

STATEMENT OF PURPOSE:

THE PURPOSE OF THIS SURVEY IS TO ESTABLISH A LOCAL NETWORK OF CALIFORNIA GEODETIC COORDINATES AND CALIFORNIA ORTHOMETRIC HEIGHTS FOR THE CITY OF OCEANSIDE IN ACCORDANCE WITH THE CALIFORNIA PUBLIC RESOURCES CODE SECTIONS 8801-8819, 8870-8880, AND 8890-8902.

UNITS:

HORIZONTAL COORDINATES AND ELEVATIONS AS SHOWN HEREON ARE IN TERMS OF THE U.S. SURVEY FOOT (I.E. ONE FOOT = 1200/3937 METERS), UNLESS OTHERWISE NOTED.

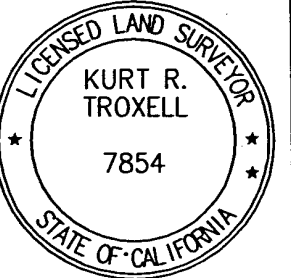
RECORD OF SURVEY:

OF A GEODETIC CONTROL NETWORK, IN THE CITY OF OCEANSIDE, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA.

SURVEYOR'S STATEMENT:

THIS MAP CORRECTLY REPRESENTS A SURVEY MADE BY ME OR UNDER MY DIRECTION IN CONFORMANCE WITH THE REQUIREMENT OF THE PROFESSIONAL LAND SURVEYORS' ACT, AT THE REQUEST OF THE CITY OF OCEANSIDE, FROM MAY TO AUGUST 2013.

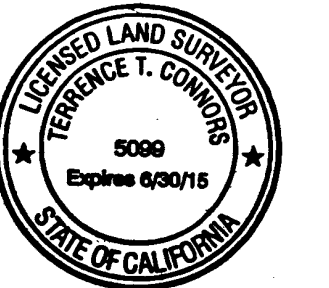
Kurt R. Troxell 8/5/2014
 KURT R. TROXELL, PLS 7854 DATE



COUNTY SURVEYOR'S STATEMENT:

THIS MAP HAS BEEN EXAMINED IN ACCORDANCE WITH SECTION 8766 OF THE PROFESSIONAL LAND SURVEYORS' ACT THIS 18TH DAY OF AUGUST, 2014.

Terrence T. Connors
 TERRENCE T. CONNORS, PLS 5099
 COUNTY SURVEYOR



MONUMENT NOTES:

- ★ INDICATES CONTINUOUS GLOBAL POSITIONING SYSTEM (CGPS) STATION AS NOTED; HELD FOR CCS83 / CGC83 CONSTRAINTS FOR THIS SURVEY.
- ☆ INDICATES CONTINUOUS GLOBAL POSITIONING SYSTEM (CGPS) STATION AS NOTED; DERIVED CCS83 / CGC83 COORDINATES FOR THIS SURVEY.
- ⊙ INDICATES FOUND VERTICAL CONTROL MONUMENT AS NOTED; HELD FOR COH88 CONSTRAINTS.
- ⊙ INDICATES FOUND VERTICAL CONTROL MONUMENT AS NOTED; DERIVED COH88 VALUES FOR THIS SURVEY.
- INDICATES FOUND MONUMENT AS NOTED.
- INDICATES SET MONUMENT AS NOTED.

LEGEND & ABBREVIATIONS:

- ③ INDICATES SHEET NUMBER.
- CITY OF OCEANSIDE BOUNDARY
- CCS83 CALIFORNIA COORDINATE SYSTEM OF 1983
- CGC83 CALIFORNIA GEODETIC COORDINATES OF 1983
- CGPS CONTINUOUS GLOBAL POSITIONING SYSTEMS
- CM CENTIMETERS
- COH88 CALIFORNIA ORTHOMETRIC HEIGHTS OF 1988
- COS CITY OF OCEANSIDE
- CSRC CALIFORNIA SPATIAL REFERENCE CENTER
- DN DOWN
- JFA JOHNSON FRANK & ASSOCIATES, INC.
- M METERS
- MM MILLIMETERS
- NAVD88 NORTH AMERICAN VERTICAL DATUM OF 1988
- NGS NATIONAL GEODETIC SURVEY
- NGVD29 NATIONAL GEODETIC VERTICAL DATUM OF 1929
- NSRS NATIONAL SPATIAL REFERENCE SYSTEM
- OPUS NGS' ONLINE POSITIONING USER SERVICE
- SECTOR SCRIPPS EPOCH COORDINATE TOOL AND ONLINE RESOURCE
- SOPAC SCRIPPS ORBIT AND PERMANENT ARRAY CENTER
- USACOE UNITED STATES ARMY CORPS OF ENGINEERS
- USFT UNITED STATES SURVEY FOOT
- VERTCON NGS' NORTH AMERICAN VERTICAL DATUM CONVERSION TOOL

RECORDER'S STATEMENT:

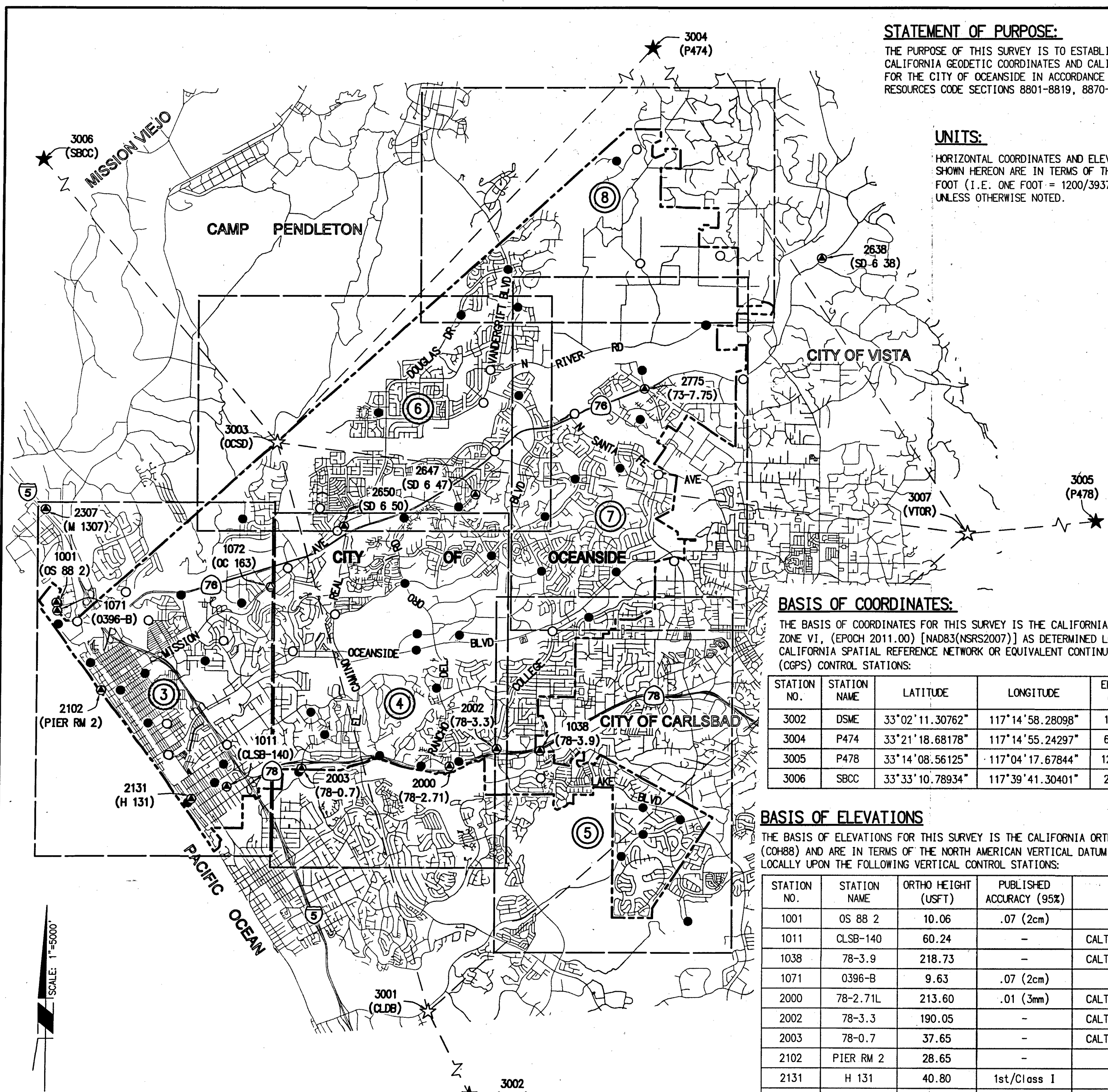
FILE NO. 2014-0361129
 FILED THIS 21 DAY OF AUG, 2014, AT 3:46 P.M.

IN BOOK OF RECORD OF SURVEY MAPS AT PAGE _____
 AT THE REQUEST OF GREGORY A. HELMER.

FEE: \$28.00

ERNEST J. DRONENBURG, JR
 COUNTY RECORDER

By: *abby Jorner*
 DEPUTY COUNTY RECORDER



BASIS OF COORDINATES:

THE BASIS OF COORDINATES FOR THIS SURVEY IS THE CALIFORNIA COORDINATES OF 1983 (CCS83), ZONE VI, (EPOCH 2011.00) [NAD83(NSRS2007)] AS DETERMINED LOCALLY BY THE FOLLOWING CALIFORNIA SPATIAL REFERENCE NETWORK OR EQUIVALENT CONTINUOUS GLOBAL POSITIONING SYSTEMS (CGPS) CONTROL STATIONS:

STATION NO.	STATION NAME	LATITUDE	LONGITUDE	ELLIP HT (USFT)	PUBLISHED ACCURACY (95%)	SOURCE
3002	DSME	33°02'11.30762"	117°14'58.28098"	186.577	.01 (3mm)	CSRC
3004	P474	33°21'18.68178"	117°14'55.24297"	602.508	.01 (3mm)	CSRC
3005	P478	33°14'08.56125"	117°04'17.67844"	1221.502	.01 (3mm)	CSRC
3006	SBCC	33°33'10.78934"	117°39'41.30401"	293.290	.01 (3mm)	CSRC

BASIS OF ELEVATIONS

THE BASIS OF ELEVATIONS FOR THIS SURVEY IS THE CALIFORNIA ORTHOMETRIC HEIGHTS OF 1988 (COH88) AND ARE IN TERMS OF THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) BASED LOCALLY UPON THE FOLLOWING VERTICAL CONTROL STATIONS:

