LINSCOTT
LAW &
GREENSPAN
engineers

Engineers & Planners
Traffic
Transportation
Parking

Linscott, Law & Greenspan, Engineers
4542 Ruffner Street
Suite 100
San Diego , CA 92111
858.300.8800 T
858.300.8810 F
www.llgengineers.com

Pasadena
Irvine
San Diego
Woodland Hills

March 8, 2018

Mr. Greg La Marca
Alliance Development Services Inc.
17828 Villamoura Drive
Poway, CA 92064

LLG Reference: 3-17-2841

Subject: **The Dolphin Motel –Access Analysis**
City of San Diego

INTRODUCTION

Linscott, Law & Greenspan, Engineers (LLG) has prepared the following Access Analysis for the redevelopment of the existing Dolphin Motel. The Dolphin Motel is located at 2912/2930 Garrison Street in the City of San Diego. The project proposes to replace the existing 36-room motel with a new 92-room, 3-story, 49,705 SF hotel. The purpose of this letter report is to provide an Access Analysis of the potential project's impacts to the adjacent roadway system.

Included in this letter assessment are the following:

- Project Description
- Existing Conditions
- Cumulative Projects
- Trip Generation
- Near-Term (Opening Day 2018) Analysis
- Significance of Impacts and Mitigations

PROJECT DESCRIPTION

The existing site includes a 36-room motel located at 2912/2930 Garrison Street in the City of San Diego. The project proposes to replace the existing motel with a 92-room, 3-story, 49,705 SF hotel. Current access to the project site is via three (3) driveways on Garrison Street. The project proposes to replace the three (3) existing driveways with one (1) driveway. ***Figure 1*** shows the project area map and ***Figure 2*** shows the project site plan.

EXISTING CONDITIONS

The following is a description of the major roadways located within the immediate vicinity of the Project site. ***Figure 3*** shows the existing conditions.

Rosecrans Street is a north-south roadway and is classified in the Peninsula Community Plan as a 4-lane roadway within the study area. Rosecrans Street is currently constructed as a 4-lane with a raised median south of N. Harbor Drive and as a 4-lane with no median between N. Harbor Drive and Keats Street. The posted speed limit is 35 mph. Currently, there are no bike lanes on Rosecrans Street. Bus stops (MTS bus route 28 connecting Shelter Island to Old Town Transit Center) are provided along Rosecrans Street. On-street parking is prohibited.

N. Harbor Drive is an east-west roadway and is classified in the Peninsula Community Plan as a 4-lane Prime Arterial within the study area. N. Harbor Drive is currently constructed as a 4-lane Major Arterial east of Rosecrans Street. The posted speed limit is 40 mph. Bike lanes are provided on both directions. On-street parking is prohibited. Bike lanes are not provided on this segment.

Scott Street is a north-south roadway and is classified in the Peninsula Community Plan as a 4-lane Major Arterial within the study area. Scott Street is currently constructed as a 4-lane Collector street with no left-turn pockets in the study area. The posted speed limit is 30 mph. Sharrow markings are provided on both directions. On-street parking is prohibited.

Garrison Street is an east-west roadway and is unclassified in the Peninsula Community Plan. Garrison Street is currently constructed as a 2-lane Local Street with commercial fronting between Rosecrans Street and Scott Street. The posted speed limit is 25 mph. On-street parking is provided on both sides of the roadway. A bus stop is currently provided on west side of Rosecrans Street, north of Garrison Street.

EXISTING COUNTS

Existing AM and PM peak hour traffic volumes, as well as average daily traffic counts (ADTs),) were conducted on Wednesday, November 29, 2017.

Figure 3 shows the existing traffic volumes. ***Appendix A*** contains the manual existing traffic volume count sheets.

CUMULATIVE PROJECTS

Cumulative projects are other planned projects in the areas adjacent to the project site that will add traffic to the roadways surrounding the project location. Based on discussions with City staff, no such projects were identified. However, in order to

account for background growth in traffic volumes, a comparison of the City of San Diego traffic count historical data was conducted. Based on a review of historical traffic volume data between Year 2002 and Year 2014 for Rosecrans Street and between Year 2002 and Year 2015 for N. Harbor Drive, traffic volumes were shown to be slightly decreasing. ***Appendix A*** contains the City of San Diego historical count comparison.

However, to be conservative, a 2% growth was applied to the existing traffic volumes to represent the Near-Term (Opening Day 2018) scenario.

TRIP GENERATION, DISTRIBUTION AND ASSIGNMENT

The amount of traffic that is to be generated by the proposed project is based on rates published in the *City of San Diego Municipal Code Land Development Code Trip Generation Manual.*

The project site is currently occupied by a 36-room motel. The existing site is calculated to generate 324 ADT.

The project proposes to replace the existing motel with a 92-room hotel which is calculated to generate approximately 828 ADT with 27 inbound / 40 outbound trips during the AM peak hour and 30 inbound / 45 outbound trips during the PM peak hour.

As shown in ***Table A***, the net new project traffic is calculated to generate a net total of 504 ADT with 40 total AM peak hour trips (16 inbound / 24 outbound trips) and 45 total PM peak hour trips (18 inbound / 27 outbound trips).

The project-generated traffic was distributed to the street system based on discussions with City staff on the existing roadway network and travel patterns and working knowledge of the local transportation system and the type of land use being proposed (i.e. hotel).

Figure 4 depicts the general project traffic distribution percentages and traffic assignment based on this distribution.

LINSCOTT LAW & GREENSPAN engineers

TABLE A
TRIP GENERATION

Land Use	Size	Daily Trip Ends (ADT)[a]		AM Peak Hour					PM Peak Hour				
		Rate [b]	Volume	% of ADT	In:Out Split	Volume In	Volume Out	Volume Total	% of ADT	In:Out Split	Volume In	Volume Out	Volume Total
Proposed Use													
Hotel	92 rooms	9 / room	828	8%	40:60	27	40	67	9%	40:60	30	45	75
Existing Use													
Hotel	36 rooms	9 / room	(324)	8%	40:60	(11)	(16)	27	9%	40:60	(12)	(18)	30
Net Total			***504***	**–**	**–**	***16***	***24***	***40***	**–**	**–**	***18***	***27***	***45***

Footnotes:
a. ADT = Average Daily Traffic.
b. Trip rate is based on the published *City of San Diego Municipal Code Land Development Code Trip Generation Manual*.

General Notes:

The site currently includes a palm reader (2,140 sf). However, to be conservative, trip credits associated with this use were not taken.

SIGNIFICANCE CRITERIA

According to the City of San Diego's *Significance Determination Thresholds* dated January 2011, a project is considered to have a significant impact if project traffic would decrease the operations of surrounding roadways by a defined threshold. For projects deemed complete on or after January 1, 2011, the City defined thresholds are shown in ***Table B***.

TABLE B
CITY OF SAN DIEGO
TRAFFIC IMPACT SIGNIFICANT THRESHOLDS

Level of Service with Project[b]	Allowable Increase Due to Project Impacts[a]	
	Roadway Segments	Intersections
	V/C	Delay (sec.)
E	0.02	2.0
F	0.01	1.0

Footnotes:

a. If a proposed project's traffic causes the values shown in the table to be exceeded, the impacts are determined to be significant. The project applicant shall then identify feasible improvements (within the Traffic Impact Study) that will restore/and maintain the traffic facility at an acceptable LOS. If the LOS with the proposed project becomes unacceptable (see note b), the project applicant shall be responsible for mitigating the project's direct significant and/or cumulatively considerable traffic impacts.

b. All LOS measurements are based upon Highway Capacity Manual procedures for peak-hour conditions. However, V/C ratios for roadway segments are estimated on an ADT/24-hour traffic volume basis (using Table 2 of the City's Traffic Impact Study Manual). The acceptable LOS for roadways and intersections is generally "D" ("C" for undeveloped locations).

General Notes:

1. Delay = Average control delay per vehicle measured in seconds for intersections
2. LOS = Level of Service
3. V/C = Volume to Capacity ratio

According to the City's *Significance Determination Thresholds*, for intersections and roadway segments affected by a project, level of service (LOS) D or better is considered acceptable."

If the project exceeds the thresholds in *Table B*, then the project is considered to have a significant "direct" project impact. A significant impact can also occur if a project causes the LOS to degrade from D to E, even if the allowable increases in *Table B* are not exceeded. A feasible mitigation measure will need to be identified to return the impact within the City thresholds, or the impact will be considered significant and unmitigated.

TRAFFIC ANALYSIS

The scenarios analyzed below are an assessment of the impact of the project traffic volumes in relation to the Existing and Near-Term (Opening Day 2018) scenarios. No roadway network improvements were assumed in the Near-Term (Opening Day 2018) analyses.

Intersections

Intersection capacity analyses were conducted for the study area intersections under Existing, Existing + Project, Near-Term (Opening Day 2018) and Near-Term (Opening Day 2018) + Project scenarios. ***Table C*** reports the intersection operations during the peak hour conditions.

As shown in *Table C*, all study area intersections are calculated to operate at LOS C or better under both Existing + Project and Opening Day (2018) + Project scenarios. Based on the City of San Diego's significance criteria, ***no* significant direct impacts are** identified on the study area intersections.

Appendix B contains the intersection analysis worksheets.

Street Segments

Street segment analyses were conducted for the study area street segments under Existing, Existing + Project, Near-Term (Opening Day 2018) and Near-Term (Opening Day 2018) + Project scenarios. ***Table D*** summarizes the results of the street segment analyses.

As shown, all the study area street segment are calculated to operate at LOS D or better under both Existing + Project and Opening Day (2018) + Project scenarios with the exception of Rosecrans Street north of N. Harbor Drive. Based on the City of San Diego's significance criteria, ***no* significant direct impact** is identified on this study area street segment as the project contribution does not exceed the allowable threshold.

Figure 3 shows the traffic volumes for the several analyzed scenarios.

SITE ACCESS

Current access to the project site is via three (3) driveways on Garrison Street. The project proposes to replace the three (3) existing driveways with one (1) driveway. The proposed project driveway will be stop-controlled (on the driveway) and allow full access.

As shown in *Table C*, with the addition of the project traffic, the project driveway is calculated to operate at level of service A.

LINSCOTT LAW & GREENSPAN engineers

SIGNIFICANCE OF IMPACTS AND MITIGATION MEASURES

Based on the City of San Diego's significance criteria, the proposed project would result in no significant impacts. Therefore, no mitigation measure is required.

Sincerely,

Linscott, Law & Greenspan, Engineers

Shankar Ramakrishnan, P.E.
Senior Transportation Engineer

cc: File

Figures:
Figure 1: Project Area Map
Figure 2: Site Plan
Figure 3: Existing Conditions and Existing Traffic Volumes
Figure 4: Project Distribution and Traffic Volumes
Figure 5: Existing + Project, Near-Term (Opening Day 2018) and Near-Term (Opening Day 2018) + Project Traffic Volumes

Tables:
Table A: Trip Generation
Table B: City of San Diego Significance Criteria
Table C: Intersection Analysis
Table D: Street Segment Analysis

Attachments:
Appendix A: Traffic Count Sheets and City of San Diego historical traffic counts comparison
Appendix B: Intersection calculation sheets
Appendix C: City of San Diego Roadway Classification and LOS Table

LINSCOTT LAW & GREENSPAN engineers

TABLE C
NEAR-TERM INTERSECTION OPERATIONS

Intersection	Control Type	Peak Hour	Existing		Existing + Project				Near-Term (Opening Day 2018)		Near-Term (Opening Day 2018) + Project			
			Delay[a]	LOS[b]	Delay	LOS	Δ[c]	Sig?	Delay	LOS	Delay	LOS	Δ	Sig?
1. N. Harbor Drive / Rosecrans Street	Signal	AM	17.7	B	17.8	B	0.1	No	17.9	B	18.0	B	0.1	No
		PM	20.5	C	20.7	C	0.2	No	21.1	C	21.3	C	0.2	No
2. N. Harbor Drive / Scott Street	Signal	AM	11.0	B	11.1	B	0.1	No	11.1	B	11.2	B	0.1	No
		PM	13.1	B	13.2	B	0.1	No	13.2	B	13.3	B	0.1	No
3. Garrison Street / Project Driveway	Driveway[d]	AM	8.8	A	9.1	A	0.3	No	8.9	A	9.3	A	0.4	No
		PM	9.1	A	9.2	A	0.1	No	9.2	A	9.3	A	0.1	No

Footnotes:

a. Average delay expressed in seconds per vehicle.
b. Level of Service.
c. Δ denotes an increase in delay due to project.
d. Driveway left turn delay is reported.

SIGNALIZED		UNSIGNALIZED	
DELAY/LOS THRESHOLDS		DELAY/LOS THRESHOLDS	
Delay	LOS	Delay	LOS
0.0 ≤ 10.0	A	0.0 ≤ 10.0	A
10.1 to 20.0	B	10.1 to 15.0	B
20.1 to 35.0	C	15.1 to 25.0	C
35.1 to 55.0	D	25.1 to 35.0	D
55.1 to 80.0	E	35.1 to 50.0	E
≥ 80.1	F	≥ 50.1	F

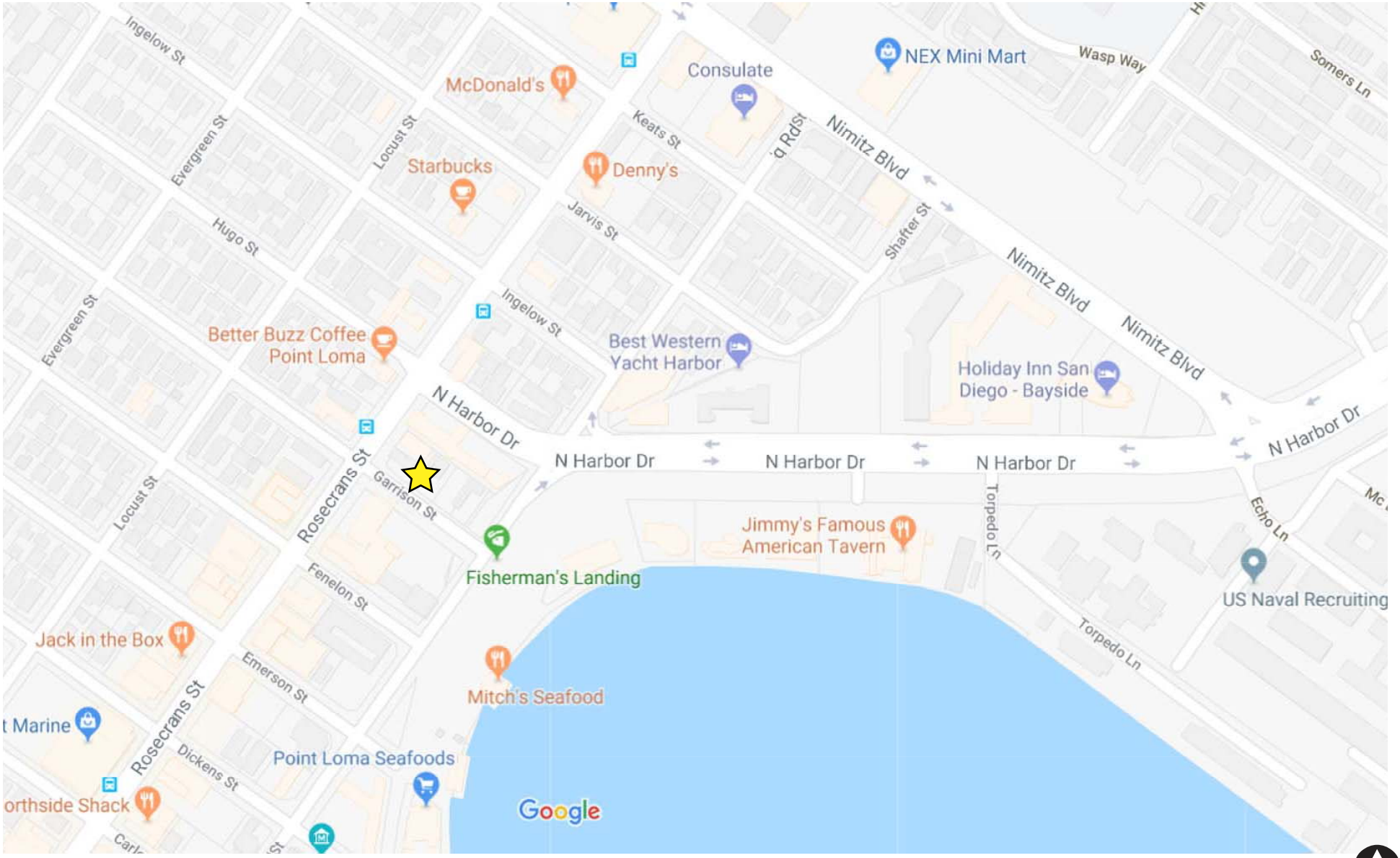
LINSCOTT LAW & GREENSPAN engineers

TABLE D
NEAR-TERM STREET SEGMENT OPERATIONS

Street Segment	Existing Capacity (LOS E)[a]	Existing			Existing + Project					Near-Term (Opening Day 2018)			Near-Term (Opening Day 2018) + Project				
		ADT[b]	V/C[c]	LOS[d]	ADT	V/C	LOS	Δ[e]	Sig?	ADT	V/C	LOS	ADT	V/C	LOS	Δ	Sig?
Rosecrans Street																	
North of N. Harbor Drive	30,000	31,580	1.052	**F**	31,830	1.061	**F**	0.009	No	32,210	1.073	**F**	32,460	1.082	**F**	0.009	No
N. Harbor Drive to Garrison Street	40,000	32,040	0.801	D	32,290	0.807	D	0.006	No	32,680	0.817	D	32,930	0.823	D	0.006	No
N. Harbor Drive																	
East of Scott Street	40,000	14,110	0.353	A	14,360	0.359	A	0.006	No	14,390	0.360	A	14,640	0.366	A	0.006	No
Scott Street																	
N. Harbor Drive to Garrison Street	15,000	11,600	0.773	D	11,850	0.790	D	0.017	No	11,830	0.789	D	12,080	0.805	D	0.016	No
Garrison Street[f]																	
Rosecrans Street to Scott Street	2,200	1,030	0.468	better than C	1,280	0.581	better than C	0.113	No	1,050	0.477	better than C	1,300	0.590	better than C	0.113	No

Footnotes:

a. Capacities based on City of San Diego Roadway Classification & LOS table (See *Appendix C*).
b. Average Daily Traffic
c. Volume to Capacity ratio
d. Level of Service
e. Δ denotes a project-induced increase in the Volume to Capacity ratio
f. To be conservative, a Sub-Collector classification (capacity of 2,200 ADT at LOS C) was used on Garrison Street.



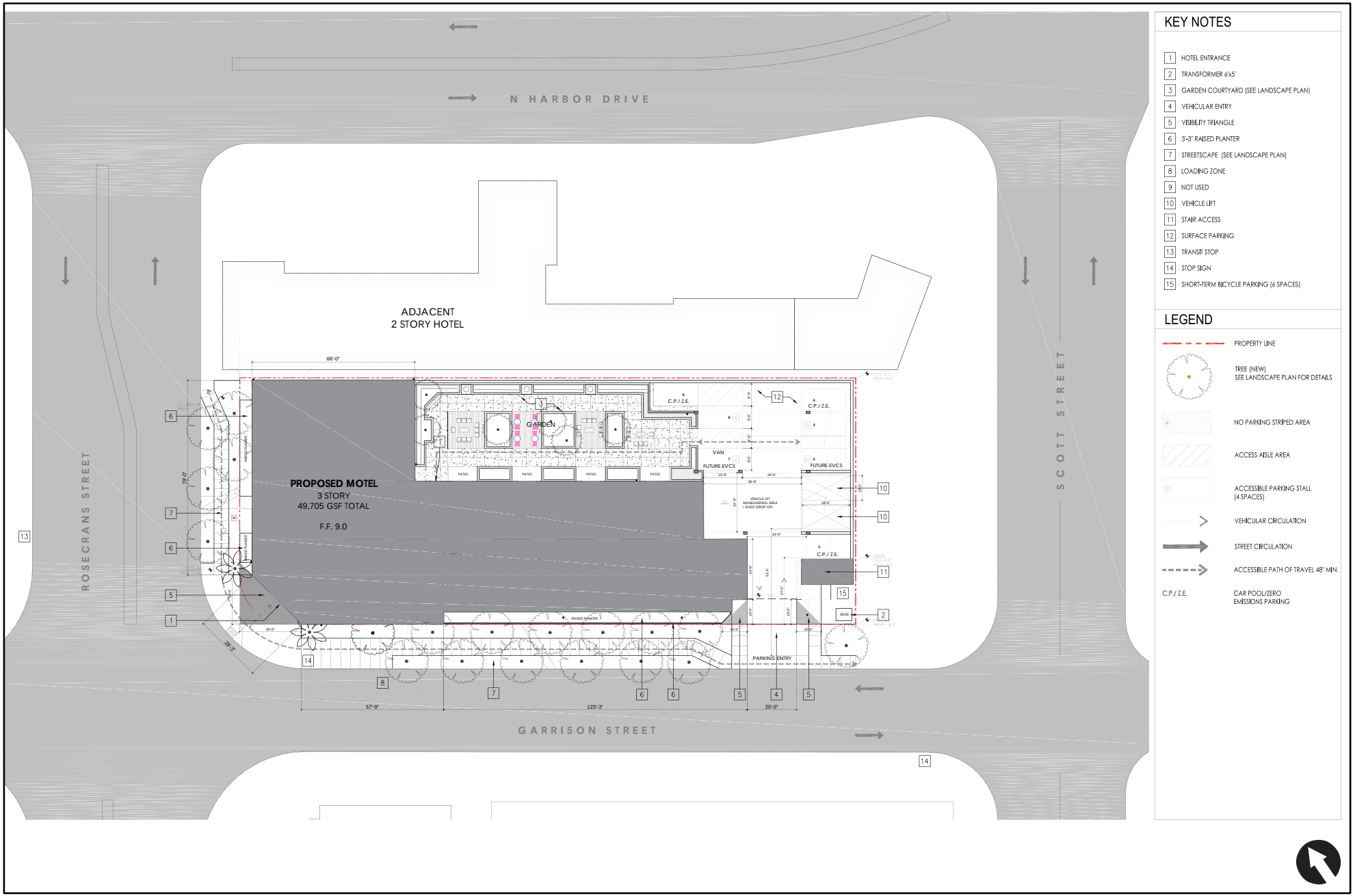
LINSCOTT LAW & GREENSPAN engineers

N:\2841\Figures
Date: 12/20/17

Figure 1

Project Area Map

DOLPHIN HOTEL ACCESS



KEY NOTES

1. HOTEL ENTRANCE
2. TRANSFORMER 6'x5'
3. GARDEN COURTYARD (SEE LANDSCAPE PLAN)
4. VEHICULAR ENTRY
5. VISIBILITY TRIANGLE
6. 3'-3" RAISED PLANTER
7. STREETSCAPE (SEE LANDSCAPE PLAN)
8. LOADING ZONE
9. NOT USED
10. VEHICLE LIFT
11. STAIR ACCESS
12. SURFACE PARKING
13. TRANSIT STOP
14. STOP SIGN
15. SHORT-TERM BICYCLE PARKING (6 SPACES)

LEGEND

- PROPERTY LINE
- TREE (NEW) SEE LANDSCAPE PLAN FOR DETAILS
- NO PARKING STRIPED AREA
- ACCESS AISLE AREA
- ACCESSIBLE PARKING STALL (4 SPACES)
- VEHICULAR CIRCULATION
- STREET CIRCULATION
- ACCESSIBLE PATH OF TRAVEL 48" MIN.
- C.P./ Z.E. — CAR POOL/ZERO EMISSIONS PARKING

