Appendix A:
Air Quality/Greenhouse Gas Data

Pechanga Parkway Widening

Riverside-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	120.15	1000sqft	2.76	120,151.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Accounts for roadway expansion, curbs, gutters, median, bus turnout, sidewalks, and access ramps

Construction Phase - Construction phase duration per project contractor

Off-road Equipment -

Off-road Equipment - Equipment list per project contractor

Off-road Equipment - Construction equipment per project contractor

Off-road Equipment - Equipment list per project contractor

Off-road Equipment - Equipment list per project contractor

Grading -

Demolition -

Construction Off-road Equipment Mitigation - SCAQMD Rule 403

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	40
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	15
tblConstructionPhase	NumDays	220.00	10.00
tblConstructionPhase	NumDays	20.00	15.00
tblConstructionPhase	NumDays	6.00	10.00
tblConstructionPhase	PhaseEndDate	10/25/2017	5/19/2017
tblConstructionPhase	PhaseEndDate	12/8/2016	4/21/2017
tblConstructionPhase	PhaseEndDate	12/21/2016	5/5/2017
tblConstructionPhase	PhaseEndDate	11/8/2017	6/2/2017
tblConstructionPhase	PhaseStartDate	12/22/2016	5/6/2017
tblConstructionPhase	PhaseStartDate	11/11/2016	4/1/2017
tblConstructionPhase	PhaseStartDate	12/14/2016	4/22/2017
tblConstructionPhase	PhaseStartDate	10/26/2017	5/20/2017
tblGrading	MaterialExported	0.00	1,973.00

tblOffRoadEquipment	LoadFactor	0.50	0.50
tblOffRoadEquipment	LoadFactor	0.42	0.42
tblOffRoadEquipment	LoadFactor	0.50	0.50
tblOffRoadEquipment	LoadFactor	0.44	0.44
tblOffRoadEquipment	LoadFactor	0.42	0.42
tblOffRoadEquipment	LoadFactor	0.42	0.42
tblOffRoadEquipment	LoadFactor	0.36	0.36
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.30	0.30
tblOffRoadEquipment	LoadFactor	0.50	0.50
tblOffRoadEquipment	OffRoadEquipmentType		Trenchers
tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Trenchers
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Tractors
tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Paving Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Rollers
tblOffRoadEquipment	OffRoadEquipmentType		Surfacing Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Trenchers
tblOffRoadEquipment	OffRoadEquipmentType		Surfacing Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0530	0.5373	0.3330	7.1000e-004	0.0299	0.0282	0.0581	5.6300e-003	0.0262	0.0318	0.0000	66.0650	66.0650	0.0138	0.0000	66.4093
Maximum	**0.0530**	**0.5373**	**0.3330**	**7.1000e-004**	**0.0299**	**0.0282**	**0.0581**	**5.6300e-003**	**0.0262**	**0.0318**	**0.0000**	**66.0650**	**66.0650**	**0.0138**	**0.0000**	**66.4093**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2017	0.0530	0.5373	0.3330	7.1000e-004	0.0131	0.0282	0.0413	2.8000e-003	0.0262	0.0290	0.0000	66.0650	66.0650	0.0138	0.0000	66.4092
Maximum	**0.0530**	**0.5373**	**0.3330**	**7.1000e-004**	**0.0131**	**0.0282**	**0.0413**	**2.8000e-003**	**0.0262**	**0.0290**	**0.0000**	**66.0650**	**66.0650**	**0.0138**	**0.0000**	**66.4092**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**56.20**	**0.00**	**28.93**	**50.27**	**0.00**	**8.90**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
2	**2-11-2017**	**5-10-2017**	0.3766	0.3766
3	**5-11-2017**	**8-10-2017**	0.2119	0.2119
		Highest	0.3766	0.3766

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	9.5900e-003	1.0000e-005	1.5500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	2.9800e-003	2.9800e-003	1.0000e-005	0.0000	3.1900e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.5900e-003**	**1.0000e-005**	**1.5500e-003**	**0.0000**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**2.9800e-003**	**2.9800e-003**	**1.0000e-005**	**0.0000**	**3.1900e-003**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	9.5900e-003	1.0000e-005	1.5500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	2.9800e-003	2.9800e-003	1.0000e-005	0.0000	3.1900e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**9.5900e-003**	**1.0000e-005**	**1.5500e-003**	**0.0000**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**2.9800e-003**	**2.9800e-003**	**1.0000e-005**	**0.0000**	**3.1900e-003**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	4/1/2017	4/21/2017	5	15	
2	Grading	Grading	4/22/2017	5/5/2017	5	10	
3	Building Construction	Building Construction	5/6/2017	5/19/2017	5	10	
4	Paving	Paving	5/20/2017	6/2/2017	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 2.76

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Trenchers	1	8.00	78	0.50
Paving	Cement and Mortar Mixers	0	8.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Cranes	0	8.00	231	0.29
Building Construction	Forklifts	0	7.00	89	0.20
Demolition	Other Construction Equipment	1	8.00	172	0.42
Paving	Pavers	0	8.00	130	0.42
Paving	Rollers	1	8.00	80	0.38
Demolition	Rubber Tired Dozers	0	8.00	247	0.40
Grading	Rubber Tired Dozers	0	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37

Demolition	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Trenchers	1	8.00	78	0.50
Grading	Graders	0	8.00	187	0.41
Paving	Paving Equipment	1	8.00	132	0.36
Grading	Off-Highway Tractors	1	8.00	124	0.44
Building Construction	Welders	0	8.00	46	0.45
Grading	Other Construction Equipment	1	8.00	172	0.42
Building Construction	Other Construction Equipment	1	8.00	172	0.42
Building Construction	Paving Equipment	1	8.00	132	0.36
Building Construction	Rollers	1	8.00	80	0.38
Building Construction	Surfacing Equipment	1	8.00	263	0.30
Building Construction	Trenchers	1	8.00	78	0.50
Paving	Surfacing Equipment	1	8.00	263	0.30
Paving	Other Construction Equipment	1	8.00	172	0.42

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	6	50.00	20.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	4	10.00	0.00	189.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	247.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Demolition - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0206	0.0000	0.0206	3.1100e-003	0.0000	3.1100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0154	0.1413	0.0982	1.4000e-004		9.4700e-003	9.4700e-003		8.9000e-003	8.9000e-003	0.0000	12.8110	12.8110	3.0400e-003	0.0000	12.8871
Total	**0.0154**	**0.1413**	**0.0982**	**1.4000e-004**	**0.0206**	**9.4700e-003**	**0.0300**	**3.1100e-003**	**8.9000e-003**	**0.0120**	**0.0000**	**12.8110**	**12.8110**	**3.0400e-003**	**0.0000**	**12.8871**

3.2 Demolition - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.7000e-004	0.0289	3.5800e-003	7.0000e-005	1.6300e-003	1.5000e-004	1.7800e-003	4.5000e-004	1.4000e-004	5.9000e-004	0.0000	7.0357	7.0357	4.9000e-004	0.0000	7.0479
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.5000e-004	3.5000e-004	3.6200e-003	1.0000e-005	8.2000e-004	1.0000e-005	8.3000e-004	2.2000e-004	0.0000	2.2000e-004	0.0000	0.7562	0.7562	2.0000e-005	0.0000	0.7568
Total	**1.1200e-003**	**0.0292**	**7.2000e-003**	**8.0000e-005**	**2.4500e-003**	**1.6000e-004**	**2.6100e-003**	**6.7000e-004**	**1.4000e-004**	**8.1000e-004**	**0.0000**	**7.7919**	**7.7919**	**5.1000e-004**	**0.0000**	**7.8047**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					6.8200e-003	0.0000	6.8200e-003	1.0300e-003	0.0000	1.0300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0154	0.1413	0.0982	1.4000e-004		9.4700e-003	9.4700e-003		8.9000e-003	8.9000e-003	0.0000	12.8110	12.8110	3.0400e-003	0.0000	12.8871
Total	**0.0154**	**0.1413**	**0.0982**	**1.4000e-004**	**6.8200e-003**	**9.4700e-003**	**0.0163**	**1.0300e-003**	**8.9000e-003**	**9.9300e-003**	**0.0000**	**12.8110**	**12.8110**	**3.0400e-003**	**0.0000**	**12.8871**

3.2 Demolition - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.7000e-004	0.0289	3.5800e-003	7.0000e-005	1.1400e-003	1.5000e-004	1.2900e-003	3.3000e-004	1.4000e-004	4.7000e-004	0.0000	7.0357	7.0357	4.9000e-004	0.0000	7.0479
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.5000e-004	3.5000e-004	3.6200e-003	1.0000e-005	5.4000e-004	1.0000e-005	5.4000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.7562	0.7562	2.0000e-005	0.0000	0.7568
Total	**1.1200e-003**	**0.0292**	**7.2000e-003**	**8.0000e-005**	**1.6800e-003**	**1.6000e-004**	**1.8300e-003**	**4.8000e-004**	**1.4000e-004**	**6.2000e-004**	**0.0000**	**7.7919**	**7.7919**	**5.1000e-004**	**0.0000**	**7.8047**

3.3 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.2000e-004	0.0000	1.2000e-004	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.8700e-003	0.0902	0.0607	8.0000e-005		5.6100e-003	5.6100e-003		5.1700e-003	5.1700e-003	0.0000	7.8287	7.8287	2.4000e-003	0.0000	7.8887
Total	**8.8700e-003**	**0.0902**	**0.0607**	**8.0000e-005**	**1.2000e-004**	**5.6100e-003**	**5.7300e-003**	**2.0000e-005**	**5.1700e-003**	**5.1900e-003**	**0.0000**	**7.8287**	**7.8287**	**2.4000e-003**	**0.0000**	**7.8887**

3.3 Grading - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.7000e-004	0.0377	4.6800e-003	1.0000e-004	2.1300e-003	2.0000e-004	2.3300e-003	5.8000e-004	1.9000e-004	7.7000e-004	0.0000	9.1948	9.1948	6.4000e-004	0.0000	9.2108
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-004	2.4000e-004	2.4100e-003	1.0000e-005	5.5000e-004	0.0000	5.5000e-004	1.5000e-004	0.0000	1.5000e-004	0.0000	0.5041	0.5041	2.0000e-005	0.0000	0.5045
Total	**1.1700e-003**	**0.0380**	**7.0900e-003**	**1.1000e-004**	**2.6800e-003**	**2.0000e-004**	**2.8800e-003**	**7.3000e-004**	**1.9000e-004**	**9.2000e-004**	**0.0000**	**9.6990**	**9.6990**	**6.6000e-004**	**0.0000**	**9.7153**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.8700e-003	0.0902	0.0607	8.0000e-005		5.6100e-003	5.6100e-003		5.1700e-003	5.1700e-003	0.0000	7.8287	7.8287	2.4000e-003	0.0000	7.8887
Total	**8.8700e-003**	**0.0902**	**0.0607**	**8.0000e-005**	**4.0000e-005**	**5.6100e-003**	**5.6500e-003**	**1.0000e-005**	**5.1700e-003**	**5.1800e-003**	**0.0000**	**7.8287**	**7.8287**	**2.4000e-003**	**0.0000**	**7.8887**

3.3 Grading - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.7000e-004	0.0377	4.6800e-003	1.0000e-004	1.4900e-003	2.0000e-004	1.6900e-003	4.3000e-004	1.9000e-004	6.2000e-004	0.0000	9.1948	9.1948	6.4000e-004	0.0000	9.2108
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-004	2.4000e-004	2.4100e-003	1.0000e-005	3.6000e-004	0.0000	3.6000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.5041	0.5041	2.0000e-005	0.0000	0.5045
Total	**1.1700e-003**	**0.0380**	**7.0900e-003**	**1.1000e-004**	**1.8500e-003**	**2.0000e-004**	**2.0500e-003**	**5.3000e-004**	**1.9000e-004**	**7.2000e-004**	**0.0000**	**9.6990**	**9.6990**	**6.6000e-004**	**0.0000**	**9.7153**

3.4 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0114	0.1213	0.0760	1.3000e-004		7.0600e-003	7.0600e-003		6.4900e-003	6.4900e-003	0.0000	11.7087	11.7087	3.5900e-003	0.0000	11.7984
Total	**0.0114**	**0.1213**	**0.0760**	**1.3000e-004**		**7.0600e-003**	**7.0600e-003**		**6.4900e-003**	**6.4900e-003**	**0.0000**	**11.7087**	**11.7087**	**3.5900e-003**	**0.0000**	**11.7984**

3.4 Building Construction - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.3000e-004	0.0132	2.8300e-003	3.0000e-005	6.3000e-004	1.3000e-004	7.6000e-004	1.8000e-004	1.2000e-004	3.0000e-004	0.0000	2.4974	2.4974	2.3000e-004	0.0000	2.5032
Worker	1.5100e-003	1.1800e-003	0.0121	3.0000e-005	2.7500e-003	2.0000e-005	2.7700e-003	7.3000e-004	2.0000e-005	7.5000e-004	0.0000	2.5206	2.5206	8.0000e-005	0.0000	2.5227
Total	**1.9400e-003**	**0.0144**	**0.0149**	**6.0000e-005**	**3.3800e-003**	**1.5000e-004**	**3.5300e-003**	**9.1000e-004**	**1.4000e-004**	**1.0500e-003**	**0.0000**	**5.0180**	**5.0180**	**3.1000e-004**	**0.0000**	**5.0259**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0114	0.1213	0.0760	1.3000e-004		7.0600e-003	7.0600e-003		6.4900e-003	6.4900e-003	0.0000	11.7087	11.7087	3.5900e-003	0.0000	11.7984
Total	**0.0114**	**0.1213**	**0.0760**	**1.3000e-004**		**7.0600e-003**	**7.0600e-003**		**6.4900e-003**	**6.4900e-003**	**0.0000**	**11.7087**	**11.7087**	**3.5900e-003**	**0.0000**	**11.7984**

3.4 Building Construction - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.3000e-004	0.0132	2.8300e-003	3.0000e-005	4.5000e-004	1.3000e-004	5.8000e-004	1.4000e-004	1.2000e-004	2.6000e-004	0.0000	2.4974	2.4974	2.3000e-004	0.0000	2.5032
Worker	1.5100e-003	1.1800e-003	0.0121	3.0000e-005	1.7900e-003	2.0000e-005	1.8100e-003	5.0000e-004	2.0000e-005	5.1000e-004	0.0000	2.5206	2.5206	8.0000e-005	0.0000	2.5227
Total	**1.9400e-003**	**0.0144**	**0.0149**	**6.0000e-005**	**2.2400e-003**	**1.5000e-004**	**2.3900e-003**	**6.4000e-004**	**1.4000e-004**	**7.7000e-004**	**0.0000**	**5.0180**	**5.0180**	**3.1000e-004**	**0.0000**	**5.0259**

3.5 Paving - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.1800e-003	0.1027	0.0658	1.1000e-004		5.5700e-003	5.5700e-003		5.1300e-003	5.1300e-003	0.0000	10.5524	10.5524	3.2300e-003	0.0000	10.6332
Paving	3.6200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0128**	**0.1027**	**0.0658**	**1.1000e-004**		**5.5700e-003**	**5.5700e-003**		**5.1300e-003**	**5.1300e-003**	**0.0000**	**10.5524**	**10.5524**	**3.2300e-003**	**0.0000**	**10.6332**

3.5 Paving - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.9000e-004	3.1000e-004	3.1300e-003	1.0000e-005	7.1000e-004	0.0000	7.2000e-004	1.9000e-004	0.0000	1.9000e-004	0.0000	0.6554	0.6554	2.0000e-005	0.0000	0.6559
Total	**3.9000e-004**	**3.1000e-004**	**3.1300e-003**	**1.0000e-005**	**7.1000e-004**	**0.0000**	**7.2000e-004**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**0.6554**	**0.6554**	**2.0000e-005**	**0.0000**	**0.6559**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.1800e-003	0.1027	0.0658	1.1000e-004		5.5700e-003	5.5700e-003		5.1300e-003	5.1300e-003	0.0000	10.5524	10.5524	3.2300e-003	0.0000	10.6332
Paving	3.6200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0128**	**0.1027**	**0.0658**	**1.1000e-004**		**5.5700e-003**	**5.5700e-003**		**5.1300e-003**	**5.1300e-003**	**0.0000**	**10.5524**	**10.5524**	**3.2300e-003**	**0.0000**	**10.6332**

3.5 Paving - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.9000e-004	3.1000e-004	3.1300e-003	1.0000e-005	4.7000e-004	0.0000	4.7000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.6554	0.6554	2.0000e-005	0.0000	0.6559
Total	**3.9000e-004**	**3.1000e-004**	**3.1300e-003**	**1.0000e-005**	**4.7000e-004**	**0.0000**	**4.7000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.6554**	**0.6554**	**2.0000e-005**	**0.0000**	**0.6559**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.527920	0.040740	0.182967	0.130733	0.020108	0.005812	0.016781	0.065303	0.001324	0.001284	0.004728	0.000989	0.001311

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	9.5900e-003	1.0000e-005	1.5500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	2.9800e-003	2.9800e-003	1.0000e-005	0.0000	3.1900e-003
Unmitigated	9.5900e-003	1.0000e-005	1.5500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	2.9800e-003	2.9800e-003	1.0000e-005	0.0000	3.1900e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.6700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	7.7700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.5000e-004	1.0000e-005	1.5500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	2.9800e-003	2.9800e-003	1.0000e-005	0.0000	3.1900e-003
Total	**9.5900e-003**	**1.0000e-005**	**1.5500e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**2.9800e-003**	**2.9800e-003**	**1.0000e-005**	**0.0000**	**3.1900e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	1.6700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	7.7700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.5000e-004	1.0000e-005	1.5500e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	2.9800e-003	2.9800e-003	1.0000e-005	0.0000	3.1900e-003
Total	**9.5900e-003**	**1.0000e-005**	**1.5500e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**2.9800e-003**	**2.9800e-003**	**1.0000e-005**	**0.0000**	**3.1900e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Pechanga Parkway Widening

Riverside-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	120.15	1000sqft	2.76	120,151.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Pechanga Parkway Widening - Riverside-South Coast County, Summer

Project Characteristics -

Land Use - Accounts for roadway expansion, curbs, gutters, median, bus turnout, sidewalks, and access ramps

Construction Phase - Construction phase duration per project contractor

Off-road Equipment -

Off-road Equipment - Equipment list per project contractor

Off-road Equipment - Construction equipment per project contractor

Off-road Equipment - Equipment list per project contractor

Off-road Equipment - Equipment list per project contractor

Grading -

Demolition -

Construction Off-road Equipment Mitigation - SCAQMD Rule 403

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	40
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	15
tblConstructionPhase	NumDays	220.00	10.00
tblConstructionPhase	NumDays	20.00	15.00
tblConstructionPhase	NumDays	6.00	10.00
tblConstructionPhase	PhaseEndDate	10/25/2017	5/19/2017
tblConstructionPhase	PhaseEndDate	12/8/2016	4/21/2017
tblConstructionPhase	PhaseEndDate	12/21/2016	5/5/2017
tblConstructionPhase	PhaseEndDate	11/8/2017	6/2/2017
tblConstructionPhase	PhaseStartDate	12/22/2016	5/6/2017
tblConstructionPhase	PhaseStartDate	11/11/2016	4/1/2017
tblConstructionPhase	PhaseStartDate	12/14/2016	4/22/2017
tblConstructionPhase	PhaseStartDate	10/26/2017	5/20/2017
tblGrading	MaterialExported	0.00	1,973.00

tblOffRoadEquipment	LoadFactor	0.50	0.50
tblOffRoadEquipment	LoadFactor	0.42	0.42
tblOffRoadEquipment	LoadFactor	0.50	0.50
tblOffRoadEquipment	LoadFactor	0.44	0.44
tblOffRoadEquipment	LoadFactor	0.42	0.42
tblOffRoadEquipment	LoadFactor	0.42	0.42
tblOffRoadEquipment	LoadFactor	0.36	0.36
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.30	0.30
tblOffRoadEquipment	LoadFactor	0.50	0.50
tblOffRoadEquipment	OffRoadEquipmentType		Trenchers
tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Trenchers
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Tractors
tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Paving Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Rollers
tblOffRoadEquipment	OffRoadEquipmentType		Surfacing Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Trenchers
tblOffRoadEquipment	OffRoadEquipmentType		Surfacing Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00

tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	2.6883	27.0750	18.5407	0.0374	3.0739	1.4401	4.3576	0.5052	1.3258	1.7115	0.0000	3,894.4100	3,894.4100	0.8605	0.0000	3,911.1171
Maximum	**2.6883**	**27.0750**	**18.5407**	**0.0374**	**3.0739**	**1.4401**	**4.3576**	**0.5052**	**1.3258**	**1.7115**	**0.0000**	**3,894.4100**	**3,894.4100**	**0.8605**	**0.0000**	**3,911.1171**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2017	2.6883	27.0750	18.5407	0.0374	1.1356	1.4401	2.4194	0.2018	1.3258	1.4542	0.0000	3,894.4100	3,894.4100	0.8605	0.0000	3,911.1171
Maximum	**2.6883**	**27.0750**	**18.5407**	**0.0374**	**1.1356**	**1.4401**	**2.4194**	**0.2018**	**1.3258**	**1.4542**	**0.0000**	**3,894.4100**	**3,894.4100**	**0.8605**	**0.0000**	**3,911.1171**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**63.06**	**0.00**	**44.48**	**60.05**	**0.00**	**15.03**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0529	1.2000e-004	0.0124	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0263	0.0263	7.0000e-005		0.0281
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0529**	**1.2000e-004**	**0.0124**	**0.0000**	**0.0000**	**4.0000e-005**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**4.0000e-005**		**0.0263**	**0.0263**	**7.0000e-005**	**0.0000**	**0.0281**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0529	1.2000e-004	0.0124	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0263	0.0263	7.0000e-005		0.0281
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0529**	**1.2000e-004**	**0.0124**	**0.0000**	**0.0000**	**4.0000e-005**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**4.0000e-005**		**0.0263**	**0.0263**	**7.0000e-005**	**0.0000**	**0.0281**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	4/1/2017	4/21/2017	5	15	
2	Grading	Grading	4/22/2017	5/5/2017	5	10	
3	Building Construction	Building Construction	5/6/2017	5/19/2017	5	10	
4	Paving	Paving	5/20/2017	6/2/2017	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 2.76

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Trenchers	1	8.00	78	0.50
Paving	Cement and Mortar Mixers	0	8.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Cranes	0	8.00	231	0.29
Building Construction	Forklifts	0	7.00	89	0.20

Demolition	Other Construction Equipment	1	8.00	172	0.42
Paving	Pavers	0	8.00	130	0.42
Paving	Rollers	1	8.00	80	0.38
Demolition	Rubber Tired Dozers	0	8.00	247	0.40
Grading	Rubber Tired Dozers	0	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Trenchers	1	8.00	78	0.50
Grading	Graders	0	8.00	187	0.41
Paving	Paving Equipment	1	8.00	132	0.36
Grading	Off-Highway Tractors	1	8.00	124	0.44
Building Construction	Welders	0	8.00	46	0.45
Grading	Other Construction Equipment	1	8.00	172	0.42
Building Construction	Other Construction Equipment	1	8.00	172	0.42
Building Construction	Paving Equipment	1	8.00	132	0.36
Building Construction	Rollers	1	8.00	80	0.38
Building Construction	Surfacing Equipment	1	8.00	263	0.30
Building Construction	Trenchers	1	8.00	78	0.50
Paving	Surfacing Equipment	1	8.00	263	0.30
Paving	Other Construction Equipment	1	8.00	172	0.42

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Building Construction	6	50.00	20.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	4	10.00	0.00	189.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	247.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Demolition - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.7416	0.0000	2.7416	0.4151	0.0000	0.4151			0.0000			0.0000
Off-Road	2.0547	18.8455	13.0921	0.0189		1.2630	1.2630		1.1865	1.1865		1,882.8903	1,882.8903	0.4475		1,894.0769
Total	**2.0547**	**18.8455**	**13.0921**	**0.0189**	**2.7416**	**1.2630**	**4.0046**	**0.4151**	**1.1865**	**1.6016**		**1,882.8903**	**1,882.8903**	**0.4475**		**1,894.0769**

3.2 Demolition - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0873	3.7429	0.4456	9.8600e-003	0.2205	0.0201	0.2406	0.0604	0.0192	0.0797		1,044.5877	1,044.5877	0.0691		1,046.3146
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0669	0.0438	0.5613	1.2100e-003	0.1118	7.2000e-004	0.1125	0.0296	6.6000e-004	0.0303		120.7472	120.7472	4.0500e-003		120.8486
Total	**0.1542**	**3.7867**	**1.0069**	**0.0111**	**0.3323**	**0.0208**	**0.3531**	**0.0901**	**0.0199**	**0.1100**		**1,165.3350**	**1,165.3350**	**0.0731**		**1,167.1632**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.9089	0.0000	0.9089	0.1376	0.0000	0.1376			0.0000			0.0000
Off-Road	2.0547	18.8455	13.0921	0.0189		1.2630	1.2630		1.1865	1.1865	0.0000	1,882.8903	1,882.8903	0.4475		1,894.0769
Total	**2.0547**	**18.8455**	**13.0921**	**0.0189**	**0.9089**	**1.2630**	**2.1718**	**0.1376**	**1.1865**	**1.3241**	**0.0000**	**1,882.8903**	**1,882.8903**	**0.4475**		**1,894.0769**

3.2 Demolition - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0873	3.7429	0.4456	9.8600e-003	0.1538	0.0201	0.1739	0.0441	0.0192	0.0633		1,044.5877	1,044.5877	0.0691		1,046.3146
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0669	0.0438	0.5613	1.2100e-003	0.0729	7.2000e-004	0.0736	0.0201	6.6000e-004	0.0208		120.7472	120.7472	4.0500e-003		120.8486
Total	**0.1542**	**3.7867**	**1.0069**	**0.0111**	**0.2268**	**0.0208**	**0.2475**	**0.0642**	**0.0199**	**0.0841**		**1,165.3350**	**1,165.3350**	**0.0731**		**1,167.1632**

3.3 Grading - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0250	0.0000	0.0250	3.7800e-003	0.0000	3.7800e-003			0.0000			0.0000
Off-Road	1.7732	18.0382	12.1476	0.0169		1.1229	1.1229		1.0331	1.0331		1,725.9392	1,725.9392	0.5288		1,739.1598
Total	**1.7732**	**18.0382**	**12.1476**	**0.0169**	**0.0250**	**1.1229**	**1.1479**	**3.7800e-003**	**1.0331**	**1.0369**		**1,725.9392**	**1,725.9392**	**0.5288**		**1,739.1598**

3.3 Grading - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1712	7.3372	0.8734	0.0193	0.4322	0.0394	0.4716	0.1185	0.0377	0.1562		2,047.7236	2,047.7236	0.1354		2,051.1087
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0669	0.0438	0.5613	1.2100e-003	0.1118	7.2000e-004	0.1125	0.0296	6.6000e-004	0.0303		120.7472	120.7472	4.0500e-003		120.8486
Total	**0.2381**	**7.3811**	**1.4348**	**0.0205**	**0.5440**	**0.0401**	**0.5841**	**0.1481**	**0.0383**	**0.1865**		**2,168.4708**	**2,168.4708**	**0.1395**		**2,171.9573**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.2800e-003	0.0000	8.2800e-003	1.2500e-003	0.0000	1.2500e-003			0.0000			0.0000
Off-Road	1.7732	18.0382	12.1476	0.0169		1.1229	1.1229		1.0331	1.0331	0.0000	1,725.9392	1,725.9392	0.5288		1,739.1598
Total	**1.7732**	**18.0382**	**12.1476**	**0.0169**	**8.2800e-003**	**1.1229**	**1.1312**	**1.2500e-003**	**1.0331**	**1.0343**	**0.0000**	**1,725.9392**	**1,725.9392**	**0.5288**		**1,739.1598**

3.3 Grading - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1712	7.3372	0.8734	0.0193	0.3016	0.0394	0.3409	0.0864	0.0377	0.1241		2,047.7236	2,047.7236	0.1354		2,051.1087
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0669	0.0438	0.5613	1.2100e-003	0.0729	7.2000e-004	0.0736	0.0201	6.6000e-004	0.0208		120.7472	120.7472	4.0500e-003		120.8486
Total	**0.2381**	**7.3811**	**1.4348**	**0.0205**	**0.3745**	**0.0401**	**0.4146**	**0.1065**	**0.0383**	**0.1449**		**2,168.4708**	**2,168.4708**	**0.1395**		**2,171.9573**

3.4 Building Construction - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.2697	24.2535	15.2035	0.0252		1.4111	1.4111		1.2982	1.2982		2,581.3304	2,581.3304	0.7909		2,601.1033
Total	**2.2697**	**24.2535**	**15.2035**	**0.0252**		**1.4111**	**1.4111**		**1.2982**	**1.2982**		**2,581.3304**	**2,581.3304**	**0.7909**		**2,601.1033**

3.4 Building Construction - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0843	2.6024	0.5305	5.3100e-003	0.1281	0.0254	0.1535	0.0369	0.0243	0.0612		559.1294	559.1294	0.0493		560.3618
Worker	0.3343	0.2191	2.8067	6.0700e-003	0.5589	3.5800e-003	0.5625	0.1482	3.3000e-003	0.1515		603.7362	603.7362	0.0203		604.2430
Total	**0.4186**	**2.8215**	**3.3372**	**0.0114**	**0.6870**	**0.0290**	**0.7160**	**0.1851**	**0.0276**	**0.2127**		**1,162.8656**	**1,162.8656**	**0.0696**		**1,164.6047**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.2697	24.2535	15.2035	0.0252		1.4111	1.4111		1.2982	1.2982	0.0000	2,581.3304	2,581.3304	0.7909		2,601.1033
Total	**2.2697**	**24.2535**	**15.2035**	**0.0252**		**1.4111**	**1.4111**		**1.2982**	**1.2982**	**0.0000**	**2,581.3304**	**2,581.3304**	**0.7909**		**2,601.1033**

3.4 Building Construction - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0843	2.6024	0.5305	5.3100e-003	0.0916	0.0254	0.1170	0.0279	0.0243	0.0522		559.1294	559.1294	0.0493		560.3618
Worker	0.3343	0.2191	2.8067	6.0700e-003	0.3645	3.5800e-003	0.3681	0.1005	3.3000e-003	0.1038		603.7362	603.7362	0.0203		604.2430
Total	**0.4186**	**2.8215**	**3.3372**	**0.0114**	**0.4561**	**0.0290**	**0.4851**	**0.1284**	**0.0276**	**0.1561**		**1,162.8656**	**1,162.8656**	**0.0696**		**1,164.6047**

3.5 Paving - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8358	20.5337	13.1558	0.0228		1.1148	1.1148		1.0257	1.0257		2,326.4009	2,326.4009	0.7128		2,344.2211
Paving	0.7231					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.5589**	**20.5337**	**13.1558**	**0.0228**		**1.1148**	**1.1148**		**1.0257**	**1.0257**		**2,326.4009**	**2,326.4009**	**0.7128**		**2,344.2211**

3.5 Paving - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0869	0.0570	0.7297	1.5800e-003	0.1453	9.3000e-004	0.1462	0.0385	8.6000e-004	0.0394		156.9714	156.9714	5.2700e-003		157.1032
Total	**0.0869**	**0.0570**	**0.7297**	**1.5800e-003**	**0.1453**	**9.3000e-004**	**0.1462**	**0.0385**	**8.6000e-004**	**0.0394**		**156.9714**	**156.9714**	**5.2700e-003**		**157.1032**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8358	20.5337	13.1558	0.0228		1.1148	1.1148		1.0257	1.0257	0.0000	2,326.4009	2,326.4009	0.7128		2,344.2211
Paving	0.7231					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.5589**	**20.5337**	**13.1558**	**0.0228**		**1.1148**	**1.1148**		**1.0257**	**1.0257**	**0.0000**	**2,326.4009**	**2,326.4009**	**0.7128**		**2,344.2211**

3.5 Paving - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0869	0.0570	0.7297	1.5800e-003	0.0948	9.3000e-004	0.0957	0.0261	8.6000e-004	0.0270		156.9714	156.9714	5.2700e-003		157.1032
Total	**0.0869**	**0.0570**	**0.7297**	**1.5800e-003**	**0.0948**	**9.3000e-004**	**0.0957**	**0.0261**	**8.6000e-004**	**0.0270**		**156.9714**	**156.9714**	**5.2700e-003**		**157.1032**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.527920	0.040740	0.182967	0.130733	0.020108	0.005812	0.016781	0.065303	0.001324	0.001284	0.004728	0.000989	0.001311

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0529	1.2000e-004	0.0124	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0263	0.0263	7.0000e-005		0.0281
Unmitigated	0.0529	1.2000e-004	0.0124	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0263	0.0263	7.0000e-005		0.0281

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	9.1500e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0426					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.1900e-003	1.2000e-004	0.0124	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0263	0.0263	7.0000e-005		0.0281
Total	**0.0529**	**1.2000e-004**	**0.0124**	**0.0000**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**		**0.0263**	**0.0263**	**7.0000e-005**		**0.0281**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	9.1500e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0426					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.1900e-003	1.2000e-004	0.0124	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0263	0.0263	7.0000e-005		0.0281
Total	**0.0529**	**1.2000e-004**	**0.0124**	**0.0000**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**		**0.0263**	**0.0263**	**7.0000e-005**		**0.0281**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Pechanga Parkway Widening

Riverside-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Asphalt Surfaces	120.15	1000sqft	2.76	120,151.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.4	**Precipitation Freq (Days)**	28
Climate Zone	10			**Operational Year**	2018
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	702.44	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Accounts for roadway expansion, curbs, gutters, median, bus turnout, sidewalks, and access ramps

Construction Phase - Construction phase duration per project contractor

Off-road Equipment -

Off-road Equipment - Equipment list per project contractor

Off-road Equipment - Construction equipment per project contractor

Off-road Equipment - Equipment list per project contractor

Off-road Equipment - Equipment list per project contractor

Demolition -

Grading -

Construction Off-road Equipment Mitigation - SCAQMD Rule 403

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	40
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	40	15
tblConstructionPhase	NumDays	220.00	10.00
tblConstructionPhase	NumDays	20.00	15.00
tblConstructionPhase	NumDays	6.00	10.00
tblGrading	MaterialExported	0.00	1,973.00
tblLandUse	BuildingSpaceSquareFeet	120,150.00	120,151.00
tblLandUse	LandUseSquareFeet	120,150.00	120,151.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	2.8842	29.2360	18.7019	0.0371	3.0739	1.5508	4.4686	0.5052	1.4280	1.8174	0.0000	3,887.1731	3,887.1731	0.8728	0.0000	3,904.5517
2017	2.6437	20.5928	13.7509	0.0242	0.1453	1.1158	1.2611	0.0385	1.0265	1.0651	0.0000	2,467.2743	2,467.2743	0.7174	0.0000	2,485.2097
Maximum	**2.8842**	**29.2360**	**18.7019**	**0.0371**	**3.0739**	**1.5508**	**4.4686**	**0.5052**	**1.4280**	**1.8174**	**0.0000**	**3,887.1731**	**3,887.1731**	**0.8728**	**0.0000**	**3,904.5517**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2016	2.8842	29.2360	18.7019	0.0371	1.2411	1.5508	2.6358	0.2277	1.4280	1.6131	0.0000	3,887.1731	3,887.1731	0.8728	0.0000	3,904.5517
2017	2.6437	20.5928	13.7509	0.0242	0.1453	1.1158	1.2611	0.0385	1.0265	1.0651	0.0000	2,467.2743	2,467.2743	0.7174	0.0000	2,485.2097
Maximum	**2.8842**	**29.2360**	**18.7019**	**0.0371**	**1.2411**	**1.5508**	**2.6358**	**0.2277**	**1.4280**	**1.6131**	**0.0000**	**3,887.1731**	**3,887.1731**	**0.8728**	**0.0000**	**3,904.5517**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**56.93**	**0.00**	**31.99**	**51.04**	**0.00**	**7.09**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0529	1.2000e-004	0.0124	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0263	0.0263	7.0000e-005		0.0281
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0529**	**1.2000e-004**	**0.0124**	**0.0000**	**0.0000**	**4.0000e-005**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**4.0000e-005**		**0.0263**	**0.0263**	**7.0000e-005**	**0.0000**	**0.0281**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0529	1.2000e-004	0.0124	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0263	0.0263	7.0000e-005		0.0281
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.0529**	**1.2000e-004**	**0.0124**	**0.0000**	**0.0000**	**4.0000e-005**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**4.0000e-005**		**0.0263**	**0.0263**	**7.0000e-005**	**0.0000**	**0.0281**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	11/11/2016	12/1/2016	5	15	
2	Grading	Grading	12/2/2016	12/15/2016	5	10	
3	Building Construction	Building Construction	12/16/2016	12/29/2016	5	10	
4	Paving	Paving	12/30/2016	1/12/2017	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 2.76

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Other Construction Equipment	1	8.00	172	0.42
Demolition	Rubber Tired Dozers	0	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Demolition	Trenchers	1	8.00	78	0.50
Grading	Graders	0	8.00	187	0.41

Grading	Off-Highway Tractors	1	8.00	124	0.44
Grading	Other Construction Equipment	1	8.00	172	0.42
Grading	Rubber Tired Dozers	0	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Grading	Trenchers	1	8.00	78	0.50
Building Construction	Cranes	0	8.00	231	0.29
Building Construction	Forklifts	0	7.00	89	0.20
Building Construction	Generator Sets	0	8.00	84	0.74
Building Construction	Other Construction Equipment	1	8.00	172	0.42
Building Construction	Paving Equipment	1	8.00	132	0.36
Building Construction	Rollers	1	8.00	80	0.38
Building Construction	Surfacing Equipment	1	8.00	263	0.30
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Trenchers	1	8.00	78	0.50
Building Construction	Welders	0	8.00	46	0.45
Paving	Cement and Mortar Mixers	0	8.00	9	0.56
Paving	Other Construction Equipment	1	8.00	172	0.42
Paving	Pavers	0	8.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	8.00	80	0.38
Paving	Surfacing Equipment	1	8.00	263	0.30
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	10.00	0.00	189.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	247.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	6	50.00	20.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Soil Stabilizer

Replace Ground Cover

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.7416	0.0000	2.7416	0.4151	0.0000	0.4151			0.0000			0.0000
Off-Road	2.1973	20.0369	13.2079	0.0189		1.3601	1.3601		1.2790	1.2790		1,909.1740	1,909.1740	0.4545		1,920.5356
Total	**2.1973**	**20.0369**	**13.2079**	**0.0189**	**2.7416**	**1.3601**	**4.1017**	**0.4151**	**1.2790**	**1.6941**		**1,909.1740**	**1,909.1740**	**0.4545**		**1,920.5356**

3.2 Demolition - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1141	4.1991	0.6048	9.6900e-003	0.2205	0.0339	0.2544	0.0605	0.0324	0.0929		1,026.0397	1,026.0397	0.0810		1,028.0656
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0728	0.0521	0.5211	1.1200e-003	0.1118	7.4000e-004	0.1125	0.0296	6.9000e-004	0.0303		111.2826	111.2826	4.0400e-003		111.3836
Total	**0.1869**	**4.2512**	**1.1259**	**0.0108**	**0.3323**	**0.0347**	**0.3669**	**0.0901**	**0.0331**	**0.1232**		**1,137.3223**	**1,137.3223**	**0.0851**		**1,139.4492**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.9089	0.0000	0.9089	0.1376	0.0000	0.1376			0.0000			0.0000
Off-Road	2.1973	20.0369	13.2079	0.0189		1.3601	1.3601		1.2790	1.2790	0.0000	1,909.1740	1,909.1740	0.4545		1,920.5356
Total	**2.1973**	**20.0369**	**13.2079**	**0.0189**	**0.9089**	**1.3601**	**2.2689**	**0.1376**	**1.2790**	**1.4166**	**0.0000**	**1,909.1740**	**1,909.1740**	**0.4545**		**1,920.5356**

3.2 Demolition - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1141	4.1991	0.6048	9.6900e-003	0.2205	0.0339	0.2544	0.0605	0.0324	0.0929		1,026.0397	1,026.0397	0.0810		1,028.0656
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0728	0.0521	0.5211	1.1200e-003	0.1118	7.4000e-004	0.1125	0.0296	6.9000e-004	0.0303		111.2826	111.2826	4.0400e-003		111.3836
Total	**0.1869**	**4.2512**	**1.1259**	**0.0108**	**0.3323**	**0.0347**	**0.3669**	**0.0901**	**0.0331**	**0.1232**		**1,137.3223**	**1,137.3223**	**0.0851**		**1,139.4492**

3.3 Grading - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0250	0.0000	0.0250	3.7800e-003	0.0000	3.7800e-003			0.0000			0.0000
Off-Road	1.8844	19.3488	12.2855	0.0170		1.2018	1.2018		1.1056	1.1056		1,764.5270	1,764.5270	0.5322		1,777.8331
Total	**1.8844**	**19.3488**	**12.2855**	**0.0170**	**0.0250**	**1.2018**	**1.2268**	**3.7800e-003**	**1.1056**	**1.1094**		**1,764.5270**	**1,764.5270**	**0.5322**		**1,777.8331**

3.3 Grading - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2237	8.2316	1.1855	0.0190	0.4322	0.0665	0.4987	0.1185	0.0636	0.1821		2,011.3635	2,011.3635	0.1589		2,015.3349
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0728	0.0521	0.5211	1.1200e-003	0.1118	7.4000e-004	0.1125	0.0296	6.9000e-004	0.0303		111.2826	111.2826	4.0400e-003		111.3836
Total	**0.2965**	**8.2837**	**1.7067**	**0.0201**	**0.5440**	**0.0672**	**0.6112**	**0.1481**	**0.0643**	**0.2124**		**2,122.6461**	**2,122.6461**	**0.1629**		**2,126.7185**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.2800e-003	0.0000	8.2800e-003	1.2500e-003	0.0000	1.2500e-003			0.0000			0.0000
Off-Road	1.8844	19.3488	12.2855	0.0170		1.2018	1.2018		1.1056	1.1056	0.0000	1,764.5270	1,764.5270	0.5322		1,777.8331
Total	**1.8844**	**19.3488**	**12.2855**	**0.0170**	**8.2800e-003**	**1.2018**	**1.2101**	**1.2500e-003**	**1.1056**	**1.1069**	**0.0000**	**1,764.5270**	**1,764.5270**	**0.5322**		**1,777.8331**

3.3 Grading - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.2237	8.2316	1.1855	0.0190	0.4322	0.0665	0.4987	0.1185	0.0636	0.1821		2,011.3635	2,011.3635	0.1589		2,015.3349
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0728	0.0521	0.5211	1.1200e-003	0.1118	7.4000e-004	0.1125	0.0296	6.9000e-004	0.0303		111.2826	111.2826	4.0400e-003		111.3836
Total	**0.2965**	**8.2837**	**1.7067**	**0.0201**	**0.5440**	**0.0672**	**0.6112**	**0.1481**	**0.0643**	**0.2124**		**2,122.6461**	**2,122.6461**	**0.1629**		**2,126.7185**

3.4 Building Construction - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.4162	26.1621	15.4081	0.0253		1.5137	1.5137		1.3926	1.3926		2,630.3786	2,630.3786	0.7934		2,650.2140
Total	**2.4162**	**26.1621**	**15.4081**	**0.0253**		**1.5137**	**1.5137**		**1.3926**	**1.3926**		**2,630.3786**	**2,630.3786**	**0.7934**		**2,650.2140**

3.4 Building Construction - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1041	2.8133	0.6883	5.1200e-003	0.1281	0.0334	0.1615	0.0369	0.0320	0.0689		538.1460	538.1460	0.0592		539.6266
Worker	0.3639	0.2606	2.6056	5.6000e-003	0.5589	3.7200e-003	0.5626	0.1482	3.4300e-003	0.1517		556.4130	556.4130	0.0202		556.9181
Total	**0.4680**	**3.0738**	**3.2938**	**0.0107**	**0.6870**	**0.0372**	**0.7241**	**0.1851**	**0.0354**	**0.2205**		**1,094.5590**	**1,094.5590**	**0.0794**		**1,096.5447**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.4162	26.1621	15.4081	0.0253		1.5137	1.5137		1.3926	1.3926	0.0000	2,630.3786	2,630.3786	0.7934		2,650.2140
Total	**2.4162**	**26.1621**	**15.4081**	**0.0253**		**1.5137**	**1.5137**		**1.3926**	**1.3926**	**0.0000**	**2,630.3786**	**2,630.3786**	**0.7934**		**2,650.2140**

3.4 Building Construction - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.1041	2.8133	0.6883	5.1200e-003	0.1281	0.0334	0.1615	0.0369	0.0320	0.0689		538.1460	538.1460	0.0592		539.6266
Worker	0.3639	0.2606	2.6056	5.6000e-003	0.5589	3.7200e-003	0.5626	0.1482	3.4300e-003	0.1517		556.4130	556.4130	0.0202		556.9181
Total	**0.4680**	**3.0738**	**3.2938**	**0.0107**	**0.6870**	**0.0372**	**0.7241**	**0.1851**	**0.0354**	**0.2205**		**1,094.5590**	**1,094.5590**	**0.0794**		**1,096.5447**

3.5 Paving - 2016

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9594	22.2283	13.2680	0.0227		1.2040	1.2040		1.1077	1.1077		2,360.5653	2,360.5653	0.7120		2,378.3660
Paving	0.7231					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.6825**	**22.2283**	**13.2680**	**0.0227**		**1.2040**	**1.2040**		**1.1077**	**1.1077**		**2,360.5653**	**2,360.5653**	**0.7120**		**2,378.3660**

3.5 Paving - 2016

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0946	0.0677	0.6774	1.4600e-003	0.1453	9.7000e-004	0.1463	0.0385	8.9000e-004	0.0394		144.6674	144.6674	5.2500e-003		144.7987
Total	**0.0946**	**0.0677**	**0.6774**	**1.4600e-003**	**0.1453**	**9.7000e-004**	**0.1463**	**0.0385**	**8.9000e-004**	**0.0394**		**144.6674**	**144.6674**	**5.2500e-003**		**144.7987**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9594	22.2283	13.2680	0.0227		1.2040	1.2040		1.1077	1.1077	0.0000	2,360.5653	2,360.5653	0.7120		2,378.3660
Paving	0.7231					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.6825**	**22.2283**	**13.2680**	**0.0227**		**1.2040**	**1.2040**		**1.1077**	**1.1077**	**0.0000**	**2,360.5653**	**2,360.5653**	**0.7120**		**2,378.3660**

3.5 Paving - 2016

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0946	0.0677	0.6774	1.4600e-003	0.1453	9.7000e-004	0.1463	0.0385	8.9000e-004	0.0394		144.6674	144.6674	5.2500e-003		144.7987
Total	**0.0946**	**0.0677**	**0.6774**	**1.4600e-003**	**0.1453**	**9.7000e-004**	**0.1463**	**0.0385**	**8.9000e-004**	**0.0394**		**144.6674**	**144.6674**	**5.2500e-003**		**144.7987**

3.5 Paving - 2017

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8358	20.5337	13.1558	0.0228		1.1148	1.1148		1.0257	1.0257		2,326.4009	2,326.4009	0.7128		2,344.2211
Paving	0.7231					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.5589**	**20.5337**	**13.1558**	**0.0228**		**1.1148**	**1.1148**		**1.0257**	**1.0257**		**2,326.4009**	**2,326.4009**	**0.7128**		**2,344.2211**

3.5 Paving - 2017

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0848	0.0591	0.5951	1.4200e-003	0.1453	9.3000e-004	0.1462	0.0385	8.6000e-004	0.0394		140.8733	140.8733	4.6100e-003		140.9886
Total	**0.0848**	**0.0591**	**0.5951**	**1.4200e-003**	**0.1453**	**9.3000e-004**	**0.1462**	**0.0385**	**8.6000e-004**	**0.0394**		**140.8733**	**140.8733**	**4.6100e-003**		**140.9886**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8358	20.5337	13.1558	0.0228		1.1148	1.1148		1.0257	1.0257	0.0000	2,326.4009	2,326.4009	0.7128		2,344.2211
Paving	0.7231					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**2.5589**	**20.5337**	**13.1558**	**0.0228**		**1.1148**	**1.1148**		**1.0257**	**1.0257**	**0.0000**	**2,326.4009**	**2,326.4009**	**0.7128**		**2,344.2211**

3.5 Paving - 2017

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0848	0.0591	0.5951	1.4200e-003	0.1453	9.3000e-004	0.1462	0.0385	8.6000e-004	0.0394		140.8733	140.8733	4.6100e-003		140.9886
Total	**0.0848**	**0.0591**	**0.5951**	**1.4200e-003**	**0.1453**	**9.3000e-004**	**0.1462**	**0.0385**	**8.6000e-004**	**0.0394**		**140.8733**	**140.8733**	**4.6100e-003**		**140.9886**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Asphalt Surfaces	16.60	8.40	6.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Asphalt Surfaces	0.527920	0.040740	0.182967	0.130733	0.020108	0.005812	0.016781	0.065303	0.001324	0.001284	0.004728	0.000989	0.001311

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0529	1.2000e-004	0.0124	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0263	0.0263	7.0000e-005		0.0281
Unmitigated	0.0529	1.2000e-004	0.0124	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0263	0.0263	7.0000e-005		0.0281

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	9.1500e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0426					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.1900e-003	1.2000e-004	0.0124	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0263	0.0263	7.0000e-005		0.0281
Total	**0.0529**	**1.2000e-004**	**0.0124**	**0.0000**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**		**0.0263**	**0.0263**	**7.0000e-005**		**0.0281**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	9.1500e-003					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0426					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.1900e-003	1.2000e-004	0.0124	0.0000		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005		0.0263	0.0263	7.0000e-005		0.0281
Total	**0.0529**	**1.2000e-004**	**0.0124**	**0.0000**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**		**0.0263**	**0.0263**	**7.0000e-005**		**0.0281**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Appendix B:
Habitat Assessment/MSHCP Consistency Analysis

December 2, 2016

CITY OF TEMECULA
Contact: William Becerra
41000 Main Street
Temecula, California 92590

SUBJECT: Habitat Assessment and Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) Consistency Analysis for the Pechanga Parkway Widening Project

Introduction

Michael Baker International (Michael Baker) conducted a habitat assessment for the Pechanga Parkway Widening Project located in the City of Temecula, Riverside County, California (project site or site). Michael Baker biologist Travis J. McGill inventoried and evaluated the condition of the habitat within the proposed project footprint on November 14, 2016.

The site investigation was conducted to characterize existing site conditions and to assess the probability of occurrence of special-status[1] plant and wildlife species that could pose a constraint to implementation of the proposed project. Special attention was given to the suitability of the habitat on-site to support burrowing owl (*Athene cunicularia*) and other sensitive species identified by the California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database (CNDDB), Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP), and other electronic databases as sensitive and as potentially occurring in the vicinity of the project site.

Project Location and Setting

The proposed Pechanga Parkway Widening Project (proposed project) located in the City of Temecula within southwestern Riverside County, California (refer to Exhibit 1, *Regional Vicinity Map*). The proposed project site is depicted on the Pechanga quadrangle of the United States Geological Survey's (USGS) 7.5-minute topographic map series in an unsectiond portion of Township 8 south, Range 2 west. Specifically, the project is located along, and adjacent to, the existing Pechanga Parkway alignment from Via Gilberto to North Casino Drive (refer to Exhibit 2, *Local Vicinity Map*).

The objective of the proposed project is to widen Pechanga Parkway from a four lane (110 feet width) facility to six lanes (134 feet width) generally between Via Gilberto and North Casino Drive in order to accommodate existing and predicted traffic demands and uphold the City of Temecula's goals to reduce

1 As used in this report, "special-status" refers to plant and wildlife species that are federally or State listed, proposed, or candidates; plant species that have been designated a California Native Plant Society (CNPS) Rare Plant Rank; listed under the MSHCP; and wildlife species that are designated by the California Department of Fish and Wildlife (CDFW) as fully protected, species of special concern, or watch list species.

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traffic congestion, improve safety on roadways, and provide better access to regional transportation routes. Due to the expansion of the Pechanga Resort & Casino and continued residential development along Pechanga Parkway, additional roadway capacity to meet existing and future needs was identified.

The project site, which includes an approximately 3,500 foot segment of the existing roadway, consists of improved road right-of-way (ROW), as well as pedestrian facilities and an existing flood control channel. There are a number of overhead and underground utilities which serve the surrounding area that are located within the existing road right of way. These utilities include a fiber optics cable, electrical, gas, storm drain, sewer, recycled and domestic water. A number of the existing aboveground utility appurtenances (street lighting and signals) will need to be relocated during the construction process. Additionally, the flood control facilities that run parallel to Pechanga Parkway will require modification to accommodate the widened roadway.

According to the City of Temecula General Plan, the parcels adjacent to the project site include Low Medium Density Residential (LM) and Specific Plan (SP) to the north, Tribal Trust Lands (TTL) and SP to the south, LM and TTL to the west, and SP to the East. According to the City of Temecula General Plan Land Use Map, the parcels adjacent to the project site are designated as LM to the north, LM and TTL to the south, LM and TTL to the west, and LM, Medium Density Residential (MD), Neighborhood Commercial (NC), and Community Commercial (CC) to the east.

Project Background

Incorporated in 1989, the City of Temecula ("City") celebrated its 25th anniversary of incorporation on December 1, 2014. The City is located in southwestern Riverside County and is known as one of the fastest growing cities in California. Currently, the City is home to over 106,000 residents and spans over 37.18 square miles. According to the *City of Temecula General Plan*, the city was planned in a manner that would preserve and enhance high quality living while preserving the topography of the surrounding area. Temecula is known as the heart of Southern California wine country due to the expansive viticulture-related land uses in the eastern regions of the city.

Pechanga Parkway functions as a primary north-south arterial for the southern portion of the City of Temecula circulation network. In response to high traffic volumes, the proposed project would continue the 2009 Pechanga Parkway Phase II Improvements that widened Pechanga Parkway to a six-lane facility from State Route 79 South (Temecula Parkway) to Via Gilberto and a four-lane facility from Via Gilberto to Wolf Valley Road.

Project Characteristics

The project proposes the widening of Pechanga Parkway from a four lane (110 feet width) facility to six lanes (134 feet width). The roadway widening would occur along a segment of the existing roadway, spanning approximately 3,600 feet. The improvements would extend from approximately 320 feet north of Via Gilberto to approximately 320 feet south of North Casino Drive (refer to *Exhibits 3a – 3d, Site Plan*).

As the roadway exists, it includes four travel lanes in each direction, a landscaped center median, and left hand turn lanes for access to Via Eduardo/Wolf Valley Road, Casino Drive, and Pechanga Resort Drive. The existing roadway also included sidewalk throughout the project area, as well as bike lanes in both

directions, with the exception of on the southbound roadway along the frontage of the Pechanga Resort and Casino. The proposed widening would include the following modifications to the roadway:

- Construction to accommodate the addition of new travel lanes;
- Construction of two (2) additional travel lanes;
- Addition of new center median curb and landscaping;
- Installation of a fiber optics cable;
- Re-locating streetlights and traffic signals.

The proposed roadway widening would expand the Pechanga Parkway Phase II improvements that occurred in 2009 which widened Pechanga Parkway to a six-lane facility from State Route 79 South (Temecula Parkway) to Via Gilberto and a four-lane facility from Via Gilberto to Wolf Valley Road. The roadway widening aims at to expand the existing improvements to alleviate traffic along Pechanga Parkway and further the long-term transportation needs identified by the City of Temecula General Plan. Besides the widening of Pechanga Parkway from four lanes to six lanes, the project also includes curb, gutter, sound wall, sidewalk, landscaping, irrigation, and storm drain improvements.

Project construction would occur over six months beginning in spring. Construction activities would include site mobilization, demolition, minor grading, installation activities, and repaving activities (repaving, striping).

Methodology

A literature review and records search was conducted to determine which sensitive biological resources have the potential to occur on or within the general vicinity of the project site. In addition to the literature review, a general habitat assessment or site investigation of the project site was conducted. The field survey provided information on the existing conditions on the site and its potential to support sensitive biological resources.

Literature Review

Prior to conducting a field visit, a literature review and records search was conducted for sensitive biological resources potentially occurring on or within the general vicinity of the project site. Previously recorded occurrences of special-status plant and wildlife species and their proximity, specifically within 2 miles, to the project site were determined through a query of the CDFWs CNDDB Rarefind 5 software, the California Native Plant Society's (CNPS) Electronic Inventory of Rare, Threatened, and Endangered Plants of California, Calflora Database, compendia of special-status species published by the CDFW, and United States Fish and Wildlife Service (USFWS) species listings.

The Riverside County Integrated Project (RCIP) Conservation Summary Report Generator was queried to determine if the MSHCP identifies any potential survey requirements for the project site (refer to Attachment B). Additionally, the proposed project site was reviewed against the MSHCP to determine if the site is located within any MSHCP areas including Criteria Cells (core habitat and wildlife movement corridors) and areas proposed for conservation.

Field Investigation

Following the literature review, biologists Travis J. McGill inventoried and evaluated the extent and conditions of the plant communities found within the boundaries of the proposed project tank on November 14, 2016. In addition, Mr. McGill identified any jurisdictional features, riparian/riverine habitat, as well as natural corridors and linkages that may support the movement of wildlife through the area. Special attention was given to any sensitive habitats and/or undeveloped areas, which have higher potentials to support sensitive flora and fauna species. Areas having the potential to provide suitable habitat for burrowing owl were closely surveyed for signs of presence during the habitat assessment.

All plant and wildlife species observed, as well as dominant plant species within each plant community, were recorded. Wildlife detections were made through observation of scat, trails, tracks, burrows, nests, and/or visual and aural observation. In addition, site characteristics such as soil condition, topography, hydrology, anthropogenic disturbances, indicator species, condition of on-site plant communities, and presence of potential jurisdictional drainage and/or wetland features as well as riparian/riverine areas were noted.

Plant communities identified on aerial photographs during the literature review were verified by walking meandering transects through the project site. The plant communities were evaluated for their potential to support sensitive plant and wildlife species. All plant and wildlife species observed, as well as dominant plant species, were recorded in a standardized field notebook. In addition, site characteristics such as soil condition, topography, presence of indicator species, slope, conditions of the plant communities, hydrology, jurisdictional features, and evidence of human use of the site were noted.

Existing Site Condition

The project site is relatively flat with no areas of significant topographic relief. The on-site elevation ranges from approximately 1,050 to 1,100 feet above mean sea level. According to the USDA Soil Survey, on-site soils consist of Greenfiled sandy loam (0 to 2 percent slopes), Gorgonio loamy sand (0 to 8 percent slopes), Ramona and Buren sandy loams (15 to 25 percent slopes, severely eroded), and Hanford fine sandy loam (0 to 2 percent slopes).

The project site occurs in an area that has primarily been converted from natural habitats into residential and commercial land uses. Residential homes and the Pechanga Resort and Casino boarder the project site to the south, and residential homes and vacant fields border the project site to the north. The proposed widening alignment is surrounded by existing development which has removed natural plant communities from the surrounding area. The proposed project will be confined to existing paved streets, and landscaped areas.

Vegetation

On-site and surrounding land uses have eliminated the naturally occurring habitats around the project footprint, reducing the suitability of the habitat to support sensitive plant and wildlife species. As a result of existing development, undisturbed native plant communities are no longer present within the boundaries of the project site.

The proposed widening alignment will be installed within the existing paved roads and landscaped areas. No plant natural communities will be affected from installation of the proposed pipeline alignments.

Wildlife

The project site provides limited habitat for wildlife species adapted to a high degree of human presence and development. The majority of the wildlife observed during the habitat assessment consisted of avian species. Six (6) avian species were detected which included house finch (*Haemorhous mexicanus*), black phoebe (*Sayornis nigricans*), mourning dove (*Zenaida macroura*), European starling (*Sturnus vulgaris*), rock pigeon (*Columba livia*), and Anna's hummingbird (*Calypte anna*).

No mammals were detected during the habitat assessment. However, mammalian species expected to occur on the project site are those adapted to continual human presence and development (e.g. California ground squirrel (*Otospermophilus beecheyi*), opossum (*Didelphis virginiana*) and deer mouse (*Peromyscu*s sp.)).

The project site provides limited habitat for reptilian species acclimated to human presence and disturbance. No reptiles were detected during the habitat assessment, however, reptilian species expected to occur include western fence lizard (*Sceloporus occidentalis*), alligator lizard (*Elgaria coerulea*), and side-blotched lizard (*Uta stansburiana*).

No fish or amphibians were observed on the project site during the habitat assessment. No hydrogeomorphic features (e.g. creeks, ponds, lakes, reservoirs) that would provide suitable habitat for fish or amphibian populations were observed on the project site. Therefore, no fish or amphibian species are expected to occur on-site and are presumed absent.

Nesting Birds

The ornamental plant communities adjacent to the proposed widening alignmens have the potential to provide suitable nesting, foraging, and cover habitat for year-round and seasonal avian residents, and migrating songbirds that could occur in the area. No nesting birds or breeding behaviors were observed during the field survey.

Migratory Corridors and Linkages

Habitat linkages provide connections between larger habitat areas that are separated by development. Wildlife corridors are similar to linkages, but provide specific opportunities for animals to disperse or migrate between areas. A corridor can be defined as a linear landscape feature of sufficient width to allow animal movement between two comparatively undisturbed habitat fragments. Adequate cover is essential for a corridor to function as a wildlife movement area. It is possible for a habitat corridor to be adequate for one species yet still inadequate for others. Wildlife corridors are features that allow for the dispersal, seasonal migration, breeding, and foraging of a variety of wildlife species. Additionally, open space can provide a buffer against both human disturbance and natural fluctuations in resources.

The proposed widening alignment is surrounded by existing development which has removed natural plant communities from the surrounding area. The proposed project will be confined to existing paved streets and landscaped areas. As a result, the proposed project will not disrupt or have any adverse effects on any

migratory corridors or linkages in the surrounding area. Additionally, the project site is not located within any MSHCP identified corridor or linkage.

Jurisdictional Areas

There are three key agencies that regulate activities within inland streams, wetlands, and riparian areas in California. The U.S. Army Corps of Engineers (Corps) Regulatory Branch regulates discharge of dredge or fill materials into "waters of the United States" pursuant to Section 404 of the Federal Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act. Of the State agencies, the CDFW regulates alterations to streambed and bank under Fish and Wildlife Code Sections 1600 et seq., and the Regional Water Quality Control Board (Regional Board) regulates discharges into surface waters pursuant to Section 401 of the CWA and the California Porter-Cologne Water Quality Control Act.

No jurisdictional drainage features or isolated wetland features that would qualify as "waters of the United States" or "waters of the state" are located within the proposed project footprint.

It should be noted that Wolf Valley Creek Channel is located immediately north of the proposed project footprint. Wolf Valley Creek Channel receives flows from urban runoff and direct precipitation. Water in this channel flows from southeast to northwest, north of the project site, and eventually flows into Temecula Creek. Wolf Creek Valley Channel is primarily earthen-lined throughout most of its reach, with concrete and riprap armoring at the various road bridge crossings. The slopes of Wolf Valley Creek Channel are artificially maintained, and planted with ornamental grass. The active channel (low flow channel) of Wolf Valley Creek supports cattails (*Typha* sp.), and California bulrush (*Schoenoplectus californicus*). Although artificially created, Wolf Valley Creek Channel will likely be considered jurisdictional by the Corps, Regional Board, and CDFW.

Based on current design plans, the proposed widening alignment not is anticipated to impact Wolf Valley Creek Channel. However, if during final design impacts to Wolf Valley Creek Channel will occur, the City of Temecula will need to have formal jurisdictional delineation prepared delineate the limits of jurisdiction and calculate the anticipated impacts from the proposed project. Any impacts to Wolf Valley Creek Channel, will likely required a CWA Section 404 permit from the Corps, CWA Section 401 Water Quality Certification from the Regional Board, and a Section 1602 Streambed Alteration Agreement from CDFW.

Sensitive Biological Resources

The CNDDB and CNPS was queried for reported locations of sensitive plant and wildlife species as well as sensitive natural plant communities within 2 miles of the project site within the Pechanga and Temecula USGS 7.5-minute quadrangles. Only a 2 mile buffer around the project site was queried due to the project site's isolation from undisturbed native habitat and development surrounding the project site. A search of published records of these species was conducted within 2 miles of the project site using the CDFW CNDDB Rarefind 5 online software and CNPS Electronic Inventory. This report evaluated the conditions of the habitat(s) within the boundaries of the project site to determine if the existing plant communities have the potential to provide suitable habitat(s) for special-status plant and wildlife species.

The literature search identified nine (9) special-status plant species, fourteen (14) special-status wildlife species, and one (1) special-status natural plant community as being documented within 2 miles of the

project site. These special-status plant and wildlife species were evaluated for their potential to occur on the project site based on habitat requirements, availability/quality of suitable habitat, and known distributions. Special-status species that have been documented within 2 miles of the project site are presented in Attachment D, *Potentially Occurring Status Species Biological Resources*.

Based on habitat requirements for specific species and the availability and quality of on-site habitats, it was determined that the project site does not provide suitable habitat that would support any of the CNDDB, CNPS or MSHCP listed plant or wildlife species that have been documented within 2 miles of the project site. The proposed widening alignment will be installed within the existing paved roads and landscaped areas. Further, the area surrounding the proposed project site is developed, which has removed natural plant communities that once occurred in the general area.

Critical Habitat

Under the federal Endangered Species Act, "Critical Habitat" is designated at the time of listing of a species or within one year of listing. Critical Habitat refers to habitat or a specific geographic area that contains the elements and features that are essential for the survival and recovery of the species. Maintenance of these physical and biological features requires special management considerations or protection, regardless of whether individuals or the species are present or not. In the event that a project may result in take or adverse modification to a species' designated Critical Habitat, a project proponent may be required to engage in suitable mitigation. However, consultation for impacts to Critical Habitat is only required when a project has a federal nexus (i.e. occurs on federal land, is issued federal permits [e.g. Corps Section 404 permit, or Corps Section 408 permit], or receives any other federal oversight or funding). If a project does not have a federal nexus, Critical Habitat consultations are not required.

The USFWS Critical Habitat mapper was used to locate the closest federally designated Critical Habitat to the project site. The USFWS Critical Habitat mapper shows that the project site is not located within federally designated Critical Habitat. The closest designated Critical Habitat is located approximately 2 miles east of the project site for coastal California gnatcatcher (*Polioptila californica californica*).

Western Riverside County MSHCP

The project site is located in the Southwest Area Plan if the MSHCP, but is not located within any criteria cells, conservations areas, cores, or linkages identified within the MSHCP.

Riparian/Riverine Areas

Under MSHCP Section 6.1.2, riparian/riverine areas are defined as areas dominated by trees, shrubs, persistent emergent plants, or emergent mosses and lichens which occur close to or are dependent upon nearby freshwater, or areas with freshwater flowing during all or a portion of the year. Conservation of these areas is intended to protect habitat that is essential to a number of listed, water-dependent amphibians, birds, fish, invertebrates, and plants. If all impacts to riparian/riverine habitat cannot be avoided, a mitigation strategy called a Determination of Biologically Equivalent or Superior Preservation (DBESP) must be developed that addresses the replacement of lost functions of habitats in regards to the listed species. This assessment is independent from considerations given to "waters of the U.S." and "waters of the State" under the CWA and the California Fish and Game Code.

No jurisdictional riparian/riverine areas are located within the proposed project footprint. It should be noted that Wolf Valley Creek Channel is located immediately north of the proposed project footprint. Wolf Valley Creek Channel is artificially maintained, and is planted with ornamental grass. Although artificially created, Wolf Valley Creek Channel will likely be considered riparian/riverine habitat under the MSHCP. Pursuant to Section 6.1.2 of the MSHCP, any alteration or loss of riparian/riverine habitat that may occur as a result of the proposed project will require the preparation of a Determination of Biologically Equivalent or Superior Preservation (DBESP) to ensure the replacement of any lost functions and values associated with Wolf Valley Creek Channel. Based on current design plans, no impacts to Wolf Valley Creek Channel are expected to occur from development of the proposed project.

Vernal Pools

The MSHCP lists two general classes of soils known to be associated with special-status plant species; clay soils and Traver-Domino Willow association soils. The specific clay soils known to be associated with special-status species within the MSHCP plan area include Bosanko, Auld, Altamont, and Porterville series soils, whereas Traver-Domino Willows association includes saline-alkali soils largely located along floodplain areas of the San Jacinto River and Salt Creek. Without the appropriate soils to create the impermeable restrictive layer, none of the special-status species associated with vernal pools can occur on the project site. None of these soils occur on the project site. Since the proposed widening alignment will be installed within the existing paved roads and landscaped areas, no undisturbed soils will be impacted. No impacts to vernal pools or fairy shrimp habitat will occur from implementation of the proposed project.

Narrow Endemic Plant Species

Based on the RCIP query and review of the MSHCP, it was determined that the proposed project is not located within the designated survey area for Narrow Endemic Plant Species as depicted in Figure 6-1 within Section 6.1.3 of the MSHCP. The proposed widening alignment will be installed within existing paved roads and landscaped areas that do not provide suitable habitat for Narrow Endemic Plant Species.

Urban/Wildlands Interface Guidelines

According to the MSHCP, the Urban/Wildlands Interface Guidelines are intended to address indirect effects associated with new development in proximity to MSHCP Conservation Areas (MSHCP, p 6-42). The proposed project is not located in or immediately adjacent to any Criteria Cells or MSHCP Conservation Areas; therefore, indirect project-related impacts to drainage, toxics, lighting, noise, invasive plant species, barriers, and grading/land development will not occur.

Additional Survey Needs and Procedures

The RCIP Conservation Summary Report Generator was queried to determine if the MSHCP lists any survey requirements for the project. The summary report identified that the project site is located in the designated survey area for burrowing owl as depicted in Figure 6-4 within Sections 6.3.2 of the MSHCP. Since the proposed widening alignment will be installed within the existing paved road and landscaped areas, burrowing owl are presumed absent and no impacts to burrowing owl will occur.

Despite a systematic search of potentially suitable burrows and open habitat throughout the project site, no burrowing owl or sign (pellets, feathers, castings, or white wash) was observed during the habitat

assessment. The heavy disturbances associated with the disking activities have likely precluded burrowing owls from inhabiting the project site. Due to the lack of burrowing owl sign and suitable burrows, burrowing owl are presumed not to occupy the project site and have a low potential to occur on site. A burrowing owl pre-construction clearance survey is recommended to be conducted within seven (7) days prior to ground disturbance, in accordance with the MSHCP, to ensure burrowing owl remain absent from the project site.

Conclusion

No sensitive plant or wildlife species were observed on the project site during the habitat assessment. It was found that naturally occurring native plant communities are not present on-site and the proposed project site has limited potential or support sensitive plant and wildlife species known to occur in the general area.

Surrounding development has isolated the project site from connecting to undisturbed, natural habitats still available in the area. The isolation and disturbance level of the project site limits the site's viability to provide suitable habitat for sensitive biological resources (i.e. sensitive plant and wildlife species, drainage features). As a result, the site does not provide suitable habitat for any of the identified sensitive plant or wildlife species known to occur in the general area, and no significant adverse impacts to biological resources are identified or anticipated, during the implementation of the proposed project. Therefore, we have determined that this project will not have a substantial adverse effect, either directly or through habitat modification on any special-status species known to occur in the general vicinity of the project site.

Recommendations

Migratory Bird Treaty Act

Pursuant to the Migratory Bird Treaty Act (MBTA) and Fish and Game Code, removal of any trees, shrubs, or any other potential nesting habitat should be conducted outside the avian nesting season. The nesting season generally extends from early February through August, but can vary slightly from year to year based upon seasonal weather conditions. If ground disturbance and vegetation removal cannot occur outside of the nesting season, a pre-construction clearance survey for nesting birds should be conducted within seven (7) days of the start of any ground disturbing activities to ensure that no nesting birds will be disturbed during construction. The biologist conducting the clearance survey should document a negative survey with a brief letter report indicating that no impacts to active avian nests will occur. If an active avian nest is discovered during the pre-construction clearance survey, construction activities should stay outside of a 300-foot buffer around the active nest. For raptor species, this buffer is expanded to 500 feet. It is recommended that a biological monitor be present to delineate the boundaries of the buffer area and to monitor the active nest to ensure that nesting behavior is not adversely affected by the construction activity. Once the young have fledged and left the nest, or the nest otherwise becomes inactive under natural conditions, normal construction activities can occur.

Please do not hesitate to contact Thomas J. McGill at (909) 974-4907 or tmcgill@mbakerintl.com or Travis J. McGill at (909) 974-4958 or travismcgill@mbakerintl.com should you have any questions or require further information.

Sincerely,

Thomas J. McGill, Ph.D.
Vice President
Natural Resources

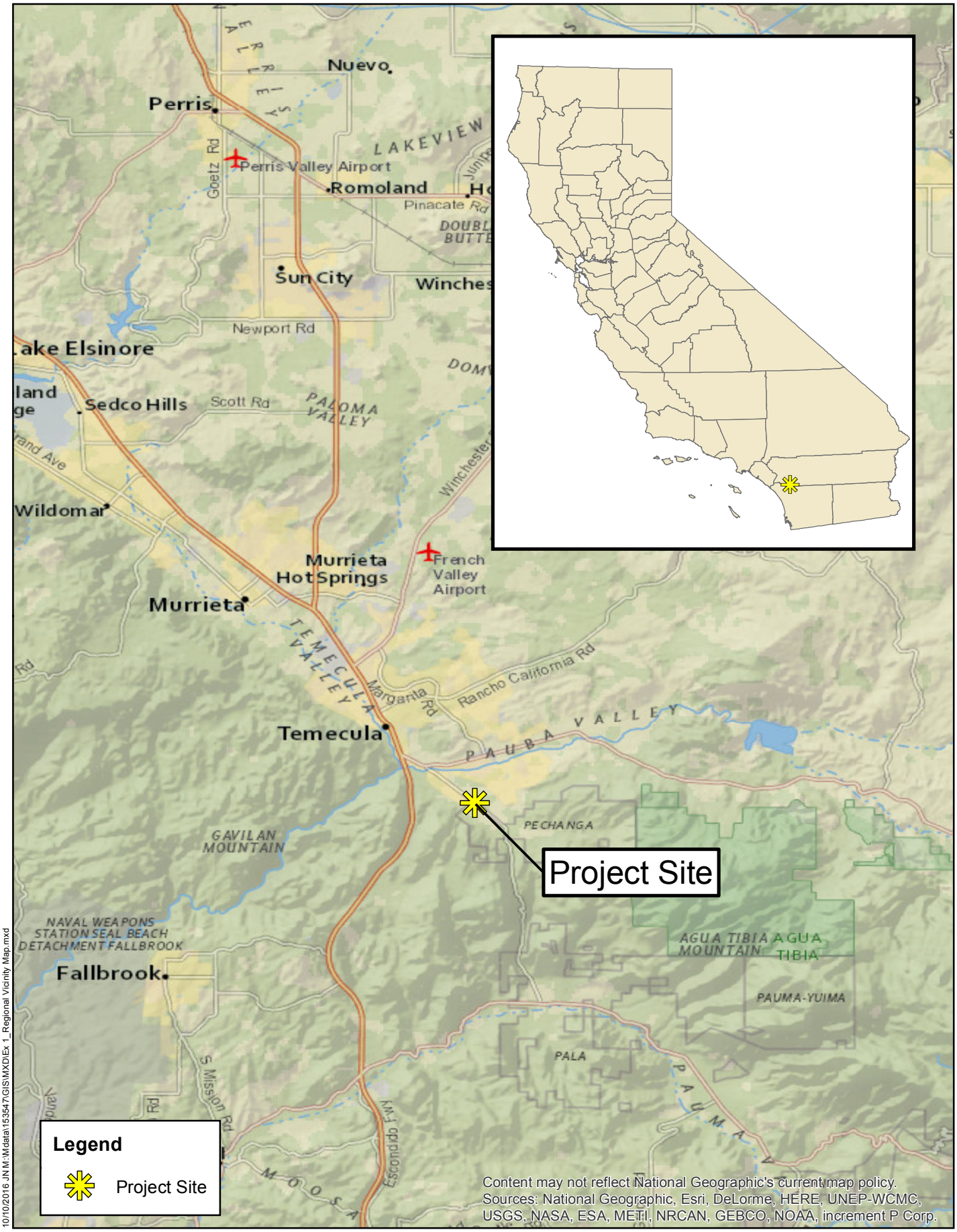
Travis J. McGill
Biologist
Natural Resources

Attachments:

A. *Project Exhibits*
B. *Riverside County Integrated Project Conservation Summary Report*
C. *Site Photographs*
D. *Potentially Occurring Special-Status Biological Resources*

Attachment A

Project Exhibits



10/10/2016 JN M:\Mdata\153547\GIS\MXD\Ex 1_Regional Vicinity Map.mxd

Michael Baker INTERNATIONAL

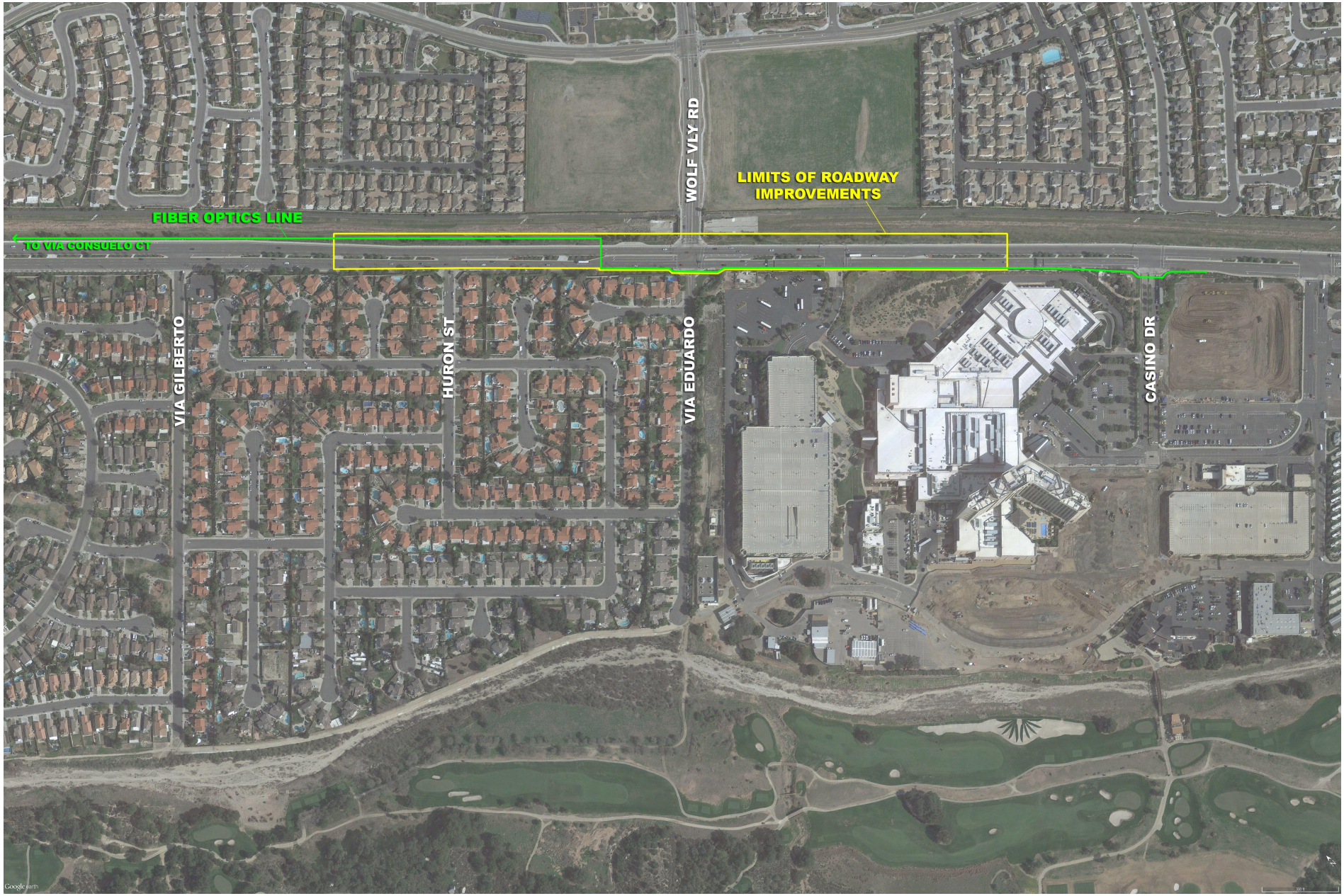
0 1 2 4 Miles

Source:

PECHANGA PARKWAY WIDENING PROJECT

Regional Vicinity Map

Exhibit 1



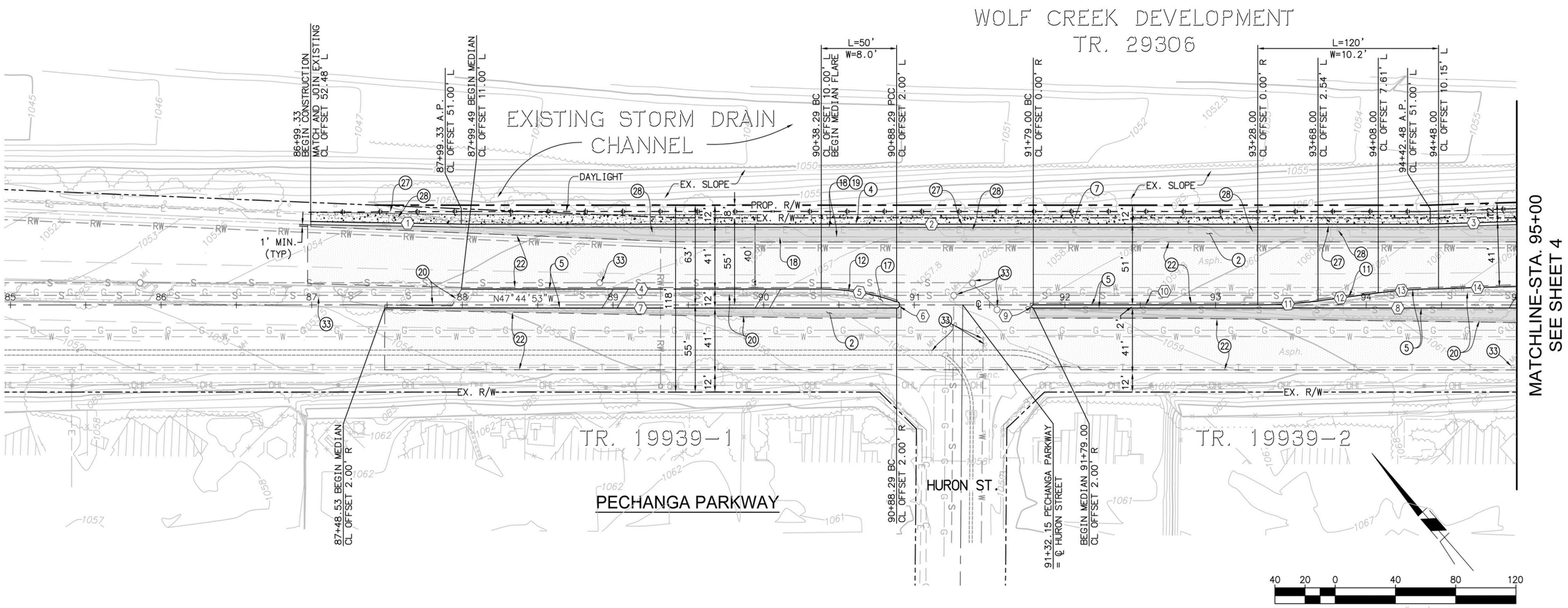
PECHANGA PARKWAY WIDENING PROJECT

Local Vicinity Map

Michael Baker INTERNATIONAL

JN 153547

Figure 2



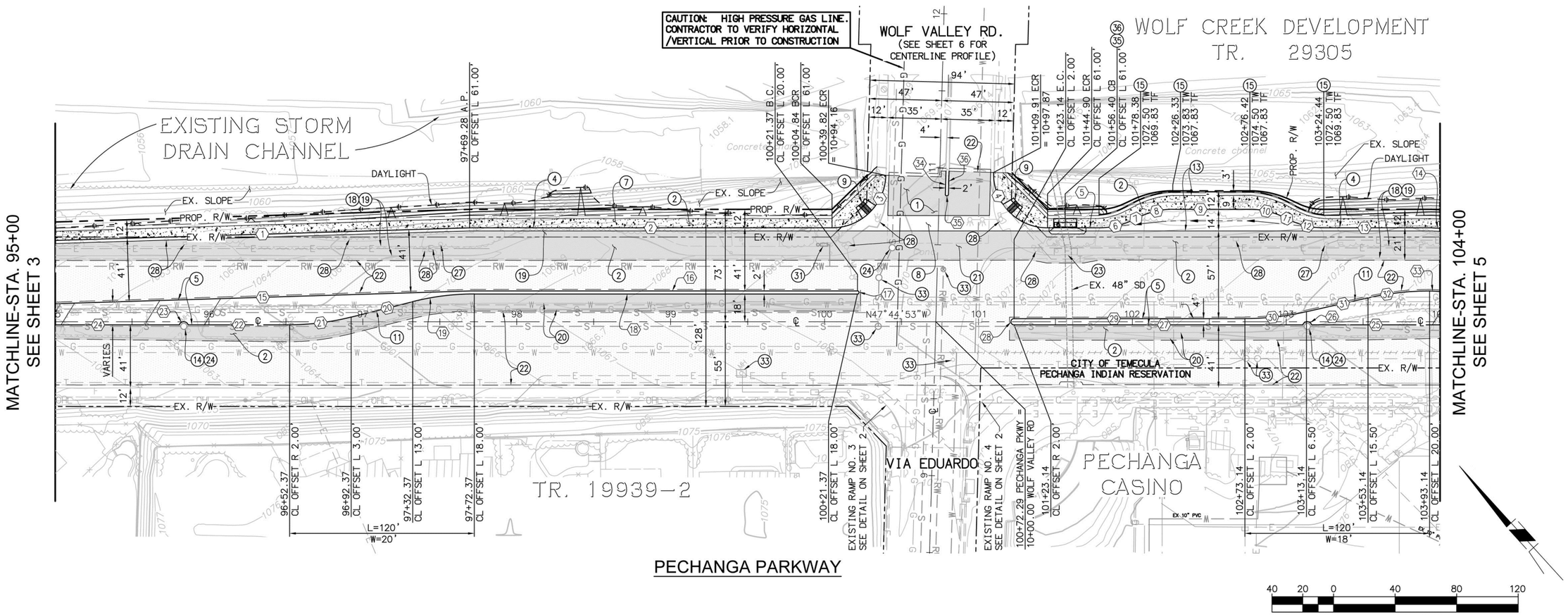
PECHANGA PARKWAY WIDENING PROJECT

Site Plan

Michael Baker INTERNATIONAL

JN 153547

Figure 3a



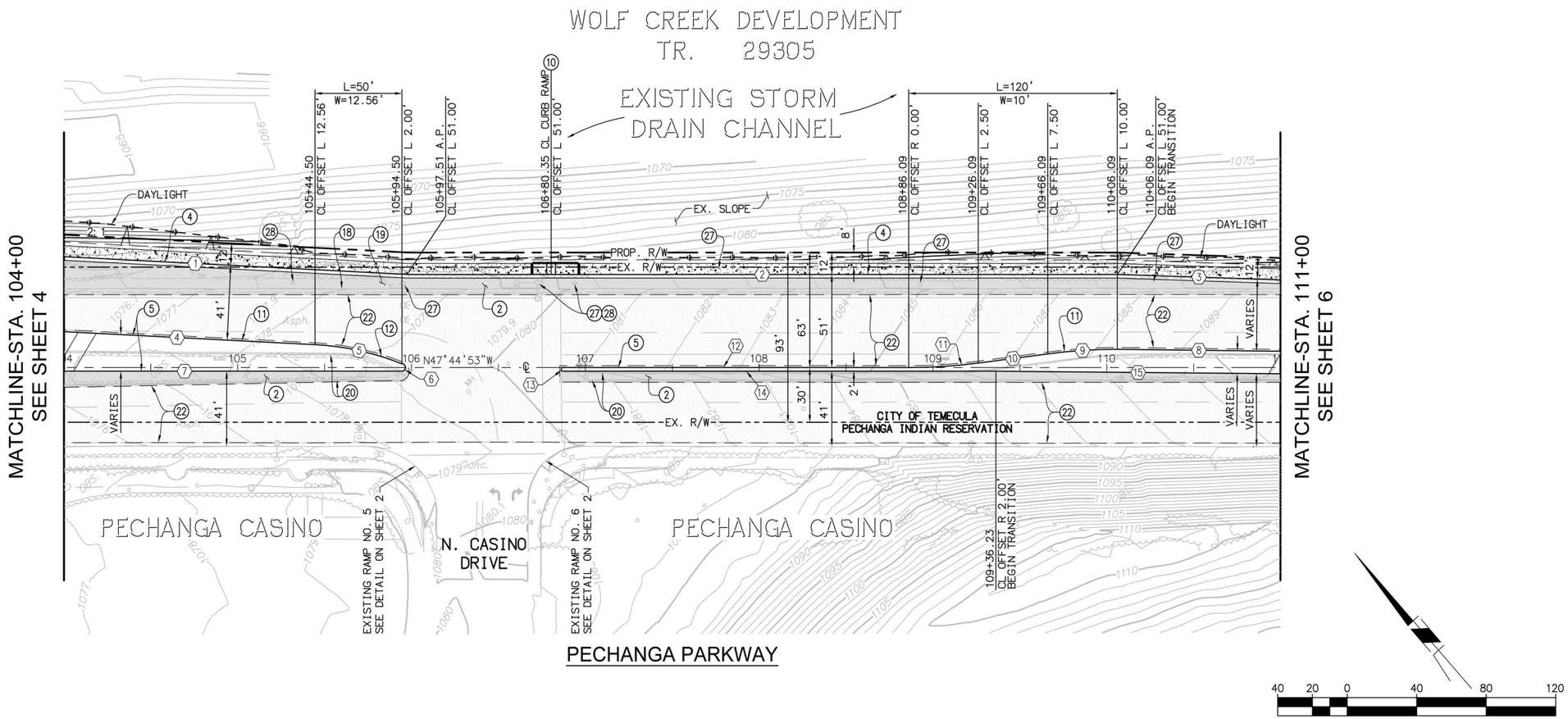
PECHANGA PARKWAY WIDENING PROJECT IS/MND

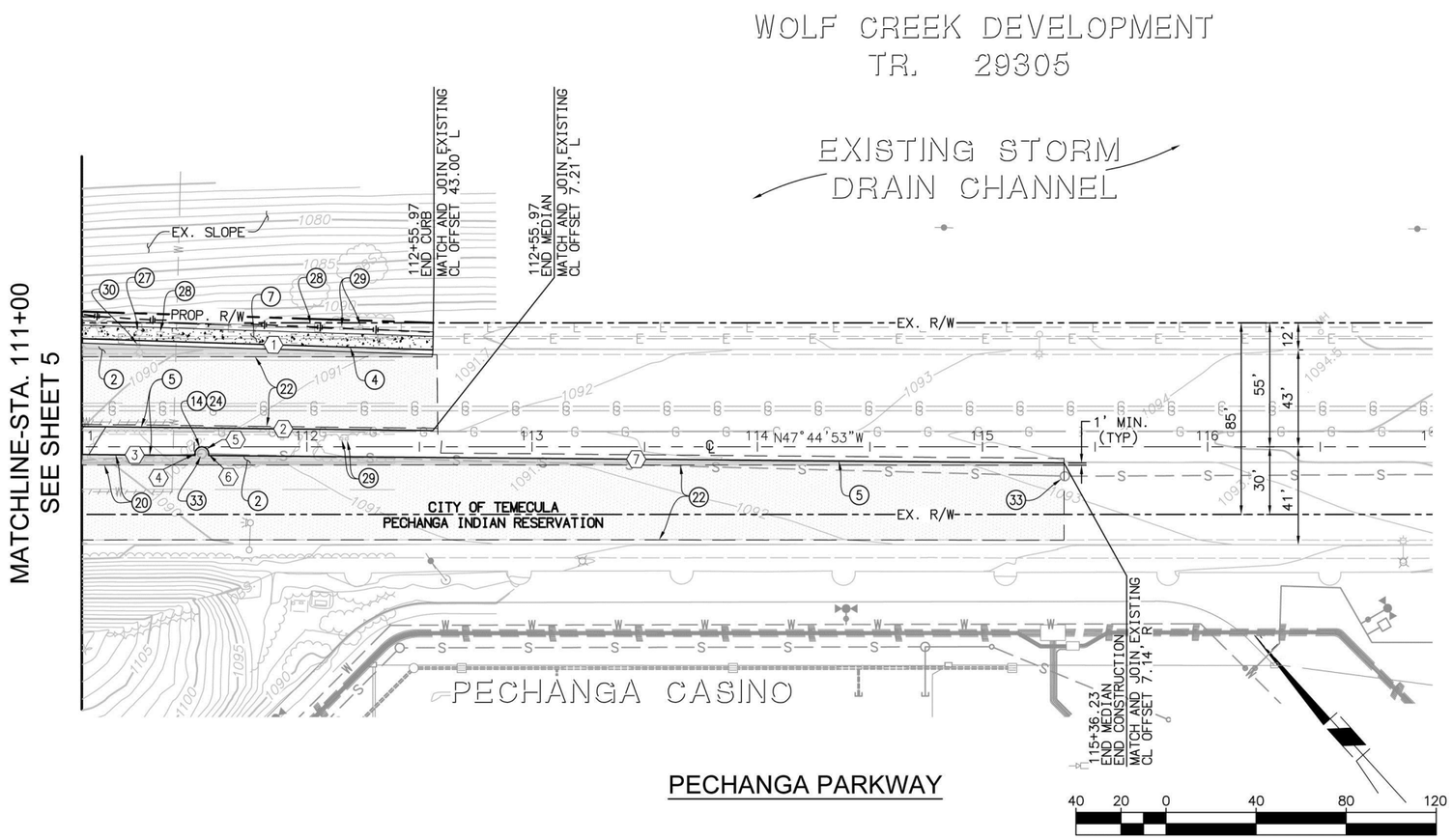
Site Plan

Michael Baker INTERNATIONAL

JN 153547

Figure 3b


WOLF CREEK DEVELOPMENT
TR. 29305
EXISTING STORM DRAIN CHANNEL
MATCHLINE-STA. 104+00
SEE SHEET 4
MATCHLINE-STA. 111+00
SEE SHEET 6
L=50'
W=12.56'
L=120'
W=10'
105+44.50 CL OFFSET L 12.56'
105+94.50 CL OFFSET L 2.00'
105+97.51 A.P. CL OFFSET L 51.00'
106+80.35 CL CURB RAMP CL OFFSET L 51.00'
108+86.09 CL OFFSET R 0.00'
109+26.09 CL OFFSET L 2.50'
109+66.09 CL OFFSET L 7.50'
110+06.09 CL OFFSET L 10.00'
110+06.09 A.P. CL OFFSET L 51.00' BEGIN TRANSITION
109+36.23 CL OFFSET R 2.00' BEGIN TRANSITION
DAYLIGHT
EX. SLOPE
PROP. R/W
EX. R/W
N47°44'53"W
CITY OF TEMECULA
PECHANGA INDIAN RESERVATION
VARIES
PECHANGA CASINO
N. CASINO DRIVE
EXISTING RAMP NO. 5 SEE DETAIL ON SHEET 2
EXISTING RAMP NO. 6 SEE DETAIL ON SHEET 2
PECHANGA PARKWAY
40 20 0 40 80 120



PECHANGA PARKWAY

Attachment B

Riverside County Integrated Project Conservation Summary Report

Riverside County Transporation and Land Management Agency - TLMA

Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP)

APN	Cell	Cell Group	Acres	Area Plan	Sub Unit
921020028	Not A Valid Parcel Number				
961020027	Not A Part	Independent	8.5	Southwest Area	Not a Part
962010037	Not A Part	Independent	10.19	Southwest Area	Not a Part

---

HABITAT ASSESSMENTS

Habitat assessment shall be required and should address at a minimum potential habitat for the following species:

APN	Amphibia Species	Burrowing Owl	Criteria Area Species	Mammalian Species	Narrow Endemic Plant Species	Special Linkage Area
961020027	NO	**YES**	NO	NO	NO	NO
962010037	NO	**YES**	NO	NO	NO	NO

Burrowing Owl

Burrowing owl.

If potential habitat for these species is determined to be located on the property, focused surveys may be required during the appropriate season.

Background

The final MSHCP was approved by the County Board of Supervisors on June 17, 2003. The federal and state permits were issued on June 22, 2004 and implementation of the MSHCP began on June 23, 2004.

For more information concerning the MSHCP, contact your local city or the County of Riverside for the unincorporated areas. Additionally, the Western Riverside County Regional Conservation Authority (RCA), which oversees all the cities and County implementation of the MSHCP, can be reached at:

Western Riverside County Regional Conservation Authority
3403 10th Street, Suite 320
Riverside, CA 92501

Phone: 951-955-9700
Fax: 951-955-8873

www.wrc-rca.org

Go Back To Previous Page

GIS Home Page

TLMA Home Page

Attachment C

Site Photographs

Photograph 1: Looking northwest along the north side of Pechanga Parkway from N. Casino Drive.

Photograph 2: Looking northwest at the landscaped slope of Wolf Valley Creek Channel, north of the project site.

Photograph 3: Looking at the cattail and bulrush in the active channel of Wolf Valley Creek Channel.

Photograph 4: Looking at the landscaped area between Pechanga Parkway and Wolf Valley Creek Channel.

Attachment D

Potentially Occurring Sensitive Biological Resources

Scientific Name	Common Name	Federal Status	State Status	CNPS Rare Plant Rank	Potential to Occur
Special-Status Wildlife					
Aspidoscelis hyperythra	orangethroat whiptail	None	WL		Presumed Absent
Athene cunicularia	burrowing owl	None	CSC		Presumed Absent
Bombus crotchii	Crotch bumble bee	None	None		Presumed Absent
Buteo swainsoni	Swainson's hawk	None	Threatened		Presumed Absent
Crotalus ruber	red-diamond rattlesnake	None	CSC		Presumed Absent
Dipodomys stephensi	Stephens' kangaroo rat	Endangered	Threatened		Presumed Absent
Emys marmorata	western pond turtle	None	CSC		Presumed Absent
Eumops perotis californicus	western mastiff bat	None	CSC		Presumed Absent
Gila orcuttii	arroyo chub	None	CSC		Presumed Absent
Perognathus longimembris brevinasus	Los Angeles pocket mouse	None	CSC		Presumed Absent
Phrynosoma blainvillii	coast horned lizard	None	CSC		Presumed Absent
Polioptila californica californica	coastal California gnatcatcher	Threatened	CSC		Presumed Absent
Spea hammondii	western spadefoot	None	CSC		Presumed Absent
Streptocephalus woottoni	Riverside fairy shrimp	Endangered	None		Presumed Absent
Special-Status Plants					
Abronia villosa var. aurita	chaparral sand-verbena	None	None	1B.1	Presumed Absent
Arctostaphylos rainbowensis	Rainbow manzanita	None	None	1B.1	Presumed Absent
Astragalus pachypus var. jaegeri	Jaeger's milk-vetch	None	None	1B.1	Presumed Absent
Berberis nevinii	Nevin's barberry	Endangered	Endangered	1B.1	Presumed Absent
Brodiaea orcuttii	Orcutt's brodiaea	None	None	1B.1	Presumed Absent
Dodecahema leptoceras	slender-horned spineflower	Endangered	Endangered	1B.1	Presumed Absent
Horkelia cuneata var. puberula	mesa horkelia	None	None	1B.1	Presumed Absent
Lasthenia glabrata ssp. coulteri	Coulter's goldfields	None	None	1B.1	Presumed Absent
Pseudognaphalium leucocephalum	white rabbit-tobacco	None	None	2B.2	Presumed Absent
Special-Status Plant Communities					
Southern Willow Scrub		None	None		Absent

Appendix C:
Cultural Resources Assessment

CULTURAL RESOURCES ASSESSMENT

Pechanga Parkway Widening Project

Temecula, Riverside County, California

Prepared for:

Darren Edgington
Michael Baker International
40810 County Center Drive, Suite 100
Temecula, California 92591-6022

Prepared by:

David Brunzell, M.A., RPA
BCR Consulting LLC
1420 Guadalajara Place
Claremont, California 91711

Project No. RBF1611

Data Base (NADB) Information:
Type of Study: Reconnaissance Survey
Resources Recorded: None
USGS Quadrangles: 7.5-minute *Pechanga* (1975) and *Temecula* (1997) *California*

BCRCONSULTING LLC

October 19, 2016

MANAGEMENT SUMMARY

BCR Consulting LLC (BCR Consulting) is under contract to Michael Baker International to complete a Cultural Resources Assessment of the Pechanga Parkway Widening Project (the project) located in Temecula, Riverside County, California. A cultural resources records search, reconnaissance level pedestrian field survey, Tribal Scoping, and paleontological map review were conducted for the project in partial fulfillment of the California Environmental Quality Act (CEQA).

The records search revealed that 27 cultural resource studies have taken place resulting in the recording of 26 cultural resources within one mile of the project site. Of the 27 previous studies, four have assessed the project site resulting in no cultural resources recorded within its boundaries. Four cultural resources (including three prehistoric isolates and one prehistoric site with a historic component) have been recorded adjacent to its boundaries. During the field survey, BCR Consulting did not discover any cultural resources, including prehistoric or historic-period archaeological sites or historic-period buildings, within the project boundaries. However, since numerous cultural resources have been recorded in the vicinity (and four are adjacent) the project site is considered sensitive for buried cultural resources.

Based on these results, BCR Consulting recommends that a professional archaeological monitor be present to monitor any ground-disturbing activities associated with the proposed project. The monitor shall work under the direct supervision of a Cultural Resource Professional that meets the Secretary of the Interior's Professional Qualification Standards for Archaeology (the qualified archaeologist). The monitor shall be authorized to temporarily stop and divert construction equipment to investigate any areas suspected to contain cultural resources. Excavation will cease in the area surrounding any cultural resource discoveries until the qualified archaeologist can evaluate the discovery for California Register of Historical Resources eligibility. Evaluations shall take place in consultation with the City and any participating Native American entities. Non-eligible resources would not merit further consideration. Eligible discoveries would be mitigated by avoidance or data recovery.

If human remains are encountered during any proposed project activities, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of disposition pursuant to Public Resources Code Section 5097.98. The County Coroner must be notified of the find immediately. If the remains are determined prehistoric, the Coroner will notify the Native American Heritage Commission (NAHC), which will determine and notify a Most Likely Descendant (MLD). With the permission of the landowner or his/her authorized representative, the MLD may inspect the site of the discovery. The MLD shall complete the inspection within 48 hours of notification by the NAHC.

TABLE OF CONTENTS

MANAGEMENT SUMMARY ii

INTRODUCTION 1

NATURAL SETTING 1

CULTURAL SETTING 1
- PREHISTORIC CONTEXT 1
- ETHNOGRAPHY 3
- HISTORY 4

PERSONNEL 4

METHODS 4
- RESEARCH 4
- FIELD SURVEY 5

RESULTS 5
- RESEARCH 5
- FIELD SURVEY 6

RECOMMENDATIONS 6

CERTIFICATION 6

REFERENCES 7

FIGURES

1: Project Location and Vicinity Maps 2

TABLES

A: Cultural Resource Records Search Results 5

APPENDICES

A: TRIBAL SCOPING
B: PROJECT PHOTOGRAPHS
C: PALEONTOLOGICAL SENSITIVITY MAP

INTRODUCTION

BCR Consulting LLC (BCR Consulting) is under contract to Michael Baker International to complete a Cultural Resources Assessment of the Pechanga Parkway Widening Project (the project) located in Temecula, Riverside County, California. A cultural resources records search, reconnaissance level pedestrian field survey, Tribal Scoping, and paleontological map review were conducted for the project site in partial fulfillment of the California Environmental Quality Act (CEQA). The project site is located within a non-sectioned portion of Township 8 South, Range 2 West, San Bernardino Baseline and Meridian. It is depicted on the United States Geological Survey (USGS) *Pechanga* (1997) and *Temecula* (1975), *California* 7.5-minute topographic quadrangles (Figure 1).

NATURAL SETTING

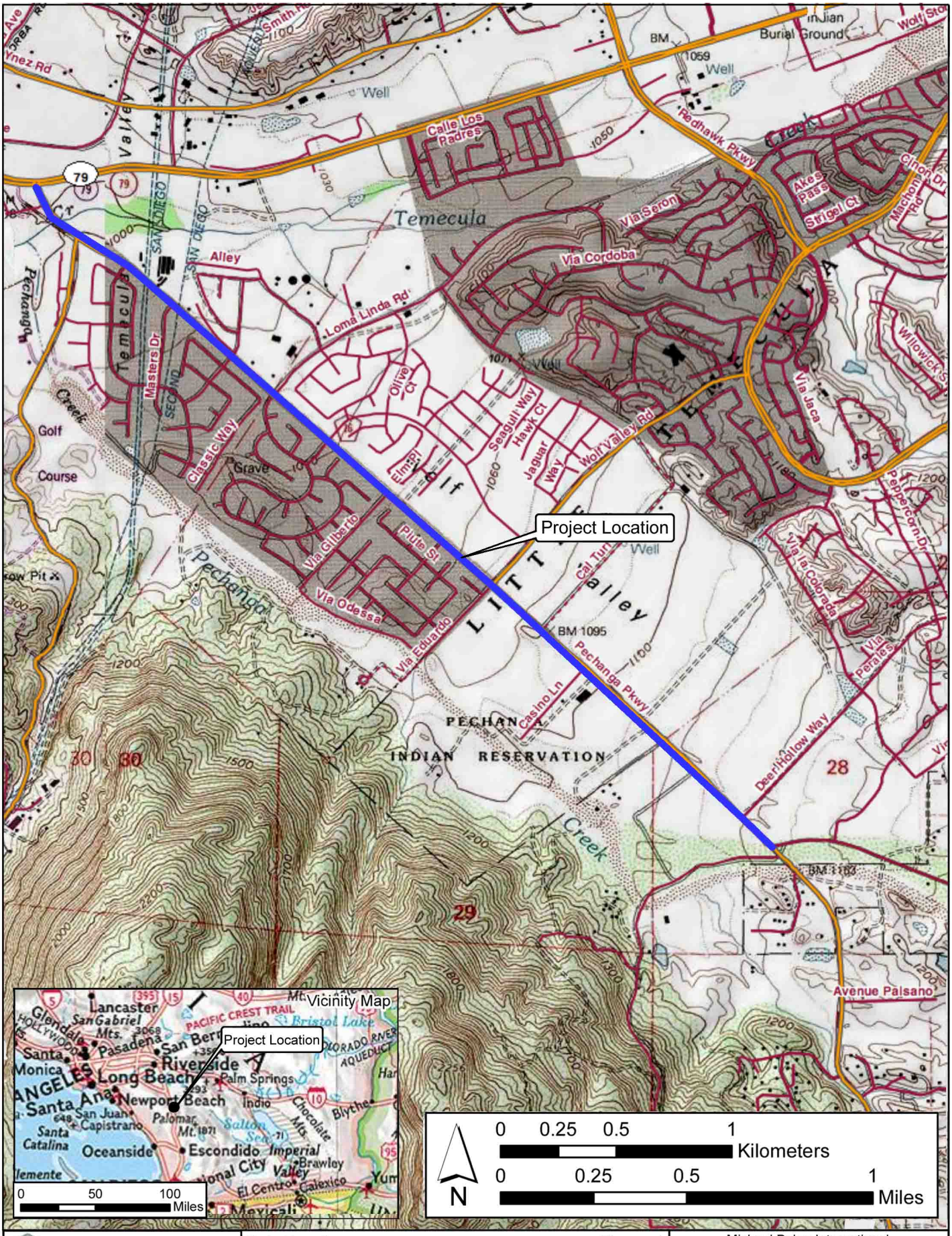
The elevation of the project site ranges from approximately 960 to 1170 feet above mean sea level (AMSL). It exhibits a northwesterly aspect and occupies a portion of the Temecula Creek and Pechanga Creek watersheds. Artificial disturbances associated with the existing road and adjacent municipal, commercial, and residential installations are severe (see USGS 1975). Coastal sage scrub, oak woodland, and riparian habitat vegetation communities are typical of the area. For details on local prehistoric (particularly Luiseño) use of plant and animal species, see Bean and Shipek (1978:552) and Oxendine (1983:19-29). Sparkman (1908) and Bean and Saubel (1972) can be referenced to review prehistoric harvesting and processing methods, and seasons and conditions in which edible plants grow locally.

The project site is located in the Peninsular Range geologic province of California that encompasses western Riverside County. It occupies the eastern margin of the Perris Block (Kenney 1999), which is bounded on the east by the San Jacinto Fault (Reynolds 1988, Morton 1972, 1977). Crystalline rocks present in the region include late Jurassic and cretaceous granitics of the southern California batholith. These resistant rocks weather to form gray or tan colored, boulder-covered conical buttes and hills. Locally, a thin veneer of Holocene soils typically obscures late Pleistocene sediments that often erode away to reveal the base of local boulder outcrops (Rogers 1965). During prehistory in Western Riverside County the boulders that form such outcrops were widely utilized as milling slicks for seed processing, although no boulders of this type were observed in the project site area. Decomposing granite in the form of brown silty sand dominates sediments observed within the project site.

CULTURAL SETTING

Prehistoric Context

The local prehistoric cultural setting has been organized into many chronological frameworks (see Warren and Crabtree 1986; Bettinger and Taylor 1974; Lanning 1963; Hunt 1960; Wallace 1958, 1962, 1977; Wallace and Taylor 1978; Campbell and Campbell 1935), although there is no definitive sequence for the region. The difficulties in establishing cultural chronologies for Riverside County are a function of its enormous size and the small amount of archaeological excavations conducted there. Moreover, throughout prehistory many groups have occupied the area and their territories often overlap spatially and



BCRCONSULTING LLC
Claremont Napa Tehachapi
www.bcrconsulting.net
909-525-7078

Project Location
Pechanga Parkway Widening Project

Figure 1

Reference: ESRI; USGS Quad: *Temecula* (1975) and *Pechanga* (1997), *California*

Michael Baker International
40810 County Center Drive, Suite 100
Temecula, California 92591

chronologically resulting in mixed artifact deposits. Due to dry climate and capricious geological processes, these artifacts rarely become integrated in-situ. Lacking a milieu hospitable to the preservation of cultural midden, local chronologies have relied upon temporally diagnostic artifacts, such as projectile points, or upon the presence/absence of other temporal indicators, such as groundstone. Such methods are instructive, but can be limited by prehistoric occupants' concurrent use of different artifact styles, or by artifact re-use or re-sharpening, as well as researchers' mistaken diagnosis, and other factors (see Flenniken 1985; Flenniken and Raymond 1986; Flenniken and Wilke 1989). Recognizing the shortcomings of comparative temporal indicators, this study recommends review of Warren and Crabtree (1986), who have drawn upon this method to produce a commonly cited and relatively comprehensive chronology.

Ethnography

The APE is situated within the traditional boundaries of the Luiseño (Bean and Shipek 1978; Kroeber 1925). Typically, the native culture groups in southern California are named after nearby Spanish missions, and such is the case for this Takic-speaking population. For instance, the term "Luiseño" is applied to the natives inhabiting the region within the "ecclesiastical jurisdiction of Mission San Luis Rey…[and who shared] an ancestral relationship which is evident in their cosmogony, and oral tradition, common language, and reciprocal relationship in ceremonies" (Oxendine 1983:8). The first written accounts of the Luiseño are attributed to the mission fathers. Sparkman (1908), Oxendine (1983) and others produced later documentation. Prior to Spanish occupation of California, the territory of the Luiseño extended along the coast from Agua Hedionda Creek to the south, Aliso Creek to the northwest, and the Elsinore Valley and Palomar Mountain to the east. These territorial boundaries were somewhat fluid and changed through time. They encompassed diverse environments that included coastal beaches, lagoons and marshes, inland river valleys and foothills, and mountain groves of oaks and evergreens (Bean and Shipek 1978:551).

Like other Native American groups in southern California, the Luiseño caught and collected seasonally available food resources, and led a semi-sedentary lifestyle. Luiseño villages generally were located in valley bottoms, along streams, or along coastal strands near mountain ranges sheltered in canyons, near a water source, and in a location that was easily defended. Individuals from these villages took advantage of the varied resources available. They also established seasonal camps along the coast and near bays and estuaries to gather shellfish and hunt waterfowl (Kroeber 1925, Bean and Shipek 1978). The Luiseño lived in small communities, which were the focus of family life. Luiseño villages were politically independent, administered by a hereditary chief, and occupied by patrilineally linked extended families (Kroeber 1925; Bean and Shipek 1978). The Luiseño believed in private property, which covered items and land owned by the village, as well as items (houses, gardens, ritual equipment, trade beads, eagle nests, and songs) owned by individuals. Trespass against any property was punished (Bean and Shipek 1978:551). Luiseño subsistence was based primarily on seeds like acorns, grass seed, Manzanita, sunflower, sage, chia, and pine nuts. Seeds were dried and ground to be cooked into a mush. Game animals such as deer, rabbit, jackrabbit, wood rat, mice, antelope, and many types of birds supplemented their vegetal intake (Lightfoot and Parrish 2009:341-362). The Luiseño utilized fire for crop management and communal rabbit drives (ibid.; Bean and Shipek 1978:552).

History

Historic-era California is generally divided into three periods: the Spanish or Mission Period (1769 to 1821), the Mexican or Rancho Period (1821 to 1848), and the American Period (1848 to present).

Spanish Period. The first European to pass through the vicinity is thought to be a Spaniard called Father Francisco Garces. Having become familiar with the area, Garces acted as a guide to Juan Bautista de Anza, who had been commissioned to lead a group across the desert from a Spanish outpost in Arizona to set up quarters at the Mission San Gabriel in 1771 near what today is Pasadena (Beck and Haase 1974). Garces was followed by Alta California Governor Pedro Fages, who briefly explored the region in 1772. Searching for San Diego Presidio deserters, Fages had traveled through Riverside to San Bernardino, crossed over the mountains into the Mojave Desert, and then journeyed westward to the San Joaquin Valley (Beck and Haase 1974).

Mexican Period. In 1821, Mexico overthrew Spanish rule and the missions began to decline. By 1833, the Mexican government passed the Secularization Act, and the missions, reorganized as parish churches, lost their vast land holdings, and released their neophytes (Beattie and Beattie 1974).

American Period. The American Period, 1848–Present, began with the Treaty of Guadalupe Hidalgo. In 1850, California was accepted into the Union of the United States primarily due to the population increase created by the Gold Rush of 1849. The cattle industry reached its greatest prosperity during the first years of the American Period. Mexican Period land grants had created large pastoral estates in California, and demand for beef during the Gold Rush led to a cattle boom that lasted from 1849–1855. However, beginning about 1855, the demand for beef began to decline due to imports of sheep from New Mexico and cattle from the Mississippi and Missouri Valleys. When the beef market collapsed, many California ranchers lost their ranchos through foreclosure. A series of disastrous floods in 1861–1862, followed by a significant drought diminished the economic impact of local ranching. This decline combined with ubiquitous agricultural and real estate developments of the late 19th century, set the stage for diversified economic pursuits that have continued to proliferate to this day (Beattie and Beattie 1974; Cleland 1941).

PERSONNEL

David Brunzell, M.A., RPA acted as the Project Manager and Principal Investigator for the current study. Mr. Brunzell also compiled the technical report and initiated the Tribal Scoping. BCR Consulting Staff Archaeologist Judy Bernal, B.A., completed the cultural resources records search and performed the field survey.

METHODS

Research

Prior to fieldwork, a records search was conducted at the Eastern Information Center (EIC), the local clearinghouse for cultural resource records. This archival research reviewed the status of all recorded historic and prehistoric cultural resources, and survey and excavation

reports completed within one mile of the project site. Additional resources reviewed included the National Register of Historic Places, the California Register of Historical Resources, and documents and inventories published by the California Office of Historic Preservation. These include the lists of California Historical Landmarks, California Points of Historical Interest, Listing of National Register Properties, and Inventory of Historic Structures.

Field Survey

An archaeological field survey of the project site was conducted on August 22, 2016. The survey was conducted by walking parallel transects along 100 percent of the alignment frontage. Soil exposures were carefully inspected for evidence of cultural resources.

RESULTS

Research

Research completed through the EIC revealed that 27 cultural resource studies have taken place resulting in the recording of 26 cultural resources within one mile of the project site. Of the 27 previous studies, four have assessed the project site resulting in no cultural resources recorded within its boundaries. Four cultural resources (including three prehistoric isolates and one prehistoric site with a historic component) have been recorded adjacent to its boundaries. A summary of the records search is included below.