STATION NO.	STATION NAME	ORTHO HEIGHT (USFT)	PUBLISHED ACCURACY (95%)	SOURCE
1001	OS 88 2	10.06	.07 (2cm)	USACOE DATASHEET ACH023
1011	CLSB-140	60.24	-	CALTRANS SURVEY REQUEST SR12-197
1038	78-3.9	218.73	-	CALTRANS SURVEY REQUEST SR12-197
1071	0396-B	9.63	.07 (2cm)	USACOE DATASHEET ACH021
2000	78-2.71L	213.60	.01 (3mm)	CALTRANS SURVEY REQUEST SR12-197
2002	78-3.3	190.05	-	CALTRANS SURVEY REQUEST SR12-197
2003	78-0.7	37.65	-	CALTRANS SURVEY REQUEST SR12-197
2102	PIER RM 2	28.65	-	NGS DATASHEET PID DX3432
2131	H 131	40.80	1st/Class I	NGS DATASHEET PID DX1222
2307	M 1307	42.09	1st/Class I	NGS DATASHEET PID DX3431
2638	SD 6 38	157.81	1st/Class II	NGS DATASHEET PID DX5541
2647	SD 6 47	78.21	1st/Class II	NGS DATASHEET PID DX5547
2650	SD 6 50	45.87	1st/Class II	NGS DATASHEET PID DX5550
2775	76-7.75	144.40	.02 (6mm)	CALTRANS SURVEY REQUEST SR13-117

PROJECT REPORTING:

A FULL PROJECT REPORT ENTITLED "CITY OF OCEANSIDE SURVEY CONTROL NETWORK FINAL PROJECT REPORT" DATED OCTOBER 2013 IS ON FILE AT THE CITY OF OCEANSIDE DOCUMENTING THE GEODETIC CONTROL SURVEYING FOR THIS PROJECT IN ACCORDANCE WITH SECTIONS 8813.2(C), 8876(D), AND 8898(H) OF THE PUBLIC RESOURCES CODE. A PARTIAL STATEMENT FROM SAID REPORT FOLLOWS:

OBSERVATION EQUIPMENT:

TRIMBLE GPS AND GNSS R8 MODELS 1 AND 2 RECEIVERS AND 2-METER FIXED HEIGHT TRIPODS.

PROCEDURES:

STATIC GPS OBSERVATIONS WERE PERFORMED BETWEEN MAY 14, 2013 AND AUGUST 31, 2013. SESSIONS WERE SCHEDULED TO PROVIDE A MINIMUM OF 10 MINUTES OF CONTINUOUS DATA COLLECTION FOR EACH SESSION WITH A MINIMUM OF TWO OBSERVATIONS PER STATION, WITH INDEPENDENT OBSERVATIONS SEPARATED BY A LEAST 3 HOURS FOR REDUNDANT SATELLITE GEOMETRY. GPS CARRIER-PHASE DATA WAS PROCESSED AND REDUCED TO GEODETIC VECTORS (DELTA X, Y, Z, PLUS COVARIANCE MATRIX) USING TRIMBLE BUSINESS CENTER SOFTWARE, VERSION 3.10. BASELINE PROCESSING PARAMETERS WERE SET TO UTILIZE 10-SECOND EPOCH DATA COLLECTED OVER 15 DEGREES ABOVE THE HORIZON. PRECISE EPHEMERIDES WERE OBTAINED FROM INTERNATIONAL GNSS SERVICE (IGS) AND USED IN THE PROCESSING. A TOTAL OF 341 INDEPENDENT BASELINES WERE ACCEPTED AND USED IN STAR*NET LEAST SQUARES ADJUSTMENT SOFTWARE, VERSION 7.0.0.42.

INDEPENDENT BASELINE PROCESSING WAS ALSO PERFORMED IN OPUS FOR SEVERAL OBSERVATIONS WITH DERIVED COORDINATES AND ORTHOMETRIC HEIGHTS ACHIEVABLE WITHIN 0.07 FEET (20 MM).

MINIMALLY-CONSTRAINED ADJUSTMENT:

A MINIMALLY-CONSTRAINED ADJUSTMENT WAS PERFORMED TO VERIFY THE INTEGRITY OF THE GPS DATA EXCLUSIVE OF ANY EXTERNAL CONSTRAINTS AND TO ESTABLISH THE WEIGHTING STRATEGY FOR THE GPS VECTORS. CGPS STATION "DSME" WAS HELD FIXED IN THE X, Y DIRECTION, AND NGS STATION PID "DX3432" (STATION NO. 2102) FOR ORTHOMETRIC HEIGHT.

THE VARIANCE-COVARIANCE MATRIX COMPUTED DURING THE LEAST SQUARES ADJUSTMENT FOR EACH VECTOR WAS AUGMENTED BY A STATION-WEIGHTING COMPONENT OF 0.010 FEET (3 MM) HORIZONTAL AND 0.007 FEET (1.5 MM) VERTICAL. APPLICATION OF THIS WEIGHTING STRATEGY PRODUCED THE FOLLOWING RESULTS:

- NETWORK VARIANCE OF UNIT WEIGHT: 0.979 WITH 744 DEGREES OF FREEDOM.
- ROOT MEAN SQUARE OF THE ABSOLUTE RESIDUALS OF VECTORS: 0.02 FEET (6 MM) HORIZONTAL, 0.03 FEET (9 MM) VERTICAL.
- MEAN SEMI-MAJOR AND MINOR POSITIONAL ERROR ELLIPSE (95% CONFIDENCE): 0.03 FEET (9 MM)
- MEAN OF VERTICAL ERROR ELLIPSE (95% CONFIDENCE): 0.04 FEET (12 MM)

THE COORDINATE RESIDUALS TABLE BELOW DISPLAYS THE RESIDUAL DIFFERENCES BETWEEN THE OBSERVED VALUES AT EACH STATION AND THE PUBLISHED VALUES OF SURROUNDING CONTROL BASED ON THE MINIMALLY-CONSTRAINED ADJUSTMENT.

COORDINATE RESIDUALS TABLE:

STATION NO.	* RESIDUALS (USFT)				PUBLISHED EPOCH	SECTOR DERIVED	VERTCON DERIVED	ORIGIN	SOURCE
	NSRS2007 (2011.00)		NAVD88 GEOID12A						
	d(N)	d(E)	d(Z)	d(h)					
1001	0.00	-0.04	0.01		2004	X	USACOE	DATA SHEET ACH023	
1011			0.00				CALTRANS	SURVEY REQUEST SR12-197	
1011	0.21	-0.05	0.00		1991.35	X	CARLSBAD	ROS 17271	
1012	0.19	-0.08	-0.02		1991.35	X	CARLSBAD	ROS 17271	
1038			0.01				CALTRANS	SURVEY REQUEST SR12-197	
1068	2.12	-1.74	-0.03		1991.35		VISTA	ROS 14023	
1070	0.16	-0.16	-0.11		1991.35	X	CARLSBAD	ROS 17271	
1071	0.04	-0.07	-0.01		2004	X	USACOE	DATA SHEET ACH021	
1072			-0.10				NGS	DATA SHEET DX1229	
1072	-0.02	0.00	-0.06		2007	X	JFA	PRJ REPORT 2999_250	
1073	-0.06	-0.03	0.08		2007	X	JFA	PRJ REPORT 2999_250	
1074	-0.06	-0.02	-0.02		2007	X	JFA	PRJ REPORT 2999_250	
2000			-0.03				CALTRANS	SURVEY REQUEST SR12-197	
2002			0.03				CALTRANS	SURVEY REQUEST SR12-197	
2003			0.03				CALTRANS	SURVEY REQUEST SR12-197	
2004			-0.03				OCEANSIDE	COS BM A29 BK 1/2012 (1983 ADJ/1970 DATUM)	
2005			-0.03				OCEANSIDE	COS BM F44 BK 1/2012 (1984 ADJ/1970 DATUM)	
2006			-0.15				OCEANSIDE	COS BM E74 BK 1/2012 (1984 ADJ/1970 DATUM)	
2102			0.00				NGS	DATA SHEET DX3432	
2131			-0.01				NGS	DATA SHEET DX1222	
2307			-0.01				NGS	DATA SHEET DX3431	
2638			0.02				NGS	DATA SHEET DX5541	
2638	-0.07	-0.03	0.02		2007	X	CALTRANS	SURVEY REQUEST SR13-117	
2647			-0.03				NGS	DATA SHEET DX5547	
2650			-0.04				NGS	DATA SHEET DX5550	
2775	-0.05	-0.07	-0.02		2007	X	CALTRANS	SURVEY REQUEST SR13-117	
CLBD	0.03	-0.01		-0.04		X	SOPAC	SOPAC DATA SHEET	
DSME	0.00	0.00		-0.04	2011		CSRC	CSRC DATA SHEET	
OCSO	0.00	0.01	-0.04	0.01		X	SOPAC	SOPAC DATA SHEET/CALTRANS ORTHO SR12-197	
P474	0.00	0.00		-0.01	2011		CSRC	CSRC DATA SHEET	
P478	0.01	-0.02		-0.03	2011		CSRC	CSRC DATA SHEET	
SBCC	0.01	0.03		-0.04	2011		CSRC	CSRC DATA SHEET	
VTOR	0.00	-0.03	0.00	-0.02		X	SOPAC	SOPAC DATA SHEET/CALTRANS ORTHO SR12-197	

*** SURROUNDING CONTROL SAMPLING:**

CONTROL FOR THE CITY OF CARLSBAD, CITY OF VISTA, JOHNSON-FRANK (JFA), USACE, AND CITY OF OCEANSIDE WERE SAMPLED DURING THE CAMPAIGN TO PROVIDE A GENERAL UNDERSTANDING AND DIRECT TIES THIS PROJECT NETWORK. AS SHOWN IN COORDINATE RESIDUALS TABLE, MANY OF THESE COORDINATE SYSTEMS WERE ESTABLISHED IN DIFFERENT EPOCHS AND VERTICAL DATUMS. FOR COMPARABLE RESULTS, 2011.00 EPOCH PUBLISHED COORDINATES FOR THE PUBLISHED SYSTEMS WERE DERIVED FROM AVERAGE VELOCITIES COMPUTED AT SURROUNDING CGPS STATIONS WITH SECTOR AND ORTHOMETRIC HEIGHTS DERIVED FROM VERTCON. ALTHOUGH RESIDUALS INDICATE GENERAL RELATIVE CONSISTENCIES BETWEEN THE PUBLISHED SYSTEMS AND PROJECT NETWORK, CONSIDERATION SHOULD BE GIVEN IN GENERALIZING THESE RESULTS AS ABSOLUTE COORDINATE AND VERTICAL SHIFTS TO THE PROJECT NETWORK.

