Appendix K2 Supplemental Traffic Analysis

Appendices

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August 7, 2019

Mr. Erik Zitek, Executive Vice President
CRESTMORE REDEVELOPMENT, LLC
VIRIDIAN PARTNERS, LLC
1805 Shea Center Drive, Suite 250
Highland Ranch, Colorado 80129

RE: Agua Mansa Commerce Park Supplemental Traffic Analysis
18-0058

Dear Mr. Zitek:

INTRODUCTION

Ganddini Group, Inc. is pleased to provide this supplemental traffic analysis for the Agua Mansa Commerce Park Project in the City of Jurupa Valley. The purpose of this supplemental traffic analysis is to determine the viability of constructing segments of El Rivino Road that are outside the City of Jurupa Valley's jurisdiction with one westbound travel lane instead of two westbound travel lanes, and if the intersection of Hall Avenue at El Rivino Road could be constructed without improvements to the north leg of that intersection. This analysis supplements the Agua Mansa Commerce Park Traffic Impact Analysis (Ganddini Group, Inc., October 9, 2018) ["Agua Mansa Commerce Park TIA"].

This letter-report summarizes the methodology, calculations, and findings. Although this is a technical report, effort has been made to write the report clearly and concisely. A glossary is provided in Appendix A to assist the reader with terms related to transportation engineering.

PURPOSE OF ANALYSIS

The project applicant has requested an analysis of El Rivino Road adjacent to the project site to determine if the portions of the roadway that are outside of the City of Jurupa Valley and within either the City of Rialto or unincorporated San Bernardino County, could be constructed with one westbound travel lane instead of two westbound travel lanes. In addition, the intersection of Hall Avenue at El Rivino Road, which is within multiple jurisdictions, has been analyzed to determine if the intersection could be constructed without improvements to the north leg of the intersection. While El Rivino Road is adjacent to the project site, the centerline of El Rivino Road is the boundary between the City of Jurupa Valley and the City of Rialto and San Bernardino County. Neither the project applicant nor the City of Jurupa Valley have control or jurisdiction over the northern portion of El Rivino Road. This analysis was requested due to concerns over the acquisition of right-of-way from private property owners on the north side of El Rivino Road, and the obtaining of construction permits from the County of San Bernardino and the City of Rialto. The two roadway segments included in this analysis on El Rivino Road are from Cedar Avenue/Rubidoux Boulevard to the west project boundary of the proposed Panattoni Project and from Cactus Avenue to Hall Avenue. The westbound left turn lanes on El Rivino Road providing access to the project site would not be impacted. Figure 1 shows a project location map highlighting these roadway segments and Figure 2 illustrates the site plan.

It should be noted that this supplemental traffic analysis has been conducted for Year 2035 With Project (Buildout) traffic conditions. Since the traffic forecast volumes in the buildout scenario exceed those in earlier forecasts (Opening Year), findings for the buildout scenario will also apply to Opening Year traffic conditions.

ROADWAY SEGMENT ANALYSIS

Roadway segments are considered to operate at an acceptable level when the average daily traffic volumes do not exceed the roadway capacities as specified by the roadway classification. The City of Jurupa Valley General Plan (2017) (adopted September 2017) roadway capacities as specified by the roadway classifications are shown in Table 1.[1] The City of Jurupa Valley along with the City of Riverside utilize the County of Riverside roadway capacities. For roadway segments located in multiple jurisdictions, City of Jurupa Valley roadway capacities and classifications have been given preference since the City of Jurupa Valley is the lead agency.

To provide consistency and ease of review, all tables and intersection reference numbers included in this supplemental analysis are consistent with the Agua Mansa Commerce Park TIA. When the tables show an even number of travel lanes this is indicative of equal travel lanes in each direction (i.e. two travel lanes means one westbound travel lane and one eastbound travel lane). Typically roadways are constructed and improved with an even number of travel lanes. Therefore, the recommended mitigation for El Rivino Road in the aforementioned traffic impact analysis when segments of El Rivino Road were forecast to operate at unacceptable Levels of Service was to improve the roadway from two to four lanes. There are exceptions when a roadway is constructed with an uneven number of travel lanes (i.e. two eastbound travel lanes and one westbound travel lane).

Table 24 shows the Year 2035 With Project roadway segment daily capacity analysis for Alternative 1. Both roadway segments are projected to operate at acceptable Levels of Service with two travel lanes.

Table 26 shows the Year 2035 With Project roadway segment daily capacity analysis for Alternative 2. El Rivino Road from Cedar Avenue to Cactus Avenue is projected to operate at an acceptable Level of Service with three travel lanes. El Rivino Road from Cactus Avenue to Hall Avenue is projected to operate at an acceptable Level of Service with two travel lanes.

Table 43 shows the Year 2035 With Project roadway segment daily capacity analysis for Alternative 1A. El Rivino Road from Cedar Avenue to Cactus Avenue is projected to operate at an acceptable Level of Service with three travel lanes. El Rivino Road from Cactus Avenue to Hall Avenue is projected to operate at an acceptable Level of Service with two travel lanes.

Table 45 shows the Year 2035 With Project roadway segment daily capacity analysis for Alternative 2A. El Rivino Road from Cedar Avenue to Cactus Avenue is projected to operate at an acceptable Level of Service with three travel lanes. El Rivino Road from Cactus Avenue to Hall Avenue is projected to operate at an acceptable Level of Service with two travel lanes.

As shown in these tables, El Rivino Road from Cedar Avenue to Cactus Avenue is projected to operate at an acceptable Level of Service with three travel lanes. El Rivino Road from Cactus Avenue to Hall Avenue is projected to operate at an acceptable Level of Service with two travel lanes. Therefore, these two roadway

[1] The roadway segment capacity thresholds represent the theoretical maximum two-way average daily traffic volumes that any given roadway is able to accommodate within one day, given typical peak hour characteristics. Generally, roadway segment analysis is performed for planning purposes only and is affected by such factors as the number of intersections (spacing, configuration and control features), degree of access control, roadway grades, design geometrics (horizontal and vertical alignments), sight distance, vehicle mix (truck and bus traffic), and bicycle/pedestrian traffic. Roadway segments benefit from on-going traffic signal progression timing adjustments that maximize green time during peak traffic demands.

segments are projected to operate at acceptable Levels of Service with the reduction from two westbound travel lanes to one westbound travel lane.

INTERSECTION ANALYSIS

An intersection analysis has been conducted for intersections located on El Rivino Road that would be impacted from the reduction of two westbound travel lanes to one westbound travel lane. The westbound left turn lanes on El Rivino Road providing access to the project site would not be impacted.

El Rivino Road from Cedar Avenue/Rubidoux Boulevard to the west project boundary of the Panattoni Development

The potentially impacted intersections include Cedar Avenue/Rubidoux Road at Tarragona Drive/El Rivino Road (Int. #6), Building 6 Access at El Rivino Road (Int. # 18), and Project Access at El Rivino Road (Int #19).

Cedar Avenue/Rubidoux Road at Tarragona Drive/El Rivino Road (Int. #6) would not be impacted for Year 2035 With Project (Alternative 1 and Alternative 2) traffic conditions since the intersection is projected to operate at acceptable Levels of Service during the peak hours, without improvements. Cedar Avenue/Rubidoux Road at Tarragona Drive/El Rivino Road (Int. #6) would not be impacted for Year 2035 With Project (Alternative 1A and Alternative 2A) traffic conditions since the intersection improvements recommended for the intersection to operate at acceptable Levels of Service during the peak hours include restriping of the existing westbound travel lanes.

Building 6 Access at El Rivino Road (Int. #18) and Project Access at El Rivino Road (Int #19) are projected to operate at acceptable Levels of Service during the peak hours for Year 2035 With Project traffic conditions with one westbound travel lane for all scenarios. Appendix B includes the Level of Service worksheets.

Therefore, the study area intersections along this roadway segment that would be impacted from the reduction of two westbound travel lanes to one westbound travel lane are still forecasted to operate at acceptable Levels of Service during the peak hours with this reduction.

El Rivino Road from Cactus Avenue to Hall Avenue

The potentially impacted intersections include Cactus Avenue/Project Access at El Rivino Road (Int. #20), Building 1 Auto Access (at El Rivino Road (Int. #21), and Hall Avenue at El Rivino Road (Int. #22).

Cactus Avenue/Project Access at El Rivino Road (Int. #20) is projected to operate at acceptable Levels of Service during the peak hours for Year 2035 With Project traffic conditions with one westbound travel lane for all scenarios. Instead of a dedicated westbound through lane and a shared westbound through/right turn lane, only a westbound shared through/right turn lane would be constructed. Appendix B includes the Level of Service worksheets.

Building 1 Auto Access at El Rivino Road (Int. #21) is projected to operate at acceptable Levels of Service during the peak hours for Year 2035 With Project traffic conditions with one westbound travel lane for all scenarios. Appendix B includes the Level of Service worksheets.

Hall Avenue at El Rivino Road (Int. #22) would not be impacted for Year 2035 With Project (all scenarios) traffic conditions since the intersection improvements include traffic signalization and dedicated left turn lanes for all movements. However, due to feasibility concerns the intersection has been analyzed with removal of mitigation (dedicated left turn lane) on the north leg of the intersection. Additionally, based on input from City of Jurupa Valley Transportation Department staff, the west leg of the intersection has been analyzed with a

dedicated through lane and right turn lane in lieu of a shared through/right turn lane. The intersection is projected to operate at acceptable Levels of Service during the peak hours for Year 2035 With Project traffic conditions without mitigation on the north leg and a dedicated through lane and right turn lane on the west leg. Appendix B includes the Level of Service worksheets.

ROADWAY DESIGN

Figure 4 shows the proposed lane configuration for the study area intersections with one westbound travel lane instead of two westbound travel lanes for Alternative 1 and Alternative 2. Figure 5 shows the proposed lane configuration for the study area intersections with one westbound travel lane instead of two westbound travel lanes for Alternative 1A and Alternative 2A.

El Rivino Road westbound from Cactus Avenue would transition from two travel lanes to one travel lane near the west project boundary of the Panattoni Project. Figure 3 shows the Panattoni project site plan. The roadway would then widen to incorporate the two westbound travel lanes at the approach to the Cedar Avenue/Rubidoux Boulevard intersection similar to existing configuration. Appendix C includes conceptual striping plans as provided for the Panattoni project. It should be noted that these conceptual striping plans are for reference purposes only to show one westbound travel lane on El Rivino Road for the roadway segments included in this analysis. These conceptual striping plans do not take into account the proposed intersection lane configurations as analyzed in the Agua Mansa Commerce Park TIA.

El Rivino Road from Cactus Avenue to Hall Avenue would remain with one westbound travel lane as currently exists for this roadway.

CONCLUSION

El Rivino Road from Cedar Avenue/Rubidoux Boulevard to the west project boundary of the proposed Panattoni Project and from Cactus Avenue to Hall Avenue can be constructed with one westbound travel lane instead of two westbound travel lanes, while still operating at acceptable roadway segment and intersection Levels of Service.

Hall Avenue at El Rivino Road (Int. #22) can be constructed without improvements to the north leg of the intersection, while still operating at acceptable Levels of Service.

It has been a pleasure to assist you with this project. Should you have any questions or if we can be of further assistance, please do not hesitate to call at (714) 795-3100.

Respectfully submitted,

GANDDINI GROUP, INC.

Bryan Crawford
Senior Transportation Planner

REGISTERED PROFESSIONAL ENGINEER
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Table 1
County of Riverside Roadway Segment Daily Capacities[1]

Roadway Classification	Number of Lanes	Maximum Two-Way Traffic Volume (ADT)[2] Level of Service		
		C	D	E
Collector	2	10,400	11,700	13,000
Secondary	4	20,700	23,300	25,900
Arterial	2	14,400	16,200	18,000
Arterial	4	27,800	32,300	35,900
Mountain Arterial	2	12,900	14,500	16,100
Mountain Arterial	4	29,800	33,500	37,200
Major Arterial	4	27,300	30,700	34,100
Urban Arterial	4	28,700	32,300	35,900
Urban Arterial	6	43,100	48,500	53,900
Urban Arterial	8	57,400	64,600	71,800
Expressway	4	32,700	36,800	40,900
Expressway	6	49,000	55,200	61,300
Expressway	8	65,400	73,500	81,700

Level of Service	Volume to Capacity Ratio
A	0.000 - 0.600
B	0.601 - 0.700
C	0.701 - 0.800
D	0.801 - 0.900
E	0.901 - 1.000
F	>1.000

Notes:

(1) Source: County of Riverside roadway daily service volume standards.

(2) Average Daily Traffic Volumes

(3) These roadway capacities are "rule of thumb" estimates for planning purposes. The Level of Service "E" volumes are estimated maximum daily capacity for respective classifications.

Table 24

Year 2035 With Project Roadway Segment Daily Capacity Analysis - Alternative 1

Roadway	Segment		Jurisdiction[2]	Roadway Standards[1]			Roadway Segment				Capacity Threshold	LOS[8]
	From	To		Classification	Lanes	Capacity[3]	Lanes[4]	Capacity[5]	ADT[6]	V/C[7]		
El Rivino Road	Cedar Avenue	Cactus Avenue	JV / RIA / SB	Secondary Highway	4	25,900	2	13,000	12,900	0.99	Approaches Capacity	E
	Cactus Avenue	Hall Avenue	JV /SB	Secondary Highway	4	25,900	2	13,000	8,700	0.67	Acceptable	B

Notes:

(1) See Table 1.

(2) SB = County of San Bernardino; JV = City of Jurupa Valley; RIA = City of Rialto; RIV = City of Riverside

(3) The County of Riverside roadway maximum capacity at Level of Service "E" (see Table 1).

(4) Based on the part of the roadway segment with the fewest amount of lanes.

(5) Roadway maximum capacity at Level of Service "E" for roadway classification. Capacity adjustment to reflect the number of existing number of travel lanes and is based on existing lane geometrics, existing roadway design, points of conflict, and existing curb-to-curb widths to determine the nearest roadway classification and capacity.

(6) ADT = Average Daily Traffic Volume.

(7) V/C = Volume to Capacity Ratio.

(8) LOS = Level of Service (Based on the Level of Service standards on Table 1).

Table 26
Year 2035 With Project Roadway Segment Daily Capacity Analysis - Alternative 2

Roadway	Segment		Jurisdiction[2]	Roadway Standards[1]			Roadway Segment				Capacity Threshold	LOS[8]
	From	To		Classification	Lanes	Capacity[3]	Lanes[4]	Capacity[5/9]	ADT[6]	V/C[7]		
El Rivino Road	Cedar Avenue	Cactus Avenue	JV / RIA / SB	Secondary Highway	4	25,900	2	13,000	13,500	1.04	Potentially Exceeds Capacity	F
		- With Improvements		Secondary Highway	4	25,900	**3**	19,950	13,500	0.68	Acceptable	B
	Cactus Avenue	Hall Avenue	JV /SB	Secondary Highway	4	25,900	2	13,000	9,200	0.71	Acceptable	C

Notes:

(1) See Table 1.

(2) SB = County of San Bernardino; JV = City of Jurupa Valley; RIA = City of Rialto; RIV = City of Riverside

(3) The County of Riverside roadway maximum capacity at Level of Service "E" (see Table 1).

(4) Based on the part of the roadway segment with the fewest amount of lanes.

(5) Roadway maximum capacity at Level of Service "E" for roadway classification. Capacity adjustment to reflect the number of existing number of travel lanes and is based on existing lane geometrics, existing roadway design, points of conflict, and existing curb-to-curb widths to determine the nearest roadway classification and capacity.

(6) ADT = Average Daily Traffic Volume.

(7) V/C = Volume to Capacity Ratio.

(8) LOS = Level of Service (Based on the Level of Service standards on Table 1).

(9) Three lane capacity calculated as median of the two lane and four lane capacity.

Table 43

Year 2035 With Project Roadway Segment Daily Capacity Analysis - Alternative 1A

Roadway	Segment		Jurisdiction[2]	Roadway Standards[1]			Roadway Segment				Capacity Threshold	LOS[8]
	From	To		Classification	Lanes	Capacity[3]	Lanes[4]	Capacity[5/9]	ADT[6]	V/C[7]		
El Rivino Road	Cedar Avenue	Cactus Avenue	JV / RIA / SB	Secondary Highway	4	25,900	2	13,000	17,300	1.33	Potentially Exceeds Capacity	F
		- With Improvements		Secondary Highway	4	25,900	**3**	19,950	17,300	0.87	Approaches Capacity	D
	Cactus Avenue	Hall Avenue	JV /SB	Secondary Highway	4	25,900	2	13,000	9,000	0.69	Acceptable	B

Notes:

(1) See Table 1.

(2) SB = County of San Bernardino; JV = City of Jurupa Valley; RIA = City of Rialto; RIV = City of Riverside

(3) The County of Riverside roadway maximum capacity at Level of Service "E" (see Table 1).

(4) Based on the part of the roadway segment with the fewest amount of lanes.

(5) Roadway maximum capacity at Level of Service "E" for roadway classification. Capacity adjustment to reflect the number of existing number of travel lanes and is based on existing lane geometrics, existing roadway design, points of conflict, and existing curb-to-curb widths to determine the nearest roadway classification and capacity.

(6) ADT = Average Daily Traffic Volume.

(7) V/C = Volume to Capacity Ratio.

(8) LOS = Level of Service (Based on the Level of Service standards on Table 1).

(9) Three lane capacity calculated as median of the two lane and four lane capacity.

Table 45

Year 2035 With Project Roadway Segment Daily Capacity Analysis - Alternative 2A

Roadway	Segment		Jurisdiction[2]	Roadway Standards[1]			Roadway Segment				Capacity Threshold	LOS[8]
	From	To		Classification	Lanes	Capacity[3]	Lanes[4]	Capacity[5/9]	ADT[6]	V/C[7]		
El Rivino Road	Cedar Avenue	Cactus Avenue	JV / RIA / SB	Secondary Highway	4	25,900	2	13,000	18,000	1.38	Potentially Exceeds Capacity	F
		- With Improvements		Secondary Highway	4	25,900	**3**	19,950	18,000	0.90	Approaches Capacity	E
	Cactus Avenue	Hall Avenue	JV /SB	Secondary Highway	4	25,900	2	13,000	9,600	0.74	Acceptable	C

Notes:

(1) See Table 1.

(2) SB = County of San Bernardino; JV = City of Jurupa Valley; RIA = City of Rialto; RIV = City of Riverside

(3) The County of Riverside roadway maximum capacity at Level of Service "E" (see Table 1).

(4) Based on the part of the roadway segment with the fewest amount of lanes.

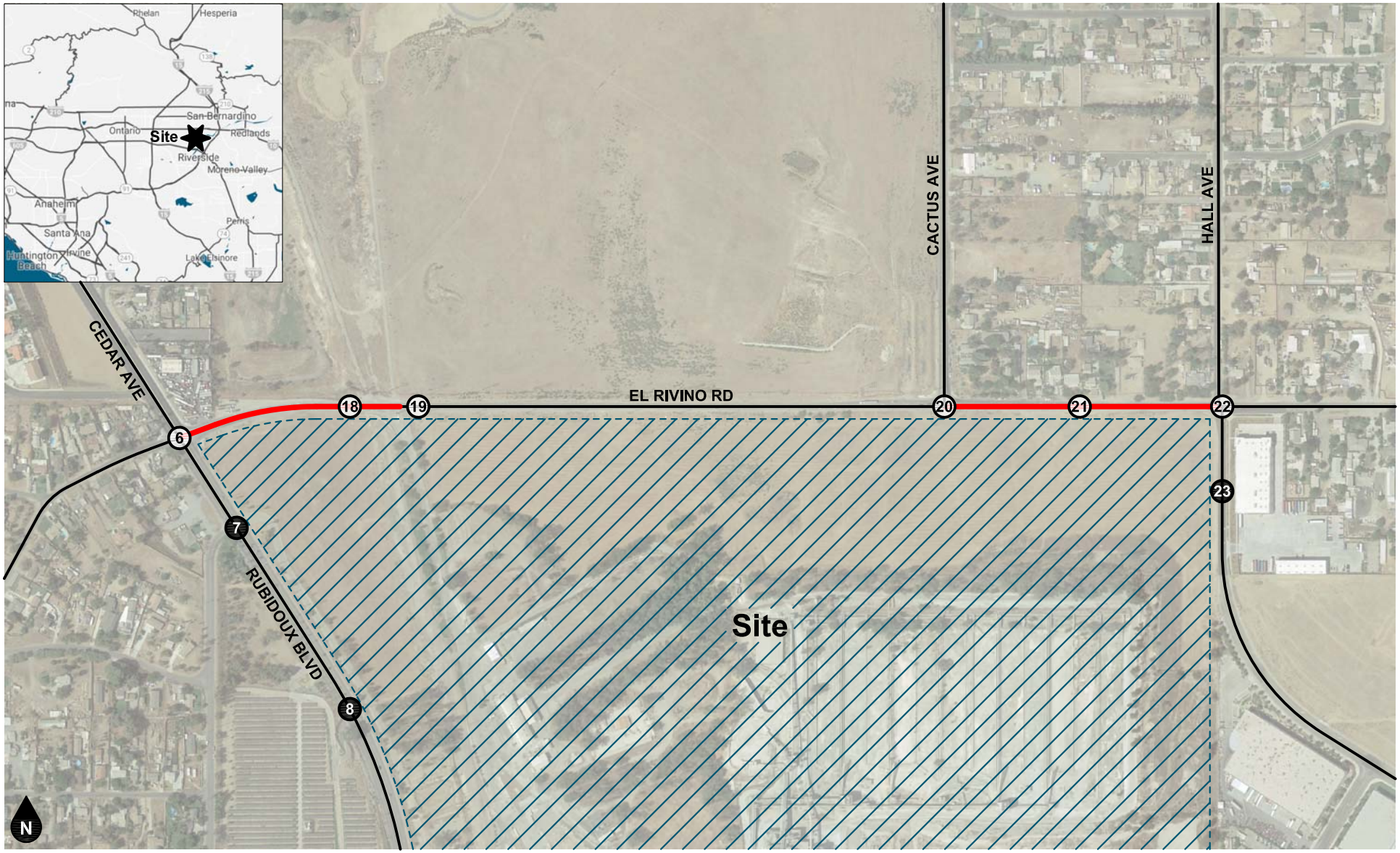
(5) Roadway maximum capacity at Level of Service "E" for roadway classification. Capacity adjustment to reflect the number of existing number of travel lanes and is based on existing lane geometrics, existing roadway design, points of conflict, and existing curb-to-curb widths to determine the nearest roadway classification and capacity.

(6) ADT = Average Daily Traffic Volume.

(7) V/C = Volume to Capacity Ratio.

(8) LOS = Level of Service (Based on the Level of Service standards on Table 1).

(9) Three lane capacity calculated as median of the two lane and four lane capacity.



Legend

Study Area Roadway Segment

(#) Study Area Intersection

Figure 1
Project Location Map

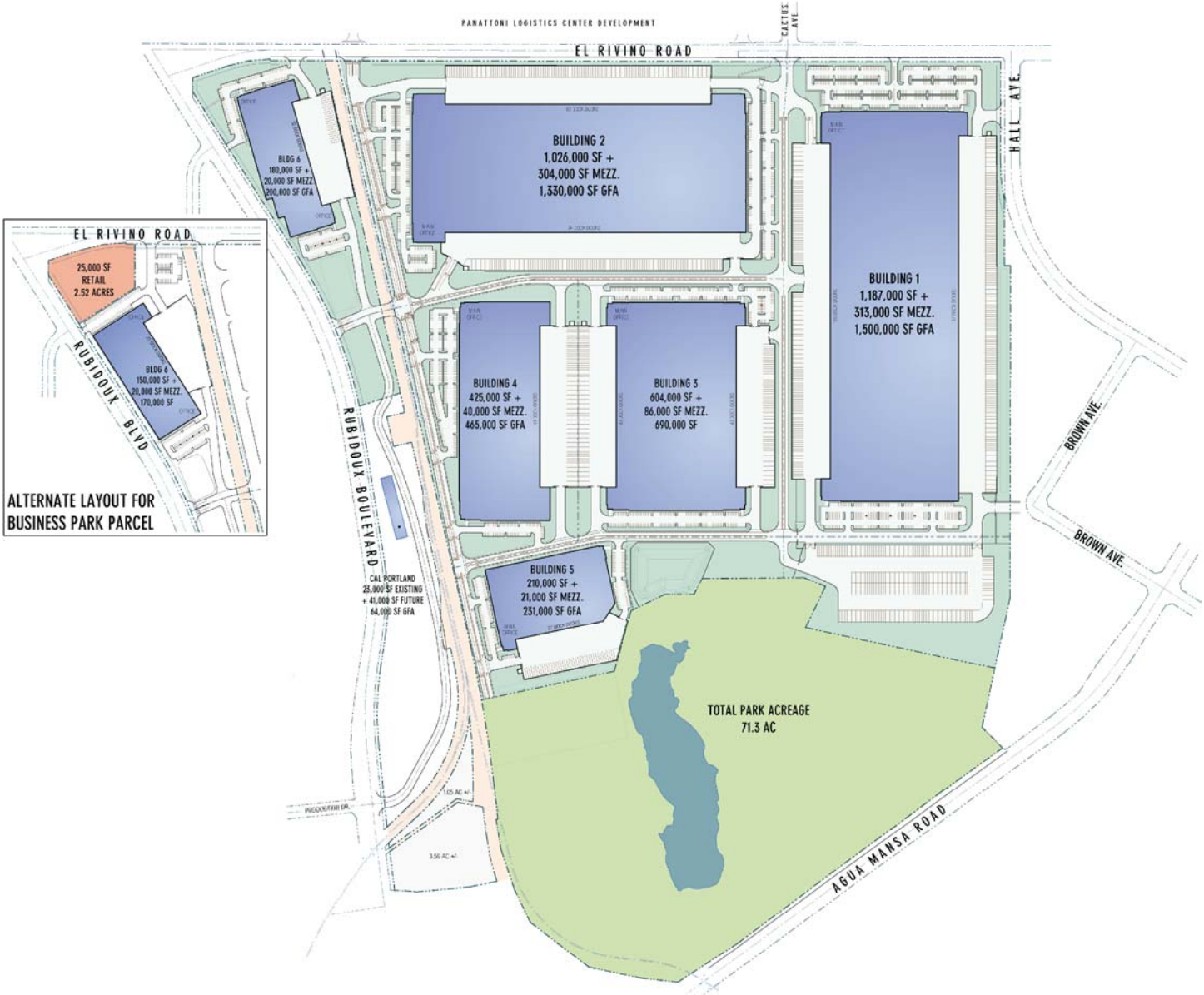


Figure 2
Site Plan

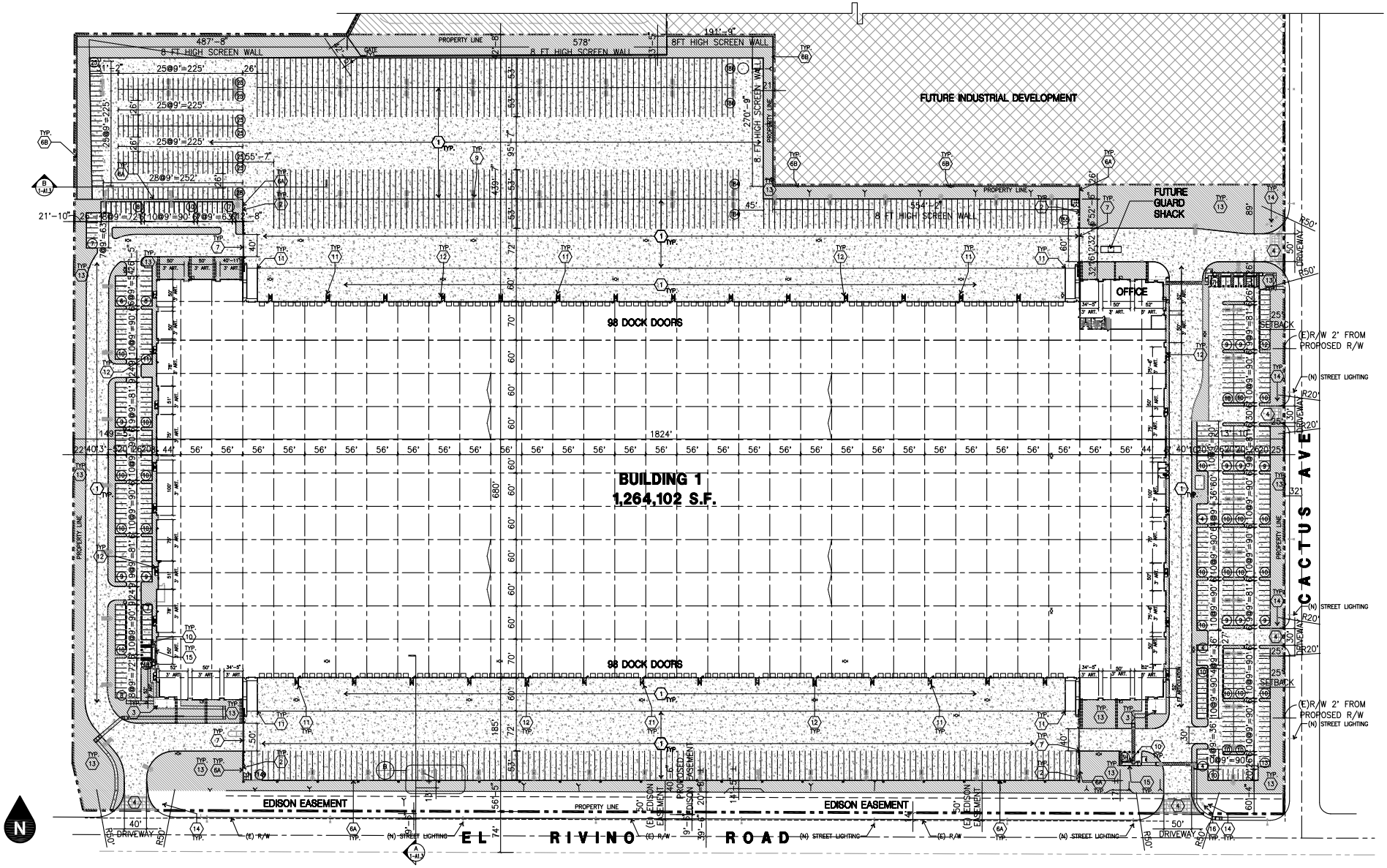
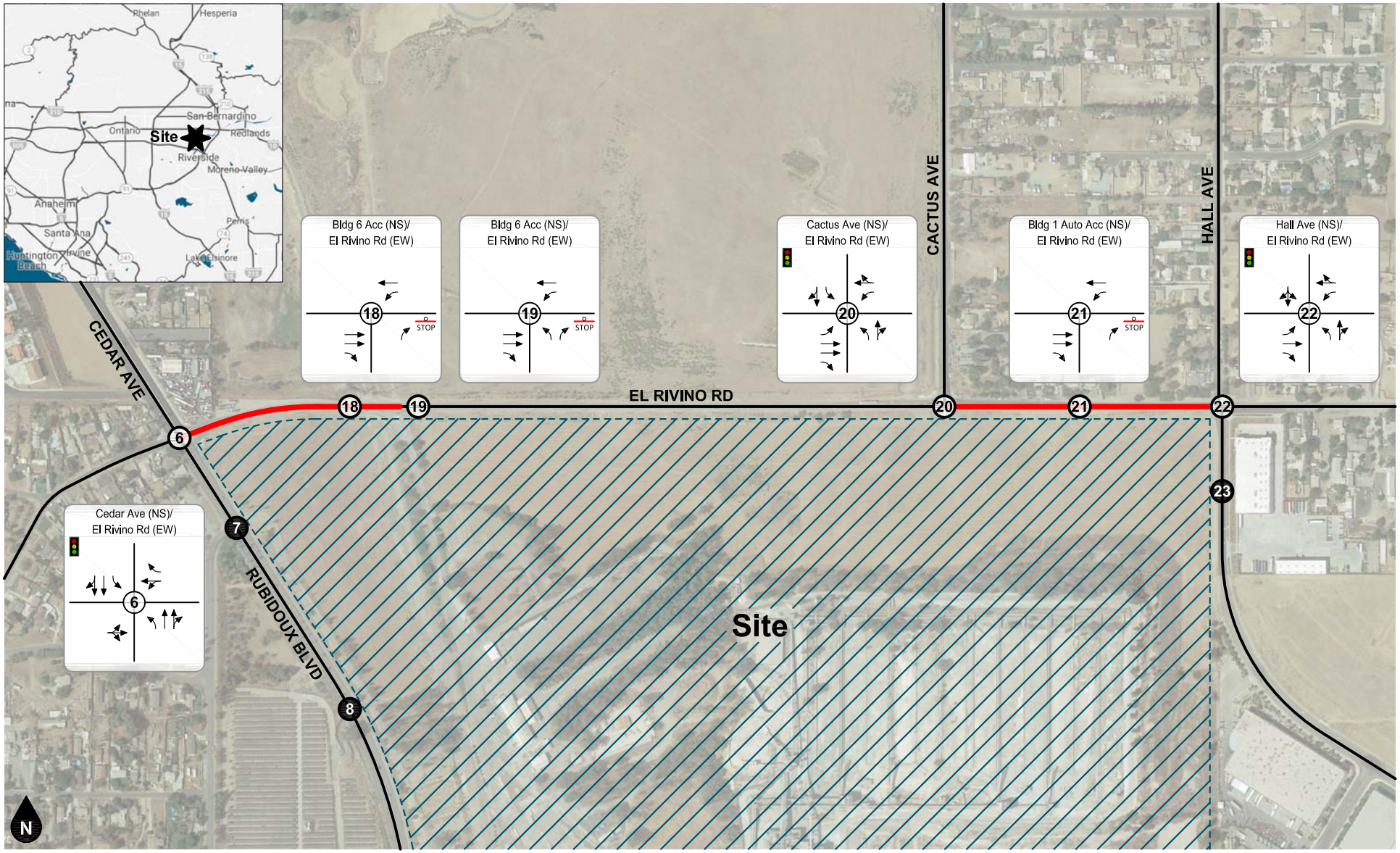


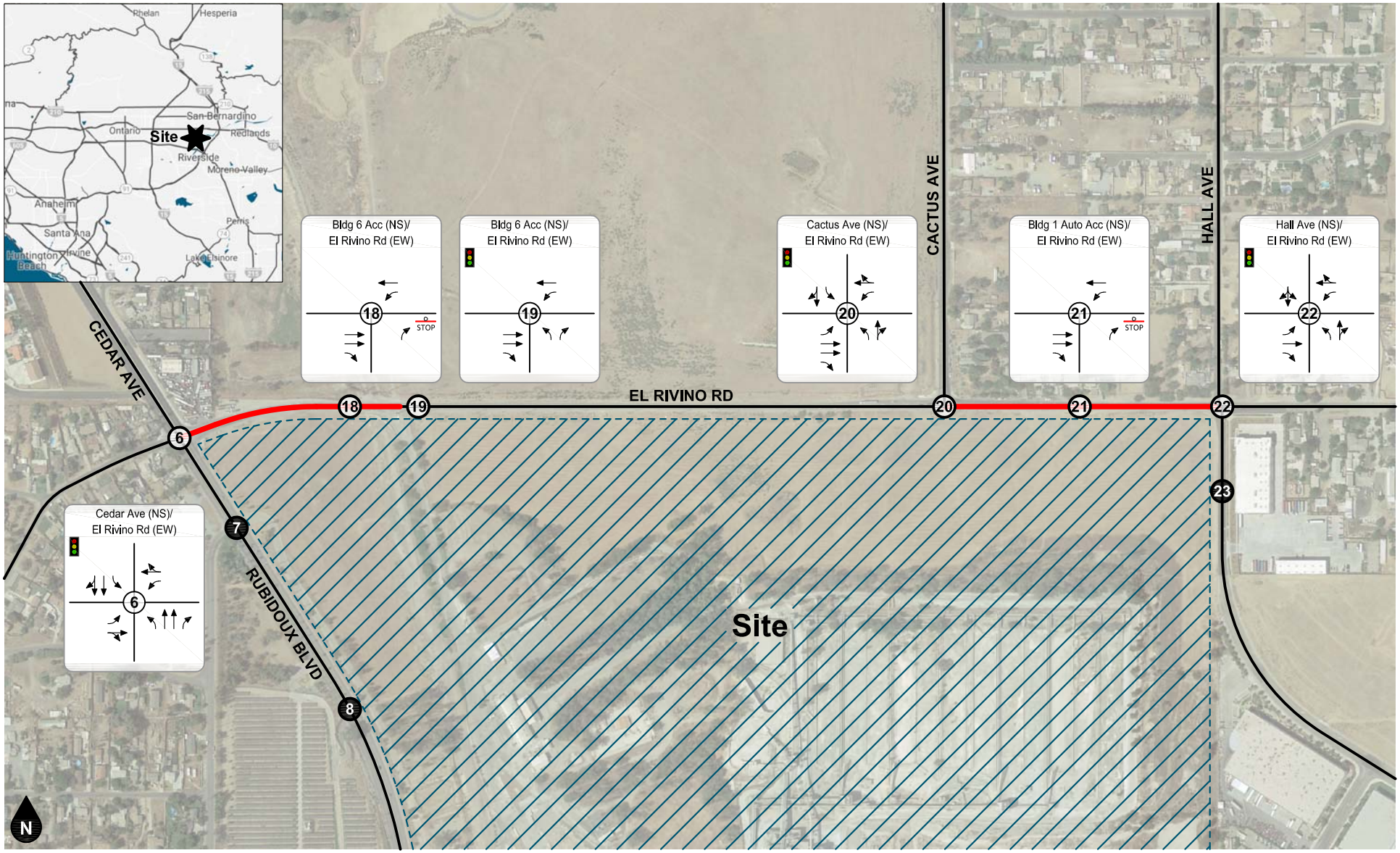
Figure 3
Panattoni Site Plan



Legend

- Study Area Roadway Segment
- Study Area Intersection
- Existing Lane
- Traffic Signal
- Stop Sign

Figure 4
Proposed Lane Configuration - Alternative 1 and 2



Legend

- Study Area Roadway Segment
- Study Area Intersection
- Existing Lane
- Traffic Signal
- Stop Sign

Figure 5
Proposed Lane Configuration - Alternative 1a and 2a

APPENDIX A

GLOSSARY

GLOSSARY OF TERMS

ACRONYMS

AC	Acres
ADT	Average Daily Traffic
Caltrans	California Department of Transportation
DU	Dwelling Unit
ICU	Intersection Capacity Utilization
LOS	Level of Service
TSF	Thousand Square Feet
V/C	Volume/Capacity
VMT	Vehicle Miles Traveled

TERMS

AVERAGE DAILY TRAFFIC: The average 24-hour volume for a stated period divided by the number of days in that period. For example, Annual Average Daily Traffic is the total volume during a year divided by 365 days.

BANDWIDTH: The number of seconds of green time available for through traffic in a signal progression.

BOTTLENECK: A point of constriction along a roadway that limits the amount of traffic that can proceed downstream from its location.

CAPACITY: The maximum number of vehicles that can be reasonably expected to pass over a given section of a lane or a roadway in a given time period.

CHANNELIZATION: The separation or regulation of conflicting traffic movements into definite paths of travel by the use of pavement markings, raised islands, or other suitable means to facilitate the safe and orderly movements of both vehicles and pedestrians.

CLEARANCE INTERVAL: Nearly same as yellow time. If there is an all red interval after the end of a yellow, then that is also added into the clearance interval.

CONTROL DELAY: The component of delay, typically expressed in seconds per vehicle, resulting from the type of traffic control at an intersection. Control delay is measured by comparison with the uncontrolled condition; it includes delay incurred by slowing down, stopping/waiting, and speeding up.

CORDON: An imaginary line around an area across which vehicles, persons, or other items are counted (in and out).

CORNER SIGHT DISTANCE: The minimum sight distance required by the driver of a vehicle to cross or enter the lanes of the major roadway without requiring approaching traffic travelling at a given speed to radically alter their speed or trajectory. Corner sight distance is measured from the driver's eye at 42 inches above the pavement to an object height of 36 inches above the pavement in the center of the nearest approach lane.

CYCLE LENGTH: The time period in seconds required for a traffic signal to complete one full cycle of indications.

CUL-DE-SAC: A local street open at one end only and with special provisions for turning around.

DAILY CAPACITY: A theoretical value representing the daily traffic volume that will typically result in a peak hour volume equal to the capacity of the roadway.

DELAY: The time consumed while traffic is impeded in its movement by some element over which it has no control, usually expressed in seconds per vehicle.

DEMAND RESPONSIVE SIGNAL: Same as traffic-actuated signal.

DENSITY: The number of vehicles occupying in a unit length of the through traffic lanes of a roadway at any given instant. Usually expressed in vehicles per mile.

DETECTOR: A device that responds to a physical stimulus and transmits a resulting impulse to the signal controller.

DESIGN SPEED: A speed selected for purposes of design. Features of a highway, such as curvature, superelevation, and sight distance (upon which the safe operation of vehicles is dependent) are correlated to design speed.

DIRECTIONAL SPLIT: The percent of traffic in the peak direction at any point in time.

DIVERSION: The rerouting of peak hour traffic to avoid congestion.

FORCED FLOW: Opposite of free flow.

FREE FLOW: Volumes are well below capacity. Vehicles can maneuver freely and travel is unimpeded by other traffic.

GAP: Time or distance between successive vehicles in a traffic stream, rear bumper to front bumper.

HEADWAY: Time or distance spacing between successive vehicles in a traffic stream, front bumper to front bumper.

INTERCONNECTED SIGNAL SYSTEM: A number of intersections that are connected to achieve signal progression.

LEVEL OF SERVICE: A qualitative measure of a number of factors, which include speed and travel time, traffic interruptions, freedom to maneuver, safety, driving comfort and convenience, and operating costs.

LOOP DETECTOR: A vehicle detector consisting of a loop of wire embedded in the roadway, energized by alternating current and producing an output circuit closure when passed over by a vehicle.

MINIMUM ACCEPTABLE GAP: Smallest time headway between successive vehicles in a traffic stream into which another vehicle is willing and able to cross or merge.

MULTI-MODAL: More than one mode; such as automobile, bus transit, rail rapid transit, and bicycle transportation modes.

OFFSET: The time interval in seconds between the beginning of green at one intersection and the beginning of green at an adjacent intersection.

PLATOON: A closely grouped component of traffic that is composed of several vehicles moving, or standing ready to move, with clear spaces ahead and behind.

PASSENGER CAR EQUIVALENT (PCE): A metric used to assess the impact of larger vehicles, such as trucks, recreational vehicles, and buses, by converting the traffic volume of larger vehicles to an equivalent number of passenger cars.

PEAK HOUR: The 60 consecutive minutes with the highest number of vehicles.

PRETIMED SIGNAL: A type of traffic signal that directs traffic to stop and go on a predetermined time schedule without regard to traffic conditions. Also, fixed time signal.

PROGRESSION: A term used to describe the progressive movement of traffic through several signalized intersections.

QUEUE: The number of vehicles waiting at a service area such as a traffic signal, stop sign, or access gate.

QUEUE LENGTH: The length of vehicle queue, typically expressed in feet, waiting at a service area such as a traffic signal, stop sign, or access gate.

SCREEN-LINE: An imaginary line or physical feature across which all trips are counted, normally to verify the validity of mathematical traffic models.

SHARED/RECIPROCAL PARKING AGREEMENT: A written binding document executed between property owners to provide a designated number of off-street parking stalls within a designated area to be available for specified businesses or land uses.

SIGHT DISTANCE: The continuous length of roadway visible to a driver or roadway user.

SIGNAL CYCLE: The time period in seconds required for one complete sequence of signal indications.

SIGNAL PHASE: The part of the signal cycle allocated to one or more traffic movements.

STACKING DISTANCE: The length of area available behind a service area, such as a traffic signal or gate, for vehicle queueing to occur.

STARTING DELAY: The delay experienced in initiating the movement of queued traffic from a stop to an average running speed through an intersection.

STOPPING SIGHT DISTANCE: The minimum distance required by the driver of a vehicle on the major roadway travelling at a given speed to bring the vehicle to a stop after an object on the road becomes visible. Stopping sight distance is measured from the driver's eye at 42 inches above the pavement to an object height of 6 inches above the pavement.

TRAFFIC-ACTUATED SIGNAL: A type of traffic signal that directs traffic to stop and go in accordance with the demands of traffic, as registered by the actuation of detectors.

TRIP: The movement of a person or vehicle from one location (origin) to another (destination). For example, from home to store to home is two trips, not one.

TRIP-END: One end of a trip at either the origin or destination (i.e., each trip has two trip-ends). A trip-end occurs when a person, object, or message is transferred to or from a vehicle.

TRIP GENERATION RATE: The quantity of trips produced and/or attracted by a specific land use stated in terms of units such as per dwelling, per acre, and per 1,000 square feet of floor space.

TRUCK: A vehicle having dual tires on one or more axles, or having more than two axles.

TURNING RADIUS: The circular arc formed by the smallest turning path radius of the front outside tire of a vehicle, such as that performed by a U-turn maneuver. This is based on the length and width of the wheel base as well as the steering mechanism of the vehicle.

UNBALANCED FLOW: Heavier traffic flow in one direction than the other. On a daily basis, most facilities have balanced flow. During the peak hours, flow is seldom balanced in an urban area.

VEHICLE MILES OF TRAVEL: A measure of the amount of usage of a section of highway, obtained by multiplying the average daily traffic by length of facility in miles.