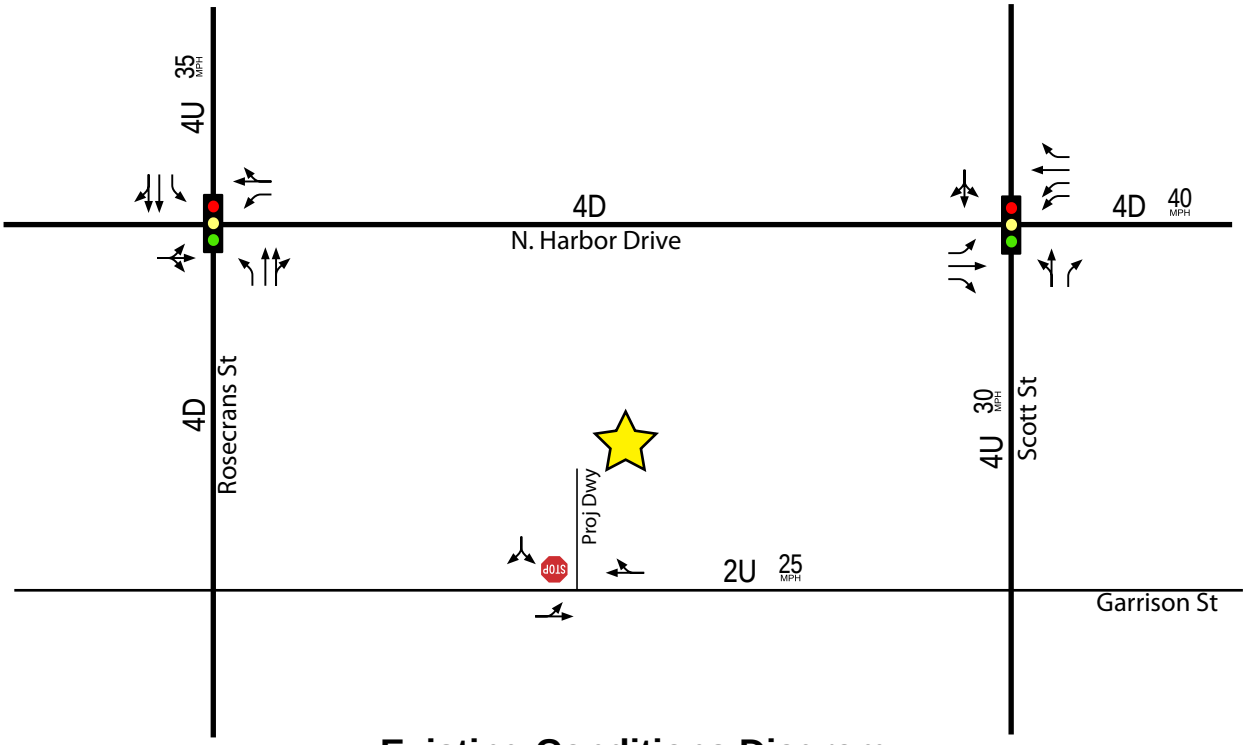
LINSCOTT LAW & GREENSPAN engineers

N:\2841\Figures
Date: 01/30/18

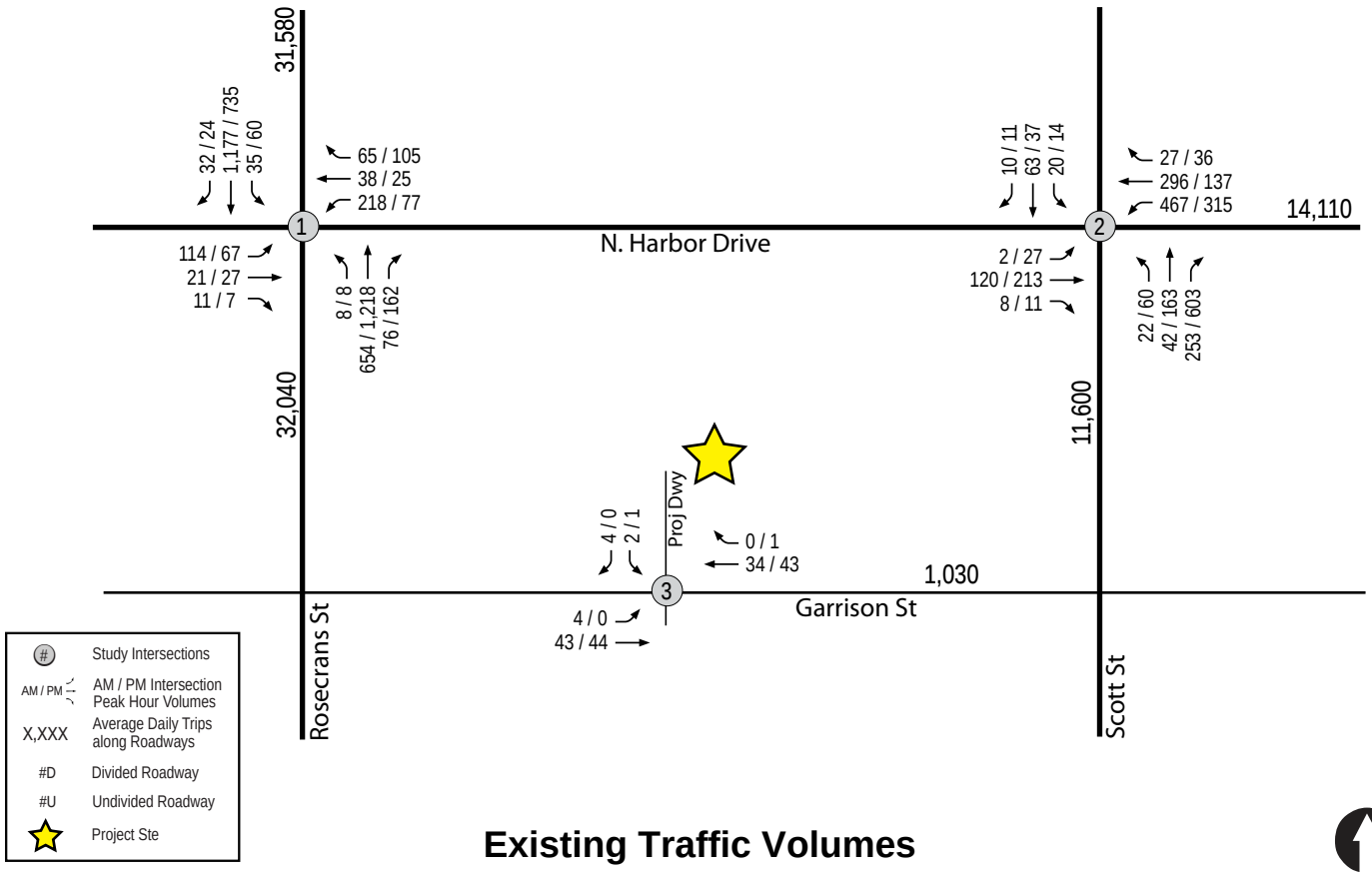
Figure 2

Site Plan

DOLPHIN HOTEL ACCESS



Existing Conditions Diagram



Existing Traffic Volumes

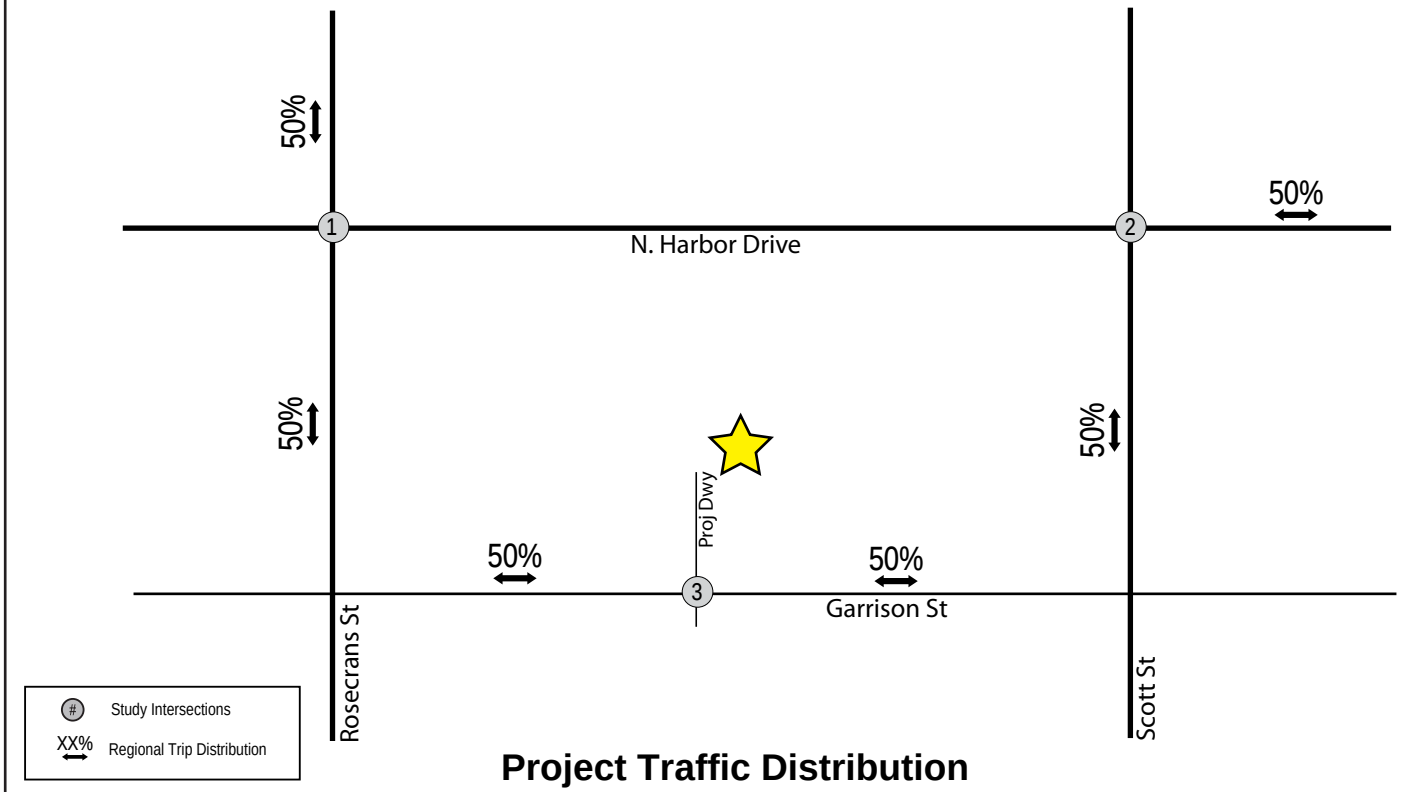
LINSCOTT LAW & GREENSPAN engineers

N:\2841\Figures
Date: 03/06/18

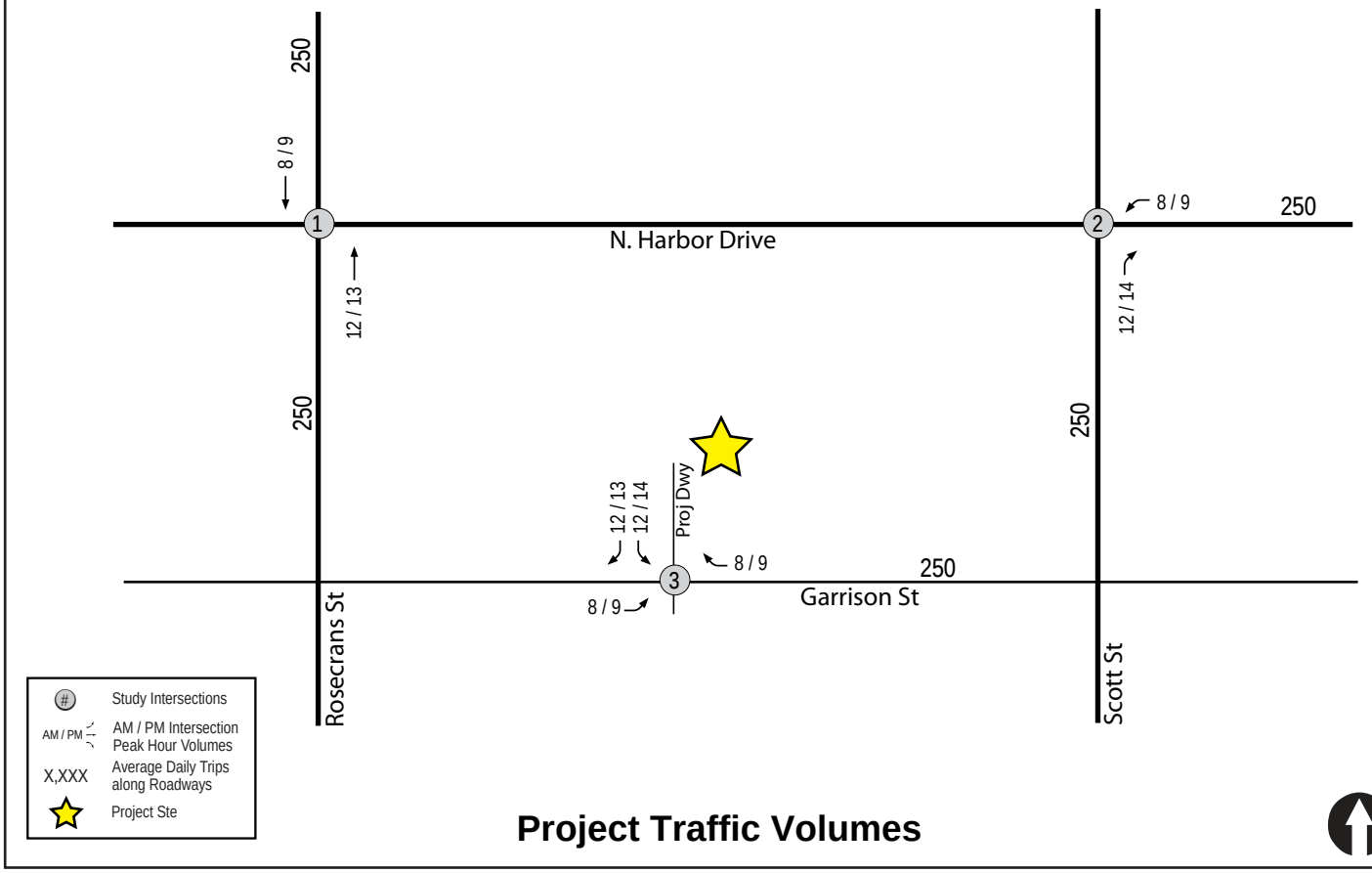
Figure 3

Existing Conditions & Traffic Volumes

DOLPHIN HOTEL ACCESS



Project Traffic Distribution



Project Traffic Volumes

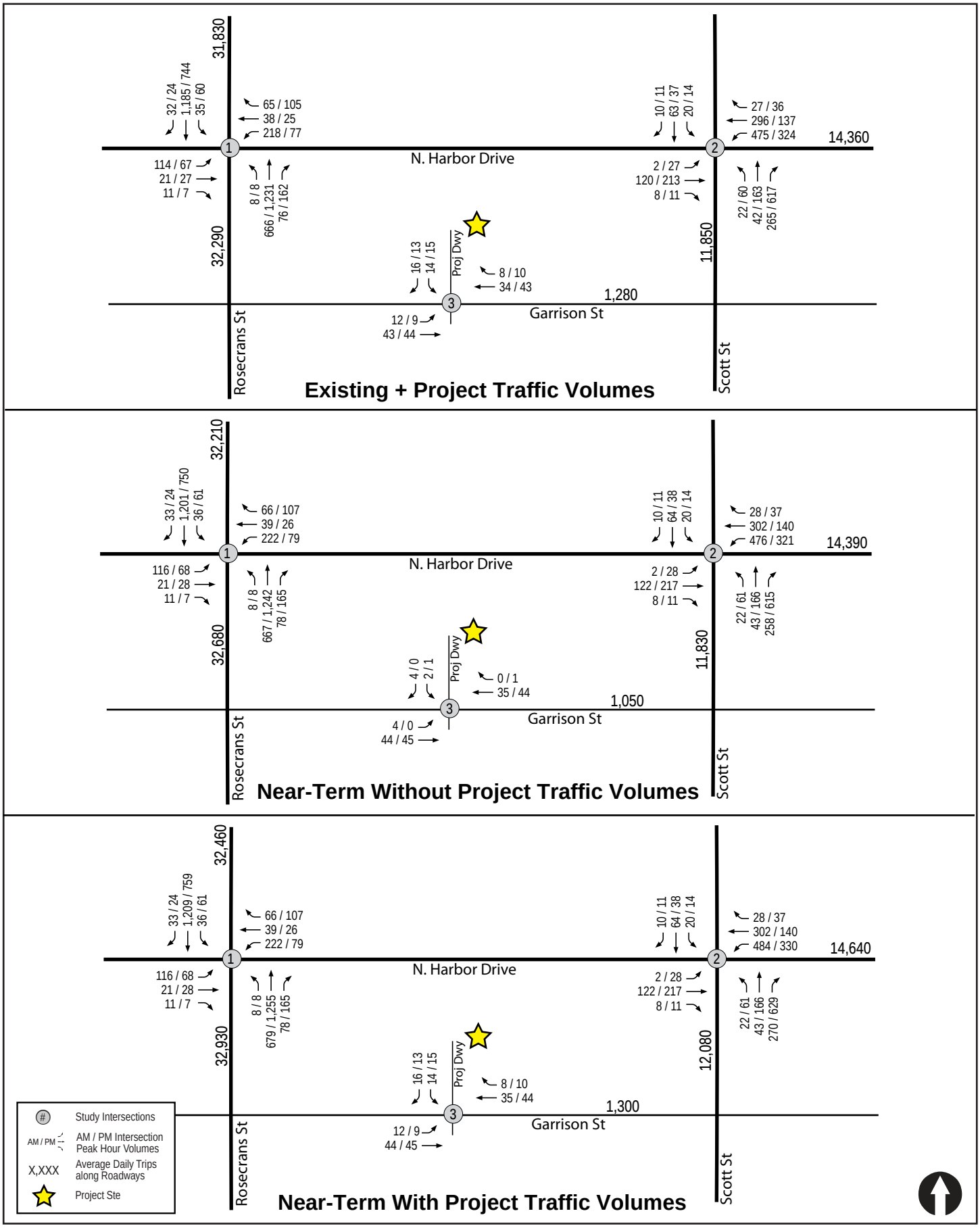
LINSCOTT LAW & GREENSPAN engineers

N:\2841\Figures
Date: 12/20/17

Figure 4

Project Traffic Volumes

DOLPHIN HOTEL ACCESS



LINSCOTT LAW & GREENSPAN engineers

N:\2841\Figures
Date: 12/20/17

Figure 5

Near-Term Traffic Volumes

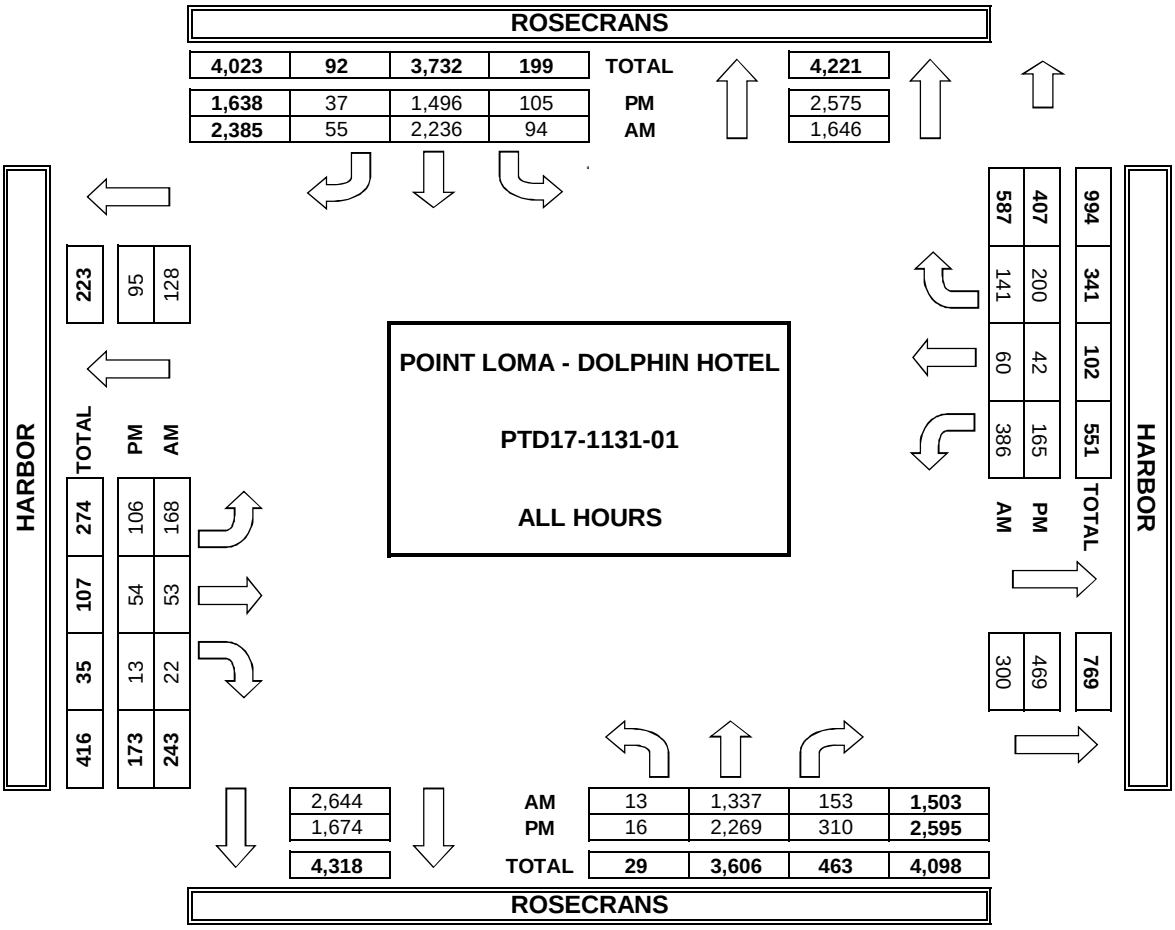
DOLPHIN HOTEL ACCESS

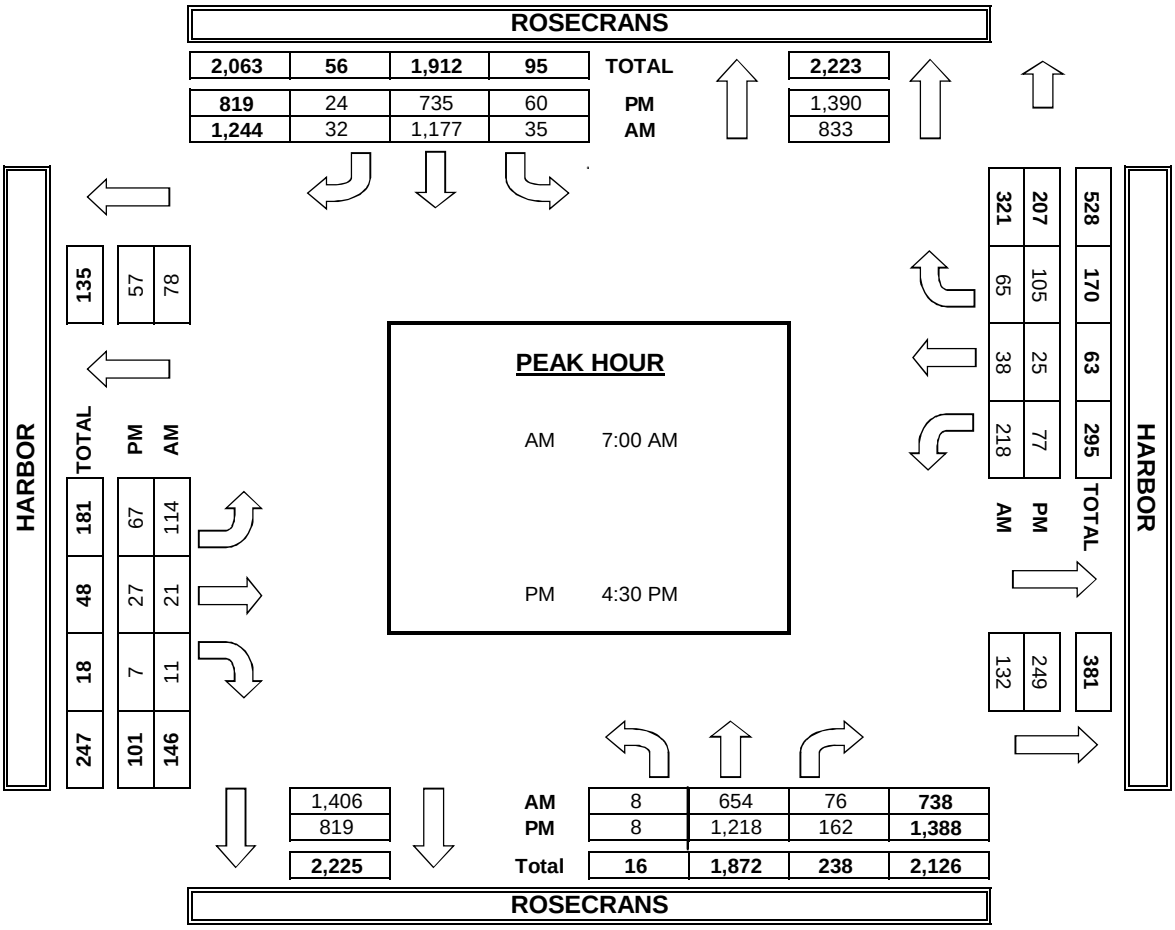
APPENDIX A

INTERSECTION AND SEGMENT MANUAL COUNT SHEETS AND CITY OF SAN DIEGO HISTORICAL TRAFFIC COUNTS COMPARISON

PACIFIC TECHNICAL DATA

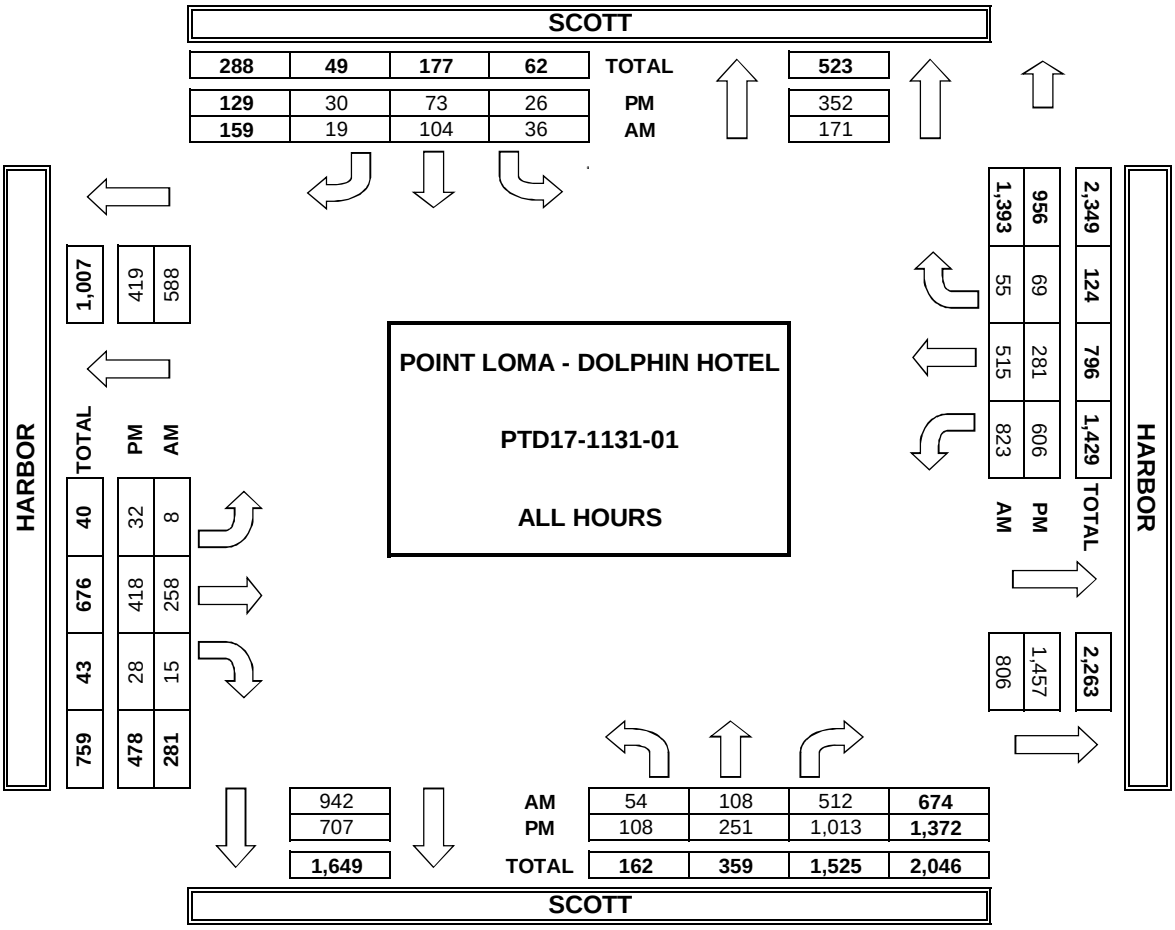
TURNING MOVEMENT COUNTS

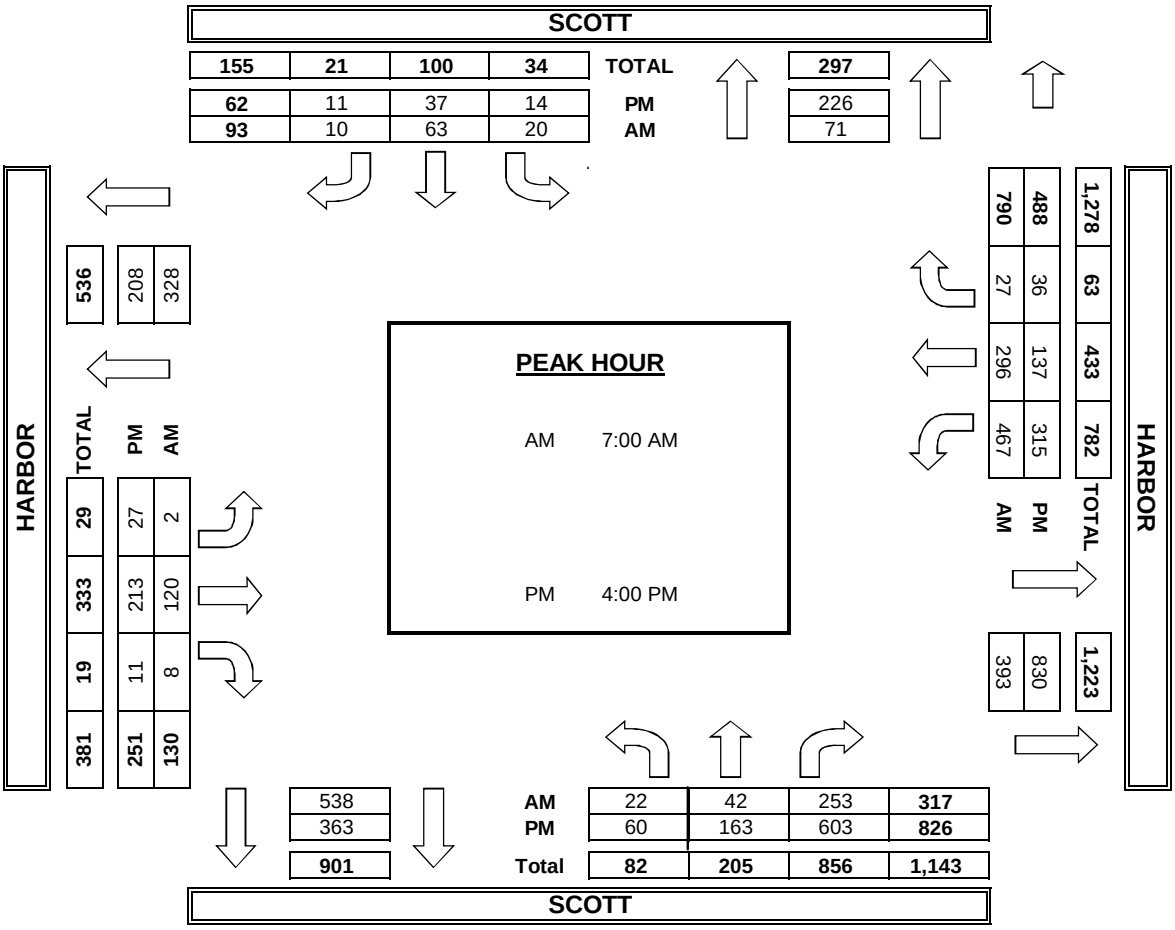




PACIFIC TECHNICAL DATA

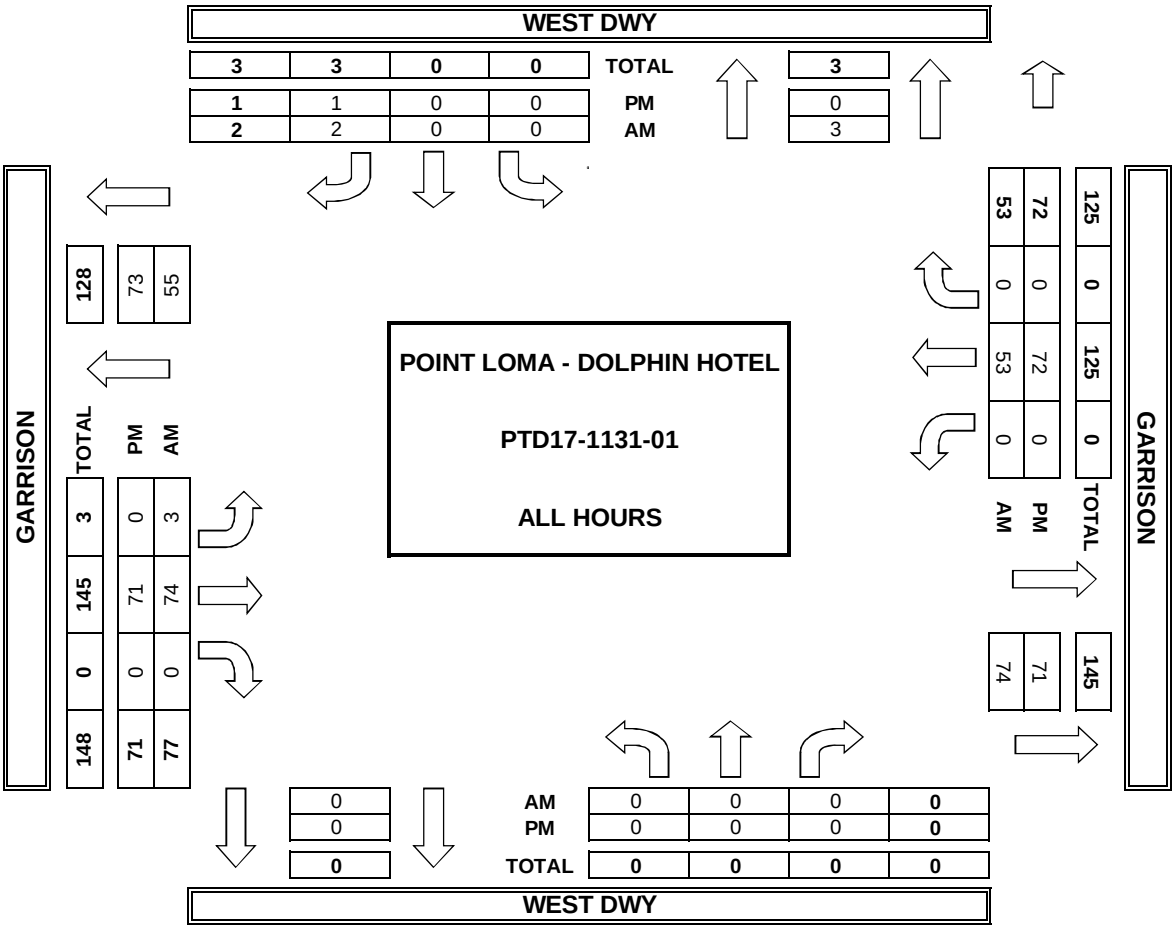
TURNING MOVEMENT COUNTS

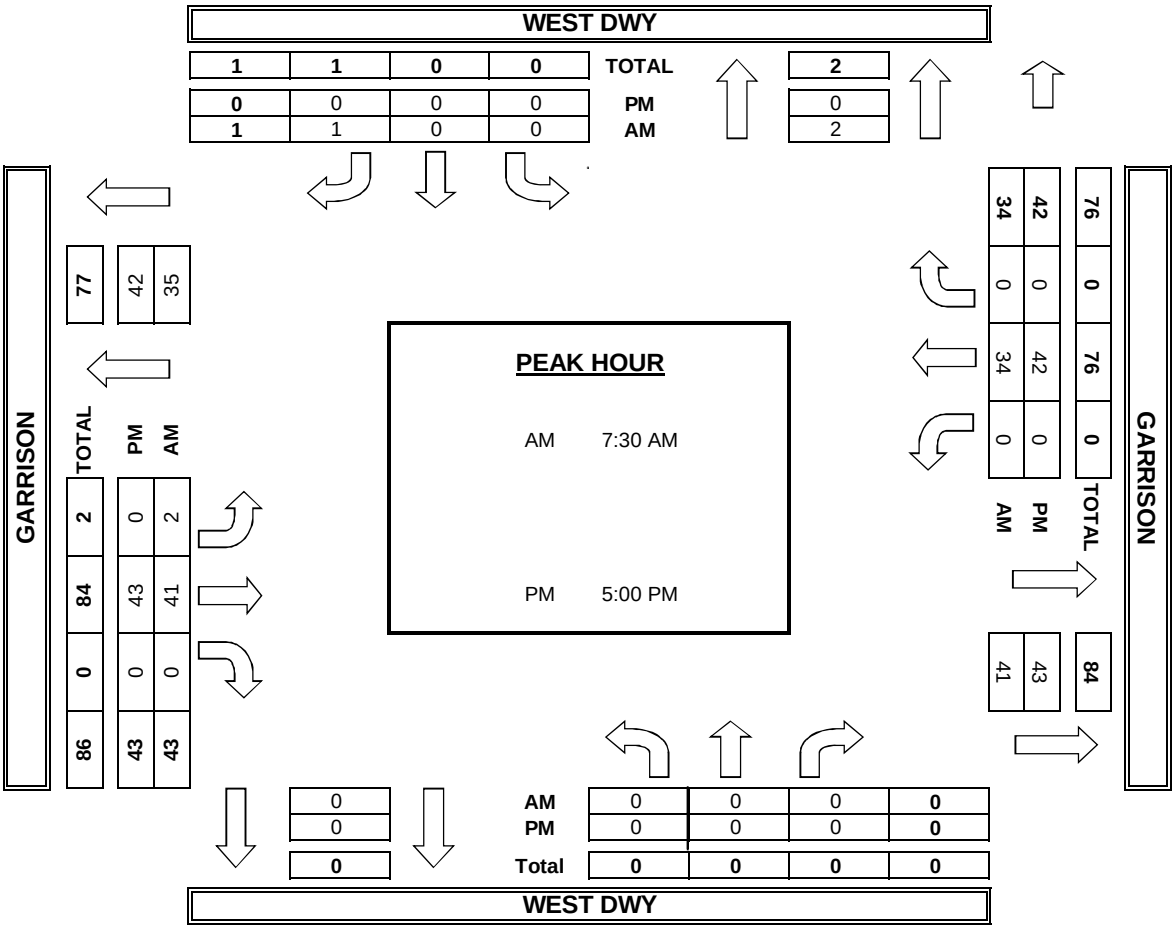




PACIFIC TECHNICAL DATA

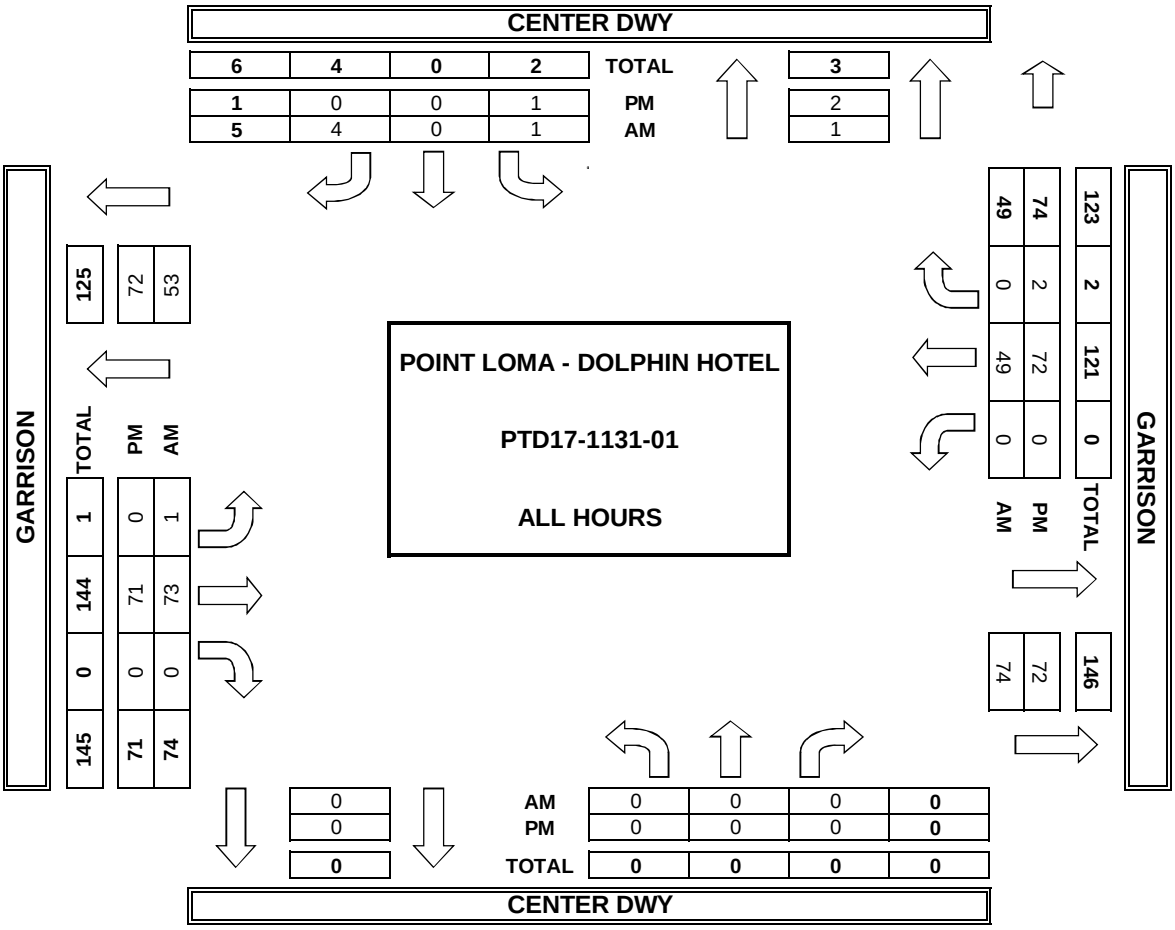
TURNING MOVEMENT COUNTS

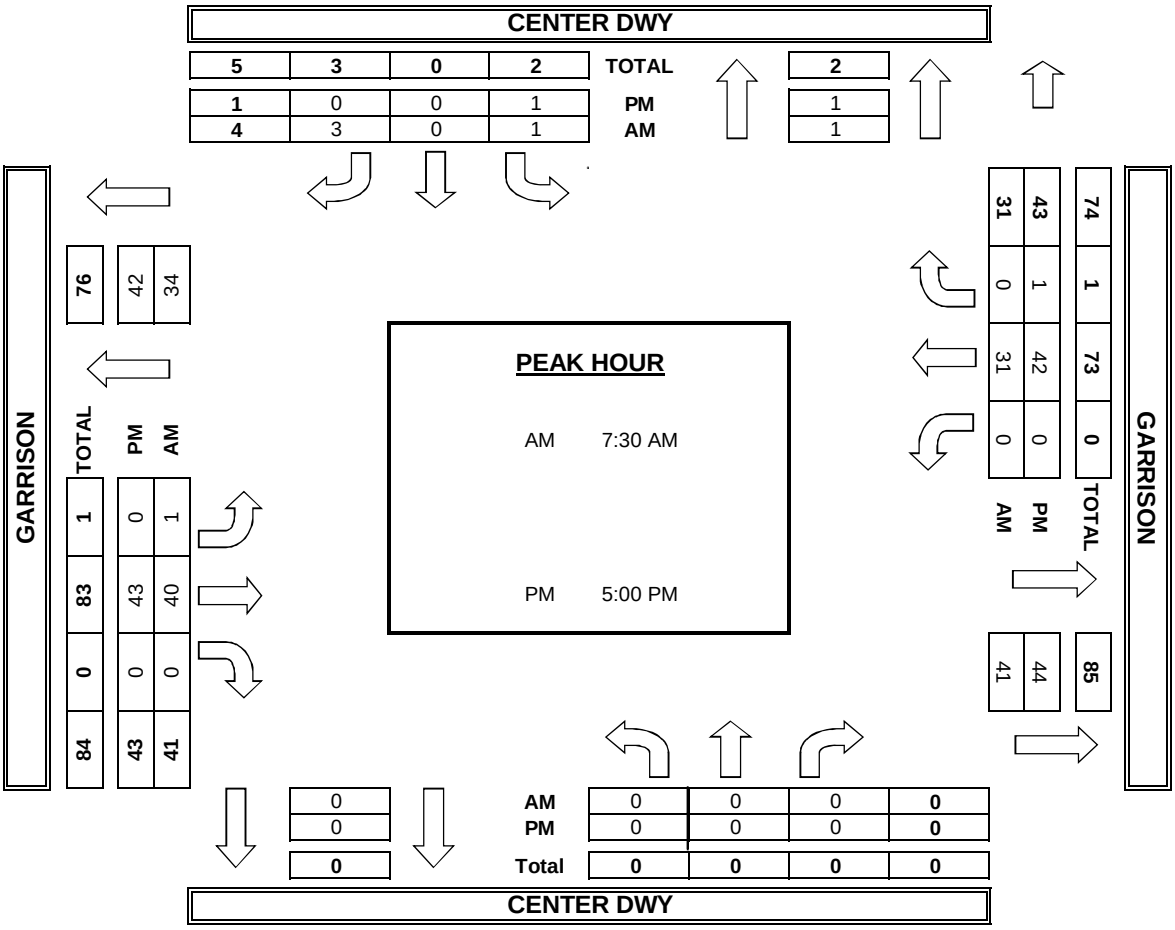




PACIFIC TECHNICAL DATA

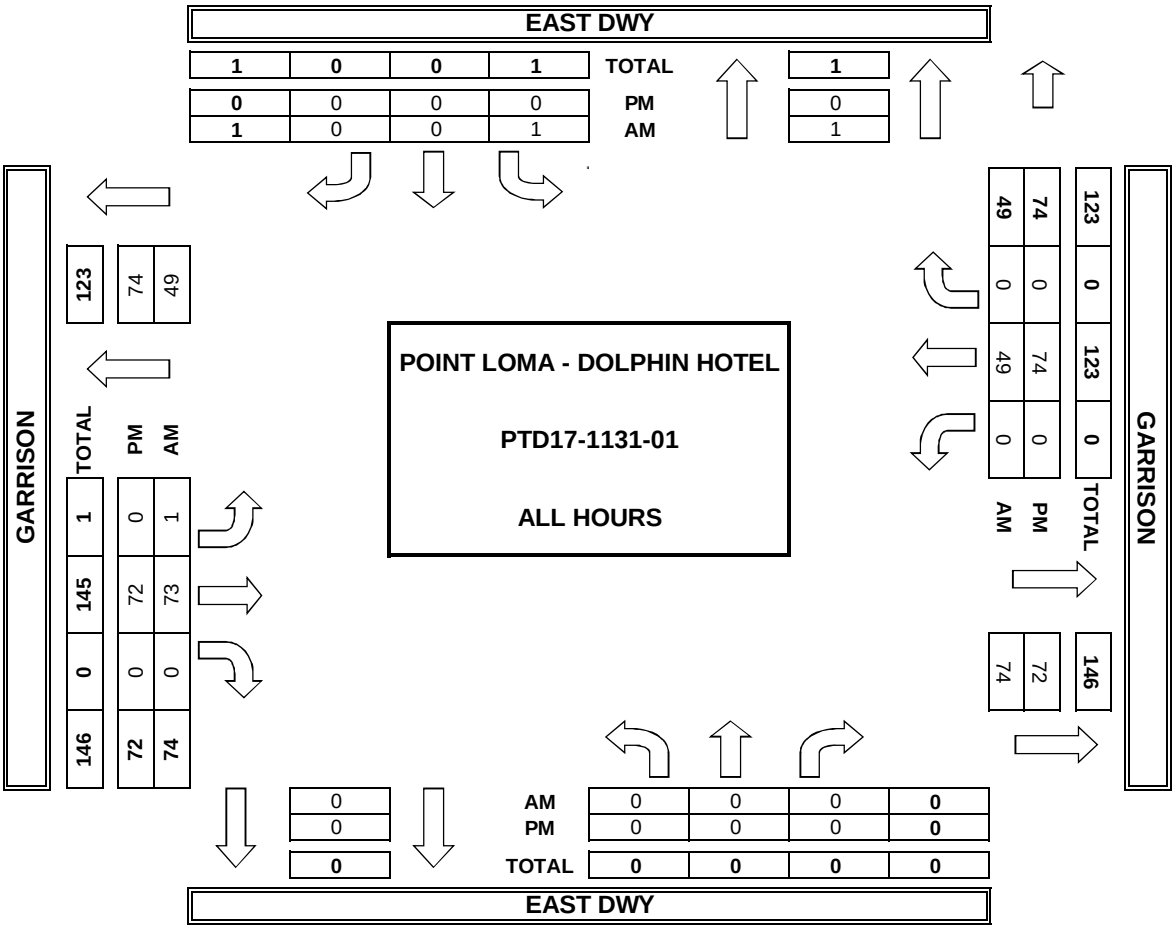
TURNING MOVEMENT COUNTS

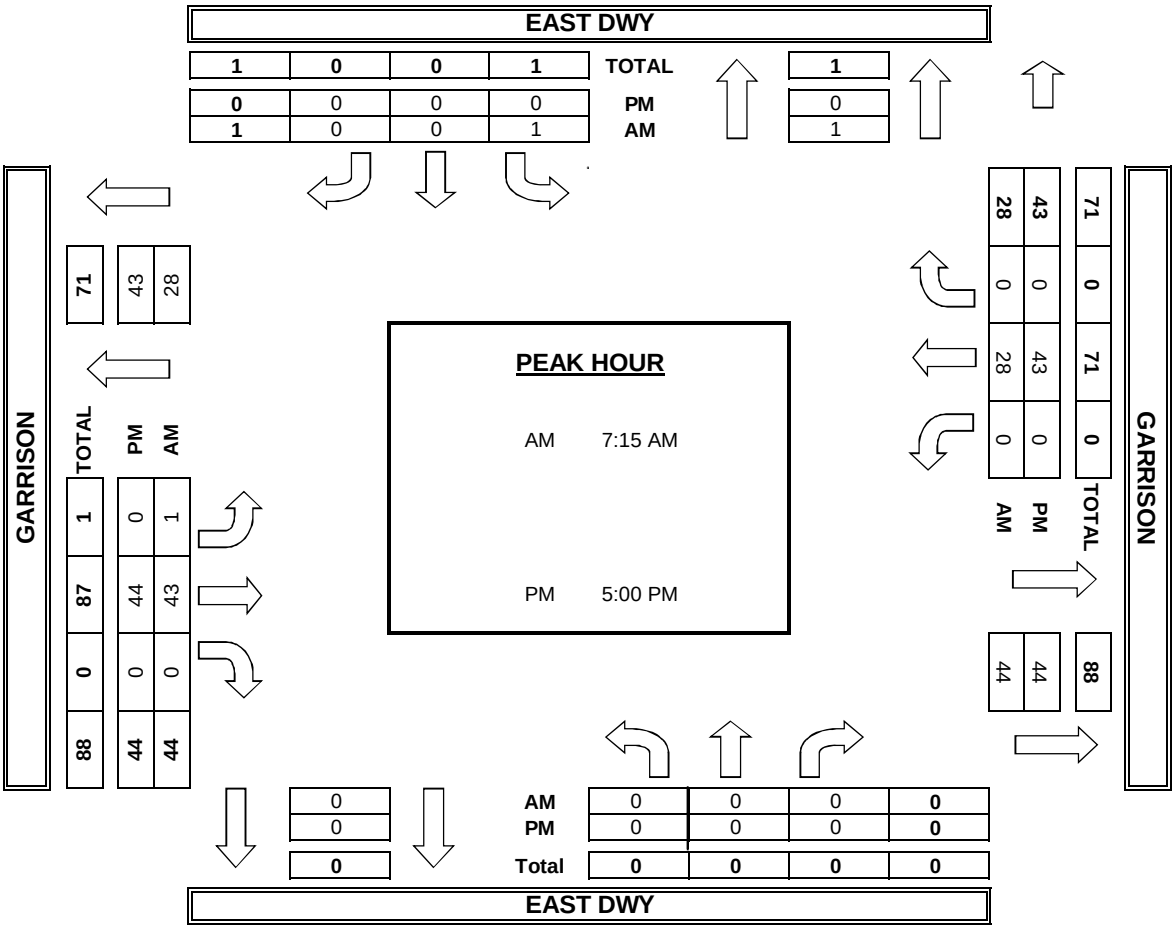




PACIFIC TECHNICAL DATA

TURNING MOVEMENT COUNTS





WEDNESDAY - NOVEMBER 29, 2017 CITY: POINT LOMA - DOLPHIN HT PROJECT: PTD17-1131-01

ROSECRANS - HARBOR TO INGELOW

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
00:00	22		24					12:00	283		266				
00:15	20		15					12:15	275		252				
00:30	14		13					12:30	328		270				
00:45	11	67	9	61			128	12:45	289	1175	223	1011			2186
01:00	8		17					13:00	302		248				
01:15	9		9					13:15	291		229				
01:30	4		7					13:30	275		233				
01:45	4	25	8	41			66	13:45	301	1169	207	917			2086
02:00	9		7					14:00	342		177				
02:15	7		1					14:15	379		216				
02:30	4		3					14:30	362		234				
02:45	5	25	4	15			40	14:45	360	1443	235	862			2305
03:00	3		9					15:00	380		225				
03:15	11		12					15:15	418		212				
03:30	5		13					15:30	393		201				
03:45	6	25	13	47			72	15:45	346	1537	194	832			2369
04:00	13		27					16:00	337		233				
04:15	17		27					16:15	319		229				
04:30	22		42					16:30	361		210				
04:45	36	88	77	173			261	16:45	360	1377	237	909			2286
05:00	38		88					17:00	367		214				
05:15	28		115					17:15	317		201				
05:30	79		203					17:30	275		205				
05:45	63	208	257	663			871	17:45	241	1200	226	846			2046
06:00	130		268					18:00	243		185				
06:15	141		338					18:15	238		198				
06:30	115		324					18:30	217		184				
06:45	146	532	318	1248			1780	18:45	183	881	155	722			1603
07:00	195		314					19:00	171		172				
07:15	214		300					19:15	164		157				
07:30	203		346					19:30	123		153				
07:45	244	856	282	1242			2098	19:45	136	594	124	606			1200
08:00	211		314					20:00	136		109				
08:15	232		250					20:15	129		87				
08:30	218		261					20:30	111		99				
08:45	203	864	272	1097			1961	20:45	111	487	90	385			872
09:00	227		257					21:00	120		94				
09:15	244		215					21:15	120		65				
09:30	254		237					21:30	72		63				
09:45	226	951	222	931			1882	21:45	76	388	67	289			677
10:00	234		211					22:00	80		70				
10:15	208		199					22:15	56		44				
10:30	256		220					22:30	60		49				
10:45	300	998	200	830			1828	22:45	50	246	37	200			446
11:00	358		215					23:00	58		42				
11:15	321		258					23:15	52		35				
11:30	255		258					23:30	35		33				
11:45	296	1230	250	981			2211	23:45	32	177	21	131			308
Total Vol.		5869		7329			**13198**		10674		7710				**18384**

Daily Totals

NB	SB	EB	WB	**Combined**
16543	15039			**31582**

	AM			**PM**		
Split %	44.5%	55.5%	**41.8%**	58.1%	41.9%	**58.2%**
Peak Hour	10:30	06:15	**11:45**	14:45	12:00	**14:30**
Volume	1235	1294	**2220**	1551	1011	**2426**
P.H.F.	0.86	0.96	**0.93**	0.94	0.94	**0.96**

