

SEWER STUDY FOR

STONE CREEK



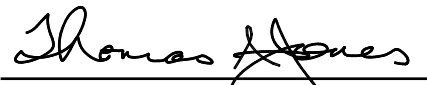
IN THE CITY OF SAN DIEGO

June 14, 2006
Revised January 22, 2007
Revised December 4, 2008
Revised June 7, 2010
Revised October 3, 2011
Revised December 21, 2012
Revised January 31, 2014
Approved August 18, 2014
Amendment #1: January 21, 2016
(Sewer Deviations & Sewer Exhibits Only)



Prepared By:

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Thomas A. Jones, P.E.

INTRODUCTION

BDS Engineering, Inc. has been authorized by CalMat Co. dba Vulcan Materials Co. to prepare this sewer study for the Stone Creek Development (Project). The purpose of this study is to determine the on-site sewer facilities required for the Project and to review potential impacts to the existing off-site Carroll Canyon Trunk Sewer. The study identifies recommended pipe sizes and alignments, and provides calculated peak depth of flow (d_n), d_n/D ratio, and pipe velocities.

BACKGROUND

The project is located in the City of San Diego in the Mira Mesa Community. The project is generally located west of Black Mountain Road, north of Activity Road, east of Kibler Drive and south of Jade Coast Drive, as shown in Figure-1. Access to the project will be from Camino Ruiz and Black Mountain Road.

The development plan for the Stone Creek project includes 64 multi-family residential lots, 21 light industrial and high technology lots, 4 business park lots, 22 mixed-use lots and 40 park and open space areas. Total project acreage is 288.52 acres. The proposed developed lots, not including park, open space lots and streets, encompass 123.14 net acres. Building pads within the project range in elevation from a low of approximately 329 feet to a high of 427 feet.

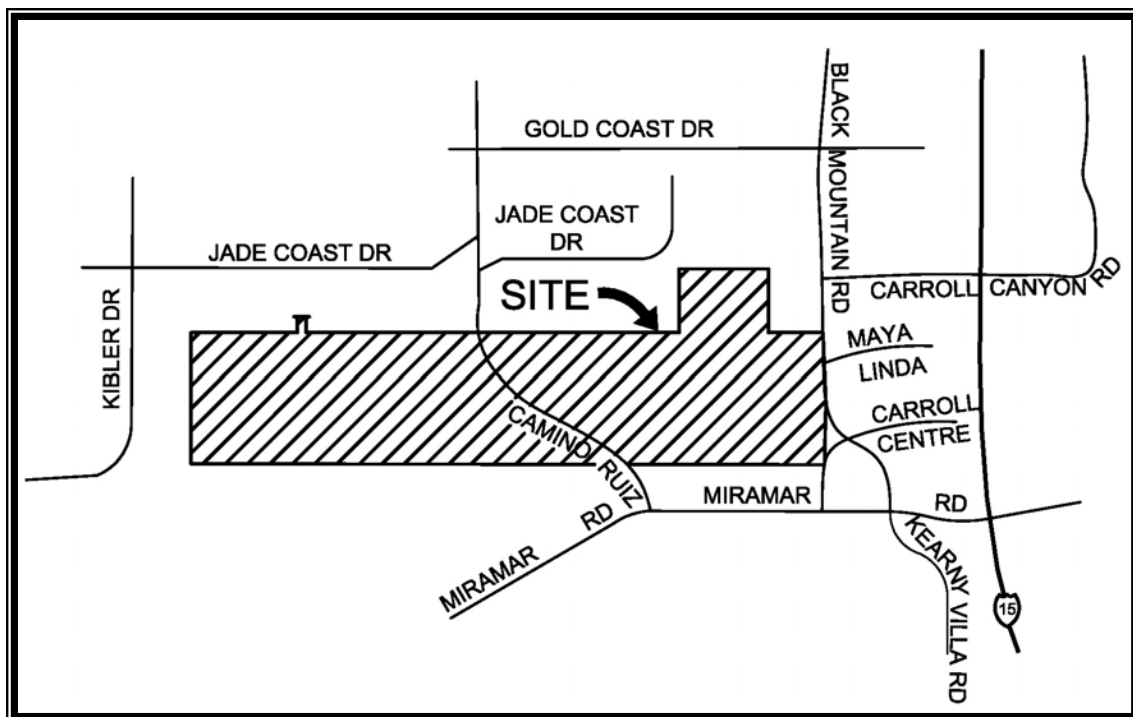


Figure-1: Vicinity Map

EXISTING SEWER FACILITIES

The Stone Creek development lies within the tributary area for the Carroll Canyon Trunk Sewer #49. The trunk sewer runs adjacent to the Vulcan Materials Co. property on the southerly side. The Carroll Canyon Trunk Sewer was built in 1970. The pipe material is Vitrified Clay (VC) and Polyvinyl Chloride (PVC) and diameter ranges from 18-inch to 21-inch.

The City of San Diego Metropolitan Wastewater Department has televised and modeled the Carroll Canyon trunk sewer and has published the condition and capacity results in a Memorandum dated March 23, 2004. The study includes dry and wet weather analysis for the year 2000, 2010, and 2030 (build out). The study did include several new development projects in the area, however did not include the Stone Creek Development.

For the purpose of the Stone Creek Sewer Study, the 2030 dry weather flows (DWF), found in Table C-1 of the City's study, were used for the analysis. The DWF downstream of manholes H05S126, H05S154, G052169 are 3.332 mgd, 4.085 mgd, and 4.518 mgd, respectively.

LAND USE

The proposed land use for the development is summarized in Table-1. In addition, each lot is labeled on the Sewer Study Exhibit, Map Pocket A. As indicated in Table-1, development of the project includes multi-family residential, industrial, business park mixed-use construction and parks.

LAND USE	NET AREA (acres)	DWELLING UNITS
Multi-Family Residential (RM-1-2, RM-2-5, RM-3-9, RM-4-10, RM-4-11)	56.49	3,502
Industrial	37.12	
Business Park	7.02	
Mixed-use	22.51	943
TOTAL	123.14	4,445

Table-1: Land Use

SEWAGE DESIGN CRITERIA

The *2004 City of San Diego Sewer Design Guide* provides criteria to estimate sewage flows from different land uses. These criteria are summarized in Table-2. Table-3 presents the sewage generation factors.

DESCRIPTION	DESIGN CRITERIA
Sewage Generation	80 gallons per day per capita
Persons per Dwelling Unit	Table 1-1, <i>2004 City of San Diego Sewer Design Guide</i>
Dwelling Units per Acre	Stone Creek Master Plan
Peaking Factor	Figure 1-1, <i>2004 City of San Diego Sewer Design Guide</i>
Manning's 'n'	0.013
Minimum Velocity	2 feet per second (fps)
Maximum Velocity	10 feet per second (fps)
Maximum d_r/D ratio	0.50 (mains $\leq 15"$ $\emptyset$) 0.75 (mains $> 15"$ $\emptyset$)

Table-2: Design Criteria

LAND USE	SEWAGE GENERATION FACTOR
Multi-Family Residential ¹ :	
15.33 du/net-ac	3,820 gpd/acre
26.04 du/net-ac	6,250 gpd/acre
37.19 du/net-ac	6,545 gpd/acre
56.66 du/net-ac	9,972 gpd/acre
63.69 du/net-ac	11,209 gpd/acre
71.35 du/net-ac	12,558 gpd/acre
124.06 du/net-ac	14,887 gpd/acre
Industrial / Business Park	5,012 gpd/acre
Commercial:	3,500 gpd/acre
Park	1,000 gpd/acre

¹ Multi-Family densities based on the Stone Creek Master Plan

Table-3: Sewage Generation Factors

SEWAGE GENERATION

Sewage generation projections for the Project area are based on the proposed Tentative Map for the Stone Creek development area and the 2004 *City of San Diego Sewer Design Guide*. The output of the sewer study is shown in the Sewer Study Summary Table in Appendix A. There will be three connections to the existing trunk sewer as outlined below.

First, a new connection to the 18" Carroll Canyon Trunk Sewer will be made between manholes H05S126 and H04S125 (at a point along the southerly boundary east of Camino Ruiz). This new connection will be generating a peak dry weather flow (PDWF) of 0.297 mgd. The total flow in the trunk sewer, including the 0.297 mgd from the development, will be 5.409 mgd. The ratio of depth of flow to pipe diameter, d_n/D , is calculated to be 0.57, which is less than the maximum allowed ratio of 0.75 in a trunk sewer.

Second, a new connection to the 21" Carroll Canyon Trunk Sewer will be made between manholes H05S228 and H05S226 (intersection of Carroll Canyon Rd and Camino Ruiz). This new connection will be generating a PDWF of 0.887 mgd. The total flow in the trunk sewer, including the additional flows of 0.297 and 0.887 mgd, at this point will be 5.269 mgd. The ratio of depth of flow to pipe diameter, d_n/D , is

calculated to be 0.47, which is less than the maximum allowed ratio of 0.75 in a trunk sewer.

Third, a new connection to the 21" Carroll Canyon Trunk Sewer will be made between manholes G05S169 and G05S168 (at a point along the southerly boundary west of Camino Ruiz). This new connection will be generating a PDWF flow of 0.933 mgd. The total flow in the trunk sewer at this point, including the additional flow of 1.184 mgd flow from the Stone Creek development upstream and the existing flow of 4.518 mgd, will be a total of 6.636 mgd. The ratio of depth of flow to pipe diameter, d_n/D , is calculated to be 0.67, which is less than the maximum allowed ratio of 0.75 in a trunk sewer.

HYDRAULIC ANALYSIS

A hydraulic model was created of the proposed gravity collection system for Stone Creek development. The hydraulic model used Manning's equation and the 2004 *Sewer Design Guide* dry weather peaking factor to determine the minimum size, slope required to meet the City of San Diego's velocity and d_n/D criteria.

The hydraulic model identifies pipe sizes based on minimum slopes; consequently, some of the recommended sizes may be reduced if the design slope is greater than the minimum slope given. Additional analysis shall be performed to verify the depth criteria if pipe sizes are modified. The pipe sizes, slopes, rim elevations, invert elevations, manhole designations, and pipe designations can be seen on the Sewer Study Exhibit, Map Pocket A. The hydraulic analysis has been summarized in Appendix A. In addition, a manhole report, has been included as part of Appendix B. This report shows the rim elevation, invert elevation and depths of all the manholes.

CONCLUSIONS AND RECOMMENDATIONS

This report presents land use information, City of San Diego design criteria as well as hydraulic analysis of the proposed sewer network for the Stone Creek Project. The hydraulic model was used to determine pipe sizes and slopes to meet the projected Peak Dry Weather Flow and meeting the City's design criteria.

We recommend that the pipe sizes and diameters in this study be used in final design of the gravity sewer system for the Stone Creek Project.

APPENDIX A

SEWER STUDY SUMMARY TABLE



Engineering, Inc.
Civil Engineering
Land Surveying

Thomas Jones, PE, LS, Principal

SEWER STUDY SUMMARY

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643

WORK ORDER NO.: 42-2637

SHEET: 1 of 5

DATE: AUGUST 2014

¹ Peaking factor interpolated by SEWERCAD program based on City of San Diego 2004 Sewer Design Guide, Figure 1-1.

LINE	FROM	TO	POPULATION PER DU	IN-LINE DU'S	POPULATION SERVED		SEWAGE PER CAPITA/DAY	AVG. DRY WEATHER FLOW	DRY WEATHER PEAKING FACTOR ¹	PEAK DRY WEATHER FLOW		LINE SIZE (D)	DESIGN SLOPE	NORMAL DEPTH d _n	d _n /D	VELOCITY (fps)	REMARKS
					IN-LINE	CUMULATIVE TOTAL	(gpd)	(gpd)		(gpd)	(cfs)	(inches)	(%)	(feet)			
P-1	MH-1	MH-2	3.5	0	0	-	80	-	-	-	-	10 inch	3.69%	0.00	0.00	0.00	
P-22	MH-2	MH-22	3.5		231	231		18,494	3.90	72,055		10 inch	15.21%	0.07	0.09	4.78	
P-2	MH-22	MH-3	3.5	66	232	879	80	70,286	2.63	185,003	0.29	12 inch	1.75%	0.17	0.17	3.31	
P-3	MH-3	MH-4	3.5	0	0	879	80	70,286	2.63	185,003	0.29	12 inch	1.62%	0.17	0.17	3.22	
P-4	MH-4	MH-5	3.5	0	0	1,085	80	86,776	2.47	214,735	0.33	12 inch	1.13%	0.20	0.20	2.97	
P-5	MH-5	MH-6	3.5	63	219	1,665	80	133,187	2.35	312,594	0.48	12 inch	1.11%	0.24	0.24	3.29	
P-6	MH-6	MH-7	3.5	38	133	1,798	80	143,812	2.32	333,712	0.52	12 inch	1.05%	0.25	0.25	3.29	
P-7	MH-7	MH-8	3.5	28	98	1,896	80	151,681	2.30	348,988	0.54	12 inch	1.03%	0.26	0.26	3.31	
P-8	MH-8	MH-9	3.5	30	106	2,002	80	160,152	2.29	366,707	0.57	12 inch	1.03%	0.27	0.27	3.35	
P-9	MH-9	MH-10	3.5	29	103	2,105	80	168,371	2.28	383,221	0.59	12 inch	1.04%	0.27	0.27	3.41	
P-10	MH-10	MH-11	2.2	85	187	2,435	80	194,821	2.22	432,236	0.67	15 inch	1.85%	0.23	0.19	4.22	
P-11	MH-11	MH-12	2.2	46	101	2,536	80	202,892	2.21	447,657	0.69	15 inch	1.00%	0.28	0.22	3.44	
P-12	MH-12	MH-13	2.2	0	0	2,536	80	202,892	2.21	447,657	0.69	15 inch	1.02%	0.28	0.22	3.46	
P-13	MH-13	MH-14	2.2	0	0	2,536	80	202,892	2.21	447,657	0.69	15 inch	0.99%	0.28	0.22	3.42	
P-14	MH-14	MH-15	2.2	253	557	5,649	80	451,897	1.96	887,547	1.38	15 inch	1.00%	0.39	0.31	4.18	
P-15	MH-15	O-2	2.2	0	0	5,649	80	451,897	1.96	887,547	1.38	15 inch	5.55%	0.25	0.20	7.70	
MAIN CONNECTION TO TRUNK SEWER AT BETWEEN MANHOLE H05S228 AND H05S226)																	
P-16	MH-16	MH-17	3.5	61	213	213	80	17041	3.96	67,424	0.10	10 inch	1.68%	0.11	0.13	2.48	
P-17	MH-18	MH-17	3.5	30	106	106	80	8470	4.00	33,881	0.05	10 inch	3.60%	0.07	0.08	2.63	
P-18	MH-17	MH-19	3.5	33	115	434	80	34683	3.22	111,733	0.17	10 inch	1.94%	0.14	0.16	3.02	
P-19	MH-19	MH-20	3.5	0	0	434	80	34683	3.22	111,733	0.17	10 inch	2.37%	0.13	0.15	3.36	
P-20	MH-21	MH-20	3.5	28	97	531	80	42452	2.97	126,271	0.20	10 inch	0.99%	0.15	0.18	3.06	
P-21	MH-20	MH-22	3.5	33	116	647	80	51792	2.88	149,015	0.23	10 inch	1.20%	0.22	0.26	2.04	
MAIN CONNECTION TO MH-4																	
P-24	MH-24	MH-25	3.5	33	115	115	80	9,222	4.00	36,888	0.06	10 inch	1.98%	0.08	0.09	2.19	
P-25	MH-25	MH-4	3.5	26	91	206	80	16,489	3.98	65,622	0.10	10 inch	2.16%	0.10	0.12	2.68	
MAIN CONNECTION TO MH-4																	
P-26	MH-26	MH-27	3.5	66	232	232	80	18,595	3.89	72,368	0.11	10 inch	1.49%	0.12	0.14	2.42	
P-27	MH-27	MH-28	3.5	0	0	232	80	18,595	3.89	72,368	0.11	10 inch	1.95%	0.11	0.13	2.66	
P-28	MH-28	MH-5	3.5	37	129	361	80	28,919	3.46	100,110	0.16	10 inch	2.43%	0.12	0.15	3.17	
MAIN CONNECTION TO MH-5																	



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SHEET: 2 of 5
DATE: AUGUST 2014

¹ Peaking factor interpolated by SEWERCAD program based on City of San Diego 2004 Sewer Design Guide, Figure 1-1.

LINE	FROM	TO	POPULATION PER DU	IN-LINE DU'S	POPULATION SERVED		SEWAGE PER CAPITA/DAY	AVG. DRY WEATHER FLOW	DRY WEATHER PEAKING FACTOR ¹	PEAK DRY WEATHER FLOW		LINE SIZE (D)	DESIGN SLOPE	NORMAL DEPTH d _n	d _n /D	VELOCITY (fps)	REMARKS
					IN-LINE	CUMULATIVE TOTAL	(gpd)	(gpd)		(gpd)	(cfs)	(inches)	(%)	(feet)			
P-29	MH-29	MH-10	3.5	41	143	143	80	11,430	4.00	45,720	0.07	8 inch	2.34%	0.09	0.13	2.55	
MAIN CONNECTION TO MH-10																	
P-30	MH-30	MH-31	2.2	63	139	139	80	11,097	4.00	44,388	0.07	8 inch	1.52%	0.10	0.15	2.17	
P-31	MH-31	MH-32	2.2	96	211	350	80	28,030	3.50	98,069	0.15	10 inch	1.28%	0.14	0.17	2.52	
P-32	MH-32	MH-33	2.2	139	306	2,556	80	204,506	2.20	450,805	0.70	12 inch	1.79%	0.26	0.26	4.33	
P-33	MH-33	MH-14	2.2	0	0	2,556	80	204,506	2.20	450,805	0.70	12 inch	16.86%	0.15	0.15	9.57	
COLLECTOR MAIN CONNECTION TO MH-14																	
P-34	MH-34	MH-35	2.2	137	301	301	80	24,109	3.66	88,290	0.14	10 inch	2.87%	0.11	0.13	3.24	
P-35	MH-35	MH-36	2.2	0	0	301	80	24,109	3.66	88,290	0.14	10 inch	2.00%	0.12	0.14	2.85	
P-36	MH-36	MH-37	2.2	90	198	499	80	39,955	3.00	119,939	0.19	10 inch	2.62%	0.13	0.16	3.43	
P-37	MH-37	MH-38	2.2	60	131	630	80	50,426	2.89	145,801	0.23	10 inch	5.22%	0.12	0.15	4.64	
P-38	MH-38	MH-39	2.2	30	66	696	80	55,681	2.84	157,948	0.24	10 inch	7.20%	0.12	0.14	5.32	
P-39	MH-39	MH-32	2.2	146	322	1,900	80	151,966	2.30	349,533	0.54	12 inch	3.34%	0.20	0.20	5.02	
MAIN CONNECTION TO MH-32																	
P-40	MH-40	MH-41	2.2	160	353	353	80	28,226	3.49	98,524	0.15	10 inch	1.00%	0.15	0.18	2.31	
P-41	MH-41	MH-42	2.2	0	0	353	80	28,226	3.49	98,524	0.15	10 inch	1.42%	0.14	0.16	2.61	
P-42	MH-42	MH-43	2.2	40	89	442	80	35,358	3.19	112,910	0.18	10 inch	1.72%	0.14	0.17	2.91	
P-43	MH-43	MH-44	2.2	159	349	791	80	63,284	2.76	174,499	0.27	10 inch	1.73%	0.17	0.21	3.31	
P-44	MH-44	MH-45	2.2	0	0	791	80	63,284	2.76	174,499	0.27	10 inch	1.73%	0.17	0.21	3.31	
P-45	MH-45	MH-39	2.2	41	91	882	80	70,516	2.63	185,298	0.29	10 inch	3.62%	0.15	0.18	4.38	
MAIN CONNECTION TO MH-39																	
P-46	MH-46	MH-39	2.2	88	193	193	80	15,457	4.00	61,826	0.10	10 inch	4.02%	0.09	0.10	3.27	
MAIN CONNECTION TO MH-39																	
P-105	MH-105	MH-106	3.0	21	64	64	80	5,112	4.00	20,449	0.03	10 inch	1.94%	0.06	0.07	1.82	
P-106	MH-106	MH-107	3.0	48	145	209	80	16,690	3.97	66,280	0.10	10 inch	1.06%	0.12	0.15	2.09	
P-107	MH-107	MH-108	3.0	41	123	332	80	26,564	3.56	94,562	0.15	10 inch	1.20%	0.14	0.17	2.43	
P-108	MH-108	MH-109	3.0	99	296	628	80	50,258	2.89	145,404	0.23	10 inch	1.47%	0.16	0.20	2.97	
P-109	MH-109	MH-110	3.0	0	0	628	80	50,258	2.89	145,404	0.23	10 inch	1.50%	0.16	0.20	2.99	
P-110	MH-110	MH-111	3.0	79	238	866	80	69,319	2.65	183,716	0.28	10 inch	1.40%	0.19	0.22	3.12	
P-111	MH-111	MH-112	3.0	38	114	980	80	78,391	2.52	197,555	0.31	10 inch	4.34%	0.15	0.18	4.76	
P-112	MH-112	MH-113	3.0	0	0	1,570	80	125,578	2.37	297,126	0.46	10 inch	0.93%	0.26	0.32	3.10	
P-113	MH-113	MH-114	3.0	0	0	1,570	80	125,578	2.37	297,126	0.46	10 inch	3.82%	0.18	0.22	5.12	
P-117	MH-114	O-3	3.0	0	0	1,570	80	3,457,578	1.05	3,629,126	5.63	18 inch	1.64%	0.68	0.45	7.27	
MAIN CONNECTION TO TRUNK SEWER BETWEEN MANHOLE S H05S125 AND H05S126																	



