4.0 Site Plans

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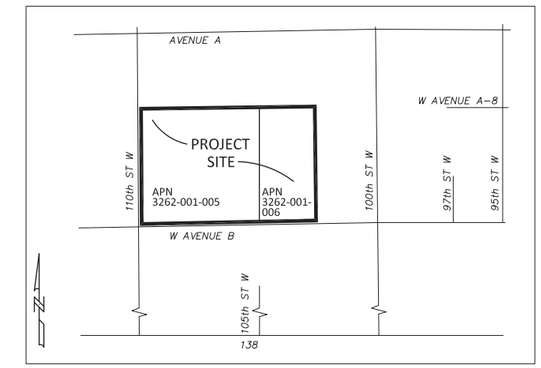
LOCATION MAP
NOT TO SCALE

PROJECT 1 NORTH LANCASTER RANCH

LOS ANGELES COUNTY, CALIFORNIA



VICINITY MAP
NOT TO SCALE

DRAWING INDEX

DRAWING NO.	TITLE
T-01	TITLE SHEET
G-01	TOPOGRAPHIC MAP
G-01	TOPOGRAPHIC MAP
C-01	SITE PLAN
C-02	GRADING PLAN
C-03	ON-SITE DRAINAGE MAP
C-04	ON-SITE DRAINAGE MAP
C-05	ON-SITE DRAINAGE MAP
C-06	ON-SITE DRAINAGE MAP
C-07	DETAIL SHEET
C-08	SECTION SHEET

NOTE:

WE HEREBY DEDICATE TO THE COUNTY OF LOS ANGELES A TWELVE (12) FOOT WIDE MULTI-USE (HIKING, MOUNTAIN BIKING AND EQUESTRIAN) TRAIL EASEMENT FOR THE PURPOSES OF THE "LITTLE BUTTES TRAIL". FULL MULTI-USE (HIKING, MOUNTAIN BIKING, AND EQUESTRIAN) PUBLIC ACCESS SHALL BE PROVIDED FOR THE TRAIL EASEMENT.

T-01

2011-00833 (RCUP201100079)

P:\CAD\PROJECTS\106-4338 SILVERADO POWER\SP LA-CUP_14-0324\P1-6\T-01-TITLE-6-B.DWG
PLOT/UPDATE: Mar 21, 2014 11:32:11 AM

REGISTERED PROFESSIONAL ENGINEER
JULIE ANN DELANEY
No.C54558
CIVIL
STATE OF CALIFORNIA

EXHIBIT PREPARER:

TETRA TECH, INC.
17885 VON KARMAN AVENUE, SUITE 500
IRVINE, CALIFORNIA 92614-6213
TEL: 949.809.5000

NOT ISSUED FOR CONSTRUCTION

NO.	DATE	REVISION	SUBM'T BY	APPV'D BY

Solar PV System Summary

20MW AC Solar Photovoltaic Generation System

APNs
3262-001-005
3262-001-006
SCH # 2012061068

Project Name:
Project 1 North Lancaster Ranch

Project Address:
110th Street West & West Avenue B
Lancaster
Los Angeles County, CA

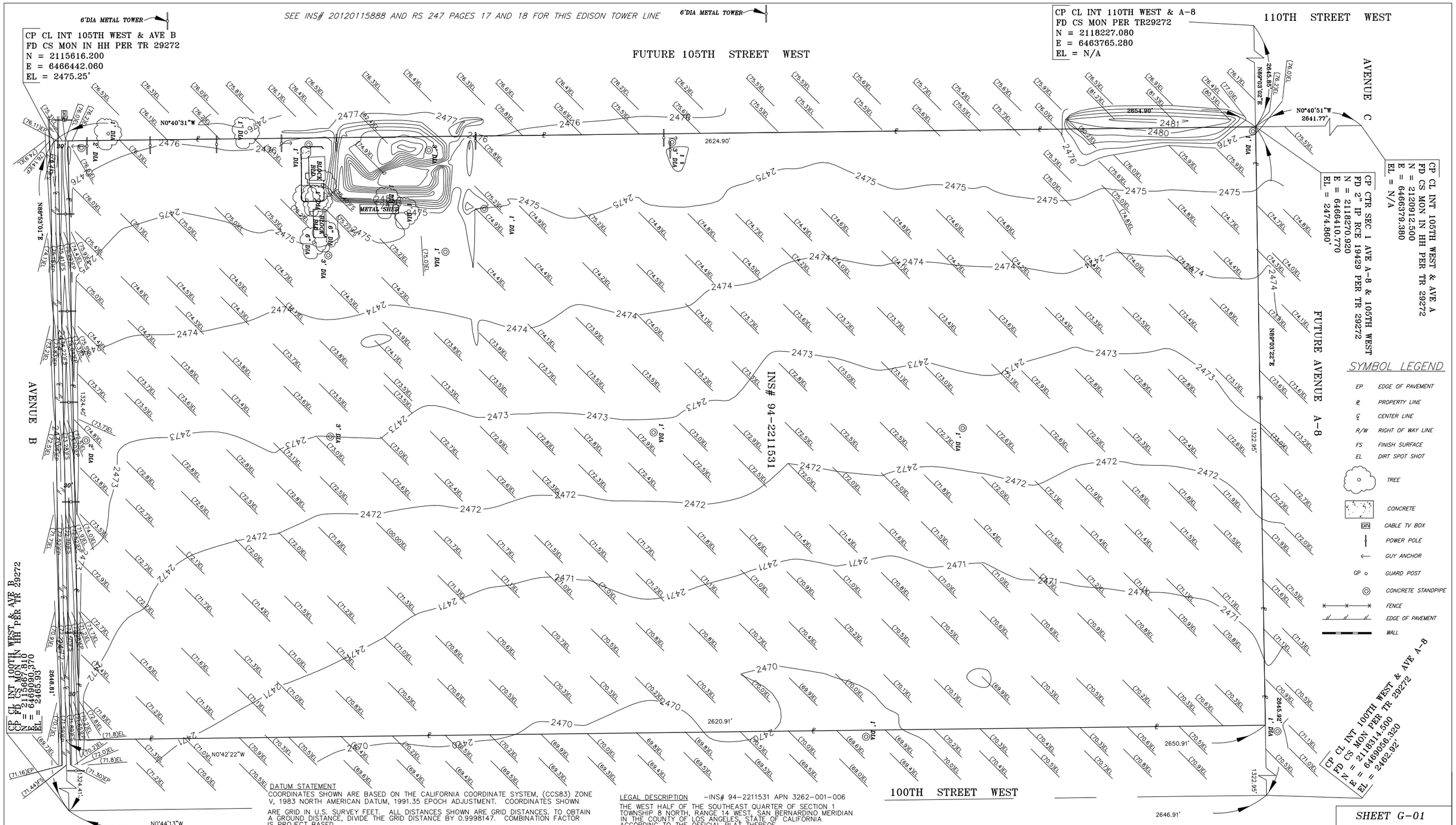
DRAWING: TITLE SHEET

APPLICANT:
Silverado Power
2 Embarcadero Center, Ste. 410
San Francisco, CA 94111
(415) 692-7740

SILVERADO power

PROJECT 1 NORTH LANCASTER RANCH
LOS ANGELES COUNTY, CA

2 Embarcadero Center, Ste. 410 | San Francisco, CA 94111 | 415.692.7740 main



DATUM STATEMENT
COORDINATES SHOWN ARE BASED ON THE CALIFORNIA COORDINATE SYSTEM, (CCS83) ZONE V, 1983 NORTH AMERICAN DATUM, 1991.35 EPOCH ADJUSTMENT. COORDINATES SHOWN ARE GRID IN U.S. SURVEY FEET. ALL DISTANCES SHOWN ARE GRID DISTANCES. TO OBTAIN A GROUND DISTANCE, DIVIDE THE GRID DISTANCE BY 0.9998147. COMBINATION FACTOR IS PROJECT BASED.

LEGAL DESCRIPTION —INS# 94-2211531 APN 3262-001-006
THE WEST HALF OF THE SOUTHEAST QUARTER OF SECTION 1 TOWNSHIP 8 NORTH, RANGE 14 WEST, SAN BERNARDINO MERIDIAN IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA ACCORDING TO THE OFFICIAL PLAT THEREOF.

SHEET G-01

BASIS OF BEARING	BENCH MARK
THE BASIS OF BEARINGS FOR THIS SURVEY IS THE CALIFORNIA COORDINATE SYSTEM, ZONE V, NAD 83, EPOCH 1991.35, AS DETERMINED LOCALLY BY A LINE BETWEEN CONTINUOUS GLOBAL POSITIONING STATIONS (CGPS), EW7123 AND EW7124, BEING NORTH 13°31'30" EAST AS DERIVED FROM GEODETIC VALUES PUBLISHED BY THE NATIONAL GEODETIC SURVEY.	LOS ANGELES COUNTY DPW BENCHMARK L 2329, LANCASTER 1998 ADJUSTMENT, NAVD 1988, ELEVATION = 2485.504 FEET. CS MON IN WELL 560MM DN @ C/L INT 110TH ST W & AVE B MKD (2, 1, 11, 12, R14W, T8N)

SCALE HORIZ: 1" = 100'

PROFESSIONAL LAND SURVEYOR LARRY E JERNIGAN No. 5924 EXP 12-31-12 STATE OF CALIFORNIA

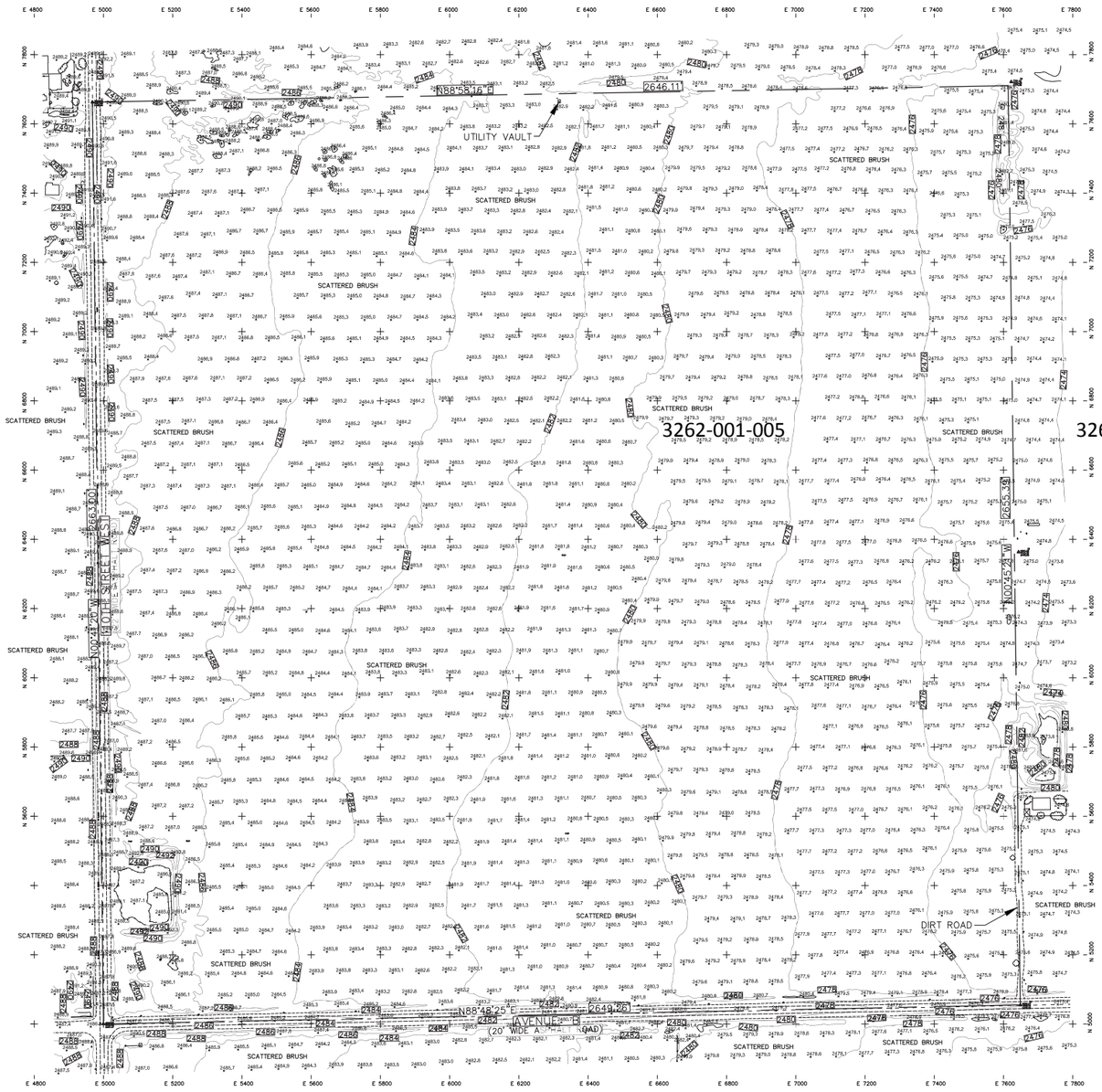
ALL VALLEY SURVEYING
44965 10TH STREET WEST
LANCASTER, CA. 93534
(661) 942-3639

NO.	REVISION	BY	APPR.	DATE
1				
2				
3				

TOPOGRAPHIC MAP
105TH STREET WEST & WEST AVENUE B
ANTELOPE VALLEY
COUNTY OF LOS ANGELES
STATE OF CALIFORNIA

DATE OF SURVEY 4/5/12

COUNTY PLAN CHECK NUMBER 2011-00833 (RCUP201100079)



BENCH MARK

QUAD: LANCASTER
NO.: L 2328
ELEVATION: 2488.811
ADJUSTMENT: 1998
DESCRIPTION: CS MON IN WELL 300MM DN @ C/L INT 110TH ST W & AVE A-8 MKD (1/4 COR 2,1,T8N,R14W)

BENCH MARK

QUAD: LANCASTER
NO.: L 2329
ELEVATION: 2485.504
ADJUSTMENT: 1998
DESCRIPTION: CS MON IN WELL 560MM DN @ C/L INT 110TH ST W & AVE B MKD (2,1,11,12,R14W,T8N)

SURVEY NOTE

BOUNDARY BASED ON FIELD SURVEY BY SPEARS LAND SURVEY PERFORMED ON 4/28/08.

BASIS OF BEARING

THE BEARINGS SHOWN HEREON ARE BASED ON THE BEARING OF N88°48'25"E BEING THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SECTION 1, TOWNSHIP 8 NORTH, RANGE 12 WEST, AS SHOWN ON THE MAP OF TRACT 29272, MAP BOOK 795, PAGES 54-59, O.R.

LEGEND

- POWER/TELEPHONE POLE
- STREET/TRAFFIC SIGN
- ON-SITE TREE

GRAPHIC SCALE

200 0 100 200 400 800

(IN FEET)
1 inch = 200 ft.

G-02

TOPOGRAPHIC SURVEY BY:

RJL

COMPILED USING PHOTOGRAMMETRIC METHODS BY
ROBERT J. LUCE & ASSOCIATES
2832 WALNUT AVENUE, SUITE E
TUSTIN, CALIFORNIA 92680
(714) 832-2077

WORK ORDER: 41344
DATE OF PHOTOGRAPHY: 5-2-08
CONTOUR INTERVAL: 2'

20MW AC Solar Photovoltaic Generation System

APNs
3262-001-005
3262-001-006

Project Name:
North Lancaster Ranch 6-22

Project Address:
110th Street West & West Avenue B
Lancaster
Los Angeles County, CA

Silverado Power
44 Montgomery Street, Ste. 3065
San Francisco, CA 94104
(415) 692-7740

2011-00833 (RCUP201100079)
NORTH LANCASTER RANCH
LOS ANGELES COUNTY, CA

REGISTERED PROFESSIONAL ENGINEER
CHARLES J. BECK
C19289
EXP. 9-30-09
CIVIL
STATE OF CALIFORNIA

PLANS PREPARED UNDER THE SUPERVISION OF CHARLES J. BECK FOR E-SOLAR

(SIGNATURE)

C19289	9-30-09	07073
RCE#	EXP. DATE	PROJECT

antelope valley engineering inc.
129 WEST PONDERA STREET
LANCASTER, CA. 93534
PHONE: (661) 948-0805

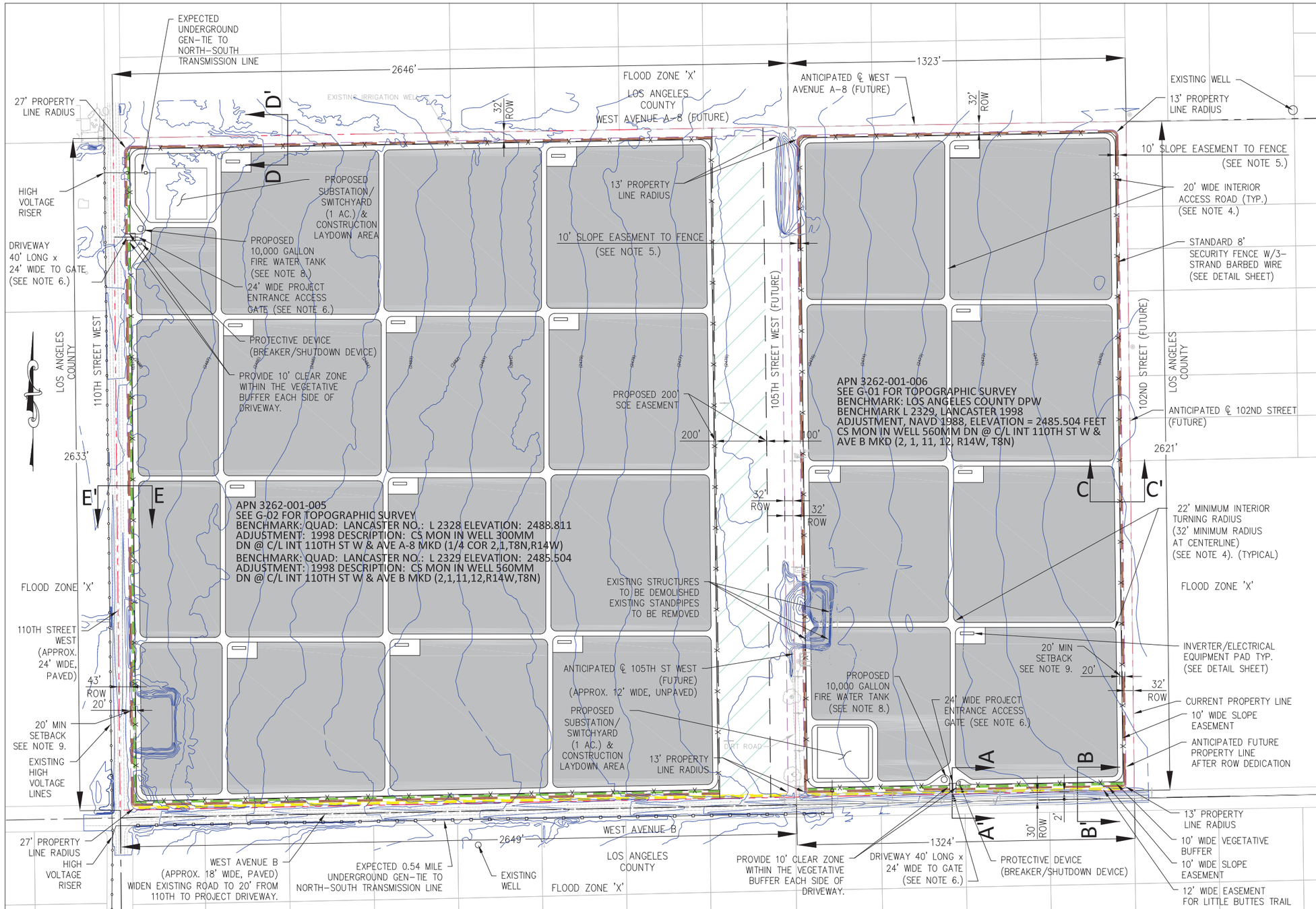
REV#		DATE
1		
2		
3		
4		
5		
6		

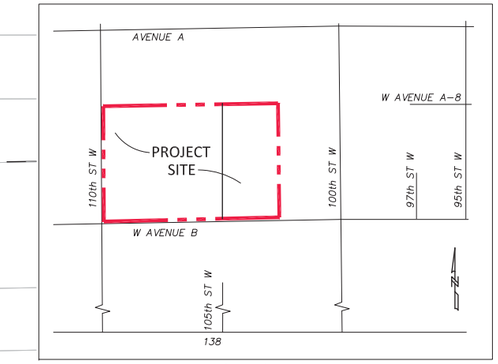
TOPOGRAPHY SURVEY
TUMBLEWEED SUNTOWER

SHEET 1 OF 1 SHTS

SCALE: 1" = 200' | CAD DWG. FILE NO.: 08066_TOPO_24x36.dwg

Julie.Delaney P:\4336-Silverado Power Solar Cup\CAD\SITE PLANS\6\6-County Submittal-C\G-02-TOPO.dwg Tue Nov 06, 2012 - 6:59am





VICINITY MAP

NO SCALE

PROJECT SITE:

PROJECT SITE IS 239 ACRES (NET)

NOTES:

1. 'ZONE X' AS SHOWN ON PANEL 0150F OF FLOOD INSURANCE RATE MAP NO. 06037C0150F. ZONE "X" DESIGNATED AS "AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOOD PLAIN.

2. FIRE DEPARTMENT ACCESS DEVICE AND EMERGENCY CONTACT PLACARD LOCATED AT ALL ENTRANCE GATES.

3. MOBILE SANITATION FACILITY, AS DEFINED BY THE LOS ANGELES COUNTY DEPARTMENT OF PUBLIC HEALTH, CAN BE LOCATED AT ALL PARKING LOCATIONS AND WILL BE LOCATED AT THE NEAREST LOCATION TO CONSTRUCTION AND OPERATIONAL WORKERS ACTIVITY. THE FACILITIES WILL BE KEPT TO LOS ANGELES COUNTY CODE, TITLE 11 – HEALTH & SAFETY, AND CAL-OSHA SANITATION STANDARDS IN SECTION 3360, TITLE 8, CALIFORNIA CODE OF REGULATIONS. MOBILE SANITATION FACILITIES WILL BE MADE AVAILABLE DURING CONSTRUCTION AND AS REQUIRED BY OSHA DURING OPERATIONS AND MAINTENANCE. SEE ARRAY BLOCK DETAIL (TYPICAL) ON C-07.

4. INTERIOR ACCESS ROADS WILL BE 20' WIDE, COMPACTED TO 90%, WITH 32 FOOT TURNING RADIUS AT CENTER LINE. THE INNER RADIUS WILL BE 22' AND THE OUTER RADIUS WILL BE 42'. INTERIOR ACCESS ROADS WILL BE PROVIDED TO INVERTER/ELECTRICAL EQUIPMENT PADS AND AROUND THE PERIMETER OF THE PROJECT. SEE ARRAY BLOCK DETAIL (TYPICAL) ON C-07.

5. 10 FOOT WIDE SLOPE EASEMENT WILL BE PROVIDED AROUND PERIMETER.

6. DRIVEWAY ACCESS GATES TO BE SET 40 FEET BACK FROM EDGE OF PROPERTY. DRIVEWAY WILL BE 24 FEET WIDE.

7. ALL DIMENSIONS SHOWN ARE APPROXIMATE AND SUBJECT TO VERIFICATION DURING DETAILED DESIGN.

8. TANK CONNECTIONS PER LOS ANGELES COUNTY FIRE DEPARTMENT.

9. A 20' MINIMUM SETBACK FROM PROPERTY LINE (AFTER DEDICATIONS) TO ARRAYS OR EQUIPMENT TO BE MAINTAINED ON SITE. PROJECT FENCE, FIRE ROADS, EASEMENTS, AND VEGETATION ARE OK WITHIN THE SETBACK.

LEGEND:

MIN	MINIMUM
ROW	RIGHT OF WAY
℄	CENTERLINE
—x—x—	FENCE LINE
	OVERHEAD LINE
	UNDERGROUND LINE
	PROPERTY LINE (AFTER ROW DEDICATIONS)
	PROPERTY LINE (CURRENT)
	PARCEL LINE
(2470)	CONTOUR LINE
	SOLAR ARRAY FIELD
	10' WIDE VEGETATIVE BUFFER
	10' WIDE SLOPE EASEMENT
	12' WIDE EASEMENT FOR LITTLE BUTTES TRAIL

C-01

2011-00833 (RCUP201100079)

REGISTERED PROFESSIONAL ENGINEER JULIE ANN DELANEY No.C54558 CIVIL STATE OF CALIFORNIA

EXHIBIT PREPARER:

TETRA TECH, INC.
17885 VON KARMAN AVENUE, SUITE 500
IRVINE, CALIFORNIA 92614-6213
TEL: 949.809.5000

NOT ISSUED FOR CONSTRUCTION

NO.	DATE	REVISION	SUBM'T BY	APPV'D BY

Solar PV System Summary

20MW AC Solar Photovoltaic Generation System

APNs
3262-001-005
3262-001-006
SCH # 2012061068

Project Name:
Project 1 North Lancaster Ranch

Project Address:
110th Street West & West Avenue B
Lancaster
Los Angeles County, CA

DRAWING: Site Plan

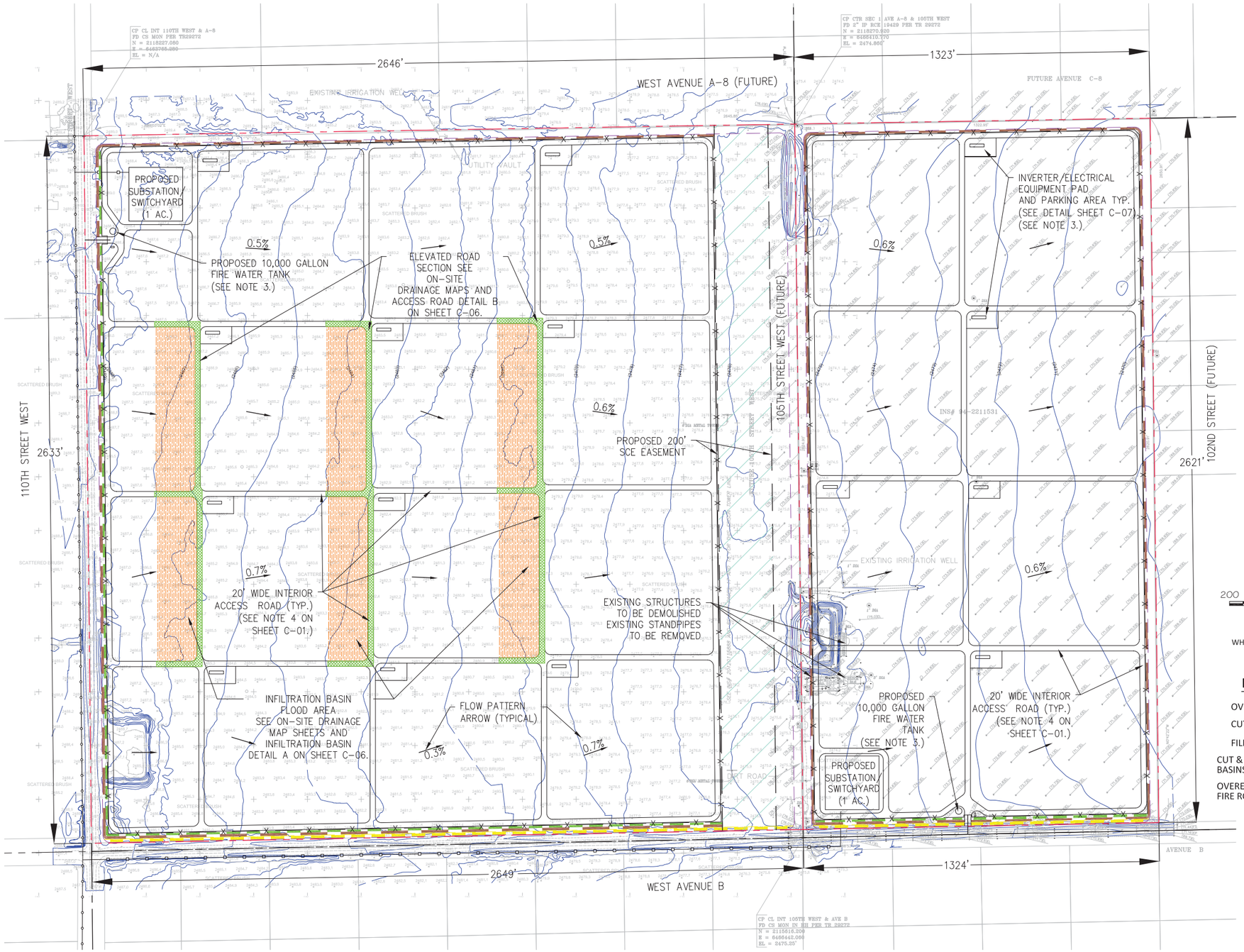
APPLICANT:
Silverado Power
2 Embarcadero Center, Ste. 410
San Francisco, CA 94111
(415) 692-7740

SILVERADO power

PROJECT 1 NORTH
LANCASTER RANCH
LOS ANGELES COUNTY, CA

2 Embarcadero Center, Ste. 410 | San Francisco, CA 94111 | 415.692.7740 main

P:\CAD\PROJECTS\196-4336 SILVERADO POWER\SP LA-CUP_14-0324\P1-4\C-01-SITE-6.DWG
PLOT/PDF DATE: Mar 24, 2014 10:52:23 AM



NOTES:

1. DRAINAGE ACROSS SITE IS CURRENTLY FROM THE WEST TO THE EAST, AS SHOWN ON THE SURFACE CONTOURS. TOPOGRAPHY/CONTOURS ARE BASED ON SURVEY DATA PROVIDED BY ALL VALLEY SURVEYING AND ANTELOPE VALLEY ENGINEERING, INC.

2. OVERALL EXISTING GRADING AND DRAINAGE PATTERN TO REMAIN UNCHANGED DURING AND AFTER CONSTRUCTION WITH THE EXCEPTION OF AREAS USED FOR DRAINAGE FEATURES. ELEVATED ROAD SECTIONS WILL BE USED TO CREATE INFILTRATION BASINS. FLOOD AREAS AND FLOW PATTERN ARROWS ARE SHOWN ON THIS SHEET AND SHEETS C-03 AND C-04. LIMIT OF GRADING ACTIVITIES WILL BE AT PROPERTY LINE (AFTER DEDICATIONS).

3. EQUIPMENT PADS WILL BE GRADED AS REQUIRED PER MANUFACTURER SPECIFICATIONS.

LEGEND:

CATV	CABLE TV BOX	EP	EDGE OF PAVEMENT
	POWER POLE	PL	PROPERTY LINE
	GUY ANCHOR	CL	CENTER LINE
GP	GUARD POST	R/W	RIGHT OF WAY LINE
	CONCRETE STANDPIPE	FS	FINISH SURFACE
	FENCE	EL	DIRT SPOT SHOT
	EDGE OF PAVEMENT		TREE
	WALL		CONCRETE

MIN	MINIMUM
ROW	RIGHT OF WAY
℄	CENTERLINE
—— x —— x ——	FENCE LINE
	OVERHEAD LINE
	UNDERGROUND LINE
	PROPERTY LINE (AFTER DEDICATIONS)
	PROPERTY LINE (CURRENT)
	PARCEL LINE
(2470)	CONTOUR LINE
	INFILTRATION BASIN FLOOD AREA
	ELEVATED ROAD SECTION
	10' WIDE VEGETATIVE BUFFER
	10' WIDE SLOPE EASEMENT
	12' WIDE EASEMENT FOR LITTLE BUTTES TRAIL

200 0 200 400

SCALE IN FEET

1'=200'

WHEN PRINTED TO SCALE ON 22"x34" SHEET

EARTHWORK QUANTITIES:

OVEREXCAVATION	=	43,600 CUBIC YARDS
CUT	=	5,400 CUBIC YARDS
FILL	=	5,400 CUBIC YARDS

CUT & FILL QUANTITIES INCLUDE INVERTER PADS, SUBSTATIONS/SWITCHYARDS, BASINS, AND ELEVATED ROAD BED FOR DRAINAGE FEATURES.

OVEREXCAVATION QUANTITY INCLUDES ACCESSIBLE FIRE ROAD.

SURVEY INFORMATION:

TOPOGRAPHIC MAP AND CONTOURING PREPARED BY ALL VALLEY SURVEYING, SEE TOPOGRAPHIC MAP SHEET G-01 AND ANTELOPE VALLEY ENGINEERING, INC. SEE TOPOGRAPHIC MAP SHEET G-02

BASIS OF BEARINGS:

SEE TOPOGRAPHIC MAP SHEETS G-01 & G-02.

BENCHMARK:

SEE TOPOGRAPHIC MAP SHEETS G-01 & G-02.

SURVEYORS:

LARRY E. JERNIGAN, PLS #5924
ALL VALLEY SURVEYING
44965 10TH STREET WEST
LANCASTER, CA 93534
(661) 942-3639

CHARLES J. BECK, PE #C19289
ANTELOPE VALLEY ENGINEERING, INC.
129 WEST PONDERA ST.
LANCASTER, CA 93534
(661) 948-0805

C-02

2011-00833 (RCUP201100079)

REGISTERED PROFESSIONAL ENGINEER JULIE ANN DELANEY No.C54558 CIVIL STATE OF CALIFORNIA

EXHIBIT PREPARER:

TETRA TECH, INC.
17885 VON KARMAN AVENUE, SUITE 500
IRVINE, CALIFORNIA 92614-6213
TEL: 949.809.5000

NOT ISSUED FOR CONSTRUCTION

NO.	DATE	REVISION	SUBM'T BY	APPV'D BY

Solar PV System Summary

20MW AC Solar Photovoltaic Generation System

APNs
3262-001-005
3262-001-006
SCH # 2012061068

Project Name:
Project 1 North Lancaster Ranch

Project Address:
110th Street West & West Avenue B
Lancaster
Los Angeles County, CA

DRAWING:
Preliminary Grading & Drainage Plan

APPLICANT:
Silverado Power
2 Embarcadero Center, Ste. 410
San Francisco, CA 94111
(415) 692-7740

SILVERADO power

PROJECT 1 NORTH
LANCASTER RANCH
LOS ANGELES COUNTY, CA

2 Embarcadero Center, Ste. 410 | San Francisco, CA 94111 | 415.692.7740 main

P:\CAD\PROJECTS\196-4336 SILVERADO POWER\SP LA-CUP_14-0324\P1-4\C-02-GRAD-6.DWG
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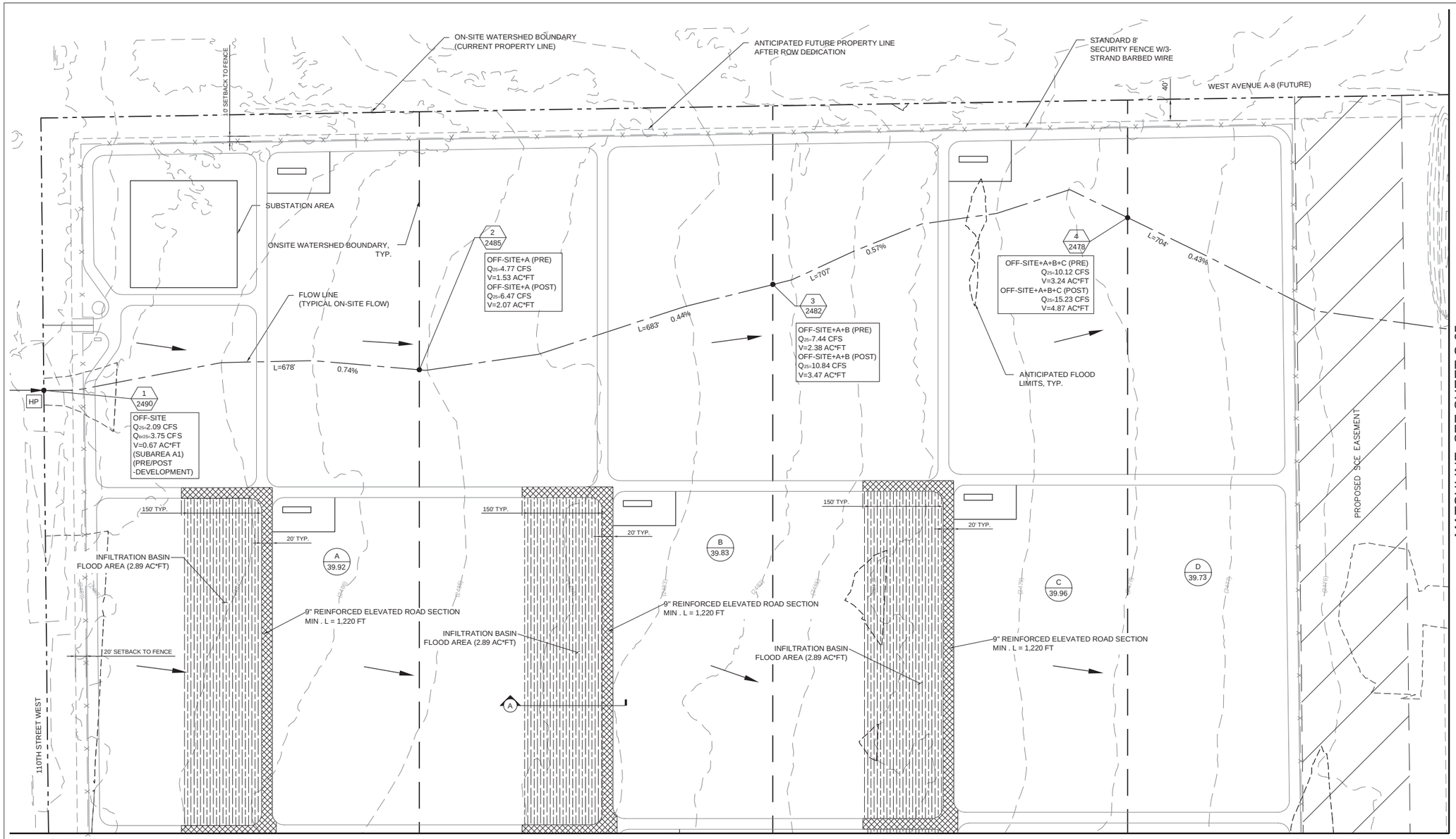


LEGEND:

XX / XX.X	SUBAREA ID / ACREAGE
XX / XXX	NODE ID / ELEVATION
HP	HIGH POINT
LP	LOW POINT
	WATERSHED BOUNDARY
	FUTURE PROPERTY LINE
X	SECURITY FENCING
	FLOW LINE
	SUB-AREA BOUNDARY
	ANTICIPATED 25-YR FLOOD LIMITS
	ELEVATED ROAD SECTION
	INFILTRATION BASIN FLOOD AREA

Q_{25} PEAK FLOW RATE (25-YEAR STORM EVENT)
Q_{br25} BURNED PEAK FLOW RATE (25-YEAR STORM EVENT)
V STORM VOLUME (25-YEAR STORM EVENT)
Q_{PM} PEAK MITIGATION FLOW RATE (85TH % STORM EVENT)
V_M MITIGATION VOLUME (85TH % STORM EVENT)
V_{DP} DEBRIS POTENTIAL VOLUME = (1,300 CY / SQ. MI.) * (TOTAL WATERSHED AREA 0.419 SQ. MI.) = 545 CY

DRAINAGE CONCEPT NOTES:
1) LOCATIONS OF DRAINAGE DEVICES SHOWN ARE NOT NECESSARILY APPROVED.
2) COMPLIANCE OF ALL STREET DRAINAGE REQUIREMENTS WILL BE MET TO THE SATISFACTION OF THE DEPARTMENT OF PUBLIC WORKS.
3) APPROVAL OF THE DRAINAGE CONCEPT DOES NOT CONSTITUTE DETERMINATION THAT THE OFFSITE IMPROVEMENTS ARE REQUIRED WITHIN THE MEANING OF GOVERNMENT CODE SECTION 66462.5, (EXCEPT AS NOTES).
4) AN OFFSITE DRAINAGE COVENANT FOR ACCEPTANCE OR DRAINAGE (AND DRAINAGE FACILITIES) MAY BE REQUIRED WHERE INDICATED.
5) A NOTE OF FLOOD HAZARD WILL BE REQUIRED WHERE INDICATED ON THIS PLAN.
6) A SOIL REPORT WILL BE REQUIRED TO VERIFY THAT A 7-DAY PERCOLATION RATE CAN BE OBTAINED.
7) BASIN SIZES ARE DEPENDENT ON THE VERIFICATION OF PERCOLATION RATES AND ARE SUBJECT TO CHANGE.
8) NOT WITHIN A FEMA ZONE A. WITHIN FEMA FLOOD ZONE X, UNSHADED.
9) NOT WITHIN A COUNTY ADOPTED FLOODWAY.
10) ALL BASINS ARE PRIVATELY MAINTAINED.
11) FOR THE POST-DEVELOPMENT 50-YEAR STORM EVENT EXITING THE PROJECT, THE PEAK FLOW RATE (Q_{50}) DECREASED BY 1.5%, THE VOLUME (V_{50}) INCREASED BY 6.9%, THE DEPTH INCREASED BY 0.0%, AND THE VELOCITY INCREASED BY 0.0%. THESE REPRESENT NEGLIGIBLE INCREASES FROM THE PRE-DEVELOPMENT CONDITION. SEE IMPACT ANALYSIS CALCULATIONS.

HYDROLOGY STUDY/DRAINAGE CONCEPT/LID PLAN
APPROVED FOR AREA AND Q ONLY
APPROVED BY:_____ RCE NO:_____ DATE_____
CHECKED BY:_____ DATE_____
COUNTY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS
LAND DEVELOPMENT DIVISION

N
0 50 100 200
SCALE: 1":100' (ON FULL SIZE DWG.)

2011-00833 (RCUP201100079) C-03

PREPARED UNDER THE SUPERVISION OF:
REGISTERED PROFESSIONAL ENGINEER JOSEPH E. DIETZ No. 67032 EXP: 9-30-14 CIVIL STATE OF CALIFORNIA
JOSEPH E. DIETZ, P.E.

EXHIBIT PREPARER:
TETRA TECH, INC.
17885 VON KARMAN AVENUE, SUITE 500
IRVINE, CALIFORNIA 92614-6213
TEL: 949.809.5000

NOT ISSUED FOR CONSTRUCTION

NO.	DATE	REVISION	SUBM'T BY	APPV'D BY

Solar PV System Summary

20MW AC Solar Photovoltaic Generation System
APNs
3262-001-005
3262-001-006
SCH # 2012061068

Project Name:
Project 1 North Lancaster Ranch
Project Address:
110th Street West & West Avenue B
Lancaster
Los Angeles County, CA

HYDROLOGY STUDY/DRAINAGE CONCEPT/LID FOR CUP 201100079 ON-SITE DRAINAGE MAP

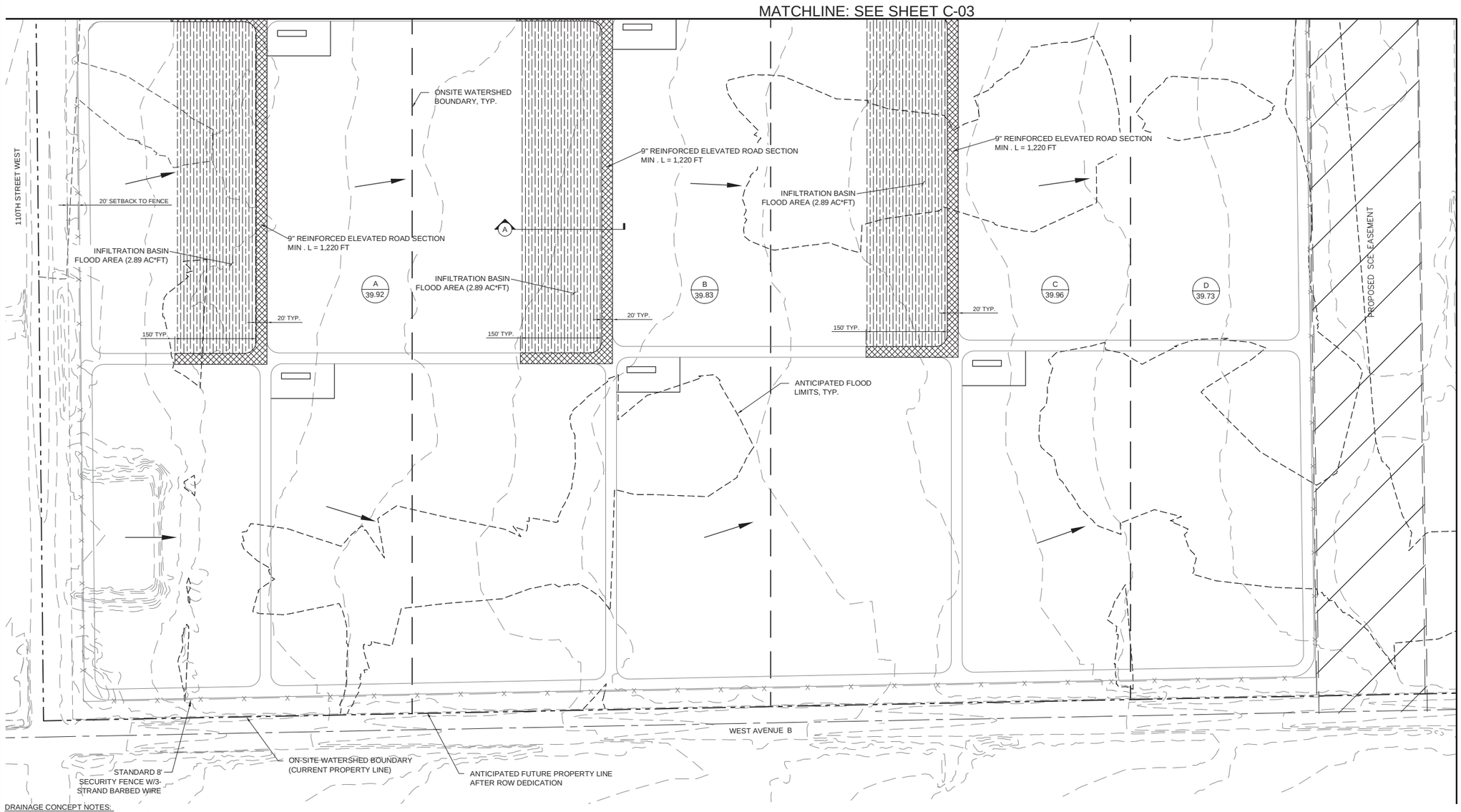
APPLICANT:
Silverado Power
2 Embarcadero Center, Ste. 410
San Francisco, CA 94111
(415) 692-7740

SILVERADO power

PROJECT 1 NORTH LANCASTER RANCH
LOS ANGELES COUNTY, CA

2 Embarcadero Center, Ste. 410 | San Francisco, CA 94111 | 415.692.7740 main

P:\245486\135-04546-12001\SUPPORTDOCS\CALCS\HYDROLOGY\CUP6\FINAL DESIGN\ONSITE HYDROLOGY C03.DWG
PLOT/UPDATE: Dec 6, 2013 10:44:45 AM



LEGEND:

XX / XX.X	SUBAREA ID / ACREAGE
XX / XXX	NODE ID / ELEVATION
HP	HIGH POINT
LP	LOW POINT
	WATERSHED BOUNDARY
	FUTURE PROPERTY LINE
X	SECURITY FENCING
	FLOW LINE
	SUB-AREA BOUNDARY
	ANTICIPATED 25-YR FLOOD LIMITS
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	INFILTRATION BASIN FLOOD AREA

Q_{25} PEAK FLOW RATE (25-YEAR STORM EVENT)
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DRAINAGE CONCEPT NOTES:

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HYDROLOGY STUDY/DRAINAGE CONCEPT/LID PLAN
APPROVED FOR AREA AND Q ONLY
APPROVED BY:_____RCE NO:_____DATE_____
CHECKED BY:_____DATE_____
COUNTY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS
LAND DEVELOPMENT DIVISION

N
0 50 100 200
SCALE: 1":100' (ON FULL SIZE DWG.)

2011-00833 (RCUP201100079) C-04

PREPARED UNDER THE SUPERVISION OF:

REGISTERED PROFESSIONAL ENGINEER JOSEPH E. DIETZ No. 67032 EXP: 9-30-14 CIVIL STATE OF CALIFORNIA

JOSEPH E. DIETZ, P.E.

EXHIBIT PREPARER:

TETRA TECH, INC.
17885 VON KARMAN AVENUE, SUITE 500
IRVINE, CALIFORNIA 92614-6213
TEL: 949.809.5000

NOT ISSUED FOR CONSTRUCTION

NO.	DATE	REVISION	SUBM'T BY	APPV'D BY

Solar PV System Summary

20MW AC Solar Photovoltaic Generation System
APNs
3262-001-005
3262-001-006
SCH # 2012061068

Project Name:
Project 1 North Lancaster Ranch
Project Address:
110th Street West & West Avenue B
Lancaster
Los Angeles County, CA

HYDROLOGY STUDY/DRAINAGE CONCEPT/LID FOR CUP 201100079 ON-SITE DRAINAGE MAP

APPLICANT:
Silverado Power
2 Embarcadero Center, Ste. 410
San Francisco, CA 94111
(415) 692-7740

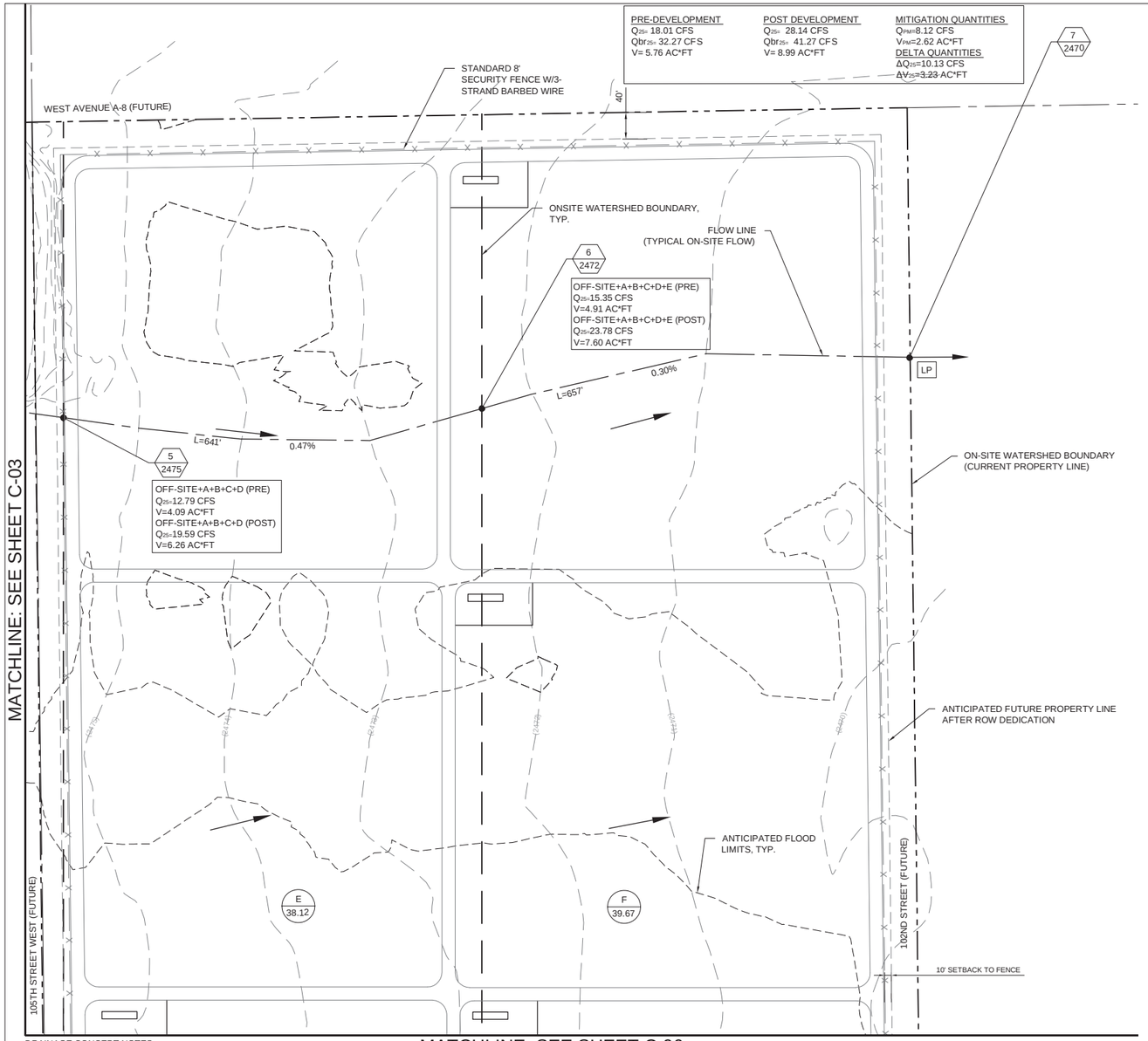
SILVERADO power

PROJECT 1 NORTH
LANCASTER RANCH
LOS ANGELES COUNTY, CA

2 Embarcadero Center, Ste. 410 | San Francisco, CA 94111 | 415.692.7740 main

P:\04546\135-04546-12001\SUPPORTDOCS\CALCS\HYDROLOGY\CUP\FINAL DESIGN\ONSITE HYDROLOGY C04.DWG
PLOT/UPDATE: Dec 6, 2013 10:39:57 AM

PRE-DEVELOPMENT	POST DEVELOPMENT	MITIGATION QUANTITIES
Q_{25}= 18.01 CFS	Q_{25}= 28.14 CFS	Q_{PM}=8.12 CFS
Q_{Brf25}= 32.27 CFS	Q_{Brf25}= 41.27 CFS	V_{PM}=2.62 AC*FT
V= 5.76 AC*FT	V= 8.99 AC*FT	DELTA QUANTITIES
		ΔQ_{25}=10.13 CFS
		ΔV_{25}=3.23 AC*FT



HYDROLOGY RESULTS: (BASED ON LA FLOOD CONTROL TC CALCULATOR)

ON-SITE HYDROLOGY (PRE-DEVELOPMENT)

Project	Subarea	Area (acre)	Q_{100}	Frequency	Soil Type	Length (ft)	Slope (ft/ft)	Isohyet (in.)	Tc calculated (min.)	Intensity (in./hr)	Cu	Cd	Flow rate (cfs)	Fire Factor	Burned flow rate (cfs)	Volume (acre-ft)
Project 1	A	39.92	0.01	2	120	678	0.0074	1.0	30	0.27	0.10	0.11	1.19	0.34	1.52	0.38
Project 1	B	39.83	0.01	2	120	683	0.0044	1.0	30	0.27	0.10	0.11	1.18	0.34	1.52	0.37
Project 1	C	39.96	0.01	2	120	707	0.0057	1.0	30	0.27	0.10	0.11	1.19	0.34	1.52	0.38
Project 1	D	39.73	0.01	2	120	704	0.0043	1.0	30	0.27	0.10	0.11	1.18	0.34	1.51	0.37
Project 1	E	38.12	0.01	2	120	641	0.0047	1.0	30	0.27	0.10	0.11	1.13	0.34	1.44	0.36
Project 1	F	39.67	0.01	2	120	657	0.0030	1.0	30	0.27	0.10	0.11	1.18	0.34	1.51	0.37
Project 1	A	39.92	0.01	5	120	678	0.0074	1.6	30	0.41	0.10	0.11	1.80	0.34	3.08	0.57
Project 1	B	39.83	0.01	5	120	683	0.0044	1.6	30	0.41	0.10	0.11	1.80	0.34	3.07	0.57
Project 1	C	39.96	0.01	5	120	707	0.0057	1.6	30	0.41	0.10	0.11	1.80	0.34	3.08	0.57
Project 1	D	39.73	0.01	5	120	704	0.0043	1.6	30	0.41	0.10	0.11	1.79	0.34	3.06	0.57
Project 1	E	38.12	0.01	5	120	641	0.0047	1.6	30	0.41	0.10	0.11	1.72	0.34	2.94	0.55
Project 1	F	39.67	0.01	5	120	657	0.0030	1.6	30	0.41	0.10	0.11	1.79	0.34	3.06	0.57
Project 1	A	39.92	0.01	10	120	678	0.0074	1.9	30	0.50	0.10	0.11	2.20	0.34	3.85	0.70
Project 1	B	39.83	0.01	10	120	683	0.0044	1.9	30	0.50	0.10	0.11	2.19	0.34	3.84	0.70
Project 1	C	39.96	0.01	10	120	707	0.0057	1.9	30	0.50	0.10	0.11	2.20	0.34	3.85	0.70
Project 1	D	39.73	0.01	10	120	704	0.0043	1.9	30	0.50	0.10	0.11	2.19	0.34	3.83	0.69
Project 1	E	38.12	0.01	10	120	641	0.0047	1.9	30	0.50	0.10	0.11	2.10	0.34	3.67	0.67
Project 1	F	39.67	0.01	10	120	657	0.0030	1.9	30	0.50	0.10	0.11	2.19	0.34	3.82	0.69
Project 1	A	39.92	0.01	25	120	678	0.0074	2.4	30	0.61	0.10	0.11	2.74	0.34	4.80	0.86
Project 1	B	39.83	0.01	25	120	683	0.0044	2.4	30	0.61	0.10	0.11	2.67	0.34	4.79	0.85
Project 1	C	39.96	0.01	25	120	707	0.0057	2.4	30	0.61	0.10	0.11	2.68	0.34	4.80	0.86
Project 1	D	39.73	0.01	25	120	704	0.0043	2.4	30	0.61	0.10	0.11	2.67	0.34	4.78	0.85
Project 1	E	38.12	0.01	25	120	641	0.0047	2.4	30	0.61	0.10	0.11	2.56	0.34	4.58	0.82
Project 1	F	39.67	0.01	25	120	657	0.0030	2.4	30	0.61	0.10	0.11	2.67	0.34	4.77	0.85
Project 1	A	39.92	0.01	50	120	678	0.0074	2.7	30	0.69	0.13	0.14	3.96	0.34	6.24	0.96
Project 1	B	39.83	0.01	50	120	683	0.0044	2.7	30	0.69	0.13	0.14	3.95	0.34	6.23	0.96
Project 1	C	39.96	0.01	50	120	707	0.0057	2.7	30	0.69	0.13	0.14	3.96	0.34	6.25	0.96
Project 1	D	39.73	0.01	50	120	704	0.0043	2.7	30	0.69	0.13	0.14	3.94	0.34	6.21	0.96
Project 1	E	38.12	0.01	50	120	641	0.0047	2.7	30	0.69	0.13	0.14	3.68	0.34	5.96	0.94
Project 1	F	39.67	0.01	50	120	657	0.0030	2.7	30	0.69	0.13	0.14	3.93	0.34	6.21	0.96
Project 1	A	39.92	0.01	MIT	120	678	0.0074	0.75	30	0.19	0.10	0.11	0.83	0.34	1.29	0.27
Project 1	B	39.83	0.01	MIT	120	683	0.0044	0.75	30	0.19	0.10	0.11	0.83	0.34	1.29	0.27
Project 1	C	39.96	0.01	MIT	120	707	0.0057	0.75	30	0.19	0.10	0.11	0.84	0.34	1.29	0.27
Project 1	D	39.73	0.01	MIT	120	704	0.0043	0.75	30	0.19	0.10	0.11	0.83	0.34	1.28	0.27
Project 1	E	38.12	0.01	MIT	120	641	0.0047	0.75	30	0.19	0.10	0.11	0.80	0.34	1.23	0.26
Project 1	F	39.67	0.01	MIT	120	657	0.0030	0.75	30	0.19	0.10	0.11	0.83	0.34	1.28	0.27

ON-SITE HYDROLOGY (POST-DEVELOPMENT)

Project	Subarea	Area (acre)	Q_{100}	Frequency	Soil Type	Length (ft)	Slope (ft/ft)	Isohyet (in.)	Tc calculated (min.)	Intensity (in./hr)	Cu	Cd	Flow rate (cfs)	Fire Factor	Burned flow rate (cfs)	Volume (acre-ft)
Project 1	A	39.92	0.1	2	120	678	0.0074	1.0	30	0.27	0.10	0.18	1.94	0.34	2.61	0.61
Project 1	B	39.83	0.1	2	120	683	0.0044	1.0	30	0.27	0.10	0.18	1.94	0.34	2.61	0.61
Project 1	C	39.96	0.1	2	120	707	0.0057	1.0	30	0.27	0.10	0.18	1.94	0.34	2.61	0.62
Project 1	D	39.73	0.1	2	120	704	0.0043	1.0	30	0.27	0.10	0.18	1.93	0.34	2.60	0.61
Project 1	E	38.12	0.1	2	120	641	0.0047	1.0	30	0.27	0.10	0.18	1.85	0.34	2.49	0.59
Project 1	F	39.67	0.1	2	120	657	0.0030	1.0	30	0.27	0.10	0.18	1.93	0.34	2.60	0.61
Project 1	A	39.92	0.1	5	120	678	0.0074	1.6	30	0.41	0.10	0.18	2.95	0.34	4.11	0.93
Project 1	B	39.83	0.1	5	120	683	0.0044	1.6	30	0.41	0.10	0.18	2.94	0.34	4.10	0.93
Project 1	C	39.96	0.1	5	120	707	0.0057	1.6	30	0.41	0.10	0.18	2.95	0.34	4.12	0.93
Project 1	D	39.73	0.1	5	120	704	0.0043	1.6	30	0.41	0.10	0.18	2.93	0.34	4.09	0.93
Project 1	E	38.12	0.1	5	120	641	0.0047	1.6	30	0.41	0.10	0.18	2.81	0.34	3.93	0.89
Project 1	F	39.67	0.1	5	120	657	0.0030	1.6	30	0.41	0.10	0.18	2.93	0.34	4.09	0.93
Project 1	A	39.92	0.1	10	120	678	0.0074	1.9	30	0.50	0.10	0.18	3.59	0.34	5.00	1.14
Project 1	B	39.83	0.1	10	120	683	0.0044	1.9	30	0.50	0.10	0.18	3.58	0.34	5.08	1.14
Project 1	C	39.96	0.1	10	120	707	0.0057	1.9	30	0.50	0.10	0.18	3.60	0.34	5.10	1.14
Project 1	D	39.73	0.1	10	120	704	0.0043	1.9	30	0.50	0.10	0.18	3.58	0.34	5.07	1.14
Project 1	E	38.12	0.1	10	120	641	0.0047	1.9	30	0.50	0.10	0.18	3.43	0.34	4.87	1.09
Project 1	F	39.67	0.1	10	120	657	0.0030	1.9	30	0.50	0.10	0.18	3.57	0.34	5.06	1.13
Project 1	A	39.92	0.1	25	120	678	0.0074	2.4	30	0.61	0.10	0.18	4.38	0.34	6.31	1.40
Project 1	B	39.83	0.1	25	120	683	0.0044	2.4	30	0.61	0.10	0.18	4.37	0.34	6.40	1.40
Project 1	C	39.96	0.1	25	120	707	0.0057	2.4	30	0.61	0.10	0.18	4.39	0.34	6.32	1.40
Project 1	D	39.73	0.1	25	120	704	0.0043	2.4	30	0.61	0.10	0.18	4.36	0.34	6.28	1.39
Project 1	E	38.12	0.1	25	120	641	0.0047	2.4	30	0.61	0.10	0.18	4.19	0.34	6.03	1.34
Project 1	F	39.67	0.1	25	120	657	0.0030	2.4	30	0.61	0.10	0.18	4.36	0.34	6.28	1.39
Project 1	A	39.92	0.1	50	120	678	0.0074	2.7	30	0.69	0.13	0.21	5.76	0.34	7.95	1.61
Project 1	B	39.83	0.1	50	120	683	0.0044	2.7	30	0.69	0.13	0.21	5.77	0.34	7.94	1.60
Project 1	C	39.96	0.1	50	120	707	0.0057	2.7	30	0.69	0.13	0.21	5.79	0.34	7.96	1.61
Project 1	D	39.73	0.1	50	120	704	0.0043	2.7	30	0.69	0.13	0.21	5.76	0.34	7.92	1.60
Project 1	E	38.12	0.1	50	120	641	0.0047	2.7	30	0.69	0.13	0.21	5.52	0.34	7.59	1.53
Project 1	F	39.67	0.1	50	120	657	0.0030	2.7	30	0.69	0.13	0.21	5.75	0.34	7.90	1.60
Project 1	A	39.92	0.1	MIT	120	678	0.0074	0.75	30	0.19	0.10	0.18	1.37	0.34	1.78	0.44
Project 1	B	39.83	0.1	MIT	120	683	0.0044	0.75	30	0.19	0.10	0.18	1.36	0.34	1.77	0.44
Project 1	C	39.96	0.1	MIT	120	707	0.0057	0.75	30	0.19	0.10	0.18	1.37	0.34	1.78	0.44
Project 1	D	39.73	0.1	MIT	120	704	0.0043	0.75	30	0.19	0.10	0.18	1.36	0.34	1.77	0.44
Project 1	E	38.12	0.1	MIT	120	641	0.0047	0.75	30	0.19	0.10	0.18	1.30	0.34	1.70	0.42
Project 1	F	39.67	0.1	MIT	120	657	0.0030	0.75	30	0.19	0.10	0.18	1.36	0.34	1.77	0.44

Incremental Flow and Volume Increase for Various Storm Events

Storm Event	Pre Q (cfs)	Post Q (cfs)	Delta Q (cfs)	Pre V (acre-ft)	Post V (acre-ft)	Delta V (acre-ft)
2.00	7.05	13.53	6.48	2.23	3.65	1.42
5.00	10.70	17.51	6.81	3.40	5.54	2.14
10.00	13.06	21.35	8.29	4.15	6.78	2.63
25.00	15.92	26.05	10.13	5.05	8.32	3.23
50.00	22.92	34.37	11.45	5.86	9.55	3.69

NOTE: FOR INFILTRATION BASIN MITIGATION VOLUME, SUM MIT. FREQUENCY VOLUMES UNDER POST-DEVELOPMENT TABLE. V_{PM}=2.62 AC*FT.

DELTA QUANTITIES FOR DRAINAGE AREA A:
$\Delta Q25$ = 4.38 - 2.68 = 1.70 CFS
$\Delta V25$ = 1.40 - 0.86 = 0.54 AC*FT

DELTA QUANTITIES FOR DRAINAGE AREA B:
$\Delta Q25$ = 4.37 - 2.67 = 1.70 CFS
$\Delta V25$ = 1.40 - 0.85 = 0.55 AC*FT

DELTA QUANTITIES FOR DRAINAGE AREA C
$\Delta Q25$ = 4.39 - 2.68 = 1.71 CFS
$\Delta V25$ = 1.32 - 0.86 = 0.54 AC*FT

DELTA QUANTITIES FOR DRAINAGE AREA D
$\Delta Q25$ = 4.36 - 2.67 = 1.69 CFS
$\Delta V25$ = 1.39 - 0.85 = 0.54 AC*FT

DELTA QUANTITIES FOR DRAINAGE AREA E
$\Delta Q25$ = 4.19 - 2.56 = 1.63 CFS
$\Delta V25$ = 1.34 - 0.82 = 0.52 AC*FT

DELTA QUANTITIES FOR DRAINAGE AREA F
$\Delta Q25$ = 4.36 - 2.66 = 1.70 CFS
$\Delta V25$ = 1.39 - 0.85 = 0.54 AC*FT

TOTAL DELTA QUANTITIES
$\Delta Q25$ = 10.13 CFS
$\Delta V25$ = 3.23 AC*FT

NOTE: DUE TO THE LID Δ QUANTITIES ABOVE BEING GREATER THAN THE MITIGATION QUANTITIES (Q_{PM} AND V_{PM}) THEY REPRESENT THE WORST CASE SCENARIO BETWEEN THE PRE-/POST DEVELOPMENT CONDITIONS AND THEREFORE SHALL BE USED FOR SIZING THE INFILTRATION BASINS.

LEGEND:

- XX / XX.X — SUBAREA ID / ACREAGE
- XX / XXX — NODE ID / ELEVATION
- HP — HIGH POINT
- LP — LOW POINT
- WATERSHED BOUNDARY
- FUTURE PROPERTY LINE
- X — SECURITY FENCING
- FLOW LINE
- SUB-AREA BOUNDARY
- ANTICIPATED 25-YR FLOOD LIMITS
- ELEVATED ROAD SECTION
- INFILTRATION BASIN FLOOD AREA

Q_{25} PEAK FLOW RATE (25-YEAR STORM EVENT)
Q_{Brf25} BURNED PEAK FLOW RATE (25-YEAR STORM EVENT)
V STORM VOLUME (25-YEAR STORM EVENT)
Q_{PM} PEAK MITIGATION FLOW RATE (85TH % STORM EVENT)
V_M MITIGATION VOLUME (85TH % STORM EVENT)
V_{DP} DEBRIS POTENTIAL VOLUME = (1.300 CY / SQ. MI.) * (TOTAL WATERSHED AREA 0.419 SQ. MI.) = 545 CY

DRAINAGE CONCEPT NOTES:
1) LOCATIONS OF DRAINAGE DEVICES SHOWN ARE NOT NECESSARILY APPROVED.
2) COMPLIANCE OF ALL STREET DRAINAGE REQUIREMENTS WILL BE MET TO THE SATISFACTION OF THE DEPARTMENT OF PUBLIC WORKS.
3) APPROVAL OF THE DRAINAGE CONCEPT DOES NOT CONSTITUTE DETERMINATION THAT THE OFFSITE IMPROVEMENTS ARE REQUIRED WITHIN THE MEANING OF GOVERNMENT CODE SECTION 66462.5, (EXCEPT AS NOTES).
4) AN OFFSITE DRAINAGE COVENANT FOR ACCEPTANCE OR DRAINAGE (AND DRAINAGE FACILITIES) MAY BE REQUIRED WHERE INDICATED.
5) A NOTE OF FLOOD HAZARD WILL BE REQUIRED WHERE INDICATED ON THIS PLAN.
6) A SOIL REPORT WILL BE REQUIRED TO VERIFY THAT A 7-DAY PERCOLATION RATE CAN BE OBTAINED.
7) BASIN SIZES ARE DEPENDENT ON THE VERIFICATION OF PERCOLATION RATES AND ARE SUBJECT TO CHANGE.
8) NOT WITHIN A FEMA ZONE A. WITHIN FEMA FLOOD ZONE X, UNSHADED.
9) NOT WITHIN A COUNTY ADOPTED FLOODWAY.
10) ALL BASINS ARE PRIVATELY MAINTAINED.
11) FOR THE POST-DEVELOPMENT 50-YEAR STORM EVENT EXITING THE PROJECT, THE PEAK FLOW RATE (Q_{50}) DECREASED BY 1.5%, THE VOLUME (V_{50}) INCREASED BY 6.9%, THE DEPTH INCREASED BY 0.0%, AND THE VELOCITY INCREASED BY 0.0%. THESE REPRESENT NEGLIGIBLE INCREASES FROM THE PRE-DEVELOPMENT CONDITION. SEE IMPACT ANALYSIS CALCULATIONS.

HYDROLOGY STUDY/DRAINAGE CONCEPT/LID PLAN
APPROVED FOR AREA AND Q ONLY
APPROVED BY:_____RCE NO:_____DATE_____
CHECKED BY:_____DATE_____
COUNTY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS
LAND DEVELOPMENT DIVISION

SCALE: 1":100' (ON FULL SIZE DWG.)

2011-00833 (RCUP201100079) C-05

PREPARED UNDER THE SUPERVISION OF:
REGISTERED PROFESSIONAL ENGINEER JOSEPH E. DIETZ No. 67032 EXP: 9-30-14 CIVIL STATE OF CALIFORNIA
JOSEPH E. DIETZ, P.E.