WEDNESDAY - NOVEMBER 29, 2017 CITY: POINT LOMA - DOLPHIN HT PROJECT: PTD17-1131-01

ROSECRANS - HARBOR TO GARRISON

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
00:00	23		29					12:00	289		294				
00:15	20		18					12:15	299		282				
00:30	12		11					12:30	305		308				
00:45	10	65	8	66			131	12:45	295	1188	258	1142			2330
01:00	9		15					13:00	284		291				
01:15	4		12					13:15	298		241				
01:30	3		6					13:30	277		252				
01:45	5	21	9	42			63	13:45	287	1146	251	1035			2181
02:00	10		7					14:00	297		233				
02:15	6		1					14:15	284		238				
02:30	3		3					14:30	299		223				
02:45	0	19	4	15			34	14:45	288	1168	215	909			2077
03:00	3		7					15:00	305		235				
03:15	5		11					15:15	319		223				
03:30	6		14					15:30	333		204				
03:45	3	17	14	46			63	15:45	342	1299	275	937			2236
04:00	10		24					16:00	333		213				
04:15	12		29					16:15	368		224				
04:30	19		46					16:30	361		220				
04:45	27	68	79	178			246	16:45	342	1404	207	864			2268
05:00	33		90					17:00	333		188				
05:15	29		122					17:15	342		199				
05:30	67		224					17:30	305		218				
05:45	36	165	287	723			888	17:45	255	1235	222	827			2062
06:00	107		287					18:00	265		179				
06:15	128		364					18:15	237		182				
06:30	108		358					18:30	205		204				
06:45	133	476	371	1380			1856	18:45	206	913	186	751			1664
07:00	185		372					19:00	167		156				
07:15	188		351					19:15	151		169				
07:30	191		398					19:30	159		166				
07:45	205	769	343	1464			2233	19:45	128	605	137	628			1233
08:00	188		344					20:00	131		120				
08:15	216		309					20:15	140		111				
08:30	205		295					20:30	125		113				
08:45	188	797	305	1253			2050	20:45	124	520	123	467			987
09:00	191		281					21:00	134		96				
09:15	177		244					21:15	116		84				
09:30	184		265					21:30	100		93				
09:45	205	757	252	1042			1799	21:45	84	434	88	361			795
10:00	216		239					22:00	94		65				
10:15	222		212					22:15	70		62				
10:30	266		254					22:30	54		52				
10:45	284	988	218	923			1911	22:45	37	255	45	224			479
11:00	275		241					23:00	45		35				
11:15	265		265					23:15	38		33				
11:30	298		277					23:30	41		28				
11:45	277	1115	280	1063			2178	23:45	27	151	29	125			276
Total Vol.		5257		8195			**13452**			10318		8270			**18588**

Daily Totals

NB	SB	EB	WB	**Combined**
15575	16465			**32040**

	AM			**PM**		
Split %	39.1%	60.9%	**42.0%**	55.5%	44.5%	**58.0%**
Peak Hour	11:45	06:45	**11:45**	15:45	12:00	**15:45**
Volume	1170	1492	**2334**	1404	1142	**2336**
P.H.F.	0.96	0.94	**0.95**	0.96	0.93	**0.95**

WEDNESDAY - NOVEMBER 29, 2017 CITY: POINT LOMA - DOLPHIN HT PROJECT: PTD17-1131-01

HARBOR - E/O SCOTT

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
00:00			8		6			12:00			108		100		
00:15			4		16			12:15			119		120		
00:30			7		4			12:30			105		132		
00:45			2	21	7	33	54	12:45			117	449	129	481	930
01:00			4		1			13:00			110		100		
01:15			1		6			13:15			115		107		
01:30			3		5			13:30			117		95		
01:45			3	11	3	15	26	13:45			115	457	104	406	863
02:00			4		5			14:00			118		120		
02:15			2		2			14:15			142		96		
02:30			1		2			14:30			135		96		
02:45			3	10	2	11	21	14:45			149	544	92	404	948
03:00			2		4			15:00			149		126		
03:15			3		3			15:15			165		102		
03:30			4		4			15:30			212		100		
03:45			1	10	7	18	28	15:45			208	734	123	451	1185
04:00			3		3			16:00			228		125		
04:15			8		14			16:15			217		122		
04:30			11		14			16:30			197		119		
04:45			8	30	17	48	78	16:45			191	833	107	473	1306
05:00			11		24			17:00			218		128		
05:15			18		38			17:15			169		121		
05:30			17		45			17:30			132		127		
05:45			28	74	77	184	258	17:45			117	636	87	463	1099
06:00			45		94			18:00			94		89		
06:15			44		138			18:15			80		80		
06:30			47		128			18:30			72		102		
06:45			57	193	189	549	742	18:45			73	319	64	335	654
07:00			77		185			19:00			53		60		
07:15			115		206			19:15			59		80		
07:30			89		177			19:30			41		61		
07:45			115	396	194	762	1158	19:45			37	190	45	246	436
08:00			96		152			20:00			36		57		
08:15			103		148			20:15			35		51		
08:30			113		168			20:30			43		66		
08:45			106	418	145	613	1031	20:45			29	143	63	237	380
09:00			91		111			21:00			36		33		
09:15			85		133			21:15			27		34		
09:30			83		95			21:30			35		42		
09:45			94	353	88	427	780	21:45			29	127	31	140	267
10:00			84		88			22:00			30		24		
10:15			80		90			22:15			15		13		
10:30			93		110			22:30			20		22		
10:45			85	342	101	389	731	22:45			14	79	27	86	165
11:00			84		103			23:00			22		17		
11:15			107		120			23:15			16		18		
11:30			90		113			23:30			18		18		
11:45			99	380	124	460	840	23:45			10	66	11	64	130
Total Vol.				2238		3509	**5747**					4577		3786	**8363**

		Daily Totals		
NB	SB	EB	WB	**Combined**
		6815	7295	**14110**

	AM			**PM**		
Split %	38.9%	61.1%	**40.7%**	54.7%	45.3%	**59.3%**
Peak Hour	11:45	07:00	**07:00**	15:30	15:45	**15:45**
Volume	431	762	**1158**	865	489	**1339**
P.H.F.	0.91	0.92	**0.90**	0.95	0.98	**0.95**

WEDNESDAY - NOVEMBER 29, 2017 CITY: POINT LOMA - DOLPHIN HT PROJECT: PTD17-1131-01

SCOTT - GARRISON TO HARBOR

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
00:00	4		4					12:00	111		76				
00:15	2		9					12:15	129		106				
00:30	4		1					12:30	93		95				
00:45	2	12	4	18			30	12:45	120	453	95	372			825
01:00	1		0					13:00	107		79				
01:15	2		2					13:15	129		75				
01:30	4		4					13:30	121		65				
01:45	1	8	0	6			14	13:45	117	474	83	302			776
02:00	4		4					14:00	124		88				
02:15	2		1					14:15	130		72				
02:30	0		2					14:30	131		76				
02:45	2	8	1	8			16	14:45	157	542	71	307			849
03:00	2		3					15:00	156		73				
03:15	1		2					15:15	163		86				
03:30	2		2					15:30	195		75				
03:45	0	5	5	12			17	15:45	189	703	95	329			1032
04:00	6		3					16:00	200		82				
04:15	8		9					16:15	192		99				
04:30	12		8					16:30	190		85				
04:45	10	36	11	31			67	16:45	180	762	88	354			1116
05:00	14		20					17:00	192		99				
05:15	17		23					17:15	138		91				
05:30	19		27					17:30	102		89				
05:45	26	76	47	117			193	17:45	102	534	73	352			886
06:00	46		69					18:00	94		72				
06:15	37		99					18:15	67		72				
06:30	31		102					18:30	75		75				
06:45	51	165	135	405			570	18:45	63	299	49	268			567
07:00	67		137					19:00	45		39				
07:15	81		137					19:15	54		47				
07:30	83		125					19:30	48		45				
07:45	82	313	134	533			846	19:45	37	184	30	161			345
08:00	75		106					20:00	28		40				
08:15	94		90					20:15	30		40				
08:30	90		111					20:30	38		31				
08:45	85	344	101	408			752	20:45	32	128	48	159			287
09:00	86		85					21:00	35		22				
09:15	81		85					21:15	24		18				
09:30	82		66					21:30	33		23				
09:45	80	329	59	295			624	21:45	23	115	23	86			201
10:00	80		72					22:00	26		23				
10:15	73		60					22:15	16		15				
10:30	89		80					22:30	13		15				
10:45	85	327	85	297			624	22:45	18	73	17	70			143
11:00	96		69					23:00	18		6				
11:15	114		91					23:15	13		7				
11:30	85		91					23:30	10		8				
11:45	107	402	93	344			746	23:45	1	42	6	27			69
Total Vol.		2025		2474			**4499**			4309		2787			**7096**

Daily Totals

NB	SB	EB	WB	**Combined**
6334	5261			**11595**

	AM			PM		
Split %	45.0%	55.0%	**38.8%**	60.7%	39.3%	**61.2%**
Peak Hour	11:45	06:45	**07:00**	15:30	12:15	**15:45**
Volume	440	534	**846**	776	375	**1132**
P.H.F.	0.85	0.97	**0.97**	0.98	0.88	**0.97**

WEDNESDAY - NOVEMBER 29, 2017 CITY: POINT LOMA - DOLPHIN HT PROJECT: PTD17-1131-01

GARRISON - ROSECRANS TO SCOTT

AM Period	NB	SB	EB		WB			PM Period	NB	SB	EB		WB		
00:00			3		3			12:00			5		12		
00:15			1		1			12:15			11		9		
00:30			0		0			12:30			10		8		
00:45			1	5	0	4	9	12:45			15	41	10	39	80
01:00			1		0			13:00			6		8		
01:15			1		0			13:15			10		7		
01:30			0		2			13:30			6		7		
01:45			1	3	3	5	8	13:45			4	26	4	26	52
02:00			0		0			14:00			13		13		
02:15			0		0			14:15			6		10		
02:30			0		0			14:30			5		10		
02:45			0	0	0	0		14:45			6	30	10	43	73
03:00			0		0			15:00			8		8		
03:15			0		0			15:15			2		7		
03:30			0		0			15:30			9		6		
03:45			0	0	0	0		15:45			5	24	8	29	53
04:00			0		0			16:00			6		8		
04:15			1		0			16:15			6		6		
04:30			4		0			16:30			7		9		
04:45			5	10	4	4	14	16:45			9	28	7	30	58
05:00			11		3			17:00			13		13		
05:15			7		1			17:15			11		13		
05:30			5		2			17:30			10		5		
05:45			6	29	4	10	39	17:45			9	43	11	42	85
06:00			6		17			18:00			5		5		
06:15			13		15			18:15			7		8		
06:30			16		8			18:30			6		10		
06:45			12	47	6	46	93	18:45			3	21	8	31	52
07:00			8		4			19:00			7		4		
07:15			9		3			19:15			3		7		
07:30			10		4			19:30			1		3		
07:45			9	36	8	19	55	19:45			2	13	1	15	28
08:00			14		10			20:00			1		4		
08:15			6		6			20:15			3		4		
08:30			7		3			20:30			5		6		
08:45			9	36	7	26	62	20:45			4	13	2	16	29
09:00			9		6			21:00			2		5		
09:15			0		7			21:15			1		0		
09:30			13		3			21:30			4		3		
09:45			9	31	9	25	56	21:45			3	10	1	9	19
10:00			6		4			22:00			2		0		
10:15			11		10			22:15			0		4		
10:30			6		4			22:30			0		2		
10:45			6	29	15	33	62	22:45			1	3	0	6	9
11:00			4		16			23:00			0		6		
11:15			7		8			23:15			3		3		
11:30			7		9			23:30			1		3		
11:45			12	30	9	42	72	23:45			2	6	2	14	20
Total Vol.				256		214	**470**					258		300	**558**

Daily Totals

NB	SB	EB	WB	Combined
		514	514	**1028**

	AM			PM		
Split %	54.5%	45.5%	**45.7%**	46.2%	53.8%	**54.3%**
Peak Hour	06:15	10:45	**06:00**	16:45	14:00	**17:00**
Volume	49	48	**93**	43	43	**85**
P.H.F.	0.77	0.75	**0.83**	0.83	0.83	**0.82**

Table A
City of San Diego Traffic Counts

id	street_name	limits	all_count	northbound_count	southbound_count	eastbound_count	westbound_count	total_count	file_no	count_date	Number of Years Between Counts		Growth Per Year
ROSECRANSST041102	ROSECRANS ST	GARRISON ST - HUGO ST		15930	17610			33540	0411-02	4/11/2002 0:00	2002		
ROSECRANSST066610	ROSECRANS ST	GARRISON ST - HUGO ST		17175	18245			35420	0666-10	7/27/2010 0:00	2010	8	0.7%
ROSECRANSST120010	ROSECRANS ST	GARRISON ST - HUGO ST		16490	16785			33275	1200-10	1/12/2011 0:00	2011	1	-6.1%
ROSECRANSST071413	ROSECRANS ST	GARRISON ST - HUGO ST		14830	16639			31469	0714-13	10/22/2013 0:00	2013	2	-2.7%
ROSECRANSST094714	ROSECRANS ST	GARRISON ST - HUGO ST		14267	15454			29721	0947-14	10/14/2014 0:00	2014	1	-5.6%
												Average	***-3.4%***
NHARBORDR057002	N HARBOR DR	NIMITZ BL - SCOTT ST				11860	8920	20780	0570-02	6/4/2002 0:00	2002		
NHARBORDR012205	N HARBOR DR	NIMITZ BL - SCOTT ST				10520	11740	22260	0122-05	6/1/2005 0:00	2005	3	2.4%
NHARBORDR012205	N HARBOR DR	NIMITZ BL - SCOTT ST				7250	9230	16480	0122-05	8/12/2008 0:00	2008	3	-8.7%
NHARBORDR078911	N HARBOR DR	NIMITZ BL - SCOTT ST				8015	9025	17040	0789-11	8/18/2011 0:00	2011	3	1.1%
NHARBORDR080314	N HARBOR DR	NIMITZ BL - SCOTT ST				7631	8675	16306	0803-14	8/14/2014 0:00	2014	3	-1.4%
NHARBORDR060115	N HARBOR DR	NIMITZ BL - SCOTT ST				4850	6909	11759	0601-15	3/10/2015 0:00	2015	1	-27.9%
												Average	***-6.9%***
												Overall Average	***-5.1%***

APPENDIX B

INTERSECTION CALCULATION SHEETS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	114	21	11	218	38	65	8	654	76	35	1177	32
Future Volume (veh/h)	114	21	11	218	38	65	8	654	76	35	1177	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	118	22	11	225	39	67	8	674	78	36	1213	33
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	185	32	13	319	109	188	17	2143	248	53	2430	66
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.01	0.67	0.67	0.03	0.69	0.69
Sat Flow, veh/h	734	184	72	1376	618	1061	1781	3209	371	1781	3534	96
Grp Volume(v), veh/h	151	0	0	225	0	106	8	373	379	36	610	636
Grp Sat Flow(s),veh/h/ln	990	0	0	1376	0	1679	1781	1777	1804	1781	1777	1853
Q Serve(g_s), s	11.8	0.0	0.0	0.0	0.0	6.4	0.5	10.2	10.3	2.3	18.9	19.0
Cycle Q Clear(g_c), s	18.2	0.0	0.0	17.4	0.0	6.4	0.5	10.2	10.3	2.3	18.9	19.0
Prop In Lane	0.78		0.07	1.00		0.63	1.00		0.21	1.00		0.05
Lane Grp Cap(c), veh/h	230	0	0	319	0	297	17	1187	1204	53	1222	1274
V/C Ratio(X)	0.66	0.00	0.00	0.71	0.00	0.36	0.46	0.31	0.31	0.68	0.50	0.50
Avail Cap(c_a), veh/h	421	0	0	511	0	531	86	1187	1204	117	1222	1274
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.96	0.00	0.96	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.3	0.0	0.0	46.5	0.0	42.0	57.1	8.1	8.1	55.7	8.6	8.6
Incr Delay (d2), s/veh	1.2	0.0	0.0	1.0	0.0	0.3	6.8	0.7	0.7	5.7	1.5	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	0.0	0.0	6.4	0.0	2.7	0.3	3.9	4.0	1.1	7.2	7.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.4	0.0	0.0	47.5	0.0	42.2	63.9	8.8	8.8	61.4	10.1	10.0
LnGrp LOS	D	A	A	D	A	D	E	A	A	E	B	B
Approach Vol, veh/h		151			331			760			1282	
Approach Delay, s/veh		50.4			45.8			9.4			11.5	
Approach LOS		D			D			A			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.8	82.4		25.8	5.5	84.7		25.8				
Change Period (Y+Rc), s	4.4	4.9		5.3	4.4	4.9		5.3				
Max Green Setting (Gmax), s	7.6	57.1		36.7	5.6	59.1		36.7				
Max Q Clear Time (g_c+I1), s	4.3	12.3		20.2	2.5	21.0		19.4				
Green Ext Time (p_c), s	0.0	1.7		0.3	0.0	3.2		0.3				

Intersection Summary			
HCM 6th Ctrl Delay		17.7	
HCM 6th LOS		B	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	120	8	467	296	27	22	42	253	20	63	10
Future Volume (veh/h)	2	120	8	467	296	27	22	42	253	20	63	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	2	126	8	492	312	0	23	44	0	21	66	11
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	5	532	451	731	923		186	117		155	116	19
Arrive On Green	0.00	0.28	0.28	0.21	0.49	0.00	0.09	0.09	0.00	0.09	0.09	0.09
Sat Flow, veh/h	1781	1870	1585	3456	1870	1585	513	1240	1585	326	1230	197
Grp Volume(v), veh/h	2	126	8	492	312	0	67	0	0	98	0	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1728	1870	1585	1753	0	1585	1752	0	0
Q Serve(g_s), s	0.0	1.8	0.1	4.6	3.6	0.0	0.0	0.0	0.0	0.6	0.0	0.0
Cycle Q Clear(g_c), s	0.0	1.8	0.1	4.6	3.6	0.0	1.2	0.0	0.0	1.8	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.34		1.00	0.21		0.11
Lane Grp Cap(c), veh/h	5	532	451	731	923		303	0		290	0	0
V/C Ratio(X)	0.39	0.24	0.02	0.67	0.34		0.22	0.00		0.34	0.00	0.00
Avail Cap(c_a), veh/h	284	1165	987	2221	2080		1597	0		1633	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	17.5	9.7	9.0	12.7	5.4	0.0	15.0	0.0	0.0	15.2	0.0	0.0
Incr Delay (d2), s/veh	17.5	0.1	0.0	0.4	0.2	0.0	0.1	0.0	0.0	0.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.6	0.0	1.4	0.8	0.0	0.4	0.0	0.0	0.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.0	9.7	9.1	13.2	5.6	0.0	15.1	0.0	0.0	15.5	0.0	0.0
LnGrp LOS	C	A	A	B	A		B	A		B	A	A
Approach Vol, veh/h		136			804	A		67	A		98	
Approach Delay, s/veh		10.1			10.2			15.1			15.5	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.8	15.1		8.2	4.5	22.5		8.2				
Change Period (Y+Rc), s	4.4	5.1		4.9	4.4	* 5.1		4.9				
Max Green Setting (Gmax), s	22.6	21.9		31.1	5.6	* 39		31.1				
Max Q Clear Time (g_c+I1), s	6.6	3.8		3.8	2.0	5.6		3.2				
Green Ext Time (p_c), s	0.9	0.4		0.3	0.0	1.7		0.2				

Intersection Summary		
HCM 6th Ctrl Delay		11.0
HCM 6th LOS		B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	43	34	0	2	4
Future Vol, veh/h	4	43	34	0	2	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	68	68	68	68	68	68
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	63	50	0	3	6

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	50	0	-	0	125	50
Stage 1	-	-	-	-	50	-
Stage 2	-	-	-	-	75	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1557	-	-	-	870	1018
Stage 1	-	-	-	-	972	-
Stage 2	-	-	-	-	948	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1557	-	-	-	867	1018
Mov Cap-2 Maneuver	-	-	-	-	867	-
Stage 1	-	-	-	-	968	-
Stage 2	-	-	-	-	948	-

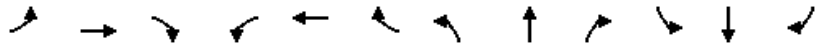
Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	8.8
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1557	-	-	-	962
HCM Lane V/C Ratio	0.004	-	-	-	0.009
HCM Control Delay (s)	7.3	0	-	-	8.8
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	67	27	7	77	25	105	8	1218	162	60	735	24
Future Volume (veh/h)	67	27	7	77	25	105	8	1218	162	60	735	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	70	28	7	80	26	109	8	1269	169	62	766	25
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	114	41	8	244	49	205	17	2239	297	67	2591	85
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.01	0.71	0.71	0.04	0.74	0.74
Sat Flow, veh/h	475	264	53	1373	315	1319	1781	3154	418	1781	3512	115
Grp Volume(v), veh/h	105	0	0	80	0	135	8	712	726	62	387	404
Grp Sat Flow(s),veh/h/ln	792	0	0	1373	0	1633	1781	1777	1795	1781	1777	1850
Q Serve(g_s), s	9.8	0.0	0.0	0.0	0.0	11.4	0.7	29.1	29.5	5.2	11.0	11.0
Cycle Q Clear(g_c), s	21.2	0.0	0.0	8.7	0.0	11.4	0.7	29.1	29.5	5.2	11.0	11.0
Prop In Lane	0.67		0.07	1.00		0.81	1.00		0.23	1.00		0.06
Lane Grp Cap(c), veh/h	163	0	0	244	0	254	17	1261	1274	67	1311	1365
V/C Ratio(X)	0.64	0.00	0.00	0.33	0.00	0.53	0.48	0.56	0.57	0.93	0.30	0.30
Avail Cap(c_a), veh/h	223	0	0	302	0	323	67	1261	1274	67	1311	1365
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.99	0.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	66.2	0.0	0.0	57.2	0.0	58.3	73.9	10.5	10.6	72.0	6.6	6.6
Incr Delay (d2), s/veh	1.6	0.0	0.0	0.3	0.0	0.6	7.5	1.8	1.9	85.6	0.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	0.0	0.0	2.8	0.0	4.8	0.3	11.6	11.9	4.0	4.2	4.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.8	0.0	0.0	57.4	0.0	59.0	81.4	12.4	12.4	157.6	7.2	7.1
LnGrp LOS	E	A	A	E	A	E	F	B	B	F	A	A
Approach Vol, veh/h		105			215			1446			853	
Approach Delay, s/veh		67.8			58.4			12.8			18.1	
Approach LOS		E			E			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.0	111.4		28.6	5.8	115.6		28.6				
Change Period (Y+Rc), s	4.4	4.9		5.3	4.4	4.9		5.3				
Max Green Setting (Gmax), s	5.6	100.1		29.7	5.6	100.1		29.7				
Max Q Clear Time (g_c+I1), s	7.2	31.5		23.2	2.7	13.0		13.4				
Green Ext Time (p_c), s	0.0	4.1		0.1	0.0	1.8		0.3				

Intersection Summary			
HCM 6th Ctrl Delay		20.5	
HCM 6th LOS		C	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	213	11	315	137	36	60	163	603	14	37	11
Future Volume (veh/h)	27	213	11	315	137	36	60	163	603	14	37	11
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	28	222	11	328	143	0	62	170	0	15	39	11
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	48	505	428	521	736		189	267		158	239	57
Arrive On Green	0.03	0.27	0.27	0.15	0.39	0.00	0.19	0.19	0.00	0.19	0.19	0.19
Sat Flow, veh/h	1781	1870	1585	3456	1870	1585	342	1398	1585	201	1253	296
Grp Volume(v), veh/h	28	222	11	328	143	0	232	0	0	65	0	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1728	1870	1585	1740	0	1585	1750	0	0
Q Serve(g_s), s	0.6	3.6	0.2	3.3	1.9	0.0	2.8	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.6	3.6	0.2	3.3	1.9	0.0	4.5	0.0	0.0	1.1	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.27		1.00	0.23		0.17
Lane Grp Cap(c), veh/h	48	505	428	521	736		455	0		454	0	0
V/C Ratio(X)	0.58	0.44	0.03	0.63	0.19		0.51	0.00		0.14	0.00	0.00
Avail Cap(c_a), veh/h	279	1156	979	1455	1660		1831	0		1766	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	17.8	11.2	9.9	14.8	7.4	0.0	13.9	0.0	0.0	12.6	0.0	0.0
Incr Delay (d2), s/veh	4.1	0.2	0.0	0.5	0.1	0.0	0.3	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.2	0.1	1.1	0.5	0.0	1.5	0.0	0.0	0.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.9	11.4	10.0	15.2	7.5	0.0	14.2	0.0	0.0	12.6	0.0	0.0
LnGrp LOS	C	B	A	B	A		B	A		B	A	A
Approach Vol, veh/h		261			471	A		232	A		65	
Approach Delay, s/veh		12.5			12.9			14.2			12.6	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.0	15.1		12.0	5.4	19.7		12.0				
Change Period (Y+Rc), s	4.4	5.1		4.9	4.4	* 5.1		4.9				
Max Green Setting (Gmax), s	15.6	22.9		37.1	5.8	* 33		37.1				
Max Q Clear Time (g_c+I1), s	5.3	5.6		3.1	2.6	3.9		6.5				
Green Ext Time (p_c), s	0.5	0.7		0.2	0.0	0.7		0.9				

Intersection Summary	
HCM 6th Ctrl Delay	13.1
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	44	43	1	1	0
Future Vol, veh/h	0	44	43	1	1	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	54	53	1	1	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	54	0	-	0	108	54
Stage 1	-	-	-	-	54	-
Stage 2	-	-	-	-	54	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1551	-	-	-	889	1013
Stage 1	-	-	-	-	969	-
Stage 2	-	-	-	-	969	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1551	-	-	-	889	1013
Mov Cap-2 Maneuver	-	-	-	-	889	-
Stage 1	-	-	-	-	969	-
Stage 2	-	-	-	-	969	-

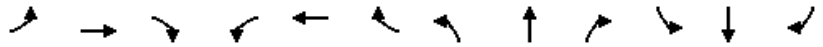
Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.1
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1551	-	-	-	889
HCM Lane V/C Ratio	-	-	-	-	0.001
HCM Control Delay (s)	0	-	-	-	9.1
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	114	21	11	218	38	65	8	666	76	35	1185	32
Future Volume (veh/h)	114	21	11	218	38	65	8	666	76	35	1185	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	118	22	11	225	39	67	8	687	78	36	1222	33
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	184	32	13	318	109	187	17	2150	244	53	2433	66
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.01	0.67	0.67	0.03	0.69	0.69
Sat Flow, veh/h	732	183	72	1376	618	1061	1781	3217	365	1781	3535	95
Grp Volume(v), veh/h	151	0	0	225	0	106	8	379	386	36	614	641
Grp Sat Flow(s),veh/h/ln	988	0	0	1376	0	1679	1781	1777	1805	1781	1777	1853
Q Serve(g_s), s	11.8	0.0	0.0	0.0	0.0	6.4	0.5	10.4	10.5	2.3	19.1	19.1
Cycle Q Clear(g_c), s	18.2	0.0	0.0	17.4	0.0	6.4	0.5	10.4	10.5	2.3	19.1	19.1
Prop In Lane	0.78		0.07	1.00		0.63	1.00		0.20	1.00		0.05
Lane Grp Cap(c), veh/h	229	0	0	318	0	296	17	1188	1206	53	1223	1276
V/C Ratio(X)	0.66	0.00	0.00	0.71	0.00	0.36	0.46	0.32	0.32	0.68	0.50	0.50
Avail Cap(c_a), veh/h	315	0	0	404	0	401	86	1188	1206	117	1223	1276
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.96	0.00	0.96	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.3	0.0	0.0	46.5	0.0	42.0	57.1	8.1	8.1	55.7	8.6	8.6
Incr Delay (d2), s/veh	1.2	0.0	0.0	2.4	0.0	0.3	6.8	0.7	0.7	5.7	1.5	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	0.0	0.0	6.5	0.0	2.7	0.3	4.0	4.1	1.1	7.2	7.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.5	0.0	0.0	48.9	0.0	42.3	63.9	8.8	8.8	61.4	10.1	10.0
LnGrp LOS	D	A	A	D	A	D	E	A	A	E	B	B
Approach Vol, veh/h		151			331			773			1291	
Approach Delay, s/veh		50.5			46.8			9.4			11.5	
Approach LOS		D			D			A			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.8	82.4		25.7	5.5	84.7		25.7				
Change Period (Y+Rc), s	4.4	4.9		5.3	4.4	4.9		5.3				
Max Green Setting (Gmax), s	7.6	66.1		27.7	5.6	68.1		27.7				
Max Q Clear Time (g_c+I1), s	4.3	12.5		20.2	2.5	21.1		19.4				
Green Ext Time (p_c), s	0.0	1.7		0.2	0.0	3.2		0.2				

Intersection Summary			
HCM 6th Ctrl Delay		17.8	
HCM 6th LOS		B	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	120	8	475	296	27	22	42	265	20	63	10
Future Volume (veh/h)	2	120	8	475	296	27	22	42	265	20	63	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	2	126	8	500	312	0	23	44	0	21	66	11
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	5	537	455	704	914		188	119		157	118	19
Arrive On Green	0.00	0.29	0.29	0.20	0.49	0.00	0.10	0.10	0.00	0.10	0.10	0.10
Sat Flow, veh/h	1781	1870	1585	3456	1870	1585	512	1240	1585	325	1230	197
Grp Volume(v), veh/h	2	126	8	500	312	0	67	0	0	98	0	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1728	1870	1585	1752	0	1585	1751	0	0
Q Serve(g_s), s	0.0	1.8	0.1	4.7	3.6	0.0	0.0	0.0	0.0	0.6	0.0	0.0
Cycle Q Clear(g_c), s	0.0	1.8	0.1	4.7	3.6	0.0	1.2	0.0	0.0	1.8	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.34		1.00	0.21		0.11
Lane Grp Cap(c), veh/h	5	537	455	704	914		306	0		293	0	0
V/C Ratio(X)	0.39	0.23	0.02	0.71	0.34		0.22	0.00		0.33	0.00	0.00
Avail Cap(c_a), veh/h	286	1069	906	1052	1348		2270	0		2332	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	17.3	9.5	8.9	12.9	5.5	0.0	14.8	0.0	0.0	15.1	0.0	0.0
Incr Delay (d2), s/veh	17.1	0.1	0.0	0.5	0.2	0.0	0.1	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.6	0.0	1.5	0.8	0.0	0.4	0.0	0.0	0.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.4	9.6	8.9	13.4	5.6	0.0	14.9	0.0	0.0	15.3	0.0	0.0
LnGrp LOS	C	A	A	B	A		B	A		B	A	A
Approach Vol, veh/h		136			812	A		67	A		98	
Approach Delay, s/veh		9.9			10.4			14.9			15.3	
Approach LOS		A			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.5	15.1		8.2	4.5	22.1		8.2				
Change Period (Y+Rc), s	4.4	5.1		4.9	4.4	* 5.1		4.9				
Max Green Setting (Gmax), s	10.6	19.9		45.1	5.6	* 25		45.1				
Max Q Clear Time (g_c+I1), s	6.7	3.8		3.8	2.0	5.6		3.2				
Green Ext Time (p_c), s	0.5	0.3		0.4	0.0	1.5		0.2				

Intersection Summary	
HCM 6th Ctrl Delay	11.1
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	12	43	34	8	14	16
Future Vol, veh/h	12	43	34	8	14	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	68	68	68	68	68	68
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	18	63	50	12	21	24

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	62	0	-	0	155	56
Stage 1	-	-	-	-	56	-
Stage 2	-	-	-	-	99	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1541	-	-	-	836	1011
Stage 1	-	-	-	-	967	-
Stage 2	-	-	-	-	925	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1541	-	-	-	826	1011
Mov Cap-2 Maneuver	-	-	-	-	826	-
Stage 1	-	-	-	-	955	-
Stage 2	-	-	-	-	925	-

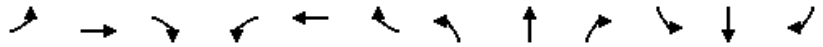
Approach	EB	WB	SB
HCM Control Delay, s	1.6	0	9.1
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1541	-	-	-	915
HCM Lane V/C Ratio	0.011	-	-	-	0.048
HCM Control Delay (s)	7.4	0	-	-	9.1
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	67	27	7	77	25	105	8	1231	162	60	744	24
Future Volume (veh/h)	67	27	7	77	25	105	8	1231	162	60	744	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	70	28	7	80	26	109	8	1282	169	62	775	25
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	114	41	8	243	49	204	17	2245	294	65	2593	84
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.01	0.71	0.71	0.04	0.74	0.74
Sat Flow, veh/h	474	264	53	1373	315	1319	1781	3159	414	1781	3513	113
Grp Volume(v), veh/h	105	0	0	80	0	135	8	718	733	62	392	408
Grp Sat Flow(s),veh/h/ln	790	0	0	1373	0	1633	1781	1777	1796	1781	1777	1850
Q Serve(g_s), s	9.8	0.0	0.0	0.0	0.0	11.4	0.7	29.4	29.9	5.2	11.1	11.1
Cycle Q Clear(g_c), s	21.2	0.0	0.0	8.7	0.0	11.4	0.7	29.4	29.9	5.2	11.1	11.1
Prop In Lane	0.67		0.07	1.00		0.81	1.00		0.23	1.00		0.06
Lane Grp Cap(c), veh/h	163	0	0	243	0	253	17	1263	1277	65	1312	1366
V/C Ratio(X)	0.65	0.00	0.00	0.33	0.00	0.53	0.48	0.57	0.57	0.95	0.30	0.30
Avail Cap(c_a), veh/h	185	0	0	266	0	280	65	1263	1277	65	1312	1366
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.99	0.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	66.3	0.0	0.0	57.2	0.0	58.4	73.9	10.5	10.6	72.1	6.6	6.6
Incr Delay (d2), s/veh	4.0	0.0	0.0	0.3	0.0	0.6	7.5	1.9	1.9	92.5	0.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	0.0	0.0	2.8	0.0	4.8	0.3	11.7	12.0	4.1	4.2	4.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	70.3	0.0	0.0	57.5	0.0	59.0	81.4	12.4	12.5	164.6	7.2	7.2
LnGrp LOS	E	A	A	E	A	E	F	B	B	F	A	A
Approach Vol, veh/h		105			215			1459			862	
Approach Delay, s/veh		70.3			58.4			12.8			18.5	
Approach LOS		E			E			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.9	111.5		28.6	5.8	115.6		28.6				
Change Period (Y+Rc), s	4.4	4.9		5.3	4.4	4.9		5.3				
Max Green Setting (Gmax), s	5.5	104.2		25.7	5.5	104.2		25.7				
Max Q Clear Time (g_c+I1), s	7.2	31.9		23.2	2.7	13.1		13.4				
Green Ext Time (p_c), s	0.0	4.2		0.0	0.0	1.8		0.3				

Intersection Summary			
HCM 6th Ctrl Delay		20.7	
HCM 6th LOS		C	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	213	11	324	137	36	60	163	617	14	37	11
Future Volume (veh/h)	27	213	11	324	137	36	60	163	617	14	37	11
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	28	222	11	338	143	0	62	170	0	15	39	11
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	48	508	430	503	730		189	268		159	240	57
Arrive On Green	0.03	0.27	0.27	0.15	0.39	0.00	0.19	0.19	0.00	0.19	0.19	0.19
Sat Flow, veh/h	1781	1870	1585	3456	1870	1585	342	1398	1585	201	1253	296
Grp Volume(v), veh/h	28	222	11	338	143	0	232	0	0	65	0	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1728	1870	1585	1740	0	1585	1749	0	0
Q Serve(g_s), s	0.6	3.6	0.2	3.4	1.9	0.0	2.8	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.6	3.6	0.2	3.4	1.9	0.0	4.5	0.0	0.0	1.1	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.27		1.00	0.23		0.17
Lane Grp Cap(c), veh/h	48	508	430	503	730		458	0		456	0	0
V/C Ratio(X)	0.58	0.44	0.03	0.67	0.20		0.51	0.00		0.14	0.00	0.00
Avail Cap(c_a), veh/h	281	1148	973	648	1214		2257	0		2173	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	17.7	11.1	9.8	14.9	7.4	0.0	13.8	0.0	0.0	12.5	0.0	0.0
Incr Delay (d2), s/veh	4.1	0.2	0.0	0.9	0.1	0.0	0.3	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.2	0.1	1.2	0.5	0.0	1.5	0.0	0.0	0.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.8	11.3	9.8	15.8	7.5	0.0	14.1	0.0	0.0	12.5	0.0	0.0
LnGrp LOS	C	B	A	B	A		B	A		B	A	A
Approach Vol, veh/h		261			481	A		232	A		65	
Approach Delay, s/veh		12.4			13.3			14.1			12.5	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.8	15.1		12.0	5.4	19.5		12.0				
Change Period (Y+Rc), s	4.4	5.1		4.9	4.4	* 5.1		4.9				
Max Green Setting (Gmax), s	5.4	22.6		46.1	5.8	* 24		46.1				
Max Q Clear Time (g_c+I1), s	5.4	5.6		3.1	2.6	3.9		6.5				
Green Ext Time (p_c), s	0.1	0.7		0.2	0.0	0.6		0.9				

Intersection Summary	
HCM 6th Ctrl Delay	13.2
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	9	50	50	10	15	13
Future Vol, veh/h	9	50	50	10	15	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	62	62	12	19	16

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	74	0	-	0	152	68
Stage 1	-	-	-	-	68	-
Stage 2	-	-	-	-	84	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1526	-	-	-	840	995
Stage 1	-	-	-	-	955	-
Stage 2	-	-	-	-	939	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1526	-	-	-	834	995
Mov Cap-2 Maneuver	-	-	-	-	834	-
Stage 1	-	-	-	-	948	-
Stage 2	-	-	-	-	939	-

Approach	EB	WB	SB
HCM Control Delay, s	1.1	0	9.2
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1526	-	-	-	902
HCM Lane V/C Ratio	0.007	-	-	-	0.038
HCM Control Delay (s)	7.4	0	-	-	9.2
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	116	21	11	222	39	66	8	667	78	36	1201	33
Future Volume (veh/h)	116	21	11	222	39	66	8	667	78	36	1201	33
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	120	22	11	229	40	68	8	688	80	37	1238	34
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	187	32	13	324	112	190	17	2132	248	53	2420	66
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.01	0.66	0.66	0.03	0.68	0.68
Sat Flow, veh/h	735	180	71	1376	622	1058	1781	3207	373	1781	3533	97
Grp Volume(v), veh/h	153	0	0	229	0	108	8	381	387	37	622	650
Grp Sat Flow(s),veh/h/ln	985	0	0	1376	0	1680	1781	1777	1803	1781	1777	1853
Q Serve(g_s), s	12.0	0.0	0.0	0.0	0.0	6.5	0.5	10.6	10.6	2.4	19.7	19.7
Cycle Q Clear(g_c), s	18.5	0.0	0.0	17.6	0.0	6.5	0.5	10.6	10.6	2.4	19.7	19.7
Prop In Lane	0.78		0.07	1.00		0.63	1.00		0.21	1.00		0.05
Lane Grp Cap(c), veh/h	232	0	0	324	0	301	17	1181	1199	53	1217	1269
V/C Ratio(X)	0.66	0.00	0.00	0.71	0.00	0.36	0.46	0.32	0.32	0.69	0.51	0.51
Avail Cap(c_a), veh/h	419	0	0	512	0	532	86	1181	1199	117	1217	1269
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.96	0.00	0.96	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.2	0.0	0.0	46.3	0.0	41.7	57.1	8.3	8.3	55.7	8.9	8.9
Incr Delay (d2), s/veh	1.2	0.0	0.0	1.0	0.0	0.3	6.8	0.7	0.7	5.8	1.5	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	0.0	0.0	6.5	0.0	2.7	0.3	4.1	4.2	1.2	7.5	7.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.3	0.0	0.0	47.3	0.0	42.0	63.9	9.0	9.0	61.5	10.4	10.3
LnGrp LOS	D	A	A	D	A	D	E	A	A	E	B	B
Approach Vol, veh/h		153			337			776			1309	
Approach Delay, s/veh		50.3			45.6			9.6			11.8	
Approach LOS		D			D			A			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.9	82.0		26.1	5.5	84.3		26.1				
Change Period (Y+Rc), s	4.4	4.9		5.3	4.4	4.9		5.3				
Max Green Setting (Gmax), s	7.6	57.1		36.7	5.6	59.1		36.7				
Max Q Clear Time (g_c+I1), s	4.4	12.6		20.5	2.5	21.7		19.6				
Green Ext Time (p_c), s	0.0	1.7		0.3	0.0	3.3		0.3				