APPENDIX B

LEVEL OF SERVICE WORKSHEETS

YEAR 2035 WITH PROJECT – ALTERNATIVE 1

Intersection Level Of Service Report
Intersection 18: Bldg 6 Acc (NS) at El Rivino Rd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	10.3
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.007

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	0	317	0	0	192
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	5	46	12	35	18
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	5	363	12	35	210
Peak Hour Factor	0.9500	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	1	91	3	9	53
Total Analysis Volume [veh/h]	0	5	363	12	35	210
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.00	0.00	0.03	0.00
d_M, Delay for Movement [s/veh]	0.00	10.28	0.00	0.00	8.10	0.00
Movement LOS		B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.02	0.00	0.00	0.09	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.55	0.00	0.00	2.26	0.00
d_A, Approach Delay [s/veh]	10.28		0.00		1.16	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.54					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 18: Bldg 6 Acc (NS) at El Rivino Rd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	13.0
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.070

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	0	600	0	0	567
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	34	28	1	4	56
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	34	628	1	4	623
Peak Hour Factor	0.9500	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	9	157	0	1	156
Total Analysis Volume [veh/h]	0	34	628	1	4	623
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.07	0.01	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	12.95	0.00	0.00	8.75	0.00
Movement LOS		B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.22	0.00	0.00	0.01	0.00
95th-Percentile Queue Length [ft/ln]	0.00	5.61	0.00	0.00	0.31	0.00
d_A, Approach Delay [s/veh]	12.95		0.00		0.06	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.37					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 19: Project Acc (NS) at El Rivino Rd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	13.1
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.016

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	0	317	0	0	192
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	7	10	34	17	14	46
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	7	10	351	17	14	238
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	3	88	4	4	60
Total Analysis Volume [veh/h]	7	10	351	17	14	238
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.01	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	13.10	10.24	0.00	0.00	8.03	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.05	0.04	0.00	0.00	0.04	0.00
95th-Percentile Queue Length [ft/ln]	1.18	1.09	0.00	0.00	0.88	0.00
d_A, Approach Delay [s/veh]	11.42		0.00		0.45	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.48					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 19: Project Acc (NS) at El Rivino Rd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	27.2
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.124

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	0	600	0	0	567
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	23	27	53	9	8	37
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	23	27	653	9	8	604
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	7	163	2	2	151
Total Analysis Volume [veh/h]	23	27	653	9	8	604
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.12	0.06	0.01	0.00	0.01	0.01
d_M, Delay for Movement [s/veh]	27.21	13.11	0.00	0.00	8.88	0.00
Movement LOS	D	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.42	0.18	0.00	0.00	0.03	0.00
95th-Percentile Queue Length [ft/ln]	10.44	4.55	0.00	0.00	0.65	0.00
d_A, Approach Delay [s/veh]	19.60		0.00		0.12	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.79					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 20: Cactus Ave (NS) at El Rivino Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	15.3
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.572

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	204	0	92	211	115	0	0	88	116
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	3	15	0	6	0	1	23	20	47	54	1
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	6	3	15	204	6	92	212	138	20	47	142	117
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	1	4	51	2	23	53	35	5	12	36	29
Total Analysis Volume [veh/h]	6	3	15	204	6	92	212	138	20	47	142	117
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	1	0	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	7	0	7	0	0	7	7	0	0	7	0
Maximum Green [s]	0	120	0	120	0	0	120	120	0	0	120	0
Amber [s]	0.0	3.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	21	0	30	0	0	31	69	0	0	38	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	7	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	10	0	0	0	10	0	0	10	0
Rest In Walk		No						No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No					No	No			No	
Maximum Recall		No					No	No			No	
Pedestrian Recall		No					No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	L	C	R	C
C, Cycle Length [s]	37	37	37	37	37	37	37
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	2	2	6	6	18	18	7
g / C, Green / Cycle	0.04	0.04	0.17	0.17	0.47	0.47	0.20
(v / s)_i Volume / Saturation Flow Rate	0.00	0.01	0.11	0.12	0.04	0.01	0.15
s, saturation flow rate [veh/h]	1810	1656	1810	1810	3618	1615	1760
c, Capacity [veh/h]	76	70	300	303	1707	762	348
d1, Uniform Delay [s]	17.24	17.37	14.69	14.70	5.43	5.29	14.14
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.44	1.94	2.71	2.92	0.02	0.01	3.19
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

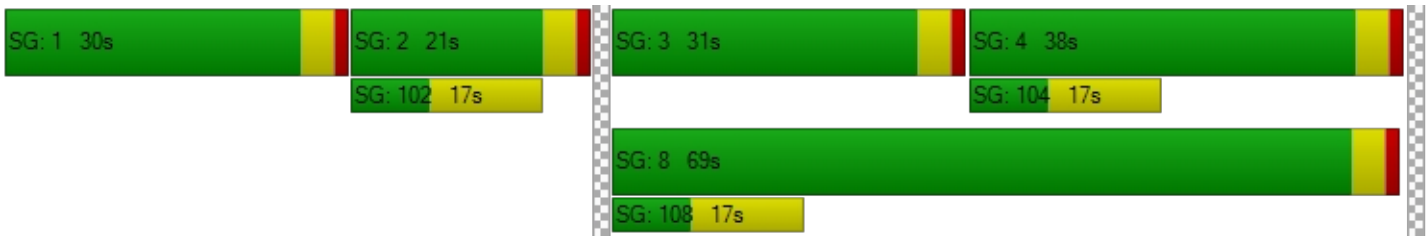
X, volume / capacity	0.08	0.26	0.68	0.70	0.08	0.03	0.75
d, Delay for Lane Group [s/veh]	17.68	19.31	17.40	17.62	5.45	5.30	17.32
Lane Group LOS	B	B	B	B	A	A	B
Critical Lane Group	No	Yes	Yes	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.05	0.17	1.55	1.63	0.19	0.06	1.96
50th-Percentile Queue Length [ft/ln]	1.29	4.15	38.81	40.68	4.78	1.39	49.04
95th-Percentile Queue Length [veh/ln]	0.09	0.30	2.79	2.93	0.34	0.10	3.53
95th-Percentile Queue Length [ft/ln]	2.33	7.46	69.86	73.22	8.61	2.50	88.28

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	17.68	19.31	19.31	17.40	0.00	0.00	17.62	5.45	5.30	0.00	17.32	17.32
Movement LOS	B	B	B	B			B	A	A		B	B
d_A, Approach Delay [s/veh]	18.90			17.40			12.41			17.32		
Approach LOS	B			B			B			B		
d_I, Intersection Delay [s/veh]	15.27											
Intersection LOS	B											
Intersection V/C	0.572											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 20: Cactus Ave (NS) at El Rivino Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	27.8
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.856

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	495	0	318	182	418	0	0	249	217
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	26	6	53	0	3	0	4	64	12	23	19	2
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	26	6	53	495	3	318	186	482	12	23	268	219
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	2	13	124	1	80	47	121	3	6	67	55
Total Analysis Volume [veh/h]	26	6	53	495	3	318	186	482	12	23	268	219
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	120	0	0	120	0	120	120	0	120	120	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	52	0	0	52	0	19	57	0	11	49	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	R	L	C
C, Cycle Length [s]	90	90	90	90	90	90	90	90	90
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	39	39	39	39	11	36	36	3	27
g / C, Green / Cycle	0.44	0.44	0.44	0.44	0.13	0.40	0.40	0.03	0.30
(v / s)_i Volume / Saturation Flow Rate	0.02	0.04	0.36	0.20	0.10	0.13	0.01	0.01	0.28
s, saturation flow rate [veh/h]	1075	1640	1365	1617	1810	3618	1615	1810	1760
c, Capacity [veh/h]	374	715	617	705	229	1435	641	62	536
d1, Uniform Delay [s]	24.40	14.89	26.03	17.91	38.40	18.96	16.56	42.67	30.21
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.08	0.05	2.48	0.46	6.79	0.14	0.01	3.67	6.28
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

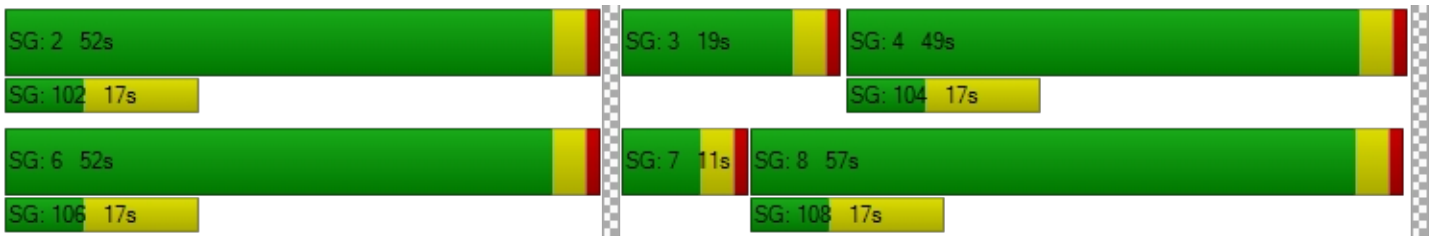
X, volume / capacity	0.07	0.08	0.80	0.46	0.81	0.34	0.02	0.37	0.91
d, Delay for Lane Group [s/veh]	24.48	14.94	28.51	18.37	45.19	19.10	16.57	46.34	36.49
Lane Group LOS	C	B	C	B	D	B	B	D	D
Critical Lane Group	No	No	Yes	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.42	0.70	9.97	4.59	4.37	3.43	0.15	0.56	10.73
50th-Percentile Queue Length [ft/ln]	10.40	17.43	249.31	114.70	109.24	85.71	3.75	13.98	268.15
95th-Percentile Queue Length [veh/ln]	0.75	1.25	15.15	8.10	7.80	6.17	0.27	1.01	16.10
95th-Percentile Queue Length [ft/ln]	18.71	31.37	378.79	202.52	194.94	154.28	6.75	25.17	402.42

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	24.48	14.94	14.94	28.51	18.37	18.37	45.19	19.10	16.57	46.34	36.49	36.49
Movement LOS	C	B	B	C	B	B	D	B	B	D	D	D
d_A, Approach Delay [s/veh]	17.86			24.52			26.19			36.93		
Approach LOS	B			C			C			D		
d_I, Intersection Delay [s/veh]	27.82											
Intersection LOS	C											
Intersection V/C	0.856											

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 21: Bldg 1 Auto Acc (NS) at El Rivino Rd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	10.2
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.004

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	0	319	0	0	204
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	34	4	5	101
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	3	353	4	5	305
Peak Hour Factor	0.9500	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	1	88	1	1	76
Total Analysis Volume [veh/h]	0	3	353	4	5	305
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	10.20	0.00	0.00	7.98	0.00
Movement LOS		B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.01	0.00	0.00	0.01	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.32	0.00	0.00	0.31	0.00
d_A, Approach Delay [s/veh]	10.20		0.00		0.13	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.11					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 21: Bldg 1 Auto Acc (NS) at El Rivino Rd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	18.0
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.035

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	0	913	0	0	466
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	10	115	2	2	44
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	10	1028	2	2	510
Peak Hour Factor	0.9500	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	3	257	1	1	128
Total Analysis Volume [veh/h]	0	10	1028	2	2	510
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.03	0.01	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	18.01	0.00	0.00	10.29	0.00
Movement LOS		C	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.11	0.00	0.00	0.01	0.00
95th-Percentile Queue Length [ft/ln]	0.00	2.70	0.00	0.00	0.22	0.00
d_A, Approach Delay [s/veh]	18.01		0.00		0.04	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.13					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 22: Hall Ave (NS) at El Rivino Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	5.4
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.363

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	74	3	4	10	11	12	3	150	147	11	124	6
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	50	0	1	0	0	0	0	15	22	4	56	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	124	3	5	10	11	12	3	165	169	15	180	6
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	31	1	1	3	3	3	1	41	42	4	45	2
Total Analysis Volume [veh/h]	124	3	5	10	11	12	3	165	169	15	180	6
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	0	7	0	0	7	0	0	7	0
Maximum Green [s]	0	120	0	0	120	0	0	120	0	0	120	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	21	0	0	21	0	0	99	0	0	99	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C
C, Cycle Length [s]	17	17	17	17	17	17	17	17
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	2.00	0.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	3	3	3	6	6	6	6	6
g / C, Green / Cycle	0.20	0.20	0.20	0.33	0.33	0.33	0.33	0.33
(v / s)_i Volume / Saturation Flow Rate	0.09	0.00	0.02	0.00	0.09	0.10	0.01	0.10
s, saturation flow rate [veh/h]	1410	1711	1320	1217	1900	1615	1240	1889
c, Capacity [veh/h]	468	344	538	604	634	539	619	630
d1, Uniform Delay [s]	8.48	5.51	5.61	6.20	4.18	4.26	6.11	4.24
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.30	0.03	0.05	0.00	0.22	0.33	0.02	0.26
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.26	0.02	0.06	0.00	0.26	0.31	0.02	0.30
d, Delay for Lane Group [s/veh]	8.78	5.54	5.65	6.20	4.40	4.59	6.13	4.49
Lane Group LOS	A	A	A	A	A	A	A	A
Critical Lane Group	Yes	No	No	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.27	0.01	0.04	0.00	0.09	0.10	0.02	0.10
50th-Percentile Queue Length [ft/ln]	6.77	0.25	0.94	0.10	2.18	2.52	0.48	2.54
95th-Percentile Queue Length [veh/ln]	0.49	0.02	0.07	0.01	0.16	0.18	0.03	0.18
95th-Percentile Queue Length [ft/ln]	12.19	0.45	1.70	0.18	3.93	4.54	0.87	4.57

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	8.78	5.54	5.54	5.65	5.65	5.65	6.20	4.40	4.59	6.13	4.49	4.49
Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	8.58			5.65			4.51			4.62		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	5.36											
Intersection LOS	A											
Intersection V/C	0.363											

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 22: Hall Ave (NS) at El Rivino Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	9.4
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.619

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	296	2	10	3	4	6	8	386	186	2	200	13
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	28	0	2	0	0	0	0	65	60	2	17	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	324	2	12	3	4	6	8	451	246	4	217	13
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	81	1	3	1	1	2	2	113	62	1	54	3
Total Analysis Volume [veh/h]	324	2	12	3	4	6	8	451	246	4	217	13
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	65
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	0	7	0	0	7	0	0	7	0
Maximum Green [s]	0	120	0	0	120	0	0	120	0	0	120	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	44	0	0	44	0	0	21	0	0	21	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C
C, Cycle Length [s]	32	32	32	32	32	32	32	32
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	2.00	0.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	12	12	12	12	12	12	12	12
g / C, Green / Cycle	0.38	0.38	0.38	0.37	0.37	0.37	0.37	0.37
(v / s)_i Volume / Saturation Flow Rate	0.23	0.01	0.01	0.01	0.24	0.15	0.00	0.12
s, saturation flow rate [veh/h]	1427	1650	1685	1169	1900	1615	954	1881
c, Capacity [veh/h]	763	686	828	433	675	573	266	668
d1, Uniform Delay [s]	8.40	6.01	6.00	11.41	9.51	8.56	15.39	8.27
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.38	0.01	0.01	0.02	1.15	0.51	0.02	0.31
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.42	0.02	0.02	0.02	0.67	0.43	0.02	0.34
d, Delay for Lane Group [s/veh]	8.77	6.02	6.01	11.43	10.67	9.07	15.41	8.57
Lane Group LOS	A	A	A	B	B	A	B	A
Critical Lane Group	Yes	No	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	1.30	0.04	0.04	0.04	1.80	0.86	0.02	0.76
50th-Percentile Queue Length [ft/ln]	32.46	0.99	0.91	0.90	45.01	21.46	0.59	18.96
95th-Percentile Queue Length [veh/ln]	2.34	0.07	0.07	0.07	3.24	1.55	0.04	1.37
95th-Percentile Queue Length [ft/ln]	58.44	1.79	1.64	1.63	81.01	38.63	1.07	34.13

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	8.77	6.02	6.02	6.01	6.01	6.01	11.43	10.67	9.07	15.41	8.57	8.57
Movement LOS	A	A	A	A	A	A	B	B	A	B	A	A
d_A, Approach Delay [s/veh]	8.66			6.01			10.12			8.69		
Approach LOS	A			A			B			A		
d_I, Intersection Delay [s/veh]	9.44											
Intersection LOS	A											
Intersection V/C	0.619											

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

YEAR 2035 WITH PROJECT – ALTERNATIVE 2

Intersection Level Of Service Report
Intersection 18: Bldg 6 Acc (NS) at El Rivino Rd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	10.3
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.017

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	0	317	0	0	192
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	12	46	6	12	18
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	12	363	6	12	210
Peak Hour Factor	0.9500	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	3	91	2	3	53
Total Analysis Volume [veh/h]	0	12	363	6	12	210
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.02	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	0.00	10.34	0.00	0.00	8.03	0.00
Movement LOS		B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.05	0.00	0.00	0.03	0.00
95th-Percentile Queue Length [ft/ln]	0.00	1.33	0.00	0.00	0.76	0.00
d_A, Approach Delay [s/veh]	10.34		0.00		0.43	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.37					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 18: Bldg 6 Acc (NS) at El Rivino Rd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	13.1
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.082

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	0	600	0	0	567
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	40	28	20	16	56
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	40	628	20	16	623
Peak Hour Factor	0.9500	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	10	157	5	4	156
Total Analysis Volume [veh/h]	0	40	628	20	16	623
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.08	0.01	0.00	0.02	0.01
d_M, Delay for Movement [s/veh]	0.00	13.06	0.00	0.00	8.87	0.00
Movement LOS		B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.27	0.00	0.00	0.05	0.00
95th-Percentile Queue Length [ft/ln]	0.00	6.69	0.00	0.00	1.29	0.00
d_A, Approach Delay [s/veh]	13.06		0.00		0.22	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.50					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 19: Project Acc (NS) at El Rivino Rd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	12.9
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.015

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	0	317	0	0	192
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	7	10	41	17	14	23
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	7	10	358	17	14	215
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	3	90	4	4	54
Total Analysis Volume [veh/h]	7	10	358	17	14	215
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.02	0.01	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	12.93	10.29	0.00	0.00	8.05	0.00
Movement LOS	B	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.05	0.04	0.00	0.00	0.04	0.00
95th-Percentile Queue Length [ft/ln]	1.16	1.10	0.00	0.00	0.89	0.00
d_A, Approach Delay [s/veh]	11.37		0.00		0.49	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.49					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 19: Project Acc (NS) at El Rivino Rd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	27.9
Analysis Method:	HCM 2010	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.128

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	0	600	0	0	567
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	23	27	59	9	8	49
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	23	27	659	9	8	616
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	7	165	2	2	154
Total Analysis Volume [veh/h]	23	27	659	9	8	616
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.13	0.06	0.01	0.00	0.01	0.01
d_M, Delay for Movement [s/veh]	27.86	13.18	0.00	0.00	8.90	0.00
Movement LOS	D	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.43	0.18	0.00	0.00	0.03	0.00
95th-Percentile Queue Length [ft/ln]	10.73	4.59	0.00	0.00	0.65	0.00
d_A, Approach Delay [s/veh]	19.93		0.00		0.11	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.80					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 20: Cactus Ave (NS) at El Rivino Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	14.9
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.558

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	204	0	92	211	115	0	0	88	116
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	3	15	0	6	3	2	29	20	47	28	1
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	6	3	15	204	6	95	213	144	20	47	116	117
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	2	1	4	51	2	24	53	36	5	12	29	29
Total Analysis Volume [veh/h]	6	3	15	204	6	95	213	144	20	47	116	117
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	1	0	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	7	0	7	0	0	7	7	0	0	7	0
Maximum Green [s]	0	120	0	120	0	0	120	120	0	0	120	0
Amber [s]	0.0	3.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	21	0	31	0	0	32	68	0	0	36	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	7	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	10	0	0	0	10	0	0	10	0
Rest In Walk		No						No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No					No	No			No	
Maximum Recall		No					No	No			No	
Pedestrian Recall		No					No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	L	C	R	C
C, Cycle Length [s]	37	37	37	37	37	37	37
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	2	2	6	6	17	17	7
g / C, Green / Cycle	0.04	0.04	0.17	0.17	0.46	0.46	0.18
(v / s)_i Volume / Saturation Flow Rate	0.00	0.01	0.11	0.12	0.04	0.01	0.13
s, saturation flow rate [veh/h]	1810	1656	1810	1810	3618	1615	1745
c, Capacity [veh/h]	77	70	305	309	1670	745	317
d1, Uniform Delay [s]	16.86	16.99	14.28	14.28	5.53	5.38	14.17
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.43	1.89	2.53	2.73	0.02	0.01	3.31
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

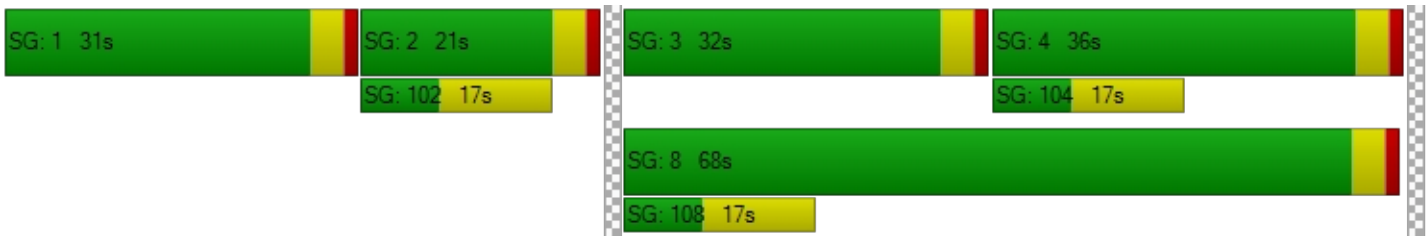
X, volume / capacity	0.08	0.26	0.67	0.69	0.09	0.03	0.73
d, Delay for Lane Group [s/veh]	17.29	18.89	16.81	17.02	5.56	5.40	17.48
Lane Group LOS	B	B	B	B	A	A	B
Critical Lane Group	No	Yes	Yes	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.05	0.16	1.49	1.57	0.20	0.06	1.75
50th-Percentile Queue Length [ft/ln]	1.26	4.03	37.26	39.24	4.97	1.38	43.77
95th-Percentile Queue Length [veh/ln]	0.09	0.29	2.68	2.82	0.36	0.10	3.15
95th-Percentile Queue Length [ft/ln]	2.26	7.26	67.06	70.62	8.95	2.49	78.79

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	17.29	18.89	18.89	16.81	0.00	0.00	17.02	5.56	5.40	0.00	17.48	17.48
Movement LOS	B	B	B	B			B	A	A		B	B
d_A, Approach Delay [s/veh]	18.49			16.81			12.02			17.48		
Approach LOS	B			B			B			B		
d_I, Intersection Delay [s/veh]	14.89											
Intersection LOS	B											
Intersection V/C	0.558											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 20: Cactus Ave (NS) at El Rivino Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	28.4
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.859

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	495	0	318	182	418	0	0	249	217
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	26	6	53	0	3	5	7	67	12	23	26	2
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	26	6	53	495	3	323	189	485	12	23	275	219
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	7	2	13	124	1	81	47	121	3	6	69	55
Total Analysis Volume [veh/h]	26	6	53	495	3	323	189	485	12	23	275	219
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	120	0	0	120	0	120	120	0	120	120	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	55	0	0	55	0	20	54	0	11	45	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	R	L	C
C, Cycle Length [s]	92	92	92	92	92	92	92	92	92
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	40	40	40	40	12	37	37	3	28
g / C, Green / Cycle	0.44	0.44	0.44	0.44	0.13	0.40	0.40	0.03	0.31
(v / s)_i Volume / Saturation Flow Rate	0.02	0.04	0.36	0.20	0.10	0.13	0.01	0.01	0.28
s, saturation flow rate [veh/h]	1071	1640	1365	1617	1810	3618	1615	1810	1762
c, Capacity [veh/h]	368	714	615	704	231	1451	648	61	541
d1, Uniform Delay [s]	25.19	15.30	26.70	18.47	39.27	19.15	16.70	43.69	30.82
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.08	0.05	2.54	0.48	6.96	0.13	0.01	3.74	6.43
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.07	0.08	0.81	0.46	0.82	0.33	0.02	0.37	0.91
d, Delay for Lane Group [s/veh]	25.28	15.34	29.24	18.94	46.23	19.28	16.72	47.44	37.25
Lane Group LOS	C	B	C	B	D	B	B	D	D
Critical Lane Group	No	No	Yes	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.43	0.72	10.27	4.83	4.56	3.52	0.15	0.57	11.18
50th-Percentile Queue Length [ft/ln]	10.74	17.98	256.85	120.68	113.96	88.04	3.82	14.34	279.53
95th-Percentile Queue Length [veh/ln]	0.77	1.29	15.53	8.43	8.06	6.34	0.28	1.03	16.67
95th-Percentile Queue Length [ft/ln]	19.34	32.37	388.27	210.75	201.49	158.46	6.88	25.81	416.63

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	25.28	15.34	15.34	29.24	18.94	18.94	46.23	19.28	16.72	47.44	37.25	37.25
Movement LOS	C	B	B	C	B	B	D	B	B	D	D	D
d_A, Approach Delay [s/veh]	18.38			25.15			26.66			37.70		
Approach LOS	B			C			C			D		
d_I, Intersection Delay [s/veh]	28.45											
Intersection LOS	C											
Intersection V/C	0.859											

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 21: Bldg 1 Auto Acc (NS) at El Rivino Rd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	10.2
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.004

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	0	319	0	0	204
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	3	40	4	5	75
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	3	359	4	5	279
Peak Hour Factor	0.9500	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	1	90	1	1	70
Total Analysis Volume [veh/h]	0	3	359	4	5	279
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	10.24	0.00	0.00	8.00	0.00
Movement LOS		B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.01	0.00	0.00	0.01	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.33	0.00	0.00	0.31	0.00
d_A, Approach Delay [s/veh]	10.24		0.00		0.14	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.11					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 21: Bldg 1 Auto Acc (NS) at El Rivino Rd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	18.1
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.035

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	0	913	0	0	466
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	10	118	2	2	51
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	10	1031	2	2	517
Peak Hour Factor	0.9500	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	3	258	1	1	129
Total Analysis Volume [veh/h]	0	10	1031	2	2	517
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.04	0.01	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	18.06	0.00	0.00	10.31	0.00
Movement LOS		C	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.11	0.00	0.00	0.01	0.00
95th-Percentile Queue Length [ft/ln]	0.00	2.71	0.00	0.00	0.22	0.00
d_A, Approach Delay [s/veh]	18.06		0.00		0.04	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.13					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 22: Hall Ave (NS) at El Rivino Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	5.2
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.356

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	74	3	4	10	11	12	3	150	147	11	124	6
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	39	0	1	0	0	0	0	18	25	4	41	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	113	3	5	10	11	12	3	168	172	15	165	6
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	28	1	1	3	3	3	1	42	43	4	41	2
Total Analysis Volume [veh/h]	113	3	5	10	11	12	3	168	172	15	165	6
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	0	7	0	0	7	0	0	7	0
Maximum Green [s]	0	120	0	0	120	0	0	120	0	0	120	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	21	0	0	21	0	0	99	0	0	99	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C
C, Cycle Length [s]	17	17	17	17	17	17	17	17
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	2.00	0.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	3	3	3	6	6	6	6	6
g / C, Green / Cycle	0.19	0.19	0.19	0.34	0.34	0.34	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.08	0.00	0.03	0.00	0.09	0.11	0.01	0.09
s, saturation flow rate [veh/h]	1410	1711	1186	1233	1900	1615	1237	1888
c, Capacity [veh/h]	468	325	502	625	643	547	628	639
d1, Uniform Delay [s]	8.38	5.59	5.70	5.96	4.07	4.15	5.99	4.08
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.26	0.03	0.05	0.00	0.21	0.33	0.02	0.22
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.24	0.02	0.07	0.00	0.26	0.31	0.02	0.27
d, Delay for Lane Group [s/veh]	8.64	5.62	5.75	5.96	4.28	4.48	6.01	4.30
Lane Group LOS	A	A	A	A	A	A	A	A
Critical Lane Group	Yes	No	No	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.24	0.01	0.04	0.00	0.08	0.09	0.02	0.08
50th-Percentile Queue Length [ft/ln]	5.97	0.25	0.96	0.09	1.91	2.24	0.46	1.96
95th-Percentile Queue Length [veh/ln]	0.43	0.02	0.07	0.01	0.14	0.16	0.03	0.14
95th-Percentile Queue Length [ft/ln]	10.74	0.45	1.73	0.16	3.44	4.03	0.82	3.53

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	8.64	5.62	5.62	5.75	5.75	5.75	5.96	4.28	4.48	6.01	4.30	4.30
Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	8.44			5.75			4.40			4.44		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	5.19											
Intersection LOS	A											
Intersection V/C	0.356											

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 22: Hall Ave (NS) at El Rivino Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	9.4
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.615

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	296	2	10	3	4	6	8	386	186	2	200	13
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	27	0	2	0	0	0	0	59	69	2	25	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	323	2	12	3	4	6	8	445	255	4	225	13
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	81	1	3	1	1	2	2	111	64	1	56	3
Total Analysis Volume [veh/h]	323	2	12	3	4	6	8	445	255	4	225	13
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	65
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	0	7	0	0	7	0	0	7	0
Maximum Green [s]	0	120	0	0	120	0	0	120	0	0	120	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	44	0	0	44	0	0	21	0	0	21	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C
C, Cycle Length [s]	32	32	32	32	32	32	32	32
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	2.00	0.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	12	12	12	12	12	12	12	12
g / C, Green / Cycle	0.38	0.38	0.38	0.37	0.37	0.37	0.37	0.37
(v / s)_i Volume / Saturation Flow Rate	0.23	0.01	0.01	0.01	0.23	0.16	0.00	0.13
s, saturation flow rate [veh/h]	1427	1650	1685	1160	1900	1615	960	1882
c, Capacity [veh/h]	763	686	828	426	673	572	270	667
d1, Uniform Delay [s]	8.38	5.99	5.98	11.53	9.46	8.60	15.24	8.29
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.37	0.01	0.01	0.02	1.12	0.54	0.02	0.32
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.42	0.02	0.02	0.02	0.66	0.45	0.01	0.36
d, Delay for Lane Group [s/veh]	8.75	6.00	5.99	11.55	10.58	9.15	15.26	8.62
Lane Group LOS	A	A	A	B	B	A	B	A
Critical Lane Group	Yes	No	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	1.29	0.04	0.04	0.04	1.76	0.89	0.02	0.79
50th-Percentile Queue Length [ft/ln]	32.23	0.99	0.91	0.91	43.95	22.34	0.59	19.65
95th-Percentile Queue Length [veh/ln]	2.32	0.07	0.07	0.07	3.16	1.61	0.04	1.42
95th-Percentile Queue Length [ft/ln]	58.01	1.78	1.64	1.64	79.11	40.22	1.06	35.38

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	8.75	6.00	6.00	5.99	5.99	5.99	11.55	10.58	9.15	15.26	8.62	8.62
Movement LOS	A	A	A	A	A	A	B	B	A	B	A	A
d_A, Approach Delay [s/veh]	8.64			5.99			10.07			8.73		
Approach LOS	A			A			B			A		
d_I, Intersection Delay [s/veh]	9.41											
Intersection LOS	A											
Intersection V/C	0.615											

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

YEAR 2035 WITH PROJECT – ALTERNATIVE 1A

Intersection Level Of Service Report
Intersection 18: Bldg 6 Acc (NS) at El Rivino Rd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	11.8
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.009

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	0	317	0	0	192
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	5	237	12	35	75
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	5	554	12	35	267
Peak Hour Factor	0.9500	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	1	139	3	9	67
Total Analysis Volume [veh/h]	0	5	554	12	35	267
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.01	0.00	0.03	0.00
d_M, Delay for Movement [s/veh]	0.00	11.78	0.00	0.00	8.67	0.00
Movement LOS		B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.03	0.00	0.00	0.11	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.71	0.00	0.00	2.67	0.00
d_A, Approach Delay [s/veh]	11.78		0.00		1.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.42					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 18: Bldg 6 Acc (NS) at El Rivino Rd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	14.1
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.079

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	0	600	0	0	567
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	34	126	1	4	272
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	34	726	1	4	839
Peak Hour Factor	0.9500	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	9	182	0	1	210
Total Analysis Volume [veh/h]	0	34	726	1	4	839
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.08	0.01	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	14.14	0.00	0.00	9.08	0.00
Movement LOS		B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.26	0.00	0.00	0.01	0.00
95th-Percentile Queue Length [ft/ln]	0.00	6.44	0.00	0.00	0.34	0.00
d_A, Approach Delay [s/veh]	14.14		0.00		0.04	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.32					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 19: Project Acc (NS) at El Rivino Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	5.2
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.370

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	0	317	0	0	192
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	37	10	114	128	14	73
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	37	10	431	128	14	265
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	3	108	32	4	66
Total Analysis Volume [veh/h]	37	10	431	128	14	265
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	65
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal group	5	0	8	0	7	4
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	7	0	7	0	7	7
Maximum Green [s]	120	0	120	0	120	120
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Split [s]	21	0	33	0	11	44
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	7	0	7	0	0	7
Pedestrian Clearance [s]	10	0	10	0	0	10
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Cycle Length [s]	21	21	21	21	21	21
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	2	2	7	7	1	11
g / C, Green / Cycle	0.08	0.08	0.32	0.32	0.03	0.54
(v / s)_i Volume / Saturation Flow Rate	0.02	0.01	0.12	0.08	0.01	0.14
s, saturation flow rate [veh/h]	1810	1615	3618	1615	1810	1900
c, Capacity [veh/h]	155	138	1161	519	53	1023
d1, Uniform Delay [s]	9.08	8.95	5.56	5.32	10.10	2.63
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.79	0.22	0.20	0.25	2.63	0.13
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

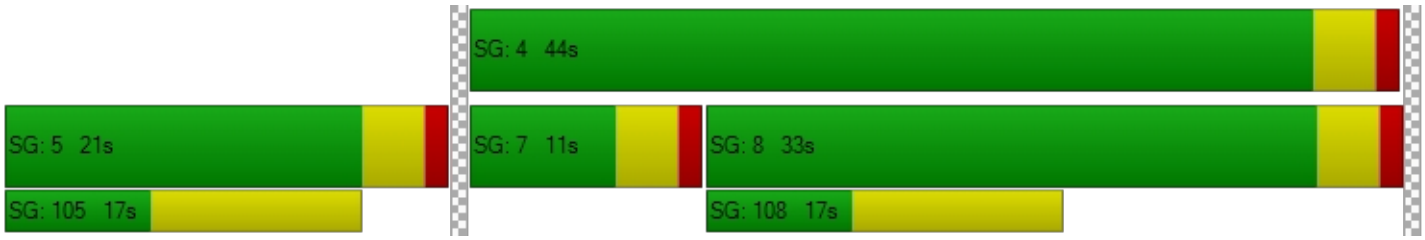
X, volume / capacity	0.24	0.07	0.37	0.25	0.27	0.26
d, Delay for Lane Group [s/veh]	9.87	9.17	5.76	5.57	12.73	2.77
Lane Group LOS	A	A	A	A	B	A
Critical Lane Group	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.13	0.03	0.30	0.19	0.08	0.04
50th-Percentile Queue Length [ft/ln]	3.21	0.84	7.53	4.71	1.96	0.94
95th-Percentile Queue Length [veh/ln]	0.23	0.06	0.54	0.34	0.14	0.07
95th-Percentile Queue Length [ft/ln]	5.77	1.51	13.55	8.48	3.53	1.70

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	9.87	9.17	5.76	5.57	12.73	2.77
Movement LOS	A	A	A	A	B	A
d_A, Approach Delay [s/veh]	9.72		5.72		3.27	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	5.16					
Intersection LOS	A					
Intersection V/C	0.370					

Sequence

Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 19: Project Acc (NS) at El Rivino Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	7.4
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.850

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	0	600	0	0	567
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	140	27	94	65	7	135
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	140	27	694	65	7	702
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	35	7	174	16	2	176
Total Analysis Volume [veh/h]	140	27	694	65	7	702
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal group	5	0	8	0	7	4
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	7	0	7	0	7	7
Maximum Green [s]	120	0	120	0	120	120
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Split [s]	33	0	76	0	11	87
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	7	0	7	0	0	7
Pedestrian Clearance [s]	10	0	10	0	0	10
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Cycle Length [s]	25	25	25	25	25	25
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	5	5	8	8	0	12
g / C, Green / Cycle	0.19	0.19	0.32	0.32	0.01	0.49
(v / s)_i Volume / Saturation Flow Rate	0.08	0.02	0.19	0.04	0.00	0.37
s, saturation flow rate [veh/h]	1810	1615	3618	1615	1810	1900
c, Capacity [veh/h]	351	313	1156	516	25	933
d1, Uniform Delay [s]	8.94	8.39	7.28	6.13	12.39	5.22
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.73	0.12	0.50	0.11	5.74	1.25
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

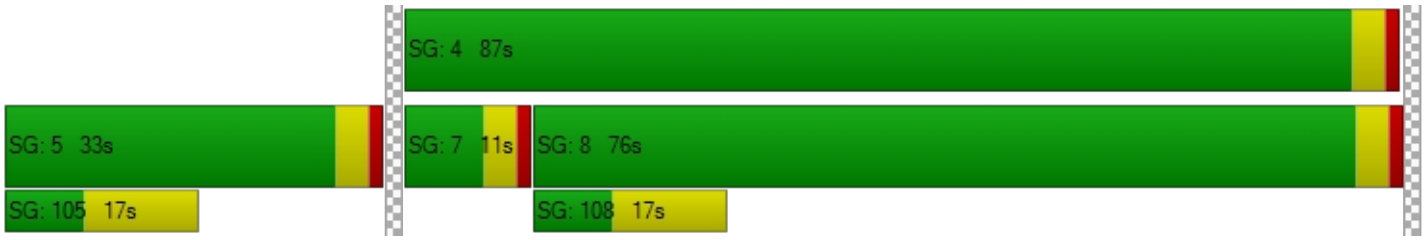
X, volume / capacity	0.40	0.09	0.60	0.13	0.28	0.75
d, Delay for Lane Group [s/veh]	9.67	8.51	7.78	6.24	18.14	6.47
Lane Group LOS	A	A	A	A	B	A
Critical Lane Group	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.49	0.09	0.90	0.14	0.07	1.10
50th-Percentile Queue Length [ft/ln]	12.35	2.17	22.45	3.61	1.72	27.48
95th-Percentile Queue Length [veh/ln]	0.89	0.16	1.62	0.26	0.12	1.98
95th-Percentile Queue Length [ft/ln]	22.22	3.90	40.41	6.50	3.10	49.46

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	9.67	8.51	7.78	6.24	18.14	6.47
Movement LOS	A	A	A	A	B	A
d_A, Approach Delay [s/veh]	9.48		7.65		6.59	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	7.38					
Intersection LOS	A					
Intersection V/C	0.850					

Sequence

Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 20: Cactus Ave (NS) at El Rivino Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	15.6
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.568

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	204	0	92	211	115	0	0	88	116
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	30	3	18	0	6	0	1	42	81	49	57	1
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	30	3	18	204	6	92	212	157	81	49	145	117
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	1	5	51	2	23	53	39	20	12	36	29
Total Analysis Volume [veh/h]	30	3	18	204	6	92	212	157	81	49	145	117
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	1	0	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	7	0	7	0	0	7	7	0	0	7	0
Maximum Green [s]	0	120	0	120	0	0	120	120	0	0	120	0
Amber [s]	0.0	3.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	21	0	30	0	0	31	69	0	0	38	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	7	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	10	0	0	0	10	0	0	10	0
Rest In Walk		No						No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No					No	No			No	
Maximum Recall		No					No	No			No	
Pedestrian Recall		No					No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	L	C	R	C
C, Cycle Length [s]	39	39	39	39	39	39	39
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	3	3	6	6	18	18	8
g / C, Green / Cycle	0.08	0.08	0.16	0.16	0.46	0.46	0.20
(v / s)_i Volume / Saturation Flow Rate	0.02	0.01	0.11	0.12	0.04	0.05	0.15
s, saturation flow rate [veh/h]	1810	1650	1810	1810	3618	1615	1761
c, Capacity [veh/h]	139	127	288	291	1664	743	348
d1, Uniform Delay [s]	17.11	17.04	15.73	15.74	6.02	6.06	14.93
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.77	0.61	3.20	3.47	0.02	0.06	3.29
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

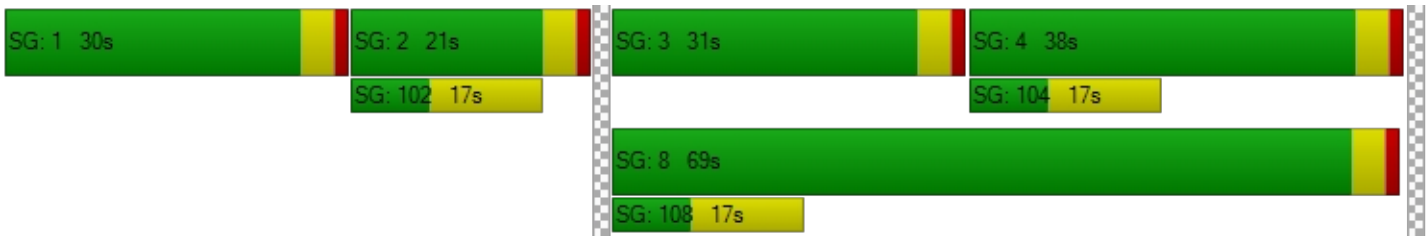
X, volume / capacity	0.22	0.17	0.71	0.73	0.09	0.11	0.75
d, Delay for Lane Group [s/veh]	17.88	17.65	18.93	19.21	6.04	6.12	18.22
Lane Group LOS	B	B	B	B	A	A	B
Critical Lane Group	Yes	No	Yes	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.25	0.17	1.71	1.79	0.25	0.27	2.13
50th-Percentile Queue Length [ft/ln]	6.25	4.37	42.70	44.82	6.35	6.79	53.37
95th-Percentile Queue Length [veh/ln]	0.45	0.31	3.07	3.23	0.46	0.49	3.84
95th-Percentile Queue Length [ft/ln]	11.25	7.87	76.86	80.67	11.44	12.22	96.07

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	17.88	17.65	17.65	18.93	0.00	0.00	19.21	6.04	6.12	0.00	18.22	18.22
Movement LOS	B	B	B	B			B	A	A		B	B
d_A, Approach Delay [s/veh]	17.79			18.93			12.26			18.22		
Approach LOS	B			B			B			B		
d_I, Intersection Delay [s/veh]	15.57											
Intersection LOS	B											
Intersection V/C	0.568											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 20: Cactus Ave (NS) at El Rivino Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	29.3
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.859

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	495	0	318	182	418	0	0	249	217
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	114	6	68	0	3	0	4	74	44	24	28	2
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	114	6	68	495	3	318	186	492	44	24	277	219
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	29	2	17	124	1	80	47	123	11	6	69	55
Total Analysis Volume [veh/h]	114	6	68	495	3	318	186	492	44	24	277	219
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	120	0	0	120	0	120	120	0	120	120	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	54	0	0	54	0	19	55	0	11	47	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	R	L	C
C, Cycle Length [s]	96	96	96	96	96	96	96	96	96
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	43	43	43	43	12	38	38	3	30
g / C, Green / Cycle	0.44	0.44	0.44	0.44	0.13	0.40	0.40	0.03	0.31
(v / s)_i Volume / Saturation Flow Rate	0.11	0.05	0.37	0.20	0.10	0.14	0.03	0.01	0.28
s, saturation flow rate [veh/h]	1075	1635	1347	1617	1810	3618	1615	1810	1763
c, Capacity [veh/h]	381	725	609	717	227	1440	643	63	542
d1, Uniform Delay [s]	27.65	15.68	27.76	18.68	41.19	20.26	17.99	45.62	32.24
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.44	0.06	2.68	0.44	7.22	0.14	0.04	3.81	6.62
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.30	0.10	0.81	0.45	0.82	0.34	0.07	0.38	0.92
d, Delay for Lane Group [s/veh]	28.08	15.75	30.44	19.12	48.41	20.40	18.04	49.43	38.86
Lane Group LOS	C	B	C	B	D	C	B	D	D
Critical Lane Group	No	No	Yes	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.12	0.94	10.83	4.90	4.71	3.80	0.61	0.62	11.81
50th-Percentile Queue Length [ft/ln]	53.05	23.61	270.84	122.59	117.84	94.97	15.17	15.62	295.28
95th-Percentile Queue Length [veh/ln]	3.82	1.70	16.23	8.54	8.27	6.84	1.09	1.12	17.45
95th-Percentile Queue Length [ft/ln]	95.49	42.50	405.79	213.38	206.85	170.94	27.31	28.12	436.19

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	28.08	15.75	15.75	30.44	19.12	19.12	48.41	20.40	18.04	49.43	38.86	38.86
Movement LOS	C	B	B	C	B	B	D	C	B	D	D	D
d_A, Approach Delay [s/veh]	23.23			25.99			27.47			39.35		
Approach LOS	C			C			C			D		
d_I, Intersection Delay [s/veh]	29.33											
Intersection LOS	C											
Intersection V/C	0.859											

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 21: Bldg 1 Auto Acc (NS) at El Rivino Rd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	10.2
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	0	319	0	0	204
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	41	19	4	106
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	2	360	19	4	310
Peak Hour Factor	0.9500	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	1	90	5	1	78
Total Analysis Volume [veh/h]	0	2	360	19	4	310
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	10.24	0.00	0.00	8.03	0.00
Movement LOS		B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.01	0.00	0.00	0.01	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.22	0.00	0.00	0.25	0.00
d_A, Approach Delay [s/veh]	10.24		0.00		0.10	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.08					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 21: Bldg 1 Auto Acc (NS) at El Rivino Rd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	17.9
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	0	913	0	0	466
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	133	9	2	53
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	1046	9	2	519
Peak Hour Factor	0.9500	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	262	2	1	130
Total Analysis Volume [veh/h]	0	0	1046	9	2	519
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	17.86	0.00	0.00	10.41	0.00
Movement LOS		C	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.01	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.23	0.00
d_A, Approach Delay [s/veh]	17.86		0.00		0.04	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.01					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 22: Hall Ave (NS) at El Rivino Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	5.4
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.372

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	74	3	4	10	11	12	3	150	147	11	124	6
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	53	0	1	0	0	0	0	15	28	4	57	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	127	3	5	10	11	12	3	165	175	15	181	6
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	32	1	1	3	3	3	1	41	44	4	45	2
Total Analysis Volume [veh/h]	127	3	5	10	11	12	3	165	175	15	181	6
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	0	7	0	0	7	0	0	7	0
Maximum Green [s]	0	120	0	0	120	0	0	120	0	0	120	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	21	0	0	21	0	0	99	0	0	99	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C
C, Cycle Length [s]	17	17	17	17	17	17	17	17
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	2.00	0.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	3	3	3	6	6	6	6	6
g / C, Green / Cycle	0.20	0.20	0.20	0.33	0.33	0.33	0.33	0.33
(v / s)_i Volume / Saturation Flow Rate	0.09	0.00	0.02	0.00	0.09	0.11	0.01	0.10
s, saturation flow rate [veh/h]	1410	1711	1356	1215	1900	1615	1240	1889
c, Capacity [veh/h]	467	349	547	602	635	540	618	632
d1, Uniform Delay [s]	8.53	5.51	5.61	6.23	4.20	4.30	6.13	4.26
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.31	0.03	0.05	0.00	0.21	0.35	0.02	0.26
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.27	0.02	0.06	0.00	0.26	0.32	0.02	0.30
d, Delay for Lane Group [s/veh]	8.84	5.54	5.65	6.23	4.42	4.65	6.15	4.52
Lane Group LOS	A	A	A	A	A	A	A	A
Critical Lane Group	Yes	No	No	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.28	0.01	0.04	0.00	0.09	0.11	0.02	0.11
50th-Percentile Queue Length [ft/ln]	7.05	0.25	0.95	0.10	2.27	2.73	0.49	2.66
95th-Percentile Queue Length [veh/ln]	0.51	0.02	0.07	0.01	0.16	0.20	0.04	0.19
95th-Percentile Queue Length [ft/ln]	12.69	0.45	1.72	0.18	4.09	4.92	0.88	4.78

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	8.84	5.54	5.54	5.65	5.65	5.65	6.23	4.42	4.65	6.15	4.52	4.52
Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	8.65			5.65			4.55			4.64		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	5.40											
Intersection LOS	A											
Intersection V/C	0.372											

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 22: Hall Ave (NS) at El Rivino Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	9.6
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.624

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	296	2	10	3	4	6	8	386	186	2	200	13
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	37	0	2	0	0	0	0	65	68	2	18	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	333	2	12	3	4	6	8	451	254	4	218	13
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	83	1	3	1	1	2	2	113	64	1	55	3
Total Analysis Volume [veh/h]	333	2	12	3	4	6	8	451	254	4	218	13
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	65
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	0	7	0	0	7	0	0	7	0
Maximum Green [s]	0	120	0	0	120	0	0	120	0	0	120	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	44	0	0	44	0	0	21	0	0	21	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C
C, Cycle Length [s]	32	32	32	32	32	32	32	32
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	2.00	0.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	12	12	12	12	12	12	12	12
g / C, Green / Cycle	0.38	0.38	0.38	0.37	0.37	0.37	0.37	0.37
(v / s)_i Volume / Saturation Flow Rate	0.23	0.01	0.01	0.01	0.24	0.16	0.00	0.12
s, saturation flow rate [veh/h]	1427	1650	1685	1168	1900	1615	954	1881
c, Capacity [veh/h]	767	691	831	431	675	574	264	668
d1, Uniform Delay [s]	8.46	6.03	6.03	11.57	9.66	8.74	15.58	8.40
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.39	0.01	0.01	0.02	1.15	0.54	0.02	0.31
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.43	0.02	0.02	0.02	0.67	0.44	0.02	0.35
d, Delay for Lane Group [s/veh]	8.85	6.04	6.03	11.58	10.81	9.28	15.60	8.70
Lane Group LOS	A	A	A	B	B	A	B	A
Critical Lane Group	Yes	No	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	1.36	0.04	0.04	0.04	1.85	0.92	0.02	0.79
50th-Percentile Queue Length [ft/ln]	34.09	1.01	0.93	0.93	46.32	23.00	0.61	19.65
95th-Percentile Queue Length [veh/ln]	2.45	0.07	0.07	0.07	3.34	1.66	0.04	1.41
95th-Percentile Queue Length [ft/ln]	61.36	1.82	1.67	1.67	83.38	41.40	1.09	35.37

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	8.85	6.04	6.04	6.03	6.03	6.03	11.58	10.81	9.28	15.60	8.70	8.70
Movement LOS	A	A	A	A	A	A	B	B	A	B	A	A
d_A, Approach Delay [s/veh]	8.74			6.03			10.27			8.82		
Approach LOS	A			A			B			A		
d_I, Intersection Delay [s/veh]	9.56											
Intersection LOS	A											
Intersection V/C	0.624											

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

YEAR 2035 WITH PROJECT – ALTERNATIVE 2A

Intersection Level Of Service Report
Intersection 18: Bldg 6 Acc (NS) at El Rivino Rd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	11.9
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.022

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	0	317	0	0	192
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	12	237	6	12	75
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	12	554	6	12	267
Peak Hour Factor	0.9500	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	3	139	2	3	67
Total Analysis Volume [veh/h]	0	12	554	6	12	267
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.02	0.01	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	0.00	11.87	0.00	0.00	8.57	0.00
Movement LOS		B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.07	0.00	0.00	0.04	0.00
95th-Percentile Queue Length [ft/ln]	0.00	1.72	0.00	0.00	0.89	0.00
d_A, Approach Delay [s/veh]	11.87		0.00		0.37	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.29					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 18: Bldg 6 Acc (NS) at El Rivino Rd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	14.3
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.093

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	0	600	0	0	567
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	40	126	20	16	272
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	40	726	20	16	839
Peak Hour Factor	0.9500	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	10	182	5	4	210
Total Analysis Volume [veh/h]	0	40	726	20	16	839
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.09	0.01	0.00	0.02	0.01
d_M, Delay for Movement [s/veh]	0.00	14.28	0.00	0.00	9.21	0.00
Movement LOS		B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.31	0.00	0.00	0.06	0.00
95th-Percentile Queue Length [ft/ln]	0.00	7.69	0.00	0.00	1.40	0.00
d_A, Approach Delay [s/veh]	14.28		0.00		0.17	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.44					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 19: Project Acc (NS) at El Rivino Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	5.2
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.345

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	0	317	0	0	192
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	37	10	121	128	14	50
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	37	10	438	128	14	242
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	9	3	110	32	4	61
Total Analysis Volume [veh/h]	37	10	438	128	14	242
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	65
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal group	5	0	8	0	7	4
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	7	0	7	0	7	7
Maximum Green [s]	120	0	120	0	120	120
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Split [s]	21	0	33	0	11	44
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	7	0	7	0	0	7
Pedestrian Clearance [s]	10	0	10	0	0	10
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Cycle Length [s]	21	21	21	21	21	21
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	2	2	7	7	1	11
g / C, Green / Cycle	0.08	0.08	0.32	0.32	0.03	0.54
(v / s)_i Volume / Saturation Flow Rate	0.02	0.01	0.12	0.08	0.01	0.13
s, saturation flow rate [veh/h]	1810	1615	3618	1615	1810	1900
c, Capacity [veh/h]	155	138	1163	519	53	1023
d1, Uniform Delay [s]	9.08	8.95	5.57	5.32	10.11	2.60
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.79	0.22	0.20	0.25	2.63	0.12
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

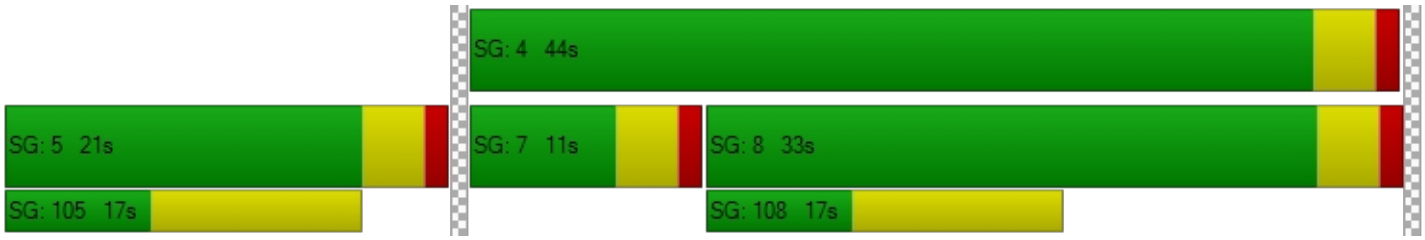
X, volume / capacity	0.24	0.07	0.38	0.25	0.26	0.24
d, Delay for Lane Group [s/veh]	9.87	9.17	5.78	5.57	12.74	2.71
Lane Group LOS	A	A	A	A	B	A
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.13	0.03	0.31	0.19	0.08	0.03
50th-Percentile Queue Length [ft/ln]	3.21	0.84	7.67	4.71	1.96	0.84
95th-Percentile Queue Length [veh/ln]	0.23	0.06	0.55	0.34	0.14	0.06
95th-Percentile Queue Length [ft/ln]	5.78	1.51	13.81	8.48	3.53	1.51

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	9.87	9.17	5.78	5.57	12.74	2.71
Movement LOS	A	A	A	A	B	A
d_A, Approach Delay [s/veh]	9.72		5.73		3.26	
Approach LOS	A		A		A	
d_I, Intersection Delay [s/veh]	5.22					
Intersection LOS	A					
Intersection V/C	0.345					

Sequence

Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 19: Project Acc (NS) at El Rivino Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	9.1
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.504

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	0	600	0	0	567
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Factor	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	140	27	100	65	7	147
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	140	27	700	65	7	714
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	35	7	175	16	2	179
Total Analysis Volume [veh/h]	140	27	700	65	7	714
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal group	5	0	8	0	7	4
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-
Minimum Green [s]	7	0	7	0	7	7
Maximum Green [s]	120	0	120	0	120	120
Amber [s]	3.0	0.0	3.0	0.0	3.0	3.0
All red [s]	1.0	0.0	1.0	0.0	1.0	1.0
Split [s]	88	0	21	0	11	32
Vehicle Extension [s]	3.0	0.0	3.0	0.0	3.0	3.0
Walk [s]	7	0	7	0	0	7
Pedestrian Clearance [s]	10	0	10	0	0	10
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
Minimum Recall	No		No		No	No
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Cycle Length [s]	120	120	120	120	120	120
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	11	11	95	95	1	101
g / C, Green / Cycle	0.10	0.10	0.79	0.79	0.01	0.84
(v / s)_i Volume / Saturation Flow Rate	0.08	0.02	0.19	0.04	0.00	0.38
s, saturation flow rate [veh/h]	1810	1615	3618	1615	1810	1900
c, Capacity [veh/h]	173	154	2866	1279	22	1592
d1, Uniform Delay [s]	53.21	49.92	3.22	2.70	58.78	2.53
k, delay calibration	0.11	0.11	0.50	0.50	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.67	0.53	0.20	0.08	7.84	0.20
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.81	0.17	0.24	0.05	0.31	0.45
d, Delay for Lane Group [s/veh]	61.87	50.46	3.42	2.78	66.61	2.73
Lane Group LOS	E	D	A	A	E	A
Critical Lane Group	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	4.55	0.77	1.83	0.30	0.26	2.97
50th-Percentile Queue Length [ft/ln]	113.86	19.29	45.85	7.51	6.49	74.31
95th-Percentile Queue Length [veh/ln]	8.05	1.39	3.30	0.54	0.47	5.35
95th-Percentile Queue Length [ft/ln]	201.36	34.72	82.54	13.52	11.68	133.76

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	61.87	50.46	3.42	2.78	66.61	2.73
Movement LOS	E	D	A	A	E	A
d_A, Approach Delay [s/veh]	60.03		3.36		3.35	
Approach LOS	E		A		A	
d_I, Intersection Delay [s/veh]	9.08					
Intersection LOS	A					
Intersection V/C	0.504					

Sequence

Ring 1	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 20: Cactus Ave (NS) at El Rivino Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	15.2
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.555

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	204	0	92	211	115	0	0	88	116
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	30	3	18	0	6	3	2	48	81	49	31	1
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	30	3	18	204	6	95	213	163	81	49	119	117
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	8	1	5	51	2	24	53	41	20	12	30	29
Total Analysis Volume [veh/h]	30	3	18	204	6	95	213	163	81	49	119	117
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	1	0	0	3	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-
Minimum Green [s]	0	7	0	7	0	0	7	7	0	0	7	0
Maximum Green [s]	0	120	0	120	0	0	120	120	0	0	120	0
Amber [s]	0.0	3.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	21	0	31	0	0	32	68	0	0	36	0
Vehicle Extension [s]	0.0	3.0	0.0	3.0	0.0	0.0	3.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	7	0	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	10	0	0	0	10	0	0	10	0
Rest In Walk		No						No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No					No	No			No	
Maximum Recall		No					No	No			No	
Pedestrian Recall		No					No	No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	L	C	R	C
C, Cycle Length [s]	39	39	39	39	39	39	39
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	3	3	6	6	17	17	7
g / C, Green / Cycle	0.08	0.08	0.16	0.16	0.45	0.45	0.18
(v / s)_i Volume / Saturation Flow Rate	0.02	0.01	0.11	0.12	0.05	0.05	0.14
s, saturation flow rate [veh/h]	1810	1650	1810	1810	3618	1615	1747
c, Capacity [veh/h]	140	128	293	297	1627	726	318
d1, Uniform Delay [s]	16.71	16.65	15.28	15.29	6.13	6.16	14.94
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.75	0.60	2.96	3.24	0.03	0.07	3.42
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