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LINE	FROM	TO	POPULATION PER DU	IN-LINE DU'S	POPULATION SERVED		SEWAGE PER CAPITA/DAY	AVG. DRY WEATHER FLOW	DRY WEATHER PEAKING FACTOR ¹	PEAK DRY WEATHER FLOW		LINE SIZE (D)	DESIGN SLOPE	NORMAL DEPTH d _n	d _n /D	VELOCITY (fps)	REMARKS
					IN-LINE	CUMULATIVE TOTAL	(gpd)	(gpd)		(gpd)	(cfs)	(inches)	(%)	(feet)			
P-115	MH-115	MH-116	3.0	96	287	287	80	22,938	3.71	85,121	0.13	10 inch	1.00%	0.14	0.17	2.21	
P-116	MH-116	MH-112	3.0	101	303	590	80	47,188	2.93	138,031	0.21	10 inch	1.23%	0.17	0.20	2.74	
MAIN CONNECTION TO MH-112																	
P-49	MH-50	MH-51	1.8	206	371	371	80	29,656	3.43	101,750	0.16	8 inch	4.46%	0.11	0.17	4.06	
P-50	MH-51	MH-52	-	-	0	371	80	29,656	3.43	101,750	0.16	8 inch	1.04%	0.16	0.24	2.42	
P-51	MH-52	MH-53	-	-	0	371	80	29,656	3.43	101,750	0.16	8 inch	3.53%	0.12	0.18	3.73	
P-52	MH-53	MH-54	1.8	114	205	576	80	46,092	2.94	135,351	0.21	8 inch	2.59%	0.15	0.22	3.64	
P-53	MH-54	MH-55	-	-	0	576	80	46,092	2.94	135,351	0.21	8 inch	1.02%	0.19	0.28	2.61	
P-54	MH-55	MH-56	2.2	66	145	721	80	57,645	2.82	162,340	0.25	8 inch	1.51%	0.19	0.28	3.17	
P-55	MH-56	MH-57	-	-	0	721	80	57,645	2.82	162,340	0.25	8 inch	2.10%	0.17	0.26	3.56	
P-56	MH-57	MH-58	2.2	65	144	865	80	69,198	2.65	183,552	0.28	8 inch	1.00%	0.22	0.33	2.83	
P-57	MH-58	MH-59	2.2	50	110	1,148	80	91,860	2.46	226,009	0.35	10 inch	2.63%	0.02	0.21	4.15	
P-58	MH-59	MH-60	3.5	4	13	1,265	80	101,189	2.44	246,600	0.38	10 inch	4.56%	0.16	0.19	5.17	
P-59	MH-60	MH-61	-	-	0	4,946	80	395,685	2.00	792,437	1.23	15 inch	6.29%	0.23	0.19	7.78	
P-60	MH-61	MH-62	2.2	91	201	5,147	80	411,759	1.99	820,492	1.27	15 inch	1.60%	0.33	0.27	4.84	
P-61	MH-62	O-1	-	-	0	5,975	80	478,025	1.95	932,622	1.45	15 inch	14.41%	0.21	0.16	10.93	
(MAIN CONNECTION TO TRUNK SEWER BETWEEN MANHOLES G05S169 AND G05S168)																	
P-63	MH-65	MH-66	1.8	172	310	310	80	24,832	3.63	90,191	0.14	8 inch	1.42%	0.14	0.21	2.62	
P-64	MH-66	MH-67	1.8	67	121	543	80	43,420	2.96	128,712	0.20	10 inch	4.22%	0.12	0.14	4.15	
P-65	MH-67	MH-68	1.8	61	109	652	80	52,173	2.87	149,904	0.23	10 inch	4.82%	0.12	0.15	4.55	
P-66	MH-68	MH-69	1.8	91	163	1,014	80	81,115	2.50	202,448	0.31	10 inch	2.91%	0.16	0.20	4.16	
P-67	MH-69	MH-70	1.8	44	79	1,215	80	97,230	2.45	237,915	0.37	10 inch	2.47%	0.18	0.22	4.11	
P-68	MH-70	MH-71	1.8	56	100	1,477	80	118,141	2.38	281,724	0.44	12 inch	3.22%	0.18	0.18	4.65	
P-69	MH-71	MH-60	2.2	174	383	3,411	80	272,896	2.11	574,698	0.89	12 inch	2.51%	0.27	0.27	5.25	
(MAIN CONNECTION TO MAIN AT MH-60)																	
P-73	MH-75	MH-76	2.2	68	150	150	80	11,992	4.00	47,969	0.07	10 inch	4.76%	0.07	0.09	3.21	
P-74	MH-76	MH-77	-	-	0	150	80	11,992	4.00	47,969	0.07	10 inch	2.89%	0.08	0.10	2.70	
P-75	MH-77	MH-78	-	-	0	150	80	11,992	4.00	47,969	0.07	10 inch	1.63%	0.09	0.11	2.21	
P-76	MH-78	MH-79	3.5	3	12	402	80	32,128	3.33	106,920	0.17	10 inch	1.29%	0.15	0.17	2.59	
P-77	MH-79	MH-80	-	-	0	699	80	55,947	2.83	158,547	0.25	10 inch	1.40%	0.17	0.21	2.99	
P-78	MH-80	MH-81	3.5	10	36	735	80	58,767	2.80	164,812	0.26	10 inch	1.89%	0.16	0.20	3.36	
P-79	MH-81	MH-82	2.2	113	248	1,376	80	110,051	2.41	264,926	0.41	10 inch	2.75%	0.19	0.23	4.41	
P-80	MH-82	MH-71	2.2	80	175	1,551	80	124,116	2.37	294,118	0.46	10 inch	1.01%	0.26	0.31	3.18	
(MAIN CONNECTION TO MAIN AT MH-71)																	



Engineering, Inc.
Civil Engineering
Land Surveying

Thomas Jones, PE, L.S, Principal

SEWER STUDY SUMMARY

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643

WORK ORDER NO.: 42-2637

SHEET: 4 of 5

DATE: AUGUST 2014

¹ Peaking factor interpolated by SEWERCAD program based on City of San Diego 2004 Sewer Design Guide, Figure 1-1.

LINE	FROM	TO	POPULATION PER DU	IN-LINE DU'S	POPULATION SERVED		SEWAGE PER CAPITA/DAY	AVG. DRY WEATHER FLOW	DRY WEATHER PEAKING FACTOR ¹	PEAK DRY WEATHER FLOW		LINE SIZE (D)	DESIGN SLOPE	NORMAL DEPTH d _n	d _n /D	VELOCITY (fps)	REMARKS
					IN-LINE	CUMULATIVE TOTAL	(gpd)	(gpd)		(gpd)	(cfs)	(inches)	(%)	(feet)			
P-88	MH-90	MH-91	-	-	0	-	80	-	-	-	0.00	8 inch	2.91%	0.00	0.00	0	
P-89	MH-91	MH-92	3.1	15	46	46	80	3,650	4.00	14,600	0.02	8 inch	1.99%	0.05	0.08	1.71	
P-90	MH-92	MH-93	3.1	22	69	115	80	9,239	4.00	36,955	0.06	8 inch	2.50%	0.08	0.12	2.45	
P-91	MH-93	MH-94	3.1	12	37	152	80	12,166	4.00	48,666	0.08	8 inch	1.63%	0.10	0.15	2.29	
P-92	MH-94	MH-95	-	-	0	152	80	12,166	4.00	48,666	0.08	12 inch	2.55%	0.08	0.08	2.53	
P-93	MH-95	MH-96	3.1	37	116	268	80	21,443	3.77	80,912	0.13	12 inch	2.83%	0.10	0.10	3.06	
P-94	MH-96	MH-62	2.2	168	370	828	80	66,266	2.71	179,421	0.28	15 inch	3.97%	0.13	0.10	4.25	
(MAIN CONNECTION TO MAIN AT MH-62)																	
P-86	MH-88	MH-89	3.1	13	39	39	80	3,156	4.00	12,623	0.02	8 inch	2.13%	0.05	0.07	1.67	
P-87	MH-89	MH-58	2.2	61	134	173	80	13,830	4.00	55,320	0.09	8 inch	1.00%	0.12	0.18	2.00	
(MAIN CONNECTION TO MAIN AT MH-58)																	
P-95	MH-97	MH-98	3.1	8	24	24	80	1,939	4.00	7,756	0.01	8 inch	5.89%	0.03	0.05	2.05	
P-96	MH-98	MH-99	3.1	10	31	183	80	14,676	4.00	58,703	0.09	8 inch	2.10%	0.10	0.15	2.64	
P-97	MH-99	MH-96	3.5	2	7	190	80	15,186	4.00	60,743	0.09	10 inch	4.06%	0.08	0.10	3.27	
(MAIN CONNECTION TO MAIN AT MH-96)																	
P-200	MH-200	MH-98	3.1	8	25	25	80	1,977	4.00	7,908	0.01	8 inch	2.87%	0.04	0.06	1.61	
(MAIN CONNECTION TO MAIN AT MH-98)																	
P-98	MH-100	MH-98	2.2	47	104	104	80	8,288	4.00	33,153	0.05	8 inch	3.40%	0.07	0.10	2.64	
(MAIN CONNECTION TO MAIN AT MH-98)																	
P-99	MH-101	MH-60	2.2	123	270	270	80	21,600	3.77	81,360	0.13	8 inch	3.59%	0.11	0.16	3.52	
(MAIN CONNECTION TO MAIN AT MH-60)																	
P-62	MH-64	MH-59	2.2	47	104	104	80	8,288	4.00	33,153	0.05	8 inch	4.00%	0.07	0.10	2.79	
(MAIN CONNECTION TO MAIN AT MH-59)																	
P-72	MH-74	MH-70	1.8	90	162	162	80	12,999	4.00	51,997	0.08	10 inch	3.03%	0.08	0.10	2.81	
(MAIN CONNECTION TO MAIN AT MH-70)																	
P-71	MH-73	MH-69	1.8	68	122	122	80	9,746	4.00	38,984	0.06	8 inch	2.79%	0.08	0.12	2.58	
(MAIN CONNECTION TO MAIN AT MH-69)																	



Engineering, Inc.
Civil Engineering
Land Surveying

Thomas Jones, PE, L.S, Principal

SEWER STUDY SUMMARY

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643

WORK ORDER NO.: 42-2637

SHEET: 5 of 5
DATE: AUGUST 2014

¹ Peaking factor interpolated by SEWERCAD program based on City of San Diego 2004 Sewer Design Guide, Figure 1-1.

LINE	FROM	TO	POPULATION PER DU	IN-LINE DU'S	POPULATION SERVED		SEWAGE PER CAPITA/DAY	AVG. DRY WEATHER FLOW	DRY WEATHER PEAKING FACTOR ¹	PEAK DRY WEATHER FLOW		LINE SIZE (D)	DESIGN SLOPE	NORMAL DEPTH d _n	d _n /D	VELOCITY (fps)	REMARKS
					IN-LINE	CUMULATIVE TOTAL	(gpd)	(gpd)		(gpd)	(cfs)	(inches)	(%)	(feet)			
P-70	MH-72	MH-68	1.8	111	199	199	80	15,900	4.00	63,599	0.10	8 inch	2.85%	0.10	0.15	3.01	
(MAIN CONNECTION TO MAIN AT MH-68)																	
P-201	MH-201	MH-66	2.2	51	112	112	80	8,940	4.00	35,760	0.06	10 inch	5.58%	0.06	0.07	3.11	
(MAIN CONNECTION TO MAIN AT MH-66)																	
P-81	MH-83	MH-84	2.2	109	240	240	80	19,186	3.87	74,196	0.12	10 inch	7.87%	0.08	0.09	4.37	
P-82	MH-84	MH-78	2.2	0	0	240	80	19,186	3.87	74,196	0.12	10 inch	12.00%	0.07	0.09	5.06	
(MAIN CONNECTION TO MAIN AT MH-78)																	
P-83	MH-85	MH-86	1.5	99	149	149	80	11,910	4.00	47,638	0.07	8 inch	7.60%	0.07	0.10	3.90	
P-84	MH-86	MH-79	1.5	99	149	298	80	23,819	3.67	87,516	0.14	8 inch	10.74%	0.08	0.13	5.28	
(MAIN CONNECTION TO MAIN AT MH-79)																	
P-85	MH-87	MH-81	1.8	218	393	393	80	31,442	3.36	105,539	0.16	8 inch	5.22%	0.11	0.17	4.33	
(MAIN CONNECTION TO MAIN AT MH-81)																	

APPENDIX B

MANHOLE REPORT

MANHOLE REPORT

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

SHEET: 1 of 3
DATE: AUGUST 2014

Label	Rim Elevation (ft)	Sump Elevation (ft)	Depth (ft)	Invert In Elevation 1 (ft)	Invert In Elevation 2 (ft)	Invert In Elevation 3 (ft)	Invert Out Elevation (ft)	Remarks
MH-1	417.30	409.30	8.00	N/A	N/A	N/A	409.30	
MH-2	406.56	398.71	7.85	398.71	N/A	N/A	398.71	
MH-3	394.00	379.25	14.75	379.25	N/A	N/A	379.25	
MH-4	391.07	377.20	13.87	377.20	377.20	N/A	377.20	
MH-5	386.04	373.63	12.41	373.63	373.63	N/A	373.63	
MH-6	381.45	369.21	12.24	369.21	N/A	N/A	369.21	
MH-7	376.63	365.00	11.63	365.00	N/A	N/A	365.00	
MH-8	372.14	361.00	11.14	361.00	N/A	N/A	361.00	
MH-9	368.11	357.20	10.91	357.20	N/A	N/A	357.20	
MH-10	364.00	353.21	10.79	353.21	353.21	N/A	353.21	
MH-11	361.45	347.20	14.25	347.20	N/A	N/A	347.20	
MH-12	363.20	343.70	19.50	343.70	N/A	N/A	343.70	
MH-13	361.66	340.72	20.94	340.72	N/A	N/A	340.72	
MH-14	353.27	336.77	16.50	336.77	336.77	N/A	336.77	
MH-15	345.37	333.67	11.70	333.67	N/A	N/A	333.67	
MH-16	415.28	406.06	9.22	N/A	N/A	N/A	406.06	
MH-17	414.52	402.06	12.46	402.06	402.06	N/A	402.06	
MH-18	416.35	408.50	7.85	N/A	N/A	N/A	408.50	
MH-19	406.45	396.82	9.63	396.82	N/A	N/A	396.82	
MH-20	397.21	389.36	7.85	389.36	N/A	N/A	389.36	
MH-21	400.15	387.56	12.59	387.56	N/A	N/A	387.56	
MH-22	402.65	383.67	18.98	383.67	383.67	N/A	383.67	
MH-24	397.70	386.00	11.70	N/A	N/A	N/A	386.00	
MH-25	396.61	385.00	11.61	385.00	N/A	N/A	385.00	
MH-26	392.18	383.91	8.27	N/A	N/A	N/A	383.91	
MH-27	389.45	381.16	8.29	381.16	N/A	N/A	381.16	
MH-28	388.02	379.41	8.61	379.41	N/A	N/A	379.41	
MH-29	366.48	358.24	8.24	N/A	N/A	N/A	358.24	
MH-30	362.31	354.46	7.85	N/A	N/A	N/A	354.46	
MH-31	363.67	351.76	11.91	351.76	N/A	N/A	351.76	
MH-32	361.12	347.83	13.29	347.83	347.83	N/A	347.83	
MH-33	353.78	340.63	13.15	340.63	N/A	N/A	340.63	
MH-34	410.91	402.48	8.43	N/A	N/A	N/A	402.48	
MH-35	407.17	398.14	9.03	398.14	N/A	N/A	398.14	
MH-36	401.49	392.84	8.65	392.84	N/A	N/A	392.84	
MH-37	393.77	383.32	10.45	383.32	N/A	N/A	383.32	
MH-38	379.92	369.00	10.92	369.00	N/A	N/A	369.00	
MH-39	373.42	357.40	16.02	357.40	357.40	357.40	357.40	
MH-40	385.58	377.70	7.88	N/A	N/A	N/A	377.70	
MH-41	391.56	375.65	15.91	375.65	N/A	N/A	375.65	
MH-42	387.04	373.48	13.56	373.48	N/A	N/A	373.48	
MH-43	382.24	371.13	11.11	371.13	N/A	N/A	371.13	

MANHOLE REPORT

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

SHEET: 2 of 3
DATE: AUGUST 2014

Label	Rim Elevation (ft)	Sump Elevation (ft)	Depth (ft)	Invert In Elevation 1 (ft)	Invert In Elevation 2 (ft)	Invert In Elevation 3 (ft)	Invert Out Elevation (ft)	Remarks
MH-44	377.86	368.57	9.29	368.57	N/A	N/A	368.57	
MH-45	374.62	365.50	9.12	365.50	N/A	N/A	365.50	
MH-46	374.11	360.30	13.81	N/A	N/A	N/A	360.30	
MH-105	396.05	388.21	7.84	N/A	N/A	N/A	388.21	
MH-106	395.96	386.85	9.11	386.85	N/A	N/A	386.85	
MH-107	395.46	386.00	9.46	386.00	N/A	N/A	386.00	
MH-108	391.49	382.64	8.85	382.64	N/A	N/A	382.64	
MH-109	387.13	378.44	8.69	378.44	N/A	N/A	378.44	
MH-110	383.22	374.46	8.76	374.46	N/A	N/A	374.46	
MH-111	379.49	370.07	9.42	370.07	N/A	N/A	370.07	
MH-112	379.64	367.77	11.87	367.77	367.77	N/A	367.77	
MH-113	381.59	365.49	16.10	365.49	N/A	N/A	365.49	
MH-114	386.00	360.83	25.17	361.16	N/A	N/A	360.83	
MH-115	378.19	369.69	8.50	N/A	N/A	N/A	369.69	
MH-116	378.81	368.60	10.21	368.60	N/A	N/A	368.60	
MH-50	392.50	384.50	8.00	N/A	N/A	N/A	384.50	
MH-51	381.36	370.04	11.32	370.04	N/A	N/A	370.04	
MH-52	378.26	369.00	9.26	369.00	N/A	N/A	369.00	
MH-53	370.39	361.28	9.11	361.28	N/A	N/A	361.28	
MH-54	368.60	358.48	10.12	358.48	N/A	N/A	358.48	
MH-55	365.12	356.75	8.37	356.75	N/A	N/A	356.75	
MH-56	364.09	354.17	9.92	354.17	N/A	N/A	354.17	
MH-57	363.07	350.45	12.62	350.45	N/A	N/A	350.45	
MH-58	361.90	348.60	13.30	348.60	348.60	N/A	348.60	
MH-59	353.41	342.00	11.41	342.00	342.00	N/A	342.00	
MH-60	340.09	328.00	12.09	328.00	328.00	328.00	328.00	
MH-61	329.66	315.17	14.49	315.17	N/A	N/A	315.17	
MH-62	329.80	314.00	15.80	314.00	314.00	N/A	314.00	
MH-64	354.75	346.00	8.75	N/A	N/A	N/A	346.00	
MH-65	397.58	389.88	7.70	N/A	N/A	N/A	389.88	
MH-66	401.61	386.68	14.93	386.68	386.68	N/A	386.68	
MH-67	386.39	376.08	10.31	376.08	N/A	N/A	376.08	
MH-68	378.14	367.50	10.64	367.50	367.50	N/A	367.50	
MH-69	366.80	356.50	10.30	356.50	356.50	N/A	356.50	
MH-70	357.86	347.20	10.66	347.20	347.20	N/A	347.20	
MH-71	349.85	336.95	12.90	336.95	336.95	N/A	336.95	
MH-72	379.87	372.20	7.67	N/A	N/A	N/A	372.20	
MH-73	368.10	360.40	7.70	N/A	N/A	N/A	360.40	
MH-74	361.27	351.26	10.01	N/A	N/A	N/A	351.26	
MH-75	382.06	371.50	10.56	N/A	N/A	N/A	371.50	
MH-76	377.81	366.50	11.31	366.50	N/A	N/A	366.50	

MANHOLE REPORT

Stone Creek Tentative Map No. 208328

PTS. NO.: 67643
WORK ORDER NO.: 42-2637

SHEET: 3 of 3
DATE: AUGUST 2014

Label	Rim Elevation (ft)	Sump Elevation (ft)	Depth (ft)	Invert In Elevation 1 (ft)	Invert In Elevation 2 (ft)	Invert In Elevation 3 (ft)	Invert Out Elevation (ft)	Remarks
MH-77	369.79	359.47	10.32	359.47	N/A	N/A	359.47	
MH-78	370.71	357.42	13.29	357.42	357.42	N/A	357.42	
MH-79	368.62	351.80	16.82	351.80	351.80	N/A	351.80	
MH-80	363.41	348.06	15.35	348.06	N/A	N/A	348.06	
MH-81	361.05	346.19	14.86	346.19	346.19	N/A	346.19	
MH-82	350.83	337.80	13.03	337.80	N/A	N/A	337.80	
MH-83	393.00	380.80	12.20	N/A	N/A	N/A	380.80	
MH-84	372.68	364.98	7.70	364.98	N/A	N/A	364.98	
MH-85	373.50	365.50	8.00	N/A	N/A	N/A	365.50	
MH-86	370.80	358.89	11.91	358.89	N/A	N/A	358.89	
MH-87	363.40	354.60	8.80	N/A	N/A	N/A	354.60	
MH-88	364.78	357.11	7.67	N/A	N/A	N/A	357.11	
MH-89	362.90	352.18	10.72	352.18	N/A	N/A	352.18	
MH-90	364.58	356.13	8.45	N/A	N/A	N/A	356.13	
MH-91	360.47	351.00	9.47	351.00	N/A	N/A	351.00	
MH-92	356.00	346.20	9.80	346.20	N/A	N/A	346.20	
MH-93	351.30	340.25	11.05	340.25	N/A	N/A	340.25	
MH-94	349.70	338.90	10.80	338.90	N/A	N/A	338.90	
MH-95	348.72	337.60	11.12	337.60	N/A	N/A	337.60	
MH-96	339.28	328.50	10.78	328.50	328.50	N/A	328.50	
MH-97	356.00	348.15	7.85	N/A	N/A	N/A	348.15	
MH-98	356.07	345.50	10.57	345.50	345.50	345.50	345.50	
MH-99	347.06	339.06	8.00	339.06	N/A	N/A	339.06	
MH-100	357.00	348.90	8.10	N/A	N/A	N/A	348.90	
MH-101	343.35	335.65	7.70	N/A	N/A	N/A	335.65	
MH-200	358.00	350.30	7.70	N/A	N/A	N/A	350.30	
MH-201	411.74	397.00	14.74	N/A	N/A	N/A	397.00	