Intersection Summary			
HCM 6th Ctrl Delay		17.9	
HCM 6th LOS		B	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	122	8	476	302	28	22	43	258	20	64	10
Future Volume (veh/h)	2	122	8	476	302	28	22	43	258	20	64	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	2	128	8	501	318	0	23	45	0	21	67	11
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	5	536	454	705	914		186	121		156	120	19
Arrive On Green	0.00	0.29	0.29	0.20	0.49	0.00	0.10	0.10	0.00	0.10	0.10	0.10
Sat Flow, veh/h	1781	1870	1585	3456	1870	1585	500	1253	1585	319	1238	195
Grp Volume(v), veh/h	2	128	8	501	318	0	68	0	0	99	0	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1728	1870	1585	1753	0	1585	1752	0	0
Q Serve(g_s), s	0.0	1.8	0.1	4.7	3.7	0.0	0.0	0.0	0.0	0.6	0.0	0.0
Cycle Q Clear(g_c), s	0.0	1.8	0.1	4.7	3.7	0.0	1.2	0.0	0.0	1.8	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.34		1.00	0.21		0.11
Lane Grp Cap(c), veh/h	5	536	454	705	914		307	0		294	0	0
V/C Ratio(X)	0.39	0.24	0.02	0.71	0.35		0.22	0.00		0.34	0.00	0.00
Avail Cap(c_a), veh/h	286	1067	904	1050	1346		2269	0		2330	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	17.4	9.5	8.9	12.9	5.5	0.0	14.8	0.0	0.0	15.1	0.0	0.0
Incr Delay (d2), s/veh	17.1	0.1	0.0	0.5	0.2	0.0	0.1	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.6	0.0	1.5	0.8	0.0	0.4	0.0	0.0	0.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.5	9.6	8.9	13.4	5.7	0.0	14.9	0.0	0.0	15.3	0.0	0.0
LnGrp LOS	C	A	A	B	A		B	A		B	A	A
Approach Vol, veh/h		138			819	A		68	A		99	
Approach Delay, s/veh		9.9			10.4			14.9			15.3	
Approach LOS		A			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.5	15.1		8.3	4.5	22.1		8.3				
Change Period (Y+Rc), s	4.4	5.1		4.9	4.4	* 5.1		4.9				
Max Green Setting (Gmax), s	10.6	19.9		45.1	5.6	* 25		45.1				
Max Q Clear Time (g_c+I1), s	6.7	3.8		3.8	2.0	5.7		3.2				
Green Ext Time (p_c), s	0.5	0.4		0.4	0.0	1.5		0.2				

Intersection Summary	
HCM 6th Ctrl Delay	11.1
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	50	50	0	2	4
Future Vol, veh/h	4	50	50	0	2	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	68	68	68	68	68	68
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	74	74	0	3	6

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	74	0	-	0	160	74
Stage 1	-	-	-	-	74	-
Stage 2	-	-	-	-	86	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1526	-	-	-	831	988
Stage 1	-	-	-	-	949	-
Stage 2	-	-	-	-	937	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1526	-	-	-	828	988
Mov Cap-2 Maneuver	-	-	-	-	828	-
Stage 1	-	-	-	-	945	-
Stage 2	-	-	-	-	937	-

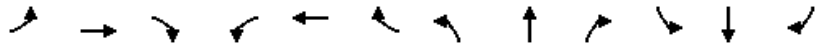
Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	8.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1526	-	-	-	928
HCM Lane V/C Ratio	0.004	-	-	-	0.01
HCM Control Delay (s)	7.4	0	-	-	8.9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	68	28	7	79	26	107	8	1242	165	61	750	24
Future Volume (veh/h)	68	28	7	79	26	107	8	1242	165	61	750	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	71	29	7	82	27	111	8	1294	172	64	781	25
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	115	42	8	246	51	208	17	2231	295	67	2583	83
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.01	0.71	0.71	0.04	0.73	0.73
Sat Flow, veh/h	472	266	52	1372	320	1314	1781	3155	417	1781	3514	112
Grp Volume(v), veh/h	107	0	0	82	0	138	8	725	741	64	395	411
Grp Sat Flow(s),veh/h/ln	790	0	0	1372	0	1634	1781	1777	1795	1781	1777	1850
Q Serve(g_s), s	10.0	0.0	0.0	0.0	0.0	11.6	0.7	30.3	30.9	5.4	11.4	11.4
Cycle Q Clear(g_c), s	21.6	0.0	0.0	8.9	0.0	11.6	0.7	30.3	30.9	5.4	11.4	11.4
Prop In Lane	0.66		0.07	1.00		0.80	1.00		0.23	1.00		0.06
Lane Grp Cap(c), veh/h	165	0	0	246	0	259	17	1256	1269	67	1306	1360
V/C Ratio(X)	0.65	0.00	0.00	0.33	0.00	0.53	0.48	0.58	0.58	0.96	0.30	0.30
Avail Cap(c_a), veh/h	220	0	0	301	0	323	67	1256	1269	67	1306	1360
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.99	0.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	66.1	0.0	0.0	56.9	0.0	58.0	73.9	10.9	11.0	72.1	6.8	6.8
Incr Delay (d2), s/veh	1.6	0.0	0.0	0.3	0.0	0.6	7.5	1.9	2.0	96.3	0.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	0.0	0.0	2.8	0.0	4.9	0.3	12.1	12.4	4.2	4.4	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.7	0.0	0.0	57.2	0.0	58.7	81.4	12.8	12.9	168.4	7.4	7.3
LnGrp LOS	E	A	A	E	A	E	F	B	B	F	A	A
Approach Vol, veh/h		107			220			1474			870	
Approach Delay, s/veh		67.7			58.1			13.2			19.2	
Approach LOS		E			E			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.0	111.0		29.0	5.8	115.1		29.0				
Change Period (Y+Rc), s	4.4	4.9		5.3	4.4	4.9		5.3				
Max Green Setting (Gmax), s	5.6	100.1		29.7	5.6	100.1		29.7				
Max Q Clear Time (g_c+I1), s	7.4	32.9		23.6	2.7	13.4		13.6				
Green Ext Time (p_c), s	0.0	4.3		0.1	0.0	1.8		0.3				

Intersection Summary		
HCM 6th Ctrl Delay		21.1
HCM 6th LOS		C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	217	11	321	140	37	61	166	615	14	38	11
Future Volume (veh/h)	28	217	11	321	140	37	61	166	615	14	38	11
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	29	226	11	334	146	0	64	173	0	15	40	11
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	50	501	424	527	734		190	270		156	246	57
Arrive On Green	0.03	0.27	0.27	0.15	0.39	0.00	0.19	0.19	0.00	0.19	0.19	0.19
Sat Flow, veh/h	1781	1870	1585	3456	1870	1585	347	1391	1585	196	1264	292
Grp Volume(v), veh/h	29	226	11	334	146	0	237	0	0	66	0	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1728	1870	1585	1738	0	1585	1752	0	0
Q Serve(g_s), s	0.6	3.8	0.2	3.4	1.9	0.0	2.9	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.6	3.8	0.2	3.4	1.9	0.0	4.7	0.0	0.0	1.1	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.27		1.00	0.23		0.17
Lane Grp Cap(c), veh/h	50	501	424	527	734		460	0		459	0	0
V/C Ratio(X)	0.59	0.45	0.03	0.63	0.20		0.51	0.00		0.14	0.00	0.00
Avail Cap(c_a), veh/h	277	1147	972	1443	1647		1815	0		1754	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	17.9	11.4	10.1	14.9	7.5	0.0	14.0	0.0	0.0	12.6	0.0	0.0
Incr Delay (d2), s/veh	4.0	0.2	0.0	0.5	0.1	0.0	0.3	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.2	0.1	1.1	0.6	0.0	1.5	0.0	0.0	0.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.0	11.6	10.1	15.3	7.6	0.0	14.3	0.0	0.0	12.6	0.0	0.0
LnGrp LOS	C	B	B	B	A		B	A		B	A	A
Approach Vol, veh/h		266			480	A		237	A		66	
Approach Delay, s/veh		12.7			13.0			14.3			12.6	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.1	15.1		12.2	5.4	19.8		12.2				
Change Period (Y+Rc), s	4.4	5.1		4.9	4.4	* 5.1		4.9				
Max Green Setting (Gmax), s	15.6	22.9		37.1	5.8	* 33		37.1				
Max Q Clear Time (g_c+I1), s	5.4	5.8		3.1	2.6	3.9		6.7				
Green Ext Time (p_c), s	0.5	0.7		0.2	0.0	0.7		0.9				

Intersection Summary		
HCM 6th Ctrl Delay	13.2	
HCM 6th LOS	B	

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	55	55	1	1	0
Future Vol, veh/h	0	55	55	1	1	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	68	68	1	1	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	69	0	-	0	137	69
Stage 1	-	-	-	-	69	-
Stage 2	-	-	-	-	68	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1532	-	-	-	856	994
Stage 1	-	-	-	-	954	-
Stage 2	-	-	-	-	955	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1532	-	-	-	856	994
Mov Cap-2 Maneuver	-	-	-	-	856	-
Stage 1	-	-	-	-	954	-
Stage 2	-	-	-	-	955	-

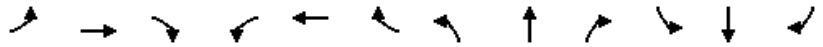
Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.2
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1532	-	-	-	856
HCM Lane V/C Ratio	-	-	-	-	0.001
HCM Control Delay (s)	0	-	-	-	9.2
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	116	21	11	222	39	66	8	679	78	36	1209	33
Future Volume (veh/h)	116	21	11	222	39	66	8	679	78	36	1209	33
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	120	22	11	229	40	68	8	700	80	37	1246	34
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	186	32	13	323	111	189	17	2139	244	53	2423	66
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.01	0.67	0.67	0.03	0.69	0.69
Sat Flow, veh/h	733	180	71	1376	622	1058	1781	3214	367	1781	3533	96
Grp Volume(v), veh/h	153	0	0	229	0	108	8	387	393	37	626	654
Grp Sat Flow(s),veh/h/ln	983	0	0	1376	0	1680	1781	1777	1804	1781	1777	1853
Q Serve(g_s), s	12.0	0.0	0.0	0.0	0.0	6.5	0.5	10.8	10.8	2.4	19.8	19.9
Cycle Q Clear(g_c), s	18.6	0.0	0.0	17.6	0.0	6.5	0.5	10.8	10.8	2.4	19.8	19.9
Prop In Lane	0.78		0.07	1.00		0.63	1.00		0.20	1.00		0.05
Lane Grp Cap(c), veh/h	231	0	0	323	0	300	17	1182	1201	53	1218	1270
V/C Ratio(X)	0.66	0.00	0.00	0.71	0.00	0.36	0.46	0.33	0.33	0.69	0.51	0.51
Avail Cap(c_a), veh/h	313	0	0	405	0	401	86	1182	1201	117	1218	1270
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.96	0.00	0.96	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.3	0.0	0.0	46.4	0.0	41.8	57.1	8.3	8.3	55.7	8.9	8.9
Incr Delay (d2), s/veh	1.2	0.0	0.0	2.6	0.0	0.3	6.8	0.7	0.7	5.8	1.6	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	0.0	0.0	6.6	0.0	2.7	0.3	4.2	4.2	1.2	7.5	7.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.5	0.0	0.0	48.9	0.0	42.1	63.9	9.0	9.0	61.5	10.4	10.3
LnGrp LOS	D	A	A	D	A	D	E	A	A	E	B	B
Approach Vol, veh/h		153			337			788			1317	
Approach Delay, s/veh		50.5			46.7			9.6			11.8	
Approach LOS		D			D			A			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.9	82.1		26.0	5.5	84.4		26.0				
Change Period (Y+Rc), s	4.4	4.9		5.3	4.4	4.9		5.3				
Max Green Setting (Gmax), s	7.6	66.1		27.7	5.6	68.1		27.7				
Max Q Clear Time (g_c+I1), s	4.4	12.8		20.6	2.5	21.9		19.6				
Green Ext Time (p_c), s	0.0	1.8		0.2	0.0	3.3		0.2				

Intersection Summary			
HCM 6th Ctrl Delay		18.0	
HCM 6th LOS		B	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	122	8	484	302	28	22	43	270	20	64	10
Future Volume (veh/h)	2	122	8	484	302	28	22	43	270	20	64	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	2	128	8	509	318	0	23	45	0	21	67	11
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	5	536	454	707	914		186	121		156	119	19
Arrive On Green	0.00	0.29	0.29	0.20	0.49	0.00	0.10	0.10	0.00	0.10	0.10	0.10
Sat Flow, veh/h	1781	1870	1585	3456	1870	1585	500	1253	1585	319	1238	195
Grp Volume(v), veh/h	2	128	8	509	318	0	68	0	0	99	0	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1728	1870	1585	1753	0	1585	1752	0	0
Q Serve(g_s), s	0.0	1.8	0.1	4.8	3.7	0.0	0.0	0.0	0.0	0.6	0.0	0.0
Cycle Q Clear(g_c), s	0.0	1.8	0.1	4.8	3.7	0.0	1.2	0.0	0.0	1.8	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.34		1.00	0.21		0.11
Lane Grp Cap(c), veh/h	5	536	454	707	914		307	0		294	0	0
V/C Ratio(X)	0.39	0.24	0.02	0.72	0.35		0.22	0.00		0.34	0.00	0.00
Avail Cap(c_a), veh/h	286	1157	981	980	1398		2220	0		2279	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	17.4	9.5	8.9	12.9	5.5	0.0	14.8	0.0	0.0	15.1	0.0	0.0
Incr Delay (d2), s/veh	17.2	0.1	0.0	0.8	0.2	0.0	0.1	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.6	0.0	1.5	0.8	0.0	0.4	0.0	0.0	0.6	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.6	9.6	8.9	13.7	5.7	0.0	14.9	0.0	0.0	15.3	0.0	0.0
LnGrp LOS	C	A	A	B	A		B	A		B	A	A
Approach Vol, veh/h		138			827	A		68	A		99	
Approach Delay, s/veh		9.9			10.6			14.9			15.3	
Approach LOS		A			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	11.5	15.1		8.3	4.5	22.2		8.3				
Change Period (Y+Rc), s	4.4	5.1		4.9	4.4	* 5.1		4.9				
Max Green Setting (Gmax), s	9.3	21.6		44.1	5.6	* 26		44.1				
Max Q Clear Time (g_c+I1), s	6.8	3.8		3.8	2.0	5.7		3.2				
Green Ext Time (p_c), s	0.4	0.4		0.4	0.0	1.5		0.2				

Intersection Summary	
HCM 6th Ctrl Delay	11.2
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	12	50	50	8	14	16
Future Vol, veh/h	12	50	50	8	14	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	68	68	68	68	68	68
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	18	74	74	12	21	24

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	86	0	-	0	190	80
Stage 1	-	-	-	-	80	-
Stage 2	-	-	-	-	110	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1510	-	-	-	799	980
Stage 1	-	-	-	-	943	-
Stage 2	-	-	-	-	915	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1510	-	-	-	789	980
Mov Cap-2 Maneuver	-	-	-	-	789	-
Stage 1	-	-	-	-	932	-
Stage 2	-	-	-	-	915	-

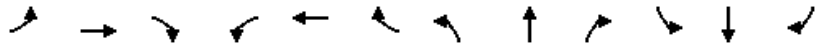
Approach	EB	WB	SB
HCM Control Delay, s	1.4	0	9.3
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1510	-	-	-	881
HCM Lane V/C Ratio	0.012	-	-	-	0.05
HCM Control Delay (s)	7.4	0	-	-	9.3
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	68	28	7	79	26	107	8	1255	165	61	759	24
Future Volume (veh/h)	68	28	7	79	26	107	8	1255	165	61	759	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	71	29	7	82	27	111	8	1307	172	64	791	25
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	115	42	8	246	51	208	17	2238	293	64	2584	82
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.01	0.71	0.71	0.04	0.73	0.73
Sat Flow, veh/h	472	266	52	1372	320	1314	1781	3160	413	1781	3516	111
Grp Volume(v), veh/h	107	0	0	82	0	138	8	732	747	64	400	416
Grp Sat Flow(s),veh/h/ln	790	0	0	1372	0	1634	1781	1777	1796	1781	1777	1850
Q Serve(g_s), s	10.0	0.0	0.0	0.0	0.0	11.6	0.7	30.6	31.2	5.4	11.5	11.5
Cycle Q Clear(g_c), s	21.6	0.0	0.0	8.9	0.0	11.6	0.7	30.6	31.2	5.4	11.5	11.5
Prop In Lane	0.66		0.07	1.00		0.80	1.00		0.23	1.00		0.06
Lane Grp Cap(c), veh/h	165	0	0	246	0	259	17	1259	1272	64	1306	1360
V/C Ratio(X)	0.65	0.00	0.00	0.33	0.00	0.53	0.48	0.58	0.59	1.00	0.31	0.31
Avail Cap(c_a), veh/h	220	0	0	301	0	323	64	1259	1272	64	1306	1360
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.99	0.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	66.1	0.0	0.0	56.9	0.0	58.0	73.9	10.8	10.9	72.3	6.8	6.8
Incr Delay (d2), s/veh	1.6	0.0	0.0	0.3	0.0	0.6	7.5	2.0	2.0	111.6	0.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	0.0	0.0	2.8	0.0	4.9	0.3	12.2	12.6	4.5	4.4	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.7	0.0	0.0	57.2	0.0	58.7	81.4	12.8	12.9	183.9	7.4	7.4
LnGrp LOS	E	A	A	E	A	E	F	B	B	F	A	A
Approach Vol, veh/h		107			220			1487			880	
Approach Delay, s/veh		67.7			58.1			13.2			20.2	
Approach LOS		E			E			B			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.8	111.2		29.0	5.8	115.1		29.0				
Change Period (Y+Rc), s	4.4	4.9		5.3	4.4	4.9		5.3				
Max Green Setting (Gmax), s	5.4	100.3		29.7	5.4	100.3		29.7				
Max Q Clear Time (g_c+I1), s	7.4	33.2		23.6	2.7	13.5		13.6				
Green Ext Time (p_c), s	0.0	4.3		0.1	0.0	1.8		0.3				

Intersection Summary			
HCM 6th Ctrl Delay		21.3	
HCM 6th LOS		C	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	217	11	330	140	37	61	166	629	14	38	11
Future Volume (veh/h)	28	217	11	330	140	37	61	166	629	14	38	11
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	29	226	11	344	146	0	64	173	0	15	40	11
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	50	504	427	510	728		191	272		157	247	57
Arrive On Green	0.03	0.27	0.27	0.15	0.39	0.00	0.20	0.20	0.00	0.20	0.20	0.20
Sat Flow, veh/h	1781	1870	1585	3456	1870	1585	346	1392	1585	195	1264	292
Grp Volume(v), veh/h	29	226	11	344	146	0	237	0	0	66	0	0
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1728	1870	1585	1738	0	1585	1751	0	0
Q Serve(g_s), s	0.6	3.7	0.2	3.5	1.9	0.0	2.9	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.6	3.7	0.2	3.5	1.9	0.0	4.6	0.0	0.0	1.1	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.27		1.00	0.23		0.17
Lane Grp Cap(c), veh/h	50	504	427	510	728		463	0		461	0	0
V/C Ratio(X)	0.58	0.45	0.03	0.67	0.20		0.51	0.00		0.14	0.00	0.00
Avail Cap(c_a), veh/h	278	1023	867	670	1103		2328	0		2245	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	17.8	11.3	10.0	15.0	7.5	0.0	13.8	0.0	0.0	12.5	0.0	0.0
Incr Delay (d2), s/veh	4.0	0.2	0.0	0.8	0.1	0.0	0.3	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.2	0.1	1.2	0.6	0.0	1.5	0.0	0.0	0.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.8	11.5	10.0	15.7	7.6	0.0	14.2	0.0	0.0	12.5	0.0	0.0
LnGrp LOS	C	B	A	B	A		B	A		B	A	A
Approach Vol, veh/h		266			490	A		237	A		66	
Approach Delay, s/veh		12.6			13.3			14.2			12.5	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.9	15.1		12.1	5.4	19.5		12.1				
Change Period (Y+Rc), s	4.4	5.1		4.9	4.4	* 5.1		4.9				
Max Green Setting (Gmax), s	7.3	20.3		48.1	5.8	* 22		48.1				
Max Q Clear Time (g_c+I1), s	5.5	5.7		3.1	2.6	3.9		6.6				
Green Ext Time (p_c), s	0.1	0.7		0.2	0.0	0.6		0.9				

Intersection Summary	
HCM 6th Ctrl Delay	13.3
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	9	60	60	10	15	13
Future Vol, veh/h	9	60	60	10	15	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	74	74	12	19	16

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	86	0	-	0	176	80
Stage 1	-	-	-	-	80	-
Stage 2	-	-	-	-	96	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1510	-	-	-	814	980
Stage 1	-	-	-	-	943	-
Stage 2	-	-	-	-	928	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1510	-	-	-	807	980
Mov Cap-2 Maneuver	-	-	-	-	807	-
Stage 1	-	-	-	-	935	-
Stage 2	-	-	-	-	928	-

Approach	EB	WB	SB
HCM Control Delay, s	1	0	9.3
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1510	-	-	-	879
HCM Lane V/C Ratio	0.007	-	-	-	0.039
HCM Control Delay (s)	7.4	0	-	-	9.3
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

APPENDIX C

CITY OF SAN DIEGO ROADWAY CLASSIFICATION AND LOS TABLE

TABLE 2 (MODIFIED)

City of San Diego Roadway Classifications, Levels of Service (LOS) and Average Daily Traffic (ADT)

		LEVEL OF SERVICE[a]				
Street Classification	**Lanes**	**A**	**B**	**C**	**D**	**E**
Freeway	8 lanes	60,000	84,000	120,000	140,000	150,000
Freeway	6 lanes	45,000	63,000	90,000	110,000	120,000
Freeway	4 lanes	30,000	42,000	60,000	70,000	80,000
Expressway	6 lanes	30,000	42,000	60,000	70,000	80,000
Prime Arterial	11 lanes	32,000	44,750	63,750	74,500	85,000
Prime Arterial	10 lanes	30,000	42,000	60,000	70,000	80,000
Prime Arterial	9 lanes	28,750	40,250	57,500	66,250	75,000
Prime Arterial	8 lanes	27,500	38,500	55,000	62,500	70,000
Prime Arterial	7 lanes	26,250	36,750	52,500	58,750	65,000
Prime Arterial	6 lanes	25,000	35,000	50,000	55,000	60,000
Prime Arterial	5 lanes	23,000	32,000	45,000	50,000	55,000
Major Arterial	6 lanes	20,000	28,000	40,000	45,000	50,000
Major Arterial	5 lanes	17,500	24,500	35,000	40,000	45,000
Major Arterial	4 lanes	15,000	21,000	30,000	35,000	40,000
Collector	5 lanes	12,500	17,500	25,000	30,000	35,000
Collector (continuous left-turn lane)	4 lanes	10,000	14,000	20,000	25,000	30,000
Major Arterial (one-way)	4 lanes	11,400	15,600	20,000	27,000	33,400
	3 lanes	8,500	11,750	15,000	20,000	25,000
	2 lanes	5,700	7,800	10,000	13,500	16,700
Collector (no Center lane) (continuous left-turn lane)	4 lanes	5,000	7,000	10,000	13,000	15,000
	3 lanes					
	2 lanes					
Collector (one-way)	2 lanes	4,500	6,250	8,750	11,000	12,500
Collector (no fronting property)	2 lanes	4,000	5,500	7,500	9,000	10,000
Collector (commercial-industrial fronting)	2 lanes	2,500	3,500	5,000	6,500	8,000
Collector (multi-family)	2 lanes	2,500	3,500	5,000	6,500	8,000
Sub-collector (single-family)	2 lanes	—	—	2,200	—	—

Footnotes:

a. Approximate recommended ADT based on City of San Diego Street Design Manual.

General Notes:

1. The volumes and the average daily level of service listed above are only intended as a general planning guideline.
2. Levels of service are not applied to residential streets since their primary purpose is to serve abutting lots, not carry through traffic. Levels of service normally apply to roads carrying through traffic between major trip generators and attractors.
3. ***Shaded areas indicate LLG-derived ADT capacities.***

CLIMATE ACTION PLAN CONSISTENCY CHECKLIST INTRODUCTION

In December 2015, the City adopted a Climate Action Plan (CAP) that outlines the actions that City will undertake to achieve its proportional share of State greenhouse gas (GHG) emission reductions. The purpose of the Climate Action Plan Consistency Checklist (Checklist) is to, in conjunction with the CAP, provide a streamlined review process for proposed new development projects that are subject to discretionary review and trigger environmental review pursuant to the California Environmental Quality Act (CEQA).[1]

Analysis of GHG emissions and potential climate change impacts from new development is required under CEQA. The CAP is a plan for the reduction of GHG emissions in accordance with CEQA Guidelines Section 15183.5. Pursuant to CEQA Guidelines Sections 15064(h)(3), 15130(d), and 15183(b), a project's incremental contribution to a cumulative GHG emissions effect may be determined not to be cumulatively considerable if it complies with the requirements of the CAP.

This Checklist is part of the CAP and contains measures that are required to be implemented on a project-by-project basis to ensure that the specified emissions targets identified in the CAP are achieved. Implementation of these measures would ensure that new development is consistent with the CAP's assumptions for relevant CAP strategies toward achieving the identified GHG reduction targets. Projects that are consistent with the CAP as determined through the use of this Checklist may rely on the CAP for the cumulative impacts analysis of GHG emissions. Projects that are not consistent with the CAP must prepare a comprehensive project-specific analysis of GHG emissions, including quantification of existing and projected GHG emissions and incorporation of the measures in this Checklist to the extent feasible. Cumulative GHG impacts would be significant for any project that is not consistent with the CAP.

The Checklist may be updated to incorporate new GHG reduction techniques or to comply with later amendments to the CAP or local, State, or federal law.

[1] Certain projects seeking ministerial approval may be required to complete the Checklist. For example, projects in a Community Plan Implementation Overlay Zone may be required to use the Checklist to qualify for ministerial level review. See Supplemental Development Regulations in the project's community plan to determine applicability.

This page intentionally left blank

CAP CONSISTENCY CHECKLIST SUBMITTAL APPLICATION

- The Checklist is required only for projects subject to CEQA review.[2]
- If required, the Checklist must be included in the project submittal package. Application submittal procedures can be found in Chapter 11: Land Development Procedures of the City's Municipal Code.
- The requirements in the Checklist will be included in the project's conditions of approval.
- The applicant must provide an explanation of how the proposed project will implement the requirements described herein to the satisfaction of the Planning Department.

Application Information

Contact Information

Project No./Name: Dolphin Motel

Property Address: 1453 - 1455 & 1461-1463 Rosecrans st/ 2912 & 2930 Garrison St, San Diego, CA 92106

Applicant Name/Co.: Greg La Marca

Contact Phone: 760-802-4888 Contact Email: greglamarca@sbcglobal.net

Was a consultant retained to complete this checklist? ■ Yes ☐ No If Yes, complete the following

Consultant Name: Joe Wong Contact Phone: 619-233-6777

Company Name: JWDA Contact Email: jwong@jwdainc.com

Project Information

1. What is the size of the project (acres)? site - 0.57 acres
2. Identify all applicable proposed land uses:
   - ☐ Residential (indicate # of single-family units):
   - ☐ Residential (indicate # of multi-family units):
   - ■ Commercial (total square footage): 49,705
   - ☐ Industrial (total square footage):
   - ☐ Other (describe):
3. Is the project or a portion of the project located in a Transit Priority Area? ■ Yes ☐ No
4. Provide a brief description of the project proposed:

The project proposes demolition of four structures and subsequent construction of a 49,705-square-foot motel comprised of: 92 rooms; an 850 SF lobby/lounge; a 60 sf sundry; a 325 SF office/ administrative; 1,420 SF breakfast lounge; 1,715 SF BOH/ support area; 1,500 SF garden; 690 SF outdoor deck; a 500 SF fitness room; and total of 92 parking spaces (7 to be provided on the first floor, where as the remaining 85 would be located in the subterranean garage)

[2] Certain projects seeking ministerial approval may be required to complete the Checklist. For example, projects in a Community Plan Implementation Overlay Zone may be required to use the Checklist to qualify for ministerial level review. See Supplemental Development Regulations in the project's community plan to determine applicability.

CAP CONSISTENCY CHECKLIST QUESTIONS

Step 1: Land Use Consistency

The first step in determining CAP consistency for discretionary development projects is to assess the project's consistency with the growth projections used in the development of the CAP. This section allows the City to determine a project's consistency with the land use assumptions used in the CAP.

Step 1: Land Use Consistency		
Checklist Item (Check the appropriate box and provide explanation and supporting documentation for your answer)	Yes	No
A. Is the proposed project consistent with the existing General Plan and Community Plan land use and zoning designations?;[3] OR, B. If the proposed project is not consistent with the existing land use plan and zoning designations, and includes a land use plan and/or zoning designation amendment, would the proposed amendment result in an increased density within a Transit Priority Area (TPA)[4] and implement CAP Strategy 3 actions, as determined in Step 3 to the satisfaction of the Development Services Department?; OR, C. If the proposed project is not consistent with the existing land use plan and zoning designations, does the project include a land use plan and/or zoning designation amendment that would result in an equivalent or less GHG-intensive project when compared to the existing designations?	☑	☐

If "***Yes***," proceed to Step 2 of the Checklist. For question B above, complete Step 3. For question C above, provide estimated project emissions under both existing and proposed designation(s) for comparison. Compare the maximum buildout of the existing designation and the maximum buildout of the proposed designation.

If "***No***," in accordance with the City's Significance Determination Thresholds, the project's GHG impact is significant. The project must nonetheless incorporate each of the measures identified in Step 2 to mitigate cumulative GHG emissions impacts unless the decision maker finds that a measure is infeasible in accordance with CEQA Guidelines Section 15091. Proceed and complete Step 2 of the Checklist.

The project proposed is consistent with the General Plan which identifies the site for Commercial Employment, Retail & Services; additionally, the project is consistent with the Peninsula Community Plan which designates the site for Commercial Development. Lastly, the project is consistent with the requirements of the requirements of the CC-4-2 zone.

[3] This question may also be answered in the affirmative if the project is consistent with SANDAG Series 12 growth projections, which were used to determine the CAP projections, as determined by the Planning Department.

[4] This category applies to all projects that answered in the affirmative to question 3 on the previous page: Is the project or a portion of the project located in a transit priority area.

Step 2: CAP Strategies Consistency

The second step of the CAP consistency review is to review and evaluate a project's consistency with the applicable strategies and actions of the CAP. Step 2 only applies to development projects that involve permits that would require a certificate of occupancy from the Building Official or projects comprised of one and two family dwellings or townhouses as defined in the California Residential Code and their accessory structures.[5] All other development projects that would not require a certificate of occupancy from the Building Official shall implement Best Management Practices for construction activities as set forth in the Greenbook (for public projects).

Step 2: CAP Strategies Consistency			
Checklist Item (Check the appropriate box and provide explanation for your answer)	Yes	No	N/A
Strategy 1: Energy & Water Efficient Buildings			
1. *Cool/Green Roofs*. • Would the project include roofing materials with a minimum 3-year aged solar reflection and thermal emittance or solar reflection index equal to or greater than the values specified in the voluntary measures under California Green Building Standards Code (Attachment A)?; OR • Would the project roof construction have a thermal mass over the roof membrane, including areas of vegetated (green) roofs, weighing at least 25 pounds per square foot as specified in the voluntary measures under California Green Building Standards Code?; OR • Would the project include a combination of the above two options? Check "N/A" only if the project does not include a roof component. The project would include roofing material with a minimum 3-year aged solar reflection and thermal emittance or solar reflection index equal to or greater than the values specified in the voluntary measures under California Green Building Standards Code. The project is also proposing to have solar panels mounted onto the roof of the building.	☑	☐	☐

[5] Actions that are not subject to Step 2 would include, for example: 1) discretionary map actions that do not propose specific development, 2) permits allowing wireless communication facilities, 3) special events permits, 4) use permits or other permits that do not result in the expansion or enlargement of a building (e.g., decks, garages, etc.), and 5) non-building infrastructure projects such as roads and pipelines. Because such actions would not result in new occupancy buildings from which GHG emissions reductions could be achieved, the items contained in Step 2 would not be applicable.

2. *Plumbing fixtures and fittings* With respect to plumbing fixtures or fittings provided as part of the project, would those low-flow fixtures/appliances be consistent with each of the following: Residential buildings: • Kitchen faucets: maximum flow rate not to exceed 1.5 gallons per minute at 60 psi; • Standard dishwashers: 4.25 gallons per cycle; • Compact dishwashers: 3.5 gallons per cycle; and • Clothes washers: water factor of 6 gallons per cubic feet of drum capacity? Nonresidential buildings: • Plumbing fixtures and fittings that do not exceed the maximum flow rate specified in Table A5.303.2.3.1 (voluntary measures) of the California Green Building Standards Code (See Attachment A); and • Appliances and fixtures for commercial applications that meet the provisions of Section A5.303.3 (voluntary measures) of the California Green Building Standards Code (See Attachment A)? Check "N/A" only if the project does not include any plumbing fixtures or fittings. The 'non-residential' building will have plumbing fixtures and fittings that do not exceed the maximum flow rate specified in Table A5.3.3.2.3.1 (voluntary measures) of the California Green Building Standards Code. The project will also have appliances and fixtures for commercial applications that meet the provisions of Section A5.303.3 (voluntary measures) of the California Green Building Standards Code.	☑	☐	☐

Strategy 3: Bicycling, Walking, Transit & Land Use			
3. *Electric Vehicle Charging* • Multiple-family projects of 17 dwelling units or less: Would 3% of the total parking spaces required, or a minimum of one space, whichever is greater, be provided with a listed cabinet, box or enclosure connected to a conduit linking the parking spaces with the electrical service, in a manner approved by the building and safety official, to allow for the future installation of electric vehicle supply equipment to provide electric vehicle charging stations at such time as it is needed for use by residents? • Multiple-family projects of more than 17 dwelling units: Of the total required listed cabinets, boxes or enclosures, would 50% have the necessary electric vehicle supply equipment installed to provide active electric vehicle charging stations ready for use by residents? • Non-residential projects: Of the total required listed cabinets, boxes or enclosures, would 50% have the necessary electric vehicle supply equipment installed to provide active electric vehicle charging stations ready for use? Check "N/A" only if the project is a single-family project or would not require the provision of listed cabinets, boxes, or enclosures connected to a conduit linking the parking spaces with electrical service, e.g., projects requiring fewer than 10 parking spaces. Project has proposed to have 5 EVCS in the below grade parking level; no accessible spaces are required as parking level is not accessed by the public (via city determination, attached).	☑	☐	☐
Strategy 3: Bicycling, Walking, Transit & Land Use (Complete this section if project includes non-residential or mixed uses)			
4. *Bicycle Parking Spaces* Would the project provide more short- and long-term bicycle parking spaces than required in the City's Municipal Code (Chapter 14, Article 2, Division 5)?[6] Check "N/A" only if the project is a residential project. Short term: 5 are required and 6 are being proposed. Long term: 5 are required and 12 are being proposed.	☑	☐	☐

[6] Non-portable bicycle corrals within 600 feet of project frontage can be counted towards the project's bicycle parking requirements.

5. *Shower facilities* If the project includes nonresidential development that would accommodate over 10 tenant occupants (employees), would the project include changing/shower facilities in accordance with the voluntary measures under the California Green Building Standards Code as shown in the table below? **Number of Tenant Occupants (Employees)** / **Shower/Changing Facilities Required** / **Two-Tier (12" X 15" X 72") Personal Effects Lockers Required** 0-10 / 0 / 0 11-50 / 1 shower stall / 2 51-100 / 1 shower stall / 3 101-200 / 1 shower stall / 4 Over 200 / 1 shower stall plus 1 additional shower stall for each 200 additional tenant-occupants / 1 two-tier locker plus 1 two-tier locker for each 50 additional tenant-occupants Check "N/A" only if the project is a residential project, or if it does not include nonresidential development that would accommodate over 10 tenant occupants (employees). N/A; motel will not have over 10 employees at one time.	☐	☐	☑

6. *Designated Parking Spaces*

If the project includes a nonresidential use in a TPA, would the project provide designated parking for a combination of low-emitting, fuel-efficient, and carpool/vanpool vehicles in accordance with the following table?

Number of Required Parking Spaces	Number of Designated Parking Spaces
0-9	0
10-25	2
26-50	4
51-75	6
76-100	9
101-150	11
151-200	18
201 and over	At least 10% of total

This measure does not cover electric vehicles. See Question 4 for electric vehicle parking requirements.

Note: Vehicles bearing Clean Air Vehicle stickers from expired HOV lane programs may be considered eligible for designated parking spaces. The required designated parking spaces are to be provided within the overall minimum parking requirement, not in addition to it.

Check "N/A" only if the project is a residential project, or if it does not include nonresidential use in a TPA.

Yes- Project has provided 9 spaces.

☑ ☐ ☐

7. *Transportation Demand Management Program* If the project would accommodate over 50 tenant-occupants (employees), would it include a transportation demand management program that would be applicable to existing tenants and future tenants that includes: At least one of the following components: • Parking cash out program • Parking management plan that includes charging employees market-rate for single-occupancy vehicle parking and providing reserved, discounted, or free spaces for registered carpools or vanpools • Unbundled parking whereby parking spaces would be leased or sold separately from the rental or purchase fees for the development for the life of the development And at least three of the following components: • Commitment to maintaining an employer network in the SANDAG iCommute program and promoting its RideMatcher service to tenants/employees • On-site carsharing vehicle(s) or bikesharing • Flexible or alternative work hours • Telework program • Transit, carpool, and vanpool subsidies • Pre-tax deduction for transit or vanpool fares and bicycle commute costs • Access to services that reduce the need to drive, such as cafes, commercial stores, banks, post offices, restaurants, gyms, or childcare, either onsite or within 1,320 feet (1/4 mile) of the structure/use? Check "N/A" only if the project is a residential project or if it would not accommodate over 50 tenant-occupants (employees). N/A; the project will not employee more than 50 employees therefore project is exempt from preparing a TDM.	☐	☐	☑

Step 3: Project CAP Conformance Evaluation (if applicable)

The third step of the CAP consistency review only applies if Step 1 is answered in the affirmative under option B. The purpose of this step is to determine whether a project that is located in a TPA but that includes a land use plan and/or zoning designation amendment is nevertheless consistent with the assumptions in the CAP because it would implement CAP Strategy 3 actions. In general, a project that would result in a reduction in density inside a TPA would not be consistent with Strategy 3.The following questions must each be answered in the affirmative and fully explained.

1. **Would the proposed project implement the General Plan's City of Villages strategy in an identified Transit Priority Area (TPA) that will result in an increase in the capacity for transit-supportive residential and/or employment densities?**
   Considerations for this question:
   - Does the proposed land use and zoning designation associated with the project provide capacity for transit-supportive residential densities within the TPA?
   - Is the project site suitable to accommodate mixed-use village development, as defined in the General Plan, within the TPA?
   - Does the land use and zoning associated with the project increase the capacity for transit-supportive employment intensities within the TPA?

2. **Would the proposed project implement the General Plan's Mobility Element in Transit Priority Areas to increase the use of transit?**
   Considerations for this question:
   - Does the proposed project support/incorporate identified transit routes and stops/stations?
   - Does the project include transit priority measures?

3. **Would the proposed project implement pedestrian improvements in Transit Priority Areas to increase walking opportunities?**
   Considerations for this question:
   - Does the proposed project circulation system provide multiple and direct pedestrian connections and accessibility to local activity centers (such as transit stations, schools, shopping centers, and libraries)?
   - Does the proposed project urban design include features for walkability to promote a transit supportive environment?

4. **Would the proposed project implement the City of San Diego's Bicycle Master Plan to increase bicycling opportunities?**
   Considerations for this question:
   - Does the proposed project circulation system include bicycle improvements consistent with the Bicycle Master Plan?
   - Does the overall project circulation system provide a balanced, multimodal, "complete streets" approach to accommodate mobility needs of all users?

5. **Would the proposed project incorporate implementation mechanisms that support Transit Oriented Development?**
   Considerations for this question:
   - Does the proposed project include new or expanded urban public spaces such as plazas, pocket parks, or urban greens in the TPA?
   - Does the land use and zoning associated with the proposed project increase the potential for jobs within the TPA?
   - Do the zoning/implementing regulations associated with the proposed project support the efficient use of parking through mechanisms such as: shared parking, parking districts, unbundled parking, reduced parking, paid or time-limited parking, etc.?

6. **Would the proposed project implement the Urban Forest Management Plan to increase urban tree canopy coverage?**
   Considerations for this question:
   - Does the proposed project provide at least three different species for the primary, secondary and accent trees in order to accommodate varying parkway widths?
   - Does the proposed project include policies or strategies for preserving existing trees?
   - Does the proposed project incorporate tree planting that will contribute to the City's 20% urban canopy tree coverage goal?

