LA POSTA ROAD AREA PLAN
INFRASTRUCTURE PLAN AND NEEDS ASSESSMENT

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I. Introduction

This report provides a baseline infrastructure analysis with respect to the La Posta Road Area Plan (Study Area). This analysis was completed in conjunction with the La Posta Road Area Plan adoption process. The purpose of this report was to derive anticipated infrastructure costs based on the assumed buildout of the Area Plan created by Design Workshop. The information presented in this document is based on meetings with various parties including La Plata County staff, City of Durango staff, the South Durango Sanitation District Engineer, La Plata Electric Association, and Atmos Energy.

See Exhibit 0.a and 0.b for Land Use Map and Sub District Delineation Map.

II. Infrastructure Analysis

The infrastructure analysis was completed in reference to the La Posta Road Area Plan. There are various components that were analyzed and are discussed in detail below. The costs of the proposed improvements are summarized in Section III.

A. Roads and Alternative Modes

The study area falls under the jurisdiction of the "Intergovernmental Agreement Regarding Joint Land Use Planning" (IGA) between La Plata County and the City of Durango. If the City does annex the study area, City staff has expressed a willingness to accept non-traditional road standards for the plan area since they are more interested in functionality than aesthetics in this area. The information presented here is based on meetings with various parties including La Plata County staff and City of Durango staff.

<u>Roadway Development Standards for City Annexation</u>

The following modified City typical road sections were used for the study area roads (see Appendix A, Exhibits 1 and 2 for schematics of the typical road sections and where they are applied):

- Collector Street (La Posta Road-Upgrade): La Posta Road currently consists of (2) 12ft wide lanes with 4ft shoulders, totaling a paved surface width of 32ft. The road section will be upgraded to include the following:
    - (1) 12ft wide center turn lane running the entire length of La Posta Road
    - (2) 12ft wide travel lanes with curb and gutter
    - (1) 5ft wide bike lanes each side inclusive of concrete gutter
    - (1) 5ft landscape buffer
    - (1) 10ft wide detached sidewalk

- Animas Airpark Drive: Animas Airpark Drive currently consists of (2) 12ft wide paved travel lanes with a 6ft wide road side ditch on the west side (cut side). This existing road runs along a steep hillside and appears to function adequately; therefore no improvements are proposed at this time. There is a possibility that the existing 6ft wide

ditch could be replaced with a sidewalk (with the addition of curb and gutter) without significant costs to provide pedestrian circulation to/from the Animas Airpark.

- Industrial Street: Any new or existing local roads falling within the industrial land uses of the study area (includes Road A, Moose Lane, Kaycee Lane, Road B, Road F, and Skylane Drive) will be built or upgraded to the following road section described below unless otherwise specified:
    - (2) 12ft wide travel lanes with curb and gutter
    - (2) 5ft landscape buffer
    - (2) 5ft wide detached sidewalk

- Residential Street: Any new or existing local roads within the study area (includes Road D) will be built or upgraded to the following road section described below unless otherwise specified:
    - (2) 12ft wide travel lanes with curb and gutter
    - (2) 8ft wide parking lanes
    - (2) 8ft landscape buffer
    - (2) 5ft wide sidewalk detached

- Mountain Road: A new proposed road (Road E) will act as the secondary access to the Animas Airpark. A constrained section has been proposed due to its function as a secondary access and the nature of the steep terrain. The new roads will be built to the following section:
    - (1) 11ft wide travel lane with curb and gutter inclusive of curb and gutter (downhill side only)
    - (1) 11ft wide travel lane (uphill side only)
    - (1) 3ft wide paved shoulder (uphill side only for bike use)
    - (1) 10ft multiuse sidewalk attached

<u>Circulation</u>
In order for any more development to occur within the Animas Airpark, a secondary access will be required per the City of Durango and La Plata County Codes.

Providing connectivity via looping roads along the east side of La Posta will reduce the number of internal project trips entering and exiting the study area along La Posta Road.

<u>Traffic Loading</u>
An analysis of the potential impacts to existing roadways and intersections must be performed with any new development due to the increase in traffic loading. A detailed traffic study was completed for the development of the Area Plan and is attached as Appendix C. This section provides a summary of the information represented in the report.

The majority of existing traffic in the study area is either going to or coming from the following locations:

- Bondad: via CR 213 (approx. 12 miles south of study area)
- HWY 550/160: via La Posta Road to River Road (approx. 2000ft north of study area)
- Bodo Park: via La Posta Road (approx. 1.5 miles north of study area)

Below is a list of existing roadways that are likely to be impacted by the development of the Area Plan:

- La Posta Road (CR 213)
- River Road
- US 550/160
- Airpark Drive
- Skyline Drive
- Kaycee Lane
- Moose Lane

Specific land uses were applied to the more general land uses described in the Land Use Plan in order to determine the trip generation rates. The trip generation rates are applied to the land uses to determine the average daily trips (ADT) for the proposed development. Below are the anticipated traffic volumes to be generated by the development:

PROJECT TRAFFIC GENERATION					
YEAR	**DAILY ADT**	**PEAK HOUR**			
		AM		**PM**	
		IN	OUT	IN	OUT
2019	**4,271**	**371**	**152**	**140**	**415**
2024	**9,597**	**802**	**352**	**333**	**903**
2029	**14,373**	**1,129**	**548**	**535**	**1,284**
2034	**17,713**	**1,354**	**684**	**678**	**1,546**

A cursory analysis was performed to analyze any potential impacts to the surrounding road system with the proposed development study area plan. A detailed traffic study analysis will be required once land uses and phasing have been established.

The following intersections are anticipated to be impacted by potential development of the study area:

- La Posta and River Road Intersection
- River Road and Escalante Drive Intersection
- US 550/160 and River Road Intersection
- US 160/550 and Dominguez Drive Intersection

The Land Use Plan is anticipated to generate increased traffic volumes at the following intersections. Details of the required improvements at each intersection are listed below and shown in Appendix A, Exhibit 3: (see traffic study in Appendix F for warrant analysis)

- The intersection of River Road and La Posta Road will need additional lanes by 2024 and will need a signal or other improvements by 2029.
- The intersection of La Posta Road and Kaycee Lane will need additional lanes and a signal or other improvements by 2024.
- The intersection of Airpark Drive and Skylane Drive will function with full projected 2034 traffic loading in 2034 with no improvements.
- The intersections of River Road with Escalante Avenue and Highway 550 / 160 have already been identified by CDOT and the City of Durango as needing improvements. These improvements will not be a part of Airpark District costs.

Transit

Currently there is no transit service to this area. The closest transit stop, provided by the Durango T service, is located at Walmart just under a mile away from the north end of the study area. There is an existing bus route that runs solely between downtown Durango and Walmart, and another that runs between downtown Durango, Walmart, and Mercy Hospital which could potentially divert down to La Posta Road. Service is every 30 minutes (weekdays only to Mercy).

The Road Runner Service is another nearby transit service that runs between downtown Durango and Ignacio. There is also potential for this route to divert down to La Posta Road. This serve runs 4 times a day.

It is likely that if annexed into the City, a transit stop would be proposed along La Posta as well as within the Animas Airpark.

Bicycle & Pedestrian

Currently there are no dedicated bicycle routes near the area. The Animas River Trail currently extends as far south as Home Depot. There are plans for the Animas River Trail to be extended into this area along the east side of the Animas River. It will be challenging in some areas due to property ownership and topography constraints such as steep terrain.

Both proposed City and County modified road sections accommodate pedestrians and bicycle circulation along La Posta Road, Animas Airpark Drive, and local streets.

Street Impact Fees

Each new building or residential unit annexing into the City must pay a Street Impact Fee. The fees vary based on residential, industrial, or commercial square footage. Assumptions where made in order to determine average building size based on the general land uses from the proposed Land Use Plan.

Detailed calculations for determining impact fees are shown below:

SUMMARY BY USE								
TOTAL UNITS			TOTAL SF					
COMMERCIAL/INDUSTRIAL					**Description of Rate**	**Unit**	**Fee Per Unit**	**Impact Fee**
Office	0		528,169	SF	Warehouse/Storage	1000 SQ ft Gross Floor Area	$ 2,823.00	$ 1,491,021
Warehouse	0		524,342	SF	Office	1000 SQ ft Gross Floor Area	$ 1,206.00	$ 632,356
Light Industrial	0		1,085,099	SF	General Light Industrial	1000 SQ ft Gross Floor Area	$ 1,963.00	$ 2,130,050
Industrial	0		17,128	SF		1000 SQ ft Gross Floor Area	$ 1,963.00	$ 33,623
Retail	0		14,708	SF			$ 3,810.00	$ 56,037
Subtotal	**0**	**Units**	**2,169,446**	**SF**				**$ 4,343,087**
RESIDENTIAL					**Description of Rate**	**Unit**	**Fee Per Unit**	**Impact Fee**
Rural	0	Units			2,500 sq ft Living Area or more	Dwelling Unit	$ 2,308.00	$ -
Large	0	Units			2,500 sq ft Living Area or more	Dwelling Unit	$ 2,308.00	$ -
Low	0	Units			2,500 sq ft Living Area or more	Dwelling Unit	$ 2,308.00	$ -
Single Family	1012	Units			1500-2499 sq ft Living Area	Dwelling Unit	$ 2,308.00	$ 2,335,927
Subtotal	**1,012**	**Units**						**$ 2,335,927**
Total New Development	**1,012**	**Units**	**2,169,446**	**SF**				**$ 6,679,014**

City of Durango-Building Department		
Major Street Impact Fee Calculations		
LAND USE TYPE	UNIT	FEE Per Unit
Single-Family Detached and Duplex:		
Less than 1,000 sq ft Living Area	Dwelling Unit	$3,954
1,000 - 1,499 sq ft Living Area	Dwelling Unit	$4,336
1,500 - 2,499 sq ft Living Area	Dwelling Unit	$4,692
2,500 sq ft Living Area or more	Dwelling Unit	$5,110
Multi-Family	Dwelling Unit	$2,760
Dormitory	Bed	$980
Day Care	Child Occupancy (first 6 childr	$100
Hotel/Motel	Room	$1,392
Shopping Center/Retail	1000 sq ft Gross Floor Area	$7,178
Restaurant	1000 sq ft Gross Floor Area	$12,672
Office/Institutional	1000 sq ft Gross Floor Area	$6,634
Nursing Home	1000 sq ft Gross Floor Area	$1,870
Place of Worship	1000 sq ft Gross Floor Area	$2,938
Elementary/Sec. School	1000 sq ft Gross Floor Area	$2,190
General Light Industrial	1000 sq ft Gross Floor Area	$4,362
Warehouse/Storage	1000 sq ft Gross Floor Area	$2,092
Mini-Warehouse	1000 sq ft Gross Floor Area	$1,158

B. Water

Currently, the existing properties within the study area are served by individual groundwater wells with no centralized water system. The following scenarios are available to provide water to the developed study area:

<u>Discussion of Possible Water Supply Alternatives</u>

There are multiple scenarios available to supply water to the Study Area which are listed below:

- Scenario 1: Connect to City of Durango Water System
  a. Extend existing 12" dia. City water main along CR 213 (La Posta Road)
  b. Connect to City water main coming from the "proposed" City Water Treatment Plant below Ridges Basin allowing looping for the study area

- Scenario 2: Form a Metro District and construct a District Water Treatment Plant
- Scenario 3: Form a Metro District and construct a centralized Metro District system supplied by existing wells
- Scenario 4: Remain on individual groundwater well systems

Scenario 1

This scenario proposes extending the existing 12" City water main that is stubbed at the west end of the River Road Bridge to the south along CR 213 to the southern end of the Study Area. An 8" water main would be installed along all other existing and proposed public roads within the district and the specified private roads within the Study Area.

Per conversations with City staff, the Study Area (including Animas Airpark) could be serviced by the 12" City water main extension. Connecting to City water would require annexation if the City deems annexation to be financially beneficial.

Ultimately, in order to supply enough water to support full development of the Study Area, water supply will have to come from both the existing Terminal Reservoir City Water Treatment Plant (CWTP) and a proposed water treatment plant (WTP) to treat raw water from the Ridges Basin Reservoir. A preliminary engineering study was conducted by Boyle Engineering Corporation, June 2003, for the City to investigate possible alternatives for the development of water supplies for future needs including the study area. The study included seven different alternatives. However, only Alternatives 1 and 2 were determined to be feasible for water supply at full build out of the study area.

"Alternative 1: Storage in Ridges Basin Reservoir (through participation with ALLP project); construction of a new 8.2 MGD water treatment plant (WTP) near Ridges Basin Reservoir; expansion of the Terminal WTP by 1.7 MGD; pipeline from new WTP to existing distribution system"

"Alternative 2: Similar to Alternative 1 with the addition of a pump station on the Animas River and a pipeline to deliver water directly from the Animas to the WTP."

The main water supply for the study area would come from the Ridges Basin Reservoir and gravity flow to a newly constructed 8.2 MGD water treatment plant. The minimum operating level of the storage tank at the treatment plant would have to be 6745ft and would require the cooperation of the Wheeler parcel due to the topography. This tank operating water level is estimated to serve ground elevations in the area between 6400ft and 6600ft at minimum operating pressures of 55 psi. If additional service area above 6600ft is desired based on participating property owners, the minimum operating water level would need to be increased to be able to provide adequate pressure.

A new pipeline would be constructed connecting the new WTP to the existing distribution system which currently ends at the west end of the River Road Bridge. This additional looping will increase available flows to the water service area.

If an alternative raw water supply is required for the water treatment plant, due to increasing demands of the study area, a pump station could be constructed to pump raw water from the Animas River to the treatment plant. The addition of a pump station also reduces the amount of water that must be purchased through the ALP Project. The pump station could be implemented at a later time after the construction of the treatment plant if additional water supply is needed.

Scenario 1 is considered the favored option based on cost of improvements and marketability of a well-established, large scale, public water system to future developers and land owners.

Scenario 2

This scenario proposes that a "Metro District" be formed by the participating Study Area property owners to construct and operate a Metro District Water Treatment Plant. This would require that the District purchase water rights from Ridges Basin Reservoir and purchase 2-3 acres of land to accommodate the plant, as well as construct approximately 2 miles of water line connecting the Ridges Basin Reservoir to the proposed Water Treatment Plant and the Study Area. These estimated upfront development costs appear unfavorable when compared with the tap fees required for connecting to the City water main.

Additionally, a well-established, large scale public water system can be more marketable than a smaller private system from a potential business and/or residential developer standpoint.

Scenario 3

Existing wells could be used to provide water to a District through a centralized distribution system. However, as mentioned above in Scenario 2, a well-established, large scale public water system can be more marketable than a small private system based on unreliable groundwater wells for supply.

Scenario 4

The individual lot owners could keep/improve their existing groundwater wells and develop their parcels based on the quantity and quality of water available in the well for the proposed use. The minimum size for a subdivided lot using a groundwater well as primary water supply is 1 acre.

Scenario 1 was determined to be the most economical based on the City's plan to construct Ridges Basin in the next 5-10 years. A detailed water study was completed using EPAnet modeling to determine pipe sizing and pressures. See Appendix D for the Water Study. A summary of the study is outlined below:

Water Study Summary:

Inputs:

- Table 1 shows the base unit demands used to calculate Average Daily Water Demands.

Land Use	Demand	Unit
Retail[1]	0.10	GPD/SF
Office[2]	0.14	GPD/SF
Service Commercial[3]	0.07	GPD/SF
Industrial[4]	0.10	GPD/SF
Light Industrial[4]	0.10	GPD/SF
Rural Residential	350.00	GPD/Unit
Single Family[5]	350.00	GPD/Unit
Multifamily[6]	350.00	GPD/Unit
Warehouse[7]	0.02	GPD/SF
Multiple Use[4]	0.10	GPD/SF
Mixed Commercial/Light Industrial[4]	0.10	GPD/SF

- The Daily Average Demand = 382 GPM
- The Peak Demand = 1720 GPM (peak factor of 4.5)
- Tank Size (3 days of daily demand plus 2 hours of fire flow) = 2MG, 34ft height by 100ft diameter
- 12" waterline loop along La Posta Road and Skylane Drive
- 8" waterline in all other roads
- 2 Pressure Reducing Valves

Results:

- Peak Demands = dynamic pressures greater than 40 psi
- Fire Flow Demands = residual pressure greater than 20 psi

[1] Colorado Department of Public Health & Environment Individual Sewage Disposal System Regs., Table 1
[2] Commercial and Institutional End Uses of Water by Benedykt Dziegielewski
[3] CDPHE ISDS Regulations, Table 1
[4] Wastewater Engineering, Third Edition by Metcalf & Eddie
[5] La Plata County Land Use Code
[6] La Plata County Land Use Code
[7] Miami-Dade Water and Sewer Department's 'Schedule of Daily Rated Gallonage for Various Occupancy'.http://www.sfrpc.com/dri/Beacon%20Countyline/SIN1%20Response/Q18.pdf

For the complete La Posta Road Area Plan Water Study, see Appendix A.
See Appendix A, Exhibit 4 for the Master Water Plan.

Assumptions were made regarding land-use and density that could have significant impacts on calculations performed in this study. All calculations may need to be adjusted once more definitive land-uses and densities are proposed.

City of Durango Water Plant Investment Fees (Tap Fees)

Each new building or residential unit connecting into the City's water system must pay a Plant Investment Fee (PIF), also referred to as "tap fees". The fees vary based on tap size for both residential and non-residential uses. Assumptions were made to determine average building size and estimate tap size. Below are the estimated tap fees for the Area Plan:

SUMMARY BY USE									
	TOTAL UNITS		**TOTAL SF**		**Average SQ. FT**				
COMMERCIAL/INDUSTRIAL					**per building**	**# of Taps**	**Tap size**	**Cost Per Tap**	**Cost**
Office	0	Units	528,169	SF	25000	21	1 1/2" Meter	$ 18,020.00	$ 380,704
Warehouse	0	Units	524,342	SF	25000	21	1 1/2" Meter	$ 18,020.00	$ 377,945
Light Industrial	0	Units	1,085,099	SF	25000	43	1 1/2" Meter	$ 18,020.00	$ 782,140
Industrial	0	Units	17,128	SF	25000	1	1 1/2" Meter	$ 18,020.00	$ 12,346
Retail	0	Units	14,708	SF	25000	1	1 1/2" Meter	$ 18,020.00	$ 10,602
Subtotal	**0**	**Units**	**2,169,446**	**SF**		87			**$ 1,563,737**
					Average SQ. FT				
RESIDENTIAL					**per building**	**# of Taps**	**Tap size**	**Cost Per Tap**	**Cost**
Rural	0	Units				0	3/4" Meter	$ 5,582.00	$ -
Large	0	Units				0	3/4" Meter	$ 5,582.00	$ -
Low	0	Units				0	3/4" Meter	$ 5,582.00	$ -
Single Family	1012	Units				1012	3/4" Meter	$ 5,582.00	$ 5,649,542
Subtotal	**1,012**	**Units**				**1012**			**$ 5,649,542**
Total New Development	**1,012**	**Units**	**2,169,446**	**SF**		**1099**			**$ 7,213,279**

The City of Durango tap fees used in the water tap fee calculations are listed below:

RESIDENTIAL USE INSIDE OR OUTSIDE CITY	
Single Dwelling Unit (1-Family)	
Up to 3/4" Meter	$5,582
1" Meter	$9,328
1 1/2" Meter	$18,020
Multi Unit Dwellings (including duplexes)	$5,582 for the first dwelling unit in each building, $2,791 for each additional unit within same building.

NON-RESIDENTIAL USE INSIDE OR OUTSIDE CITY	
Single Dwelling Unit (1-Family)	
Up to 3/4" Meter	$5,582
1" Meter	$9,328
1 1/2" Meter	$18,020
2" Meter	$26,680
3" Meter	$55,840

C. Irrigation

There are existing irrigation lateral ditches and buried water lines running across multiple properties within the study area. Most of the laterals are within existing easements. The existing La Posta Road property owners' water rights can be used for a non-potable water system for irrigation. However, it may prove more expensive to set up a separate water system for the non-potable water than it would be to use the potable water system.

No irrigation improvements were considered for the Study Area at this time.

D. Sewer

Currently, the properties within the study are on individual septic systems. It is anticipated that the lots that are already subdivided on the southern end of Koshak Mesa would likely not seek central sewer collection and therefore sewer collection from these lots was not analyzed at this time for this study. Remaining undeveloped parcels may seek central sewer and have been evaluated for a central sewer system. There are four possible scenarios for sewer service to the study area which are listed below:

<u>Discussion of Sewer Service Alternatives</u>

There are multiple scenarios available to provide sewer service to the Study Area:

- Scenario 1: Connect to City of Durango Sewer System
- Scenario 2: Connect to South Durango Sanitation District Sewer System
- Scenario 3: Construct District Wastewater Treatment Plant
- Scenario 4: Remain on individual septic systems

Scenario 1
This alternative would provide sewer service from the City of Durango. The existing City of Durango sewer system only extends as far south as north of the HWY 550/160 High Bridge in Bodo Park. Connecting into the City system is probably not economically feasible because four existing lift stations/wet wells in Bodo Park would have to be rebuilt and upsized to accommodate the additional flow. Additionally, a lift station would be required to pump from the study area to the north to the connection point in Bodo. This would require installing new force main from the southern point of the study area to the north side of the Hwy 550/160 High Bridge.

Due to the anticipated cost of improvements to the existing City system outside the Study Area, this alternative is considered unfavorable and was not analyzed in the sewer alternatives cost comparison.

Scenario 2
This scenario would provide sewer service from the South Durango Sanitation District (SDSD). There are two potential connection points to the existing SDSD system:

- Connection Point #1: Located on the east side of the River Road Bridge. This would require a lift station in the study area that would pump wastewater across the bridge to this connection point from a lift station fed by gravity main in CR 213 and on Koshak Mesa.
- Connection Point #2: Located on the east side of the Animas River, north of the SDSD Treatment Plant, a 24” interceptor line currently runs south on the east side of the river. This would require a lift station pumping from the study area to the connection point #2 by crossing the Animas River with a force main line.

The study area is currently outside the SDSD service area. Per conversations with Rick Johnson, the SDSD engineer, a Resolution (Resolution No. 2004-3: A Resolution Concerning the Extension of Sewer Service by the South Durango Sanitation District to the Koshak Mesa Area, January 2004) was passed by the District regarding not fractionalizing Koshak Mesa (study area) and only allowing them to connect to SDSD system if they created a Sewer Master Plan for the area. He has suggested three possible ways of managing the proposed Study Area sewer system:

- La Posta study area to create a Special District with a Service agreement between Special District and SDSD for treatment only, where a Special District manages and maintains the lift station and collection system. If a Special District is created, SDSD

would require an agreement granting SDSD right to comment for approval of system components and maintenance.

- La Posta study area to create a Sub- District with a Service agreement for SDSD to manage the entire system but allowing the sub-district to bond separately for improvements necessary to incorporate the system into SDSD in order to avoid impacting the existing SDSD customers with the new improvement costs.

- Complete incorporation of the study area into the District to be treated as all other individual tap owners within SDSD.

Scenario 2 is favored over the connection with the City of Durango sewer system due to the relative lower cost than that of improving the necessary existing City sewer system.

Scenario 3
This scenario proposes a new wastewater treatment plant for the study area. The ideal location for the wastewater treatment plant would be within the lowest property in the Study Area located on the south end of the study area adjacent to the Animas River. The cost of the treatment plant would need to be distributed among participating property owners or there is potential to apply for grants to cover the costs of the treatment plant.

This scenario is also a favored scenario over the connection with the City of Durango sewer system due to the relative lower cost than that of improving the necessary existing City sewer system. Additionally, this alternative is favorable when compared with the high proposed tap fees required by South Durango Sanitation District to connect to their system.

Scenario 4
The individual lot owners could keep/improve their existing septic systems to further develop their parcels. Some land uses may not be feasibly treated by septic systems based on flowrates and required effluent treatments. Under the case of annexation, the City would probably not allow this alternative.

Sewer Alternatives Costs Analysis
The following three selected options, described above and listed below, were evaluated from a cost perspective in more detail in the Sewer Study attached as Appendix E.

- Connect to SDSD-Connection Point #1: Connect to SDSD across the river
- Connect to SDSD-Connection Point #2: Connect to SDSD across River Road Bridge
- Connect to proposed District Wastewater Treatment Plant

The cost analysis shown in the Sewer Study determined that both connecting to the SDSD either across the river or via River Road Bridge are feasible options. At this time for the study, the river crossing appears to be the most economical and is therefore the chosen option for the

Area Plan. The proposed sewer design was slightly varied in that the Airpark gravity feeds to the south end of Koshak Mesa as opposed to being pumped back up to Airpark Drive. See Appendix A, Exhibit 5 Master Sewer Plan.

Design Flows

Average daily projected sewage production was calculated for the project using the following base unit demands:

Type of Use	Gal/Unit/Day (max.)	Unit
Retail	*0.10	SF Bldg Space
Office	**0.14	SF Bldg Space
Service Commercial	***0.10	SF Bldg Space
Industrial	0.10	SF Bldg Space
Live-Work	****300	Unit

Sources:
*Colorado Department of Public Health & Environment Individual Sewage Disposal Systems Regs., Table 1
** Commercial and Institutional End Uses of Water by Benedykt Dziegielewski, subsource: Crews, James E. and Mary Ann Miller 1983 Forecasting water Use ACE.
***CDPHE ISDS Regulations Table 1
****La Plata County Land Use Code

The projected average sewage production for the entire Study Area:

SUMMARY BY USE												
	TOTAL UNITS		TOTAL SF		RATE (MAX)		TOTAL HIGH		PEAK FLOW RATE*		TOTAL FLOW RATE	
COMMERCIAL/INDUSTRIAL												
Office	0		528,169	SF	0.14	GPD/SF	73944	GPD	0.389	GPM/SF*1000	205	GPM/SF*1000
Warehouse	0		524,342	SF	0.02	GPD/SF	10487	GPD	0.056	GPM/SF*1000	29	GPM/SF*1000
Light Industrial	0		1,085,099	SF	0.10	GPD/SF	108510	GPD	0.278	GPM/SF*1000	301	GPM/SF*1000
Industrial	0		17,128	SF	0.10	GPD/SF	1713	GPD	0.278	GPM/SF*1000	5	GPM/SF*1000
Retail			14,708	SF	0.10	GPD/SF	1471	GPD	0.278	GPM/SF*1000	4	GPM/SF*1000
Subtotal	**0**	**Units**	**2,169,446**	**SF**			**196124**	**GPD**			**545**	**GPM**
					RATE (MAX)		**TOTAL HIGH**		**PEAK FLOW RATE***		**TOTAL FLOW RATE**	
RESIDENTIAL												
Rural	0	Units			300	GPD/Unit	0	GPD	0.83	GPM/Unit	0	GPM
Large	0	Units			300	GPD/Unit	0	GPD	0.83	GPM/Unit	0	GPM
Low	0	Units			300	GPD/Unit	0	GPD	0.83	GPM/Unit	0	GPM
Single Family	1012	Units			300	GPD/Unit	303630	GPD	0.83	GPM/Unit	843	GPM
Subtotal	**1,012**	**Units**					**303630**	**GPD**			**843**	**GPM**
Total New Development	**1,012**	**Units**	**2,169,446**	**SF**			**499754**	**GPD**			**1388**	**GPM**

- Daily Average Flow = 499,754 Gallons per Day (GPD)

- Peak Flow: 1388 Gallons per Minute (GPM) (peaking factor of 4)

Collection System
The proposed collection system will be required to meet the rules and regulations of the Colorado Department of Public Health and Environment. The system will be required to meet the design standards of the SDSD Codes and Standards Revision 1 July 2004 if the sewer system is connected to the SDSD Treatment Plant.

Pipe Specifications
All new pipes shall be SDR-35 PVC. Sewer Mains are required to a minimum of 8" diameter and service lines shall be a minimum of 4" diameter. Service lines shall be connected to the mains with a wye fitting or an approved saddle. Service lines shall be installed above the spring line of the sewer main. Manholes shall be installed at every sewer main line horizontal bend or grade change, and at a maximum interval of 400-ft. Each section of the line shall be sized to provide adequate capacity for complete build-out of the study area.

South Durango Sanitation District Sewer Plant Investment Fees (Tap Fees)
Each new building or residential unit connecting into the South Durango Sanitation District (SDSD) sewer system must pay a Plant Investment Fee (PIF), also referred to as "tap fees". The fees vary based on building square footage and number of units. Each residential unit is considered an equivalent residential tap (ERT). Exhibit A of the SDSD Codes and Standards Revision 1 July 2004 lists ERTs for specific land uses. Assumptions were made regarding the general land uses stated in the land use plan for the study. The cost per ERT is $8000. Detailed calculations for determining tap fees are shown below:

SUMMARY BY USE								
	TOTAL UNITS		**TOTAL SF**					
COMMERCIAL/INDUSTRIAL					**ERT**	**# of Taps**	**Cost Per Tap**	**Cost**
Office	0		528,169	SF	0.35	185	$ 8,000	$ 1,478,873
Warehouse	0		524,342	SF	0.35	184	$ 8,000	$ 1,468,157
Light Industrial	0		1,085,099	SF	0.35	380	$ 8,000	$ 3,038,278
Industrial	0		17,128	SF	0.5	9	$ 8,000	$ 68,513
Retail			14,708	SF	0.35	5	$ 8,000	$ 41,182
Subtotal	**0**	**Units**	**2,169,446**	**SF**		762		**$ 6,095,003**
RESIDENTIAL					**ERT**	**# of Taps**	**Cost Per Tap**	**Cost**
Rural	0	Units			1	0	$ 8,000	$ -
Large	0	Units			1	0	$ 8,000	$ -
Low	0	Units			1	0	$ 8,000	$ -
Single Family	1012	Units			1	1012	$ 8,000	$ 8,096,800
Subtotal	**1,012**	**Units**				**1012**		**$ 8,096,800**
Total New Development	**1,012**	**Units**	**2,169,446**	**SF**		**1774**		**$ 14,191,803**

E. Electricity

Electricity will be provided by La Plata Electric Association (LPEA). LPEA has an overhead 3-phase powerline along CR 213, from just south of the River Road Bridge continuing on past the south end of the study area. Future plans are to run 3-phase power in the empty conduit that exists along the River Road Bridge. There are also stretches of 3-phase power in the Animas Airpark and in several parcels on the south end of the study area. Single phase power exists for most of the other remaining parcels adjacent to CR 213. LPEA will likely require that any new power lines required for new development be installed underground due to the difficulty in maintaining overhead power lines. At this time, LPEA is not anticipating making any improvements to their system in the study area in the near future. However, in the future higher demands may require that another transmission line be constructed connecting the Grandview substation to existing lines at the intersection of HWY 160/550 and River Road.

The developer would be required to pay for all new interior lines to their individual parcels. The proposed land use designations for the study area require almost double the service load. The Systems Engineer for LPEA, Dan Harms, has estimated that the existing mainline facilities will likely be adequate to support the proposed loading, but the existing system would likely be at maximum capacity. The capacity of the existing facilities is on a “first come, first serve” basis such that if additional growth occurs to the south of the study area prior to the development of the study area, the southern development is entitled to the remaining capacity in the existing facilities. Depending on the remaining capacity in the system at the time of the study area development, this may require the Study Area to bear the costs of improving the existing main line facilities in order to provide additional capacity. The improvements may consist of the installation of a feeder line originating from the Grandview Substation connecting to the existing facilities at the intersection of Highway 550/160 and River Road in order to provide additional charge to the existing line running along La Posta Road. It is estimated that this improvement would not be needed until at least half the buildout of the Area Plan. The estimated costs by the LPEA engineer are included as District Costs in the cost summary.

Power requirements:

- The industrial land uses will require 3-phase
- The commercial land uses will require either 3-phase or single phase
- The residential land uses will only require single phase
- Lift Stations will require 3-phase

The cost of installing 3-phase power underground has been incorporated into the lineal foot unit road costs for the new proposed roads. A common dry utility trench will contain the electric, phone, and cable conduits. Typically the developer’s contractor digs the trench, and the utility company’s certified contractor installs the line with the developer’s contractor backfilling the trench.

See Appendix A, Exhibit 6 for Master Dry Utility Plan.

F. Natural Gas

Atmos Energy is the natural gas provider in the area. There exists a high pressure 4" gas main running predominately along the west side of CR 213. There are secondary lines that exist in Animas Airpark. In order for Koshak Mesa to tap the existing high pressure line, a gas regulator would need to be installed.

The sales representative for Atmos Energy has estimated that system capacity is available to serve the proposed study area development based on the proposed land use designations with medium to low Industrial loading. Large industrial load requirements could be subject to additional system capacity improvements which are difficult to estimate at this time.

New gas line installation is proposed in all roads within the Area Plan. Similar to the electric infrastructure installation, typically the developer's contractor digs the trench, and then the utility company's certified contractor installs the line, with the developer's contractor backfilling the trench.

See Appendix A, Exhibit 6 for Master Dry Utility Plan.

G. Communications

Currently there are no available communication lines within the study area. However, there are multiple options available nearby to provide communication lines. There may be a conduit already in place running across the River Road Bridge that could be used for a communications line.
The following communications companies are currently available to provide service:

- Optimum - currently has service to the Home Depot area
- Fast Track - currently has service to the Home Depot area
- Century Link – information was not available

H. Stormwater

Currently drainage follows road borrow ditches and natural drainages through the properties. There are no current public stormwater detention or water quality treatment facilities within the study area.

Any parcel developers in this area will need to manage their stormwater runoff per the La Plata County Code requirements for stormwater, as well as the City of Durango Code if the study area is annexed into the City. It is likely that the proposed land use plan will increase the impervious area significantly in the study area requiring detention of the additional runoff. Due to the close proximity of the Animas River, stormwater quality is a concern. Developers will be required to adhere to the stormwater management regulations dictated by the federal Clean Water Act and enforced by the Colorado Department of Public Health and Environment (CDPHE).

A conceptual stormwater study was completed to determine culvert sizing and storm drain requirements. See Appendix F for the Stormwater Study. Stormwater detention will be required

to reduce developed runoff flows to historic rates for each parcel's developed flowrates. Therefore the culverts were sized to accommodate the 10 year historic flowrates and not the developed. Storm drain analysis was performed to determine the extent of storm drain infrastructure that would be required based on the capacity of the proposed curb and gutter.

With planned development, there is an opportunity to create regional detention/treatment locations that capture multiple development projects, relieving the developers from having to construct a detention/treatment facility on each individual development project.

Where roads are to be upgraded, it is likely that existing culverts will need to be extended or replaced. New roads will require culverts at low points. Although no stormwater treatment is included in projected costs in this report, drainage improvements along roads and trails are included in the costs for those improvements.

See Appendix A, Exhibit 7 for a Master Stormwater Plan.

III. Order of Magnitude Costs

Infrastructure Order of Magnitude Costs were completed for the land use plan. The costs were categorized into the following categories:

- District: Costs for improvements that benefit all participating parties in the Area Plan

    a. La Posta Road Improvements

        i. La Posta Road is proposed to be constructed in multiple phases in an effort to reduce initial costs. The first phase of construction will consist of only the waterline installation with the concrete trail overtop of it. This improvement will likely be constructed in phases starting from River Road Bridge to Kaycee Lane with the second phase starting at Kaycee Lane and continuing to the south end of the study area along La Posta Road.

        ii. The City of Durango has agreed to pay for the cost of the concrete trail and its associated costs and therefore these costs have been removed from the line item cost for the Phase 1 La Posta Road Improvement.

    b. Waterline Loop under La Posta Road and connecting to Skylane Drive. Costs for waterline under Skylane Drive assume installation with construction of road improvements.

    c. Waterline connecting from River Road to new Ridges Basin Treatment plant is to be provided by the City of Durango and is therefore not included in District Costs

    d. Improvements for Highway 550/160 and Escalante Drive are not included in costs as they are likely to be paid for by the City and/or CDOT.

- Sub-District: Costs for improvements that benefit specific sub-districts: A (North Koshak), B (South Koshak), C (Airpark). See Appendix A, Exhibit 0.B for Sub-District Map.

- Non-Eligible " District and Sub-District Costs": Costs for improvements that are not allowed to be financed by a metro district such as dry utilities (electric, gas, communications)

- Private Costs: Costs for improvements that were calculated by request from Design Workshop

    a. Road F Improvements

The infrastructure summaries account for improvement costs for the following:

- Roadways
    - Lighting
    - Signage
    - Landscaping
    - Irrigation
        - Only provided in residential roadways to irrigated proposed turf in landscape strip. All other roadways will have native grasses in landscape strip
    - Sidewalks
- Intersections
    - Turn Lanes-costs for turn lanes assume that they are constructed in conjunction with the construction of the main road.
    - Signals
- Water
    - Water lines to be installed under all new and existing roads as they are constructed
- Sewer
    - Sewer lines to be constructed all at once to provide service to all parcels within the study area, except for the sewer under Airpark Future Connector Road since development in the area is not anticipated in the near future.
- Electric
- Natural Gas
- Stormwater
- Right-of-Way (ROW) Purchase

The unit costs are attached as Appendix B.

The total soft costs applied to the construction costs listed above (except form ROW purchase) included the following line items:

- Engineering Costs =15%
- Contingency = 15%
- Mobilization = 10%
- Traffic Control = range from 1% to 6%
- Construction Staking = 2%
- Record Drawings = 1%
- Materials & Testing Control = 2%

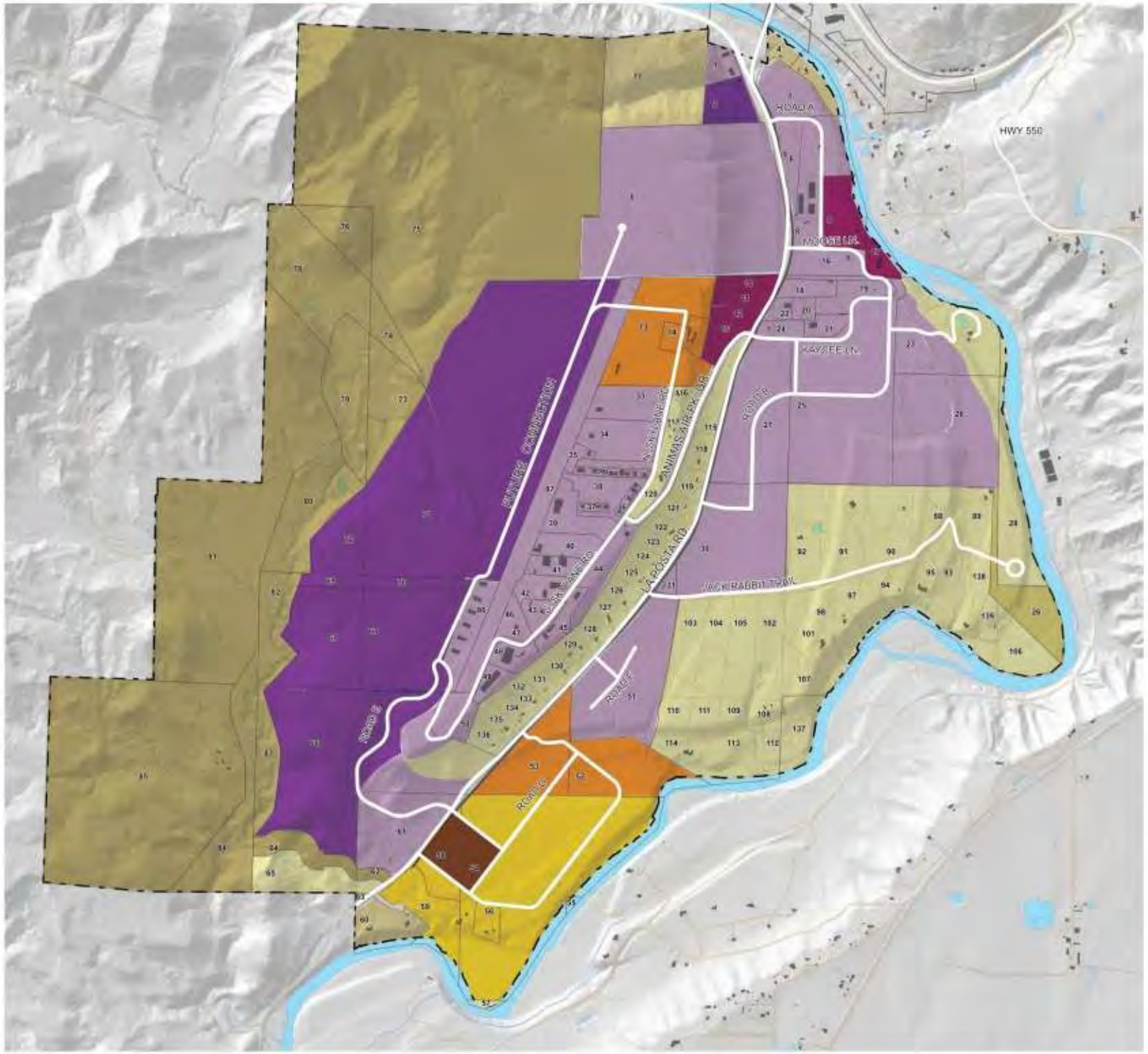
See the following page for a summary of the costs.

	District Costs	**$**	**13,996,830**	**YR**
	La Posta Road (River Road to Kaycee Ln) - Sidewalk Grading and waterline installation	$	1,275,593	2014
	US-550/160 Intersection Improvements: widen radius for trucks	$	50,000	2014
	Waterline - Trunk (12" loop including Skylane Dr)	$	1,345,262	2014
	Sewerline - Trunk	$	3,324,721	2014
	La Posta Road (Kaycee Ln to South End) - Sidewalk Grading and waterline installation	$	2,573,292	2019
(1)	OLD La Posta Road - Turn Lane (Old LP RD EB Left Decel at River Rd)	$	553	2024
	La Posta Road (River Rd to Kaycee Ln) - Full buildout remaining	$	1,364,605	2024
	La Posta Road (Kaycee Ln to South End) - Full buildout remaining	$	3,329,087	2024
(1)	La Posta Road - Turn Lane (River Rd WB RIGHT to OLD LP RD)	$	20,489	2024
(1)	La Posta Road - Turn Lane (LP RD SB RIGHT to Airpark Dr)	$	20,489	2024
(1)	La Posta Road - Turn Lane (LP RD SB RIGHT to Road E)	$	31,754	2024
(1)	La Posta Road - Turn Lane (LP RD NB RIGHT ACEL AT KAYCEE LN)	$	20,489	2024
	La Posta Rd and Kaycee Ln Intersection Signal	$	188,629	2024
	La Posta Rd and River Road Intersection Signal	$	180,581	2029
	Sewerline - Trunk (Future Connector)	$	271,286	2034
	Sub-District Costs	**$**	**24,207,182**	
	Subarea A (North Koshak)	***$***	***6,642,147***	
	Road A - Industrial Local Street	$	1,384,232	2019
(1)	Road A - Turn Lane (Rd A WB Right to LP Rd)	$	12,715	2019
	Moose Lane-Upgrade Existing Rd to Industrial Local Street	$	947,308	2019
(1)	Moose Lane - Turn Lane (Moose Ln WB Right to LP Rd)	$	12,715	2019
	Kaycee Lane-Upgrade Existing Rd to Industrial Local Street	$	1,177,599	2019
(1)	Kaycee Lane - Turn Lane (KC Ln WB Right to LP Rd)	$	38,146	2019
(1)	Kaycee Lane - Turn Lane (KC Ln WB Left to LP Rd)	$	5,086	2019
	Road B (w/connector) Industrial Local Street	$	3,051,629	2019
(1)	Road B - Turn Lane (Rd B WB Right to LP Rd)	$	12,715	2019
	Subarea B (South Koshak)	***$***	***6,504,115***	
	Road D - Residential Local Street	$	6,472,327	2019
(1)	Road D - Turn Lane (Rd D North, Road D at Rd E, Rd D South WB Right to LP Rd)	$	31,789	2019
	Subarea C (Airpark)	***$***	***11,060,920***	
(1)	Airpark Drive - Turn Lane (Airpark Dr EB Left to LP Rd)	$	83,341	2019
(1)	Airpark Drive - Turn Lane (Airpark Dr EB Right to LP Rd)	$	31,619	2019
	Skylane Drive - Upgrade to Industrial Local Street	$	3,210,031	2019
	Road E - Bike Lane, 10' sidewalk	$	2,818,033	2019
(1)	Road E - Turn Lane (Rd E EB Left to LP Rd)	$	12,715	2019
	Airpark Future Connector - Industrial Local Street	$	4,905,181	2034
	Non-Eligible "District or Sub-District" Costs	**$**	**1,795,403**	
	District	***$***	***561,124***	
	La Posta Road - Dry Utilities	$	82,580	2024
	Electric - System Upgrade	$	450,000	2034
	Gas - System Upgrade	$	28,544	2019
	Subarea A (North Koshak)	***$***	***497,860***	
	Road A - Dry Utilities	$	40,572	2019
	Moose Lane-Dry Utilities	$	29,988	2019
	Kaycee Lane-Dry Utilities	$	120,393	2019
	Road B (w/connector)-Dry Utilities	$	306,907	2019
	Subarea B (South Koshak)	***$***	***253,106***	
	Road D - Dry Utilities	$	253,106	2019
	Subarea C (Airpark)	***$***	***483,314***	
	Skylane Drive - Dry Utilities	$	80,055	2019
	Airpark Future Connector - Dry Utilities	$	403,259	2034
	Private Costs			
	Road F - Industrial Local Street	$	851,450	2019
(1)	Road F - Turn Lane (Rd F WB Right to LP Rd)	$	12,715	2019
	Road F - Dry Utilities	$	98,010	2019
	Street Impact Fees	$	432,640	
	Sewer Tap Fees	$	587,174	
	Water Tap Fees	$	175,813	
	Paid for by City of Durango			
	La Posta Road - 10' mulituse sidewalk (paid for by City of Durango)	$	1,460,351	2014
(1)	Prices listed are only if improvements are done as part of larger construction of main road.			

APPENDIX A:
INFRASTRUCTURE MASTER PLANS

EX-0.1 Land Use Map
EX-0.2 Sub District Delineation Map
EX-1 Master Roadway Network Plan – Roadway Development Standards
EX-2 Master Roadway Network Plan – Typical Road Sections
EX-3 Master Roadway Network Plan - Intersection Improvements
EX-4 Master Water Plan
EX-5 Master Sewer Plan
EX-6 Master Dry Utility Plan
EX-7 Master Stormwater Management Plan

Figure 7. Draft Preferred Plan



Note: Road and trail alignments shown on this plan are conceptual and are subject to change.

LEGEND- Draft Preferred Plan

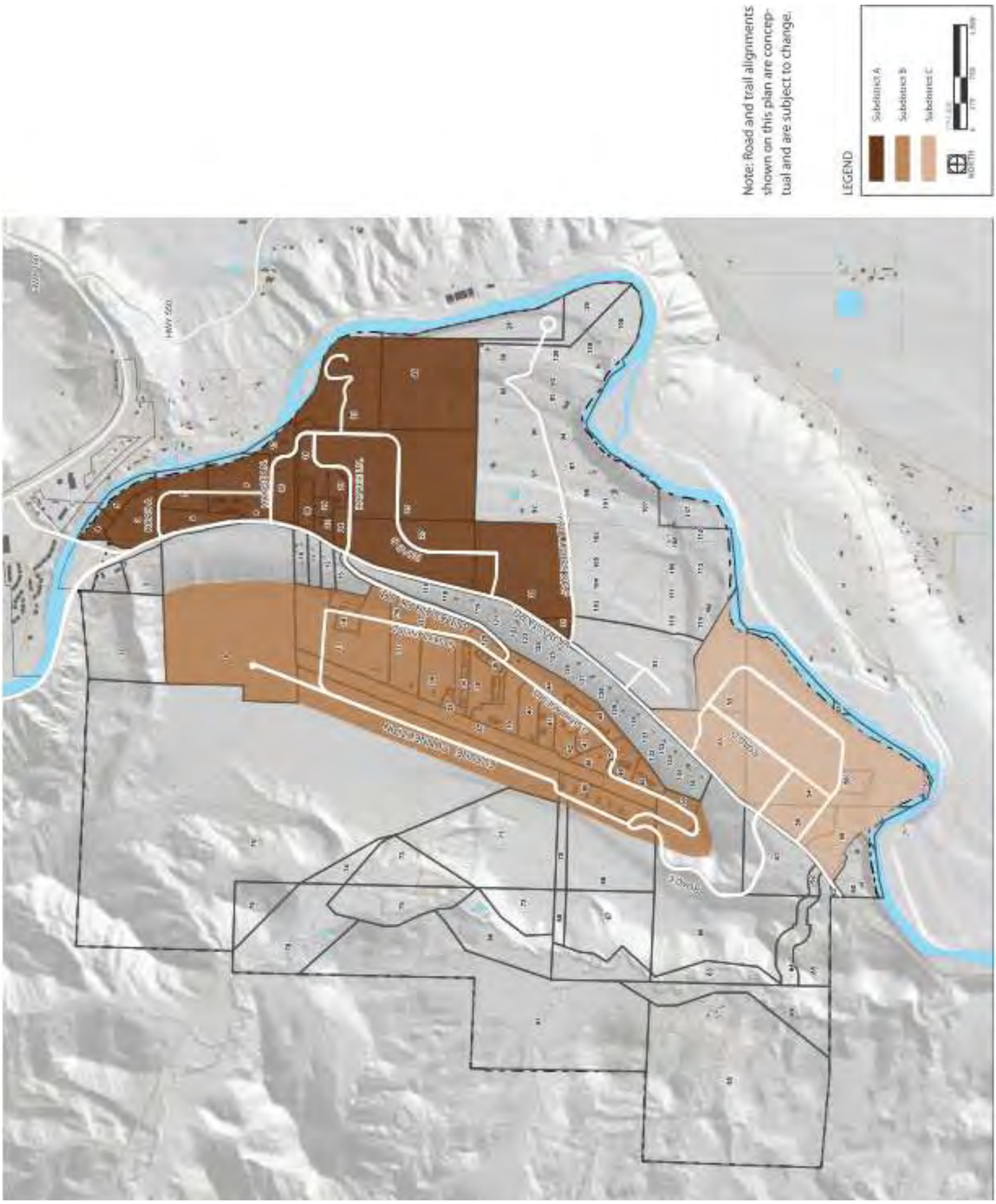
- Rural (1 du/35 ac)
- Rural Res (1 du/ 3 ac)
- Large Lot (1 du/ ac)
- Low (1-5 du/ac)
- Med. (5-12 du/ac)
- High (12-24 du/ac)
- Mixed Use
- Multiple Use
- Mixed Commercial/Lt. Industrial
- Industrial

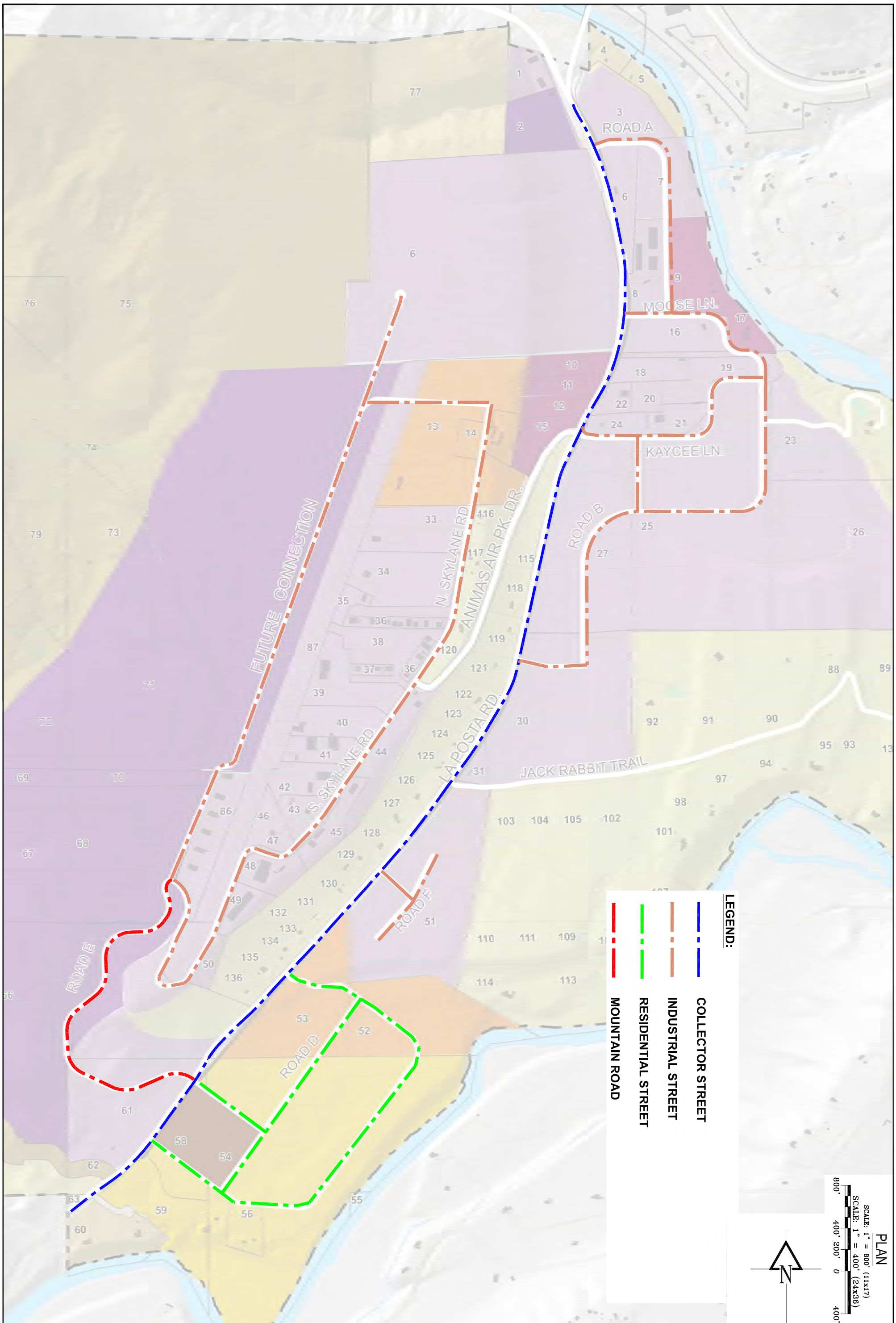
DESIGNWORKSHOP

Exhibit G

EXHIBIT 0.A – LAND USE MAP (DESIGN WORKSHOP)

EXHIBIT 0.B – SUBDISTRICT MAP (DESIGN WORKSHOP)





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			SHEET EX-1 X OF X

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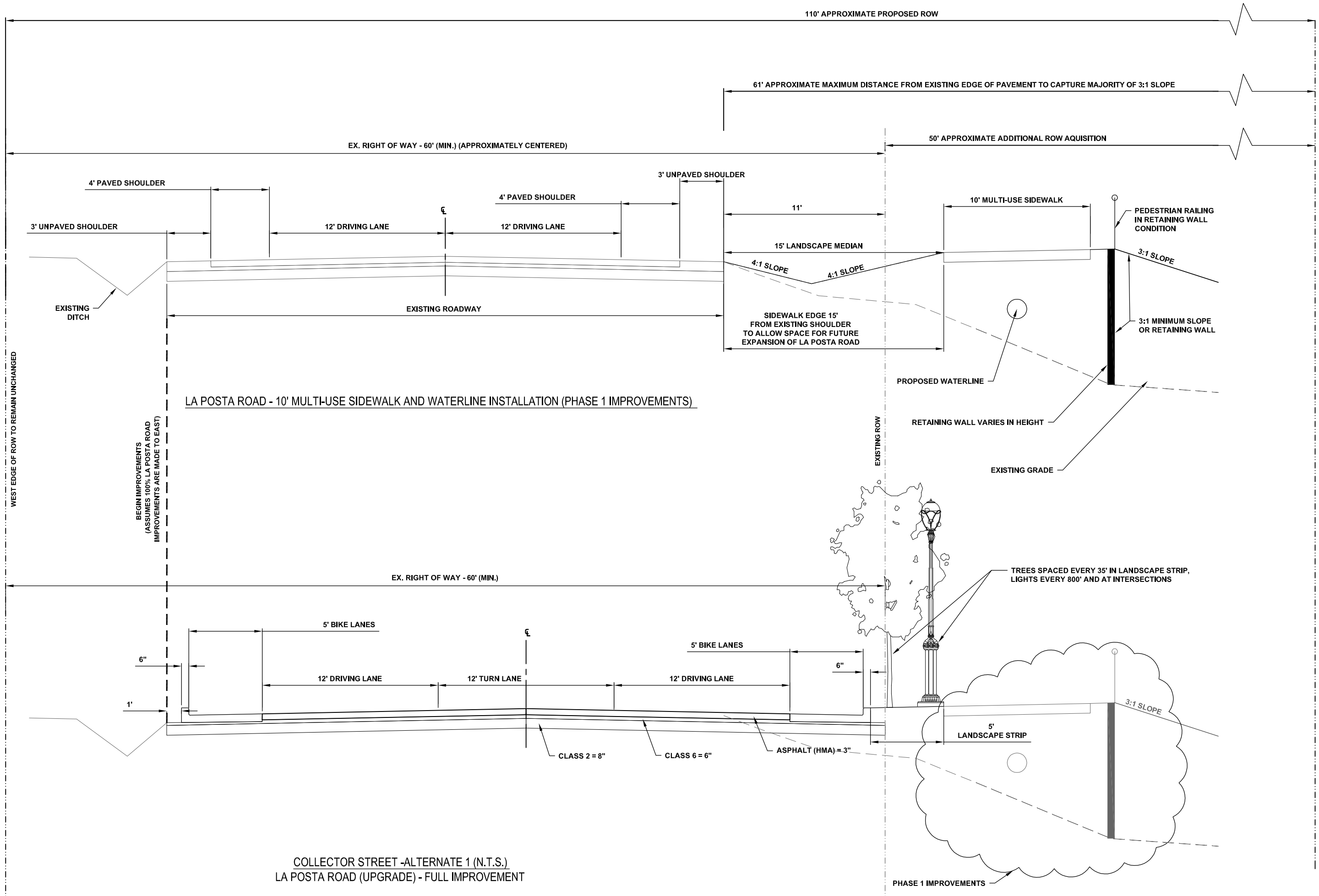

COLLECTOR STREET -ALTERNATE 1 (N.T.S.)
LA POSTA ROAD (UPGRADE) - FULL IMPROVEMENT

SHEET EX-2A

X OF X

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LA POSTA ROAD AREA PLAN
TYPICAL ROAD SECTIONS
LA POSTA ROAD
EXHIBIT 2A

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PROJECT: LA POSTA ROAD AREA PLAN

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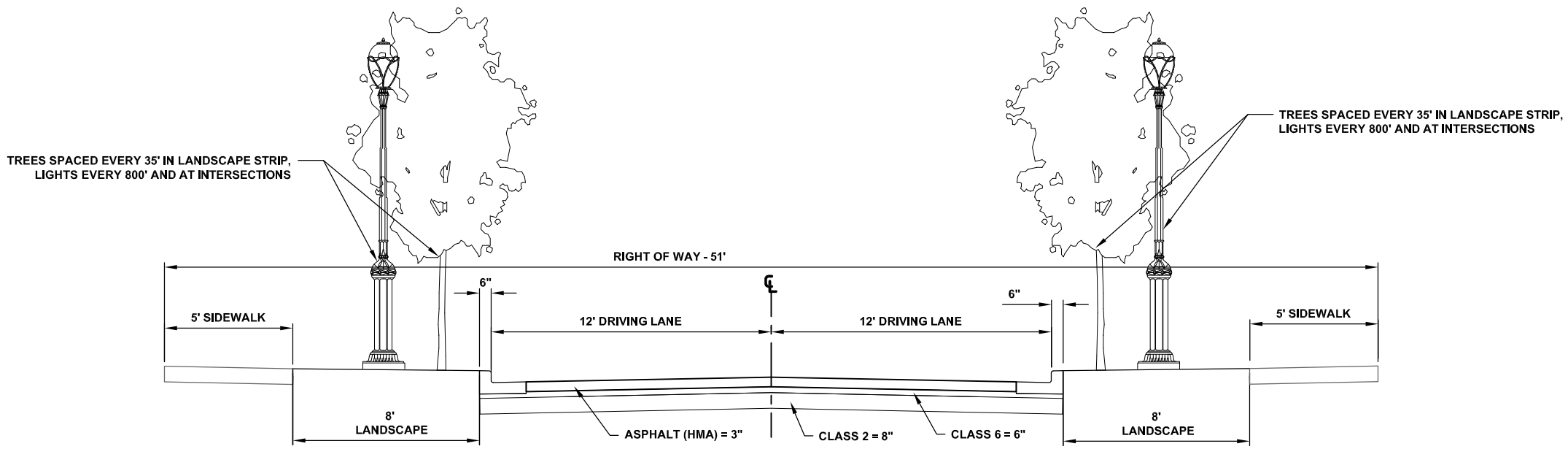


INDUSTRIAL STREET (MODIFIED-NO PARKING) (N.T.S)

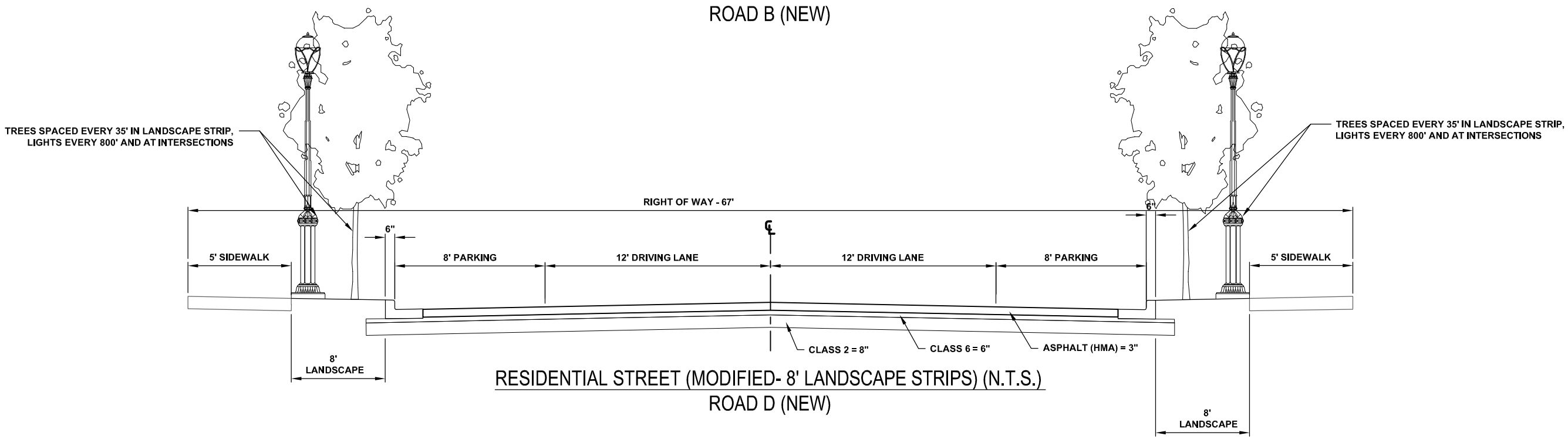
NORTH AND SOUTH SKYLANE DRIVE-UPGRADE

ROAD A (NEW)

MOOSE LANE (EX)

KAYCEE LANE (EX)

ROAD B (NEW)



RESIDENTIAL STREET (MODIFIED- 8' LANDSCAPE STRIPS) (N.T.S.)

ROAD D (NEW)

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X OF X

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LA POSTA ROAD AREA PLAN
TYPICAL ROAD SECTIONS
CITY STREET SECTIONS
EXHIBIT 2B

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DATE: 11-27-12
PROJECT: LA POSTA ROAD AREA PLAN

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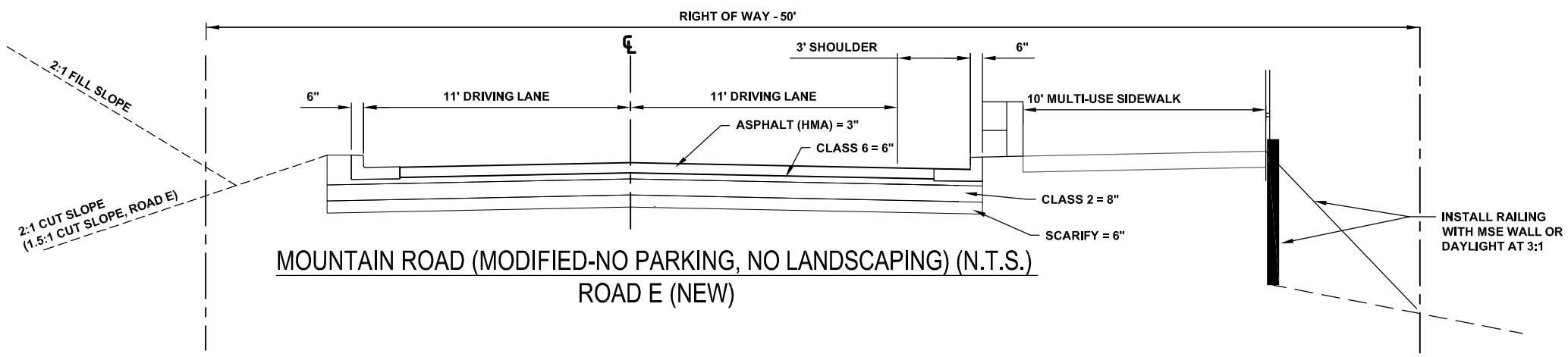
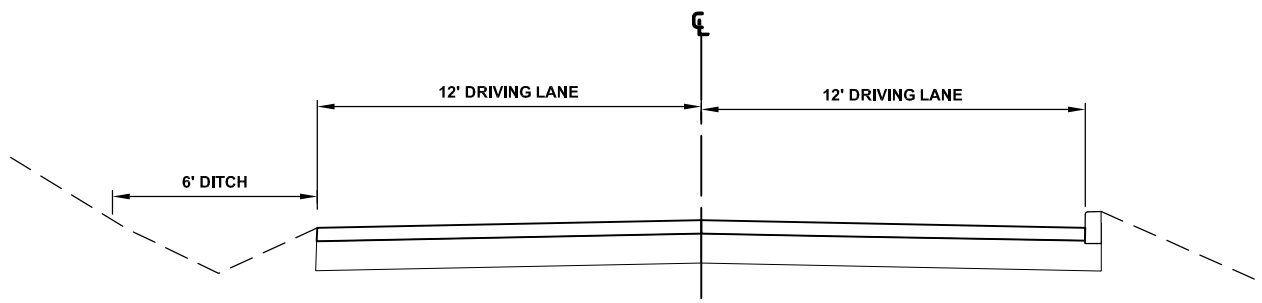


MOUNTAIN ROAD (MODIFIED-NO PARKING, NO LANDSCAPING) (N.T.S.)
ROAD E (NEW)



ANIMAS AIRPARK DRIVE-EXISTING (N.T.S.)

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LA POSTA ROAD AREA PLAN
TYPICAL ROAD SECTIONS
MISC CITY SECTIONS
EXHIBIT 2C

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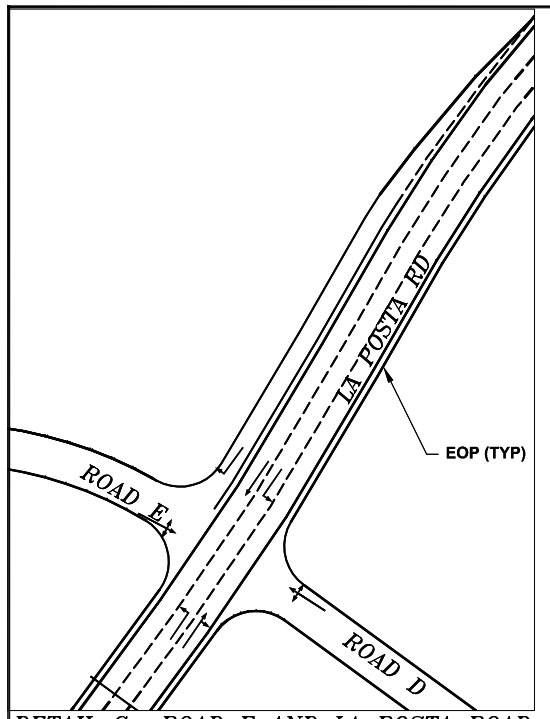
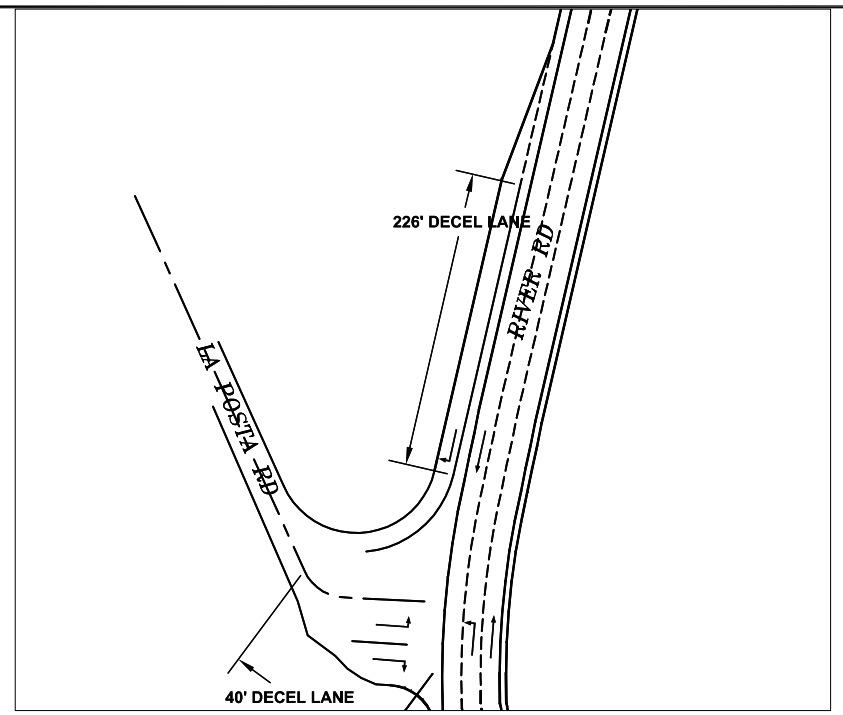


DETAIL C– ROAD E AND LA POSTA ROAD

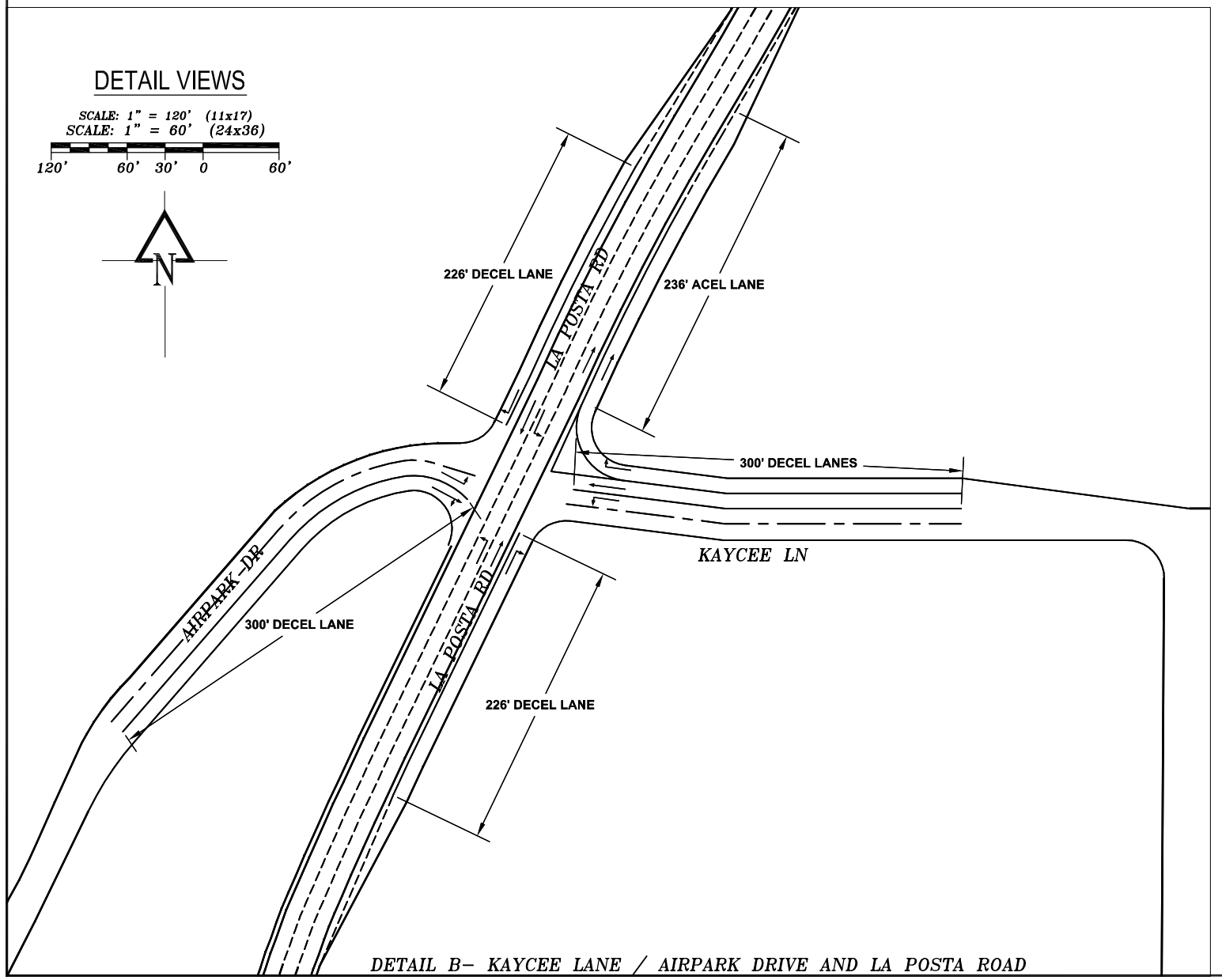


DETAIL A– RIVER ROAD AND LA POSTA ROAD

DETAIL VIEWS

SCALE: 1" = 120' (11x17)
SCALE: 1" = 60' (24x36)

120' 60' 30' 0 60'

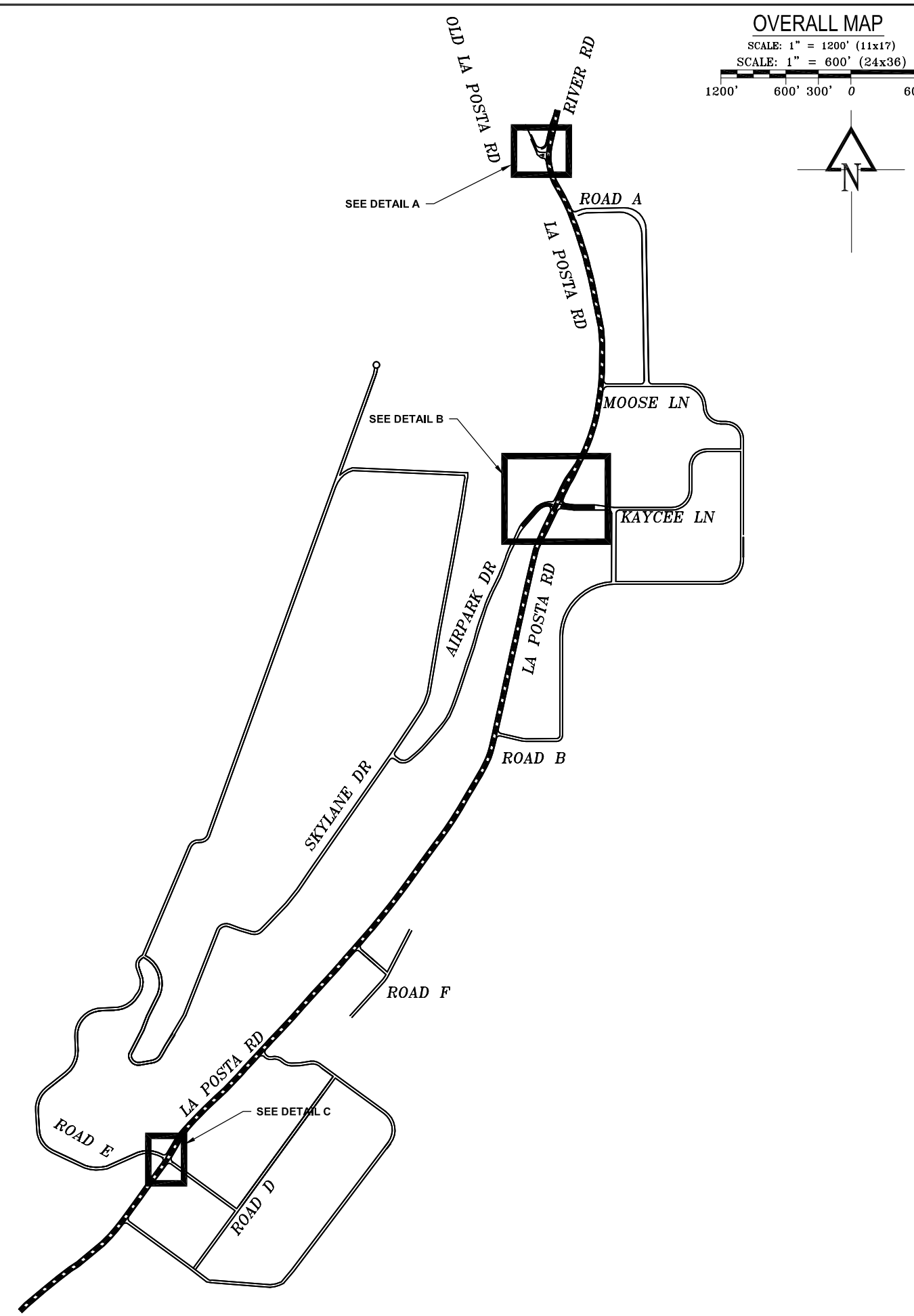


DETAIL B– KAYCEE LANE / AIRPARK DRIVE AND LA POSTA ROAD

OVERALL MAP

SCALE: 1" = 1200' (11x17)
SCALE: 1" = 600' (24x36)

1200' 600' 300' 0 600'



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LA POSTA ROAD AREA PLAN
MASTER ROADWAY NETWORK PLAN
INTERSECTION IMPROVEMENTS
EXHIBIT 3

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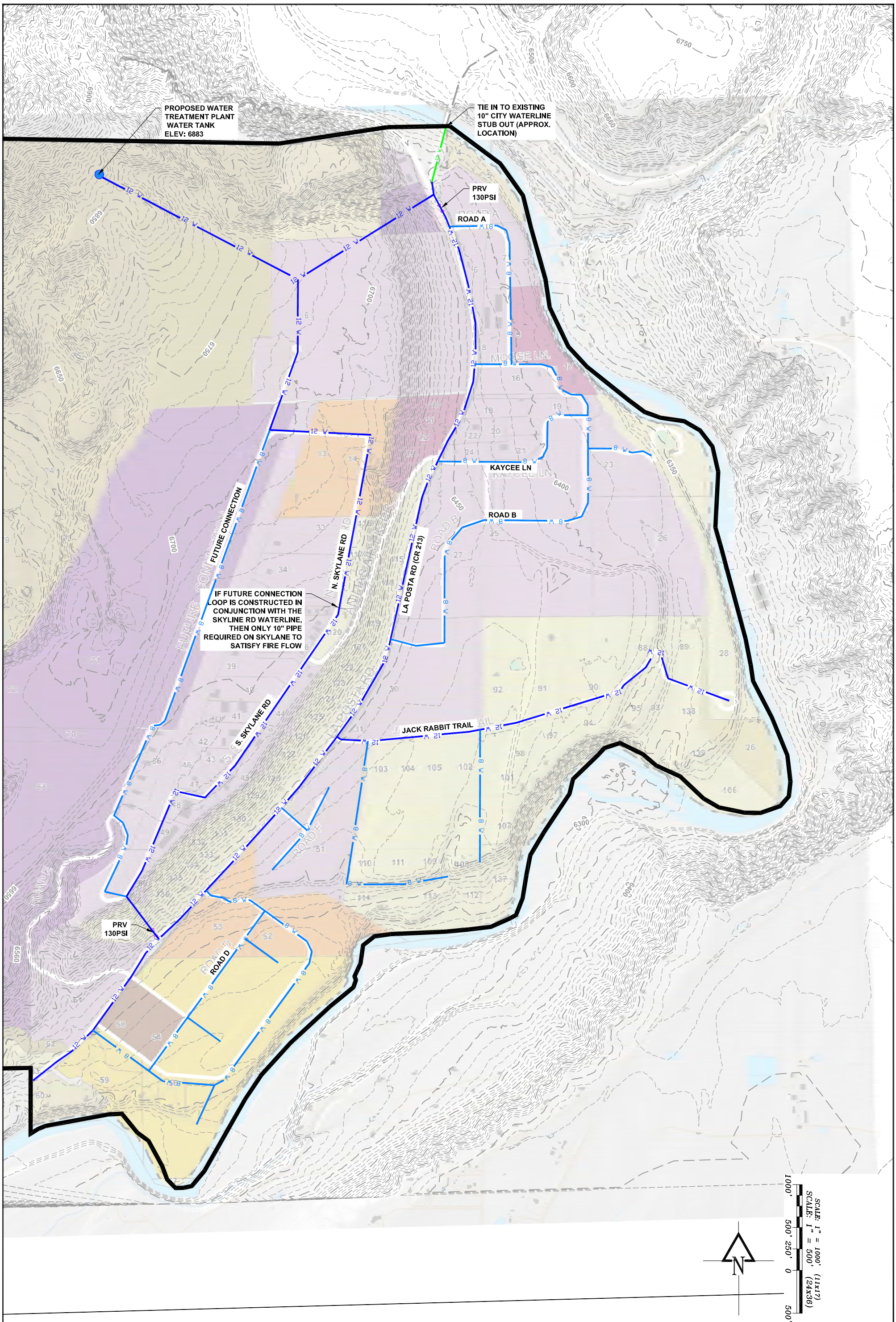

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Fax: (970) 385-4502

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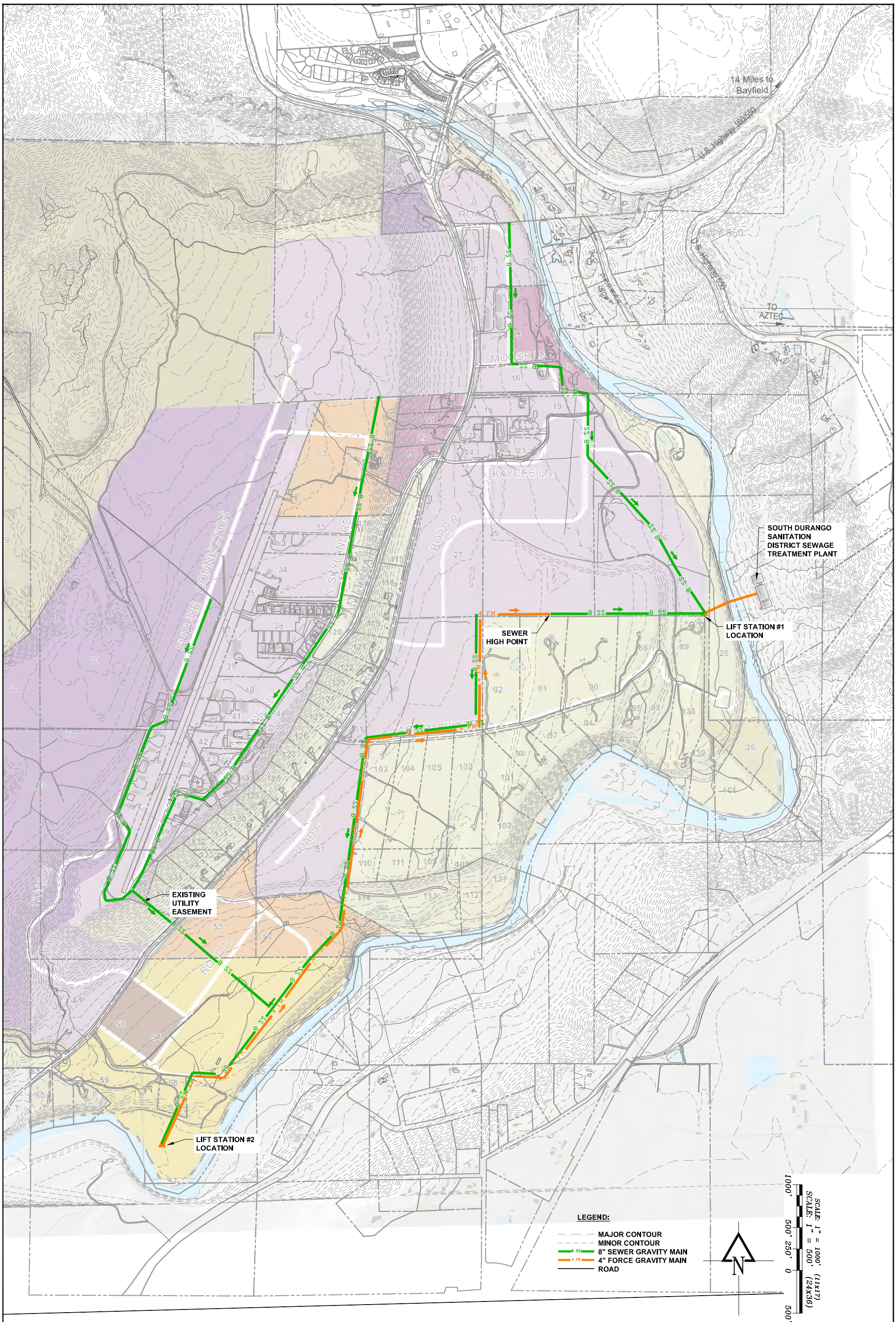
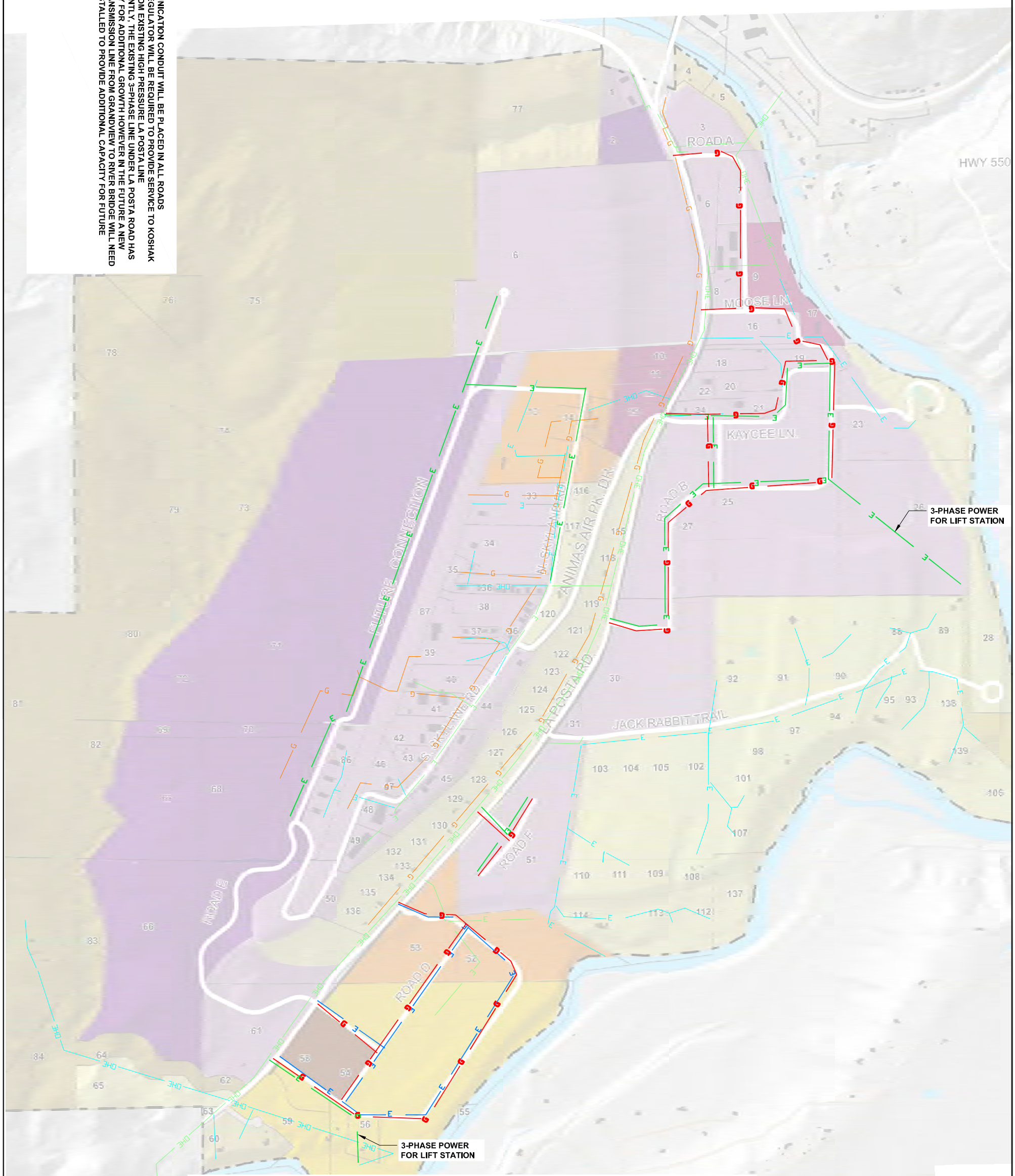


ACAD FILE: SEWER PLAN.dwg			
REVISIONS: 1 XX	Drawn/Checked: Drafted by: DATE: 11-12-12 PROJECT: LA POSTA ROAD AREA PLAN	**LA POSTA ROAD AREA PLAN** **MASTER SEWER PLAN** **EXHIBIT 5**	**Russell Planning & Engineering, Inc.** Civil Engineering Services 934 Main Avenue, Unit C Durango, Colorado 81301 Phone: (970) 385-4546 Fax: (970) 385-4502

SHEET EX-5

X OF X

NOTES:
1. COMMUNICATION CONDUIT WILL BE PLACED IN ALL ROADS
2. GAS REGULATOR WILL BE REQUIRED TO PROVIDE SERVICE TO KOSHAK MESA FROM EXISTING HIGH PRESSURE LA POSTA LINE
3. CURRENTLY, THE EXISTING 3=PHASE LINE UNDER LA POSTA ROAD HAS CAPACITY FOR ADDITIONAL GROWTH HOWEVER IN THE FUTURE A NEW LPEA TRANSMISSION LINE FROM GRANDVIEW TO RIVER BRIDGE WILL NEED TO BE INSTALLED TO PROVIDE ADDITIONAL CAPACITY FOR FUTURE GROWTH.