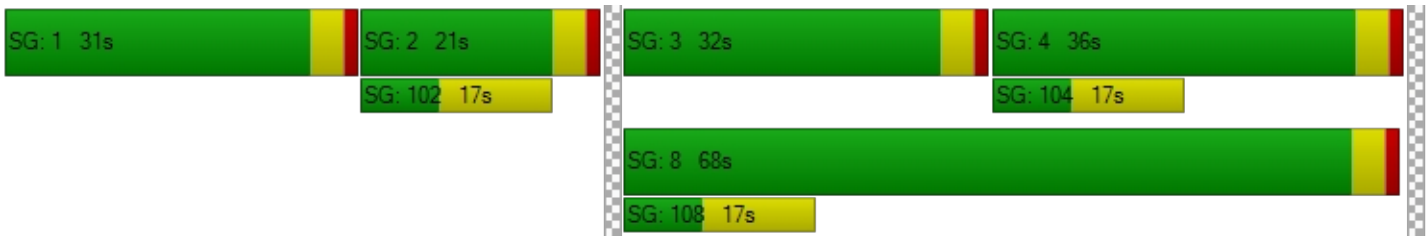
X, volume / capacity	0.21	0.16	0.70	0.72	0.10	0.11	0.74
d, Delay for Lane Group [s/veh]	17.46	17.24	18.25	18.53	6.15	6.23	18.37
Lane Group LOS	B	B	B	B	A	A	B
Critical Lane Group	Yes	No	Yes	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.24	0.17	1.64	1.73	0.26	0.27	1.90
50th-Percentile Queue Length [ft/ln]	6.06	4.24	40.98	43.23	6.57	6.75	47.62
95th-Percentile Queue Length [veh/ln]	0.44	0.31	2.95	3.11	0.47	0.49	3.43
95th-Percentile Queue Length [ft/ln]	10.91	7.64	73.76	77.82	11.82	12.15	85.72

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	17.46	17.24	17.24	18.25	0.00	0.00	18.53	6.15	6.23	0.00	18.37	18.37
Movement LOS	B	B	B	B			B	A	A		B	B
d_A, Approach Delay [s/veh]	17.37			18.25			11.93			18.37		
Approach LOS	B			B			B			B		
d_I, Intersection Delay [s/veh]	15.19											
Intersection LOS	B											
Intersection V/C	0.555											

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 20: Cactus Ave (NS) at El Rivino Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	30.0
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.862

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	0	0	0	495	0	318	182	418	0	0	249	217
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	114	6	68	0	3	5	7	77	44	24	35	2
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	114	6	68	495	3	323	189	495	44	24	284	219
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	29	2	17	124	1	81	47	124	11	6	71	55
Total Analysis Volume [veh/h]	114	6	68	495	3	323	189	495	44	24	284	219
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal group	0	2	0	0	6	0	3	8	0	7	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	0	7	0	0	7	0	7	7	0	7	7	0
Maximum Green [s]	0	120	0	0	120	0	120	120	0	120	120	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.0	0.0	1.0	1.0	0.0
Split [s]	0	53	0	0	53	0	19	56	0	11	48	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
Minimum Recall		No			No		No	No		No	No	
Maximum Recall		No			No		No	No		No	No	
Pedestrian Recall		No			No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	L	C	R	L	C
C, Cycle Length [s]	99	99	99	99	99	99	99	99	99
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	44	44	44	44	12	40	40	3	31
g / C, Green / Cycle	0.44	0.44	0.44	0.44	0.13	0.40	0.40	0.03	0.31
(v / s)_i Volume / Saturation Flow Rate	0.11	0.05	0.37	0.20	0.10	0.14	0.03	0.01	0.29
s, saturation flow rate [veh/h]	1071	1635	1347	1617	1810	3618	1615	1810	1764
c, Capacity [veh/h]	374	723	607	715	229	1456	650	62	548
d1, Uniform Delay [s]	28.63	16.14	28.52	19.30	42.19	20.48	18.17	46.79	32.94
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.46	0.06	2.75	0.46	7.39	0.14	0.04	3.89	6.76
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.31	0.10	0.82	0.46	0.83	0.34	0.07	0.39	0.92
d, Delay for Lane Group [s/veh]	29.09	16.20	31.28	19.76	49.58	20.62	18.22	50.68	39.70
Lane Group LOS	C	B	C	B	D	C	B	D	D
Critical Lane Group	No	No	Yes	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.20	0.98	11.18	5.17	4.92	3.91	0.62	0.64	12.33
50th-Percentile Queue Length [ft/ln]	54.96	24.40	279.49	129.18	123.09	97.68	15.50	16.05	308.14
95th-Percentile Queue Length [veh/ln]	3.96	1.76	16.66	8.90	8.56	7.03	1.12	1.16	18.08
95th-Percentile Queue Length [ft/ln]	98.93	43.92	416.58	222.38	214.06	175.82	27.89	28.89	452.08

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	29.09	16.20	16.20	31.28	19.76	19.76	49.58	20.62	18.22	50.68	39.70	39.70
Movement LOS	C	B	B	C	B	B	D	C	B	D	D	D
d_A, Approach Delay [s/veh]	24.01			26.70			27.99			40.20		
Approach LOS	C			C			C			D		
d_I, Intersection Delay [s/veh]	30.04											
Intersection LOS	C											
Intersection V/C	0.862											

Sequence

Ring 1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 21: Bldg 1 Auto Acc (NS) at El Rivino Rd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	10.3
Analysis Method:	HCM 2010	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.003

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	0	319	0	0	204
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	2	47	19	4	80
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	2	366	19	4	284
Peak Hour Factor	0.9500	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	1	92	5	1	71
Total Analysis Volume [veh/h]	0	2	366	19	4	284
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	10.28	0.00	0.00	8.05	0.00
Movement LOS		B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.01	0.00	0.00	0.01	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.22	0.00	0.00	0.25	0.00
d_A, Approach Delay [s/veh]	10.28		0.00		0.11	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.08					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 21: Bldg 1 Auto Acc (NS) at El Rivino Rd (EW)

Control Type:	Two-way stop	Delay (sec / veh):	17.9
Analysis Method:	HCM 2010	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.000

Intersection Setup

Name						
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name						
Base Volume Input [veh/h]	0	0	913	0	0	466
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	136	9	2	60
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	1049	9	2	526
Peak Hour Factor	0.9500	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	262	2	1	132
Total Analysis Volume [veh/h]	0	0	1049	9	2	526
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.01	0.00	0.00	0.01
d_M, Delay for Movement [s/veh]	0.00	17.91	0.00	0.00	10.42	0.00
Movement LOS		C	A	A	B	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.01	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.23	0.00
d_A, Approach Delay [s/veh]	17.91		0.00		0.04	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.01					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 22: Hall Ave (NS) at El Rivino Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	5.2
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.365

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	74	3	4	10	11	12	3	150	147	11	124	6
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	42	0	1	0	0	0	0	18	31	4	42	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	116	3	5	10	11	12	3	168	178	15	166	6
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	29	1	1	3	3	3	1	42	45	4	42	2
Total Analysis Volume [veh/h]	116	3	5	10	11	12	3	168	178	15	166	6
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	120
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	0	7	0	0	7	0	0	7	0
Maximum Green [s]	0	120	0	0	120	0	0	120	0	0	120	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	21	0	0	21	0	0	99	0	0	99	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C
C, Cycle Length [s]	17	17	17	17	17	17	17	17
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	2.00	0.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	3	3	3	6	6	6	6	6
g / C, Green / Cycle	0.19	0.19	0.19	0.34	0.34	0.34	0.34	0.34
(v / s)_i Volume / Saturation Flow Rate	0.08	0.00	0.03	0.00	0.09	0.11	0.01	0.09
s, saturation flow rate [veh/h]	1410	1711	1230	1232	1900	1615	1237	1888
c, Capacity [veh/h]	466	330	512	623	644	548	627	640
d1, Uniform Delay [s]	8.44	5.59	5.70	5.99	4.09	4.19	6.02	4.11
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.28	0.03	0.05	0.00	0.21	0.34	0.02	0.22
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.25	0.02	0.06	0.00	0.26	0.32	0.02	0.27
d, Delay for Lane Group [s/veh]	8.72	5.62	5.75	5.99	4.31	4.54	6.03	4.33
Lane Group LOS	A	A	A	A	A	A	A	A
Critical Lane Group	Yes	No	No	No	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.25	0.01	0.04	0.00	0.08	0.10	0.02	0.08
50th-Percentile Queue Length [ft/ln]	6.24	0.25	0.97	0.09	2.00	2.44	0.46	2.07
95th-Percentile Queue Length [veh/ln]	0.45	0.02	0.07	0.01	0.14	0.18	0.03	0.15
95th-Percentile Queue Length [ft/ln]	11.24	0.46	1.74	0.17	3.61	4.39	0.84	3.73

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	8.72	5.62	5.62	5.75	5.75	5.75	5.99	4.31	4.54	6.03	4.33	4.33
Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A
d_A, Approach Delay [s/veh]	8.52			5.75			4.44			4.47		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	5.24											
Intersection LOS	A											
Intersection V/C	0.365											

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 22: Hall Ave (NS) at El Rivino Rd (EW)

Control Type:	Signalized	Delay (sec / veh):	9.5
Analysis Method:	HCM 2010	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.620

Intersection Setup

Name												
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name												
Base Volume Input [veh/h]	296	2	10	3	4	6	8	386	186	2	200	13
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Growth Rate	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	36	0	2	0	0	0	0	59	77	2	26	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right-Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	332	2	12	3	4	6	8	445	263	4	226	13
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	83	1	3	1	1	2	2	111	66	1	57	3
Total Analysis Volume [veh/h]	332	2	12	3	4	6	8	445	263	4	226	13
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	70
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	LeadGreen
Permissive Mode	SingleBand
Lost time [s]	8.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal group	0	2	0	0	6	0	0	8	0	0	4	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-
Minimum Green [s]	0	7	0	0	7	0	0	7	0	0	7	0
Maximum Green [s]	0	120	0	0	120	0	0	120	0	0	120	0
Amber [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
All red [s]	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	49	0	0	49	0	0	21	0	0	21	0
Vehicle Extension [s]	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	7	0	0	7	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0	0.0	2.0	0.0
Minimum Recall		No			No			No			No	
Maximum Recall		No			No			No			No	
Pedestrian Recall		No			No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	C	L	C	R	L	C
C, Cycle Length [s]	32	32	32	32	32	32	32	32
L, Total Lost Time per Cycle [s]	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00
l1_p, Permitted Start-Up Lost Time [s]	2.00	0.00	2.00	2.00	0.00	0.00	2.00	0.00
l2, Clearance Lost Time [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
g_i, Effective Green Time [s]	12	12	12	12	12	12	12	12
g / C, Green / Cycle	0.38	0.38	0.38	0.37	0.37	0.37	0.37	0.37
(v / s)_i Volume / Saturation Flow Rate	0.23	0.01	0.01	0.01	0.23	0.16	0.00	0.13
s, saturation flow rate [veh/h]	1427	1650	1685	1159	1900	1615	960	1882
c, Capacity [veh/h]	766	691	831	423	674	572	268	667
d1, Uniform Delay [s]	8.44	6.01	6.00	11.68	9.60	8.78	15.43	8.42
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.39	0.01	0.01	0.02	1.12	0.58	0.02	0.33
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.43	0.02	0.02	0.02	0.66	0.46	0.01	0.36
d, Delay for Lane Group [s/veh]	8.83	6.02	6.01	11.70	10.72	9.36	15.45	8.75
Lane Group LOS	A	A	A	B	B	A	B	A
Critical Lane Group	Yes	No	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	1.35	0.04	0.04	0.04	1.81	0.96	0.02	0.81
50th-Percentile Queue Length [ft/ln]	33.81	1.01	0.92	0.93	45.22	23.92	0.60	20.35
95th-Percentile Queue Length [veh/ln]	2.43	0.07	0.07	0.07	3.26	1.72	0.04	1.47
95th-Percentile Queue Length [ft/ln]	60.86	1.81	1.66	1.68	81.40	43.05	1.08	36.63

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	8.83	6.02	6.02	6.01	6.01	6.01	11.70	10.72	9.36	15.45	8.75	8.75
Movement LOS	A	A	A	A	A	A	B	B	A	B	A	A
d_A, Approach Delay [s/veh]	8.71			6.01			10.23			8.86		
Approach LOS	A			A			B			A		
d_I, Intersection Delay [s/veh]	9.54											
Intersection LOS	A											
Intersection V/C	0.620											

Sequence

Ring 1	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

APPENDIX C

PANATTONI CONCEPTUAL STRIPING PLAN

GENERAL TRAFFIC CONTROL NOTES:

1. CONSTRUCTION PERMITS SHALL BE OBTAINED FROM THE CITY OF RIALTO DEPARTMENT OF ENGINEERING PRIOR TO THE START OF ANY WORK. INSPECTION COORDINATION SHALL BE REQUESTED AT LEAST TWO WORKING DAYS PRIOR TO THE START OF ANY WORK IN PUBLIC RIGHT-OF-WAY WITH IN THE CITY LIMITS. CALL (909) 350-7610.
2. All WORK, MATERIALS, EQUIPMENT AND TEMPORARY TRAFFIC CONTROL SHALL CONFORM TO THESE PLANS, THE CITY OF RIALTO STANDARD SPECIFICATIONS, THE STANDARD PLANS AND SPECIFICATIONS OF THE STATE OF CALIFORNIA, DATED 2010, AND THE CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, DATED 2014.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING EMERGENCY SERVICES, TRANSPORTATION SERVICES, IMPACTED BUSINESSES, AND AFFECTED RESIDENTS OF THE CONSTRUCTION AND/OR CLOSURE AND DETOUR ROUTE BY PLACING CHANGEABLE MESSAGE SIGN (CMS) AT LEAST SEVEN DAYS PRIOR TO THE CLOSURE ALERTING THE PUBLIC OF CONSTRUCTION.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ACCESS TO ANY AND ALL RESIDENTIAL AND COMMERCIAL PROPERTIES LOCATED WITHIN THE CONSTRUCTION ZONE AND/OR ROAD CLOSURE DURING THE PROJECT 24-HOURS A DAY, 7 DAYS A WEEK.
5. THE CONSTRUCTION SHALL NOT DISRUPT ANY PUBLIC SERVICES INCLUDING MAIL DELIVERY, TRASH PICKUP, AND BUS SERVICES.
6. WORK HOURS SHALL BE RESTRICTED TO THE PERIOD BETWEEN 9:00 AM AND 3:00 PM, MONDAY THROUGH FRIDAY, UNLESS APPROVED OTHERWISE. WHEN NIGHT WORK IS REQUIRED, THE WORK HOURS SHALL. BE BETWEEN 9:00 PM AND 5:00 AM, SUNDAY THROUGH THURSDAY.
7. THE EXACT LOCATION OF ALL TRAFFIC CONTROL DEVICES IS SUBJECT TO APPROVAL OF THE CITY ENGINEER. ADDITIONAL TRAFFIC CONTROL DEVICES OR MODIFICATIONS TO THE PLANS MAY BE REQUIRED BY THE CITY ENGINEER AT ANY TIME.
8. DURING CONSTRUCTION, ALL CONFLICTING TRAFFIC CONTROL DEVICES SHALL BE COVERED OR REMOVED. UPON COMPLETION OF CONSTRUCTION, ALL TEMPORARY TRAFFIC CONTROL DEVICES SHALL BE REMOVED AND THE ROADWAY RESTORED TO ORIGINAL CONDITION.
9. GLUE DOWN DELINEATORS WITH COLORED REFLECTIVE TAPE (WHITE FOR RIGHT EDGELINE DELINEATION AND YELLOW FOR CENTERLINE DELINEATION) ARE REQUIRED IF THE TEMPORARY TRAFFIC CONTROL IS TO REMAIN IN PLACE OVERNIGHT.
10. CONTRACTOR SHALL POST WARNING SIGNS FOR PAVEMENT SURFACE DISRUPTIONS OF 1/2" OR GREATER. PAVEMENT DISRUPTIONS OF 1" OR GREATER SHALL HAVE A BEVELED EDGE OF FOUR (4) HORIZONTAL TO ONE (1) VERTICAL.
11. CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF THE AMERICAN DISABILITY ACT ACCESSIBILITY GUIDELINES AND WITH THE CALIFORNIA ACCESSIBILITY GUIDELINES AS RELATED TO PEDESTRIAN ACCESS AND SHALL MAINTAIN PEDESTRIAN ACCESS AT ALL TIMES PER ADA REQUIREMENTS.
12. ALL OPEN EXCAVATIONS WITHIN THE PUBLIC RIGHT-OF-WAY SHALL BE BACK-FILIED OR STEEL PLATED PER CITY STD. 1009 DURING NON-WORKING HOURS. "STEEL PLATES AHEAD" WARNING SIGNS SHALL BE POSTED IN ADVANCE OF STEEL PLATE BRIDGING.
13. ALL TRAFFIC LANES SHALL BE A MINIMUM OF 12' IN WIDTH, HAVE A MINIMUM OF 5 FEET OF CLEARANCE FROM OPEN EXCAVATIONS AND A MINIMUM OF 2 FEET FROM VERTICAL OBSTRUCTIONS. OPEN TRENCHES WITH LESS THAN FIVE FEET OF CLEARANCE SHALL BE PROTECTED BY K-RAIL BARRIERS/TEMPORARY CRASH CUSHIONS INSTALLED PER CALTRANS STANDARDS, WITH EDGE LINE STRIPING APPLIED PER DETAIL 27B AT 1' OFF.
14. WHEN NECESSARY TO RESTRICT PARKING, CONTRACTOR SHALL POST SIGNS A MINIMUM OF 48 HOURS PRIOR TO THE COMMENCEMENT OF WORK.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSPECTING AND MAINTAINING ALL WORK ZONE TRAFFIC CONTROL DEVICES 24-HOURS PER DAY AND 7 DAYS A WEEK AND SHALL DESIGNATE A SINGLE POINT OF CONTACT RESPONSIBLE FOR THIS EFFORT.

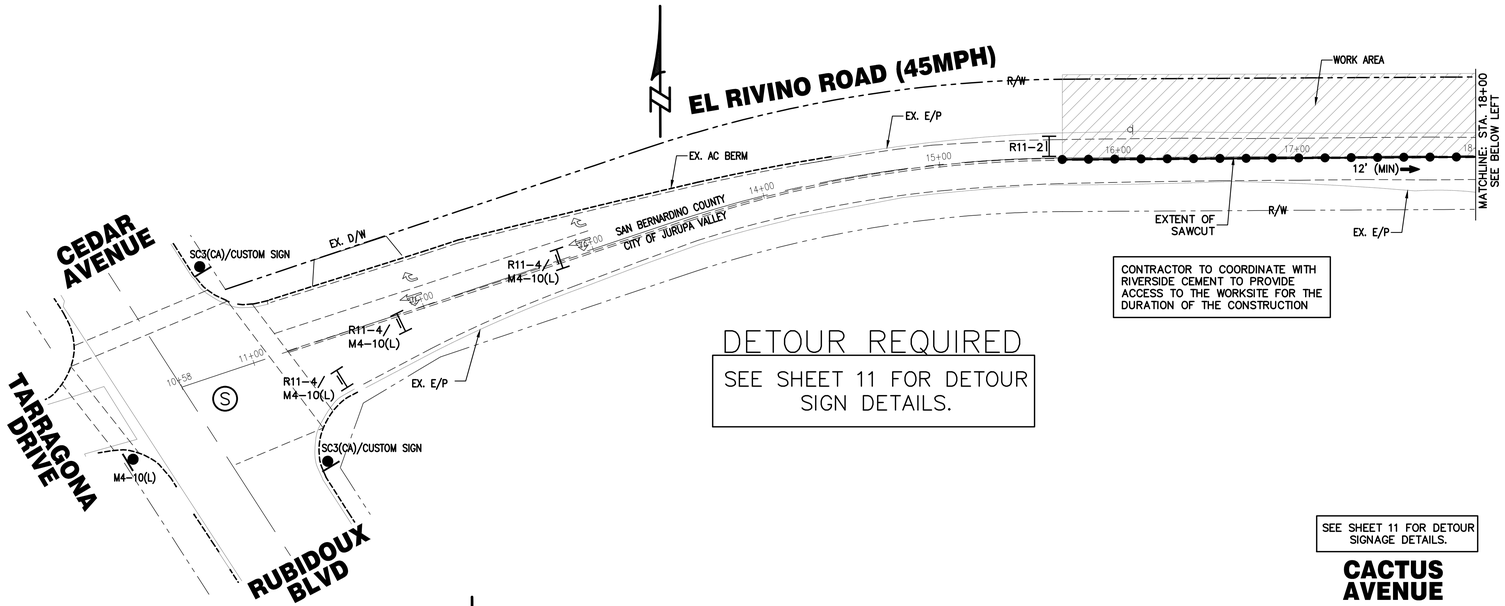
-PHASE 1-

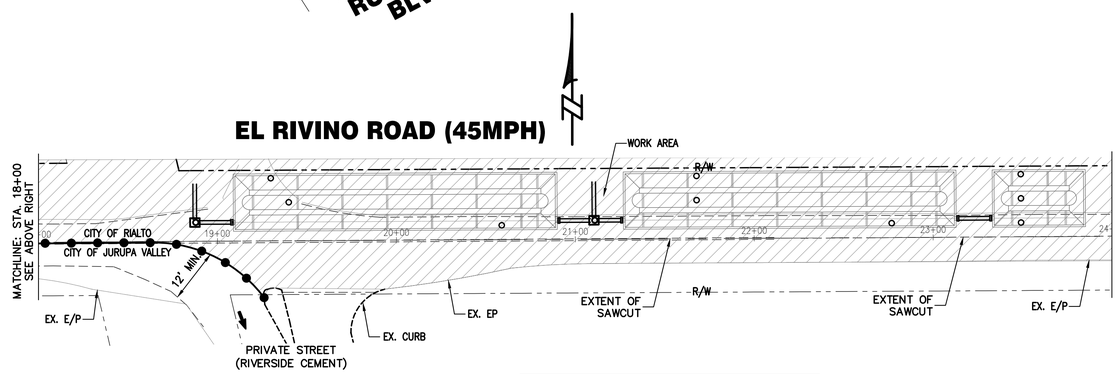
DURATION: 6 WEEKS

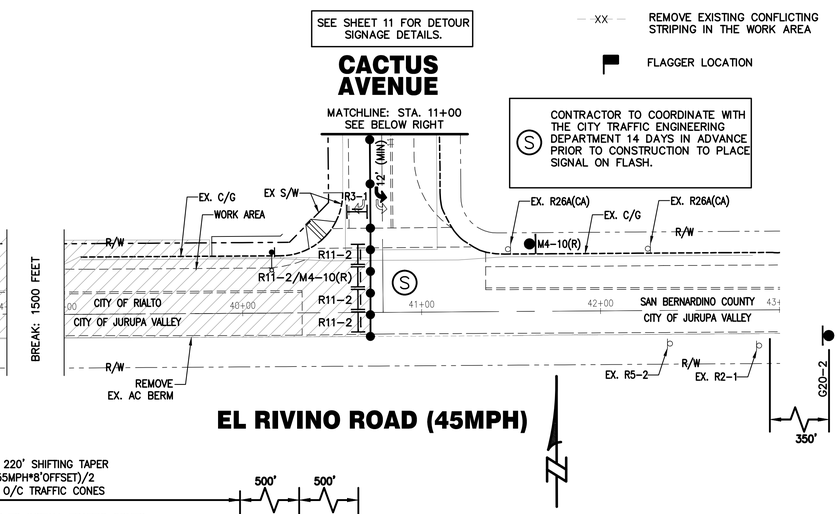
WORK HOURS: 8:00AM-3:30PM

LEGEND:

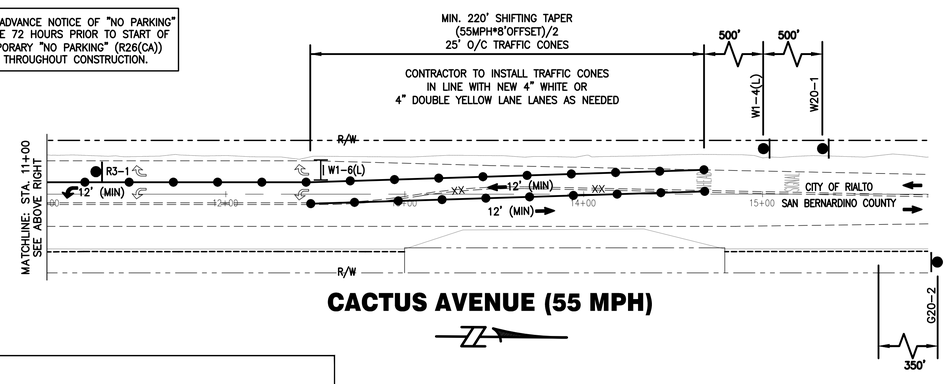
- TEMPORARY TRAFFIC CONTROL SIGN
- TYPE III BARRICADE WITH SIGN
- TRAFFIC CONE OR GLUE DOWN DELINEATOR
- DIRECTION OF TRAVEL
- SIGNALIZED INTERSECTION
- AREA OF CONSTRUCTION
- FLASHING ARROW SIGN (FAS)
- TEMPORARY CONCRETE BARRIER (K-RAIL)
- TEMPORARY CRASH CUSHION
- REMOVE EXISTING CONFLICTING STRIPING IN THE WORK AREA
- FLAGGER LOCATION



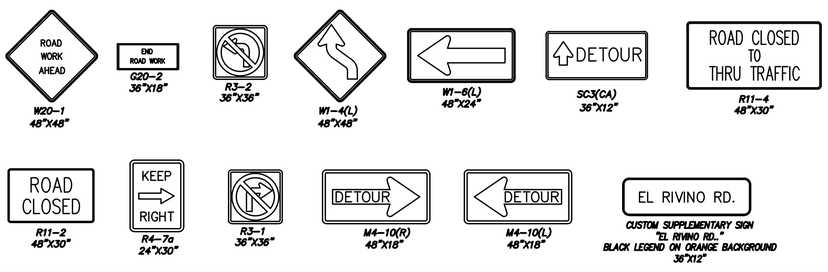




CONTRACTOR TO POST ADVANCE NOTICE OF "NO PARKING" ALONG CACTUS AVENUE 72 HOURS PRIOR TO START OF CONSTRUCTION. TEMPORARY "NO PARKING" (R26(CA)) SIGNS TO REMAIN THROUGHOUT CONSTRUCTION.



SIGN LEGEND:



CITY OF JURUPA VALLEY
PUBLIC WORKS DEPARTMENT

JIM L. SMITH R.C.E. NO 42977 DATE

SCALE: 1" = 40'

20 0 20 40 60

811 Know what's below. Call before you dig.

MARK	REVISIONS	APPR.	DATE

DESIGNED BY: JW DRAWN BY: JW CHECKED BY: TJW

SEAL-DESIGN ENGINEER

REGISTERED PROFESSIONAL ENGINEER THOMAS JOSEPH WHEAT No. 69467 Exp. 6/30/20 CIVIL STATE OF CALIFORNIA

PREPARED UNDER THE SUPERVISION OF:

THOMAS J. WHEAT, RCE 69467, EXP. 06/30/2020 DATE

RECOMMENDED FOR APPROVAL BY LOCKWOOD ENGINEERING:

CARLETON W. LOCKWOOD, JR, RCE 45935 DATE

ROBERT G. EISENBEISZ, PUBLIC WORKS DIRECTOR/CITY ENGINEER, RCE 54931 DATE

TJW ENGINEERING, INC.
Traffic Engineering & Transportation
Planning Consultants
6 Venture, Suite 225
Irvine, CA 92618
t: (949) 878-3509 f: (949) 878-3593
www.tjwengineering.com

BENCH MARK: SAN BERNARDINO COUNTY BENCHMARK NO. "00614" ELEVATION = 950.595' (NGVD '29)

DESCRIPTION: NAIL IN CONCRETE CURB, AT THE NORTHWEST CORNER INTERSECTION OF CACTUS AVENUE AND EL RIVINO, 32 FT. NORTH OF EL RIVINO, 112 FT. WEST OF CACTUS, 6 FT. SOUTH OF A WALL AT ENTRANCE TO EL RIVINO COUNTRY CLUB.

CITY OF RIALTO

TEMPORARY TRAFFIC CONTROL PLAN
EL RIVINO ROAD FROM RUBIDOUX BLVD. TO HALL AVENUE PHASE 1

1 OF 11 SHEETS

FOR: EL RIVINO INDUSTRIAL I, LLC
20411 SW BIRCH STREET, SUITE 200 NEWPORT BEACH, CA 92660
PHONE: (949) 296-2960 FAX: (888) 793-7363

PPD No. 2357 PLAN No. _____

Plot Date: 07/30/2018 10:18:42 AM User: ### File Name: C:\Users\Jasper Wong\Dropbox (TJW Engineering Inc.)\TJW Projects\THI Projects\THI-16-013\THI6013 El Rivino Cactus TC F.dwg Last Update: 7/30/2018 10:18:01 AM

SIGN LEGEND:

LEGEND:

- TEMPORARY TRAFFIC CONTROL SIGN
- TYPE III BARRICADE WITH SIGN
- TRAFFIC CONE OR GLUE DOWN DELINEATOR
- DIRECTION OF TRAVEL
- (S) SIGNALIZED INTERSECTION
- AREA OF CONSTRUCTION
- FLASHING ARROW SIGN (FAS)
- TEMPORARY CONCRETE BARRIER (K-RAIL)
- TEMPORARY CRASH CUSHION
- XX REMOVE EXISTING CONFLICTING STRIPING IN THE WORK AREA
- FLAGGER LOCATION

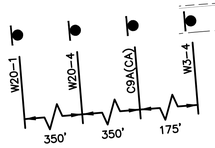
-PHASE 2A-

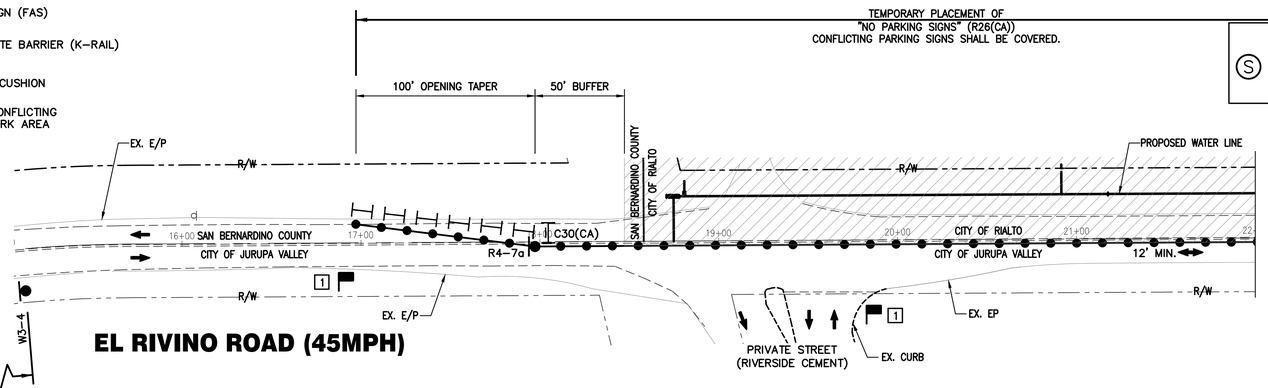
DURATION: 4 WEEKS
WORK HOURS: 8:00AM-3:30PM

CONTRACTOR TO POST ADVANCE NOTICE OF "NO PARKING" ALONG CACTUS AVENUE 72 HOURS PRIOR TO START OF CONSTRUCTION. TEMPORARY "NO PARKING" (R26(CA)) SIGNS TO REMAIN THROUGHOUT CONSTRUCTION.

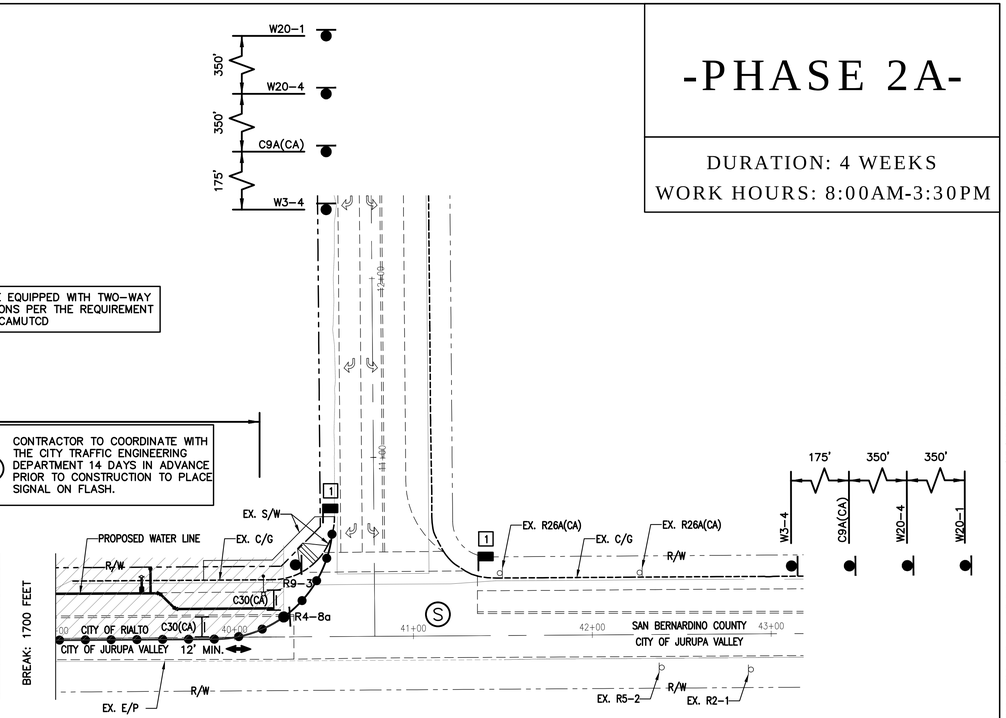
[1] FLAGGERS SHALL BE EQUIPPED WITH TWO-WAY RADIO COMMUNICATIONS PER THE REQUIREMENT OF CH. 6E OF THE CAMUTCD

(S) CONTRACTOR TO COORDINATE WITH THE CITY TRAFFIC ENGINEERING DEPARTMENT 14 DAYS IN ADVANCE PRIOR TO CONSTRUCTION TO PLACE SIGNAL ON FLASH.





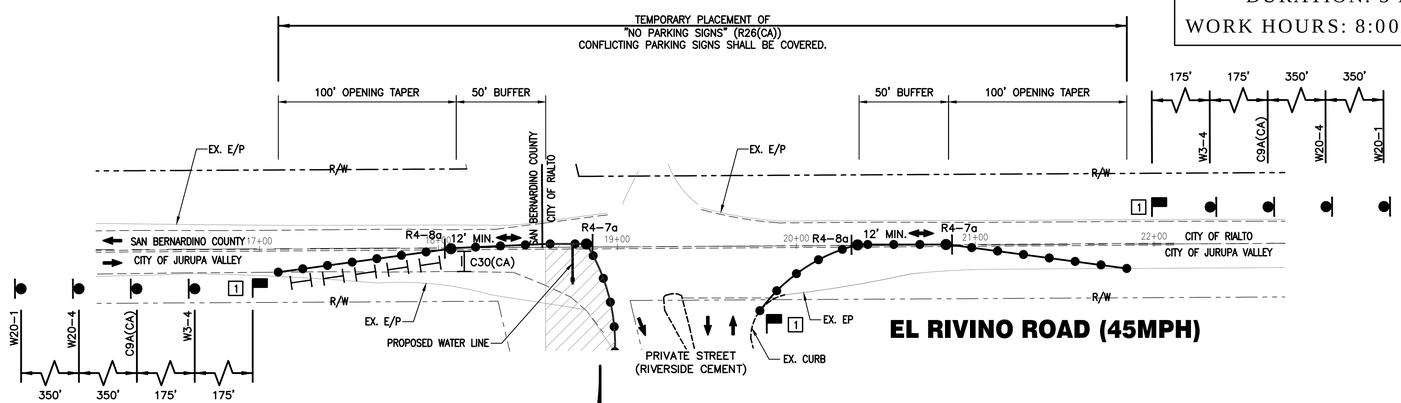
EL RIVINO ROAD (45MPH)



EL RIVINO ROAD (45MPH)

-PHASE 2B-

DURATION: 3 DAYS
WORK HOURS: 8:00AM-3:30PM



EL RIVINO ROAD (45MPH)

CONTRACTOR TO POST ADVANCE NOTICE OF "NO PARKING" ALONG CACTUS AVENUE 72 HOURS PRIOR TO START OF CONSTRUCTION. TEMPORARY "NO PARKING" (R26(CA)) SIGNS TO REMAIN THROUGHOUT CONSTRUCTION.

[1] FLAGGERS SHALL BE EQUIPPED WITH TWO-WAY RADIO COMMUNICATIONS PER THE REQUIREMENT OF CH. 6E OF THE CAMUTCD

SCALE: 1" = 40'

20 0 20 40 60

GENERAL TRAFFIC CONTROL NOTES:

1. CONSTRUCTION PERMITS SHALL BE OBTAINED FROM THE CITY OF RIALTO DEPARTMENT OF ENGINEERING PRIOR TO THE START OF ANY WORK. INSPECTION COORDINATION SHALL BE REQUESTED AT LEAST TWO WORKING DAYS PRIOR TO THE START OF ANY WORK IN PUBLIC RIGHT-OF-WAY WITH IN THE CITY LIMITS. CALL (909) 350-7610.
2. All WORK, MATERIALS, EQUIPMENT AND TEMPORARY TRAFFIC CONTROL SHALL CONFORM TO THESE PLANS, THE CITY OF RIALTO STANDARD SPECIFICATIONS, THE STANDARD PLANS AND SPECIFICATIONS OF THE STATE OF CALIFORNIA, DATED 2010, AND THE CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, DATED 2014.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING EMERGENCY SERVICES, TRANSPORTATION SERVICES, IMPACTED BUSINESSES, AND AFFECTED RESIDENTS OF THE CONSTRUCTION AND/OR CLOSURE AND DETOUR ROUTE BY PLACING CHANGEABLE MESSAGE SIGN (CMS) AT LEAST SEVEN DAYS PRIOR TO THE CLOSURE ALERTING THE PUBLIC OF CONSTRUCTION.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ACCESS TO ANY AND ALL RESIDENTIAL AND COMMERCIAL PROPERTIES LOCATED WITHIN THE CONSTRUCTION ZONE AND/OR ROAD CLOSURE DURING THE PROJECT 24-HOURS A DAY, 7 DAYS A WEEK.
5. THE CONSTRUCTION SHALL NOT DISRUPT ANY PUBLIC SERVICES INCLUDING MAIL DELIVERY, TRASH PICKUP, AND BUS SERVICES.
6. WORK HOURS SHALL BE RESTRICTED TO THE PERIOD BETWEEN 9:00 AM AND 3:00 PM, MONDAY THROUGH FRIDAY, UNLESS APPROVED OTHERWISE. WHEN NIGHT WORK IS REQUIRED, THE WORK HOURS SHALL. BE BETWEEN 9:00 PM AND 5:00 AM, SUNDAY THROUGH THURSDAY.
7. THE EXACT LOCATION OF ALL TRAFFIC CONTROL DEVICES IS SUBJECT TO APPROVAL OF THE CITY ENGINEER. ADDITIONAL TRAFFIC CONTROL DEVICES OR MODIFICATIONS TO THE PLANS MAY BE REQUIRED BY THE CITY ENGINEER AT ANY TIME.
8. DURING CONSTRUCTION, ALL CONFLICTING TRAFFIC CONTROL DEVICES SHALL BE COVERED OR REMOVED. UPON COMPLETION OF CONSTRUCTION, ALL TEMPORARY TRAFFIC CONTROL DEVICES SHALL BE REMOVED AND THE ROADWAY RESTORED TO ORIGINAL CONDITION.
9. GLUE DOWN DELINEATORS WITH COLORED REFLECTIVE TAPE (WHITE FOR RIGHT EDGELINE DELINEATION AND YELLOW FOR CENTERLINE DELINEATION) ARE REQUIRED IF THE TEMPORARY TRAFFIC CONTROL IS TO REMAIN IN PLACE OVERNIGHT.
10. CONTRACTOR SHALL POST WARNING SIGNS FOR PAVEMENT SURFACE DISRUPTIONS OF 1/2" OR GREATER. PAVEMENT DISRUPTIONS OF 1" OR GREATER SHALL HAVE A BEVELED EDGE OF FOUR (4) HORIZONTAL TO ONE (1) VERTICAL.
11. CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF THE AMERICAN DISABILITY ACT ACCESSIBILITY GUIDELINES AND WITH THE CALIFORNIA ACCESSIBILITY GUIDELINES AS RELATED TO PEDESTRIAN ACCESS AND SHALL MAINTAIN PEDESTRIAN ACCESS AT ALL TIMES PER ADA REQUIREMENTS.
12. ALL OPEN EXCAVATIONS WITHIN THE PUBLIC RIGHT-OF-WAY SHALL BE BACK-FILLED OR STEEL PLATED PER CITY STD. 1009 DURING NON-WORKING HOURS. "STEEL PLATES AHEAD" WARNING SIGNS SHALL BE POSTED IN ADVANCE OF STEEL PLATE BRIDGING.
13. ALL TRAFFIC LANES SHALL BE A MINIMUM OF 12' IN WIDTH, HAVE A MINIMUM OF 5 FEET OF CLEARANCE FROM OPEN EXCAVATIONS AND A MINIMUM OF 2 FEET FROM VERTICAL OBSTRUCTIONS. OPEN TRENCHES WITH LESS THAN FIVE FEET OF CLEARANCE SHALL BE PROTECTED BY K-RAIL BARRIERS/TEMPORARY CRASH CUSHIONS INSTALLED PER CALTRANS STANDARDS, WITH EDGE LINE STRIPING APPLIED PER DETAIL 27B AT 1' OFF.
14. WHEN NECESSARY TO RESTRICT PARKING, CONTRACTOR SHALL POST SIGNS A MINIMUM OF 48 HOURS PRIOR TO THE COMMENCEMENT OF WORK.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSPECTING AND MAINTAINING ALL WORK ZONE TRAFFIC CONTROL DEVICES 24-HOURS PER DAY AND 7 DAYS A WEEK AND SHALL DESIGNATE A SINGLE POINT OF CONTACT RESPONSIBLE FOR THIS EFFORT.

CITY OF JURUPA VALLEY
PUBLIC WORKS DEPARTMENT

JIM L. SMITH R.C.E. NO 42977 DATE

PREPARED UNDER THE SUPERVISION OF:

THOMAS J. WHEAT, RCE 69467, EXP. 06/30/2020 DATE

RECOMMENDED FOR APPROVAL BY LOCKWOOD ENGINEERING:

CARLETON W. LOCKWOOD, JR, RCE 45935 DATE

ROBERT G. EISENBEISZ, PUBLIC WORKS DIRECTOR/CITY ENGINEER, RCE 54931 DATE

Know what's below. Call before you dig.

MARK	REVISIONS	APPR.	DATE

DESIGNED BY: JW DRAWN BY: JW CHECKED BY: TJW

SEAL-DESIGN ENGINEER

REGISTERED PROFESSIONAL ENGINEER
THOMAS JOSEPH WHEAT
No. 69467
Exp. 6/30/20
CIVIL
STATE OF CALIFORNIA

TJW ENGINEERING, INC.
Traffic Engineering & Transportation
Planning Consultants
6 Venture, Suite 225
Irvine, CA 92618
t: (949) 878-3509 f: (949) 878-3593
www.tjwengineering.com

BENCH MARK: SAN BERNARDINO COUNTY BENCHMARK NO. "00614" ELEVATION = 950.595' (NGVD '29)

DESCRIPTION: NAIL IN CONCRETE CURB, AT THE NORTHWEST CORNER INTERSECTION OF CACTUS AVENUE AND EL RIVINO, 32 FT. NORTH OF EL RIVINO, 112 FT. WEST OF CACTUS, 6 FT. SOUTH OF A WALL AT ENTRANCE TO EL RIVINO COUNTRY CLUB.

CITY OF RIALTO

TEMPORARY TRAFFIC CONTROL PLAN
EL RIVINO ROAD FROM RUBIDOUX BLVD.
TO HALL AVENUE PHASE 2A&B

2 OF 11 SHEETS

FOR: EL RIVINO INDUSTRIAL I, LLC
20411 SW BIRCH STREET, SUITE 200 NEWPORT BEACH, CA 92660
PHONE: (949) 296-2960 FAX: (888) 793-7363

PPD No. 2357 PLAN No. _____

Plot Date: 07/30/2018 10:18:48 AM User: #### File Name: C:\Users\Jasper Wong\Dropbox (TJW Engineering Inc.)\TJW Projects\THI Projects\THI-16-013\THI16013 El Rivino Cactus TC F.dwg Last Update: 7/30/2018 10:18:01 AM

GENERAL TRAFFIC CONTROL NOTES:

1. CONSTRUCTION PERMITS SHALL BE OBTAINED FROM THE CITY OF RIALTO DEPARTMENT OF ENGINEERING PRIOR TO THE START OF ANY WORK. INSPECTION COORDINATION SHALL BE REQUESTED AT LEAST TWO WORKING DAYS PRIOR TO THE START OF ANY WORK IN PUBLIC RIGHT-OF-WAY WITH IN THE CITY LIMITS. CALL (909) 350-7610.
2. All WORK, MATERIALS, EQUIPMENT AND TEMPORARY TRAFFIC CONTROL SHALL CONFORM TO THESE PLANS, THE CITY OF RIALTO STANDARD SPECIFICATIONS, THE STANDARD PLANS AND SPECIFICATIONS OF THE STATE OF CALIFORNIA, DATED 2010, AND THE CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, DATED 2014.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING EMERGENCY SERVICES, TRANSPORTATION SERVICES, IMPACTED BUSINESSES, AND AFFECTED RESIDENTS OF THE CONSTRUCTION AND/OR CLOSURE AND DETOUR ROUTE BY PLACING CHANGEABLE MESSAGE SIGN (CMS) AT LEAST SEVEN DAYS PRIOR TO THE CLOSURE ALERTING THE PUBLIC OF CONSTRUCTION.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ACCESS TO ANY AND ALL RESIDENTIAL AND COMMERCIAL PROPERTIES LOCATED WITHIN THE CONSTRUCTION ZONE AND/OR ROAD CLOSURE DURING THE PROJECT 24-HOURS A DAY, 7 DAYS A WEEK.
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9. GLUE DOWN DELINEATORS WITH COLORED REFLECTIVE TAPE (WHITE FOR RIGHT EDGELINE DELINEATION AND YELLOW FOR CENTERLINE DELINEATION) ARE REQUIRED IF THE TEMPORARY TRAFFIC CONTROL IS TO REMAIN IN PLACE OVERNIGHT.
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11. CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF THE AMERICAN DISABILITY ACT ACCESSIBILITY GUIDELINES AND WITH THE CALIFORNIA ACCESSIBILITY GUIDELINES AS RELATED TO PEDESTRIAN ACCESS AND SHALL MAINTAIN PEDESTRIAN ACCESS AT ALL TIMES PER ADA REQUIREMENTS.
12. ALL OPEN EXCAVATIONS WITHIN THE PUBLIC RIGHT-OF-WAY SHALL BE BACK-FILLED OR STEEL PLATED PER CITY STD. 1009 DURING NON-WORKING HOURS. "STEEL PLATES AHEAD" WARNING SIGNS SHALL BE POSTED IN ADVANCE OF STEEL PLATE BRIDGING.
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SIGN LEGEND:

-PHASE 3-

DURATION: 4 WEEKS

WORK HOURS: 8:00AM-3:30PM

LEGEND:

- TEMPORARY TRAFFIC CONTROL SIGN
- TYPE III BARRICADE WITH SIGN
- TRAFFIC CONE OR GLUE DOWN DELINEATOR
- DIRECTION OF TRAVEL
- SIGNALIZED INTERSECTION
- AREA OF CONSTRUCTION
- FLASHING ARROW SIGN (FAS)
- TEMPORARY CONCRETE BARRIER (K-RAIL)
- TEMPORARY CRASH CUSHION
- REMOVE EXISTING CONFLICTING STRIPING IN THE WORK AREA
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CONTRACTOR TO POST ADVANCE NOTICE OF "NO PARKING" ALONG CACTUS AVENUE 72 HOURS PRIOR TO START OF CONSTRUCTION. TEMPORARY "NO PARKING" (R26(CA)) SIGNS TO REMAIN THROUGHOUT CONSTRUCTION.

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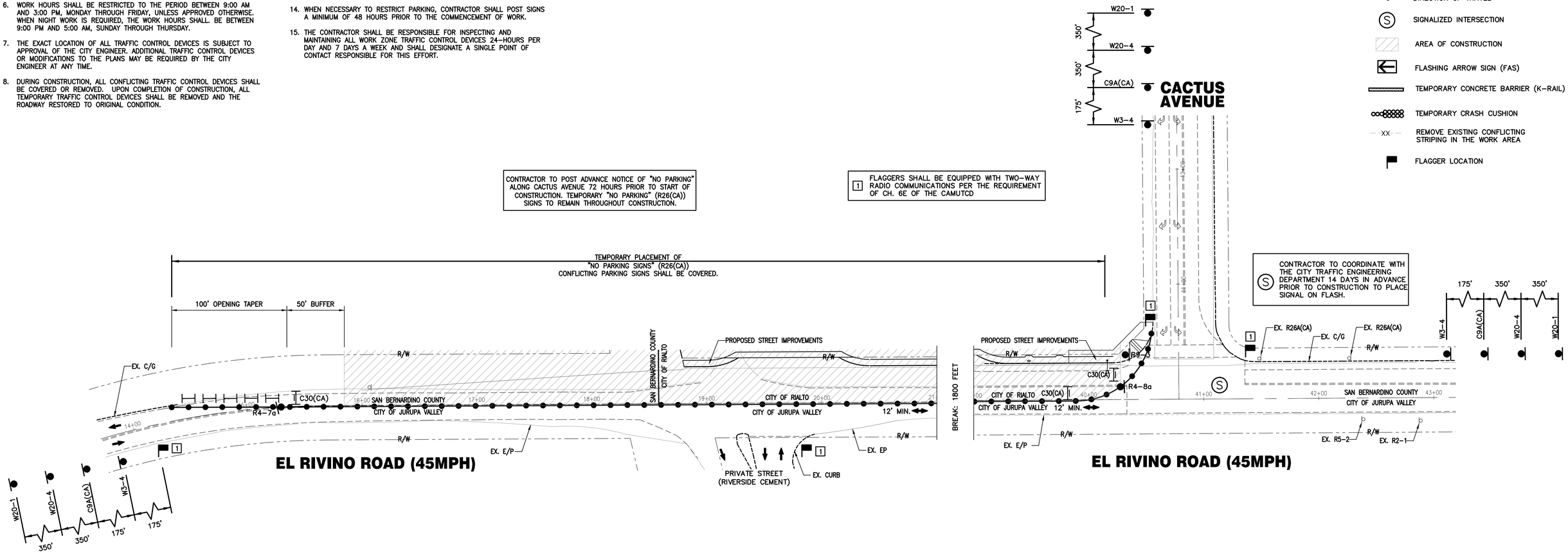

SCALE: 1" = 40'

20 0 20 40 60

CITY OF JURUPA VALLEY
PUBLIC WORKS DEPARTMENT

JIM L. SMITH R.C.E. NO 42977 DATE

PREPARED UNDER THE SUPERVISION OF:

THOMAS J. WHEAT, RCE 69467, EXP. 06/30/2020 DATE

RECOMMENDED FOR APPROVAL BY LOCKWOOD ENGINEERING:

CARLETON W. LOCKWOOD, JR, RCE 45935 DATE

ROBERT G. EISENBEISZ, PUBLIC WORKS DIRECTOR/CITY ENGINEER, RCE 54931 DATE

Know what's below. Call before you dig.