EXHIBIT PREPARER:
TETRA TECH, INC.
17885 VON KARMAN AVENUE, SUITE 500
IRVINE, CALIFORNIA 92614-6213
TEL: 949.809.5000

NOT ISSUED FOR CONSTRUCTION

NO.	DATE	REVISION	SUBM'T BY	APPV'D BY

Solar PV System Summary

20MW AC Solar Photovoltaic Generation System
APNs
3262-001-005
3262-001-006
SCH # 2012061068

Project Name:
Project 1 North Lancaster Ranch
Project Address:
110th Street West & West Avenue B
Lancaster
Los Angeles County, CA

HYDROLOGY STUDY/DRAINAGE CONCEPT/LID FOR CUP 201100079 ON-SITE DRAINAGE MAP

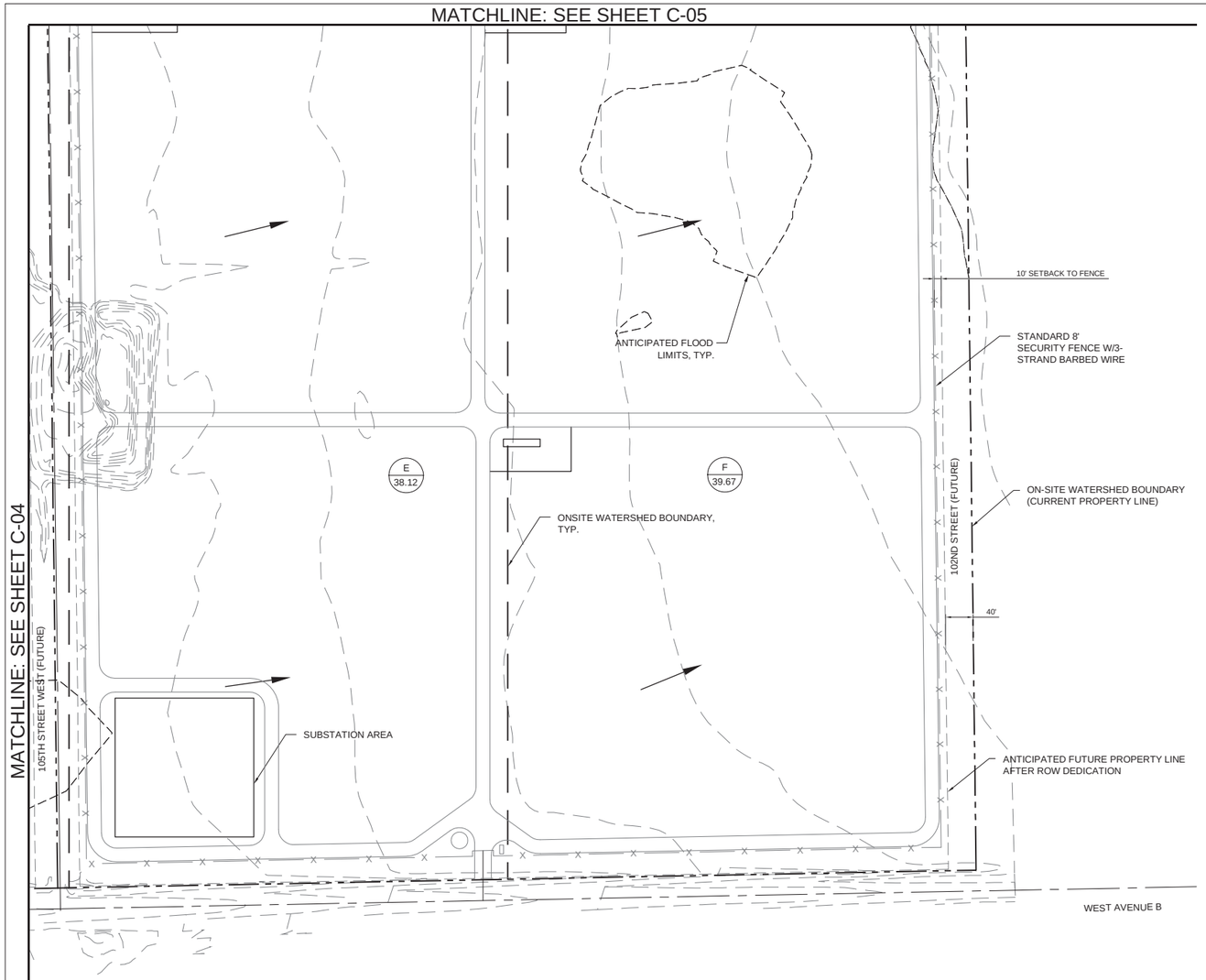
APPLICANT:
Silverado Power
2 Embarcadero Center, Ste. 410
San Francisco, CA 94111
(415) 692-7740

SILVERADO power

PROJECT 1 NORTH
LANCASTER RANCH
LOS ANGELES COUNTY, CA

2 Embarcadero Center, Ste. 410 | San Francisco, CA 94111 | 415.692.7740 main

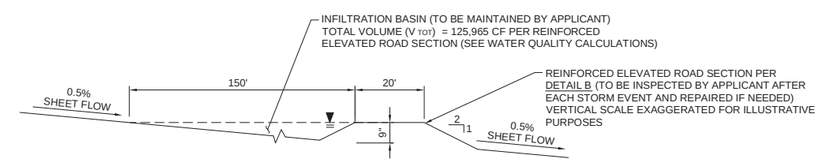
P:\045461\35-04546-T20011\SUPPORTDOCS\CALCS\HYDROLOGY\CUP6\FINAL DESIGN\ONSITE HYDROLOGY C05.DWG
PLOT/UPDATE: Dec 6, 2013 10:43:29 AM



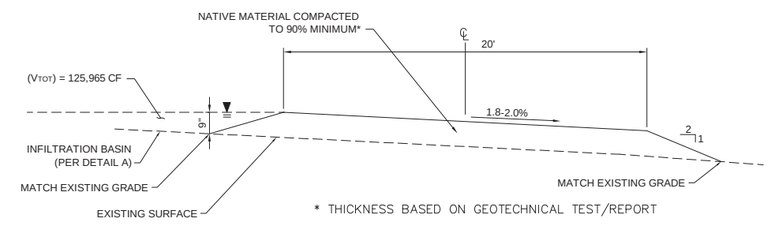
LEGEND:

XX / XX.X	SUBAREA ID / ACREAGE
XX / XXX	NODE ID / ELEVATION
HP	HIGH POINT
LP	LOW POINT
	WATERSHED BOUNDARY
	FUTURE PROPERTY LINE
X	SECURITY FENCING
	FLOW LINE
	SUB-AREA BOUNDARY
	ANTICIPATED 25-YR FLOOD LIMITS
	ELEVATED ROAD SECTION
	INFILTRATION BASIN FLOOD AREA

Q_{25} PEAK FLOW RATE (25-YEAR STORM EVENT)
Qbr_{25} BURNED PEAK FLOW RATE (25-YEAR STORM EVENT)
V STORM VOLUME (25-YEAR STORM EVENT)
Q_{PM} PEAK MITIGATION FLOW RATE (85TH % STORM EVENT)
V_M MITIGATION VOLUME (85TH % STORM EVENT)
V_{DP} DEBRIS POTENTIAL VOLUME = (1,300 CY / SQ. MI.) * (TOTAL WATERSHED AREA 0.419 SQ. MI.) = 545 CY



A INFILTRATION BASIN DETAIL
SCALE: NTS



B ACCESS ROAD DETAIL (TYP.)
SCALE: NTS

N

0 50 100 200
SCALE: 1":100' (ON FULL SIZE DWG.)

DRAINAGE CONCEPT NOTES:
1) LOCATIONS OF DRAINAGE DEVICES SHOWN ARE NOT NECESSARILY APPROVED.
2) COMPLIANCE OF ALL STREET DRAINAGE REQUIREMENTS WILL BE MET TO THE SATISFACTION OF THE DEPARTMENT OF PUBLIC WORKS.
3) APPROVAL OF THE DRAINAGE CONCEPT DOES NOT CONSTITUTE DETERMINATION THAT THE OFFSITE IMPROVEMENTS ARE REQUIRED WITHIN THE MEANING OF GOVERNMENT CODE SECTION 66462.5, (EXCEPT AS NOTES).
4) AN OFFSITE DRAINAGE COVENANT FOR ACCEPTANCE OR DRAINAGE (AND DRAINAGE FACILITIES) MAY BE REQUIRED WHERE INDICATED.
5) A NOTE OF FLOOD HAZARD WILL BE REQUIRED WHERE INDICATED ON THIS PLAN.
6) A SOIL REPORT WILL BE REQUIRED TO VERIFY THAT A 7-DAY PERCOLATION RATE CAN BE OBTAINED.
7) BASIN SIZES ARE DEPENDENT ON THE VERIFICATION OF PERCOLATION RATES AND ARE SUBJECT TO CHANGE.
8) NOT WITHIN A FEMA ZONE A. WITHIN FEMA FLOOD ZONE X, UNSHADED.
9) NOT WITHIN A COUNTY ADOPTED FLOODWAY.
10) ALL BASINS ARE PRIVATELY MAINTAINED.
11) FOR THE POST-DEVELOPMENT 50-YEAR STORM EVENT EXITING THE PROJECT, THE PEAK FLOW RATE (Q_{50}) DECREASED BY 1.5%, THE VOLUME (V_{50}) INCREASED BY 6.9%, THE DEPTH INCREASED BY 0.0%, AND THE VELOCITY INCREASED BY 0.0%. THESE REPRESENT NEGLIGIBLE INCREASES FROM THE PRE-DEVELOPMENT CONDITION. SEE IMPACT ANALYSIS CALCULATIONS.

HYDROLOGY STUDY/DRAINAGE CONCEPT/LID PLAN
APPROVED FOR AREA AND Q ONLY
APPROVED BY:_____RCE NO:_____DATE_____
CHECKED BY:_____DATE_____
COUNTY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS
LAND DEVELOPMENT DIVISION

2011-00833 (RCUP201100079) C-06

PREPARED UNDER THE SUPERVISION:
REGISTERED PROFESSIONAL ENGINEER JOSEPH E. DIETZ No. 67032 EXP: 9-30-14 CIVIL STATE OF CALIFORNIA
JOSEPH E. DIETZ, P.E.

EXHIBIT PREPARER:
TETRA TECH, INC.
17885 VON KARMAN AVENUE, SUITE 500
IRVINE, CALIFORNIA 92614-6213
TEL: 949.809.5000

NOT ISSUED FOR CONSTRUCTION

NO.	DATE	REVISION	SUBM'T BY	APPV'D BY

Solar PV System Summary

20MW AC Solar Photovoltaic Generation System
APNs
3262-001-005
3262-001-006
SCH # 2012061068

Project Name:
Project 1 North Lancaster Ranch
Project Address:
110th Street West & West Avenue B
Lancaster
Los Angeles County, CA

HYDROLOGY STUDY/DRAINAGE CONCEPT/LID FOR CUP 201100079 ON-SITE DRAINAGE MAP

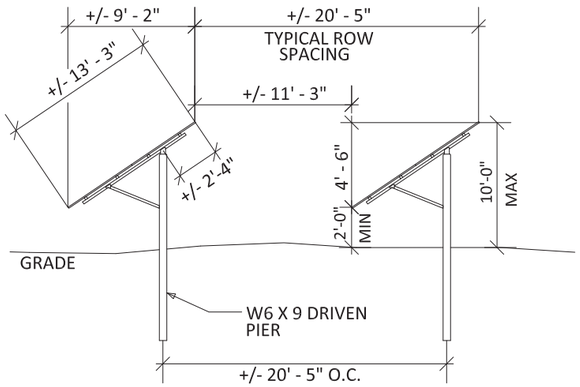
APPLICANT:
Silverado Power
2 Embarcadero Center, Ste. 410
San Francisco, CA 94111
(415) 692-7740

SILVERADO power

PROJECT 1 NORTH
LANCASTER RANCH
LOS ANGELES COUNTY, CA

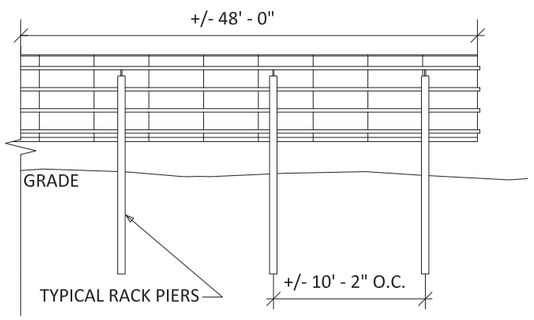
2 Embarcadero Center, Ste. 410 | San Francisco, CA 94111 | 415.692.7740 main

P:\04546\135-04546-12001\SUPPORTDOCS\CALCS\HYDROLOGY\CUP\FINAL DESIGN\ONSITE HYDROLOGY C06.DWG
PLOT/UPDATE: Dec 6, 2013 10:44:37 AM



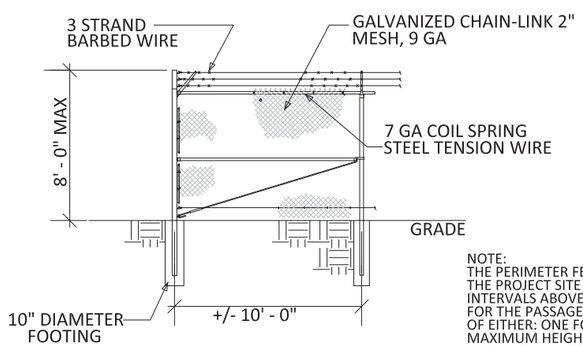
TYPICAL SOLAR ARRAY RACK DETAIL AND END ELEVATION

NOT TO SCALE



SOLAR ARRAY RACK DETAIL ELEVATION

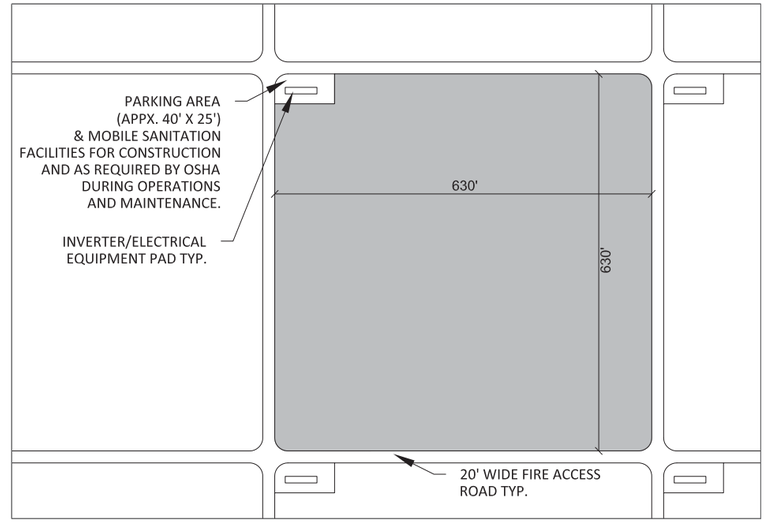
NOT TO SCALE



NOTE:
THE PERIMETER FENCING SURROUNDING THE PROJECT SITE WILL BE RAISED AT REGULAR INTERVALS ABOVE GROUND LEVEL TO ALLOW FOR THE PASSAGE OF WILDLIFE TO THE LESSER OF EITHER: ONE FOOT ABOVE GRADE OR TO THE MAXIMUM HEIGHT ALLOWED BY THE PUC. RAISED OPENINGS WILL BE 50' WIDE SPACED AT 200' ON-CENTER.

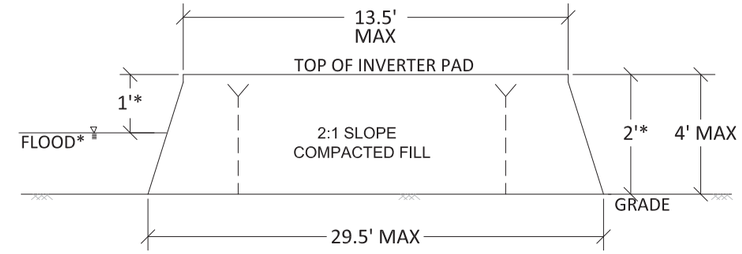
CHAIN LINK SECURITY FENCE ELEVATION

NOT TO SCALE



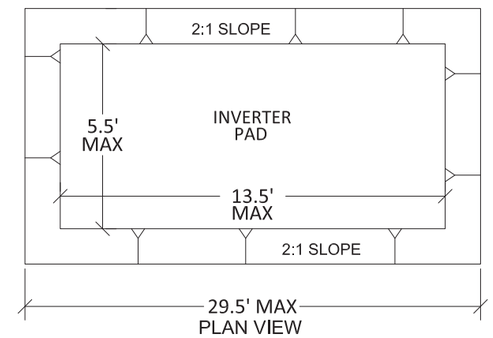
ARRAY BLOCK DETAIL (TYPICAL)

NOT TO SCALE



*TOP OF INVERTER PAD TO BE 1' MINIMUM ABOVE FLOOD WATER ELEVATION AS DETERMINED IN FINAL HYDROLOGY REPORT AND 2' ABOVE GRADE IN FEMA ZONE A.

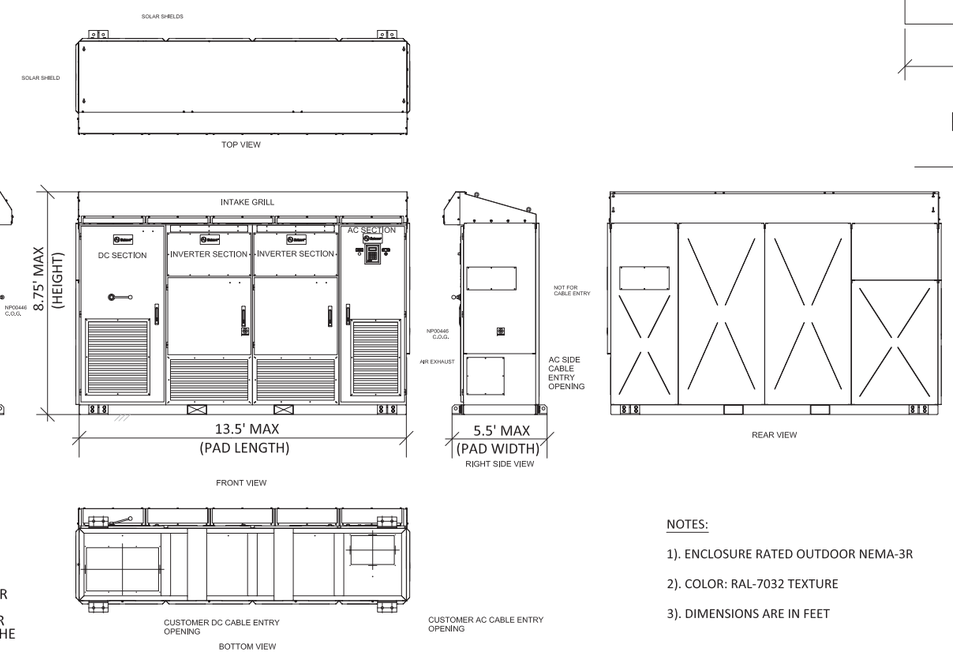
ELEVATION VIEW



PLAN VIEW

RAISED INVERTER PAD DETAILS FOR FLOOD AREAS AS NEEDED

NOT TO SCALE



NOTES:

1). ENCLOSURE RATED OUTDOOR NEMA-3R

2). COLOR: RAL-7032 TEXTURE

3). DIMENSIONS ARE IN FEET

INVERTER PAD DETAILS (TYPICAL)

NOT TO SCALE

C-07

2011-00833 (RCUP201100079)

REGISTERED PROFESSIONAL ENGINEER JULIE ANN DELANEY No.C54558 CIVIL STATE OF CALIFORNIA

EXHIBIT PREPARER:

TETRA TECH, INC.
17885 VON KARMAN AVENUE, SUITE 500
IRVINE, CALIFORNIA 92614-6213
TEL: 949.809.5000

NOT ISSUED FOR CONSTRUCTION

NO.	DATE	REVISION	SUBM'T BY	APPV'D BY

Solar PV System Summary

20MW AC Solar Photovoltaic Generation System

APNs
3262-001-005
3262-001-006
SCH # 2012061068

Project Name:
Project 1 North Lancaster Ranch

Project Address:
110th Street West & West Avenue B
Lancaster
Los Angeles County, CA

DRAWING: DETAIL SHEET

APPLICANT:
Silverado Power
2 Embarcadero Center, Ste. 410
San Francisco, CA 94111
(415) 692-7740

SILVERADO power

PROJECT 1 NORTH LANCASTER RANCH
LOS ANGELES COUNTY, CA

2 Embarcadero Center, Ste. 410 | San Francisco, CA 94111 | 415.692.7740 main

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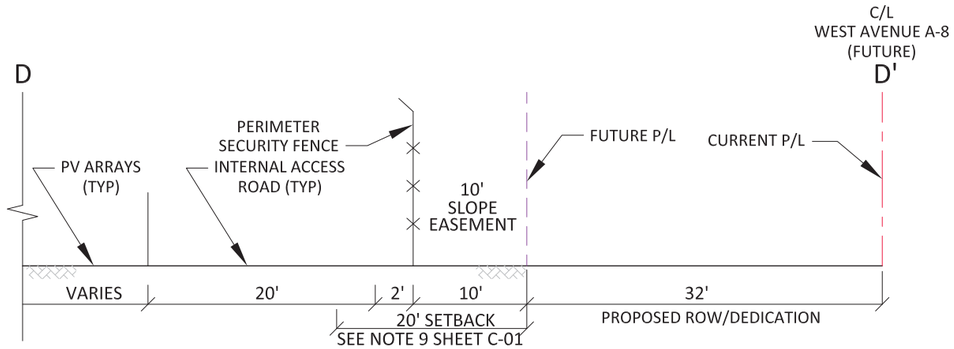
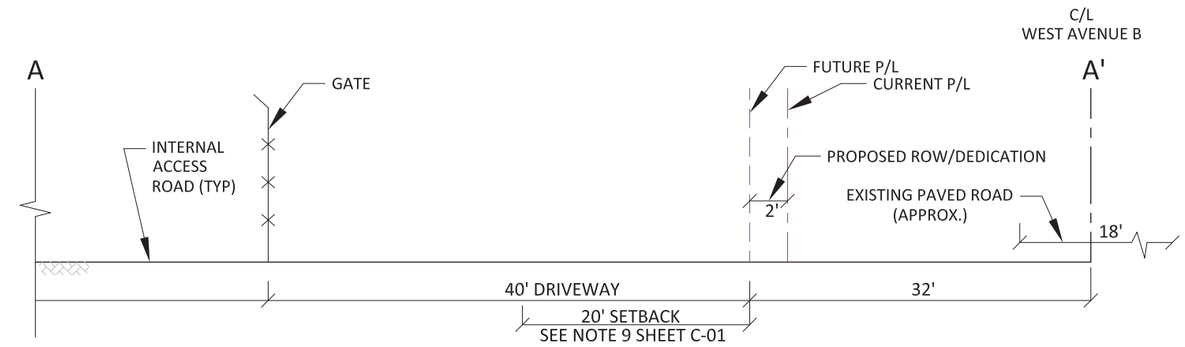


SECTION D - D'

NOT TO SCALE



SECTION A - A'

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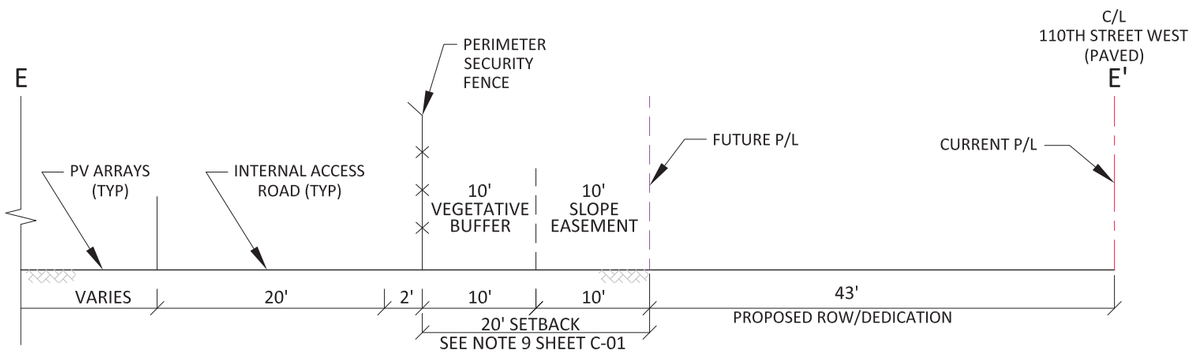

SECTION E - E'

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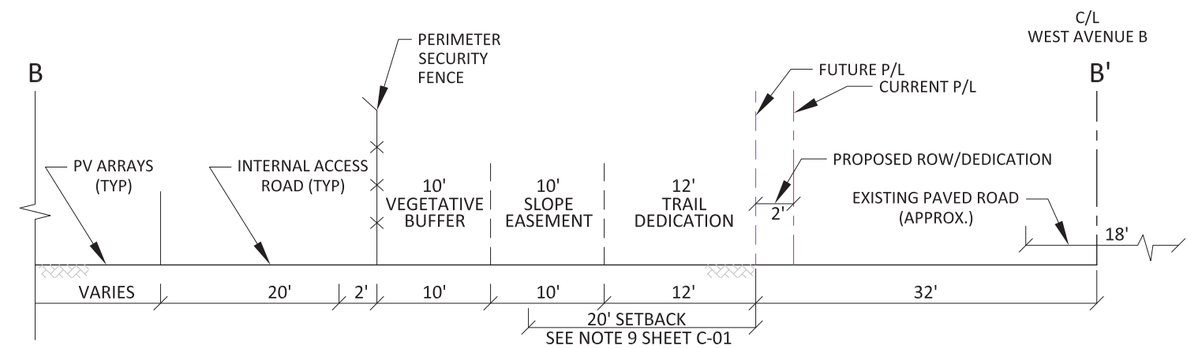

SECTION B - B'

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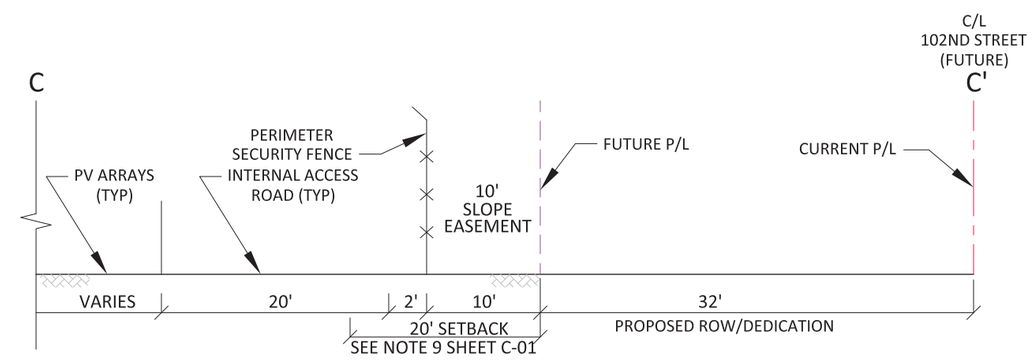

SECTION C - C'

NOT TO SCALE

C-08

2011-00833 (RCUP201100079)

REGISTERED PROFESSIONAL ENGINEER
JULIE ANN DELANEY
No.C54558
CIVIL
STATE OF CALIFORNIA

EXHIBIT PREPARER:

TETRA TECH, INC.

17885 VON KARMAN AVENUE, SUITE 500
IRVINE, CALIFORNIA 92614-6213
TEL: 949.809.5000

NOT ISSUED FOR CONSTRUCTION

NO.	DATE	REVISION	SUBM'T BY	APPV'D BY

Solar PV System Summary

20MW AC Solar Photovoltaic Generation System

APNs
3262-001-005
3262-001-006
SCH # 2012061068

Project Name:
Project 1 North Lancaster Ranch

Project Address:
110th Street West & West Avenue B
Lancaster
Los Angeles County, CA

DRAWING: SECTION SHEET

APPLICANT:
Silverado Power
2 Embarcadero Center, Ste. 410
San Francisco, CA 94111
(415) 692-7740

SILVERADO power

PROJECT 1 NORTH
LANCASTER RANCH
LOS ANGELES COUNTY, CA

2 Embarcadero Center, Ste. 410 | San Francisco, CA 94111 | 415.692.7740 main

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PLOT/UPDATE: Mar 24, 2014 2:13:30 PM

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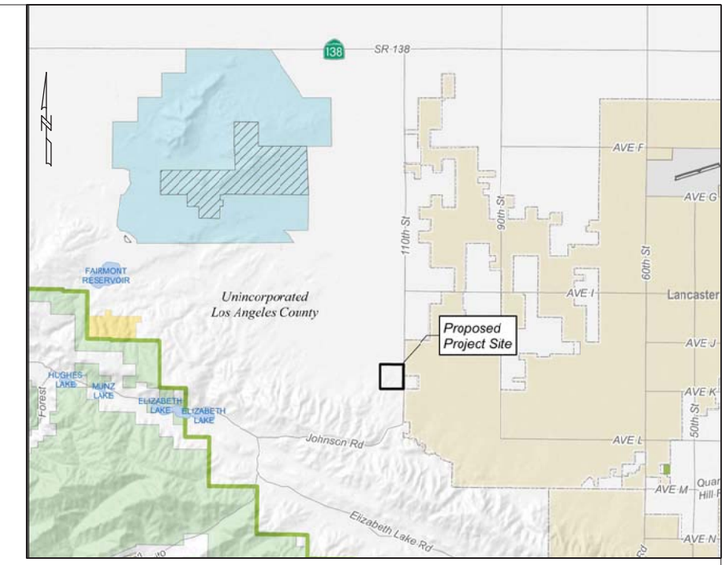
LOCATION MAP
NOT TO SCALE

PROJECT 2 WESTERN ANTELOPE BLUE SKY RANCH

LOS ANGELES COUNTY, CALIFORNIA



VICINITY MAP
NOT TO SCALE

DRAWING INDEX

DRAWING NO.	TITLE
T-01	TITLE SHEET
G-01	TOPOGRAPHIC MAP
G-02	TOPOGRAPHIC MAP
C-01	SITE PLAN
C-02	GRADING PLAN
C-03	ON-SITE DRAINAGE MAP
C-04	ON-SITE DRAINAGE MAP
C-05	ON-SITE DRAINAGE MAP
C-06	ON-SITE DRAINAGE MAP
C-07	DETAIL SHEET
C-08	SECTION SHEET
C-09	GEN-TIE ROUTE OPTIONS

NOTE:

WE HEREBY DEDICATE TO THE COUNTY OF LOS ANGELES A TWELVE (12) FOOT WIDE MULTI-USE (HIKING, MOUNTAIN BIKING AND EQUESTRIAN) TRAIL EASEMENT FOR THE PURPOSES OF THE "CALIFORNIA POPPY TRAIL". FULL MULTI-USE (HIKING, MOUNTAIN BIKING, AND EQUESTRIAN) PUBLIC ACCESS SHALL BE PROVIDED FOR THE TRAIL EASEMENT.

SURVEY INFORMATION:

TOPOGRAPHIC MAP AND 2' CONTOURING PREPARED BY ALL VALLEY SURVEYING.
BENCHMARK AND BASIS OF BEARINGS SHOWN ON TOPOGRAPHIC MAP, DRAWING G-01 & G-02.

SURVEYOR:

LARRY E. JERNIGAN, PLS #5924
ALL VALLEY SURVEYING
44965 10TH STREET WEST
LANCASTER, CA 93534
(661) 942-3639

T-01
R2011-00798 (RCUP201100070)

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PLOT/UPDATE: Mar 21, 2014 11:32:05 AM

REGISTERED PROFESSIONAL ENGINEER
JULIE ANN DELANEY
No.C54558
CIVIL
STATE OF CALIFORNIA

EXHIBIT PREPARER:
TETRA TECH, INC.
17885 VON KARMAN AVENUE, SUITE 500
IRVINE, CALIFORNIA 92614-6213
TEL: 949.809.5000

NOT ISSUED FOR CONSTRUCTION

NO.	DATE	REVISION	SUBM'T BY	APPV'D BY

Solar PV System Summary

40MW AC Solar Photovoltaic Generation System

APN:
3267-015-001

SCH # 2012061068

Project Name:
Project 2 Western Antelope Blue Sky Ranch
Project Address:
110th Street West & West Ave K
Lancaster, CA 93536-7703
Los Angeles County, CA

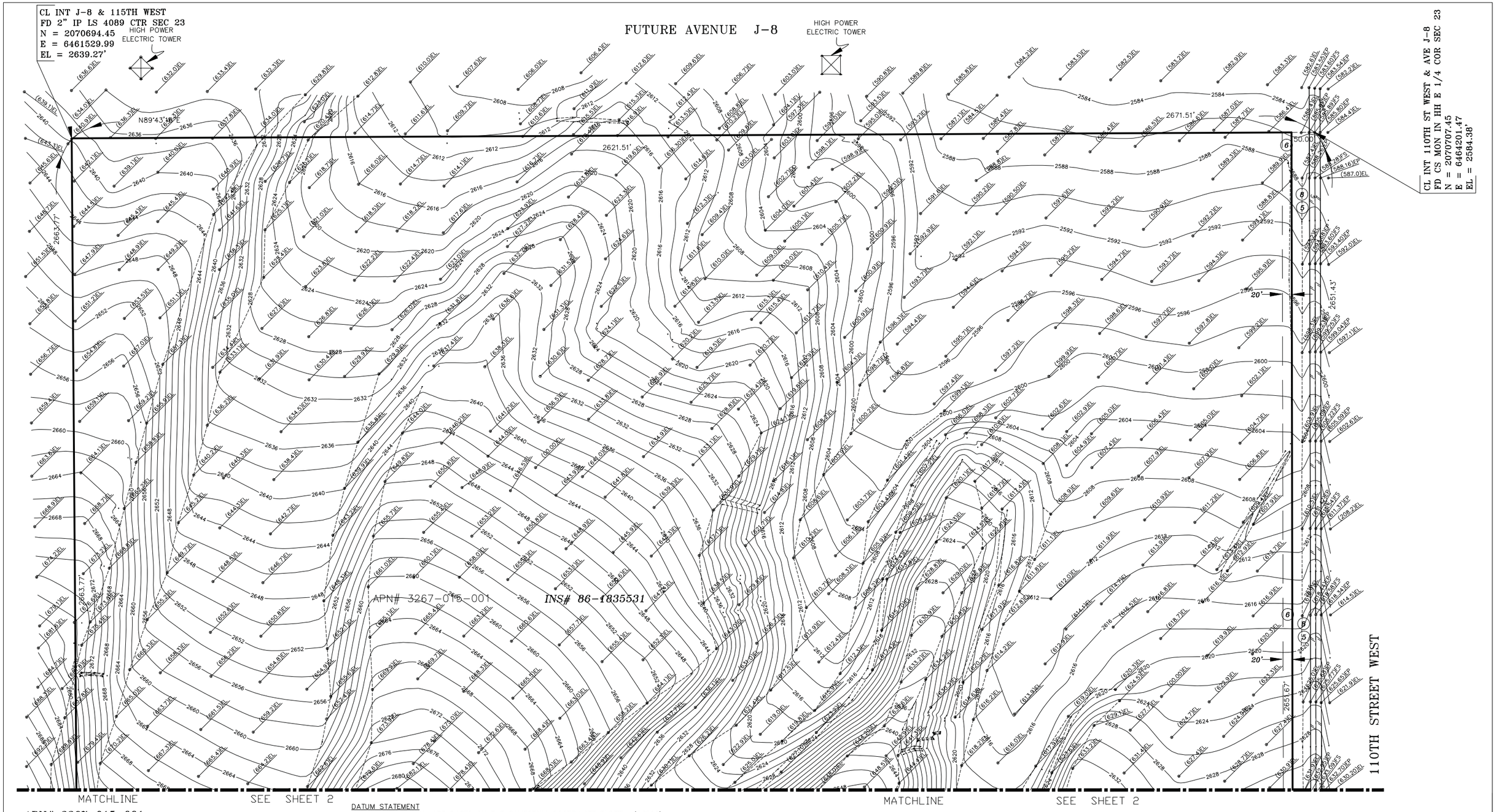
DRAWING: TITLE SHEET

APPLICANT:
Silverado Power
2 Embarcadero Center, Ste. 410
San Francisco, CA 94111
(415) 692-7740

SILVERADO power

PROJECT 2
WESTERN ANTELOPE
BLUE SKY RANCH
LOS ANGELES COUNTY, CA

2 Embarcadero Center, Ste. 410 | San Francisco, CA 94111 | 415.692.7740 main



APN# 3267-015-001

INS# 86-1835531

DATUM STATEMENT
COORDINATES SHOWN ARE BASED ON THE CALIFORNIA COORDINATE SYSTEM, (CCS83) ZONE V, 1983 NORTH AMERICAN DATUM, 1991.35 EPOCH ADJUSTMENT. COORDINATES SHOWN ARE IN U.S. SURVEY FEET. ALL DISTANCES SHOWN ARE GRID DISTANCES. TO OBTAIN A GROUND DISTANCE, DIVIDE THE GRID DISTANCE BY 0.999853427
COMBINATION FACTOR IS PROJECT BASED.

SHEET 1/2	SHEET G-01

BASIS OF BEARING	BENCH MARK
THE BASIS OF BEARINGS FOR THIS SURVEY IS THE CALIFORNIA COORDINATE SYSTEM, ZONE V, NAD 83, EPOCH 1991.35, AS DETERMINED LOCALLY BY A LINE BETWEEN CONTINUOUS GLOBAL POSITIONING STATIONS (CGPS), EW7110 AND EW7125, BEING NORTH 00°10'12" EAST AS DERIVED FROM GEODETIC VALUES PUBLISHED BY THE NATIONAL GEODETIC SURVEY.	LOS ANGELES COUNTY BENCHMARK L 5660, LANCASTER 1998 ADJUSTMENT, NAVD 1988, ELEVATION= 2685.887 FEET DPW BM TAG IN NW COR CONC GTE PAD @ SE COR AVE K & 110TH ST W 39M E & 11.7M S/O C/L INT

SCALE
HORIZ: 1"= 100'

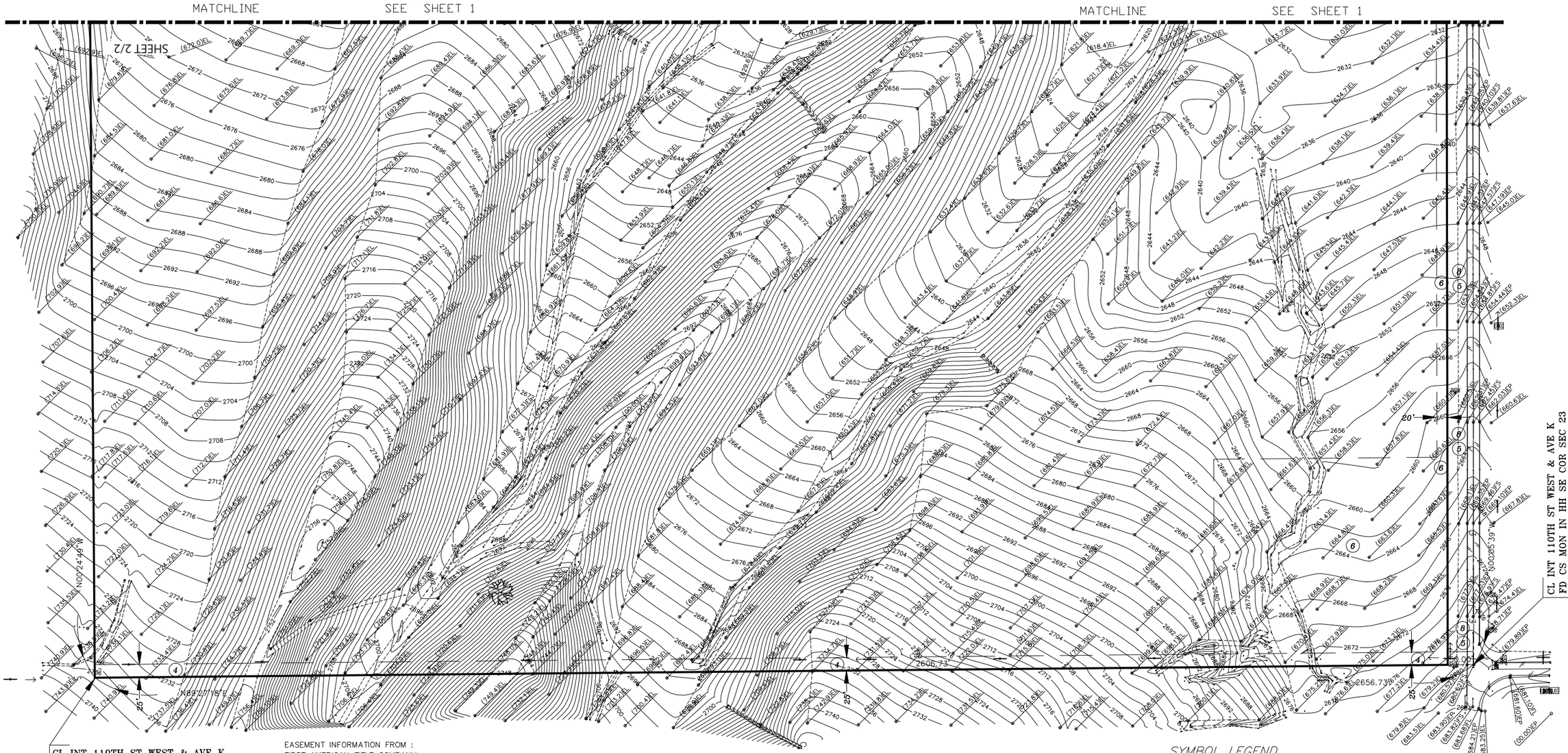
PROFESSIONAL LAND SURVEYOR
LARRY E JERNIGAN
No. 5924
EXP 12-31-12
STATE OF CALIFORNIA

ALL VALLEY SURVEYING
44965 10TH STREET WEST
LANCASTER, CA. 93534
(661) 942-3639

NO.	REVISION	BY	APPR.	DATE
1				
2				
3				

TOPOGRAPHIC MAP
AVENUE K & 110TH STREET WEST
ANTELOPE VALLEY
COUNTY OF LOS ANGELES
STATE OF CALIFORNIA

DATE OF SURVEY	COUNTY PLAN CHECK NUMBER
4/28/12	2011-00833(RCUP201100079)



EASEMENT INFORMATION FROM :
FIRST AMERICAN TITLE COMPANY
TITLE REPORTS:
NCS-467227-SD (12/14/10)

(4) – EASEMENT FOR POLE LINES AND INCIDENTAL PURPOSE RECORDED IN BOOK 5861 PAGE 166 OF DEEDS

(5) – 30' ROAD EASEMENT FOR 110TH STREET WEST RECORDED IN BOOK 18303 PAGE 233, O.R. BK 4738, PG 306 O.R.

(6) – EASEMENT FOR DEBRIS BASIN AND STORM DRAIN RECORDED 6/1/44 AS INS# 1577 IN BOOK 21009 PAGE 15, O.R.

(7) – DOES NOT APPLY TO THIS PROPERTY

(8) – 20' ROAD EASEMENT TO 50' FOR 110TH STREET WEST RECORDED 2/4/65 AS INS# 3344 IN BOOK D-2788 PAGE 420

APN# 3267-015-001

INS# 86-1835531

DATUM STATEMENT
COORDINATES SHOWN ARE BASED ON THE CALIFORNIA COORDINATE SYSTEM, (CCS83) ZONE V, 1983 NORTH AMERICAN DATUM, 1991.35 EPOCH ADJUSTMENT. COORDINATES SHOWN ARE IN U.S. SURVEY FEET. ALL DISTANCES SHOWN ARE GRID DISTANCES. TO OBTAIN A GROUND DISTANCE, DIVIDE THE GRID DISTANCE BY 0.999853427 COMBINATION FACTOR IS PROJECT BASED.

SYMBOL LEGEND

	POWER POLE	STOP	STOP SIGN
	GUY ANCHOR	SIGN	MISC SIGN
ELEC	ELECTRIC BOX	EP	EDGE OF PAVEMENT
	EDGE OF PAVEMENT	FL	FLOW LINE
		PL	PROPERTY LINE
	SHRUB/TREE	℄	CENTER LINE
		R/W	RIGHT OF WAY LINE
	CONCRETE	FS	FINISH SURFACE

BASIS OF BEARING	BENCH MARK
THE BASIS OF BEARINGS FOR THIS SURVEY IS THE CALIFORNIA COORDINATE SYSTEM, ZONE V, NAD 83, EPOCH 1991.35, AS DETERMINED LOCALLY BY A LINE BETWEEN CONTINUOUS GLOBAL POSITIONING STATIONS (CGPS), EW7110 AND EW7125, BEING NORTH 00°10'12" EAST AS DERIVED FROM GEODETIC VALUES PUBLISHED BY THE NATIONAL GEODETIC SURVEY.	LOS ANGELES COUNTY BENCHMARK L 5660, LANCASTER 1998 ADJUSTMENT, NAVD 1988, ELEVATION= 2685.887 FEET DPW BM TAG IN NW COR CONC GTE PAD @ SE COR AVE K & 110TH ST W 39M E & 11.7M S/O C/L INT

SCALE
HORIZ: 1"= 100'

PROFESSIONAL LAND SURVEYOR
LARRY E JERNIGAN
No. 5924
EXP 12-31-12
STATE OF CALIFORNIA

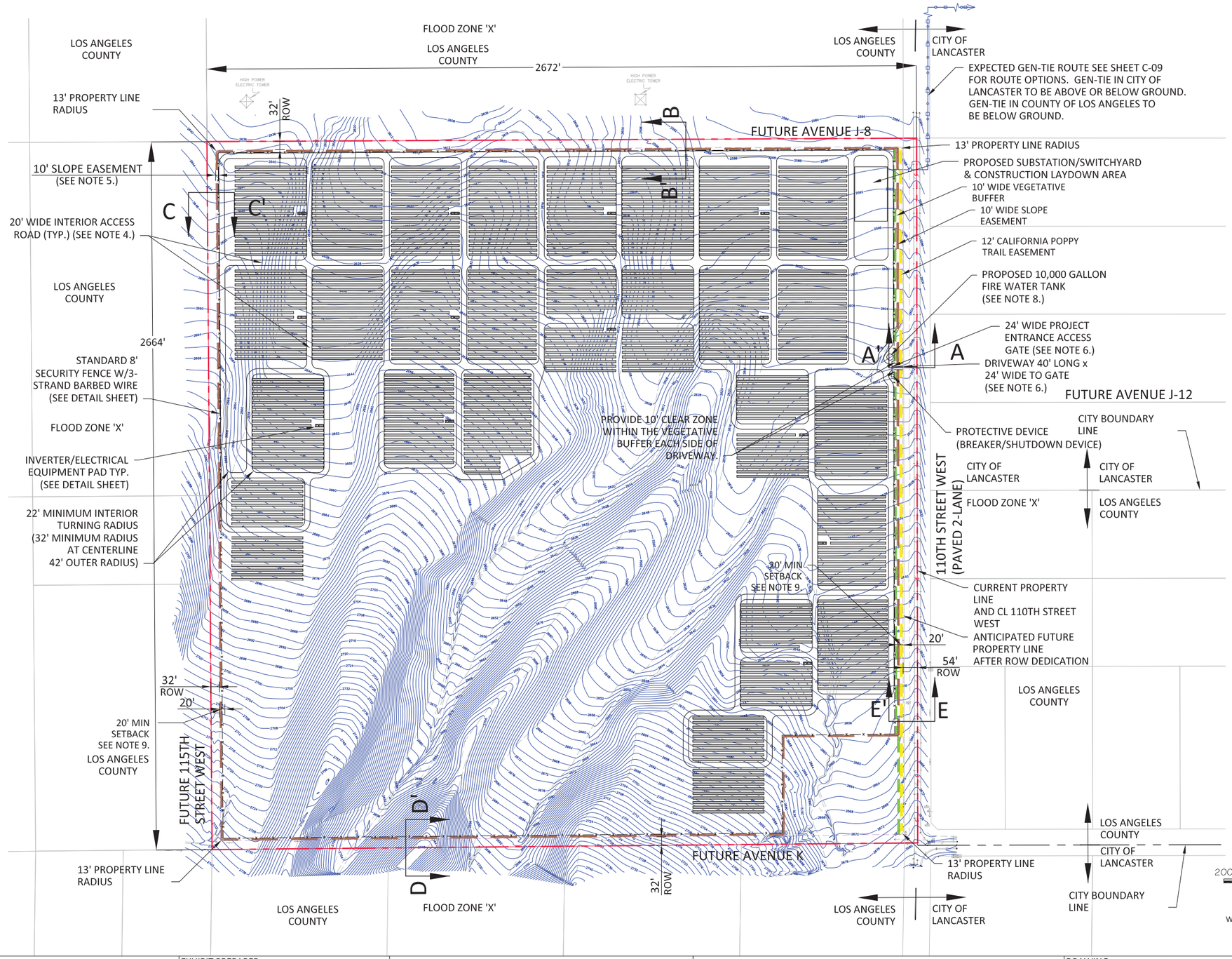
ALL VALLEY SURVEYING
44965 10TH STREET WEST
LANCASTER, CA. 93534
(661) 942-3639

NO.	REVISION	BY	APPR.	DATE
1				
2				
3				

SHEET 2/2	SHEET G-01

TOPOGRAPHIC MAP
AVENUE K & 110TH STREET WEST
ANTELOPE VALLEY
COUNTY OF LOS ANGELES
STATE OF CALIFORNIA

DATE OF SURVEY	COUNTY PLAN CHECK NUMBER
4/28/12	2011-00833(RCUP201100079)



PROJECT SITE:

PROJECT SITE IS 163 ACRES (NET)

NOTES:

1. 'ZONE X' AS SHOWN ON PANEL 0400F OF FLOOD INSURANCE RATE MAP NO. 06037C0400F. ZONE "X" DESIGNATED AS "AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOOD PLAIN.

2. FIRE DEPARTMENT ACCESS DEVICE AND EMERGENCY CONTACT PLACARD LOCATED AT ALL ENTRANCE GATES.

3. MOBILE SANITATION FACILITY, AS DEFINED BY THE LOS ANGELES COUNTY DEPARTMENT OF PUBLIC HEALTH, CAN BE LOCATED AT ALL PARKING LOCATIONS AND WILL BE LOCATED AT THE NEAREST LOCATION TO CONSTRUCTION AND OPERATIONAL WORKERS ACTIVITY. THE FACILITIES WILL BE KEPT TO LOS ANGELES COUNTY CODE, TITLE 11 - HEALTH & SAFETY, AND CAL-OSHA SANITATION STANDARDS IN SECTION 3360, TITLE 8, CALIFORNIA CODE OF REGULATIONS. MOBILE SANITATION FACILITIES WILL BE MADE AVAILABLE DURING CONSTRUCTION AND AS REQUIRED BY OSHA DURING OPERATIONS AND MAINTENANCE. SEE ARRAY BLOCK DETAIL (TYPICAL) ON C-07.

4. INTERIOR ACCESS ROADS WILL BE 20' WIDE, COMPACTED TO 90%, WITH 32 FOOT TURNING RADIUS AT CENTER LINE. THE INNER RADIUS WILL BE 22' AND THE OUTER RADIUS WILL BE 42'. INTERIOR ACCESS ROADS WILL BE PROVIDED TO INVERTER/ELECTRICAL EQUIPMENT PADS AND AROUND THE PERIMETER OF THE PROJECT. SEE ARRAY BLOCK DETAIL (TYPICAL) ON C-07.

5. 10 FOOT WIDE SETBACK ZONE AROUND PERIMETER TO FENCE LINE TO PROVIDE SLOPE EASEMENT.

6. DRIVEWAY ACCESS GATES TO BE SET 40 FEET BACK FROM EDGE OF PROPERTY. DRIVEWAY WILL BE 24 FEET WIDE.

7. ALL DIMENSIONS SHOWN ARE APPROXIMATE AND SUBJECT TO VERIFICATION DURING DETAILED DESIGN.

8. TANK CONNECTIONS PER LOS ANGELES COUNTY FIRE DEPARTMENT.

9. A 20' MINIMUM SETBACK FROM PROPERTY LINE (AFTER DEDICATIONS) TO ARRAYS OR EQUIPMENT TO BE MAINTAINED ON SITE. PROJECT FENCE, FIRE ROADS, EASEMENTS, AND VEGETATION ARE OK WITHIN THE SETBACK.

BENCHMARK:

LOS ANGELES COUNTY BENCHMARK L 5660, LANCASTER 1998 ADJUSTMENT, NAVD 1988, ELEVATION= 2685.887 FEET DPW BM TAG IN NW COR CONC GTE PAD @ SE COR AVE K & 110TH ST W 39M E & 11.7M S/O C/L INT

LEGEND:

MIN	MINIMUM
ROW	RIGHT OF WAY
℄	CENTERLINE
—x—x—	FENCE LINE
	OVERHEAD LINE
	UNDERGROUND LINE
	PROPERTY LINE (AFTER ROW DEDICATIONS)
	PROPERTY LINE (CURRENT)
	PARCEL LINE
(2470)	CONTOUR LINE
	SOLAR ARRAY FIELD
	10' WIDE VEGETATIVE BUFFER
	10' WIDE SLOPE EASEMENT
	12' WIDE EASEMENT FOR THE CALIFORNIA POPPY TRAIL

200 0 200 400

SCALE IN FEET

1'=200'

WHEN PRINTED TO SCALE ON 22"x34" SHEET

C-01

R2011-00798 (RCUP201100070)

REGISTERED PROFESSIONAL ENGINEER JULIE ANN DELANEY No.C54558 CIVIL STATE OF CALIFORNIA

EXHIBIT PREPARER:

TETRA TECH, INC.

17885 VON KARMAN AVENUE, SUITE 500
IRVINE, CALIFORNIA 92614-6213
TEL: 949.809.5000

NOT ISSUED FOR CONSTRUCTION

NO.	DATE	REVISION	SUBM'T BY	APPV'D BY

Solar PV System Summary

40MW AC Solar Photovoltaic Generation System

APN: 3267-015-001

SCH # 2012061068

Project Name: Project 2 Western Antelope Blue Sky Ranch
Project Address: 110th Street West & West Ave K Lancaster, CA 93536-7703 Los Angeles County, CA

DRAWING: Site Plan

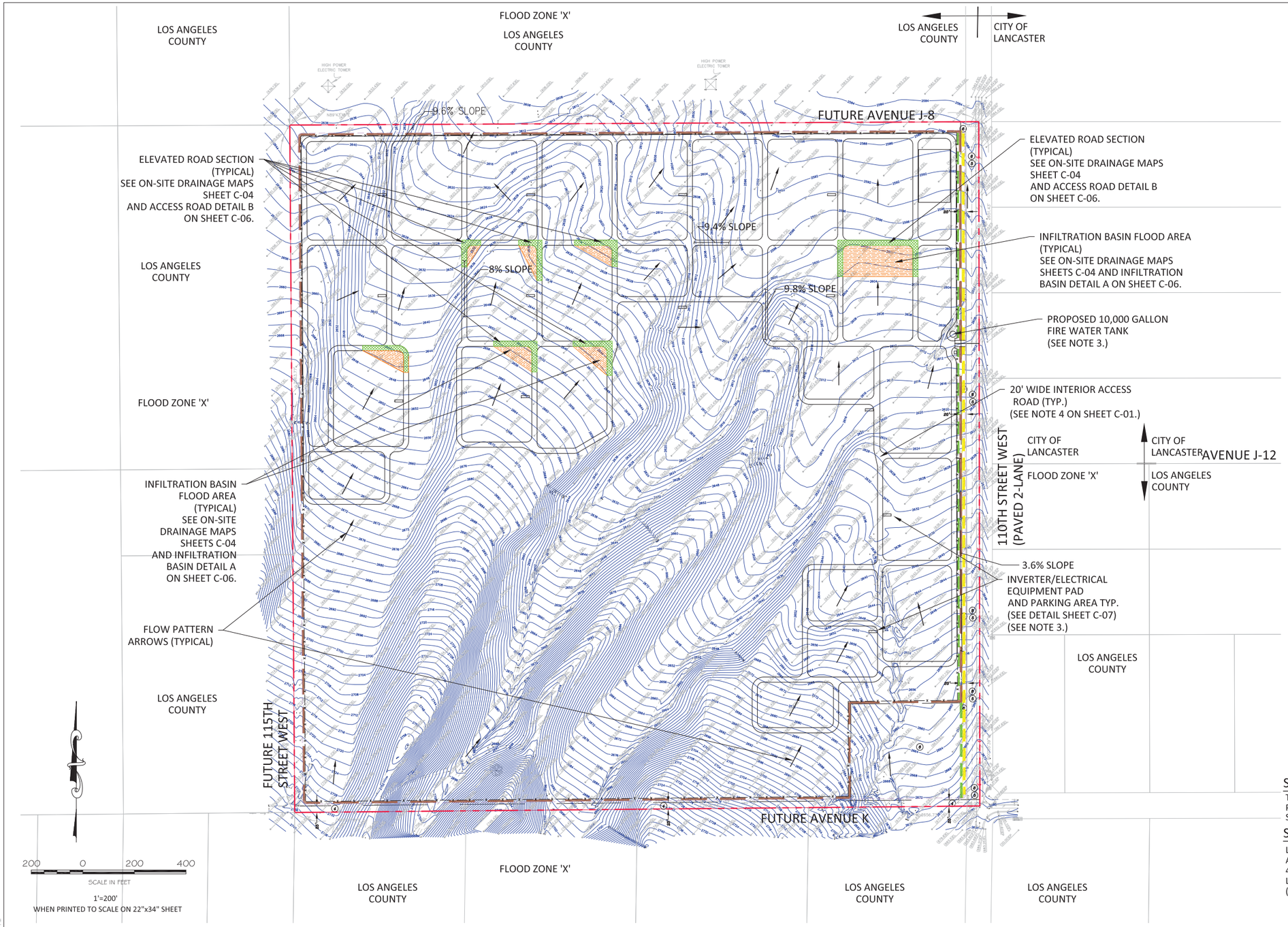
APPLICANT: Silverado Power
2 Embarcadero Center, Ste. 410
San Francisco, CA 94111
(415) 692-7740

SILVERADO power

PROJECT 2
WESTERN ANTELOPE
BLUE SKY RANCH
LOS ANGELES COUNTY, CA

2 Embarcadero Center, Ste. 410 | San Francisco, CA 94111 | 415.692.7740 main

P:\CAD\PROJECTS\106-4336 SILVERADO POWER\SP LA-CUP_14-0324\P2-7\C-01-SITE-7-8.DWG
PLOT/UPDATE: Mar 24, 2014 11:22:5 AM



NOTES:

1. OVERALL DRAINAGE ACROSS SITE IS CURRENTLY FROM THE SOUTHWEST TO THE NORTHEAST, AS SHOWN ON THE SURFACE CONTOURS. TOPOGRAPHY/CONTOURS ARE BASED ON SURVEY DATA PROVIDED BY ALL VALLEY SURVEYING.

2. OVERALL EXISTING GRADING AND DRAINAGE PATTERN TO REMAIN UNCHANGED DURING AND AFTER CONSTRUCTION WITH THE EXCEPTION OF AREAS USED FOR DRAINAGE FEATURES. ELEVATED ROAD SECTIONS WILL BE USED TO CREATE INFILTRATION BASINS. FLOOD AREAS AND FLOW PATTERN ARROWS ARE SHOWN ON THIS SHEET AND SHEETS C-03 AND C-04.

3. EQUIPMENT PADS WILL BE GRADED AS REQUIRED PER MANUFACTURER SPECIFICATIONS.

LEGEND:

- POWER POLE
- GUY ANCHOR
- ELECTRIC BOX
- EDGE OF PAVEMENT
- SHRUB/TREE
- CONCRETE
- STOP SIGN
- MISC SIGN
- EP — EDGE OF PAVEMENT
- FL — FLOW LINE
- PL — PROPERTY LINE
- ℄ — CENTER LINE
- R/W — RIGHT OF WAY LINE
- FS — FINISH SURFACE
- (5) — EASEMENT (SEE SHEET G-02)
- ℄ — CENTERLINE
- L.F. — LINEAR FEET
- TYP. — TYPICAL
- PROPOSED FENCE LINE
- PROPERTY LINE (AFTER DEDICATIONS)
- PROPERTY LINE (CURRENT)
- PARCEL LINE
- INFILTRATION BASIN FLOOD AREA
- ELEVATED ROAD SECTION
- CONTOUR LINE (2' INTERVAL FROM ALL VALLEY SURVEYING)
- 10' WIDE VEGETATIVE BUFFER
- 10' WIDE SLOPE EASEMENT
- 12' WIDE EASEMENT FOR THE CALIFORNIA POPPY TRAIL

EARTHWORK QUANTITIES:

OVEREXCAVATION	=	28,700 CUBIC YARDS
CUT	=	18,500 CUBIC YARDS
FILL	=	18,500 CUBIC YARDS

CUT & FILL QUANTITIES INCLUDE INVERTER PADS, SUBSTATION/SWITCHYARD, BASINS, AND ELEVATED ROAD BED FOR DRAINAGE FEATURES.

OVEREXCAVATION QUANTITY INCLUDES ACCESSIBLE FIRE ROAD.

SURVEY INFORMATION:

TOPOGRAPHIC MAP AND 2' CONTOURING PREPARED BY ALL VALLEY SURVEYING, SEE TOPOGRAPHIC MAP SHEETS.

SURVEYOR:

LARRY E. JERNIGAN, PLS #5924
ALL VALLEY SURVEYING
44965 10TH STREET WEST
LANCASTER, CA 93534
(661) 942-3639

BASIS OF BEARINGS:

SEE TOPOGRAPHIC MAP SHEETS (G-01 & G-02).

BENCHMARK:

SEE TOPOGRAPHIC MAP SHEETS (G-01 & G-02).

EASEMENTS:

SEE TOPOGRAPHIC MAP SHEET (G-02).

C-02

R2011-00798 (RCUP201100070)

REGISTERED PROFESSIONAL ENGINEER — JULIE ANN DELANEY — No.C54558 — CIVIL — STATE OF CALIFORNIA

EXHIBIT PREPARER:

TETRA TECH, INC.
17885 VON KARMAN AVENUE, SUITE 500
IRVINE, CALIFORNIA 92614-6213
TEL: 949.809.5000

NOT ISSUED FOR CONSTRUCTION

NO.	DATE	REVISION	SUBM'T BY	APPV'D BY

Solar PV System Summary

40MW AC Solar Photovoltaic Generation System

APN: 3267-015-001

SCH # 2012061068

Project Name: Project 2 Western Antelope Blue Sky Ranch
Project Address: 110th Street West & West Ave K Lancaster, CA 93536-7703 Los Angeles County, CA

DRAWING: Preliminary Grading & Drainage Plan

APPLICANT: Silverado Power
2 Embarcadero Center, Ste. 410
San Francisco, CA 94111
(415) 692-7740

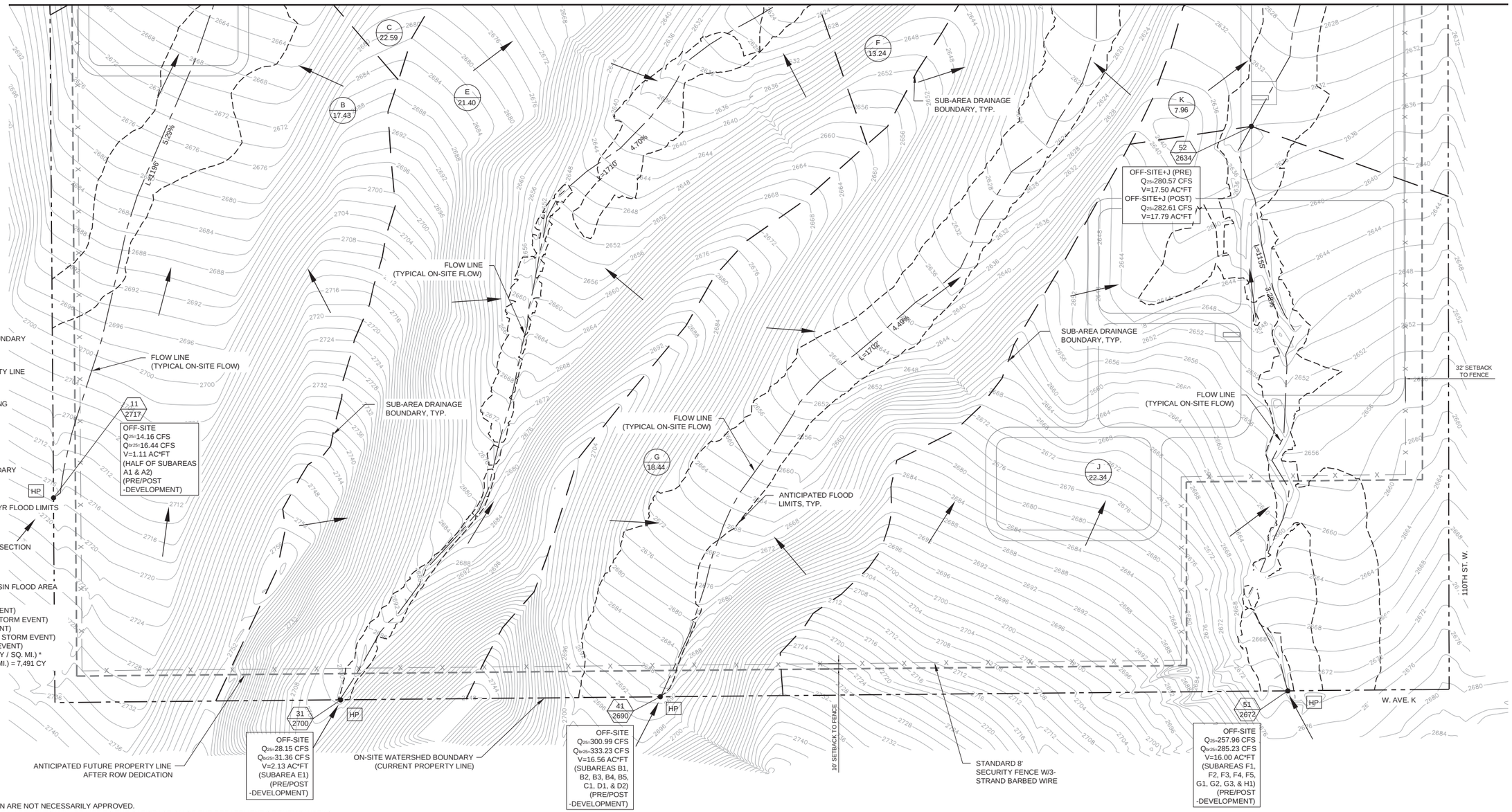
SILVERADO power

PROJECT 2
WESTERN ANTELOPE
BLUE SKY RANCH
LOS ANGELES COUNTY, CA

2 Embarcadero Center, Ste. 410 | San Francisco, CA 94111 | 415.692.7740 main

P:\CAD\PROJECTS\106-4338 SILVERADO POWER\SP LA-CUP_14-0324\P2-7\C-02-GRAD-7-8.DWG
PLOT/UPDATE: Mar 24, 2014 12:46:23 PM

MATCHLINE: SEE SHEET C-04



LEGEND:

XX / XX.X	SUBAREA ID / ACREAGE
XX / XXX	NODE ID / ELEVATION
HP	HIGH POINT
LP	LOW POINT
	WATERSHED BOUNDARY
	FUTURE PROPERTY LINE
X	SECURITY FENCING
	FLOW LINE
	SUB-AREA BOUNDARY
	ANTICIPATED 25-YR FLOOD LIMITS
	ELEVATED ROAD SECTION
	INFILTRATION BASIN FLOOD AREA

Q_{25} PEAK FLOW RATE (25-YEAR STORM EVENT)
Q_{br25} BURNED PEAK FLOW RATE (25-YEAR STORM EVENT)
V STORM VOLUME (25-YEAR STORM EVENT)
Q_{PM} PEAK MITIGATION FLOW RATE (85TH % STORM EVENT)
V_M MITIGATION VOLUME (85TH % STORM EVENT)
V_{DP} DEBRIS POTENTIAL VOLUME = (7,100CY / SQ. MI.) * (TOTAL WATERSHED AREA 1.055 SQ. MI.) = 7,491 CY

DRAINAGE CONCEPT NOTES:
1) LOCATIONS OF DRAINAGE DEVICES SHOWN ARE NOT NECESSARILY APPROVED.
2) COMPLIANCE OF ALL STREET DRAINAGE REQUIREMENTS WILL BE MET TO THE SATISFACTION OF THE DEPARTMENT OF PUBLIC WORKS.
3) APPROVAL OF THE DRAINAGE CONCEPT DOES NOT CONSTITUTE DETERMINATION THAT THE OFFSITE IMPROVEMENTS ARE REQUIRED WITHIN THE MEANING OF GOVERNMENT CODE SECTION 66462.5, (EXCEPT AS NOTES).
4) AN OFFSITE DRAINAGE COVENANT FOR ACCEPTANCE OR DRAINAGE (AND DRAINAGE FACILITIES) MAY BE REQUIRED WHERE INDICATED.
5) A NOTE OF FLOOD HAZARD WILL BE REQUIRED WHERE INDICATED ON THIS PLAN.
6) A SOIL REPORT WILL BE REQUIRED TO VERIFY THAT A 7-DAY PERCOLATION RATE CAN BE OBTAINED.
7) BASIN SIZES ARE DEPENDENT ON THE VERIFICATION OF PERCOLATION RATES AND ARE SUBJECT TO CHANGE.
8) NOT WITHIN A FEMA ZONE A. WITHIN FEMA ZONE X, UNSHADED.
9) NOT WITHIN A COUNTY ADOPTED FLOODWAY.
10) ALL BASINS ARE PRIVATELY MAINTAINED.
11) FOR THE POST-DEVELOPMENT 50-YEAR STORM EVENT EXITING THE PROJECT, THE PEAK FLOW RATES (Q_{50}) INCREASED BY MAXIMUM OF 8.7%, THE VOLUMES (V_{50}) INCREASED BY A MAXIMUM OF 10.0%, THE DEPTHS INCREASED BY A MAXIMUM OF 7.1%, AND THE VELOCITIES INCREASED BY A MAXIMUM OF 3.1%. THESE REPRESENT NEGLIGIBLE INCREASES FROM THE PRE-DEVELOPMENT CONDITION. SEE IMPACT ANALYSIS CALCULATIONS.

HYDROLOGY STUDY/DRAINAGE CONCEPT/LID PLAN
APPROVED FOR AREA AND Q ONLY
APPROVED BY:_____RCE NO:_____DATE_____
CHECKED BY: _____ DATE_____
COUNTY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS
LAND DEVELOPMENT DIVISION

N

0 50 100 200
SCALE: 1":100' (ON FULL SIZE DWG.)

R2011-00798 (RCUP201100070) | C-03

PREPARED UNDER THE SUPERVISION OF:
REGISTERED PROFESSIONAL ENGINEER JOSEPH E. DIETZ No. 67032 EXP: 9-30-14 CIVIL STATE OF CALIFORNIA
JOSEPH E. DIETZ, P.E.

EXHIBIT PREPARER:
TETRA TECH, INC.
17885 VON KARMAN AVENUE, SUITE 500
IRVINE, CALIFORNIA 92614-6213
TEL: 949.809.5000

NOT ISSUED FOR CONSTRUCTION

NO.	DATE	REVISION	SUBM'T BY	APPV'D BY

Solar PV System Summary

40MW AC Solar Photovoltaic Generation System

APN:
3267-015-001

SCH # 2012061068

Project Name:
Project 2 Western Antelope Blue Sky Ranch
Project Address:
110th Street West & West Ave K
Lancaster, CA 93536-7703
Los Angeles County, CA

HYDROLOGY STUDY/DRAINAGE CONCEPT/LID FOR CUP 201100070 ON-SITE DRAINAGE MAP

APPLICANT:
Silverado Power
2 Embarcadero Center, Ste. 410
San Francisco, CA 94111
(415) 692-7740

SILVERADO power

PROJECT 2
WESTERN ANTELOPE BLUE SKY RANCH
LOS ANGELES COUNTY, CA

2 Embarcadero Center, Ste. 410 | San Francisco, CA 94111 | 415.692.7740 main

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PLOT/UPDATE: Dec 6, 2013 11:45:20 AM

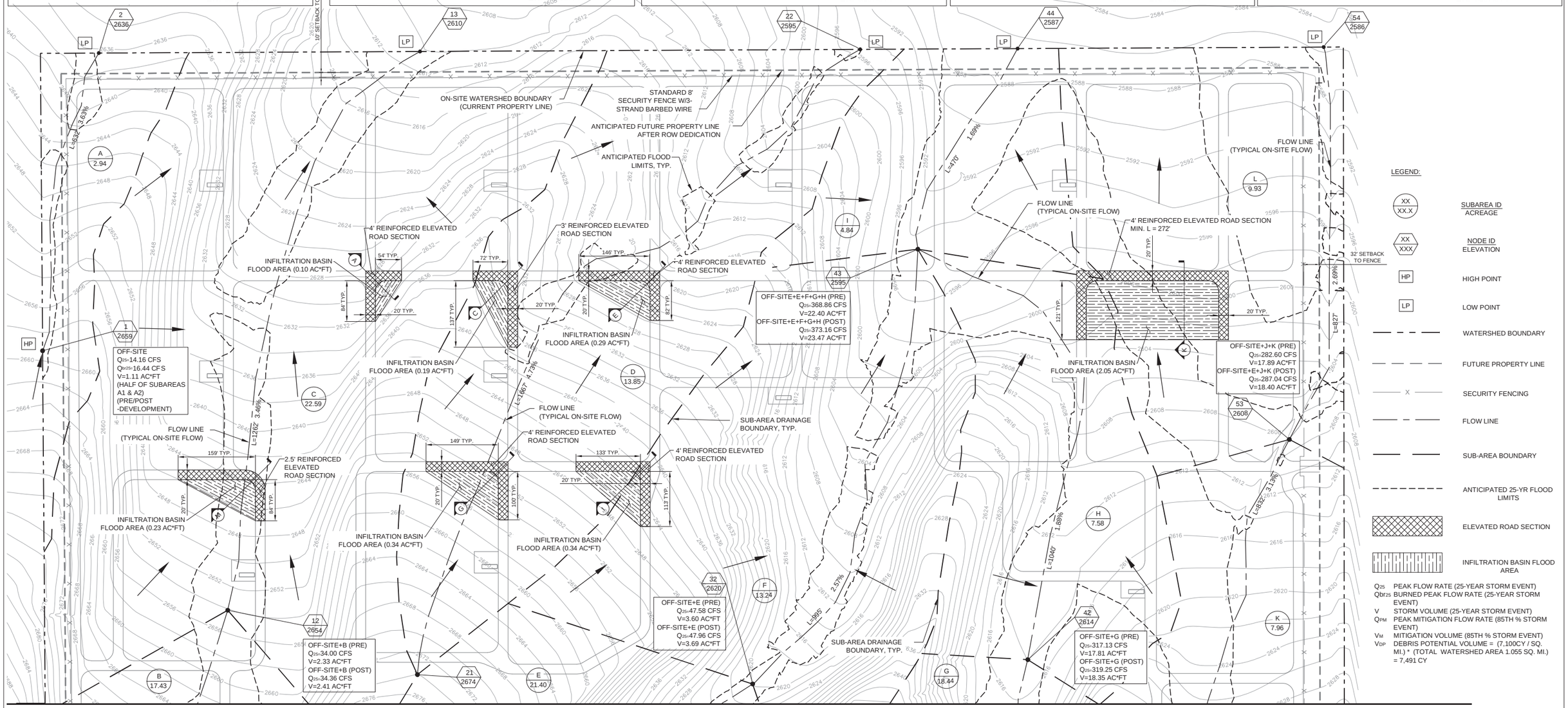
PRE-DEVELOPMENT	POST DEVELOPMENT	MITIGATION (FOR ENTIRE SITE)
Q_{25}= 15.93 CFS	Q_{25}= 16.48 CFS	Q_{PM}=4.80 CFS
Qbr_{25}= 18.70 CFS	Qbr_{25}= 19.24 CFS	V_M=1.54 AC*FT
V= 1.27 AC*FT	V= 1.36 AC*FT	DELTA (FOR ENTIRE SITE)
		ΔQ_{25}=17.19 CFS
		ΔV_{25}=3.23 AC*FT

PRE-DEVELOPMENT	POST DEVELOPMENT	MITIGATION (FOR ENTIRE SITE)
Q_{25}= 38.99 CFS	Q_{25}= 42.22 CFS	Q_{PM}=4.80 CFS
Qbr_{25}= 46.38 CFS	Qbr_{25}= 49.42 CFS	V_M=1.54 AC*FT
V= 3.46 AC*FT	V= 4.15 AC*FT	DELTA (FOR ENTIRE SITE)
		ΔQ_{25}=17.19 CFS
		ΔV_{25}=3.23 AC*FT

PRE-DEVELOPMENT	POST DEVELOPMENT	MITIGATION (FOR ENTIRE SITE)
Q_{25}= 2.76 CFS	Q_{25}= 4.05 CFS	Q_{PM}=4.80 CFS
Qbr_{25}= 4.58 CFS	Qbr_{25}= 5.70 CFS	V_M=1.54 AC*FT
V= 0.66 AC*FT	V= 1.08 AC*FT	DELTA (FOR ENTIRE SITE)
		ΔQ_{25}=17.19 CFS
		ΔV_{25}=3.23 AC*FT

PRE-DEVELOPMENT	POST DEVELOPMENT	MITIGATION (FOR ENTIRE SITE)
Q_{25}= 371.27 CFS	Q_{25}= 376.40 CFS	Q_{PM}=4.80 CFS
Qbr_{25}= 414.48 CFS	Qbr_{25}= 419.28 CFS	V_M=1.54 AC*FT
V= 22.64 AC*FT	V= 23.85 AC*FT	DELTA (FOR ENTIRE SITE)
		ΔQ_{25}=17.19 CFS
		ΔV_{25}=3.23 AC*FT

PRE-DEVELOPMENT	POST DEVELOPMENT	MITIGATION (FOR ENTIRE SITE)
Q_{25}= 284.39 CFS	Q_{25}= 291.38 CFS	Q_{PM}=4.80 CFS
Qbr_{25}= 316.54 CFS	Qbr_{25}= 323.50 CFS	V_M=1.54 AC*FT
V= 18.34 AC*FT	V= 19.16 AC*FT	DELTA (FOR ENTIRE SITE)
		ΔQ_{25}=17.19 CFS
		ΔV_{25}=3.23 AC*FT



MATCHLINE: SEE SHEET C-03

DRAINAGE CONCEPT NOTES:

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HYDROLOGY STUDY/DRAINAGE CONCEPT/LID PLAN
APPROVED FOR AREA AND Q ONLY
APPROVED BY:_____RCE NO:_____DATE_____
CHECKED BY:_____DATE_____
COUNTY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS
LAND DEVELOPMENT DIVISION

N

0 50 100 200
SCALE: 1":100' (ON FULL SIZE DWG.)