Table A. Cultural Resource Records Search Results

USGS 7.5 Minute Quadrangles	Resources Within One Mile of Project Site (Location)	Studies Within One Mile of Project Site
Pechanga (1975) and *Temecula* (1997), *California*	P-33-1460: Prehistoric Site (1/2 Mile SW) P-33-2536: Prehistoric/Historic-Period Site (1/2 Mile SW) P-33-4707/H: Prehistoric/Historic-Period Site (Adjacent N) P-33-7848: Historic-Period Site (1/8 Mile SW) P-33-7849: Historic-Period Site (1/4 Mile S) P-33-7859: Historic-Period Site (1/4 Mile S) P-33-7860: Prehistoric Site (1/4 Mile SW) P-33-7861: Prehistoric Site (1/4 Mile SW) P-33-7862: Prehistoric Site (1/2 Mile S) P-33-7863: Historic-Period Site (3/4 Mile S) P-33-7864: Prehistoric Site (1/2 Mile S) P-33-7865: Prehistoric Site (1/2 Mile S) P-33-7906: Prehistoric/Historic-Period Site (3/4 Mile SW) P-33-7907: Prehistoric Site (1/2 Mile SW) P-33-7909: Prehistoric/Historic-Period Site (1 Mile SW) P-33-11005: Prehistoric Site (1/2 Mile NW) P-33-11069: Prehistoric Site (1/2 Mile SW) P-33-11070: Prehistoric Site (1/2 Mile SW) P-33-18091: Historic-Period Site (1/2 Mile SW) P-33-22168: Historic-Period Site (3/4 Mile SW) P-33-22170: Prehistoric/Historic-Period Site (1/2 Mile SW) P-33-22171: Historic-Period Site (3/4 Mile SW) P-33-24088: Prehistoric Isolate (1/4 Mile NE) P-33-24089: Prehistoric Isolate (Adjacent N) P-33-24090: Prehistoric Isolate (Adjacent N) P-33-24091: Prehistoric (Adjacent N)	RI-111, 213, 513, 545*, 1048, 1604, 1857*, 2070, 2261, 2343, 3189, 3436, 3437, 3440, 3589, 3440, 4147, 4346, 4356, 4654, 5145, 5431, 5539, 5880, 6790*, 7096*, 8408

*Previously assessed a portion of the project site.

Field Survey

During the field survey, BCR Consulting archaeologists did not record any cultural resources within the project site boundaries. The project site exhibited approximately 10 percent surface visibility. Artificial disturbances associated with the existing road and adjacent municipal, commercial, and residential installations were severe. The non-built portions of the project site exhibit sparse native and non-native grasses and scrub brush, particularly along the alignment's northern frontage near the northwestern terminus, and at a vacant lot located at the northwestern intersection of Pechanga Parkway and Loma Linda Road.

RECOMMENDATIONS

The records search and field survey did not identify any cultural resources, including prehistoric or historic-period archaeological sites or historic-period buildings, currently located within the project boundaries. However, since numerous cultural resources have been recorded in the vicinity (four adjacent) the project site is considered sensitive for buried cultural resources. Based on these results, BCR Consulting recommends that a professional archaeological monitor be present to monitor any ground-disturbing activities associated with the proposed project. The monitor shall work under the direct supervision of a Cultural Resource Professional that meets the Secretary of the Interior's Professional Qualification Standards for Archaeology (the qualified archaeologist). The monitor shall be authorized to divert construction equipment to investigate any areas suspected to contain cultural resources. Excavation will cease in the area surrounding any cultural resource discoveries until the qualified archaeologist can evaluate the discovery for California Register of Historical Resources eligibility. Evaluations shall take place in consultation with the City and any participating Native American entities. Non-eligible resources would not merit further consideration. Eligible discoveries would be mitigated by avoidance or data recovery.

If human remains are encountered during any proposed project activities, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner determines origin and disposition pursuant to Public Resources Code Section 5097.98. The County Coroner must be notified of the find immediately. If the remains are determined to be prehistoric, the Coroner will notify the Native American Heritage Commission (NAHC), which will determine and notify a Most Likely Descendant (MLD). With the permission of the landowner or representative, the MLD may inspect the discovery site. The MLD shall complete inspection within 48 hours of notification by the NAHC.

CERTIFICATION

I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this archaeological report, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

Date: October 19, 2016	
	David Brunzell
Authorized Signature	Printed Name

REFERENCES

Beattie, George W., and Helen P. Beattie
1974 *Heritage of the Valley: San Bernardino's First Century*. Biobooks: Oakland.

Bean, Lowell John, and Florence Shipek
1978 *California*, edited by R.F. Heizer. Handbook of North American Indians, Vol. 8, W.C. Sturtevant, general editor, Smithsonian Institution, Washington, D.C.

Bean, Lowell John and Katherine Siva Saubel
1972 *Temalpakh.* Malki Museum Press. Banning, California.

Beck, Warren A., and Ynez D. Haase
1974 *Historical Atlas of California*. Oklahoma City: University of Oklahoma Press.

Bettinger, Robert L., and R.E. Taylor
1974 Suggested Revisions in Archaeological Sequences of the Great Basin and Interior Southern California. *Nevada Archaeological Survey Research Papers* 3:1-26.

Campbell, E., and W. Campbell
1935 The Pinto Basin. *Southwest Museum Papers* 9:1-51.

Cleland, Robert Glass
1941 *The Cattle on a Thousand Hills—Southern California, 1850-80.* San Marino, California: Huntington Library.

Flenniken, J.J.
1985 Stone Tool Reduction Techniques as Cultural Markers. *Stone Tool Analysis: Essays in Honor of Don E. Crabtree,* edited by M.G. Plew, J.C. Woods, and M.G. Pavesic. University of New Mexico Press, Albuquerque.

Flenniken, J.J. and A.W. Raymond
1986 Morphological Projectile Point Typology: Replication, Experimentation, and Technological Analysis. *American Antiquity* 51:603-614.

Flenniken, J.J. and Philip J. Wilke
1989 Typology, Technology, and Chronology of Great Basin Dart Points. *American Anthropologist* 91:149-158.

Hunt, Alice P.
1960 *The Archaeology of the Death Valley Salt Pan, California.* University of Utah Anthropological Papers No. 47.

Kenney, M.D.
1999 *Introduction to the Natural History of Southern California.* California Natural History Guides: 13. Los Angeles: University of California Press.

Kroeber, Alfred L.
1925 *Handbook of the Indians of California.* Bureau of American Ethnology Bulletin 78. Washington D.C.: Smithsonian Institution. Reprinted in 1976, New York: Dover Publications.

Lanning, Edward P.
1963 The Archaeology of the Rose Spring Site (Iny-372). *University of California Publications in American Archaeology and Ethnology* 49(3):237-336.

Lightfoot, Kent G., Otis Parrish
2009 *California Indians and Their Environment, an Introduction.* University of California Press, Berkeley.

Morton, D.M.
1972 *Geology of the Lakeview-Perris Quadrangle*, Riverside County, California, CDMG, Map Sheet 19, Scale 1:24,000.

1977 Surface Deformation in Part of the San Jacitno Valley, Southern California, in *Journal of Research,* Vol. 5, No. 1, Jan-Feb. 1977, pp. 117-124.

Oxendine, Joan
1983 *The Luiseño Village During the Late Prehistoric Era.* Unpublished PhD Dissertation, Department of Anthropology, University of California, Riverside.

Reynolds, R.E.
1988 *Paleontologic Resource Overview and Management Plan for Edwards Air Force Base, California.* San Bernardino County Museum, Redlands, California.

Rogers, M.J.
1965 *Early Lithic Industries of the Lower Basin of the Colorado River and Adjacent Desert Areas.* San Diego Museum Papers No. 3.

Sparkman, Philip S.
1908 The Culture of the Luiseño Indians. *University of California Publications in American Archaeology and Ethnology* 8(4). University of California, Berkeley.

United States Geological Survey
1975 *Temecula, California 7.5-minute topographic quadrangle map*

1997 *Pechanga, California 7.5-minute topographic quadrangle map*

Wallace, William J.
1958 Archaeological Investigation in Death Valley National Monument. *University of California Archaeological Survey Reports* 42:7-22.

1962 Prehistoric Cultural Development in the Southern California Deserts. *American Antiquity* 28(2):172-180.

1977 A Half Century of Death Valley Archaeology. *The Journal of California Anthropology* 4(2):249-258.

Wallace, William J., and Edith S. Taylor
1978 *Ancient Peoples and Cultures of Death Valley National Monument.* Acoma Books, Ramona, California.

Warren, Claude N., and R.H. Crabtree
1986 The Prehistory of the Southwestern Great Basin. In *Handbook of the North American Indians, Vol. 11, Great Basin,* edited by W.L. d'Azevedo, pp.183-193. W.C. Sturtevant, General Editor. Smithsonian Institution, Washington D.C.

APPENDIX A

TRIBAL SCOPING

Subject:	BCR Consulting SLF/List of Tribes Request, Pechanga Pkwy Widening, Temecula, Riverside County
From:	David Brunzell (david.brunzell@yahoo.com)
To:	gayle.totton@nahc.ca.gov;
Date:	Monday, September 12, 2016 3:18 PM

Hi Gayle,

I'd like to request a Sacred Lands File Search and list of potentially interested tribes for the proposed Pechanga Parkway Widening Project in the City of Temecula, Riverside County, California. The lead agency for this project is the City of Temecula. The Project will be located as follows (SBBM; see attached project location map):

Township 8 South
Range 2 West
Non-sectioned
USGS 7.5 Minute Topographic Quads: *Temecula* (1975) and *Pechanga* (1997)*, California*

Please send the results and list to my email and please get in touch with any questions.

Thanks,

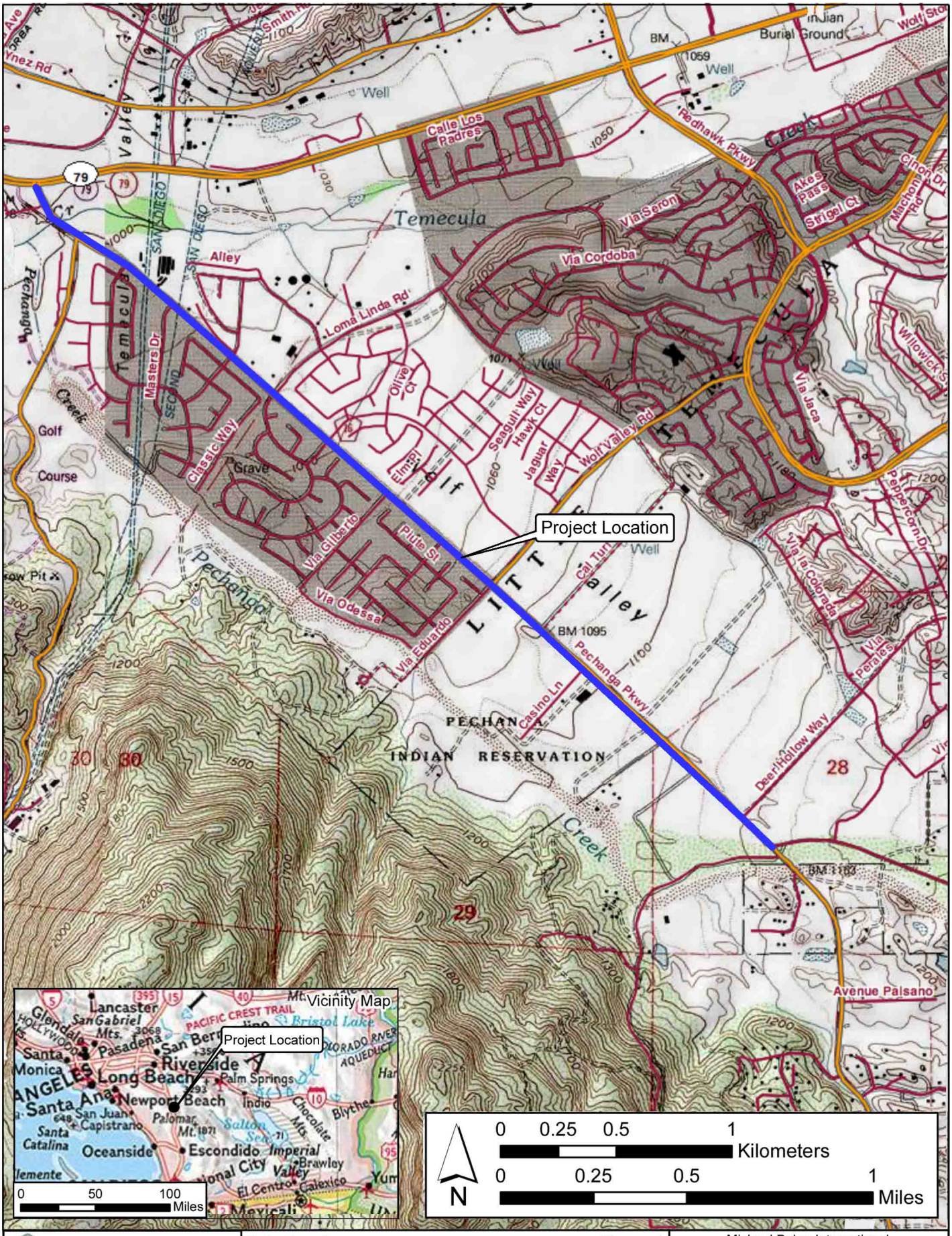
David Brunzell
Principal Investigator/Archaeologist

BCR Consulting LLC
Certified Small Business (SB)
1420 Guadalajara Place
Claremont, California 91711
909-525-7078

www.bcrconsulting.net

Attachments

- Fig 1.pdf (554.69KB)



BCRCONSULTING LLC
Claremont Napa Tehachapi
www.bcrconsulting.net
909-525-7078

Project Location
Pechanga Parkway Widening Project

Figure 1

Reference: ESRI; USGS Quad: *Temecula* (1975) and *Pechanga* (1997), *California*

Michael Baker International
40810 County Center Drive, Suite 100
Temecula, California 92591

NATIVE AMERICAN HERITAGE COMMISSION
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
(916) 373-3710
(916) 373-5471 FAX

September 13, 2016

David Brunzell
BCR Consulting

Sent by E-mail: David.brunzell@yahoo.com

RE: Proposed Pechanga Parkway Widening Project, City of Temecula; Temecula and Pechanga USGS Quadrangles, Riverside County, California

Dear Mr. Brunzell:

Attached is a consultation list of tribes with traditional lands or cultural places located within the boundaries of the above referenced counties. A record search of the Native American Heritage Commission (NAHC) *Sacred Lands File* (SLF) was completed for the area of potential project effect (APE) for the above referenced project. Sites have been recorded in the APE you provided that may be impacted by the project. Please contact the Pechanga Band of Mission Indians at (951) 770-6000 or (951) 770-8100 for more information about the sites. Please contact **ALL** of the culturally affiliated Tribes on the attached Tribal Contact List directly for more information about other potential sites within your APE.

Our records indicate that the lead agency for this project has not requested a Native American Contact List for the purposes of consultation. Please note that the intent of the referenced codes below is to mitigate impacts to tribal cultural resources, as defined, for California Environmental Quality Act (CEQA) projects.

As of July 1, 2015, Public Resources Code Sections 21080.3.1 and 21080.3.2 require public agencies to consult with California Native American tribes identified by the Native American Heritage Commission (NAHC) for the purpose mitigating impacts to tribal cultural resources:

> **Within 14 days** of determining that an application for a project is complete or a decision by a public agency to undertake a project, the lead agency shall provide formal notification to the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, which shall be accomplished by means of at least one written notification that includes a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation pursuant to this section. (Public Resources Code Section 21080.3.1(d))

The law does not preclude agencies from initiating consultation with the tribes that are culturally and traditionally affiliated with their jurisdictions. The NAHC believes that in fact that this is the best practice to ensure that tribes are consulted commensurate with the intent of the law.

In accordance with Public Resources Code Section 21080.3.1(d), formal notification must include a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation. The NAHC believes that agencies should also include with their notification letters information regarding any cultural resources assessment that has been completed on the APE, such as:

1. The results of any record search that may have been conducted at an Information Center of the California Historical Resources Information System (CHRIS), including, but not limited to:

    - A listing of any and all known cultural resources have already been recorded on or adjacent to the APE;

- Copies of any and all cultural resource records and study reports that may have been provided by the Information Center as part of the records search response;

- If the probability is low, moderate, or high that cultural resources are located in the APE.

- Whether the records search indicates a low, moderate or high probability that unrecorded cultural resources are located in the potential APE; and

- If a survey is recommended by the Information Center to determine whether previously unrecorded cultural resources are present.

2. The results of any archaeological inventory survey that was conducted, including:

   - Any report that may contain site forms, site significance, and suggested mitigation measurers.

     All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for pubic disclosure in accordance with Government Code Section 6254.10.

3. The results of any Sacred Lands File (SFL) check conducted through Native American Heritage Commission. The Sacred Lands File list is not exhaustive. A tribe may be the only source of information.

4. Any ethnographic studies conducted for any area including all or part of the potential APE; and

5. Any geotechnical reports regarding all or part of the potential APE.

Lead agencies should be aware that records maintained by the NAHC and CHRIS is not exhaustive, and a negative response to these searches does not preclude the existence of a cultural place. A tribe may be the only source of information regarding the existence of a tribal cultural resource.

This information will aid tribes in determining whether to request formal consultation. In the case that they do, having the information beforehand well help to facilitate the consultation process.

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance we are able to assure that our consultation list contains current information.

If you have any questions, please contact me at my email address: gayle.totton@nahc.ca.gov.

Sincerely,

Gayle Totton, M.A., PhD.
Associate Governmental Program Analyst

CONFIDENTIALITY NOTICE: This communication with its contents may contain confidential and/or legally privileged information. It is solely for the use of the intended recipient(s). Unauthorized interception, review, use or disclosure is prohibited and may violate applicable laws including the Electronic Communications Privacy Act. If you are not the intended recipient, please contact the sender and destroy all copies of the communication.

Native American Heritage Commission
Native American Contact List
Riverside County
9/13/2016

Agua Caliente Band of Cahuilla Indians
Jeff Grubbe, Chairperson
5401 Dinah Shore Drive — Cahuilla
Palm Springs, CA, 92264 — Luiseno
Phone: (760) 699 - 6800
Fax: (760) 699-6919

Agua Caliente Band of Cahuilla Indians
Patricia Garcia-Plotkin, Director
5401 Dinah Shore Drive — Cahuilla
Palm Springs, CA, 92264 — Luiseno
Phone: (760) 699 - 6907
Fax: (760) 699-6924
ACBCI-THPO@aguacaliente.net

Campo Band of Mission Indians
Ralph Goff, Chairperson
36190 Church Road, Suite 1 — Kumeyaay
Campo, CA, 91906
Phone: (619)478-9046
Fax: (619)478-5818
rgoff@campo-nsn.gov

Ewiiaapaayp Tribal Office
Michael Garcia, Vice Chairperson
4054 Willows Road — Kumeyaay
Alpine, CA, 91901
Phone: (619)445-6315
Fax: (619)445-9126
michaelg@leaningrock.net

Ewiiaapaayp Tribal Office
Robert Pinto, Chairperson
4054 Willows Road — Kumeyaay
Alpine, CA, 91901
Phone: (619)445-6315
Fax: (619)445-9126

Jamul Indian Village
Erica Pinto, Chairperson
P.O. Box 612 — Kumeyaay
Jamul, CA, 91935
Phone: (619)669-4785
Fax: (619)669-4817

La Jolla Band of Luiseno Indians
Thomas Rodriguez, Chairperson
22000 Highway 76 — Luiseno
Pauma Valley, CA, 92061
Phone: (760)742-3771

La Posta Band of Mission Indians
Javaughn Miller, Tribal Administrator
8 Crestwood Road — Kumeyaay
Boulevard, CA, 91905
Phone: (619)478-2113
Fax: (619)478-2125
jmiller@Lapostatribe.net

La Posta Band of Mission Indians
Gwendolyn Parada, Chairperson
8 Crestwood Road — Kumeyaay
Boulevard, CA, 91905
Phone: (619)478-2113
Fax: (619)478-2125
LP13boots@aol.com

Manzanita Band of Kumeyaay Nation
Nick Elliott, Cultural Resources Coordinator
P. O. Box 1302 — Kumeyaay
Boulevard, CA, 91905
Phone: (619) 766 - 4930
Fax: (619) 766-4957
nickmepa@yahoo.com

Manzanita Band of Kumeyaay Nation
Angela Elliott Santos, Chairperson
P.O. Box 1302 — Kumeyaay
Boulevard, CA, 91905
Phone: (619) 766 - 4930
Fax: (619) 766-4957

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Pechanga Parkway Widening, Riverside County.

Native American Heritage Commission
Native American Contact List
Riverside County
9/13/2016

Mesa Grande Band of Mission Indians
Virgil Oyos, Chairperson
P.O Box 270 — Kumeyaay
Santa Ysabel, CA, 92070
Phone: (760)782-3818
Fax: (760)782-9092
mesagrandeband@msn.com

Pala Band of Mission Indians
Shasta Gaughen, Tribal Historic Preservation Officer
PMB 50, 35008 Pala Temecula Rd. — Cupeno, Luiseno
Pala, CA, 92059
Phone: (760) 891 - 3515
Fax: (760) 742-3189
sgaughen@palatribe.com

Pauma Band of Luiseno Indians - Pauma & Yuima Reservation
Temet Aguilar, Chairperson
P.O. Box 369, Ext. 303 — Luiseno
Pauma Valley, CA, 92061
Phone: (760)742-1289
Fax: (760)742-3422

Pechanga Band of Mission Indians
Paul Macarro, Cultural Resources Manager
P.O. Box 1477 — Luiseno
Temecula, CA, 92593
Phone: (951) 770 - 8100
Fax: (951) 506-9491
pmacarro@pechanga-nsn.gov

Pechanga Band of Mission Indians
Anna Hoover, Cultural Analyst
P. O. Box 2183 — Luiseno
Temecula, CA, 92593
Phone: (951) 770 - 8104
Fax: (951) 694-0446
ahoover@pechanga-nsn.gov

Pechanga Band of Mission Indians
Mark Macarro, Chairperson
P.O. Box 1477 — Luiseno
Temecula, CA, 92593
Phone: (951) 770 - 6000
Fax: (951) 695-1778
striplett@pechanga-nsn.gov

Rincon Band of Mission Indians
Bo Mazzetti, Chairperson
1 West Tribal Road — Luiseno
Valley Center, CA, 92082
Phone: (760)749-1051
Fax: (760)749-5144
bomazzetti@aol.com

Rincon Band of Mission Indians
Jim McPherson, Tribal Historic Preservation Officer
1 West Tribal Road — Luiseno
Valley Center, CA, 92082
Phone: (760)749-1051
Fax: (760)749-5144
vwhipple@rincontribe.org

San Luis Rey Band of Mission Indians
1889 Sunset Drive — Luiseno
Vista, CA, 92081
Phone: (760) 724 - 8505
Fax: (760) 724-2172
cjmojado@slrmissionindians.org

San Luis Rey Band of Mission Indians
San Luis Rey, Tribal Council
1889 Sunset Drive — Luiseno
Vista, CA, 92081
Phone: (760)724-8505
Fax: (760)724-2172
cjmojado@slrmissionindians.org

San Pasqual Band of Mission Indians
Allen E. Lawson, Chairperson
P.O. Box 365 — Kumeyaay
Valley Center, CA, 92082
Phone: (760)749-3200
Fax: (760)749-3876
allenl@sanpasqualtribe.org

This list is current only as of the date of this document. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Pechanga Parkway Widening, Riverside County.

Native American Heritage Commission
Native American Contact List
Riverside County
9/13/2016

San Pasqual Band of Mission Indians
John Flores, Environmental Coordinator
P. O. Box 365 — Kumeyaay
Valley Center, CA, 92082
Phone: (760) 749 - 3200
Fax: (760) 749-3876
johnf@sanpasqualtribe.org

Soboba Band of Luiseno Indians
Joseph Ontiveros, Cultural Resource Department
P.O. BOX 487 — Cahuilla
San Jacinto, CA, 92581 — Luiseno
Phone: (951)663-5279
Fax: (951)654-4198
jontiveros@soboba-nsn.gov

Soboba Band of Luiseno Indians
Carrie Garcia, Cultural Resources Manager
P. O. Box 487 — Cahuilla
San Jacinto, CA, 92583 — Luiseno
Phone: (951)654-2765
Fax: (951)654-4198
carrieg@soboba-nsn.gov

Sycuan Band of the Kumeyaay Nation
Cody J. Martinez, Chairperson
1 Kwaaypaay Court — Kumeyaay
El Cajon, CA, 92019
Phone: (619)445-2613
Fax: (619)445-1927
ssilva@sycuan-nsn.gov

Sycuan Band of the Kumeyaay Nation
Lisa Haws, Cultural Resources Manager
1 Kwaaypaay Court — Kumeyaay
El Cajon, CA, 92019
Phone: (619) 445 - 4564

Viejas Band of Kumeyaay Indians
Robert J. Welch, Chairperson
1 Viejas Grade Road — Kumeyaay
Alpine, CA, 91901
Phone: (619)445-3810
Fax: (619)445-5337
jhagen@viejas-nsn.gov

Viejas Band of Kumeyaay Indians
Julie Hagen,
1 Viejas Grade Road — Kumeyaay
Alpine, CA, 91901
Phone: (619) 445 - 3810
Fax: (619) 445-5337
jhagen@viejas-nsn.gov

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This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed Pechanga Parkway Widening, Riverside County.

Native American Consultation Summary for the Pechanga Widening Project, Temecula, Riverside County, California

Native American Heritage Commission replied to BCR Consulting Request on September 13, 2016. Results of Sacred Land File Search DID INDICATE presence of Native American cultural resources that could be impacted, and recommended that Pechanga Band of Mission Indians as well as the below groups/individuals be contacted.

Groups Contacted	Letter/Email Date	Response from Tribes
Jeff Grubbe, Chairperson Agua Caliente Band of Cahuilla Indians	Letter: 9/16/16 Email: N/A	None
Thomas Rodriguez, Chairperson La Jolla Band of Luiseno Indians	Letter: 9/16/16 Email: N/A	None
Patricia Garcia-Plotkin, Director Agua Caliente Band of Cahuilla Indians	Letter: 9/16/16 Email: 9/17/16	None
Javaughn Miller, Tribal Administrator La Posta Band of Mission Indians	Letter: 9/16/16 Email: 9/17/16	None
Ralph Goff, Chairperson Campo Band of Mission Indians	Letter: 9/16/16 Email: 9/17/16	None
Gwendolyn Parada, Chairperson La Posta Band of Mission Indians	Letter: 9/16/16 Email: 9/17/16	None
Michael Garcia, Vice Chairperson Ewiiaapaayp Tribal Office	Letter: 9/16/16 Email: 9/17/16	None
Nick Elliot, Cultural Resources Coordinator Manzanita Band of Kumeyaay Nation	Letter: 9/16/16 Email: 9/17/16	None
Robert Pinto, Chairperson Ewiiaapaayp Tribal Office	Letter: 9/16/16 Email: N/A	None
Angela Elliot Santos, Chairperson Manzanita Band of Kumeyaay Nation	Letter: 9/16/16 Email: N/A	None
Erica Pinto, Chairperson Jamul Indian Village	Letter: 9/16/16 Email: N/A	None
Virgil Oyos, Chairperson Morongo Band of Mission Indians	Letter: 9/16/16 Email: 9/17/16	None
Mark Macarro, Chairperson Pechanga Band of Mission Indians	Letter: 9/16/16 Email: 9/17/16	None
Shasta Gaughen, Historic Preservation Office Pala Band of Mission Indians	Letter: 9/16/16 Email: 9/17/16	None
Bo Mazzetti, Chairperson Rincon Band of Mission Indians	Letter: 9/16/16 Email: 9/17/16	None

Groups Contacted	Letter/Email Date	Response from Tribes
Temet Aguilar, Chairperson Pauma & Yuima Reservation	Letter: 9/16/16 Email: N/A	None
Jim McPherson, Tribal Historic Preservation Officer Rincon Band of Mission Indians	Letter: 9/16/16 Email: 9/17/16	None
Paul Macarro, Cultural Resources Manager Pechanga Band of Mission Indians	Letter: 9/16/16 Email: 9/17/16	None
San Luis Rey Band of Mission Indians	Letter: 9/16/16 Email: 9/17/16	None
Anna Hoover, Cultural Analyst Pechanga Cultural Resources Department	Letter: 9/16/16 Email: 9/17/16	None
Tribal Council San Luis Rey Band of Mission Indians	Letter: 9/16/16 Email: 9/17/16	None
Allen E. Lawson, Chairperson San Pasqual Band of Mission Indians	Letter: 9/16/16 Email: 9/17/16	None
John Flores, Environmental Coordinator San Pasqual Band of Mission Indians	Letter: 9/16/16 Email: 9/17/16	None
Robert Welch, Chairperson Viejas Band of Kumeyaay Indians	Letter: 9/16/16 Email: 9/17/16	None
Joseph Ontiveros, Cultural Resources Department Soboba Band of Luiseno Indians	Letter: 9/16/16 Email: 9/17/16	None
Julie Hagen Viejas Band of Kumeyaay Indians	Letter: 9/16/16 Email: 9/17/16	None
Carrie Garcia, Soboba Band of Luiseno Indians Cultural Resources Manager	Letter: 9/16/16 Email: 9/17/16	None
Cody J. Martinez, Chairperson Sycuan Band of the Kumeyaay Nation	Letter: 9/16/16 Email: 9/17/16	None
Lisa Haws, Cultural Resources Manager Sycuan Band of the Kumeyaay Nation	Letter: 9/16/16 Email: N/A	None

September 16, 2016

Jeff Grubbe
Chairperson
Agua Caliente Band of Cahuilla Indians
5401 Dinah Shore Drive
Palm Springs, California 92264

Subject: Tribal Scoping for the Pechanga Parkway Widening Project, Temecula, Riverside County, California

Dear Mr. Chairperson:

This is a tribal scoping letter to solicit your comments on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the tribal scoping is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American groups and individuals. We understand that much of the content of the communications will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The proposed project is located in a non-sectioned portion of Township 8 South, Range 2 West, San Bernardino Baseline and Meridian. The property is depicted on the *Temecula* (1975), and *Pechanga* (1997) *California* 7.5-minute USGS topographic quadrangles, (see attached map). The lead agency is the City of Temecula.

If you know of any cultural resources in the vicinity that may be of religious and/or cultural significance to your community or if you would like more information, please contact me at 909-525-7078 or david.brunzell@yahoo.com. Correspondence can also be sent to BCR Consulting LLC, Attn: David Brunzell, 1420 Guadalajara Place, Claremont, California 91711. I request a response by October 20, 2016. If you require more time, please let me know. Thank you for your involvement in this process.

Sincerely,

BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

Attachment: USGS Map

September 16, 2016

Thomas Rodriguez
Chairperson
La Jolla Band of Luiseno Indians
22000 Highway 76
Pauma Valley, California 92061

Subject: Tribal Scoping for the Pechanga Parkway Widening Project, Temecula, Riverside County, California

Dear Mr. Chairperson:

This is a tribal scoping letter to solicit your comments on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the tribal scoping is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American groups and individuals. We understand that much of the content of the communications will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The proposed project is located in a non-sectioned portion of Township 8 South, Range 2 West, San Bernardino Baseline and Meridian. The property is depicted on the *Temecula* (1975), and *Pechanga* (1997) *California* 7.5-minute USGS topographic quadrangles, (see attached map). The lead agency is the City of Temecula.

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Sincerely,

BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

Attachment: USGS Map

September 16, 2016

Patricia Garcia-Plotkin
Director
Agua Caliente Band of Cahuilla Indians
5401 Dinah Shore Drive
Palm Springs, California 92264

Subject: Tribal Scoping for the Pechanga Parkway Widening Project, Temecula, Riverside County, California

Dear Patricia:

This is a tribal scoping letter to solicit your comments on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the tribal scoping is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American groups and individuals. We understand that much of the content of the communications will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The proposed project is located in a non-sectioned portion of Township 8 South, Range 2 West, San Bernardino Baseline and Meridian. The property is depicted on the *Temecula* (1975), and *Pechanga* (1997) *California* 7.5-minute USGS topographic quadrangles, (see attached map). The lead agency is the City of Temecula.

If you know of any cultural resources in the vicinity that may be of religious and/or cultural significance to your community or if you would like more information, please contact me at 909-525-7078 or david.brunzell@yahoo.com. Correspondence can also be sent to BCR Consulting LLC, Attn: David Brunzell, 1420 Guadalajara Place, Claremont, California 91711. I request a response by October 20, 2016. If you require more time, please let me know. Thank you for your involvement in this process.

Sincerely,

BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

Attachment: USGS Map

September 16, 2016

Javaughn Miller
Tribal Administrator
La Posta Band of Mission Indians
8 Crestwood Road
Boulevard, California 91905

Subject: Tribal Scoping for the Pechanga Parkway Widening Project, Temecula, Riverside County, California

Dear Javaughn:

This is a tribal scoping letter to solicit your comments on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the tribal scoping is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American groups and individuals. We understand that much of the content of the communications will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The proposed project is located in a non-sectioned portion of Township 8 South, Range 2 West, San Bernardino Baseline and Meridian. The property is depicted on the *Temecula* (1975), and *Pechanga* (1997) *California* 7.5-minute USGS topographic quadrangles, (see attached map). The lead agency is the City of Temecula.

If you know of any cultural resources in the vicinity that may be of religious and/or cultural significance to your community or if you would like more information, please contact me at 909-525-7078 or david.brunzell@yahoo.com. Correspondence can also be sent to BCR Consulting LLC, Attn: David Brunzell, 1420 Guadalajara Place, Claremont, California 91711. I request a response by October 20, 2016. If you require more time, please let me know. Thank you for your involvement in this process.

Sincerely,

BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

Attachment: USGS Map

September 16, 2016

Ralph Goff
Chairperson
Campo Band of Mission Indians
36190 Church Road, Suite 1
Campo, California 91906

Subject: Tribal Scoping for the Pechanga Parkway Widening Project, Temecula, Riverside County, California

Dear Mr. Chairperson:

This is a tribal scoping letter to solicit your comments on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the tribal scoping is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American groups and individuals. We understand that much of the content of the communications will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The proposed project is located in a non-sectioned portion of Township 8 South, Range 2 West, San Bernardino Baseline and Meridian. The property is depicted on the *Temecula* (1975), and *Pechanga* (1997) *California* 7.5-minute USGS topographic quadrangles, (see attached map). The lead agency is the City of Temecula.

If you know of any cultural resources in the vicinity that may be of religious and/or cultural significance to your community or if you would like more information, please contact me at 909-525-7078 or david.brunzell@yahoo.com. Correspondence can also be sent to BCR Consulting LLC, Attn: David Brunzell, 1420 Guadalajara Place, Claremont, California 91711. I request a response by October 20, 2016. If you require more time, please let me know. Thank you for your involvement in this process.

Sincerely,

BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

Attachment: USGS Map

September 16, 2016

Gwendolyn Parada
Chairperson
La Posta Band of Mission Indians
8 Crestwood Road
Boulevard, California 91905

Subject: Tribal Scoping for the Pechanga Parkway Widening Project, Temecula, Riverside County, California

Dear Ms. Chairperson:

This is a tribal scoping letter to solicit your comments on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the tribal scoping is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American groups and individuals. We understand that much of the content of the communications will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The proposed project is located in a non-sectioned portion of Township 8 South, Range 2 West, San Bernardino Baseline and Meridian. The property is depicted on the *Temecula* (1975), and *Pechanga* (1997) *California* 7.5-minute USGS topographic quadrangles, (see attached map). The lead agency is the City of Temecula.

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Sincerely,

BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

Attachment: USGS Map

September 16, 2016

Michael Garcia
Vice Chairperson
Ewiiaapaayp Tribal Office
4054 Willows Road
Alpine, California 91901

Subject: Tribal Scoping for the Pechanga Parkway Widening Project, Temecula, Riverside County, California

Dear Michael:

This is a tribal scoping letter to solicit your comments on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the tribal scoping is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American groups and individuals. We understand that much of the content of the communications will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The proposed project is located in a non-sectioned portion of Township 8 South, Range 2 West, San Bernardino Baseline and Meridian. The property is depicted on the *Temecula* (1975), and *Pechanga* (1997) *California* 7.5-minute USGS topographic quadrangles, (see attached map). The lead agency is the City of Temecula.

If you know of any cultural resources in the vicinity that may be of religious and/or cultural significance to your community or if you would like more information, please contact me at 909-525-7078 or david.brunzell@yahoo.com. Correspondence can also be sent to BCR Consulting LLC, Attn: David Brunzell, 1420 Guadalajara Place, Claremont, California 91711. I request a response by October 20, 2016. If you require more time, please let me know. Thank you for your involvement in this process.

Sincerely,

BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

Attachment: USGS Map

September 16, 2016

Nick Elliot
Cultural Resources Coordinator
Manzanita Band of Kumeyaay Nation
P.O. Box 1302
Boulevard, California 91905

Subject: Tribal Scoping for the Pechanga Parkway Widening Project, Temecula, Riverside County, California

Dear Nick:

This is a tribal scoping letter to solicit your comments on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the tribal scoping is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American groups and individuals. We understand that much of the content of the communications will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The proposed project is located in a non-sectioned portion of Township 8 South, Range 2 West, San Bernardino Baseline and Meridian. The property is depicted on the *Temecula* (1975), and *Pechanga* (1997) *California* 7.5-minute USGS topographic quadrangles, (see attached map). The lead agency is the City of Temecula.

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Sincerely,

BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

Attachment: USGS Map

September 16, 2016

Robert Pinto Sr.
Chairperson
Ewiiaapaayp Tribal Office
4054 Willows Road
Alpine, California 91901

Subject: Tribal Scoping for the Pechanga Parkway Widening Project, Temecula, Riverside County, California

Dear Mr. Chairperson:

This is a tribal scoping letter to solicit your comments on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the tribal scoping is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American groups and individuals. We understand that much of the content of the communications will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The proposed project is located in a non-sectioned portion of Township 8 South, Range 2 West, San Bernardino Baseline and Meridian. The property is depicted on the *Temecula* (1975), and *Pechanga* (1997) *California* 7.5-minute USGS topographic quadrangles, (see attached map). The lead agency is the City of Temecula.

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Sincerely,

BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

Attachment: USGS Map

September 16, 2016

Angela Elliot Santos
Chairperson
Manzanita Band of Kumeyaay Nation
P.O. Box 1302
Boulevard, California 91905

Subject: Tribal Scoping for the Pechanga Parkway Widening Project, Temecula, Riverside County, California

Dear Ms. Chairperson:

This is a tribal scoping letter to solicit your comments on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the tribal scoping is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American groups and individuals. We understand that much of the content of the communications will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The proposed project is located in a non-sectioned portion of Township 8 South, Range 2 West, San Bernardino Baseline and Meridian. The property is depicted on the *Temecula* (1975), and *Pechanga* (1997) *California* 7.5-minute USGS topographic quadrangles, (see attached map). The lead agency is the City of Temecula.

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Sincerely,

BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

Attachment: USGS Map

September 16, 2016

Erica Pinto
Chairperson
Jamul Indian Reservation
P.O. Box 612
Jamul, California 91935

Subject: Tribal Scoping for the Pechanga Parkway Widening Project, Temecula, Riverside County, California

Dear Ms. Chairperson:

This is a tribal scoping letter to solicit your comments on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the tribal scoping is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American groups and individuals. We understand that much of the content of the communications will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The proposed project is located in a non-sectioned portion of Township 8 South, Range 2 West, San Bernardino Baseline and Meridian. The property is depicted on the *Temecula* (1975), and *Pechanga* (1997) *California* 7.5-minute USGS topographic quadrangles, (see attached map). The lead agency is the City of Temecula.

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Sincerely,

BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

Attachment: USGS Map

September 16, 2016

Virgil Oyos
Chairperson
Morongo Band of Mission Indians
P.O. Box 270
Santa Ysabel, California 92070

Subject: Tribal Scoping for the Pechanga Parkway Widening Project, Temecula, Riverside County, California

Dear Mr. Chairperson:

This is a tribal scoping letter to solicit your comments on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the tribal scoping is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American groups and individuals. We understand that much of the content of the communications will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The proposed project is located in a non-sectioned portion of Township 8 South, Range 2 West, San Bernardino Baseline and Meridian. The property is depicted on the *Temecula* (1975), and *Pechanga* (1997) *California* 7.5-minute USGS topographic quadrangles, (see attached map). The lead agency is the City of Temecula.

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Sincerely,

BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

Attachment: USGS Map

September 16, 2016

Mark Macarro
Chairperson
Pechanga Band of Mission Indians
P.O. Box 1477
Temecula, California 92593

Subject: Tribal Scoping for the Pechanga Parkway Widening Project, Temecula, Riverside County, California

Dear Mr. Chairperson:

This is a tribal scoping letter to solicit your comments on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the tribal scoping is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American groups and individuals. We understand that much of the content of the communications will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The proposed project is located in a non-sectioned portion of Township 8 South, Range 2 West, San Bernardino Baseline and Meridian. The property is depicted on the *Temecula* (1975), and *Pechanga* (1997) *California* 7.5-minute USGS topographic quadrangles, (see attached map). The lead agency is the City of Temecula.

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Sincerely,

BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

Attachment: USGS Map

September 16, 2016

Shasta Gaughen
Historic Preservation Office
Pala Band of Mission Indians
35008 Pala Temecula Road, PMB
Pala, California 92059

Subject: Tribal Scoping for the Pechanga Parkway Widening Project, Temecula, Riverside County, California

Dear Shasta:

This is a tribal scoping letter to solicit your comments on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the tribal scoping is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American groups and individuals. We understand that much of the content of the communications will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The proposed project is located in a non-sectioned portion of Township 8 South, Range 2 West, San Bernardino Baseline and Meridian. The property is depicted on the *Temecula* (1975), and *Pechanga* (1997) *California* 7.5-minute USGS topographic quadrangles, (see attached map). The lead agency is the City of Temecula.

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Sincerely,

BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

Attachment: USGS Map

September 16, 2016

Bo Mazzetti
Chairperson
Rincon Band of Mission Indians
1 West Tribal Road
Valley Center, California 92082

Subject: Tribal Scoping for the Pechanga Parkway Widening Project, Temecula, Riverside County, California

Dear Mr. Chairperson:

This is a tribal scoping letter to solicit your comments on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the tribal scoping is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American groups and individuals. We understand that much of the content of the communications will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The proposed project is located in a non-sectioned portion of Township 8 South, Range 2 West, San Bernardino Baseline and Meridian. The property is depicted on the *Temecula* (1975), and *Pechanga* (1997) *California* 7.5-minute USGS topographic quadrangles, (see attached map). The lead agency is the City of Temecula.

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Sincerely,

BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

Attachment: USGS Map

September 16, 2016

Temet Aguilar
Chairperson
Pauma & Yuima Reservation
P.O. Box 369
Pauma Valley, California 92061

Subject: Tribal Scoping for the Pechanga Parkway Widening Project, Temecula, Riverside County, California

Dear Mr. Chairperson:

This is a tribal scoping letter to solicit your comments on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the tribal scoping is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American groups and individuals. We understand that much of the content of the communications will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The proposed project is located in a non-sectioned portion of Township 8 South, Range 2 West, San Bernardino Baseline and Meridian. The property is depicted on the *Temecula* (1975), and *Pechanga* (1997) *California* 7.5-minute USGS topographic quadrangles, (see attached map). The lead agency is the City of Temecula.

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BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

Attachment: USGS Map

September 16, 2016

Jim McPherson
Tribal Historic Preservation Officer
Rincon Band of Mission Indians
1 West Tribal Road
Valley Center, California 92082

Subject: Tribal Scoping for the Pechanga Parkway Widening Project, Temecula, Riverside County, California

Dear Jim:

This is a tribal scoping letter to solicit your comments on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the tribal scoping is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American groups and individuals. We understand that much of the content of the communications will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The proposed project is located in a non-sectioned portion of Township 8 South, Range 2 West, San Bernardino Baseline and Meridian. The property is depicted on the *Temecula* (1975), and *Pechanga* (1997) *California* 7.5-minute USGS topographic quadrangles, (see attached map). The lead agency is the City of Temecula.

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Sincerely,

BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

Attachment: USGS Map

September 16, 2016

Paul Macarro
Cultural Resources Manager
Pechanga Band of Mission Indians
P.O Box 1477
Temecula, California 92593

Subject: Tribal Scoping for the Pechanga Parkway Widening Project, Temecula, Riverside County, California

Dear Paul:

This is a tribal scoping letter to solicit your comments on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the tribal scoping is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American groups and individuals. We understand that much of the content of the communications will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The proposed project is located in a non-sectioned portion of Township 8 South, Range 2 West, San Bernardino Baseline and Meridian. The property is depicted on the *Temecula* (1975), and *Pechanga* (1997) *California* 7.5-minute USGS topographic quadrangles, (see attached map). The lead agency is the City of Temecula.

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Sincerely,

BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

Attachment: USGS Map

September 16, 2016

Tribal Council
San Luis Rey Band of Mission Indians
1889 Sunset Drive
Vista, California 92081

Subject: Tribal Scoping for the Pechanga Parkway Widening Project, Temecula, Riverside County, California

Dear Tribal Council:

This is a tribal scoping letter to solicit your comments on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the tribal scoping is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American groups and individuals. We understand that much of the content of the communications will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The proposed project is located in a non-sectioned portion of Township 8 South, Range 2 West, San Bernardino Baseline and Meridian. The property is depicted on the *Temecula* (1975), and *Pechanga* (1997) *California* 7.5-minute USGS topographic quadrangles, (see attached map). The lead agency is the City of Temecula.

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Sincerely,

BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

Attachment: USGS Map

September 16, 2016

Anna Hoover
Cultural Analyst
Pechanga Cultural Resources Department
P.O. Box 2183
Temecula, California 92593

Subject: Tribal Scoping for the Pechanga Parkway Widening Project, Temecula, Riverside County, California

Dear Anna:

This is a tribal scoping letter to solicit your comments on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the tribal scoping is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American groups and individuals. We understand that much of the content of the communications will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The proposed project is located in a non-sectioned portion of Township 8 South, Range 2 West, San Bernardino Baseline and Meridian. The property is depicted on the *Temecula* (1975), and *Pechanga* (1997) *California* 7.5-minute USGS topographic quadrangles, (see attached map). The lead agency is the City of Temecula.

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Sincerely,

BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

Attachment: USGS Map

September 16, 2016

Allen E. Lawson
Chairperson
San Pasqual Band of Mission Indians
P.O. Box 365
Valley Center, California 92082

Subject: Tribal Scoping for the Pechanga Parkway Widening Project, Temecula, Riverside County, California

Dear Mr. Chairperson:

This is a tribal scoping letter to solicit your comments on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the tribal scoping is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American groups and individuals. We understand that much of the content of the communications will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The proposed project is located in a non-sectioned portion of Township 8 South, Range 2 West, San Bernardino Baseline and Meridian. The property is depicted on the *Temecula* (1975), and *Pechanga* (1997) *California* 7.5-minute USGS topographic quadrangles, (see attached map). The lead agency is the City of Temecula.

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Sincerely,

BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

Attachment: USGS Map

September 16, 2016

John Flores
Environmental Coordinator
San Pasqual Band of Mission Indians
P.O. Box 365
Valley Center, California 92082

Subject: Tribal Scoping for the Pechanga Parkway Widening Project, Temecula, Riverside County, California

Dear John:

This is a tribal scoping letter to solicit your comments on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the tribal scoping is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American groups and individuals. We understand that much of the content of the communications will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The proposed project is located in a non-sectioned portion of Township 8 South, Range 2 West, San Bernardino Baseline and Meridian. The property is depicted on the *Temecula* (1975), and *Pechanga* (1997) *California* 7.5-minute USGS topographic quadrangles, (see attached map). The lead agency is the City of Temecula.

If you know of any cultural resources in the vicinity that may be of religious and/or cultural significance to your community or if you would like more information, please contact me at 909-525-7078 or david.brunzell@yahoo.com. Correspondence can also be sent to BCR Consulting LLC, Attn: David Brunzell, 1420 Guadalajara Place, Claremont, California 91711. I request a response by October 20, 2016. If you require more time, please let me know. Thank you for your involvement in this process.

Sincerely,

BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

Attachment: USGS Map

September 16, 2016

Robert J. Welch
Chairperson
Viejas Band of Kumeyaay Indians
1 Viejas Grade Road
Alpine, California 91901

Subject: Tribal Scoping for the Pechanga Parkway Widening Project, Temecula, Riverside County, California

Dear Mr. Chairperson:

This is a tribal scoping letter to solicit your comments on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the tribal scoping is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American groups and individuals. We understand that much of the content of the communications will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The proposed project is located in a non-sectioned portion of Township 8 South, Range 2 West, San Bernardino Baseline and Meridian. The property is depicted on the *Temecula* (1975), and *Pechanga* (1997) *California* 7.5-minute USGS topographic quadrangles, (see attached map). The lead agency is the City of Temecula.

If you know of any cultural resources in the vicinity that may be of religious and/or cultural significance to your community or if you would like more information, please contact me at 909-525-7078 or david.brunzell@yahoo.com. Correspondence can also be sent to BCR Consulting LLC, Attn: David Brunzell, 1420 Guadalajara Place, Claremont, California 91711. I request a response by October 20, 2016. If you require more time, please let me know. Thank you for your involvement in this process.

Sincerely,

BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

Attachment: USGS Map

September 16, 2016

Joseph Ontiveros
Cultural Resources Department
Soboba Band of Luiseno Indians
P.O. Box 487
San Jacinto, California 92581

Subject: Tribal Scoping for the Pechanga Parkway Widening Project, Temecula, Riverside County, California

Dear Joseph:

This is a tribal scoping letter to solicit your comments on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the tribal scoping is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American groups and individuals. We understand that much of the content of the communications will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The proposed project is located in a non-sectioned portion of Township 8 South, Range 2 West, San Bernardino Baseline and Meridian. The property is depicted on the *Temecula* (1975), and *Pechanga* (1997) *California* 7.5-minute USGS topographic quadrangles, (see attached map). The lead agency is the City of Temecula.

If you know of any cultural resources in the vicinity that may be of religious and/or cultural significance to your community or if you would like more information, please contact me at 909-525-7078 or david.brunzell@yahoo.com. Correspondence can also be sent to BCR Consulting LLC, Attn: David Brunzell, 1420 Guadalajara Place, Claremont, California 91711. I request a response by October 20, 2016. If you require more time, please let me know. Thank you for your involvement in this process.

Sincerely,

BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

Attachment: USGS Map

September 16, 2016

Julie Hagen
Viejas Band of Kumeyaay Indians
1 Viejas Grade Road
Alpine, California 91901

Subject: Tribal Scoping for the Pechanga Parkway Widening Project, Temecula, Riverside County, California

Dear Julie:

This is a tribal scoping letter to solicit your comments on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the tribal scoping is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American groups and individuals. We understand that much of the content of the communications will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The proposed project is located in a non-sectioned portion of Township 8 South, Range 2 West, San Bernardino Baseline and Meridian. The property is depicted on the *Temecula* (1975), and *Pechanga* (1997) *California* 7.5-minute USGS topographic quadrangles, (see attached map). The lead agency is the City of Temecula.

If you know of any cultural resources in the vicinity that may be of religious and/or cultural significance to your community or if you would like more information, please contact me at 909-525-7078 or david.brunzell@yahoo.com. Correspondence can also be sent to BCR Consulting LLC, Attn: David Brunzell, 1420 Guadalajara Place, Claremont, California 91711. I request a response by October 20, 2016. If you require more time, please let me know. Thank you for your involvement in this process.

Sincerely,

BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

Attachment: USGS Map

September 16, 2016

Carrie Garcia
Soboba Band of Luiseno Indians
Cultural Resources Manager
P.O. Box 487
San Jacinto, California 92581

Subject: Tribal Scoping for the Pechanga Parkway Widening Project, Temecula, Riverside County, California

Dear Carrie:

This is a tribal scoping letter to solicit your comments on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the tribal scoping is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American groups and individuals. We understand that much of the content of the communications will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The proposed project is located in a non-sectioned portion of Township 8 South, Range 2 West, San Bernardino Baseline and Meridian. The property is depicted on the *Temecula* (1975), and *Pechanga* (1997) *California* 7.5-minute USGS topographic quadrangles, (see attached map). The lead agency is the City of Temecula.

If you know of any cultural resources in the vicinity that may be of religious and/or cultural significance to your community or if you would like more information, please contact me at 909-525-7078 or david.brunzell@yahoo.com. Correspondence can also be sent to BCR Consulting LLC, Attn: David Brunzell, 1420 Guadalajara Place, Claremont, California 91711. I request a response by October 20, 2016. If you require more time, please let me know. Thank you for your involvement in this process.

Sincerely,

BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

Attachment: USGS Map

September 16, 2016

Cody J. Martinez
Chairperson
Sycuan Band of the Kumeyaay Nation
1 Kwaaypaay Court
El Cajon, California 92019

Subject: Tribal Scoping for the Pechanga Parkway Widening Project, Temecula, Riverside County, California

Dear Mr. Chairperson:

This is a tribal scoping letter to solicit your comments on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the tribal scoping is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American groups and individuals. We understand that much of the content of the communications will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The proposed project is located in a non-sectioned portion of Township 8 South, Range 2 West, San Bernardino Baseline and Meridian. The property is depicted on the *Temecula* (1975), and *Pechanga* (1997) *California* 7.5-minute USGS topographic quadrangles, (see attached map). The lead agency is the City of Temecula.

If you know of any cultural resources in the vicinity that may be of religious and/or cultural significance to your community or if you would like more information, please contact me at 909-525-7078 or david.brunzell@yahoo.com. Correspondence can also be sent to BCR Consulting LLC, Attn: David Brunzell, 1420 Guadalajara Place, Claremont, California 91711. I request a response by October 20, 2016. If you require more time, please let me know. Thank you for your involvement in this process.

Sincerely,

BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

Attachment: USGS Map

September 16, 2016

Lisa Haws
Cultural Resources Manager
Sycuan Band of the Kumeyaay Nation
1 Kwaaypaay Court
El Cajon, California 92019

Subject: Tribal Scoping for the Pechanga Parkway Widening Project, Temecula, Riverside County, California

Dear Lisa:

This is a tribal scoping letter to solicit your comments on a proposed development project at locations with which you have tribal cultural affiliation. The purpose of the tribal scoping is to ensure the protection of Native American cultural resources on which the proposed undertaking may have an impact. In the tribal scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American groups and individuals. We understand that much of the content of the communications will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The proposed project is located in a non-sectioned portion of Township 8 South, Range 2 West, San Bernardino Baseline and Meridian. The property is depicted on the *Temecula* (1975), and *Pechanga* (1997) *California* 7.5-minute USGS topographic quadrangles, (see attached map). The lead agency is the City of Temecula.

If you know of any cultural resources in the vicinity that may be of religious and/or cultural significance to your community or if you would like more information, please contact me at 909-525-7078 or david.brunzell@yahoo.com. Correspondence can also be sent to BCR Consulting LLC, Attn: David Brunzell, 1420 Guadalajara Place, Claremont, California 91711. I request a response by October 20, 2016. If you require more time, please let me know. Thank you for your involvement in this process.

Sincerely,

BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

Attachment: USGS Map

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- Adult Signature Required $ $0.00
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Postage $0.47

Total Postage and Fees $3.77

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Sent To: Ralph Goff
Street and Apt. No., or PO Box No.: 36190 Church Rd. Suite 1
City, State, ZIP+4®: Campo, CA. 91906

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Sent To: Gwendolyn Purada
Street and Apt. No., or PO Box No.: 4 Crestwood Rd
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Sent To: Michael Garcia
Street and Apt. No., or PO Box No.: 4054 Willows Rd.
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City, State, ZIP+4®: Boulevard, CA. 91905

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Sent To: Robert Pinto
Street and Apt. No., or PO Box No.: 4054 Willows Rd.
City, State, ZIP+4®: Alpine, CA. 91901

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Sent To: Angela Elliot Santos
Street and Apt. No., or PO Box No.: P.O. Box 1302
City, State, ZIP+4®: Boulevard, CA. 91905

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Sent To: Erica Pinto
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City, State, ZIP+4®: Santa Ysabel, CA. 92070

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Sent To Mark Macarro
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City, State, ZIP+4® Temecula, CA. 92593

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Postage $0.47
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Total Postage and Fees $3.77
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Sent To Shasta Gaughen
Street and Apt. No., or PO Box No. 35008 Pala Temecula Rd.
City, State, ZIP+4® Pala, CA. 92059

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- ☐ Adult Signature Required $ $0.00
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Total Postage and Fees $3.77
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09/16/2016

Sent To Bo Mazzetti
Street and Apt. No., or PO Box No. 1 West Tribal Rd.
City, State, ZIP+4® Valley Center, CA. 92082

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Total Postage and Fees $3.77
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CLAREMONT, CA 91711 SEP 16 2016 USPS
09/16/2016

Sent To Temet Aguilar
Street and Apt. No., or PO Box No. P.O. Box 369
City, State, ZIP+4® Pauma Valley, CA. 92061

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APPENDIX B

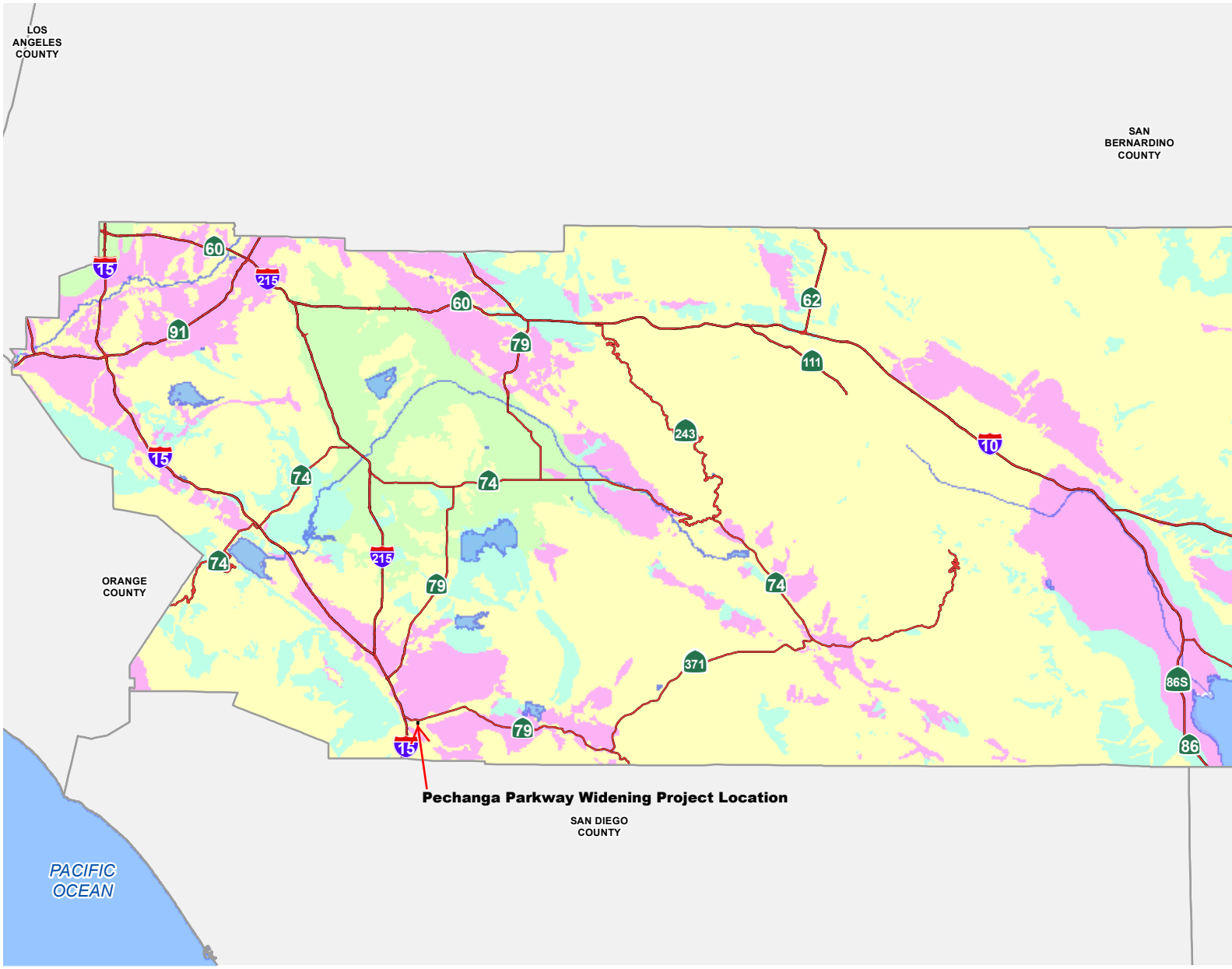
PHOTOGRAPHS

Photo 1: Project Site Overview (View east)

Photo 2: Project Site Overview Towards Vacant Lot (View North)

APPENDIX C

PALEONTOLOGICAL SENSITIVITY MAP



Riverside County Paleontological Sensitivity Map

High A (Ha)
High B (Hb)
Low
Undetermined
Highways
Waterbodies

December 16, 2013

0 10 20 Miles

Disclaimer: Maps and data are to be used for reference purposes only. Map features are approximate, and are not necessarily accurate to surveying or engineering standards. The County of Riverside makes no warranty or guarantee as to the content (the source is often third party), accuracy, timeliness, or completeness of any of the data provided, and assumes no legal responsibility for the information contained on this map. Any use of this product with respect to accuracy and precision shall be the sole responsibility of the user.

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Appendix D:
Geotechnical Investigation

Project No. T2733-22-01
October 12, 2016

Francisco Martinez Jr., P.E.
Michael Baker International
40810 County Center Drive, Suite 200
Temecula, California 92590

Subject: GEOTECHNICAL INVESTIGATION
PECHANGA PARKWAY WIDENING
VIA GILBERTO TO NORTH CASINO DRIVE
CITY PROJECT PW 15-14
TEMECULA, CALIFORNIA

Dear Mr. Martinez:

In accordance with Proposal IE-1607 dated February 24, 2016 and the Subconsultant Agreement for Professional Services, Geocon West, Inc. (Geocon) has prepared this report of our geotechnical investigation along Pechanga Parkway from Via Gilberto to North Casino Drive, in Temecula, California. The approximate limits of the project are depicted on the attached *Vicinity Map* (see Figure 1). This report presents a summary of the methods used to observe the subsurface geologic conditions, measurements of the existing pavement section thicknesses, results of the laboratory testing, and recommendations for design and construction of the roadway widening.

Geocon performed geotechnical observation and testing for the City of Temecula during improvements to Pechanga Parkway in 2008 and 2009. As part of this project, we have reviewed our construction records and used that information in evaluation of the currently proposed construction.

PROJECT UNDERSTANDING

The Pechanga Parkway widening will include improvements to the roadways along Pechanga Parkway between Via Gilberto and North Casino Drive. The extent of the improvements will begin approximately 600 feet southeast of Via Gilberto at Station 86+99 and extend to approximately 600 feet southeast of North Casino Drive at Station 115+36.

Pechanga Parkway runs in a northwest/southeast orientation. In the area of the proposed improvements, the roadway consists of two travel lanes and a bike lane in each direction, with a center median. Based on the plans by Michael Baker International, we understand that the planned construction will include widening of the roadway to the northeast, a reduction in median width, and shifting of the medians to accommodate a third lane of traffic in each direction. The improvements will include grading along the northeast side of Pechanga Parkway, relocation of utilities, additional storm drain structures, new lighting, new medians, relocation of a bus pad, construction of a retaining wall, new

curb and gutter, sidewalk, and irrigation. Portions of the roadway will be milled and overlaid, and areas of widened pavement will receive a new structural section.

Grading will include modifying the channel slopes along the northeast side of the roadway. The existing channel slopes along the length of the proposed improvements are approximately 6 to 10 feet in height below the existing roadway. The slopes are inclined at approximately 4:1 to 5:1 (horizontal:vertical). The slopes are separated from the existing paved roadway by a sidewalk and narrow landscaped area. The proposed alterations include steepening some of the slopes to 2:1 (h:v) in order to provide additional area for the roadway widening. The new fill will daylight within the approximate midpoint of the existing slopes. The new slopes will generally be up to 6 feet high with one section northwest of Wolf Valley Road up to 10 feet high. The toe of the new slope will extend to the bottom of the existing channel slope (See Figure 2). A 6-foot-high retaining wall will be constructed within the existing slope southeast of Wolf Valley Road to provide room for a bus turnout.

The recommendations presented herein are based on analysis of the data obtained during the investigation, our work during widening of the roadway in 2008 to 2009, and our experience with similar soil and geologic conditions. If project details vary significantly from those described herein, Geocon should be contacted to determine the necessity for review and possible revision of this report.

SCOPE OF SERVICES

The purpose of the investigation was to advance borings along the northeast shoulder to observe the subsurface geologic conditions, core the existing pavement sections to measure base and asphalt concrete thicknesses, sample the exposed subgrade soil, perform R-value testing of subgrade soil, evaluate the existing and planned pavement sections based on information obtained during our investigation, and recommend pavement sections for new asphalt concrete roadways and improvement of the existing pavement. Our scope of services included the following:

- Mark the proposed core locations and notify Underground Service Alert (USA) to locate and mark utilities in the proposed investigation area.
- Obtain an encroachment permit from the City of Temecula.
- Advance three borings along the northeast side of the roadway. The borings were performed to observe surficial geologic conditions and to collect samples for laboratory testing and analyses.
- Excavate six pavement cores in the roadways. The existing asphalt concrete pavement and aggregate base thicknesses were measured and bulk samples were collected from the base and subgrade.
- Perform laboratory testing of the surficial soil, including R-value, direct shear, consolidation, moisture content, and in-place density.
- Prepare this written report presenting our findings, conclusions and recommendations.

EXISTING CONDITIONS

Based on our work during widening of the roadway in 2008 to 2009, our records indicate that the existing roadway consists of approximately 6½ inches of asphalt concrete over approximately 12 to 17 inches of aggregate base (along both sides of the roadway). During one phase of the roadway construction, the subgrade soils required use of geogrid beneath the pavement section due to poor subgrade conditions encountered during construction. The northeastern side of the roadway consists of various generations of pavement with older pavement being overlaid in the No. 1 lane.

Laboratory test results during the 2008 and 2009 roadway construction indicated that the subgrade between Sta 87+00 and 103+00 had an R-value of 64, and we recommended a pavement structural section of 6.5 inches of asphalt concrete over 12 inches of aggregate base. Between Sta 103+00 and 115+00, the subgrade had an R-value of 20, and we recommended a pavement structural section of 6.5 inches of asphalt concrete over 17.5 inches of aggregate base.

During our site reconnaissance and field exploration on August 31 and September 1, 2016, the existing pavement did not exhibit signs of severe distress within the area of the proposed roadway improvements.

FIELD EXPLORATION AND LABORATORY TESTING

The northeastern shoulder of the roadway was explored on August 31, 2016 by excavating three 8-inch diameter borings utilizing a truck-mounted hollow-stem auger drilling machine. The borings were excavated to a depth of approximately 16½ feet below the existing ground surface in areas of the planned grading along the existing slopes and in the area of the proposed retaining wall. The approximate locations of the exploratory borings are depicted on the *Boring Location Map* (see Figure 2A).

Coring of the roadway was performed on August 31 and September 1, 2016. Cores were taken from the northeastern side of the roadway in both lanes and in the shoulder. The approximate core locations are shown on the *Boring Location Plan* (see Figures 2A and 2B). The core samples were obtained using either a 6-inch diameter diamond core barrel, or a truck-mounted hollow-stem auger drilling machine. The cores were drilled through the asphalt concrete, and the exploration was extended through the aggregate base layer and into the subgrade. Measurements of the cores and aggregate base layers were taken in the field, and samples of the subgrade and base were collected. The cores, subgrade and base samples were transported to our geotechnical laboratory for analysis, and the core holes were filled to existing subgrade level and capped with asphalt concrete patch. Measurements of the core thicknesses are provided on Table 1 on the following page.

No groundwater or saturated soils were encountered within the explorations for this project. The borings indicate that the northeastern shoulder consists of 7 to 9 feet of fill over younger alluvial deposits at the locations explored. The fill generally consists of loose to medium dense silty sand, and

firm to stiff sandy silt. The underlying younger alluvium consists of loose to medium dense sand with varying amounts of silt, and firm to stiff sandy silt. The roadway cores indicate that the subsurface conditions along the north side of Pechanga Parkway consist of 6½ to 9 inches of asphalt concrete over 11 to 17 inches of aggregate base, over a subgrade consisting of silty sand with varying amounts of gravel.

A detailed discussion of the field investigation, including boring logs, is presented in Appendix A. Laboratory tests were performed on selected soil samples obtained during the investigation. Appendix B presents a summary of the laboratory test results.

TABLE 1
EXISTING CONDITIONS

Pechanga Parkway Lane	Core	Measured Asphalt Concrete Thickness (in)	Measured Aggregate Base Thickness (in)	Subgrade USCS Classification
Left Lane	C-1	7.0	11.0	Silty Sand trace Gravel (SM)
Right Lane	C-2	7.0	11.0	Silty Sand trace Gravel (SM)
Left Lane	C-3	9.0	11.5	Silty Sand trace Gravel (SM)
Right Lane	C-4	6.5	17.0	Silty Sand trace Gravel (SM)
Right Shoulder	C-5	7.0	17.0	Silty Sand trace Gravel (SM)
Right Shoulder	C-6	7.0	17.0	Silty Sand with Gravel (SM)

Testing of subgrade samples collected along Pechanga Parkway yielded R-value test results of 32, 44, and 50. The R-value test results are presented in Appendix B.

CONCLUSIONS AND RECOMMENDATIONS

It is our opinion that soil or geologic conditions were not encountered during the investigation that would preclude the construction of the proposed Pechanga Parkway widening and associated improvements provided the recommendations presented herein are followed and implemented during construction.

Based on the asphalt concrete cores, the aggregate base thicknesses, and the subgrade soil conditions observed during our exploration, it is our opinion that the roadways were constructed to the pavement section thicknesses recommended in 2008 and 2009. At that time, Pechanga Parkway was classified as a Major Arterial with a Traffic Index of 10.

Some of the roadway improvements constructed during 2008 and 2009 encountered wet or soft subgrade conditions, and a geogrid was used to stabilize the subgrade before placing aggregate base. Similar subgrade conditions may be encountered during construction of the currently proposed pavement widening. If necessary, recommendations for stabilization of the subgrade will be provided by Geocon during construction.

New Pavements – Preliminary Pavement Recommendations

New pavements should be constructed to meet the current minimum structural section thicknesses in the City's Standard Plan Numbers 113 and 115. Based on the roadway width and the planned number of lanes, we anticipate that the roadway will be classified as a Major Arterial with a Traffic Index of 10 or a Principal Arterial with a Traffic Index of 12.

The following preliminary pavement sections in Table 2 are recommended along Pechanga Parkway where new pavements are planned. The pavement sections were evaluated using an R-value of 32. Final pavement sections should be evaluated based on R-value testing of the soils encountered at the pavement subgrade during construction.

Pavement thicknesses were determined following procedures outlined in the referenced Caltrans *Highway Design Manual*. We used a Traffic Index of 10 and 12 per the City of Temecula Pavement Design Requirements, Standard Plan No. 115. The project civil engineer should select the appropriate Traffic Index for the roadway. Geocon should be contacted for additional recommendations if other Traffic Indices apply.

TABLE 2
RECOMMENDED PAVEMENT DESIGN SECTIONS

Roadway Classification	Estimated Traffic Index (TI)	Subgrade R-Value	Asphalt Concrete (inches)	Class 2 Aggregate Base (inches)
Major Arterial	10	32	6.5	14
Principal Arterial	12	32	6.5	19

Asphalt concrete should conform to Section 203-6 of the Greenbook. Class 2 aggregate base materials should conform to Section 26-1.02A of the "*Standard Specifications of the State of California, Department of Transportation"* (Caltrans). If used, Crushed Aggregate Base (CAB) and Crushed Miscellaneous Base (CMB) should conform to Sections 200-2.2 and 200-2.4, respectively, of the Greenbook.

The subgrade should be moisture conditioned to approximately 2 percent above its optimum moisture content and compacted to at least 95 percent of the maximum dry density as evaluated by ASTM International (ASTM) D1557. The aggregate base material should be compacted to at least 95 percent of the maximum dry density at approximately 2 percent above its optimum moisture content. Asphalt concrete should be compacted to at least 95 percent of the Hveem density as evaluated by ASTM D1561. Testing of the subgrade, base, and asphalt concrete should be performed during construction of the pavement to verify relative compaction.

The performance of pavements is highly dependent upon providing positive surface drainage away from the edge of pavements. Ponding of water on or adjacent to the pavement will likely result in saturation of the subgrade materials and subsequent cracking, subsidence and pavement distress. If planters are planned adjacent to paving, consideration should be given to extending the perimeter curb at least 12 inches below the bottom of the aggregate base to minimize the introduction of water beneath the paving.

Grading

Grading of the northeast shoulder of Pechanga Parkway should be performed in accordance with the attached *Recommended Grading Specifications* and the City of Temecula Grading Ordinances.

Prior to commencing grading, a preconstruction conference should be held at the site with the county inspector, owner or developer, grading contractor, civil engineer, and geotechnical engineer in attendance. Special soil handling and/or the grading plans can be discussed at that time.

Site preparation should begin with the removal of deleterious material, debris and vegetation. The depth of removal should be such that material exposed in cut areas or soil to be used as fill is

relatively free of organic matter. Material generated during stripping and/or site demolition should be exported from the site.

Fill in the existing slope areas northeast of Pechanga Parkway should be keyed and benched into the existing slope. The width of the key at the tow of the proposed fill slopes should be sufficiently wide to permit complete coverage with the compaction equipment used. The base of the key should be at least 2 feet deep into competent material at the toe of the new fill slope, and inclined slightly into the slope as show in the *Typical Benching Detail* in the attached *Recommended Grading Specifications*. Geocon should observe the keyway bottoms to check the exposed soil and approve the excavation in writing prior to any fill placement. Deeper excavations may be required if dry, loose, or soft soil is present at the base of the keyway. Backcut drains may be needed depending on field conditions encountered during grading.

Benching should be conducted in accordance with the attached *Recommended Grading Specifications*. The contractor should take precautionary measures not to damage the existing improvements adjacent to the planned graded slopes.

The site should be brought to finish grade elevations with fill compacted in layers. Layers of fill should be no thicker than will allow for adequate bonding and compaction. Fill, including backfill and scarified ground surfaces, should be compacted to a dry density of at least 90 percent of the laboratory maximum dry density, at approximately 2 percent above optimum moisture content, as determined by ASTM D 1557. Fill materials placed below optimum moisture content may require additional moisture conditioning prior to placing additional fill.

Import fill should consist of granular materials with a “low” expansion potential (EI of 50 or less), should be less corrosive than the site soils, generally free of deleterious material and rock fragments larger than 6 inches and should be compacted as recommended herein. Geocon should be notified of the import soil source and should perform laboratory testing of import soil prior to its arrival at the site to evaluate its suitability as fill material.

Fill slopes should be overbuilt at least 2 feet and cut back to the tight fill core. The slopes should be track-walked at the completion of each slope such that the fill is compacted to a dry density of at least 90 percent of the laboratory maximum dry density at approximately 2 percent above optimum moisture content to the face of the finished slope.

Finished slopes should be landscaped with drought-tolerant vegetation having variable root depths and requiring minimal landscape irrigation. In addition, the slopes should be drained and properly maintained to reduce erosion.

Conventional Retaining Walls

The recommendations presented herein are generally applicable to the design of rigid concrete or masonry retaining walls having a maximum height of 10 feet. In the event that walls higher than 10 feet or other types of walls are planned, Geocon should be consulted for additional recommendations.

Retaining walls not restrained at the top and having a level backfill surface should be designed for an active soil pressure equivalent to the pressure exerted by a fluid density of 30 pounds per cubic foot (pcf). This soil pressures assume that the backfill materials within an area bounded by the wall and a 1:1 plane extending upward from the base of the wall possess an EI of 50 or less. For those areas where backfill materials do not conform to the criteria herein, Geocon should be consulted for additional recommendations.

The structural engineer should determine the seismic design category for the project in accordance with Section 1613 of the CBC. If the project possesses a seismic design category of D, E, or F, proposed retaining walls in excess of 6 feet in height should be designed with seismic lateral pressure (Section 1803.5.12 of the 2013 CBC).

A seismic load of 10 pcf should be used for design of walls that support more than 6 feet of backfill in accordance with Section 1803.5.12 of the 2013 CBC. The seismic load is applied as an equivalent fluid pressure along the height of the wall and the calculated loads result in a maximum load exerted at the base of the wall and zero at the top of the wall. This seismic load should be applied in addition to the active earth pressure. The earth pressure is based on half of two-thirds of PGA_M calculated from ASCE 7-10 Section 11.8.3.

Unrestrained walls will move laterally when backfilled and loading is applied. The amount of lateral deflection is dependent on the wall height, the type of soil used for backfill, and loads acting on the wall. The retaining walls, and improvements above the retaining walls, should be designed to incorporate an appropriate amount of lateral deflection as determined by the structural engineer.

Retaining walls should be provided with a drainage system adequate to prevent the buildup of hydrostatic forces, and should be waterproofed as required by the project architect. The soil immediately adjacent to the backfilled retaining wall should be composed of free draining material that is completely wrapped in Mirafi 140N (or equivalent) filter fabric for a lateral distance of 1 foot for the bottom two-thirds of the height of the retaining wall. The upper one-third of the wall backfill should be comprised of less permeable compacted fill to reduce water infiltration. Alternatively, a drainage panel, such as a Miradrain 6000 or equivalent, can be placed along the back of the wall as shown on Figure 3.

The use of drainage openings through the base of the wall (weep holes) is not recommended where the seepage could be a nuisance or otherwise adversely affect the property adjacent to the base of the wall. The recommendations herein assume a properly compacted backfill (EI of 20 or less) with no hydrostatic forces or imposed surcharge load. If conditions different than those described are expected, or if specific drainage details are desired, Geocon should be contacted for additional recommendations.

Wall foundations should be at least 18 inches wide and extend at least 24 inches below lowest adjacent pad grade. Wall foundations should be deepened such that the outside edge of the foundation is at least 7 feet horizontally from the face of the slope. Reinforcement for continuous foundations should consist of at least four, No. 4 steel, steel reinforcing bars placed horizontally in the footings, two near the top and two near the bottom. The project structural engineer should design the reinforcement for the concrete foundations.

Foundations may be designed for an allowable soil bearing pressure of 2,000 pounds per square foot (psf) (dead plus live load). The bearing pressure may be increased by one-third for transient loads due to wind or seismic forces. The estimated maximum total settlement for the planned retaining walls with a bearing pressure of 2,000 psf is ½ inch with differential settlement on the order of ½ inch over a horizontal distance of 40 feet.

For resistance to lateral loads, a passive pressure exerted by an equivalent fluid weight of 175 pounds per cubic foot (pcf) should be used for the design of foundations or shear keys within the existing 4:1 (h:v) channel slopes. The exposed material at the bottom of the retaining wall foundation excavations, within the fill slopes, should be inspected during construction and additional recommendations provided as needed. The upper 12 inches of material along the toe of the wall should not be included in the design for passive resistance. An allowable coefficient of friction of 0.35 may be used between recently placed fill soil and concrete.

Plan Review

Geocon should review the project plans, prior to final submittal, to verify conformance with the recommendations in this report. Additional analyses may be required after review of the plans.

LIMITATIONS AND UNIFORMITY OF CONDITIONS

1. The recommendations of this report pertain only to the site investigated and are based upon the assumption that the soil conditions do not deviate from those disclosed in the investigation. If any variations or undesirable conditions are encountered during construction, or if the proposed construction will differ from that anticipated herein, Geocon West, Inc. should be notified so that supplemental recommendations can be given. The evaluation or identification of the potential presence of hazardous or corrosive materials was not part of the scope of services provided by Geocon West, Inc.

2. This report is issued with the understanding that it is the responsibility of the owner, or of his representative, to ensure that the information and recommendations contained herein are brought to the attention of the engineer and contractor for the project and incorporated into the plans, and the necessary steps are taken to see that the contractor and subcontractors carry out such recommendations in the field.

3. The findings of this report are valid as of the date of this report. However, changes in the conditions of a property can occur with the passage of time, whether they are due to natural processes or the works of man on this or adjacent properties. In addition, changes in applicable or appropriate standards may occur, whether they result from legislation or the broadening of knowledge. Accordingly, the findings of this report may be invalidated wholly or partially by changes outside our control. Therefore, this report is subject to review and should not be relied upon after a period of three years

Should you have any questions regarding this report, or if we may be of further service, please contact the undersigned at your convenience.

Very truly yours,

GEOCON WEST, INC.

Chet E. Robinson
GE 2890

Lisa A. Battiato
CEG 2316

Attachments: References
Figure 1, Vicinity Map
Figures 2A and 2B, Field Exploration Location Plans
Figure 3, Wall Drainage Detail
Figures A-1 to A-9, Logs of Borings
Figure B-1, Laboratory Test Results
Figure B-2, Direct Shear Test Results
Figures B-3 and B-4, Consolidation Test Results
Recommended Grading Specifications

Distribution: Addressee (Email)

REFERENCES

1) California Department of Transportation (Caltrans), 2015, Highway Design Manual, dated July 1.

2) California Department of Transportation (Caltrans), 2010, Standard Specifications.

3) California Department of Transportation (Caltrans), 2008, Maintenance Technical Advisory Guide, Volume I – Flexible Pavement Preservation, Second Edition, dated March 7.

4) City of Temecula, 2011, *Standard Plan Number 115, Pavement Design Requirements*, dated October 12.

5) Cozad & Fox, Inc., 2007, *City of Temecula, Department of Public Works, Plans for the Street Widening of City of Temecula Project No. PW 99-11, Pechanga Parkway – Phase II, Federal Project No. PL HL – 5459(014)*, dated August 14.

6) Geocon Inland Empire, Inc., 2009, *Final Report of Testing and Services Performed During Installation of Roadway Improvements, Pechanga Parkway, Phase II Street Improvements, City Project No. PW 99-1, Temecula, California*, Geocon Project No. T2462-52-01, dated November 16.

7) Geocon Inland Empire, Inc., 2008, *R-Value testing results*, communication to City of Temecula, attn.: Steven Beswick, dated August 13.

8) Google Inc., 2013, Google Earth Pro, Version 7.1.2.2041

9) Michael Baker International, *City of Temecula, Street Improvement Plan, Pechanga Parkway, From Station 86+00 to Station 117+00, Project No. PW 15-14*, dated August 23, revised October 4.

10) Public Works Standards, Inc., 2015, *"Greenbook" Standard Specifications for Public Works Construction*, Published by BNI Building News.

NOT TO SCALE

N

SOURCE: GOOGLE MAPS, 2016

VICINITY MAP

GEOCON
WEST, INC.
GEOTECHNICAL ENVIRONMENTAL MATERIALS
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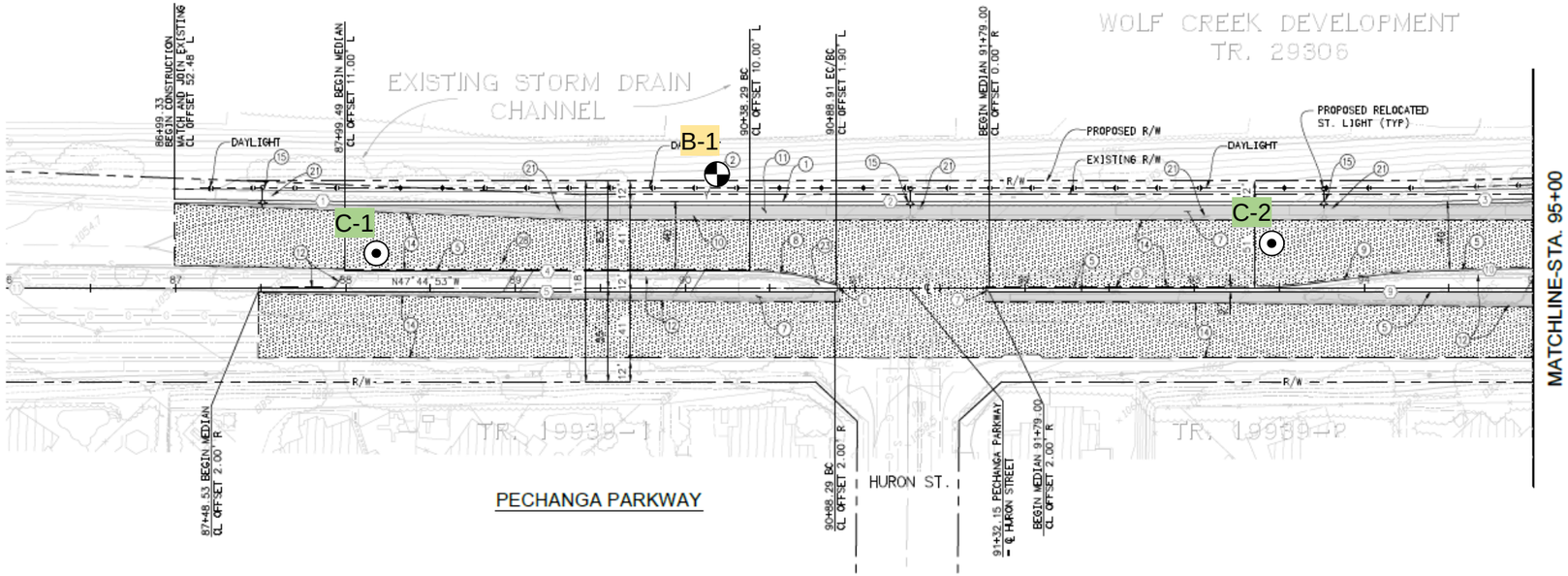
PECHANGA PARKWAY WIDENING
VIA GILBERTO TO NORTH CASINO DRIVE
CITY PROJECT PW 15-14
TEMECULA, CALIFORNIA

KBP		

OCTOBER, 2016	PROJECT NO. T2733-22-01	FIG. 1



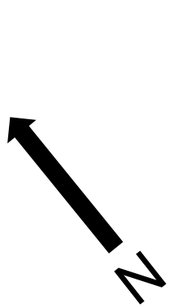
GEOCON LEGEND

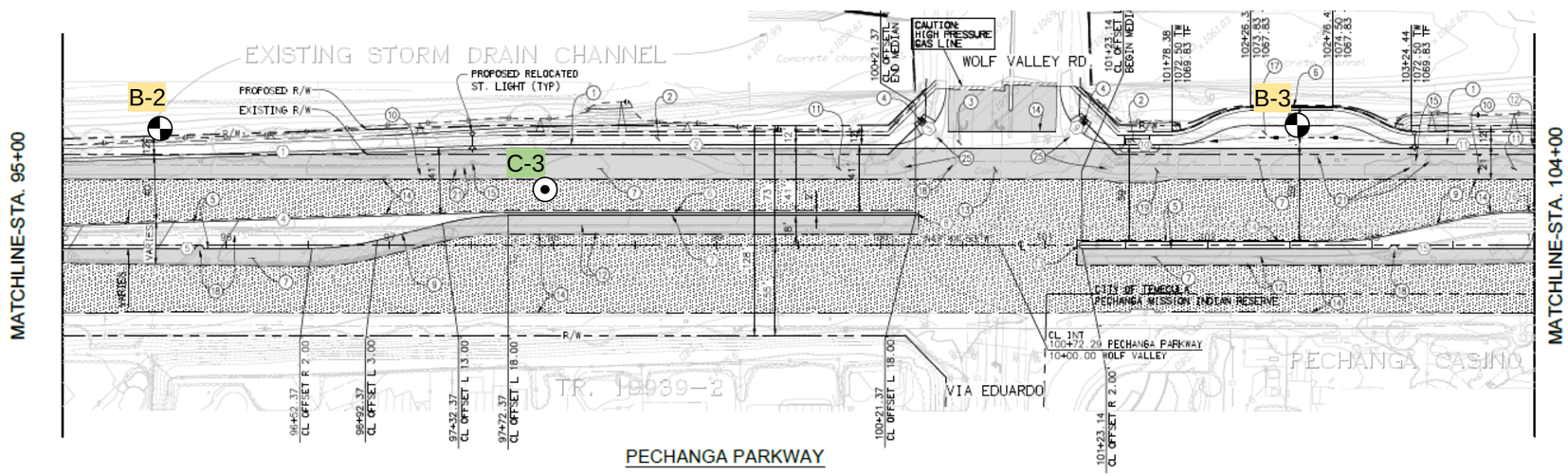
Locations are approximate

- - - ..... PROJECT BOUNDARY

B-4 ..... BORING LOCATION

C-1 ..... CORE LOCATION





Source: Michael Baker International, transmitted 08/23/2016

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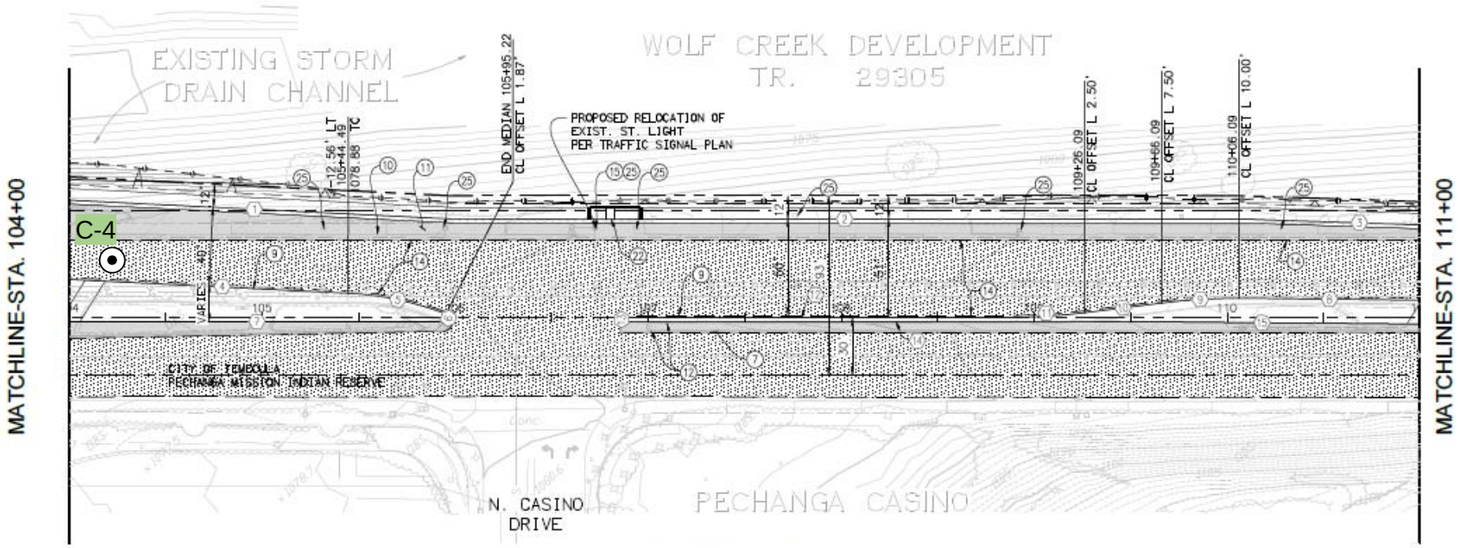
BORING LOCATION MAP

PECHANGA PARKWAY WIDENING
VIA GILBERTO TO NORTH CASINO DRIVE
CITY PROJECT PW 15-14
TEMECULA, CALIFORNIA

KBP			OCTOBER, 2016	PROJECT NO. T2733-22-01	FIG. 2A



GEOCON LEGEND

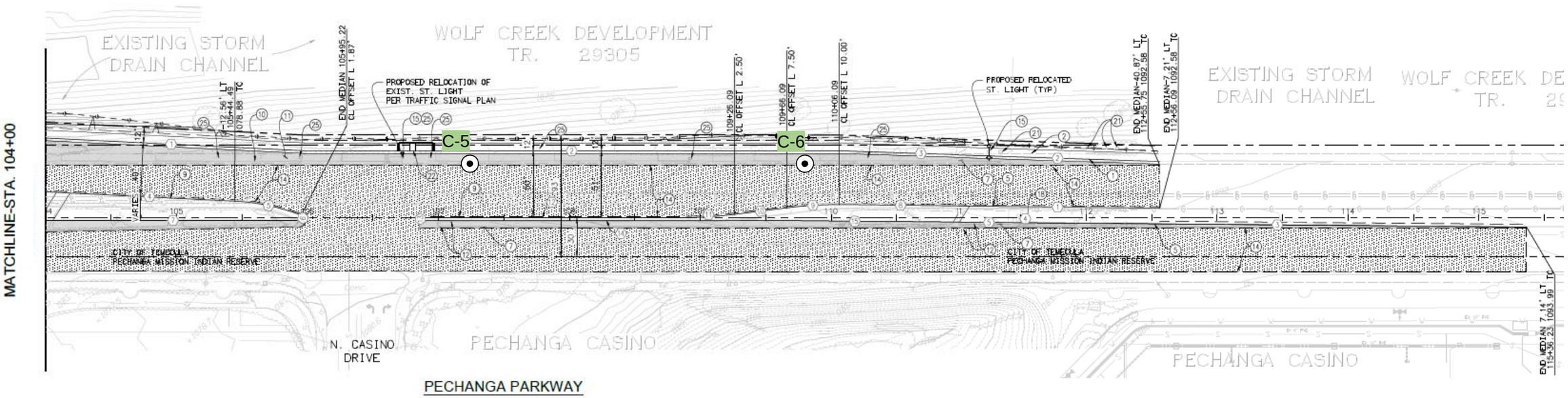
Locations are approximate

- - - ..... PROJECT BOUNDARY

B-4 ..... BORING LOCATION

C-1 ..... CORE LOCATION

N



Source: Michael Baker International, transmitted 08/23/2016

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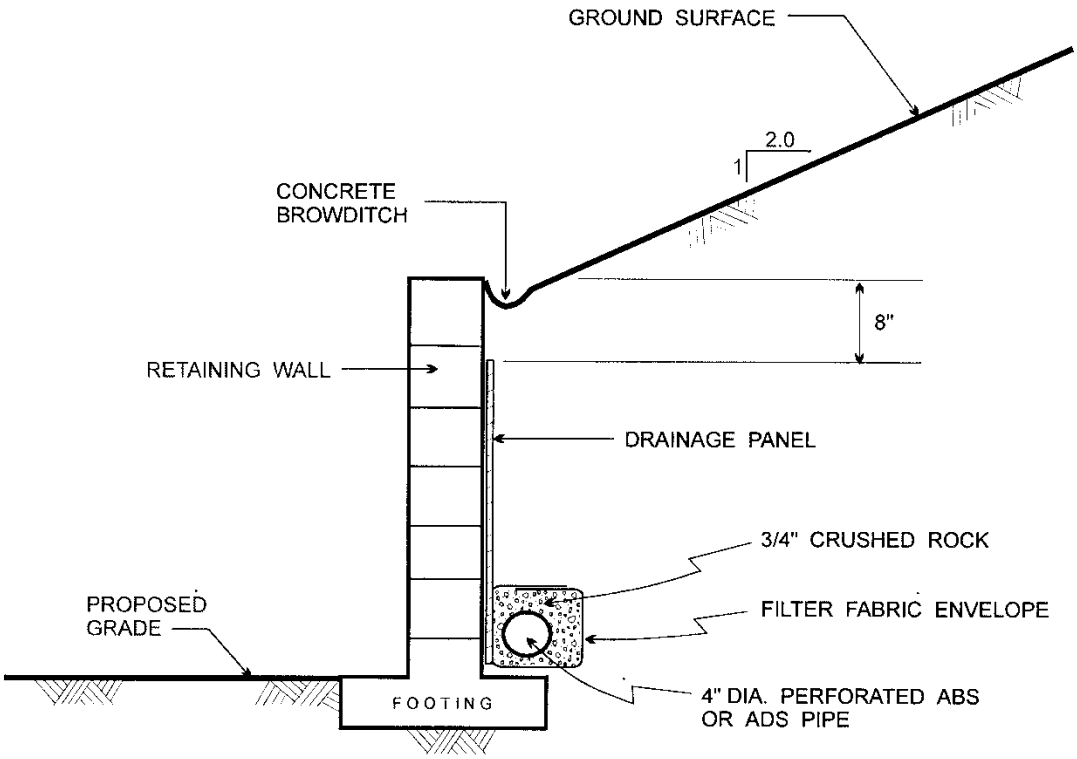
BORING LOCATION MAP

PECHANGA PARKWAY WIDENING
VIA GILBERTO TO NORTH CASINO DRIVE
CITY PROJECT PW 15-14
TEMECULA, CALIFORNIA

KBP			OCTOBER, 2016	PROJECT NO. T2733-22-01	FIG. 2B



NOTES:

1.....WALL DRAINAGE PANELS SHOULD CONSISTS OF MIRADRAIN 6000 OR EQUIVALENT

2.....FILTER FABRIC SHOULD CONSIST OF MIRAFI 140N OR APPROVED EQUIVALENT

3.....VOLUME OF CRUSHED ROCK SHOULD BE AT LEAST 1 CUBIC FOOT PER FOOT OF PIPE

4.....CONCRETE BROWDITCH RECOMMENDED FOR SLOPE HEIGHTS GREATER THAN 6 FEET

NO SCALE

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CER		

WALL DRAINAGE DETAIL

PECHANGA PARKWAY WIDENING
VIA GILBERTO TO NORTH CASINO DRIVE
CITY PROJECT PW 15-14
TEMECULA, CALIFORNIA

OCTOBER, 2016	PROJECT NO. T2733-22-01	FIG. 3

PROJECT NO. T2733-22-01

BORING B-1

ELEV. (MSL.) _____ DATE COMPLETED **08/31/2016**

EQUIPMENT **HOLLOW STEM AUGER** BY: **ALICE ORTON**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0	B-1 @ 0-5			SM	**ARTIFICIAL FILL (afu)** Silty SAND, medium dense, moist, dark brown; fine to medium sand; trace coarse sand; trace roots			
2					-Becomes brown; mica in coarse sand			
	B-1 @ 2.5					26	129.6	10.3
4								
	B-1 @ 5'				-Becomes dark brown; trace mica; trace roots	17	126.8	10.5
6								
	B-1 @ 7.5				-Becomes brown; fine sand; trace fine to medium sand; trace mica	17	113.2	14.5
8								
				SM	**YOUNGER ALLUVIUM (Qya)** Silty SAND, loose, moist, carbonate tracers			
10	B-1 @ 10'				-Carbonate tracers	14	115.7	11.9
12								
14								
	B-1 @ 15'			SM-ML	Silty SAND to Sandy SILT, loose to stiff, moist, brown; fine sand; trace medium to coarse sand in silt; trace mica	14	119.1	11.5
16								
					Total Depth 16.5 feet Groundwater not encountered Penetration resistance for 140 lb. hammer falling 30" by auto-hammer Backfilled with cuttings on 08/31/2016			

Figure A-1,
Log of Boring B-1, Page 1 of 1

T2733-22-01 PECHANGA PARKWAY WIDENING.GPJ

SAMPLE SYMBOLS

- ... SAMPLING UNSUCCESSFUL
- ... STANDARD PENETRATION TEST
- ... DRIVE SAMPLE (UNDISTURBED)
- ... DISTURBED OR BAG SAMPLE
- ... CHUNK SAMPLE
- ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

GEOCON

PROJECT NO. T2733-22-01

BORING B-2

ELEV. (MSL.) _____ DATE COMPLETED **08/31/2016**

EQUIPMENT **HOLLOW STEM AUGER** BY: **ALICE ORTON**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0	B-2 @ 0-5			SM	**ARTIFICIAL FILL (afu)** Silty SAND, medium dense, moist, dark brown; fine to medium sand; trace coarse sand; trace roots			
2	B-2 @ 2.5				-Trace mica; trace gravel	24	120.9	11.0
4				ML	Sandy SILT, firm, moist, brown; trace fine to medium sand; trace mica; no gravel; trace charcoal			
6	B-2 @ 5'					8	103.3	19.5
8	B-2 @ 7.5			ML	**YOUNGER ALLUVIUM (Qya)** Sandy SILT; firm, moist, brown; trace fine to medium sand	11	110.1	14.9
10	B-2 @ 10'				-Carbonate stringers	11		
12								
14				SM-SW	Silty SAND to Well Graded SAND with Silt, loose, moist, light brown; fine to medium sand			
16	B-2 @ 15'					14	107.6	9.4

Total Depth 16.5 feet
Groundwater not encountered
Penetration resistance for 140 lb. hammer falling 30" by auto-hammer
Backfilled with cuttings on 08/31/2016

Figure A-2,
Log of Boring B-2, Page 1 of 1

T2733-22-01 PECHANGA PARKWAY WIDENING.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL
... STANDARD PENETRATION TEST
... DRIVE SAMPLE (UNDISTURBED)
... DISTURBED OR BAG SAMPLE
... CHUNK SAMPLE
... WATER TABLE OR SEEPAGE

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GEOCON

PROJECT NO. T2733-22-01

BORING B-3

ELEV. (MSL.) _____ DATE COMPLETED **08/31/2016**

EQUIPMENT **HOLLOW STEM AUGER** BY: **ALICE ORTON**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0	B-3 @ 0-5			SM	**ARTIFICIAL FILL (afu)** Silty SAND, medium dense, moist, dark brown; fine to medium sand, trace coarse sand; roots			
2					-Becomes brown			
	B-3 @ 2.5					36	126.9	12.5
4								
	B-3 @ 5'				-Becomes loose; trace gravel	14	112.5	12.9
6								
	B-3 @ 7.5			SM-ML	Silty SAND to Sandy SILT, loose to stiff, moist, brown; fine sand; trace mica; no gravel; roots	15	116.0	8.3
8								
				ML	**YOUNGER ALLUVIUM (Qya)** Sandy SILT, stiff, moist, light brown; fine sand; trace medium sand; trace carbonate stringers; trace mica			
10	B-3 @ 10'					14	121.7	10.0
12								
14								
	B-3 @ 15'				-Becomes stiff; trace medium to coarse sand; trace charcoal	19	108.8	14.7
16								

Total Depth 16.5 feet
Groundwater not encountered
Penetration resistance for 140 lb. hammer falling 30" by auto-hammer
Backfilled with cuttings on 08/31/2016

Figure A-3,
Log of Boring B-3, Page 1 of 1

T2733-22-01 PECHANGA PARKWAY WIDENING.GPJ

SAMPLE SYMBOLS

- ... SAMPLING UNSUCCESSFUL
- ... STANDARD PENETRATION TEST
- ... DRIVE SAMPLE (UNDISTURBED)
- ... DISTURBED OR BAG SAMPLE
- ... CHUNK SAMPLE
- ... WATER TABLE OR SEEPAGE

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GEOCON

PROJECT NO. T2733-22-01

BORING C-1

ELEV. (MSL.) _____ DATE COMPLETED **09/01/2016**

EQUIPMENT _____ BY: **ALICE ORTON**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0	C-1 CORE				**ASPHALT CONCRETE** 7.0 inches			
					AGGREGATE BASE 11.0 inches			
2	C-1 @ 1.5			SM	**SUBGRADE** Silty SAND, medium dense, moist, dark yellowish brown; fine to coarse sand; trace gravel			

Total Depth 2 feet 1 inch
Groundwater not encountered
Backfilled/ 6" AC Cap on 09/01/2016

Figure A-4,
Log of Boring C-1, Page 1 of 1

T2733-22-01 PECHANGA PARKWAY WIDENING.GPJ

SAMPLE SYMBOLS

- ... SAMPLING UNSUCCESSFUL
- ... STANDARD PENETRATION TEST
- ... DRIVE SAMPLE (UNDISTURBED)
- ... DISTURBED OR BAG SAMPLE
- ... CHUNK SAMPLE
- ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

GEOCON

PROJECT NO. T2733-22-01

BORING C-2

ELEV. (MSL.) _____ DATE COMPLETED **08/31/2016**

EQUIPMENT **HOLLOW STEM AUGER** BY: **ALICE ORTON**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0					**ASPHALT CONCRETE** 7.0 inches			
					AGGREGATE BASE 11.0 inches			
2	C-2 @ 2'			SM	**SUBGRADE** Silty SAND, medium dense, moist, dark grayish brown; fine to medium sand; trace coarse sand; trace gravel			
					Total Depth 3 feet Groundwater not encountered Backfilled/ 6" AC Cap on 08/31/2016			

Figure A-5,
Log of Boring C-2, Page 1 of 1

T2733-22-01 PECHANGA PARKWAY WIDENING.GPJ

SAMPLE SYMBOLS

- ... SAMPLING UNSUCCESSFUL
- ... STANDARD PENETRATION TEST
- ... DRIVE SAMPLE (UNDISTURBED)
- ... DISTURBED OR BAG SAMPLE
- ... CHUNK SAMPLE
- ... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

GEOCON

PROJECT NO. T2733-22-01

BORING C-3

ELEV. (MSL.) _____ DATE COMPLETED **09/01/2016**

EQUIPMENT _____ BY: **ALICE ORTON**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0	C-3 CORE				**ASPHALT CONCRETE** 9.0 inches			
	C-3 @ 7-20.5'				**AGGREGATE BASE** 11.5 inches			
	C-3 @ 21'			SM	**SUBGRADE** Silty SAND, medium dense, moist, brown; fine to medium sand; trace coarse sand; trace gravel			

Total Depth 1 feet 10 inches
Groundwater not encountered
Backfilled/ 6" AC Cap on 09/01/2016

Figure A-6,
Log of Boring C-3, Page 1 of 1

T2733-22-01 PECHANGA PARKWAY WIDENING.GPJ

SAMPLE SYMBOLS			
	... SAMPLING UNSUCCESSFUL	... STANDARD PENETRATION TEST	... DRIVE SAMPLE (UNDISTURBED)
	... DISTURBED OR BAG SAMPLE	... CHUNK SAMPLE	... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

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PROJECT NO. T2733-22-01

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	**BORING C-4** ELEV. (MSL.) _____ DATE COMPLETED **08/31/2016** EQUIPMENT **HOLLOW STEM AUGER** BY: **ALICE ORTON**	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
					MATERIAL DESCRIPTION			
0					**ASPHALT CONCRETE** 6.5 inches			
					AGGREGATE BASE 17.0 inches			
2	C-4 @ 2'			SM	**SUBGRADE** Silty SAND, medium dense, moist, dark grayish brown; fine to coarse sand; trace gravel			

Total Depth 3 feet
Groundwater not encountered
Backfilled/ 6" AC Cap on 08/31/2016

Figure A-7,
Log of Boring C-4, Page 1 of 1

T2733-22-01 PECHANGA PARKWAY WIDENING.GPJ

SAMPLE SYMBOLS			
	... SAMPLING UNSUCCESSFUL	... STANDARD PENETRATION TEST	... DRIVE SAMPLE (UNDISTURBED)
	... DISTURBED OR BAG SAMPLE	... CHUNK SAMPLE	... WATER TABLE OR SEEPAGE

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GEOCON

PROJECT NO. T2733-22-01

BORING C-5

ELEV. (MSL.) _____ DATE COMPLETED **08/31/2016**

EQUIPMENT **HOLLOW STEM AUGER** BY: **ALICE ORTON**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0					**ASPHALT CONCRETE** 6.5 inches			
					AGGREGATE BASE 17.0 inches			
2	C-5 @ 2'			SM	**SUBGRADE** Silty SAND, medium dense, moist, dark grayish brown; trace gravel			
					Total Depth 3 feet Groundwater not encountered Backfilled/ 6" AC Cap on 08/31/2016			

Figure A-8,
Log of Boring C-5, Page 1 of 1

T2733-22-01 PECHANGA PARKWAY WIDENING.GPJ

SAMPLE SYMBOLS

- ... SAMPLING UNSUCCESSFUL
- ... STANDARD PENETRATION TEST
- ... DRIVE SAMPLE (UNDISTURBED)
- ... DISTURBED OR BAG SAMPLE
- ... CHUNK SAMPLE
- ... WATER TABLE OR SEEPAGE

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PROJECT NO. T2733-22-01

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	**BORING C-6** ELEV. (MSL.) _____ DATE COMPLETED **08/31/2016** EQUIPMENT **HOLLOW STEM AUGER** BY: **ALICE ORTON**	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
					MATERIAL DESCRIPTION			
0					**ASPHALT CONCRETE**7.0 inches			
					AGGREGATE BASE17.0 inches			
2	C-6 @ 2'			SM	**SUBGRADE** Silty SAND with Gravel, dense, slightly moist, dark yellowish brown; few cobbles			

Total Depth 2.5 feet
Groundwater not encountered
Backfilled/ 6" AC Cap on 08/31/2016

Figure A-9,
Log of Boring C-6, Page 1 of 1

T2733-22-01 PECHANGA PARKWAY WIDENING.GPJ

SAMPLE SYMBOLS			
	... SAMPLING UNSUCCESSFUL	... STANDARD PENETRATION TEST	... DRIVE SAMPLE (UNDISTURBED)
	... DISTURBED OR BAG SAMPLE	... CHUNK SAMPLE	... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

GEOCON

Site Number: 1			
Recorded By: Alesia Hsiao			
Job Number: 153547			
Date: 5/11/2016			
Time: 11:42 a.m.			
Location: Along Eona Circle			
Source of Peak Noise: Traffic along Eona Circle and Pechanga Parkway, birds chirping, residential noise (garage doors, car doors, etc.)			
Noise Data			
Leq (dB)	**Lmin (dB)**	**Lmax (dB)**	**Peak (dB)**
50.9	34.5	65.6	87.5

Equipment						
Category	**Type**	**Vendor**	**Model**	**Serial No.**	**Cert. Date**	**Note**
Sound	Sound Level Meter	**Brüel & Kjær**	**2250**	**2548189**	**1/4/2016**	
	Microphone	**Brüel & Kjær**	**4189**	**2543364**	**1/4/2016**	
	Preamp	**Brüel & Kjær**	**ZC 0032**	**4265**	**1/4/2016**	
	Calibrator	**Brüel & Kjær**	**4231**	**2545667**	**1/4/2016**	

Weather Data			
Est.	**Duration:** 10 minutes		**Sky:** ☼ Sunny
	Note: dBA Offset = 0.01		**Sensor Height (ft):** 5 ft
	Wind Ave Speed (mph / m/s)	**Temperature (degrees Fahrenheit)**	**Barometer Pressure (hPa)**
	1.0	82.6	29.98

Photo of Measurement Location

2250

Instrument:		2250
Application:		BZ7225 Version 4.4
Start Time:		05/11/2016 11:42:15
End Time:		05/11/2016 11:52:15
Elapsed Time:		00:10:00
Bandwidth:		1/3-octave
Max Input Level:		138.72

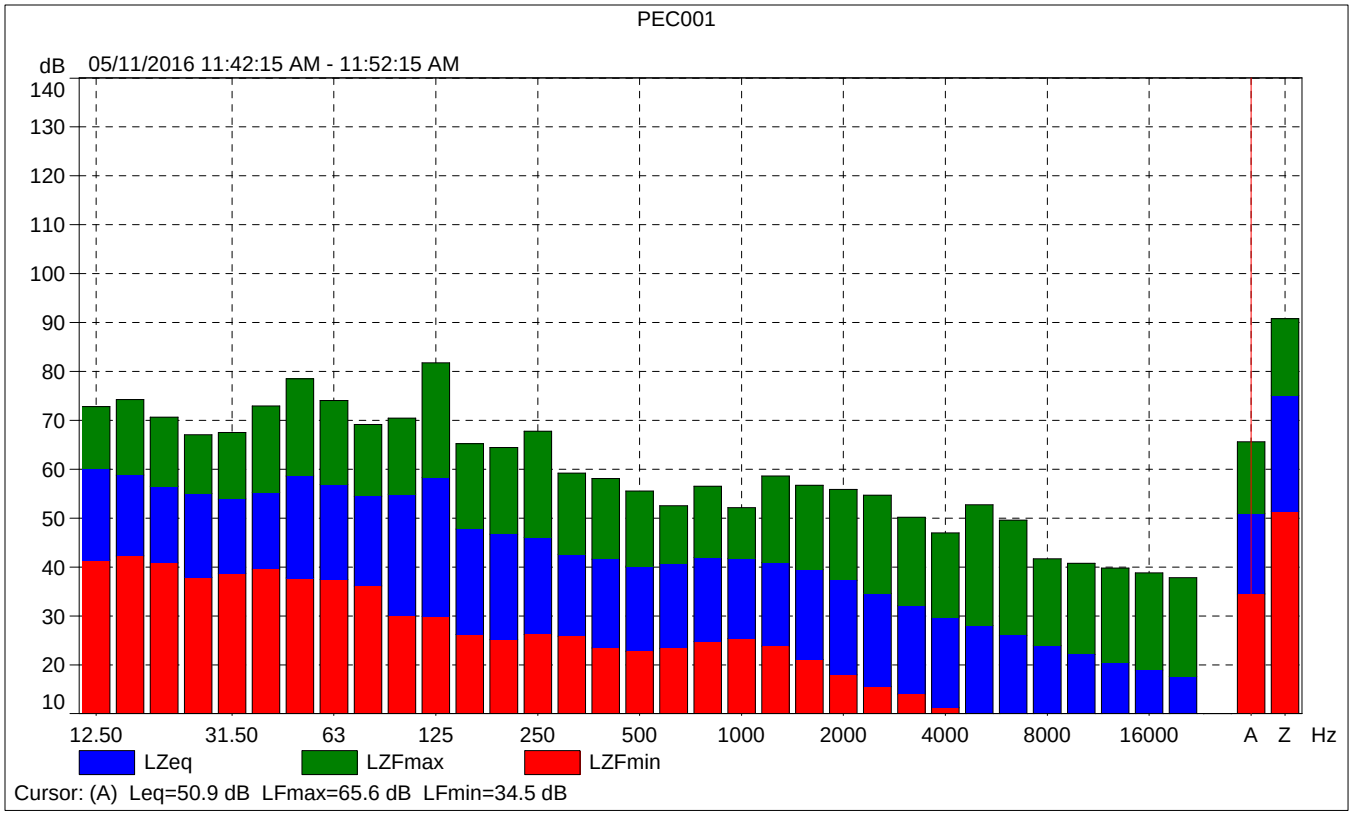
	Time	Frequency
Broadband (excl. Peak):	FSI	AZ
Broadband Peak:		C
Spectrum:	FS	Z

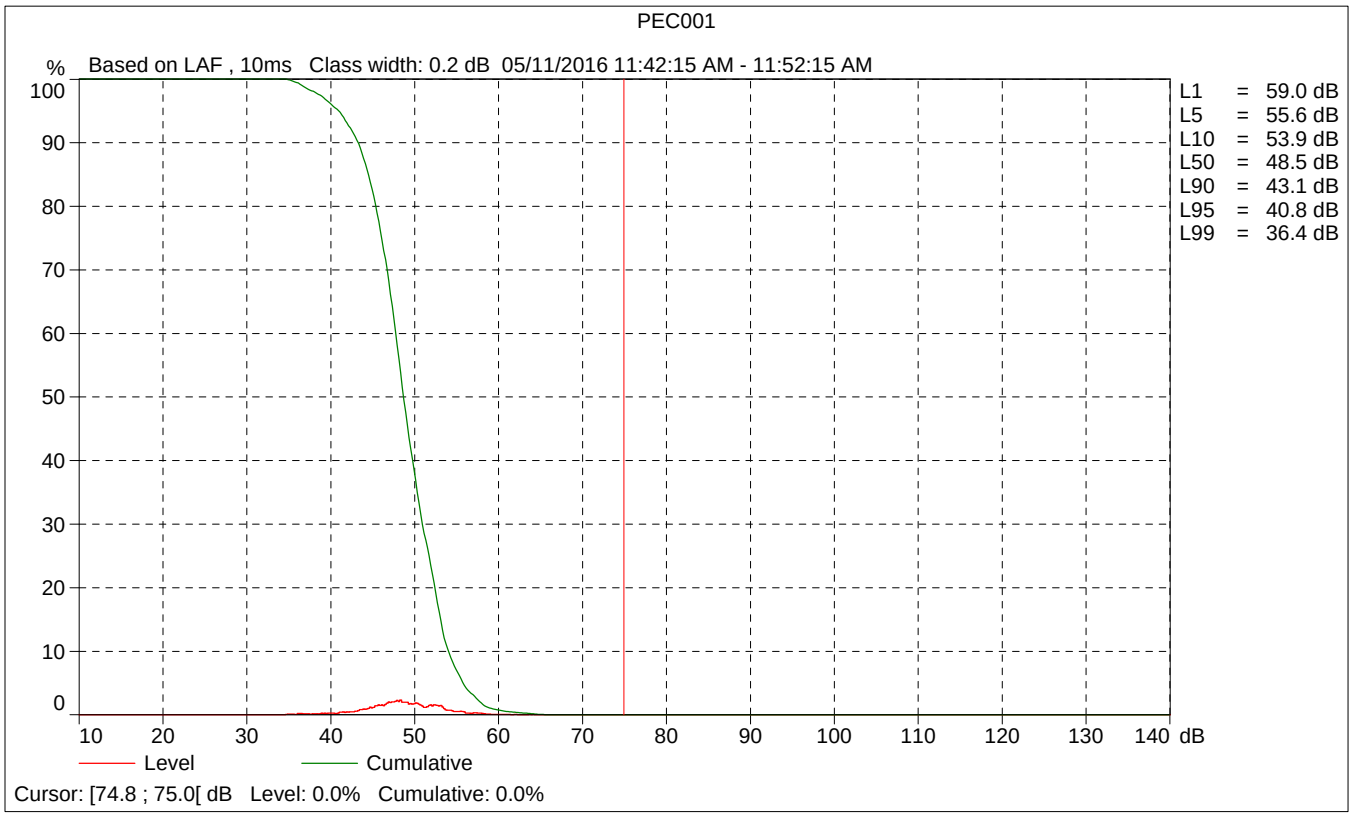
Instrument Serial Number:		2548189
Microphone Serial Number:		2543364
Input:		Top Socket
Windscreen Correction:		None
Sound Field Correction:		Free-field