MARK	REVISIONS	APPR.	DATE

DESIGNED BY: JW DRAWN BY: JW CHECKED BY: TJW

SEAL-DESIGN ENGINEER

REGISTERED PROFESSIONAL ENGINEER THOMAS JOSEPH WHEAT No. 69467 Exp. 6/30/20 CIVIL STATE OF CALIFORNIA

TJW ENGINEERING, INC.
Traffic Engineering & Transportation
Planning Consultants
6 Venture, Suite 225
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CITY OF RIALTO

TEMPORARY TRAFFIC CONTROL PLAN
EL RIVINO ROAD FROM RUBIDOUX BLVD.
TO HALL AVENUE PHASE 3

3 OF 11 SHEETS

FOR: EL RIVINO INDUSTRIAL I, LLC
20411 SW BIRCH STREET, SUITE 200 NEWPORT BEACH, CA 92660
PHONE: (949) 296-2960 FAX: (888) 793-7363

PPD No. 2357 PLAN No. _____

Plot Date: 07/30/2018 10:18:52 AM User: #### File Name: C:\Users\Jasper Wong\Dropbox (TJW Engineering Inc.)\TJW Projects\THI-16-013\THI6013 El Rivino Cactus TC F.dwg Last Update: 7/30/2018 10:18:01 AM

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11. CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF THE AMERICAN DISABILITY ACT ACCESSIBILITY GUIDELINES AND WITH THE CALIFORNIA ACCESSIBILITY GUIDELINES AS RELATED TO PEDESTRIAN ACCESS AND SHALL MAINTAIN PEDESTRIAN ACCESS AT ALL TIMES PER ADA REQUIREMENTS.
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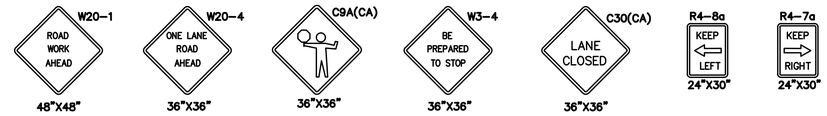

-PHASE 4-

DURATION: 1 WEEK

WORK HOURS: 8:00AM-3:30PM

LEGEND:

- TEMPORARY TRAFFIC CONTROL SIGN
- TYPE III BARRICADE WITH SIGN
- TRAFFIC CONE OR GLUE DOWN DELINEATOR
- DIRECTION OF TRAVEL
- SIGNALIZED INTERSECTION
- AREA OF CONSTRUCTION
- FLASHING ARROW SIGN (FAS)
- TEMPORARY CONCRETE BARRIER (K-RAIL)
- TEMPORARY CRASH CUSHION
- XX — REMOVE EXISTING CONFLICTING STRIPING IN THE WORK AREA
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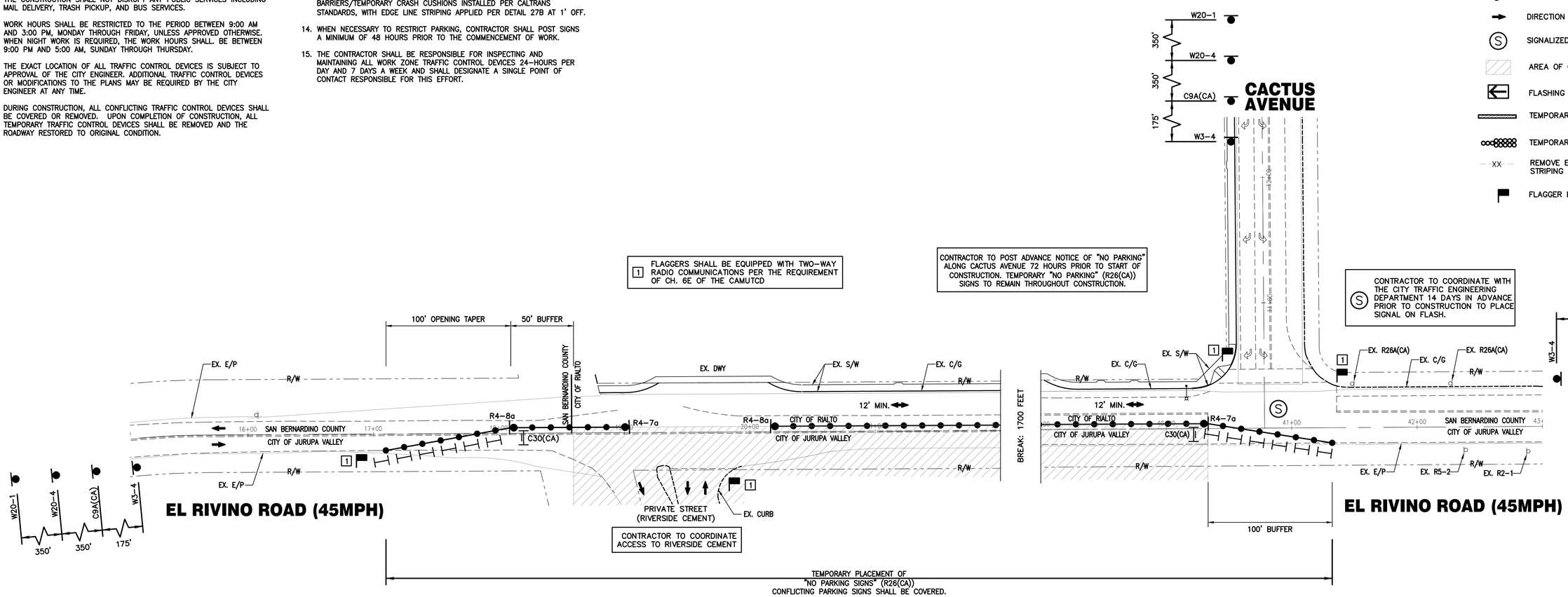

CITY OF JURUPA VALLEY
PUBLIC WORKS DEPARTMENT

JIM L. SMITH R.C.E. NO 42977 DATE

PREPARED UNDER THE SUPERVISION OF:

THOMAS J. WHEAT, RCE 69467, EXP. 06/30/2020 DATE

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CARLETON W. LOCKWOOD, JR, RCE 45935 DATE

ROBERT G. EISENBEISZ, PUBLIC WORKS DIRECTOR/CITY ENGINEER, RCE 54931 DATE

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DESIGNED BY: JW DRAWN BY: JW CHECKED BY: TJW

SEAL-DESIGN ENGINEER

REGISTERED PROFESSIONAL ENGINEER THOMAS JOSEPH WHEAT No. 69467 Exp. 6/30/20 CIVIL STATE OF CALIFORNIA

TJW ENGINEERING, INC.
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CITY OF RIALTO

TEMPORARY TRAFFIC CONTROL PLAN
EL RIVINO ROAD FROM RUBIDOUX BLVD. TO HALL AVENUE PHASE 4

4 OF 11 SHEETS

FOR: EL RIVINO INDUSTRIAL I, LLC
20411 SW BIRCH STREET, SUITE 200 NEWPORT BEACH, CA 92660
PHONE: (949) 296-2960 FAX: (888) 793-7363

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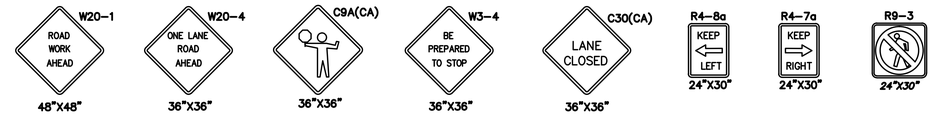
5. THE CONSTRUCTION SHALL NOT DISRUPT ANY PUBLIC SERVICES INCLUDING MAIL DELIVERY, TRASH PICKUP, AND BUS SERVICES.
6. WORK HOURS SHALL BE RESTRICTED TO THE PERIOD BETWEEN 9:00 AM AND 3:00 PM, MONDAY THROUGH FRIDAY, UNLESS APPROVED OTHERWISE. WHEN NIGHT WORK IS REQUIRED, THE WORK HOURS SHALL. BE BETWEEN 9:00 PM AND 5:00 AM, SUNDAY THROUGH THURSDAY.
7. THE EXACT LOCATION OF ALL TRAFFIC CONTROL DEVICES IS SUBJECT TO APPROVAL OF THE CITY ENGINEER. ADDITIONAL TRAFFIC CONTROL DEVICES OR MODIFICATIONS TO THE PLANS MAY BE REQUIRED BY THE CITY ENGINEER AT ANY TIME.
8. DURING CONSTRUCTION, ALL CONFLICTING TRAFFIC CONTROL DEVICES SHALL BE COVERED OR REMOVED. UPON COMPLETION OF CONSTRUCTION, ALL TEMPORARY TRAFFIC CONTROL DEVICES SHALL BE REMOVED AND THE ROADWAY RESTORED TO ORIGINAL CONDITION.
9. GLUE DOWN DELINEATORS WITH COLORED REFLECTIVE TAPE (WHITE FOR RIGHT EDGELINE DELINEATION AND YELLOW FOR CENTERLINE DELINEATION) ARE REQUIRED IF THE TEMPORARY TRAFFIC CONTROL IS TO REMAIN IN PLACE OVERNIGHT.
10. CONTRACTOR SHALL POST WARNING SIGNS FOR PAVEMENT SURFACE DISRUPTIONS OF 1/2" OR GREATER. PAVEMENT DISRUPTIONS OF 1" OR GREATER SHALL HAVE A BEVELED EDGE OF FOUR (4) HORIZONTAL TO ONE (1) VERTICAL.
11. CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF THE AMERICAN DISABILITY ACT ACCESSIBILITY GUIDELINES AND WITH THE CALIFORNIA ACCESSIBILITY GUIDELINES AS RELATED TO PEDESTRIAN ACCESS AND SHALL MAINTAIN PEDESTRIAN ACCESS AT ALL TIMES PER ADA REQUIREMENTS.
12. ALL OPEN EXCAVATIONS WITHIN THE PUBLIC RIGHT-OF-WAY SHALL BE BACK-FILLED OR STEEL PLATED PER CITY STD. 1009 DURING NON-WORKING HOURS. "STEEL PLATES AHEAD" WARNING SIGNS SHALL BE POSTED IN ADVANCE OF STEEL PLATE BRIDGING.
13. ALL TRAFFIC LANES SHALL BE A MINIMUM OF 12' IN WIDTH, HAVE A MINIMUM OF 5 FEET OF CLEARANCE FROM OPEN EXCAVATIONS AND A MINIMUM OF 2 FEET FROM VERTICAL OBSTRUCTIONS. OPEN TRENCHES WITH LESS THAN FIVE FEET OF CLEARANCE SHALL BE PROTECTED BY K-RAIL BARRIERS/TEMPORARY CRASH CUSHIONS INSTALLED PER CALTRANS STANDARDS, WITH EDGE LINE STRIPING APPLIED PER DETAIL 27B AT 1' OFF.
14. WHEN NECESSARY TO RESTRICT PARKING, CONTRACTOR SHALL POST SIGNS A MINIMUM OF 48 HOURS PRIOR TO THE COMMENCEMENT OF WORK.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSPECTING AND MAINTAINING ALL WORK ZONE TRAFFIC CONTROL DEVICES 24-HOURS PER DAY AND 7 DAYS A WEEK AND SHALL DESIGNATE A SINGLE POINT OF CONTACT RESPONSIBLE FOR THIS EFFORT.

SIGN LEGEND:

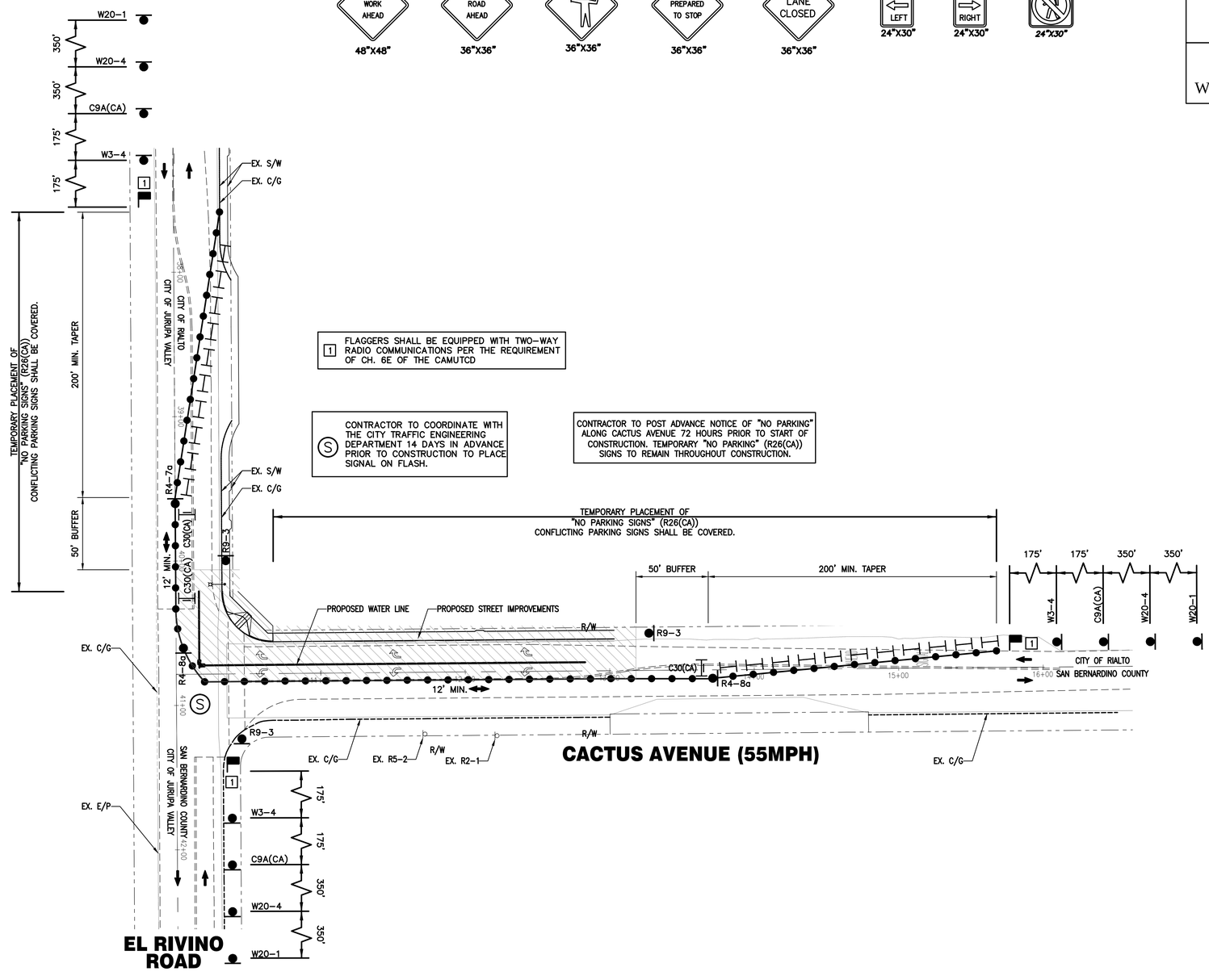


-PHASE 5-

DURATION:
WORK HOURS: 8:00AM-3:30PM

LEGEND:

- TEMPORARY TRAFFIC CONTROL SIGN
- TYPE III BARRICADE WITH SIGN
- TRAFFIC CONE OR GLUE DOWN DELINEATOR
- DIRECTION OF TRAVEL
- SIGNALIZED INTERSECTION
- AREA OF CONSTRUCTION
- FLASHING ARROW SIGN (FAS)
- TEMPORARY CONCRETE BARRIER (K-RAIL)
- TEMPORARY CRASH CUSHION
- XX — REMOVE EXISTING CONFLICTING STRIPING IN THE WORK AREA
- FLAGGER LOCATION



CITY OF JURUPA VALLEY
PUBLIC WORKS DEPARTMENT

JIM L. SMITH R.C.E. NO 42977 DATE

SCALE: 1" = 40'

20 0 20 40 60

Know what's below. Call before you dig.

MARK	REVISIONS	APPR.	DATE

DESIGNED BY: JW DRAWN BY: JW CHECKED BY: TJW

SEAL-DESIGN ENGINEER
REGISTERED PROFESSIONAL ENGINEER THOMAS JOSEPH WHEAT No. 69467 Exp. 6/30/20 CIVIL STATE OF CALIFORNIA

PREPARED UNDER THE SUPERVISION OF:
THOMAS J. WHEAT, RCE 69467, EXP. 06/30/2020 DATE

RECOMMENDED FOR APPROVAL BY LOCKWOOD ENGINEERING:
CARLETON W. LOCKWOOD, JR, RCE 45935 DATE

ROBERT G. EISENBEISZ, PUBLIC WORKS DIRECTOR/CITY ENGINEER, RCE 54931 DATE

TJW ENGINEERING, INC.
Traffic Engineering & Transportation
Planning Consultants
6 Venture, Suite 225
Irvine, CA 92618
t: (949) 878-3509 f: (949) 878-3593
www.tjwengineering.com

BENCH MARK: SAN BERNARDINO COUNTY BENCHMARK NO. "00614" ELEVATION = 950.595' (NGVD '29)

DESCRIPTION: NAIL IN CONCRETE CURB, AT THE NORTHWEST CORNER INTERSECTION OF CACTUS AVENUE AND EL RIVINO, 32 FT. NORTH OF EL RIVINO, 112 FT. WEST OF CACTUS, 6 FT. SOUTH OF A WALL AT ENTRANCE TO EL RIVINO COUNTRY CLUB.

CITY OF RIALTO

TEMPORARY TRAFFIC CONTROL PLAN
CACTUS AVENUE AT EL RIVINO ROAD
PHASE 5

5 OF 11 SHEETS

FOR: EL RIVINO INDUSTRIAL I, LLC
20411 SW BIRCH STREET, SUITE 200 NEWPORT BEACH, CA 92660
PHONE: (949) 296-2960 FAX: (888) 793-7363

PPD No. 2357 PLAN No. _____

Plot Date: 07/30/2018 10:18:58 AM User: #### File Name: C:\Users\Jasper Wong\Dropbox (TJW Engineering Inc.)\TJW Projects\THI Projects\THI-16-013\THI16013 El Rivino Cactus TC F.dwg Last Update: 7/30/2018 10:18:01 AM

-PHASE 6-

DURATION:
WORK HOURS: 8:00AM-3:30PM

GENERAL TRAFFIC CONTROL NOTES:

1. CONSTRUCTION PERMITS SHALL BE OBTAINED FROM THE CITY OF RIALTO DEPARTMENT OF ENGINEERING PRIOR TO THE START OF ANY WORK. INSPECTION COORDINATION SHALL BE REQUESTED AT LEAST TWO WORKING DAYS PRIOR TO THE START OF ANY WORK IN PUBLIC RIGHT-OF-WAY WITH IN THE CITY LIMITS. CALL (909) 350-7610.
2. All WORK, MATERIALS, EQUIPMENT AND TEMPORARY TRAFFIC CONTROL SHALL CONFORM TO THESE PLANS, THE CITY OF RIALTO STANDARD SPECIFICATIONS, THE STANDARD PLANS AND SPECIFICATIONS OF THE STATE OF CALIFORNIA, DATED 2010, AND THE CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, DATED 2014.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING EMERGENCY SERVICES, TRANSPORTATION SERVICES, IMPACTED BUSINESSES, AND AFFECTED RESIDENTS OF THE CONSTRUCTION AND/OR CLOSURE AND DETOUR ROUTE BY PLACING CHANGEABLE MESSAGE SIGN (CMS) AT LEAST SEVEN DAYS PRIOR TO THE CLOSURE ALERTING THE PUBLIC OF CONSTRUCTION.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ACCESS TO ANY AND ALL RESIDENTIAL AND COMMERCIAL PROPERTIES LOCATED WITHIN THE CONSTRUCTION ZONE AND/OR ROAD CLOSURE DURING THE PROJECT 24-HOURS A DAY, 7 DAYS A WEEK.
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11. CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF THE AMERICAN DISABILITY ACT ACCESSIBILITY GUIDELINES AND WITH THE CALIFORNIA ACCESSIBILITY GUIDELINES AS RELATED TO PEDESTRIAN ACCESS AND SHALL MAINTAIN PEDESTRIAN ACCESS AT ALL TIMES PER ADA REQUIREMENTS.
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LEGEND:

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- TYPE III BARRICADE WITH SIGN
- TRAFFIC CONE
- DIRECTION OF TRAVEL
- SIGNALIZED INTERSECTION
- AREA OF CONSTRUCTION
- FLASHING ARROW SIGN (FAS)
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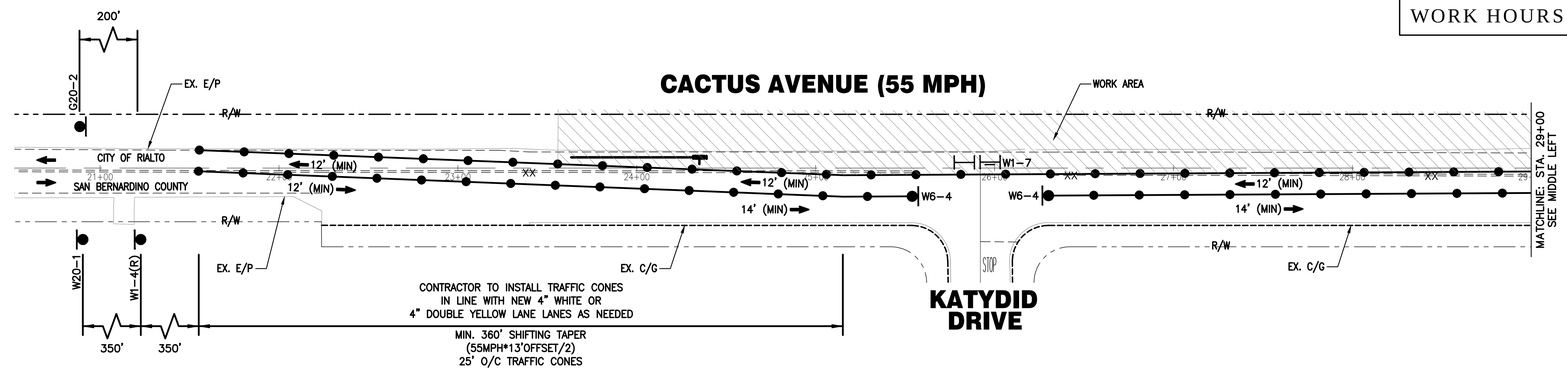
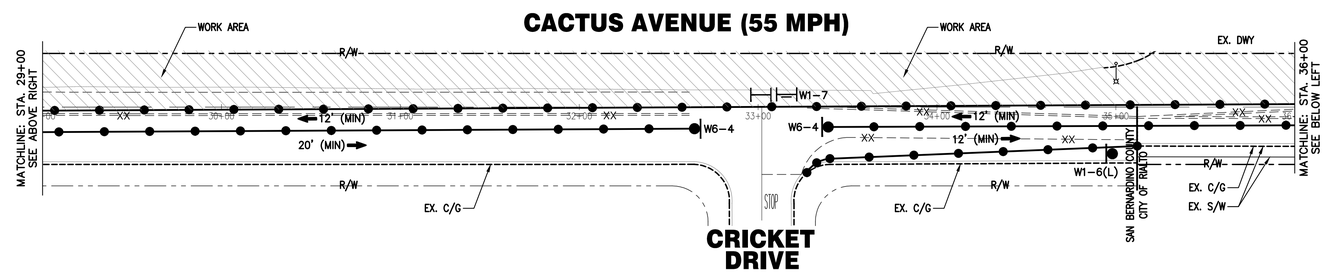
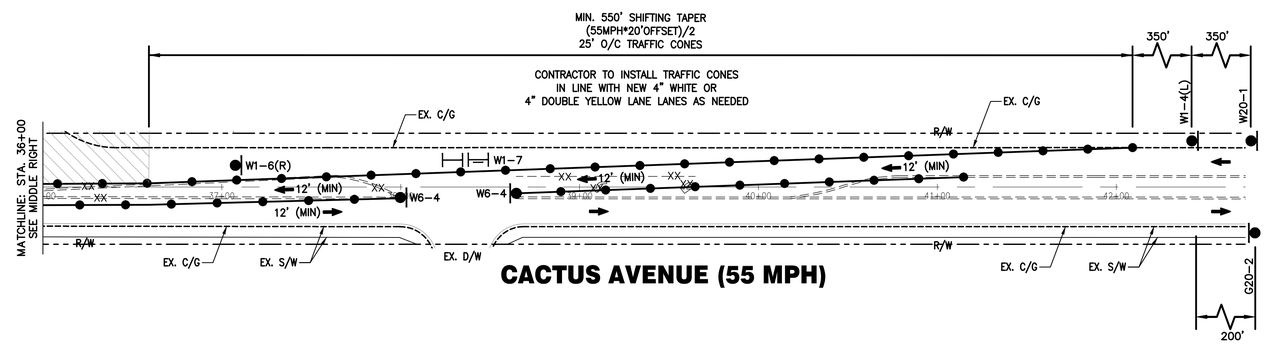
- TEMPORARY CRASH CUSHION
- XX REMOVE EXISTING CONFLICTING STRIPING IN THE WORK AREA
- FLAGGER LOCATION

SIGN LEGEND:







CITY OF JURUPA VALLEY
PUBLIC WORKS DEPARTMENT

JIM L. SMITH R.C.E. NO 42977 DATE

SCALE: 1" = 40'
20 0 20 40 60

Know what's below. Call before you dig.

MARK	REVISIONS	APPR.	DATE

DESIGNED BY: JW DRAWN BY: JW CHECKED BY: TJW

SEAL-DESIGN ENGINEER
REGISTERED PROFESSIONAL ENGINEER THOMAS JOSEPH WHEAT No. 69467 Exp. 6/30/20 CIVIL STATE OF CALIFORNIA

PREPARED UNDER THE SUPERVISION OF:
THOMAS J. WHEAT, RCE 69467, EXP. 06/30/2020 DATE

RECOMMENDED FOR APPROVAL BY LOCKWOOD ENGINEERING:
CARLETON W. LOCKWOOD, JR, RCE 45935 DATE

ROBERT G. EISENBEISZ, PUBLIC WORKS DIRECTOR/CITY ENGINEER, RCE 54931 DATE

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t: (949) 878-3509 f: (949) 878-3593
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BENCH MARK: SAN BERNARDINO COUNTY BENCHMARK NO. "00614" ELEVATION = 950.595' (NGVD '29)

DESCRIPTION: NAIL IN CONCRETE CURB, AT THE NORTHWEST CORNER INTERSECTION OF CACTUS AVENUE AND EL RIVINO, 32 FT. NORTH OF EL RIVINO, 112 FT. WEST OF CACTUS, 6 FT. SOUTH OF A WALL AT ENTRANCE TO EL RIVINO COUNTRY CLUB.

CITY OF RIALTO

TEMPORARY TRAFFIC CONTROL PLAN
CACTUS AVENUE FROM STA. 20+50
TO STA. 42+75 PHASE 6

6 OF 11 SHEETS

FOR: EL RIVINO INDUSTRIAL I, LLC
20411 SW BIRCH STREET, SUITE 200 NEWPORT BEACH, CA 92660
PHONE: (949) 296-2960 FAX: (888) 793-7363

PPD No. 2357 PLAN No. _____

Plot Date: 07/30/2018 10:19:03 AM User: #### File Name: C:\Users\Jesper Wong\Dropbox (TJW Engineering Inc.)\TJW Projects\THI Projects\THI-16-013\THI6013 El Rivino Cactus TC F.dwg Last Update: 7/30/2018 10:18:01 AM

-PHASE 7-

DURATION:
WORK HOURS: 8:00AM-3:30PM

GENERAL TRAFFIC CONTROL NOTES:

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11. CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF THE AMERICAN DISABILITY ACT ACCESSIBILITY GUIDELINES AND WITH THE CALIFORNIA ACCESSIBILITY GUIDELINES AS RELATED TO PEDESTRIAN ACCESS AND SHALL MAINTAIN PEDESTRIAN ACCESS AT ALL TIMES PER ADA REQUIREMENTS.
12. ALL OPEN EXCAVATIONS WITHIN THE PUBLIC RIGHT-OF-WAY SHALL BE BACK-FILIED OR STEEL PLATED PER CITY STD. 1009 DURING NON-WORKING HOURS. "STEEL PLATES AHEAD" WARNING SIGNS SHALL BE POSTED IN ADVANCE OF STEEL PLATE BRIDGING.
13. ALL TRAFFIC LANES SHALL BE A MINIMUM OF 14' IN WIDTH, HAVE A MINIMUM OF 5 FEET OF CLEARANCE FROM OPEN EXCAVATIONS AND A MINIMUM OF 2 FEET FROM VERTICAL OBSTRUCTIONS. OPEN TRENCHES WITH LESS THAN FIVE FEET OF CLEARANCE SHALL BE PROTECTED BY K-RAIL BARRIERS/TEMPORARY CRASH CUSHIONS INSTALLED PER CALTRANS STANDARDS, WITH EDGE LINE STRIPING APPLIED PER DETAIL 27B AT 1' OFF.
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LEGEND:

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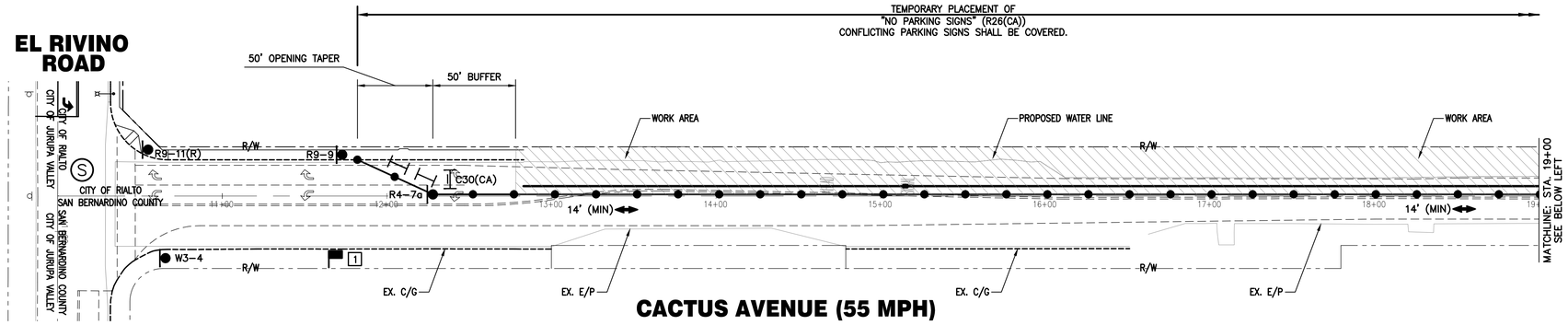
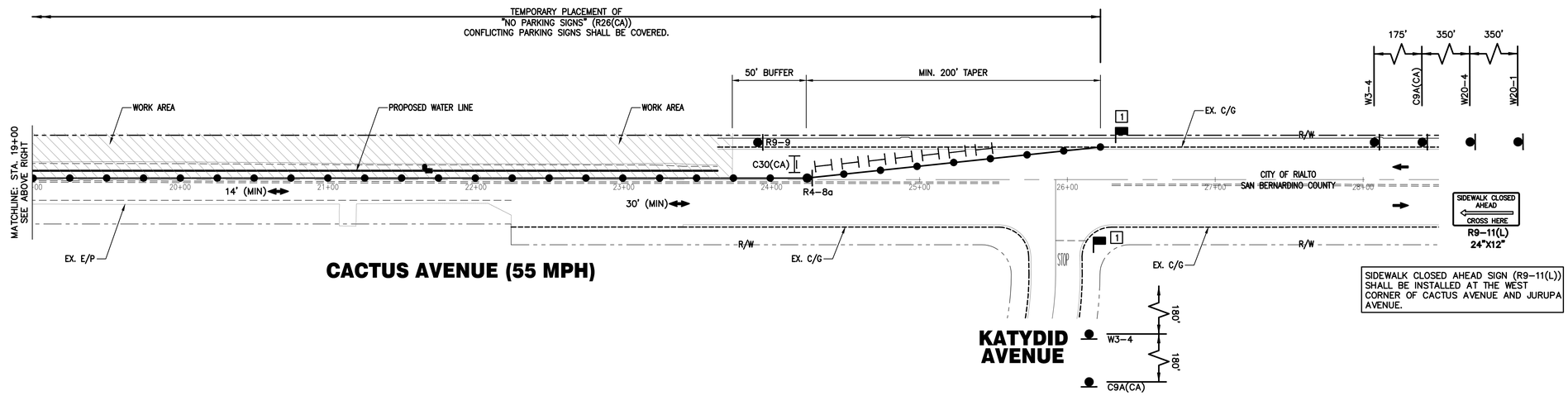
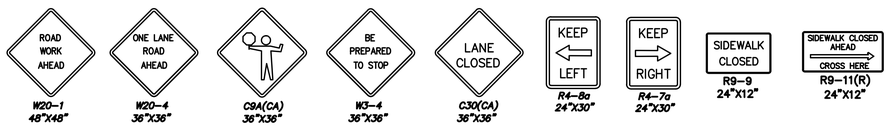


1 FLAGGERS SHALL BE EQUIPPED WITH TWO-WAY RADIO COMMUNICATIONS PER THE REQUIREMENT OF CH. 6E OF THE CAMUTCD



SIDEWALK CLOSED AHEAD SIGN (R9-11(L)) SHALL BE INSTALLED AT THE WEST CORNER OF CACTUS AVENUE AND JURUPA AVENUE.

SIGN LEGEND:



CITY OF JURUPA VALLEY
PUBLIC WORKS DEPARTMENT

JIM L. SMITH R.C.E. NO 42977 DATE

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CITY OF RIALTO

TEMPORARY TRAFFIC CONTROL PLAN
CACTUS AVENUE FROM EL RIVINO ROAD
TO STA. 28+00 PHASE 7

7 OF 11 SHEETS

FOR: EL RIVINO INDUSTRIAL I, LLC
20411 SW BIRCH STREET, SUITE 200 NEWPORT BEACH, CA 92660
PHONE: (949) 296-2960 FAX: (888) 793-7363

PPD No. 2357 PLAN No. _____

Plot Date: 07/30/2018 10:19:07 AM User: #### File Name: C:\Users\Jasper Wong\Dropbox (TJW Engineering Inc.)\TJW Projects\THI Projects\THI-16-013\THI6013 El Rivino Cactus TC F.dwg Last Update: 7/30/2018 10:18:01 AM

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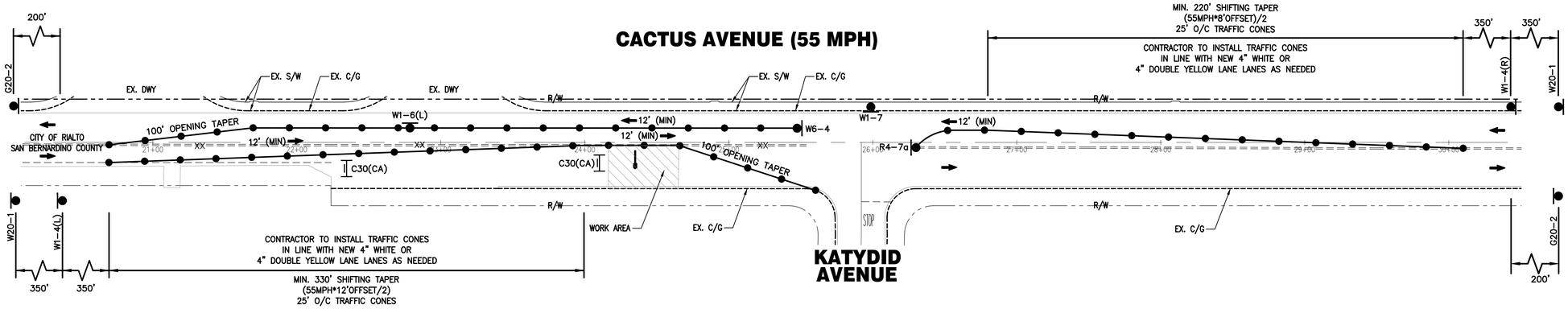
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSPECTING AND MAINTAINING ALL WORK ZONE TRAFFIC CONTROL DEVICES 24-HOURS PER DAY AND 7 DAYS A WEEK AND SHALL DESIGNATE A SINGLE POINT OF CONTACT RESPONSIBLE FOR THIS EFFORT.

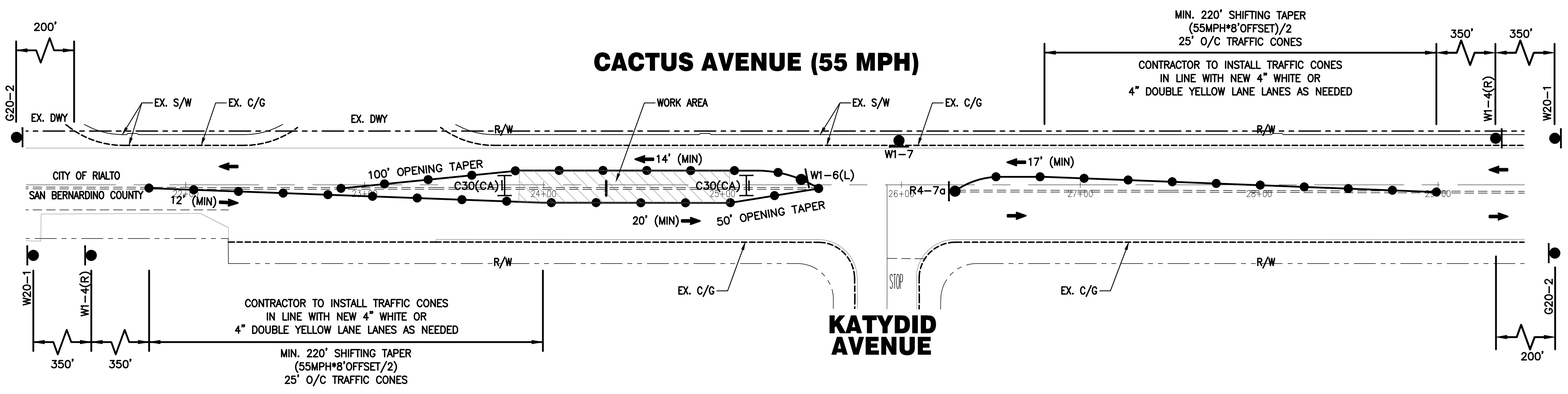
-PHASE 8A-

DURATION:
WORK HOURS: 8:00AM-3:30PM



-PHASE 8B-

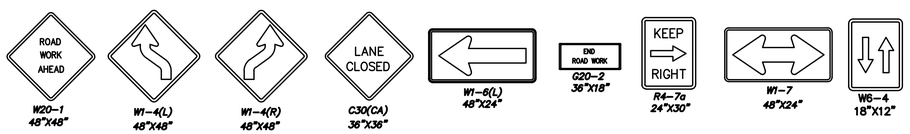
DURATION:
WORK HOURS: 8:00AM-3:30PM



LEGEND:

- TEMPORARY TRAFFIC CONTROL SIGN
- TYPE III BARRICADE WITH SIGN
- TRAFFIC CONE OR GLUE DOWN DELINEATOR
- DIRECTION OF TRAVEL
- SIGNALIZED INTERSECTION
- AREA OF CONSTRUCTION
- FLASHING ARROW SIGN (FAS)
- TEMPORARY CONCRETE BARRIER (K-RAIL)
- TEMPORARY CRASH CUSHION
- XX REMOVE EXISTING CONFLICTING STRIPING IN THE WORK AREA
- FLAGGER LOCATION

SIGN LEGEND:



CITY OF JURUPA VALLEY
PUBLIC WORKS DEPARTMENT

JIM L. SMITH R.C.E. NO 42977 DATE

SCALE: 1" = 40'
20 0 20 40 60

Know what's below. Call before you dig.

MARK	REVISIONS	APPR.	DATE

DESIGNED BY: JW DRAWN BY: JW CHECKED BY: TJW

SEAL-DESIGN ENGINEER
REGISTERED PROFESSIONAL ENGINEER THOMAS JOSEPH WHEAT No. 69467 Exp. 6/30/20 CIVIL STATE OF CALIFORNIA

PREPARED UNDER THE SUPERVISION OF:
THOMAS J. WHEAT, RCE 69467, EXP. 06/30/2020 DATE

RECOMMENDED FOR APPROVAL BY LOCKWOOD ENGINEERING:
CARLETON W. LOCKWOOD, JR, RCE 45935 DATE

ROBERT G. EISENBEISZ, PUBLIC WORKS DIRECTOR/CITY ENGINEER, RCE 54931 DATE

TJW ENGINEERING, INC.
Traffic Engineering & Transportation
Planning Consultants
6 Venture, Suite 225
Irvine, CA 92618
t: (949) 878-3509 f: (949) 878-3593
www.tjwengineering.com

BENCH MARK: SAN BERNARDINO COUNTY BENCHMARK NO. "00614" ELEVATION = 950.595' (NGVD '29)

DESCRIPTION: NAIL IN CONCRETE CURB, AT THE NORTHWEST CORNER INTERSECTION OF CACTUS AVENUE AND EL RIVINO, 32 FT. NORTH OF EL RIVINO, 112 FT. WEST OF CACTUS, 6 FT. SOUTH OF A WALL AT ENTRANCE TO EL RIVINO COUNTRY CLUB.

CITY OF RIALTO

TEMPORARY TRAFFIC CONTROL PLAN
CACTUS AVENUE FROM STA. 20+00
TO STA. 30+50 PHASE 8A&B

8 OF 11 SHEETS

FOR: EL RIVINO INDUSTRIAL I, LLC
20411 SW BIRCH STREET, SUITE 200 NEWPORT BEACH, CA 92660
PHONE: (949) 296-2960 FAX: (888) 793-7363

PPD No. 2357 PLAN No. _____

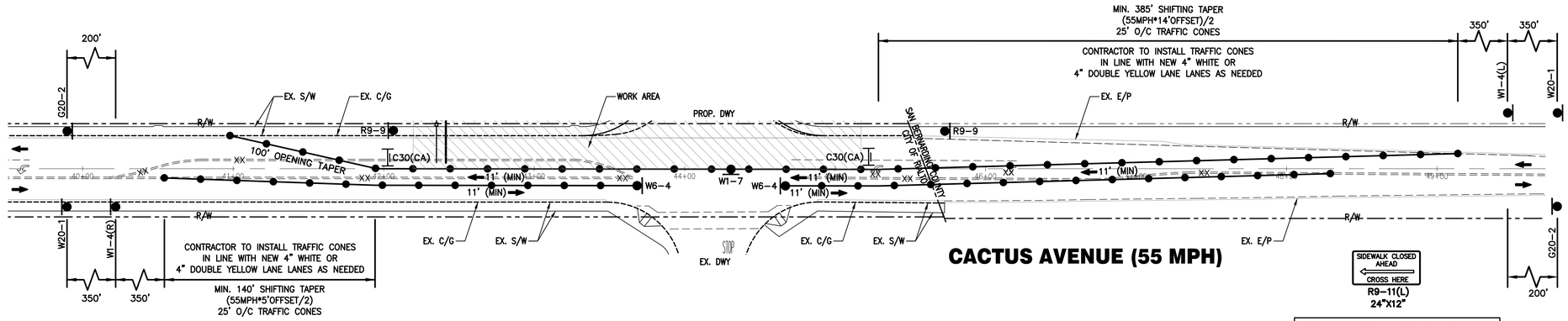
Plot Date: 07/30/2018 10:19:11 AM User: #### File Name: C:\Users\Jasper Wong\Dropbox (TJW Engineering Inc.)\TJW Projects\THI Projects\THI-16-013\THI6013 El Rivino Cactus TC F.dwg Last Update: 7/30/2018 10:18:01 AM

GENERAL TRAFFIC CONTROL NOTES:

1. CONSTRUCTION PERMITS SHALL BE OBTAINED FROM THE CITY OF RIALTO DEPARTMENT OF ENGINEERING PRIOR TO THE START OF ANY WORK. INSPECTION COORDINATION SHALL BE REQUESTED AT LEAST TWO WORKING DAYS PRIOR TO THE START OF ANY WORK IN PUBLIC RIGHT-OF-WAY WITH IN THE CITY LIMITS. CALL (909) 350-7610.
2. All WORK, MATERIALS, EQUIPMENT AND TEMPORARY TRAFFIC CONTROL SHALL CONFORM TO THESE PLANS, THE CITY OF RIALTO STANDARD SPECIFICATIONS, THE STANDARD PLANS AND SPECIFICATIONS OF THE STATE OF CALIFORNIA, DATED 2010, AND THE CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, DATED 2014.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING EMERGENCY SERVICES, TRANSPORTATION SERVICES, IMPACTED BUSINESSES, AND AFFECTED RESIDENTS OF THE CONSTRUCTION AND/OR CLOSURE AND DETOUR ROUTE BY PLACING CHANGEABLE MESSAGE SIGN (CMS) AT LEAST SEVEN DAYS PRIOR TO THE CLOSURE ALERTING THE PUBLIC OF CONSTRUCTION.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ACCESS TO ANY AND ALL RESIDENTIAL AND COMMERCIAL PROPERTIES LOCATED WITHIN THE CONSTRUCTION ZONE AND/OR ROAD CLOSURE DURING THE PROJECT 24-HOURS A DAY, 7 DAYS A WEEK.
5. THE CONSTRUCTION SHALL NOT DISRUPT ANY PUBLIC SERVICES INCLUDING MAIL DELIVERY, TRASH PICKUP, AND BUS SERVICES.
6. WORK HOURS SHALL BE RESTRICTED TO THE PERIOD BETWEEN 9:00 AM AND 3:00 PM, MONDAY THROUGH FRIDAY, UNLESS APPROVED OTHERWISE. WHEN NIGHT WORK IS REQUIRED, THE WORK HOURS SHALL. BE BETWEEN 9:00 PM AND 5:00 AM, SUNDAY THROUGH THURSDAY.
7. THE EXACT LOCATION OF ALL TRAFFIC CONTROL DEVICES IS SUBJECT TO APPROVAL OF THE CITY ENGINEER. ADDITIONAL TRAFFIC CONTROL DEVICES OR MODIFICATIONS TO THE PLANS MAY BE REQUIRED BY THE CITY ENGINEER AT ANY TIME.
8. DURING CONSTRUCTION, ALL CONFLICTING TRAFFIC CONTROL DEVICES SHALL BE COVERED OR REMOVED. UPON COMPLETION OF CONSTRUCTION, ALL TEMPORARY TRAFFIC CONTROL DEVICES SHALL BE REMOVED AND THE ROADWAY RESTORED TO ORIGINAL CONDITION.
9. GLUE DOWN DELINEATORS WITH COLORED REFLECTIVE TAPE (WHITE FOR RIGHT EDGELINE DELINEATION AND YELLOW FOR CENTERLINE DELINEATION) ARE REQUIRED IF THE TEMPORARY TRAFFIC CONTROL IS TO REMAIN IN PLACE OVERNIGHT.
10. CONTRACTOR SHALL POST WARNING SIGNS FOR PAVEMENT SURFACE DISRUPTIONS OF 1/2" OR GREATER. PAVEMENT DISRUPTIONS OF 1" OR GREATER SHALL HAVE A BEVELED EDGE OF FOUR (4) HORIZONTAL TO ONE (1) VERTICAL.
11. CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF THE AMERICAN DISABILITY ACT ACCESSIBILITY GUIDELINES AND WITH THE CALIFORNIA ACCESSIBILITY GUIDELINES AS RELATED TO PEDESTRIAN ACCESS AND SHALL MAINTAIN PEDESTRIAN ACCESS AT ALL TIMES PER ADA REQUIREMENTS.
12. ALL OPEN EXCAVATIONS WITHIN THE PUBLIC RIGHT-OF-WAY SHALL BE BACK-FILLED OR STEEL PLATED PER CITY STD. 1009 DURING NON-WORKING HOURS. "STEEL PLATES AHEAD" WARNING SIGNS SHALL BE POSTED IN ADVANCE OF STEEL PLATE BRIDGING.
13. ALL TRAFFIC LANES SHALL BE A MINIMUM OF 12' IN WIDTH, HAVE A MINIMUM OF 5 FEET OF CLEARANCE FROM OPEN EXCAVATIONS AND A MINIMUM OF 2 FEET FROM VERTICAL OBSTRUCTIONS. OPEN TRENCHES WITH LESS THAN FIVE FEET OF CLEARANCE SHALL BE PROTECTED BY K-RAIL BARRIERS/TEMPORARY CRASH CUSHIONS INSTALLED PER CALTRANS STANDARDS, WITH EDGE LINE STRIPING APPLIED PER DETAIL 27B AT 1' OFF.
14. WHEN NECESSARY TO RESTRICT PARKING, CONTRACTOR SHALL POST SIGNS A MINIMUM OF 48 HOURS PRIOR TO THE COMMENCEMENT OF WORK.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSPECTING AND MAINTAINING ALL WORK ZONE TRAFFIC CONTROL DEVICES 24-HOURS PER DAY AND 7 DAYS A WEEK AND SHALL DESIGNATE A SINGLE POINT OF CONTACT RESPONSIBLE FOR THIS EFFORT.

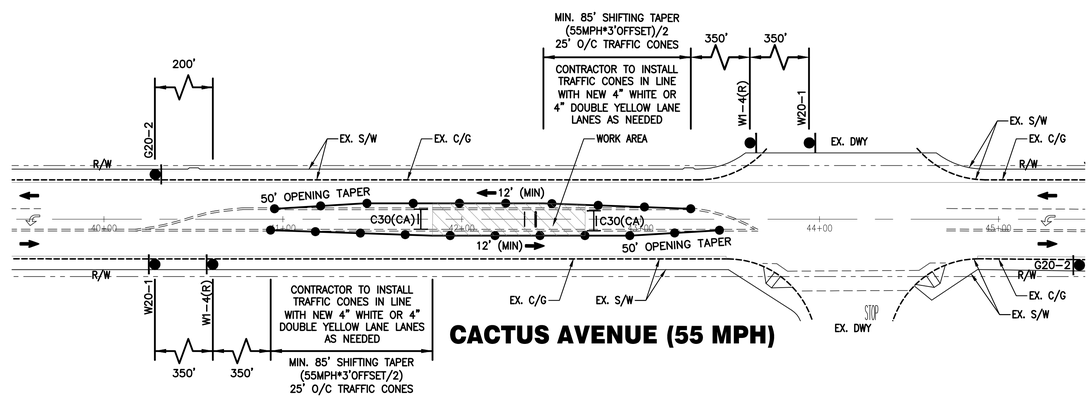
-PHASE 9A-

DURATION:
WORK HOURS: 8:00AM-3:30PM



-PHASE 9B-

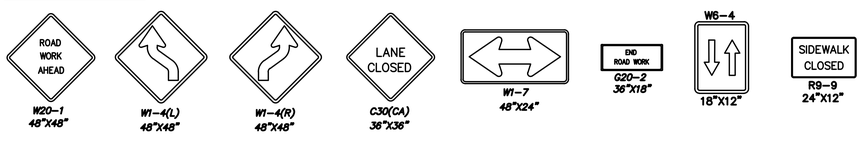
DURATION:
WORK HOURS: 8:00AM-3:30PM



LEGEND:

- TEMPORARY TRAFFIC CONTROL SIGN
- TYPE III BARRICADE WITH SIGN
- TRAFFIC CONE OR GLUE DOWN DELINEATOR
- DIRECTION OF TRAVEL
- SIGNALIZED INTERSECTION
- AREA OF CONSTRUCTION
- FLASHING ARROW SIGN (FAS)
- TEMPORARY CONCRETE BARRIER (K-RAIL)
- TEMPORARY CRASH CUSHION
- XX REMOVE EXISTING CONFLICTING STRIPING IN THE WORK AREA
- FLAGGER LOCATION

SIGN LEGEND:



CITY OF JURUPA VALLEY
PUBLIC WORKS DEPARTMENT

JIM L. SMITH R.C.E. NO 42977 DATE

SCALE: 1" = 40'
20 0 20 40 60

Know what's below. Call before you dig.