LEGEND

- EXISTING GAS LINE
- EXISTING 3-PHASE OVERHEAD ELECTRIC LINE
- EXISTING 3-PHASE UNDERGROUND ELECTRIC LINE
- EXISTING 1-PHASE OVERHEAD ELECTRIC LINE
- EXISTING 1-PHASE UNDERGROUND ELECTRIC LINE
- PROPOSED GAS LINE
- PROPOSED 3-PHASE UNDERGROUND ELECTRIC LINE
- PROPOSED 1-PHASE UNDERGROUND ELECTRIC LINE

N

ACAD FILE: DRY UTILITIES PLAN.dwg		LA POSTA ROAD AREA PLAN MASTER DRY UTILITY PLAN EXHIBIT 6	Russell Planning & Engineering, Inc. Civil Engineering Services 934 Main Avenue, Unit C Durango, Colorado 81301 Phone: (970) 385-4546 Fax: (970) 385-4502
REVISIONS: 1 XX	Drawn/Checked: Drafted by: DATE: 11-12-12 PROJECT: LA POSTA ROAD AREA PLAN		SHEET EX-6 X OF X

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APPENDIX B:
COST SUMMARY
UNIT COSTS

La Posta Road Area Plan
Appendix B - Infrastructure Unit Costs
11/27/2012

Summary	Cost / LF	Total Cost
District Costs		
Waterline - Trunk (12" loop including Skylane Dr)		$ 1,345,262
Sewerline - Trunk		$ 3,324,721
Sewerline - Trunk (Future Connector)		$ 271,286
Intersection of La Posta Road and River Road		$ 180,581
Intersection of La Posta Road and Kaycee Ln/Airpark Dr		$ 188,629
OLD La Posta Road - Turn Lane (Old LP RD EB Left Decel at River Rd)		$ 553
La Posta Road (River Road to Kaycee Ln) - Sidewalk Grading and waterline installation	$ 372	$ 1,275,593
La Posta Road (Kaycee Ln to South End) - Sidewalk Grading and waterline installation	$ 295	$ 2,573,292
La Posta Road (River Rd to Kaycee Ln) - Full buildout remaining	$ 398	$ 1,364,605
La Posta Road (Kaycee Ln to South End) - Full buildout remaining	$ 382	$ 3,329,087
La Posta Road - Turn Lane (River Rd WB RIGHT to OLD LP RD)		$ 20,489
La Posta Road - Turn Lane (LP RD SB RIGHT to Airpark Dr)		$ 20,489
La Posta Road - Turn Lane (LP RD SB RIGHT to Road E)		$ 31,754
La Posta Road - Turn Lane (LP RD NB RIGHT ACEL AT KAYCEE LN)		$ 20,489
Subdistrict A		
Road A - Industrial Local Street	$ 602	$ 1,384,232
Road A - Turn Lane (Rd A WB Right to LP Rd)		$ 12,715
Moose Lane-Upgrade Existing Rd to Industrial Local Street	$ 557	$ 947,308
Moose Lane - Turn Lane (Moose Ln WB Right to LP Rd)		$ 12,715
Kaycee Lane-Upgrade Existing Rd to Industrial Local Street	$ 561	$ 1,177,599
Kaycee Lane - Turn Lane (KC Ln WB Right to LP Rd)		$ 38,146
Kaycee Lane - Turn Lane (KC Ln WB Left to LP Rd)		$ 5,086
Road B (w/connector) Industrial Local Street	$ 566	$ 3,051,629
Road B - Turn Lane (Rd B WB Right to LP Rd)		$ 12,715
Subdistrict B		
Road D - Residential Local Street	$ 821	$ 6,472,327
Road D - Turn Lane (Rd D North, Road D at Rd E, Rd D South WB Right to LP Rd)		$ 31,789
Subdistrict C		
Airpark Drive - Turn Lane (Airpark Dr EB Left to LP Rd)		$ 83,341
Airpark Drive - Turn Lane (Airpark Dr EB Right to LP Rd)		$ 31,619
Skylane Drive - Upgrade to Industrial Local Street	$ 410	$ 3,210,031
Road E - Bike Lane, 10' sidewalk	$ 798	$ 2,818,033
Road E - Turn Lane (Rd E EB Left to LP Rd)		$ 12,715
Airpark Future Connector - Industrial Local Street	$ 697	$ 4,905,181
Private Costs		
Road F - Industrial Local Street	$ 621	$ 851,450
Road F - Turn Lane (Rd F WB Right to LP Rd)		$ 12,715
Non-Elligible District and Subdistrict Costs		
Electric - System Upgrade		$ 450,000
Gas - System Upgrade		$ 28,544
La Posta Road - Dry Utilities		$ 82,580
Road A - Dry Utilities		$ 40,572
Moose Lane-Dry Utilities		$ 29,988
Kaycee Lane-Dry Utilities		$ 120,393
Road B (w/connector)-Dry Utilities		$ 306,907
Road D - Dry Utilities		$ 253,106
Road F - Dry Utilities		$ 98,010
Skylane Drive - Dry Utilities		$ 80,055
Airpark Future Connector - Dry Utilities		$ 403,259
Costs Paid for by City of Durango		
La Posta Road - 10' mulituse sidewalk (paid for by City of Durango)		$ 1,460,351.20

Item	Unit Price	Unit	Column1	Column2	Column3	Column4	Column5	Column6	Column7	Column8	
Asphalt	$ 216.00	CY						0		$	-
Class 2 Base Course	$ 32.00	CY						0		$	-
Class 6 Base Course	$ 37.00	CY						0		$	-
Embankment	$ 7.80	CY						0		$	-
Excavation	$ 5.10	CY						0		$	-
Air Vac Valves (every 1400')	$ 3,500.00	EA						0		$	-
Drainage Manhole (every 3000')	$ 3,300.00	EA						0		$	-
Fire Hydrant (every 400')	$ 3,500.00	EA						0		$	-
Lighting (ls) (every 800')	$ 3,700.00	EA						0		$	-
Lighting Conduit	$ 4.50	LF						0		$	-
Storm Drain Inlets	$ 7,500.00	EA						0		$	-
15" CMP Cross Drain	$ 60.00	LF						0		$	-
18" CMP Cross Drain	$ 70.00	LF						0		$	-
24" CMP Cross Drain	$ 80.00	LF						0		$	-
36" CMP Cross Drain	$ 85.00	LF						0		$	-
15" CMP Storm drain	$ 55.00	LF						0		$	-
18" CMP Storm drain	$ 65.00	LF						0		$	-
24" CMP Storm drain	$ 75.00	LF						0		$	-
36" CMP Storm drain	$ 80.00	LF						0		$	-
8" DIP waterline (no service stubouts)	$ 55.00	LF						0		$	-
10" DIP waterline (no service stubouts)	$ 70.00	LF						0		$	-
8" DIP waterline (includes service stubouts)	$ 60.00	LF						0		$	-
10" DIP waterline (includes service stubouts)	$ 75.00	LF						0		$	-
12" DIP waterline (includes service stubouts)	$ 80.00	LF						0		$	-
12" Pressure Reducing Valve	$ 50,000.00	EA.						0		NO PRICING	
Communications Conduit	$ 4.50	LF						0		$	-
Catch Curb and Gutter	$ 21.50	LF						0		$	-
Common Dry Utility Trench (Power, Communications)	$ 14.00	LF						0		$	-
Communications - Line	$ 5.00	LF						0		$	-
Communications - Pedestels	$ 1,500.00	EA						0		$	-
Electric (Single Phase Power) - Line	$ 10.00	LF						0		$	-
Electric (Three Phase Power) - Line	$ 27.00	LF						0		$	-
Electric - Transformer	$ 30,000.00	EA						0		$	-
Electric - J Box	$ 1,000.00	EA						0		$	-
Gas - 4" Conduit & Trench	$ 12.00	LF						0		$	-
Lane striping (4" thick stripe)	$ 2.00	LF						0		$	-
Stormwater Management	$ 16.00	LF						0		$	-
Signage (ls) (assume 4'x4', every 500')	$ 6.45	SF						0		$	-
MSE Wall	$ 40.00	SF						0		$	-
Demo Asphalt	$ 8.50	SY						0		$	-
Concrete 6-Inch Trail	$ 55.00	SY						0		$	-
Landscape Strip Includes Trees every 35' each side of road	$ 25.00	LF						0		$	-
Guardrail	$ 65.00	LF						0		$	-
Water Quality MS4 Ponds for Street Runoff	$ 3,200.00	AC						0		$	-
Clearing and Grubbing	$ 1,700.00	AC						0		$	-
Pedestrian Railing	$ 115.00	LF						0		$	-
4" HDPE Force Main (Cross Country)	$ 42.00	LF						0		$	-
4" HDPE Force Main (In Road , In Gravity Sewer Trench)	$ 24.00	LF						0		$	-
8" PVC Sewerline (Cross Country)	$ 44.00	LF						0		$	-
8" PVC Sewerline (In Road)	$ 44.00	LF						0		$	-
LIFT STATION	$ 160,000.00	EA						0		$	-
BORING UNDER RIVER	$ 350.00	LF						0		$	-
ROW Acquisition - Residential	$ 15,700.00	AC								$	-
ROW Acquisition - Adobe Cliffs	$ 41,340.00	AC								$	-
ROW Acquisition - Animas Airpark	$ 85,590.00	AC								$	-
4" Irrigation Line	$ 37.00	LF						0		$	-
Seed Mix and Mulch	$ 2.00	SY						0		$	-

La Posta Road (River Road to Kaycee Ln) - Sidewalk Grading and waterline installation

			Dimensions (Feet)							
Unit	**Unit Price**	**Unit**	**Depth**	**Width**	**Length**	**Quantity**	**LF**	**SF**	**CY**	**Cost**
Clearing and Grubbing	$ 1,700.00	AC			3431			223015		$ 8,704
Embankment	$ 7.80	CY			3431				21304	$ 166,168
Excavation	$ 5.10	CY			3431				20168	$ 102,855
Seed Mix and Mulch	$ 2.00	SY			3431			78913		$ 17,536
MSE Wall	$ 40.00	SF			3431			1920		$ 76,800
Landscape Strip Includes Trees every 35' each side of road	$ 25.00	LF			3431					$ -
Storm Drain Inlets	$ 7,500.00	EA			3431	4.0				$ 30,000
15" CMP Cross Drain	$ 60.00	LF			3431					$ -
18" CMP Cross Drain	$ 70.00	LF			3431		60			$ 4,200
24" CMP Cross Drain	$ 80.00	LF			3431		120			$ 9,600
36" CMP Cross Drain	$ 85.00	LF			3431		0			
15" CMP Storm drain	$ 55.00	LF			3431					$ -
18" CMP Storm drain	$ 65.00	LF			3431					$ -
24" CMP Storm drain	$ 75.00	LF			3431					$ -
Stormwater Management	$ 16.00	LF			3431		3431			$ 54,896
12" DIP waterline (includes service stubouts)	$ 80.00	LF			3431		3431			$ 274,480
Air Vac Valves (every 1400')	$ 3,500.00	EA			3431	2.5				$ 8,578
12" Pressure Reducing Valve	$ 50,000.00	EA			3431	1.0				$ 50,000
Fire Hydrant (every 400')	$ 3,500.00	EA			3431					$ -
									Total	**$ 803,816**
Soft Costs										
Engineering Costs	15%									
Contingency	15%									
Mobilization	10%									
Traffic Control	6%									
Construction Staking	2%									
Record Drawings	1%									
Materials & Testing Control	2%									
Total	51%									$ 1,213,762
ROW Acquisition - Residential	$ 15,700.00	AC			3431	50.0		171550		$ 61,830
ROW Acquisition - Adobe Cliffs	$ 41,340.00	AC			0	50.0		0		$ -
ROW Acquisition - Animas Airpark	$ 85,590.00	AC			0	0.0		0		$ -
										$ 61,830
										$ 1,275,593

La Posta Road (Kaycee Ln to South End) - Sidewalk Grading and waterline installation

			Dimensions (Feet)								
Unit	**Unit Price**	**Unit**	**Depth**	**Width**	**Length**	**Quantity**	**LF**	**SF**	**CY**	**Cost**	
Clearing and Grubbing	$ 1,700.00	AC			8722			566930		$	22,125
Embankment	$ 7.80	CY			8722				31955	$	249,252
Excavation	$ 5.10	CY			8722				30251	$	154,282
Seed Mix and Mulch	$ 2.00	SY			8722			200606		$	44,579
MSE Wall	$ 40.00	SF			8722			2880		$	115,200
Landscape Strip Includes Trees every 35' each side of road	$ 25.00	LF			8722					$	-
Storm Drain Inlets	$ 7,500.00	EA			8722	4.0				$	30,000
15" CMP Cross Drain	$ 60.00	LF			8722					$	-
18" CMP Cross Drain	$ 70.00	LF			8722		60			$	4,200
24" CMP Cross Drain	$ 80.00	LF			8722		180			$	14,400
36" CMP Cross Drain	$ 85.00	LF			8722		60			$	5,100
15" CMP Storm drain	$ 55.00	LF			8722					$	-
18" CMP Storm drain	$ 65.00	LF			8722					$	-
24" CMP Storm drain	$ 75.00	LF			8722					$	-
Stormwater Management	$ 16.00	LF			8722		8722			$	139,552
12" DIP waterline (includes service stubouts)	$ 80.00	LF			8722		8722			$	697,760
Air Vac Valves (every 1400')	$ 3,500.00	EA			8722	6.2				$	21,805
12" Pressure Reducing Valve	$ 50,000.00	EA			8722	0.0				$	-
Fire Hydrant (every 400')	$ 3,500.00	EA			8722					$	-
									Total	**$**	**1,498,256**
Soft Costs											
Engineering Costs	15%										
Contingency	15%										
Mobilization	10%										
Traffic Control	6%										
Construction Staking	2%										
Record Drawings	1%										
Materials & Testing Control	2%										
Total	51%									$	2,262,366
ROW Acquisition - Residential	$ 15,700.00	AC			3498	50.0		174900		$	63,038
ROW Acquisition - Adobe Cliffs	$ 41,340.00	AC			5224	50.0		261200		$	247,888
ROW Acquisition - Animas Airpark	$ 85,590.00	AC			0	0.0		0		$	-
										$	310,926
										$	**2,573,292**

La Posta Road (River Rd to Kaycee Ln) - Full buildout remaining

			Dimensions (Feet)								
Unit	**Unit Price**	**Unit**	**Depth**	**Width**	**Length**	**Quantity**	**LF**	**SF**	**CY**	**Cost**	
Demo Asphalt	$ 8.50	SY		38.0	3431			130378		$	123,135
Embankment	$ 7.80	CY	1.0	15.0	3431				1906	$	14,868
Excavation	$ 5.10	CY	1.0	15.0	3431				1906	$	9,721
Asphalt	$ 216.00	CY	0.3	43.0	3431				1366	$	295,066
Class 2 Base Course	$ 32.00	CY	0.7	11.0	3431				932	$	29,820
Class 6 Base Course	$ 37.00	CY	0.5	11.0	3431				699	$	25,860
Catch Curb and Gutter	$ 21.50	LF			3431	2.0	6862			$	147,533
Landscape Strip Includes Trees every 35' each side of road	$ 25.00	LF		5.0	3431		3431	17155		$	85,775
Lighting (ls) (every 800')	$ 3,700.00	EA			3431	4.3				$	15,868
Lighting Conduit	$ 4.50	LF			3431		3431			$	15,440
Lane striping (4" thick stripe)	$ 2.00	LF			3431	2.0	6862			$	13,724
Signage (ls) (assume 4'x4', every 500')	$ 6.45	SF			3431	4.0		64		$	413
Storm Drain Inlets	$ 7,500.00	EA			3431	8.0				$	60,000
Drainage Manhole (every 3000')	$ 3,300.00	EA			3431					$	-
15" CMP Cross Drain	$ 60.00	LF			3431					$	-
18" CMP Cross Drain	$ 70.00	LF			3431					$	-
24" CMP Cross Drain	$ 80.00	LF			3431					$	-
36" CMP Cross Drain	$ 85.00	LF			3431					$	-
15" CMP Storm drain	$ 55.00	LF			3431					$	-
18" CMP Storm drain	$ 65.00	LF			3431					$	-
24" CMP Storm drain	$ 75.00	LF			3431					$	-
Water Quality MS4 Ponds for Street Runoff	$ 3,200.00	AC			3431			157826		$	11,594
Stormwater Management	$ 16.00	LF			3431		3431			$	54,896
									Total	$	903,712
Soft Costs											
Engineering Costs	15%										
Contingency	15%										
Mobilization	10%										
Traffic Control	6%										
Construction Staking	2%										
Record Drawings	1%										
Materials & Testing Control	2%										
Total	51%									$	1,364,605
ROW Acquisition - Residential	$ 15,700.00	AC			3431	0.0		0		$	-
ROW Acquisition - Adobe Cliffs	$ 41,340.00	AC			3431	0.0		0		$	-
ROW Acquisition - Animas Airpark	$ 85,590.00	AC			3431	0.0		0		$	-
										$	-
										$	**1,364,605**

La Posta Road (Kaycee Ln to South End) - Full buildout remaining

Unit	Unit Price	Unit	Depth	Width	Length	Quantity	LF	SF	CY	Cost
			Dimensions (Feet)							
Demo Asphalt	$ 8.50	SY		38.0	8722			331436		$ 313,023
Embankment	$ 7.80	CY	1.0	15.0	8722				4846	$ 37,795
Excavation	$ 5.10	CY	1.0	15.0	8722				4846	$ 24,712
Asphalt	$ 216.00	CY	0.3	43.0	8722				3473	$ 750,092
Class 2 Base Course	$ 32.00	CY	0.7	11.0	8722				2369	$ 75,806
Class 6 Base Course	$ 37.00	CY	0.5	11.0	8722				1777	$ 65,738
Catch Curb and Gutter	$ 21.50	LF			8722	2.0	17444			$ 375,046
Landscape Strip Includes Trees every 35' each side of road	$ 25.00	LF		5.0	8722		8722	43610		$ 218,050
Lighting (ls) (every 800')	$ 3,700.00	EA			8722	10.9				$ 40,339
Lighting Conduit	$ 4.50	LF			8722		8722			$ 39,249
Lane striping (4" thick stripe)	$ 2.00	LF			8722	2.0	17444			$ 34,888
Signage (ls) (assume 4'x4', every 500')	$ 6.45	SF			8722	9.0		144		$ 929
Storm Drain Inlets	$ 7,500.00	EA			8722	8.0				$ 60,000
Drainage Manhole (every 3000')	$ 3,300.00	EA			8722					$ -
15" CMP Cross Drain	$ 60.00	LF			8722					$ -
18" CMP Cross Drain	$ 70.00	LF			8722					$ -
24" CMP Cross Drain	$ 80.00	LF			8722					$ -
36" CMP Cross Drain	$ 85.00	LF			8722					$ -
15" CMP Storm drain	$ 55.00	LF			8722					$ -
18" CMP Storm drain	$ 65.00	LF			8722					$ -
24" CMP Storm drain	$ 75.00	LF			8722					$ -
Water Quality MS4 Ponds for Street Runoff	$ 3,200.00	AC			8722			401212		$ 29,474
Stormwater Management	$ 16.00	LF			8722		8722			$ 139,552
									Total	$ 2,204,693
Soft Costs										
Engineering Costs	15%									
Contingency	15%									
Mobilization	10%									
Traffic Control	6%									
Construction Staking	2%									
Record Drawings	1%									
Materials & Testing Control	2%									
Total	51%									$ 3,329,087
ROW Acquisition - Residential	$ 15,700.00	AC			8722	0.0		0		$ -
ROW Acquisition - Adobe Cliffs	$ 41,340.00	AC			8722	0.0		0		$ -
ROW Acquisition - Animas Airpark	$ 85,590.00	AC			8722	0.0		0		$ -
										$ -
										$ 3,329,087

La Posta Road - Dry Utilities

Common Dry Utility Trench (Power, Communications)	$ 14.00	LF			0		0			$ -
Communications Conduit	$ 4.50	LF			12153		12153			$ 54,689
									Total	$ 54,689
Soft Costs										
Engineering Costs	15%									
Contingency	15%									
Mobilization	10%									
Traffic Control	6%									
Construction Staking	2%									
Record Drawings	1%									
Materials & Testing Control	2%									
Total	51%									**$ 82,580**

Road A - Industrial Local Street

Unit	Unit Price	Unit	Depth	Width	Length	Quantity	LF	SF	CY	Cost
			Dimensions (Feet)							
Clearing and Grubbing	$ 1,700.00	AC			2300			149500		$ 5,834
Excavation	$ 5.10	CY	2.0	26.5	2300				4515	$ 23,026
Embankment	$ 7.80	CY	2.0	26.5	2300				4515	$ 35,216
Seed Mix and Mulch	$ 2.00	SY		16.0	2300			36800		$ 8,178
Asphalt	$ 216.00	CY	0.3	21.0	2300				447	$ 96,600
Class 2 Base Course	$ 32.00	CY	0.7	27.0	2300				1533	$ 49,067
Class 6 Base Course	$ 37.00	CY	0.5	27.0	2300				1150	$ 42,550
Catch Curb and Gutter	$ 21.50	LF			2300	2.0	4600			$ 98,900
Concrete 6-Inch Trail	$ 55.00	SY		12.0	2300			27600		$ 168,667
Landscape Strip Includes Trees every 35' each side of road	$ 25.00	LF		16.0	2300		2300	36800		$ 57,500
Lane striping (4" thick stripe)	$ 2.00	LF			2300	1.0	2300			$ 4,600
Lighting (ls) (every 800')	$ 3,700.00	EA			2300	5.8				$ 21,275
Lighting Conduit	$ 4.50	LF			2300		4600			$ 20,700
Signage (ls) (assume 4'x4', every 500')	$ 6.45	SF			2300	3.0		48		$ 310
Storm Drain Inlets	$ 7,500.00	EA			2300	2.0				$ 15,000
Drainage Manhole (every 3000')	$ 3,300.00	EA			2300	0.8				$ 2,530
15" CMP Cross Drain	$ 60.00	LF			2300		0			$ -
18" CMP Cross Drain	$ 70.00	LF			2300		0			$ -
24" CMP Cross Drain	$ 80.00	LF			2300		0			$ -
36" CMP Cross Drain	$ 85.00	LF			2300		80			$ 6,800
15" CMP Storm drain	$ 55.00	LF			2300		0			$ -
18" CMP Storm drain	$ 65.00	LF			2300		0			$ -
24" CMP Storm drain	$ 75.00	LF			2300		0			$ -
Water Quality MS4 Ponds for Street Runoff	$ 3,200.00	AC			2300			55200		$ 4,055
Stormwater Management	$ 16.00	LF			2300		1000			$ 16,000
8" DIP waterline (includes service stubouts)	$ 60.00	LF			2300		2300			$ 138,000
Air Vac Valves (every 1400')	$ 3,500.00	EA			2300	1.6				$ 5,750
Fire Hydrant (every 400')	$ 3,500.00	EA			2300	2.5				$ 8,750
Common Dry Utility Trench (Power, Communications)	$ 14.00	LF			2300		2300			$ 32,200
Communications Conduit	$ 4.50	LF			2300		2300			$ 10,350
									Total	$ 871,856
Soft Costs										
Engineering Costs	15%									
Contingency	15%									
Mobilization	10%									
Traffic Control	1%									
Construction Staking	2%									
Record Drawings	1%									
Materials & Testing Control	2%									
Total	46%									$ 1,272,910
ROW Acquisition - Residential	$ 15,700.00	AC			2300	0.0		0		$ -
ROW Acquisition - Adobe Cliffs	$ 41,340.00	AC			2300	51.0		117300		$ 111,322
ROW Acquisition - Animas Airpark	$ 85,590.00	AC			2300	0.0		0		$ -
										$ 111,322
										$ 1,384,232

Road A - Dry Utilities

Gas - 4" Conduit & Trench	$ 12.00	LF			2300		2300			$ 27,600
Electric (Single Phase Power) - Line	$ 10.00	LF			0		0			$ -
Electric (Three Phase Power) - Line	$ 27.00	LF			0		0			$ -
									Total	$ 27,600
Soft Costs										
Engineering Costs	15%									
Contingency	15%									
Mobilization	10%									
Traffic Control	2%									
Construction Staking	2%									
Record Drawings	1%									
Materials & Testing Control	2%									
Total	47%									**$ 40,572**

Moose Lane-Upgrade Existing Rd to Industrial Local Street

Unit	Unit Price	Unit	Depth	Width	Length	Quantity	LF	SF	CY	Cost
			Dimensions (Feet)							
Clearing and Grubbing	$ 1,700.00	AC			1700			69700		$ 2,720
Excavation	$ 5.10	CY	2.0	13.0	1700				1637	$ 8,349
Embankment	$ 7.80	CY	2.0	13.0	1700				1637	$ 12,769
Seed Mix and Mulch	$ 2.00	SY		16.0	1700			27200		$ 6,044
Asphalt	$ 216.00	CY	0.3	21.0	1700				331	$ 71,400
Class 2 Base Course	$ 32.00	CY	0.7	9.0	1700				378	$ 12,089
Class 6 Base Course	$ 37.00	CY	0.5	9.0	1700				283	$ 10,483
Catch Curb and Gutter	$ 21.50	LF			1700	2.0	3400			$ 73,100
Concrete 6-Inch Trail	$ 55.00	SY		12.0	1700			20400		$ 124,667
Landscape Strip Includes Trees every 35' each side of road	$ 25.00	LF		16.0	1700		1700	27200		$ 42,500
Lane striping (4" thick stripe)	$ 2.00	LF			1700	1.3	2266.666667			$ 4,533
Lighting (ls) (every 800')	$ 3,700.00	EA			1700	4.3				$ 15,725
Lighting Conduit	$ 4.50	LF			1700		3400			$ 15,300
Signage (ls) (assume 4'x4', every 500')	$ 6.45	SF			1700	2.0		32		$ 206
Storm Drain Inlets	$ 7,500.00	EA			1700	2.8				$ 21,250
Drainage Manhole (every 3000')	$ 3,300.00	EA			1700	0.6				$ 1,870
15" CMP Cross Drain	$ 60.00	LF			1700		0			$ -
18" CMP Cross Drain	$ 70.00	LF			1700		0			$ -
24" CMP Cross Drain	$ 80.00	LF			1700		0			$ -
36" CMP Cross Drain	$ 85.00	LF			1700		0			$ -
15" CMP Storm drain	$ 55.00	LF			1700		0			$ -
18" CMP Storm drain	$ 65.00	LF			1700		0			$ -
24" CMP Storm drain	$ 75.00	LF			1700		0			$ -
Water Quality MS4 Ponds for Street Runoff	$ 3,200.00	AC			1700			40800		$ 2,997
Stormwater Management	$ 16.00	LF			1700		1000			$ 16,000
8" DIP waterline (includes service stubouts)	$ 60.00	LF			1700		1700			$ 102,000
Air Vac Valves (every 1400')	$ 3,500.00	EA			1700	1.2				$ 4,250
Fire Hydrant (every 400')	$ 3,500.00	EA			1700	2.5				$ 8,750
Common Dry Utility Trench (Power, Communications)	$ 14.00	LF			1700		1700			$ 23,800
Communications Conduit	$ 4.50	LF			1700		1700			$ 7,650
									Total	$ 588,453
Soft Costs										
Engineering Costs	15%									
Contingency	15%									
Mobilization	10%									
Traffic Control	2%									
Construction Staking	2%									
Record Drawings	1%									
Materials & Testing Control	2%									
Total	47%									$ 865,026
ROW Acquisition - Residential	$ 15,700.00	AC			1700	0.0		0		$ -
ROW Acquisition - Adobe Cliffs	$ 41,340.00	AC			1700	51.0		86700		$ 82,281
ROW Acquisition - Animas Airpark	$ 85,590.00	AC			1700	0.0		0		$ -
										$ 82,281
										$ 947,308

Moose Lane-Dry Utilities

Gas - 4" Conduit & Trench	$ 12.00	LF			1700		1700			$ 20,400
Electric (Single Phase Power) - Line	$ 10.00	LF			0		0			$ -
Electric (Three Phase Power) - Line	$ 27.00	LF			0		0			$ -
									Total	$ 20,400
Soft Costs										
Engineering Costs	15%									
Contingency	15%									
Mobilization	10%									
Traffic Control	2%									
Construction Staking	2%									
Record Drawings	1%									
Materials & Testing Control	2%									
Total	47%									**$ 29,988**

Kaycee Lane-Upgrade Existing Rd to Industrial Local Street

Unit	Unit Price	Unit	Depth	Width	Length	Quantity	LF	SF	CY	Cost
			Dimensions (Feet)							
Clearing and Grubbing	$ 1,700.00	AC			2100			86100		$ 3,360
Excavation	$ 5.10	CY	2.0	13.0	2100				2022	$ 10,313
Embankment	$ 7.80	CY	2.0	13.0	2100				2022	$ 15,773
Seed Mix and Mulch	$ 2.00	SY		16.0	2100			33600		$ 7,467
Asphalt	$ 216.00	CY	0.3	21.0	2100				408	$ 88,200
Class 2 Base Course	$ 32.00	CY	0.7	9.0	2100				467	$ 14,933
Class 6 Base Course	$ 37.00	CY	0.5	9.0	2100				350	$ 12,950
Catch Curb and Gutter	$ 21.50	LF			2100	2.0	4200			$ 90,300
Concrete 6-Inch Trail	$ 55.00	SY		12.0	2100			25200		$ 154,000
Landscape Strip Includes Trees every 35' each side of road	$ 25.00	LF		16.0	2100		2100	33600		$ 52,500
Lane striping (4" thick stripe)	$ 2.00	LF			2100	1.3	2800			$ 5,600
Lighting (ls) (every 800')	$ 3,700.00	EA			2100	5.3				$ 19,425
Lighting Conduit	$ 4.50	LF			2100		4200			$ 18,900
Signage (ls) (assume 4'x4', every 500')	$ 6.45	SF			2100	3.0		48		$ 310
Storm Drain Inlets	$ 7,500.00	EA			2100	3.5				$ 26,250
Drainage Manhole (every 3000')	$ 3,300.00	EA			2100	0.7				$ 2,310
15" CMP Cross Drain	$ 60.00	LF			2100		0			$ -
18" CMP Cross Drain	$ 70.00	LF			2100		0			$ -
24" CMP Cross Drain	$ 80.00	LF			2100		80			$ 6,400
36" CMP Cross Drain	$ 85.00	LF			2100		0			$ -
15" CMP Storm drain	$ 55.00	LF			2100		80			$ 4,400
18" CMP Storm drain	$ 65.00	LF			2100		0			$ -
24" CMP Storm drain	$ 75.00	LF			2100		0			$ -
Water Quality MS4 Ponds for Street Runoff	$ 3,200.00	AC			2100			50400		$ 3,702
Stormwater Management	$ 16.00	LF			2100		1000			$ 16,000
8" DIP waterline (includes service stubouts)	$ 60.00	LF			2100		2100			$ 126,000
Air Vac Valves (every 1400')	$ 3,500.00	EA			2100	1.5				$ 5,250
Fire Hydrant (every 400')	$ 3,500.00	EA			2100	2.5				$ 8,750
Common Dry Utility Trench (Power, Communications)	$ 14.00	LF			2100		2100			$ 29,400
Communications Conduit	$ 4.50	LF			2100		2100			$ 9,450
									Total	$ 731,944
Soft Costs										
Engineering Costs	15%									
Contingency	15%									
Mobilization	10%									
Traffic Control	2%									
Construction Staking	2%									
Record Drawings	1%									
Materials & Testing Control	2%									
Total	47%									$ 1,075,958
ROW Acquisition - Residential	$ 15,700.00	AC			2100	0.0		0		$ -
ROW Acquisition - Adobe Cliffs	$ 41,340.00	AC			2100	51.0		107100		$ 101,642
ROW Acquisition - Animas Airpark	$ 85,590.00	AC			2100	0.0		0		$ -
										$ 101,642
										$ 1,177,599

Kaycee Lane-Dry Utilities

Gas - 4" Conduit & Trench	$ 12.00	LF			2100		2100			$ 25,200
Electric (Single Phase Power) - Line	$ 10.00	LF			0		0			$ -
Electric (Three Phase Power) - Line	$ 27.00	LF			2100		2100			$ 56,700
									Total	$ 81,900
Soft Costs										
Engineering Costs	15%									
Contingency	15%									
Mobilization	10%									
Traffic Control	2%									
Construction Staking	2%									
Record Drawings	1%									
Materials & Testing Control	2%									
Total	47%									**$ 120,393**

Road B (w/connector) Industrial Local Street

Unit	Unit Price	Unit	Depth	Width	Length	Quantity	LF	SF	CY	Cost
			Dimensions (Feet)							
Clearing and Grubbing	$ 1,700.00	AC			5390			350350		$ 13,673
Excavation	$ 5.10	CY	2.0	26.5	5390				10580	$ 53,960
Embankment	$ 7.80	CY	2.0	26.5	5390				10580	$ 82,527
Seed Mix and Mulch	$ 2.00	SY		16.0	5390			86240		$ 19,164
Asphalt	$ 216.00	CY	0.3	21.0	5390				1048	$ 226,380
Class 2 Base Course	$ 32.00	CY	0.7	27.0	5390				3593	$ 114,987
Class 6 Base Course	$ 37.00	CY	0.5	27.0	5390				2695	$ 99,715
Catch Curb and Gutter	$ 21.50	LF			5390	2.0	10780			$ 231,770
Concrete 6-Inch Trail	$ 55.00	SY		12.0	5390			64680		$ 395,267
Landscape Strip Includes Trees every 35' each side of road	$ 25.00	LF		16.0	5390		5390	86240		$ 134,750
Lane striping (4" thick stripe)	$ 2.00	LF			5390	1.0	5390			$ 10,780
Lighting (ls) (every 800')	$ 3,700.00	EA			5390	13.5				$ 49,858
Lighting Conduit	$ 4.50	LF			5390		10780			$ 48,510
Signage (ls) (assume 4'x4', every 500')	$ 6.45	SF			5390	6.0		96		$ 619
Storm Drain Inlets	$ 7,500.00	EA			5390	2.0				$ 15,000
Drainage Manhole (every 3000')	$ 3,300.00	EA			5390	1.8				$ 5,929
15" CMP Cross Drain	$ 60.00	LF			5390		0			$ -
18" CMP Cross Drain	$ 70.00	LF			5390		0			$ -
24" CMP Cross Drain	$ 80.00	LF			5390		80			$ 6,400
36" CMP Cross Drain	$ 85.00	LF			5390		80			$ 6,800
15" CMP Storm drain	$ 55.00	LF			5390		0			$ -
18" CMP Storm drain	$ 65.00	LF			5390		0			$ -
24" CMP Storm drain	$ 75.00	LF			5390		0			$ -
Water Quality MS4 Ponds for Street Runoff	$ 3,200.00	AC			5390			129360		$ 9,503
Stormwater Management	$ 16.00	LF			5390		1000			$ 16,000
8" DIP waterline (includes service stubouts)	$ 60.00	LF			5390		5390			$ 323,400
Air Vac Valves (every 1400')	$ 3,500.00	EA			5390	3.9				$ 13,475
Fire Hydrant (every 400')	$ 3,500.00	EA			5390	2.5				$ 8,750
Communications Conduit	$ 4.50	LF			5390		5390			$ 24,255
									Total	$ 1,911,471
Soft Costs										
Engineering Costs	15%									
Contingency	15%									
Mobilization	10%									
Traffic Control	1%									
Construction Staking	2%									
Record Drawings	1%									
Materials & Testing Control	2%									
Total	46%									$ 2,790,748
ROW Acquisition - Residential	$ 15,700.00	AC			5390	0.0		0		$ -
ROW Acquisition - Adobe Cliffs	$ 41,340.00	AC			5390	51.0		274890		$ 260,880
ROW Acquisition - Animas Airpark	$ 85,590.00	AC			5390	0.0		0		$ -
										$ 260,880
										$ 3,051,629

Road B (w/connector)-Dry Utilities

Gas - 4" Conduit & Trench	$ 12.00	LF			5390		5390			$ 64,680
Electric (Single Phase Power) - Line	$ 10.00	LF			0		0			$ -
Electric (Three Phase Power) - Line	$ 27.00	LF			5390		5390			$ 145,530
									Total	$ 210,210
Soft Costs										
Engineering Costs	15%									
Contingency	15%									
Mobilization	10%									
Traffic Control	1%									
Construction Staking	2%									
Record Drawings	1%									
Materials & Testing Control	2%									
Total	46%									**$ 306,907**

Road D - Residential Local Street

Unit	Unit Price	Unit	Depth	Width	Length	Quantity	LF	SF	CY	Cost
			Dimensions (Feet)							
Clearing and Grubbing	$ 1,700.00	AC			7880			512200		$ 19,989
Excavation	$ 5.10	CY	2.0	34.5	7880				20138	$ 102,703
Embankment	$ 7.80	CY	2.0	34.5	7880				20138	$ 157,075
Seed Mix and Mulch	$ 2.00	SY		16.0	7880			126080		$ 28,018
Asphalt	$ 216.00	CY	0.3	37.0	7880				2700	$ 583,120
Class 2 Base Course	$ 32.00	CY	0.7	43.0	7880				8366	$ 267,725
Class 6 Base Course	$ 37.00	CY	0.5	43.0	7880				6275	$ 232,168
Catch Curb and Gutter	$ 21.50	LF			7880	2.0	15760			$ 338,840
Concrete 6-Inch Trail	$ 55.00	SY		12.0	7880			94560		$ 577,867
Landscape Strip Includes Trees every 35' each side of road	$ 25.00	LF		16.0	7880		7880	126080		$ 197,000
Lane striping (4" thick stripe)	$ 2.00	LF			7880	1.0	7880			$ 15,760
Lighting (ls) (every 800')	$ 3,700.00	EA			7880	19.7				$ 72,890
Lighting Conduit	$ 4.50	LF			7880		15760			$ 70,920
Signage (ls) (assume 4'x4', every 500')	$ 6.45	SF			7880	8.0		128		$ 826
Storm Drain Inlets	$ 7,500.00	EA			7880	13.1				$ 98,500
Drainage Manhole (every 3000')	$ 3,300.00	EA			7880	2.6				$ 8,668
15" CMP Cross Drain	$ 60.00	LF			7880		80			$ 4,800
18" CMP Cross Drain	$ 70.00	LF			7880		0			$ -
24" CMP Cross Drain	$ 80.00	LF			7880		0			$ -
36" CMP Cross Drain	$ 85.00	LF			7880		160			$ 13,600
15" CMP Storm drain	$ 55.00	LF			7880		0			$ -
18" CMP Storm drain	$ 65.00	LF			7880		1000			$ 65,000
24" CMP Storm drain	$ 75.00	LF			7880		0			$ -
Water Quality MS4 Ponds for Street Runoff	$ 3,200.00	AC			7880			315200		$ 23,155
Stormwater Management	$ 16.00	LF			7880		1000			$ 16,000
8" DIP waterline (includes service stubouts)	$ 60.00	LF			7880		7880			$ 472,800
Air Vac Valves (every 1400')	$ 3,500.00	EA			7880	5.6				$ 19,700
Fire Hydrant (every 400')	$ 3,500.00	EA			7880	2.5				$ 8,750
4" Irrigation Line	$ 37.00	LF			7880		15760			$ 583,120
Common Dry Utility Trench (Power, Communications)	$ 14.00	LF			5390		5390			$ 75,460
Communications Conduit	$ 4.50	LF			7880		7880			$ 35,460
								Total Materials and Installation		$ 4,089,914
Soft Costs										
Engineering Costs	15%									
Contingency	15%									
Mobilization	10%									
Traffic Control	1%									
Construction Staking	2%									
Record Drawings	1%									
Materials & Testing Control	2%									
Total	46%									$ 5,971,274
ROW Acquisition - Residential	$ 15,700.00	AC			7880	0.0		0		$ -
ROW Acquisition - Adobe Cliffs	$ 41,340.00	AC			7880	67.0		527960		$ 501,053
ROW Acquisition - Animas Airpark	$ 85,590.00	AC			7880	0.0		0		$ -
										$ 501,053
										$ 6,472,327

Road D - Dry Utilities

Gas - 4" Conduit & Trench	$ 12.00	LF			7880		7880			$ 94,560
Electric (Single Phase Power) - Line	$ 10.00	LF			7880		7880			$ 78,800
Electric (Three Phase Power) - Line	$ 27.00	LF			0		0			$ -
								Total Materials and Installation		$ 173,360
Soft Costs										
Engineering Costs	15%									
Contingency	15%									
Mobilization	10%									
Traffic Control	1%									
Construction Staking	2%									
Record Drawings	1%									
Materials & Testing Control	2%									
Total	46%									**$ 253,106**

Road F - Industrial Local Street

Unit	Unit Price	Unit	Depth	Width	Length	Quantity	LF	SF	CY	Cost
			Dimensions (Feet)							
Clearing and Grubbing	$ 1,700.00	AC			1370			89050		$ 3,475
Excavation	$ 5.10	CY	2.0	26.5	1370				2689	$ 13,715
Embankment	$ 7.80	CY	2.0	26.5	1370				2689	$ 20,976
Seed Mix and Mulch	$ 2.00	SY		16.0	1370			21920		$ 4,871
Asphalt	$ 216.00	CY	0.3	21.0	1370				266	$ 57,540
Class 2 Base Course	$ 32.00	CY	0.7	27.0	1370				913	$ 29,227
Class 6 Base Course	$ 37.00	CY	0.5	27.0	1370				685	$ 25,345
Catch Curb and Gutter	$ 21.50	LF			1370	2.0	2740			$ 58,910
Concrete 6-Inch Trail	$ 55.00	SY		12.0	1370			16440		$ 100,467
Landscape Strip Includes Trees every 35' each side of road	$ 25.00	LF		16.0	1370		1370	21920		$ 34,250
Lane striping (4" thick stripe)	$ 2.00	LF			1370	1.0	1370			$ 2,740
Lighting (ls) (every 800')	$ 3,700.00	EA			1370	3.4				$ 12,673
Lighting Conduit	$ 4.50	LF			1370		2740			$ 12,330
Signage (ls) (assume 4'x4', every 500')	$ 6.45	SF			1370	2.0		32		$ 206
Storm Drain Inlets	$ 7,500.00	EA			1370	2.0				$ 15,000
Drainage Manhole (every 3000')	$ 3,300.00	EA			1370	0.5				$ 1,507
15" CMP Cross Drain	$ 60.00	LF			1370		0			$ -
18" CMP Cross Drain	$ 70.00	LF			1370		0			$ -
24" CMP Cross Drain	$ 80.00	LF			1370		80			$ 6,400
36" CMP Cross Drain	$ 85.00	LF			1370		0			$ -
15" CMP Storm drain	$ 55.00	LF			1370		0			$ -
18" CMP Storm drain	$ 65.00	LF			1370		0			$ -
24" CMP Storm drain	$ 75.00	LF			1370		0			$ -
Water Quality MS4 Ponds for Street Runoff	$ 3,200.00	AC			1370			32880		$ 2,415
Stormwater Management	$ 16.00	LF			1370		1000			$ 16,000
8" DIP waterline (includes service stubouts)	$ 60.00	LF			1370		1370			$ 82,200
Air Vac Valves (every 1400')	$ 3,500.00	EA			1370	1.0				$ 3,425
Fire Hydrant (every 400')	$ 3,500.00	EA			1370	2.5				$ 8,750
Common Dry Utility Trench (Power, Communications)	$ 14.00	LF			1370		1370			$ 19,180
Communications Conduit	$ 4.50	LF			1370		1370			$ 6,165
									Total	$ 537,768
Soft Costs										
Engineering Costs	15%									
Contingency	15%									
Mobilization	10%									
Traffic Control	1%									
Construction Staking	2%									
Record Drawings	1%									
Materials & Testing Control	2%									
Total	46%									$ 785,141
ROW Acquisition - Residential	$ 15,700.00	AC			1370	0.0		0		$ -
ROW Acquisition - Adobe Cliffs	$ 41,340.00	AC			1370	51.0		69870		$ 66,309
ROW Acquisition - Animas Airpark	$ 85,590.00	AC			1370	0.0		0		$ -
										$ 66,309
										$ 851,450

Road F - Dry Utilities

Gas - 4" Conduit & Trench	$ 12.00	LF			1370		1370			$ 16,440
Electric (Single Phase Power) - Line	$ 10.00	LF			1370		1370			$ 13,700
Electric (Three Phase Power) - Line	$ 27.00	LF			1370		1370			$ 36,990
									Total	$ 67,130
Soft Costs										
Engineering Costs	15%									
Contingency	15%									
Mobilization	10%									
Traffic Control	1%									
Construction Staking	2%									
Record Drawings	1%									
Materials & Testing Control	2%									
Total	46%									**$ 98,010**

Skylane Drive - Upgrade to Industrial Local Street

Unit	Unit Price	Unit	Depth	Width	Length	Quantity	LF	SF	CY	Cost
			Dimensions (Feet)							
Clearing and Grubbing	$ 1,700.00	AC			7822			78220		$ 3,053
Demo Asphalt	$ 8.50	SY		24.0	7822			187728		$ 177,299
Excavation	$ 5.10	CY	2.0	13.0	7822				7532	$ 38,415
Embankment	$ 7.80	CY	2.0	13.0	7822				7532	$ 58,752
Seed Mix and Mulch	$ 2.00	SY		16.0	7822			125152		$ 27,812
Asphalt	$ 216.00	CY	0.3	21.0	7822				1521	$ 328,524
Class 2 Base Course	$ 32.00	CY	0.7	3.0	7822				579	$ 18,541
Class 6 Base Course	$ 37.00	CY	0.5	3.0	7822				435	$ 16,079
Catch Curb and Gutter	$ 21.50	LF			7822	8.0		128		$ -
Concrete 6-Inch Trail	$ 55.00	SY		10.0	7822			78220		$ 478,011
Landscape Strip Includes Trees every 35' each side of road	$ 25.00	LF		16.0	7822		7822	125152		$ 195,550
Lane striping (4" thick stripe)	$ 2.00	LF			7822	1.0	7822			$ 15,644
Lighting (ls) (every 800')	$ 3,700.00	EA			7822	19.6				$ 72,354
Lighting Conduit	$ 4.50	LF			7822		15644			$ 70,398
Signage (ls) (assume 4'x4', every 500')	$ 6.45	SF			7822	2.0		32		$ 206
Storm Drain Inlets	$ 7,500.00	EA			7822	13.0	2			$ 97,775
Drainage Manhole (every 3000')	$ 3,300.00	EA			7822	2.6	3			$ 8,604
15" CMP Cross Drain	$ 60.00	LF			7822		0			$ -
18" CMP Cross Drain	$ 70.00	LF			7822		30			$ 2,100
24" CMP Cross Drain	$ 80.00	LF			7822		0			$ -
15" CMP Storm drain	$ 55.00	LF			7822		0			$ -
18" CMP Storm drain	$ 65.00	LF			7822		1000			$ 65,000
24" CMP Storm drain	$ 75.00	LF			7822		0			$ -
Water Quality MS4 Ponds for Street Runoff	$ 3,200.00	AC			7822			187728		$ 13,791
Stormwater Management	$ 16.00	LF			7822		7822			$ 125,152
8" DIP waterline (includes service stubouts)	$ 60.00	LF	**Accounted for in District Costs**				0			$ -
Air Vac Valves (every 1400')	$ 3,500.00	EA	**Accounted for in District Costs**			0.0				$ -
Fire Hydrant (every 400')	$ 3,500.00	EA			7822	19.6				$ 68,443
Common Dry Utility Trench (Power, Communications)	$ 14.00	LF			0		0			$ -
Communications Conduit	$ 4.50	LF			0		0			$ -
									Total	**$ 1,881,501**
Soft Costs										
Engineering Costs	15%									
Contingency	15%									
Mobilization	10%									
Traffic Control	2%									
Construction Staking	2%									
Record Drawings	1%									
Materials & Testing Control	2%									
Total	47%									$ 2,765,806
ROW Acquisition - Residential	$ 15,700.00	AC			0	0.0		0		$ -
ROW Acquisition - Adobe Cliffs	$ 41,340.00	AC			0	0.0		0		$ -
ROW Acquisition - Animas Airpark	$ 85,590.00	AC			4433	51.0		226083		$ 444,225
										$ 444,225
										$ 3,210,031

Skylane Drive - Dry Utilities

Electric (Single Phase Power) - Line	$ 10.00	LF			0		0			$ -
Electric (Three Phase Power) - Line	$ 27.00	LF			2017		2017			$ 54,459
									Total	**$ 54,459**
Soft Costs										
Engineering Costs	15%									
Contingency	15%									
Mobilization	10%									
Traffic Control	2%									
Construction Staking	2%									
Record Drawings	1%									
Materials & Testing Control	2%									
Total	47%									**$ 80,055**

Road E - Bike Lane, 10' sidewalk

			Dimensions (Feet)							
Unit	**Unit Price**	**Unit**	**Depth**	**Width**	**Length**	**Quantity**	**LF**	**SF**	**CY**	**Cost**
Clearing and Grubbing	$ 1,700.00	AC			3532			318460		$ 12,428
Excavation	$ 5.10	CY			3532				36281	$ 185,033
Embankment	$ 7.80	CY			3532				46215	$ 360,477
Seed Mix and Mulch	$ 2.00	SY			3532			202560		$ 45,013
Asphalt	$ 216.00	CY	0.3	25.0	3532				1079	$ 233,112
Class 2 Base Course	$ 32.00	CY	0.7	25.0	3532				2191	$ 70,117
Class 6 Base Course	$ 37.00	CY	0.5	25.0	3532				1635	$ 60,502
Catch Curb and Gutter	$ 21.50	LF			3532	2.0	3532			$ 75,938
Concrete 6-Inch Trail	$ 55.00	SY	0.5	10.0	3532			35320		$ 215,844
Lane striping (4" thick stripe)	$ 2.00	LF			3532	3.0	3532			$ 7,064
Lighting (ls) (every 800')	$ 3,700.00	EA			3532	4.4				$ 16,336
Lighting Conduit	$ 4.50	LF			3532		3532			$ 15,894
Signage (ls) (assume 4'x4', every 500')	$ 6.45	SF			3532	4.0		64		$ 413
Storm Drain Inlets	$ 7,500.00	EA			3532	2.0				$ 15,000
Drainage Manhole (every 3000')	$ 3,300.00	EA			3532	1.0				$ 3,300
15" CMP Cross Drain	$ 60.00	LF			3532		60			$ 3,600
18" CMP Cross Drain	$ 70.00	LF			3532		225			$ 15,750
24" CMP Cross Drain	$ 80.00	LF			3532		0			$ -
36" CMP Cross Drain	$ 85.00	LF			3532		431			$ 36,635
15" CMP Storm drain	$ 55.00	LF			3532		0			$ -
18" CMP Storm drain	$ 65.00	LF			3532		0			$ -
24" CMP Storm drain	$ 75.00	LF			3532		0			$ -
36" CMP Storm drain	$ 80.00	LF			3532		0			$ -
Water Quality MS4 Ponds for Street Runoff	$ 3,200.00	AC			3532			98896		$ 7,265
Stormwater Management	$ 16.00	LF			3532		3532			$ 56,512
8" DIP waterline (includes service stubouts)	$ 60.00	LF			3532		3532			$ 211,920
Air Vac Valves (every 1400')	$ 3,500.00	EA			3532	2.5				$ 8,830
Guardrail	$ 65.00	LF			3532		3532			$ 229,580
									Total Cost	**$ 1,886,563**
Soft Costs										
Engineering Costs	15%									
Contingency	15%									
Mobilization	10%									
Traffic Control	1%									
Construction Staking	2%									
Record Drawings	1%									
Materials & Testing Control	2%									
Total	46%									$ 2,754,382
ROW Acquisition - Residential	$ 15,700.00	AC			3532	50.0		176600		$ 63,651
ROW Acquisition - Adobe Cliffs	$ 41,340.00	AC			0	0.0		0		$ -
ROW Acquisition - Animas Airpark	$ 85,590.00	AC			0	0.0		0		$ -
										$ 63,651
										$ 2,818,033

Airpark Future Connector - Industrial Local Street

Unit	Unit Price	Unit	Depth	Width	Length	Quantity	LF	SF	CY	Cost
			Dimensions (Feet)							
Clearing and Grubbing	$ 1,700.00	AC			7034			457210		$ 17,843
Excavation	$ 5.10	CY	2.0	26.5	7034				13807	$ 70,418
Embankment	$ 7.80	CY	2.0	26.5	7034				13807	$ 107,698
Seed Mix and Mulch	$ 2.00	SY		16.0	7034			112544		$ 25,010
Asphalt	$ 216.00	CY	0.3	21.0	7034				1368	$ 295,428
Class 2 Base Course	$ 32.00	CY	0.7	27.0	7034				4689	$ 150,059
Class 6 Base Course	$ 37.00	CY	0.5	27.0	7034				3517	$ 130,129
Catch Curb and Gutter	$ 21.50	LF			7034	2.0	14068			$ 302,462
Concrete 6-Inch Trail	$ 55.00	SY		12.0	7034			84408		$ 515,827
Landscape Strip Includes Trees every 35' each side of road	$ 25.00	LF		16.0	7034		7034	112544		$ 175,850
Lane striping (4" thick stripe)	$ 2.00	LF			7034	1.0	7034			$ 14,068
Lighting (ls) (every 800')	$ 3,700.00	EA			7034	17.6				$ 65,065
Lighting Conduit	$ 4.50	LF			7034		14068			$ 63,306
Signage (ls) (assume 4'x4', every 500')	$ 6.45	SF			7034	8.0		128		$ 826
Storm Drain Inlets	$ 7,500.00	EA			7034	11.7	2			$ 87,925
Drainage Manhole (every 3000')	$ 3,300.00	EA			7034	2.3				$ 7,737
15" CMP Cross Drain	$ 60.00	LF			7034		0			$ -
18" CMP Cross Drain	$ 70.00	LF			7034		0			$ -
24" CMP Cross Drain	$ 80.00	LF			7034		160			$ 12,800
36" CMP Cross Drain	$ 85.00	LF			7034		0			$ -
15" CMP Storm drain	$ 55.00	LF			7034		0			$ -
18" CMP Storm drain	$ 65.00	LF			7034		3200			$ 208,000
24" CMP Storm drain	$ 75.00	LF			7034		0			$ -
Water Quality MS4 Ponds for Street Runoff	$ 3,200.00	AC			7034			168816		$ 12,402
Stormwater Management	$ 16.00	LF			7034		1000			$ 16,000
8" DIP waterline (includes service stubouts)	$ 60.00	LF			7034		7034			$ 422,040
Air Vac Valves (every 1400')	$ 3,500.00	EA			7034	5.0				$ 17,585
Fire Hydrant (every 400')	$ 3,500.00	EA			7034	2.5				$ 8,750
Common Dry Utility Trench (Power, Communications)	$ 14.00	LF			7034		7034			$ 98,476
Communications Conduit	$ 4.50	LF			7034		7034			$ 31,653
									Total	$ 2,857,356
Soft Costs										
Engineering Costs	15%									
Contingency	15%									
Mobilization	10%									
Traffic Control	2%									
Construction Staking	2%									
Record Drawings	1%									
Materials & Testing Control	2%									
Total	47%									$ 4,200,313
ROW Acquisition - Residential	$ 15,700.00	AC			7034	0.0		0		$ -
ROW Acquisition - Adobe Cliffs	$ 41,340.00	AC			7034	0.0		0		$ -
ROW Acquisition - Animas Airpark	$ 85,590.00	AC			7034	51.0		358734		$ 704,868
										$ 704,868
										$ 4,905,181

Airpark Future Connector - Dry Utilities

Gas - 4" Conduit & Trench	$ 12.00	LF			7034		7034			$ 84,408
Electric (Single Phase Power) - Line	$ 10.00	LF			0		0			$ -
Electric (Three Phase Power) - Line	$ 27.00	LF			7034		7034			$ 189,918
									Total	$ 274,326
Soft Costs										
Engineering Costs	15%									
Contingency	15%									
Mobilization	10%									
Traffic Control	2%									
Construction Staking	2%									
Record Drawings	1%									
Materials & Testing Control	2%									
Total	47%									**$ 403,259**

Waterline - Trunk (12" loop including Skylane Dr)											
Clearing and Grubbing	$	1,700.00	AC			3700			74000		$ 2,888
Seed Mix and Mulch	$	2.00	SY			3700			74000		$ 16,444
12" DIP waterline (includes service stubouts)	$	80.00	LF			10107		10106.81			$ 808,545
Air Vac Valves (every 1400')	$	3,500.00	EA			10107	7.2				$ 25,267
12" Pressure Reducing Valve	$	50,000.00	EA				1.0				$ 50,000
										Total Cost	$ 903,144
Soft Costs											
Engineering Costs		15%									
Contingency		15%									
Mobilization		10%									
Traffic Control		1%									
Construction Staking		2%									
Record Drawings		1%									
Materials & Testing Control		2%									
Total		46%									$ 1,318,591
ROW Acquisition - Residential	$	15,700.00	AC			3700	20.0		74000		$ 26,671
ROW Acquisition - Adobe Cliffs	$	41,340.00	AC			0	0.0		0		$ -
ROW Acquisition - Animas Airpark	$	85,590.00	AC			0	0.0		0		$ -
											$ 26,671
											$ 1,345,262
Sewerline - Trunk											
Clearing and Grubbing	$	1,700.00	AC			13784	20.0		275680		$ 10,759
Seed Mix and Mulch	$	2.00	SY			13784	10.0		137840		$ 30,631
Excavation	$	5.10	CY	0.0	18.0	13784				0	$ -
Embankment	$	7.80	CY	0.0	18.0	13784				0	$ -
Class 2 Base Course	$	32.00	CY	0.7	12.0	13784				4105	$ 131,346
Class 6 Base Course	$	37.00	CY	0.5	12.0	13784				3063	$ 113,335
4" HDPE Force Main (Cross Country)	$	42.00	LF			795		795			$ 33,390
4" HDPE Force Main (In Road , In Gravity Sewer Trench)	$	24.00	LF			8290		8290			$ 198,960
8" PVC Sewerline (Cross Country)	$	44.00	LF			12989		12989			$ 571,516
8" PVC Sewerline (In Road)	$	44.00	LF			11774		11774			$ 518,056
Lift Station	$	160,000.00	EA				2				$ 320,000
Boring Under River	$	350.00	LF		145	145		145			$ 50,750
Electric (Three Phase Power) - Line	$	27.00	LF			3279.0		3279	0		$ 88,533
										Total Cost	**$ 2,067,276**
Soft Costs											
Engineering Costs		15%									
Contingency		15%									
Mobilization		10%									
Traffic Control		1%									
Construction Staking		2%									
Record Drawings		1%									
Materials & Testing Control		2%									
Total		46%									$ 3,018,223
ROW Acquisition - Residential	$	15,700.00	AC				20.0		0		$ -
ROW Acquisition - Adobe Cliffs	$	41,340.00	AC			14947	20.0		298940		$ 283,705
ROW Acquisition - Animas Airpark	$	85,590.00	AC			580	20.0		11600		$ 22,793
											$ 306,497
											$ 3,324,721

Sewerline - Trunk (Future Connector)										
Clearing and Grubbing	$ 1,700.00	AC			0	20.0		0		$ -
Seed Mix and Mulch	$ 2.00	SY			0	10.0		0		$ -
Excavation	$ 5.10	CY	0.0	18.0	0				0	$ -
Embankment	$ 7.80	CY	0.0	18.0	0				0	$ -
Class 2 Base Course	$ 32.00	CY	0.7	12.0	0				0	$ -
Class 6 Base Course	$ 37.00	CY	0.5	12.0	0				0	$ -
4" HDPE Force Main (Cross Country)	$ 42.00	LF			0		0			$ -
4" HDPE Force Main (In Road , In Gravity Sewer Trench)	$ 24.00	LF			0		0			$ -
8" PVC Sewerline (Cross Country)	$ 44.00	LF			0		0			$ -
8" PVC Sewerline (In Road)	$ 44.00	LF			4223		4223			$ 185,812
Lift Station	$ 160,000.00	EA				0				$ -
Boring Under River	$ 350.00	LF		145	0		0			$ -
Electric (Three Phase Power) - Line	$ 27.00	LF			0.0		0	0		$ -
									Total Cost	**$ 185,812**
Soft Costs										
Engineering Costs	15%									
Contingency	15%									
Mobilization	10%									
Traffic Control	1%									
Construction Staking	2%									
Record Drawings	1%									
Materials & Testing Control	2%									
Total	46%									$ 271,286
ROW Acquisition - Residential	$ 15,700.00	AC			0	20.0		0		$ -
ROW Acquisition - Adobe Cliffs	$ 41,340.00	AC			0	20.0		0		$ -
ROW Acquisition - Animas Airpark	$ 85,590.00	AC			0	20.0		0		$ -
										$ -
										$ 271,286
Electric - System Upgrade										
LPEA Transmission line from Grandview to Riviera Bridge (not needed at this time but anticipated to be needed at about 50% buildout, LPEA board may pay)								Estimate from Dan Harms at LPEA		$ 450,000
Gas - System Upgrade										
Gas Line Regulator										$ 20,000
									Total Cost	**$ 20,000**
Soft Costs										
Engineering Costs	15%									
Contingency	15%									
Mobilization	10%									
Traffic Control	0%									
Construction Staking	2%									
Record Drawings	0%									
Materials & Testing Control	0%									
Total	42%									$ 28,400
ROW Acquisition - Residential	$ 15,700.00	AC			20	20.0		400		$ 144
ROW Acquisition - Adobe Cliffs	$ 41,340.00	AC			0	20.0		0		$ -
ROW Acquisition - Animas Airpark	$ 85,590.00	AC			0	20.0		0		$ -
										$ 144
										$ 28,544

OLD La Posta Road - Turn Lane (Old LP RD EB Left Decel at River Rd)

			Dimensions (Feet)							
Unit	**Unit Price**	**Unit**	**Depth**	**Width**	**Length**	**Quantity**	**LF**	**SF**	**CY**	**Cost**
Lane striping (4" thick stripe)	$ 2.00	LF			40	2.0	80			$ 160
Signage (ls) (assume 4'x4', every 500')	$ 6.45	SF			40	2.0		32		$ 206
									Total	$ 366
Soft Costs										
Engineering Costs	15%									
Contingency	15%									
Mobilization	10%									
Traffic Control	6%									
Construction Staking	2%									
Record Drawings	1%									
Materials & Testing Control	2%									
Total	51%									$ 553
ROW Acquisition - Residential	$ 15,700.00	AC			0	0.0		0		$ -
ROW Acquisition - Adobe Cliffs	$ 41,340.00	AC			0	0.0		0		$ -
ROW Acquisition - Animas Airpark	$ 85,590.00	AC			0	0.0		0		$ -
										$ -
										$ 553

La Posta Road - Turn Lane (River Rd WB RIGHT to OLD LP RD)

			Dimensions (Feet)							
Unit	**Unit Price**	**Unit**	**Depth**	**Width**	**Length**	**Quantity**	**LF**	**SF**	**CY**	**Cost**
Clearing and Grubbing	$ 1,700.00	AC		12.00	226			2712		$ 106
Embankment	$ 7.80	CY	2.0	12.0	226				201	$ 1,567
Excavation	$ 5.10	CY	2.0	12.0	226				201	$ 1,025
MSE Wall	$ 40.00	SF			226					$ -
Asphalt	$ 216.00	CY	0.3	12.0	226				25	$ 5,424
Class 2 Base Course	$ 32.00	CY	0.7	12.0	226				67	$ 2,143
Class 6 Base Course	$ 37.00	CY	0.5	12.0	226				50	$ 1,858
Lane striping (4" thick stripe)	$ 2.00	LF			300	1.0	300			$ 600
Water Quality MS4 Ponds for Street Runoff	$ 3,200.00	AC		12.0	226			2712		$ 199
									Total	**$ 12,922**
Soft Costs										
Engineering Costs	15%									
Contingency	15%									
Mobilization	10%									
Traffic Control	6%									
Construction Staking	2%									
Record Drawings	1%									
Materials & Testing Control	2%									
Total	51%									$ 19,512
ROW Acquisition - Residential	$ 15,700.00	AC			226	12.0		2712		$ 977
ROW Acquisition - Adobe Cliffs	$ 41,340.00	AC			0	12.0		0		$ -
ROW Acquisition - Animas Airpark	$ 85,590.00	AC			0	12.0		0		$ -
										$ 977
										$ 20,489

La Posta Road - Turn Lane (LP RD SB RIGHT to Airpark Dr)

Unit	Unit Price	Unit	Depth	Dimensions (Feet) Width	Length	Quantity	LF	SF	CY	Cost
Clearing and Grubbing	$ 1,700.00	AC		12.00	226			2712		$ 106
Embankment	$ 7.80	CY	2.0	12.0	226				201	$ 1,567
Excavation	$ 5.10	CY	2.0	12.0	226				201	$ 1,025
MSE Wall	$ 40.00	SF			226					$ -
Asphalt	$ 216.00	CY	0.3	12.0	226				25	$ 5,424
Class 2 Base Course	$ 32.00	CY	0.7	12.0	226				67	$ 2,143
Class 6 Base Course	$ 37.00	CY	0.5	12.0	226				50	$ 1,858
Lane striping (4" thick stripe)	$ 2.00	LF			300	1.0	300			$ 600
Water Quality MS4 Ponds for Street Runoff	$ 3,200.00	AC		12.0	226			2712		$ 199
									Total	**$ 12,922**
Soft Costs										
Engineering Costs	15%									
Contingency	15%									
Mobilization	10%									
Traffic Control	6%									
Construction Staking	2%									
Record Drawings	1%									
Materials & Testing Control	2%									
Total	51%									$ 19,512
ROW Acquisition - Residential	$ 15,700.00	AC			226	12.0		2712		$ 977
ROW Acquisition - Adobe Cliffs	$ 41,340.00	AC			0	12.0		0		$ -
ROW Acquisition - Animas Airpark	$ 85,590.00	AC			0	12.0		0		$ -
										$ 977
										$ 20,489

La Posta Road - Turn Lane (LP RD SB RIGHT to Road E)

Unit	Unit Price	Unit	Depth	Dimensions (Feet) Width	Length	Quantity	LF	SF	CY	Cost
Clearing and Grubbing	$ 1,700.00	AC		12.00	356			4272		$ 167
Embankment	$ 7.80	CY	2.0	12.0	356				316	$ 2,468
Excavation	$ 5.10	CY	2.0	12.0	356				316	$ 1,614
MSE Wall	$ 40.00	SF			356					$ -
Asphalt	$ 216.00	CY	0.3	12.0	356				40	$ 8,544
Class 2 Base Course	$ 32.00	CY	0.7	12.0	356				105	$ 3,375
Class 6 Base Course	$ 37.00	CY	0.5	12.0	356				79	$ 2,927
Lane striping (4" thick stripe)	$ 2.00	LF			300	1.0	300			$ 600
Water Quality MS4 Ponds for Street Runoff	$ 3,200.00	AC		12.0	356			4272		$ 314
									Total	**$ 20,009**
Soft Costs										
Engineering Costs	15%									
Contingency	15%									
Mobilization	10%									
Traffic Control	6%									
Construction Staking	2%									
Record Drawings	1%									
Materials & Testing Control	2%									
Total	51%									$ 30,214
ROW Acquisition - Residential	$ 15,700.00	AC			356	12.0		4272		$ 1,540
ROW Acquisition - Adobe Cliffs	$ 41,340.00	AC			0	12.0		0		$ -
ROW Acquisition - Animas Airpark	$ 85,590.00	AC			0	12.0		0		$ -
										$ 1,540
										$ 31,754

La Posta Road - Turn Lane (LP RD NB RIGHT ACEL AT KAYCEE LN)

			Dimensions (Feet)								
Unit	**Unit Price**	**Unit**	**Depth**	**Width**	**Length**	**Quantity**	**LF**	**SF**	**CY**	**Cost**	
Clearing and Grubbing	$ 1,700.00	AC		12.00	226			2712		$	106
Embankment	$ 7.80	CY	2.0	12.0	226				201	$	1,567
Excavation	$ 5.10	CY	2.0	12.0	226				201	$	1,025
MSE Wall	$ 40.00	SF			226					$	-
Asphalt	$ 216.00	CY	0.3	12.0	226				25	$	5,424
Class 2 Base Course	$ 32.00	CY	0.7	12.0	226				67	$	2,143
Class 6 Base Course	$ 37.00	CY	0.5	12.0	226				50	$	1,858
Lane striping (4" thick stripe)	$ 2.00	LF			300	1.0	300			$	600
Water Quality MS4 Ponds for Street Runoff	$ 3,200.00	AC		12.0	226			2712		$	199
									Total	**$**	**12,922**
Soft Costs											
Engineering Costs	15%										
Contingency	15%										
Mobilization	10%										
Traffic Control	6%										
Construction Staking	2%										
Record Drawings	1%										
Materials & Testing Control	2%										
Total	51%									$	19,512
ROW Acquisition - Residential	$ 15,700.00	AC			226	12.0		2712		$	977
ROW Acquisition - Adobe Cliffs	$ 41,340.00	AC			0	12.0		0		$	-
ROW Acquisition - Animas Airpark	$ 85,590.00	AC			0	12.0		0		$	-
										$	977
										$	**20,489**

Road A - Turn Lane (Rd A WB Right to LP Rd)

			Dimensions (Feet)								
Unit	**Unit Price**	**Unit**	**Depth**	**Width**	**Length**	**Quantity**	**LF**	**SF**	**CY**	**Cost**	
Clearing and Grubbing	$ 1,700.00	AC		16.00	100			1600		$	62
Excavation	$ 5.10	CY	2.0	16.0	100				119	$	604
Embankment	$ 7.80	CY	2.0	16.0	100				119	$	924
Seed Mix and Mulch	$ 2.00	SY			100			800		$	178
Asphalt	$ 216.00	CY	0.3	16.0	100				15	$	3,200
Class 2 Base Course	$ 32.00	CY	0.7	16.0	100				40	$	1,264
Class 6 Base Course	$ 37.00	CY	0.5	16.0	100				30	$	1,096
Lane striping (4" thick stripe)	$ 2.00	LF			100	1.0	100			$	200
Water Quality MS4 Ponds for Street Runoff	$ 3,200.00	AC		16.0	100			1900		$	140
									Total	$	7,669
Soft Costs											
Engineering Costs	15%										
Contingency	15%										
Mobilization	10%										
Traffic Control	1%										
Construction Staking	2%										
Record Drawings	1%										
Materials & Testing Control	2%										
Total	46%									$	11,197
ROW Acquisition - Residential	$ 15,700.00	AC			100	0.0		0		$	-
ROW Acquisition - Adobe Cliffs	$ 41,340.00	AC			100	16.0		1600		$	1,518
ROW Acquisition - Animas Airpark	$ 85,590.00	AC			100	0.0		0		$	-
										$	1,518
										$	**12,715**

Moose Lane - Turn Lane (Moose Ln WB Right to LP Rd)

Unit	Unit Price	Unit	Depth	Width	Length	Quantity	LF	SF	CY	Cost
			Dimensions (Feet)							
Clearing and Grubbing	$ 1,700.00	AC		16.00	100			1600		$ 62
Excavation	$ 5.10	CY	2.0	16.0	100				119	$ 604
Embankment	$ 7.80	CY	2.0	16.0	100				119	$ 924
Seed Mix and Mulch	$ 2.00	SY			100			800		$ 178
Asphalt	$ 216.00	CY	0.3	16.0	100				15	$ 3,200
Class 2 Base Course	$ 32.00	CY	0.7	16.0	100				40	$ 1,264
Class 6 Base Course	$ 37.00	CY	0.5	16.0	100				30	$ 1,096
Lane striping (4" thick stripe)	$ 2.00	LF			100	1.0	100			$ 200
Water Quality MS4 Ponds for Street Runoff	$ 3,200.00	AC		16.0	100			1900		$ 140
									Total	$ 7,669
Soft Costs										
Engineering Costs	15%									
Contingency	15%									
Mobilization	10%									
Traffic Control	1%									
Construction Staking	2%									
Record Drawings	1%									
Materials & Testing Control	2%									
Total	46%									$ 11,197
ROW Acquisition - Residential	$ 15,700.00	AC			100	0.0		0		$ -
ROW Acquisition - Adobe Cliffs	$ 41,340.00	AC			100	16.0		1600		$ 1,518
ROW Acquisition - Animas Airpark	$ 85,590.00	AC			100	0.0		0		$ -
										$ 1,518
										$ 12,715

Kaycee Lane - Turn Lane (KC Ln WB Right to LP Rd)

Unit	Unit Price	Unit	Depth	Width	Length	Quantity	LF	SF	CY	Cost
			Dimensions (Feet)							
Clearing and Grubbing	$ 1,700.00	AC		16.00	300			4800		$ 187
Excavation	$ 5.10	CY	2.0	16.0	300				356	$ 1,813
Embankment	$ 7.80	CY	2.0	16.0	300				356	$ 2,773
Seed Mix and Mulch	$ 2.00	SY			300			2400		$ 533
Asphalt	$ 216.00	CY	0.3	16.0	300				44	$ 9,600
Class 2 Base Course	$ 32.00	CY	0.7	16.0	300				119	$ 3,793
Class 6 Base Course	$ 37.00	CY	0.5	16.0	300				89	$ 3,289
Lane striping (4" thick stripe)	$ 2.00	LF			300	1.0	300			$ 600
Water Quality MS4 Ponds for Street Runoff	$ 3,200.00	AC		16.0	300			5700		$ 419
									Total	$ 23,008
Soft Costs										
Engineering Costs	15%									
Contingency	15%									
Mobilization	10%									
Traffic Control	1%									
Construction Staking	2%									
Record Drawings	1%									
Materials & Testing Control	2%									
Total	46%									$ 33,591
ROW Acquisition - Residential	$ 15,700.00	AC			300	0.0		0		$ -
ROW Acquisition - Adobe Cliffs	$ 41,340.00	AC			300	16.0		4800		$ 4,555
ROW Acquisition - Animas Airpark	$ 85,590.00	AC			300	0.0		0		$ -
										$ 4,555
										$ 38,146

Kaycee Lane - Turn Lane (KC Ln WB Left to LP Rd)

			Dimensions (Feet)							
Unit	**Unit Price**	**Unit**	**Depth**	**Width**	**Length**	**Quantity**	**LF**	**SF**	**CY**	**Cost**
Clearing and Grubbing	$ 1,700.00	AC		16.00	40			640		$ 25
Excavation	$ 5.10	CY	2.0	16.0	40				47	$ 242
Embankment	$ 7.80	CY	2.0	16.0	40				47	$ 370
Seed Mix and Mulch	$ 2.00	SY			40			320		$ 71
Asphalt	$ 216.00	CY	0.3	16.0	40				6	$ 1,280
Class 2 Base Course	$ 32.00	CY	0.7	16.0	40				16	$ 506
Class 6 Base Course	$ 37.00	CY	0.5	16.0	40				12	$ 439
Lane striping (4" thick stripe)	$ 2.00	LF			40	1.0	40			$ 80
Water Quality MS4 Ponds for Street Runoff	$ 3,200.00	AC		16.0	40			760		$ 56
									Total	$ 3,068
Soft Costs										
Engineering Costs	15%									
Contingency	15%									
Mobilization	10%									
Traffic Control	1%									
Construction Staking	2%									
Record Drawings	1%									
Materials & Testing Control	2%									
Total	46%									$ 4,479
ROW Acquisition - Residential	$ 15,700.00	AC			40	0.0		0		$ -
ROW Acquisition - Adobe Cliffs	$ 41,340.00	AC			40	16.0		640		$ 607
ROW Acquisition - Animas Airpark	$ 85,590.00	AC			40	0.0		0		$ -
										$ 607
										$ 5,086

Airpark Drive - Turn Lane (Airpark Dr EB Left to LP Rd)

			Dimensions (Feet)							
Unit	**Unit Price**	**Unit**	**Depth**	**Width**	**Length**	**Quantity**	**LF**	**SF**	**CY**	**Cost**
Clearing and Grubbing	$ 1,700.00	AC			300			4800		$ 187
Excavation	$ 5.10	CY	2.0	16.0	300				356	$ 1,813
Embankment	$ 7.80	CY	2.0	16.0	300				356	$ 2,773
Seed Mix and Mulch	$ 2.00	SY			300			2400		$ 533
Asphalt	$ 216.00	CY	0.3	16.0	300				44	$ 9,600
Class 2 Base Course	$ 32.00	CY	0.7	16.0	300				119	$ 3,793
Class 6 Base Course	$ 37.00	CY	0.5	16.0	300				89	$ 3,289
Catch Curb and Gutter	$ 21.50	LF			300	2.0	600			$ 12,900
Lane striping (4" thick stripe)	$ 2.00	LF			300	1.0	300			$ 600
Signage (ls) (assume 4'x4', every 500')	$ 6.45	SF			300	2.0		32		$ 206
Storm Drain Inlets	$ 7,500.00	EA			300	0.5	2			$ 3,750
Drainage Manhole (every 3000')	$ 3,300.00	EA			300	0.1				$ 330
Water Quality MS4 Ponds for Street Runoff	$ 3,200.00	AC		16.0	300			5700		$ 419
Stormwater Management	$ 16.00	LF			300		1000			$ 16,000
									Total	$ 56,194
Soft Costs										
Engineering Costs	15%									
Contingency	15%									
Mobilization	10%									
Traffic Control	1%									
Construction Staking	2%									
Record Drawings	1%									
Materials & Testing Control	2%									
Total	46%									$ 82,043
ROW Acquisition - Residential	$ 15,700.00	AC			300	12.0		3600		$ 1,298
ROW Acquisition - Adobe Cliffs	$ 41,340.00	AC			300	0.0		0		$ -
ROW Acquisition - Animas Airpark	$ 85,590.00	AC			300	0.0		0		$ -
										$ 1,298
										$ 83,341

Airpark Drive - Turn Lane (Airpark Dr EB Right to LP Rd)

Unit	Unit Price	Unit	Depth	Width	Length	Quantity	LF	SF	CY	Cost
			Dimensions (Feet)							
Clearing and Grubbing	$ 1,700.00	AC			40			640		$ 25
Excavation	$ 5.10	CY	2.0	16.0	40				47	$ 242
Embankment	$ 7.80	CY	2.0	16.0	40				47	$ 370
Seed Mix and Mulch	$ 2.00	SY			40			320		$ 71
Asphalt	$ 216.00	CY	0.3	16.0	40				6	$ 1,280
Class 2 Base Course	$ 32.00	CY	0.7	16.0	40				16	$ 506
Class 6 Base Course	$ 37.00	CY	0.5	16.0	40				12	$ 439
Catch Curb and Gutter	$ 21.50	LF			40	2.0	80			$ 1,720
Lane striping (4" thick stripe)	$ 2.00	LF			40	1.0	40			$ 80
Signage (ls) (assume 4'x4', every 500')	$ 6.45	SF			40	2.0		32		$ 206
Storm Drain Inlets	$ 7,500.00	EA			40	0.1	2			$ 500
Drainage Manhole (every 3000')	$ 3,300.00	EA			40	0.0				$ 44
Water Quality MS4 Ponds for Street Runoff	$ 3,200.00	AC		16.0	40			760		$ 56
Stormwater Management	$ 16.00	LF			40		1000			$ 16,000
									Total	$ 21,538
Soft Costs										
Engineering Costs	15%									
Contingency	15%									
Mobilization	10%									
Traffic Control	1%									
Construction Staking	2%									
Record Drawings	1%									
Materials & Testing Control	2%									
Total	46%									$ 31,446
ROW Acquisition - Residential	$ 15,700.00	AC			40	12.0		480		$ 173
ROW Acquisition - Adobe Cliffs	$ 41,340.00	AC			40	0.0		0		$ -
ROW Acquisition - Animas Airpark	$ 85,590.00	AC			40	0.0		0		$ -
										$ 173
										$ 31,619

Road B - Turn Lane (Rd B WB Right to LP Rd)

Unit	Unit Price	Unit	Depth	Width	Length	Quantity	LF	SF	CY	Cost
			Dimensions (Feet)							
Clearing and Grubbing	$ 1,700.00	AC		16.00	100			1600		$ 62
Excavation	$ 5.10	CY	2.0	16.0	100				119	$ 604
Embankment	$ 7.80	CY	2.0	16.0	100				119	$ 924
Seed Mix and Mulch	$ 2.00	SY			100			800		$ 178
Asphalt	$ 216.00	CY	0.3	16.0	100				15	$ 3,200
Class 2 Base Course	$ 32.00	CY	0.7	16.0	100				40	$ 1,264
Class 6 Base Course	$ 37.00	CY	0.5	16.0	100				30	$ 1,096
Lane striping (4" thick stripe)	$ 2.00	LF			100	1.0	100			$ 200
Water Quality MS4 Ponds for Street Runoff	$ 3,200.00	AC		16.0	100			1900		$ 140
									Total	$ 7,669
Soft Costs										
Engineering Costs	15%									
Contingency	15%									
Mobilization	10%									
Traffic Control	1%									
Construction Staking	2%									
Record Drawings	1%									
Materials & Testing Control	2%									
Total	46%									$ 11,197
ROW Acquisition - Residential	$ 15,700.00	AC			100	0.0		0		$ -
ROW Acquisition - Adobe Cliffs	$ 41,340.00	AC			100	16.0		1600		$ 1,518
ROW Acquisition - Animas Airpark	$ 85,590.00	AC			100	0.0		0		$ -
										$ 1,518
										$ 12,715

Road F - Turn Lane (Rd F WB Right to LP Rd)

			Dimensions (Feet)							
Unit	**Unit Price**	**Unit**	**Depth**	**Width**	**Length**	**Quantity**	**LF**	**SF**	**CY**	**Cost**
Clearing and Grubbing	$ 1,700.00	AC		16.00	100			1600		$ 62
Excavation	$ 5.10	CY	2.0	16.0	100				119	$ 604
Embankment	$ 7.80	CY	2.0	16.0	100				119	$ 924
Seed Mix and Mulch	$ 2.00	SY			100			800		$ 178
Asphalt	$ 216.00	CY	0.3	16.0	100				15	$ 3,200
Class 2 Base Course	$ 32.00	CY	0.7	16.0	100				40	$ 1,264
Class 6 Base Course	$ 37.00	CY	0.5	16.0	100				30	$ 1,096
Lane striping (4" thick stripe)	$ 2.00	LF			100	1.0	100			$ 200
Water Quality MS4 Ponds for Street Runoff	$ 3,200.00	AC		16.0	100			1900		$ 140
									Total	$ 7,669
Soft Costs										
Engineering Costs	15%									
Contingency	15%									
Mobilization	10%									
Traffic Control	1%									
Construction Staking	2%									
Record Drawings	1%									
Materials & Testing Control	2%									
Total	46%									$ 11,197
ROW Acquisition - Residential	$ 15,700.00	AC			100	0.0		0		$ -
ROW Acquisition - Adobe Cliffs	$ 41,340.00	AC			100	16.0		1600		$ 1,518
ROW Acquisition - Animas Airpark	$ 85,590.00	AC			100	0.0		0		$ -
										$ 1,518
										$ 12,715

Road D - Turn Lane (Rd D North, Road D at Rd E, Rd D South WB Right to LP Rd)

			Dimensions (Feet)							
Unit	**Unit Price**	**Unit**	**Depth**	**Width**	**Length**	**Quantity**	**LF**	**SF**	**CY**	**Cost**
Clearing and Grubbing	$ 1,700.00	AC		16.00	250			4000		$ 156
Excavation	$ 5.10	CY	2.0	16.0	250				296	$ 1,511
Embankment	$ 7.80	CY	2.0	16.0	250				296	$ 2,311
Seed Mix and Mulch	$ 2.00	SY			250			2000		$ 444
Asphalt	$ 216.00	CY	0.3	16.0	250				37	$ 8,000
Class 2 Base Course	$ 32.00	CY	0.7	16.0	250				99	$ 3,160
Class 6 Base Course	$ 37.00	CY	0.5	16.0	250				74	$ 2,741
Lane striping (4" thick stripe)	$ 2.00	LF			250	1.0	250			$ 500
Water Quality MS4 Ponds for Street Runoff	$ 3,200.00	AC		16.0	250			4750		$ 349
									Total	$ 19,173
Soft Costs										
Engineering Costs	15%									
Contingency	15%									
Mobilization	10%									
Traffic Control	1%									
Construction Staking	2%									
Record Drawings	1%									
Materials & Testing Control	2%									
Total	46%									$ 27,993
ROW Acquisition - Residential	$ 15,700.00	AC			250	0.0		0		$ -
ROW Acquisition - Adobe Cliffs	$ 41,340.00	AC			250	16.0		4000		$ 3,796
ROW Acquisition - Animas Airpark	$ 85,590.00	AC			250	0.0		0		$ -
										$ 3,796
										$ 31,789

Road E - Turn Lane (Rd E EB Left to LP Rd)

			Dimensions (Feet)								
Unit	**Unit Price**	**Unit**	**Depth**	**Width**	**Length**	**Quantity**	**LF**	**SF**	**CY**	**Cost**	
Clearing and Grubbing	$ 1,700.00	AC		16.00	100			1600		$	62
Excavation	$ 5.10	CY	2.0	16.0	100				119	$	604
Embankment	$ 7.80	CY	2.0	16.0	100				119	$	924
Seed Mix and Mulch	$ 2.00	SY			100			800		$	178
Asphalt	$ 216.00	CY	0.3	16.0	100				15	$	3,200
Class 2 Base Course	$ 32.00	CY	0.7	16.0	100				40	$	1,264
Class 6 Base Course	$ 37.00	CY	0.5	16.0	100				30	$	1,096
Lane striping (4" thick stripe)	$ 2.00	LF			100	1.0	100			$	200
Water Quality MS4 Ponds for Street Runoff	$ 3,200.00	AC		16.0	100			1900		$	140
									Total	$	7,669
Soft Costs											
Engineering Costs	15%										
Contingency	15%										
Mobilization	10%										
Traffic Control	1%										
Construction Staking	2%										
Record Drawings	1%										
Materials & Testing Control	2%										
Total	46%									$	11,197
ROW Acquisition - Residential	$ 15,700.00	AC			100	0.0		0		$	-
ROW Acquisition - Adobe Cliffs	$ 41,340.00	AC			100	16.0		1600		$	1,518
ROW Acquisition - Animas Airpark	$ 85,590.00	AC			100	0.0		0		$	-
										$	1,518
										$	**12,715**

Intersection of La Posta Road and River Road

			Dimensions (Feet)								
Unit	**Unit Price**	**Unit**	**Depth**	**Width**	**Length**	**Quantity**	**LF**	**SF**	**CY**	**Cost**	
Concrete Footing	$ 3,000.00	Each				3.0		0		$	9,000
Signal Head Backplates	$ 165.00	Each				6.0			0	$	990
Programmable Traffic Signal Face	$ 1,000.00	Each				6.0			0	$	6,000
Traffic Signal-Light Pile Steel (65 foot mast arm)	$ 20,000.00	EAch				4.0				$	80,000
Traffic Signal Vehicle Detector	$ 1,200.00	Each				8.0				$	9,600
Traffic Signal Controller Cabinet	$ 14,000.00	Each				1.0				$	14,000
									Total	$	119,590
Soft Costs											
Engineering Costs	15%										
Contingency	15%										
Mobilization	10%										
Traffic Control	6%										
Construction Staking	2%										
Record Drawings	1%										
Materials & Testing Control	2%										
Total	51%									$	180,581
ROW Acquisition - Residential	$ 15,700.00	AC			0	0.0		0		$	-
ROW Acquisition - Adobe Cliffs	$ 41,340.00	AC			0	0.0		0		$	-
ROW Acquisition - Animas Airpark	$ 85,590.00	AC			0	0.0		0		$	-
										$	-
										$	**180,581**

Intersection of La Posta Road and Kaycee Ln/Airpark Dr

Unit	Unit Price	Unit	Depth	Dimensions (Feet) Width	Length	Quantity	LF	SF	CY	Cost
Concrete Footing	$ 3,000.00	Each				4.0		0		$ 12,000
Signal Head Backplates	$ 165.00	Each				8.0			0	$ 1,320
Programmable Traffic Signal Face	$ 1,000.00	Each				8.0			0	$ 8,000
Traffic Signal-Light Pile Steel (65 foot mast arm)	$ 20,000.00	EAch				4.0				$ 80,000
Traffic Signal Vehicle Detector	$ 1,200.00	Each				8.0				$ 9,600
Traffic Signal Controller Cabinet	$ 14,000.00	Each				1.0				$ 14,000
									Total	$ 124,920
Soft Costs										
Engineering Costs	15%									
Contingency	15%									
Mobilization	10%									
Traffic Control	6%									
Construction Staking	2%									
Record Drawings	1%									
Materials & Testing Control	2%									
Total	51%									$ 188,629
ROW Acquisition - Residential	$ 15,700.00	AC			0	0.0		0		$ -
ROW Acquisition - Adobe Cliffs	$ 41,340.00	AC			0	0.0		0		$ -
ROW Acquisition - Animas Airpark	$ 85,590.00	AC			0	0.0		0		$ -
										$ -
										$ 188,629

La Posta Road - 10' mulituse sidewalk (paid for by City of Durango)

Unit	Unit Price	Unit	Depth	Dimensions (Feet) Width	Length	Quantity	LF	SF	CY	Cost
Pedestrian Railing	$ 115.00	LF			12153		660			$ 75,900
Concrete 6-Inch Trail	$ 55.00	SY		12.0	12153			145836		$ 891,220
									Total	**$ 967,120**
Soft Costs										
Engineering Costs	15%									
Contingency	15%									
Mobilization	10%									
Traffic Control	6%									
Construction Staking	2%									
Record Drawings	1%									
Materials & Testing Control	2%									
Total	51%									$ 1,460,351
ROW Acquisition - Residential	$ 15,700.00	AC			0	50.0		0		$ -
ROW Acquisition - Adobe Cliffs	$ 41,340.00	AC			0	50.0		0		$ -
ROW Acquisition - Animas Airpark	$ 85,590.00	AC			0	0.0		0		$ -
										$ -
										$ 1,460,351

APPENDIX C

LA POSTA ROAD AREA DEVELOPMENT TRAFFIC IMPACT STUDY

Original Date:
11/12/2012

Prepared by
Russell Planning and Engineering, Inc.
934 Main Ave. Unit C
Durango, CO 81301

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Exhibits

Exhibit A Background Traffic Volumes

Exhibit B Project Traffic Volumes

Exhibit C Project + Background Traffic Volumes

Exhibit D Other Approved Development Traffic Volumes

Exhibit E Tabulated Traffic Volumes

Exhibit F Design Workshop Build-out Projections

Exhibit G Proposed Development Traffic Volumes

Exhibit H Proposed Improvements Map

Appendices

Appendix 1 Animas Glacier Gravel Proposed Access Improvements

Appendix 2 Synchro Reports

EXECUTIVE SUMMARY

The purpose of this traffic study is to evaluate the La Posta Road Area Plan in La Plata County from a traffic circulation and safety standpoint. The project area consists of approximately 2,000 acres of land at the south end of the City of Durango limits. The majority of existing traffic in the study area is either going to or coming from the following locations:

- Bondad: via CR 213 (approx. 12 miles south of study area)
- HWY 550/160: via La Posta Road to River Road (approx. 2000ft north of study area)
- Bodo Park: via La Posta Road (approx. 1.5 miles north of study area)

Five critical intersections have been identified for the project:

- River Road and US Highway 550/160 (existing intersection)
- River Road and Escalante Avenue (existing intersection)
- River Road and La Posta Road (CR 213) (existing intersection)
- La Posta Road and Kaycee Lane / Airpark Drive (existing intersection)
- Airpark Drive and Skylane Drive (existing intersection)

Other intersections contained in or built with the project include the intersections of La Posta road with:

- Road A (proposed new intersection)
- Moose lane (existing intersection)
- Road B (proposed new intersection)
- Jackrabbit Trail (existing intersection)
- Road F (proposed new intersection)
- Road D (North Access) (proposed new intersection)
- Road E / Road D (proposed new intersection)
- Road D (South Access) (proposed new intersection)

Study objectives include documentation of background traffic conditions, an evaluation of project generated traffic, and analysis of traffic circulation and loading.