APPENDIX C

SEWER DEVIATIONS AMENDMENT #1



THE CITY OF SAN DIEGO

City of San Diego
Development Services
1222 First Ave., MS-302
San Diego, CA 92101
(619) 446-5000

Deviation From Standards

FORM
DS-266
MAY 2010

Drawing Number: _____ Project Number: _____

I.O. No: _____

Project Description/Location:

Engineer of Work: _____ RCE No. _____

(Print Name)

Thomas A. Jones

(Signature)

(Date)



PLACE RCE STAMP HERE

Description of Deviation:

Reason for Deviation:

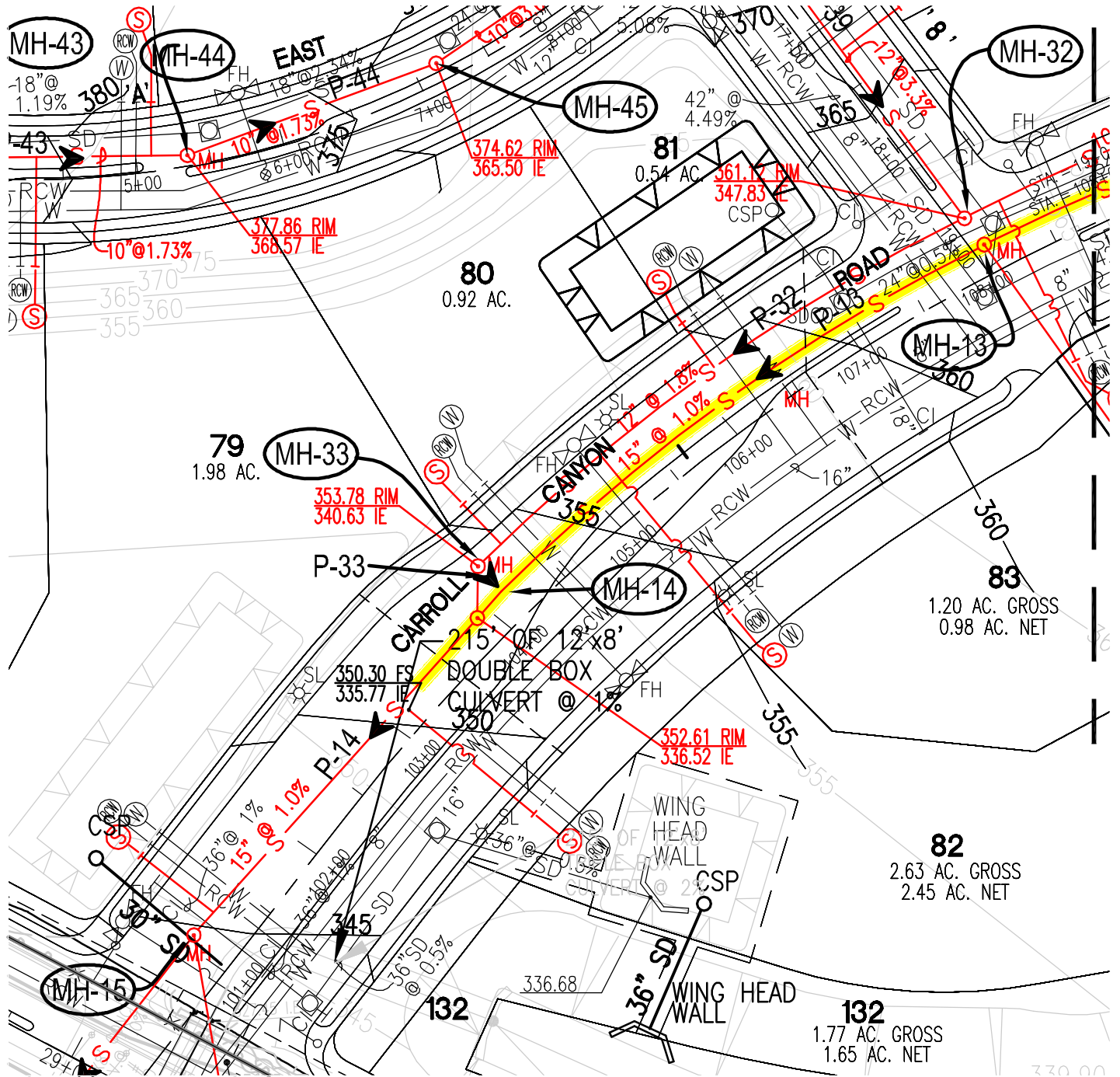
Mitigation Measures for Deviation:

Reviewed By: _____ Date: _____

Approved By:
Deputy City Engineer: _____ Date: _____

Deputy Director: _____ Date: _____

PLACE RCE STAMP HERE

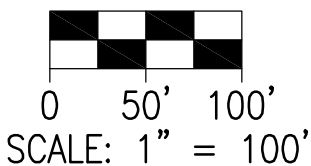


LEGEND:

SEWER MAIN > 15' DEPTH

REFERENCE: TM SHEET 8

SCALE:



PROJECT TITLE:

SEWER DEVIATION - EXHIBIT A

DWG. FILE: L:\PROJECTS\0423\Engr\Sewer Exhibit\SEWER DEVIATION A.dwg

PROJECT NO.

04-23

DATE

8/18/14

DRAWN TM

CHECKED TJ

SHEET NO. 1

EX-A
AMEND. #1
JAN. 21, 2016
OF 2 SHEETS



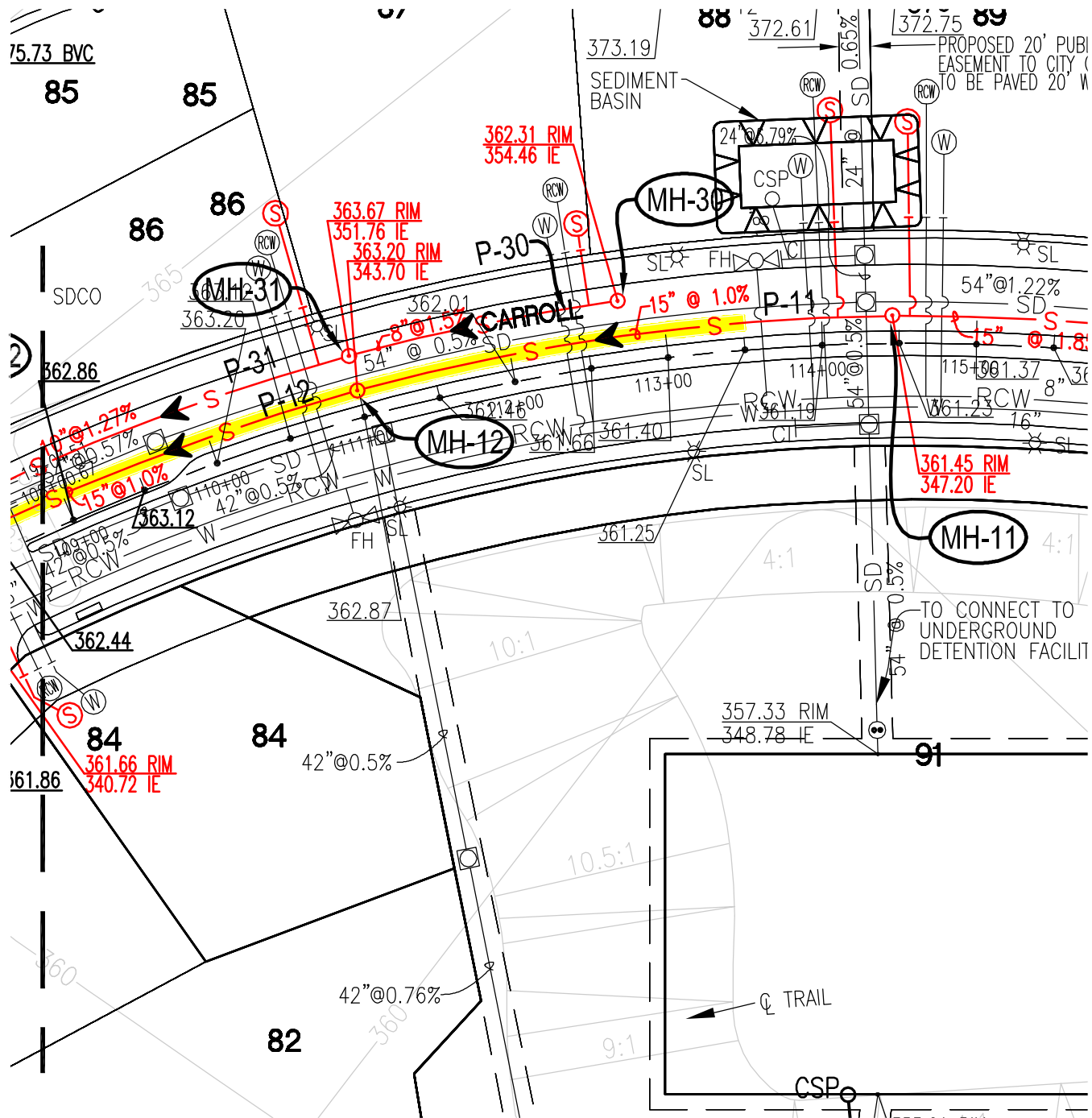
PREPARED FOR:

CALMAT CO., dba VULCAN MATERIALS CO.
7220 TRADE ST, SUITE 205
SAN DIEGO, CA 92121

ENGINEER OF WORK:

BDS Engineering, Inc.
Civil Engineering
Land Surveying
6859 Federal Boulevard
Lemon Grove, California 91945
(619) 582-4992 FAX (619) 582-7428

MATCHLINE - SEE SHEET 1



LEGEND:

SEWER MAIN > 15' DEPTH

REFERENCE: TM SHEET 8

SCALE:



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



PROJECT TITLE:

SEWER DEVIATION - EXHIBIT A

DWG. FILE: L:\PROJECTS\0423\Engr\Sewer Exhibit\SEWER DEVIATION A.dwg

STONE CREEK
VESTING TENTATIVE MAP NO. 208328
SAN DIEGO, CA

PREPARED FOR:

CALMAT CO., dba VULCAN MATERIALS CO.
7220 TRADE ST, SUITE 205
SAN DIEGO, CA 92121

ENGINEER OF WORK:

BDS Engineering, Inc.
Civil Engineering
Land Surveying
6859 Federal Boulevard
Lemon Grove, California 91945
(619) 582-4992 FAX (619) 582-7428

PROJECT NO.

04-23

DATE

8/18/14

DRAWN TM

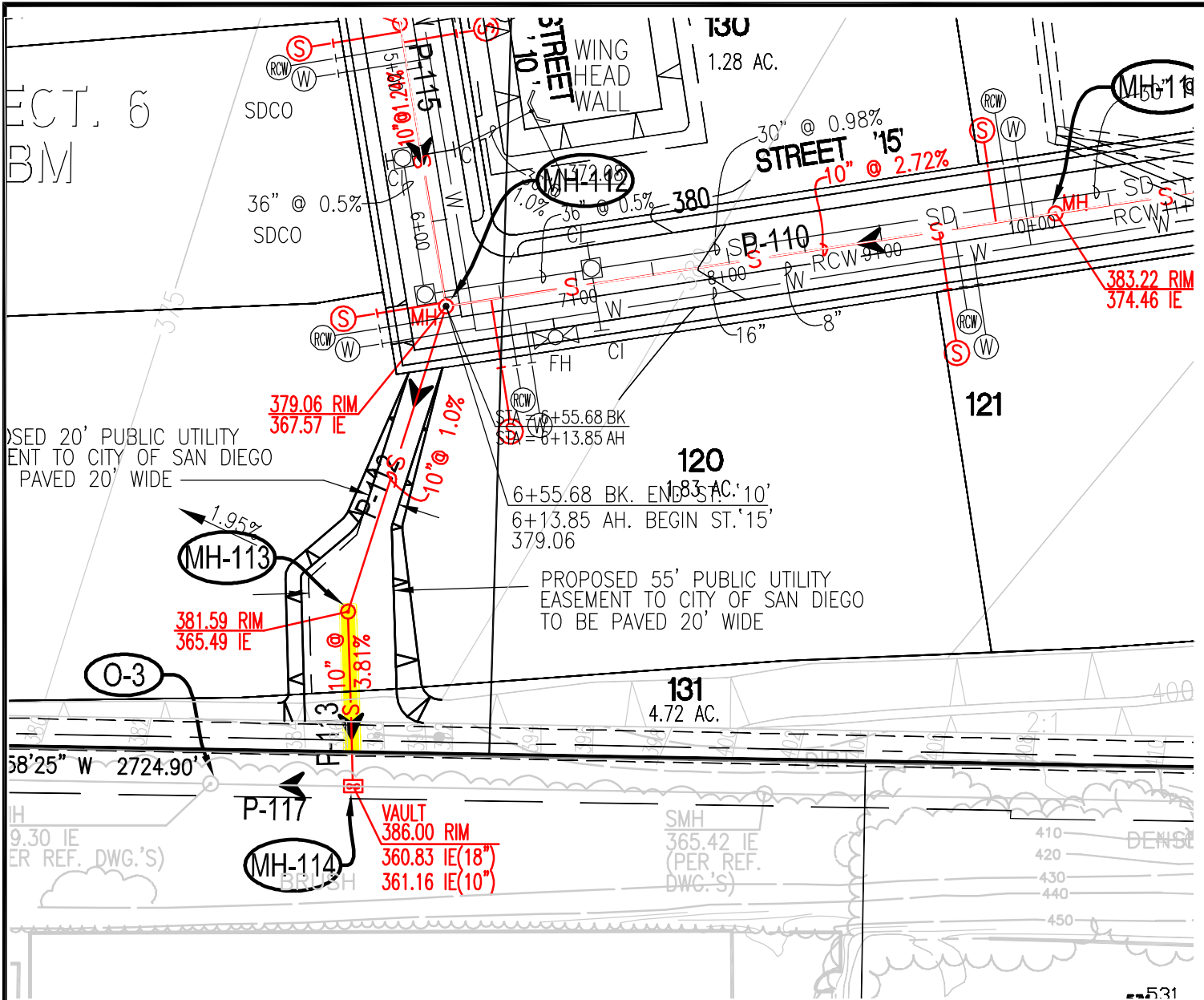
CHECKED TJ

SHEET NO. 2

EX-A

AMEND. #1
JAN. 21, 2016
OF 2 SHEETS

PLOT DATE: Mar 14, 2016-2:03pm



LEGEND:

SEWER MAIN > 15' DEPTH



REFERENCE: TM SHEET 9

SCALE:

0 50' 100'

SCALE: 1" = 100'

PROJECT TITLE:
SEWER DEVIATION - EXHIBIT B
 DWG. FILE: L:\PROJECTS\0423\Engr\Sewer Exhibit\SEWER DEVIATION B.dwg

STONE CREEK
VESTING TENTATIVE MAP NO. 208328
 SAN DIEGO, CA

PROJECT NO.
 04-23

DATE
 8/18/14

DRAWN TM
CHECKED TJ

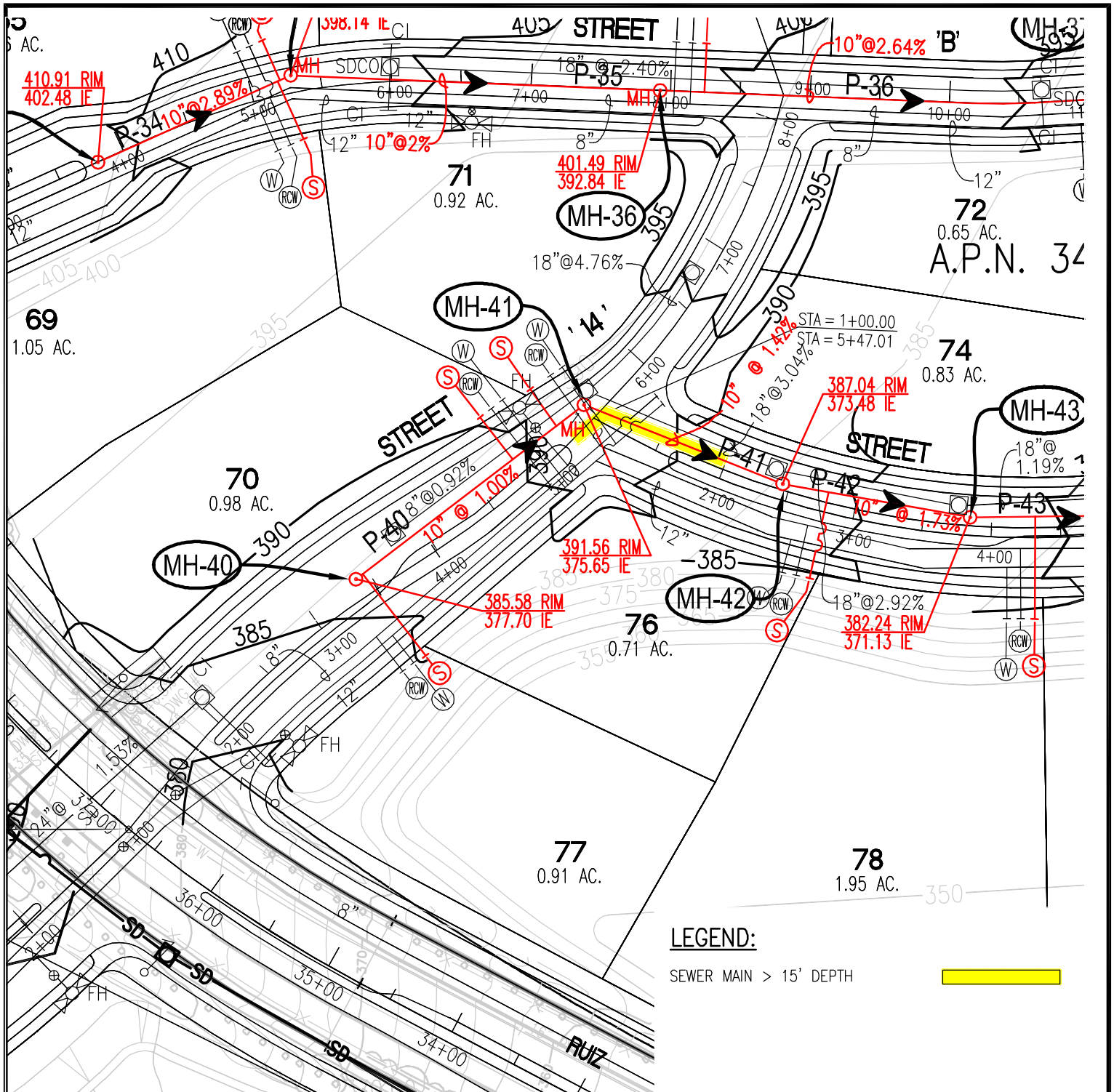


PREPARED FOR:
 CALMAT CO., dba VULCAN MATERIALS CO.
 7220 TRADE ST, SUITE 205
 SAN DIEGO, CA 92121

ENGINEER OF WORK: **BDS** Engineering, Inc.
 Civil Engineering
 Land Surveying
 6859 Federal Boulevard
 Lemon Grove, California 91945
 (619) 582-4992 FAX (619) 582-7428

EX-B
 AMEND. #1
 JAN. 21, 2016

PLOT DATE: Mar 14, 2016-2:05pm



LEGEND:

SEWER MAIN > 15' DEPTH



REFERENCE: TM SHEET 8

SCALE:



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



PROJECT TITLE:

SEWER DEVIATION - EXHIBIT C

DWG. FILE: L:\PROJECTS\0423\Engr\Sewer Exhibit\SEWER DEVIATION C.dwg

STONE CREEK
VESTING TENTATIVE MAP NO. 208328
SAN DIEGO, CA

PREPARED FOR:

CALMAT CO., dba VULCAN MATERIALS CO.
7220 TRADE ST, SUITE 205
SAN DIEGO, CA 92121

ENGINEER OF WORK:

BDS Engineering, Inc.
Civil Engineering
Land Surveying
6859 Federal Boulevard
Lemon Grove, California 91945
(619) 582-4992 FAX (619) 582-7428

PROJECT NO.