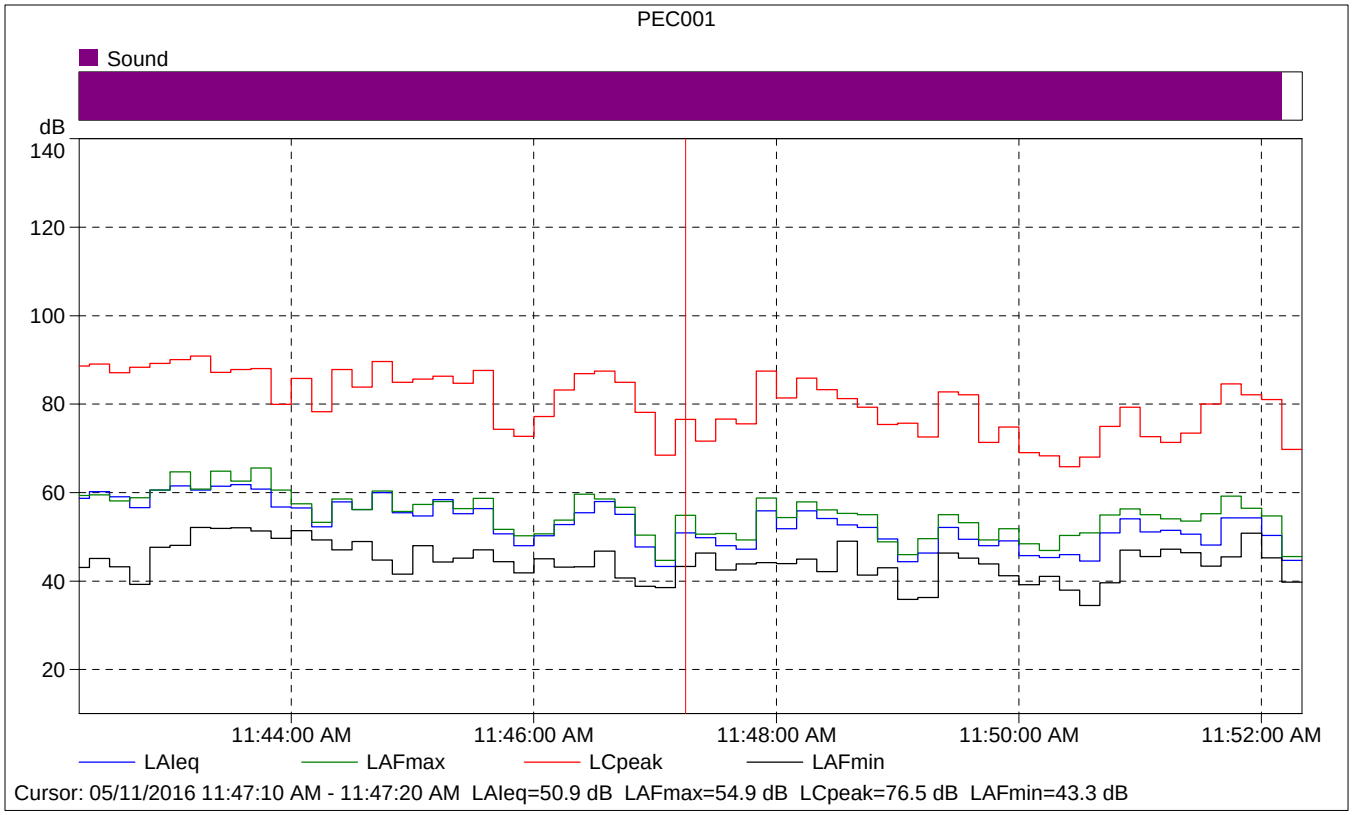
Calibration Time:		05/09/2016 17:06:48
Calibration Type:		External reference
Sensitivity:		64.5731016993523 mV/Pa

PEC001

	Start time	End time	Elapsed time	Overload [%]	LAeq [dB]	LAFmax [dB]	LAFmin [dB]
Value				0.00	50.9	65.6	34.5
Time	11:42:15 AM	11:52:15 AM	0:10:00				
Date	05/11/2016	05/11/2016					

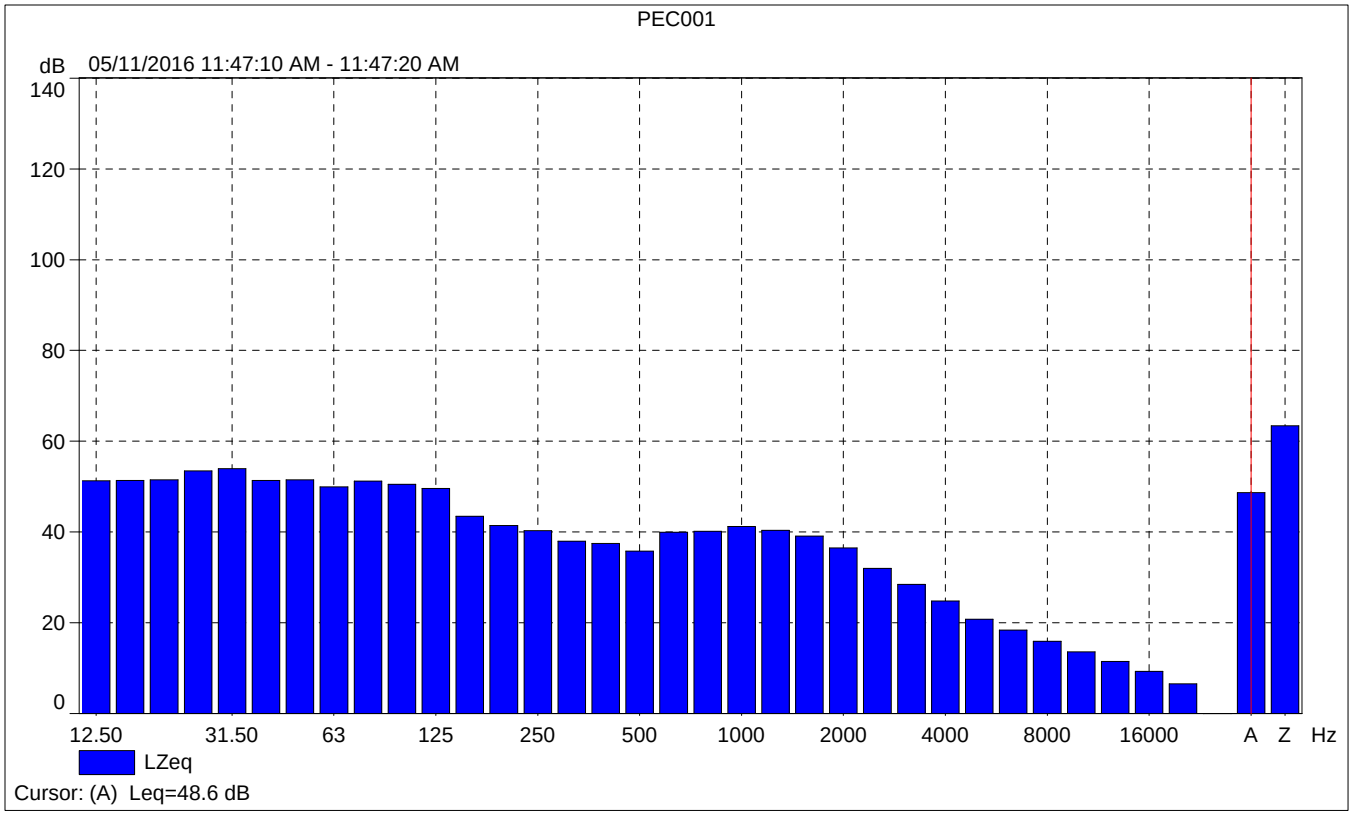

PEC001
dB
05/11/2016 11:42:15 AM - 11:52:15 AM
140
130
120
110
100
90
80
70
60
50
40
30
20
10
12.50
31.50
63
125
250
500
1000
2000
4000
8000
16000
A
Z
Hz
LZeq
LZFmax
LZFmin
Cursor: (A) Leq=50.9 dB LFmax=65.6 dB LFmin=34.5 dB

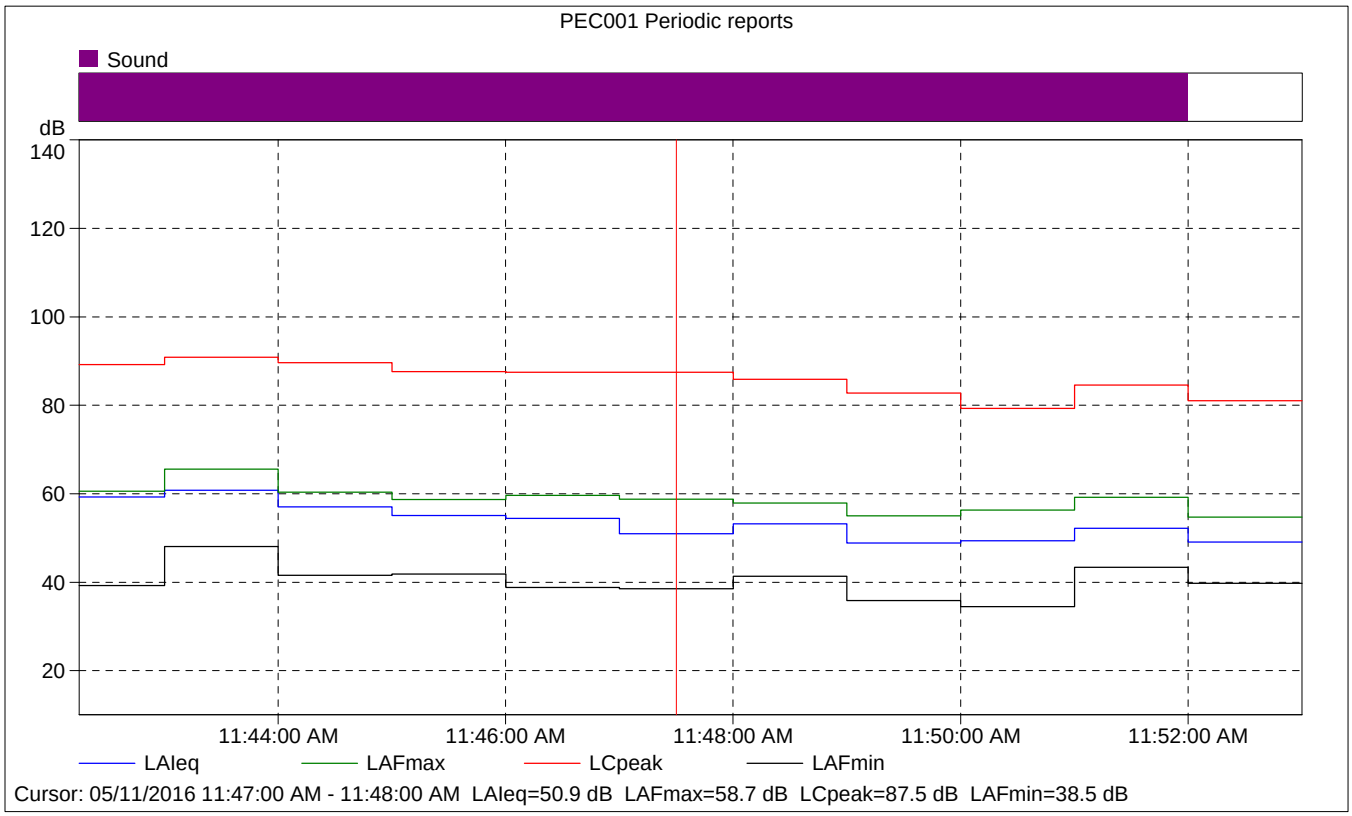

PEC001
%
Based on LAF , 10ms Class width: 0.2 dB 05/11/2016 11:42:15 AM - 11:52:15 AM
100
90
80
70
60
50
40
30
20
10
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
dB
L1 = 59.0 dB
L5 = 55.6 dB
L10 = 53.9 dB
L50 = 48.5 dB
L90 = 43.1 dB
L95 = 40.8 dB
L99 = 36.4 dB
Level
Cumulative
Cursor: [74.8 ; 75.0[dB Level: 0.0% Cumulative: 0.0%



PEC001

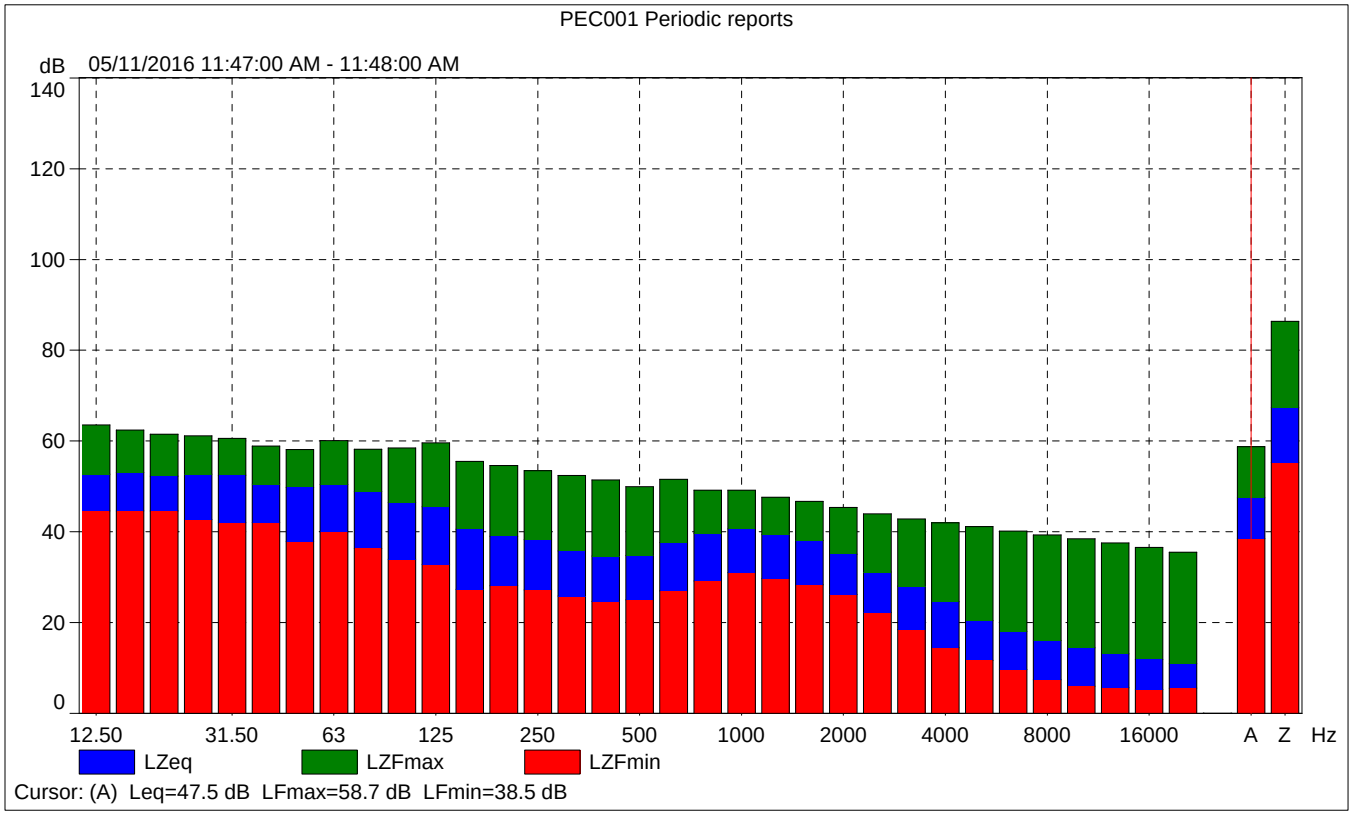
	Start time	Elapsed time	LAIeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			50.9	54.9	43.3
Time	11:47:10 AM	0:00:10			
Date	05/11/2016				


PEC001
05/11/2016 11:47:10 AM - 11:47:20 AM
dB
140
120
100
80
60
40
20
0
12.50
31.50
63
125
250
500
1000
2000
4000
8000
16000
A
Z
Hz
LZeq
Cursor: (A) Leq=48.6 dB

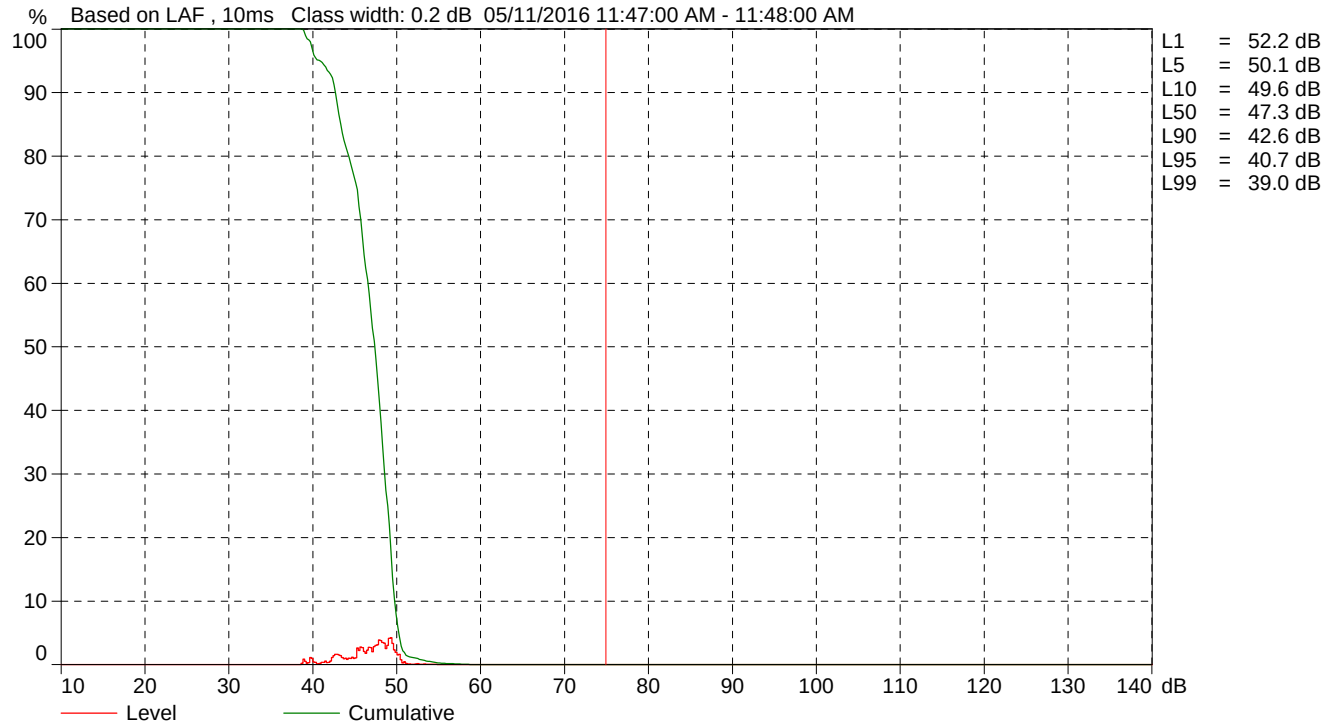

PEC001 Periodic reports
Sound
dB
140
120
100
80
60
40
20
11:44:00 AM
11:46:00 AM
11:48:00 AM
11:50:00 AM
11:52:00 AM
LAIeq
LAFmax
LCpeak
LAFmin
Cursor: 05/11/2016 11:47:00 AM - 11:48:00 AM LAIeq=50.9 dB LAFmax=58.7 dB LCpeak=87.5 dB LAFmin=38.5 dB

PEC001 Periodic reports

	Start time	Elapsed time	Overload [%]	LAIeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			0.00	50.9	58.7	38.5
Time	11:47:00 AM	0:01:00				
Date	05/11/2016					



PEC001 Periodic reports



Cursor: [74.8 ; 75.0[dB Level: 0.0% Cumulative: 0.0%

Site Number: 2			
Recorded By: Alesia Hsiao			
Job Number: 153547			
Date: 5/11/2016			
Time: 12:02 p.m.			
Location: Along Parsippany Center			
Source of Peak Noise: Traffic along Parsippany Center, birds chirping, residential noise (garage doors, car doors, etc.)			
Noise Data			
Leq (dB)	**Lmin (dB)**	**Lmax (dB)**	**Peak (dB)**
62.1	38.0	93.3	89.2

Equipment						
Category	**Type**	**Vendor**	**Model**	**Serial No.**	**Cert. Date**	**Note**
Sound	Sound Level Meter	**Brüel & Kjær**	**2250**	**2548189**	**1/4/2016**	
	Microphone	**Brüel & Kjær**	**4189**	**2543364**	**1/4/2016**	
	Preamp	**Brüel & Kjær**	**ZC 0032**	**4265**	**1/4/2016**	
	Calibrator	**Brüel & Kjær**	**4231**	**2545667**	**1/4/2016**	

Weather Data			
Est.	**Duration:** 10 minutes	**Sky:** ☼ Sunny	
	Note: dBA Offset = 0.01	**Sensor Height (ft):** 5 ft	
	Wind Ave Speed (mph / m/s)	**Temperature (degrees Fahrenheit)**	**Barometer Pressure (hPa)**
	0.8	84.4	29.98

Photo of Measurement Location

2250

Instrument:		2250
Application:		BZ7225 Version 4.4
Start Time:		05/11/2016 12:02:39
End Time:		05/11/2016 12:12:39
Elapsed Time:		00:10:00
Bandwidth:		1/3-octave
Max Input Level:		138.72

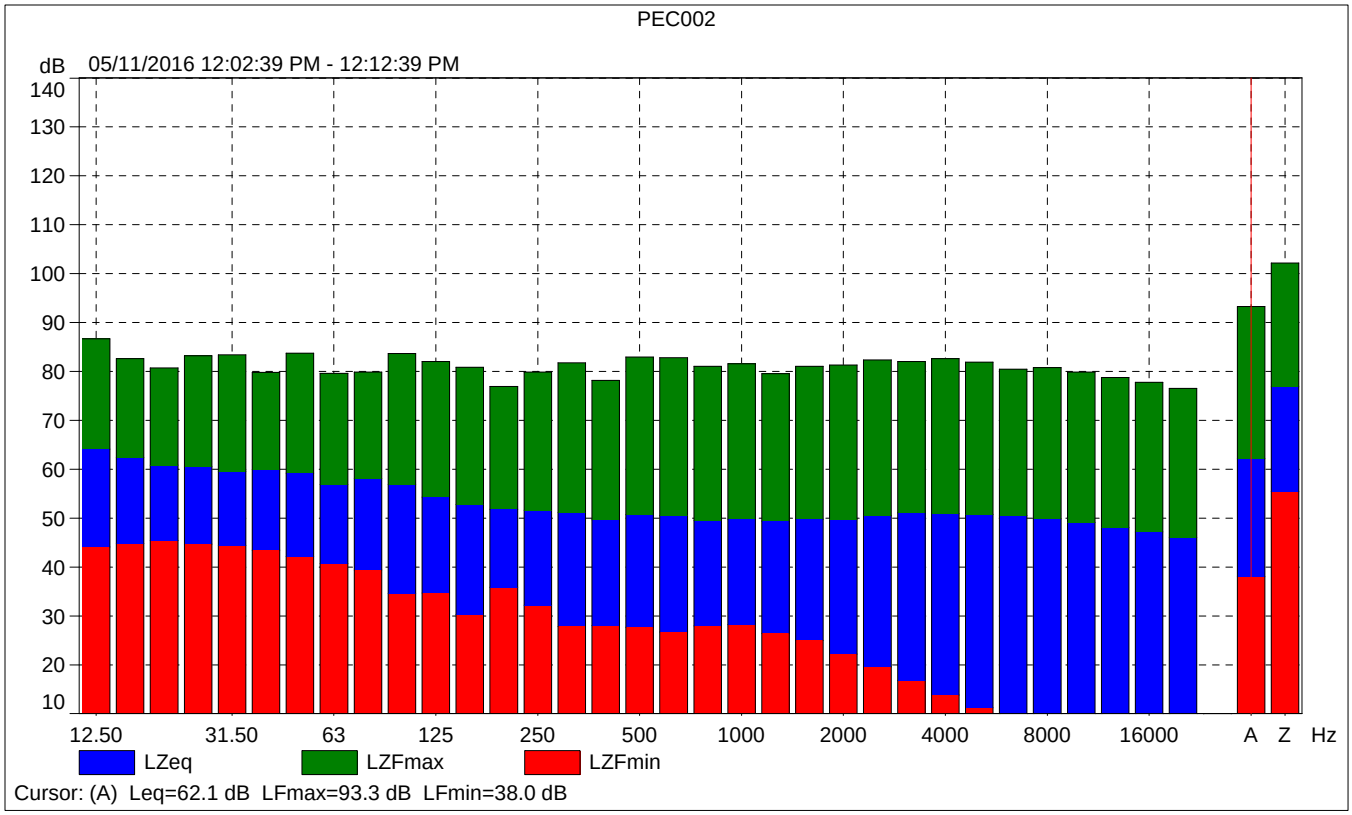
	Time	Frequency
Broadband (excl. Peak):	FSI	AZ
Broadband Peak:		C
Spectrum:	FS	Z

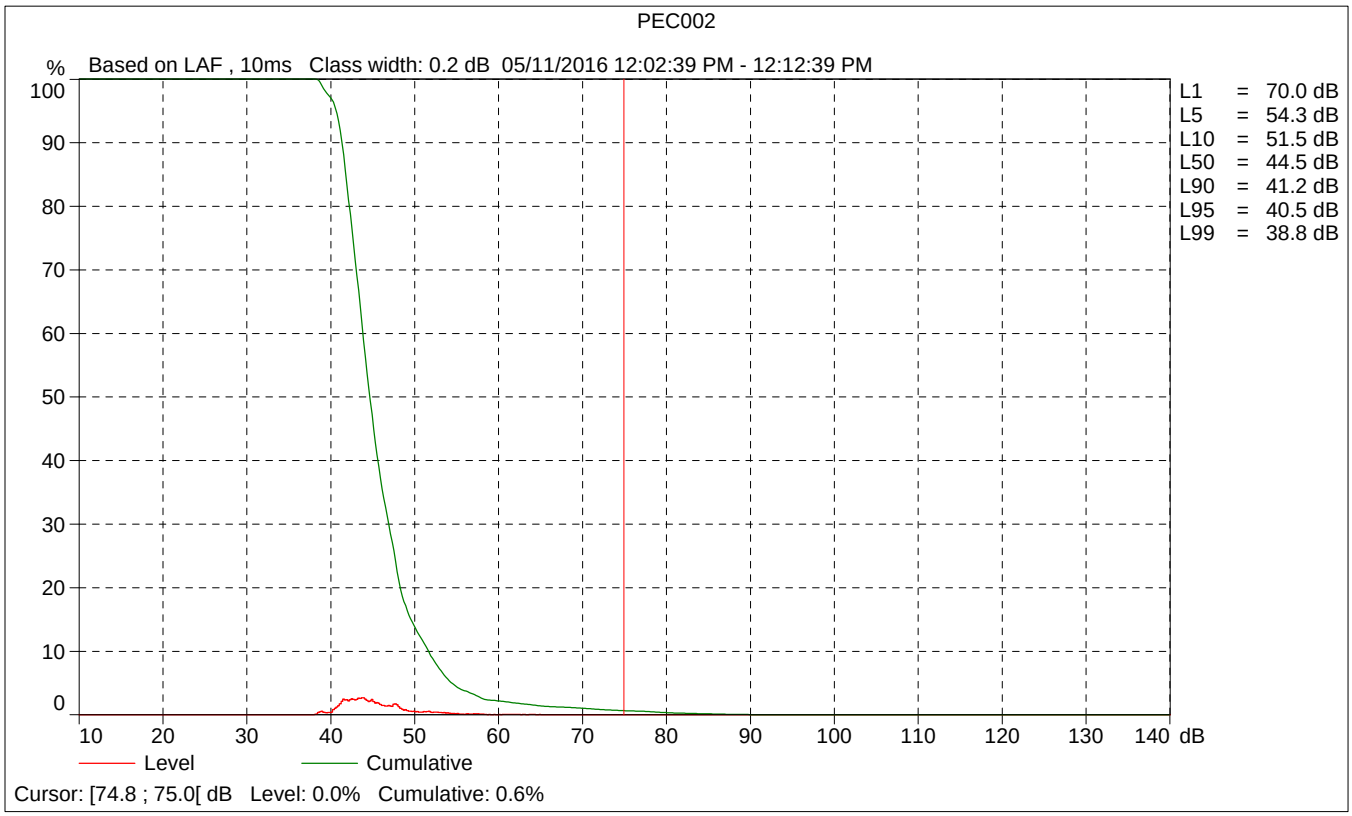
Instrument Serial Number:		2548189
Microphone Serial Number:		2543364
Input:		Top Socket
Windscreen Correction:		None
Sound Field Correction:		Free-field

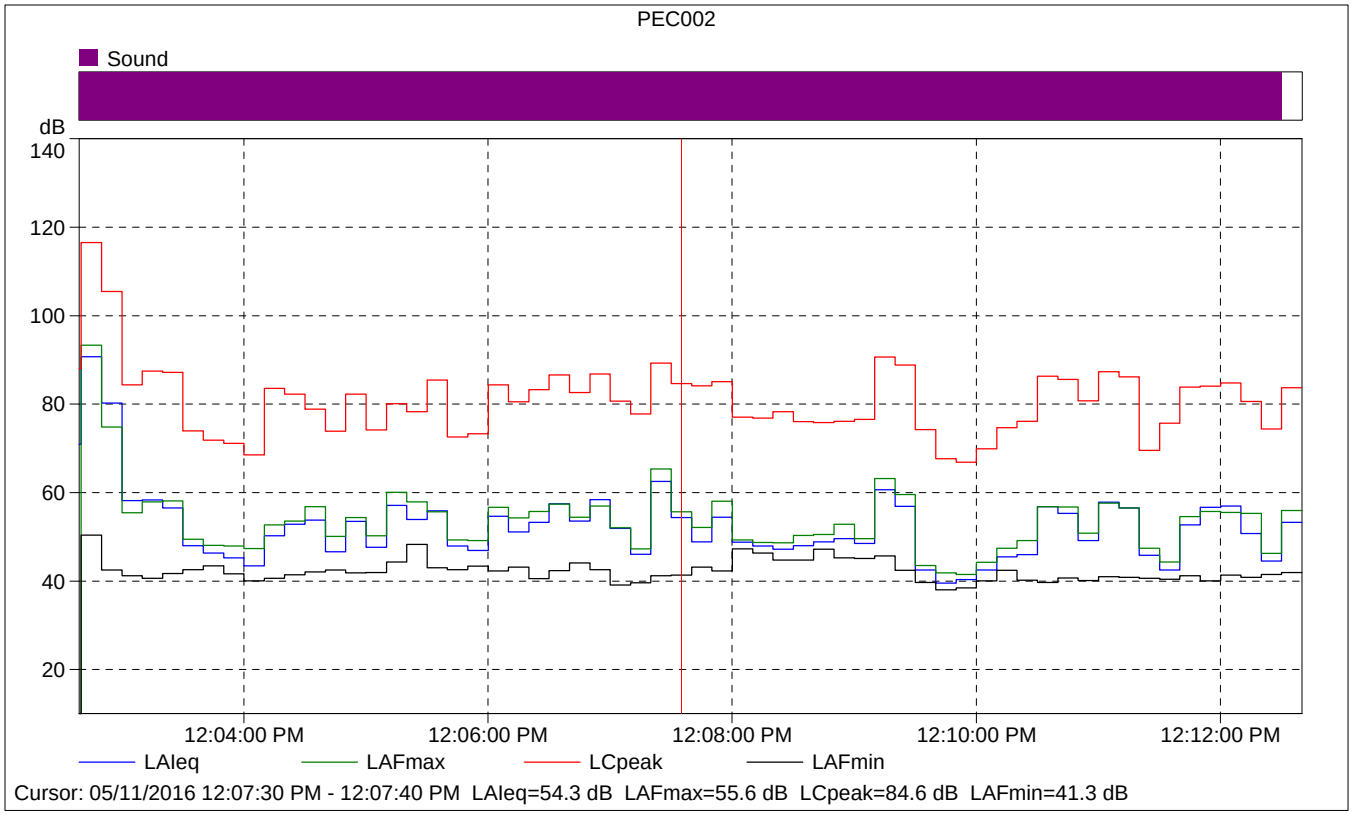
Calibration Time:		05/09/2016 17:06:48
Calibration Type:		External reference
Sensitivity:		64.5731016993523 mV/Pa

PEC002

	Start time	End time	Elapsed time	Overload [%]	LAeq [dB]	LAFmax [dB]	LAFmin [dB]
Value				0.00	62.1	93.3	38.0
Time	12:02:39 PM	12:12:39 PM	0:10:00				
Date	05/11/2016	05/11/2016					

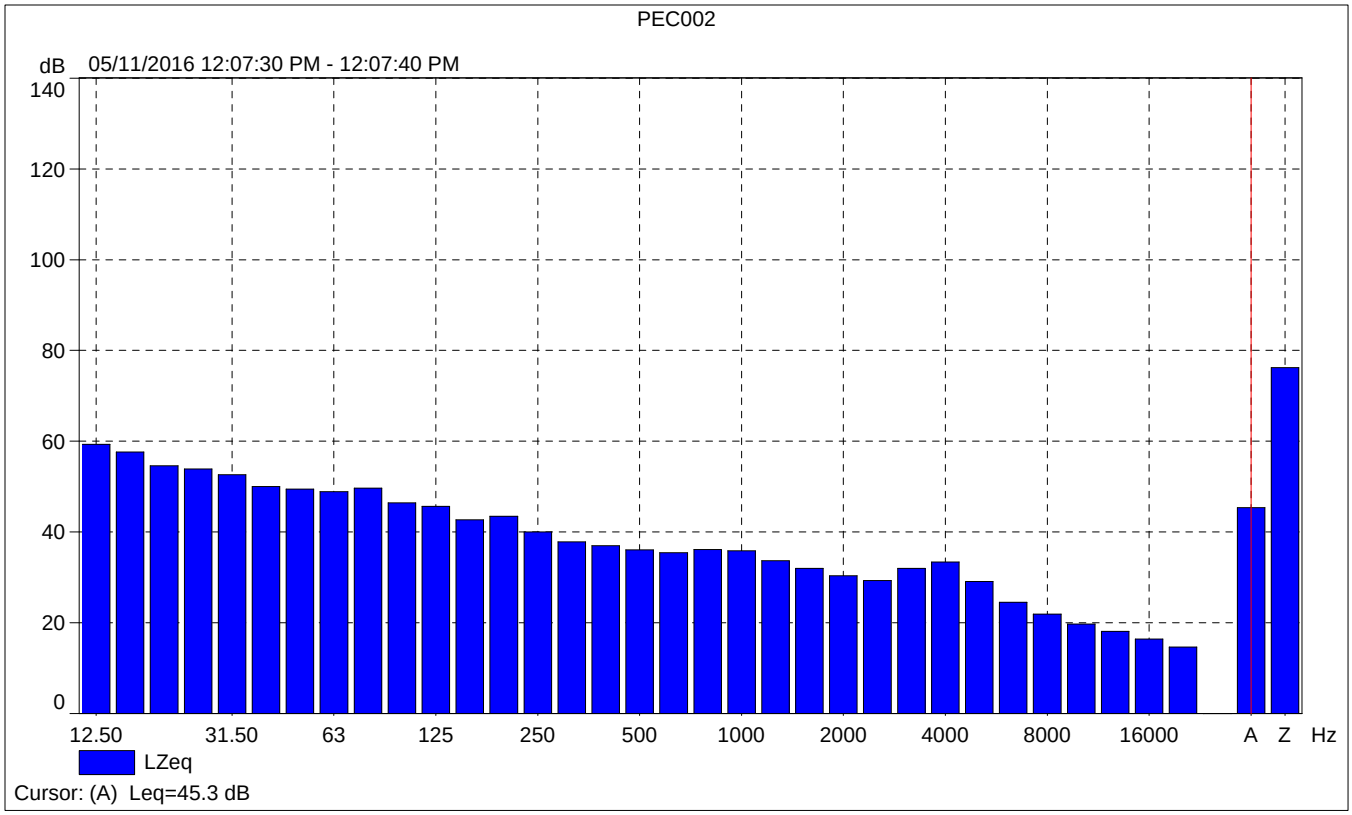

PEC002
dB
05/11/2016 12:02:39 PM - 12:12:39 PM
140
130
120
110
100
90
80
70
60
50
40
30
20
10
12.50
31.50
63
125
250
500
1000
2000
4000
8000
16000
A
Z
Hz
LZeq
LZFmax
LZFmin
Cursor: (A) Leq=62.1 dB LFmax=93.3 dB LFmin=38.0 dB

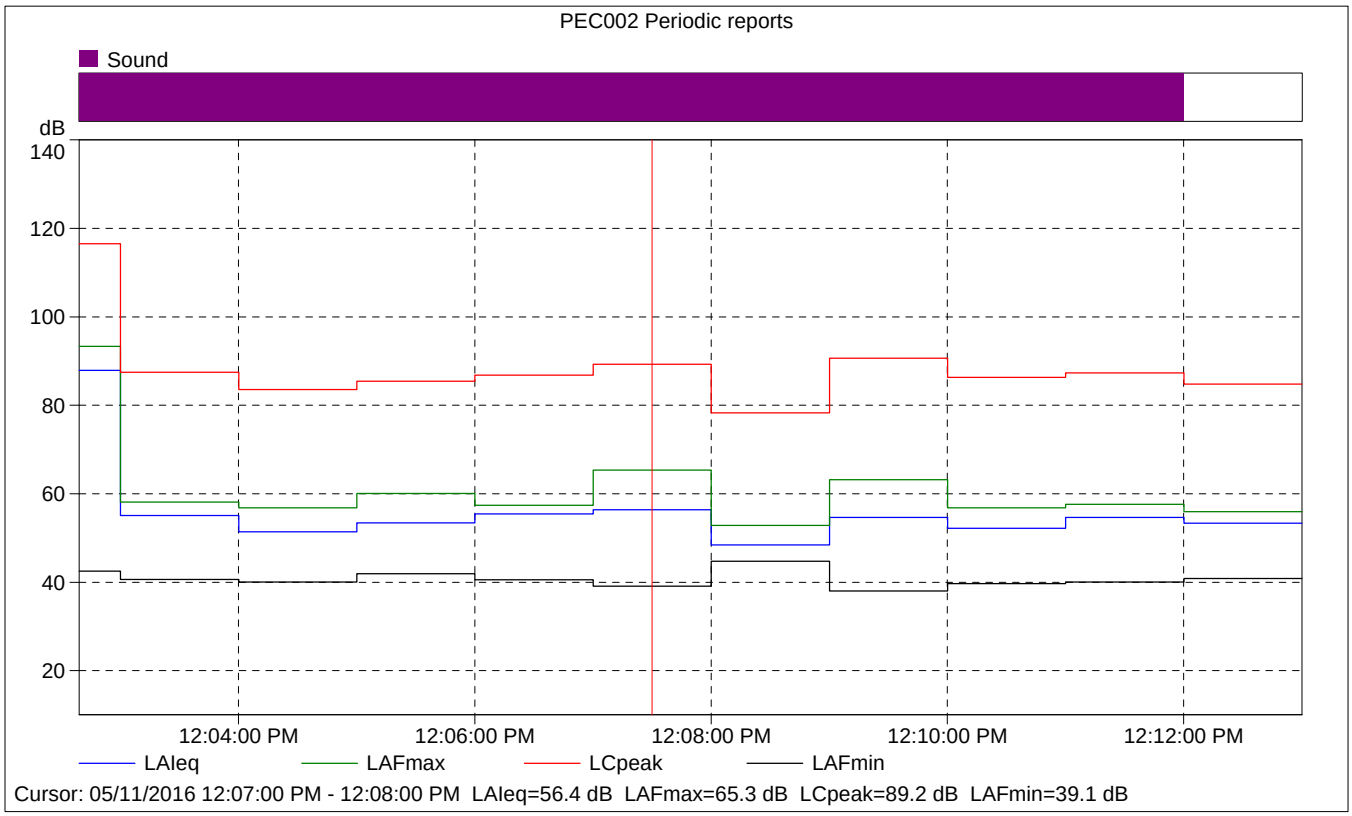

PEC002
%
Based on LAF , 10ms Class width: 0.2 dB 05/11/2016 12:02:39 PM - 12:12:39 PM
100
90
80
70
60
50
40
30
20
10
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
dB
L1 = 70.0 dB
L5 = 54.3 dB
L10 = 51.5 dB
L50 = 44.5 dB
L90 = 41.2 dB
L95 = 40.5 dB
L99 = 38.8 dB
Level
Cumulative
Cursor: [74.8 ; 75.0[dB Level: 0.0% Cumulative: 0.6%



PEC002

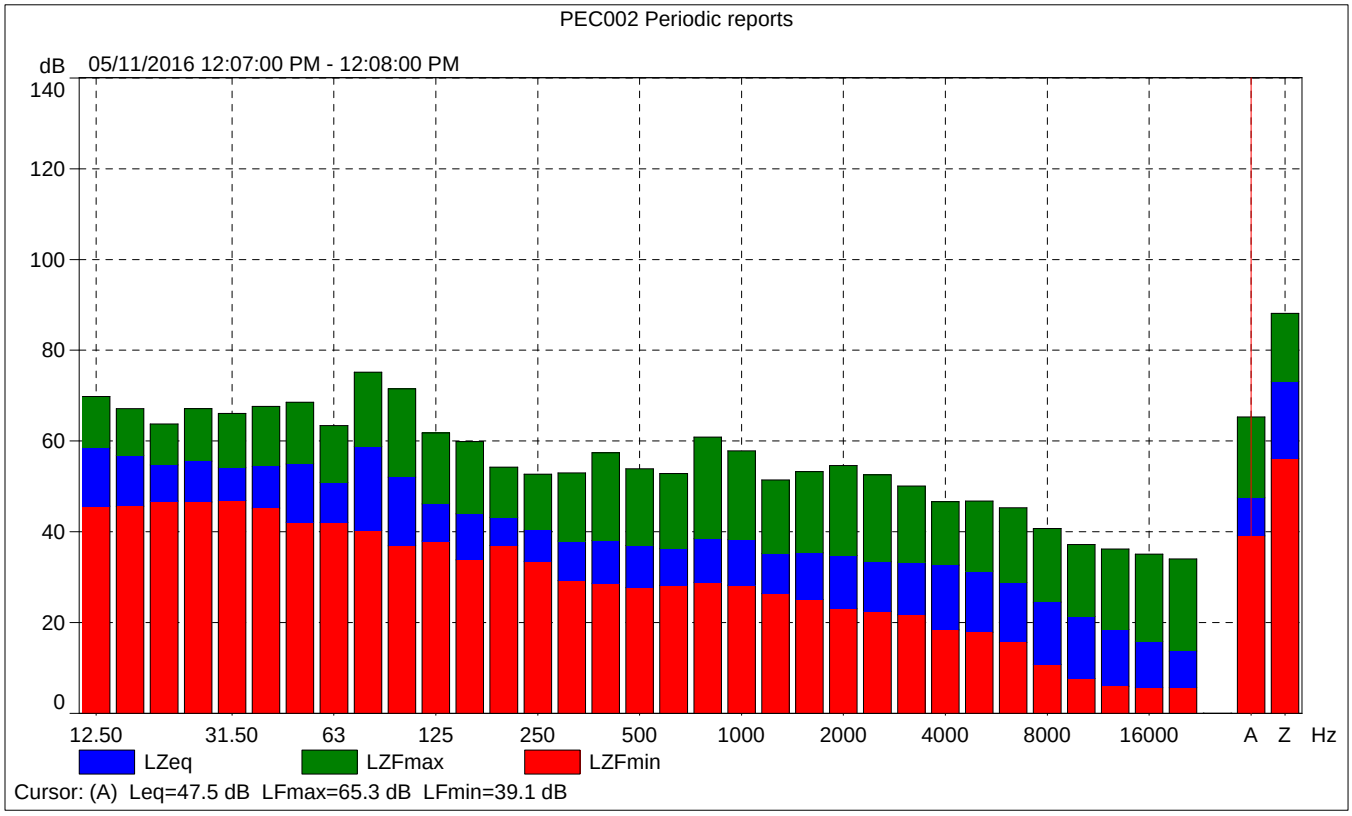
	Start time	Elapsed time	LAIeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			54.3	55.6	41.3
Time	12:07:30 PM	0:00:10			
Date	05/11/2016				

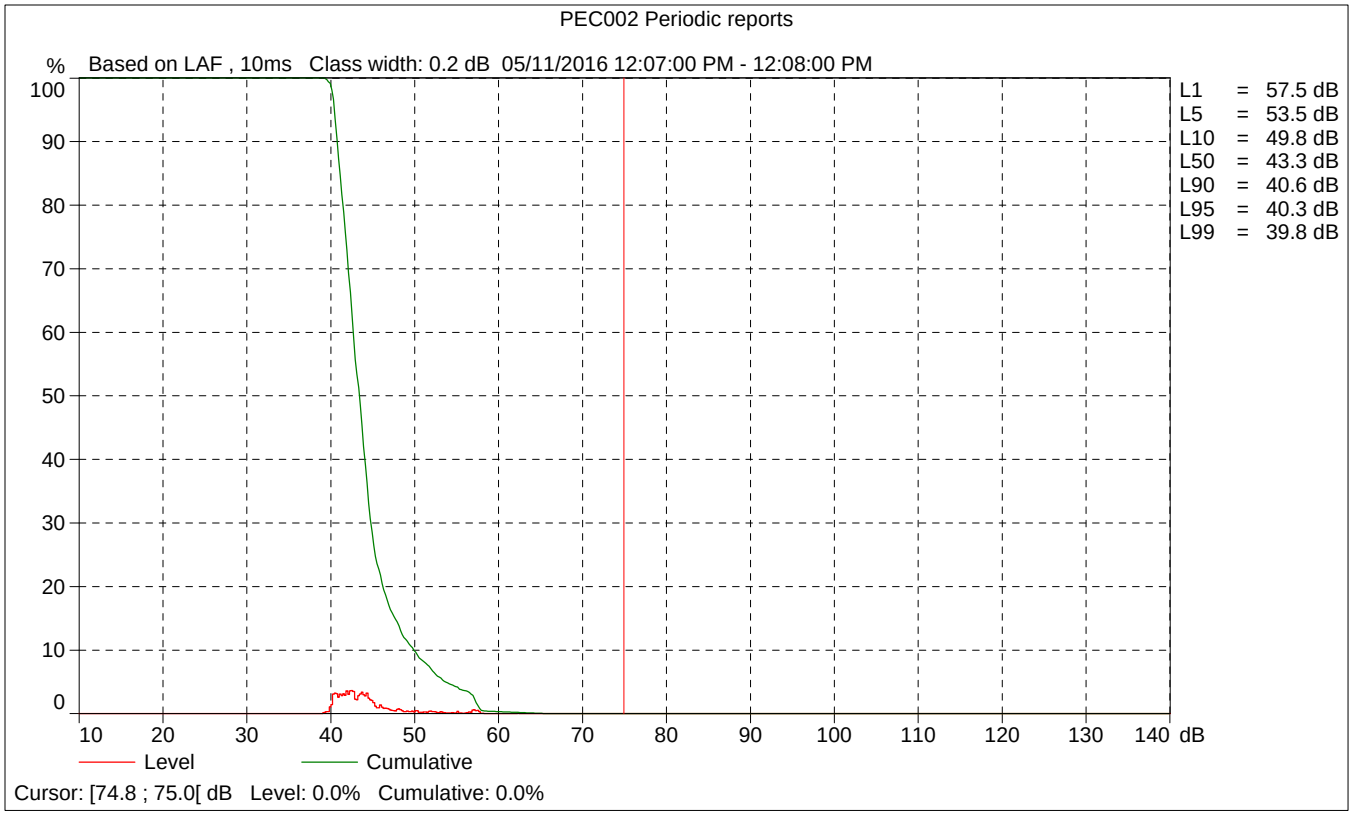

PEC002
dB
05/11/2016 12:07:30 PM - 12:07:40 PM
140
120
100
80
60
40
20
0
12.50
31.50
63
125
250
500
1000
2000
4000
8000
16000
A
Z
Hz
LZeq
Cursor: (A) Leq=45.3 dB


PEC002 Periodic reports
Sound
dB
140
120
100
80
60
40
20
12:04:00 PM
12:06:00 PM
12:08:00 PM
12:10:00 PM
12:12:00 PM
LAIeq
LAFmax
LCpeak
LAFmin
Cursor: 05/11/2016 12:07:00 PM - 12:08:00 PM LAIeq=56.4 dB LAFmax=65.3 dB LCpeak=89.2 dB LAFmin=39.1 dB

PEC002 Periodic reports

	Start time	Elapsed time	Overload [%]	LAIeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			0.00	56.4	65.3	39.1
Time	12:07:00 PM	0:01:00				
Date	05/11/2016					




PEC002 Periodic reports
% Based on LAF , 10ms Class width: 0.2 dB 05/11/2016 12:07:00 PM - 12:08:00 PM
100
90
80
70
60
50
40
30
20
10
0
10 20 30 40 50 60 70 80 90 100 110 120 130 140 dB
L1 = 57.5 dB
L5 = 53.5 dB
L10 = 49.8 dB
L50 = 43.3 dB
L90 = 40.6 dB
L95 = 40.3 dB
L99 = 39.8 dB
Level
Cumulative
Cursor: [74.8 ; 75.0[dB Level: 0.0% Cumulative: 0.0%

Site Number: 3			
Recorded By: Alesia Hsiao			
Job Number: 153547			
Date: 5/11/2016			
Time: 12:26 p.m.			
Location: Along Klamath Court			
Source of Peak Noise: Traffic along Pechanga Parkway, birds chirping, dogs parking, residential noise (garage doors, car doors, etc.)			
Noise Data			
Leq (dB)	**Lmin (dB)**	**Lmax (dB)**	**Peak (dB)**
58.2	38.7	87.5	86.8

Equipment						
Category	**Type**	**Vendor**	**Model**	**Serial No.**	**Cert. Date**	**Note**
Sound	Sound Level Meter	**Brüel & Kjær**	**2250**	**2548189**	**1/4/2016**	
	Microphone	**Brüel & Kjær**	**4189**	**2543364**	**1/4/2016**	
	Preamp	**Brüel & Kjær**	**ZC 0032**	**4265**	**1/4/2016**	
	Calibrator	**Brüel & Kjær**	**4231**	**2545667**	**1/4/2016**	

Weather Data			
Est.	**Duration:** 10 minutes		**Sky:** ☼ Sunny
	Note: dBA Offset = 0.01		**Sensor Height (ft):** 5 ft
	Wind Ave Speed (mph / m/s)	**Temperature (degrees Fahrenheit)**	**Barometer Pressure (hPa)**
	1.2	82.4	29.98

Photo of Measurement Location

2250

Instrument:		2250
Application:		BZ7225 Version 4.4
Start Time:		05/11/2016 12:26:03
End Time:		05/11/2016 12:36:03
Elapsed Time:		00:10:00
Bandwidth:		1/3-octave
Max Input Level:		138.72

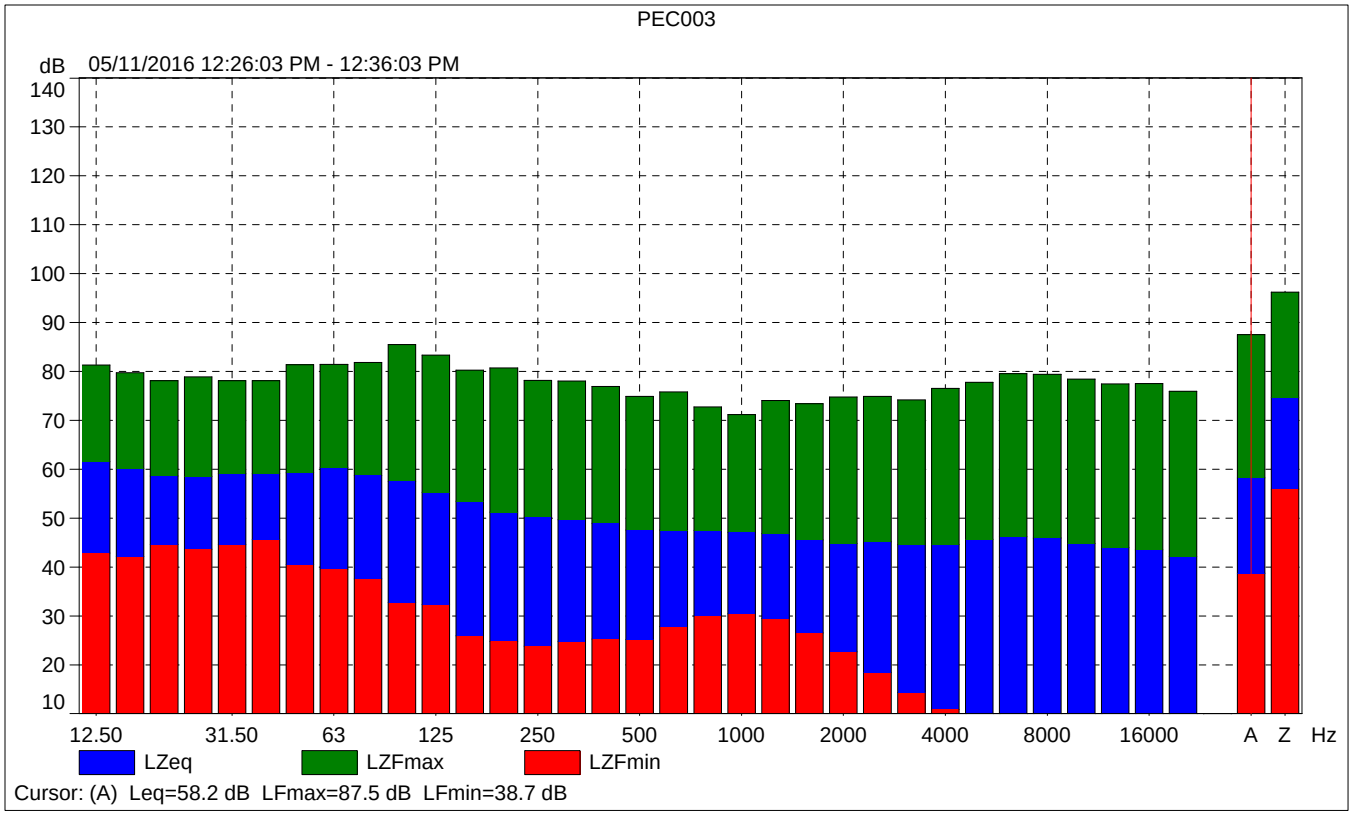
	Time	Frequency
Broadband (excl. Peak):	FSI	AZ
Broadband Peak:		C
Spectrum:	FS	Z

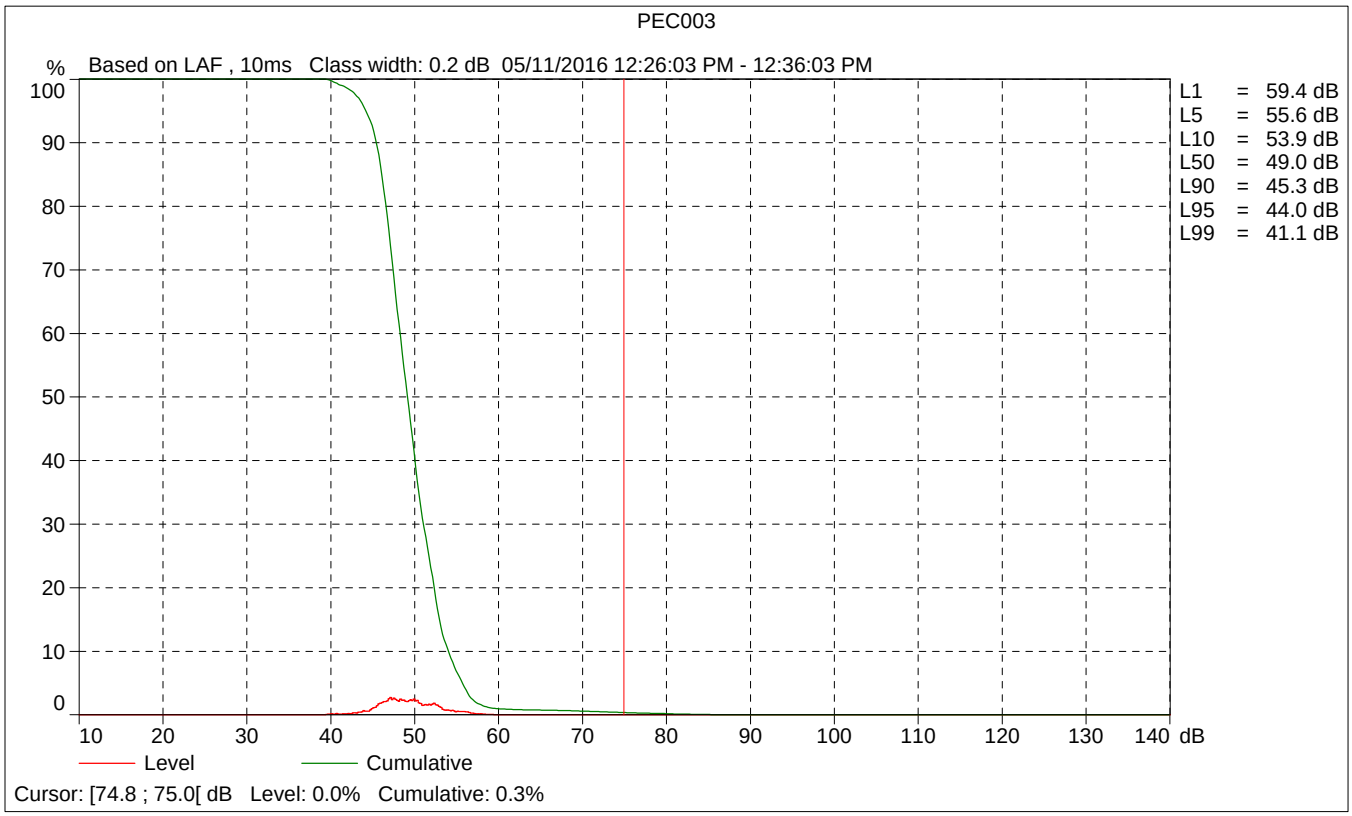
Instrument Serial Number:		2548189
Microphone Serial Number:		2543364
Input:		Top Socket
Windscreen Correction:		None
Sound Field Correction:		Free-field

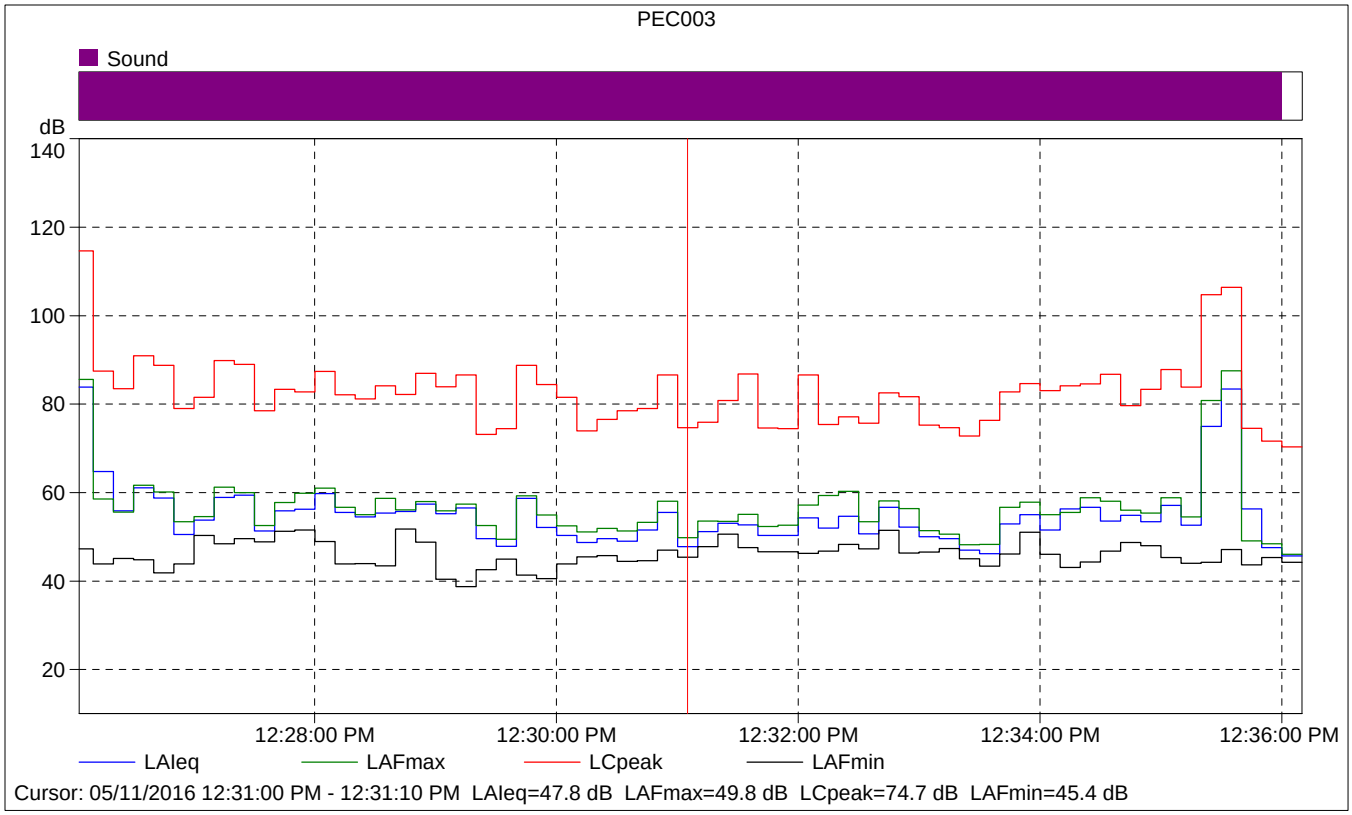
Calibration Time:		05/09/2016 17:06:48
Calibration Type:		External reference
Sensitivity:		64.5731016993523 mV/Pa

PEC003

	Start time	End time	Elapsed time	Overload [%]	LAeq [dB]	LAFmax [dB]	LAFmin [dB]
Value				0.00	58.2	87.5	38.7
Time	12:26:03 PM	12:36:03 PM	0:10:00				
Date	05/11/2016	05/11/2016					

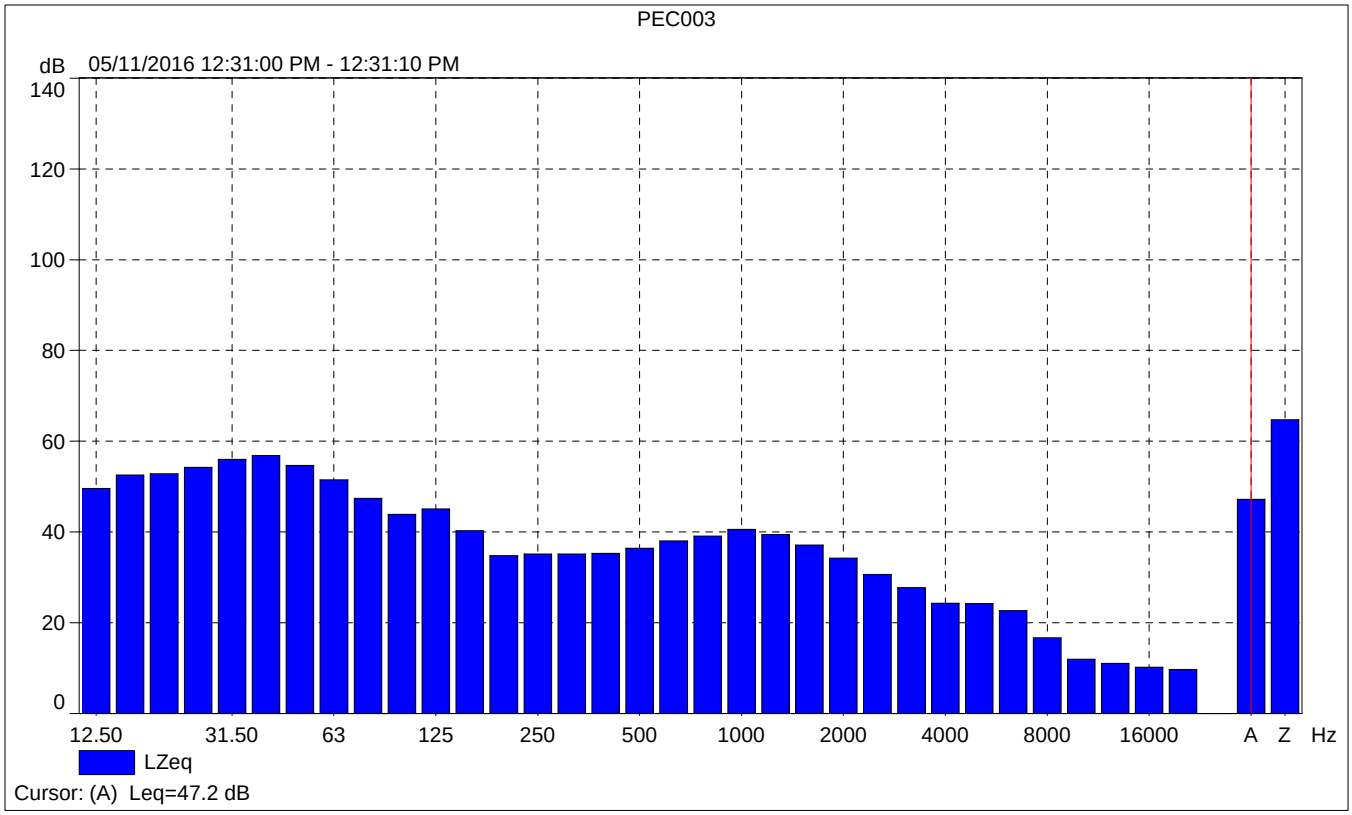

PEC003
dB
05/11/2016 12:26:03 PM - 12:36:03 PM
140
130
120
110
100
90
80
70
60
50
40
30
20
10
12.50
31.50
63
125
250
500
1000
2000
4000
8000
16000
A
Z
Hz
LZeq
LZFmax
LZFmin
Cursor: (A) Leq=58.2 dB LFmax=87.5 dB LFmin=38.7 dB

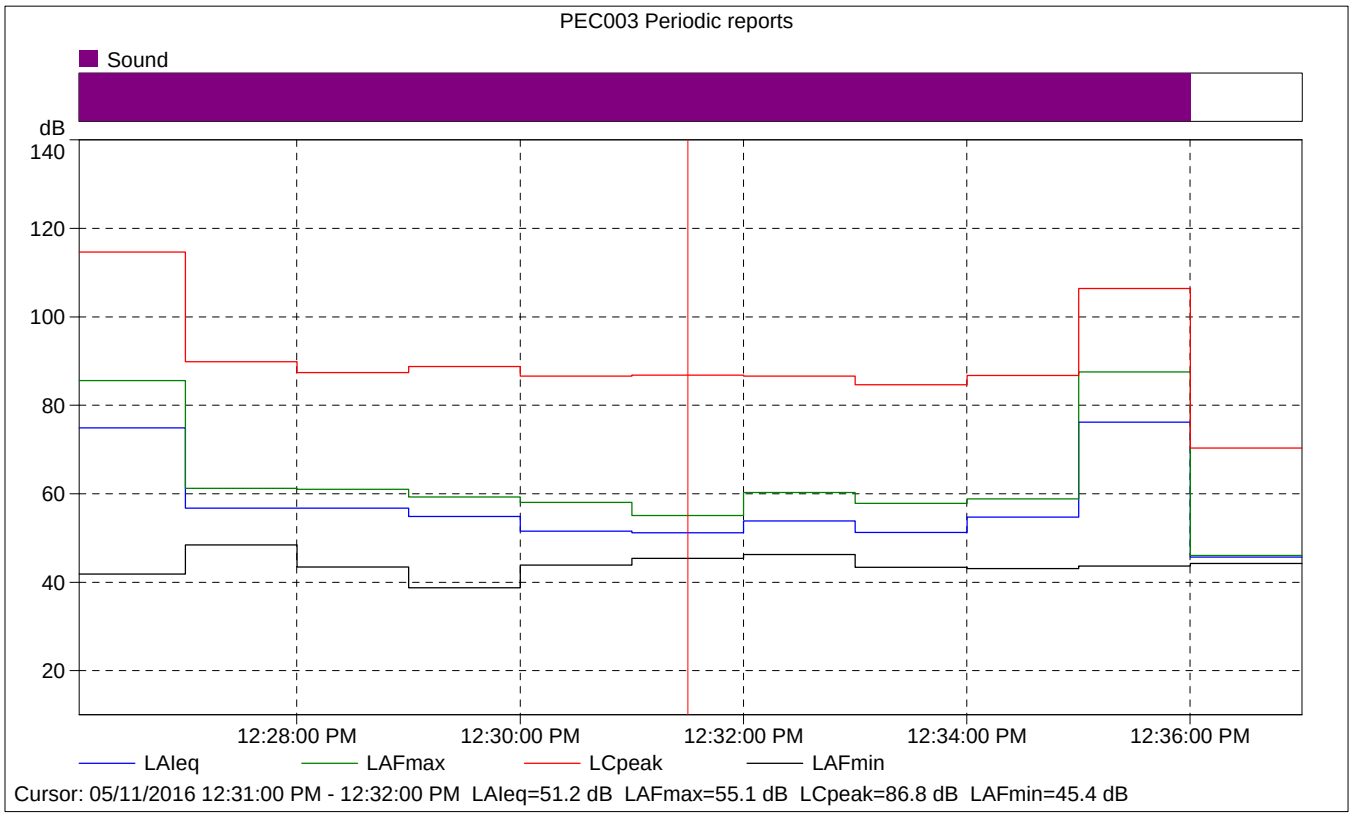

PEC003
%
Based on LAF , 10ms Class width: 0.2 dB 05/11/2016 12:26:03 PM - 12:36:03 PM
100
90
80
70
60
50
40
30
20
10
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
dB
L1 = 59.4 dB
L5 = 55.6 dB
L10 = 53.9 dB
L50 = 49.0 dB
L90 = 45.3 dB
L95 = 44.0 dB
L99 = 41.1 dB
Level
Cumulative
Cursor: [74.8 ; 75.0[dB Level: 0.0% Cumulative: 0.3%



PEC003

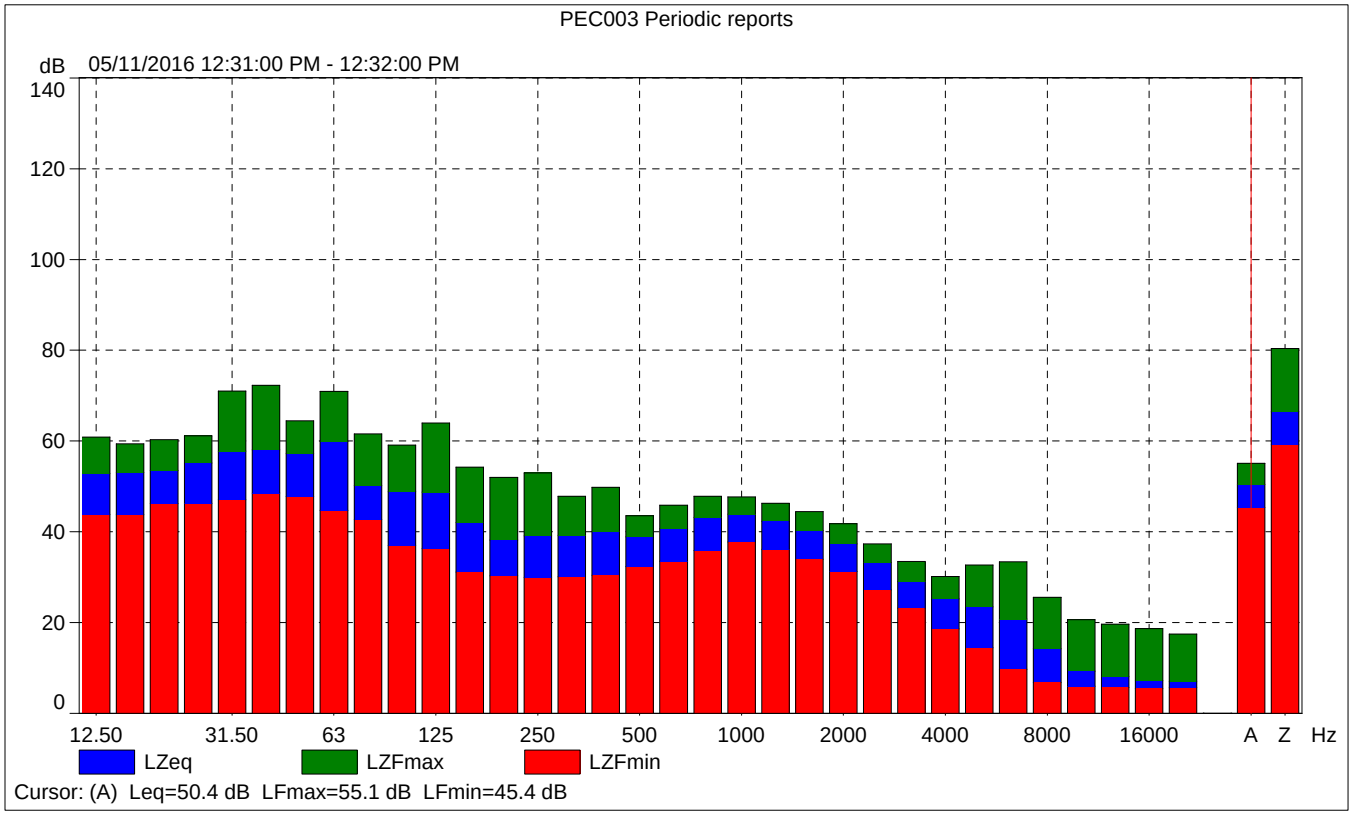
	Start time	Elapsed time	LAIeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			47.8	49.8	45.4
Time	12:31:00 PM	0:00:10			
Date	05/11/2016				


PEC003
dB
05/11/2016 12:31:00 PM - 12:31:10 PM
140
120
100
80
60
40
20
0
12.50
31.50
63
125
250
500
1000
2000
4000
8000
16000
A
Z
Hz
LZeq
Cursor: (A) Leq=47.2 dB

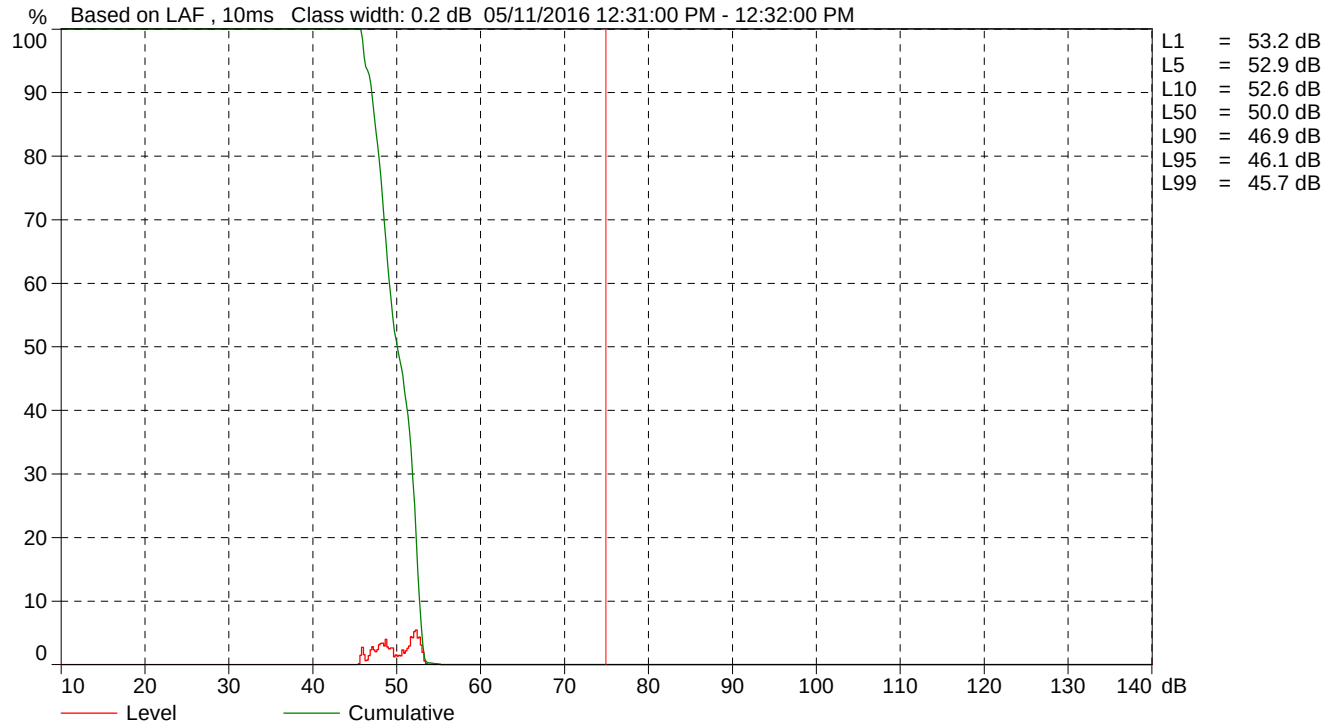

PEC003 Periodic reports
Sound
dB
140
120
100
80
60
40
20
12:28:00 PM
12:30:00 PM
12:32:00 PM
12:34:00 PM
12:36:00 PM
LAIeq
LAFmax
LCpeak
LAFmin
Cursor: 05/11/2016 12:31:00 PM - 12:32:00 PM LAIeq=51.2 dB LAFmax=55.1 dB LCpeak=86.8 dB LAFmin=45.4 dB

PEC003 Periodic reports

	Start time	Elapsed time	Overload [%]	LAIeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			0.00	51.2	55.1	45.4
Time	12:31:00 PM	0:01:00				
Date	05/11/2016					



PEC003 Periodic reports



Cursor: [74.8 ; 75.0[dB Level: 0.0% Cumulative: 0.0%

SUMMARY OF LABORATORY R-VALUE TEST RESULTS
ASTM D2844

Sample No.	R-Value
C-2 @ 2’	50
C-4 @ 2’	32
C-6 @ 2’	44

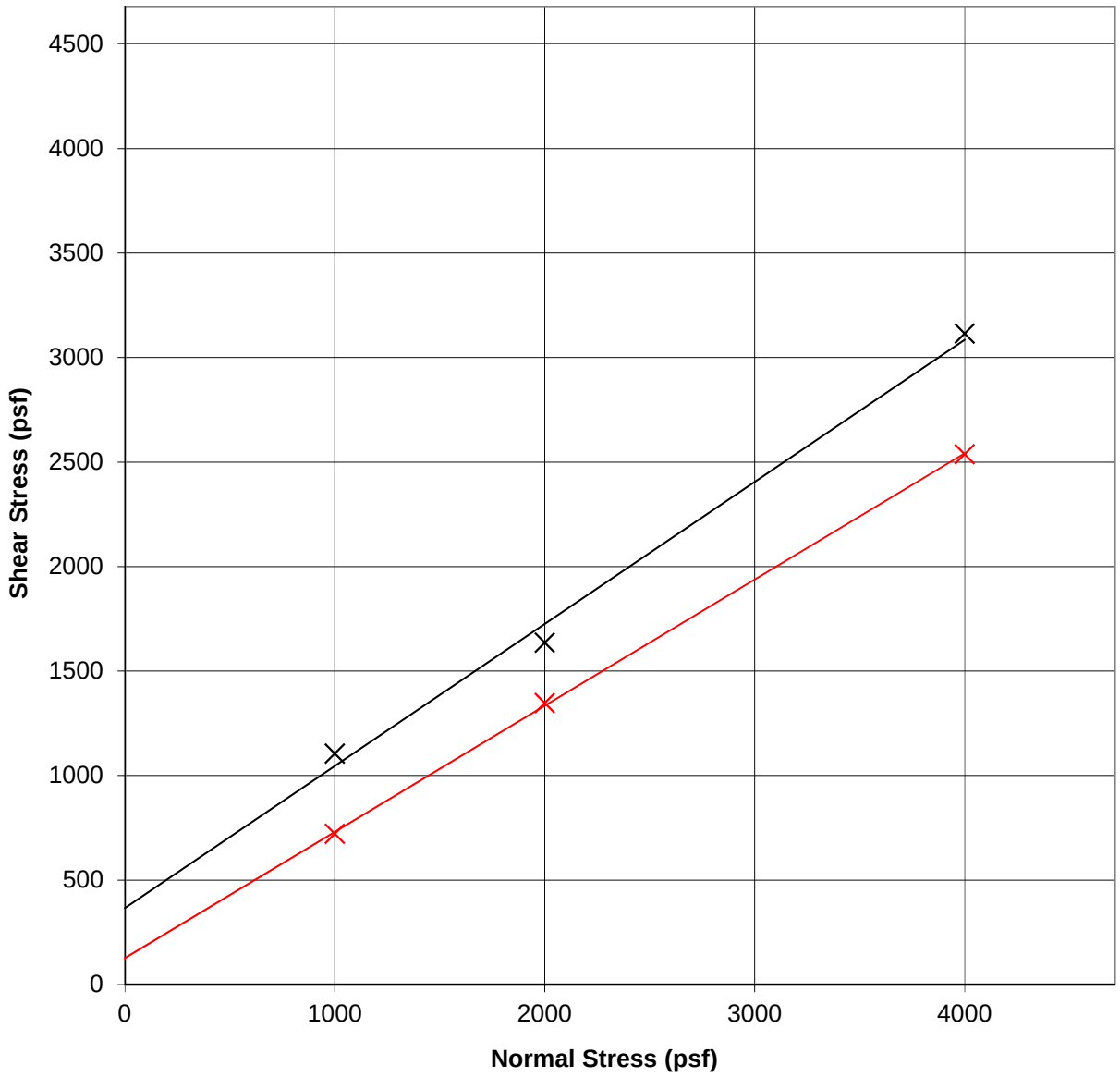
GEOCON
WEST, INC.
GEOTECHNICAL CONSULTANTS
41571 CORNING PLACE SUITE 101 MURRIETA, CA 92562-7065
PHONE 951-304-2300 FAX 951-304-2392

LABORATORY TEST RESULTS

PECHANGA PARKWAY WIDENING
VIA GILBERTO TO NORTH CASINO DRIVE
CITY PROJECT PW 15-14
TEMECULA, CALIFORNIA

KBP		

OCTOBER, 2016	PROJECT NO. T2733-22-01	FIG B-1



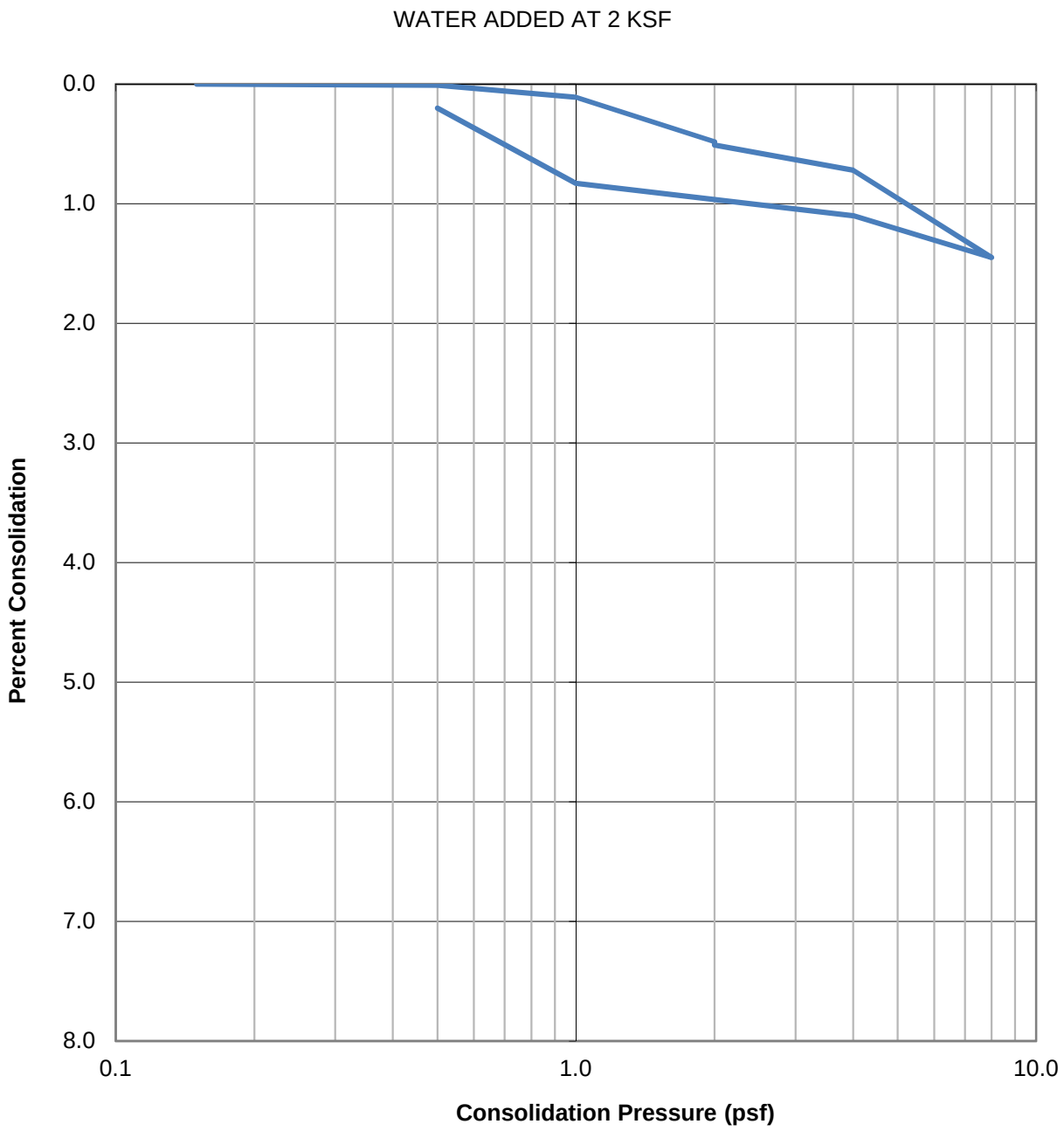
SAMPLE ID	SOIL TYPE	INITIAL DRY DENSITY (pcf)	INITIAL MOISTURE (%)	FINAL MOISTURE (%)	C (psf)	ϕ (deg)
B-1 @ 7.5'	SM	113.2	14.5	17.3	370	34
B-2 @ 5'	SM	103.3	19.5	20.6	130	31

GEOCON
WEST, INC.
GEOTECHNICAL ENVIRONMENTAL MATERIALS
41571 CORNING PLACE, SUITE 101, MURRIETA, CA 92562-7065
PHONE 951-304-2300 FAX 951-304-2392

KBP

DIRECT SHEAR TEST RESULTS
PECHANGA PARKWAY WIDENING
VIA GILBERTO TO NORTH CASINO DRIVE
CITY PROJET PW 15-14
TEMECULA, CALIFORNIA

OCTOBER, 2016 | PROJECT NO. T2733-22-01 | FIG B-2



SAMPLE ID	SOIL TYPE	DRY DENSITY (PCF)	INITIAL MOISTURE (%)	FINAL MOISTURE (%)
B-3 @ 7.5'	SM-ML	116.0	8.3	16.7

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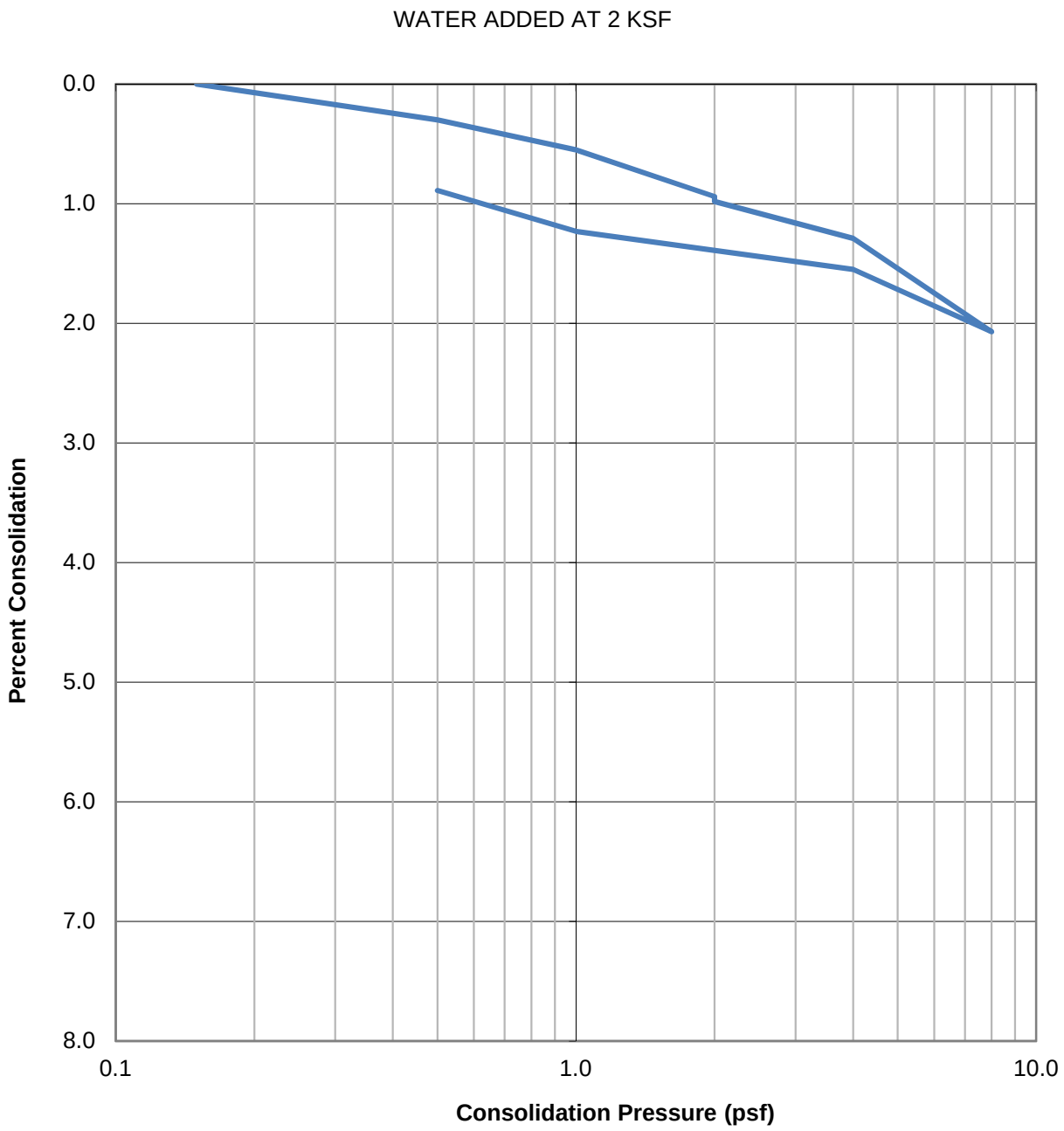
CER

CONSOLIDATION TEST RESULTS

PECHANGA PARKWAY WIDENING
VIA GILBERTO TO NORTH CASINO DRIVE
CITY PROJECT PW 15-14
TEMECULA, CALIFORNIA

OCTOBER, 2016 | PROJECT NO. T2733-22-01 | FIG B-3



SAMPLE ID	SOIL TYPE	DRY DENSITY (PCF)	INITIAL MOISTURE (%)	FINAL MOISTURE (%)
B-3 @ 10'	ML	121.7	10.0	13.0

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CONSOLIDATION TEST RESULTS

PECHANGA PARKWAY WIDENING
VIA GILBERTO TO NORTH CASINO DRIVE
CITY PROJECT PW 15-14
TEMECULA, CALIFORNIA

OCTOBER, 2016 | PROJECT NO. T2733-22-01 | FIG B-4

RECOMMENDED GRADING SPECIFICATIONS

1. GENERAL

1.1 These Recommended Grading Specifications shall be used in conjunction with the Geotechnical Report for the project prepared by Geocon. The recommendations contained in the text of the Geotechnical Report are a part of the earthwork and grading specifications and shall supersede the provisions contained hereinafter in the case of conflict.

1.2 Prior to the commencement of grading, a geotechnical consultant (Consultant) shall be employed for the purpose of observing earthwork procedures and testing the fills for substantial conformance with the recommendations of the Geotechnical Report and these specifications. The Consultant should provide adequate testing and observation services so that they may assess whether, in their opinion, the work was performed in substantial conformance with these specifications. It shall be the responsibility of the Contractor to assist the Consultant and keep them apprised of work schedules and changes so that personnel may be scheduled accordingly.

1.3 It shall be the sole responsibility of the Contractor to provide adequate equipment and methods to accomplish the work in accordance with applicable grading codes or agency ordinances, these specifications and the approved grading plans. If, in the opinion of the Consultant, unsatisfactory conditions such as questionable soil materials, poor moisture condition, inadequate compaction, and/or adverse weather result in a quality of work not in conformance with these specifications, the Consultant will be empowered to reject the work and recommend to the Owner that grading be stopped until the unacceptable conditions are corrected.

2. DEFINITIONS

2.1 **Owner** shall refer to the owner of the property or the entity on whose behalf the grading work is being performed and who has contracted with the Contractor to have grading performed.

2.2 **Contractor** shall refer to the Contractor performing the site grading work.

2.3 **Civil Engineer** or **Engineer of Work** shall refer to the California licensed Civil Engineer or consulting firm responsible for preparation of the grading plans, surveying and verifying as-graded topography.

2.4 **Consultant** shall refer to the soil engineering and engineering geology consulting firm retained to provide geotechnical services for the project.

2.5 **Soil Engineer** shall refer to a California licensed Civil Engineer retained by the Owner, who is experienced in the practice of geotechnical engineering. The Soil Engineer shall be responsible for having qualified representatives on-site to observe and test the Contractor's work for conformance with these specifications.

2.6 **Engineering Geologist** shall refer to a California licensed Engineering Geologist retained by the Owner to provide geologic observations and recommendations during the site grading.

2.7 **Geotechnical Report** shall refer to a soil report (including all addenda) which may include a geologic reconnaissance or geologic investigation that was prepared specifically for the development of the project for which these Recommended Grading Specifications are intended to apply.

3. MATERIALS

3.1 Materials for compacted fill shall consist of any soil excavated from the cut areas or imported to the site that, in the opinion of the Consultant, is suitable for use in construction of fills. In general, fill materials can be classified as *soil* fills, *soil-rock* fills or *rock* fills, as defined below.

3.1.1 **Soil fills** are defined as fills containing no rocks or hard lumps greater than 12 inches in maximum dimension and containing at least 40 percent by weight of material smaller than ¾ inch in size.

3.1.2 **Soil-rock fills** are defined as fills containing no rocks or hard lumps larger than 4 feet in maximum dimension and containing a sufficient matrix of soil fill to allow for proper compaction of soil fill around the rock fragments or hard lumps as specified in Paragraph 6.2. **Oversize rock** is defined as material greater than 12 inches.

3.1.3 **Rock fills** are defined as fills containing no rocks or hard lumps larger than 3 feet in maximum dimension and containing little or no fines. Fines are defined as material smaller than ¾ inch in maximum dimension. The quantity of fines shall be less than approximately 20 percent of the rock fill quantity.

3.2 Material of a perishable, spongy, or otherwise unsuitable nature as determined by the Consultant shall not be used in fills.

3.3 Materials used for fill, either imported or on-site, shall not contain hazardous materials as defined by the California Code of Regulations, Title 22, Division 4, Chapter 30, Articles 9

and 10; 40CFR; and any other applicable local, state or federal laws. The Consultant shall not be responsible for the identification or analysis of the potential presence of hazardous materials. However, if observations, odors or soil discoloration cause Consultant to suspect the presence of hazardous materials, the Consultant may request from the Owner the termination of grading operations within the affected area. Prior to resuming grading operations, the Owner shall provide a written report to the Consultant indicating that the suspected materials are not hazardous as defined by applicable laws and regulations.

3.4 The outer 15 feet of *soil-rock* fill slopes, measured horizontally, should be composed of properly compacted *soil* fill materials approved by the Consultant. *Rock* fill may extend to the slope face, provided that the slope is not steeper than 2:1 (horizontal:vertical) and a soil layer no thicker than 12 inches is track-walked onto the face for landscaping purposes. This procedure may be utilized provided it is acceptable to the governing agency, Owner and Consultant.

3.5 Samples of soil materials to be used for fill should be tested in the laboratory by the Consultant to determine the maximum density, optimum moisture content, and, where appropriate, shear strength, expansion, and gradation characteristics of the soil.

3.6 During grading, soil or groundwater conditions other than those identified in the Geotechnical Report may be encountered by the Contractor. The Consultant shall be notified immediately to evaluate the significance of the unanticipated condition

4. CLEARING AND PREPARING AREAS TO BE FILLED

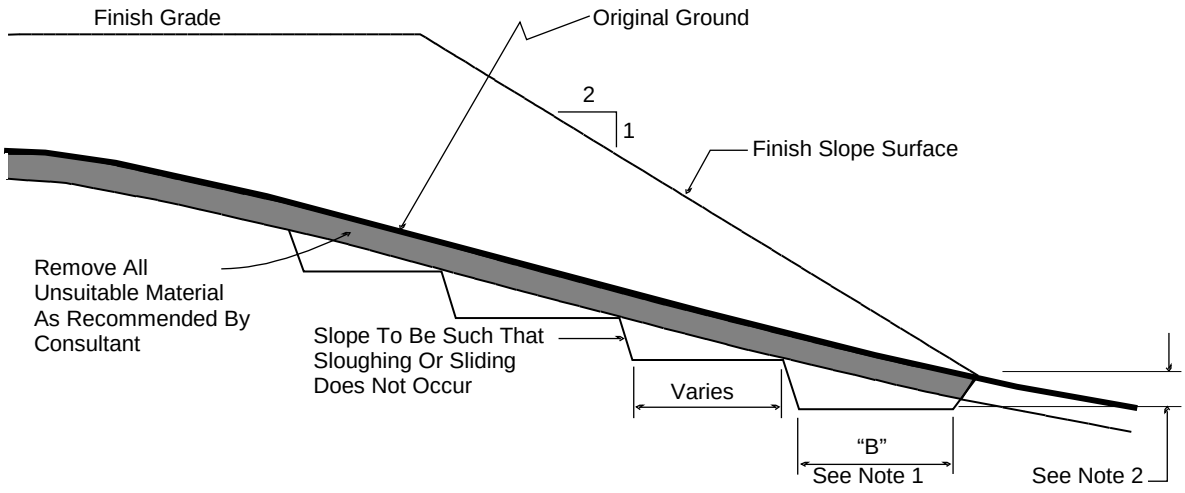
4.1 Areas to be excavated and filled shall be cleared and grubbed. Clearing shall consist of complete removal above the ground surface of trees, stumps, brush, vegetation, man-made structures, and similar debris. Grubbing shall consist of removal of stumps, roots, buried logs and other unsuitable material and shall be performed in areas to be graded. Roots and other projections exceeding 1½ inches in diameter shall be removed to a depth of 3 feet below the surface of the ground. Borrow areas shall be grubbed to the extent necessary to provide suitable fill materials.

4.2 Asphalt pavement material removed during clearing operations should be properly disposed at an approved off-site facility or in an acceptable area of the project evaluated by Geocon and the property owner. Concrete fragments that are free of reinforcing steel may be placed in fills, provided they are placed in accordance with Section 6.2 or 6.3 of this document.

4.3 After clearing and grubbing of organic matter and other unsuitable material, loose or porous soils shall be removed to the depth recommended in the Geotechnical Report. The depth of removal and compaction should be observed and approved by a representative of the Consultant. The exposed surface shall then be plowed or scarified to a minimum depth of 6 inches and until the surface is free from uneven features that would tend to prevent uniform compaction by the equipment to be used.

4.4 Where the slope ratio of the original ground is steeper than 5:1 (horizontal:vertical), or where recommended by the Consultant, the original ground should be benched in accordance with the following illustration.

TYPICAL BENCHING DETAIL



No Scale

DETAIL NOTES:

(1) Key width "B" should be a minimum of 10 feet, or sufficiently wide to permit complete coverage with the compaction equipment used. The base of the key should be graded horizontal, or inclined slightly into the natural slope.

(2) The outside of the key should be below the topsoil or unsuitable surficial material and at least 2 feet into dense formational material. Where hard rock is exposed in the bottom of the key, the depth and configuration of the key may be modified as approved by the Consultant.

4.5 After areas to receive fill have been cleared and scarified, the surface should be moisture conditioned to achieve the proper moisture content, and compacted as recommended in Section 6 of these specifications.

5. COMPACTION EQUIPMENT

5.1 Compaction of *soil* or *soil-rock* fill shall be accomplished by sheepsfoot or segmented-steel wheeled rollers, vibratory rollers, multiple-wheel pneumatic-tired rollers, or other types of acceptable compaction equipment. Equipment shall be of such a design that it will be capable of compacting the *soil* or *soil-rock* fill to the specified relative compaction at the specified moisture content.

5.2 Compaction of *rock* fills shall be performed in accordance with Section 6.3.

6. PLACING, SPREADING AND COMPACTION OF FILL MATERIAL

6.1 *Soil* fill, as defined in Paragraph 3.1.1, shall be placed by the Contractor in accordance with the following recommendations:

6.1.1 *Soil* fill shall be placed by the Contractor in layers that, when compacted, should generally not exceed 8 inches. Each layer shall be spread evenly and shall be thoroughly mixed during spreading to obtain uniformity of material and moisture in each layer. The entire fill shall be constructed as a unit in nearly level lifts. Rock materials greater than 12 inches in maximum dimension shall be placed in accordance with Section 6.2 or 6.3 of these specifications.

6.1.2 In general, the *soil* fill shall be compacted at a moisture content at or above the optimum moisture content as determined by ASTM D 1557.

6.1.3 When the moisture content of *soil* fill is below that specified by the Consultant, water shall be added by the Contractor until the moisture content is in the range specified.

6.1.4 When the moisture content of the *soil* fill is above the range specified by the Consultant or too wet to achieve proper compaction, the *soil* fill shall be aerated by the Contractor by blading/mixing, or other satisfactory methods until the moisture content is within the range specified.

6.1.5 After each layer has been placed, mixed, and spread evenly, it shall be thoroughly compacted by the Contractor to a relative compaction of at least 90 percent. Relative compaction is defined as the ratio (expressed in percent) of the in-place dry density of the compacted fill to the maximum laboratory dry density as determined in accordance with ASTM D 1557. Compaction shall be continuous over the entire area, and compaction equipment shall make sufficient passes so that the specified minimum relative compaction has been achieved throughout the entire fill.

6.1.6 Where practical, soils having an Expansion Index greater than 50 should be placed at least 3 feet below finish pad grade and should be compacted at a moisture content generally 2 to 4 percent greater than the optimum moisture content for the material.

6.1.7 Properly compacted *soil* fill shall extend to the design surface of fill slopes. To achieve proper compaction, it is recommended that fill slopes be over-built by at least 3 feet and then cut to the design grade. This procedure is considered preferable to track-walking of slopes, as described in the following paragraph.

6.1.8 As an alternative to over-building of slopes, slope faces may be back-rolled with a heavy-duty loaded sheepsfoot or vibratory roller at maximum 4-foot fill height intervals. Upon completion, slopes should then be track-walked with a D-8 dozer or similar equipment, such that a dozer track covers all slope surfaces at least twice.

6.2 *Soil-rock* fill, as defined in Paragraph 3.1.2, shall be placed by the Contractor in accordance with the following recommendations:

6.2.1 Rocks larger than 12 inches but less than 4 feet in maximum dimension may be incorporated into the compacted *soil* fill, but shall be limited to the area measured 15 feet minimum horizontally from the slope face and 5 feet below finish grade or 3 feet below the deepest utility, whichever is deeper.

6.2.2 Rocks or rock fragments up to 4 feet in maximum dimension may either be individually placed or placed in windrows. Under certain conditions, rocks or rock fragments up to 10 feet in maximum dimension may be placed using similar methods. The acceptability of placing rock materials greater than 4 feet in maximum dimension shall be evaluated during grading as specific cases arise and shall be approved by the Consultant prior to placement.

6.2.3 For individual placement, sufficient space shall be provided between rocks to allow for passage of compaction equipment.

6.2.4 For windrow placement, the rocks should be placed in trenches excavated in properly compacted *soil* fill. Trenches should be approximately 5 feet wide and 4 feet deep in maximum dimension. The voids around and beneath rocks should be filled with approved granular soil having a Sand Equivalent of 30 or greater and should be compacted by flooding. Windrows may also be placed utilizing an "open-face" method in lieu of the trench procedure, however, this method should first be approved by the Consultant.

6.2.5 Windrows should generally be parallel to each other and may be placed either parallel to or perpendicular to the face of the slope depending on the site geometry. The minimum horizontal spacing for windrows shall be 12 feet center-to-center with a 5-foot stagger or offset from lower courses to next overlying course. The minimum vertical spacing between windrow courses shall be 2 feet from the top of a lower windrow to the bottom of the next higher windrow.

6.2.6 Rock placement, fill placement and flooding of approved granular soil in the windrows should be continuously observed by the Consultant.

6.3 *Rock* fills, as defined in Section 3.1.3, shall be placed by the Contractor in accordance with the following recommendations:

6.3.1 The base of the *rock* fill shall be placed on a sloping surface (minimum slope of 2 percent). The surface shall slope toward suitable subdrainage outlet facilities. The *rock* fills shall be provided with subdrains during construction so that a hydrostatic pressure buildup does not develop. The subdrains shall be permanently connected to controlled drainage facilities to control post-construction infiltration of water.

6.3.2 *Rock* fills shall be placed in lifts not exceeding 3 feet. Placement shall be by rock trucks traversing previously placed lifts and dumping at the edge of the currently placed lift. Spreading of the *rock* fill shall be by dozer to facilitate *seating* of the rock. The *rock* fill shall be watered heavily during placement. Watering shall consist of water trucks traversing in front of the current rock lift face and spraying water continuously during rock placement. Compaction equipment with compactive energy comparable to or greater than that of a 20-ton steel vibratory roller or other compaction equipment providing suitable energy to achieve the required compaction or deflection as recommended in Paragraph 6.3.3 shall be utilized. The number of passes to be made should be determined as described in Paragraph 6.3.3. Once a *rock* fill lift has been covered with *soil* fill, no additional *rock* fill lifts will be permitted over the *soil* fill.

6.3.3 Plate bearing tests, in accordance with ASTM D 1196, may be performed in both the compacted *soil* fill and in the *rock* fill to aid in determining the required minimum number of passes of the compaction equipment. If performed, a minimum of three plate bearing tests should be performed in the properly compacted *soil* fill (minimum relative compaction of 90 percent). Plate bearing tests shall then be performed on areas of *rock* fill having two passes, four passes and six passes of the compaction equipment, respectively. The number of passes required for the *rock* fill shall be determined by comparing the results of the plate bearing tests for the *soil* fill and the *rock* fill and by evaluating the deflection

variation with number of passes. The required number of passes of the compaction equipment will be performed as necessary until the plate bearing deflections are equal to or less than that determined for the properly compacted *soil* fill. In no case will the required number of passes be less than two.

6.3.4 A representative of the Consultant should be present during *rock* fill operations to observe that the minimum number of "passes" have been obtained, that water is being properly applied and that specified procedures are being followed. The actual number of plate bearing tests will be determined by the Consultant during grading.

6.3.5 Test pits shall be excavated by the Contractor so that the Consultant can state that, in their opinion, sufficient water is present and that voids between large rocks are properly filled with smaller rock material. In-place density testing will not be required in the *rock* fills.

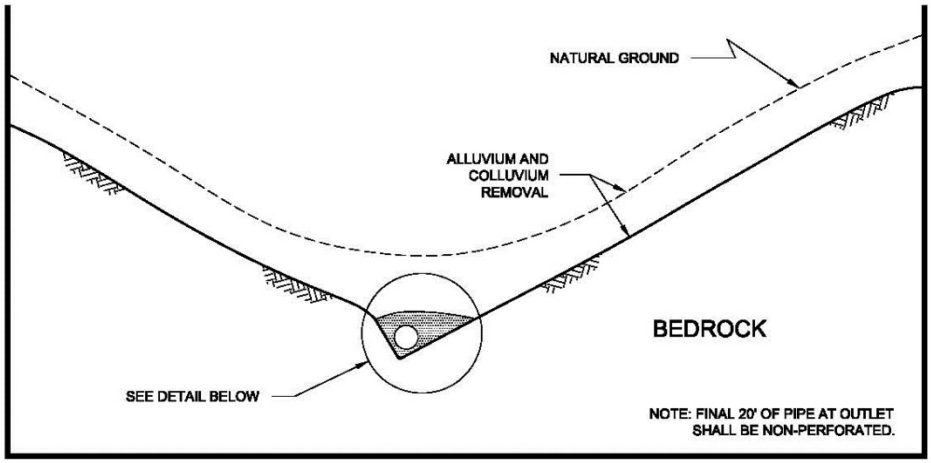
6.3.6 To reduce the potential for "piping" of fines into the *rock* fill from overlying *soil* fill material, a 2-foot layer of graded filter material shall be placed above the uppermost lift of *rock* fill. The need to place graded filter material below the *rock* should be determined by the Consultant prior to commencing grading. The gradation of the graded filter material will be determined at the time the *rock* fill is being excavated. Materials typical of the *rock* fill should be submitted to the Consultant in a timely manner, to allow design of the graded filter prior to the commencement of *rock* fill placement.

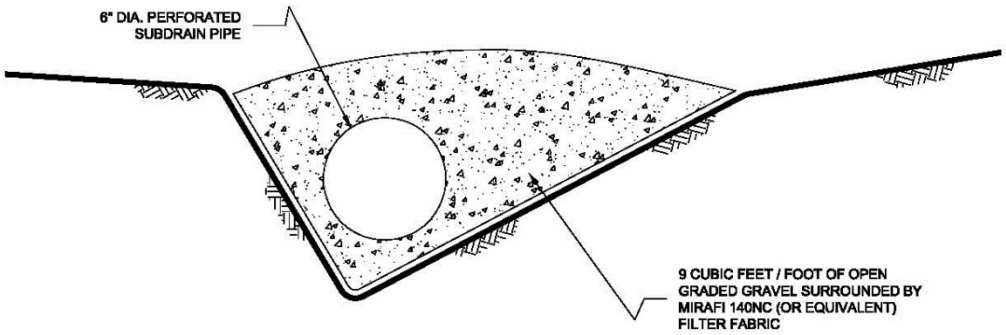
6.3.7 *Rock* fill placement should be continuously observed during placement by the Consultant.

7. SUBDRAINS

7.1 The geologic units on the site may have permeability characteristics and/or fracture systems that could be susceptible under certain conditions to seepage. The use of canyon subdrains may be necessary to mitigate the potential for adverse impacts associated with seepage conditions. Canyon subdrains with lengths in excess of 500 feet or extensions of existing offsite subdrains should use 8-inch-diameter pipes. Canyon subdrains less than 500 feet in length should use 6-inch-diameter pipes.

TYPICAL CANYON DRAIN DETAIL





NOTES:

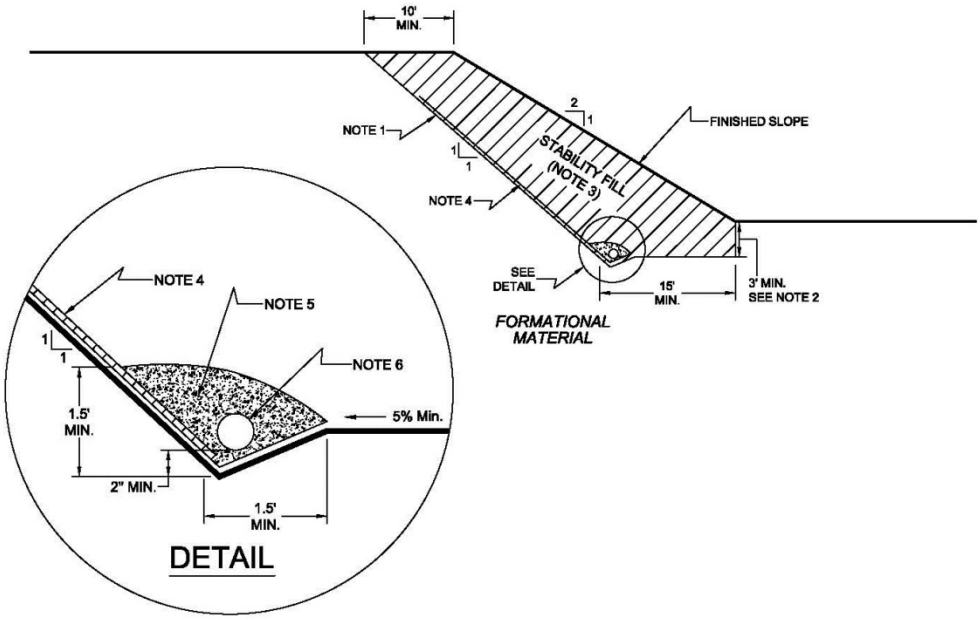
1.....8-INCH DIAMETER, SCHEDULE 80 PVC PERFORATED PIPE FOR FILLS
IN EXCESS OF 100-FEET IN DEPTH OR A PIPE LENGTH OF LONGER THAN 500 FEET.

2.....6-INCH DIAMETER, SCHEDULE 40 PVC PERFORATED PIPE FOR FILLS
LESS THAN 100-FEET IN DEPTH OR A PIPE LENGTH SHORTER THAN 500 FEET.

NO SCALE

7.2 Slope drains within stability fill keyways should use 4-inch-diameter (or larger) pipes.

TYPICAL STABILITY FILL DETAIL



NOTES:

1.....EXCAVATE BACKCUT AT 1:1 INCLINATION (UNLESS OTHERWISE NOTED).

2.....BASE OF STABILITY FILL TO BE 3 FEET INTO FORMATIONAL MATERIAL, SLOPING A MINIMUM 5% INTO SLOPE.

3.....STABILITY FILL TO BE COMPOSED OF PROPERLY COMPACTED GRANULAR SOIL.

4.....CHIMNEY DRAINS TO BE APPROVED PREFABRICATED CHIMNEY DRAIN PANELS (MIRADRAIN G200N OR EQUIVALENT) SPACED APPROXIMATELY 20 FEET CENTER TO CENTER AND 4 FEET WIDE. CLOSER SPACING MAY BE REQUIRED IF SEEPAGE IS ENCOUNTERED.

5.....FILTER MATERIAL TO BE 3/4-INCH, OPEN-GRADED CRUSHED ROCK ENCLOSED IN APPROVED FILTER FABRIC (MIRAFI 140NC).

6.....COLLECTOR PIPE TO BE 4-INCH MINIMUM DIAMETER, PERFORATED, THICK-WALLED PVC SCHEDULE 40 OR EQUIVALENT, AND SLOPED TO DRAIN AT 1 PERCENT MINIMUM TO APPROVED OUTLET.

NO SCALE

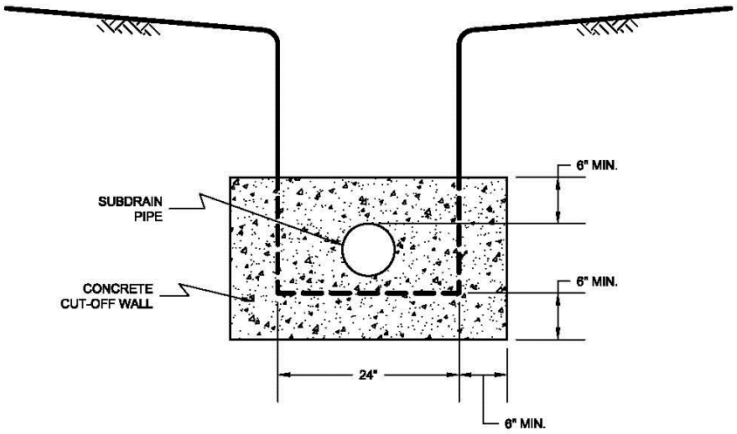
7.3 The actual subdrain locations will be evaluated in the field during the remedial grading operations. Additional drains may be necessary depending on the conditions observed and the requirements of the local regulatory agencies. Appropriate subdrain outlets should be evaluated prior to finalizing 40-scale grading plans.