R2011-00798 (RCUP201100070) | C-04

PREPARED UNDER THE SUPERVISION OF:

REGISTERED PROFESSIONAL ENGINEER JOSEPH E. DIETZ No. 67032 EXP: 9-30-14 CIVIL STATE OF CALIFORNIA

JOSEPH E. DIETZ, P.E.

EXHIBIT PREPARER:

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NO.	DATE	REVISION	SUBM'T BY	APPV'D BY

Solar PV System Summary

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APN: 3267-015-001

SCH # 2012061068

Project Name: Project 2 Western Antelope Blue Sky Ranch
Project Address: 110th Street West & West Ave K Lancaster, CA 93536-7703 Los Angeles County, CA

HYDROLOGY STUDY/DRAINAGE CONCEPT/LID FOR CUP 201100070 ON-SITE DRAINAGE MAP

APPLICANT:
Silverado Power
2 Embarcadero Center, Ste. 410
San Francisco, CA 94111
(415) 692-7740

SILVERADO power

PROJECT 2
WESTERN ANTELOPE BLUE SKY RANCH
LOS ANGELES COUNTY, CA

2 Embarcadero Center, Ste. 410 | San Francisco, CA 94111 | 415.692.7740 main

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PLOT/UPDATE: Dec 6, 2013 11:36:06 AM

HYDROLOGY RESULTS: (BASED ON LA FLOOD CONTROL TC CALCULATOR)

ON-SITE HYDROLOGY (PRE-DEVELOPMENT)

Project	Subarea	Area (acres)	%imp	Frequency	Soil Type	Length (ft)	Slope (ft/ft)	Isohyet (in.)	Tc calculated (min.)	Intensity (in./hr)	Cu	Cd	Flow rate (cfs)	Fire Factor	Burned flow rate (cfs)	Volume (acre-ft)
Project 2	A	2.94	0.01	2	134	632	0.0363	2.3	30	0.60	0.10	0.11	0.19	0.34	0.35	0.06
Project 2	B	17.43	0.01	2	120	1196	0.0529	2.4	30	0.62	0.10	0.11	1.19	0.34	2.13	0.38
Project 2	C	22.59	0.01	2	134	1262	0.0346	2.4	30	0.61	0.10	0.11	1.52	0.34	2.72	0.48
Project 2	D	13.85	0.01	2	134	1667	0.0473	2.3	30	0.58	0.10	0.11	0.90	0.34	1.60	0.29
Project 2	E	21.40	0.01	2	120	1710	0.0470	2.4	30	0.62	0.10	0.11	1.46	0.34	2.62	0.46
Project 2	F	13.24	0.01	2	134	995	0.0257	2.3	30	0.59	0.10	0.11	0.86	0.34	1.53	0.27
Project 2	G	18.44	0.01	2	120	1702	0.0449	2.4	30	0.61	0.10	0.11	1.24	0.34	2.22	0.39
Project 2	H	7.58	0.01	2	134	1040	0.0188	2.3	30	0.58	0.10	0.11	0.49	0.34	0.88	0.16
Project 2	I	4.84	0.01	2	134	470	0.0169	2.2	30	0.57	0.10	0.11	0.30	0.34	0.54	0.10
Project 2	J	22.34	0.01	2	120	1155	0.0328	2.4	30	0.61	0.10	0.11	1.50	0.34	2.69	0.48
Project 2	K	7.96	0.01	2	134	832	0.0313	2.3	30	0.58	0.10	0.11	0.52	0.34	0.92	0.16
Project 2	L	9.93	0.01	2	134	827	0.0269	2.2	30	0.57	0.10	0.11	0.62	0.34	1.11	0.20
Project 2	A	2.94	0.01	5	134	632	0.0363	3.5	30	0.90	0.10	0.11	0.29	0.34	0.54	0.09
Project 2	B	17.43	0.01	5	120	1196	0.0529	3.6	24	1.03	0.33	0.34	6.10	0.34	7.41	0.67
Project 2	C	22.59	0.01	5	134	1262	0.0346	3.6	30	0.92	0.10	0.11	2.29	0.34	4.28	0.73
Project 2	D	13.85	0.01	5	134	1667	0.0473	3.4	30	0.89	0.10	0.11	1.36	0.34	2.53	0.43
Project 2	E	21.40	0.01	5	120	1710	0.0470	3.6	30	0.93	0.28	0.29	5.77	0.34	7.30	0.80
Project 2	F	13.24	0.01	5	134	995	0.0257	3.4	30	0.89	0.10	0.11	1.30	0.34	2.42	0.41
Project 2	G	18.44	0.01	5	120	1702	0.0449	3.6	30	0.92	0.27	0.28	4.75	0.34	6.07	0.67
Project 2	H	7.58	0.01	5	134	1040	0.0188	3.4	30	0.89	0.10	0.11	0.74	0.34	1.38	0.24
Project 2	I	4.84	0.01	5	134	470	0.0169	3.3	30	0.86	0.10	0.11	0.46	0.34	0.85	0.15
Project 2	J	22.34	0.01	5	120	1155	0.0328	3.6	29	0.93	0.28	0.29	6.03	0.34	7.62	0.82
Project 2	K	7.96	0.01	5	134	832	0.0313	3.4	30	0.89	0.10	0.11	0.78	0.34	1.45	0.25
Project 2	L	9.93	0.01	5	134	827	0.0269	3.3	30	0.86	0.10	0.11	0.94	0.34	1.75	0.30
Project 2	A	2.94	0.01	10	134	632	0.0363	4.3	30	1.10	0.10	0.11	0.36	0.34	0.68	0.11
Project 2	B	17.43	0.01	10	120	1196	0.0529	4.4	17	1.49	0.46	0.46	11.95	0.34	13.61	0.91
Project 2	C	22.59	0.01	10	134	1262	0.0346	4.4	30	1.12	0.10	0.11	2.78	0.34	5.31	0.89
Project 2	D	13.85	0.01	10	134	1667	0.0473	4.2	30	1.08	0.10	0.11	1.65	0.34	3.13	0.53
Project 2	E	21.40	0.01	10	120	1710	0.0470	4.4	24	1.26	0.40	0.41	11.06	0.34	12.88	1.09
Project 2	F	13.24	0.01	10	134	995	0.0257	4.2	30	1.08	0.10	0.11	1.57	0.34	2.99	0.50
Project 2	G	18.44	0.01	10	120	1702	0.0449	4.4	25	1.22	0.38	0.39	8.77	0.34	10.34	0.91
Project 2	H	7.58	0.01	10	134	1040	0.0188	4.2	30	1.08	0.10	0.11	0.90	0.34	1.71	0.29
Project 2	I	4.84	0.01	10	134	470	0.0169	4.1	30	1.05	0.10	0.11	0.56	0.34	1.06	0.18
Project 2	J	22.34	0.01	10	120	1155	0.0328	4.4	19	1.39	0.43	0.43	13.35	0.34	15.43	1.13
Project 2	K	7.96	0.01	10	134	832	0.0313	4.2	30	1.08	0.10	0.11	0.95	0.34	1.80	0.30
Project 2	L	9.93	0.01	10	134	827	0.0269	4.1	30	1.05	0.10	0.11	1.15	0.34	2.18	0.37
Project 2	A	2.94	0.01	25	134	632	0.0363	5.3	14	1.94	0.30	0.31	1.77	0.34	2.26	0.16
Project 2	B	17.43	0.01	25	120	1196	0.0529	5.4	13	2.07	0.55	0.55	19.84	0.34	21.89	1.22
Project 2	C	22.59	0.01	25	134	1262	0.0346	5.4	30	1.38	0.15	0.16	4.99	0.34	8.05	1.13
Project 2	D	13.85	0.01	25	134	1667	0.0473	5.2	30	1.33	0.14	0.15	2.76	0.34	4.58	0.66
Project 2	E	21.40	0.01	25	120	1710	0.0470	5.4	18	1.78	0.51	0.51	19.43	0.34	21.72	1.47
Project 2	F	13.24	0.01	25	134	995	0.0257	5.2	30	1.33	0.14	0.15	2.64	0.34	4.38	0.63
Project 2	G	18.44	0.01	25	120	1702	0.0449	5.4	18	1.75	0.50	0.50	16.14	0.34	18.11	1.25
Project 2	H	7.58	0.01	25	134	1040	0.0188	5.2	30	1.33	0.14	0.15	1.51	0.34	2.51	0.36
Project 2	I	4.84	0.01	25	134	470	0.0169	5.0	15	1.78	0.27	0.28	2.41	0.34	3.17	0.24
Project 2	J	22.34	0.01	25	120	1155	0.0328	5.4	15	1.91	0.53	0.53	22.61	0.34	25.11	1.50
Project 2	K	7.96	0.01	25	134	832	0.0313	5.2	26	1.42	0.17	0.18	2.03	0.34	3.13	0.39
Project 2	L	9.93	0.01	25	134	827	0.0269	5.0	30	1.29	0.13	0.14	1.79	0.34	3.07	0.45
Project 2	A	2.94	0.01	50	134	632	0.0363	6.0	12	2.37	0.37	0.38	2.65	0.34	3.21	0.19
Project 2	B	17.43	0.01	50	120	1196	0.0529	6.2	12	2.45	0.60	0.60	25.62	0.34	27.84	1.46
Project 2	C	22.59	0.01	50	134	1262	0.0346	6.1	21	1.85	0.28	0.29	12.12	0.34	15.79	1.40
Project 2	D	13.85	0.01	50	134	1667	0.0473	5.9	30	1.52	0.20	0.21	4.42	0.34	6.40	0.78
Project 2	E	21.40	0.01	50	120	1710	0.0470	6.2	15	2.21	0.57	0.57	26.96	0.34	29.55	1.75
Project 2	F	13.24	0.01	50	134	995	0.0257	5.9	19	1.88	0.29	0.30	7.47	0.34	9.63	0.80
Project 2	G	18.44	0.01	50	120	1702	0.0449	6.1	16	2.11	0.56	0.56	21.79	0.34	23.95	1.47
Project 2	H	7.58	0.01	50	134	1040	0.0188	5.9	23	1.72	0.26	0.27	3.52	0.34	4.69	0.45
Project 2	I	4.84	0.01	50	134	470	0.0169	5.7	12	2.25	0.35	0.36	3.92	0.34	4.81	0.29
Project 2	J	22.34	0.01	50	120	1155	0.0328	6.1	12	2.41	0.59	0.59	31.77	0.34	34.62	1.83
Project 2	K	7.96	0.01	50	134	832	0.0313	5.9	15	2.10	0.33	0.34	5.68	0.34	7.08	0.49
Project 2	L	9.93	0.01	50	134	827	0.0269	5.7	17	1.91	0.29	0.30	5.69	0.34	7.34	0.58

ON-SITE HYDROLOGY (POST-DEVELOPMENT)

Project	Subarea	Area (acres)	%imp	Frequency	Soil Type	Length (ft)	Slope (ft/ft)	Isohyet (in.)	Tc calculated (min.)	Intensity (in./hr)	Cu	Cd	Flow rate (cfs)	Fire Factor	Burned flow rate (cfs)	Volume (acre-ft)
Project 2	A	2.94	0.10	2	134	632	0.0363	2.3	30	0.60	0.10	0.18	0.32	0.34	0.46	0.10
Project 2	B	17.43	0.03	2	120	1196	0.0529	2.4	30	0.62	0.10	0.12	1.30	0.34	2.23	0.41
Project 2	C	22.59	0.09	2	134	1262	0.0346	2.4	30	0.61	0.10	0.17	2.34	0.34	3.45	0.75
Project 2	D	13.85	0.10	2	134	1667	0.0473	2.3	30	0.59	0.10	0.18	1.47	0.34	2.11	0.47
Project 2	E	21.40	0.02	2	120	1710	0.0470	2.4	30	0.62	0.10	0.12	1.59	0.34	2.74	0.51
Project 2	F	13.24	0.06	2	134	995	0.0257	2.3	30	0.59	0.10	0.15	1.17	0.34	1.81	0.37
Project 2	G	18.44	0.10	2	120	1702	0.0449	2.4	30	0.61	0.10	0.18	2.02	0.34	2.92	0.64
Project 2	H	7.58	0.09	2	134	1040	0.0188	2.3	30	0.59	0.10	0.17	0.76	0.34	1.12	0.24
Project 2	I	4.84	0.10	2	134	470	0.0169	2.2	30	0.57	0.10	0.18	0.50	0.34	0.71	0.16
Project 2	J	22.34	0.05	2	120	1155	0.0328	2.4	30	0.61	0.10	0.14	1.91	0.34	3.05	0.61
Project 2	K	7.96	0.09	2	134	832	0.0313	2.3	30	0.59	0.10	0.17	0.80	0.34	1.17	0.25
Project 2	L	9.93	0.10	2	134	827	0.0269	2.2	30	0.57	0.10	0.18	1.02	0.34	1.46	0.32
Project 2	A	2.94	0.10	5	134	632	0.0363	3.5	28	0.93	0.10	0.18	0.49	0.34	0.73	0.15
Project 2	B	17.43	0.03	5	120	1196	0.0529	3.6	23	1.05	0.34	0.36	6.59	0.34	7.88	0.73
Project 2	C	22.59	0.09	5	134	1262	0.0346	3.6	30	0.92	0.10	0.17	3.53	0.34	5.37	1.13
Project 2	D	13.85	0.10	5	134	1667	0.0473	3.4	30	0.89	0.10	0.18	2.22	0.34	3.29	0.71
Project 2	E	21.40	0.02	5	120	1710	0.0470	3.6	30	0.93	0.28	0.29	5.77	0.34	7.29	0.85
Project 2	F	13.24	0.06	5	134	995	0.0257	3.4	30	0.89	0.10	0.15	1.77	0.34	2.83	0.56
Project 2	G	18.44	0.10	5	120	1702	0.0449	3.6	30	0.92	0.27	0.33	5.60	0.34	6.81	1.04
Project 2	H	7.58	0.09	5	134	1040	0.0188	3.4	30	0.89	0.10	0.17	1.15	0.34	1.74	0.37
Project 2	I	4.84	0.10	5	134	470	0.0169	3.3	27	0.90	0.10	0.18	0.78	0.34	1.16	0.24
Project 2	J	22.34	0.05	5	120	1155	0.0328	3.6	26	0.98	0.31	0.34	7.44	0.34	9.01	1.02
Project 2	K	7.96	0.09	5	134	832	0.0313	3.4	30	0.89	0.10	0.17	1.20	0.34	1.83	0.38
Project 2	L	9.93	0.10	5	134	827	0.0269	3.3	30	0.86	0.10	0.18	1.54	0.34	2.27	0.49
Project 2	A	2.94	0.10	10	134	632	0.0363	4.3	23	1.25	0.12	0.20	0.74	0.34	1.07	0.19
Project 2	B	17.43	0.03	10	120	1196	0.0529	4.4	17	1.49	0.46	0.47	12.21	0.34	13.83	0.97
Project 2	C	22.59	0.09	10	134	1262	0.0346	4.4	30	1.12	0.10	0.17	4.30	0.34	6.64	1.38
Project 2	D	13.85	0.10	10	134	1667	0.0473	4.2	30	1.08	0.10	0.18	2.69	0.34	4.04	0.86
Project 2	E	21.40	0.02	10	120	1710	0.0470	4.4	24	1.26	0.40	0.41	11.06	0.34	12.88	1.16
Project 2	F	13.24	0.06	10	134	995	0.0257	4.2	30	1.08	0.10	0.15	2.14	0.34	3.49	0.69
Project 2	G	18.44	0.10	10	120	1702	0.0449	4.4	23	1.27	0.40	0.45	10.54	0.34	12.00	1.37
Project 2	H	7.58	0.09	10	134	1040	0.0188	4.2	30	1.08	0.10	0.17	1.39	0.34	2.14	0.45
Project 2	I	4.84	0.10	10	134	470	0.0169	4.1	24	1.18	0.10	0.18	1.01	0.34	1.53	0.29
Project 2	J	22.34	0.05	10	120	1155	0.0328	4.4	19	1.39	0.43	0.45	13.97	0.34	15.96	1.36
Project 2	K	7.96	0.09	10	134	832	0.0313	4.2	30	1.08	0.10	0.17	1.46	0.34	2.25	0.47
Project 2	L	9.93	0.10	10	134	827	0.0269	4.1	30	1.05	0.10	0.18	1.88	0.34	2.81	0.60
Project 2	A	2.94	0.10	25	134	632	0.0363	5.3	12	2.08	0.32	0.38	2.32	0.34	2.80	0.25
Project 2	B	17.43	0.03	25	120	1196	0.0529	5.4	13	2.07	0.55	0.56	20.20	0.34	22.20	1.30
Project 2	C	22.59	0.09	25	134	1262	0.0346	5.4	27	1.45	0.18	0.24	7.86	0.34	10.78	1.74
Project 2	D	13.85	0.10	25	134	1667	0.0473	5.2	30	1.33	0.14	0.22	4.05	0.34	5.70	1.08
Project 2	E	21.40	0.02	25	120	1710	0.0470	5.4	18	1.78	0.51	0.52	19.81	0.34	22.05	1.56
Project 2	F	13.24	0.06	25	134	995	0.0257	5.2	28	1.38	0.15	0.20	3.65	0.34	5.36	0.87
Project 2	G	18.44	0.10	25	120	1702	0.0449	5.4	17	1.80	0.51	0.55	18.26	0.34	20.06	1.79
Project 2	H	7.58	0.09	25	134	1040	0.0188	5.2	28	1.38	0.15	0.22	2.30	0.34	3.25	0.56
Project 2	I	4.84	0.10	25	134	470	0.0169	5.0	13	1.91	0.29	0.35	3.24	0.34	3.97	0.38
Project 2	J	22.34	0.05	25	120	1155	0.0328	5.4	14	1.97	0.54	0.56	24.65	0.34	27.04	1.79
Project 2	K	7.96	0.09	25	134	832	0.0313	5.2	17	1.74	0.26	0.32	4.43	0.34	5.57	0.61
Project 2	L	9.93	0.10	25	134	827	0.0269	5.0	20	1.56	0.21	0.28	4.34	0.34	5.66	0.76
Project 2	A	2.94	0.10	50	134	632	0.0363	6.0	10	2.58	0.40	0.45	3.41	0.34	3.95	0.29
Project 2	B	17.43	0.03	50	120	1196	0.0529	6.2	11	2.55	0.61	0.62	27.56	0.34	29.75	1.52
Project 2	C	22.59	0.09	50	134	1262	0.0346	6.1	19	1.94	0.30	0.35	15.34	0.34	18.85	2.09
Project 2	D	13.85	0.10	50	134	1667	0.0473	5.9	23	1.72	0.26	0.32	7.62	0.34	9.57	1.29
Project 2	E	21.40	0.02	50	120	1710	0.0470	6.2	15	2.21	0.57	0.58	27.43	0.34	29.96	1.86
Project 2	F	13.24	0.06	50	134	995	0.0257	5.9	18	1.93	0.30	0.34	8.69	0.34	10.77	1.06
Project 2	G	18.44	0.10	50	120	1702	0.0449	6.1	15	2.17	0.57	0.60	24.01	0.34	26.00	2.09
Project 2	H	7.58	0.09	50	134	1040	0.0188	5.9	19	1.88	0.29	0.34	4.85	0.34	6.00	0.68
Project 2	I	4.84	0.10	50	134	470	0.0169	5.7	11	2.35	0.37	0.42	4.78	0.34	5.61	0.44
Project 2	J	22.34	0.05	50	120	1155	0.0328	6.1	12	2.41	0.59	0.61	32.84	0.34	35.53	2.15
Project 2	K	7.96	0.09	50	134	832	0.0313	5.9	14	2.17	0.34	0.39	6.74	0.34	8.06	0.72
Project 2	L	9.93	0.10	50	134	827	0.0269	5.7	15	2.03	0.31	0.37	7.46	0.34	9.03	0.90
Project 2	A	2.94	0.10	MIT.	134	632	0.0363	0.75	30	0.19	0.10	0.18	0.10	0.34	0.13	0.03
Project 2	B	17.43	0.03	MIT.	120	1196	0.0529	0.75	30	0.19	0.10	0.12	0.40	0.34	0.59	0.13
Project 2	C	22.59	0.09	MIT.	134	1262	0.0346	0.75	30	0.19	0.10	0.17	0.73	0.34	0.97	0.24
Project 2	D	13.85	0.10	MIT.	134	1667	0.0473	0.75	30	0.19	0.10	0.18	0.47	0.34	0.62	0.15
Project 2	E	21.40	0.02	MIT.	120	1710	0.0470	0.75	30	0.19	0.10	0.12	0.49	0.34	0.73	0.16
Project 2	F	13.24	0.06	MIT.	134	995	0.0257	0.75	30	0.19	0.10	0.15	0.38	0.34	0.52	0.12
Project 2	G	18.44	0.10	MIT.	120	1702	0.0449	0.75	30	0.19	0.10	0.18	0.63	0.34	0.82	0.20
Project 2	H	7.58	0.09	MIT.	134	1040	0.0188	0.75	30	0.19	0.10	0.17	0.24	0.34	0.32	0.08
Project 2	I	4.84	0.10	MIT.	134	470	0.0169	0.75	30	0.19	0.10	0.18	0.17	0.34	0.22	0.05
Project 2	J	22.34	0.05	MIT.	120	1155	0.0328	0.75	30	0.19	0.10	0.14	0.59	0.34	0.84	0.19
Project 2	K	7.96	0.09	MIT.	134	832	0.0313	0.75	30	0.19	0.10	0.17	0.26	0.34	0.34	0.08
Project 2	L	9.93	0.10	MIT.	134	827	0.0269	0.75	30	0.19	0.10	0.18	0.34	0.34	0.44	0.11

Incremental Flow and Volume Increase for Various Storm Events

Storm Event	Pre-Q (cfs)	Post-Q (cfs)	Delta-Q (cfs)	Pre-V (acre-ft)	Post-V (acre-ft)	Delta-V (acre-ft)
2	10.79	15.2	4.41	3.43	4.83	1.40
5	80.81	88.08	7.27	5.56	7.67	2.11
10	55.05	63.39	8.34	7.21	9.79	2.58
25	97.92	115.11	17.19	9.46	12.69	3.23
50	151.61	170.73	19.12	11.49	15.09	3.60

NOTE: FOR INFILTRATION BASIN MITIGATION VOLUME, SUM MIT. FREQUENCY VOLUMES UNDER POST-DEVELOPMENT TABLE. V_{PM}=1.54 AC*FT.

DELTA QUANTITIES FOR DRAINAGE AREA A:
ΔQ25 = 2.32 - 1.77 = 0.55 CFS
ΔV25 = 0.25 - 0.16 = 0.09 AC*FT

DELTA QUANTITIES FOR DRAINAGE AREA B:
ΔQ25 = 20.20 - 19.84 = 0.36 CFS
ΔV25 = 1.30 - 1.22 = 0.08 AC*FT

DELTA QUANTITIES FOR DRAINAGE AREA C
ΔQ25 = 7.86 - 4.99 = 2.87 CFS
ΔV25 = 1.74 - 1.13 = 0.61 AC*FT

DELTA QUANTITIES FOR DRAINAGE AREA D
ΔQ25 = 4.05 - 2.76 = 1.29 CFS
ΔV25 = 1.08 - 0.66 = 0.42 AC*FT

DELTA QUANTITIES FOR DRAINAGE AREA E
ΔQ25 = 19.81 - 19.43 = 0.38 CFS
ΔV25 = 1.56 - 1.47 = 0.09 AC*FT

DELTA QUANTITIES FOR DRAINAGE AREA F
ΔQ25 = 3.65 - 2.64 = 1.01 CFS
ΔV25 = 0.87 - 0.63 = 0.24 AC*FT

DELTA QUANTITIES FOR DRAINAGE AREA G
ΔQ25 = 18.26 - 16.14 = 2.12 CFS
ΔV25 = 1.79 - 1.25 = 0.54 AC*FT

DELTA QUANTITIES FOR DRAINAGE AREA H
ΔQ25 = 2.30 - 1.51 = 0.79 CFS
ΔV25 = 0.56 - 0.36 = 0.20 AC*FT

DELTA QUANTITIES FOR DRAINAGE AREA I
ΔQ25 = 3.24 - 2.41 = 0.83 CFS
ΔV25 = 0.38 - 0.24 = 0.14 AC*FT

DELTA QUANTITIES FOR DRAINAGE AREA J
ΔQ25 = 24.65 - 22.61 = 2.04 CFS
ΔV25 = 1.79 - 1.50 = 0.29 AC*FT

DELTA QUANTITIES FOR DRAINAGE AREA K
ΔQ25 = 4.43 - 2.03 = 2.40 CFS
ΔV25 = 0.61 - 0.39 = 0.22 AC*FT

DELTA QUANTITIES FOR DRAINAGE AREA L
ΔQ25 = 4.34 - 1.79 = 2.55 CFS
ΔV25 = 0.76 - 0.45 = 0.31 AC*FT

TOTAL DELTA QUANTITIES
ΔQ25 = 17.19 CFS
ΔV25 = 3.23 AC*FT

NOTE: DUE TO THE LID Δ QUANTITIES ABOVE BEING GREATER THAN THE MITIGATION QUANTITIES (Q_{PM} AND V_{PM}) THEY REPRESENT THE WORST CASE SCENARIO BETWEEN THE PRE-/POST DEVELOPMENT CONDITIONS AND THEREFORE SHALL BE USED FOR SIZING THE INFILTRATION BASINS.

HYDROLOGY STUDY/DRAINAGE CONCEPT/LID PLAN
APPROVED FOR AREA AND Q ONLY
APPROVED BY:________________RCE NO:________________DATE______________
CHECKED BY:________________DATE______________
COUNTY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS
LAND DEVELOPMENT DIVISION

R2011-00798 (RCUP201100070) | C-05

PREPARED UNDER THE SUPERVISION OF:
REGISTERED PROFESSIONAL ENGINEER — JOSEPH E. DIETZ — No. 67032 — EXP: 9-30-14 — CIVIL — STATE OF CALIFORNIA
JOSEPH E. DIETZ, P.E.

EXHIBIT PREPARER:
TETRA TECH, INC.
17885 VON KARMAN AVENUE, SUITE 500
IRVINE, CALIFORNIA 92614-6213
TEL: 949.809.5000

NOT ISSUED FOR CONSTRUCTION

NO.	DATE	REVISION	SUBM'T BY	APPV'D BY

Solar PV System Summary
40MW AC Solar Photovoltaic Generation System
APN: 3267-015-001
SCH # 2012061068
Project Name: Project 2 Western Antelope Blue Sky Ranch
Project Address: 110th Street West & West Ave K
Lancaster, CA 93536-7703
Los Angeles County, CA

HYDROLOGY STUDY/DRAINAGE CONCEPT/LID FOR CUP 201100070
ON-SITE DRAINAGE MAP

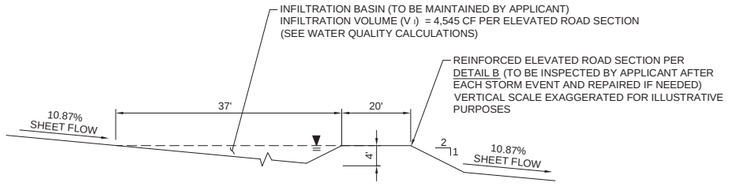
APPLICANT:
Silverado Power
2 Embarcadero Center, Ste. 410
San Francisco, CA 94111
(415) 692-7740

SILVERADO power

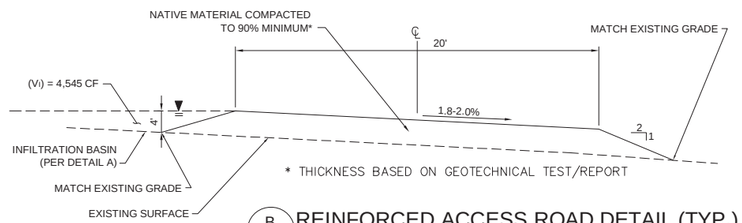
PROJECT 2
WESTERN ANTELOPE
BLUE SKY RANCH
LOS ANGELES COUNTY, CA

2 Embarcadero Center, Ste. 410 | San Francisco, CA 94111 | 415.692.7740 main

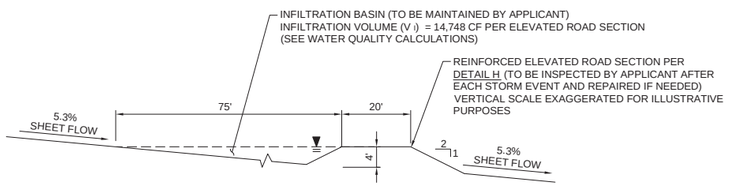
P:\04546\135-04546-12001\SUPPORTDOCS\CALCS\HYDROLOGY\7\FINAL DESIGN\ONSITE HYDROLOGY C05.DWG
PLOT/UPDATE: Nov 27, 2013 1:28:47 PM



A INFILTRATION BASIN DETAIL
SCALE: NTS



B REINFORCED ACCESS ROAD DETAIL (TYP.)
SCALE: NTS



G INFILTRATION BASIN DETAIL
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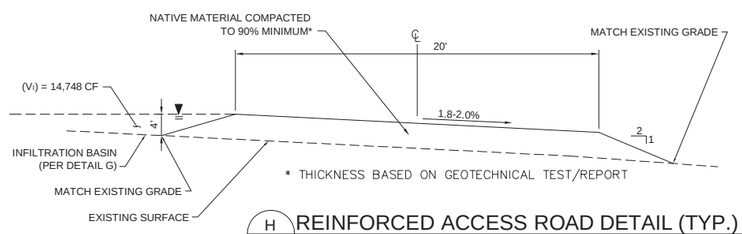

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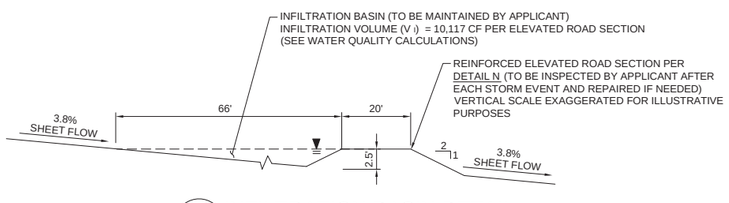
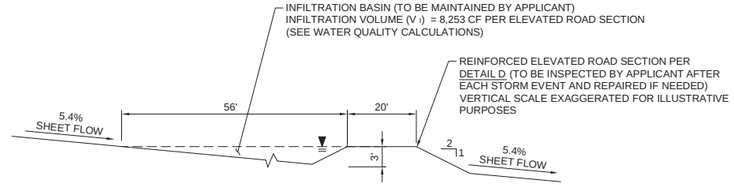
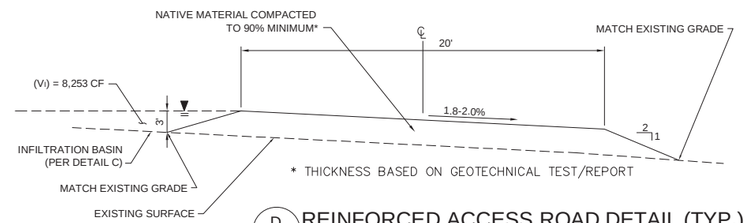


M INFILTRATION BASIN DETAIL
SCALE: NTS



C INFILTRATION BASIN DETAIL
SCALE: NTS



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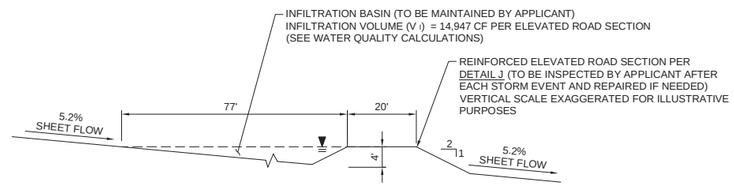
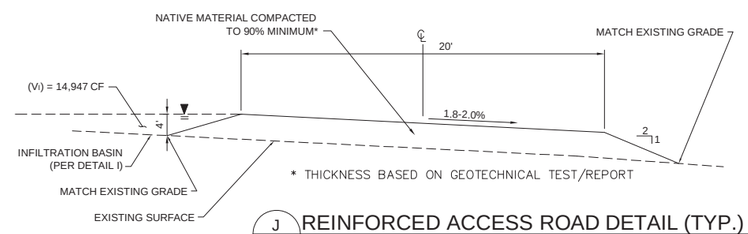


I INFILTRATION BASIN DETAIL
SCALE: NTS



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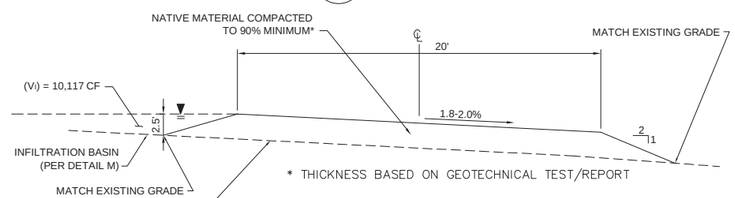
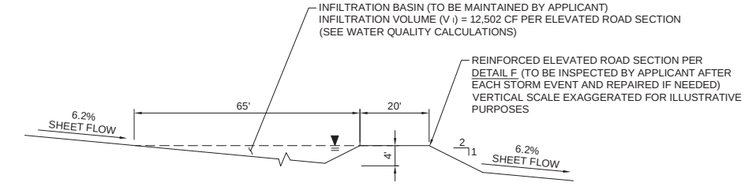
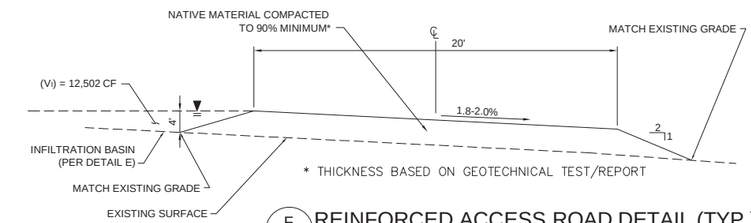


N REINFORCED ACCESS ROAD DETAIL (TYP.)
SCALE: NTS



E INFILTRATION BASIN DETAIL
SCALE: NTS



F REINFORCED ACCESS ROAD DETAIL (TYP.)
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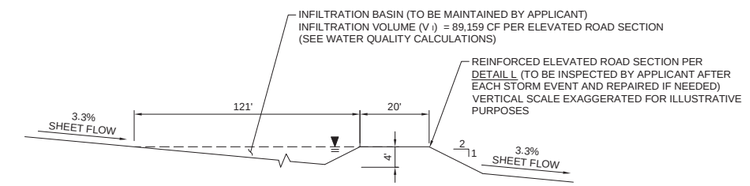

K INFILTRATION BASIN DETAIL
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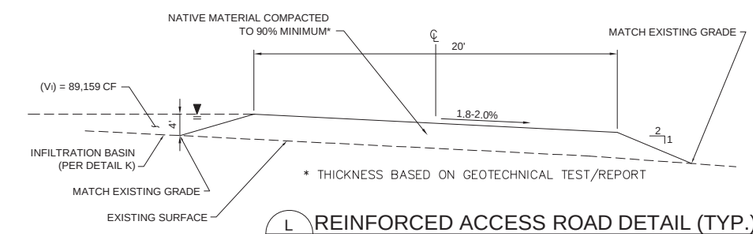


L REINFORCED ACCESS ROAD DETAIL (TYP.)
SCALE: NTS

HYDROLOGY STUDY/DRAINAGE CONCEPT/LID PLAN
APPROVED FOR AREA AND Q ONLY
APPROVED BY: _____ RCE NO: _____ DATE _____
CHECKED BY: _____ DATE _____
COUNTY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS
LAND DEVELOPMENT DIVISION

R2011-00798 (RCUP201100070) | C-06

PREPARED UNDER THE SUPERVISION OF:

REGISTERED PROFESSIONAL ENGINEER
JOSEPH E. DIETZ
No. 67032
EXP: 9-30-14
CIVIL
STATE OF CALIFORNIA

JOSEPH E. DIETZ, P.E.

EXHIBIT PREPARER:

TETRA TECH, INC.
17885 VON KARMAN AVENUE, SUITE 500
IRVINE, CALIFORNIA 92614-6213
TEL: 949.809.5000

NOT ISSUED FOR CONSTRUCTION

NO.	DATE	REVISION	SUBM'T BY	APPV'D BY

Solar PV System Summary

40MW AC Solar Photovoltaic Generation System

APN:
3267-015-001

SCH # 2012061068

Project Name:
Project 2 Western Antelope Blue Sky Ranch
Project Address:
110th Street West & West Ave K
Lancaster, CA 93536-7703
Los Angeles County, CA

HYDROLOGY STUDY/DRAINAGE CONCEPT/LID
FOR CUP 201100070
ON-SITE DRAINAGE MAP

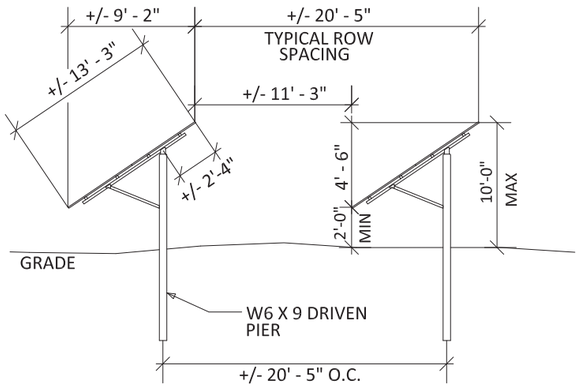
APPLICANT:
Silverado Power
2 Embarcadero Center, Ste. 410
San Francisco, CA 94111
(415) 692-7740

SILVERADO power

PROJECT 2
WESTERN ANTELOPE
BLUE SKY RANCH
LOS ANGELES COUNTY, CA

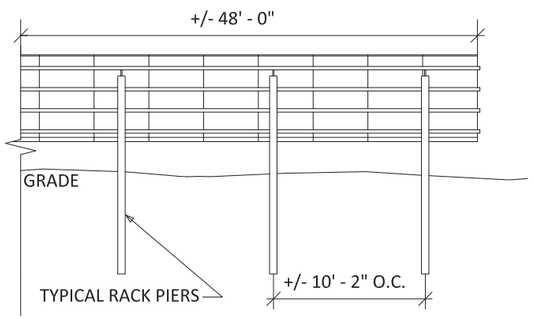
2 Embarcadero Center, Ste. 410 | San Francisco, CA 94111 | 415.692.7740 main

P:\04546\125-04546-12001\SUPPORTDOCS\CALCS\HYDROLOGY\FINAL DESIGN\ONSITE HYDROLOGY CDB.DWG
PLOT/UPDATE: Dec 2, 2013 8:57:52 AM



TYPICAL SOLAR ARRAY RACK DETAIL AND END ELEVATION

NOT TO SCALE



SOLAR ARRAY RACK DETAIL ELEVATION

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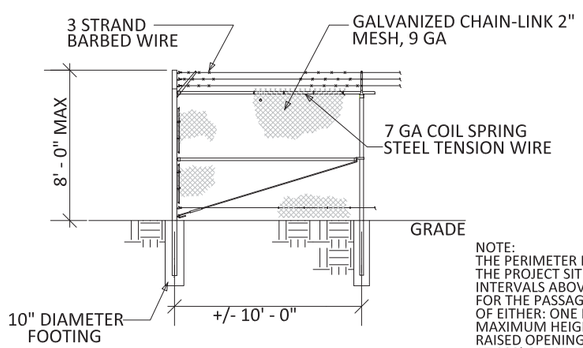
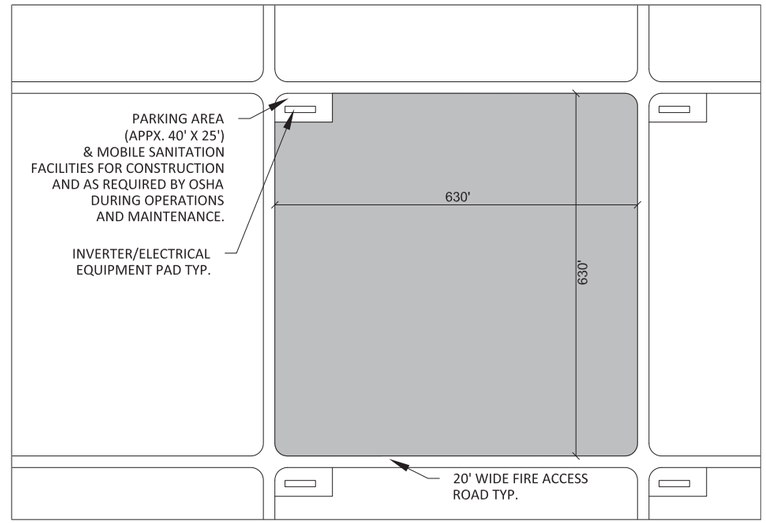


NOTE:
THE PERIMETER FENCING SURROUNDING THE PROJECT SITE WILL BE RAISED AT REGULAR INTERVALS ABOVE GROUND LEVEL TO ALLOW FOR THE PASSAGE OF WILDLIFE TO THE LESSER OF EITHER: ONE FOOT ABOVE GRADE OR TO THE MAXIMUM HEIGHT ALLOWED BY THE PUC. RAISED OPENINGS WILL BE 50' WIDE SPACED AT 200' ON-CENTER.

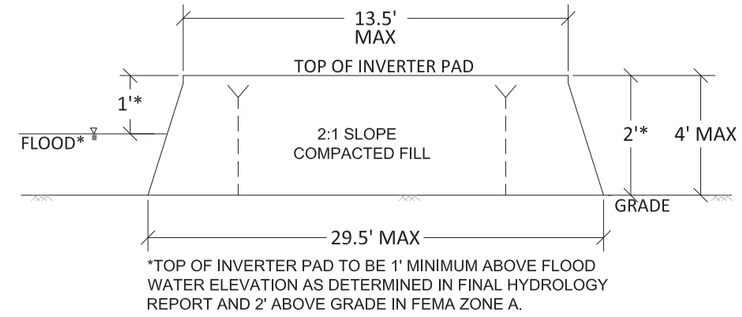
CHAIN LINK SECURITY FENCE ELEVATION

NOT TO SCALE



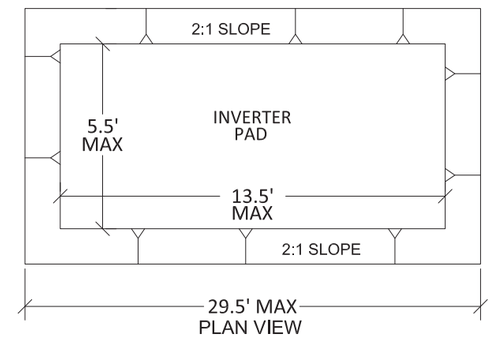
ARRAY BLOCK DETAIL (TYPICAL)

NOT TO SCALE



*TOP OF INVERTER PAD TO BE 1' MINIMUM ABOVE FLOOD WATER ELEVATION AS DETERMINED IN FINAL HYDROLOGY REPORT AND 2' ABOVE GRADE IN FEMA ZONE A.

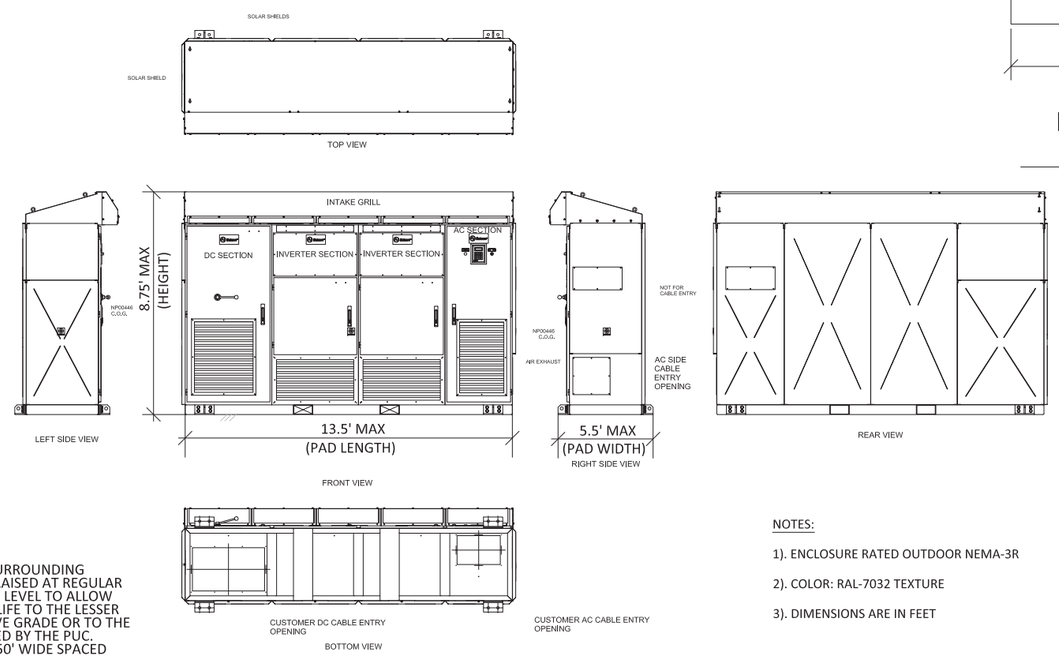
ELEVATION VIEW



PLAN VIEW

RAISED INVERTER PAD DETAILS FOR FLOOD AREAS AS NEEDED

NOT TO SCALE



NOTES:

1). ENCLOSURE RATED OUTDOOR NEMA-3R

2). COLOR: RAL-7032 TEXTURE

3). DIMENSIONS ARE IN FEET

INVERTER PAD DETAILS (TYPICAL)

NOT TO SCALE

C-07

R2011-00798 (RCUP201100070)

REGISTERED PROFESSIONAL ENGINEER JULIE ANN DELANEY No.C54558 CIVIL STATE OF CALIFORNIA

EXHIBIT PREPARER:

TETRA TECH, INC.
17885 VON KARMAN AVENUE, SUITE 500
IRVINE, CALIFORNIA 92614-6213
TEL: 949.809.5000

NOT ISSUED FOR CONSTRUCTION

NO.	DATE	REVISION	SUBM'T BY	APPV'D BY

Solar PV System Summary

40MW AC Solar Photovoltaic Generation System

APN:
3267-015-001

SCH # 2012061068

Project Name:
Project 2 Western Antelope Blue Sky Ranch
Project Address:
110th Street West & West Ave K
Lancaster, CA 93536-7703
Los Angeles County, CA

DRAWING: DETAIL SHEET

APPLICANT:
Silverado Power
2 Embarcadero Center, Ste. 410
San Francisco, CA 94111
(415) 692-7740

SILVERADO power

PROJECT 2
WESTERN ANTELOPE BLUE SKY RANCH
LOS ANGELES COUNTY, CA

2 Embarcadero Center, Ste. 410 | San Francisco, CA 94111 | 415.692.7740 main

P:\CAD\PROJECTS\108-4336 SILVERADO POWER\SP LA-CUP_14-0324\P2-7\C-06-DETAIL-7-8.DWG
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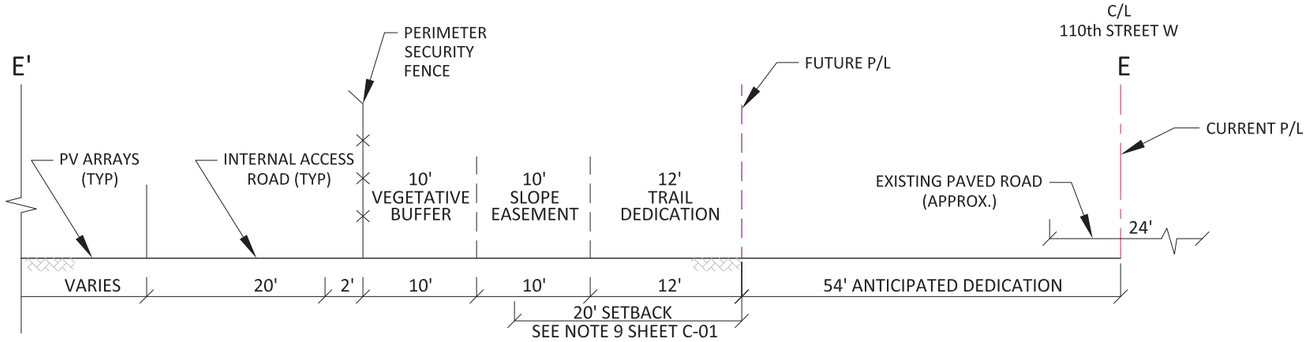
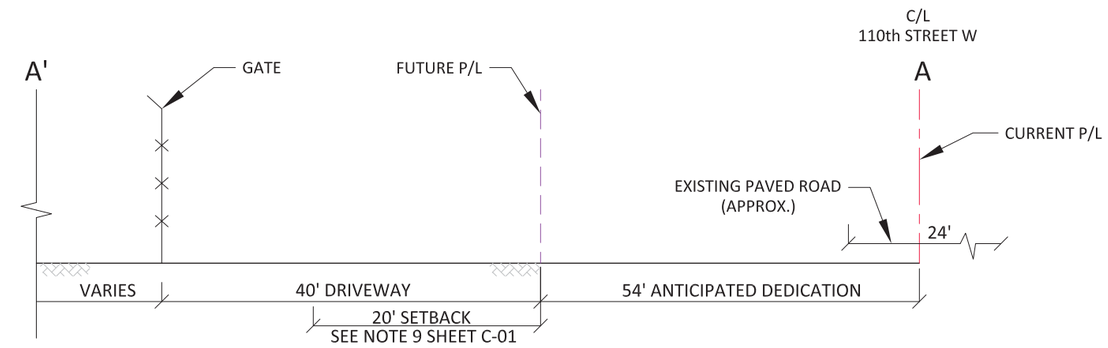


SECTION E' - E

NOT TO SCALE



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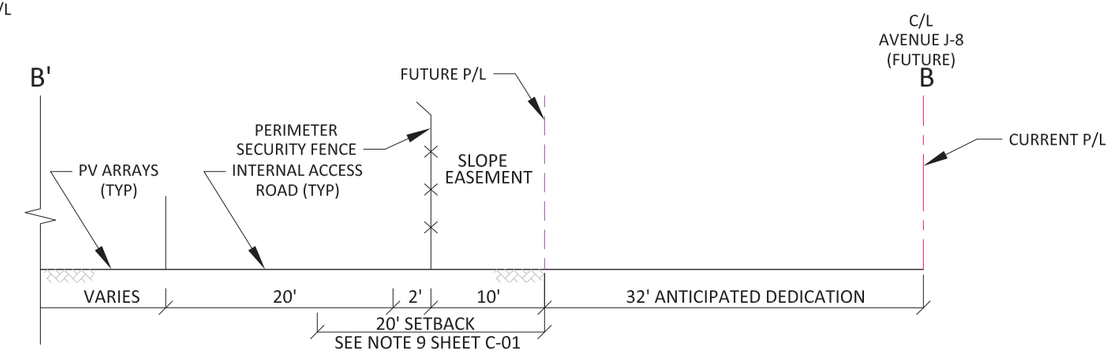

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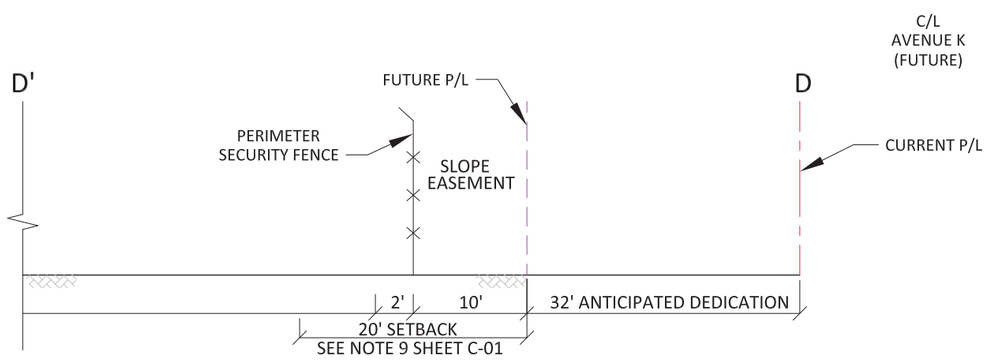

SECTION D' - D

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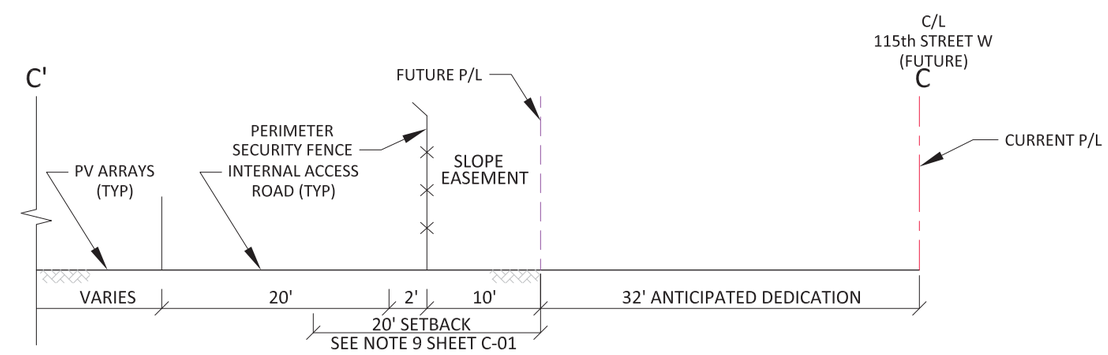

SECTION C' - C

NOT TO SCALE

C-08

R2011-00798 (RCUP201100070)

REGISTERED PROFESSIONAL ENGINEER JULIE ANN DELANEY No.C54558 CIVIL STATE OF CALIFORNIA

EXHIBIT PREPARER:

TETRA TECH, INC.

17885 VON KARMAN AVENUE, SUITE 500
IRVINE, CALIFORNIA 92614-6213
TEL: 949.809.5000

NOT ISSUED FOR CONSTRUCTION

NO.	DATE	REVISION	SUBM'T BY	APPV'D BY

Solar PV System Summary

40MW AC Solar Photovoltaic Generation System

APN: 3267-015-001

SCH # 2012061068

Project Name:
Project 2 Western Antelope Blue Sky Ranch
Project Address:
110th Street West & West Ave K
Lancaster, CA 93536-7703
Los Angeles County, CA

DRAWING: SECTION SHEET

APPLICANT:
Silverado Power
2 Embarcadero Center, Ste. 410
San Francisco, CA 94111
(415) 692-7740

SILVERADO power

PROJECT 2
WESTERN ANTELOPE
BLUE SKY RANCH
LOS ANGELES COUNTY, CA

2 Embarcadero Center, Ste. 410 | San Francisco, CA 94111 | 415.692.7740 main

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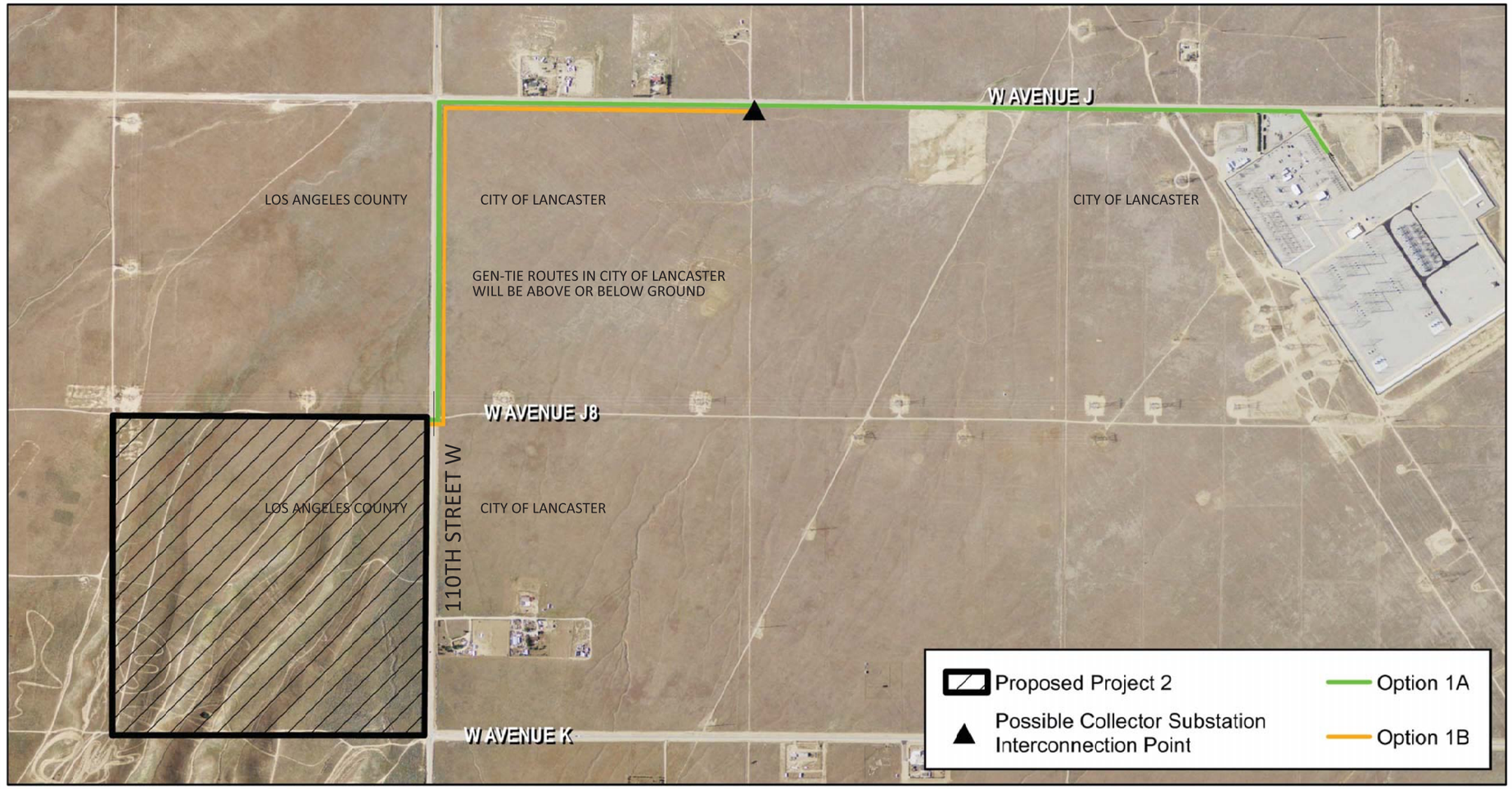

NOTES:

1. ALL GEN-TIE OPTIONS SHOWN ARE NEW, WITH NO TIE-INS TO EXISTING GEN-TIES.
2. GEN-TIE OPTIONS WITHIN LOS ANGELES COUNTY LIMITS/JURISDICTION WILL BE UNDERGROUND.
3. GEN-TIE OPTIONS WITHIN CITY OF LANCASTER LIMITS/JURISDICTION WILL BE UNDERGROUND OR ABOVE GROUND.

GEN-TIE ROUTE OPTIONS

NOT TO SCALE

C-09

R2011-00798 (RCUP201100070)

REGISTERED PROFESSIONAL ENGINEER
JULIE ANN DELANEY
No.C54558
CIVIL
STATE OF CALIFORNIA

EXHIBIT PREPARER:

TETRA TECH, INC.
17885 VON KARMAN AVENUE, SUITE 500
IRVINE, CALIFORNIA 92614-6213
TEL: 949.809.5000

NOT ISSUED FOR CONSTRUCTION

NO.	DATE	REVISION	SUBM'T BY	APPV'D BY

Solar PV System Summary

40MW AC Solar Photovoltaic Generation System

APN:
3267-015-001

SCH # 2012061068

Project Name:
Project 2 Western Antelope Blue Sky Ranch
Project Address:
110th Street West & West Ave K
Lancaster, CA 93536-7703
Los Angeles County, CA

DRAWING: GEN-TIE ROUTE OPTIONS

APPLICANT:
Silverado Power
2 Embarcadero Center, Ste. 410
San Francisco, CA 94111
(415) 692-7740

SILVERADO power

PROJECT 2
WESTERN ANTELOPE
BLUE SKY RANCH
LOS ANGELES COUNTY, CA

2 Embarcadero Center, Ste. 410 | San Francisco, CA 94111 | 415.692.7740 main

P:\(240)\PROJECTS\106-4336 SILVERADO POWER\SP LA-CUP_14-0324\P2-7\C-09-GEN-TIE-7-8.DWG
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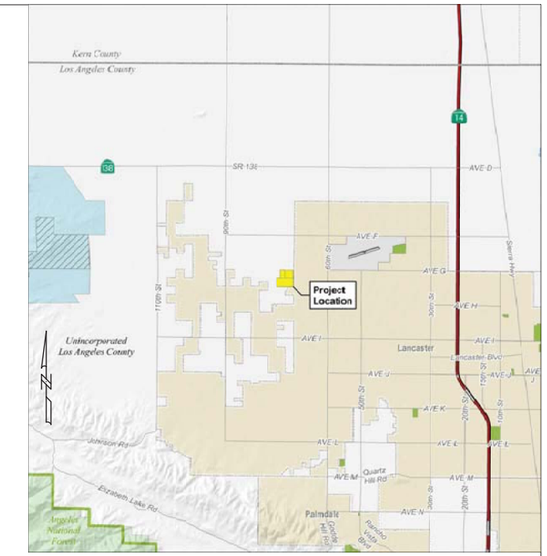
LOCATION MAP
NOT TO SCALE

PROJECT 3 AMERICAN SOLAR GREENWORKS

LOS ANGELES COUNTY, CALIFORNIA



VICINITY MAP
NOT TO SCALE

DRAWING INDEX

DRAWING NO.	TITLE
T-01	TITLE SHEET
G-01	TOPOGRAPHIC MAP
G-02	TOPOGRAPHIC MAP
C-01	SITE PLAN
C-02	GRADING PLAN
C-03	ON-SITE DRAINAGE MAP
C-04	ON-SITE DRAINAGE MAP
C-05	ON-SITE DRAINAGE MAP
C-06	DETAIL SHEET
C-07	SECTION SHEET

SURVEY INFORMATION:

TOPOGRAPHIC MAP AND 1' CONTOURING PREPARED BY ALL VALLEY SURVEYING.
BENCHMARK AND BASIS OF BEARINGS SHOWN ON TOPOGRAPHIC MAP, DRAWING G-01 & G-02.

SURVEYOR:

LARRY E. JERNIGAN, PLS #5924
ALL VALLEY SURVEYING
44965 10TH STREET WEST
LANCASTER, CA 93534
(661) 942-3639

T-01
R2011-00799 (RCUP201100071)

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PLOT/UPDATE: Mar 20, 2014 2:27:36 PM

REGISTERED PROFESSIONAL ENGINEER
JULIE ANN DELANEY
No.C54558
CIVIL
STATE OF CALIFORNIA

EXHIBIT PREPARER:
TETRA TECH, INC.
17885 VON KARMAN AVENUE, SUITE 500
IRVINE, CALIFORNIA 92614-6213
TEL: 949.809.5000

NOT ISSUED FOR CONSTRUCTION

NO.	DATE	REVISION	SUBM'T BY	APPV'D BY

Solar PV System Summary

35MW AC Solar Photovoltaic Generation System
APNs 3268-018-002
3268-018-035
SCH # 2012061068

Project Name:
Project 3 American Solar Greenworks

Project Address:
W Ave. G & 70th St. W
Los Angeles County, CA

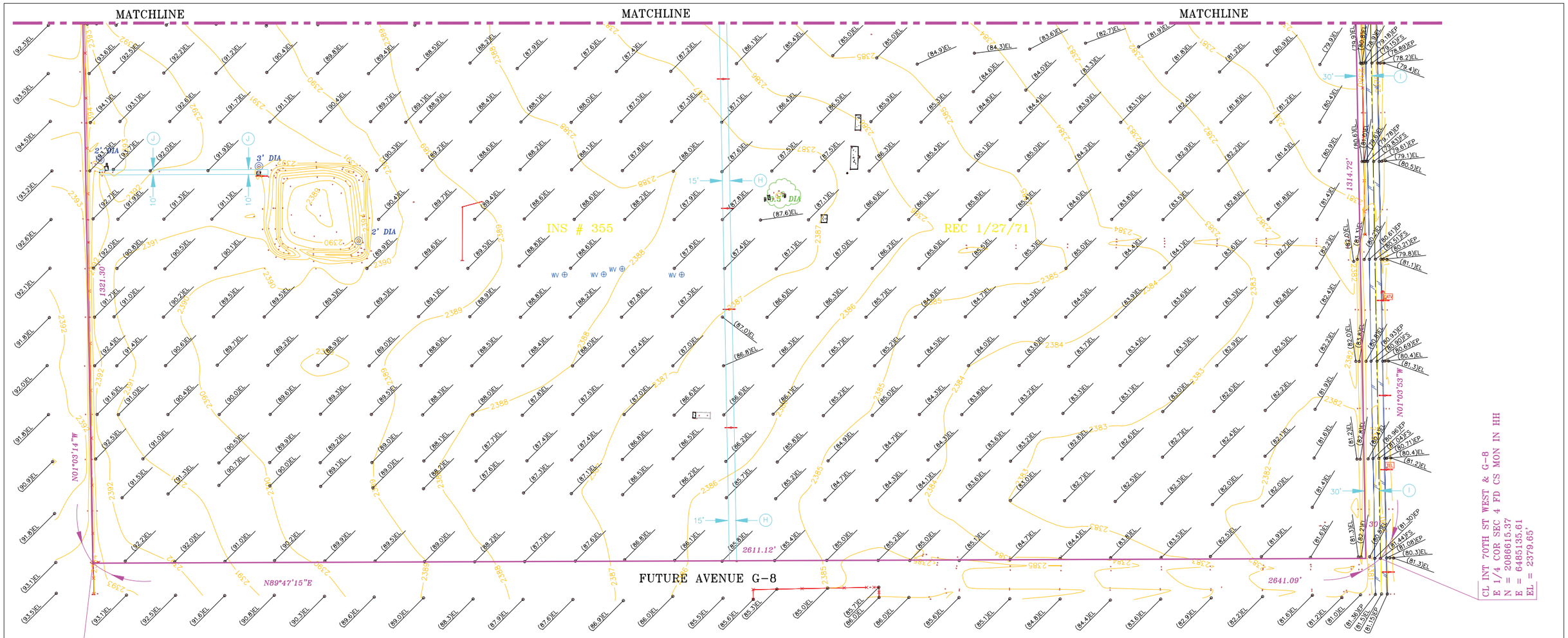
DRAWING: TITLE SHEET

APPLICANT:
Silverado Power
2 Embarcadero Center, Ste. 410
San Francisco, CA 94111
(415) 692-7740

SILVERADO power

PROJECT 3
AMERICAN SOLAR GREENWORKS
LOS ANGELES COUNTY, CA

2 Embarcadero Center, Ste. 410 | San Francisco, CA 94111 | 415.692.7740 main



SYMBOL LEGEND

- TELE — TELEPHONE BOX
- CATV — CABLE TV BOX
- POWER POLE
- GUY ANCHOR
- ELEC — ELECTRIC BOX
- GP — GUARD POST
- WV — WATER VALVE
- CONCRETE STANDPIPE
- TEL — TELEPHONE BOX
- MB — MAILBOX
- FENCE
- EDGE OF PAVEMENT
- WALL
- CONCRETE
- TREE
- SLB — STREET LIGHT BOX
- STREET LIGHT
- TSB — TRAFFIC SIGNAL BOX
- STREET — STREET SIGN
- STOP — STOP SIGN
- SPEED — SPEED LIMIT SIGN
- EP — EDGE OF PAVEMENT
- CLF — CHAIN-LINK FENCE
- PL — PROPERTY LINE
- CL — CENTER LINE
- R/W — RIGHT OF WAY LINE
- FS — FINISH SURFACE

(A) – 5' ELECTRIC LINE EASEMENT BK 6063 PG 32 OF DEEDS

(B) – 30' ROAD EASEMENT (70TH ST W) TO THE COUNTY OF LOS ANGELES BK 4738, PG 306 O.R.

(C) – 10' ROAD EASEMENT (AVE "G" & 70TH ST W) TO THE COUNTY OF LOS ANGELES INS 87-1178477

(D) – OFFER TO DEDICATE 32' ROAD EASEMENT (AVE "G" & 75TH ST W) TO THE COUNTY OF LOS ANGELES INS# 87-1178478

(E) – 40' ROAD EASEMENT (AVE G) TO THE COUNTY OF LOS ANGELES INS# 3716, REC 2/17/55 O.R.

(F) – ELECTRIC LINE EASEMENT WITHIN ROAD R/W NEAR INTERSECTION OF AVE G & 70TH ST WEST INS# 4118, REC 4/24/56 O.R.

(G) – DRAINAGE ACCEPTANCE INS# 82-1178487

(H) – 5' AND 15' ELECTRIC LINE EASEMENT, BK 6057 PG 25 OF DEEDS

(I) – 30' ROAD EASEMENT (70TH ST WEST) TO THE COUNTY OF LOS ANGELES, BK 6187, PG 65, O.R.

(J) – 10' ELECTRIC LINE EASEMENT, BK 42274, PG 90 O.R.

EASEMENT INFORMATION FROM :
FIRST AMERICAN TITLE COMPANY
TITLE REPORTS:
NCS-454444-ONT1(9/8/10)
NCS-454425-ONT1(9/5/10)
NCS-468215-SD(12/17/10)

DATUM STATEMENT
COORDINATES SHOWN ARE BASED ON THE CALIFORNIA COORDINATE SYSTEM, (CCS83) ZONE V, 1983 NORTH AMERICAN DATUM, 1991.35 EPOCH ADJUSTMENT. COORDINATES SHOWN ARE IN U.S. SURVEY FEET. ALL DISTANCES SHOWN ARE GRID DISTANCES. TO OBTAIN A GROUND DISTANCE, DIVIDE THE GRID DISTANCE BY 0.999847886. COMBINATION FACTOR IS PROJECT BASED.