FULLY-CONSTRAINED ADJUSTMENT:

CALIFORNIA GEODETIC COORDINATE OF 1983 CONSTRAINTS

SURROUNDING CGPS STATIONS DSME, P474, P478, AND SBCC CONSTITUTE THE BASIS OF CALIFORNIA GEODETIC COORDINATE CONTROL.

CLBD, OCSO, VTOR ARE CONTINUOUS STATIONS, ALTHOUGH OFFICIAL PUBLISHED COORDINATES ARE NOT PART OF THE 2011.00 CSRC CGPS NETWORK, TIES TO THESE STATIONS WERE INCLUDED SINCE THEY ARE IN CLOSE PROXIMITY TO THE PROJECT NETWORK AND MAYBE USEFUL TO USERS IN THE FUTURE. SECTOR DERIVED PROVISIONAL COORDINATES WERE USED TO COMPUTE RESIDUALS FOR ANALYSIS OF THE RELATIONSHIP WITH THE PRIMARY CGPS STATIONS. THE RESIDUALS INDICATE CONSISTENCY WITH SURROUNDING STATIONS, WITH A SLIGHT VARIANCE IN THE ELLIPSOID HEIGHT AT OCSO. FOR THE PURPOSE OF FINAL ADJUSTMENT THESE STATIONS WERE NOT HELD FIXED.

APPLICATION OF THIS WEIGHTING STRATEGY PRODUCED THE FOLLOWING RESULTS:

- NETWORK VARIANCE OF UNIT WEIGHT: 1.037 WITH 753 DEGREES OF FREEDOM.
- ROOT MEAN SQUARE OF THE ABSOLUTE RESIDUALS OF VECTORS: 0.02 FEET (6 MM) HORIZONTAL, 0.03 FEET (9 MM) VERTICAL.
- MEAN SEMI-MAJOR AND MINOR POSITIONAL ERROR ELLIPSE (95% CONFIDENCE): 0.03 FEET (9 MM)
- MEAN OF VERTICAL ERROR ELLIPSE (95% CONFIDENCE): 0.04 FEET (12 MM)

CALIFORNIA ORTHOMETRIC HEIGHTS OF 1988 CONSTRAINTS

NGS BENCHMARKS SERVE AS THE BACKBONE OF NAVD 88 ORTHOMETRIC HEIGHTS IN THE AREA. CALTRANS ALSO TIED IN NGS STATIONS AS PART OF THEIR CORRIDOR CONTROL WORK FOR STATE ROUTES 76 AND 78 UNDER SURVEY REQUEST NOS. SR 12-197 AND SR 13-117. AFTER THE RESIDUAL ANALYSIS FOR THE NGS, USACOE, AND CALTRANS STATIONS IT WAS DETERMINED THAT STATION NOS. 1001, 1011, 1038, 1071, 2000, 2002, 2003, 2102, 2131, 2307, 2638, 2647, AND 2650 WOULD PROVIDE A SOLID BASES FOR FIXED STATIONS WELL DISPERSED THROUGHOUT THE NETWORK. PID "DX1229" (STATION NO. 1072) PRODUCED A HIGHER RESIDUAL RELATIVE TO THE OTHER NGS STATIONS AND WAS NOT HELD.

DURING THE ANALYSIS GEOID09 AND GEOID12A WERE COMPARED BY RESIDUALS AT THE NGS AND CALTRANS STATIONS. IT WAS NOTED THAT A SLOPE OF APPROXIMATELY 0 FEET TO 0.08 FEET EXISTED FROM THE OCEAN NORTHEASTERLY ACROSS THE CITY BETWEEN THE TWO MODELS. IT WAS DETERMINED THAT GEOID12A BEST REPRESENTS THIS SURFACE WITH RESPECT TO THE LOCAL BENCHMARKS AND THEREFORE WAS HELD FIXED.

APPLICATION OF THIS WEIGHTING STRATEGY PRODUCED THE FOLLOWING RESULTS:

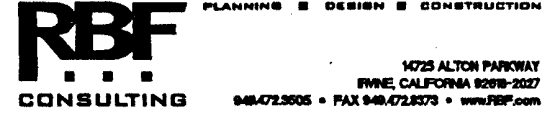
- NETWORK VARIANCE OF UNIT WEIGHT: 1.042 WITH 763 DEGREES OF FREEDOM.
- ROOT MEAN SQUARE OF THE ABSOLUTE RESIDUALS OF VECTORS: 0.02 FEET (6 MM) HORIZONTAL, 0.03 FEET (9 MM) VERTICAL.
- MEAN SEMI-MAJOR AND MINOR POSITIONAL ERROR ELLIPSE (95% CONFIDENCE): 0.03 FEET (9 MM)
- MEAN OF VERTICAL ERROR ELLIPSE (95% CONFIDENCE): 0.04 FEET (12 MM)

ACCURACY STATEMENT:

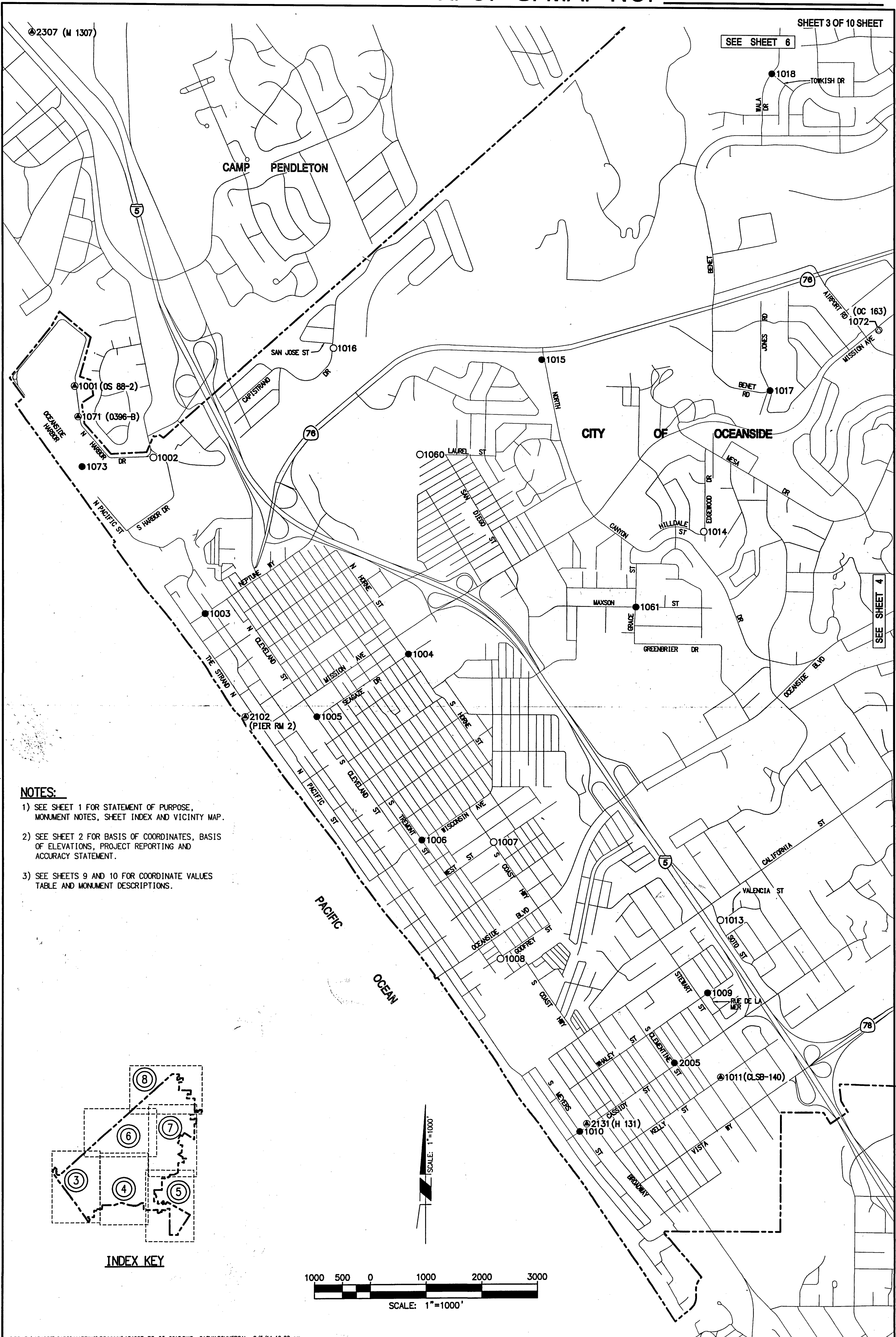
HORIZONTAL COORDINATES AS SHOWN HEREON MEET THE REQUIREMENTS FOR CALIFORNIA GEODETIC COORDINATES OF 1983 (CGC83) AND THE CALIFORNIA COORDINATE SYSTEM OF 1983 (CCS83), SECTIONS 8870-8880 AND 8801-8819 OF THE CALIFORNIA PUBLIC RESOURCES CODE RESPECTIVELY, INCLUDING A LOCAL ACCURACY CLASSIFICATION OF 0.03 FEET (1 CM) 95% CIRCULAR ERROR PROBABLE ACCORDING TO THE FEDERAL GEOGRAPHIC DATA COMMITTEE "GEOSPATIAL POSITIONING ACCURACY STANDARD, PART 2, GEODETIC CONTROL NETWORKS", FGDC-STD-007.2-1998.

ELEVATIONS AS SHOWN HEREON ARE DERIVED CALIFORNIA ORTHOMETRIC HEIGHTS OF 1988 (COH88) IN ACCORDANCE WITH CHAPTER 5 OF THE CALIFORNIA PUBLIC RESOURCES CODE SECTIONS 8890-8902. INCLUDING A LOCAL ACCURACY CLASSIFICATION OF 0.07 FEET (2 CM) 95% ERROR PROBABLE RELATIVE TO THE LOCAL NAVD88 DATUM ACCORDING TO THE FEDERAL GEOGRAPHIC DATA COMMITTEE "GEOSPATIAL POSITIONING ACCURACY STANDARD, PART 2, GEODETIC CONTROL NETWORKS", FGDC-STD-007.2-1998.