7.4 *Rock* fill or *soil-rock* fill areas may require subdrains along their down-slope perimeters to mitigate the potential for buildup of water from construction or landscape irrigation. The subdrains should be at least 6-inch-diameter pipes encapsulated in gravel and filter fabric. *Rock* fill drains should be constructed using the same requirements as canyon subdrains.

7.5 Prior to outletting, the final 20-foot segment of a subdrain that will not be extended during future development should consist of non-perforated drainpipe. At the non-perforated/ perforated interface, a seepage cutoff wall should be constructed on the downslope side of the pipe.

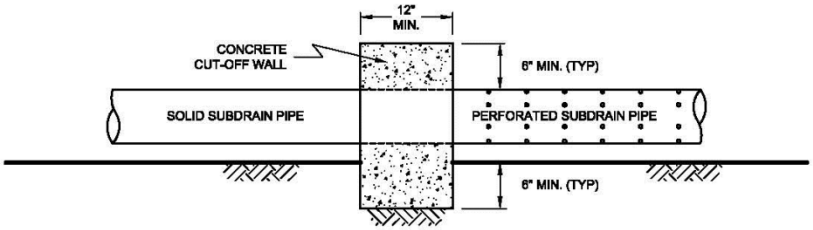
TYPICAL CUT OFF WALL DETAIL

FRONT VIEW



NO SCALE

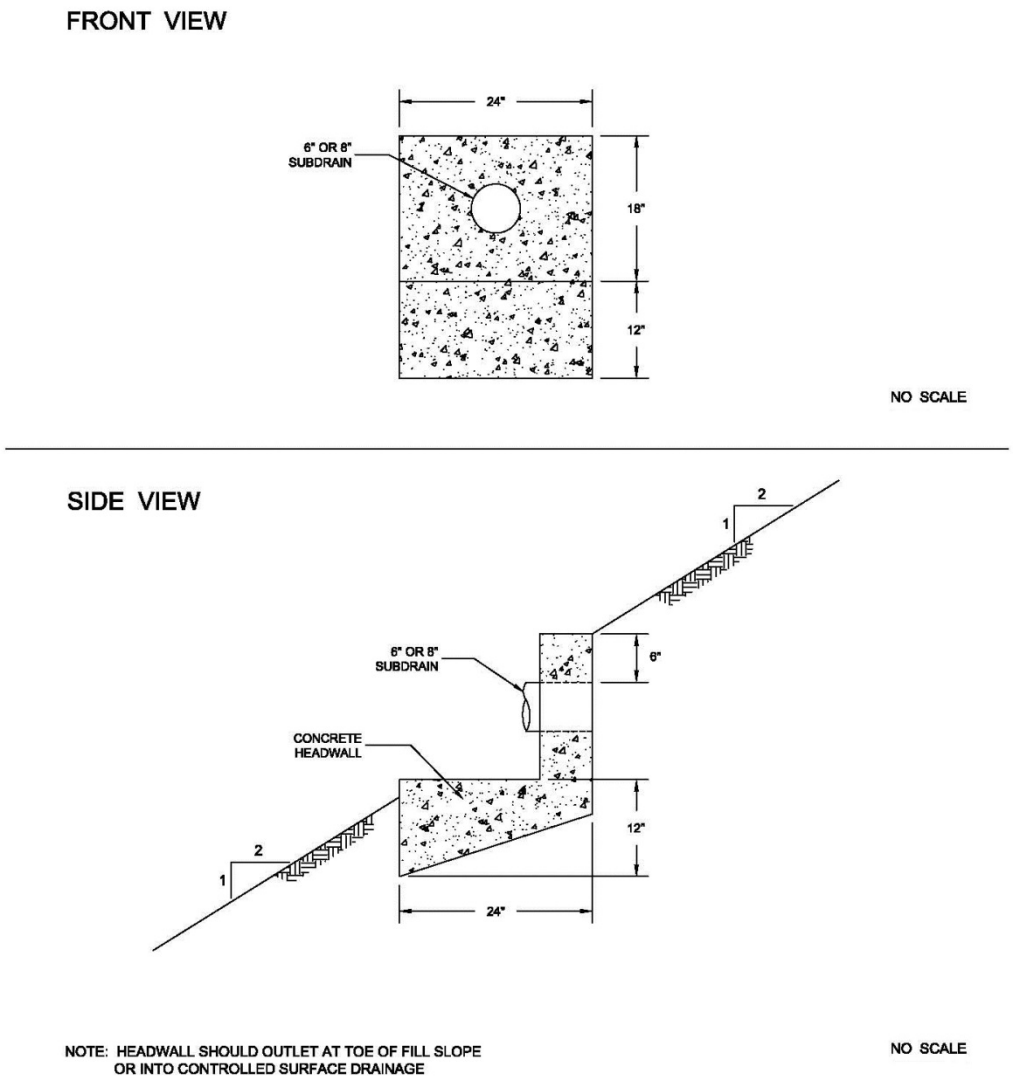
SIDE VIEW



NO SCALE

7.6 Subdrains that discharge into a natural drainage course or open space area should be provided with a permanent headwall structure.

TYPICAL HEADWALL DETAIL



7.7 The final grading plans should show the location of the proposed subdrains. After completion of remedial excavations and subdrain installation, the project civil engineer should survey the drain locations and prepare an “as-built” map showing the drain locations. The final outlet and connection locations should be determined during grading operations. Subdrains that will be extended on adjacent projects after grading can be placed on formational material and a vertical riser should be placed at the end of the subdrain. The grading contractor should consider videoing the subdrains shortly after burial to check proper installation and functionality. The contractor is responsible for the performance of the drains.

8. OBSERVATION AND TESTING

8.1 The Consultant shall be the Owner's representative to observe and perform tests during clearing, grubbing, filling, and compaction operations. In general, no more than 2 feet in vertical elevation of *soil* or *soil-rock* fill should be placed without at least one field density test being performed within that interval. In addition, a minimum of one field density test should be performed for every 2,000 cubic yards of *soil* or *soil-rock* fill placed and compacted.

8.2 The Consultant should perform a sufficient distribution of field density tests of the compacted *soil* or *soil-rock* fill to provide a basis for expressing an opinion whether the fill material is compacted as specified. Density tests shall be performed in the compacted materials below any disturbed surface. When these tests indicate that the density of any layer of fill or portion thereof is below that specified, the particular layer or areas represented by the test shall be reworked until the specified density has been achieved.

8.3 During placement of *rock* fill, the Consultant should observe that the minimum number of passes have been obtained per the criteria discussed in Section 6.3.3. The Consultant should request the excavation of observation pits and may perform plate bearing tests on the placed *rock* fills. The observation pits will be excavated to provide a basis for expressing an opinion as to whether the *rock* fill is properly seated and sufficient moisture has been applied to the material. When observations indicate that a layer of *rock* fill or any portion thereof is below that specified, the affected layer or area shall be reworked until the *rock* fill has been adequately seated and sufficient moisture applied.

8.4 A settlement monitoring program designed by the Consultant may be conducted in areas of *rock* fill placement. The specific design of the monitoring program shall be as recommended in the Conclusions and Recommendations section of the project Geotechnical Report or in the final report of testing and observation services performed during grading.

8.5 We should observe the placement of subdrains, to check that the drainage devices have been placed and constructed in substantial conformance with project specifications.

8.6 Testing procedures shall conform to the following Standards as appropriate:

8.6.1 Soil and Soil-Rock Fills:

8.6.1.1 Field Density Test, ASTM D 1556, *Density of Soil In-Place By the Sand-Cone Method.*

8.6.1.2 Field Density Test, Nuclear Method, ASTM D 6938, *Density of Soil and Soil-Aggregate In-Place by Nuclear Methods (Shallow Depth).*

8.6.1.3 Laboratory Compaction Test, ASTM D 1557, *Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10-Pound Hammer and 18-Inch Drop*.

8.6.1.4. Expansion Index Test, ASTM D 4829, *Expansion Index Test*.

9. PROTECTION OF WORK

9.1 During construction, the Contractor shall properly grade all excavated surfaces to provide positive drainage and prevent ponding of water. Drainage of surface water shall be controlled to avoid damage to adjoining properties or to finished work on the site. The Contractor shall take remedial measures to prevent erosion of freshly graded areas until such time as permanent drainage and erosion control features have been installed. Areas subjected to erosion or sedimentation shall be properly prepared in accordance with the Specifications prior to placing additional fill or structures.

9.2 After completion of grading as observed and tested by the Consultant, no further excavation or filling shall be conducted except in conjunction with the services of the Consultant.

10. CERTIFICATIONS AND FINAL REPORTS

10.1 Upon completion of the work, Contractor shall furnish Owner a certification by the Civil Engineer stating that the lots and/or building pads are graded to within 0.1 foot vertically of elevations shown on the grading plan and that all tops and toes of slopes are within 0.5 foot horizontally of the positions shown on the grading plans. After installation of a section of subdrain, the project Civil Engineer should survey its location and prepare an *as-built* plan of the subdrain location. The project Civil Engineer should verify the proper outlet for the subdrains and the Contractor should ensure that the drain system is free of obstructions.

10.2 The Owner is responsible for furnishing a final as-graded soil and geologic report satisfactory to the appropriate governing or accepting agencies. The as-graded report should be prepared and signed by a California licensed Civil Engineer experienced in geotechnical engineering and by a California Certified Engineering Geologist, indicating that the geotechnical aspects of the grading were performed in substantial conformance with the Specifications or approved changes to the Specifications.

Appendix E:
Water Quality Management Plan

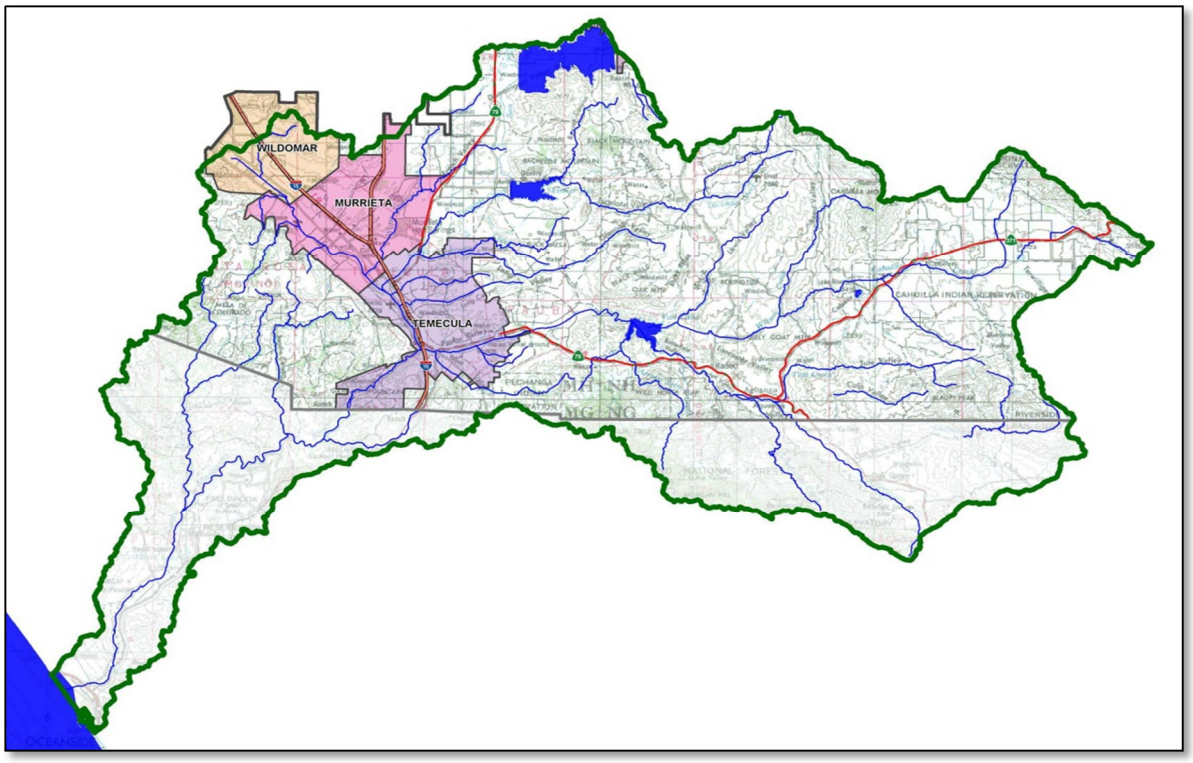
Project Specific Water Quality Management Plan

*A Template for preparing Project Specific WQMPs for Priority Development Projects located within the **Santa Margarita Region** of Riverside County*

Project Title: Pechanga Parkway Widening (Via Gilberto to North Casino Drive)

Development No: PW15-14

Design Review/Case No: Insert text here



☐ **Preliminary**
☒ **Final**

Original Date Prepared: August 19, 2016

Revision Date(s): Insert text here

Prepared for Compliance with Regional Board Order No. **R9-2010-0016**

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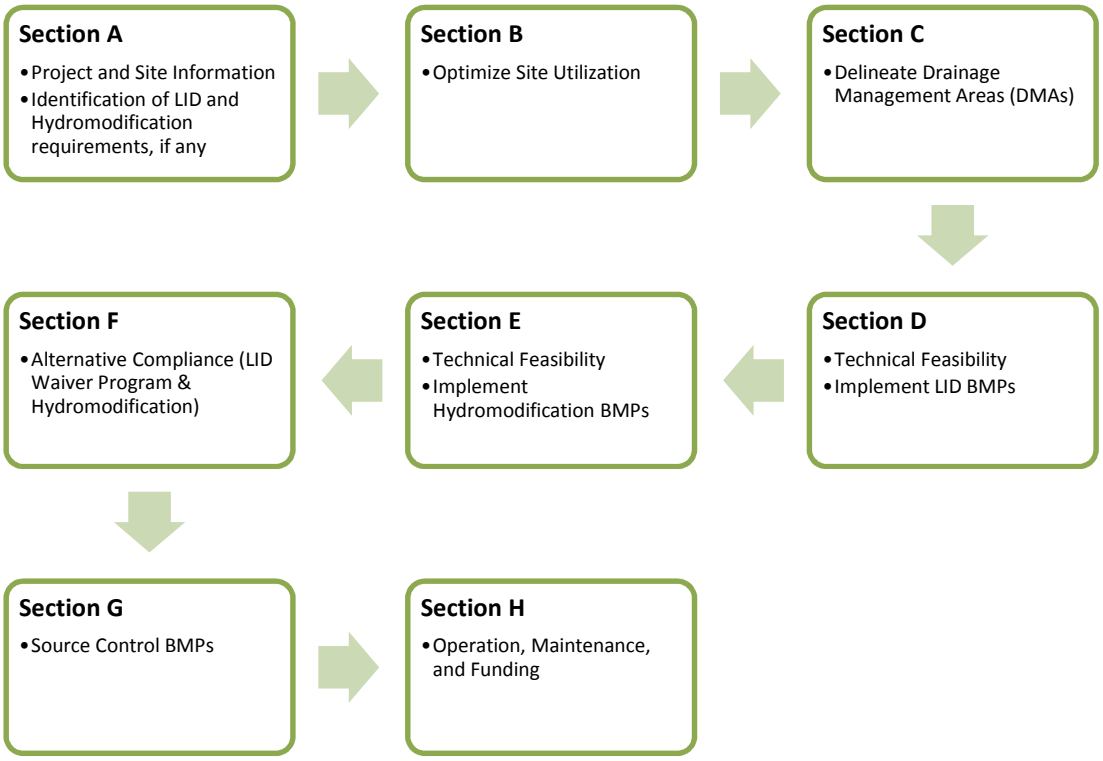
951.676.8042

A Brief Introduction

The Municipal Separate Stormwater Sewer System (MS4) Permit[1] for the **Santa Margarita Region** (SMR) requires preparation of a Project-Specific Water Quality Management Plan (WQMP) for all Development Projects as defined in section F.1.d.(1) of the Permit. This Project-Specific WQMP Template for Development Projects in the **Santa Margarita Region** has been prepared to help document compliance and prepare a WQMP submittal. Below is a flowchart for the layout of this Template that will provide the steps required to document compliance.



[1] Order No. R9-2010-0016, NPDES No. CAS0108766, Waste Discharge Requirements for Discharges from the MS4 Draining the County of Riverside, the Incorporated Cities of Riverside County, and the Riverside County Flood Control and Water Conservation District within the San Diego Region, California Regional Water Quality Control Board, November 10, 2010.

OWNER'S CERTIFICATION

This Project-Specific WQMP has been prepared for the City of Temecula by Michael Baker International Company for the Pechanga Parkway Widening project.

This WQMP is intended to comply with the requirements of the City of Temecula for Municipal Code 8.28.500 which includes the requirement for the preparation and implementation of a Project-Specific WQMP.

The undersigned, while owning the property/project described in the preceding paragraph, shall be responsible for the implementation and funding of this WQMP and will ensure that this WQMP is amended as appropriate to reflect up-to-date conditions on the site. In addition, the property owner accepts responsibility for interim operation and maintenance of Stormwater Best Management Practices until such time as this responsibility is formally transferred to a subsequent owner. This WQMP will be reviewed with the facility operator, facility supervisors, employees, tenants, maintenance and service contractors, or any other party (or parties) having responsibility for implementing portions of this WQMP. At least one copy of this WQMP will be maintained at the project site or project office in perpetuity. The undersigned is authorized to certify and to approve implementation of this WQMP. The undersigned is aware that implementation of this WQMP is enforceable under City of Temecula Water Quality Ordinance (Municipal Code Section 8.28.500).

"I, the undersigned, certify under penalty of law that the provisions of this WQMP have been reviewed and accepted and that the WQMP will be transferred to future successors in interest."

Owner's Signature	Date
Owner's Printed Name	Owner's Title/Position

PREPARER'S CERTIFICATION

"The selection, sizing and design of stormwater treatment and other stormwater quality and quantity control Best Management Practices in this plan meet the requirements of Regional Water Quality Control Board Order No. **R9-2010-0016** and any subsequent amendments thereto."

Preparer's Signature	Date
Francisco Martinez Jr.	Project Manager
Preparer's Printed Name	Preparer's Title/Position

Preparer's Licensure:

Table of Contents

Section A: Project and Site Information 6
A.1 Maps and Site Plans 6
A.2 Identify Receiving Waters 7
A.3 Drainage System Susceptibility to Hydromodification 7
A.4 Additional Permits/Approvals required for the Project: 8
Section B: Optimize Site Utilization (LID Principles) 9
Section C: Delineate Drainage Management Areas (DMAs) 10
Section D: Implement LID BMPs 12
D.1 Infiltration Applicability 12
D.2 Harvest and Use Assessment 14
D.3 Bioretention and Biotreatment Assessment 16
D.4 Other Limiting Geotechnical Conditions 17
D.5 Feasibility Assessment Summaries 17
D.6 LID BMP Sizing 18
Section E: Implement Hydrologic Control BMPs and Sediment Supply BMPs 21
E.1 Onsite Feasibility of Hydrologic Control BMPs 21
E.2 Meeting the HMP Performance Standard for Small Project Sites 21
E.3 Hydrologic Control BMP Selection 22
E.4 Hydrologic Control BMP Sizing 24
E.5 Implement Sediment Supply BMPs 24
Section F: Alternative Compliance 27
F.1 Identify Pollutants of Concern 29
F.2 Stormwater Credits 30
F.3 Sizing Criteria 30
F.4 Treatment Control BMP Selection 31
F.5 Hydrologic Performance Standard – Alternative Compliance Approach 31
F.6 Sediment Supply Performance Standard - Alternative Compliance 32
Section G: Source Control BMPs 33
Section H: Construction Plan Checklist 34
Section I: Operation, Maintenance and Funding 35
Acronyms, Abbreviations and Definitions 36

List of Tables

Table A.1 Identification of Receiving Waters 7
Table A.2 Identification of Susceptibility to Hydromodification 8
Table A.3 Other Applicable Permits 8
Table C.1 DMA Classifications 10
Table C.2 Type 'A', Self-Treating Areas 10
Table C.3 Type 'B', Self-Retaining Areas 10
Table C.4 Type 'C', Areas that Drain to Self-Retaining Areas 11
Table C.5 Type 'D', Areas Draining to BMPs 11
Table D.1 Infiltration Feasibility 12
Table D.2 Geotechnical Concerns for Onsite Retention Table 17
Table D.3 LID Prioritization Summary Matrix 17
Table D.4 DCV Calculations for LID BMPs ..... **Error! Bookmark not defined.**
Table D.5 LID BMP Sizing 20
Table E.1 LID & Hydromodification BMP Location 22
Table E.2 Hydrologic Control BMP Sizing 24
Table F.1 Potential Pollutants by Land Use Type 29
Table F.2 Stormwater Credits 30
Table F.3 Treatment Control BMP Sizing 30
Table F.4 Treatment Control BMP Selection 31
Table F.5 Offsite Hydrologic Control BMP Sizing 32
Table G.1 Structural and Operational Source Control BMP 33
Table H.1 Construction Plan Cross-reference 34

List of Appendices

Appendix 1: Maps and Site Plans 43
Appendix 2: Construction Plans 44
Appendix 3: Soils Information 45
Appendix 4: Historical Site Conditions 46
Appendix 5: LID Infeasibility 47
Appendix 6: BMP Design Details 48
Appendix 7: Hydromodification 49
Appendix 8: Source Control 50
Appendix 9: O&M 51
Appendix 10: Educational Materials 43

Section A: Project and Site Information

PROJECT INFORMATION	
Type of Project:	Street Widening
Planning Area:	XXX
Community Name:	Insert text here
Development Name:	Pechanga Parkway Widening
PROJECT LOCATION	
Latitude & Longitude (DMS): 33˚ 27' 34.5", 117˚ 6' 27.6"	
Project Watershed and Sub-Watershed: Pechanga HA, Wolf HSA	
APN(s): City right-of-way	
Map Book and Page No.: Insert text here	
PROJECT CHARACTERISTICS	
Proposed or potential land use(s)	Street
Proposed or Potential SIC Code(s)	Insert text here
Area of Impervious Project Footprint (SF)	322,300 SF
Total area of proposed Impervious Surfaces within the Project Limits (SF)/or Replacement	30,430 SF
Total Project Area (ac)	7.4 AC
Does the project consist of offsite road improvements?	☐ Y ☒ N
Does the project propose to construct unpaved roads?	☐ Y ☒ N
Is the project part of a larger common plan of development (phased project)?	☐ Y ☒ N
Is the project exempt from HMP Performance Standards?	☒ Y ☐ N
EXISTING SITE CHARACTERISTICS	
Total area of existing Impervious Surfaces within the project limits (SF)	291,870 SF
Is the project located within any Multi-Species Habitat Conservation Plan (MSHCP Criteria Cell?	☐ Y ☒ N
If so, identify the Cell number:	N/A
Are there any natural hydrologic features on the project site?	☒ Y ☐ N
Is a Geotechnical Report attached?	☐ Y ☒ N
If no Geotech. Report, list the Natural Resources Conservation Service (NRCS) soils type(s) present on the site (A, B, C and/or D)	A,C
What is the Water Quality Design Storm Depth for the project?	0.95

A.1 Maps and Site Plans

When completing your Project-Specific WQMP, include a map of the Project vicinity and existing site. In addition, include all grading, drainage, landscape/plant palette and other pertinent construction plans in Appendix 2. At a **minimum**, your WQMP Site Plan should include the following:

- Drainage Management Areas (DMAs)
- Proposed Structural Best Management Practices (BMPs)
- Drainage Path
- Source Control BMPs
- Buildings, Roof Lines, Downspouts
- Impervious Surfaces
- Standard Labeling

- Drainage infrastructure, inlets, overflows

Use your discretion on whether or not you may need to create multiple sheets or can appropriately accommodate these features on one or two sheets. Keep in mind that the Copermittee plan reviewer must be able to easily analyze your Project utilizing this template and its associated site plans and maps.

A.2 Identify Receiving Waters

Using Table A.1 below, list in order of upstream to downstream, the Receiving Waters that the Project site is tributary to. Continue to fill each row with the Receiving Water's 303(d) listed impairments (if any), designated Beneficial Uses, and proximity, if any, to a RARE Beneficial Use. Include a map of the Receiving Waters in Appendix 1. *(http://www.waterboards.ca.gov/sandiego/water_issues/programs/basin_plan/)*

Table A.1 Identification of Receiving Waters

Receiving Waters	USEPA Approved 303(d) List Impairments	Designated Beneficial Uses	Proximity to RARE Beneficial Use
Wolf Valley Creek (HAS 2.52)	None	None	
Temecula Creek (HAS 2.52)	Pesticides (Chlorpyrifos); Metals (Copper), Nutrients(Phosphorus), Salinity(TDS), Toxicity (Toxicity)	MUN, AGR, IND, PROC, GWR, REC-1, REC-2, WARM, WILD	
Santa Margarita River – Upper Portion (Deluz HAS 2.22, 2.21)	Nutrients (Phosphorus), Toxicity (Toxicity)	MUN, AGR, IND, REC-1, REC-2, WARM, COLD, WILD, RARE, SPWN	
Santa Margarita River – Lower Portion (Ysidora, HAS 2.13, 2.12, 2.11)	Bacteria & Viruses (Enterococcus, Fecal Coliform), Nutrients (Phosphorus, Nitrogen)	MUN, AGR, IND, PROC, REC-1, REC-2, WARM, COLD, WILD, RARE	
Santa Margarita Lagoon	Nutrients (Eutrophic)	REC-1, REC-2, EST, WILD, RARE, MAR, MIGR, SPWN	
Pacific Ocean	None	IND, NAV, REC-1, REC-2, COMM, BIOL, WILD, RARE, MAR, AQUA, MIGR, SPWN, SHELL	

A.3 Drainage System Susceptibility to Hydromodification

Using Table A.2 below, list in order of the point of discharge at the project site down to the Santa Margarita River, each drainage system or receiving water that the project site is tributary to. Continue to fill each row with the material of the drainage system, the storm drain susceptibility using the SWCT2 (Stormwater & Water Conservation Tracking Tool - http://rivco.permitrack.com/) or Map 2 of the Hydromodification Susceptibility Documentation Report and Mapping: Santa Margarita Region (Appendix D of the SMR HMP), and the condition for exempting the drainage system, if applicable. If the exemption includes receiving waters that were not evaluated in Appendix D, provide supporting documentation in Appendix 7 to demonstrate that they classify as Engineered, Fully Hardened and Maintained (EFHM) channels, consistent with the definition provided in Appendix D. Include a map exhibiting each drainage system and the associated susceptibility in Appendix 1.

Table A.2 Identification of Susceptibility to Hydromodification

Drainage System	Drainage System Material	Susceptibility of Drainage System	Hydromodification Exemption
Street Curb Inlets and Existing Storm Drain	RCP pipes	Non Susceptible	Concrete Lined
Wolf Valley Creek Channel	Reinforced Grass Lined	Non Susceptible	Artificially Harden Channel
Triple 14"W x 7' H RCB	Concrete	Non Susceptible	Concrete Lined
Temecula Creek	Natural Earthen	Non Susceptible	Large River Reach exemption
Murrieta Creek	Earthen	Susceptible & Non Susceptible	Large River Reach exemption
Santa Margarita River	Natural Earthen	Non Susceptible	Large River Reach exemption

A.4 Additional Permits/Approvals required for the Project:

Table A.3 Other Applicable Permits

Agency	Permit Required	
State Department of Fish and Game, 1602 Streambed Alteration Agreement	☐ Y	☒ N
State Water Resources Control Board, Clean Water Act Section 401 Water Quality Certification	☐ Y	☒ N
US Army Corps of Engineers, Clean Water Act Section 404 Permit	☐ Y	☒ N
US Fish and Wildlife, Endangered Species Act Section 7 Biological Opinion	☐ Y	☒ N
Statewide Construction General Permit Coverage	☒ Y	☐ N
Statewide Industrial General Permit Coverage	☐ Y	☒ N
Western Riverside MSHCP Consistency Approval (e.g., JPR, DBESP)	☐ Y	☒ N
Other *(please list in the space below as required)*	☐ Y	☒ N

If yes is answered to any of the questions above, the Copermittee may require proof of approval/coverage from those agencies as applicable including documentation of any associated requirements that may affect this Project-Specific WQMP.

Section B: Optimize Site Utilization (LID Principles)

Review of the information collected in Section 'A' will aid in identifying the principal constraints on site design and selection of LID BMPs as well as opportunities to reduce imperviousness and incorporate LID Principles into the site and landscape design. For example, **constraints** might include impermeable soils, high groundwater, groundwater pollution or contaminated soils, steep slopes, geotechnical instability, high-intensity land use, heavy pedestrian or vehicular traffic, utility locations or safety concerns. **Opportunities** might include existing natural areas, low areas, oddly configured or otherwise unbuildable parcels, easements and landscape amenities including open space and buffers (which can double as locations for LID Bioretention BMPs), and differences in elevation (which can provide hydraulic head). Prepare a brief narrative for each of the site optimization strategies described below. This narrative will help you as you proceed with your Low Impact Development (LID) design and explain your design decisions to others.

The 2010 SMR MS4 Permit further requires that LID Retention BMPs (Infiltration Only or Harvest and Use) be used unless it can be shown that those BMPs are infeasible. Therefore, it is important that your narrative identify and justify if there are any constraints that would prevent the use of those categories of LID BMPs. Similarly, you should also note opportunities that exist which will be utilized during project design. Upon completion of identifying Constraints and Opportunities, include these on your WQMP Site plan in Appendix 1.

Site Optimization

The following questions are based upon Section 3.2 of the WQMP Guidance Document. Review of the WQMP Guidance Document will help you determine how best to optimize your site and subsequently identify opportunities and/or constraints, and document compliance.

Did you identify and preserve existing drainage patterns? If so, how? If not, why?

Yes. Drainage patterns will be conserved.

Did you identify and protect existing vegetation? If so, how? If not, why?

No. Due to the nature of the street widening project existing landscaped areas will be removed and replaced. The project section of Pechanga Parkway is currently a 4-lane major road which will be widen to 6-lanes. When Pechanga Parkway was constructed the native vegetation in the area was removed and replaced with irrigated landscape

Did you identify and preserve natural infiltration capacity? If so, how? If not, why?

No. Pechanga Parkway widening limits have previously been disturbed and compacted.

Did you identify and minimize impervious area? If so, how? If not, why?

Yes. Minimized width of median when feasible.

Did you identify and disperse runoff to adjacent pervious areas? If so, how? If not, why?

No. As this project is a street widening project we maintaining existing drainage patterns which do not disperse runoff to pervious areas.

Section C: Delineate Drainage Management Areas (DMAs)

Utilizing the procedure in Section 3.3 of the WQMP Guidance Document which discusses the methods of delineating and mapping your project site into individual DMAs, complete Table C.1 below to appropriately categorize the types of classification (e.g., Type A, Type B, etc.) per DMA for your Project site. Upon completion of this table, this information will then be used to populate and tabulate the corresponding tables for their respective DMA classifications.

Table C.1 DMA Classifications

DMA Name or Identification	Surface Type(s)[1]	Area (Sq. Ft.)	DMA Type
DMA 1	Asphalt, Concrete	244,330	D
DMA 2	Asphalt, Concrete	64,860	D
DMA 3	Asphalt, Concrete	75,930	D
DMA 4	Asphalt, Concrete	260,500	D
DMA 5	Asphalt, Concrete	320,860	D

[1]*Reference Table 2-1 in the WQMP Guidance Document to populate this column*

Table C.2 Type 'A', Self-Treating Areas

DMA Name or Identification	Area (Sq. Ft.)	Stabilization Type	Irrigation Type (if any)
N/A			

Table C.3 Type 'B', Self-Retaining Areas

Self-Retaining Area				Type 'C' DMAs that are draining to the Self-Retaining Area		
DMA Name/ ID	Post-project surface type	Area (square feet) [A]	Storm Depth (inches) [B]	DMA Name / ID	[C] from Table C.4 = [C]	Required Retention Depth (inches) [D]
N/A						

$$[D] = [B] + \frac{[B] \cdot [C]}{[A]}$$

Table C.4 Type 'C', Areas that Drain to Self-Retaining Areas

DMA					Receiving Self-Retaining DMA		
DMA Name/ ID	Area (square feet)	Post-project surface type	Runoff factor	Product	DMA name /ID	Area (square feet)	Ratio
	[A]		[B]	[C] = [A] x [B]		[D]	[C]/[D]
N/A							

Note: (See Section 3.3 of WQMP Guidance Document) Ensure that partially pervious areas draining to a Self-Retaining area do not exceed the following ratio:

$$\left(\frac{\mathbf{2}}{\boldsymbol{Impervious\ Fraction}}\right) : \mathbf{1}$$

(Tributary Area**:** Self-Retaining Area)

Table C.5 Type 'D', Areas Draining to BMPs

DMA Name or ID	BMP Name or ID
DMA 1	Curb Inlet Filter Insert
DMA 2	Curb Inlet Filter Insert
DMA 3	Curb Inlet Filter Insert
DMA 4	Curb Inlet Filter Insert
DMA 5	Curb Inlet Filter Insert

Note: More than one DMA may drain to a single LID BMP; however, one DMA may not drain to more than one BMP.

Section D: Implement LID BMPs

D.1 Infiltration Applicability

An assessment of the feasibility of utilizing Infiltration BMPs is required for all projects, *except in the following case:*

- ☐ Harvest and Use BMPs will be implemented to address the Design Capture Volume (see the Harvest and Use Assessment below) for all Drainage Management Areas AND the project is exempt from HMP Performance Standards (*Proceed to Section D.2 and Section E*).

If the above box remains unchecked, perform a site-specific evaluation of the feasibility of Infiltration BMPs using each of the applicable criteria identified in Chapter 3.4.1 of the WQMP Guidance Document and complete the remainder of Section D.1.

Is there an infiltration concern (see discussion in Chapter 2.3.4 of the WQMP Guidance Document for further details)? ☒ Y ☐ N

If yes has been checked, both Infiltration BMPs and Hydrologic Control BMPs that include an infiltration functionalities may not be feasible for the site. It is recommended that you contact your Copermittee to verify whether or not infiltration within the Project is infeasible.

Infiltration near major roadway may create a public safety hazard as structural integrity of roadway section may be compromised due to infiltration.

Geotechnical Report

A Geotechnical Report or Phase I Environmental Site Assessment may be required by the Copermittee to confirm present and past site characteristics that may affect the use of Infiltration BMPs. In addition, the Copermittee, at their discretion, may not require a geotechnical report for small projects as described in Chapter 2 of the WQMP Guidance Document. If a geotechnical report has been prepared, include it in Appendix 3. In addition, if a Phase I Environmental Site Assessment has been prepared, include it in Appendix 4.

Is this project classified as a small project consistent with the requirements of Chapter 2 of the WQMP Guidance Document? ☐ Y ☒ N

Infiltration Feasibility

Table D.1 below is meant to provide a simple means of assessing which DMAs on your site support Infiltration BMPs and is discussed in the WQMP Guidance Document in Chapter 2.3.4. Check the appropriate box for each question and then list affected DMAs as applicable. If additional space is needed, add a row below the corresponding answer.

Geotechnical report has not been completed at this time, will provide with subsequent submittal.

No infiltration is proposed.

Table D.1 Infiltration Feasibility

Does the project site…	YES	NO
…have any DMAs with a seasonal high groundwater mark shallower than 10 feet?		
If Yes, list affected DMAs:		

…have any DMAs located within 100 feet of a water supply well?		
If Yes, list affected DMAs:		
…have any areas identified by the geotechnical report as posing a public safety risk where infiltration of stormwater could have a negative impact?		
If Yes, list affected DMAs:		
…have measured in-situ infiltration rates of less than 1.6 inches / hour?		
If Yes, list affected DMAs:		
…have significant cut and/or fill conditions that would preclude in-situ testing of infiltration rates at the final infiltration surface?		
If Yes, list affected DMAs:		
…have any contaminated groundwater plume in the vicinity of the site?		
If Yes, list affected DMAs:		
…geotechnical report identifies other site-specific factors that would preclude effective and safe infiltration?		
Describe here:		

If you answered "Yes" to any of the questions above for any DMA, Infiltration BMPs should not be used for those DMAs and you should proceed to the assessment for Harvest and Use below.

D.2 Harvest and Use Assessment

Please check what applies*:*

☒ Reclaimed water will be used for the non-potable water demands for the Project.

☐Downstream water rights may be impacted by Harvest and Use as approved by the Regional Board (verify with the Copermittee).

☐The Design Capture Volume (DCV) will be addressed using Infiltration Only BMPs. In such a case, Harvest and Use BMPs are still encouraged, but it would not be required if the DCV will be infiltrated or evapotranspired.

If any of the above boxes have been checked, Harvest and Use BMPs need not be assessed for the site. If neither of the above criteria applies, follow the steps below to assess the feasibility of irrigation use, toilet use and other non-potable uses (e.g., industrial use).

Irrigation Use Feasibility

Complete the following steps to determine the feasibility of harvesting stormwater runoff for Irrigation Use BMPs on your site:

Step 1: Identify the total area of irrigated landscape on the site, and the type of landscaping used.

Total Area of Irrigated Landscape: **N/A**

Type of Landscaping (Conservation Design or Active Turf): **N/A**

Step 2: Identify the planned total of all impervious areas on the proposed project from which runoff might be feasibly captured and stored for irrigation use. Depending on the configuration of buildings and other impervious areas on the site, you may consider the site as a whole, or parts of the site, to evaluate reasonable scenarios for capturing and storing runoff and directing the stored runoff to the potential use(s) identified in Step 1 above.

Total Area of Impervious Surfaces: **N/A**

Step 3: Cross reference the Design Storm depth for the project site (see Exhibit A of the WQMP Guidance Document) with the left column of Table 2-4 in Chapter 2 to determine the minimum area of Effective Irrigated Area per Tributary Impervious Area (EIATIA).

Enter your EIATIA factor: **N/A**

Step 4: Multiply the unit value obtained from Step 3 by the total of impervious areas from Step 2 to develop the minimum irrigated area that would be required.

Minimum required irrigated area: **N/A**

Step 5: Determine if harvesting stormwater runoff for irrigation use is feasible for the project by comparing the total area of irrigated landscape (Step 1) to the minimum required irrigated area (Step 4).

Minimum required irrigated area (Step 4)	Available Irrigated Landscape (Step 1)
N/A	**N/A**

Toilet Use Feasibility

Complete the following steps to determine the feasibility of harvesting stormwater runoff for toilet flushing uses on your site:

Step 1: Identify the projected total number of daily toilet users during the wet season, and account for any periodic shut downs or other lapses in occupancy:

Projected Number of Daily Toilet Users: **N/A**

Project Type: **N/A**

Step 2: Identify the planned total of all impervious areas on the proposed Project from which runoff might be feasibly captured and stored for toilet use. Depending on the configuration of buildings and other impervious areas on the site, you may consider the Project site as a whole, or parts of the site, to evaluate reasonable scenarios for capturing and storing runoff and directing the stored runoff to the potential use(s) identified in Step 1 above.

Total Area of Impervious Surfaces: **N/A**

Step 3: Enter the Design Storm depth for the project site (see Exhibit A) into the left column of Table 2-3 in Chapter 2 to determine the minimum number or toilet users per tributary impervious acre (TUTIA).

Enter your TUTIA factor: **N/A**

Step 4: Multiply the unit value obtained from Step 3 by the total of impervious areas from Step 2 to develop the minimum number of toilet users that would be required.

Minimum number of toilet users: **N/A**

Step 5: Determine if harvesting stormwater runoff for toilet flushing use is feasible for the Project by comparing the Number of Daily Toilet Users (Step 1) to the minimum required number of toilet users (Step 4).

Minimum required Toilet Users (Step 4)	Projected number of toilet users (Step 1)
N/A	**N/A**

Other Non-Potable Use Feasibility

Are there other non-potable uses for stormwater runoff on the site (e.g. industrial use)? See Chapter 2 of the Guidance for further information. If yes, describe below. If no, write N/A.

Insert narrative description here.

Step 1: Identify the projected average daily non-potable demand, in gallons per day, during the Wet Season and accounting for any periodic shut downs or other lapses in occupancy or operation.

Average Daily Demand: **N/A**

Step 2: Identify the planned total of all impervious areas on the proposed Project from which runoff might be feasibly captured and stored for the identified non-potable use. Depending on the configuration of buildings and other impervious areas on the site, you may consider the Project

site as a whole, or parts of the site, to evaluate reasonable scenarios for capturing and storing runoff and directing the stored runoff to the potential use(s) identified in Step 1 above.

Total Area of Impervious Surfaces: **N/A**

Step 3: Enter the Design Storm Depth for the Project site (see Exhibit A) into the left column of Table 2-5 in Chapter 2 to determine the minimum demand for non-potable uses of stormwater runoff per tributary impervious acre.

Enter the factor from Table 2-3: **N/A**

Step 4: Multiply the unit value obtained from Step 4 by the total of impervious areas from Step 3 to develop the minimum gpd of non-potable use that would be required.

Minimum required use: **N/A**

Step 5: Determine if harvesting stormwater runoff for other non-potable use is feasible for the Project by comparing the Number of Daily Toilet Users (Step 1) to the minimum required number of toilet users (Step 4).

Minimum required non-potable use (Step 4)	Projected average daily use (Step 1)
N/A	**N/A**

If Irrigation, Toilet and Other Use feasibility anticipated demands are less than the applicable minimum values, Harvest and Use BMPs are not required and you should proceed to utilize LID Bioretention and Biotreatment BMPs, unless a site-specific analysis has been completed that demonstrates technical infeasibility as noted in D.3 below.

D.3 Bioretention and Biotreatment Assessment

Other LID Bioretention and Biotreatment BMPs as described in Chapter 2.3 of the WQMP Guidance Document are feasible on nearly all development sites with sufficient advance planning.

Select one of the following:

☐ LID Bioretention/Biotreatment BMPs will be used for some or all DMAs of the Project as noted below in Section D.4

☒ A site-specific analysis demonstrating the technical infeasibility of all LID BMPs has been performed and is included in Appendix 5. If you plan to submit an analysis demonstrating the technical infeasibility of LID BMPs, request a pre-submittal meeting with the Copermittee with jurisdiction over the Project site to discuss this option. Proceed to Section E to document your alternative compliance measures.

D.4 Other Limiting Geotechnical Conditions

Onsite retention may not be feasible due to specific geotechnical concerns identified in the Geotechnical Report. If any, describe below. If no, write N/A:

> **Geotechnical report has not been completed at this time, will provide with subsequent submittal.**

Table D.2 Geotechnical Concerns for Onsite Retention Table

Type of Geotechnical Concern	DMAs Feasible (By Name or ID)	DMAs Infeasible (By Name or ID)
Collapsible Soil		
Expansive Soil		
Slopes		
Liquefaction		
Other		

D.5 Feasibility Assessment Summaries

From the Infiltration, Harvest and Use, Bioretention and Biotreatment Sections above, complete Table D.3 below to summarize which LID BMPs are technically feasible, and which are not, based upon the established hierarchy.

Table D.3 LID Prioritization Summary Matrix

DMA Name/ID	LID BMP Hierarchy				No LID (Alternative Compliance)
	1. Infiltration	2. Harvest and use	3. Bioretention	4. Biotreatment	
1	☐	☐	☐	☐	☒
2	☐	☐	☐	☐	☒
3	☐	☐	☐	☐	☒
4	☐	☐	☐	☐	☒
5	☐	☐	☐	☐	☒
	☐	☐	☐	☐	☐

For those DMAs where LID BMPs are not feasible, provide a brief narrative below summarizing why they are not feasible, include your technical infeasibility criteria in Appendix 5, and proceed to Section E below to document Alternative Compliance measures for those DMAs. Recall that each proposed DMA must pass through the LID BMP hierarchy before alternative compliance measures may be considered.

DMA 1 – Infiltration, Bioretention, and Biotreatment are not feasible for project as it may create a public safety hazard as structural integrity of roadway section may be compromised. Also, limited right-of-way constraints the used and design of some of these BMPs.

DMA 2 – Infiltration, Bioretention, and Biotreatment are not feasible for project as it may create a public safety hazard as structural integrity of roadway section may be compromised. Also, limited right-of-way constraints the used and design of some of these BMPs.

DMA 3 – Infiltration, Bioretention, and Biotreatment are not feasible for project as it may create a public safety hazard as structural integrity of roadway section may be compromised. Also, limited right-of-way constraints the used and design of some of these BMPs.

DMA 4 – Infiltration, Bioretention, and Biotreatment are not feasible for project as it may create a public safety hazard as structural integrity of roadway section may be compromised. Also, limited right-of-way constraints the used and design of some of these BMPs.

DMA 5 – Infiltration, Bioretention, and Biotreatment are not feasible for project as it may create a public safety hazard as structural integrity of roadway section may be compromised. Also, limited right-of-way constraints the used and design of some of these BMPs.

D.6 LID BMP Sizing

Each LID BMP must be designed to ensure that the DCV will be addressed by the selected BMPs. First**,** calculate the DCV for each LID BMP using the V_{BMP} worksheet in Appendix F of the LID BMP Design Handbook. Second**,** design the LID BMP to meet the required V_{BMP} using a method approved by the Copermittee with jurisdiction over the Project site. Utilize the worksheets found in the LID BMP Design Handbook or consult with the Copermittee to assist you in correctly sizing your LID BMPs. Complete Table D.4 below to document the DCV and the Proposed Volume for each LID BMP. Provide the completed design procedure sheets for each LID BMP in Appendix 6. You may add additional rows to the table below as needed.

Table D.4.1 DCV Calculations for LID BMPs

DMA Type/ID	DMA (square feet)	Post-Project Surface Type	Effective Impervious Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	*Curb Inlet Filter Insert A*		
	[A]		[B]	[C]	[A] x [C]			
DMA 1	*244,330*	*Concrete or Asphalt*	*1.00*	*0.892*	*217,942*	*Design Storm Depth (in)*	*DCV,* V_{BMP} *(cubic feet)*	*Proposed Volume on Plans (cubic feet)*
					-			
					-			
					-			
	244,330				217,942	0.95	17,254	

Table D.4.2 DCV Calculations for LID BMPs

DMA Type/ID	DMA (square feet)	Post-Project Surface Type	Effective Impervious Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	*Curb Inlet Filter Insert B*		
	[A]		[B]	[C]	[A] x [C]			
DMA 2	*64,860*	*Concrete or Asphalt*	*1.00*	*0.892*	*57,855*	*Design Storm Depth (in)*	*DCV, V_{BMP} (cubic feet)*	*Proposed Volume on Plans (cubic feet)*
					-			
	64,860				57,855	0.95	4,580	

Table D.4.3 DCV Calculations for LID BMPs

DMA Type/ID	DMA (square feet)	Post-Project Surface Type	Effective Impervious Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	*Curb Inlet Filter Insert C*		
	[A]		[B]	[C]	[A] x [C]			
DMA 3	*75,930*	*Concrete or Asphalt*	*1.00*	*0.892*	*67,730*	*Design Storm Depth (in)*	*DCV, V_{BMP} (cubic feet)*	*Proposed Volume on Plans (cubic feet)*
					-			
					-			
					-			
	75,930				67,730	0.95	5,362	

Table D.4.4 DCV Calculations for LID BMPs

DMA Type/ID	DMA (square feet)	Post-Project Surface Type	Effective Impervious Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	*Curb Inlet Filter Insert D*		
	[A]		[B]	[C]	[A] x [C]			
DMA 4	*260,500*	*Concrete or Asphalt*	*1.00*	*0.892*	*232,366*	*Design Storm*	*DCV, V_{BMP}*	*Proposed Volume on Plans*

					-	*Depth (in)*	*(cubic feet)*	*(cubic feet)*
					-			
					-			
	260,500				232,366	0.95	18,396	

Table D.4.5 DCV Calculations for LID BMPs

DMA Type/ID	DMA (square feet)	Post-Project Surface Type	Effective Impervious Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	*Curb Inlet Filter Insert E*		
	[A]		[B]	[C]	[A] x [C]			
DMA 5	*320,860*	*Concrete or Asphalt*	*1.00*	*0.892*	*286,207*	*Design Storm Depth (in)*	*DCV, V_{BMP} (cubic feet)*	*Proposed Volume on Plans (cubic feet)*
					-			
					-			
					-			
	320,860				286,207	0.95	22,658	

[B], [C] is obtained as described in Section 2.5 of the WQMP Guidance Document

[E] is obtained from Exhibit A in the WQMP Guidance Document

[G] is obtained from a design procedure sheet, such as in LID BMP Design Handbook and placed in Appendix 6

Each LID BMP must be designed to ensure that the Design Capture Volume (DCV) will be addressed by the selected BMPs. First**,** calculate the Design Capture Volume for each LID BMP using the 'V_{BMP}' worksheet in Appendix F of the LID BMP Design Handbook. Second**,** design the LID BMP to meet the required V_{BMP} using a method approved by the Copermittee. Utilize the worksheets found in the LID BMP Design Handbook or consult with your Copermittee. Complete Table D.5 below to document the Design Capture Volume and the Proposed Volume for each LID BMP. You can add rows to the table as needed. Alternatively, the Santa Margarita Hydrology Model (SMRHM) can be used to size LID BMPs to address the DCV and, if applicable, to size Hydrologic Control BMPs to meet the Hydrologic Performance Standard of the SMR HMP, as identified in Section E.

Table D.4 LID BMP Sizing

BMP Name / ID	DMA No.	BMP Type / Description	Design Capture Volume (ft^3)	Proposed Volume (ft^3)
Curb inlet filter A	1		17,254	
Curb inlet filter B	2		4,580	

Curb inlet filter C	3		5,362	
Curb inlet filter D	4		18,396	
Curb inlet filter E	5		22,658	

Section E: Implement Hydrologic Control BMPs and Sediment Supply BMPs

If a completed Table A.2 demonstrates that the project is exempt from HMP Performance Standards, specify N/A of proceed to Section F, if applicable, and Section G.

E.1 Onsite Feasibility of Hydrologic Control BMPs

An assessment of the feasibility of implementing onsite Hydrologic Control BMPs is required for all projects.

N/A

Select one of the following:

☐ Yes – The implementation of Hydrologic Control BMPs is feasible onsite. *(Proceed to Step E.3 and Step E.4)*

- *Or* -

☐ No – The project site is larger than one acre and the implementation of Hydrologic Control BMPs is not feasible onsite. *(Proceed to Step E.5 and Step F for Alternative Compliance upon approval of the Technical Feasibility Assessment by the Copermittee)*

☐ No – The project site is smaller than one acre and the implementation of Hydrologic Control BMPs is not feasible onsite. *(Proceed to Step E.2)*

If the reasons for infeasibility are different from those listed in Section D.1, describe the technical or spatial reasons that preclude the implementation of onsite Hydrologic Control BMPs. If none, write N/A:

N/A

Approval of the condition for infeasibility, if any, is required by the Copermittee. Has the condition for infeasibility been approved by the Copermittee?

☐ Y ☐ N ☒ N/A

E.2 Meeting the HMP Performance Standard for Small Project Sites

Select one of the following: **N/A**

☐ Yes – The project site is equal to or larger than one acre. *(Proceed to Step E.3, Step E.4, and Step E.5)*

- *Or* -

☐ No – The project site is less than one acre. *(Follow the remainder of Step E.2)*

Only a Simplified Technical Feasibility Study is required from the applicant. Complete the Simplified Technical Feasibility Study in Appendix 7, which must include, at a minimum, the soil conditions at the PDP, a demonstration of the lack of available space for onsite Hydrologic Control BMPs, an explanation of prohibitive costs to implement Hydrologic Control BMPs, and a written opinion from a Registered Geotechnical Engineer identifying the infeasibility due to geotechnical concerns.

Select one of the following: **N/A**

☐ Yes – Onsite Hydrologic Control BMPs are feasible. *(Proceed to Step E., Step E.4, and Step E.5)*

- *Or* -

☐ No – Onsite Hydrologic Control BMPs are not feasible per the Simplified Technical Feasibility Study. *(Proceed to Section E.5 for Sediment Supply Performance Standard and Section F for Alternative Compliance)*

E.3 Hydrologic Control BMP Selection

Capture of the DCV and achievement of the Hydrologic Performance Standard may be met by combined and/or separate structural BMPs. Similarly, compliance with the two identified requirements may be fully or partially achieved onsite.

For each DMA, identify in Table E.1 if the DCV is fully or partially captured onsite, if the Hydrologic Performance Standard is fully or partially met onsite (by using the SMRHM identified in Step E.4), and if structural BMPs for compliance with the LID requirement and the Hydrologic Performance Standard are combined.

Table E.1 LID & Hydromodification BMP Location

DMA	LID BMP	Hydrologic Control BMP	Combined BMP	BMP type and ID
1	☐ Onsite ☐ Partially Onsite ☐ Offsite ☒ None Required	☐ Onsite ☐ Partially Onsite ☐ Offsite ☒ None Required	☐ Yes ☒ No	Identify the ID and type of Hydrologic Control BMP to mitigate 1st DMA
2	☐ Onsite ☐ Partially Onsite	☐ Onsite ☐ Partially Onsite	☐ Yes ☒ No	Identify the ID and type of Hydrologic Control BMP to mitigate 2nd DMA

	☐ Offsite ☒ None Required	☐ Offsite ☐ None Required		
3	☐ Onsite ☐ Partially Onsite ☐ Offsite ☒ None Required	☐ Onsite ☐ Partially Onsite ☐ Offsite ☒ None Required	☐ Yes ☒ No	Identify the ID and type of Hydrologic Control BMP to mitigate 3rd DMA
4	☐ Onsite ☐ Partially Onsite ☐ Offsite ☒ None Required	☐ Onsite ☐ Partially Onsite ☐ Offsite ☒ None Required	☐ Yes ☒ No	Identify the ID and type of Hydrologic Control BMP to mitigate 3rd DMA
5	☐ Onsite ☐ Partially Onsite ☐ Offsite ☒ None Required	☐ Onsite ☐ Partially Onsite ☐ Offsite ☒ None Required	☐ Yes ☒ No	Identify the ID and type of Hydrologic Control BMP to mitigate 3rd DMA

For each DMA provide a narrative describing if the DCV and the Hydrologic Performance Standard are to be fully managed onsite. If not, the narrative should detail how and where offsite structural BMPs will achieve management of the DCV and the Hydrologic Performance Standard.

DMA 1 – Project will not fully manage the DVC onsite as Infiltration, Bioretention, and Biotreatment may cause a public safety hazard. Also, project has been identified to be exempt from Hydrologic Performance Standards, see table A.2. Although each DMA will be provided with at curb inlet filter insert.

DMA 2 – Project will not fully manage the DVC onsite as Infiltration, Bioretention, and Biotreatment may cause a public safety hazard. Also, project has been identified to be exempt from Hydrologic Performance Standards, see table A.2. Although each DMA will be provided with at curb inlet filter insert.

DMA 3 – Project will not fully manage the DVC onsite as Infiltration, Bioretention, and Biotreatment may cause a public safety hazard. Also, project has been identified to be exempt from Hydrologic Performance Standards, see table A.2. Although each DMA will be provided with at curb inlet filter insert.

DMA 4 – Project will not fully manage the DVC onsite as Infiltration, Bioretention, and Biotreatment may cause a public safety hazard. Also, project has been identified to be exempt from Hydrologic Performance Standards, see table A.2. Although each DMA will be provided with at curb inlet filter insert.

DMA 5 – Project will not fully manage the DVC onsite as Infiltration, Bioretention, and Biotreatment may cause a public safety hazard. Also, project has been identified to be exempt from Hydrologic Performance Standards, see table A.2. Although each DMA will be provided with at curb inlet filter insert.

E.4 Hydrologic Control BMP Sizing

Each Hydrologic Control BMP must be designed to ensure that the flow duration curve of the post-development DMA will not exceed that of the pre-existing, naturally occurring, DMA by more than ten percent over a one-year period. Using SMRHM, the applicant shall demonstrate that the performance of each designed Hydrologic Control BMP complies with the Hydrologic Performance Standard. Complete Table E.2 below and identify, for each DMA, the type of Hydrologic Control BMP, if the SMRHM model confirmed the management (Identified as "passed" in SMRHM), the total volume capacity of the Hydrologic Control BMP, the Hydrologic Control BMP footprint at top floor elevation, and the drawdown time of the Hydrologic Control BMP. SMRHM summary reports should be documented in Appendix 7. Refer to the SMRHM Guidance Document for additional information on SMRHM. You can add rows to the table as needed.

Table E.2 Hydrologic Control BMP Sizing

BMP Name / ID	DMA No.	BMP Type / Description	SMRHM Passed	BMP Volume (ac-ft)	BMP Footprint (ac)	Drawdown time (hr)
N/A			☐			
			☐			
			☐			
			☐			

E.5 Implement Sediment Supply BMPs

The applicant may refer to Section 2.3 of the SMR HMP for a comprehensive description of the methodology to meet the Sediment Supply Performance Standard. Complete the following steps to determine compliance with the Sediment Supply Performance Standard: **N/A**

Step 1: Identify if the site is a Significant Source of Bed Sediment Supply to the receiving channel

☐ Step 1.A – Is the Bed Sediment of onsite streams similar to that of receiving streams?

Rate the similarity: ☐ High
☐ Medium
☐ Low

Results from the geotechnical and sieve analysis to be performed both onsite and in the receiving channel should be documented in Appendix 7. Of particular interest, the results of the sieve analysis, the soil erodibility factor, a description of the topographic relief of the project area, and the lithology of onsite soils should be reported in Appendix 7.

Step 1.B – Are onsite streams capable of delivering Bed Sediment Supply from the site, if any, to the receiving channel? **N/A**

Rate the potential: ☐ High
☐ Medium

☐ Low

Results from the analyses of the sediment delivery potential to the receiving channel should be documented in Appendix 7 and identify, at a minimum, the Sediment Source, the distance to the receiving channel, the onsite channel density, the project watershed area, the slope, length, land use, and rainfall intensity.

☐ Step 1.C – Will the receiving channel adversely respond to a change in Bed Sediment Load?

Rate the need for bed sediment supply: **N/A**

☐ High
☐ Medium
☐ Low

Results from the in-stream analysis to be performed both onsite should be documented in Appendix 7. The analysis should, at a minimum, quantify the bank stability and the degree of incision, provide a gradation of the Bed Sediment within the receiving channel, and identify if the channel is sediment supply-limited.

☐ Step 1.D – Summary of Step 1

Summarize in Table E.3 the findings of Step 1 and associate a score (in parenthesis) to each step. The sum of the three individual scores determines if a stream is a significant contributor to the receiving stream.

- Sum is equal to or greater than eight - Site is a significant source of sediment bed material – all on-site streams must be preserved or by-passed within the site plan. The applicant shall proceed to Step 2 for all onsite streams.
- Sum is greater than five but lower than eight. Site is a source of sediment bed material – some of the on-site streams must be preserved (with identified streams noted). The applicant shall proceed to Step 2 for the identified streams only.
- Sum is equal to or lower than five. Site is not a significant source of sediment bed material. The applicant may advance to Section F.

Table E.3 Triad Assessment Summary

Step	**Rating**			**Total Score**
1.A	☐ High (3)	☐ Medium (2)	☐ Low (1)	**N/A**
1.B	☐ High (3)	☐ Medium (2)	☐ Low (1)	**N/A**
1.C	☐ High (3)	☐ Medium (2)	☐ Low (1)	**N/A**
Significant Source Rating of Bed Sediment to the receiving channel(s)				**N/A**

Step 2: Preservation of Identified Onsite Channels

Onsite streams identified as a Significant Source of Bed Sediment should be avoided in the site design.

Check one of the following: **N/A**

☐ The site design does avoid all onsite channels identified as a Significant Source of Bed Sediment *(The applicant may disregard subsequent steps of Section E.5 and directly advance directly to Section F.*)

- *Or* -

☐ The site design **does NOT avoid** all onsite channels identified as a Significant Source of Bed Sediment *(The applicant may proceed with the subsequent steps of Section E.5).*

Provide in Appendix 7 a site map that identifies all onsite channels and highlights those onsite channels that were identified as a Significant Source of Bed Sediment. The site map shall demonstrate, if feasible, that the site design avoids those onsite channels identified as a Significant Source of Bed Sediment. In addition, the applicant shall describe the characteristics of each onsite channel identified as a Significant Source of Bed Sediment. If the design plan cannot avoid the onsite channels, please provide a rationale for each channel individually.

N/A

Step 3: By-Pass of Upstream Drainage(s) to Preserve the discharge of Bed Sediment Supply to the receiving channel(s)

Onsite channels identified as a Significant Source of Bed Sediment Supply should be by-passed the discharge of Bed Sediment Supply to the receiving channel(s).

Check one of the following: **N/A**

☐ The site design does avoid and/or bypass all onsite channels identified as a source of Bed Sediment Supply *(The applicant may directly advance to Section F.*)

- *Or* -

☐ The site design **does NOT avoid or by-pass** all onsite channels identified as a source of Bed Sediment Supply *(The applicant may proceed to an Alternative Approach, as defined in Section F).*

Provide in Appendix 7 a site map that identifies all onsite channels and highlights those onsite channels that were identified as a Significant Source of Bed Sediment Supply. The site map shall demonstrate, if feasible, that the site design avoids or by-passes those onsite channels of significant Bed Sediment Supply to the receiving channel(s). In addition, the applicant shall describe the characteristics of each onsite channel identified as a Significant Source of Bed Sediment Supply. If the design plan cannot avoid or by-pass the onsite channels, please provide a rationale for each channel individually.

N/A

Section F: Alternative Compliance

LID BMPs and Hydrologic Control BMPs are expected to be feasible on virtually all projects. Where LID BMPs and/or Hydrologic Control BMPs have been demonstrated to be infeasible as documented in Section D and/or Section E, respectively, other Treatment Control BMPs or alternative compliance approaches must be used (subject LID waiver and/or HMP alternative compliance approval by the Copermittee).

In addition, if supporting documentation demonstrates the infeasibility to implement Sediment Supply BMPs onsite (See Section E.5), the applicant may refer to Section F.5.

Check one of the following boxes:

- ☐ LID Principles, LID BMPs, Hydrologic Control BMPs, and Sediment Supply BMPs have been incorporated into the site design to fully address all Drainage Management Areas. No alternative compliance measures are required for this project and thus this Section is not required to be completed.

- *Or* -

- ☐ LID Principles and LID BMPs have NOT been incorporated into the site design to fully address the LID requirements for all Drainage Management Areas AND HMP Performance Standards are not fully addressed in the following Drainage Management Areas.
    - The following Drainage Management Areas are unable to be addressed using LID BMPs. A site specific analysis demonstrating technical infeasibility of LID BMPs has been approved by the Copermittee and included in Appendix 5. The following alternative compliance measures on the following pages are being implemented to ensure that any pollutant loads expected to be discharged by not incorporating LID BMPs, are fully mitigated. The applicant should complete Section F.1, Section F.2, and Section F.3, as applicable.
    - A site specific analysis demonstrating technical infeasibility of Hydrologic Control BMPs and Sediment Supply BMPs has been approved by the Copermittee and included in Appendix 7. Projects less than one acre have completed the Simplified Technical Feasibility Study. The applicant should complete Section F.5 and/or Section F.6, as applicable.

List DMAs Here.

- *Or* -

- ☐ LID Principles and LID BMPs have been incorporated into the site design to fully address the DCV for all Drainage Management Areas. However, HMP Performance Standards are not fully addressed in the following Drainage Management Areas. A site specific analysis demonstrating technical infeasibility of Hydrologic Control BMPs and Sediment Supply BMPs has been approved by the Copermittee and included in Appendix 7. Projects less than one acre have

completed the Simplified Technical Feasibility. The applicant should complete Section F.5 and/or Section F.6, as applicable.

List DMAs Here.

F.1 Identify Pollutants of Concern

Utilizing Table A.1 from Section A above which noted your project's Receiving Waters and their associated USEPA approved 303(d) listed impairments, cross reference this information with that of your selected Priority Development Project Category in Table F.1 below. If the identified General Pollutant Categories are the same as those listed for your Receiving Waters, then these will be your Pollutants of Concern and the appropriate box or boxes will be checked on the last row. The purpose of this is to document compliance and to help you appropriately plan for mitigating your Pollutants of Concern in lieu of implementing LID BMPs.

Table F.1 Potential Pollutants by Land Use Type

Priority Development Project Categories and/or Project Features (check those that apply)	General Pollutant Categories							
	Bacterial Indicators	Metals	Nutrients	Pesticides	Toxic Organic Compounds	Sediments	Trash & Debris	Oil & Grease
☐ Detached Residential Development	P	N	P	P	N	P	P	P
☐ Attached Residential Development	P	N	P	P	N	P	P	P(2)
☐ Commercial/Industrial Development	P(3)	P	P(1)	P(1)	P(5)	P(1)	P	P
☐ Automotive Repair Shops	N	P	N	N	P(4, 5)	N	P	P
☐ Restaurants (>5,000 ft^2)	P	N	N	N	N	N	P	P
☐ Hillside Development (>5,000 ft^2)	P	N	P	P	N	P	P	P
☒ Parking Lots (>5,000 ft^2)	P(6)	P	P(1)	P(1)	P(4)	P(1)	P	P
☐ Retail Gasoline Outlets	N	P	N	N	P	N	P	P
Project Priority Pollutant(s) of Concern	☒	☒	☒	☒	☒	☐	☐	☐

P = Potential
N = Not Potential
(1) A potential Pollutant if non-native landscaping exists or is proposed onsite; otherwise not expected
(2) A potential Pollutant if the project includes uncovered parking areas; otherwise not expected
(3) A potential Pollutant is land use involving animal waste
(4) Specifically petroleum hydrocarbons
(5) Specifically solvents
(6) Bacterial indicators are routinely detected in pavement runoff

F.2 Stormwater Credits

Projects that cannot implement LID BMPs but nevertheless implement Smart Growth Principles are potentially eligible for Stormwater Credits. Utilize Table 3-7 within the WQMP Guidance Document to identify your Project Category and its associated Water Quality Credit. If not applicable, write N/A.

Table F.2 Stormwater Credits

Qualifying Project Categories	Credit Percentage[2]
N/A	
Total Credit Percentage[1]	

[1]Cannot Exceed 50%
[2]Obtain corresponding data from Table 3-7 in the WQMP Guidance Document

F.3 Sizing Criteria

After you appropriately considered Stormwater Credits for your Project, utilize Table F.3 below to appropriately size them to the DCV, or Design Flow Rate, as applicable. Please reference Chapter 3.5.5 of the WQMP Guidance Document for further information.

Table F.3 Treatment Control BMP Sizing

DMA Type/ID	**DMA (square feet)**	**Post-Project Surface Type**	**Effective Impervious Fraction, I_f**	**DMA Runoff Factor**	**DMA x Runoff Factor**		***Enter BMP Name / Identifier Here***		
	[A]		[B]	[C]	[A] x [C]				
N/A						*Design Storm Depth (in)*	*Minimum DCV or Design Flow Rate (cubic feet or cfs)*	*Total Storm Water Credit % Reduction*	*Proposed Volume or Flow on Plans (cubic feet or cfs)*
	A_T = Σ[A]				Σ= [D]	[E]	$[F] = \frac{[D]x[E]}{[G]}$	[F] X (1-[H])	[I]

[B], [C] is obtained as described in Section 2.5 from the WQMP Guidance Document
[E] is obtained from Exhibit A in the WQMP Guidance Document
[G] is for Flow-Based Treatment Control BMPs [G] = 43,560, for Volume-Based Control Treatment BMPs, [G] = 12
[H] is from the Total Stormwater Credit Percentage as Calculated from Table E.2 above
[I] as obtained from a design procedure sheet from the BMP manufacturer and should be included in Appendix 6

F.4 Treatment Control BMP Selection

Treatment Control BMPs typically provide proprietary treatment mechanisms to treat potential Pollutants in runoff, but do not sustain significant biological processes. Treatment Control BMPs must have a removal efficiency of a medium or high effectiveness as quantified below:

- **High**: equal to or greater than 80% removal efficiency
- **Medium**: between 40% and 80% removal efficiency

Such removal efficiency documentation (e.g., studies, reports, etc.) as further discussed in Chapter 3.5.2 of the WQMP Guidance Document, must be included in Appendix 6. In addition, ensure that proposed Treatment Control BMPs are properly identified on the WQMP Site Plan in Appendix 1.

Table F.4 Treatment Control BMP Selection

Selected Treatment Control BMP Name or ID[1]	Priority Pollutant(s) of Concern to Mitigate[2]	Removal Efficiency Percentage[3]
FloGard Catch Basin insert Filter (curb inlet Style)	Bacteria and Virus, Metals, Nutrients, Pesticides, Toxic Organic Compounds	

[1] Treatment Control BMPs must not be constructed within Receiving Waters. In addition, a proposed Treatment Control BMP may be listed more than once if they possess more than one qualifying pollutant removal efficiency.
[2] Cross Reference Table E.1 above to populate this column.
[3] As documented in a Copermittee Approved Study and provided in Appendix 6.

F.5 Hydrologic Performance Standard – Alternative Compliance Approach

Alternative compliance options are only available if the governing Copermittee has acknowledged the infeasibility of onsite Hydrologic Control BMPs and approved an alternative compliance approach. Attach to Appendix 7 the Technical Feasibility Study (Projects equal or greater than one acre) or Simplified Technical Feasibility Study (Projects less than one acre) along with a written approval from the Copermittee. The applicant may refer to Section 2.2.iv of the SMR HMP for extensive guidelines on the alternative compliance approach.

Select the pursued alternative and describe the specifics of the alternative: **N/A**

☐ Offsite Hydrologic Control Management within the same channel system

N/A

☐ In-Stream Restoration Project

N/A

<u>For Offsite Hydrologic Control BMP Option</u>

Each Hydrologic Control BMP must be designed to ensure that the flow duration curve of the post-development DMA will not exceed that of the pre-existing, naturally occurring, DMA by more than ten percent over a one-year period. Using SMRHM, the applicant shall demonstrate that the performance of

each designed Hydrologic Control BMP is equivalent with the Hydrologic Performance Standard for onsite conditions. Complete Table F.4 below and identify, for each Hydrologic Control BMP, the equivalent DMA the Hydrologic Control BMP mitigates, that the SMRHM model passed, the total volume capacity of the BMP, the BMP footprint at top floor elevation, and the drawdown time of the BMP. SMRHM summary reports for the alternative approach should be documented in Appendix 7. Refer to the SMRHM Guidance Document for additional information on SMRHM. You can add rows to the table as needed.

Table F.5 Offsite Hydrologic Control BMP Sizing

BMP Name / Type	Equivalent DMA (ac)	SMRHM Passed	BMP Volume (ac-ft)	BMP Footprint (ac)	Drawdown time (hr)
N/A		☐			
		☐			
		☐			
		☐			

<u>For Instream Restoration Option</u>

Attach to Appendix 7 the technical report detailing the condition of the receiving channel subject to the proposed hydrologic and sediment regimes. Provide the full design plans for the in-stream restoration project that have been approved by the Copermittee.

F.6 Sediment Supply Performance Standard - Alternative Compliance

The alternative compliance option to the Sediment Supply Performance Standard is only available if the governing Copermittee has approved the investigation of alternative Bed Sediment Supply options. Attach to Appendix 7 the Technical Feasibility Study, along with the modeling analysis, the long-term monitoring program, and the potential corrective actions, that demonstrate the performance of the overall alternative compliance program. The applicant may refer to Section 2.3.ii of the SMR HMP for extensive guidelines on the alternative compliance approach.

Provide a narrative describing the alternative Bed Sediment Supply approach, including the long-term monitoring program and the findings of the numerical modeling.
N/A

Section G: Source Control BMPs

Source Control BMPs include permanent, structural features that may be required in your Project plans — such as roofs over and berms around trash and recycling areas — and Operational BMPs, such as regular sweeping and "housekeeping", that must be implemented by the site's occupant or user. The Maximum Extent Practicable (MEP) standard typically requires both types of BMPs. In general, Operational BMPs cannot be substituted for a feasible and effective structural BMP. Using the Pollutant Sources/Source Control Checklist in Appendix 8, review the following procedure to specify Source Control BMPs for your site:

1. ***Identify Pollutant Sources*:** Review Column 1 in the Pollutant Sources/Source Control Checklist. Check off the potential sources of Pollutants that apply to your site.

2. ***Note Locations on Project-Specific WQMP Exhibit*:** Note the corresponding requirements listed in Column 2 of the Pollutant Sources/Source Control Checklist. Show the location of each Pollutant source and each permanent Source Control BMP in your Project-Specific WQMP Exhibit located in Appendix 1.

3. ***Prepare a Table and Narrative*:** Check off the corresponding requirements listed in Column 3 in the Pollutant Sources/Source Control Checklist. In the left column of Table G.1 below, list each potential source of Pollutants on your site (from those that you checked in the Pollutant Sources/Source Control Checklist). In the middle column, list the corresponding permanent, Structural Source Control BMPs (from Columns 2 and 3 of the Pollutant Sources/Source Control Checklist) used to prevent Pollutants from entering runoff. **Add additional narrative** in this column that explains any special features, materials or methods of construction that will be used to implement these permanent, Structural Source Control BMPs.

4. ***Identify Operational Source Control BMPs:*** To complete your table, refer once again to the Pollutant Sources/Source Control Checklist. List in the right column of your table the Operational BMPs that should be implemented as long as the anticipated activities continue at the site. Copermittee stormwater ordinances require that applicable Source Control BMPs be implemented; the same BMPs may also be required as a condition of a use permit or other revocable Discretionary Approval for use of the site.

Table G.1 Structural and Operational Source Control BMP

Potential Sources of Runoff Pollutants	Structural Source Control BMPs	Operational Source Control BMPs
On-site storm drain inlets	See Appendix 8	See Appendix 8
Plazas, sidewalks	See Appendix 8	See Appendix 8

Section H: Construction Plan Checklist

Populate Table H.1 below to assist the plan checker in an expeditious review of your project. The first two columns will contain information that was prepared in previous steps, while the last column will be populated with the corresponding plan sheets. This table is to be completed with the submittal of your final Project-Specific WQMP.

Table H.1 Construction Plan Cross-reference

BMP No. or ID	BMP Identifier and Description	Corresponding Plan Sheet(s)
A	WQMP Exhibit	
B	WQMP Exhibit	
C	WQMP Exhibit	
D	WQMP Exhibit	
E	WQMP Exhibit	

Note that the updated table — or Construction Plan WQMP Checklist — is **only a reference tool** to facilitate an easy comparison of the construction plans to your Project-Specific WQMP. The Copermittee with jurisdiction over the Project site can advise you regarding the process required to propose changes to the approved Project-Specific WQMP.

Section I: Operation, Maintenance and Funding

The Copermittee with jurisdiction over the Project site will periodically verify that BMPs on your Project are maintained and continue to operate as designed. To make this possible, the Copermittee will require that you include in Appendix 9 of this Project-Specific WQMP:

1. A means to finance and implement maintenance of BMPs in perpetuity, including replacement cost.
2. Acceptance of responsibility for maintenance from the time the BMPs are constructed until responsibility for operation and maintenance is legally transferred. A warranty covering a period following construction may also be required.
3. An outline of general maintenance requirements for the Stormwater BMPs you have selected.
4. Figures delineating and designating pervious and impervious areas, location, and type of Stormwater BMP, and tables of pervious and impervious areas served by each facility. Geo-locating the BMPs using a coordinate system of latitude and longitude is recommended to help facilitate a future statewide database system.
5. A separate list and location of self-retaining areas or areas addressed by LID Principles that do not require specialized Operations and Maintenance or inspections but will require typical landscape maintenance as noted in Chapter 5, in the WQMP Guidance. Include a brief description of typical landscape maintenance for these areas.

The Copermittee with jurisdiction over the Project site will also require that you prepare and submit a detailed BMP Operation and Maintenance Plan that sets forth a maintenance schedule for each of the BMPs built on your site. An agreement assigning responsibility for maintenance and providing for inspections and certification may also be required.

Details of these requirements and instructions for preparing a BMP Operation and Maintenance Plan are in Chapter 5 of the WQMP Guidance Document.

Maintenance Mechanism: City of Temecula

Will the proposed BMPs be maintained by a Homeowners' Association (HOA) or Property Owners Association (POA)?

☐ Y ☒ N

Include your Operation and Maintenance Plan and Maintenance Mechanism in Appendix 9. Additionally, include all pertinent forms of educational materials for those personnel that will be maintaining the proposed BMPs within this Project-Specific WQMP in Appendix 10.

Acronyms, Abbreviations and Definitions

2010 SMR MS4 Permit	Order No. R9-2010-0016, an NPDES Permit issued by the San Diego Regional Water Quality Control Board.
Applicant	Public or private entity seeking the discretionary approval of new or replaced improvements from the Copermittee with jurisdiction over the project site. The Applicant has overall responsibility for the implementation and the approval of a Priority Development Project. The WQMP uses consistently the term "user" to refer to the applicant such as developer or project proponent. The WQMP employs also the designation "user" to identify the Registered Professional Civil Engineer responsible for submitting the Project-Specific WQMP, and designing the required BMPs.
Best Management Practice (BMP)	Defined in 40 CFR 122.2 as schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the United States. BMPs also include treatment requirements, operating procedures and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. In the case of municipal storm water permits, BMPs are typically used in place of numeric effluent limits.
BMP Fact Sheets	BMP Fact Sheets are available in the LID BMP Design Handbook. Individual BMP Fact Sheets include sitting considerations, and design and sizing guidelines for seven types of structural BMPs (infiltration basin, infiltration trench, permeable pavement, harvest-and-use, bioretention, extended detention basin, and sand filter).
California Stormwater Quality Association (CASQA)	Publisher of the California Stormwater Best Management Practices Handbooks, available at www.cabmphandbooks.com.
Conventional Treatment Control BMP	A type of BMP that provides treatment of stormwater runoff. Conventional treatment control BMPs, while designed to treat particular Pollutants, typically do not provide the same level of volume reduction as LID BMPs, and commonly require more specialized maintenance than LID BMPs. As such, the 2010 SMR MS4 Permit and this WQMP require the use of LID BMPs wherever feasible, before Conventional Treatment BMPs can be considered or implemented.
Copermittees	The 2010 SMR MS4 Permit identifies the Cities of Murrieta, Temecula, and Wildomar, the County, and the District, as Copermittees for the SMR.
County	The abbreviation refers to the County of Riverside in this document.

CEQA	California Environmental Quality Act - a statute that requires state and local agencies to identify the significant environmental impacts of their actions and to avoid or mitigate those impacts, if feasible.
CIMIS	California Irrigation Management Information System - an integrated network of 118 automated active weather stations all over California managed by the California Department of Water Resources.
CWA	Clean Water Act - is the primary federal law governing water pollution. Passed in 1972, the CWA established the goals of eliminating releases of high amounts of toxic substances into water, eliminating additional water pollution by 1985, and ensuring that surface waters would meet standards necessary for human sports and recreation by 1983. CWA Section 402(p) is the federal statute requiring NPDES permits for discharges from MS4s.
CWA Section 303(d) Waterbody	Impaired water in which water quality does not meet applicable water quality standards and/or is not expected to meet water quality standards, even after the application of technology based pollution controls required by the CWA. The discharge of urban runoff to these water bodies by the Copermittees is significant because these discharges can cause or contribute to violations of applicable water quality standards.
Design Storm	The 2010 SMR MS4 Permit has established the 85th percentile, 24-hour storm event as the "Design Storm". The applicant may refer to Exhibit A to identify the applicable Design Storm Depth (D85) to the project.
DCV	Design Capture Volume (DCV) is the volume of runoff produced from the Design Storm to be mitigated through LID Retention BMPs, Other LID BMPs and Volume Based Conventional Treatment BMPs, as appropriate.
Design Flow Rate	The design flow rate represents the minimum flow rate capacity that flow-based conventional treatment control BMPs should treat to the MEP, when considered.
DCIA	Directly Connected Impervious Areas - those impervious areas that are hydraulically connected to the MS4 (i.e. street curbs, catch basins, storm drains, etc.) and thence to the structural BMP without flowing over pervious areas.
Discretionary Approval	A decision in which a Copermittee uses its judgment in deciding whether and how to carry out or approve a project.
District	Riverside County Flood Control and Water Conservation District.
DMA	A Drainage Management Area - a delineated portion of a project site that is hydraulically connected to a common structural BMP or conveyance point. The Applicant may refer to Section 3.3 for further guidelines on how to delineate DMAs.

Drawdown Time	Refers to the amount of time the design volume takes to pass through the BMP. The specified or incorporated drawdown times are to ensure that adequate contact or detention time has occurred for treatment, while not creating vector or other nuisance issues. It is important to abide by the drawdown time requirements stated in the fact sheet for each specific BMP.
Effective Area	Area which 1) is suitable for a BMP (for example, if infiltration is potentially feasible for the site based on infeasibility criteria, infiltration must be allowed over this area) and 2) receives runoff from impervious areas.
ESA	An Environmental Sensitive Area (ESA) designates an area "in which plants or animals life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which would be easily disturbed or degraded by human activities and developments". (Reference: California Public Resources Code § 30107.5).
ET	Evapotranspiration (ET) is the loss of water to the atmosphere by the combined processes of evaporation (from soil and plant surfaces) and transpiration (from plant tissues). It is also an indicator of how much water crops, lawn, garden, and trees need for healthy growth and productivity
FAR	The Floor Area Ratio (FAR) is the total square feet of a building divided by the total square feet of the lot the building is located on.
Flow-Based BMP	Flow-based BMPs are conventional treatment control BMPs that are sized to treat the design flow rate.
FPPP	Facility Pollution Prevention Plan
HCOC	Hydrologic Condition of Concern - Exists when the alteration of a site's hydrologic regime caused by development would cause significant impacts on downstream channels and aquatic habitats, alone or in conjunction with impacts of other projects.
HMP	Hydromodification Management Plan – Plan defining Performance Standards for PDPs to manage increases in runoff discharge rates and durations.
Hydrologic Control BMP	BMP to mitigate the increases in runoff discharge rates and durations and meet the Performance Standards set forth in the HMP.
HSG	Hydrologic Soil Groups – soil classification to indicate the minimum rate of infiltration obtained for bare soil after prolonged wetting. The HSGs are A (very low runoff potential/high infiltration rate), B, C, and D (high runoff potential/very low infiltration rate)

Hydromodification	The 2010 SMR MS4 Permit identifies that increased volume, velocity, frequency and discharge duration of storm water runoff from developed areas has the potential to greatly accelerate downstream erosion, impair stream habitat in natural drainages, and negatively impact beneficial uses.
JRMP	A separate Jurisdictional Runoff Management Plan (JRMP) has been developed by each Copermittee and identifies the local programs and activities that the Copermittee is implementing to meet the 2010 SMR MS4 Permit requirements.
LID	Low Impact Development (LID) is a site design strategy with a goal of maintaining or replicating the pre-development hydrologic regime through the use of design techniques. LID site design BMPs help preserve and restore the natural hydrologic cycle of the site, allowing for filtration and infiltration which can greatly reduce the volume, peak flow rate, velocity, and pollutant loads of storm water runoff.
LID BMP	A type of stormwater BMP that is based upon Low Impact Development concepts. LID BMPs not only provide highly effective treatment of stormwater runoff, but also yield potentially significant reductions in runoff volume – helping to mimic the pre-project hydrologic regime, and also require less ongoing maintenance than Treatment Control BMPs. The applicant may refer to Chapter 2.
LID BMP Design Handbook	The LID BMP Design Handbook was developed by the Copermittees to provide guidance for the planning, design and maintenance of LID BMPs which may be used to mitigate the water quality impacts of PDPs within the County.
LID Bioretention BMP	LID Bioretention BMPs are bioretention areas are vegetated (i.e., landscaped) shallow depressions that provide storage, infiltration, and evapotranspiration, and provide for pollutant removal (e.g., filtration, adsorption, nutrient uptake) by filtering stormwater through the vegetation and soils. In bioretention areas, pore spaces and organic material in the soils help to retain water in the form of soil moisture and to promote the adsorption of pollutants (e.g., dissolved metals and petroleum hydrocarbons) into the soil matrix. Plants use soil moisture and promote the drying of the soil through transpiration. The 2010 SMR MS4 Permit defines "retain" as to keep or hold in a particular place, condition, or position without discharge to surface waters.
LID Biotreatment BMP	BMPs that reduce stormwater pollutant discharges by intercepting rainfall on vegetative canopy, and through incidental infiltration and/or evapotranspiration, and filtration, and other biological and chemical processes. As stormwater passes down through the planting soil, pollutants are filtered, adsorbed, biodegraded, and sequestered by the soil and plants, and collected through an underdrain.

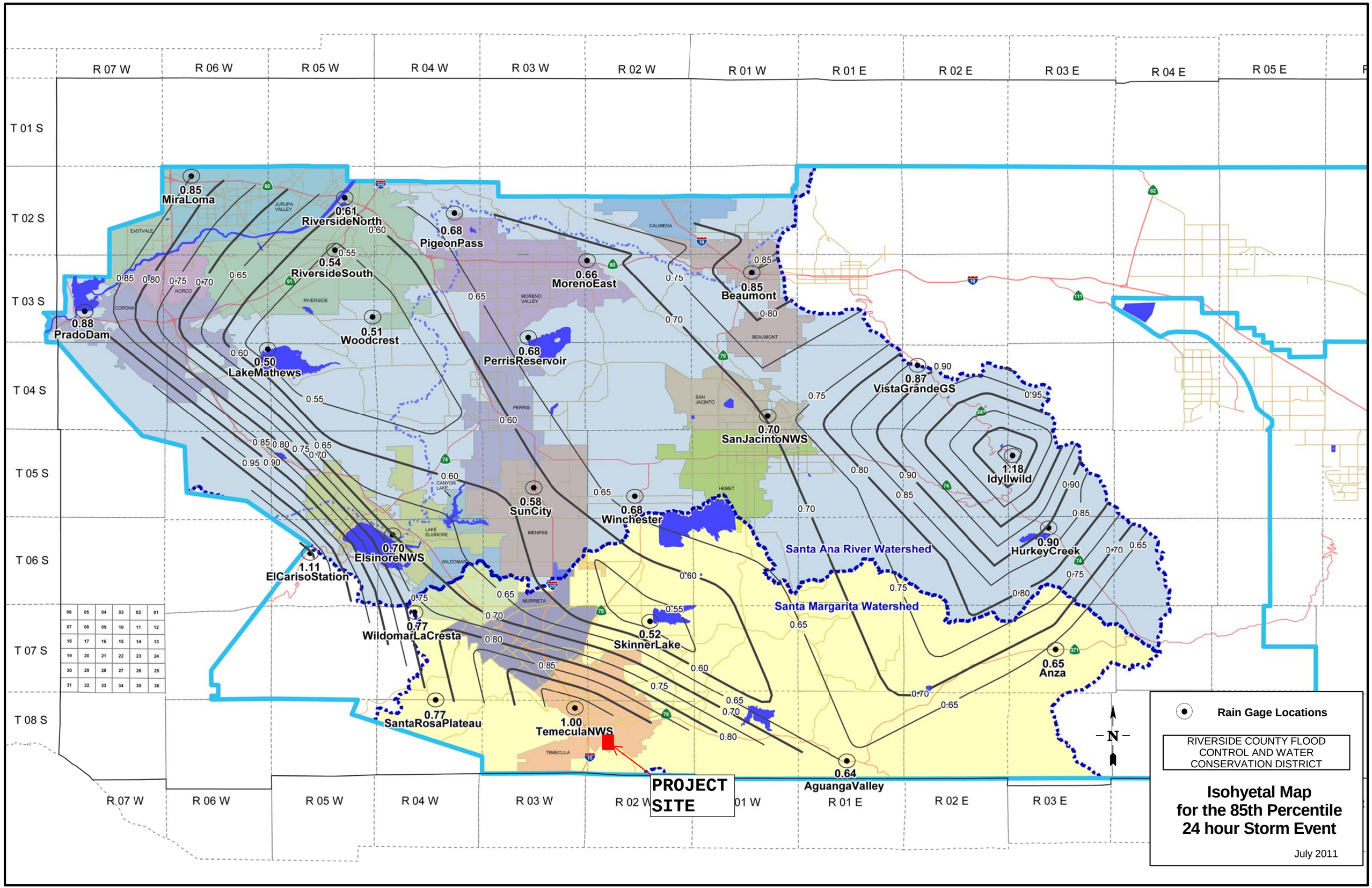
LID Harvest and Reuse BMP	BMPs used to facilitate capturing Stormwater Runoff for later use without negatively impacting downstream water rights or other Beneficial Uses.
LID Infiltration BMP	BMPs to reduce stormwater runoff by capturing and infiltrating the runoff into in-situ soils or amended onsite soils. Typical LID Infiltration BMPs include infiltration basins, infiltration trenches and pervious pavements.
LID Retention BMP	BMPs to ensure full onsite retention without runoff of the DCV such as infiltration basins, bioretention, chambers, trenches, permeable pavement and pavers, harvest and reuse.
LID Principles	Site design concepts that prevent or minimize the causes (or drivers) of post-construction impacts, and help mimic the pre-development hydrologic regime.
MEP	Maximum Extent Practicable - standard established by the 1987 amendments to the CWA for the reduction of Pollutant discharges from MS4s. Refer to Attachment C of the 2010 SMR MS4 Permit for a complete definition of MEP.
MF	Multi-family – zoning classification for parcels having 2 or more living residential units.
MS4	Municipal Separate Storm Sewer System (MS4) is a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains): (i) Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, storm water, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or designated and approved management agency under section 208 of the CWA that discharges to waters of the United States; (ii) Designated or used for collecting or conveying storm water; (iii) Which is not a combined sewer; (iv) Which is not part of the Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.26.
New Development Project	Defined by the 2010 MS4 permit as 'Priority Development Projects' if the project, or a component of the project meets the categories and thresholds described in Section 1.1.1.
NPDES	National Pollution Discharge Elimination System - Federal program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under Sections 307, 318, 402, and 405 of the CWA.
NRCS	Natural Resources Conservation Service

PDP	Priority Development Project - Includes New Development and Redevelopment project categories listed in Section F.1.d(2) of Order No. R9-2009-0002.
Priority Pollutants of Concern	Pollutants expected to be present on the project site and for which a downstream water body is also listed as Impaired under the CWA Section 303(d) list or by a TMDL.
Project-Specific WQMP	A plan specifying and documenting permanent LID Principles and Stormwater BMPs to control post-construction Pollutants and stormwater runoff for the life of the PDP, and the plans for operation and maintenance of those BMPs for the life of the project.
Receiving Waters	Waters of the United States.
Redevelopment Project	The creation, addition, and or replacement of impervious surface on an already developed site. Examples include the expansion of a building footprint, road widening, the addition to or replacement of a structure, and creation or addition of impervious surfaces. Replacement of impervious surfaces includes any activity that is not part of a routine maintenance activity where impervious material(s) are removed, exposing underlying soil during construction. Redevelopment does not include trenching and resurfacing associated with utility work; resurfacing existing roadways; new sidewalk construction, pedestrian ramps, or bike lane on existing roads; and routine replacement of damaged pavement, such as pothole repair. Project that meets the criteria described in Section 1.
Runoff Fund	Runoff Funds have not been established by the Copermittees and are not available to the Applicant. If established, a Runoff Fund will develop regional mitigation projects where PDPs will be able to buy mitigation credits if it is determined that implementing onsite controls is infeasible.
San Diego Regional Board	San Diego Regional Water Quality Control Board - The term "Regional Board", as defined in Water Code section 13050(b), is intended to refer to the California Regional Water Quality Control Board for the San Diego Region as specified in Water Code Section 13200. State agency responsible for managing and regulating water quality in the SMR.
SCCWRP	Southern California Coastal Water Research Project
Site Design BMP	Site design BMPs prevent or minimize the causes (or drivers) of post-construction impacts, and help mimic the pre-development hydrologic regime.
SF	Parcels with a zoning classification for a single residential unit.
SMC	Southern California Stormwater Monitoring Coalition
SMR	The Santa Margarita Region (SMR) represents the portion of the Santa Margarita Watershed that is included within the County of Riverside.

Source Control BMP	Source Control BMPs land use or site planning practices, or structural or nonstructural measures that aim to prevent runoff pollution by reducing the potential for contamination at the source of pollution. Source control BMPs minimize the contact between Pollutants and runoff.
Stormwater Credit	Stormwater Credit can be claimed by an Applicant if certain development practices that provide broad-scale environmental benefits to communities are incorporated into the project design. Refer to Section 3.5.4 for additional information on Stormwater Credits.
Structural BMP	Structures designed to remove pollutants from stormwater runoff and mitigate hydromodification impacts.
SWPPP	Storm Water Pollution Prevention Plan
Tentative Tract Map	Tentative Tract Maps are required for all subdivision creating five (5) or more parcels, five (5) or more condominiums as defined in Section 783 of the California Civil Code, a community apartment project containing five (5) or more parcels, or for the conversion of a dwelling to a stock cooperative containing five (5) or more dwelling units.
TMDL	Total Maximum Daily Load - the maximum amount of a Pollutant that can be discharged into a waterbody from all sources (point and non-point) and still maintain Water Quality Standards. Under CWA Section 303(d), TMDLs must be developed for all waterbodies that do not meet Water Quality Standards after application of technology-based controls.
USEPA	United States Environmental Protection Agency
Volume-Based BMP	Volume-Based BMPs applies to BMPs where the primary mode of pollutant removal depends upon the volumetric capacity such as detention, retention, and infiltration systems.
WQMP	Water Quality Management Plan
Wet Season	The 2010 SMR MS4 Permit defines the wet season from October 1 through April 30.

Appendix 1: Maps and Site Plans

Location Map, WQMP Site Plan and Receiving Waters Map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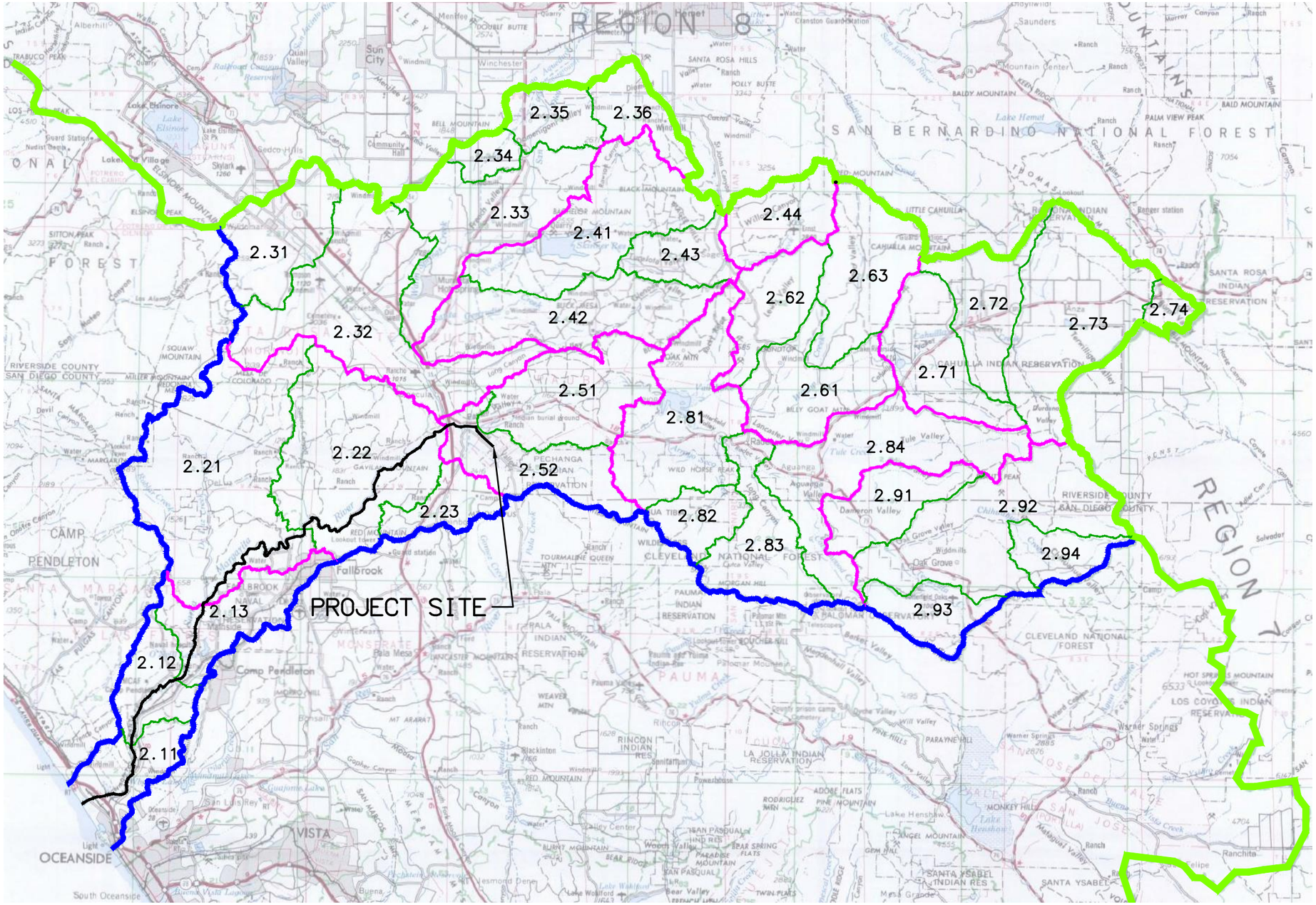
0.85 MiraLoma
0.61 RiversideNorth
0.68 PigeonPass
0.54 RiversideSouth
0.66 MorenoEast
0.85 Beaumont
0.88 PradoDam
0.51 Woodcrest
0.50 LakeMathews
0.68 PerrisReservoir
0.87 VistaGrandeGS
0.70 SanJacintoNWS
1.18 Idyllwild
0.58 SunCity
0.68 Winchester
0.90 HurkeyCreek
0.70 ElsinoreNWS
1.11 ElCarisoStation
0.77 WildomarLaCresta
0.52 SkinnerLake
0.65 Anza
0.77 SantaRosaPlateau
1.00 TemeculaNWS
0.64 AguangaValley
Santa Ana River Watershed
Santa Margarita Watershed
PROJECT SITE
N
Rain Gage Locations
RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
Isohyetal Map for the 85th Percentile 24 hour Storm Event
July 2011



LEGEND

- REGIONAL BOUNDARY
- HYDROLOGIC UNIT BOUNDARY (HU)
- HYDROLOGIC AREA BOUNDARY (HA)
- HYDROLOGIC SUBAREA BOUNDARY (SA)
- FLOW PATH

902 SANTA MARGARITA HYDROLOGIC UNIT

902.1 Ysidora HA
2.11 Lower Ysidora HSA
2.12 Chappo HSA
2.13 Upper Ysidora HSA

902.2 DeLuz HA
2.21 DeLuz Creek HSA
2.22 Gavilan HSA
2.23 Vallecitos HSA

902.3 Murrieta HA
2.31 Wildomar HSA
2.32 Murrieta HSA
2.33 French HSA
2.34 Lower Domenigoni HSA
2.35 Domenigoni HSA
2.36 Diamond HSA

902.4 Auld HA
2.41 Bachelor Mountain HSA
2.42 Gertrudis HSA
2.43 Lower Tucalota HSA
2.44 Tucalota HSA

902.5 Pechanga HA
2.51 Pauba HSA
2.52 Wolf HSA

902.6 Wilson HA
2.61 Lancaster Valley HSA
2.62 Lewis HSA
2.63 Reed Valley HSA

902.7 Cave Rocks HA
2.71 Lower Coahuilla HSA
2.72 Upper Coahuilla HSA
2.73 Anza HSA
2.74 Burnt HSA

902.8 Aguanga HA
2.81 Vail HSA
2.82 Devils Hole HSA
2.83 Redec HSA
2.84 Tule Creek HSA

902.9 Oakgrove HA
2.91 Lower Culp HSA
2.92 Previtt Canyon HSA
2.93 Dodge HSA
2.94 Chihuahua HSA

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RECEIVING WATERS MAP

FIGURE 2

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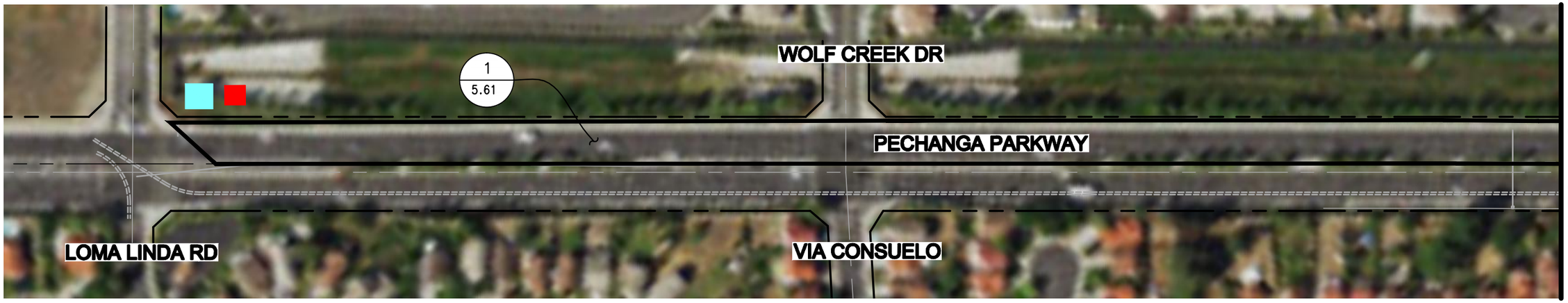

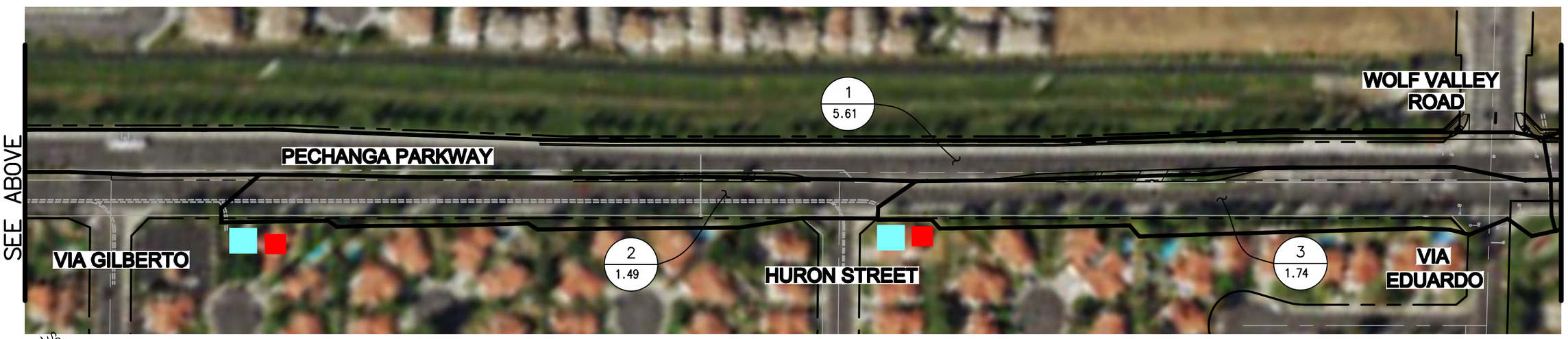

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LEGEND

1 / 12.4	DMA AREA NUMBER / AREA IN ACRES
	DMA BOUNDARY
	CURB INLET FILTER INSERT
	DRAIN INLET STENCIL

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PECHANGA PARKWAY WIDENING

WQMP EXHIBIT (1 OF 2)

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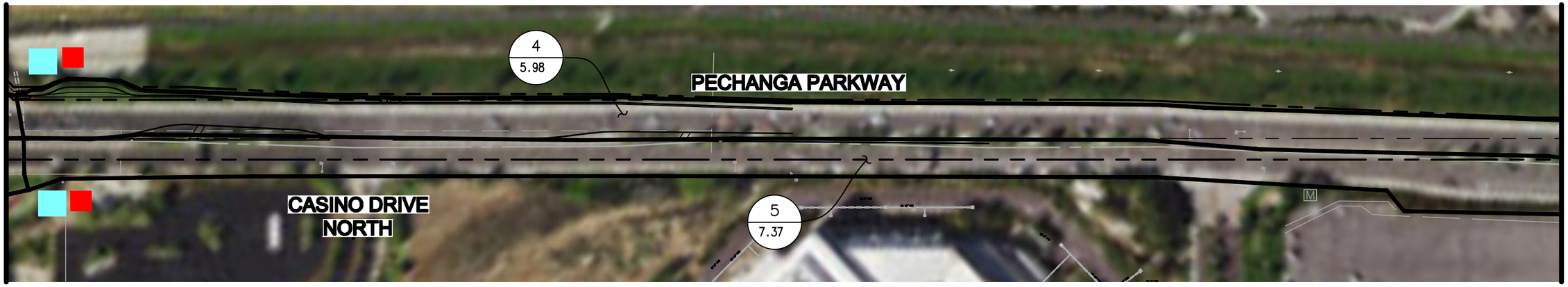

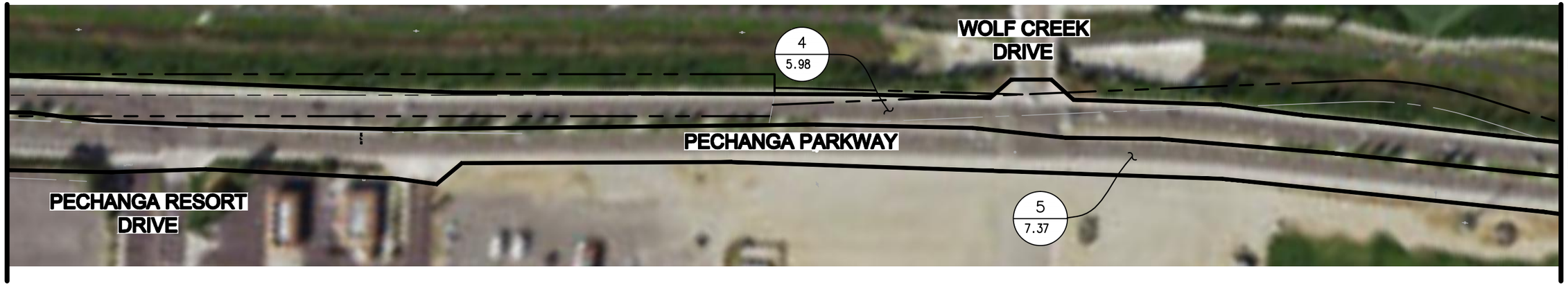

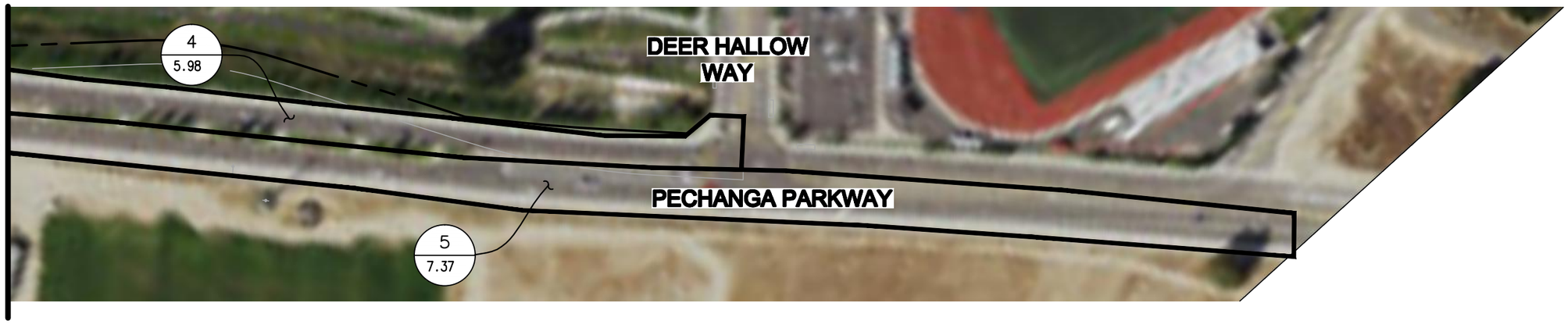

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PECHANGA PARKWAY WIDENING

WQMP EXHIBIT (2 OF 2)

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Appendix 2: Construction Plans

Grading and Drainage Plans

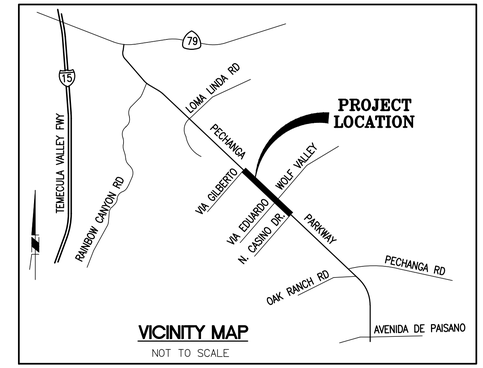
CITY OF TEMECULA

STREET IMPROVEMENT PLAN

PECHANGA PARKWAY

FROM STATION 86+00 TO STATION 117+00

PROJECT NO. PW 15-14



VICINITY MAP
NOT TO SCALE

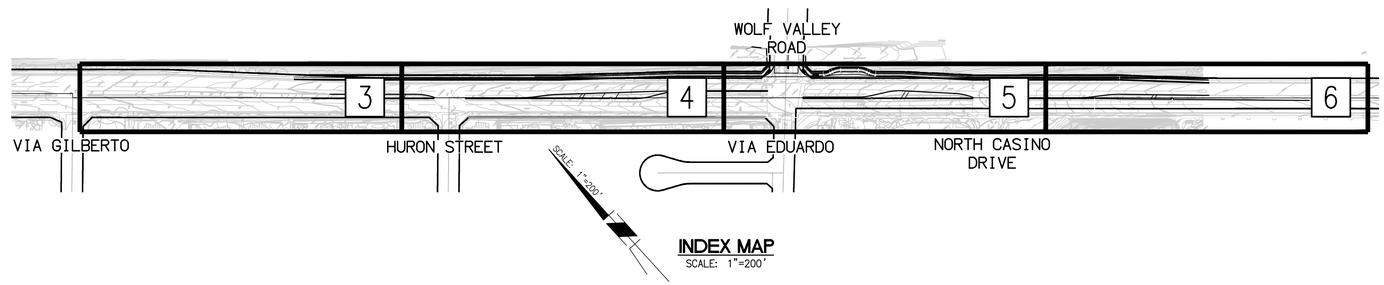
GENERAL NOTES (CITY OF TEMECULA)

1. STANDARDS. ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT EDITION OF THE CITY'S IMPROVEMENT STANDARD DRAWINGS FOR PUBLIC WORKS CONSTRUCTION (AND SUBSEQUENT AMENDMENTS), THE CITY'S ENGINEERING AND CONSTRUCTION MANUAL, CITY CODES AND REQUIREMENTS.
2. EMERGENCY TELEPHONE NUMBERS. (ANSWERING MACHINE IS NOT ACCEPTABLE):

(RESPONSIBLE PERSON/DEVELOPER) (COMPANY) (24-HR PHONE NUMBER)

(RESPONSIBLE PERSON/CONTRACTOR) (COMPANY) (24-HR PHONE NUMBER)

3. LICENSE/PERMIT REQUIREMENT.
   a. PRIOR TO START OF ANY WORK, A BUSINESS LICENSE SHALL BE OBTAINED FROM THE CITY.
   b. A GRADING PERMIT SHALL BE OBTAINED, PRIOR TO ANY WORK ON PRIVATE DEVELOPMENT. THE PERMIT AND AN APPROVED SET OF IMPROVEMENT PLANS MUST BE PRESENT AT THE JOBSITE DURING CONSTRUCTION.
4. ERRORS OR OMISSIONS. APPROVAL OF THESE PLANS BY THE CITY DOES NOT RELIEVE THE APPLICANT AND ENGINEER OF RECORD FROM THE RESPONSIBILITY FOR THE CORRECTION OF ERRORS OR OMISSIONS DISCOVERED DURING CONSTRUCTION.
5. WORKING HOURS. CITY ORDINANCE NO. 94-25 STATES THAT NO PERSON SHALL ENGAGE IN OR CONDUCT CONSTRUCTION ACTIVITY, WHEN THE CONSTRUCTION SITE IS WITHIN ONE-QUARTER OF A MILE OF AN OCCUPIED RESIDENCE, BETWEEN THE HOURS OF 6:30 PM AND 6:30 AM, MONDAY THROUGH FRIDAY AND SHALL ONLY ENGAGE IN OR CONDUCT CONSTRUCTION ACTIVITY BETWEEN THE HOURS OF 7:00 AM AND 6:30 PM ON SATURDAY. NO CONSTRUCTION ACTIVITY SHALL BE UNDERTAKEN ON SUNDAY AND NATIONALLY RECOGNIZED HOLIDAYS.
6. REGULATORY AGENCY CLEARANCES. THE ISSUANCE OF A PERMIT BY THE CITY DOES NOT IMPLY OR PROVIDE ANY CLEARANCES FROM STATE OR FEDERAL AGENCIES REGULATING THE PROVISIONS OF STATE OR FEDERAL ENDANGERED SPECIES ACTS OR WATER QUALITY REGULATIONS. THE APPROPRIATE CLEARANCES FROM THESE AGENCIES SHALL BE OBTAINED PRIOR TO ANY SITE DISTURBANCE OR GRADING.
7. CONSTRUCTION CHANGE. ANY CONSTRUCTION CHANGE MUST BE FIRST SUBMITTED TO THE CITY AS A REDLINE REVISION FOR REVIEW AND APPROVAL PRIOR TO IMPLEMENTING THE CHANGE IN THE FIELD. REFER TO THE CITY'S ENGINEERING AND CONSTRUCTION MANUAL.
8. PRE-CONSTRUCTION MEETING. A PRE-CONSTRUCTION MEETING SHALL BE SCHEDULED TWO WORK DAYS PRIOR TO THE START OF CONSTRUCTION. DURING CONSTRUCTION, A DEPENDABLE AND RESPONSIVE CONTRACTOR'S REPRESENTATIVE SHALL BE AT THE JOB SITE AT ALL TIMES.
9. UTILITIES. APPROVAL OF THESE PLANS BY THE CITY DOES NOT CONSTITUTE A REPRESENTATION AS TO THE ACCURACY OR COMPLETENESS OF THE LOCATION, NOR THE EXISTENCE OR NON-EXISTENCE OF ANY UNDERGROUND UTILITIES WITHIN THE PROJECT LIMITS. ANY UTILITY DAMAGED DURING THE PERFORMANCE OF THE WORK SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE GOVERNING AGENCY BY THE CONTRACTOR, AT HIS EXPENSE.
10. SURVEY. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE ENGINEER OF RECORD AND TO INSTALL STREET CENTERLINE MONUMENTS, AS REQUIRED BY RIVERSIDE COUNTY ORDINANCE NO. 491. CENTERLINE TIES SHALL BE PROVIDED TO THE CITY ENGINEER, UPON COMPLETION OF THE PROJECT AND BEFORE ACCEPTANCE IS GRANTED. ALL EXISTING MONUMENTATION (DISTURBED OR DESTROYED DURING CONSTRUCTION) SHALL BE REPLACED TO CITY STANDARDS IN ACCORDANCE WITH THE LAND SURVEYORS ACT AND THE STREETS AND HIGHWAY CODE, AND AS APPROVED BY THE CITY ENGINEER. UPON REQUEST, SURVEY CUTS SHEETS SHALL BE PROVIDED TO THE CITY ENGINEER.
11. DUST CONTROL. DUST SHALL BE CONTROLLED BY WATERING OR OTHER METHODS, AS APPROVED BY THE CITY ENGINEER AND SHALL COMPLY WITH SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT'S (SCAQMD) RULE 403.
12. CONSTRUCTION FENCING. A SIX FOOT CHAIN LINK FENCE IS REQUIRED ON ALL INDUSTRIAL AND COMMERCIAL PROJECTS UNTIL ROOF SYSTEMS ARE COMPLETED OR AS DEEMED NECESSARY BY THE CITY ENGINEER FOR PUBLIC SAFETY. THE MAINTENANCE OF THE FENCE IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
13. INSPECTIONS. ALL WORK PERFORMED WITHOUT PROPER INSPECTION FROM THE CITY MAY BE SUBJECT TO REJECTION.
14. OTHER CONSTRUCTION NOTES. REFER TO SEPARATE NOTES FOR GRADING, EROSION AND SEDIMENT CONTROL, PAVING AND TRAFFIC REQUIREMENTS, IF APPLICABLE.