CLIMATE ACTION PLAN CONSISTENCY CHECKLIST
ATTACHMENT A

This attachment provides performance standards for applicable Climate Action Pan (CAP) Consistency Checklist measures.

Table 1 Roof Design Values for Question 1: Cool/Green Roofs supporting Strategy 1: Energy & Water Efficient Buildings of the Climate Action Plan

Land Use Type	Roof Slope	Minimum 3-Year Aged Solar Reflectance	Thermal Emittance	Solar Reflective Index
Low-Rise Residential	≤ 2:12	0.55	0.75	64
	> 2:12	0.20	0.75	16
High-Rise Residential Buildings, Hotels and Motels	≤ 2:12	0.55	0.75	64
	> 2:12	0.20	0.75	16
Non-Residential	≤ 2:12	0.55	0.75	64
	> 2:12	0.20	0.75	16

Source: Adapted from the California Green Building Standards Code (CALGreen) Tier 1 residential and non-residential voluntary measures shown in Tables A4.106.5.1 and A5.106.11.2.2, respectively. Roof installation and verification shall occur in accordance with the CALGreen Code.

CALGreen does not include recommended values for low-rise residential buildings with roof slopes of ≤ 2:12 for San Diego's climate zones (7 and 10). Therefore, the values for climate zone 15 that covers Imperial County are adapted here.

Solar Reflectance Index (SRI) equal to or greater than the values specified in this table may be used as an alternative to compliance with the aged solar reflectance values and thermal emittance.

Table 2	Fixture Flow Rates for Non-Residential Buildings related to Question 2: Plumbing Fixtures and Fittings supporting Strategy 1: Energy & Water Efficient Buildings of the Climate Action Plan
Fixture Type	**Maximum Flow Rate**
Showerheads	1.8 gpm @ 80 psi
Lavatory Faucets	0.35 gpm @60 psi
Kitchen Faucets	1.6 gpm @ 60 psi
Wash Fountains	1.6 [rim space(in.)/20 gpm @ 60 psi]
Metering Faucets	0.18 gallons/cycle
Metering Faucets for Wash Fountains	0.18 [rim space(in.)/20 gpm @ 60 psi]
Gravity Tank-type Water Closets	1.12 gallons/flush
Flushometer Tank Water Closets	1.12 gallons/flush
Flushometer Valve Water Closets	1.12 gallons/flush
Electromechanical Hydraulic Water Closets	1.12 gallons/flush
Urinals	0.5 gallons/flush

Source: Adapted from the California Green Building Standards Code (CALGreen) Tier 1 non-residential voluntary measures shown in Tables A5.303.2.3.1 and A5.106.11.2.2, respectively. See the California Plumbing Code for definitions of each fixture type.

Where complying faucets are unavailable, aerators rated at 0.35 gpm or other means may be used to achieve reduction.

Acronyms:
gpm = gallons per minute
psi = pounds per square inch (unit of pressure)
in. = inch

Table 3	**Standards for Appliances and Fixtures for Commercial Application related to Question 2: Plumbing Fixtures and Fittings supporting Strategy 1: Energy & Water Efficient Buildings of the Climate Action Plan**	
Appliance/Fixture Type	**Standard**	
Clothes Washers	Maximum Water Factor (WF) that will reduce the use of water by 10 percent below the California Energy Commissions' WF standards for commercial clothes washers located in Title 20 of the *California Code of Regulations*.	
Conveyor-type Dishwashers	0.70 maximum gallons per rack (2.6 L) (High-Temperature)	0.62 maximum gallons per rack (4.4 L) (Chemical)
Door-type Dishwashers	0.95 maximum gallons per rack (3.6 L) (High-Temperature)	1.16 maximum gallons per rack (2.6 L) (Chemical)
Undercounter-type Dishwashers	0.90 maximum gallons per rack (3.4 L) (High-Temperature)	0.98 maximum gallons per rack (3.7 L) (Chemical)
Combination Ovens	Consume no more than 10 gallons per hour (38 L/h) in the full operational mode.	
Commercial Pre-rinse Spray Valves (manufactured on or after January 1, 2006)	Function at equal to or less than 1.6 gallons per minute (0.10 L/s) at 60 psi (414 kPa) and • Be capable of cleaning 60 plates in an average time of not more than 30 seconds per plate. • Be equipped with an integral automatic shutoff. • Operate at static pressure of at least 30 psi (207 kPa) when designed for a flow rate of 1.3 gallons per minute (0.08 L/s) or less.	

Source: Adapted from the California Green Building Standards Code (CALGreen) Tier 1 non-residential voluntary measures shown in Section A5.303.3. See the California Plumbing Code for definitions of each appliance/fixture type.

Acronyms:
L = liter
L/h = liters per hour
L/s = liters per second
psi = pounds per square inch (unit of pressure)
kPa = kilopascal (unit of pressure)

From:	MEscobarEck@atlantissd.com
To:	Sophia Del Mar English
Subject:	FW: EV Parking requirement -- The Dolphin Motel , PTS # 556027
Date:	Thursday, February 15, 2018 4:11:10 PM

From: Ahmadi, Afsaneh [mailto:AAhmadi@sandiego.gov]
Sent: Thursday, February 15, 2018 2:51 PM
To: MEscobarEck@atlantissd.com
Subject: FW: EV Parking requirement -- The Dolphin Motel , PTS # 556027

FYI

Afsaneh Ahmadi, P.E.
Chief Building Official/Deputy Director
(619) 446-5406

The City of SAN DIEGO

~ A world-class city for all ~

-

From: Shadyab, Mehdi
Sent: Thursday, February 15, 2018 1:47 PM
To: Elhamad, Ismail <IElhamad@sandiego.gov>
Cc: Ahmadi, Afsaneh <AAhmadi@sandiego.gov>; Gonsalves, Ann <AGonsalves@sandiego.gov>
Subject: RE: EV Parking requirement -- The Dolphin Motel , PTS # 556027

Ismail,
After further research and reading the law concerning the issue of EV-charging stations for the stated project, we have interpreted the following:

- The governing California Green Building Code does not specify any requirements for Hotels and Motels to provide EV-Charging Stations. As a result, no parking spaces need be designated for EV, present or future. No raceway need be provided for future installation.
- If Hotel/Motel owners decide voluntarily to provide EV-charging station(s) in story (ies) below grade, accessible sized/designated EV stations need not be provided as long as below grade

From: MEscobarEck@atlantissd.com
To: Sophia Del Mar English
Subject: FW: EV Parking requirement -- The Dolphin Motel , PTS # 556027
Date: Thursday, February 15, 2018 4:11:10 PM

From: Ahmadi, Afsaneh [mailto:AAhmadi@sandiego.gov]
Sent: Thursday, February 15, 2018 2:51 PM
To: MEscobarEck@atlantissd.com
Subject: FW: EV Parking requirement -- The Dolphin Motel , PTS # 556027

FYI

Afsaneh Ahmadi, P.E.
Chief Building Official/Deputy Director
(619) 446-5406

The City of SAN DIEGO

~ A world-class city for all ~

-

From: Shadyab, Mehdi
Sent: Thursday, February 15, 2018 1:47 PM
To: Elhamad, Ismail <IElhamad@sandiego.gov>
Cc: Ahmadi, Afsaneh <AAhmadi@sandiego.gov>; Gonsalves, Ann <AGonsalves@sandiego.gov>
Subject: RE: EV Parking requirement -- The Dolphin Motel , PTS # 556027

Ismail,
After further research and reading the law concerning the issue of EV-charging stations for the stated project, we have interpreted the following:

- The governing California Green Building Code does not specify any requirements for Hotels and Motels to provide EV-Charging Stations. As a result, no parking spaces need be designated for EV, present or future. No raceway need be provided for future installation.
- If Hotel/Motel owners decide voluntarily to provide EV-charging station(s) in story (ies) below grade, accessible sized/designated EV stations need not be provided as long as below grade

parking spaces is accessed by mechanical lift and provided by means of Valet service only, and not available for parking by general public.

- If Hotel/Motel owners decide voluntarily to provide EV-charging station(s) on ground level, then they must meet the provisions of CBC, Chapter 11B, for scoping and technical requirements, as applicable. Please be advised, required accessible parking spaces provided to serve the hotel/motel are not allowed to be used for EV-Charging stations. The code states *"For the purpose of this section, electric vehicle charging stations are not parking spaces; see Section 11B-228."* [CBC, Section 11B-208.1].

I have already called Sophia Del Mar English (of JWDA Architects) and informed her of our interpretation, as stated above. Please feel free to share this information with your clients and other City staff.

Mehdi Shadyab, P.E., CASp, J.D.
Senior Structural Engineer
City of San Diego
Development Services Department / Building Construction Safety

T (619) 446-5067
www.sandiego.gov

From: Elhamad, Ismail
Sent: Thursday, February 08, 2018 10:38 AM
To: Shadyab, Mehdi <MShadyab@sandiego.gov>
Cc: Gonsalves, Ann <AGonsalves@sandiego.gov>
Subject: RE: EV Parking requirement -- The Dolphin Motel , PTS # 556027

Mehdi,

Can you please tell me when you going to be in your office. I have called you and came by your office but you were not there.

Thanks..

From: Gonsalves, Ann
Sent: Thursday, February 08, 2018 10:26 AM
To: Shadyab, Mehdi <MShadyab@sandiego.gov>; Elhamad, Ismail <IElhamad@sandiego.gov>

parking spaces is accessed by mechanical lift and provided by means of Valet service only, and not available for parking by general public.

- If Hotel/Motel owners decide voluntarily to provide EV-charging station(s) on ground level, then they must meet the provisions of CBC, Chapter 11B, for scoping and technical requirements, as applicable. Please be advised, required accessible parking spaces provided to serve the hotel/motel are not allowed to be used for EV-Charging stations. The code states *"For the purpose of this section, electric vehicle charging stations are not parking spaces; see Section 11B-228."* [CBC, Section 11B-208.1].

I have already called Sophia Del Mar English (of JWDA Architects) and informed her of our interpretation, as stated above. Please feel free to share this information with your clients and other City staff.

Mehdi Shadyab, P.E., CASp, J.D.
Senior Structural Engineer
City of San Diego
Development Services Department / Building Construction Safety

T (619) 446-5067
www.sandiego.gov

From: Elhamad, Ismail
Sent: Thursday, February 08, 2018 10:38 AM
To: Shadyab, Mehdi <MShadyab@sandiego.gov>
Cc: Gonsalves, Ann <AGonsalves@sandiego.gov>
Subject: RE: EV Parking requirement -- The Dolphin Motel , PTS # 556027

Mehdi,

Can you please tell me when you going to be in your office. I have called you and came by your office but you were not there.

Thanks..

From: Gonsalves, Ann
Sent: Thursday, February 08, 2018 10:26 AM
To: Shadyab, Mehdi <MShadyab@sandiego.gov>; Elhamad, Ismail <IElhamad@sandiego.gov>

Subject: RE: EV Parking requirement -- The Dolphin Motel , PTS # 556027

Thanks, Mehdi!

From: Shadyab, Mehdi
Sent: Wednesday, February 07, 2018 7:20 PM
To: Gonsalves, Ann <AGonsalves@sandiego.gov>; Elhamad, Ismail <IElhamad@sandiego.gov>
Subject: RE: EV Parking requirement -- The Dolphin Motel , PTS # 556027

Hi Ann.
I will be back in the office tomorrow Thursday. Please ask Ismail to look for me. I will absolutely help to resolve the issue under consideration.

Mehdi.

Happy Connecting. Sent from my Sprint Samsung Galaxy S® 5

-------- Original message --------
From: "Gonsalves, Ann" <AGonsalves@sandiego.gov>
Date: 2/7/18 4:55 PM (GMT-08:00)
To: "Shadyab, Mehdi" <MShadyab@sandiego.gov>, "Elhamad, Ismail" <IElhamad@sandiego.gov>
Subject: FW: EV Parking requirement -- The Dolphin Motel , PTS # 556027

Ismail and Mehdi,

Perhaps there is a misunderstanding here. Can we please all resolve tomorrow? Thanks for your help.

Thanks,
Ann

From: MEscobarEck@atlantissd.com [mailto:mescobareck@atlantissd.com]
Sent: Wednesday, February 07, 2018 4:44 PM
To: Gonsalves, Ann <AGonsalves@sandiego.gov>
Cc: Sophia Del Mar English <SDelMarEnglish@jwdainc.com>
Subject: RE: EV Parking requirement -- The Dolphin Motel , PTS # 556027

Ann: I don't think I do. Aren't only 4 required? My understanding of the draft legislation that was floating around was that it was not additive. We have not adopted implementing regulations (that I am aware of). I can't imagine anyone would want added parking. I whole-heartedly support the addition of actual EV charges to the required spaces though. It should never be additive. --Marcela

---

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

THE CITY OF SAN DIEGO

No FAA Notification Self-Certification Agreement

FORM DS-503
MAY 2013

This agreement is made by and between the City of San Diego, a Municipal Corporation [City] and the owner or owner's duly authorized representative of real property [Property Owner], located at

1453-1455, 1461-1463 ROSECRANS & 2912 & 2930 GARRISON STREET
(PROPERTY ADDRESS)

and more particularly described as

SEE ALTA ATTACHED CIVIL DOCUMENT
(LEGAL DESCRIPTION) (PROJECT APPROVAL NO.S.)

in the City of San Diego, County of San Diego, State of California [Property].

Per Section 77.15 of Title 14 of the Code of Federal Regulations (CFR) Part 77, no person is required to notify the Federal Aviation Administration (FAA) for any object that would be shielded by existing structures of a permanent and substantial character or by natural terrain or topographic features of equal or greater height, and would be located in the congested area of a city, town, or settlement where it is evident beyond all reasonable doubt that the structure so shielded will not adversely affect safety in air navigation.

The City will not require notification to the FAA if a professional, licensed by the state of California to prepare construction documents provides certification on their plans along with their signature and registration stamp that the structure(s) or modification to existing structure(s) shown on the plans do not require Federal Aviation Administration notification because per Section 77.15 (a) of Title 14 of the Code of Federal Regulations CFR Part 77, notification is not required.

In consideration of the grant of permission by the City of San Diego to allow the self certification of the determination of no requirement to notify FAA under section 77.15 of Title 14 of the Code of Federal Regulations CFR Part 77, the applicant covenants and agrees with the City of San Diego as follows:

1. Should it be subsequently determined by the City, Airport Land Use Commission, State, or the Federal Aviation Administration, or any other government agency that the proposed project is required to notify the Federal Aviation Administration under CFR Part 77, the City assumes no responsibility or liability for any changes required to the submitted construction drawings and documents and to the structures installed on the project site as a result of and to achieve consistency with the FAA's determination of No Hazard to Air Navigation.

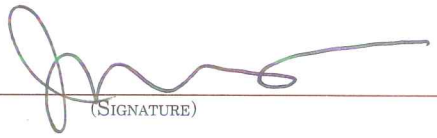
2. The applicant certifies that said owner(s) acknowledges and accepts that the construction drawings and documents that are part of the ministerial approval application as well as the construction in the field may have to be revised as necessary to comply with the FAA Determination of Hazard to Air Navigation. The applicant also acknowledges that if a Determination of Presumed Hazard is made by the FAA, that the City will stop all construction until a Determination of No Hazard to Air Navigation is made by the FAA for the project or a permit from the California Department of Transportation is obtained in accordance with Public Utilities Code Section 21659. The applicant acknowledges that this may cost the applicant more money in permitting and construction costs, as well as delays in project construction.

3. Furthermore, the applicant certifies that said owner(s) acknowledges and accepts all responsibility for changes required to the submitted construction drawings and documents and to the structures installed on the project site as a result of and to achieve consistency with the FAA's determination. The applicant acknowledges and accepts that the City assumes no responsibility for said changes and the impacts that result to the development as a result. The applicant shall defend, indemnify, and hold harmless the City, its agents, officers, and employees from any and all claims, actions, proceedings, damages, judgments, or costs, including attorney's fees, against the City or its agents,

officers, or employees, including, but not limited to, any to any action to attack, set aside, void, challenge, or annul this development approval or decision.

The City will promptly notify applicant of any claim, action, or proceeding and, if the City should fail to cooperate fully in the defense, the applicant shall not thereafter be responsible to defend, indemnify, and hold harmless the City or its agents, officers, and employees. The City may elect to conduct its own defense, participate in its own defense, or obtain independent legal counsel in defense of any claim related to this indemnification. In the event of such election, applicant shall pay all of the costs related thereto, including without limitation reasonable attorney's fees and costs. In the event of a disagreement between the City and applicant regarding litigation issues, the City shall have the authority to control the litigation and make litigation related decisions, including, but not limited to, settlement or other disposition of the matter. However, the applicant shall not be required to pay or perform any settlement unless such settlement is approved by applicant.

4. Lastly, the applicant certifies that said owner acknowledges and accepts that additional plan review and inspection fees may be required if additional staff reviews of the revised drawings and documents or additional inspections are necessary to reflect the final design of the development to be consistent with a FAA Determination of Hazard to Air Navigation



(SIGNATURE)

JOSEPH O. WONG, FAIA

(PRINT NAME & TITLE)

JOSEPH WONG DESIGN ASSOCIATES

(COMPANY ORGANIZATION NAME)

08/29/17

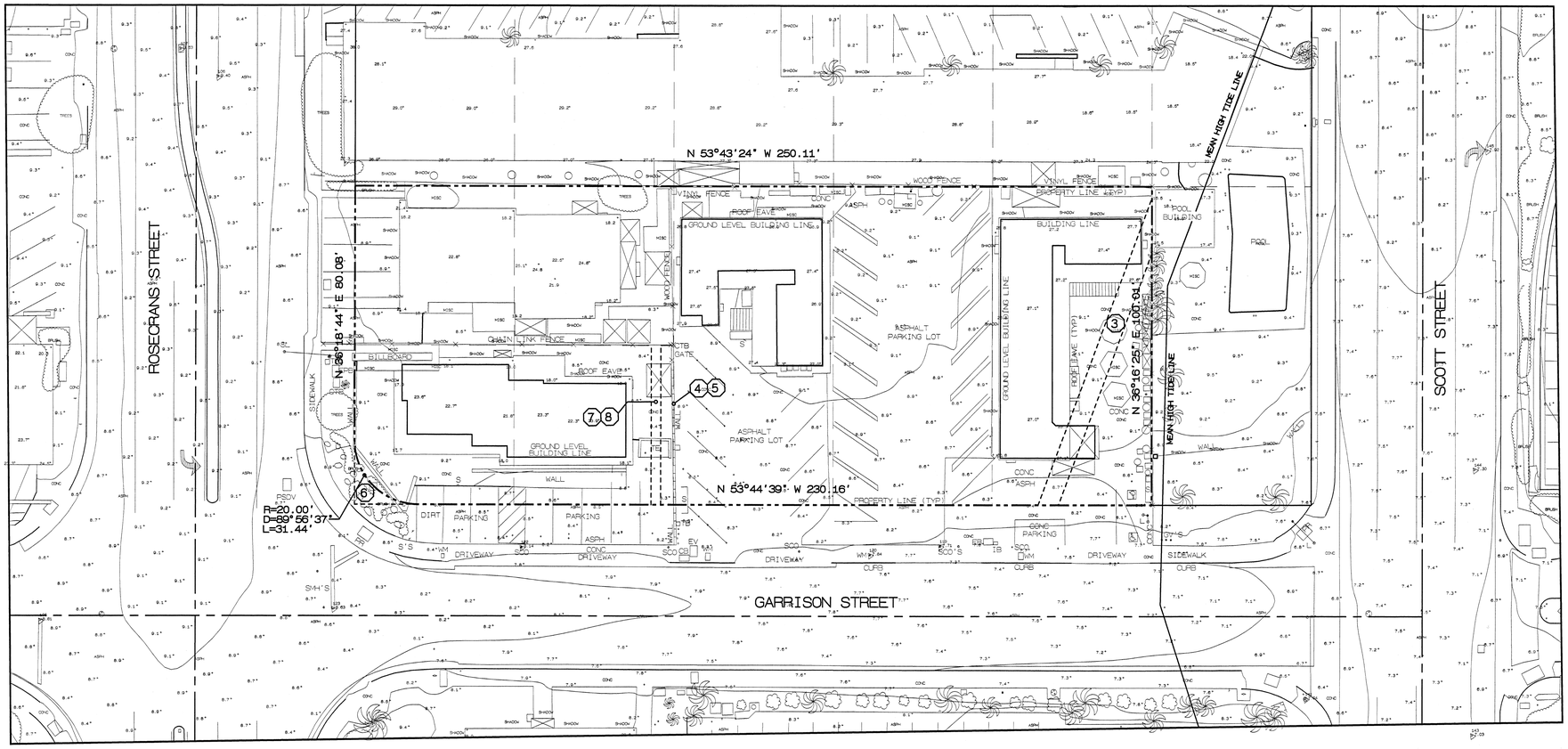
(DATE)

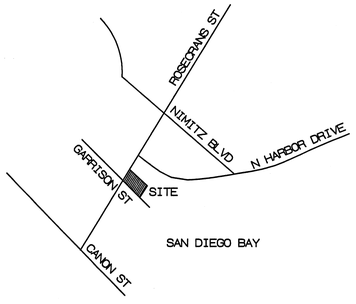
TOPOGRAPHY

SCALE 1"= 20'

ABBREVIATIONS

ASPH	ASPHALT
CB	COMMUNICATIONS BOX
CTB	CABLE TELEVISION BOX
EV	ELECTRIC VAULT
GV	GAS VALVE
IB	IRRIGATION BOX
L	LIGHT
PR	PEDESTRIAN RAMP
PSDV	PORT OF SAN DIEGO VAULT
S	SIGN
SCO	SEWER CLEANOUT
SL	STREET LIGHT
SMH	SEWER MANHOLE
TB	TELEPHONE BOX
TE	TRASH ENCLOSURE
TYP	TYPICAL
WM	WATER METER





VICINITY MAP

NOT TO SCALE

TITLE NOTES

(2) AN EASEMENT OR RIGHT OF WAY FOR THE CONSTRUCTION AND MAINTENANCE OF FLUMES, CANALS OR AQUEDUCTS, CONVEYED BY DEED FROM FRANK A. KIMBALL, AND WARREN G. KIMBALL TO KIMBALL BROTHERS WATER COMPANY, A CORPORATION, DATED JUNE 9, 1869, AND RECORDED IN BOOK 7, PAGE 124 OF DEEDS. THE INTEREST OF SAID GRANTEE IN AND TO SAID EASEMENT HAS SINCE PASSED TO AND NOW VESTS OF RECORD IN THE SWEETWATER AUTHORITY. THE LOCATION AND EXTENT OF SAID EASEMENT IS NOT DISCLOSED OF RECORD AND IS NOT PLOTTED.

(3) AN EASEMENT FOR SEWER PURPOSES AND RIGHTS INCIDENTAL THERETO GRANTED TO THE CITY OF SAN DIEGO, A MUNICIPAL CORPORATION, RECORDED JUNE 12, 1928 IN BOOK 1510, PAGE 12, OF DEEDS, OF OFFICIAL RECORDS.

(4) AN EASEMENT FOR THE CONSTRUCTION AND MAINTENANCE OF A PRIVATE SEWER LATERAL AND RIGHTS INCIDENTAL THERETO GRANTED TO THE CITY OF SAN DIEGO, A MUNICIPAL CORPORATION, RECORDED FEBRUARY 4, 1944 IN BOOK 1635, PAGE 177 OF OFFICIAL RECORDS.

(5) AN EASEMENT FOR POLES AND WIRES AND RIGHTS INCIDENTAL THERETO GRANTED TO THE SAN DIEGO GAS AND ELECTRIC COMPANY, RECORDED MAY 29, 1944 IN BOOK 1684, PAGE 263, OF OFFICIAL RECORDS.

(6) AN EASEMENT FOR PUBLIC STREET AND RIGHTS INCIDENTAL THERETO GRANTED TO THE CITY OF SAN DIEGO, RECORDED MARCH 3, 1959 IN BOOK 7527, PAGE 49 OF OFFICIAL RECORDS.

(7) AN EASEMENT FOR POLES AND WIRES AND RIGHTS INCIDENTAL THERETO GRANTED TO THE SAN DIEGO GAS AND ELECTRIC COMPANY, RECORDED IN BOOK 1688, PAGE 116, OF OFFICIAL RECORDS.

(8) AN AGREEMENT RELATING TO THE INSTALLATION, MAINTENANCE AND POSSIBLE REMOVAL OF A PARKING LOT OVER EXISTING SIDEWALK AND CURB, BY AND BETWEEN THE CITY OF SAN DIEGO AND EDWIN FRANK MAY AND BARBARA J. MAY, RECORDED JUNE 21, 1963 AS INSTRUMENT NO. 108971, OF OFFICIAL RECORDS. AGREEMENT IS NOT PLOTTED.

(9) AN EASEMENT FOR COMMUNICATION STRUCTURES AND RIGHTS INCIDENTAL THERETO, GRANTED TO THE PACIFIC TELEPHONE AND TELEGRAPH COMPANY, RECORDED MAY 11, 1966 AS INSTRUMENT NO. 79002, OF OFFICIAL RECORDS.

(13) AN AGREEMENT RELATING TO THE INSTALLATION, MAINTENANCE AND POSSIBLE REMOVAL OF A 3 1/2 TALL CHAIN LINK FENCE, BY AND BETWEEN THE CITY OF SAN DIEGO AND H.G. ROCKWOOD AND BEVERLY M. ROCKWOOD, RECORDED DECEMBER 18, 1986 AS INSTRUMENT NO. 86-596034, OF OFFICIAL RECORDS. AGREEMENT IS NOT PLOTTED.

(20) AN ENCROACHMENT MAINTENANCE AND REMOVAL AGREEMENT, EXECUTED BY. H.D. MURDOCK, INC. AND THE CITY OF SAN DIEGO, RECORDED APRIL 4, 2014 AS INSTRUMENT NO. 2014-0133012, OF OFFICIAL RECORDS. AGREEMENT IS NOT PLOTTED.

LEGAL DESCRIPTION

LOTS 1 AND 2, BLOCK 62 OF ROSEVILLE, CITY OF SAN DIEGO, COUNTY OF SAN DIEGO, ACCORDING TO MAP THEREOF NO. 165 FILED IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY, EXCEPTING THAT PORTION IF ANY HERETO FORE OR NOW LYING BELOW THE ORDINARY HIGH TIDE LINE OF THE BAY OF SAN DIEGO.

LOT 3 IN BLOCK 62 OF ROSEVILLE, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO MAP THEREOF NO. 165, FILED IN THE OFFICE OF THE RECORDER OF SAN DIEGO COUNTY. EXCEPTING THAT PORTION, IF ANY, HERETOFORE OR NOW LYING BELOW THE ORDINARY HIGH TIDE LINE OF THE BAY OF SAN DIEGO.

LOTS 4 AND 5 IN BLOCK 62, OF ROSEVILLE, IN CITY OF SAN DIEGO, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO MAP THEREOF NO. 165, FILED IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY.

REFERENCE DOCUMENT

TITLE INFORMATION FOR THIS SURVEY IS FROM FIDELITY NATIONAL TITLE COMPANY PRELIMINARY REPORT ORDER NO. 005-23088597-IM9, DATED OCTOBER 7, 2016 AND CHICAGO TITLE PRELIMINARY REPORT ORDER NO. 0069801-993-SD2-CFU, DATED MARCH 16, 2017.

LEGEND

(3) INDICATES REFERENCE TO TITLE NOTE EXCEPTION PER THE TITLE REPORTS.

NOTES

1. AGREEMENTS, DOCUMENTS AND OTHER MATTERS WHICH AFFECT THIS PROPERTY EXIST, BUT CANNOT BE PLOTTED. SEE TITLE REPORT.
2. THE PRECISE LOCATION OF UNDERGROUND UTILITIES COULD NOT BE DETERMINED IN THE FIELD PRIOR TO ANY EXCAVATION UTILITY COMPANIES WILL NEED TO MARK-OUT EXACT UTILITY LOCATIONS.
3. THE ASSESSOR PARCEL NUMBERS FOR THE SUBJECT PROPERTY ARE 530-751-01,02,03,04 AND 05.
4. THE ADDRESSES FOR THE SUBJECT PROPERTY ARE 1453-1455 AND 1461-1463 ROSECRANS STREET AND 2912 AND 2930 GARRISON STREET, SAN DIEGO, CA 92106.
5. THE TOTAL AREA OF THE SUBJECT PROPERTY IS 0.57 ACRES.

CE &S CHRISTENSEN ENGINEERING & SURVEYING
CIVIL ENGINEERS LAND SURVEYORS PLANNERS
7888 SILVERTON AVENUE, SUITE 'J', SAN DIEGO, CALIFORNIA 92126
TELEPHONE: (858)271-9901 FAX: (858)271-8912 EMAIL: CEANDS@AOL.COM

PATRICK F. CHRISTENSEN, L.S. 7208 — MARCH 23, 2017 Date

LICENSED LAND SURVEYOR PATRICK F. CHRISTENSEN No. L.S 7208 Exp. 3-31-18 STATE OF CALIFORNIA

J.N. 2016-80

ADVANCED GEOTECHNICAL SOLUTIONS, INC.
485 Corporate Drive, Suite B
Escondido, CA 92029
Telephone: (619) 867-0487

Alliance Development Services, Inc.
17828 Villamoura Drive
Poway, CA 92064

April 12, 2017
P/W 1611-03
Report No. 1611-03-B-2

Attention: **Mr. Mac Stead**

Subject: ***Preliminary Infiltration Feasibility Study, Dolphin Motel Project, Point Loma San Diego, California***

References: See Attached

Gentlemen:
In accordance with your request, Advanced Geotechnical Solutions, Inc. (AGS) has prepared this Preliminary Infiltration Feasibility Study for the proposed Dolphin Motel Project in the Point Loma area of San Diego, California. This report is intended to meet the preliminary infiltration testing requirements of the City of San Diego and provide an evaluation of the feasibility for storm water infiltration in accordance with the current Storm Water Standards – BMP Design Manual. A discussion of our field testing and findings are presented below. Worksheet Form C.4-1 and associated supporting worksheets and data are presented in Appendix A.

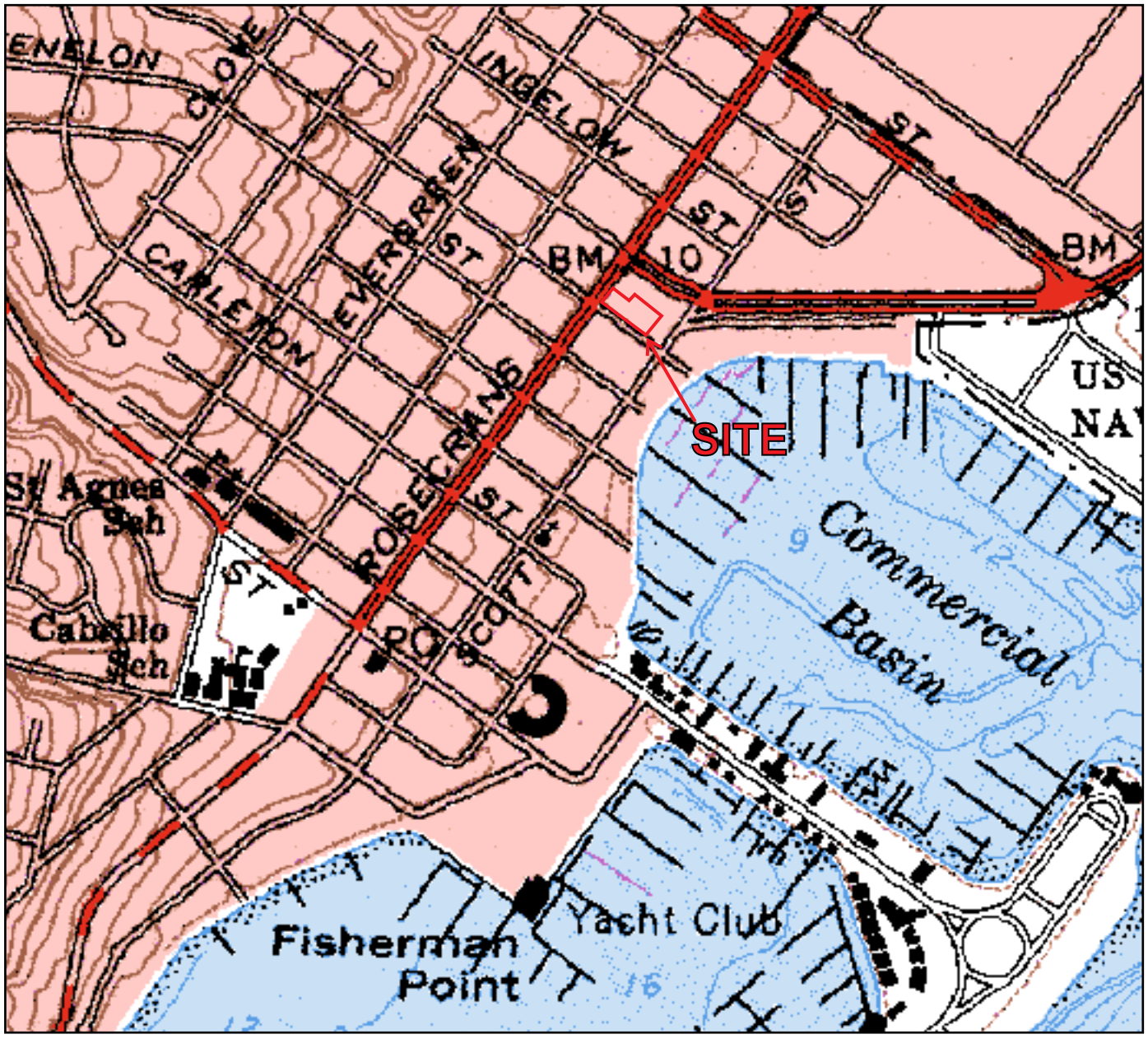
1.0 SITE DESCRIPTION AND PROPOSED DEVELOPMENT

The Proposed Project is located within the USGS 7.5' Point Loma quadrangle, generally along Rosecrans Street, City of San Diego, California. More specifically the rectangular shaped property is bounded on the southwest by Garrison Street, to the northwest by Rosecrans Street and a commercial structure, and to the northeast and southeast by existing motels as depicted in Figure 1 (Site Location Map). Overall the lot encompasses approximately 0.70 acres. Topography at the site is relatively level to gently sloping to the southeast (towards the bay). The site currently supports a motel with two, two-story structures and a one-story structure; surface improvements include paved driveways and parking areas with some small planters.

Detailed development plans were not available at the time of this study. However, it is our understanding the existing structures and associated improvements will be razed to allow for construction of a new motel structure. It is currently anticipated that the new motel will consist of a multi-story "podium" structure having three stories of motel units over one story of subterranean parking. Current plans call for the top of the subterranean garage slab to be at an elevation of -1.5 feet below sea level Associated improvements including storm water BMPs are anticipated.

2.0 FIELD INVESTIGATION

To evaluate the feasibility of storm water infiltration on the site, and to provide preliminary design infiltration rates, borehole percolation tests were performed in general conformance with Appendix D, Section D.3.3.2 of the recently adopted BMP Design Manual. Two borehole percolation tests were performed at the western side of the site (Figure 2).



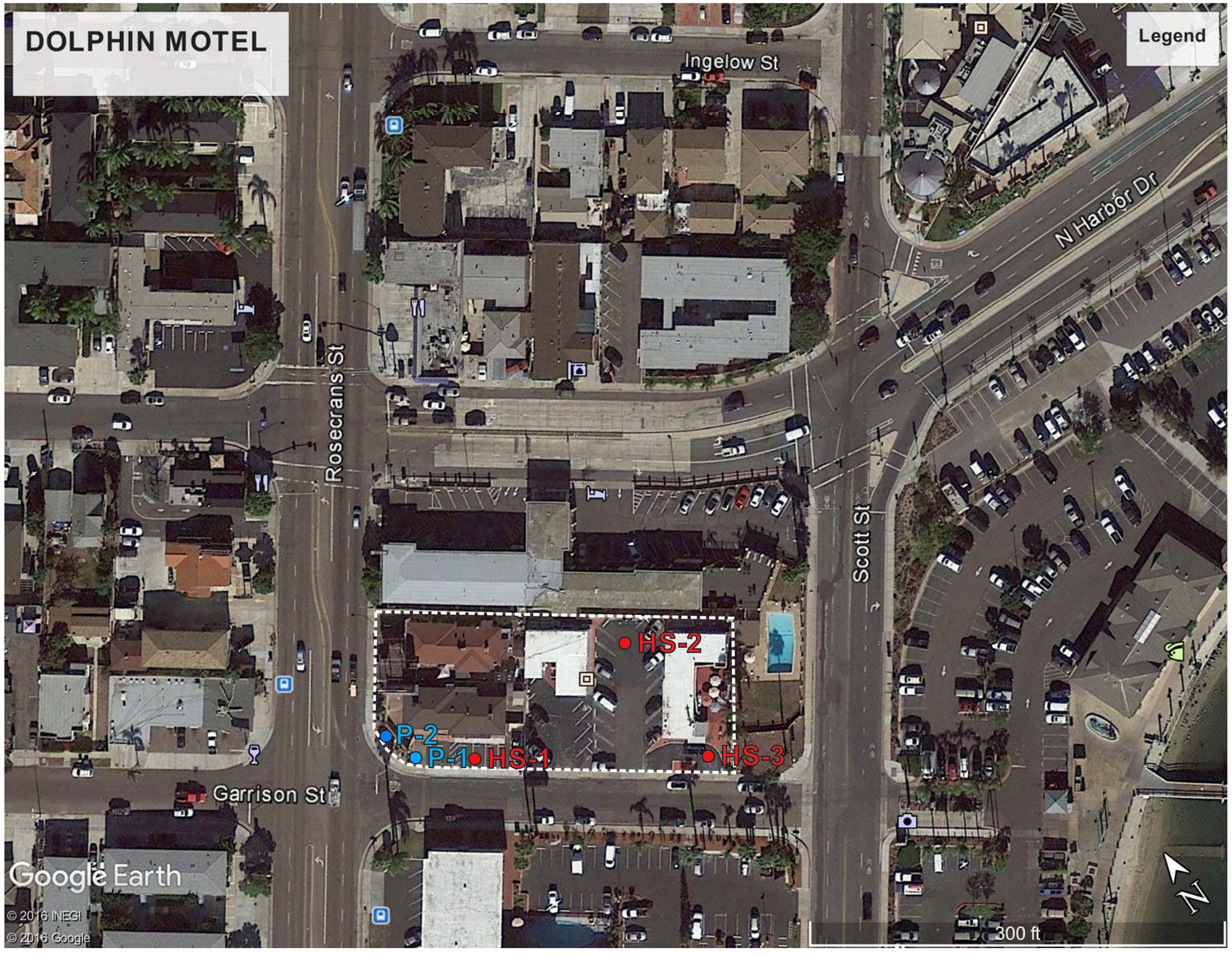
USGS SITE LOCATION MAP

2912 GARRISON STREET
SAN DIEGO, CALIFORNIA

FIGURE 1

SOURCE MAP(S): POINT LOMA QUADRANGLE CALIFORNIA - SAN DIEGO CO. 7.5 MINUTE SERIES (TOPOGRAPHIC)

AGS
ADVANCED GEOTECHNICAL SOLUTIONS, INC.
485 Corporate Drive, Suite B, Escondido Ca, 92029
Telephone: (619) 867-0487 Fax: (714) 786-5661
P/W 1611-03 **Report No. 1611-03-B-2**



LEGEND

- P-1 — Approximate Infiltration Test Location
- HS-1 — Approximate Hollow-Stem Auger Location

NORTH

FIGURE 2
Infiltration Test Location Plan

AGS
ADVANCED GEOTECHNICAL SOLUTIONS, INC.

Project:	Report:	Date:
P/W 1611-03	1611-03-B-2	April, 2017

A 6-inch diameter hand auger was used to advance the infiltration test borings to a depth of five (5) feet below ground surface. In addition three exploratory borings were advanced to a maximum depth of 50 feet below ground surface utilizing a truck mounted drill rig equipped with 8-inch diameter hollowstem augerA geologist from AGS continuously logged the exploratory and infiltration test borings for soil/geology. Boring logs are presented in the Appendix B. Locations of the infiltration test borings are shown on Figure 2.

3.0 GEOLOGY

Infiltration test borings P-1 and P-2 extended into old paralic deposits (Qop_6) which were observed to underlie undocumented artificial fill (afu). The undocumented artificial fill encountered within the borings advanced during this infiltration investigation consisted predominantly of medium dense, silty sand with clay in moist to wet condition. The upper portion of the old paralic deposits encountered generally consisted of interbedded fine-grained clayey sand and sandy clay in a wet to saturated and loose/firm to moderately dense/stiff condition. Observed bedding ranged from laminar to thickly bedded but was generally observed to be thinly bedded.