04-23

DATE

8/18/14

DRAWN

TM

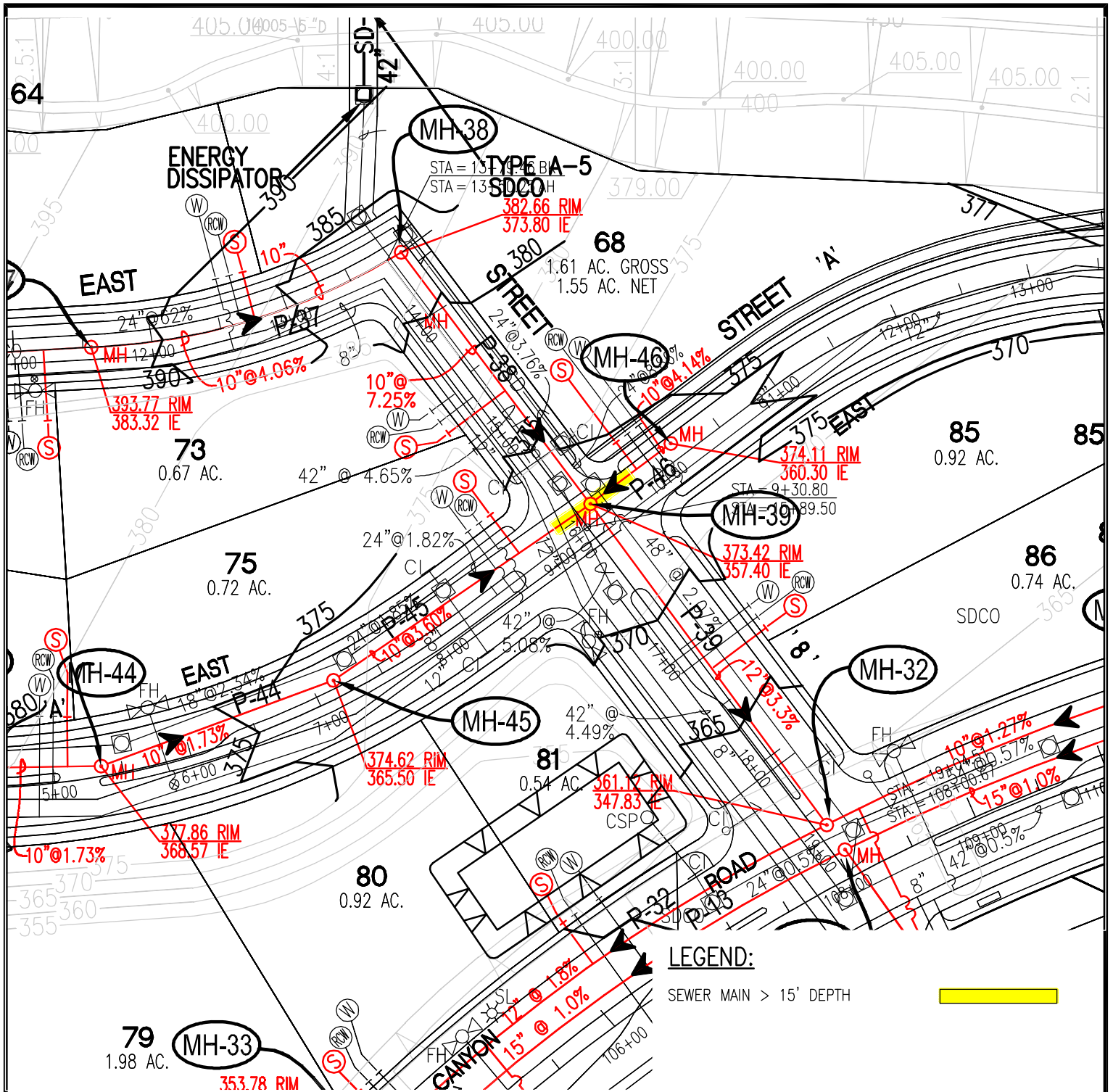
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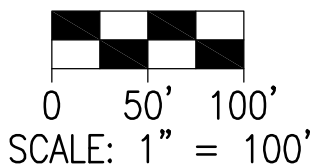
EX-C

AMEND. #1
JAN. 21, 2016



REFERENCE: TM SHEET 8

SCALE:



STONE CREEK

PROJECT TITLE:

SEWER DEVIATION - EXHIBIT D

DWG. FILE: L:\PROJECTS\0423\Engr\Sewer Exhibit\SEWER DEVIATION D.dwg

STONE CREEK
VESTING TENTATIVE MAP NO. 208328
SAN DIEGO, CA

PREPARED FOR:

CALMAT CO., dba VULCAN MATERIALS CO.
7220 TRADE ST, SUITE 205
SAN DIEGO, CA 92121

ENGINEER OF WORK:

BDS Engineering, Inc.
Civil Engineering
Land Surveying
6859 Federal Boulevard
Lemon Grove, California 91945
(619) 582-4992 FAX (619) 582-7428

PROJECT NO.

04-23

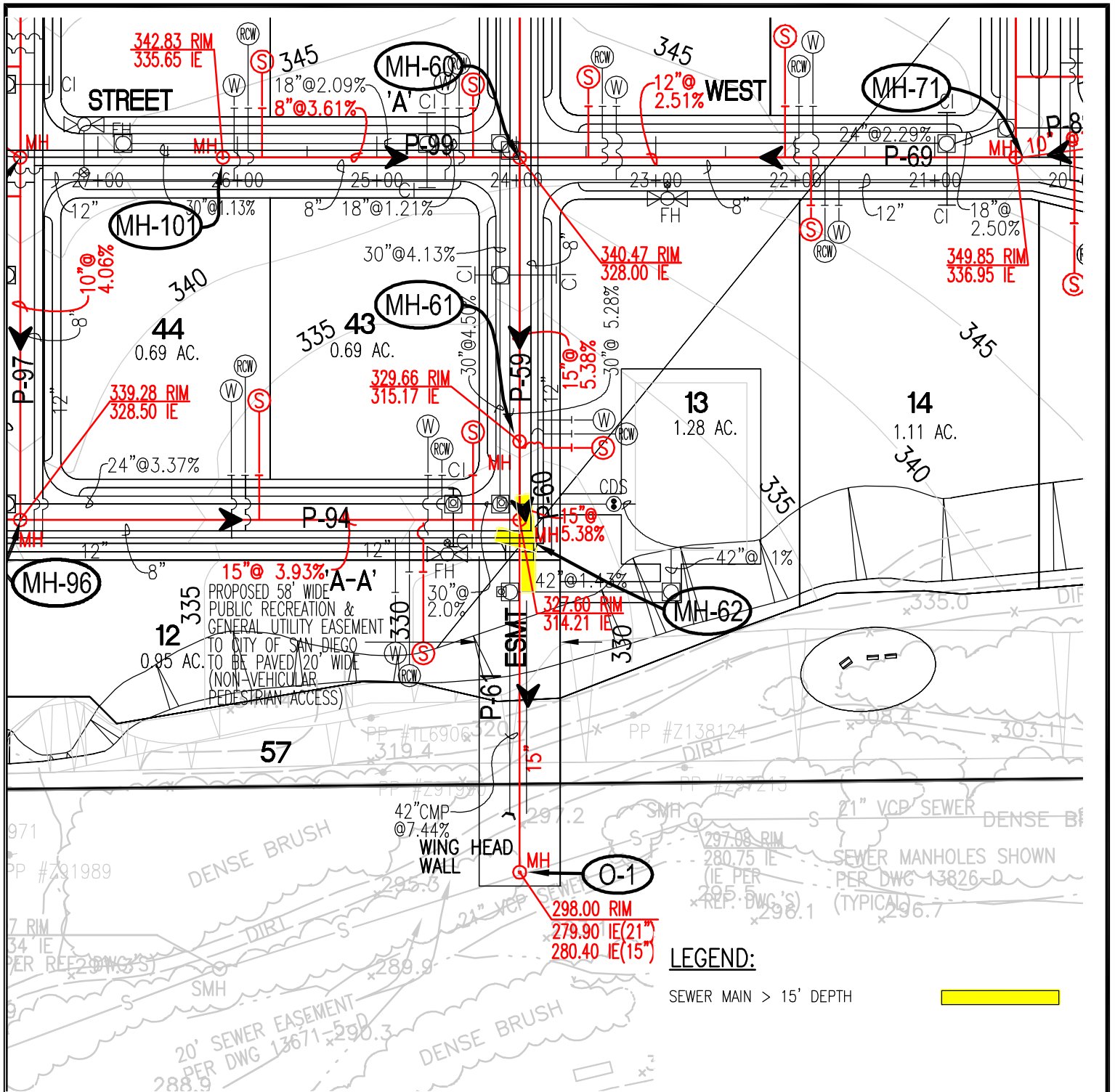
DATE

8/18/14

DRAWN TM
CHECKED TJ

EX-D
AMEND. #1
JAN. 21, 2016

PLOT DATE: Mar 14, 2016-2:06pm



SCALE:



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



STONE CREEK

PROJECT TITLE:

SEWER DEVIATION - EXHIBIT E

DWG. FILE: L:\PROJECTS\0423\Engr\Sewer Exhibit\SEWER DEVIATION E.dwg

STONE CREEK
VESTING TENTATIVE MAP NO. 208328
SAN DIEGO, CA

PREPARED FOR:

CALMAT CO., dba VULCAN MATERIALS CO.
7220 TRADE ST, SUITE 205
SAN DIEGO, CA 92121

ENGINEER OF WORK:

BDS Engineering, Inc.
Civil Engineering
Land Surveying
6859 Federal Boulevard
Lemon Grove, California 91945
(619) 582-4992 FAX (619) 582-7428

PROJECT NO.

04-23

DATE

8/18/14

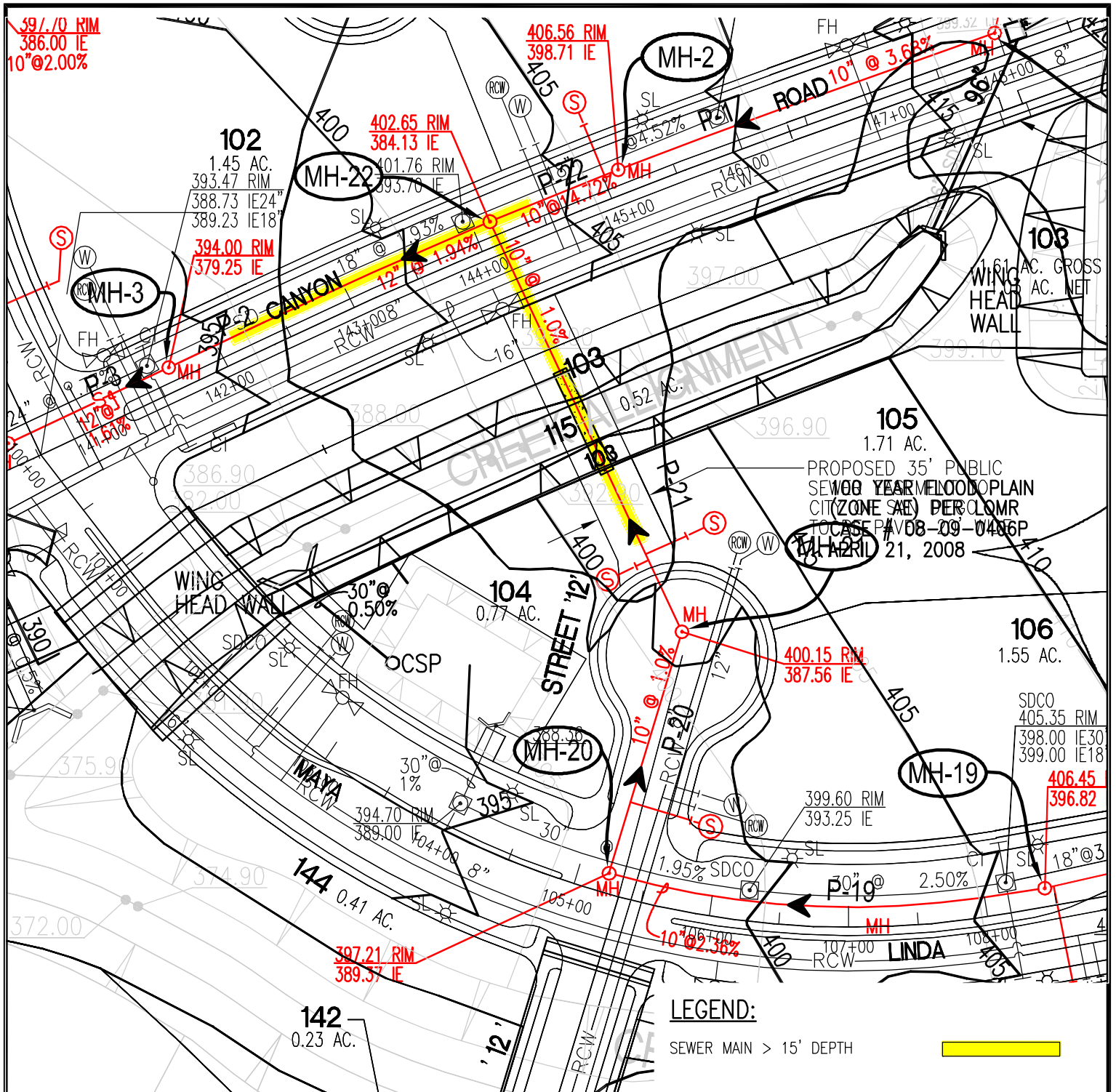
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EX-E

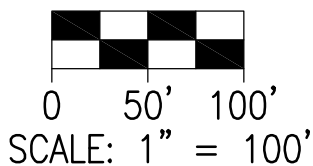
AMEND. #1
JAN. 21, 2016

PLOT DATE: Mar 14, 2016-2:08pm



REFERENCE: TM SHEET 8

SCALE:



STONE CREEK

PROJECT TITLE:

SEWER DEVIATION - EXHIBIT G

DWG. FILE: L:\PROJECTS\0423\Engr\Sewer Exhibit\SEWER DEVIATION G.dwg

STONE CREEK
VESTING TENTATIVE MAP NO. 208328
SAN DIEGO, CA

PREPARED FOR:

CALMAT CO., dba VULCAN MATERIALS CO.
7220 TRADE ST, SUITE 205
SAN DIEGO, CA 92121

ENGINEER OF WORK:

BDS Engineering, Inc.
Civil Engineering
Land Surveying
6859 Federal Boulevard
Lemon Grove, California 91945
(619) 582-4992 FAX (619) 582-7428

PROJECT NO.

04-23

DATE

8/18/14

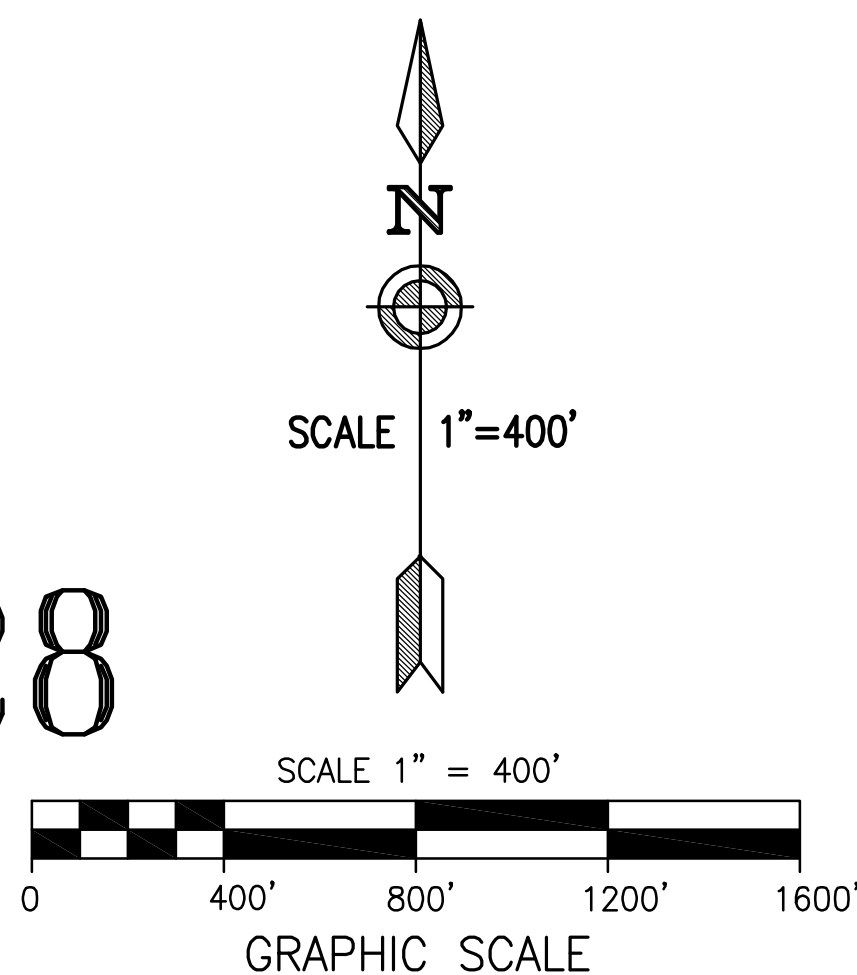
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CHECKED TJ

EX-G
AMEND. #1
JAN. 21, 2016

APPENDIX D

SEWER EXHIBITS AMENDMENT #1

SHEET 16



ST STREET
 TS TRUNK, SENIOR
 TW TOP OF WALL
 W WATER
 WM WATER METER
 W WITH
 YR YEAR
 Δ DELTA

LOT NO.	PROPOSED USE	LOT NO.	PROPOSED USE	LOT NO.	PROPOSED USE
1	RESIDENTIAL	57	OPEN SPACE (SLOPE)	113	PARK (CREEK)
2	RESIDENTIAL	58	PARK	114	PARK (CREEK)
3	RESIDENTIAL	59	MIXED-USE	115	PARK (CREEK)
4	RESIDENTIAL	60	MIXED-USE	116	PARK (CREEK)
5	RESIDENTIAL	61	MIXED-USE	117	PARK (CREEK)
6	RESIDENTIAL	62	MIXED-USE	118	RESIDENTIAL
7	RESIDENTIAL	63	LIGHT INDUSTRIAL	119	RESIDENTIAL
8	RESIDENTIAL	64	OPEN SPACE (SLOPE)	120	HIGH TECH
9	RESIDENTIAL	65	RESIDENTIAL	121	HIGH TECH
10	RESIDENTIAL	66	RESIDENTIAL	122	HIGH TECH
11	RESIDENTIAL	67	RESIDENTIAL	123	HIGH TECH
12	RESIDENTIAL	68	RESIDENTIAL	124	HIGH TECH
13	RESIDENTIAL	69	MIXED-USE	125	HIGH TECH
14	RESIDENTIAL	70	MIXED-USE	126	HIGH TECH
15	RESIDENTIAL	71	MIXED-USE	127	RESIDENTIAL
16	RESIDENTIAL	72	RESIDENTIAL	128	RESIDENTIAL
17	RESIDENTIAL	73	RESIDENTIAL	129	RESIDENTIAL
18	RESIDENTIAL	74	MIXED-USE	130	RESIDENTIAL
19	RESIDENTIAL	75	MIXED-USE	131	OPEN SPACE (SLOPE)
20	RESIDENTIAL	76	MIXED-USE	132	CONSERVATION
21	RESIDENTIAL	77	MIXED-USE	133	PARK
22	RESIDENTIAL	78	MIXED-USE	134	PARK
23	RESIDENTIAL	79	MIXED-USE	135	PARK
24	RESIDENTIAL	80	MIXED-USE	136	PARK
25	RESIDENTIAL	81	MIXED-USE	137	PARK
26	RESIDENTIAL	82	MIXED-USE	138	PARK
27	RESIDENTIAL	83	MIXED-USE	139	PARK
28	RESIDENTIAL	84	MIXED-USE	140	PARK
29	RESIDENTIAL	85	RESIDENTIAL	141	PARK
30	RESIDENTIAL	86	RESIDENTIAL	142	PARK
31	RESIDENTIAL	87	RESIDENTIAL	143	PARK
32	RESIDENTIAL	88	RESIDENTIAL	144	PARK
33	RESIDENTIAL	89	RESIDENTIAL	145	PARK
34	RESIDENTIAL	90	RESIDENTIAL	146	PARK
35	MIXED-USE	91	PARK	147	PARK
36	MIXED-USE	92	BUSINESS PARK	148	CONSERVATION
37	MIXED-USE	93	BUSINESS PARK	149	CONSERVATION
38	MIXED-USE	94	BUSINESS PARK	150	PARK
39	RESIDENTIAL	95	BUSINESS PARK	151	PARK
40	RESIDENTIAL	96	LIGHT INDUSTRIAL		
41	RESIDENTIAL	97	LIGHT INDUSTRIAL		
42	RESIDENTIAL	98	LIGHT INDUSTRIAL		
43	RESIDENTIAL	99	LIGHT INDUSTRIAL		
44	RESIDENTIAL	100	LIGHT INDUSTRIAL		
45	RESIDENTIAL	101	LIGHT INDUSTRIAL		
46	RESIDENTIAL	102	LIGHT INDUSTRIAL		
47	RESIDENTIAL	103	PARK		
48	RESIDENTIAL	104	PARK		
49	RESIDENTIAL	105	LIGHT INDUSTRIAL		
50	RESIDENTIAL	106	LIGHT INDUSTRIAL		
51	PARK	107	LIGHT INDUSTRIAL		
52	PARK	108	LIGHT INDUSTRIAL		
53	PARK	109	LIGHT INDUSTRIAL		
54	PARK	110	LIGHT INDUSTRIAL		
55	PARK	111	PARK (CREEK)		
56	PARK	112	PARK (CREEK)		