INDEX MAP
SCALE: 1"=200'

SOILS ENGINEER:

GEOCON WEST, INC
41571 CORNING PLACE, SUITE 100
MURRIETA, CA 92562
(951) 304-2300

ENGINEER'S NOTICE TO CONTRACTORS

THE EXISTENCE AND LOCATION OF ANY UNDERGROUND UTILITIES OR STRUCTURES SHOWN ON THESE PLANS ARE OBTAINED BY SEARCH OF AVAILABLE RECORDS AND TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO EXISTING UTILITIES EXCEPT THOSE SHOWN ON THIS PLAN. THE CONTRACTOR IS REQUIRED TO TAKE ALL PRECAUTIONARY MEASURES TO PROTECT THE UTILITIES SHOWN, AND ANY OTHER LINES OR STRUCTURES NOT SHOWN ON THESE PLANS, AND IS RESPONSIBLE FOR PROTECTION OF AND ANY DAMAGE TO THESE LINES OR STRUCTURES.

CONSTRUCTION CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONSTRUCTION CONTRACTORS WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT. INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS, AND CONSTRUCTION CONTRACTOR FURTHER AGREES TO, DEFEND, INDEMNIFY, AND HOLD DESIGN PROFESSIONAL AND OWNER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT.

THE CONTRACTOR SHALL BE RESPONSIBLE TO REPORT DISCREPANCIES IN PLANS AND/OR FIELD CONDITIONS IMMEDIATELY TO THE DESIGN ENGINEER FOR RESOLUTION PRIOR TO CONSTRUCTION, AND SHALL BE RESPONSIBLE FOR DISCREPANCIES NOT SO REPORTED AND RESOLVED.

CAUTION: THE ENGINEER PREPARING THESE PLANS WILL NOT RESPONSIBLE FOR, OR LIABLE FOR, UNAUTHORIZED CHANGES OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE "PLANS".

SOURCE OF TOPOGRAPHY:

EXISTING TOPOGRAPHY SHOWN ON THESE PLANS WAS PROVIDED BY INLAND AERIAL SURVEYS, INC. COMPILED FROM AERIAL PHOTOGRAPHY DATED 05-18-16.

INDEX OF DRAWINGS

SHEET #	DESCRIPTION
1	TITLE SHEET
2	NOTES, QUANTITIES, DETAILS, AND TYPICAL SECTIONS
3	STREET IMPROVEMENT PLANS FROM STA. 86+00 - STA 95+00
4	STREET IMPROVEMENT PLANS FROM STA. 95+00 - STA 104+00
5	STREET IMPROVEMENT PLANS FROM STA. 104+00 - STA 111+00
6	STREET IMPROVEMENT PLANS FROM STA. 111+00 - STA 117+00
7	TYPICAL SECTIONS
8	TRAFFIC SIGNAL / SIGNING AND STRIPING TITLE SHEET
9-10	SIGNING AND STRIPING PLAN PECHANGA PARKWAY FROM VIA GILBERTO TO CASINO DRIVE NORTH
11	TRAFFIC SIGNAL PLAN PECHANGA PARKWAY AT WOLF VALLEY / VIA EDUARDO
12	TRAFFIC SIGNAL PLAN PECHANGA PARKWAY AT CASINO DRIVE NORTH
13-14	FIBER OPTIC COMMUNICATIONS PLAN GENERAL NOTES
15	FIBER OPTIC COMMUNICATIONS PLAN PECHANGA PARKWAY FROM STA. 70+00 - STA 92+50
16	FIBER OPTIC COMMUNICATIONS PLAN PECHANGA PARKWAY FROM STA. 92+50 - STA 116+50
17	FIBER OPTIC COMMUNICATIONS PLAN PECHANGA PARKWAY FROM STA. 116+50 - STA 121+00
18-19	FIBER OPTIC COMMUNICATIONS PLAN DETAILS
20	TRAFFIC CONTROL PLAN

BASIS OF BEARING:

THE BEARINGS FOR THIS SURVEY ARE BASED ON THE LINE BETWEEN STATIONS "PINYON 1" AND "LAKE MATHEWS" (POSITIONS PER NATIONAL GEODETIC SURVEY, GRS80 ELLIPSOID, CCS83, EPOCH 1995.5) AS SHOWN ON THE MAP FILED IN BOOK 102, PAGES 50 THROUGH 65 OF RECORDS OF SURVEYS IN THE OFFICE OF THE COUNTY RECORDER OF RIVERSIDE COUNTY, CALIFORNIA, BEING N 72ø55'01" W.

LEGEND OF SYMBOLS

ITEM	SYMBOL
EXISTING CONTOUR	420
EXISTING ELEVATION	(302.7)
TOP OF CURB ELEVATION	410.50 TC
8" CONCRETE CURB & GUTTER	
CONCRETE GUTTER	
PROPOSED FULL PAVEMENT SECTION	
0.10' GRIND AND OVERLAY	
DAYLIGHT LINE	
DIRECTION OF FLOW	
EXISTING WATER MAIN	W
EXISTING SEWER	S
EXISTING GAS	G
STREET LIGHT	
DEMOLITION LINE	
FEATHER AND OVERLAY AC PAVING	
EXISTING FENCE	X X
EXISTING RIGHT OF WAY LINE	
PROPOSED RIGHT OF WAY LINE	

ABBREVIATIONS:

FINISHED SURFACE	FS
FINISHED GRADE	FG
FLOW LINE	FL
TOP OF CURB	TC
FINISHED GRADE	FG
HIGH POINT	HP
LOW POINT	LP
BEGIN CURVE	BC
END CURVE	EC
POINT OF COMPOUND CURVATURE	PCC
POINT OF REVERSE CURVE	PRC
BEGIN VERTICAL CURVE	BVC
END VERTICAL CURVE	EVC
PERCENT	%
TYPICAL	TYP.
GRADE BREAK	GB
CATCH BASIN	CB
TOP OF SLOPE	TS
ASPHALTIC CONCRETE	AC
PROTECT IN PLACE	P.I.P.
EDGE OF PAVEMENT	EOP
CURB & GUTTER	CG
CURB & GUTTER	C&G
SIDEWALK	S/W
CENTERLINE	C/L
RIGHT OF WAY	R/W
ANGLE POINT	AP

Michael Baker INTERNATIONAL
40810 COUNTY CENTER DR., SUITE 100
TEMECULA, CA 92591
PHONE: (951) 676-8042
MBAKERINTL.COM

PROJECT NO. PW 15-14

CONSTRUCTION RECORD	DATE	BY	REVISIONS	DATE	ACC'D
CONTRACTOR					
INSPECTOR					
DATE COMPLETED					

BENCH MARK: 600-6-81 RESET 1999, A 3-1/4" ALUM. DISK ON TOP OF CURB IN THE NW'LY RETURN AT THE INTERSECTION OF HWY. 79 AND FRONT STREET.
ELEVATION 996.809

SCALE
HORIZONTAL: AS NOTED
VERTICAL: N/A

REGISTERED PROFESSIONAL ENGINEER FRANCISCO MARTINEZ JR. C-84640 CIVIL STATE OF CALIFORNIA

DESIGNED BY	DRAWN BY	CHECKED BY
CF	XL	FM

PLANS PREPARED UNDER THE SUPERVISION OF
DATE:
FRANCISCO MARTINEZ JR.
R.C.E. 84640

RECOMMENDED BY: DATE:
ACCEPTED BY: DATE:
THOMAS W. GARCIA
DIRECTOR OF PUBLIC WORKS/CITY ENGINEER
R.C.E. 48279

CITY OF TEMECULA DEPARTMENT OF PUBLIC WORKS

STREET IMPROVEMENT PLAN
PECHANGA PARKWAY
STA 86+00 - STA 117+00
TITLE SHEET

SHEET NO. 1 OF 19 SHEETS

NOT FOR CONSTRUCTION - 30% SUBMITTAL - 8/19/16

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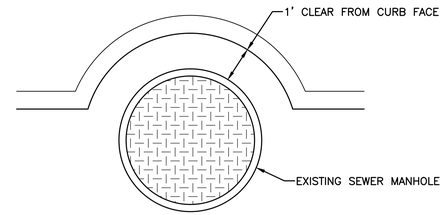
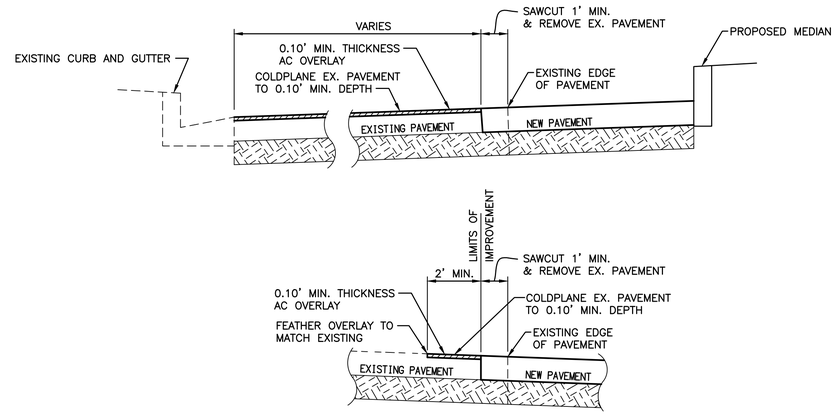
PAVING NOTES (CITY OF TEMECULA)

1. STANDARDS. ALL WORK AND MATERIALS (I.E., ASPHALT CONCRETE (AC) PAVEMENT, PORTLAND CONCRETE CEMENT (PCC), BASE COURSE, ETC.) SHALL CONFORM TO THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (I.E., GREENBOOK) LATEST EDITION, THE ENGINEERING AND CONSTRUCTION MANUAL, CITY AND ENGINEERING STANDARDS AND REQUIREMENTS.
2. PERMIT REQUIREMENTS. A GRADING OR ENCROACHMENT PERMIT(S) SHALL BE OBTAINED PRIOR TO PAVING. BEFORE OBTAINING AN ENCROACHMENT PERMIT, A CERTIFICATE OF INSURANCE AND THE REQUIRED BONDING (FOR PUBLIC IMPROVEMENTS) SHALL BE PROVIDED TO THE CITY ENGINEER. A CALTRANS ENCROACHMENT PERMIT MAY BE REQUIRED.
3. SOIL STERILIZER. AN APPROVED SOIL STERILIZER SHALL BE USED ON ALL BASE GRADE SURFACES PRIOR TO PAVING.
4. PRIME COAT. PRIME COAT IS REQUIRED ON SUBGRADE OR BASE WHEN THE BASE IS SUBJECTED TO SUBSTANTIAL CONSTRUCTION TRAFFIC (OR WHEN LONG TIME PERIODS ELAPSE BEFORE AC IS PLACED), AS DETERMINED BY THE SOILS ENGINEER AND APPROVED BY THE CITY ENGINEER.
5. TYPE I SLURRY. PRIOR TO PROJECT FINAL COMPLETION AND ACCEPTANCE OF STREETS INTO THE CITY'S MAINTAINED SYSTEM, TYPE I SLURRY SHALL BE PLACED OVER THE ASPHALT CONCRETE PAVED PROJECT STREET(S), AS DIRECTED BY THE CITY ENGINEER. THE ENTIRE ROADWAY WIDTH SHALL BE SWEPT AT LEAST 3 TIMES OR AS DIRECTED BY THE CITY ENGINEER.
6. FOG SEAL. FOR PRIVATE DEVELOPMENT, ASPHALTIC EMULSION (FOG SEAL) SHALL BE APPLIED NOT LESS THAN 14 DAYS FOLLOWING PLACEMENT OF THE ASPHALT SURFACING AND SHALL BE APPLIED AT A RATE OF 0.05 GALLONS PER SQ. YD. THE ASPHALT EMULSION SHALL CONFORM TO SECTIONS 37, 39 AND 94 OF THE STATE STANDARD SPECIFICATIONS.
7. TACK COAT. A TACK COAT SHALL BE APPLIED TO EXISTING PAVEMENT AND VERTICAL JOINTS, CONCRETE SURFACES AND ASPHALT CONCRETE BASE COURSE, IF IT HAS BEEN EXPOSED TO VEHICULAR LOADS. THE TACK COAT SHALL BE SLOW SETTING ANIONIC EMULSIFIED ASPHALT TYPE "SS-1H" CONFORMING TO THE GREENBOOK.
8. CERTIFICATION/TESTING. ALL SUBGRADE AND BASE GRADE SHALL BE CERTIFIED BY A LICENSED LAND SURVEYOR. BASE AND AC MATERIALS SHALL BE TESTED IN ACCORDANCE WITH THE CITY'S QUALITY ASSURANCE PROGRAM (QAP) AND/OR AS DIRECTED BY THE CITY ENGINEER.
9. PAVING MATERIALS.
   a. AC MATERIALS.
      1. AC MATERIALS SHALL CONFORM TO SECTION 203-6 OF THE GREENBOOK AND CITY STANDARDS.
         i. TYPE C2 PG70-10 FOR FINISH AND OVERLAY COURSES. THIS COURSE SHALL BE A MINIMUM OF 0.12 FOOT (1¼ INCHES) THICK INCLUDING GRIND AND OVERLAY INSTALLATIONS.
         ii. TYPE B PG70-10 FOR BASE COURSE. THIS COURSE SHALL CONTAIN THE BALANCE OF THE REQUIRED ASPHALT CONCRETE THICKNESS. THE MINIMUM AC LIFT FOR BASE COURSE IS 0.21 FOOT (2½ INCHES).
      2. THE MINIMUM AC THICKNESS IS 0.33 FOOT (4 INCHES).
      3. THE MAXIMUM AC LIFT IS 0.33 FOOT (4 INCHES).
      NOTE: "SHOVING" IS A TYPE OF AC PAVEMENT FAILURE THAT MAY BE CAUSED BY ASPHALT MIXES THAT ARE TOO RICH IN ASPHALT, THAT HAVE COURSE/FINE AGGREGATE THAT IS TOO ROUNDED, ETC. TYPICALLY, SHOVING RESULTS AT HILLS, CURVES OR INTERSECTIONS, CAUSED BY BRAKING OR ACCELERATING VEHICULAR FORCES. TO PREVENT OR MINIMIZE SHOVING, THE CITY RESERVES THE RIGHT TO REQUIRE A MODIFIED AC MIX DESIGN WITH PROPERTIES THAT PROVIDE HIGH STABILITY (I.E., ABILITY TO RESIST SHOVING AND RUTTING, ANGULAR AGGREGATE PARTICLES WITH A ROUGH SURFACE TEXTURE, ETC.) IN COMPLIANCE WITH THE GREENBOOK AND/OR CALTRANS SPECIFICATIONS.
   b. BASE MATERIALS.
      1. BASE MATERIALS SHALL CONFORM TO PROVISIONS OF THE GREENBOOK AND CURRENT CITY STANDARDS.
      2. FOR STREET SECTIONS, BASE COURSE MATERIAL SHALL BE CRUSHED AGGREGATE BASE (CAB) OR CRUSHED MISCELLANEOUS BASE (CMB) PER SECTIONS 200-2.2 AND 202-2.4 OF THE GREENBOOK. PRINCIPAL AND URBAN ARTERIAL ROADS REQUIRE CAB.
   c. PORTLAND CONCRETE CEMENT. ALL PCC USED SHALL BE IN CONFORMANCE TO THE GREENBOOK.
10. MIX DESIGNS. TEN WORKING DAYS PRIOR TO PAVING, THE PROPOSED MIX DESIGN(S) FROM THE SUPPLYING ASPHALT OR CONCRETE PLANT SHALL BE SUBMITTED TO THE CITY FOR REVIEW AND APPROVAL. THE MIX DESIGN(S) SHALL CLEARLY SHOW THAT THE DESIGN MEETS ALL CITY AND GREENBOOK REQUIREMENTS.
11. STREET SECTIONS. STREET STRUCTURAL SECTIONS SHOWN ON PLANS ARE TENTATIVE (I.E., THEY'RE USED FOR BONDING PURPOSES). THE FINAL STRUCTURAL SECTION REQUIREMENTS SHALL BE DETERMINED BY ADDITIONAL SOIL TESTS, AFTER ROUGH GRADING. THE STRUCTURAL SECTION DESIGN SHALL BE REVIEWED AND APPROVED BY THE CITY ENGINEER. SAID DESIGN SHALL ADHERE TO THE METHODOLOGY SET FORTH IN CHAPTER 600 OF CALTRANS HIGHWAY DESIGN MANUAL AND SHALL UTILIZE THE "R" VALUE METHOD (I.E., "R" VALUE TESTS SHALL BE CONDUCTED IN ACCORDANCE WITH CALIFORNIA TEST NO. 301 AND SHALL BE CERTIFIED BY A REGISTERED CIVIL ENGINEER). THE NUMBER AND LOCATIONS OF THESE TESTS SHALL BE SUBJECT TO APPROVAL BY THE CITY ENGINEER.
12. COMPACTION. PRIOR TO PLACEMENT OF BASE MATERIAL AND AC, COMPACTION REPORTS BY A SOILS ENGINEER, CERTIFYING 95% COMPACTION OF SUB-GRADE AND BASE MATERIAL, SHALL BE SUBMITTED TO THE CITY ENGINEER. _COMPACTION TEST OBSERVATION OF SUB-GRADE AND BASE GRADE MATERIALS SHALL BE COORDINATED TO INCLUDE THE SOILS ENGINEER AND THE PUBLIC WORKS INSPECTOR.
13. PAVING INSPECTIONS.
   a. BASE GRADE INSPECTION. ONE INSPECTION AT SUB-GRADE COMPLETION (PRIOR TO PLACEMENT OF BASE) IS REQUIRED BY THE DEPARTMENT OF PUBLIC WORKS.
   b. PAVING INSPECTIONS. TWO PAVING INSPECTIONS ARE REQUIRED BY THE DEPARTMENT OF PUBLIC WORKS: (1) PRIOR TO PAVING, AT BASE GRADE COMPLETION; AND (2) DURING PLACEMENT OF AC.
   c. DRIVEWAYS. ALL ONSITE PRIVATE RESIDENTIAL DRIVEWAYS SHALL COMPLY WITH THE APPROVED PLANS AND CITY STANDARDS, AND SHALL BE INSPECTED AND CLEARED BY THE CITY ENGINEER PRIOR TO PAVING.
14. UTILITIES. ALL UNDERGROUND FACILITIES AND LATERALS SHALL BE IN PLACE PRIOR TO PAVING.
15. TRENCHING FOR UTILITIES. ALL STREET TRENCHES SHALL CONFORM TO CITY AND ENGINEERING STANDARDS. REFER TO CITY STANDARD NO. 407 "TRENCH/POTHOLE REPAIR" FOR TRENCH MAINTENANCE AND/OR REPAIRS. IF TRENCHES IN CLOSE PROXIMITY AND PARALLEL TO GUTTER LINES RESULT IN LEAVING PAVEMENT STRIPS IN DISTRESS OR LESS THAN TWO FEET IN WIDTH (BETWEEN THE TRENCH AND GUTTER LINE), SAID PAVEMENT STRIPS SHALL BE REMOVED AND REPAVED, AT THE DISCRETION OF THE CITY ENGINEER. A TACK COAT SHALL BE APPLIED TO JOIN EXISTING ASPHALT CONCRETE AND VERTICAL SURFACES IN COMPLIANCE WITH THE GREENBOOK.
16. PARKING LOT GRADE. THE MINIMUM AC OR CONCRETE PAVEMENT GRADE SHALL BE ONE PERCENT (1%).
17. GUTTER LIP. A 3/8 INCH LIP SHALL BE PLACED ADJACENT TO CONCRETE GUTTERS IN ACCORDANCE WITH CITY AND ENGINEERING STANDARDS. REFER TO STANDARD NO. 200.
18. PAVING DETAIL AROUND MANHOLES, VALVE COVERS, ETC. ALL PAVING AROUND MANHOLES, UTILITY VALVE COVERS, ETC. SHALL BE IN ACCORDANCE WITH THE GREENBOOK REQUIREMENTS, UTILITY AGENCY REQUIREMENTS, CITY AND ENGINEERING STANDARDS. REFER TO CITY STANDARD NO. 503 "PAVING DETAIL AROUND MANHOLE."
19. AC PLACEMENT. THE METHOD OF DEPOSITING, DISTRIBUTING (I.E., USING A SELF-PROPELLED SPREADING/FINISHING MACHINE) AND ROLLING AC SHALL BE IN ACCORDANCE WITH THE GREENBOOK.
20. ACCEPTANCE OF PRODUCT. THE CONTRACTOR SHALL REPAIR ANY DEFECTIVE SURFACING DUE TO GRADE SETTLEMENT OF FILLS, TRENCH FILLS OR BASE MATERIAL, AS REQUIRED BY THE CITY ENGINEER. NO PAVEMENT "BIRDBATHS" OR DEVIATIONS GREATER THAN 1/8 INCH IN SIX FEET SHALL BE ACCEPTED.
21. PROTECTION OF WORK. THE CONTRACTOR SHALL: (A) PROTECT EXISTING STRUCTURES, CURB AND GUTTERS, SIDEWALKS, LANDSCAPING, CATCH BASIN DEPRESSIONS AND OTHER SURFACE FEATURES AGAINST DAMAGE CAUSED BY PAVING OPERATIONS AND ASPHALT SPRAY; (B) PROTECT COMPLETED WORK; ALL VEHICULAR TRAFFIC (I.E., MOVING OR STATIONARY LOADS) SHALL BE KEPT OFF NEWLY PAVED AREAS UNTIL PAVEMENT SURFACES HAVE COOLED DOWN ADEQUATELY; (C) CLEAN THE SITE (I.E., REMOVE LOOSE PAVEMENT AND AGGREGATE, CLEAN OUT ALL MANHOLE PITS, ENSURE FREE OPERATION OF VALVES AFTER PAVING, REMOVE ALL DEBRIS, RUBBISH AND EXCESS MATERIAL FROM WORK AREA, ETC.).
22. OTHER CONSTRUCTION NOTES. REFER TO SEPARATE NOTES FOR "GENERAL," "GRADING," AND "EROSION AND SEDIMENT CONTROL" REQUIREMENTS.



(26) SEWER NOTCH DETAIL
NTS



(14) OVERLAY JOIN DETAIL
NTS

CONSTRUCTION NOTES

1. CONSTRUCT CURB AND GUTTER PER C.O.T. STD. 201
2. CONSTRUCT SIDEWALK PER C.O.T. STD. 401
3. CONSTRUCT CROSS GUTTER PER C.O.T. STD. 210 & 211
4. CONSTRUCT ACCESS RAMP PER C.O.T. STD. 402
5. CONTRUCT MEDIAN CURB PER C.O.T. STD. 204
6. CONSTRUCT MASONRY RETAINING WALL TYPE 1 PER C.O.T. STD. C-25
7. CONSTRUCT 6 1/2" AC PAVEMENT OVER 12" C.A.B.
8. CONSTRUCT MEDIAN FLARE PER APWA STD. 141-2
9. CONSTRUCT MEDIAN TAPER PER APWA STD. 140-3
10. SAWCUT, REMOVE AND DISPOSE EXISTING CURB AND GUTTER
11. SAWCUT, REMOVE AND DISPOSE EXISTING SIDEWALK
12. SAWCUT, REMOVE AND DISPOSE EXISTING MEDIAN CURB
13. SAWCUT, REMOVE AND DISPOSE EXISTING CROSS GUTTER
14. SAWCUT AND OVERLAY PER DETAIL ON SHEET 2
15. RELOCATE EXISTING STREET LIGHT
16. INSTALL STREET LIGHT PER C.O.T. STD. 800 AND 802
17. CONSTRUCT BUS TURNOUT PER COUNTY OF RIVERSIDE STD. 814
18. ADJUST SEWER MANHOLE TO GRADE
19. REMOVE EXIST. CATCH BASIN
20. CONSTRUCT CATCH BASIN & LOCAL DEPRESSION PER SEPERATE PLANS
21. ADJUST PULL BOX TO GRADE
22. CONSTRUCT CASE 'C' CURB RAMP PER CALTRANS STD. A88A
23. SAWCUT, REMOVE AND DISPOSE EXISTING A.C. PAVEMENT
24. CONSTRUCT 4" AC PAVEMENT OVER 15" C.A.B.
25. RELOCATE EXISTING TRAFFIC SIGNAL AND APPURTANCES PER TRAFFIC SIGNAL PLANS
26. NOTCH MEDIAN CURB FACE EXISTING SEWER MANHOLE PER DETAIL ON SHEET 2
27. RELOCATE EXISTING R.C.W.D. UTILITY AND APPERTENCES PER SEPERATE PLANS
28. PROTECT IN PLACE EXISTING UTILITY AND/OR APPERTENANCES PER LOCATION ON PLAN

NOT FOR CONSTRUCTION - 30% SUBMITTAL - 8/19/16

Michael Baker INTERNATIONAL
40810 COUNTY CENTER DR., SUITE 100
TEMECULA, CA 92591
PHONE: (951) 676-8042
MBAKERINTL.COM

PROJECT NO. PW 15-14

CONSTRUCTION RECORD	DATE	BY	REVISIONS	DATE	ACC'D
CONTRACTOR					
INSPECTOR					
DATE COMPLETED					

BENCH MARK: 600-6-81 RESET 1999, A 3-1/4" ALUM. DISK ON TOP OF CURB IN THE NW'LY RETURN AT THE INTERSECTION OF HWY. 79 AND FRONT STREET. ELEVATION 996.809

SCALE: HORIZONTAL AS NOTED; VERTICAL N/A

REGISTERED PROFESSIONAL ENGINEER FRANCISCO MARTINEZ JR. C-84640 CIVIL STATE OF CALIFORNIA

DESIGNED BY	DRAWN BY	CHECKED BY
CF	XL	FM

PLANS PREPARED UNDER THE SUPERVISION OF
FRANCISCO MARTINEZ JR. DATE:
R.C.E. 84640

RECOMMENDED BY: DATE:
ACCEPTED BY: DATE:
THOMAS W. GARCIA
DIRECTOR OF PUBLIC WORKS/CITY ENGINEER
R.C.E. 48279

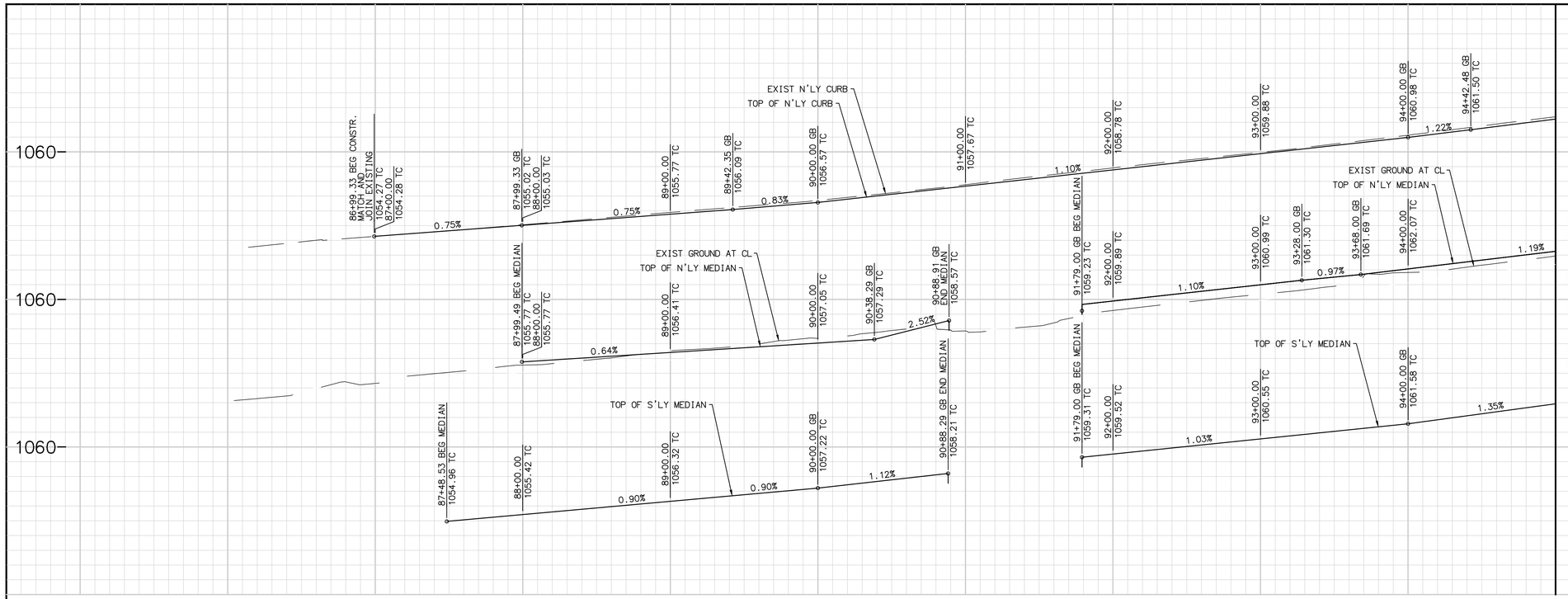
CITY OF TEMECULA — DEPARTMENT OF PUBLIC WORKS

STREET IMPROVEMENT PLAN
PECHANGA PARKWAY

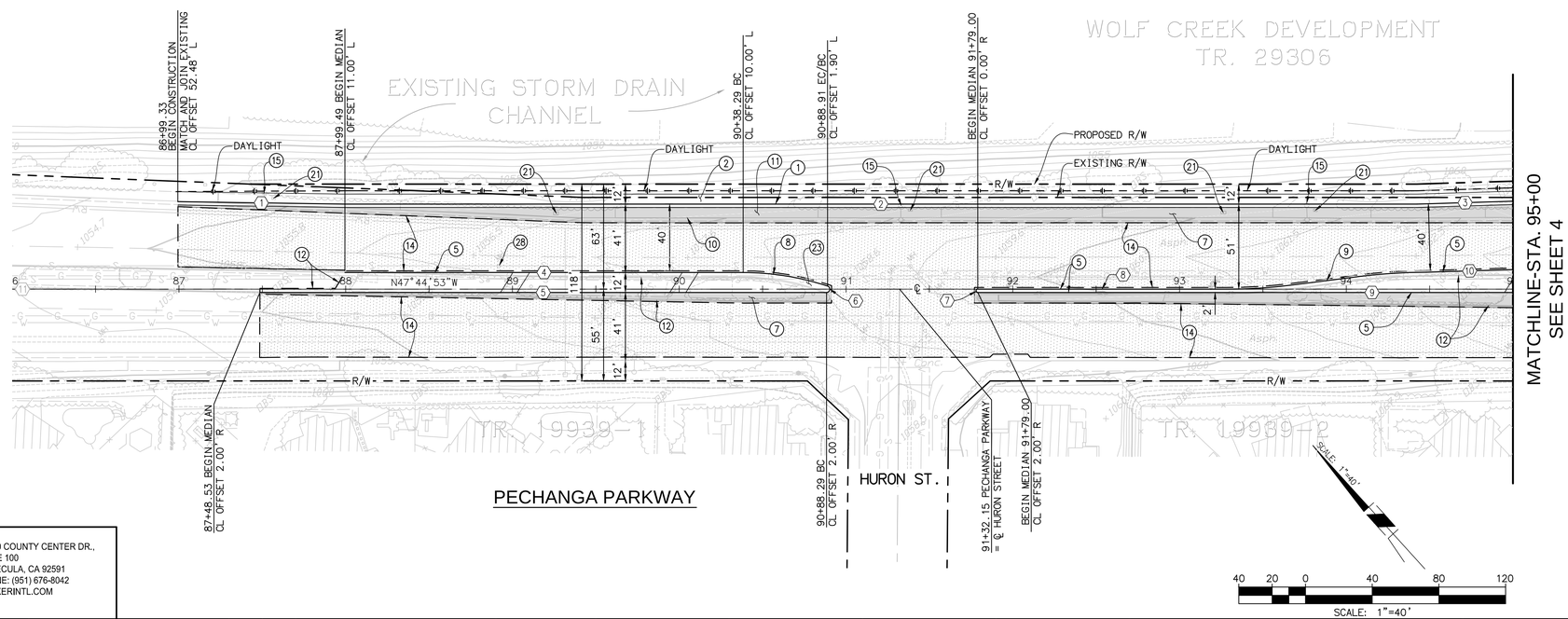
NOTES, QUANTITIES, DETAILS

SHEET NO. 2 OF 19 SHEETS

H:\PDATA\153547\CADD\LAND\DLV\IMPROVE\ST\153547-ST-002.DWG CANDICE.FENTON 8/16/16 11:43 am



PROFILE SCALE
HORIZ. : 1" = 40'
VERT. : 1" = 4'



CONSTRUCTION NOTES

1. CONSTRUCT CURB AND GUTTER PER C.O.T. STD. 201
2. CONSTRUCT SIDEWALK PER C.O.T. STD. 401
5. CONTRUCT MEDIAN CURB PER C.O.T. STD. 204
7. CONSTRUCT 6 1/2" AC PAVEMENT OVER 12" C.A.B.
8. CONSTRUCT MEDIAN FLARE PER APWA STD. 141-2
9. CONSTRUCT MEDIAN TAPER PER APWA STD. 140-3
10. SAWCUT, REMOVE AND DISPOSE EXISTING CURB AND GUTTER
11. SAWCUT, REMOVE AND DISPOSE EXISTING SIDEWALK
12. SAWCUT, REMOVE AND DISPOSE EXISTING MEDIAN CURB
14. SAWCUT AND OVERLAY PER DETAIL ON SHEET 2
15. RELOCATE EXISTING STREET LIGHT
21. ADJUST PULL BOX TO GRADE
23. SAWCUT, REMOVE AND DISPOSE EXISTING A.C. PAVEMENT
28. PROTECT IN PLACE EXISTING UTILITY AND/OR APPERTENANCES PER LOCATION ON PLAN

LINE/CURVE DATA TABLE

NO.	BEARING/DELTA	RADIUS	LENGTH	TANGENT	NOTE
1	N46°54'10"W	--	100.01'	--	TYPE A-8 C&G
2	N47°44'53"W	--	643.15'	--	TYPE A-8 C&G
3	N49°30'02"W	--	57.55'	--	TYPE A-8 C&G
4	N47°44'53"W	--	238.81'	--	TYPE D-8 CURB
5	N47°44'53"W	--	339.76'	--	TYPE D-8 CURB
6	161°50'10"	2.00'	5.65'	12.51'	TYPE D-8 CURB
7	180°00'00"	1.00'	3.14'	--	TYPE D-8 CURB
8	N47°44'53"W	--	149.00'	--	TYPE D-8 CURB
9	N47°44'53"W	--	321.00'	--	TYPE D-8 CURB
10	N49°30'02"W	--	52.02'	--	TYPE D-8 CURB

Michael Baker INTERNATIONAL
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TEMECULA, CA 92591
PHONE: (951) 676-8042
MBAKERINTL.COM

PROJECT NO. PW 15-14

CONSTRUCTION RECORD	DATE	BY	REVISIONS	DATE	ACC'D
CONTRACTOR					
INSPECTOR					
DATE COMPLETED					

BENCH MARK: 600-6-81 RESET 1999, A 3-1/4" ALUM. DISK ON TOP OF CURB IN THE NW'LY RETURN AT THE INTERSECTION OF HWY. 79 AND FRONT STREET.
ELEVATION 996.809

SCALE: HORIZONTAL AS NOTED; VERTICAL N/A

REGISTERED PROFESSIONAL ENGINEER FRANCISCO MARTINEZ JR. C-84640 CIVIL STATE OF CALIFORNIA

DESIGNED BY	DRAWN BY	CHECKED BY
CF	XL	FM

PLANS PREPARED UNDER THE SUPERVISION OF
DATE:
FRANCISCO MARTINEZ JR.
R.C.E. 84640

RECOMMENDED BY: DATE:
ACCEPTED BY: DATE:
THOMAS W. GARCIA
DIRECTOR OF PUBLIC WORKS/CITY ENGINEER
R.C.E. 48279

CITY OF TEMECULA — DEPARTMENT OF PUBLIC WORKS

STREET IMPROVEMENT PLAN
PECHANGA PARKWAY

STA. 86+00 TO 95+00

SHEET NO. 3 OF 19 SHEETS

NOT FOR CONSTRUCTION - 30% SUBMITTAL - 8/19/16

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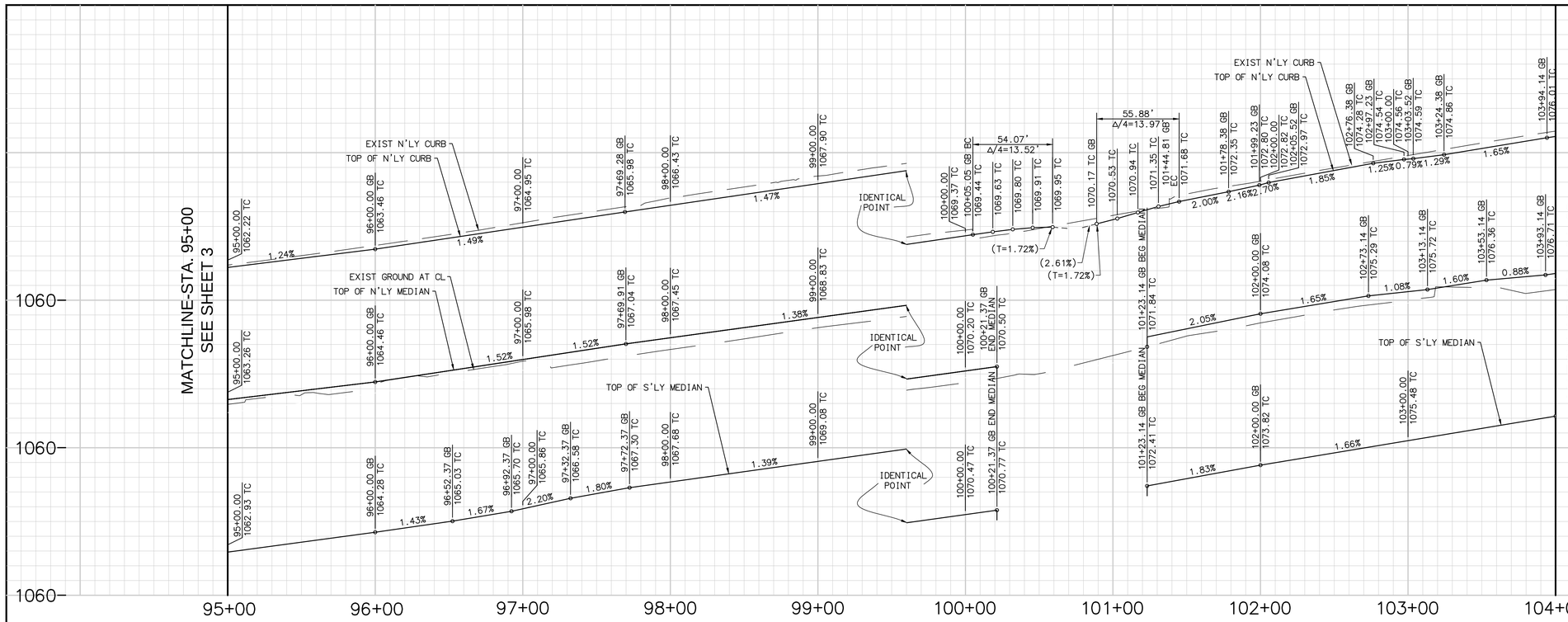
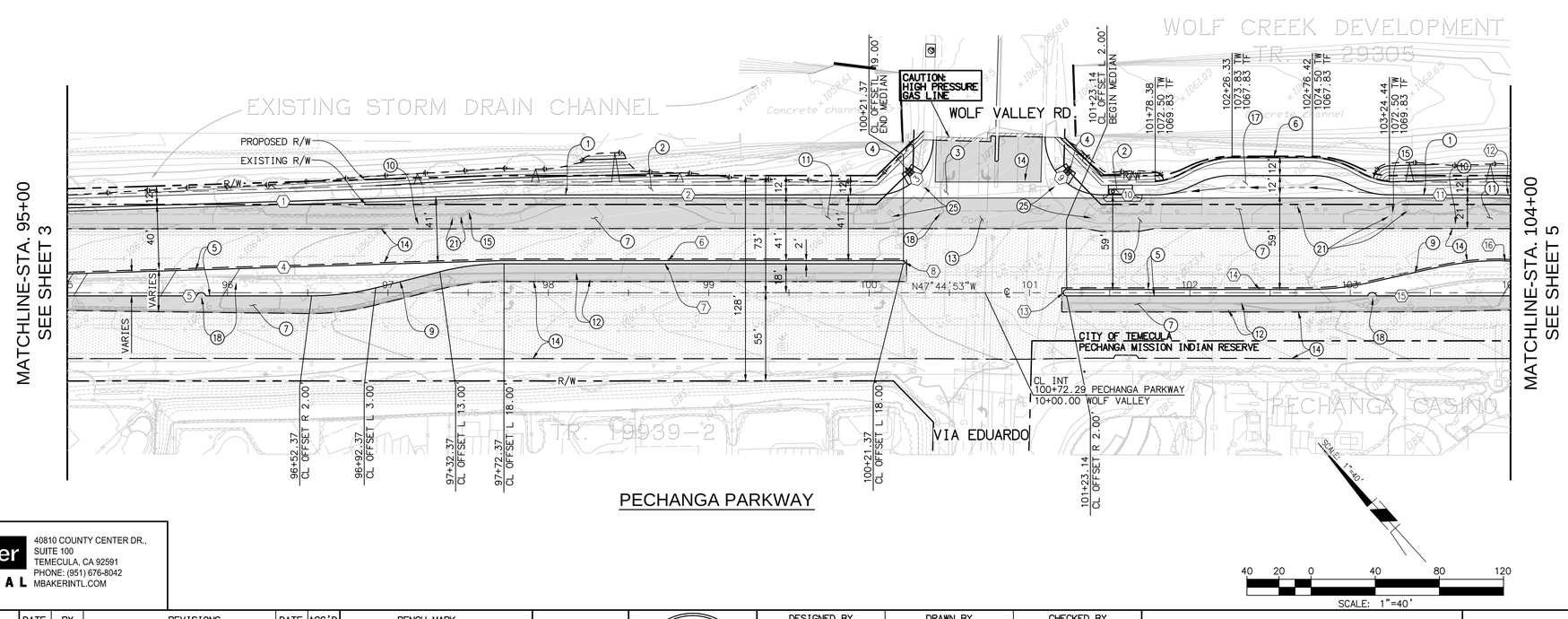


PROFILE SCALE
HORIZ. : 1" = 40'
VERT. : 1" = 4'



CONSTRUCTION NOTES

1. CONSTRUCT CURB AND GUTTER PER C.O.T. STD. 201
2. CONSTRUCT SIDEWALK PER C.O.T. STD. 401
3. CONSTRUCT CROSS GUTTER PER C.O.T. STD. 210 & 211
4. CONSTRUCT ACCESS RAMP PER C.O.T. STD. 402
5. CONTRUCT MEDIAN CURB PER C.O.T. STD. 204
6. CONSTRUCT RETAINING WALL PER C.O.T. RETAINING WALL STANDARD
7. CONSTRUCT 6" AC PAVEMENT OVER 12" C.A.B.
9. CONSTRUCT MEDIAN TAPER PER APWA STD. 140-3
10. SAWCUT, REMOVE AND DISPOSE EXISTING CURB AND GUTTER
11. SAWCUT, REMOVE AND DISPOSE EXISTING SIDEWALK
12. SAWCUT, REMOVE AND DISPOSE EXISTING MEDIAN CURB
13. SAWCUT, REMOVE AND DISPOSE EXISTING CROSS GUTTER
14. SAWCUT AND OVERLAY PER DETAIL ON SHEET 2
15. RELOCATE EXISTING STREET LIGHT
17. CONSTRUCT BUS TURNOUT PER COUNTY OF RIVERSIDE STD. 814
18. ADJUST SEWER MANHOLE TO GRADE
19. REMOVE EXIST. CATCH BASIN
21. ADJUST PULL BOX TO GRADE
25. RELOCATE EXISTING TRAFFIC SIGNAL AND APPURTANCES PER TRAFFIC SIGNAL PLANS.

LINE/CURVE DATA TABLE

NO	BEARING/DELTA	RADIUS	LENGTH	TANGENT	NOTE
1	N49°30'02"W	--	269.41'	--	TYPE A-8 C&G
2	N47°44'53"W	--	235.77'	--	TYPE A-8 C&G
3	88°30'47"	35.00'	54.07'	34.10'	TYPE A-8 C&G
4	N49°30'02"W	--	270.04'	--	TYPE D-8 CURB
5	N47°44'53"W	--	152.37'	--	TYPE D-8 CURB
6	N47°44'53"W	--	251.45'	--	TYPE D-8 CURB
7	N47°44'53"W	--	249.00'	--	TYPE D-8 CURB
8	180°00'00"	1.00'	3.14'	--	TYPE D-8 CURB
9	91°28'21"	35.00'	55.88'	35.91'	TYPE A-8 C&G
10	N47°44'53"W	--	33.56'	--	TYPE A-8 C&G
11	N47°44'53"W	--	69.77'	--	TYPE A-8 C&G
12	N44°55'58"W	--	5.86'	--	TYPE A-8 C&G
13	180°00'00"	2.00'	6.28'	--	TYPE D-8 CURB
14	N47°44'53"W	--	150.00'	--	TYPE D-8 CURB
15	N47°44'53"W	--	276.86'	--	TYPE D-8 CURB
16	N44°55'58"W	--	6.87'	--	TYPE D-8 CURB

PROJECT NO. PW 15-14

Michael Baker INTERNATIONAL
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MBAKERINTL.COM

CONSTRUCTION RECORD	DATE	BY	REVISIONS	DATE	ACC'D
CONTRACTOR					
INSPECTOR					
DATE COMPLETED					

BENCH MARK
600-6-81 RESET 1999. A 3-1/4" ALUM. DISK ON TOP OF CURB IN THE NW'LY RETURN AT THE INTERSECTION OF HWY. 79 AND FRONT STREET.
ELEVATION 996.809

SCALE
HORIZONTAL: AS NOTED
VERTICAL: N/A

REGISTERED PROFESSIONAL ENGINEER FRANCISCO MARTINEZ JR. C-84640 CIVIL STATE OF CALIFORNIA

DESIGNED BY	DRAWN BY	CHECKED BY
CF	XL	FM

PLANS PREPARED UNDER THE SUPERVISION OF
DATE:
FRANCISCO MARTINEZ JR.
R.C.E. 84640

RECOMMENDED BY: DATE:
ACCEPTED BY: DATE:
THOMAS W. GARCIA
DIRECTOR OF PUBLIC WORKS/CITY ENGINEER
R.C.E. 48279

CITY OF TEMECULA — DEPARTMENT OF PUBLIC WORKS

STREET IMPROVEMENT PLAN
PECHANGA PARKWAY

STA. 95+00 TO 104+00

SHEET NO. 4 OF 19 SHEETS

NOT FOR CONSTRUCTION - 30% SUBMITTAL - 8/19/16

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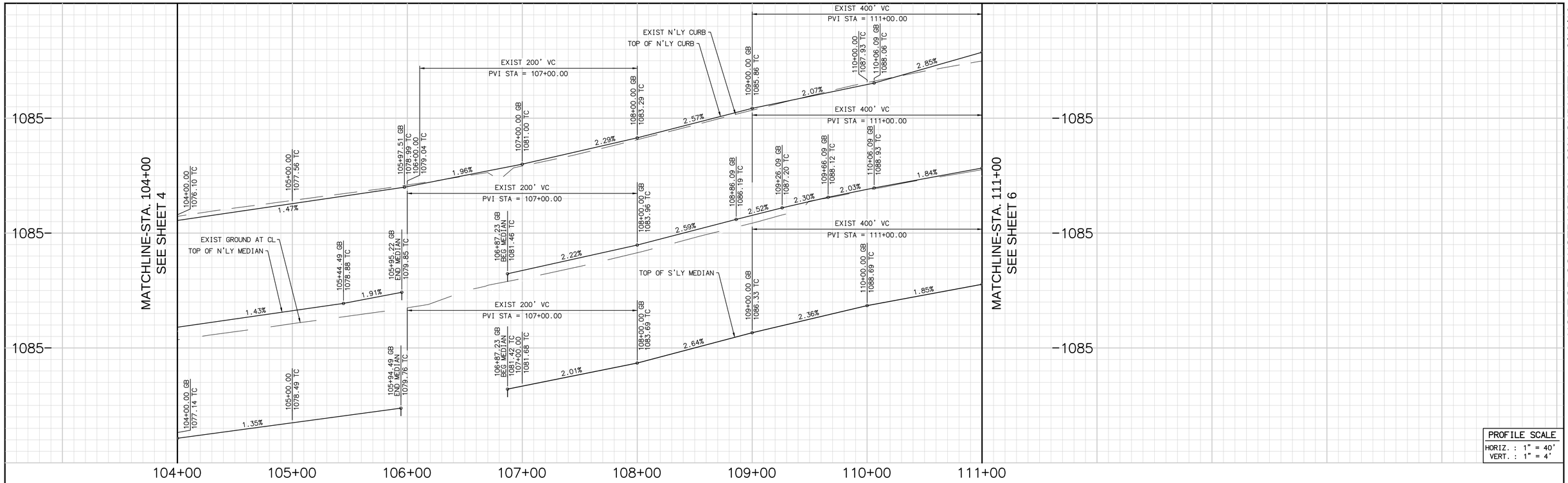
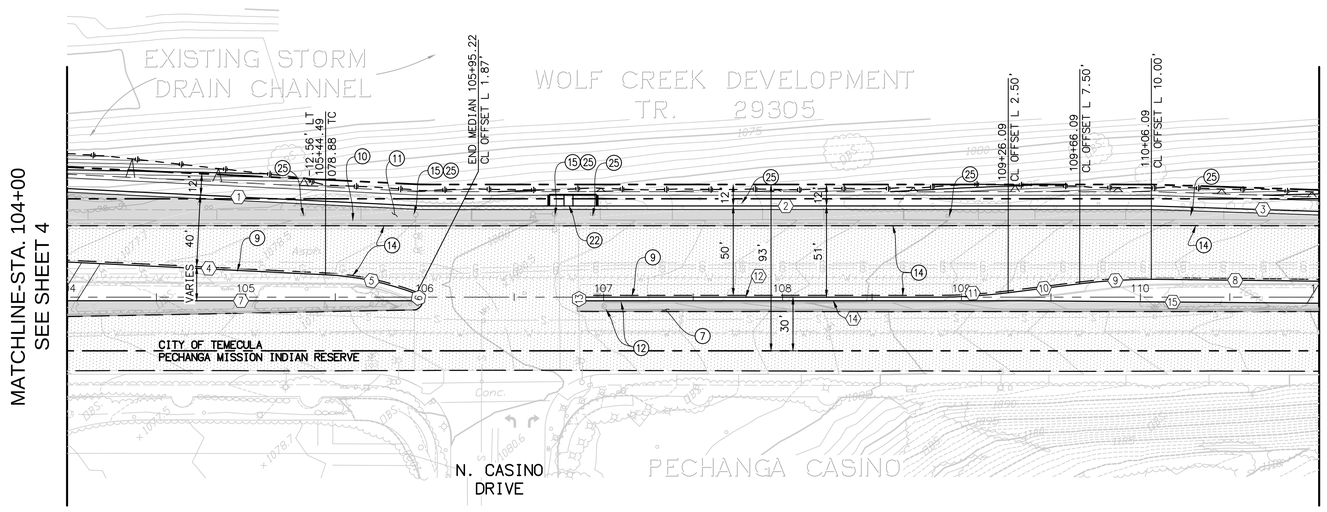


NOT FOR CONSTRUCTION - 30% SUBMITTAL - 8/19/16

PROFILE SCALE
HORIZ. : 1" = 40'
VERT. : 1" = 4'



PECHANGA PARKWAY

CONSTRUCTION NOTES

7. CONSTRUCT 6 1/2" AC PAVEMENT OVER 12" C.A.B.
9. CONSTRUCT MEDIAN TAPER PER APWA STD. 140-3
10. SAWCUT, REMOVE AND DISPOSE EXISTING CURB AND GUTTER
11. SAWCUT, REMOVE AND DISPOSE EXISTING SIDEWALK
12. SAWCUT, REMOVE AND DISPOSE EXISTING MEDIAN CURB
14. SAWCUT AND OVERLAY PER DETAIL ON SHEET 2
15. RELOCATE EXISTING STREET LIGHT
22. CONSTRUCT CASE 'C' CURB RAMP PER CALTRANS STD. A88A
25. RELOCATE EXISTING TRAFFIC SIGNAL AND APPURTANCES PER TRAFFIC SIGNAL PLANS

LINE/CURVE DATA TABLE

NO.	BEARING/DELTA	RADIUS	LENGTH	NOTE
1	N44°55'58"W	--	203.61'	TYPE A-8 C&G
2	N47°44'53"W	--	408.59'	TYPE A-8 C&G
3	N45°53'01"W	--	250.13'	TYPE A-8 C&G
4	N44°55'58"W	--	144.66'	TYPE D-8 CURB
5	18°10'11"	164.17'	52.06'	TYPE D-8 CURB
6	159°22'25"	2.00'	5.56'	TYPE D-8 CURB
7	N47°44'53"W	--	194.49'	TYPE D-8 CURB
8	N47°06'30"W	--	93.91'	TYPE D-8 CURB
9	07°07'55"	322.19'	40.10'	TYPE D-8 CURB
10	N54°52'23"W	--	40.31'	TYPE D-8 CURB
11	07°07'55"	322.19'	40.10'	TYPE D-8 CURB
12	N47°44'53"W	--	198.87'	TYPE D-8 CURB
13	180°00'00"	1.00'	3.14'	TYPE D-8 CURB
14	N47°44'53"W	--	249.00'	TYPE D-8 CURB
15	N47°15'27"W	--	163.78'	TYPE D-8 CURB

SCALE: 1"=40'

40 20 0 40 80 120

SCALE: 1"=40'

Michael Baker INTERNATIONAL
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PROJECT NO. PW 15-14

CONSTRUCTION RECORD	DATE	BY	REVISIONS	DATE	ACC'D
CONTRACTOR					
INSPECTOR					
DATE COMPLETED					

BENCH MARK

600-6-81 RESET 1999, A 3-1/4" ALUM. DISK ON TOP OF CURB IN THE NW'LY RETURN AT THE INTERSECTION OF HWY. 79 AND FRONT STREET.

ELEVATION 996.809

SCALE	
HORIZONTAL	AS NOTED
VERTICAL	N/A

REGISTERED PROFESSIONAL ENGINEER FRANCISCO MARTINEZ JR. C-84640 CIVIL STATE OF CALIFORNIA

DESIGNED BY	DRAWN BY	CHECKED BY
CF	XL	FM

PLANS PREPARED UNDER THE SUPERVISION OF

DATE:

FRANCISCO MARTINEZ JR.
R.C.E. 84640

RECOMMENDED BY: DATE:

ACCEPTED BY: DATE:

THOMAS W. GARCIA
DIRECTOR OF PUBLIC WORKS/CITY ENGINEER
R.C.E. 48279

CITY OF TEMECULA DEPARTMENT OF PUBLIC WORKS

STREET IMPROVEMENT PLAN
PECHANGA PARKWAY

STA. 104+00 TO 111+00

SHEET NO. 5 OF 19 SHEETS

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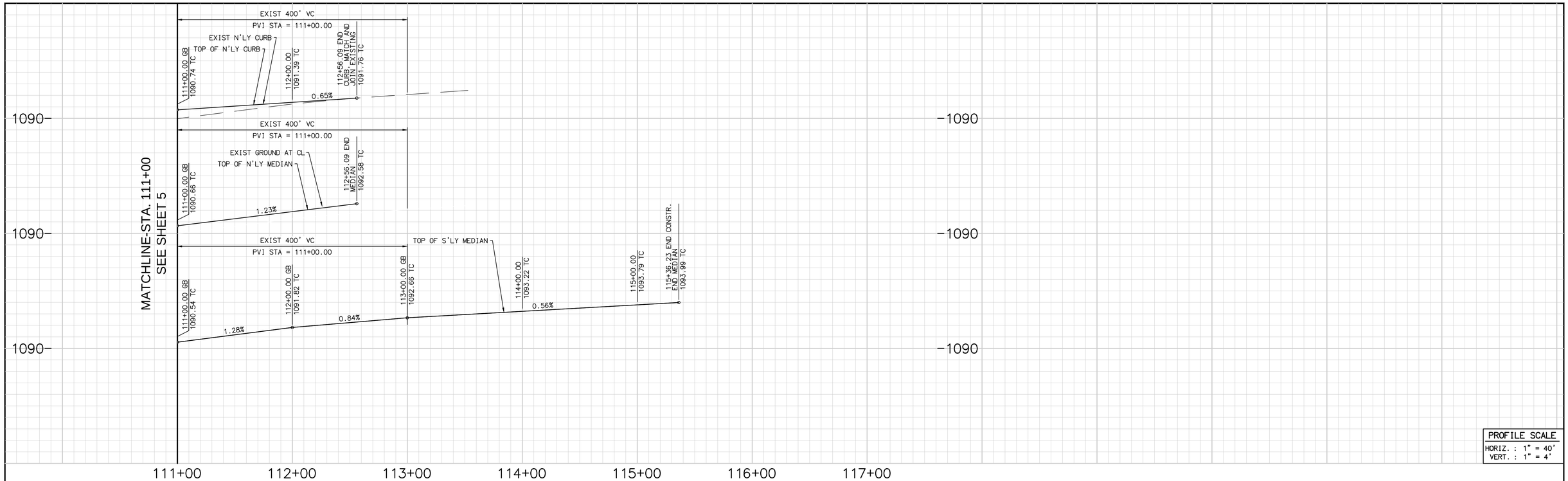
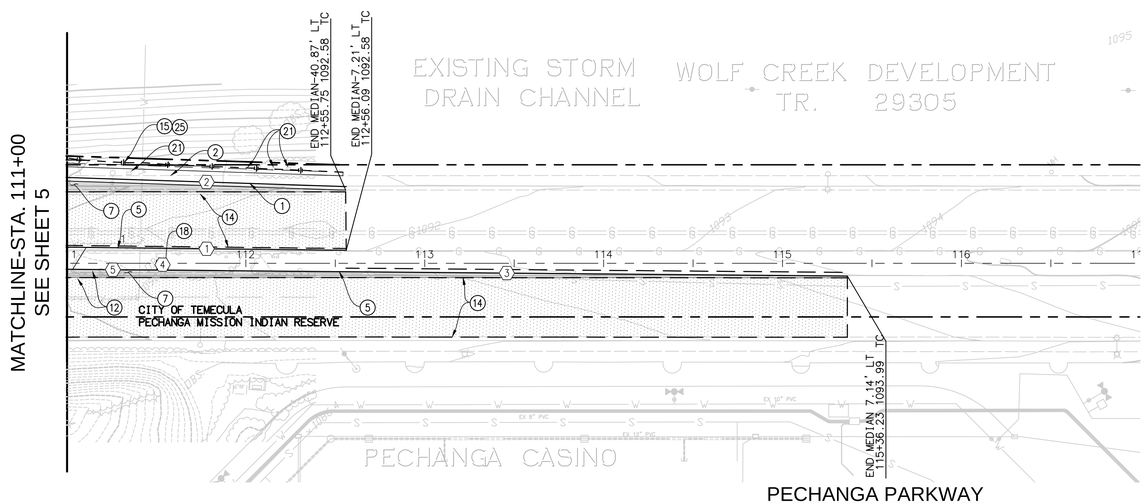


PROFILE SCALE
HORIZ. : 1" = 40'
VERT. : 1" = 4'



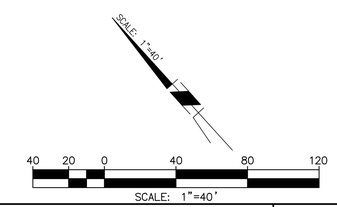
PECHANGA PARKWAY

CONSTRUCTION NOTES

1. CONSTRUCT CURB AND GUTTER PER C.O.T. STD. 201
2. CONSTRUCT SIDEWALK PER C.O.T. STD. 401
5. CONTRUCT MEDIAN CURB PER C.O.T. STD. 204
7. CONSTRUCT 6" AC PAVEMENT OVER 12" C.A.B.
12. SAWCUT, REMOVE AND DISPOSE EXISTING MEDIAN CURB
14. SAWCUT AND OVERLAY PER DETAIL ON SHEET 2
15. RELOCATE EXISTING STREET LIGHT
18. ADJUST SEWER MANHOLE TO GRADE
21. ADJUST PULL BOX TO GRADE
25. RELOCATE EXISTING TRAFFIC SIGNAL AND APPURTANCES PER TRAFFIC SIGNAL PLANS.

LINE/CURVE DATA TABLE

NO	BEARING/DELTA	RADIUS	LENGTH	NOTE
1	N47°06'37"W	--	156.10'	TYPE D-8 CURB
2	N45°53'01"W	--	156.18'	TYPE A-8 C&G
3	N47°15'27"W	--	380.75'	TYPE A-8 C&G
4	222°00'41"	2.25'	8.72'	TYPE A-8 C&G
5	N47°15'27"W	--	51.29'	TYPE A-8 C&G



PROJECT NO. PW 15-14

Michael Baker INTERNATIONAL
40810 COUNTY CENTER DR., SUITE 100
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CONSTRUCTION RECORD	DATE	BY	REVISIONS	DATE	ACC'D
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BENCH MARK
600-6-81 RESET 1999, A 3-1/4" ALUM. DISK ON TOP OF CURB IN THE NW'LY RETURN AT THE INTERSECTION OF HWY. 79 AND FRONT STREET.
ELEVATION 996.809

SCALE
HORIZONTAL: AS NOTED
VERTICAL: N/A

REGISTERED PROFESSIONAL ENGINEER FRANCISCO MARTINEZ JR. C-84640 CIVIL STATE OF CALIFORNIA

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R.C.E. 48279

CITY OF TEMECULA — DEPARTMENT OF PUBLIC WORKS

STREET IMPROVEMENT PLAN
PECHANGA PARKWAY

STA. 111+00 TO 117+00

SHEET NO. 6 OF 19 SHEETS

NOT FOR CONSTRUCTION - 30% SUBMITTAL - 8/19/16

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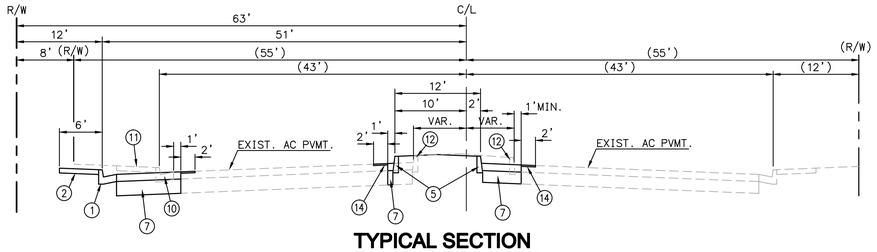
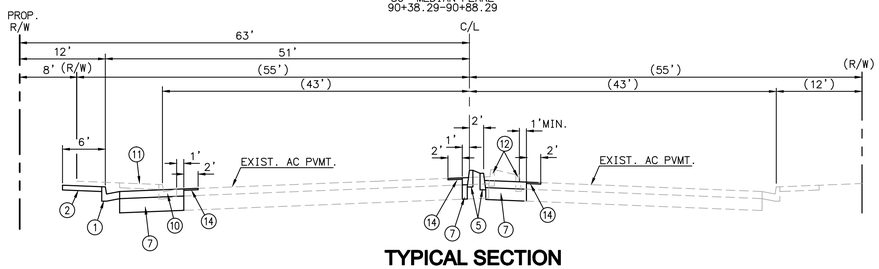


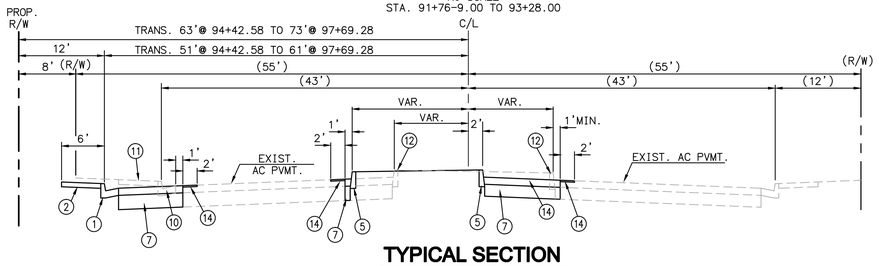
TYPICAL SECTION

NO SCALE
STA. 87+48.29 TO 90+38.29
50' MEDIAN FLARE
90+38.29-90+88.29



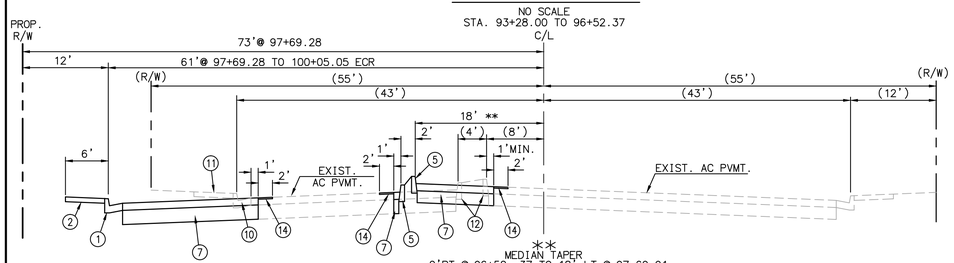
TYPICAL SECTION

NO SCALE
STA. 91+76-9.00 TO 93+28.00



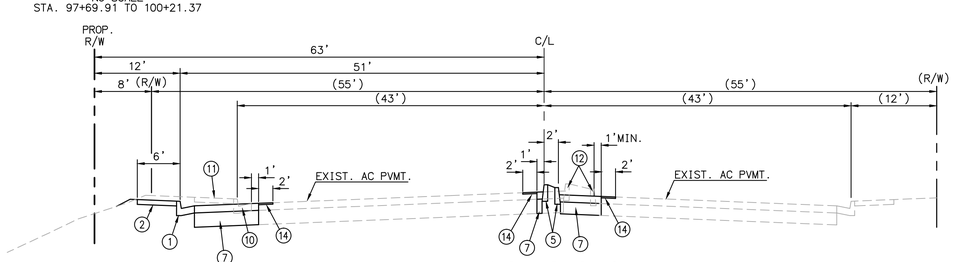
TYPICAL SECTION

NO SCALE
STA. 93+28.00 TO 96+52.37



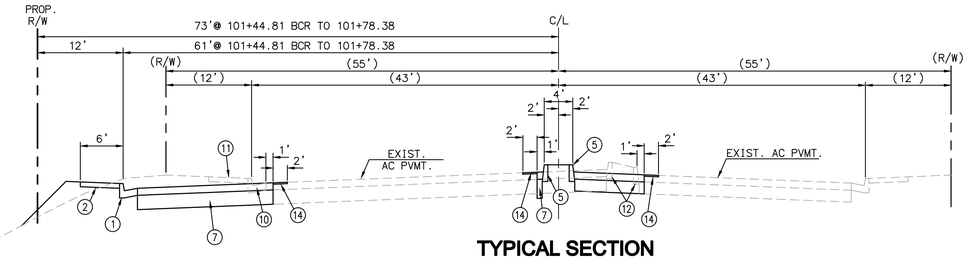
TYPICAL SECTION

NO SCALE
STA. 97+69.91 TO 100+21.37



TYPICAL SECTION

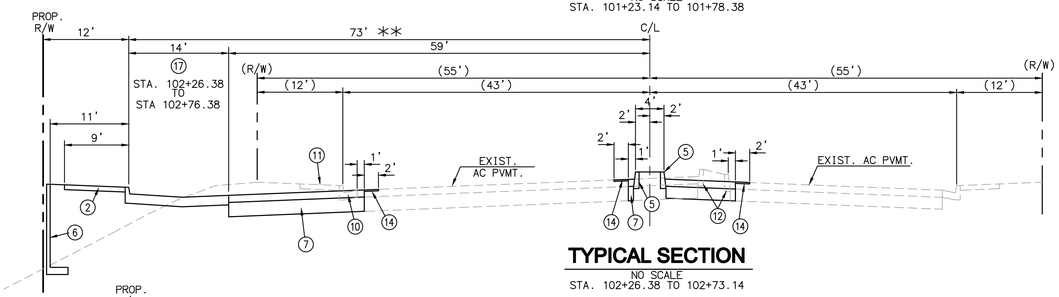
NO SCALE
STA. 106+87.23 TO 108+86.09



TYPICAL SECTION

NO SCALE
STA. 101+23.14 TO 101+78.38

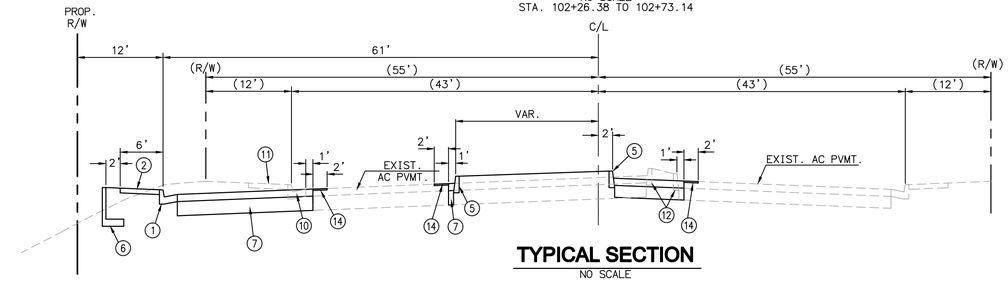
**
BUS TURNOUT TRANSITION
61'LT.-73' LT.
101+78.38 TO 102+26.38
73' LT.-61' LT.
102+76.38 TO 103+24.38



TYPICAL SECTION

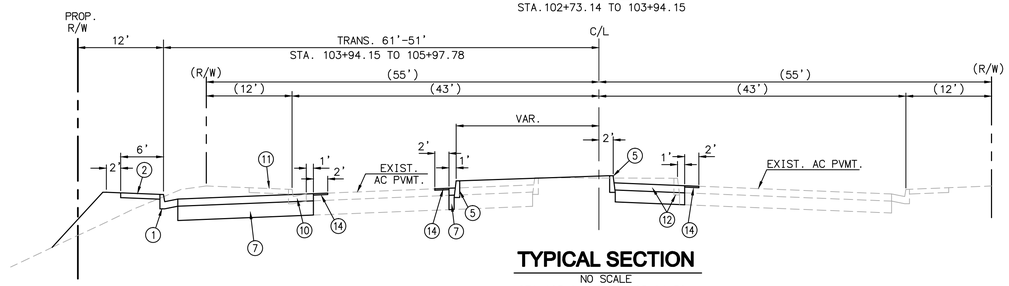
NO SCALE
STA. 102+26.38 TO 102+73.14

BUS TURNOUT TRANSITION
73' LT.-61' LT.
102+76.38 TO 103+24.38



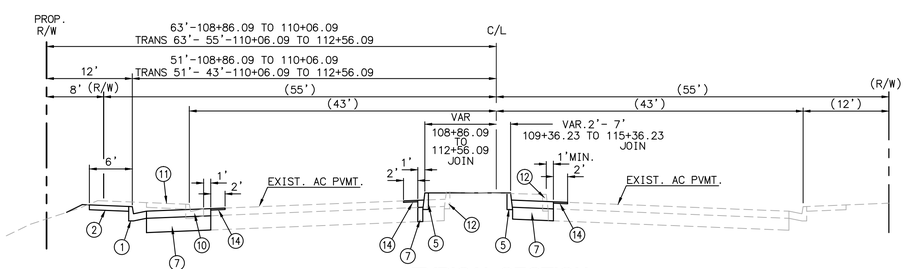
TYPICAL SECTION

NO SCALE
STA.102+73.14 TO 103+94.15



TYPICAL SECTION

NO SCALE
STA.103+94.15 TO 105+94.50



TYPICAL SECTION

NO SCALE
STA. 108+86.09 TO 115+36.23

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MBAKERINTL.COM

PROJECT NO. PW 15-14

CONSTRUCTION RECORD	DATE	BY	REVISIONS	DATE	ACC'D
CONTRACTOR					
INSPECTOR					
DATE COMPLETED					

BENCH MARK

600-6-81 RESET 1999, A 3-1/4" ALUM. DISK ON TOP OF CURB IN THE NW'LY RETURN AT THE INTERSECTION OF HWY. 79 AND FRONT STREET.

ELEVATION 996.809

SCALE
HORIZONTAL: AS NOTED
VERTICAL: N/A

REGISTERED PROFESSIONAL ENGINEER — FRANCISCO MARTINEZ JR. — C-84640 — CIVIL — STATE OF CALIFORNIA

DESIGNED BY	DRAWN BY	CHECKED BY
CF	XL	FM

PLANS PREPARED UNDER THE SUPERVISION OF

DATE:

FRANCISCO MARTINEZ JR.
R.C.E. 84640

RECOMMENDED BY: DATE:

ACCEPTED BY: DATE:

THOMAS W. GARCIA
DIRECTOR OF PUBLIC WORKS/CITY ENGINEER
R.C.E. 48279

CITY OF TEMECULA — DEPARTMENT OF PUBLIC WORKS

STREET IMPROVEMENT PLAN
PECHANGA PARKWAY
TYPICAL SECTIONS

SHEET NO. 7 OF 19 SHEETS

NOT FOR CONSTRUCTION - 30% SUBMITTAL - 8/19/16

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CITY OF TEMECULA

TRAFFIC SIGNAL AND SIGNING AND STRIPING PLAN

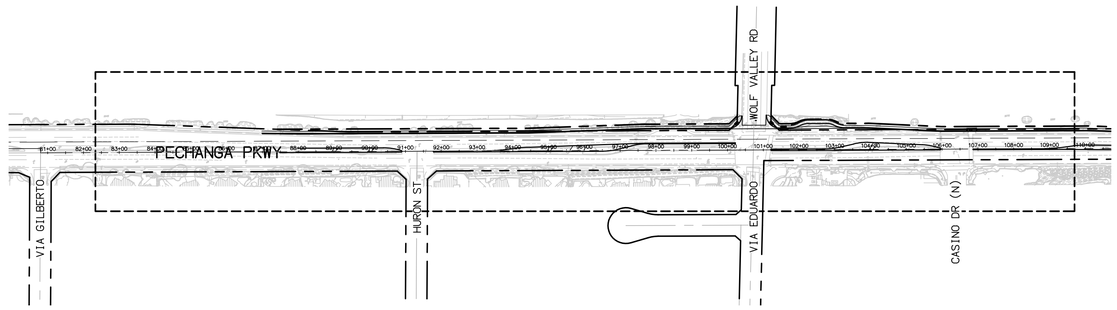
PECHANGA PARKWAY

TRAFFIC SIGNAL GENERAL NOTES

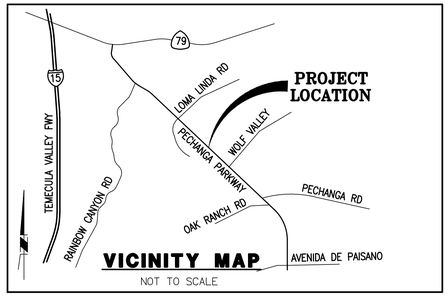
1. ALL WORK MATERIAL AND EQUIPMENT SHALL CONFORM TO THE PROVISIONS OF THE STANDARD PLANS AND SPECIFICATIONS OF THE STATE OF CALIFORNIA, DEPARTMENT OF TRANSPORTATION (CALTRANS) DATED 2015, AND THE SPECIAL PROVISIONS.
2. A CITY OF TEMECULA ENCROACHMENT PERMIT SHALL BE REQUIRED TO PERFORM WORK WITHIN THE PUBLIC RIGHT-OF-WAY. CITY APPROVED PLANS DO NOT RELIEVE THE CONTRACTOR FROM THE RESPONSIBILITY OF OBTAINING AN ENCROACHMENT PERMIT. A COPY OF THE PERMIT SHALL BE KEPT ON THE CONSTRUCTION SITE AT ALL TIMES.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A DETAILED TRAFFIC CONTROL PLAN FOR ANY LANE CLOSURES ASSOCIATED WITH THE TRAFFIC SIGNAL CONSTRUCTION.
4. THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES IS APPROXIMATE ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE EXACT LOCATION AND DEPTH OF ALL UTILITIES INCLUDING THOSE NOT SHOWN ON THE PLAN PRIOR TO START OF WORK. CONTACT UNDERGROUND SERVICE ALERT AT (800) 422-4133.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AN ELECTRICAL PERMIT FROM THE CITY'S BUILDING AND SAFETY DEPARTMENT FOR THE SERVICE PEDESTAL.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND NOTIFYING AFFECTED AGENCIES AT LEAST 72 HOURS PRIOR TO START OF WORK.
7. UNLESS SHOWN OTHERWISE, INDUCTIVE LOOP DETECTORS SHALL BE 6 FOOT IN DIAMETER WITH 10 FOOT SPACING IN THE DIRECTION OF TRAVEL. LOOP DETECTORS SHALL BE TYPE "E", LOOP DETECTOR WIRE SHALL BE TYPE "2" AND DETECTOR LEAD-IN CABLE SHALL BE TYPE "B". PRIOR TO INSTALLATION, THE ENGINEER OR HIS DESIGNATED REPRESENTATIVE SHALL VERIFY ALL LOOP DETECTOR LOCATIONS IN THE FIELD. ALL NECESSARY STRIPING SHALL BE IN PLACE PRIOR TO POSITIONING OF DETECTORS. LOOP DETECTORS SHALL BE SEALED WITH A "HOT MELT SEALANT".
8. THE CONDUCTOR SCHEDULE IS FURNISHED AS AN INSTALLATION GUIDELINE ONLY. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE THE APPROPRIATE NUMBER OF CONDUCTORS REQUIRED FOR THE INTENDED OPERATION.
9. ALL VEHICLE SIGNAL INDICATIONS SHALL BE 12 INCH. THE SIGNAL HOUSING, BACKPLATES AND VISORS SHALL BE METAL. PLASTIC SIGNAL HEADS AND LENSES ARE NOT PERMITTED. ALL VEHICLE SIGNAL INDICATIONS SHALL BE LED (DIALITE OR CITY APPROVED EQUAL).
10. ALL PEDESTRIAN SIGNALS SHALL BE COUNTDOWN. PEDESTRIAN INDICATIONS SHALL BE TYPE A WITH INTERNATIONAL SYMBOL DISPLAYS. PEDESTRIAN SIGNAL INDICATIONS SHALL BE LED (DIALITE OR CITY APPROVED EQUAL). PEDESTRIAN PUSHBUTTON SIGN MOUNT SHALL BE TYPE "B" WITH TAMPER PROOF SCREWS, 5"X71/2"-R10-3B (MUTCD) SIGNS AND ADA "BULLDOG" PUSH BUTTONS.
11. ALL PRE-EMPTION EQUIPMENT SHALL BE TOMAR 3140 SERIES WITH SELF TEST DETECTOR OR CITY APPROVED EQUAL. ALL EVPE OPTICAL DETECTORS SHALL BE MOUNTED ON THE SIGNAL MAST ARM BY CLAMPING METHOD. PRIOR TO INSTALLATION, THE ENGINEER OR DESIGNATED REPRESENTATIVE SHALL DETERMINE THE EXACT LOCATION OF DETECTOR IN THE FIELD.
12. ALL PULL BOXES SHALL BE NO. 6, UNLESS OTHERWISE NOTED ON THE PLANS. PULL BOXES SHALL NOT BE LOCATED IN OR WITHIN 1 FOOT OF ANY CURB ACCESS RAMPS OR DRIVEWAY. ALL PULL BOXES AND COVERS SHALL BE CONCRETE AND SHALL BE MARKED "TRAFFIC SIGNAL".
13. THE CONTRACTOR SHALL VERIFY WITH THE ENGINEER THE EXACT LOCATION OF ALL TRAFFIC SIGNAL EQUIPMENT PRIOR TO INSTALLATION.
14. ALL CONDUITS SHALL BE 3-INCH RIGID STEEL UNLESS OTHERWISE NOTED. ALL STUB-OUTS SHALL BE 3-INCH CONDUIT. NON-METALLIC CONDUIT WILL NOT BE ALLOWED. ALL CONDUITS UNDER ROADWAY SECTION SHALL BE INSTALLED WITHOUT OPEN CUTTING.
15. EACH CONDUCTOR SHALL BE PERMANENTLY IDENTIFIED. IDENTIFICATION SHALL BE BY DIRECT LABELING, TAGS OR BANDS PERMANENTLY FASTENED TO THE CONDUCTORS. THE IDENTIFICATION SHALL BE PLACED ON EACH CONDUCTOR OR GROUP OF CONDUCTORS IN EACH PULL BOX AND NEAR THE END OF EACH CONDUCTOR WHERE THE CONDUCTORS ARE TERMINATED.
16. LUMINAIRES SHALL BE 85 WATT "POWERLUX" INDUCTION WITH FULL CUT -OFF LENS.
17. INTERNALLY ILLUMINATED STREET NAME SIGNS SHALL BE TYPE "A". SIGN LEGEND SHALL BE TYPE E (M) UPPER AND LOWER CASE.
18. UNDERGROUND TRAFFIC SIGNAL CONDUCTORS SHALL NOT BE SPLICED.
19. ANY LANDSCAPING DAMAGED BY THE TRAFFIC SIGNAL CONSTRUCTION SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE ENGINEER AND THE PROPERTY OWNER.
20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLETING ALL "PUNCH LIST" ITEMS PRIOR TO TRAFFIC SIGNAL TURN-ON.

WORK TO BE PERFORMED

WORK FOR THIS PROJECT SHALL CONSIST ON INSTALLING TRAFFIC SIGNALS/LIGHTING AND SIGNING/STRIPING AT THE FOLLOWING LOCATION:
PECHANGA PARKWAY AT WOLF CREEK ROAD SOUTH



INDEX MAP
SCALE: 1"=200'



VICINITY MAP
NOT TO SCALE

SIGNING AND STRIPING GENERAL NOTES

1. STRIPING, SIGNING, OR PAVEMENT LEGENDS SHALL NOT BE INSTALLED PRIOR TO FIELD INSPECTION AND APPROVAL BY THE INSPECTOR.
2. ALL PAVEMENT MARKINGS AND SIGN LOCATIONS MUST BE INSPECTED AND APPROVED BEFORE STRIPING BEGINS. THE INSPECTOR SHALL DETERMINE THE EXACT LIMITS OF THE MATCH STRIPING.
3. ALL R1 SIGNS AND WARNING SIGNS SHALL USE HI-INTENSITY GRADE REFLECTIVE SHEETING AND BE A MINIMUM OF 30"X30". OTHER REGULATORY OR GUIDE SIGNS MAY BE ENGINEERING GRADE REFLECTIVE SHEETING.
4. UNLESS OTHERWISE STATED, ALL STRIPING SHALL BEGIN AND TERMINATE AT QUARTER DELTA OF THE CURB RETURN, OR BACK OF THE CROSSWALK OR STOP BAR.
5. ALL R1 SIGNS WILL BE LOCATED 2 FEET BEHIND CURB AT THE B.C.R. OR AS SPECIFIED ON THE PLAN.
6. ALL STOP BARS WILL BE LOCATED AT THE PROLONGATION OF THE CENTER DELTA OF THE CURB RETURN OR BEHIND THE WHEELCHAIR ACCESS RAMPS UNLESS OTHERWISE SPECIFIED ON THE PLAN.
7. THE STOP LEGEND SHALL BE 8 FEET BEHIND THE STOP BAR. IF REQUIRED, DIRECTIONAL ARROWS SHALL ALSO BE 8 FEET BEHIND THE STOP BAR OR 8 FEET BEHIND THE STOP LEGENDS.
8. ALL PAVEMENT MARKERS, STRIPING, AND PAVEMENT MARKINGS SHALL CONFORM TO THE LATEST VERSION OF THE CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), AND CALTRANS STANDARD PLANS: A20-A THROUGH A24-E.
9. STREET NAME SIGNS SHALL BE INSTALLED AT ALL INTERSECTIONS AND MAY BE INSTALLED ABOVE THE R1 SIGN OR AS SPECIFIED ON THE PLAN.
10. THE POST MATERIAL SHALL BE "TELESPAR QWIK-PUNCH" OR APPROVED EQUAL WITH RECEPTIVE 30-INCH OR 36-INCH ANCHOR ASSEMBLY.
11. ALL PAVEMENT STRIPING AND LEGENDS SHALL BE INSTALLED PER SECTION 84.3 OF THE CALTRANS STANDARD SPECIFICATIONS.
12. ALL CONFLICTING PAVEMENT LEGENDS, STRIPING, AND PAVEMENT MARKINGS SHALL BE REMOVED BY WET SANDBLASTING PER SECTION 15 OF THE CALTRANS STANDARD SPECIFICATIONS.
13. ALL PAINTED STRIPING SHALL BE DOUBLE COATED IN NOT LESS THAN 7 DAYS, BUT NO MORE THAN 14 DAYS FROM DATE OF INITIAL INSTALLATION.
14. ALL PAVEMENT MARKINGS, PAVEMENT LEGENDS, AND LINES 8" OR WIDER SHALL BE THERMOPLASTIC UNLESS OTHERWISE APPROVED BY THE DEPARTMENT OF PUBLIC WORKS.
15. ALL PAVEMENT STRIPING SHALL HAVE RAISED PAVEMENT MARKINGS (RPM) PER SECTION 85 OF THE CALTRANS STANDARD SPECIFICATIONS.

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
8	TITLE SHEET
9-10	SIGNING AND STRIPING PLAN PECHANGA PARKWAY FROM VIA GILBERTO TO CASINO DRIVE SOUTH
11	TRAFFIC SIGNAL PLAN PECHANGA PARKWAY AT VIA EDUARDO
12	TRAFFIC SIGNAL PLAN PECHANGA PARKWAY AT CASINO DRIVE NORTH

Michael Baker INTERNATIONAL
40810 COUNTY CENTER DR., SUITE 100
TEMECULA, CA 92591
PHONE: (951) 676-8042
MBAKERINTL.COM

CONSTRUCTION RECORD	DATE	BY	REVISIONS	DATE	ACC'D
CONTRACTOR					
INSPECTOR					
DATE COMPLETED					

BENCH MARK
600-6-81 RESET 1999, A 3-1/4" ALUM. DISK ON TOP OF CURB IN THE NW'LY RETURN AT THE INTERSECTION OF HWY. 79 AND FRONT STREET.
ELEVATION 996.809

SCALE
HORIZONTAL: AS NOTED
VERTICAL: N/A

REGISTERED PROFESSIONAL ENGINEER RYAN K. ZELLERS NO. 69470 EXP. 06-30-18 CIVIL STATE OF CALIFORNIA

DESIGNED BY	DRAWN BY	CHECKED BY
BHS	BHS	RKZ

PLANS PREPARED UNDER THE SUPERVISION OF
DATE:
RYAN K. ZELLERS
R.C.E. 69470

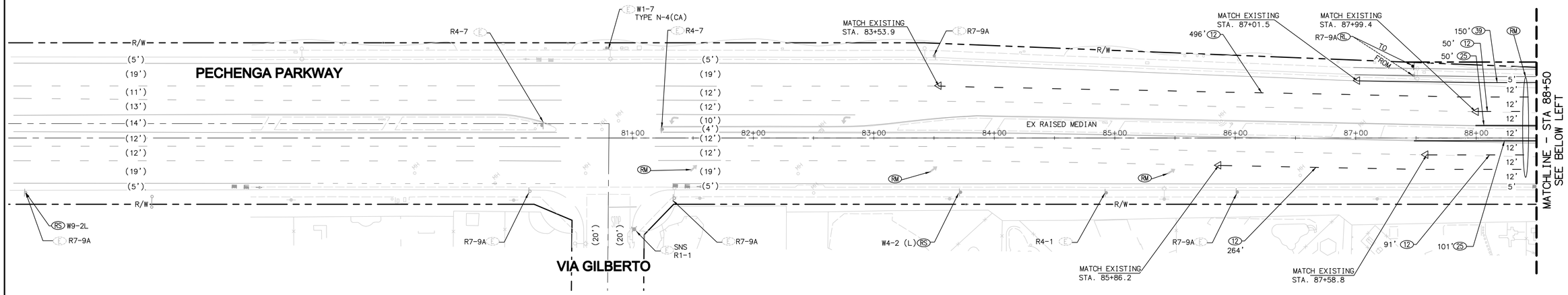
RECOMMENDED BY: DATE:
ACCEPTED BY: DATE:
THOMAS W. GARCIA
DIRECTOR OF PUBLIC WORKS/CITY ENGINEER
R.C.E. 48279

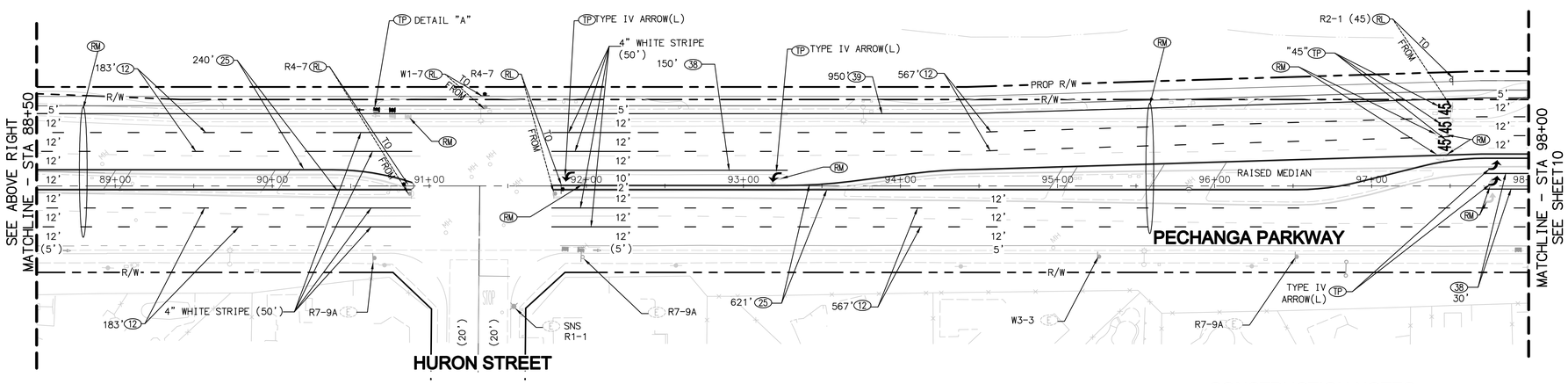
CITY OF TEMECULA — DEPARTMENT OF PUBLIC WORKS
TRAFFIC SIGNAL/SIGNING AND STRIPING PLANS
PECHANGA PARKWAY
TITLE SHEET

LDXX-XXXX
SHEET NO. 8 OF X SHEETS

NOT FOR CONSTRUCTION - 30% SUBMITTAL - 8/19/16

H:\PDATA\153547 PECHANGA PKWY WIDENING\CADD\TRANSPW\DLV\153547-08-TT.DWG BLANCA.SOTO 8/17/2016 3:44 PM

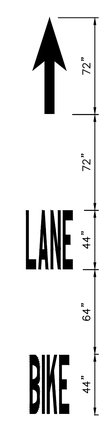




LEGEND

- EXISTING SIGN
- EXISTING SIGN (ON STREET LIGHT)
- PROPOSED SIGN
- PROPOSED SIGN (ON STREET LIGHT)
- (12') EXISTING LANE WIDTH
- 12' PROPOSED LANE WIDTH
- SNS STREET NAME SIGN
- MATCH EXISTING STRIPING/END PROPOSED STRIPING

SIGN LEGEND

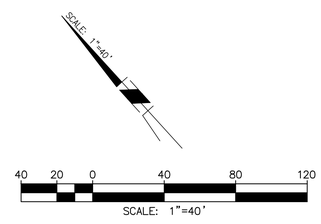


NOTE:
1. LEGEND SPACING PER CAMUTCD FIGURE 9C-3
2. PLACED IMMEDIATELY AFTER EACH INTERSECTION

DETAIL "A"
WORD AND ARROW BIKE LANE MARKING
NOT TO SCALE

CONSTRUCTION NOTES:

- (E) EXISTING SIGN TO REMAIN
- (#) INSTALL PROPOSED STRIPE (DETAIL # PER CALTRANS STANDARD PLAN)
- (TP) INSTALL PAVEMENT MARKING (THERMOPLASTIC)
- (RM) REMOVE EXISTING PAVEMENT MARKING OR STRIPING
- (IS) INSTALL SIGN (AND POST IF NECESSARY)
- (RS) REMOVE AND SALVAGE EXISTING SIGN
- (TO / FROM RL) RELOCATE EXISTING SIGN



NOTES:

1. DESIGN SPEED OF PECHANGA PARKWAY IS 45 MPH

Michael Baker INTERNATIONAL
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TEMECULA, CA 92591
PHONE: (951) 676-8042
MBAKERINTL.COM

LDXX-XXXX

CONSTRUCTION RECORD	DATE	BY	REVISIONS	DATE	ACC'D
CONTRACTOR					
INSPECTOR					
DATE COMPLETED					

BENCH MARK
600-6-81 RESET 1999, A 3-1/4" ALUM. DISK ON TOP OF CURB IN THE NW'LY RETURN AT THE INTERSECTION OF HWY. 79 AND FRONT STREET.
ELEVATION 996.809

SCALE
HORIZONTAL: AS NOTED
VERTICAL: N/A

REGISTERED PROFESSIONAL ENGINEER RYAN K. ZELLERS NO. 69470 EXP. 06-30-18 CIVIL STATE OF CALIFORNIA

DESIGNED BY	DRAWN BY	CHECKED BY
BHS	BHS	RKZ

PLANS PREPARED UNDER THE SUPERVISION OF
DATE:
RYAN K. ZELLERS
R.C.E. 69470

RECOMMENDED BY: DATE:
ACCEPTED BY: DATE:
THOMAS W. GARCIA
DIRECTOR OF PUBLIC WORKS/CITY ENGINEER
R.C.E. 48279

CITY OF TEMECULA — DEPARTMENT OF PUBLIC WORKS

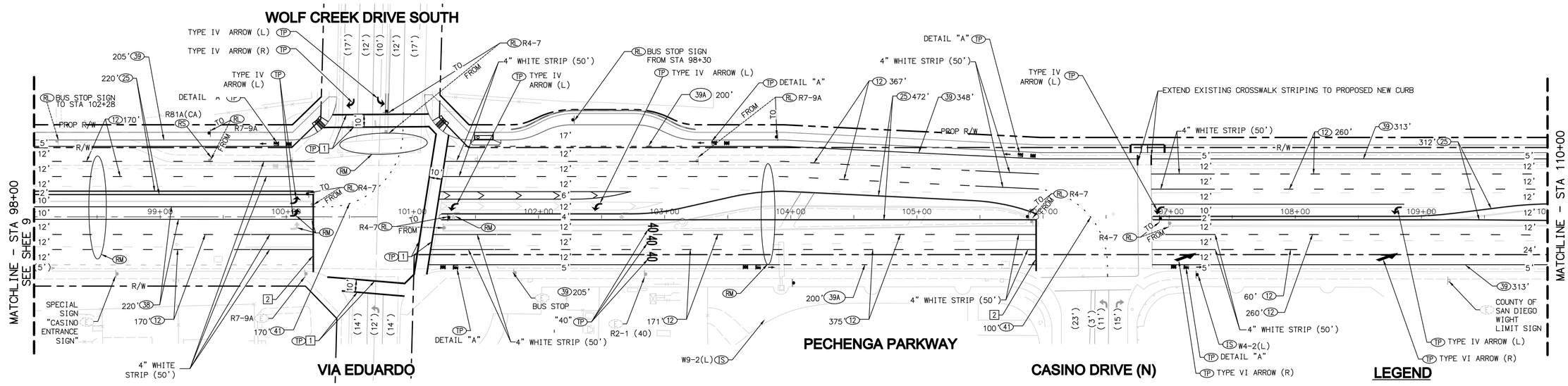
TRAFFIC SIGNAL/SIGNING AND STRIPING PLANS
PECHANGA PARKWAY

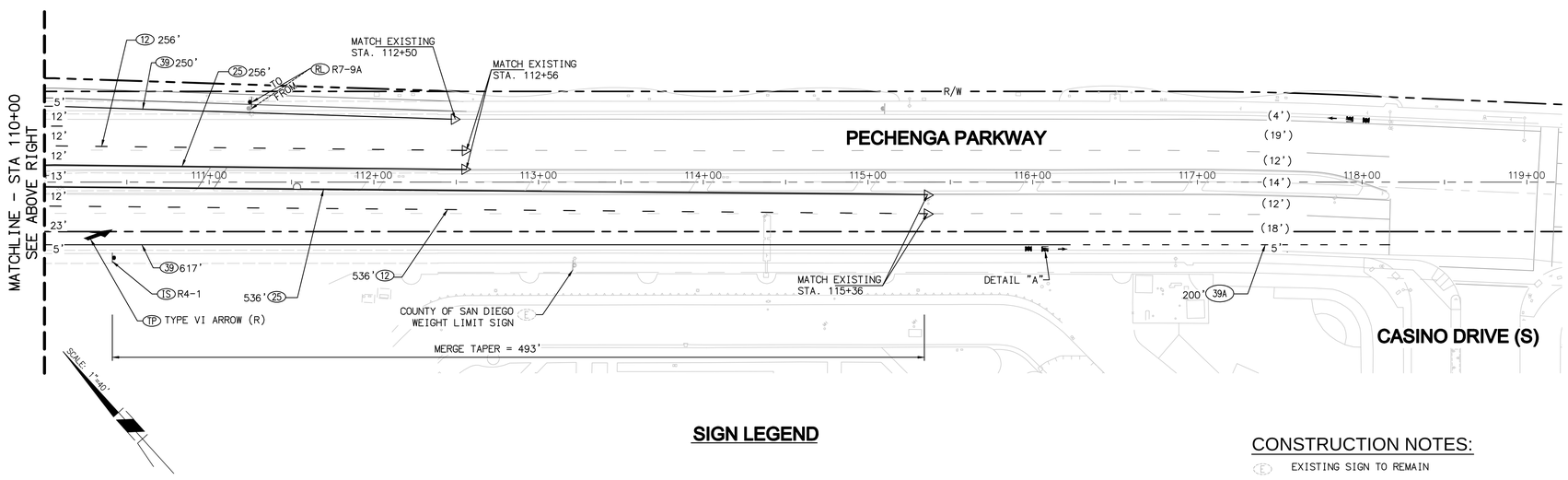
SIGNING AND STRIPING PLAN

SHEET NO. 9 OF X SHEETS

NOT FOR CONSTRUCTION - 30% SUBMITTAL - 8/19/16

H:\PDATA\153547 PECHANGA PKWY WIDENING\CADD\TRANSPW\DLV\153547-09-PD.DWG BLANCA.SOTO 8/17/2016 3:46 PM





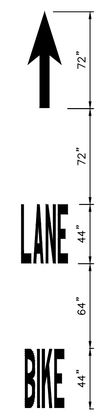
LEGEND

- EXISTING SIGN
- EXISTING SIGN (ON STREET LIGHT)
- PROPOSED SIGN
- PROPOSED SIGN (ON STREET LIGHT)
- (12') EXISTING LANE WIDTH
- 12' PROPOSED LANE WIDTH
- SNS STREET NAME SIGN
- ◁ MATCH EXISTING STRIPING/END PROPOSED STRIPING

SIGN LEGEND

40 20 0 40 80 120

SCALE: 1"=40'



NOTE:
1. LEGEND SPACING PER CAMUTCD FIGURE 9C-3
2. PLACED IMMEDIATELY AFTER EACH INTERSECTION

DETAIL "A"
WORD AND ARROW BIKE LANE MARKING
NOT TO SCALE

CONSTRUCTION NOTES:

- (E) EXISTING SIGN TO REMAIN
- (#) INSTALL PROPOSED STRIPE (DETAIL # PER CALTRANS STANDARD PLAN)
- (TP) INSTALL PAVEMENT MARKING (THERMOPLASTIC)
- (RM) REMOVE EXISTING PAVEMENT MARKING OR STRIPING
- (IS) INSTALL SIGN (AND POST IF NECESSARY)
- (RS) REMOVE AND SALVAGE EXISTING SIGN
- TO / FROM (RL) RELOCATE EXISTING SIGN
- [1] INSTALL 12" WHITE CROSSWALK
- [2] INSTALL 12" WHITE LIMIT LINE

NOTES:

1. DESIGN SPEED OF PECHANGA PARKWAY IS 45 MPH

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LDXX-XXXX

CONSTRUCTION RECORD	DATE	BY	REVISIONS	DATE	ACC'D
CONTRACTOR					
INSPECTOR					
DATE COMPLETED					

BENCH MARK: 600-6-81 RESET 1999, A 3-1/4" ALUM. DISK ON TOP OF CURB IN THE NW'LY RETURN AT THE INTERSECTION OF HWY. 79 AND FRONT STREET. ELEVATION 996.809

SCALE: HORIZONTAL AS NOTED; VERTICAL N/A

REGISTERED PROFESSIONAL ENGINEER RYAN K. ZELLERS NO. 69470 EXP. 06-30-18 CIVIL STATE OF CALIFORNIA

DESIGNED BY	DRAWN BY	CHECKED BY
BHS	BHS	RKZ

PLANS PREPARED UNDER THE SUPERVISION OF

DATE:

RYAN K. ZELLERS
R.C.E. 69470

RECOMMENDED BY: DATE:

ACCEPTED BY: DATE:

THOMAS W. GARCIA
DIRECTOR OF PUBLIC WORKS/CITY ENGINEER
R.C.E. 48279

CITY OF TEMECULA — DEPARTMENT OF PUBLIC WORKS

TRAFFIC SIGNAL/SIGNING AND STRIPING PLANS
PECHANGA PARKWAY

SIGNING AND STRIPING PLAN

SHEET NO. 10 OF X SHEETS

NOT FOR CONSTRUCTION - 30% SUBMITTAL - 8/19/16

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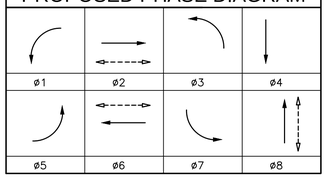
■ CONDUCTOR SCHEDULE

AWG OR CABLE	POLE	CIRCUIT	1	2	3	4	5	6	7	8	9
12 CSC	A	ø2,ø5,ø2P	–	–	–	–	–	–	–	1	1
	B	ø7,ø8,ø8P	–	–	–	–	–	–	1	1	1
	C	ø4,ø7	–	–	–	–	–	1	1	1	1
	D	ø1,ø2,ø2P	–	–	–	–	1	1	1	1	1
	E'	ø1,ø6,ø6P	1●	1●	1●	1●	–	–	–	1●	1●
	F'	ø3,ø4	–	1●	1●	1●	–	–	–	1●	1●
	G'	ø3,ø8,ø8P	–	–	1●	1●	–	–	–	1●	1●
	H'	ø5,ø6,ø6P	–	–	–	1●	–	–	–	1●	1●
		TOTAL	1	2	3	4	1	2	3	8	8
3 CSC	A	ø8PPB	–	–	–	–	–	–	–	1	1
	B	ø2PPB	–	–	–	–	–	–	1	1	1
	C	ø2PPB	–	–	–	–	–	1	1	1	1
	D	–	–	–	–	–	–	–	–	–	–
	E'	–	–	–	–	–	–	–	–	–	–
	F'	ø6PPB	–	1●	1●	1●	–	–	–	1●	1●
	G'	ø6PPB	–	–	1●	1●	–	–	–	1●	1●
	H'	ø8PPB	–	–	–	1●	–	–	–	1●	1●
		TOTAL	–	1	2	3	–	1	2	6	6
#12		IISNS	2●	2●	2●	2●	–	2	2	–	–
#10		SIGNAL COMMON	1●	1●	1●	1●	1	1	1	1	1
		LUMINAIRE	2●	2●	2●	2●	–	2	2	–	–
		TOTAL	3	3	3	3	1	3	3	1	1
DLC		ø1	–	–	–	1●	–	–	–	1●	1●
		ø2	–	–	–	–	3/3●	3/3●	3/3●	3/3●	3/3●
		ø3	–	–	–	–	–	–	1	1	1
		ø4	–	3●	3●	3●	–	–	–	3●	3●
		ø5	–	–	–	–	2	2	2	2	2
		ø6	–	–	–	6●	–	–	–	6●	6●
		ø7	–	1	1	1	–	–	–	1	1
		ø8	–	–	–	–	–	–	1	1	1
		TOTAL	–	4	4	11	8	8	10	21	21
EMERGENCY VEHICLE PRE-EMPTION			1●	1●	2●	2●	–	1	1	2/2●	2/2●
VIDEO DETECTION CABLE			–	–	–	–	–	–	–	–	–
12 PR SIGNAL INTERCONNECT			–	–	1	1	1	1	1	2	2
24 SMFO SIGNAL INTERCONNECT			–	–	1	1	1	1	1	2	2
CONDUIT SIZE			2"●	3"●	3"●	4"●	2.5"	3"	3"	2-4"	2-4"

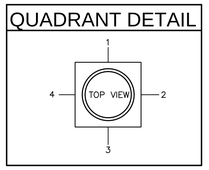
■ ALL CONDUCTORS/CONDUITSARE ARE EXISTING UNLESS LABELED (●) NEW.

PROPOSED PHASE DIAGRAM



FLASHING OPERATIONS SHALL BE RED ON ALL PHASES.
DESIGN SPEED: 45 MPH PECHANGA PKWY
35 MPH WOLF CREEK DR S

QUADRANT DETAIL



PEDESTRIAN
PUSH BUTTON LOCATION

POLE REMOVAL SCHEDULE

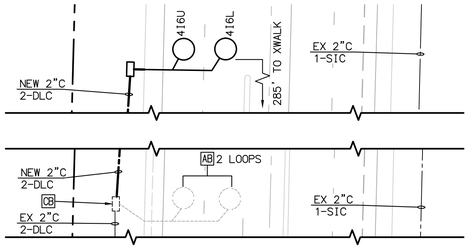
No.	TYPE	HGT.	SIG. M.A.	LUM. M.A.
E	26-4-129	30'	45'	15'
G	26-4-129	30'	40'	15'

■ POLE SCHEDULE

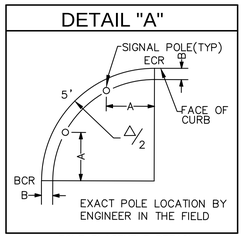
	STANDARD				LUMINAIRE INDUCTION	SIGNAL MOUNTING		PED	PPB		* PLACEMENT		
No.	TYPE	HGT.	SIG. M.A.	LUM. M.A.		MAST ARM	POLE	SIGNAL	ø	QUAD	A	B	I.I.S.N.S.
A	29-4-100	30'	45'	15'	85W	2-MAS	SV-1-T	SP-1-T	8	4	EX	EX	Via Eduardo
B	1A	10'	–	–	–	–	TV-2-T	SP-1-T	2	1	EX	EX	–
C	19-4-129	30'	30'	15'	85W	2-MAS	SV-1-T	–	2	1	EX	EX	Pechanga Pkwy
D	1A	10'	–	–	–	–	TV-2-T	SP-1-T	–	–	EX	EX	–
E'	61-5-100●	30'●	60'●	15'●	85W♦	2-MAS♦	SV-1-T♦	SP-1-T♦	–	–	14.4'	3'	Wolf Valley Rd♦
F'	1A♦	10'♦	–	–	–	–	TV-2-T♦	–	6♦	3	14.3'	3'	–
G'	26-4-100●	30'●	45'●	15'●	85W♦	2-MAS♦	SV-1-T♦	SP-1-T♦	6♦	3	17.7'	3'	Pechanga Pkwy♦
H'	1A♦	10'♦	–	–	–	–	TV-2-T♦	SP-1-T♦	8♦	4	15.1'	3'	–

■ POTHOLE NEW POLE LOCATIONS PRIOR TO ORDERING POLES.
* SEE DETAIL "A"
ALL EQUIPMENT EXISTING UNLESS NOTED: (●) NEW (♦) RELOCATE

SIGN LEGEND:

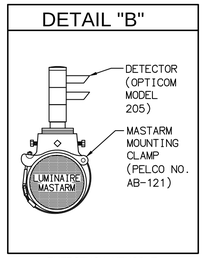


DETAIL "A"

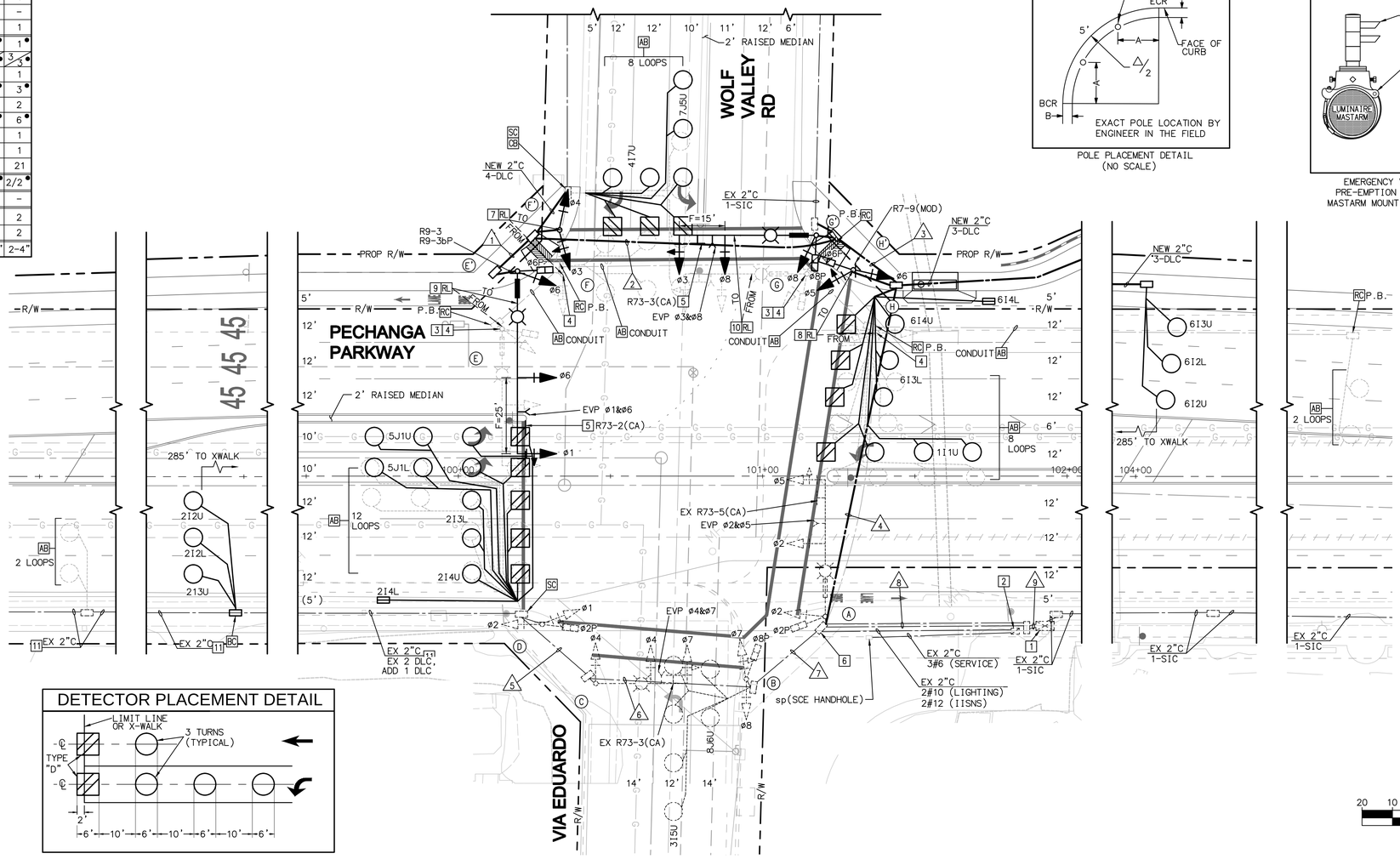


POLE PLACEMENT DETAIL
(NO SCALE)

DETAIL "B"



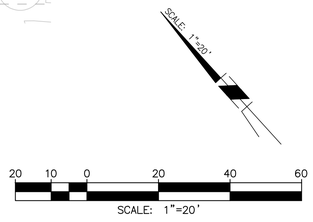
EMERGENCY VEHICLE
PRE-EMPTION DETECTOR
MASTARM MOUNTING DETAIL



CONSTRUCTION NOTES

1. EXISTING TYPE 170E CONTROLLER ASSEMBLY IN TYPE 332 CABINET TO REMAIN. MODIFY AS REQUIRED.
2. EXITING TYPE III-CF SERVICE EQUIPMENT ENCLOSURE TO REMAIN. MODIFY AS REQUIRED.
3. REMOVE AND SALVAGE EXISTING POLE.
4. REMOVE EXISTING FOUNDATION COMPLETE.
5. FURNISH AND INSTALL MAST ARM MOUNTED SIGN PER STANDARD PLAN ES-7N, DETAIL "U".
6. SIC CABLES AND SMFO TO BE PULLED BACK TO AN UNDISTURBED PULL POX AND RECONNECTED TO EXISTING OPERATIONS. COMMUNICATIONS SHALL BE MAINTAINED UNTIL NEW FACILITIES ARE IN PLACE. SPLICING OF SMFO WILL NOT BE ALLOWED.
7. RL POLE, EXISTING VEHICLE HEADS, PEDESTRIAN HEAD AND PEDESTRIAN PUSH BUTTON FROM POLE (F) TO POLE (F').
8. RL POLE, EXISTING VEHICLE HEADS, PEDESTRIAN HEAD, POLE MOUNTED SIGN AND PEDESTRIAN PUSH BUTTON FROM POLE (H) TO POLE (H').
9. RL EXISTING VEHICLE HEADS, PEDESTRIAN HEAD, PEDESTRIAN PUSH BUTTON, EMERGENCY VEHICLE PRE-EMPTION (EVPE), MAST ARM MOUNTED SIGN, POLE MOUNTED SIGNS, IISNS AND LUMINAIRE FROM POLE (E) TO POLE (E').
10. RL EXISTING VEHICLE HEADS, PEDESTRIAN HEAD, PEDESTRIAN PUSH BUTTON, EMERGENCY VEHICLE PRE-EMPTION (EVPE), MAST ARM MOUNTED SIGN, IISNS AND LUMINAIRE FROM POLE (G) TO POLE (G').
11. SEE FIBER OPTIC COMMUNICATIONS PLANS FOR SIC INFORMATION.

DETECTOR PLACEMENT DETAIL



20 10 0 20 40 60
SCALE: 1"=20'

Michael Baker INTERNATIONAL
40810 COUNTY CENTER DR., SUITE 100
TEMECULA, CA 92591
PHONE: (951) 676-8042
MBAKERINTL.COM

LDXX-XXXX

CONSTRUCTION RECORD	DATE	BY	REVISIONS	DATE	ACC'D
CONTRACTOR					
INSPECTOR					
DATE COMPLETED					

BENCH MARK: 600-6-81 RESET 1999, A 3-1/4" ALUM. DISK ON TOP OF CURB IN THE NW'LY RETURN AT THE INTERSECTION OF HWY. 79 AND FRONT STREET.
ELEVATION 996.809

SCALE: HORIZONTAL AS NOTED; VERTICAL N/A

REGISTERED PROFESSIONAL ENGINEER RYAN K. ZELLERS NO. 69470 EXP. 06-30-18 CIVIL STATE OF CALIFORNIA

DESIGNED BY	DRAWN BY	CHECKED BY
BHS	BHS	RKZ

PLANS PREPARED UNDER THE SUPERVISION OF
DATE:
RYAN K. ZELLERS
R.C.E. 69470

RECOMMENDED BY: DATE:
ACCEPTED BY: DATE:
THOMAS W. GARCIA
DIRECTOR OF PUBLIC WORKS/CITY ENGINEER
R.C.E. 48279

CITY OF TEMECULA — DEPARTMENT OF PUBLIC WORKS

TRAFFIC SIGNAL/SIGNING AND STRIPING PLANS
PECHANGA PARKWAY
AT WOLF VALLEY RD/VIA EDUARDO
TRAFFIC SIGNAL PLAN

SHEET NO. 11 OF X SHEETS

NOT FOR CONSTRUCTION - 30% SUBMITTAL - 8/19/16

H:\PDATA\153547 PECHANGA PKWY WIDENING\CADD\TRANSPW\DLV\153547-11-TS.DWG BLANCA.SOTO 8/17/2016 4:19 PM

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■ CONDUCTOR SCHEDULE

AWG OR CABLE	POLE	CIRCUIT	1	2	3	4	5
12 CSC	(A)	ø1,ø2,ø2P	–	–	–	–	1
	(B')	ø1,ø6,ø8	–	1●	–	–	1
	(C')	ø8,ø8P	1●	1●	–	–	1
	(D)	ø2,ø8P	–	–	1	–	1
			–	–	–	–	–
			–	–	–	–	–
			–	–	–	–	–
			–	–	–	–	–
		TOTAL	1	2	1	–	4
3 CSC	(C')	ø8PPB	1●	1●	–	–	1
	(D)	ø6PPB ø8PPB	–	–	2	–	2
	(E)	ø6PPB	–	–	–	1	1
			–	–	–	–	–
			–	–	–	–	–
			–	–	–	–	–
			–	–	–	–	–
			–	–	–	–	–
		TOTAL	1	1	2	1	4
#12		IISNS	2●	2●	2	–	–
#10		SIGNAL COMMON	1●	1●	1	1	1
		LUMINAIRE	2●	2●	2	–	–
		TOTAL	3	3	3	1	1
DLC		ø1	1●	1●	–	–	1
		ø2	–	–	–	–	3/3●
		ø6	6●	6●	–	–	6
		ø8	–	–	2	–	2
		TOTAL	7	7	2	–	15
EMERGENCY VEHICLE PRE-EMPTION			1●	2●	1	–	3
VIDEO DETECTION CABLE			–	–	–	–	–
12 PR SIGNAL INTERCONNECT			–	–	1	–	2
24 SMFO SIGNAL INTERCONNECT			–	–	1	–	2
CONDUIT SIZE			3"●	3"●	3"	2"	2-3"

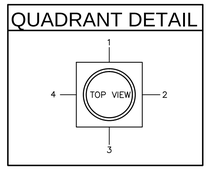
■ ALL CONDUCTORS/CONDUITSARE ARE EXISTING UNLESS LABELED (●) NEW.