4.0 TEST PROCEDURE

The resulting test holes were cleaned of loose debris then filled with more than 5 gallons of clean, potable water and allowed to pre-soak. The following day the test holes were cleaned of sediment and the bottom was lined with approximately 2-inches of washed gravel prior to infiltration testing. A series of falling head infiltration tests were performed. The test holes were filled with clean, potable water to approximately 24 inches above the infiltration surface and allowed to infiltrate. The water level was allowed to drop for a 30-minute period, the water level was then measured and the drop rate calculated in inches per hour. The test hole was then refilled with water as necessary and the test procedure was repeated over the course of 6 hours, and until a stabilized percolation rate was recorded. The stabilized percolation rate was then converted to an infiltration rate based on the "Porchet Method" utilizing the following equation:

Logs of the field testing and graphical representations of the test data presented as infiltration versus time interval are included in Appendix A as supporting documents for Form C.4-1.

$$I_t = \frac{\Delta H\, \pi r^2 60}{\Delta t(\pi r^2 + 2\pi r H_{avg})} = \frac{\Delta H\, 60\, r}{\Delta t(r + 2H_{avg})}$$

Where:

I_t = tested infiltration rate, inches/hour
ΔH = change in head over the time interval, inches
Δt = time interval, minutes
r = effective radius of test hole
H_{avg} = average head over the time interval, inches

5.0 TEST RESULTS AND PRELIMINARY DESIGN VALUES

The results of our testing are summarized in Table 1 below.

TABLE 1
SUMMARY OF INFILTRATION TEST RESULTS

Test Hole No.	Depth of Test Hole	Approximate Test Elevation	Geologic Unit	Description	Tested Infiltration Rate (inches/hour)
P-1	60 inches	6.0 ft msl	Qop_6	Clayey Sand/Sandy Clay	0
P-2	60 inches	6.0 ft msl	Qop_6	Clayey Sand	0.14

In accordance with Appendix D, Section D.5. of the BMP Design Manual, a 'Factor of Safety' should be applied to the tested infiltration rates to determine the design infiltration rates. The factor of safety is determined by Worksheet D.5-1/I-9 and possesses a numerical value between 2 and 9. For the proposed project site, the factor of safety worksheet yielded a Combined Factor of Safety (S_{total}) of 4.5. However, for the purposes of feasibility screening, it is recommended that a Factor of Safety of 2.0 be utilized. Table 2 below summarizes the preliminary design infiltration rates for the subject test holes utilizing a factor of safety of 2.0.

TABLE 2
SUMMARY OF PRELIMINARY DESIGN INFILTRATION RATES

Test Hole No.	Tested Infiltration Rate (in./hr.)	Factor of Safety	Design Infiltration Rate (in./hr.)
P-1	0	2.0	0.0
P-2	0.14	2.0	0.07

6.0 DESIGN CONSIDERATIONS

6.1. Groundwater

Perched groundwater was encountered at approximately three (3) feet below ground surface in both test boreholes (P-1 and P-2). Static groundwater was not observed within hand auger excavations but was encountered within the deeper exploratory borings (HS-1 through HS-3) at a depth of approximately fifteen (15) feet below ground surface. However, nearby monitoring well data suggests historical high ground water is approximately eleven (11) feet below ground surface. Further, it is anticipated that static groundwater elevations may fluctuate due to tides given the close proximity of the San Diego Bay (approximately 280 ft). It is our opinion the seasonal high groundwater elevation will be shallower than ten (10) feet below the bottom of potential infiltration type BMPs.

6.2. Geotechnical Hazards

There are no significant geotechnical hazards known to exist on or adjacent to the project site.

6.3. Soil Contamination

During our recent site investigation, no evidence of soil contamination was observed, nor is any contamination known to exist onsite. Utilizing an online resource; Geotracker.ca.gov, showed an open Leaking Underground Storage Tank (LUST) cleanup site that is open. The cleanup site is located at Northern Trust of CA, which is about 750 feet from the proposed project site. The investigation opened in 2000 and soil samples collected at a depth of 15 feet below ground surface were saturated with petroleum hydrocarbons. Northern Trust of CA sits at a higher elevation than the proposed project site and the contaminant plume has not migrated to the project site. It is not anticipated that infiltration would lead to spread of contamination.

6.4. Soil Characteristics and Anticipated Flow Paths

The soils underlying the project site are identified as Old Paralic Deposits, Unit 6 and generally consist of interbedded clayey sands and sandy clay. Based on site specific testing and our previous experience in the project area, the clay soils underlying the site are considered to be impermeable when saturated and the silty to clayey sand soils have low to moderate permeability. Minor to moderate lateral flow will occur within the confined sand layers. However, in consideration of the thinly interbedded nature of the soils, the capacity for vertical infiltration is negligible.

6.5. Proximity to Water Supply Wells

There are no known water supply wells within the project vicinity.

7.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the results of our preliminary infiltration testing, the onsite native soils (Old Paralic Deposits) possess preliminary design infiltration rates ranging between **0.0 to 0.07 inches/hour**. These rates indicate a No Infiltration to Partial Infiltration condition. However, the clay lenses encountered will act as confining layers when saturated prohibiting vertical infiltration. It is anticipated that water introduced through infiltration type BMPs will flow laterally toward the proposed subterranean parking structure and into adjacent utility trenches. In addition, the site does not meet the minimum separation of 10 feet between the proposed infiltration surface and seasonal high groundwater levels. Accordingly no infiltration is recommended.

The infiltration rates presented in this report are based on limited testing performed as apart of preliminary screening for feasibility purposes. Dependent upon the final location, depth, and type of proposed infiltration BMP, additional testing may be warranted.

Advanced Geotechnical Solutions, Inc. appreciates the opportunity to provide you with geotechnical consulting services and professional opinions. If you have any questions, please contact the undersigned at (619) 867-0487.

Respectfully Submitted,
Advanced Geotechnical Solutions, Inc.

Prepared by:

SHANE P. SMITH
Staff Engineer

Reviewed by:

JEFFREY A. CHANEY, President
RCE 46544 / RGE 2314, Reg. Exp. 6-30-17

PAUL J. DERISI, Vice President
CEG 2536, Reg. Exp. 5-31-17

Distribution: (6) Addressee

Attachments: References
Figure 1 – Site Location Map
Figure 2 – Infiltration Test Location Map
Appendix A- Storm Water Standards BMP Design Manual - Worksheet Form C.4-1, Support Documents and Field Data
Appendix B- Hand Auger Logs
Appendix C- Hollow Stem Logs

REFERENCES

Advanced Geotechnical Solutions, Inc., 2016, "Proposal for Geotechnical Services Associated with the Design of the Dolphin Motel Project", San Diego, California dated November 28, 2016, Report No. 1611-03-A-1.

American Society for Testing and Materials (2008), Annual Book of ASTM Standards, Section 4, Construction, Volume 04.08, Soil and Rock (I), ASTM International, West Conshohocken, Pennsylvania.

California Building Standards Commission, 2016, California Building Code, Title 24, Part 2, Volumes 1 and 2.

City of San Diego, 2016, Transportation & Storm Water, Storm Water Standard – BMP Design Manual, January 2016 Edition.

Jennings, C.W., 1994, Fault Activity Map of California and Adjacent Areas: California Geological Survey, California Geologic Data Map No. 6, Scale 1:750,000.

Kennedy, M.P., and Tan, S.S., 2008, Geologic Map of the San Diego 30' x 60' Quadrangle, California Regional Geologic Map Series, Scale = 1:100,000, Map No. 3, Sheet 1 of 2.

State of California Water Boards, September 23, 2016, *http://geotracker.waterboards.ca.gov/*

Tan, S.S., 1995, Landslide Hazards in the Southern Part of the San Diego Metropolitan Area, San Diego County, California, Landslide Hazard Identification Map No. 33, Plate 33A, Division of Mines and Geology, Open File Report 95-03.

APPENDIX A

STORM WATER STANDARDS BMP DESIGN MANUAL – WORKSHEET FORM C.4-1, SUPPORT DOCUMENTS AND FIELD DATA

Categorization of Infiltration Feasibility Condition	Worksheet C.4-1

Part 1 - Full Infiltration Feasibility Screening Criteria

Would infiltration of the full design volume be feasible from a physical perspective without any undesirable consequences that cannot be reasonably mitigated?

Criteria	Screening Question	Yes	No
1	Is the estimated reliable infiltration rate below proposed facility locations greater than 0.5 inches per hour? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2 and Appendix D.	☐	☒

Provide basis:

Two (2) borehole percolation tests were performed onsite as part of a feasibility analysis for the implementation of infiltration type BMPs. Testing was performed in general conformance with Appendix D, Section D.3.3.2 of the current BMP Design Manual. The observed percolation rates were then converted to observed infiltration rates using the "Porchet Method". The observed infiltration rates were calculated to be 0.0 in/hr in Test Boring P-1, and 0.14 in/hr in Test Boring P-2. Utilizing a factor of safety of 2, for preliminary screening purposes, the preliminary design infiltration rates range between 0.0 and 0.07 in/hr.

Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.

2	Can infiltration greater than 0.5 inches per hour be allowed without increasing risk of geotechnical hazards (slope stability, groundwater mounding, utilities, or other factors) that cannot be mitigated to an acceptable level? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2.	☐	☒

Provide basis:

Design Infiltration rates at the project site are less than 0.5 inches/hour. As such, this screening question does not control the feasibility of infiltration at the project site and is not applicable.

Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.

Worksheet C.4-1 Page 2 of 4			
Criteria	Screening Question	Yes	No
3	Can infiltration greater than 0.5 inches per hour be allowed without increasing risk of groundwater contamination (shallow water table, storm water pollutants or other factors) that cannot be mitigated to an acceptable level? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.	☐	☒
Provide basis: The preliminary design infiltration rates at the project site are less than 0.5 inches/hour. Infiltration at a rate greater than 0.5 inches/hour is not feasible for this project. As such, this screening question does not control the feasibility of infiltration at the project site. Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.			
4	Can infiltration greater than 0.5 inches per hour be allowed without causing potential water balance issues such as change of seasonality of ephemeral streams or increased discharge of contaminated groundwater to surface waters? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.	☐	☒
Provide basis: The design infiltration rates at the project site are less than 0.5 inches/hour. Infiltration at a rate greater than 0.5 inches/hour is not feasible for this project. As such, this screening question does not control the feasibility of infiltration at the project site. Per Section C.4.4 of the BMP Design Manual, final determination should be made by the project design engineer.			
Part 1 Result*	If all answers to rows 1-4 are "Yes" a full infiltration design is potentially feasible. The feasibility screening category is Full Infiltration If any answer from row 1-4 is "No", infiltration may be possible to some extent but would not generally be feasible or desirable to achieve a "full infiltration" design. Proceed to Part 2		

**To be completed using gathered site information and best professional judgment considering the definition of MEP in the MS4 Permit. Additional testing and/or studies may be required by the City Engineer to substantiate findings*

Part 2 – Partial Infiltration vs. No Infiltration Feasibility Screening Criteria
Would infiltration of water in any appreciable amount be physically feasible without any negative consequences that cannot be reasonably mitigated?

Criteria	Screening Question	Yes	No
5	Do soil and geologic conditions allow for infiltration in any appreciable rate or volume? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2 and Appendix D.	☐	☒

Provide basis:

Site specific infiltration testing yielded preliminary design infiltration rates ranging between 0.00 and 0.07 inches/hour. The subsurface soils encountered at the project site are interbedded, fine-grained clayey sand and sandy clay in a wet to saturated and loose/firm to moderately dense/stiff condition. Limited infiltration within the sandy lenses is anticipated. However, the clay lenses are considered impermeable when saturated and act as an aquitard/confining layer preventing vertical infiltration. Based on the results of our site specific investigation, the soil and geologic conditions at the project site do not allow for infiltration in an 'appreciable' rate or volume.

Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability and why it was not feasible to mitigate low infiltration rates.

6	Can Infiltration in any appreciable quantity be allowed without increasing risk of geotechnical hazards (slope stability, groundwater mounding, utilities, or other factors) that cannot be mitigated to an acceptable level? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2.	☐	☒

Provide basis:

As discussed in previous responses and the referenced infiltration study, the onsite soils consist of interbedded clayey sand and sandy clay. The clay lenses will act as confining layers between the sandier lenses prohibiting vertical infiltration. It is anticipated that water introduced through infiltration type BMPs will flow laterally within confined sand lenses. In consideration of existing and proposed improvements in close proximity to the site, it is highly likely that water intrusion into nearby permeable improvements (e.g. utility trenches, wall backfill) will occur. In addition, the onsite soils have low horizontal hydraulic conductivity and may be susceptible to groundwater mounding. To reduce the associated risk to an acceptable level, mitigation measures such as cut-off walls, deepened foundation elements, structural setbacks and additional drainage systems will be necessary but are likely to be cost prohibitive. For preliminary screening purposes, partial infiltration is not considered feasible. The type, location, size, and depth of proposed infiltration BMPs has not been finalized at this time. When more detailed plans become available, additional analysis and modification to preliminary recommendations may be necessary.

Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability and why it was not feasible to mitigate low infiltration rates.

Worksheet C.4-1 Page 4 of 4			
Criteria	Screening Question	Yes	No
7	Can Infiltration in any appreciable quantity be allowed without posing significant risk for groundwater related concerns (shallow water table, storm water pollutants or other factors)? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.	☒	☐
Provide basis: The site is at an approximate elevation ranging of 9 to 11 feet above sea level. Groundwater was found to be at approximately 15 feet below ground surface. Although, as previously stated it is our opinion that historical high ground water is at approximately 11 feet below ground surface. This opinion is based on soil mottling observed in subsurface samples and review of historic well data from the site vicinity. As such, it is not anticipated that the proposed infiltration BMPs will have the required 10-foot separation to high groundwater. The required separation can be reduced at the discretion of the reviewing agency provided the receiving groundwater body does not support beneficial uses and that adequate pre-treatment is provided to preclude the introduction of contaminants. Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability and why it was not feasible to mitigate low infiltration rates.			
8	Can infiltration be allowed without violating downstream water rights? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.	☒	☐
Provide basis: It is not anticipated that infiltration would violated downstream water rights. Per Section C.4.4 of the BMP Design Manual, final determination should be made by the project design engineer. Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability and why it was not feasible to mitigate low infiltration rates.			
Part 2 Result*	If all answers from row 5-8 are "Yes", then partial infiltration design is potentially feasible. The feasibility screening category is Partial Infiltration. If any answer from row 5-8 is "No", then infiltration of any volume is considered to be infeasible within the drainage area. The feasibility screening category is No Infiltration.		

**To be completed using gathered site information and best professional judgment considering the definition of MEP in the MS4 Permit. Additional testing and/or studies may be required by the City Engineer to substantiate findings*

PERCOLATIC PERCOLATION DATA SHEET

Project:	Dolphin Motel	Project No:	1611-03	Date:	1/16/2017
Test Hole No:	P-1	Tested By:	SS	Water Temp.	68
Depth of Test Hole:	60 inches	USCS :	CL	Air Temp	72

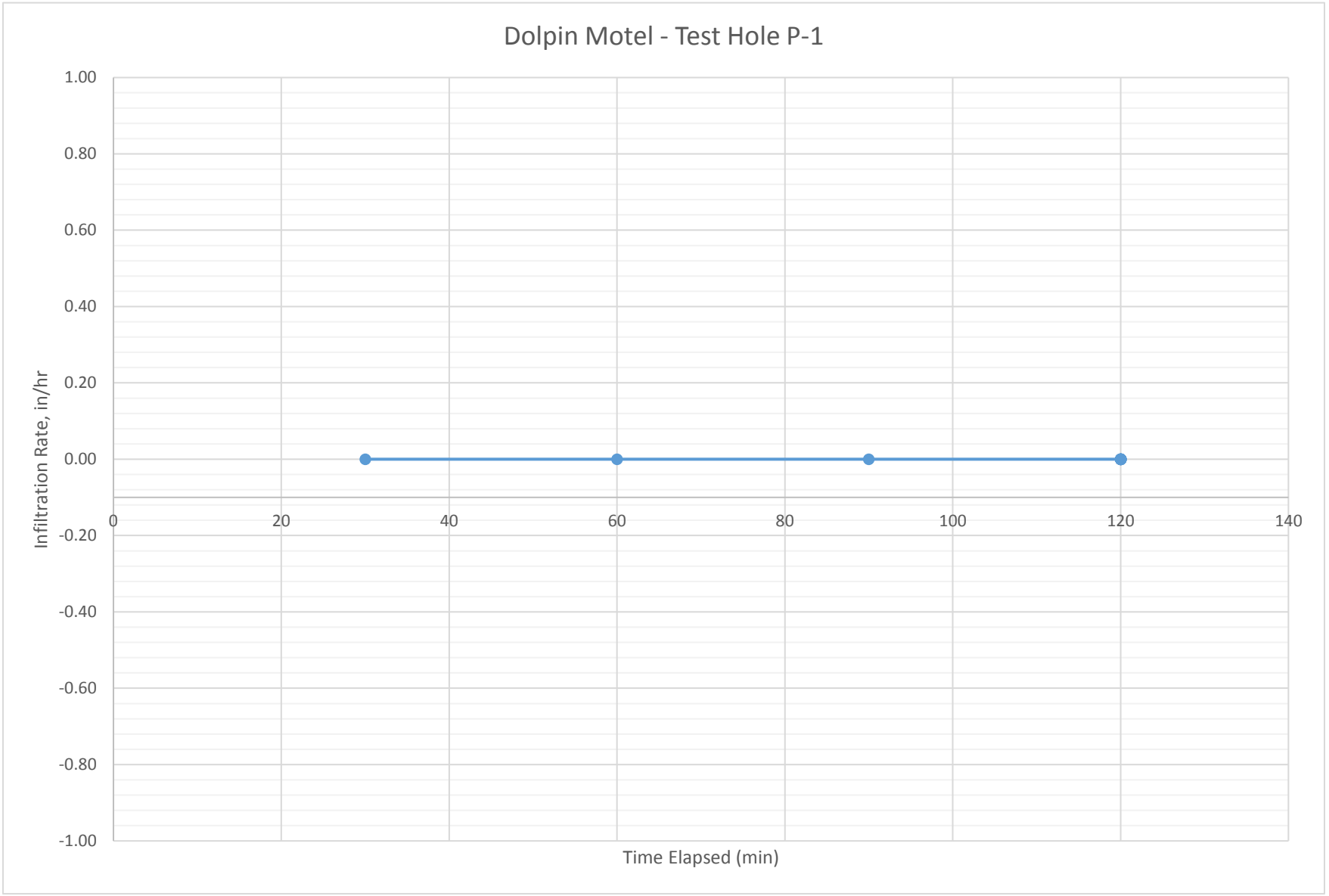
Test Hole Dimensions (Inches)

Length 60 Width _____ Diameter 6 Avg. Water Column 24

Infiltration Test

Trial No.	Start Time (hr and min)	Stop Time (hr and min)	Time Interval (min.)	(Pieziometric Surface in inches)			Perc Rate (in./hr.)	Infiltration Rate* (in./hr.)	Notes
				Start Depth	End Depth	Depth Change			
1	9:58	10:28	30	37.80	37.80	0.00	0.00	0.00	
2	10:29	10:59	30	37.80	37.80	0.00	0.00	0.00	
3	11:00	11:30	30	37.80	37.80	0.00	0.00	0.00	
4	11:31	12:01	30	37.80	37.80	0.00	0.00	0.00	
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									

*Calculated via Porchet Method


Dolpin Motel - Test Hole P-1
Infiltration Rate, in/hr
1.00
0.80
0.60
0.40
0.20
0.00
-0.20
-0.40
-0.60
-0.80
-1.00
0
20
40
60
80
100
120
140
Time Elapsed (min)

PERCOLATIC PERCOLATION DATA SHEET

Project: Dolphin Motel | Project No: 1611-03 | Date: 1/16/2017

Test Hole No: P-2 | Tested By: SS | Water Temp. 68

Depth of Test Hole: 60 inches | USCS : CL | Air Temp 72

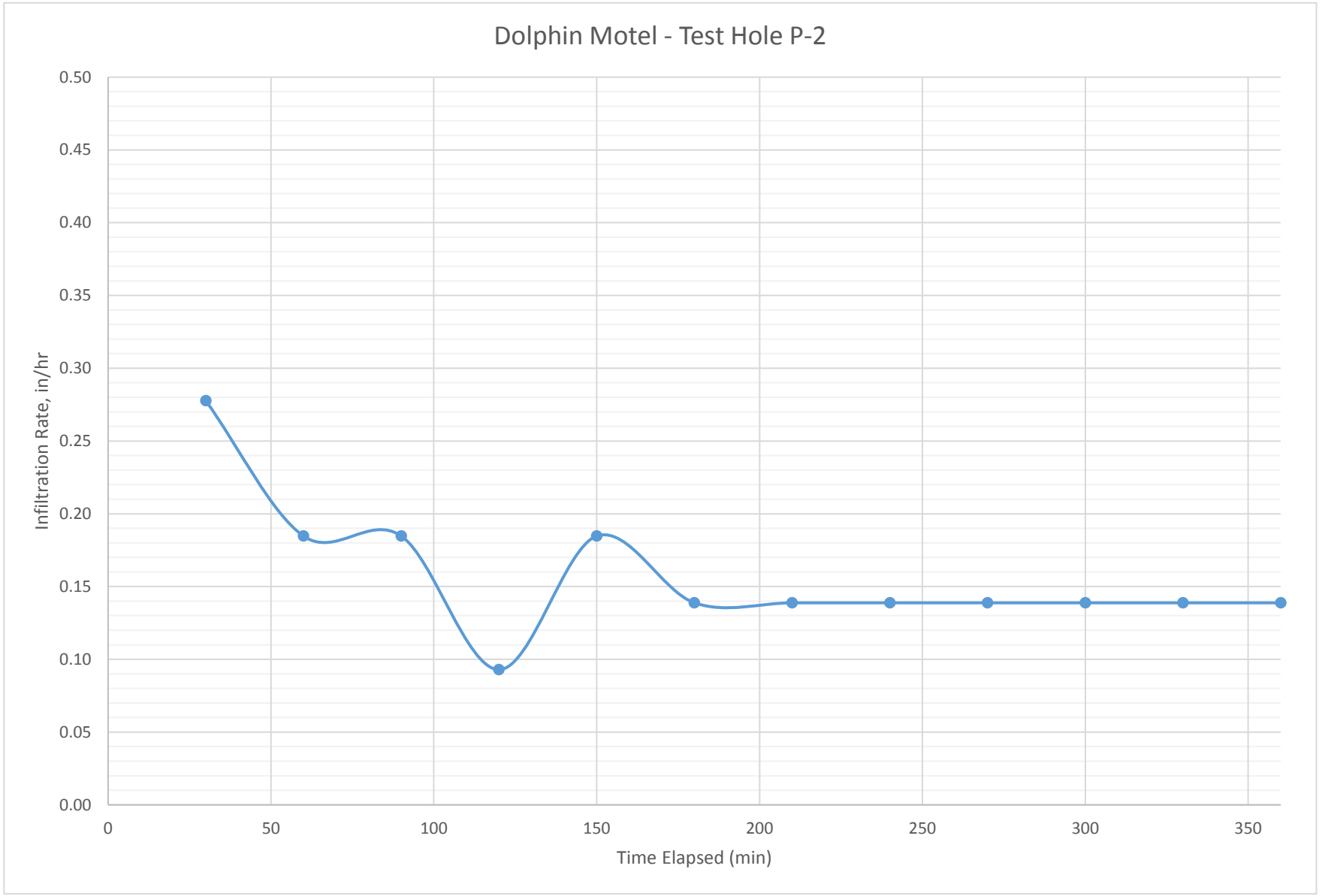
Test Hole Dimensions (Inches)

Length 60 | Width | Diameter 6 | Avg. Water Column 24

Infiltration Test

Trial No.	Start Time (hr and min)	Stop Time (hr and min)	Time Interval (min.)	(Pieziometric Surface in inches)			Perc Rate (in./hr.)	Infiltration Rate* (in./hr.)	Notes
				Start Depth	End Depth	Depth Change			
1	10:00	10:30	30	47.64	50.00	2.36	4.72	0.28	
2	10:31	11:01	30	47.64	49.21	1.57	3.14	0.18	
3	11:02	11:32	30	47.64	49.21	1.57	3.14	0.18	
4	11:33	12:03	30	48.03	48.82	0.79	1.58	0.09	
5	12:04	12:34	30	47.64	49.21	1.57	3.14	0.18	
6	12:35	1:05	30	48.03	49.21	1.18	2.36	0.14	
7	1:06	1:36	30	48.03	49.21	1.18	2.36	0.14	
8	1:37	2:07	30	47.64	48.82	1.18	2.36	0.14	
9	2:08	2:38	30	47.30	48.48	1.18	2.36	0.14	
10	2:39	3:09	30	47.42	48.60	1.18	2.36	0.14	
11	3:10	3:40	30	47.49	48.67	1.18	2.36	0.14	
12	3:41	4:11	30	47.64	48.82	1.18	2.36	0.14	
13									
14									
15									

*Calculated via Porchet Method


Dolphin Motel - Test Hole P-2
Infiltration Rate, in/hr
0.50
0.45
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0.00
0
50
100
150
200
250
300
350
Time Elapsed (min)

APPENDIX B

HAND AUGER LOGS

BORING NUMBER P-1

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

CLIENT Alliance Development Services, Inc.
PROJECT NAME Dolphin Motel
PROJECT NUMBER 1611-03
PROJECT LOCATION Point Loma
DATE STARTED 1/16/17 **COMPLETED** 1/16/17
GROUND ELEVATION 11 ft **HOLE SIZE** 6
DRILLING CONTRACTOR
GROUND WATER LEVELS:
DRILLING METHOD Hand Auger
AT TIME OF DRILLING ---
LOGGED BY SS **CHECKED BY** JAC
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	SATURATION (%)	OTHER TESTS	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		SM	**Artifical Fill - Undocumented (afu)**, SILTY SAND, fine to coarse grained, dark brown, wet, loose; trace sub-rounded 1 inch gravel										
5		CL	**Old Paralic Deposits (Qop)**, SANDY CLAY, fine to coarse grained, blue gray, saturated, medium dense										

Total Depth = 5.0 ft
Perched water at 3.0 feet

BORING NUMBER P-2

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

CLIENT Alliance Development Services, Inc.
PROJECT NAME Dolphin Motel
PROJECT NUMBER 1611-03
PROJECT LOCATION Point Loma
DATE STARTED 1/16/17 **COMPLETED** 1/16/17
GROUND ELEVATION 11 ft **HOLE SIZE** 6
DRILLING CONTRACTOR
GROUND WATER LEVELS:
DRILLING METHOD Hand Auger
AT TIME OF DRILLING ---
LOGGED BY SS **CHECKED BY** JAC
AT END OF DRILLING ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	SATURATION (%)	OTHER TESTS	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		SM	**Artifical Fill - Undocumented (afu)**, SILTY SAND, fine to coarse grained, dark brown, wet, loose; trace sub-rounded 1 inch gravel										
5		CL	**Old Paralic Deposits (Qop)**, SANDY CLAY, fine to coarse grained, blue gray, saturated, medium dense										
			Total Depth = 5.0 ft Perched water at 3.0 feet										

APPENDIX C

HOLLOW STEM LOGS

BORING NUMBER HS-1

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

CLIENT Alliance Development Services Inc. **PROJECT NAME** Dolphin Motel

PROJECT NUMBER 1611-03 **PROJECT LOCATION** Point Loma

DATE STARTED 2/1/17 **COMPLETED** 2/1/17 **GROUND ELEVATION** 11 ft **HOLE SIZE** 8

DRILLING CONTRACTOR 2R-Drilling **GROUND WATER LEVELS:**

DRILLING METHOD Hollow Stem Auger ▽ **AT TIME OF DRILLING** 15.00 ft / Elev -4.00 ft

LOGGED BY SS **CHECKED BY** JAC **AT END OF DRILLING** ---

NOTES **AFTER DRILLING** ---

DEPTH (ft)	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	SATURATION (%)	OTHER TESTS	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		SM	**Artificial Fill - Undocumented (afu):** SILTY SAND, fine to medium grained, brown, moist to wet, loose										
5			@ 4.0 ft, SILTY SAND, fine to medium grained, brown, saturated, loose; perched water										
		SC	@ 5.0 ft, CLAYEY SAND, fine to medium grained, mottled brown to gray, wet, medium dense	MC	7-4-5 (9)	116	14.9	88					
		SC	**Old Paralic Deposits (Qop6):** CLAYEY SAND, fine to medium grained, brown, wet, moderately dense; interbedded sand and clay										
10			@ 10.0 ft, CLAYEY SAND, fine to medium grained, brown, wet, moderately dense; interbedded sand and clay	SPT	3-7-7 (14)								
15			▽										
		CL	@ 15.0 ft, SANDY CLAY, fine grained, brown, wet, hard; interbedded sand and clay	MC	8-14-18 (32)	117	16.3	100	Consol				
20		SM	@ 20.0 ft, SILTY SAND, very fine grained, tan to brown, moist, very dense	SPT	5-9-11 (20)		19.0						
25			@ 25.0 ft, SILTY SAND, fine grained, tan to brown, saturated, dense	MC	5-10-20 (30)	101	21.0	85	SA, Shear				23
30			@ 30.0 ft, SILTY SAND, fine to medium grained, tan to brown, saturated, dense	SPT	7-15-27 (42)								
35													

(Continued Next Page)

BORING NUMBER HS-1

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

CLIENT Alliance Development Services Inc. **PROJECT NAME** Dolphin Motel

PROJECT NUMBER 1611-03 **PROJECT LOCATION** Point Loma

DEPTH (ft)	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	SATURATION (%)	OTHER TESTS	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
35		SM	@ 35.0 ft, SILTY SAND, fine to medium grained, tan to brown, saturated, medium dense	MC	3-5-22 (27)	100	23.0	90					
40			@ 40.0 ft, SILTY SAND, fine to medium grained, tan to brown, saturated, moderately dense; interbedded sand and clay, lense of seashells	SPT	4-5-7 (12)		21.0						23
45		SC	@ 45.0 ft, CLAYEY SAND, fine to medium grained, reddish brown, saturated, very dense	MC	18-30-44 (74)	120	15.0	99					
50			@ 50.0 ft, CLAYEY SAND, fine to medium grained, reddish brown, saturated, dense	SPT	13-16-18 (34)								

Total Depth = 50.0 ft
Ground Water at 15.0 ft
Backfilled with Bentonite and Cement Grout

BORING NUMBER HS-2

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

CLIENT Alliance Development Services Inc. **PROJECT NAME** Dolphin Motel

PROJECT NUMBER 1611-03 **PROJECT LOCATION** Point Loma

DATE STARTED 2/1/17 **COMPLETED** 2/1/17 **GROUND ELEVATION** 11 ft **HOLE SIZE** 8

DRILLING CONTRACTOR 2R-Drilling **GROUND WATER LEVELS:**

DRILLING METHOD Hollow Stem Auger ▽ **AT TIME OF DRILLING** 15.00 ft / Elev -4.00 ft

LOGGED BY SS **CHECKED BY** JAC **AT END OF DRILLING** ---

NOTES **AFTER DRILLING** ---

DEPTH (ft)	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	SATURATION (%)	OTHER TESTS	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0			0-6 inches of Asphalt										
		SM	**Artificial Fill - Undocumented (afu):** SILTY SAND, fine to medium grained, brown, moist to wet, loose	BU					Max, El, Chem				
5		SC	**Old Paralic Deposit (Qop6):** CLAYEY SAND, fine to medium grained, mottled brown to gray, wet, loose	SPT	1-1-2 (3)								
10			@ 10.0 ft, CLAYEY SAND, fine to medium grained, dark gray to brown, moist to wet, medium dense	MC	8-10-12 (22)	113	18.4	100					
15		SM	▽ @ 15.0 ft, SILTY SAND, fine to medium grained, light brown to tan, moist, moderately dense	SPT	5-8-9 (17)								
20			@ 20.0 ft, SILTY SAND, fine grained, light brown to tan, saturated, moderately dense	MC	9-11-14 (25)	108	20.5	99	Consol				
25			@ 25.0 ft, SILTY SAND, fine grained, light brown to tan, saturated, moderately dense	SPT	5-7-9 (16)								
30			@ 30.0 ft, SILTY SAND, fine grained, light brown to tan, saturated, dense	MC	6-17-28 (45)	98	25.1	95					
35													

(Continued Next Page)

BORING NUMBER HS-2

AGS
ADVANCED GEOTECHNICAL SOLUTIONS, INC.

CLIENT Alliance Development Services Inc. **PROJECT NAME** Dolphin Motel

PROJECT NUMBER 1611-03 **PROJECT LOCATION** Point Loma

DEPTH (ft)	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	SATURATION (%)	OTHER TESTS	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
35		CL	@ 35.0 ft, SANDY CLAY, fine to medium grained, orange brown to brown, saturated, medium dense; mottling iron oxide	SPT	6-11-18 (29)								
40			@ 40.0 ft, SANDY CLAY, fine to medium grained, orange brown to brown, saturated, dense	MC	8-16-25 (41)	115	17.1	100					
45			@ 45.0 ft, SANDY CLAY, fine to medium grained, orange brown to brown, saturated, dense	SPT	9-15-23 (38)								
50			@ 50.0 ft, SANDY CLAY, fine to medium grained, orange brown to brown, saturated, very dense	MC	16-24-40 (64)	106	21.1	96					

Total Depth = 50.0 ft
Ground Water at 15.0 ft
Backfilled with Bentonite and Cement Grout

BORING NUMBER HS-3

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

CLIENT Alliance Development Services Inc. **PROJECT NAME** Dolphin Motel

PROJECT NUMBER 1611-03 **PROJECT LOCATION** Point Loma

DATE STARTED 2/1/17 **COMPLETED** 2/1/17 **GROUND ELEVATION** 11 ft **HOLE SIZE** 8

DRILLING CONTRACTOR 2R-Drilling **GROUND WATER LEVELS:**

DRILLING METHOD Hollow Stem Auger ▽ **AT TIME OF DRILLING** 15.00 ft / Elev -4.00 ft

LOGGED BY SS **CHECKED BY** JAC **AT END OF DRILLING** ---

NOTES **AFTER DRILLING** ---

DEPTH (ft)	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	SATURATION (%)	OTHER TESTS	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		SM	4 inches of Concrete **Artificial Fill - Undocumented (afu):** SILTY SAND, fine to medium grained, tan to brown, slightly moist, loose	BU					Remolded Shear				
5		SC	**Old Paralic Deposit (Qop6):** CLAYEY SAND, fine to medium grained, mottled brown to dark brown, moist, moderately dense; roots and orgaincs	MC	3-4-7 (11)	103	19.6	83					
10			@ 10.0 ft, CLAYEY SAND, fine to medium grained, mottled brown to dark brown, moist, moderately dense	SPT	3-4-6 (10)					39	13	26	
15		SM	▽ @ 15.0 ft, SILTY SAND, fine to medium grained, gray to brown, saturated, moderately dense to dense; with mottling	MC	5-11-18 (29)	108	20.3	98	Consol				39
20			@ 20.0 ft, SILTY SAND, fine to medium grained, gray to brown, saturated, loose	SPT	5-4-4 (8)		29.0						30
25			@ 25.0 ft, SILTY SAND, fine to medium grained, tan to brown, saturated, dense	MC	11-15-28 (43)	98	26.0	97					
30			@ 30.0 ft, SILTY SAND, fine grained, tan to brown, saturated, moderately dense	SPT	7-13-15 (28)								
35													

(Continued Next Page)

BORING NUMBER HS-3

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

CLIENT Alliance Development Services Inc. **PROJECT NAME** Dolphin Motel

PROJECT NUMBER 1611-03 **PROJECT LOCATION** Point Loma

DEPTH (ft)	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	SATURATION (%)	OTHER TESTS	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
35		SM	@ 35.0 ft, SILTY SAND, fine grained, tan to brown, saturated, very dense	MC	10-26-42 (68)	103	22.7	96					
40		CL	@ 40.0 ft, SANDY CLAY, fine to medium grained,orange brown to brown, saturated, very stiff	SPT	7-11-17 (28)		16.0						
45			@ 45.0 ft, SANDY CLAY, fine to medium grained, orange brown to brown, saturated, hard	MC	16-16-17 (33)	114	17.0	96					
50			@ 50.0 ft, SANDY CLAY, fine to medium grained, orange brown to brown, saturated, very stiff	SPT	4-8-17 (25)								

Total Depth = 50.0 ft
Ground Water at 15.0 ft
Backfilled with Bentonite and Cement Grout

ADVANCED GEOTECHNICAL SOLUTIONS, INC.
485 Corporate Drive, Suite B
Escondido, CA 92029
Telephone: (619) 867-0487

Alliance Development Services, Inc.
17828 Villamoura Drive
Poway, CA 92064

June 12, 2017
P/W 1611-03
Report No. 1611-03-B-5

Attention: **Mr. Mac Stead**

Subject: ***Updated Preliminary Infiltration Feasibility Study, Dolphin Motel Project, Point Loma San Diego, California***

References: See Attached

Gentlemen:
In accordance with your request, Advanced Geotechnical Solutions, Inc. (AGS) has prepared this Updated Preliminary Infiltration Feasibility Study for the proposed Dolphin Motel Project in the Point Loma area of San Diego, California. This report is intended to meet the preliminary infiltration testing requirements of the City of San Diego and provide an evaluation of the feasibility for storm water infiltration in accordance with the current Storm Water Standards – BMP Design Manual. A discussion of our field testing and findings are presented below. Worksheet Form C.4-1 and associated supporting worksheets and data are presented in Appendix A.

1.0 SITE DESCRIPTION AND PROPOSED DEVELOPMENT

The Proposed Project is located within the USGS 7.5' Point Loma quadrangle, generally along Rosecrans Street, City of San Diego, California. More specifically the rectangular shaped property is bounded on the southwest by Garrison Street, to the northwest by Rosecrans Street and a commercial structure, and to the northeast and southeast by existing motels as depicted in Figure 1 (Site Location Map). Overall the lot encompasses approximately 0.70 acres. Topography at the site is relatively level to gently sloping to the southeast (toward the bay). The site currently supports a motel with two, two-story structures and a one-story structure; surface improvements include paved driveways and parking areas with some small planters.

As AGS understands the project, the existing structures and associated improvements will be razed to allow for construction of a new motel structure. It is currently anticipated that the new motel will consist of a multi-story "podium" structure having three stories of motel units over one story of subterranean parking. Current plans call for the top of the subterranean garage slab to be at an elevation of -1.5 feet below sea level Associated improvements including storm water BMPs are anticipated.

2.0 PREVIOUS STUDIES

AGS previously performed geotechnical studies (AGS, 2017a and 2017b) for the proposed project which included excavation of three (3) exploratory borings to a depth of 50 feet and site specific infiltration testing in the northwesterly corner of the site.

3.0 CURRENT FIELD INVESTIGATION

Current plans have been updated to include two biofiltration basins, one along the northerly project boundary (adjacent to Rosecrans Street) and one along the westerly project boundary (adjacent to Garrison Street). To evaluate the feasibility of storm water infiltration for the recently proposed basins, four additional borehole percolation tests were performed in general conformance with Appendix D, Section D.3.3.2 of the current BMP Design Manual. A 6-inch diameter hand auger was used to advance the infiltration test borings to a depths ranging from 34 to 38 inches below ground surface. A geologist from AGS continuously logged the infiltration test borings for soil/geology. Locations of the infiltration test borings and hollowstem borings are shown on Plate 1 (Infiltration Test Location Plan).

4.0 GEOLOGY

The site is underlain by old paralic deposits at depth and mantled by a relatively thin veneer of artificial fill near the surface. Infiltration test boring P-3 extended into undocumented artificial fill (afu) while, P-4 through P-6 extended into old paralic deposits (Qop_6) which were observed to underlie undocumented artificial fill (afu). The undocumented artificial fill encountered within the borings advanced during this infiltration investigation consisted predominantly of medium dense, silty sand with clay in moist to wet condition. The upper portion of the old paralic deposits encountered generally consisted of interbedded fine-grained clayey sand and sandy clay in a wet to saturated and loose/firm to moderately dense/stiff condition. Observed bedding ranged from laminar to thickly bedded but was generally observed to be thinly bedded.