BASIS OF BEARING	BENCH MARK
THE BASIS OF BEARINGS FOR THIS SURVEY IS THE CALIFORNIA COORDINATE SYSTEM, ZONE V, NAD 83, EPOCH 1991.35, AS DETERMINED LOCALLY BY A LINE BETWEEN CONTINUOUS GLOBAL POSITIONING STATIONS (CGPS), EW7110 AND EW7125, BEING NORTH 00°10'12" EAST AS DERIVED FROM GEODETIC VALUES PUBLISHED BY THE NATIONAL GEODETIC SURVEY	LOS ANGELES COUNTY BENCHMARK L2273, LANCASTER 1998 ADJUSTMENT, NAVD 1988, ELEVATION= 2387.380 FEET CS MON IN WELL 450MM DN @ C/L INT 75TH ST W & AVE G MKD (1/4 COR 33, 4, R13W, T8N, R7N)

SCALE
HORIZ: 1"= 100'

PROFESSIONAL LAND SURVEYOR
LARRY E. JERNIGAN
No. 5924
EXP 12-31-12
STATE OF CALIFORNIA

ALL VALLEY SURVEYING
44965 10TH STREET WEST
LANCASTER, CA. 93534
(661) 942-3639

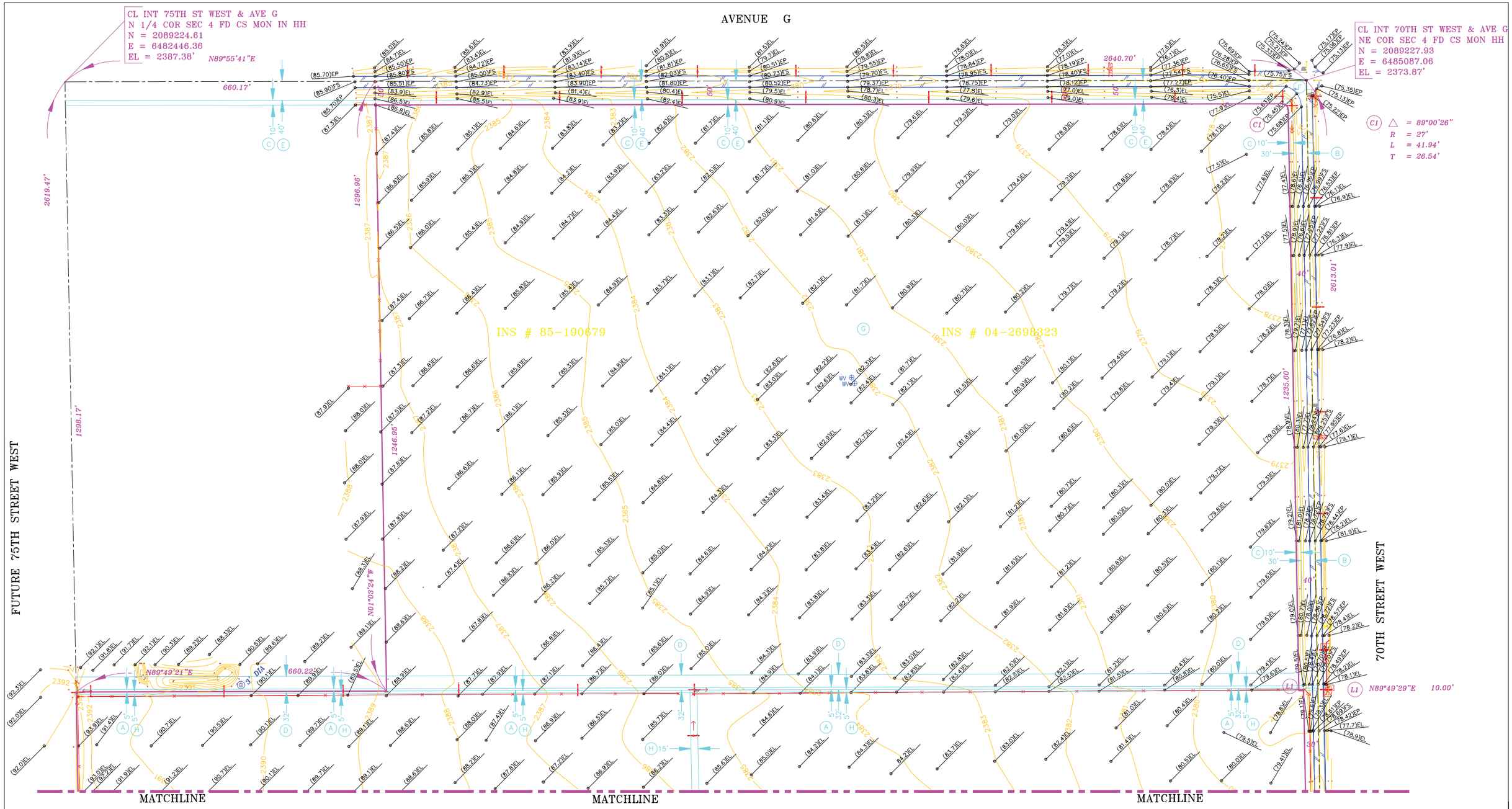
NO.	REVISION	BY	APPR.	DATE
1				
2				
3				

SHEET 1/2 | SHEET G-01

TOPOGRAPHIC MAP
AVENUE G & 70TH STREET WEST
ANTELOPE VALLEY
COUNTY OF LOS ANGELES
STATE OF CALIFORNIA

DATE OF SURVEY 4/20/12

COUNTY PLAN CHECK NUMBER 2011-00833(RCUP201100079)



DATUM STATEMENT
COORDINATES SHOWN ARE BASED ON THE CALIFORNIA COORDINATE SYSTEM, (CCS83) ZONE V, 1983 NORTH AMERICAN DATUM, 1991.35 EPOCH ADJUSTMENT. COORDINATES SHOWN ARE IN U.S. SURVEY FEET. ALL DISTANCES SHOWN ARE GRID DISTANCES. TO OBTAIN A GROUND DISTANCE, DIVIDE THE GRID DISTANCE BY 0.999847886. COMBINATION FACTOR IS PROJECT BASED.

BASIS OF BEARING	BENCH MARK
THE BASIS OF BEARINGS FOR THIS SURVEY IS THE CALIFORNIA COORDINATE SYSTEM, ZONE V, NAD 83, EPOCH 1991.35, AS DETERMINED LOCALLY BY A LINE BETWEEN CONTINUOUS GLOBAL POSITIONING STATIONS (CGPS), EW7110 AND EW7125, BEING NORTH 00°10'12" EAST AS DERIVED FROM GEODETIC VALUES PUBLISHED BY THE NATIONAL GEODETIC SURVEY	LOS ANGELES COUNTY BENCHMARK L2273, LANCASTER 1998 ADJUSTMENT, NAVD 1988, ELEVATION= 2387.380 FEET CS MON IN WELL 450MM DN @ C/L INT 75TH ST W & AVE G MKD (1/4 COR 33, 4, R13W, T8N, R7N)

SCALE
HORIZ: 1"= 100'

PROFESSIONAL LAND SURVEYOR
LARRY E JERNIGAN
No. 5924
EXP 12-31-12
STATE OF CALIFORNIA

ALL VALLEY SURVEYING
44965 10TH STREET WEST
LANCASTER, CA. 93534
(661) 942-3639

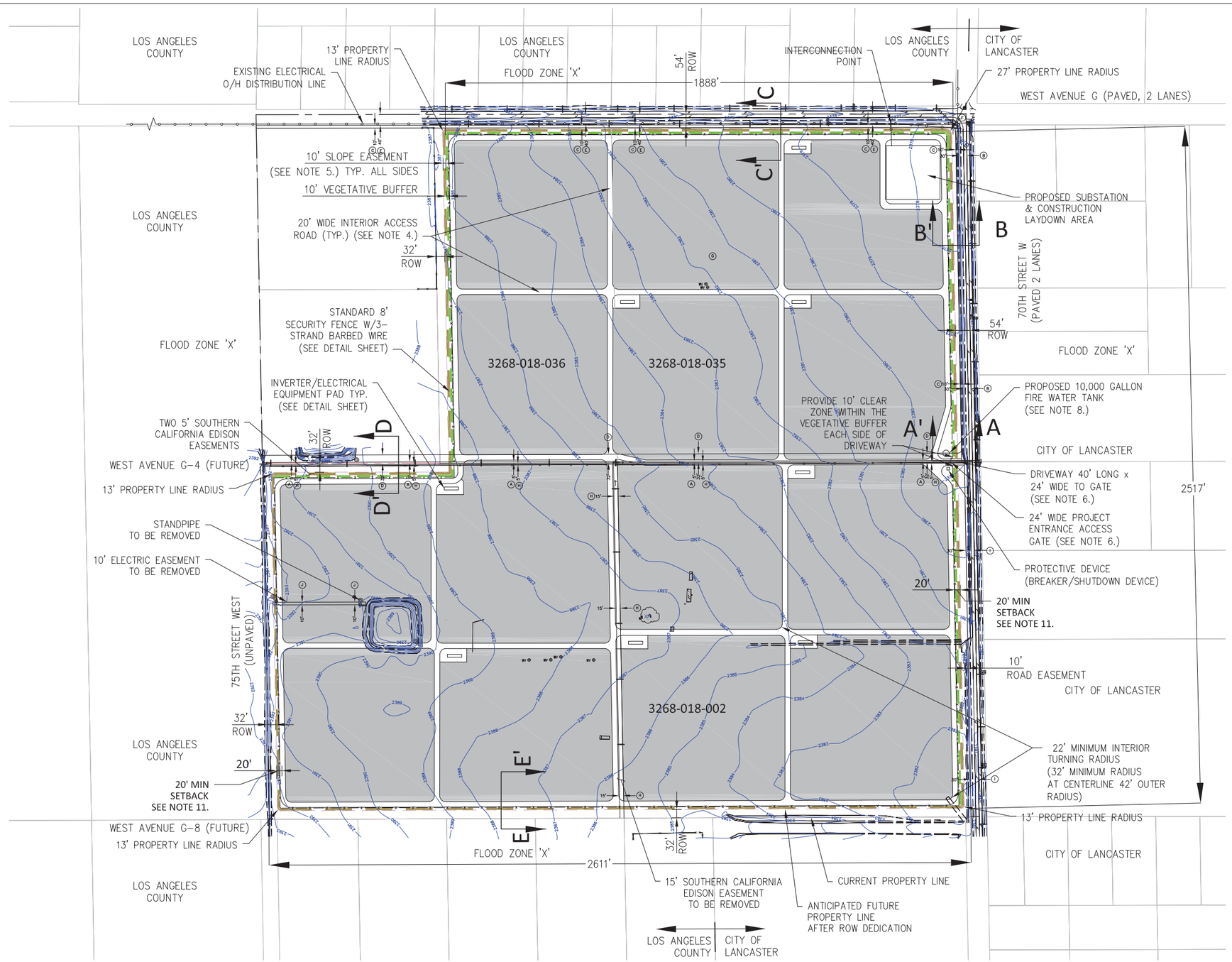
NO.	REVISION	BY	APPR.	DATE
1				
2				
3				

SHEET 2/2 | SHEET G-02

TOPOGRAPHIC MAP
AVENUE G & 70TH STREET WEST
ANTELOPE VALLEY
COUNTY OF LOS ANGELES
STATE OF CALIFORNIA

DATE OF SURVEY
4/20/12

COUNTY PLAN CHECK NUMBER
2011-00833(RCUP201100079)



PROJECT SITE:

PROJECT SITE IS 134.6 ACRES (NET)

NOTES:

1. 'ZONE X' AS SHOWN ON PANEL 0400F OF FLOOD INSURANCE RATE MAP NO. 06037C0400F. ZONE "X" DESIGNATED AS "AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOOD PLAIN.

2. FIRE DEPARTMENT ACCESS DEVICE AND EMERGENCY CONTACT PLACARD LOCATED AT ALL ENTRANCE GATES.

3. MOBILE SANITATION FACILITY, AS DEFINED BY THE LOS ANGELES COUNTY DEPARTMENT OF PUBLIC HEALTH, CAN BE LOCATED AT ALL PARKING LOCATIONS AND WILL BE LOCATED AT THE NEAREST LOCATION TO CONSTRUCTION AND OPERATIONAL WORKERS ACTIVITY. THE FACILITIES WILL BE KEPT TO LOS ANGELES COUNTY CODE, TITLE 11 - HEALTH & SAFETY, AND CAL-OSHA SANITATION STANDARDS IN SECTION 3360, TITLE 8, CALIFORNIA CODE OF REGULATIONS. MOBILE SANITATION FACILITIES WILL BE MADE AVAILABLE DURING CONSTRUCTION AND AS REQUIRED BY OSHA DURING OPERATIONS AND MAINTENANCE. SEE ARRAY BLOCK DETAIL (TYPICAL) ON C-06.

4. INTERIOR ACCESS ROADS WILL BE 20' WIDE, COMPACTED TO 90%, WITH 32 FOOT TURNING RADIUS AT CENTER LINE. THE INNER RADIUS WILL BE 22' AND THE OUTER RADIUS WILL BE 42'. INTERIOR ACCESS ROADS WILL BE PROVIDED TO INVERTER/ELECTRICAL EQUIPMENT PADS AND AROUND THE PERIMETER OF THE PROJECT. SEE ARRAY BLOCK DETAIL (TYPICAL) ON C-06.

5. 10 FOOT WIDE SLOPE EASEMENT WILL BE PROVIDED AROUND PERIMETER.

6. DRIVEWAY ACCESS GATES TO BE SET 40 FEET BACK FROM EDGE OF PROPERTY. DRIVEWAY WILL BE 24 FEET WIDE.

7. ALL DIMENSIONS SHOWN ARE APPROXIMATE AND SUBJECT TO VERIFICATION DURING DETAILED DESIGN.

8. TANK CONNECTIONS PER LOS ANGELES COUNTY FIRE DEPARTMENT.

9. ANTICIPATED ROW SETBACK/DEDICATION FOR FUTURE ROAD DEVELOPMENT. REFER TO SHEET C-06 FOR SECTIONS AND ROW DETAILS.

10. CONTOURS SHOWN ON SITE PLAN, C-01, ARE BASED ON SURVEY BY ALL VALLEY SURVEYING.

11. A 20' MINIMUM SETBACK FROM PROPERTY LINE (AFTER DEDICATIONS) TO ARRAYS OR EQUIPMENT TO BE MAINTAINED ON SITE. PROJECT FENCE, FIRE ROADS, EASEMENTS, AND VEGETATION ARE OK WITHIN THE SETBACK.

BENCHMARK:

LOS ANGELES COUNTY BENCHMARK L2273, LANCASTER 1998
ADJUSTMENT, NAVD 1988,
ELEVATION=2387.380 FEET
CS MON IN WELL 450MM DN @ C/L INT 75TH ST W & AVE G
MKD (1/4 COR 33, 4, R13W, T8N, R7N)

LEGEND:

MIN	MINIMUM
O/H	OVERHEAD LINES
ROW	RIGHT OF WAY
℄	CENTERLINE
—x—x—	FENCE LINE
	OVERHEAD LINE
	UNDERGROUND LINE
	PROPERTY LINE (AFTER DEDICATIONS)
	PROPERTY LINE (CURRENT)
	PARCEL LINE
2383	CONTOUR LINE (1' INTERVAL FROM SURVEY)
	SOLAR ARRAY FIELD
	10' WIDE VEGETATIVE BUFFER
	10' WIDE SLOPE EASEMENT

200 0 200 400
SCALE IN FEET
1'=200'
WHEN PRINTED TO SCALE ON 22"x34" SHEET

C-01
R2011-00799 (RCUP201100071)

P:\CAD\PROJECTS\106-4336 SILVERADO POWER\SP LA-CUP_14-0324\P3-8\C-01-SITE-8-C.DWG
PLOT/UPDATE: Mar 24, 2014 11:25:17 AM

REGISTERED PROFESSIONAL ENGINEER JULIE ANN DELANEY No.C54558 CIVIL STATE OF CALIFORNIA

EXHIBIT PREPARER:
TETRA TECH, INC.
17885 VON KARMAN AVENUE, SUITE 500
IRVINE, CALIFORNIA 92614-6213
TEL: 949.809.5000

NOT ISSUED FOR CONSTRUCTION

NO.	DATE	REVISION	SUBM'T BY	APPV'D BY

Solar PV System Summary

35MW AC Solar Photovoltaic Generation System
APNs 3268-018-002
3268-018-035
SCH # 2012061068

Project Name:
Project 3 American Solar Greenworks
Project Address:
W Ave. G & 70th St. W
Los Angeles County, CA

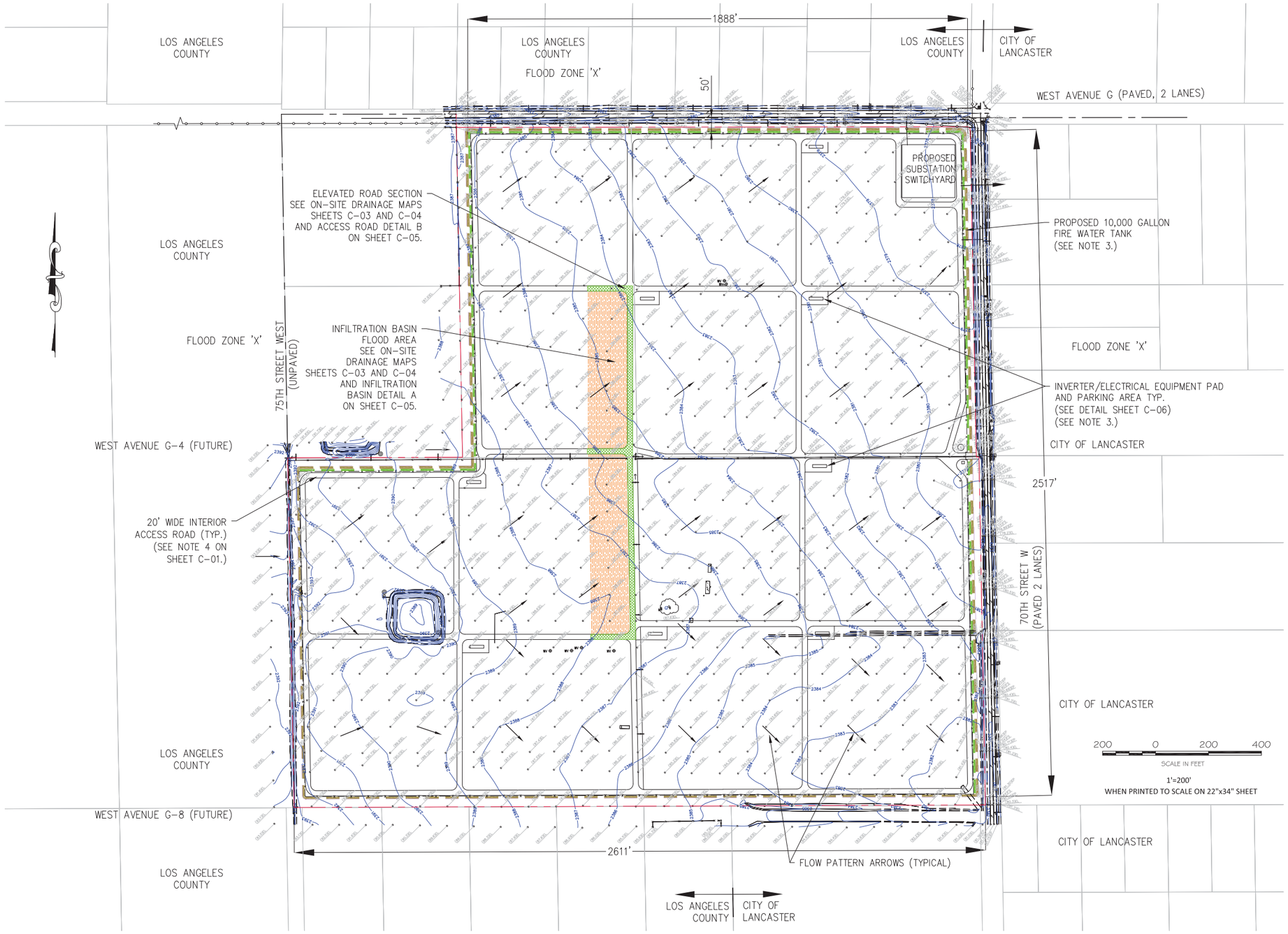
DRAWING: Site Plan

APPLICANT:
Silverado Power
2 Embarcadero Center, Ste. 410
San Francisco, CA 94111
(415) 692-7740

SILVERADO power

PROJECT 3
AMERICAN SOLAR GREENWORKS
LOS ANGELES COUNTY, CA

2 Embarcadero Center, Ste. 410 | San Francisco, CA 94111 | 415.692.7740 main



200 0 200 400

SCALE IN FEET

1'=200'

WHEN PRINTED TO SCALE ON 22"x34" SHEET

NOTES:

1. DRAINAGE ACROSS SITE IS CURRENTLY FROM THE WEST TO THE EAST, AS SHOWN ON THE SURFACE CONTOURS. TOPOGRAPHY/CONTOURS ARE BASED ON SURVEY DATA PROVIDED BY ALL VALLEY SURVEYING.

2. OVERALL EXISTING GRADING AND DRAINAGE PATTERN TO REMAIN UNCHANGED DURING AND AFTER CONSTRUCTION WITH THE EXCEPTION OF AREAS USED FOR DRAINAGE FEATURES. ELEVATED ROAD SECTIONS WILL BE USED TO CREATE INFILTRATION BASINS. FLOOD AREAS AND FLOW PATTERN ARROWS ARE SHOWN ON THIS SHEET AND SHEETS C-03 AND C-04.

3. EQUIPMENT PADS WILL BE GRADED AS REQUIRED PER MANUFACTURER SPECIFICATIONS.

LEGEND:

TELE	TELEPHONE BOX	SLB	STREET LIGHT BOX
CATV	CABLE TV BOX		STREET LIGHT
	POWER POLE	TSB	TRAFFIC SIGNAL BOX
	GUY ANCHOR	STS	STREET SIGN
ELEC	ELECTRIC BOX	STOP	STOP SIGN
GP	GUARD POST	SPD	SPEED LIMIT SIGN
WV	WATER VALVE	EP	EDGE OF PAVEMENT
	CONCRETE STANDPIPE	CLF	CHAIN-LINK FENCE
TEL	TELEPHONE BOX	PL	PROPERTY LINE
MLB	MAILBOX	CL	CENTER LINE
	FENCE	R/W	RIGHT OF WAY LINE
	EDGE OF PAVEMENT	FS	FINISH SURFACE
	WALL		
			TREE
			CONCRETE
			FENCE LINE
℄	CENTERLINE		OVERHEAD LINE
CMP	CORRUGATED METAL PIPE		UNDERGROUND LINE
L.F.	LINEAR FEET		PROPERTY LINE (AFTER DEDICATIONS)
TBD	TO BE DETERMINED		PROPERTY LINE (CURRENT)
TYP.	TYPICAL		PARCEL LINE
			INFILTRATION BASIN FLOOD AREA
			ELEVATED ROAD SECTION
		2383	CONTOUR LINE (1' INTERVAL FROM ALL VALLEY SURVEYING)
			10' WIDE VEGETATIVE BUFFER
			10' WIDE SLOPE EASEMENT

EARTHWORK QUANTITIES:

OVEREXCAVATION	=	25,500 CUBIC YARDS
CUT	=	1,000 CUBIC YARDS
FILL	=	1,000 CUBIC YARDS

CUT & FILL QUANTITIES INCLUDE INVERTER PADS, SUBSTATION, BASINS, AND ELEVATED ROAD BED FOR DRAINAGE FEATURES.

OVEREXCAVATION QUANTITY INCLUDES ACCESSIBLE FIRE ROAD.

SURVEY INFORMATION:

TOPOGRAPHIC MAP AND 1' CONTOURING PREPARED BY ALL VALLEY SURVEYING, SEE TOPOGRAPHIC MAP SHEETS.

SURVEYOR:

LARRY E. JERNIGAN, PLS #5924
ALL VALLEY SURVEYING
44965 10TH STREET WEST
LANCASTER, CA 93534
(661) 942-3639

BASIS OF BEARINGS:

SEE TOPOGRAPHIC MAP SHEETS.

BENCHMARK:

SEE TOPOGRAPHIC MAP SHEETS.

EASEMENTS:

SEE TOPOGRAPHIC MAP SHEETS.

C-02

R2011-00799 (RCUP201100071)

P:\CAD\PROJECTS\106-4336 SILVERADO POWER\SP LA-CUP-14-032A\P3-9\C-02-GRAD-9-A.DWG
PLOT/UPDATE: Mar 24, 2014 11:2:42 AM

REGISTERED PROFESSIONAL ENGINEER JULIE ANN DELANEY No.C54558 CIVIL STATE OF CALIFORNIA

EXHIBIT PREPARER:

TETRA TECH, INC.
17885 VON KARMAN AVENUE, SUITE 500
IRVINE, CALIFORNIA 92614-6213
TEL: 949.809.5000

NOT ISSUED FOR CONSTRUCTION

NO.	DATE	REVISION	SUBM'T BY	APPV'D BY

Solar PV System Summary

35MW AC Solar Photovoltaic Generation System
APNs 3268-018-002
3268-018-035
SCH # 2012061068

Project Name:
Project 3 American Solar Greenworks

Project Address:
W Ave. G & 70th St. W
Los Angeles County, CA

DRAWING:
Preliminary Grading & Drainage Plan

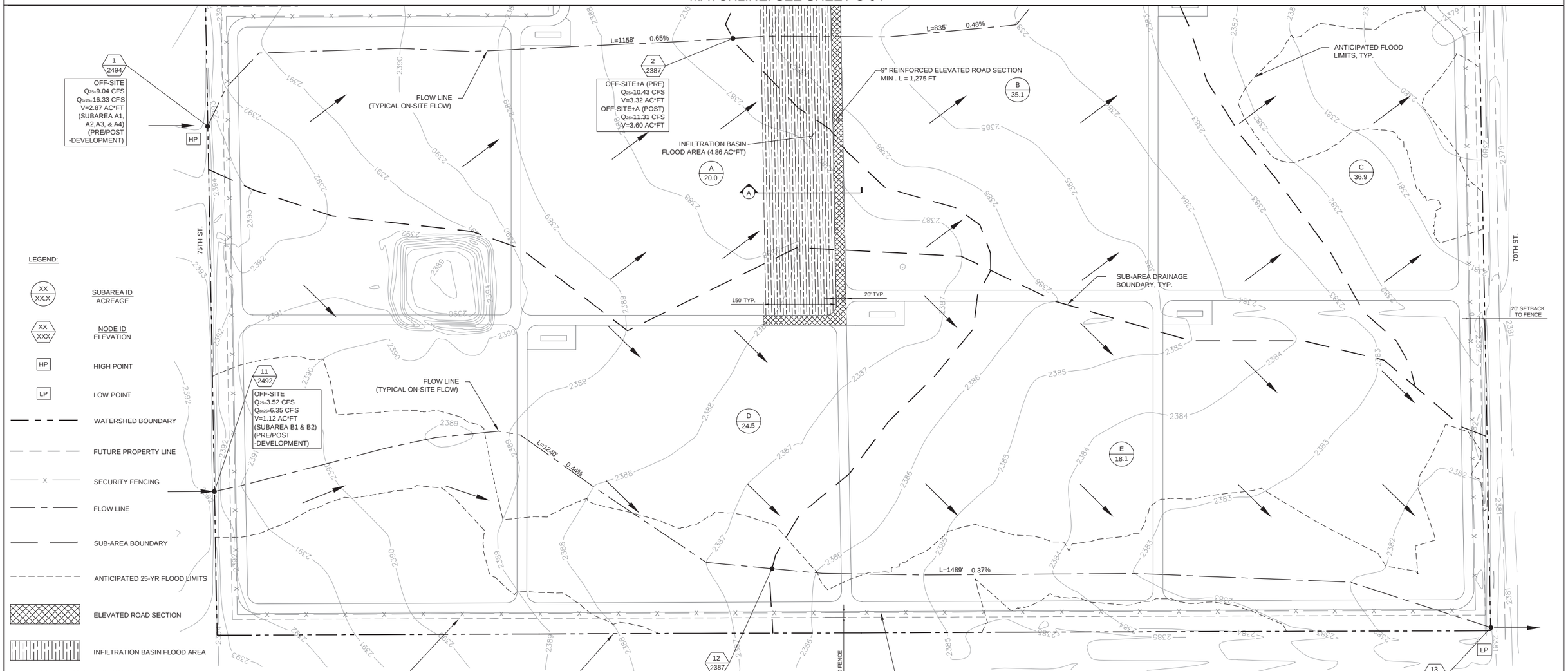
APPLICANT:
Silverado Power
2 Embarcadero Center, Ste. 410
San Francisco, CA 94111
(415) 692-7740

SILVERADO power

PROJECT 3
AMERICAN SOLAR GREENWORKS
LOS ANGELES COUNTY, CA

2 Embarcadero Center, Ste. 410 | San Francisco, CA 94111 | 415.692.7740 main

MATCHLINE: SEE SHEET C-04



LEGEND:

- XX / XX.X — SUBAREA ID / ACREAGE
- XX / XXX — NODE ID / ELEVATION
- HP — HIGH POINT
- LP — LOW POINT
- WATERSHED BOUNDARY
- FUTURE PROPERTY LINE
- SECURITY FENCING
- FLOW LINE
- SUB-AREA BOUNDARY
- ANTICIPATED 25-YR FLOOD LIMITS
- ELEVATED ROAD SECTION
- INFILTRATION BASIN FLOOD AREA

Q_{25} PEAK FLOW RATE (25-YEAR STORM EVENT)
Qbr_{25} BURNED PEAK FLOW RATE (25-YEAR STORM EVENT)
V STORM VOLUME (25-YEAR STORM EVENT)
Q_{PM} PEAK MITIGATION FLOW RATE (85TH % STORM EVENT)
V_M MITIGATION VOLUME (85TH % STORM EVENT)
V_{DP} DEBRIS POTENTIAL VOLUME = (1,300 CY / SQ. MI.) * (TOTAL WATERSHED AREA 0.480 SQ. MI.) = 624 CY

PRE-DEVELOPMENT	POST DEVELOPMENT	MITIGATION QUANTITIES (FOR ENTIRE SITE)
Q_{25}= 6.47 CFS	Q_{25}= 8.35 CFS	Q_{PM}=4.60 CFS
Qbr_{25}= 11.66 CFS	Qbr_{25}= 13.32 CFS	V_M=1.49 AC*FT
V= 2.07 AC*FT	V= 2.67 AC*FT	DELTA QUANTITIES (FOR ENTIRE SITE)
		ΔQ_{25}=5.93 CFS
		ΔV_{25}=1.90 AC*FT

DRAINAGE CONCEPT NOTES:

1) LOCATIONS OF DRAINAGE DEVICES SHOWN ARE NOT NECESSARILY APPROVED.
2) COMPLIANCE OF ALL STREET DRAINAGE REQUIREMENTS WILL BE MET TO THE SATISFACTION OF THE DEPARTMENT OF PUBLIC WORKS.
3) APPROVAL OF THE DRAINAGE CONCEPT DOES NOT CONSTITUTE DETERMINATION THAT THE OFFSITE IMPROVEMENTS ARE REQUIRED WITHIN THE MEANING OF GOVERNMENT CODE SECTION 66462.5, (EXCEPT AS NOTES).
4) AN OFFSITE DRAINAGE COVENANT FOR ACCEPTANCE OR DRAINAGE (AND DRAINAGE FACILITIES) MAY BE REQUIRED WHERE INDICATED.
5) A NOTE OF FLOOD HAZARD WILL BE REQUIRED WHERE INDICATED ON THIS PLAN.
6) A SOIL REPORT WILL BE REQUIRED TO VERIFY THAT A 7-DAY PERCOLATION RATE CAN BE OBTAINED.
7) BASIN SIZES ARE DEPENDENT ON THE VERIFICATION OF PERCOLATION RATES AND ARE SUBJECT TO CHANGE.
8) NOT WITHIN A FEMA ZONE A. WITHIN FEMA ZONE X, UNSHADED.
9) NOT WITHIN A COUNTY ADOPTED FLOODWAY.
10) ALL BASINS ARE PRIVATELY MAINTAINED.
11) FOR THE POST-DEVELOPMENT 50-YEAR STORM EVENT EXITING THE PROJECT, THE PEAK FLOW RATE (Q_{50}) INCREASED BY 9.9%, THE VOLUME (V_{50}) INCREASED BY 3.4%, THE DEPTH INCREASED BY 4.8%, AND THE VELOCITY INCREASED BY 0.0%. THESE REPRESENT NEGLIGIBLE INCREASES FROM THE PRE-DEVELOPMENT CONDITION. SEE IMPACT ANALYSIS CALCULATIONS.

HYDROLOGY STUDY/DRAINAGE CONCEPT/LID PLAN
APPROVED FOR AREA AND Q ONLY
APPROVED BY: _____ RCE NO: _____ DATE _____
CHECKED BY: _____ DATE _____
COUNTY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS
LAND DEVELOPMENT DIVISION

N

0 50' 100' 200'
SCALE: 1" = 100'

R2011-00799 (RCUP201100071)

C-03

PREPARED UNDER THE SUPERVISION OF:

REGISTERED PROFESSIONAL ENGINEER JOSEPH E. DIETZ No. 67032 EXP: 9-30-14 CIVIL STATE OF CALIFORNIA

JOSEPH E. DIETZ, P.E.

EXHIBIT PREPARER:

TETRA TECH, INC.
17885 VON KARMAN AVENUE, SUITE 500
IRVINE, CALIFORNIA 92614-6213
TEL: 949.809.5000

NOT ISSUED FOR CONSTRUCTION

NO.	DATE	REVISION	SUBM'T BY	APPV'D BY

Solar PV System Summary

35MW AC Solar Photovoltaic Generation System
APNs 3268-018-002
3268-018-035
SCH # 2012061068

Project Name:
Project 3 American Solar Greenworks

Project Address:
W Ave. G & 70th St. W
Los Angeles County, CA

HYDROLOGY STUDY/DRAINAGE CONCEPT/LID
FOR CUP 201100071
ON-SITE DRAINAGE MAP

APPLICANT:
Silverado Power
2 Embarcadero Center, Ste. 410
San Francisco, CA 94111
(415) 692-7740

SILVERADO power

PROJECT 3
AMERICAN SOLAR
GREENWORKS
LOS ANGELES COUNTY, CA

2 Embarcadero Center, Ste. 410 | San Francisco, CA 94111 | 415.692.7740 main

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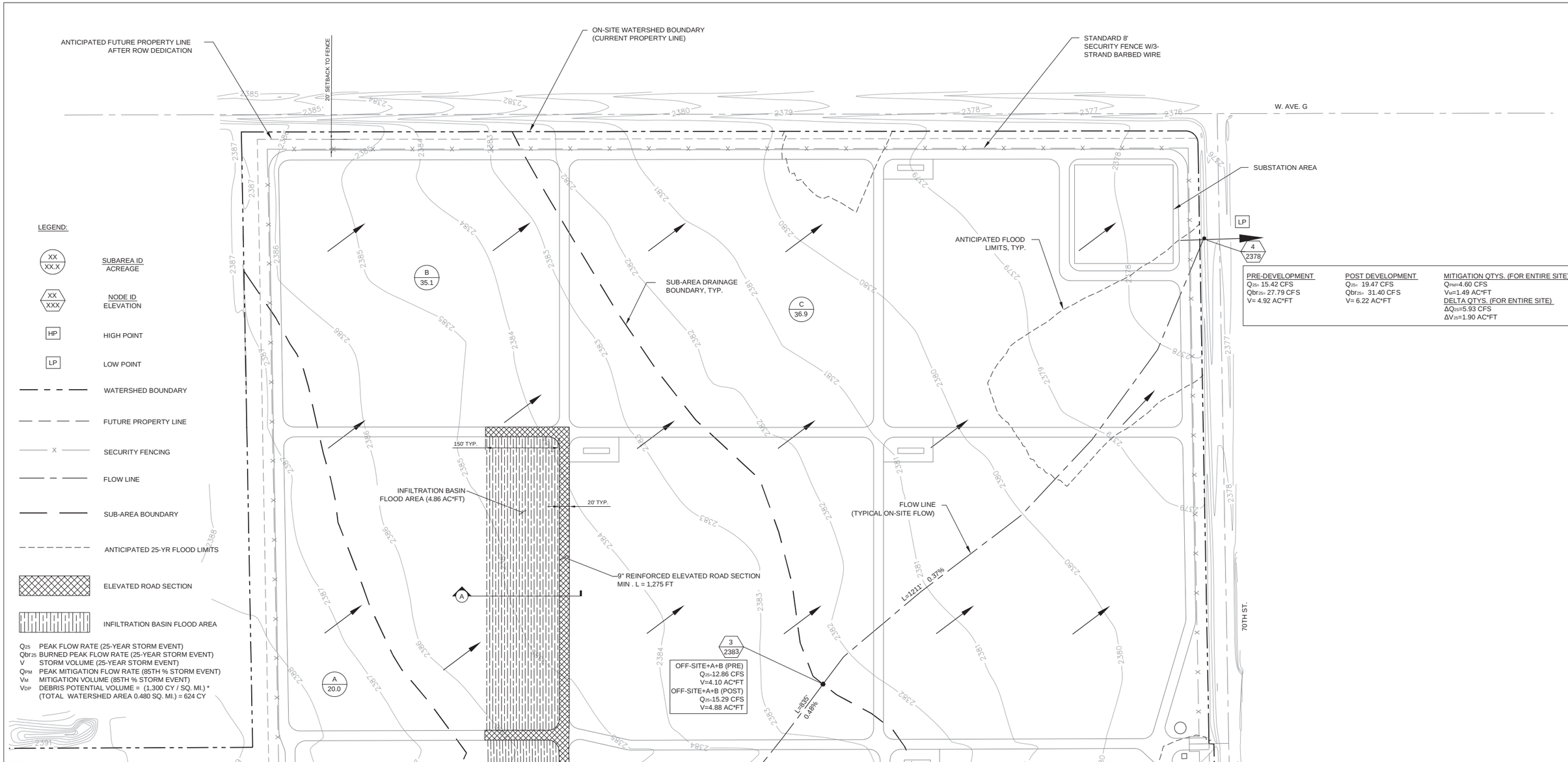
PLOT/UPDATE: Dec 6, 2013 11:46:22 AM



PRE-DEVELOPMENT	POST DEVELOPMENT	MITIGATION QTYS. (FOR ENTIRE SITE)
Q_{25}= 15.42 CFS	Q_{25}= 19.47 CFS	Q_{PM}=4.60 CFS
Qbr_{25}= 27.79 CFS	Qbr_{25}= 31.40 CFS	V_M=1.49 AC*FT
V= 4.92 AC*FT	V= 6.22 AC*FT	DELTA QTYS. (FOR ENTIRE SITE)
		ΔQ_{25}=5.93 CFS
		ΔV_{25}=1.90 AC*FT

MATCHLINE: SEE SHEET C-03

DRAINAGE CONCEPT NOTES:

1) LOCATIONS OF DRAINAGE DEVICES SHOWN ARE NOT NECESSARILY APPROVED.
2) COMPLIANCE OF ALL STREET DRAINAGE REQUIREMENTS WILL BE MET TO THE SATISFACTION OF THE DEPARTMENT OF PUBLIC WORKS.
3) APPROVAL OF THE DRAINAGE CONCEPT DOES NOT CONSTITUTE DETERMINATION THAT THE OFFSITE IMPROVEMENTS ARE REQUIRED WITHIN THE MEANING OF GOVERNMENT CODE SECTION 66462.5, (EXCEPT AS NOTES).
4) AN OFFSITE DRAINAGE COVENANT FOR ACCEPTANCE OR DRAINAGE (AND DRAINAGE FACILITIES) MAY BE REQUIRED WHERE INDICATED.
5) A NOTE OF FLOOD HAZARD WILL BE REQUIRED WHERE INDICATED ON THIS PLAN.
6) A SOIL REPORT WILL BE REQUIRED TO VERIFY THAT A 7-DAY PERCOLATION RATE CAN BE OBTAINED.
7) BASIN SIZES ARE DEPENDENT ON THE VERIFICATION OF PERCOLATION RATES AND ARE SUBJECT TO CHANGE.
8) NOT WITHIN A FEMA ZONE A. WITHIN FEMA ZONE X, UNSHADED.
9) NOT WITHIN A COUNTY ADOPTED FLOODWAY.
10) ALL BASINS ARE PRIVATELY MAINTAINED.
11) FOR THE POST-DEVELOPMENT 50-YEAR STORM EVENT EXITING THE PROJECT, THE PEAK FLOW RATE (Q_{50}) INCREASED BY 9.9%, THE VOLUME (V_{50}) INCREASED BY 3.4%, THE DEPTH INCREASED BY 4.8%, AND THE VELOCITY INCREASED BY 0.0%. THESE REPRESENT NEGLIGIBLE INCREASES FROM THE PRE-DEVELOPMENT CONDITION. SEE IMPACT ANALYSIS CALCULATIONS.

HYDROLOGY STUDY/DRAINAGE CONCEPT/LID PLAN
APPROVED FOR AREA AND Q ONLY
APPROVED BY: _____ RCE NO: _____ DATE _____
CHECKED BY: _____ DATE _____
COUNTY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS
LAND DEVELOPMENT DIVISION

N
0 50' 100' 200'
SCALE: 1"=100'

R2011-00799 (RCUP201100071) C-04

PREPARED UNDER THE SUPERVISION OF:
REGISTERED PROFESSIONAL ENGINEER JOSEPH E. DIETZ No. 67032 EXP: 9-30-14 CIVIL STATE OF CALIFORNIA
JOSEPH E. DIETZ, P.E.

EXHIBIT PREPARER:
TETRA TECH, INC.
17885 VON KARMAN AVENUE, SUITE 500
IRVINE, CALIFORNIA 92614-6213
TEL: 949.809.5000

NOT ISSUED FOR CONSTRUCTION

NO.	DATE	REVISION	SUBM'T BY	APPV'D BY

Solar PV System Summary

35MW AC Solar Photovoltaic Generation System
APNs 3268-018-002
3268-018-035
SCH # 2012061068

Project Name:
Project 3 American Solar Greenworks
Project Address:
W Ave. G & 70th St. W
Los Angeles County, CA

HYDROLOGY STUDY/DRAINAGE CONCEPT/LID FOR CUP 201100071 ON-SITE DRAINAGE MAP

APPLICANT:
Silverado Power
2 Embarcadero Center, Ste. 410
San Francisco, CA 94111
(415) 692-7740

SILVERADO power

PROJECT 3
AMERICAN SOLAR GREENWORKS
LOS ANGELES COUNTY, CA

2 Embarcadero Center, Ste. 410 | San Francisco, CA 94111 | 415.692.7740 main

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PLOT/UPDATE: Dec 6, 2013 11:46:44 AM

HYDROLOGY RESULTS: (BASED ON LA FLOOD CONTROL TC CALCULATOR)

ON-SITE HYDROLOGY (PRE DEVELOPMENT)

Project	Subarea	Area (acres)	%Imp	Frequency	Soil Type	Length (ft)	Slope (ft/ft)	Isohyet (in.)	Tc-calculated (min.)	Intensity (in./hr)	Cu	Cd	Flow rate (cfs)	Fire Factor	Burned flow rate (cfs)	Volume (acre-ft)
Project 3	A	20.0	0.01	2	120	1158	0.0065	1.1	30	0.28	0.10	0.11	0.62	0.34	1.00	0.20
Project 3	B	35.1	0.01	2	120	835	0.0048	1.1	30	0.28	0.10	0.11	1.08	0.34	1.76	0.34
Project 3	C	36.9	0.01	2	120	1211	0.0037	1.1	30	0.28	0.10	0.11	1.14	0.34	1.85	0.36
Project 3	D	24.5	0.01	2	120	1240	0.0044	1.1	30	0.28	0.10	0.11	0.75	0.34	1.23	0.24
Project 3	E	18.1	0.01	2	120	1489	0.0037	1.1	30	0.28	0.10	0.11	0.56	0.34	0.91	0.18
Project 3	A	20.0	0.01	5	120	1158	0.0065	1.6	30	0.42	0.10	0.11	0.92	0.34	1.59	0.30
Project 3	B	35.1	0.01	5	120	835	0.0048	1.6	30	0.42	0.10	0.11	1.62	0.34	2.78	0.52
Project 3	C	36.9	0.01	5	120	1211	0.0037	1.6	30	0.42	0.10	0.11	1.70	0.34	2.92	0.55
Project 3	D	24.5	0.01	5	120	1240	0.0044	1.6	30	0.42	0.10	0.11	1.13	0.34	1.94	0.36
Project 3	E	18.1	0.01	5	120	1489	0.0037	1.6	30	0.42	0.10	0.11	0.84	0.34	1.43	0.27
Project 3	A	20.0	0.01	10	120	1158	0.0065	2.0	30	0.51	0.10	0.11	1.12	0.34	1.97	0.36
Project 3	B	35.1	0.01	10	120	835	0.0048	2.0	30	0.51	0.10	0.11	1.97	0.34	3.46	0.64
Project 3	C	36.9	0.01	10	120	1211	0.0037	2.0	30	0.51	0.10	0.11	2.07	0.34	3.63	0.67
Project 3	D	24.5	0.01	10	120	1240	0.0044	2.0	30	0.51	0.10	0.11	1.37	0.34	2.41	0.44
Project 3	E	18.1	0.01	10	120	1489	0.0037	2.0	30	0.51	0.10	0.11	1.02	0.34	1.78	0.33
Project 3	A	20.0	0.01	25	120	1158	0.0065	2.5	30	0.63	0.10	0.11	1.39	0.34	2.49	0.45
Project 3	B	35.1	0.01	25	120	835	0.0048	2.5	30	0.63	0.10	0.11	2.43	0.34	4.37	0.78
Project 3	C	36.9	0.01	25	120	1211	0.0037	2.5	30	0.63	0.10	0.11	2.56	0.34	4.60	0.82
Project 3	D	24.5	0.01	25	120	1240	0.0044	2.5	30	0.63	0.10	0.11	1.70	0.34	3.05	0.55
Project 3	E	18.1	0.01	25	120	1489	0.0037	2.5	30	0.63	0.10	0.11	1.25	0.34	2.26	0.40
Project 3	A	20.0	0.01	50	120	1158	0.0065	2.8	30	0.72	0.14	0.15	2.16	0.34	3.41	0.52
Project 3	B	35.1	0.01	50	120	835	0.0048	2.8	30	0.72	0.14	0.15	3.79	0.34	5.98	0.91
Project 3	C	36.9	0.01	50	120	1211	0.0037	2.8	30	0.72	0.14	0.15	3.99	0.34	6.29	0.95
Project 3	D	24.5	0.01	50	120	1240	0.0044	2.8	30	0.72	0.14	0.15	2.65	0.34	4.17	0.63
Project 3	E	18.1	0.01	50	120	1489	0.0037	2.8	30	0.72	0.14	0.15	1.95	0.34	3.08	0.47
Project 3	A	20.0	0.01	MIT.	120	1158	0.0065	0.75	30	0.19	0.10	0.11	0.42	0.34	0.65	0.14
Project 3	B	35.1	0.01	MIT.	120	835	0.0048	0.75	30	0.19	0.10	0.11	0.73	0.34	1.13	0.24
Project 3	C	36.9	0.01	MIT.	120	1211	0.0037	0.75	30	0.19	0.10	0.11	0.77	0.34	1.19	0.25
Project 3	D	24.5	0.01	MIT.	120	1240	0.0044	0.75	30	0.19	0.10	0.11	0.51	0.34	0.79	0.17
Project 3	E	18.1	0.01	MIT.	120	1489	0.0037	0.75	30	0.19	0.10	0.11	0.38	0.34	0.58	0.12

ON-SITE HYDROLOGY (POST DEVELOPMENT)

Project	Subarea	Area (acres)	%Imp	Frequency	Soil Type	Length (ft)	Slope (ft/ft)	Isohyet (in.)	Tc-calculated (min.)	Intensity (in./hr)	Cu	Cd	Flow rate (cfs)	Fire Factor	Burned flow rate (cfs)	Volume (acre-ft)
Project 3	A	20.0	0.1	2	120	1158	0.0065	1.1	30	0.28	0.10	0.18	1.01	0.34	1.36	0.32
Project 3	B	35.1	0.1	2	120	835	0.0048	1.1	30	0.28	0.10	0.18	1.77	0.34	2.39	0.56
Project 3	C	36.9	0.1	2	120	1211	0.0037	1.1	30	0.28	0.10	0.18	1.86	0.34	2.51	0.59
Project 3	D	24.5	0.1	2	120	1240	0.0044	1.1	30	0.28	0.10	0.18	1.23	0.34	1.67	0.39
Project 3	E	18.1	0.1	2	120	1489	0.0037	1.1	30	0.28	0.10	0.18	0.91	0.34	1.23	0.29
Project 3	A	20.0	0.1	5	120	1158	0.0065	1.6	30	0.42	0.10	0.18	1.51	0.34	2.11	0.49
Project 3	B	35.1	0.1	5	120	835	0.0048	1.6	30	0.42	0.10	0.18	2.65	0.34	3.71	0.85
Project 3	C	36.9	0.1	5	120	1211	0.0037	1.6	30	0.42	0.10	0.18	2.79	0.34	3.90	0.90
Project 3	D	24.5	0.1	5	120	1240	0.0044	1.6	30	0.42	0.10	0.18	1.85	0.34	2.59	0.59
Project 3	E	18.1	0.1	5	120	1489	0.0037	1.6	30	0.42	0.10	0.18	1.37	0.34	1.91	0.44
Project 3	A	20.0	0.1	10	120	1158	0.0065	2.0	30	0.51	0.10	0.18	1.84	0.34	2.61	0.59
Project 3	B	35.1	0.1	10	120	835	0.0048	2.0	30	0.51	0.10	0.18	3.22	0.34	4.58	1.04
Project 3	C	36.9	0.1	10	120	1211	0.0037	2.0	30	0.51	0.10	0.18	3.39	0.34	4.81	1.09
Project 3	D	24.5	0.1	10	120	1240	0.0044	2.0	30	0.51	0.10	0.18	2.25	0.34	3.19	0.73
Project 3	E	18.1	0.1	10	120	1489	0.0037	2.0	30	0.51	0.10	0.18	1.66	0.34	2.36	0.54
Project 3	A	20.0	0.1	25	120	1158	0.0065	2.5	30	0.63	0.10	0.18	2.27	0.34	3.28	0.73
Project 3	B	35.1	0.1	25	120	835	0.0048	2.5	30	0.63	0.10	0.18	3.98	0.34	5.75	1.28
Project 3	C	36.9	0.1	25	120	1211	0.0037	2.5	30	0.63	0.10	0.18	4.18	0.34	6.04	1.34
Project 3	D	24.5	0.1	25	120	1240	0.0044	2.5	30	0.63	0.10	0.18	2.78	0.34	4.01	0.89
Project 3	E	18.1	0.1	25	120	1489	0.0037	2.5	30	0.63	0.10	0.18	2.05	0.34	2.96	0.66
Project 3	A	20.0	0.1	50	120	1158	0.0065	2.8	30	0.72	0.14	0.22	3.17	0.34	4.30	0.84
Project 3	B	35.1	0.1	50	120	835	0.0048	2.8	30	0.72	0.14	0.22	5.56	0.34	7.54	1.47
Project 3	C	36.9	0.1	50	120	1211	0.0037	2.8	30	0.72	0.14	0.22	5.84	0.34	7.93	1.55
Project 3	D	24.5	0.1	50	120	1240	0.0044	2.8	30	0.72	0.14	0.22	3.88	0.34	5.27	1.03
Project 3	E	18.1	0.1	50	120	1489	0.0037	2.8	30	0.72	0.14	0.22	2.87	0.34	3.89	0.76
Project 3	A	20.0	0.1	MIT.	120	1158	0.0065	0.75	30	0.19	0.10	0.18	0.68	0.34	0.89	0.22
Project 3	B	35.1	0.1	MIT.	120	835	0.0048	0.75	30	0.19	0.10	0.18	1.20	0.34	1.56	0.39
Project 3	C	36.9	0.1	MIT.	120	1211	0.0037	0.75	30	0.19	0.10	0.18	1.26	0.34	1.64	0.41
Project 3	D	24.5	0.1	MIT.	120	1240	0.0044	0.75	30	0.19	0.10	0.18	0.84	0.34	1.09	0.27
Project 3	E	18.1	0.1	MIT.	120	1489	0.0037	0.75	30	0.19	0.10	0.18	0.62	0.34	0.81	0.20

Incremental Flow and Volume Increase for Various Storm Events

Storm Event	Pre-Q (cfs)	Post-Q (cfs)	Delta-Q (cfs)	Pre-V (acre-ft)	Post-V (acre-ft	Delta-V (acre-ft)
2.00	4.15	6.78	2.63	1.32	2.15	0.83
5.00	6.21	10.17	3.96	2.00	3.27	1.27
10.00	7.55	12.36	4.81	2.44	3.99	1.55
25.00	9.33	15.26	5.93	3.00	4.90	1.90
50.00	14.54	21.32	6.78	3.48	5.65	2.17

NOTE: FOR INFILTRATION BASIN MITIGATION VOLUME, SUM MIT. FREQUENCY VOLUMES UNDER POST-DEVELOPMENT TABLE. V_{PM}=1.49 AC*FT.

DELTA QUANTITIES FOR DRAINAGE AREA A:
ΔQ25 = 2.27 - 1.39 = 0.88 CFS
ΔV25 = 0.73 - 0.45 = 0.28 AC*FT

DELTA QUANTITIES FOR DRAINAGE AREA B:
ΔQ25 = 3.98 - 2.43 = 1.55 CFS
ΔV25 = 1.28 - 0.78 = 0.50 AC*FT

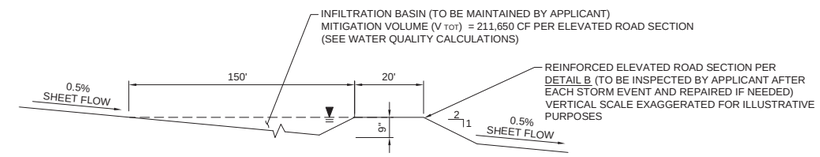
DELTA QUANTITIES FOR DRAINAGE AREA C
ΔQ25 = 4.18 - 2.56 = 1.62 CFS
ΔV25 = 1.34 - 0.82 = 0.52 AC*FT

DELTA QUANTITIES FOR DRAINAGE AREA D
ΔQ25 = 2.78 - 1.70 = 1.08 CFS
ΔV25 = 0.89 - 0.55 = 0.34 AC*FT

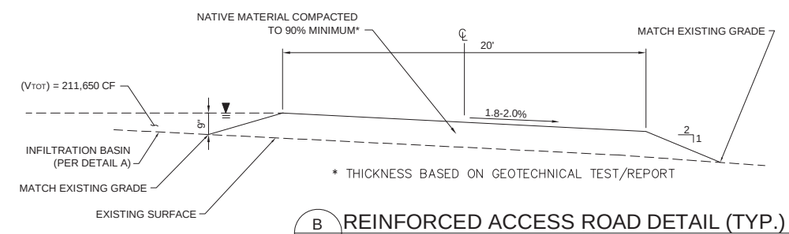
DELTA QUANTITIES FOR DRAINAGE AREA E
ΔQ25 = 2.05 - 1.25 = 0.80 CFS
ΔV25 = 0.66 - 0.40 = 0.26 AC*FT

TOTAL DELTA QUANTITIES
ΔQ25 = 5.93 CFS
ΔV25 = 1.90 AC*FT

NOTE: DUE TO THE LID Δ QUANTITIES ABOVE BEING GREATER THAN THE MITIGATION QUANTITIES (Q_{PM} AND V_{PM}) THEY REPRESENT THE WORST CASE SCENARIO BETWEEN THE PRE-/POST DEVELOPMENT CONDITIONS AND THEREFORE SHALL BE USED FOR SIZING THE INFILTRATION BASINS.



A INFILTRATION BASIN DETAIL
SCALE: NTS



B REINFORCED ACCESS ROAD DETAIL (TYP.)
SCALE: NTS

HYDROLOGY STUDY/DRAINAGE CONCEPT/LID PLAN
APPROVED FOR AREA AND Q ONLY
APPROVED BY: _____ RCE NO: _____ DATE _____
CHECKED BY: _____ DATE _____
COUNTY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS
LAND DEVELOPMENT DIVISION

R2011-00799 (RCUP201100071) C-05

PREPARED UNDER THE SUPERVISION OF:
REGISTERED PROFESSIONAL ENGINEER JOSEPH E. DIETZ No. 67032 EXP: 9-30-14 CIVIL STATE OF CALIFORNIA
JOSEPH E. DIETZ, P.E.

EXHIBIT PREPARER:
TETRA TECH, INC.
17885 VON KARMAN AVENUE, SUITE 500
IRVINE, CALIFORNIA 92614-6213
TEL: 949.809.5000

NOT ISSUED FOR CONSTRUCTION

NO.	DATE	REVISION	SUBM'T BY	APPV'D BY

Solar PV System Summary

35MW AC Solar Photovoltaic Generation System
APNs 3268-018-002
3268-018-035
SCH # 2012061068

Project Name:
Project 3 American Solar Greenworks
Project Address:
W Ave. G & 70th St. W
Los Angeles County, CA

HYDROLOGY STUDY/DRAINAGE CONCEPT/LID FOR CUP 201100071 ON-SITE DRAINAGE MAP

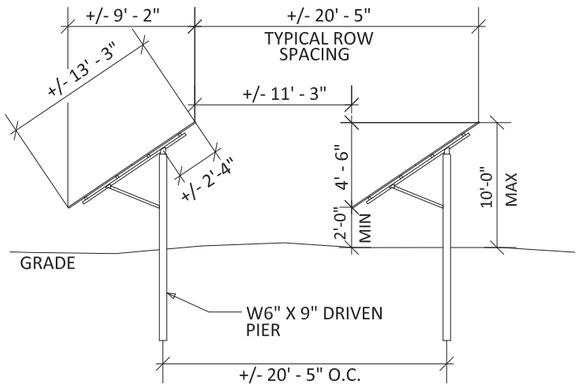
APPLICANT:
Silverado Power
2 Embarcadero Center, Ste. 410
San Francisco, CA 94111
(415) 692-7740

SILVERADO power

PROJECT 3
AMERICAN SOLAR GREENWORKS
LOS ANGELES COUNTY, CA

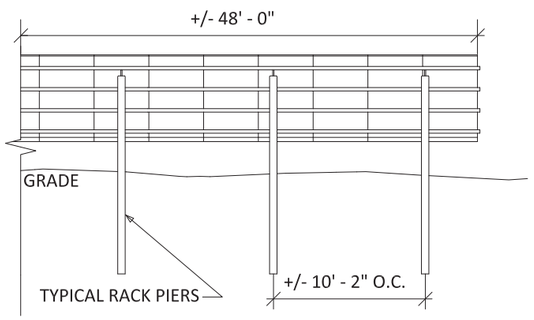
2 Embarcadero Center, Ste. 410 | San Francisco, CA 94111 | 415.692.7740 main

P:\045461\35-04546-12001\SUPPORTDOCS\CALCS\HYDROLOGY\FINAL DESIGN\ONSITE HYDROLOGY C05.DWG
PLOT/UPDATE: Dec 2, 2013 8:58:41 AM



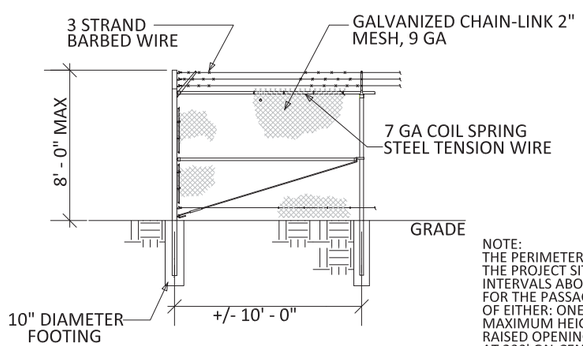
TYPICAL SOLAR ARRAY RACK DETAIL AND END ELEVATION

NOT TO SCALE



SOLAR ARRAY RACK DETAIL ELEVATION

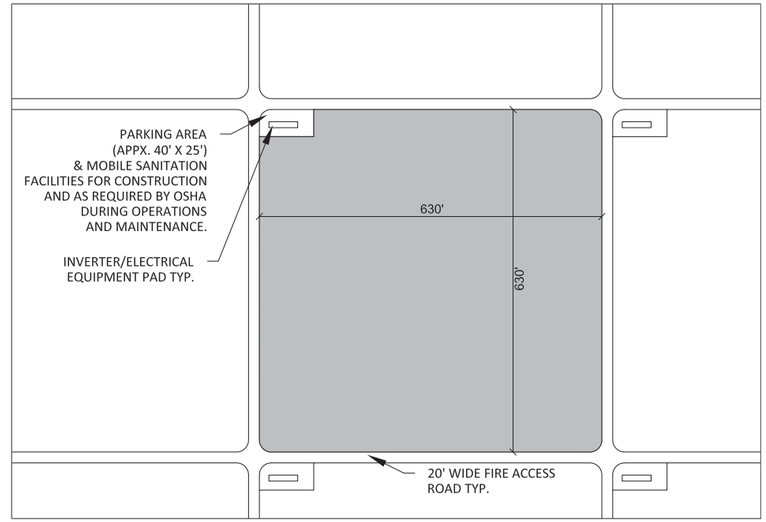
NOT TO SCALE



NOTE:
THE PERIMETER FENCING SURROUNDING THE PROJECT SITE WILL BE RAISED AT REGULAR INTERVALS ABOVE GROUND LEVEL TO ALLOW FOR THE PASSAGE OF WILDLIFE TO THE LESSER OF EITHER: ONE FOOT ABOVE GRADE OR TO THE MAXIMUM HEIGHT ALLOWED BY THE PUC. RAISED OPENINGS WILL BE 50' WIDE SPACED AT 200' ON-CENTER.

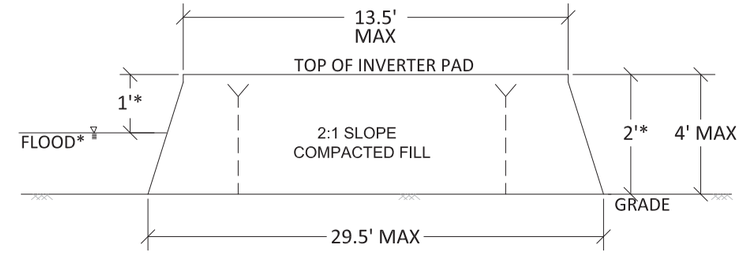
CHAIN LINK SECURITY FENCE ELEVATION

NOT TO SCALE



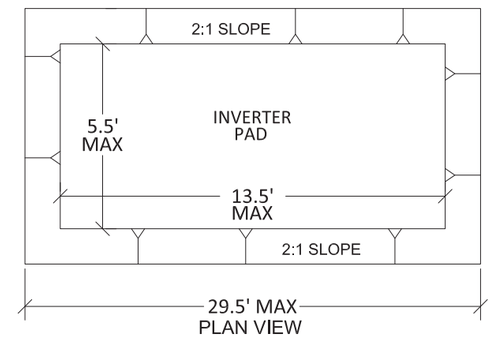
ARRAY BLOCK DETAIL (TYPICAL)

NOT TO SCALE



*TOP OF INVERTER PAD TO BE 1' MINIMUM ABOVE FLOOD WATER ELEVATION AS DETERMINED IN FINAL HYDROLOGY REPORT AND 2' ABOVE GRADE IN FEMA ZONE A.

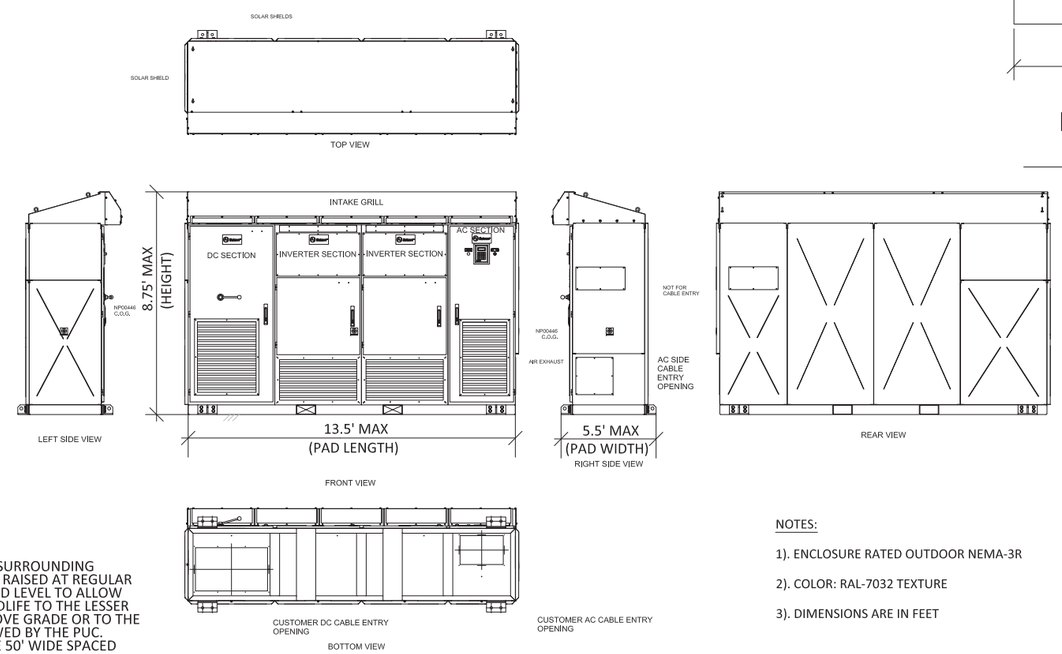
ELEVATION VIEW



PLAN VIEW

RAISED INVERTER PAD DETAILS FOR FLOOD AREAS AS NEEDED

NOT TO SCALE



NOTES:

1). ENCLOSURE RATED OUTDOOR NEMA-3R

2). COLOR: RAL-7032 TEXTURE

3). DIMENSIONS ARE IN FEET

INVERTER PAD DETAILS (TYPICAL)

NOT TO SCALE

C-06

R2011-00799 (RCUP201100071)

REGISTERED PROFESSIONAL ENGINEER JULIE ANN DELANEY No.C54558 CIVIL STATE OF CALIFORNIA

EXHIBIT PREPARER:

TETRA TECH, INC.
17885 VON KARMAN AVENUE, SUITE 500
IRVINE, CALIFORNIA 92614-6213
TEL: 949.809.5000

NOT ISSUED FOR CONSTRUCTION

NO.	DATE	REVISION	SUBM'T BY	APPV'D BY

Solar PV System Summary

35MW AC Solar Photovoltaic Generation System
APNs 3268-018-002
3268-018-035
SCH # 2012061068

Project Name:
Project 3 American Solar Greenworks

Project Address:
W Ave. G & 70th St. W
Los Angeles County, CA

DRAWING: DETAIL SHEET

APPLICANT:
Silverado Power
2 Embarcadero Center, Ste. 410
San Francisco, CA 94111
(415) 692-7740

SILVERADO power

PROJECT 3
AMERICAN SOLAR GREENWORKS
LOS ANGELES COUNTY, CA

2 Embarcadero Center, Ste. 410 | San Francisco, CA 94111 | 415.692.7740 main

P:\CAD\PROJECTS\106-4336 SILVERADO POWER\SP LA-CUP_14-0324\P3-9\C-06-DETAIL-9.DWG
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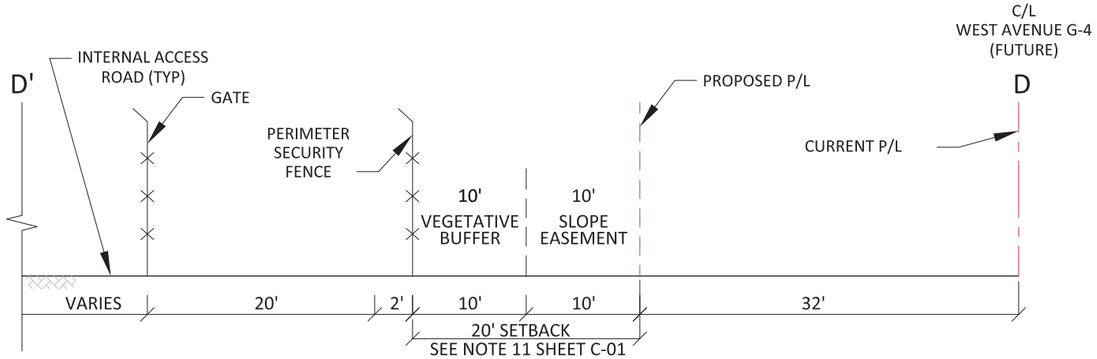
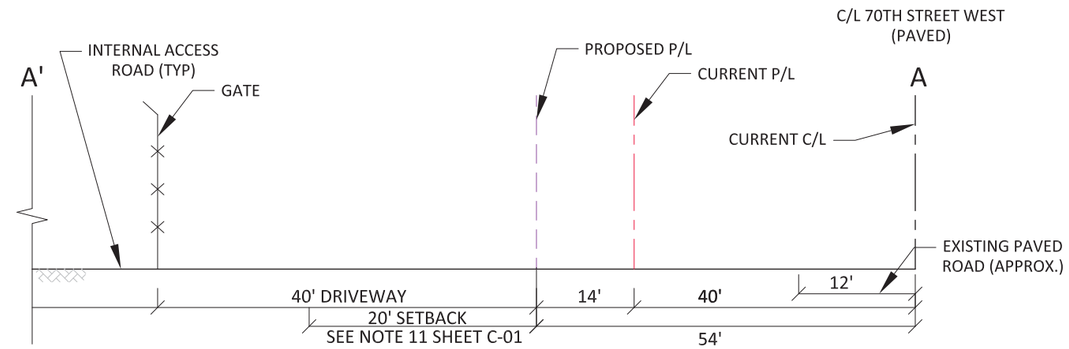


SECTION D' - D

NOT TO SCALE



SECTION A' - A

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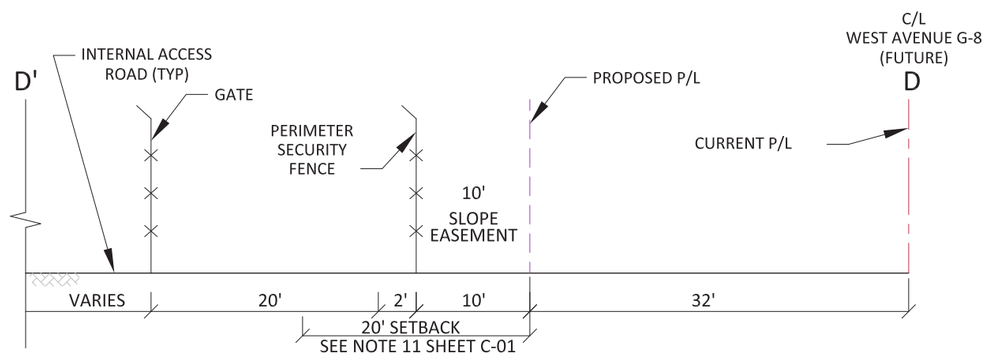

SECTION E' - E

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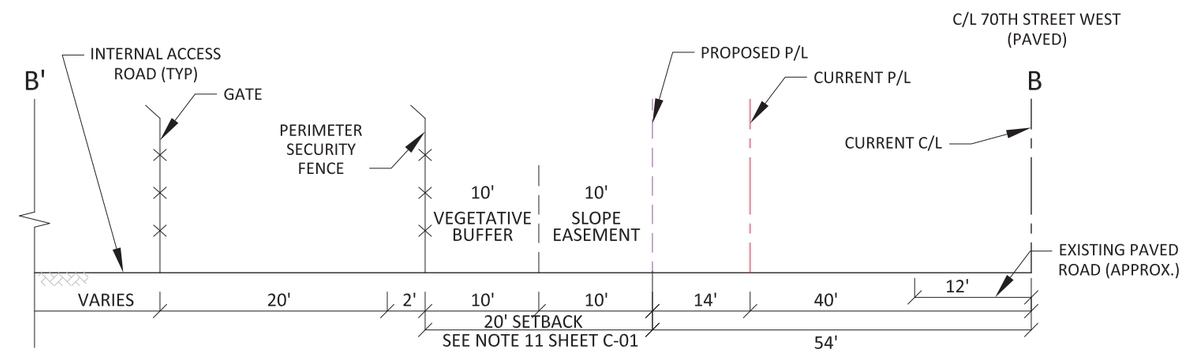

SECTION B' - B

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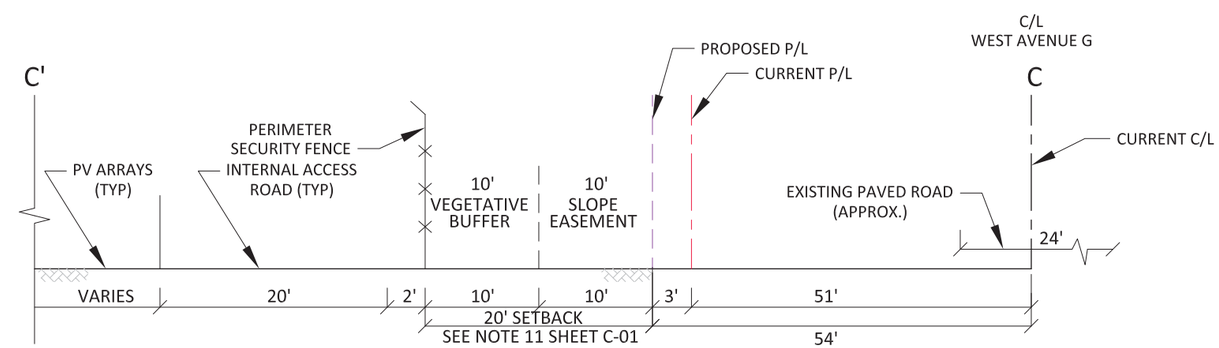

SECTION C' - C

NOT TO SCALE

C-07

R2011-00799 (RCUP201100071)

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PLOT/UPDATE: Mar 23, 2014 2:7:37 PM

REGISTERED PROFESSIONAL ENGINEER JULIE ANN DELANEY No.C54558 CIVIL STATE OF CALIFORNIA

EXHIBIT PREPARER:

TETRA TECH, INC.