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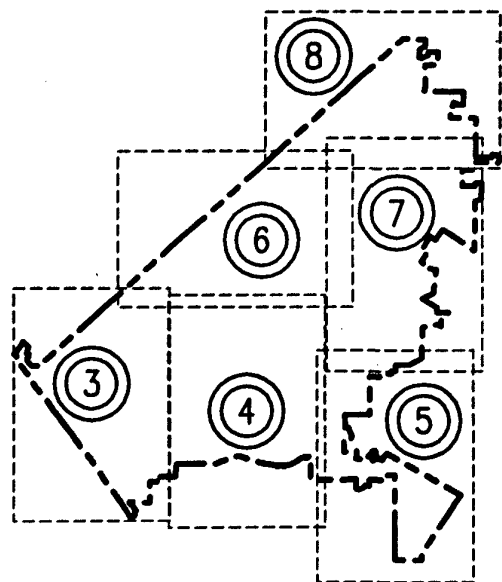
SEE SHEET 6



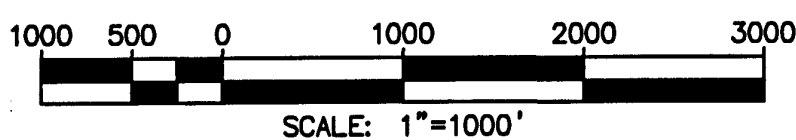
SEE SHEET 4

NOTES:

- 1) SEE SHEET 1 FOR STATEMENT OF PURPOSE, MONUMENT NOTES, SHEET INDEX AND VICINITY MAP.
- 2) SEE SHEET 2 FOR BASIS OF COORDINATES, BASIS OF ELEVATIONS, PROJECT REPORTING AND ACCURACY STATEMENT.
- 3) SEE SHEETS 9 AND 10 FOR COORDINATE VALUES TABLE AND MONUMENT DESCRIPTIONS.



INDEX KEY

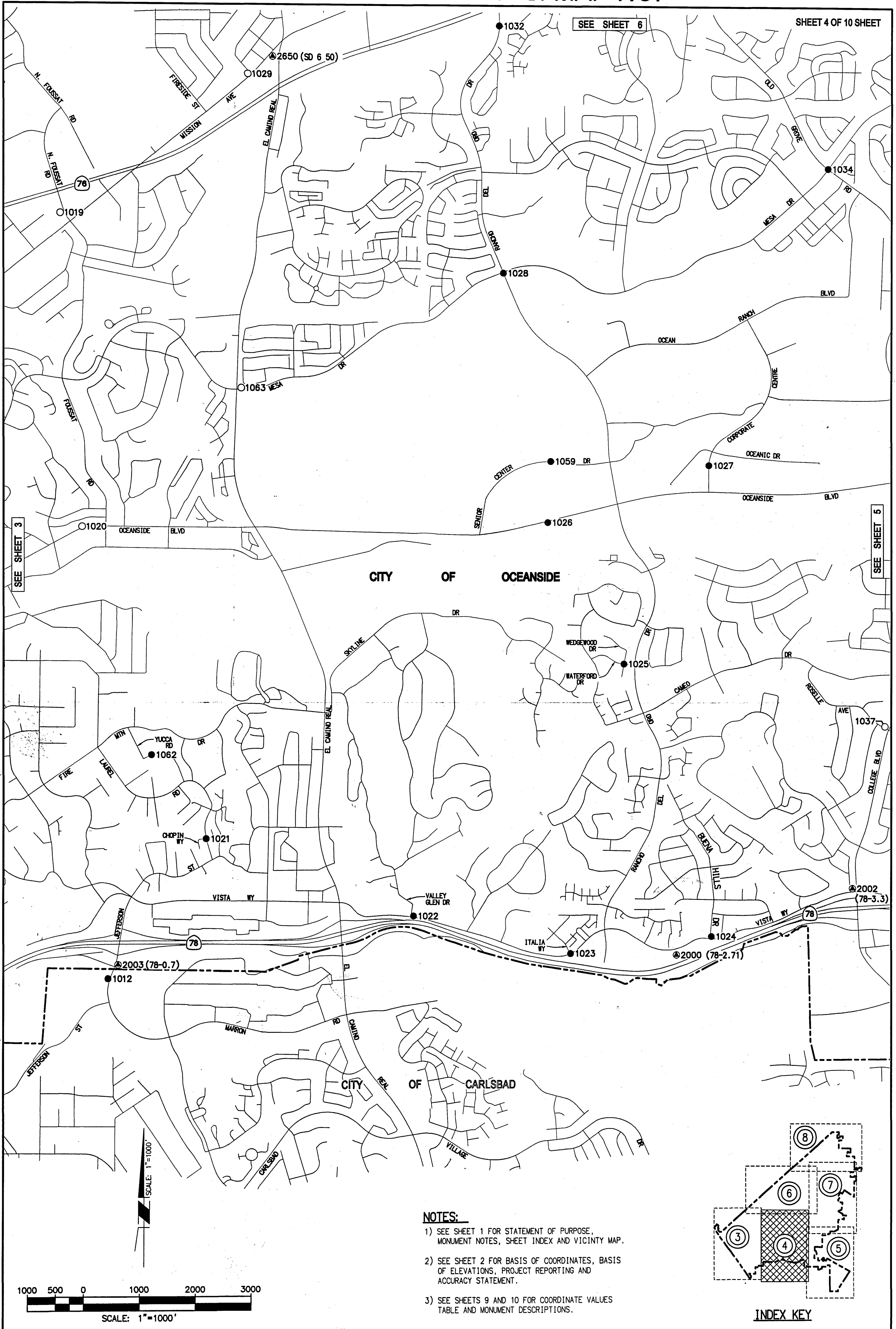


R. OF S. MAP NO. 21787

R. OF S. MAP NO.

SHEET 4 OF 10 SHEET

SEE SHEET 6

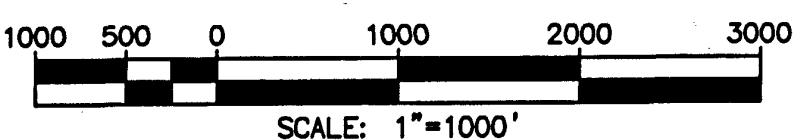


SEE SHEET 3

SEE SHEET 5

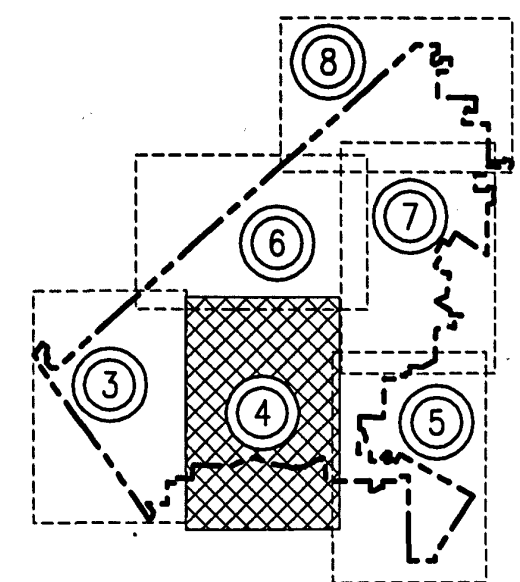
CITY OF OCEANSIDE

CITY OF CARLSBAD



NOTES:

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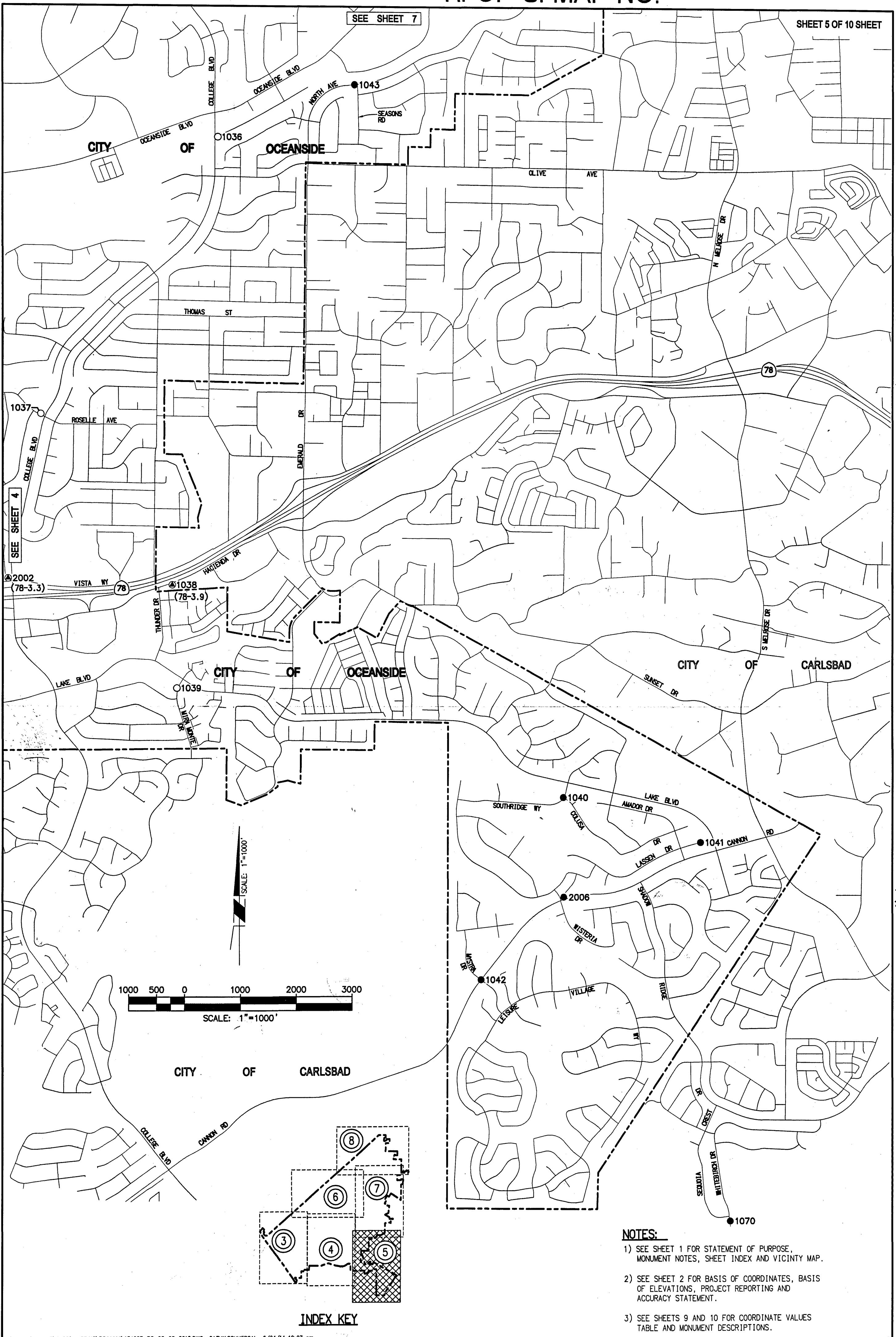
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R. OF S. MAP NO. 21787