MARK	REVISIONS	APPR.	DATE

DESIGNED BY: JW DRAWN BY: JW CHECKED BY: TJW

SEAL-DESIGN ENGINEER
REGISTERED PROFESSIONAL ENGINEER THOMAS JOSEPH WHEAT No. 69467 Exp. 6/30/20 CIVIL STATE OF CALIFORNIA

PREPARED UNDER THE SUPERVISION OF:
THOMAS J. WHEAT, RCE 69467, EXP. 06/30/2020 DATE

RECOMMENDED FOR APPROVAL BY LOCKWOOD ENGINEERING:
CARLETON W. LOCKWOOD, JR, RCE 45935 DATE

ROBERT G. EISENBEISZ, PUBLIC WORKS DIRECTOR/CITY ENGINEER, RCE 54931 DATE

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BENCH MARK: SAN BERNARDINO COUNTY BENCHMARK NO. "00614" ELEVATION = 950.595' (NGVD '29)

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CITY OF RIALTO

TEMPORARY TRAFFIC CONTROL PLAN
CACTUS AVENUE FROM STA. 39+50
TO STA. 49+75 PHASE 9A&B

9 OF 11 SHEETS

FOR: EL RIVINO INDUSTRIAL I, LLC
20411 SW BIRCH STREET, SUITE 200 NEWPORT BEACH, CA 92660
PHONE: (949) 296-2960 FAX: (888) 793-7363

PPD No. 2357 PLAN No. _____

Plot Date: 07/30/2018 10:19:14 AM User: #### File Name: C:\Users\Jasper Wong\Dropbox (TJW Engineering Inc.)\TJW Projects\THI Projects\THI-16-013\THI6013 El Rivino Cactus TC F.dwg Last Update: 7/30/2018 10:18:01 AM

-PHASE 9C-

DURATION:
WORK HOURS: 8:00AM-3:30PM

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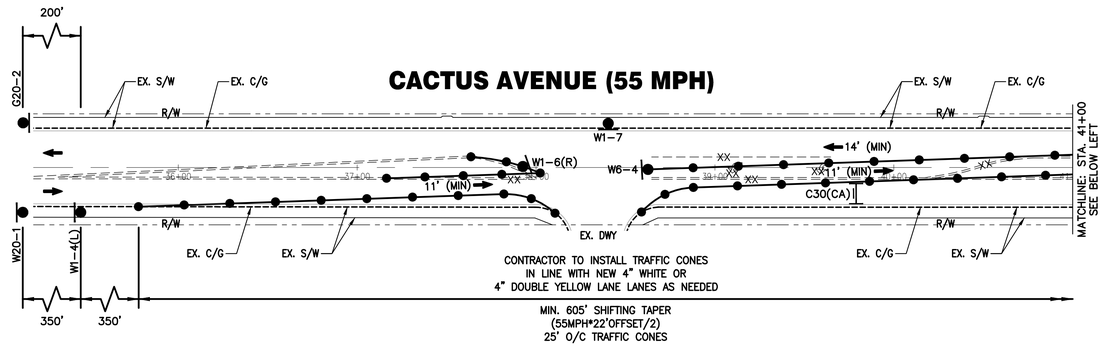
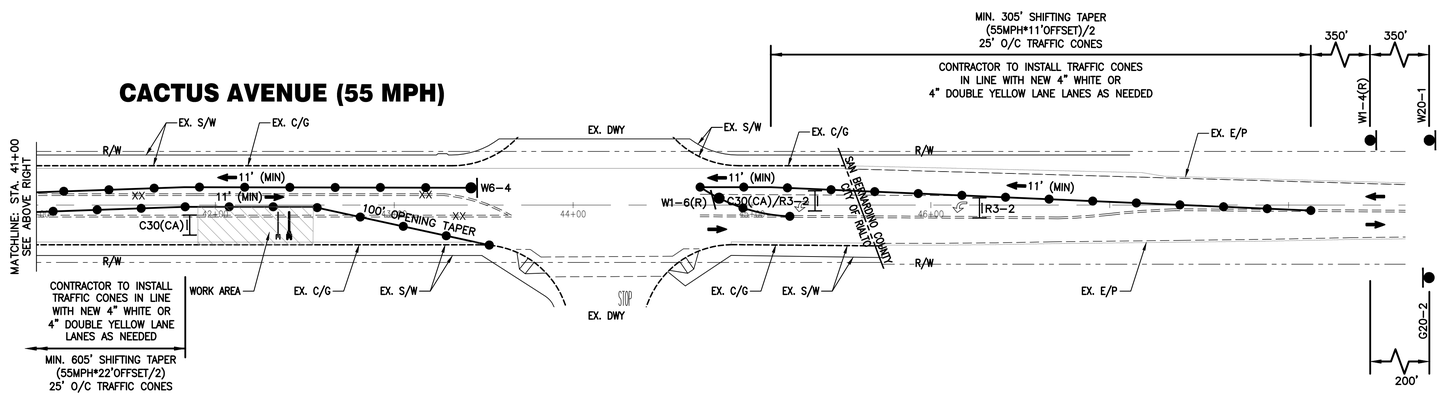
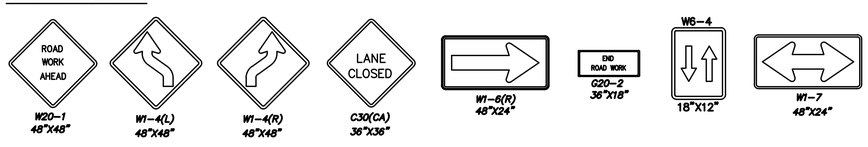
LEGEND:

- TEMPORARY TRAFFIC CONTROL SIGN
- TYPE III BARRICADE WITH SIGN
- TRAFFIC CONE
- DIRECTION OF TRAVEL
- SIGNALIZED INTERSECTION
- AREA OF CONSTRUCTION
- FLASHING ARROW SIGN (FAS)
- TEMPORARY CONCRETE BARRIER (K-RAIL)
- TEMPORARY CRASH CUSHION
- XX REMOVE EXISTING CONFLICTING STRIPING IN THE WORK AREA
- FLAGGER LOCATION





SIGN LEGEND:



CITY OF JURUPA VALLEY
PUBLIC WORKS DEPARTMENT

JIM L. SMITH R.C.E. NO 42977 DATE

SCALE: 1" = 40'
20 0 20 40 60

Know what's below. Call before you dig.

MARK	REVISIONS	APPR.	DATE

DESIGNED BY: JW DRAWN BY: JW CHECKED BY: TJW

SEAL-DESIGN ENGINEER
REGISTERED PROFESSIONAL ENGINEER THOMAS JOSEPH WHEAT No. 69467 Exp. 6/30/20 CIVIL STATE OF CALIFORNIA

PREPARED UNDER THE SUPERVISION OF:
THOMAS J. WHEAT, RCE 69467, EXP. 06/30/2020 DATE

RECOMMENDED FOR APPROVAL BY LOCKWOOD ENGINEERING:
CARLETON W. LOCKWOOD, JR, RCE 45935 DATE

ROBERT G. EISENBEISZ, PUBLIC WORKS DIRECTOR/CITY ENGINEER, RCE 54931 DATE

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t: (949) 878-3509 f: (949) 878-3593
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BENCH MARK: SAN BERNARDINO COUNTY BENCHMARK NO. "00614" ELEVATION = 950.595' (NGVD '29)
DESCRIPTION: NAIL IN CONCRETE CURB, AT THE NORTHWEST CORNER INTERSECTION OF CACTUS AVENUE AND EL RIVINO, 32 FT. NORTH OF EL RIVINO, 112 FT. WEST OF CACTUS, 6 FT. SOUTH OF A WALL AT ENTRANCE TO EL RIVINO COUNTRY CLUB.

CITY OF RIALTO

TEMPORARY TRAFFIC CONTROL PLAN
CACTUS AVENUE FROM STA. 35+25
TO STA. 17+25 PHASE 9C

10 OF 11 SHEETS

FOR: EL RIVINO INDUSTRIAL I, LLC
20411 SW BIRCH STREET, SUITE 200 NEWPORT BEACH, CA 92660
PHONE: (949) 296-2960 FAX: (888) 793-7363

PPD No. 2357 PLAN No. _____

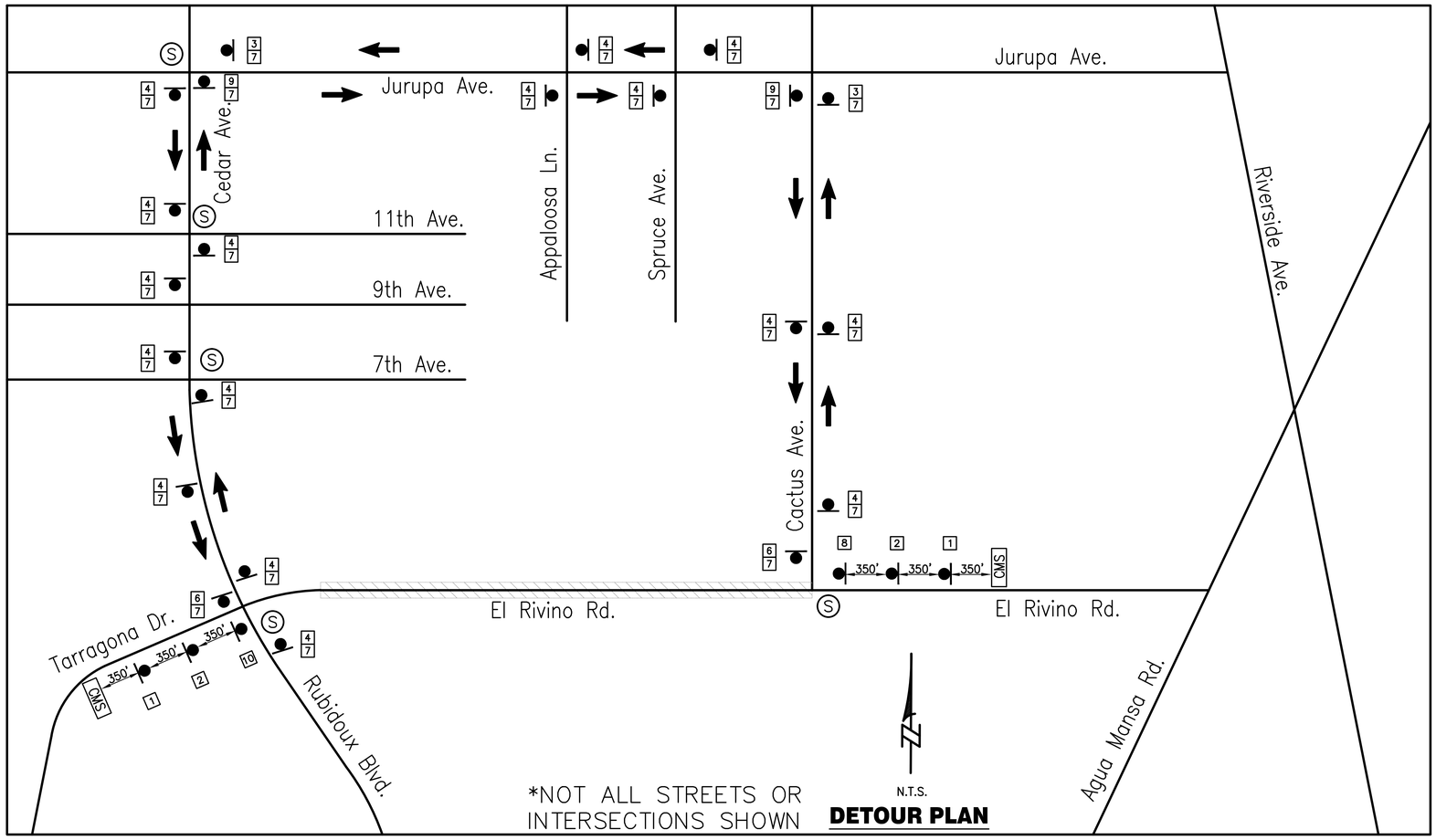
Plot Date: 07/30/2018 10:19:17 AM User: #### File Name: C:\Users\Jasper Wong\Dropbox (TJW Engineering Inc.)\TJW Projects\THI Projects\THI-16-013\THI6013 El Rivino Cactus TC F.dwg Last Update: 7/30/2018 10:18:01 AM

PHASE 1: EL RIVINO ROAD DETOUR PLAN

WESTBOUND CLOSURE BETWEEN CACTUS AVENUE AND RUBIDOUX BOULEVARD

DETOUR ROUTE:

- **CACTUS AVENUE**
- **JURUPA AVENUE**
- **CEDAR AVENUE/RUBIDOUX BLVD**



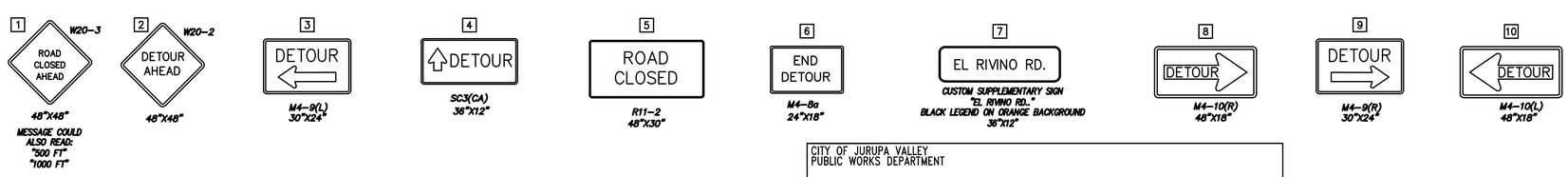
LEGEND:

- TEMPORARY TRAFFIC CONTROL SIGN
- TYPE III BARRICADE
- DIRECTION OF TRAVEL
- FLAGGER LOCATION
- SIGNALIZED INTERSECTION
- AREA OF CONSTRUCTION
- CMS — CHANGEABLE MESSAGE SIGN

CMS MESSAGING

MESSAGE 1 : "EL RIVINO ROAD"
MESSAGE 2 : "CLOSED AHEAD"
MESSAGE 3 : "USE DETOUR"

SIGN LEGEND:



CITY OF JURUPA VALLEY
PUBLIC WORKS DEPARTMENT

JIM L. SMITH R.C.E. NO 42977 DATE

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REGISTERED PROFESSIONAL ENGINEER THOMAS JOSEPH WHEAT No. 69467 Exp. 6/30/20 CIVIL STATE OF CALIFORNIA

PREPARED UNDER THE SUPERVISION OF:

THOMAS J. WHEAT, RCE 69467, EXP. 06/30/2020 DATE

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ROBERT G. EISENBEISZ, PUBLIC WORKS DIRECTOR/CITY ENGINEER, RCE 54931 DATE

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CITY OF RIALTO

PHASE 1 DETOUR PLAN
EL RIVINO ROAD FROM CACTUS AVENUE
TO RUBIDOUX BOULEVARD/CEDAR AVENUE

FOR: EL RIVINO INDUSTRIAL I, LLC
20411 SW BIRCH STREET, SUITE 200 NEWPORT BEACH, CA 92660
PHONE: (949) 296-2960 FAX: (888) 793-7363

PPD No. 2357 PLAN No. _____

11 OF 11 SHEETS

Plot Date: 07/30/2018 10:19:18 AM User: #### File Name: C:\Users\Jasper Wong\Dropbox (TJW Engineering Inc.)\TJW Projects\THI Projects\THI-16-013\THI16013 El Rivino Cactus TC F.dwg Last Update: 7/30/2018 10:18:01 AM

STREET, SIGNING AND STRIPING IMPROVEMENT PLANS
FOR
EL RIVINO ROAD AND CACTUS AVENUE
IN THE CITY OF RIALTO

GENERAL STREET NOTES:

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH CITY OF RIALTO STANDARD DRAWINGS, STANDARD SPECIAL PROVISIONS, AND THE LATEST EDITION OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, WITH SUPPLEMENTS. ANY VARIATION FROM OR EXCEPTION TO THE STANDARDS OR FOLLOWING GENERAL NOTES MUST BE APPROVED BY THE CITY ENGINEER.
2. ALL EXISTING IMPROVEMENTS INCLUDING CURB AND GUTTERS, SIDEWALKS, ASPHALT/CONCRETE OR P.C.C. PAVING, WHICH ARE BEING JOINED OR MATCHED SHALL BE DONE TO THE SATISFACTION OF THE CITY ENGINEER, INCLUDING NECESSARY SAW CUTTING, REMOVAL REPLACEMENT AND CAPPING.
3. ANY EXISTING TRAVEL WAYS IN WHICH AN EXCAVATION IS MADE IN CONJUNCTION WITH THIS PROJECT SHALL BE COVERED BY PERMIT. THIS AREA SHALL BE PROPERLY POSTED AND LIGHTED IN CONFORMANCE WITH THE STATE MANUAL OF WARNING SIGNS, LIGHTS, AND DEVICES FOR USE IN PERFORMANCE OF WORK UPON HIGHWAYS IN ORDER TO ELIMINATE ANY HAZARDS. STREET SHALL BE SURFACED WITH A MINIMUM OF 2" OF ASPHALT AT THE END OF EACH WORKING DAY.
4. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND SHALL NOTIFY THE CITY FIELD INSPECTORS AT LEAST 48 HOURS PRIOR TO STARTING EACH PHASE OF CONSTRUCTION AND PRIOR TO REQUIRING INSPECTION.
5. ALL UTILITIES SHALL BE INSTALLED PRIOR TO PAVING OF THE STREETS. ALL TRENCHES SHALL BE FULLY COMPACTED TO THE SATISFACTION OF THE CITY ENGINEER. ALL MANHOLES AND VALVE BOX FRAMES SHALL BE ADJUSTED TO FINISHED GRADES AFTER COMPLETION OF CONSTRUCTION.
6. THE CONTRACTOR SHALL DETERMINE THE TRUE LOCATION OF ANY UNDERGROUND UTILITY PRIOR TO LAYING ANY LINES WHICH ARE TO CONNECT THE EXISTING SEWER, WATER, OR STORM DRAINS. THESE LINES SHALL BE EXPOSED AND JOIN ELEVATIONS VERIFIED. ANY CHANGE IN GRADE OR DEVIATION FROM THE PLANS MUST BE APPROVED BY THE CITY ENGINEER.
7. ADVERTISING SIGNS WILL NOT BE PERMITTED WITHIN THE STREET RIGHT-OF-WAY.
8. TREES SHALL BE PLANTED WITHIN THE STREET RIGHT-OF-WAY IN ACCORDANCE WITH THE CITY OF RIALTO REQUIREMENTS.
9. STRUCTURAL SECTION OF PAVEMENT SHALL BE DETERMINED BY THE PRIVATE SOILS ENGINEER. THE PRIVATE SOILS ENGINEER SHALL FURNISH THE RESULTS OF R-VALUE TESTS AND STRUCTURAL SECTION CALCULATIONS TO THE CITY ENGINEER FOR APPROVAL. IN NO CASE SHALL THE STRUCTURAL SECTION BE LESS THAN IS REQUIRED BY CITY OF RIALTO STANDARD DRAWING NO. 50.
10. COMPACTION TESTING SHALL BE PERFORMED BY THE SOILS ENGINEER TO THE SATISFACTION OF THE CITY ENGINEER. THE SUBGRADE SHALL BE COMPACTED TO 90% WITH THE TOP 6 INCHES BELOW THE ASPHALT PAVING COMPACTED TO 95%. IF THE AGGREGATE BASE IS THICKER THAN ONE FOOT, THE ENTIRE THICKNESS OF THE BASE MATERIAL SHALL BE COMPACTED TO 95%.
11. SEWER MAIN AND LATERALS SHALL BE CONSTRUCTED, BACKFILL COMPACTED, AND TESTED PRIOR TO CONSTRUCTION OF CURB AND GUTTER.
12. THE CURB AND GUTTER SHALL BE "ETCHED" SHOWING LATERAL LOCATIONS "S" FOR SEWER, "G" FOR GAS, "E" FOR ELECTRICAL AND "W" FOR WATER.
13. TRAFFIC CONTROL AND SAFETY DEVICES SHALL BE PLACED AND MAINTAINED PER THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION MANUAL OF WARNING SIGNS LIGHTS, AND DEVICES FOR USE IN PERFORMANCE OF WORK UPON HIGHWAYS AND TO THE SATISFACTION OF THE CITY ENGINEER.
14. NOTICE TO CONTRACTORS: THE EXISTENCE AND LOCATION OF ANY UNDERGROUND UTILITY PIPES OR STRUCTURES SHOWN ON THESE PLANS ARE OBTAINED BY A SEARCH OF THE AVAILABLE RECORDS. APPROVAL OF THESE PLANS BY THE CITY OF RIALTO DOES NOT CONSTITUTE A REPRESENTATION AS TO THE ACCURACY OR COMPLETENESS OF THE LOCATION OR EXISTENCE OR NON-EXISTENCE OF ANY UNDERGROUND UTILITY PIPE OR STRUCTURE WITHIN THE LIMITS OF THIS PROJECT. THE CONTRACTOR IS REQUIRED TO TAKE ALL DUE PRECAUTIONARY MEANS TO PROTECT THE UTILITY LINES NOT OF RECORD OR NOT SHOWN ON THESE PLANS.
15. PRIVATE ENGINEERS NOTICE: PRIOR TO CONSTRUCTION, SEWER AND WATER CONTRACTORS SHALL ASCERTAIN THE CORRECTNESS OF WATER SERVICES AND SEWER LATERAL LOCATIONS WITH THE DEVELOPER. ANY DEVIATION FROM LOCATIONS SHOWN ON THESE PLANS SHALL BE REPORTED TO THE ENGINEER FOR ADJUSTMENT PRIOR TO CALLING FOR ANY CONSTRUCTION STAKING REQUIRED.
16. PRIOR TO THE CITY RELEASING THE BOND FOR THE PUBLIC IMPROVEMENTS, THE ENGINEER OF RECORD SHALL SUBMIT A COMPLETE SET OF "AS BUILT" PLANS ON MYLAR TO THE CITY ENGINEERING SECTION AND THE TIE SHEETS FOR NECESSARY MONUMENTATION SHALL ALSO BE SUBMITTED TO THE CITY.
17. STATE LAW (SB 3019) REQUIRES THE CONTRACTOR TO CONTACT UNDERGROUND SERVICE ALERT AND OBTAIN AN IDENTIFICATION NUMBER PRIOR TO THE ISSUANCE OF THE CITY'S ENCROACHMENT PERMIT. THE CONTRACTOR SHALL NOTIFY UNDERGROUND SERVICE ALERT TWO FULL WORKING DAYS (48 HOURS MINIMUM) IN ADVANCE OF ANY CONSTRUCTION ACTIVITIES, INCLUDING PAVEMENT REMOVAL. EXCAVATION AND A.C. OVERLAY, WHICH COULD AFFECT ANY UNDERGROUND UTILITY.
18. PRIOR TO ANY CONSTRUCTION WORK, THE CONTRACTOR SHALL OBTAIN A CITY BUSINESS LICENSE AND PERMIT.
19. PRIOR TO TAKING ANY WATER FROM A FIRE HYDRANT, THE CONTRACTOR SHALL MAKE ARRANGEMENTS TO OBTAIN A FIRE HYDRANT WATER METER.
20. ALL STREET TRENCHING, BACKFILLING AND PAVEMENT REPAIRS SHALL BE DONE IN ACCORDANCE WITH CITY STANDARD DRAWING NO. 64.
21. ALL IRRIGATION LINES TO BE REMOVED, RELOCATED OR RECONSTRUCTED AS SHOWN AND/OR AS DIRECTED BY THE PUBLIC WORKS INSPECTOR IN THE FIELD.
22. CONTRACTOR SHALL REMOVE AND/OR INSTALL PAVEMENT MARKINGS AND STRIPING. PLACEMENT AND SCHEDULING TO BE DETERMINED BY INSPECTOR IN THE FIELD.
23. THE CONTRACTOR SHALL NOT ORDER OR PLACE ANY PORTLAND CEMENT CONCRETE OR ASPHALT CONCRETE PAVING UNTIL THE FORMS AND SUBGRADE AND/OR AGGREGATE BASE HAVE BEEN INSPECTED AND APPROVED BY THE CITY INSPECTOR IN THE FIELD.
24. STRICT ADHERENCE TO DUST CONTROL REQUIREMENTS SHALL BE ENFORCED, AND ALL DUST SHALL BE CONTROLLED BY WATERING, UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.
25. IF ANY EXISTING UTILITIES OR ANY OTHER FACILITIES CONFLICT WITH THE PROPOSED IMPROVEMENTS, WORK SHALL STOP AND THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY.
26. THE FINAL OR SURFACE LAYER OF ASPHALT CONCRETE SHALL NOT BE PLACED UNTIL ALL ON-SITE IMPROVEMENTS HAVE BEEN COMPLETED, INCLUDING ALL GRADING AND UNTIL ALL UNACCEPTABLE CONCRETE AND/OR ASPHALT WORK HAS BEEN REMOVED AND REPLACED, UNLESS OTHERWISE APPROVED BY THE ENGINEER.
27. ALL PERMANENT TRAFFIC CONTROL SIGNS AND DEVICES SHALL BE LOCATED AS SPECIFIED IN THE FIELD BY THE CITY ENGINEER PRIOR TO FINAL APPROVAL OF IMPROVEMENTS.
28. REPAIR OR REPLACE ANY DAMAGED OR ALTERED EXISTING IMPROVEMENTS WITHIN PUBLIC RIGHT-OF-WAY AS DIRECTED BY THE ENGINEER IN THE FIELD.
29. ALL SURVEY MONUMENTS SHALL BE PROTECTED AND PERPETUATED IN PLACE ANY DISTURBED OR COVERED MONUMENTS SHALL BE RESET BY A QUALIFIED REGISTERED CIVIL ENGINEER OR A LICENSED LAND SURVEYOR.
30. ANY CONTRACTOR PERFORMING WORK ON THIS PROJECT SHALL FAMILIARIZE THEMSELVES WITH THE WORK SITE AND SHALL BE SOLELY RESPONSIBLE FOR ANY DAMAGE TO EXISTING FACILITIES RESULTING DIRECTLY OR INDIRECTLY FROM THEIR OPERATIONS, WHETHER OR NOT SUCH FACILITIES ARE SHOWN ON THESE PLANS.
31. CARE SHOULD BE TAKEN TO PREVENT GRADED DITCHES AND SWALES FROM UNDERMINING STREET IMPROVEMENTS. UPON INSPECTION OF THE SITES, THE CITY ENGINEER MAY REQUIRE TEMPORARY GUNITE SWALES, ENTERING OR LEAVING IMPROVEMENTS.
32. APPROVAL OF THESE PLANS BY THE CITY OR ITS AGENTS DOES NOT RELIEVE THE ENGINEER AND THE APPLICANT FROM THE RESPONSIBILITY FOR THE CORRECTION OF ERRORS OR OMISSIONS DISCOVERED DURING CONSTRUCTION. UPON REQUEST, THE APPROPRIATE PLAN REVISIONS SHALL BE PROMPTLY SUBMITTED TO THE CITY ENGINEER FOR REVIEW AND APPROVAL.
33. MANHOLE FRAMES AND COVERS TO BE CONSTRUCTED BY THE CONTRACTOR 6" BELOW FINISH GRADE. UPON COMPLETION OF PAVING, THE PAVING CONTRACTOR SHALL ADJUST TOP OF MANHOLE TO FINISH GRADE.
34. ALL AREAS TO BE PAVED SHALL BE STERILIZED AS DIRECTED BY THE CITY ENGINEER PRIOR TO PAVING.
35. A SEAL COAT OF SS1H WILL BE REQUIRED ON ALL NEW ASPHALT CONCRETE APPLIED AT THE RATE OF 0.075 GALLS PER SQUARE YARD.

CITY OF RIALTO CONSTRUCTION INSPECTION HOURS
7:00A.M. TO 5:00P.M. – MONDAY THROUGH THURSDAY

ENGINEER'S NOTE:

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; THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNER AND ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPT FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR THE ENGINEER.

THE EXISTENCE AND LOCATION OF ANY UNDERGROUND UTILITIES OR STRUCTURES SHOWN ON THESE PLANS WERE OBTAINED BY A DILIGENT SEARCH OF ALL AVAILABLE RECORDS. THE CONTRACTOR IS REQUIRED TO TAKE ALL PRECAUTIONARY MEASURES TO PROTECT THE UTILITIES SHOWN AND ANY OTHER LINES OR STRUCTURES SHOWN OR NOT SHOWN ON THESE PLANS, AND IS RESPONSIBLE FOR THE PROTECTION OF, AND ANY DAMAGE TO THESE LINES OR STRUCTURES.

INDEX OF SHEETS:

SHEET 1	TITLE SHEET – TYPICAL SECTIONS, NOTES & QUANTITIES
SHEET 2 TO 4	EL RIVINO RD. – STREET IMPROVEMENT PLAN & PROFILE
SHEET 5 TO 8	CACTUS AVE – STREET IMPROVEMENT PLAN & PROFILE
SHEET 9 TO 11	OFFSITE STORM DRAIN PLANS
SHEET 12 TO 15	SIGNING AND STRIPING PLANS

LEGEND

— —	SAWCUT EXISTING A.C. PAVEMENT
(1525.90)	EXISTING ELEVATION
1525.90	DESIGN ELEVATION
→	DIRECTION OF FLOW
-o-o-o-	DAYLIGHT LINE
	FLOWLINE
	PROPOSED R/W
	EXIST. R/W
—(W)—	EXIST. UTILITY LINE

LIST OF ABBREVIATIONS

A.B.	AGGREGATE BASE	FP	FINISH PAVEMENT
A.C.	ASPHALT CONCRETE	FS	FINISH SURFACE
A.D.A.	AMERICAN DISABILITIES ACT	H.P.	HIGH POINT
B.C.	BEGINNING OF CURVE	INV.	INVERT ELEVATION
B.C.R.	BEGINNING OF CURVE RETURN	L.P.	LOW POINT
B.V.C.	BEGINNING OF VERTICAL CURVE	M.V.C.	MIDDLE OF VERTICAL CURVE
C&G	CURB & GUTTER	N.T.S.	NOT TO SCALE
C.F.	CURB FACE	P.C.C.	PORTLAND CEMENT CONCRETE
C.F.S.	CUBIC FEET PER SECOND	P.C.V.C.	POINT OF COMPOUND VERTICAL CURVE
C.M.B.	CRUSHED MISCELLANEOUS BASE	P.R.C.	POINT OF REVERSE CURVE
E.C.	END OF CURVE	P.R.V.C.	POINT OF REVERSE VERTICAL CURVE
E.C.R.	END OF CURVE RETURN	R.C.B.	REINFORCED CONCRETE BOX
ESMT.	EASEMENT	R/W	RIGHT OF WAY
E.V.C.	END OF VERTICAL CURVE	S/W	SIDEWALK
FL	FLOWLINE	TAN	TANGENT
		TC	TOP OF CURB

PAVEMENT LEGEND:

- CONSTRUCT NEW AC PAVEMENT
- COLD PLANE AND OVERLAY
- AC REMOVAL
- CONSTRUCT NEW PCC PAVEMENT
- CONSTRUCT NEW PCC SIDEWALK

OWNER/DEVELOPER:

EL RIVINO INDUSTRIAL 1, LLC
20411 SW BIRCH STREET, SUITE 200
NEWPORT BEACH, CA 92660
PHONE: (949) 296-2967
FAX: (888) 793-7363

GEOTECHNICAL ENGR.:

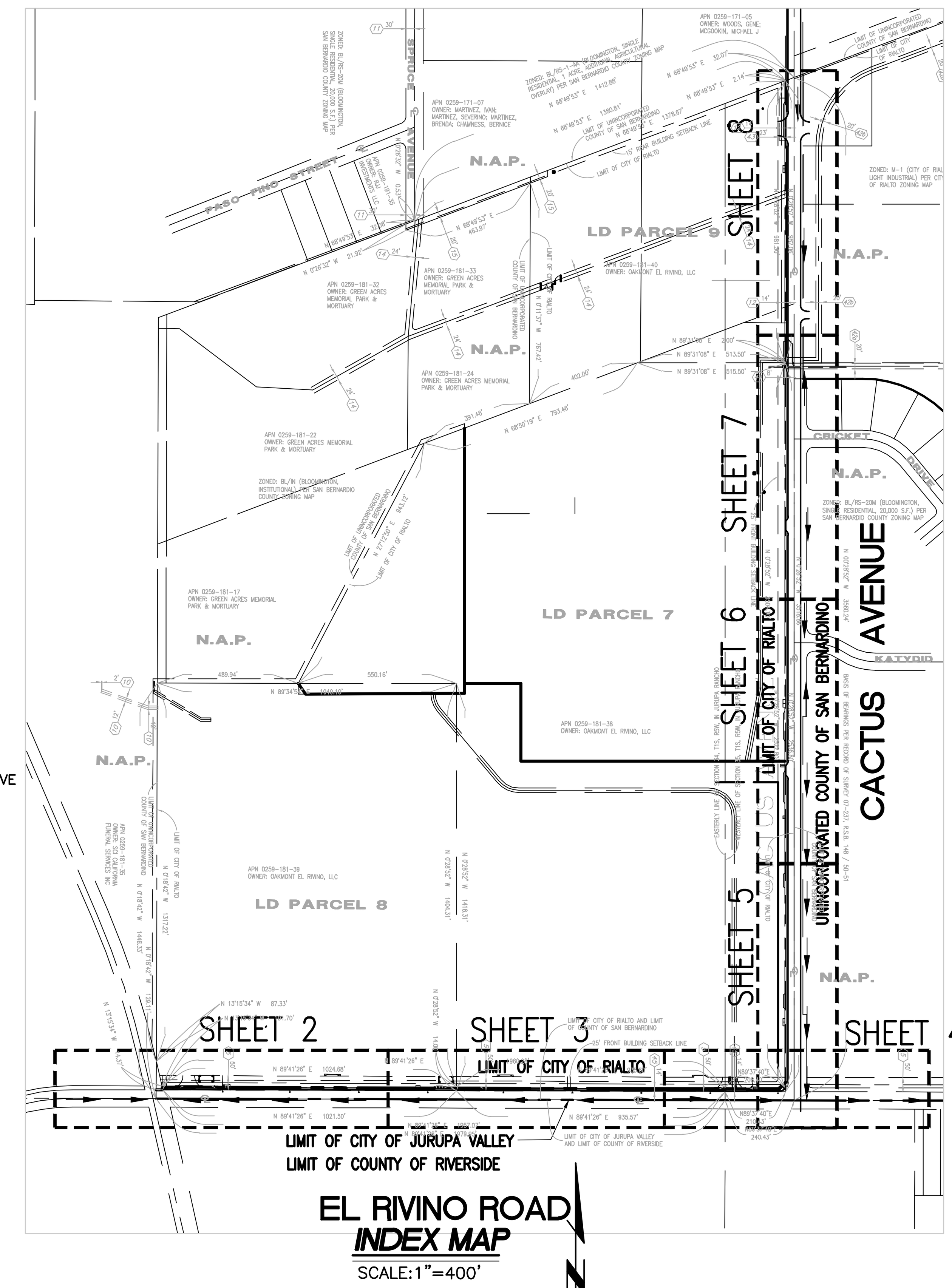
SOUTHERN CALIFORNIA GEOTECHNICAL
22885 EAST SAVI RANCH PARKWAY, SUITE E
YORBA LINDA, CA 92887
PH: (714)685-1115
DATED: DECEMBER 2, 2014

TOPOGRAPHY SOURCE:

CENTRAL COAST AERIAL MAPPING
710 FIERO LANE #24
SAN LUIS OBISPO CA 93401
PH: (805) 543-4307
FX: (805) 543-7257

BASIS OF BEARINGS:
THE BEARINGS SHOWN HEREON ARE BASED ON THE CENTERLINE OF CACTUS AVENUE BEING N 00°28'52" W AS PER RECORD OF SURVEY 07-237, FILED IN R.S.B. 148 / 50-51, IN THE COUNTY OF SAN BERNARDINO, RECORDS OF SAID COUNTY, STATE OF CALIFORNIA.

UTILITY COMPANIES	EMERGENCY NUMBERS
WEST VALLEY WATER DISTRICT	(909) 875-1361
SOUTHERN CALIFORNIA GAS CO.	(800) 427-2200
SOUTHERN CALIFORNIA EDISON	(800) 655-4555
GENERAL TELEPHONE CO.	(800) 834-4966
COLTON JOINT UNIFIED SCHOOL DISTRICT	(909) 580-5000
VERIZON-MCI COMMUNICATION SERVICES	(972) 729-6322
TIME WARNER CABLE	(909) 975-3439



EL RIVINO ROAD
INDEX MAP
SCALE:1"=400'

SEE SHEETS 3, 5, 6 AND 7 FOR STREET SECTIONS

STORM DRAIN GENERAL NOTES:

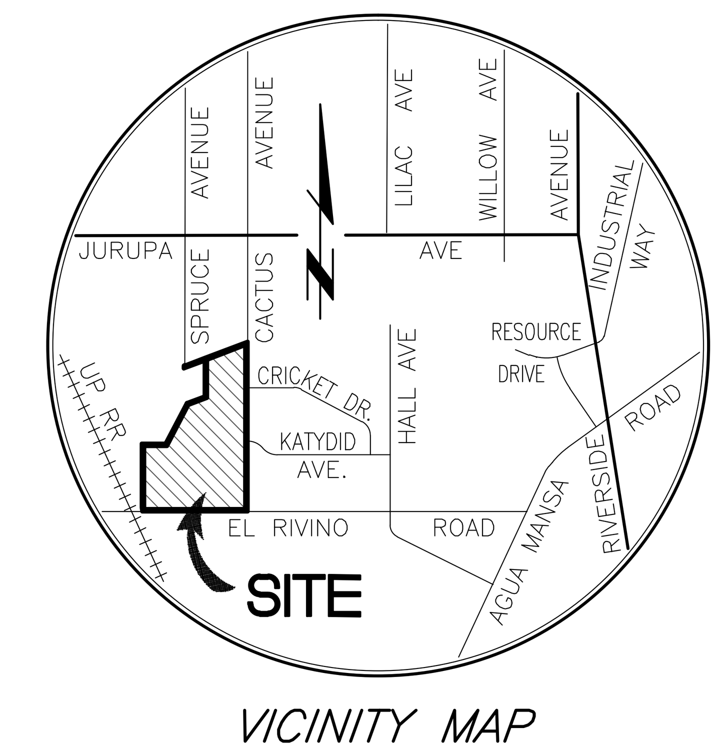
1. THE CONSTRUCTION OF ALL IMPROVEMENTS SHALL CONFORM TO THESE PLANS, THE REQUIREMENTS OF THE CITY OF RIALTO STANDARD SPECIFICATIONS AND TO THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION "GREEN BOOK", LATEST EDITION.
2. CONSTRUCTION PERMITS SHALL BE OBTAINED FROM THE CITY OF RIALTO DEVELOPMENT SERVICES DEPARTMENT PRIOR TO START OF ANY WORK WITHIN THE CITY LIMITS.
3. STATIONING REFERS TO THE CENTERLINES OF STORM DRAINS EXCEPT WHERE NOTED OTHERWISE.
4. CONSTRUCTION INSPECTION WILL BE PERFORMED BY THE CITY OF RIALTO. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND SHALL NOTIFY THE CITY INSPECTORS (909) 820-2533- 24 HOURS PRIOR TO STARTING EACH PHASE OF CONSTRUCTIONS AND PRIOR TO REQUIRING INSPECTION.
5. ALL EXPOSED CONCRETE SURFACES SHALL CONFORM IN GRADE, COLOR AND FINISH TO ALL ADJOINING CURB AND SIDEWALK.
6. STATIONING FOR LATERALS AND CONNECTOR PIPE REFER TO THE CENTERLINE – CENTERLINE INTERSECTION STATION.
7. STATE LAW (SB 3019) REQUIRES THE CONTRACTOR TO CONTACT UNDERGROUND SERVICE ALERT AND OBTAIN AN IDENTIFICATION NUMBER PRIOR TO THE ISSUANCE OF THE CITY'S ENCROACHMENT PERMIT. THE CONTRACTOR SHALL NOTIFY UNDERGROUND SERVICE ALERT TWO FULL WORKING DAYS (48 HOURS MINIMUM) IN ADVANCE OF ANY CONSTRUCTION ACTIVITIES, INCLUDING PAVEMENT REMOVAL, EXCAVATION AND AC OVERLAY, WHICH COULD AFFECT ANY UNDERGROUND UTILITY.
8. ALL ELEVATIONS SHOWN ARE IN FEET AND DECIMALS THEREOF BASED ON CITY OF RIALTO BENCH MARK AND DATUM.
9. ELEVATIONS OF UTILITIES ARE APPROXIMATE UNLESS OTHERWISE NOTED.
10. IF ANY EXISTING UTILITIES OR ANY OTHER FACILITIES CONFLICT WITH THE PROPOSED IMPROVEMENTS, WORK SHALL STOP AND THE ENGINEER OF RECORD NOTIFIED IMMEDIATELY.
11. CONTRACTOR SHALL POTHOLE AT TIE IN STATIONS AND AT ANY OTHER POINTS OF POTENTIAL CONFLICTS WITH UNDERGROUND FACILITIES BEFORE STARTING CONSTRUCTION.
12. BACKFILL MATERIAL TO HAVE A SAND EQUIVALENT (S.E.) OF 30 (MIN.) AND MINIMUM COMPACTION OF 90%. ALL TRENCH BACKFILL SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS OF THE CITY OF RIALTO AND STANDARD DRAWING NO. 64.
13. BACKFILL TO BE IN 8" LIFTS IF TRENCH BOTTOM AND SIDES HAVE A S.E. LESS THAN 20.
14. NO TRENCH MAY LEFT OPEN OVERNIGHT UNLESS AUTHORIZED IN WRITING BY THE CITY ENGINEER.
15. TRENCHES SHALL HAVE SHAPED BEDDING WITH THE TOP 12" OVER PIPE BEING COLORED SAND, UNLESS OTHERWISE NOTED ON PLANS. COLOR TO BE APPROVED BY THE FIELD INSPECTOR.
16. NO CONCRETE SHALL BE PLACED UNTIL THE FORMS AND REINFORCING STEEL HAS BEEN PLACED, INSPECTED AND APPROVED.
17. EXISTING UNDERGROUND UTILITIES ARE AS PER THE AVAILABLE RECORDS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE ACTUAL LOCATION AND ELEVATION IN THE FIELD.
18. THE WALL AND FACES OF ALL EXCAVATIONS GREATER THAN FIVE (5) FEET IN DEPTH SHALL BE EFFECTIVELY GUARDED BY A SHORING SYSTEM, SLOPING OF THE GROUND OR OTHER EQUIVALENT MEANS. TRENCHES LESS THAN FIVE (5) FEET IN DEPTH SHALL ALSO BE GUARDED WHEN EXAMINATION INDICATES HAZARDOUS GROUND MOVEMENT MAY BE EXPECTED.
19. THE CONTRACTOR(S) SHALL ALSO OBTAIN A PERMIT TO PERFORM EXCAVATION OR TRENCH WORK AS DESCRIBED IN NOTE 18 ABOVE FROM CAL/OSHA.
20. "V" IS THE DEPTH OF INLET OF CATCH BASINS MEASURED FROM THE TOP OF CURB TO INVERT OUTLET OF CONNECTOR PIPE.
21. THE CONTRACTOR SHALL DETERMINE THE TRUE LOCATION OF ANY UNDERGROUND UTILITY PRIOR TO LAYING ANY LINES WHICH ARE TO CONNECT TO THE EXISTING SEWER OR STORM DRAINS.
22. IF CAST IN PLACE PIPE (CIPP) WERE USED IN LIEU OF R.C.P. A SOILS REPORT MUST BE SUBMITTED TO THE CITY OF RIALTO.
23. CATCH BASINS SHALL BE LOCATED SO THAT LOCAL DEPRESSIONS SHALL BEGIN AT EXISTING CURB RETURN OR JOINT UNLESS OTHERWISE SPECIFIED.
24. ALL MANHOLES SHALL BE CONSTRUCTED 6" BELOW PAVEMENT GRADE AND BROUGHT TO FINISH GRADE BY THE PAVING CONTRACTOR AFTER PAVEMENT IS IN PLACE. ELEVATIONS SHOWN ON PROFILE AS TOP OF MANHOLE (RIM) ARE APPROXIMATE ONLY AND NOT TO BE USED FOR SETTING OF MANHOLE RING.
25. IMMEDIATELY FOLLOWING REMOVAL OF EXISTING PAVEMENT OR DIKE OR CURB AND/OR GUTTER, THE CONTRACTOR SHALL DILIGENTLY PURSUE THAT PORTION OF WORK TO COMPLETION.
26. NOTICE TO CONTRACTOR: THE EXISTENCE AND LOCATION OF ANY UNDERGROUND UTILITY PIPES OF STRUCTURES SHOWN ON THESE PLANS ARE OBTAINED BY A SEARCH OF THE AVAILABLE RECORDS. APPROVAL OF THESE PLANS BY THE CITY OF RIALTO DOES NOT CONSTITUTE A REPRESENTATION AS TO THE ACCURACY OR COMPLETENESS OF THE LOCATION OR EXISTENCE ON NON EXISTENCE OF ANY UNDERGROUND UTILITY PIPES OR STRUCTURES WITHIN THE LIMITS OF THIS PROJECT. THE CONTRACTOR IS REQUIRED TO TAKE ALL DUE PRECAUTIONARY MEANS TO PROTECT THE UTILITY LINES NOT OF RECORD OR NOT SHOWN ON THESE PLANS.
27. IF DURING CONSTRUCTION, GROUND WATER IS ENCOUNTERED, A SYSTEM APPROVED BY THE CITY ENGINEER SHALL BE INSTALLED TO DEWATER SAID AREA AT THE DIRECTION OF THE SOILS ENGINEER.
28. NO TRENCH BACKFILL SHALL TAKE PLACE WITHOUT PRIOR APPROVAL OF THE CITY'S INSPECTOR.
29. AS-BUILT PLANS SHALL BE PROVIDED TO THE CITY BY THE CONTRACTOR.
30. ALL CATCH BASINS WITHIN THE TRACT BOUNDARY WHERE STORM WATER IS AN INFLOW TO THE BASIN SHALL HAVE A WATER QUALITY INSERT INSTALLED AS PART OF THE CATCH BASIN. THE INSERT SHALL BE A FLO-GARD +PLUS CATCH BASIN FILTER INSERT BY KRISTAR ENTERPRISES INC. OR APPROVAL EQUAL.

CONSTRUCTION INSPECTION HOURS
7:00A.M. TO 5:00P.M. MONDAY THROUGH THURSDAY

SIGNING AND STRIPING CONSTRUCTION NOTES:

(E)	EXISTING SIGN TO REMAIN.	7	ea.
FH	INSTALL BLUE RETROREFLECTIVE FIRE HYDRANT MARKER PER CITY STANDARD DRAWING NO. W-704.	8	ea.
IS	INSTALL SIGN AND POST AS SHOWN.	13	ea.
PM	INSTALL THERMOPLASTIC PAVEMENT MARKING AS SHOWN PER CA-MUTCD STANDARDS.	216	SQ.FT.
RL	RELOCATE EXISTING SIGN AND POST TO NEW LOCATION AS SHOWN.	1	ea.
TX	INSTALL THERMOPLASTIC 12" SOLID WHITE LIMIT LINE OR CROSSWALK MARKING.	175	LF
XX	REMOVE CONFLICTING STRIPING OR MARKINGS.	3,200	LF
(23)	INSTALL DOUBLE YELLOW CENTERLINE RPM PATTERN – DETAIL 23.	3,700	LF
(27B)	PAINT 4" WHITE RIGHT EDGE LINE STRIPE – DETAIL 27B.	400	LF
(33)	INSTALL DOUBLE YELLOW TWO-WAY LEFT TURN MEDIAN RPM PATTERN – DETAIL 33.	1,750	LF
(38C)	INSTALL WHITE CHANNELIZING RPM PATTERN – DETAIL 38C.	565	LF

NOTE: QUANTITIES SHOWN ARE TOTALS FOR ALL SHEETS.



VICINITY MAP
N.T.S.

QTY. CONSTRUCTION NOTES

QTY.	NO.	CONSTRUCTION NOTES
5,700 LF	(1)	SAWCUT EXISTING PAVEMENT.
67,345 SF	(2)	REMOVE EXISTING ASPHALT PAVEMENT.
2 EA.	(3)	ADJUST TO GRADE EXISTING MCI MANHOLE.
3 EA.	(4)	REMOVE AND RELOCATE EXISTING SIGN.
3 EA.	(5)	REMOVE EXISTING FIRE HYDRANT. PER SEPARATE WATER PLANS AT MAIN
230 SF	(6)	REMOVE EXISTING DRIVEWAY.
37 LF	(7)	REMOVE EXISTING WALL.
100 LF	(8)	REMOVE EXISTING CHAIN LINK FENCE AND GATE.
N/A	(9)	PROTECT IN PLACE EXISTING CURB AND CROSS GUTTER.
111,500 SF*	(10)	CONSTRUCT 7" A.C. OVER 10" CLASS II A.B. OR C.M.B.
4,410 LF	(11)	CONSTRUCT 8" CURB & GUTTER PER CITY OF RIALTO STD. NO. SC-200.
28,560 SF	(12)	CONSTRUCT SIDEWALK CURB ADJACENT PER CITY OF RIALTO STD. NO. SC-203.
5,150 SF	(13)	CONSTRUCT COMMERCIAL DRIVEWAY APPROACH PER SPPWC 110-3 TYPE C. SEE PLANS FOR WIDTH, SEE MODIFIED DETAIL ON SHEET 4.
38,452 SF	(14)	COLD MILL AND CONSTRUCT VARIABLE THICKNESS AC OVERLAY (0.17' MIN.), SEE JOINT DETAIL ON SHEET 4
1 EA.	(15)	CONSTRUCT CURB RAMP PER SPPWC STD PLAN 111-4 CASE-A TYPE1.
70 SF	(16)	RECONSTRUCT DAMAGED PORTION OF CROSS GUTTER PER CITY OF RIALTO STD. SC-216.
380 LF	(17)	CONSTRUCT REDWOOD HEADER PER DETAIL ON SHEET 2.
2 EA	(18)	CONSTRUCT SPPWC 300-3 CATCH BASIN PER STORM DRAIN PLANS, SEE SHEET 5 TO 7.
1 EA	(19)	CONSTRUCT LOCAL DEPRESSION PER SPPWC STANDARD DRAWING 313-3 CASE E PER STORM DRAIN PLANS, SEE SHEET 5 TO 7.
1 EA	(20)	CONSTRUCT PARKWAY DRAIN PER SPPWC STANDARD DRAWING 151-2 INLET TYPE 2.
15 LF	(21)	CONSTRUCT CROSS GUTTER PER CITY OF RIALTO STD. SC-216 AND JOIN EXISTING.
220 LF	(22)	SAW CUT REMOVE EXISTING CURB & GUTTER
16 EA	(23)	REMOVE EXISTING POWER POLE AND UNDERGROUND POWER LINES. (BY OTHERS)
1 EA	(24)	RELOCATE AND ADJUST TO GRADE ELECTRICAL PULL BOX OR CABINET.
1 EA	(25)	RELOCATE AND ADJUST TO GRADE EXISTING TRAFFIC SIGNAL PULL BOX.
5 LF	(26)	SAWCUT REMOVE & RECONSTRUCT PORTION OF LOCAL DEPRESSION PER SPPWC STD. 313-3 CASE E (DETAIL SHT. 7)
26 EA	(27)	ADJUST TO GRADE WATER GATE VALVE COVER
11 EA	(28)	ADJUST TO GRADE STORM DRAIN MANHOLE COVER

* TO BE VERIFIED PER SOIL REPORT
THE QUANTITIES SHOWN HEREON ARE ESTIMATES ONLY. THE CONTRACTORS SHALL PREPARE THEIR OWN QUANTITIES AND BID A COMPLETE JOB.