Principal Findings

It should be noted that improvements outlined in this report have been determined from a generalized area plan with assumed build-out projections and road layouts. It is recommended that prior to installing improvements, a detailed traffic analysis be performed for applicable traffic patterns based on actual development and traffic patterns. Below is a list of anticipated improvements at the five critical intersections:

- **River Road and Highway 550/160 & River Road and Escalante Drive**
  The intersections of River Road with Escalante Avenue and Highway 550 / 160 have already been identified by CDOT and the City of Durango as needing improvements. These improvements are not anticipated to be a part of the Area Plan District Costs
  .
- **River Road and La Posta Road (CR 213)**
  The intersection of River Road and La Posta Road will need additional lanes by 2024 and will need a signal or other improvements by 2029. Currently, the La Posta Road and River Road intersection appears to be operating at an acceptable Level of Service. The

functionality of this intersection will become more critical in the future once HWY 160/550 becomes so congested that La Posta Road becomes a more attractive alternate route. During previous discussions, a roundabout was proposed as a possible alternative at this intersection to relieve congestion.

- **La Posta Road and Kaycee Lane/Airpark Drive** will need additional lanes and a signal or other improvements by 2024. During previous discussions, a roundabout was proposed as a possible alternative at this intersection to relieve congestion.

- **Airpark Drive and Skylane Drive** will function with full projected 2034 traffic loading in 2034 with no improvements.

Additional findings:

- **La Posta Road and Road A, Moose Lane, and Road B**
  Warrant analysis indicated that additional turn lanes and a signal may be needed due to high minor approach volumes. Since the majority of the minor approach traffic is entering or exiting to and from the north, it is likely that a signal will not be necessary to achieve acceptable LOS.

- **La Posta Road and Road D/Road E**
  Warrant analysis indicated that additional turn lanes and a signal may be needed due to high minor approach volumes. This intersection in particular will need further assessment in order to accurately determine an intersection configuration appropriate to development. For example, if the intersection at La Posta Road and Road E is signalized, the northern and southern access points to the Road D area may become minor access points and require smaller scale improvements.

1) *Introduction*

Site & Study Area

The purpose of this traffic study is to evaluate development within the La Posta Road Area Plan in La Plata County from a traffic circulation and safety standpoint. The project area consists of approximately 2,000 acres of land at the south end of the City of Durango limits.

The Project Area is located in the La Plata County Florida Mesa planning area, south of downtown Durango, along the Animas River and County Road 213 (referred to as "La Posta Road" or "CR 213"). The area is bound on the north, east and south by the Animas River. Private and public land forms the eastern boundary. Just south of the area, La Posta Road travels through sovereign lands of the Southern Ute Tribe.

The Project Area has been the landing zone for light industrial and commercial development in La Plata County because of the lack of available space for such expansion and growth elsewhere in the County. All of the development in the area has been occurring reactive to market demand and without a strategic direction or plan for where and how development should occur. As a result, the mixture and placement of uses has created potential land use conflicts. Most of the light industrial and commercial development is concentrated on the top of the mesa and is

known as Animas Air Park, the location of the private Animas Air Park runway. Property east of La Posta Road and close to the River Road/US 160 intersection has also developed as light industrial and commercial. At the time of this study, a proposal for a gravel pit on the southern portion of the site has been discussed and included as part of this analysis. The existing commercial and light industrial properties have not maximized the development potential in part because of the infrastructure limitations and the lack of traditional zoning in the area. Two large-lot single family residential subdivisions that total 36 units are positioned along La Posta Road and along the river, Adobe Cliffs and Deer Island. Approximately 1,036 acres (47 percent) of the area's land is vacant and assessed as agricultural property today.

2) Existing and Proposed Roadways

The majority of existing traffic in the study area is either going to or coming from the following locations:

- Bondad: via CR 213 (approx. 12 miles south of study area)
- HWY 550/160: via La Posta Road to River Road (approx. 2000ft north of study area)
- Bodo Park: via La Posta Road (approx. 1.5 miles north of study area)

Five critical intersections have been identified for the project:

- River Road and US Highway 550/160 (existing intersection)
- River Road and Escalante Avenue (existing intersection)
- River Road and La Posta Road (CR 213) (existing intersection)
- La Posta Road and Kaycee Lane / Airpark Drive (existing intersection)
- Airpark Drive and Skylane Drive (existing intersection)

Other intersections contained in or built with the project include the intersections of La Posta road with:

- Road A (proposed new intersection)
- Moose lane (existing intersection)
- Road B (proposed new intersection)
- Jackrabbit Trail (existing intersection)
- Road F (proposed new intersection)
- Road D (North Access) (proposed new intersection)
- Road E / Road D (proposed new intersection)
- Road D (South Access) (proposed new intersection)

See Exhibit H for a conceptual transportation improvements layout.

State Highway 550 / 160: is located less than a half mile to the north of the study area. This is a regional highway facility that extends as far east as Interstate 25 (intersection at Walsenburg) and extends to the west through the Four Corners area of Colorado. US 550/160 provides a connection between Durango and its surrounding communities such as Bayfield, Gem Village, and Ignacio (via SH 172). The highway is classified as urban Regional Highway (NRA) with a speed of 50 mph. The stretch of Highway through Durango is 4 lanes wide with approximately 26,000 ADT per day. Per the City of Durango adopted TRIP 2030 study, it is predicted that the 2030 traffic volumes will cause congestion along the highway starting at the north end of Durango all

the way to Three Springs east of Durango with Levels of Service ranging between E and F. The following options were proposed in the TRIP 2030 study to help relieve congestion in the corridor in this area:

- Widen to six lane expressway: widen from 4 to 6 lanes with limited at grade access
- Four lane freeway: remain 4 lanes with grade separated intersections
- Six lane freeway: widen from 4 to 6 lanes with grade separated intersections and HOV lanes

River Road provides access over the Animas River via the recently constructed River Road Bridge. The west end of River Road intersects with La Posta Road and extends east across the bridge to its intersection with Highway 550/160. River Road is two lanes wide and has been assigned a Colorado Department of Transportation (CDOT) access code classification of a Rural Highway (R-B) for this study. Per La Plata County Data, River Road currently serves over 3000 ADT. The TRIP 2030 study predicts 17,000 ADT on River Road by 2030 and classifies the road as a Minor Arterial.

River Road Bridge is two lanes wide with bicycle/pedestrian lanes on each side. Future improvements to the intersection of Escalante Drive and River Road, as well as increased traffic volumes may require that the bridge be expanded to three lanes in the future. The bicycle/pedestrian lanes would then likely be rebuilt as a separate bridge structure.

Escalante Avenue intersects River Road between the River Road Bridge and Highway 550 / 160. This intersection has been analyzed to verify functionality as it is in close proximity to the project access point in Highway 550 / 160 and the River Road Bridge. In addition, properties along Escalante Avenue have been approved for significant development, specifically the 'Rocket' development, for which traffic volume adjustments have been made (see Exhibits D and E). Escalante Avenue has been analyzed only as a leg of its intersection with River Road.

La Posta Road (CR 213) is the only entrance/exit into the study area, running north to south, through the study area. It is a two lane paved county road with a speed limit of 40 mph. The TRIP 2030 study identifies La Posta Road as a Collector. La Posta Road begins just south of Bodo Park where the west frontage road of Highway 550/160 transitions to a rural highway which continues south to the study area, and on to Bondad where it ends at the intersection with Highway 550. Per La Plata County data, La Posta Road serves roughly 1400 ADT per day, south of Animas Airpark driveway. The TRIP 2030 study predicts 12,000 ADT on La Posta Road by 2030.

If the City were to annex the study area, it is anticipated that La Posta Road would have to be improved to a collector road, 44 foot wide (2-12-foot driving lanes, 1-12-foot turn lane, two bike lanes) plus a sidewalk on at least one side. La Posta Road has been assigned a Colorado Department of Transportation (CDOT) access code classification of a Rural Highway (R-B) for this study.

Kaycee Lane is an existing 34' wide gravel road section that services a couple existing small businesses. The gravel road is considered to be in good condition. Kaycee Lane has been assigned a Colorado Department of Transportation (CDOT) access code classification of a Frontage Road (F-R) for this study.

Airpark Drive is the main access to the Animas Airpark. No secondary access is currently available to Animas Airpark landowners. For additional development to occur in the Airpark, a secondary access would be required. Airpark Drive has been assigned a Colorado Department of Transportation (CDOT) access code classification of a Frontage Road (F-R) for this study.

Skylane Drive is the main road running north to south in the Animas Airpark. Currently it is a 24' wide paved road with minimal shouldering. Skylane Drive has been assigned a Colorado Department of Transportation (CDOT) access code classification of a Frontage Road (F-R) for this study.

Other Minor Roadways: all minor project roadways have been assigned a Colorado Department of Transportation (CDOT) access code classification of a Frontage Road (F-R) for this study.
Moose Lane is an existing 24' wide gravel road that services one business. The gravel road is considered to be in good condition.
Jackrabbit Trail is an existing gravel road that services one residential subdivision. The subdivision currently holds 12 single family residences and 16 empty lots. Build-out on vacant lots was added into La Posta District Traffic.
Road A is a proposed 24' City Street providing access to projected development within the La Posta Road Area Plan.
Road B is a proposed 24' City Street providing access to projected development within the La Posta Road Area Plan.
Road F is a proposed 24' City Street providing access to projected development within the La Posta Road Area Plan.
Road D is a proposed 40' City Street with on-street parking providing access to projected development within the La Posta Road Area Plan.
Road E is a proposed 25' City Street providing secondary access to the Animas Airpark.

See Exhibit H for a conceptual transportation improvements layout.

3) Existing and Projected Traffic Volumes

Existing Daily, AM & PM Peak Hour Traffic Volumes

To determine the existing traffic volumes at the intersection of River Road and La Posta Road, Russell Engineering performed traffic counts for 4 hours between 7:00-9:00 a.m. and 4:00-6:00 p.m. on Tuesday, July 3rd, 2012. For all other background traffic loading, data compiled from previous RPE Traffic studies submitted to the County were used. Study sources used for intersection data are cited in Exhibits A and E. Expected background traffic in future years was calculated by applying a yearly growth factor to existing traffic counts. An annual growth rate of 2.01% was applied to traffic loading on Highway 550 / 160, and a rate of 1.04% was applied to all other traffic loads. Exhibits A and E show calculated background traffic volumes.

Traffic anticipated due to other significant development near the project was added into projected traffic volumes. The Animas Glacier Gravel Pit and Rocket developments have both received County and City planning approval and are expected to impact traffic within the scope of this project. Approved projected traffic from these projects was added to traffic volumes beginning in 2019. See Exhibits A, D, and E for detailed traffic counts and projections.

4) Project Trip Generation and Distribution

Trip generation represents the amount of traffic generated by a development. A trip is defined as a one-way vehicle turning movement with either the origin or destination within the proposed development. The Trip Generation Manual, also known as the ITE Manual, by The Institute of Transportation Engineers (ITE), 6th Edition was used to estimate the proposed traffic from the development. ITE generation rates were applied to project build-out projections provided by Design Workshop (see Exhibits B, F, and G). No adjustments were made for internal trip capture within the project.

Development Land Use Descriptions

The project area consists of approximately 2,000 acres of land at the south end of the City of Durango limits. Based on information project build-out projections provided by Design Workshop, the Institute of Traffic Engineer's Trip Generation Manual (6th Edition) was used to predict traffic flows generated from the project. Table 1 shows the generation rates used in applying traffic generation to projected build-out. Applying these trips onto project infrastructure is outlined in the next section.

TRIP GENERATION RATE CALCULATIONS 6TH EDITION ITE MANUAL

	Trips / Unit				PEAK HOUR SPLITS				ITE #
	Peak Hour		DAILY ADT		AM		PM		
	AM	PM			% IN	% OUT	% IN	% OUT	710
OFFICE	1.56	1.49	11.01	PER KSF	88%	12%	17%	83%	
	Trips / Unit				PEAK HOUR SPLITS				
	Peak Hour		DAILY ADT		AM		PM		
	AM	PM			% IN	% OUT	% IN	% OUT	150
WAREHOUSE	0.57	0.61	4.96	PER KSF	59%	41%	8%	92%	
	Trips / Unit				PEAK HOUR SPLITS				
	Peak Hour		DAILY ADT		AM		PM		
	AM	PM			% IN	% OUT	% IN	% OUT	110
LIGHT INDUSTRIAL	1.01	1.08	6.97	PER KSF	90%	10%	14%	86%	
	Trips / Unit				PEAK HOUR SPLITS				
	Peak Hour		DAILY ADT		AM		PM		
	AM	PM			% IN	% OUT	% IN	% OUT	130
INDUSTRIAL PARK	0.82	0.86	6.96	PER KSF	86%	14%	21%	79%	
	Trips / Unit				PEAK HOUR SPLITS				
	Peak Hour		DAILY ADT		AM		PM		
	AM	PM			% IN	% OUT	% IN	% OUT	814
RETAIL	6.41	4.93	40.67	PER KSF	48%	52%	57%	43%	
	Trips / Unit				PEAK HOUR SPLITS				
	Peak Hour		DAILY ADT		AM		PM		
	AM	PM			% IN	% OUT	% IN	% OUT	210

RESIDENTIAL SINGLE FAMILY RESIDENCE	0.77	1.02	9.57	PER DU	25%	75%	64%	36%	
	Trips / Unit				**PEAK HOUR SPLITS**				
	Peak Hour		**DAILY ADT**		**AM**		**PM**		
	AM	PM			% IN	% OUT	% IN	% OUT	230
RESIDENTIAL CONDOMINIUM / TOWNHOME	0.44	0.54	5.86	PER DU	18%	82%	65%	35%	

Table 1 – Trip Generation Rates
ADT – Average Daily Traffic
KSF – 1,000 square feet of building
DU – Dwelling Unit

Project AM & PM Peak Hour Traffic Volumes

Table 2 shows the total traffic loading due to project build-out using the generating factors in Table 1.

PROJECT TRAFFIC GENERATION					
YEAR	**DAILY** ADT	**PEAK HOUR**			
		AM		**PM**	
		IN	OUT	IN	OUT
2019	**4,271**	**371**	**152**	**140**	**415**
2024	**9,597**	**802**	**352**	**333**	**903**
2029	**14,373**	**1,129**	**548**	**535**	**1,284**
2034	**17,713**	**1,354**	**684**	**678**	**1,546**

Table 2 –Total Project Traffic Loading

Based on the project location it is estimated that there will be three main directions of travel to/from the site:

1. To/From the project via La Posta Road (south)
2. To/From the project via La Posta Road (north) – 'Old' La Posta to Bodo Park
3. To/From the project via River Road (east)

Based on population factors, shopping, job locations, dining, and recreational opportunities the following splits were used to project the project's traffic patterns. The following is a summary of the assumptions that were used to load traffic onto the existing road infrastructure.

-90% of total site traffic will travel to/from the north (on either River Road or La Posta Road)
    -70% of this traffic will turn east onto River Road
    -30% of this traffic will remain northbound on La Posta Road
-10% of total site traffic will travel to/from the south (on La Posta Road)
-All other project splits will follow existing splits
-At Road B, a connection has been proposed to Kaycee Lane, and a significant portion of northbound traffic is expected to use the more improved access (Kaycee Lane/Airpark

intersection will need control due to high turning movement volumes). For analysis, the traffic at Road B was distributed as follows:

- 30% of the total traffic volume at Road B is projected as exiting / entering from the north at Kaycee Lane
- 60% of the total traffic volume at Road B is projected as exiting / entering from the north at Road B
- 10% of the total traffic volume at Road B is projected as exiting / entering from the south at Road B

(See Exhibits B and E)

Project generated trip distributions are shown in Exhibit B.

5) Capacity and Level of Service (LOS) Analysis

In order to predict the performance of intersections serving the project area, expected traffic volumes were loaded onto a traffic simulation model (Synchro 7) which returned a level of service (LOS) for traffic flow movements at analyzed intersections according to the Highway Capacity Manual (HCM).

Acceptable LOS determinations were taken from the La Plata County Transportation Integrated Plan (TRIP) 2030 document. Per TRIP 2030, River Road is classified as an arterial, and must maintain a LOS of C or better. This is the most stringent requirement within the project area. La Posta Road is classified as a Collector, and must maintain a D or better LOS. All other project roads are considered Local Roads and are required to maintain a D or better LOS. Tables 7 – 11 show the LOS by intersection for the 5 intersections analyzed in detail for this project. Any movements not shown in Tables 7 – 11 were not assigned a LOS by the Synchro 7 software due to lane sharing or a lack of controls (free movements were not analyzed). Free movements tabulated are reported as FREE, and movements not reported due to lane sharing are reported as NR (not reported). Intersections were analyzed with existing conditions, with added lanes, and with updated controls (signals).

The five critical intersections previously identified were evaluated for LOS at the 5-year phase intervals first using current intersection configurations and control signage and then adding improvements such as additional turn lanes and stop control (i.e. 4-way stop, signals) in order ot meet acceptable LOS at the intersection. Details of the Synchro 7 modeling inputs and output results are attached in Appendix 2.

<u>River Road and US Highway 550/160</u>

This intersection has been identified by both County and State entities as requiring improvements due to factors beyond the scope of this project.
The intersection is currently signalized with the following lane configurations:

- West leg: Double Left turn, free flow right turn acceleration lane
- North leg: Right turn deceleration lane
- South leg: Double left turn lane

Under existing conditions with the development of the Rocket subdivision, northbound, southbound, and eastbound movements are anticipated to fail. In 2030, almost all movements

are projected to fail in each direction. City staff does not believe that CDOT can require developers along CR 213 to pay to make improvements to the River Road intersection since it is a public street. The curb radii are to be expanded to accommodate turning trucks which will also provide for faster turning movements for cars, potentially improving the Level of Service. Per Trip 2030 study, the following future improvements are proposed at this intersection to relieve congestion:

- Northbound: Additional through lane
- Southbound: Additional through lane

#1 River Road and Hwy 550 / 160			HCM Level Of Service					
			River Road Eastbound		Hwy 550/160 Northbound		Hwy 550/160 Southbound	
Year	Condition*	Type	Left	Right	Left	Thru	Thru	Right
2034 - AM	ADDED LANES	signal	D	A	F	D	F	A
2034 - PM	ADDED LANES	signal	F	A	C	B	F	A

Table 7 –LOS at intersection #1 – River Road and Highway 550 / 160
Condition: Added Lanes: Northbound: Additional through lane, Southbound: Additional through lane*

River Road and Escalante Avenue

This intersection has been identified by both City and County entities as requiring improvements due to factors beyond the scope of this project.

Currently, the River Road and Escalante Drive intersection is a four way stop operating at an acceptable Level of Service. However, in the future with the development of the already approved Rocket Subdivision and Animas Glacier Gravel Pit and the subsequent, this intersection is anticipated to warrant a signal with failing southbound movements. In 2030, both eastbound and southbound movements are anticipated to fail and warrant a signal at the intersection. Improvements that could be made to relieve congestion at the intersection:

- Eastbound: Construct left turn lane
- Southbound: Construct left turn lane

#2 River Road and Escalante			HCM Level Of Service					
			River Road Eastbound	River Road Westbound	Frontage Road Northbound	Escalante Avenue Southbound		
Year	Condition	Type	Left	Left	Thru	Left	Thru	Right
2034 - AM	ADDED LANES	2-way stop	A	A	F	F	F	C
2034 - PM	ADDED LANES	2-way stop	A	A	F	F	F	E

Table 8 –LOS at intersection #2 – River Road and Escalante Avenue
Condition: Added Lanes: Eastbound: Construct left turn lanes, Southbound: Construct left turn lane*

River Road and La Posta Road

The intersection of River Road and La Posta Road serves all projected and proposed traffic through 2034 with added turn lanes and a traffic signal. See Exhibit H for a schematic

improvements layout. The intersection serves all projected traffic under the following conditions:

- 2019 – existing conditions are sufficient
- 2024 – added lanes are necessary
    - Eastbound: Left Turn Lane
    - Southbound: Right Turn Lane
    - Northbound: Left Turn Lane
- 2029 – advanced control is necessary

#3 River Road and La Posta			HCM Level Of Service					
			River Road Westbound		La Posta Road Northbound		La Posta Road Southbound	
Year	**Condition**	**Type**	**Left**	**Right**	**Thru**	**Right**	**Left**	**Thru**
2019 - AM	EXISTING	1-way stop	FREE	FREE	A	FREE	B	NR
2019 - PM	EXISTING	1-way stop	FREE	FREE	A	FREE	B	NR
2019 - AM	ADDED LANES	1-way stop	FREE	FREE	A	FREE	B	NR
2019 - PM	ADDED LANES	1-way stop	FREE	FREE	A	FREE	B	NR
2024- AM	EXISTING	1-way stop	FREE	FREE	A	FREE	E	NR
2024 - PM	EXISTING	1-way stop	FREE	FREE	A	FREE	F	NR
2024- AM	ADDED LANES	1-way stop	FREE	FREE	B	FREE	D	NR
2024 - PM	ADDED LANES	1-way stop	FREE	FREE	A	FREE	D	NR
2029 - AM	ADDED LANES	1-way stop	FREE	FREE	B	FREE	F	NR
2034 - AM	ADDED LANES	1-way stop	FREE	FREE	C	FREE	F	NR
2034 - PM	ADDED LANES	1-way stop	FREE	FREE	B	FREE	F	NR
2034 - AM	ADDED LANES	signal	C	A	B	A	B	A
2034 - PM	ADDED LANES	signal	D	A	D	A	D	A

Table 9 –LOS at intersection #3 – River Road and La Posta Road

<u>Kaycee Lane and La Posta Road</u>

The intersection of Kaycee Lane and La Posta Road serves all projected and proposed traffic through 2034 with added turn lanes and a traffic signal. See Exhibit H for a schematic improvements layout. The intersection serves all projected traffic under the following conditions:

- 2019 – existing conditions are sufficient
- 2024 – added lanes and advanced control are necessary

- Northbound Left Turn Decel Lane
- Northbound Right Turn Decel Lane
- Southbound Left Turn Decel Lane
- Southbound Right Turn Decel Lane
- Eastbound Left Turn Decel Lane
- Westbound Left Turn Decel Lane
- Westbound Right Turn Decel Lane
- Westbound Right Turn Acel Lane onto La Posta Road

			HCM Level Of Service											
4 Kaycee and La Posta			Airpark Drive Eastbound			Kaycee Lane Westbound			La Posta Road Northbound			La Posta Road Southbound		
Year	Condition	Type	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
2019 - AM	EXISTING	2-way stop	NR	C	NR	NR	B	NR	NR	A	NR	NR	A	NR
2019 - PM	EXISTING	2-way stop	NR	D	NR	NR	B	NR	NR	A	NR	NR	A	NR
2019 - AM	ADDED LANES	2-way stop	C	NR	A	B	A	NR	A	FREE	FREE	A	FREE	FREE
2019 - PM	ADDED LANES	2-way stop	C	NR	A	B	B	NR	A	FREE	FREE	A	FREE	FREE
2024 - AM	ADDED LANES	2-way stop	F	NR	B	D	B	NR	A	FREE	FREE	A	FREE	FREE
2029 - AM	ADDED LANES	2-way stop	F	NR	B	F	B	A	A	FREE	FREE	A	FREE	FREE
2034 - AM	ADDED LANES	2-way stop	F	NR	B	F	NR	C	B	FREE	FREE	B	FREE	FREE
2034 - PM	ADDED LANES	2-way stop	F	NR	B	F	NR	F	A	FREE	FREE	A	FREE	FREE
2034 - AM	ADDED LANES	signal	D	NR	A	C	NR	A	C	C	A	D	C	A
2034 - PM	ADDED LANES	signal	D	NR	A	B	NR	A	C	C	A	C	C	A

Table 10 –LOS at intersection #4 –Kaycee Lane and La Posta Road

<u>Airpark Drive and Skylane Drive</u>

The intersection of Airpark Drive and Skylane Drive will serve all projected traffic through 2034 with its current layout and signage.

			Delay (sec/veh) - AM					
#5 Airpark and Skylane			Westbound		Northbound		Southbound	
Year	Condition	Type	Left	Right	Thru	Right	Left	Thru
2034 - AM	EXISTING	1way stop	B	FREE	FREE	FREE	A	FREE
2034 - PM	EXISTING	1way stop	B	FREE	FREE	FREE	A	FREE

Table 11 –LOS at intersection #5 –SkyLane Drive and Airpark Drive

6) Signal Warrant Analysis

All intersections were checked for signal warrants. All warrants were analyzed on a peak-traffic hour volume basis, and all traffic volumes tabulated are in vehicles per hour (vph). The MUTCD provides 9 signal warrants. Warrants 1, 2, and 3 analyze traffic volumes in order to determine signal requirements. Warrant 1 assesses peak 8-hour traffic volumes, while Warrant 2 assesses peak 4-hour volumes, and Warrant 3 assesses peak hour traffic volumes. As the ITE manual provides peak hour traffic volumes, this was the only volume-based warrant evaluated. Table 3 shows project intersection signal warrant analysis. No other signal warrants applied to this project:

- Warrant 4 is applied to high pedestrian volumes, which are not expected
- Warrant 5 is applied to school crossings, none of which are included in the project
- Warrant 6 is applied to coordinated signal systems, which is not currently proposed for the road network
- Warrant 7 is applied to intersections with crash experience, which does not apply as most of the traffic loading is hypothetical
- Warrant 8 is applied to roadway networking, which is not currently proposed for the road network
- Warrant 9 is applied to intersections near a grade crossing (e.g. train tracks) , none of which are included in the project

MUTCD SIGNAL WARRANT #3							
(EVALUATED FOR 2034 PROJECT TRAFFIC)							
LA POSTA ROAD APPROACH	AM Traffic	PM Traffic	La Posta AM Traffic	La Posta PM Traffic	Allowable cross-traffic (am)	Allowable cross-traffic (am)	Signal warranted?
ROAD A	22	127	1979	2147	100	100	YES
MOOSE LANE	81	129	1979	2147	100	100	YES
KAYCEE LANE REVISED*	98	468	1818	1439	100	105	YES
AIRPARK ROAD	173	447	1818	1439	100	105	YES
ROAD B - REVISED*	32	176	1074	1209	175	150	YES
ROAD F	26	152	1074	1209	175	150	YES
ROAD D - NORTH ACCESS	122	71	1074	1209	175	150	NO
ROAD D AT ROAD E	115	68	1074	1209	175	150	NO
ROAD E	77	132	1074	1209	175	150	NO
ROAD D - SOUTH ACCESS	83	45	1074	1209	175	150	NO

Table 3 – Signal Warrant Analysis

**Lots originally accessing La Posta Road at Road B were distributed between Kaycee Lane and Road B, see Exhibit B for details*

Although several intersections met signal warrants, not all were analyzed in detail:

Roads A, B, F, and Moose Lane are projected to warrant signals, but were not analyzed due to the warrant being met only in the pm peak hour, when 90% (86% for Road B, see Exhibit B) of the outbound/ minor approach traffic is turning right onto La Posta Road. However, a detailed traffic study for the intersection is still recommended upon development in lots utilizing this access point.

Kaycee Lane and Airpark Drive are both projected as warranting a signal, and the shared intersection of these two accesses with La Posta Road was modeled using Synchro 7, with signalization/ advanced control projected to be necessary by 2024.

Roads D and E are not projected to meet signal warrants, but due to the proposed configuration of Road D (one loop with three access points) and the 4-way shared intersection with Road E, a more detailed analysis of traffic at this intersection is strongly advised.

7) Turn Lane Warrant Analysis

Turn lane warrants have been analyzed as outlined in the CDOT Access Code. A two-way turn lane (TWTL) is proposed for the length of La Posta Road, which will serve as left turn acceleration and deceleration lanes. Considering these factors, left-turn lanes were not analyzed for warrants. Per the Access Code, right turn acceleration lanes are not required for roads with a speed limit less than 45 mph; La Posta Road is currently a 40 mph road, with no increases in the speed limit expected. However, modeling analysis indicated that Kaycee Lane will require a right turn acceleration lane onto La Posta Road due to the high volume of right turn movements coming out of Kaycee Lane onto La Posta Road. Table 4 shows the CDOT Access Code Design Parameters for the right turn acceleration lane.

MINOR APPROACH RIGHT TURN ACCELERATION LANES (SPEED LIMIT = 25 MPH)						
MINOR APPROACH (F-R) ACCESS	ACEL LENGTH (ft)	AM	PM	STORAGE REQUIRED (ft)	TRANSITION TAPER (ft) (12:1)	FULL WIDTH ADDED LANE (ft)
KAYCEE LN ONTO LA POSTA NB	380	89	430	0	144	236

Table 4 – Right Turn Acceleration Lane CDOT Access Code design requirements

Table 5 shows the CDOT Access Code Right turn lane requirements for La Posta Road Access points. Table 6 shows the CDOT Access Code Design Parameters for access points to La Posta Road meeting right turn deceleration warrants. Roads meeting a right turn lane warrant are:

- Kaycee Lane and Airpark Drive (analyzed for advanced intersection control with added lanes, see Exhibit H)
- Road E (turn lane has already been designed per Animas Glacier access plan, see Appendix 1 – Animas Glacier Gravel Proposed Access Improvements; further analysis recommended upon area development)
- The River Road approach to La Posta Road was not analyzed for turn lane warrants, as the intersection was already being analyzed in Synchro 7 and a right turn lane from River Road onto La Posta Road was necessary to reach an acceptable level of service.

LA POSTA ROAD RIGHT TURN DECELERATION LANES							
(REQUIRED WHERE RIGHT TURN TRAFFIC OFF OF ROAD > 25 VPH ON ROADS CLASSIFIED AS R-B, RURAL HIGHWAY PER CDOT ACCESS CODE, EVALUATED WITH 2034 PROJECT TRAFFIC)							
ACCESS	AM IN	PM IN	RIGHT TURN SPLIT		AM	PM	LANE REQUIRED
ROAD A	123	21	NB	10%	12	2	NO
MOOSE LANE	131	77	NB	10%	13	8	NO
KAYCEE LANE REVISED*	PROJECT TRAFFIC APPLIED WITH BACKGROUND TRAFFIC				37	5	YES
AIRPARK DRIVE					377	165	YES
ROAD B - REVISED*	164	12	NB	14%	23	2	NO
ROAD F	146	25	NB	10%	15	2	NO
ROAD D - NORTH ACCESS	35	129	NB	10%	3	13	NO
ROAD D AT ROAD E	33	123	NB	10%	3	12	NO
ROAD D - SOUTH ACCESS	20	83	NB	10%	2	8	NO
ROAD E (2034)	53	24	SB	90%	109**	75**	YES
ROAD E (2019)	ANIMAS GLACIER GRAVEL PIT TRAFFIC ONLY				62	54	YES

Table 5 – La Posta Road Right Turn Deceleration Lane Warrant Analysis

**Lots originally accessing La Posta Road at Road B were distributed between Kaycee Lane and Road B, see Exhibit B for details*

***2034 Road E Traffic volumes reflect traffic generated from proposed build-out in addition to the approved Animas Glacier Gravel Pit traffic*

LA POSTA ROAD RIGHT TURN DECELERATION LANES (SPEED LIMIT = 40 MPH)			
LA POSTA RD (R-B)	DECEL LENGTH (ft)	TRANSITION TAPER (ft) (12:1)	FULL WIDTH ADDED LANE (ft)
ACCESS			
RIVER RD WB ONTO LA POSTA	370	144	226
LA POSTA ROAD SB ONTO AIRPARK DR	370	144	226
LA POSTA ROAD NB ONTO KAYCEE LN	370	144	226
LA POSTA ROAD SB ONTO RD E	370	144	226

Table 6 – La Posta Road Right Turn Deceleration Lane CDOT Access Code design requirements

Table 7 shows the CDOT Access Code Right Turn Lane requirements for minor approaches onto La Posta Road. It should be noted that these warrants are intended for access points onto a roadway, not the terminal intersections occurring on the project access points. It is recommended that each minor intersection be assessed for Level of Service performance upon commencement of development in applicable lots.

MINOR APPROACH RIGHT TURN DECELERATION LANES (REQUIRED WHERE RIGHT TURN TRAFFIC OFF OF ROAD > 50 VPH ON ROADS CLASSIFIED AS F-R, FRONTAGE ROAD PER CDOT ACCESS CODE, EVALUATED FOR 2034 PROJECT TRAFFIC)							
ACCESS	AM IN	PM IN	RIGHT TURN SPLIT		AM	PM	LANE REQUIRED
ROAD A	22	127	NB	90%	20	115	YES
MOOSE LANE	81	129	NB	90%	73	116	YES
KAYCEE LANE REVISED*	PROJECT TRAFFIC APPLIED WITH BACKGROUND TRAFFIC				89	430	YES
AIRPARK DR					12	37	YES
ROAD B - REVISED*	32	176	NB	90%	28	158	YES
ROAD F	26	152	NB	90%	23	137	YES
ROAD D - NORTH ACCESS	122	71	NB	90%	109	64	YES
ROAD D AT ROAD E	115	68	NB	90%	104	61	YES
ROAD D - SOUTH ACCESS	83	45	NB	90%	75	41	YES
ROAD E (2034 PROJECT)	9	54	NB	10%	15**	21**	NO
ROAD E (2019)	ANIMAS GLACIER GRAVEL PIT TRAFFIC ONLY				14	16	NO

Table 7 – Minor Approach Right Turn Deceleration Lane Warrant Analysis

**Lots originally accessing La Posta Road at Road B were distributed between Kaycee Lane and Road B, see Exhibit B for details*

***2034 Road E Traffic volumes reflect traffic generated from proposed build-out in addition to the approved Animas Glacier Gravel Pit traffic*

This analysis was used to approximate required improvements for the overall area plan. Table 8 shows the CDOT Access Code Design Parameters for minor approaches meeting the right turn lane warrants. These parameters are intended for general costing only, and are not recommended as intersection parameters.

MINOR APPROACH RIGHT TURN DECELERATION LANES (SPEED LIMIT = 25 MPH)				
MINOR APPROACH (F-R)	TURNING TRAFFIC		STORAGE REQUIRED (ft)	TRANSITION TAPER (ft) (7.5:1)
ACCESS	AM	PM		
ROAD A WB ONTO LA POSTA	20	115	100	90
MOOSE LN WB ONTO LA POSTA	73	116	100	90
KAYCEE LN WB ONTO LA POSTA	89	430	300	90
AIRPARK DR EB ONTO LA POSTA*	12	37	40	90
ROAD B WB ONTO LA POSTA	28	158	100	90
ROAD F WB ONTO LA POSTA	23	137	100	90
ROAD D - NORTH ACCESS WB ONTO LA POSTA	109	64	100	90
ROAD D AT ROAD E WB ONTO LA POSTA	104	61	100	90
ROAD D - SOUTH ACCESS WB ONTO LA POSTA	75	41	50	90

Table 8 – Minor Approach Right Turn Deceleration Lane CDOT Access Code design requirements

**Although a right turn lane is warranted at Airpark Drive, modeling indicates that a left turn lane and s shared right / through lane will serve the intersection appropriately*

Table 9 shows the CDOT Access Code Left Turn Lane requirements for minor approaches onto La Posta Road. It is recommended that each minor intersection be assessed for Level of Service performance upon commencement of development in applicable lots.

MINOR APPROACH LEFT TURN DECELERATION LANES							
(REQUIRED WHERE LEFT TURN INGRESS TRAFFIC > 25 VPH ON ROADS CLASSIFIED AS F-R, FRONTAGE ROAD PER CDOT ACCESS CODE, EVALUATED FOR 2034 PROJECT TRAFFIC)							
ACCESS	AM IN	PM IN	RIGHT TURN SPLIT		AM	PM	LANE REQUIRED
ROAD A	22	127	NB	10%	2	13	NO
MOOSE LANE	81	129	NB	10%	8	13	NO
KAYCEE LANE REVISED*	PROJECT TRAFFIC APPLIED WITH BACKGROUND TRAFFIC				9	38	YES
AIRPARK DRIVE					162	410	YES
ROAD B - REVISED*	32	176	NB	10%	3	18	NO
ROAD F	26	152	NB	10%	3	15	NO
ROAD D - NORTH ACCESS	122	71	NB	10%	12	7	NO
ROAD D AT ROAD E	115	68	NB	10%	12	7	NO
ROAD D - SOUTH ACCESS	83	45	NB	10%	8	5	NO
ROAD E	9	54	NB	90%	62**	111**	YES
	(PROJECT TRAFFIC ONLY)				(WITH GRAVEL PIT TRAFFIC ADDED)		
ROAD E (2019)	ANIMAS GLACIER GRAVEL PIT TRAFFIC ONLY				54	62	YES

Table 9 – Minor Approach Left Turn Deceleration Lane Warrant Analysis

**Lots originally accessing La Posta Road at Road B were distributed between Kaycee Lane and Road B, see Exhibit B for details*

***2034 Road E Traffic volumes reflect traffic generated from proposed build-out in addition to the approved Animas Glacier Gravel Pit traffic*

This analysis was used to approximate required improvements for the overall area plan. Table 10 shows the CDOT Access Code Design Parameters for minor approaches meeting the right turn lane warrants. These parameters are intended for general costing only, and are not recommended as intersection parameters.

MINOR APPROACH LEFT TURN DECELERATION LANES (SPEED LIMIT = 25 MPH)				
MINOR APPROACH (F-R)	TURNING TRAFFIC		STORAGE REQUIRED (ft)	TRANSITION TAPER (ft) (7.5:1)
ACCESS	AM	PM		
OLD LA POSTA RD SB ONTO LA POSTA (FROM BODO PARK)	9	40	40	90
AIRPARK DR EB ONTO LA POSTA	162	410	300	90
KAYCEE LN WB ONTO LA POSTA	89	430	300	90
ROAD E - EB ONTO LA POSTA	62	111	100	90

Table 10 – Minor Approach Left Turn Deceleration Lane CDOT Access Code design requirements

8) Summary, Conclusion, and Recommendations

It should be noted that improvements outlined in this report have been determined from a generalized area plan, not a detailed traffic study. It is recommended that prior to installing improvements a detailed traffic analysis be performed for applicable traffic patterns based on actual site specific development and traffic patterns.

Overall, findings at critical intersections indicate that:

- **River Road and Highway 550/160 & River Road and Escalante Drive**
  The intersections of River Road with Escalante Avenue and Highway 550 / 160 have already been identified by CDOT and the City of Durango as needing improvements. These improvements are not anticipated to be a part of the Area Plan District Costs
  .
- **River Road and La Posta Road (CR 213)**
  The intersection of River Road and La Posta Road will need additional lanes by 2024 and will need a signal or other improvements by 2029. Currently, the La Posta Road and River Road intersection appears to be operating at an acceptable Level of Service. The functionality of this intersection will become more critical in the future once HWY 160/550 becomes so congested that La Posta Road becomes a more attractive alternate route. During previous discussions, a roundabout was proposed as a possible alternative at this intersection to relieve congestion.

- **La Posta Road and Kaycee Lane/Airpark Drive** will need additional lanes and a signal or other improvements by 2024. During previous discussions, a roundabout was proposed as a possible alternative at this intersection to relieve congestion.

- **Airpark Drive and Skylane Drive** will function with full projected 2034 traffic loading in 2034 with no improvements.

Additional findings:

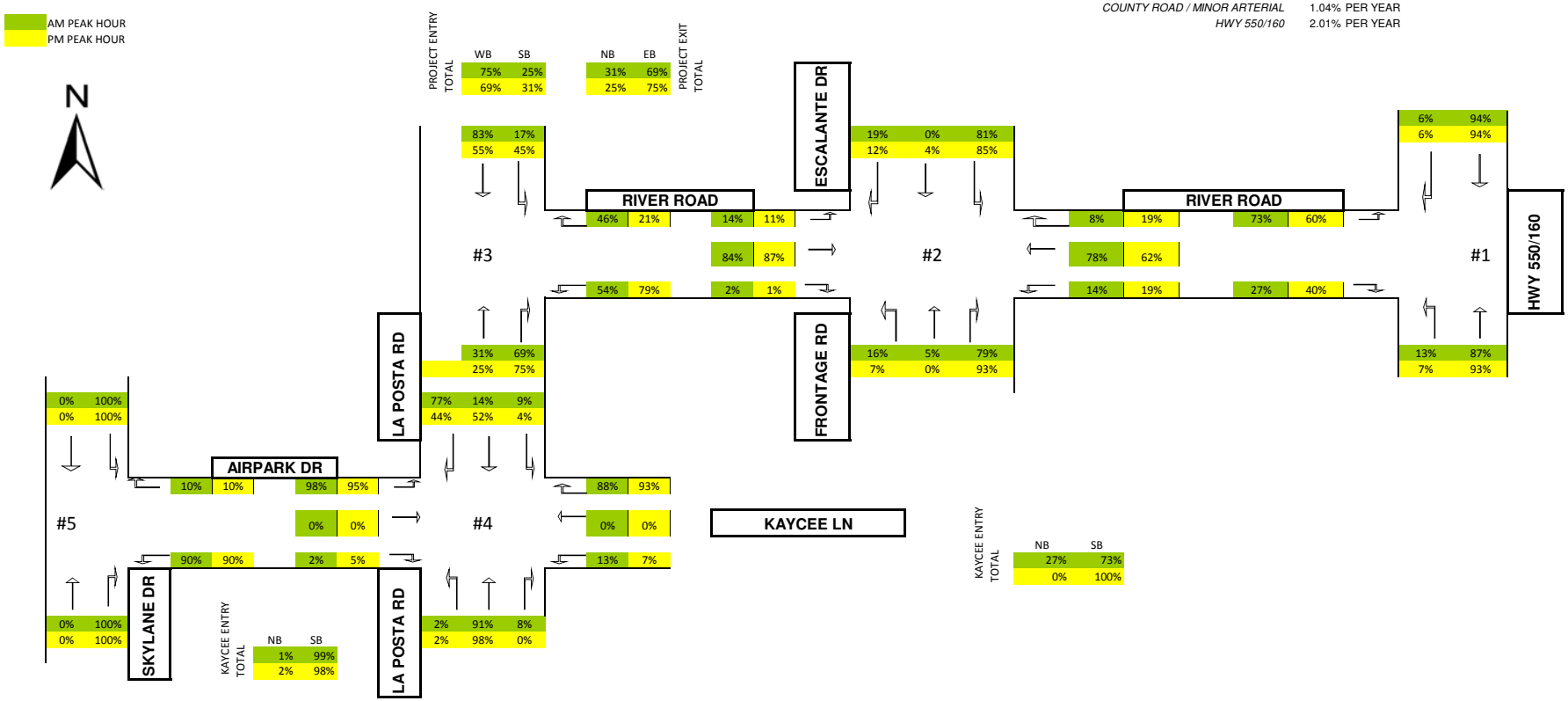
- **La Posta Road and Road A, Moose Lane, and Road B**
  Warrant analysis indicated that additional turn lanes and a signal may be needed due to high minor approach volumes. Since the majority of the minor approach traffic is entering or exiting to and from the north, it is likely that a signal will not be necessary to achieve acceptable LOS.

- **La Posta Road and Road D/Road E**
  Warrant analysis indicated that additional turn lanes and a signal may be needed due to high minor approach volumes. This intersection in particular will need further assessment in order to accurately determine an intersection configuration appropriate to development. For example, if the intersection at La Posta Road and Road E is signalized, the northern and southern access points to the Road D area may become minor access points and require smaller scale improvements.

EXHIBIT A1 EXISTING TRAFFIC SPLITS

GROWTH RATES:

COUNTY ROAD / MINOR ARTERIAL	1.04% PER YEAR
HWY 550/160	2.01% PER YEAR



INTERSECTION BACKGROUND TRAFFIC VOLUME SOURCES:

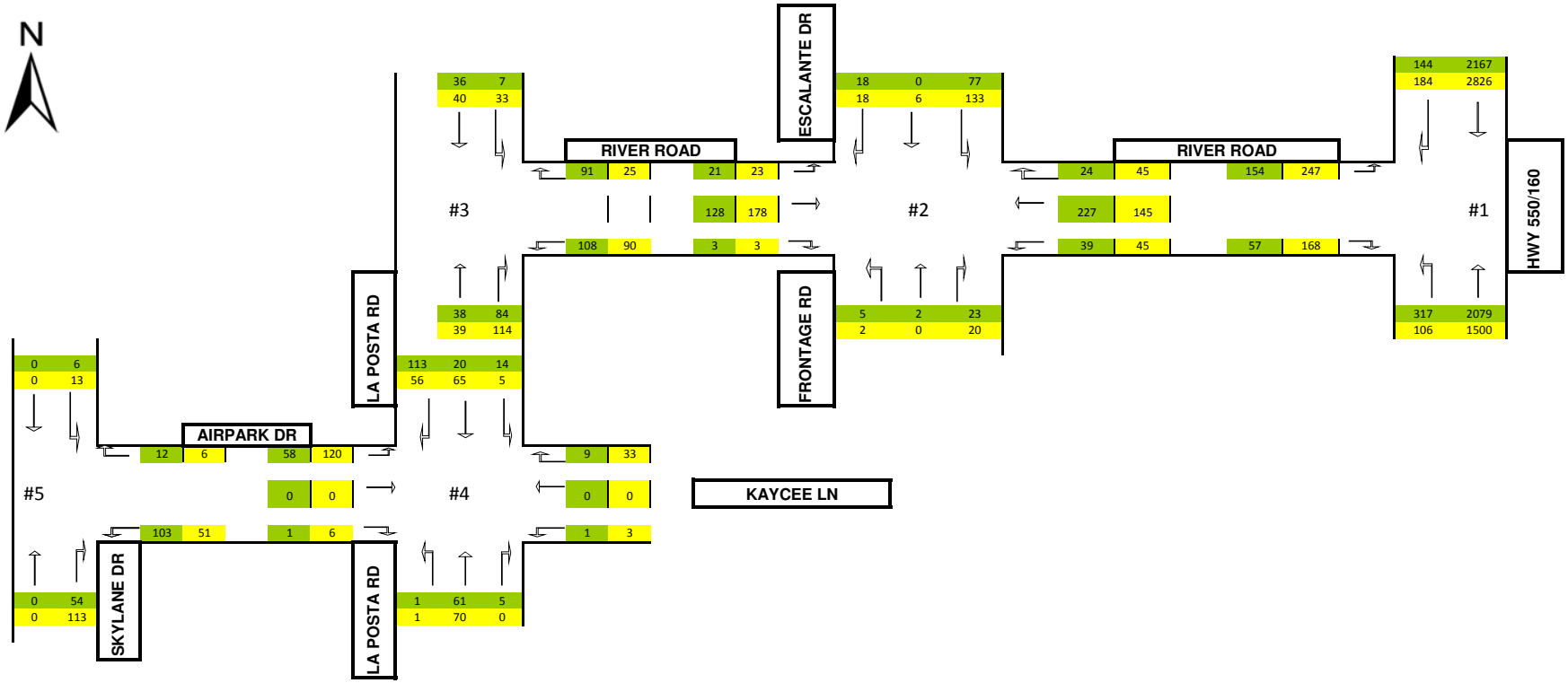
#1 WEEMINUCHE ANIMAS GLACIER TRAFFIC STUDY
#2 WEEMINUCHE ANIMAS GLACIER TRAFFIC STUDY
#3 RPE VISUAL COUNTS, 07/03/2012
#4 POWER MOTIVE TRAFFIC STUDY
#5 LA POSTA AND AIRPARK DRIVE TRAFFIC PROJECTED AT 90% SOUTH, 10% NORTH

EXHIBIT A2 2014 BACKGROUND TRAFFIC VOLUME

GROWTH RATES:

COUNTY ROAD / MINOR ARTERIAL	1.04% PER YEAR
HWY 550/160	2.01% PER YEAR

AM PEAK HOUR
PM PEAK HOUR



INTERSECTION BACKGROUND TRAFFIC VOLUME SOURCES

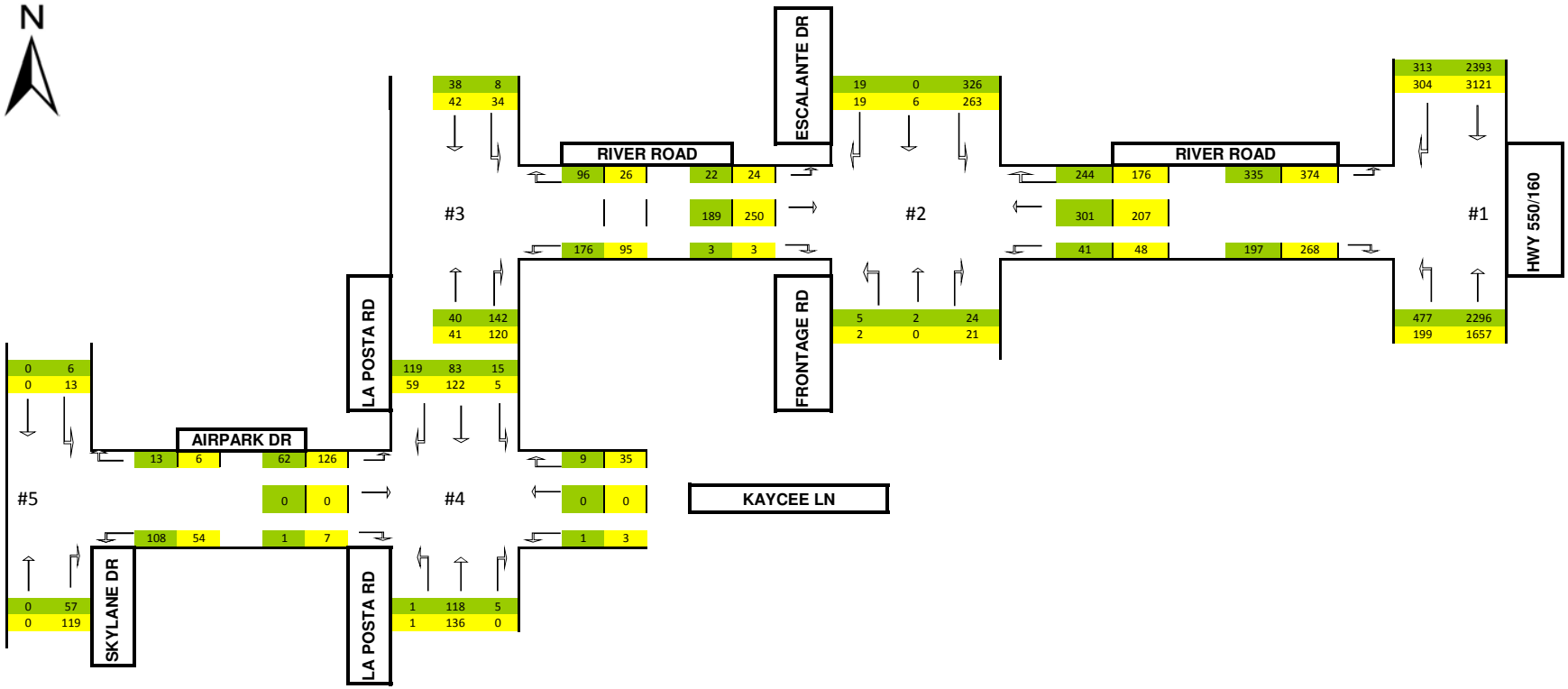
#1 WEEMINUCHE ANIMAS GLACIER TRAFFIC STUDY
#2 WEEMINUCHE ANIMAS GLACIER TRAFFIC STUDY
#3 RPE VISUAL COUNTS, 07/03/2012
#4 POWER MOTIVE TRAFFIC STUDY
#5 LA POSTA AND AIRPARK DRIVE TRAFFIC PROJECTED AT 90% SOUTH, 10% NORTH

EXHIBIT A3 2019 BACKGROUND TRAFFIC VOLUME WITH APPROVED PLANNED DEVELOPMENT

GROWTH RATES:

COUNTY ROAD / MINOR ARTERIAL	1.04% PER YEAR
HWY 550/160	2.01% PER YEAR

AM PEAK HOUR
PM PEAK HOUR



INTERSECTION BACKGROUND TRAFFIC VOLUME SOURCES

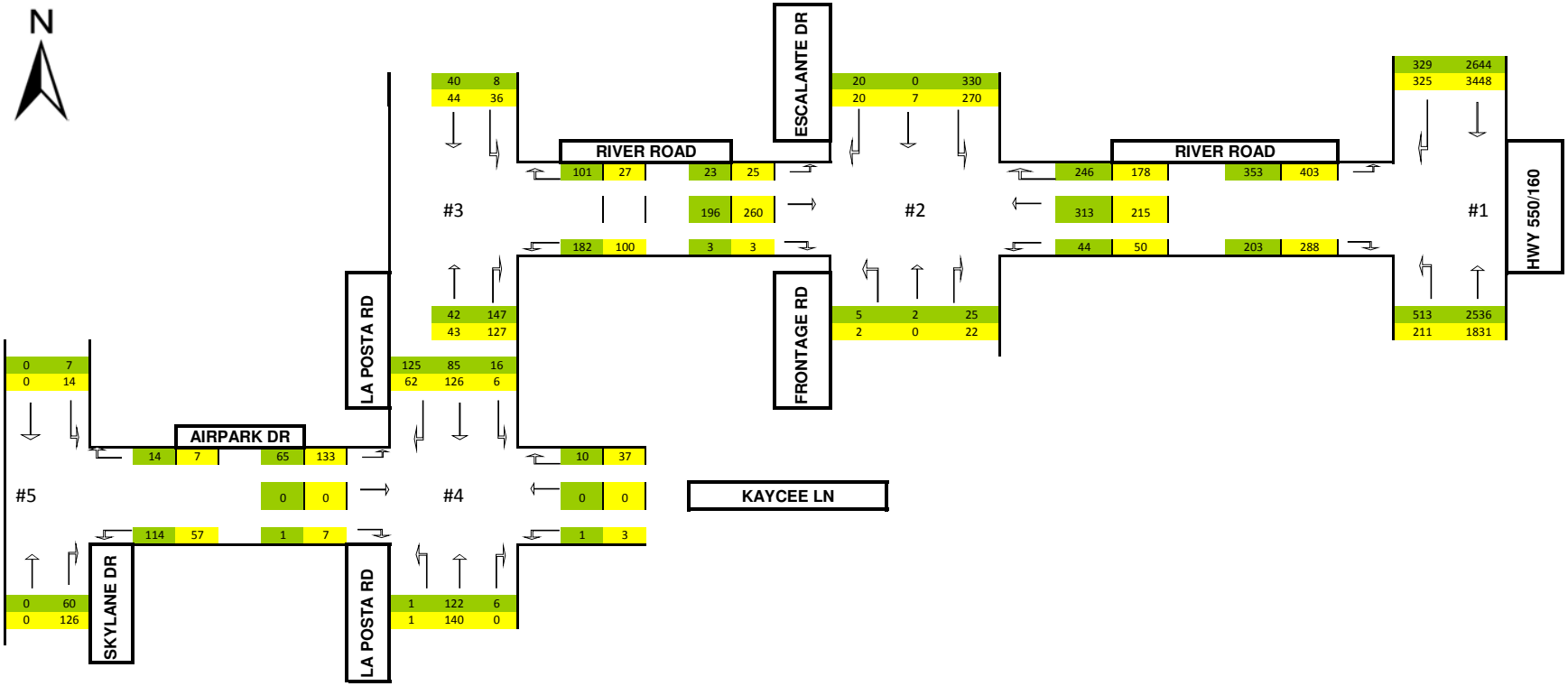
#1 WEEMINUCHE ANIMAS GLACIER TRAFFIC STUDY
#2 WEEMINUCHE ANIMAS GLACIER TRAFFIC STUDY
#3 RPE VISUAL COUNTS, 07/03/2012
#4 POWER MOTIVE TRAFFIC STUDY
#5 LA POSTA AND AIRPARK DRIVE TRAFFIC PROJECTED AT 90% SOUTH, 10% NORTH

EXHIBIT A4 2024 BACKGROUND TRAFFIC VOLUME WITH APPROVED PLANNED DEVELOPMENT

GROWTH RATES:

COUNTY ROAD / MINOR ARTERIAL	1.04% PER YEAR
HWY 550/160	2.01% PER YEAR

AM PEAK HOUR
PM PEAK HOUR



INTERSECTION BACKGROUND TRAFFIC VOLUME SOURCES

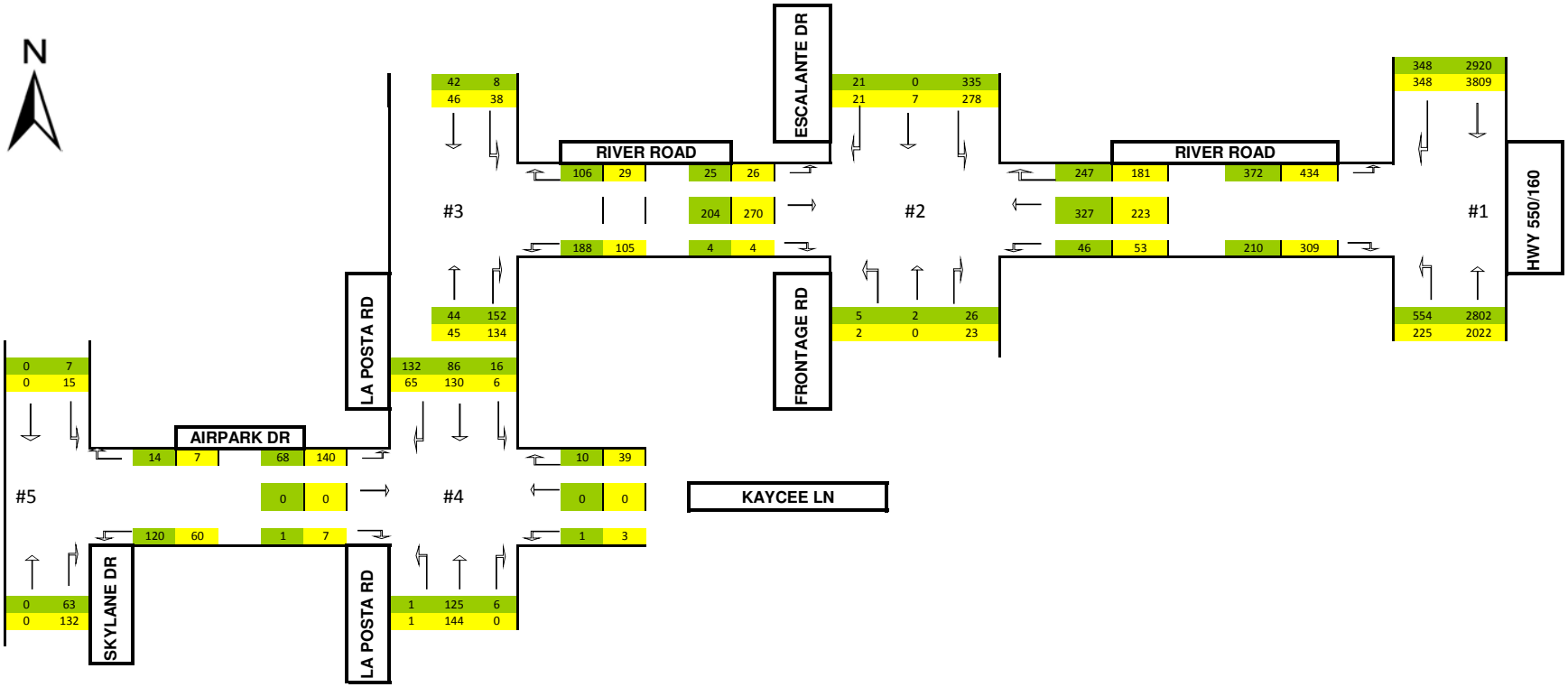
#1 WEEMINUCHE ANIMAS GLACIER TRAFFIC STUDY
#2 WEEMINUCHE ANIMAS GLACIER TRAFFIC STUDY
#3 RPE VISUAL COUNTS, 07/03/2012
#4 POWER MOTIVE TRAFFIC STUDY
#5 LA POSTA AND AIRPARK DRIVE TRAFFIC PROJECTED AT 90% SOUTH, 10% NORTH

EXHIBIT A5 2029 BACKGROUND TRAFFIC VOLUME WITH APPROVED PLANNED DEVELOPMENT

GROWTH RATES:

COUNTY ROAD / MINOR ARTERIAL	1.04% PER YEAR
HWY 550/160	2.01% PER YEAR

AM PEAK HOUR
PM PEAK HOUR



INTERSECTION BACKGROUND TRAFFIC VOLUME SOURCES

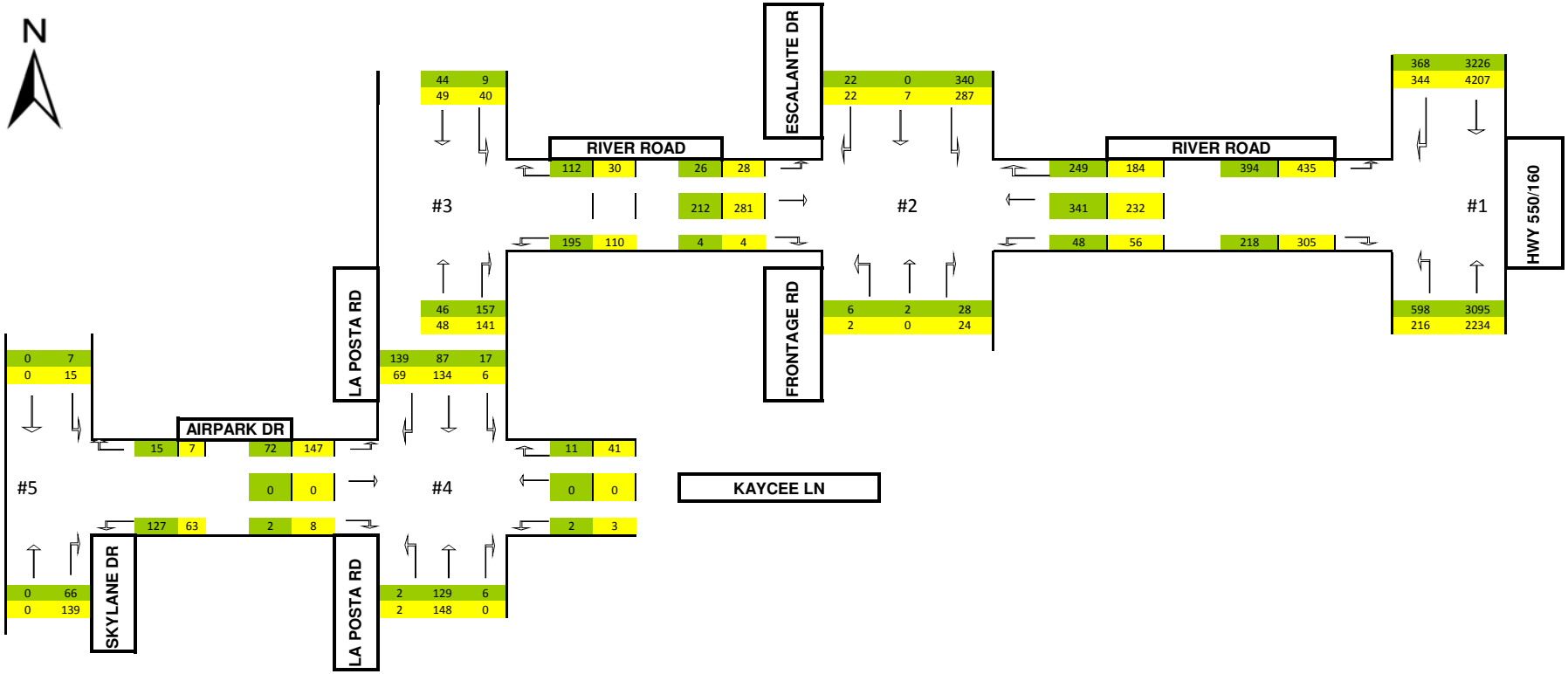
#1 WEEMINUCHE ANIMAS GLACIER TRAFFIC STUDY
#2 WEEMINUCHE ANIMAS GLACIER TRAFFIC STUDY
#3 RPE VISUAL COUNTS, 07/03/2012
#4 POWER MOTIVE TRAFFIC STUDY
#5 LA POSTA AND AIRPARK DRIVE TRAFFIC PROJECTED AT 90% SOUTH, 10% NORTH

EXHIBIT A6 2034 BACKGROUND TRAFFIC VOLUME WITH APPROVED PLANNED DEVELOPMENT

GROWTH RATES:

COUNTY ROAD / MINOR ARTERIAL	1.04% PER YEAR
HWY 550/160	2.01% PER YEAR

AM PEAK HOUR
PM PEAK HOUR



INTERSECTION BACKGROUND TRAFFIC VOLUME SOURCES:

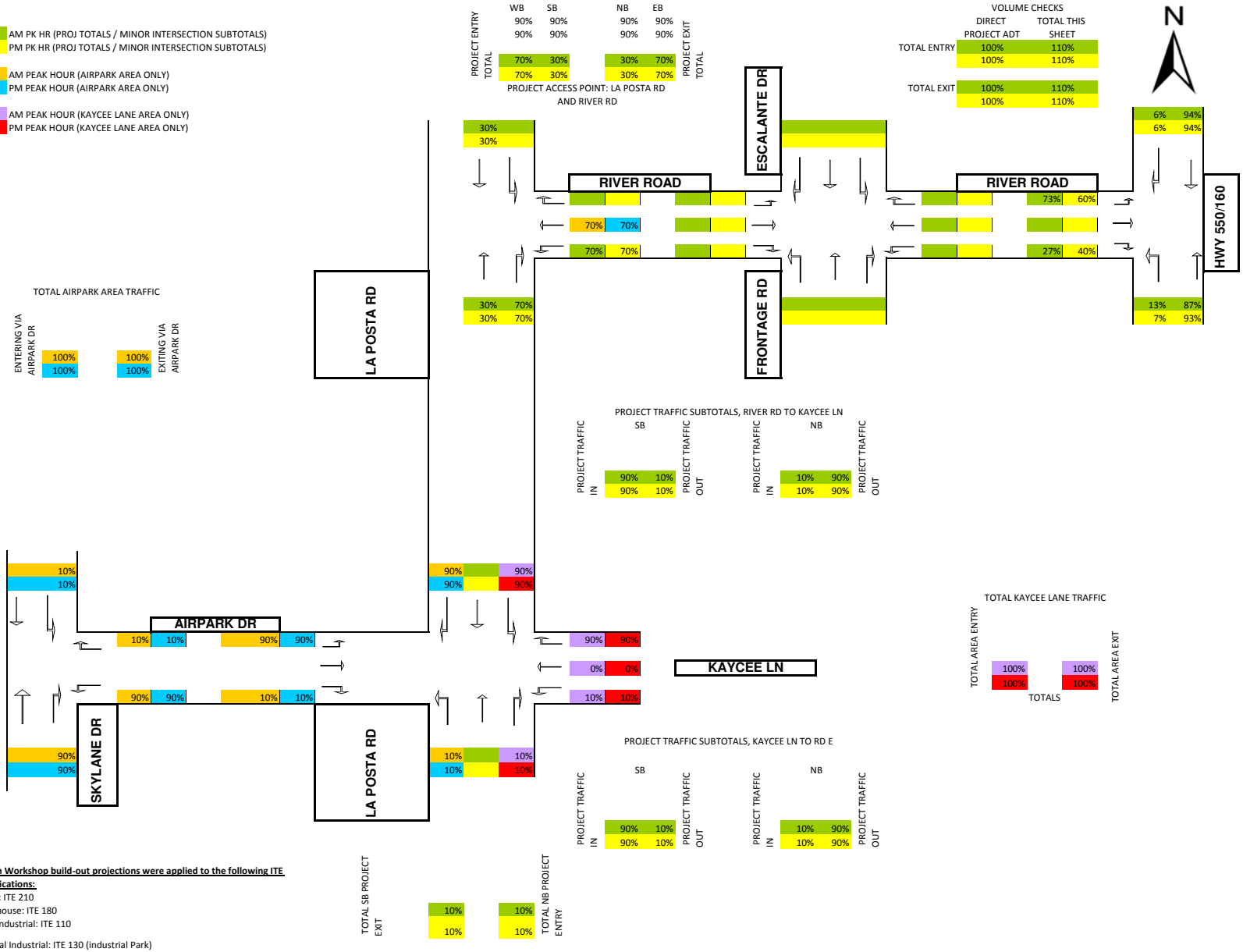
#1 WEEMINUCHE ANIMAS GLACIER TRAFFIC STUDY
#2 WEEMINUCHE ANIMAS GLACIER TRAFFIC STUDY
#3 RPE VISUAL COUNTS, 07/03/2012
#4 POWER MOTIVE TRAFFIC STUDY
#5 LA POSTA AND AIRPARK DRIVE TRAFFIC PROJECTED AT 90% SOUTH, 10% NORTH

EXHIBIT B0 ESTIMATED PROJECT TRAFFIC PERCENT SLPITS

AM PK HR (PROJ TOTALS / MINOR INTERSECTION SUBTOTALS)
PM PK HR (PROJ TOTALS / MINOR INTERSECTION SUBTOTALS)

AM PEAK HOUR (AIRPARK AREA ONLY)
PM PEAK HOUR (AIRPARK AREA ONLY)

AM PEAK HOUR (KAYCEE LANE AREA ONLY)
PM PEAK HOUR (KAYCEE LANE AREA ONLY)



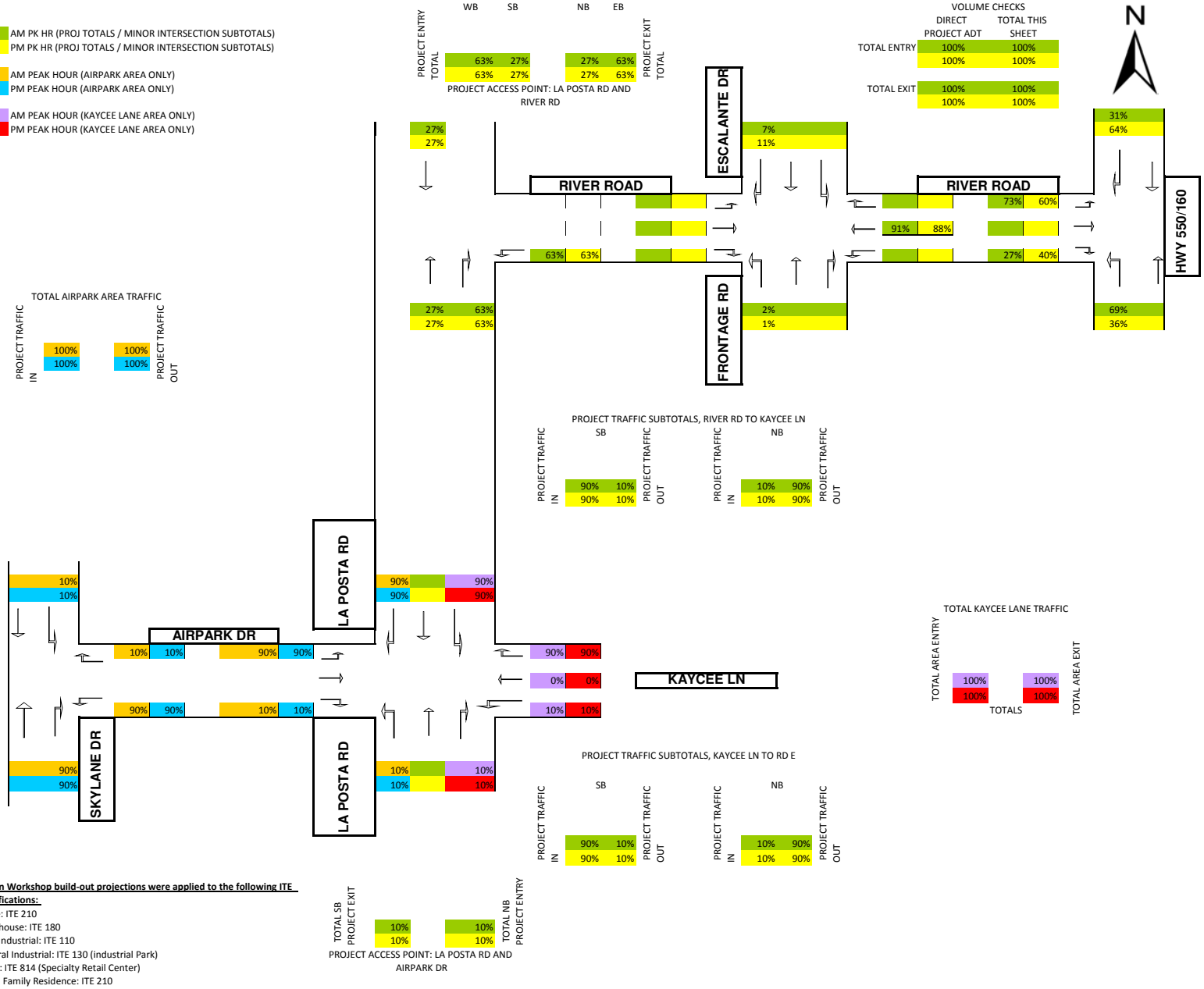
Design Workshop build-out projections were applied to the following ITE classifications:

Office: ITE 210
Warehouse: ITE 180
Light Industrial: ITE 110

General Industrial: ITE 130 (industrial Park)
Retail: ITE 814 (Specialty Retail Center)
Single Family Residence: ITE 210
Multi-Family Residence: ITE 230

EXHIBIT B1 PROJECT TRAFFIC SPLITS (MULTIPLIERS)

- AM PK HR (PROJ TOTALS / MINOR INTERSECTION SUBTOTALS)
- PM PK HR (PROJ TOTALS / MINOR INTERSECTION SUBTOTALS)
- AM PEAK HOUR (AIRPARK AREA ONLY)
- PM PEAK HOUR (AIRPARK AREA ONLY)
- AM PEAK HOUR (KAYCEE LANE AREA ONLY)
- PM PEAK HOUR (KAYCEE LANE AREA ONLY)



Design Workshop build-out projections were applied to the following ITE classifications:

Office: ITE 210
Warehouse: ITE 180
Light Industrial: ITE 110
General Industrial: ITE 130 (industrial Park)
Retail: ITE 814 (Specialty Retail Center)
Single Family Residence: ITE 210
Multi-Family Residence: ITE 230

EXHIBIT B2 2019 PROJECT TRAFFIC VOLUME

AM PK HR (PROJ TOTALS / MINOR INTERSECTION SUBTOTALS)
PM PEAK HOUR (PROJECT TOTAL)

AM PEAK HOUR (AIRPARK AREA ONLY)
PM PEAK HOUR (AIRPARK AREA ONLY)

AM PEAK HOUR (KAYCEE LANE AREA ONLY)
PM PEAK HOUR (KAYCEE LANE AREA ONLY)

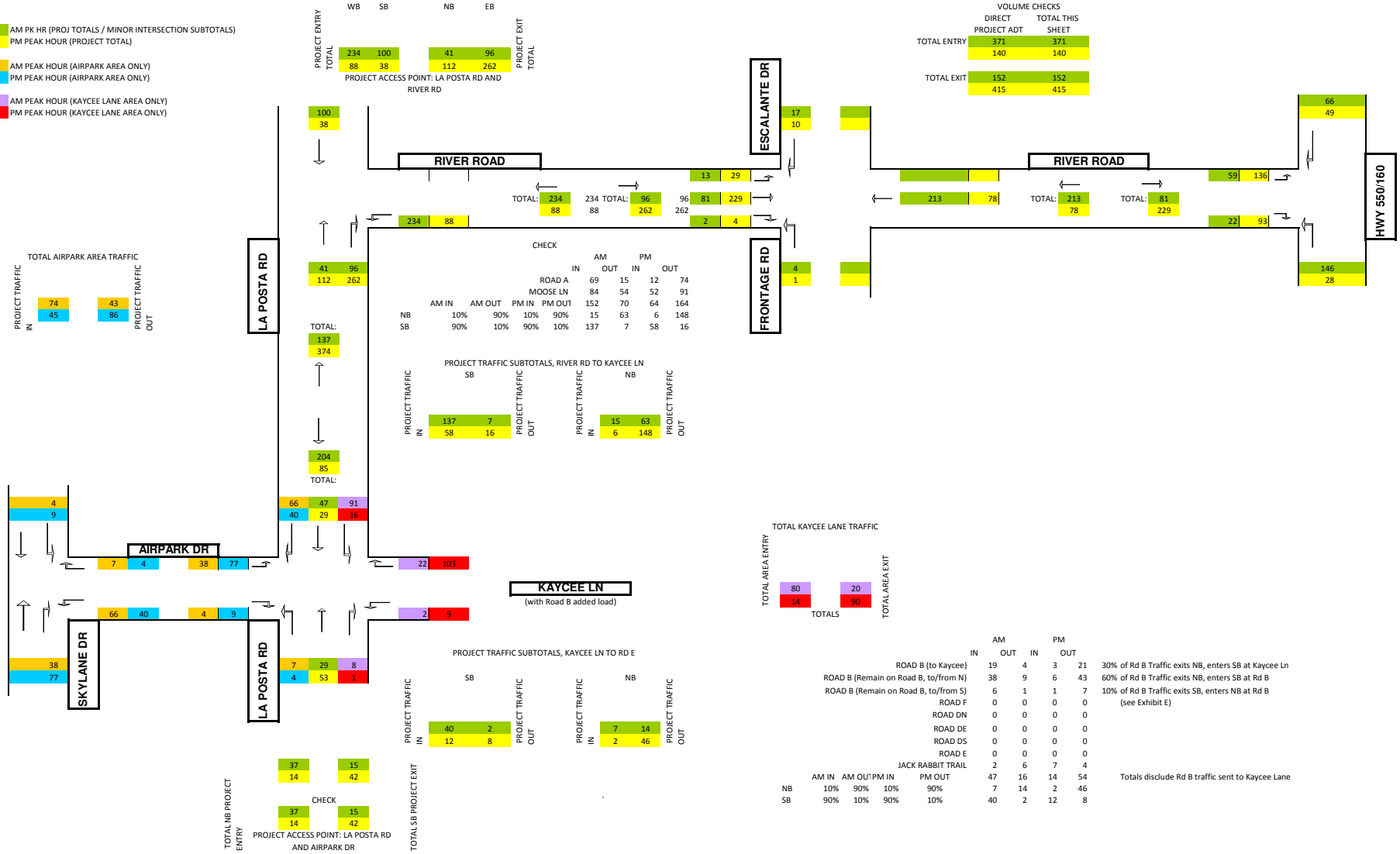
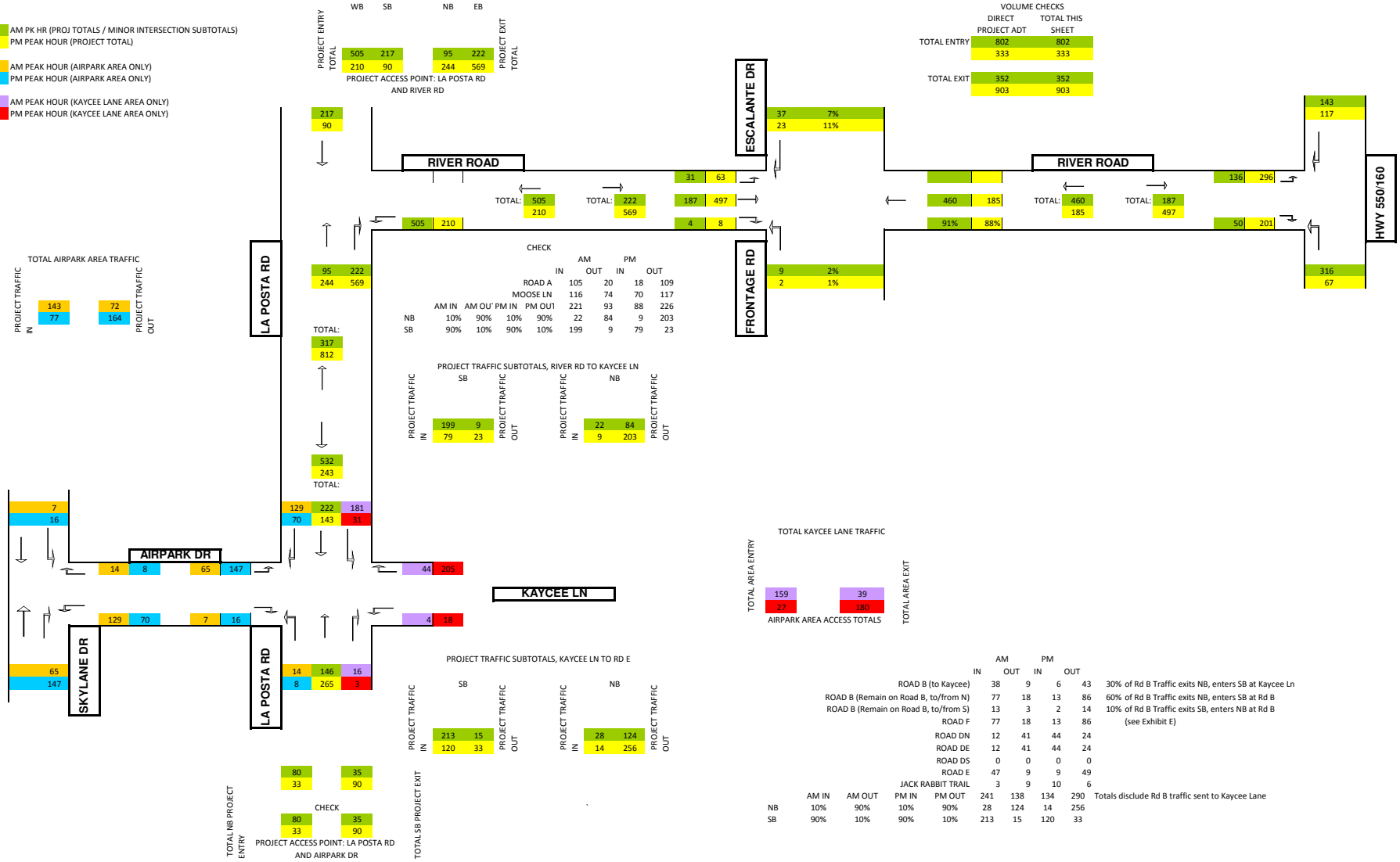