R. OF S. MAP NO.

SEE SHEET 7

SHEET 5 OF 10 SHEET

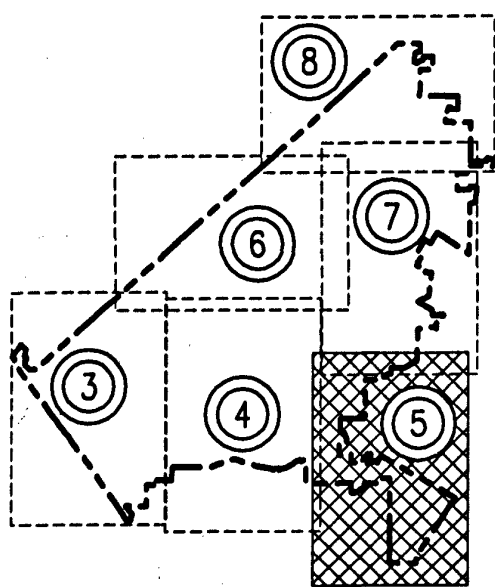


R. OF S. MAP NO. 21787

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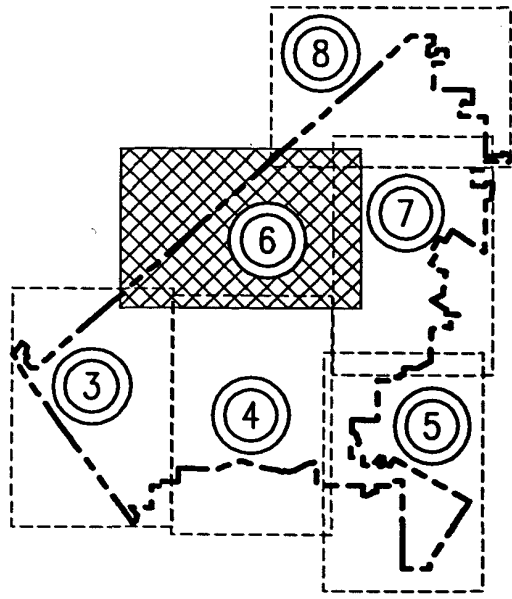
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INDEX KEY

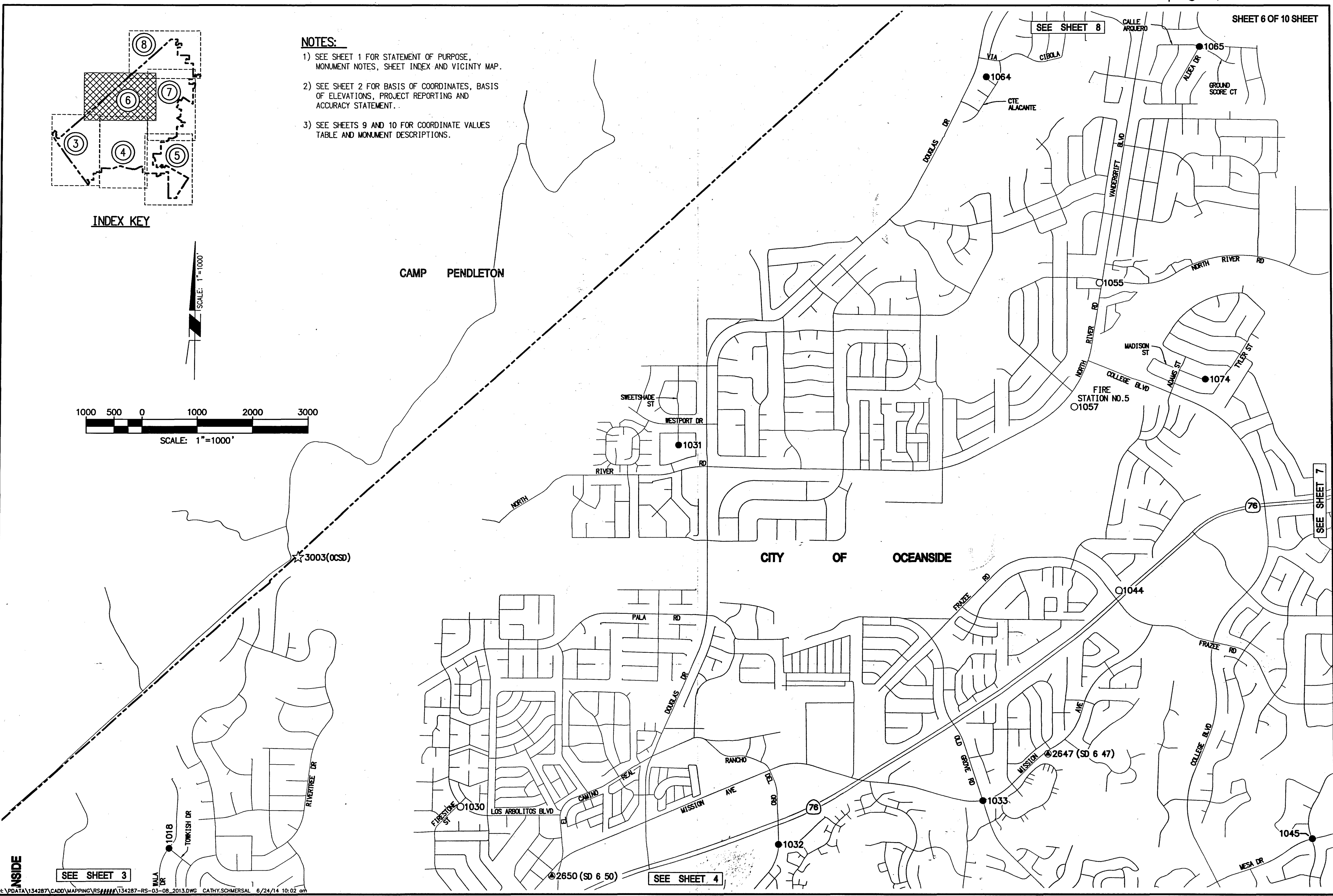
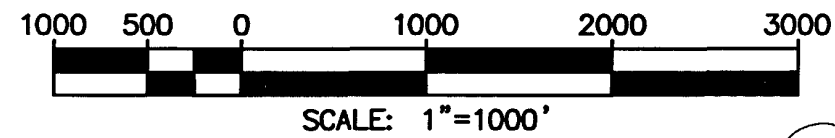


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INDEX KEY



INSIDE

SEE SHEET 3

SEE SHEET 4

SEE SHEET 7

SEE SHEET 8

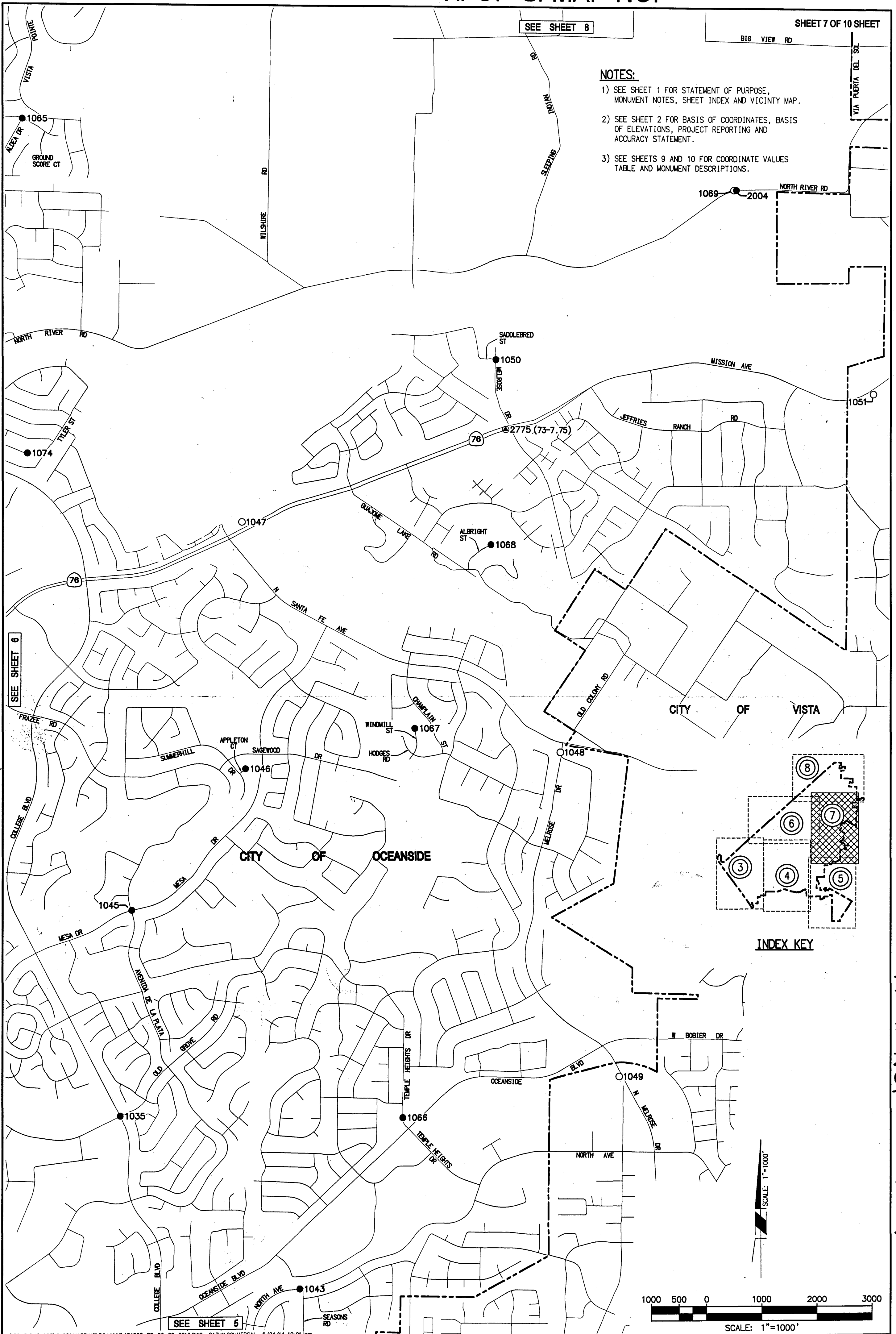
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SEE SHEET 8