QTY. STORM DRAIN CONSTRUCTION NOTES:

QTY.	NO.	STORM DRAIN CONSTRUCTION NOTES
2 EA	(50)	CONSTRUCT CURB OPENING CATCH BASIN PER S.P.P.W.C. STD. PLAN NO. 300-3, WITH LOCAL DEPRESSION PER S.P.P.W.C. STD. 313-3 CASE "E", "V" AND "W" PER PLAN.
2 EA	(51)	CONSTRUCT STORM DRAIN MANHOLE PER S.P.P.W.C. STD PLAN NO. 321-2.
1,260 LF	(52)	CONSTRUCT UNDERGROUND DETENTION SYSTEM PER DETAIL ON SHT. 11
100 LF	(53)	CONSTRUCT 24" R.C.P. D-2000.
5 EA	(54)	CONSTRUCT 24" CMP STUB
5 EA	(55)	CONSTRUCT CONCRETE COLLAR FOR RCP PER S.P.P.W.C. STD PLAN NO. 380-4.
–	(56)	PROPOSED FIRE HYDRANT PER SEPARATE WATER PLAN
–	(57)	PROPOSED CONCRETE SIDEWALK PER STREET PLANS
3 EA	(58)	CONSTRUCT CONCTECH MANHOLE TRAFFIC TYPE WITH SQUARE CONCRETE CAP TYPE UNLESS OTHERWISE SPECIFIED, "NT" COVER FOR NON-TRAFFIC TYPE.
–	(59)	PROPOSED WATER MAIN PER SEPARATE WATER PLAN
–	(60)	PROPOSED STREET LIGHT POLE PER SEPARATE STREET LIGHT PLAN
–	(61)	EXISTING FIRE LINE AND HYDRANT TO BE REMOVED PER WATER PLAN AT MAIN
57 EA	(62)	INSTALL COUPLING BENDS FOR UNDERGROUND CHAMBERS
2096 CY	(63)	POROUS STONE BACKFILL PER MANUFACTURER'S SPECIFICATION
6 EA	(64)	INSTALL 96" TEES
12 EA	(65)	INSTALL 96" ELBOWS

CITY OF JURUPA VALLEY
PUBLIC WORKS DEPARTMENT

JIM L. SMITH R.C.E. NO. 42977 — DATE

811 Know what's below. Call before you dig.

MARK | REVISIONS | APPR. | DATE

DESIGNED BY: AC DRAWN BY: AC CHECKED BY: HA

SEAL-DESIGN ENGINEER
REGISTERED PROFESSIONAL ENGINEER HAIDOOK I. AGHAIAN R.C.E. NO. 43293 Exp. 3-31-20 CIVIL STATE OF CALIFORNIA

PREPARED UNDER THE SUPERVISION OF:
HAIDOOK I. AGHAIAN, RCE 43293, EXP. 03/31/2020 — DATE
RECOMMENDED FOR APPROVAL BY LOCKWOOD ENGINEERING:
CARLETON W. LOCKWOOD, JR, RCE 45935 — DATE
APPROVED BY:
ROBERT G. EISENBEISZ, PUBLIC WORKS DIRECTOR/CITY ENGINEER, RCE 54931 — DATE

CIVIL ENGINEERS
Thienes Engineering, Inc.
CIVIL ENGINEERING • LAND SURVEYING
14349 FIRESTONE BOULEVARD
LA MIRADA, CALIFORNIA 90638
PH.(714)521-4811 FAX(714)521-4173

BENCH MARK: SAN BERNARDINO COUNTY BENCHMARK NO. "00614" *ELEV. = 950.595' (NGVD '29)*
DESCRIPTION: NAIL IN CONCRETE CURB, AT THE NORTHWEST CORNER INTERSECTION OF CACTUS AVENUE AND EL RIVINO, 32 FT. NORTH OF EL RIVINO, 112 FT. WEST OF CACTUS, 6 FT. SOUTH OF A WALL AT ENTRANCE TO EL RIVINO COUNTRY CLUB.

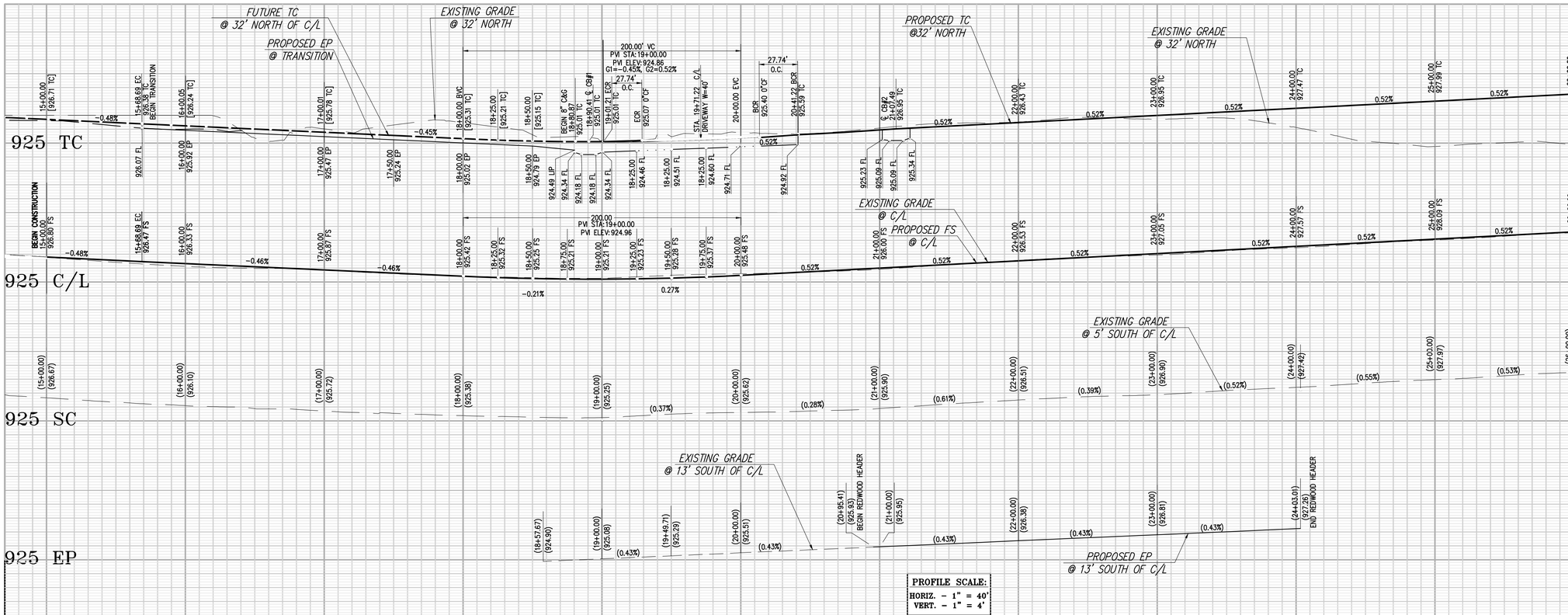
CITY OF RIALTO
EL RIVINO INDUSTRIAL 1, LLC – PHASE 1
STREET IMPROVEMENT PLAN
EL RIVINO RD AND CACTUS AVE.
TITLE SHEET

1 OF 15 SHEETS

FOR: EL RIVINO INDUSTRIAL 1, LLC
20411 SW BIRCH STREET, SUITE 200 NEWPORT BEACH, CA 92660
PHONE: (949) 296-2967 FAX: (888) 793-7363

PPD No. 2017-0082 | PLAN No. ___

Last Update: 6/26/18
O:\2800-2899\2873\2873d\STREET\2873d - ST01.dwg



CONSTRUCTION NOTES

1. SAWCUT EXISTING PAVEMENT.
2. REMOVE EXISTING ASPHALT PAVEMENT.
3. ADJUST TO GRADE EXISTING MCI MANHOLE.
4. REMOVE AND RELOCATE EXISTING SIGN.
5. REMOVE EXISTING FIRE HYDRANT. PER SEPARATE WATER PLANS AT MAIN
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7. REMOVE EXISTING WALL.
8. REMOVE EXISTING CHAIN LINK FENCE AND GATE.
9. PROTECT IN PLACE EXISTING CURB AND CROSS GUTTER.
10. * CONSTRUCT 7" A.C. OVER 10" CLASS II A.B. OR C.M.B.
11. CONSTRUCT 8" CURB & GUTTER PER CITY OF RIALTO STD. NO. SC-200.
12. CONSTRUCT SIDEWALK CURB ADJACENT PER CITY OF RIALTO STD. NO. SC-203.
13. CONSTRUCT COMMERCIAL DRIVEWAY APPROACH PER SPPWC 110-3 TYPE C. SEE PLANS FOR WIDTH, SEE MODIFIED DETAIL ON SHEET 4.
14. COLD MILL AND CONSTRUCT VARIABLE THICKNESS AC OVERLAY (0.17' MIN.), SEE JOINT DETAIL ON SHEET 4
15. CONSTRUCT CURB RAMP PER SPPWC STD PLAN 111-4 CASE-A TYPE1.
16. RECONSTRUCT DAMAGED PORTION OF CROSS GUTTER PER CITY OF RIALTO STD. SC-216.
17. CONSTRUCT REDWOOD HEADER PER DETAIL ON SHEET 2.
18. CONSTRUCT SPPWC 300-3 CATCH BASIN PER STORM DRAIN PLANS, SEE SHEET 5 TO 7.
19. CONSTRUCT LOCAL DEPRESSION PER SPPWC STANDARD DRAWING 313-3 CASE E PER STORM DRAIN PLANS, SEE SHEET 5 TO 7.
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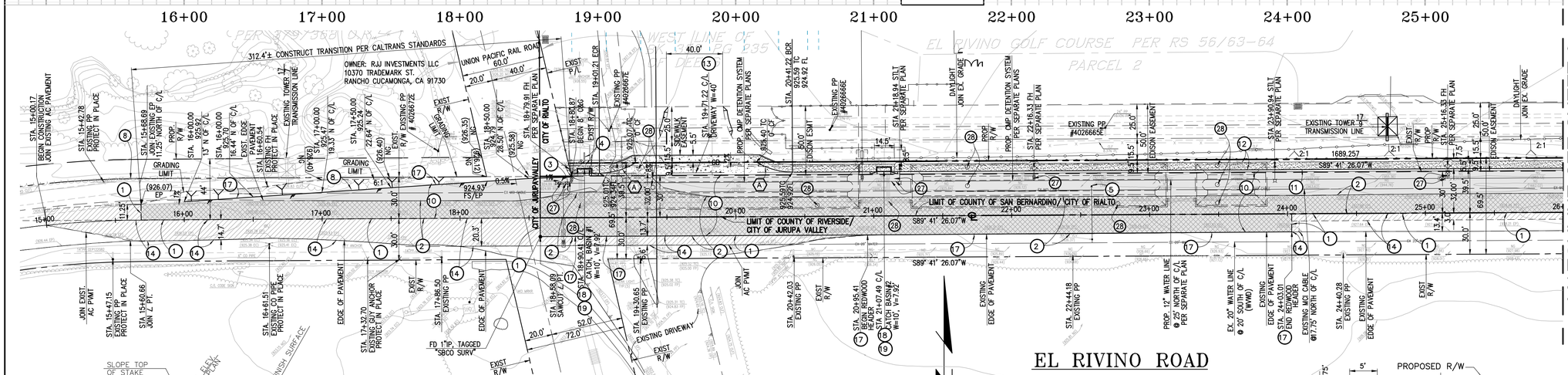
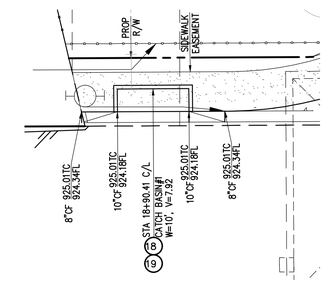
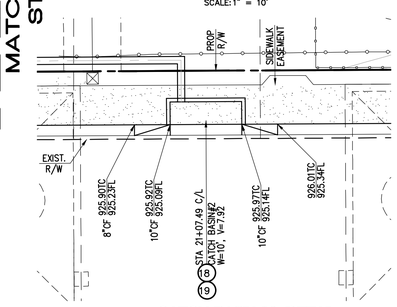
* TO BE VERIFIED PER SOIL REPORT





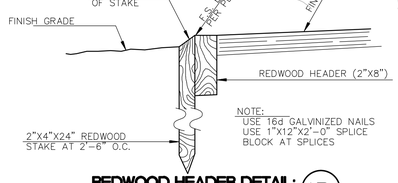
CATCH BASIN #1, DETAIL
• STA. 18+90.41 C/L
SCALE: 1" = 10'



CATCH BASIN #2, DETAIL
• STA. 21+07.49 C/L
SCALE: 1" = 10'

PAVEMENT LEGEND:

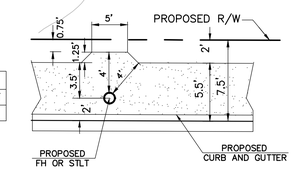
- CONSTRUCT NEW AC PAVEMENT
- COLD PLANE AND OVERLAY
- AC REMOVAL
- CONSTRUCT NEW PCC PAVEMENT
- CONSTRUCT NEW PCC SIDEWALK



REDWOOD HEADER DETAIL: 17
N.T.S.

CURVE DATA TABLE

	DELTA	RADIUS	LENGTH	TANGENT
A	31°47'18"	50.00'	27.74'	14.24'



SIDEWALK DETAIL AT PROP. FH AND STLT
N.T.S.

Know what's below. Call before you dig.

MARK	REVISIONS	APPR.	DATE

DESIGNED BY: AC DRAWN BY: AC CHECKED BY: HA

SEAL-DESIGN ENGINEER
REGISTERED PROFESSIONAL ENGINEER HAIDOOK I. AGHAIAN R.C.E. NO. 43293 Exp. 3-31-20 CIVIL STATE OF CALIFORNIA

CITY OF JURUPA VALLEY
PUBLIC WORKS DEPARTMENT

JIM L. SMITH R.C.E. NO. 42977 DATE

PREPARED UNDER THE SUPERVISION OF:

HAIDOOK I. AGHAIAN, RCE 43293, EXP. 03/31/2020 DATE

RECOMMENDED FOR APPROVAL BY LOCKWOOD ENGINEERING:

CARLETON W. LOCKWOOD, JR, RCE 45935 DATE

APPROVED BY:

ROBERT G. EISENBEISZ, PUBLIC WORKS DIRECTOR/CITY ENGINEER, RCE 54931 DATE

CIVIL ENGINEERS
Thienes Engineering, Inc.
CIVIL ENGINEERING • LAND SURVEYING
14349 FIRESTONE BOULEVARD
LA MIRADA, CALIFORNIA 90638
PH.(714)521-4811 FAX(714)521-4173

BENCH MARK: SAN BERNARDINO COUNTY BENCHMARK NO. "00614" *ELEV. = 950.595' (NGVD '29)*
DESCRIPTION: NAIL IN CONCRETE CURB, AT THE NORTHWEST CORNER INTERSECTION OF CACTUS AVENUE AND EL RIVINO, 32 FT. NORTH OF EL RIVINO, 112 FT. WEST OF CACTUS, 6 FT. SOUTH OF A WALL AT ENTRANCE TO EL RIVINO COUNTRY CLUB.

CITY OF RIALTO
EL RIVINO INDUSTRIAL 1, LLC - PHASE 1
STREET IMPROVEMENT PLAN
EL RIVINO ROAD
STA. 15+00.17 TO STA. 26+00.00

2 OF 15 SHEETS

FOR: EL RIVINO INDUSTRIAL 1, LLC
20411 SW BIRCH STREET, SUITE 200 NEWPORT BEACH, CA 92660
PHONE: (949) 296-2960 FAX: (888) 793-7363

PPD No. 2017-0082 PLAN No. ____

Last Update:6/26/18
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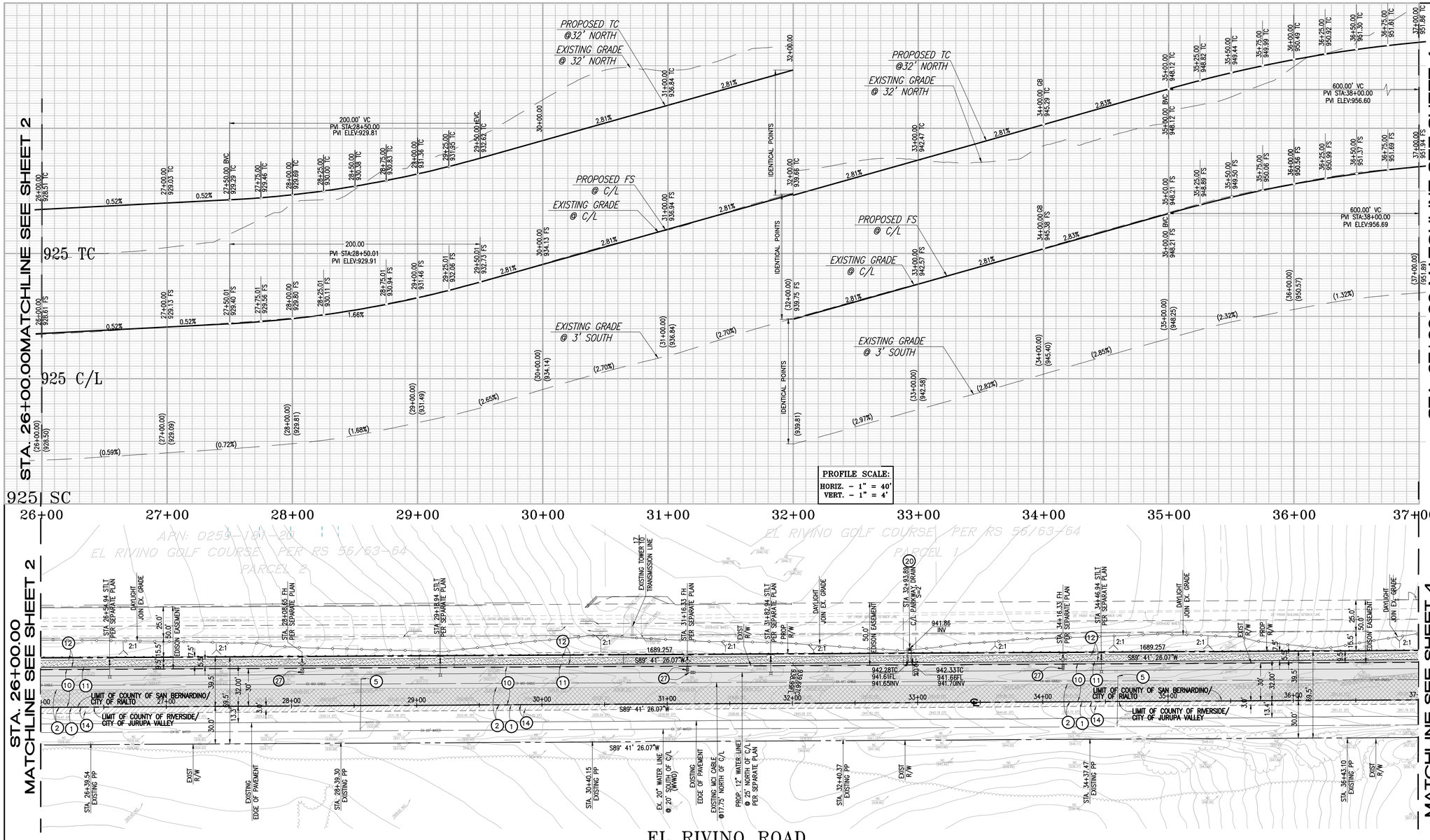

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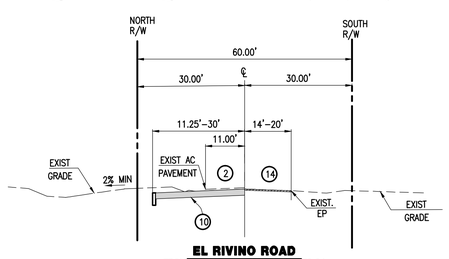

EL RIVINO ROAD
FROM STA 15+00 TO STA 18+79.91
N.T.S.
T.I.=10

PAVEMENT LEGEND:

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- COLD PLANE AND OVERLAY
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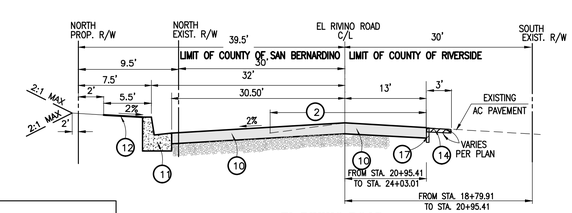
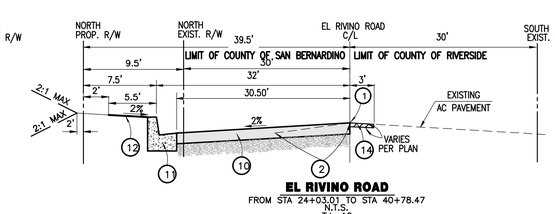


EL RIVINO ROAD
FROM STA 18+79.91 TO STA 24+03.01
N.T.S.
T.I.=10



EL RIVINO ROAD
FROM STA 24+03.01 TO STA 40+78.47
N.T.S.
T.I.=10

CITY OF JURUPA VALLEY
PUBLIC WORKS DEPARTMENT

JIM L. SMITH R.C.E. NO. 42977 DATE

Know what's **below.** **Call** before you dig.

MARK	REVISIONS	APPR.	DATE

DESIGNED BY: AC DRAWN BY: AC CHECKED BY: HA

SEAL-DESIGN ENGINEER

REGISTERED PROFESSIONAL ENGINEER HAIDOOK I. AGHAIAN R.C.E. NO. 43293 Exp. 3-31-20 CIVIL STATE OF CALIFORNIA

PREPARED UNDER THE SUPERVISION OF:

HAIDOOK I. AGHAIAN, RCE 43293, EXP. 03/31/2020 DATE

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ROBERT G. EISENBEISZ, PUBLIC WORKS DIRECTOR/CITY ENGINEER, RCE 54931 DATE

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CITY OF RIALTO
EL RIVINO INDUSTRIAL 1, LLC - PHASE 1
STREET IMPROVEMENT PLAN
EL RIVINO ROAD
STA. 26+00.00 TO STA. 37+00.00

3 OF 15 SHEETS

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20411 SW BIRCH STREET, SUITE 200 NEWPORT BEACH, CA 92660
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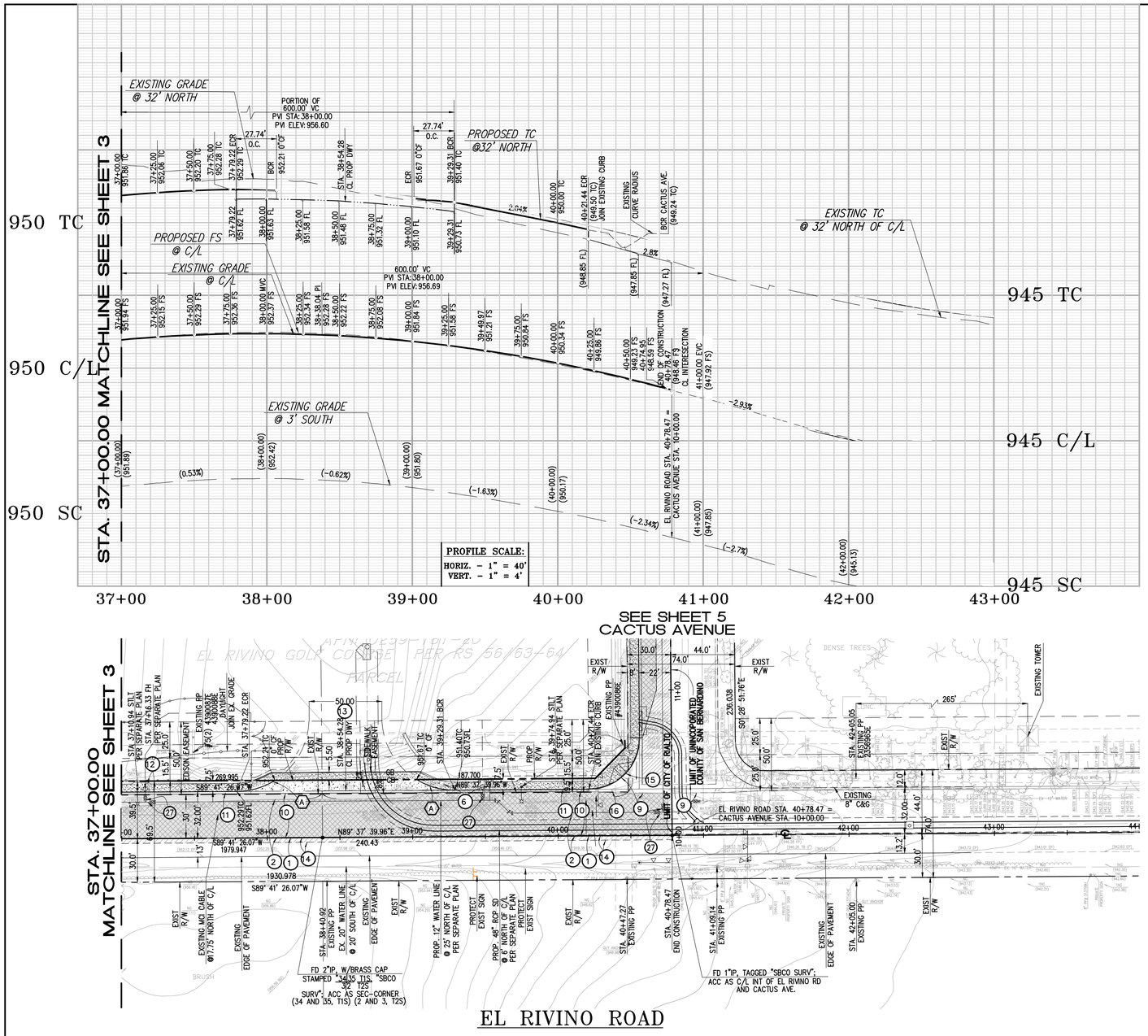

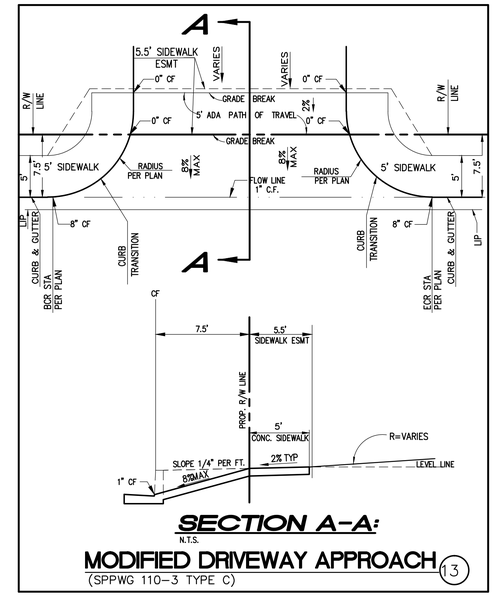

SECTION A-A:

N.T.S.

MODIFIED DRIVEWAY APPROACH (13)

(SPPWG 110-3 TYPE C)

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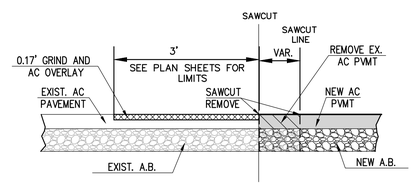
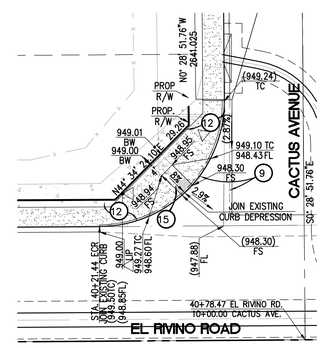


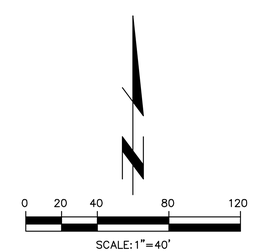
PAVEMENT JOIN DETAIL

N.T.S.



ADA RAMP (15)

SCALE 1"= 20'



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CURVE DATA TABLE

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CITY OF JURUPA VALLEY
PUBLIC WORKS DEPARTMENT

JIM L. SMITH R.C.E. NO. 42977 DATE

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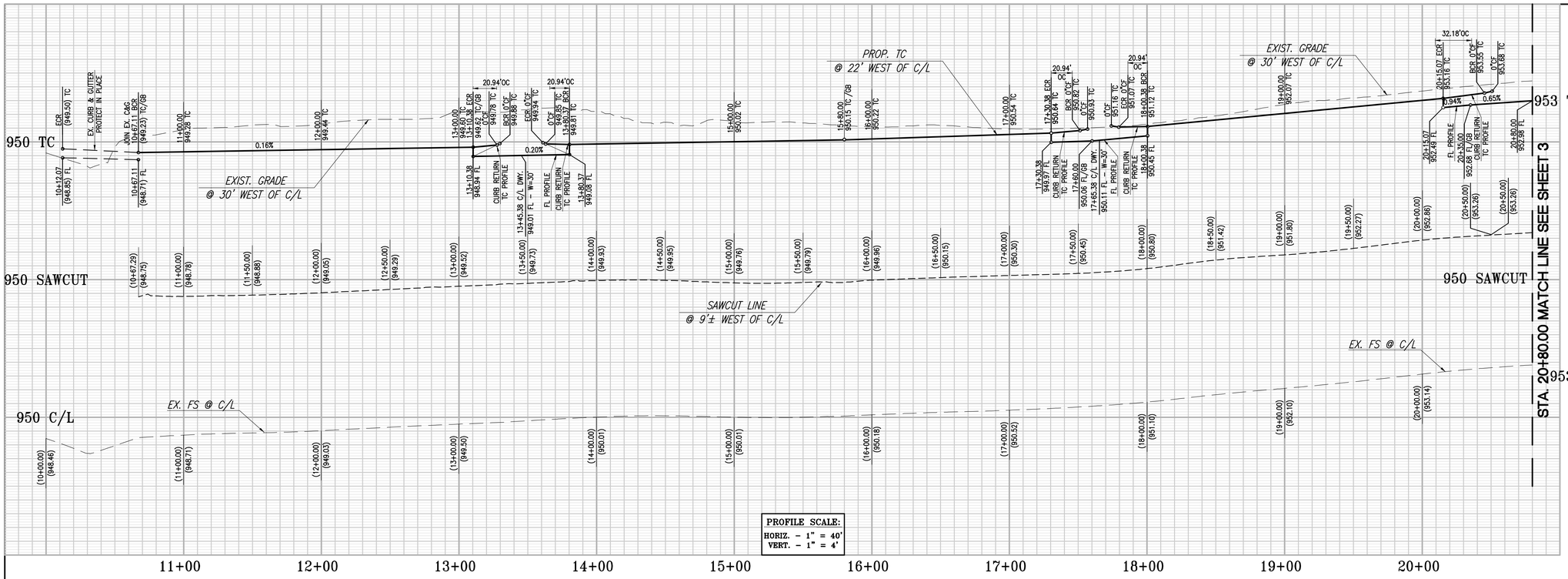

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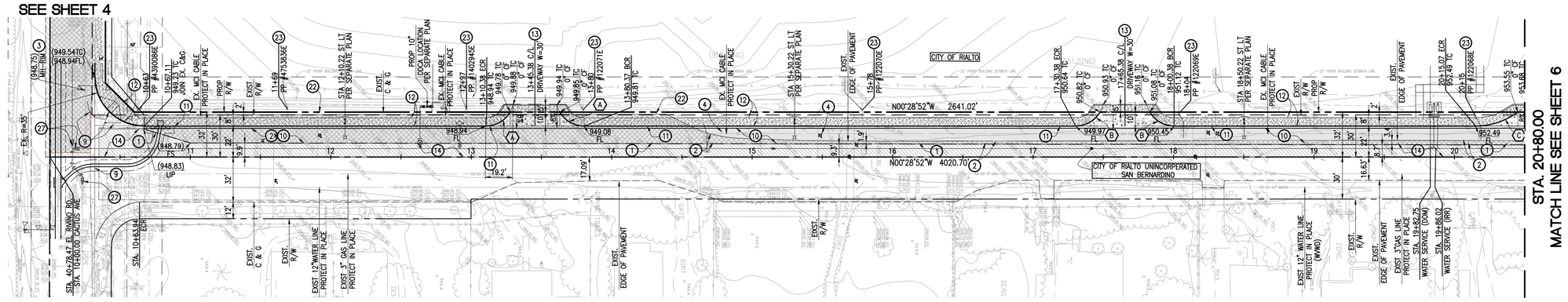
THE QUANTITIES SHOWN HEREON ARE ESTIMATES ONLY. THE CONTRACTORS SHALL PREPARE THEIR OWN QUANTITIES AND BID A COMPLETE JOB.

EL RIVINO ROAD
SEE SHEET 4

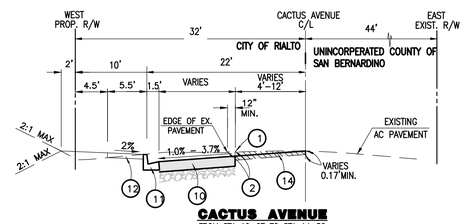


CURVE TABLE				
CURVE #	DELTA	RADIUS	LENGTH	TANGENT
A	60°00'00"	20.00'	20.94'	11.55'
B	60°00'00"	20.00'	20.94'	11.55'
C	36°52'12"	50.00'	32.18'	16.67'

CACTUS AVENUE

PAVEMENT LEGEND:

- CONSTRUCT NEW AC PAVEMENT
- COLD PLANE AND OVERLAY
- AC REMOVAL
- CONSTRUCT NEW PCC PAVEMENT
- CONSTRUCT NEW PCC SIDEWALK



0 20 40 80 120
SCALE: 1" = 40'

Know what's below. Call before you dig.

MARK	REVISIONS	APPR.	DATE

DESIGNED BY: AC DRAWN BY: AC CHECKED BY: HA

SEAL-DESIGN ENGINEER
REGISTERED PROFESSIONAL ENGINEER HAIDOOK I. AGHAIAN R.C.E. NO. 43293 Exp. 3-31-20 CIVIL STATE OF CALIFORNIA

PREPARED UNDER THE SUPERVISION OF:
HAIDOOK I. AGHAIAN, RCE 43293, EXP. 03/31/2020 DATE
RECOMMENDED FOR APPROVAL BY LOCKWOOD ENGINEERING:
CARLETON W. LOCKWOOD, JR, RCE 45935 DATE
APPROVED BY:
ROBERT G. EISENBEISZ, PUBLIC WORKS DIRECTOR/CITY ENGINEER, RCE 54931 DATE

CIVIL ENGINEERS
Thienes Engineering, Inc.
CIVIL ENGINEERING • LAND SURVEYING
14349 FIRESTONE BOULEVARD
LA MIRADA, CALIFORNIA 90638
PH.(714)521-4811 FAX(714)521-4173

BENCH MARK: SAN BERNARDINO COUNTY BENCHMARK NO. "00614" ELEV. = 950.595' (NGVD '29)
DESCRIPTION: NAIL IN CONCRETE CURB, AT THE NORTHWEST CORNER INTERSECTION OF CACTUS AVENUE AND EL RIVINO, 32 FT. NORTH OF EL RIVINO, 112 FT. WEST OF CACTUS, 6 FT. SOUTH OF A WALL AT ENTRANCE TO EL RIVINO COUNTRY CLUB.

CITY OF RIALTO
EL RIVINO INDUSTRIAL 1, LLC - PHASE 1
STREET IMPROVEMENT PLAN
CACTUS AVENUE
STA. 10+00 TO STA. 20+80

5 OF 15 SHEETS

FOR: EL RIVINO INDUSTRIAL 1, LLC
20411 SW BIRCH STREET, SUITE 200 NEWPORT BEACH, CA 92660
PHONE: (949) 296-2967 FAX: (888) 793-7363

PPD No. 2017-0082 PLAN No. ___

Last Update: 6/26/18
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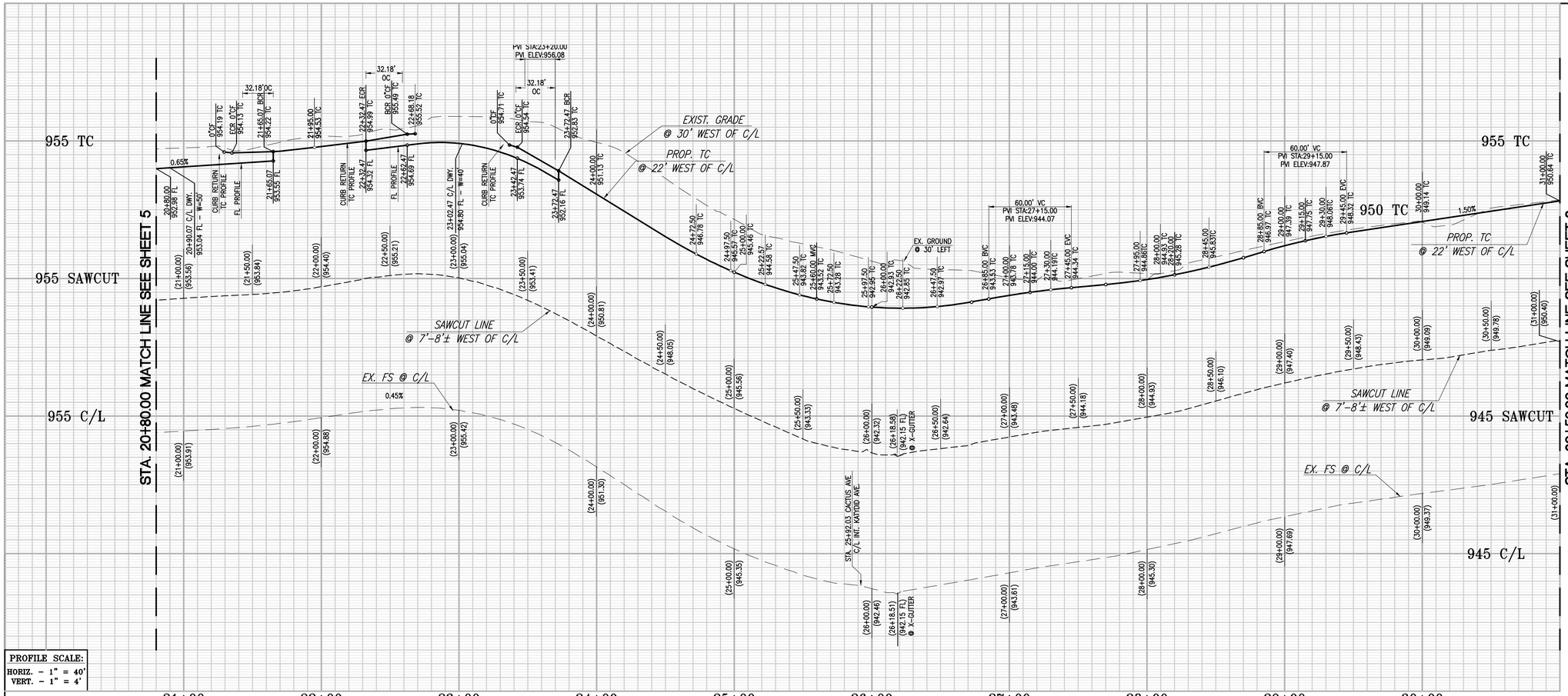
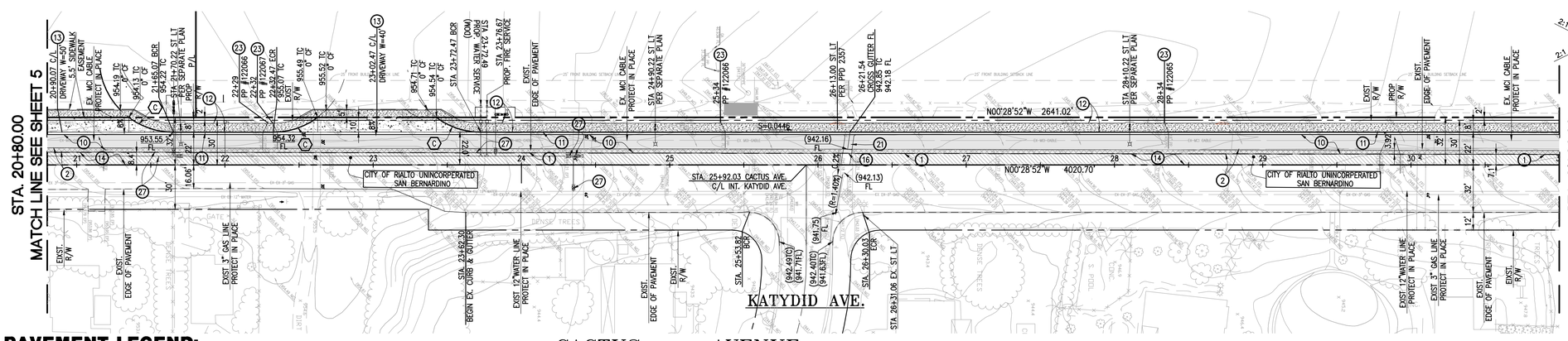


PROFILE SCALE:
HORIZ. – 1" = 40'
VERT. – 1" = 4'



CONSTRUCTION NOTES

1. SAWCUT EXISTING PAVEMENT.
2. REMOVE EXISTING ASPHALT PAVEMENT.
3. ADJUST TO GRADE EXISTING MCI MANHOLE.
4. REMOVE AND RELOCATE EXISTING SIGN.
5. REMOVE EXISTING FIRE HYDRANT. PER SEPARATE WATER PLANS AT MAIN
6. REMOVE EXISTING DRIVEWAY.
7. REMOVE EXISTING WALL.
8. REMOVE EXISTING CHAIN LINK FENCE AND GATE.
9. PROTECT IN PLACE EXISTING CURB AND CROSS GUTTER.
10. * CONSTRUCT 7" A.C. OVER 10" CLASS II A.B. OR C.M.B.
11. CONSTRUCT 8" CURB & GUTTER PER CITY OF RIALTO STD. NO. SC–200.
12. CONSTRUCT SIDEWALK CURB ADJACENT PER CITY OF RIALTO STD. NO. SC–203.
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14. COLD MILL AND CONSTRUCT VARIABLE THICKNESS AC OVERLAY (0.17' MIN.), SEE JOINT DETAIL ON SHEET 4
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19. CONSTRUCT LOCAL DEPRESSION PER SPPWC STANDARD DRAWING 313–3 CASE E PER STORM DRAIN PLANS, SEE SHEET 5 TO 7.
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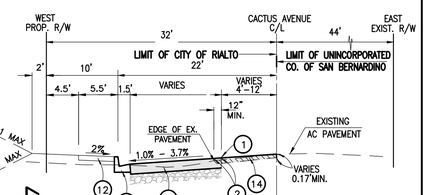

CACTUS AVENUE
FROM STA 20+50 TO STA 31+00
N.T.S.
T.L.=10

CURVE TABLE				
CURVE #	DELTA	RADIUS	LENGTH	TANGENT
C	36°52'12"	50.00'	32.18'	16.67'

PAVEMENT LEGEND:

- CONSTRUCT NEW AC PAVEMENT
- COLD PLANE AND OVERLAY
- CONSTRUCT NEW PCC SIDEWALK
- AC REMOVAL
- CONSTRUCT NEW PCC PAVEMENT

0 20 40 80 120
SCALE: 1" = 40'

811 Know what's below. Call before you dig.

MARK	REVISIONS	APPR.	DATE

DESIGNED BY: AC DRAWN BY: AC CHECKED BY: HA

SEAL–DESIGN ENGINEER
REGISTERED PROFESSIONAL ENGINEER HAIDOOK I. AGHAIAN R.C.E. NO. 43293 Exp. 3–31–20 CIVIL STATE OF CALIFORNIA

PREPARED UNDER THE SUPERVISION OF:
HAIDOOK I. AGHAIAN, RCE 43293, EXP. 03/31/2020 DATE
RECOMMENDED FOR APPROVAL BY LOCKWOOD ENGINEERING:
CARLETON W. LOCKWOOD, JR, RCE 45935 DATE
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ROBERT G. EISENBEISZ, PUBLIC WORKS DIRECTOR/CITY ENGINEER, RCE 54931 DATE

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CITY OF RIALTO
EL RIVINO INDUSTRIAL 1, LLC – PHASE 1
STREET IMPROVEMENT PLAN
CACTUS AVENUE
STA. 20+80 TO STA. 31+00

6 OF 15 SHEETS

FOR: EL RIVINO INDUSTRIAL 1, LLC
20411 SW BIRCH STREET, SUITE 200 NEWPORT BEACH, CA 92660
PHONE: (949) 296–2967 FAX: (888) 793–7363

PPD No. 2017–0082 PLAN No. ___

Last Update: 6/26/18
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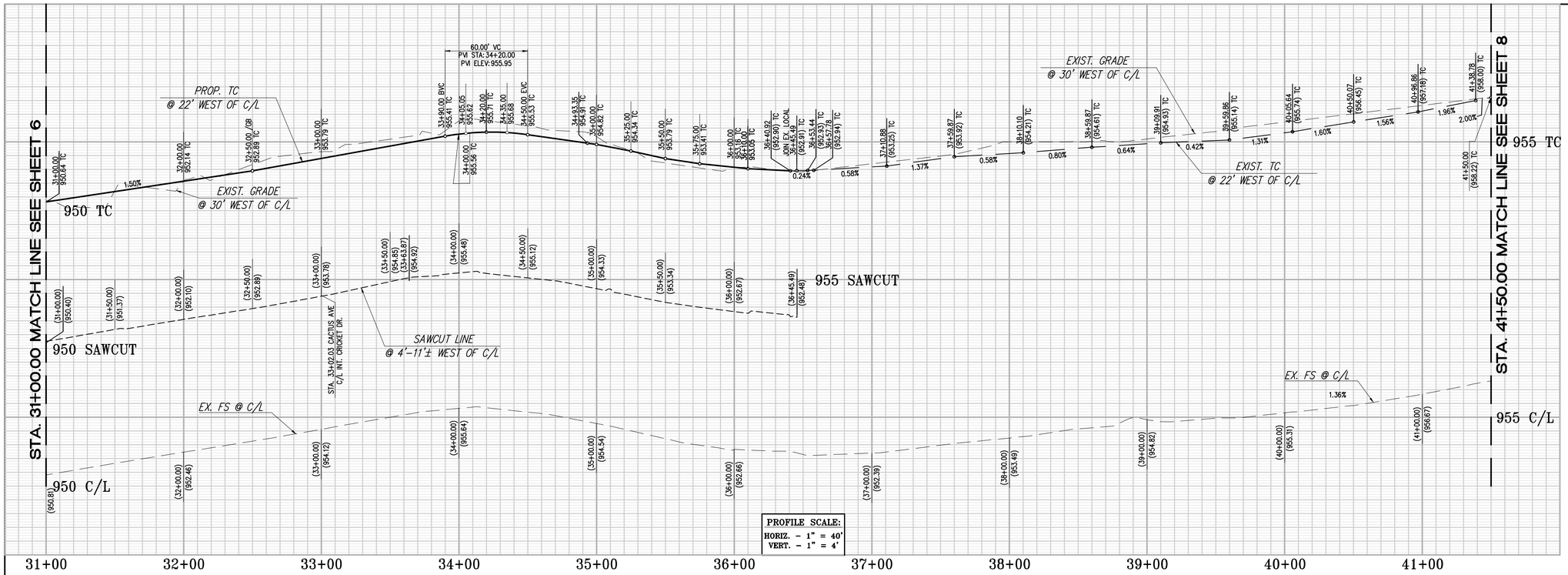

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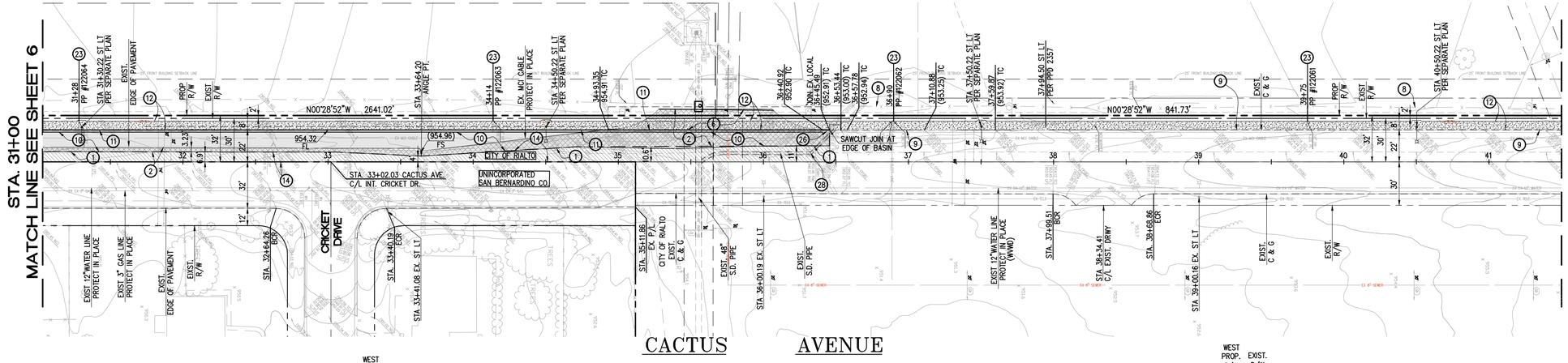
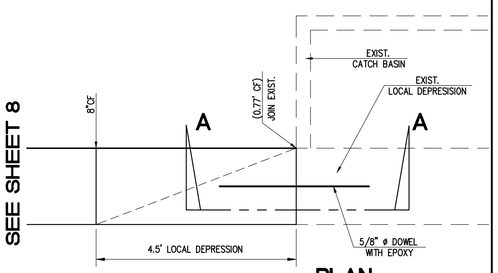
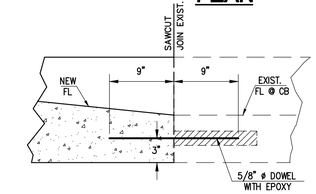




PLAN



SECTION A-A

JOIN DETAIL (26)

N.T.S.

PAVEMENT LEGEND:

- CONSTRUCT NEW AC PAVEMENT
- COLD PLANE AND OVERLAY
- AC REMOVAL
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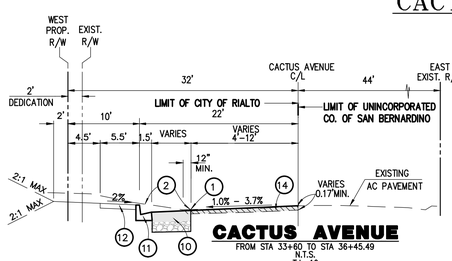
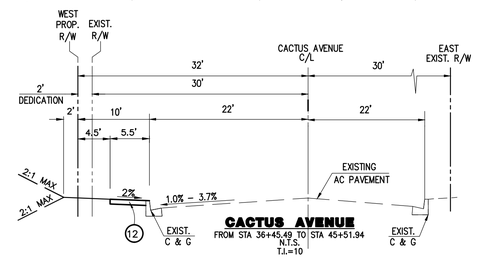


CACTUS AVENUE
FROM STA 33+60 TO STA 36+45.49
N.T.S.
T.I.=10



CACTUS AVENUE
FROM STA 36+45.49 TO STA 45+51.94
N.T.S.
T.I.=10

0 20 40 80 120

SCALE: 1" = 40'

Know what's below. Call before you dig.