EXHIBIT B3 2024 PROJECT TRAFFIC VOLUME

- AM PK HR (PROJ TOTALS / MINOR INTERSECTION SUBTOTALS)
- PM PEAK HOUR (PROJECT TOTAL)
- AM PEAK HOUR (AIRPARK AREA ONLY)
- PM PEAK HOUR (AIRPARK AREA ONLY)
- AM PEAK HOUR (KAYCEE LANE AREA ONLY)
- PM PEAK HOUR (KAYCEE LANE AREA ONLY)



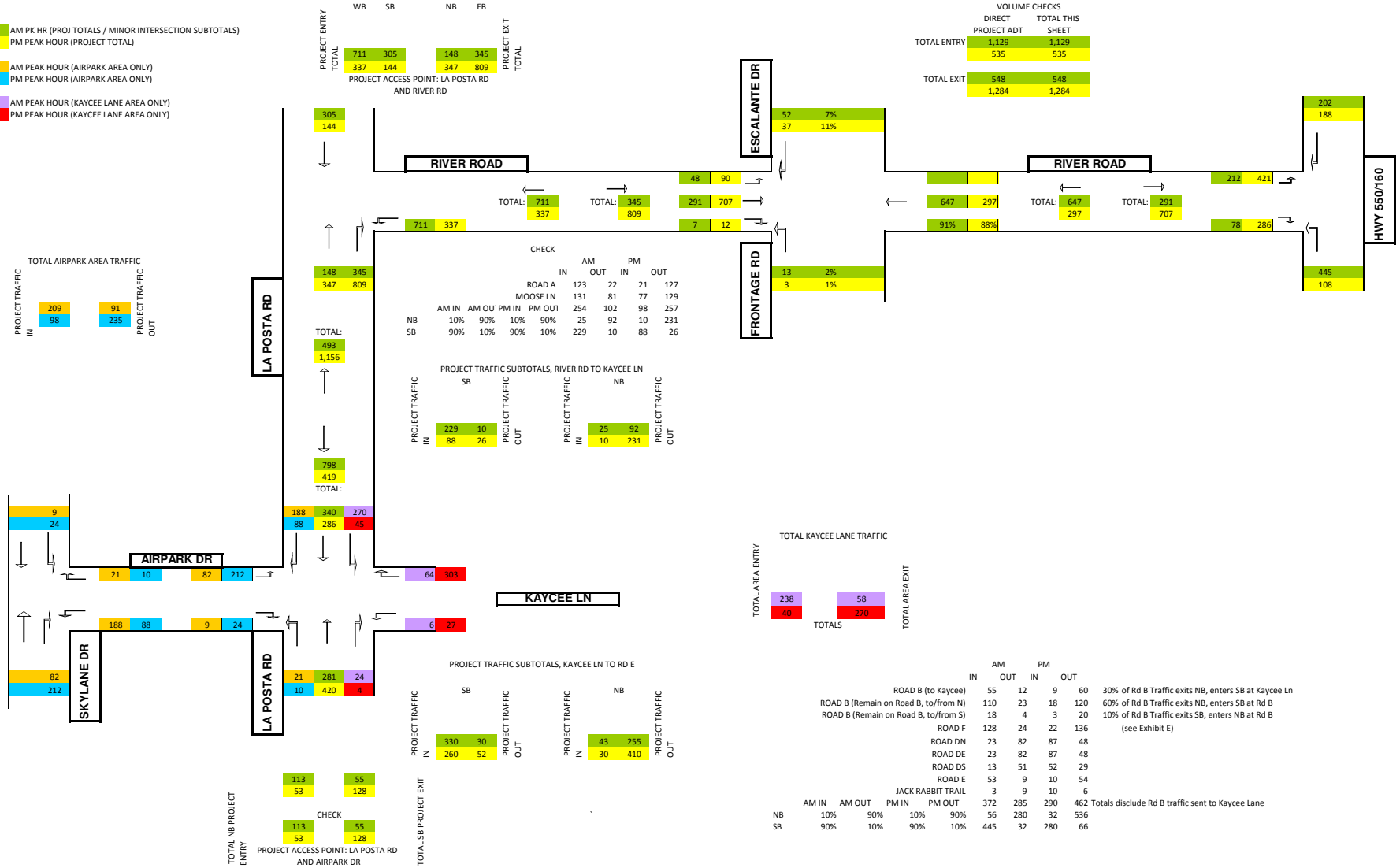
	AM IN	AM OUT	PM IN	PM OUT					
ROAD B (to Kaycee)					38	9	6	43	30% of Rd B Traffic exits NB, enters SB at Kaycee Ln
ROAD B (Remain on Road B, to/from N)					77	18	13	86	60% of Rd B Traffic exits NB, enters SB at Rd B
ROAD B (Remain on Road B, to/from S)					13	3	2	14	10% of Rd B Traffic exits SB, enters NB at Rd B
ROAD F					77	18	13	86	(see Exhibit E)
ROAD DN					12	41	44	24	
ROAD DE					12	41	44	24	
ROAD DS					0	0	0	0	
ROAD E					47	9	9	49	
JACK RABBIT TRAIL					3	9	10	6	
					241	138	134	290	Totals disclude Rd B traffic sent to Kaycee Lane
NB	10%	90%	10%	90%	28	124	14	256	
SB	90%	10%	90%	10%	213	15	120	33	

EXHIBIT B4 2029 PROJECT TRAFFIC VOLUME

AM PK HR (PROJ TOTALS / MINOR INTERSECTION SUBTOTALS)
PM PEAK HOUR (PROJECT TOTAL)

AM PEAK HOUR (AIRPARK AREA ONLY)
PM PEAK HOUR (AIRPARK AREA ONLY)

AM PEAK HOUR (KAYCEE LANE AREA ONLY)
PM PEAK HOUR (KAYCEE LANE AREA ONLY)



VOLUME CHECKS

	DIRECT PROJECT ADT	TOTAL THIS SHEET
TOTAL ENTRY	1,129	1,129
	535	535
TOTAL EXIT	548	548
	1,284	1,284

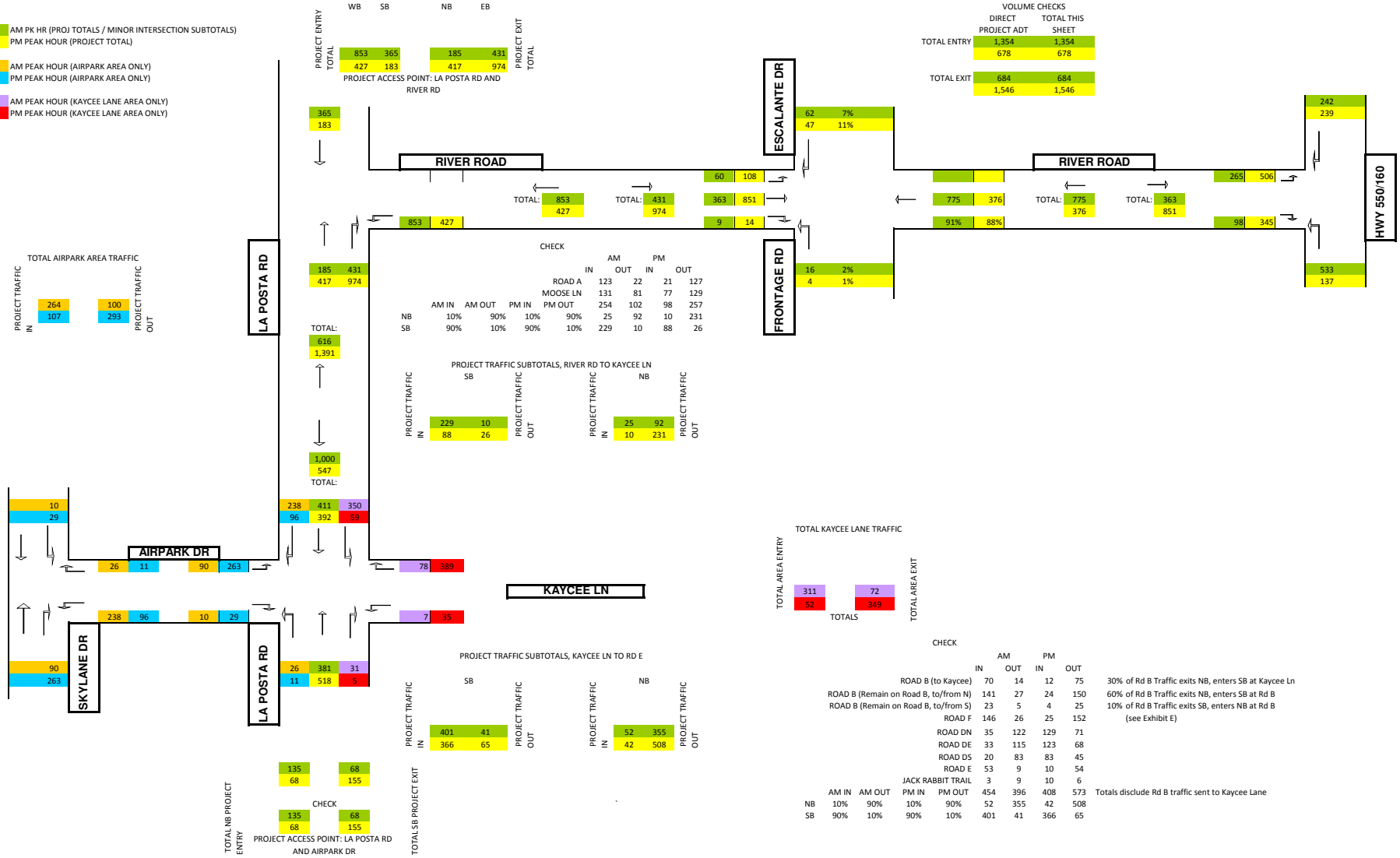
	AM IN	AM OUT	PM IN	PM OUT					
					IN	OUT	IN	OUT	
ROAD B (to Kaycee)					55	12	9	60	30% of Rd B Traffic exits NB, enters SB at Kaycee Ln
ROAD B (Remain on Road B, to/from N)					110	23	18	120	60% of Rd B Traffic exits NB, enters SB at Rd B
ROAD B (Remain on Road B, to/from S)					18	4	3	20	10% of Rd B Traffic exits SB, enters NB at Rd B
ROAD F					128	24	22	136	(see Exhibit E)
ROAD DN					23	82	87	48	
ROAD DE					23	82	87	48	
ROAD DS					13	51	52	29	
ROAD E					53	9	10	54	
JACK RABBIT TRAIL					3	9	10	6	
				PM OUT	372	285	290	462	Totals disclude Rd B traffic sent to Kaycee Lane
NB	10%	90%	10%	90%	56	280	32	536	
SB	90%	10%	90%	10%	445	32	280	66	

EXHIBIT B5 2034 PROJECT TRAFFIC VOLUME

AM PK HR (PROJ TOTALS / MINOR INTERSECTION SUBTOTALS)
PM PEAK HOUR (PROJECT TOTAL)

AM PEAK HOUR (AIRPARK AREA ONLY)
PM PEAK HOUR (AIRPARK AREA ONLY)

AM PEAK HOUR (KAYCEE LANE AREA ONLY)
PM PEAK HOUR (KAYCEE LANE AREA ONLY)



VOLUME CHECKS

	DIRECT PROJECT ADT	TOTAL THIS SHEET
TOTAL ENTRY	1,354	1,354
	678	678
TOTAL EXIT	684	684
	1,546	1,546

CHECK

	AM IN	AM OUT	PM IN	PM OUT
ROAD A	123	22	21	127
MOOSE LN	131	81	77	129
	254	102	98	257
NB	10%	90%	10%	90%
SB	90%	10%	90%	10%
	25	92	10	231
	229	10	88	26

CHECK

	AM IN	AM OUT	PM IN	PM OUT		
ROAD B (to Kaycee)	70	14	12	75		30% of Rd B Traffic exits NB, enters SB at Kaycee Ln
ROAD B (Remain on Road B, to/from N)	141	27	24	150		60% of Rd B Traffic exits NB, enters SB at Rd B
ROAD B (Remain on Road B, to/from S)	23	5	4	25		10% of Rd B Traffic exits SB, enters NB at Rd B
ROAD F	146	26	25	152		(see Exhibit E)
ROAD DN	35	122	129	71		
ROAD DE	33	115	123	68		
ROAD DS	20	83	83	45		
ROAD E	53	9	10	54		
JACK RABBIT TRAIL	3	9	10	6		
	AM IN	AM OUT	PM IN	PM OUT	454 396 408 573	Totals disclude Rd B traffic sent to Kaycee Lane
NB	10%	90%	10%	90%	52 355 42 508	
SB	90%	10%	90%	10%	401 41 366 65	

EXHIBIT C1 2019 PROJECT + BACKGROUND WITH OTHER APPROVED DEVLOPMENT TRAFFIC VOLUME

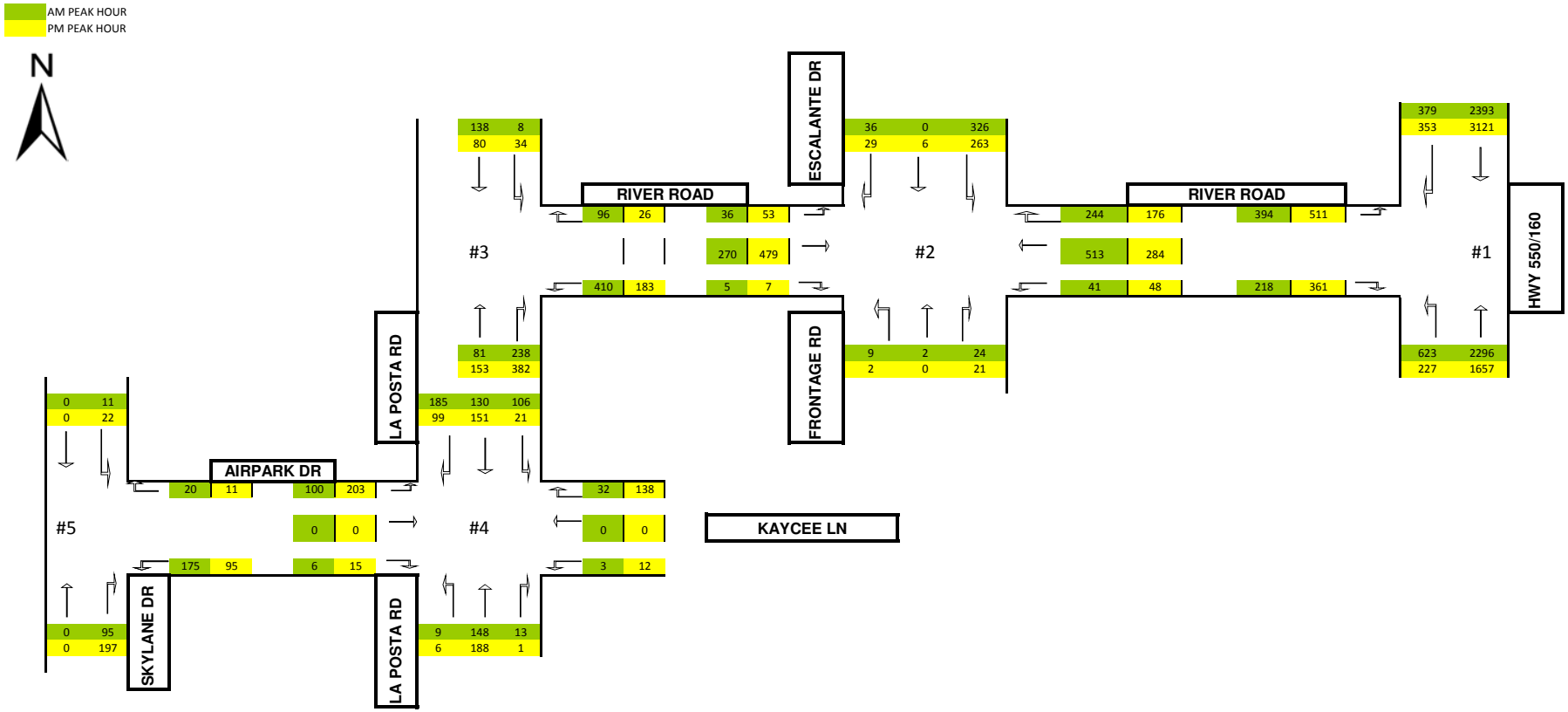


EXHIBIT C2 2024 PROJECT + BACKGROUND WITH OTHER APPROVED DEVLOPMENT TRAFFIC VOLUME

AM PEAK HOUR
PM PEAK HOUR

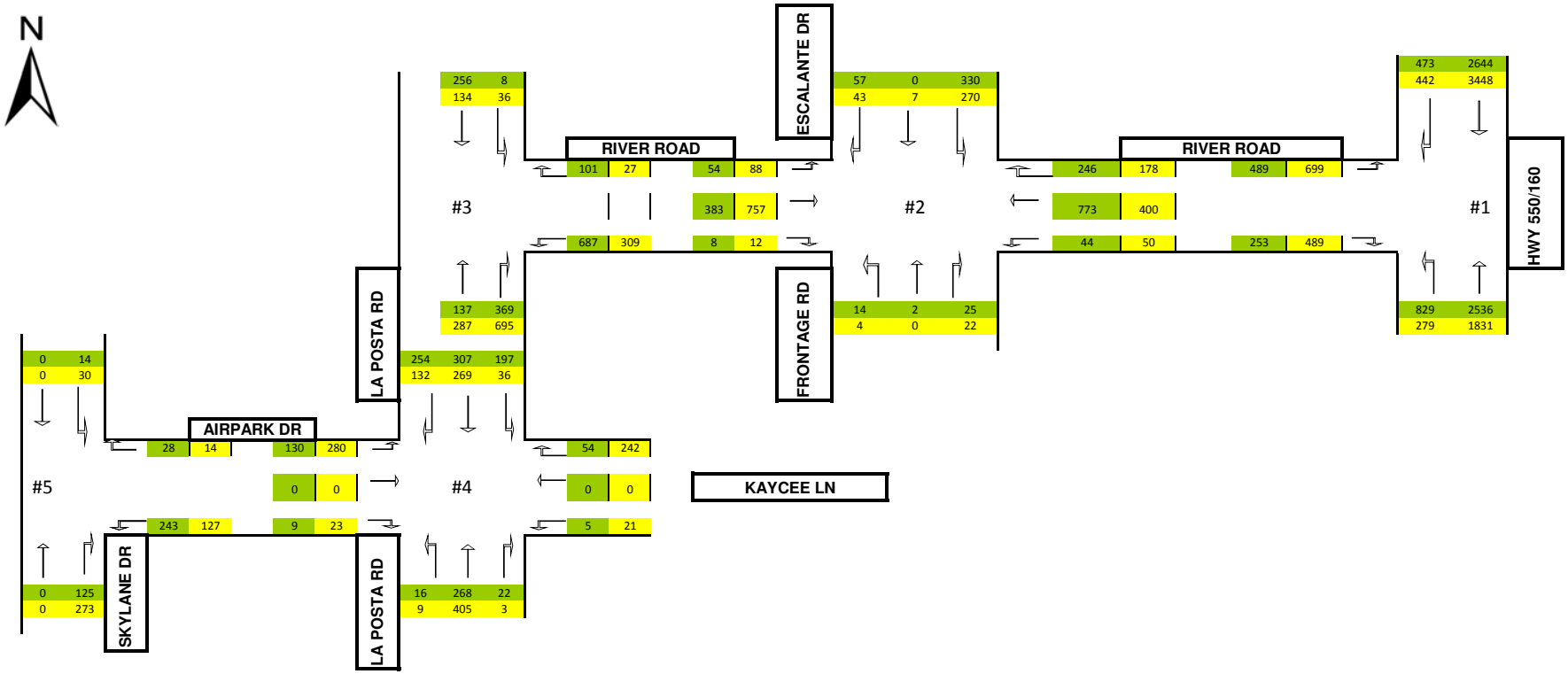


EXHIBIT C3 2029 PROJECT + BACKGROUND WITH OTHER APPROVED DEVLOPMENT TRAFFIC VOLUME

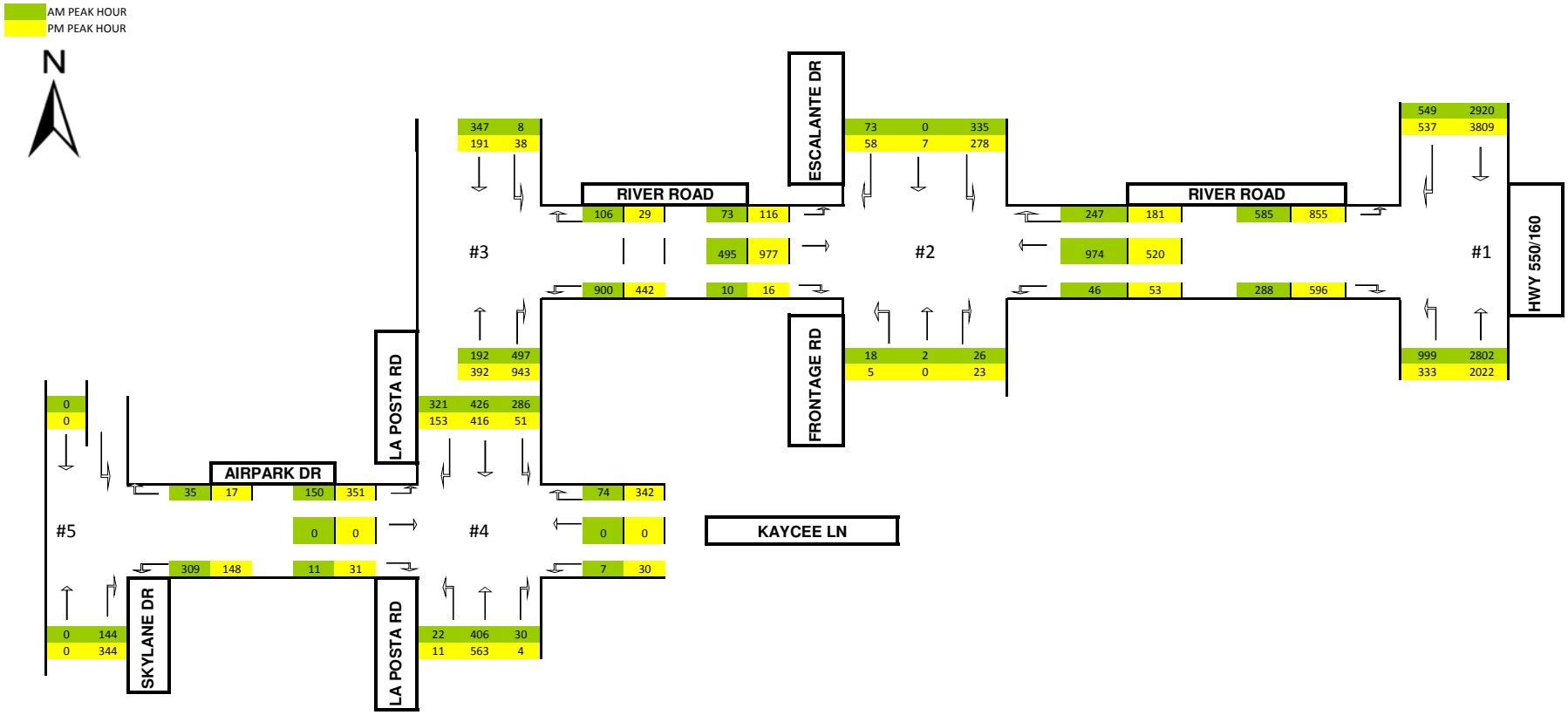


EXHIBIT C4 2034 PROJECT + BACKGROUND WITH OTHER APPROVED DEVLOPMENT TRAFFIC VOLUME

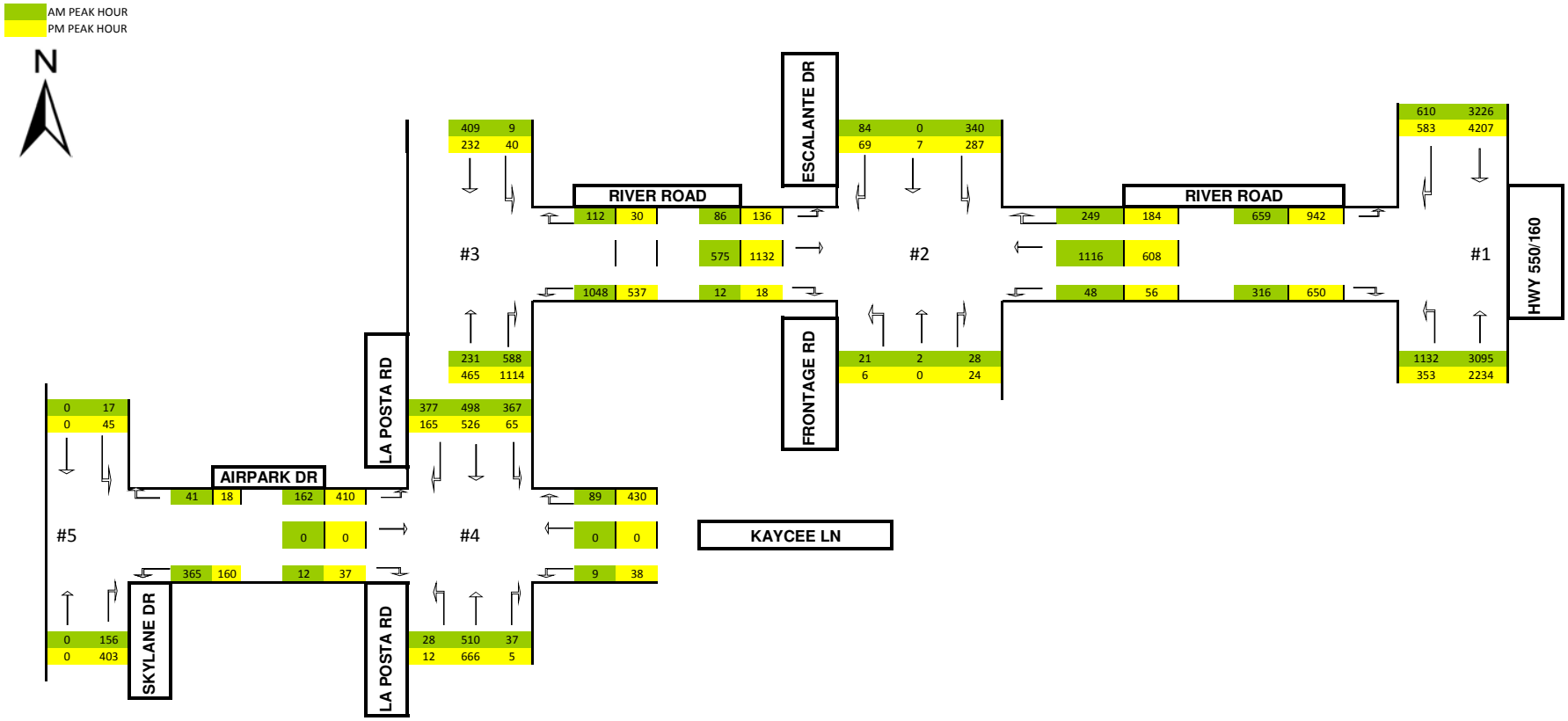


EXHIBIT D OTHER APPROVED DEVELOPMENT TRAFFIC VOLUME

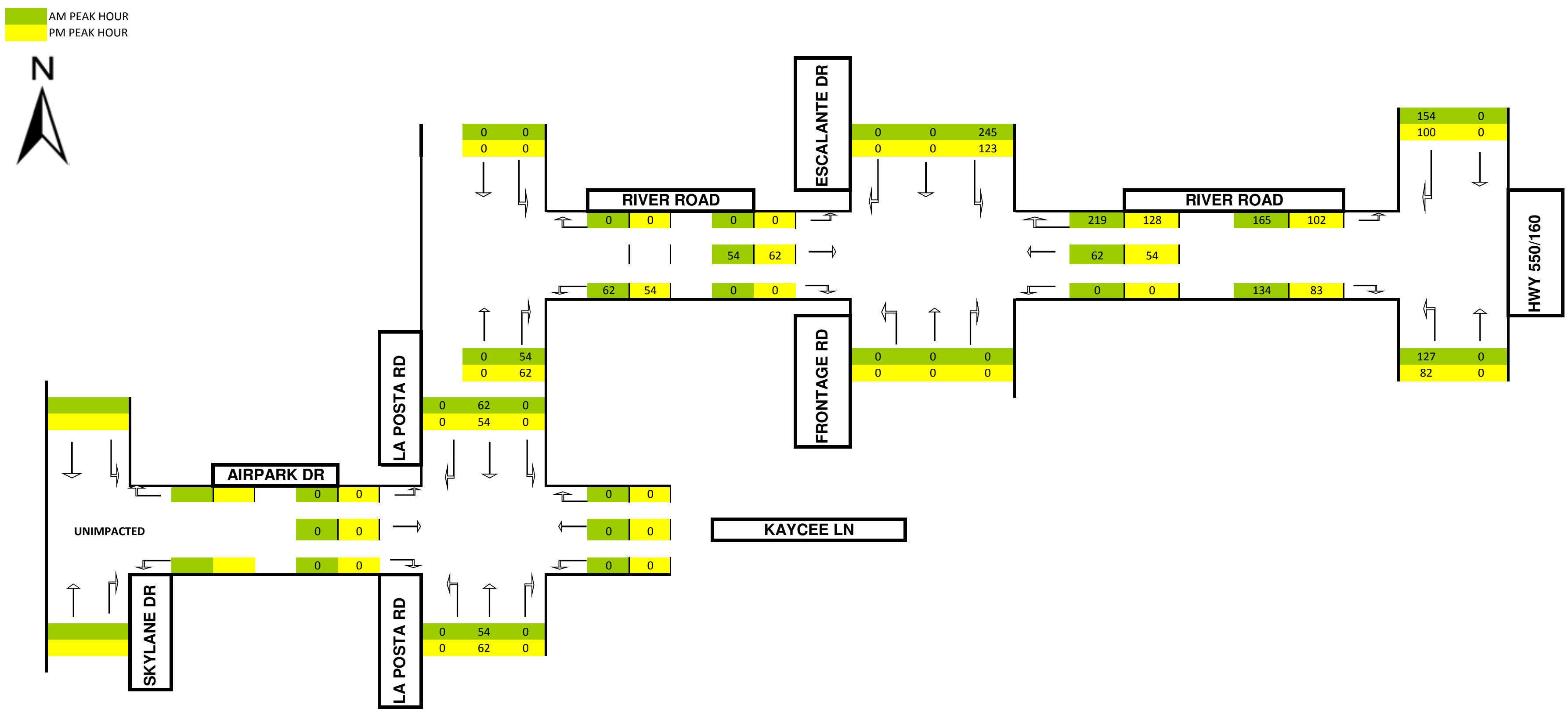


EXHIBIT E TABULATED TRAFFIC VOLUMES

TRIP 2030 GROWTH RATES

COUNTY ROAD / MINOR ARTERIAL	1.0400% PER YEAR	*YEARLY GROWTH FACTOR:*	1.0104
HWY 550/160	2.0100% PER YEAR		1.0201

1 **RIVER RD & HWY 160**

AM

	HWY 160 NORTHBOUND				HWY 160 SOUTHBOUND				RIVER RD EASTBOUND				WESTBOUND (N/A)			
	LEFT	THRU	RIGHT	Total	LEFT	THRU	RIGHT	Total	LEFT	THRU	RIGHT	Total	LEFT	THRU	RIGHT	Total
EXISTING 2008	281	1845	X	2126	X	1923	127	2050	136	X	50	187	x	x	x	x
GROWTH FACTOR TO 2014 (YEAR 0)	1.13	1.13		1.13		1.13	1.13	1.13	1.13		1.13	1.13				
2014 BG TRAFFIC	317	2079		2395		2167	144	2310	154		57	210				
BG GROWTH FACTOR T0 2019	1.24	1.24		1.24		1.24	1.24	1.24	1.24		1.24	1.24				
ROCKET PLANNED DEVELOPMENT TRAFFIC	99	0		99		0	120	120	135		110	245				
ANIMAS GLACIER GRAVEL PIT PLANNED DEVELOPMENT TRAFFIC	28	0		28		0	34	34	30		24	54				
TOTAL APPROVED PLANNED DEVELOPMENT TRAFFIC	127	0		127		0	154	154	165		134	299				
2019 BG WITH APPROVED PLANNED DEVELOPMENT	477	2296		2773		2393	313	2706	335		197	531				
2019 PROJECT TRAFFIC	146			146			66	66	59		22	81				
2019 PROJECT + BACKGROUND	623	2,296		2919		2,393	379	2772	394		218	612				
BG GROWTH FACTOR T0 2024	1.37	1.37		1.37		1.37	1.37	1.37	1.37		1.37	1.37				
2024 BG WITH APPROVED PLANNED DEVELOPMENT	513	2536		3050		2644	329	2973	353		203	556				
2024 PROJECT TRAFFIC	316			316			143	143	136		50	187				
2024 PROJECT + BACKGROUND	829	2,536		3366		2,644	473	3116	489		253	742				
BG GROWTH FACTOR T0 2029	1.52	1.52		1.52		1.52	1.52	1.52	1.52		1.52	1.52				
2029 BG WITH APPROVED PLANNED DEVELOPMENT	554	2802		3355		2920	348	3268	372		210	583				
2029 PROJECT TRAFFIC	445			445			202	202	212		78	291				
2029 PROJECT + BACKGROUND	999	2,802		3800		2,920	549	3470	585		288	873				
BG GROWTH FACTOR T0 2034	1.68	1.68		1.68		1.68	1.68	1.68	1.68		1.68	1.68				
2034 BG WITH APPROVED PLANNED DEVELOPMENT	598	3095		3693		3226	368	3594	394		218	612				
2034 PROJECT TRAFFIC	533			533			242	242	265		98	363				
2034 PROJECT + BACKGROUND	1,132	3,095		4226		3,226	610	3836	659		316	975				

RIVER RD & HWY 160

PM

	HWY 160 NORTHBOUND				HWY 160 SOUTHBOUND				RIVER RD EASTBOUND				WESTBOUND (N/A)			
	LEFT	THRU	RIGHT	Total	LEFT	THRU	RIGHT	Total	LEFT	THRU	RIGHT	Total	LEFT	THRU	RIGHT	Total
EXISTING 2008	94	1331	X	1425	X	2508	164	2671	219	X	149	368	x	x	x	x
GROWTH FACTOR TO 2014 (YEAR 0)	1.13	1.13		1.13		1.13	1.13	1.13	1.13		1.13	1.13				
2014 BG TRAFFIC	106	1500		1606		2826	184	3010	247		168	415				
BG GROWTH FACTOR T0 2019	1.24	1.24		1.24		1.24	1.24	1.24	1.24		1.24	1.24				
ROCKET PLANNED DEVELOPMENT TRAFFIC	58	0		58		0	70	70	68		55	123				
ANIMAS GLACIER GRAVEL PIT PLANNED DEVELOPMENT TRAFFIC	24	0		24		0	30	30	34		28	62				
TOTAL APPROVED PLANNED DEVELOPMENT TRAFFIC	82	0		82		0	100	100	102		83	185				
2019 BG WITH APPROVED PLANNED DEVELOPMENT	199	1657		1856		3121	304	3425	374		268	643				
2019 PROJECT TRAFFIC	28			28			49	49	136		93	229				
2019 PROJECT + BACKGROUND	227	1,657		1885		3,121	353	3474	511		361	872				
BG GROWTH FACTOR T0 2024	1.37	1.37		1.37		1.37	1.37	1.37	1.37		1.37	1.37				
2024 BG WITH APPROVED PLANNED DEVELOPMENT	211	1831		2042		3448	325	3773	403		288	691				
2024 PROJECT TRAFFIC	67			67			117	117	296		201	497				
2024 PROJECT + BACKGROUND	279	1,831		2109		3,448	442	3890	699		489	1188				
BG GROWTH FACTOR T0 2029	1.52	1.52		1.52		1.52	1.52	1.52	1.52		1.52	1.52				
2029 BG WITH APPROVED PLANNED DEVELOPMENT	225	2022		2247		3809	348	4157	434		309	744				
2029 PROJECT TRAFFIC	108			108			188	188	421		286	707				
2029 PROJECT + BACKGROUND	333	2,022		2355		3,809	537	4345	855		596	1451				
BG GROWTH FACTOR T0 2034	1.68	1.68		1.68		1.68	1.68	1.68	1.68		1.68	1.68				
2034 BG WITH APPROVED PLANNED DEVELOPMENT	216	2234		2449		4207	344	4551	435		305	740				
2034 PROJECT TRAFFIC	137			137			239	239	506		345	851				
2034 PROJECT + BACKGROUND	353	2,234		2587		4,207	583	4790	942		650	1591				

2 **ESCALANTE & RIVER RD**

AM

	FRONTAGE RD NORTHBOUND				ESCALANTE AVE SOUTHBOUND				RIVER RD EASTBOUND				RIVER RD WESTBOUND			
	LEFT	THRU	RIGHT	Total	LEFT	THRU	RIGHT	Total	LEFT	THRU	RIGHT	Total	LEFT	THRU	RIGHT	Total
EXISTING 2010	4	1	22	28	74	0	17	91	20	123	3	146	38	218	23	278
GROWTH FACTOR TO 2014 (YEAR 0)	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
2014 BG TRAFFIC	5	2	23	29	77	0	18	95	21	128	3	153	39	227	24	290
BG GROWTH FACTOR T0 2019	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
ROCKET PLANNED DEVELOPMENT TRAFFIC	0	0	0	0	245	0	0	245	0	0	0	0	0	0	219	219
ANIMAS GLACIER GRAVEL PIT PLANNED DEVELOPMENT TRAFFIC	0	0	0	0	0	0	0	0	0	54	0	54	0	62	0	62
TOTAL APPROVED PLANNED DEVELOPMENT TRAFFIC	0	0	0	0	245	0	0	245	0	54	0	54	0	62	219	281
2019 BG WITH APPROVED PLANNED DEVELOPMENT	5	2	24	30	326	0	19	345	22	189	3	215	41	301	244	587
2019 PROJECT TRAFFIC	4			4			17	17	13	81	2	96		213		213
2019 PROJECT + BACKGROUND	9	2	24	34	326	0	36	362	36	270	5	311	41	513	244	799
BG GROWTH FACTOR T0 2024	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16
2024 BG WITH APPROVED PLANNED DEVELOPMENT	5	2	25	32	330	0	20	351	23	196	3	223	44	313	246	603
2024 PROJECT TRAFFIC	9			9			37	37	31	187	4	222		460		460
2024 PROJECT + BACKGROUND	14	2	25	41	330	0	57	387	54	383	8	445	44	773	246	1062
BG GROWTH FACTOR T0 2029	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22
2029 BG WITH APPROVED PLANNED DEVELOPMENT	5	2	26	34	335	0	21	356	25	204	4	232	46	327	247	620
2029 PROJECT TRAFFIC	13			13			52	52	48	291	7	345		647		647
2029 PROJECT + BACKGROUND	18	2	26	46	335	0	73	408	73	495	10	577	46	974	247	1267
BG GROWTH FACTOR T0 2034	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
2034 BG WITH APPROVED PLANNED DEVELOPMENT	6	2	28	35	340	0	22	362	26	212	4	242	48	341	249	638
2034 PROJECT TRAFFIC	16			16			62	62	60	363	9	431		775		775
2034 PROJECT + BACKGROUND	21	2	28	51	340	0	84	424	86	575	12	673	48	1116	249	1413

ESCALANTE & RIVER RD

PM

	FRONTAGE RD NORTHBOUND				ESCALANTE AVE SOUTHBOUND				RIVER RD EASTBOUND				RIVER RD WESTBOUND			
	LEFT	THRU	RIGHT	Total	LEFT	THRU	RIGHT	Total	LEFT	THRU	RIGHT	Total	LEFT	THRU	RIGHT	Total
EXISTING 2010	1	0	19	20	128	6	17	151	22	171	3	196	44	139	44	226
GROWTH FACTOR TO 2014 (YEAR 0)	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
2014 BG TRAFFIC	2	0	20	21	133	6	18	157	23	178	3	204	45	145	45	236
BG GROWTH FACTOR T0 2019	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
ROCKET PLANNED DEVELOPMENT TRAFFIC	0	0	0	0	123	0	0	123	0	0	0	0	0	0	128	128
ANIMAS GLACIER GRAVEL PIT PLANNED DEVELOPMENT TRAFFIC	0	0	0	0	0	0	0	0	0	62	0	62	0	54	0	54
TOTAL APPROVED PLANNED DEVELOPMENT TRAFFIC	0	0	0	0	123	0	0	123	0	62	0	62	0	54	128	182
2019 BG WITH APPROVED PLANNED DEVELOPMENT	2	0	21	22	263	6	19	289	24	250	3	277	48	207	176	430
2019 PROJECT TRAFFIC	1			1			10	10	29	229	4	262		78		78
2019 PROJECT + BACKGROUND	2	0	21	23	263	6	29	298	53	479	7	539	48	284	176	508
BG GROWTH FACTOR T0 2024	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16	1.16
2024 BG WITH APPROVED PLANNED DEVELOPMENT	2	0	22	23	270	7	20	297	25	260	3	288	50	215	178	443
2024 PROJECT TRAFFIC	2			2			23	23	63	497	8	569		185		185
2024 PROJECT + BACKGROUND	4	0	22	25	270	7	43	320	88	757	12	857	50	400	178	628
BG GROWTH FACTOR T0 2029	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22	1.22
2029 BG WITH APPROVED PLANNED DEVELOPMENT	2	0	23	25	278	7	21	307	26	270	4	300	53	223	181	457
2029 PROJECT TRAFFIC	3			3			37	37	90	707	12	809		297		297
2029 PROJECT + BACKGROUND	5	0	23	28	278	7	58	344	116	977	16	1109	53	520	181	754
BG GROWTH FACTOR T0 2034	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28	1.28
2034 BG WITH APPROVED PLANNED DEVELOPMENT	2	0	24	26	287	7	22	316	28	281	4	313	56	232	184	472
2034 PROJECT TRAFFIC	4			4			47	47	108	851	14	974		376		376
2034 PROJECT + BACKGROUND	6	0	24	30	287	7	69	363	136	1,132	18	1287	56	608	184	848

3 **RIVER RD & LA POSTA**

AM

	LA POSTA RD NORTHBOUND				LA POSTA RD SOUTHBOUND				EASTBOUND (N/A)				RIVER RD WESTBOUND			
	LEFT	THRU	RIGHT	Total	LEFT	THRU	RIGHT	Total	LEFT	THRU	RIGHT	Total	LEFT	THRU	RIGHT	Total
EXISTING 2012	X	37	82	119	7	35	X	42	x	x	x	x	106	X	89	195
GROWTH FACTOR TO 2014 (YEAR 0)		1.02	1.02	1.02	1.02	1.02		1.02					1.02		1.02	1.02
2014 BG TRAFFIC		38	84	121	7	36		43					108		91	199
BG GROWTH FACTOR T0 2019		1.08	1.08	1.08	1.08	1.08		1.08					1.08		1.08	1.08
ROCKET PLANNED DEVELOPMENT TRAFFIC	NOT APPLIED															
ANIMAS GLACIER GRAVEL PIT PLANNED DEVELOPMENT TRAFFIC	0	0	54	54	0	0	0	0					62	0	0	62
TOTAL APPROVED PLANNED DEVELOPMENT TRAFFIC		0	54	54	0	0		0					62		0	62
2019 BG WITH APPROVED PLANNED DEVELOPMENT		40	142	182	8	38		45					176		96	272
2019 PROJECT TRAFFIC	0	41	96	137	0	100	0	100					234	0	0	234
2019 PROJECT + BACKGROUND	0	81	238	319	8	138	0	145					410	0	96	506
BG GROWTH FACTOR T0 2024		1.13	1.13	1.13	1.13	1.13		1.13					1.13		1.13	1.13
2024 BG WITH APPROVED PLANNED DEVELOPMENT		42	147	189	8	40		48					182		101	283
2024 PROJECT TRAFFIC	0	95	222	317	0	217	0	217					505	0	0	505
2024 PROJECT + BACKGROUND	0	137	369	505	8	256	0	264					687	0	101	788
BG GROWTH FACTOR T0 2029		1.19	1.19	1.19	1.19	1.19		1.19					1.19		1.19	1.19
2029 BG WITH APPROVED PLANNED DEVELOPMENT		44	152	196	8	42		50					188		106	294
2029 PROJECT TRAFFIC	0	148	345	493	0	305	0	305					711	0	0	711
2029 PROJECT + BACKGROUND	0	192	497	689	8	347	0	355					900	0	106	1006
BG GROWTH FACTOR T0 2034		1.26	1.26	1.26	1.26	1.26		1.26					1.26		1.26	1.26
2034 BG WITH APPROVED PLANNED DEVELOPMENT		46	157	203	9	44		53					195		112	307
2034 PROJECT TRAFFIC	0	185	431	616	0	365	0	365					853	0	0	853
2034 PROJECT + BACKGROUND	0	231	588	819	9	409	0	418					1048	0	112	1160

RIVER RD & LA POSTA

PM

	LA POSTA RD NORTHBOUND				LA POSTA RD SOUTHBOUND				EASTBOUND (N/A)				RIVER RD WESTBOUND			
	LEFT	THRU	RIGHT	Total	LEFT	THRU	RIGHT	Total	LEFT	THRU	RIGHT	Total	LEFT	THRU	RIGHT	Total
EXISTING 2012	X	38	112	150	32	39	X	71	X	X	X	X	88	X	24	112
GROWTH FACTOR TO 2014 (YEAR 0)		1.02	1.02	1.02	1.02	1.02		1.02					1.02		1.02	1.02
2014 BG TRAFFIC		39	114	153	33	40		72					90		25	114
BG GROWTH FACTOR T0 2019		1.08	1.08	1.08	1.08	1.08		1.08					1.08		1.08	1.08
ROCKET PLANNED DEVELOPMENT TRAFFIC								NOT APPLIED								
ANIMAS GLACIER GRAVEL PIT PLANNED DEVELOPMENT TRAFFIC	0	0	62	62	0	0	0	0					54	0	0	54
TOTAL APPROVED PLANNED DEVELOPMENT TRAFFIC		0	62	62	0	0		0					54		0	54
2019 BG WITH APPROVED PLANNED DEVELOPMENT		41	120	161	34	42		76					95		26	120
2019 PROJECT TRAFFIC	0	112	262	374	0	38	0	38					88	0	0	88
2019 PROJECT + BACKGROUND	0	153	382	535	34	80	0	114					183	0	26	209
BG GROWTH FACTOR T0 2024		1.13	1.13	1.13	1.13	1.13		1.13					1.13		1.13	1.13
2024 BG WITH APPROVED PLANNED DEVELOPMENT		43	127	170	36	44		80					100		27	127
2024 PROJECT TRAFFIC	0	244	569	812	0	90	0	90					210	0	0	210
2024 PROJECT + BACKGROUND	0	287	695	982	36	134	0	170					309	0	27	337
BG GROWTH FACTOR T0 2029		1.19	1.19	1.19	1.19	1.19		1.19					1.19		1.19	1.19
2029 BG WITH APPROVED PLANNED DEVELOPMENT		45	134	179	38	46		85					105		29	134
2029 PROJECT TRAFFIC	0	347	809	1156	0	144	0	144					337	0	0	337
2029 PROJECT + BACKGROUND	0	392	943	1335	38	191	0	229					442	0	29	471
BG GROWTH FACTOR T0 2034		1.26	1.26	1.26	1.26	1.26		1.26					1.26		1.26	1.26
2034 BG WITH APPROVED PLANNED DEVELOPMENT		48	141	188	40	49		89					110		30	141
2034 PROJECT TRAFFIC	0	417	974	1391	0	183	0	183					427	0	0	427
2034 PROJECT + BACKGROUND	0	465	1114	1579	40	232	0	272					537	0	30	567

4 **KAYCEE LN & LA POSTA**

AM

	LA POSTA RD NORTHBOUND				LA POSTA RD SOUTHBOUND				AIRPARK DR EASTBOUND				KAYCEE LN WESTBOUND			
	LEFT	THRU	RIGHT	Total	LEFT	THRU	RIGHT	Total	LEFT	THRU	RIGHT	Total	LEFT	THRU	RIGHT	Total
Existing 2008	1	57	5	63	13	19	106	139	55	0	1	56	1	0	8	10
GROWTH FACTOR TO 2014 (YEAR 0)	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
2014 BG TRAFFIC	1	61	5	67	14	20	113	147	58	0	1	60	1	0	9	10
BG GROWTH FACTOR T0 2019	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12
ROCKET PLANNED DEVELOPMENT TRAFFIC	NOT APPLIED															
ANIMAS GLACIER GRAVEL PIT PLANNED DEVELOPMENT TRAFFIC	0	54	0	54	0	62	0	62	0	0	0	0	0	0	0	0
TOTAL APPROVED PLANNED DEVELOPMENT TRAFFIC	0	54	0	54	0	62	0	62	0	0	0	0	0	0	0	0
2019 BG WITH APPROVED PLANNED DEVELOPMENT	1	118	5	125	15	83	119	217	62	0	1	63	1	0	9	11
2019 PROJECT TRAFFIC	7	29	8	45	91	47	66	204	38	0	4	43	2	0	22	24
2019 PROJECT + BACKGROUND	9	148	13	170	106	130	185	421	100	0	6	105	3	0	32	35
BG GROWTH FACTOR T0 2024	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18
2024 BG WITH APPROVED PLANNED DEVELOPMENT	1	122	6	129	16	85	125	226	65	0	1	66	1	0	10	11
2024 PROJECT TRAFFIC	14	146	16	176	181	222	129	532	65	0	7	72	4	0	44	48
2024 PROJECT + BACKGROUND	16	268	22	305	197	307	254	758	130	0	9	139	5	0	54	59
BG GROWTH FACTOR T0 2029	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24
2029 BG WITH APPROVED PLANNED DEVELOPMENT	1	125	6	133	16	86	132	234	68	0	1	70	1	0	10	12
2029 PROJECT TRAFFIC	21	281	24	326	270	340	188	798	82	0	9	91	6	0	64	70
2029 PROJECT + BACKGROUND	22	406	30	458	286	426	321	1032	150	0	11	161	7	0	74	81
BG GROWTH FACTOR T0 2034	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31
2034 BG WITH APPROVED PLANNED DEVELOPMENT	2	129	6	137	17	87	139	243	72	0	2	73	2	0	11	13
2034 PROJECT TRAFFIC	26	381	31	438	350	411	238	1000	90	0	10	100	7	0	78	86
2034 PROJECT + BACKGROUND	28	510	37	575	367	498	377	1243	162	0	12	173	9	0	89	98

KAYCEE LN & LA POSTA

PM

	LA POSTA RD NORTHBOUND				LA POSTA RD SOUTHBOUND				AIRPARK DR EASTBOUND				KAYCEE LN WESTBOUND			
	LEFT	THRU	RIGHT	Total	LEFT	THRU	RIGHT	Total	LEFT	THRU	RIGHT	Total	LEFT	THRU	RIGHT	Total
Existing 2008	1	66	0	67	5	61	53	118	112	0	6	118	2	0	31	33
GROWTH FACTOR TO 2014 (YEAR 0)	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
2014 BG TRAFFIC	1	70	0	71	5	65	56	126	120	0	6	126	3	0	33	36
BG GROWTH FACTOR T0 2019	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12	1.12
ROCKET PLANNED DEVELOPMENT TRAFFIC	NOT APPLIED															
ANIMAS GLACIER GRAVEL PIT PLANNED DEVELOPMENT TRAFFIC	0	62	0	62	0	54	0	54	0	0	0	0	0	0	0	0
TOTAL APPROVED PLANNED DEVELOPMENT TRAFFIC	0	62	0	62	0	54	0	54	0	0	0	0	0	0	0	0
2019 BG WITH APPROVED PLANNED DEVELOPMENT	1	136	0	137	5	122	59	187	126	0	7	133	3	0	35	37
2019 PROJECT TRAFFIC	4	53	1	58	16	29	40	85	77	0	9	86	9	0	103	112
2019 PROJECT + BACKGROUND	6	188	1	195	21	151	99	271	203	0	15	218	12	0	138	149
BG GROWTH FACTOR T0 2024	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18
2024 BG WITH APPROVED PLANNED DEVELOPMENT	1	140	0	141	6	126	62	194	133	0	7	140	3	0	37	39
2024 PROJECT TRAFFIC	8	265	3	276	31	143	70	243	147	0	16	164	18	0	205	223
2024 PROJECT + BACKGROUND	9	405	3	417	36	269	132	437	280	0	23	303	21	0	242	263
BG GROWTH FACTOR T0 2029	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24	1.24
2029 BG WITH APPROVED PLANNED DEVELOPMENT	1	144	0	145	6	130	65	201	140	0	7	147	3	0	39	42
2029 PROJECT TRAFFIC	10	420	4	433	45	286	88	419	212	0	24	235	27	0	303	330
2029 PROJECT + BACKGROUND	11	563	4	579	51	416	153	620	351	0	31	382	30	0	342	372
BG GROWTH FACTOR T0 2034	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31	1.31
2034 BG WITH APPROVED PLANNED DEVELOPMENT	2	148	0	150	6	134	69	209	147	0	8	155	3	0	41	44
2034 PROJECT TRAFFIC	11	518	5	534	59	392	96	547	263	0	29	293	35	0	389	424
2034 PROJECT + BACKGROUND	12	666	5	683	65	526	165	756	410	0	37	447	38	0	430	468

5 **AIRPARK DR & SKYLANE**

AM

	SKYLANE DR NORTHBOUND				SKYLANE DR SOUTHBOUND				EASTBOUND (N/A)				AIRPARK DR WESTBOUND			
	LEFT	THRU	RIGHT	Total	LEFT	THRU	RIGHT	Total	LEFT	THRU	RIGHT	Total	LEFT	THRU	RIGHT	Total
EXISTING 2008 CALCULATED	X	0	51	51	6	0	X	6	x	x	x	x	97	X	11	108
GROWTH FACTOR TO 2014 (YEAR 0)		1.06	1.06	1.06	1.06	1.06		1.06					1.06		1.06	1.06
2014 BG TRAFFIC		0	54	54	6	0		6					103		12	115
BG GROWTH FACTOR T0 2019		1.12	1.12	1.12	1.12	1.12		1.12					1.12		1.12	1.12
2019 BG		0	57	57	6	0		6					108		13	121
2019 PROJECT TRAFFIC		0	38	38	4	0		4					66		7	74
2019 PROJECT + BACKGROUND		0	95	95	11	0		11					175		20	195
BG GROWTH FACTOR T0 2024		1.18	1.18	1.18	1.18	1.18		1.18					1.18		1.18	1.18
2024 BG		0	60	60	7	0		7					114		14	128
2024 PROJECT TRAFFIC		0	65	65	7	0		7					129		14	143
2024 PROJECT + BACKGROUND		0	125	125	14	0		14					243		28	271
BG GROWTH FACTOR T0 2029		1.24	1.24	1.24	1.24	1.24		1.24					1.24		1.24	1.24
2029 BG		0	63	63	7	0		7					120		14	134
2029 PROJECT TRAFFIC		0	82	82	9	0		9					188		21	209
2029 PROJECT + BACKGROUND		0	144	144	16	0		16					309		35	344
BG GROWTH FACTOR T0 2034		1.31	1.31	1.31	1.31	1.31		1.31					1.31		1.31	1.31
2034 BG		0	66	66	7	0		7					127		15	142
2034 PROJECT TRAFFIC		0	90	90	10	0		10					238		26	264
2034 PROJECT + BACKGROUND		0	156	156	17	0		17					365		41	406

AIRPARK DR & SKYLANE

PM

	SKYLANE DR NORTHBOUND				SKYLANE DR SOUTHBOUND				EASTBOUND (N/A)				AIRPARK DR WESTBOUND			
	LEFT	THRU	RIGHT	Total	LEFT	THRU	RIGHT	Total	LEFT	THRU	RIGHT	Total	LEFT	THRU	RIGHT	Total
EXISTING 2008 CALCULATED	X	0	106	106	12	0	X	12	x	x	x	x	48	X	6	54
GROWTH FACTOR TO 2014 (YEAR 0)		1.06	1.06	1.06	1.06	1.06		1.06					1.06		1.06	1.06
2014 BG TRAFFIC		0	113	113	13	0		13					51		6	58
BG GROWTH FACTOR T0 2019		1.12	1.12	1.12	1.12	1.12		1.12					1.12		1.12	1.12
2019 BG		0	119	119	13	0		13					54		6	61
2019 PROJECT TRAFFIC		0	77	77	9	0		9					40		4	45
2019 PROJECT + BACKGROUND		0	197	197	22	0		22					95		11	106
BG GROWTH FACTOR T0 2024		1.18	1.18	1.18	1.18	1.18		1.18					1.18		1.18	1.18
2024 BG		0	126	126	14	0		14					57		7	64
2024 PROJECT TRAFFIC		0	147	147	16	0		16					70		8	77
2024 PROJECT + BACKGROUND		0	273	273	30	0		30					127		14	141
BG GROWTH FACTOR T0 2029		1.24	1.24	1.24	1.24	1.24		1.24					1.24		1.24	1.24
2029 BG		0	132	132	15	0		15					60		7	67
2029 PROJECT TRAFFIC		0	212	212	24	0		24					88		10	98
2029 PROJECT + BACKGROUND		0	344	344	38	0		38					148		17	165
BG GROWTH FACTOR T0 2034		1.31	1.31	1.31	1.31	1.31		1.31					1.31		1.31	1.31
2034 BG		0	139	139	15	0		15					63		7	71
2034 PROJECT TRAFFIC		0	263	263	29	0		29					96		11	107
2034 PROJECT + BACKGROUND		0	403	403	45	0		45					160		18	178

ASSUMPTIONS AND SOURCES:

1 **RIVER RD & HWY 160 BACKGROUND TRAFFIC VOLUMES - WEEMINUCHE ANIMAS GLACIER TRAFFIC STUDY**

2 **ESCALANTE & RIVER ROAD BACKGROUND TRAFFIC VOLUMES - WEEMINUCHE ANIMAS GLACIER TRAFFIC STUDY**

3 **RIVER RD & LA POSTA BACKGROUND TRAFFIC VOLUMES - RPE COUNTS, 07/03/2012**

4 **KAYCEE LN & LA POSTA BACKGROUND TRAFFIC VOLUMES - POWER MOTIVE TRAFFIC STUDY**

5 **AIRPAK DR & SKYLANE BACKGROUND TRAFFIC VOLUMES - POWER MOTIVE TRAFFIC STUDY (KAYCEE AND LA POSTA TRAFFIC PROJECTED AT 90%S / 10%N)**

6 **GROWTH RATES - MERCURY VILLAGE TRAFFIC STUDY (SEE RIGHT)**

7 **ANIMAS GLACIER GRAVEL PLANNED DEVELOPMENT TRAFFIC WAS TAKEN FROM THE TRAFFIC STUDY FOR THE DEVELOPMENT, AND IS APPLIED TO DIRECTLY AFFECTED INTERSECTIONS ONLY (HWY 550 / 160 AND RIVER ROAD; RIVER ROAD AND ESCALANTE), OTHER IMPACTS ARE REPRESENTED BY OVERALL GROWTH RATES. ALL ANUIMAS GLACIER GRAVEL PIT TRAFFIC WAS ADDED BEGINNING IN 2019.**

8 **ROCKET DRIVE PLANNED DEVELOPMENT TRAFFIC WAS TAKEN FROM THE TRAFFIC STUDY FOR THE DEVELOPMENT, AND IS APPLIED TO DIRECTLY AFFECTED INTERSECTIONS ONLY (HWY 550 / 160 AND RIVER ROAD; RIVER ROAD AND ESCALANTE), OTHER IMPACTS ARE REPRESENTED BY OVERALL GROWTH RATES.**

9 **PROJECT TRAFFIC NOT SPECIFIED IN EX-B1 FOLLOWS EXISTING TRAFFIC SPLITS**

10 **ROAD B PROJECT TRAFFIC HAS BEEN SHARED WITH THE KAYCEE LANE INTERSECTION, AS THE IMPROVED INTERSECTION WILL PROVIDE A PREFERRED ALTERNATE ROUTE DURING HIGH TRAFFIC PERIODS (SEE EXHIBIT B)**

11 **PROJECT TRAFFIC WAS DETERMINED BY APPLYING ITE TRIP GENERATION RATES TO BUILD-OUT PROJECTIONS PROVIDED BY DESIGN WORKSHOP (SEE EXHIBITS F AND G)**

12 **DESIGN WORKSHOP BUILD-OUT PROJECTIONS WERE APPLIED TO THE FOLLOWING ITE CLASSIFICATIONS:**

Office: ITE 210
Warehouse: ITE 180
Light Industrial: ITE 110
General Industrial: ITE 130 (Industrial Park)
Retail: ITE 814 (Specialty Retail Center)
Single Family Residence: ITE 210
Multi-Family Residence: ITE 230
(SEE EXHIBIT G)

FROM MERCURY TRAFFIC STUDY

SH160 1 YEAR GROWTH FACTOR =	1.0201
TRIP 2030 1 YEAR GROWTH FACTOR=	1.0104
SEASONAL FACTOR =	1.03

20 year factor (from CDOT website)	1.49
1 year factor (from CDOT)	1.020149

Hwy 160	1.49
DGO (20 YR FACTOR)	1.23
DGO (1 YR FACTOR)	1.0104

EXHIBIT F DESIGN WORKSHOP PROJECT BUILD-OUT PROJECTIONS

YEAR 0 (2014) - BASELINE-ESTIMATED TIME FRAME FOR ANNEXATION & ENTITLEMENT TO BE COMPLETED

YEAR 5 (2019) BUILD-OUT - ASSUMING ALL ROAD, SEWER, WATER IMPROVEMENTS MADE TO STIMULATE DEVELOPMENT

LA POSTA HIGHWAY ACCESS	SF-OFFICE	SF-WAREHOUSE	SF-LIGHT INDUSTRIAL	SF-INDUSTRIAL	SF-RETAIL	SINGLE FAMILY UNITS	MULTI-FAMILY UNITS
ROAD A (A)	25,000	34,835	25,000				
MOOSE (M)	12,500	20,295	40,590		5,000	25	33
KAYCEE LN / LA POSTA	X	X	X	X	X	X	X
(KC)	12,500	50,000	50,000			1	
AIRPARK (AIR)	10,000	12,500	50,000	2,100		25	50
ROAD B (B)	12,500	37,500	37,500				
JACK RABBIT TRAIL (R)						10	
ROAD F							
ROAD D - NORTH (DN)							
ROAD D / ROAD E / LA POSTA	X	X	X	X	X	X	X
ROAD E (E)							
ROAD D (DE)							
ROAD D - SOUTH (DS)							
PROJECT TOTAL	72,500	155,130	203,090	2,100	5,000	61	83

YEAR 10 (2024) BUILD-OUT

LA POSTA HIGHWAY ACCESS	SF-OFFICE	SF-WAREHOUSE	SF-LIGHT INDUSTRIAL	SF-INDUSTRIAL	SF-RETAIL	SINGLE FAMILY UNITS	MULTI-FAMILY UNITS
ROAD A (A)	9,835		25,000				
MOOSE (M)	12,500				5,000	1	
KAYCEE LN / LA POSTA	X	X	X	X	X	X	X
(KC)	12,500	50,000	50,000				
AIRPARK (AIR)	10,000	12,500	50,000			25	15
ROAD B (B)	12,500	37,500	37,500				
JACK RABBIT TRAIL (R)						6	
ROAD F	12,500	43,647	50,000				
ROAD D - NORTH (DN)						40	50
ROAD D / ROAD E / LA POSTA	X	X	X	X	X	X	X
ROAD E (E)	10,000	13,078	25,000	9,345			
ROAD D (DE)						40	50
ROAD D - SOUTH (DS)							
PROJECT TOTAL	79,835	156,725	237,500	9,345	5,000	112	115

YEAR 15 (2029) BUILD-OUT

LA POSTA HIGHWAY ACCESS	SF-OFFICE	SF-WAREHOUSE	SF-LIGHT INDUSTRIAL	SF-INDUSTRIAL	SF-RETAIL	SINGLE FAMILY UNITS	MULTI-FAMILY UNITS
ROAD A (A)			19,671				
MOOSE (M)	7,004				1,709		
KAYCEE LN / LA POSTA	X	X	X	X	X	X	X
(KC)	12,500	50,000	50,000				
AIRPARK (AIR)	10,000	12,500	50,000			15	
ROAD B (B)	12,500	13,484	37,500				
JACK RABBIT TRAIL (R)							
ROAD F	12,500		37,294				
ROAD D - NORTH (DN)						40	50
ROAD D / ROAD E / LA POSTA	X	X	X	X	X	X	X
ROAD E (E)	3,078		1,156				
ROAD D (DE)						40	50
ROAD D - SOUTH (DS)				278		26	100
PROJECT TOTAL	57,582	75,984	195,621	278	1,709	121	200

YEAR 20 (2034) BUILD-OUT

LA POSTA HIGHWAY ACCESS	SF-OFFICE	SF-WAREHOUSE	SF-LIGHT INDUSTRIAL	SF-INDUSTRIAL	SF-RETAIL	SINGLE FAMILY UNITS	MULTI-FAMILY UNITS
ROAD A (A)							
MOOSE (M)							
KAYCEE LN / LA POSTA	X	X	X	X	X	X	X
(KC)	12,500	29,202	50,000				
AIRPARK (AIR)	10,000	12,500	41,005				
ROAD B (B)	12,500		37,500				
JACK RABBIT TRAIL (R)							
ROAD F	12,500						
ROAD D - NORTH (DN)						40	45
ROAD D / ROAD E / LA POSTA	X	X	X	X	X	X	X
ROAD E (E)							
ROAD D (DE)						40	28
ROAD D - SOUTH (DS)							89
PROJECT TOTAL	47,500	41,702	128,505	0	0	80	162

NOTES:

1 "SERVICE COMMERCIAL" LANDS WILL BE SPLIT INTO ITE GENERATORS AS: 50% OFFICE, 25% WAREHOUSE, 25% LIGHT INDUSTRIAL
2 RABBIT TRAIL ACCESS WILL USE ITE GENERATION RATES AS WE HAVE NO BG DATA AND THIS IS A SMALL RESIDENTIAL SUBDIVISION (NOT EXPECTED TO TRIGGER IMNPROVEMENTS)
3 LOTS NOT REDEVELOPED WILL NOT BE INCLUDED IN ITE RATES, AS BG TRAFFIC WITH GROWTH WILL ACCOUNT FOR THIS TRAFFIC
4 LOTS 75-78 AND 84 ARE ASSUMED UNDEVELOPABLE DUE TO ACCESS ISSUES
5 PROJECT TOTALS ARE INDEPENDENT, NOT TOTALED FROM SPREADSHEET SO THAT OVERALL PROJECT ACCESS DATA REFLECTS LOTS NOT INCLUDED IN INTERSECTION ACCESS BASINS (EG LOT 60, 65)

DW Assumptions:

1 YEAR 5 (2019) BUILD-OUT - ASSUMING ALL ROAD, SEWER, WATER IMPROVEMENTS MADE TO STIMULATE DEVELOPMENT
2 FAR assumptions: Mixed Commercial/Light Industrial=.15, Multiple Use=.3, Industrial=.0015
3 Multiple use is 60% residential, 20% Office, 20% Retail. Multiple use residential assuming max. potential of 24 units/acre with 5% being single family detached units and 95% being multi-family units.
4 Medium Residential assumes max of 12 du/acre (range is from 5-12 du/acre). Assumes 50% single family, 50% multi-family units
5 Mixed Commercial/Light Industrial is 50% Office, 25% Warehouse, 25% Light Industrial
6 Existing residential considered part of baseline condition
7 Moderate rate of development
8 Moderate to High rate of development
9 Absorption rates see July 2012 Absorption Rate Assumptions below

EXHIBIT G PROPOSED DEVELOPMENT TRAFFIC VOLUMES

FULL PROJECT

								L	M	N	O
			ITE GENERATION RATES					PROJECT TRAFFIC GENERATION			
	CURRENT PHASE	PHASE TOTAL	DAILY	PEAK HOUR				DAILY	PEAK HOUR		
	SF or Units/Year	SF or Units/Total		AM		PM			AM		PM	
2019			ADT RATE PER KSF	IN	OUT	IN	OUT	ADT	IN	OUT	IN	OUT
OFFICE	72,500 SF	73 KSF	11.01	1.37	0.19	0.25	1.24	798	100	14	18	90
WAREHOUSE	155,130 SF	155 KSF	4.96	0.34	0.23	0.05	0.56	769	52	36	8	87
LIGHT INDUSTRIAL	203,090 SF	203 KSF	6.97	0.91	0.10	0.15	0.93	1,416	185	21	31	189
GENERAL INDUSTRIAL	2,100 SF	2 KSF	6.96	0.71	0.11	0.18	0.68	15	1	0	0	1
RETAIL	5,000 SF	5 KSF	40.67	3.08	3.33	2.81	2.12	203	15	17	14	11
SINGLE FAMILY RESIDENTIAL*	61 DU	61 DU	9.57	0.19	0.58	0.65	0.37	584	12	35	40	22
MULTI-FAMILTY RESIDENTIAL	83 DU	83 DU	5.86	0.08	0.36	0.35	0.19	486	7	30	29	16
							2019 TOTAL PROJECT TRAFFIC	**4,271**	**371**	**152**	**140**	**415**

			ITE GENERATION RATES					PROJECT TRAFFIC GENERATION				
	CURRENT PHASE	PHASE TOTAL	DAILY	PEAK HOUR				DAILY	PEAK HOUR			
	SF or Units/Year	SF or Units/Total		AM		PM			AM		PM	
2024			ADT RATE PER KSF	IN	OUT	IN	OUT	ADT	IN	OUT	IN	OUT
OFFICE	79,835 SF	152 KSF	11.01	1.37	0.19	0.25	1.24	1,677	209	29	39	188
WAREHOUSE	156,725 SF	312 KSF	4.96	0.34	0.23	0.05	0.56	1,547	105	73	15	175
LIGHT INDUSTRIAL	237,500 SF	441 KSF	6.97	0.91	0.10	0.15	0.93	3,071	400	44	67	409
GENERAL INDUSTRIAL	9,345 SF	11 KSF	6.96	0.71	0.11	0.18	0.68	80	8	1	2	8
RETAIL	5,000 SF	10 KSF	40.67	3.08	3.33	2.81	2.12	407	31	33	28	21
SINGLE FAMILY RESIDENTIAL	112 DU	173 DU	9.57	0.19	0.58	0.65	0.37	1,656	33	100	113	64
MULTI-FAMILTY RESIDENTIAL	115 DU	198 DU	5.86	0.08	0.36	0.35	0.19	1,160	16	71	69	37
							2024 TOTAL PROJECT TRAFFIC	**9,597**	**802**	**352**	**333**	**903**

			ITE GENERATION RATES					PROJECT TRAFFIC GENERATION				
	CURRENT PHASE	PHASE TOTAL	DAILY	PEAK HOUR				DAILY	PEAK HOUR			
	SF or Units/Year	SF or Units/Total		AM		PM			AM		PM	
2029			ADT RATE PER KSF	IN	OUT	IN	OUT	ADT	IN	OUT	IN	OUT
OFFICE	57,582 SF	210 KSF	11.01	1.37	0.19	0.25	1.24	2,311	288	39	53	260
WAREHOUSE	75,984 SF	388 KSF	4.96	0.34	0.23	0.05	0.56	1,924	130	91	19	218
LIGHT INDUSTRIAL	195,621 SF	636 KSF	6.97	0.91	0.10	0.15	0.93	4,434	578	64	96	591
GENERAL INDUSTRIAL	278 SF	12 KSF	6.96	0.71	0.11	0.18	0.68	82	8	1	2	8
RETAIL	1,709 SF	12 KSF	40.67	3.08	3.33	2.81	2.12	476	36	39	33	25
SINGLE FAMILY RESIDENTIAL	121 DU	294 DU	9.57	0.19	0.58	0.65	0.37	2,814	57	170	192	108
MULTI-FAMILTY RESIDENTIAL	200 DU	398 DU	5.86	0.08	0.36	0.35	0.19	2,332	32	144	140	75
							2029 TOTAL PROJECT TRAFFIC	**14,373**	**1,129**	**548**	**535**	**1,284**

			ITE GENERATION RATES					PROJECT TRAFFIC GENERATION				
	CURRENT PHASE	PHASE TOTAL	DAILY	PEAK HOUR				DAILY	PEAK HOUR			
	SF or Units/Year	SF or Units/Total		AM		PM			AM		PM	
2034			ADT RATE PER KSF	IN	OUT	IN	OUT	ADT	IN	OUT	IN	OUT
OFFICE	47,500 SF	257 KSF	11.01	1.37	0.19	0.25	1.24	2,834	353	48	65	318
WAREHOUSE	41,702 SF	430 KSF	4.96	0.34	0.23	0.05	0.56	2,131	144	100	21	241
LIGHT INDUSTRIAL	128,505 SF	765 KSF	6.97	0.91	0.10	0.15	0.93	5,330	695	77	116	710
GENERAL INDUSTRIAL	0 SF	12 KSF	6.96	0.71	0.11	0.18	0.68	82	8	1	2	8
RETAIL	0 SF	12 KSF	40.67	3.08	3.33	2.81	2.12	476	36	39	33	25
SINGLE FAMILY RESIDENTIAL	80 DU	374 DU	9.57	0.19	0.58	0.65	0.37	3,579	72	216	244	137
MULTI-FAMILTY RESIDENTIAL	162 DU	560 DU	5.86	0.08	0.36	0.35	0.19	3,282	44	202	197	106
							2034 TOTAL PROJECT TRAFFIC	**17,713**	**1,354**	**684**	**678**	**1,546**

ROAD A

PHASING-land uses and densities provided by Design Workshop

								L	M	N	O
			ITE GENERATION RATES					PROJECT TRAFFIC GENERATION			
	CURRENT PHASE	PHASE TOTAL	DAILY	PEAK HOUR				DAILY	PEAK HOUR		
	SF or Units/Year	SF or Units/Total		AM		PM			AM		PM	
2019			ADT RATE PER KSF	IN	OUT	IN	OUT	ADT	IN	OUT	IN	OUT
OFFICE	25,000 SF	25 KSF	11.01	1.37	0.19	0.25	1.24	275	34	5	6	31
WAREHOUSE	34,835 SF	35 KSF	4.96	0.34	0.23	0.05	0.56	173	12	8	2	20
LIGHT INDUSTRIAL	25,000 SF	25 KSF	6.97	0.91	0.10	0.15	0.93	174	23	3	4	23
GENERAL INDUSTRIAL	0 SF	0 KSF	6.96	0.71	0.11	0.18	0.68	0	0	0	0	0
RETAIL	0 SF	0 KSF	40.67	3.08	3.33	2.81	2.12	0	0	0	0	0
SINGLE FAMILY RESIDENTIAL	0 DU	0 DU	9.57	0.19	0.58	0.65	0.37	0	0	0	0	0
MULTI-FAMILTY RESIDENTIAL	0 DU	0 DU	5.86	0.08	0.36	0.35	0.19	0	0	0	0	0
						2019 ROAD A PROJECT TRAFFIC		622	69	15	12	74

			ITE GENERATION RATES					PROJECT TRAFFIC GENERATION				
	CURRENT PHASE	PHASE TOTAL	DAILY	PEAK HOUR				DAILY	PEAK HOUR			
	SF or Units/Year	SF or Units/Total		AM		PM			AM		PM	
2024			ADT RATE PER KSF	IN	OUT	IN	OUT	ADT	IN	OUT	IN	OUT
OFFICE	9,835 SF	35 KSF	11.01	1.37	0.19	0.25	1.24	384	48	7	9	43
WAREHOUSE	0 SF	35 KSF	4.96	0.34	0.23	0.05	0.56	173	12	8	2	20
LIGHT INDUSTRIAL	25,000 SF	50 KSF	6.97	0.91	0.10	0.15	0.93	349	45	5	8	46
GENERAL INDUSTRIAL	0 SF	0 KSF	6.96	0.71	0.11	0.18	0.68	0	0	0	0	0
RETAIL	0 SF	0 KSF	40.67	3.08	3.33	2.81	2.12	0	0	0	0	0
SINGLE FAMILY RESIDENTIAL	0 DU	0 DU	9.57	0.19	0.58	0.65	0.37	0	0	0	0	0
MULTI-FAMILTY RESIDENTIAL	0 DU	0 DU	5.86	0.08	0.36	0.35	0.19	0	0	0	0	0
						2024 ROAD A PROJECT TRAFFIC		905	105	20	18	109

			ITE GENERATION RATES					PROJECT TRAFFIC GENERATION				
	CURRENT PHASE	PHASE TOTAL	DAILY	PEAK HOUR				DAILY	PEAK HOUR			
	SF or Units/Year	SF or Units/Total		AM		PM			AM		PM	
2029			ADT RATE PER KSF	IN	OUT	IN	OUT	ADT	IN	OUT	IN	OUT
OFFICE	0 SF	35 KSF	11.01	1.37	0.19	0.25	1.24	384	48	7	9	43
WAREHOUSE	0 SF	35 KSF	4.96	0.34	0.23	0.05	0.56	173	12	8	2	20
LIGHT INDUSTRIAL	19,671 SF	70 KSF	6.97	0.91	0.10	0.15	0.93	486	63	7	11	65
GENERAL INDUSTRIAL	0 SF	0 KSF	6.96	0.71	0.11	0.18	0.68	0	0	0	0	0
RETAIL	0 SF	0 KSF	40.67	3.08	3.33	2.81	2.12	0	0	0	0	0
SINGLE FAMILY RESIDENTIAL	0 DU	0 DU	9.57	0.19	0.58	0.65	0.37	0	0	0	0	0
MULTI-FAMILTY RESIDENTIAL	0 DU	0 DU	5.86	0.08	0.36	0.35	0.19	0	0	0	0	0
						2029 ROAD A PROJECT TRAFFIC		1,042	123	22	21	127

			ITE GENERATION RATES					PROJECT TRAFFIC GENERATION				
	CURRENT PHASE	PHASE TOTAL	DAILY	PEAK HOUR				DAILY	PEAK HOUR			
	SF or Units/Year	SF or Units/Total		AM		PM			AM		PM	
2034			ADT RATE PER KSF	IN	OUT	IN	OUT	ADT	IN	OUT	IN	OUT
OFFICE	0 SF	35 KSF	11.01	1.37	0.19	0.25	1.24	384	48	7	9	43
WAREHOUSE	0 SF	35 KSF	4.96	0.34	0.23	0.05	0.56	173	12	8	2	20
LIGHT INDUSTRIAL	0 SF	70 KSF	6.97	0.91	0.10	0.15	0.93	486	63	7	11	65
GENERAL INDUSTRIAL	0 SF	0 KSF	6.96	0.71	0.11	0.18	0.68	0	0	0	0	0
RETAIL	0 SF	0 KSF	40.67	3.08	3.33	2.81	2.12	0	0	0	0	0
SINGLE FAMILY RESIDENTIAL	0 DU	0 DU	9.57	0.19	0.58	0.65	0.37	0	0	0	0	0
MULTI-FAMILTY RESIDENTIAL	0 DU	0 DU	5.86	0.08	0.36	0.35	0.19	0	0	0	0	0
						2034 ROAD A ROAD A TRAFFIC		1,042	123	22	21	127

MOOSE LANE

PHASING-land uses and densities provided by Design Workshop

								L	M	N	O
			ITE GENERATION RATES					PROJECT TRAFFIC GENERATION			
	CURRENT PHASE	PHASE TOTAL	DAILY	PEAK HOUR				DAILY	PEAK HOUR			
	SF or Units/Year	SF or Units/Total		AM		PM			AM		PM	
2019			ADT RATE PER KSF	IN	OUT	IN	OUT	ADT	IN	OUT	IN	OUT
OFFICE	12,500 SF	13 KSF	11.01	1.37	0.19	0.25	1.24	138	17	2	3	15
WAREHOUSE	20,295 SF	20 KSF	4.96	0.34	0.23	0.05	0.56	101	7	5	1	11
LIGHT INDUSTRIAL	40,590 SF	41 KSF	6.97	0.91	0.10	0.15	0.93	283	37	4	6	38
GENERAL INDUSTRIAL	0 SF	0 KSF	6.96	0.71	0.11	0.18	0.68	0	0	0	0	0
RETAIL	5,000 SF	5 KSF	40.67	3.08	3.33	2.81	2.12	203	15	17	14	11
SINGLE FAMILY RESIDENTIAL	25 DU	25 DU	9.57	0.19	0.58	0.65	0.37	239	5	14	16	9
MULTI-FAMILTY RESIDENTIAL	33 DU	33 DU	5.86	0.08	0.36	0.35	0.19	193	3	12	12	6
						2019 MOOSE LANE PROJECT TRAFFIC		**1,157**	**84**	**54**	**52**	**91**

			ITE GENERATION RATES					PROJECT TRAFFIC GENERATION				
	CURRENT PHASE	PHASE TOTAL	DAILY	PEAK HOUR				DAILY	PEAK HOUR			
	SF or Units/Year	SF or Units/Total		AM		PM			AM		PM	
2024			ADT RATE PER KSF	IN	OUT	IN	OUT	ADT	IN	OUT	IN	OUT
OFFICE	12,500 SF	25 KSF	11.01	1.37	0.19	0.25	1.24	275	34	5	6	31
WAREHOUSE	0 SF	20 KSF	4.96	0.34	0.23	0.05	0.56	101	7	5	1	11
LIGHT INDUSTRIAL	0 SF	41 KSF	6.97	0.91	0.10	0.15	0.93	283	37	4	6	38
GENERAL INDUSTRIAL	0 SF	0 KSF	6.96	0.71	0.11	0.18	0.68	0	0	0	0	0
RETAIL	5,000 SF	10 KSF	40.67	3.08	3.33	2.81	2.12	407	31	33	28	21
SINGLE FAMILY RESIDENTIAL	1 DU	26 DU	9.57	0.19	0.58	0.65	0.37	249	5	15	17	10
MULTI-FAMILTY RESIDENTIAL	0 DU	33 DU	5.86	0.08	0.36	0.35	0.19	193	3	12	12	6
						2024 MOOSE LANE PROJECT TRAFFIC		**1,508**	**116**	**74**	**70**	**117**

			ITE GENERATION RATES					PROJECT TRAFFIC GENERATION				
	CURRENT PHASE	PHASE TOTAL	DAILY	PEAK HOUR				DAILY	PEAK HOUR			
	SF or Units/Year	SF or Units/Total		AM		PM			AM		PM	
2029			ADT RATE PER KSF	IN	OUT	IN	OUT	ADT	IN	OUT	IN	OUT
OFFICE	7,004 SF	32 KSF	11.01	1.37	0.19	0.25	1.24	352	44	6	8	40
WAREHOUSE	0 SF	20 KSF	4.96	0.34	0.23	0.05	0.56	101	7	5	1	11
LIGHT INDUSTRIAL	0 SF	41 KSF	6.97	0.91	0.10	0.15	0.93	283	37	4	6	38
GENERAL INDUSTRIAL	0 SF	0 KSF	6.96	0.71	0.11	0.18	0.68	0	0	0	0	0
RETAIL	1,709 SF	12 KSF	40.67	3.08	3.33	2.81	2.12	476	36	39	33	25
SINGLE FAMILY RESIDENTIAL	0 DU	26 DU	9.57	0.19	0.58	0.65	0.37	249	5	15	17	10
MULTI-FAMILTY RESIDENTIAL	0 DU	33 DU	5.86	0.08	0.36	0.35	0.19	193	3	12	12	6
						2029 MOOSE LANE PROJECT TRAFFIC		**1,654**	**131**	**81**	**77**	**129**

			ITE GENERATION RATES					PROJECT TRAFFIC GENERATION				
	CURRENT PHASE	PHASE TOTAL	DAILY	PEAK HOUR				DAILY	PEAK HOUR			
	SF or Units/Year	SF or Units/Total		AM		PM			AM		PM	
2034			ADT RATE PER KSF	IN	OUT	IN	OUT	ADT	IN	OUT	IN	OUT
OFFICE	0 SF	32 KSF	11.01	1.37	0.19	0.25	1.24	352	44	6	8	40
WAREHOUSE	0 SF	20 KSF	4.96	0.34	0.23	0.05	0.56	101	7	5	1	11
LIGHT INDUSTRIAL	0 SF	41 KSF	6.97	0.91	0.10	0.15	0.93	283	37	4	6	38
GENERAL INDUSTRIAL	0 SF	0 KSF	6.96	0.71	0.11	0.18	0.68	0	0	0	0	0
RETAIL	0 SF	12 KSF	40.67	3.08	3.33	2.81	2.12	476	36	39	33	25
SINGLE FAMILY RESIDENTIAL	0 DU	26 DU	9.57	0.19	0.58	0.65	0.37	249	5	15	17	10
MULTI-FAMILTY RESIDENTIAL	0 DU	33 DU	5.86	0.08	0.36	0.35	0.19	193	3	12	12	6
						2034 MOOSE LANE PROJECT TRAFFIC		**1,654**	**131**	**81**	**77**	**129**

KAYCEE LANE

PHASING-land uses and densities provided by Design Workshop

								L	M	N	O
			ITE GENERATION RATES					PROJECT TRAFFIC GENERATION			
	CURRENT PHASE	PHASE TOTAL	DAILY	PEAK HOUR				DAILY	PEAK HOUR			
	SF or Units/Year	SF or Units/Total		AM		PM			AM		PM	
2019			ADT RATE PER KSF	IN	OUT	IN	OUT	ADT	IN	OUT	IN	OUT
OFFICE	12,500 SF	13 KSF	11.01	1.37	0.19	0.25	1.24	138	17	2	3	15
WAREHOUSE	50,000 SF	50 KSF	4.96	0.34	0.23	0.05	0.56	248	17	12	2	28
LIGHT INDUSTRIAL	50,000 SF	50 KSF	6.97	0.91	0.10	0.15	0.93	349	45	5	8	46
GENERAL INDUSTRIAL	0 SF	0 KSF	6.96	0.71	0.11	0.18	0.68	0	0	0	0	0
RETAIL	0 SF	0 KSF	40.67	3.08	3.33	2.81	2.12	0	0	0	0	0
SINGLE FAMILY RESIDENTIAL	1 DU	1 DU	9.57	0.19	0.58	0.65	0.37	10	0	1	1	0
MULTI-FAMILTY RESIDENTIAL	0 DU	0 DU	5.86	0.08	0.36	0.35	0.19	0	0	0	0	0
						2019 KAYCEE LANE PROJECT TRAFFIC		**744**	**80**	**20**	**14**	**90**

			ITE GENERATION RATES					PROJECT TRAFFIC GENERATION				
	CURRENT PHASE	PHASE TOTAL	DAILY	PEAK HOUR				DAILY	PEAK HOUR			
	SF or Units/Year	SF or Units/Total		AM		PM			AM		PM	
2024			ADT RATE PER KSF	IN	OUT	IN	OUT	ADT	IN	OUT	IN	OUT
OFFICE	12,500 SF	25 KSF	11.01	1.37	0.19	0.25	1.24	275	34	5	6	31
WAREHOUSE	50,000 SF	100 KSF	4.96	0.34	0.23	0.05	0.56	496	34	23	5	56
LIGHT INDUSTRIAL	50,000 SF	100 KSF	6.97	0.91	0.10	0.15	0.93	697	91	10	15	93
GENERAL INDUSTRIAL	0 SF	0 KSF	6.96	0.71	0.11	0.18	0.68	0	0	0	0	0
RETAIL	0 SF	0 KSF	40.67	3.08	3.33	2.81	2.12	0	0	0	0	0
SINGLE FAMILY RESIDENTIAL	0 DU	1 DU	9.57	0.19	0.58	0.65	0.37	10	0	1	1	0
MULTI-FAMILTY RESIDENTIAL	0 DU	0 DU	5.86	0.08	0.36	0.35	0.19	0	0	0	0	0
						2024 KAYCEE LANE PROJECT TRAFFIC		**1,478**	**159**	**39**	**27**	**180**