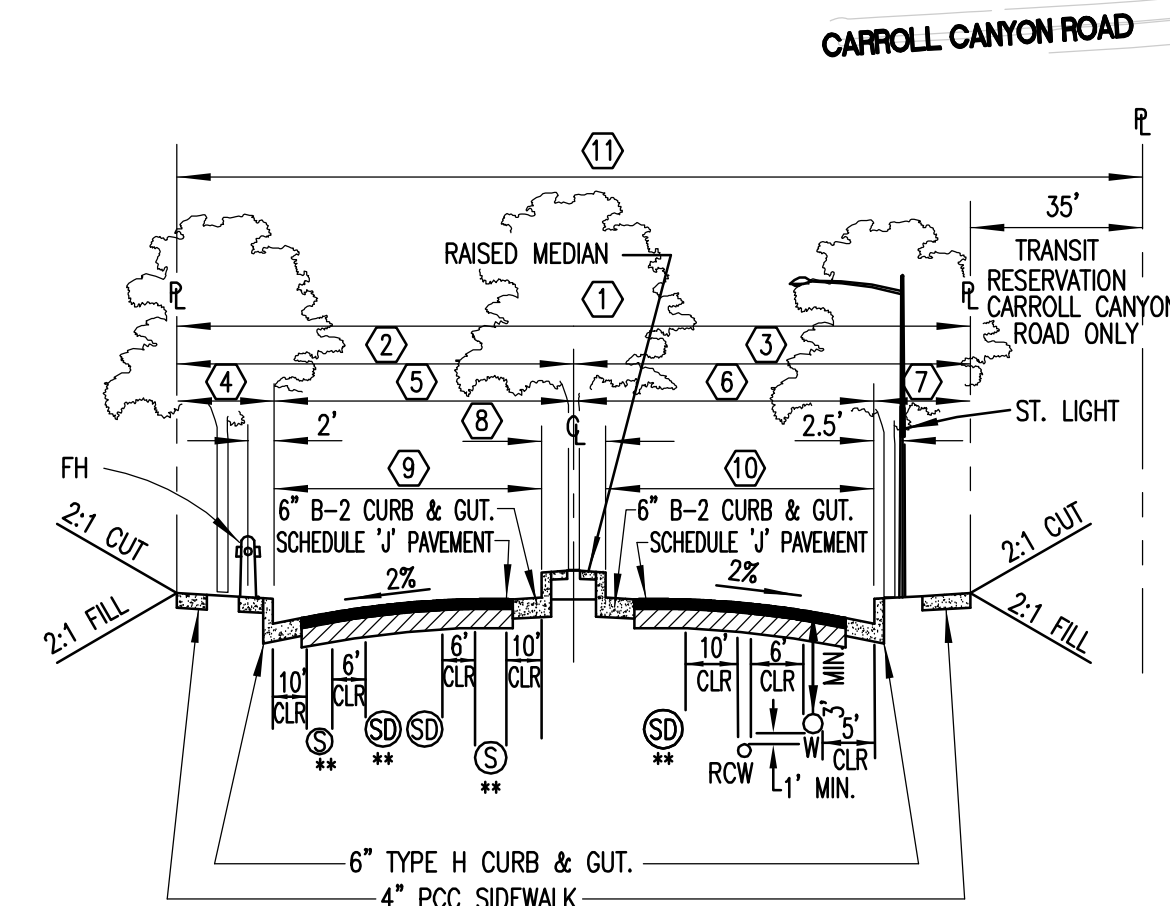
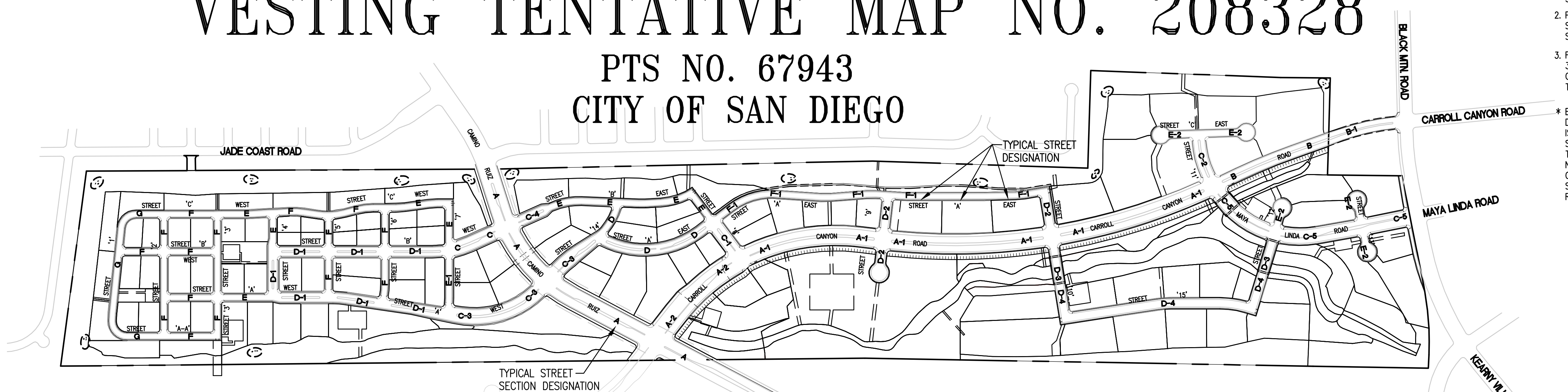
GAS - SAN DIEGO GAS AND ELECTRIC
ELECTRIC - SAN DIEGO GAS AND ELECTRIC
TELEPHONE - AT&T (FORMERLY SBC & PACIFIC BELL)
CABLE TELEVISION - TIME WARNER
SEWER - CITY OF SAN DIEGO
WATER - CITY OF SAN DIEGO
FIRE PROTECTION - CITY OF SAN DIEGO

Lemon Grove, California 91945
(619) 582-4992
DWG. FILE: L:\PROJECTS\0423\Engr\Sewer Exhibit\SEWER STUDY-1.dwg
PLOT DATE: Mar 14, 2016-2:10pm

EASEMENT NOTES PER COMMITMENT FOR TITLE INSURANCE
BY CHICAGO TITLE COMPANY, ORDER NO. 930014063-U50,
DATED JANUARY 29, 2009.

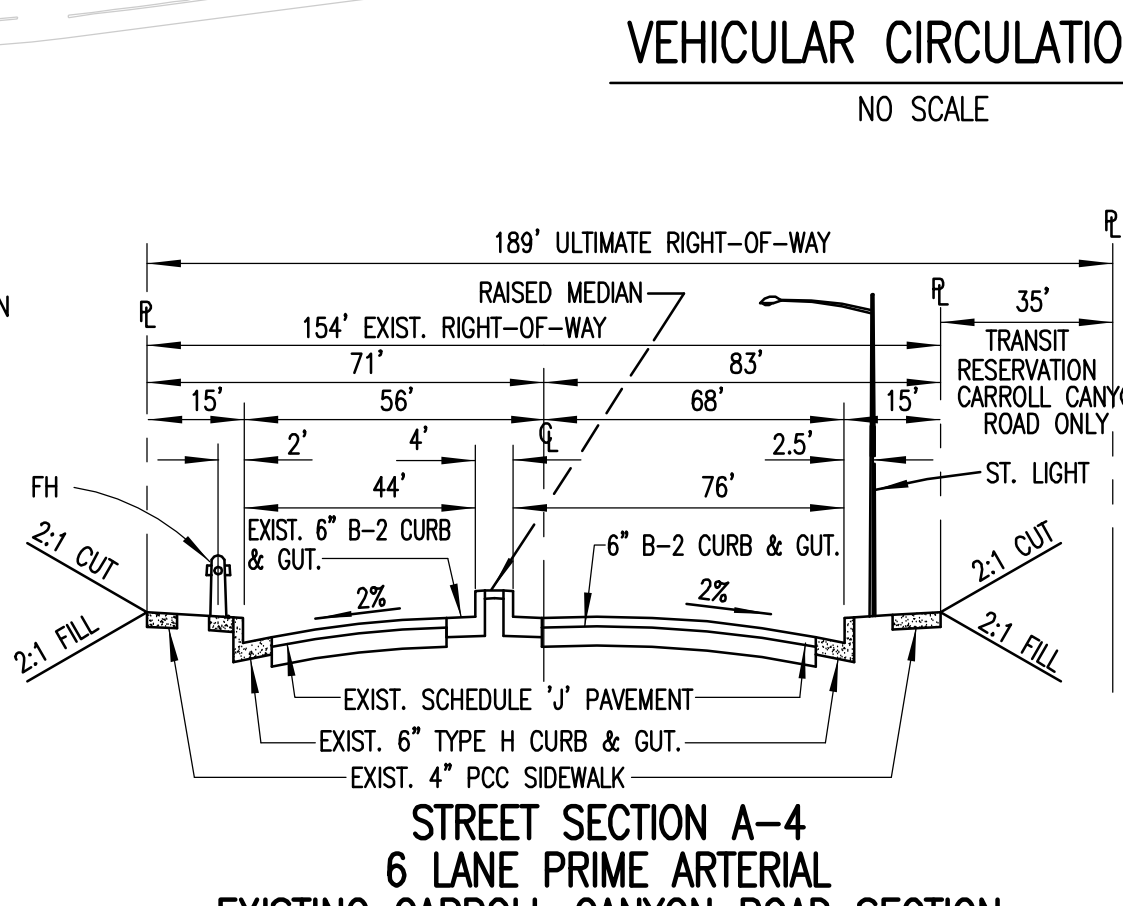
1. THE RIGHT TO CONSTRUCT, USE, MAINTAIN, ERECT, REPAIR AND REPLACE UPON SAID REAL PROPERTY AND REMOVE THEREFROM PIPE LINES, TELEPHONE LINES, TANKS, MACHINERY, BUILDING AND OTHER STRUCTURES, WHICH MAY BE NECESSARY OR DESIRABLE IN THE EXERCISE OF THE MINERAL RIGHTS RESERVED HEREBY, WITH RIGHTS OF WAY FOR PASSAGE OVER, UPON AND ACROSS AND INGRESS TO AND EGRESS FROM SAID REAL PROPERTY FOR ANY OR ALL PIPES, AS RESERVED IN THE DEED FROM THE SPIECKELS HOLDING COMPANY, RECORDED JULY 18, 1946 IN BOOK 2185, PAGE 346 OF OFFICIAL RECORDS.
2. AN AGREEMENT BETWEEN THE CITY OF SAN DIEGO AND CONROCK CO., A DELAWARE CORPORATION, OWNER, RECORDED MARCH 23, 1976 AS FILE NO. 76-084812, OF OFFICIAL RECORDS, RELATING TO THE INSTALLATION, MAINTENANCE AND POSSIBLE REMOVAL OF APPROXIMATELY 4,000 LINEAR FEET OF 6" CHAIN-LINK FENCE (2,000' ON EACH SIDE) EASTERLY AND WESTERLY 9' OF R/W OF CAMINO RUIZ.
3. AN EASEMENT FOR PUBLIC UTILITIES, INGRESS AND EGRESS TO SAN DIEGO GAS AND ELECTRIC COMPANY RECORDED APRIL 12, 1956 IN BOOK 6057, PAGE 208 AS FILE NO. 50442 OF OFFICIAL RECORDS. TO BE QUITCLAIMED.
4. AN EASEMENT FOR PUBLIC UTILITIES TO SAN DIEGO GAS AND ELECTRIC COMPANY RECORDED JANUARY 5, 1957 IN BOOK 6408, PAGE 162 OF OFFICIAL RECORDS. TO BE QUITCLAIMED.
5. AN EASEMENT FOR PUBLIC UTILITIES, INGRESS AND EGRESS TO SAN DIEGO GAS AND ELECTRIC COMPANY RECORDED JANUARY 31, 1957 IN BOOK 6438, PAGE 564 OF OFFICIAL RECORDS. TO BE QUITCLAIMED.
6. AN EASEMENT FOR PUBLIC UTILITIES, INGRESS AND EGRESS TO SAN DIEGO GAS AND ELECTRIC COMPANY RECORDED AUGUST 30, 1957 IN BOOK 6730, PAGE 517 OF OFFICIAL RECORDS. TO BE QUITCLAIMED.
7. AN EASEMENT FOR PUBLIC UTILITIES, INGRESS AND EGRESS TO SAN DIEGO GAS AND ELECTRIC COMPANY RECORDED MAY 8, 1961 AS FILE NO. 78977, OF OFFICIAL RECORDS. TO BE QUITCLAIMED.
8. AN EASEMENT FOR PUBLIC UTILITIES, INGRESS AND EGRESS TO SAN DIEGO GAS AND ELECTRIC COMPANY RECORDED JUNE 5, 1961 AS FILE NO. 95658, OF OFFICIAL RECORDS. TO BE QUITCLAIMED.
9. AN EASEMENT FOR ROAD PURPOSES AND UTILITY LINES INCLUDING BUT NOT LIMITED TO SEWER, WATER, GAS AND ELECTRIC POWER LINES AND APPURTENANCES THERETO GRANTED TO R. M. MORRIS PER DEED RECORDED AUGUST 3, 1961 AS FILE NO. 132850 OF OFFICIAL RECORDS. RESTRICTIONS ON THE USE, BY THE OWNERS OF SAID LAND, OF THE EASEMENT AREA AS PROVIDED IN THE DOCUMENT REFERRED TO ABOVE. TO BE QUITCLAIMED.
10. AN EASEMENT FOR PUBLIC UTILITIES, INGRESS AND EGRESS TO SAN DIEGO GAS AND ELECTRIC COMPANY RECORDED APRIL 6, 1964 AS FILE NO. 62009, OF OFFICIAL RECORDS. TO BE QUITCLAIMED.
11. AN EASEMENT FOR PUBLIC UTILITIES, INGRESS AND EGRESS TO SAN DIEGO GAS AND ELECTRIC COMPANY RECORDED MARCH 18, 1969 AS FILE NO. 46860, OF OFFICIAL RECORDS. RESTRICTIONS ON THE USE, BY THE OWNERS OF SAID LAND, OF THE EASEMENT AREA AS PROVIDED IN THE DOCUMENT REFERRED TO ABOVE. TO BE QUITCLAIMED.
12. AN EASEMENT FOR A STORM DRAIN OR DRAINS INCLUDING ANY OR ALL APPURTENANCES THEREIN, TOGETHER WITH THE RIGHT OF INGRESS AND EGRESS TO CITY OF SAN DIEGO RECORDED AUGUST 15, 1972 AS FILE NO. 215379, OF OFFICIAL RECORDS. PORTION TO BE VACATED.
13. AN EASEMENT FOR PUBLIC STREET, EARTH EXCAVATION OR EMBANKMENT SLOPE OR SLOPES, TOGETHER WITH THE RIGHT OF WAY TO CONSTRUCT, RECONSTRUCT, OPERATE AND REPAIR A STORM DRAIN OR DRAINS, INCLUDING ANY OR ALL APPURTENANCES THERETO, TOGETHER WITH THE RIGHT OF INGRESS AND EGRESS GRANTED TO THE CITY OF SAN DIEGO, A MUNICIPAL CORPORATION PER DEED RECORDED JUNE 25, 1973 AS FILE NO. 73-173448 OF OFFICIAL RECORDS. SAID INSTRUMENT ADDITIONALLY CONTAINS THE PRIVILEGE AND RIGHT TO EXTEND DRAINAGE STRUCTURES AND EXCAVATION AND EMBANKMENT SLOPES BEYOND THE LIMITS OF THE ABOVE DESCRIBED RIGHT OF WAY WHERE REQUIRED FOR THE CONSTRUCTION AND MAINTENANCE THEREOF. PORTION TO BE VACATED.
14. AN EASEMENT FOR PUBLIC UTILITIES, INGRESS AND EGRESS TO SAN DIEGO GAS AND ELECTRIC COMPANY RECORDED MAY 20, 1974 AS FILE NO. 74-132921, OF OFFICIAL RECORDS. RESTRICTIONS ON THE USE, BY THE OWNERS OF SAID LAND, OF THE EASEMENT AREA AS PROVIDED IN THE DOCUMENT REFERRED TO ABOVE. TO BE QUITCLAIMED.
15. AN EASEMENT FOR PUBLIC UTILITIES, INGRESS AND EGRESS TO SAN DIEGO GAS AND ELECTRIC COMPANY RECORDED MARCH 25, 1975 AS FILE NO. 75-067190, OF OFFICIAL RECORDS. RESTRICTIONS ON THE USE, BY THE OWNERS OF SAID LAND, OF THE EASEMENT AREA AS PROVIDED IN THE DOCUMENT REFERRED TO ABOVE.
16. AN EASEMENT FOR RIGHT OF WAY FOR A PUBLIC STREET, EARTH EXCAVATION OR EMBANKMENT SLOPE OR SLOPES, TOGETHER WITH THE RIGHT OF WAY TO CONSTRUCT, RECONSTRUCT, OPERATE AND REPAIR A STORM DRAIN OR DRAINS, INCLUDING ANY OR ALL APPURTENANCES THERETO, TOGETHER WITH THE RIGHT OF INGRESS AND EGRESS GRANTED TO CITY OF SAN DIEGO RECORDED APRIL 2, 1975 AS FILE NO. 75-75123, OF OFFICIAL RECORDS. PORTION TO BE VACATED.
17. AN EASEMENT FOR A STORM DRAIN OR DRAINS INCLUDING ANY OR ALL APPURTENANCES THERETO, TOGETHER WITH THE RIGHT OF INGRESS AND EGRESS AND RIGHTS INCIDENTAL THERETO TO THE CITY OF SAN DIEGO PER DEED RECORDED APRIL 10, 1975 AS FILE NO. 75-083149 OF OFFICIAL RECORDS. TO BE VACATED.
18. AN EASEMENT FOR PUBLIC UTILITIES, INGRESS AND EGRESS TO SAN DIEGO GAS AND ELECTRIC COMPANY RECORDED APRIL 21, 1977 AS FILE NO. 77-146813, OF OFFICIAL RECORDS.
19. AN EASEMENT FOR PUBLIC UTILITIES INGRESS, EGRESS AND RIGHTS INCIDENTAL THERETO TO SAN DIEGO GAS AND ELECTRIC COMPANY PER DEED RECORDED OCTOBER 1, 1979 AS FILE NO. 79-409099 OF OFFICIAL RECORDS.
20. AN EASEMENT FOR DRAINAGE IMPROVEMENTS AND RIGHTS INCLUSIVE THERETO RECORDED SEPTEMBER 20, 2004 AS FILE NO. 2004-0891674 OF OFFICIAL RECORDS. THE EXACT LOCATION AND EXTENT OF SAID EASEMENT IS NOT DISCLOSED IN THE DOCUMENT. AFFECTS PARCELS 1 AND 2 OF PARCEL MAP NO. 15786.
21. AN EASEMENT FOR PUBLIC STREET AND INCIDENTS AND APPURTENANCES THERETO TO THE CITY OF SAN DIEGO RECORDED JULY 6, 2005 AS FILE NO. 2005-0568797 OF OFFICIAL RECORDS.
22. A "JOINT USE AGREEMENT", DATED JULY 7, 2005, EXECUTED BY SAN DIEGO GAS AND ELECTRIC COMPANY, A CALIFORNIA CORPORATION AND THE CITY OF SAN DIEGO, RECORDED AUGUST 4, 2005 AS INSTRUMENT NO. 2005-0665971 OF OFFICIAL RECORDS.

STONE CREEK VESTING TENTATIVE MAP NO. 208328 PTS NO. 67943 CITY OF SAN DIEGO



STREET SECTION A
6 LANE MAJOR

SECTION DESIGNATION	STREET SECTION TABLE									
	DIMENSION INDICATOR									
SECTION A	188'	78'	30'	22'	56'	68'	22'	24'	44'	56'
SECTION A-1	139'	73'	66'	22'	51'	51'	15'	14'	44'	174'
SECTION A-2	161'	78'	83'	22'	56'	68'	15'	24'	44'	196'
SECTION A-3	173'	90'	83'	22'	68'	68'	15'	24'	56'	208'



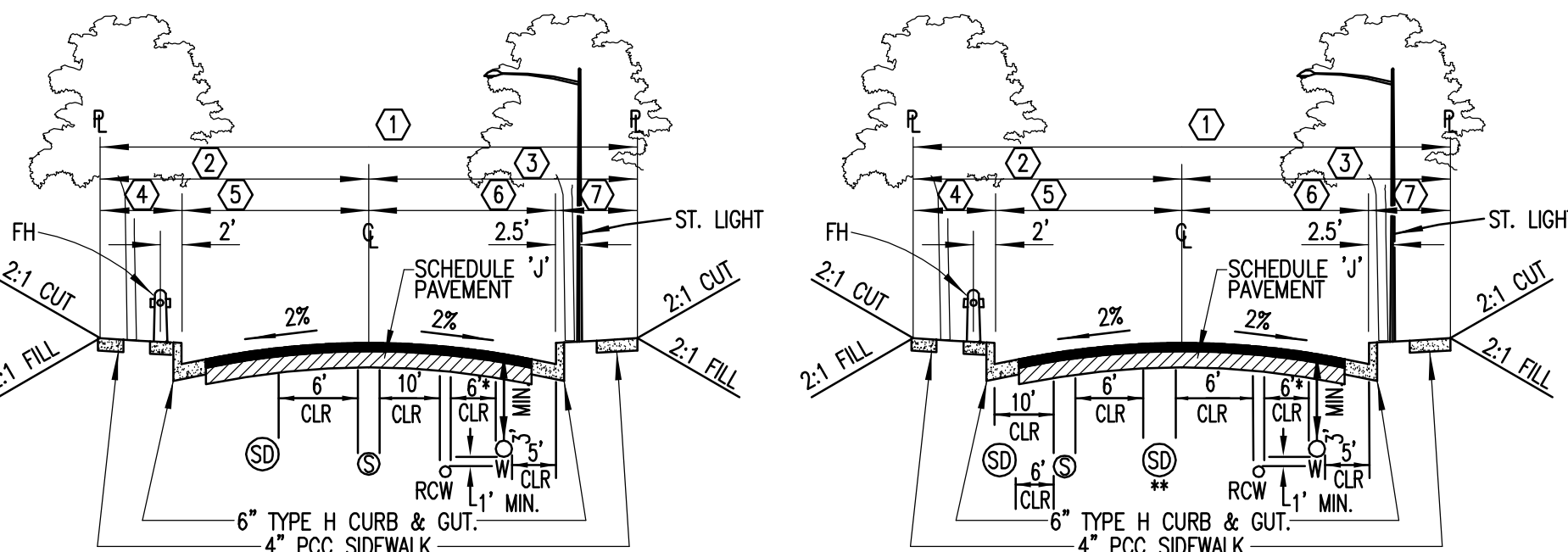
STREET SECTION B
4 LANE MAJOR

SECTION DESIGNATION	STREET SECTION TABLE									
	DIMENSION INDICATOR									
SECTION B	98'	49'	49'	12'	37'	37'	12'	14'	30'	133'
SECTION B-1	88'	44'	44'	7'	37'	37'	7'	10'	32'	132'

SECTION DESIGNATION	STREET SECTION TABLE									
	DIMENSION INDICATOR									
SECTION B	114'	57'	57'	15'	42'	42'	15'	24'	30'	30'
SECTION C-1	110'	55'	55'	14'	41'	41'	14'	14'	34'	34'
SECTION C-2	104'	52'	52'	14'	38'	38'	14'	14'	31'	31'
SECTION C-3	122'	65'	57'	15'	50'	42'	15'	24'	38'	30'
SECTION C-4	116'	59'	57'	15'	44'	42'	15'	6'	50'	30'
SECTION C-5	120'	60'	60'	15'	45'	45'	15'	4'	38'	48'
SECTION C-6	120'	60'	60'	15'	45'	45'	15'	10'	30'	50'

SECTION DESIGNATION	STREET SECTION TABLE									
	DIMENSION INDICATOR									
SECTION C	114'	57'	57'	15'	42'	42'	15'	24'	30'	30'
SECTION C-1	110'	55'	55'	14'	41'	41'	14'	14'	34'	34'
SECTION C-2	104'	52'	52'	14'	38'	38'	14'	14'	31'	31'
SECTION C-3	122'	65'	57'	15'	50'	42'	15'	24'	38'	30'
SECTION C-4	116'	59'	57'	15'	44'	42'	15'	6'	50'	30'
SECTION C-5	120'	60'	60'	15'	45'	45'	15'	4'	38'	48'
SECTION C-6	120'	60'	60'	15'	45'	45'	15'	10'	30'	50'

SECTION DESIGNATION	STREET SECTION TABLE									
	DIMENSION INDICATOR									
SECTION C	114'	57'	57'	15'	42'	42'	15'	24'	30'	30'
SECTION C-1	110'	55'	55'	14'	41'	41'	14'	14'	34'	34'
SECTION C-2	104'	52'	52'	14'	38'	38'	14'	14'	31'	31'
SECTION C-3	122'	65'	57'	15'	50'	42'	15'	24'	38'	30'
SECTION C-4	116'	59'	57'	15'	44'	42'	15'	6'	50'	30'
SECTION C-5	120'	60'	60'	15'	45'	45'	15'	4'	38'	48'
SECTION C-6	120'	60'	60'	15'	45'	45'	15'	10'	30'	50'



STREET SECTION E
2 LANE COLLECTOR

SECTION DESIGNATION	STREET SECTION TABLE									
	DIMENSION INDICATOR									
SECTION E	60'	30'	30'	12'	18'	18'	12'	-	-	-
SECTION E-1	62'	30'	32'	12'	18'	18'	14'	-	-	-
SECTION E-2	64'	32'	32'	12'	20'	20'	12'	-	-	-

STREET SECTION E
2 LANE COLLECTOR

STREET SECTION F
2 LANE SUB-COLLECTOR

SECTION DESIGNATION	STREET SECTION TABLE									
	DIMENSION INDICATOR									
SECTION F	58'	29'	29'	12'	17'	17'	12'	-	-	-
SECTION F	58'	29'	29'	12'	17'	17'	12'	-	-	-

STREET SECTION G
RESIDENTIAL LOCAL

SECTION DESIGNATION	STREET SECTION TABLE									
	DIMENSION INDICATOR									
SECTION G	58'	29'	29'	12'	17'	17'	12'	-	-	-
SECTION G	58'	29'	29'	12'	17'	17'	12'	-	-	-

CUL-DE-SAC SECTION

SECTION DESIGNATION	STREET SECTION TABLE									
	DIMENSION INDICATOR									
SECTION G	58'	29'	29'	12'	17'	17'	12'	-	-	-
SECTION G	58'	29'	29'	12'	17'	17'	12'	-	-	-

SHEET 2 OF 44 SHEETS

STREET SECTION NOTES

- FOR STREET SECTION LOCATION SEE VEHICULAR CIRCULATION MAP, THIS SHEET.
- FOR STREET DIMENSIONS SEE STREET SECTION TABLE BELOW EACH STREET SECTION.
- FOR STREET DESIGNATIONS, SEE SHEETS 3, 4, 5 & 6 AND VEHICULAR CIRCULATION MAP AND STREET SECTION TABLE.