MARK	REVISIONS	APPR.	DATE

DESIGNED BY: AC DRAWN BY: AC CHECKED BY: HA

SEAL-DESIGN ENGINEER

REGISTERED PROFESSIONAL ENGINEER HAIDOOK I. AGHAIAN R.C.E. NO. 43293 Exp. 3-31-20 CIVIL STATE OF CALIFORNIA

PREPARED UNDER THE SUPERVISION OF:

HAIDOOK I. AGHAIAN, RCE 43293, EXP. 03/31/2020 DATE

RECOMMENDED FOR APPROVAL BY LOCKWOOD ENGINEERING:

CARLETON W. LOCKWOOD, JR, RCE 45935 DATE

APPROVED BY:

ROBERT G. EISENBEISZ, PUBLIC WORKS DIRECTOR/CITY ENGINEER, RCE 54931 DATE

CIVIL ENGINEERS

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CIVIL ENGINEERING • LAND SURVEYING
14349 FIRESTONE BOULEVARD
LA MIRADA, CALIFORNIA 90638
PH.(714)521-4811 FAX(714)521-4173

BENCH MARK: SAN BERNARDINO COUNTY BENCHMARK NO. "00614" *ELEV. = 950.595' (NGVD '29)*

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CITY OF RIALTO
EL RIVINO INDUSTRIAL 1, LLC - PHASE 1
STREET IMPROVEMENT PLAN
CACTUS AVENUE
STA. 31+00 TO STA. 41+50

7 OF 15 SHEETS

FOR: EL RIVINO INDUSTRIAL 1, LLC
20411 SW BIRCH STREET, SUITE 200 NEWPORT BEACH, CA 92660
PHONE: (949) 296-2967 FAX: (888) 793-7363

PPD No. 2017-0082 PLAN No. ___

Last Update: 6/26/18
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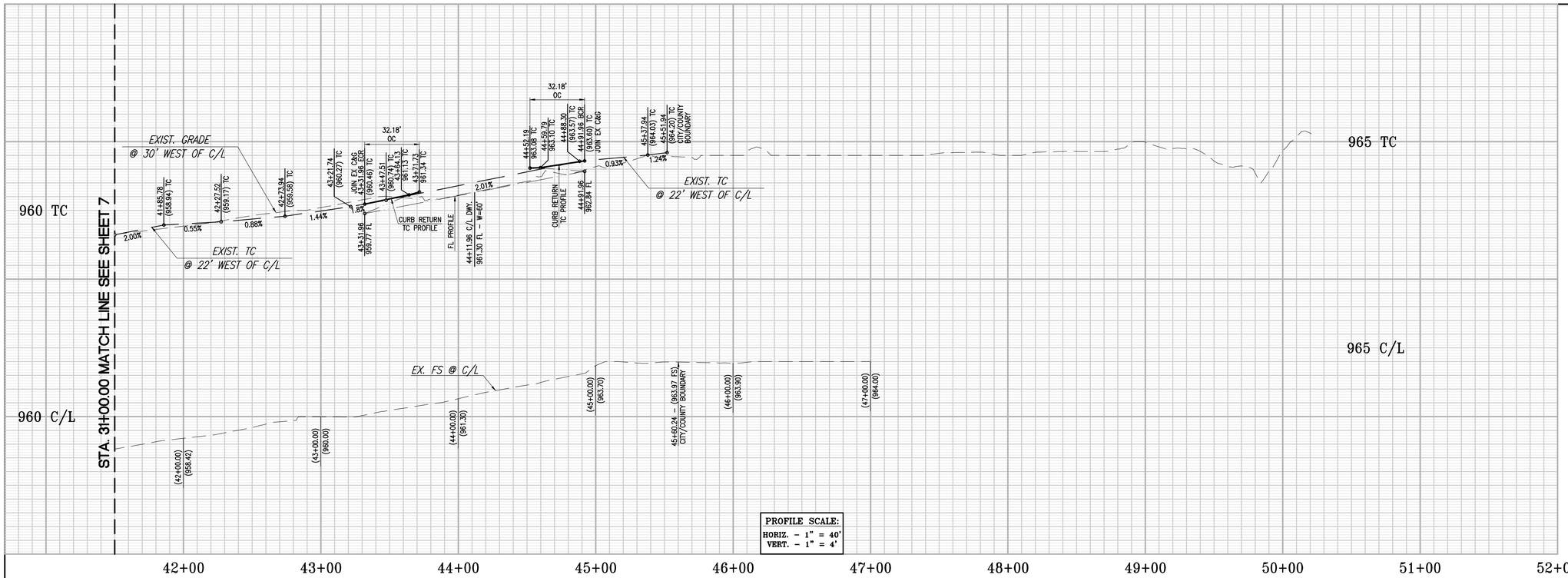

CONSTRUCTION NOTES

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4. REMOVE AND RELOCATE EXISTING SIGN.
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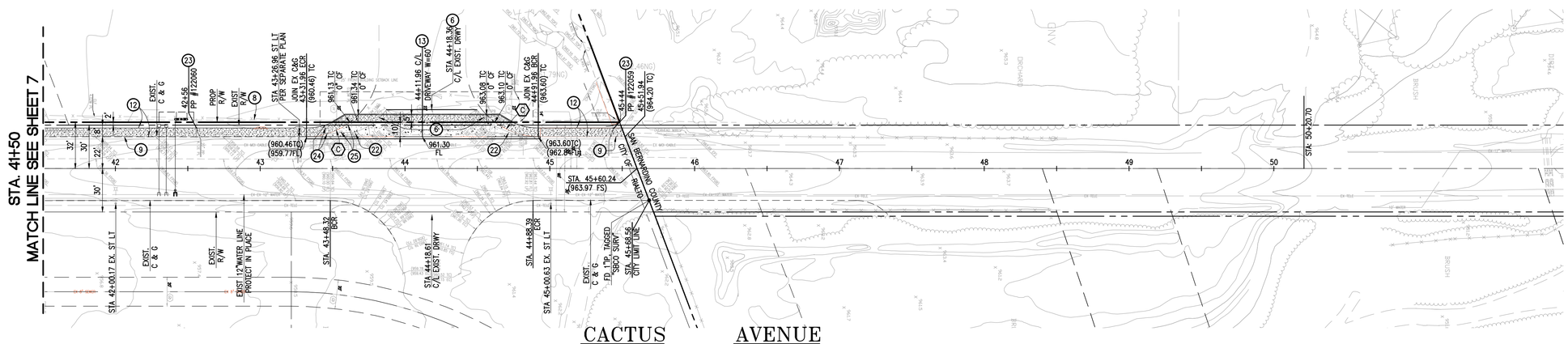

CURVE TABLE				
CURVE #	DELTA	RADIUS	LENGTH	TANGENT
C	36°52'12"	50.00'	32.18'	16.67'

0 20 40 80 120

SCALE: 1" = 40'

Know what's below. Call before you dig.

MARK	REVISIONS	APPR.	DATE

DESIGNED BY: AC DRAWN BY: AC CHECKED BY: HA

SEAL-DESIGN ENGINEER

REGISTERED PROFESSIONAL ENGINEER HAIDOOK I. AGHAIAN R.C.E. NO. 43293 Exp. 3-31-20 CIVIL STATE OF CALIFORNIA

PREPARED UNDER THE SUPERVISION OF:

HAIDOOK I. AGHAIAN, RCE 43293, EXP. 03/31/2020 DATE

RECOMMENDED FOR APPROVAL BY LOCKWOOD ENGINEERING:

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CITY OF RIALTO

EL RIVINO INDUSTRIAL 1, LLC - PHASE 1
STREET IMPROVEMENT PLAN

CACTUS AVENUE

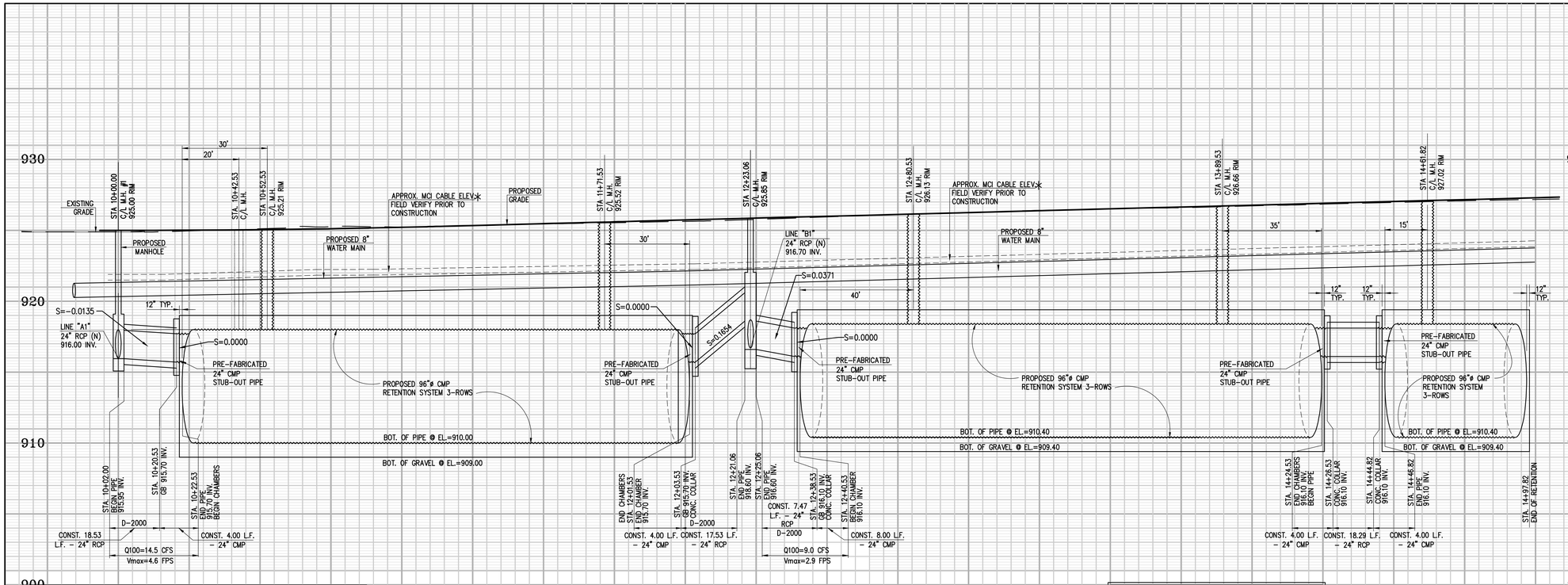
STA. 41+50 TO STA. 52+00

8 OF 15 SHEETS

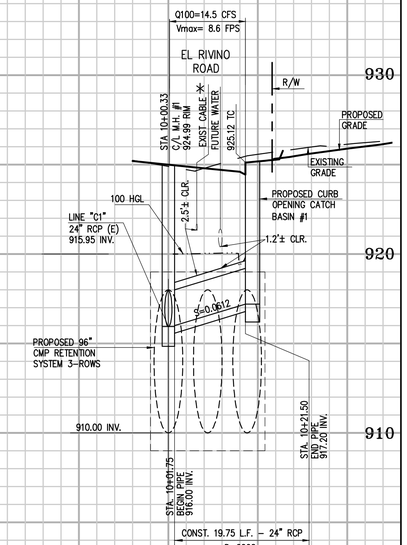
FOR: EL RIVINO INDUSTRIAL 1, LLC
20411 SW BIRCH STREET, SUITE 200 NEWPORT BEACH, CA 92660
PHONE: (949) 296-2967 FAX: (888) 793-7363

PPD No. 2017-0082 PLAN No. ___

Last Update: 6/26/18
O:\2800-2899\2873\2873d\STREET\2873d - ST08 CACTUS.dwg



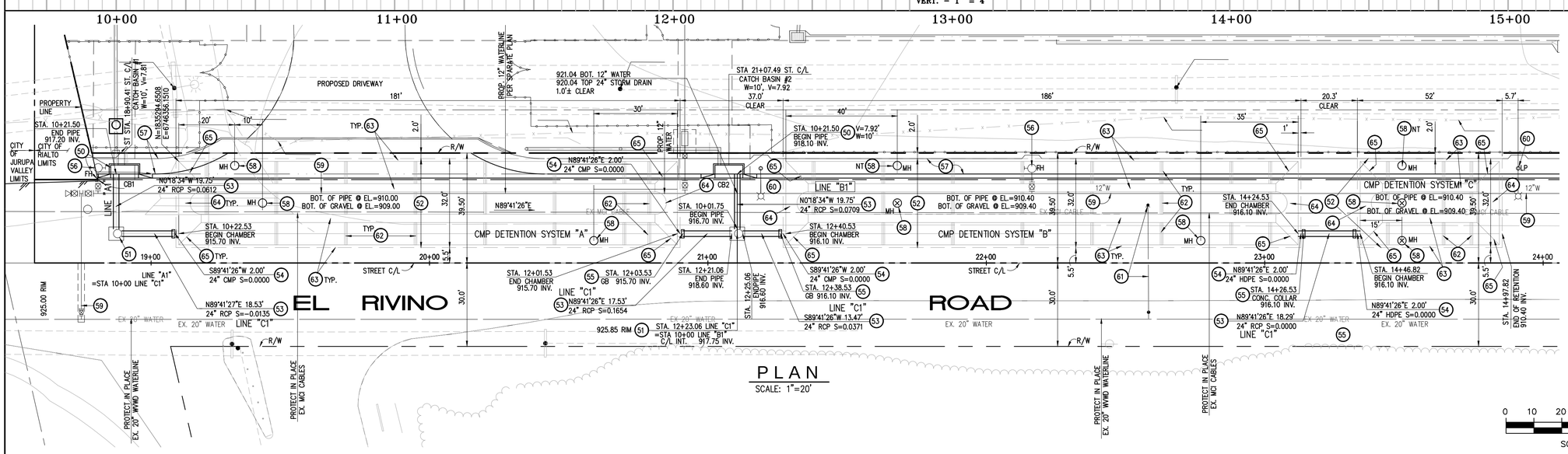
LINE "C1"



LINE "A1"

NOTE:
* FIELD VERIFY LOCATIONS AND ELEVATIONS OF EXISTING UTILITY LINES, INFORM CIVIL ENGINEER FOR ANY ELEVATION DISCREPANCIES PRIOR TO CONSTRUCTION

PROFILE SCALE:
HORIZ. - 1" = 20'
VERT. - 1" = 4'



PLAN
SCALE: 1"=20'

STORM DRAIN CONSTRUCTION NOTES:

50 — CONSTRUCT CURB OPENING CATCH BASIN PER S.P.P.W.C. STD. PLAN NO. 300-3, WITH LOCAL DEPRESSION PER S.P.P.W.C. STD. 313-3 CASE "E", "V" AND "W" PER PLAN.
51 — CONSTRUCT STORM DRAIN MANHOLE PER S.P.P.W.C. STD PLAN NO. 321-2.
52 — CONSTRUCT UNDERGROUND DETENTION SYSTEM PER DETAIL ON SHT. 11
53 — CONSTRUCT 24" R.C.P. D-2000.
54 — CONSTRUCT 24" CMP STUB
55 — CONSTRUCT CONCRETE COLLAR FOR RCP PER S.P.P.W.C. STD PLAN NO. 380-4.
56 — PROPOSED FIRE HYDRANT PER SEPARATE WATER PLAN
57 — PROPOSED CONCRETE SIDEWALK PER STREET PLANS
58 — CONSTRUCT CONCTECH MANHOLE TRAFFIC TYPE WITH SQUARE CONCRETE CAP TYPE UNLESS OTHERWISE SPECIFIED, "NT" COVER FOR NON-TRAFFIC TYPE.
59 — PROPOSED WATER MAIN PER SEPARATE WATER PLAN
60 — PROPOSED STREET LIGHT POLE PER SEPARATE STREET LIGHT PLAN
61 — EXISTING FIRE LINE AND HYDRANT TO BE REMOVED PER WATER PLAN AT MAIN
62 — INSTALL COUPLING BENDS FOR UNDERGROUND CHAMBERS
63 — POROUS STONE BACKFILL PER MANUFACTURER'S SPECIFICATION
64 — INSTALL 96" TEES
65 — INSTALL 96" ELBOWS

0 10 20 40 60
SCALE: 1"=20'

Know what's **below.** **Call** before you dig.

MARK	REVISIONS	APPR.	DATE

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PREPARED UNDER THE SUPERVISION OF:
HAIDOOK I. AGHAIAN, RCE 43293, EXP. 03/31/2020 DATE
RECOMMENDED FOR APPROVAL BY LOCKWOOD ENGINEERING:
CARLETON W. LOCKWOOD, JR, RCE 45935 DATE
APPROVED BY:
ROBERT G. EISENBEISZ, PUBLIC WORKS DIRECTOR/CITY ENGINEER, RCE 54931 DATE

CIVIL ENGINEERS
Thienes Engineering, Inc.
CIVIL ENGINEERING • LAND SURVEYING
14349 FIRESTONE BOULEVARD
LA MIRADA, CALIFORNIA 90638
PH.(714)521-4811 FAX(714)521-4173

BENCH MARK: SAN BERNARDINO COUNTY BENCHMARK NO. "00614" *ELEV. = 950.595' (NGVD '29)*
DESCRIPTION: NAIL IN CONCRETE CURB, AT THE NORTHWEST CORNER INTERSECTION OF CACTUS AVENUE AND EL RIVINO, 32 FT. NORTH OF EL RIVINO, 112 FT. WEST OF CACTUS, 6 FT. SOUTH OF A WALL AT ENTRANCE TO EL RIVINO COUNTRY CLUB.

CITY OF RIALTO

EL RIVINO INDUSTRIAL 1, LLC - PHASE 1
OFFSITE STORM DRAIN PLAN
EL RIVINO ROAD

9 OF 15 SHEETS

FOR: EL RIVINO INDUSTRIAL 1, LLC
20411 SW BIRCH STREET, SUITE 200 NEWPORT BEACH, CA 92660
PHONE: (949) 296-2967 FAX: (888) 793-7363

PPD No. 2017-0082 PLAN No. ____

Last Update:6/26/18
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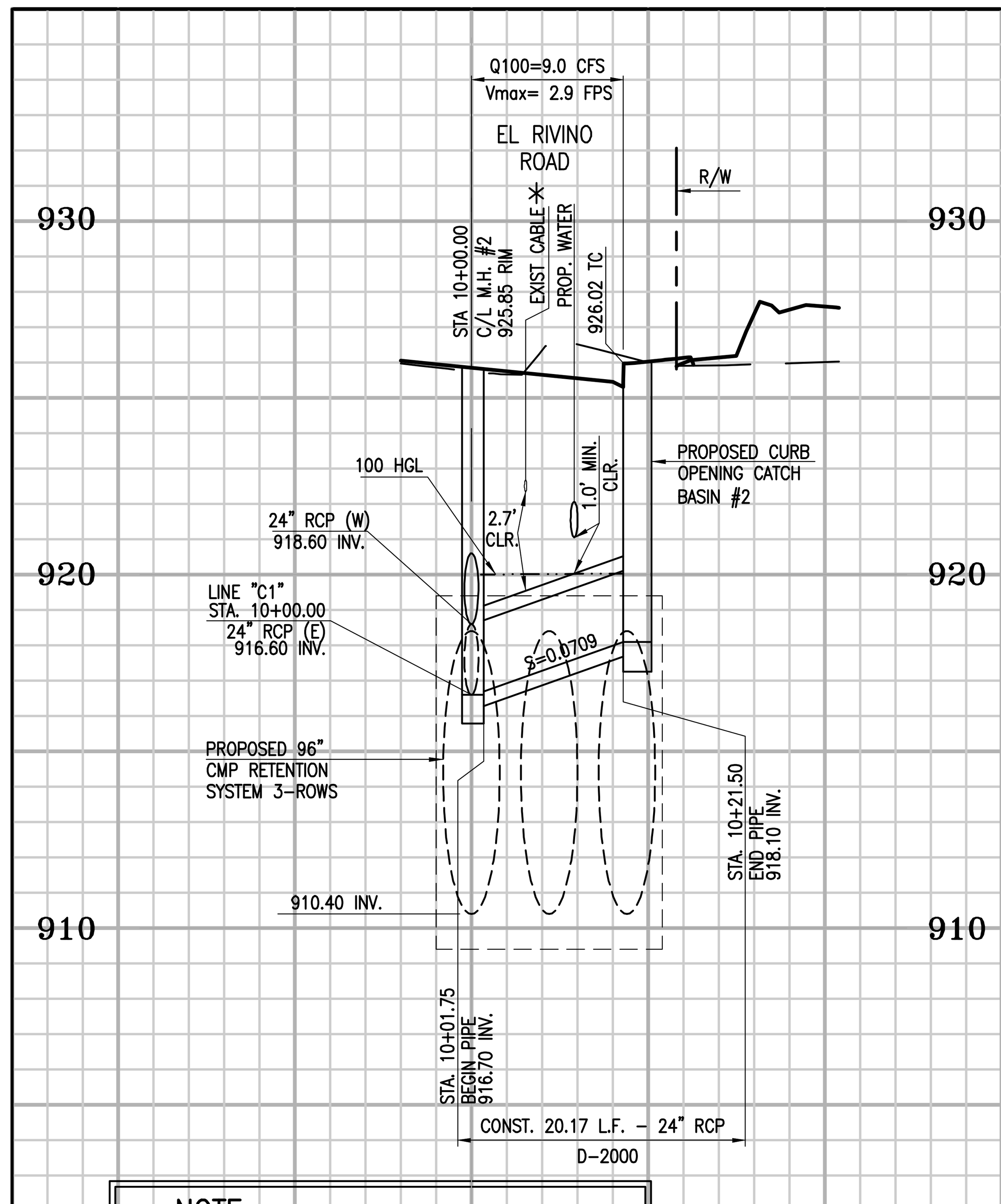


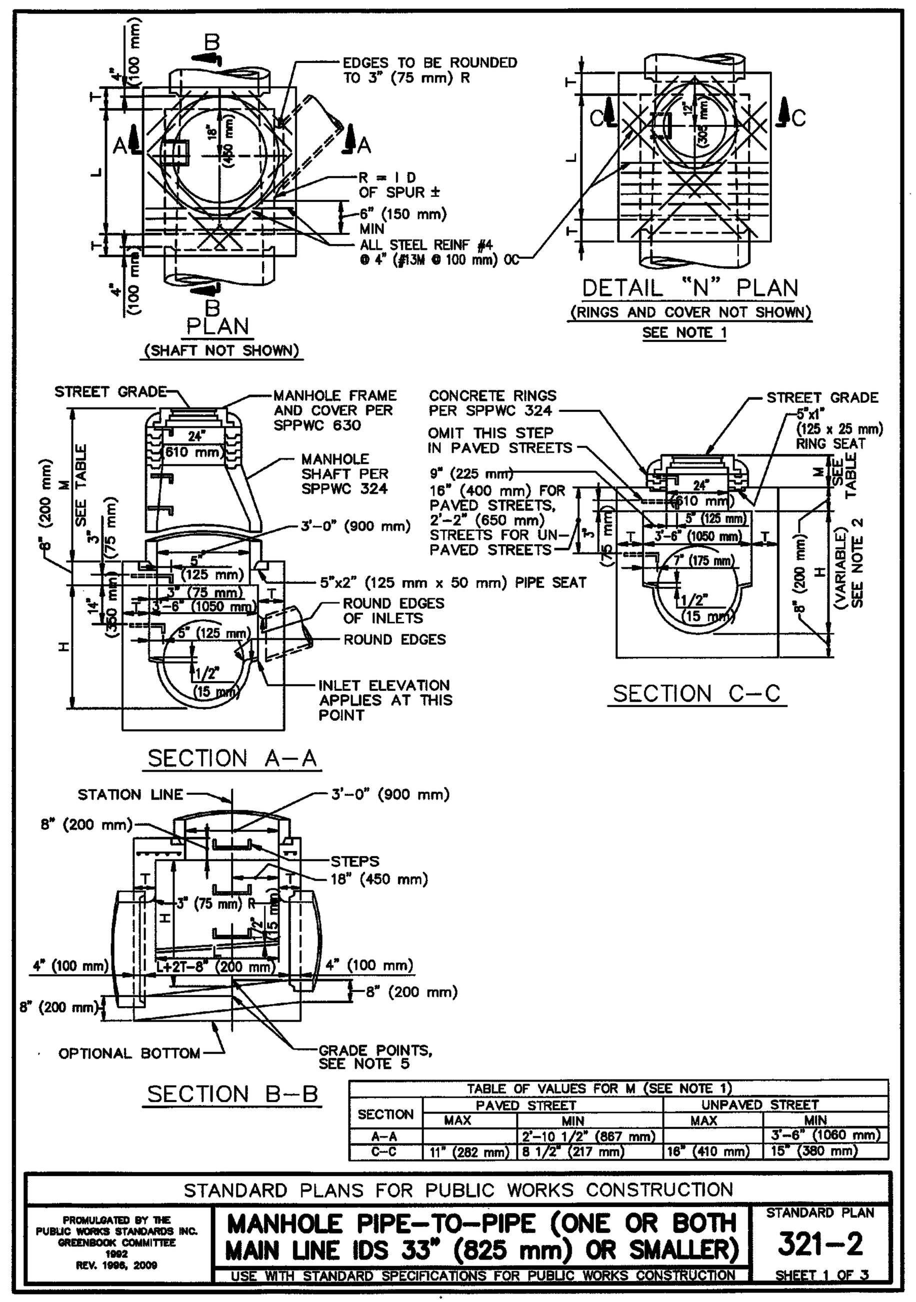
NOTE:

* FIELD VERIFY LOCATIONS AND ELEVATIONS OF EXISTING UTILITY LINES, INFORM CIVIL ENGINEER FOR ANY ELEVATION DISCREPANCIES PRIOR TO CONSTRUCTION

LINE "B1"

1+00

PROFILE SCALE:
HORIZ. - 1" = 20'
VERT. - 1" = 4'



NOTES

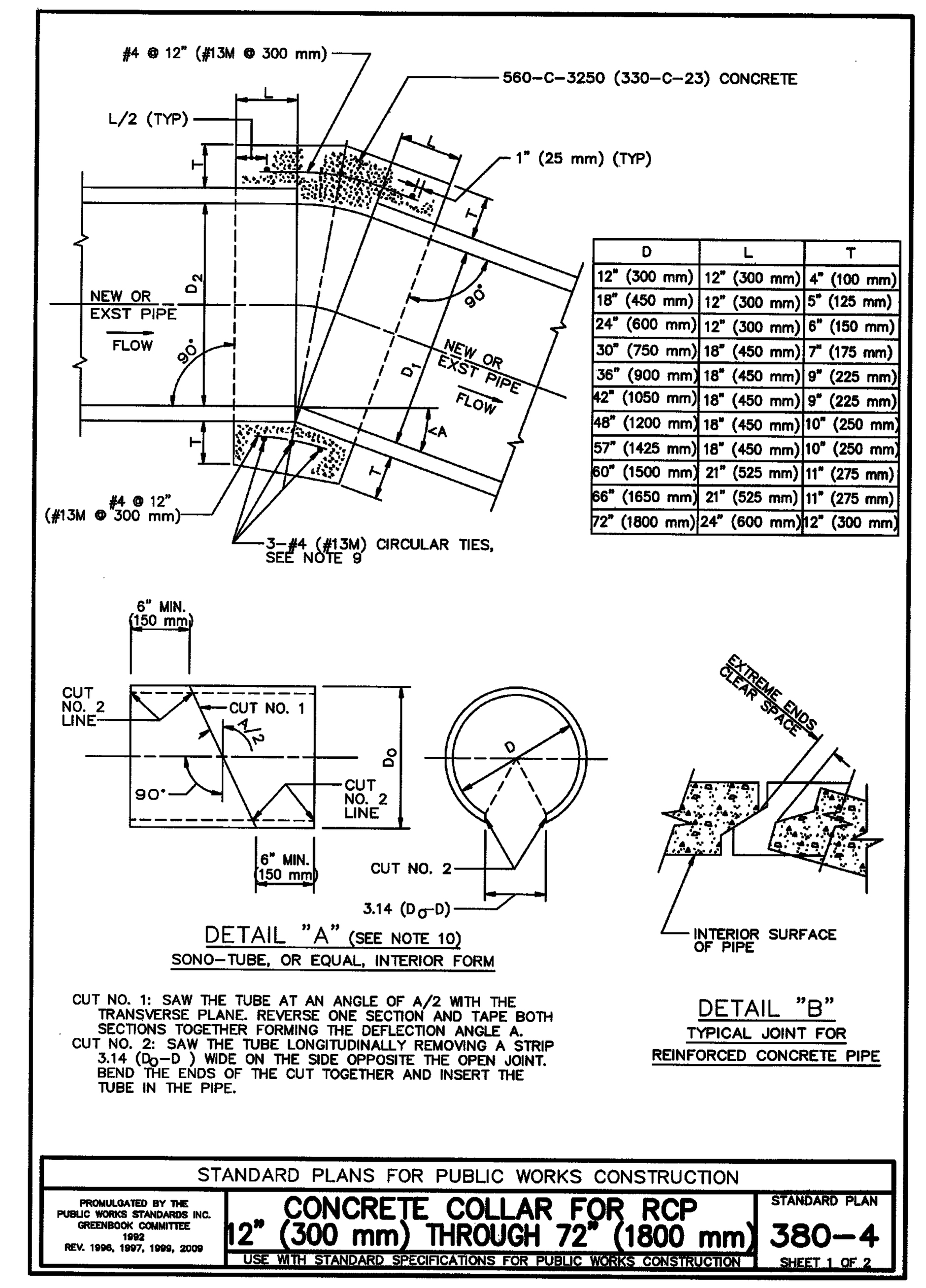
1. WHEN DEPTH M FROM STREET GRADE TO THE TOP OF THE BOX IS LESS THAN 2'-10 1/2" (867 mm) FOR PAVED STREETS OR 3'-6" (1060 mm) FOR UNPAVED STREETS, CONSTRUCT SHAFT PER SECTION C-C AND DETAIL "N". DEPTH M MAY BE REDUCED TO AN ABSOLUTE LIMIT OF 6" (150 mm) WHEN LARGER VALUES OF M WOULD REDUCE H IN SECTION C-C TO 3'-6" (1060 mm) OR LESS.
2. H (IN SECTION A-A AND B-B) SHALL NOT BE LESS THAN 4'-0" (1.2 m), BUT MAY BE INCREASED PROVIDED THAT THE VALUE OF M SHALL NOT BE LESS THAN THE MINIMUM SPECIFIED AND THAT THE REDUCER SHALL BE USED. FOR H (IN SECTION C-C) SEE NOTE 1.
3. L SHALL BE 4'-0" (1.2 m) UNLESS OTHERWISE SHOWN. L MAY BE INCREASED OR LOCATION OF MANHOLE SHIFTED TO MEET PIPE ENDS, BUT ANY CHANGE IN LOCATION OF THE SPUR MUST BE APPROVED BY THE ENGINEER.
4. T SHALL BE 8" (200 mm) FOR VALUES OF H UP TO AND INCLUDING 8'-0" (2.4 m) AND 10" (250 mm) FOR VALUES OF H OVER 8'-0" (2.4 m).
5. STATIONS OF MANHOLES SHOWN ON PLANS APPLY AT CENTERLINE OF SHAFT. ELEVATIONS ARE SHOWN AT CENTERLINE OF SHAFT AND REFER TO THE PROLONGED INVERT GRADE LINES. SEE NOTE 3.
6. REINFORCEMENT SHALL CONFORM TO ASTM A 615, GRADE 40 (ASTM A 615M, GRADE 300), AND SHALL TERMINATE 1 1/2" (40 mm) CLEAR OF CONCRETE SURFACES UNLESS OTHERWISE SHOWN.
7. FLOOR OF MANHOLE SHALL BE STEEL TROWELED TO SPRING LINE.
8. BODY OF MANHOLE SHALL BE POURED IN ONE CONTINUOUS OPERATION EXCEPT THAT A CONSTRUCTION JOINT WITH A LONGITUDINAL KEYWAY MAY BE PLACED AT SPRING LINE.
9. THICKNESS OF THE DECK SHALL VARY WHEN NECESSARY TO PROVIDE A LEVEL SEAT BUT SHALL NOT BE LESS THAN 8" (200 mm).
10. STEPS SHALL CONFORM TO SPPWC 635 OR 636. UNLESS OTHERWISE SHOWN, STEPS SHALL BE UNIFORMLY SPACED 14" (350 mm) TO 15" (375 mm) OC. THE LOWEST STEP SHALL NOT BE MORE THAN 24" (600 mm) ABOVE THE LEDGE AT THE SIDE OF THE MANHOLE.

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION
MANHOLE PIPE-TO-PIPE (ONE OR BOTH MAIN LINE IDS 33" (825 mm) OR SMALLER) — STANDARD PLAN 321-2, SHEET 2 OF 3

11. THE FOLLOWING CRITERIA SHALL BE USED FOR THIS MANHOLE:
    A. MAIN LINE = 33" (825 mm) INSIDE DIAMETER OR LESS. (EXCEPTION – IF THE MAIN LINE RCP DOWNSTREAM OF THE MANHOLE IS 36" (900 mm) TO 42" (1050 mm) INSIDE DIAMETER AND THE MAIN LINE RCP UPSTREAM IS 33" (825 mm) OR LESS.) SPPWC 320 OR 322 IS NOT APPLICABLE WHERE THE MAIN LINE CONDUIT IS LESS THAN 36" (900 mm) IN DIAMETER.
    B. SEE SECTION A – A. THE MAXIMUM SIZE LATERAL THAT MAY BE CONNECTED TO THIS MANHOLE IS SUCH THAT THE DISTANCE FROM THE OUTSIDE (TOP) OF THE LATERAL TO THE BOTTOM OF THE 8" (200 mm) THICK TOP OF THE MANHOLE CHAMBER, MEASURED VERTICALLY FROM THE END OF THE RCP, SHALL BE A MINIMUM OF 6" (150 mm).
    C. IF THE SIZE OF THE LATERAL IS SUCH THAT THE ABOVE-SPECIFIED MINIMUM DISTANCES CANNOT BE MAINTAINED, THEN ONE OF THE FOLLOWING ALTERNATE SOLUTIONS MUST BE USED.
        1. PROVIDE A SPECIAL STRUCTURE.
        2. PROVIDE TWO STANDARD STRUCTURES, CONSISTING OF THIS MANHOLE PLACED UPSTREAM OR DOWNSTREAM FROM THE APPLICABLE JUNCTION STRUCTURE OR TRANSITION STRUCTURE.
12. MANHOLE FRAME AND COVER SHALL CONFORM TO SPPWC 630 UNLESS OTHERWISE SHOWN.
13. MANHOLE SHAFT SHALL CONFORM TO SPPWC 324 UNLESS OTHERWISE SHOWN.
14. WHERE A MANHOLE SHAFT – 36" (900 mm) WITHOUT REDUCER IS SPECIFIED REFER TO SPPWC 336.
15. WHERE A PRESSURE MANHOLE SHAFT – WITH ECCENTRIC REDUCER IS SPECIFIED REFER TO SPPWC 328.
16. WHERE A PRESSURE MANHOLE SHAFT – 36" (900 mm) WITHOUT REDUCER IS SPECIFIED REFER TO SPPWC 329.
17. THE FOLLOWING SPPWC ARE INCORPORATED HEREIN:
    324 MANHOLE SHAFT – WITH ECCENTRIC REDUCER
    326 MANHOLE SHAFT – 36" (900 mm) WITHOUT REDUCER
    328 PRESSURE MANHOLE SHAFT – WITH ECCENTRIC
    329 PRESSURE MANHOLE SHAFT – 36" (900 mm) WITHOUT REDUCER
    630 24" (610 mm) MANHOLE FRAME AND COVER
    633 36" (900 mm) MANHOLE FRAME AND COVER
    635 STEEL STEP
    636 POLYPROPYLENE PLASTIC STEP

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION
MANHOLE PIPE-TO-PIPE (ONE OR BOTH MAIN LINE IDS 33" (825 mm) OR SMALLER) — STANDARD PLAN 321-2, SHEET 3 OF 3

STORM DRAIN MANHOLE DETAIL (51)
N.T.S. S.P.P.W.C. STD. 321-2



NOTES

1. A CONCRETE COLLAR IS REQUIRED WHERE THE CHANGE IN GRADE EXCEEDS 10%.
2. FOR CURVE JOINTS (SEE DETAIL B, SHEET 1)
   IF THE EXTREME ENDS OF THE PIPE LEAVE A CLEAR SPACE THAT IS GREATER THAN 1" (25 mm), BUT IS LESS THAN 3" (75 mm) A CONCRETE COVER IS REQUIRED IN ACCORDANCE WITH SSPWC 306-1.2.4.
   IF THE EXTREME ENDS OF THE PIPE LEAVE A CLEAR SPACE THAT IS EQUAL TO OR GREATER THAN 3" (75 mm), BUT LESS THAN 6" (150 mm), A CONCRETE COLLAR IS REQUIRED. IF THE CLEAR SPACE IS 6" (150 mm) OR GREATER, A TRANSITION STRUCTURE IS REQUIRED.
3. CONCRETE COLLAR SHALL NOT BE USED FOR A SIZE CHANGE ON THE MAIN LINE.
4. CONNECTOR PIPES
   A. WHERE PIPES OF DIFFERENT DIAMETERS ARE JOINED WITH A CONCRETE COLLAR, L AND T SHALL BE THOSE OF THE LARGER PIPE. $D=D_1$ OR D_2, WHICHEVER IS GREATER.
   B. WHEN D_1 IS EQUAL TO OR LESS THAN D_2, JOIN INVERTS AND WHEN D_1 IS GREATER THAN D_2, JOIN SOFFITS.
5. FOR PIPE LARGER THAN 72" (1800 mm) SPECIAL COLLAR DETAILS ARE REQUIRED.
6. FOR PIPE SIZE NOT LISTED USE NEXT SIZE LARGER.
7. REINFORCEMENT SHALL CONFORM TO ASTM A 615 (A 615 M) GRADE 40 (300).
8. WHERE REINFORCING IS REQUIRED THE DIAMETER OF THE CIRCULAR TIES SHALL BE D+(2X WALL THICKNESS) + T.
9. REINFORCING SHALL BE USED WHERE THE PIPE DIAMETER IS GREATER THAN 21" (525 mm) AND ON ALL PIPES WHERE THE SPACES BETWEEN THE EXTREME OUTER ENDS IS 3" (75 mm) OR LARGER.

CIRCULAR TIES:

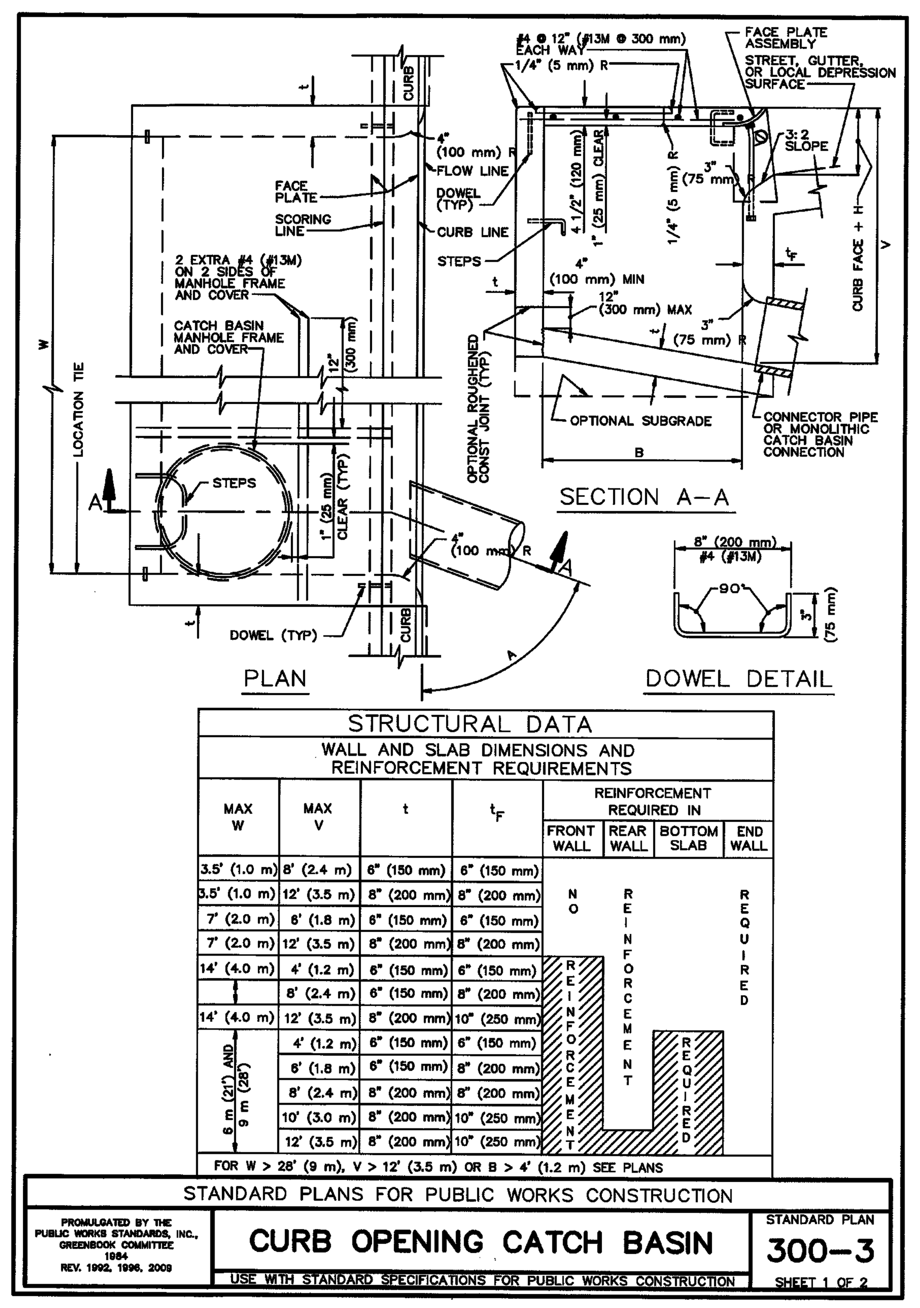
PIPE DIAMETER	NO. OF CIRCULAR TIES
21" (525 mm) OR LESS	3
24" (600 mm) TO 30" (750 mm)	3
33" (825 mm) TO 57" (1425 mm)	4
60" (1500 mm) TO 72" (1800 mm)	5

WHERE THE SPACE BETWEEN PIPE ENDS EXCEEDS 3" (75 mm), THE NUMBER OF CIRCULAR TIES SHALL BE INCREASED TO MAINTAIN AN APPROXIMATE SPACING OF 6" (150 mm) O.C.

10. WHERE THE PIPE IS 21" (525 mm) OR LESS IN DIAMETER AN INTERIOR FORM OF UNSEALED SONO-TUBE OR EQUAL SHALL BE USED TO PROVIDE A SMOOTH INTERIOR JOINT. THE PAPER FORM MAY BE LEFT IN PLACE (SEE DETAIL A). WHEN THE PIPE IS 24" (600 mm) OR LARGER A REMOVABLE INTERIOR FORM SHALL BE USED OR THE INTERIOR JOINT SHALL BE COMPLETELY FILLED WITH MORTAR AND NEATLY POINTED.

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION
CONCRETE COLLAR FOR RCP 12" (300 mm) THROUGH 72" (1800 mm) — STANDARD PLAN 380-4, SHEET 2 OF 2

CONCRETE COLLAR DETAIL (55)
N.T.S.

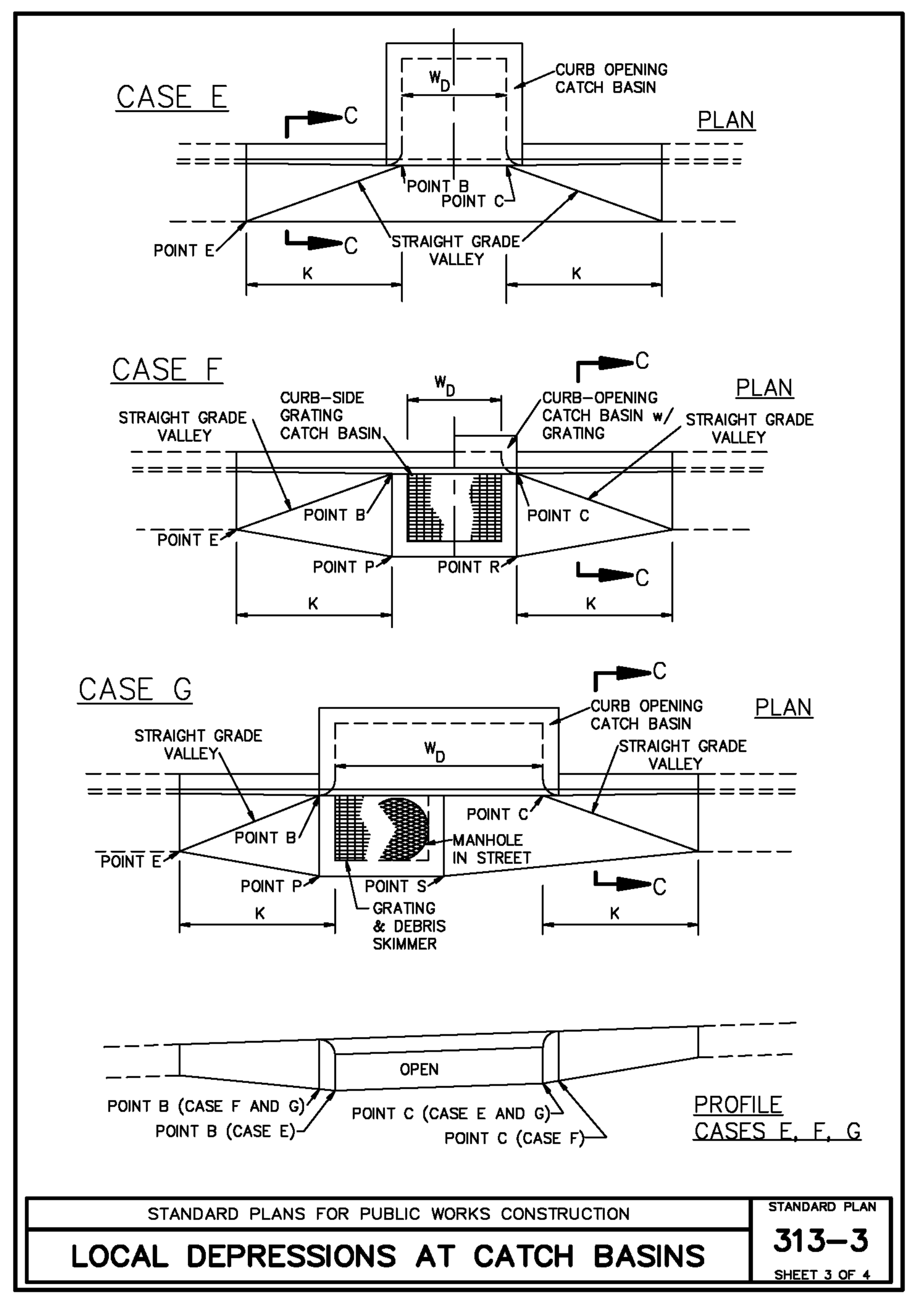


NOTES:

1. WHERE THE BASIN IS TO BE CONSTRUCTED WITHIN THE LIMITS OF EXISTING OR PROPOSED SIDEWALK OR IS CONTIGUOUS TO SUCH SIDEWALK, THE TOP SLAB OF THE BASIN MAY BE POURED EITHER MONOLITHIC WITH THE SIDEWALK OR SEPARATELY, USING THE SAME CLASS OF CONCRETE AS IN THE BASIN. WHEN POURED MONOLITHICALLY, THE SIDEWALK SHALL BE PROVIDED WITH A WEAKENED PLANE OR A 1" (25 mm) DEEP SAWCUT CONTINUOUSLY AROUND THE EXTERNAL PERIMETER OF THE CATCH BASIN WALLS, INCLUDING ACROSS THE FULL WIDTH OF THE SIDEWALK. SURFACE OF ALL EXPOSED CONCRETE SHALL CONFORM IN SLOPE, GRADE, COLOR, FINISH, AND SCORING TO EXISTING OR PROPOSED CURB AND WALK ADJACENT TO THE BASIN.
2. ALL CURVED CONCRETE SURFACES SHALL BE FORMED BY CURVED FORMS, AND SHALL NOT BE SHAPED BY PLASTERING.
3. FLOOR OF BASIN SHALL BE GIVEN A STEEL TROWEL FINISH AND SHALL HAVE A LONGITUDINAL AND LATERAL SLOPE OF 1:12 MINIMUM AND 1:3 MAXIMUM, EXCEPT WHERE THE GUTTER GRADE EXCEEDS 8%, IN WHICH CASE THE LONGITUDINAL SLOPE OF THE FLOOR SHALL BE THE SAME AS THE GUTTER GRADE. SLOPE FLOOR FROM ALL DIRECTIONS TO THE OUTLET.
4. DIMENSIONS:
   B = 3'-2" (970 mm)
   V = THE DIFFERENCE IN ELEVATION BETWEEN THE TOP OF THE CURB AND THE INVERT OF THE CATCH BASIN AT THE OUTLET = 4.5' (1.35 m).
   V_U = THE DIFFERENCE IN ELEVATION BETWEEN THE TOP OF THE CURB AND THE INVERT AT THE UPSTREAM END OF THE BASIN, AND SHALL BE DETERMINED BY THE REQUIREMENTS OF NOTE 3, BUT SHALL NOT BE LESS THAN CURB FACE PLUS 12" (300 mm).
   V_I = THE DIFFERENCE IN ELEVATION BETWEEN THE TOP OF THE CURB AND THE INVERT OF THE INLET, NOTED ON THE PLANS.
   H = NOTED ON THE PLANS.
   W = NOTED ON THE PLANS.
   A = THE ANGLE, IN DEGREES, INTERCEPTED BY THE CENTERLINE OF THE CONNECTOR PIPE AND THE CATCH BASIN WALL TO WHICH THE CONNECTOR PIPE IS ATTACHED.
5. PLACE CONNECTOR PIPES AS INDICATED ON THE PLANS. UNLESS OTHERWISE SPECIFIED, THE CONNECTOR PIPE SHALL BE LOCATED AT THE DOWNSTREAM END OF THE BASIN. WHERE THE CONNECTOR PIPE IS SHOWN AT A CORNER, THE CENTERLINE OF THE PIPE SHALL INTERSECT THE INSIDE CORNER OF THE BASIN. THE PIPE MAY BE CUT AND TRIMMED AT A SKEW NECESSARY TO INSURE MINIMUM 3" (80 mm) PIPE EMBEDMENT, ALL AROUND, WITHIN THE CATCH BASIN WALL, AND 3" (75 mm) RADIUS OF ROUNDING OF STRUCTURE CONCRETE, ALL AROUND, ADJACENT TO PIPE ENDS. A MONOLITHIC CATCH BASIN CONNECTION SHALL BE USED TO JOIN THE CONNECTOR PIPE TO THE CATCH BASIN WHENEVER ANGLE "A" IS LESS THAN 70° OR GREATER THAN 110°, OR WHENEVER THE CONNECTOR PIPE IS LOCATED IN A CORNER. THE OPTIONAL USE OF A MONOLITHIC CATCH BASIN CONNECTION IN ANY CASE IS PERMITTED. MONOLITHIC CATCH BASIN CONNECTIONS MAY BE CONSTRUCTED TO AVOID CUTTING STANDARD LENGTHS OF PIPE.
6. STEPS SHALL BE LOCATED AS SHOWN. IF THE CONNECTOR PIPE INTERFERES WITH THE STEPS, THEY SHALL BE LOCATED AT THE CENTERLINE OF THE DOWNSTREAM END WALL. STEPS SHALL BE SPACED 12" (300 mm) APART. THE TOP STEP SHALL BE 7" (175 mm) BELOW THE TOP OF THE MANHOLE AND PROJECT 2-1/2" (65 mm). ALL OTHER STEPS SHALL PROJECT 5" (130 mm).
7. DOWELS ARE REQUIRED AT EACH CORNER AND AT 7' (2 m) ON CENTER (MAXIMUM) ALONG THE BACKWALL.
8. THE FOLLOWING SPPWC ARE INCORPORATED HEREIN:
   308 MONOLITHIC CATCH BASIN CONNECTION
   309 CATCH BASIN REINFORCEMENT
   310 CATCH BASIN FACE PLATE ASSEMBLY AND PROTECTION BAR
   312 CATCH BASIN MANHOLE FRAME AND COVER
   635 STEEL STEP
   636 POLYPROPYLENE PLASTIC STEP

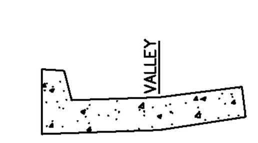
STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION
CURB OPENING CATCH BASIN — STANDARD PLAN 300-3, SHEET 2 OF 2

CURB OPENING CATCH BASIN DETAIL (50)
N.T.S. S.P.P.W.C. STD. 300-3



NOTES:

1. ALL EXPOSED EDGES SHALL BE ROUNDED TO A 1/2" (15 mm) RADIUS.
2. THE CURB FACE AT POINTS A AND D SHALL BE THE NORMAL CURB FACE OF THE ADJACENT CURB. AT POINTS B AND C, THE CURB FACE SHALL BE THE NORMAL CURB FACE OF THE ADJACENT CURB PLUS H. (SEE APPLICABLE CATCH BASIN STANDARD PLAN.)
3. IN EXISTING STREETS WHERE NO PAVEMENT RECONSTRUCTION IS SPECIFIED ON THE PLANS, THE ELEVATION OF THE OUTER EDGE OF THE LOCAL DEPRESSION SHALL MEET THE FINISHED STREET SURFACE.
4. IN NEW STREETS OR IN EXISTING STREETS WHERE PAVEMENT RECONSTRUCTION IS SPECIFIED ON THE PLANS:
   THE ELEVATIONS OF POINTS F AND G SHALL BE SET H1 HIGHER THAN THE GUTTER FLOW LINE ELEVATIONS AT POINTS A AND D, RESPECTIVELY.
   THE ELEVATIONS OF POINTS P AND R SHALL BE SET H2 HIGHER THAN THE GUTTER FLOW LINE ELEVATIONS AT POINTS B AND C, RESPECTIVELY.
   THE ELEVATION OF POINT S SHALL BE SET H2 HIGHER THAN THE ELEVATION AT THE NEAREST GUTTER FLOW LINE.
   WHERE THERE IS NO GUTTER ADJACENT TO THE LOCAL DEPRESSION, THE ELEVATION OF POINT E SHALL BE SET H3 HIGHER THAN THE ELEVATION AT THE NEAREST TOE OF CURB.
5. DIMENSIONS:
   H, H1, H2 AND H3 SHALL BE AS NOTED ON THE PLANS.
   G = 24" (600 mm)
   K = 5'-0" (1500 mm)
   L = 6'-0" (1800 mm)
   M = 4'-0" (1200 mm)
   N = 5'-0" (1500 mm)
   W_D = CATCH BASIN W FOR SINGLE CATCH BASIN OR DISTANCE BETWEEN EXTREME END WALLS FOR MULTIPLE CATCH BASINS.