5.0 TEST PROCEDURE

The resulting test holes were cleaned of loose debris then successively filled with clean, potable water and allowed to pre-soak. The following day the test holes were cleaned of sediment and the bottom was lined with approximately 2-inches of washed gravel prior to infiltration testing. A series of falling head infiltration tests were performed. The test holes were filled with clean, potable water to approximately 24 inches above the infiltration surface and allowed to infiltrate. The water level was allowed to drop for a 30-minute period, the water level was then measured and the drop rate calculated in inches per hour. The test hole was then refilled with water as necessary and the test procedure was repeated over the course of 6 hours, and until a stabilized percolation rate was recorded. The stabilized percolation rate was then converted to an infiltration rate based on the "Porchet Method" utilizing the following equation:

Logs of the field testing and graphical representations of the test data presented as infiltration versus time interval are included in Appendix A as supporting documents for Form C.4-1.

$$I_t = \frac{\Delta H\, \pi r^2 60}{\Delta t(\pi r^2 + 2\pi r H_{avg})} = \frac{\Delta H\, 60\, r}{\Delta t(r + 2H_{avg})}$$

Where:

I_t = tested infiltration rate, inches/hour
ΔH = change in head over the time interval, inches
Δt = time interval, minutes
r = effective radius of test hole
H_{avg} = average head over the time interval, inches

6.0 TEST RESULTS AND PRELIMINARY DESIGN VALUES

The results of our testing are summarized in Table 1 below.

TABLE 1
SUMMARY OF INFILTRATION TEST RESULTS

Test Hole No.	Depth of Test Hole	Approximate Test Elevation	Geologic Unit	Description	Tested Infiltration Rate (inches/hour)
P-3	38 inches	5.2 ft msl	afu	Clayey Sand to Sandy Silt	0.03
P-4	34 inches	5.7 ft msl	Qop_6	Clayey Sand	0.00
P-5	36 inches	6.1 ft msl	Qop_6	Clayey Sand	0.00
P-6	36 inches	6.0 ft msl	Qop_6	Clayey Sand	0.00

In accordance with Appendix D, Section D.5. of the BMP Design Manual, a 'Factor of Safety' should be applied to the tested infiltration rates to determine the design infiltration rates. The factor of safety is determined by Worksheet D.5-1/I-9 and possesses a numerical value between 2 and 9. For the proposed project site, the factor of safety worksheet yielded a Combined Factor of Safety (S_{total}) of 4.5. However, for the purposes of feasibility screening, it is recommended that a Factor of Safety of 2.0 be utilized. Table 2 below summarizes the preliminary design infiltration rates for the subject test holes utilizing a factor of safety of 2.0.

TABLE 2
SUMMARY OF PRELIMINARY DESIGN INFILTRATION RATES

Test Hole No.	Tested Infiltration Rate (in./hr.)	Factor of Safety	Design Infiltration Rate (in./hr.)
P-3	0.03	2.0	0.015
P-4	0.00	2.0	0.000
P-5	0.00	2.0	0.000
P-6	0.00	2.0	0.000

7.0 DESIGN CONSIDERATIONS

7.1. Groundwater

Static groundwater was not observed within hand auger excavations but was encountered within the deeper exploratory borings (HS-1 through HS-3) at a depth of approximately fifteen (15) feet below ground surface. However, nearby monitoring well data suggests historical high ground water is approximately eleven (11) feet below ground surface. Further, it is anticipated that static groundwater elevations may fluctuate due to tides given the close proximity of the San Diego Bay (approximately 280 ft). Perched groundwater was encountered between three (3) and four (4) feet below ground surface during our previous subsurface exploration at the site.

7.2. Geotechnical Hazards

There are no significant geotechnical hazards known to exist on or adjacent to the project site.

7.3. Soil Contamination

During our recent site investigation, no evidence of soil contamination was observed, nor is any contamination known to exist onsite. Utilizing an online resource; Geotracker.ca.gov, showed an open Leaking Underground Storage Tank (LUST) cleanup site that is open. The cleanup site is located at Northern Trust of CA, which is about 750 feet from the proposed project site. The investigation opened in 2000 and soil samples collected at a depth of 15 feet below ground surface were saturated with petroleum hydrocarbons. Northern Trust of CA sits at a higher elevation than the proposed project site and the contaminant plume has not migrated to the project site. It is not anticipated that infiltration would lead to spread of contamination.

7.4. Soil Characteristics and Anticipated Flow Paths

The soils underlying the project site are identified as Old Paralic Deposits, Unit 6 and generally consist of interbedded clayey sands and sandy clay. Based on site specific testing and our previous experience in the project area, the clay soils underlying the site are considered to be impermeable when saturated and the silty to clayey sand soils have low to moderate permeability. Minor to moderate lateral flow will occur within the confined sand layers. However, in consideration of the thinly interbedded nature of the soils, the capacity for vertical infiltration is negligible.

7.5. Proximity to Water Supply Wells

There are no known water supply wells within the project vicinity.

8.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the results of our preliminary infiltration testing, the onsite native soils (Old Paralic Deposits) possess preliminary design infiltration rates ranging between **0.0 to 0.01 inches/hour** with an average preliminary design infiltration rate of less than **0.004 inches/hour.** The average rate indicates a No

Infiltration condition based on the City's current interpretation of 'appreciable rate' as being greater than or equal to 0.01 inches/hour.

The infiltration rates presented in this report are based on limited testing performed as apart of preliminary screening for feasibility purposes. Dependent upon the final location, depth, and type of proposed infiltration BMP, additional testing may be warranted.

Advanced Geotechnical Solutions, Inc. appreciates the opportunity to provide you with geotechnical consulting services and professional opinions. If you have any questions, please contact the undersigned at (619) 867-0487.

Respectfully Submitted,
Advanced Geotechnical Solutions, Inc.

Prepared by:

SHANE P. SMITH
Staff Engineer

Reviewed by:

JEFFREY A. CHANEY, President
RCE 46544 / RGE 2314, Reg. Exp. 6-30-19

REGISTERED PROFESSIONAL ENGINEER
JEFFREY A. CHANEY
No. 2314
GEOTECHNICAL
STATE OF CALIFORNIA

PAUL J. DERISI, Vice President
CEG 2536, Reg. Exp. 5-31-19

PROFESSIONAL GEOLOGIST
PAUL J. DERISI
No. 2536
CERTIFIED ENGINEERING GEOLOGIST
STATE OF CALIFORNIA

Distribution: (6) Addressee

Attachments: References
Figure 1 – Site Location Map
Appendix A- Storm Water Standards BMP Design Manual - Worksheet Form C.4-1, Support Documents and Field Data
Appendix B- Boring Logs
Plate 1 – Infiltration Test Location Plan

REFERENCES

Advanced Geotechnical Solutions, Inc., 2016, "Proposal for Geotechnical Services Associated with the Design of the Dolphin Motel Project", San Diego, California", dated November 28, 2016, Report No. 1611-03-A-1.

---. (2017a). "Preliminary Infiltration Feasibility Study, Dolphin Motel Project, Point Loma San Diego, California", dated April 7, 2017, Report No. 1611-03-B-2

---. (2017b). "Preliminary Geotechnical Investigation and Foundation Design Recommendations for Proposed Residential Multi-Family Podium Apartment Structure (Garrison Street) Dolphin Motel Project, San Diego, California", dated April 10, 2017, Report No. 1611-03-B-3

American Society for Testing and Materials (2008), Annual Book of ASTM Standards, Section 4, Construction, Volume 04.08, Soil and Rock (I), ASTM International, West Conshohocken, Pennsylvania.

California Building Standards Commission, 2016, California Building Code, Title 24, Part 2, Volumes 1 and 2.

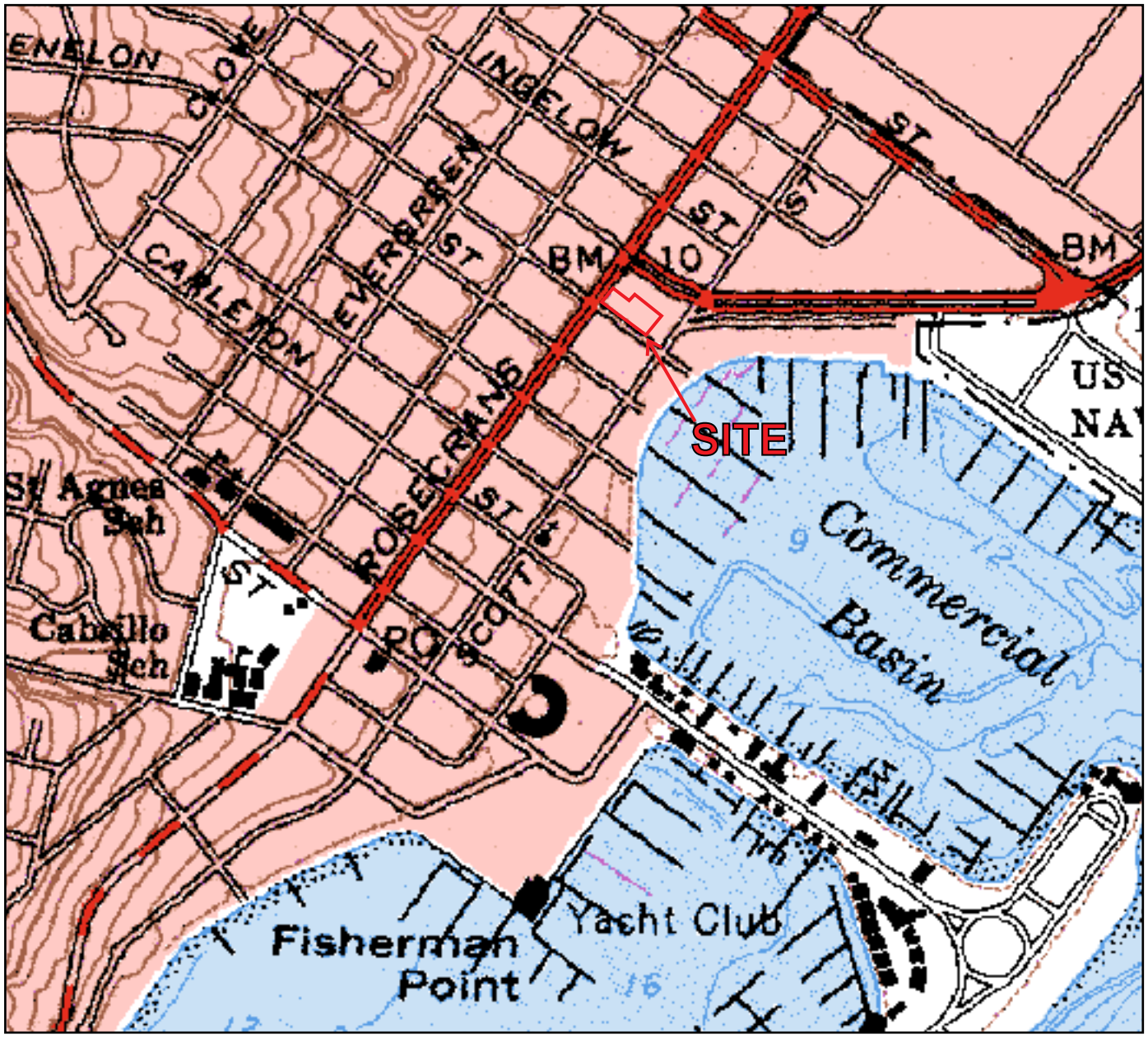
City of San Diego, 2016, Transportation & Storm Water, Storm Water Standard – BMP Design Manual, January 2016 Edition.

Jennings, C.W., 1994, Fault Activity Map of California and Adjacent Areas: California Geological Survey, California Geologic Data Map No. 6, Scale 1:750,000.

Kennedy, M.P., and Tan, S.S., 2008, Geologic Map of the San Diego 30' x 60' Quadrangle, California Regional Geologic Map Series, Scale = 1:100,000, Map No. 3, Sheet 1 of 2.

State of California Water Boards, September 23, 2016, *http://geotracker.waterboards.ca.gov/*

Tan, S.S., 1995, Landslide Hazards in the Southern Part of the San Diego Metropolitan Area, San Diego County, California, Landslide Hazard Identification Map No. 33, Plate 33A, Division of Mines and Geology, Open File Report 95-03.



USGS SITE LOCATION MAP

2912 GARRISON STREET
SAN DIEGO, CALIFORNIA

FIGURE 1

SOURCE MAP(S): POINT LOMA QUADRANGLE CALIFORNIA - SAN DIEGO CO. 7.5 MINUTE SERIES (TOPOGRAPHIC)

AGS
ADVANCED GEOTECHNICAL SOLUTIONS, INC.
485 Corporate Drive, Suite B, Escondido Ca, 92029
Telephone: (619) 867-0487 Fax: (714) 786-5661
P/W 1611-03 **Report No. 1611-03-B-5**

APPENDIX A

STORM WATER STANDARDS BMP DESIGN MANUAL – WORKSHEET FORM C.4-1, SUPPORT DOCUMENTS AND FIELD DATA

Categorization of Infiltration Feasibility Condition	Worksheet C.4-1

Part 1 - Full Infiltration Feasibility Screening Criteria

Would infiltration of the full design volume be feasible from a physical perspective without any undesirable consequences that cannot be reasonably mitigated?

Criteria	Screening Question	Yes	No
1	Is the estimated reliable infiltration rate below proposed facility locations greater than 0.5 inches per hour? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2 and Appendix D.	☐	☒

Provide basis:

Four (4) borehole percolation tests were performed onsite as part of a feasibility analysis for the implementation of infiltration type BMPs. Testing was performed in general conformance with Appendix D, Section D.3.3.2 of the current BMP Design Manual. The observed percolation rates were then converted to observed infiltration rates using the "Porchet Method". The observed infiltration rates were calculated to be 0.03 in/hr in Test Boring P-3, and 0.00 in/hr in Test Borings P-4 through P-6. Utilizing a factor of safety of 2, for preliminary screening purposes, the preliminary design infiltration rates range between 0.0 and 0.01 in/hr, with an average infiltration rate of less than 0.004 in/hr. A more detailed discussion of the site specific infiltration testing is presented in our Updated Preliminary Infiltration Feasibility Study, Dolphin Motel Project, Point Loma Area, San Diego, California, Report No. 1611-03-B-5 dated June 12, 2017.

Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.

2	Can infiltration greater than 0.5 inches per hour be allowed without increasing risk of geotechnical hazards (slope stability, groundwater mounding, utilities, or other factors) that cannot be mitigated to an acceptable level? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2.	☐	☒

Provide basis:

Design Infiltration rates at the project site are less than 0.5 inches/hour. As such, this screening question does not control the feasibility of infiltration at the project site and is not applicable.

Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.

Worksheet C.4-1 Page 2 of 4			
Criteria	Screening Question	Yes	No
3	Can infiltration greater than 0.5 inches per hour be allowed without increasing risk of groundwater contamination (shallow water table, storm water pollutants or other factors) that cannot be mitigated to an acceptable level? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.	☐	☒
Provide basis: The preliminary design infiltration rates at the project site are less than 0.5 inches/hour. Infiltration at a rate greater than 0.5 inches/hour is not feasible for this project. As such, this screening question does not control the feasibility of infiltration at the project site. Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.			
4	Can infiltration greater than 0.5 inches per hour be allowed without causing potential water balance issues such as change of seasonality of ephemeral streams or increased discharge of contaminated groundwater to surface waters? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.	☐	☒
Provide basis: The design infiltration rates at the project site are less than 0.5 inches/hour. Infiltration at a rate greater than 0.5 inches/hour is not feasible for this project. As such, this screening question does not control the feasibility of infiltration at the project site. Per Section C.4.4 of the BMP Design Manual, final determination should be made by the project design engineer. Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability.			
Part 1 Result*	If all answers to rows 1-4 are "Yes" a full infiltration design is potentially feasible. The feasibility screening category is Full Infiltration If any answer from row 1-4 is "No", infiltration may be possible to some extent but would not generally be feasible or desirable to achieve a "full infiltration" design. Proceed to Part 2		No, full infil-tration is not feasible

**To be completed using gathered site information and best professional judgment considering the definition of MEP in the MS4 Permit. Additional testing and/or studies may be required by the City Engineer to substantiate findings*

Worksheet C.4-1 Page 3 of 4

Part 2 – Partial Infiltration vs. No Infiltration Feasibility Screening Criteria

Would infiltration of water in any appreciable amount be physically feasible without any negative consequences that cannot be reasonably mitigated?

Criteria	Screening Question	Yes	No
5	Do soil and geologic conditions allow for infiltration in any appreciable rate or volume? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2 and Appendix D.	☐	☒

Provide basis:

Site specific infiltration testing yielded preliminary design infiltration rates (utilizing a factor of safety of 2) ranging between 0.00 and 0.01 inches/hour with an average rate of less than 0.004 inches/hour. In addition the subsurface soils encountered are relatively dense and possess high fines content, and perched groundwater was encountered at shallow depths during previous geotechnical studies at the site. Infiltration at the project site is anticipated to be negligible. It is anticipated that over the lifetime of the development the infiltration rates will further diminish. The BMP Design Manual utilizes the subjective terminology of 'appreciable' and fails to define a lower bound infiltration rate. It is our current understanding that an 'appreciable' infiltration rate is interpreted to be an infiltration rate of 0.01 in/hr or greater. Therefore, in consideration of the current interpretation, the soil and geologic conditions at the project site locally does not allow for infiltration in an 'appreciable' rate or volume.

Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability and why it was not feasible to mitigate low infiltration rates.

6	Can Infiltration in any appreciable quantity be allowed without increasing risk of geotechnical hazards (slope stability, groundwater mounding, utilities, or other factors) that cannot be mitigated to an acceptable level? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.2.	☐	☒

Provide basis:

As stated in response to criteria 5; it is our current understanding that an 'appreciable' infiltration rate is interpreted to be an infiltration rate of 0.01 in/hr or greater. Therefore, in consideration of the current interpretation, the soil and geologic conditions at the project site does not allow for infiltration in an 'appreciable' rate or volume. As such, this screening question does not control the feasibility of infiltration at the project site.

Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability and why it was not feasible to mitigate low infiltration rates.

Worksheet C.4-1 Page 4 of 4			
Criteria	Screening Question	Yes	No
7	Can Infiltration in any appreciable quantity be allowed without posing significant risk for groundwater related concerns (shallow water table, storm water pollutants or other factors)? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.	☐	☒
Provide basis: As stated in response to previous screening questions; it is our current understanding that an 'appreciable' infiltration rate is interpreted to be an infiltration rate of 0.01 in/hr or greater. Therefore, in consideration of the current interpretation, the soil and geologic conditions at the project site locally does not allow for infiltration in an 'appreciable' rate or volume. As such, this screening question does not control the feasibility of infiltration at the project site. Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability and why it was not feasible to mitigate low infiltration rates.			
8	Can infiltration be allowed without violating downstream water rights? The response to this Screening Question shall be based on a comprehensive evaluation of the factors presented in Appendix C.3.	☐	☒
Provide basis: It is not anticipated that infiltration would violate downstream water rights; however, per Section C.4.4 of the BMP Design Manual, final determination should be made by the project design engineer. Summarize findings of studies; provide reference to studies, calculations, maps, data sources, etc. Provide narrative discussion of study/data source applicability and why it was not feasible to mitigate low infiltration rates.			
Part 2 Result*	If all answers from row 5-8 are "Yes", then partial infiltration design is potentially feasible. The feasibility screening category is Partial Infiltration. If any answer from row 5-8 is "No", then infiltration of any volume is considered to be infeasible within the drainage area. The feasibility screening category is No Infiltration.		No Infil-tration

**To be completed using gathered site information and best professional judgment considering the definition of MEP in the MS4 Permit. Additional testing and/or studies may be required by the City Engineer to substantiate findings*

PERCOLATION TEST DATA SHEET

Project: Dolphin Motel | Project No.: 1611-03 | Date: 5/11/2017

Test Hole No.: P-3 | Tested By: D.L. | Water Temp.: 72

Depth of Test Hole: 38 Inches | USCS: Cl | Air Temp.: 65

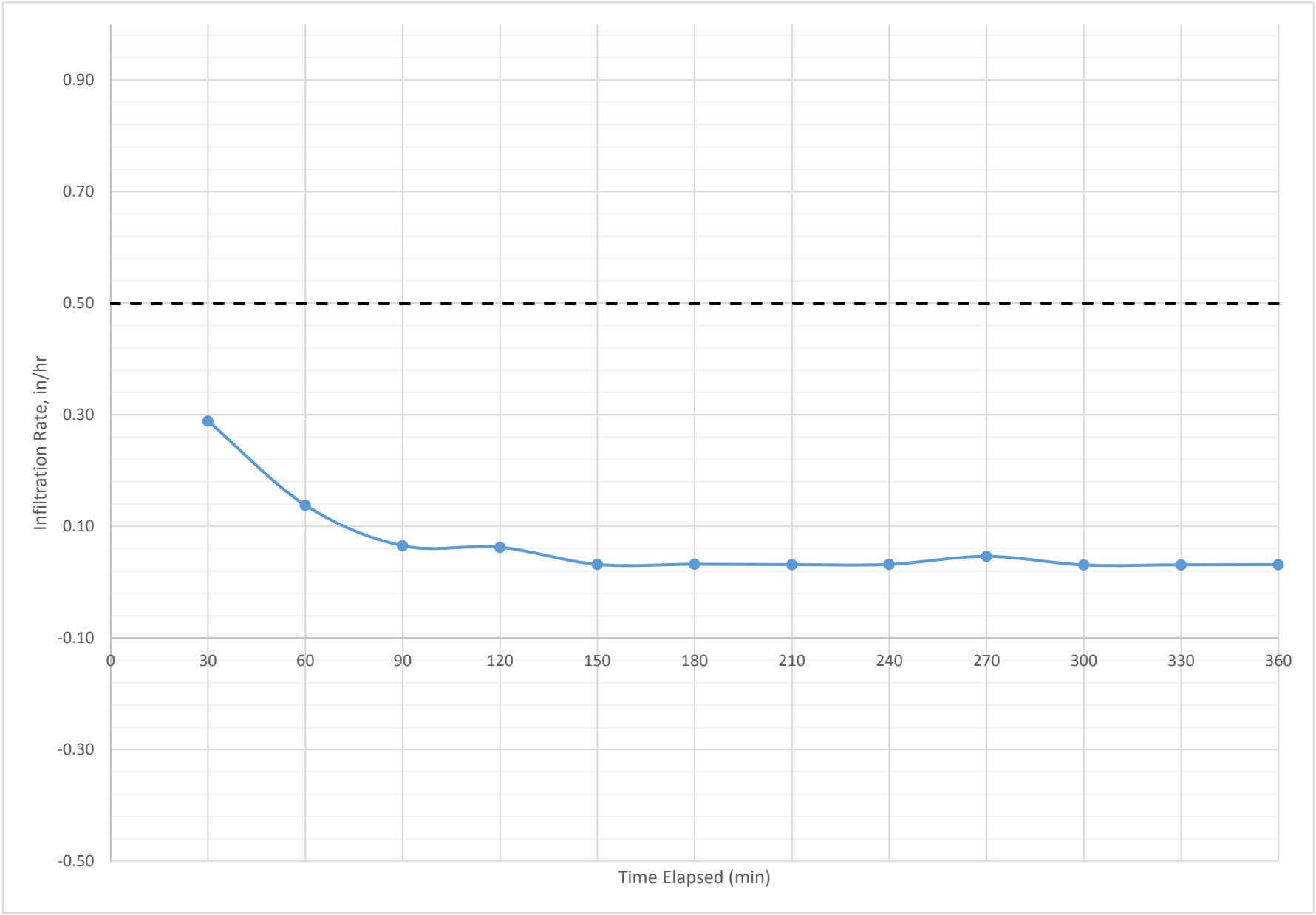
Test Hole Dimensions (Inches)

Length 38 Width 6 Diameter 6

Infiltration Test

Trial No.	Start Time (hr and min)	Stop Time (hr and min)	Time Interval (min.)	(Pieziometric Surface in inches)			Average Water Column	Perc Rate (in./hr.)	Infiltration Rate* (in./hr.)
				Start Depth	End Depth	Depth Change			
1	9:47	10:17	30	23.00	20.75	2.25	21.88	4.50	0.289
2	10:17	10:47	30	20.75	19.75	1.00	20.25	2.00	0.138
3	10:47	11:17	30	21.75	21.25	0.50	21.50	1.00	0.065
4	11:17	11:47	30	22.75	22.25	0.50	22.50	1.00	0.063
5	11:47	12:17	30	22.25	22.00	0.25	22.13	0.50	0.032
6	12:17	12:47	30	22.00	21.75	0.25	21.88	0.50	0.032
7	12:47	13:17	30	22.50	22.25	0.25	22.38	0.50	0.031
8	1:17	1:47	30	22.25	22.00	0.25	22.13	0.50	0.032
9	1:47	2:17	30	23.00	22.63	0.38	22.81	0.75	0.046
10	2:17	2:47	30	23.00	22.75	0.25	22.88	0.50	0.031
11	2:47	3:17	30	22.75	22.50	0.25	22.63	0.50	0.031
12	3:17	3:47	30	22.50	22.25	0.25	22.38	0.50	0.031
13									
14									
15									

*Calculated via Porchet Method


0.90
0.70
0.50
0.30
0.10
-0.10
-0.30
-0.50
Infiltration Rate, in/hr
0
30
60
90
120
150
180
210
240
270
300
330
360
Time Elapsed (min)

PERCOLATION TEST DATA SHEET

Project: Dolphin Motel | Project No.: 1611-03 | Date: 5/11/2017

Test Hole No.: P-4 | Tested By: D.L. | Water Temp.: 72

Depth of Test Hole: 34 | USCS: Cl | Air Temp.: 65

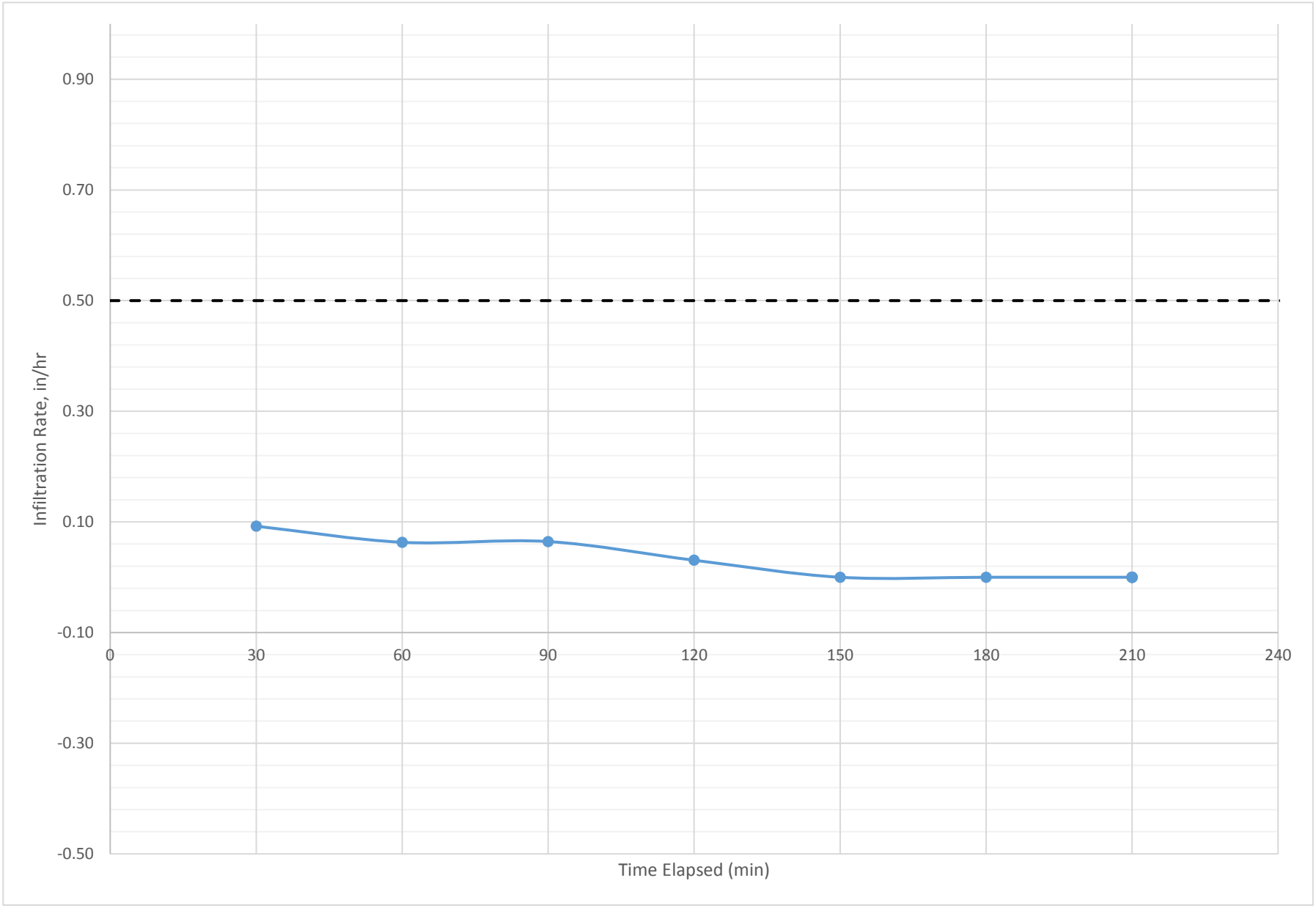
Test Hole Dimensions (Inches)

Length 34 Width 6 Diameter 6

Infiltration Test

Trial No.	Start Time (hr and min)	Stop Time (hr and min)	Time Interval (min.)	(Pieziometric Surface in inches)			Average Water Column	Perc Rate (in./hr.)	Infiltration Rate* (in./hr.)
				Start Depth	End Depth	Depth Change			
1	9:49	10:19	30	23.25	22.50	0.75	22.88	1.50	0.092
2	10:19	10:49	30	22.50	22.00	0.50	22.25	1.00	0.063
3	10:49	11:19	30	22.00	21.50	0.50	21.75	1.00	0.065
4	11:19	11:49	30	23.00	22.75	0.25	22.88	0.50	0.031
5	11:49	12:19	30	22.75	22.75	0.00	22.75	0.00	0.000
6	12:19	12:49	30	22.75	22.75	0.00	22.75	0.00	0.000
7	12:49	13:19	30	22.75	22.75	0.00	22.75	0.00	0.000
8									
9									
10									
11									
12									
13									
14									
15									

*Calculated via Porchet Method


0.90
0.70
0.50
0.30
0.10
-0.10
-0.30
-0.50
Infiltration Rate, in/hr
0
30
60
90
120
150
180
210
240
Time Elapsed (min)

PERCOLATION TEST DATA SHEET

Project: Dolphin Motel | Project No.: 1611-03 | Date: 5/11/2017

Test Hole No.: P-5 | Tested By: D.L. | Water Temp.: 72

Depth of Test Hole: 36 | USCS: Cl | Air Temp.: 65

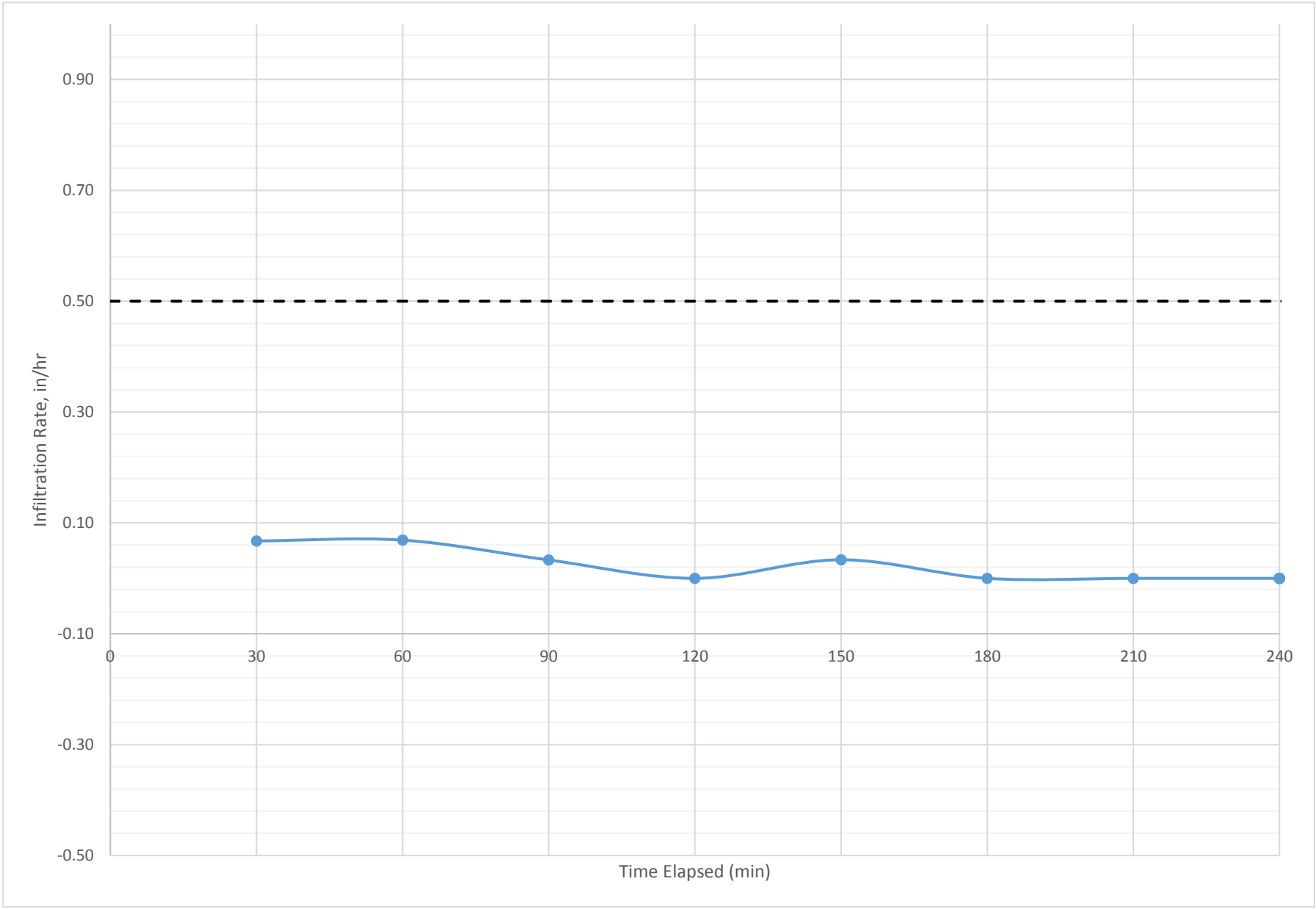
Test Hole Dimensions (Inches)

Length 36 Width 6 Diameter 6

Infiltration Test

Trial No.	Start Time (hr and min)	Stop Time (hr and min)	Time Interval (min.)	(Pieziometric Surface in inches)			Average Water Column	Perc Rate (in./hr.)	Infiltration Rate* (in./hr.)
				Start Depth	End Depth	Depth Change			
1	9:52	10:22	30	21.00	20.50	0.50	20.75	1.00	0.067
2	10:22	10:52	30	20.50	20.00	0.50	20.25	1.00	0.069
3	10:52	11:22	30	21.25	21.00	0.25	21.13	0.50	0.033
4	11:22	11:52	30	21.00	21.00	0.00	21.00	0.00	0.000
5	11:52	12:22	30	21.00	20.75	0.25	20.88	0.50	0.034
6	12:22	12:52	30	20.75	20.75	0.00	20.75	0.00	0.000
7	12:52	13:22	30	20.75	20.75	0.00	20.75	0.00	0.000
8	13:22	13:52	30	20.75	20.75	0.00	20.75	0.00	0.000
9									
10									
11									
12									
13									
14									
15									

*Calculated via Porchet Method


0.90
0.70
0.50
0.30
0.10
-0.10
-0.30
-0.50
Infiltration Rate, in/hr
0
30
60
90
120
150
180
210
240
Time Elapsed (min)

PERCOLATION TEST DATA SHEET

Project: Dolphin Motel | Project No.: 1611-03 | Date: 5/11/2017

Test Hole No.: P-6 | Tested By: D.L. | Water Temp.: 72

Depth of Test Hole: 36 | USCS: CL | Air Temp.: 65

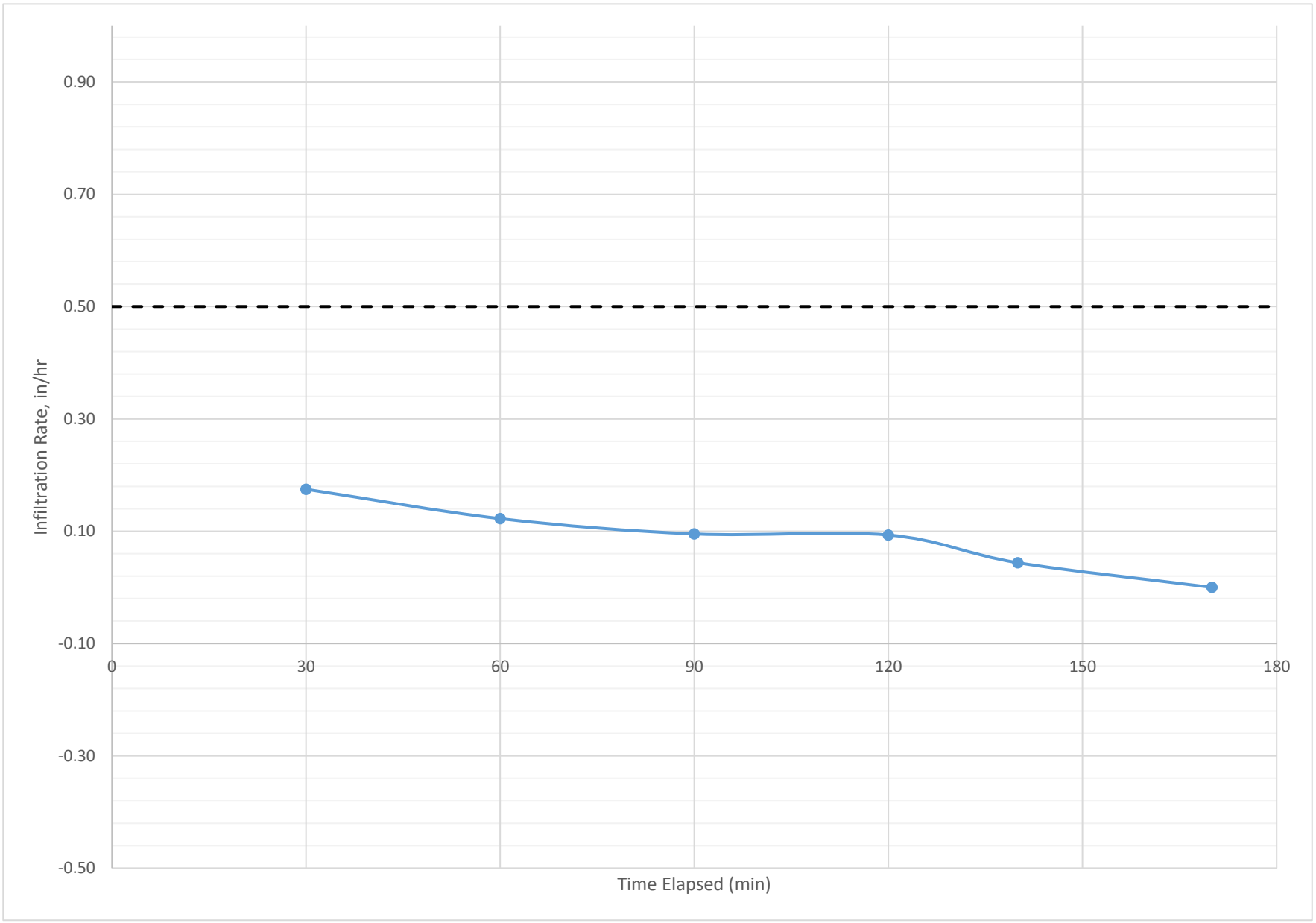
Test Hole Dimensions (Inches)

Length 36 Width 6 Diameter 6

Infiltration Test

Trial No.	Start Time (hr and min)	Stop Time (hr and min)	Time Interval (min.)	(Pieziometric Surface in inches)			Average Water Column	Perc Rate (in./hr.)	Infiltration Rate* (in./hr.)
				Start Depth	End Depth	Depth Change			
1	9:53	10:23	30	25.00	23.50	1.50	24.25	3.00	0.175
2	10:23	10:53	30	23.50	22.50	1.00	23.00	2.00	0.122
3	10:53	11:23	30	22.50	21.75	0.75	22.13	1.50	0.095
4	11:23	11:53	30	23.00	22.25	0.75	22.63	1.50	0.093
5	11:53	12:13	20	24.25	24.00	0.25	24.13	0.75	0.044
6	12:13	12:43	30	24.00	24.00	0.00	24.00	0.00	0.000
7	12:43	13:13	30	24.00	24.00	0.00	24.00	0.00	0.000
8	13:13	13:43	30	24.00	24.00	0.00	24.00	0.00	0.000
9									
10									
11									
12									
13									
14									
15									

*Calculated via Porchet Method


0.90
0.70
0.50
0.30
0.10
-0.10
-0.30
-0.50
Infiltration Rate, in/hr
0
30
60
90
120
150
180
Time Elapsed (min)

APPENDIX B

BORING LOGS

BORING NUMBER HS-1

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

CLIENT Alliance Development Services Inc. **PROJECT NAME** Dolphin Motel

PROJECT NUMBER 1611-03 **PROJECT LOCATION** Point Loma

DATE STARTED 2/1/17 **COMPLETED** 2/1/17 **GROUND ELEVATION** 11 ft **HOLE SIZE** 8

DRILLING CONTRACTOR 2R-Drilling **GROUND WATER LEVELS:**

DRILLING METHOD Hollow Stem Auger ▽ **AT TIME OF DRILLING** 15.00 ft / Elev -4.00 ft

LOGGED BY SS **CHECKED BY** JAC **AT END OF DRILLING** ---

NOTES **AFTER DRILLING** ---

DEPTH (ft)	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	SATURATION (%)	OTHER TESTS	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		SM	**Artificial Fill - Undocumented (afu):** SILTY SAND, fine to medium grained, brown, moist to wet, loose										
5			@ 4.0 ft, SILTY SAND, fine to medium grained, brown, saturated, loose; perched water										
		SC	@ 5.0 ft, CLAYEY SAND, fine to medium grained, mottled brown to gray, wet, medium dense	MC	7-4-5 (9)	116	14.9	88					
		SC	**Old Paralic Deposits (Qop6):** CLAYEY SAND, fine to medium grained, brown, wet, moderately dense; interbedded sand and clay										
10			@ 10.0 ft, CLAYEY SAND, fine to medium grained, brown, wet, moderately dense; interbedded sand and clay	SPT	3-7-7 (14)								
15			▽										
		CL	@ 15.0 ft, SANDY CLAY, fine grained, brown, wet, hard; interbedded sand and clay	MC	8-14-18 (32)	117	16.3	100	Consol				
20		SM	@ 20.0 ft, SILTY SAND, very fine grained, tan to brown, moist, very dense	SPT	5-9-11 (20)		19.0						
25			@ 25.0 ft, SILTY SAND, fine grained, tan to brown, saturated, dense	MC	5-10-20 (30)	101	21.0	85	SA, Shear				23
30			@ 30.0 ft, SILTY SAND, fine to medium grained, tan to brown, saturated, dense	SPT	7-15-27 (42)								
35													

(Continued Next Page)

BORING NUMBER HS-1

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

CLIENT Alliance Development Services Inc. **PROJECT NAME** Dolphin Motel

PROJECT NUMBER 1611-03 **PROJECT LOCATION** Point Loma

DEPTH (ft)	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	SATURATION (%)	OTHER TESTS	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
35		SM	@ 35.0 ft, SILTY SAND, fine to medium grained, tan to brown, saturated, medium dense	MC	3-5-22 (27)	100	23.0	90					
40			@ 40.0 ft, SILTY SAND, fine to medium grained, tan to brown, saturated, moderately dense; interbedded sand and clay, lense of seashells	SPT	4-5-7 (12)		21.0						23
45		SC	@ 45.0 ft, CLAYEY SAND, fine to medium grained, reddish brown, saturated, very dense	MC	18-30-44 (74)	120	15.0	99					
50			@ 50.0 ft, CLAYEY SAND, fine to medium grained, reddish brown, saturated, dense	SPT	13-16-18 (34)								

Total Depth = 50.0 ft
Ground Water at 15.0 ft
Backfilled with Bentonite and Cement Grout

BORING NUMBER HS-2

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

CLIENT Alliance Development Services Inc. **PROJECT NAME** Dolphin Motel

PROJECT NUMBER 1611-03 **PROJECT LOCATION** Point Loma

DATE STARTED 2/1/17 **COMPLETED** 2/1/17 **GROUND ELEVATION** 11 ft **HOLE SIZE** 8

DRILLING CONTRACTOR 2R-Drilling **GROUND WATER LEVELS:**

DRILLING METHOD Hollow Stem Auger ▽ **AT TIME OF DRILLING** 15.00 ft / Elev -4.00 ft

LOGGED BY SS **CHECKED BY** JAC **AT END OF DRILLING** ---

NOTES **AFTER DRILLING** ---

DEPTH (ft)	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	SATURATION (%)	OTHER TESTS	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0			0-6 inches of Asphalt										
		SM	**Artificial Fill - Undocumented (afu):** SILTY SAND, fine to medium grained, brown, moist to wet, loose	BU					Max, El, Chem				
5		SC	**Old Paralic Deposit (Qop6):** CLAYEY SAND, fine to medium grained, mottled brown to gray, wet, loose	SPT	1-1-2 (3)								
10			@ 10.0 ft, CLAYEY SAND, fine to medium grained, dark gray to brown, moist to wet, medium dense	MC	8-10-12 (22)	113	18.4	100					
15		SM	▽ @ 15.0 ft, SILTY SAND, fine to medium grained, light brown to tan, moist, moderately dense	SPT	5-8-9 (17)								
20			@ 20.0 ft, SILTY SAND, fine grained, light brown to tan, saturated, moderately dense	MC	9-11-14 (25)	108	20.5	99	Consol				
25			@ 25.0 ft, SILTY SAND, fine grained, light brown to tan, saturated, moderately dense	SPT	5-7-9 (16)								
30			@ 30.0 ft, SILTY SAND, fine grained, light brown to tan, saturated, dense	MC	6-17-28 (45)	98	25.1	95					
35													

(Continued Next Page)

BORING NUMBER HS-2

AGS
ADVANCED GEOTECHNICAL SOLUTIONS, INC.