* BASIC SEPARATIONS ARE SHOWN. IF DURING FINAL ENGINEERING DESIGN IT IS DETERMINED THAT BASIC SEPARATIONS CANNOT BE OBTAINED, THEN THE SPECIAL PROVISIONS OF THE NOVEMBER 2009 EDITION OF THE CITY OF SAN DIEGO RECYCLED WATER SYSTEM GUIDELINES, SECTION 4, DETAIL RW-107 SHALL APPLY.

LEGEND

CURB & GUTTER

PCC SIDEWALK

STORM DRAIN PIPE

CURB INLET

STORM DRAIN CLEANOUT

SEWER MANHOLE

SEWER MAIN (PUBLIC)

TRUNK SEWER

WATER MAIN (POTABLE)

RECYCLED WATER MAIN

GATE VALVE

FIRE HYDRANT (3 WAY)

STREET LIGHT

RETAINING WALL

CENTERLINE

PROPERTY LINE

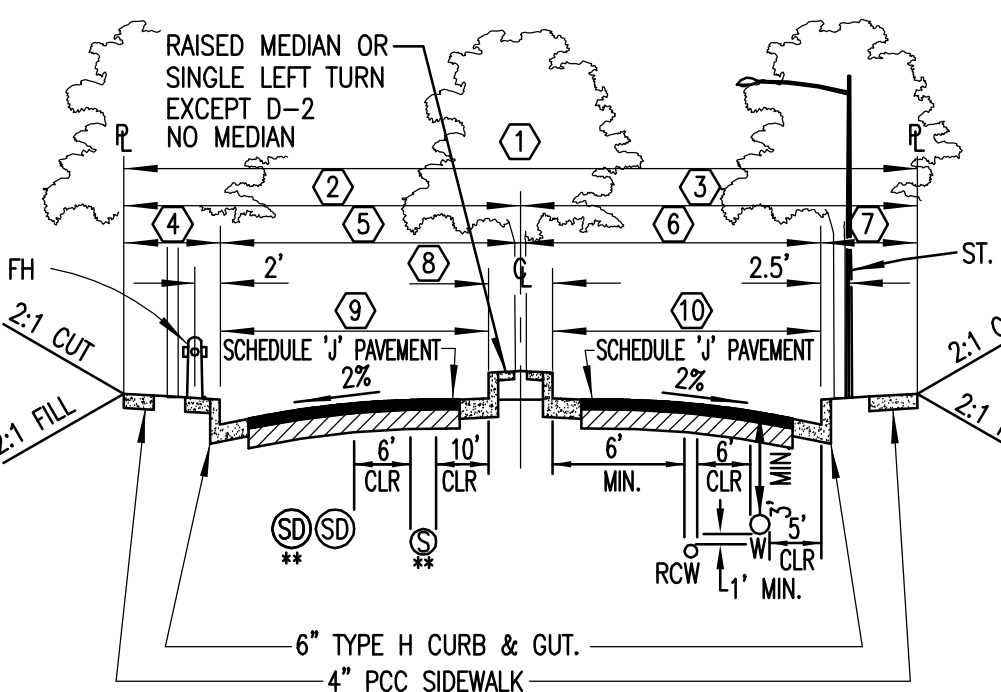
EASEMENT LINE

DAYLIGHT LINE

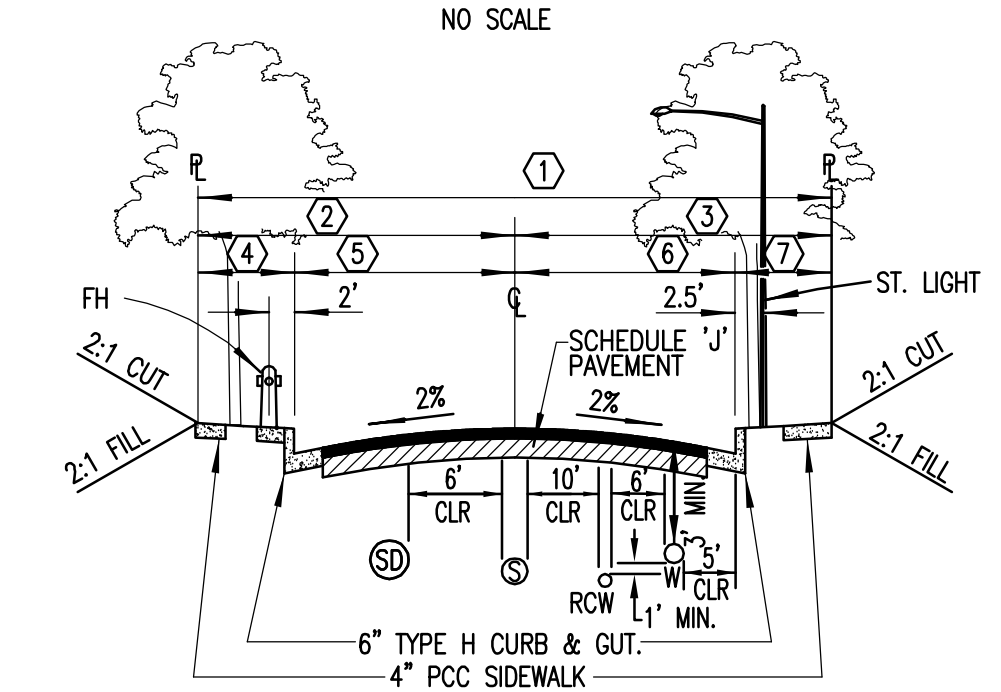
FLOOD PLAIN

FLOODWAY

STREET TREES



STREET SECTION D
2 LANE COLLECTOR



STREET SECTION D-4
2 LANE COLLECTOR

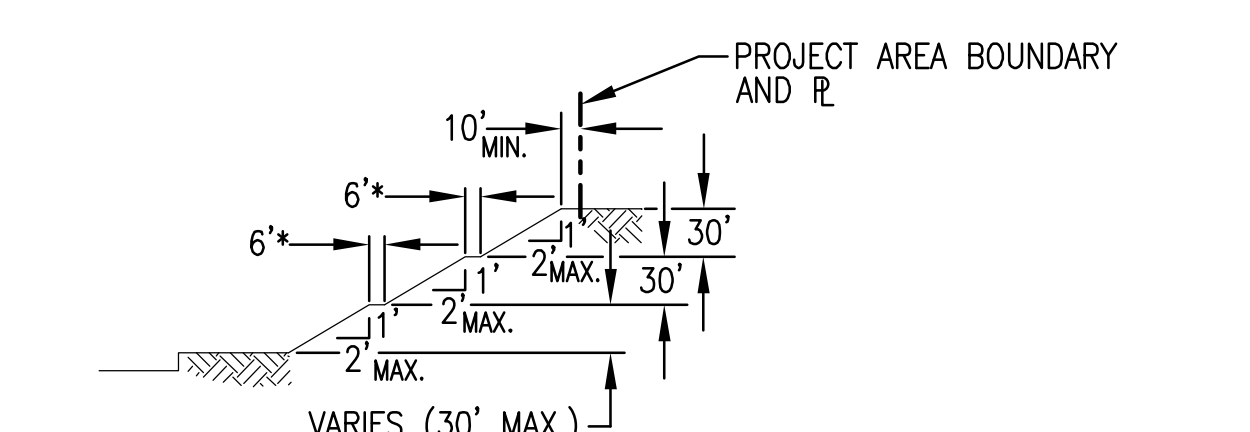
NOTE
PARKING PERMITTED ON ONE SIDE OF STREET. RED CURBS OR NO PARKING SIGNS REQUIRED ON ONE SIDE OF STREET.

STREET SECTION TABLE										
SECTION DESIGNATION	DIMENSION INDICATOR									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2 LANE COLLECTOR										
SECTION D	86'	43'	43'	14'	29'	29'	14'	14'	22'	22'
SECTION D-1	86'	43'	43'	14'	29'	29'	14'	12'	23'	23'
SECTION D-2	76'	38'	38'	14'	24'	24'	14'	NO MEDIAN	19'	19'
SECTION D-3	76'	38'	38'	14'	24'	24'	14'	NO MEDIAN	19'	19'
SECTION D-4	78'	39'	39'	14'	25'	25'	14'	NO MEDIAN	—	—
SECTION D-5	92'	49'	43'	15'	34'	28'	15'	8'	34'	20'
SECTION DESIGNATION	STREET DESIGNATION									
SECTION D	STREET 'A' EAST									
SECTION D-1	STREET 'A' WEST, STREET 'B' WEST & STREET '4'									
SECTION D-2	STREET '9', & '10'									
SECTION D-3	STREET '10', & '12'									
SECTION D-4	STREET '10', '12' & '15'									
SECTION D-5	STREET 'B' EAST									

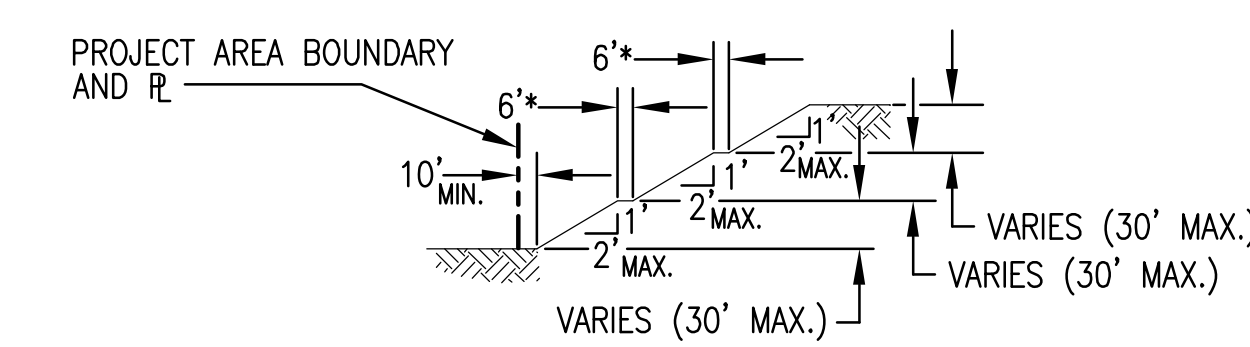
STONE CREEK
VESTING TENTATIVE MAP NO. 208328
PTS NO. 67943
CITY OF SAN DIEGO

- NOTES
1. AT TIME OF DEVELOPMENT, UNDERGROUND DETENTION SYSTEMS EAST AND WEST OF CAMINO RUIZ SHALL BE DESIGNED FOR WATER QUALITY AND PEAK FLOW RATE ALLEVIATION.
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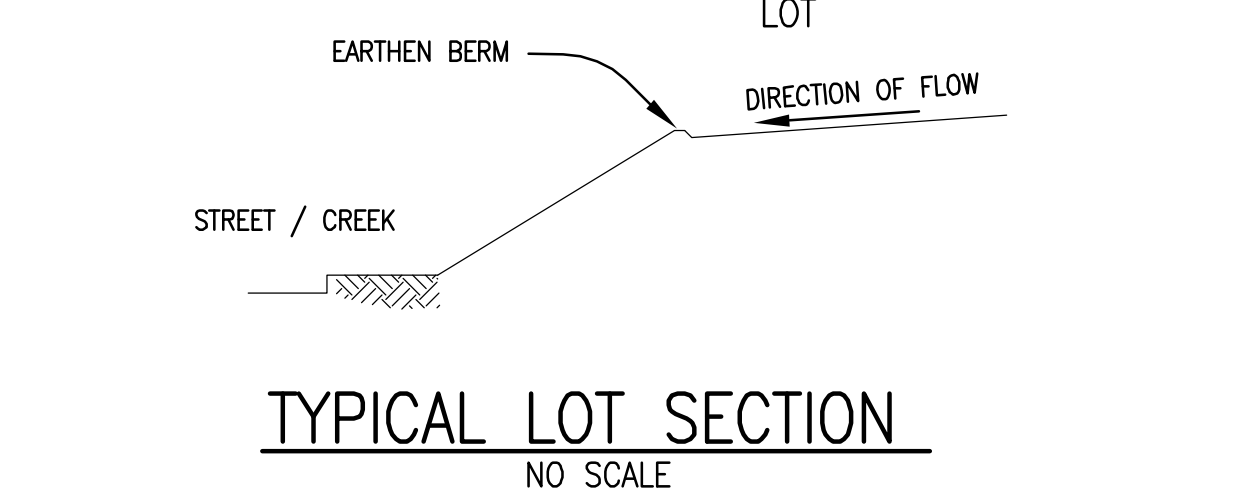
LEGEND	SYMBOL
ALL EXISTING ITEMS	(SCREENED)
NEW CONTOUR	360
SPOT ELEVATION	320.00
CURB & GUTTER	
LAND USE LABEL	RM-3-8
DIRECTION OF FLOW	
FIRE HYDRANT	
GATE VALVE	
RECLAIMED WATER	RCW
WATER	W
STORM DRAIN	SD
STORM DRAIN CLEANOUT	
SEWER	S
TRUNK SEWER	TS
SEWER MANHOLE	MH
SEWER LINE DESIGNATOR	P-79
SEWER MANHOLE DESIGNATOR	MH-88



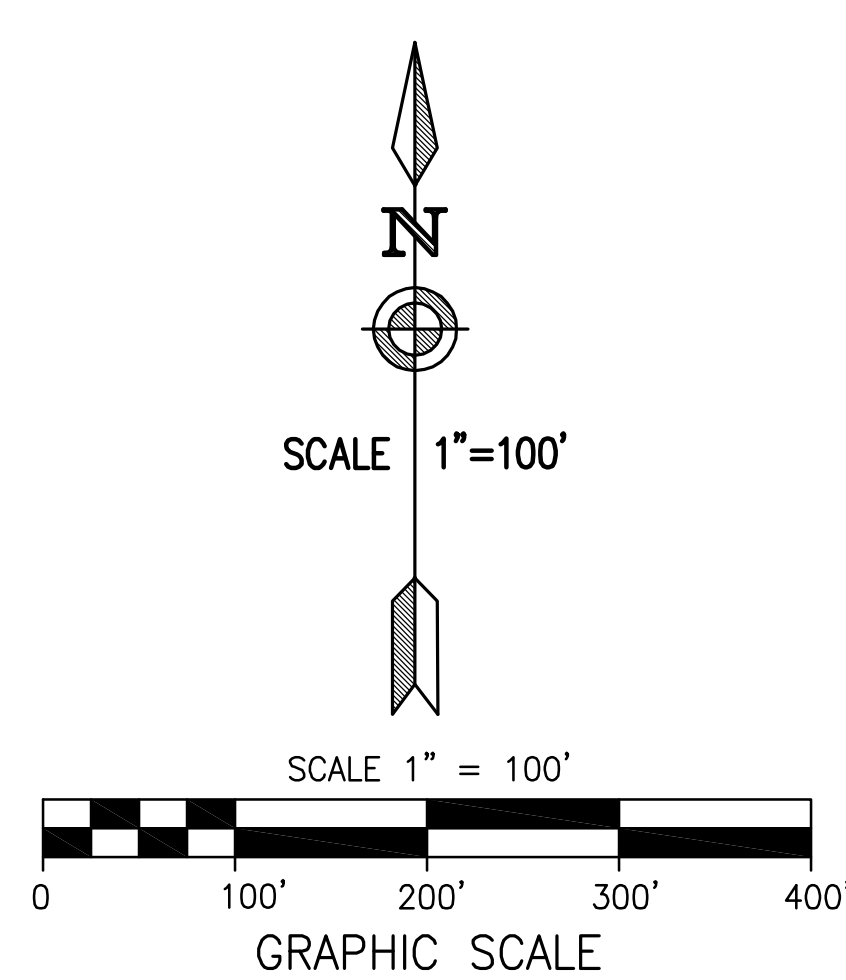
*BENCH WIDTH IS 6' MIN.
EXCEPT BENCH WIDTH IS 8' MIN. AT HIKING TRAIL LOCATIONS.
TYPICAL SLOPE SECTION A-A
SCALE 1"=100"



*BENCH WIDTH IS 6' MIN.
EXCEPT BENCH WIDTH IS 8' MIN. AT HIKING TRAIL LOCATIONS.
TYPICAL SLOPE SECTION B-B
SCALE 1"=100"



TYPICAL LOT SECTION
NO SCALE



STONE CREEK
SEWER STUDY EXHIBIT SHEET 3 OF 6
ENGINEER OF WORK:
BDS ENGINEERING, INC.
CIVIL ENGINEERING
LAND SURVEYING
6859 Federal Boulevard
Lemon Grove, California 91945
(619) 582-4992
FAX: (619) 582-4992
PLOT DATE: Mar 14, 2016-2:11pm
04-23
JOB NO.