SHEET 7 OF 10 SHEET

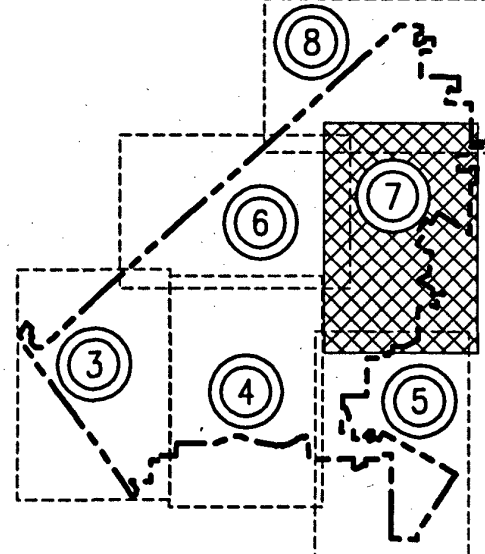
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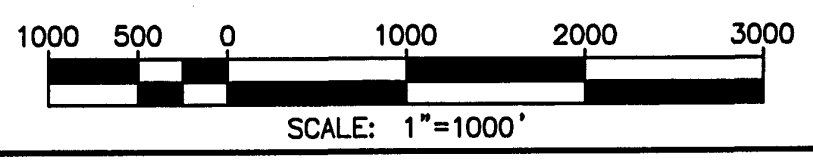


SEE SHEET 6

SEE SHEET 5



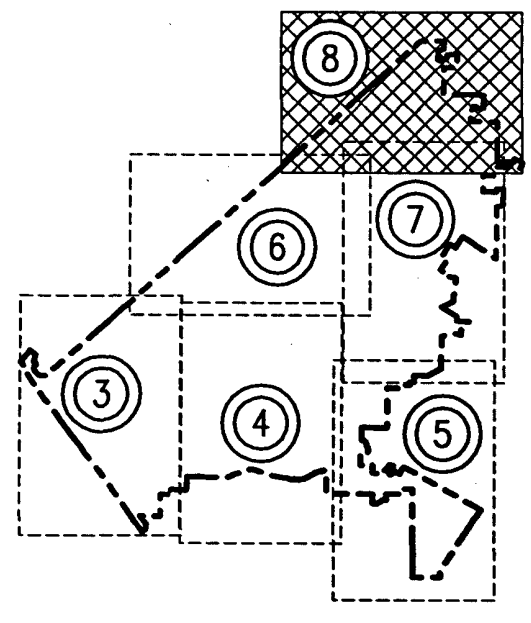
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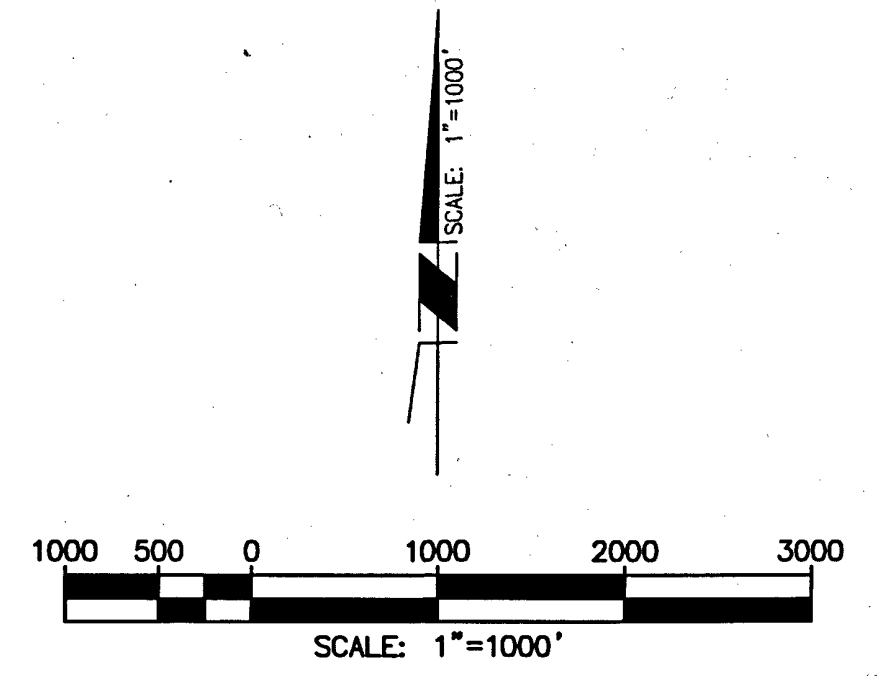
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 PLANNING • DESIGN • CONSTRUCTION JN 134287



R. OF S. MAP NO. 21787

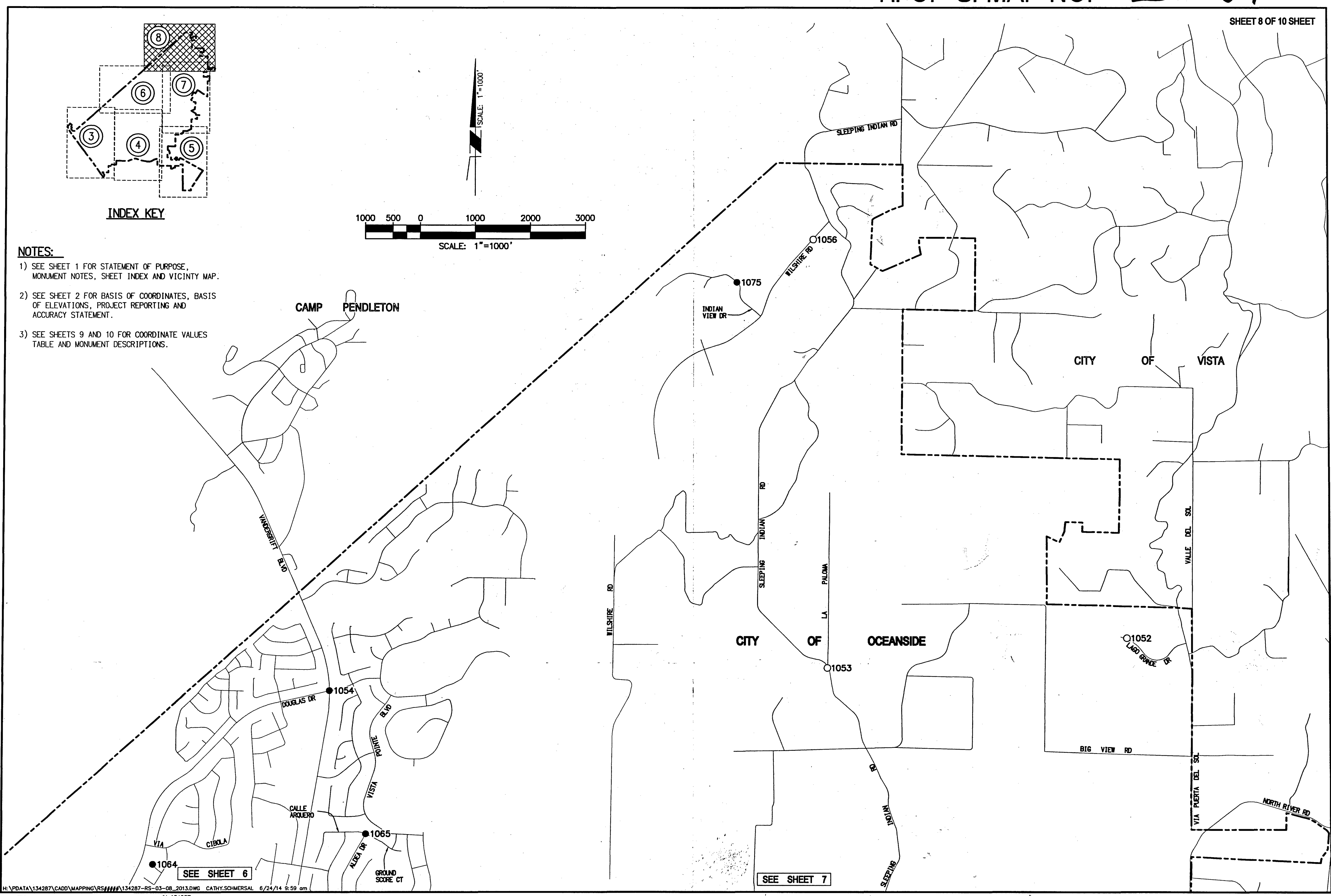


INDEX KEY



NOTES:

- 1) SEE SHEET 1 FOR STATEMENT OF PURPOSE, MONUMENT NOTES, SHEET INDEX AND VICINITY MAP.
- 2) SEE SHEET 2 FOR BASIS OF COORDINATES, BASIS OF ELEVATIONS, PROJECT REPORTING AND ACCURACY STATEMENT.
- 3) SEE SHEETS 9 AND 10 FOR COORDINATE VALUES TABLE AND MONUMENT DESCRIPTIONS.