CLIENT Alliance Development Services Inc. **PROJECT NAME** Dolphin Motel

PROJECT NUMBER 1611-03 **PROJECT LOCATION** Point Loma

DEPTH (ft)	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	SATURATION (%)	OTHER TESTS	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
35		CL	@ 35.0 ft, SANDY CLAY, fine to medium grained, orange brown to brown, saturated, medium dense; mottling iron oxide	SPT	6-11-18 (29)								
40			@ 40.0 ft, SANDY CLAY, fine to medium grained, orange brown to brown, saturated, dense	MC	8-16-25 (41)	115	17.1	100					
45			@ 45.0 ft, SANDY CLAY, fine to medium grained, orange brown to brown, saturated, dense	SPT	9-15-23 (38)								
50			@ 50.0 ft, SANDY CLAY, fine to medium grained, orange brown to brown, saturated, very dense	MC	16-24-40 (64)	106	21.1	96					

Total Depth = 50.0 ft
Ground Water at 15.0 ft
Backfilled with Bentonite and Cement Grout

BORING NUMBER HS-3

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

CLIENT Alliance Development Services Inc. **PROJECT NAME** Dolphin Motel

PROJECT NUMBER 1611-03 **PROJECT LOCATION** Point Loma

DATE STARTED 2/1/17 **COMPLETED** 2/1/17 **GROUND ELEVATION** 11 ft **HOLE SIZE** 8

DRILLING CONTRACTOR 2R-Drilling **GROUND WATER LEVELS:**

DRILLING METHOD Hollow Stem Auger ▽ **AT TIME OF DRILLING** 15.00 ft / Elev -4.00 ft

LOGGED BY SS **CHECKED BY** JAC **AT END OF DRILLING** ---

NOTES **AFTER DRILLING** ---

DEPTH (ft)	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	SATURATION (%)	OTHER TESTS	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		SM	4 inches of Concrete **Artificial Fill - Undocumented (afu):** SILTY SAND, fine to medium grained, tan to brown, slightly moist, loose	BU					Remolded Shear				
5		SC	**Old Paralic Deposit (Qop6):** CLAYEY SAND, fine to medium grained, mottled brown to dark brown, moist, moderately dense; roots and orgaincs	MC	3-4-7 (11)	103	19.6	83					
10			@ 10.0 ft, CLAYEY SAND, fine to medium grained, mottled brown to dark brown, moist, moderately dense	SPT	3-4-6 (10)					39	13	26	
15		SM	▽ @ 15.0 ft, SILTY SAND, fine to medium grained, gray to brown, saturated, moderately dense to dense; with mottling	MC	5-11-18 (29)	108	20.3	98	Consol				39
20			@ 20.0 ft, SILTY SAND, fine to medium grained, gray to brown, saturated, loose	SPT	5-4-4 (8)		29.0						30
25			@ 25.0 ft, SILTY SAND, fine to medium grained, tan to brown, saturated, dense	MC	11-15-28 (43)	98	26.0	97					
30			@ 30.0 ft, SILTY SAND, fine grained, tan to brown, saturated, moderately dense	SPT	7-13-15 (28)								
35													

(Continued Next Page)

BORING NUMBER HS-3

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

CLIENT Alliance Development Services Inc. **PROJECT NAME** Dolphin Motel

PROJECT NUMBER 1611-03 **PROJECT LOCATION** Point Loma

DEPTH (ft)	GRAPHIC LOG	USCS	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	BLOW COUNTS (N VALUE)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	SATURATION (%)	OTHER TESTS	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
35		SM	@ 35.0 ft, SILTY SAND, fine grained, tan to brown, saturated, very dense	MC	10-26-42 (68)	103	22.7	96					
40		CL	@ 40.0 ft, SANDY CLAY, fine to medium grained,orange brown to brown, saturated, very stiff	SPT	7-11-17 (28)		16.0						
45			@ 45.0 ft, SANDY CLAY, fine to medium grained, orange brown to brown, saturated, hard	MC	16-16-17 (33)	114	17.0	96					
50			@ 50.0 ft, SANDY CLAY, fine to medium grained, orange brown to brown, saturated, very stiff	SPT	4-8-17 (25)								

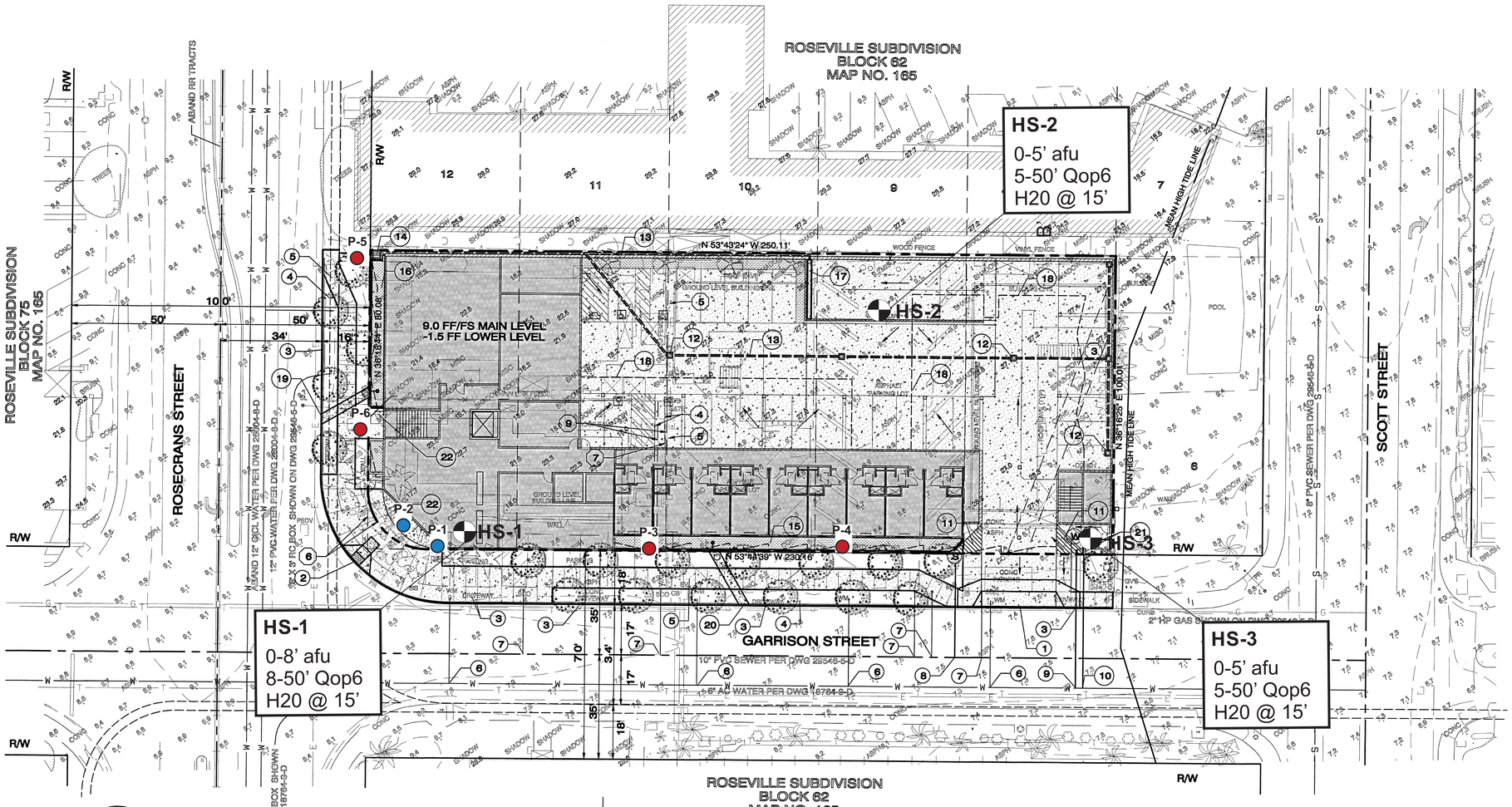
Total Depth = 50.0 ft
Ground Water at 15.0 ft
Backfilled with Bentonite and Cement Grout

CONSTRUCTION NOTES

1. C/L PROPOSED 25' DRIVEWAY PER SDG-163
2. PROPOSED PED RAMP PER SDG-132
3. REMOVE AND REPLACE EXISTING DRIVEWAY WITH CURB GUTTER AND SIDEWALK (TYPICAL)
4. REMOVE EX CONCRETE. REPLACE WITH PLANTER (TYPICAL)
5. PROPOSED SIDEWALK PER SDG-155
6. KILL EXISTING WATER SERVICE (TYPICAL)
7. ABANDON EXISTING SEWER LATERAL AT P/L (TYPICAL)
8. PROPOSED 6" SEWER LATERAL
9. PROPOSED 2" WATER SERVIDE
10. PROPOSED 4" FIRE SERVICE
11. VISIBILITY TRIANGLE (TYPICAL)
12. MAIN FLOOR PARKING AREA CATCH BASIN (TYPICAL)
13. PVC DRAIN (TYPICAL)
14. CATCH BASIN WITH PUMP (AT GROUND LEVEL) TO CONVEY MAIN FLOOR AND PARKING RAMP RUNOFF TO BIOFILTRATION BASIN. INCLUDES OVERFLOW TO CURB OULET IN THE CASE OF PUMP FAILURE V100 = 4.0 FPS
15. BIOFILTRATION BASIN TO TREAT RUNOFF FROM ROOF (500 SF) (BMP-1)
16. BIOFILTRATION BASIN TO TREAT RUNOFF FROM MAIN LEVEL (213 SF) (BMP-2)
17. RAMP TRENCH DRAIN WITH PUMP TO CONVEY RUNOFF TO CATCH BASIN 14 AND THEN TO BIOFILTRATON BASIN
18. OUTLINE OF RUOFF
19. CURB OUTLET PER D-25 Q100 = 0.45 CFS V100 = 2.2 FPS
20. CURB OUTLET PER D-25 Q100 = 1.12 CFS V100 = 3.1 FPS
21. PROPOSED BACKFLOW PREVENTER (TYPICAL)
22. PROPOSED ONSITE POROUS PAVING AREA

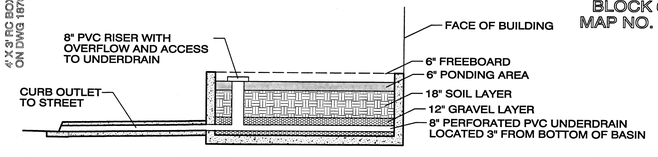
TITLE NOTES

2. AN EASEMENT OR RIGHT OF WAY FOR THE CONSTRUCTION AND MAINTENANCE OF FLUMES, CANALS OR AQUEDUCTS, CONVEYED BY DEED FROM FRANK A. KIMBALL, AND WARREN G. KIMBALL TO KIMBALL BROTHERS WATER COMPANY, A CORPORATION, DATED JUNE 9, 1869, AND RECORDED IN BOOK 7, PAGE 124 OF DEEDS. THE INTEREST OF SAID GRANTEE IN AND TO SAID EASEMENT HAS SINCE PASSED TO AND NOW VESTS OF RECORD IN THE SWEETWATER AUTHORITY. THE LOCATION AND EXTENT OF SAID EASEMENT IS NOT DISCLOSED OF RECORD AND IS NOT PLOTTED.
3. AN EASEMENT FOR SEWER PURPOSES AND RIGHTS INCIDENTAL THERETO GRANTED TO THE CITY OF SAN DIEGO, A MUNICIPAL CORPORATION, RECORDED JUNE 12, 1928 IN BOOK 1510, PAGE 12, OF DEEDS, OF OFFICIAL RECORDS.
4. AN EASEMENT FOR THE CONSTRUCTION AND MAINTENANCE OF A PRIVATE SEWER LATERAL AND RIGHTS INCIDENTAL THERETO GRANTED TO THE CITY OF SAN DIEGO, A MUNICIPAL CORPORATION, RECORDED FEBRUARY 4, 1944 IN BOOK 1635, PAGE 177 OF OFFICIAL RECORDS.
5. AN EASEMENT FOR POLES AND WIRES AND RIGHTS INCIDENTAL THERETO GRANTED TO THE SAN DIEGO GAS AND ELECTRIC COMPANY, RECORDED MAY 29, 1944 IN BOOK 1684, PAGE 263, OF OFFICIAL RECORDS.
6. AN EASEMENT FOR PUBLIC STREET AND RIGHTS INCIDENTAL THERETO GRANTED TO THE CITY OF SAN DIEGO, RECORDED MARCH 3, 1959 IN BOOK 7527, PAGE 49 OF OFFICIAL RECORDS.
7. AN EASEMENT FOR POLES AND WIRES AND RIGHTS INCIDENTAL THERETO GRANTED TO THE SAN DIEGO GAS AND ELECTRIC COMPANY, RECORDED IN BOOK 1688, PAGE 116, OF OFFICIAL RECORDS.
9. AN EASEMENT FOR COMMUNICATION STRUCTURES AND RIGHTS INCIDENTAL THERETO, GRANTED TO THE PACIFIC TELEPHONE AND TELEGRAPH COMPANY, RECORDED MAY 11, 1966 AS INSTRUMENT NO. 79002, OF OFFICIAL RECORDS.



SCALE 1" = 20'

0 20 40 60 80



BIOFILTRATION BASIN DETAIL
NOT TO SCALE

ANTONY K. CHRISTENSEN, R.C.E. 54021 — APRIL 10, 2017 Date

REGISTERED PROFESSIONAL ENGINEER — Antony K. Christensen — No. 54021 — Exp. 12-31-17 — CIVIL — STATE OF CALIFORNIA

LEGAL DESCRIPTION

LOTS 1 AND 2, BLOCK 62 OF ROSEVILLE, CITY OF SAN DIEGO, COUNTY OF SAN DIEGO, ACCORDING TO MAP THEREOF NO. 165 FILED IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY, EXCEPTING THAT PORTION IF ANY HERETO FORE OR NOW LYING BELOW THE ORDINARY HIGH TIDE LINE OF THE BAY OF SAN DIEGO.

LOT 3 IN BLOCK 62 OF ROSEVILLE, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO MAP THEREOF NO. 165, FILED IN THE OFFICE OF THE RECORDER OF SAN DIEGO COUNTY. EXCEPTING THAT PORTION, IF ANY, HERETOFORE OR NOW LYING BELOW THE ORDINARY HIGH TIDE LINE OF THE BAY OF SAN DIEGO.

LOTS 4 AND 5 IN BLOCK 62, OF ROSEVILLE, IN CITY OF SAN DIEGO, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO MAP THEREOF NO. 165, FILED IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY.

APNs: 530-751-01,02,03,04 AND 05

BASIS OF BEARINGS

A PORTION OF THE MEAN HIGH TIDE LINE AS SHOWN ON SHEET 3 OF RECORD OF SURVEY 20732. I.E. SOUTH 37°29'53" WEST.

APN / ADDRESS

ASSESSOR'S PARCEL NUMBERS: 530-751-01,02,03,04 AND 05

ADDRESS: 1453-1455 AND 1461-1463 ROSECRANS ST
AND 2912 AND 2930 GARRISON ST
SAN DIEGO, CA 92106

BENCHMARK

CITY OF SAN DIEGO BENCHMARK BRASS PLUG LOCATED IN THE TOP OF CURB AT THE WESTERLY CORNER OF ROSECRANS STREET AND GARRISON STREET. ELEVATION = 8.474' MEAN SEA LEVEL (N.G.V.D. 1929).

NOTES

1. UTILITIES SHOWN HEREON ARE FROM CITY OF SAN DIEGO RECORDS AND ARE THEIR LOCATION ARE APPROXIMATE. NOT ALL UTILITIES MAY BE SHOWN. BEFORE ANY WORK TAKES PLACE CONTRACTOR SHALL HAVE ALL UTILITIES MARKED OUT AND SHALL USE SPECIAL CARE DURING CONSTRUCTION.
2. TITLE INFORMATION FOR THIS PROJECT IS FROM FIDELITY NATIONAL TITLE COMPANY PRELIMINARY REPORT ORDER NO. 005-23088597-1MB, DATED OCTOBER 7, 2016 AND CHICAGO TITLE PRELIMINARY REPORT ORDER NO. 0069801-993-SD2-CFU, DATED MARCH 16, 2017. ITEMS OTHER THAN EASEMENTS EXIST. SEE TITLE REPORTS FOR DETAILS.
3. THE SOURCE OF THE TOPOGRAPHIC INFORMATION SHOWN HEREON IS FROM SURVEY BY CHRISTENSEN ENGINEERING & SURVEYING, DATED 01-07-13 AND REVISED 01-08-13.
4. THE SUBJECT PROPERTY IS SERVED BY CITY OF SAN DIEGO SANITARY SEWER AND WATER MAINS.
5. NAD27 COORDINATES = 204-1698. NAD83 COORDINATES = 1844-6258.
6. TITLE ITEM 3 TO BE VACATED. TITLE ITEMS 4, 5, 7 & 9 TO BE QUITCLAIMED.
7. AN ENCROACHMENT MAINTENANCE AND REMOVAL AGREEMENT WILL BE REQUIRED FOR PRIVATE CURB OUTLETS AND WALKWAYS WITHIN ROSECRANS AND GARRISON STREET RIGHTS OF WAY

GRADING DATA

AREA OF SITE - 24,941 S.F.
AREA OF SITE TO BE GRADED: 24,941 SF
PERCENT OF SITE TO BE GRADED: 100%
AREA OF SITE WITH SLOPES GREATER THAN 25%: 0 S.F.

AMOUNT OF CUT - 9160 C.Y.
AMOUNT OF FILL - 180 C.Y.
AMOUNT OF EXPORT - 8,980 C.Y.
MAXIMUM FILL - <1
MAXIMUM CUT - 11 FOOT VERTICAL WITHIN STRUCTURE
NONE ELSEWHERE
MAXIMUM HEIGHT OF FILL SLOPE - NONE
MAXIMUM HEIGHT OF CUT SLOPE - NONE
RETAINING WALL: NONE NOT A PART OF BUILDING

EARTHWORK CALCULATIONS ARE APPROXIMATE TO FINISH FLOOR/SURFACE

0 10 20 40 60
(IN FEET)
1 inch = 20 ft.

Owners:

PL BOUTIQUE INVESTORS LLC
17828 VILLAMCURA DR
POWAY CA 92064-1013

Prepared By:

CHRISTENSEN ENGINEERING &
7888 SILVERTON AVENUE, SUITE
SAN DIEGO, CA 92126
PHONE (858) 271-9901 FAX (858)

LEGEND:

- P-1 — Approximate Infiltration Test location (2017a)
- P-3 — Approximate Infiltration Test location (Current)
- HS-1 — Approximate Hollow Stem Boring location

Project Address:

1453-1455 AND 1461-1463 ROSECRANS ST
AND 2912 AND 2930 GARRISON ST
SAN DIEGO, CA 92106

Revision 4:

Revision 3:

Project Name:

DOLPHIN MOTEL

PLATE 1
Infiltration Test Location Plan

AGS
ADVANCED GEOTECHNICAL SOLUTIONS, INC.

Project:	Report:	Date:
P/W 1611-03	1611-03-B-5	June 2017

Sheet Title:

PRELIMINARY GRADING PL

A2016-80

CONSTRUCTION NOTES

1. C/L PROPOSED 25' DRIVEWAY PER SDG-163
2. PROPOSED PED RAMP PER SDG-132
3. REMOVE AND REPLACE EXISTING DRIVEWAY WITH CURB GUTTER AND SIDEWALK (TYPICAL)
4. REMOVE EX CONCRETE. REPLACE WITH PLANTER (TYPICAL)
5. PROPOSED SIDEWALK PER SDG-155
6. KILL EXISTING WATER SERVICE (TYPICAL)
7. ABANDON EXISTING SEWER LATERAL AT P/L (TYPICAL)
8. PROPOSED 6" SEWER LATERAL
9. PROPOSED 2" WATER SERVIDE
10. PROPOSED 4" FIRE SERVICE
11. VISIBILITY TRIANGLE (TYPICAL)
12. MAIN FLOOR PARKING AREA CATCH BASIN (TYPICAL)
13. PVC DRAIN (TYPICAL)
14. CATCH BASIN WITH PUMP (AT GROUND LEVEL) TO CONVEY MAIN FLOOR AND PARKING RAMP RUNOFF TO BIOFILTRATION BASIN. INCLUDES OVERFLOW TO CURB OULET IN THE CASE OF PUMP FAILURE V100 = 4.0 FPS
15. BIOFILTRATION BASIN TO TREAT RUNOFF FROM ROOF (500 SF) (BMP-1)
16. BIOFILTRATION BASIN TO TREAT RUNOFF FROM MAIN LEVEL (213 SF) (BMP-2)
17. RAMP TRENCH DRAIN WITH PUMP TO CONVEY RUNOFF TO CATCH BASIN 14 AND THEN TO BIOFILTRATON BASIN
18. OUTLINE OF RUOFF
19. CURB OUTLET PER D-25 Q100 = 0.45 CFS V100 = 2.2 FPS
20. CURB OUTLET PER D-25 Q100 = 1.12 CFS V100 = 3.1 FPS
21. PROPOSED BACKFLOW PREVENTER (TYPICAL)
22. PROPOSED ONSITE POROUS PAVING AREA

TITLE NOTES

2. AN EASEMENT OR RIGHT OF WAY FOR THE CONSTRUCTION AND MAINTENANCE OF FLUMES, CANALS OR AQUEDUCTS, CONVEYED BY DEED FROM FRANK A. KIMBALL, AND WARREN G. KIMBALL TO KIMBALL BROTHERS WATER COMPANY, A CORPORATION, DATED JUNE 9, 1869, AND RECORDED IN BOOK 7, PAGE 124 OF DEEDS. THE INTEREST OF SAID GRANTEE IN AND TO SAID EASEMENT HAS SINCE PASSED TO AND NOW VESTS OF RECORD IN THE SWEETWATER AUTHORITY. THE LOCATION AND EXTENT OF SAID EASEMENT IS NOT DISCLOSED OF RECORD AND IS NOT PLOTTED.
3. AN EASEMENT FOR SEWER PURPOSES AND RIGHTS INCIDENTAL THERETO GRANTED TO THE CITY OF SAN DIEGO, A MUNICIPAL CORPORATION, RECORDED JUNE 12, 1928 IN BOOK 1510, PAGE 12, OF DEEDS, OF OFFICIAL RECORDS.
4. AN EASEMENT FOR THE CONSTRUCTION AND MAINTENANCE OF A PRIVATE SEWER LATERAL AND RIGHTS INCIDENTAL THERETO GRANTED TO THE CITY OF SAN DIEGO, A MUNICIPAL CORPORATION, RECORDED FEBRUARY 4, 1944 IN BOOK 1635, PAGE 177 OF OFFICIAL RECORDS.
5. AN EASEMENT FOR POLES AND WIRES AND RIGHTS INCIDENTAL THERETO GRANTED TO THE SAN DIEGO GAS AND ELECTRIC COMPANY, RECORDED MAY 29, 1944 IN BOOK 1684, PAGE 263, OF OFFICIAL RECORDS.
6. AN EASEMENT FOR PUBLIC STREET AND RIGHTS INCIDENTAL THERETO GRANTED TO THE CITY OF SAN DIEGO, RECORDED MARCH 3, 1959 IN BOOK 7527, PAGE 49 OF OFFICIAL RECORDS.
7. AN EASEMENT FOR POLES AND WIRES AND RIGHTS INCIDENTAL THERETO GRANTED TO THE SAN DIEGO GAS AND ELECTRIC COMPANY, RECORDED IN BOOK 1688, PAGE 116, OF OFFICIAL RECORDS.
9. AN EASEMENT FOR COMMUNICATION STRUCTURES AND RIGHTS INCIDENTAL THERETO, GRANTED TO THE PACIFIC TELEPHONE AND TELEGRAPH COMPANY, RECORDED MAY 11, 1966 AS INSTRUMENT NO. 79002, OF OFFICIAL RECORDS.

LEGAL DESCRIPTION

LOTS 1 AND 2, BLOCK 62 OF ROSEVILLE, CITY OF SAN DIEGO, COUNTY OF SAN DIEGO, ACCORDING TO MAP THEREOF NO. 165 FILED IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY, EXCEPTING THAT PORTION IF ANY HERETO FORE OR NOW LYING BELOW THE ORDINARY HIGH TIDE LINE OF THE BAY OF SAN DIEGO.

LOT 3 IN BLOCK 62 OF ROSEVILLE, IN THE COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO MAP THEREOF NO. 165, FILED IN THE OFFICE OF THE RECORDER OF SAN DIEGO COUNTY. EXCEPTING THAT PORTION, IF ANY, HERETOFORE OR NOW LYING BELOW THE ORDINARY HIGH TIDE LINE OF THE BAY OF SAN DIEGO.

LOTS 4 AND 5 IN BLOCK 62, OF ROSEVILLE, IN CITY OF SAN DIEGO, COUNTY OF SAN DIEGO, STATE OF CALIFORNIA, ACCORDING TO MAP THEREOF NO. 165, FILED IN THE OFFICE OF THE COUNTY RECORDER OF SAN DIEGO COUNTY.

APNs: 530-751-01,02,03,04 AND 05

BASIS OF BEARINGS

A PORTION OF THE MEAN HIGH TIDE LINE AS SHOWN ON SHEET 3 OF RECORD OF SURVEY 20732. I.E. SOUTH 37°29'53" WEST.

APN / ADDRESS

ASSESSOR'S PARCEL NUMBERS: 530-751-01,02,03,04 AND 05

ADDRESS: 1453-1455 AND 1461-1463 ROSECRANS ST
AND 2912 AND 2930 GARRISON ST
SAN DIEGO, CA 92106

BENCHMARK

CITY OF SAN DIEGO BENCHMARK BRASS PLUG LOCATED IN THE TOP OF CURB AT THE WESTERLY CORNER OF ROSECRANS STREET AND GARRISON STREET. ELEVATION = 8.474' MEAN SEA LEVEL (N.G.V.D. 1929).

NOTES

1. UTILITIES SHOWN HEREON ARE FROM CITY OF SAN DIEGO RECORDS AND ARE THEIR LOCATION ARE APPROXIMATE. NOT ALL UTILITIES MAY BE SHOWN. BEFORE ANY WORK TAKES PLACE CONTRACTOR SHALL HAVE ALL UTILITIES MARKED OUT AND SHALL USE SPECIAL CARE DURING CONSTRUCTION.
2. TITLE INFORMATION FOR THIS PROJECT IS FROM FIDELITY NATIONAL TITLE COMPANY PRELIMINARY REPORT ORDER NO. 005-23088597-1MB, DATED OCTOBER 7, 2016 AND CHICAGO TITLE PRELIMINARY REPORT ORDER NO. 0069801-993-SD2-CFU, DATED MARCH 16, 2017. ITEMS OTHER THAN EASEMENTS EXIST. SEE TITLE REPORTS FOR DETAILS.
3. THE SOURCE OF THE TOPOGRAPHIC INFORMATION SHOWN HEREON IS FROM SURVEY BY CHRISTENSEN ENGINEERING & SURVEYING, DATED 01-07-13 AND REVISED 01-08-13.
4. THE SUBJECT PROPERTY IS SERVED BY CITY OF SAN DIEGO SANITARY SEWER AND WATER MAINS.
5. NAD27 COORDINATES = 204-1698. NAD83 COORDINATES = 1844-6258.
6. TITLE ITEM 3 TO BE VACATED. TITLE ITEMS 4, 5, 7 & 9 TO BE QUITCLAIMED.
7. AN ENCROACHMENT MAINTENANCE AND REMOVAL AGREEMENT WILL BE REQUIRED FOR PRIVATE CURB OUTLETS AND WALKWAYS WITHIN ROSECRANS AND GARRISON STREET RIGHTS OF WAY

GRADING DATA

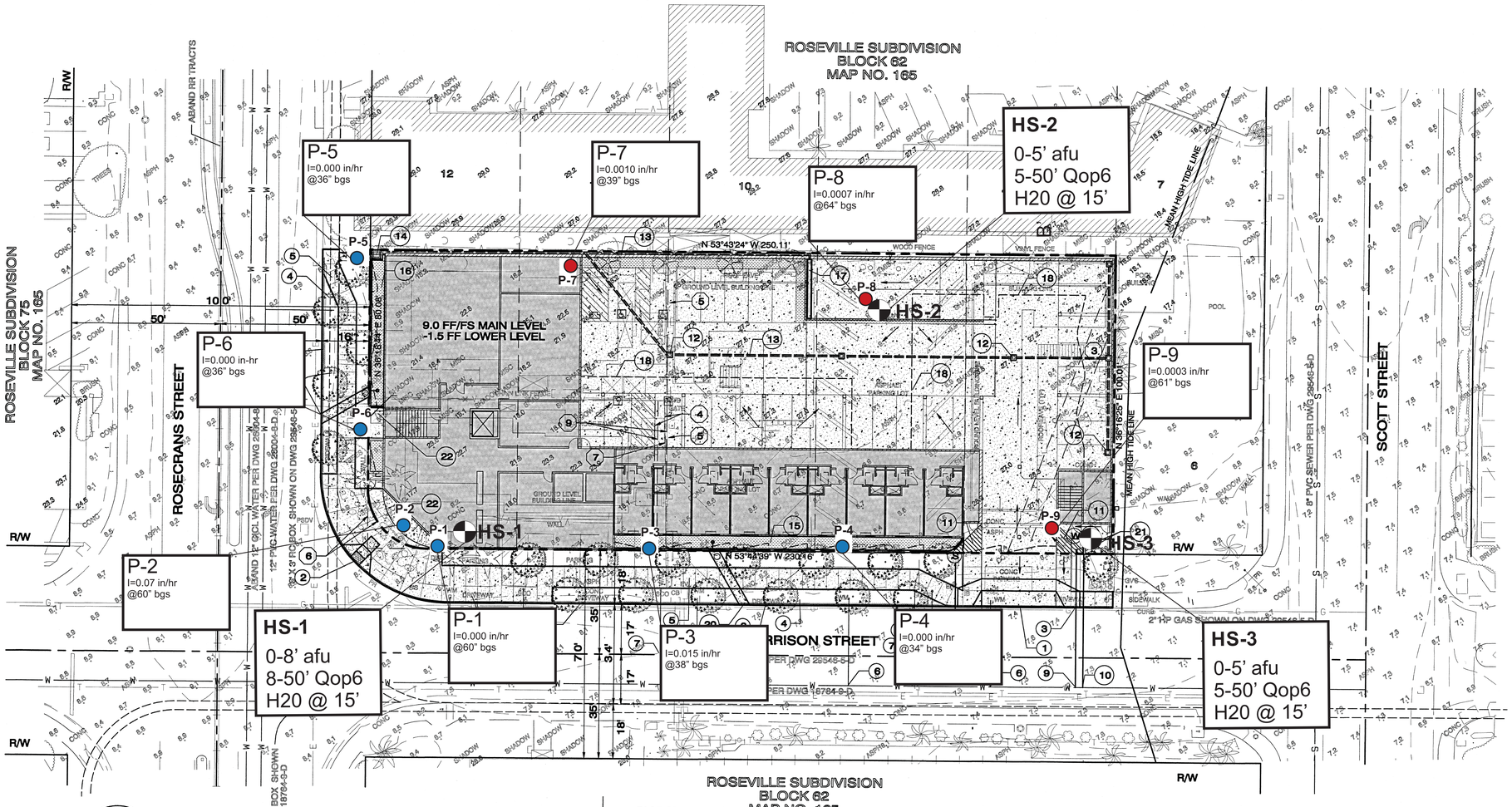
AREA OF SITE - 24,941 S.F.
AREA OF SITE TO BE GRADED: 24,941 SF
PERCENT OF SITE TO BE GRADED: 100%
AREA OF SITE WITH SLOPES GREATER THAN 25%: 0 S.F.

AMOUNT OF CUT - 9160 C.Y.
AMOUNT OF FILL - 180 C.Y.
AMOUNT OF EXPORT - 8,980 C.Y.
MAXIMUM FILL - <1
MAXIMUM CUT - 11 FOOT VERTICAL WITHIN STRUCTURE
NONE ELSEWHERE
MAXIMUM HEIGHT OF FILL SLOPE - NONE
MAXIMUM HEIGHT OF CUT SLOPE - NONE
RETAINING WALL: NONE NOT A PART OF BUILDING

EARTHWORK CALCULATIONS ARE APPROXIMATE TO FINISH FLOOR/SURFACE

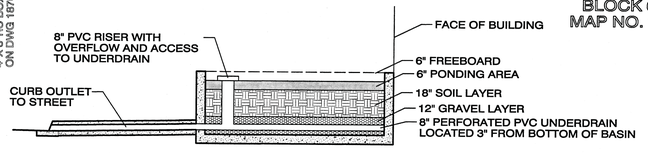
INFILTRATION RATES	
ID	Rate (in/hr)
P-1	0.0000
P-2	0.0700
P-3	0.0150
P-4	0.0000
P-5	0.0000
P-6	0.0000
P-7	0.0010
P-8	0.0007
P-9	0.0003
AVERAGE =	0.0097

(FS = 2.0)



SCALE 1" = 20'

0 20 40 60 80



BIOFILTRATION BASIN DETAIL
NOT TO SCALE

0 10 20 40 60
(IN FEET)
1 inch = 20 ft.

Owners:

PL BOUTIQUE INVESTORS LLC
17828 VILLAMOURA DR
POWAY CA 92064-1013

LEGEND:

- P-1 — Approximate Borehole Percolation Test location (AGS, Previous Studies)
- P-7 — Approximate Double Ring Infiltrometer Test location (AGS, Current Study)
- HS-1 — Approximate Hollow Stem Boring location

Prepared By:

CHRISTENSEN ENGINEERING &
7888 SILVERTON AVENUE, SUITE
SAN DIEGO, CA 92126
PHONE (858) 271-9901 FAX (858)

Project Address:

1453-1455 AND 1461-1463 ROSECRANS ST
AND 2912 AND 2930 GARRISON ST
SAN DIEGO, CA 92106

Revision 4:

Revision 3:

Project Name:

DOLPHIN MOTEL

Sheet Title:

PRELIMINARY GRADING PL

PLATE 1
Infiltration Test Location Plan

ADVANCED GEOTECHNICAL SOLUTIONS, INC.

Project:	Report:	Date:
P/W 1611-03		Nov. 2017

REGISTERED PROFESSIONAL ENGINEER
ANTONY K. CHRISTENSEN
No. 54021
Exp. 12-31-17
CIVIL
STATE OF CALIFORNIA

APRIL 10, 2017
ANTONY K. CHRISTENSEN, R.C.E. 54021 Date

A2016-80