			ITE GENERATION RATES					PROJECT TRAFFIC GENERATION				
	CURRENT PHASE	PHASE TOTAL	DAILY	PEAK HOUR				DAILY	PEAK HOUR			
	SF or Units/Year	SF or Units/Total		AM		PM			AM		PM	
2029			ADT RATE PER KSF	IN	OUT	IN	OUT	ADT	IN	OUT	IN	OUT
OFFICE	12,500 SF	38 KSF	11.01	1.37	0.19	0.25	1.24	413	51	7	9	46
WAREHOUSE	50,000 SF	150 KSF	4.96	0.34	0.23	0.05	0.56	744	50	35	7	84
LIGHT INDUSTRIAL	50,000 SF	150 KSF	6.97	0.91	0.10	0.15	0.93	1,046	136	15	23	139
GENERAL INDUSTRIAL	0 SF	0 KSF	6.96	0.71	0.11	0.18	0.68	0	0	0	0	0
RETAIL	0 SF	0 KSF	40.67	3.08	3.33	2.81	2.12	0	0	0	0	0
SINGLE FAMILY RESIDENTIAL	0 DU	1 DU	9.57	0.19	0.58	0.65	0.37	10	0	1	1	0
MULTI-FAMILTY RESIDENTIAL	0 DU	0 DU	5.86	0.08	0.36	0.35	0.19	0	0	0	0	0
						2029 KAYCEE LANE PROJECT TRAFFIC		**2,212**	**238**	**58**	**40**	**270**

			ITE GENERATION RATES					PROJECT TRAFFIC GENERATION				
	CURRENT PHASE	PHASE TOTAL	DAILY	PEAK HOUR				DAILY	PEAK HOUR			
	SF or Units/Year	SF or Units/Total		AM		PM			AM		PM	
2034			ADT RATE PER KSF	IN	OUT	IN	OUT	ADT	IN	OUT	IN	OUT
OFFICE	12,500 SF	50 KSF	11.01	1.37	0.19	0.25	1.24	551	69	9	13	62
WAREHOUSE	29,202 SF	179 KSF	4.96	0.34	0.23	0.05	0.56	889	60	42	9	101
LIGHT INDUSTRIAL	50,000 SF	200 KSF	6.97	0.91	0.10	0.15	0.93	1,394	182	20	30	186
GENERAL INDUSTRIAL	0 SF	0 KSF	6.96	0.71	0.11	0.18	0.68	0	0	0	0	0
RETAIL	0 SF	0 KSF	40.67	3.08	3.33	2.81	2.12	0	0	0	0	0
SINGLE FAMILY RESIDENTIAL	0 DU	1 DU	9.57	0.19	0.58	0.65	0.37	10	0	1	1	0
MULTI-FAMILTY RESIDENTIAL	0 DU	0 DU	5.86	0.08	0.36	0.35	0.19	0	0	0	0	0
						2034 KAYCEE LANE PROJECT TRAFFIC		**2,843**	**311**	**72**	**52**	**349**

AIRPARK ROAD

PHASING-land uses and densities provided by Design Workshop

								L	M	N	O
			ITE GENERATION RATES					PROJECT TRAFFIC GENERATION			
	CURRENT PHASE	PHASE TOTAL	DAILY	PEAK HOUR				DAILY	PEAK HOUR		
	SF or Units/Year	SF or Units/Total		AM		PM			AM		PM	
2019			ADT RATE PER KSF	IN	OUT	IN	OUT	ADT	IN	OUT	IN	OUT
OFFICE	10,000 SF	10 KSF	11.01	1.37	0.19	0.25	1.24	110	14	2	3	12
WAREHOUSE	12,500 SF	13 KSF	4.96	0.34	0.23	0.05	0.56	62	4	3	1	7
LIGHT INDUSTRIAL	50,000 SF	50 KSF	6.97	0.91	0.10	0.15	0.93	349	45	5	8	46
GENERAL INDUSTRIAL	2,100 SF	2 KSF	6.96	0.71	0.11	0.18	0.68	15	1	0	0	1
RETAIL	0 SF	0 KSF	40.67	3.08	3.33	2.81	2.12	0	0	0	0	0
SINGLE FAMILY RESIDENTIAL	25 DU	25 DU	9.57	0.19	0.58	0.65	0.37	239	5	14	16	9
MULTI-FAMILTY RESIDENTIAL	50 DU	50 DU	5.86	0.08	0.36	0.35	0.19	293	4	18	18	9
						2019 AIRPARK ROAD PROJECT TRAFFIC		**1,067**	**74**	**43**	**45**	**86**

			ITE GENERATION RATES					PROJECT TRAFFIC GENERATION				
	CURRENT PHASE	PHASE TOTAL	DAILY	PEAK HOUR				DAILY	PEAK HOUR			
	SF or Units/Year	SF or Units/Total		AM		PM			AM		PM	
2024			ADT RATE PER KSF	IN	OUT	IN	OUT	ADT	IN	OUT	IN	OUT
OFFICE	10,000 SF	20 KSF	11.01	1.37	0.19	0.25	1.24	220	27	4	5	25
WAREHOUSE	12,500 SF	25 KSF	4.96	0.34	0.23	0.05	0.56	124	8	6	1	14
LIGHT INDUSTRIAL	50,000 SF	100 KSF	6.97	0.91	0.10	0.15	0.93	697	91	10	15	93
GENERAL INDUSTRIAL*USE AIRPARK DR B/C ROAD E IS PRIVATE	0 SF	2 KSF	6.96	0.71	0.11	0.18	0.68	15	1	0	0	1
RETAIL	0 SF	0 KSF	40.67	3.08	3.33	2.81	2.12	0	0	0	0	0
SINGLE FAMILY RESIDENTIAL	25 DU	50 DU	9.57	0.19	0.58	0.65	0.37	479	10	29	33	18
MULTI-FAMILTY RESIDENTIAL	15 DU	65 DU	5.86	0.08	0.36	0.35	0.19	381	5	23	23	12
						2024 AIRPARK ROAD PROJECT TRAFFIC		**1,915**	**143**	**72**	**77**	**164**

			ITE GENERATION RATES					PROJECT TRAFFIC GENERATION				
	CURRENT PHASE	PHASE TOTAL	DAILY	PEAK HOUR				DAILY	PEAK HOUR			
	SF or Units/Year	SF or Units/Total		AM		PM			AM		PM	
2029			ADT RATE PER KSF	IN	OUT	IN	OUT	ADT	IN	OUT	IN	OUT
OFFICE	10,000 SF	30 KSF	11.01	1.37	0.19	0.25	1.24	330	41	6	8	37
WAREHOUSE	12,500 SF	38 KSF	4.96	0.34	0.23	0.05	0.56	186	13	9	2	21
LIGHT INDUSTRIAL	50,000 SF	150 KSF	6.97	0.91	0.10	0.15	0.93	1,046	136	15	23	139
GENERAL INDUSTRIAL	0 SF	2 KSF	6.96	0.71	0.11	0.18	0.68	15	1	0	0	1
RETAIL	0 SF	0 KSF	40.67	3.08	3.33	2.81	2.12	0	0	0	0	0
SINGLE FAMILY RESIDENTIAL	15 DU	65 DU	9.57	0.19	0.58	0.65	0.37	622	13	38	42	24
MULTI-FAMILTY RESIDENTIAL	0 DU	65 DU	5.86	0.08	0.36	0.35	0.19	381	5	23	23	12
						2029 AIRPARK ROAD PROJECT TRAFFIC		**2,579**	**209**	**91**	**98**	**235**

			ITE GENERATION RATES					PROJECT TRAFFIC GENERATION				
	CURRENT PHASE	PHASE TOTAL	DAILY	PEAK HOUR				DAILY	PEAK HOUR			
	SF or Units/Year	SF or Units/Total		AM		PM			AM		PM	
2034			ADT RATE PER KSF	IN	OUT	IN	OUT	ADT	IN	OUT	IN	OUT
OFFICE	10,000 SF	40 KSF	11.01	1.37	0.19	0.25	1.24	440	55	7	10	49
WAREHOUSE	12,500 SF	50 KSF	4.96	0.34	0.23	0.05	0.56	248	17	12	2	28
LIGHT INDUSTRIAL	41,005 SF	191 KSF	6.97	0.91	0.10	0.15	0.93	1,331	174	19	29	177
GENERAL INDUSTRIAL	0 SF	2 KSF	6.96	0.71	0.11	0.18	0.68	15	1	0	0	1
RETAIL	0 SF	0 KSF	40.67	3.08	3.33	2.81	2.12	0	0	0	0	0
SINGLE FAMILY RESIDENTIAL	0 DU	65 DU	9.57	0.19	0.58	0.65	0.37	622	13	38	42	24
MULTI-FAMILTY RESIDENTIAL	0 DU	65 DU	5.86	0.08	0.36	0.35	0.19	381	5	23	23	12
						2034 AIRPARK ROAD PROJECT TRAFFIC		**3,037**	**264**	**100**	**107**	**293**

ROAD B

PHASING-land uses and densities provided by Design Workshop

			ITE GENERATION RATES					PROJECT TRAFFIC GENERATION	L	M	N	O
	CURRENT PHASE	PHASE TOTAL	DAILY	PEAK HOUR				DAILY	PEAK HOUR			
	SF or Units/Year	SF or Units/Total		AM		PM			AM		PM	
2019			ADT RATE PER KSF	IN	OUT	IN	OUT	ADT	IN	OUT	IN	OUT
OFFICE	12,500 SF	13 KSF	11.01	1.37	0.19	0.25	1.24	138	17	2	3	15
WAREHOUSE	37,500 SF	38 KSF	4.96	0.34	0.23	0.05	0.56	186	13	9	2	21
LIGHT INDUSTRIAL	37,500 SF	38 KSF	6.97	0.91	0.10	0.15	0.93	261	34	4	6	35
GENERAL INDUSTRIAL	0 SF	0 KSF	6.96	0.71	0.11	0.18	0.68	0	0	0	0	0
RETAIL	0 SF	0 KSF	40.67	3.08	3.33	2.81	2.12	0	0	0	0	0
SINGLE FAMILY RESIDENTIAL	0 DU	0 DU	9.57	0.19	0.58	0.65	0.37	0	0	0	0	0
MULTI-FAMILTY RESIDENTIAL	0 DU	0 DU	5.86	0.08	0.36	0.35	0.19	0	0	0	0	0
							2019 ROAD B PROJECT TRAFFIC	**585**	**64**	**15**	**11**	**71**

			ITE GENERATION RATES					PROJECT TRAFFIC GENERATION				
	CURRENT PHASE	PHASE TOTAL	DAILY	PEAK HOUR				DAILY	PEAK HOUR			
	SF or Units/Year	SF or Units/Total		AM		PM			AM		PM	
2024			ADT RATE PER KSF	IN	OUT	IN	OUT	ADT	IN	OUT	IN	OUT
OFFICE	12,500 SF	25 KSF	11.01	1.37	0.19	0.25	1.24	275	34	5	6	31
WAREHOUSE	37,500 SF	75 KSF	4.96	0.34	0.23	0.05	0.56	372	25	18	4	42
LIGHT INDUSTRIAL	37,500 SF	75 KSF	6.97	0.91	0.10	0.15	0.93	523	68	8	11	70
GENERAL INDUSTRIAL	0 SF	0 KSF	6.96	0.71	0.11	0.18	0.68	0	0	0	0	0
RETAIL	0 SF	0 KSF	40.67	3.08	3.33	2.81	2.12	0	0	0	0	0
SINGLE FAMILY RESIDENTIAL	0 DU	0 DU	9.57	0.19	0.58	0.65	0.37	0	0	0	0	0
MULTI-FAMILTY RESIDENTIAL	0 DU	0 DU	5.86	0.08	0.36	0.35	0.19	0	0	0	0	0
							2024 ROAD B PROJECT TRAFFIC	**1,170**	**128**	**30**	**21**	**143**

			ITE GENERATION RATES					PROJECT TRAFFIC GENERATION				
	CURRENT PHASE	PHASE TOTAL	DAILY	PEAK HOUR				DAILY	PEAK HOUR			
	SF or Units/Year	SF or Units/Total		AM		PM			AM		PM	
2029			ADT RATE PER KSF	IN	OUT	IN	OUT	ADT	IN	OUT	IN	OUT
OFFICE	12,500 SF	38 KSF	11.01	1.37	0.19	0.25	1.24	413	51	7	9	46
WAREHOUSE	13,484 SF	88 KSF	4.96	0.34	0.23	0.05	0.56	439	30	21	4	50
LIGHT INDUSTRIAL	37,500 SF	113 KSF	6.97	0.91	0.10	0.15	0.93	784	102	11	17	104
GENERAL INDUSTRIAL	0 SF	0 KSF	6.96	0.71	0.11	0.18	0.68	0	0	0	0	0
RETAIL	0 SF	0 KSF	40.67	3.08	3.33	2.81	2.12	0	0	0	0	0
SINGLE FAMILY RESIDENTIAL	0 DU	0 DU	9.57	0.19	0.58	0.65	0.37	0	0	0	0	0
MULTI-FAMILTY RESIDENTIAL	0 DU	0 DU	5.86	0.08	0.36	0.35	0.19	0	0	0	0	0
							2029 ROAD B PROJECT TRAFFIC	**1,636**	**183**	**39**	**31**	**201**

			ITE GENERATION RATES					PROJECT TRAFFIC GENERATION				
	CURRENT PHASE	PHASE TOTAL	DAILY	PEAK HOUR				DAILY	PEAK HOUR			
	SF or Units/Year	SF or Units/Total		AM		PM			AM		PM	
2034			ADT RATE PER KSF	IN	OUT	IN	OUT	ADT	IN	OUT	IN	OUT
OFFICE	12,500 SF	50 KSF	11.01	1.37	0.19	0.25	1.24	551	69	9	13	62
WAREHOUSE	0 SF	88 KSF	4.96	0.34	0.23	0.05	0.56	439	30	21	4	50
LIGHT INDUSTRIAL	37,500 SF	150 KSF	6.97	0.91	0.10	0.15	0.93	1,046	136	15	23	139
GENERAL INDUSTRIAL	0 SF	0 KSF	6.96	0.71	0.11	0.18	0.68	0	0	0	0	0
RETAIL	0 SF	0 KSF	40.67	3.08	3.33	2.81	2.12	0	0	0	0	0
SINGLE FAMILY RESIDENTIAL	0 DU	0 DU	9.57	0.19	0.58	0.65	0.37	0	0	0	0	0
MULTI-FAMILTY RESIDENTIAL	0 DU	0 DU	5.86	0.08	0.36	0.35	0.19	0	0	0	0	0
							2034 ROAD B PROJECT TRAFFIC	**2,035**	**235**	**45**	**40**	**251**

JACK RABBIT TRAIL - 12 DU CURRENTLY, 16 VACANT LOTS

PHASING-land uses and densities provided by Design Workshop

								L	M	N	O
			ITE GENERATION RATES					PROJECT TRAFFIC GENERATION			
	CURRENT PHASE	PHASE TOTAL	DAILY	PEAK HOUR				DAILY	PEAK HOUR			
	SF or Units/Year	SF or Units/Total		AM		PM			AM		PM	
2019			ADT RATE PER KSF	IN	OUT	IN	OUT	ADT	IN	OUT	IN	OUT
OFFICE	0 SF	0 KSF	11.01	1.37	0.19	0.25	1.24	0	0	0	0	0
WAREHOUSE	0 SF	0 KSF	4.96	0.34	0.23	0.05	0.56	0	0	0	0	0
LIGHT INDUSTRIAL	0 SF	0 KSF	6.97	0.91	0.10	0.15	0.93	0	0	0	0	0
GENERAL INDUSTRIAL	0 SF	0 KSF	6.96	0.71	0.11	0.18	0.68	0	0	0	0	0
RETAIL	0 SF	0 KSF	40.67	3.08	3.33	2.81	2.12	0	0	0	0	0
SINGLE FAMILY RESIDENTIAL	10 DU	10 DU	9.57	0.19	0.58	0.65	0.37	96	2	6	7	4
MULTI-FAMILTY RESIDENTIAL	0 DU	0 DU	5.86	0.08	0.36	0.35	0.19	0	0	0	0	0
				2019 RABBIT TRAIL LANE PROJECT TRAFFIC				**96**	**2**	**6**	**7**	**4**

			ITE GENERATION RATES					PROJECT TRAFFIC GENERATION				
	CURRENT PHASE	PHASE TOTAL	DAILY	PEAK HOUR				DAILY	PEAK HOUR			
	SF or Units/Year	SF or Units/Total		AM		PM			AM		PM	
2024			ADT RATE PER KSF	IN	OUT	IN	OUT	ADT	IN	OUT	IN	OUT
OFFICE	0 SF	0 KSF	11.01	1.37	0.19	0.25	1.24	0	0	0	0	0
WAREHOUSE	0 SF	0 KSF	4.96	0.34	0.23	0.05	0.56	0	0	0	0	0
LIGHT INDUSTRIAL	0 SF	0 KSF	6.97	0.91	0.10	0.15	0.93	0	0	0	0	0
GENERAL INDUSTRIAL	0 SF	0 KSF	6.96	0.71	0.11	0.18	0.68	0	0	0	0	0
RETAIL	0 SF	0 KSF	40.67	3.08	3.33	2.81	2.12	0	0	0	0	0
SINGLE FAMILY RESIDENTIAL	6 DU	16 DU	9.57	0.19	0.58	0.65	0.37	153	3	9	10	6
MULTI-FAMILTY RESIDENTIAL	0 DU	0 DU	5.86	0.08	0.36	0.35	0.19	0	0	0	0	0
				2024 RABBIT TRAIL LANE PROJECT TRAFFIC				**153**	**3**	**9**	**10**	**6**

			ITE GENERATION RATES					PROJECT TRAFFIC GENERATION				
	CURRENT PHASE	PHASE TOTAL	DAILY	PEAK HOUR				DAILY	PEAK HOUR			
	SF or Units/Year	SF or Units/Total		AM		PM			AM		PM	
2029			ADT RATE PER KSF	IN	OUT	IN	OUT	ADT	IN	OUT	IN	OUT
OFFICE	0 SF	0 KSF	11.01	1.37	0.19	0.25	1.24	0	0	0	0	0
WAREHOUSE	0 SF	0 KSF	4.96	0.34	0.23	0.05	0.56	0	0	0	0	0
LIGHT INDUSTRIAL	0 SF	0 KSF	6.97	0.91	0.10	0.15	0.93	0	0	0	0	0
GENERAL INDUSTRIAL	0 SF	0 KSF	6.96	0.71	0.11	0.18	0.68	0	0	0	0	0
RETAIL	0 SF	0 KSF	40.67	3.08	3.33	2.81	2.12	0	0	0	0	0
SINGLE FAMILY RESIDENTIAL	0 DU	16 DU	9.57	0.19	0.58	0.65	0.37	153	3	9	10	6
MULTI-FAMILTY RESIDENTIAL	0 DU	0 DU	5.86	0.08	0.36	0.35	0.19	0	0	0	0	0
				2029 RABBIT TRAIL LANE PROJECT TRAFFIC				**153**	**3**	**9**	**10**	**6**

			ITE GENERATION RATES					PROJECT TRAFFIC GENERATION				
	CURRENT PHASE	PHASE TOTAL	DAILY	PEAK HOUR				DAILY	PEAK HOUR			
	SF or Units/Year	SF or Units/Total		AM		PM			AM		PM	
2034			ADT RATE PER KSF	IN	OUT	IN	OUT	ADT	IN	OUT	IN	OUT
OFFICE	0 SF	0 KSF	11.01	1.37	0.19	0.25	1.24	0	0	0	0	0
WAREHOUSE	0 SF	0 KSF	4.96	0.34	0.23	0.05	0.56	0	0	0	0	0
LIGHT INDUSTRIAL	0 SF	0 KSF	6.97	0.91	0.10	0.15	0.93	0	0	0	0	0
GENERAL INDUSTRIAL	0 SF	0 KSF	6.96	0.71	0.11	0.18	0.68	0	0	0	0	0
RETAIL	0 SF	0 KSF	40.67	3.08	3.33	2.81	2.12	0	0	0	0	0
SINGLE FAMILY RESIDENTIAL	0 DU	16 DU	9.57	0.19	0.58	0.65	0.37	153	3	9	10	6
MULTI-FAMILTY RESIDENTIAL	0 DU	0 DU	5.86	0.08	0.36	0.35	0.19	0	0	0	0	0
				2034 RABBIT TRAIL LANE PROJECT TRAFFIC				**153**	**3**	**9**	**10**	**6**

ROAD F

PHASING-land uses and densities provided by Design Workshop

								L	M	N	O
			ITE GENERATION RATES					PROJECT TRAFFIC GENERATION			
	CURRENT PHASE	PHASE TOTAL	DAILY	PEAK HOUR				DAILY	PEAK HOUR		
	SF or Units/Year	SF or Units/Total		AM		PM			AM		PM	
2019			ADT RATE PER KSF	IN	OUT	IN	OUT	ADT	IN	OUT	IN	OUT
OFFICE	0 SF	0 KSF	11.01	1.37	0.19	0.25	1.24	0	0	0	0	0
WAREHOUSE	0 SF	0 KSF	4.96	0.34	0.23	0.05	0.56	0	0	0	0	0
LIGHT INDUSTRIAL	0 SF	0 KSF	6.97	0.91	0.10	0.15	0.93	0	0	0	0	0
GENERAL INDUSTRIAL	0 SF	0 KSF	6.96	0.71	0.11	0.18	0.68	0	0	0	0	0
RETAIL	0 SF	0 KSF	40.67	3.08	3.33	2.81	2.12	0	0	0	0	0
SINGLE FAMILY RESIDENTIAL	0 DU	0 DU	9.57	0.19	0.58	0.65	0.37	0	0	0	0	0
MULTI-FAMILTY RESIDENTIAL	0 DU	0 DU	5.86	0.08	0.36	0.35	0.19	0	0	0	0	0
				2019 KIVA ROAD ACCESS PROJECT TRAFFIC				**0**	**0**	**0**	**0**	**0**

			ITE GENERATION RATES					PROJECT TRAFFIC GENERATION				
	CURRENT PHASE	PHASE TOTAL	DAILY	PEAK HOUR				DAILY	PEAK HOUR			
	SF or Units/Year	SF or Units/Total		AM		PM			AM		PM	
2024			ADT RATE PER KSF	IN	OUT	IN	OUT	ADT	IN	OUT	IN	OUT
OFFICE	12,500 SF	13 KSF	11.01	1.37	0.19	0.25	1.24	138	17	2	3	15
WAREHOUSE	43,647 SF	44 KSF	4.96	0.34	0.23	0.05	0.56	216	15	10	2	24
LIGHT INDUSTRIAL	50,000 SF	50 KSF	6.97	0.91	0.10	0.15	0.93	349	45	5	8	46
GENERAL INDUSTRIAL	0 SF	0 KSF	6.96	0.71	0.11	0.18	0.68	0	0	0	0	0
RETAIL	0 SF	0 KSF	40.67	3.08	3.33	2.81	2.12	0	0	0	0	0
SINGLE FAMILY RESIDENTIAL	0 DU	0 DU	9.57	0.19	0.58	0.65	0.37	0	0	0	0	0
MULTI-FAMILTY RESIDENTIAL	0 DU	0 DU	5.86	0.08	0.36	0.35	0.19	0	0	0	0	0
				2024 KIVA ROAD ACCESS PROJECT TRAFFIC				**703**	**77**	**18**	**13**	**86**

			ITE GENERATION RATES					PROJECT TRAFFIC GENERATION				
	CURRENT PHASE	PHASE TOTAL	DAILY	PEAK HOUR				DAILY	PEAK HOUR			
	SF or Units/Year	SF or Units/Total		AM		PM			AM		PM	
2029			ADT RATE PER KSF	IN	OUT	IN	OUT	ADT	IN	OUT	IN	OUT
OFFICE	12,500 SF	25 KSF	11.01	1.37	0.19	0.25	1.24	275	34	5	6	31
WAREHOUSE	0 SF	44 KSF	4.96	0.34	0.23	0.05	0.56	216	15	10	2	24
LIGHT INDUSTRIAL	37,294 SF	87 KSF	6.97	0.91	0.10	0.15	0.93	608	79	9	13	81
GENERAL INDUSTRIAL	0 SF	0 KSF	6.96	0.71	0.11	0.18	0.68	0	0	0	0	0
RETAIL	0 SF	0 KSF	40.67	3.08	3.33	2.81	2.12	0	0	0	0	0
SINGLE FAMILY RESIDENTIAL	0 DU	0 DU	9.57	0.19	0.58	0.65	0.37	0	0	0	0	0
MULTI-FAMILTY RESIDENTIAL	0 DU	0 DU	5.86	0.08	0.36	0.35	0.19	0	0	0	0	0
				2029 KIVA ROAD ACCESS PROJECT TRAFFIC				**1,100**	**128**	**24**	**22**	**136**

			ITE GENERATION RATES					PROJECT TRAFFIC GENERATION				
	CURRENT PHASE	PHASE TOTAL	DAILY	PEAK HOUR				DAILY	PEAK HOUR			
	SF or Units/Year	SF or Units/Total		AM		PM			AM		PM	
2034			ADT RATE PER KSF	IN	OUT	IN	OUT	ADT	IN	OUT	IN	OUT
OFFICE	12,500 SF	38 KSF	11.01	1.37	0.19	0.25	1.24	413	51	7	9	46
WAREHOUSE	0 SF	44 KSF	4.96	0.34	0.23	0.05	0.56	216	15	10	2	24
LIGHT INDUSTRIAL	0 SF	87 KSF	6.97	0.91	0.10	0.15	0.93	608	79	9	13	81
GENERAL INDUSTRIAL	0 SF	0 KSF	6.96	0.71	0.11	0.18	0.68	0	0	0	0	0
RETAIL	0 SF	0 KSF	40.67	3.08	3.33	2.81	2.12	0	0	0	0	0
SINGLE FAMILY RESIDENTIAL	0 DU	0 DU	9.57	0.19	0.58	0.65	0.37	0	0	0	0	0
MULTI-FAMILTY RESIDENTIAL	0 DU	0 DU	5.86	0.08	0.36	0.35	0.19	0	0	0	0	0
				2034 KIVA ROAD ACCESS PROJECT TRAFFIC				**1,238**	**146**	**26**	**25**	**152**

ROAD D - NORTH ACCESS

PHASING-land uses and densities provided by Design Workshop

			ITE GENERATION RATES					PROJECT TRAFFIC GENERATION				
									L	M	N	O
	CURRENT PHASE	PHASE TOTAL	DAILY	PEAK HOUR				DAILY	PEAK HOUR			
	SF or Units/Year	SF or Units/Total		AM		PM			AM		PM	
2019			ADT RATE PER KSF	IN	OUT	IN	OUT	ADT	IN	OUT	IN	OUT
OFFICE	0 SF	0 KSF	11.01	1.37	0.19	0.25	1.24	0	0	0	0	0
WAREHOUSE	0 SF	0 KSF	4.96	0.34	0.23	0.05	0.56	0	0	0	0	0
LIGHT INDUSTRIAL	0 SF	0 KSF	6.97	0.91	0.10	0.15	0.93	0	0	0	0	0
GENERAL INDUSTRIAL	0 SF	0 KSF	6.96	0.71	0.11	0.18	0.68	0	0	0	0	0
RETAIL	0 SF	0 KSF	40.67	3.08	3.33	2.81	2.12	0	0	0	0	0
SINGLE FAMILY RESIDENTIAL	0 DU	0 DU	9.57	0.19	0.58	0.65	0.37	0	0	0	0	0
MULTI-FAMILTY RESIDENTIAL	0 DU	0 DU	5.86	0.08	0.36	0.35	0.19	0	0	0	0	0
			2019 ROAD D - NORTH ACCES PROJECT TRAFFIC					**0**	**0**	**0**	**0**	**0**

			ITE GENERATION RATES					PROJECT TRAFFIC GENERATION				
	CURRENT PHASE	PHASE TOTAL	DAILY	PEAK HOUR				DAILY	PEAK HOUR			
	SF or Units/Year	SF or Units/Total		AM		PM			AM		PM	
2024			ADT RATE PER KSF	IN	OUT	IN	OUT	ADT	IN	OUT	IN	OUT
OFFICE	0 SF	0 KSF	11.01	1.37	0.19	0.25	1.24	0	0	0	0	0
WAREHOUSE	0 SF	0 KSF	4.96	0.34	0.23	0.05	0.56	0	0	0	0	0
LIGHT INDUSTRIAL	0 SF	0 KSF	6.97	0.91	0.10	0.15	0.93	0	0	0	0	0
GENERAL INDUSTRIAL	0 SF	0 KSF	6.96	0.71	0.11	0.18	0.68	0	0	0	0	0
RETAIL	0 SF	0 KSF	40.67	3.08	3.33	2.81	2.12	0	0	0	0	0
SINGLE FAMILY RESIDENTIAL	40 DU	40 DU	9.57	0.19	0.58	0.65	0.37	383	8	23	26	15
MULTI-FAMILTY RESIDENTIAL	50 DU	50 DU	5.86	0.08	0.36	0.35	0.19	293	4	18	18	9
			2024 ROAD D - NORTH ACCES PROJECT TRAFFIC					**676**	**12**	**41**	**44**	**24**

			ITE GENERATION RATES					PROJECT TRAFFIC GENERATION				
	CURRENT PHASE	PHASE TOTAL	DAILY	PEAK HOUR				DAILY	PEAK HOUR			
	SF or Units/Year	SF or Units/Total		AM		PM			AM		PM	
2029			ADT RATE PER KSF	IN	OUT	IN	OUT	ADT	IN	OUT	IN	OUT
OFFICE	0 SF	0 KSF	11.01	1.37	0.19	0.25	1.24	0	0	0	0	0
WAREHOUSE	0 SF	0 KSF	4.96	0.34	0.23	0.05	0.56	0	0	0	0	0
LIGHT INDUSTRIAL	0 SF	0 KSF	6.97	0.91	0.10	0.15	0.93	0	0	0	0	0
GENERAL INDUSTRIAL	0 SF	0 KSF	6.96	0.71	0.11	0.18	0.68	0	0	0	0	0
RETAIL	0 SF	0 KSF	40.67	3.08	3.33	2.81	2.12	0	0	0	0	0
SINGLE FAMILY RESIDENTIAL	40 DU	80 DU	9.57	0.19	0.58	0.65	0.37	766	15	46	52	29
MULTI-FAMILTY RESIDENTIAL	50 DU	100 DU	5.86	0.08	0.36	0.35	0.19	586	8	36	35	19
			2029 ROAD D - NORTH ACCES PROJECT TRAFFIC					**1,352**	**23**	**82**	**87**	**48**

			ITE GENERATION RATES					PROJECT TRAFFIC GENERATION				
	CURRENT PHASE	PHASE TOTAL	DAILY	PEAK HOUR				DAILY	PEAK HOUR			
	SF or Units/Year	SF or Units/Total		AM		PM			AM		PM	
2034			ADT RATE PER KSF	IN	OUT	IN	OUT	ADT	IN	OUT	IN	OUT
OFFICE	0 SF	0 KSF	11.01	1.37	0.19	0.25	1.24	0	0	0	0	0
WAREHOUSE	0 SF	0 KSF	4.96	0.34	0.23	0.05	0.56	0	0	0	0	0
LIGHT INDUSTRIAL	0 SF	0 KSF	6.97	0.91	0.10	0.15	0.93	0	0	0	0	0
GENERAL INDUSTRIAL	0 SF	0 KSF	6.96	0.71	0.11	0.18	0.68	0	0	0	0	0
RETAIL	0 SF	0 KSF	40.67	3.08	3.33	2.81	2.12	0	0	0	0	0
SINGLE FAMILY RESIDENTIAL	40 DU	120 DU	9.57	0.19	0.58	0.65	0.37	1,148	23	69	78	44
MULTI-FAMILTY RESIDENTIAL	45 DU	145 DU	5.86	0.08	0.36	0.35	0.19	850	11	52	51	27
			2034 ROAD D - NORTH ACCES PROJECT TRAFFIC					**1,998**	**35**	**122**	**129**	**71**

ROAD D AT ROAD E

PHASING-land uses and densities provided by Design Workshop

								L	M	N	O
			ITE GENERATION RATES					PROJECT TRAFFIC GENERATION			
	CURRENT PHASE	PHASE TOTAL	DAILY	PEAK HOUR				DAILY	PEAK HOUR		
	SF or Units/Year	SF or Units/Total		AM		PM			AM		PM	
2019			ADT RATE PER KSF	IN	OUT	IN	OUT	ADT	IN	OUT	IN	OUT
OFFICE	0 SF	0 KSF	11.01	1.37	0.19	0.25	1.24	0	0	0	0	0
WAREHOUSE	0 SF	0 KSF	4.96	0.34	0.23	0.05	0.56	0	0	0	0	0
LIGHT INDUSTRIAL	0 SF	0 KSF	6.97	0.91	0.10	0.15	0.93	0	0	0	0	0
GENERAL INDUSTRIAL	0 SF	0 KSF	6.96	0.71	0.11	0.18	0.68	0	0	0	0	0
RETAIL	0 SF	0 KSF	40.67	3.08	3.33	2.81	2.12	0	0	0	0	0
SINGLE FAMILY RESIDENTIAL	0 DU	0 DU	9.57	0.19	0.58	0.65	0.37	0	0	0	0	0
MULTI-FAMILTY RESIDENTIAL	0 DU	0 DU	5.86	0.08	0.36	0.35	0.19	0	0	0	0	0
				2019 ROAD D - AT ROAD E PROJECT TRAFFIC				**0**	**0**	**0**	**0**	**0**

			ITE GENERATION RATES					PROJECT TRAFFIC GENERATION				
	CURRENT PHASE	PHASE TOTAL	DAILY	PEAK HOUR				DAILY	PEAK HOUR			
	SF or Units/Year	SF or Units/Total		AM		PM			AM		PM	
2024			ADT RATE PER KSF	IN	OUT	IN	OUT	ADT	IN	OUT	IN	OUT
OFFICE	0 SF	0 KSF	11.01	1.37	0.19	0.25	1.24	0	0	0	0	0
WAREHOUSE	0 SF	0 KSF	4.96	0.34	0.23	0.05	0.56	0	0	0	0	0
LIGHT INDUSTRIAL	0 SF	0 KSF	6.97	0.91	0.10	0.15	0.93	0	0	0	0	0
GENERAL INDUSTRIAL	0 SF	0 KSF	6.96	0.71	0.11	0.18	0.68	0	0	0	0	0
RETAIL	0 SF	0 KSF	40.67	3.08	3.33	2.81	2.12	0	0	0	0	0
SINGLE FAMILY RESIDENTIAL	40 DU	40 DU	9.57	0.19	0.58	0.65	0.37	383	8	23	26	15
MULTI-FAMILTY RESIDENTIAL	50 DU	50 DU	5.86	0.08	0.36	0.35	0.19	293	4	18	18	9
				2024 ROAD D - AT ROAD E PROJECT TRAFFIC				**676**	**12**	**41**	**44**	**24**

			ITE GENERATION RATES					PROJECT TRAFFIC GENERATION				
	CURRENT PHASE	PHASE TOTAL	DAILY	PEAK HOUR				DAILY	PEAK HOUR			
	SF or Units/Year	SF or Units/Total		AM		PM			AM		PM	
2029			ADT RATE PER KSF	IN	OUT	IN	OUT	ADT	IN	OUT	IN	OUT
OFFICE	0 SF	0 KSF	11.01	1.37	0.19	0.25	1.24	0	0	0	0	0
WAREHOUSE	0 SF	0 KSF	4.96	0.34	0.23	0.05	0.56	0	0	0	0	0
LIGHT INDUSTRIAL	0 SF	0 KSF	6.97	0.91	0.10	0.15	0.93	0	0	0	0	0
GENERAL INDUSTRIAL	0 SF	0 KSF	6.96	0.71	0.11	0.18	0.68	0	0	0	0	0
RETAIL	0 SF	0 KSF	40.67	3.08	3.33	2.81	2.12	0	0	0	0	0
SINGLE FAMILY RESIDENTIAL	40 DU	80 DU	9.57	0.19	0.58	0.65	0.37	766	15	46	52	29
MULTI-FAMILTY RESIDENTIAL	50 DU	100 DU	5.86	0.08	0.36	0.35	0.19	586	8	36	35	19
				2029 ROAD D - AT ROAD E PROJECT TRAFFIC				**1,352**	**23**	**82**	**87**	**48**

			ITE GENERATION RATES					PROJECT TRAFFIC GENERATION				
	CURRENT PHASE	PHASE TOTAL	DAILY	PEAK HOUR				DAILY	PEAK HOUR			
	SF or Units/Year	SF or Units/Total		AM		PM			AM		PM	
2034			ADT RATE PER KSF	IN	OUT	IN	OUT	ADT	IN	OUT	IN	OUT
OFFICE	0 SF	0 KSF	11.01	1.37	0.19	0.25	1.24	0	0	0	0	0
WAREHOUSE	0 SF	0 KSF	4.96	0.34	0.23	0.05	0.56	0	0	0	0	0
LIGHT INDUSTRIAL	0 SF	0 KSF	6.97	0.91	0.10	0.15	0.93	0	0	0	0	0
GENERAL INDUSTRIAL	0 SF	0 KSF	6.96	0.71	0.11	0.18	0.68	0	0	0	0	0
RETAIL	0 SF	0 KSF	40.67	3.08	3.33	2.81	2.12	0	0	0	0	0
SINGLE FAMILY RESIDENTIAL	40 DU	120 DU	9.57	0.19	0.58	0.65	0.37	1,148	23	69	78	44
MULTI-FAMILTY RESIDENTIAL	28 DU	128 DU	5.86	0.08	0.36	0.35	0.19	750	10	46	45	24
				2034 ROAD D - AT ROAD E PROJECT TRAFFIC				**1,898**	**33**	**115**	**123**	**68**

ROAD D - SOUTH ACCESS

PHASING-land uses and densities provided by Design Workshop

									L	M	N	O
			ITE GENERATION RATES					PROJECT TRAFFIC GENERATION				
	CURRENT PHASE	PHASE TOTAL	DAILY	PEAK HOUR				DAILY	PEAK HOUR			
	SF or Units/Year	SF or Units/Total		AM		PM			AM		PM	
2019			ADT RATE PER KSF	IN	OUT	IN	OUT	ADT	IN	OUT	IN	OUT
OFFICE	0 SF	0 KSF	11.01	1.37	0.19	0.25	1.24	0	0	0	0	0
WAREHOUSE	0 SF	0 KSF	4.96	0.34	0.23	0.05	0.56	0	0	0	0	0
LIGHT INDUSTRIAL	0 SF	0 KSF	6.97	0.91	0.10	0.15	0.93	0	0	0	0	0
GENERAL INDUSTRIAL	0 SF	0 KSF	6.96	0.71	0.11	0.18	0.68	0	0	0	0	0
RETAIL	0 SF	0 KSF	40.67	3.08	3.33	2.81	2.12	0	0	0	0	0
SINGLE FAMILY RESIDENTIAL	0 DU	0 DU	9.57	0.19	0.58	0.65	0.37	0	0	0	0	0
MULTI-FAMILTY RESIDENTIAL	0 DU	0 DU	5.86	0.08	0.36	0.35	0.19	0	0	0	0	0
			2019 ROAD D - SOUTH ACCESS PROJECT TRAFFIC					**0**	**0**	**0**	**0**	**0**

			ITE GENERATION RATES					PROJECT TRAFFIC GENERATION				
	CURRENT PHASE	PHASE TOTAL	DAILY	PEAK HOUR				DAILY	PEAK HOUR			
	SF or Units/Year	SF or Units/Total		AM		PM			AM		PM	
2024			ADT RATE PER KSF	IN	OUT	IN	OUT	ADT	IN	OUT	IN	OUT
OFFICE	0 SF	0 KSF	11.01	1.37	0.19	0.25	1.24	0	0	0	0	0
WAREHOUSE	0 SF	0 KSF	4.96	0.34	0.23	0.05	0.56	0	0	0	0	0
LIGHT INDUSTRIAL	0 SF	0 KSF	6.97	0.91	0.10	0.15	0.93	0	0	0	0	0
GENERAL INDUSTRIAL	0 SF	0 KSF	6.96	0.71	0.11	0.18	0.68	0	0	0	0	0
RETAIL	0 SF	0 KSF	40.67	3.08	3.33	2.81	2.12	0	0	0	0	0
SINGLE FAMILY RESIDENTIAL	0 DU	0 DU	9.57	0.19	0.58	0.65	0.37	0	0	0	0	0
MULTI-FAMILTY RESIDENTIAL	0 DU	0 DU	5.86	0.08	0.36	0.35	0.19	0	0	0	0	0
			2024 ROAD D - SOUTH ACCESS PROJECT TRAFFIC					**0**	**0**	**0**	**0**	**0**

			ITE GENERATION RATES					PROJECT TRAFFIC GENERATION				
	CURRENT PHASE	PHASE TOTAL	DAILY	PEAK HOUR				DAILY	PEAK HOUR			
	SF or Units/Year	SF or Units/Total		AM		PM			AM		PM	
2029			ADT RATE PER KSF	IN	OUT	IN	OUT	ADT	IN	OUT	IN	OUT
OFFICE	0 SF	0 KSF	11.01	1.37	0.19	0.25	1.24	0	0	0	0	0
WAREHOUSE	0 SF	0 KSF	4.96	0.34	0.23	0.05	0.56	0	0	0	0	0
LIGHT INDUSTRIAL	0 SF	0 KSF	6.97	0.91	0.10	0.15	0.93	0	0	0	0	0
GENERAL INDUSTRIAL	278 SF	0 KSF	6.96	0.71	0.11	0.18	0.68	2	0	0	0	0
RETAIL	0 SF	0 KSF	40.67	3.08	3.33	2.81	2.12	0	0	0	0	0
SINGLE FAMILY RESIDENTIAL	26 DU	26 DU	9.57	0.19	0.58	0.65	0.37	249	5	15	17	10
MULTI-FAMILTY RESIDENTIAL	100 DU	100 DU	5.86	0.08	0.36	0.35	0.19	586	8	36	35	19
			2029 ROAD D - SOUTH ACCESS PROJECT TRAFFIC					**837**	**13**	**51**	**52**	**29**

			ITE GENERATION RATES					PROJECT TRAFFIC GENERATION				
	CURRENT PHASE	PHASE TOTAL	DAILY	PEAK HOUR				DAILY	PEAK HOUR			
	SF or Units/Year	SF or Units/Total		AM		PM			AM		PM	
2034			ADT RATE PER KSF	IN	OUT	IN	OUT	ADT	IN	OUT	IN	OUT
OFFICE	0 SF	0 KSF	11.01	1.37	0.19	0.25	1.24	0	0	0	0	0
WAREHOUSE	0 SF	0 KSF	4.96	0.34	0.23	0.05	0.56	0	0	0	0	0
LIGHT INDUSTRIAL	0 SF	0 KSF	6.97	0.91	0.10	0.15	0.93	0	0	0	0	0
GENERAL INDUSTRIAL	0 SF	0 KSF	6.96	0.71	0.11	0.18	0.68	2	0	0	0	0
RETAIL	0 SF	0 KSF	40.67	3.08	3.33	2.81	2.12	0	0	0	0	0
SINGLE FAMILY RESIDENTIAL	0 DU	26 DU	9.57	0.19	0.58	0.65	0.37	249	5	15	17	10
MULTI-FAMILTY RESIDENTIAL	89 DU	189 DU	5.86	0.08	0.36	0.35	0.19	1,108	15	68	66	36
			2034 ROAD D - SOUTH ACCESS PROJECT TRAFFIC					**1,358**	**20**	**83**	**83**	**45**

ROAD E

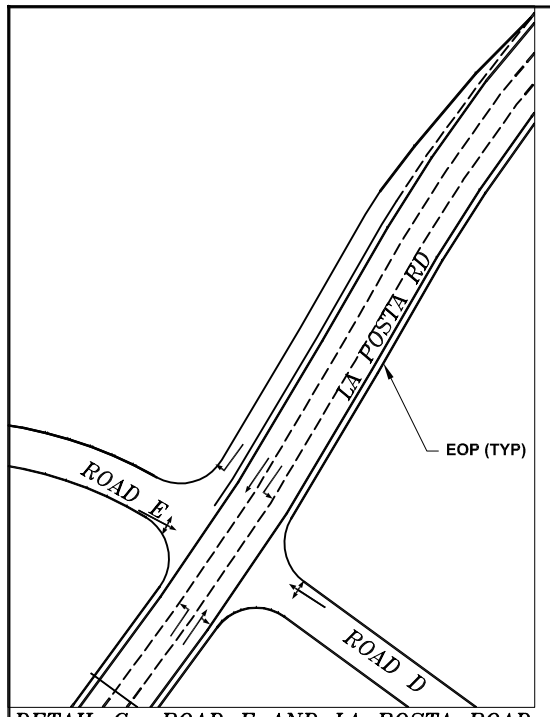
PHASING-land uses and densities provided by Design Workshop

								L	M	N	O
			ITE GENERATION RATES					PROJECT TRAFFIC GENERATION			
	CURRENT PHASE	PHASE TOTAL	DAILY	PEAK HOUR				DAILY	PEAK HOUR		
	SF or Units/Year	SF or Units/Total		AM		PM			AM		PM	
2019			ADT RATE PER KSF	IN	OUT	IN	OUT	ADT	IN	OUT	IN	OUT
OFFICE	0 SF	0 KSF	11.01	1.37	0.19	0.25	1.24	0	0	0	0	0
WAREHOUSE	0 SF	0 KSF	4.96	0.34	0.23	0.05	0.56	0	0	0	0	0
LIGHT INDUSTRIAL	0 SF	0 KSF	6.97	0.91	0.10	0.15	0.93	0	0	0	0	0
GENERAL INDUSTRIAL	0 SF	0 KSF	6.96	0.71	0.11	0.18	0.68	0	0	0	0	0
RETAIL	0 SF	0 KSF	40.67	3.08	3.33	2.81	2.12	0	0	0	0	0
SINGLE FAMILY RESIDENTIAL	0 DU	0 DU	9.57	0.19	0.58	0.65	0.37	0	0	0	0	0
MULTI-FAMILTY RESIDENTIAL	0 DU	0 DU	5.86	0.08	0.36	0.35	0.19	0	0	0	0	0
						2019 ROAD E PROJECT TRAFFIC		**0**	**0**	**0**	**0**	**0**

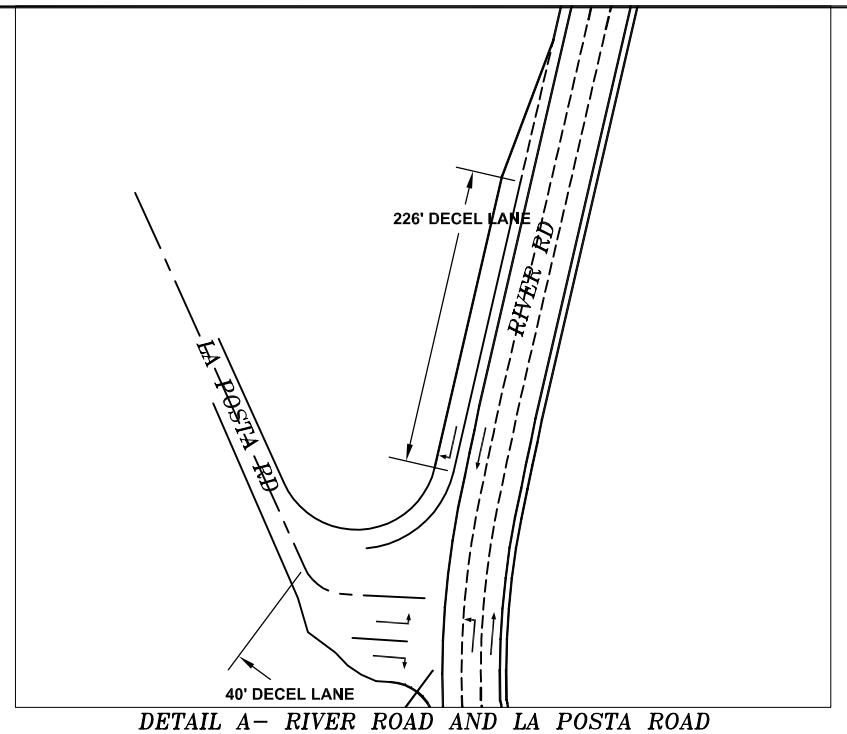
			ITE GENERATION RATES					PROJECT TRAFFIC GENERATION			
	CURRENT PHASE	PHASE TOTAL	DAILY	PEAK HOUR				DAILY	PEAK HOUR		
	SF or Units/Year	SF or Units/Total		AM		PM			AM		PM	
2024			ADT RATE PER KSF	IN	OUT	IN	OUT	ADT	IN	OUT	IN	OUT
OFFICE	10,000 SF	10 KSF	11.01	1.37	0.19	0.25	1.24	110	14	2	3	12
WAREHOUSE	13,078 SF	13 KSF	4.96	0.34	0.23	0.05	0.56	65	4	3	1	7
LIGHT INDUSTRIAL	25,000 SF	25 KSF	6.97	0.91	0.10	0.15	0.93	174	23	3	4	23
GENERAL INDUSTRIAL	9,345 SF	9 KSF	6.96	0.71	0.11	0.18	0.68	65	7	1	2	6
RETAIL	0 SF	0 KSF	40.67	3.08	3.33	2.81	2.12	0	0	0	0	0
SINGLE FAMILY RESIDENTIAL	0 DU	0 DU	9.57	0.19	0.58	0.65	0.37	0	0	0	0	0
MULTI-FAMILTY RESIDENTIAL	0 DU	0 DU	5.86	0.08	0.36	0.35	0.19	0	0	0	0	0
						2024 ROAD E PROJECT TRAFFIC		**414**	**47**	**9**	**9**	**49**

			ITE GENERATION RATES					PROJECT TRAFFIC GENERATION			
	CURRENT PHASE	PHASE TOTAL	DAILY	PEAK HOUR				DAILY	PEAK HOUR		
	SF or Units/Year	SF or Units/Total		AM		PM			AM		PM	
2029			ADT RATE PER KSF	IN	OUT	IN	OUT	ADT	IN	OUT	IN	OUT
OFFICE	3,078 SF	13 KSF	11.01	1.37	0.19	0.25	1.24	144	18	2	3	16
WAREHOUSE	0 SF	13 KSF	4.96	0.34	0.23	0.05	0.56	65	4	3	1	7
LIGHT INDUSTRIAL	1,156 SF	26 KSF	6.97	0.91	0.10	0.15	0.93	182	24	3	4	24
GENERAL INDUSTRIAL	0 SF	9 KSF	6.96	0.71	0.11	0.18	0.68	65	7	1	2	6
RETAIL	0 SF	0 KSF	40.67	3.08	3.33	2.81	2.12	0	0	0	0	0
SINGLE FAMILY RESIDENTIAL	0 DU	0 DU	9.57	0.19	0.58	0.65	0.37	0	0	0	0	0
MULTI-FAMILTY RESIDENTIAL	0 DU	0 DU	5.86	0.08	0.36	0.35	0.19	0	0	0	0	0
						2029 ROAD E PROJECT TRAFFIC		**456**	**53**	**9**	**10**	**54**

			ITE GENERATION RATES					PROJECT TRAFFIC GENERATION			
	CURRENT PHASE	PHASE TOTAL	DAILY	PEAK HOUR				DAILY	PEAK HOUR		
	SF or Units/Year	SF or Units/Total		AM		PM			AM		PM	
2034			ADT RATE PER KSF	IN	OUT	IN	OUT	ADT	IN	OUT	IN	OUT
OFFICE	0 SF	13 KSF	11.01	1.37	0.19	0.25	1.24	144	18	2	3	16
WAREHOUSE	0 SF	13 KSF	4.96	0.34	0.23	0.05	0.56	65	4	3	1	7
LIGHT INDUSTRIAL	0 SF	26 KSF	6.97	0.91	0.10	0.15	0.93	182	24	3	4	24
GENERAL INDUSTRIAL	0 SF	9 KSF	6.96	0.71	0.11	0.18	0.68	65	7	1	2	6
RETAIL	0 SF	0 KSF	40.67	3.08	3.33	2.81	2.12	0	0	0	0	0
SINGLE FAMILY RESIDENTIAL	0 DU	0 DU	9.57	0.19	0.58	0.65	0.37	0	0	0	0	0
MULTI-FAMILTY RESIDENTIAL	0 DU	0 DU	5.86	0.08	0.36	0.35	0.19	0	0	0	0	0
						2034 ROAD E PROJECT TRAFFIC		**456**	**53**	**9**	**10**	**54**



DETAIL C– ROAD E AND LA POSTA ROAD

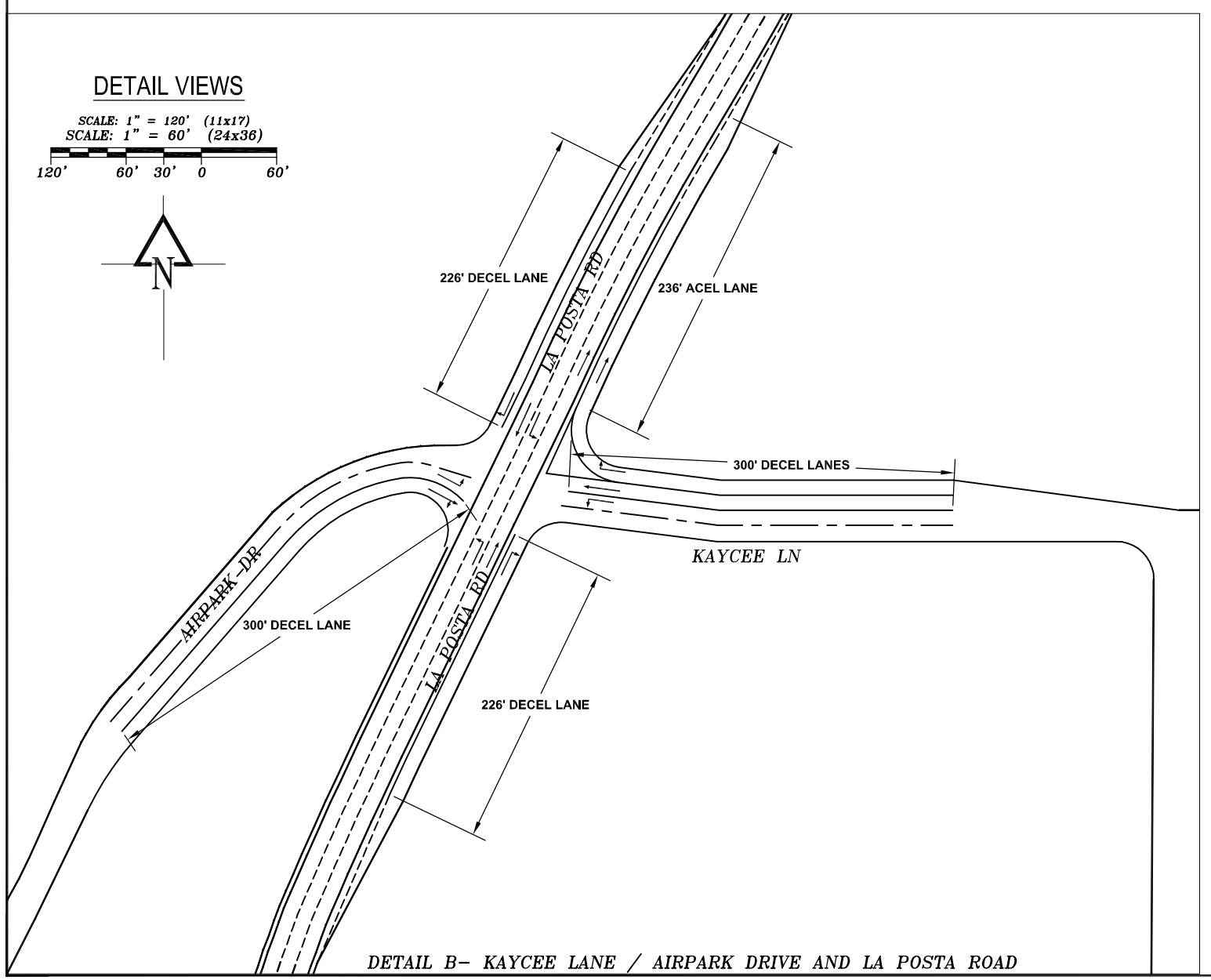


DETAIL A– RIVER ROAD AND LA POSTA ROAD

DETAIL VIEWS

SCALE: 1" = 120' (11x17)
SCALE: 1" = 60' (24x36)

120' 60' 30' 0 60'

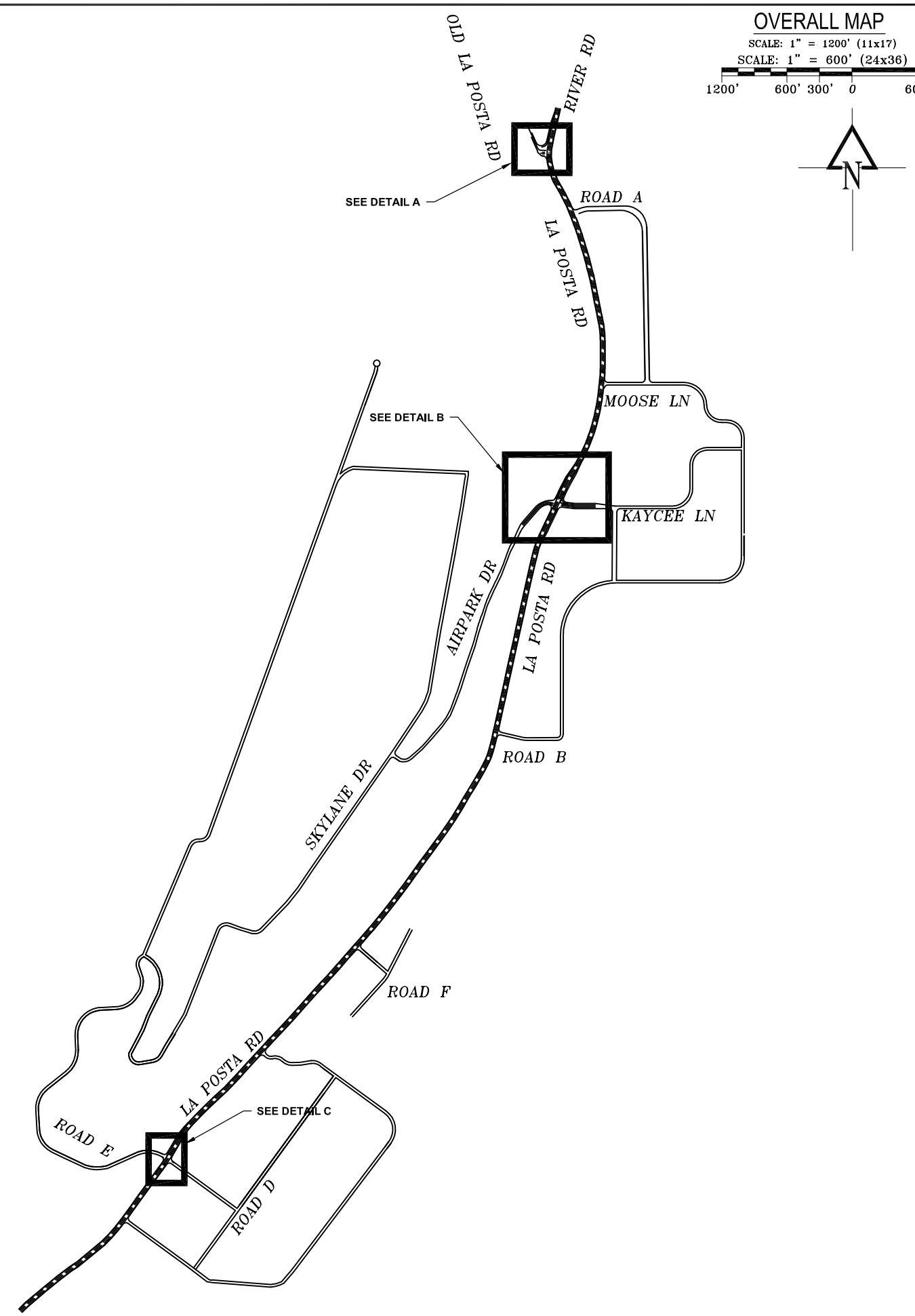


DETAIL B– KAYCEE LANE / AIRPARK DRIVE AND LA POSTA ROAD

OVERALL MAP

SCALE: 1" = 1200' (11x17)
SCALE: 1" = 600' (24x36)

1200' 600' 300' 0 600'



CONCEPTUAL

CALL UNCC
TWO WORKING DAYS
BEFORE YOU DIG
1-800-922-1987
UTILITY NOTIFICATION
CENTER OF COLORADO

REVISIONS:

LA POSTA ROAD AREA PLAN
IMPROVEMENTS MAP
ROAD IMPROVEMENTS MAP

Russell Planning & Engineering, Inc.
Civil Engineering Services
934 Main Avenue, Unit C
Durango, Colorado 81301
Phone: (970) 385-4546
Fax: (970) 385-4502

Drawn: LM
Drafted: TM
Checked: LM

Date of Submittal
11/07/2012

--- OF 1

EX-H

File Name: R:\current projects\land projects 3\la plata county - la posta road study\ACAD\Exhibits\ROAD IMPROVEMENTS MAP Plotted: 11/13/2012 11:20 AM Plot Style: HALF.STB Plotted By: TRAVIS MOONEY

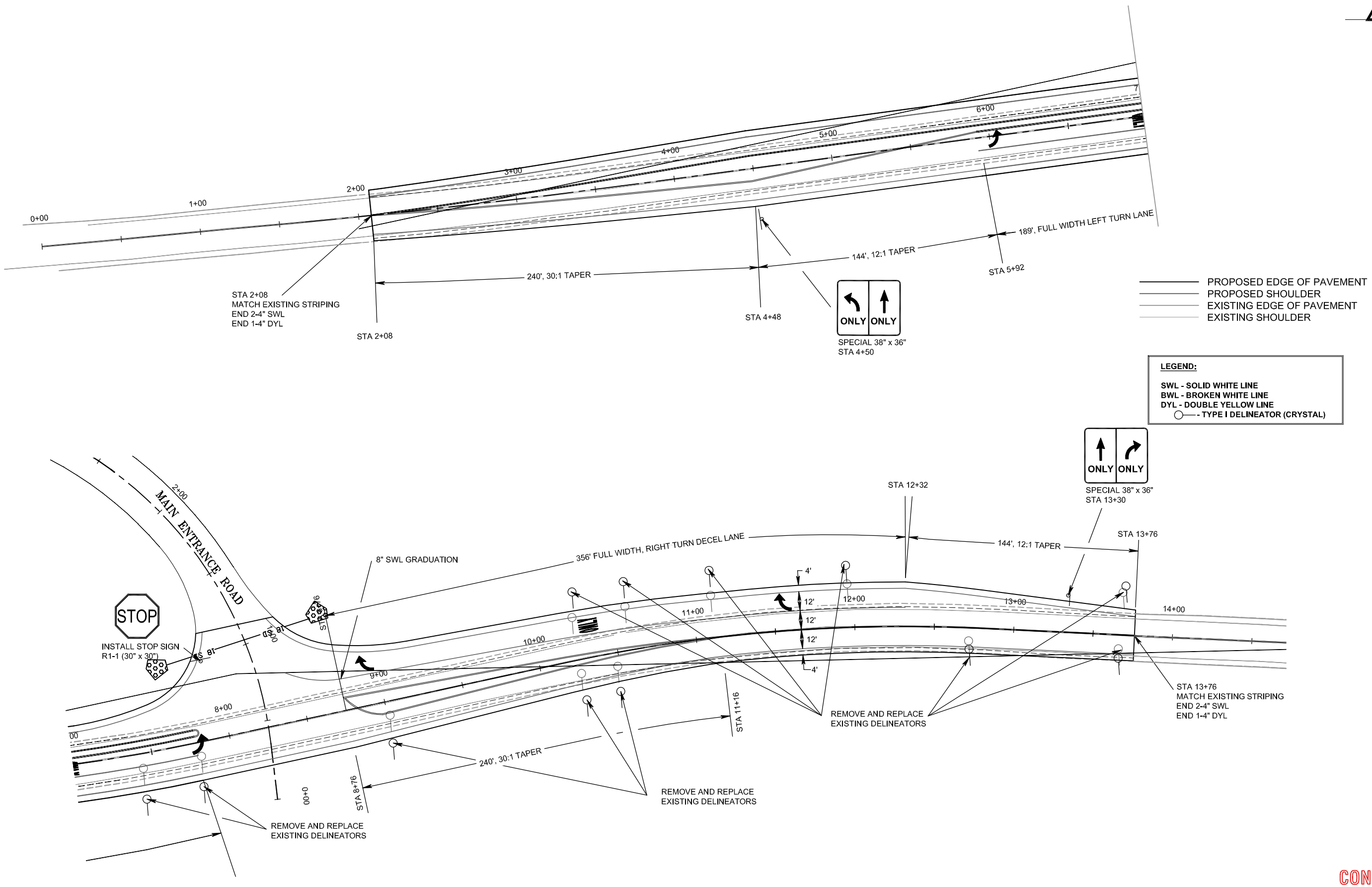
R:\current projects\land projects 3\la plata county - la posta road study\ACAD\Exhibits\ROAD IMPROVEMENTS MAP.dwg, EX-H ROAD IMPROVEMENTS MAP, 11/13/2012 11:20:41 AM, CutePDF Writer

PLAN

SCALE: 1" = 60' (11x17)
SCALE: 1" = 30' (24x36)

60' 30' 15' 0 30'

N



CONCEPTUAL

CALL UNCC
TWO WORKING DAYS
BEFORE YOU DIG
1-800-922-1987
UTILITY NOTIFICATION
CENTER OF COLORADO

REVISIONS:

LA POSTA ROAD AREA PLAN

APPENDIX I - ANIMAS GLACIER INTERSECTION
DESIGN

Russell Planning & Engineering, Inc.
Civil Engineering Services
934 Main Avenue, Unit C
Durango, Colorado 81301
Phone: (970) 385-4546
Fax: (970) 385-4502

Drawn: __
Drafted: __
Checked: __

Date of Submittal
11/07/2012

--- OF 1

APP - I

File Name: R:\current projects\land projects 3\la plata county - la posta road study\ACAD\Exhibits\ANIMAS GLACIER RD E Plotted: 11/9/2012 3:43 PM Plot Style: HALF.STB Plotted By: TRAVIS MOONEY

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	36	270	5	41	513	244	9	2	24	326	0	36
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	39	293	5	45	558	265	10	2	26	354	0	39
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)					675							
pX, platoon unblocked												
vC, conflicting volume	823			299			782	1286	149	1032	1157	411
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	823			299			782	1286	149	1032	1157	411
tC, single (s)	4.2			4.2			7.6	6.6	7.0	7.6	6.6	7.0
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	95			96			96	99	97	0	100	93
cM capacity (veh/h)	790			1245			246	147	864	166	176	584

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	186	152	323	544	38	354	39
Volume Left	39	0	45	0	10	354	0
Volume Right	0	5	0	265	26	0	39
cSH	790	1700	1245	1700	448	166	584
Volume to Capacity	0.05	0.09	0.04	0.32	0.08	2.14	0.07
Queue Length 95th (ft)	4	0	3	0	7	707	5
Control Delay (s)	2.5	0.0	1.4	0.0	13.8	577.8	11.6
Lane LOS	A		A		B	F	B
Approach Delay (s)	1.4		0.5		13.8	521.5	
Approach LOS					B	F	

Intersection Summary				
Average Delay	126.2			
Intersection Capacity Utilization	66.6%	ICU Level of Service	C	
Analysis Period (min)	15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	8	138	81	238	410	96
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	150	88	259	446	104
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	933	498	550			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	933	498	550			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	97	74	91			
cM capacity (veh/h)	268	568	1010			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	159	347	550
Volume Left	9	88	0
Volume Right	150	0	104
cSH	535	1010	1700
Volume to Capacity	0.30	0.09	0.32
Queue Length 95th (ft)	31	7	0
Control Delay (s)	14.5	2.9	0.0
Lane LOS	B	A	
Approach Delay (s)	14.5	2.9	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	63.4%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	100	0	6	3	1	32	9	148	13	106	130	185
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	109	0	7	3	1	35	10	161	14	115	141	201
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	695	667	242	666	760	168	342			175		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	695	667	242	666	760	168	342			175		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	66	100	99	99	100	96	99			92		
cM capacity (veh/h)	315	343	792	342	303	871	1206			1389		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	115	39	185	458
Volume Left	109	3	10	115
Volume Right	7	35	14	201
cSH	327	737	1206	1389
Volume to Capacity	0.35	0.05	0.01	0.08
Queue Length 95th (ft)	39	4	1	7
Control Delay (s)	21.9	10.2	0.5	2.6
Lane LOS	C	B	A	A
Approach Delay (s)	21.9	10.2	0.5	2.6
Approach LOS	C	B		

Intersection Summary				
Average Delay		5.3		
Intersection Capacity Utilization		55.7%	ICU Level of Service	B
Analysis Period (min)		15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	175	20	0	95	11	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	190	22	0	103	12	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	76	52			103	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	76	52			103	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	79	98			99	
cM capacity (veh/h)	915	1011			1476	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	212	103	12
Volume Left	190	0	12
Volume Right	22	103	0
cSH	924	1700	1476
Volume to Capacity	0.23	0.06	0.01
Queue Length 95th (ft)	22	0	1
Control Delay (s)	10.1	0.0	7.5
Lane LOS	B		A
Approach Delay (s)	10.1	0.0	7.5
Approach LOS	B		

Intersection Summary			
Average Delay	6.8		
Intersection Capacity Utilization	24.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	36	270	5	41	513	244	9	2	24	326	0	36
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	39	293	5	45	558	265	10	2	26	354	0	39
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)					675							
pX, platoon unblocked												
vC, conflicting volume	823			299			782	1286	149	1032	1157	411
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	823			299			782	1286	149	1032	1157	411
tC, single (s)	4.2			4.2			7.6	6.6	7.0	7.6	6.6	7.0
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	95			96			96	99	97	0	100	93
cM capacity (veh/h)	790			1245			246	147	864	166	176	584

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2	SB 3
Volume Total	186	152	323	544	38	177	177	39
Volume Left	39	0	45	0	10	177	177	0
Volume Right	0	5	0	265	26	0	0	39
cSH	790	1700	1245	1700	448	166	166	584
Volume to Capacity	0.05	0.09	0.04	0.32	0.08	1.07	1.07	0.07
Queue Length 95th (ft)	4	0	3	0	7	223	223	5
Control Delay (s)	2.5	0.0	1.4	0.0	13.8	146.1	146.1	11.6
Lane LOS	A		A		B	F	F	B
Approach Delay (s)	1.4		0.5		13.8	132.7		
Approach LOS					B	F		

Intersection Summary				
Average Delay	32.8			
Intersection Capacity Utilization	57.8%	ICU Level of Service		B
Analysis Period (min)	15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	8	138	81	238	410	96
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	150	88	259	446	104
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		4				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	880	446	550			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	880	446	550			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	97	75	91			
cM capacity (veh/h)	287	608	1010			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	159	88	259	446	104
Volume Left	9	88	0	0	0
Volume Right	150	0	0	0	104
cSH	644	1010	1700	1700	1700
Volume to Capacity	0.25	0.09	0.15	0.26	0.06
Queue Length 95th (ft)	24	7	0	0	0
Control Delay (s)	13.1	8.9	0.0	0.0	0.0
Lane LOS	B	A			
Approach Delay (s)	13.1	2.3		0.0	
Approach LOS	B				

Intersection Summary				
Average Delay		2.7		
Intersection Capacity Utilization		39.4%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	100	0	6	3	1	32	9	148	13	106	130	185
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	109	0	7	3	1	35	10	161	14	115	141	201
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)						16						
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	553	566	141	559	753	161	342			175		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	553	566	141	559	753	161	342			175		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	72	100	99	99	100	96	99			92		
cM capacity (veh/h)	393	392	901	404	306	879	1206			1389		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	109	7	3	36	10	161	14	115	141	201
Volume Left	109	0	3	0	10	0	0	115	0	0
Volume Right	0	7	0	35	0	0	14	0	0	201
cSH	393	901	404	906	1206	1700	1700	1389	1700	1700
Volume to Capacity	0.28	0.01	0.01	0.04	0.01	0.09	0.01	0.08	0.08	0.12
Queue Length 95th (ft)	28	1	1	3	1	0	0	7	0	0
Control Delay (s)	17.6	9.0	14.0	9.5	8.0	0.0	0.0	7.8	0.0	0.0
Lane LOS	C	A	B	A	A			A		
Approach Delay (s)	17.1		9.9		0.4			2.0		
Approach LOS	C		A							

Intersection Summary				
Average Delay	4.2			
Intersection Capacity Utilization	35.9%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	175	20	0	95	11	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	190	22	0	103	12	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	76	52			103	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	76	52			103	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	79	98			99	
cM capacity (veh/h)	915	1011			1476	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	212	103	12
Volume Left	190	0	12
Volume Right	22	103	0
cSH	924	1700	1476
Volume to Capacity	0.23	0.06	0.01
Queue Length 95th (ft)	22	0	1
Control Delay (s)	10.1	0.0	7.5
Lane LOS	B		A
Approach Delay (s)	10.1	0.0	7.5
Approach LOS	B		

Intersection Summary			
Average Delay	6.8		
Intersection Capacity Utilization	24.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	53	479	7	48	284	176	2	0	21	263	6	29
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	58	521	8	52	309	191	2	0	23	286	7	32
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)					675							
pX, platoon unblocked												
vC, conflicting volume	500			528			933	1244	264	907	1152	250
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	500			528			933	1244	264	907	1152	250
tC, single (s)	4.2			4.2			7.6	6.6	7.0	7.6	6.6	7.0
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	94			95			99	100	97	0	96	96
cM capacity (veh/h)	1046			1021			187	153	728	203	173	744

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	318	268	207	346	25	289	35
Volume Left	58	0	52	0	2	286	0
Volume Right	0	8	0	191	23	0	32
cSH	1046	1700	1021	1700	582	203	568
Volume to Capacity	0.06	0.16	0.05	0.20	0.04	1.43	0.06
Queue Length 95th (ft)	4	0	4	0	3	428	5
Control Delay (s)	2.0	0.0	2.6	0.0	11.5	262.4	11.7
Lane LOS	A		A		B	F	B
Approach Delay (s)	1.1		1.0		11.5	235.5	
Approach LOS					B	F	

Intersection Summary			
Average Delay	52.3		
Intersection Capacity Utilization	61.1%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	34	80	153	382	183	26
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	37	87	166	415	199	28
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	961	213	227			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	961	213	227			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	85	89	87			
cM capacity (veh/h)	247	822	1329			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	124	582	227
Volume Left	37	166	0
Volume Right	87	0	28
cSH	485	1329	1700
Volume to Capacity	0.26	0.13	0.13
Queue Length 95th (ft)	25	11	0
Control Delay (s)	15.0	3.3	0.0
Lane LOS	B	A	
Approach Delay (s)	15.0	3.3	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	4.0		
Intersection Capacity Utilization	56.6%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	203	1	15	12	1	138	6	188	1	21	151	99
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	221	1	16	13	1	150	7	204	1	23	164	108
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	578	428	164	445	535	205	272			205		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	578	428	164	445	535	205	272			205		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	35	100	98	97	100	82	99			98		
cM capacity (veh/h)	341	505	875	501	439	831	1280			1354		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	238	164	212	187	108
Volume Left	221	13	7	23	0
Volume Right	16	150	1	0	108
cSH	356	785	1280	1354	1700
Volume to Capacity	0.67	0.21	0.01	0.02	0.06
Queue Length 95th (ft)	115	20	0	1	0
Control Delay (s)	33.2	10.8	0.3	1.1	0.0
Lane LOS	D	B	A	A	
Approach Delay (s)	33.2	10.8	0.3	0.7	
Approach LOS	D	B			

Intersection Summary				
Average Delay	10.9			
Intersection Capacity Utilization	49.1%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	95	11	0	197	22	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	103	12	0	214	24	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	155	107			214	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	155	107			214	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	87	99			98	
cM capacity (veh/h)	817	942			1344	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	115	214	24
Volume Left	103	0	24
Volume Right	12	214	0
cSH	828	1700	1344
Volume to Capacity	0.14	0.13	0.02
Queue Length 95th (ft)	12	0	1
Control Delay (s)	10.0	0.0	7.7
Lane LOS	B		A
Approach Delay (s)	10.0	0.0	7.7
Approach LOS	B		

Intersection Summary			
Average Delay	3.8		
Intersection Capacity Utilization	30.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	53	479	7	48	284	176	2	0	21	263	6	29
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	58	521	8	52	309	191	2	0	23	286	7	32
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)					675							
pX, platoon unblocked												
vC, conflicting volume	500			528			933	1244	264	907	1152	250
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	500			528			933	1244	264	907	1152	250
tC, single (s)	4.2			4.2			7.6	6.6	7.0	7.6	6.6	7.0
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	94			95			99	100	97	0	96	96
cM capacity (veh/h)	1046			1021			187	153	728	203	173	744

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2	SB 3
Volume Total	318	268	207	346	25	143	143	38
Volume Left	58	0	52	0	2	143	143	0
Volume Right	0	8	0	191	23	0	0	32
cSH	1046	1700	1021	1700	582	203	203	476
Volume to Capacity	0.06	0.16	0.05	0.20	0.04	0.70	0.70	0.08
Queue Length 95th (ft)	4	0	4	0	3	112	112	6
Control Delay (s)	2.0	0.0	2.6	0.0	11.5	56.4	56.4	13.2
Lane LOS	A		A		B	F	F	B
Approach Delay (s)	1.1		1.0		11.5	51.3		
Approach LOS					B	F		

Intersection Summary				
Average Delay	12.2			
Intersection Capacity Utilization	54.1%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	34	80	153	382	183	26
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	37	87	166	415	199	28
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		4				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	947	199	227			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	947	199	227			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	85	90	87			
cM capacity (veh/h)	252	837	1329			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	124	166	415	199	28
Volume Left	37	166	0	0	0
Volume Right	87	0	0	0	28
cSH	843	1329	1700	1700	1700
Volume to Capacity	0.15	0.13	0.24	0.12	0.02
Queue Length 95th (ft)	13	11	0	0	0
Control Delay (s)	13.4	8.1	0.0	0.0	0.0
Lane LOS	B	A			
Approach Delay (s)	13.4	2.3		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	31.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	203	1	15	12	1	138	6	188	1	21	151	99
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	221	1	16	13	1	150	7	204	1	23	164	108
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)						16						
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	428	428	164	444	535	204	272			205		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	428	428	164	444	535	204	272			205		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	49	100	98	97	100	82	99			98		
cM capacity (veh/h)	429	505	875	502	439	831	1280			1354		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	221	17	13	151	7	204	1	23	164	108
Volume Left	221	0	13	0	7	0	0	23	0	0
Volume Right	0	16	0	150	0	0	1	0	0	108
cSH	429	837	502	837	1280	1700	1700	1354	1700	1700
Volume to Capacity	0.51	0.02	0.03	0.18	0.01	0.12	0.00	0.02	0.10	0.06
Queue Length 95th (ft)	71	2	2	16	0	0	0	1	0	0
Control Delay (s)	21.9	9.4	12.4	10.3	7.8	0.0	0.0	7.7	0.0	0.0
Lane LOS	C	A	B	B	A			A		
Approach Delay (s)	21.0		10.5		0.2			0.6		
Approach LOS	C		B							

Intersection Summary				
Average Delay	7.6			
Intersection Capacity Utilization	41.1%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	95	11	0	197	22	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	103	12	0	214	24	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	155	107			214	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	155	107			214	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	87	99			98	
cM capacity (veh/h)	817	942			1344	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	115	214	24
Volume Left	103	0	24
Volume Right	12	214	0
cSH	828	1700	1344
Volume to Capacity	0.14	0.13	0.02
Queue Length 95th (ft)	12	0	1
Control Delay (s)	10.0	0.0	7.7
Lane LOS	B		A
Approach Delay (s)	10.0	0.0	7.7
Approach LOS	B		

Intersection Summary			
Average Delay	3.8		
Intersection Capacity Utilization	30.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	54	383	8	44	773	246	14	2	25	330	0	57
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	59	416	9	48	840	267	15	2	27	359	0	62
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)					675							
pX, platoon unblocked												
vC, conflicting volume	1108			425			1116	1741	212	1423	1612	554
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1108			425			1116	1741	212	1423	1612	554
tC, single (s)	4.2			4.2			7.6	6.6	7.0	7.6	6.6	7.0
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	90			96			88	97	97	0	100	87
cM capacity (veh/h)	615			1117			125	73	787	80	88	471

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2
Volume Total	267	217	468	688	45	359	62
Volume Left	59	0	48	0	15	359	0
Volume Right	0	9	0	267	27	0	62
cSH	615	1700	1117	1700	239	80	471
Volume to Capacity	0.10	0.13	0.04	0.40	0.19	4.49	0.13
Queue Length 95th (ft)	8	0	3	0	17	Err	11
Control Delay (s)	3.5	0.0	1.3	0.0	23.5	Err	13.8
Lane LOS	A		A		C	F	B
Approach Delay (s)	1.9		0.5		23.5	8528.3	
Approach LOS					C	F	

Intersection Summary			
Average Delay	1706.0		
Intersection Capacity Utilization	77.9%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	8	256	137	369	687	101
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	278	149	401	747	110
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1501	802	857			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1501	802	857			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	92	27	81			
cM capacity (veh/h)	107	381	775			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	287	550	857
Volume Left	9	149	0
Volume Right	278	0	110
cSH	354	775	1700
Volume to Capacity	0.81	0.19	0.50
Queue Length 95th (ft)	175	18	0
Control Delay (s)	47.0	4.9	0.0
Lane LOS	E	A	
Approach Delay (s)	47.0	4.9	0.0
Approach LOS	E		

Intersection Summary			
Average Delay	9.5		
Intersection Capacity Utilization	95.6%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	130	0	9	5	0	54	16	268	22	197	307	254
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	141	0	10	5	0	59	17	291	24	214	334	276
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1297	1250	472	1248	1376	303	610			315		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1297	1250	472	1248	1376	303	610			315		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	100	98	96	100	92	98			83		
cM capacity (veh/h)	108	139	588	125	117	732	959			1234		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	151	64	333	824
Volume Left	141	5	17	214
Volume Right	10	59	24	276
cSH	114	519	959	1234
Volume to Capacity	1.32	0.12	0.02	0.17
Queue Length 95th (ft)	254	11	1	16
Control Delay (s)	264.2	12.9	0.6	3.9
Lane LOS	F	B	A	A
Approach Delay (s)	264.2	12.9	0.6	3.9
Approach LOS	F	B		

Intersection Summary				
Average Delay		32.2		
Intersection Capacity Utilization		83.3%	ICU Level of Service	E
Analysis Period (min)		15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	243	28	0	125	14	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	264	30	0	136	15	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	98	68			136	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	98	68			136	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	70	97			99	
cM capacity (veh/h)	886	990			1436	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	295	136	15
Volume Left	264	0	15
Volume Right	30	136	0
cSH	896	1700	1436
Volume to Capacity	0.33	0.08	0.01
Queue Length 95th (ft)	36	0	1
Control Delay (s)	11.0	0.0	7.5
Lane LOS	B		A
Approach Delay (s)	11.0	0.0	7.5
Approach LOS	B		

Intersection Summary			
Average Delay	7.5		
Intersection Capacity Utilization	33.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	54	383	8	44	773	246	14	2	25	330	0	57
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	59	416	9	48	840	267	15	2	27	359	0	62
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)					675							
pX, platoon unblocked												
vC, conflicting volume	1108			425			1116	1741	212	1423	1612	554
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1108			425			1116	1741	212	1423	1612	554
tC, single (s)	4.2			4.2			7.6	6.6	7.0	7.6	6.6	7.0
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	90			96			88	97	97	0	100	87
cM capacity (veh/h)	615			1117			125	73	787	80	88	471

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2	SB 3
Volume Total	267	217	468	688	45	179	179	62
Volume Left	59	0	48	0	15	179	179	0
Volume Right	0	9	0	267	27	0	0	62
cSH	615	1700	1117	1700	239	80	80	471
Volume to Capacity	0.10	0.13	0.04	0.40	0.19	2.24	2.24	0.13
Queue Length 95th (ft)	8	0	3	0	17	413	413	11
Control Delay (s)	3.5	0.0	1.3	0.0	23.5	682.1	682.1	13.8
Lane LOS	A		A		C	F	F	B
Approach Delay (s)	1.9		0.5		23.5	583.7		
Approach LOS					C	F		

Intersection Summary				
Average Delay	117.9			
Intersection Capacity Utilization	69.0%	ICU Level of Service	C	
Analysis Period (min)	15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	8	256	137	369	687	101
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	278	149	401	747	110
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		4				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1446	747	857			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1446	747	857			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	93	32	81			
cM capacity (veh/h)	116	410	775			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	287	149	401	747	110
Volume Left	9	149	0	0	0
Volume Right	278	0	0	0	110
cSH	423	775	1700	1700	1700
Volume to Capacity	0.68	0.19	0.24	0.44	0.06
Queue Length 95th (ft)	123	18	0	0	0
Control Delay (s)	30.7	10.7	0.0	0.0	0.0
Lane LOS	D	B			
Approach Delay (s)	30.7	2.9		0.0	
Approach LOS	D				

Intersection Summary			
Average Delay	6.1		
Intersection Capacity Utilization	58.7%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	130	1	9	5	1	54	16	268	22	197	307	254
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	141	1	10	5	1	59	17	291	24	214	334	276
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)						16						
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1089	1112	334	1098	1364	291	610			315		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1089	1112	334	1098	1364	291	610			315		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	6	99	99	97	99	92	98			83		
cM capacity (veh/h)	150	168	704	158	119	743	959			1234		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	141	11	5	60	17	291	24	214	334	276
Volume Left	141	0	5	0	17	0	0	214	0	0
Volume Right	0	10	0	59	0	0	24	0	0	276
cSH	150	533	158	757	959	1700	1700	1234	1700	1700
Volume to Capacity	0.94	0.02	0.03	0.08	0.02	0.17	0.01	0.17	0.20	0.16
Queue Length 95th (ft)	169	2	3	6	1	0	0	16	0	0
Control Delay (s)	118.4	11.9	28.6	10.7	8.8	0.0	0.0	8.5	0.0	0.0
Lane LOS	F	B	D	B	A			A		
Approach Delay (s)	110.7		12.2		0.5			2.2		
Approach LOS	F		B							

Intersection Summary				
Average Delay	14.3			
Intersection Capacity Utilization	48.9%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	243	28	1	125	14	1
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	264	30	1	136	15	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	101	69			137	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	101	69			137	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	70	97			99	
cM capacity (veh/h)	884	988			1435	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	295	137	16
Volume Left	264	0	15
Volume Right	30	136	0
cSH	893	1700	1435
Volume to Capacity	0.33	0.08	0.01
Queue Length 95th (ft)	36	0	1
Control Delay (s)	11.0	0.0	7.0
Lane LOS	B		A
Approach Delay (s)	11.0	0.0	7.0
Approach LOS	B		

Intersection Summary			
Average Delay	7.5		
Intersection Capacity Utilization	33.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	36	134	287	695	309	27
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	39	146	312	755	336	29
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1730	351	365			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1730	351	365			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	45	79	74			
cM capacity (veh/h)	71	688	1182			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	185	1067	365
Volume Left	39	312	0
Volume Right	146	0	29
cSH	241	1182	1700
Volume to Capacity	0.77	0.26	0.21
Queue Length 95th (ft)	138	27	0
Control Delay (s)	56.2	5.7	0.0
Lane LOS	F	A	
Approach Delay (s)	56.2	5.7	0.0
Approach LOS	F		

Intersection Summary			
Average Delay	10.2		
Intersection Capacity Utilization	90.6%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	73	495	10	46	974	247	18	2	26	335	0	73
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	79	538	11	50	1059	268	20	2	28	364	0	79
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)					675							
pX, platoon unblocked												
vC, conflicting volume	1327			549			1411	2129	274	1750	2001	664
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1327			549			1411	2129	274	1750	2001	664
tC, single (s)	4.2			4.2			7.6	6.6	7.0	7.6	6.6	7.0
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	84			95			70	94	96	0	100	80
cM capacity (veh/h)	506			1003			65	38	717	42	46	399

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2	SB 3
Volume Total	348	280	579	798	50	182	182	79
Volume Left	79	0	50	0	20	182	182	0
Volume Right	0	11	0	268	28	0	0	79
cSH	506	1700	1003	1700	126	42	42	399
Volume to Capacity	0.16	0.16	0.05	0.47	0.40	4.37	4.37	0.20
Queue Length 95th (ft)	14	0	4	0	42	Err	Err	18
Control Delay (s)	5.0	0.0	1.3	0.0	50.9	Err	Err	16.3
Lane LOS	A		A		F	F	F	C
Approach Delay (s)	2.8		0.6		50.9	8212.9		
Approach LOS					F	F		