17885 VON KARMAN AVENUE, SUITE 500
IRVINE, CALIFORNIA 92614-6213
TEL: 949.809.5000

NOT ISSUED FOR CONSTRUCTION

NO.	DATE	REVISION	SUBM'T BY	APPV'D BY

Solar PV System Summary

35MW AC Solar Photovoltaic Generation System
APNs 3268-018-002
3268-018-035
SCH # 2012061068

Project Name:
Project 3 American Solar Greenworks

Project Address:
W Ave. G & 70th St. W
Los Angeles County, CA

DRAWING: SECTION SHEET

APPLICANT:
Silverado Power
2 Embarcadero Center, Ste. 410
San Francisco, CA 94111
(415) 692-7740

SILVERADO power

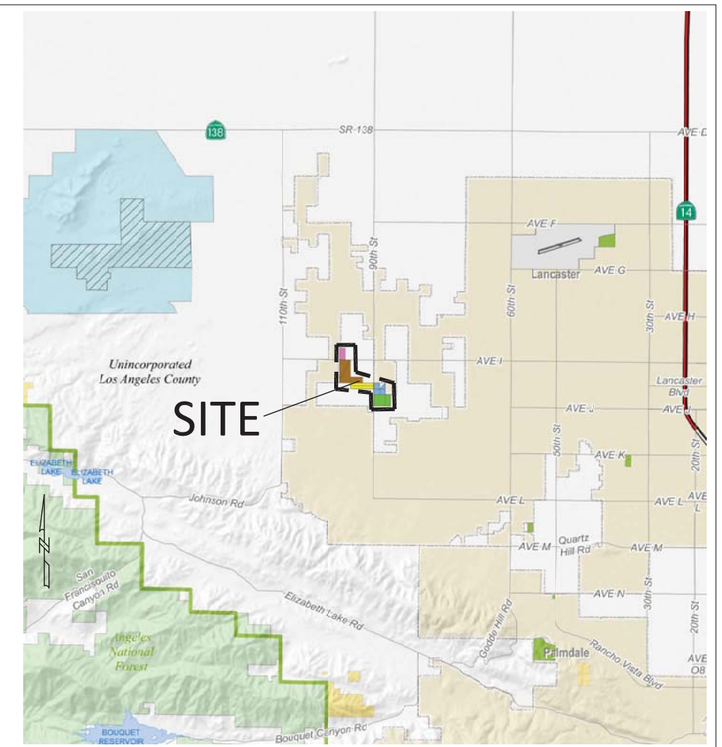
PROJECT 3
AMERICAN SOLAR GREENWORKS
LOS ANGELES COUNTY, CA

2 Embarcadero Center, Ste. 410 | San Francisco, CA 94111 | 415.692.7740 main

KEY MAP
NOT TO SCALE

PROJECT 4 ANTELOPE SOLAR GREENWORKS

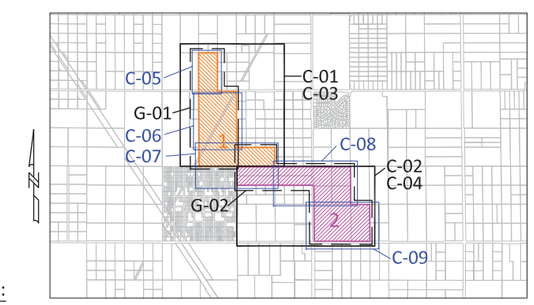
LOS ANGELES COUNTY, CALIFORNIA



VICINITY MAP
NOT TO SCALE

DRAWING INDEX

DRAWING NO.	TITLE
T-01	TITLE SHEET
G-01	SURVEY SHEET
G-02	SURVEY SHEET
C-01	SITE PLAN - NORTH
C-02	SITE PLAN - SOUTH
C-03	GRADING PLAN - NORTH
C-04	GRADING PLAN - SOUTH
C-05	ON-SITE DRAINAGE MAP
C-06	ON-SITE DRAINAGE MAP
C-07	ON-SITE DRAINAGE MAP
C-08	ON-SITE DRAINAGE MAP
C-09	ON-SITE DRAINAGE MAP
C-10	ON-SITE DRAINAGE MAP
C-11	DETAIL SHEET
C-12	SECTION SHEET
C-13	SECTION SHEET
C-14	SECTION SHEET



LEGEND:

1 = NORTH PROJECT AREA
2 = SOUTH PROJECT AREA
C-01 = DRAWING NUMBER

DRAWING REFERENCE MAP
NOT TO SCALE

SURVEY INFORMATION:

TOPOGRAPHIC MAP AND 1' CONTOURING PREPARED BY ALL VALLEY SURVEYING.
BENCHMARK AND BASIS OF BEARINGS SHOWN ON TOPOGRAPHIC MAPS, DRAWINGS G-01 & G-02.

SURVEYOR:

LARRY E. JERNIGAN, PLS #5924
ALL VALLEY SURVEYING
44965 10TH STREET WEST
LANCASTER, CA 93534
(661) 942-3639

R2011-00807 (RCUP201100076) T-01

REGISTERED PROFESSIONAL ENGINEER JULIE ANN DELANEY No.C54558 CIVIL STATE OF CALIFORNIA

EXHIBIT PREPARER:
TETRA TECH, INC.
17885 VON KARMAN AVENUE, SUITE 500
IRVINE, CALIFORNIA 92614-6213
TEL: 949.809.5000

NOT ISSUED FOR CONSTRUCTION

NO.	DATE	REVISION	SUBM'T BY	APPV'D BY

Solar PV System Summary

52MW AC Solar Photovoltaic Generation System
APNs 3218-002-018, 023
3203-002-015, 017
3218-001-002, 003, 004
3203-002-011, 012, 013, 014
3219-019-011

Project Name:
Project 4 Antelope Solar Greenworks
Project Address:
90th St. W & W Ave. J
Los Angeles County, CA
SCH # 2012061068

DRAWING: TITLE SHEET

APPLICANT:
Silverado Power
2 Embarcadero Center, Ste. 410
San Francisco, CA 94111
(415) 692-7740

SILVERADO power

PROJECT 4
ANTELOPE SOLAR GREENWORKS
LOS ANGELES COUNTY, CA

2 Embarcadero Center, Ste. 410 | San Francisco, CA 94111 | 415.692.7740 main

P:\(240)PROJECTS\106-4336 SILVERADO POWER\SP LA-CUP_14-032A\P4-10A\T-01-TITLE PAGE-10A.DWG
PLOT/APRIATE: Mar 20, 2014 2:35:58 PM

EASEMENT REFERENCES

1	10-FOOT EASEMENT PER BOOK D-1499, PAGE 128 O.R.
2	10-FOOT EASEMENT PER BOOK 54001, PAGE 220 O.R.
3	30-FOOT EASEMENT PER MINUTE BOOK 184, PAGE 360 O.R.
4	30-FOOT EASEMENT PER BOOK 678, PAGE 368, BOOK 3385, PAGE 254, MINUTE BOOK 184, PAGE 360, AND RESERVED IN INST. NO. 20090120583
5	30-FOOT EASEMENT 2-4, PER PER BOOK 21183, PAGE 338 O.R.
6	13-FOOT CORNER CUT OFF, IRREVOCABLE OFFER TO DEDICATE, PART D, PER INST. NO. 82-770282
7	32-FOOT IRREVOCABLE OFFER TO DEDICATE, PART C, PER INST. NO. 82-770282
8	32-FOOT IRREVOCABLE OFFER TO DEDICATE, PART C, PER INST. NO. 82-761883
9	110-FOOT EASEMENT PER INST. NO. 88-186797
10	30-FOOT EASEMENT 2-6, PER PER BOOK 21183, PAGE 332 O.R.
11	30-FOOT IRREVOCABLE OFFER TO DEDICATE, PART B, PER INST. NO. 82-761883 AND A 30-FOOT EASEMENT PER DOCUMENT RECORDED MARCH 5TH, 1958 AS INST. NO. 477 OF O.R.
12	13-FOOT CORNER CUT OFF, IRREVOCABLE OFFER TO DEDICATE, PART D, PER INST. NO. 82-761883
13	32-FOOT IRREVOCABLE OFFER TO DEDICATE, PART B, PER INST. NO. 82-770282
14	30-FOOT STORM DRAIN EASEMENT SHOWN ON ASSESSORS BOOK 3218 PAGE 002, NOT RECORDED OF OFFICIAL RECORDS
15	13-FOOT CORNER CUT OFF, IRREVOCABLE OFFER TO DEDICATE, PART E, PER INST. NO. 82-770282
16	20-FOOT IRREVOCABLE OFFER TO DEDICATE, PART A, PER INST. NO. 82-770282
17	20-FOOT IRREVOCABLE OFFER TO DEDICATE, PART A, PER INST. NO. 82-761883
18	13-FOOT CORNER CUT OFF, IRREVOCABLE OFFER TO DEDICATE, PART E, PER INST. NO. 82-761883
19	32-FOOT EASEMENT RESERVED IN PARCEL IV, INST. NO. 97-1922638, PARCEL III A, INST. NO. 97-1922639, AND PARCEL 2 INST. NO. 04-1626977
20	32-FOOT EASEMENT PARCEL IV A, INST. NO. 97-1922638, PARCEL III, INST. NO. 97-1922639, AND PARCEL 4, INST. NO. 04-1626977
21	32-FOOT EASEMENT RESERVED IN PARCEL IV, INST. NO. 97-1922638, PARCEL III A, INST. NO. 97-1922639, AND PARCEL 2, INST. NO. 04-1626977
22	5-FOOT EASEMENT RESERVED IN BOOK 7078, PAGE 357 AND BOOK 6719, PAGE 218 O.R.
23	32-FOOT EASEMENT PARCEL IV A, INST. NO. 97-1922638, PARCEL III, INST. NO. 97-1922639, AND PARCEL 4, INST. NO. 04-1626977
24	5-FOOT EASEMENT RESERVED IN DEED RECORDED MARCH 25TH, 1930 AS INST. NO. 421 OF O.R.
25	5-FOOT EASEMENT RESERVED IN THE FOLLOWING DEEDS BOOK 8986, PAGE 368, BOOK 24226, PAGE 289, AND BOOK 40552, PAGE 801 ALL OF O.R.
26	6-FOOT EASEMENT RECORDED DEC. 21, 1951 AS INST. NO. 2020 OF O.R.

LEGEND

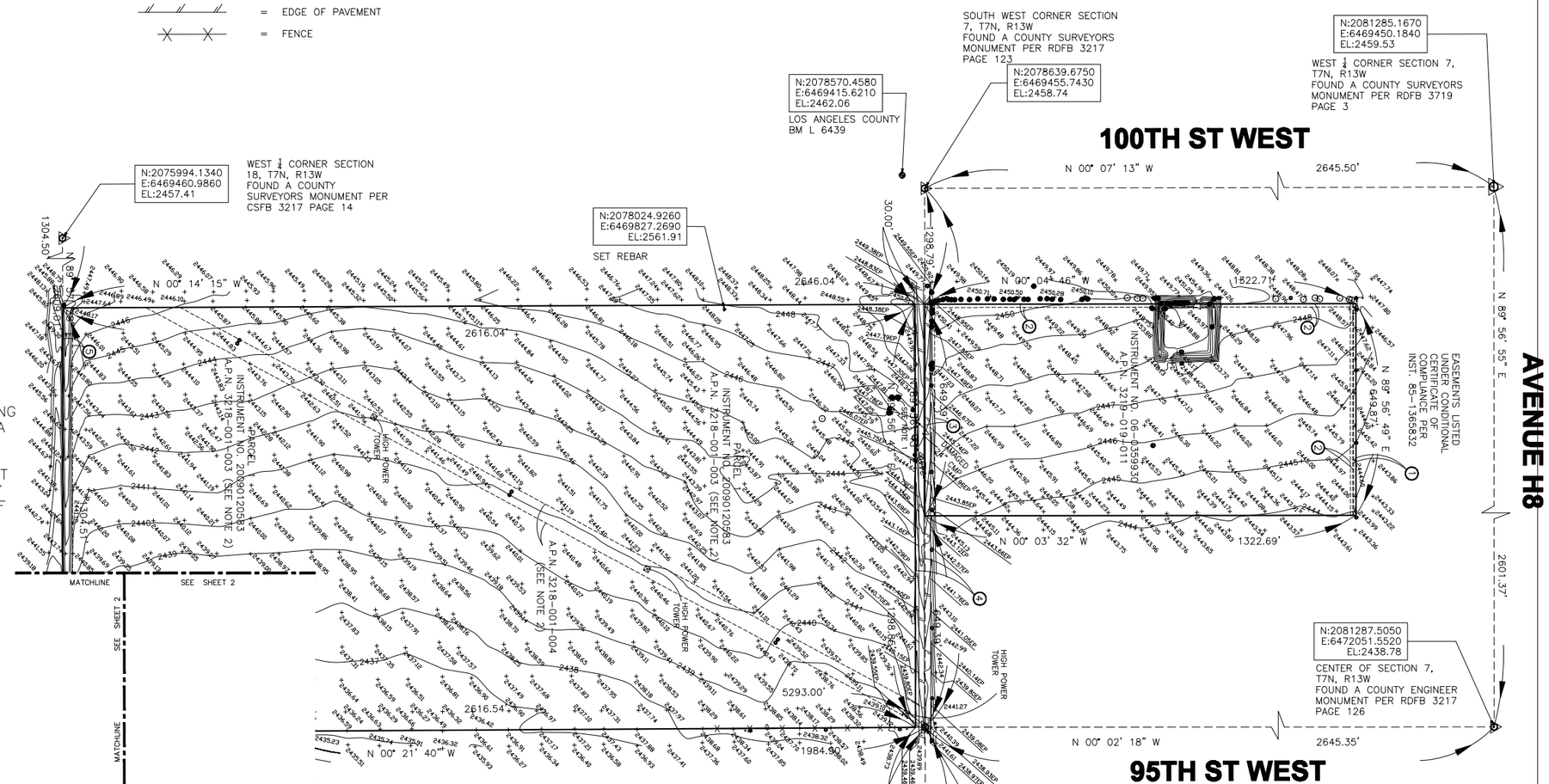
- = SURVEY CONTROL MONUMENT AS NOTED
- = LOS ANGELES COUNTY BENCHMARK AS NOTED
- = TREE 12" & 24"
- = LARGE BUSH
- = PADDLE MARKER POST
- = POWER POLE
- = GUY WIRE
- = MAILBOX
- TW = TOP OF WALL
- EP = EDGE OF PAVEMENT
- 5 = EASEMENT IDENTIFIER
- = TELEPHONE RISER
- = POST
- = STANDPIPE
- = EDGE OF PAVEMENT
- = FENCE

DATUM STATEMENT

COORDINATES SHOWN ARE BASED ON THE CALIFORNIA COORDINATE SYSTEM, (CCS83) ZONE V, 1983 NORTH AMERICAN DATUM, 1991.35 EPOCH ADJUSTMENT. COORDINATES SHOWN ARE GRID IN U.S. SURVEY FEET. ALL DISTANCES SHOWN ARE GRID DISTANCES. TO OBTAIN A GROUND DISTANCE, DIVIDE THE GRID DISTANCE BY 0.99983621. COMBINATION FACTOR IS PROJECT BASED.

NOTE 1 – FOUND TWO APPARENT GAS LINES ORIGIN UNKNOWN

NOTE 2 – INST. NO. 20090120583 DESCRIBES AN ALIQUOT PART OF THE NORTHWEST QUARTER OF SECTION 18, T7N, R13W, AND MAKES NO EXCEPTION OF THE APPARENT EDISON EASEMENT CUTTING THROUGH THE LAND IN A NORTHEASTERLY DIRECTION AS SHOWN. A CURRENT TITLE SEARCH ALSO MAKES NO MENTION OF SAID EASEMENT. THE COUNTY ASSESOR SHOWS AN EASEMENT AS PARCEL 004. TRANSMISSION TOWERS AND POWER POLES DO EXIST WITHIN LINES AS SHOWN SCALED FROM THE LOS ANGELES COUNTY REGIONAL PLANNING GIS WEB SITE. A MORE THOROUGH SEARCH OF TITLE IS NECESSARY TO DETERMINE THE ORIGN OF THIS APPARENT EASEMENT.



BASIS OF BEARING	BENCH MARK
THE BASIS OF BEARINGS FOR THIS SURVEY IS THE CALIFORNIA COORDINATE SYSTEM, ZONE V, NAD 83, EPOCH 1991.35, AS DETERMINED LOCALLY BY A LINE BETWEEN CONTINUOUS GLOBAL POSITIONING STATIONS (CGPS), EW7123 AND EW7124, BEING NORTH 13°31'30" EAST AS DERIVED FROM GEODETIC VALUES PUBLISHED BY THE NATIONAL GEODETIC SURVEY.	LOS ANGELES COUNTY BENCHMARK L 6439, LANCASTER 2004 ADJUSTMENT, NAVD 1988, ELEVATION = 2462.062 FEET C-NAIL IN CONC STANDPIPE @ SW COR AVE I & 100TH ST W 19.8M(65FT) S/O & 10.7M(35FT) W/O C/L INT

SCALE
HORIZ: 1"= 200'

PROFESSIONAL LAND SURVEYOR
LARRY E JERNIGAN
No. 5924
EXP 12-31-12
STATE OF CALIFORNIA

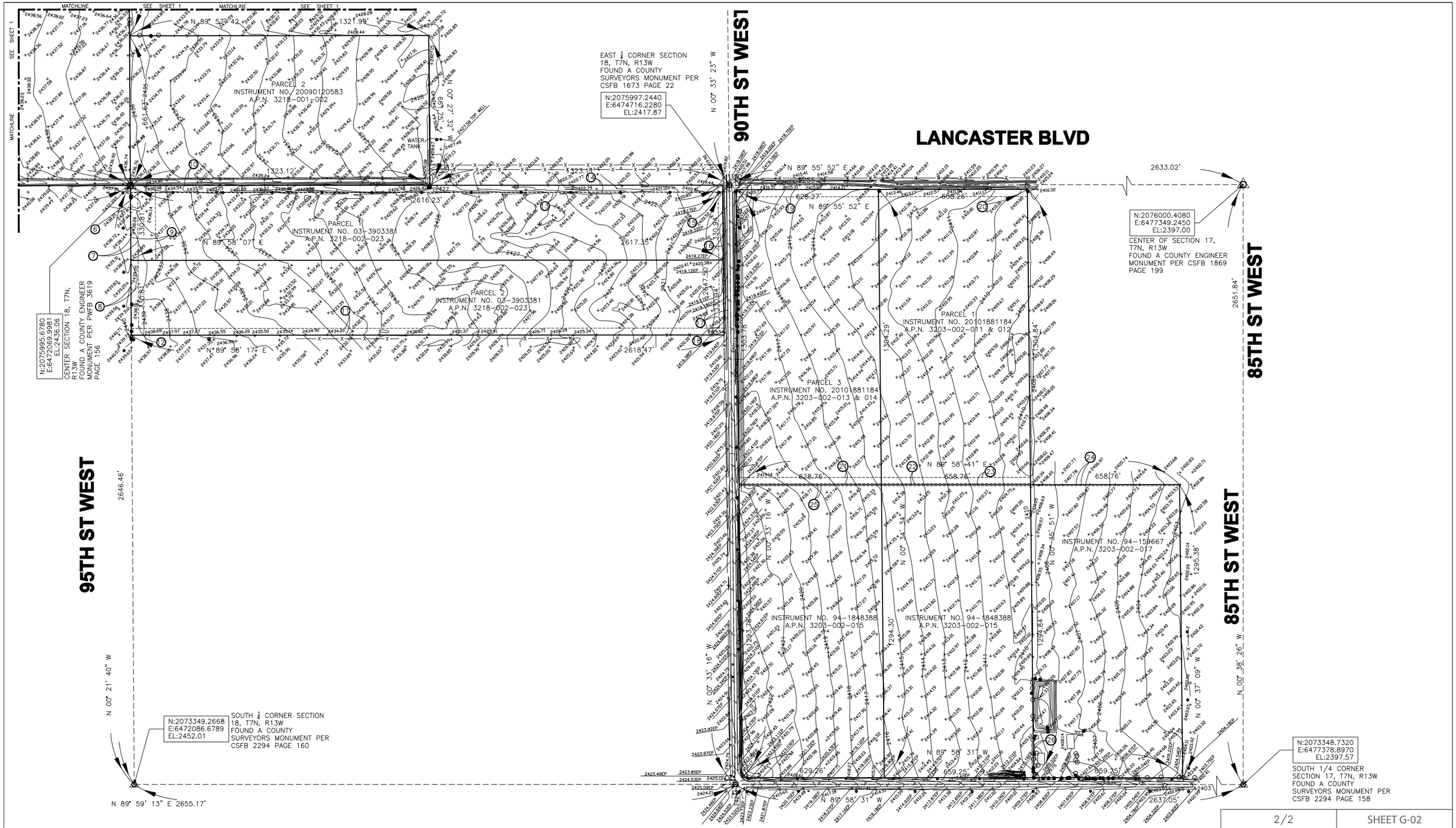
ALL VALLEY SURVEYING
44965 10TH STREET WEST
LANCASTER, CA. 93534
(661) 942-3639

NO.	REVISION	BY	APPR.	DATE
1				
2				
3				

1/2 | SHEET G-01

TOPOGRAPHIC MAP
AVENUE I & 90TH STREET WEST
ANTELOPE VALLEY
COUNTY OF LOS ANGELES
STATE OF CALIFORNIA

DATE OF SURVEY	COUNTY PLAN CHECK NUMBER
1/22/12	R2011-00807(RCUP2011-00076)



BASIS OF BEARING	BENCH MARK
THE BASIS OF BEARINGS FOR THIS SURVEY IS THE CALIFORNIA COORDINATE SYSTEM, ZONE V, NAD 83, EPOCH 1991.35, AS DETERMINED LOCALLY BY A LINE BETWEEN CONTINUOUS GLOBAL POSITIONING STATIONS (CGPS), EW7123 AND EW7124, BEING NORTH 13°31'30" EAST AS DERIVED FROM GEODETIC VALUES PUBLISHED BY THE NATIONAL GEODETIC SURVEY.	LOS ANGELES COUNTY BENCHMARK L 6439, LANCASTER 2004 ADJUSTMENT, NAVD 1988, ELEVATION = 2462.062 FEET C-NAIL IN CONC STANDPIPE @ SW COR AVE I & 100TH ST W 19.8M(65FT) S/O & 10.7M(35FT) W/O C/L INT

SCALE
HORIZ: 1"= 200'

PROFESSIONAL LAND SURVEYOR
LARRY E. JERNIGAN
No. 5924
EXP 12-31-12
STATE OF CALIFORNIA

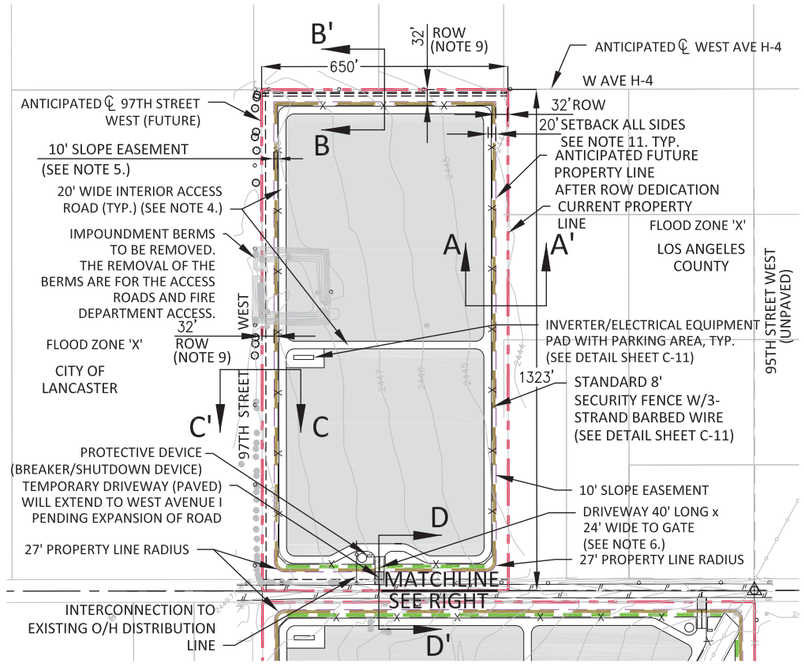
ALL VALLEY SURVEYING
44965 10TH STREET WEST
LANCASTER, CA. 93534
(661) 942-3639

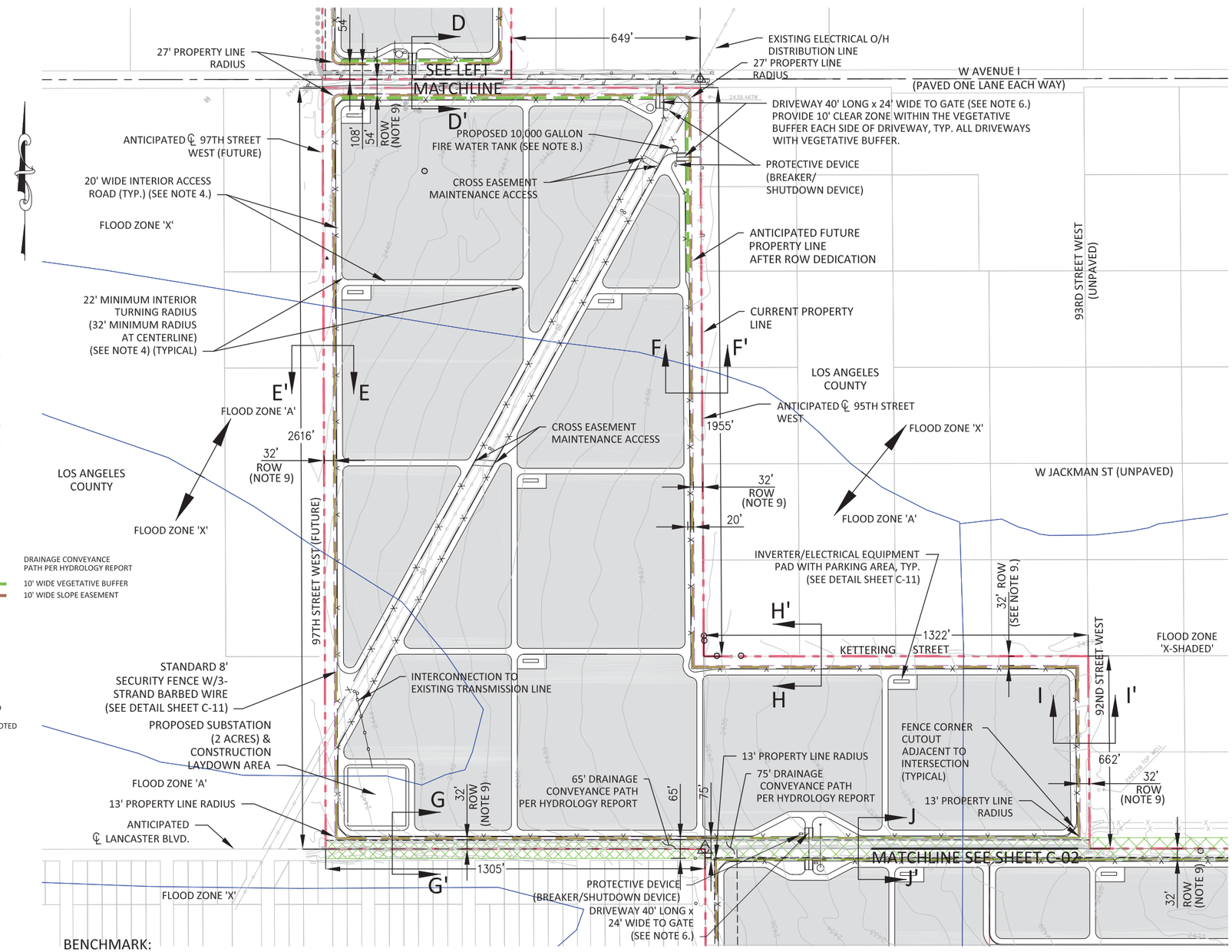
NO.	REVISION	BY	APPR.	DATE
1				
2				
3				

2/2 | SHEET G-02

TOPOGRAPHIC MAP
AVENUE I & 90TH STREET WEST
ANTELOPE VALLEY
COUNTY OF LOS ANGELES
STATE OF CALIFORNIA

DATE OF SURVEY	COUNTY PLAN CHECK NUMBER
1/22/12	R2011-00807(RCUP2011-00076)





SITE PLAN NOTES:

1. 'ZONE X' AS SHOWN ON PANEL 0150F OF FLOOD INSURANCE RATE MAP NO. 06037C0400F. ZONE "X" DESIGNATED AS "AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOOD PLAIN. ZONE "A" DESIGNATED AS, "NO BASE FLOOD ELEVATIONS DETERMINED".

2. FIRE DEPARTMENT ACCESS DEVICE AND EMERGENCY CONTACT PLACARD LOCATED AT ALL ENTRANCE GATES.

3. MOBILE SANITATION FACILITY, AS DEFINED BY THE LOS ANGELES COUNTY DEPARTMENT OF PUBLIC HEALTH, CAN BE LOCATED AT ALL PARKING LOCATIONS AND WILL BE LOCATED AT THE NEAREST LOCATION TO CONSTRUCTION AND OPERATIONAL WORKERS ACTIVITY. THE FACILITIES WILL BE KEPT TO LOS ANGELES COUNTY CODE, TITLE 11 - HEALTH & SAFETY, AND CAL-OSHA SANITATION STANDARDS IN SECTION 3360, TITLE 8, CALIFORNIA CODE OF REGULATIONS. MOBILE SANITATION FACILITIES WILL BE MADE AVAILABLE DURING CONSTRUCTION AND AS REQUIRED BY OSHA DURING OPERATIONS AND MAINTENANCE. SEE ARRAY BLOCK DETAIL (TYPICAL) ON C-11.

4. INTERIOR ACCESS ROADS WILL BE 20' WIDE, COMPACTED TO 90%, WITH 32 FOOT TURNING RADIUS AT CENTER LINE. THE INNER RADIUS WILL BE 22' AND THE OUTER RADIUS WILL BE 42'. INTERIOR ACCESS ROADS WILL BE PROVIDED TO INVERTER/ELECTRICAL EQUIPMENT PADS AND AROUND THE PERIMETER OF THE PROJECT. SEE ARRAY BLOCK DETAIL (TYPICAL) ON C-11.

5. 10 FOOT WIDE SLOPE EASEMENT WILL BE PROVIDED AROUND PERIMETER.

6. DRIVEWAY ACCESS GATES TO BE SET 40 FEET BACK FROM EDGE OF PROPERTY. DRIVEWAY WILL BE 24 FEET WIDE.

7. ALL DIMENSIONS SHOWN ARE APPROXIMATE AND SUBJECT TO VERIFICATION DURING DETAILED DESIGN.

8. TANK CONNECTIONS PER LOS ANGELES COUNTY FIRE DEPARTMENT.

9. ANTICIPATED ROW SETBACK/DEDICATION FOR FUTURE ROAD DEVELOPMENT. REFER TO SHEETS C-12, C-13, AND C-14 FOR SECTIONS AND ROW DETAILS.

10. CONTOURS SHOWN ARE BASED ON TOPOGRAPHIC MAP PREPARED BY ALL VALLEY SURVEYING.

11. A 20' MINIMUM SETBACK FROM PROPERTY LINE (AFTER DEDICATIONS) TO ARRAYS OR EQUIPMENT TO BE MAINTAINED ON SITE. PROJECT FENCE, FIRE ROADS, EASEMENTS, AND VEGETATION ARE OK WITHIN THE SETBACK.

200 0 200 400

SCALE IN FEET

1"=200'

WHEN PRINTED TO SCALE ON 22"x34" SHEET

SITE PLAN LEGEND:

TYP.	TYPICAL	
MIN	MINIMUM	
O/H	OVERHEAD LINES	
ROW	RIGHT OF WAY	
℄	CENTERLINE	
— x — x —	FENCE LINE	
	OVERHEAD LINE	
	UNDERGROUND LINE	
	PROPERTY LINE (AFTER DEDICATIONS)	
	PROPERTY LINE (CURRENT)	
	PARCEL LINE	
	FLOOD ZONE DESIGNATION	
2445	CONTOUR LINE	
	SOLAR ARRAY FIELD	
	= SURVEY CONTROL MONUMENT AS NOTED	
	= LOS ANGELES COUNTY BENCHMARK AS NOTED	
	= TREE 12" & 24"	
	= LARGE BUSH	
	= PADDLE MARKER POST	
	= POWER POLE	
	= GUY WIRE	
	= MAILBOX	
	= TELEPHONE RISER	
	= POST	
	= STANDPIPE	
	= EDGE OF PAVEMENT	
	= FENCE	
TW	= TOP OF WALL	
EP	= EDGE OF PAVEMENT	
5	= EASEMENT IDENTIFIER	

DRAINAGE CONVEYANCE PATH PER HYDROLOGY REPORT

10' WIDE VEGETATIVE BUFFER

10' WIDE SLOPE EASEMENT

BENCHMARK:

LOS ANGELES COUNTY BENCHMARK L 6439, LANCASTER 2004 ADJUSTMENT, NAVD 1988, ELEVATION = 2462.062 FEET

C-NAIL IN CONC STANDPIPE @ SW COR AVE I & 100TH ST W 19.8M(65FT) S/O & 10.7M(35FT) W/O C/L INT

R2011-00807 (RCUP201100076) C-01

REGISTERED PROFESSIONAL ENGINEER JULIE ANN DELANEY No.C54558 CIVIL STATE OF CALIFORNIA

EXHIBIT PREPARER:

TETRA TECH, INC.

17885 VON KARMAN AVENUE, SUITE 500
IRVINE, CALIFORNIA 92614-6213
TEL: 949.809.5000

NOT ISSUED FOR CONSTRUCTION

NO.	DATE	REVISION	SUBM'T BY	APPV'D BY

Solar PV System Summary

52MW AC Solar Photovoltaic Generation System

APNs 3218-002-018, 023
3203-002-015, 017
3218-001-002, 003, 004
3203-002-011, 012, 013, 014
3219-019-011

Project Name:
Project 4 Antelope Solar Greenworks

Project Address:
90th St. W & W Ave. J
Los Angeles County, CA

SCH # 2012061068

DRAWING: SITE PLAN-NORTH

APPLICANT:

Silverado Power
2 Embarcadero Center, Ste. 410
San Francisco, CA 94111
(415) 692-7740

SILVERADO power

PROJECT 4
ANTELOPE SOLAR GREENWORKS
LOS ANGELES COUNTY, CA

2 Embarcadero Center, Ste. 410 | San Francisco, CA 94111 | 415.692.7740 main

P:\CAD\PROJECTS\196-4336 SILVERADO POWER\SP LA-CUP_14-032AY94-10A\C-01-SITE PLAN-10A.DWG
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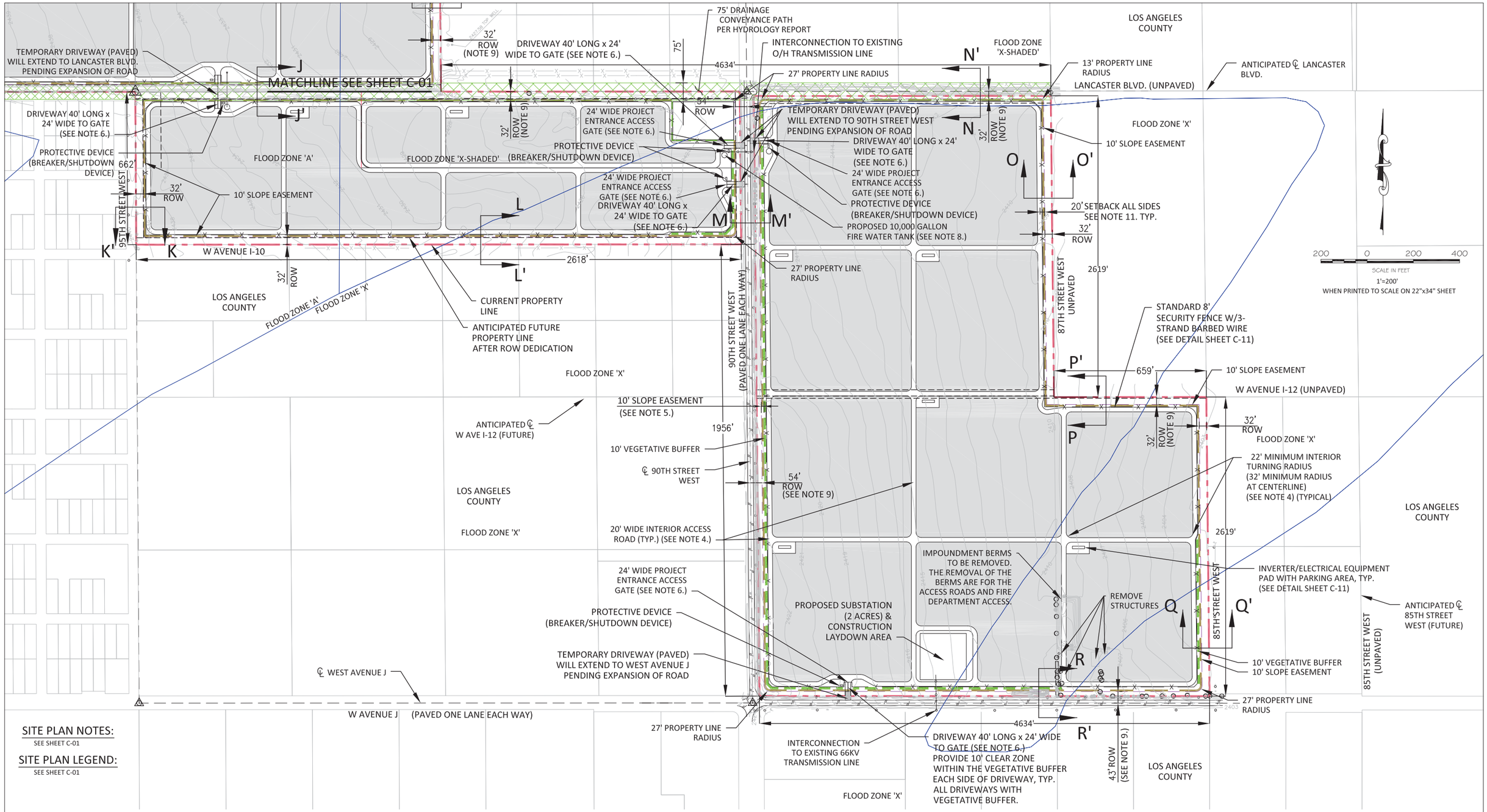


SITE PLAN NOTES:

SEE SHEET C-01

SITE PLAN LEGEND:

SEE SHEET C-01

R2011-00807 (RCUP201100076) C-02

REGISTERED PROFESSIONAL ENGINEER JULIE ANN DELANEY No.C54558 CIVIL STATE OF CALIFORNIA

EXHIBIT PREPARER:

TETRA TECH, INC.
17885 VON KARMAN AVENUE, SUITE 500
IRVINE, CALIFORNIA 92614-6213
TEL: 949.809.5000

NOT ISSUED FOR CONSTRUCTION

NO.	DATE	REVISION	SUBM'T BY	APPV'D BY

Solar PV System Summary

52MW AC Solar Photovoltaic Generation System

APNs 3218-002-018, 023
3203-002-015, 017
3218-001-002, 003, 004
3203-002-011, 012, 013, 014
3219-019-011

Project Name:
Project 4 Antelope Solar Greenworks

Project Address:
90th St. W & W Ave. J
Los Angeles County, CA

SCH # 2012061068

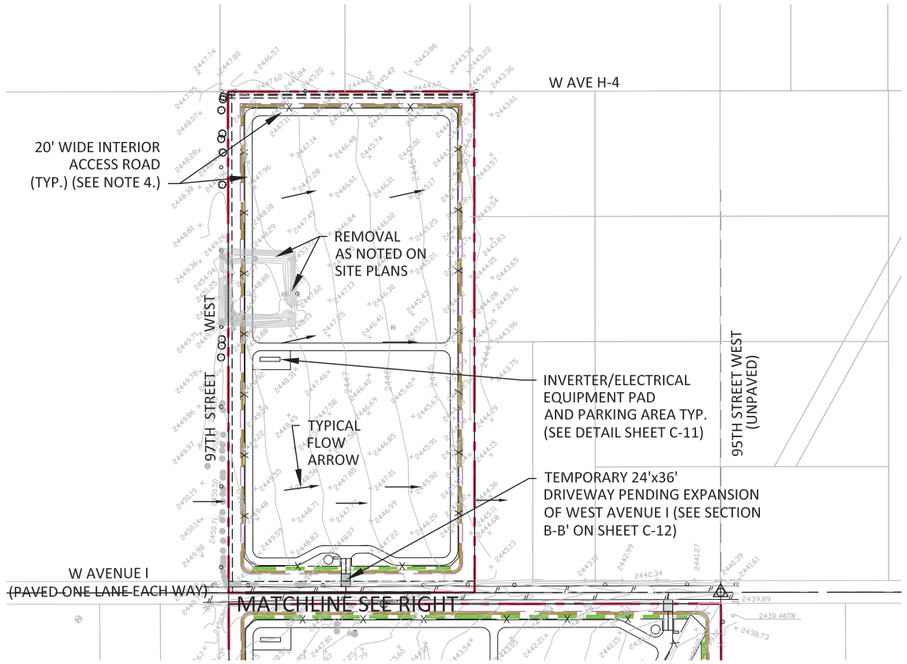
DRAWING: SITE PLAN-SOUTH

APPLICANT:
Silverado Power
2 Embarcadero Center, Ste. 410
San Francisco, CA 94111
(415) 692-7740

SILVERADO power

PROJECT 4
ANTELOPE SOLAR GREENWORKS
LOS ANGELES COUNTY, CA

2 Embarcadero Center, Ste. 410 | San Francisco, CA 94111 | 415.692.7740 main



SURVEY INFORMATION:

TOPOGRAPHIC MAP AND 1' CONTOURING PREPARED BY ALL VALLEY SURVEYING, JANUARY 22, 2012

SURVEYOR:

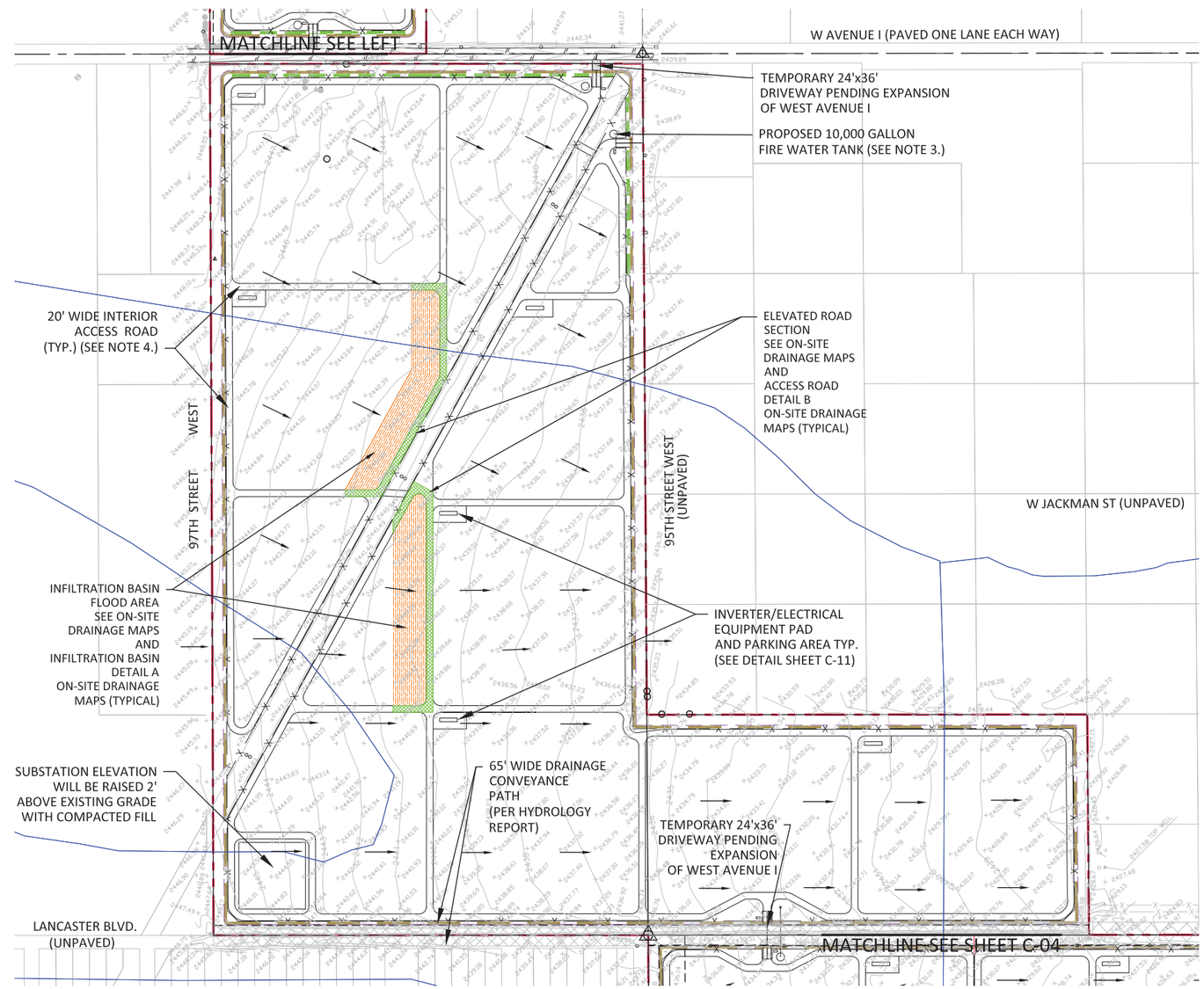
LARRY E. JERNIGAN, PLS #5924
ALL VALLEY SURVEYING
44965 10TH STREET WEST
LANCASTER, CA 93534
(661) 942-3639

BASIS OF BEARINGS:

SEE TOPOGRAPHIC MAP SHEET G-01

BENCHMARK:

SEE TOPOGRAPHIC MAP SHEET G-01



EARTHWORK QUANTITIES:

OVEREXCAVATION	=	60,000 CUBIC YARDS
CUT	=	4,200 CUBIC YARDS
FILL	=	4,200 CUBIC YARDS

CUT & FILL QUANTITIES INCLUDE INVERTER PADS, SUBSTATIONS/SWITCHYARDS, BASINS, AND ELEVATED ROAD BED FOR DRAINAGE FEATURES.

OVEREXCAVATION QUANTITY INCLUDES ACCESSIBLE FIRE ROAD.

200 0 200 400
SCALE IN FEET

1'=200'
WHEN PRINTED TO SCALE ON 22"x34" SHEET

GRADING NOTES:

1. DRAINAGE ACROSS SITE IS CURRENTLY FROM THE WEST TO THE EAST, AS SHOWN ON THE SURFACE CONTOURS. TOPOGRAPHY/CONTOURS ARE BASED ON SURVEY DATA PROVIDED BY ALL VALLEY SURVEYING.

2. OVERALL EXISTING GRADING AND DRAINAGE PATTERN TO REMAIN UNCHANGED DURING AND AFTER CONSTRUCTION WITH THE EXCEPTION OF AREAS USED FOR DRAINAGE FEATURES. ELEVATED ROAD SECTIONS WILL BE USED TO CREATE INFILTRATION BASINS. FLOOD AREAS AND FLOW PATTERN ARROWS ARE SHOWN ON THIS SHEET AND SHEETS C-04 - C-10. LIMIT OF GRADING ACTIVITIES WILL BE AT PROPERTY LINE (AFTER DEDICATIONS) EXCEPT WHERE NOTED.

3. EQUIPMENT PADS WILL BE GRADED AS REQUIRED PER MANUFACTURER SPECIFICATIONS.

GRADING LEGEND:

TYP.	TYPICAL
MIN	MINIMUM
O/H	OVERHEAD LINES
ROW	RIGHT OF WAY
℄	CENTERLINE
—— x —— x ——	FENCE LINE
	PROPERTY LINE (AFTER DEDICATIONS)
	PROPERTY LINE (CURRENT)
	PARCEL LINE
	FLOOD ZONE DESIGNATION
	CONTOUR LINE
	INFILTRATION BASIN FLOOD AREA
	ELEVATED ROAD SECTION
	= SURVEY CONTROL MONUMENT AS NOTED
	= LOS ANGELES COUNTY BENCHMARK AS NOTED
	= TREE 12" & 24"
	= LARGE BUSH
	= PADDLE MARKER POST
	= POWER POLE
	= GUY WIRE
	= MAILBOX
TW	= TOP OF WALL
EP	= EDGE OF PAVEMENT
	= EASEMENT IDENTIFIER
	DRAINAGE CONVEYANCE PATH PER HYDROLOGY REPORT
	10' WIDE VEGETATIVE BUFFER
	10' WIDE SLOPE EASEMENT
	= TELEPHONE RISER
	= POST
	= STANDPIPE
	= EDGE OF PAVEMENT
	= FENCE

R2011-00807 (RCUP201100076) C-03

REGISTERED PROFESSIONAL ENGINEER JULIE ANN DELANEY No.C54558 CIVIL STATE OF CALIFORNIA

EXHIBIT PREPARER:

TETRA TECH, INC.
17885 VON KARMAN AVENUE, SUITE 500
IRVINE, CALIFORNIA 92614-6213
TEL: 949.809.5000

NOT ISSUED FOR CONSTRUCTION

NO.	DATE	REVISION	SUBM'T BY	APPV'D BY

Solar PV System Summary

52MW AC Solar Photovoltaic Generation System

APNs 3218-002-018, 023
3203-002-015, 017
3218-001-002, 003, 004
3203-002-011, 012, 013, 014
3219-019-011

Project Name:
Project 4 Antelope Solar Greenworks

Project Address:
90th St. W & W Ave. J
Los Angeles County, CA

SCH # 2012061068

DRAWING: GRADING PLAN N

APPLICANT:
Silverado Power
2 Embarcadero Center, Ste. 410
San Francisco, CA 94111
(415) 692-7740

SILVERADO power

PROJECT 4
ANTELOPE SOLAR GREENWORKS
LOS ANGELES COUNTY, CA

2 Embarcadero Center, Ste. 410 | San Francisco, CA 94111 | 415.692.7740 main

P:\CAD\PROJECTS\106-4338_SILVERADO_POWER\SP_LA-CUP_14-0324\P4-10A\C-03-GRADE PLAN-10A.DWG
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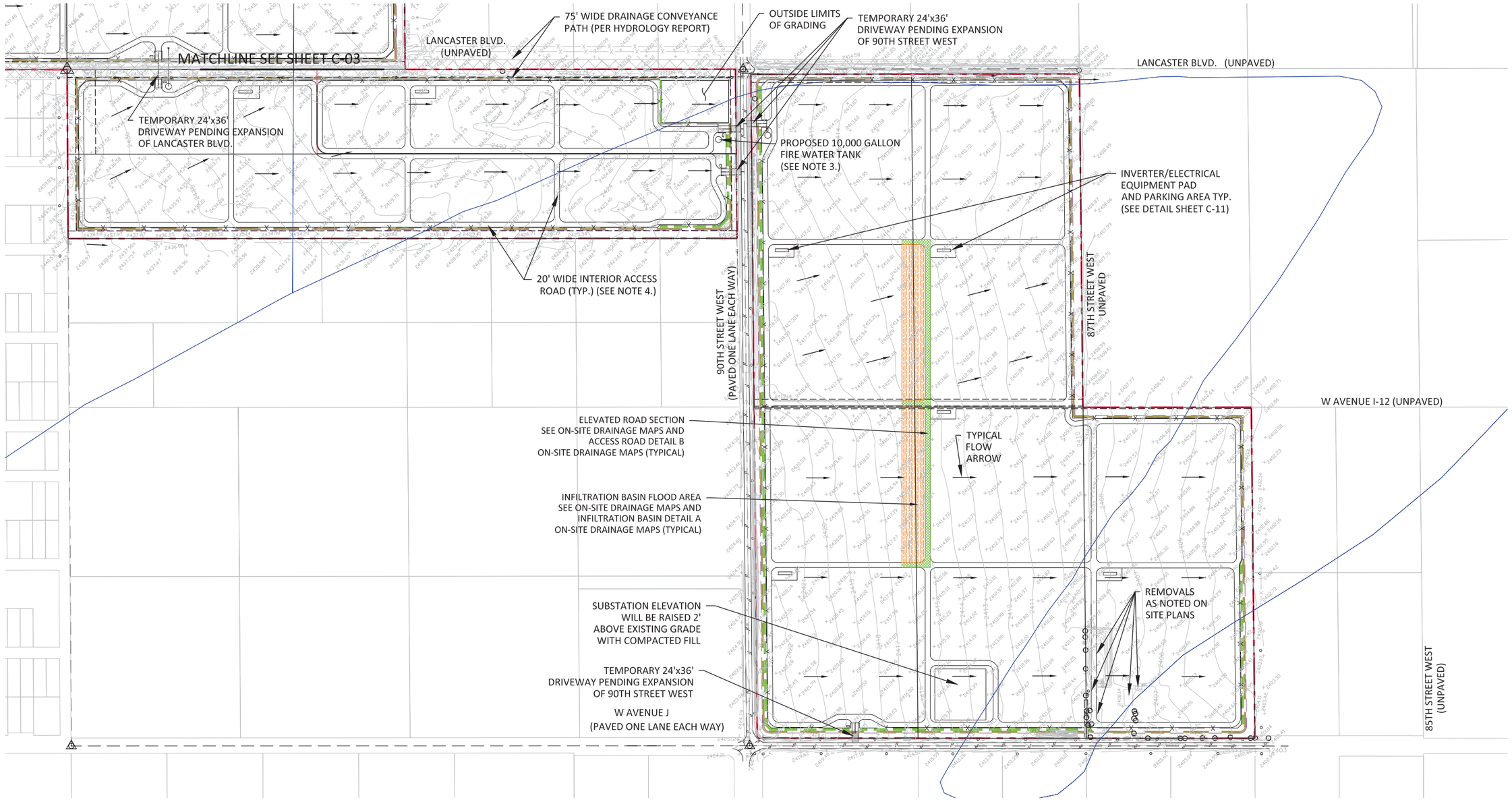

GRADING NOTES:

SEE SHEET C-03

GRADING LEGEND:

SEE SHEET C-03

R2011-00807 (RCUP201100076) **C-04**

REGISTERED PROFESSIONAL ENGINEER JULIE ANN DELANEY No.C54558 CIVIL STATE OF CALIFORNIA

EXHIBIT PREPARER:

TETRA TECH, INC.
17885 VON KARMAN AVENUE, SUITE 500
IRVINE, CALIFORNIA 92614-6213
TEL: 949.809.5000

NOT ISSUED FOR CONSTRUCTION

NO.	DATE	REVISION	SUBM'T BY	APPV'D BY

Solar PV System Summary

52MW AC Solar Photovoltaic Generation System

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3203-002-015, 017
3218-001-002, 003, 004
3203-002-011, 012, 013, 014
3219-019-011

Project Name:
Project 4 Antelope Solar Greenworks

Project Address:
90th St. W & W Ave. J
Los Angeles County, CA

SCH # 2012061068

DRAWING: GRADING PLAN S

APPLICANT:
Silverado Power
2 Embarcadero Center, Ste. 410
San Francisco, CA 94111
(415) 692-7740

SILVERADO power

PROJECT 4
ANTELOPE SOLAR GREENWORKS
LOS ANGELES COUNTY, CA

2 Embarcadero Center, Ste. 410 | San Francisco, CA 94111 | 415.692.7740 main

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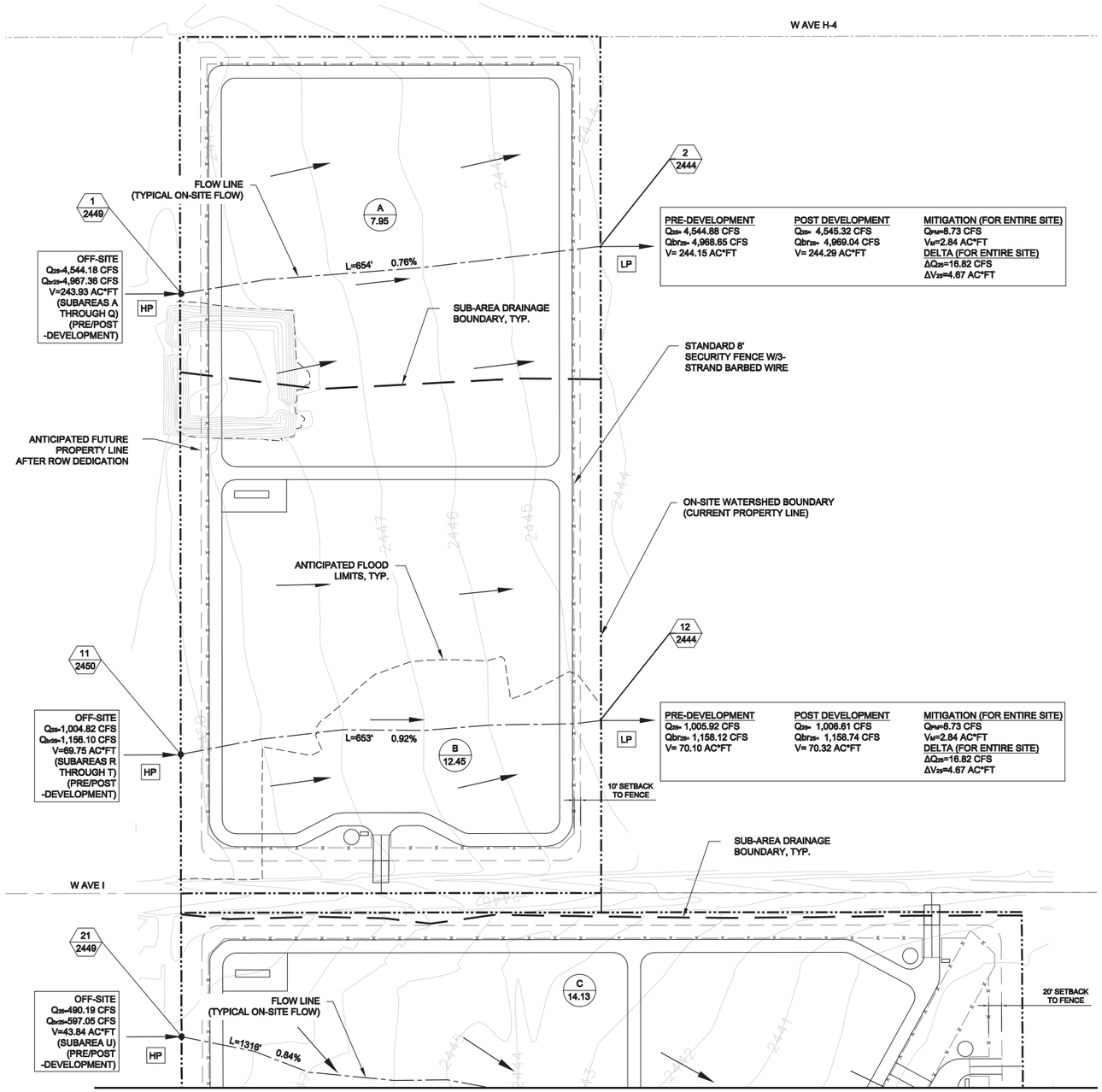


MATCHLINE: SEE SHEET C-06

LEGEND:

XX / XX.X	SUBAREA ID / ACREAGE
XX / XXX	NODE ID / ELEVATION
HP	HIGH POINT
LP	LOW POINT
	WATERSHED BOUNDARY
	FUTURE PROPERTY LINE
X	SECURITY FENCING
	FLOW LINE
	SUB-AREA BOUNDARY
	ANTICIPATED 25-YR FLOOD LIMITS
	ELEVATED ROAD SECTION
	INFILTRATION BASIN FLOOD AREA

Q_{25} PEAK FLOW RATE (25-YEAR STORM EVENT)
Q_{br25} BURNED PEAK FLOW RATE (25-YEAR STORM EVENT)
V STORM VOLUME (25-YEAR STORM EVENT)
Q_{PM} PEAK MITIGATION FLOW RATE (85TH % STORM EVENT)
V_M MITIGATION VOLUME (85TH % STORM EVENT)
V_{DP} DEBRIS POTENTIAL VOLUME = 112,283 CY

DRAINAGE CONCEPT NOTES:
1) LOCATIONS OF DRAINAGE DEVICES SHOWN ARE NOT NECESSARILY APPROVED.
2) COMPLIANCE OF ALL STREET DRAINAGE REQUIREMENTS WILL BE MET TO THE SATISFACTION OF THE DEPARTMENT OF PUBLIC WORKS.
3) APPROVAL OF THE DRAINAGE CONCEPT DOES NOT CONSTITUTE DETERMINATION THAT THE OFFSITE IMPROVEMENTS ARE REQUIRED WITHIN THE MEANING OF GOVERNMENT CODE SECTION 66462.5, (EXCEPT AS NOTES).
4) AN OFFSITE DRAINAGE COVENANT FOR ACCEPTANCE OR DRAINAGE (AND DRAINAGE FACILITIES) MAY BE REQUIRED WHERE INDICATED.
5) A NOTE OF FLOOD HAZARD WILL BE REQUIRED WHERE INDICATED ON THIS PLAN.
6) A SOIL REPORT WILL BE REQUIRED TO VERIFY THAT A 7-DAY PERCOLATION RATE CAN BE OBTAINED.
7) BASIN SIZES ARE DEPENDENT ON THE VERIFICATION OF PERCOLATION RATES AND ARE SUBJECT TO CHANGE.
8) WITHIN A FEMA ZONE A, FEMA ZONE X - UNSHADED, AND FEMA ZONE X - SHADED.
9) WITHIN A COUNTY ADOPTED FLOODWAY.
10) ALL BASINS ARE PRIVATELY MAINTAINED.
11) FOR THE POST-DEVELOPMENT 50-YEAR STORM EVENT EXITING THE PROJECT, THE PEAK FLOW RATES (Q_{50}) INCREASED BY MAXIMUM OF 0.7%, AND THE VOLUMES (V_{50}) INCREASED BY A MAXIMUM OF 3.5%. SIMILAR INCREASES ARE ANTICIPATED FOR THE DEPTHS AND VELOCITIES DUE TO THE SMALL INCREASE IN PEAK FLOW RATES (<1%). THESE REPRESENT NEGLIGIBLE INCREASES FROM THE PRE-DEVELOPMENT CONDITION. THE POST-DEVELOPMENT DOES NOT INCLUDE THE MITIGATION EFFECTS OF THE BASINS. SEE IMPACT ANALYSIS CALCULATIONS.

0 50 100 200
SCALE: 1"=100'

HYDROLOGY STUDY/DRAINAGE CONCEPT/LID PLAN
APPROVED FOR AREA AND Q ONLY
APPROVED BY:_____RCE NO:_____DATE_____
CHECKED BY:_____DATE_____
COUNTY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS
LAND DEVELOPMENT DIVISION

R2011-00807 (RCUP201100076) C-05

PREPARED UNDER THE SUPERVISION OF:
REGISTERED PROFESSIONAL ENGINEER JOSEPH E. DIETZ No. 67032 EXP: 9-30-14 CIVIL STATE OF CALIFORNIA
JOSEPH E. DIETZ, P.E.

EXHIBIT PREPARER:
TETRA TECH, INC.
17885 VON KARMAN AVENUE, SUITE 500
IRVINE, CALIFORNIA 92614-6213
TEL: 949.809.5000

NOT ISSUED FOR CONSTRUCTION

NO.	DATE	REVISION	SUBM'T BY	APPV'D BY

Solar PV System Summary

52MW AC Solar Photovoltaic Generation System
APNs 3218-002-018, 023
3203-002-015, 017
3218-001-002, 003, 004
3203-002-011, 012, 013, 014
3219-019-011

Project Name:
Project 4 Antelope Solar Greenworks
Project Address:
90th St. W & W Ave. J
Los Angeles County, CA
SCH # 2012061068

HYDROLOGY STUDY/DRAINAGE CONCEPT/LID FOR CUP 201100076 ON-SITE DRAINAGE MAP

APPLICANT:
Silverado Power
2 Embarcadero Center, Ste. 410
San Francisco, CA 94111
(415) 692-7740

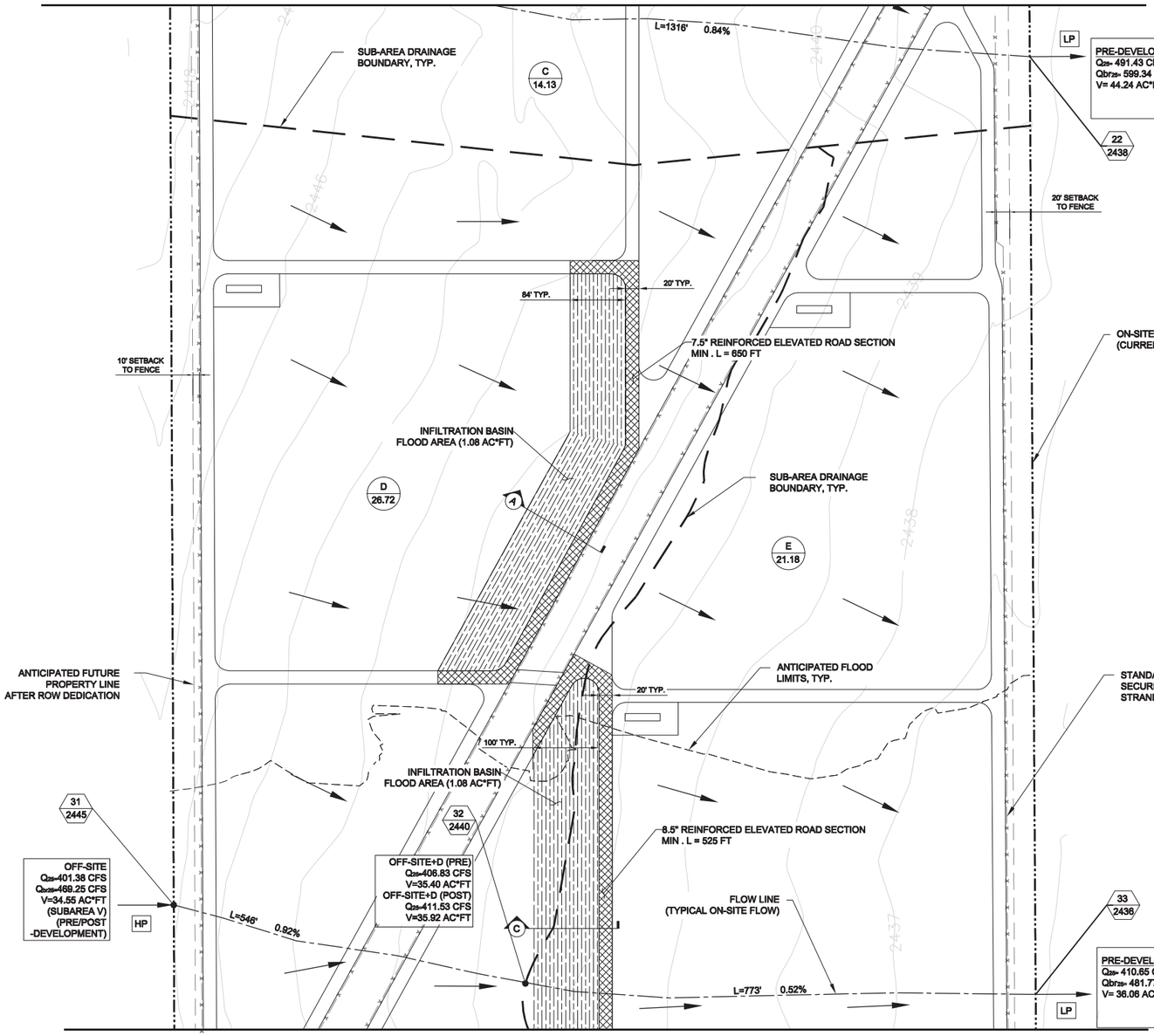
SILVERADO power

PROJECT 4
ANTELOPE SOLAR GREENWORKS
LOS ANGELES COUNTY, CA

2 Embarcadero Center, Ste. 410 | San Francisco, CA 94111 | 415.692.7740 main

P:\04041\135--04646-12001\SUPPORTDOCS\CALCS\HYDROLOGY\10A\FINAL DESIGN\ONSITE HYDROLOGY C-05,C-06.DWG
PLOT/UPDATE: Dec 12, 2013 10:14:46 AM

MATCHLINE: SEE SHEET C-05



PRE-DEVELOPMENT	POST DEVELOPMENT	MITIGATION (FOR ENTIRE SITE)
Q_{25}= 491.43 CFS	Q_{25}= 492.22 CFS	Q_{PM}=8.73 CFS
Qbr_{25}= 599.34 CFS	Qbr_{25}= 600.04 CFS	V_M=2.84 AC*FT
V= 44.24 AC*FT	V= 44.49 AC*FT	DELTA (FOR ENTIRE SITE)
		ΔQ_{25}=16.82 CFS
		ΔV_{25}=4.67 AC*FT

PRE-DEVELOPMENT	POST DEVELOPMENT	MITIGATION (FOR ENTIRE SITE)
Q_{25}= 410.65 CFS	Q_{25}= 416.39 CFS	Q_{PM}=8.73 CFS
Qbr_{25}= 481.77 CFS	Qbr_{25}= 487.35 CFS	V_M=2.84 AC*FT
V= 36.06 AC*FT	V= 36.96 AC*FT	DELTA (FOR ENTIRE SITE)
		ΔQ_{25}=16.82 CFS
		ΔV_{25}=4.67 AC*FT

MATCHLINE: SEE SHEET C-07

LEGEND:

- XX / XX.X — SUBAREA ID / ACREAGE
- XX / XXX — NODE ID / ELEVATION
- HP — HIGH POINT
- LP — LOW POINT
- WATERSHED BOUNDARY
- FUTURE PROPERTY LINE
- SECURITY FENCING
- FLOW LINE
- SUB-AREA BOUNDARY
- ANTICIPATED 25-YR FLOOD LIMITS
- ELEVATED ROAD SECTION
- INFILTRATION BASIN FLOOD AREA

Q_{25} PEAK FLOW RATE (25-YEAR STORM EVENT)
Qbr_{25} BURNED PEAK FLOW RATE (25-YEAR STORM EVENT)
V STORM VOLUME (25-YEAR STORM EVENT)
Q_{PM} PEAK MITIGATION FLOW RATE (85TH % STORM EVENT)
V_M MITIGATION VOLUME (85TH % STORM EVENT)
V_{DP} DEBRIS POTENTIAL VOLUME = 112,283 CY

DRAINAGE CONCEPT NOTES:
1) LOCATIONS OF DRAINAGE DEVICES SHOWN ARE NOT NECESSARILY APPROVED.
2) COMPLIANCE OF ALL STREET DRAINAGE REQUIREMENTS WILL BE MET TO THE SATISFACTION OF THE DEPARTMENT OF PUBLIC WORKS.
3) APPROVAL OF THE DRAINAGE CONCEPT DOES NOT CONSTITUTE DETERMINATION THAT THE OFFSITE IMPROVEMENTS ARE REQUIRED WITHIN THE MEANING OF GOVERNMENT CODE SECTION 66462.5, (EXCEPT AS NOTES).
4) AN OFFSITE DRAINAGE COVENANT FOR ACCEPTANCE OR DRAINAGE (AND DRAINAGE FACILITIES) MAY BE REQUIRED WHERE INDICATED.
5) A NOTE OF FLOOD HAZARD WILL BE REQUIRED WHERE INDICATED ON THIS PLAN.
6) A SOIL REPORT WILL BE REQUIRED TO VERIFY THAT A 7-DAY PERCOLATION RATE CAN BE OBTAINED.
7) BASIN SIZES ARE DEPENDENT ON THE VERIFICATION OF PERCOLATION RATES AND ARE SUBJECT TO CHANGE.
8) WITHIN A FEMA ZONE A, FEMA ZONE X - UNSHADED, AND FEMA ZONE X - SHADED.
9) WITHIN A COUNTY ADOPTED FLOODWAY.
10) ALL BASINS ARE PRIVATELY MAINTAINED.
11) FOR THE POST-DEVELOPMENT 50-YEAR STORM EVENT EXITING THE PROJECT, THE PEAK FLOW RATES (Q_{50}) INCREASED BY MAXIMUM OF 0.7%, AND THE VOLUMES (V_{50}) INCREASED BY A MAXIMUM OF 3.5%. SIMILAR INCREASES ARE ANTICIPATED FOR THE DEPTHS AND VELOCITIES DUE TO THE SMALL INCREASE IN PEAK FLOW RATES (<1%). THESE REPRESENT NEGLIGIBLE INCREASES FROM THE PRE-DEVELOPMENT CONDITION. THE POST-DEVELOPMENT DOES NOT INCLUDE THE MITIGATION EFFECTS OF THE BASINS. SEE IMPACT ANALYSIS CALCULATIONS.