PROPOSED PHASE DIAGRAM

		NOT USED	NOT USED
ø1	ø2	ø3	ø4
		NOT USED	
ø5	ø6	ø7	ø8

FLASHING OPERATIONS SHALL BE RED ON ALL PHASES.
DESIGN SPEED: 45 MPH PECHANGA PKWY
35 MPH WOLF CREEK DR S

QUADRANT DETAIL



PEDESTRIAN
PUSH BUTTON LOCATION

POLE REMOVAL SCHEDULE

No.	TYPE	HGT.	SIG. M.A.	LUM. M.A.
(B)	26-4-129	30'	45'	15'
(C)	19-4-129	30'	25'	15'

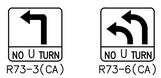
■ POLE SCHEDULE

STANDARD					LUMINAIRE INDUCTION	SIGNAL MOUNTING		PED	PPB		* PLACEMENT		I.I.S.N.S.
No.	TYPE	HGT.	SIG. M.A.	LUM. M.A.		MAST ARM	POLE	SIGNAL	ø	QUAD	A	B	
(A)	1A	10'	–	–	–	–	TV-2-T	SP-1-T	–	–	AS SHOWN	3'	–
(B')	29-5-100●	30'●	50'●	15'●	85W ♦	2-MAS ♦	SV-2-T ♦	–	–	–	AS SHOWN	3'	North Casino Dr ♦
(C')	17-3-100●	30'●	15'●	15'●+	85W ♦	1-MAS ♦	SV-2-T ♦	SP-1-T ♦	8 ♦	2	EX	EX	Pechanga Pkwy ♦
(D)	19-4-129	30'	25'	15'	85W	2-MAS	SV-1-T	SP-2-T	8/2	4/3	EX	EX	North Casino Dr
(E)	PPB	3'-4"	–	–	–	–	–	–	2	1	EX	EX	–

■ POTHOLE NEW POLE LOCATIONS PRIOR TO ORDERING POLES.
* SEE DETAIL "A"

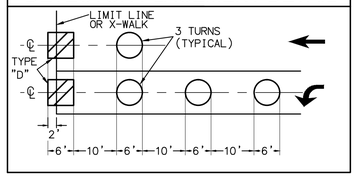
ALL EQUIPMENT EXISTING UNLESS NOTED: (●) NEW (♦) RELOCATE
(+) ROTATE LUMINAIRE MAST ARM 90 DEGREES

SIGN LEGEND:

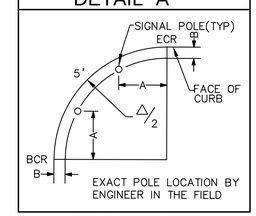


R73-3(CA) R73-6(CA)

DETECTOR PLACEMENT DETAIL

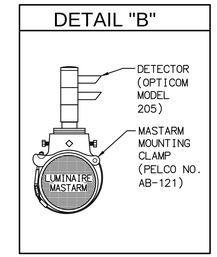


DETAIL "A"



POLE PLACEMENT DETAIL
(NO SCALE)

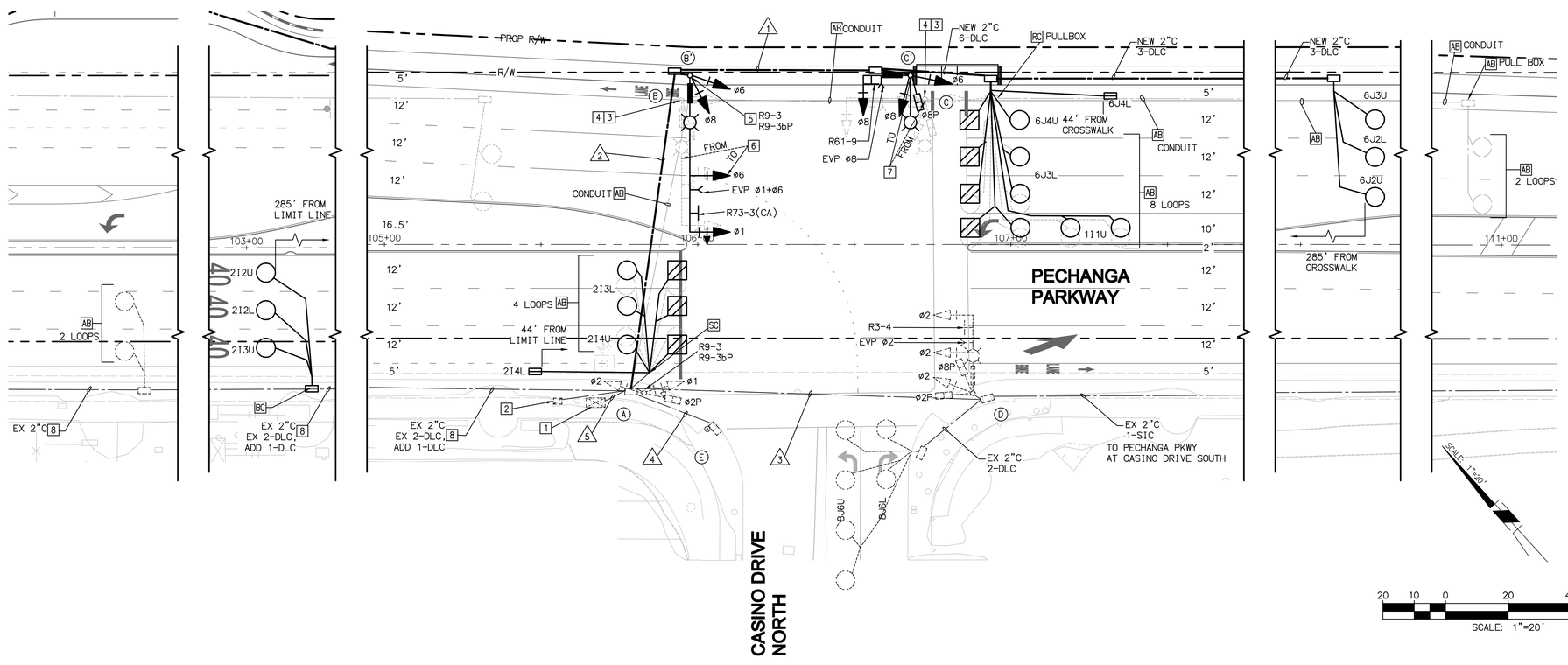
DETAIL "B"



EMERGENCY VEHICLE
PRE-EMPTION DETECTOR
MASTARM MOUNTING DETAIL

CONSTRUCTION NOTES

1. EXISTING TYPE 170E CONTROLLER ASSEMBLY IN TYPE 332 CABINET TO REMAIN. MODIFY AS REQUIRED.
2. EXITING TYPE III-CF SERVICE EQUIPMENT ENCLOSURE TO REMAIN. MODIFY AS REQUIRED.
3. REMOVE AND SALVAGE EXISTING POLE.
4. REMOVE EXISTING FOUNDATION COMPLETE.
5. INSTALL POLE MOUNTED SIGN AS NOTED
6. RL EXISTING VEHICLE HEADS, EMERGENCY VEHICLE PRE-EMPTION (EVPE), MAST ARM MOUNTED SIGN, IISNS AND LUMINAIRE FROM POLE (B) TO POLE (B').
7. RL EXISTING VEHICLE HEADS, PEDESTRIAN HEAD, PEDESTRIAN PUSH BUTTON, EMERGENCY VEHICLE PRE-EMPTION (EVPE), MAST ARM MOUNTED SIGN, IISNS AND LUMINAIRE FROM POLE (C) TO POLE (C').
8. SEE FIBER OPTIC COMMUNICATIONS PLANS FOR SIC INFORMATION.



SCALE: 1"=20'

LDXX-XXXX

Michael Baker INTERNATIONAL
40810 COUNTY CENTER DR.,
SUITE 100
TEMECULA, CA 92591
PHONE: (951) 676-8042
MBAKERINTL.COM

CONSTRUCTION RECORD	DATE	BY	REVISIONS	DATE	ACC'D
CONTRACTOR					
INSPECTOR					
DATE COMPLETED					

BENCH MARK
600-6-81 RESET 1999, A 3-1/4" ALUM. DISK ON TOP OF CURB IN THE NW'LY RETURN AT THE INTERSECTION OF HWY. 79 AND FRONT STREET.
ELEVATION 996.809

SCALE
HORIZONTAL: AS NOTED
VERTICAL: N/A

REGISTERED PROFESSIONAL ENGINEER RYAN K. ZELLERS NO. 69470 EXP. 06-30-18 CIVIL STATE OF CALIFORNIA

DESIGNED BY	DRAWN BY	CHECKED BY
BHS	BHS	RKZ

PLANS PREPARED UNDER THE SUPERVISION OF
DATE:
RYAN K. ZELLERS
R.C.E. 69470

RECOMMENDED BY: DATE:
ACCEPTED BY: DATE:
THOMAS W. GARCIA
DIRECTOR OF PUBLIC WORKS/CITY ENGINEER
R.C.E. 48279

CITY OF TEMECULA — DEPARTMENT OF PUBLIC WORKS

TRAFFIC SIGNAL/SIGNING AND STRIPING PLANS
PECHANGA PARKWAY
AT CASINO DRIVE NORTH
TRAFFIC SIGNAL PLAN

SHEET NO. 12 OF X SHEETS

NOT FOR CONSTRUCTION - 30% SUBMITTAL - 8/19/16

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NOT FOR CONSTRUCTION - 30% SUBMITTAL - 8/19/16

GENERAL NOTES

1. ALL WORK DETAILED ON THESE CONSTRUCTION DRAWINGS, EXCEPT STATED OTHERWISE IN THE CONTRACT SPECIFICATIONS, SHALL BE IN ACCORDANCE WITH: CITY OF TEMECULA STANDARDS AND SPECIFICATIONS, AMERICAN PUBLIC WORKS ASSOCIATION (APWA), THE STATE OF CALIFORNIA, DEPARTMENT OF TRANSPORTATION (CALTRANS) 2010 STANDARD PLANS AND 2010 SPECIFICATIONS; CALIFORNIA MANUAL ON UNIFORMT RAFFIC CONTROL DEVICES (CAMUTCD) (LATEST EDITION); AND THE SPECIAL PROVISIONS.

2. TRAFFIC CONTROL DURING CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (CAMUTCD), AND/OR THE APWA WORK AREA TRAFFIC CONTROL HANDBOOK (WATCH)(LATEST EDITION).

3. TRAFFIC CONTROL SHALL BE IMPLEMENTED BEFORE ANY WORK IS STARTED. A TRAFFIC CONTROL PLAN FOR WORK TO BE DONE WITHIN THE COUNTY OF RIVERSIDE RIGHT OF WAY NEEDS TO BE SUBMITTED TO THE COUNTY OF RIVERSIDE FOR REVIEW PRIOR TO CONSTRUCTION.

4. PRECISE LOCATIONS/ELEVATIONS OF THE EXISTING UNDERGROUND UTILITIES ARE NOT KNOWN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR MAKING SUFFICIENT EXPLORATIONS TO LOCATE ALL UTILITIES AND SUBSTRUCTURES INCLUDING SEWER LATERAL LINES WHETHER SHOWN ON THE PLANS OR NOT AND TO PROTECT THEM FROM ANY POSSIBLE DAMAGE PRIOR TO AND DURING CONSTRUCTION. THE EXPENSE OF REPAIR OR REPLACEMENT OF SAID UTILITIES AND SUBSTRUCTURES SHALL BE BORNE BY THE CONTRACTOR. CONTRACTOR SHALL NOTIFY THE ENGINEER-OF-WORK OF ANY POTENTIAL CONFLICTS SUFFICIENTLY IN TIME FOR CONSTRUCTION CHANGES TO BE MADE AND APPROVED.

   - LOCATION OF UTILITIES SHOWN ON PLANS SHALL BE CONSIDERED APPROXIMATE ONLY. CONTRACTOR SHALL CAREFULLY EXCAVATE IN THE VICINITY AND SHALL LOCATE ALL UTILITIES SHOWN ON THE PLAN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES SHOWN ON THE PLAN, REGARDLESS OF EXACT LOCATION.
   - LOCATIONS OF SEWER LATERALS SHOWN ON THE PLANS ARE FROM THE AVAILABLE RECORDS OF THE CITY OF TEMECULA. ALL THE SEWER LATERALS FROM THE SEWER MAIN TO THE PROPERTY MAY NOT BE SHOWN ON THE PLANS. HOWEVER, THE CONTRACTOR IS REQUIRED TO ASSUME THAT EACH PROPERTY WILL BE SERVED BY A SEWER LATERAL. THE SEWER LATERALS ARE NOT THE PROPERTY OF THE CITY OF TEMECULA AND THESE LATERALS FROM SEWER MAIN TO THE PROPERTY BELONG TO EACH INDIVIDUAL PROPERTY OWNER. THE CONTRACTOR SHALL CONTACT EACH PROPERTY OWNER TO DETERMINE THE LOCATION AND DEPTHS OF SUCH LATERALS AND SHALL PROTECT THESE IN PLACE. FULL COMPENSATION FOR PROTECTING SUCH LATERALS IN PLACE SHALL BE CONSIDERED INCLUDED IN THE PRICES BID FOR ITEMS OF WORK, WHICH MAY AFFECT SUCH LATERALS.
   - THE CONTRACTOR SHALL NOTIFY EACH OWNER OF THE SUBSURFACE INSTALLATIONS INCLUDING THE SERVICE CONNECTIONS, AND SHALL DETERMINE THE EXACT LOCATION AND DEPTH OF SUBSURFACE INSTALLATION AS APPROXIMATELY MARKED BY THE RESPECTIVE OWNERS, WHICH MAY AFFECT OR BE AFFECTED BY THE CONTRACTOR'S OPERATIONS. THE CITY OF TEMECULA SHALL NOT BE RESPONSIBLE FOR ANY COMPENSATION TO THE CONTRACTOR FOR ANY UNMARKED OR INCORRECTLY MARKED APPROXIMATE LOCATIONS BY THE RESPECTIVE OWNERS. IF NO PAY ITEM IS PROVIDED IN THE CONTRACT FOR THIS WORK, FULL COMPENSATION FOR SUCH WORK SHALL BE CONSIDERED AS INCLUDED IN THE PRICES BID FOR THE OTHER ITEMS OF WORK. "SUBSURFACE INSTALLATION" IN THIS SECTION MEANS ANY UNDERGROUND PIPELINE, CONDUIT, DUCT, WIRE, OR OTHER STRUCTURE, EXCEPT NON-PRESSURIZED SEWER LINES, NON-PRESSURIZED STORM DRAINS, OR OTHER NON-PRESSURIZED DRAIN PIPES, OPERATED OR MAINTAINED IN OR ACROSS PUBLIC STREETS OR PUBLIC RIGHT-OF-WAY.

5. CONTRACTOR SHALL NOTIFY THE CITY'S PUBLIC WORKS DEPARTMENT 48 HOURS PRIOR TO THE BEGINNING OF ANY CONSTRUCTION WORK.

6. ALL OPERATIONS CONDUCTED ON THE PREMISES, INCLUDING THE WARMING UP, REPAIR, ARRIVAL DEPARTURE OR RUNNING OF ANY EQUIPMENT SHALL BE LIMITED TO THE HOURS OF 7:00 A.M. TO 4:30 P.M., MONDAY THRU FRIDAY. NO WORK SHALL BE PERFORMED ON THE PREMISES ON SATURDAY, SUNDAY OR HOLIDAYS, UNLESS OTHERWISE APPROVED BY THE CITY'S REPRESENTATIVE.

7. ALL TRENCH EXCAVATION AND BACK FILL IN THE PUBLIC RIGHT-OF-WAY SHALL CONFORM TO THE CITY'S REQUIREMENTS.

8. A PERMIT SHALL BE OBTAINED FROM THE CITY OF TEMECULA FOR ANY EXCAVATION AND/OR CONSTRUCTION WITHIN THE PROPOSED PROJECT AND PUBLIC RIGHT-OF-WAY.

9. IN ALL OPERATIONS, THE REQUIREMENTS OF THE STATE DIVISION OF INDUSTRIAL SAFETY FOR TRENCHES, EXCAVATIONS AND SHORING SHALL APPLY. SAFETY IS STRESSED. ANY OPERATION OR SITUATION THAT THREATENS THE SAFETY OF WORKERS OR THE PUBLIC, INCLUDING IMPROPER TRAFFIC CONTROL, SHALL CAUSE THE SUSPENSION OF WORK UNTIL CORRECTIONS ARE MADE.

10. ALL EXCAVATIONS DEEPER THAN ONE INCH SHALL BE PROPERLY BARRICADED AT ALL TIMES, AND EQUIPPED WITH FLASHER LIGHTS FROM 4:30 P.M. TO 7:00 A.M. DAILY, AND FROM 4:30 P.M. FRIDAY TO 7:00 A.M. MONDAY.

11. ALL OPEN EXCAVATIONS WITHIN A STREET SHALL BE STEEL PLATED AT ALL TIMES, EXCEPT WHEN THE CONTRACTOR IS PHYSICALLY WORKING WITHIN THE AREA AND HAS PLACED BARRICADES TO THE SATISFACTION OF THE ENGINEER. PROVIDE ADVANCE "STEEL PLATES AHEAD" CONSTRUCTION SIGNS PRIOR TO THE PLACEMENT OF STEEL PLATES, SEE APWA WATCH MANUAL FOR ADVANCE SIGN PLACEMENT.

12. HARD HATS AND HIGH VISIBILITY ORANGE VESTS SHALL BE WORN AT ALL TIMES WHEN WORKING ON THE PROJECT.

13. ALL P.C.C. AND A.C. REMOVALS SHALL BE OUTLINED TO NECESSARY WORKING LIMITS AND SAWCUT TO A MINIMUM DEPTH OF 2 INCHES PRIOR TO THE REMOVAL. UNLESS OTHERWISE STATED IN THE SPECIAL PROVISIONS, ALL DEBRIS CREATED BY THE REMOVAL OPERATIONS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF ON THE SAME DAY AWAY FROM THE JOB SITE IN A MANNER AND AT A LOCATION ACCEPTABLE TO ALL AGENCIES AFFECTED BY THE WORK.

14. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ANY MONUMENTS AND/OR BENCHMARKS. ANY MONUMENTS AND/OR BENCHMARKS WHICH ARE DISTURBED OR DESTROYED BY CONSTRUCTION SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE. SUCH POINTS SHALL BE REFERENCED AND REPLACED WITH APPROPRIATE MONUMENTATION BY A LICENSED LAND SURVEYOR OR A REGISTERED CIVIL ENGINEER AUTHORIZED TO PRACTICE LAND SURVEYING. A CORNER RECORD OR RECORD OF SURVEY, AS APPROPRIATE, SHALL BE FILED BY THE LICENSED LAND SURVEYOR OR REGISTERED CIVIL ENGINEER AS REQUIRED BY THE LAND SURVEYOR'S ACT.

15. ALL STATIONS AND DIMENSIONS ARE ALONG THE STATION LINE OF STREET AS SHOWN ON THE PLANS UNLESS OTHERWISE SPECIFIED.

16. CONDUIT SHALL BE JACKED OR BORED OR AS DIRECTED BY THE CITY'S REPRESENTATIVE.

17. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RELOCATION OR REPLACEMENT OF ALL STRIPING, SIGNING OR TRAFFIC DETECTOR LOOPS AS REQUIRED BY THE CITY'S REPRESENTATIVE.

18. DUST CONTROL MEASURES, SUCH AS THE PERIODIC WETTING DOWN OF THE BARE OR EXPOSED AREAS, SHALL BE UTILIZED AT ALL TIMES DURING CONSTRUCTION TO THE SATISFACTION OF THE PUBLIC WORKS AND/OR BUILDING INSPECTORS.

19. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING THE ADJOINING PUBLIC STREETS AND RIGHT-OF-WAY IN A CLEAN AND DUST FREE CONDITION WITHIN THE PROJECT LIMITS. DEBRIS OR WASTE SHALL NOT BE DISPOSED INTO A PUBLIC STORM DRAIN. THE CONTINUOUS USE OF STREET SWEEPING MACHINES MAY BE ADVISABLE.

20. THE CONTRACTOR AGREES THAT HE/SHE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING THE SAFETY OF ALL PERSONS AND PROPERTY. THE REQUIREMENT SHALL APPLY CONTINUALLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. THE CONTRACTOR SHALL DEFEND INDEMNIFY AND HOLD THE OWNER, THE ENGINEER AND THE CITY HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER, ENGINEER OR CITY.

21. EROSION CONTROL, INCLUDING RIP-RAP, INTERIM SLOPE PROTECTION, SAND BAGS OR OTHER EROSION CONTROL MEASURES SHALL BE PROVIDED AS NECESSARY TO CONTROL SEDIMENT AND SILT FROM THE PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL EROSION CONTROL FACILITIES THROUGHOUT THE DEVELOPMENT OF THE PROJECT.

22. ALL LANDSCAPING, IRRIGATION SYSTEM, SIDEWALK, CURB, GUTTER, ROADWAY, ETC... WHICH IS DAMAGED BY CONSTRUCTION ACTIVITIES SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE CITY AND THE PROPERTY OWNER.

23. NO REVISIONS SHALL BE MADE TO THESE PLANS WITHOUT THE APPROVAL OF THE ENGINEER.

CONSTRUCTION NOTES

1. FURNISH AND INSTALL FIBER PATCH PANEL, PATCH CORDS, CONNECTORS, FIBER SWITCH/ETHERNET SWITCH AND POWER SUPPLY TO ESTABLISH COMPLETE DATA COMMUNICATION.
2. FURNISH AND INSTALL 3" RIGID STEEL CONDUIT.
3. FURNISH AND INSTALL 3" SCHEDULE 80 HDPE CONDUIT WITH TRACE WIRE.
4. FURNISH AND INSTALL NO. 6E PULL BOX PER DETAILS ON SHEET 06 AND THE SPECIAL PROVISIONS.
5. REMOVE AND SALVAGE EXISTING NO. 5 PULL BOX. MODIFY EXISTING CONDUIT TO INSTALL 45 DEGREE SWEEPS FOR FUTURE FIBER OPTIC CABLE. INSTALL NO. 6E PULL BOX PER DETAILS ON SHEET 06 AND THE SPECIAL PROVISIONS.
6. MODIFY EXISTING CONDUIT TO INSTALL 45 DEGREE SWEEPS FOR FIBER OPTIC CABLE, AS SHOWN ON PLANS. FURNISH AND INSTALL NO. 6E PULL BOX PER DETAILS ON SHEET 06 AND THE SPECIAL PROVISIONS.
7. FURNISH AND INSTALL FIBER OPTIC SPLICE CLOSURE. SPLICE NECESSARY STRANDS FOR DATA COMMUNICATION. FOR FIBER ASSIGNMENTS SEE SHEET 07.
8. FURNISH AND INSTALL FIBER OPTIC SPLICE BOX I PER LADOT STANDARD DRAWING NO. S-79.02A AND SHEET 06, DETAIL "C".
9. FURNISH AND INSTALL 6-STRAND SINGLE MODE FIBER CABLE IN EXISTING/PROPOSED CONDUIT, AS NOTED.
10. ABANDON EXISTING 3" CONDUIT.
11. FURNISH AND INSTALL 1-48 SMFO ALTOS LOOSE TUBE GEL FREE CABLE (OS2)IN EXISTING/PROPOSED CONDUIT, AS NOTED.
12. LOOP 60' OF FIBER OPTIC CABLE INSIDE SPLICE VAULT.
13. REMOVE EXISTING PULL BOX.
14. LOOP 20' OF FIBER OPTIC CABLE INSIDE PULL BOX.
15. REMOVE EXISTING 12 PAIR #19 SIC IN EXISTING CONDUIT, UNLESS OTHERWISE NOTED. CONTRACTOR SHALL COORDINATE WITH CITY PRIOR TO REMOVAL.
16. REMOVE AND SALVAGE EXISTING PULL BOX. REMOVE AND SALVAGE EXISTING CONDUIT ELBOWS. CONNECT NEW AND EXISTING CONDUIT (PER CONDUIT SIZE AS NOTED). MATCH SURFACE TO EXISTING SURROUNDINGS AS DIRECTED BY THE CITY'S ASSIGNED REPRESENTATIVE.

Michael Baker INTERNATIONAL
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TEMECULA, CA 92591
PHONE: (951) 676-8042
MBAKERINTL.COM

LDXX-XXXX

CONSTRUCTION RECORD	DATE	BY	REVISIONS	DATE	ACC'D
CONTRACTOR					
INSPECTOR					
DATE COMPLETED					

BENCH MARK: 600-6-81 RESET 1999, A 3-1/4" ALUM. DISK ON TOP OF CURB IN THE NW'LY RETURN AT THE INTERSECTION OF HWY. 79 AND FRONT STREET.
ELEVATION 996.809

SCALE: HORIZONTAL AS NOTED; VERTICAL N/A

REGISTERED PROFESSIONAL ENGINEER RUBEN B. MANRIQUEZ No. 79675 Exp. 9-30-2016 CIVIL STATE OF CALIFORNIA

DESIGNED BY	DRAWN BY	CHECKED BY
RM	CT	RM

PLANS PREPARED UNDER THE SUPERVISION OF
DATE:
RUBEN B. MANRIQUEZ
R.C.E. 79675

RECOMMENDED BY: DATE:
ACCEPTED BY: DATE:
THOMAS W. GARCIA
DIRECTOR OF PUBLIC WORKS/CITY ENGINEER
R.C.E. 48279

CITY OF TEMECULA — DEPARTMENT OF PUBLIC WORKS

FIBER OPTIC COMMUNICATIONS PLAN
PECHANGA PARKWAY

SHEET NO. 01 OF 7 SHEETS

NOT FOR CONSTRUCTION - 30% SUBMITTAL - 8/19/16

FIBER OPTIC CABLE/CONDUIT GENERAL NOTES

1. ALL SALVAGED EQUIPMENT SHALL BE DELIVERED TO THE CITY PUBLIC WORKS BUILDING CORPORATION YARD.
2. WHERE DAMAGE IS CAUSED BY THE CONTRACTOR'S OPERATIONS, THE CONTRACTOR SHALL AT HIS EXPENSE REPAIR OR REPLACE DAMAGED FACILITIES PROMPTLY IN ACCORDANCE WITH CITY OF TEMECULA STANDARD PLANS AND SPECIFICATIONS OR CALTRANS 2015 STANDARD PLANS AND SPECIFICATIONS, AS DIRECTED BY THE CITY'S REPRESENTATIVE.
3. ALL AFFECTED SIGNS, ROADSIDE MARKERS, ELECTROLIERS, ETC., SHALL BE PROTECTED AND/OR REPLACE IN-KIND, AT NO COST TO THE CITY, IN ACCORDANCE WITH THE CALTRANS 2015 STANDARD PLANS AND SPECIFICATIONS AND THE CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (CAMUTCD).
4. NO LANES MAY BE CLOSED OR OBSTRUCTED AT ANY TIME UNLESS SPECIFICALLY ALLOWED PER THE ENCROACHMENT PERMIT AND/OR AS DIRECTED BY THE CITY'S REPRESENTATIVE.
5. CONTRACTOR SHALL ARRANGE TO HAVE A SIGNAL TECHNICIAN QUALIFIED TO WORK ON THE CCTV SYSTEM AND FIBER OPTIC COMMUNICATION SYSTEM AND EMPLOYED BY THE MANUFACTURER OR HIS/HER REPRESENTATIVE, PRESENT AT THE TIME THE SYSTEM IS TURNED ON.
6. NEW CONDUIT SHALL BE PULLED THROUGH OPPOSITE ENDS OF PULL BOXES USING 45 DEGREE U.L. APPROVED ELBOWS. CONDUITS THAT CONTAIN FIBER OPTIC CABLE (FOC) SHALL HAVE 45 DEGREE ELBOW SWEEPS INTO #6E PULL BOXES OR VAULTS, UNLESS SHOWN OTHERWISE.
7. ALL NEW PULL BOXES SHALL BE No. 6E UNLESS SHOWN OTHERWISE. PULL BOX SPACING SHALL BE NO MORE THAN 600' SPACING (UNLESS SHOWN OTHERWISE). INSTALL No. 6E PULL BOXES PER DETAILS SHOWN ON SHEET FOC-X. ALL PULL BOXES IN DIRT OR PARKWAY SHALL HAVE A 1'x1'x4" CONCRETE CAP INSTALLED AROUND BOX.
8. ALL CONDUIT SHALL BE SCHEDULE 80 PVC AND RIGID STEEL AT ALL STREET CROSSINGS, AS SHOWN.
9. ALL SCH 80 PVC AND RIGID STEEL CONDUIT SHALL HAVE A #8 BARE BOND WIRE.
10. ALL FIBER OPTIC VAULTS/SPLICE BOX'S SHALL BE PER LADOT STANDARD DRAWINGS AND THE SPECIAL PROVISIONS.
11. NEW PULL BOXES OR VAULTS/FIBER OPTIC SPLICE BOXES SHALL NOT BE LOCATED IN OR WITHIN 1' OF ANY CURB ACCESS RAMP AND SHALL NOT BE CLOSER THAN 3' TO DRIVEWAYS.
12. EACH FIBER OPTIC CABLE SHALL BE PERMANENTLY IDENTIFIED. IDENTIFICATION SHALL BE BY DIRECT LABELING, FOR DETAILS SEE THE SPECIAL PROVISIONS.
13. THE CONTRACTOR SHALL PROVIDE ALL PATCH CORDS AND CABLING WITH APPROPRIATE CONNECTORS TO CONNECT ALL THE EXISTING/PROPOSED EQUIPMENT TO HAVE SYSTEM FULLY OPERATIONAL.
14. THE CONTRACTOR SHALL INSTALL REQUIRED COMMUNICATION EQUIPMENT IN ORDER TO PROVIDE A COMPLETE OPERATIONAL SYSTEM WITH MINIMUM DISRUPTION TO THE EXISTING COMMUNICATION SYSTEM.
15. TRAFFIC SIGNALS SHALL REMAIN IN OPERATION AT ALL TIMES UNLESS APPROVED BY THE CITY'S REPRESENTATIVE.
16. THE CONTRACTOR SHALL MAINTAIN THE EXISTING TRAFFIC SIGNAL, CCTV AND COMMUNICATION SYSTEMS (INCLUDING FIBER OPTIC SYSTEM) WITHIN THE PROJECT LIMITS. CARE SHALL BE TAKEN TO AVOID DAMAGING THESE SYSTEMS. IF THE EXISTING TRAFFIC SIGNAL, CCTV AND COMMUNICATION SYSTEMS (INCLUDING FIBER OPTIC SYSTEM) IS DAMAGED DURING CONSTRUCTION, THE CONTRACTOR SHALL REPLACE/REPAIR THE DAMAGED SYSTEM AS DIRECTED BY THE CITY'S REPRESENTATIVE AT NO COST TO THE CITY OF ORANGE.
17. BORE AND JACK METHOD SHALL BE USED FOR INSTALLING CONDUIT UNDER PAVEMENT.
18. THE LOCATIONS OF PROPOSED VAULTS/FIBER OPTIC SPICES BOXES AND PULL BOXES ARE APPROXIMATE AND MAY CHANGE TO SUIT FIELD CONDITIONS AS DIRECTED BY THE CITY'S REPRESENTATIVE.
19. ALL CONDUIT SHALL BE INSTALLED A MINIMUM OF 24" UNDER SIDEWALK AND STREET, UNLESS SHOWN OTHERWISE.
20. CONTRACTOR RESPONSIBLE FOR NOTIFYING THE CITY TRAFFIC OPERATIONS ENGINEER 72 HOURS PRIOR TO CONSTRUCTION FOR SCHEDULING ALL INSPECTIONS.
21. CONTRACTOR SHALL NOTIFY THE TRAFFIC MAINTENANCE SUPERVISOR THREE (3) WORKING DAYS PRIOR TO CONSTRUCTION. HAND DIG ALL TRENCHES UNTIL CLEAR OF OBSTRUCTIONS.
22. HAND DIG FOUNDATIONS AND TRENCHES UNTIL CLEAR OF OBSTRUCTIONS. POT HOLING REQUIRED FOR UTILITIES SHOWN OR NOT SHOWN SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE COST FOR POT HOLING REQUIRED FOR UTILITIES SHOWN OR NOT SHOWN SHALL BE INCLUDED IN THE CONTRACT BID PRICE.
23. ALL NEW PULL BOX LIDS SHALL READ "INTERCONNECT".
24. ALL CONDUITS AND INNERDUCTS SHALL HAVE THEIR ENDS SEALED WITH COMMERCIAL PREFORMED PLUGS, OR DUCT SEALED.
25. ALL CONCRETE SIDEWALK AND ASPHALT CONCRETE PAVEMENT DISTURBED DURING CONSTRUCTION SHALL BE REPLACED IN KIND IN ACCORDANCE TO THE CITY OF TEMECULA REQUIREMENTS.
26. SIDEWALK REMOVALS SHALL BE FULL WIDTH OF SIDEWALK WITH A MINIMUM OF 3' PANEL.
27. ALL SIDEWALK REPLACEMENT SHALL BE FULL WIDTH AND AT A LENGTH NOT LESS THAN 3 LINEAL FEET. IN NO CASE SHALL A SIDEWALK SECTION REMAIN WHICH HAS A LENGTH LESS THAN 3 LINEAL FEET WHEN MEASURED TO THE NEAREST JOINT.
28. ALL PROPOSED CONDUIT SHALL HAVE THE PROPER CLEARANCE FROM ANY WATER LINES PER THE CITY OF TEMECULA'S WATER DEPARTMENT'S GUIDELINES/STANDARDS.

LEGEND

[SEE CALTRANS STANDARD PLAN ES-1A FOR ADDITIONAL LEGENDS]

- EXISTING CCTV CAMERA
- EXISTING SPLICE CABINET
- EXISTING TRAFFIC SIGNAL
- EXISTING PULL BOX
- EXISTING CONDUIT
- EXISTING TRAFFIC SIGNAL
- EXISTING TRAFFIC SIGNAL CONTROLLER CABINET
- EXISTING FIRE HYDRANT
- EXISTING SERVICE CABINET
- EXISTING AIR VENT
- EXISTING GAS METER BOX
- EXISTING MAILBOX
- EXISTING MAN HOLE
- EXISTING NEWSPAPER STANDS
- EXISTING WATER METER
- EXISTING WATER VALVE
- EXISTING TELEPHONE DEMARCATION CABINET
- EXISTING IRRIGATION METER
- EXISTING CATCH BASIN
- PROPOSED CCTV CAMERA
- PROPOSED SPLICE BOX
- PROPOSED CONDUIT TO EXSITING CONDUIT SPLICE
- PROPOSED NO. 6E PULL BOX
- PROPOSED CONDUIT
- PROPOSED TRAFFIC SIGNAL
- FOC-X REFERENCE NUMBER PER SHEET, AS NOTED
- PROPOSED POLE LOCATION NUMBER

- WATER LINE
- CABLE TV
- ELECTICAL LINE
- GAS LINE
- STORM DRAIN
- OIL LINE
- SANITARY SEWER LINE
- TELEPHONE LINE
- COMMUNICATION LINE

SM SINGLE MODE
FOC FIBER OPTIC CABLE SIGNAL
SIC INTERCONNECT CABLE

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MBAKERINTL.COM

LDXX-XXXX

CONSTRUCTION RECORD	DATE	BY	REVISIONS	DATE	ACC'D	BENCH MARK
CONTRACTOR						600-6-81 RESET 1999, A 3-1/4" ALUM. DISK ON TOP OF CURB IN THE NW'LY RETURN AT THE INTERSECTION OF HWY. 79 AND FRONT STREET.
INSPECTOR						ELEVATION 996.809
DATE COMPLETED						

SCALE
HORIZONTAL: AS NOTED
VERTICAL: N/A

REGISTERED PROFESSIONAL ENGINEER RUBEN B. MANRIQUEZ No. 79675 Exp. 9-30-2016 CIVIL STATE OF CALIFORNIA

DESIGNED BY	DRAWN BY	CHECKED BY
RM	CT	RM

PLANS PREPARED UNDER THE SUPERVISION OF

DATE:

RUBEN B. MANRIQUEZ
R.C.E. 79675

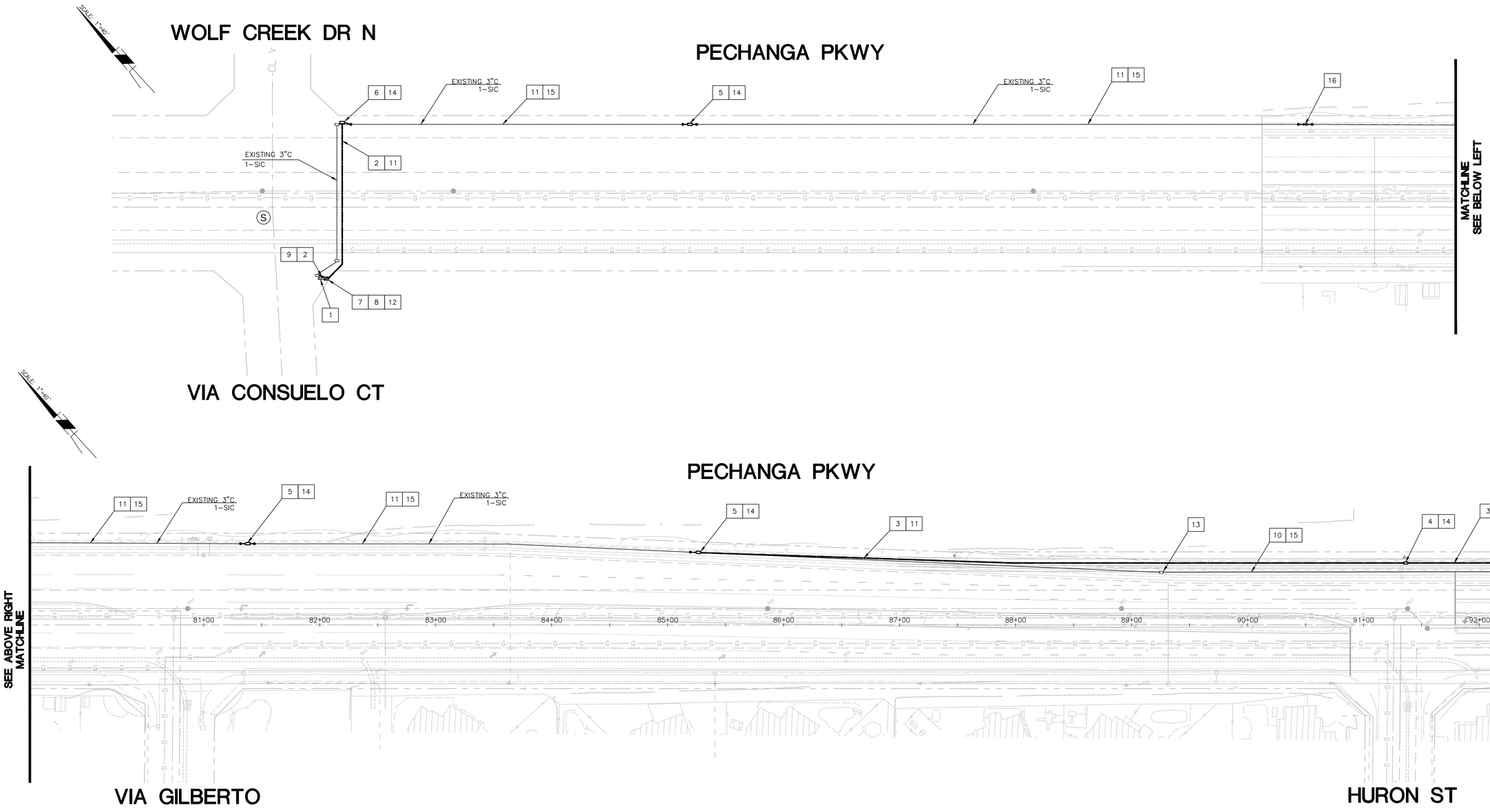
RECOMMENDED BY: DATE:

ACCEPTED BY: DATE:
THOMAS W. GARCIA
DIRECTOR OF PUBLIC WORKS/CITY ENGINEER
R.C.E. 48279

CITY OF TEMECULA — DEPARTMENT OF PUBLIC WORKS

FIBER OPTIC COMMUNICATIONS PLAN
PECHANGA PARKWAY

SHEET NO. 02 OF 7 SHEETS



NOTES THIS SHEET:

1. FOR GENERAL NOTES, CONSTRUCTION NOTES AND FIBER OPTIC CABLE CONDUIT GENERAL NOTES AND LEGEND SEE SHEET 01 AND 02.
2. FOR DETAILS SEE SHEET 06.

40 20 0 40 80 120

SCALE: 1"=40'

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TEMECULA, CA 92591
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MBAKERINTL.COM

NOT FOR CONSTRUCTION - 30% SUBMITTAL - 8/19/16

LDXX-XXXX

CONSTRUCTION RECORD	DATE	BY	REVISIONS	DATE	ACC'D	BENCH MARK
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INSPECTOR						ELEVATION 996.809
DATE COMPLETED						

SCALE
HORIZONTAL
AS NOTED
VERTICAL
N/A

REGISTERED PROFESSIONAL ENGINEER — RUBEN B. MANRIQUEZ — No. 79675 — Exp. 9-30-2016 — CIVIL — STATE OF CALIFORNIA

DESIGNED BY	DRAWN BY	CHECKED BY
RM	CT	RM

PLANS PREPARED UNDER THE SUPERVISION OF

_____ DATE: _____

RUBEN B. MANRIQUEZ
R.C.E. 79675

RECOMMENDED BY: _____ DATE: _____

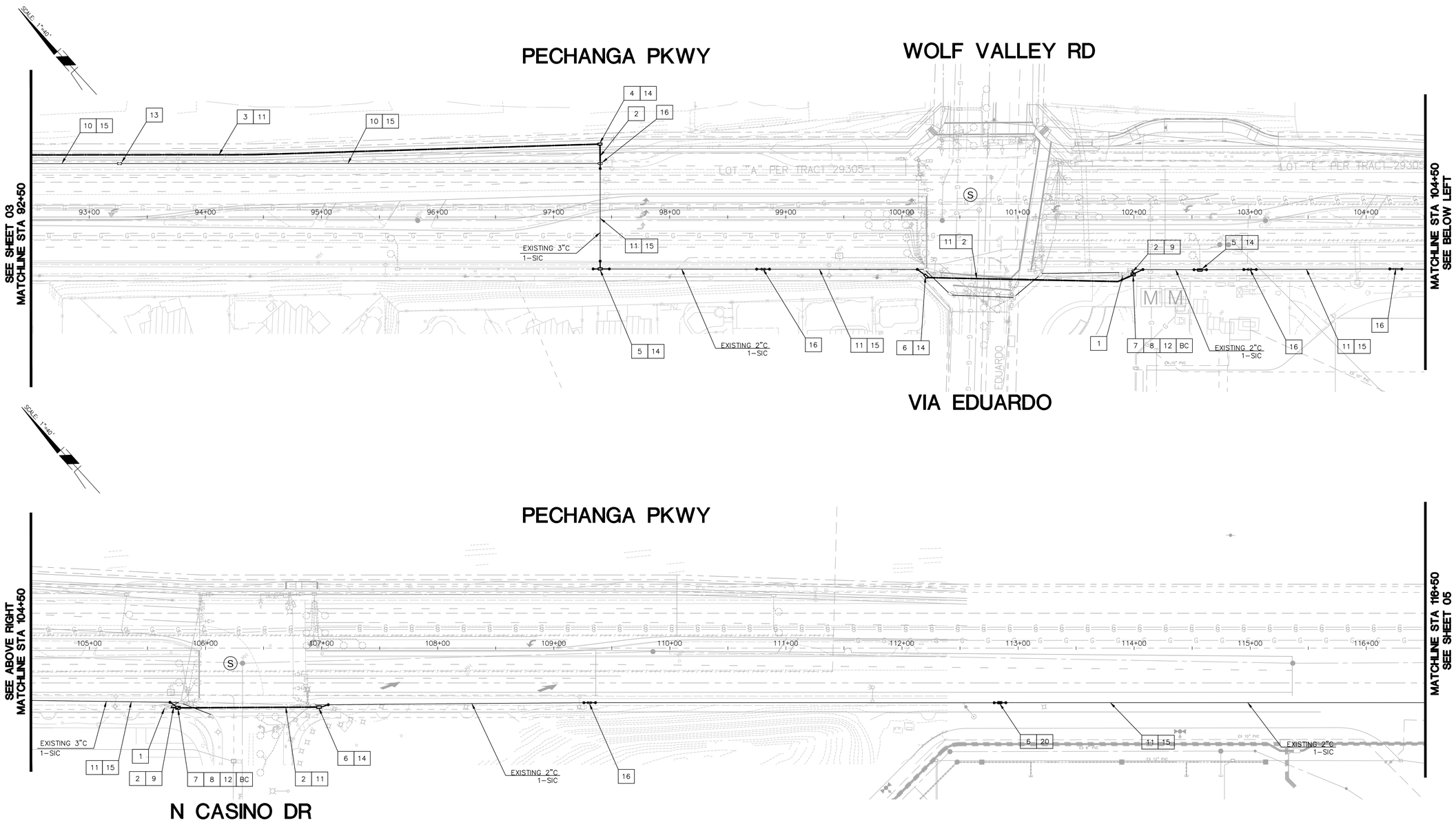
ACCEPTED BY: _____ DATE: _____

THOMAS W. GARCIA
DIRECTOR OF PUBLIC WORKS/CITY ENGINEER
R.C.E. 48279

CITY OF TEMECULA — DEPARTMENT OF PUBLIC WORKS

FIBER OPTIC COMMUNICATIONS PLAN
PECHANGA PARKWAY

SHEET NO. 03 OF 7 SHEETS



NOT FOR CONSTRUCTION - 30% SUBMITTAL - 8/19/16

NOTES THIS SHEET:

1. FOR GENERAL NOTES, CONSTRUCTION NOTES AND FIBER OPTIC CABLE CONDUIT GENERAL NOTES AND LEGEND SEE SHEET 01 AND 02.
2. FOR DETAILS SEE SHEET 06.

40 20 0 40 80 120

SCALE: 1"=40'

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LDXX-XXXX

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INSPECTOR						
DATE COMPLETED						ELEVATION 996.809

SCALE	
HORIZONTAL	AS NOTED
VERTICAL	N/A

REGISTERED PROFESSIONAL ENGINEER RUBEN B. MANRIQUEZ No. 79675 Exp. 9-30-2016 CIVIL STATE OF CALIFORNIA

DESIGNED BY	DRAWN BY	CHECKED BY
RM	CT	RM

PLANS PREPARED UNDER THE SUPERVISION OF

_____ DATE: _____

RUBEN B. MANRIQUEZ
R.C.E. 79675

RECOMMENDED BY: _____ DATE: _____

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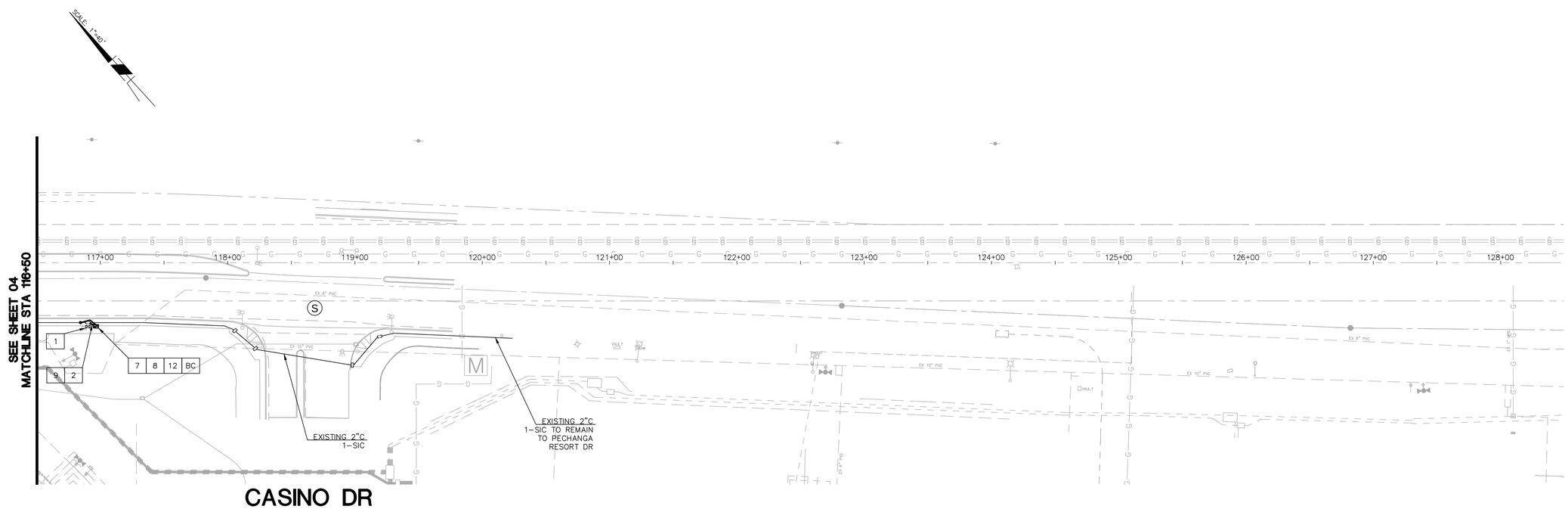
THOMAS W. GARCIA
DIRECTOR OF PUBLIC WORKS/CITY ENGINEER
R.C.E. 48279

CITY OF TEMECULA — DEPARTMENT OF PUBLIC WORKS

FIBER OPTIC COMMUNICATIONS PLAN
PECHANGA PARKWAY

SHEET NO. 04 OF 7 SHEETS

NOT FOR CONSTRUCTION - 30% SUBMITTAL - 8/19/16



NOTES THIS SHEET:

1. FOR GENERAL NOTES, CONSTRUCTION NOTES AND FIBER OPTIC CABLE CONDUIT GENERAL NOTES AND LEGEND SEE SHEET 01 AND 02.
2. FOR DETAILS SEE SHEETS 06 TO 07.

40 20 0 40 80 120

SCALE: 1"=40'

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LDXX-XXXX

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DATE COMPLETED						

SCALE
HORIZONTAL
AS NOTED
VERTICAL
N/A

REGISTERED PROFESSIONAL ENGINEER RUBEN B. MANRIQUEZ No. 79675 Exp. 9-30-2016 CIVIL STATE OF CALIFORNIA

DESIGNED BY	DRAWN BY	CHECKED BY
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DATE: _____

RUBEN B. MANRIQUEZ
R.C.E. 79675

RECOMMENDED BY: _____ DATE: _____

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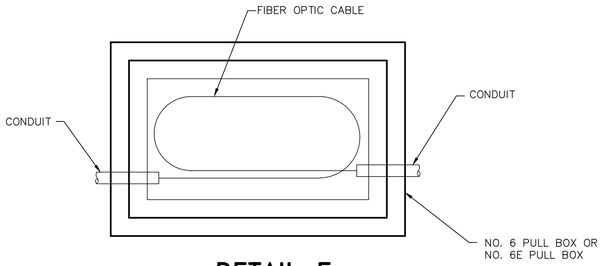
CITY OF TEMECULA — DEPARTMENT OF PUBLIC WORKS

FIBER OPTIC COMMUNICATIONS PLAN
PECHANGA PARKWAY

SHEET NO. 05 OF 7 SHEETS

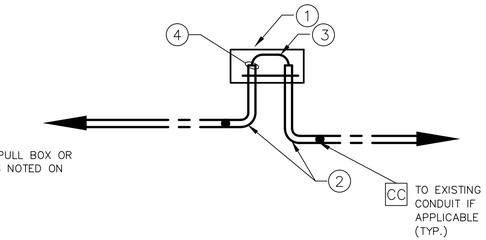
NOT FOR CONSTRUCTION - 30% SUBMITTAL - 8/19/16



DETAIL E

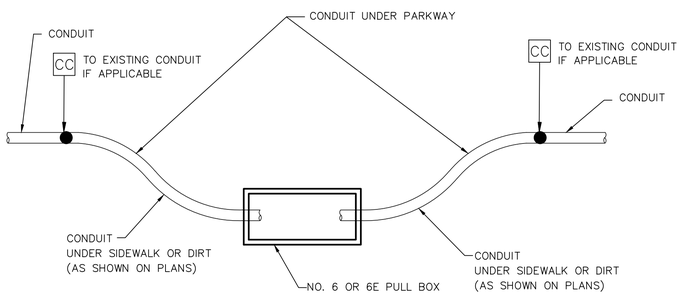
FIBER OPTIC PULL BOX WITH NO SPLICE

TRAFFIC SIGNAL FIBER OPTIC CABLE CONDUIT AND PULL BOX



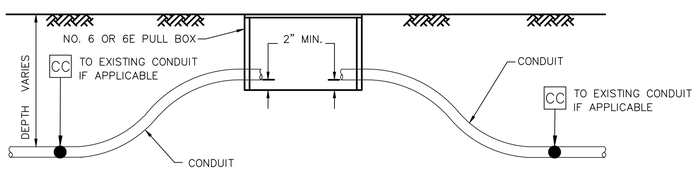
NOTES:

1. NO. 6, NO. 6E PULL BOX OR SPLICE BOX (AS NOTED ON PLANS)
2. 45° SWEEP
3. LOOP CABLES
4. TAG EACH CONDUIT BY DIRECTION TO NEXT PULL BOX

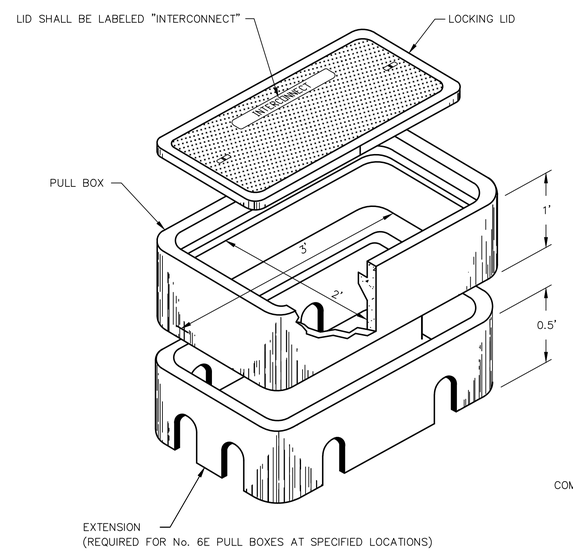


TOP VIEW

ROUTE CONDUIT UNDER PARKWAY INTO NO. 6E PULL BOX



SIDE VIEW

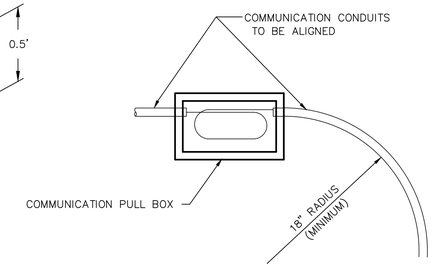


FIBER OPTIC CABLE PULL BOX

N.T.S.

CONDUIT NOTES: (THIS SHEET)

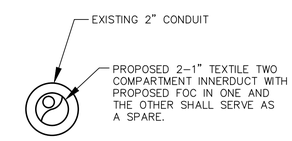
1. DIMENSIONS VARY ACCORDING TO SIZE OF CONDUIT ETC. BUT THE MINIMUM BEND RADIUS SHALL BE SIX TIMES THE CONDUIT DIAMETER FOR ALL CONDUITS.
2. ALL BENDS SHALL BE FACTORY BENDS.
3. CONTRACTOR SHALL ADAPT CONDUIT STUBOUTS FOR SPECIFIC PROJECT REQUIREMENTS.
4. ADDITIONAL CONDUIT ENTRANCES AS REQUIRED.



DETAIL C

TYPICAL MINIMUM BENDING RADIUS

INNERDUCT DETAIL



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LDXX-XXXX

CONSTRUCTION RECORD	DATE	BY	REVISIONS	DATE	ACC'D
CONTRACTOR					
INSPECTOR					
DATE COMPLETED					

BENCH MARK: 600-6-81 RESET 1999, A 3-1/4" ALUM. DISK ON TOP OF CURB IN THE NW'LY RETURN AT THE INTERSECTION OF HWY. 79 AND FRONT STREET. ELEVATION 996.809

SCALE: HORIZONTAL AS NOTED; VERTICAL N/A

REGISTERED PROFESSIONAL ENGINEER RUBEN B. MANRIQUEZ No. 79675 Exp. 9-30-2016 CIVIL STATE OF CALIFORNIA

DESIGNED BY	DRAWN BY	CHECKED BY
RM	CT	RM

PLANS PREPARED UNDER THE SUPERVISION OF

DATE:

RUBEN B. MANRIQUEZ
R.C.E. 79675

RECOMMENDED BY: DATE:

ACCEPTED BY: DATE:

THOMAS W. GARCIA
DIRECTOR OF PUBLIC WORKS/CITY ENGINEER
R.C.E. 48279

CITY OF TEMECULA — DEPARTMENT OF PUBLIC WORKS

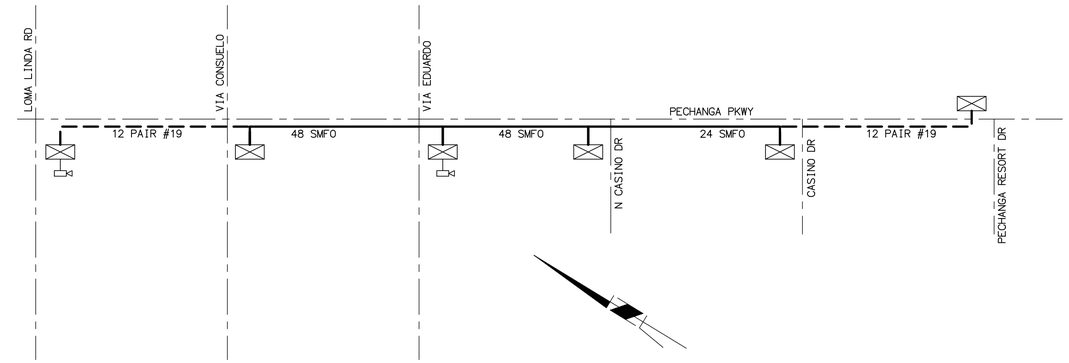
FIBER OPTIC COMMUNICATIONS PLAN
PECHANGA PARKWAY

SHEET NO. 06 OF 7 SHEETS

FO CABLE – VIA CONSUELO TO PECHANGA RESORT DR

FIBER OPTIC TABLE (48 SINGLE MODE FIBER OPTIC CABLE)

BUNDLE #	FIBER #	TRAFFIC SIGNAL CONTROLLER/CCTV CAMERA	NOTES
1	1–2	PECHANGA PKWY @ VIA CONSUELO TRAFFIC SIGNAL PECHANGA PKWY @ VIA EDUARDO TRAFFIC SIGNAL PECHANGA PKWY @ N. CASINO DR TRAFFIC SIGNAL PECHANGA PKWY @ PECHANGA RESORT DR TRAFFIC SIGNAL	TWO FIBERS ASSIGNED TO PECHANGA PKWY
1	3–12	PECHANGA PKWY (SPARES)	(SPARE FIBERS/FUTURE USE)
2	13–24	PECHANGA PKWY (SPARES)	(SPARE FIBERS/FUTURE USE)
3	25–36	PECHANGA PKWY (SPARES)	(SPARE FIBERS/FUTURE USE)
4	37–48	PECHANGA PKWY (SPARES)	(SPARE FIBERS/FUTURE USE)

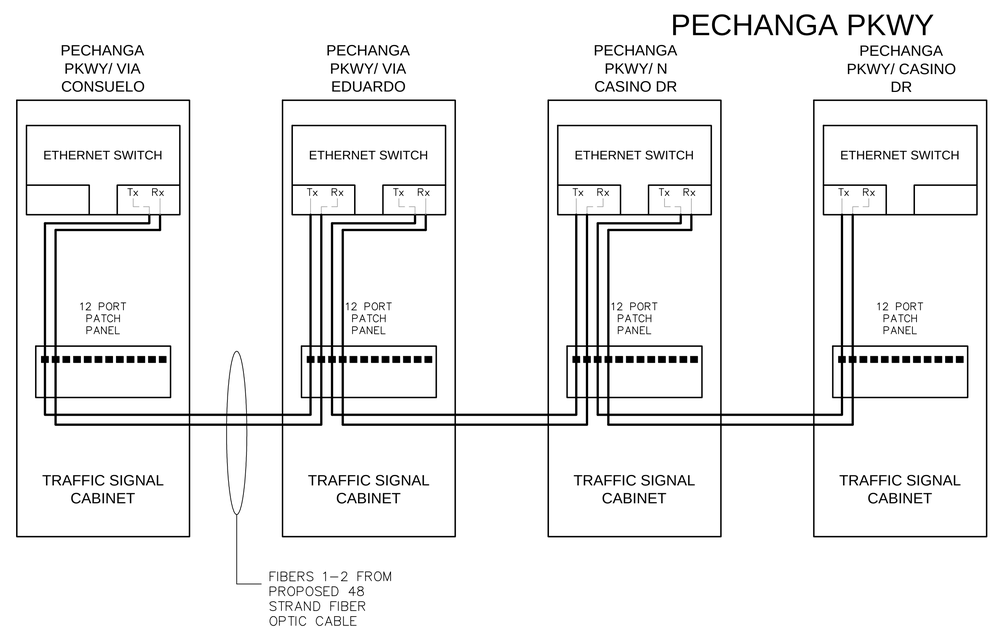


COMMUNICATION SCHEMATIC

NOT TO SCALE

LEGEND THIS SHEET:

- F.O. FUSION SPLICE
- F.O. TERMINATE
- NEW F.O. CABLE
- EXISTING SIC CABLE
- Tx TRANSMIT
- Rx RECEIVE
- EXIST CCTV
- EXIST VIDEO DETECTION
- EXIST CABINET
- EXIST FIRE STATION
- EXIST HUB
- PROPOSED CCTV



FIBER OPTIC ASSIGNMENT DETAIL

NOT TO SCALE

NOTES (THIS SHEET ONLY):

1. FOR GENERAL NOTES, LEGEND, FIBER OPTIC PLAN CONSTRUCTION NOTES, AND DETAILS SEE SHEETS 01–02.

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CONSTRUCTION RECORD	DATE	BY	REVISIONS	DATE	ACC'D
CONTRACTOR					
INSPECTOR					
DATE COMPLETED					

BENCH MARK: 600-6-81 RESET 1999, A 3-1/4" ALUM. DISK ON TOP OF CURB IN THE NW'LY RETURN AT THE INTERSECTION OF HWY. 79 AND FRONT STREET. ELEVATION 996.809

SCALE: HORIZONTAL AS NOTED; VERTICAL N/A

REGISTERED PROFESSIONAL ENGINEER RUBEN B. MANRIQUEZ No. 79675 Exp. 9-30-2016 CIVIL STATE OF CALIFORNIA

DESIGNED BY	DRAWN BY	CHECKED BY
RM	CT	RM

PLANS PREPARED UNDER THE SUPERVISION OF

DATE:

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R.C.E. 79675

RECOMMENDED BY: DATE:

ACCEPTED BY: DATE:
THOMAS W. GARCIA
DIRECTOR OF PUBLIC WORKS/CITY ENGINEER
R.C.E. 48279

CITY OF TEMECULA — DEPARTMENT OF PUBLIC WORKS

FIBER OPTIC COMMUNICATIONS PLAN
PECHANGA PARKWAY

LDXX-XXXX

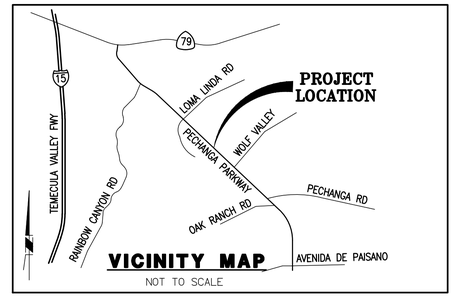
SHEET NO. 07 OF 7 SHEETS

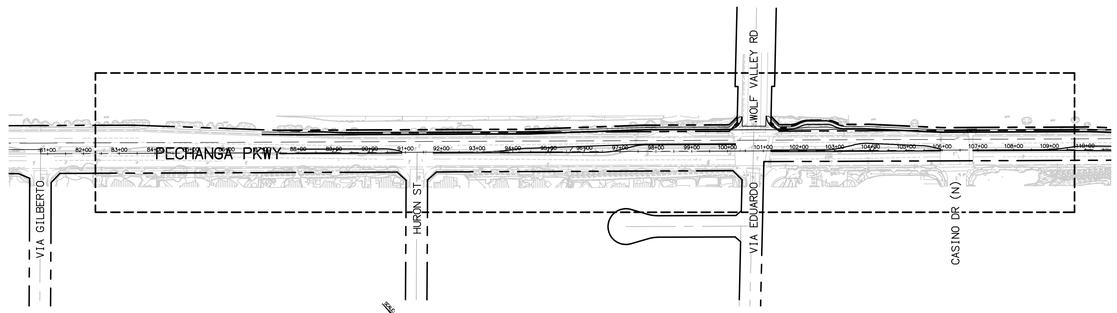
NOT FOR CONSTRUCTION - 30% SUBMITTAL - 8/19/16

CITY OF TEMECULA

TRAFFIC CONTROL PLAN

PECHANGA PARKWAY





INDEX MAP
SCALE: 1"=200'

TRAFFIC CONTROL GENERAL NOTES

1. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (CALIFORNIA MUTCD) AND THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.
2. THE CITY ENGINEER OR HIS REPRESENTATIVE HAS THE AUTHORITY TO INITIATE FIELD CHANGES TO ASSURE PUBLIC SAFETY.
3. ALL TRAFFIC CONTROL DEVICES SHALL BE REMOVED FROM VIEW WHEN NOT IN USE.
4. WORK HOURS SHALL BE RESTRICTED TO THE PERIOD BETWEEN 8:30 A.M. AND 3:30 P.M., MONDAY THROUGH FRIDAY, UNLESS APPROVED OTHERWISE. WHEN NIGHT WORK IS REQUIRED, WORK HOURS SHALL BE 9 P.M. TO 5 A.M., SUNDAY THROUGH THURSDAY.
5. TRENCHES MUST BE BACK FILLED OR PLATED DURING NON-WORKING HOURS.
6. PEDESTRIAN CONTROLS SHALL BE PROVIDED AS SHOWN ON THE PLANS.
7. TEMPORARY "NO PARKING" SIGNS WILL BE POSTED 24 HOURS PRIOR TO COMMENCING WORK.
8. ACCESS TO DRIVEWAYS WILL BE MAINTAINED AT ALL TIMES UNLESS OTHER ARRANGEMENTS ARE MADE.
9. THE CONTRACTOR SHALL REPLACE WITHIN 72 HOURS, ALL TRAFFIC SIGNAL LOOP DETECTORS DAMAGED DURING CONSTRUCTION.
10. THE CONTRACTOR SHALL REPLACE WITHIN 24 HOURS, ALL STRIPING REMOVED OR DAMAGED BY CONSTRUCTION WORK. (STRIPING MAY BE REPLACED TEMPORARILY WITH TAPE.)
11. ALL WORKERS SHALL BE EQUIPPED WITH AN ORANGE VEST (OR A REFLECTIVE VEST AT NIGHT). ALL FLAGGERS SHALL ALSO BE EQUIPPED WITH A HARD HAT, C28 "STOP/SLOW" PADDLE AND SHALL BE TRAINED IN THE PROPER FUNDAMENTALS OF FLAGGING TRAFFIC.
12. ANY WORK THAT DISTURBS NORMAL TRAFFIC SIGNAL OPERATIONS SHALL BE COORDINATED WITH THE CITY OF TEMECULA'S TRAFFIC DIVISION, 48 HOURS PRIOR TO BEGINNING CONSTRUCTION. CONTACT THE CITY'S TRAFFIC DIVISION AT (951) 694 -6411.
13. THE CONTRACTOR SHALL MAINTAIN ALL TRAFFIC CONTROL DEVICES 24 HOURS PER DAY AND 7 DAYS PER WEEK.
14. A MINIMUM OF TWELVE (12) FOOT TRAVEL LANES MUST BE MAINTAINED UNLESS OTHERWISE APPROVED BY THE DEPARTMENT OF PUBLIC WORKS.
15. ALL NIGHT WORK WILL REQUIRE WRITTEN APPROVAL FROM THE DEPARTMENT OF PUBLIC WORKS. LANE CLOSURES, ROAD DETOURS, ROAD CLOSURES, AND TRAFFIC SIGNAL MODIFICATIONS ASSOCIATED WITH OVERNIGHT CONSTRUCTION ACTIVITIES WILL REQUIRE WARNING SIGNS BE PLACED AT LEAST ONE WEEK IN ADVANCE OF STARTING CONSTRUCTION.
16. A SOLAR POWERED FLASHING ARROW BOARD SHALL BE REQUIRED ON ALL ARTERIAL STREET LANE CLOSURES.

LEGEND AND CONSTRUCTION NOTES:

- WORK AREA
- TYPE II BARRICADE WITH SIGN AS NOTED ON PLAN
- SIGN (AS NOTED ON PLAN)
- PORTABLE CONES
- DIRECTION OF TRAVEL
- 12' CONSTRUCTION LANE DIMENSION
- SOLAR/BATTERY POWERED FLASHING ARROW SIGN (FAS)
- TS SIGNAL AT INTERSECTION
- TNP TEMPORARY NO PARKING

SIGN LEGEND

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
20	TITLE SHEET - TRAFFIC CONTROL LEGEND AND NOTES
21-X	TRAFFIC CONTROL PHASES TO BE DEVELOP

TRAFFIC CONTROL NOTES:

STREET: PECHANGA PARKWAY

SIGN SPACING	CONE SPACING	SPEED APPROACH
350 FT.	20 FT.	40 MPH.

THE CONTRACTOR SHALL REPLACE WITHIN 72 HOURS, ALL TRAFFIC SIGNAL LOOP DETECTORS DAMAGED DURING THE CONSTRUCTION.

ANY WORK THAT DISTURBS NORMAL TRAFFIC SIGNAL OPERATIONS SHALL BE COORDINATED WITH THE CITY OF TEMECULA'S TRAFFIC DIVISION, 48 HOURS PRIOR TO BEGINNING CONSTRUCTION. CONTACT THE CITY'S TRAFFIC DIVISION AT (951)694-6411.

OWNER

CITY OF TEMECULA

Michael Baker INTERNATIONAL
40810 COUNTY CENTER DR., SUITE 100
TEMECULA, CA 92591
PHONE: (951) 676-8042
MBAKERINTL.COM

LDXX-XXXX

CONSTRUCTION RECORD	DATE	BY	REVISIONS	DATE	ACC'D
CONTRACTOR					
INSPECTOR					
DATE COMPLETED					

BENCH MARK: 600-6-81 RESET 1999, A 3-1/4" ALUM. DISK ON TOP OF CURB IN THE NW'LY RETURN AT THE INTERSECTION OF HWY. 79 AND FRONT STREET.
ELEVATION 996.809

SCALE: HORIZONTAL AS NOTED; VERTICAL N/A

REGISTERED PROFESSIONAL ENGINEER RYAN K. ZELLERS NO. 69470 EXP. 06-30-18 CIVIL STATE OF CALIFORNIA

DESIGNED BY	DRAWN BY	CHECKED BY
BHS	BHS	RKZ

PLANS PREPARED UNDER THE SUPERVISION OF
DATE:
RYAN K. ZELLERS
R.C.E. 69470

RECOMMENDED BY: DATE:
ACCEPTED BY: DATE:
THOMAS W. GARCIA
DIRECTOR OF PUBLIC WORKS/CITY ENGINEER
R.C.E. 48279

CITY OF TEMECULA — DEPARTMENT OF PUBLIC WORKS

TRAFFIC CONTROL PLANS
PECHANGA PARKWAY

TITLE SHEET

SHEET NO. 20 OF X SHEETS

NOT FOR CONSTRUCTION - 30% SUBMITTAL - 8/19/16

H:\PDATA\153547 PECHANGA PKWY WIDENING\CADD\TRANSPW\DLV\STAGE\153547-20-TC.DWG BLANCA.SOTO 8/19/2016 1:11 PM

CITY OF TEMECULA

MEDIAN LANDSCAPE & IRRIGATION IMPROVEMENT PLANS

PECHANGA PARKWAY

FROM STATION STA 87+44 TO STA 115+36

PROJECT NO. PW 15-14

GENERAL NOTES:

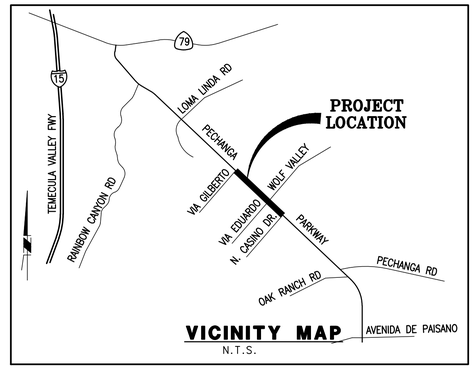
1. A NO-FEE CONSTRUCTION PERMIT IS REQUIRED FOR THE PRIME CONTRACTOR PERFORMING THE WORK SHOWN ON THESE PLANS. THE PERMIT CAN BE OBTAINED AT THE CITY OF TEMECULA PUBLIC WORKS DEPARTMENT, 43200 BUSINESS PARK DRIVE, TEMECULA, CALIFORNIA.
2. THE CONTRACTOR SHALL GIVE THE CITY INSPECTOR OR PROJECT MANAGER AT LEAST 48 HOURS NOTICE PRIOR TO COMMENCING WORK. ANY WORK DONE WITHOUT PROPER INSPECTION WILL BE SUBJECT TO REJECTION. FOR INSPECTION, CALL: 951-694-6411.
3. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE PLANS, THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION "THE GREENBOOK", CALTRANS STANDARD SPECIFICATIONS AND PLANS, THE CITY OF TEMECULA STANDARD DRAWINGS, AND THE PROJECT SPECIFICATIONS.
4. THE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT OF ANY INCONSISTENCIES BETWEEN THESE PLANS AND FIELD CONDITIONS PRIOR TO CONSTRUCTION.
5. THE LANDSCAPE ARCHITECT SHALL BE NOTIFIED OF CHANGES OR ADDITIONS THAT ARE TO BE MADE PRIOR TO INSTALLATION. NO DEVIATION FROM THESE PLANS IS PERMITTED WITHOUT APPROVAL OF THE LANDSCAPE ARCHITECT.
6. IMPORTANT NOTICE: SECTION 4216/4217 OF THE GOVERNMENT CODE REQUIRES THAT A DIG ALERT IDENTIFICATION NUMBER BE ISSUED BEFORE A "PERMIT TO EXCAVATE" WILL BE VALID. FOR YOUR DIG ALERT I.D. NUMBER, CALL UNDERGROUND SERVICE ALERT AT 1-800-422-4133 THREE-WORKING DAYS BEFORE YOU DIG.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION AND PROTECTION OF ALL UTILITIES. FOR LOCATION OF UNDERGROUND UTILITIES, OR FOR EMERGENCY ASSISTANCE CALL:

SOUTHERN CALIFORNIA EDISON	(951) 928-8318
SOUTHERN CALIFORNIA GAS COMPANY	(951) 335-7828
EASTERN MUNICIPAL WATER DISTRICT	(951) 928-3777 EXT. 4439
RANCHO CALIFORNIA WATER DISTRICT	(951) 296-6900
VERIZON (TELEPHONE)	(951) 766-4270
TIME WARNER (CABLE T.V.)	(951) 587-8660
UNDERGROUND SERVICE ALERT	(800) 442-4133
METROPOLITAN WATER DISTRICT OF SOUTHERN CAL.	(951) 776-2626

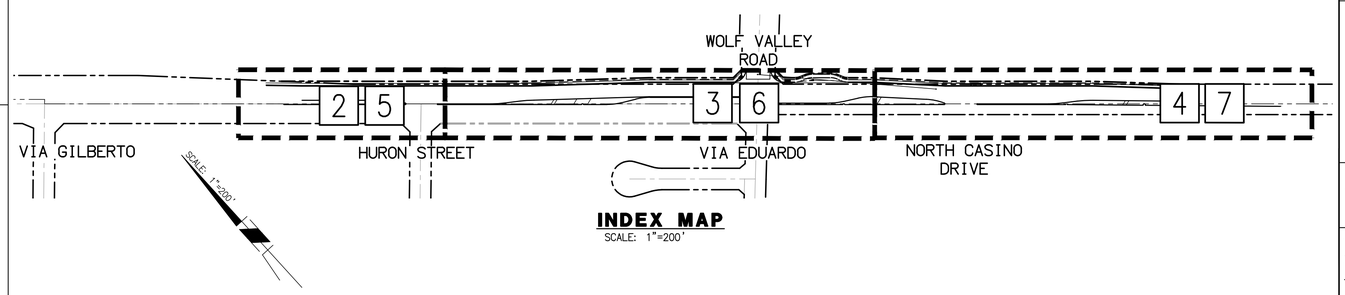
8. THE EXISTENCE AND LOCATION OF ALL UNDERGROUND FACILITIES AS SHOWN ON THESE PLANS WAS OBTAINED BY A SEARCH OF THE AVAILABLE RECORDS. TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO EXISTING FACILITIES, EXCEPT AS SHOWN. THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT ALL SUBSTRUCTURES WHETHER OR NOT SHOWN ON THESE PLANS. THE CONTRACTOR SHALL MAKE EXPLORATORY EXCAVATIONS AND LOCATE EXISTING UNDERGROUND FACILITIES SUFFICIENTLY AHEAD OF CONSTRUCTION TO PERMIT REVISIONS TO THESE PLANS WHEN NECESSARY. THE EXPENSE OF REPAIR OR REPLACEMENT OF SAID SUBSTRUCTURES SHALL BE BORNE BY THE CONTRACTOR.
9. ALL UNDERGROUND UTILITIES TO BE CONSTRUCTED WITHIN THE STREET RIGHT-OF-WAY SHALL BE INSTALLED, CONNECTED, AND TESTED PRIOR TO CONSTRUCTION OF ANY CONCRETE CURBS, CROSS GUTTERS, OR ASPHALT CONCRETE PAVEMENT.
10. ALL TRENCHES SHALL BE COMPLETED IN ACCORDANCE WITH CITY OF TEMECULA STANDARD DRAWINGS NUMBERS 407 AND 407A.
11. ALL PROPERTY CORNERS SHALL BE UNDISTURBED BY THE CONSTRUCTION OF THE IMPROVEMENTS OR THEY SHALL BE RESET AT THE CONTRACTOR'S EXPENSE.
12. ALL SLOPES SHALL BE ROUNDED INTO EXISTING TERRAIN TO PRODUCE A CONTOURED TRANSITION FROM CUT OR FILL TO THE NATURAL GROUND ABUTTING THE SLOPE.
13. THE CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. THE CONTRACTOR SHALL DEFEND, INDEMNIFY, AND HOLD THE CITY, ITS OFFICERS, OFFICIALS, EMPLOYEES, AGENTS, VOLUNTEERS AND THE LANDSCAPE ARCHITECT HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE CITY OR THE ENGINEER.
14. A SET OF "AS BUILT" DRAWINGS MUST BE SUBMITTED BY THE CONTRACTOR TO THE LANDSCAPE ARCHITECT PRIOR TO ACCEPTANCE OF THE IMPROVEMENTS.
15. LOOP DETECTORS MUST BE REPLACED AT EACH INTERSECTION WITHIN 2-WEEKS OF DISRUPTION OF THE INTERSECTION

NOTICE TO CONTRACTORS

1. THE EXISTENCE AND LOCATION OF ANY UNDERGROUND UTILITIES OR STRUCTURES SHOWN ON THESE PLANS ARE OBTAINED BY SEARCH OF AVAILABLE RECORDS AND TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO EXISTING UTILITIES EXCEPT THOSE SHOWN ON THIS PLAN. THE CONTRACTOR IS REQUIRED TO TAKE ALL PRECAUTIONARY MEASURES TO PROTECT THE UTILITIES SHOWN, AND ANY OTHER LINES OR STRUCTURES NOT SHOWN ON THESE PLANS, AND IS RESPONSIBLE FOR PROTECTION OF AND ANY DAMAGE TO THESE LINES OR STRUCTURES.
2. CONSTRUCTION CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONSTRUCTION CONTRACTORS WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT. INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS, AND CONSTRUCTION CONTRACTOR FURTHER AGREES TO, DEFEND, INDEMNIFY, AND HOLD DESIGN PROFESSIONAL AND OWNER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT.
3. THE CONTRACTOR SHALL BE RESPONSIBLE TO REPORT DISCREPANCIES IN PLANS AND/OR FIELD CONDITIONS IMMEDIATELY TO THE DESIGN ENGINEER FOR RESOLUTION PRIOR TO CONSTRUCTION, AND SHALL BE RESPONSIBLE FOR DISCREPANCIES NOT SO REPORTED AND RESOLVED.
4. CAUTION: THE ENGINEER PREPARING THESE PLANS WILL NOT RESPONSIBLE FOR, OR LIABLE FOR, UNAUTHORIZED CHANGES OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE "PLANS".



VICINITY MAP
N.T.S.



INDEX MAP
SCALE: 1"=200'

SHEET INDEX

SHT. 1	TITLE SHEET
SHT. 2	PLANTING PLAN STA 87+44-92+00, LEGEND AND NOTES
SHT. 3	PLANTING PLAN STA 92+00-104+00
SHT. 4	PLANTING PLAN STA 104+00-115+36
SHT. 5	IRRIGATION PLAN STA 87+00-92+00, LEGEND AND NOTES
SHT. 6	IRRIGATION PLAN STA 92+00-104+00
SHT. 7	IRRIGATION PLAN STA 104+00-115+36
SHT. 8	PLANTING & IRRIGATION DETAILS
SHT. 9	IRRIGATION DETAILS
SHT. 10	IRRIGATION DETAILS

CITY OF TEMECULA STANDARD NOTES

1. ALL WORK SHALL COMPLY WITH THE CITY OF TEMECULA COMMUNITY SERVICE DEPARTMENT LANDSCAPE STANDARD SPECIFICATION AND INSTALLATION DETAILS.
2. INSPECTIONS ARE REQUIRED BY THE TCSD LANDSCAPE INSPECTOR PER THE TCSD LANDSCAPE CONSTRUCTION INSPECTION JOB CARD.
3. CONTRACTOR SHALL CONTACT THE TCSD AT (951) 694- 6480 PRIOR TO COMMENCING LANDSCAPE INSTALLATION TO SCHEDULE THE REQUIRED PRE-JOB MEETING.
4. IRRIGATION CONTROLLER CHARTS ARE REQUIRED TO BE COMPLETE PRIOR TO BEGINNING THE MAINTENANCE PERIOD.
5. THE CONTRACTOR SHALL SUPPLY DATA REPORTS FROM THE CONTROLLER TO THE CITY AT THE 30, 60 AND 90 DAY INSPECTION. THE CONTRACTOR IS TO REVIEW THE DATA AND MAKE CORRECTIONS TO ALL IRRIGATION SYSTEMS AS REQUIRED.

GENERAL IRRIGATION NOTES.

1. CONTRACTOR SHALL INSTALL ONE (1) COMPLETE DRIP IRRIGATION STATION SYSTEM (I.E. REMOTE CONTROL VALVE, DISK FILTER, PRESSURE REGULATOR, LATERAL AND EMITTERS, FLUSH VALVE, ETC.) CONTRACTOR SHALL THEN CALL THE TCSD INSPECTOR FOR AN INSPECTION AND TESTING OF THE IRRIGATION STATION. ONCE THE TCSD REPRESENTATIVE APPROVES THE INSTALLED IRRIGATION STATION, THE REMAINING DRIP SYSTEM MAY BE CONSTRUCTED.
2. IRRIGATION MAINLINE, VALVES, SLEEVING AND QUICK COUPLERS ARE SHOWN IN ROAD FOR PLAN CLARITY. EQUIPMENT SHALL BE PLACED WITHIN PLANING AREAS IN MEDIANS WHENEVER POSSIBLE. ALL IRRIGATION EQUIPMENT SHALL BE LOCATED IN THE CITY RIGHT-OF-WAY.
3. CONTRACTOR SHALL RE-DESIGN AND RETROFIT THE ADJACENT EXISTING IRRIGATION TO ELIMINATE OVERSPRAY ONTO THE NEW EQUIPMENT.
4. IRRIGATION SYSTEM TO USE DOMESTIC WATER. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE RANCHO CALIFORNIA WATER DISTRICT RULES AND REGULATIONS.

WATER SOURCE

RANCHO CALIFORNIA WATER DISTRICT	951-296-6900
EXISTING DOMESTIC WATER METER SIZE:	1 1/2"
PEAK WATER DEMAND:	24 GPM

REFER TO "PW99011- PECHANGA PKWY MEDIANS PLAN" DATED 10/20/2007 PREPARED BY ALHAMBRA GROUP FOR PRESSURE AND ADDITIONAL INFORMATION.

ALL EQUIPMENT SHALL BE LOCATED WITHIN THE CITY RIGHT-OF-WAY.

POWER SOURCE

EXISTING CONTROLLER W/ METER ENCLOSURE - PROTECT IN PLACE.

REFER TO "PW99011- PECHANGA PKWY MEDIANS PLAN" DATED 10/20/2007 PREPARED BY ALHAMBRA GROUP FOR ADDITIONAL INFORMATION.

ALL EQUIPMENT SHALL BE LOCATED WITHIN THE CITY RIGHT-OF-WAY.

CONTROLLER NOTES.

EXISTING CONTROLLER W/ METER ENCLOSURE - PROTECT IN PLACE.

CONTRACTOR SHALL UTILIZE EXISTING CONTROL WIRES FROM EXISTING CONTROLLER TO EXISTING VALVES FOR INSTALLATION OF NEW VALVES. UPDATE CONTROLLER CHART AS REQUIRED.

REFER TO "PW99011- PECHANGA PKWY MEDIANS PLAN" DATED 10/20/2007 PREPARED BY ALHAMBRA GROUP FOR ADDITIONAL INFORMATION.

ALL EQUIPMENT SHALL BE LOCATED WITHIN THE CITY RIGHT-OF-WAY.

LANDSCAPE AREA:

TOTAL LANDSCAPE IN TCSD MAINTAINED AREA:	11,700	SF
TOTAL TREES IN TCSD MAINTAINED AREA:	43	24" BOX

TOTAL LANDSCAPE QUANTITIES IN TCSD MAINTAINED AREA:

IMPORT AND PLACE TOPSOIL	–	CY
SOIL PREP AND FINE GRADE	11,700	SF
INSTALL AUTOMATIC IRRIGATION SYSTEM	1	LS
SLEEVING (ROADWAY)	–	LF
WATER METERS	–	LS
ELECTRIC METERS	–	LS
CONTROLLER	–	LS
PLANT 24" BOX TREES	43	EA
PLANT 5 GALLON SHRUBS	1,418	EA
PLANT ONE GALLON SHRUBS	–	EA
ROOT BARRIER	86	EA
4" LAYER OF ORGANIC MULCH	11,700	SF

NOTE: QUANTITIES ARE FOR THE CONVENIENCE OF THE CONTRACTOR ONLY. CONTRACTOR TO DEVELOP HIS OWN QUANTITIES AND ALLOW FOR SHRINKAGE AND COMPACTION.

BASIS OF BEARINGS:

THE BEARINGS FOR THIS SURVEY ARE BASED ON THE LINE BETWEEN STATIONS "PINYON 1" AND "LAKE MATHEWS" (POSITIONS PER NATIONAL GEODETIC SURVEY, GRS80 ELLIPSOID, CCS83, EPOCH 1995.5) AS SHOWN ON THE MAP FILED IN BOOK 102, PAGES 50 THROUGH 65 OF RECORDS OF SURVEYS IN THE OFFICE OF THE COUNTY RECORDER OF RIVERSIDE COUNTY, CALIFORNIA, BEING N 72°55'01" W.

REPAIRS TO EXISTING IMPROVEMENTS

CONTRACTOR TO REVIEW IRRIGATION PLANS THOROUGHLY. NOTE THAT NEW MAINLINE IS ROUTED THROUGH EXISTING LANDSCAPED MEDIAN/ PARKWAY IMPROVEMENTS CONTAINING LANDSCAPE AND IRRIGATION IMPROVEMENTS. CONTRACTOR TO PROTECT EXISTING SYSTEMS IN PLACE AS MUCH AS POSSIBLE. SYSTEMS THAT ARE DAMAGED SHALL BE REPAIRED TO THE SATISFACTION OF THE TCSD INSPECTOR AND PROPERTY OWNER AS PART OF THIS CONTRACT. REPLACE DAMAGED TURF, GROUND COVER, SHRUBS AND TREES TO MATCH THE ORIGINALLY SPECIFIED PLANT. MULCH SHALL BE REPLACED TO A DEPTH OF 4" IN SHRUB AREAS.

Michael Baker INTERNATIONAL
40810 COUNTY CENTER DR., SUITE 100
TEMECULA, CA 92591
PHONE: (951) 676-8042
MBAKERINTL.COM

ASSESSOR'S PARCEL NUMBER:

918-230-001

SOURCE OF TOPOGRAPHY:

EXISTING TOPOGRAPHY SHOWN ON THESE PLANS WAS PROVIDED BY INLAND AERIAL SURVEY, INC. COMPILED FROM AERIAL PHOTOGRAPHY DATED 05-18-16.

SOILS ENGINEER:

GEOCON WEST, INC
41571 CORNING PLACE, SUITE 100
MURRIETA, CA 92562
(951) 304-2300

LANDSCAPE MAINTENANCE RESPONSIBILITY NOTE:

IT SHALL BE THE RESPONSIBILITY OF THE CITY OF TEMECULA TO MAINTAIN ALL ON SITE WATER IRRIGATION SYSTEMS IN ACCORDANCE WITH RCWD REQUIREMENTS AND ALL APPLICABLE CODES & ORDINANCES.

RCWD JOB NO. : E____ H____

EXISTING 1 1/2" WATER SERVICE FOR LANDSCAPE PURPOSES

LDXX-XXXX

CONSTRUCTION RECORD	DATE	BY	REVISIONS	DATE	ACC'D
CONTRACTOR _____					
INSPECTOR _____					
DATE COMPLETED _____					

BENCH MARK

600-6-81 RESET 1999, A 3-1/4" ALUM. DISK ON TOP OF CURB IN THE NW'LY RETURN AT THE INTERSECTION OF HWY. 79 AND FRONT STREET.

ELEVATION 996.809

SCALE
HORIZONTAL: AS NOTED
VERTICAL: N/A

REGISTERED LANDSCAPE ARCHITECT — JOHN PRESTON ANDREW LIC. NO. 3152 — SIGNATURE — SEP. 30, 2017 RENEWAL DATE — DATE — STATE OF CALIFORNIA

DESIGNED BY	DRAWN BY	CHECKED BY
JA	MH, AC	JA

PLANS PREPARED UNDER THE SUPERVISION OF

_____ DATE: _____
JOHN ANDREW
R.L.A. 3152

RECOMMENDED BY: _____ DATE: _____

ACCEPTED BY: _____ DATE: _____
THOMAS W. GARCIA
DIRECTOR OF PUBLIC WORKS/CITY ENGINEER
R.C.E. 48279

CITY OF TEMECULA — DEPARTMENT OF PUBLIC WORKS

LANDSCAPE IMPROVEMENT PLAN
PECHANGA PARKWAY
STA 87+44 - STA 115+36
TITLE SHEET

SHEET NO. 1 OF 10 SHEETS

NOT FOR CONSTRUCTION - 30% SUBMITTAL - 8/19/16

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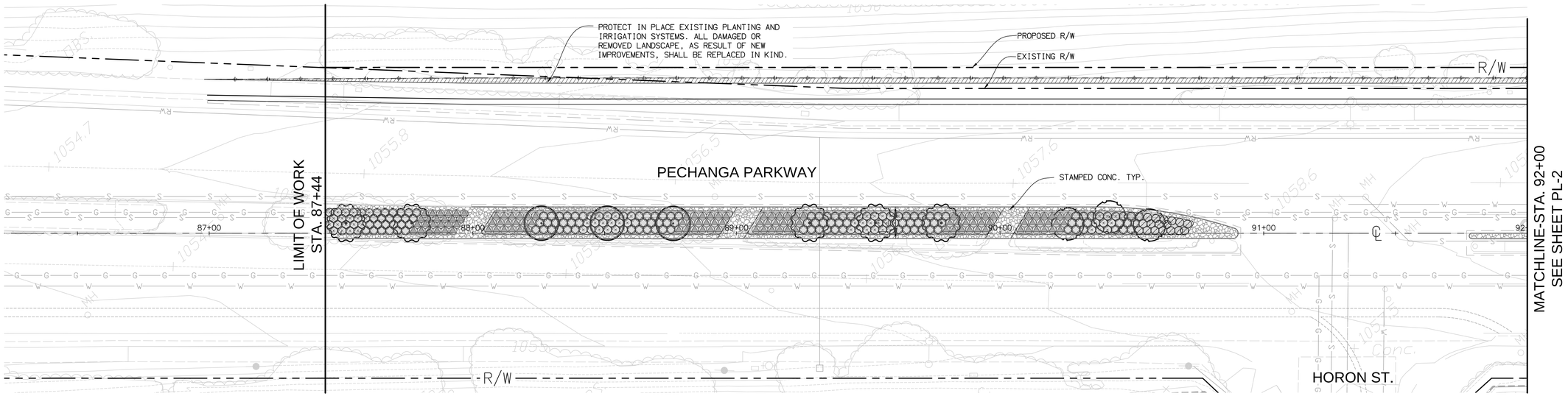

PLANT LEGEND

SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	QUANTITY	COMMENTS	DETAIL	WATER USE
	TREES						
	PYRUS CALLERYANA 'ARISTOCRAT'	ORNAMENTAL PEAR	24" BOX	13	DOUBLE STAKE; 10'-12' HT. X 4'-5' SP. MIN.	CITY OF TEMECULA STD DWG P-1 & P-5	MEDIUM
	GEIJERA PARVIFLORA	AUSTRALIAN WILLOW	24" BOX	14	DOUBLE STAKE; 8'-10' HT. X 3'-4' SP. MIN.	CITY OF TEMECULA STD DWG P-1 & P-5	MEDIUM
	LAGERSTROEMA INDICA 'INDIAN TRIBES'	CREPE MYRTLE	24" BOX	16	DOUBLE STAKE; 9'-10' HT. X 3'-4' SP. MIN.; STANDARD	CITY OF TEMECULA STD DWG P-1 & P-5	MEDIUM
	SHRUBS						
	PITTOSPORUM TOBIRA 'WHEELERI'	WHEELERS DWARF	5 GAL	541	3' O.C. TYP. HEALTHY, DENSE, VIGOROUS	CITY OF TEMECULA STD DWG P-6	MEDIUM
	RHAPHIOLEPIS INDICA 'BALLERINA'	BALLERINA INDIAN HAWTHORN	5 GAL	123	3' O.C. TYP. HEALTHY, DENSE, VIGOROUS	CITY OF TEMECULA STD DWG P-6	MEDIUM
	RHAPHIOLEPIS INDICA 'CLARA'	WHITE INDIAN HAWTHORN	5 GAL	323	3' O.C. TYP. HEALTHY, DENSE, VIGOROUS	CITY OF TEMECULA STD DWG P-6	MEDIUM
	TRACHELOSPERMUM JASMINOIDES	STAR JASMINE	5 GAL	431	3' O.C. TYP. HEALTHY, DENSE, VIGOROUS	CITY OF TEMECULA STD DWG P-6	MEDIUM
	GROUND COVER						
	MULCH	ORGANIC MULCH	4" THICK	AS REQUIRED	--	--	--

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SCALE: 1"=20'

CONSTRUCTION RECORD	DATE	BY	REVISIONS	DATE	ACC'D
CONTRACTOR					
INSPECTOR					
DATE COMPLETED					

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ELEVATION 996.809

SCALE: HORIZONTAL AS NOTED; VERTICAL N/A

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DESIGNED BY	DRAWN BY	CHECKED BY
JA	MH, AC	JA

PLANS PREPARED UNDER THE SUPERVISION OF

DATE:

JOHN ANDREW
R.L.A. 3152

RECOMMENDED BY: DATE:

ACCEPTED BY: DATE:

THOMAS W. GARCIA
DIRECTOR OF PUBLIC WORKS/CITY ENGINEER
R.C.E. 48279

CITY OF TEMECULA — DEPARTMENT OF PUBLIC WORKS

LANDSCAPE IMPROVEMENT PLAN
PECHANGA PARKWAY
STA. 87+44 TO 92+00
PLANTING PLAN, LEGEND AND NOTES

SHEET NO. 2 OF 10 SHEETS

PL-1
LDXX-XXXX

NOT FOR CONSTRUCTION - 30% SUBMITTAL - 8/19/16

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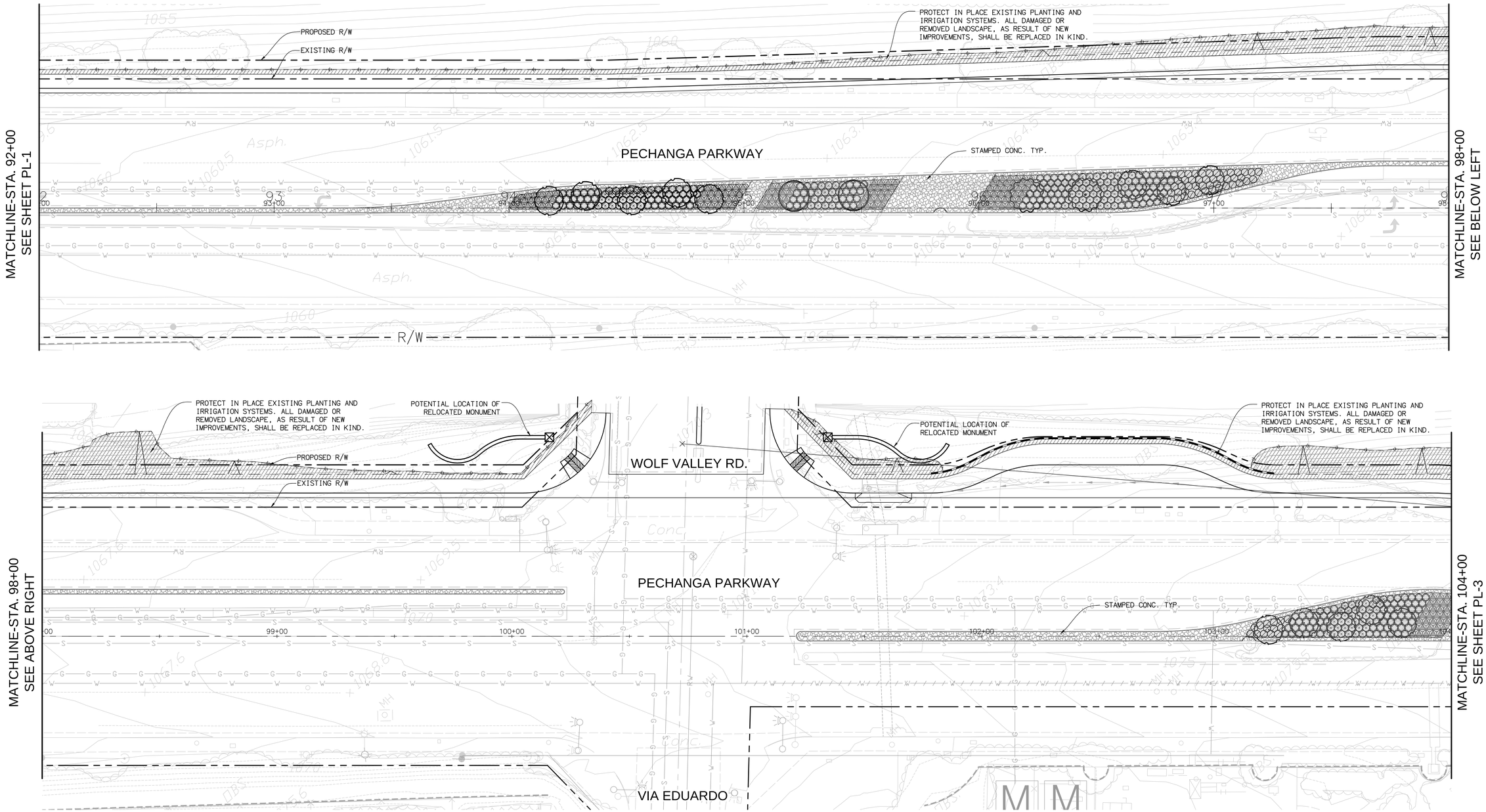

NOT FOR CONSTRUCTION - 30% SUBMITTAL - 8/19/16

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Michael Baker INTERNATIONAL
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PHONE: (951) 676-8042
MBAKERINTL.COM

SEE SHEET PL-1 FOR PLANTING LEGEND AND NOTES AND SHEET ID-1 FOR DETAILS

SCALE: 1"=20'

20 10 0 20 40 60

SCALE: 1"=20'

PL-2
LDXX-XXXX

CONSTRUCTION RECORD	DATE	BY	REVISIONS	DATE	ACC'D
CONTRACTOR					
INSPECTOR					
DATE COMPLETED					

BENCH MARK

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ELEVATION 996.809

SCALE
HORIZONTAL
AS NOTED
VERTICAL
N/A

REGISTERED LANDSCAPE ARCHITECT
JOHN PRESTON ANDREW LIC. NO. 3152
SIGNATURE
SEP. 30, 2017
RENEWAL DATE
DATE
STATE OF CALIFORNIA

DESIGNED BY	DRAWN BY	CHECKED BY
JA	MH, AC	JA

PLANS PREPARED UNDER THE SUPERVISION OF

DATE:

JOHN ANDREW
R.L.A. 3152

RECOMMENDED BY: DATE:

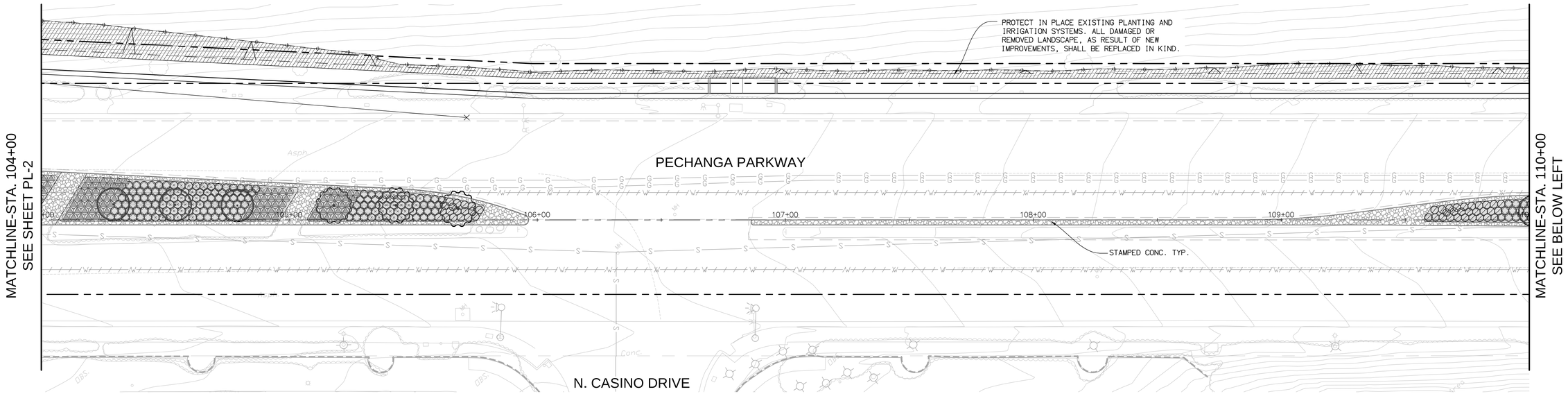
ACCEPTED BY: DATE:

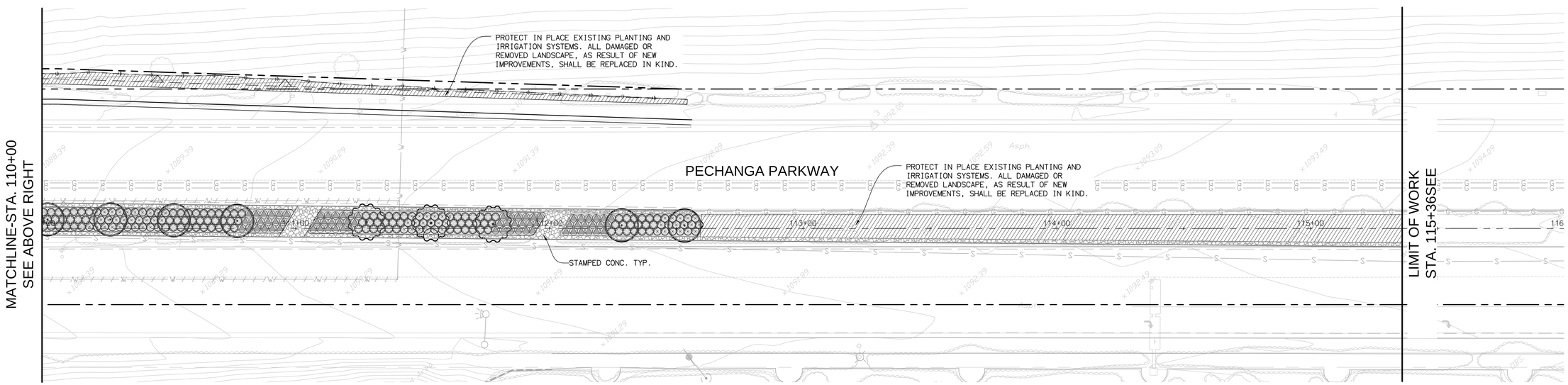
THOMAS W. GARCIA
DIRECTOR OF PUBLIC WORKS/CITY ENGINEER
R.C.E. 48279

CITY OF TEMECULA — DEPARTMENT OF PUBLIC WORKS

LANDSCAPE IMPROVEMENT PLAN
PECHANGA PARKWAY
STA. 92+00 TO 104+00
PLANTING PLAN

SHEET NO. 3
OF 10 SHEETS





SEE SHEET PL-1 FOR PLANTING LEGEND AND NOTES AND SHEET ID-1 FOR DETAILS

SCALE: 1"=20'

20 10 0 20 40 60

SCALE: 1"=20'

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CONTRACTOR					
INSPECTOR					
DATE COMPLETED					

BENCH MARK

600-6-81 RESET 1999, A 3-1/4" ALUM. DISK ON TOP OF CURB IN THE NW'LY RETURN AT THE INTERSECTION OF HWY. 79 AND FRONT STREET.

ELEVATION 996.809

SCALE
HORIZONTAL: AS NOTED
VERTICAL: N/A

REGISTERED LANDSCAPE ARCHITECT
JOHN PRESTON ANDREW LIC.NO. 3152
SIGNATURE
SEP. 30, 2017
RENEWAL DATE
DATE
STATE OF CALIFORNIA

DESIGNED BY	DRAWN BY	CHECKED BY
JA	MH, AC	JA

PLANS PREPARED UNDER THE SUPERVISION OF

_____ DATE: _____
JOHN ANDREW
R.L.A. 3152

RECOMMENDED BY: _____ DATE: _____

ACCEPTED BY: _____ DATE: _____
THOMAS W. GARCIA
DIRECTOR OF PUBLIC WORKS/CITY ENGINEER
R.C.E. 48279

CITY OF TEMECULA — DEPARTMENT OF PUBLIC WORKS

LANDSCAPE IMPROVEMENT PLAN
PECHANGA PARKWAY
STA. 104+00 TO 115+36
PLANTING PLAN

PL-3
LDXX-XXXX

SHEET NO. 4 OF 10 SHEETS

NOT FOR CONSTRUCTION - 30% SUBMITTAL - 8/19/16

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IRRIGATION NOTES

1. ALL LOCAL MUNICIPAL AND STATE LAWS, RULES AND REGULATIONS GOVERNING OR RELATING TO ANY PORTION OF THIS WORK ARE HEREBY INCORPORATED INTO AND MADE A PART OF THESE SPECIFICATIONS AND THEIR PROVISIONS SHALL BE CARRIED OUT BY THE CONTRACTOR.
2. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL EXISTING UTILITIES, STRUCTURES AND SERVICES BEFORE COMMENCING WORK. THE LOCATIONS OF UTILITIES, STRUCTURES AND SERVICES SHOWN IN THESE PLANS ARE APPROXIMATE ONLY. ANY DISCREPANCIES BETWEEN THESE PLANS AND ACTUAL FIELD CONDITIONS SHALL BE REPORTED TO THE CITY.
3. THE CONTRACTOR SHALL OBTAIN THE PERTINENT ENGINEERING PLANS BEFORE BEGINNING WORK.
4. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS REQUIRED TO PERFORM THE WORK INDICATED HEREIN BEFORE BEGINNING WORK.
5. THIS DESIGN IS DIAGRAMMATIC. ALL EQUIPMENT SHOWN IN PAVED AREAS IS FOR DESIGN CLARITY ONLY AND IS TO BE INSTALLED WITHIN PLANTING AREAS WHEREVER POSSIBLE.
6. DO NOT WILLFULLY INSTALL ANY EQUIPMENT AS SHOWN ON THE PLANS WHEN IT IS OBVIOUS IN THE FIELD THAT UNKNOWN CONDITIONS EXIST THAT WERE NOT EVIDENT AT THE TIME THESE PLANS WERE PREPARED. ANY SUCH CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE PRIOR TO ANY WORK OR THE IRRIGATION CONTRACTOR SHALL ASSUME ALL RESPONSIBILITY FOR ANY FIELD CHANGES DEEMED NECESSARY BY THE CITY.
7. INSTALL ALL EQUIPMENT AS SHOWN IN THE DETAILS AND SPECIFICATIONS. CONTRACTOR SHALL BE RESPONSIBLE TO COMPLY WITH LOCAL CITY, COUNTY AND STATE REQUIREMENTS FOR BOTH EQUIPMENT AND INSTALLATION.
8. ACTUAL LOCATION FOR THE POINT OF CONNECTION FOR THE DOMESTIC WATER METER, CONTROLLER PAD AND INSTALLATION OF THE AUTOMATIC CONTROLLER IS TO BE DETERMINED IN THE FIELD BY THE CITY/TCSD.
9. ALL PIPE UNDER PAVED AREAS TO BE INSTALLED IN A SCH. 40 SLEEVE TWICE THE DIAMETER OF THE PIPE CARRIED. ALL WIRE UNDER PAVED AREAS TO BE INSTALLED IN A SCH. 40 SLEEVE THE SIZE REQUIRED TO EASILY PULL WIRE THROUGH. ALL SLEEVES TO BE INSTALLED WITH A MINIMUM DEPTH AS SHOWN ON THE SLEEVE TRENCHING DETAIL (I-33) ON SHEET 6. SLEEVES TO EXTEND AT LEAST 12" PAST THE EDGE OF PAVEMENT. ALL SLEEVE ENDS SHALL BE FILLED WITH AEROSOL FOAM AFTER THE WIRE, MAINLINE, AND LATERALS HAVE BEEN INSTALLED.
10. ALL QUICK COUPLER VALVES TO BE INSTALLED IN SHRUB OR GROUND COVER AREAS WHERE POSSIBLE. ALL QUICK COUPLER VALVES TO BE INSTALLED AS SHOWN ON THE INSTALLATION DETAILS. INSTALL ALL QUICK COUPLER VALVES WITHIN 18" OF PAVEMENT.

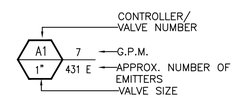
IRRIGATION MATERIAL LEGEND

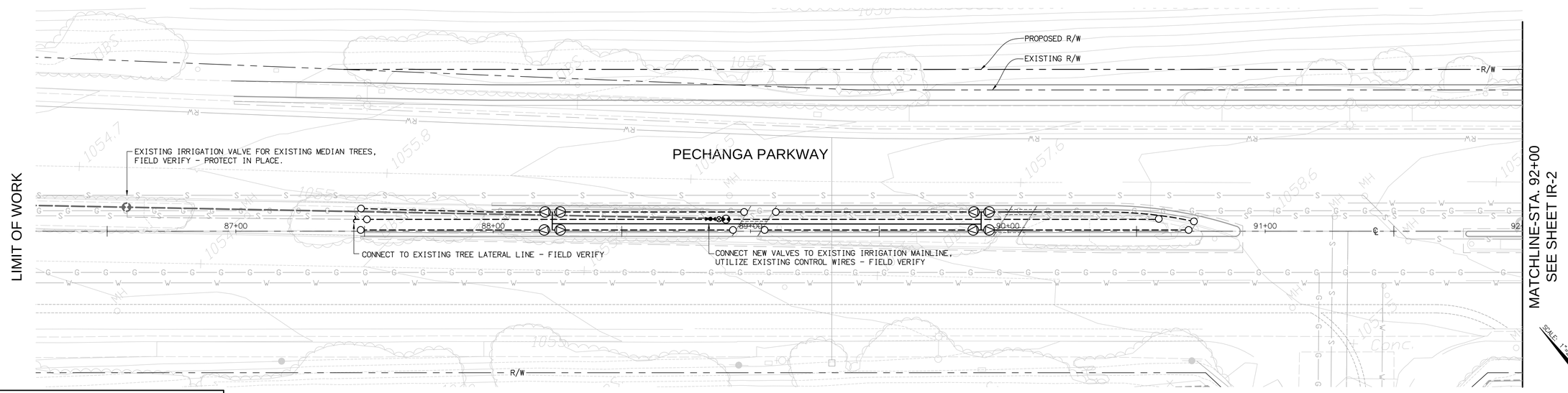
SYMBOL	MANUFACT.	MODEL NO. / DESCRIPTION	CITY STANDARD DETAIL
	NIBCO	T-560 2" MANIFOLD ISOLATION BALL VALVE INSIDE VALVE BOX WITH GREEN LID	I-24,I-30,I-31
	TORO	100-ATLVC QUICK COUPLER VALVE, GREEN IN COLOR	I-27,I-30,I-31
	HUNTER	ICV-101G-AS-R (1") PRESSURE REGULATED PLASTIC REMOTE CONTROL VALVE.	I-28,I-30,I-31
	HUNTER	ICV-101G-AS-R (1") PRESSURE REGULATED PLASTIC REMOTE CONTROL VALVE. INSTALLED WITH NIBCO T-381-WK 1" BRASS MANUAL ANGLE VALVE AND AMIAD 1-1201 WYE STRAINER.	I-29,I-30,I-31
	NIBCO	T-381-WK 1" BRASS MANUAL ANGLE VALVE INSIDE VALVE BOX WITH GREEN LID	I-29,I-30
	SENNINGER	USE MODEL# PMR-40LF INLINE PRESSURE REGULATOR FOR DEMANDS LESS THAN 8 GPM. USE MODEL# PMR-40MF INLINE PRESSURE REGULATOR FOR DEMANDS 8-18 GPM. USE MODEL# PMR-40HF INLINE PRESSURE REGULATOR FOR DEMANDS GREATER THAN 18 GPM.	I-10,I-14
	DURA PROD.	MODEL# 548-007 3/4" PVC FEMALE HOSE THREAD CAP WITH O-RING FLUSH ASSEMBLY. INSTALL MODEL# 533-095, PVC 3/4" MHT x 1/2" SPIGOT MALE ADAPTER WITH 1/2" SCH. 40 UVR PVC SLIP COUPLING.	I-11
NO SYMBOL	SALCO	PRESSURE COMPENSATING "ZERO FLUSH" DRIP EMITTER, OPERATING AT 5PSI, 1 GPH FOR SHRUBS AND 2 GPH FOR TREES	I-7-9,I-12,I-14,I-15
	–	APPROXIMATE LOCATION OF EXISTING 2" PVC IRRIGATION MAINLINE PIPE, FIELD VERIFY – PROTECT IN PLACE	I-32,I-33,I-14
	–	APPROXIMATE LOCATION OF EXISTING 2" PVC IRRIGATION MAINLINE PIPE, FIELD VERIFY – TO BE REMOVED/ ABANDON IN PLACE	
	PACIFIC PLASTICS	PVC PIPE 2" CL. 315, AS MAINLINES 24" BELOW GRADE	I-32,I-33,I-34
	PACIFIC PLASTICS	UVR PVC PIPE SCH. 40, 1" SIZE UNLESS INDICATED OTHERWISE ON PLANS, ON GRADE	I-14,I-15,I-36
	PACIFIC PLASTICS	PVC PIPE SCH. 40, 1" SIZE UNLESS INDICATED OTHERWISE ON PLANS, AS SUBMAIN 18" BELOW GRADE	I-32,I-33,I-34
	PACIFIC PLASTICS	PVC PIPE SCH. 40, AS SLEEVING, TWICE THE DIAMETER OF PIPE OR WIRE BUNDLE CARRIED PLACE BELOW ALL PAVEMENT, ETC., AND AS DIRECTED BY THE CITY (TCSD).	I-33
NO SYMBOL	SPEARS	DS-400 PRE FILLED WIRE CONNECTOR, FOR ALL WIRE CONNECTIONS	I-39
NO SYMBOL	AS APPROVED	PULL BOXES FOR WIRE SPLICES SHALL BE LOCATED APPROXIMATELY 200 FEET ON CENTER AS NEEDED AND AT THE ENDS OF ALL SLEEVES UNDER PAVING. PULL BOXES SHALL BE PLASTIC RECTANGULAR WITH BOLT DOWN COVER, SPLICES WILL NOT BE ALLOWED WITHOUT TCSD APPROVAL.	I-40
NO SYMBOL	BROOKS OR APPROVED EQUAL	CB3STDBODY, CB3STDCOVER CONCRETE VALVE BOX WITH CONCRETE LID	I-40
NO SYMBOL	AS APPROVED	IRRIGATION CONTROL WIRE #8-14UF (SEE SCHEDULE BELOW) AWG DIRECT BURIAL (U.L. APPROVED)	I-32,I-33,I-40

CONTROL WIRE SCHEDULE: (MAXIMUM LENGTH OF RUN)

CONTROL / COMMON	NO.14	NO.12	NO.10	NO.8
NO. 14	1,700'	2,000'	2,400'	2,700'
NO. 12		2,700'	3,300'	3,800'
NO. 10			4,300'	5,200'
NO. 8				6,700'

ABOVE WIRING SCHEDULE IS BASED ON THE USE OF A 24 VOLT AUTOMATIC IRRIGATION CONTROLLER AND WIRE SIZE IS BASED ON OPERATING ONE VALVE AT A TIME.