Intersection Summary				
Average Delay	1459.6			
Intersection Capacity Utilization	78.5%	ICU Level of Service	D	
Analysis Period (min)	15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	8	347	192	497	900	106
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	377	209	540	978	115
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		4				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1936	978	1093			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1936	978	1093			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	82	0	67			
cM capacity (veh/h)	48	301	631			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	386	209	540	978	115
Volume Left	9	209	0	0	0
Volume Right	377	0	0	0	115
cSH	308	631	1700	1700	1700
Volume to Capacity	1.25	0.33	0.32	0.58	0.07
Queue Length 95th (ft)	446	36	0	0	0
Control Delay (s)	171.9	13.5	0.0	0.0	0.0
Lane LOS	F	B			
Approach Delay (s)	171.9	3.8		0.0	
Approach LOS	F				

Intersection Summary			
Average Delay	31.0		
Intersection Capacity Utilization	75.5%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	150	0	11	7	1	74	22	406	30	286	426	321
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	163	0	12	8	1	80	24	441	33	311	463	349
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)						16						
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1574	1607	463	1586	1923	441	812			474		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1574	1607	463	1586	1923	441	812			474		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	100	98	88	98	87	97			71		
cM capacity (veh/h)	57	72	595	64	46	612	806			1078		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	163	12	8	82	24	441	33	311	463	349
Volume Left	163	0	8	0	24	0	0	311	0	0
Volume Right	0	12	0	80	0	0	33	0	0	349
cSH	57	595	64	620	806	1700	1700	1078	1700	1700
Volume to Capacity	2.85	0.02	0.12	0.13	0.03	0.26	0.02	0.29	0.27	0.21
Queue Length 95th (ft)	421	2	10	11	2	0	0	30	0	0
Control Delay (s)	988.8	11.2	68.2	12.8	9.6	0.0	0.0	9.7	0.0	0.0
Lane LOS	F	B	F	B	A			A		
Approach Delay (s)	922.0		17.5		0.5			2.7		
Approach LOS	F		C							

Intersection Summary				
Average Delay	88.2			
Intersection Capacity Utilization	62.2%	ICU Level of Service	B	
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	309	35	0	144	16	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	336	38	0	157	17	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	113	78			157	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	113	78			157	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	61	96			99	
cM capacity (veh/h)	868	977			1411	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	374	157	17
Volume Left	336	0	17
Volume Right	38	157	0
cSH	878	1700	1411
Volume to Capacity	0.43	0.09	0.01
Queue Length 95th (ft)	54	0	1
Control Delay (s)	12.1	0.0	7.6
Lane LOS	B		A
Approach Delay (s)	12.1	0.0	7.6
Approach LOS	B		

Intersection Summary			
Average Delay	8.5		
Intersection Capacity Utilization	39.2%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	659	316	1132	3095	3226	610
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	260	500			1000
Storage Lanes	0	1	2			1
Taper Length (ft)	0	25	25			25
Satd. Flow (prot)	3367	1553	3303	4893	4893	1524
Flt Permitted	0.950		0.082			
Satd. Flow (perm)	3367	1553	285	4893	4893	1524
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		343				619
Link Speed (mph)	25			50	50	
Link Distance (ft)	675			510	1447	
Travel Time (s)	18.4			7.0	19.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	4%	6%	6%	6%	6%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	716	343	1230	3364	3507	663
Turn Type		Free	pm+pt			Free
Protected Phases	4		5	2	6	
Permitted Phases		Free	2			Free
Total Split (s)	33.0	0.0	28.0	77.0	49.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Act Effct Green (s)	29.0	110.0	73.0	73.0	45.0	110.0
Actuated g/C Ratio	0.26	1.00	0.66	0.66	0.41	1.00
v/c Ratio	0.81	0.22	1.45	1.04	1.75	0.44
Control Delay	46.1	0.3	237.4	45.6	365.7	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.1	0.3	237.4	45.6	365.7	0.9
LOS	D	A	F	D	F	A
Approach Delay	31.3			97.0	307.7	
Approach LOS	C			F	F	

Intersection Summary	
Area Type: Other	
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 1.75	
Intersection Signal Delay: 179.3	Intersection LOS: F
Intersection Capacity Utilization 123.4%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 1: RIVER RD & HWY 160/550

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	86	575	12	48	1116	249	21	2	28	340	0	84
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	0		0	0		0	120		120
Storage Lanes	0		0	0		0	0		0	2		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Satd. Flow (prot)	0	3440	0	0	3374	0	0	1658	0	3367	1553	0
Flt Permitted		0.538			0.892			0.980		0.950		
Satd. Flow (perm)	0	1862	0	0	3016	0	0	1658	0	3367	1553	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			33			30			169	
Link Speed (mph)		30			25			25			25	
Link Distance (ft)		286			675			518			1320	
Travel Time (s)		6.5			18.4			14.1			36.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	731	0	0	1536	0	0	55	0	370	91	0
Turn Type	pm+pt			pm+pt			Split			Split		
Protected Phases	3	4		3	4		1	1		2	2	
Permitted Phases	4			4								
Total Split (s)	18.0	53.0	0.0	18.0	53.0	0.0	14.0	14.0	0.0	33.0	33.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	2.5	2.5	4.0	2.5	2.5	4.0
Act Effct Green (s)		67.0			67.0			7.6		36.0	36.0	
Actuated g/C Ratio		0.57			0.57			0.06		0.31	0.31	
v/c Ratio		1.22dl			0.89			0.41		0.36	0.15	
Control Delay		22.4			29.7			37.5		34.3	0.6	
Queue Delay		0.0			4.7			0.0		0.0	0.0	
Total Delay		22.4			34.4			37.5		34.3	0.6	
LOS		C			C			D		C	A	
Approach Delay		22.4			34.4			37.5			27.7	
Approach LOS		C			C			D			C	

Intersection Summary

Area Type: Other
Cycle Length: 118
Actuated Cycle Length: 118
Offset: 0 (0%), Referenced to phase 2:SBTL and 6:, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.89
Intersection Signal Delay: 30.2 Intersection LOS: C
Intersection Capacity Utilization 85.3% ICU Level of Service E
Analysis Period (min) 15
dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 2: RIVER RD & ESCALANTE DR

ø1	ø2	ø3	ø4
14 s	33 s	18 s	53 s

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	9	409	231	588	1048	112
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	100	250			250
Storage Lanes	1	1	1			1
Taper Length (ft)	25	25	25			25
Satd. Flow (prot)	1736	1553	1736	1827	1827	1553
Flt Permitted	0.950		0.141			
Satd. Flow (perm)	1736	1553	258	1827	1827	1553
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		422				88
Link Speed (mph)	40			30	30	
Link Distance (ft)	1526			3199	1005	
Travel Time (s)	26.0			72.7	22.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	10	445	251	639	1139	122
Turn Type		Free	pm+pt			Free
Protected Phases	4		5	2	6	
Permitted Phases		Free	2			Free
Total Split (s)	13.0	0.0	8.0	35.0	27.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Act Effct Green (s)	5.9	38.2	32.4	35.8	24.3	38.2
Actuated g/C Ratio	0.15	1.00	0.85	0.94	0.64	1.00
v/c Ratio	0.04	0.29	0.67	0.37	0.98	0.08
Control Delay	15.2	0.5	17.7	2.0	34.8	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.2	0.5	17.7	2.0	34.8	0.1
LOS	B	A	B	A	C	A
Approach Delay	0.8			6.4	31.4	
Approach LOS	A			A	C	

Intersection Summary

Area Type: Other
Cycle Length: 48
Actuated Cycle Length: 38.2
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.98
Intersection Signal Delay: 17.5 Intersection LOS: B
Intersection Capacity Utilization 81.3% ICU Level of Service D
Analysis Period (min) 15

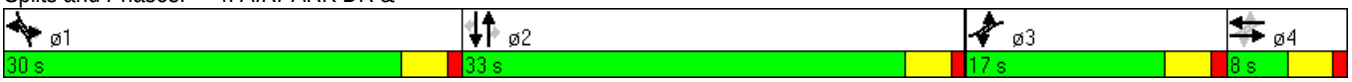
Splits and Phases: 3: LA POSTA RD &

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	162	0	12	9	0	89	28	510	37	367	498	377
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		100	200		400	250		250	250		250
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Satd. Flow (prot)	1736	1553	0	1736	1827	1553	1736	1827	1553	1736	1827	1553
Flt Permitted							0.950			0.950		
Satd. Flow (perm)	1827	1553	0	1827	1827	1553	1736	1827	1553	1736	1827	1553
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		666				521			40			410
Link Speed (mph)		25			25			40			30	
Link Distance (ft)		2136			685			5227			347	
Travel Time (s)		58.3			18.7			89.1			7.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	176	13	0	10	0	97	30	554	40	399	541	410
Turn Type	pm+pt			pm+pt		Free	Prot		custom	Prot		Perm
Protected Phases	3	4		3	4		1	2		1	2	
Permitted Phases	4			4		Free			1 2			2
Total Split (s)	17.0	8.0	0.0	17.0	8.0	0.0	30.0	33.0	63.0	30.0	33.0	33.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Act Effct Green (s)	12.2	4.1		12.2		75.8	21.4	29.4	54.8	21.4	29.4	29.4
Actuated g/C Ratio	0.16	0.05		0.16		1.00	0.28	0.39	0.72	0.28	0.39	0.39
v/c Ratio	0.63	0.02		0.04		0.06	0.06	0.78	0.04	0.81	0.76	0.48
Control Delay	40.4	0.1		27.2		0.1	20.9	32.5	1.6	40.4	31.5	4.5
Queue Delay	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.4	0.1		27.2		0.1	20.9	32.5	1.6	40.4	31.5	4.5
LOS	D	A		C		A	C	C	A	D	C	A
Approach Delay		37.6						29.9			25.9	
Approach LOS		D						C			C	

Intersection Summary

Area Type: Other
Cycle Length: 88
Actuated Cycle Length: 75.8
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 26.9 Intersection LOS: C
Intersection Capacity Utilization 72.8% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 4: AIRPARK DR &



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	365	41	0	156	17	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1724	0	1580	0	0	1736
Flt Permitted	0.957					0.950
Satd. Flow (perm)	1724	0	1580	0	0	1736
Link Speed (mph)	25		25			25
Link Distance (ft)	2136		840			801
Travel Time (s)	58.3		22.9			21.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	442	0	170	0	0	18
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 43.5%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	86	575	12	48	1116	249	21	2	28	340	0	84
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	93	625	13	52	1213	271	23	2	30	370	0	91
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)					675							
pX, platoon unblocked												
vC, conflicting volume	1484			638			1621	2407	319	1984	2278	742
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1484			638			1621	2407	319	1984	2278	742
tC, single (s)	4.2			4.2			7.6	6.6	7.0	7.6	6.6	7.0
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	79			94			43	91	95	0	100	74
cM capacity (veh/h)	440			928			40	24	671	25	29	354

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2	SB 3
Volume Total	406	326	659	877	55	185	185	91
Volume Left	93	0	52	0	23	185	185	0
Volume Right	0	13	0	271	30	0	0	91
cSH	440	1700	928	1700	78	25	25	354
Volume to Capacity	0.21	0.19	0.06	0.52	0.71	7.29	7.29	0.26
Queue Length 95th (ft)	20	0	4	0	84	Err	Err	25
Control Delay (s)	6.6	0.0	1.5	0.0	123.7	Err	Err	18.7
Lane LOS	A		A		F	F	F	C
Approach Delay (s)	3.7		0.6		123.7	8021.8		
Approach LOS					F	F		

Intersection Summary				
Average Delay	1331.9			
Intersection Capacity Utilization	85.3%	ICU Level of Service	E	
Analysis Period (min)	15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	9	409	231	588	1048	112
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	445	251	639	1139	122
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		4				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2280	1139	1261			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2280	1139	1261			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	58	0	54			
cM capacity (veh/h)	23	243	545			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	454	251	639	1139	122
Volume Left	10	251	0	0	0
Volume Right	445	0	0	0	122
cSH	248	545	1700	1700	1700
Volume to Capacity	1.83	0.46	0.38	0.67	0.07
Queue Length 95th (ft)	781	60	0	0	0
Control Delay (s)	421.0	17.1	0.0	0.0	0.0
Lane LOS	F	C			
Approach Delay (s)	421.0	4.8		0.0	
Approach LOS	F				

Intersection Summary			
Average Delay	75.1		
Intersection Capacity Utilization	87.1%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	162	0	12	9	1	89	28	510	37	367	498	377
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	176	0	13	10	1	97	30	554	40	399	541	410
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)						16						
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1955	1995	541	1967	2364	554	951			595		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1955	1995	541	1967	2364	554	951			595		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	100	98	67	94	82	96			59		
cM capacity (veh/h)	25	34	537	30	20	528	714			972		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	176	13	10	98	30	554	40	399	541	410
Volume Left	176	0	10	0	30	0	0	399	0	0
Volume Right	0	13	0	97	0	0	40	0	0	410
cSH	25	537	30	534	714	1700	1700	972	1700	1700
Volume to Capacity	7.17	0.02	0.33	0.18	0.04	0.33	0.02	0.41	0.32	0.24
Queue Length 95th (ft)	Err	2	26	17	3	0	0	51	0	0
Control Delay (s)	Err	11.9	175.7	15.4	10.3	0.0	0.0	11.3	0.0	0.0
Lane LOS	F	B	F	C	B			B		
Approach Delay (s)	9310.2		30.0		0.5			3.3		
Approach LOS	F		D							

Intersection Summary			
Average Delay	778.6		
Intersection Capacity Utilization	72.8%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	365	41	0	156	17	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	397	45	0	170	18	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	122	85			170	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	122	85			170	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	54	95			99	
cM capacity (veh/h)	857	969			1396	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	441	170	18
Volume Left	397	0	18
Volume Right	45	170	0
cSH	867	1700	1396
Volume to Capacity	0.51	0.10	0.01
Queue Length 95th (ft)	74	0	1
Control Delay (s)	13.4	0.0	7.6
Lane LOS	B		A
Approach Delay (s)	13.4	0.0	7.6
Approach LOS	B		

Intersection Summary			
Average Delay	9.6		
Intersection Capacity Utilization	43.5%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	942	650	353	2234	4207	583
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	260	500			1000
Storage Lanes	0	1	2			1
Taper Length (ft)	0	25	25			25
Satd. Flow (prot)	3367	1553	3303	4893	4893	1524
Flt Permitted	0.950		0.082			
Satd. Flow (perm)	3367	1553	285	4893	4893	1524
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		462				621
Link Speed (mph)	25			50	50	
Link Distance (ft)	675			510	1447	
Travel Time (s)	18.4			7.0	19.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	4%	6%	6%	6%	6%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1024	707	384	2428	4573	634
Turn Type		Free	pm+pt			Free
Protected Phases	4		5	2	6	
Permitted Phases		Free	2			Free
Total Split (s)	28.0	0.0	13.0	62.0	49.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Act Effct Green (s)	24.0	90.0	58.0	58.0	45.0	90.0
Actuated g/C Ratio	0.27	1.00	0.64	0.64	0.50	1.00
v/c Ratio	1.14	0.46	0.79	0.77	1.87	0.42
Control Delay	108.8	1.0	29.4	13.4	413.9	0.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	108.8	1.0	29.4	13.4	413.9	0.8
LOS	F	A	C	B	F	A
Approach Delay	64.8			15.6	363.6	
Approach LOS	E			B	F	

Intersection Summary	
Area Type: Other	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Control Type: Pretimed	
Maximum v/c Ratio: 1.87	
Intersection Signal Delay: 210.2	Intersection LOS: F
Intersection Capacity Utilization 128.2%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 1: RIVER RD & HWY 160/550

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	136	1132	18	56	608	184	6	0	24	287	7	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	0		0	0		0	120		120
Storage Lanes	0		0	0		0	0		0	2		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Satd. Flow (prot)	0	3447	0	0	3347	0	0	1617	0	3367	1578	0
Flt Permitted		0.657			0.724			0.990		0.950		
Satd. Flow (perm)	0	2276	0	0	2430	0	0	1617	0	3367	1578	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			67			26			75	
Link Speed (mph)		30			25			25			25	
Link Distance (ft)		286			675			518			1320	
Travel Time (s)		6.5			18.4			14.1			36.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1398	0	0	922	0	0	33	0	312	83	0
Turn Type	Perm			Perm			custom			Split		
Protected Phases		4			8		1	1		2	2	
Permitted Phases	4			8			1					
Total Split (s)	75.0	75.0	0.0	75.0	75.0	0.0	8.0	8.0	0.0	27.0	27.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	2.5	2.5	4.0	2.5	2.5	4.0	2.5	2.5	4.0
Act Effct Green (s)		71.0			72.5			5.5		27.7	27.7	
Actuated g/C Ratio		0.65			0.66			0.05		0.25	0.25	
v/c Ratio		0.95			0.57			0.31		0.37	0.18	
Control Delay		33.4			11.0			30.9		36.3	10.7	
Queue Delay		0.0			0.0			0.0		0.0	0.0	
Total Delay		33.4			11.0			30.9		36.3	10.7	
LOS		C			B			C		D	B	
Approach Delay		33.4			11.0			30.9			31.0	
Approach LOS		C			B			C			C	

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 0 (0%), Referenced to phase 2:SBTL and 6:, Start of Green
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.95
Intersection Signal Delay: 25.5 Intersection LOS: C
Intersection Capacity Utilization 85.0% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 2: RIVER RD & ESCALANTE DR

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	9	409	231	588	1048	112
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	100	450			300
Storage Lanes	1	1	1			1
Taper Length (ft)	25	25	25			25
Satd. Flow (prot)	1736	1553	1736	1827	1827	1553
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1736	1553	1736	1827	1827	1553
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						
Link Speed (mph)	40			30	30	
Link Distance (ft)	1526			3199	1005	
Travel Time (s)	26.0			72.7	22.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	10	445	251	639	1139	122
Turn Type		custom	Prot			custom
Protected Phases	4		1	6	2	
Permitted Phases		6 4				6 4
Total Split (s)	6.0	66.0	16.0	60.0	44.0	66.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Act Effct Green (s)	2.0	66.0	12.0	56.0	40.0	66.0
Actuated g/C Ratio	0.03	1.00	0.18	0.85	0.61	1.00
v/c Ratio	0.19	0.29	0.79	0.41	1.03	0.08
Control Delay	39.3	0.5	46.7	2.0	50.9	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.3	0.5	46.7	2.0	50.9	0.1
LOS	D	A	D	A	D	A
Approach Delay	1.3			14.6	46.0	
Approach LOS	A			B	D	

Intersection Summary

Area Type: Other
Cycle Length: 66
Actuated Cycle Length: 66
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 1.03
Intersection Signal Delay: 27.5 Intersection LOS: C
Intersection Capacity Utilization 87.1% ICU Level of Service E
Analysis Period (min) 15

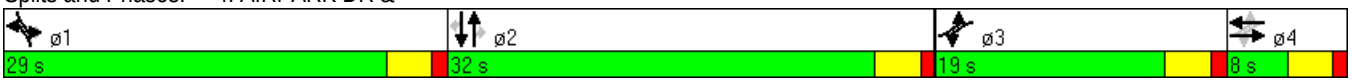
Splits and Phases: 3: LA POSTA RD &

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	410	0	37	38	0	430	12	666	5	65	526	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		100	200		400	250		250	250		250
Storage Lanes	1		0	1		1	1		1	1		1
Taper Length (ft)	25		25	25		25	25		25	25		25
Satd. Flow (prot)	1736	1553	0	1736	1827	1553	1736	1827	1553	1736	1827	1553
Flt Permitted							0.950			0.950		
Satd. Flow (perm)	1827	1553	0	1827	1827	1553	1736	1827	1553	1736	1827	1553
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		632				417			5			179
Link Speed (mph)		25			25			40			30	
Link Distance (ft)		2136			685			5227			347	
Travel Time (s)		58.3			18.7			89.1			7.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	446	40	0	41	0	467	13	724	5	71	572	179
Turn Type	pm+pt			pm+pt		Free	Prot		custom	Prot		Perm
Protected Phases	3	4		3	4		1	2		1	2	
Permitted Phases	4			4		Free			1 2			2
Total Split (s)	19.0	8.0	0.0	19.0	8.0	0.0	29.0	32.0	61.0	29.0	32.0	32.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Act Effct Green (s)	17.6	4.1		17.6		64.0	8.2	28.9	36.1	8.2	28.9	28.9
Actuated g/C Ratio	0.28	0.06		0.28		1.00	0.13	0.45	0.56	0.13	0.45	0.45
v/c Ratio	0.93	0.06		0.09		0.30	0.06	0.88	0.01	0.32	0.69	0.22
Control Delay	52.3	0.2		18.1		0.5	28.2	34.9	4.2	32.0	23.3	3.6
Queue Delay	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.3	0.2		18.1		0.5	28.2	34.9	4.2	32.0	23.3	3.6
LOS	D	A		B		A	C	C	A	C	C	A
Approach Delay		48.0						34.6			19.8	
Approach LOS		D						C			B	

Intersection Summary

Area Type: Other
Cycle Length: 88
Actuated Cycle Length: 64
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.93
Intersection Signal Delay: 25.9 Intersection LOS: C
Intersection Capacity Utilization 78.0% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 4: AIRPARK DR &



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	160	18	0	403	45	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1724	0	1580	0	0	1736
Flt Permitted	0.957					0.950
Satd. Flow (perm)	1724	0	1580	0	0	1736
Link Speed (mph)	25		25			25
Link Distance (ft)	2136		840			801
Travel Time (s)	58.3		22.9			21.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	194	0	438	0	0	49
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 48.2%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	136	1132	18	56	608	184	6	0	24	287	7	69
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	148	1230	20	61	661	200	7	0	26	312	8	75
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)					675							
pX, platoon unblocked												
vC, conflicting volume	861			1250			2067	2518	625	1820	2428	430
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	861			1250			2067	2518	625	1820	2428	430
tC, single (s)	4.2			4.2			7.6	6.6	7.0	7.6	6.6	7.0
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	81			89			58	100	94	0	65	87
cM capacity (veh/h)	764			542			15	19	423	35	22	567

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1	SB 2	SB 3
Volume Total	763	635	391	530	33	156	156	83
Volume Left	148	0	61	0	7	156	156	0
Volume Right	0	20	0	200	26	0	0	75
cSH	764	1700	542	1700	67	35	35	173
Volume to Capacity	0.19	0.37	0.11	0.31	0.48	4.50	4.50	0.48
Queue Length 95th (ft)	18	0	9	0	49	Err	Err	57
Control Delay (s)	4.7	0.0	3.4	0.0	101.0	Err	Err	43.6
Lane LOS	A		A		F	F	F	E
Approach Delay (s)	2.6		1.4		101.0	7914.7		
Approach LOS					F	F		

Intersection Summary				
Average Delay	1139.9			
Intersection Capacity Utilization	85.0%	ICU Level of Service	E	
Analysis Period (min)	15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	40	232	465	1114	537	30
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	43	252	505	1211	584	33
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		4				
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2805	584	616			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2805	584	616			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	50	47			
cM capacity (veh/h)	9	508	954			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	296	505	1211	584	33
Volume Left	43	505	0	0	0
Volume Right	252	0	0	0	33
cSH	58	954	1700	1700	1700
Volume to Capacity	5.09	0.53	0.71	0.34	0.02
Queue Length 95th (ft)	Err	80	0	0	0
Control Delay (s)	Err	12.9	0.0	0.0	0.0
Lane LOS	F	B			
Approach Delay (s)	Err	3.8		0.0	
Approach LOS	F				

Intersection Summary			
Average Delay	1127.3		
Intersection Capacity Utilization	68.6%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	410	1	37	38	1	430	12	666	5	65	526	165
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	446	1	40	41	1	467	13	724	5	71	572	179
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)						16						
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1464	1468	572	1504	1642	724	751			729		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1464	1468	572	1504	1642	724	751			729		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	99	92	51	99	0	98			92		
cM capacity (veh/h)	0	114	516	84	89	422	849			865		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	446	41	41	468	13	724	5	71	572	179
Volume Left	446	0	41	0	13	0	0	71	0	0
Volume Right	0	40	0	467	0	0	5	0	0	179
cSH	0	472	84	423	849	1700	1700	865	1700	1700
Volume to Capacity	Err	0.09	0.49	1.11	0.02	0.43	0.00	0.08	0.34	0.11
Queue Length 95th (ft)	Err	7	52	409	1	0	0	7	0	0
Control Delay (s)	Err	13.4	84.1	106.8	9.3	0.0	0.0	9.5	0.0	0.0
Lane LOS	F	B	F	F	A			A		
Approach Delay (s)	Err		105.0		0.2			0.8		
Approach LOS	F		F							

Intersection Summary			
Average Delay	Err		
Intersection Capacity Utilization	94.4%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	160	18	0	403	45	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	174	20	0	438	49	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	317	219			438	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	317	219			438	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	73	98			96	
cM capacity (veh/h)	643	816			1111	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	193	438	49
Volume Left	174	0	49
Volume Right	20	438	0
cSH	657	1700	1111
Volume to Capacity	0.29	0.26	0.04
Queue Length 95th (ft)	31	0	3
Control Delay (s)	12.8	0.0	8.4
Lane LOS	B		A
Approach Delay (s)	12.8	0.0	8.4
Approach LOS	B		

Intersection Summary			
Average Delay	4.2		
Intersection Capacity Utilization	48.2%	ICU Level of Service	A
Analysis Period (min)	15		

APPENDIX D

LA POSTA ROAD AREA PLAN
WATER STUDY

Original Date:
11/12/2012

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I. Introduction

The future development of the La Posta Road Area Plan will require a potable water system. This report analyzes the possible connection points to the existing City of Durango (COD) water system, the planned COD system improvements, and the necessary improvements to service the proposed La Posta Road Area Plan study area. Results of this study were used to develop a Water Master Plan to guide the future operation and development of the La Posta Road (LPR) Area Plan water system.

II. Study Area

La Posta Road service area includes commercial, industrial, mixed use and residential areas. Currently, some property owners utilize existing groundwater wells to obtain water. Rural residential parcels on La Posta Road and Jack Rabbit Trail are included in the water model as they will have the potential to join the system at any given time. The western rural parcels are not included in the water study. See Appendix B for parcel list included in model.

Land Use Demands

According to the La Plata County Land Use Code Section 82-186, Water Quantity and Quality Standards, "water demand for all projects shall be estimated at 350 gallons per day (GPD) per dwelling unit". One dwelling unit per parcel was assumed for existing use parcels. Parcels to the west of the Future Connection are not included in the water demand calculations (see Appendix A: Design Workshop Land Use Map). Table 1 shows the base unit demands used to calculate Average Daily Water Demands.

Table 1: Base Unit Water Demands

Land Use	Demand	Unit
Retail[1]	0.10	GPD/SF
Office[2]	0.14	GPD/SF
Service Commercial[3]	0.07	GPD/SF
Industrial[4]	0.10	GPD/SF
Light Industrial[4]	0.10	GPD/SF
Rural Residential	350.00	GPD/Unit
Single Family[5]	350.00	GPD/Unit
Multifamily[6]	350.00	GPD/Unit
Warehouse[7]	0.02	GPD/SF
Multiple Use[4]	0.10	GPD/SF
Mixed Commercial/Light Industrial[4]	0.10	GPD/SF

[1] Colorado Department of Public Health & Environment Individual Sewage Disposal System Regs., Table 1
[2] Commercial and Institutional End Uses of Water by Benedykt Dziegielewski
[3] CDPHE ISDS Regulations, Table 1
[4] Wastewater Engineering, Third Edition by Metcalf & Eddie
[5] La Plata County Land Use Code
[6] La Plata County Land Use Code
[7] Miami-Dade Water and Sewer Department's 'Schedule of Daily Rated Gallonage for Various Occupancy'.http://www.sfrpc.com/dri/Beacon%20Countyline/SIN1%20Response/Q18.pdf

III. City of Durango – Water Supply and Distribution

The nearest point of connection to an existing water system is at the west end of the River Road Bridge where the City of Durango water system is currently stubbed to. This line is fed by the existing Terminal Reservoir College Mesa Water Treatment Plant (CMWTP) (see Appendix A: Exhibit-2). The existing system alone cannot support the anticipated future development of the LPR Area Plan study area therefore an additional water supply source is needed to serve the study area.

A preliminary engineering study was conducted by Boyle Engineering Corporation, June 2003, for the City to investigate possible alternatives for the development of water supplies for future needs including the study area. One of the alternatives included the construction of an 8.2 MGD water treatment plant in Ridges Basin (RBWTP) to treat raw water from the Lake Nighthorse Reservoir (Ridges Basin). The COD plans to construct the new RBWTP water treatment plant in within the next five years per conversations with City staff. A new pipeline would be constructed connecting the new RBWTP to the existing distribution system which currently ends at the west end of the River Road Bridge. This additional looping will increase available flows to the water service area.

According to both Alternatives 1 and 2 in the Boyle Study, the main water supply for the study area would come from the Lake Nighthorse Reservoir and gravity flow to a newly constructed 8.2 MGD water treatment plant. The minimum operating level of the storage tank at the treatment plant would have to be 6745' and would require the cooperation of the Wheeler parcel due to the topography. This tank operating water level is estimated to serve ground elevations in the area between 6400 and 6600 at minimum operating pressures of 55 psi. If additional service area above 6600 is desired based on participating property owners, the minimum operating water level would need to be increased to be able to provide adequate pressure.

Once the City constructs the pipeline connecting the existing system to the new RBWTP, the LPR Area Plan service area connection points to the COD system would be to the new pipeline connecting to the RBWTP, one point along La Posta Road and the other at a higher elevation on the Dillon Ranches property creating a looped system. See Appendix A: Exhibit-1.

IV. Water System Modeling

For developing this Master Plan, Russell Planning and Engineering, Inc. constructed an EPANet model based on the existing City of Durango potable water system and the proposed study area water system network (see Appendix A: Exhibit-2). EPANet is a free software program developed by the EPA's Water Supply and Water Resources Division. EPANet is capable of modeling pressurized pipe networks for extended periods. EPANet is commonly utilized to determine expected flow rates, pressures and losses within a water system.

Existing storage tanks, water distribution lines were added to the model in order to properly simulate the system's performance. Variables such as node elevation, node demands, pipe length, pipe diameter, pipe roughness, tank elevation, tank capacity, and tank height were included in order to define the physical properties of the water system.

A. Input Parameters

Distribution Pipes
The water system shall be designed in accordance with City of Durango Development Standards for Public Improvements. All water mains shall be a minimum of 8" diameter. All water pipe shall be ductile iron pipe (DIP), pipe thickness AWWA Class 52 (maximum pressure 350psi) and shall be installed with a minimum of 4-ft cover. See Appendix A: Exhibit-1 for Water Model Network.

Water Supply
Water supply for the model is coming from the proposed WTP and the CMWTP. A 12" water main along La Posta Road is tie-in to the existing 12" City water stub-out at the west end of the River Road Bridge (see Figure 1).

Tank
The storage tank elevation at the treatment plant is at the same elevation as the CMWTP (6883'). In this scenario the new storage tank can back up the CMWTP (see Exhibit-1 for location of proposed tank). The existing tank was assumed to be 28 ft high and 210 ft in diameter. The proposed tank was sized to store 3 days of daily average demand plus 2 hours of fire flow. The proposed tank minimum capacity is 2MG and was assumed to be 34 ft high and 100 ft in diameter (see Appendix C). The city may decide to increase the size of the tank to serve other areas outside of the study area.

Daily Average Demands
Future water demands were determined according to Design Workshop land use map and maximum built out projections. The total daily average flow is 382.2GPM. Appendix B shows a summary of the water demand calculations.

Peak Demands
The peak demands were calculated assuming a peak factor of 4.5 (see Appendix B). The total peak flow is 1719.9 GPM. According to conversation with City staff, the water system should be able to supply fire flows plus the daily average demands. However, the peak demands will be modeled to make sure that the system meets the City of Durango Standards.

B. Analysis

The three separate analyses completed in designing the water system are described below:

1) *Static Pressure Analysis – No Demands*
   This analysis was used to check the maximum static pressure of the water system when there are no demands and no flow through the pipes. The pressure should not exceed 110 psi at any building under static conditions. Any development unable to meet this requirement must supply individual pressure reducing valves in service lines to the buildings.

2) *Dynamic Pressure Analysis - Base (Peak) Demands*
The City code requires a minimum operating pressure of 40psi with water tanks one-half full. 60psi to 120psi is generally considered good working pressures for a water system. Generally water pressures greater than 120psi are considered high and the areas of high pressure require individual pressure reducing valves (PRVs) to protect the lot owners plumbing from the effects of high pressure.

3) *Fire Flow Analysis – Daily Average Demands + Fire Flow Demand*
International Fire Code (IFC) requires 3000 gpm of fire flow for the duration of 2 hours when using Type V-B construction up to 13400 square feet. The mains must also meet the required demands while maintaining a minimum pressure of 20 psi. Type V-B construction is typical wood frame construction with no fire rating, which is common among single family homes. Fire flow requirements can be reduced by 50% for sprinkled structures. Hydrants shall be located in compliance with the Table C105.1 of the IFC. Hydrants are proposed to be spaced an estimated 400' along road ways. Several scenarios were run in order to study the effects of open fire hydrants in critical locations.

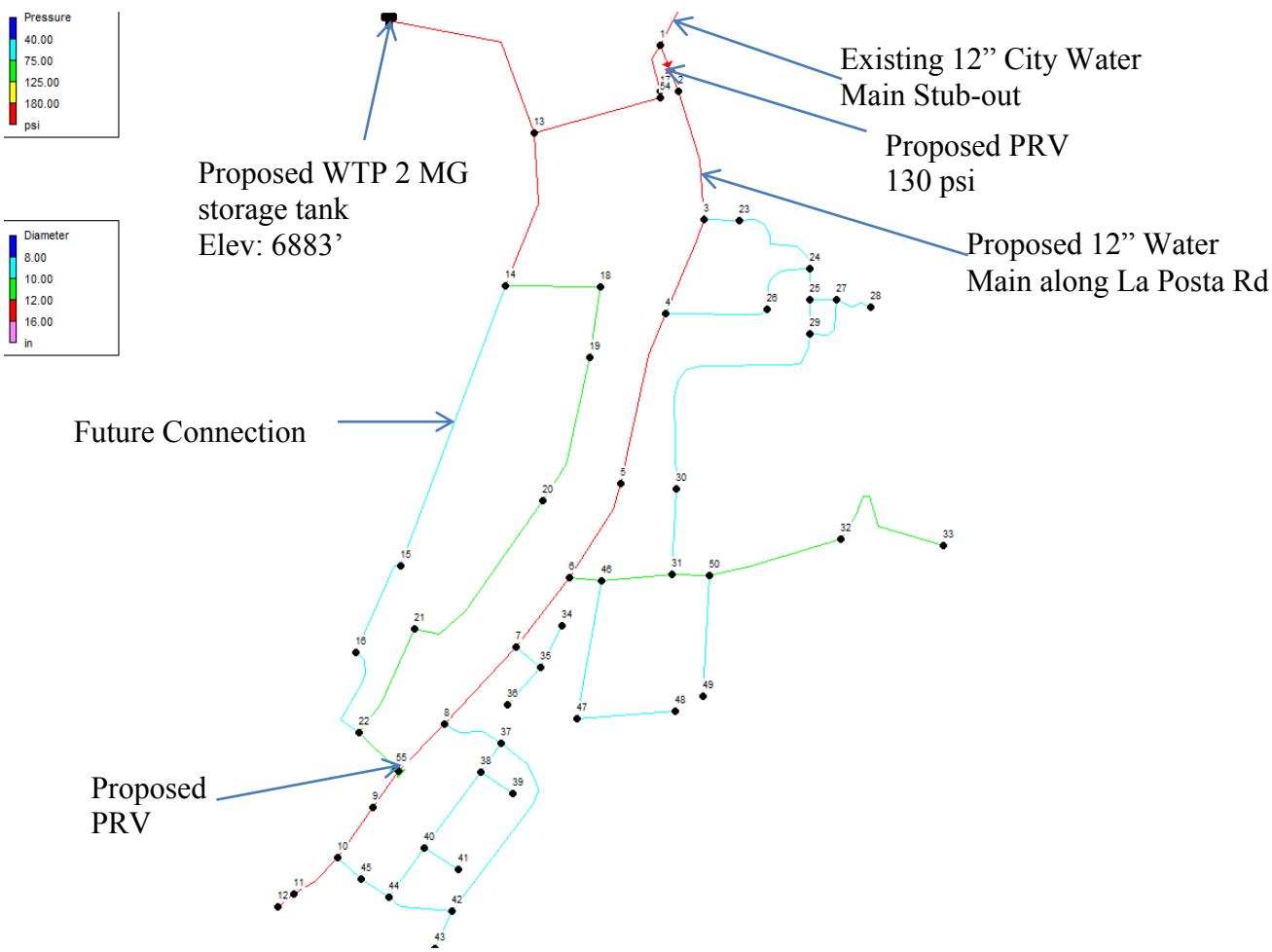


Figure 1: La Posta Road Development Water Network Map
(Pressure Legend = Node Pressure, Diameter Legend = Pipe Diameter)

C. Results

The pressure in the system is regulated by the level of water within the RBWTP storage tank. EPANet findings revealed that the system has static pressures between 73psi and 222psi. Therefore, pressure reducing valves should be installed on service lines to the buildings in areas with pressures higher than 150 psi. During peak hours, the pressure range between 68psi and 217psi which is a very wide range of pressures. Two PRV's (setting=130 psi) are proposed to decrease the high pressure in the southern nodes of the system. It is estimated that 82% of the total demand during peak hours will be supplied by the proposed WTP.

Fire flows were tested at different nodes. The fire flow at nodes 22 and 33 were the critical scenario (see Figure 1). The proposed pipe diameters are suitable for providing fire flows of 3000gpm (see Appendix C). A 12" line is proposed to be extended along La Posta Road looping to a proposed 12" line along Skylane Road in order to provide at least 20psi pressure required for fire flows. If the Future Connector was constructed at the time of the construction of the Skyline Drive road, the waterline within Skyline Drive would only need to be 10". However, it is anticipated that the Future Connector will be constructed long after the rest of the study area is developed, therefore a 12" line is proposed for Skyline Drive.

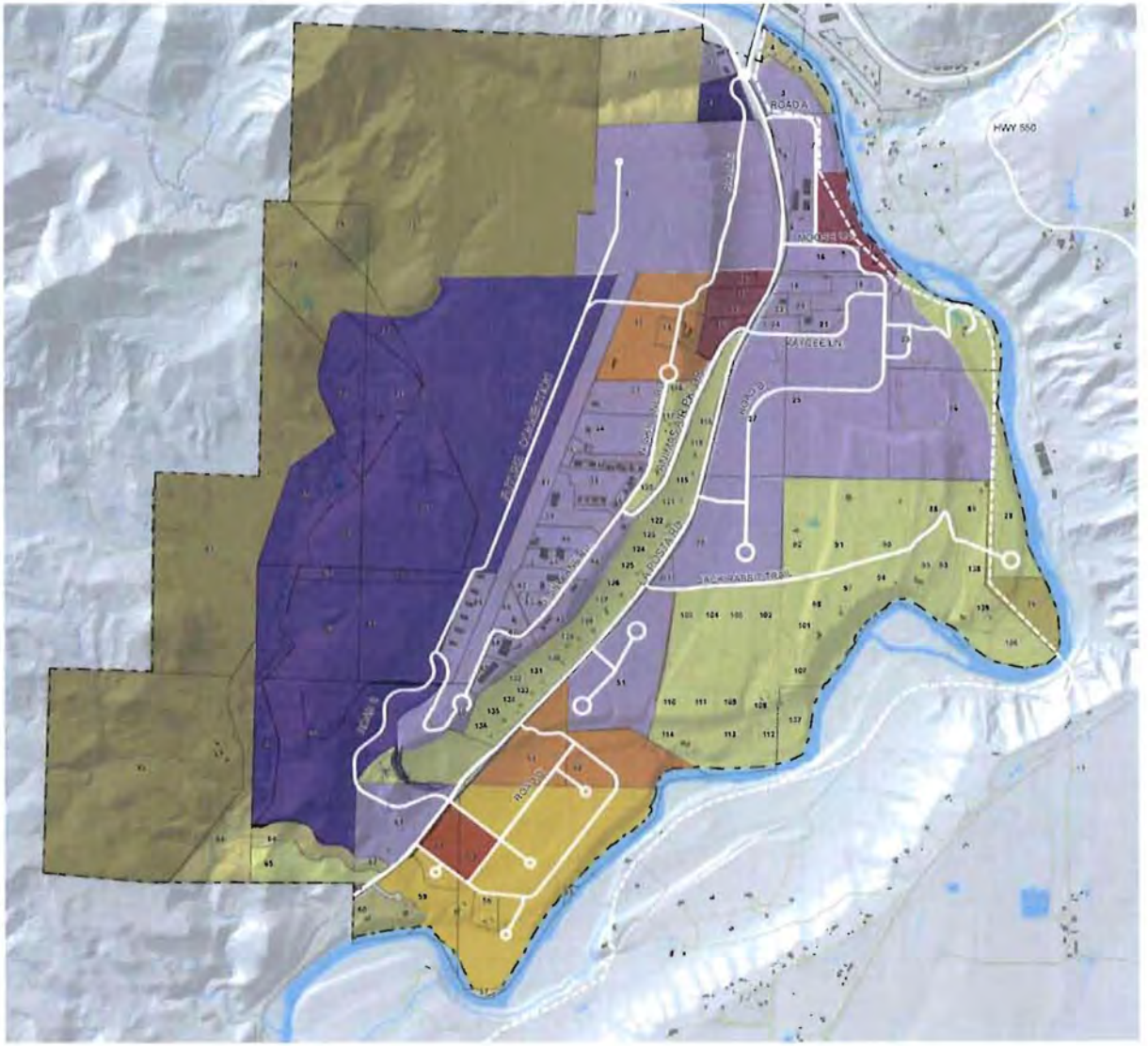
A complete presentation of results of the EPANet Model runs can be found in Appendix C.

V. Conclusion

The distribution system for the development is designed to deliver potable water throughout the La Posta Road Development to serve the proposed buildings and residences and also to provide adequate fire protection. The proposed study area is divided into multiple phases of development. To provide adequate fire flow, some waterline looping may be required before completion of certain areas of development.

APPENDIX A

Figure 7. Draft Preferred Plan



Note: Road and trail alignments shown on this plan are conceptual and are subject to change.

LEGEND- Draft Preferred Plan

- Rural (1 du/35 ac)
- Rural Res (1 du/ 3 ac)
- Large Lot (1 du/ ac)
- Low (1-5 du/ac)
- Med. (5-12 du/ac)
- High (12-24 du/ac)
- Mixed Use
- Multiple Use
- Mixed Commercial/Lt. Industrial
- Industrial

DESIGNWORKSHOP

Exhibit G

PROPOSED WATER TREATMENT PLANT WATER TANK ELEV: 6883

TIE IN TO EXISTING 10" CITY WATERLINE STUB OUT (APPROX. LOCATION)

14 Miles to Bayfield

U.S. Highway 160/550

U.S. Highway 550

TO AZTEC

PRV 130PSI

ROAD A

D.R.G. W.R.R. ROW

KAYCEE LN

ROAD B

FUTURE CONNECTION

N. SKYLANE RD

LA POSTA RD (CR 213)

IF FUTURE CONNECTION LOOP IS CONSTRUCTED IN CONJUNCTION WITH THE SKYLINE RD WATERLINE, THEN ONLY 10" PIPE REQUIRED ON SKYLANE TO SATISFY FIRE FLOW

S. SKYLANE RD

JACK RABBIT TRAIL

PRV 130PSI

ROAD D

PLAN

SCALE: 1" = 1000' (11x17)
SCALE: 1" = 500' (24x36)

1000' 500' 250' 0 500'

N

EXHIBIT

EX-1

Drawn: YL
Drafted: YL
Checked: LM

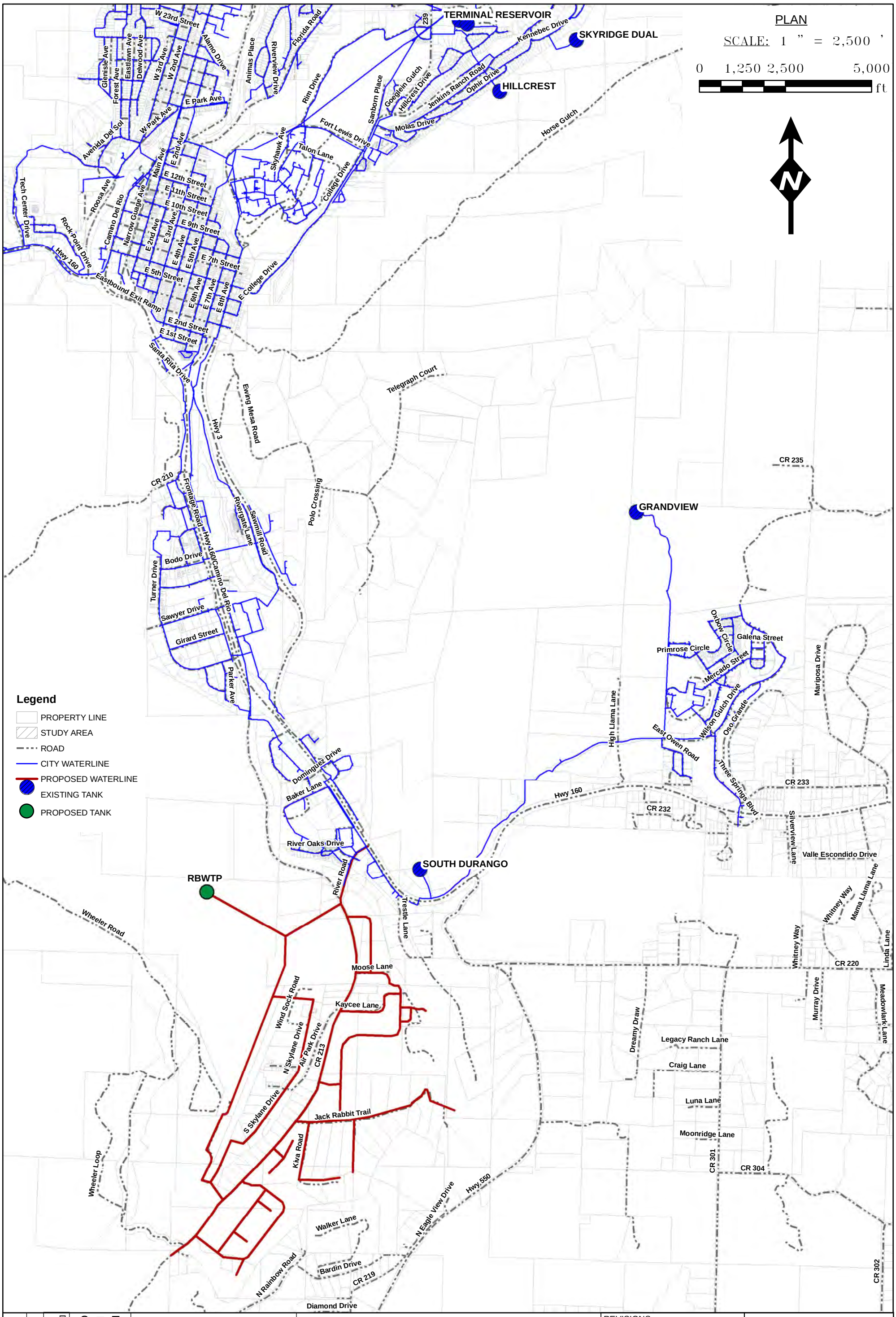
Date of Submittal
11/07/2012

Russell Planning & Engineering, Inc.
Civil Engineering Services
934 Main Avenue, Unit C
Durango, Colorado 81301
Phone: (970) 385-4546
Fax: (970) 385-4502

LA POSTA ROAD
WATER MODEL NETWORK
EXHIBIT-1

REVISIONS:

CALL UNCC
TWO WORKING DAYS
BEFORE YOU DIG
1-800-922-1987
UTILITY NOTIFICATION
CENTER OF COLORADO



EX-2

Drawn: YL
Drafted: YL
Checked: LM

Date of Submittal
11/07/2012

Russell Planning & Engineering, Inc.
Civil Engineering Services
934 Main Avenue, Unit C
Durango, Colorado 81301
Phone: (970) 385-4546
Fax: (970) 385-4502

CITY OF DURANGO WATER SYSTEM EXHIBIT-2

REVISIONS:

CALL UNCC
TWO WORKING DAYS
BEFORE YOU DIG
1-800-922-1987
UTILITY NOTIFICATION
CENTER OF COLORADO

APPENDIX B

JUNCTION ID	PARCEL ID	LAND USE						OFFICE DEMAND (GPD)	WAREHOUSE DEMAND (GPD)	LIGHT INDUSTRIAL DEMAND (GPD)	INDUSTRIAL DEMAND (GPD)	RETAIL DEMAND (GPD)	SINGLE FAMILY DEMAND (GPD)	TOTAL NODE DEMAND (GPM)	TOTAL NODE PEAK (GPM)	JUNCTION ELEVATION (FT)
		OFFICE (SF)	WAREHOUSE (SF)	LIGHT INDUSTRIAL (SF)	INDUSTRIAL (SF)	RETAIL (SF)	SINGLE FAMILY (UNIT)									
1	3	12534	12534	25067	0	0	0.0	1754.8	250.7	2506.7	0.0	0.0	0.0	3.6	16.3	6399.85
	4	0	0	0	0	0	1.0	0.0	0.0	0.0	0.0	0.0	350.0			
	5	0	0	0	0	0	1.0	0.0	0.0	0.0	0.0	0.0	350.0			
2	6*	11398	11398	22796	0	0	0.0	1595.7	228.0	2279.6	0.0	0.0	0.0	5.6	25.0	6424.58
	7	10904	10094	21807	0	0	0.0	1526.6	201.9	2180.7	0.0	0.0	0.0			
3	8	10414	10414	20828	0	0	0.0	1458.0	208.3	2082.8	0.0	0.0	0.0	5.1	22.8	6429.09
	16	9881	9881	19763	0	0	0.0	1383.3	197.6	1976.3	0.0	0.0	0.0			
4	18	4628	4628	9257	0	0	0.0	648.0	92.6	925.7	0.0	0.0	0.0	5.3	23.8	6464.31
	22	2493	2493	4985	0	0	0.0	349.0	49.9	498.5	0.0	0.0	0.0			
	24	3896	3896	7793	0	0	0.0	545.5	77.9	779.3	0.0	0.0	0.0			
	10	1244	0	0	0	1244	2.0	174.2	0.0	0.0	0.0	124.4	700.0			
	11	1063	0	0	0	1063	2.0	148.8	0.0	0.0	0.0	106.3	700.0			
	12	0	0	0	0	1163	2.0	0.0	0.0	0.0	0.0	116.3	700.0			
	15	709	0	0	0	709	2.0	99.3	0.0	0.0	0.0	70.9	700.0			
5	115	0	0	0	0	0	1.0	0.0	0.0	0.0	0.0	0.0	350.0	0.7	3.3	6463.27
	118	0	0	0	0	0	1.0	0.0	0.0	0.0	0.0	0.0	350.0			
	119	0	0	0	0	0	1.0	0.0	0.0	0.0	0.0	0.0	350.0			
6	31	1373	1373	2745	0	0	0.0	192.2	27.5	274.5	0.0	0.0	0.0	1.6	7.0	6455.84
	121	0	0	0	0	0	1.0	0.0	0.0	0.0	0.0	0.0	350.0			
	122	0	0	0	0	0	1.0	0.0	0.0	0.0	0.0	0.0	350.0			
	123	0	0	0	0	0	1.0	0.0	0.0	0.0	0.0	0.0	350.0			
	124	0	0	0	0	0	1.0	0.0	0.0	0.0	0.0	0.0	350.0			
	125	0	0	0	0	0	1.0	0.0	0.0	0.0	0.0	0.0	350.0			
7	126	0	0	0	0	0	1.0	0.0	0.0	0.0	0.0	0.0	350.0	1.0	4.4	6440.20
	127	0	0	0	0	0	1.0	0.0	0.0	0.0	0.0	0.0	350.0			
	128	0	0	0	0	0	1.0	0.0	0.0	0.0	0.0	0.0	350.0			
	129	0	0	0	0	0	1.0	0.0	0.0	0.0	0.0	0.0	350.0			
8	130	0	0	0	0	0	1.0	0.0	0.0	0.0	0.0	0.0	350.0	1.5	6.6	6417.10
	131	0	0	0	0	0	1.0	0.0	0.0	0.0	0.0	0.0	350.0			
	132	0	0	0	0	0	1.0	0.0	0.0	0.0	0.0	0.0	350.0			
	133	0	0	0	0	0	1.0	0.0	0.0	0.0	0.0	0.0	350.0			
	134	0	0	0	0	0	1.0	0.0	0.0	0.0	0.0	0.0	350.0			
	135	0	0	0	0	0	1.0	0.0	0.0	0.0	0.0	0.0	350.0			
9	136	0	0	0	0	0	1.0	0.0	0.0	0.0	0.0	0.0	350.0	0.3	1.5	6371.38
	66	0	0	0	1142	0	0.0	0.0	0.0	0.0	114.2	0.0	0.0			
10	61	13078	13078	26156	0	0	0.0	1830.9	261.6	2615.6	0.0	0.0	0.0	3.3	14.7	6353.71
11	59	0	0	0	0	0	26.0	0.0	0.0	0.0	0.0	0.0	9100.0	6.3	28.5	6343.46
	62	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
	65	0	0	0	278	0	0.0	0.0	0.0	0.0	27.8	0.0	0.0			
12	60	0	0	0	0	0	2.0	0.0	0.0	0.0	0.0	0.0	700.0	0.7	3.1	6331.96
	63	0	0	0	0	3000	0.0	0.0	0.0	0.0	0.0	300.0	0.0			
13	6**	38021	38021	76041	0	0	0.0	5322.9	760.4	7604.1	0.0	0.0	0.0	9.5	42.8	6731.42
14	74	0	0	0	230	0	0.0	0.0	0.0	0.0	23.0	0.0	0.0	0.45	2.01	6705.17
	75	0	0	0	5405			0.0	0.0	0.0	540.5	0.0	0.0			
	79	0	0	0	808	0	0.0	0.0	0.0	0.0	80.8	0.0	0.0			
15	69	0	0	0	89	0	0.0	0.0	0.0	0.0	8.9	0.0	0.0	0.29	1.3	6650.94
	70	0	0	0	232	0	0.0	0.0	0.0	0.0	23.2	0.0	0.0			
	71	0	0	0	2211	0	0.0	0	0	0	221.1	0	0			
	72	0	0	0	356	0	0.0	0	0	0	35.6	0	0			
	73	0	0	0	496	0	0.0	0	0	0	49.6	0	0			
	80	0	0	0	790	0	0.0	0	0	0	79.0	0	0			
16	68	0	0	0	1553	0	0.0	0.0	0.0	0.0	155.3	0.0	0.0	2.6	11.7	6627.03
	82	0	0	0	515	0	0.0	0.0	0.0	0.0	51.5	0.0	0.0			
	67	0	0	0	664	0	0.0	0.0	0.0	0.0	66.4	0.0	0.0			
	86	0	0	34795	0	0	0.0	0.0	0.0	3479.5	0.0	0.0	0.0			
17	1	2500	2500	5000	0	0	0.0	350.0	50.0	500.0	0.0	0.0	0.0	1.5	6.8	6462.96
	2	0	0	0	2100	0	0.0	0.0	0.0	0.0	210.0	0.0	0.0			
	77	0	0	0	0	0	3.0	0.0	0.0	0.0	0.0	0.0	1050.0			
18	13	0	0	0	0	0	104.0	0.0	0.0	0.0	0.0	0.0	36400.0	25.3	113.8	6675.92
19	14	0	0	0	0	0	30.0	0.0	0.0	0.0	0.0	0.0	10500.0	10.6	47.6	6664.19
	33	12187	12187	24374	0	0	0.0	1706.2	243.7	2437.4	0.0	0.0	0.0			
	116	0	0	0	0	0	1.0	0.0	0.0	0.0	0.0	0.0	350.0			
20	34	14040	14040	28080	0	0	0.0	1965.6	280.8	2808.0	0.0	0.0	0.0	13.0	58.4	6644.29
	35	2367	2367	4735	0	0	0.0	331.4	47.3	473.5	0.0	0.0	0.0			
	36	11237	11237	22473	0	0	0.0	1573.1	224.7	2247.3	0.0	0.0	0.0			
	37	2736	2736	5473	0	0	0.0	383.1	54.7	547.3	0.0	0.0	0.0			
	38	9568	9568	19137	0	0	0.0	1339.6	191.4	1913.7	0.0	0.0	0.0			
	39	9981	9981	19961	0	0	0.0	1397.3	199.6	1996.1	0.0	0.0	0.0			
	117	0	0	0	0	0	1.0	0.0	0.0	0.0	0.0	0.0	350.0			
	120	0	0	0	0	0	1.0	0.0	0.0	0.0	0.0	0.0	350.0			
21	40	7138	7138	14275	0	0	0.0	999.3	142.8	1427.5	0.0	0.0	0.0	6.9	30.9	6640.00
	41	7911	7911	15823	0	0	0.0	1107.6	158.2	1582.3	0.0	0.0	0.0			
	42	6274	6274	12547	0	0	0.0	878.3	125.5	1254.7	0.0	0.0	0.0			
	43	1175	1175	2350	0	0	0.0	164.5	23.5	235.0	0.0	0.0	0.0			
	44	1444	1444	2889	0	0	0.0	202.2	28.9	288.9	0.0	0.0	0.0			
	45	2571	2571	5142	0	0	0.0	359.9	51.4	514.2	0.0	0.0	0.0			
	46	990	990	1980	0	0	0.0	138.6	19.8	198.0	0.0	0.0	0.0			
	47	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
22	48	8672	8672	17344	0	0	0.0	1214.1	173.4	1734.4	0.0	0.0	0.0	3.9	17.5	6620.02
	83	0	0	0	259	0	0.0	0.0	0.0	0.0	25.9	0.0	0.0			
	49	6800	6800	13600	0	0	0.0	952.0	136.0	1360.0	0.0	0.0	0.0			
	50	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
23	9	0	0	0	0	5743	29.0	0.0	0.0	0.0	0.0	574.3	10150.0	7.4	33.5	6403.16
24	17	0	0	0	0	1786	21.0	0.0	0.0	0.0	0.0	178.6	7350.0	7.1	31.9	6386.73
	19	7427	7427	14855	0	0	0.0	1039.8	148.5	1485.5	0.0	0.0	0.0			
25	-	0			0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6390.28
26	20	2436	2436	4873	0	0	0.0	341.1	48.7	487.3	0.0	0.0	0.0	1.6	7.3	6400.01
	21	4068	4068	8136	0	0	0.0	569.5	81.4	813.6	0.0	0.0	0.0			
27	23	25409	25409	50818	0	0	1.1	3557.3	508.2	5081.8	0.0	0.0	396.9	6.6	29.8	6385.16
28	-	0			0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6379.60
29	25	77937	77937	155875	0	0	0.0	10911.2	1558.7	15587.5	0.0	0.0	0.0	32.2	144.9	6395.08
	26	50906	50906	101812	0	0	0.0	7126.8	1018.1	10181.2	0.0	0.0	0.0			
30	27	39042	39042	78085	0	0	0.0	5465.9	780.8	7808.5	0.0	0.0	0.0	9.8	43.9	6433.74
31	30	48069	48069	96138	0	0	0.0	6729.7	961.4	9613.8	0.0	0.0	0.0	12.5	56.3	6420.27
	104	0	0	0	0	0	1.0	0.0	0.0	0.0	0.0	0.0	350.0			
	105	0	0	0	0	0	1.0	0.0	0.0	0.0	0.0	0.0	350.0			
32	88	0	0	0	0	0	1.0	0.0	0.0	0.0	0.0	0.0	350.0	1.0	4.4	6424.21
	90	0	0	0	0	0	1.0	0.0	0.0	0.0	0.0	0.0	350.0			
	94	0	0	0	0	0	1.0	0.0	0.0	0.0	0.0	0.0	350.0			
	95	0	0	0	0	0	1.0	0.0	0.0	0.0	0.0	0.0	350.0			
33	26	0	0	0	0	0	1.0	0.0	0.0	0.0	0.0	0.0	350.0	1.5	6.6	6360.00
	28	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
	89	0	0	0	0	0	1.0	0.0	0.0	0.0	0.0	0.0	350.0			
	93	0	0	0	0	0	1.0	0.0	0.0	0.0	0.0	0.0	350.0			
	96	0	0	0	0	0	1.0	0.0	0.0	0.0	0.0	0.0	350.0			
	99	0	0	0	0	0	1.0	0.0	0.0	0.0	0.0	0.0	350.0			
	106	0	0	0	0	0	1.0	0.0	0.0	0.0	0.0	0.0	350.0			
34	51*	14549	14549	29098	0	0	0.0	2036.9	291.0	2909.8	0.0	0.0	0.0	3.6	16.4	6429.56
35	51*	14549	14549	29098	0	0	0.0	2036.9	291.0	2909.8	0.0	0.0	0.0	3.6	16.4	6417.91
36	51*	14549	14549	29098	0	0	0.0	2036.9	291.0	2909.8	0.0	0.0	0.0	3.6	16.4	6410.23
37	52	0	0	0	0	0	142.0	0.0	0.0	0.0	0.0	0.0	49700.0	34.5	155.3	6360.66
38	53	0	0	0	0	0	148.0	0.0	0.0	0.0	0.0	0.0	51800.0	36.0	161.9	6343.51
39	54*	0	0	0	0	0	64.0	0.0	0.0	0.0	0.0	0.0	22400.0	15.6	70.0	6331.72
40	54*	0	0	0	0	0	64.0	0.0	0.0	0.0	0.0	0.0	22400.0	15.6	70.0	6329.30
41	54*	0	0	0	0	0	64.0	0.0	0.0	0.0	0.0	0.0	22400.0	15.6	70.0	6320.01
42	55	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	1.1	6308.23
	56	0	0	0	0	0	1.0	0.0	0.0	0.0	0.0	0.0	350.0			
43	54*	0	0	0	0	0	64.0	0.0	0.0	0.0	0.0	0.0	22400.0	15.6	70.0	6274.91
	57	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
44	58	0	0	0	0	0	189.0	0.0	0.0	0.0	0.0	0.0	66150.0	45.9	206.7	6318.68
45	-	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6335.52
46	103	0	0	0	0	0	1.0	0.0	0.0	0.0	0.0	0.0	350.0	0.2	1.1	6434.02
47	110	0	0	0	0	0	1.0	0.0	0.0	0.0	0.0	0.0	350.0	0.7	3.3	6385.58
	111	0	0	0	0	0	1.0	0.0	0.0	0.0	0.0	0.0	350.0			
	114	0	0	0	0	0	1.0	0.0	0.0	0.0	0.0	0.0	350.0			
48	100	0	0	0	0	0	1.0	0.0	0.0	0.0	0.0	0.0	350.0	1.2	5.5	6358.73
	108	0	0	0	0	0	1.0	0.0	0.0	0.0	0.0	0.0	350.0			
	109	0	0	0	0	0	1.0	0.0	0.0	0.0	0.0	0.0	350.0			
	112	0	0	0	0	0	1.0	0.0	0.0	0.0	0.0	0.0	350.0			
	113	0	0	0	0	0	1.0	0.0	0.0	0.0	0.0	0.0	350.0			
49	101	0	0	0	0	0	1.0	0.0	0.0	0.0	0.0	0.0	350.0	0.7	3.3	6386.49
	102	0	0	0	0	0	1.0	0.0	0.0	0.0	0.0	0.0	350.0			
	107	0	0	0	0	0	1.0	0.0	0.0	0.0	0.0	0.0	350.0			
50	91	0	0	0	0	0	1.0	0.0	0.0	0.0	0.0	0.0	350.0	1.0	4.4	6420.70
	92	0	0	0	0	0	1.0	0.0	0.0	0.0	0.0	0.0	350.0			
	97	0	0	0	0	0	1.0	0.0	0.0	0.0	0.0	0.0	350.0			
	98	0	0	0	0	0	1.0	0.0	0.0	0.0	0.0	0.0	350.0			
51	-	0	0	0	0	0	0.0	0	0	0	0.0	0	0	0	0	6386.93
	TOTAL	**528168.9**	**524341.7**	**1085099.4**	**17128.2**	**14708.0**	**1012.1**	**73943.7**	**10486.8**	**108509.9**	**1712.8**	**1470.8**	**354246.9**	**382.2**	**1719.9**	
	TOTAL (Max Build-out)	**528168.9**	**524341.7**	**1085099.4**	**17128.2**	**14708.0**	**1012.1**									

Peak Factor = 4.5

From City GIS (existing business will not redevelop)

open space

Existing uses for residential assuming 1 single family unit per parcel

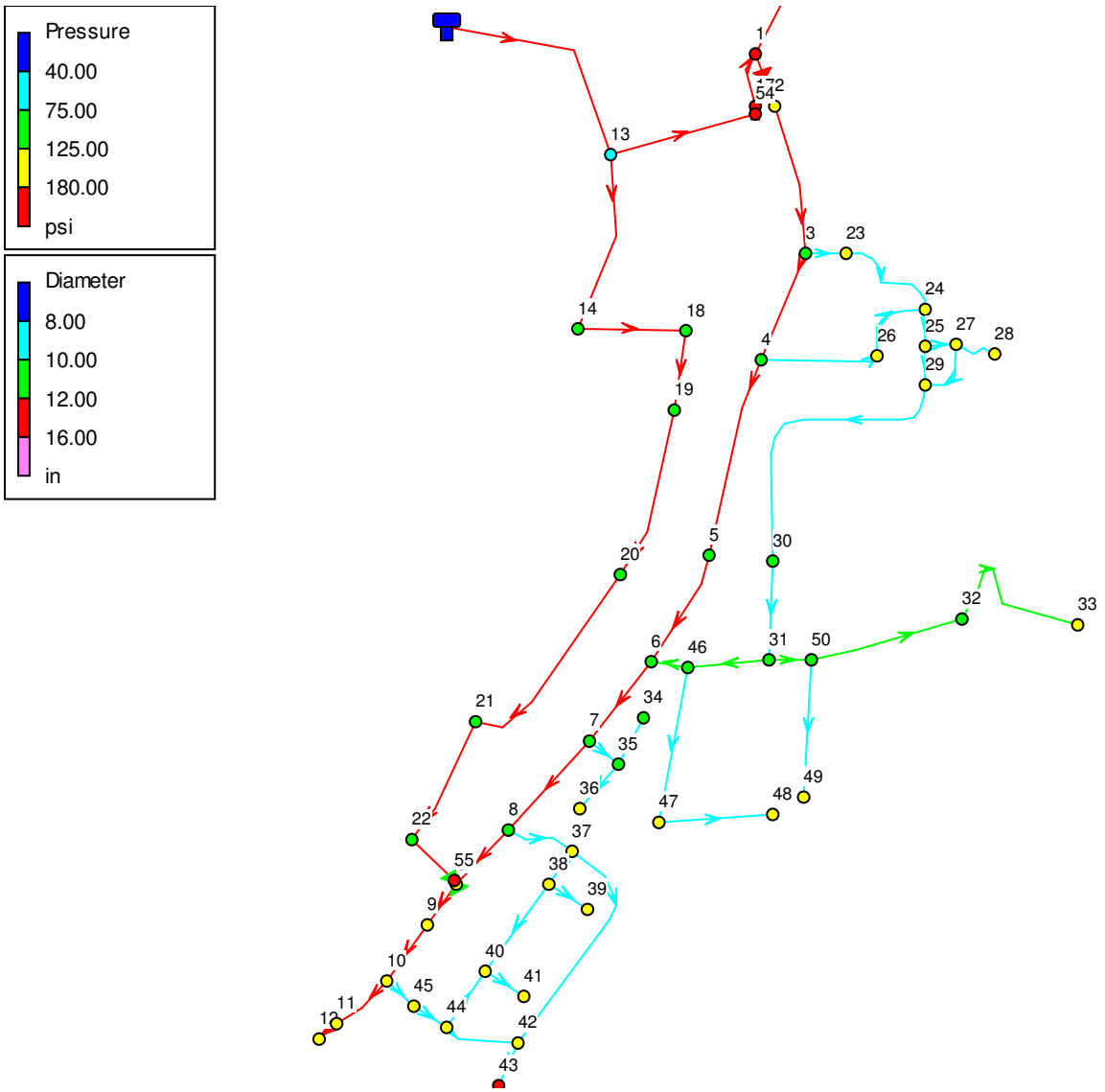
Updates

6* Lower Parcel 6

6** Upper Parcel 6

Daily Average Flow=	550,370.9 GPD
3 Days Average Flow=	1,651,112.8 GALLONS
Fire Flow=	3,000.0 GPM
2 Hours Fire Flow=	360,000.0 GALLONS
Tank Volume=	**2,011,112.8 GALLONS**
Tank Volume=	268,847.0 ft^3
Height=	**34.0 ft**
Diameter=	**100.3 ft**

APPENDIX C



LA POSTA RD - PEAK FLOW (NO FUTURE CONNECTION)

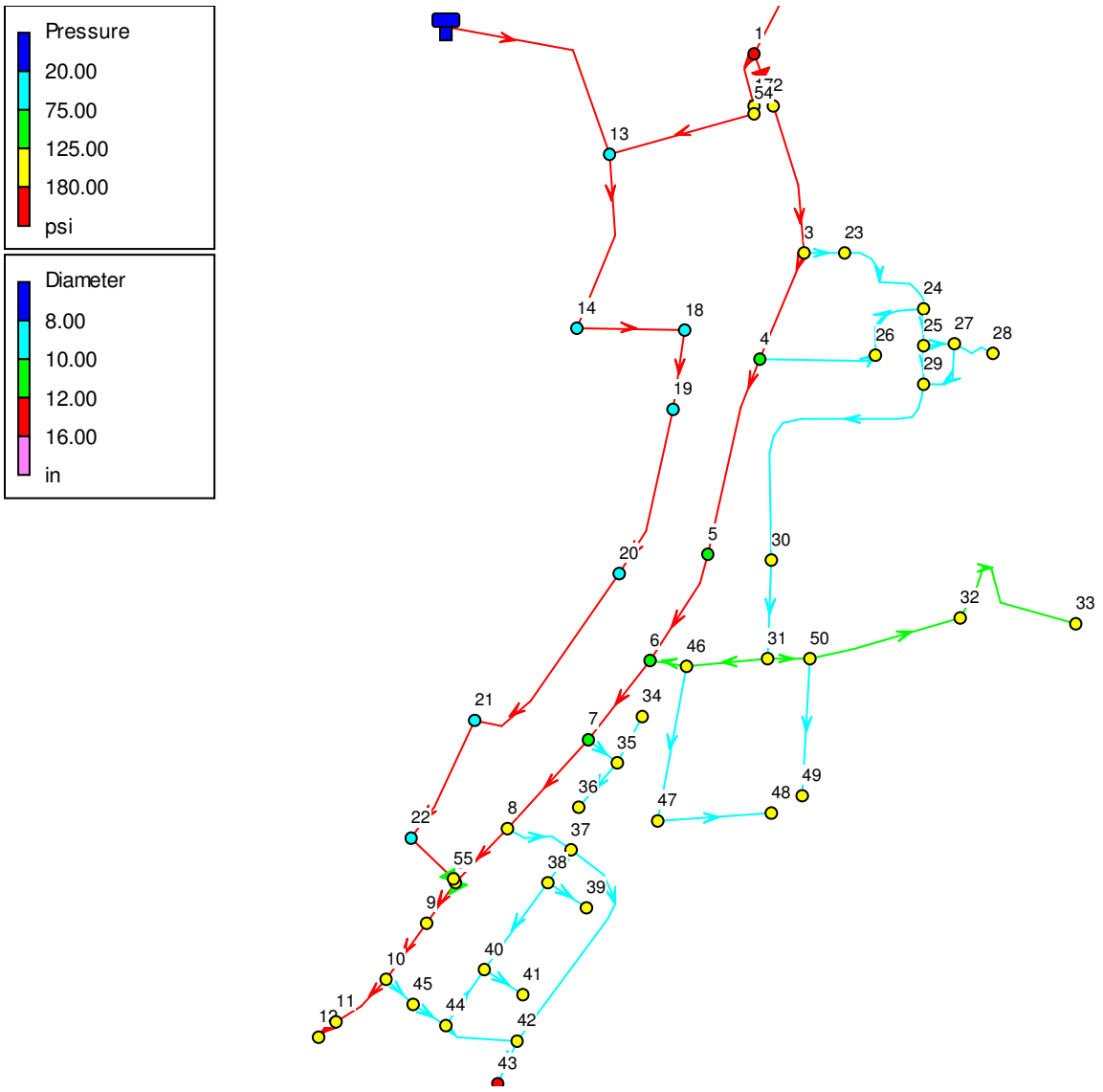
Network Table - Nodes

Node ID	Demand GPM	Head ft	Pressure psi
Tank EXISTING	-311.39	6897.10	6.11
Tank PROPOSED	-1409.14	6900.00	7.37
Junc 13	42.75	6888.58	68.10
Junc 14	2.03	6888.13	79.28
Junc 18	113.85	6887.86	91.83
Junc 19	47.70	6887.77	96.88
Junc 20	58.50	6887.72	105.48
Junc 5	3.15	6710.57	107.16
Junc 21	32.35	6887.68	107.32
Junc 4	23.85	6714.45	108.39
Junc 6	7.20	6708.32	109.40
Junc 7	4.50	6706.22	115.27
Junc 22	29.25	6887.67	115.97
Junc 46	0.90	6708.34	118.86
Junc 30	44.10	6708.94	119.25
Junc 34	16.20	6706.19	119.87
Junc 32	4.50	6708.38	123.13
Junc 8	6.75	6703.81	124.23
Junc 50	4.50	6708.38	124.65
Junc 31	56.25	6708.38	124.84
Junc 35	16.20	6706.20	124.92
Junc 3	22.95	6717.43	124.94
Junc 36	16.20	6706.19	128.24
Junc 2	25.20	6724.60	130.00
Junc 23	33.30	6716.51	135.78
Junc 26	7.20	6714.01	136.06
Junc 51	0.00	6703.20	137.04
Junc 29	144.90	6712.00	137.32
Junc 49	3.15	6708.38	139.48
Junc 25	0.00	6712.50	139.62

LA POSTA RD - PEAK FLOW (NO FUTURE CONNECTION)

Node ID	Demand GPM	Head ft	Pressure psi
Junc 47	3.15	6708.33	139.85
Junc 24	31.95	6713.59	141.63
Junc 27	29.70	6712.30	141.75
Junc 9	1.35	6702.75	143.58
Junc 28	0.00	6712.30	144.16
Junc 37	155.25	6700.77	147.37
Junc 33	6.75	6708.38	150.95
Junc 10	14.85	6702.51	151.13
Junc 48	5.40	6708.33	151.48
Junc 38	162.00	6700.24	154.57
Junc 11	28.35	6702.50	155.57
Junc 45	0.00	6701.60	158.62
Junc 39	70.20	6700.18	159.66
Junc 12	3.15	6702.50	160.56
Junc 40	70.20	6700.24	160.73
Junc 41	70.20	6700.18	164.73
Junc 44	206.55	6700.57	165.47
Junc 42	0.90	6700.57	170.00
Junc 17	6.75	6883.10	181.16
Junc 54	0.00	6885.84	182.35
Junc 43	70.20	6700.50	184.41
Junc 56	0.00	6888.62	200.89
Junc 1	16.20	6881.61	208.75
Junc 55	0.00	6887.67	217.38

LA POSTA RD - PEAK FLOW (NO FUTURE CONNECTION)



LA POSTA RD - DAILY AVERAGE FLOW + FIRE NODE 22 (NO FUTURE CONNECTION)

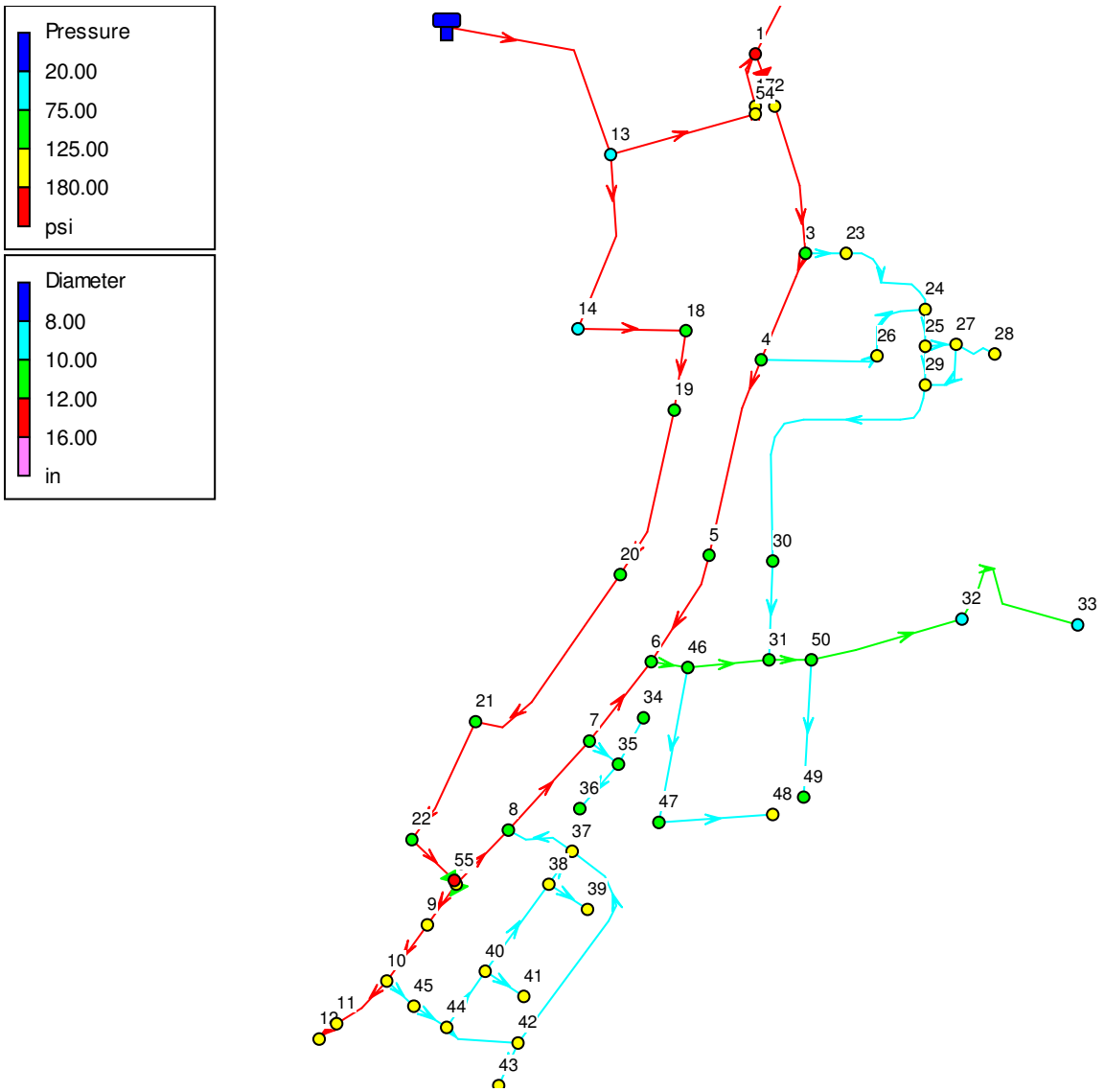
Network Table - Nodes

Node ID	Demand GPM	Head ft	Pressure psi
Tank EXISTING	-515.18	6897.10	6.11
Tank PROPOSED	-2867.16	6900.00	7.37
Junc 22	3006.50	6678.19	25.20
Junc 21	7.19	6704.38	27.90
Junc 20	13.00	6759.08	49.74
Junc 19	10.60	6779.02	49.76
Junc 14	0.45	6820.83	50.12
Junc 18	25.30	6798.63	53.17
Junc 13	9.50	6857.43	54.60
Junc 4	5.30	6723.98	112.51
Junc 5	0.70	6723.74	112.86
Junc 6	1.60	6723.60	116.02
Junc 7	1.00	6723.47	122.74
Junc 46	0.20	6723.60	125.47
Junc 30	9.80	6723.64	125.61
Junc 55	0.00	6678.19	126.60
Junc 34	3.60	6723.47	127.35
Junc 3	5.10	6724.16	127.85
Junc 32	1.00	6723.60	129.73
Junc 2	5.60	6724.60	130.00
Junc 50	1.00	6723.60	131.25
Junc 31	12.50	6723.60	131.43
Junc 35	3.60	6723.47	132.40
Junc 8	1.50	6723.32	132.69
Junc 36	3.60	6723.47	135.73
Junc 23	7.40	6724.10	139.07
Junc 26	1.60	6723.95	140.36
Junc 29	32.20	6723.83	142.45
Junc 25	0.00	6723.86	144.54
Junc 51	0.00	6723.28	145.74

LA POSTA RD - DAILY AVERAGE FLOW + FIRE NODE 22 (NO FUTURE CONNECTION)

Node ID	Demand GPM	Head ft	Pressure psi
Junc 49	0.70	6723.60	146.07
Junc 24	7.10	6723.92	146.11
Junc 47	0.70	6723.60	146.46
Junc 27	6.60	6723.84	146.75
Junc 28	0.00	6723.84	149.16
Junc 9	0.30	6723.25	152.47
Junc 37	34.50	6723.13	157.06
Junc 33	1.50	6723.60	157.55
Junc 48	1.20	6723.60	158.10
Junc 10	3.30	6723.24	160.12
Junc 38	36.00	6723.10	164.48
Junc 11	6.30	6723.24	164.56
Junc 45	0.00	6723.18	167.97
Junc 12	0.70	6723.24	169.54
Junc 39	15.60	6723.10	169.58
Junc 54	0.00	6857.55	170.09
Junc 17	1.50	6857.68	170.15
Junc 40	15.60	6723.10	170.63
Junc 41	15.60	6723.10	174.66
Junc 44	45.90	6723.12	175.24
Junc 42	0.20	6723.12	179.77
Junc 43	15.60	6723.12	194.21
Junc 56	0.00	6875.56	195.23
Junc 1	3.60	6857.75	198.41

LA POSTA RD - DAILY AVERAGE FLOW + FIRE NODE 22 (NO FUTURE CONNECTION)



LA POSTA RD - DAILY AVERAGE FLOW + FIRE NODE 33 (NO FUTURE CONNECTION)

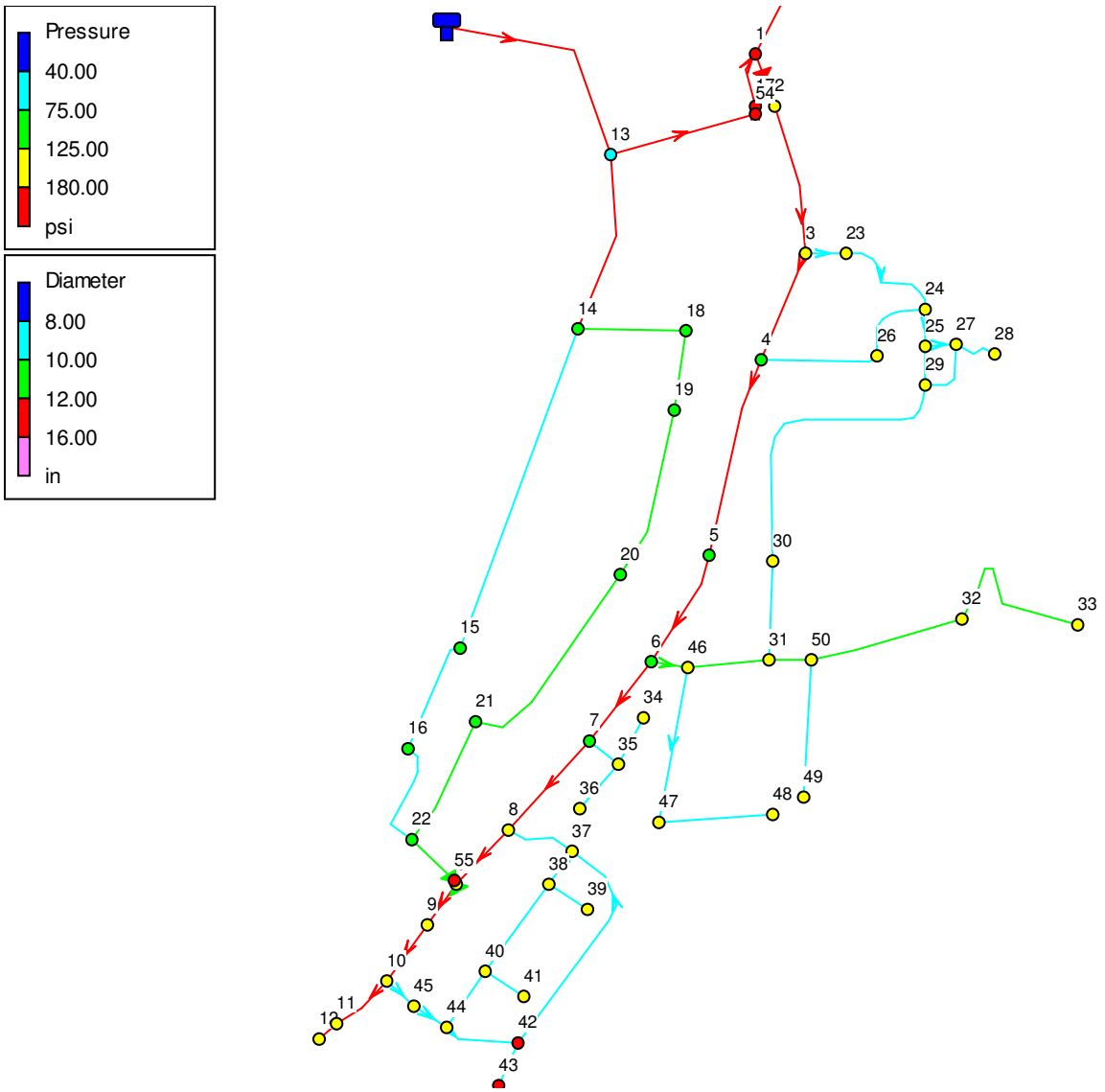
Network Table - Nodes

Node ID	Demand GPM	Head ft	Pressure psi
Tank EXISTING	-603.74	6897.10	6.11
Tank PROPOSED	-2778.60	6900.00	7.37
Junc 33	3001.50	6446.77	37.60
Junc 32	1.00	6529.07	45.43
Junc 13	9.50	6859.83	55.64
Junc 14	0.45	6854.32	64.63
Junc 18	25.30	6850.97	75.85
Junc 19	10.60	6848.10	79.69
Junc 21	7.19	6837.42	85.54
Junc 20	13.00	6845.22	87.06
Junc 50	1.00	6628.09	89.86
Junc 22	6.50	6833.71	92.59
Junc 30	9.80	6655.19	95.95
Junc 5	0.70	6687.07	96.97
Junc 6	1.60	6680.84	97.49
Junc 31	12.50	6645.71	97.68
Junc 4	5.30	6697.75	101.15
Junc 46	0.20	6670.02	102.26
Junc 49	0.70	6628.09	104.68
Junc 7	1.00	6682.62	105.04
Junc 34	3.60	6682.62	109.65
Junc 35	3.60	6682.62	114.70
Junc 8	1.50	6684.98	116.07
Junc 36	3.60	6682.62	118.03
Junc 3	5.10	6705.88	119.93
Junc 47	0.70	6670.02	123.25
Junc 29	32.20	6688.54	127.15
Junc 26	1.60	6696.22	128.35
Junc 2	5.60	6724.60	130.00
Junc 51	0.00	6686.95	130.00

LA POSTA RD - DAILY AVERAGE FLOW + FIRE NODE 33 (NO FUTURE CONNECTION)