0 50 100 200
SCALE: 1"=100'

HYDROLOGY STUDY/DRAINAGE CONCEPT/LID PLAN
APPROVED FOR AREA AND Q ONLY
APPROVED BY:_____RCE NO:_____DATE_____
CHECKED BY:_____DATE _____
COUNTY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS
LAND DEVELOPMENT DIVISION

R2011-00807 (RCUP201100076) C-06

PREPARED UNDER THE SUPERVISION OF:
REGISTERED PROFESSIONAL ENGINEER JOSEPH E. DIETZ No. 67032 EXP: 9-30-14 CIVIL STATE OF CALIFORNIA
JOSEPH E. DIETZ, P.E.

EXHIBIT PREPARER:
TETRA TECH, INC.
17885 VON KARMAN AVENUE, SUITE 500
IRVINE, CALIFORNIA 92614-6213
TEL: 949.809.5000

NOT ISSUED FOR CONSTRUCTION

NO.	DATE	REVISION	SUBM'T BY	APPV'D BY

Solar PV System Summary

52MW AC Solar Photovoltaic Generation System
APNs 3218-002-018, 023
3203-002-015, 017
3218-001-002, 003, 004
3203-002-011, 012, 013, 014
3219-019-011

Project Name:
Project 4 Antelope Solar Greenworks
Project Address:
90th St. W & W Ave. J
Los Angeles County, CA
SCH # 2012061068

HYDROLOGY STUDY/DRAINAGE CONCEPT/LID FOR CUP 201100076 ON-SITE DRAINAGE MAP

APPLICANT:
Silverado Power
2 Embarcadero Center, Ste. 410
San Francisco, CA 94111
(415) 692-7740

SILVERADO power

PROJECT 4
ANTELOPE SOLAR GREENWORKS
LOS ANGELES COUNTY, CA

2 Embarcadero Center, Ste. 410 | San Francisco, CA 94111 | 415.692.7740 main

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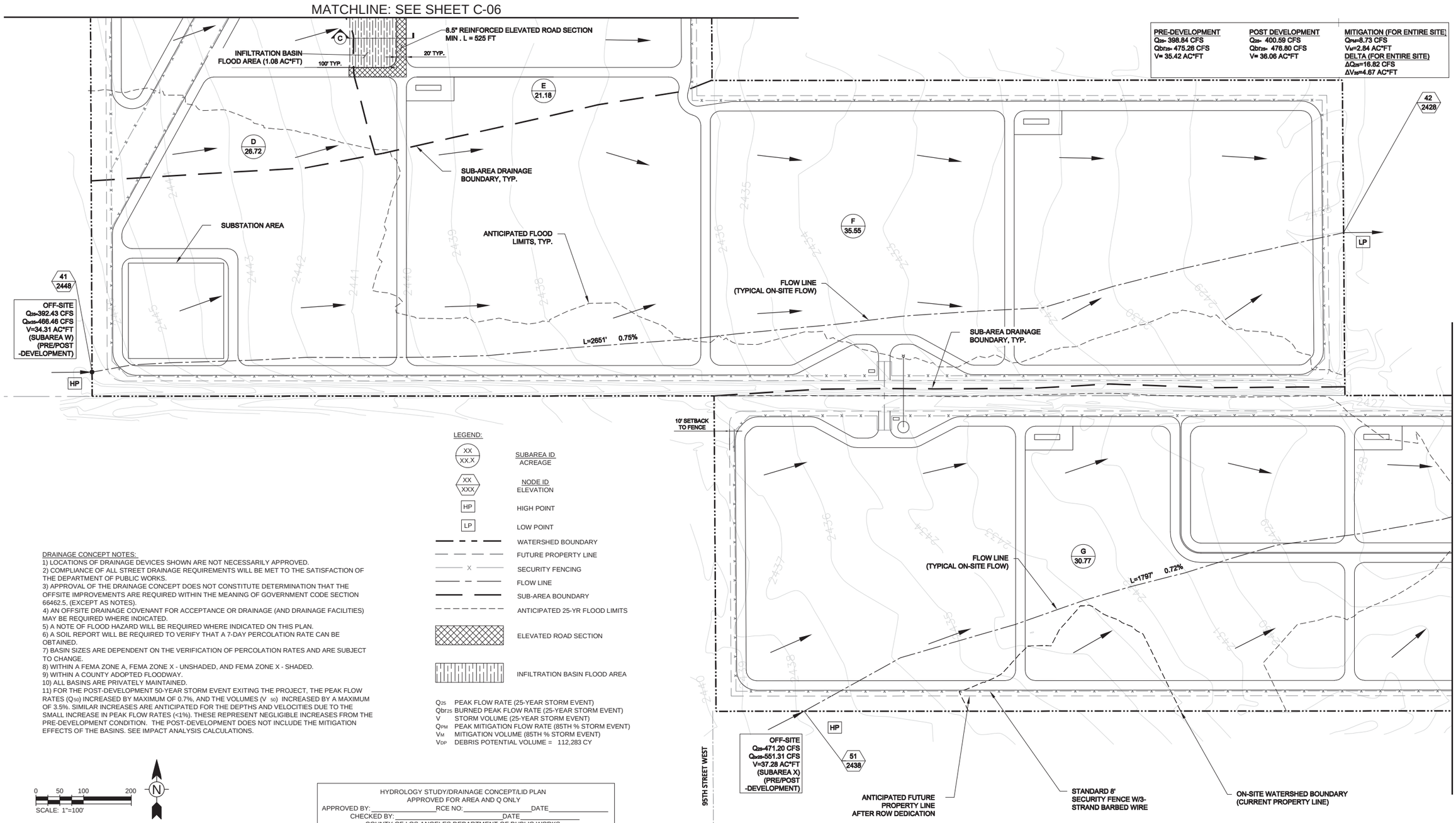
PLOT/PAPERWIT: TAN 17 2013 10:24:49 AM



PRE-DEVELOPMENT	POST DEVELOPMENT	MITIGATION (FOR ENTIRE SITE)
Q_{25}= 398.84 CFS	Q_{25}= 400.59 CFS	Q_{PM}=8.73 CFS
Q_{br25}= 475.26 CFS	Q_{br25}= 476.80 CFS	V_M=2.84 AC*FT
V= 35.42 AC*FT	V= 36.06 AC*FT	DELTA (FOR ENTIRE SITE)
		ΔQ_{25}=16.82 CFS
		ΔV_{25}=4.67 AC*FT

LEGEND:

XX / XX.X	SUBAREA ID / ACREAGE
XX / XXX	NODE ID / ELEVATION
HP	HIGH POINT
LP	LOW POINT
	WATERSHED BOUNDARY
	FUTURE PROPERTY LINE
	SECURITY FENCING
	FLOW LINE
	SUB-AREA BOUNDARY
	ANTICIPATED 25-YR FLOOD LIMITS
	ELEVATED ROAD SECTION
	INFILTRATION BASIN FLOOD AREA

DRAINAGE CONCEPT NOTES:

1) LOCATIONS OF DRAINAGE DEVICES SHOWN ARE NOT NECESSARILY APPROVED.
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7) BASIN SIZES ARE DEPENDENT ON THE VERIFICATION OF PERCOLATION RATES AND ARE SUBJECT TO CHANGE.
8) WITHIN A FEMA ZONE A, FEMA ZONE X - UNSHADED, AND FEMA ZONE X - SHADED.
9) WITHIN A COUNTY ADOPTED FLOODWAY.
10) ALL BASINS ARE PRIVATELY MAINTAINED.
11) FOR THE POST-DEVELOPMENT 50-YEAR STORM EVENT EXITING THE PROJECT, THE PEAK FLOW RATES (Q_{50}) INCREASED BY MAXIMUM OF 0.7%, AND THE VOLUMES (V_{50}) INCREASED BY A MAXIMUM OF 3.5%. SIMILAR INCREASES ARE ANTICIPATED FOR THE DEPTHS AND VELOCITIES DUE TO THE SMALL INCREASE IN PEAK FLOW RATES (<1%). THESE REPRESENT NEGLIGIBLE INCREASES FROM THE PRE-DEVELOPMENT CONDITION. THE POST-DEVELOPMENT DOES NOT INCLUDE THE MITIGATION EFFECTS OF THE BASINS. SEE IMPACT ANALYSIS CALCULATIONS.

Q_{25} PEAK FLOW RATE (25-YEAR STORM EVENT)
Q_{br25} BURNED PEAK FLOW RATE (25-YEAR STORM EVENT)
V STORM VOLUME (25-YEAR STORM EVENT)
Q_{PM} PEAK MITIGATION FLOW RATE (85TH % STORM EVENT)
V_M MITIGATION VOLUME (85TH % STORM EVENT)
V_{DP} DEBRIS POTENTIAL VOLUME = 112,283 CY

0 50 100 200
SCALE: 1"=100'

HYDROLOGY STUDY/DRAINAGE CONCEPT/LID PLAN
APPROVED FOR AREA AND Q ONLY
APPROVED BY:_____RCE NO:_____DATE_____
CHECKED BY:_____DATE_____
COUNTY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS
LAND DEVELOPMENT DIVISION

R2011-00807 (RCUP201100076) C-07

PREPARED UNDER THE SUPERVISION OF:
REGISTERED PROFESSIONAL ENGINEER JOSEPH E. DIETZ No. 67032 EXP: 9-30-14 CIVIL STATE OF CALIFORNIA
JOSEPH E. DIETZ, P.E.

EXHIBIT PREPARER:
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17885 VON KARMAN AVENUE, SUITE 500
IRVINE, CALIFORNIA 92614-6213
TEL: 949.809.5000

NOT ISSUED FOR CONSTRUCTION

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Solar PV System Summary

52MW AC Solar Photovoltaic Generation System
APNs 3218-002-018, 023
3203-002-015, 017
3218-001-002, 003, 004
3203-002-011, 012, 013, 014
3219-019-011

Project Name:
Project 4 Antelope Solar Greenworks
Project Address:
90th St. W & W Ave. J
Los Angeles County, CA
SCH # 2012061068

HYDROLOGY STUDY/DRAINAGE CONCEPT/LID
FOR CUP 201100076
ON-SITE DRAINAGE MAP

APPLICANT:
Silverado Power
2 Embarcadero Center, Ste. 410
San Francisco, CA 94111
(415) 692-7740

SILVERADO power
2 Embarcadero Center, Ste. 410 | San Francisco, CA 94111 | 415.692.7740 main

PROJECT 4
ANTELOPE SOLAR
GREENWORKS
LOS ANGELES COUNTY, CA

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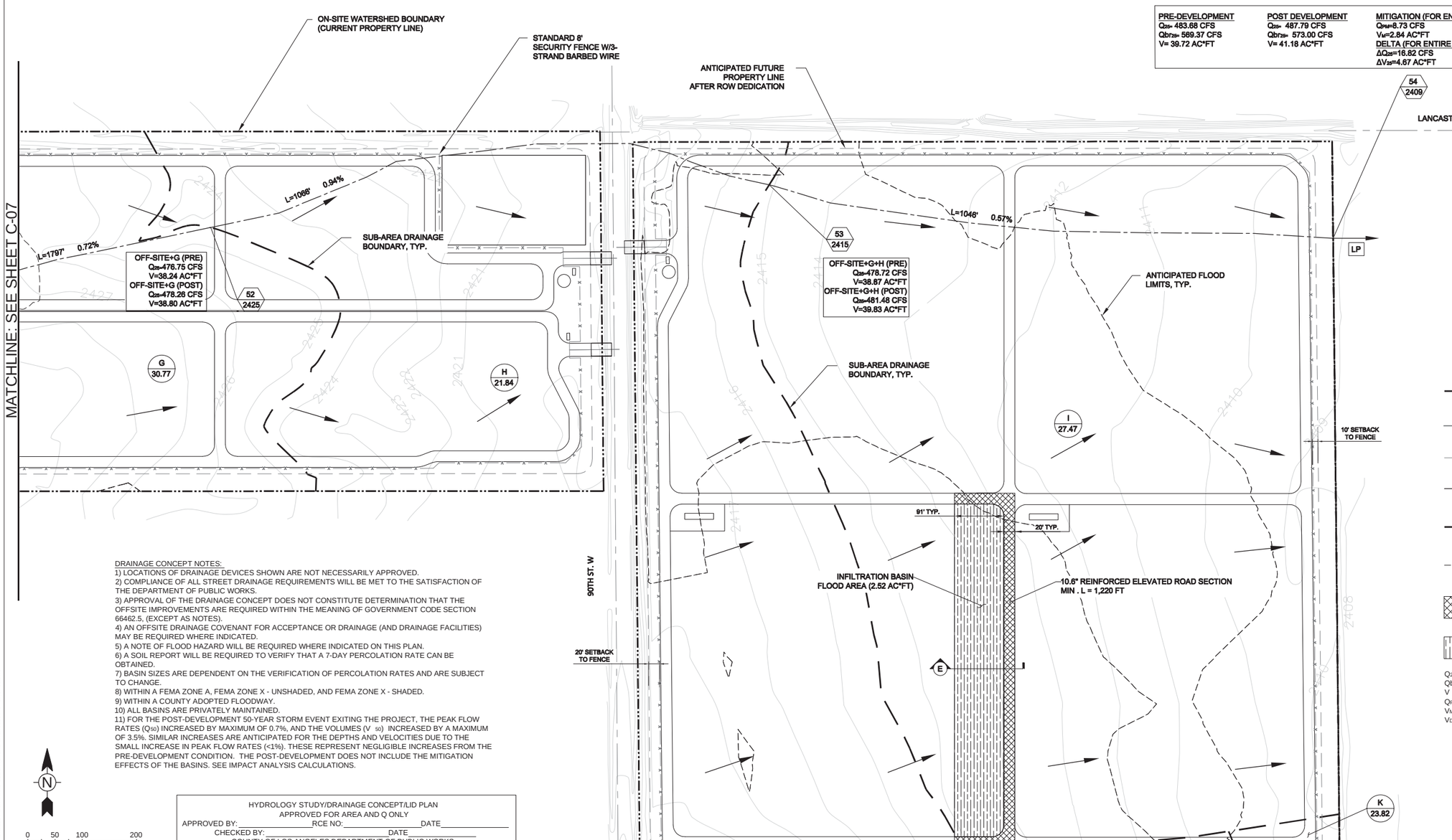
PLOT/UPDATE: Dec 6, 2013 1:24:54 PM

PRE-DEVELOPMENT	POST DEVELOPMENT	MITIGATION (FOR ENTIRE SITE)
Q_{25}= 483.68 CFS	Q_{25}= 487.79 CFS	Q_{PM}=8.73 CFS
Qbr_{25}= 569.37 CFS	Qbr_{25}= 573.00 CFS	V_M=2.84 AC*FT
V= 39.72 AC*FT	V= 41.18 AC*FT	DELTA (FOR ENTIRE SITE)
		ΔQ_{25}=16.82 CFS
		ΔV_{25}=4.67 AC*FT



LEGEND:

- XX / XX.X — SUBAREA ID / ACREAGE
- XX / XXX — NODE ID / ELEVATION
- HP — HIGH POINT
- LP — LOW POINT
- WATERSHED BOUNDARY
- FUTURE PROPERTY LINE
- X — SECURITY FENCING
- FLOW LINE
- SUB-AREA BOUNDARY
- ANTICIPATED 25-YR FLOOD LIMITS
- ELEVATED ROAD SECTION
- INFILTRATION BASIN FLOOD AREA

Q_{25} PEAK FLOW RATE (25-YEAR STORM EVENT)
Qbr_{25} BURNED PEAK FLOW RATE (25-YEAR STORM EVENT)
V STORM VOLUME (25-YEAR STORM EVENT)
Q_{PM} PEAK MITIGATION FLOW RATE (85TH % STORM EVENT)
V_M MITIGATION VOLUME (85TH % STORM EVENT)
V_{DP} DEBRIS POTENTIAL VOLUME = 112,283 CY

DRAINAGE CONCEPT NOTES:
1) LOCATIONS OF DRAINAGE DEVICES SHOWN ARE NOT NECESSARILY APPROVED.
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10) ALL BASINS ARE PRIVATELY MAINTAINED.
11) FOR THE POST-DEVELOPMENT 50-YEAR STORM EVENT EXITING THE PROJECT, THE PEAK FLOW RATES (Q_{50}) INCREASED BY MAXIMUM OF 0.7%, AND THE VOLUMES (V_{50}) INCREASED BY A MAXIMUM OF 3.5%. SIMILAR INCREASES ARE ANTICIPATED FOR THE DEPTHS AND VELOCITIES DUE TO THE SMALL INCREASE IN PEAK FLOW RATES (<1%). THESE REPRESENT NEGLIGIBLE INCREASES FROM THE PRE-DEVELOPMENT CONDITION. THE POST-DEVELOPMENT DOES NOT INCLUDE THE MITIGATION EFFECTS OF THE BASINS. SEE IMPACT ANALYSIS CALCULATIONS.

N

0 50 100 200
SCALE: 1"=100'

HYDROLOGY STUDY/DRAINAGE CONCEPT/LID PLAN
APPROVED FOR AREA AND Q ONLY
APPROVED BY: _____ RCE NO: _____ DATE _____
CHECKED BY: _____ DATE _____
COUNTY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS
LAND DEVELOPMENT DIVISION

R2011-00807 (RCUP201100076) C-08

PREPARED UNDER THE SUPERVISION OF:

REGISTERED PROFESSIONAL ENGINEER JOSEPH E. DIETZ No. 67032 EXP: 9-30-14 CIVIL STATE OF CALIFORNIA

JOSEPH E. DIETZ, P.E.

EXHIBIT PREPARER:

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TEL: 949.809.5000

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NO.	DATE	REVISION	SUBM'T BY	APPV'D BY

Solar PV System Summary

52MW AC Solar Photovoltaic Generation System
APNs 3218-002-018, 023
3203-002-015, 017
3218-001-002, 003, 004
3203-002-011, 012, 013, 014
3219-019-011

Project Name:
Project 4 Antelope Solar Greenworks
Project Address:
90th St. W & W Ave. J
Los Angeles County, CA
SCH # 2012061068

HYDROLOGY STUDY/DRAINAGE CONCEPT/LID FOR CUP 201100076 ON-SITE DRAINAGE MAP

APPLICANT:
Silverado Power
2 Embarcadero Center, Ste. 410
San Francisco, CA 94111
(415) 692-7740

SILVERADO power

PROJECT 4
ANTELOPE SOLAR GREENWORKS
LOS ANGELES COUNTY, CA

2 Embarcadero Center, Ste. 410 | San Francisco, CA 94111 | 415.692.7740 main

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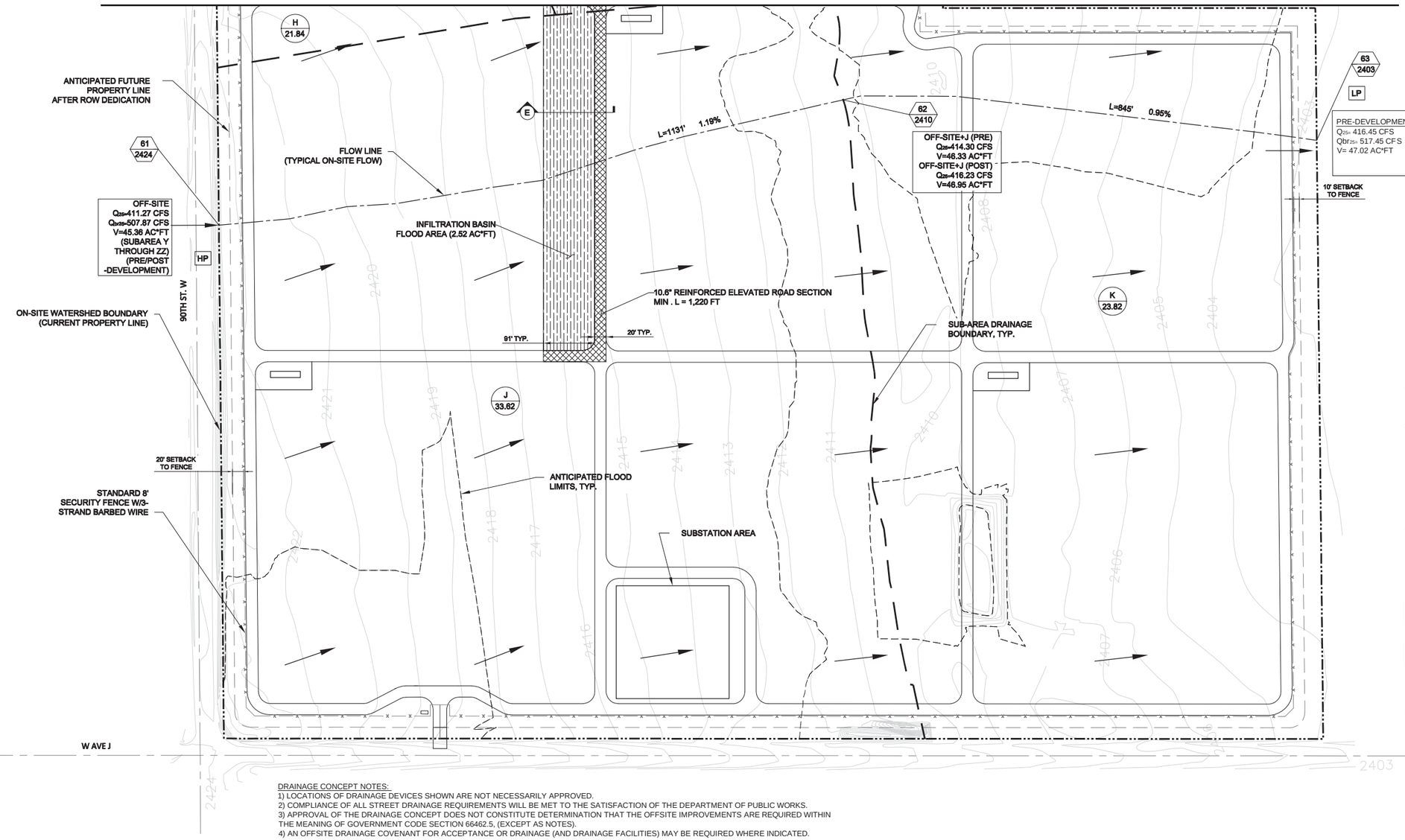
MATCHLINE: SEE SHEET C-08



PRE-DEVELOPMENT	POST DEVELOPMENT	MITIGATION (FOR ENTIRE SITE)
Q_{25}= 416.45 CFS	Q_{25}= 419.75 CFS	Q_{PM}=8.73 CFS
Qbr_{25}= 517.45 CFS	Qbr_{25}= 520.36 CFS	V_M=2.84 AC*FT
V= 47.02 AC*FT	V= 48.08 AC*FT	DELTA (FOR ENTIRE SITE)
		ΔQ_{25}=16.82 CFS
		ΔV_{25}=4.67 AC*FT

LEGEND:

- XX / XX.X — SUBAREA ID / ACREAGE
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Q_{25} PEAK FLOW RATE (25-YEAR STORM EVENT)
Qbr_{25} BURNED PEAK FLOW RATE (25-YEAR STORM EVENT)
V STORM VOLUME (25-YEAR STORM EVENT)
Q_{PM} PEAK MITIGATION FLOW RATE (85TH % STORM EVENT)
V_M MITIGATION VOLUME (85TH % STORM EVENT)
V_{DP} DEBRIS POTENTIAL VOLUME = 112,283 CY

DRAINAGE CONCEPT NOTES:

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N

0 50 100 200
SCALE: 1"=100'

HYDROLOGY STUDY/DRAINAGE CONCEPT/LID PLAN
APPROVED FOR AREA AND Q ONLY
APPROVED BY:_____RCE NO:_____DATE_____
CHECKED BY:_____DATE_____
COUNTY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS
LAND DEVELOPMENT DIVISION

R2011-00807 (RCUP201100076) C-09

PREPARED UNDER THE SUPERVISION OF:
REGISTERED PROFESSIONAL ENGINEER JOSEPH E. DIETZ No. 67032 EXP: 9-30-14 CIVIL STATE OF CALIFORNIA
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APNs 3218-002-018, 023
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3218-001-002, 003, 004
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SILVERADO power

PROJECT 4
ANTELOPE SOLAR GREENWORKS
LOS ANGELES COUNTY, CA

2 Embarcadero Center, Ste. 410 | San Francisco, CA 94111 | 415.692.7740 main

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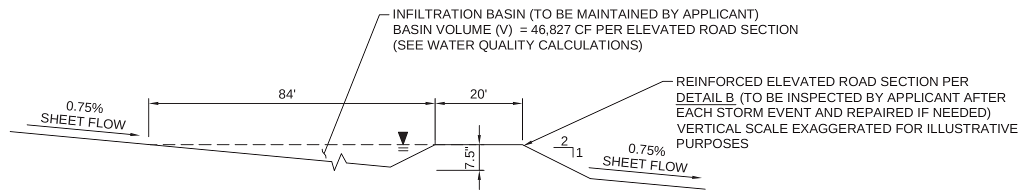
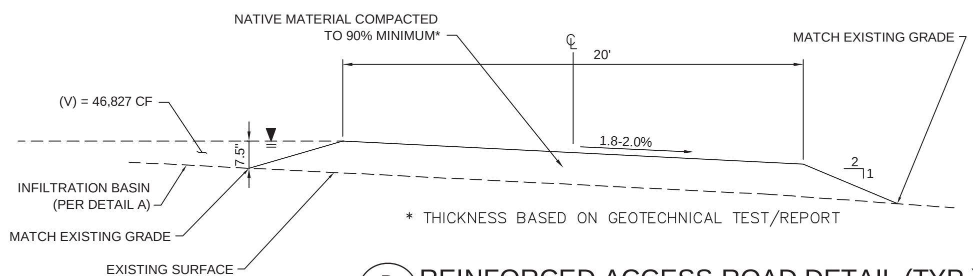
PLOT DATE: Dec 16, 2013 - 12:25 PM



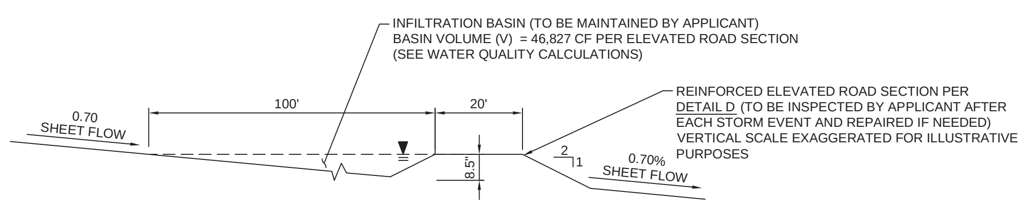
(A) INFILTRATION BASIN DETAIL

SCALE: NTS



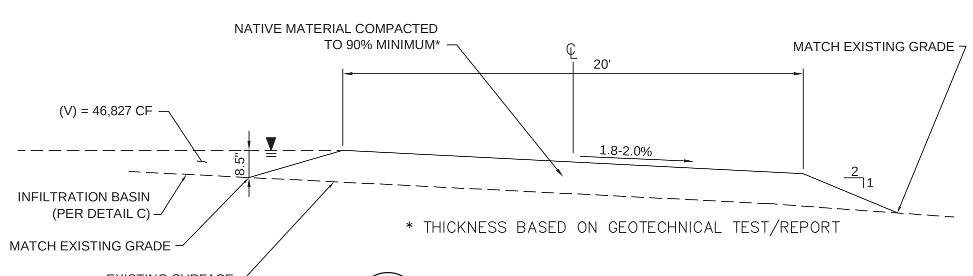
(B) REINFORCED ACCESS ROAD DETAIL (TYP.)

SCALE: NTS



(C) INFILTRATION BASIN DETAIL

SCALE: NTS



(D) REINFORCED ACCESS ROAD DETAIL (TYP.)

SCALE: NTS

HYDROLOGY RESULTS: (BASED ON LA FLOOD CONTROL TC CALCULATOR)

ON SITE HYDROLOGY (PRE DEVELOPMENT)

Project	Subarea	Area (acres)	%Imp	Frequency	Soil Type	Length (ft)	Slope (ft/ft)	Isohyet (in.)	Tc calculated (min.)	Intensity (in./hr)	Cu	Cd	Flow rate (cfs)	Fire Factor	Burned flow rate (cfs)	Volume (acre ft)
Project 4	A	7.95	0.01	25	134	654	0.0076	3.1	30	0.80	0.10	0.11	0.70	0.34	1.29	0.22
Project 4	B	12.45	0.01	25	134	653	0.0092	3.1	30	0.80	0.10	0.11	1.10	0.34	2.02	0.35
Project 4	C	14.13	0.01	25	134	1316	0.0084	3.1	30	0.80	0.10	0.11	1.24	0.34	2.29	0.40
Project 4	D	26.72	0.01	25	120	546	0.0092	3.2	28	0.85	0.23	0.24	5.45	0.34	7.28	0.85
Project 4	E	21.18	0.01	25	120	773	0.0052	3.2	30	0.82	0.21	0.22	3.82	0.34	5.24	0.66
Project 4	F	35.55	0.01	25	120	2651	0.0075	3.2	30	0.82	0.21	0.22	6.41	0.34	8.80	1.11
Project 4	G	30.77	0.01	25	120	1797	0.0072	3.2	30	0.82	0.21	0.22	5.55	0.34	7.62	0.96
Project 4	H	21.84	0.01	25	134	1066	0.0094	3.2	30	0.82	0.10	0.11	1.97	0.34	3.64	0.63
Project 4	I	27.47	0.01	25	120	1046	0.0057	3.2	30	0.82	0.21	0.22	4.96	0.34	6.80	0.85
Project 4	J	33.62	0.01	25	134	1131	0.0119	3.2	30	0.82	0.10	0.11	3.03	0.34	5.61	0.97
Project 4	K	23.82	0.01	25	134	845	0.0095	3.2	30	0.82	0.10	0.11	2.15	0.34	3.97	0.69
Project 4	A	7.95	0.01	50	134	654	0.0076	3.5	30	0.91	0.10	0.11	0.80	0.34	1.49	0.25
Project 4	B	12.45	0.01	50	134	653	0.0092	3.5	30	0.91	0.10	0.11	1.25	0.34	2.33	0.40
Project 4	C	14.13	0.01	50	134	1316	0.0084	3.5	30	0.91	0.10	0.11	1.41	0.34	2.64	0.45
Project 4	D	26.72	0.01	50	120	546	0.0092	3.6	18	1.19	0.38	0.39	12.40	0.34	14.61	1.08
Project 4	E	21.18	0.01	50	120	773	0.0052	3.6	30	0.94	0.29	0.30	5.97	0.34	7.48	0.79
Project 4	F	35.55	0.01	50	120	2651	0.0075	3.6	30	0.94	0.29	0.30	10.03	0.34	12.56	1.33
Project 4	G	30.77	0.01	50	120	1797	0.0072	3.6	30	0.94	0.29	0.30	8.68	0.34	10.87	1.15
Project 4	H	21.84	0.01	50	134	1066	0.0094	3.6	30	0.94	0.10	0.11	2.26	0.34	4.24	0.72
Project 4	I	27.47	0.01	50	120	1046	0.0057	3.6	30	0.94	0.29	0.30	7.75	0.34	9.70	1.03
Project 4	J	33.62	0.01	50	134	1131	0.0119	3.6	30	0.94	0.10	0.11	3.48	0.34	6.52	1.11
Project 4	K	23.82	0.01	50	134	845	0.0095	3.6	30	0.94	0.10	0.11	2.46	0.34	4.62	0.79

ON SITE HYDROLOGY (POST DEVELOPMENT)

Project	Subarea	Area (acres)	%Imp	Frequency	Soil Type	Length (ft)	Slope (ft/ft)	Isohyet (in.)	Tc calculated (min.)	Intensity (in./hr)	Cu	Cd	Flow rate (cfs)	Fire Factor	Burned flow rate (cfs)	Volume (acre ft)
Project 4	A	7.95	0.1	25	134	654	0.0076	3.1	30	0.80	0.10	0.18	1.14	0.34	1.68	0.36
Project 4	B	12.45	0.1	25	134	653	0.0092	3.1	30	0.80	0.10	0.18	1.79	0.34	2.64	0.57
Project 4	C	14.13	0.1	25	134	1316	0.0084	3.1	30	0.80	0.10	0.18	2.03	0.34	2.99	0.65
Project 4	D	26.72	0.1	25	120	546	0.0092	3.2	20	1.00	0.32	0.38	10.15	0.34	11.94	1.37
Project 4	E	21.18	0.1	25	120	773	0.0052	3.2	30	0.82	0.21	0.28	4.86	0.34	6.16	1.04
Project 4	F	35.55	0.1	25	120	2651	0.0075	3.2	30	0.82	0.21	0.28	8.16	0.34	10.34	1.75
Project 4	G	30.77	0.1	25	120	1797	0.0072	3.2	30	0.82	0.21	0.28	7.06	0.34	8.95	1.52
Project 4	H	21.84	0.1	25	134	1066	0.0094	3.2	30	0.82	0.10	0.18	3.22	0.34	4.75	1.03
Project 4	I	27.47	0.1	25	120	1046	0.0057	3.2	30	0.82	0.21	0.28	6.31	0.34	7.99	1.35
Project 4	J	33.62	0.1	25	134	1131	0.0119	3.2	30	0.82	0.10	0.18	4.96	0.34	7.31	1.59
Project 4	K	23.82	0.1	25	134	845	0.0095	3.2	30	0.82	0.10	0.18	3.52	0.34	5.18	1.13
Project 4	A	7.95	0.1	50	134	654	0.0076	3.5	30	0.91	0.10	0.18	1.30	0.34	1.93	0.42
Project 4	B	12.45	0.1	50	134	653	0.0092	3.5	30	0.91	0.10	0.18	2.04	0.34	3.03	0.65
Project 4	C	14.13	0.1	50	134	1316	0.0084	3.5	30	0.91	0.10	0.18	2.31	0.34	3.44	0.74
Project 4	D	26.72	0.1	50	120	546	0.0092	3.6	17	1.22	0.38	0.43	14.02	0.34	16.11	1.62
Project 4	E	21.18	0.1	50	120	773	0.0052	3.6	25	1.02	0.33	0.39	8.43	0.34	9.85	1.26
Project 4	F	35.55	0.1	50	120	2651	0.0075	3.6	30	0.94	0.29	0.35	11.70	0.34	14.01	2.06
Project 4	G	30.77	0.1	50	120	1797	0.0072	3.6	30	0.94	0.29	0.35	10.12	0.34	12.13	1.79
Project 4	H	21.84	0.1	50	134	1066	0.0094	3.6	30	0.94	0.10	0.18	3.70	0.34	5.50	1.18
Project 4	I	27.47	0.1	50	120	1046	0.0057	3.6	30	0.94	0.29	0.35	9.04	0.34	10.83	1.59
Project 4	J	33.62	0.1	50	134	1131	0.0119	3.6	30	0.94	0.10	0.18	5.69	0.34	8.46	1.81
Project 4	K	23.82	0.1	50	134	845	0.0095	3.6	30	0.94	0.10	0.18	4.03	0.34	6.00	1.29
Project 4	A	7.95	0.1	MIT.	134	654	0.0076	0.75	30	0.19	0.10	0.18	0.27	0.34	0.35	0.09
Project 4	B	12.45	0.1	MIT.	134	653	0.0092	0.75	30	0.19	0.10	0.18	0.43	0.34	0.55	0.14
Project 4	C	14.13	0.1	MIT.	134	1316	0.0084	0.75	30	0.19	0.10	0.18	0.48	0.34	0.63	0.16
Project 4	D	26.72	0.1	MIT.	120	546	0.0092	0.75	30	0.19	0.10	0.18	0.91	0.34	1.19	0.30
Project 4	E	21.18	0.1	MIT.	120	773	0.0052	0.75	30	0.19	0.10	0.18	0.72	0.34	0.94	0.24
Project 4	F	35.55	0.1	MIT.	120	2651	0.0075	0.75	30	0.19	0.10	0.18	1.22	0.34	1.58	0.39
Project 4	G	30.77	0.1	MIT.	120	1797	0.0072	0.75	30	0.19	0.10	0.18	1.05	0.34	1.37	0.34
Project 4	H	21.84	0.1	MIT.	134	1066	0.0094	0.75	30	0.19	0.10	0.18	0.75	0.34	0.97	0.24
Project 4	I	27.47	0.1	MIT.	120	1046	0.0057	0.75	30	0.19	0.10	0.18	0.94	0.34	1.22	0.31
Project 4	J	33.62	0.1	MIT.	134	1131	0.0119	0.75	30	0.19	0.10	0.18	1.15	0.34	1.50	0.37
Project 4	K	23.82	0.1	MIT.	134	845	0.0095	0.75	30	0.19	0.10	0.18	0.81	0.34	1.06	0.26

NOTE: FOR INFILTRATION BASIN MITIGATION VOLUME, SUM MIT. FREQUENCY VOLUMES UNDER POST-DEVELOPMENT TABLE. V_{PM}=2.84 AC*FT.

DELTA QUANTITIES FOR DRAINAGE AREA A:
ΔQ25 = 1.14 - 0.70 = 0.44 CFS
ΔV25 = 0.36 - 0.22 = 0.14 AC*FT

DELTA QUANTITIES FOR DRAINAGE AREA B:
ΔQ25 = 1.79 - 1.10 = 0.69 CFS
ΔV25 = 0.57 - 0.35 = 0.22 AC*FT

DELTA QUANTITIES FOR DRAINAGE AREA C
ΔQ25 = 2.03 - 1.24 = 0.79 CFS
ΔV25 = 0.65 - 0.40 = 0.25 AC*FT

DELTA QUANTITIES FOR DRAINAGE AREA D
ΔQ25 = 10.15 - 5.45 = 4.70 CFS
ΔV25 = 1.37 - 0.85 = 0.52 AC*FT

DELTA QUANTITIES FOR DRAINAGE AREA E
ΔQ25 = 4.86 - 3.82 = 1.04 CFS
ΔV25 = 1.04 - 0.66 = 0.38 AC*FT

DELTA QUANTITIES FOR DRAINAGE AREA F
ΔQ25 = 8.16 - 6.41 = 1.75 CFS
ΔV25 = 1.75 - 1.11 = 0.64 AC*FT

DELTA QUANTITIES FOR DRAINAGE AREA G
ΔQ25 = 7.06 - 5.55 = 1.51 CFS
ΔV25 = 1.52 - 0.96 = 0.56 AC*FT

DELTA QUANTITIES FOR DRAINAGE AREA H
ΔQ25 = 3.22 - 1.97 = 1.25 CFS
ΔV25 = 1.03 - 0.63 = 0.40 AC*FT

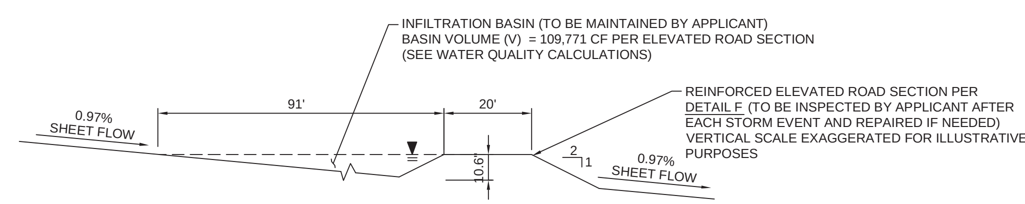
DELTA QUANTITIES FOR DRAINAGE AREA I
ΔQ25 = 6.31 - 4.96 = 1.35 CFS
ΔV25 = 1.35 - 0.85 = 0.50 AC*FT

DELTA QUANTITIES FOR DRAINAGE AREA J
ΔQ25 = 4.96 - 3.03 = 1.93 CFS
ΔV25 = 1.59 - 0.97 = 0.62 AC*FT

DELTA QUANTITIES FOR DRAINAGE AREA K
ΔQ25 = 3.52 - 2.15 = 1.37 CFS
ΔV25 = 1.13 - 0.69 = 0.44 AC*FT

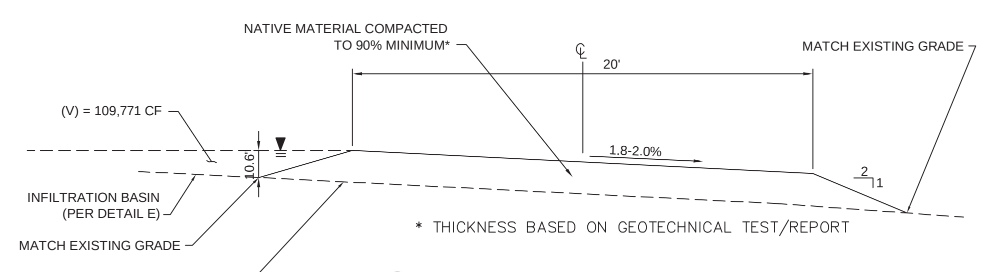
TOTAL DELTA QUANTITIES
ΔQ25 = 16.82 CFS
ΔV25 = 4.67 AC*FT

NOTE: DUE TO THE LID Δ QUANTITIES ABOVE BEING GREATER THAN THE MITIGATION QUANTITIES (Q_{PM} AND V_{PM}) THEY REPRESENT THE WORST CASE SCENARIO BETWEEN THE PRE-/POST DEVELOPMENT CONDITIONS AND THEREFORE SHALL BE USED FOR SIZING THE INFILTRATION BASINS.



(E) INFILTRATION BASIN DETAIL

SCALE: NTS



(F) REINFORCED ACCESS ROAD DETAIL (TYP.)

SCALE: NTS

HYDROLOGY STUDY/DRAINAGE CONCEPT/LID PLAN
APPROVED FOR AREA AND Q ONLY
APPROVED BY:______________RCE NO:_____________DATE____________
CHECKED BY:___________________________DATE____________
COUNTY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS
LAND DEVELOPMENT DIVISION

R2011-00807 (RCUP201100076) C-10

P:\04546\135-04546-12001\SUPPORTDOCS\CALCS\HYDROLOGY\10A\FINAL DESIGN\ONSITE HYDROLOGY C-10.DWG
PLOTUPDATE: Dec. 2, 2013 8:54 AM

PREPARED UNDER THE SUPERVISION OF:

REGISTERED PROFESSIONAL ENGINEER
JOSEPH E. DIETZ
No. 67032
EXP: 9-30-14
CIVIL
STATE OF CALIFORNIA

JOSEPH E. DIETZ, P.E.

EXHIBIT PREPARER:

TETRA TECH, INC.
17885 VON KARMAN AVENUE, SUITE 500
IRVINE, CALIFORNIA 92614-6213
TEL: 949.809.5000

NOT ISSUED FOR CONSTRUCTION

NO.	DATE	REVISION	SUBM'T BY	APPV'D BY

Solar PV System Summary

52MW AC Solar Photovoltaic Generation System
APNs 3218-002-018, 023
3203-002-015, 017
3218-001-002, 003, 004
3203-002-011, 012, 013, 014
3219-019-011

Project Name:
Project 4 Antelope Solar Greenworks
Project Address:
90th St. W & W Ave. J
Los Angeles County, CA
SCH # 2012061068

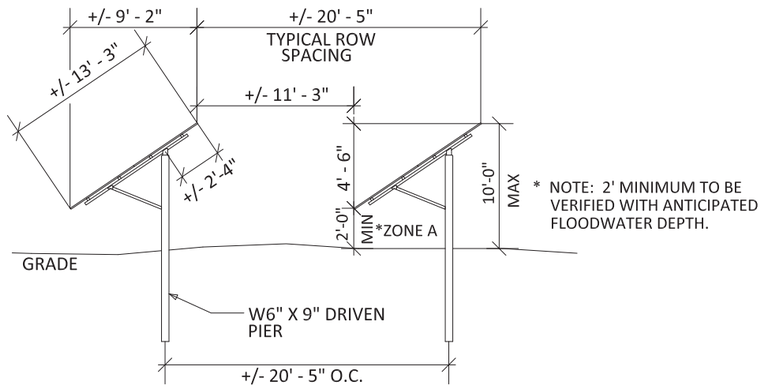
HYDROLOGY STUDY/DRAINAGE CONCEPT/LID
FOR CUP 201100076
ON-SITE DRAINAGE MAP

APPLICANT:
Silverado Power
2 Embarcadero Center, Ste. 410
San Francisco, CA 94111
(415) 692-7740

SILVERADO power

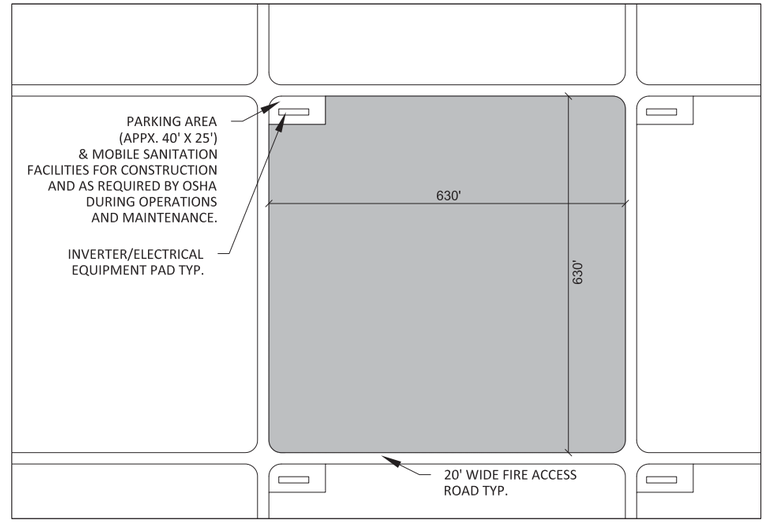
PROJECT 4
ANTELOPE SOLAR
GREENWORKS
LOS ANGELES COUNTY, CA

2 Embarcadero Center, Ste. 410 | San Francisco, CA 94111 | 415.692.7740 main



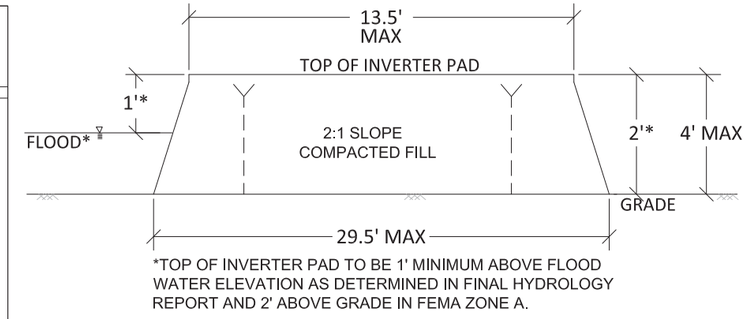
TYPICAL SOLAR ARRAY RACK DETAIL AND END ELEVATION

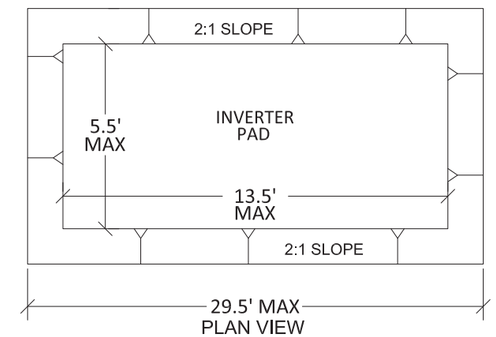
NOT TO SCALE



ARRAY BLOCK DETAIL (TYPICAL)

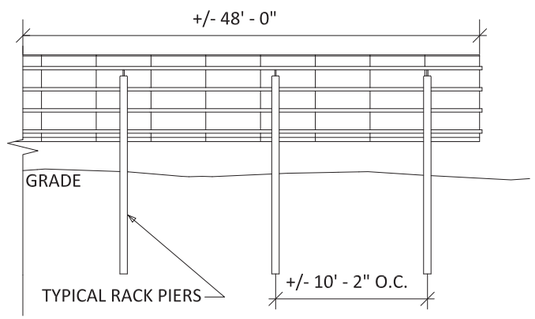
NOT TO SCALE





RAISED INVERTER PAD DETAILS FOR FLOOD AREAS AS NEEDED

NOT TO SCALE



SOLAR ARRAY RACK DETAIL ELEVATION

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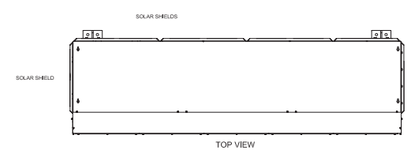
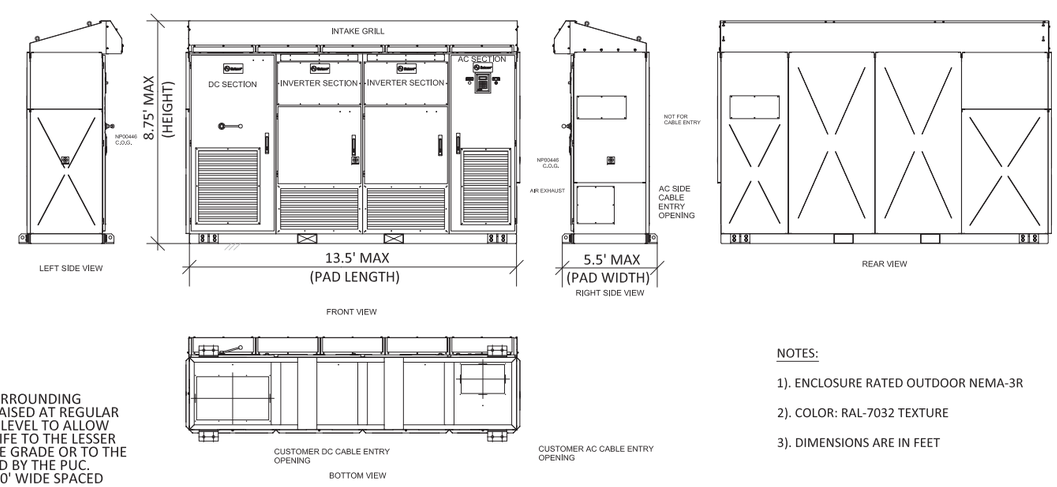


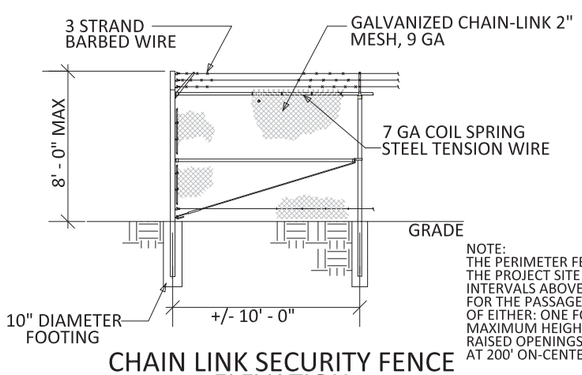


NOTES:

1). ENCLOSURE RATED OUTDOOR NEMA-3R

2). COLOR: RAL-7032 TEXTURE

3). DIMENSIONS ARE IN FEET



NOTE:
THE PERIMETER FENCING SURROUNDING THE PROJECT SITE WILL BE RAISED AT REGULAR INTERVALS ABOVE GROUND LEVEL TO ALLOW FOR THE PASSAGE OF WILDLIFE TO THE LESSER OF EITHER: ONE FOOT ABOVE GRADE OR TO THE MAXIMUM HEIGHT ALLOWED BY THE PUC. RAISED OPENINGS WILL BE 50' WIDE SPACED AT 200' ON-CENTER.

CHAIN LINK SECURITY FENCE ELEVATION

NOT TO SCALE

INVERTER PAD DETAILS (TYPICAL)

NOT TO SCALE

R2011-00807 (RCUP201100076) C-11

REGISTERED PROFESSIONAL ENGINEER JULIE ANN DELANEY No.C54558 CIVIL STATE OF CALIFORNIA

EXHIBIT PREPARER:

TETRA TECH, INC.
17885 VON KARMAN AVENUE, SUITE 500
IRVINE, CALIFORNIA 92614-6213
TEL: 949.809.5000

NOT ISSUED FOR CONSTRUCTION

NO.	DATE	REVISION	SUBM'T BY	APPV'D BY

Solar PV System Summary

52MW AC Solar Photovoltaic Generation System

APNs 3218-002-018, 023
3203-002-015, 017
3218-001-002, 003, 004
3203-002-011, 012, 013, 014
3219-019-011

Project Name:
Project 4 Antelope Solar Greenworks

Project Address:
90th St. W & W Ave. J
Los Angeles County, CA

SCH # 2012061068

DRAWING: DETAIL SHEET

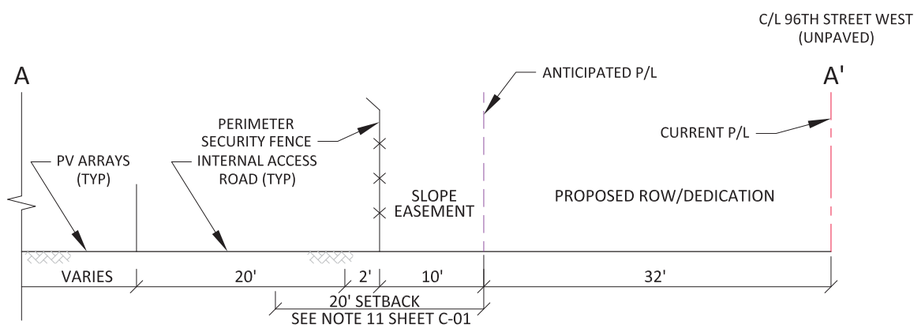
APPLICANT:
Silverado Power
2 Embarcadero Center, Ste. 410
San Francisco, CA 94111
(415) 692-7740

SILVERADO power

PROJECT 4
ANTELOPE SOLAR GREENWORKS
LOS ANGELES COUNTY, CA

2 Embarcadero Center, Ste. 410 | San Francisco, CA 94111 | 415.692.7740 main

P:\CAD\PROJECTS\06-4336 SILVERADO POWER\VP LA-OUP_14-0324\P4-10A\C-11-DETAIL SHEET-10A.DWG
PLOT/UPDATE: Mar 24, 2014 - 11:6:34 AM



SECTION A - A'

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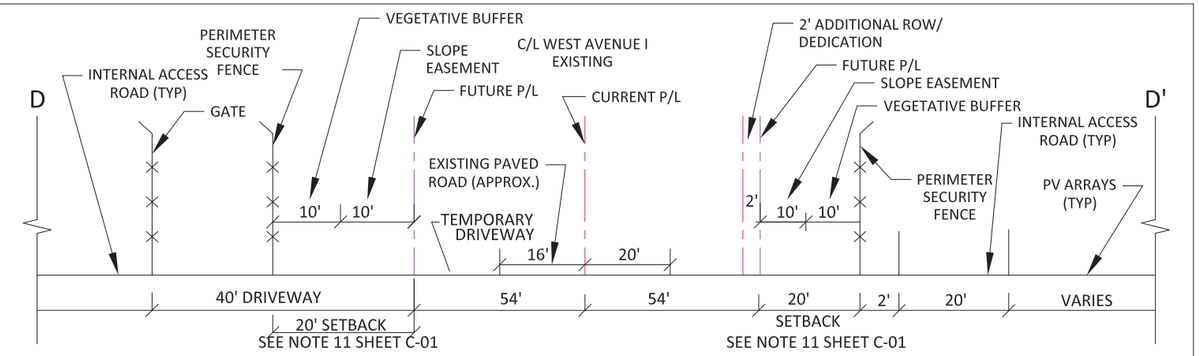

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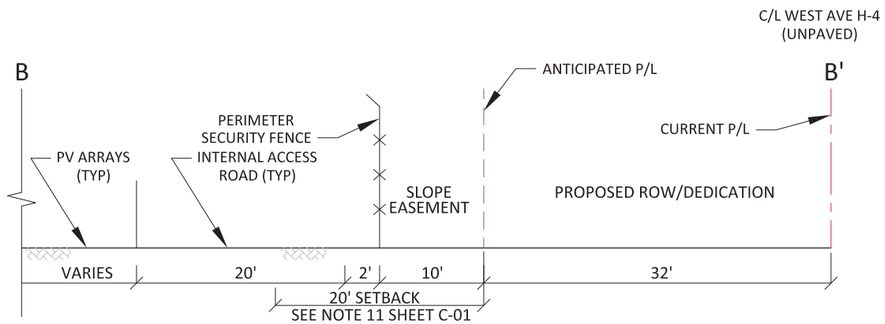

SECTION B - B'

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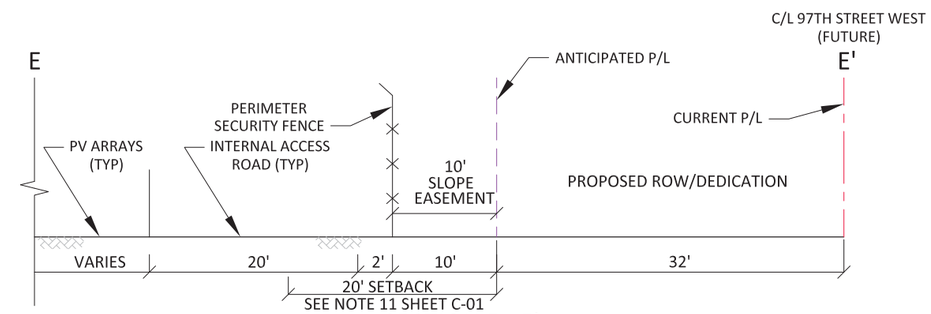

SECTION E - E'

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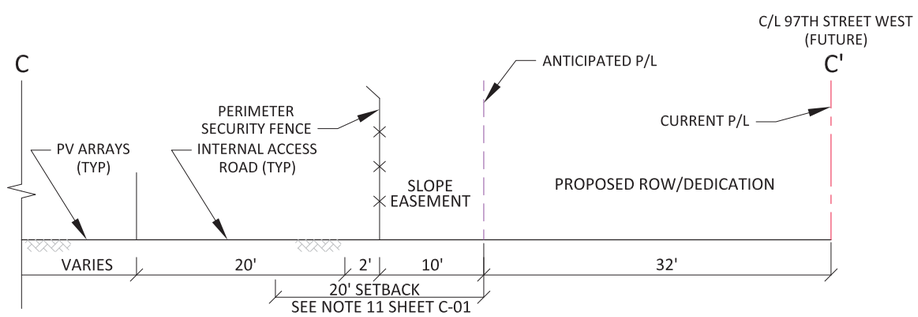

SECTION C - C'

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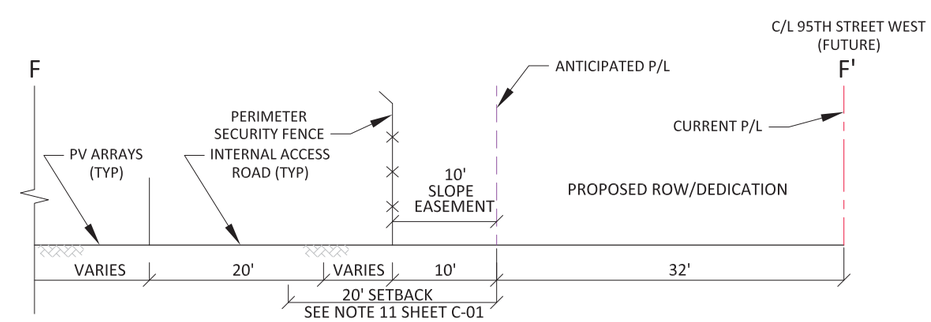

SECTION F - F'

NOT TO SCALE

R2011-00807 (RCUP201100076) C-12

REGISTERED PROFESSIONAL ENGINEER
JULIE ANN DELANEY
No.C54558
CIVIL
STATE OF CALIFORNIA

EXHIBIT PREPARER:

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17885 VON KARMAN AVENUE, SUITE 500
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3203-002-011, 012, 013, 014
3219-019-011

Project Name:
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Project Address:
90th St. W & W Ave. J
Los Angeles County, CA

SCH # 2012061068

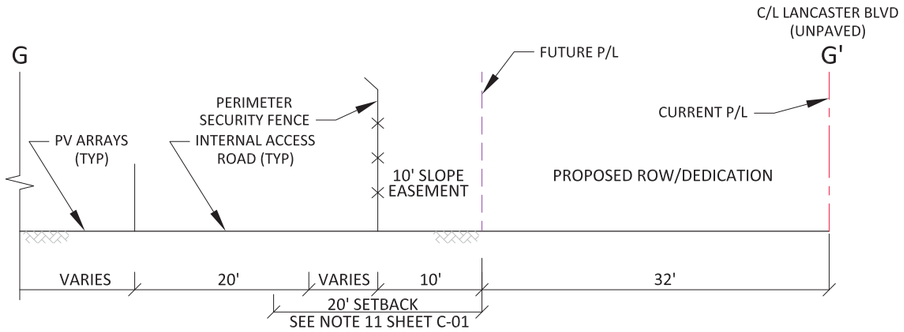
DRAWING: SECTION SHEET

APPLICANT:
Silverado Power
2 Embarcadero Center, Ste. 410
San Francisco, CA 94111
(415) 692-7740

SILVERADO power

PROJECT 4
ANTELOPE SOLAR
GREENWORKS
LOS ANGELES COUNTY, CA

2 Embarcadero Center, Ste. 410 | San Francisco, CA 94111 | 415.692.7740 main



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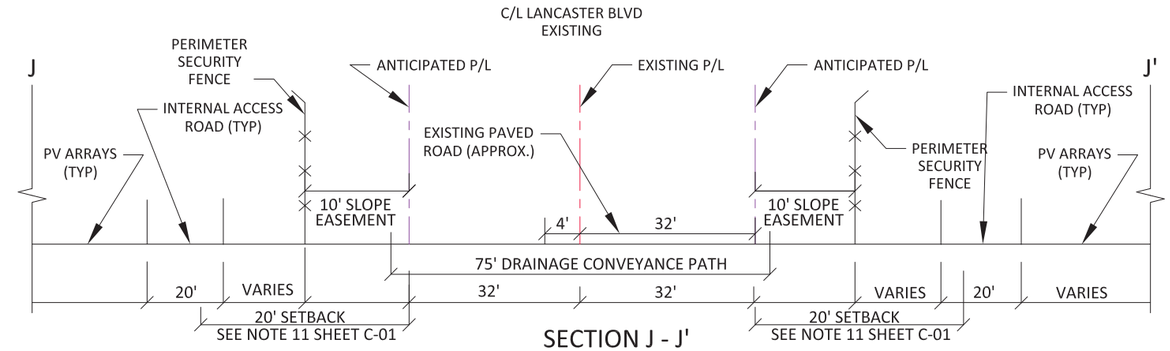

SECTION J - J'

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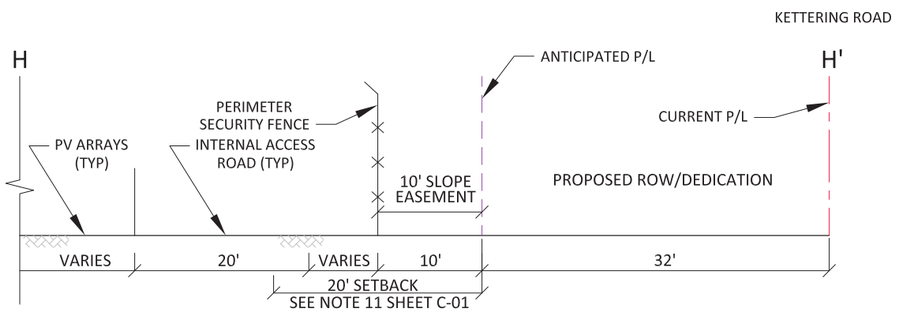

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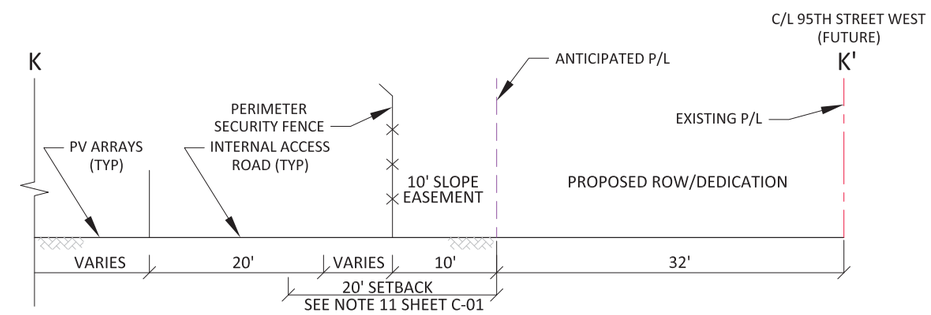

SECTION K - K'

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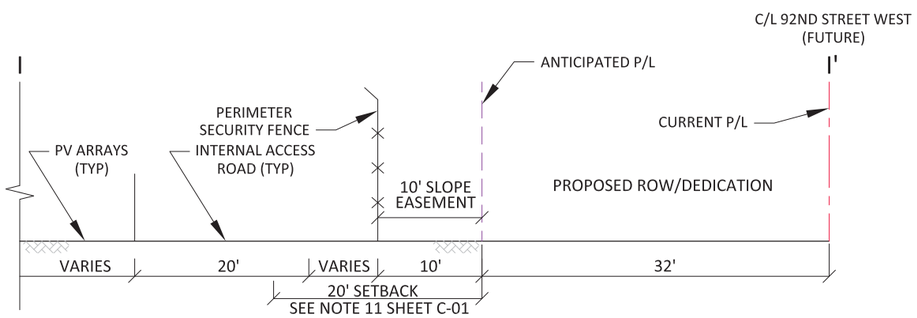
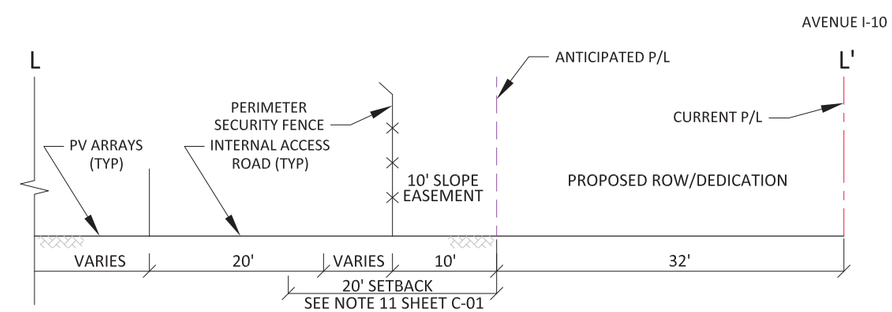


SECTION I - I'

NOT TO SCALE



SECTION L - L'

NOT TO SCALE

R2011-00807 (RCUP201100076) C-13

REGISTERED PROFESSIONAL ENGINEER
JULIE ANN GEZAKEY
No.C54556
CIVIL
STATE OF CALIFORNIA

EXHIBIT PREPARER:

TETRA TECH, INC.
17885 VON KARMAN AVENUE, SUITE 500
IRVINE, CALIFORNIA 92614-6213
TEL: 949.809.5000

NOT ISSUED FOR CONSTRUCTION

NO.	DATE	REVISION	SUBM'T BY	APPV'D BY

Solar PV System Summary

52MW AC Solar Photovoltaic Generation System

APNs 3218-002-018, 023
3203-002-015, 017
3218-001-002, 003, 004
3203-002-011, 012, 013, 014
3219-019-011

Project Name:
Project 4 Antelope Solar Greenworks

Project Address:
90th St. W & W Ave. J
Los Angeles County, CA

SCH # 2012061068

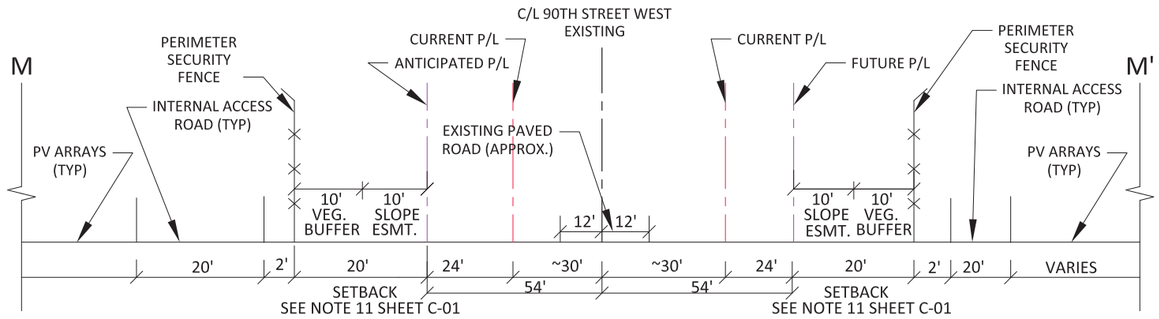
DRAWING: SECTION SHEET

APPLICANT:
Silverado Power
2 Embarcadero Center, Ste. 410
San Francisco, CA 94111
(415) 692-7740

SILVERADO power

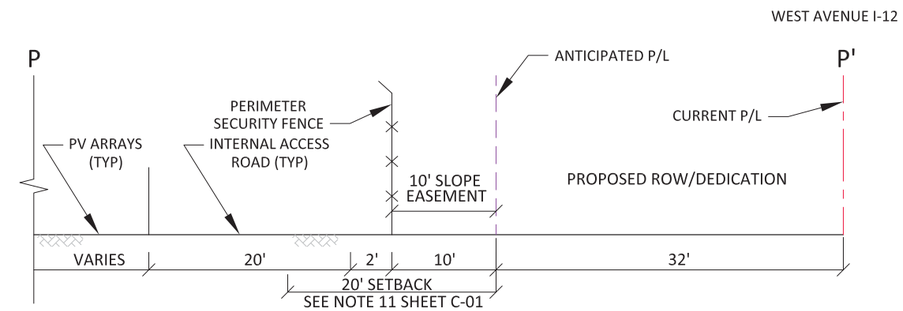
PROJECT 4
ANTELOPE SOLAR
GREENWORKS
LOS ANGELES COUNTY, CA

2 Embarcadero Center, Ste. 410 | San Francisco, CA 94111 | 415.692.7740 main



SECTION M - M'

NOT TO SCALE



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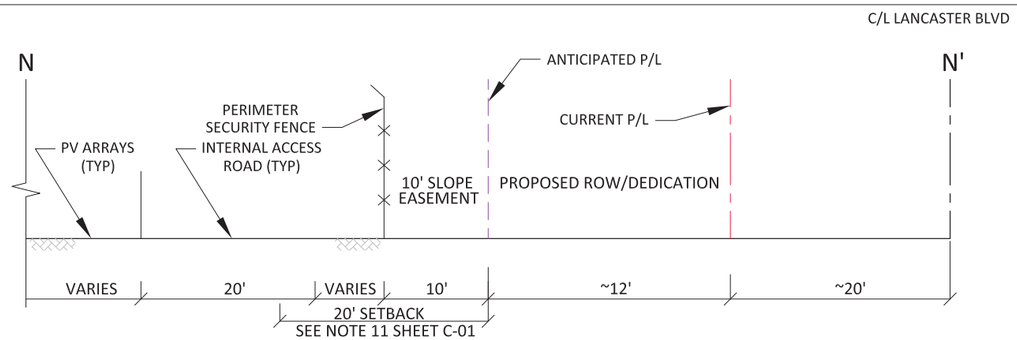
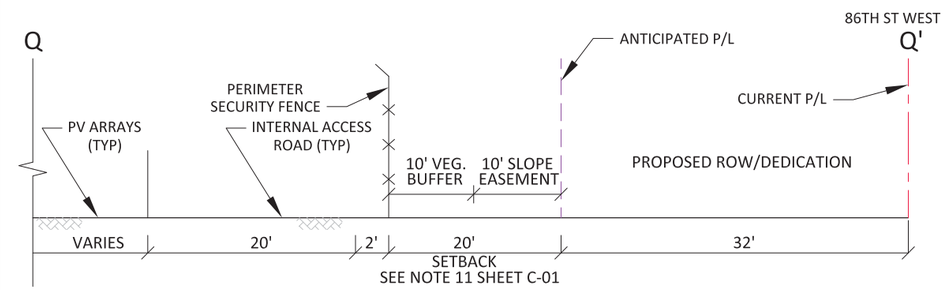
NOT TO SCALE



SECTION N -N'

NOT TO SCALE



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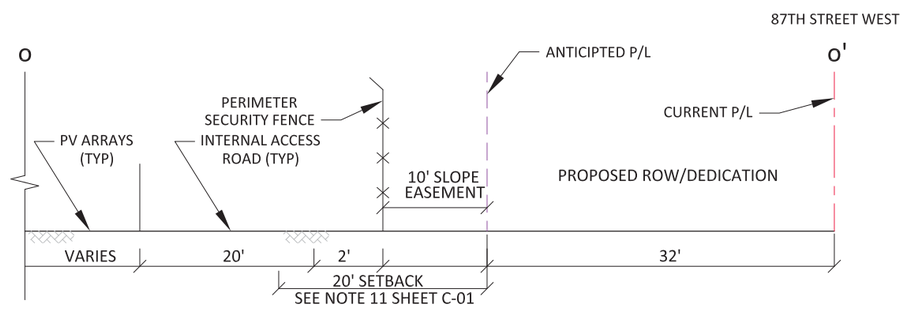
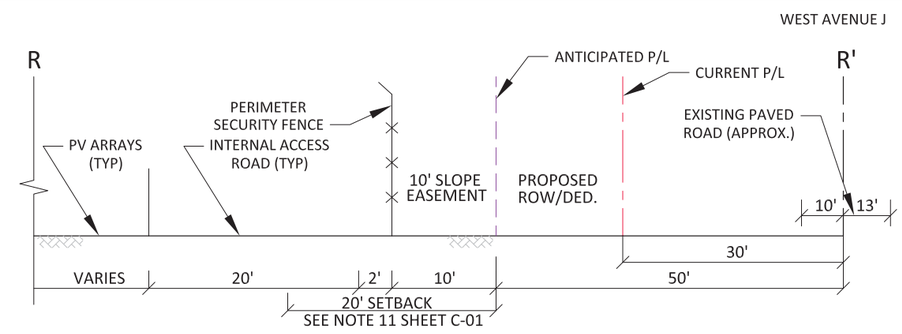


SECTION O - O'

NOT TO SCALE



SECTION R - R'

NOT TO SCALE

R2011-00807 (RCUP201100076) C-14

REGISTERED PROFESSIONAL ENGINEER JULIE ANN DELCARD No.C54558 CIVIL STATE OF CALIFORNIA

EXHIBIT PREPARER:

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17885 VON KARMAN AVENUE, SUITE 500
IRVINE, CALIFORNIA 92614-6213
TEL: 949.809.5000

NOT ISSUED FOR CONSTRUCTION

NO.	DATE	REVISION	SUBM'T BY	APPV'D BY

Solar PV System Summary

52MW AC Solar Photovoltaic Generation System
APNs 3218-002-018, 023
3203-002-015, 017
3218-001-002, 003, 004
3203-002-011, 012, 013, 014
3219-019-011

Project Name:
Project 4 Antelope Solar Greenworks
Project Address:
90th St. W & W Ave. J
Los Angeles County, CA
SCH # 2012061068

DRAWING: SECTION SHEET

APPLICANT:
Silverado Power
2 Embarcadero Center, Ste. 410
San Francisco, CA 94111
(415) 692-7740

SILVERADO power

PROJECT 4
ANTELOPE SOLAR GREENWORKS
LOS ANGELES COUNTY, CA

2 Embarcadero Center, Ste. 410 | San Francisco, CA 94111 | 415.692.7740 main

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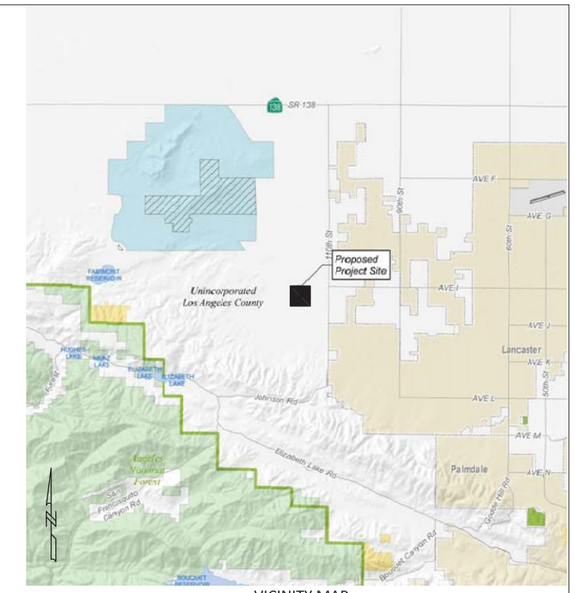
LOCATION MAP
NOT TO SCALE

PROJECT 5
SILVER SUN GREENWORKS
LOS ANGELES COUNTY, CALIFORNIA



VICINITY MAP
NOT TO SCALE

DRAWING INDEX

DRAWING NO.	TITLE
T-01	TITLE SHEET
G-01	TOPOGRAPHIC MAP
G-02	TOPOGRAPHIC MAP
C-01	SITE PLAN
C-02	GRADING PLAN
C-03	ON-SITE DRAINAGE MAP
C-04	ON-SITE DRAINAGE MAP
C-05	ON-SITE DRAINAGE MAP
C-06	DETAIL SHEET
C-07	SECTION SHEET
C-08	GEN-TIE ROUTE OPTIONS

SURVEY INFORMATION:

TOPOGRAPHIC MAP AND 1' CONTOURING PREPARED BY ALL VALLEY SURVEYING.
BENCHMARK AND BASIS OF BEARINGS SHOWN ON TOPOGRAPHIC MAPS, DRAWINGS G-01 & G-02.