Michael Baker INTERNATIONAL
40810 COUNTY CENTER DR., SUITE 100
TEMECULA, CA 92591
PHONE: (951) 676-8042
MBAKERINTL.COM

20 10 0 20 40 60
SCALE: 1"=20'

IR-1
LDXX-XXXX

CONSTRUCTION RECORD	DATE	BY	REVISIONS	DATE	ACC'D
CONTRACTOR					
INSPECTOR					
DATE COMPLETED					

BENCH MARK

600-6-81 RESET 1999, A 3-1/4" ALUM. DISK ON TOP OF CURB IN THE NW'LY RETURN AT THE INTERSECTION OF HWY. 79 AND FRONT STREET.

ELEVATION 996.809

SCALE
HORIZONTAL
AS NOTED
VERTICAL
N/A

REGISTERED LANDSCAPE ARCHITECT
JOHN PRESTON ANDREW LIC.NO. 3152
SIGNATURE
SEP. 30, 2017
RENEWAL DATE
DATE
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DESIGNED BY	DRAWN BY	CHECKED BY
JA	MH, AC	JA

PLANS PREPARED UNDER THE SUPERVISION OF

_____ DATE: _____
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R.L.A. 3152

RECOMMENDED BY: _____ DATE: _____

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THOMAS W. GARCIA
DIRECTOR OF PUBLIC WORKS/CITY ENGINEER
R.C.E. 48279

CITY OF TEMECULA — DEPARTMENT OF PUBLIC WORKS

LANDSCAPE IMPROVEMENT PLAN
PECHANGA PARKWAY
STA. 87+44 TO 92+00
IRRIGATION PLAN, LEGEND AND NOTES

SHEET NO.
5
OF 10 SHEETS

NOT FOR CONSTRUCTION - 30% SUBMITTAL - 8/19/16

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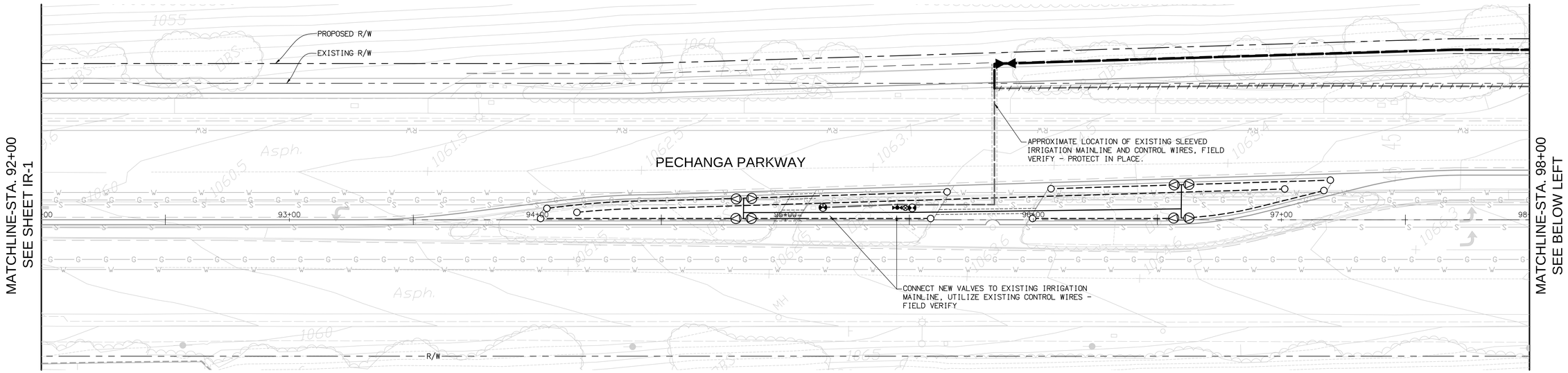

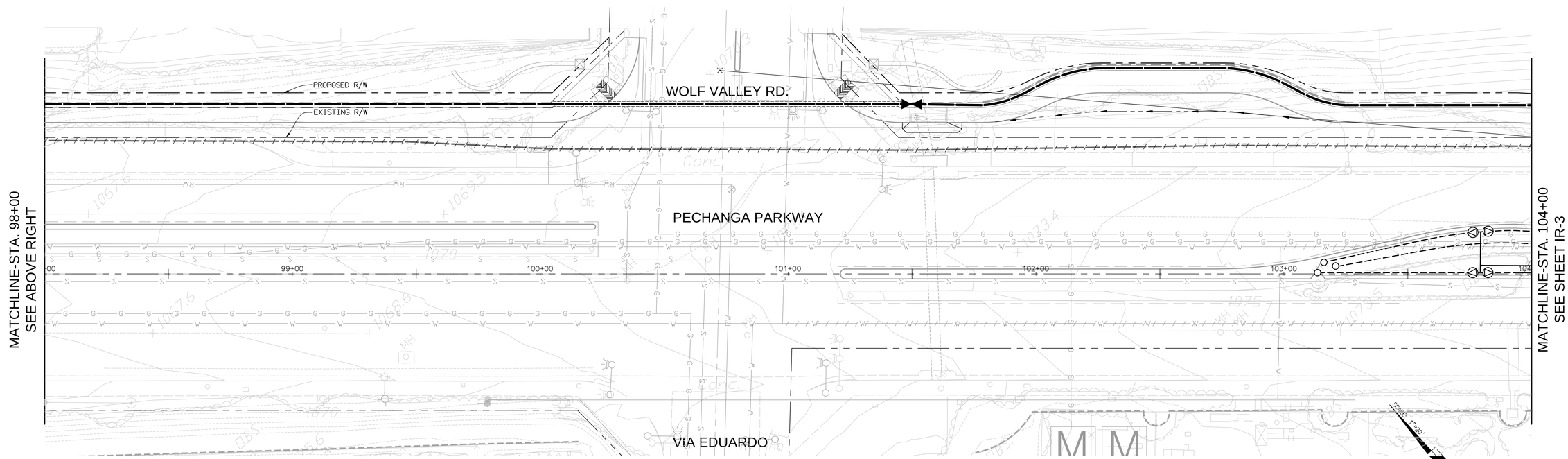

SEE SHEET IR-1 FOR IRRIGATION LEGEND AND NOTES AND SHEET ID-1 & ID-2 FOR DETAILS

20 10 0 20 40 60
SCALE: 1"=20'

Michael Baker INTERNATIONAL
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TEMECULA, CA 92591
PHONE: (951) 676-8042
MBAKERINTL.COM

CONSTRUCTION RECORD	DATE	BY	REVISIONS	DATE	ACC'D
CONTRACTOR					
INSPECTOR					
DATE COMPLETED					

BENCH MARK

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ELEVATION 996.809

SCALE
HORIZONTAL: AS NOTED
VERTICAL: N/A

REGISTERED LANDSCAPE ARCHITECT
JOHN PRESTON ANDREW LIC. NO. 3152
SIGNATURE
SEP. 30, 2017
RENEWAL DATE
DATE
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PLANS PREPARED UNDER THE SUPERVISION OF

_____ DATE: _____
JOHN ANDREW
R.L.A. 3152

RECOMMENDED BY: _____ DATE: _____

ACCEPTED BY: _____ DATE: _____
THOMAS W. GARCIA
DIRECTOR OF PUBLIC WORKS/CITY ENGINEER
R.C.E. 48279

CITY OF TEMECULA — DEPARTMENT OF PUBLIC WORKS

LANDSCAPE IMPROVEMENT PLAN
PECHANGA PARKWAY
STA. 92+00 TO 104+00
IRRIGATION PLAN

IR-2
LDXX-XXXX

SHEET NO. 6 OF 10 SHEETS

NOT FOR CONSTRUCTION - 30% SUBMITTAL - 8/19/16

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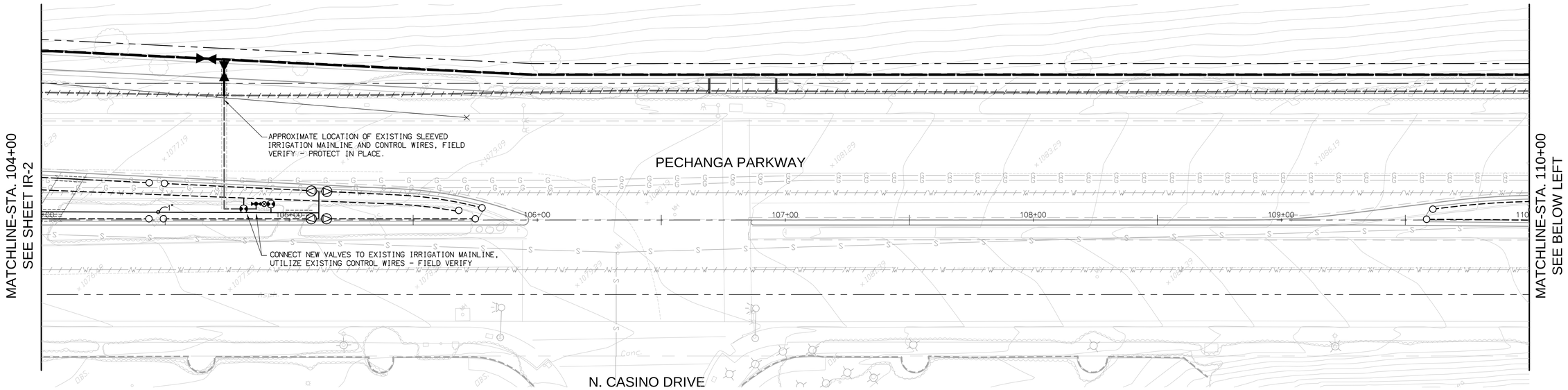
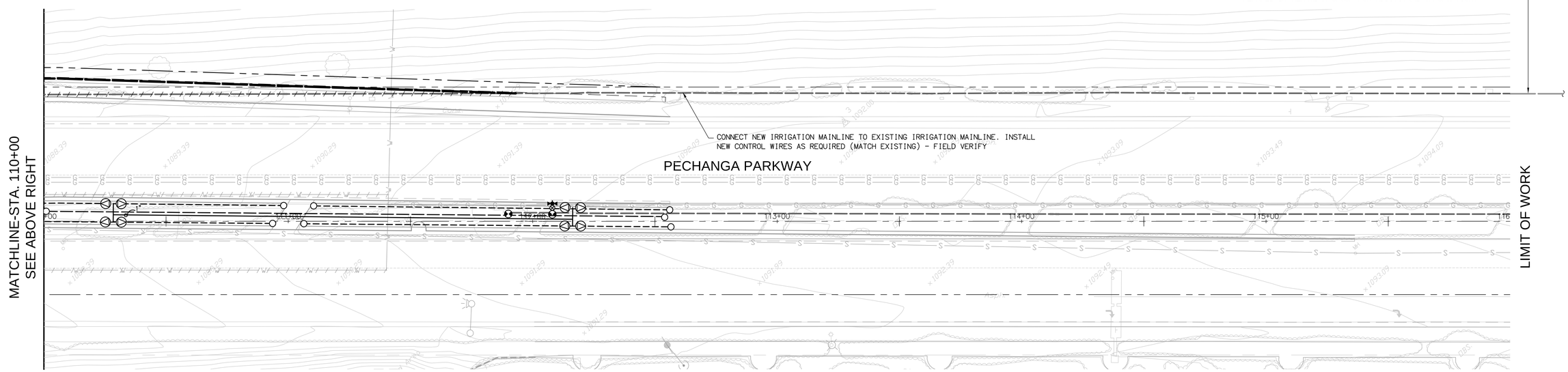
NOT FOR CONSTRUCTION - 30% SUBMITTAL - 8/19/16



EXISTING IRRIGATION MAINLINE TO EXISTING 1 1/2" DOMESTIC WATER METER, BACKFLOW PREVENTER, MASTER VALVE, CONTROLLER AND FLOW SENSOR (APPROXIMATELY 1,200'), FIELD VERIFY - PROTECT IN PLACE

REFER TO "PW99011- PECHANGA PKWY MEDIANS PLAN" DATED 10/20/2007 PREPARED BY ALHAMBRA GROUP FOR ADDITIONAL INFORMATION.



SEE SHEET IR-1 FOR IRRIGATION LEGEND AND NOTES AND SHEET ID-1 & ID-2 FOR DETAILS

SCALE: 1"=20'

20 10 0 20 40 60

SCALE: 1"=20'

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INSPECTOR					
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BENCH MARK

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ELEVATION 996.809

SCALE
HORIZONTAL
AS NOTED
VERTICAL
N/A

REGISTERED LANDSCAPE ARCHITECT
JOHN PRESTON ANDREW L.A.C. NO. 3152
SIGNATURE
SEP. 30, 2017
RENEWAL DATE
DATE
STATE OF CALIFORNIA

DESIGNED BY	DRAWN BY	CHECKED BY
JA	MH, AC	JA

PLANS PREPARED UNDER THE SUPERVISION OF

DATE:

JOHN ANDREW
R.L.A. 3152

RECOMMENDED BY: DATE:

ACCEPTED BY: DATE:

THOMAS W. GARCIA
DIRECTOR OF PUBLIC WORKS/CITY ENGINEER
R.C.E. 48279

CITY OF TEMECULA — DEPARTMENT OF PUBLIC WORKS

LANDSCAPE IMPROVEMENT PLAN
PECHANGA PARKWAY
STA. 104+00 TO 115+36
IRRIGATOIN PLAN

IR-3
LDXX-XXXX

SHEET NO. 7 OF 10 SHEETS

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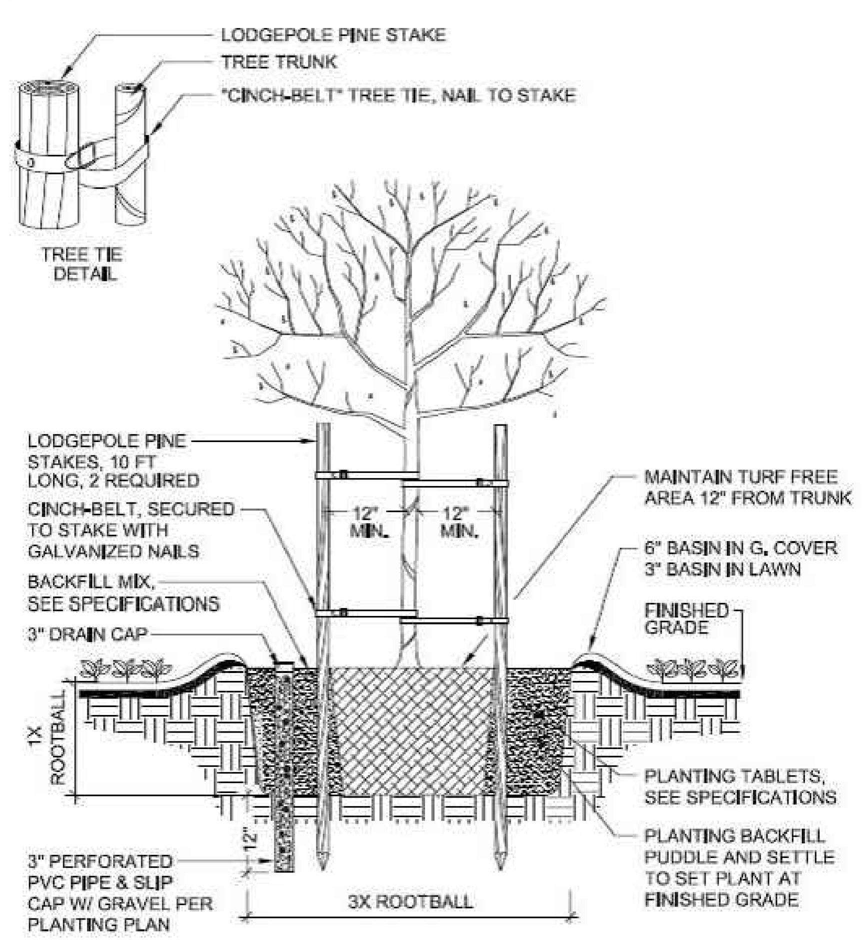
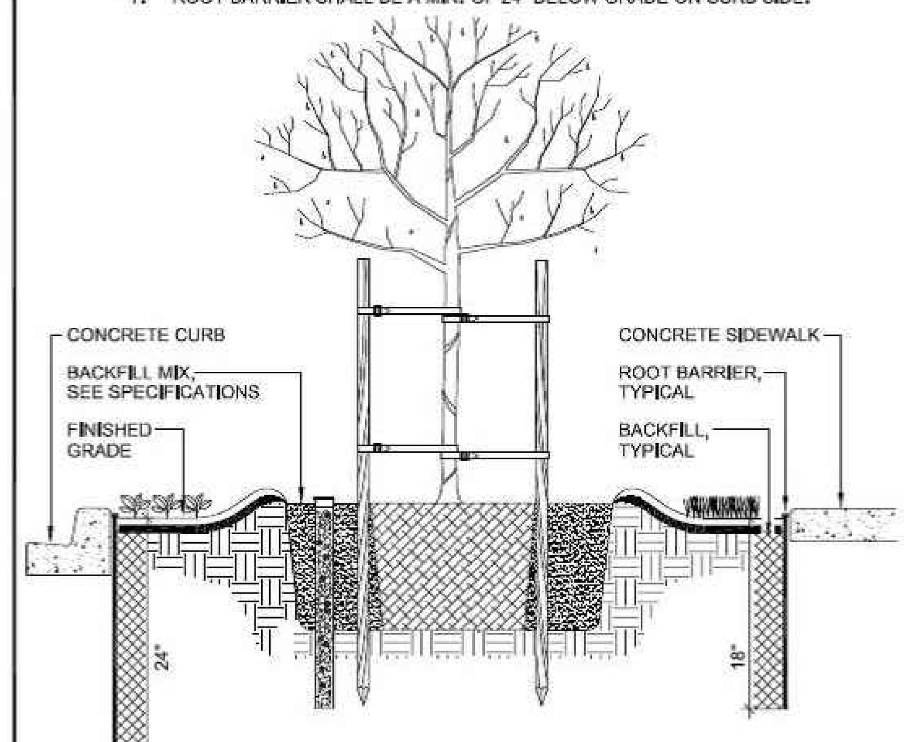


NOTE:
ALL PLANT BASINS SHALL RECEIVE A 4" DEEP LAYER OF APPROVED MULCH.

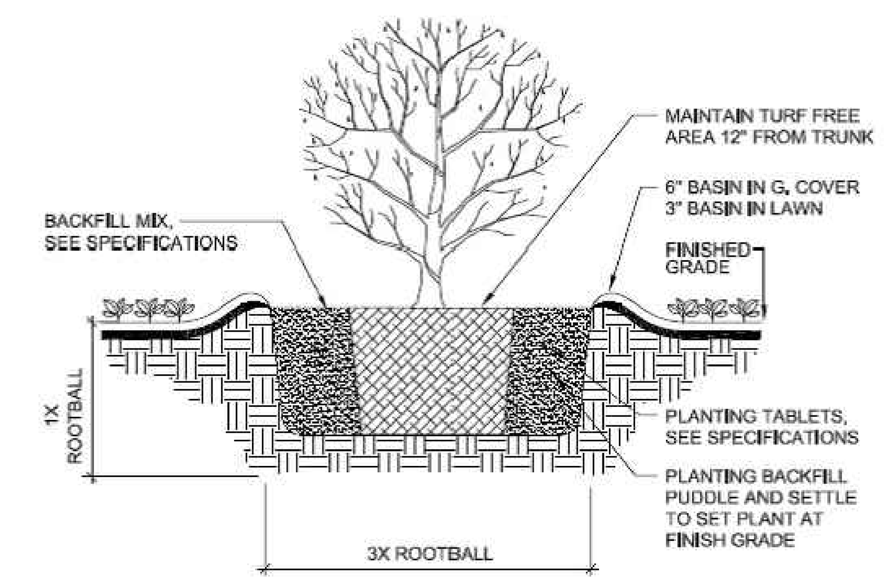
CITY OF TEMECULA	NO SCALE
DOUBLE STAKE TREE 5 GAL., 15 GAL., 24" BOX	P - 1

NOTE:
1. TOP OF ROOT CONTROL BARRIER MUST BE AT GRADE.
2. POSITION ROOT CONTROL BARRIER ADJACENT TO STRUCTURE.
3. RAISED ROOT DEFLECTORS MUST BE FACING PLANTED AREA.
4. BARRIER SHALL EXTEND A MIN. OF 8" BELOW BOTTOM OF HARDSCAPE.
5. PROVIDE A MIN. OF 10 FEET OF ROOT BARRIER PER TREE.
6. ROOT BARRIER SHALL BE A MIN. OF 18" BELOW GRADE ON WALK SIDE.
7. ROOT BARRIER SHALL BE A MIN. OF 24" BELOW GRADE ON CURB SIDE.



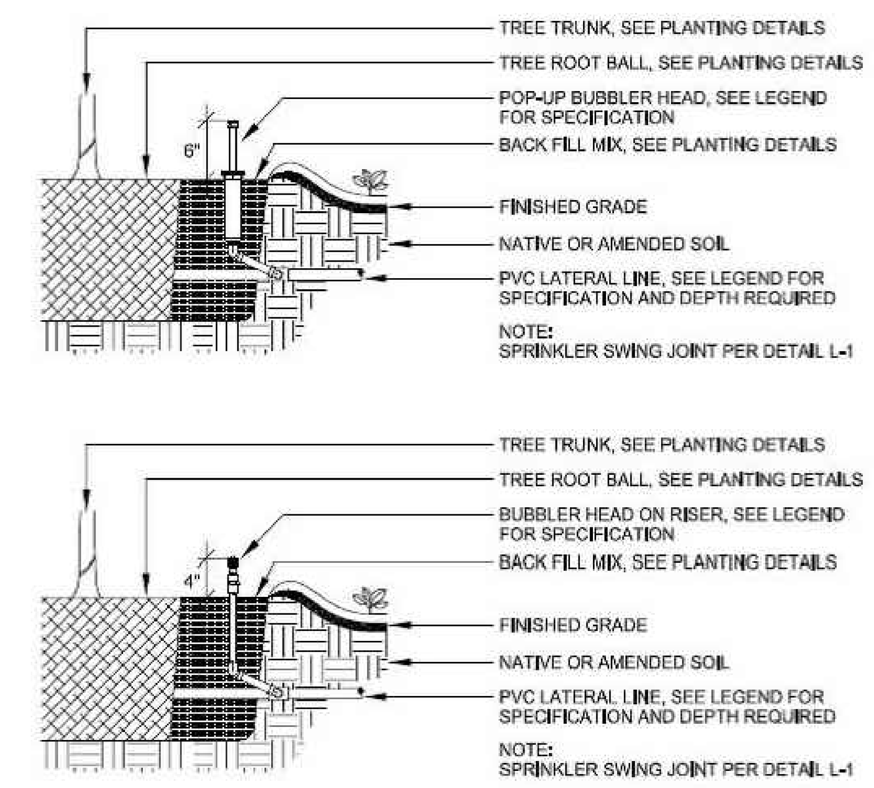
NOTE:
DETAIL IS FOR THE INSTALLATION OF ROOT BARRIERS ONLY, REFER TO THE TREE DETAILS FOR INSTALLATION INSTRUCTIONS FOR TREES.

CITY OF TEMECULA	NO SCALE
TREE ROOT BARRIER	P - 5



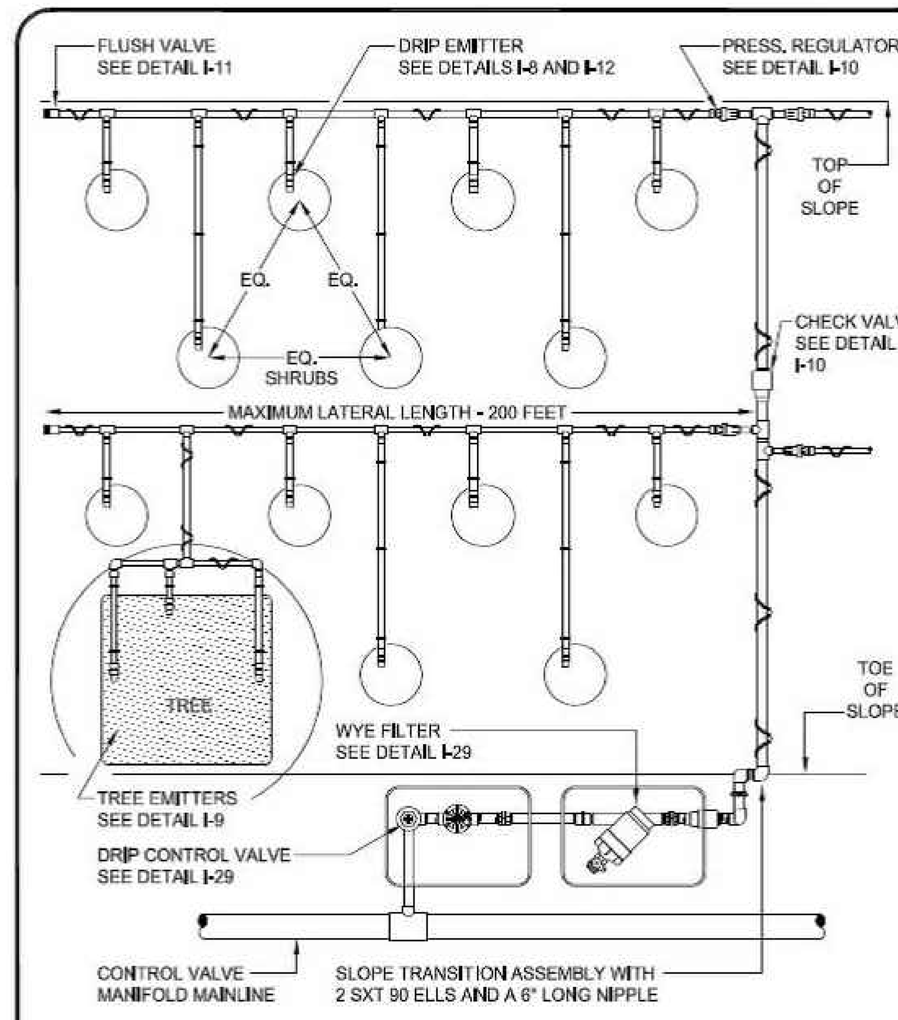
NOTE:
ALL PLANT BASINS SHALL RECEIVE A 4" DEEP LAYER OF APPROVED MULCH.

CITY OF TEMECULA	NO SCALE
SHRUB PLANTING	P - 6

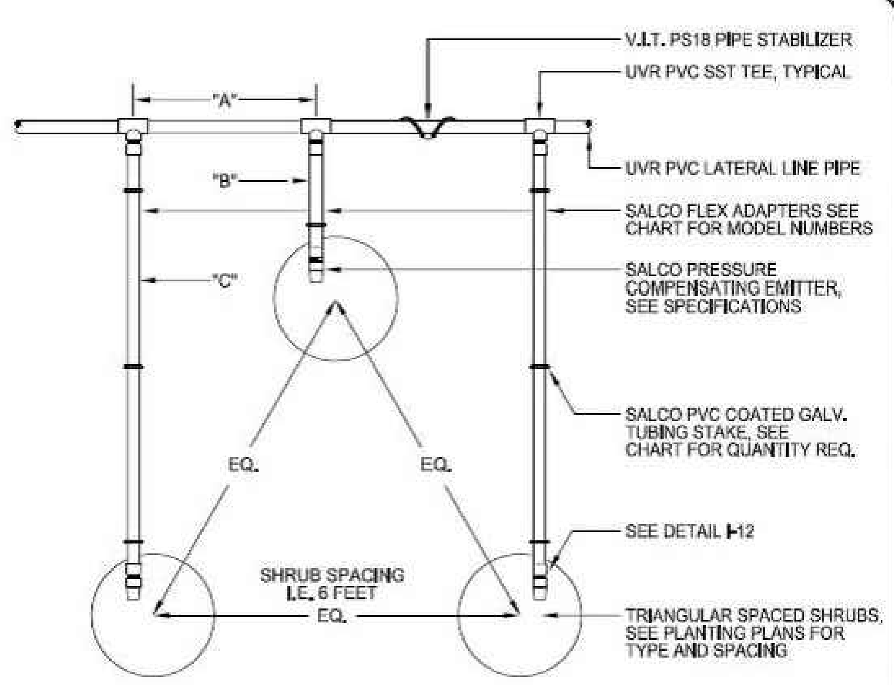


NOTE:
INSTALL SPRINKLER HEADS 24" FROM FENCES, WALLS, OR BUILDINGS. DO NOT INSTALL SPRINKLER HEAD ON RISER WITHIN 10 FEET OF PAVING, CURBS, OR TURF EDGES.
INSTALL SPRINKLER HEADS PLUMB. ADJUST NOZZLE STREAM TO COVER LANDSCAPE AREA WITHOUT OVERSPRAY ONTO PAVING, FENCES, WALLS OR BUILDINGS.
USE A NON-HARDENING TEFLON PIPE SEALANT ON ALL THREADED CONNECTIONS.

CITY OF TEMECULA	NO SCALE
TREE BUBBLERS	I - 6



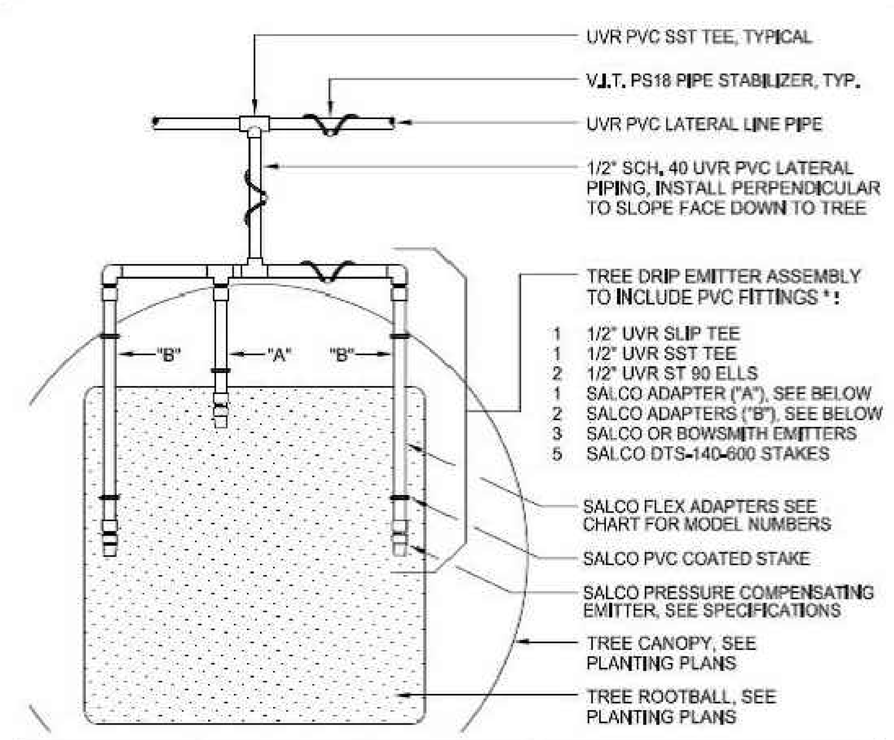
CITY OF TEMECULA	NO SCALE
POINT TO POINT DRIP IRRIGATION LAYOUT	I - 7



PLANT SPACING	LENGTH "A"	ADAPTER "B"	ADAPTER "C"	STAKES REQ.
18 IN.	9 IN.	PVC-050-IH-12-2MA	PVC-050-IH-24-2MA	B = 1, C = 1
36 IN.	18 IN.	PVC-050-IH-24-2MA	PVC-050-IH-48-2MA	B = 1, C = 2
72 IN.	36 IN.	PVC-050-IH-24-2MA	PVC-050-IH-84-2MA	B = 1, C = 3

NOTE:
PVC LATERAL SUPPLY LINES SHALL RUN PARALLEL TO SLOPE WITH DRIP EMITTER LINES RUN PERPENDICULAR TO SLOPE AS SHOWN ABOVE.
EMITTER SPACING SHALL BE BASED ON PLANT SPACING, INSTALL ALL IRRIGATION USING THE COMPONENTS DESCRIBED ABOVE. THE IRRIGATION SHALL BE COMPLETELY INSTALLED PRIOR TO PLANT LAYOUTS. ADJUST PLANTING SPACING TO FINAL IRRIGATION LAYOUT.

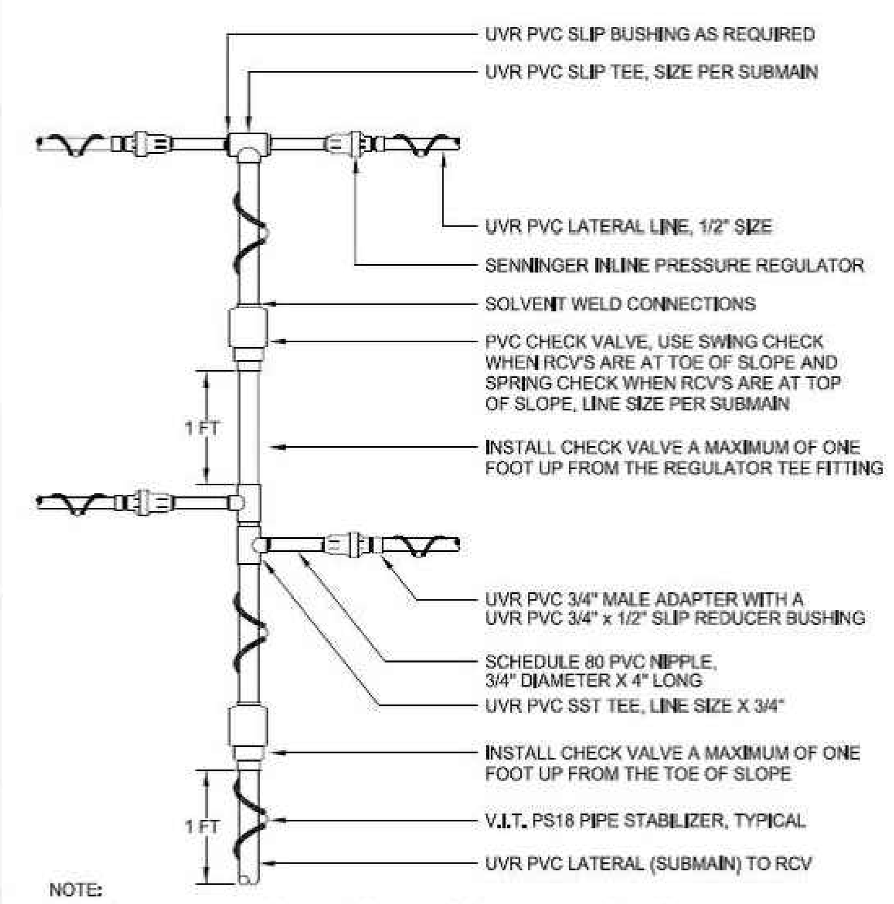
CITY OF TEMECULA	NO SCALE
DRIP EMITTER ASSEMBLY DETAIL	I - 8



TREE SIZE	5 - 15 GAL.	24 IN. BOX	36 IN. BOX	48 IN. BOX
NO. OF EMITTERS	3 EA.	4 EA.	5 EA.	6 EA.
ADAPTER "A" (1)	PVC-050-IH-8-2MA	PVC-050-IH-8-2MA	PVC-050-IH-8-2MA	PVC-050-IH-8-2MA
ADAPTER "B" (2+)	PVC-050-IH-12-2MA	PVC-050-IH-18-2MA	PVC-050-IH-24-2MA	PVC-050-IH-36-2MA

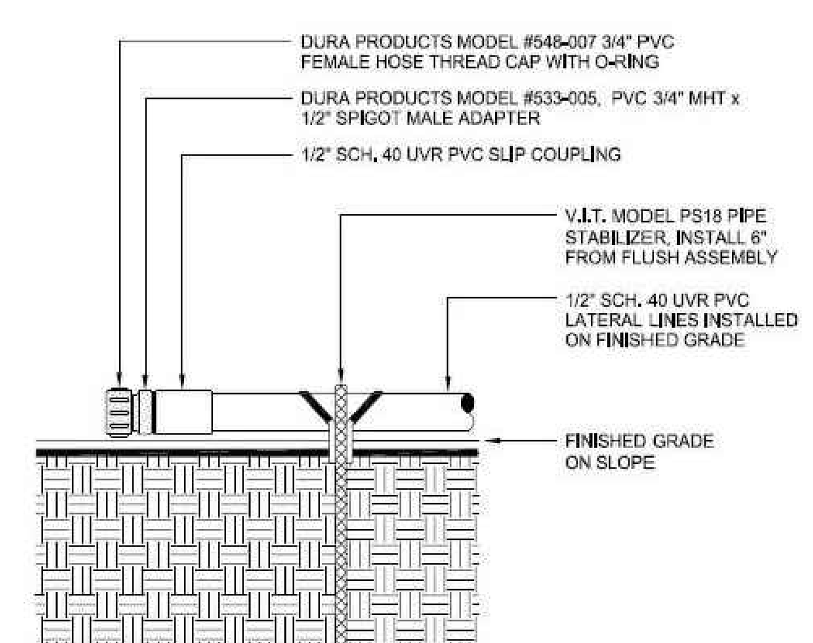
* TREES REQUIRING MORE THAN 3 EMITTERS SHALL USE ASSEMBLIES WITH ADDITIONAL COMPONENTS; INCLUDING FITTINGS, ADAPTERS, EMITTERS AND STAKES AS SHOWN ABOVE.
DRIP EMITTERS SHALL BE PLACED TO DRIP DIRECTLY ADJACENT TO TREE ROOTBALL.
ALL IRRIGATION SHALL BE COMPLETELY INSTALLED PRIOR TO PLANTING LAYOUT.

CITY OF TEMECULA	NO SCALE
TREE DRIP LAYOUT	I - 9



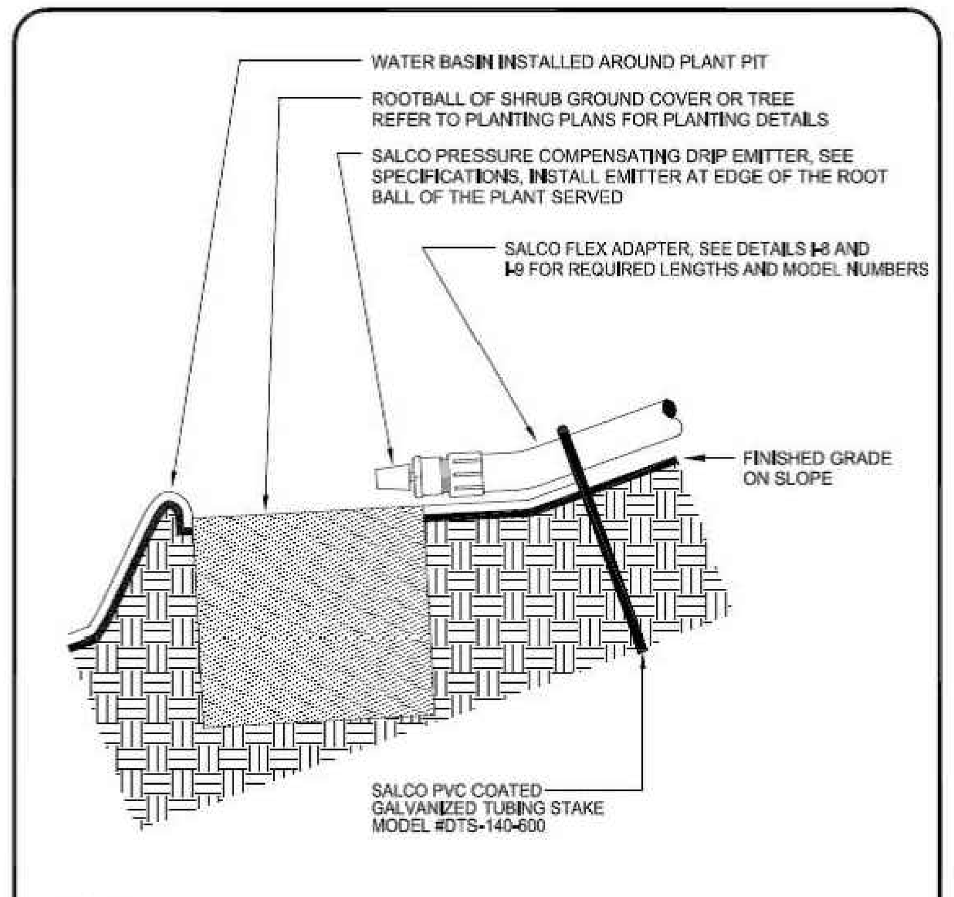
NOTE:
VERTICAL LATERAL LINE (SUBMAIN) SHALL BE COMPLETELY FLUSHED CLEAN WITH WATER PRIOR TO THE INSTALLATION OF THE SENNINGER PRESSURE REGULATING VALVES.

CITY OF TEMECULA	NO SCALE
DRIP PRESSURE REGULATOR AND CHECK VALVE DETAIL	I - 10



NOTE:
FLUSH CAP TO REMAIN IN PLACE UNLESS FLUSHING DRIP LATERAL LINES.
A HOSE SHALL BE ATTACHED TO MHT MALE ADAPTER WHENEVER FLUSHING OF LINES IS PERFORMED TO PREVENT EROSION OF SLOPE MATERIALS.

CITY OF TEMECULA	NO SCALE
DRIP FLUSH ASSEMBLY	I - 11



NOTE:
DRIP EMITTER SHALL BE PLACED TO DRIP DIRECTLY ADJACENT TO PLANT ROOTBALL.
PVC LATERAL SUPPLY LINES SHALL RUN PARALLEL TO SLOPE WITH DRIP EMITTER LINES RUN PERPENDICULAR TO SLOPE AS SHOWN ABOVE. SEE DETAIL SID006.
ALL IRRIGATION SHALL BE COMPLETELY INSTALLED PRIOR TO PLANT LAYOUTS.

CITY OF TEMECULA	NO SCALE
SINGLE OUTLET DRIP EMITTER DETAIL	I - 12

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ID-1
LDXX-XXXX

CONSTRUCTION RECORD	DATE	BY	REVISIONS	DATE	ACC'D	BENCH MARK	SCALE
CONTRACTOR ______						600-6-81 RESET 1999, A 3-1/4" ALUM. DISK ON TOP OF CURB IN THE NW'LY RETURN AT THE INTERSECTION OF HWY. 79 AND FRONT STREET.	HORIZONTAL AS NOTED
INSPECTOR ______						ELEVATION 996.809	VERTICAL N/A
DATE COMPLETED ______							

REGISTERED LANDSCAPE ARCHITECT — JOHN PRESTON ANDREW LIC. NO. 3152 — SEP. 30, 2017 RENEWAL DATE — SIGNATURE — DATE — STATE OF CALIFORNIA

DESIGNED BY	DRAWN BY	CHECKED BY
JA	MH, AC	JA

PLANS PREPARED UNDER THE SUPERVISION OF
______ DATE: ______
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RECOMMENDED BY: ______ DATE: ______
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CITY OF TEMECULA — DEPARTMENT OF PUBLIC WORKS

LANDSCAPE IMPROVEMENT PLAN
PECHANGA PARKWAY
STA 87+44 - STA 115+36
PLANTING & IRRIGATION DETAILS

SHEET NO. 8 OF 10 SHEETS

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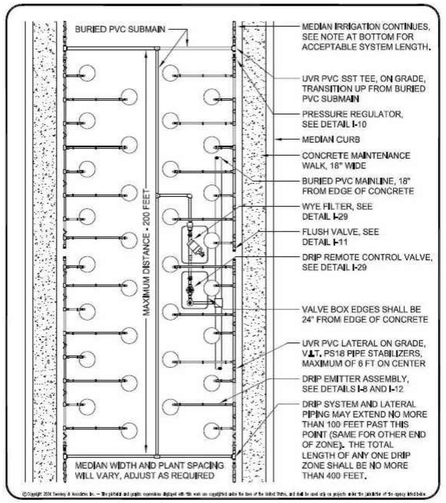
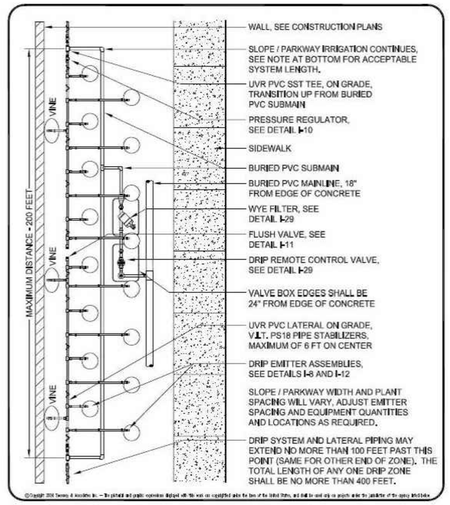
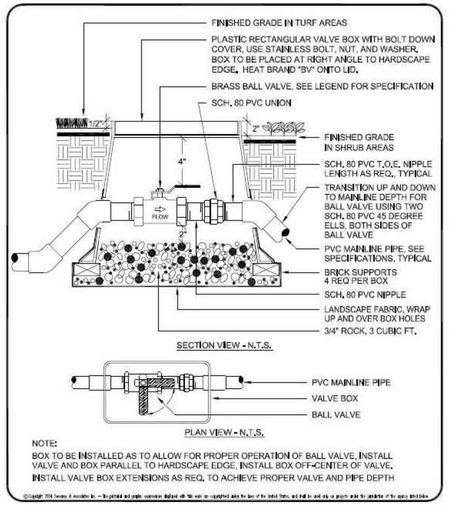


CITY OF TEMECULA	NO SCALE
MEDIAN DRIP IRRIGATION LAYOUT	I - 14

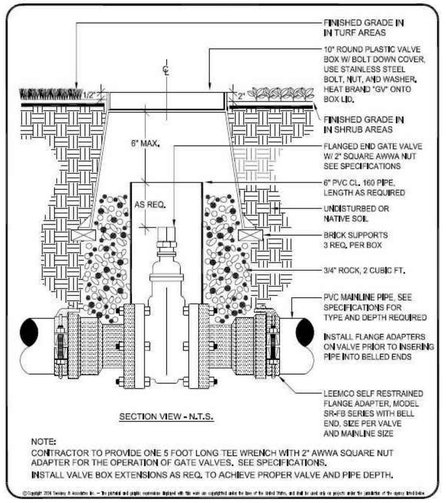


CITY OF TEMECULA	NO SCALE
SMALL SLOPE / PARKWAY IRRIGATION LAYOUT	I - 15



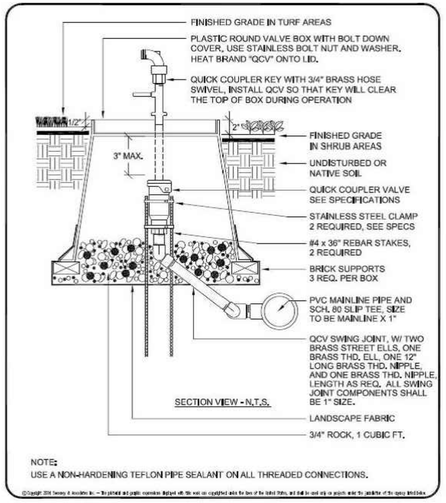
NOTE:
BOX TO BE INSTALLED AS TO ALLOW FOR PROPER OPERATION OF BALL VALVE. INSTALL VALVE AND BOX PARALLEL TO HARDSCAPE EDGE. INSTALL BOX OFF-CENTER OF VALVE.
INSTALL VALVE BOX EXTENSIONS AS REQ. TO ACHIEVE PROPER VALVE AND PIPE DEPTH

CITY OF TEMECULA	NO SCALE
BALL VALVE 2" AND SMALLER	I - 24



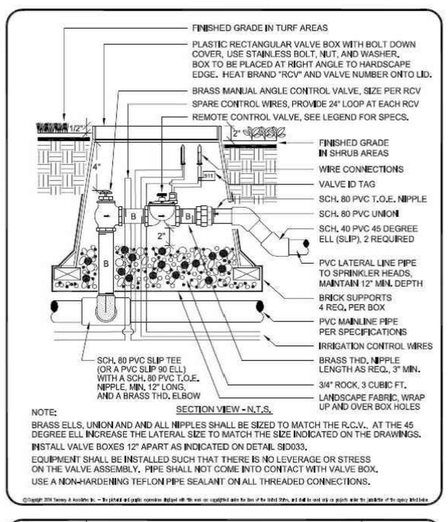
NOTE:
CONTRACTOR TO PROVIDE ONE 5 FOOT LONG TEE WRENCH WITH 2" AWWA SQUARE NUT ADAPTER FOR THE OPERATION OF GATE VALVES. SEE SPECIFICATIONS.
INSTALL VALVE BOX EXTENSIONS AS REQ. TO ACHIEVE PROPER VALVE AND PIPE DEPTH.

CITY OF TEMECULA	NO SCALE
GATE VALVE 2 1/2" AND LARGER	I - 25



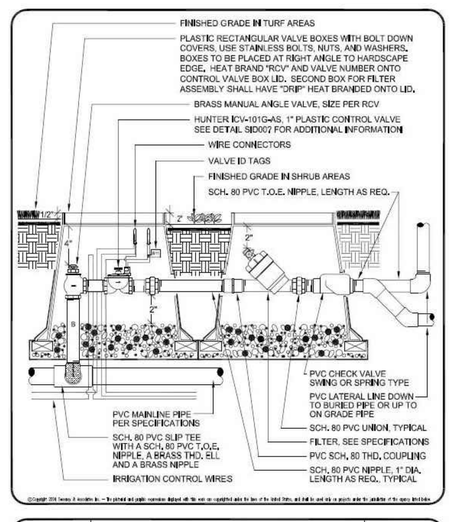
NOTE:
USE A NON-HARDENING TEFLON PIPE SEALANT ON ALL THREADED CONNECTIONS.

CITY OF TEMECULA	NO SCALE
QUICK COUPLER VALVE IN VALVE BOX	I - 27

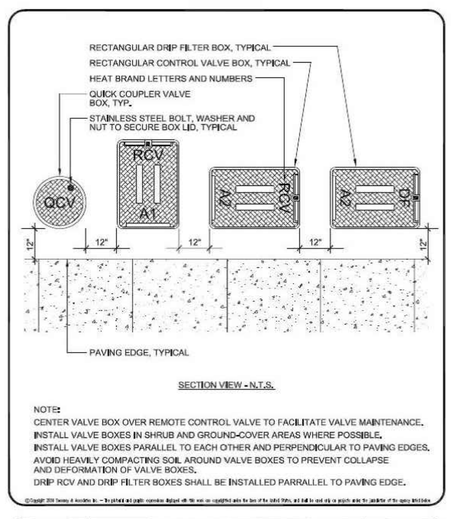


NOTE:
BRASS ELLS, UNION AND AND ALL NIPPLES SHALL BE SIZED TO MATCH THE R.C.V., AT THE 45 DEGREE ELL INCREASE THE LATERAL SIZE TO MATCH THE SIZE INDICATED ON THE DRAWINGS.
INSTALL VALVE BOXES 12" APART AS INDICATED ON DETAIL SD033.
EQUIPMENT SHALL BE INSTALLED SUCH THAT THERE IS NO LEVERAGE OR STRESS ON THE VALVE ASSEMBLY. PIPE SHALL NOT COME INTO CONTACT WITH VALVE BOX.
USE A NON-HARDENING TEFLON PIPE SEALANT ON ALL THREADED CONNECTIONS.

CITY OF TEMECULA	NO SCALE
REMOTE CONTROL VALVE	I - 28

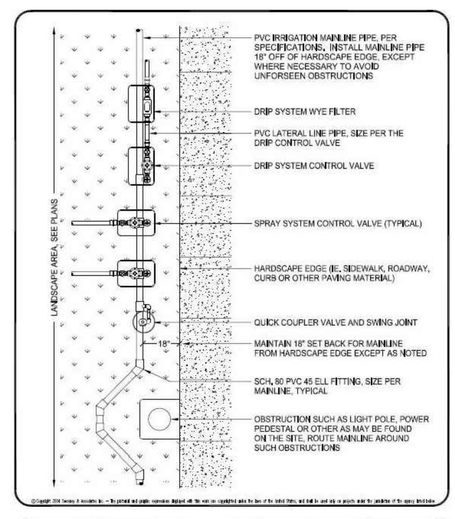


CITY OF TEMECULA	NO SCALE
DRIP REMOTE CONTROL VALVE AND WYE FILTER ASSEMBLY	I - 29

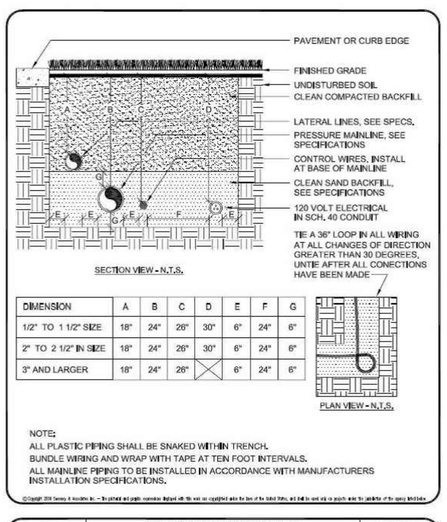


NOTE:
CENTER VALVE BOX OVER REMOTE CONTROL VALVE TO FACILITATE VALVE MAINTENANCE.
INSTALL VALVE BOXES IN SHRUB AND GROUND-COVER AREAS WHERE POSSIBLE.
INSTALL VALVE BOXES PARALLEL TO EACH OTHER AND PERPENDICULAR TO PAVING EDGES.
AVOID HEAVILY COMPACTING SOIL AROUND VALVE BOXES TO PREVENT COLLAPSE AND DEFORMATION OF VALVE BOXES.
DRIP RCV AND DRIP FILTER BOXES SHALL BE INSTALLED PARRALLEL TO PAVING EDGE.

CITY OF TEMECULA	NO SCALE
VALVE BOX PLACEMENT	I - 30



CITY OF TEMECULA	NO SCALE
MAINLINE AND VALVE MANIFOLD LAYOUT	I - 31



DIMENSION	A	B	C	D	E	F	G
1/2" TO 1 1/2" SIZE	18"	24"	26"	30"	6"	24"	6"
2" TO 2 1/2" IN SIZE	18"	24"	26"	30"	6"	24"	6"
3" AND LARGER	18"	24"	26"		6"	24"	6"

NOTE:
ALL PLASTIC PIPING SHALL BE SNAKED WITHIN TRENCH.
BUNDLE WIRING AND WRAP WITH TAPE AT TEN FOOT INTERVALS.
ALL MAINLINE PIPING TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS INSTALLATION SPECIFICATIONS.

CITY OF TEMECULA	NO SCALE
PIPE AND WIRE TRENCHING	I - 32

Michael Baker INTERNATIONAL
40810 COUNTY CENTER DR., SUITE 100
TEMECULA, CA 92591
PHONE: (951) 676-8042
MBAKERINTL.COM

CONSTRUCTION RECORD	DATE	BY	REVISIONS	DATE	ACC'D
CONTRACTOR					
INSPECTOR					
DATE COMPLETED					

BENCH MARK
600-6-81 RESET 1999, A 3-1/4" ALUM. DISK ON TOP OF CURB IN THE NW'LY RETURN AT THE INTERSECTION OF HWY. 79 AND FRONT STREET.
ELEVATION 996.809

SCALE
HORIZONTAL: AS NOTED
VERTICAL: N/A

REGISTERED LANDSCAPE ARCHITECT — JOHN PRESTON ANDREW LIC. NO 3152 — SIGNATURE — SEP. 30, 2017 RENEWAL DATE — DATE — STATE OF CALIFORNIA

DESIGNED BY	DRAWN BY	CHECKED BY
JA	MH, AC	JA

PLANS PREPARED UNDER THE SUPERVISION OF
DATE:
JOHN ANDREW
R.L.A. 3152

RECOMMENDED BY: DATE:
ACCEPTED BY: DATE:
THOMAS W. GARCIA
DIRECTOR OF PUBLIC WORKS/CITY ENGINEER
R.C.E. 48279

CITY OF TEMECULA — DEPARTMENT OF PUBLIC WORKS

LANDSCAPE IMPROVEMENT PLAN
PECHANGA PARKWAY
STA 87+44 - STA 115+36
IRRIGATION DETAILS

SHEET NO. 9 OF 10 SHEETS

ID-2
LDXX-XXXX

NOT FOR CONSTRUCTION - 30% SUBMITTAL - 8/19/16

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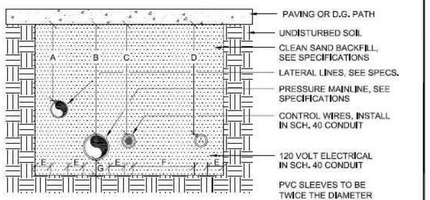

SECTION VIEW - N.T.S.

DIMENSION	A	B	C	D	E	F	G
DEPTH BELOW GRADE	24"	36"	36"	36"	6"	24"	6"

NOTE:

ALL PVC MAINLINE, PVC LATERAL LINES, AND CONTROL WIRES SHALL BE SLEEVED BELOW ALL HARDSCAPE ELEMENTS WITHIN A SCH. 40 PVC SLEEVE. SLEEVES SHALL BE TWICE THE DIAMETER OF THE PIPE OR CONTROL WIRE BUNDLE CARRIED WITHIN, OR 4" MINIMUM, WHICH EVER IS THE GREATER.

ALL SLEEVES SHALL EXTEND 24 INCHES BEYOND THE EDGE OF PAVING.

ALL CURBS SHALL BE MARKED WITH A "SCORE" MARK TO DESIGNATE SLEEVE LOCATION.

SLEEVE DETAIL SHALL ALSO BE USED FOR INSTALLATION OF PIPE IN ROCK SOIL.

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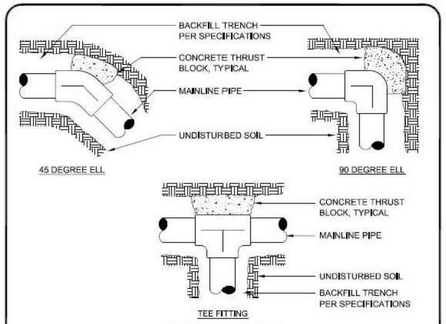
CITY OF TEMECULA	NO SCALE
SLEEVE TRENCHING	I - 33



ALL SECTION VIEWS - N.T.S.

NOTES:

ALL CONCRETE USED IN THRUST BLOCKS SHALL BE 470-C-2000.

SOLVENT WELD MAINLINE PIPE AND FITTINGS SHALL RECEIVE CONCRETE THRUST BLOCKING.

BELL AND GASKET MAINLINE PIPE AND FITTINGS SHALL USE PIPE RESTRAINT SYSTEMS.

CONCRETE THRUST BLOCKS SHALL BE A MINIMUM OF 1 CUBIC FOOT IN VOLUME. THRUST BLOCKS SHALL NOT ENCASE THE FITTINGS IN CONCRETE.

ALL MAINLINES SHALL BE INSTALLED ACCORDING TO THE MANUFACTURER'S INSTALLATION RECOMMENDATIONS AND PRESSURE TESTED PER THE SPECIFICATIONS.

ALL TRENCH DEPTH AND WIDTH SHALL BE PER THE SPECIFICATIONS.

WRAP PLASTIC FITTINGS IN CONTACT WITH CONCRETE USING BLACK PIPE WRAP.

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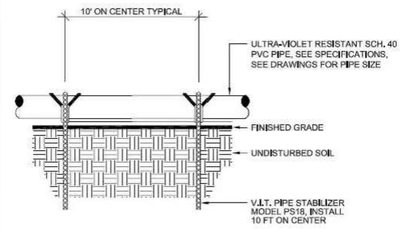
CITY OF TEMECULA	NO SCALE
THRUST BLOCKS	I - 34



NOTE:

ALL PVC PIPE INSTALLED ON GRADE TO BE SCH. 40 ULTRA-VIOLET RESISTANT PVC.

ALL PVC FITTINGS INSTALLED ON GRADE TO BE SCH. 40 ULTRA-VIOLET RESISTANT PVC.

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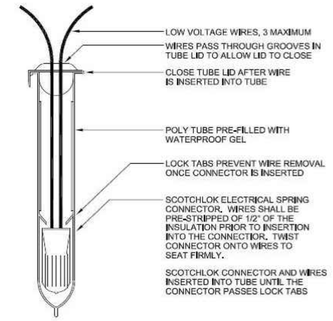
CITY OF TEMECULA	NO SCALE
PIPE ON GRADE	I - 36



SECTION VIEW - N.T.S.

NOTE:

WIRE CONNECTOR SHALL BE A 3M DBY DIRECT BURY SPLICE KIT.

KIT SHALL INCLUDE A SCOTCHLOK SPRING CONNECTOR, A POLYPROPYLENE TUBE AND A WATERPROOF SEALING GEL. TUBE SHALL BE SUPPLIED PREFILLED WITH GEL.

DIRECT BURY SPLICE KIT SHALL BE USED TO ELECTRICALLY CONNECT 2 - 3 #14 OR 2 #12 PRE-STRIPPED COPPER WIRES. LARGER WIRES OR GREATER QUANTITIES OF WIRES SHALL REQUIRE A LARGER APPROVED WIRE CONNECTION.

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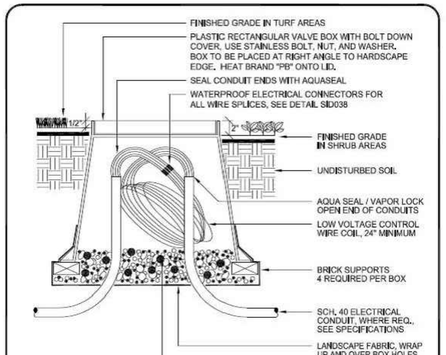
CITY OF TEMECULA	NO SCALE
WIRE CONNECTOR	I - 39



SECTION VIEW - N.T.S.

NOTE:

ALL CONTROL WIRE SPLICES SHALL BE PRE-APPROVED BY TCSD SUPERINTENDENT PRIOR TO INSTALLATION.

ALL CONTROL WIRE SPLICES SHALL BE INSTALLED INSIDE PULL BOXES.

ALL SPLICES SHALL BE MADE USING WATERPROOF ELECTRICAL CONNECTORS.

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CITY OF TEMECULA	NO SCALE
CONTROL WIRE PULL BOX	I - 40

NOT FOR CONSTRUCTION - 30% SUBMITTAL - 8/19/16

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PHONE: (951) 676-8042
MBAKERINTL.COM

ID-3
LDXX-XXXX

CONSTRUCTION RECORD	DATE	BY	REVISIONS	DATE	ACC'D
CONTRACTOR					
INSPECTOR					
DATE COMPLETED					

BENCH MARK

600-6-81 RESET 1999, A 3-1/4" ALUM. DISK ON TOP OF CURB IN THE NW'LY RETURN AT THE INTERSECTION OF HWY. 79 AND FRONT STREET.

ELEVATION 996.809

SCALE
HORIZONTAL: AS NOTED
VERTICAL: N/A

REGISTERED LANDSCAPE ARCHITECT
JOHN PRESTON ANDREW LIC. NO. 3152
SIGNATURE
SEP. 30, 2017
RENEWAL DATE
DATE
STATE OF CALIFORNIA

DESIGNED BY	DRAWN BY	CHECKED BY
JA	MH, AC	JA

PLANS PREPARED UNDER THE SUPERVISION OF

_____ DATE: _____
JOHN ANDREW
R.L.A. 3152

RECOMMENDED BY: _____ DATE: _____

ACCEPTED BY: _____ DATE: _____
THOMAS W. GARCIA
DIRECTOR OF PUBLIC WORKS/CITY ENGINEER
R.C.E. 48279

CITY OF TEMECULA — DEPARTMENT OF PUBLIC WORKS

LANDSCAPE IMPROVEMENT PLAN
PECHANGA PARKWAY
STA 87+44 - STA 115+36
IRRIGATION DETAILS

SHEET NO. 10 OF 10 SHEETS

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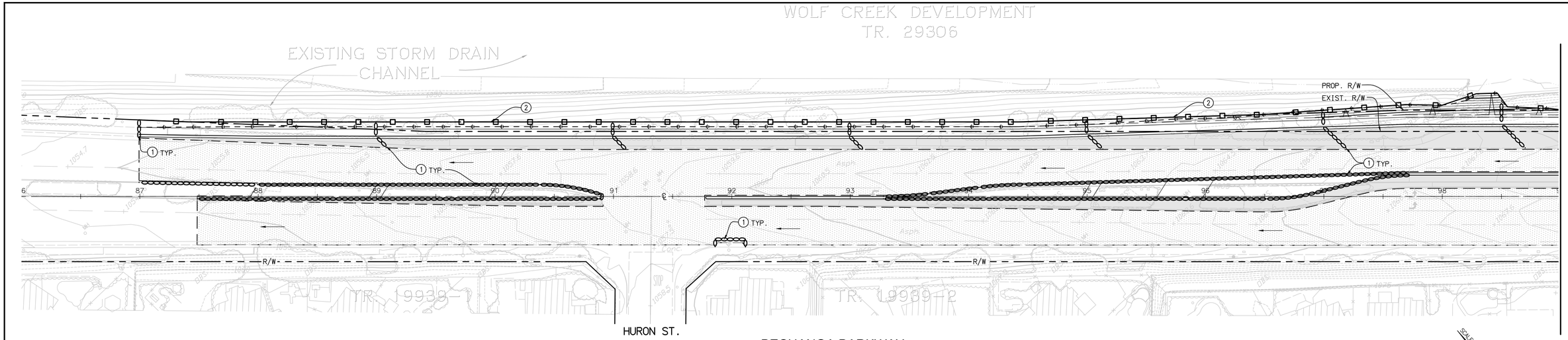


NOT FOR CONSTRUCTION - 30% SUBMITTAL - 8/19/16

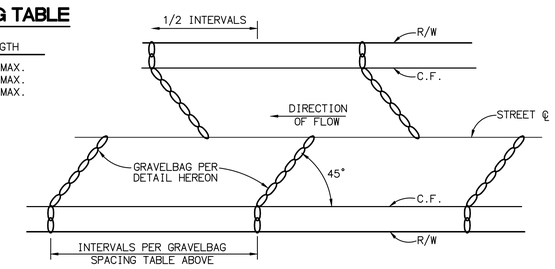
EROSION & SEDIMENT CONTROL NOTES

1. FILTERED RUNOFF. ALL RUNOFF SHALL BE FILTERED PRIOR TO DISCHARGING FROM A SITE OR TO ANY TYPE OF PRIVATE OR PUBLIC STORM WATER CONVEYANCE SYSTEM (NATURAL WATERCOURSES, STREETS, GUTTERS, CONCRETE-LINED V-DITCHES, STORM DRAINS, FLOW-LINES, INLETS, OUTLETS, ETC.). ALL NON-PERMITTED DISCHARGES ARE PROHIBITED FROM ENTERING ANY STORM WATER CONVEYANCE SYSTEM YEAR-ROUND.
2. BEST MANAGEMENT PRACTICES (BMP'S). YEAR-ROUND, POLLUTION PREVENTION MEASURES, ALSO KNOWN AS BEST MANAGEMENT PRACTICES (BMP'S), MUST BE INSTALLED PRIOR TO ANY FIELD ACTIVITIES. BMP HANDBOOKS CAN BE DOWNLOADED AT WWW.CABMPHANDBOOKS.COM. ADDITIONAL EROSION PREVENTION AND SEDIMENT CONTROL (ESC) MEASURES MUST BE INSTALLED AND MAINTAINED PRIOR TO AND THROUGHOUT EACH RAINY SEASON. THE DEVELOPER/CONTRACTOR IS RESPONSIBLE FOR ESC MEASURES THROUGHOUT THE DURATION OF THE PROJECT FOR ALL CLEARING, DISKING, GRADING, EXCAVATING AND STOCKPILING ACTIVITIES, AND ON ALL EXPOSED SLOPES AND INACTIVE PADS THROUGHOUT THE ENTIRE SITE. THE DEVELOPER/CONTRACTOR IS ALSO RESPONSIBLE FOR ANY DISCHARGES FROM SUBCONTRACTORS.
   a. STOCKPILING OF BMPS. ADDITIONAL ESC MATERIALS SHALL BE STOCKPILED AT VARIOUS LOCATIONS THROUGHOUT THE SITE FOR IMMEDIATE USE WITHIN SEVEN DAYS PRIOR TO ANY FORECAST RAIN. ON EMERGENCY SITUATIONS, THE DEVELOPER/CONTRACTOR SHALL IMMEDIATELY MAKE EQUIPMENT AND WORKERS AVAILABLE TO PROTECT THE SITE.
3. EROSION AND SEDIMENT CONTROLS. ALL ESC MEASURES SHALL BE INSPECTED, RESTORED, REPAIRED OR MODIFIED YEAR-ROUND THROUGHOUT THE SITE TO PROTECT PERIMETERS, ADJACENT PROPERTIES, ENVIRONMENTALLY SENSITIVE AREAS AND ALL PRIVATE/PUBLIC STORM WATER CONVEYANCE SYSTEMS. IF ANY EROSION OR SEDIMENT CONTROLS FAIL DURING ANY RAIN EVENT, MORE EFFECTIVE ONES WILL BE REQUIRED IN THEIR PLACE.
   a. EROSION CONTROLS. EROSION CONTROLS SHALL INCLUDE, BUT ARE NOT LIMITED TO APPLYING AND ESTABLISHING: VEGETATIVE COVER, WOOD MULCH, STAPLED OR PINNED BLANKETS (STRAW, COCONUT OR OTHER), PLASTIC SHEETING (MINIMUM 10-MIL), POLYPROPYLENE MATS, SPRAY-ON CONTROLS TO ALL DISTURBED AREAS OR OTHER MEASURES APPROVED BY THE CITY ENGINEER. JUTE NETTING SHALL NOT BE USED AS A STAND-ALONE EROSION CONTROL. FOR SLOPES GREATER THAN 4:1, PROVIDE FIBER ROLLS AND EITHER A BONDED FIBER MATRIX PRODUCT APPLIED TO A RATE OF 3500 LB/ACRE OR A STABILIZED FIBER MATRIX PRODUCT APPLIED TO A RATE OF 10 GAL/ACRE. THE CITY ENGINEER MAY APPROVE DIFFERENT APPLICATION RATES FOR SLOPES LESS THAN 4:1.
   b. SEDIMENT CONTROLS. SEDIMENT CONTROLS SHALL INCLUDE, BUT ARE NOT LIMITED TO: DESILTING BASINS, GRADED BERMS, FIBER ROLLS, SILT FENCES, GRAVEL BAG CHEVRONS (FILLED WITH MINIMUM ¾" GRAVEL), CHECK DAMS, DRAINAGE INLET PROTECTION, ETC. FIBER ROLLS SHALL BE INSTALLED IN 15-FOOT INCREMENTS MEASURED ALONG THE FACE OF THE SLOPE. SILT FENCE SHALL BE INSTALLED ALONG INTERIOR STREETS AND COMBINED WITH GRAVEL-BAG OR SILT FENCE CHEVRONS INSIDE THE SIDEWALK RIGHT-OF-WAY OR BACK OF CURBS.
4. STATE CONSTRUCTION GENERAL PERMIT. IF THE PROJECT DISTURBS, EXPOSES OR STOCKPILES ONE ACRE OR MORE OF SOIL, THE SITE MUST BE COVERED UNDER THE STATE CONSTRUCTION GENERAL PERMIT. A WASTE DISCHARGE IDENTIFICATION (WDID) NUMBER, A RISK LEVEL DETERMINATION NUMBER AND THE QUALIFIED "STORM WATER POLLUTION PREVENTION PLAN" (SWPPP) DEVELOPER (QSD) SHALL BE PROVIDED TO THE CITY PRIOR TO ISSUANCE OF A GRADING PERMIT. A SWPPP SHALL BE IMPLEMENTED THROUGHOUT THE DURATION OF THE PROJECT AND SHALL BE READILY AVAILABLE TO CITY AND STATE INSPECTORS AND UPDATED TO REFLECT CURRENT SITE CONDITIONS DURING CONSTRUCTION. THE CONSTRUCTION PERMIT CAN BE DOWNLOADED AT: WWW.WATERBOARDS.CA.GOV/WATER_ISSUES/PROGRAMS/STORMWATER/CONSTRUCTION.
5. PERIMETER PROTECTION. PERIMETER PROTECTION MUST BE INSTALLED PRIOR TO ANY CLEARING ACTIVITIES. CLEARING SHALL BE LIMITED TO AREAS THAT WILL BE IMMEDIATELY GRADED OR DISTURBED. A COMBINATION OF ESC MEASURES SHALL BE IMPLEMENTED IN AREAS THAT HAVE BEEN CLEARED. ALL DISTURBED AREAS OF AN INACTIVE SITE, AS DESCRIBED IN THE ENGINEERING AND CONSTRUCTION MANUAL, SHALL ALSO BE PROTECTED.
6. CONSTRUCTION ACCESS POINTS. CONSTRUCTION ACCESS POINTS SHALL BE STABILIZED WITH A COMBINATION OF ROCK AND SHAKER PLATES YEAR-ROUND TO PREVENT TRACK-OUT. INTERIOR ACCESS POINTS (ALL PROPOSED DRIVEWAYS, MATERIAL STORAGE AND STAGING AREA ENTRANCES/EXITS, ETC.) SHALL ALSO BE PROTECTED WITH ROCK TO PREVENT TRACK-OUT ONTO INTERIOR STREETS. ROUTINE STREET SWEEPING SHALL BE PERFORMED ON ALL PAVED STREETS WHERE TRACKING IS OBSERVED. VACUUM SWEEPERS SHALL BE USED WHEN STREET SWEEPING BECOMES INEFFECTIVE. CONTROLLED STREET WASHING SHALL ONLY BE ALLOWED PRIOR TO THE APPLICATION OF ASPHALT SEAL COATS, AND ONLY WHEN ALL PERTINENT DRAINAGE INLETS ARE PROTECTED.
7. DESILTING BASINS. DESILTING BASINS SHALL BE DESIGNED ACCORDING TO THE GUIDANCE PROVIDED IN CASQA'S CONSTRUCTION BMP HANDBOOK. IMPOUNDED WATER SHALL BE SECURED FROM THE PUBLIC. SIGNAGE INDICATING "PONDED WATER - DO NOT ENTER," OR AN EQUIVALENT WARNING NOTICE, SHALL BE POSTED.
8. MATERIAL STORAGE. MATERIAL STORAGE AND STAGING AREAS SHALL BE ESTABLISHED. FUEL TANKS, PORTABLE TOILETS, LIQUIDS, GELS, POWDERS, LANDSCAPE MATERIALS AND STOCKPILES OF SOIL SHALL BE STORED AWAY FROM ALL PRIVATE/PUBLIC STORM WATER CONVEYANCE SYSTEMS, SIDEWALKS, RIGHT-OF-WAYS AND FLOW-LINES AND SHALL HAVE SECONDARY CONTAINMENT. INACTIVE STOCKPILES OF SOIL SHALL BE COVERED AT ALL TIMES. ACTIVE STOCKPILES SHALL BE COVERED PRIOR TO A FORECAST RAIN.
9. CONSTRUCTION WASTE. CONSTRUCTION WASTE AND MISCELLANEOUS DEBRIS SHALL BE PLACED IN WATER-TIGHT BINS. WIRE MESH RECEPTACLES SHALL NOT BE ALLOWED. WASH-OUT STATIONS SHALL BE PROVIDED FOR CONCRETE, PAINTS, STUCCO AND OTHER LIQUID WASTE, AND SHALL BE LINED WITH PLASTIC AND LOCATED AWAY FROM PUBLIC RIGHT-OF-WAYS, FLOW LINES, ETC. PRIOR TO ANY FORECAST RAIN, BINS AND WASH-OUTS SHALL BE COVERED WITH LIDS OR PLASTIC TARPS.
10. SLOPE PROTECTION. STORM WATER RUNOFF SHALL NOT BE DIRECTED OVER SLOPES WITHOUT PERMANENT DOWN DRAINS INSTALLED. ESC MEASURES ARE REQUIRED ON ALL EXPOSED SLOPES UNTIL SUFFICIENT/PERMANENT LANDSCAPE IS ESTABLISHED. THERE SHALL BE 100% SLOPE PROTECTION IN PLACE PRIOR TO ISSUANCE OF CERTIFICATE OF OCCUPANCY.
11. PORTABLE MIXERS. ALL PORTABLE MIXERS SHALL HAVE PLASTIC LINERS UNDERNEATH THEM WITH GRAVEL-BAGS PLACED ON THE DOWN-HILL SIDE OF THE LINERS TO CONTAIN DISCHARGES.
12. MAINTENANCE. ALL ONSITE AND OFFSITE FLOW LINES (I.E., V- AND BROW-DITCHES, TERRACE DRAINS, RIBBON GUTTERS, CURB GUTTERS, ETC.), STORM WATER CONVEYANCE SYSTEMS, CHECK DAMS, CHEVRONS, SILT FENCES AND DESILTING BASINS SHALL BE FREE OF SEDIMENT, CONSTRUCTION MATERIALS, WASTE, MISCELLANEOUS DEBRIS AND DETERIORATED ESC MEASURES YEAR-ROUND.
13. OBSTRUCTIONS. NO OBSTRUCTIONS, OTHER THAN BMP'S, SHALL BE ALLOWED WITHIN ANY STORM WATER CONVEYANCE SYSTEM, UNLESS ALTERNATIVE DRAINAGE FACILITIES HAVE BEEN APPROVED BY THE CITY ENGINEER.
14. OTHER CONSTRUCTION NOTES. REFER TO SEPARATE NOTES FOR "GENERAL," "GRADING" AND "PAVING" REQUIREMENTS.

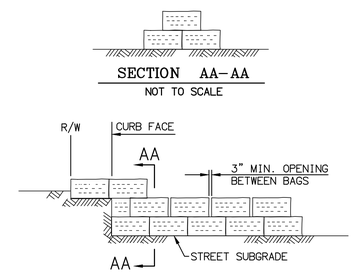
PLEASE REFER TO THE SWPPP FOR ADDITIONAL EROSION AND SEDIMENT CONTROL REQUIREMENTS. CONTRACTOR IS RESPONSIBLE TO ADHERE TO THE CONSTRUCTION GENERAL PERMIT, STATE WATER RESOURCE CONTROL BOARD.

GRAVELBAG SPACING TABLE

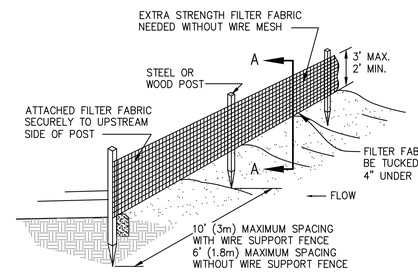
STREET GRADE	LENGTH
<4%	200' MAX.
4% TO 9%	100' MAX.
>9%	50' MAX.

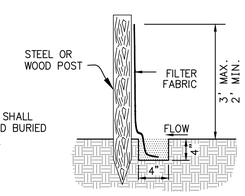


1 TYPICAL STREET GRAVELBAG PLACEMENT DETAIL
NOT TO SCALE

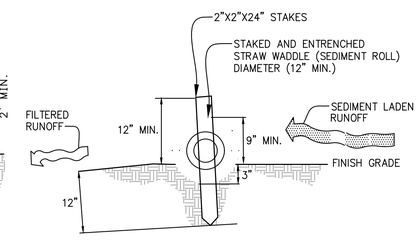


SECTION AA-AA
NOT TO SCALE





SECTION A - A
NOT TO SCALE



2 SILT FENCE PROTECTION
NOT TO SCALE

EROSION AND SEDIMENT CONTROL NOTES, AND QUANTITIES

		QTY.	UNIT
1	INSTALL GRAVELBAG VELOCITY REDUCERS PER DETAIL HEREON.	3884	LF
2	INSTALL SILT FENCE PROTECTION PER DETAIL HEREON.	2504	LF

EROSION AND SEDIMENT CONTROL LEGEND

GRAVEL BAGS/STRAW WADDLE
SILT FENCE
DIRECTION OF FLOW

SCALE: 1"=40'

40 20 0 40 80 120
SCALE: 1"=40'

Michael Baker INTERNATIONAL
40810 COUNTY CENTER DR., SUITE 100
TEMECULA, CA 92591
PHONE: (951) 676-8042
MBAKERINTL.COM

PROJECT NO. PW 15-14

CONSTRUCTION RECORD	DATE	BY	REVISIONS	DATE	ACC'D
CONTRACTOR					
INSPECTOR					
DATE COMPLETED					

BENCH MARK
600-6-81 RESET 1999, A 3-1/4" ALUM. DISK ON TOP OF CURB IN THE NW'LY RETURN AT THE INTERSECTION OF HWY. 79 AND FRONT STREET.
ELEVATION 996.809

SCALE
HORIZONTAL: AS NOTED
VERTICAL: N/A

REGISTERED PROFESSIONAL ENGINEER — FRANCISCO MARTINEZ JR. — C-84640 — CIVIL — STATE OF CALIFORNIA

DESIGNED BY	DRAWN BY	CHECKED BY
CF	XL	FM

PLANS PREPARED UNDER THE SUPERVISION OF
DATE:
FRANCISCO MARTINEZ JR.
R.C.E. 84640

RECOMMENDED BY: DATE:
ACCEPTED BY: DATE:
THOMAS W. GARCIA
DIRECTOR OF PUBLIC WORKS/CITY ENGINEER
R.C.E. 48279

CITY OF TEMECULA — DEPARTMENT OF PUBLIC WORKS

STREET IMPROVEMENT PLAN
PECHANGA PARKWAY

EROSION CONTROL PLAN

SHEET NO. 1 OF 2 SHEETS

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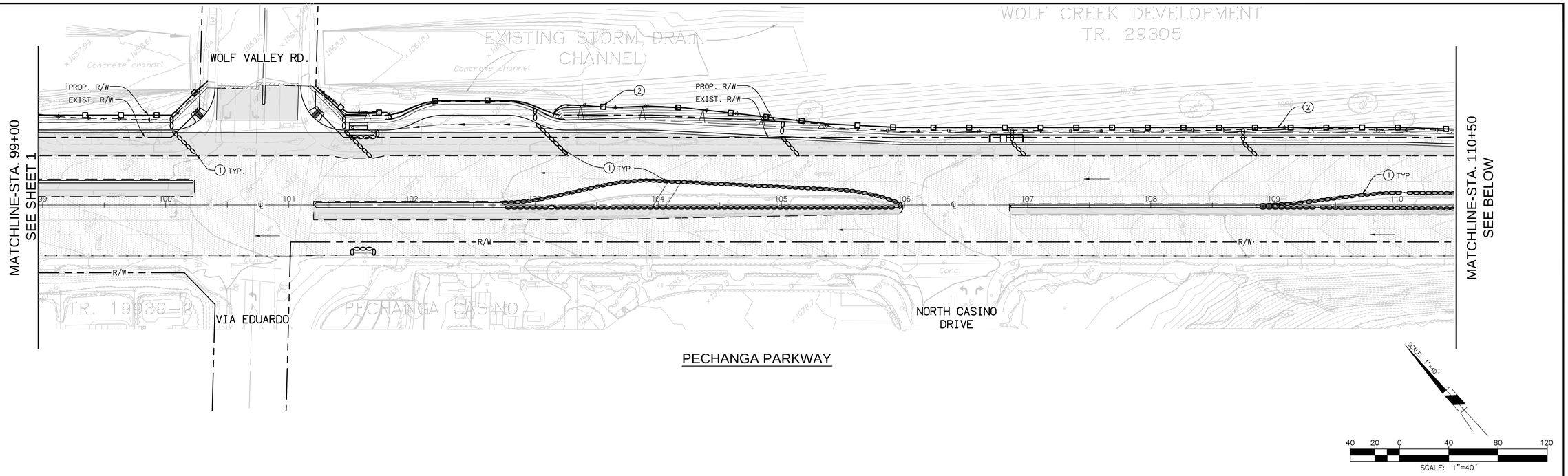

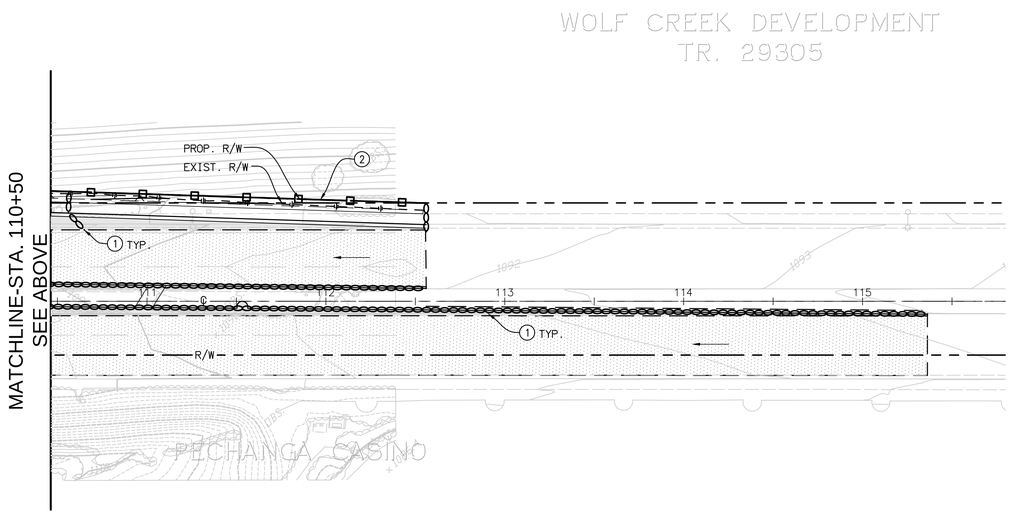

EROSION AND SEDIMENT CONTROL NOTES

1. *INSTALL GRAVELBAG VELOCITY REDUCERS PER DETAIL HEREON.*
2. *INSTALL SILT FENCE PROTECTION PER DETAIL HEREON.*

EROSION AND SEDIMENT CONTROL LEGEND

- GRAVEL BAGS/STRAW WADDLE
- SILT FENCE
- DIRECTION OF FLOW

Michael Baker INTERNATIONAL
40810 COUNTY CENTER DR., SUITE 100
TEMECULA, CA 92591
PHONE: (951) 676-8042
MBAKERINTL.COM

PROJECT NO. PW 15-14

CONSTRUCTION RECORD	DATE	BY	REVISIONS	DATE	ACC'D
CONTRACTOR					
INSPECTOR					
DATE COMPLETED					

BENCH MARK: 600-6-81 RESET 1999, A 3-1/4" ALUM. DISK ON TOP OF CURB IN THE NW'LY RETURN AT THE INTERSECTION OF HWY. 79 AND FRONT STREET. ELEVATION 996.809

SCALE: HORIZONTAL AS NOTED; VERTICAL N/A

REGISTERED PROFESSIONAL ENGINEER FRANCISCO MARTINEZ JR. C-84640 CIVIL STATE OF CALIFORNIA

DESIGNED BY	DRAWN BY	CHECKED BY
CF	XL	FM

PLANS PREPARED UNDER THE SUPERVISION OF

FRANCISCO MARTINEZ JR. DATE:
R.C.E. 84640

RECOMMENDED BY: DATE:

ACCEPTED BY: DATE:
THOMAS W. GARCIA
DIRECTOR OF PUBLIC WORKS/CITY ENGINEER
R.C.E. 48279

CITY OF TEMECULA — DEPARTMENT OF PUBLIC WORKS

STREET IMPROVEMENT PLAN
PECHANGA PARKWAY

EROSION CONTROL PLAN

SHEET NO. 2 OF SHEETS

NOT FOR CONSTRUCTION - 30% SUBMITTAL - 8/19/16

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Appendix 3: Soils Information

Geotechnical Study and Other Infiltration Testing Data

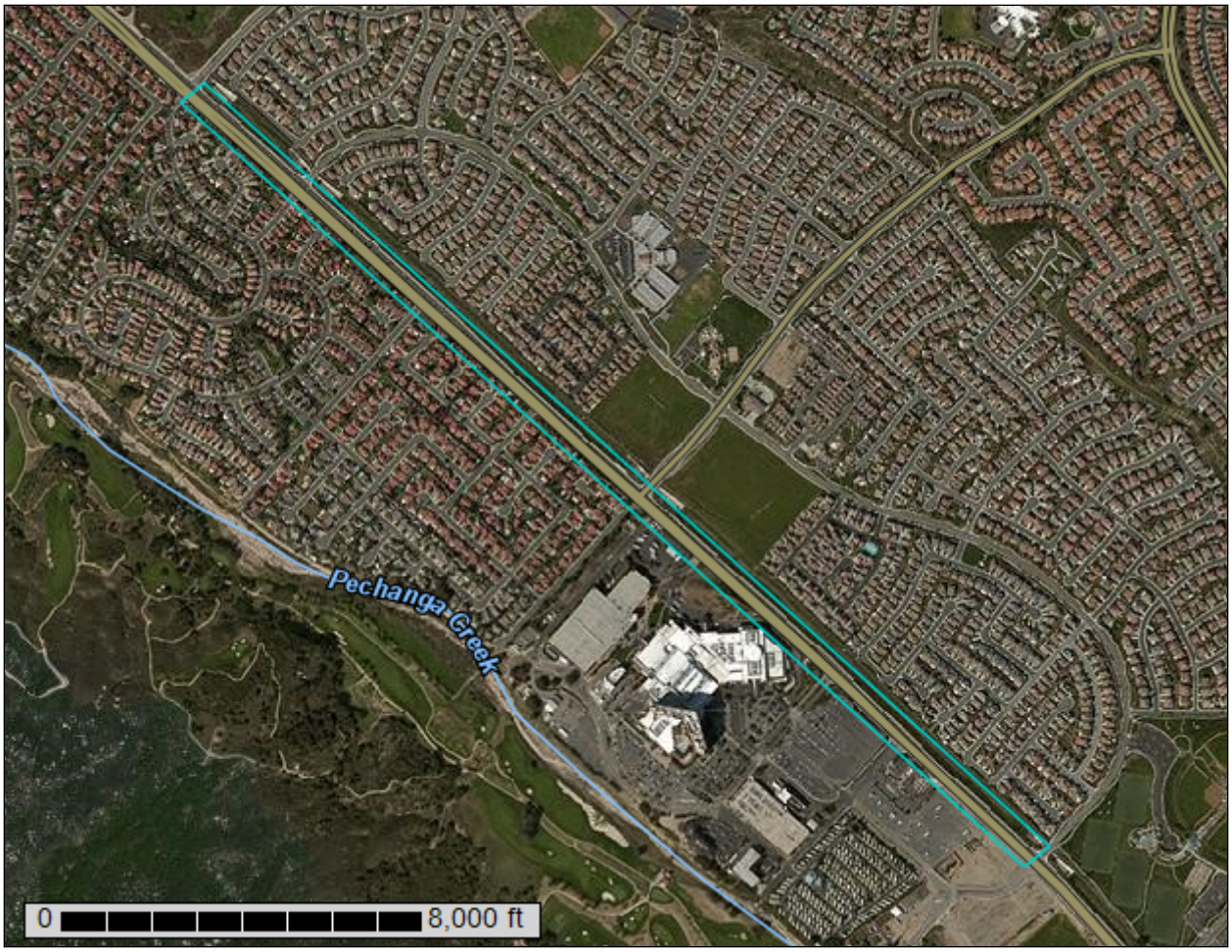
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Western Riverside Area, California



August 19, 2016

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (http://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

Preface.....2
How Soil Surveys Are Made.....5
Soil Map.....7
Soil Map.....8
Legend.....9
Map Unit Legend.....10
Map Unit Descriptions.....10
Western Riverside Area, California.....12
AtD2—Arlington and Greenfield fine sandy loams, 8 to 15 perc ent slopes, eroded.....12
GhC—Gorgonio loamy sand, 0 to 8 percent slopes.....14
GtA—Grangeville fine sandy loam, drained, 0 to 2 percent sl opes.....15
GyA—Greenfield sandy loam, 0 to 2 percent slopes.....16
HcC—Hanford coarse sandy loam, 2 to 8 percent slopes.....17
HgA—Hanford fine sandy loam, 0 to 2 percent slopes.....19
RmE3—Ramona and Buren sandy loams, 15 to 25 percent slopes, severely eroded.....20
VmA—Visalia fine sandy loam, 0 to 2 percent slopes.....22
References.....24

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the

individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

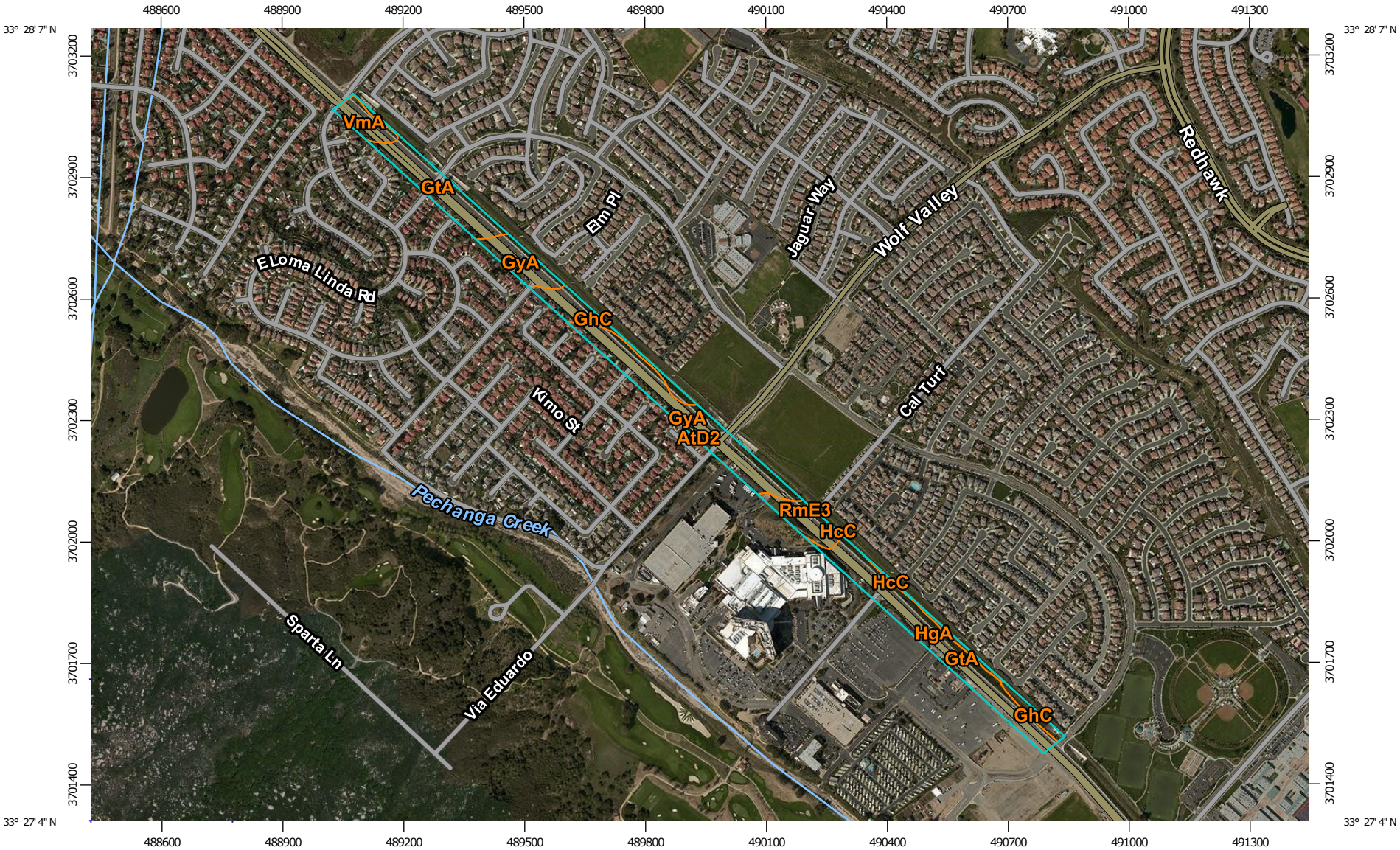
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:13,800 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 200 400 800 1200

Feet: 0 500 1000 2000 3000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Western Riverside Area, California
Survey Area Data: Version 8, Sep 22, 2015

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 3, 2010—Feb 26, 2015

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Western Riverside Area, California (CA679)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
AtD2	Arlington and Greenfield fine sandy loams, 8 to 15 perc ent slopes, eroded	0.1	0.1%
GhC	Gorgonio loamy sand, 0 to 8 percent slopes	4.0	10.5%
GtA	Grangeville fine sandy loam, drained, 0 to 2 percent sl opes	6.3	16.4%
GyA	Greenfield sandy loam, 0 to 2 percent slopes	12.3	32.3%
HcC	Hanford coarse sandy loam, 2 to 8 percent slopes	0.2	0.5%
HgA	Hanford fine sandy loam, 0 to 2 percent slopes	10.5	27.6%
RmE3	Ramona and Buren sandy loams, 15 to 25 percent slopes, severely eroded	2.7	7.1%
VmA	Visalia fine sandy loam, 0 to 2 percent slopes	2.1	5.4%
Totals for Area of Interest		**38.1**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally

are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Western Riverside Area, California

AtD2—Arlington and Greenfield fine sandy loams, 8 to 15 perc ent slopes, eroded

Map Unit Setting

National map unit symbol: hcr6
Elevation: 100 to 3,500 feet
Mean annual precipitation: 9 to 20 inches
Mean annual air temperature: 63 degrees F
Frost-free period: 200 to 320 days
Farmland classification: Not prime farmland

Map Unit Composition

Greenfield and similar soils: 35 percent
Arlington and similar soils: 35 percent
Unnamed, severely eroded: 20 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Arlington

Setting

Landform: Alluvial fans
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 11 inches: fine sandy loam
H2 - 11 to 24 inches: sandy loam
H3 - 24 to 36 inches: cemented
H4 - 36 to 47 inches: coarse sandy loam, loamy coarse sand
H4 - 36 to 47 inches:

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: 24 to 40 inches to duripan
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 3.2 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: LOAMY (1975) (R019XD029CA)

Hydric soil rating: No

Description of Greenfield

Setting

Landform: Alluvial fans
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 26 inches: fine sandy loam
H2 - 26 to 43 inches: fine sandy loam
H3 - 43 to 60 inches: loam
H4 - 60 to 70 inches: stratified loamy sand to sandy loam

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Moderate (about 8.3 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: A
Ecological site: LOAMY (1975) (R019XD029CA)
Hydric soil rating: No

Description of Unnamed, Severely Eroded

Properties and qualities

Depth to restrictive feature: More than 80 inches
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Minor Components

Greenfield

Percent of map unit: 10 percent
Hydric soil rating: No

GhC—Gorgonio loamy sand, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: hcvb
Elevation: 20 to 3,000 feet
Mean annual precipitation: 10 to 25 inches
Mean annual air temperature: 57 to 63 degrees F
Frost-free period: 250 to 310 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Gorgonio and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gorgonio

Setting

Landform: Alluvial fans
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 15 inches: loamy sand
H2 - 15 to 60 inches: stratified gravelly loamy sand to gravelly loamy fine sand

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat excessively drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Rare
Frequency of ponding: None
Available water storage in profile: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): 3s
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: A
Ecological site: SANDY (1975) (R019XD035CA)
Hydric soil rating: No

Minor Components

Soboba

Percent of map unit: 5 percent
Hydric soil rating: No

Hanford

Percent of map unit: 5 percent
Hydric soil rating: No

Tujunga

Percent of map unit: 5 percent
Hydric soil rating: No

GtA—Grangeville fine sandy loam, drained, 0 to 2 percent sl opes

Map Unit Setting

National map unit symbol: hcvn
Elevation: 10 to 1,800 feet
Mean annual precipitation: 12 inches
Mean annual air temperature: 63 degrees F
Frost-free period: 200 to 270 days
Farmland classification: Prime farmland if irrigated and drained

Map Unit Composition

Grangeville and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Grangeville

Setting

Landform: Alluvial fans
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 36 inches: fine sandy loam
H2 - 36 to 64 inches: sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: Rare
Frequency of ponding: None

Calcium carbonate, maximum in profile: 5 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Moderate (about 8.0 inches)

Interpretive groups
Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 3c
Hydrologic Soil Group: A/D
Ecological site: SANDY BASIN (R019XD070CA)
Hydric soil rating: No

Minor Components

Dello
Percent of map unit: 10 percent
Hydric soil rating: No

Traver
Percent of map unit: 4 percent
Hydric soil rating: No

Unnamed
Percent of map unit: 1 percent
Hydric soil rating: No

GyA—Greenfield sandy loam, 0 to 2 percent slopes

Map Unit Setting
National map unit symbol: hcvv
Elevation: 100 to 3,500 feet
Mean annual precipitation: 9 to 20 inches
Mean annual air temperature: 63 degrees F
Frost-free period: 200 to 300 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition
Greenfield and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Greenfield

Setting
Landform: Alluvial fans, terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile
H1 - 0 to 26 inches: sandy loam
H2 - 26 to 43 inches: fine sandy loam

H3 - 43 to 60 inches: loam
H4 - 60 to 72 inches: stratified loamy sand to sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Rare
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Moderate (about 8.3 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 3c
Hydrologic Soil Group: A
Ecological site: LOAMY (1975) (R019XD029CA)
Hydric soil rating: No

Minor Components

Hanford

Percent of map unit: 10 percent
Hydric soil rating: No

Pachappa

Percent of map unit: 2 percent
Hydric soil rating: No

Arlington

Percent of map unit: 2 percent
Hydric soil rating: No

Unnamed

Percent of map unit: 1 percent
Hydric soil rating: No

HcC—Hanford coarse sandy loam, 2 to 8 percent slopes

Map Unit Setting

National map unit symbol: hcw2
Elevation: 150 to 900 feet
Mean annual precipitation: 9 to 20 inches
Mean annual air temperature: 63 to 64 degrees F
Frost-free period: 250 to 280 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Hanford and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hanford

Setting

Landform: Alluvial fans
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 8 inches: coarse sandy loam
H2 - 8 to 40 inches: fine sandy loam
H3 - 40 to 60 inches: stratified loamy sand to coarse sandy loam

Properties and qualities

Slope: 2 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 7.0 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: A
Ecological site: SANDY (R020XD012CA)
Hydric soil rating: No

Minor Components

Greenfield

Percent of map unit: 5 percent
Hydric soil rating: No

Ramona

Percent of map unit: 5 percent
Hydric soil rating: No

Tujunga

Percent of map unit: 2 percent
Hydric soil rating: No

Unnamed

Percent of map unit: 2 percent
Hydric soil rating: No

Unnamed

Percent of map unit: 1 percent
Hydric soil rating: No

HgA—Hanford fine sandy loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: hcw7
Elevation: 150 to 900 feet
Mean annual precipitation: 9 to 20 inches
Mean annual air temperature: 63 to 64 degrees F
Frost-free period: 250 to 280 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Hanford and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hanford

Setting

Landform: Alluvial fans
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 8 inches: fine sandy loam
H2 - 8 to 40 inches: fine sandy loam
H3 - 40 to 60 inches: stratified loamy sand to coarse sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Rare
Frequency of ponding: None
Available water storage in profile: Moderate (about 7.0 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 3c
Hydrologic Soil Group: A
Ecological site: LOAMY (1975) (R019XD029CA)
Hydric soil rating: No

Minor Components

Greenfield
Percent of map unit: 5 percent
Hydric soil rating: No

Ramona
Percent of map unit: 5 percent
Hydric soil rating: No

Tujunga
Percent of map unit: 5 percent
Hydric soil rating: No

RmE3—Ramona and Buren sandy loams, 15 to 25 percent slopes, severely eroded

Map Unit Setting
National map unit symbol: hcyj
Elevation: 250 to 3,500 feet
Mean annual precipitation: 10 to 20 inches
Mean annual air temperature: 63 degrees F
Frost-free period: 230 to 320 days
Farmland classification: Not prime farmland

Map Unit Composition
Ramona and similar soils: 45 percent
Buren and similar soils: 40 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ramona

Setting
Landform: Alluvial fans, terraces
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Alluvium derived from granite

Typical profile
H1 - 0 to 8 inches: sandy loam
H2 - 8 to 17 inches: fine sandy loam
H3 - 17 to 68 inches: sandy clay loam
H4 - 68 to 74 inches: gravelly sandy loam

Properties and qualities
Slope: 15 to 25 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Very high

Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 1 percent
Available water storage in profile: Moderate (about 8.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: LOAMY (1975) (R019XD029CA)
Hydric soil rating: No

Description of Buren

Setting

Landform: Alluvial fans, terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Convex, linear
Parent material: Alluvium

Typical profile

H1 - 0 to 12 inches: sandy loam
H2 - 12 to 28 inches: loam
H3 - 28 to 37 inches: loam
H4 - 37 to 52 inches: cemented

Properties and qualities

Slope: 15 to 25 percent
Depth to restrictive feature: 37 to 40 inches to duripan
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Available water storage in profile: Low (about 5.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: LOAMY (1975) (R019XD029CA)
Hydric soil rating: No

Minor Components

Ramona

Percent of map unit: 5 percent
Hydric soil rating: No

Buren

Percent of map unit: 5 percent
Hydric soil rating: No

Hanford

Percent of map unit: 5 percent
Hydric soil rating: No

VmA—Visalia fine sandy loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: hczv
Elevation: 600 to 1,200 feet
Mean annual precipitation: 15 inches
Mean annual air temperature: 57 degrees F
Frost-free period: 200 to 260 days
Farmland classification: Prime farmland if irrigated and drained

Map Unit Composition

Visalia and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Visalia

Setting

Landform: Alluvial fans
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granite

Typical profile

H1 - 0 to 18 inches: fine sandy loam
H2 - 18 to 60 inches: sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Rare
Frequency of ponding: None
Available water storage in profile: Moderate (about 7.2 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 3c

Hydrologic Soil Group: A
Ecological site: LOAMY (1975) (R019XD029CA)
Hydric soil rating: No

Minor Components

Hanford
Percent of map unit: 5 percent
Hydric soil rating: No

Gorgonio
Percent of map unit: 5 percent
Hydric soil rating: No

Tujunga
Percent of map unit: 5 percent
Hydric soil rating: No

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

Appendix 4: Historical Site Conditions

Phase I Environmental Site Assessment or Other Information on Past Site Use

N/A

Appendix 5: LID Infeasibility

LID Technical Infeasibility Analysis

Appendix 6: BMP Design Details

BMP Sizing, Design Details and other Supporting Documentation

Table D.4.1 DCV Calculations for LID BMPs

DMA Type/ID	DMA (square feet)	Post-Project Surface Type	Effective Impervious Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	*Curb Inlet Filter Insert A*		
	[A]		[B]	[C]	[A] x [C]			
DMA 1	*244,330*	*Concrete or Asphalt*	*1.00*	*0.892*	*217,942*	*Design Storm Depth (in)*	*DCV, V_{BMP} (cubic feet)*	*Proposed Volume on Plans (cubic feet)*
					-			
					-			
					-			
	244,330				217,942	0.95	17,254	

Table D.4.2 DCV Calculations for LID BMPs

DMA Type/ID	DMA (square feet)	Post-Project Surface Type	Effective Impervious Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	*Curb Inlet Filter Insert B*		
	[A]		[B]	[C]	[A] x [C]			
DMA 2	*64,860*	*Concrete or Asphalt*	*1.00*	*0.892*	*57,855*	*Design Storm Depth (in)*	*DCV, V_{BMP} (cubic feet)*	*Proposed Volume on Plans (cubic feet)*
					-			
	64,860				57,855	0.95	4,580	

Table D.4.3 DCV Calculations for LID BMPs

DMA Type/ID	DMA (square feet)	Post-Project Surface Type	Effective Impervious Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	*Curb Inlet Filter Insert C*		
	[A]		[B]	[C]	[A] x [C]			
DMA 3	*75,930*	*Concrete or Asphalt*	*1.00*	*0.892*	*67,730*	*Design Storm Depth (in)*	*DCV, V_{BMP} (cubic feet)*	*Proposed Volume on Plans (cubic feet)*
					-			
					-			
					-			
	75,930				67,730	0.95	5,362	

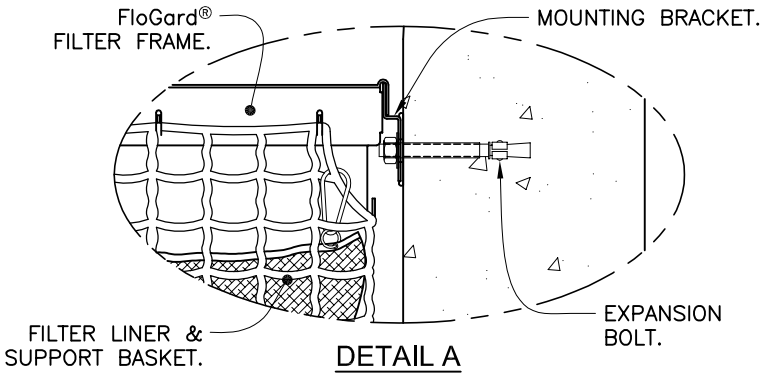
Table D.4.4 DCV Calculations for LID BMPs

DMA Type/ID	DMA (square feet)	Post-Project Surface Type	Effective Impervious Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	*Curb Inlet Filter Insert D*		
	[A]		[B]	[C]	[A] x [C]			
DMA 4	*260,500*	*Concrete or Asphalt*	*1.00*	*0.892*	*232,366*	*Design Storm Depth (in)*	*DCV, V_{BMP} (cubic feet)*	*Proposed Volume on Plans (cubic feet)*
					-			
					-			
					-			
	260,500				232,366	0.95	18,396	

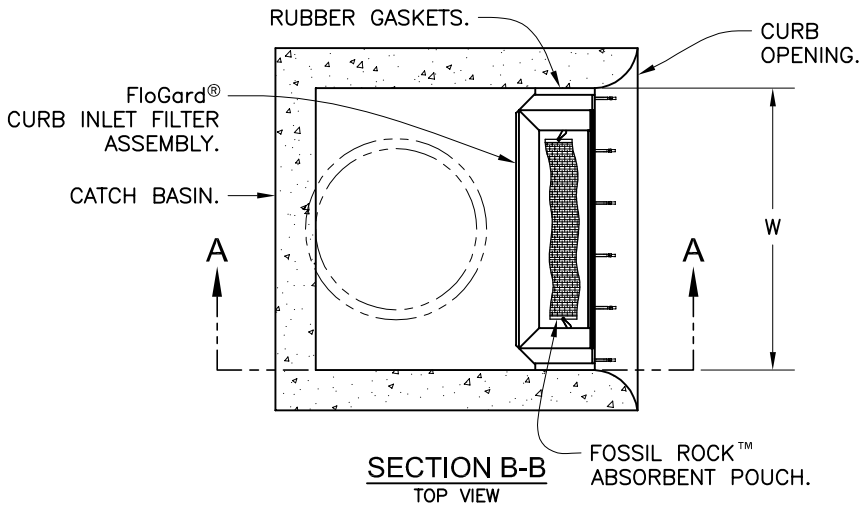
Table D.4.5 DCV Calculations for LID BMPs

DMA Type/ID	DMA (square feet)	Post-Project Surface Type	Effective Impervious Fraction, I_f	DMA Runoff Factor	DMA Areas x Runoff Factor	*Curb Inlet Filter Insert E*		
	[A]		[B]	[C]	[A] x [C]			
DMA 5	*320,860*	*Concrete or Asphalt*	*1.00*	*0.892*	*286,207*	*Design Storm Depth (in)*	*DCV, V_{BMP} (cubic feet)*	*Proposed Volume on Plans (cubic feet)*
					-			
					-			
					-			
	320,860				286,207	0.95	22,658	

FGP-0002

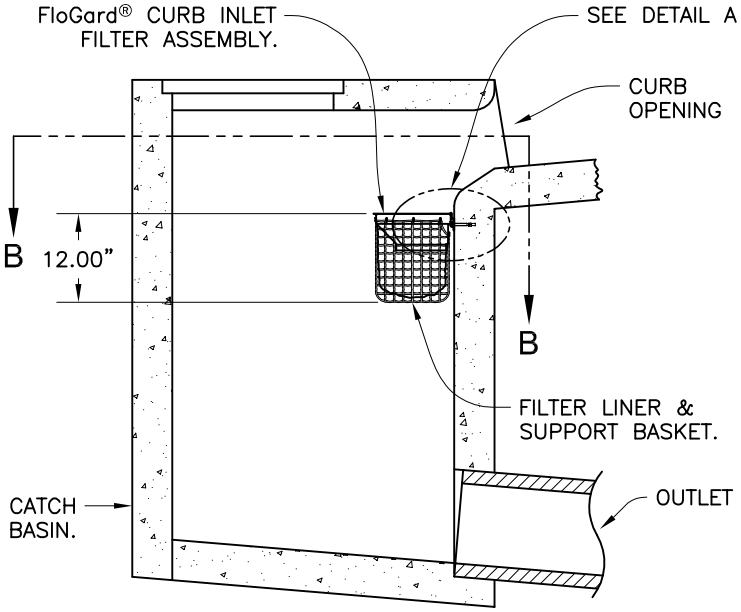


DETAIL A
MOUNTING BRACKET & EXPANSION BOLTS
SEE NOTE 2
SCALE: 6X



SECTION B-B
TOP VIEW
SCALE: 1X

SPECIFIER CHART				
MODEL NO.	Curb Opening Width - W -	Storage Capacity - Cu. Ft. -	Filtered Flow Rate - GPM/CFS -	Bypass Flow Rate - GPM/CFS -
FGP-24CI	2.0' (24")	.95	338 / .75	2,513 / 5.6
FGP-30CI	2.5' (30")	1.20	450 / 1.00	3,008 / 6.7
FGP-36CI	3.0' (36")	1.50	563 / 1.25	3,547 / 7.9
FGP-42CI	3.5' (42")	1.80	675 / 1.50	3,951 / 8.8
FGP-48CI	4.0' (48")	2.10	768 / 1.76	4,445 / 9.9
FGP-5.0CI	5.0' (60")	2.40	900 / 2.00	5,208 / 11.6
FGP-6.0CI	6.0' (72")	3.05	1,126 / 2.51	6,196 / 13.8
FGP-7.0CI	7.0' (84")	3.65	1,350 / 3.01	7,139 / 15.9
FGP-8.0CI	8.0' (96")	4.25	1,576 / 3.51	8,082 / 18.0
FGP-10.0CI	10.0' (120")	4.85	1,800 / 4.01	9,833 / 21.9
FGP-12.0CI	12.0' (144")	6.10	2,252 / 5.02	11,764 / 26.2
FGP-14.0CI	14.0' (168")	7.30	2,700 / 6.02	13,515 / 30.1
FGP-16.0CI	16.0' (192")	8.55	3.152 / 7.02	15,446 / 34.4
FGP-18.0CI	18.0' (216")	9.45	3,490 / 7.78	17,152 / 38.2
FGP-21.0CI	21.0' (252")	10.95	4,050 / 9.02	19,891 / 44.3
FGP-28.0CI	28.0 (336")	14.60	5,400 / 12.03	26,311 / 58.6



SECTION A-A
SIDE VIEW
SCALE: 1X

NOTES:

1. Filter insert shall have a high flow bypass feature.
2. Filter support frame shall be constructed from stainless steel Type 304.
3. Filter medium shall be *Fossil Rock* ™, installed and maintained in accordance with manufacturer specifications.
4. Storage capacity reflects 80% of maximum solids collection prior to impeding filtering bypass.