Node ID	Demand GPM	Head ft	Pressure psi
Junc 25	0.00	6690.56	130.11
Junc 23	7.40	6703.53	130.15
Junc 27	6.60	6689.93	132.06
Junc 24	7.10	6694.64	133.42
Junc 28	0.00	6689.93	134.46
Junc 48	1.20	6670.02	134.88
Junc 9	0.30	6686.75	136.65
Junc 37	34.50	6685.09	140.58
Junc 10	3.30	6686.64	144.26
Junc 38	36.00	6685.11	148.02
Junc 11	6.30	6686.64	148.70
Junc 45	0.00	6686.16	151.93
Junc 39	15.60	6685.11	153.12
Junc 12	0.70	6686.64	153.68
Junc 40	15.60	6685.34	154.27
Junc 41	15.60	6685.34	158.30
Junc 44	45.90	6685.61	158.99
Junc 42	0.20	6685.46	163.45
Junc 17	1.50	6847.65	165.80
Junc 54	0.00	6853.74	168.44
Junc 43	15.60	6685.45	177.89
Junc 56	0.00	6868.21	192.04
Junc 1	3.60	6844.31	192.58
Junc 55	0.00	6832.12	193.30

LA POSTA RD - DAILY AVERAGE FLOW + FIRE NODE 33 (NO FUTURE CONNECTION)



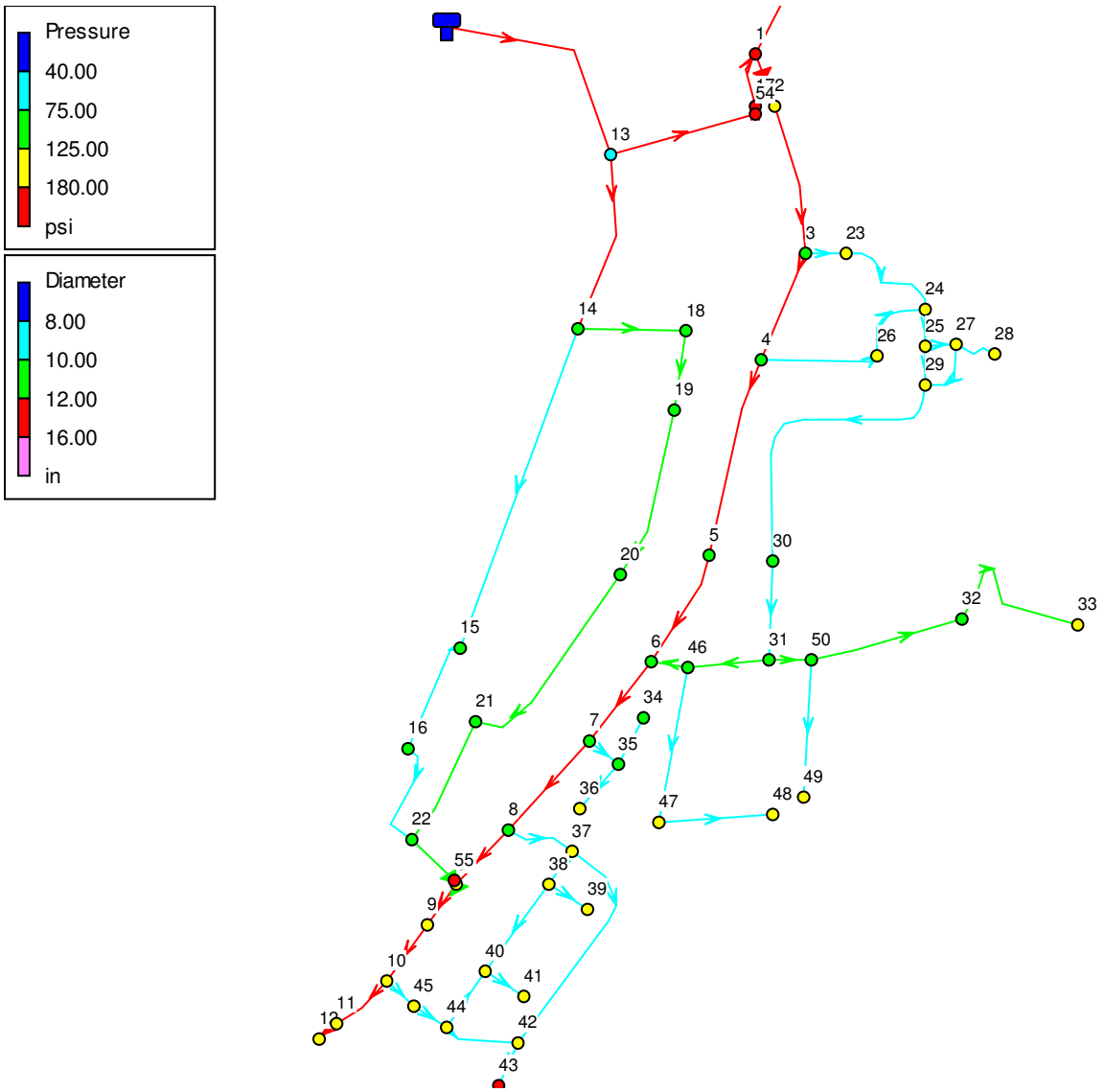
LA POSTA RD - STATIC PRESSURE ANALYSIS (WITH FUTURE CONNECTION)

Network Table - Nodes

Node ID	Demand GPM	Head ft	Pressure psi
Tank EXISTING	120.29	6897.10	6.11
Tank PROPOSED	-120.33	6900.00	7.37
Junc 13	0.00	6899.88	72.99
Junc 14	0.00	6899.88	84.37
Junc 18	0.00	6899.88	97.04
Junc 19	0.00	6899.88	102.12
Junc 15	0.00	6899.88	107.87
Junc 20	0.00	6899.88	110.75
Junc 21	0.00	6899.88	112.61
Junc 4	0.00	6724.60	112.78
Junc 5	0.00	6724.60	113.24
Junc 6	0.00	6724.60	116.46
Junc 16	0.00	6899.88	118.23
Junc 22	0.00	6899.88	121.26
Junc 7	0.00	6724.60	123.23
Junc 46	0.00	6724.60	125.91
Junc 30	0.00	6724.60	126.03
Junc 34	0.00	6724.60	127.84
Junc 3	0.00	6724.60	128.05
Junc 2	0.00	6724.60	130.00
Junc 32	0.00	6724.60	130.16
Junc 50	0.00	6724.60	131.68
Junc 31	0.00	6724.60	131.87
Junc 35	0.00	6724.60	132.89
Junc 8	0.00	6724.60	133.24
Junc 36	0.00	6724.60	136.22
Junc 23	0.00	6724.60	139.28
Junc 26	0.00	6724.60	140.65
Junc 29	0.00	6724.60	142.78
Junc 25	0.00	6724.60	144.86

Node ID	Demand GPM	Head ft	Pressure psi
Junc 51	0.00	6724.60	146.31
Junc 24	0.00	6724.60	146.40
Junc 49	0.00	6724.60	146.50
Junc 47	0.00	6724.60	146.90
Junc 27	0.00	6724.60	147.08
Junc 28	0.00	6724.60	149.49
Junc 9	0.00	6724.60	153.05
Junc 37	0.00	6724.60	157.70
Junc 33	0.00	6724.60	157.98
Junc 48	0.00	6724.60	158.53
Junc 10	0.00	6724.60	160.71
Junc 38	0.00	6724.60	165.13
Junc 11	0.00	6724.60	165.15
Junc 45	0.00	6724.60	168.59
Junc 12	0.00	6724.60	170.13
Junc 39	0.00	6724.60	170.24
Junc 40	0.00	6724.60	171.28
Junc 41	0.00	6724.60	175.31
Junc 44	0.00	6724.60	175.89
Junc 42	0.00	6724.60	180.41
Junc 17	0.00	6899.79	188.39
Junc 54	0.00	6899.83	188.41
Junc 43	0.00	6724.60	194.85
Junc 56	0.00	6898.56	205.19
Junc 1	0.00	6899.76	216.61
Junc 55	0.00	6899.88	222.66

LA POSTA RD - STATIC PRESSURE ANALYSIS (WITH FUTURE CONNECTION)



LA POSTA RD - PEAK FLOW (WITH FUTURE CONNECTION)

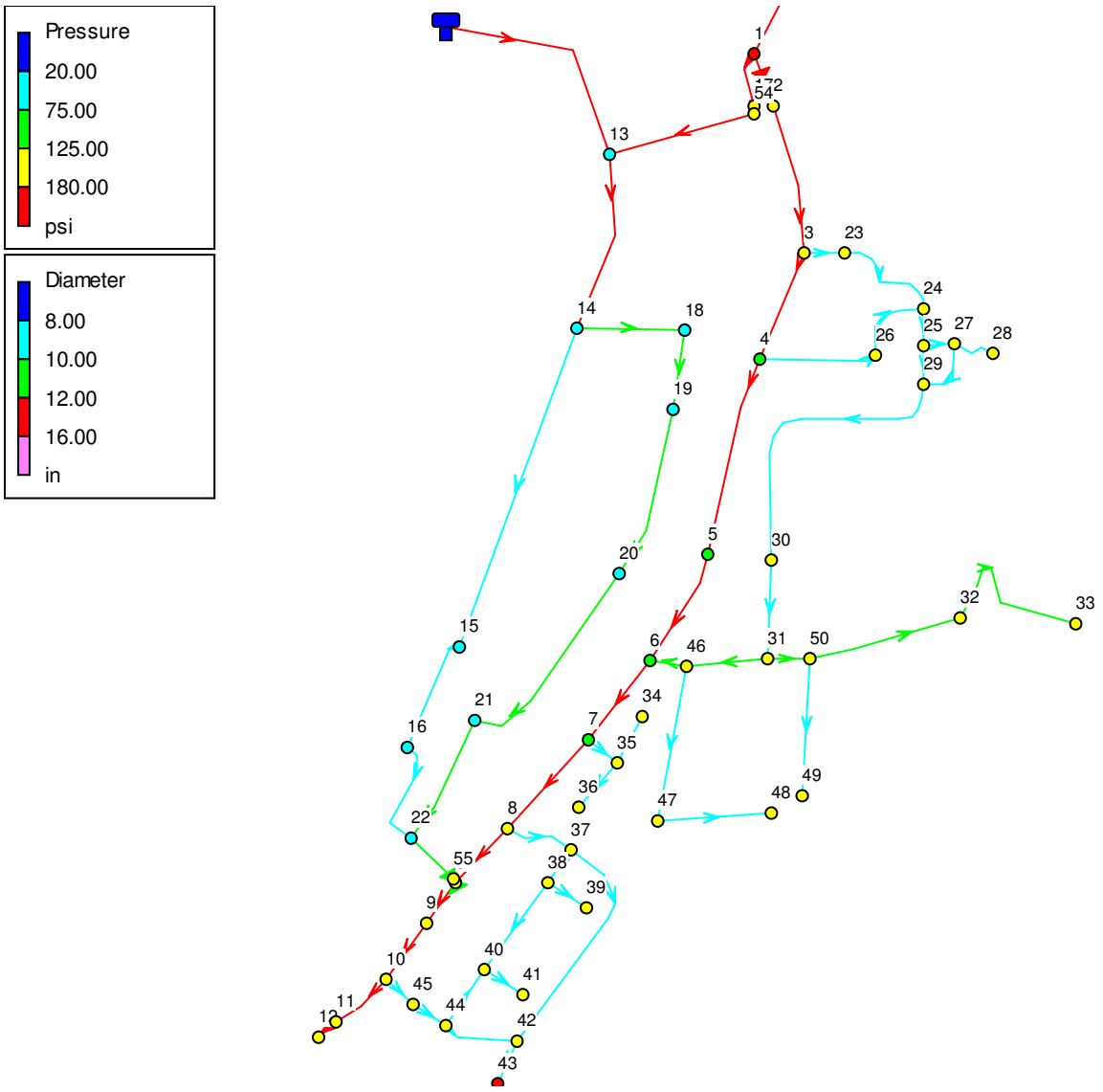
Network Table - Nodes

Node ID	Demand GPM	Head ft	Pressure psi
Tank EXISTING	-311.39	6897.10	6.11
Tank PROPOSED	-1409.14	6900.00	7.37
Junc 13	42.75	6888.58	68.10
Junc 14	2.03	6888.13	79.28
Junc 18	113.85	6887.72	91.77
Junc 19	47.70	6887.62	96.81
Junc 15	1.31	6887.78	102.62
Junc 20	58.50	6887.58	105.42
Junc 5	3.15	6710.57	107.16
Junc 21	31.05	6887.58	107.28
Junc 4	23.85	6714.45	108.39
Junc 6	7.20	6708.32	109.40
Junc 16	11.70	6887.67	112.94
Junc 7	4.50	6706.22	115.27
Junc 22	17.55	6887.60	115.94
Junc 46	0.90	6708.34	118.86
Junc 30	44.10	6708.94	119.25
Junc 34	16.20	6706.19	119.87
Junc 32	4.50	6708.38	123.13
Junc 8	6.75	6703.81	124.23
Junc 50	4.50	6708.38	124.65
Junc 31	56.25	6708.38	124.84
Junc 35	16.20	6706.20	124.92
Junc 3	22.95	6717.43	124.94
Junc 36	16.20	6706.19	128.24
Junc 2	25.20	6724.60	130.00
Junc 23	33.30	6716.51	135.78
Junc 26	7.20	6714.01	136.06
Junc 51	0.00	6703.20	137.04
Junc 29	144.90	6712.00	137.32

LA POSTA RD - PEAK FLOW (WITH FUTURE CONNECTION)

Node ID	Demand GPM	Head ft	Pressure psi
Junc 49	3.15	6708.38	139.48
Junc 25	0.00	6712.50	139.62
Junc 47	3.15	6708.33	139.85
Junc 24	31.95	6713.59	141.63
Junc 27	29.70	6712.30	141.75
Junc 9	1.35	6702.75	143.58
Junc 28	0.00	6712.30	144.16
Junc 37	155.25	6700.77	147.37
Junc 33	6.75	6708.38	150.95
Junc 10	14.85	6702.51	151.13
Junc 48	5.40	6708.33	151.48
Junc 38	162.00	6700.24	154.57
Junc 11	28.35	6702.50	155.57
Junc 45	0.00	6701.60	158.62
Junc 39	70.20	6700.18	159.66
Junc 12	3.15	6702.50	160.56
Junc 40	70.20	6700.24	160.73
Junc 41	70.20	6700.18	164.73
Junc 44	206.55	6700.57	165.47
Junc 42	0.90	6700.57	170.00
Junc 17	6.75	6883.10	181.16
Junc 54	0.00	6885.84	182.35
Junc 43	70.20	6700.50	184.41
Junc 56	0.00	6888.62	200.89
Junc 1	16.20	6881.61	208.75
Junc 55	0.00	6887.60	217.34

LA POSTA RD - PEAK FLOW (WITH FUTURE CONNECTION)



LA POSTA RD - DAILY AVERAGE FLOW + FIRE NODE 22 (WITH FUTURE CONNECTION)

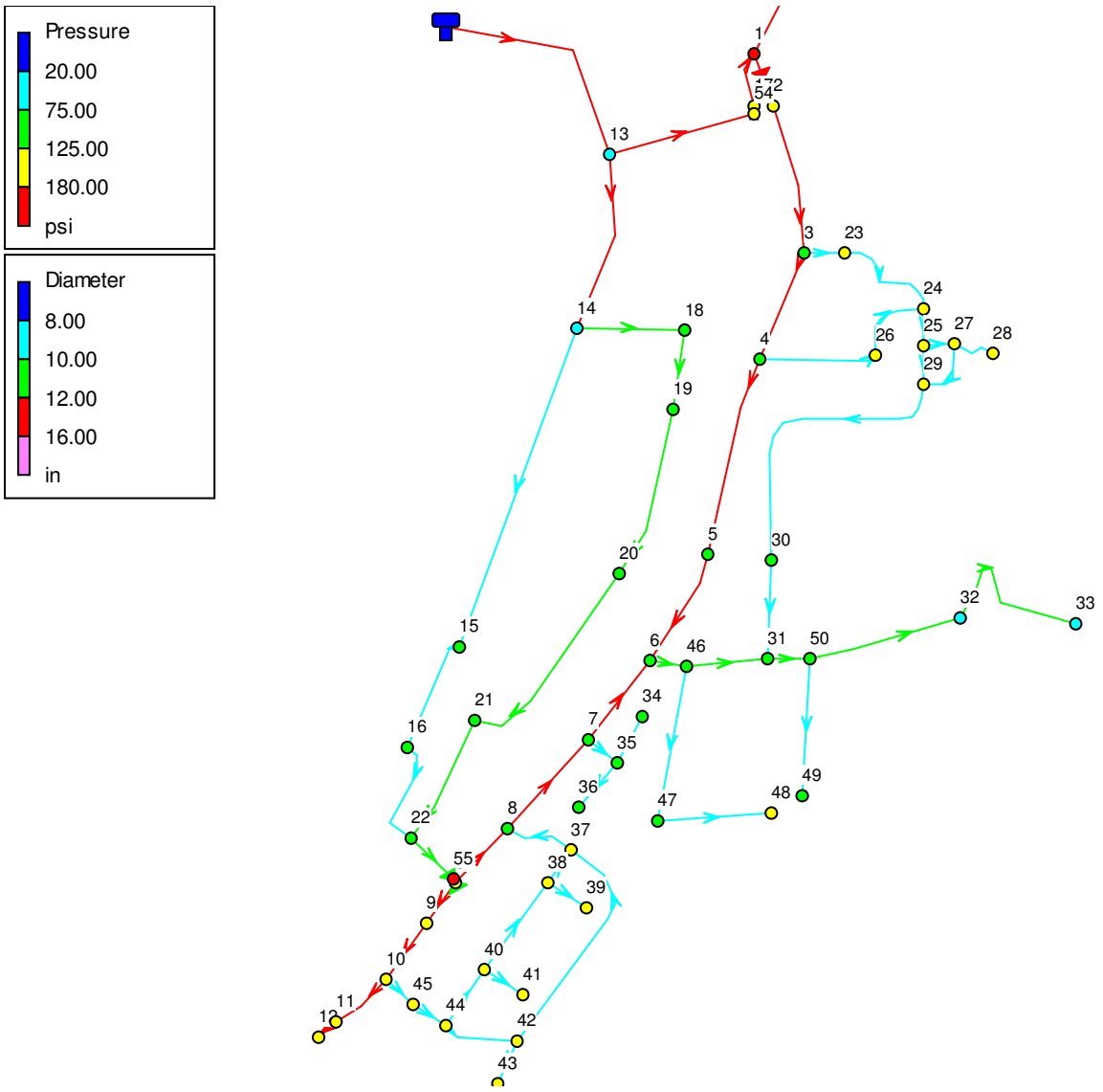
Network Table - Nodes

Node ID	Demand GPM	Head ft	Pressure psi
Tank EXISTING	-515.18	6897.10	6.11
Tank PROPOSED	-2867.16	6900.00	7.37
Junc 22	3003.90	6681.14	26.48
Junc 21	6.90	6706.61	28.86
Junc 16	2.60	6708.62	35.35
Junc 15	0.29	6737.23	37.39
Junc 19	10.60	6779.48	49.96
Junc 20	13.00	6759.94	50.11
Junc 14	0.45	6820.83	50.12
Junc 18	25.30	6798.77	53.23
Junc 13	9.50	6857.43	54.60
Junc 4	5.30	6723.98	112.51
Junc 5	0.70	6723.74	112.86
Junc 6	1.60	6723.60	116.02
Junc 7	1.00	6723.47	122.74
Junc 46	0.20	6723.60	125.47
Junc 30	9.80	6723.64	125.61
Junc 34	3.60	6723.47	127.35
Junc 3	5.10	6724.16	127.85
Junc 55	0.00	6681.14	127.88
Junc 32	1.00	6723.60	129.73
Junc 2	5.60	6724.60	130.00
Junc 50	1.00	6723.60	131.25
Junc 31	12.50	6723.60	131.43
Junc 35	3.60	6723.47	132.40
Junc 8	1.50	6723.32	132.69
Junc 36	3.60	6723.47	135.73
Junc 23	7.40	6724.10	139.07
Junc 26	1.60	6723.95	140.36
Junc 29	32.20	6723.83	142.45

LA POSTA RD - DAILY AVERAGE FLOW + FIRE NODE 22 (WITH FUTURE CONNECTION)

Node ID	Demand GPM	Head ft	Pressure psi
Junc 25	0.00	6723.86	144.54
Junc 51	0.00	6723.28	145.74
Junc 49	0.70	6723.60	146.07
Junc 24	7.10	6723.92	146.11
Junc 47	0.70	6723.60	146.46
Junc 27	6.60	6723.84	146.75
Junc 28	0.00	6723.84	149.16
Junc 9	0.30	6723.25	152.47
Junc 37	34.50	6723.13	157.06
Junc 33	1.50	6723.60	157.55
Junc 48	1.20	6723.60	158.10
Junc 10	3.30	6723.24	160.12
Junc 38	36.00	6723.10	164.48
Junc 11	6.30	6723.24	164.56
Junc 45	0.00	6723.18	167.97
Junc 12	0.70	6723.24	169.54
Junc 39	15.60	6723.10	169.58
Junc 54	0.00	6857.55	170.09
Junc 17	1.50	6857.68	170.15
Junc 40	15.60	6723.10	170.63
Junc 41	15.60	6723.10	174.66
Junc 44	45.90	6723.12	175.24
Junc 42	0.20	6723.12	179.77
Junc 43	15.60	6723.12	194.21
Junc 56	0.00	6875.56	195.23
Junc 1	3.60	6857.75	198.41

LA POSTA RD - DAILY AVERAGE FLOW + FIRE NODE 22 (WITH FUTURE CONNECTION)



LA POSTA RD - DAILY AVERAGE FLOW + FIRE NODE 33 (WITH FUTURE CONNECTION)

Network Table - Nodes

Node ID	Demand GPM	Head ft	Pressure psi
Tank EXISTING	-603.74	6897.10	6.11
Tank PROPOSED	-2778.60	6900.00	7.37
Junc 33	3001.50	6446.77	37.60
Junc 32	1.00	6529.07	45.43
Junc 13	9.50	6859.83	55.64
Junc 14	0.45	6854.32	64.63
Junc 18	25.30	6850.91	75.83
Junc 19	10.60	6848.07	79.67
Junc 15	0.29	6842.23	82.88
Junc 21	6.90	6837.70	85.66
Junc 20	13.00	6845.24	87.07
Junc 50	1.00	6628.09	89.86
Junc 16	2.60	6838.09	91.45
Junc 22	3.90	6834.15	92.78
Junc 30	9.80	6655.19	95.95
Junc 5	0.70	6687.07	96.97
Junc 6	1.60	6680.84	97.49
Junc 31	12.50	6645.71	97.68
Junc 4	5.30	6697.75	101.15
Junc 46	0.20	6670.02	102.26
Junc 49	0.70	6628.09	104.68
Junc 7	1.00	6682.62	105.04
Junc 34	3.60	6682.62	109.65
Junc 35	3.60	6682.62	114.70
Junc 8	1.50	6684.98	116.07
Junc 36	3.60	6682.62	118.03
Junc 3	5.10	6705.88	119.93
Junc 47	0.70	6670.02	123.25
Junc 29	32.20	6688.54	127.15
Junc 26	1.60	6696.22	128.35

LA POSTA RD - DAILY AVERAGE FLOW + FIRE NODE 33 (WITH FUTURE CONNECTION)

Node ID	Demand GPM	Head ft	Pressure psi
Junc 2	5.60	6724.60	130.00
Junc 51	0.00	6686.95	130.00
Junc 25	0.00	6690.56	130.11
Junc 23	7.40	6703.53	130.15
Junc 27	6.60	6689.93	132.06
Junc 24	7.10	6694.64	133.42
Junc 28	0.00	6689.93	134.46
Junc 48	1.20	6670.02	134.88
Junc 9	0.30	6686.75	136.65
Junc 37	34.50	6685.09	140.58
Junc 10	3.30	6686.64	144.26
Junc 38	36.00	6685.11	148.02
Junc 11	6.30	6686.64	148.70
Junc 45	0.00	6686.16	151.93
Junc 39	15.60	6685.11	153.12
Junc 12	0.70	6686.64	153.68
Junc 40	15.60	6685.34	154.27
Junc 41	15.60	6685.34	158.30
Junc 44	45.90	6685.61	158.99
Junc 42	0.20	6685.46	163.45
Junc 17	1.50	6847.65	165.80
Junc 54	0.00	6853.74	168.44
Junc 43	15.60	6685.45	177.89
Junc 56	0.00	6868.21	192.04
Junc 55	0.00	6830.27	192.50
Junc 1	3.60	6844.31	192.58

LA POSTA RD - DAILY AVERAGE FLOW + FIRE NODE 33 (WITH FUTURE CONNECTION)

Property	Value
*Tank ID	EXISTING
X-Coordinate	56547.66
Y-Coordinate	53922.33
Description	
Tag	
*Elevation	6883
*Initial Level	14.1
*Minimum Level	0
*Maximum Level	28.2
*Diameter	210
Minimum Volume	
Volume Curve	
Mixing Model	Mixed
Mixing Fraction	
Reaction Coeff.	
Initial Quality	
Source Quality	
Net Inflow	-251.20
Elevation	6897.10
Pressure	6.11
Quality	0.00

EXISTING TANK PROPERTIES

Property	Value
*Tank ID	PROPOSED
X-Coordinate	50449.28
Y-Coordinate	28628.76
Description	
Tag	
*Elevation	6883
*Initial Level	17
*Minimum Level	0
*Maximum Level	34
*Diameter	100.3
Minimum Volume	
Volume Curve	
Mixing Model	Mixed
Mixing Fraction	
Reaction Coeff.	
Initial Quality	
Source Quality	
Net Inflow	-1469.33
Elevation	6900.00
Pressure	7.37
Quality	0.00

PROPOSED TANK PROPERTIES

APPENDIX E

LA POSTA ROAD AREA PLAN
SEWER COLLECTION ALTERNATIVES COST STUDY

Original Date:
11/12/2012

Prepared by
Russell Planning and Engineering, Inc.
934 Main Ave. Unit C
Durango, CO 81301

I. Introduction

The future development of the La Posta Road Area Plan will require sanitary sewer service if annexed into the City. This report analyzes the alternatives to provide sanitary sewer collection service to the area.

II. Sewer Collection Alternatives Cost Analysis

The following three selected options, described below, were evaluated in more detail to determine order of magnitude costs to help determine the favorable option.

- Connect to SDSD-Connection Point #1: Connect to SDSD across the river
- Connect to SDSD-Connection Point #2: Connect to SDSD across River Road Bridge
- Connect to proposed District Wastewater Treatment Plant

Either scenario, whether connecting to the SDSD Wastewater Treatment Plant or to a proposed District Wastewater Treatment Plant, will require the installation of an 8" main and lift stations with force mains. Some sections of the gravity main may need to be upsized to a 12" main depending on minimum slope of the final design.

The sewer systems layouts for each option are shown in schematic plan view in the attached as Exhibits 1, 2, and 3.

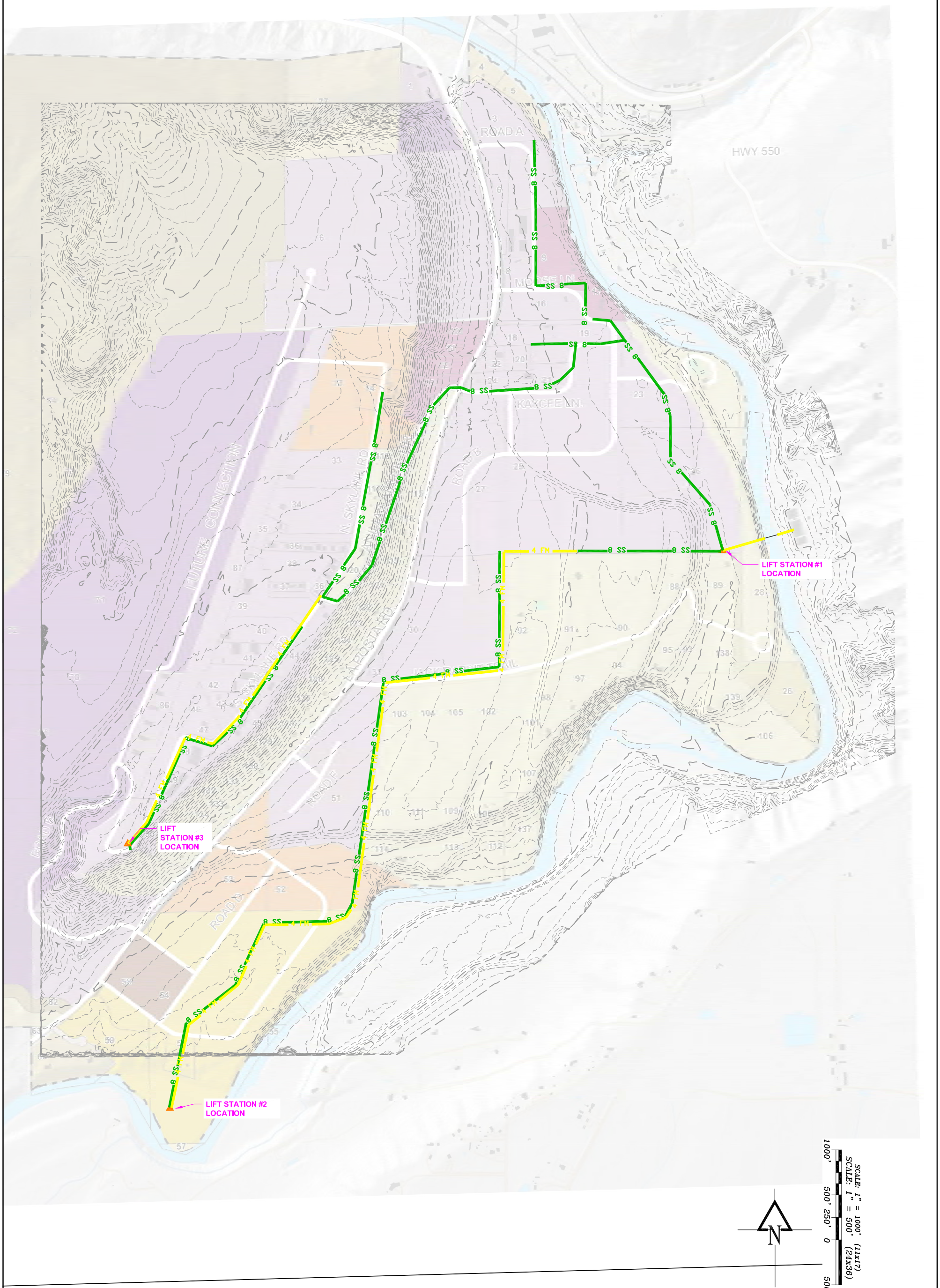
All 3 options were priced to determine the more favorable option. The estimated costs are shown below:

- Connect to SDSD across the river = $2M
- Connect to SDSD across River Road Bridge = $2.2M
- Connect to proposed District Wastewater Treatment Plant = $5.5M

See Exhibit 4 for the details of the sewer alternatives cost analysis.

III. Conclusion

At this time, connecting to the SDSD across the river appears to be the more economical option. However, connecting across the River Road Bridge also appears to be a feasible alternative should the river crossing pose an unforeseen cost increase.



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REVISIONS: 1 XX	**Drawn/Checked:** **Drafted by:** **DATE:** 11-12-12 *PROJECT: LA POSTA ROAD AREA PLAN*	**LA POSTA ROAD AREA PLAN** **SEWER COLLECTION ALTERNATIVE** **SDSD_RIVER** **EXHIBIT 1**	**Russell Planning & Engineering, Inc.** Civil Engineering Services 934 Main Avenue, Unit C Durango, Colorado 81301 Phone: (970) 385-4546 Fax: (970) 385-4502

SHEET EX-1

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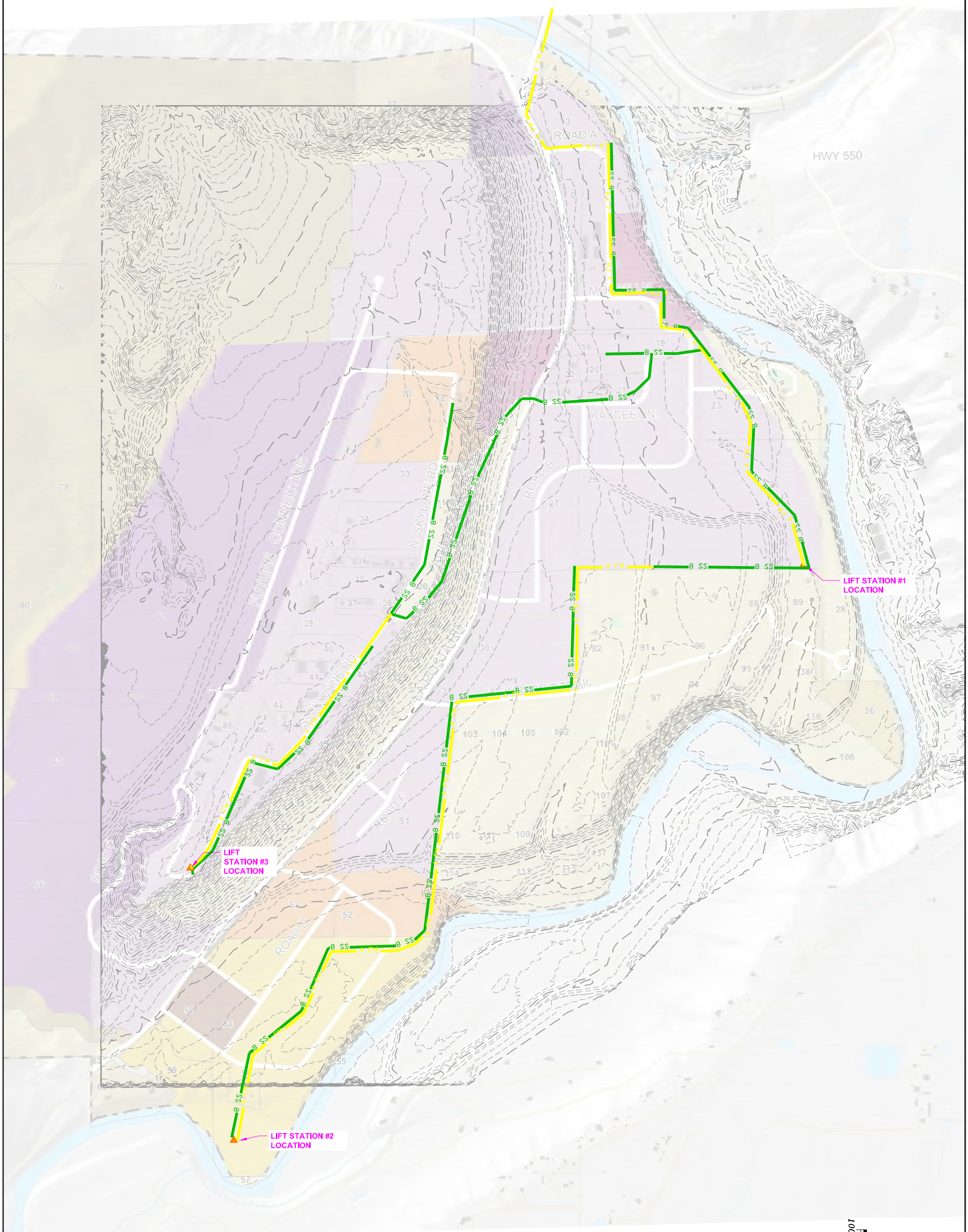

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REVISIONS: 1 xx	Drawn/Checked: Drafted by: DATE: 11-12-12 PROJECT: LA POSTA ROAD AREA PLAN	**LA POSTA ROAD AREA PLAN** **SEWER COLLECTION ALTERNATIVES** **SDSD_BRIDGE** **EXHIBIT 2**	**Russell Planning & Engineering, Inc.** Civil Engineering Services 934 Main Avenue, Unit C Durango, Colorado 81301 Phone: (970) 385-4546 Fax: (970) 385-4502

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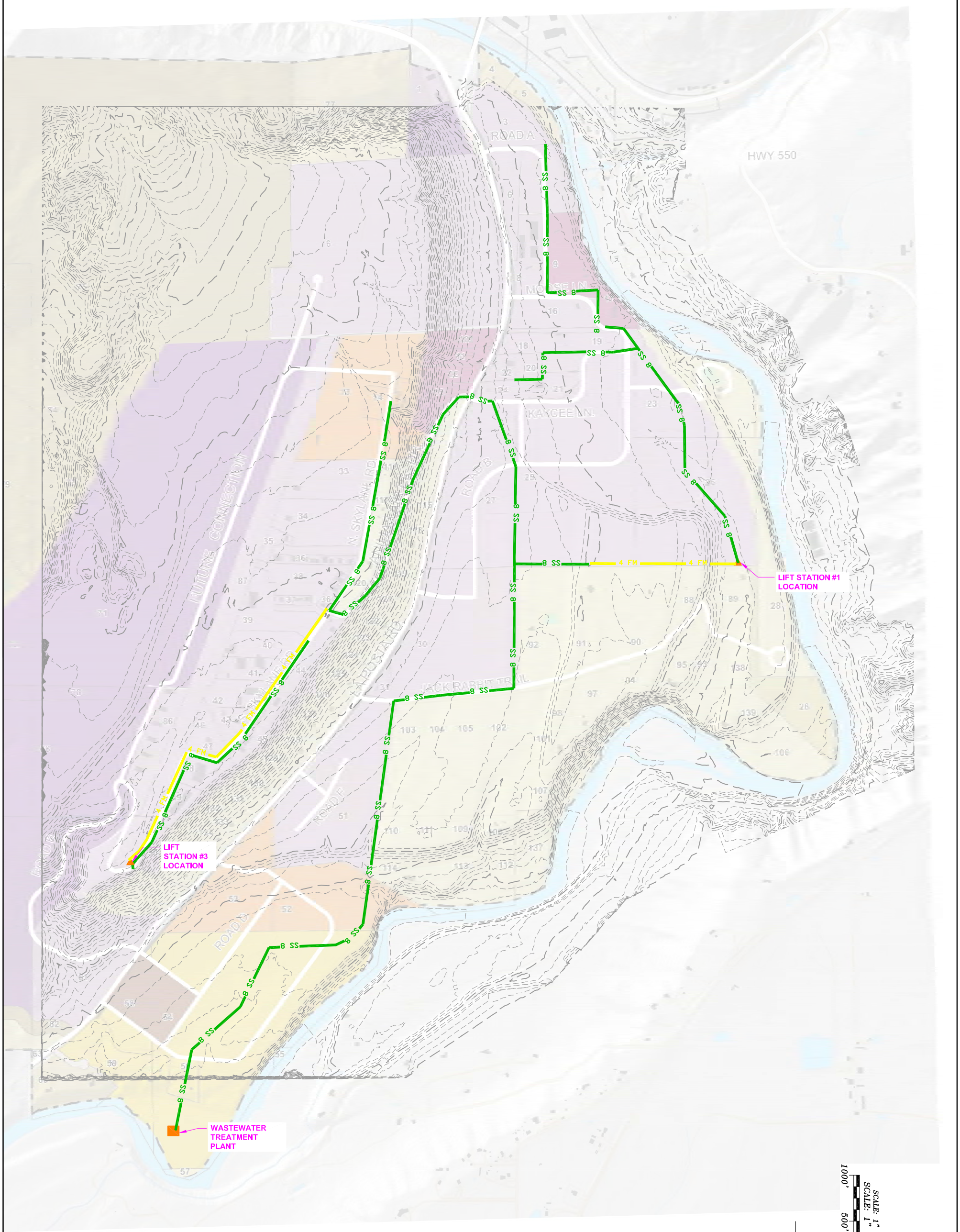

ACAD FILE: UTILITY PLAN_SWR_WWTP.dwg		LA POSTA ROAD AREA PLAN SEWER COLLECTION ALTERNATIVES DISTRICT_WASTEWATER TREATMENT PLANT EXHIBIT 3	Russell Planning & Engineering, Inc. Civil Engineering Services 934 Main Avenue, Unit C Durango, Colorado 81301 Phone: (970) 385-4546 Fax: (970) 385-4502
REVISIONS: 1 XX	Drawn/Checked: Drafted by: DATE: 11-12-12 PROJECT: LA POSTA ROAD AREA PLAN		SHEET EX-3 X OF X

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La Posta Road Area Plan
Exhibit 4 - Sewer Alternatives Cost Analysis

EXHIBIT 4 - SEWER ALTERNATIVES ANALYSIS

SEWER_SDSD_RIVER
Complete Buildout

Unit		Unit Price	Unit	Source	UNIT		Cost
4" HDPE Force Main (CROSS COUNTRY)	$	42.00	LF		1483	$	62,286.00
4" HDPE Force Main (IN ROAD W/GRAVITY SEWER)	$	24.00	LF	Mercury	12305	$	295,320.00
8" PVC Sewerline (IN ROAD)	$	44.00	LF	Mercury	25782	$	1,134,408.00
LIFT STATION	$	160,000.00	EACH	MERCURY	3	$	480,000.00
BORING UNDER RIVER	$	350.00	LF		145	$	50,750.00
TOTAL						**$**	**2,022,764.00**

SEWER_SDSD_BRIDGE
Complete Buildout

Unit		Unit Price	Unit	Source	UNIT		Cost
4" HDPE Force Main (CROSS COUNTRY)	$	42.00	LF	Mercury	816	$	34,272.00
4" HDPE Force Main (IN ROAD W/GRAVITY SEWER)	$	24.00	LF	Mercury	19679	$	472,296.00
8" PVC Sewerline (IN ROAD W/GRAVITY SEWER)	$	44.00	LF	Mercury	27401	$	1,205,644.00
LIFT STATION	$	160,000.00	EACH	MERCURY	3	$	480,000.00
TOTAL						**$**	**2,192,212.00**

SEWER_WWTP
Complete Buildout

Unit		Unit Price	Unit	Source	UNIT		Cost
4" HDPE Force Main (CROSS COUNTRY)	$	42.00	LF	Mercury	1590	$	66,780.00
4" HDPE Force Main (IN ROAD W/GRAVITY SEWER)	$	24.00	LF	Mercury	3720	$	89,280.00
8" PVC Sewerline (IN ROAD W/GRAVITY SEWER)	$	44.00	LF	Mercury	27639	$	1,216,116.00
LIFT STATION	$	50,000.00	EACH	MERCURY	2	$	100,000.00
WWTP	$	10.00	GPD	JEFF ROADS	402997	$	4,029,966.98
TOTAL						**$**	**5,502,142.98**

APPENDIX F

LA POSTA ROAD AREA PLAN
STORMWATER STUDY

Original Date:
11/12/2012

Prepared by
Russell Planning and Engineering, Inc.
934 Main Ave. Unit C
Durango, CO 81301

I. Introduction

The future development of the La Posta Road Area Plan will require stormwater management. This report analyzes the historic and the proposed development flow patterns. Results of this study were used to develop a Stormwater Master Plan to guide the future operation and development of the La Posta Road (LPR) Area Plan stormwater system. Each site will be required to develop site specific drainage plans at the time of development.

II. Study Area

The La Posta Road Area Plan "study area" (service area) for this report will include approximately 136 parcels, of which 15 parcels are not currently committed to be part of the Area Plan. However, any potential drainage impacts to these properties must be considered. La Posta Road service area includes commercial, industrial, mixed use and residential areas. Currently drainage follows road borrow ditches and natural drainages through the properties. There are no current public stormwater detention or water quality treatment facilities within the study area.

The study area slopes from west to east and ultimately drains into the Animas River. Offsite drainages from the west drain through the property via roadside swales and natural drainage swales. The drainage basin is a mix of native scrub brush lining the both the upper mesa (Airpark) and the lower mesa (Koshak). Many of the lots have been commercially developed at the airpark, which has meant that many have large areas of impervious area due to large buildings and parking lots. Some of the developed lots have existing detention ponds.

Due to the significant range in elevations within the Area Plan study area, the soil types range from Hydrological soil group type B to type D.

- Koshak Mesa (6625' and lower) – type B
- Airpark (6625' - 6850') – type C
- Offsite Flows (6850' and higher) – type D

See Exhibit 1 for Soil Types Map.

III. Development Standards

Any parcel developers in this area will need to manage their stormwater runoff per the La Plata County Code requirements for stormwater, as well as the City of Durango Code if the study area is annexed into the City. Due to the close proximity of the Animas River, stormwater quality is a concern. Developers will be required to adhere to the stormwater management regulations dictated by the federal Clean Water Act and enforced by the Colorado Department of Public Health and Environment (CDPHE). Precautions should be taken to prevent any new erosion on-site and all on any adjacent areas. All necessary erosion control measures will be constructed before commencement of construction.

It is likely that the proposed land use plan will increase the impervious area significantly in the study area requiring detention of the additional runoff. With planned development, there is an opportunity to create regional detention/treatment locations that capture multiple development

projects, relieving the developers from having to construct a detention/treatment facility on each individual development project. However, this analysis assumes each property will detain its increased runoff volumes due to the addition of impervious area.

IV. Methodology and Design Criteria

The Hydraflow Hydrographs Extension for AutoCAD Civil 3D 2011 program with the SCS Method was used to determine the basin flows. The Soil Conservation Service (SCS) (now known as National Resources Conservation Service [NRCS]) hydrologic methods are widely used for the analysis of large and small watersheds. The unit hydrograph method and a known design storm allow the designer to generate an accurate hydrograph. (Hydraflow Hydrographs Extension for AutoCAD Civil 3D 2011)

Program Input for Hydraflow Hydrographs Extension for AutoCAD Civil 3D 2011:

- Drainage Area (Ac): Specifies the subbasin area in acres.
    - Basins were derived based on existing topography and the proposed road layout shown in Exhibit 2 – Basin Delineation Map

- Curve Number (CN): Specifies the SCS Curve Number for this area. See Reference Tables for coefficient values.

Land Use or Surface Characteristics	CN
Open Space: Good condition, Type B	61

Source: ASCE (from Hydraflow Hydrographs Extension for AutoCAD Civil 3D 2011)

- Time of concentration (Tc) is the time it takes for runoff to travel from the most remote upstream point in the drainage area to the downstream point in question. There are four methods for computing Tc.

- Time Interval (Min.): 2 minutes

- Storm Distribution: Type II

- Storm Duration (Hrs.): 24 hour storm

- Storm Periods: 10 year

- Rainfall Intensity Curve: Durango, CO IDF Curve

- Precipitation Data: NOAA Atlas 2, Volume 3

The Hydrograph Report Summary of the basins and their respective hydrographs with runoff rates are attached in Exhibit 4.

V. Drainage Conveyance Features

The storm drain sizing and curb and gutter capacity were analyzed using the Hydraflow Express Extension for AutoCAD Civil 3D 2011.

- The manning's "n" values:
  - storm drain (corrugated metal pipe): 0.023
  - curb and gutter (concrete): 0.013

Storm Drain Analysis

It is anticipated that properties adjacent to the road will not be permitted to allow onsite drainage from their site to drain into the road curb and gutter. Therefore only the runoff from the road itself was used to perform the curb and gutter capacity analysis. The analysis was completed for varying road slopes of each road section to determine the max capacity that could be carried within the allowable spread specified by City of Durango Code before requiring an inlet. See Exhibit 5 for curb and gutter capacity check. A storm drain analysis was completed comparing curb capacity with lengths of roads to determine the need for inlets and storm drain using the information derived from the Curb and Gutter Capacity calculations. See Exhibit 6 for Storm Drain Analysis.

Culvert Analysis

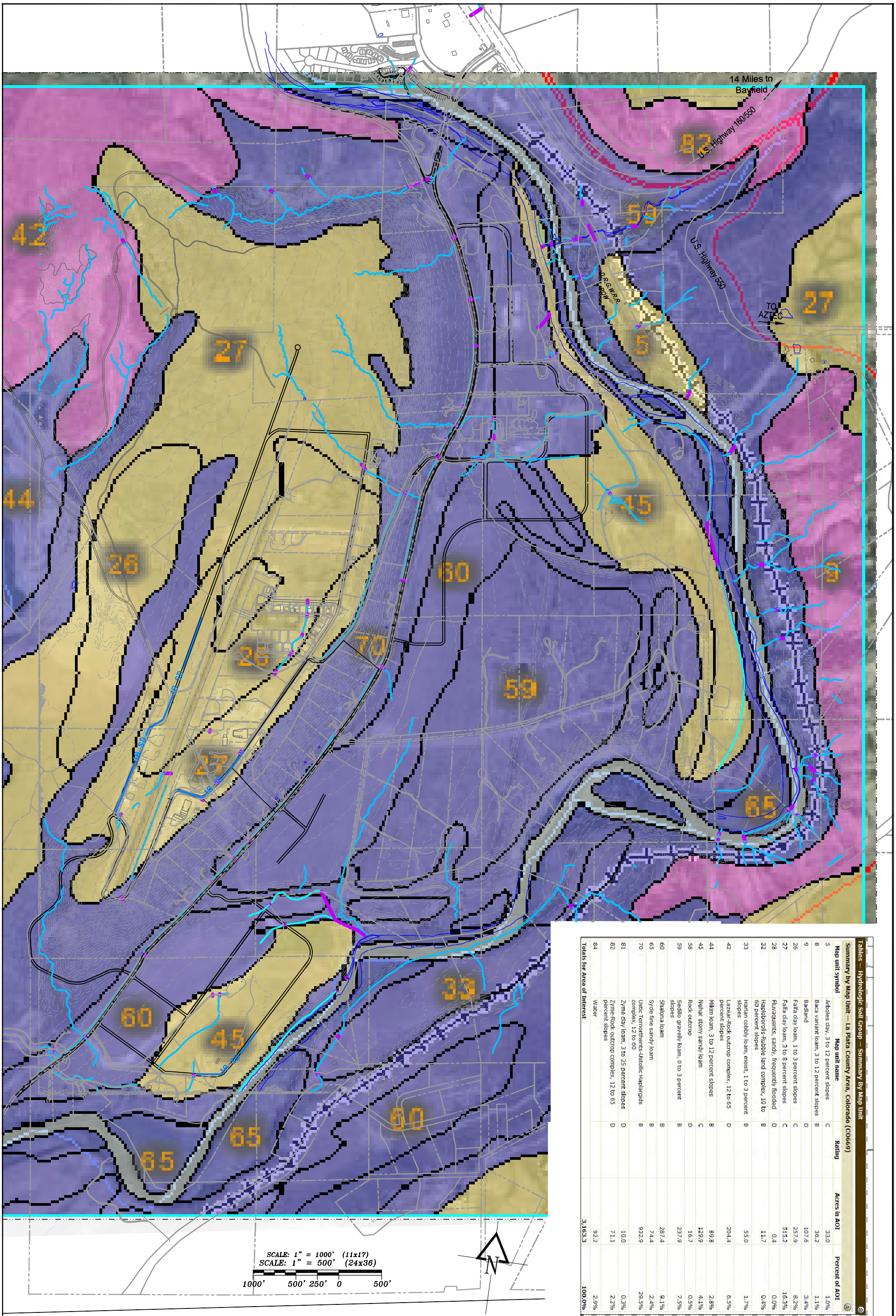
Due to the conceptual level of the road design, only major cross drains (culverts) were located at anticipated low points along the proposed roads and sized using historic 10 year storm event runoff rates. In cases where downstream culverts existed along La Posta Road, the proposed culvert size was proposed as the same size as the existing downstream culvert size on La Posta Road. The cross drains for Road E were determined from a previous drainage study for the Animas Glacier Gravel Pit Development, dated 10/23/2012. See Exhibit 7 for a summary of culvert sizing and Exhibit 8 for culvert calculations.

VI. Detention and Water Quality

Parcel owners will be required to determine developed flow runoff rates and provide onsite detention and to release at historic runoff rates and water quality.

VII. Conclusion

- This drainage study is a conceptual drainage study based on a conceptual road layout in order to determine anticipated infrastructure costs. Additional drainage features may be necessary at the time of development since only major drainages were evaluated for culvert sizing.
- Culverts and storm drains are sized for the historic 10 year storm event runoff rate.
- Detention and water quality will be required onsite for all parcel developments.



Tables — Hydrologic Soil Group — Summary By Map Unit

Summary by Map Unit — La Plata County Area, Colorado (CO669)

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
5	Arboles clay, 3 to 12 percent slopes	C	33.0	1.0%
8	Baca variant loam, 3 to 12 percent slopes	B	36.2	1.1%
9	Badland	D	107.6	3.4%
26	Falfa clay loam, 1 to 3 percent slopes	C	257.9	8.2%
27	Falfa clay loam, 3 to 8 percent slopes	C	515.2	16.3%
28	Fluvaquents, sandy, frequently flooded	D	0.4	0.0%
32	Haploborolls-Rubble land complex, 10 to 60 percent slopes	B	11.7	0.4%
33	Harlan cobbly loam, moist, 1 to 3 percent slopes	B	55.0	1.7%
42	Lazear-Rock outcrop complex, 12 to 65 percent slopes	D	204.4	6.5%
44	Mikim loam, 3 to 12 percent slopes	B	89.8	2.8%
45	Nehar stony sandy loam	C	129.9	4.1%
58	Rock outcrop	D	16.7	0.5%
59	Sedillo gravelly loam, 0 to 3 percent slopes	B	237.9	7.5%
60	Shalona loam	B	287.4	9.1%
65	Syde fine sandy loam	B	74.4	2.4%
70	Ustic Torriorthents-Ustollic Haplargids complex, 12 to 60	B	932.9	29.5%
81	Zyme clay loam, 3 to 25 percent slopes	D	10.0	0.3%
82	Zyme-Rock outcrop complex, 12 to 65 percent slopes	D	71.1	2.2%
84	Water		92.2	2.9%
Totals for Area of Interest			3,163.3	100.0%

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Drawn/Checked:

Drafted by:

DATE: 11-12-12

PROJECT: LA POSTA ROAD AREA PLAN

LA POSTA ROAD AREA PLAN
STORMWATER STUDY
EXHIBIT 1 - SOILS MAP

Russell Planning & Engineering, Inc.
Civil Engineering Services
934 Main Avenue, Unit C
Durango, Colorado 81301
Phone: (970) 385-4546
Fax: (970) 385-4502

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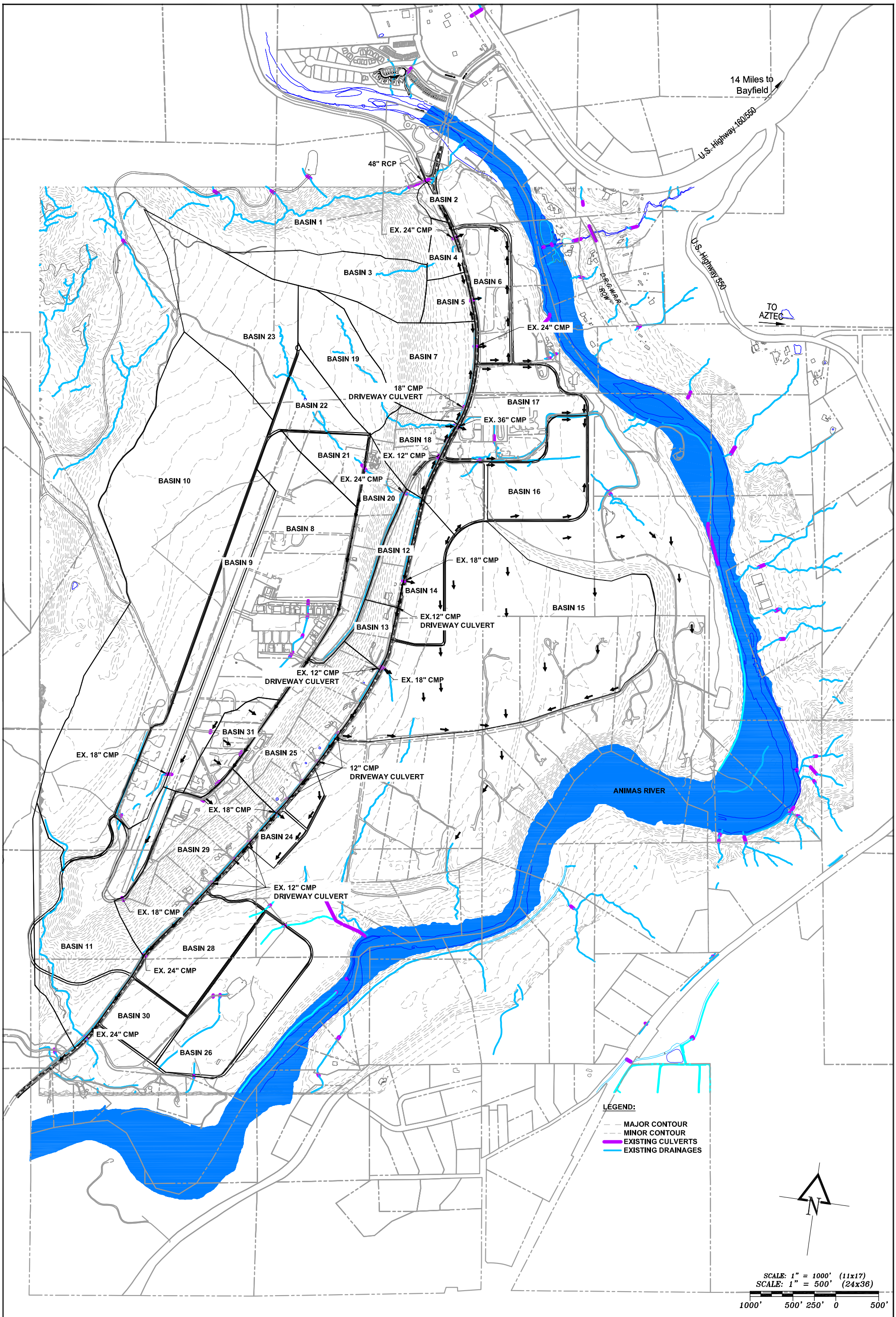

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REVISIONS: 1 XX	Drawn/Checked: Drafted by: DATE: 11-12-12 PROJECT: LA POSTA ROAD AREA PLAN	**LA POSTA ROAD AREA PLAN** **STORMWATER STUDY** **EXHIBIT 2 - BASIN MAP**	**Russell Planning & Engineering, Inc.** Civil Engineering Services 934 Main Avenue, Unit C Durango, Colorado 81301 Phone: (970) 385-4546 Fax: (970) 385-4502

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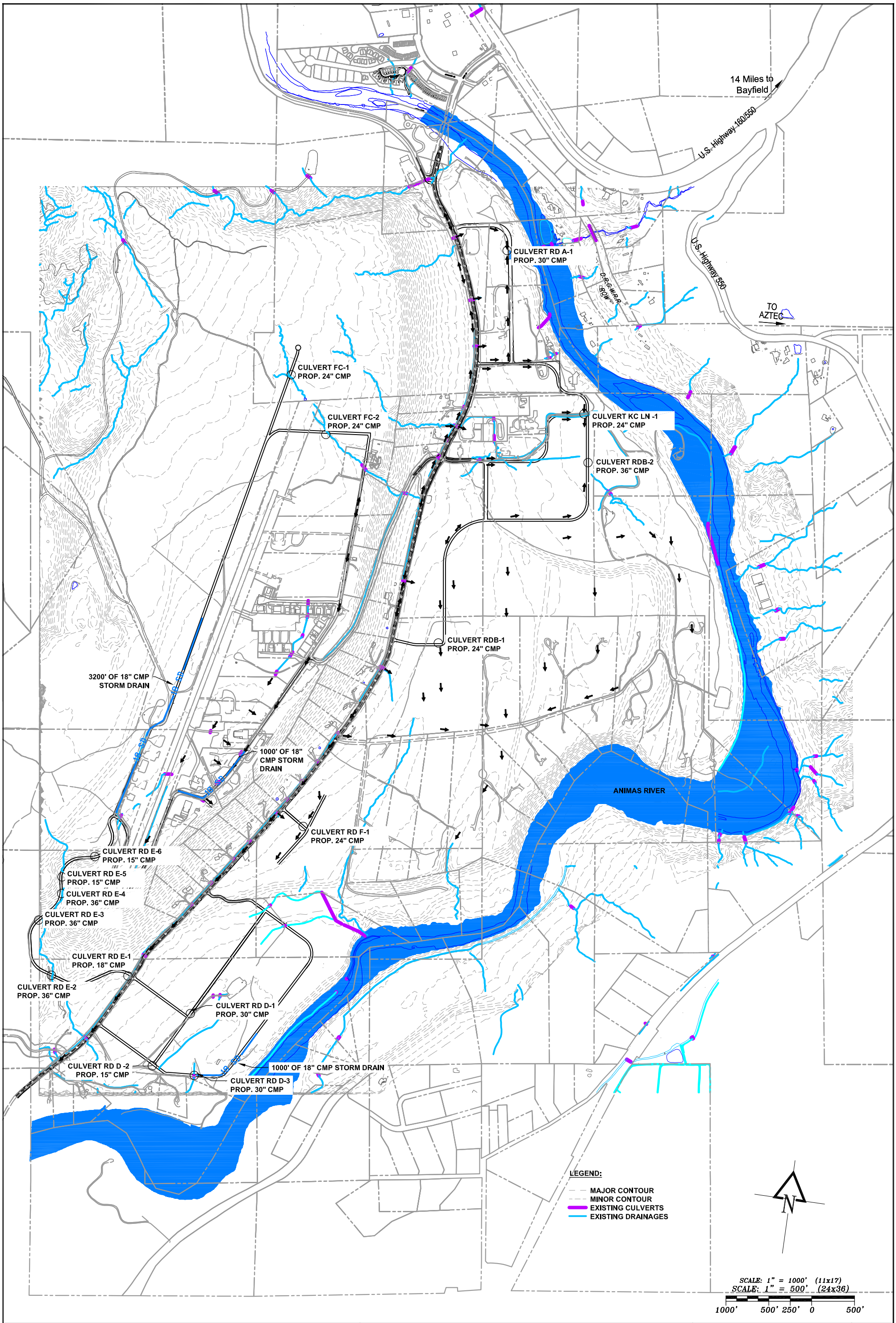


ACAD FILE: STORMWATER STUDY.dwg			
REVISIONS: 1 XX	Drawn/Checked:	**LA POSTA ROAD AREA PLAN**	**Russell Planning & Engineering, Inc.**
	Drafted by:	**STORMWATER STUDY**	Civil Engineering Services
	DATE: 11-12-12	**EXHIBIT 3 - IMPROVEMENTS MAP**	934 Main Avenue, Unit C
	PROJECT: LA POSTA ROAD AREA PLAN		Durango, Colorado 81301
			Phone: (970) 385-4546
			Fax: (970) 385-4502

SHEET EX-3

X OF X

R:\Current Projects\Land Projects 3\La Plata County - La Posta Road Study\ACAD\Level 3 Production Drawings\STORMWATER STUDY.dwg, EX-3_STORMWATER IMPROVEMENTS EXHIBIT, 11/13/2012 12:13:01 PM, lorim

Hydrograph Return Period Recap

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8

Hyd. No.	Hydrograph type (origin)	Inflow hyd(s)	Peak Outflow (cfs)								Hydrograph Description
			1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr	
1	SCS Runoff	------	-------	-------	-------	-------	14.86	-------	-------	36.12	Basin 3
2	SCS Runoff	------	-------	-------	-------	-------	0.833	-------	-------	4.285	Basin 4
3	SCS Runoff	------	-------	-------	-------	-------	1.104	-------	-------	5.682	Basin 5
4	SCS Runoff	------	-------	-------	-------	-------	2.473	-------	-------	13.91	Basin 6
5	SCS Runoff	------	-------	-------	-------	-------	3.374	-------	-------	19.58	Basin 7
6	Combine	1, 2, 3, 4, 5	-------	-------	-------	-------	21.90	-------	-------	75.87	CULVERT RD A-1
7	SCS Runoff	------	-------	-------	-------	-------	62.94	-------	-------	129.38	Basin 8
8	SCS Runoff	------	-------	-------	-------	-------	40.36	-------	-------	80.72	Basin 9
9	SCS Runoff	------	-------	-------	-------	-------	87.61	-------	-------	196.57	Basin 10
10	SCS Runoff	------	-------	-------	-------	-------	11.52	-------	-------	57.06	Basin 11
11	Combine	7, 8, 9, 10	-------	-------	-------	-------	158.92	-------	-------	344.87	CULVERT LP RD-1
12	SCS Runoff	------	-------	-------	-------	-------	2.385	-------	-------	10.25	Basin 12
13	SCS Runoff	------	-------	-------	-------	-------	2.965	-------	-------	9.501	Basin 13
14	SCS Runoff	------	-------	-------	-------	-------	2.915	-------	-------	15.48	Basin 14
15	SCS Runoff	------	-------	-------	-------	-------	10.42	-------	-------	59.66	Basin 15
16	Combine	12, 13, 14,	-------	-------	-------	-------	7.360	-------	-------	33.20	CULVERT RD B-1
17	SCS Runoff	------	-------	-------	-------	-------	10.46	-------	-------	14.76	LA POSTA ROAD
18	SCS Runoff	------	-------	-------	-------	-------	2.312	-------	-------	12.07	Basin 19
19	SCS Runoff	------	-------	-------	-------	-------	0.112	-------	-------	0.158	INDUSTRIAL ROAD
20	SCS Runoff	------	-------	-------	-------	-------	0.224	-------	-------	0.316	MOUNTAIN ROAD
21	SCS Runoff	------	-------	-------	-------	-------	5.028	-------	-------	25.87	BASIN 16
22	SCS Runoff	------	-------	-------	-------	-------	2.179	-------	-------	11.21	BASIN 17
23	SCS Runoff	------	-------	-------	-------	-------	3.687	-------	-------	18.97	BASIN 18
24	SCS Runoff	------	-------	-------	-------	-------	3.352	-------	-------	17.24	BASIN 20
25	SCS Runoff	------	-------	-------	-------	-------	1.676	-------	-------	8.622	BASIN 21
26	SCS Runoff	------	-------	-------	-------	-------	2.179	-------	-------	11.21	BASIN 22
27	SCS Runoff	------	-------	-------	-------	-------	7.642	-------	-------	39.32	BASIN 23
28	Combine	21, 22, 23,	-------	-------	-------	-------	10.89	-------	-------	56.04	CULVERT KC LN-1
29	Combine	18, 24, 25, 26, 27, 28	-------	-------	-------	-------	26.11	-------	-------	135.12	CULVERT RD B-2
30	SCS Runoff	------	-------	-------	-------	-------	2.179	-------	-------	11.21	BASIN 24
31	SCS Runoff	------	-------	-------	-------	-------	5.698	-------	-------	29.31	BASIN 25
32	Combine	30, 31	-------	-------	-------	-------	7.877	-------	-------	40.52	CULVERT RD F-1
33	SCS Runoff	------	-------	-------	-------	-------	5.296	-------	-------	27.24	BASIN 26
34	SCS Runoff	------	-------	-------	-------	-------	1.106	-------	-------	5.690	BASIN 27

Hydrograph Return Period Recap

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8

Hyd. No.	Hydrograph type (origin)	Inflow hyd(s)	Peak Outflow (cfs)								Hydrograph Description
			1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr	
35	SCS Runoff	------	-------	-------	-------	-------	4.240	-------	-------	21.81	BASIN 28
36	SCS Runoff	------	-------	-------	-------	-------	6.603	-------	-------	33.97	BASIN 29
37	SCS Runoff	------	-------	-------	-------	-------	2.413	-------	-------	12.42	BASIN 30
38	Combine	33, 34, 35, 36,	-------	-------	-------	-------	17.24	-------	-------	88.72	CULVERT RD D-2
39	Combine	37, 38	-------	-------	-------	-------	19.66	-------	-------	101.13	CULVERT RD D-1
40	SCS Runoff	------	-------	-------	-------	-------	0.261	-------	-------	0.369	RESIDENTIAL ROAD

Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	14.86	2	722	44,967	------	------	------	Basin 3
2	SCS Runoff	0.833	2	720	3,313	------	------	------	Basin 4
3	SCS Runoff	1.104	2	720	4,393	------	------	------	Basin 5
4	SCS Runoff	2.473	2	722	13,054	------	------	------	Basin 6
5	SCS Runoff	3.374	2	724	22,188	------	------	------	Basin 7
6	Combine	21.90	2	722	87,914	1, 2, 3, 4, 5	------	------	CULVERT RD A-1
7	SCS Runoff	62.94	1	730	255,046	------	------	------	Basin 8
8	SCS Runoff	40.36	1	717	76,922	------	------	------	Basin 9
9	SCS Runoff	87.61	1	728	340,815	------	------	------	Basin 10
10	SCS Runoff	11.52	1	718	38,062	------	------	------	Basin 11
11	Combine	158.92	1	729	710,844	7, 8, 9, 10	------	------	CULVERT LP RD-1
12	SCS Runoff	2.385	1	719	7,674	------	------	------	Basin 12
13	SCS Runoff	2.965	1	716	6,823	------	------	------	Basin 13
14	SCS Runoff	2.915	1	721	12,516	------	------	------	Basin 14
15	SCS Runoff	10.42	1	730	86,737	------	------	------	Basin 15
16	Combine	7.360	1	719	27,014	12, 13, 14,	------	------	CULVERT RD B-1
17	SCS Runoff	10.46	1	715	21,637	------	------	------	LA POSTA ROAD
18	SCS Runoff	2.312	2	748	26,712	------	------	------	Basin 19
19	SCS Runoff	0.112	1	715	232	------	------	------	INDUSTRIAL ROAD
20	SCS Runoff	0.224	1	715	464	------	------	------	MOUNTAIN ROAD
21	SCS Runoff	5.028	2	720	19,997	------	------	------	BASIN 16
22	SCS Runoff	2.179	2	720	8,666	------	------	------	BASIN 17
23	SCS Runoff	3.687	2	720	14,665	------	------	------	BASIN 18
24	SCS Runoff	3.352	2	720	13,332	------	------	------	BASIN 20
25	SCS Runoff	1.676	2	720	6,666	------	------	------	BASIN 21
26	SCS Runoff	2.179	2	720	8,666	------	------	------	BASIN 22
27	SCS Runoff	7.642	2	720	30,396	------	------	------	BASIN 23
28	Combine	10.89	2	720	43,328	21, 22, 23,	------	------	CULVERT KC LN-1
29	Combine	26.11	2	720	129,098	18, 24, 25, 26, 27, 28	------	------	CULVERT RD B-2
30	SCS Runoff	2.179	2	720	8,666	------	------	------	BASIN 24
31	SCS Runoff	5.698	2	720	22,664	------	------	------	BASIN 25
32	Combine	7.877	2	720	31,329	30, 31	------	------	CULVERT RD F-1
33	SCS Runoff	5.296	2	720	21,064	------	------	------	BASIN 26
34	SCS Runoff	1.106	2	720	4,399	------	------	------	BASIN 27

Hydrograph Summary Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
35	SCS Runoff	4.240	2	720	16,864	------	------	------	BASIN 28
36	SCS Runoff	6.603	2	720	26,263	------	------	------	BASIN 29
37	SCS Runoff	2.413	2	720	9,599	------	------	------	BASIN 30
38	Combine	17.24	2	720	68,591	33, 34, 35, 36,	------	------	CULVERT RD D-2
39	Combine	19.66	2	720	78,190	37, 38	------	------	CULVERT RD D-1
40	SCS Runoff	0.261	1	715	541	------	------	------	RESIDENTIAL ROAD

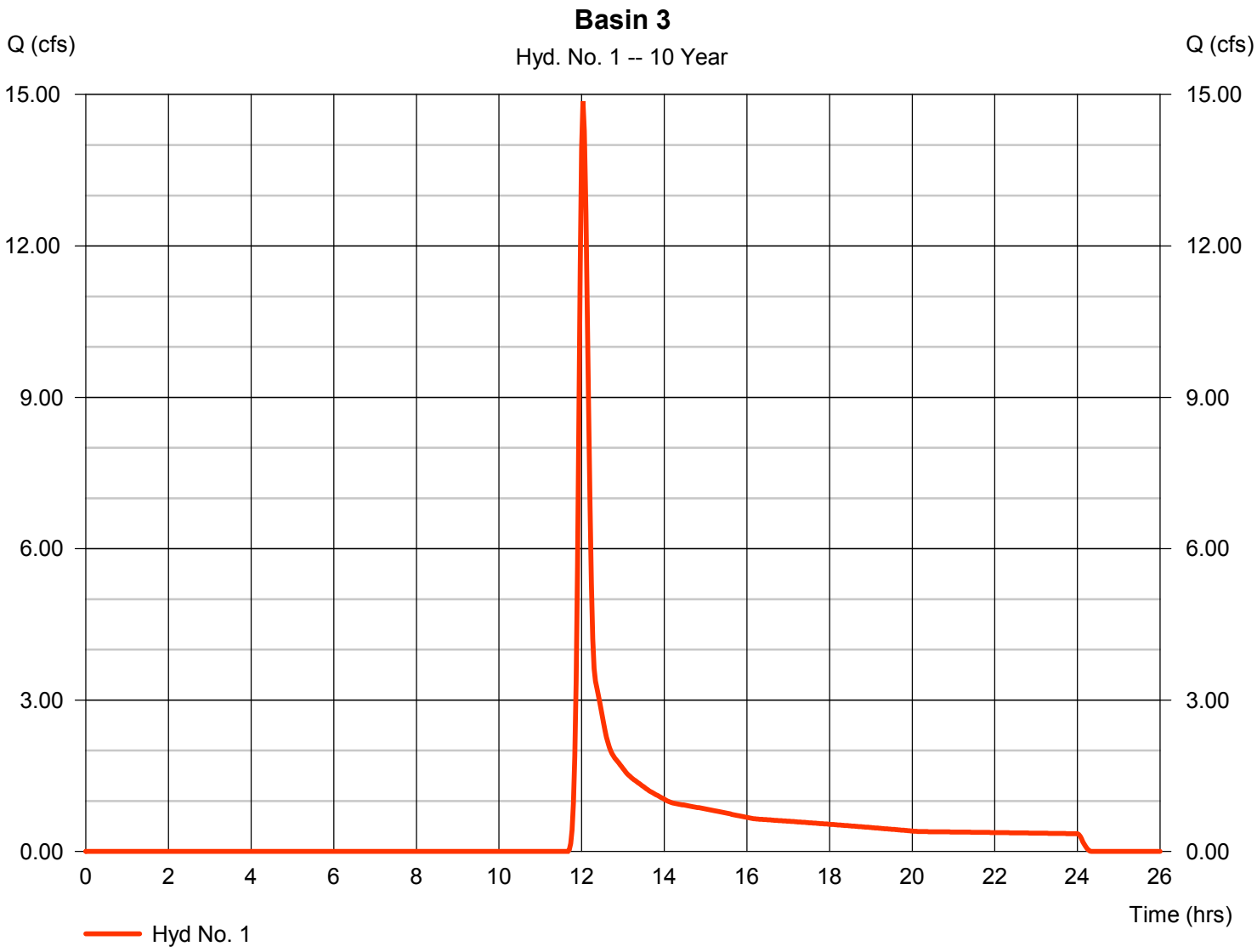
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 Thursday, Nov 1, 2012

Hyd. No. 1

Basin 3

Hydrograph type	= SCS Runoff	Peak discharge	= 14.86 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.03 hrs
Time interval	= 2 min	Hyd. volume	= 44,967 cuft
Drainage area	= 24.460 ac	Curve number	= 71
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 11.40 min
Total precip.	= 2.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



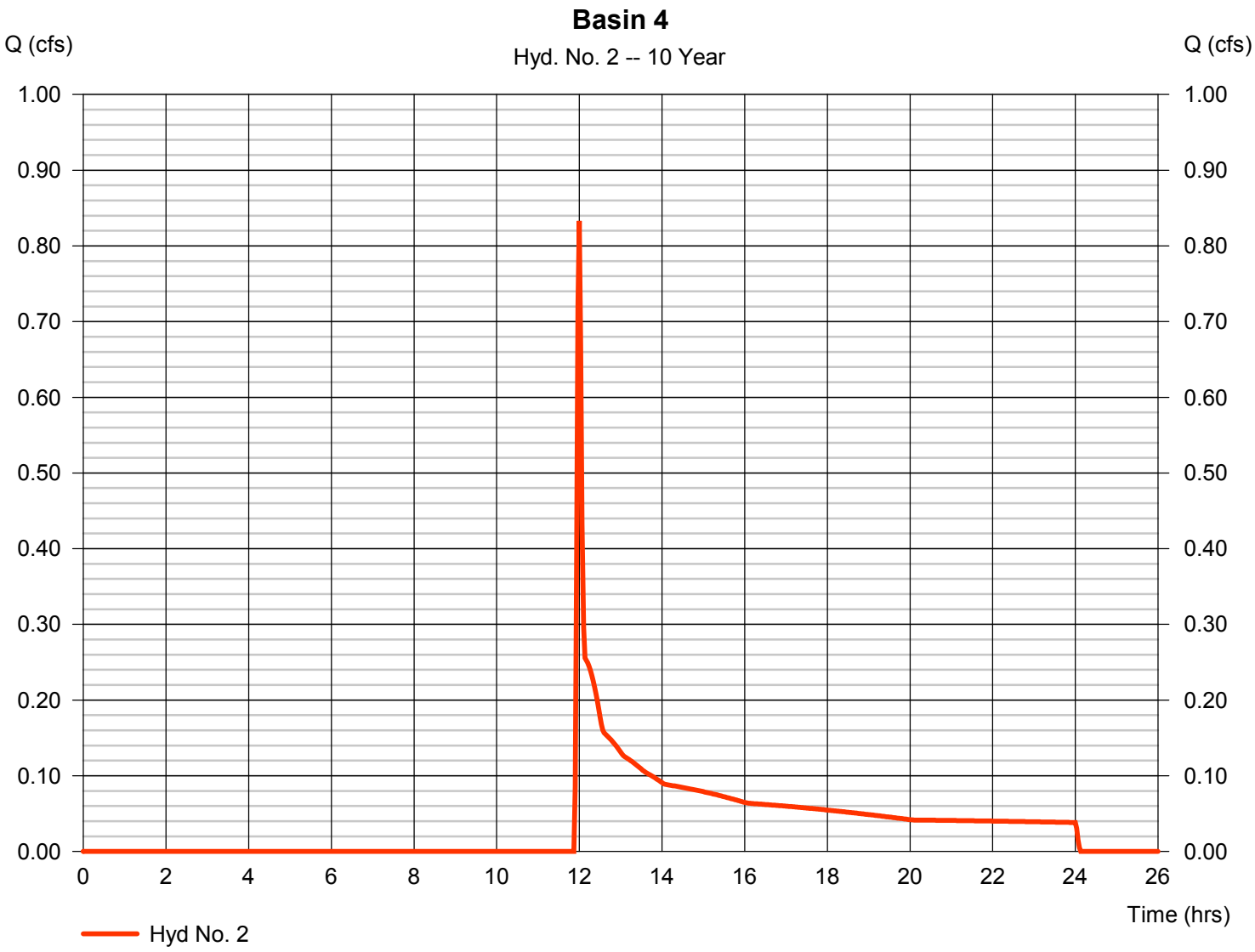
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 Thursday, Nov 1, 2012

Hyd. No. 2

Basin 4

Hydrograph type	= SCS Runoff	Peak discharge	= 0.833 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.00 hrs
Time interval	= 2 min	Hyd. volume	= 3,313 cuft
Drainage area	= 4.970 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 2.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



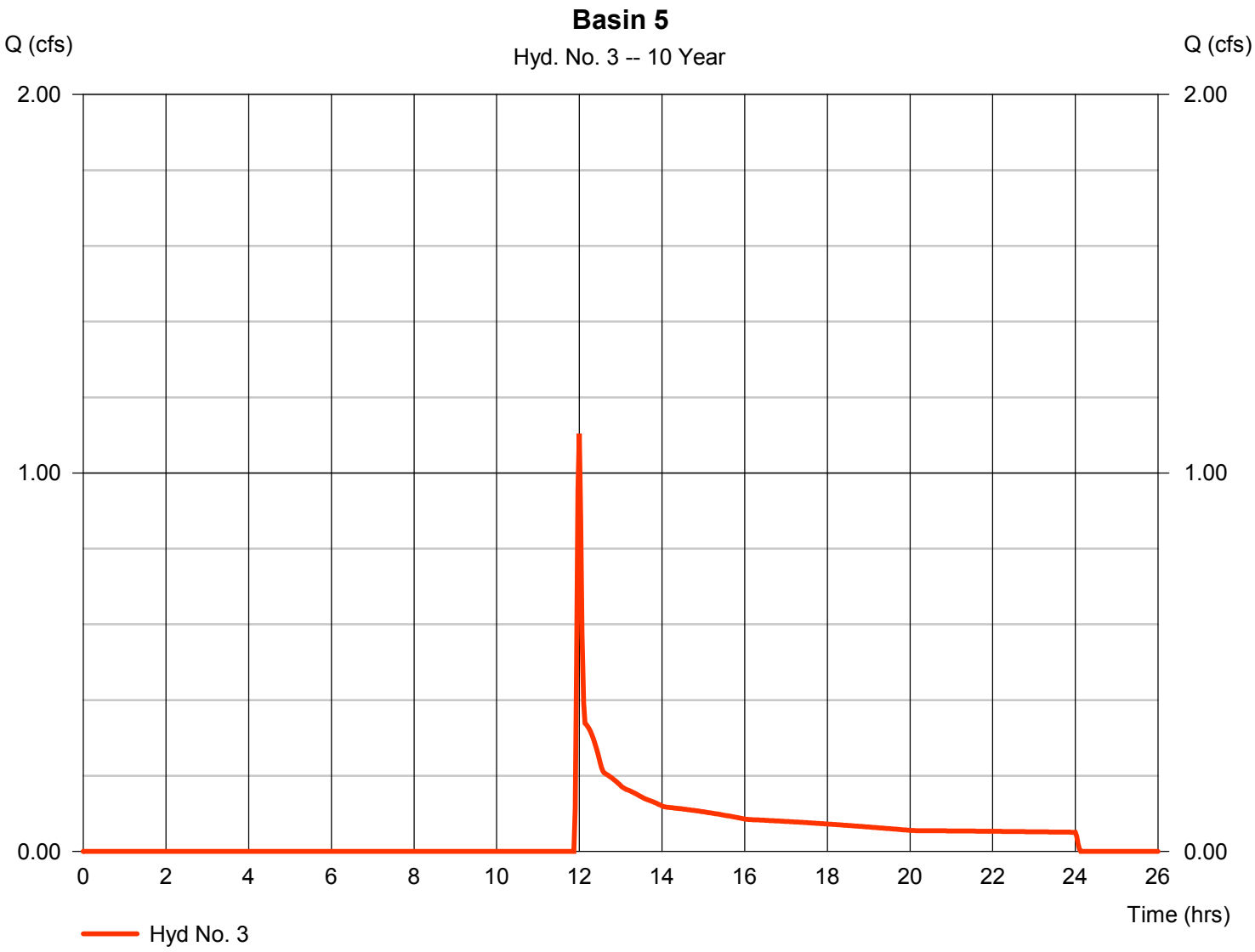
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 Thursday, Nov 1, 2012

Hyd. No. 3

Basin 5

Hydrograph type	= SCS Runoff	Peak discharge	= 1.104 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.00 hrs
Time interval	= 2 min	Hyd. volume	= 4,393 cuft
Drainage area	= 6.590 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 3.80 min
Total precip.	= 2.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



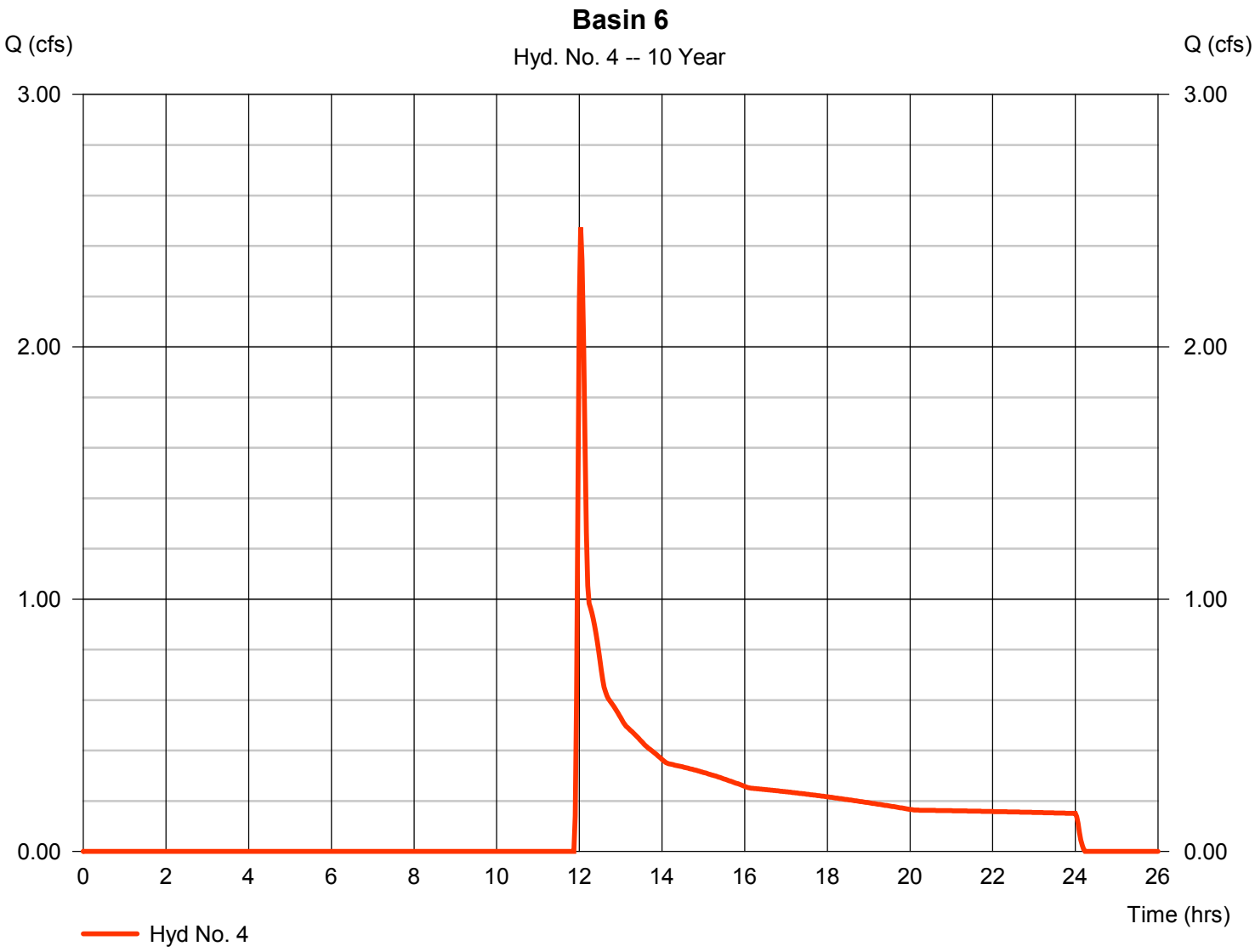
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 Thursday, Nov 1, 2012

Hyd. No. 4

Basin 6

Hydrograph type	= SCS Runoff	Peak discharge	= 2.473 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.03 hrs
Time interval	= 2 min	Hyd. volume	= 13,054 cuft
Drainage area	= 18.360 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 7.40 min
Total precip.	= 2.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