W.O. # 42-2637



MIRA MESA WEST
UNIT NO. 3
MAP NO. 9110

MIRA MESA VERDE
UNIT NO. 14
MAP NO. 6912

MIRA MESA RIDGECREST
UNIT NO. 2
MAP NO. 7891

SEE SHEET NO. 4
MATCH LINE

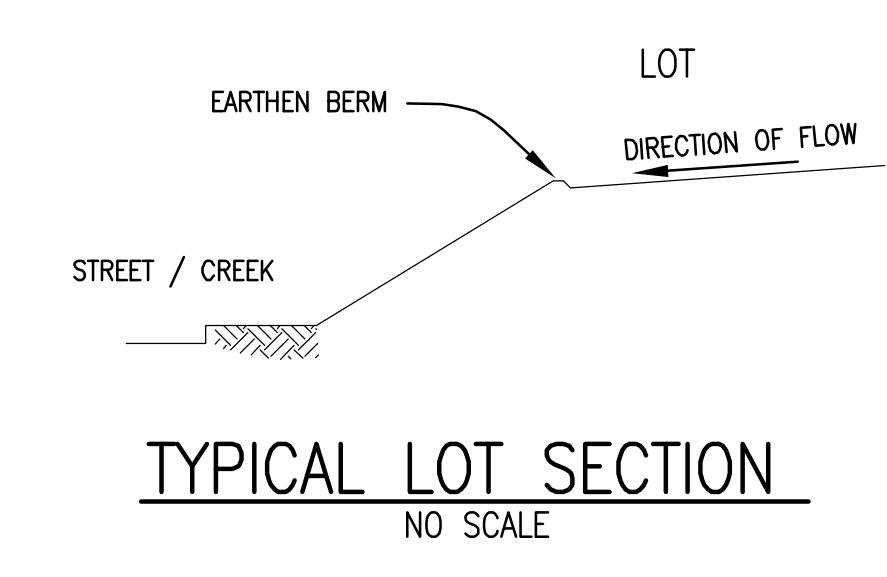
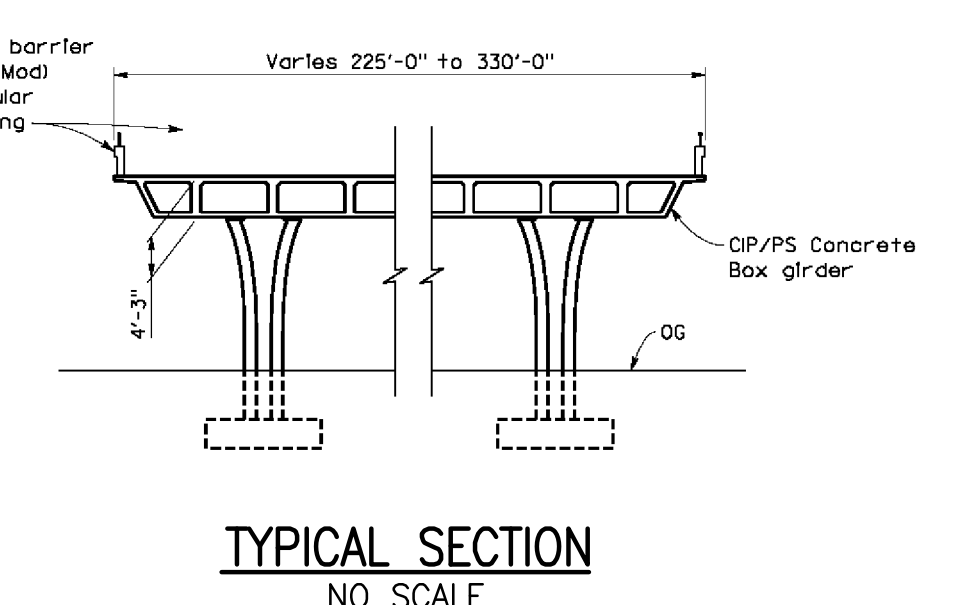
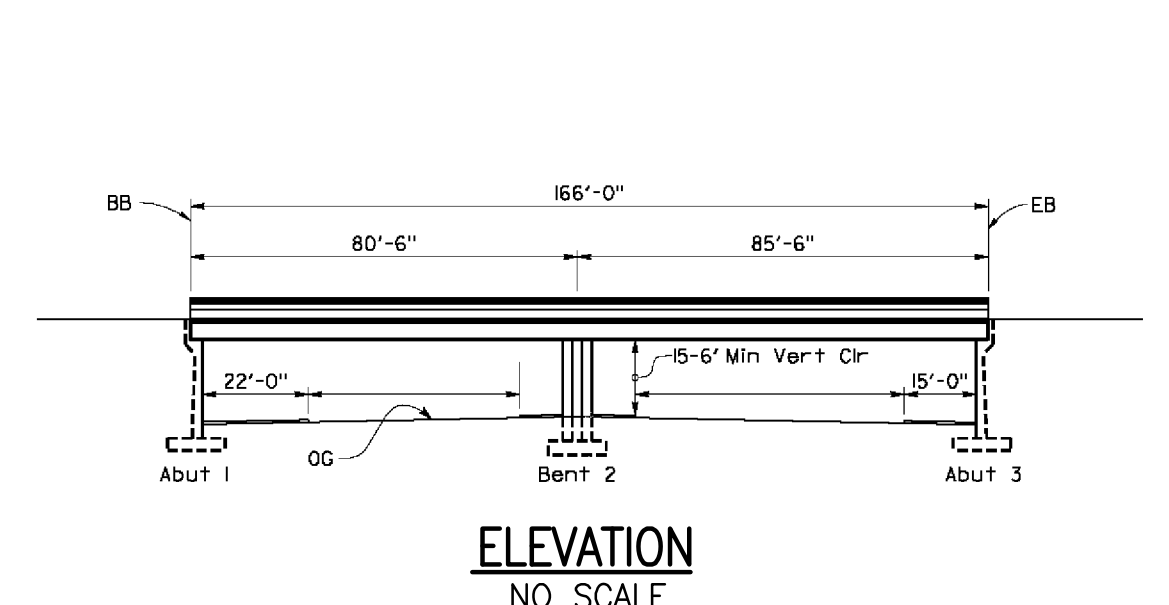
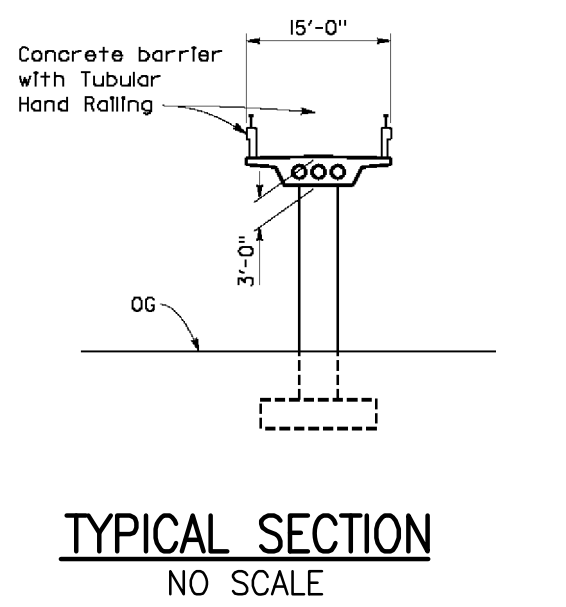
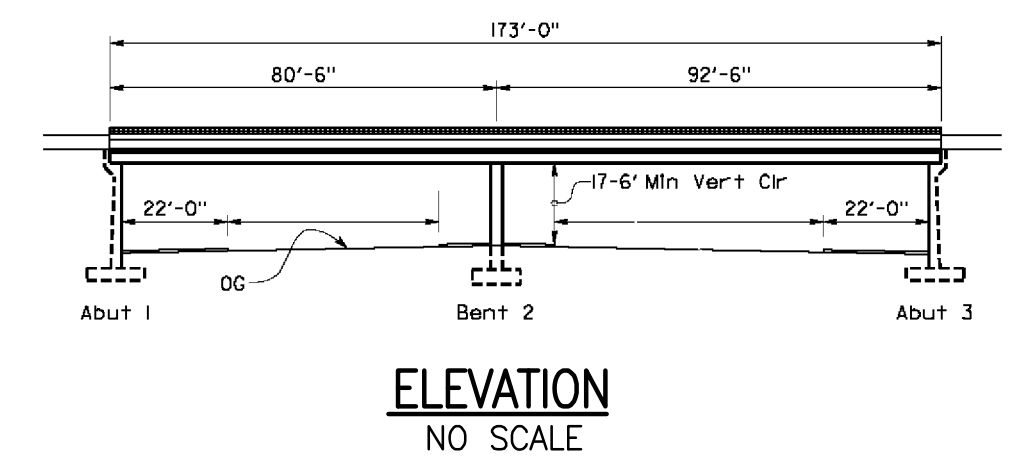
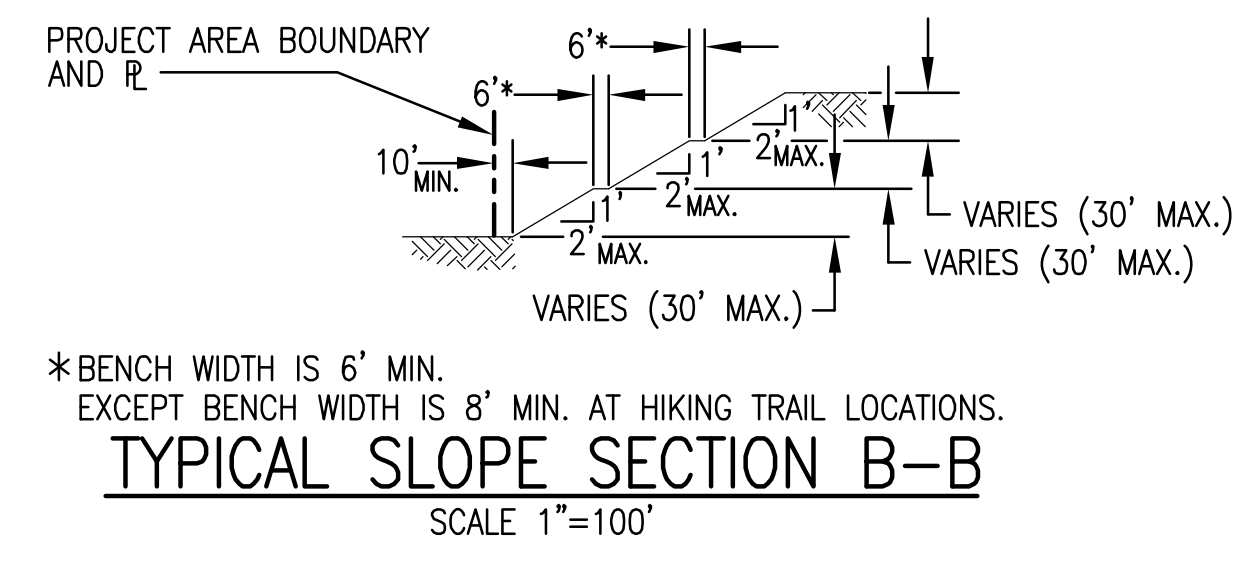
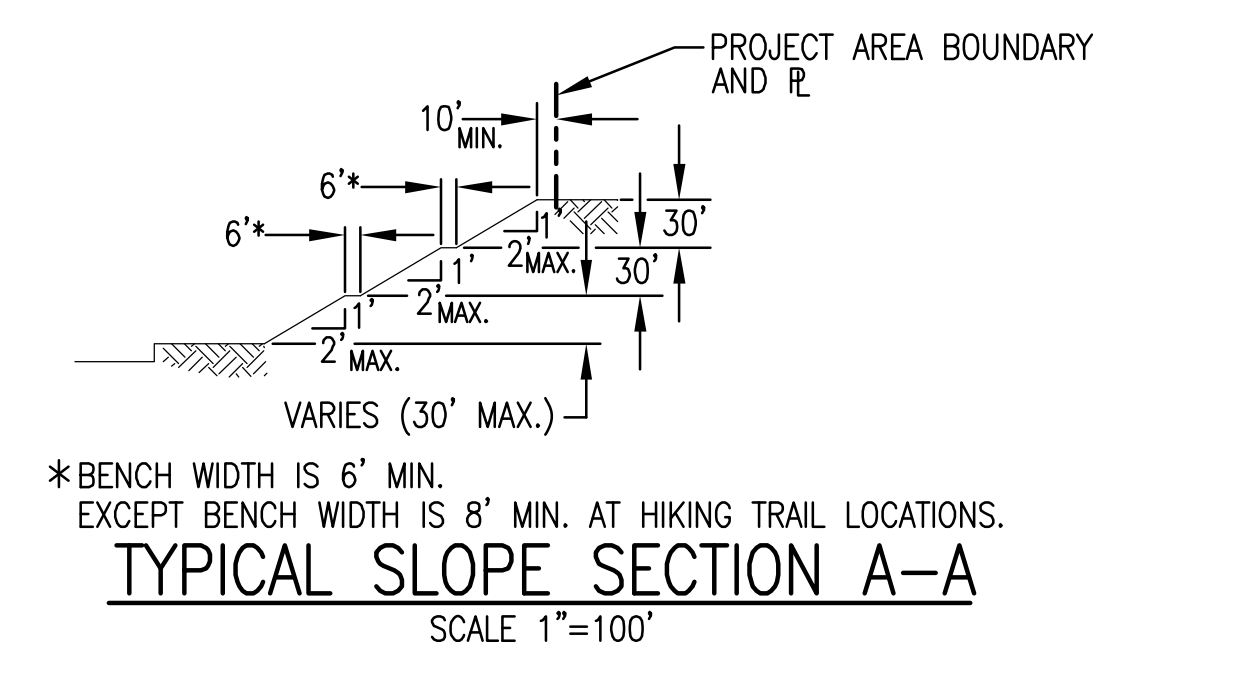
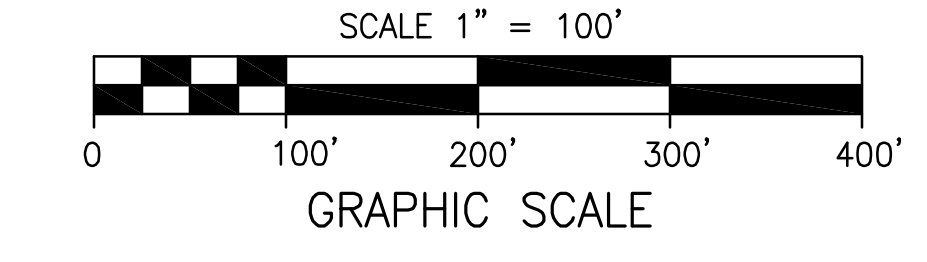
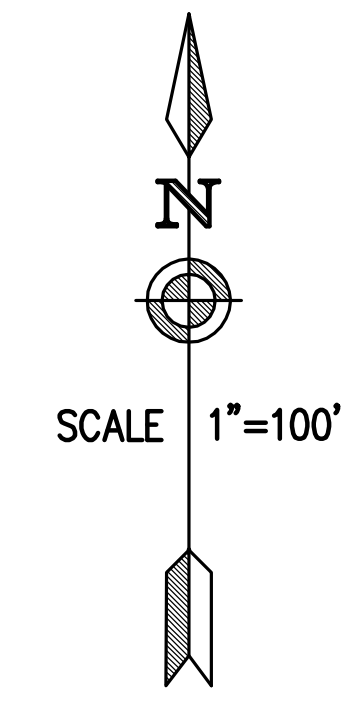
R.O.S. 3325

STONE CREEK VESTING TENTATIVE MAP NO. 208328

PTS NO. 67943
CITY OF SAN DIEGO

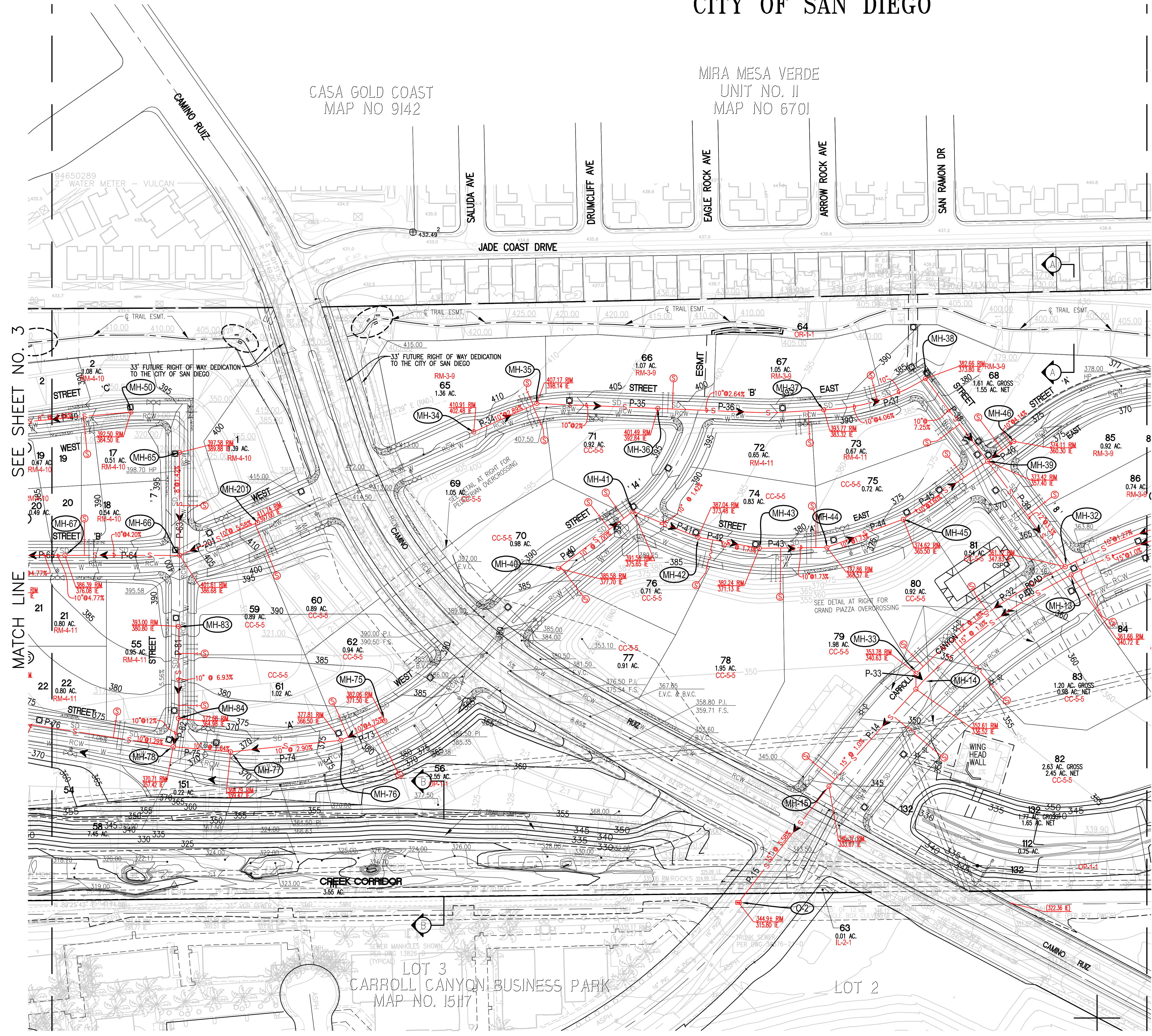
CASA GOLD COAST
MAP NO 9142

MIRA MESA VERDE
UNIT NO. II
MAP NO 6701



- ### NOTES
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LEGEND	SYMBOL
ALL EXISTING ITEMS	(SCREENED)
NEW CONTOUR	360
SPOT ELEVATION	370.00
CURB & GUTTER	
LAND USE LABEL	
DIRECTION OF FLOW	→
FIRE HYDRANT	⊠
GATE VALVE	⊙
RECLAIMED WATER	—RCW—
WATER	—W—
STORM DRAIN	—SD—
STORM DRAIN CLEANOUT	⊠
SEWER	—S—
TRUNK SEWER	—TS—
SEWER MANHOLE	⊙
SEWER LINE DESIGNATOR	P-79
SEWER MANHOLE DESIGNATOR	MH-88



STONE CREEK
SEWER STUDY EXHIBIT SHEET 4 OF 6

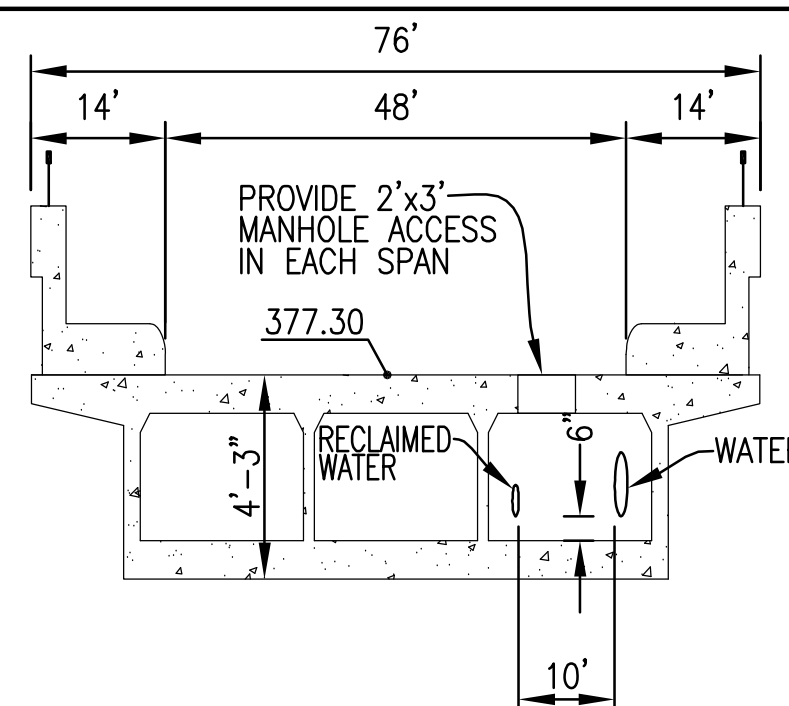
ENGINEER OF WORK:
BDS ENGINEERING, INC.
CIVIL ENGINEERING
LAND SURVEYING
6859 Federal Boulevard
Lemon Grove, California 91945
(619) 582-4992
ENCLOSURE: PROJECTS/2016/Stone Creek/SEWER STUDY-4.dwg
PLOT DATE: Mar 14, 2016-2:12pm

04-23
JOB NO.