SURVEYOR:

LARRY E. JERNIGAN, PLS #5924
ALL VALLEY SURVEYING
44965 10TH STREET WEST
LANCASTER, CA 93534
(661) 942-3639

R2011-00801 (RCUP201100072) T-01

REGISTERED PROFESSIONAL ENGINEER
JULIE ANN DELANEY
No.C54558
CIVIL
STATE OF CALIFORNIA

EXHIBIT PREPARER:
TETRA TECH, INC.
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IRVINE, CALIFORNIA 92614-6213
TEL: 949.809.5000

NOT ISSUED FOR CONSTRUCTION

NO.	DATE	REVISION	SUBM'T BY	APPV'D BY

Solar PV System Summary

20MW AC Solar Photovoltaic Generation System
APNs: 3267-003-001, 3267-003-002 & 3267-003-003
SCH # 2012061068

Project Name:
Project 5 Silver Sun Greenworks
Project Address:
120TH ST W & W AVE I
Lancaster,
Los Angeles County, CA

DRAWING: TITLE SHEET

APPLICANT:
Silverado Power
2 Embarcadero Center, Ste. 410
San Francisco, CA 94111
(415) 692-7740

SILVERADO power

PROJECT 5
SILVER SUN GREENWORKS
LOS ANGELES COUNTY, CA

2 Embarcadero Center, Ste. 410 | San Francisco, CA 94111 | 415.692.7740 main

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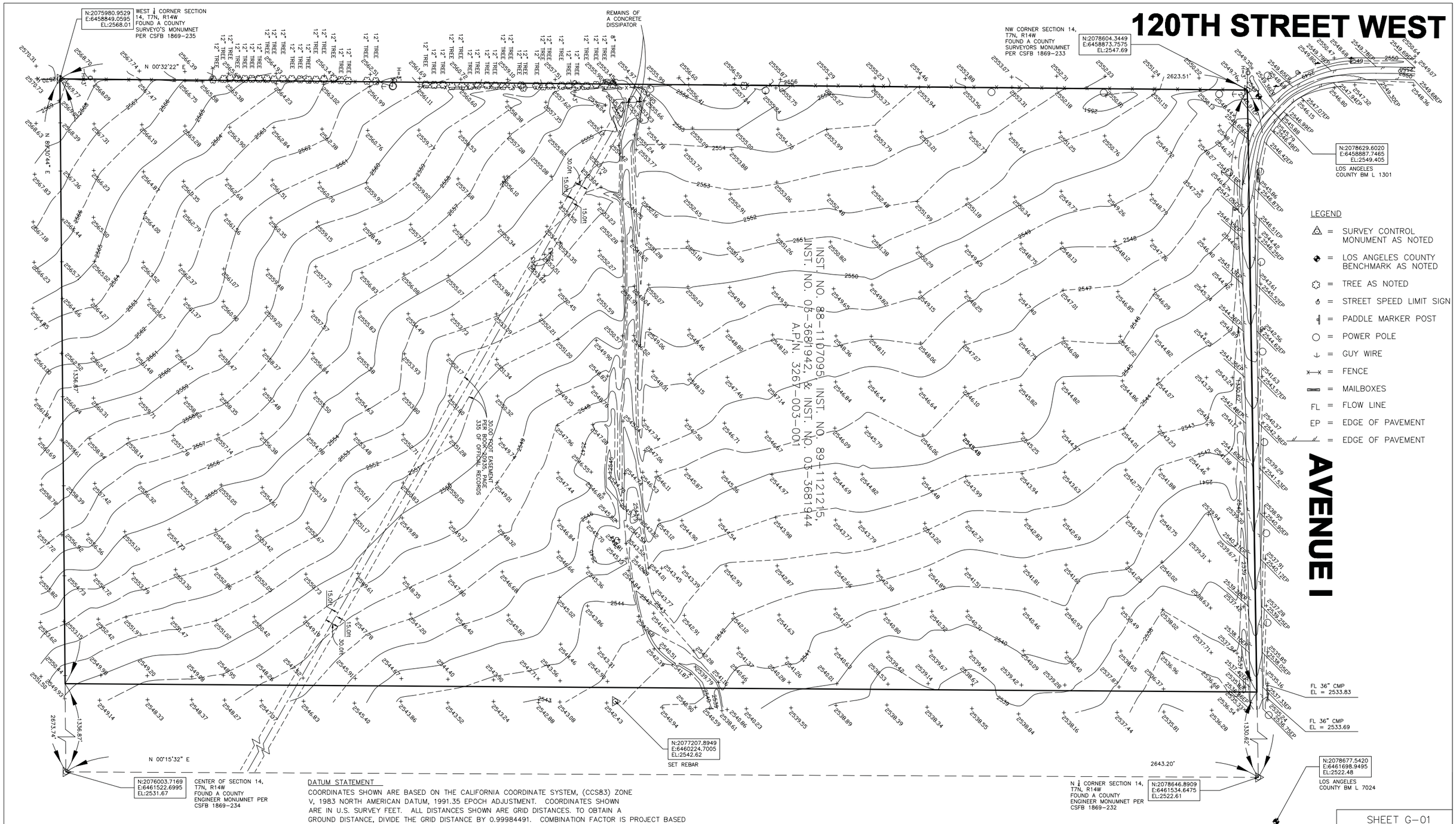


DATUM STATEMENT

COORDINATES SHOWN ARE BASED ON THE CALIFORNIA COORDINATE SYSTEM, (CCS83) ZONE V, 1983 NORTH AMERICAN DATUM, 1991.35 EPOCH ADJUSTMENT. COORDINATES SHOWN ARE IN U.S. SURVEY FEET. ALL DISTANCES SHOWN ARE GRID DISTANCES. TO OBTAIN A GROUND DISTANCE, DIVIDE THE GRID DISTANCE BY 0.99984491. COMBINATION FACTOR IS PROJECT BASED

SHEET G-01

BASIS OF BEARING	BENCH MARK
THE BASIS OF BEARINGS FOR THIS SURVEY IS THE CALIFORNIA COORDINATE SYSTEM, ZONE V, NAD 83, EPOCH 1991.35, AS DETERMINED LOCALLY BY A LINE BETWEEN CONTINUOUS GLOBAL POSITIONING STATIONS (CGPS), EW7110 AND EW7125, BEING NORTH 00°10'12" EAST AS DERIVED FROM GEODETIC VALUES PUBLISHED BY THE NATIONAL GEODETIC SURVEY.	LOS ANGELES COUNTY BENCHMARK L 1301, LANCASTER 2004 ADJUSTMENT, NAVD 1988, ELEVATION = 2549.405 FEET CSBM MON UP 75MM(3IN) 7.6M(25FT) N/O C/L PROD AVE I & 17M(55.8FT) E/O CL PROD 120TH ST W 15M(49.2FT) SE/O PP #3002085E MKD (BM102-27 1957 RE 5869) BUTTON GONE

SCALE HORIZ: 1" = 100'

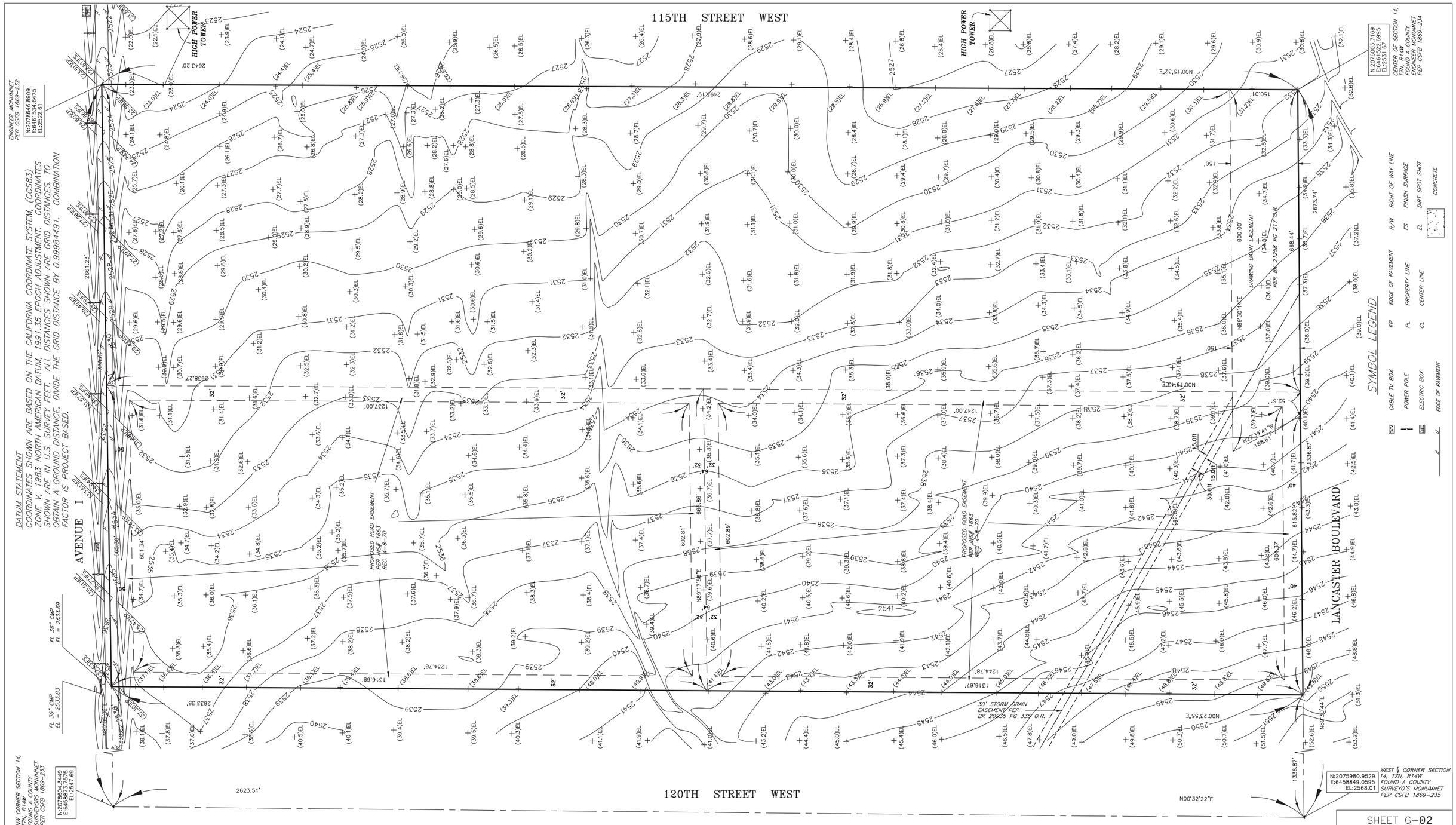
PROFESSIONAL LAND SURVEYOR LARRY E JERNIGAN No. 5924 EXP 12-31-12 STATE OF CALIFORNIA

ALL VALLEY SURVEYING
44965 10TH STREET WEST
LANCASTER, CA. 93534
(661) 942-3639

NO.	REVISION	BY	APPR.	DATE
1				
2				
3				

TOPOGRAPHIC MAP
AVENUE I & 120TH STREET WEST
ANTELOPE VALLEY
COUNTY OF LOS ANGELES
STATE OF CALIFORNIA

DATE OF SURVEY	COUNTY PLAN CHECK NUMBER
1/20/12	R2011-00801(RCUP2011-00072)



SHEET G-02

BASIS OF BEARING	BENCH MARK
THE BASIS OF BEARINGS FOR THIS SURVEY IS THE CALIFORNIA COORDINATE SYSTEM, ZONE V, NAD 83, EPOCH 1991.35, AS DETERMINED LOCALLY BY A LINE BETWEEN CONTINUOUS GLOBAL POSITIONING STATIONS (CGPS), EW7110 AND EW7125, BEING NORTH 00°10'12" EAST AS DERIVED FROM GEODETIC VALUES PUBLISHED BY THE NATIONAL GEODETIC SURVEY.	LOS ANGELES COUNTY BENCHMARK L 1301, LANCASTER 2004 ADJUSTMENT, NAVD 1988, ELEVATION = 2549.405 FEET CSBM MON UP 75MM(3IN) 7.6M(25FT) N/O C/L PROD AVE I & 17M(55.8FT) E/O CL PROD 120TH ST W 15M(49.2FT) SE/O PP #3002085E MKD (BM102-27 1957 RE 5869) BUTTON GONE

SCALE
HORIZ: 1"= 100'

PROFESSIONAL LAND SURVEYOR
LARRY E JERNIGAN
No. 5924
EXP 12-31-12
STATE OF CALIFORNIA

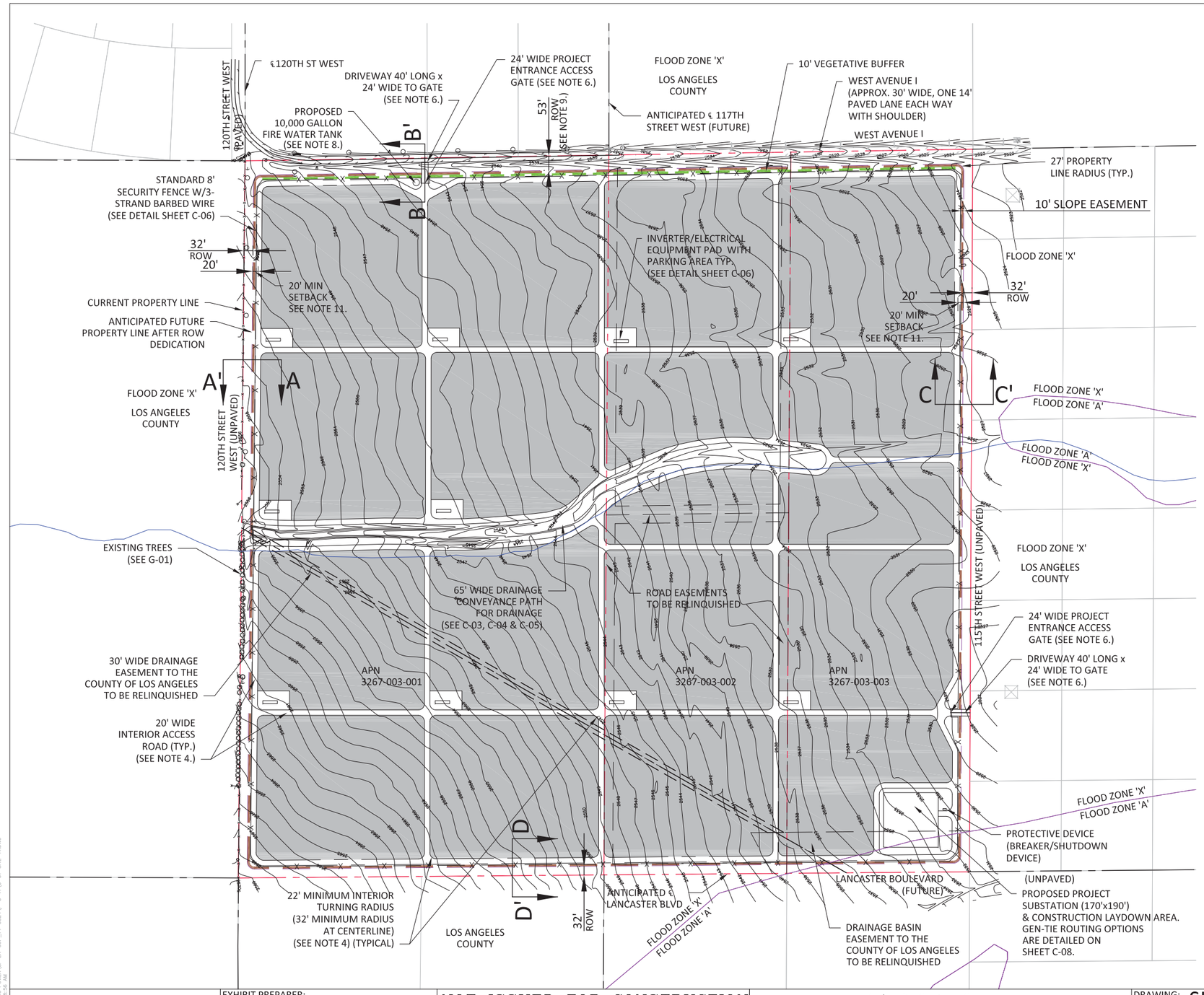
THIS MAP WAS PREPARED BY ME OR UNDER MY SUPERVISION SEPTEMBER, 2012.
LARRY E. JERNIGAN, PLS 5924

ALL VALLEY SURVEYING
44965 10TH STREET WEST
LANCASTER, CA. 93534
(661) 942-3639 JN: AV1246

NO.	REVISION	BY	APPR.	DATE
1				
2				
3				

TOPOGRAPHIC MAP
SILVER SUN EXPANSION
ANTELOPE VALLEY
COUNTY OF LOS ANGELES
STATE OF CALIFORNIA

DATE OF SURVEY	COUNTY PLAN CHECK NUMBER
9/2/12	R2011-00801(RCUP2011-00072)



PROJECT SITE:

PROJECT SITE IS 160 ACRES (NET)

NOTES:

1. 'ZONE X' AND 'ZONE A' AS SHOWN ON PANEL 0150F OF FLOOD INSURANCE RATE MAP NO. 06037C0400F. ZONE "X" DESIGNATED AS, "AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOOD PLAIN". ZONE "A" DESIGNATED AS, "NO BASE FLOOD ELEVATIONS DETERMINED".

2. FIRE DEPARTMENT ACCESS DEVICE AND EMERGENCY CONTACT PLACARD LOCATED AT ENTRANCE GATE.

3. MOBILE SANITATION FACILITY, AS DEFINED BY THE LOS ANGELES COUNTY DEPARTMENT OF PUBLIC HEALTH, CAN BE LOCATED AT ALL PARKING LOCATIONS AND WILL BE LOCATED AT THE NEAREST LOCATION TO CONSTRUCTION AND OPERATIONAL WORKERS ACTIVITY. THE FACILITIES WILL BE KEPT TO LOS ANGELES COUNTY CODE, TITLE 11 - HEALTH & SAFETY, AND CAL-OSHA SANITATION STANDARDS IN SECTION 3360, TITLE 8, CALIFORNIA CODE OF REGULATIONS. MOBILE SANITATION FACILITIES WILL BE MADE AVAILABLE DURING CONSTRUCTION AND AS REQUIRED BY OSHA DURING OPERATIONS AND MAINTENANCE. SEE ARRAY BLOCK DETAIL (TYPICAL) ON C-06.

4. INTERIOR ACCESS ROADS WILL BE 20' WIDE, COMPACTED TO 90%, WITH 32 FOOT TURNING RADIUS AT CENTER LINE. THE INNER RADIUS WILL BE 22' AND THE OUTER RADIUS WILL BE 42'. INTERIOR ACCESS ROADS WILL BE PROVIDED TO INVERTER/ELECTRICAL EQUIPMENT PADS AND AROUND THE PERIMETER OF THE PROJECT. SEE ARRAY BLOCK DETAIL (TYPICAL) ON C-06.

5. 10 FOOT WIDE SLOPE EASEMENT WILL BE PROVIDED AROUND PERIMETER.

6. DRIVEWAY ACCESS GATES TO BE SET 40 FEET BACK FROM EDGE OF PROPERTY. DRIVEWAY WILL BE 24 FEET WIDE.

7. ALL DIMENSIONS SHOWN ARE APPROXIMATE AND SUBJECT TO VERIFICATION DURING DETAILED DESIGN.

8. TANK CONNECTIONS PER LOS ANGELES COUNTY FIRE DEPARTMENT.

9. ANTICIPATED ROW SETBACK/DEDICATION FOR FUTURE ROAD DEVELOPMENT.

10. CONTOURS SHOWN ON SITE PLAN, C-01, ARE BASED ON SURVEY BY ALL VALLEY SURVEYING.

11. A 20' MINIMUM SETBACK FROM PROPERTY LINE (AFTER DEDICATIONS) TO ARRAYS OR EQUIPMENT TO BE MAINTAINED ON SITE. PROJECT FENCE, FIRE ROADS, EASEMENTS, AND VEGETATION ARE OK WITHIN THE SETBACK.

BENCHMARK:

BM L1462 NAVD 1988, 2004 LANCASTER ADJUSTMENT, ELEV.=2336.348'

RDBM TAG IN CTR CONC HDWL 6.4M(21FT) N/O C/L AVE D & 101M(331FT) E/O C/L PROP 35TH ST W

LEGEND:

	TREE AS NOTED
	POWER POLE
TYP.	TYPICAL
MIN	MINIMUM
ROW	RIGHT OF WAY
℄	CENTERLINE
x x	FENCE LINE
	OVERHEAD LINE
	UNDERGROUND LINE
	PROPERTY LINE (AFTER DEDICATIONS)
	PROPERTY LINE (CURRENT)
	PARCEL LINE
2470	CONTOUR LINE
	EASEMENT (SEE SHEETS G-01 AND G-02)
	BLUELINE STREAM (FROM USGS)
	FLOOD ZONE BOUNDARY DELINEATION
	SOLAR ARRAY FIELD
	10' WIDE VEGETATIVE BUFFER
	10' WIDE SLOPE EASEMENT

200 0 200 400

SCALE IN FEET

1'=200'

WHEN PRINTED TO SCALE ON 22"x34" SHEET

R2011-00801 (RCUP201100072) C-01

REGISTERED PROFESSIONAL ENGINEER JULIE ANN DELANEY No.C54558 CIVIL STATE OF CALIFORNIA

EXHIBIT PREPARER:

TETRA TECH, INC.

17885 VON KARMAN AVENUE, SUITE 500
IRVINE, CALIFORNIA 92614-6213
TEL: 949.809.5000

NOT ISSUED FOR CONSTRUCTION

NO.	DATE	REVISION	SUBM'T BY	APPV'D BY

Solar PV System Summary

20MW AC Solar Photovoltaic Generation System

APNs: 3267-003-001, 3267-003-002 & 3267-003-003

SCH # 2012061068

Project Name:
Project 5 Silver Sun Greenworks

Project Address:
120TH ST W & W AVE I
Lancaster,
Los Angeles County, CA

DRAWING: SITE PLAN

APPLICANT:
Silverado Power
2 Embarcadero Center, Ste. 410
San Francisco, CA 94111
(415) 692-7740

SILVERADO power

PROJECT 5
SILVER SUN GREENWORKS
LOS ANGELES COUNTY, CA

2 Embarcadero Center, Ste. 410 | San Francisco, CA 94111 | 415.692.7740 main

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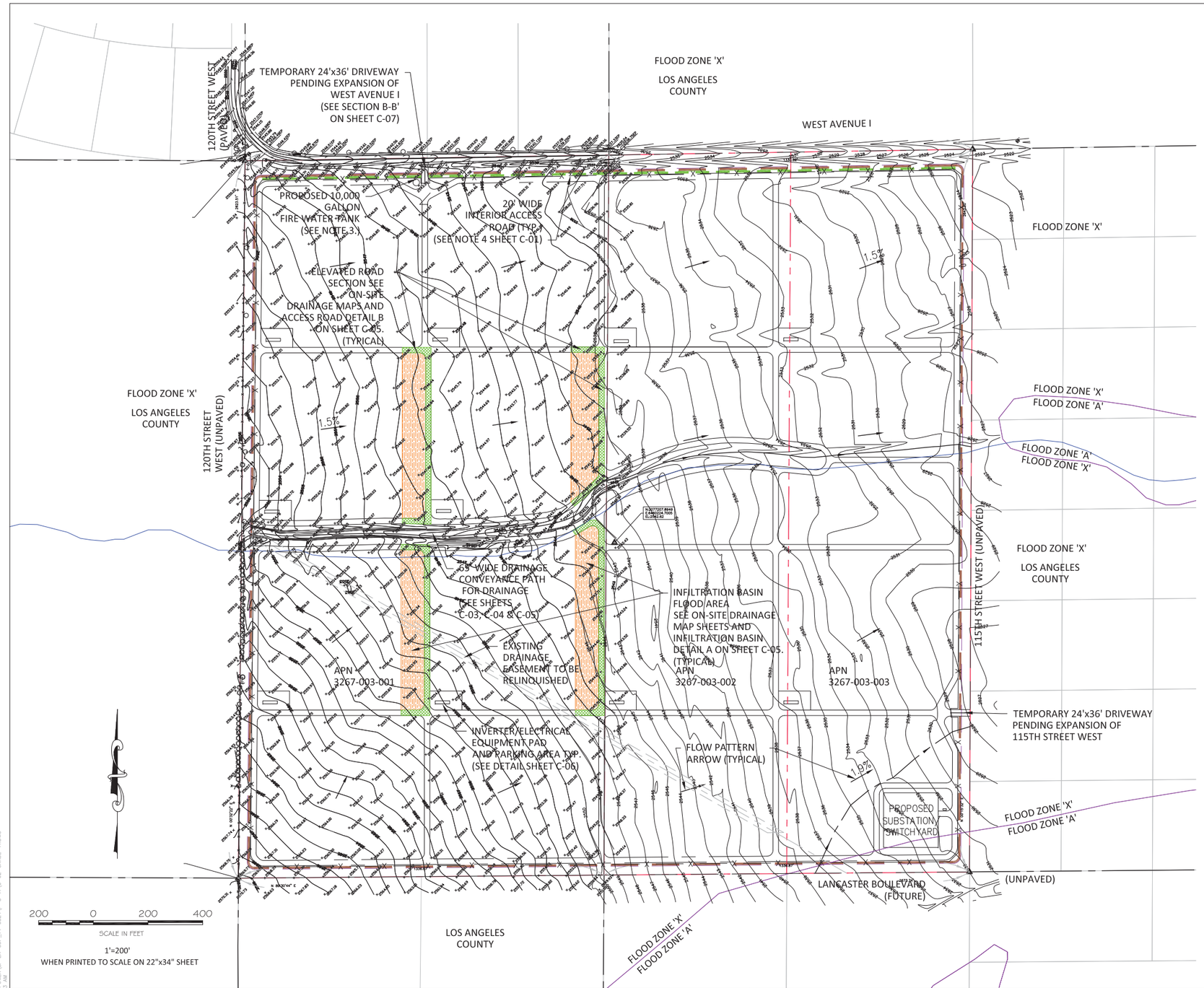

NOTES:

1. DRAINAGE ACROSS SITE IS CURRENTLY FROM THE SOUTHWEST TO THE NORTHEAST, AS SHOWN ON THE SURFACE CONTOURS. TOPOGRAPHY/CONTOURS ARE BASED ON SURVEY DATA PROVIDED BY ALL VALLEY SURVEYING.

2. OVERALL EXISTING GRADING AND DRAINAGE PATTERN TO REMAIN UNCHANGED DURING AND AFTER CONSTRUCTION WITH THE EXCEPTION OF AREAS USED FOR DRAINAGE FEATURES. ELEVATED ROAD SECTIONS WILL BE USED TO CREATE INFILTRATION BASINS. FLOOD AREAS AND FLOW PATTERN ARROWS ARE SHOWN ON THIS SHEET AND SHEETS C-03 AND C-04.

3. EQUIPMENT PADS WILL BE GRADED AS REQUIRED PER MANUFACTURER SPECIFICATIONS.

LEGEND:

=	SURVEY CONTROL MONUMENT AS NOTED	TYP.	TYPICAL
=	LOS ANGELES COUNTY BENCHMARK AS NOTED	MIN	MINIMUM
=	TREE AS NOTED	ROW	RIGHT OF WAY
=	STREET SPEED LIMIT SIGN	℄	CENTERLINE
=	PADDLE MARKER POST	x x	FENCE LINE
=	POWER POLE		UNDERGROUND LINE
=	GUY WIRE		PROPERTY LINE (AFTER DEDICATIONS)
x x	FENCE		PROPERTY LINE (CURRENT)
=	MAILBOXES		PARCEL LINE
FL =	FLOW LINE	2470	CONTOUR LINE
EP =	EDGE OF PAVEMENT		EASEMENT (SEE SHEETS G-01 AND G-02)
=	EDGE OF PAVEMENT		BLUELINE STREAM (FROM USGS)
			FLOOD ZONE BOUNDARY DELINEATION
			INFILTRATION BASIN FLOOD AREA
			ELEVATED ROAD SECTION
			10' WIDE VEGETATIVE BUFFER
			10' WIDE SLOPE EASEMENT

EARTHWORK QUANTITIES:

OVEREXCAVATION	=	32,900 CUBIC YARDS
CUT	=	3,100 CUBIC YARDS
FILL	=	3,100 CUBIC YARDS

CUT & FILL QUANTITIES INCLUDE INVERTER PADS, SUBSTATION, BASINS, AND ELEVATED ROAD BED FOR DRAINAGE FEATURES.

OVEREXCAVATION QUANTITY INCLUDES ACCESSIBLE FIRE ROAD.

SURVEY INFORMATION:

TOPOGRAPHIC MAP AND 1' CONTOURING PREPARED BY ALL VALLEY SURVEYING, JANUARY 20, 2012 & SEPTEMBER 2, 2012.

SURVEYOR:

LARRY E. JERNIGAN, PLS #5924
ALL VALLEY SURVEYING
44965 10TH STREET WEST
LANCASTER, CA 93534
(661) 942-3639

BASIS OF BEARINGS:

SEE TOPOGRAPHIC MAP SHEETS G-01 & G-02.

BENCHMARK:

SEE TOPOGRAPHIC MAP SHEETS G-01 & G-02.

NOTE:

EXISTING SURVEYED ELEVATIONS ARE SHOWN IN FEET. SURVEY ON EAST SIDE IN '( )' ADD 2500'.

R2011-00801 (RCUP201100072) C-02

REGISTERED PROFESSIONAL ENGINEER JULIE ANN DELANEY No.C54558 CIVIL STATE OF CALIFORNIA

EXHIBIT PREPARER:

TETRA TECH, INC.
17885 VON KARMAN AVENUE, SUITE 500
IRVINE, CALIFORNIA 92614-6213
TEL: 949.809.5000

NOT ISSUED FOR CONSTRUCTION

NO.	DATE	REVISION	SUBM'T BY	APPV'D BY

Solar PV System Summary

20MW AC Solar Photovoltaic Generation System

APNs: 3267-003-001, 3267-003-002 & 3267-003-003

SCH # 2012061068

Project Name:
Project 5 Silver Sun Greenworks

Project Address:
120TH ST W & W AVE I
Lancaster,
Los Angeles County, CA

DRAWING: GRADING PLAN

APPLICANT:
Silverado Power
2 Embarcadero Center, Ste. 410
San Francisco, CA 94111
(415) 692-7740

SILVERADO power

PROJECT 5
SILVER SUN GREENWORKS
LOS ANGELES COUNTY, CA

2 Embarcadero Center, Ste. 410 | San Francisco, CA 94111 | 415.692.7740 main

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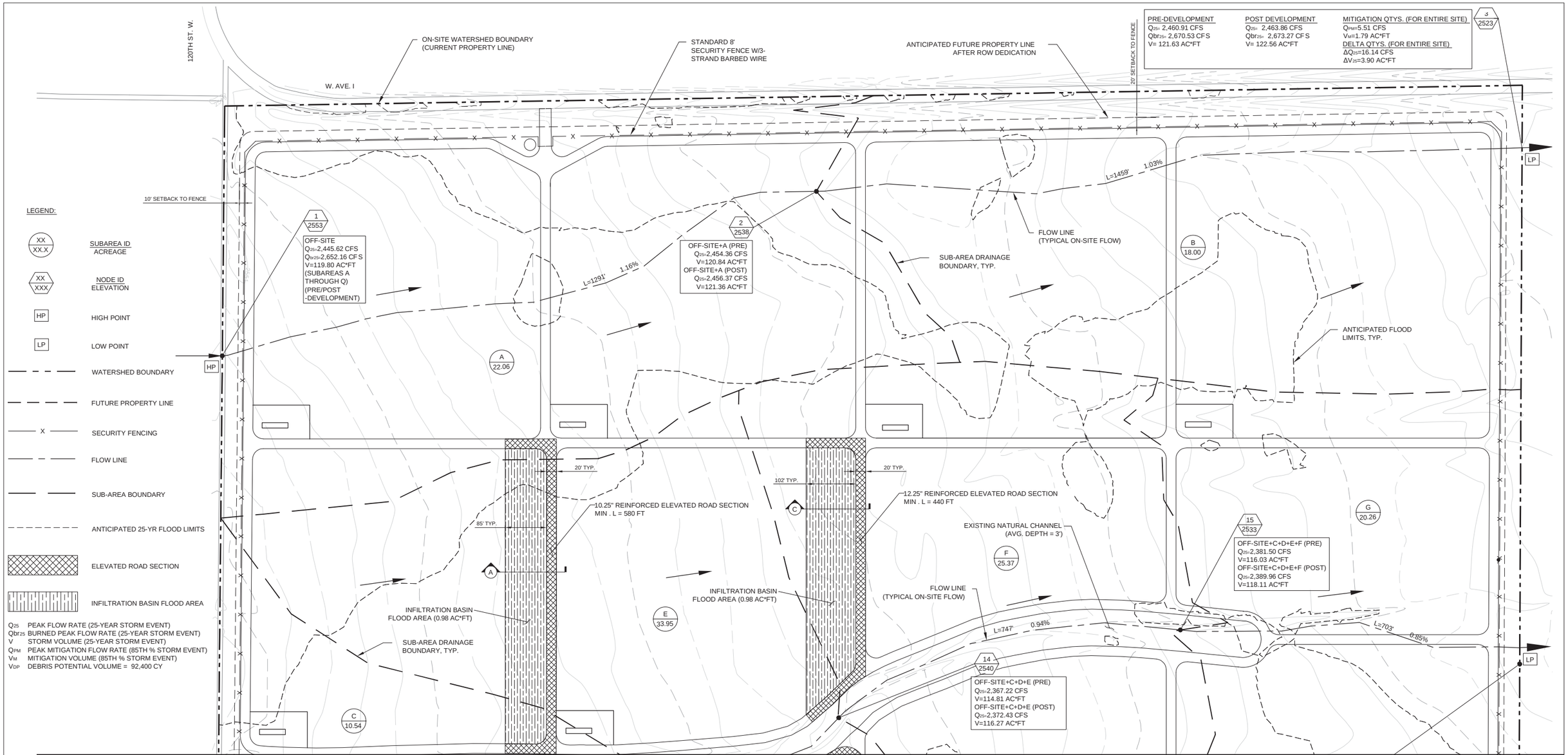

MATCHLINE: SEE SHEET C-04

DRAINAGE CONCEPT NOTES:

1) LOCATIONS OF DRAINAGE DEVICES SHOWN ARE NOT NECESSARILY APPROVED.
2) COMPLIANCE OF ALL STREET DRAINAGE REQUIREMENTS WILL BE MET TO THE SATISFACTION OF THE DEPARTMENT OF PUBLIC WORKS.
3) APPROVAL OF THE DRAINAGE CONCEPT DOES NOT CONSTITUTE DETERMINATION THAT THE OFFSITE IMPROVEMENTS ARE REQUIRED WITHIN THE MEANING OF GOVERNMENT CODE SECTION 66462.5, (EXCEPT AS NOTES).
4) AN OFFSITE DRAINAGE COVENANT FOR ACCEPTANCE OR DRAINAGE (AND DRAINAGE FACILITIES) MAY BE REQUIRED WHERE INDICATED.
5) A NOTE OF FLOOD HAZARD WILL BE REQUIRED WHERE INDICATED ON THIS PLAN.
6) A SOIL REPORT WILL BE REQUIRED TO VERIFY THAT A 7-DAY PERCOLATION RATE CAN BE OBTAINED.
7) BASIN SIZES ARE DEPENDENT ON THE VERIFICATION OF PERCOLATION RATES AND ARE SUBJECT TO CHANGE.
8) WITHIN A FEMA ZONE A AND ZONE X, UNSHADED.
9) WITHIN A COUNTY ADOPTED FLOODWAY.
10) ALL BASINS ARE PRIVATELY MAINTAINED.
11) FOR THE POST-DEVELOPMENT 50-YEAR STORM EVENT EXITING THE PROJECT, THE PEAK FLOW RATES (Q_{50}) INCREASED BY MAXIMUM OF 0.4%, AND THE VOLUMES (V_{50}) INCREASED BY A MAXIMUM OF 2.0%. SIMILAR INCREASES ARE ANTICIPATED FOR THE DEPTHS AND VELOCITIES DUE TO THE SMALL INCREASE IN PEAK FLOW RATES (<1%). THESE REPRESENT NEGLIGIBLE INCREASES FROM THE PRE-DEVELOPMENT CONDITION. THE POST-DEVELOPMENT DOES NOT INCLUDE THE MITIGATION EFFECTS OF THE BASINS. SEE IMPACT ANALYSIS CALCULATIONS.

HYDROLOGY STUDY/DRAINAGE CONCEPT/LID PLAN
APPROVED FOR AREA AND Q ONLY
APPROVED BY:_____RCE NO:_____DATE_____
CHECKED BY:_____DATE_____
COUNTY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS
LAND DEVELOPMENT DIVISION

R2011-00801 (RCUP201100072) C-03

PREPARED UNDER THE SUPERVISION OF:

REGISTERED PROFESSIONAL ENGINEER JOSEPH E. DIETZ No. 67032 EXP: 9-30-14 CIVIL STATE OF CALIFORNIA

JOSEPH E. DIETZ, P.E.

EXHIBIT PREPARER:

TETRA TECH, INC.
17885 VON KARMAN AVENUE, SUITE 500
IRVINE, CALIFORNIA 92614-6213
TEL: 949.809.5000

NOT ISSUED FOR CONSTRUCTION

NO.	DATE	REVISION	SUBM'T BY	APPV'D BY

Solar PV System Summary

20MW AC Solar Photovoltaic Generation System

APNs: 3267-003-001, 3267-003-002 & 3267-003-003

SCH # 2012061068

Project Name:
Project 5 Silver Sun Greenworks

Project Address:
120TH ST W & W AVE I
Lancaster,
Los Angeles County, CA

HYDROLOGY STUDY/DRAINAGE CONCEPT/LID FOR CUP 201100072 ON-SITE DRAINAGE MAP

APPLICANT:
Silverado Power
2 Embarcadero Center, Ste. 410
San Francisco, CA 94111
(415) 692-7740

SILVERADO power

PROJECT 5
SILVER SUN GREENWORKS
LOS ANGELES COUNTY, CA

2 Embarcadero Center, Ste. 410 | San Francisco, CA 94111 | 415.692.7740 main

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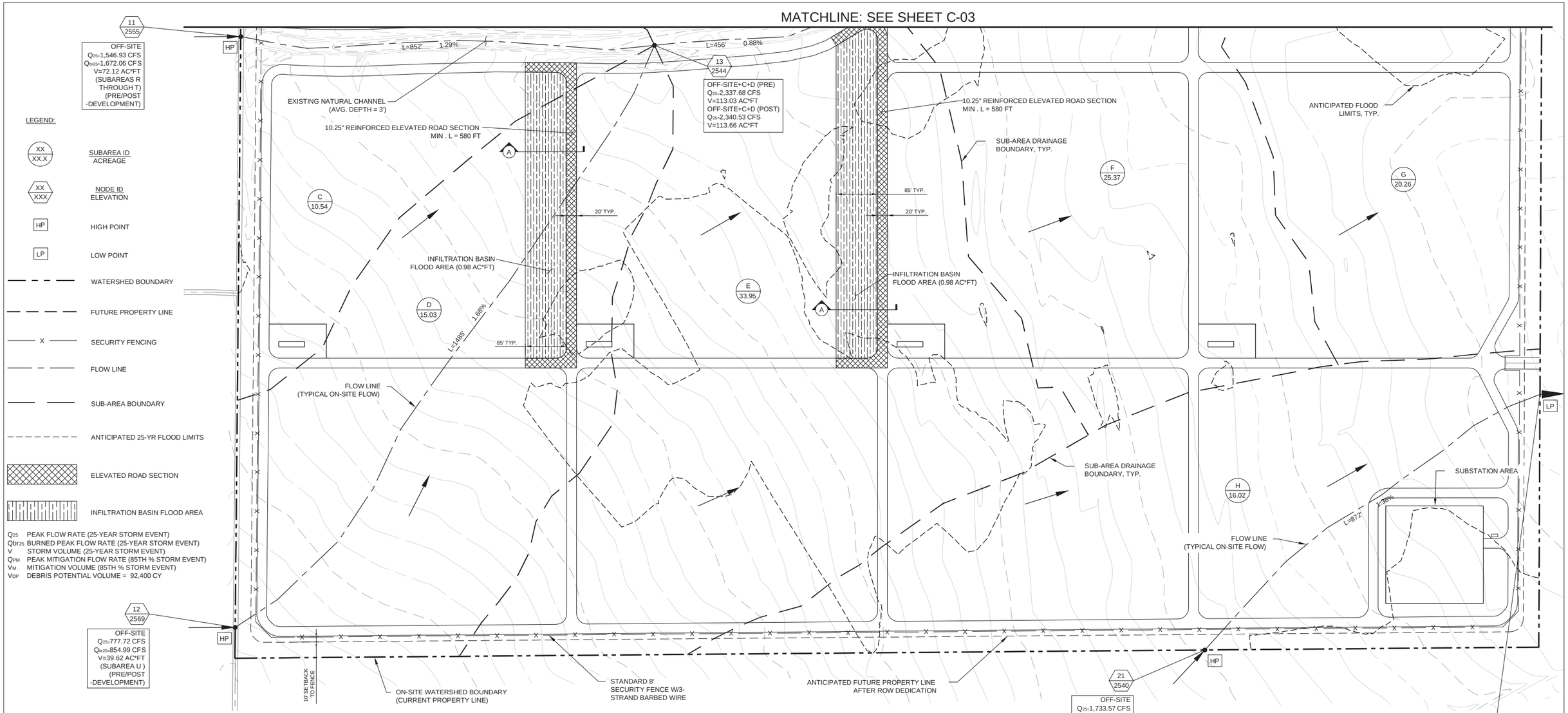

LEGEND:

- XX / XX.X — SUBAREA ID / ACREAGE
- XX / XXX — NODE ID / ELEVATION
- HP — HIGH POINT
- LP — LOW POINT
- WATERSHED BOUNDARY
- FUTURE PROPERTY LINE
- X — SECURITY FENCING
- FLOW LINE
- SUB-AREA BOUNDARY
- ANTICIPATED 25-YR FLOOD LIMITS
- ELEVATED ROAD SECTION
- INFILTRATION BASIN FLOOD AREA

Q_{25} PEAK FLOW RATE (25-YEAR STORM EVENT)
Qbr_{25} BURNED PEAK FLOW RATE (25-YEAR STORM EVENT)
V STORM VOLUME (25-YEAR STORM EVENT)
Q_{PM} PEAK MITIGATION FLOW RATE (85TH % STORM EVENT)
V_M MITIGATION VOLUME (85TH % STORM EVENT)
V_{DP} DEBRIS POTENTIAL VOLUME = 92,400 CY

DRAINAGE CONCEPT NOTES:

1) LOCATIONS OF DRAINAGE DEVICES SHOWN ARE NOT NECESSARILY APPROVED.
2) COMPLIANCE OF ALL STREET DRAINAGE REQUIREMENTS WILL BE MET TO THE SATISFACTION OF THE DEPARTMENT OF PUBLIC WORKS.
3) APPROVAL OF THE DRAINAGE CONCEPT DOES NOT CONSTITUTE DETERMINATION THAT THE OFFSITE IMPROVEMENTS ARE REQUIRED WITHIN THE MEANING OF GOVERNMENT CODE SECTION 66462.5, (EXCEPT AS NOTES).
4) AN OFFSITE DRAINAGE COVENANT FOR ACCEPTANCE OR DRAINAGE (AND DRAINAGE FACILITIES) MAY BE REQUIRED WHERE INDICATED.
5) A NOTE OF FLOOD HAZARD WILL BE REQUIRED WHERE INDICATED ON THIS PLAN.
6) A SOIL REPORT WILL BE REQUIRED TO VERIFY THAT A 7-DAY PERCOLATION RATE CAN BE OBTAINED.
7) BASIN SIZES ARE DEPENDENT ON THE VERIFICATION OF PERCOLATION RATES AND ARE SUBJECT TO CHANGE.
8) WITHIN A FEMA ZONE A AND ZONE X, UNSHADED.
9) WITHIN A COUNTY ADOPTED FLOODWAY.
10) ALL BASINS ARE PRIVATELY MAINTAINED.
11) FOR THE POST-DEVELOPMENT 50-YEAR STORM EVENT EXITING THE PROJECT, THE PEAK FLOW RATES (Q_{50}) INCREASED BY MAXIMUM OF 0.4%, AND THE VOLUMES (V_{50}) INCREASED BY A MAXIMUM OF 2.0%. SIMILAR INCREASES ARE ANTICIPATED FOR THE DEPTHS AND VELOCITIES DUE TO THE SMALL INCREASE IN PEAK FLOW RATES (<1%). THESE REPRESENT NEGLIGIBLE INCREASES FROM THE PRE-DEVELOPMENT CONDITION. THE POST-DEVELOPMENT DOES NOT INCLUDE THE MITIGATION EFFECTS OF THE BASINS. SEE IMPACT ANALYSIS CALCULATIONS.

PRE-DEVELOPMENT	POST DEVELOPMENT	MITIGATION QTYS. (FOR ENTIRE SITE)
Q_{25}= 1,743.21 CFS	Q_{25}= 1,745.34 CFS	Q_{PM}=5.51 CFS
Qbr_{25}= 1,939.77 CFS	Qbr_{25}= 1,941.77 CFS	V_M=1.79 AC*FT
V= 93.45 AC*FT	V= 93.85 AC*FT	DELTA QTYS. (FOR ENTIRE SITE)
		ΔQ_{25}=16.14 CFS
		ΔV_{25}=3.90 AC*FT

HYDROLOGY STUDY/DRAINAGE CONCEPT/LID PLAN
APPROVED FOR AREA AND Q ONLY
APPROVED BY:_____RCE NO:_____DATE_____
CHECKED BY: _____DATE _____
COUNTY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS
LAND DEVELOPMENT DIVISION

0 50 100 200
SCALE: 100

R2011-00801 (RCUP201100072) C-04

PREPARED UNDER THE SUPERVISION OF:

REGISTERED PROFESSIONAL ENGINEER JOSEPH E. DIETZ No. 67032 EXP: 9-30-14 CIVIL STATE OF CALIFORNIA

JOSEPH E. DIETZ, P.E.

EXHIBIT PREPARER:

TETRA TECH, INC.
17885 VON KARMAN AVENUE, SUITE 500
IRVINE, CALIFORNIA 92614-6213
TEL: 949.809.5000

NOT ISSUED FOR CONSTRUCTION

NO.	DATE	REVISION	SUBM'T BY	APPV'D BY

Solar PV System Summary

20MW AC Solar Photovoltaic Generation System
APNs: 3267-003-001, 3267-003-002 & 3267-003-003
SCH # 2012061068

Project Name:
Project 5 Silver Sun Greenworks
Project Address:
120TH ST W & W AVE I
Lancaster,
Los Angeles County, CA

HYDROLOGY STUDY/DRAINAGE CONCEPT/LID
FOR CUP 201100072
ON-SITE DRAINAGE MAP

APPLICANT:
Silverado Power
2 Embarcadero Center, Ste. 410
San Francisco, CA 94111
(415) 692-7740

SILVERADO power

PROJECT 5
SILVER SUN
GREENWORKS
LOS ANGELES COUNTY, CA

2 Embarcadero Center, Ste. 410 | San Francisco, CA 94111 | 415.692.7740 main

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PLOT/UPDATE: Dec 6, 2013 1:41:23 PM

HYDROLOGY RESULTS: (BASED ON LA FLOOD CONTROL TC CALCULATOR)

ON-SITE HYDROLOGY (PRE-DEVELOPMENT)																
Project	Subarea	Area (acres)	%imp	Frequency	Soil Type	Length (ft)	Slope (ft/ft)	Isohyet (in.)	Tc-calculated (min.)	Intensity (in./hr)	Cu	Cd	Flow rate (cfs)	Fire Factor	Burned flow rate (cfs)	Volume (acre-ft)
Project 5	A	22.06	0.01	25	120	1291	0.0116	4.2	29	1.10	0.35	0.36	8.74	0.34	10.47	1.04
Project 5	B	18.00	0.01	25	120	1459	0.0103	4.0	30	1.04	0.34	0.35	6.55	0.34	7.90	0.79
Project 5	C	10.54	0.01	25	120	852	0.0129	4.4	19	1.40	0.43	0.43	6.35	0.34	7.33	0.54
Project 5	D	15.03	0.01	25	120	1485	0.0168	4.4	28	1.17	0.37	0.38	6.68	0.34	7.92	0.75
Project 5	E	33.95	0.01	25	120	456	0.0088	4.4	12	1.74	0.50	0.50	29.54	0.34	33.15	1.78
Project 5	F	25.37	0.01	25	120	747	0.0094	4.2	19	1.34	0.42	0.42	14.28	0.34	16.57	1.22
Project 5	G	20.26	0.01	25	120	706	0.0085	4.2	19	1.34	0.42	0.42	11.40	0.34	13.23	0.98
Project 5	H	16.02	0.01	25	120	872	0.0138	4.4	19	1.40	0.43	0.43	9.64	0.34	11.14	0.82
Project 5	A	22.06	0.01	50	120	1291	0.0116	4.8	24	1.37	0.43	0.43	13.00	0.34	15.01	1.25
Project 5	B	18.00	0.01	50	120	1459	0.0103	4.6	29	1.20	0.38	0.39	8.42	0.34	9.93	0.95
Project 5	C	10.54	0.01	50	120	852	0.0129	5.0	15	1.78	0.51	0.51	9.57	0.34	10.70	0.64
Project 5	D	15.03	0.01	50	120	1485	0.0168	5.0	22	1.49	0.46	0.46	10.30	0.34	11.74	0.91
Project 5	E	33.95	0.01	50	120	456	0.0088	5.0	11	2.06	0.55	0.55	38.47	0.34	42.43	2.08
Project 5	F	25.37	0.01	50	120	747	0.0094	4.8	16	1.66	0.49	0.49	20.64	0.34	23.24	1.46
Project 5	G	20.26	0.01	50	120	706	0.0085	4.8	15	1.71	0.50	0.50	17.32	0.34	19.43	1.17
Project 5	H	16.02	0.01	50	120	872	0.0138	5.0	15	1.78	0.51	0.51	14.54	0.34	16.26	0.98

ON-SITE HYDROLOGY (POST-DEVELOPMENT)																
Project	Subarea	Area (acres)	%imp	Frequency	Soil Type	Length (ft)	Slope (ft/ft)	Isohyet (in.)	Tc-calculated (min.)	Intensity (in./hr)	Cu	Cd	Flow rate (cfs)	Fire Factor	Burned flow rate (cfs)	Volume (acre-ft)
Project 5	A	22.06	0.1	25	120	1291	0.0116	4.2	26	1.16	0.37	0.42	10.75	0.34	12.40	1.56
Project 5	B	18.00	0.1	25	120	1459	0.0103	4.0	30	1.04	0.34	0.40	7.49	0.34	8.71	1.20
Project 5	C	10.54	0.1	25	120	852	0.0129	4.4	17	1.47	0.45	0.50	7.75	0.34	8.65	0.80
Project 5	D	15.03	0.1	25	120	1485	0.0168	4.4	25	1.23	0.39	0.44	8.13	0.34	9.30	1.12
Project 5	E	33.95	0.1	25	120	456	0.0088	4.4	12	1.74	0.50	0.54	31.90	0.34	35.15	2.61
Project 5	F	25.37	0.1	25	120	747	0.0094	4.2	17	1.41	0.44	0.49	17.53	0.34	19.63	1.84
Project 5	G	20.26	0.1	25	120	706	0.0085	4.2	17	1.41	0.44	0.49	14.00	0.34	15.68	1.47
Project 5	H	16.02	0.1	25	120	872	0.0138	4.4	17	1.47	0.45	0.50	11.77	0.34	13.14	1.22
Project 5	A	22.06	0.1	50	120	1291	0.0116	4.8	21	1.46	0.45	0.50	16.10	0.34	17.97	1.85
Project 5	B	18.00	0.1	50	120	1459	0.0103	4.6	26	1.26	0.40	0.45	10.21	0.34	11.62	1.41
Project 5	C	10.54	0.1	50	120	852	0.0129	5.0	14	1.84	0.52	0.56	10.86	0.34	11.89	0.94
Project 5	D	15.03	0.1	50	120	1485	0.0168	5.0	21	1.52	0.46	0.50	11.42	0.34	12.76	1.32
Project 5	E	33.95	0.1	50	120	456	0.0088	5.0	10	2.15	0.56	0.59	43.07	0.34	46.78	3.02
Project 5	F	25.37	0.1	50	120	747	0.0094	4.8	15	1.71	0.50	0.54	23.43	0.34	25.81	2.14
Project 5	G	20.26	0.1	50	120	706	0.0085	4.8	14	1.77	0.51	0.55	19.72	0.34	21.66	1.72
Project 5	H	16.02	0.1	50	120	872	0.0138	5.0	15	1.78	0.51	0.55	15.68	0.34	17.23	1.42
Project 5	A	22.06	0.1	MIT.	120	1291	0.0116	0.75	30	0.19	0.10	0.18	0.75	0.34	0.98	0.24
Project 5	B	18.00	0.1	MIT.	120	1459	0.0103	0.75	30	0.19	0.10	0.18	0.62	0.34	0.80	0.20
Project 5	C	10.54	0.1	MIT.	120	852	0.0129	0.75	30	0.19	0.10	0.18	0.36	0.34	0.47	0.12
Project 5	D	15.03	0.1	MIT.	120	1485	0.0168	0.75	30	0.19	0.10	0.18	0.51	0.34	0.67	0.17
Project 5	E	33.95	0.1	MIT.	120	456	0.0088	0.75	30	0.19	0.10	0.18	1.16	0.34	1.51	0.38
Project 5	F	25.37	0.1	MIT.	120	747	0.0094	0.75	30	0.19	0.10	0.18	0.87	0.34	1.13	0.28
Project 5	G	20.26	0.1	MIT.	120	706	0.0085	0.75	30	0.19	0.10	0.18	0.69	0.34	0.90	0.22
Project 5	H	16.02	0.1	MIT.	120	872	0.0138	0.75	30	0.19	0.10	0.18	0.55	0.34	0.71	0.18

NOTE: FOR INFILTRATION BASIN MITIGATION VOLUME, SUM MIT. FREQUENCY VOLUMES UNDER POST-DEVELOPMENT TABLE. V_{PM}=1.79 AC*FT.

DELTA QUANTITIES FOR DRAINAGE AREA A:
ΔQ25 = 10.75 - 8.74 = 2.01 CFS
ΔV25 = 1.56 - 1.04 = 0.52 AC*FT

DELTA QUANTITIES FOR DRAINAGE AREA B:
ΔQ25 = 7.49 - 6.55 = 0.94 CFS
ΔV25 = 1.20 - 0.79 = 0.41 AC*FT

DELTA QUANTITIES FOR DRAINAGE AREA C
ΔQ25 = 7.75 - 6.35 = 1.40 CFS
ΔV25 = 0.80 - 0.54 = 0.26 AC*FT

DELTA QUANTITIES FOR DRAINAGE AREA D
ΔQ25 = 8.13 - 6.68 = 1.45 CFS
ΔV25 = 1.12 - 0.75 = 0.37 AC*FT

DELTA QUANTITIES FOR DRAINAGE AREA E
ΔQ25 = 31.90 - 29.54 = 2.36 CFS
ΔV25 = 2.61 - 1.78 = 0.83 AC*FT

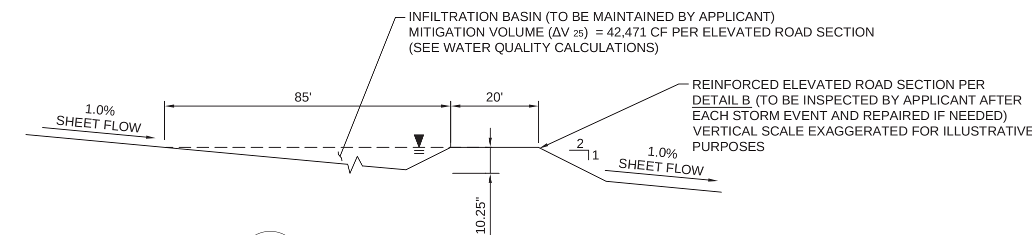
DELTA QUANTITIES FOR DRAINAGE AREA F
ΔQ25 = 17.53 - 14.28 = 3.25 CFS
ΔV25 = 1.84 - 1.22 = 0.62 AC*FT

DELTA QUANTITIES FOR DRAINAGE AREA G
ΔQ25 = 14.00 - 11.40 = 2.60 CFS
ΔV25 = 1.47 - 0.98 = 0.49 AC*FT

DELTA QUANTITIES FOR DRAINAGE AREA H
ΔQ25 = 11.77 - 9.64 = 2.13 CFS
ΔV25 = 1.22 - 0.82 = 0.40 AC*FT

TOTAL DELTA QUANTITIES
ΔQ25 = 16.14 CFS
ΔV25 = 3.90 AC*FT

NOTE: DUE TO THE LID Δ QUANTITIES ABOVE BEING GREATER THAN THE MITIGATION QUANTITIES (Q_{PM} AND V_{PM}) THEY REPRESENT THE WORST CASE SCENARIO BETWEEN THE PRE/POST DEVELOPMENT CONDITIONS AND THEREFORE SHALL BE USED FOR SIZING THE INFILTRATION BASINS.



A INFILTRATION BASIN DETAIL
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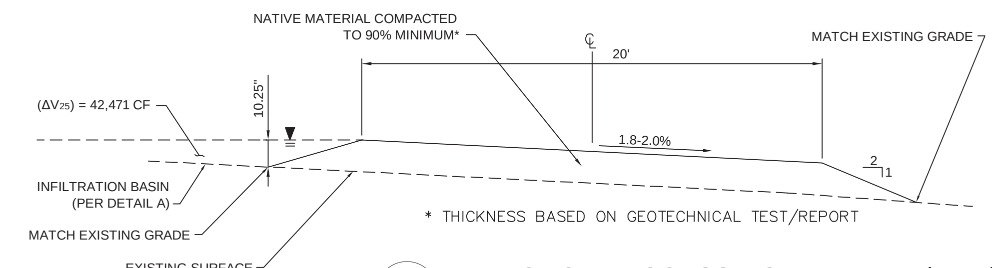
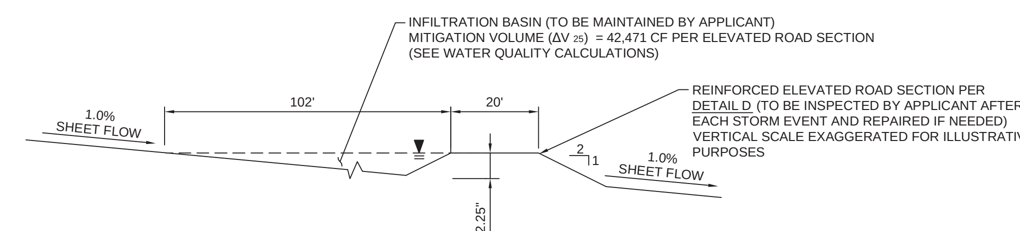
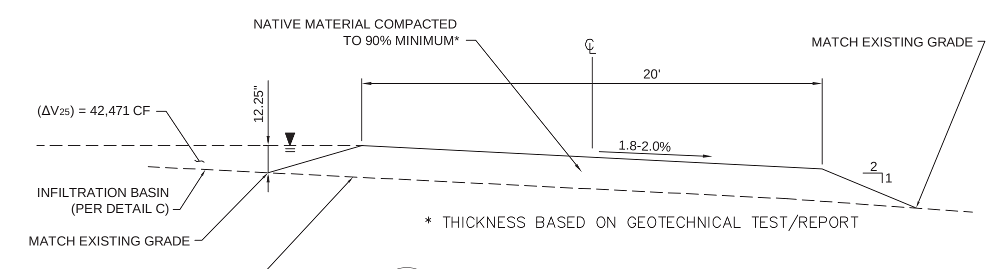


B REINFORCED ACCESS ROAD DETAIL (TYP.)
SCALE: NTS



C INFILTRATION BASIN DETAIL
SCALE: NTS



D REINFORCED ACCESS ROAD DETAIL (TYP.)
SCALE: NTS

HYDROLOGY STUDY/DRAINAGE CONCEPT/LID PLAN
APPROVED FOR AREA AND Q ONLY
APPROVED BY:__________ RCE NO:__________ DATE__________
CHECKED BY:__________ DATE__________
COUNTY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS
LAND DEVELOPMENT DIVISION

R2011-00801 (RCUP201100072) C-05

PREPARED UNDER THE SUPERVISION OF:
REGISTERED PROFESSIONAL ENGINEER
JOSEPH E. DIETZ
No. 67032
EXP: 9-30-14
CIVIL
STATE OF CALIFORNIA
JOSEPH E. DIETZ, P.E.

EXHIBIT PREPARER:
TETRA TECH, INC.
17885 VON KARMAN AVENUE, SUITE 500
IRVINE, CALIFORNIA 92614-6213
TEL: 949.809.5000

NOT ISSUED FOR CONSTRUCTION

NO.	DATE	REVISION	SUBM'T BY	APPV'D BY

Solar PV System Summary

20MW AC Solar Photovoltaic Generation System
APNs: 3267-003-001, 3267-003-002 & 3267-003-003
SCH # 2012061068

Project Name:
Project 5 Silver Sun Greenworks
Project Address:
120TH ST W & W AVE I
Lancaster,
Los Angeles County, CA

HYDROLOGY STUDY/DRAINAGE CONCEPT/LID FOR CUP 201100072
ON-SITE DRAINAGE MAP

APPLICANT:
Silverado Power
2 Embarcadero Center, Ste. 410
San Francisco, CA 94111
(415) 692-7740

SILVERADO power

PROJECT 5
SILVER SUN GREENWORKS
LOS ANGELES COUNTY, CA

2 Embarcadero Center, Ste. 410 | San Francisco, CA 94111 | 415.692.7740 main

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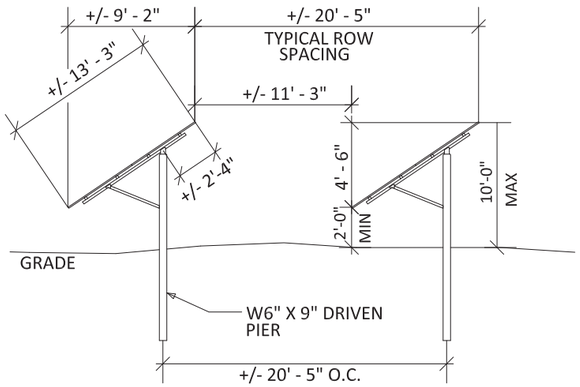
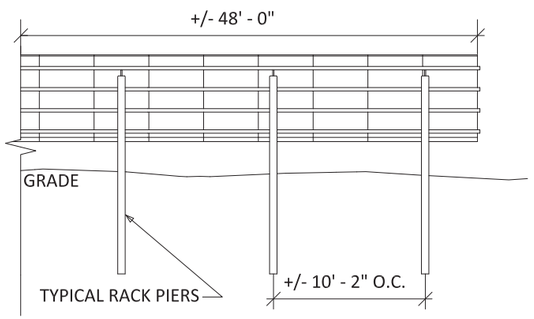


TYPICAL SOLAR ARRAY RACK DETAIL AND END ELEVATION

NOT TO SCALE



SOLAR ARRAY RACK DETAIL ELEVATION

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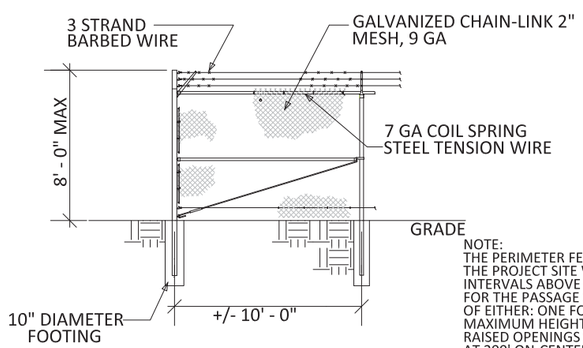
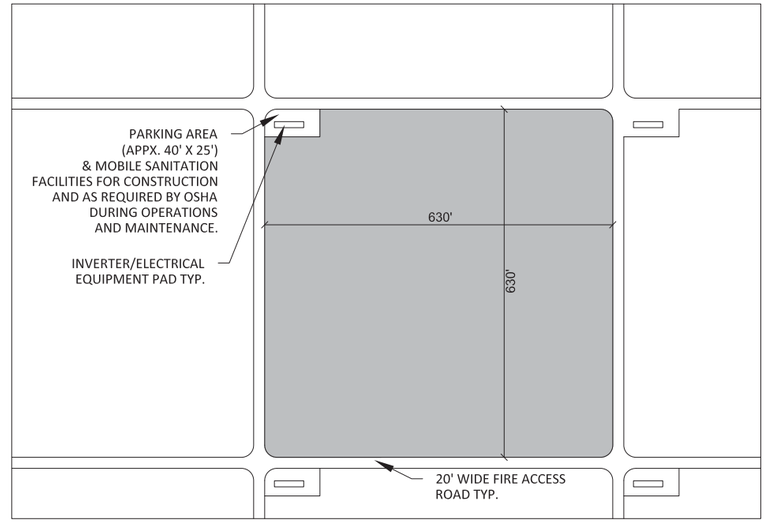


NOTE:
THE PERIMETER FENCING SURROUNDING THE PROJECT SITE WILL BE RAISED AT REGULAR INTERVALS ABOVE GROUND LEVEL TO ALLOW FOR THE PASSAGE OF WILDLIFE TO THE LESSER OF EITHER: ONE FOOT ABOVE GRADE OR TO THE MAXIMUM HEIGHT ALLOWED BY THE PUC. RAISED OPENINGS WILL BE 50' WIDE SPACED AT 200' ON-CENTER.

CHAIN LINK SECURITY FENCE ELEVATION

NOT TO SCALE



ARRAY BLOCK DETAIL (TYPICAL)

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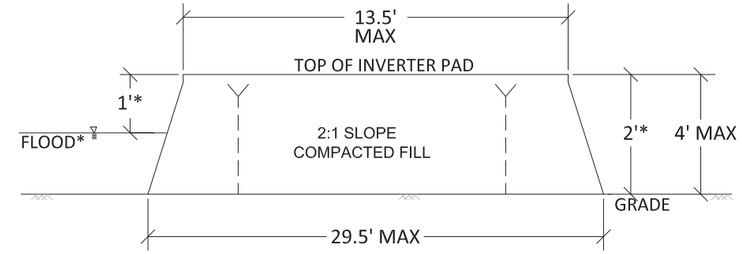
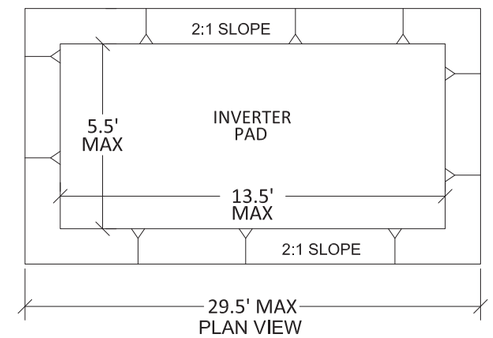


*TOP OF INVERTER PAD TO BE 1' MINIMUM ABOVE FLOOD WATER ELEVATION AS DETERMINED IN FINAL HYDROLOGY REPORT AND 2' ABOVE GRADE IN FEMA ZONE A.