SECTION C-C

STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION
LOCAL DEPRESSIONS AT CATCH BASINS — STANDARD PLAN 313-3, SHEET 4 OF 4

LOCAL DEPRESSION DETAIL (50)
N.T.S. S.P.P.W.C. STD. 313-3

Last Update: 6/26/18
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811 Know what's **below.** **Call** before you dig.

MARK	REVISIONS	APPR.	DATE

DESIGNED BY: AC DRAWN BY: AC CHECKED BY: HA

SEAL-DESIGN ENGINEER

PREPARED UNDER THE SUPERVISION OF:
HAIDOOK I. AGHAIAN, RCE 43293, EXP. 03/31/2020 — DATE
RECOMMENDED FOR APPROVAL BY LOCKWOOD ENGINEERING:
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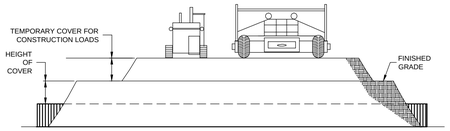
CITY OF RIALTO

EL RIVINO INDUSTRIAL I, LLC – PHASE 1
OFFSITE STORM DRAIN PLAN
EL RIVINO ROAD

10 OF 15 SHEETS

FOR: EL RIVINO INDUSTRIAL 1, LLC
20411 SW BIRCH STREET, SUITE 200 NEWPORT BEACH, CA 92660
PHONE: (949) 296-2967 FAX: (888) 793-7363

PPD No. 2017-0082 PLAN No. ____



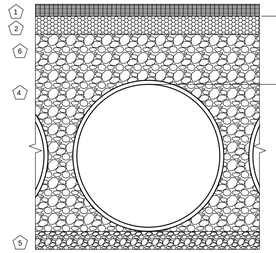
CONSTRUCTION LOADS

FOR TEMPORARY CONSTRUCTION VEHICLE LOADS, AN EXTRA AMOUNT OF COMPACTED COVER MAY BE REQUIRED OVER THE TOP OF THE PIPE. THE HEIGHT-OF-COVER SHALL MEET THE MINIMUM REQUIREMENTS SHOWN IN THE TABLE BELOW. THE USE OF HEAVY CONSTRUCTION EQUIPMENT NECESSITATES GREATER PROTECTION FOR THE PIPE THAN FINISHED GRADE COVER MINIMUMS FOR NORMAL HIGHWAY TRAFFIC.

PIPE SPAN, INCHES	AXLE LOADS (kips)			
	18-50	50-75	75-110	110-150
	MINIMUM COVER (FT)			
12-42	2.0	2.5	3.0	3.0
48-72	3.0	3.0	3.5	4.0
78-120	3.0	3.5	4.0	4.0
126-144	3.5	4.0	4.5	4.5

*MINIMUM COVER MAY VARY, DEPENDING ON LOCAL CONDITIONS. THE CONTRACTOR MUST PROVIDE THE ADDITIONAL COVER REQUIRED TO AVOID DAMAGE TO THE PIPE. MINIMUM COVER IS MEASURED FROM THE TOP OF THE PIPE TO THE TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE.

3 CONSTRUCTION LOADING DIAGRAM
SCALE: N.T.S.



KEY

1.) RIGID OR FLEXIBLE PAVEMENT

2.) GRANULAR ROAD BASE

3.) 12" MIN. FOR DIAMETERS THROUGH 96" 18" MIN. FOR DIAMETERS FROM 102" AND LARGER MEASURED TO TOP OF RIGID OR BOTTOM OF FLEXIBLE PAVEMENT.

4.) FREE DRAINING ANGULAR WASHED STONE ¾" - 2" PARTICLE SIZE.

5.) GRANULAR BEDDING, ROUGHLY SHAPED TO FIT THE BOTTOM OF PIPE, 4"- 6" IN DEPTH.

6.) CONTECH C-40 OR C-45 NON-WOVEN GEOTEXTILE REQUIRED, WRAPPING TRENCH SIDES AND TOP ONLY.

FOUNDATION/BEDDING PREPARATION

PRIOR TO PLACING THE BEDDING, THE FOUNDATION MUST BE CONSTRUCTED TO A UNIFORM AND STABLE GRADE. IN THE EVENT THAT UNSUITABLE FOUNDATION MATERIALS ARE ENCOUNTERED DURING EXCAVATION, THEY SHALL BE REMOVED AND BROUGHT BACK TO THE GRADE WITH A FILL MATERIAL AS APPROVED BY THE ENGINEER. ONCE THE FOUNDATION PREPARATION IS COMPLETE, THE 4 INCHES OF A WELL-GRADED GRANULAR MATERIAL SHALL BE PLACED AS THE BEDDING.

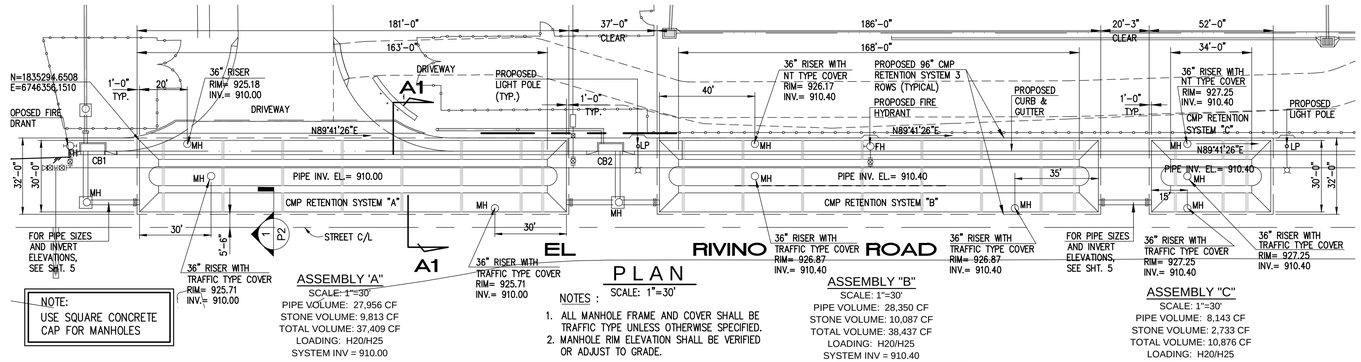
BACKFILL

THE BACKFILL MATERIAL SHALL BE FREE-DRAINING ANGULAR WASHED STONE 3/4" - 2" PARTICLE SIZE. MATERIAL SHALL BE PLACED IN 6"-10" MAXIMUM LIFTS. MATERIAL SHALL BE WORKED INTO THE PIPE HAUNCHES BY MEANS OF SHOVEL-SLICING, RODDING, AIR-TAMPER, VIBRATORY ROD, OR OTHER EFFECTIVE METHODS COMPACTION IS CONSIDERED ADEQUATE WHEN NO FURTHER YIELDING OF THE MATERIAL IS OBSERVED UNDER THE COMPACTOR, OR UNDER FOOT, AND THE PROJECT ENGINEER OR HIS REPRESENTATIVE IS SATISFIED WITH THE LEVEL OF COMPACTION. INADEQUATE COMPACTION CAN LEAD TO EXCESSIVE DEFLECTIONS WITHIN THE SYSTEM AND SETTLEMENT OF THE SOILS OVER THE SYSTEM. BACKFILL SHALL BE PLACED SUCH THAT THERE IS NO MORE THAN A TWO-LIFT DIFFERENTIAL BETWEEN THE SIDES OF ANY PIPE IN THE SYSTEM AT ALL TIMES DURING THE BACKFILL PROCESS. BACKFILL SHALL BE ADVANCED ALONG THE LENGTH OF THE SYSTEM AT THE SAME RATE TO AVOID DIFFERENTIAL LOADING ON ANY PIPES IN THE SYSTEM.

EQUIPMENT USED TO PLACE AND COMPACT THE BACKFILL SHALL BE OF A SIZE AND TYPE SO AS NOT TO DISTORT, DAMAGE, OR DISPLACE THE PIPE. ATTENTION MUST BE GIVEN TO PROVIDING ADEQUATE MINIMUM COVER FOR SUCH EQUIPMENT, AND MAINTAINING BALANCED LOADING ON ALL PIPES IN THE SYSTEM, DURING ALL SUCH OPERATIONS.

OTHER ALTERNATE BACKFILL MATERIAL MAY BE ALLOWED DEPENDING ON SITE SPECIFIC CONDITIONS. REFER TO TYPICAL BACKFILL DETAIL FOR MATERIAL REQUIRED.

1 BACKFILL CAP DETAIL
P2 SCALE: N.T.S.



NOTE:
USE SQUARE CONCRETE CAP FOR MANHOLES

ASSEMBLY 'A'
SCALE: 1"=30'
PIPE VOLUME: 27,956 CF
STONE VOLUME: 9,813 CF
TOTAL VOLUME: 37,409 CF
LOADING: H20/H25
SYSTEM INV = 910.00

PLAN
SCALE: 1"=30'

NOTES :
1. ALL MANHOLE FRAME AND COVER SHALL BE TRAFFIC TYPE UNLESS OTHERWISE SPECIFIED.
2. MANHOLE RIM ELEVATION SHALL BE VERIFIED OR ADJUST TO GRADE.

ASSEMBLY "B"
SCALE: 1"=30'
PIPE VOLUME: 28,350 CF
STONE VOLUME: 10,087 CF
TOTAL VOLUME: 38,437 CF
LOADING: H20/H25
SYSTEM INV = 910.40

ASSEMBLY "C"
SCALE: 1"=30'
PIPE VOLUME: 8,143 CF
STONE VOLUME: 2,733 CF
TOTAL VOLUME: 10,876 CF
LOADING: H20/H25
SYSTEM INV = 910.40

SPECIFICATION FOR CORRUGATED STEEL PIPE-ALUMINIZED TYPE 2 STEEL

SCOPE

THIS SPECIFICATION COVERS THE MANUFACTURE AND INSTALLATION OF THE CORRUGATED STEEL PIPE (CSP) DETAILED IN THE PROJECT PLANS.

MATERIAL

THE ALUMINIZED TYPE 2 STEEL COILS SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF AASHTO M274 OR ASTM A929.

PIPE

THE CSP SHALL BE MANUFACTURED IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF AASHTO M36 OR ASTM A760. THE PIPE SIZES, GAGES AND CORRUGATIONS SHALL BE AS SHOWN ON THE PROJECT PLANS.

ALL FABRICATION OF THE PRODUCT SHALL OCCUR WITHIN THE UNITED STATES.

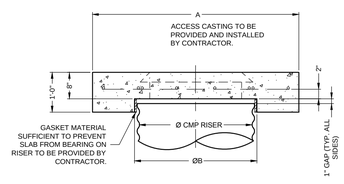
HANDLING AND ASSEMBLY

SHALL BE IN ACCORDANCE WITH RECOMMENDATIONS OF THE NATIONAL CORRUGATED STEEL PIPE ASSOCIATION (NCSPA)

INSTALLATION

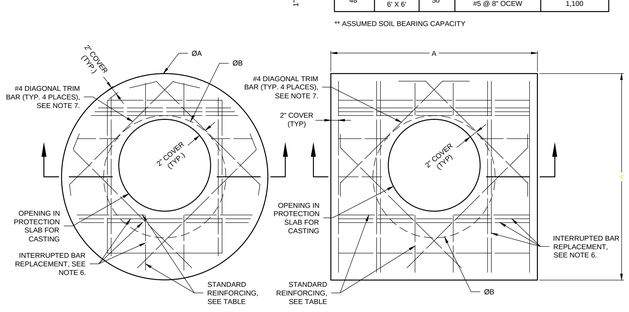
SHALL BE IN ACCORDANCE WITH AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, SECTION 26, DIVISION II OR ASTM A798 AND IN CONFORMANCE WITH THE PROJECT PLANS AND SPECIFICATIONS. IF THERE ARE ANY INCONSISTENCIES OR CONFLICTS THE CONTRACTOR SHOULD DISCUSS AND RESOLVE WITH THE SITE ENGINEER.

IT IS ALWAYS THE RESPONSIBILITY OF THE CONTRACTOR TO FOLLOW OSHA GUIDELINES FOR SAFE PRACTICES.



REINFORCING TABLE				
Ø CMP RISER	A	Ø B	REINFORCING	**BEARING PRESSURE (PSF)
24"	Ø 4' 4'X4'	26"	#5 @ 12" OCEW #5 @ 12" OCEW	2,410 1,780
30"	Ø 4'-6" 4'-6" X 4'-6"	32"	#5 @ 12" OCEW #5 @ 12" OCEW	2,120 1,530
36"	Ø 5' 5' X 5'	38"	#5 @ 10" OCEW #5 @ 10" OCEW	1,890 1,350
42"	Ø 5'-6" 5'-6" X 5'-6"	44"	#5 @ 10" OCEW #5 @ 9" OCEW	1,720 1,210
48"	Ø 6' 6' X 6'	50"	#5 @ 9" OCEW #5 @ 8" OCEW	1,600 1,100

** ASSUMED SOIL BEARING CAPACITY

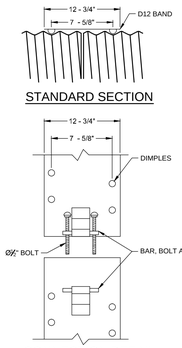


SQUARE OPTION PLAN VIEW

NOTES:

1. DESIGN IN ACCORDANCE WITH AASHTO, 17th EDITION.
2. DESIGN LOAD HS25.
3. EARTH COVER = 1' MAX.
4. CONCRETE STRENGTH = 3,500 psi
5. REINFORCING STEEL = ASTM A615, GRADE 60.
6. PROVIDE ADDITIONAL REINFORCING AROUND OPENINGS EQUAL TO THE BARS INTERRUPTED, HALF EACH SIDE. ADDITIONAL BARS TO BE IN THE SAME PLANE.
7. TRIM OPENING WITH DIAGONAL #4 BARS, EXTEND BARS A MINIMUM OF 12" BEYOND OPENING, BEND BARS AS REQUIRED TO MAINTAIN BAR COVER.
8. PROTECTION SLAB AND ALL MATERIALS TO BE PROVIDED AND INSTALLED BY CONTRACTOR.
9. DETAIL DESIGN BY DELTA ENGINEERING, BINGHAMTON, NY.

4 MANHOLE CAP DETAIL
SCALE: N.T.S.



STANDARD SECTION

CONNECTION DETAIL

GENERAL NOTES:

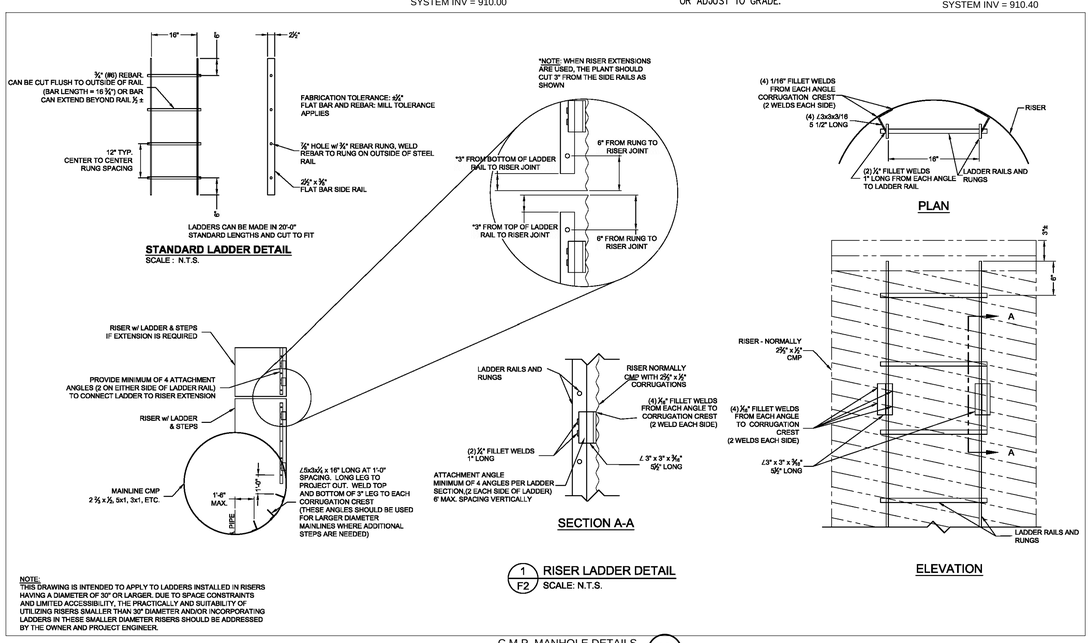
1. REFER TO CONTECH BAND SELECTION GUIDE FOR BAND WIDTH, GAGE, AND FASTENER TYPES.
2. BANDS FOR PIPE-ARCH ARE THE SAME AS FOR EQUIVALENT DIAMETER ROUND PIPE.
3. BANDS ARE NORMALLY FURNISHED AS FOLLOWS:
   12" THRU 48" 1-PIECE
   54" THRU 96" 2-PIECE
   102" THRU 144" 3-PIECES.
4. BAND FASTENERS ARE ATTACHED WITH SPOT WELDS, RIVETS OR HAND WELDS.
5. REROLLED ANNULAR END CORRUGATIONS ARE NORMALLY 2-2/3" X 1/2".
6. DIMENSIONS ARE SUBJECT TO MANUFACTURING TOLERANCES.

2 DIMPLE BAND DETAIL
SCALE: N.T.S.

- VOLUME = 86,722 CF
- MAINLINE PIPE GAUGE = 16
- WALL TYPE = PERFORATED
- DIAMETER = 96"
- FINISH = ALT2

NOTES

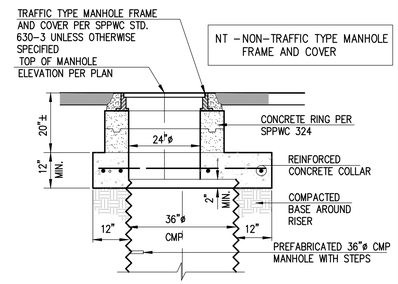
- ALL RISER AND STUB DIMENSIONS ARE TO CENTERLINE.
- ALL ELEVATIONS, DIMENSIONS, AND LOCATIONS OF RISERS AND INLETS, SHALL BE VERIFIED BY THE ENGINEER OF RECORD PRIOR TO RELEASING FOR FABRICATION.
- ALL FITTINGS AND REINFORCEMENT COMPLY WITH ASTM A998.
- ALL RISERS AND STUBS ARE 2⅔" x ½" CORRUGATION AND 16 GAGE UNLESS OTHERWISE NOTED.
- RISERS TO BE FIELD TRIMMED TO GRADE.
- QUANTITY OF PIPE SHOWN DOES NOT PROVIDE EXTRA PIPE FOR CONNECTING THE SYSTEM TO EXISTING PIPE OR DRAINAGE STRUCTURES. OUR SYSTEM AS DETAILED PROVIDES NOMINAL INLET AND/OR OUTLET PIPE STUB FOR CONNECTION TO EXISTING DRAINAGE FACILITIES. IF ADDITIONAL PIPE IS NEEDED IT IS THE RESPONSIBILITY OF THE CONTRACTOR.

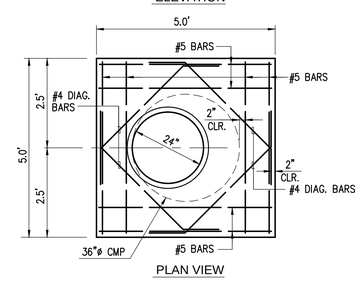


NOTE:
THIS DRAWING IS INTENDED TO APPLY TO LADDERS INSTALLED IN RISERS HAVING A DIAMETER OF 30" OR LARGER. DUE TO SPACE CONSTRAINTS AND LIMITED ACCESSIBILITY, THE PRACTICALLY AND SUITABILITY OF UTILIZING RISERS SMALLER THAN 30" DIAMETER AND/OR INCORPORATING LADDERS IN THESE SMALLER DIAMETER RISERS SHOULD BE ADDRESSED BY THE OWNER AND PROJECT ENGINEER.

1 RISER LADDER DETAIL
F2 SCALE: N.T.S.

C.M.P. MANHOLE DETAILS 58
NOT TO SCALE

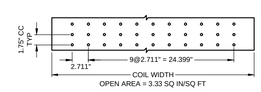




MANHOLE DETAIL 58
NOT TO SCALE

NOTES:

1. DEPTH OF POROUS STONE ABOVE AND BELOW PIPE SHOULD BE 6" MINMUM.
2. WIDTH OF POROUS STONE AROUND PERIMETER OF SYSTEM SHOULD BE 12" MINMUM.



NOTES:

1. PERFORATIONS MEET AASHTO AND ASTM SPECIFICATIONS.
2. PERFORATION OPEN AREA PER SQUARE FOOT OF PIPE IS BASED ON THE NOMINAL DIAMETER AND LENGTH OF PIPE.
3. ALL DIMENSIONS ARE SUBJECT TO MANUFACTURING TOLERANCES.
4. ALL HOLES 3/8"Ø.

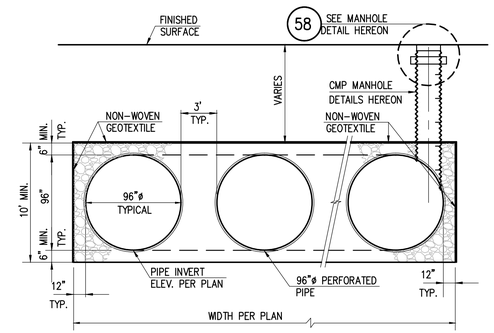
EXFILTRATION AREA
STANDARD PERFORATION PATTERNS
AASTHO M-36 AND ASTM A760, B745

APPROXIMATE AREA PER LINEAR FOOT OF PIPE				
PIPE Ø (INCHES)	CORRUGATION PATTERN			
	2-2/3"X1/2" (SQ. INCHES)	3"X1" (SQ. INCHES)	5"x1" (SQ. INCHES)	ULTRA-FLO (SQ. INCHES)
96	94.5	104.6	83.7	103.3

NOTES:

1. ALL HOLES ARE 3/8" DIAMETER,AND ARE NOTED AS 'CLASS 2 PERFORATIONS' PER AASHTO AND ASTM.
2. GAGE AND COATING LIMITATIONS APPLY. 5" X 1" IS NOT AVAILABLE IN ALUMINUM.
3. ALL DIMENSIONS ARE SUBJECT TO MANUFACTURING TOLERANCES.

PERFORATION DETAIL
SCALE: N.T.S.



SECTION "A1-A1"
SCALE: N.T.S.

Last Update:6/26/18
G:\2800-2899\2873\2873d\STREET\2873d - ST-11SD.dwg

CONTECH UNDERGROUND RETENTION SYSTEM 52
NOT TO SCALE

811 Know what's below. Call before you dig.

MARK	REVISIONS	APPR.	DATE

DESIGNED BY: AC DRAWN BY: AC CHECKED BY: HA

SEAL-DESIGN ENGINEER
REGISTERED PROFESSIONAL ENGINEER HAIDOOK I. AGHAIAN R.C.E. NO. 43293 Exp. 3-31-20 CIVIL STATE OF CALIFORNIA

PREPARED UNDER THE SUPERVISION OF:
HAIDOOK I. AGHAIAN, RCE 43293, EXP. 03/31/2020 DATE
RECOMMENDED FOR APPROVAL BY LOCKWOOD ENGINEERING:
CARLETON W. LOCKWOOD, JR, RCE 45935 DATE
APPROVED BY:
ROBERT G. EISENBEISZ, PUBLIC WORKS DIRECTOR/CITY ENGINEER, RCE 54931 DATE

CIVIL ENGINEERS
Thienes Engineering, Inc.
CIVIL ENGINEERING • LAND SURVEYING
14349 FIRESTONE BOULEVARD
LA MIRADA, CALIFORNIA 90638
PH.(714)521-4811 FAX(714)521-4173

BENCH MARK: SAN BERNARDINO COUNTY BENCHMARK NO. "00614" ELEV. = 950.595' (NGVD '29)
DESCRIPTION: NAIL IN CONCRETE CURB, AT THE NORTHWEST CORNER INTERSECTION OF CACTUS AVENUE AND EL RIVINO, 32 FT. NORTH OF EL RIVINO, 112 FT. WEST OF CACTUS, 6 FT. SOUTH OF A WALL AT ENTRANCE TO EL RIVINO COUNTRY CLUB.

CITY OF RIALTO

EL RIVINO INDUSTRIAL I, LLC - PHASE 1
OFFSITE STORM DRAIN PLAN
EL RIVINO ROAD

11 OF 15 SHEETS

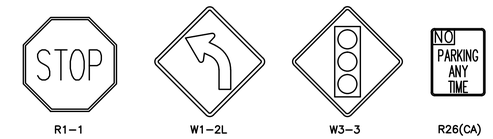
FOR: EL RIVINO INDUSTRIAL I, LLC
20411 SW BIRCH STREET, SUITE 200 NEWPORT BEACH, CA 92660
PHONE: (949) 296-2967 FAX: (888) 793-7363

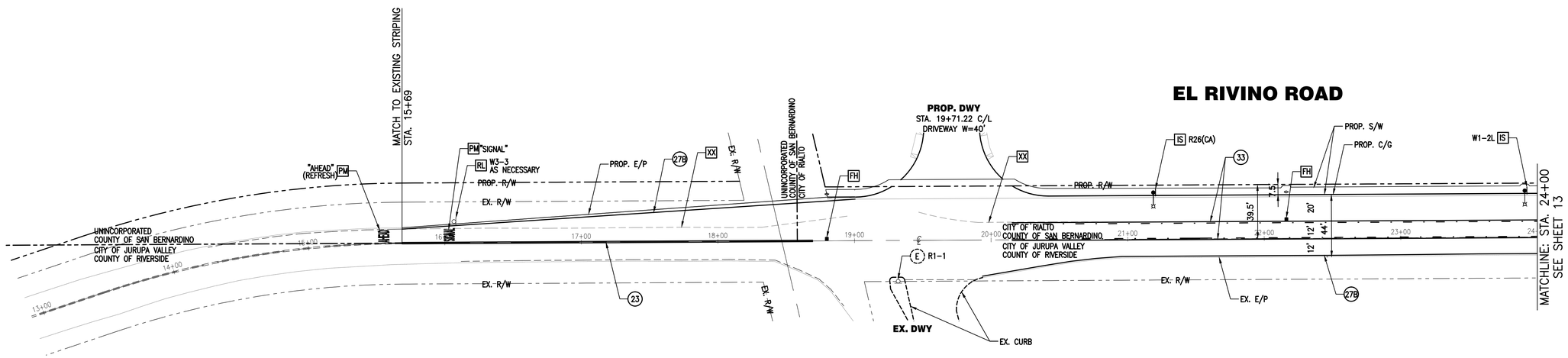
PPD No. 2017-0082 PLAN No. ___

SIGNING AND STRIPING GENERAL NOTES:

1. ALL WORK SHALL BE DONE IN CONFORMANCE WITH THE 2012 CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (CA MUTCD), THE LATEST CALTRANS TRAFFIC MANUAL AND STANDARD PLANS & SPECIFICATIONS, AND ALL ADDENDA THERETO, THE STANDARD REQUIREMENTS OF THE CITY OF RIALTO, AND ALL OTHER CODES, RULES, AND REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION.
2. CONTRACTOR SHALL FURNISH AND INSTALL ALL TRAFFIC SIGNS, SIGN POSTS, PAVEMENT MARKINGS, RAISED PAVEMENT MARKERS, AND ALL OTHER EQUIPMENT AND HARDWARE.
3. THE CONTRACTOR SHALL NOTIFY THE CITY AT LEAST 3 WORKING DAYS BEFORE INSTALLATION OF SIGNS AND PAVEMENT MARKINGS. THE CITY SHALL APPROVE THE EXACT LOCATION OF SIGNS AND PAVEMENT MARKINGS PRIOR TO INSTALLATION.
4. THE CONTRACTOR SHALL INSTALL BLUE RAISED PAVEMENT MARKERS ADJACENT TO ALL FIRE HYDRANTS WITHIN THE PROJECT LIMITS IN ACCORDANCE TO THE CALTRANS TRAFFIC MANUAL.
5. ALL TRAFFIC STRIPING SHALL BE RAISED PAVEMENT MARKERS. ALL PAVEMENT MARKINGS ON CITY STREETS SHALL MATCH CITY STENCILS. ALL PAVEMENT MARKINGS AND LEGENDS SHALL BE "FOG SEALED". STRIPING SHALL BE APPLIED WITHIN 48 HOURS OF SURFACE COURSE APPLICATION ON PUBLIC STREETS. IN NO CASE SHALL A NEWLY PAVED STREET BE LEFT UNSTRIPED OVER A WEEKEND OR HOLIDAY.
6. ALL CONFLICTING STRIPING, PAVEMENT MARKINGS, LEGENDS, AND RAISED PAVEMENT MARKERS SHALL BE REMOVED, EVEN IF NOT SHOWN ON THE PLANS. REMOVAL SHALL BE PERFORMED BY WET SANDBLASTING, GRINDING, OR OTHER APPROVED METHODS, NONE OF WHICH SHALL DAMAGE THE PAVEMENT. "BLACK OUT" METHOD OF REMOVAL IS NOT PERMITTED. DAMAGED PAVEMENT DUE TO REMOVALS SHALL BE REPAIRED AS APPROVED BY, AND AT NO COST TO, THE CITY.
7. ALL SIGNS AND SIGN POSTS SHALL BE STANDARD SIZE, IN ACCORDANCE WITH CITY OF RIALTO STANDARDS, AND PRIOR TO INSTALLATION APPROVED BY THE CITY. TRAFFIC SIGN FACE SHALL BE 3M DIAMOND GRADE DG3 REFLECTIVE SHEETING (ASTM XI) WITH PROTECTIVE GRAFFITI OVERLAY FILM OR APPROVED EQUAL. ALL WARNING AND REGULATORY SIGNS SHALL BE HIGH INTENSITY GRADE (DG3) REFLECTIVE. GUIDE SIGNS SHALL BE SUPER ENGINEERING GRADE REFLECTIVE.
8. PRIOR TO FINAL ACCEPTANCE OF STREET IMPROVEMENTS, ALL SIGNS AND STREET MARKINGS WITHIN AND NEAR THE CONSTRUCTION AREA SHALL BE RESTORED TO LIKE-NEW CONDITION, AS APPROVED BY THE CITY.
9. AT LOCATIONS WHERE EXISTING PAINTED CURB IS TO BE RECONSTRUCTED, THE CONTRACTOR SHALL PAINT THE NEW CURB WITHIN 10 DAYS OF CURB CONSTRUCTION. PRIOR TO PAINTING CURB, THE CONTRACTOR SHALL SUBMIT TO THE CITY WRITTEN PROOF THE PAINT IS WATER-BASED WITHIN A 2-YEAR GUARANTEE AGAINST COLOR FADING.
10. APPLY SLURRY SEAL TO THE EXISTING ASPHALT PAVEMENT PRIOR TO INSTALLATION OF PERMANENT TRAFFIC STRIPING, AS REQUIRED BY THE CITY ENGINEER.

SIGN LEGEND:





SIGNING AND STRIPING CONSTRUCTION NOTES:

E	EXISTING SIGN TO REMAIN.
FH	INSTALL BLUE RETROREFLECTIVE FIRE HYDRANT MARKER PER CITY STANDARD DRAWING NO. W-704.
IS	INSTALL SIGN AND POST AS SHOWN.
PM	INSTALL THERMOPLASTIC PAVEMENT MARKING AS SHOWN PER CA-MUTCD STANDARDS.
RL	RELOCATE EXISTING SIGN AND POST TO NEW LOCATION AS SHOWN.
TX	INSTALL THERMOPLASTIC 12" SOLID WHITE LIMIT LINE OR CROSSWALK MARKING.
XX	REMOVE CONFLICTING STRIPING OR MARKINGS.
23	INSTALL DOUBLE YELLOW CENTERLINE RPM PATTERN – DETAIL 23.
27B	PAINT 4" WHITE RIGHT EDGE LINE STRIPE – DETAIL 27B.
33	INSTALL DOUBLE YELLOW TWO-WAY LEFT TURN MEDIAN RPM PATTERN – DETAIL 33.
38C	INSTALL WHITE CHANNELIZING RPM PATTERN – DETAIL 38C.

NOTE: QUANTITIES SHOWN ARE TOTALS FOR ALL SHEETS.

SCALE: 1" = 40'

20 0 20 40 60

CITY OF JURUPA VALLEY
PUBLIC WORKS DEPARTMENT

JIM L. SMITH, RCE 42977 — DATE

Know what's below. Call before you dig.

MARK	REVISIONS	APPR.	DATE

DESIGNED BY: KM DRAWN BY: TW CHECKED BY: TW

SEAL-DESIGN ENGINEER

REGISTERED PROFESSIONAL ENGINEER — THOMAS JOSEPH WHEAT — No. 69467 — Exp. 6/30/20 — CIVIL — STATE OF CALIFORNIA

PREPARED UNDER THE SUPERVISION OF: — 06/26/18
THOMAS J. WHEAT, RCE 69467 — DATE

RECOMMENDED FOR APPROVAL BY LOCKWOOD ENGINEERING:
CARLETON W. LOCKWOOD, JR, RCE 45935 — DATE

APPROVED BY:
ROBERT G. EISENBEISZ, PUBLIC WORKS DIRECTOR/CITY ENGINEER, RCE 54931 — DATE

TJW ENGINEERING, INC.
Traffic Engineering & Transportation
Planning Consultants
6 Venture, Suite 225
Irvine, CA 92618
t: (949) 878-3509 f: (949) 878-3593
www.tjwengineering.com

BENCH MARK: SAN BERNARDINO COUNTY BENCHMARK NO. "00614" *ELEV. = 950.595' (NGVD '29)*
DESCRIPTION: NAIL IN CONCRETE CURB, AT THE NORTHWEST CORNER INTERSECTION OF CACTUS AVENUE AND EL RIVINO, 32 FT. NORTH OF EL RIVINO, 112 FT. WEST OF CACTUS, 6 FT. SOUTH OF A WALL AT ENTRANCE TO EL RIVINO COUNTRY CLUB.

CITY OF RIALTO

SIGNING AND STRIPING PLAN
EL RIVINO ROAD

FOR: EL RIVINO INDUSTRIAL I, LLC
20411 SW BIRCH STREET, SUITE 200 NEWPORT BEACH, CA 92660
PHONE: (949) 296-2960 FAX: (888) 793-7363

PPD No. 2017-0082

PLAN No. ___

Plot Date: 06/26/2018 11:42:39 AM User: #### File Name: C:\Users\Jasper Wong\Dropbox (TJW Engineering Inc.)\TJW Projects\THI Projects\THI-16-013\THI16013 El Rivino Cactus SS D.dwg Last Update: 6/26/2018 11:42:02 AM

SIGNING AND STRIPING GENERAL NOTES:

SEE SHEET 12 FOR GENERAL NOTES.

SIGNING AND STRIPING CONSTRUCTION NOTES:

(E)	EXISTING SIGN TO REMAIN.
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IS	INSTALL SIGN AND POST AS SHOWN.
PM	INSTALL THERMOPLASTIC PAVEMENT MARKING AS SHOWN PER CA-MUTCD STANDARDS.
RL	RELOCATE EXISTING SIGN AND POST TO NEW LOCATION AS SHOWN.
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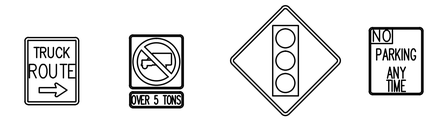
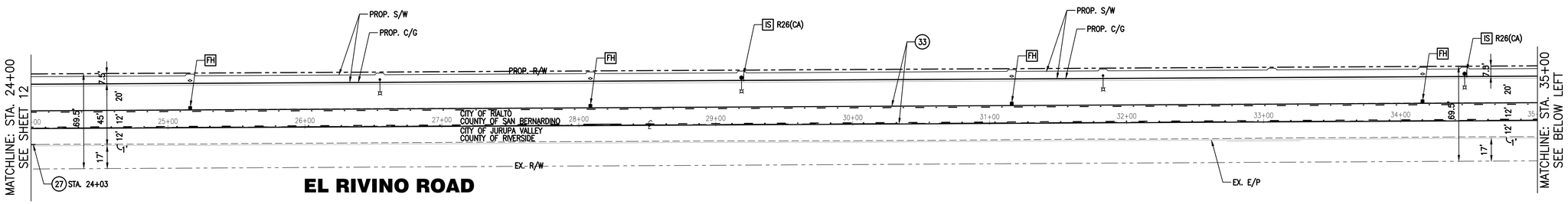
(38C)	INSTALL WHITE CHANNELIZING RPM PATTERN – DETAIL 38C.

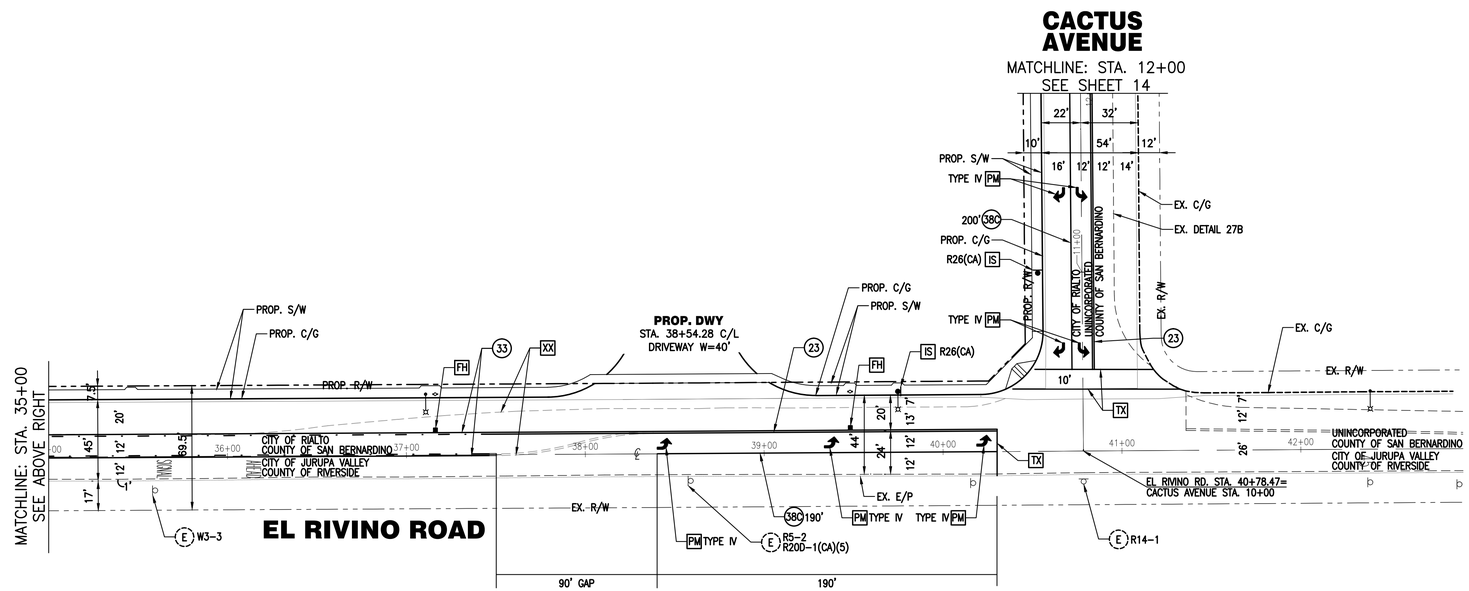
NOTE: QUANTITIES SHOWN ON SHEET 12.

SIGN LEGEND:



R14-1 | W5-2 R20D-1(CA)(5) | W3-3 | R26(CA)





SCALE: 1" = 40'

20 0 20 40 60

COUNTY OF SAN BERNARDINO DEPARTMENT OF PUBLIC WORKS			
MOHAMMAD SIDDIQUI ENGINEER, TRAFFIC DIVISION	DATE	RECOMMENDED BY:	
MOHAMMAD QURESHI TRAFFIC DIVISION CHIEF	DATE	APPROVED BY: SAMEH BASTA ENGINEER, LAND DEVELOPMENT DIVISION	DATE

CITY OF JURUPA VALLEY
PUBLIC WORKS DEPARTMENT

JIM L. SMITH, RCE 42977 DATE

Know what's below. Call before you dig.

MARK	REVISIONS	APPR.	DATE

DESIGNED BY: KM DRAWN BY: TW CHECKED BY: TW

SEAL-DESIGN ENGINEER

REGISTERED PROFESSIONAL ENGINEER THOMAS JOSEPH WHEAT No. 69467 Exp. 6/30/20 CIVIL STATE OF CALIFORNIA

PREPARED UNDER THE SUPERVISION OF: 06/26/18

THOMAS J. WHEAT, RCE 69467 DATE

RECOMMENDED FOR APPROVAL BY LOCKWOOD ENGINEERING:

CARLETON W. LOCKWOOD, JR, RCE 45935 DATE

APPROVED BY:

ROBERT G. EISENBEISZ, PUBLIC WORKS DIRECTOR/CITY ENGINEER, RCE 54931 DATE

TJW ENGINEERING, INC.
Traffic Engineering & Transportation
Planning Consultants
6 Venture, Suite 225
Irvine, CA 92618
t: (949) 878-3509 f: (949) 878-3593
www.tjwengineering.com

BENCH MARK: SAN BERNARDINO COUNTY BENCHMARK NO. "00614" *ELEV. = 950.595' (NGVD '29)*
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CITY OF RIALTO

SIGNING AND STRIPING PLAN
EL RIVINO ROAD and CACTUS AVENUE

FOR: EL RIVINO INDUSTRIAL I, LLC
20411 SW BIRCH STREET, SUITE 200 NEWPORT BEACH, CA 92660
PHONE: (949) 296-2960 FAX: (888) 793-7363

PPD No. 2017-0082

13 OF 15 SHEETS

PLAN No. ___

Plot Date: 06/26/2018 11:42:41 AM User: #### File Name: C:\Users\Jasper Wong\Dropbox (TJW Engineering Inc.)\TJW Projects\THI Projects\THI-16-013\THI6013 El Rivino Cactus SS D.dwg Last Update: 6/26/2018 11:42:02 AM

SIGNING AND STRIPING GENERAL NOTES:

SEE SHEET 12 FOR GENERAL NOTES.

SIGNING AND STRIPING CONSTRUCTION NOTES:

(E)	EXISTING SIGN TO REMAIN.
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PM	INSTALL THERMOPLASTIC PAVEMENT MARKING AS SHOWN PER CA-MUTCD STANDARDS.
RL	RELOCATE EXISTING SIGN AND POST TO NEW LOCATION AS SHOWN.
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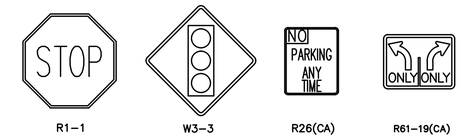
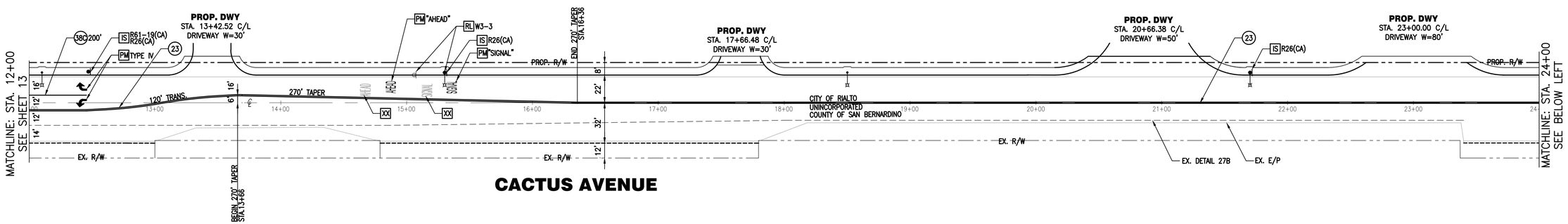
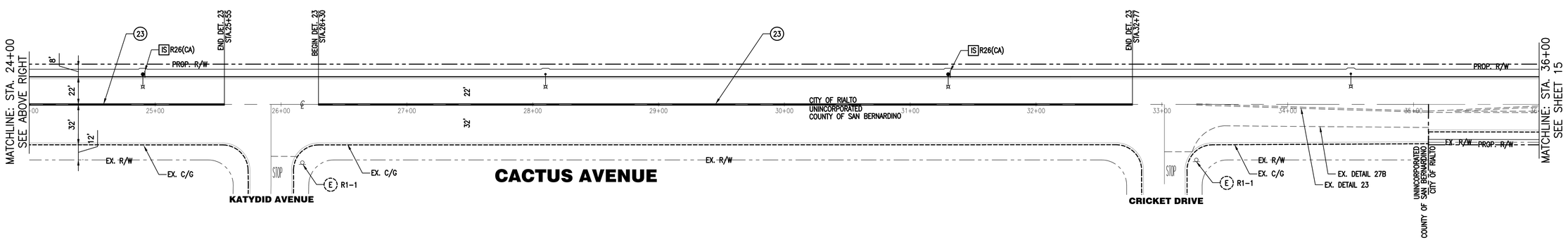
NOTE: QUANTITIES SHOWN ON SHEET 12.

SIGN LEGEND:



R1-1 W3-3 R26(CA) R61-19(CA)





SCALE: 1" = 40'

20 0 20 40 60

COUNTY OF SAN BERNARDINO
DEPARTMENT OF PUBLIC WORKS

MOHAMMAD SIDDIQUI — DATE
ENGINEER, TRAFFIC DIVISION

MOHAMMAD QURESHI — DATE
TRAFFIC DIVISION CHIEF

RECOMMENDED BY:

APPROVED BY:

SAMEH BASTA — DATE
ENGINEER, LAND DEVELOPMENT DIVISION

811 Know what's below. Call before you dig.

MARK	REVISIONS	APPR.	DATE

DESIGNED BY: KM DRAWN BY: TW CHECKED BY: TW

SEAL-DESIGN ENGINEER

REGISTERED PROFESSIONAL ENGINEER THOMAS JOSEPH WHEAT No. 69467 Exp. 6/30/20 CIVIL STATE OF CALIFORNIA

PREPARED UNDER THE SUPERVISION OF:
THOMAS J. WHEAT, RCE 69467 — 06/26/18 DATE

RECOMMENDED FOR APPROVAL BY LOCKWOOD ENGINEERING:
CARLETON W. LOCKWOOD, JR, RCE 45935 — DATE

APPROVED BY:
ROBERT G. EISENBEISZ, PUBLIC WORKS DIRECTOR/CITY ENGINEER, RCE 54931 — DATE

TJW ENGINEERING, INC.
Traffic Engineering & Transportation
Planning Consultants
6 Venture, Suite 225
Irvine, CA 92618
t: (949) 878-3509 f: (949) 878-3593
www.tjwengineering.com

BENCH MARK: SAN BERNARDINO COUNTY BENCHMARK NO. "00614" *ELEV. = 950.595' (NGVD '29)*
DESCRIPTION: NAIL IN CONCRETE CURB, AT THE NORTHWEST CORNER INTERSECTION OF CACTUS AVENUE AND EL RIVINO, 32 FT. NORTH OF EL RIVINO, 112 FT. WEST OF CACTUS, 6 FT. SOUTH OF A WALL AT ENTRANCE TO EL RIVINO COUNTRY CLUB.

CITY OF RIALTO

SIGNING AND STRIPING PLAN
CACTUS AVENUE

FOR: EL RIVINO INDUSTRIAL I, LLC
20411 SW BIRCH STREET, SUITE 200 NEWPORT BEACH, CA 92660
PHONE: (949) 296-2960 FAX: (888) 793-7363

PPD No. 2017-0082

PLAN No. ___

Plot Date: 06/26/2018 11:42:43 AM User: #### File Name: C:\Users\Jasper Wong\Dropbox (TJW Engineering Inc.)\TJW Projects\THI Projects\THI-16-013\THI16013 El Rivino Cactus SS D.dwg Last Update: 6/26/2018 11:42:02 AM

SIGNING AND STRIPING GENERAL NOTES:

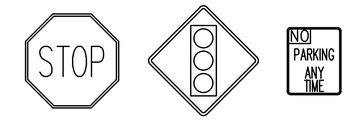
SEE SHEET 8 FOR GENERAL NOTES.

SIGNING AND STRIPING CONSTRUCTION NOTES:

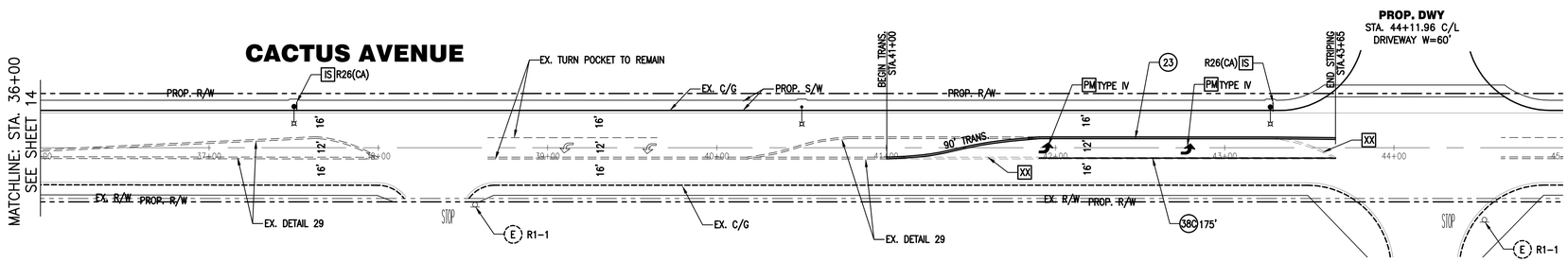
(E)	EXISTING SIGN TO REMAIN.
IS	INSTALL SIGN AND POST AS SHOWN.
PM	INSTALL THERMOPLASTIC PAVEMENT MARKING AS SHOWN PER CA-MUTCD STANDARDS.
RL	RELOCATE EXISTING SIGN AND POST TO NEW LOCATION AS SHOWN.
TX	INSTALL THERMOPLASTIC 12" SOLID WHITE LIMIT LINE OR CROSSWALK MARKING.
XX	REMOVE CONFLICTING STRIPING OR MARKINGS.
(23)	INSTALL DOUBLE YELLOW CENTERLINE RPM PATTERN – DETAIL 23.
(27B)	PAINT 4" WHITE RIGHT EDGE LINE STRIPE – DETAIL 27B.
(33)	INSTALL DOUBLE YELLOW TWO-WAY LEFT TURN MEDIAN RPM PATTERN – DETAIL 33.
(38C)	INSTALL WHITE CHANNELIZING RPM PATTERN – DETAIL 38C.

NOTE: QUANTITIES SHOWN ON SHEET 12.

SIGN LEGEND:



R1-1 W3-3 R26(CA)



SCALE: 1" = 40'

20 0 20 40 60

Know what's **below.** **Call** before you dig.

MARK	REVISIONS	APPR.	DATE

DESIGNED BY: KM DRAWN BY: TW CHECKED BY: TW

SEAL-DESIGN ENGINEER

REGISTERED PROFESSIONAL ENGINEER THOMAS JOSEPH WHEAT No. 69467 Exp. 6/30/20 CIVIL STATE OF CALIFORNIA

PREPARED UNDER THE SUPERVISION OF: 06/26/18

THOMAS J. WHEAT, RCE 69467 DATE

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PLAN No. ___

Plot Date: 06/26/2018 11:42:44 AM User: #### File Name: C:\Users\Jasper Wong\Dropbox (TJW Engineering Inc.)\TJW Projects\THI Projects\THI-16-013\THI16013 El Rivino Cactus SS D.dwg Last Update: 6/26/2018 11:42:02 AM