W.O. # 42-2637

STONE CREEK VESTING TENTATIVE MAP NO. 208328

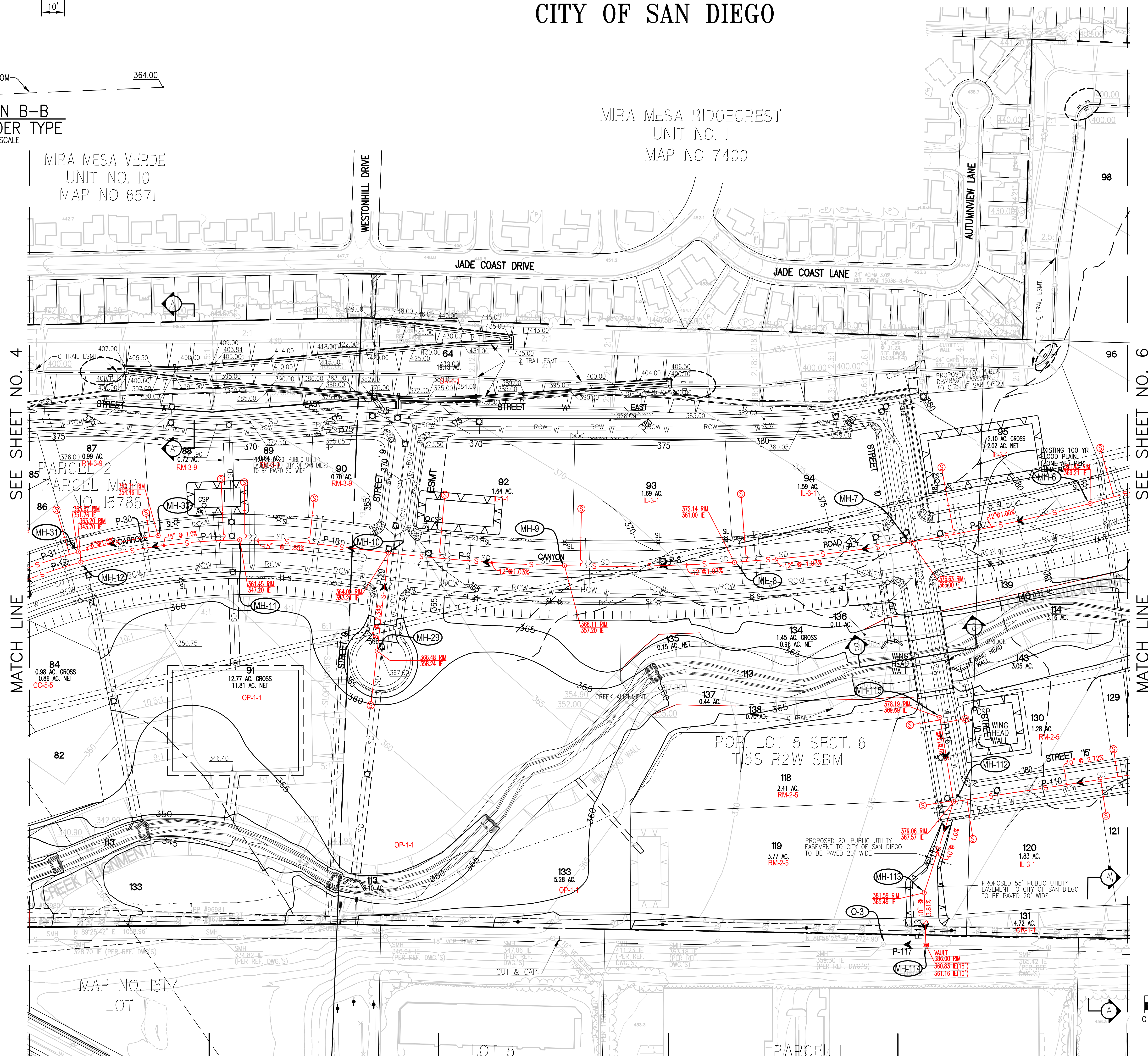
PTS NO. 67943
CITY OF SAN DIEGO



SECTION B-B
BOX GIRDER TYPE
NO SCALE

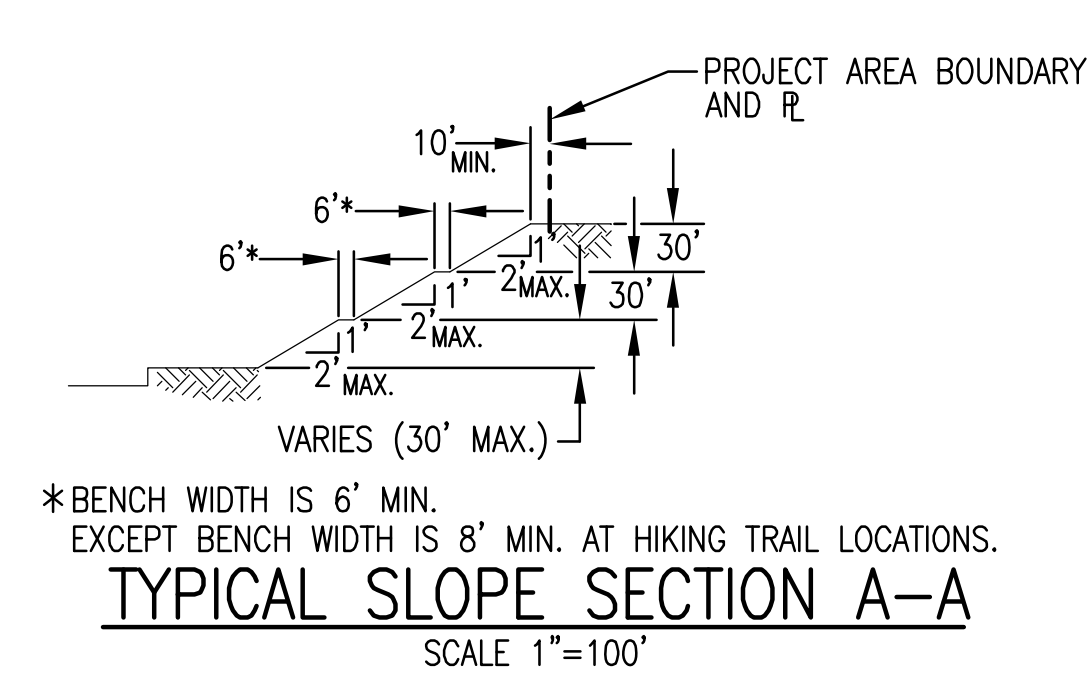
MIRA MESA VERDE
UNIT NO. 10
MAP NO 6571

MIRA MESA RIDGECREST
UNIT NO. 1
MAP NO 7400

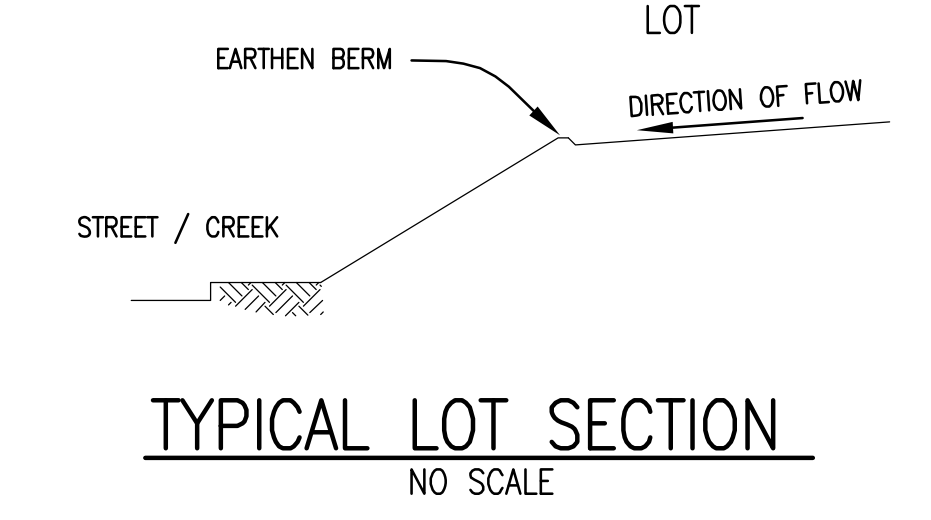


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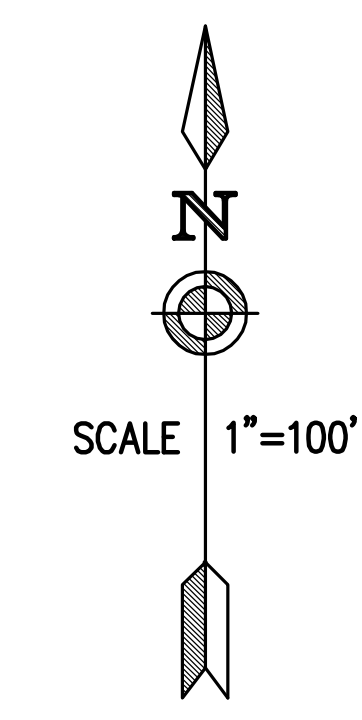
LEGEND	SYMBOL
ALL EXISTING ITEMS	(SCREENED)
NEW CONTOUR	360
SPOT ELEVATION	370.00
CURB & GUTTER	RM-3-B
LAND USE LABEL	
DIRECTION OF FLOW	→
FIRE HYDRANT	⊠
GATE VALVE	⊙
RECLAIMED WATER	—RCW—
WATER	—W—
STORM DRAIN	—SD—
STORM DRAIN CLEANOUT	⊠
SEWER	—S—
TRUNK SEWER	—TS—
SEWER MANHOLE	⊙MH
SEWER LINE DESIGNATOR	P-79
SEWER MANHOLE DESIGNATOR	MH-88



TYPICAL SLOPE SECTION A-A
SCALE 1"=100'



TYPICAL LOT SECTION
NO SCALE



SCALE 1" = 100'
GRAPHIC SCALE

STONE CREEK
SEWER STUDY EXHIBIT SHEET 5 OF 6

ENGINEER OF WORK:
BDS ENGINEERING, INC.
CIVIL ENGINEERING
LAND SURVEYING
6859 Federal Boulevard
Lemon Grove, California 91945
(619) 582-4992
PLOT DATE: Mar 14, 2016-2:13pm

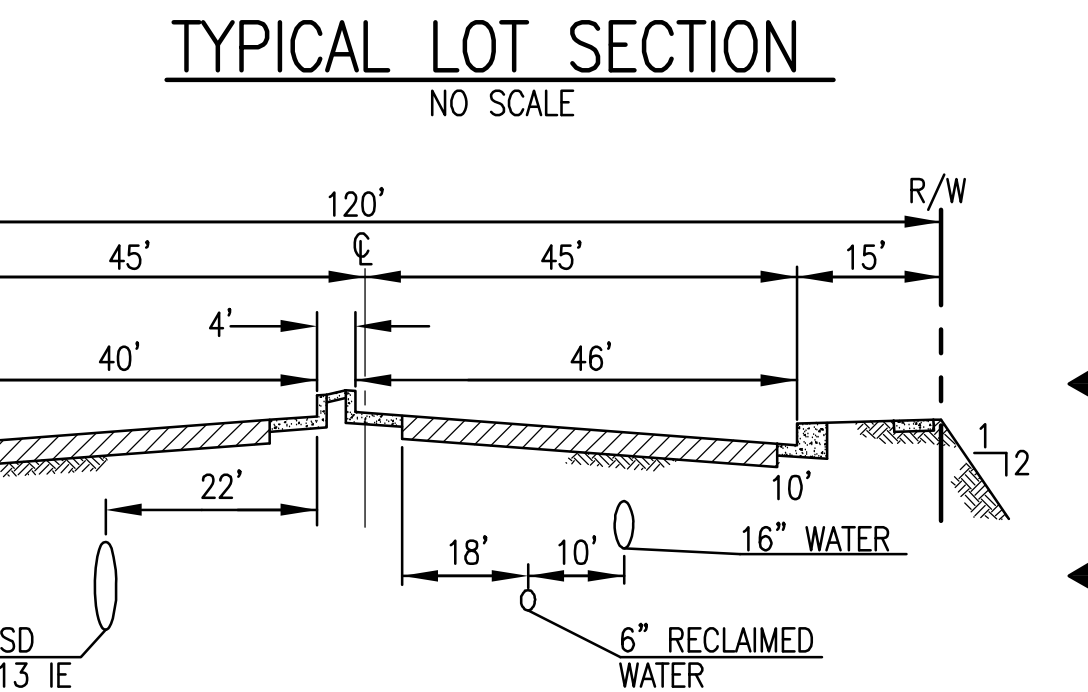
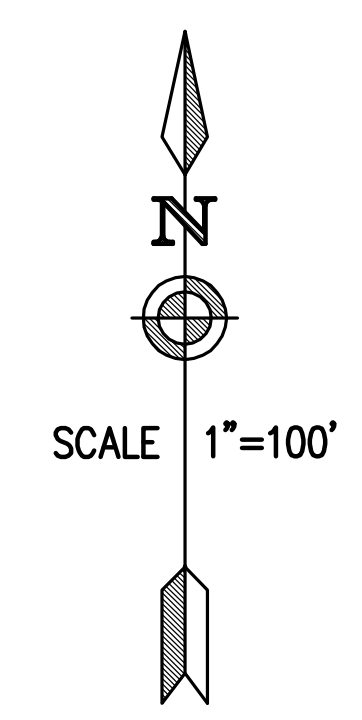
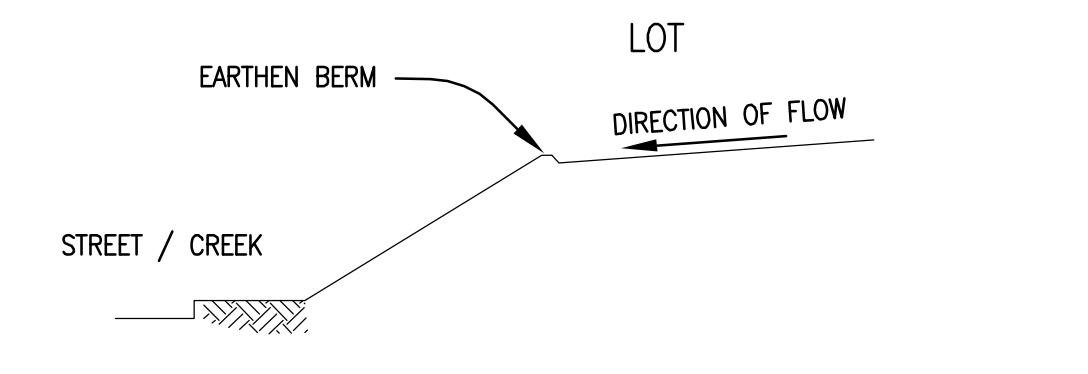
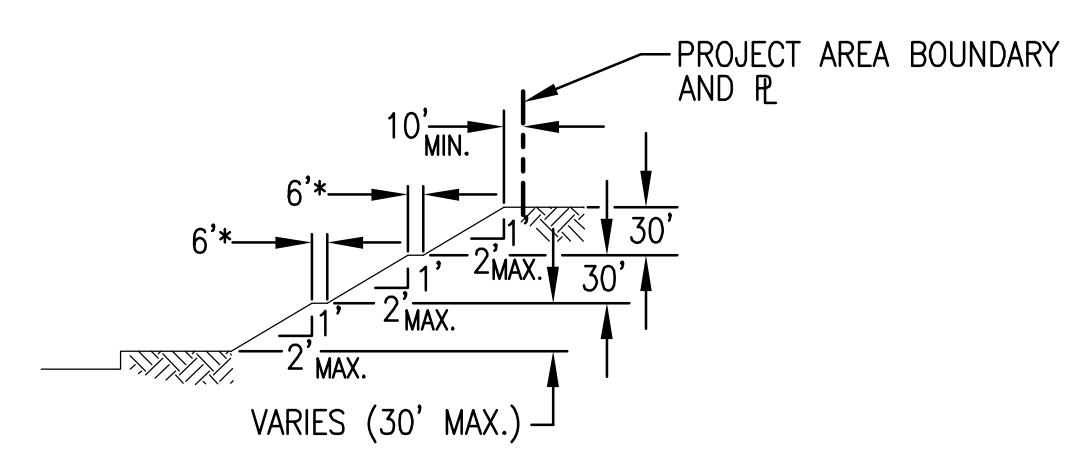
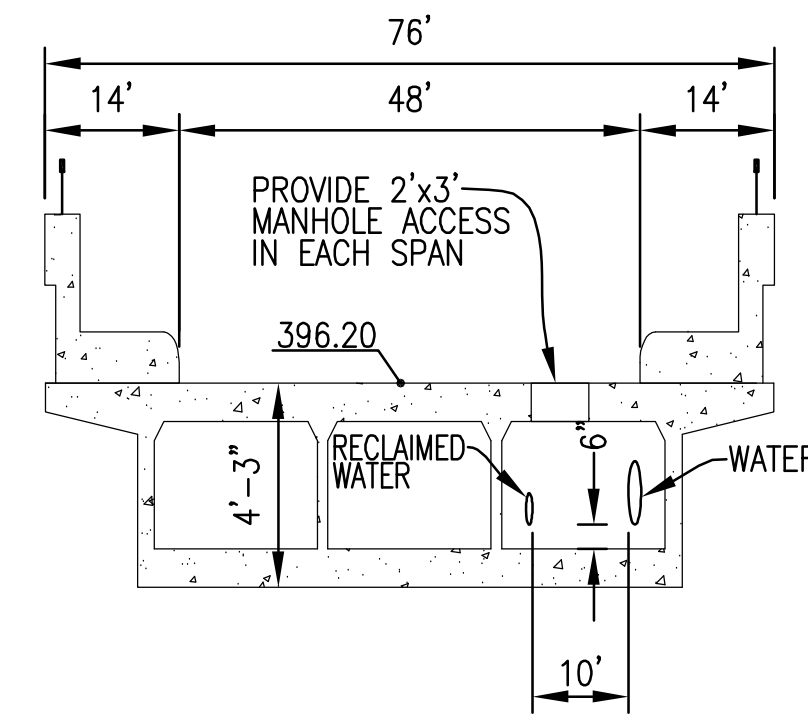
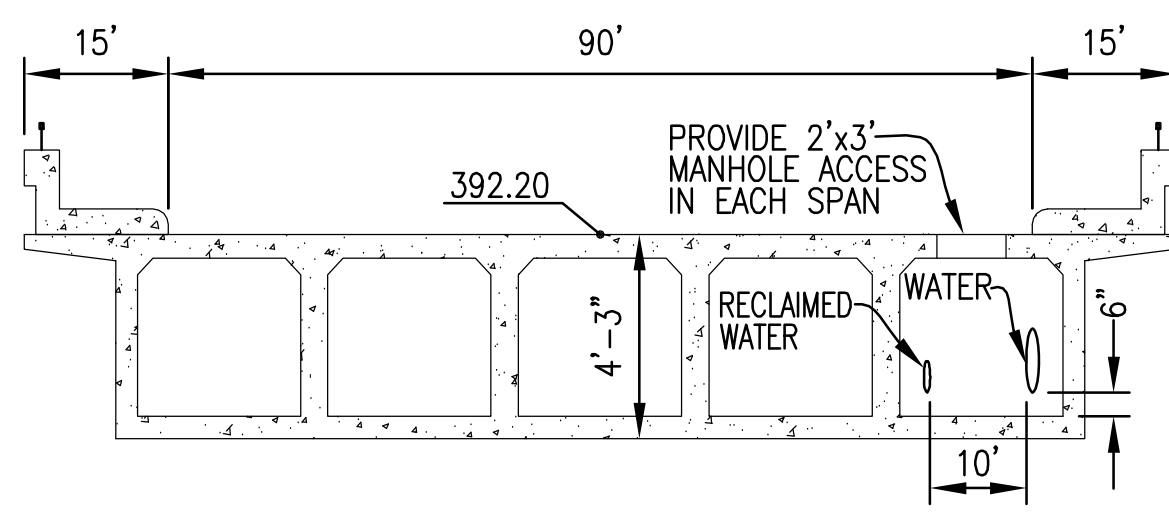
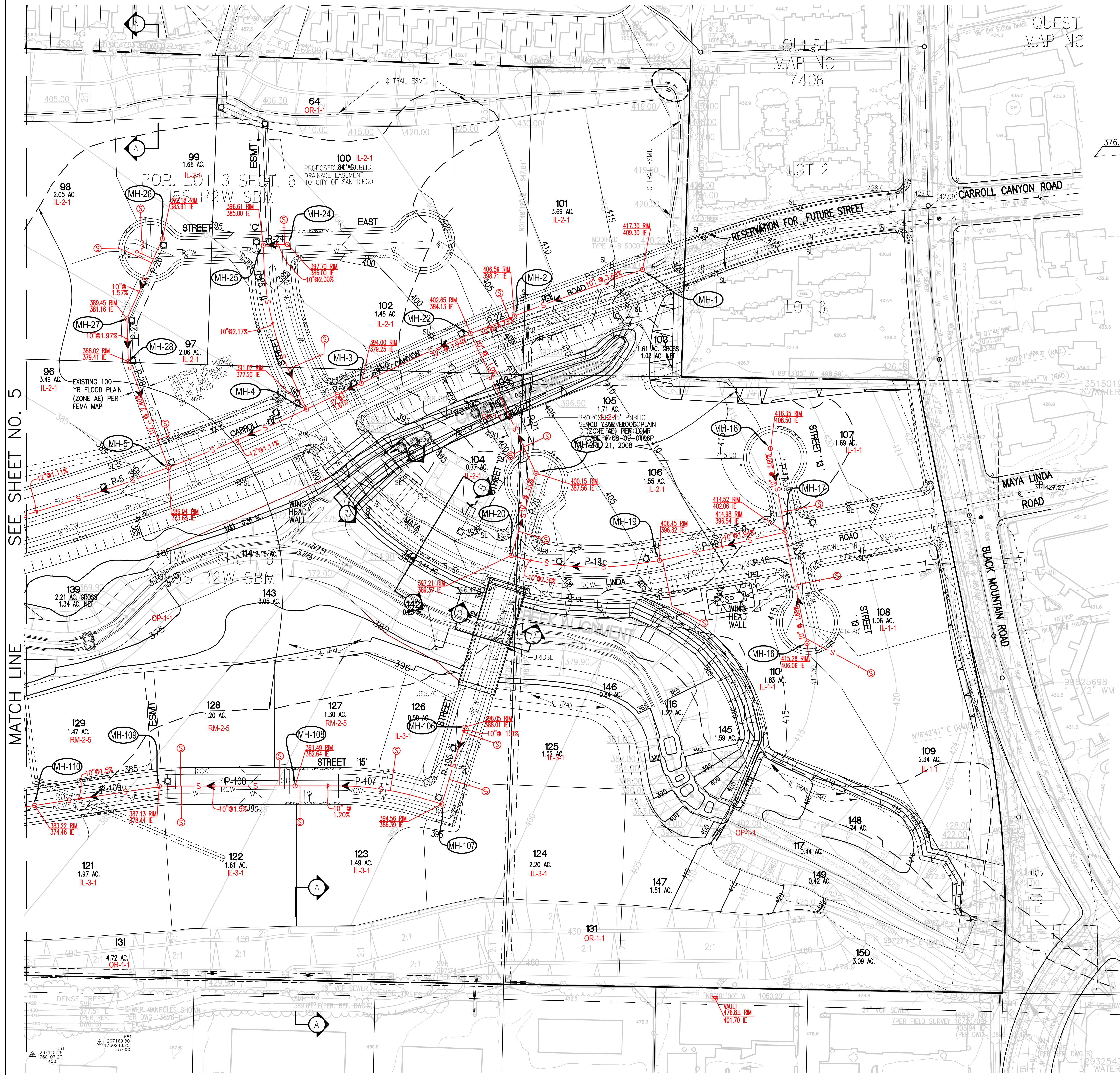
04-23
JOB NO.

W.O. # 42-2637

AMENDMENT #1 - JANUARY 21, 2016

STONE CREEK VESTING TENTATIVE MAP NO. 208328

PTS NO. 67943
CITY OF SAN DIEGO



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LEGEND	SYMBOL
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NEW CONTOUR	360
SPOT ELEVATION	370.00
CURB & GUTTER	RM-3-8
LAND USE LABEL	
DIRECTION OF FLOW	→
FIRE HYDRANT	⊕
GATE VALVE	⊙
RECLAIMED WATER	RCW
WATER	W
STORM DRAIN	SD
STORM DRAIN CLEANOUT	⊕
SEWER	S
TRUNK SEWER	TS
SEWER MANHOLE	MH
SEWER LINE DESIGNATOR	P-79
SEWER MANHOLE DESIGNATOR	MH-88

STONE CREEK
SEWER STUDY EXHIBIT SHEET 6 OF 6

ENGINEER OF WORK:
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CIVIL ENGINEERING
LAND SURVEYING
6859 Federal Boulevard
Lemon Grove, California 91945
(619) 582-4992
PLOT DATE: Mar 14, 2016-2:13pm

AMENDMENT #1 - JANUARY 21, 2016

W.O. # 42-2637