SEE SHEET 6

SEE SHEET 7

H:\PDATA\134287\CADD\MAPPING\RS\134287-RS-03-08_2013.DWG CATHY.SCHMERSAL 6/24/14 9:59 am

SHEET NO.	STATION NO.	STATION NAME	CGC83 COORDINATES 83NRSR2007 (2011.00)			CCS 83 COORDINATES (2011.00)		COH88 DERIVED	COH88 PUBLISHED	COMBINATION FACTOR	DESCRIPTION	ORIGIN	SOURCE
			LATITUDE	LONGITUDE	ELLIP HT (M)	NORTHING (USFT)	EASTING (USFT)	ELEVATION (USFT)	ELEVATION (USFT)				
3	1001	OS 88 2	33°12'37.11972"	117°23'40.85667"	-31.661	2022070.76	6211559.28	10.06	10.06	0.99996143	FOUND 4" USACOE BRASS DISK IN CURB WITH CROSS STAMPED "OS 88-2LAD0", FLUSH	USACOE	DATA SHEET ACH023
3	1002		33°12'24.61596"	117°23'24.21178"	-30.381	2020791.58	6212959.55	14.24	-	0.99996136	SET 2.5" BRASS DISK IN CURB WITH TRIANGLE / PUNCH STAMPED "LS 7854", FLUSH		
3	1003		33°11'57.03946"	117°23'13.07146"	-20.666	2017994.23	6213875.64	46.17	-	0.99996014	FOUND 3.5" BRASS DISK IN MONUMENT WELL WITH PUNCH STAMPED "RCE 33069", DN. 0.37'		
3	1004		33°11'50.26349"	117°22'30.18252"	2.076	2017269.88	6217512.41	120.59	-	0.99995664	FOUND 3.5" BRASS DISK IN MONUMENT WELL WITH PUNCH STAMPED "LS 7959", DN. 0.44'		
3	1005		33°11'38.88005"	117°22'49.29406"	-19.550	2016136.98	6215876.05	49.79	-	0.99996017	FOUND 3.5" BRASS DISK IN MONUMENT WELL WITH PUNCH STAMPED "LS 4068", DN. 0.50'		
3	1006		33°11'17.06969"	117°22'26.89360"	-19.031	2013912.14	6217755.70	51.47	-	0.99996035	FOUND 3.5" BRASS DISK IN MONUMENT WELL WITH PUNCH STAMPED "LS 7672", DN. 0.40'		
3	1007		33°11'16.86048"	117°22'11.72062"	-9.492	2013877.12	6219044.84	82.69	-	0.99995886	SET 3.5" BRASS DISK IN CURB WITH TRIANGLE / PUNCH STAMPED "LS 7854", FLUSH		
3	1008		33°10'56.07960"	117°22'10.01146"	-21.623	2011775.35	6219167.53	42.97	-	0.99996102	SET 2.5" BRASS DISK IN CURB WITH TRIANGLE / PUNCH STAMPED "LS 7854", FLUSH		
3	1009		33°10'50.34502"	117°21'25.98185"	-13.338	2011155.82	6222903.19	69.94	-	0.99995980	FOUND 3.5" BRASS DISK IN MONUMENT WELL WITH PUNCH STAMPED "RCE 22015", DN. 0.45'		
3	1010		33°10'25.51372"	117°21'52.82916"	-23.019	2008670.57	6220594.73	38.50	-	0.99996164	FOUND 3.5" BRASS DISK IN MONUMENT WELL WITH PUNCH STAMPED "RCE 17706", DN. 0.43'		
3	1011	CLSB-140	33°10'35.34670"	117°21'23.03750"	-16.304	2009637.36	6223137.33	60.24	60.24	0.99996046	FOUND 2" BRASS DISK IN CURB WITH TRIANGLE / PUNCH STAMPED "CLSB-140 LS 6215", FLUSH	CARLSBAD	ROS 17271
4	1012	CLSB-128	33°10'45.58664"	117°20'26.09569"	-25.799	2010621.28	6227987.62	28.75	28.75	0.99996181	FOUND 3" BRASS DISK IN BRIDGE DECK WITH TRIANGLE / PUNCH STAMPED "CLSB-128", FLUSH	CARLSBAD	ROS 17271
3	1013		33°11'03.34623"	117°21'23.47331"	-4.319	2012467.53	6223130.32	99.46	-	0.99995821	SET 2.5" BRASS DISK IN CURB WITH TRIANGLE / PUNCH STAMPED "LS 7854", FLUSH		
3	1014		33°12'12.80042"	117°21'27.83623"	7.530	2019490.86	6222834.13	138.07	-	0.99995554	SET 2.5" BRASS DISK IN CURB INLET WITH TRIANGLE / PUNCH STAMPED "LS 7854", FLUSH		
3	1015		33°12'43.18651"	117°22'02.65432"	-11.389	2022593.40	6219908.79	76.06	-	0.99995818	FOUND 3.5" BRASS DISK IN MONUMENT WELL WITH PUNCH STAMPED "LS 5292", DN. 0.46'		
3	1016		33°12'44.59462"	117°22'46.63719"	-13.966	2022775.97	6216173.76	67.81	-	0.99995857	SET 2.5" BRASS DISK IN CURB INLET WITH TRIANGLE / PUNCH STAMPED "LS 7854", FLUSH		
3	1017		33°12'38.27551"	117°21'14.02936"	-26.133	2022053.06	6224034.47	27.46	-	0.99996055	FOUND 3.5" BRASS DISK IN MONUMENT WELL WITH PUNCH STAMPED "RCE 13817", DN. 0.47'		
3,6	1018		33°13'34.73486"	117°21'14.42709"	-17.761	2027759.51	6224061.10	54.70	-	0.99995869	FOUND 3.5" BRASS DISK IN MONUMENT WELL WITH PUNCH STAMPED "RCE 27732", DN. 0.55'		
4	1019		33°13'02.10069"	117°20'37.89695"	-24.095	2024428.61	6227129.42	33.87	-	0.99995999	SET 2.5" BRASS DISK IN CURB INLET WITH TRIANGLE / PUNCH STAMPED "LS 7854", FLUSH		
4	1020		33°12'06.18715"	117°20'32.60090"	-9.247	2018772.97	6227520.11	82.76	-	0.99995824	SET 2.5" BRASS DISK IN CURB INLET WITH TRIANGLE / PUNCH STAMPED "LS 7854", FLUSH		
4	1021		33°11'10.72533"	117°20'05.74528"	6.616	2013143.88	6229743.58	134.88	-	0.99995640	FOUND 3.5" BRASS DISK IN MONUMENT WELL WITH PUNCH STAMPED "RCE 32247", DN. 0.50'		
4	1022		33°10'57.23628"	117°19'21.73100"	-24.067	2011741.90	6233469.90	34.03	-	0.99996139	FOUND 3.5" BRASS DISK IN MONUMENT WELL WITH PUNCH STAMPED "LS 3997", DN. 0.76'		
4	1023		33°10'50.70839"	117°18'48.32181"	-11.703	2011053.07	6236302.41	74.43	-	0.99995953	FOUND 3.5" BRASS DISK IN MONUMENT WELL WITH PUNCH STAMPED "LS8553", DN. 0.60'		
4	1024		33°10'53.99550"	117°18'18.31244"	28.698	2011359.37	6238856.15	206.80	-	0.99995315	FOUND 3.5" BRASS DISK IN MONUMENT WELL WITH PUNCH STAMPED "LS 4506", DN. 0.49'		
4	1025		33°11'42.76027"	117°18'37.61491"	39.443	2016304.45	6237265.85	241.97	-	0.99995087	FOUND 3.5" BRASS DISK IN MONUMENT WELL WITH PUNCH STAMPED "LS 4611", DN. 0.69'		
4	1026		33°12'07.92774"	117°18'54.15690"	8.208	2018862.34	6235886.23	139.50	-	0.99995548	FOUND 1.75" BRASS DISK IN CURB INLET WITH PUNCH STAMPED "COS BM D17", FLUSH		
4	1027		33°12'18.52282"	117°18'19.97548"	20.432	2019903.61	6238801.30	179.38	-	0.99995345	FOUND 3.5" BRASS DISK IN MONUMENT WELL WITH PUNCH STAMPED "LS 4965", DN. 0.51'		
4	1028		33°12'52.57622"	117°19'04.16019"	18.188	2023383.46	6235082.52	172.14	-	0.99995344	FOUND 2.5" BRASS DISK IN MONUMENT WELL WITH PUNCH STAMPED "RCE 22312", DN. 0.53'		
4	1029		33°13'27.33835"	117°19'58.73219"	-20.748	2026944.54	6230482.96	44.59	-	0.99995922	SET 2.5" BRASS DISK IN CURB WITH TRIANGLE / PUNCH STAMPED "LS 7854", FLUSH		
6	1030		33°13'42.55443"	117°20'12.90469"	-21.571	2028494.89	6229295.14	41.87	-	0.99995921	SET 2.5" BRASS DISK ON SDG+E VAULT WITH TRIANGLE / PUNCH STAMPED "LS 7854", FLUSH		
6	1031		33°14'47.06476"	117°19'27.65469"	-15.567	2034974.85	6233205.82	61.11	-	0.99995775	FOUND 3.5" BRASS DISK IN MONUMENT WELL WITH PUNCH STAMPED "RCE 42485", DN. 0.45'		
4,6	1032		33°13'36.49754"	117°19'05.58207"	-8.912	2027823.64	6235007.21	83.10	-	0.99995728	FOUND 3.5" BRASS DISK IN MONUMENT WELL WITH PUNCH STAMPED "RCE 16889", DN. 0.47'		
6	1033		33°13'44.57763"	117°18'22.36014"	-5.643	2028602.86	6238686.80	93.60	-	0.99995670	FOUND 3.5" BRASS DISK IN MONUMENT WELL WITH CHISELED 'X', NO STAMPING, DN. 0.51'		
4	1034		33°13'11.97904"	117°17'55.16364"	49.493	2025284.94	6240963.71	274.42	-	0.99994834	FOUND 3.5" BRASS DISK IN MONUMENT WELL WITH PUNCH IN CROSS STAMPED "RCE 15470", DN. 0.54'		
7	1035		33°13'01.94982"	117°17'14.81997"	90.621	2024237.04	6244380.73	409.17	-	0.99994198	FOUND 2" BRASS DISK IN MONUMENT WELL WITH PUNCH STAMPED "13177", DN. 0.54'		
5	1036		33°12'21.73492"	117°17'05.23760"	37.316	2020164.59	6245154.42	234.37	-	0.99995076	SET 2.5" BRASS DISK IN CURB INLET WITH TRIANGLE / PUNCH STAMPED "LS 7854", FLUSH		
4,5	1037		33°11'32.00190"	117°17'41.74215"	58.685	2015169.21	6242002.57	304.84	-	0.99994797	SET 2.5" BRASS DISK IN CURB INLET WITH TRIANGLE / PUNCH STAMPED "LS 7854", FLUSH		
5	1038	78-3.9	33°11'01.89073"	117°17'13.85975"	32.457	2012102.35	6244341.60	218.73	218.73	0.99995246	FOUND 2.25" BRASS DISK IN CONCRETE WALK WITH PUNCH STAMPED "CALTRANS 78-3.9", FLUSH	CALTRANS	SURVEY REQUEST SR12-197
5	1039		33°10'43.51108"	117°17'12.62929"	32.910	2010243.76	6244427.70	220.27	-	0.99995262	SET 2.5" BRASS DISK IN CURB INLET WITH TRIANGLE / PUNCH STAMPED "LS 7854", FLUSH		
5	1040		33°10'24.60238"	117°15'50.80023"	62.468	2008264.34	6251363.60	316.87	-	0.99994823	FOUND 3.5" BRASS DISK IN MONUMENT WELL WITH PUNCH STAMPED "RCE 27732", DN. 0.64'		
5	1041		33°10'16.76844"	117°15'21.52581"	78.471	2007448.49	6253844.09	369.24	-	0.99994583	FOUND 3.5" BRASS DISK IN MONUMENT WELL STAMPED "RCE 27732", DN. 0.69'		
5	1042		33°09'51.93187"	117°16'07.81697"	80.473	2004976.57	6249885.03	376.13	-	0.99994586	FOUND 3.5" BRASS DISK IN MONUMENT WELL WITH PUNCH STAMPED "RCE 16844", DN. 0.55'		
5,7	1043		33°12'31.36143"	117°16'36.52855"	47.799	2021113.39	6247603.17	268.58	-	0.99994901	FOUND 3.5" BRASS DISK IN MONUMENT WELL WITH PUNCH STAMPED "RCE 27732", DN. 0.52'		
6	1044		33°14'22.06490"	117°17'53.94057"	-10.397	2032367.20	6241138.83	77.71	-	0.99995713	SET 2.5" BRASS DISK IN CURB INLET WITH TRIANGLE / PUNCH STAMPED "LS 7854", FLUSH		
6,7	1045		33°13'38.53936"	117°17'12.84634"	57.442	2027933.33	6244585.17	300.20	-	0.99994685	FOUND 3.5" BRASS DISK IN NORTHERLY MONUMENT WELL WITH PUNCH STAMPED "LS 4279", DN. 0.45'		
7	1046		33°14'03.94591"	117°16'49.20936"	36.328	2030481.17	6246618.29	230.75	-	0.99994994	FOUND 3.5" BRASS DISK IN MONUMENT WELL WITH PUNCH STAMPED "LS 4279", DN. 0.42'		
7	1047		33°14'48.00543"	117°16'50.50469"	-2.956	2034935.20	6246552.29	101.74	-	0.99995576	SET 2.5" BRASS DISK IN CURB INLET WITH TRIANGLE / PUNCH STAMPED "LS 7854", FLUSH		
7	1048		33°14'07.47206"	117°15'42.54978"	25.794	2030782.10	6252283.42	195.85	-	0.99995156	SET 2.5" BRASS DISK IN CURB INLET WITH TRIANGLE / PUNCH STAMPED "LS 7854", FLUSH		
7	1049		33°13'09.49537"	117°15'29.26382"	93.239	2024911.67	6253355.19	417.22	-	0.99994150	SET 2.5" BRASS DISK IN CURB INLET WITH TRIANGLE / PUNCH STAMPED "LS 7854", FLUSH		
7	1050		33°15'17.61612"	117°15'57.05919"	10.880	2037883.31	6251120.16	146.84	-	0.99995338	FOUND 3.5" BRASS DISK IN MONUMENT WELL WITH PUNCH STAMPED "RCE 27732", DN. 0.42'		
7	1051		33°15'12.25680"	117°14'36.43733"	17.736	2037275.69	6257960.96	168.92	-	0.99995234	SET 2.5" BRASS DISK IN CONCRETE DRAIN INLET WITH TRIANGLE / PUNCH STAMPED "LS 7854", FLUSH		
8	1052		33°16'35.43203"	117°14'55.84275"	73.177	2045697.71	6256393.66	350.65	-	0.99994315	SET 2.5" BRASS DISK ON SDG+E VAULT WITH TRIANGLE / PUNCH STAMPED "LS 7854", FLUSH		
8	1053		33°16'29.54967"	117°15'59.53975"	59.489	2045155.46	6250980.41	306.04	-	0.99994533	SET 2.5" BRASS DISK IN CONCRETE WITH TRIANGLE / PUNCH STAMPED "LS 7854", FLUSH		