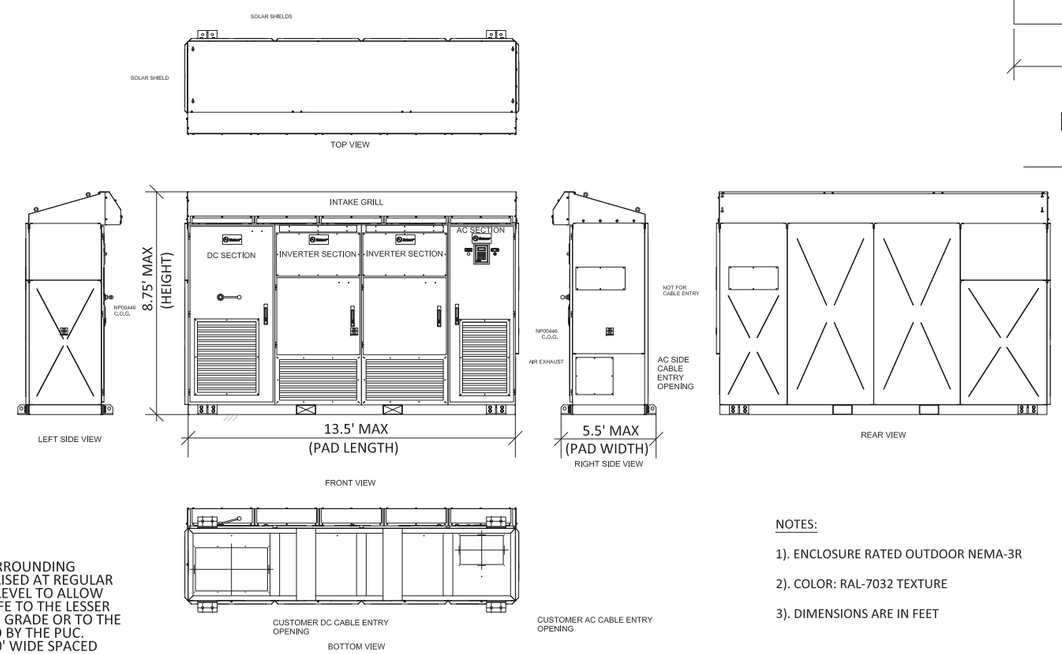
ELEVATION VIEW



PLAN VIEW

RAISED INVERTER PAD DETAILS FOR FLOOD AREAS AS NEEDED

NOT TO SCALE



NOTES:

1). ENCLOSURE RATED OUTDOOR NEMA-3R

2). COLOR: RAL-7032 TEXTURE

3). DIMENSIONS ARE IN FEET

INVERTER PAD DETAILS (TYPICAL)

NOT TO SCALE

R2011-00801 (RCUP201100072) C-06

REGISTERED PROFESSIONAL ENGINEER JULIE ANN DELANEY No.C54558 CIVIL STATE OF CALIFORNIA

EXHIBIT PREPARER:

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17885 VON KARMAN AVENUE, SUITE 500
IRVINE, CALIFORNIA 92614-6213
TEL: 949.809.5000

NOT ISSUED FOR CONSTRUCTION

NO.	DATE	REVISION	SUBM'T BY	APPV'D BY

Solar PV System Summary

20MW AC Solar Photovoltaic Generation System

APNs: 3267-003-001, 3267-003-002 & 3267-003-003

SCH # 2012061068

Project Name:
Project 5 Silver Sun Greenworks

Project Address:
120TH ST W & W AVE I
Lancaster,
Los Angeles County, CA

DRAWING: DETAIL SHEET

APPLICANT:
Silverado Power
2 Embarcadero Center, Ste. 410
San Francisco, CA 94111
(415) 692-7740

SILVERADO power

PROJECT 5
SILVER SUN GREENWORKS
LOS ANGELES COUNTY, CA

2 Embarcadero Center, Ste. 410 | San Francisco, CA 94111 | 415.692.7740 main

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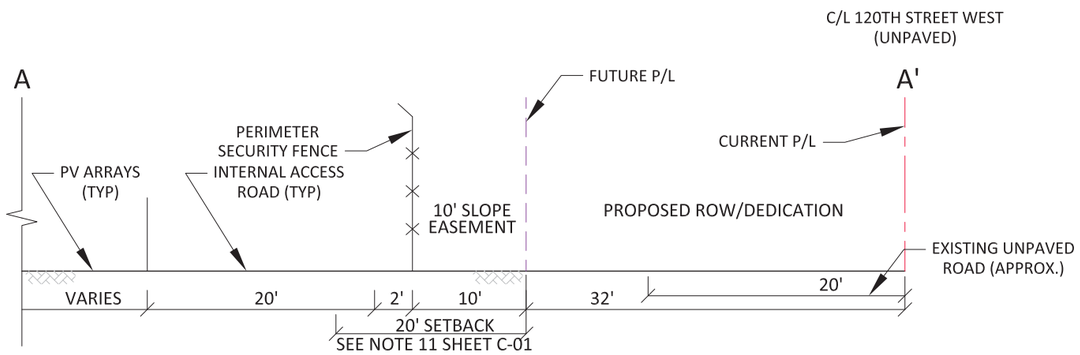

SECTION A - A'

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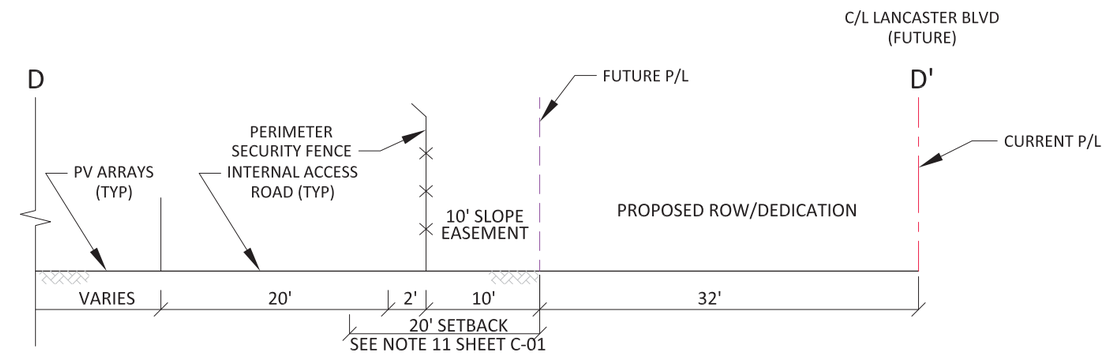

SECTION D - D'

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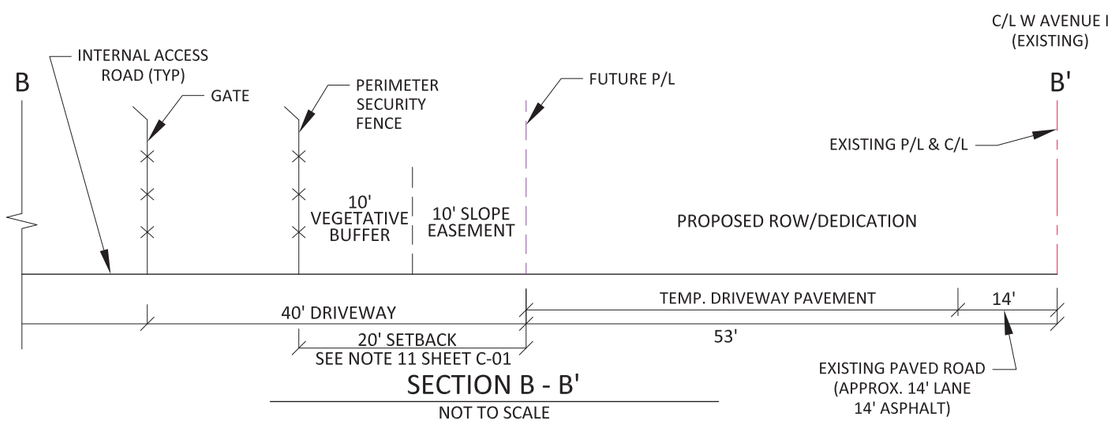
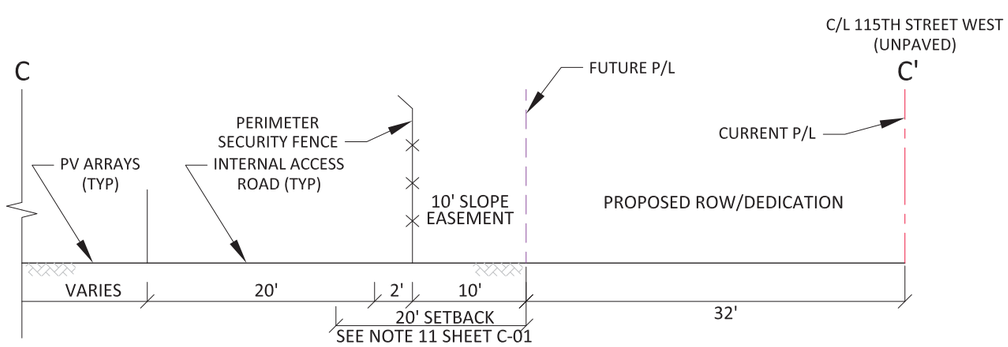


SECTION B - B'

NOT TO SCALE



SECTION C - C'

NOT TO SCALE

R2011-00801 (RCUP201100072) C-07

REGISTERED PROFESSIONAL ENGINEER
JULIE ANN DELANEY
No.C54558
CIVIL
STATE OF CALIFORNIA

EXHIBIT PREPARER:

TETRA TECH, INC.

17885 VON KARMAN AVENUE, SUITE 500
IRVINE, CALIFORNIA 92614-6213
TEL: 949.809.5000

NOT ISSUED FOR CONSTRUCTION

NO.	DATE	REVISION	SUBM'T BY	APPV'D BY

Solar PV System Summary

20MW AC Solar Photovoltaic Generation System

APNs: 3267-003-001, 3267-003-002 & 3267-003-003

SCH # 2012061068

Project Name:
Project 5 Silver Sun Greenworks

Project Address:
120TH ST W & W AVE I
Lancaster,
Los Angeles County, CA

DRAWING: SECTION SHEET

APPLICANT:
Silverado Power
2 Embarcadero Center, Ste. 410
San Francisco, CA 94111
(415) 692-7740

SILVERADO power

PROJECT 5
SILVER SUN
GREENWORKS
LOS ANGELES COUNTY, CA

2 Embarcadero Center, Ste. 410 | San Francisco, CA 94111 | 415.692.7740 main

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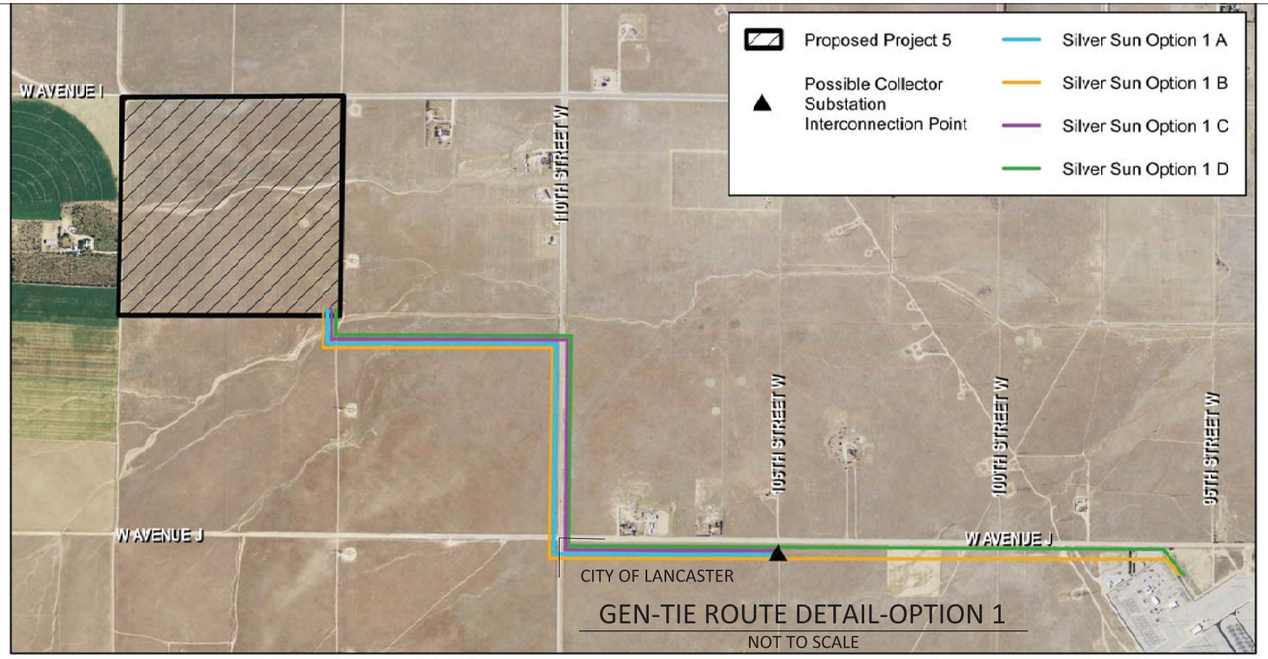
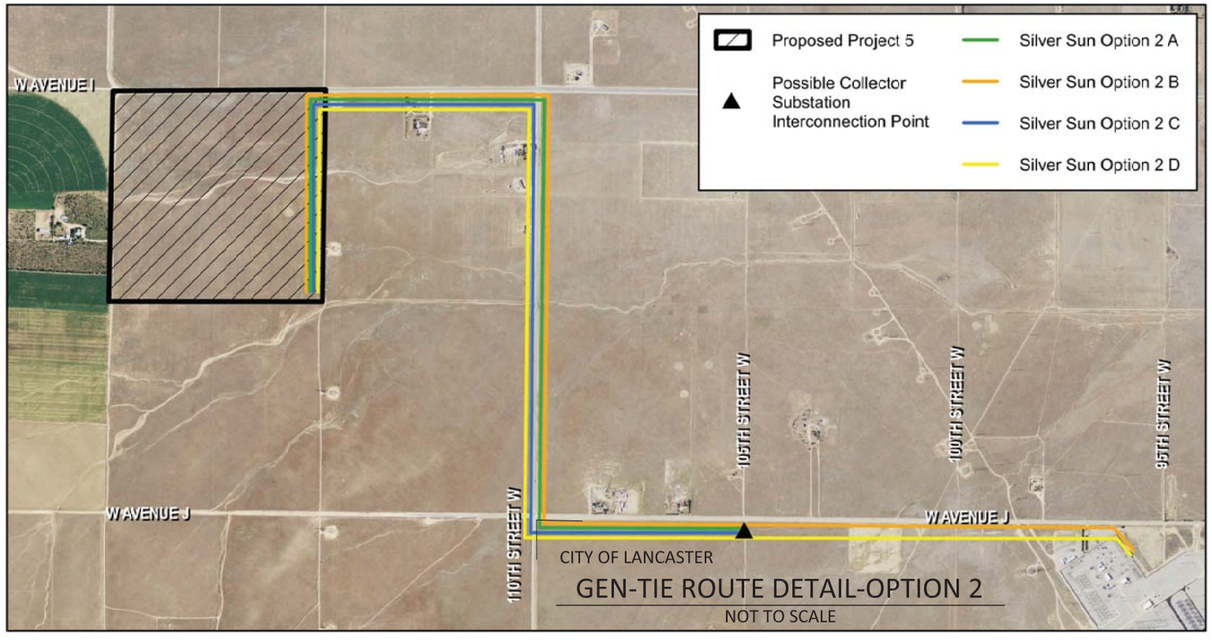


GEN-TIE ROUTE DETAIL-OPTION 1

NOT TO SCALE



GEN-TIE ROUTE DETAIL-OPTION 2

NOT TO SCALE

NOTES:

1. ALL GEN-TIE OPTIONS SHOWN ARE NEW, WITH NO TIE-INS TO EXISTING GEN-TIES.
2. GEN-TIE OPTIONS WITHIN LOS ANGELES COUNTY LIMITS/JURISDICTION WILL BE UNDERGROUND.
3. GEN-TIE OPTIONS WITHIN CITY OF LANCASTER LIMITS/JURISDICTION WILL BE UNDERGROUND OR ABOVE GROUND.

R2011-00801 (RCUP201100072) C-08

REGISTERED PROFESSIONAL ENGINEER JULIE ANN DELANEY No.C54558 CIVIL STATE OF CALIFORNIA

EXHIBIT PREPARER:

TETRA TECH, INC.
17885 VON KARMAN AVENUE, SUITE 500
IRVINE, CALIFORNIA 92614-6213
TEL: 949.809.5000

NOT ISSUED FOR CONSTRUCTION

NO.	DATE	REVISION	SUBM'T BY	APPV'D BY

Solar PV System Summary

20MW AC Solar Photovoltaic Generation System

APNs: 3267-003-001, 3267-003-002 & 3267-003-003

SCH # 2012061068

Project Name: Project 5 Silver Sun Greenworks

Project Address: 120TH ST W & W AVE I Lancaster, Los Angeles County, CA

DRAWING: GEN-TIE ROUTE OPTIONS

APPLICANT:
Silverado Power
2 Embarcadero Center, Ste. 410
San Francisco, CA 94111
(415) 692-7740

SILVERADO power

PROJECT 5
SILVER SUN GREENWORKS
LOS ANGELES COUNTY, CA

2 Embarcadero Center, Ste. 410 | San Francisco, CA 94111 | 415.692.7740 main

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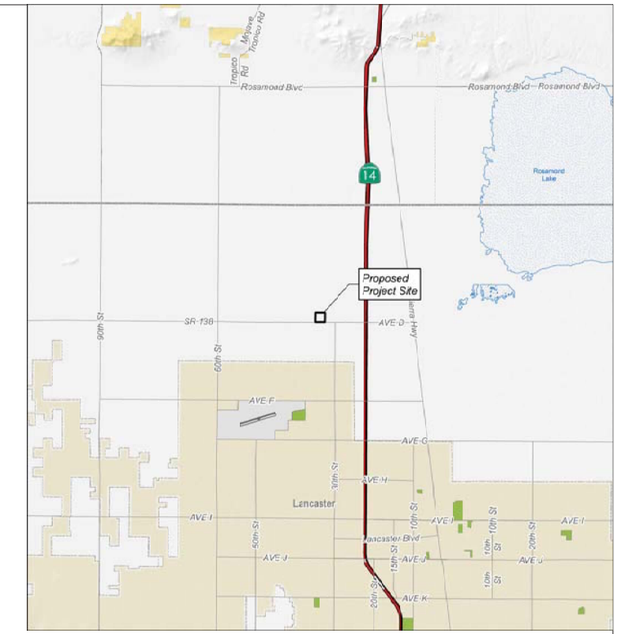
LOCATION MAP
NOT TO SCALE

PROJECT 6
LANCASTER WAD
LOS ANGELES COUNTY, CALIFORNIA



VICINITY MAP
NOT TO SCALE

DRAWING INDEX

DRAWING NO.	TITLE
T-01	TITLE SHEET
G-01	TOPOGRAPHIC MAP
C-01	SITE PLAN
C-02	GRADING PLAN
C-03	ON-SITE DRAINAGE MAP
C-04	ON-SITE DRAINAGE MAP
C-05	DETAIL SHEET
C-06	SECTION SHEET

SURVEY INFORMATION:

TOPOGRAPHIC MAP AND 1' CONTOURING PREPARED BY ALL VALLEY SURVEYING.
BENCHMARK AND BASIS OF BEARINGS SHOWN ON TOPOGRAPHIC MAP, DRAWING G-01.

SURVEYOR:

LARRY E. JERNIGAN, PLS #5924
ALL VALLEY SURVEYING
44965 10TH STREET WEST
LANCASTER, CA 93534
(661) 942-3639

R2011-00805 (RCUP2011-00074) T-01

REGISTERED PROFESSIONAL ENGINEER JULIE ANN DELAREY No.C54558 CIVIL STATE OF CALIFORNIA

EXHIBIT PREPARER:

TETRA TECH, INC.
17885 VON KARMAN AVENUE, SUITE 500
IRVINE, CALIFORNIA 92614-6213
TEL: 949.809.5000

NOT ISSUED FOR CONSTRUCTION

NO.	DATE	REVISION	SUBM'T BY	APPV'D BY

Solar PV System Summary

5MW AC Solar Photovoltaic Generation System
APN:
3115-010-004
SCH # 2012061068

Project Name:
Project 6 Lancaster WAD
Project Address:
W Ave. D & 35th St. W
Lancaster,
Los Angeles County, CA

DRAWING: TITLE SHEET

APPLICANT:
Silverado Power
2 Embarcadero Center, Ste. 410
San Francisco, CA 94111
(415) 692-7740

SILVERADO power

PROJECT 6
LANCASTER WAD
LOS ANGELES COUNTY, CA

2 Embarcadero Center, Ste. 410 | San Francisco, CA 94111 | 415.692.7740 main

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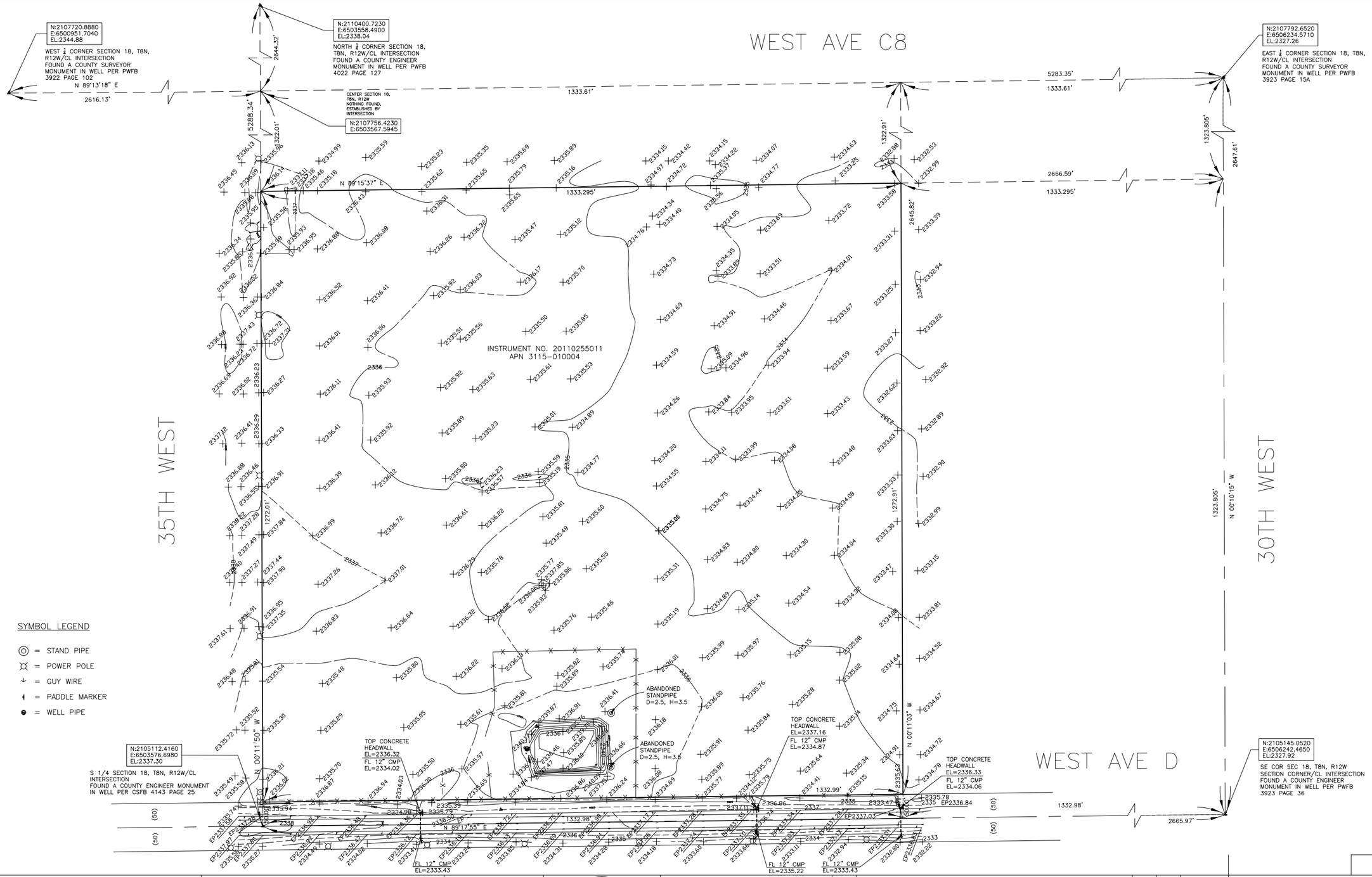


SHEET G-01

BASIS OF BEARING	BENCH MARK
DESIGNATION- OBAN PID-EW0819 STATE/COUNTY-CA/LOS ANGELES USGS QUAD-ROSAMOND 1973 SPC CA5- N=2096834.88 E=6517733.23 SPC CA5- COMBINED FACTOR 0.99981691	BM L1462 NAVD 1988, 2004 LANCASTER ADJUSTMENT, ELEV.=2336.348' RDBM TAG IN CTR CONC HDWL 6.4M(21FT) N/O C/L AVE D & 101M(331FT) E/O C/L PROP 35TH ST W

SCALE
HORIZ: 1"= 100'

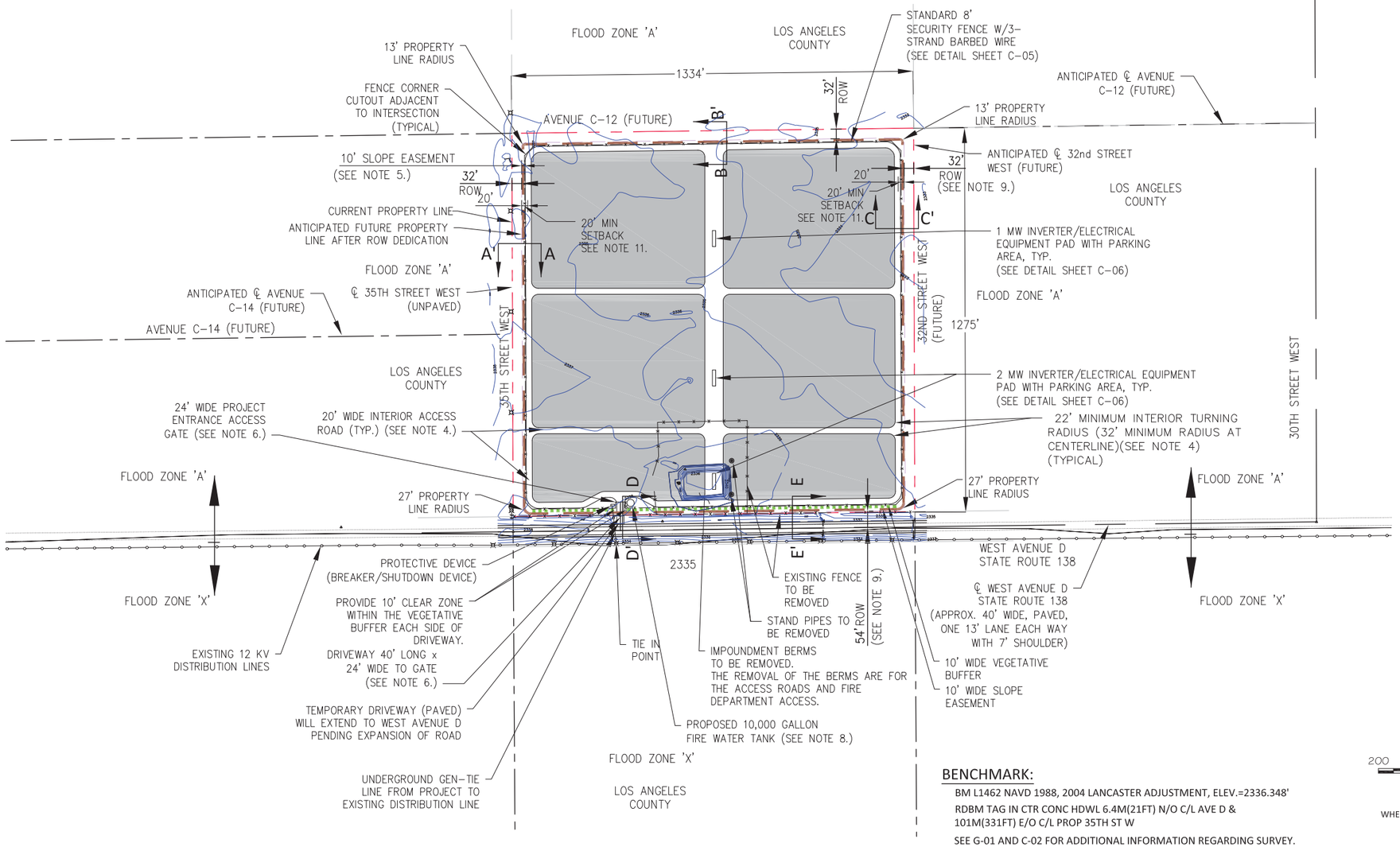
PROFESSIONAL LAND SURVEYOR
LARRY E JERNIGAN
No. 5924
EXP 12-31-12
STATE OF CALIFORNIA

ALL VALLEY SURVEYING
44965 10TH STREET WEST
LANCASTER, CA. 93534
(661) 942-3639

NO.	REVISION	BY	APPR.	DATE
1				
2				
3				

TOPOGRAPHIC MAP
AVENUE D & 35TH STREET WEST
ANTELOPE VALLEY
COUNTY OF LOS ANGELES
STATE OF CALIFORNIA

DATE OF SURVEY	COUNTY PLAN CHECK NUMBER
1/18/12	R2011-00805(RCUP2011-00074)



VICINITY MAP

NO SCALE

PROJECT SITE:

PROJECT SITE IS 39 ACRES (NET)

NOTES:

1. 'ZONE X' AS SHOWN ON PANEL 0150F OF FLOOD INSURANCE RATE MAP NO. 06037C0175F. ZONE "X" DESIGNATED AS "AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOOD PLAIN. ZONE "A" DESIGNATED AS, "NO BASE FLOOD ELEVATIONS DETERMINED".

2. FIRE DEPARTMENT ACCESS DEVICE AND EMERGENCY CONTACT PLACARD LOCATED AT ALL ENTRANCE GATES.

3. MOBILE SANITATION FACILITY, AS DEFINED BY THE LOS ANGELES COUNTY DEPARTMENT OF PUBLIC HEALTH, CAN BE LOCATED AT ALL PARKING LOCATIONS AND WILL BE LOCATED AT THE NEAREST LOCATION TO CONSTRUCTION AND OPERATIONAL WORKERS ACTIVITY. THE FACILITIES WILL BE KEPT TO LOS ANGELES COUNTY CODE, TITLE 11 – HEALTH & SAFETY, AND CAL-OSHA SANITATION STANDARDS IN SECTION 3360, TITLE 8, CALIFORNIA CODE OF REGULATIONS. MOBILE SANITATION FACILITIES WILL BE MADE AVAILABLE DURING CONSTRUCTION AND AS REQUIRED BY OSHA DURING OPERATIONS AND MAINTENANCE. SEE ARRAY BLOCK DETAIL (TYPICAL) ON C-05.

4. INTERIOR ACCESS ROADS WILL BE 20' WIDE, COMPACTED TO 90%, WITH 32 FOOT TURNING RADIUS AT CENTER LINE. THE INNER RADIUS WILL BE 22' AND THE OUTER RADIUS WILL BE 42'. INTERIOR ACCESS ROADS WILL BE PROVIDED TO INVERTER/ELECTRICAL EQUIPMENT PADS AND AROUND THE PERIMETER OF THE PROJECT. SEE ARRAY BLOCK DETAIL (TYPICAL) ON C-05.

5. 10 FOOT WIDE SLOPE EASEMENT WILL BE PROVIDED AROUND PERIMETER.
6. DRIVEWAY ACCESS GATES TO BE SET 40 FEET BACK FROM EDGE OF PROPERTY. DRIVEWAY WILL BE 24 FEET WIDE.

7. ALL DIMENSIONS SHOWN ARE APPROXIMATE AND SUBJECT TO VERIFICATION DURING DETAILED DESIGN.

8. TANK CONNECTIONS PER LOS ANGELES COUNTY FIRE DEPARTMENT.

9. ANTICIPATED ROW SETBACK/DEDICATION FOR FUTURE ROAD DEVELOPMENT. REFER TO SHEET C-06 FOR SECTIONS AND ROW DETAILS.

10. CONTOURS SHOWN ON SITE PLAN, C-01, ARE BASED ON USGS MAP CONTOURS.

11. A 20' MINIMUM SETBACK FROM PROPERTY LINE (AFTER DEDICATIONS) TO ARRAYS OR EQUIPMENT TO BE MAINTAINED ON SITE. PROJECT FENCE, FIRE ROADS, EASEMENTS, AND VEGETATION ARE OK WITHIN THE SETBACK.

LEGEND:

MIN ROW	MINIMUM RIGHT OF WAY
℄	CENTERLINE
	POWER POLE
x — x	FENCE LINE
	OVERHEAD LINE
	UNDERGROUND LINE
	PROPERTY LINE (AFTER DEDICATIONS)
	PROPERTY LINE (CURRENT)
	PARCEL LINE (SURVEYING)
2336	CONTOUR LINE (1' INTERVAL FROM ALL VALLEY)
	SOLAR ARRAY FIELD
	10' WIDE VEGETATIVE BUFFER
	10' WIDE SLOPE EASEMENT

200 0 200 400

SCALE IN FEET

1'=200'

WHEN PRINTED TO SCALE ON 22"x34" SHEET

BENCHMARK:

BM L1462 NAVD 1988, 2004 LANCASTER ADJUSTMENT, ELEV.=2336.348'

RDBM TAG IN CTR CONC HDWL 6.4M(21FT) N/O C/L AVE D & 101M(331FT) E/O C/L PROP 35TH ST W

SEE G-01 AND C-02 FOR ADDITIONAL INFORMATION REGARDING SURVEY.

R2011-00805 (RCUP2011-00074) C-01

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PLOT/UPDATE: Mar 24, 2014 11:41:02 AM

REGISTERED PROFESSIONAL ENGINEER JULIE ANN DELANEY No.C54558 CIVIL STATE OF CALIFORNIA

EXHIBIT PREPARER:

TETRA TECH, INC.

17885 VON KARMAN AVENUE, SUITE 500
IRVINE, CALIFORNIA 92614-6213
TEL: 949.809.5000

NOT ISSUED FOR CONSTRUCTION

NO.	DATE	REVISION	SUBM'T BY	APPV'D BY

Solar PV System Summary

5MW AC Solar Photovoltaic Generation System

APN:
3115-010-004
SCH # 2012061068

Project Name:
Project 6 Lancaster WAD

Project Address:
W Ave. D & 35th St. W
Lancaster,
Los Angeles County, CA

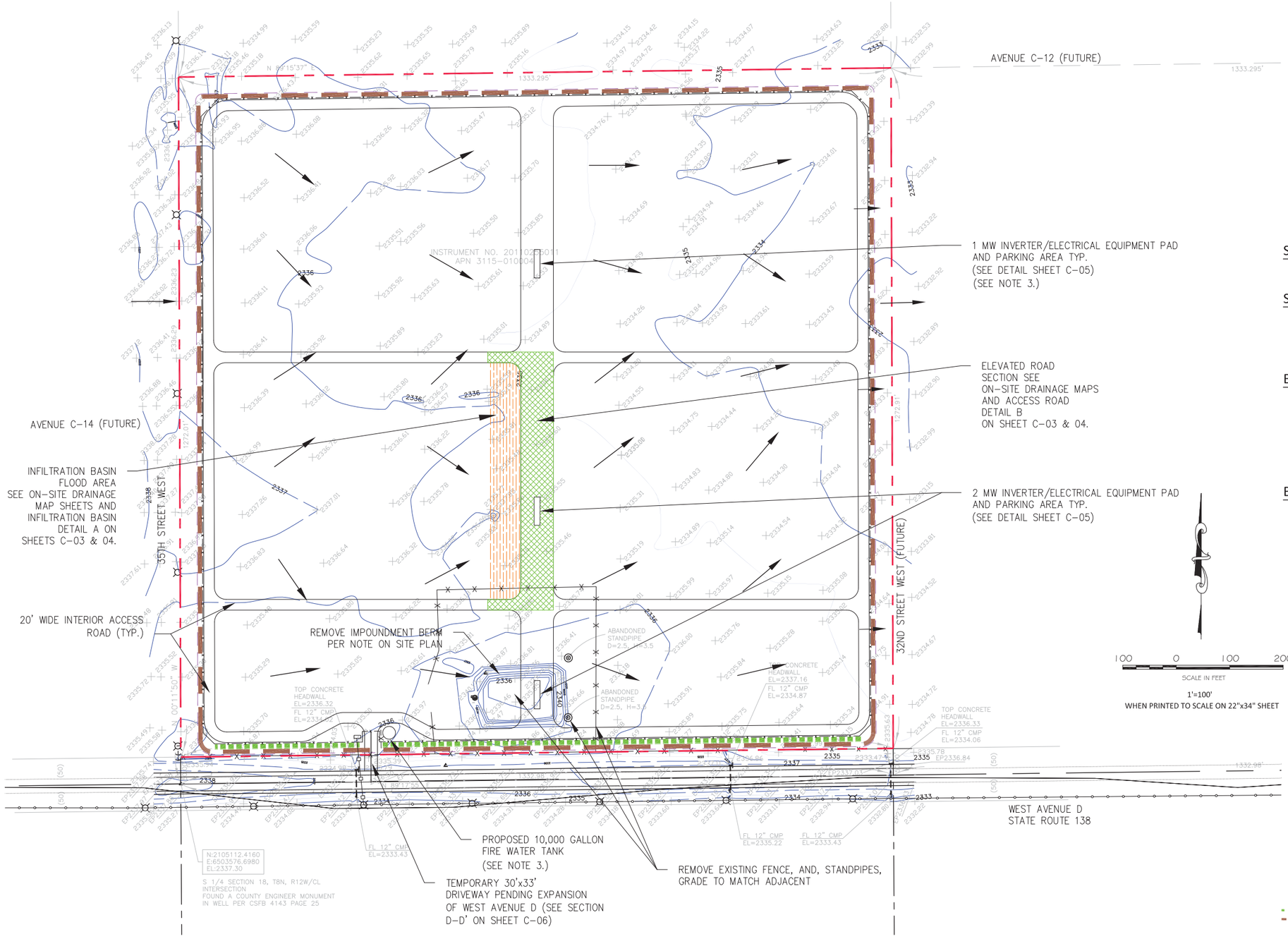
DRAWING: SITE PLAN

APPLICANT:
Silverado Power
2 Embarcadero Center, Ste. 410
San Francisco, CA 94111
(415) 692-7740

SILVERADO power

PROJECT 6
LANCASTER WAD
LOS ANGELES COUNTY, CA

2 Embarcadero Center, Ste. 410 | San Francisco, CA 94111 | 415.692.7740 main



EARTHWORK QUANTITIES:

OVEREXCAVATION	=	31,460 CUBIC YARDS
CUT	=	1,600 CUBIC YARDS
FILL	=	1,600 CUBIC YARDS

CUT & FILL QUANTITIES INCLUDE INVERTER PADS, BASIN, AND ELEVATED ROAD BED FOR DRAINAGE FEATURES.

OVEREXCAVATION QUANTITY INCLUDES ACCESSIBLE FIRE ROAD.

SURVEY INFORMATION:

TOPOGRAPHIC MAP AND 1' CONTOURING PREPARED BY ALL VALLEY SURVEYING, JANUARY 18, 2012

SURVEYOR:

LARRY E. JERNIGAN, PLS #5924
ALL VALLEY SURVEYING
44965 10TH STREET WEST
LANCASTER, CA 93534
(661) 942-3639

BASIS OF BEARINGS:

PID-EW0819
DESIGNATION- OBAN
STATE/COUNTY-CA/LOS ANGELES
USGS QUAD-ROSAMOND 1973

SPC CA5- N=2096834.88 E=6517733.23

SPC CA5- COMBINED FACTOR 0.99981691

BENCHMARK:

BM L1462 NAVD 1988, 2004 LANCASTER ADJUSTMENT, ELEV.=2336.348'

RDBM TAG IN CTR CONC HDWL 6.4M(21FT) N/O C/L AVE D & 101M(331FT) E/O C/L PROP 35TH ST W

NOTES:

1. DRAINAGE ACROSS SITE IS CURRENTLY FROM THE WEST TO THE EAST, AS SHOWN ON THE SURFACE CONTOURS. TOPOGRAPHY/CONTOURS ARE BASED ON SURVEY DATA PROVIDED BY ALL VALLEY SURVEYING.

2. OVERALL EXISTING GRADING AND DRAINAGE PATTERN TO REMAIN UNCHANGED DURING AND AFTER CONSTRUCTION WITH THE EXCEPTION OF AREAS USED FOR DRAINAGE FEATURES. ELEVATED ROAD SECTIONS WILL BE USED TO CREATE INFILTRATION BASINS. FLOOD AREAS AND FLOW PATTERN ARROWS ARE SHOWN ON THIS SHEET AND SHEETS C-03 AND C-04. LIMIT OF GRADING ACTIVITIES WILL BE AT PROPERTY LINE (AFTER DEDICATIONS).

3. EQUIPMENT PADS WILL BE GRADED AS REQUIRED PER MANUFACTURER SPECIFICATIONS.

LEGEND:

TYP.	TYPICAL
◎ =	STAND PIPE
⌘ =	POWER POLE
⊥ =	GUY WIRE
=	PADDLE MARKER
⊗ =	WELL PIPE
℄	CENTERLINE
CMP	CORRUGATED METAL PIPE
L.F.	LINEAR FEET
	10' WIDE VEGETATIVE BUFFER
	10' WIDE SLOPE EASEMENT

MIN	MINIMUM
ROW	RIGHT OF WAY
℄	CENTERLINE
—x—x—	FENCE LINE
	OVERHEAD LINE
	UNDERGROUND LINE
	PROPERTY LINE (AFTER DEDICATIONS)
	PROPERTY LINE (CURRENT)
	PARCEL LINE
2337	CONTOUR LINE (1' INTERVAL FROM ALL VALLEY SURVEYING)
	INFILTRATION BASIN FLOOD AREA
	ELEVATED ROAD SECTION

R2011-00805 (RCUP2011-00074) C-02

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PLOT/UPDATE: Mar 24, 2014 11:42:11 AM

REGISTERED PROFESSIONAL ENGINEER JULIE ANN DELANEY No.C54558 CIVIL STATE OF CALIFORNIA

EXHIBIT PREPARER:
TETRA TECH, INC.
17885 VON KARMAN AVENUE, SUITE 500
IRVINE, CALIFORNIA 92614-6213
TEL: 949.809.5000

NOT ISSUED FOR CONSTRUCTION

NO.	DATE	REVISION	SUBM'T BY	APPV'D BY

Solar PV System Summary

5MW AC Solar Photovoltaic Generation System
APN:
3115-010-004
SCH # 2012061068

Project Name:
Project 6 Lancaster WAD
Project Address:
W Ave. D & 35th St. W
Lancaster,
Los Angeles County, CA

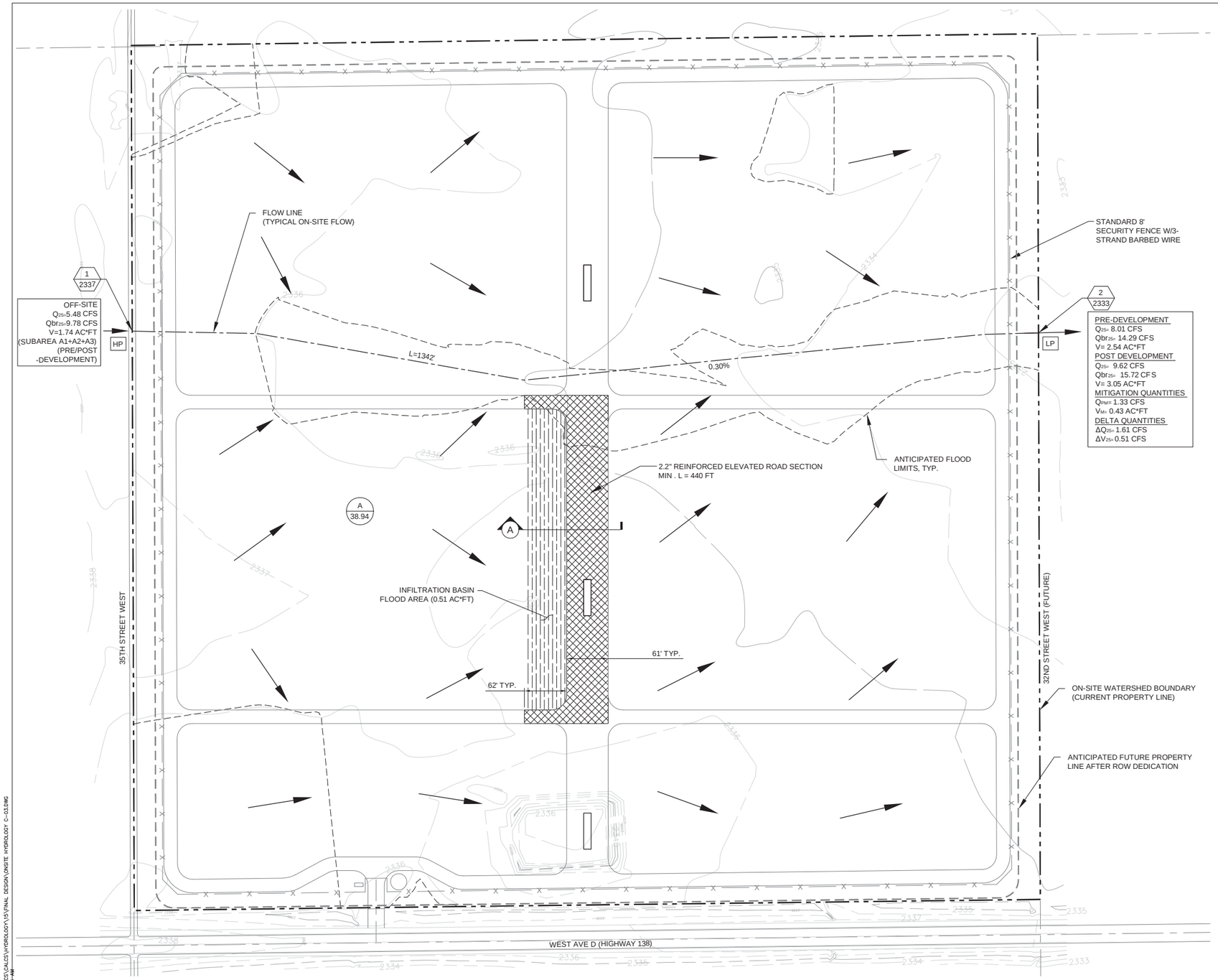
DRAWING: GRADING PLAN

APPLICANT:
Silverado Power
2 Embarcadero Center, Ste. 410
San Francisco, CA 94111
(415) 692-7740

SILVERADO power

PROJECT 6
LANCASTER WAD
LOS ANGELES COUNTY, CA

2 Embarcadero Center, Ste. 410 | San Francisco, CA 94111 | 415.692.7740 main



LEGEND:

XX / XX.X	SUBAREA ID / ACREAGE
XX / XXX	NODE ID / ELEVATION
HP	HIGH POINT
LP	LOW POINT
	WATERSHED BOUNDARY
	FUTURE PROPERTY LINE
X	SECURITY FENCING
	FLOW LINE
	ANTICIPATED 25-YR STORM EVENT FLOOD LIMITS
	ELEVATED ROAD SECTION
	INFILTRATION BASIN FLOOD AREA

Q_{25} PEAK FLOW RATE (25-YEAR STORM EVENT)
Qbr_{25} BURNED PEAK FLOW RATE (25-YEAR STORM EVENT)
V STORM VOLUME (25-YEAR STORM EVENT)
Q_{PM} PEAK MITIGATION FLOW RATE (85TH % STORM EVENT)
V_M MITIGATION VOLUME (85TH % STORM EVENT)
V_{DP} DEBRIS POTENTIAL VOLUME = (1,300 CY / SQ. MI.) * (TOTAL WATERSHED AREA 0.193 SQ. MI.) = 251 CY

DRAINAGE CONCEPT NOTES:

1) LOCATIONS OF DRAINAGE DEVICES SHOWN ARE NOT NECESSARILY APPROVED.
2) COMPLIANCE OF ALL STREET DRAINAGE REQUIREMENTS WILL BE MET TO THE SATISFACTION OF THE DEPARTMENT OF PUBLIC WORKS.
3) APPROVAL OF THE DRAINAGE CONCEPT DOES NOT CONSTITUTE DETERMINATION THAT THE OFFSITE IMPROVEMENTS ARE REQUIRED WITHIN THE MEANING OF GOVERNMENT CODE SECTION 66462.5, (EXCEPT AS NOTES).
4) AN OFFSITE DRAINAGE COVENANT FOR ACCEPTANCE OR DRAINAGE (AND DRAINAGE FACILITIES) MAY BE REQUIRED WHERE INDICATED.
5) A NOTE OF FLOOD HAZARD WILL BE REQUIRED WHERE INDICATED ON THIS PLAN.
6) A SOIL REPORT WILL BE REQUIRED TO VERIFY THAT A 7-DAY PERCOLATION RATE CAN BE OBTAINED.
7) BASIN SIZES ARE DEPENDENT ON THE VERIFICATION OF PERCOLATION RATES AND ARE SUBJECT TO CHANGE.
8) WITHIN A FEMA ZONE A.
9) WITHIN A COUNTY ADOPTED FLOODWAY.
10) ALL BASINS ARE PRIVATELY MAINTAINED.
11) FOR THE POST-DEVELOPMENT 50-YEAR STORM EVENT EXITING THE PROJECT, THE PEAK FLOW RATE (Q_{50}) INCREASED BY 8.5%, THE VOLUME (V_{50}) INCREASED BY 2.4%, THE DEPTH INCREASED BY 0.0%, AND THE VELOCITY INCREASED BY 2.7%. THESE REPRESENT NEGLIGIBLE INCREASES FROM THE PRE-DEVELOPMENT CONDITION. SEE IMPACT ANALYSIS CALCULATIONS.

HYDROLOGY STUDY/DRAINAGE CONCEPT/LID PLAN
APPROVED FOR AREA AND Q ONLY
APPROVED BY: _____ RCE NO: _____ DATE _____
CHECKED BY: _____ DATE _____
COUNTY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS
LAND DEVELOPMENT DIVISION

N
0 40' 80' 160'
SCALE: 1"=80'

R2011-00805 (RCUP2011-00074) C-03

PREPARED UNDER THE SUPERVISION OF:

REGISTERED PROFESSIONAL ENGINEER
JOSEPH E. DIETZ
No. 67032
EXP: 9-30-14
CIVIL
STATE OF CALIFORNIA

JOSEPH E. DIETZ, P.E.

EXHIBIT PREPARER:

TETRA TECH, INC.
17885 VON KARMAN AVENUE, SUITE 500
IRVINE, CALIFORNIA 92614-6213
TEL: 949.809.5000

NOT ISSUED FOR CONSTRUCTION

NO.	DATE	REVISION	SUBM'T BY	APPV'D BY

Solar PV System Summary

5MW AC Solar Photovoltaic Generation System

APN:
3115-010-004
SCH # 2012061068

Project Name:
Project 6 Lancaster WAD

Project Address:
W Ave. D & 35th St. W
Lancaster,
Los Angeles County, CA

HYDROLOGY STUDY/DRAINAGE CONCEPT/LID
FOR CUP 201100074
ON-SITE DRAINAGE MAP

APPLICANT:
Silverado Power
2 Embarcadero Center, Ste. 410
San Francisco, CA 94111
(415) 692-7740

SILVERADO power

PROJECT 6
LANCASTER WAD
LOS ANGELES COUNTY, CA

2 Embarcadero Center, Ste. 410 | San Francisco, CA 94111 | 415.692.7740 main

P:\0/0446\135--0446-12001\SUPPORTDOCS\CALCS\HYDROLOGY\15\FINAL DESIGN\ONSITE HYDROLOGY C-03.DWG
Plot by:ROBERT Date: Mar 4, 2015 Time: 10:29 AM

HYDROLOGY RESULTS: (BASED ON LA FLOOD CONTROL TC CALCULATOR)

ON-SITE HYDROLOGY (PRE-DEVELOPMENT)

Project	Subarea	Area (acres)	%imp	Frequency	Soil Type	Length (ft)	Slope (ft/ft)	Isohyet (in.)	Tc-calculated (min.)	Intensity (in./hr)	Cu	Cd	Flow rate (cfs)	Fire Factor	Burned flow rate (cfs)	Volume (acre-ft)
Project 6	A	38.94	0.01	2	120	1342	0.003	1.0	30	0.26	0.10	0.11	1.11	0.34	1.80	0.36
Project 6	A	38.94	0.01	5	120	1342	0.003	1.5	30	0.39	0.10	0.11	1.67	0.34	2.84	0.54
Project 6	A	38.94	0.01	10	120	1342	0.003	1.9	30	0.48	0.10	0.11	2.06	0.34	3.58	0.66
Project 6	A	38.94	0.01	25	120	1342	0.003	2.3	30	0.59	0.10	0.11	2.53	0.34	4.51	0.80
Project 6	A	38.94	0.01	50	120	1342	0.003	2.6	30	0.67	0.11	0.12	3.13	0.34	5.43	0.92
Project 6	A	38.94	0.01	MIT.	120	1342	0.003	0.75	30	0.19	0.10	0.11	0.81	0.34	1.26	0.26

ON-SITE HYDROLOGY (POST-DEVELOPMENT)

Project	Subarea	Area (acres)	%imp	Frequency	Soil Type	Length (ft)	Slope (ft/ft)	Isohyet (in.)	Tc-calculated (min.)	Intensity (in./hr)	Cu	Cd	Flow rate (cfs)	Fire Factor	Burned flow rate (cfs)	Volume (acre-ft)
Project 6	A	38.94	0.1	2	120	1342	0.003	1.0	30	0.26	0.10	0.18	1.82	0.34	2.44	0.58
Project 6	A	38.94	0.1	5	120	1342	0.003	1.5	30	0.39	0.10	0.18	2.73	0.34	3.80	0.88
Project 6	A	38.94	0.1	10	120	1342	0.003	1.9	30	0.48	0.10	0.18	3.36	0.34	4.76	1.07
Project 6	A	38.94	0.1	25	120	1342	0.003	2.3	30	0.59	0.10	0.18	4.14	0.34	5.94	1.31
Project 6	A	38.94	0.1	50	120	1342	0.003	2.6	30	0.67	0.11	0.19	4.96	0.34	7.05	1.50
Project 6	A	38.94	0.1	MIT.	120	1342	0.003	0.75	30	0.19	0.10	0.18	1.33	0.34	1.74	0.43

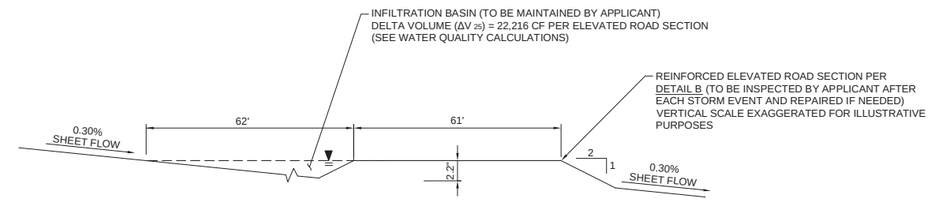
Incremental Flow and Volume Increase for Various Storm Events

Storm Event	Pre-Q (cfs)	Post-Q (cfs)	Delta-Q (cfs)	Pre-V (acre-ft)	Post-V (acre-ft	Delta-V (acre-ft)
2.00	1.11	1.82	0.71	0.36	0.58	0.22
5.00	1.67	2.73	1.06	0.54	0.88	0.34
10.00	2.06	3.36	1.30	0.66	1.07	0.41
25.00	2.53	4.14	1.61	0.80	1.31	0.51
50.00	3.13	4.96	1.83	0.92	1.50	0.58

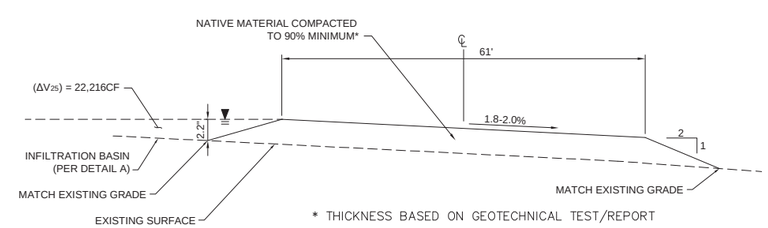
NOTE: FOR INFILTRATION BASIN MITIGATION VOLUME, SEE MIT. FREQUENCY FLOW VOLUME UNDER POST-DEVELOPMENT TABLE.

TOTAL DELTA QUANTITIES
$\Delta Q25$ = 4.14 CFS - 2.53 CFS = 1.61 CFS
$\Delta V25$ = 1.31 AC*FT - 0.80 AC*FT = 0.51 AC*FT

NOTE: DUE TO THE LID Δ QUANTITIES ABOVE BEING GREATER THAN THE MITIGATION QUANTITIES (Q_{25} AND V_{25}) THEY REPRESENT THE WORST CASE SCENARIO BETWEEN THE PRE-/POST DEVELOPMENT CONDITIONS AND THEREFORE SHALL BE USED FOR SIZING THE INFILTRATION BASINS.



A INFILTRATION BASIN DETAIL
SCALE: NTS



B REINFORCED ACCESS ROAD DETAIL (TYP.)
SCALE: NTS

HYDROLOGY STUDY/DRAINAGE CONCEPT/LID PLAN
APPROVED FOR AREA AND Q ONLY
APPROVED BY:_____ RCE NO:_____ DATE_____
CHECKED BY:_____ DATE_____
COUNTY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS
LAND DEVELOPMENT DIVISION

R2011-00805 (RCUP2011-00074) C-04

PREPARED UNDER THE SUPERVISION OF:
REGISTERED PROFESSIONAL ENGINEER JOSEPH E. DIETZ No. 67032 EXP: 9-30-14 CIVIL STATE OF CALIFORNIA
JOSEPH E. DIETZ, P.E.

EXHIBIT PREPARER:
TETRA TECH, INC.
17885 VON KARMAN AVENUE, SUITE 500
IRVINE, CALIFORNIA 92614-6213
TEL: 949.809.5000

NOT ISSUED FOR CONSTRUCTION

NO.	DATE	REVISION	SUBM'T BY	APPV'D BY

Solar PV System Summary

5MW AC Solar Photovoltaic Generation System
APN: 3115-010-004
SCH # 2012061068

Project Name: Project 6 Lancaster WAD
Project Address: W Ave. D & 35th St. W Lancaster, Los Angeles County, CA

HYDROLOGY STUDY/DRAINAGE CONCEPT/LID FOR CUP 201100074 ON-SITE DRAINAGE MAP

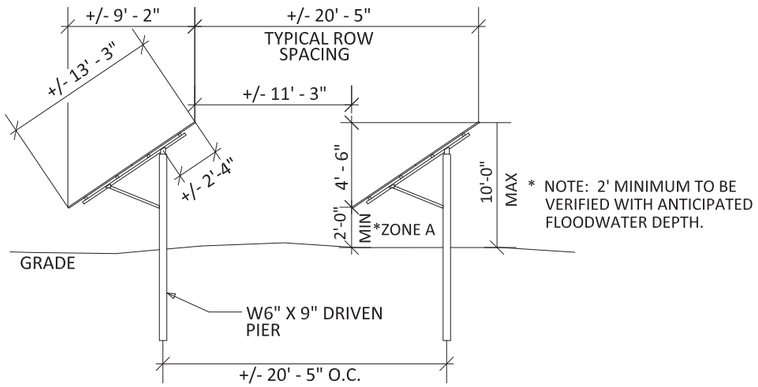
APPLICANT:
Silverado Power
2 Embarcadero Center, Ste. 410
San Francisco, CA 94111
(415) 692-7740

SILVERADO power

PROJECT 6
LANCASTER WAD
LOS ANGELES COUNTY, CA

2 Embarcadero Center, Ste. 410 | San Francisco, CA 94111 | 415.692.7740 main

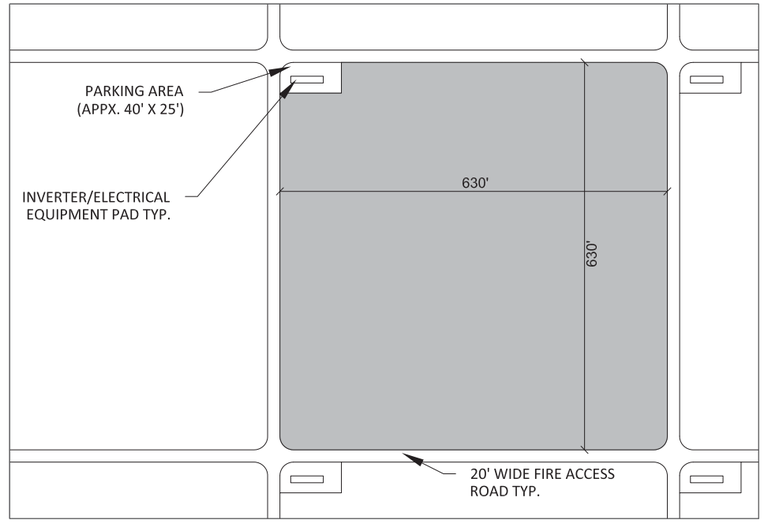
P:\04546\135-04546-12001\SUPPORTDOCS\CALCS\HYDROLOGY\13\FINAL DESIGN\ONSITE HYDROLOGY C-04.DWG
PLOT/UPDATE: Dec 2, 2013 9:5:43 AM



* NOTE: 2' MINIMUM TO BE VERIFIED WITH ANTICIPATED FLOODWATER DEPTH.

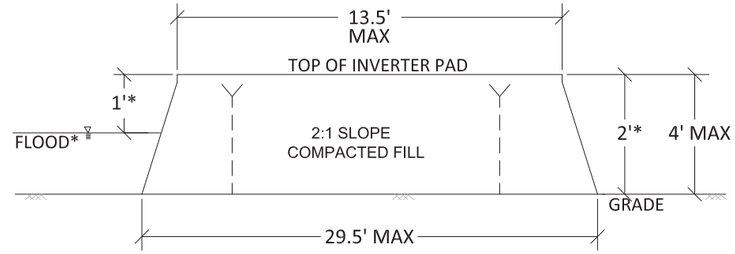
TYPICAL SOLAR ARRAY RACK DETAIL AND END ELEVATION

NOT TO SCALE



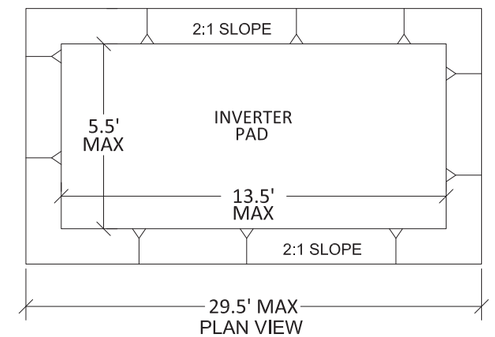
ARRAY BLOCK DETAIL (TYPICAL)

NOT TO SCALE



*TOP OF INVERTER PAD TO BE 1' MINIMUM ABOVE FLOOD WATER ELEVATION AS DETERMINED IN FINAL HYDROLOGY REPORT AND 2' ABOVE GRADE IN FEMA ZONE A.

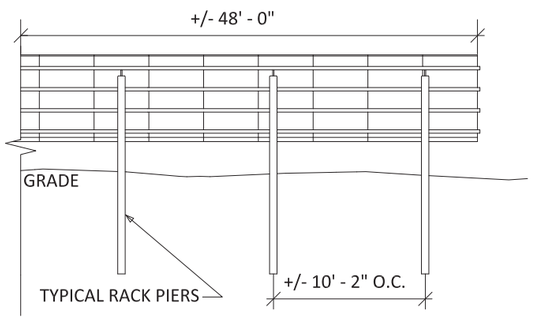
ELEVATION VIEW



PLAN VIEW

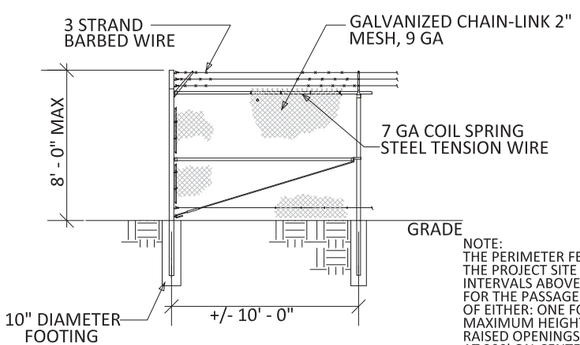
RAISED INVERTER PAD DETAILS FOR FLOOD AREAS AS NEEDED

NOT TO SCALE



SOLAR ARRAY RACK DETAIL ELEVATION

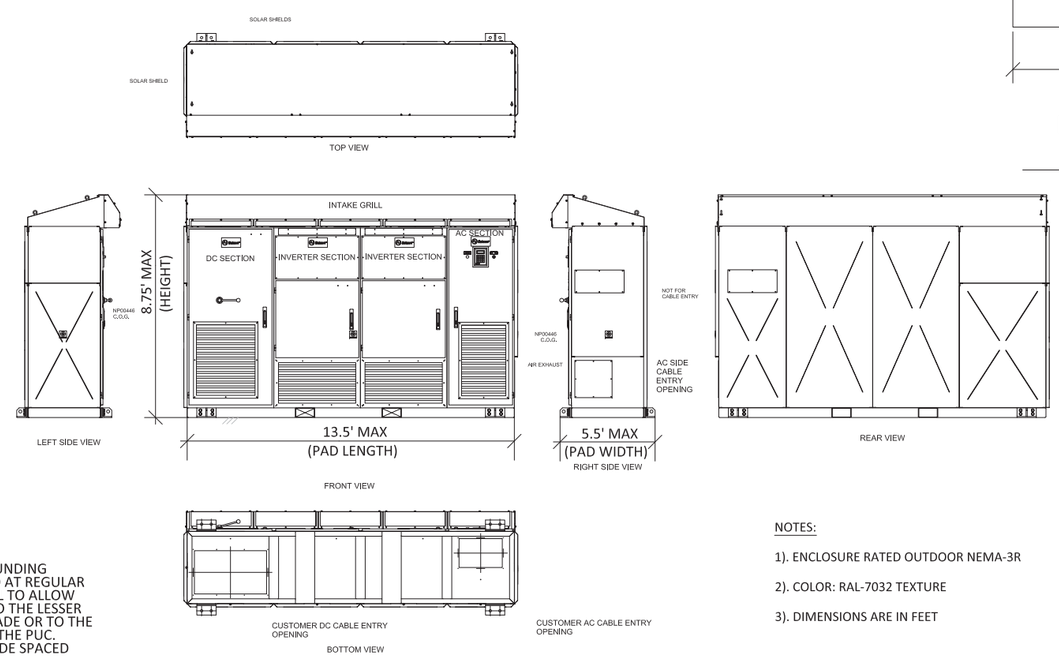
NOT TO SCALE



NOTE:
THE PERIMETER FENCING SURROUNDING THE PROJECT SITE WILL BE RAISED AT REGULAR INTERVALS ABOVE GROUND LEVEL TO ALLOW FOR THE PASSAGE OF WILDLIFE TO THE LESSER OF EITHER: ONE FOOT ABOVE GRADE OR TO THE MAXIMUM HEIGHT ALLOWED BY THE PUC. RAISED OPENINGS WILL BE 50' WIDE SPACED AT 200' ON-CENTER.

CHAIN LINK SECURITY FENCE ELEVATION

NOT TO SCALE



NOTES:

1). ENCLOSURE RATED OUTDOOR NEMA-3R

2). COLOR: RAL-7032 TEXTURE

3). DIMENSIONS ARE IN FEET

INVERTER PAD DETAILS (TYPICAL)

NOT TO SCALE

R2011-00805 (RCUP2011-00074) C-05

REGISTERED PROFESSIONAL ENGINEER JULIE ANN DELANEY No.C54558 CIVIL STATE OF CALIFORNIA

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TEL: 949.809.5000

NOT ISSUED FOR CONSTRUCTION

NO.	DATE	REVISION	SUBM'T BY	APPV'D BY

Solar PV System Summary

5MW AC Solar Photovoltaic Generation System

APN:
3115-010-004
SCH # 2012061068

Project Name:
Project 6 Lancaster WAD

Project Address:
W Ave. D & 35th St. W
Lancaster,
Los Angeles County, CA

DRAWING: DETAIL SHEET

APPLICANT:
Silverado Power
2 Embarcadero Center, Ste. 410
San Francisco, CA 94111
(415) 692-7740

SILVERADO power

PROJECT 6
LANCASTER WAD
LOS ANGELES COUNTY, CA

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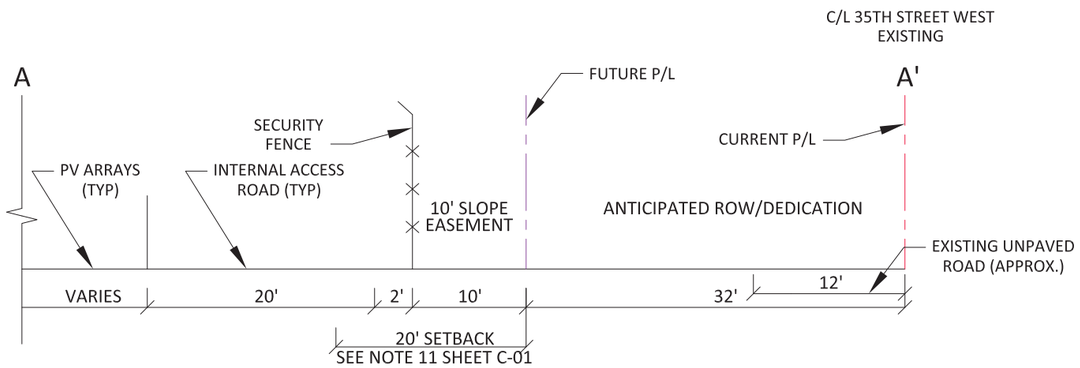
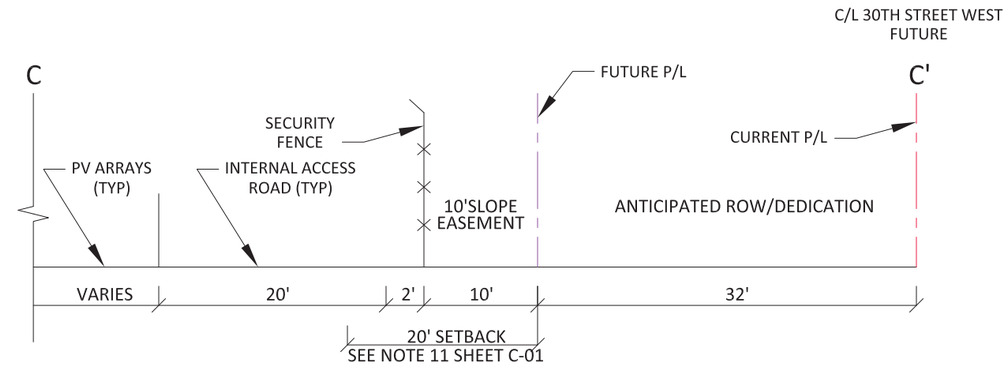
PLOT/UPDATE: Mar 24, 2014 11:26:08 AM



SECTION A - A'

NOT TO SCALE



SECTION C - C'

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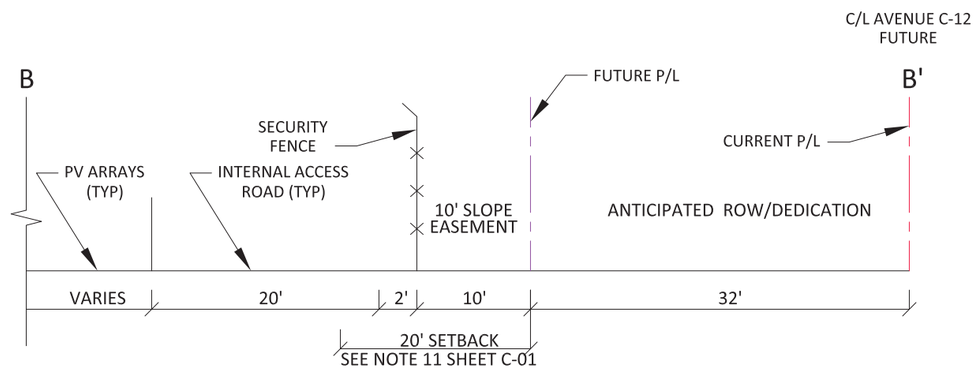

SECTION B - B'

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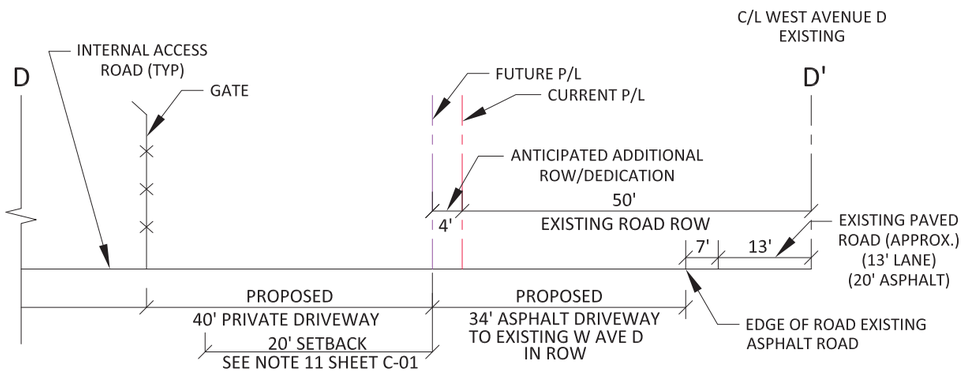
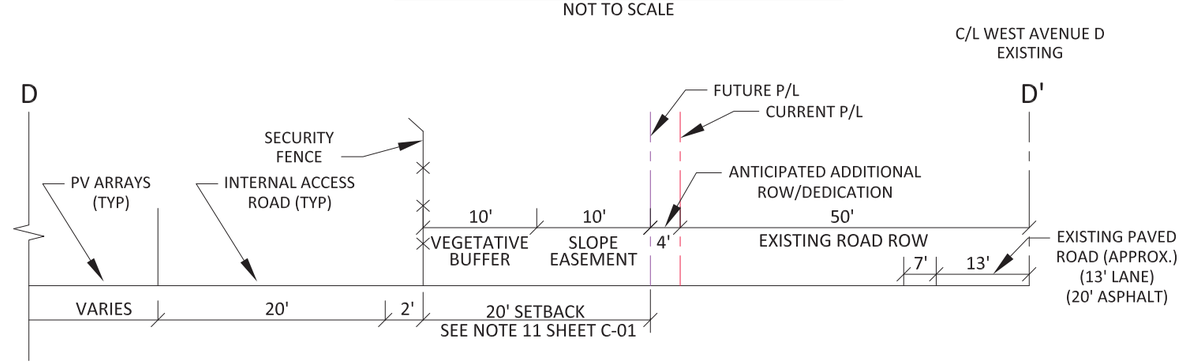


SECTION D - D'

NOT TO SCALE



SECTION D - D'

NOT TO SCALE

R2011-00805 (RCUP2011-00074) C-06

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PLOT/UPDATE: Mar 24, 2014 6:37:48 AM

REGISTERED PROFESSIONAL ENGINEER JULIE ANN DELANEY No.C54558 CIVIL STATE OF CALIFORNIA

EXHIBIT PREPARER:

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IRVINE, CALIFORNIA 92614-6213
TEL: 949.809.5000

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NO.	DATE	REVISION	SUBM'T BY	APPV'D BY

Solar PV System Summary

5MW AC Solar Photovoltaic Generation System

APN:
3115-010-004

SCH # 2012061068

Project Name:
Project 6 Lancaster WAD

Project Address:
W Ave. D & 35th St. W
Lancaster,
Los Angeles County, CA

DRAWING: SECTION SHEET

APPLICANT:
Silverado Power
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SILVERADO power

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LANCASTER WAD
LOS ANGELES COUNTY, CA

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