Inlet Filtration

FloGard®

Catch Basin Insert Filter

Curb Inlet Style

Oldcastle®
Stormwater Solutions
7921 Southpark Plaza, Suite 200 | Littleton, CO | 80120 | Ph: 800.579.8819 | oldcastlestormwater.com

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DRAWING NO.	REV	ECO	DATE	
FGP-0002	E	ECO-0127 JPR 5/18/15	JPR 1/3/06	SHEET 1 OF 1

Appendix 7: Hydromodification

Supporting Detail Relating to compliance with the HMP Performance Standards

N/A – Project Exempt from HCOC

Appendix 8: Source Control

Pollutant Sources/Source Control Checklist

STORMWATER POLLUTANT SOURCES/SOURCE CONTROL CHECKLIST

How to use this worksheet (also see instructions in Section G of the WQMP Template):

1. Review Column 1 and identify which of these potential sources of stormwater pollutants apply to your site. Check each box that applies.
2. Review Column 2 and incorporate all of the corresponding applicable BMPs in your WQMP Exhibit.
3. Review Columns 3 and 4 and incorporate all of the corresponding applicable permanent controls and operational BMPs in your WQMP. Use the format shown in Table G.1on page 23 of this WQMP Template. Describe your specific BMPs in an accompanying narrative, and explain any special conditions or situations that required omitting BMPs or substituting alternative BMPs for those shown here.

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 **Potential Sources of Runoff Pollutants**	**2** **Permanent Controls—Show on WQMP Drawings**	**3** **Permanent Controls—List in WQMP Table and Narrative**	**4** **Operational BMPs—Include in WQMP Table and Narrative**
[X] **A.** On-site storm drain inlets	[X] Locations of inlets.	[X] Mark all inlets with the words "Only Rain Down the Storm Drain" or similar. Catch Basin Markers may be available from the Riverside County Flood Control and Water Conservation District, call 951.955.1200 to verify.	[X] Maintain and periodically repaint or replace inlet markings. [ ] Provide stormwater pollution prevention information to new site owners, lessees, or operators. [ ] See applicable operational BMPs in Fact Sheet SC-44, "Drainage System Maintenance," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com [ ] Include the following in lease agreements: "Tenant shall not allow anyone to discharge anything to storm drains or to store or deposit materials so as to create a potential discharge to storm drains."
[ ] **B.** Interior floor drains and elevator shaft sump pumps		[ ] State that interior floor drains and elevator shaft sump pumps will be plumbed to sanitary sewer.	[ ] Inspect and maintain drains to prevent blockages and overflow.
[ ] **C.** Interior parking garages		[ ] State that parking garage floor drains will be plumbed to the sanitary sewer.	[ ] Inspect and maintain drains to prevent blockages and overflow.

IF THESE SOURCES WILL BE ON THE PROJECT SITE …	… THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 **Potential Sources of Runoff Pollutants**	**2** **Permanent Controls—Show on WQMP Drawings**	**3** **Permanent Controls—List in WQMP Table and Narrative**	**4** **Operational BMPs—Include in WQMP Table and Narrative**
❑ **D1.** Need for future indoor & structural pest control		❑ Note building design features that discourage entry of pests.	❑ Provide Integrated Pest Management information to owners, lessees, and operators.
❑ **D2.** Landscape/ Outdoor Pesticide Use	❑ Show locations of native trees or areas of shrubs and ground cover to be undisturbed and retained. ❑ Show self-retaining landscape areas, if any. ❑ Show stormwater treatment and hydrograph modification management BMPs. (See instructions in Chapter 3, Step 5 and guidance in Chapter 5.)	State that final landscape plans will accomplish all of the following. ❑ Preserve existing native trees, shrubs, and ground cover to the maximum extent possible. ❑ Design landscaping to minimize irrigation and runoff, to promote surface infiltration where appropriate, and to minimize the use of fertilizers and pesticides that can contribute to stormwater pollution. ❑ Where landscaped areas are used to retain or detain stormwater, specify plants that are tolerant of saturated soil conditions. ❑ Consider using pest-resistant plants, especially adjacent to hardscape. To insure successful establishment, select plants appropriate to site soils, slopes, climate, sun, wind, rain, land use, air movement, ecological consistency, and plant interactions.	❑ Maintain landscaping using minimum or no pesticides. ❑ See applicable operational BMPs in "What you should know for…..Landscape and Gardening" at http://rcflood.org/stormwater/Error! Hyperlink reference not valid. ❑ Provide IPM information to new owners, lessees and operators.

IF THESE SOURCES WILL BE ON THE PROJECT SITE …	… THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 **Potential Sources of Runoff Pollutants**	**2** **Permanent Controls—Show on WQMP Drawings**	**3** **Permanent Controls—List in WQMP Table and Narrative**	**4** **Operational BMPs—Include in WQMP Table and Narrative**
❑ **E.** Pools, spas, ponds, decorative fountains, and other water features.	❑ Show location of water feature and a sanitary sewer cleanout in an accessible area within 10 feet. (Exception: Public pools must be plumbed according to County Department of Environmental Health Guidelines.)	If the Co-Permittee requires pools to be plumbed to the sanitary sewer, place a note on the plans and state in the narrative that this connection will be made according to local requirements.	❑ See applicable operational BMPs in "Guidelines for Maintaining Your Swimming Pool, Jacuzzi and Garden Fountain" at http://rcflood.org/stormwater/
❑ **F.** Food service	❑ For restaurants, grocery stores, and other food service operations, show location (indoors or in a covered area outdoors) of a floor sink or other area for cleaning floor mats, containers, and equipment. ❑ On the drawing, show a note that this drain will be connected to a grease interceptor before discharging to the sanitary sewer.	❑ Describe the location and features of the designated cleaning area. ❑ Describe the items to be cleaned in this facility and how it has been sized to insure that the largest items can be accommodated.	❑ See the brochure, "The Food Service Industry Best Management Practices for: Restaurants, Grocery Stores, Delicatessens and Bakeries" at http://rcflood.org/stormwater/ Provide this brochure to new site owners, lessees, and operators.
❑ **G.** Refuse areas	❑ Show where site refuse and recycled materials will be handled and stored for pickup. See local municipal requirements for sizes and other details of refuse areas. ❑ If dumpsters or other receptacles are outdoors, show how the designated area will be covered, graded, and paved to prevent run-on and show locations of berms to prevent runoff from the area. ❑ Any drains from dumpsters, compactors, and tallow bin areas shall be connected to a grease removal device before discharge to sanitary sewer.	❑ State how site refuse will be handled and provide supporting detail to what is shown on plans. ❑ State that signs will be posted on or near dumpsters with the words "Do not dump hazardous materials here" or similar.	❑ State how the following will be implemented: Provide adequate number of receptacles. Inspect receptacles regularly; repair or replace leaky receptacles. Keep receptacles covered. Prohibit/prevent dumping of liquid or hazardous wastes. Post "no hazardous materials" signs. Inspect and pick up litter daily and clean up spills immediately. Keep spill control materials available on-site. See Fact Sheet SC-34, "Waste Handling and Disposal" in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com

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❑ **H.** Industrial processes.	❑ Show process area.	❑ **If industrial processes are to be located on site, state: "All process activities to be performed indoors. No processes to drain to exterior or to storm drain system."**	❑ **See Fact Sheet SC-10, "Non-Stormwater Discharges" in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com** See the brochure "Industrial & Commercial Facilities Best Management Practices for: Industrial, Commercial Facilities" at http://rcflood.org/stormwater/

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
1 **Potential Sources of Runoff Pollutants**	**2** **Permanent Controls—Show on WQMP Drawings**	**3** **Permanent Controls—List in WQMP Table and Narrative**	**4** **Operational BMPs—Include in WQMP Table and Narrative**
❑ **I.** Outdoor storage of equipment or materials. (See rows J and K for source control measures for vehicle cleaning, repair, and maintenance.)	❑ Show any outdoor storage areas, including how materials will be covered. Show how areas will be graded and bermed to prevent run-on or run-off from area. ❑ Storage of non-hazardous liquids shall be covered by a roof and/or drain to the sanitary sewer system, and be contained by berms, dikes, liners, or vaults. ❑ Storage of hazardous materials and wastes must be in compliance with the local hazardous materials ordinance and a Hazardous Materials Management Plan for the site.	Include a detailed description of materials to be stored, storage areas, and structural features to prevent pollutants from entering storm drains. Where appropriate, reference documentation of compliance with the requirements of Hazardous Materials Programs for: ▪ Hazardous Waste Generation ▪ Hazardous Materials Release Response and Inventory ▪ California Accidental Release (CalARP) ▪ Aboveground Storage Tank ▪ Uniform Fire Code Article 80 Section 103(b) & (c) 1991 ▪ Underground Storage Tank www.cchealth.org/groups/hazmat/	❑ See the Fact Sheets SC-31, "Outdoor Liquid Container Storage" and SC-33, "Outdoor Storage of Raw Materials " in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com

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1 **Potential Sources of Runoff Pollutants**	**2** **Permanent Controls—Show on WQMP Drawings**	**3** **Permanent Controls—List in WQMP Table and Narrative**	**4** **Operational BMPs—Include in WQMP Table and Narrative**
❑ **J.** Vehicle and Equipment Cleaning	❑ **Show on drawings as appropriate:** **(1) Commercial/industrial facilities having vehicle/equipment cleaning needs shall either provide a covered, bermed area for washing activities or discourage vehicle/equipment washing by removing hose bibs and installing signs prohibiting such uses.** **(2) Multi-dwelling complexes shall have a paved, bermed, and covered car wash area (unless car washing is prohibited on-site and hoses are provided with an automatic shut-off to discourage such use).** **(3) Washing areas for cars, vehicles, and equipment shall be paved, designed to prevent run-on to or runoff from the area, and plumbed to drain to the sanitary sewer.** **(4) Commercial car wash facilities shall be designed such that no runoff from the facility is discharged to the storm drain system. Wastewater from the facility shall discharge to the sanitary sewer, or a wastewater reclamation system shall be installed.**	❑ **If a car wash area is not provided, describe any measures taken to discourage on-site car washing and explain how these will be enforced.**	**Describe operational measures to implement the following (if applicable):** ❑ **Washwater from vehicle and equipment washing operations shall not be discharged to the storm drain system.** Refer to "Outdoor Cleaning Activities and Professional Mobile Service Providers" for many of the Potential Sources of Runoff Pollutants categories below. Brochure can be found at http://rcflood.org/stormwater/ ❑**Car dealerships and similar may rinse cars with water only.**

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❑ **K.** Vehicle/Equipment Repair and Maintenance	❑ **Accommodate all vehicle equipment repair and maintenance indoors. Or designate an outdoor work area and design the area to prevent run-on and runoff of stormwater.** ❑ **Show secondary containment for exterior work areas where motor oil, brake fluid, gasoline, diesel fuel, radiator fluid, acid-containing batteries or other hazardous materials or hazardous wastes are used or stored. Drains shall not be installed within the secondary containment areas.** ❑ **Add a note on the plans that states either (1) there are no floor drains, or (2) floor drains are connected to wastewater pretreatment systems prior to discharge to the sanitary sewer and an industrial waste discharge permit will be obtained.**	❑ **State that no vehicle repair or maintenance will be done outdoors, or else describe the required features of the outdoor work area.** ❑ **State that there are no floor drains or if there are floor drains, note the agency from which an industrial waste discharge permit will be obtained and that the design meets that agency's requirements.** ❑ **State that there are no tanks, containers or sinks to be used for parts cleaning or rinsing or, if there are, note the agency from which an industrial waste discharge permit will be obtained and that the design meets that agency's requirements.**	**In the Stormwater Control Plan, note that all of the following restrictions apply to use the site:** ❑ **No person shall dispose of, nor permit the disposal, directly or indirectly of vehicle fluids, hazardous materials, or rinsewater from parts cleaning into storm drains.** ❑ **No vehicle fluid removal shall be performed outside a building, nor on asphalt or ground surfaces, whether inside or outside a building, except in such a manner as to ensure that any spilled fluid will be in an area of secondary containment. Leaking vehicle fluids shall be contained or drained from the vehicle immediately.** ❑ **No person shall leave unattended drip parts or other open containers containing vehicle fluid, unless such containers are in use or in an area of secondary containment.** Refer to "Automotive Maintenance & Car Care Best Management Practices for Auto Body Shops, Auto Repair Shops, Car Dealerships, Gas Stations and Fleet Service Operations". Brochure can be found at http://rcflood.org/stormwater/ Refer to Outdoor Cleaning Activities and Professional Mobile Service Providers for many of the Potential Sources of Runoff Pollutants categories below. Brochure can be found at http://rcflood.org/stormwater/

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
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❑ **L.** Fuel Dispensing Areas	❑ Fueling areas[6] shall have impermeable floors (i.e., portland cement concrete or equivalent smooth impervious surface) that are: a) graded at the minimum slope necessary to prevent ponding; and b) separated from the rest of the site by a grade break that prevents run-on of stormwater to the maximum extent practicable. ❑ Fueling areas shall be covered by a canopy that extends a minimum of ten feet in each direction from each pump. [Alternative: The fueling area must be covered and the cover's minimum dimensions must be equal to or greater than the area within the grade break or fuel dispensing area[1].] The canopy [or cover] shall not drain onto the fueling area.		❑ The property owner shall dry sweep the fueling area routinely. ❑ See the Fact Sheet SD-30 , "Fueling Areas" in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com

[6] The fueling area shall be defined as the area extending a minimum of 6.5 feet from the corner of each fuel dispenser or the length at which the hose and nozzle assembly may be operated plus a minimum of one foot, whichever is greater.

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❑ **M.** Loading Docks	❑ Show a preliminary design for the loading dock area, including roofing and drainage. Loading docks shall be covered and/or graded to minimize run-on to and runoff from the loading area. Roof downspouts shall be positioned to direct stormwater away from the loading area. Water from loading dock areas shall be drained to the sanitary sewer, or diverted and collected for ultimate discharge to the sanitary sewer. ❑ Loading dock areas draining directly to the sanitary sewer shall be equipped with a spill control valve or equivalent device, which shall be kept closed during periods of operation. ❑ Provide a roof overhang over the loading area or install door skirts (cowling) at each bay that enclose the end of the trailer.		❑ Move loaded and unloaded items indoors as soon as possible. ❑ See Fact Sheet SC-30, "Outdoor Loading and Unloading," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com

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❑ **N.** Fire Sprinkler Test Water		❑ Provide a means to drain fire sprinkler test water to the sanitary sewer.	❑ See the note in Fact Sheet SC-41, "Building and Grounds Maintenance," in the CASQA Stormwater Quality Handbooks at www.cabmphandbooks.com
O. Miscellaneous Drain or Wash Water or Other Sources ❑ Boiler drain lines ❑ Condensate drain lines ❑ Rooftop equipment ❑ Drainage sumps ❑ Roofing, gutters, and trim. ❑ Other sources		❑ Boiler drain lines shall be directly or indirectly connected to the sanitary sewer system and may not discharge to the storm drain system. ❑ Condensate drain lines may discharge to landscaped areas if the flow is small enough that runoff will not occur. Condensate drain lines may not discharge to the storm drain system. ❑ Rooftop equipment with potential to produce pollutants shall be roofed and/or have secondary containment. ❑ Any drainage sumps on-site shall feature a sediment sump to reduce the quantity of sediment in pumped water. ❑ Avoid roofing, gutters, and trim made of copper or other unprotected metals that may leach into runoff. Include controls for other sources as specified by local reviewer.	

STORMWATER POLLUTANT SOURCES/SOURCE CONTROL CHECKLIST

IF THESE SOURCES WILL BE ON THE PROJECT SITE ...	... THEN YOUR WQMP SHOULD INCLUDE THESE SOURCE CONTROL BMPs, AS APPLICABLE		
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X **P.** Plazas, sidewalks, and parking lots.			X Sweep plazas, sidewalks, and parking lots regularly to prevent accumulation of litter and debris. Collect debris from pressure washing to prevent entry into the storm drain system. Collect washwater containing any cleaning agent or degreaser and discharge to the sanitary sewer not to a storm drain.

Appendix 9: O&M

Operation and Maintenance Plan and Documentation of Finance, Maintenance and Recording Mechanisms

GENERAL SPECIFICATIONS FOR MAINTENANCE OF
***FLO-GARD+PLUS*® CATCH BASIN INSERT FILTERS**

SCOPE:

Federal, State and Local Clean Water Act regulations and those of insurance carriers require that stormwater filtration systems be maintained and serviced on a recurring basis. The intent of the regulations is to ensure that the systems, on a continuing basis, efficiently remove pollutants from stormwater runoff thereby preventing pollution of the nation's water resources. These specifications apply to the FloGard+Plus® Catch Basin Insert Filter.

RECOMMENDED FREQUENCY OF SERVICE:

Drainage Protection Systems (DPS) recommends that installed Flo-Gard+Plus® Catch Basin Insert Filters be serviced on a recurring basis. Ultimately, the frequency depends on the amount of runoff, pollutant loading and interference from debris (leaves, vegetation, cans, paper, etc.); however, it is recommended that each installation be serviced a minimum of three times per year, with a change of filter medium once per year. DPS technicians are available to do an on-site evaluation, upon request.

RECOMMENDED TIMING OF SERVICE:

DPS guidelines for the timing of service are as follows:

1. For areas with a definite rainy season: Prior to, during and following the rainy season.
2. For areas subject to year-round rainfall: On a recurring basis (at least three times per year).
3. For areas with winter snow and summer rain: Prior to and just after the snow season and during the summer rain season.
4. For installed devices not subject to the elements (washracks, parking garages, etc.): On a recurring basis (no less than three times per years).

SERVICE PROCEDURES:

1. The catch basin grate shall be removed and set to one side. The catch basin shall be visually inspected for defects and possible illegal dumping. If illegal dumping has occurred, the proper authorities and property owner representative shall be notified as soon as practicable.
2. Using an industrial vacuum, the collected materials shall be removed from the liner. (Note: DPS uses a truck-mounted vacuum for servicing Flo-Gard+Plus® catch basin inserts.)
3. When all of the collected materials have been removed, the filter medium pouches shall be removed by unsnapping the tether from the D-ring and set to one side. The filter liner, gaskets, stainless steel frame and mounting brackets, etc. shall be inspected for continued serviceability. Minor damage or defects found shall be corrected on-the-spot and a notation made on the Maintenance Record. More extensive deficiencies that affect the efficiency of the filter (torn liner, etc.), if approved by the customer representative, will be corrected and an invoice submitted to the representative along with the Maintenance Record.
4. The filter medium pouches shall be inspected for defects and continued serviceability and replaced as necessary and the pouch tethers re-attached to the liner's D-ring. See below.
5. The grate shall be replaced.

REPLACEMENT AND DISPOSAL OF EXPOSED FILTER MEDIUM AND COLLECTED DEBRIS

The frequency of filter medium pouch exchange will be in accordance with the existing DPS-Customer Maintenance Contract. DPS recommends that the medium be changed at least once per year. During the appropriate service, or if so determined by the service technician during a non-scheduled service, the filter medium pouches will be replaced with new pouches. Once the exposed pouches and debris have been removed, DPS has possession and must dispose of it in accordance with local, state and federal agency requirements.

DPS also has the capability of servicing all manner of catch basin inserts and catch basins without inserts, underground oil/water separators, stormwater interceptors and other such devices. All DPS personnel are highly qualified technicians and are confined space trained and certified. Call us at (888) 950-8826 for further information and assistance.

FloGard +Plus® Catch Basin Insert Filter

Inlet Filtration

Removes pollutants from runoff at the source

FloGard +Plus is a catch basin insert filter designed to remove sediment, gross solids, trash, and petroleum hydrocarbons from stormwater runoff. FloGard +Plus is ideally suited for removal of primary pollutants from paved surfaces in commercial and residential areas. Rated filter flow capacities are designed to exceed the required "first flush" treatment flow rate, and the unique dual-bypass design typically exceeds catch basin inlet capacity.

Economical Treatment
Quick, easy, and cost-effective to install, inspect, and maintain.

Efficient Performance
Removes pollutants at the inlet where they are easiest to catch.

Versatile Applications
Appropriate and easy to use on new construction or retrofit projects.

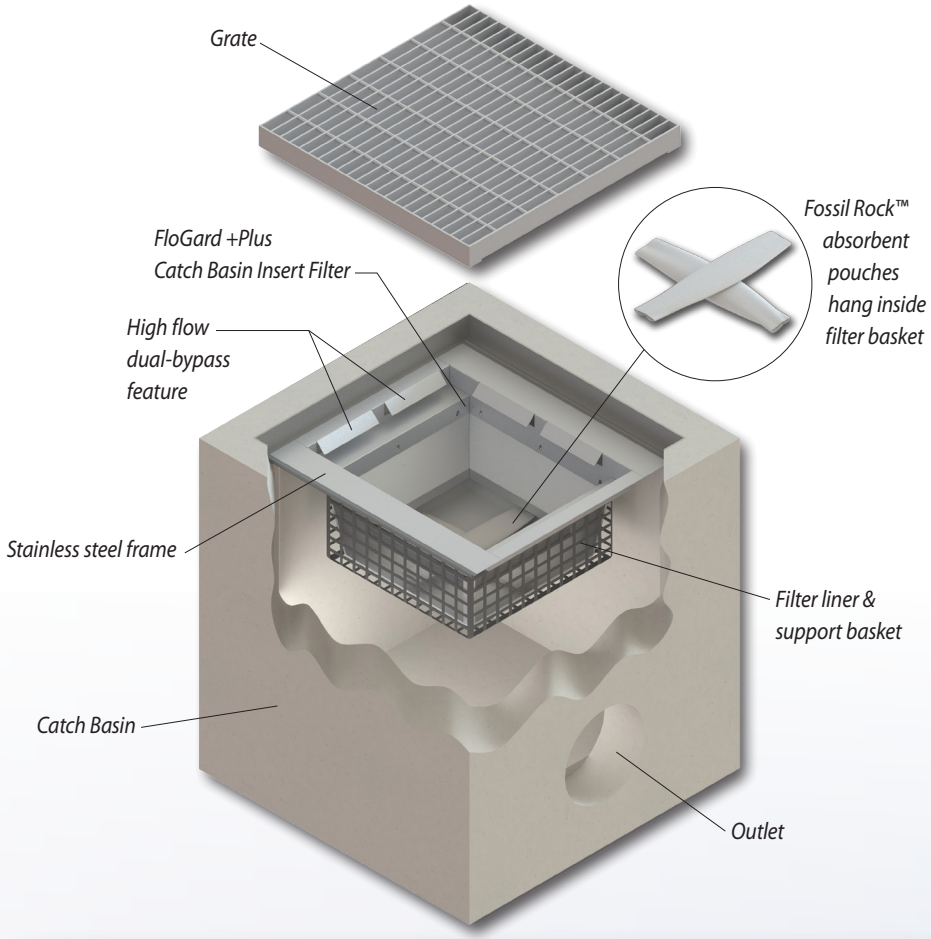
Flexible Design
Available in a wide variety of sizes and configurations, including custom options.

Durable Construction
Built to last and withstand the loads from captured pollutants.

Environmentally Friendly
No standing water minimizes vector, bacteria, and odor problems.

Proven Performance
Field and laboratory tested with up to 86%[1] removal of TSS and 80%[2] removal of oils and grease.

1. *University of Auckland laboratory testing of local street sweep material.*
2. *UCLA laboratory study.*



How It Works:

Flows entering the unit pass through the filter liner basket for removal of sediment, trash, and debris. Optional Fossil Rock™ sorbent pouches installed in the basket effect hydrocarbon capture. As the storm flow exceeds the treatment flow rate, treatment will continue and excess flows will pass through the dual-bypass openings near the top of the unit.

FloGard +Plus Catch Basin Insert Filter

Catch basin insert designed to capture sediment, gross solids, trash, and petroleum hydrocarbons from low (first flush) flows, even during the most extreme weather conditions.

Example Types, Sizes, and Capacities

Additional sizes, including regional and custom options are available.

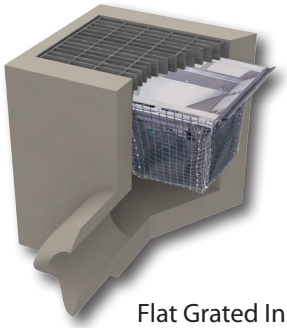
FloGard Combination Inlet
SPECIFIER CHART

MODEL NO. STANDARD DEPTH	STANDARD & SHALLOW DEPTH (Data in these columes is the same for both STANDARD & SHALLOW versions)			STANDARD DEPTH -20 Inches-		MODEL NO. SHALLOW DEPTH	SHALLOW DEPTH -12 Inches-	
	INLET ID Inside Dimension (inch x inch)	GRATE OD Outside Dimension (inch x inch)	TOTAL BYPASS CAPACITY (cu. ft. / sec.)	SOLIDS STORAGE CAPACITY (cu. ft.)	FILTERED FLOW (cu. ft. / sec.)		SOLIDS STORAGE CAPACITY (cu. ft.)	FILTERED FLOW (cu. ft. / sec.)
FGP-1633FGO	16 X 33	18 X 36	7.0	2.5	1.7	FGP-1633FGO8	1.4	1.1
FGP-1836FGO	18 X 36	18 X 40	6.9	2.3	1.6	FGP-1836FGO8	1.3	.9
FGP-2234FGO	22 X 34	24 X 36	8.1	3.6	2.1	FGP-2234FGO8	2.1	1.4
FGP-2436FGO	24 X 36	24 X 40	8.0	3.4	2.0	FGP-2436FGO8	1.95	1.15

Combination Inlet

FloGard Flat Grated Inlet
SPECIFIER CHART

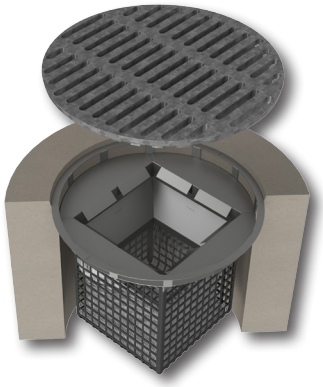
MODEL NO. STANDARD DEPTH	STANDARD & SHALLOW DEPTH (Data in these columes is the same for both STANDARD & SHALLOW versions)			STANDARD DEPTH -20 Inches-		MODEL NO. SHALLOW DEPTH	SHALLOW DEPTH -12 Inches-	
	INLET ID Inside Dimension (inch x inch)	GRATE OD Outside Dimension (inch x inch)	TOTAL BYPASS CAPACITY (cu. ft. / sec.)	SOLIDS STORAGE CAPACITY (cu. ft.)	FILTERED FLOW (cu. ft. / sec.)		SOLIDS STORAGE CAPACITY (cu. ft.)	FILTERED FLOW (cu. ft. / sec.)
FGP-12F	12 X 12	12 X 14	2.8	0.3	0.4	FGP-12F8	.15	.25
FGP-16F	16 X 16	16 X 19	4.7	0.8	0.7	FGP-16F8	.45	.4
FGP-18F	18 X 18	18 X 20	4.7	0.8	0.7	FGP-18F8	.45	.4
FGP-1836F	18 X 36	18 X 40	6.9	2.3	1.6	FGP-1836F8	1.3	.9
FGP-21F	22 X 22	22 X 24	6.1	2.2	1.5	FGP-21F8	1.25	.85
FGP-24F	24 X 24	24 X 27	6.1	2.2	1.5	FGP-24F8	1.25	.85
FGP-2436F	24 X 36	24 X 40	8.0	3.4	2.0	FGP-2436F8	1.95	1.15
FGP-2448F	24 X 48	24 X 48	9.3	4.4	2.4	FGP-2448F8	2.5	1.35
FGP-32F-TN	28 X 28	32 X 32	6.3	2.2	1.5	FGP-32F8-TN	1.25	.85
FGP-30F	30 X 30	30 X 34	8.1	3.6	2.0	FGP-30F8	2.05	1.15
FGP-36F	36 X 36	36 X 40	9.1	4.6	2.4	FGP-36F8	2.65	1.35
FGP-3648F	36 X 48	40 X 48	11.5	6.8	3.2	FGP-3648F8	3.9	1.85
FGP-48F	48 X 48	48 X 54	13.2	9.5	3.9	FGP-48F8	5.45	2.25
FGP-1633F	16 X 34	18 X 36	6.9	2.3	1.6	FGP-1633F8	1.3	.9
FGP-2234F	22 X 34	24 X 36	8.0	3.4	2.0	FGP-2234F8	1.95	1.15



Flat Grated Inlet

FloGard Circular Grated Inlet
SPECIFIER CHART

MODEL NUMBER	INLET ID (Ø INCHES)	GRATE OD (Ø INCHES)	SOLIDS STORAGE CAPACITY (CU FT)	FILTERED FLOW (CFS)	TOTAL BYPASS CAPACITY (CFS)
FGP-RF15F	15	18	0.3	0.4	2.8
FGP-RF18F	18	20	0.8	0.7	4.7
FGP-RF20F	20	23	0.8	0.7	4.7
FGP-RF21F	21	23.5	0.8	0.7	4.7
FGP-RF22F	22	24	0.8	0.7	4.7
FGP-RF24F	24	26	0.8	0.7	4.7
FGP-RF30F	30	32	2.2	1.5	6.1
FGP-RF36F	36	39	3.6	2.0	8.1



Circular Frame Catch Basin

Visit our website: oldcastlestormwater.com or call (800) 579-8819 for additional sizes and options.

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Appendix 10: Educational Materials

BMP Fact Sheets, Maintenance Guidelines and Other End-User BMP Information

N/A

Appendix F:
Noise Data

Site Number: 1			
Recorded By: Alesia Hsiao			
Job Number: 153547			
Date: 5/11/2016			
Time: 11:42 a.m.			
Location: Along Eona Circle			
Source of Peak Noise: Traffic along Eona Circle and Pechanga Parkway, birds chirping, residential noise (garage doors, car doors, etc.)			
Noise Data			
Leq (dB)	**Lmin (dB)**	**Lmax (dB)**	**Peak (dB)**
50.9	34.5	65.6	87.5

Equipment						
Category	**Type**	**Vendor**	**Model**	**Serial No.**	**Cert. Date**	**Note**
Sound	Sound Level Meter	**Brüel & Kjær**	**2250**	**2548189**	**1/4/2016**	
	Microphone	**Brüel & Kjær**	**4189**	**2543364**	**1/4/2016**	
	Preamp	**Brüel & Kjær**	**ZC 0032**	**4265**	**1/4/2016**	
	Calibrator	**Brüel & Kjær**	**4231**	**2545667**	**1/4/2016**	

Weather Data			
Est.	**Duration:** 10 minutes		**Sky:** ☼ Sunny
	Note: dBA Offset = 0.01		**Sensor Height (ft):** 5 ft
	Wind Ave Speed (mph / m/s)	**Temperature (degrees Fahrenheit)**	**Barometer Pressure (hPa)**
	1.0	82.6	29.98

Photo of Measurement Location

2250

Instrument:		2250
Application:		BZ7225 Version 4.4
Start Time:		05/11/2016 11:42:15
End Time:		05/11/2016 11:52:15
Elapsed Time:		00:10:00
Bandwidth:		1/3-octave
Max Input Level:		138.72

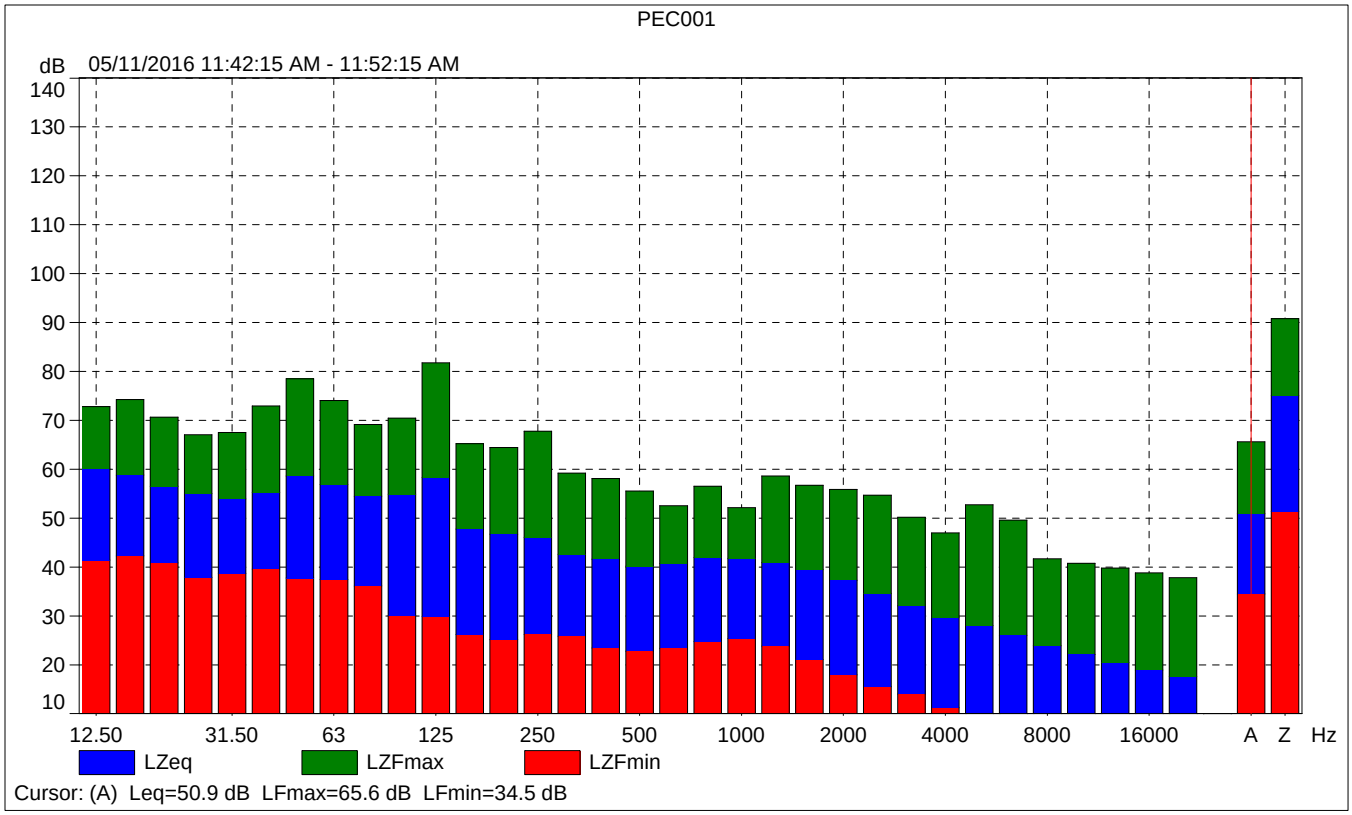
	Time	Frequency
Broadband (excl. Peak):	FSI	AZ
Broadband Peak:		C
Spectrum:	FS	Z

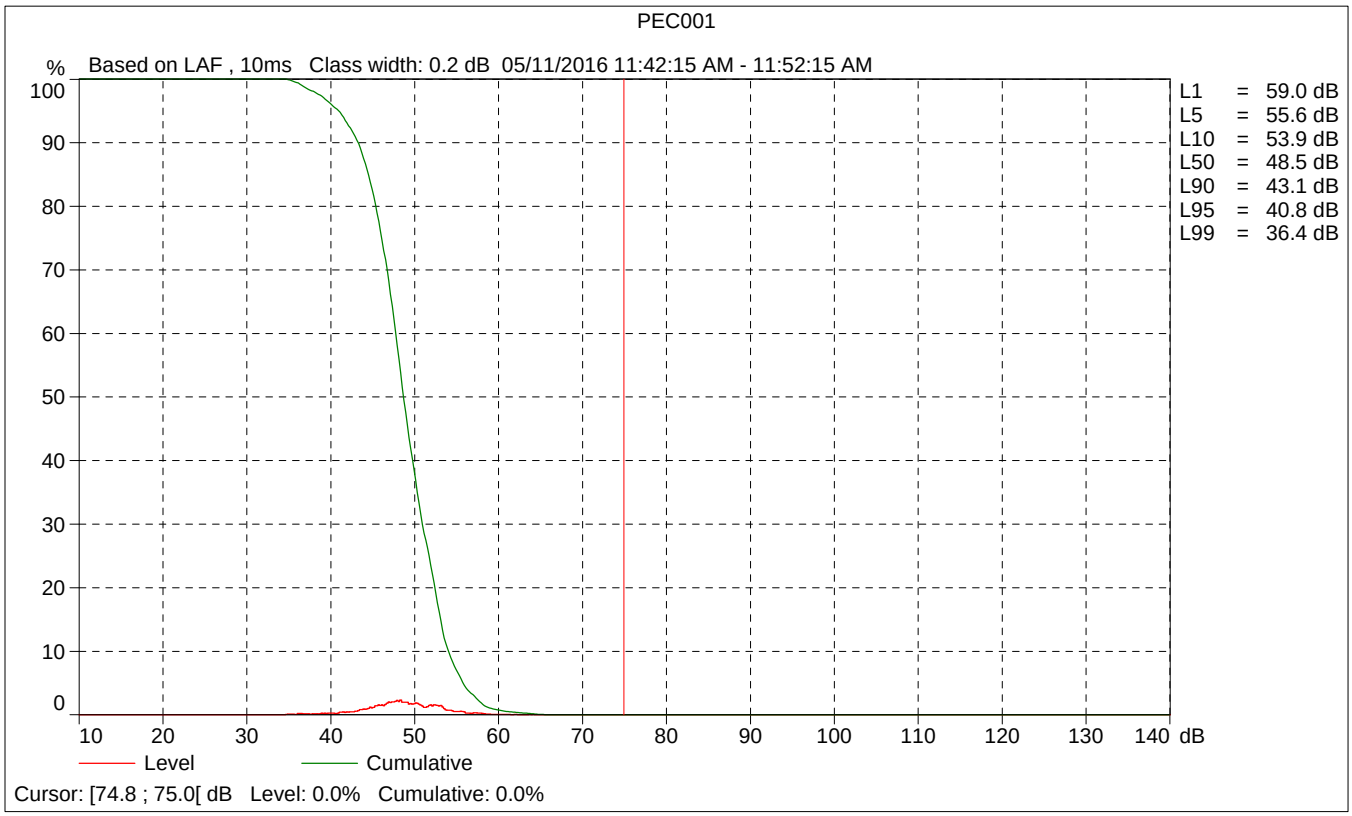
Instrument Serial Number:		2548189
Microphone Serial Number:		2543364
Input:		Top Socket
Windscreen Correction:		None
Sound Field Correction:		Free-field

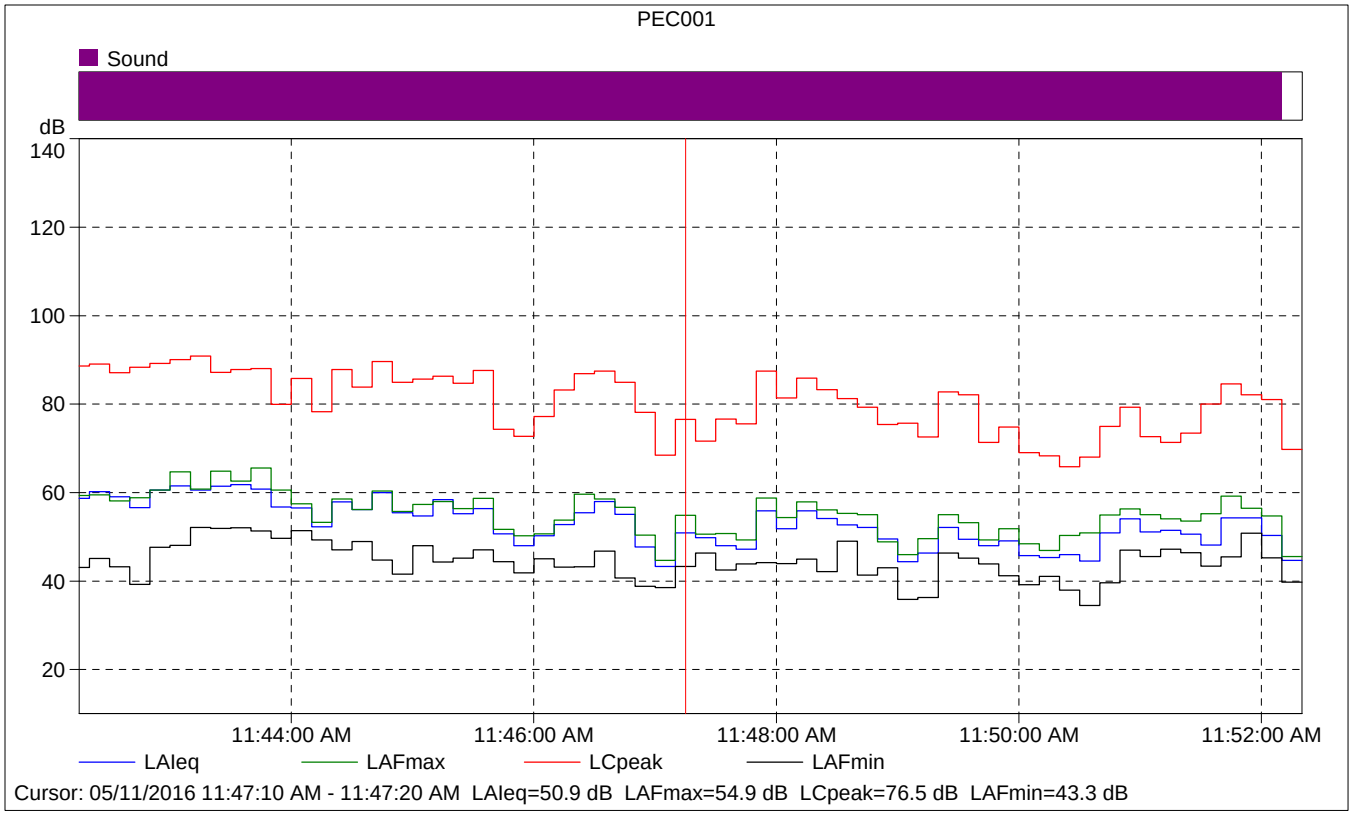
Calibration Time:		05/09/2016 17:06:48
Calibration Type:		External reference
Sensitivity:		64.5731016993523 mV/Pa

PEC001

	Start time	End time	Elapsed time	Overload [%]	LAeq [dB]	LAFmax [dB]	LAFmin [dB]
Value				0.00	50.9	65.6	34.5
Time	11:42:15 AM	11:52:15 AM	0:10:00				
Date	05/11/2016	05/11/2016					

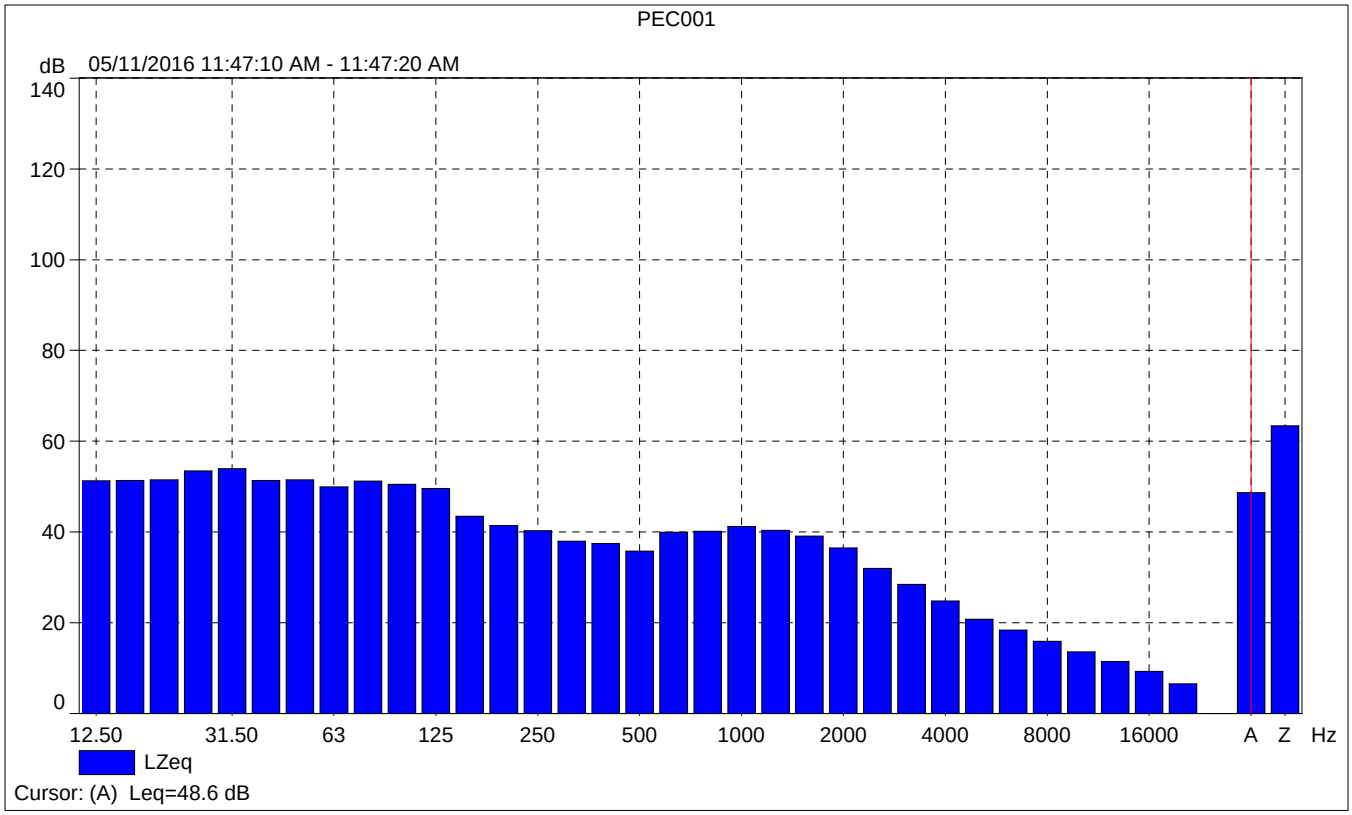

PEC001
dB
05/11/2016 11:42:15 AM - 11:52:15 AM
140
130
120
110
100
90
80
70
60
50
40
30
20
10
12.50
31.50
63
125
250
500
1000
2000
4000
8000
16000
A
Z
Hz
LZeq
LZFmax
LZFmin
Cursor: (A) Leq=50.9 dB LFmax=65.6 dB LFmin=34.5 dB

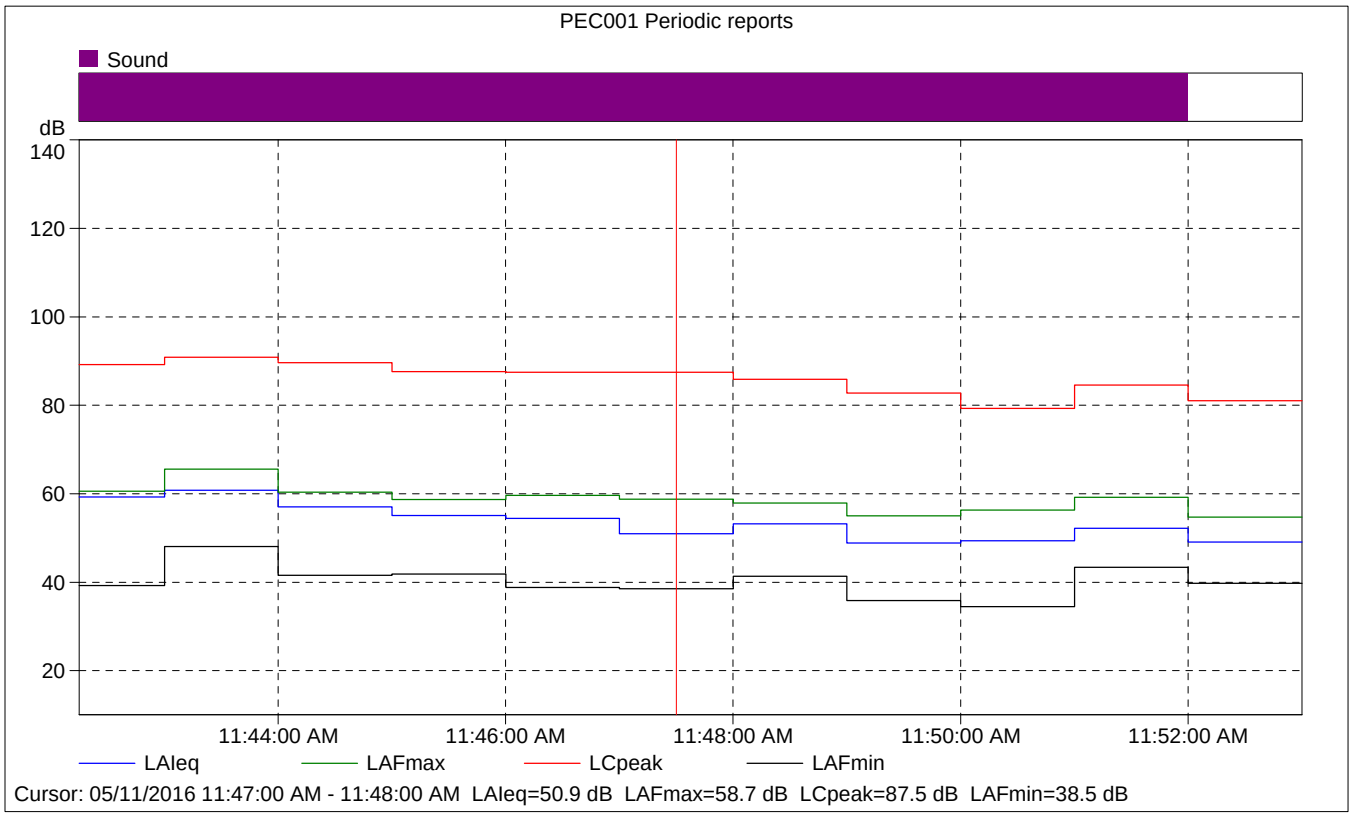

PEC001
%
Based on LAF , 10ms Class width: 0.2 dB 05/11/2016 11:42:15 AM - 11:52:15 AM
100
90
80
70
60
50
40
30
20
10
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
dB
L1 = 59.0 dB
L5 = 55.6 dB
L10 = 53.9 dB
L50 = 48.5 dB
L90 = 43.1 dB
L95 = 40.8 dB
L99 = 36.4 dB
Level
Cumulative
Cursor: [74.8 ; 75.0[dB Level: 0.0% Cumulative: 0.0%



PEC001

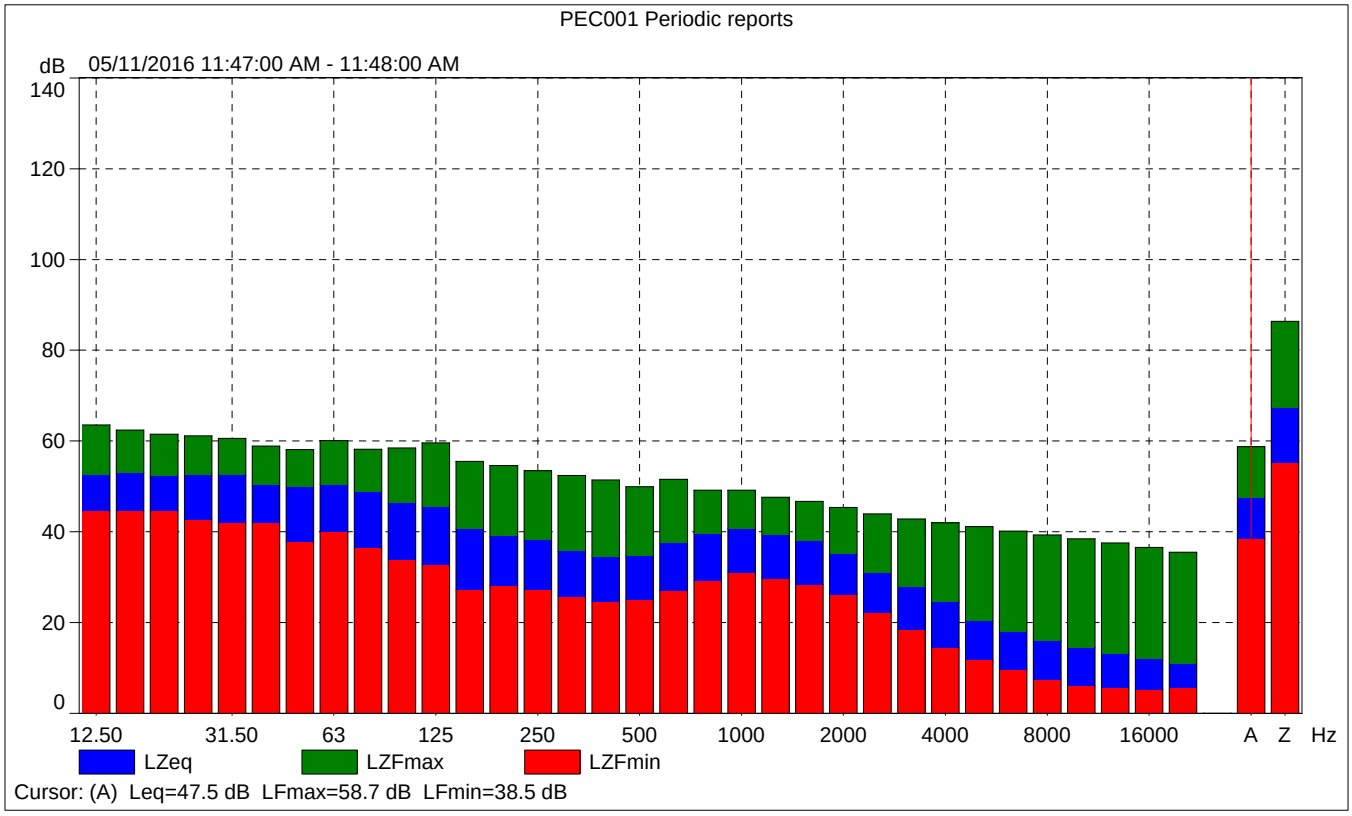
	Start time	Elapsed time	LAIeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			50.9	54.9	43.3
Time	11:47:10 AM	0:00:10			
Date	05/11/2016				


PEC001
05/11/2016 11:47:10 AM - 11:47:20 AM
dB
140
120
100
80
60
40
20
0
12.50
31.50
63
125
250
500
1000
2000
4000
8000
16000
A
Z
Hz
LZeq
Cursor: (A) Leq=48.6 dB

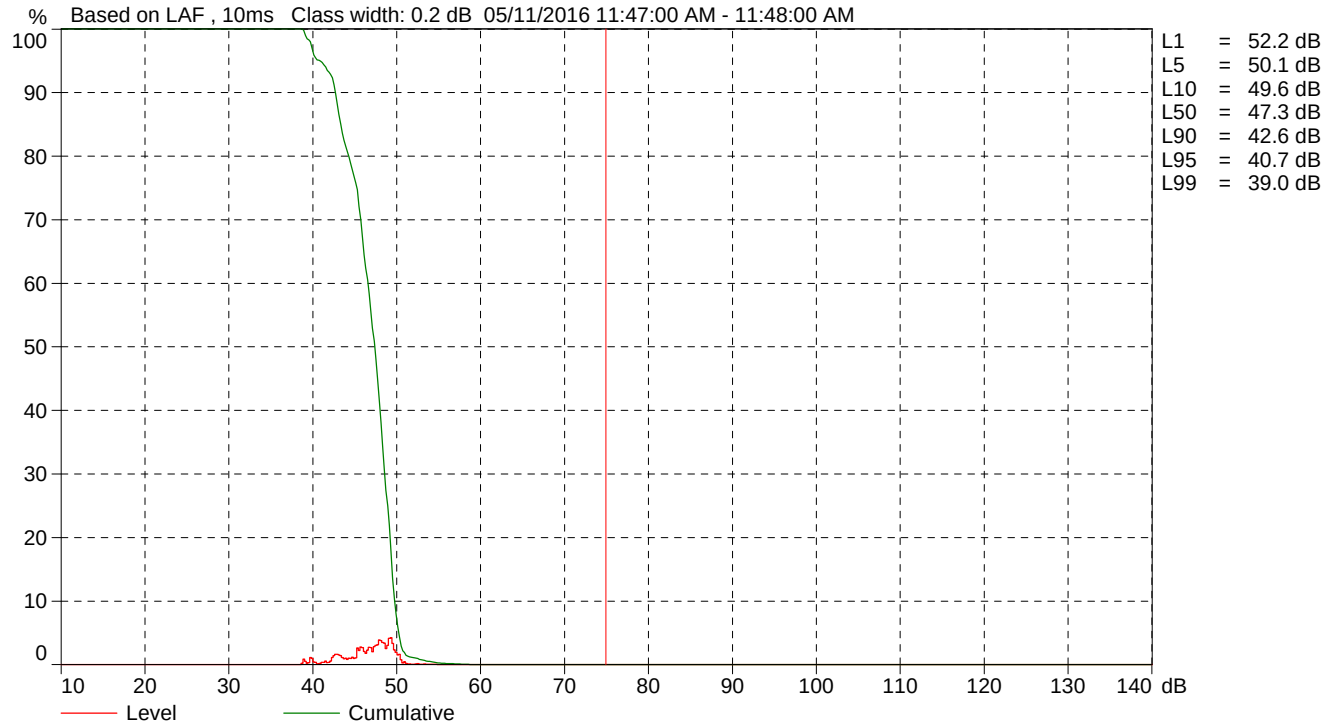

PEC001 Periodic reports
Sound
dB
140
120
100
80
60
40
20
11:44:00 AM
11:46:00 AM
11:48:00 AM
11:50:00 AM
11:52:00 AM
LAIeq
LAFmax
LCpeak
LAFmin
Cursor: 05/11/2016 11:47:00 AM - 11:48:00 AM LAIeq=50.9 dB LAFmax=58.7 dB LCpeak=87.5 dB LAFmin=38.5 dB

PEC001 Periodic reports

	Start time	Elapsed time	Overload [%]	LAIeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			0.00	50.9	58.7	38.5
Time	11:47:00 AM	0:01:00				
Date	05/11/2016					



PEC001 Periodic reports



Cursor: [74.8 ; 75.0[dB Level: 0.0% Cumulative: 0.0%

Site Number: 2			
Recorded By: Alesia Hsiao			
Job Number: 153547			
Date: 5/11/2016			
Time: 12:02 p.m.			
Location: Along Parsippany Center			
Source of Peak Noise: Traffic along Parsippany Center, birds chirping, residential noise (garage doors, car doors, etc.)			
Noise Data			
Leq (dB)	**Lmin (dB)**	**Lmax (dB)**	**Peak (dB)**
62.1	38.0	93.3	89.2

Equipment						
Category	**Type**	**Vendor**	**Model**	**Serial No.**	**Cert. Date**	**Note**
Sound	Sound Level Meter	**Brüel & Kjær**	**2250**	**2548189**	**1/4/2016**	
	Microphone	**Brüel & Kjær**	**4189**	**2543364**	**1/4/2016**	
	Preamp	**Brüel & Kjær**	**ZC 0032**	**4265**	**1/4/2016**	
	Calibrator	**Brüel & Kjær**	**4231**	**2545667**	**1/4/2016**	

Weather Data			
Est.	**Duration:** 10 minutes	**Sky:** ☼ Sunny	
	Note: dBA Offset = 0.01	**Sensor Height (ft):** 5 ft	
	Wind Ave Speed (mph / m/s)	**Temperature (degrees Fahrenheit)**	**Barometer Pressure (hPa)**
	0.8	84.4	29.98

Photo of Measurement Location

2250

Instrument:		2250
Application:		BZ7225 Version 4.4
Start Time:		05/11/2016 12:02:39
End Time:		05/11/2016 12:12:39
Elapsed Time:		00:10:00
Bandwidth:		1/3-octave
Max Input Level:		138.72

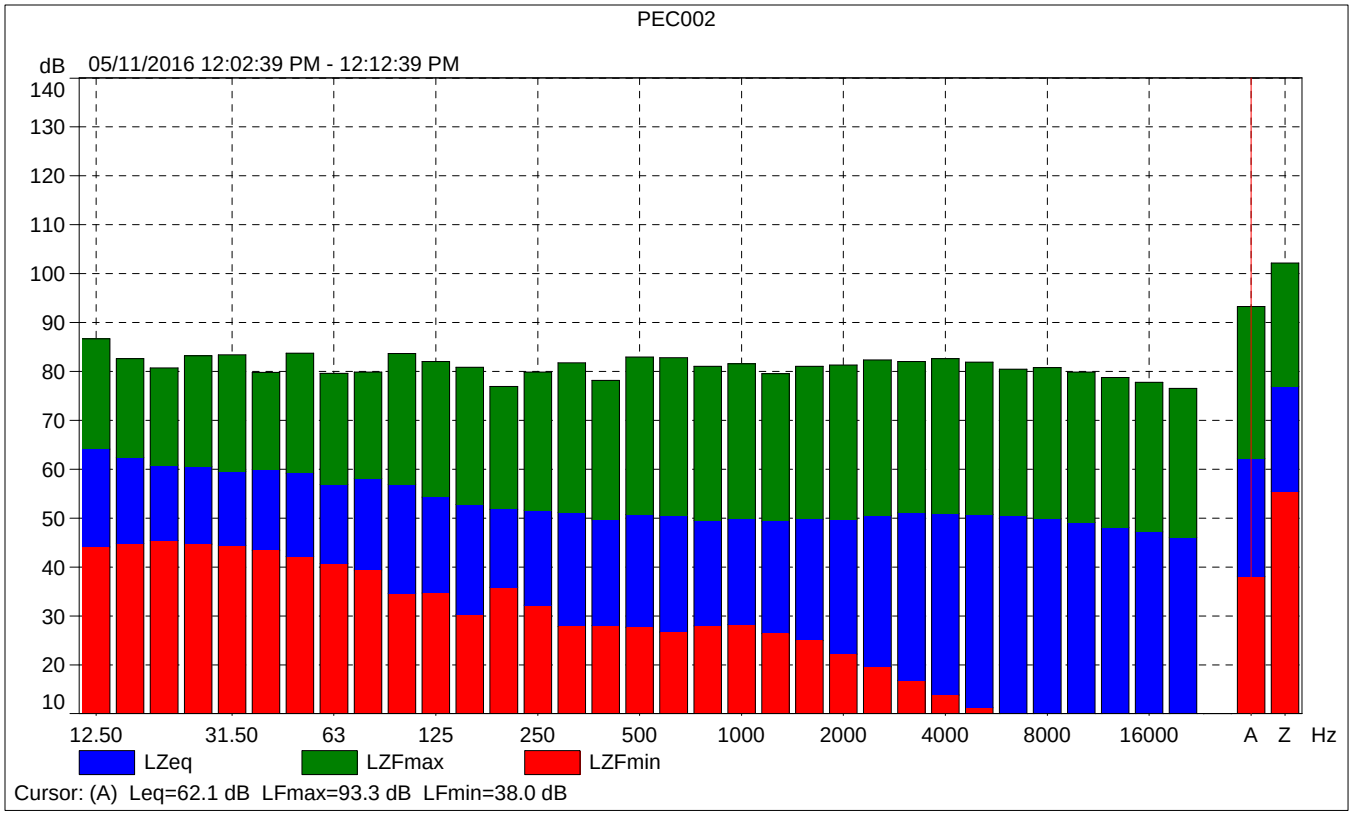
	Time	Frequency
Broadband (excl. Peak):	FSI	AZ
Broadband Peak:		C
Spectrum:	FS	Z

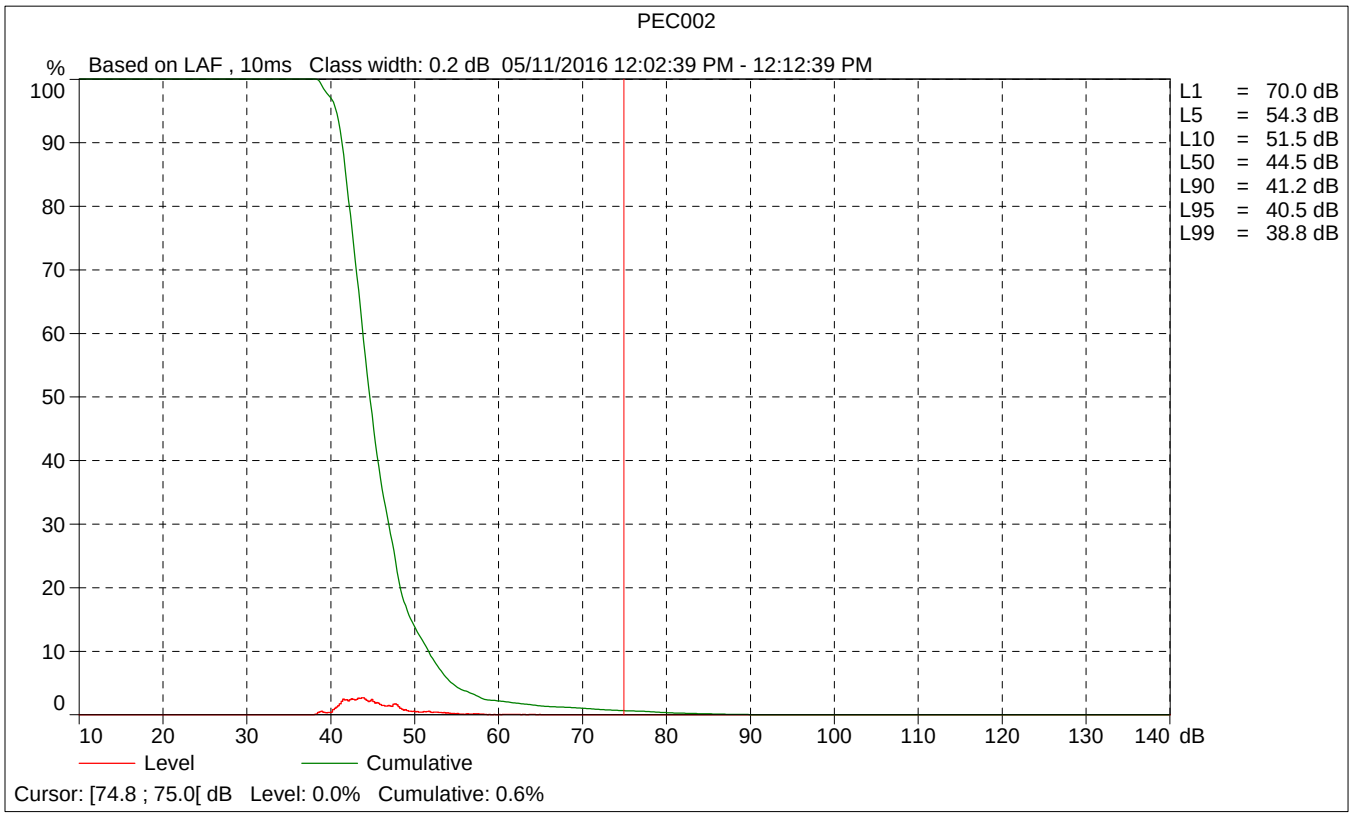
Instrument Serial Number:		2548189
Microphone Serial Number:		2543364
Input:		Top Socket
Windscreen Correction:		None
Sound Field Correction:		Free-field

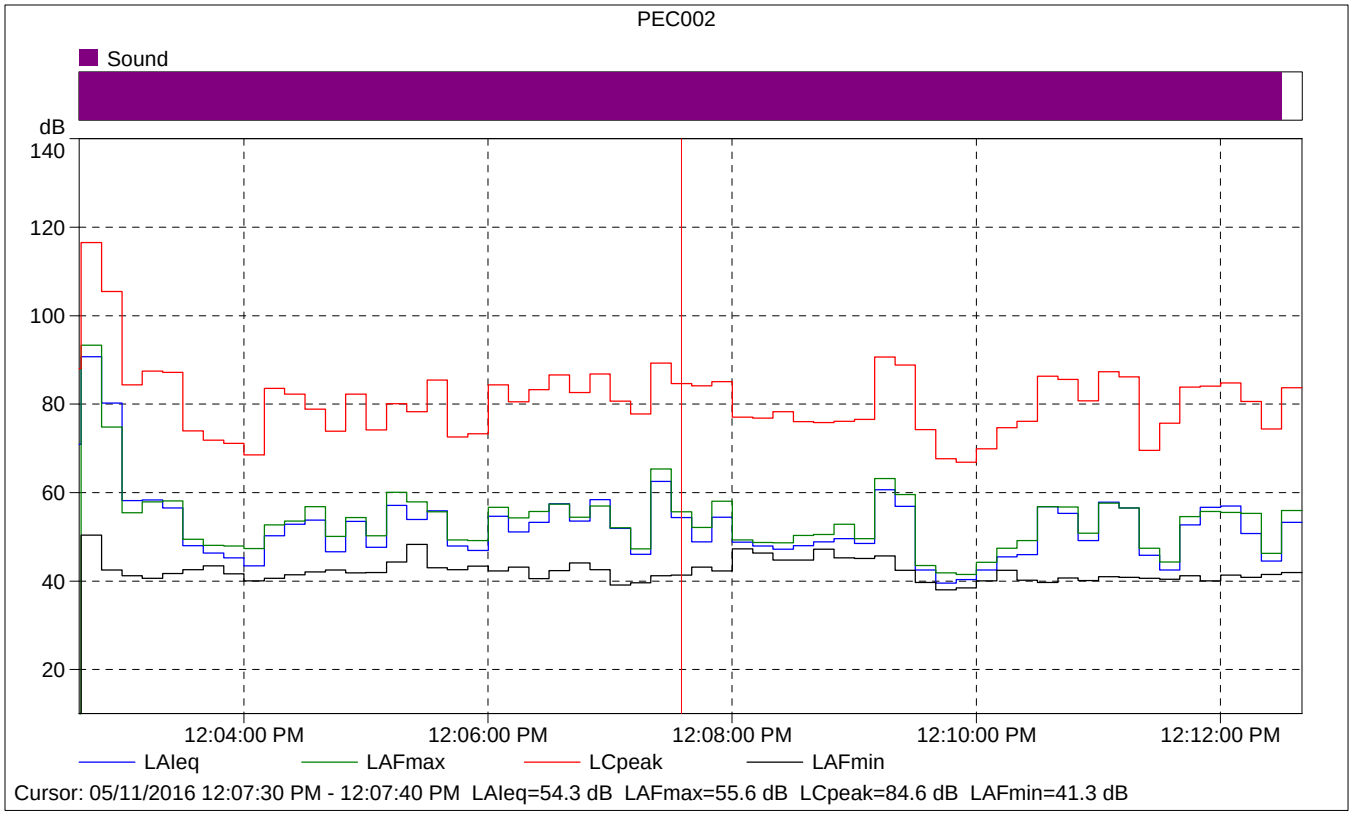
Calibration Time:		05/09/2016 17:06:48
Calibration Type:		External reference
Sensitivity:		64.5731016993523 mV/Pa

PEC002

	Start time	End time	Elapsed time	Overload [%]	LAeq [dB]	LAFmax [dB]	LAFmin [dB]
Value				0.00	62.1	93.3	38.0
Time	12:02:39 PM	12:12:39 PM	0:10:00				
Date	05/11/2016	05/11/2016					

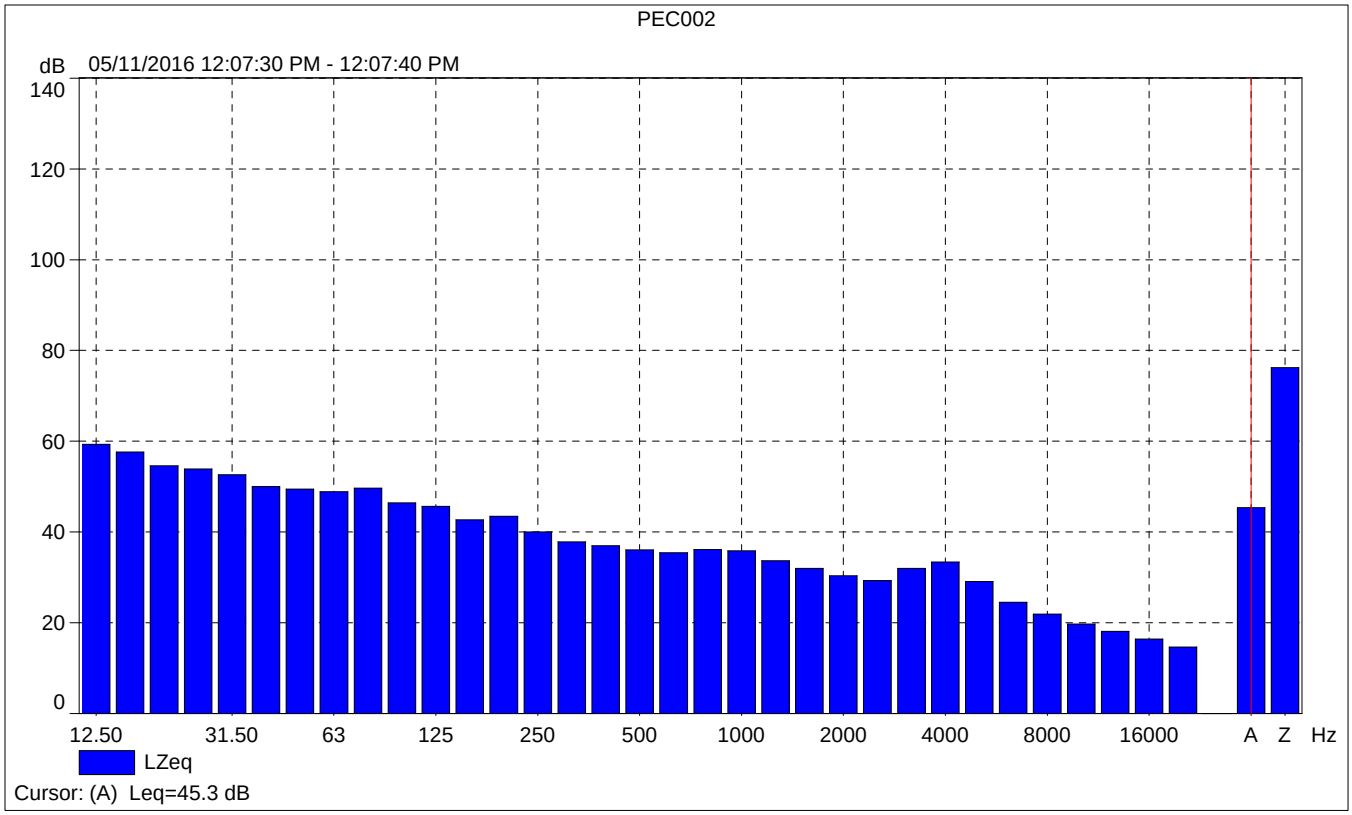

PEC002
dB
05/11/2016 12:02:39 PM - 12:12:39 PM
140
130
120
110
100
90
80
70
60
50
40
30
20
10
12.50
31.50
63
125
250
500
1000
2000
4000
8000
16000
A
Z
Hz
LZeq
LZFmax
LZFmin
Cursor: (A) Leq=62.1 dB LFmax=93.3 dB LFmin=38.0 dB

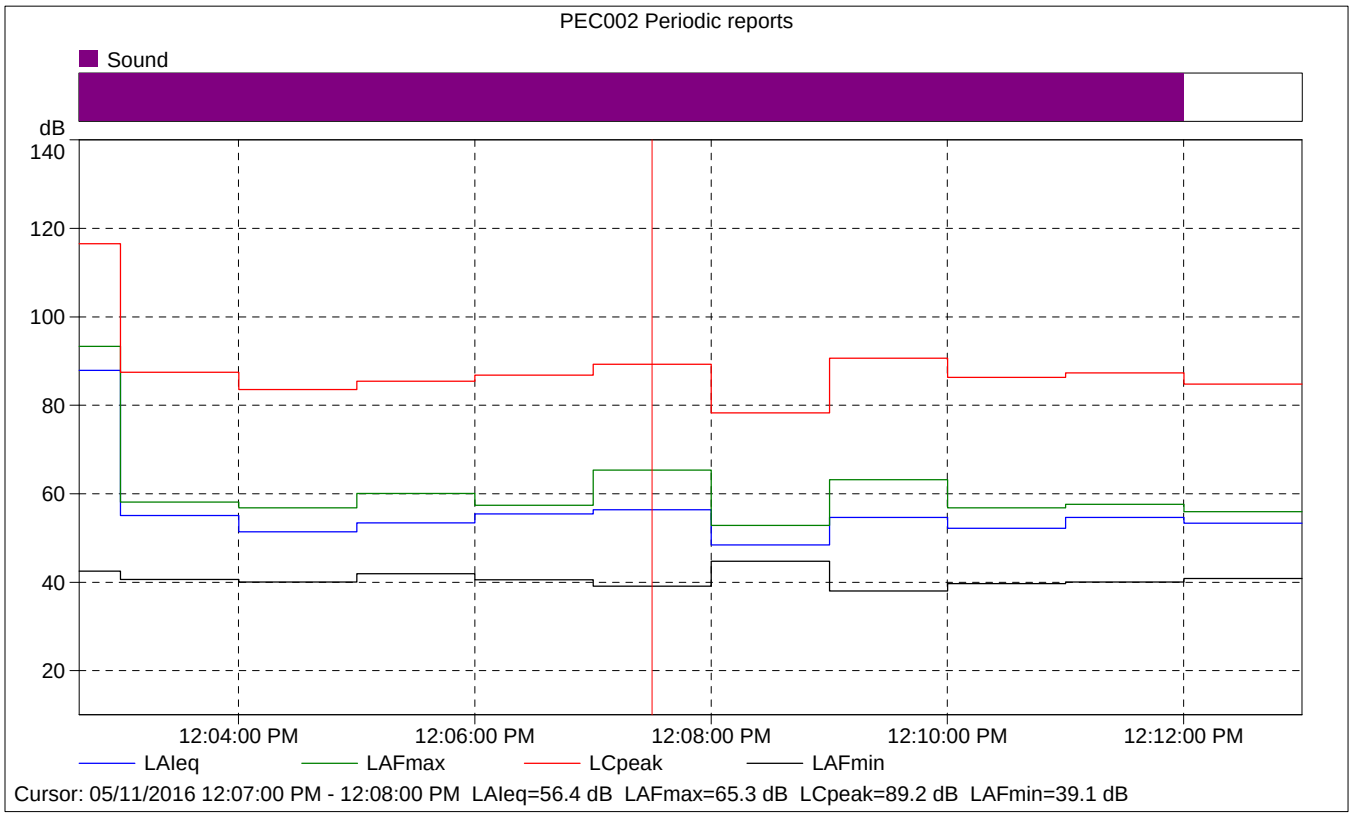

PEC002
%
Based on LAF , 10ms Class width: 0.2 dB 05/11/2016 12:02:39 PM - 12:12:39 PM
100
90
80
70
60
50
40
30
20
10
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
dB
L1 = 70.0 dB
L5 = 54.3 dB
L10 = 51.5 dB
L50 = 44.5 dB
L90 = 41.2 dB
L95 = 40.5 dB
L99 = 38.8 dB
Level
Cumulative
Cursor: [74.8 ; 75.0[dB Level: 0.0% Cumulative: 0.6%



PEC002

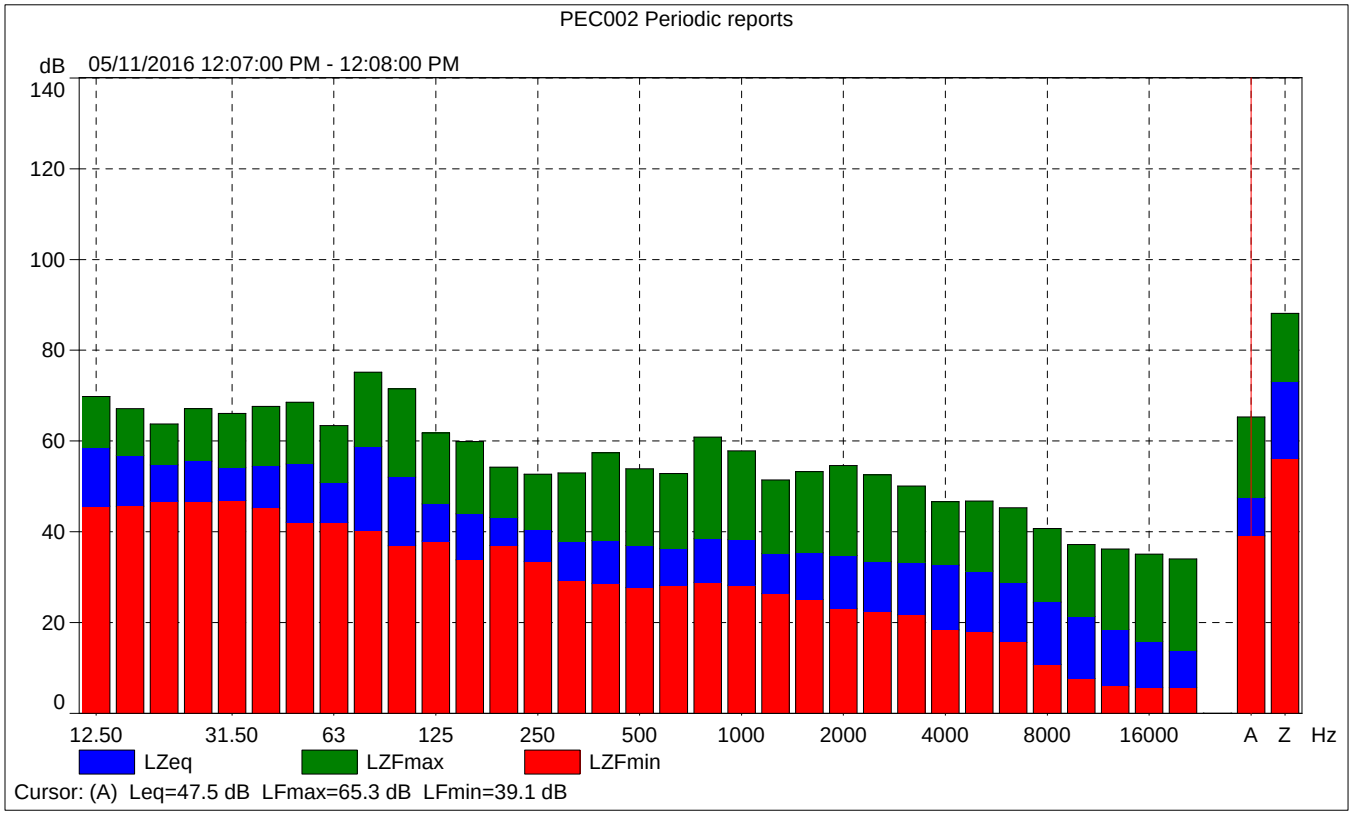
	Start time	Elapsed time	LAIeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			54.3	55.6	41.3
Time	12:07:30 PM	0:00:10			
Date	05/11/2016				

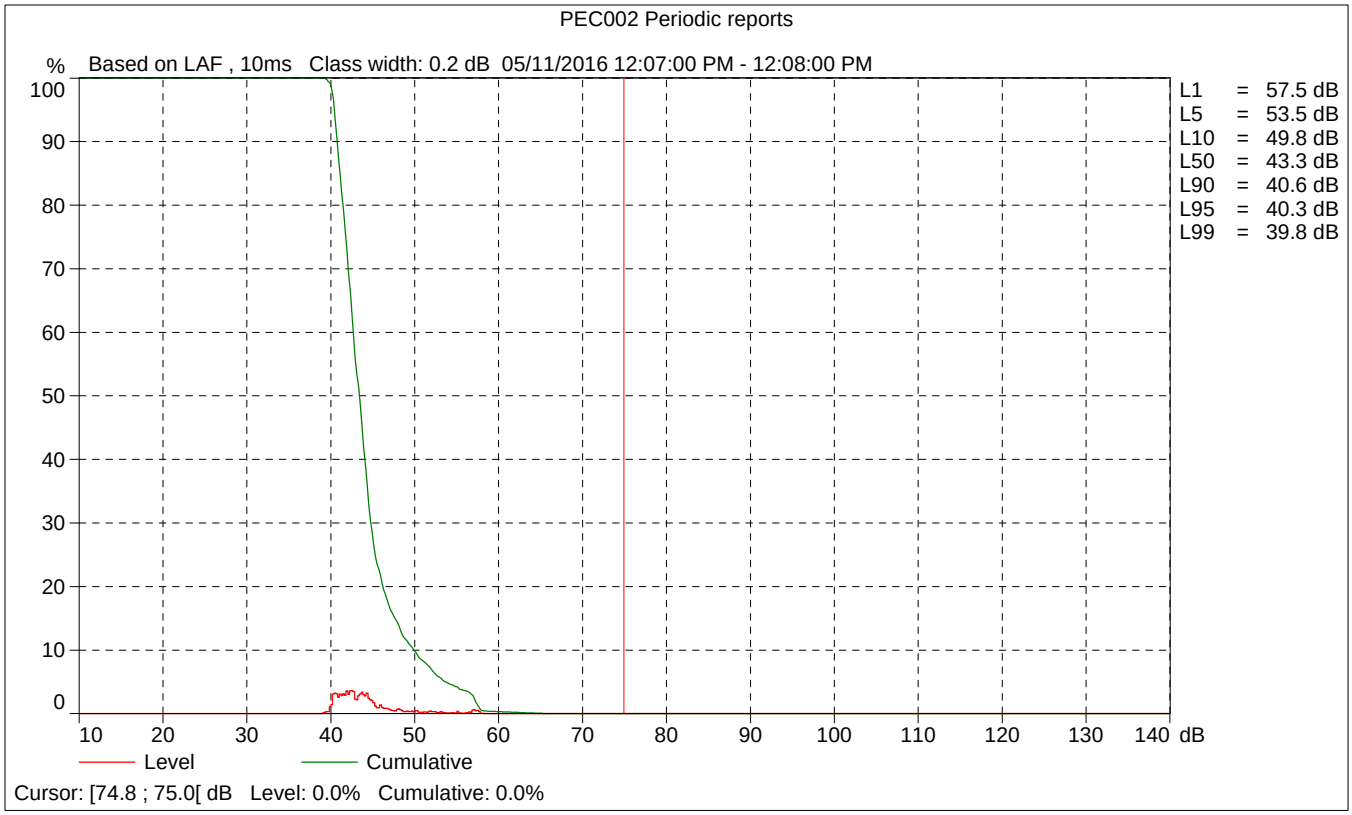

PEC002
dB
05/11/2016 12:07:30 PM - 12:07:40 PM
140
120
100
80
60
40
20
0
12.50
31.50
63
125
250
500
1000
2000
4000
8000
16000
A
Z
Hz
LZeq
Cursor: (A) Leq=45.3 dB


PEC002 Periodic reports
Sound
dB
140
120
100
80
60
40
20
12:04:00 PM
12:06:00 PM
12:08:00 PM
12:10:00 PM
12:12:00 PM
LAIeq
LAFmax
LCpeak
LAFmin
Cursor: 05/11/2016 12:07:00 PM - 12:08:00 PM LAIeq=56.4 dB LAFmax=65.3 dB LCpeak=89.2 dB LAFmin=39.1 dB

PEC002 Periodic reports

	Start time	Elapsed time	Overload [%]	LAIeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			0.00	56.4	65.3	39.1
Time	12:07:00 PM	0:01:00				
Date	05/11/2016					




PEC002 Periodic reports
% Based on LAF , 10ms Class width: 0.2 dB 05/11/2016 12:07:00 PM - 12:08:00 PM
100
90
80
70
60
50
40
30
20
10
0
10 20 30 40 50 60 70 80 90 100 110 120 130 140 dB
L1 = 57.5 dB
L5 = 53.5 dB
L10 = 49.8 dB
L50 = 43.3 dB
L90 = 40.6 dB
L95 = 40.3 dB
L99 = 39.8 dB
Level
Cumulative
Cursor: [74.8 ; 75.0[dB Level: 0.0% Cumulative: 0.0%

Site Number: 3			
Recorded By: Alesia Hsiao			
Job Number: 153547			
Date: 5/11/2016			
Time: 12:26 p.m.			
Location: Along Klamath Court			
Source of Peak Noise: Traffic along Pechanga Parkway, birds chirping, dogs parking, residential noise (garage doors, car doors, etc.)			
Noise Data			
Leq (dB)	**Lmin (dB)**	**Lmax (dB)**	**Peak (dB)**
58.2	38.7	87.5	86.8

Equipment						
Category	**Type**	**Vendor**	**Model**	**Serial No.**	**Cert. Date**	**Note**
Sound	Sound Level Meter	**Brüel & Kjær**	**2250**	**2548189**	**1/4/2016**	
	Microphone	**Brüel & Kjær**	**4189**	**2543364**	**1/4/2016**	
	Preamp	**Brüel & Kjær**	**ZC 0032**	**4265**	**1/4/2016**	
	Calibrator	**Brüel & Kjær**	**4231**	**2545667**	**1/4/2016**	

Weather Data			
Est.	**Duration:** 10 minutes		**Sky:** ☼ Sunny
	Note: dBA Offset = 0.01		**Sensor Height (ft):** 5 ft
	Wind Ave Speed (mph / m/s)	**Temperature (degrees Fahrenheit)**	**Barometer Pressure (hPa)**
	1.2	82.4	29.98

Photo of Measurement Location

2250

Instrument:		2250
Application:		BZ7225 Version 4.4
Start Time:		05/11/2016 12:26:03
End Time:		05/11/2016 12:36:03
Elapsed Time:		00:10:00
Bandwidth:		1/3-octave
Max Input Level:		138.72

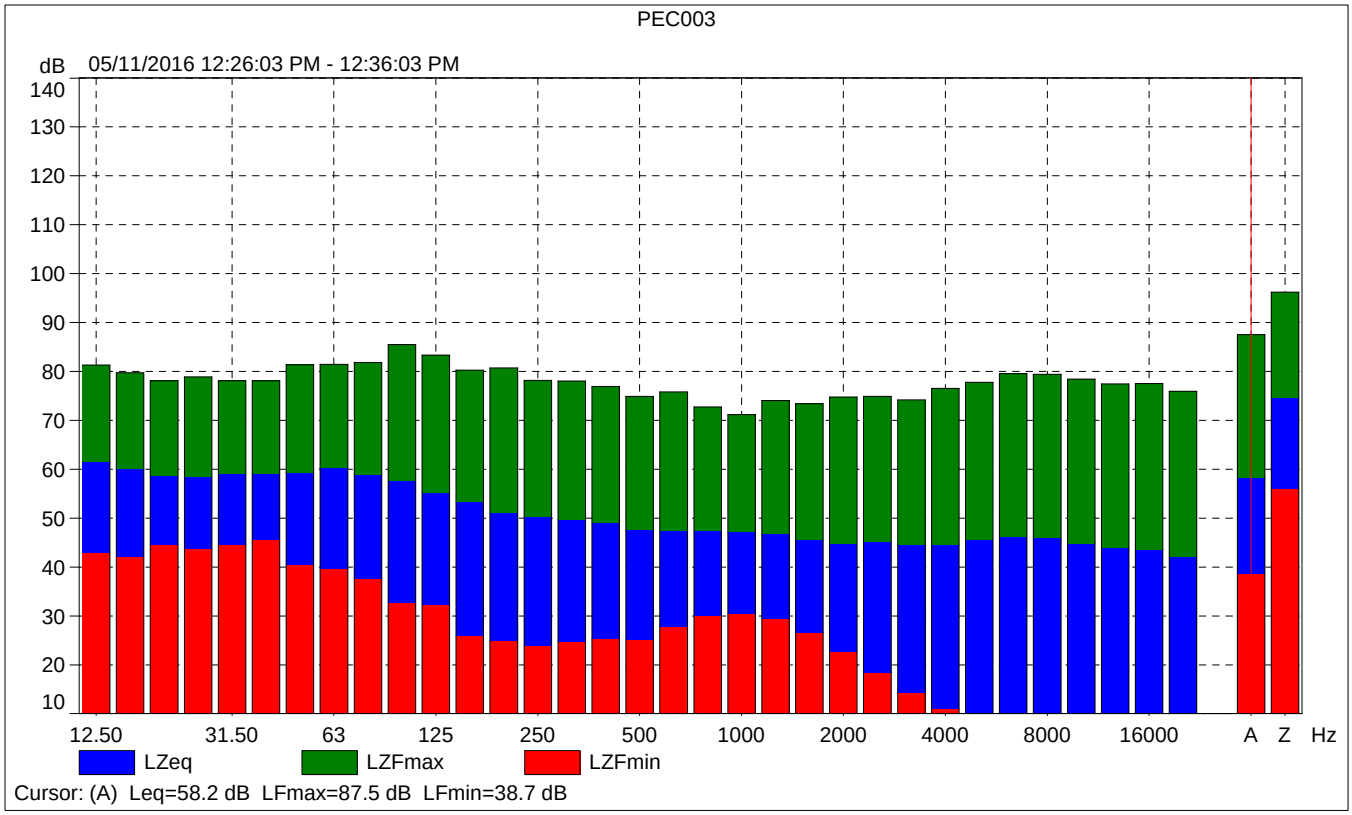
	Time	Frequency
Broadband (excl. Peak):	FSI	AZ
Broadband Peak:		C
Spectrum:	FS	Z

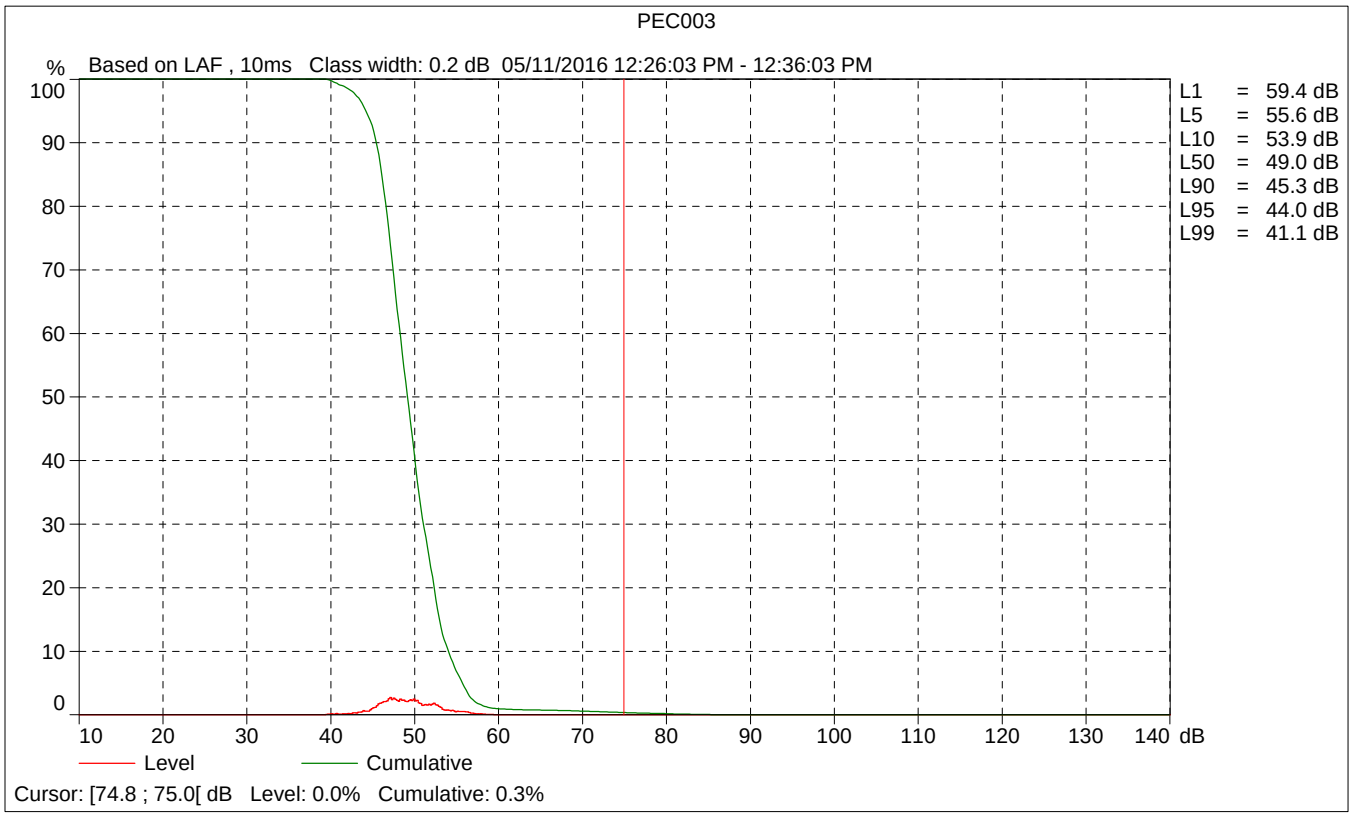
Instrument Serial Number:		2548189
Microphone Serial Number:		2543364
Input:		Top Socket
Windscreen Correction:		None
Sound Field Correction:		Free-field

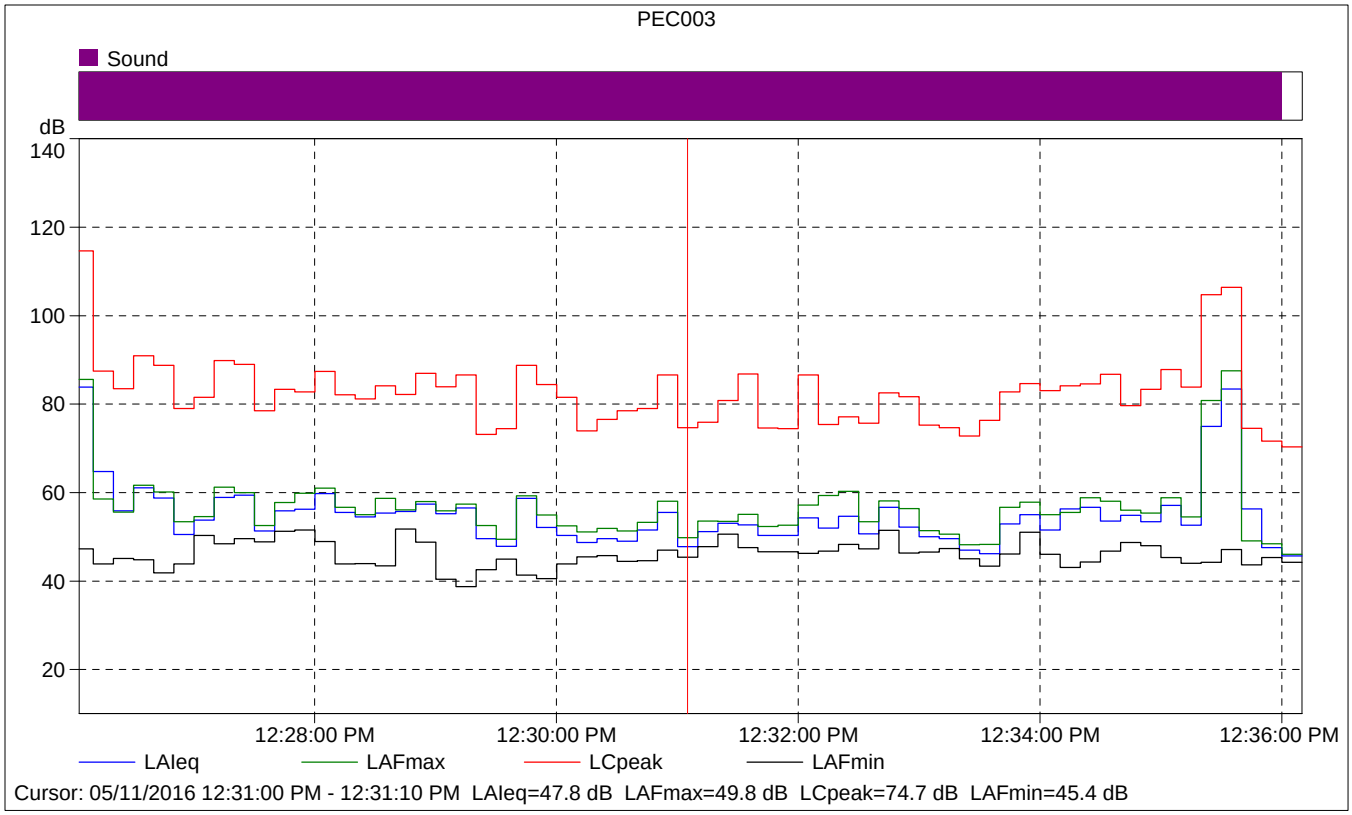
Calibration Time:		05/09/2016 17:06:48
Calibration Type:		External reference
Sensitivity:		64.5731016993523 mV/Pa

PEC003

	Start time	End time	Elapsed time	Overload [%]	LAeq [dB]	LAFmax [dB]	LAFmin [dB]
Value				0.00	58.2	87.5	38.7
Time	12:26:03 PM	12:36:03 PM	0:10:00				
Date	05/11/2016	05/11/2016					

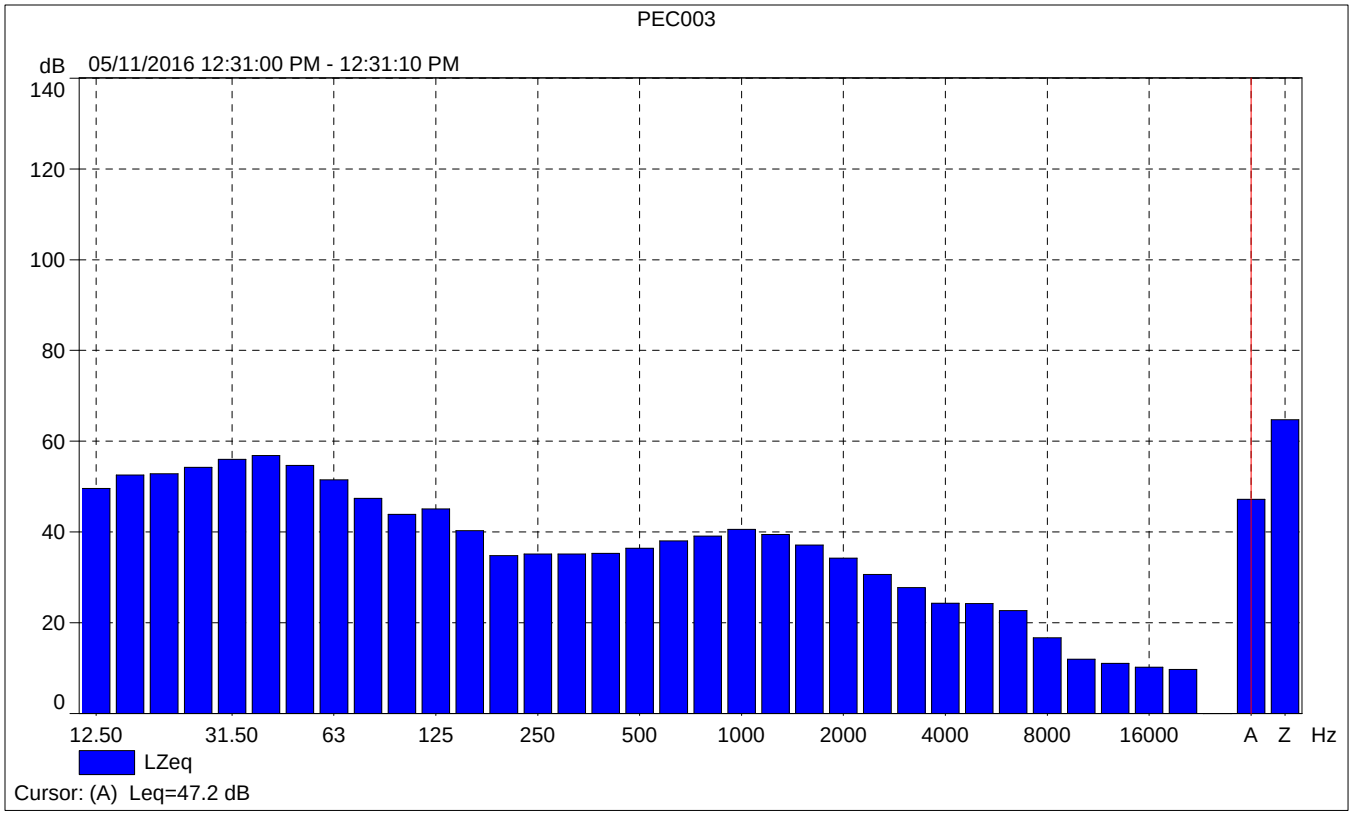

PEC003
dB
05/11/2016 12:26:03 PM - 12:36:03 PM
140
130
120
110
100
90
80
70
60
50
40
30
20
10
12.50
31.50
63
125
250
500
1000
2000
4000
8000
16000
A
Z
Hz
LZeq
LZFmax
LZFmin
Cursor: (A) Leq=58.2 dB LFmax=87.5 dB LFmin=38.7 dB

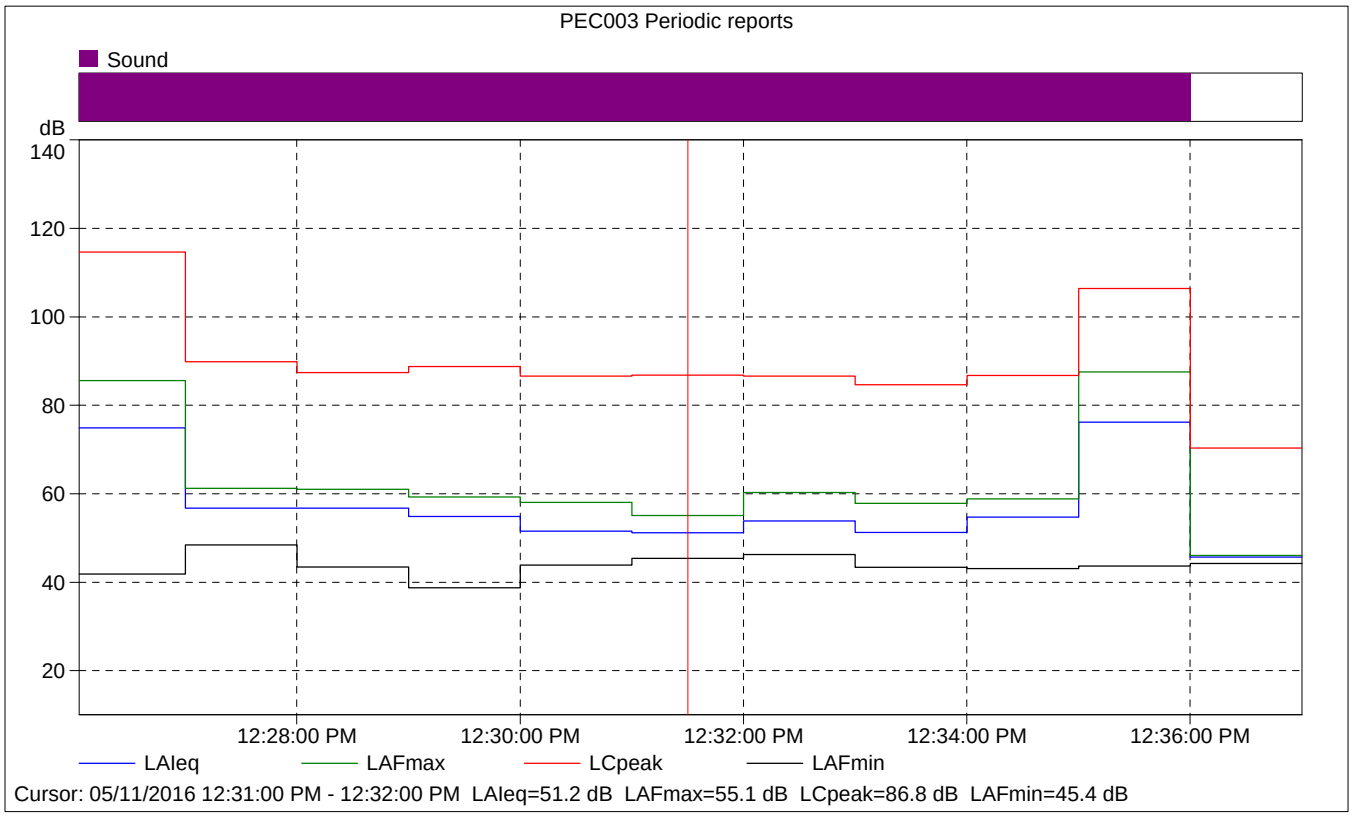

PEC003
%
Based on LAF , 10ms Class width: 0.2 dB 05/11/2016 12:26:03 PM - 12:36:03 PM
100
90
80
70
60
50
40
30
20
10
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
dB
L1 = 59.4 dB
L5 = 55.6 dB
L10 = 53.9 dB
L50 = 49.0 dB
L90 = 45.3 dB
L95 = 44.0 dB
L99 = 41.1 dB
Level
Cumulative
Cursor: [74.8 ; 75.0[dB Level: 0.0% Cumulative: 0.3%



PEC003

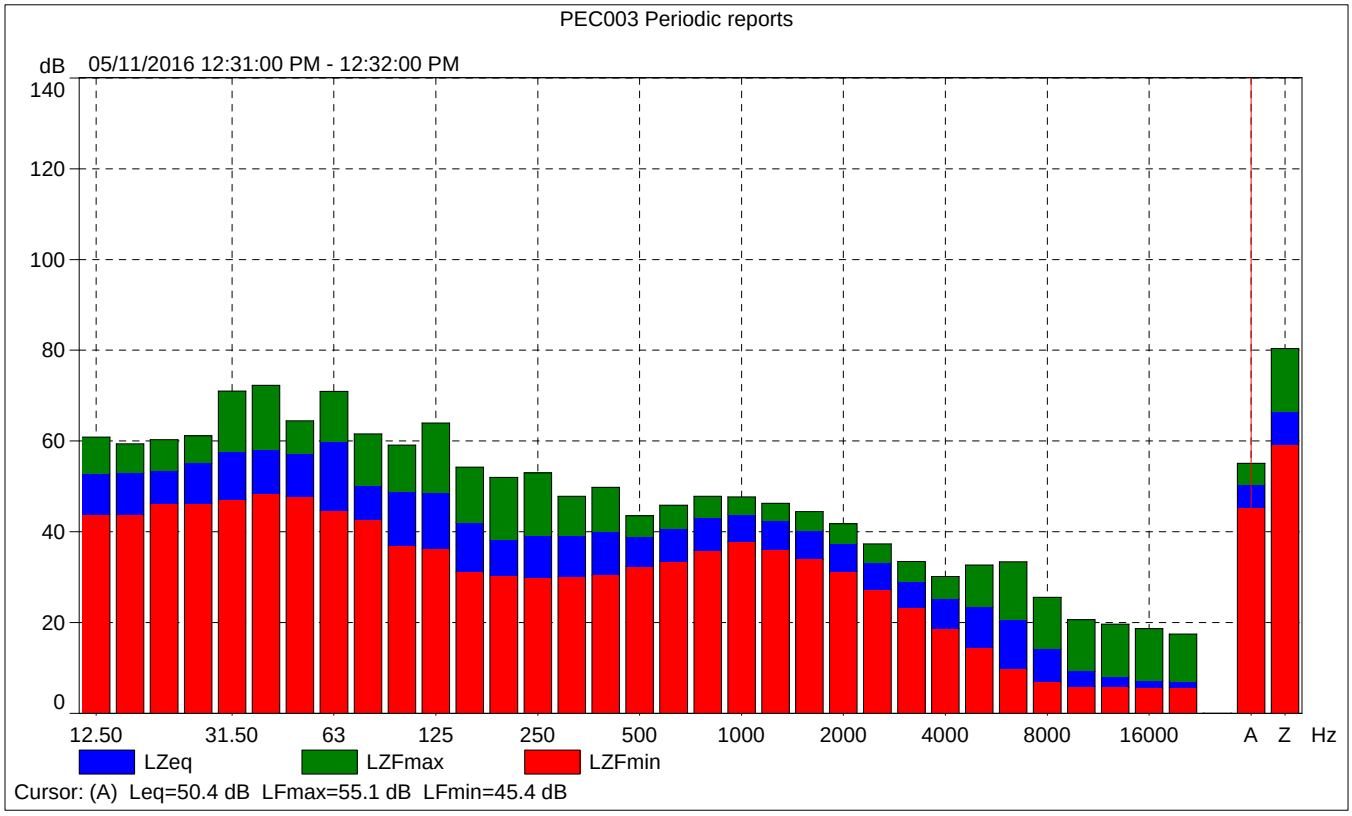
	Start time	Elapsed time	LAIeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			47.8	49.8	45.4
Time	12:31:00 PM	0:00:10			
Date	05/11/2016				


PEC003
dB
05/11/2016 12:31:00 PM - 12:31:10 PM
140
120
100
80
60
40
20
0
12.50
31.50
63
125
250
500
1000
2000
4000
8000
16000
A
Z
Hz
LZeq
Cursor: (A) Leq=47.2 dB

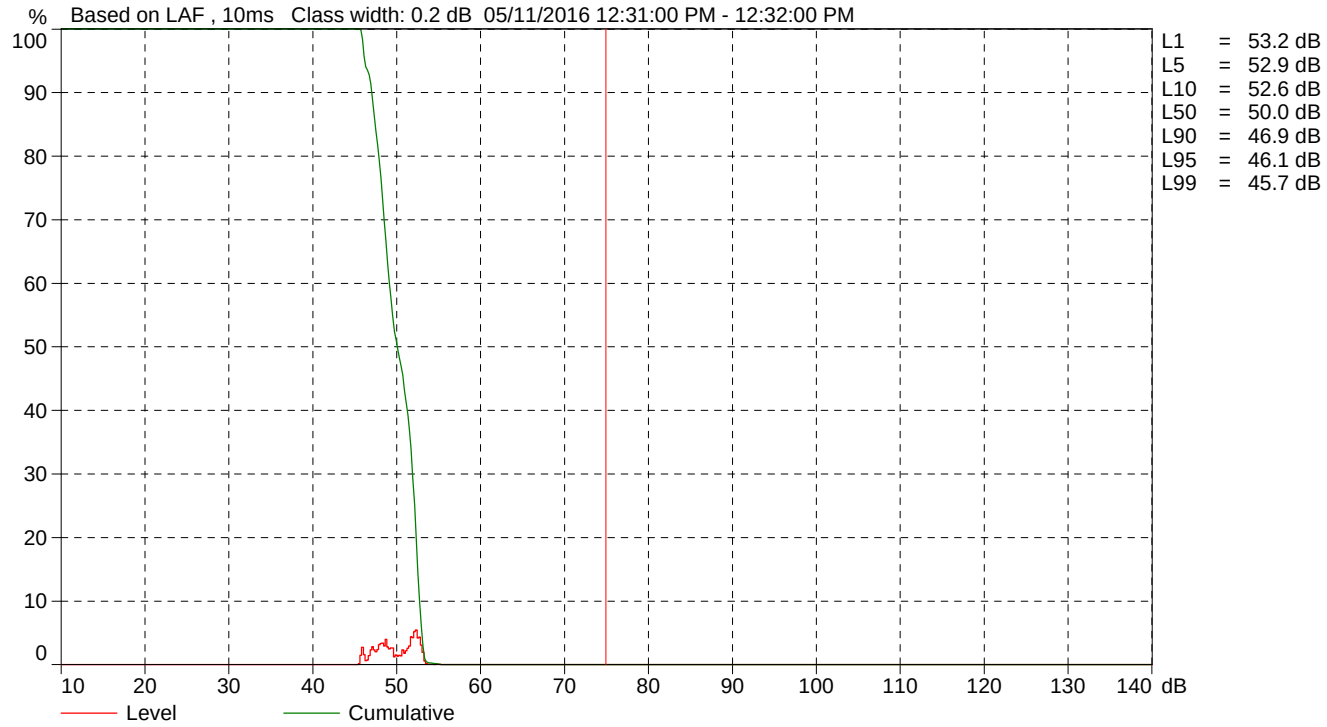

PEC003 Periodic reports
Sound
dB
140
120
100
80
60
40
20
12:28:00 PM
12:30:00 PM
12:32:00 PM
12:34:00 PM
12:36:00 PM
LAIeq
LAFmax
LCpeak
LAFmin
Cursor: 05/11/2016 12:31:00 PM - 12:32:00 PM LAIeq=51.2 dB LAFmax=55.1 dB LCpeak=86.8 dB LAFmin=45.4 dB

PEC003 Periodic reports

	Start time	Elapsed time	Overload [%]	LAIeq [dB]	LAFmax [dB]	LAFmin [dB]
Value			0.00	51.2	55.1	45.4
Time	12:31:00 PM	0:01:00				
Date	05/11/2016					



PEC003 Periodic reports



Cursor: [74.8 ; 75.0[dB Level: 0.0% Cumulative: 0.0%