SHEET NO.	STATION NO.	STATION NAME	CGC83 COORDINATES 83NSRS2007 (2011.00)			CCS 83 COORDINATES (2011.00)		COH88 DERIVED	COH88 PUBLISHED	COMBINATION FACTOR	DESCRIPTION	ORIGIN	SOURCE
			LATITUDE	LONGITUDE	ELLIP HT (M)	NORTHING (USFT)	EASTING (USFT)						
8	1054		33°16'24.65557"	117°17'45.73019"	18.840	2044750.00	6241960.43	173.17	-	0.99995174			
6	1055		33°15'16.81796"	117°17'58.45090"	2.355	2037904.74	6240811.47	119.39	-	0.99995472			
8	1056		33°17'46.25917"	117°16'03.35583"	182.013	2052911.44	6250732.11	707.76	-	0.99992579			
6	1057		33°14'54.62378"	117°18'03.62554"	-9.478	2035666.08	6240349.46	80.67	-	0.99995674			
4	1059		33°12'18.90719"	117°18'53.67354"	33.455	2019971.57	6235938.64	222.29	-	0.99995140			
3	1060		33°12'25.82705"	117°22'28.17789"	4.328	2020862.28	6217721.51	127.82	-	0.99995590			
3	1061		33°11'59.18288"	117°21'42.15354"	11.714	2018127.55	6221603.01	151.92	-	0.99995503			
4	1062		33°11'25.64934"	117°20'17.43168"	63.712	2014662.53	6228766.21	322.21	-	0.99994726			
4	1063		33°12'31.31410"	117°19'59.37524"	-3.388	2021282.98	6230369.52	101.72	-	0.99995705			
6,8	1064		33°15'53.53208"	117°18'22.76989"	-14.059	2041636.16	6238784.04	65.52	-	0.99995707			
6,7,8	1065		33°15'59.31441"	117°17'37.55059"	31.687	2042181.90	6242629.21	215.37	-	0.99994986			
7	1066		33°13'01.94030"	117°16'15.18190"	75.281	2024186.07	6249447.02	358.55	-	0.99994439			
7	1067		33°14'11.49141"	117°16'13.47717"	35.959	2031213.92	6249660.64	229.34	-	0.99994993			
7	1068	V2028	33°14'44.49047"	117°15'57.71876"	27.877	2034535.96	6251031.53	202.66	200.37*	0.99995095	VISTA	ROS 14023	
7	1069		33°15'48.58846"	117°15'06.65028"	17.863	2040972.17	6255430.68	169.37	-	0.99995209			
5	1070	CLSB-099	33°09'09.18296"	117°15'14.32408"	132.485	2000612.01	6254390.43	546.64	546.74	0.99993833	CARLSBAD	ROS 17271	
3	1071	0396-B	33°12'31.67647"	117°23'40.09807"	-31.805	2021519.93	6211617.69	9.63	9.63	0.99996151	USACOE	DATA SHEET ACH021	
3	1072	OC 163	33°12'49.28708"	117°20'51.09839"	-25.016	2023145.38	6225994.32	30.96	31.06	0.99996026	NGS	DATA SHEET DX1229	
3	1073	SLR 2010-01	33°12'22.83351"	117°23'39.16897"	-30.974	2020625.35	6211686.82	12.39	12.30	0.99996147	JFA	PROJECT REPORT USACOE FILE 2999_250	
6,7	1074	SLR 2010-22	33°14'59.81883"	117°17'35.77737"	-0.054	2036167.38	6242719.59	111.44	111.45	0.99995522	JFA	PROJECT REPORT USACOE FILE 2999_250	
8	1075		33°17'38.38978"	117°16'19.70939"	155.347	2052129.68	6249336.32	620.37	-	0.99993000			
4	2000	78-2.71L	33°10'50.62249"	117°18'25.76094"	30.752	2011024.89	6238219.68	213.60	213.60	0.99995287	CALTRANS	SURVEY REQUEST SR12-197	
4,5	2002	78-3.3	33°11'02.78600"	117°17'48.27389"	23.666	2012222.06	6241417.89	190.05	190.05	0.99995383	CALTRANS	SURVEY REQUEST SR12-197	
4	2003	78-0.7	33°10'48.06575"	117°20'24.01601"	-23.065	2010869.98	6228166.98	37.65	37.65	0.99996135	CALTRANS	SURVEY REQUEST SR12-197	
7	2004	BM A-29	33°15'48.59594"	117°15'06.60910"	17.877	2040972.89	6255434.19	169.42	167.12*	0.99995209	OCEANSIDE	COS BM A29 BK 1/2012 (1983 ADJ/1970 DATUM)	
3	2005	BM F-44	33°10'37.84251"	117°21'32.91761"	-18.118	2009898.52	6222300.31	54.43	54.43	0.99996071	OCEANSIDE	COS BM F44 BK 1/2012 (1984 ADJ/1970 DATUM)	
5	2006	BM E-74	33°10'06.75334"	117°15'50.49702"	114.381	2006460.16	6251371.83	487.24	485.11*	0.99994033	OCEANSIDE	COS BM E74 BK 1/2012 (1984 ADJ/1970 DATUM)	
3	2102	PIER RM 2	33°11'38.71911"	117°23'04.34501"	-26.016	2016134.61	6214596.96	28.65	28.65	0.99996119	NGS	DATA SHEET DX3432	
3	2131	H 131	33°10'26.90375"	117°21'51.35532"	-22.290	2008809.71	6220721.49	40.80	40.80	0.99996151	NGS	DATA SHEET DX1222	
3	2307	M 1307	33°13'39.76370"	117°23'50.47777"	-21.835	2028410.86	6210811.58	42.09	42.09	0.99995928	NGS	DATA SHEET DX3431	
1	2638	SD 6 38	33°16'34.04545"	117°13'34.81652"	14.509	2045492.42	6263270.96	157.81	157.81	0.99995237	NGS	DATA SHEET DX5541	
6	2647	SD 6 47	33°13'52.99492"	117°18'08.71992"	-10.302	2029441.85	6239853.97	78.21	78.21	0.99995735	NGS	DATA SHEET DX5547	
4,6	2650	SD 6 50	33°13'30.50817"	117°19'53.49920"	-20.346	2027260.29	6230930.80	45.87	45.87	0.99995913	NGS	DATA SHEET DX5550	
7	2775	73-7.75	33°15'05.12311"	117°15'54.84356"	10.137	2036618.85	6251296.01	144.40	144.40	0.99995358	CALTRANS	SURVEY REQUEST SR13-117	
1	3001	CLBD	33°08'07.37604"	117°18'39.46300"	21.343	1994538.20	6236887.31	183.39		0.99995676	SOPAC	SOPAC DATA SHEET	
1	3002	DSME	33°02'11.30762"	117°14'58.28098"	56.869	1958366.29	6255349.44	299.91		0.99995861	CSRC	CSRC DATA SHEET	
6	3003	OCSO	33°14'26.38783"	117°20'48.19371"	43.655	2032956.33	6226344.31	255.86		0.99994861	SOPAC	SOPAC DATA SHEET/CALTRANS SURVEY REQUEST SR12-197	
1	3004	P474	33°21'18.68178"	117°14'55.24297"	183.645	2074324.66	6256718.79	712.07		0.99992538	CSRC	CSRC DATA SHEET	
1	3005	P478	33°14'08.56125"	117°04'17.67844"	372.315	2030380.76	6310453.11	1329.27		0.99989716	CSRC	CSRC DATA SHEET	
1	3006	SBCC	33°33'10.78934"	117°39'41.30401"	89.395	2147751.14	6131652.26	406.32		0.99994739	CSRC	CSRC DATA SHEET	
1	3007	VTOR	33°13'30.04070"	117°11'35.41859"	380.670	2026802.24	6273238.92	1358.96		0.99989618	SOPAC	SOPAC DATA SHEET/CALTRANS SURVEY REQUEST SR12-197	

* INDICATES PUBLISHED NGVD29 ELEVATION PER SOURCE DOCUMENTS