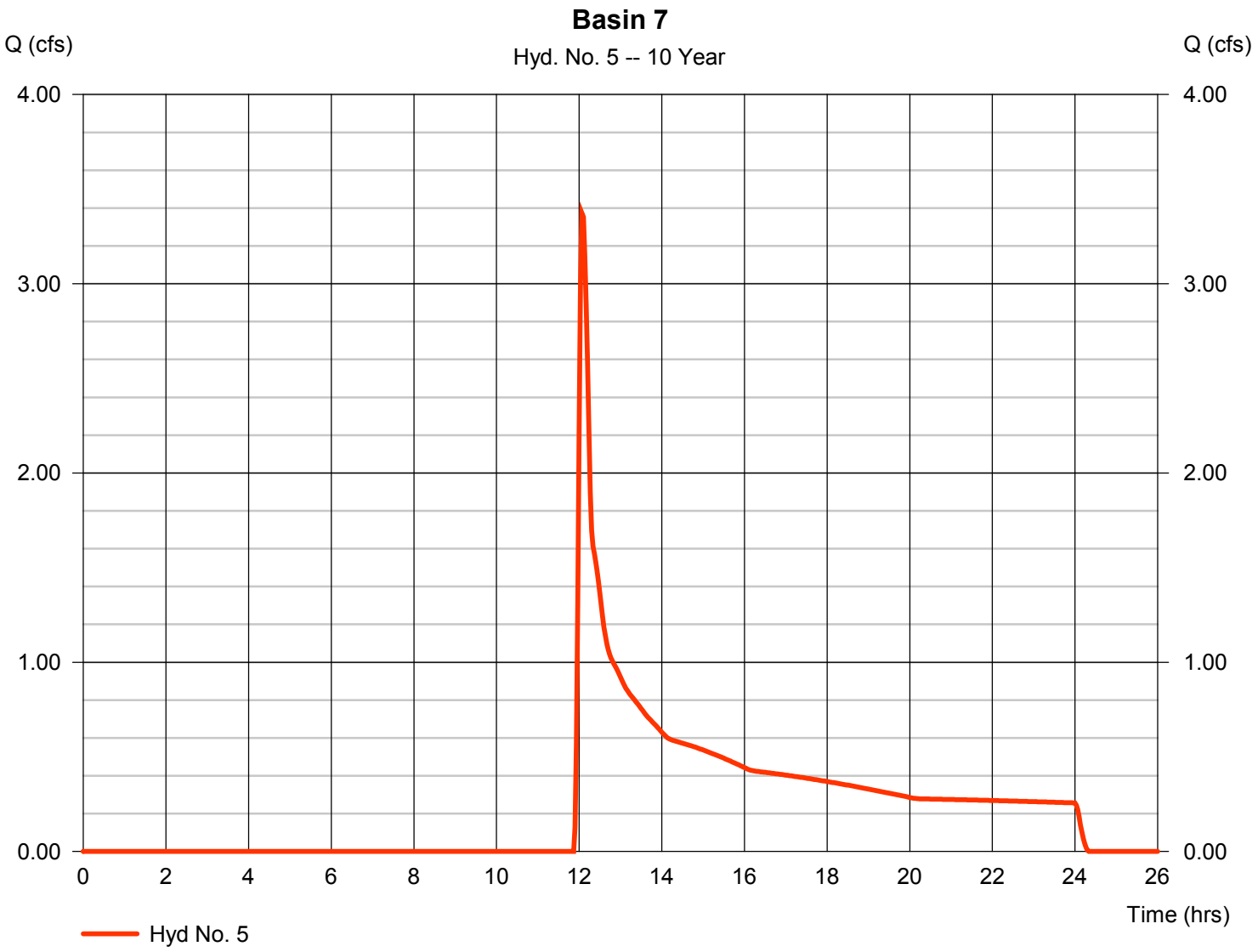
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 Thursday, Nov 1, 2012

Hyd. No. 5

Basin 7

Hydrograph type	= SCS Runoff	Peak discharge	= 3.374 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.07 hrs
Time interval	= 2 min	Hyd. volume	= 22,188 cuft
Drainage area	= 30.260 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 11.30 min
Total precip.	= 2.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



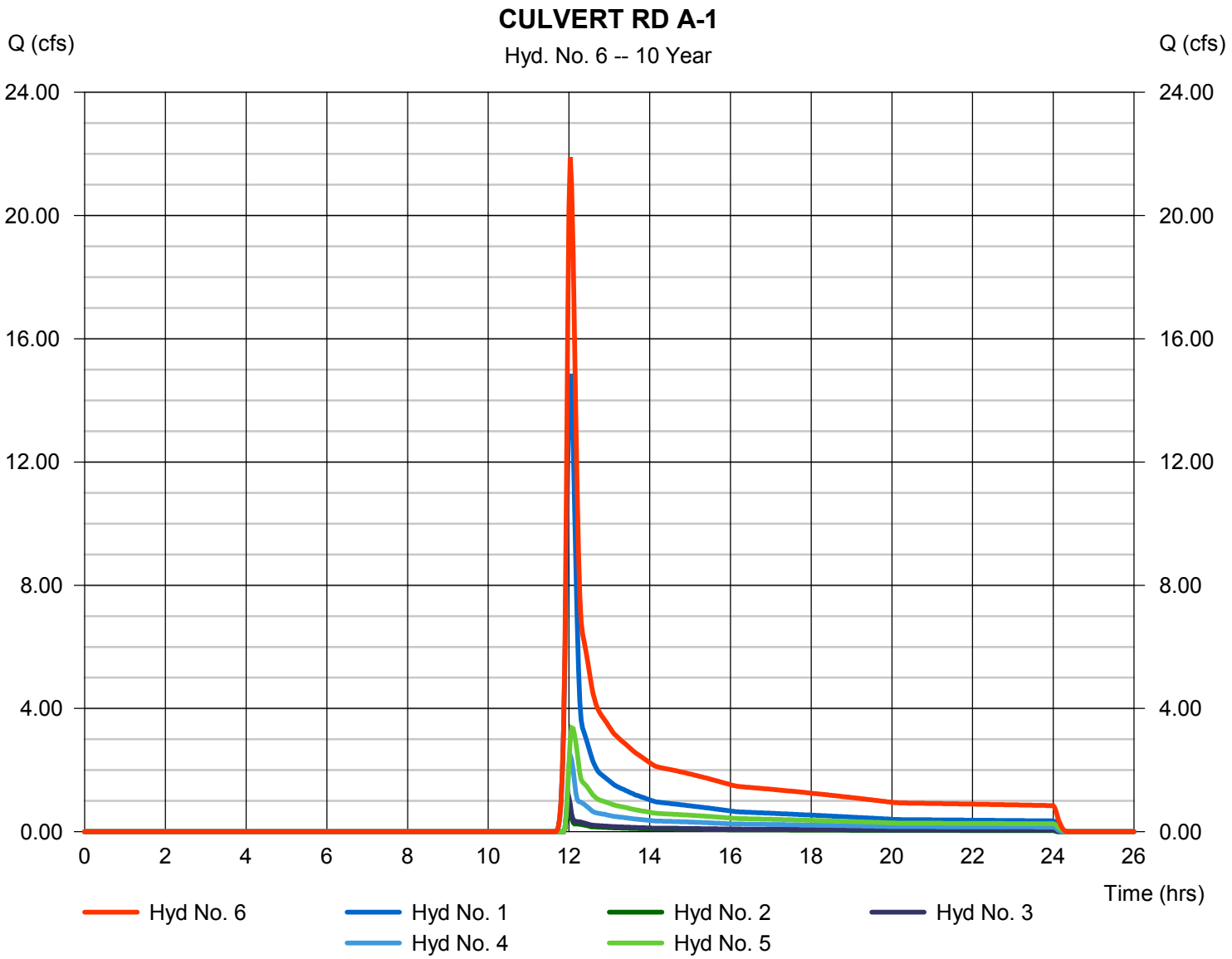
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 Thursday, Nov 1, 2012

Hyd. No. 6

CULVERT RD A-1

Hydrograph type	= Combine	Peak discharge	= 21.90 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.03 hrs
Time interval	= 2 min	Hyd. volume	= 87,914 cuft
Inflow hyds.	= 1, 2, 3, 4, 5	Contrib. drain. area	= 84.640 ac



Hydrograph Report

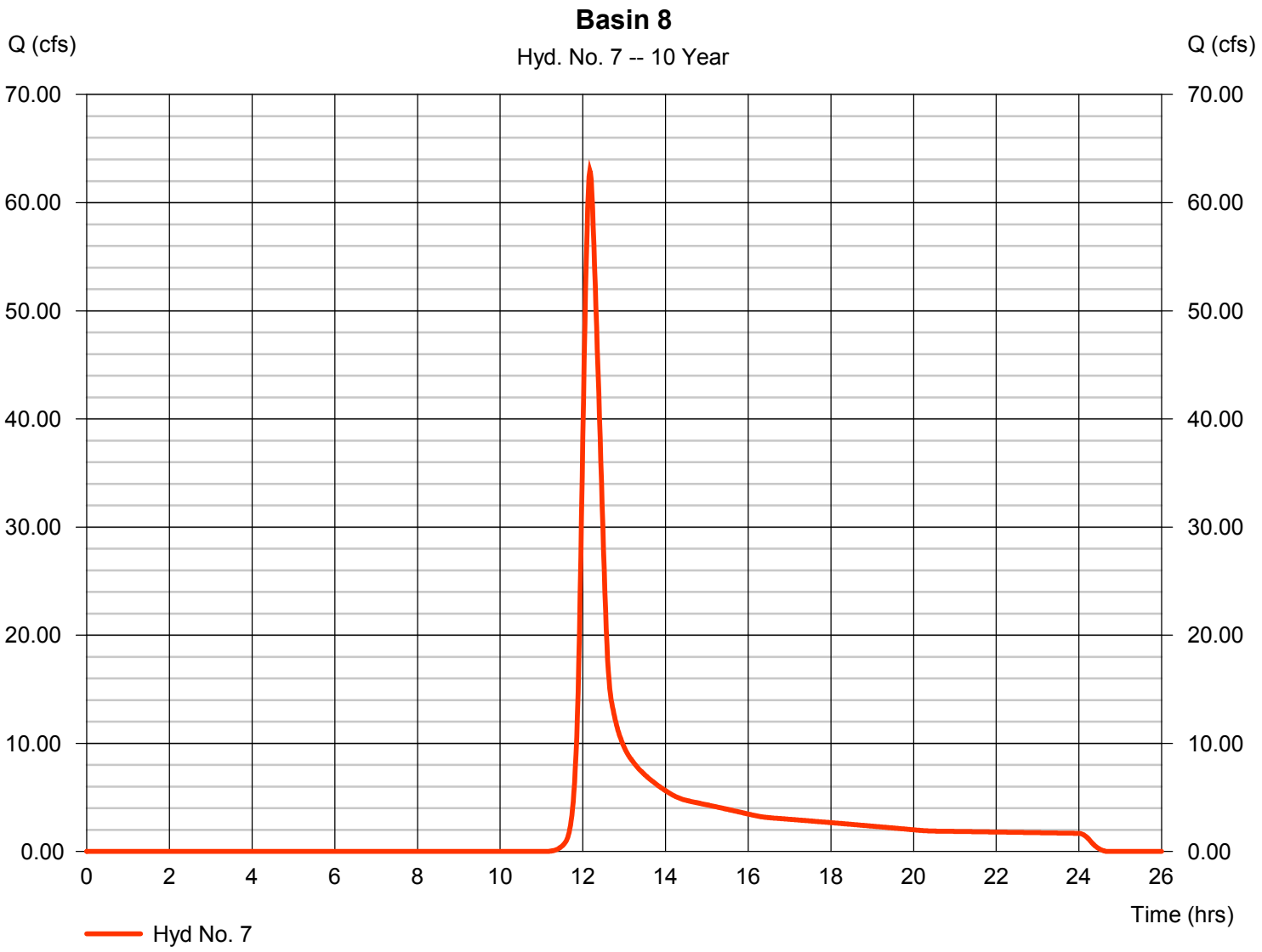
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 Thursday, Nov 1, 2012

Hyd. No. 7

Basin 8

Hydrograph type	= SCS Runoff	Peak discharge	= 62.94 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.17 hrs
Time interval	= 1 min	Hyd. volume	= 255,046 cuft
Drainage area	= 94.170 ac	Curve number	= 77*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 27.00 min
Total precip.	= 2.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(8.480 x 98) + (82.350 x 74) + (3.340 x 89)] / 94.170



Hydrograph Report

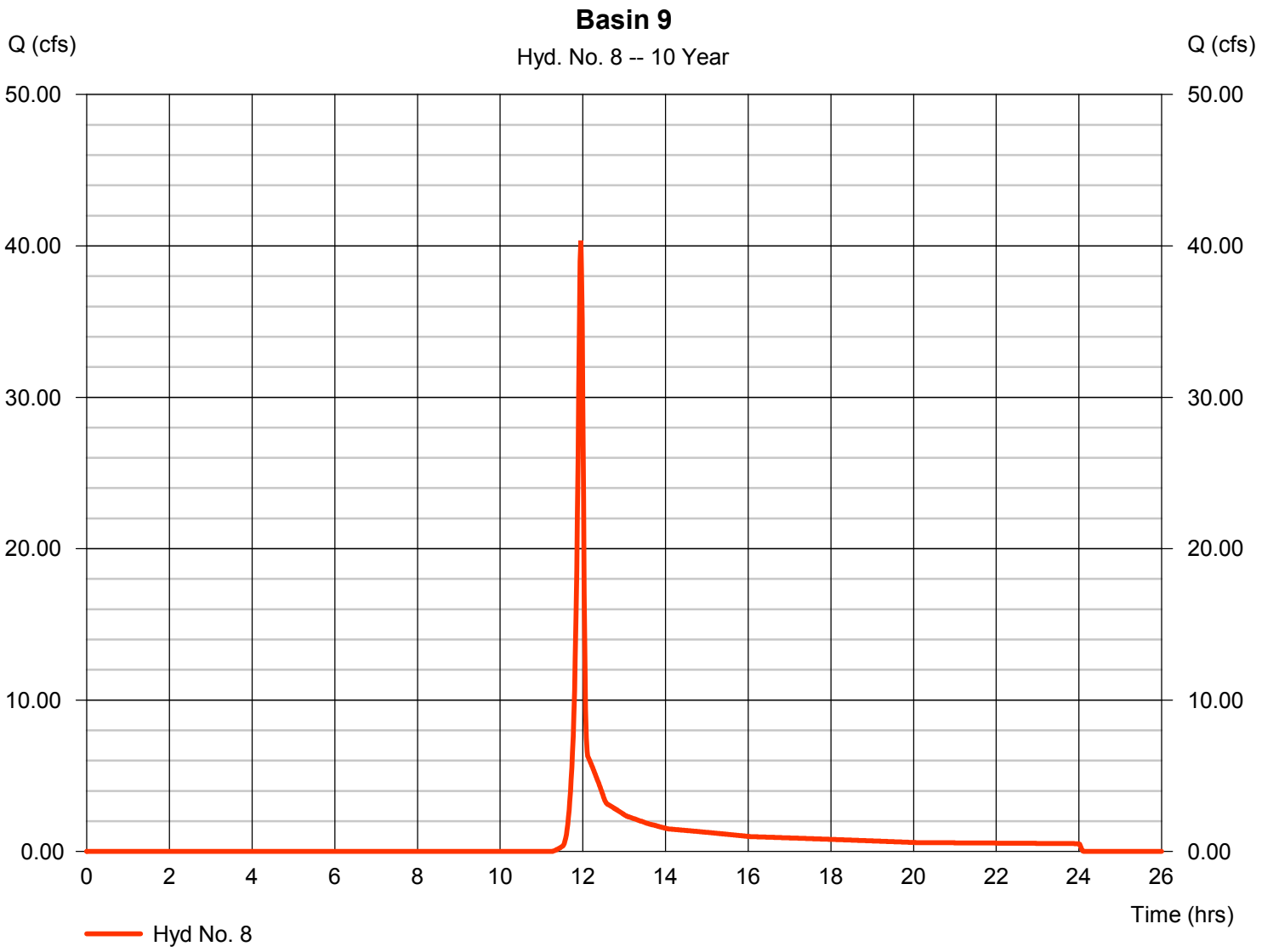
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 Thursday, Nov 1, 2012

Hyd. No. 8

Basin 9

Hydrograph type	= SCS Runoff	Peak discharge	= 40.36 cfs
Storm frequency	= 10 yrs	Time to peak	= 11.95 hrs
Time interval	= 1 min	Hyd. volume	= 76,922 cuft
Drainage area	= 30.510 ac	Curve number	= 76*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 4.20 min
Total precip.	= 2.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(28.400 x 74) + (2.110 x 98)] / 30.510



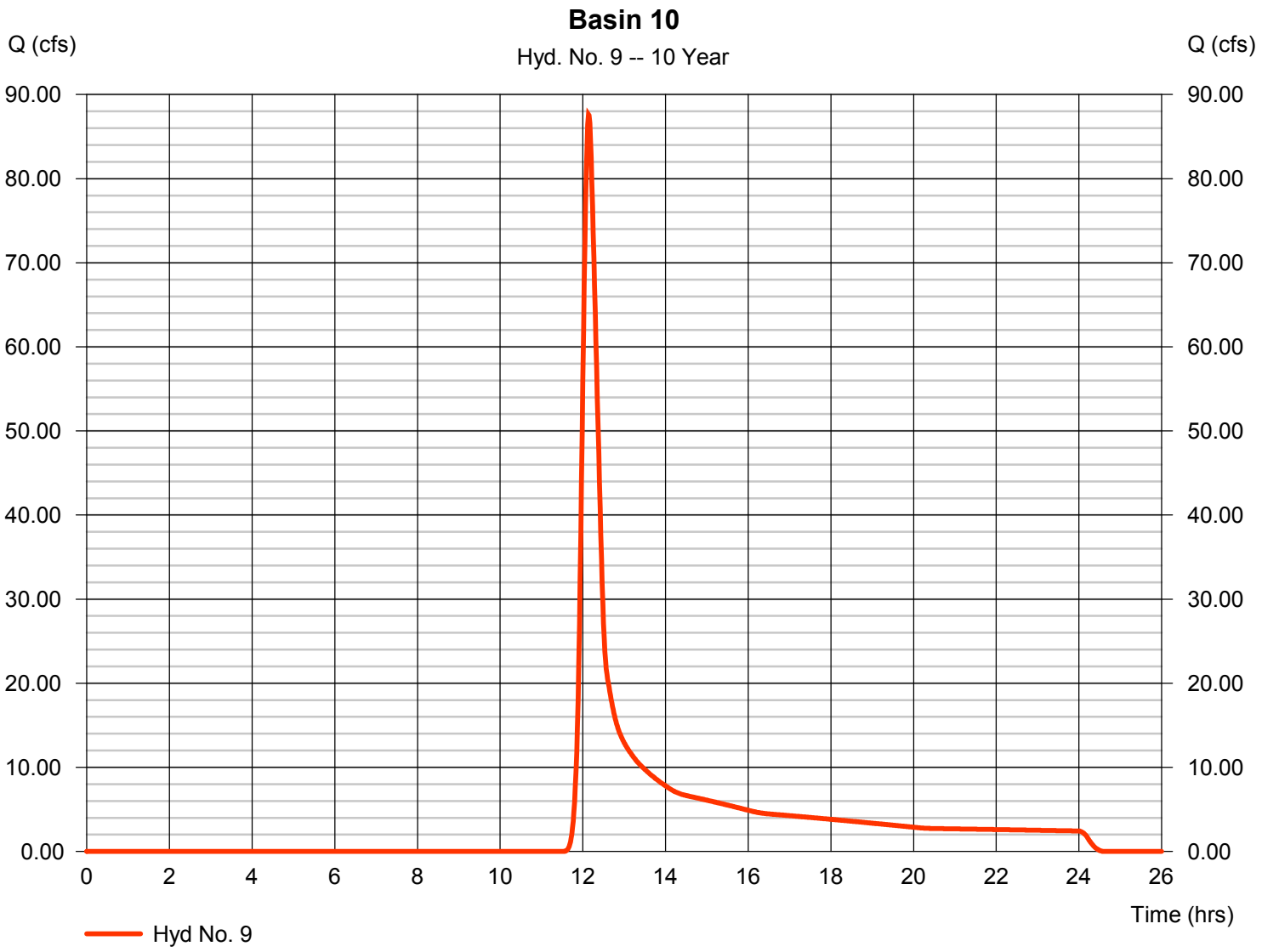
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 Thursday, Nov 1, 2012

Hyd. No. 9

Basin 10

Hydrograph type	= SCS Runoff	Peak discharge	= 87.61 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.13 hrs
Time interval	= 1 min	Hyd. volume	= 340,815 cuft
Drainage area	= 155.750 ac	Curve number	= 74
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 23.30 min
Total precip.	= 2.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



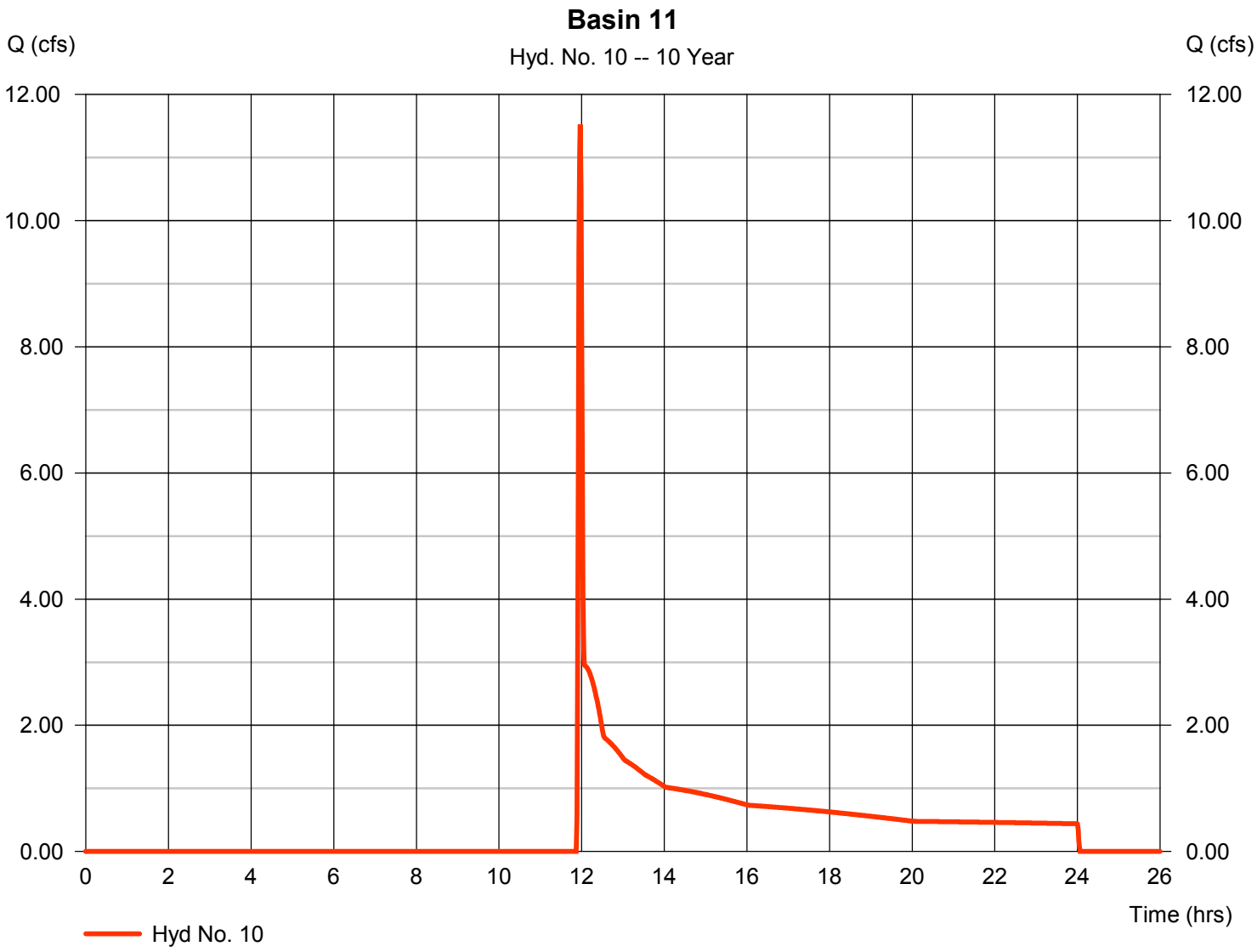
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 Thursday, Nov 1, 2012

Hyd. No. 10

Basin 11

Hydrograph type	= SCS Runoff	Peak discharge	= 11.52 cfs
Storm frequency	= 10 yrs	Time to peak	= 11.97 hrs
Time interval	= 1 min	Hyd. volume	= 38,062 cuft
Drainage area	= 57.100 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 2.00 min
Total precip.	= 2.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



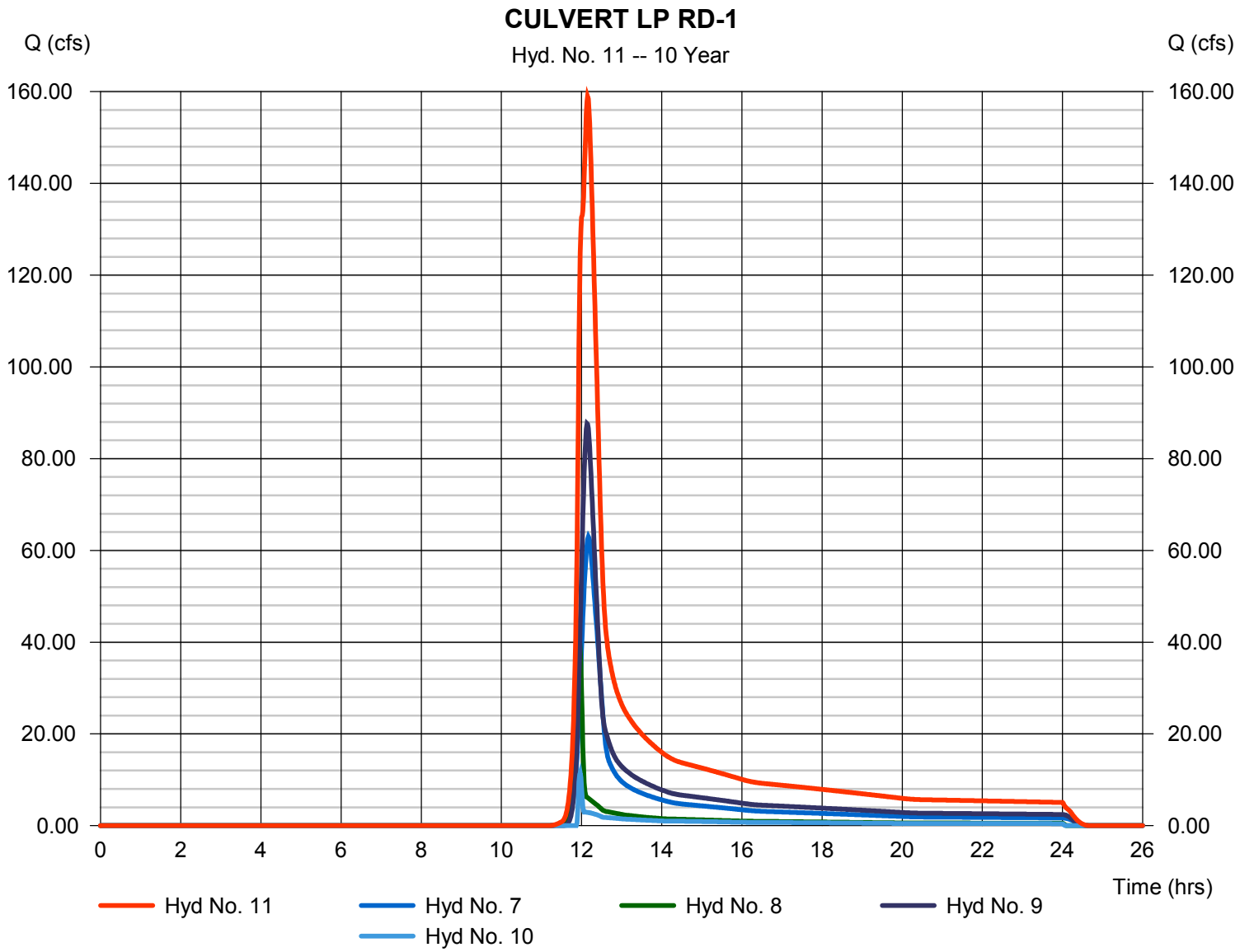
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 Thursday, Nov 1, 2012

Hyd. No. 11

CULVERT LP RD-1

Hydrograph type	= Combine	Peak discharge	= 158.92 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.15 hrs
Time interval	= 1 min	Hyd. volume	= 710,844 cuft
Inflow hyds.	= 7, 8, 9, 10	Contrib. drain. area	= 337.530 ac



Hydrograph Report

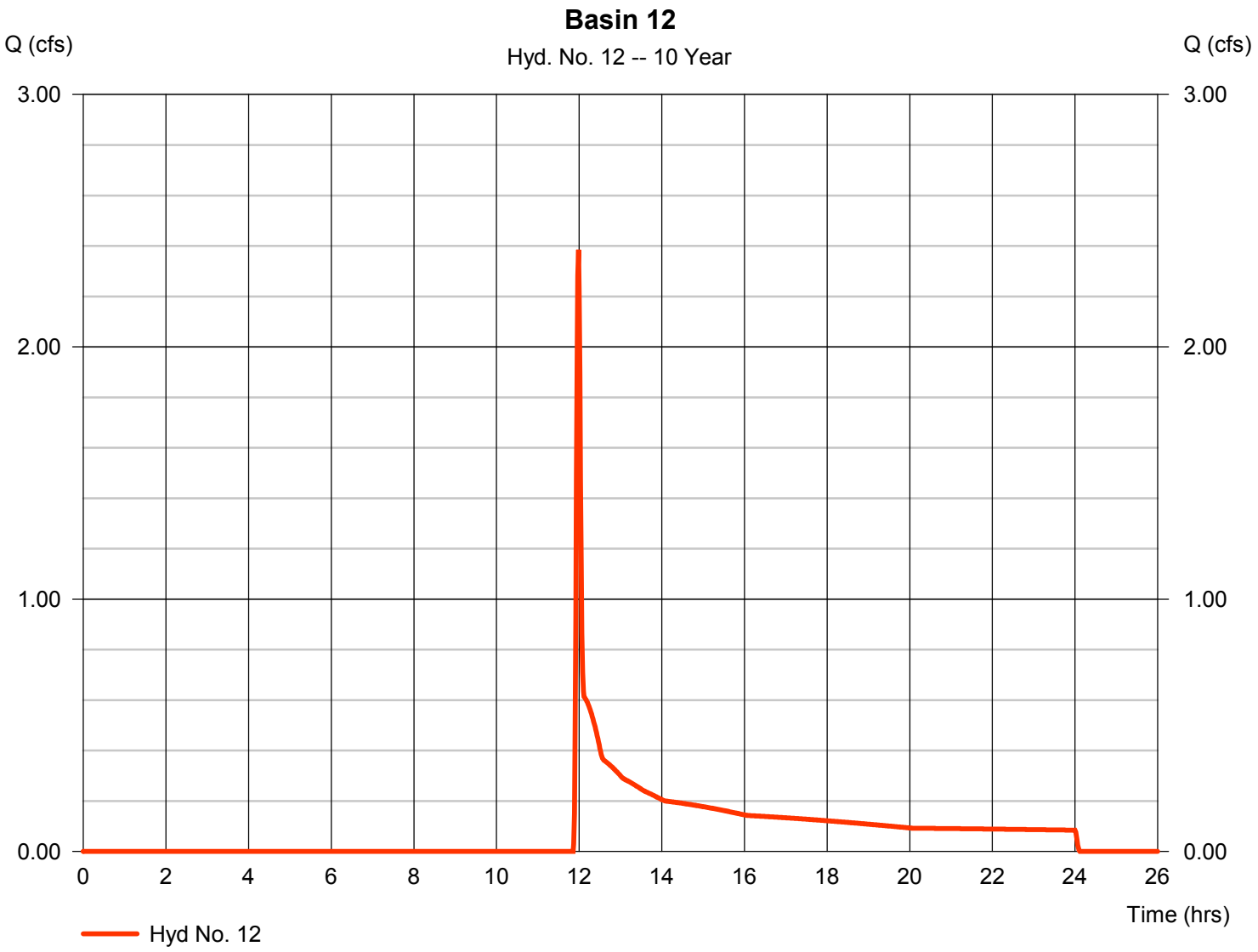
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 Thursday, Nov 1, 2012

Hyd. No. 12

Basin 12

Hydrograph type	= SCS Runoff	Peak discharge	= 2.385 cfs
Storm frequency	= 10 yrs	Time to peak	= 11.98 hrs
Time interval	= 1 min	Hyd. volume	= 7,674 cuft
Drainage area	= 9.640 ac	Curve number	= 62*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 4.50 min
Total precip.	= 2.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.060 x 98) + (9.460 x 61) + (0.120 x 85)] / 9.640



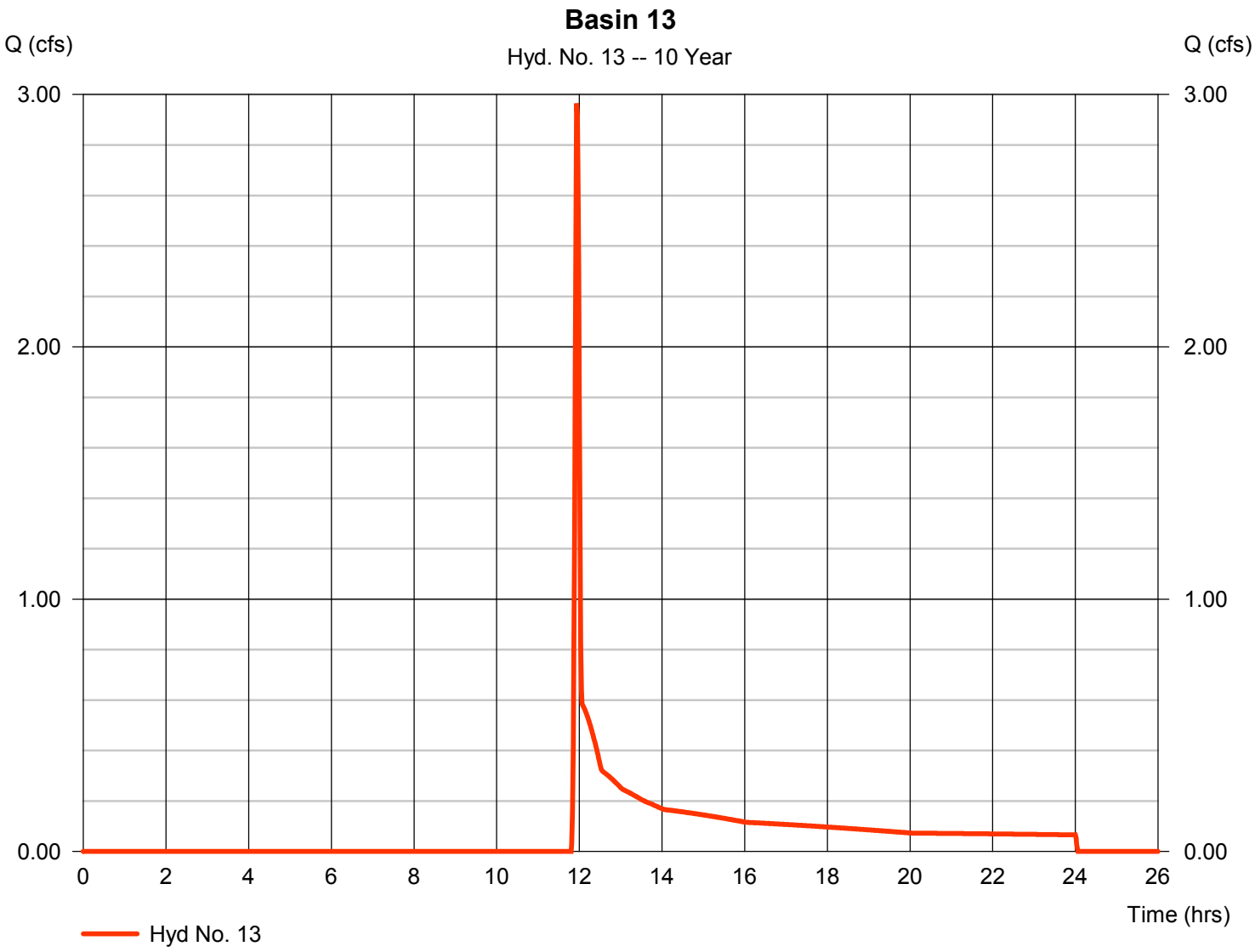
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 Thursday, Nov 1, 2012

Hyd. No. 13

Basin 13

Hydrograph type	= SCS Runoff	Peak discharge	= 2.965 cfs
Storm frequency	= 10 yrs	Time to peak	= 11.93 hrs
Time interval	= 1 min	Hyd. volume	= 6,823 cuft
Drainage area	= 6.740 ac	Curve number	= 65
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 2.30 min
Total precip.	= 2.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



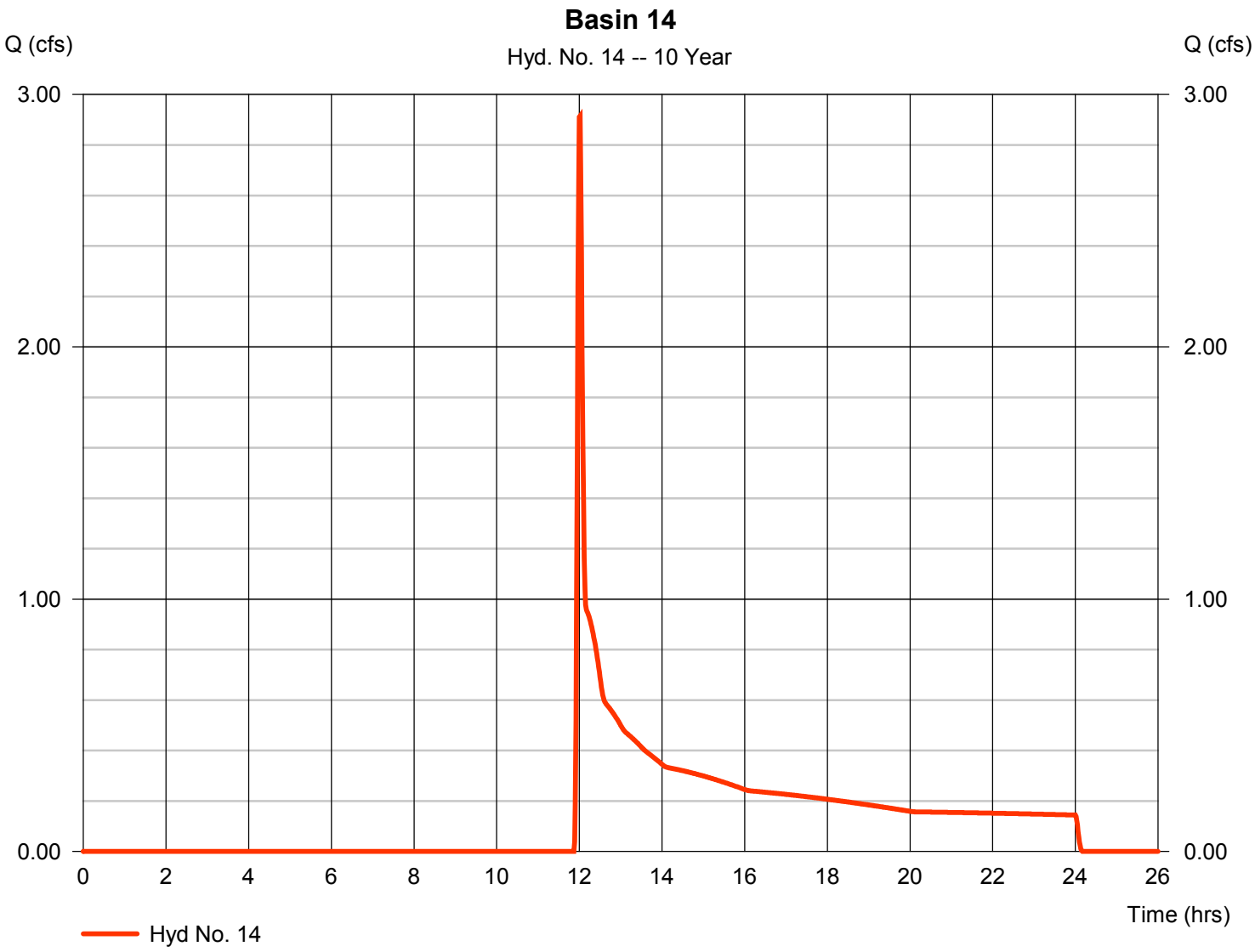
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 Thursday, Nov 1, 2012

Hyd. No. 14

Basin 14

Hydrograph type	= SCS Runoff	Peak discharge	= 2.915 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.02 hrs
Time interval	= 1 min	Hyd. volume	= 12,516 cuft
Drainage area	= 17.070 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 5.20 min
Total precip.	= 2.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydrograph Report

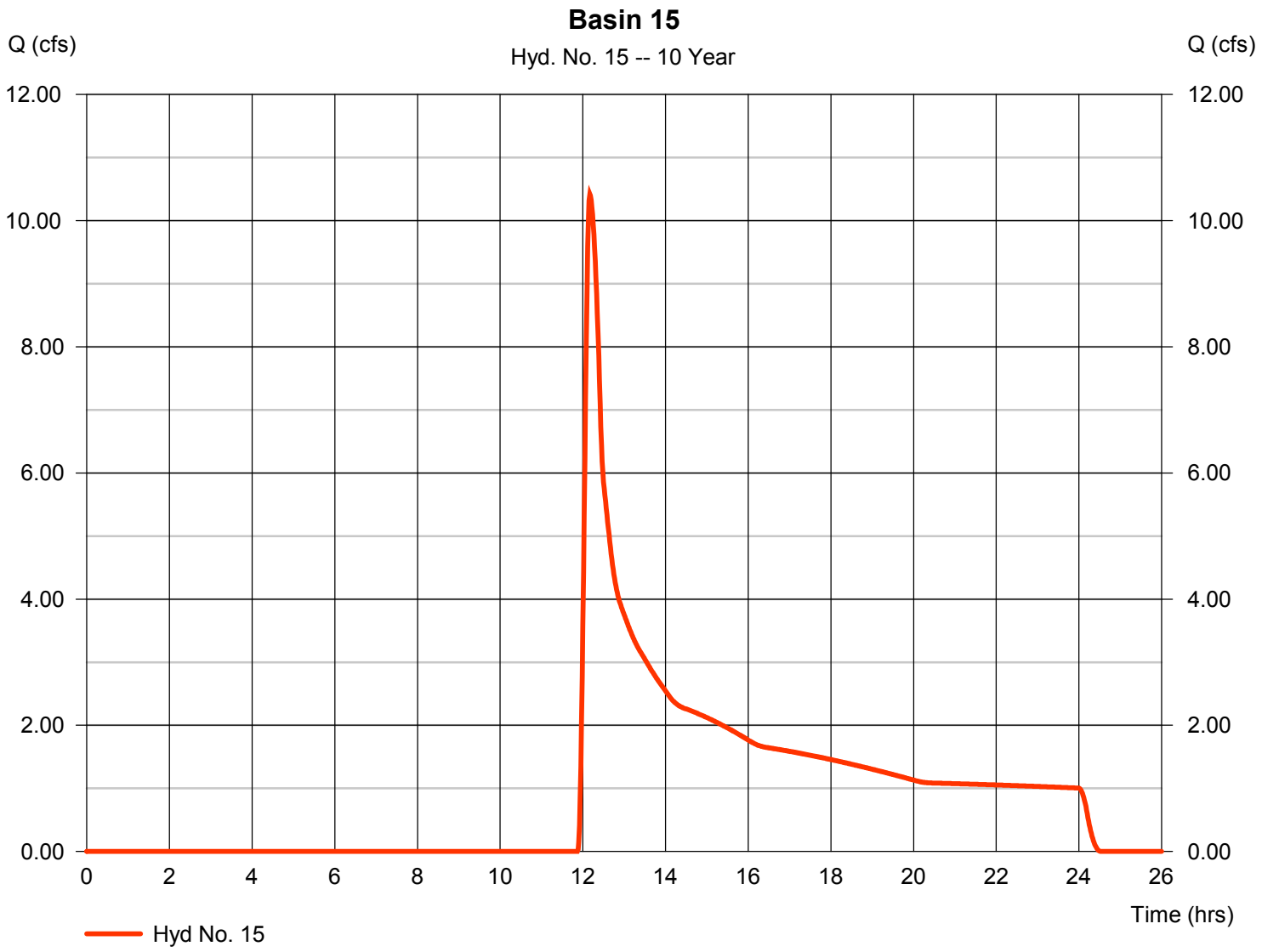
Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 Thursday, Nov 1, 2012

Hyd. No. 15

Basin 15

Hydrograph type	= SCS Runoff	Peak discharge	= 10.42 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.17 hrs
Time interval	= 1 min	Hyd. volume	= 86,737 cuft
Drainage area	= 121.990 ac	Curve number	= 61*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 20.10 min
Total precip.	= 2.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.230 x 98) + (120.310 x 61) + (1.450 x 85)] / 121.990

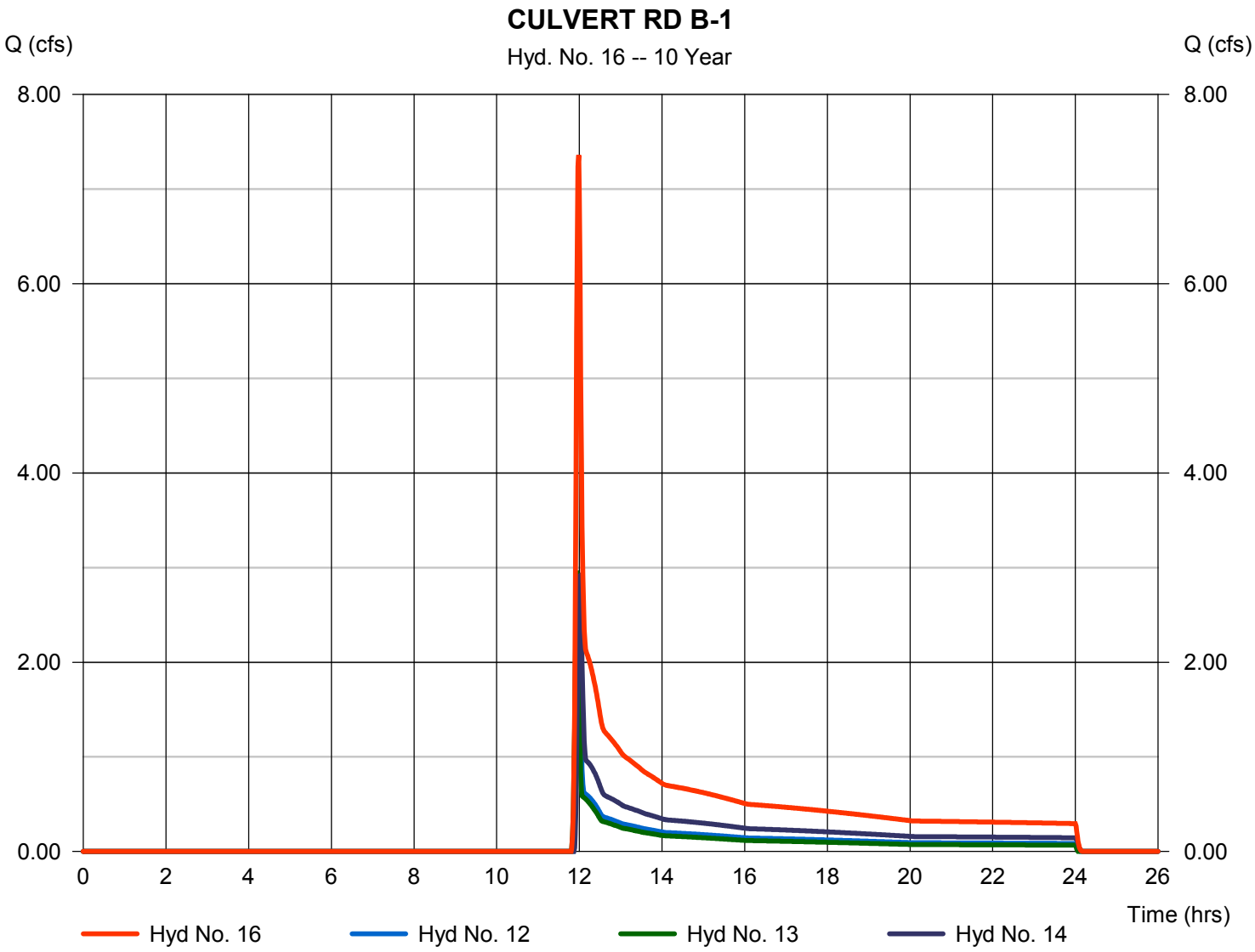


Hydrograph Report

Hyd. No. 16

CULVERT RD B-1

Hydrograph type	= Combine	Peak discharge	= 7.360 cfs
Storm frequency	= 10 yrs	Time to peak	= 11.98 hrs
Time interval	= 1 min	Hyd. volume	= 27,014 cuft
Inflow hyds.	= 12, 13, 14	Contrib. drain. area	= 33.450 ac



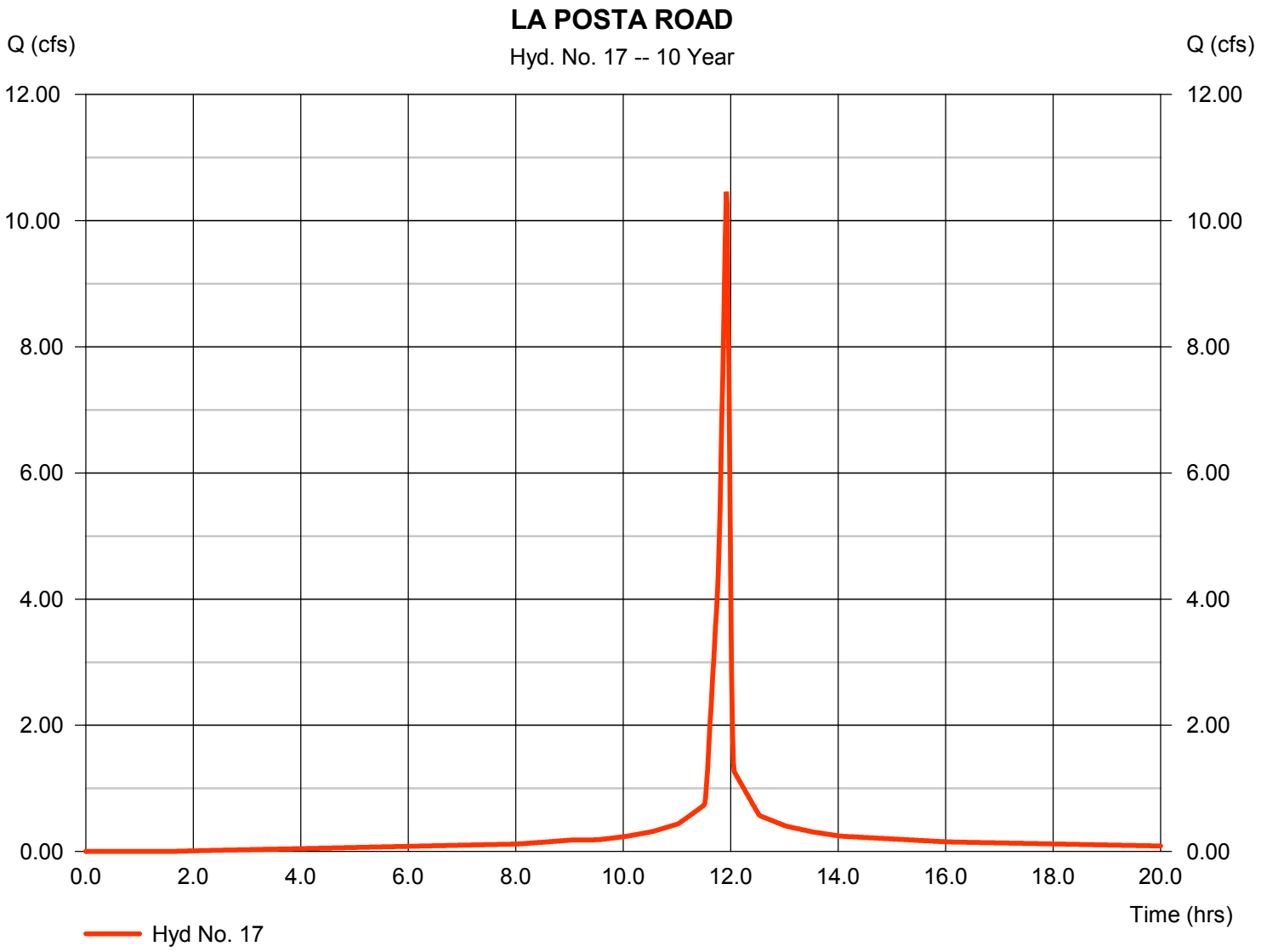
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 Thursday, Nov 1, 2012

Hyd. No. 17

LA POSTA ROAD

Hydrograph type	= SCS Runoff	Peak discharge	= 10.46 cfs
Storm frequency	= 10 yrs	Time to peak	= 11.92 hrs
Time interval	= 1 min	Hyd. volume	= 21,637 cuft
Drainage area	= 2.800 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 2.00 min
Total precip.	= 2.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



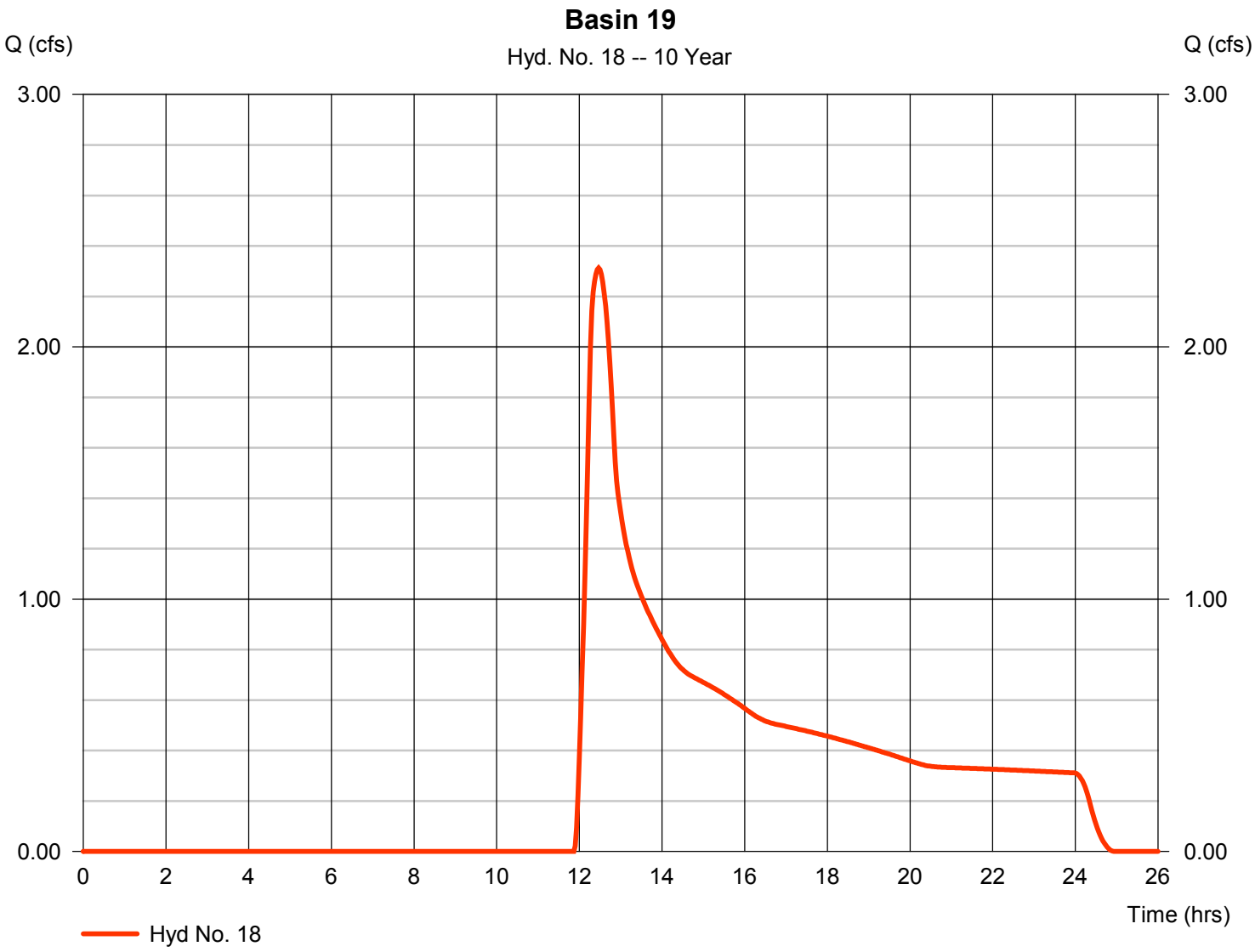
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 Thursday, Nov 1, 2012

Hyd. No. 18

Basin 19

Hydrograph type	= SCS Runoff	Peak discharge	= 2.312 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.47 hrs
Time interval	= 2 min	Hyd. volume	= 26,712 cuft
Drainage area	= 38.000 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 34.20 min
Total precip.	= 2.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

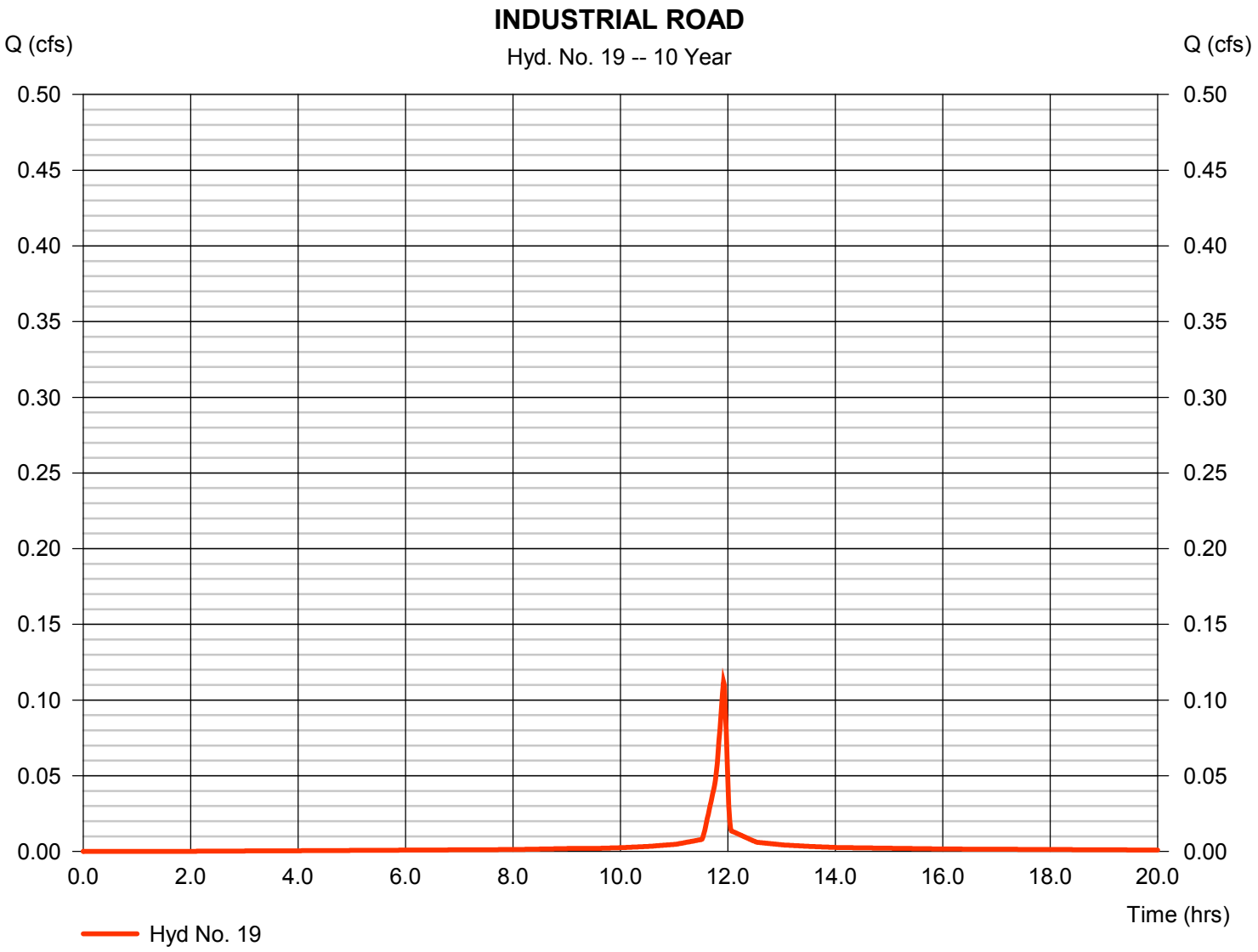


Hydrograph Report

Hyd. No. 19

INDUSTRIAL ROAD

Hydrograph type	= SCS Runoff	Peak discharge	= 0.112 cfs
Storm frequency	= 10 yrs	Time to peak	= 11.92 hrs
Time interval	= 1 min	Hyd. volume	= 232 cuft
Drainage area	= 0.030 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 2.00 min
Total precip.	= 2.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484

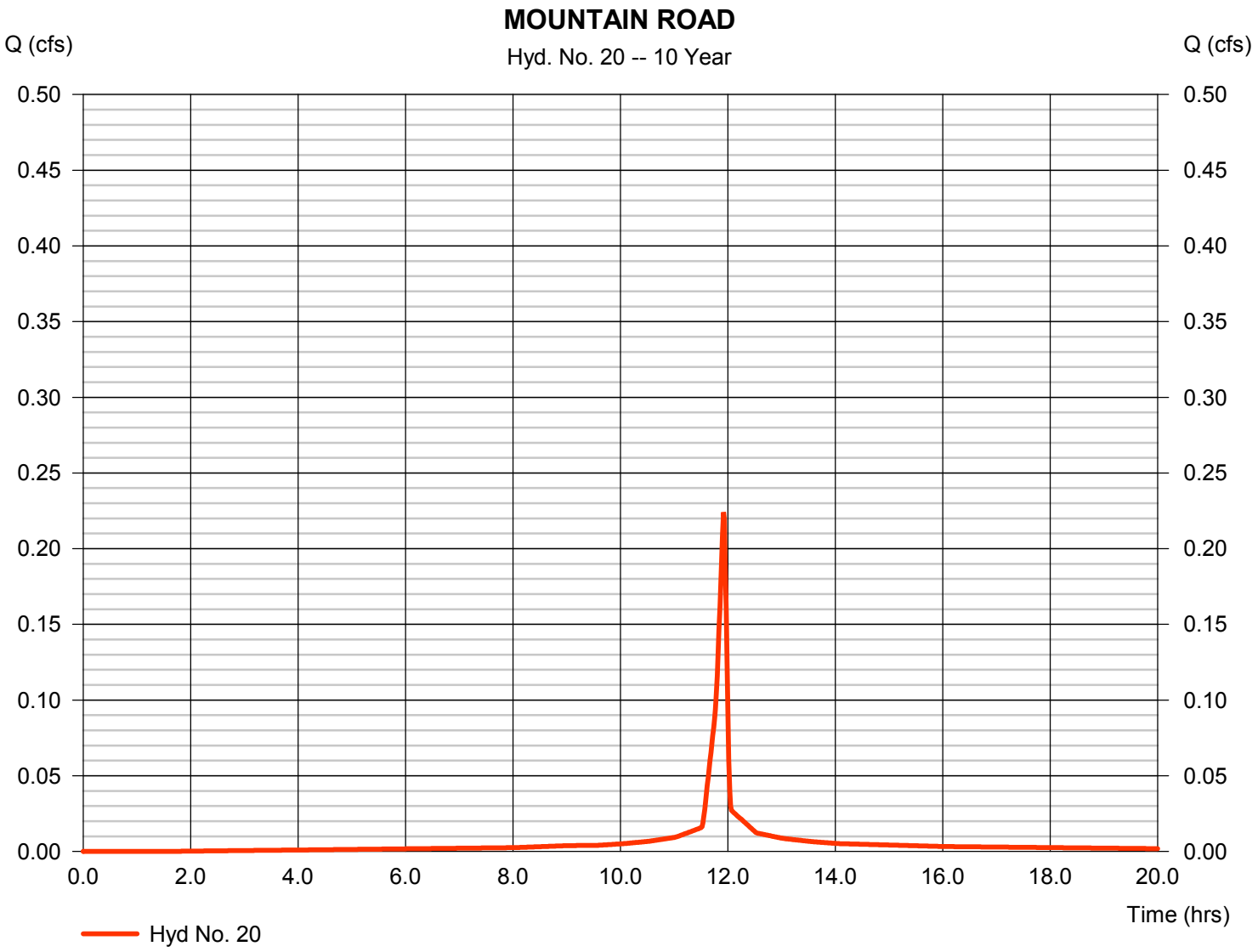


Hydrograph Report

Hyd. No. 20

MOUNTAIN ROAD

Hydrograph type	= SCS Runoff	Peak discharge	= 0.224 cfs
Storm frequency	= 10 yrs	Time to peak	= 11.92 hrs
Time interval	= 1 min	Hyd. volume	= 464 cuft
Drainage area	= 0.060 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 2.00 min
Total precip.	= 2.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



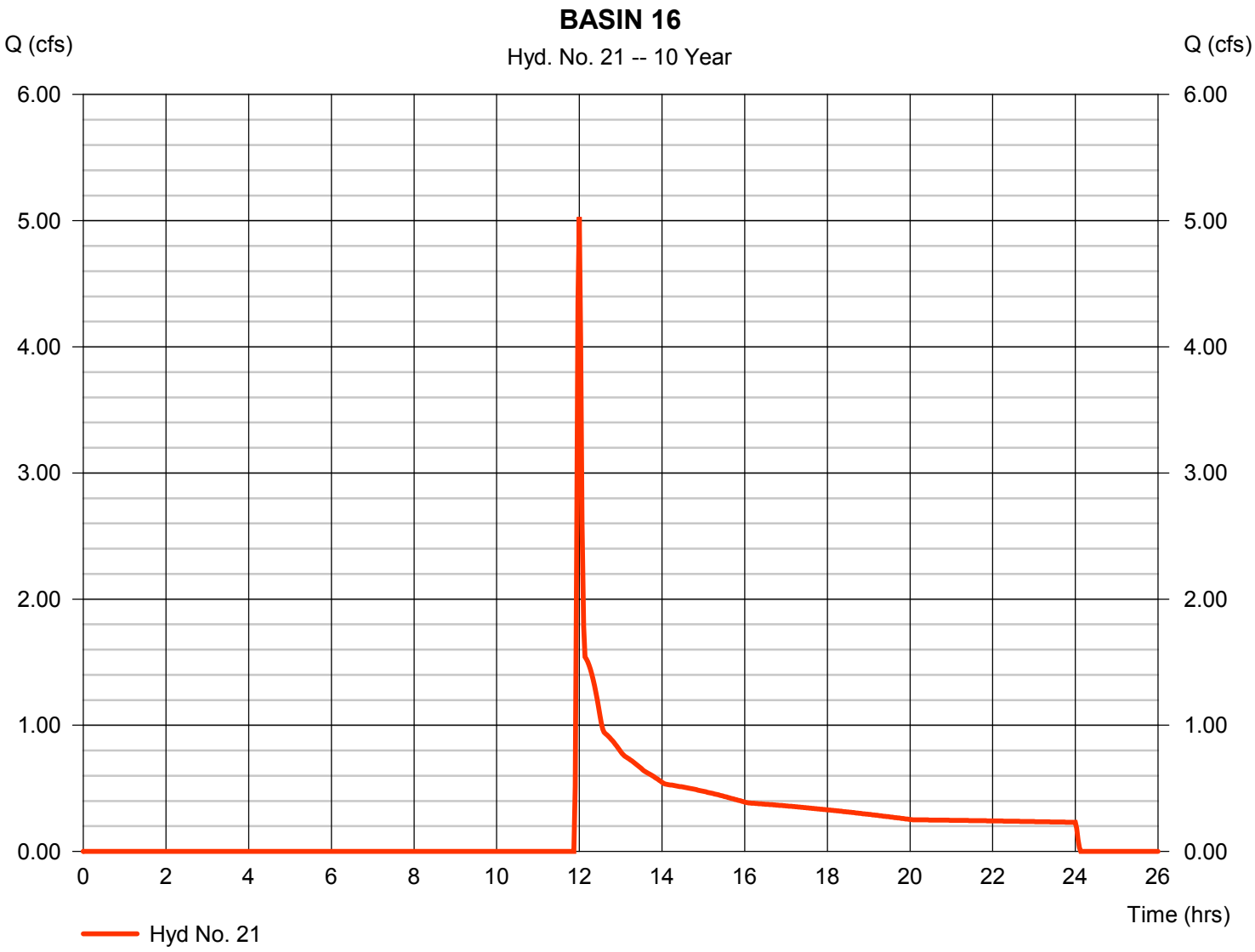
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 Thursday, Nov 1, 2012

Hyd. No. 21

BASIN 16

Hydrograph type	= SCS Runoff	Peak discharge	= 5.028 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.00 hrs
Time interval	= 2 min	Hyd. volume	= 19,997 cuft
Drainage area	= 30.000 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 2.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



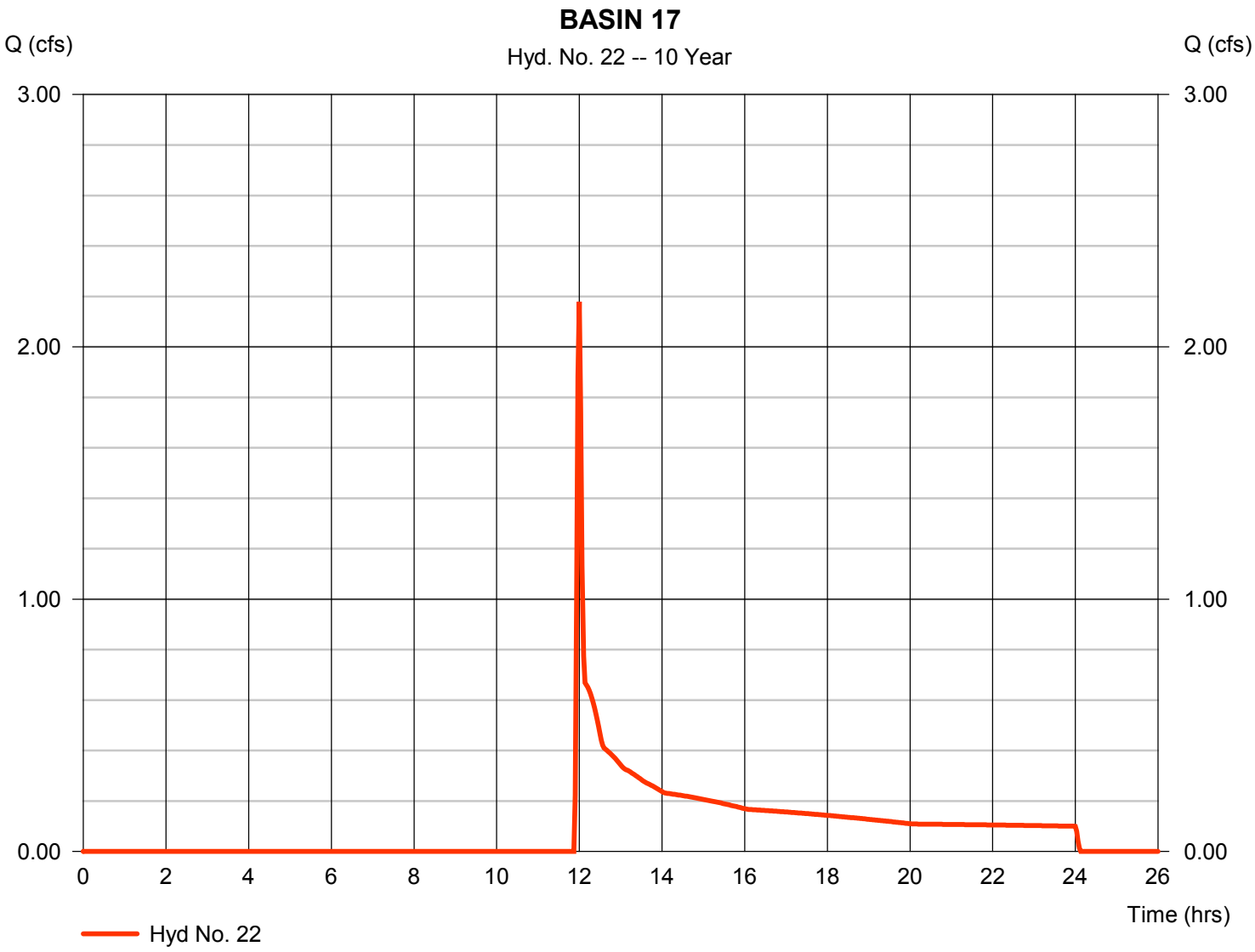
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 Thursday, Nov 1, 2012

Hyd. No. 22

BASIN 17

Hydrograph type	= SCS Runoff	Peak discharge	= 2.179 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.00 hrs
Time interval	= 2 min	Hyd. volume	= 8,666 cuft
Drainage area	= 13.000 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 2.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



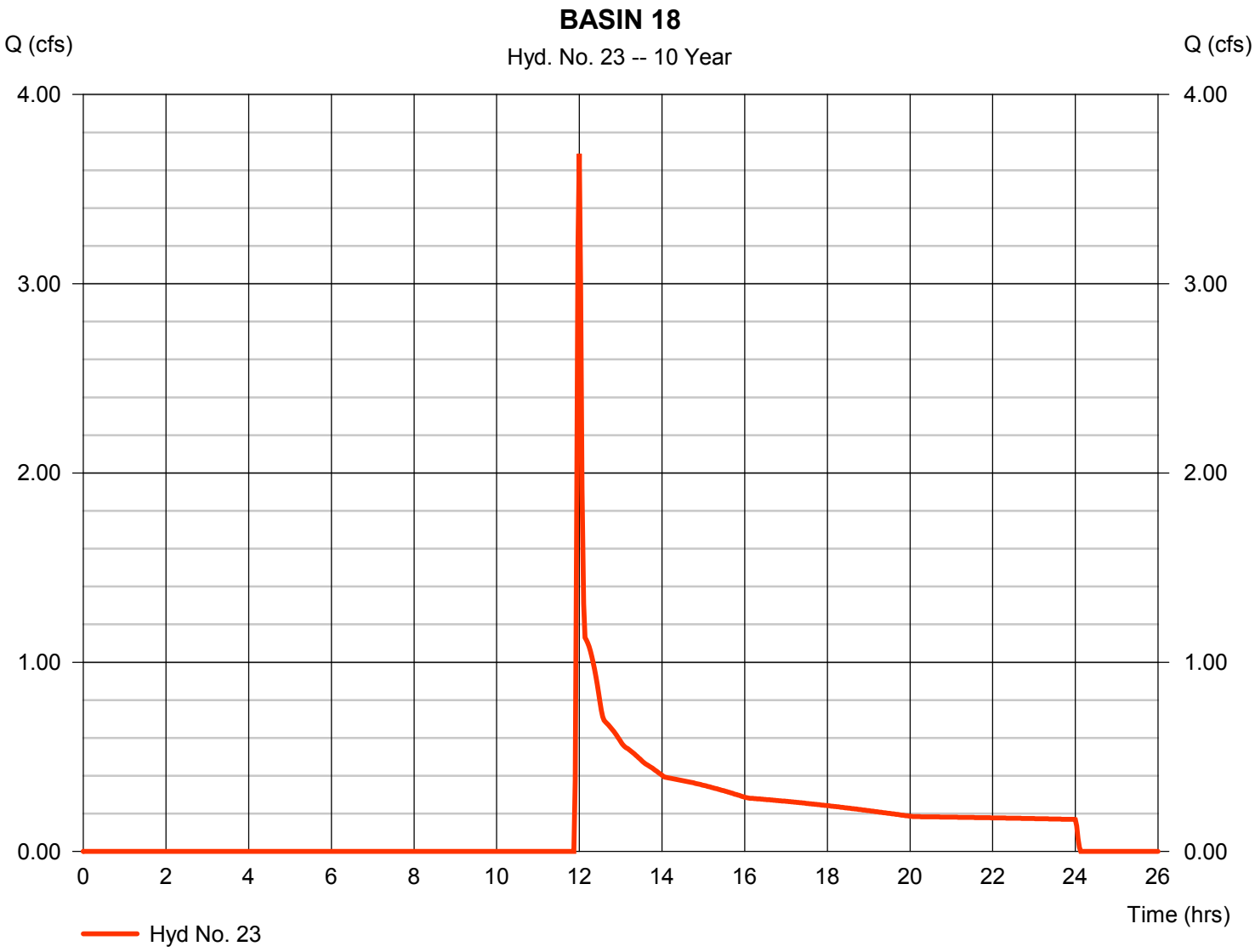
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 Thursday, Nov 1, 2012

Hyd. No. 23

BASIN 18

Hydrograph type	= SCS Runoff	Peak discharge	= 3.687 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.00 hrs
Time interval	= 2 min	Hyd. volume	= 14,665 cuft
Drainage area	= 22.000 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 2.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



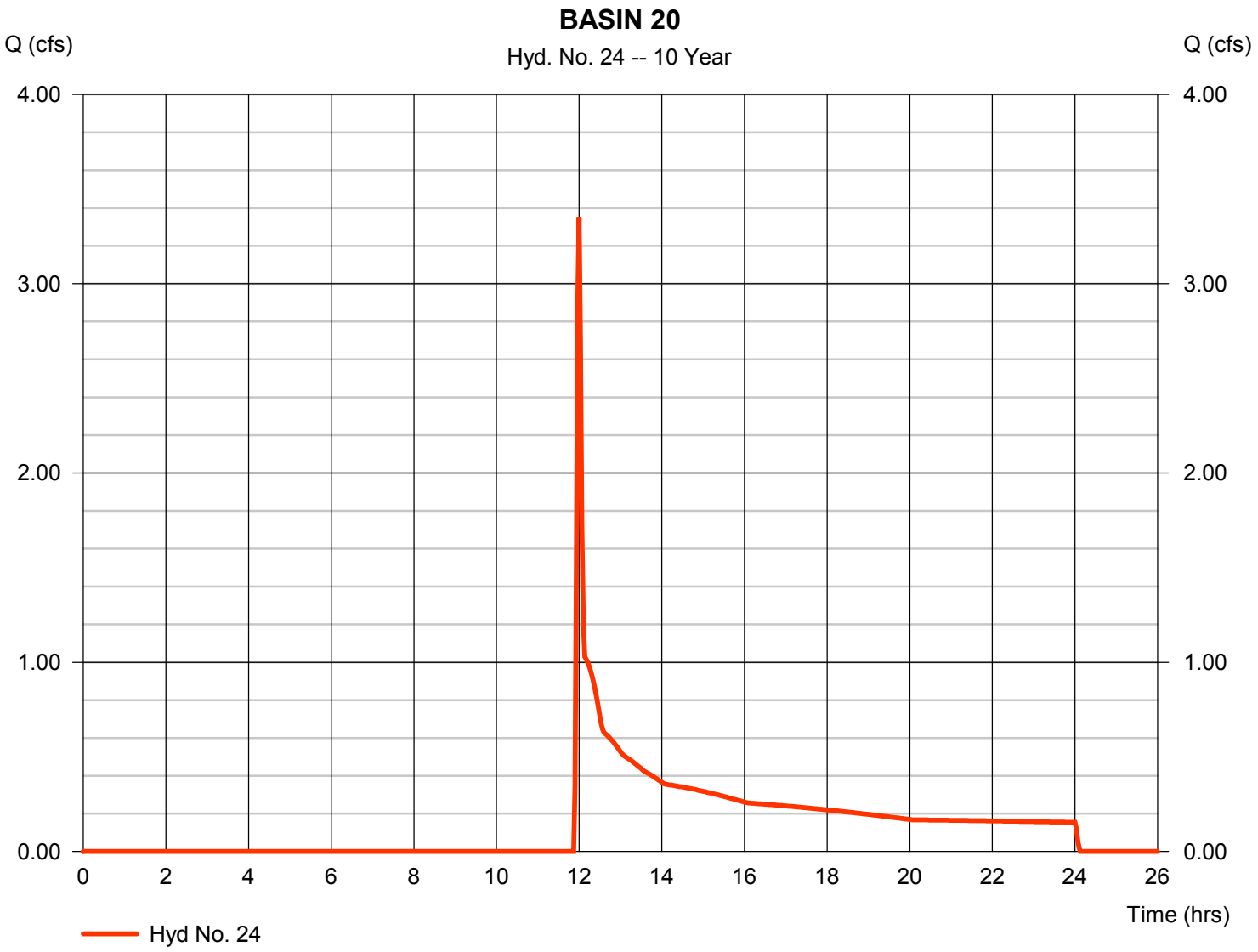
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 Thursday, Nov 1, 2012

Hyd. No. 24

BASIN 20

Hydrograph type	= SCS Runoff	Peak discharge	= 3.352 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.00 hrs
Time interval	= 2 min	Hyd. volume	= 13,332 cuft
Drainage area	= 20.000 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 2.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



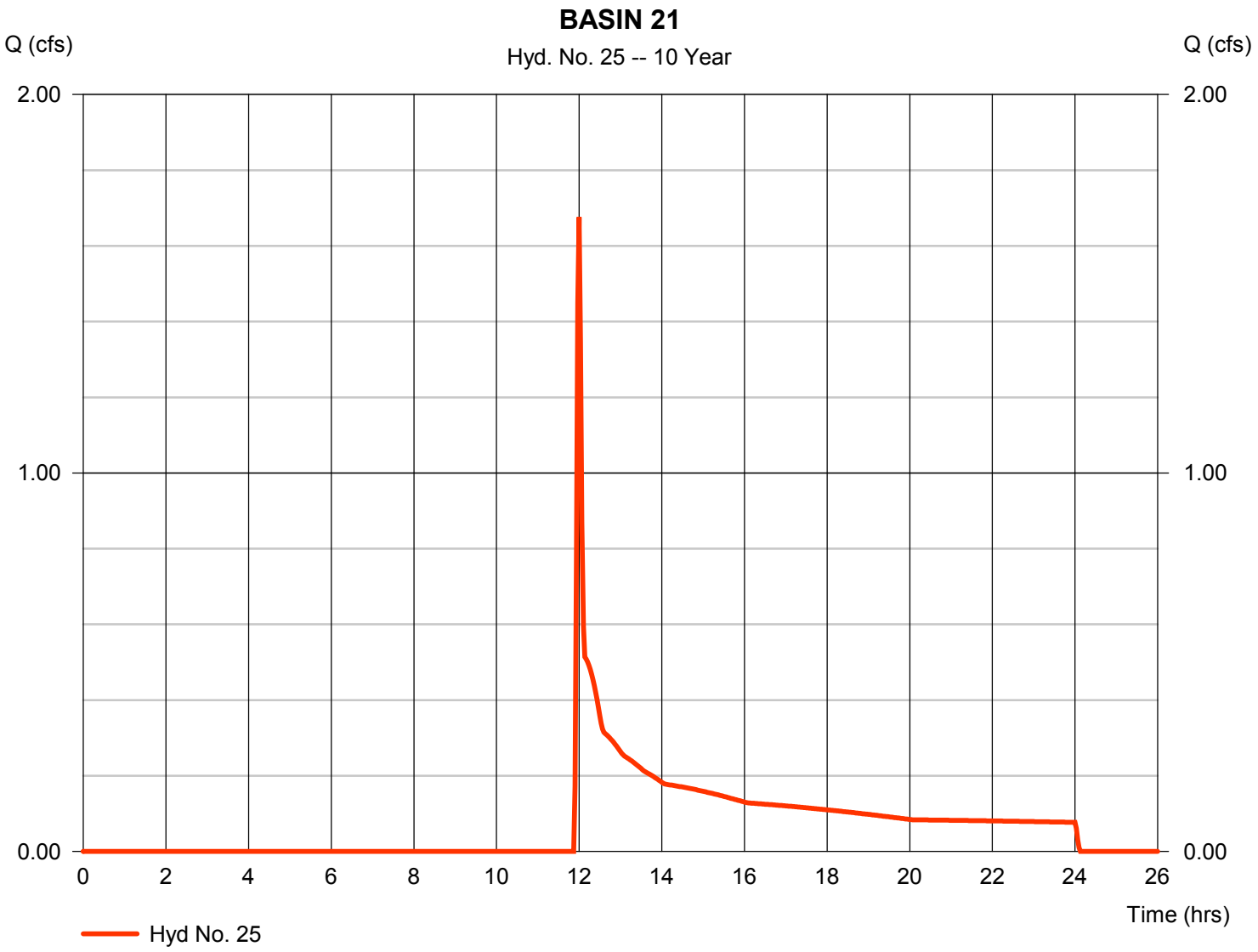
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 Thursday, Nov 1, 2012

Hyd. No. 25

BASIN 21

Hydrograph type	= SCS Runoff	Peak discharge	= 1.676 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.00 hrs
Time interval	= 2 min	Hyd. volume	= 6,666 cuft
Drainage area	= 10.000 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 2.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



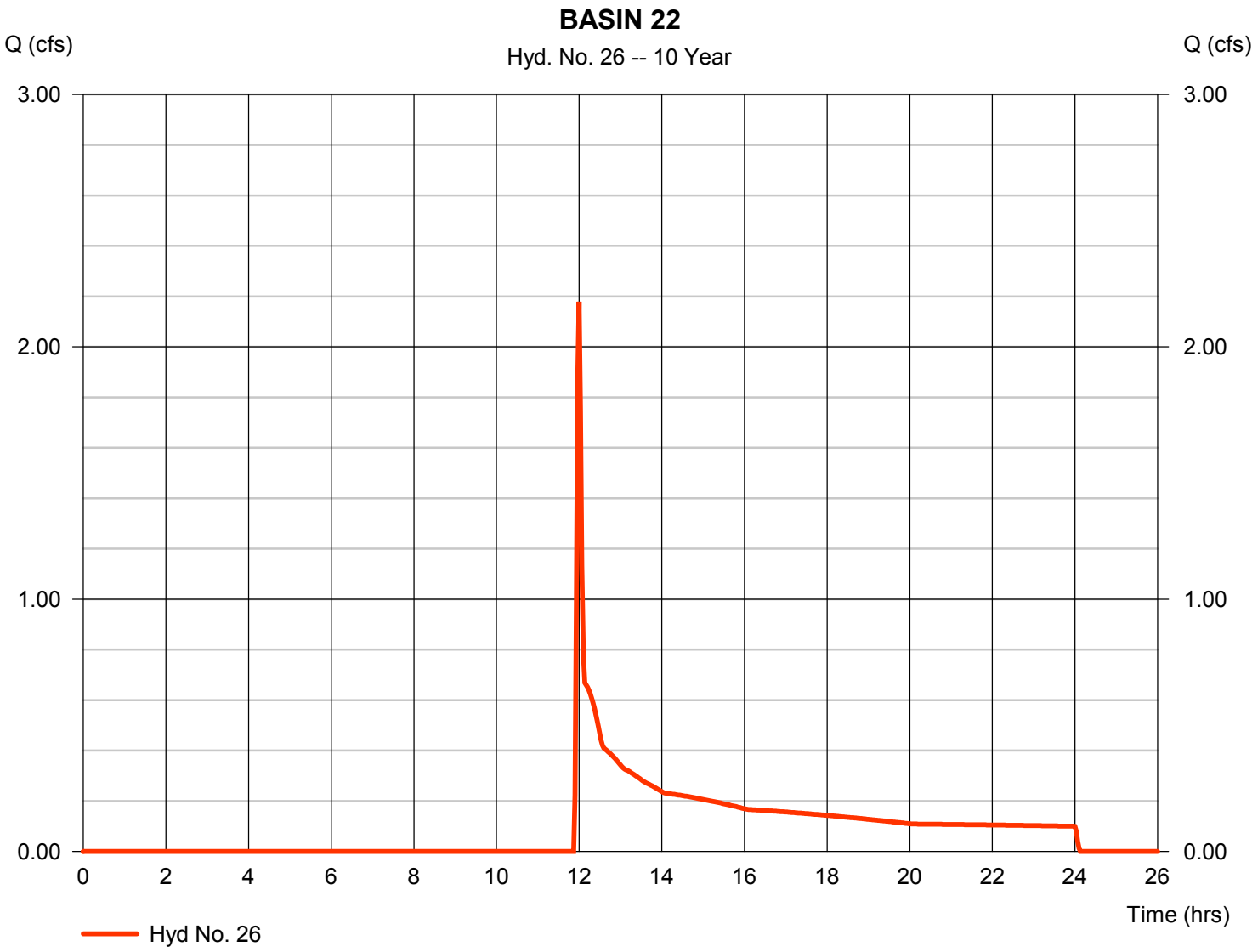
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 Thursday, Nov 1, 2012

Hyd. No. 26

BASIN 22

Hydrograph type	= SCS Runoff	Peak discharge	= 2.179 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.00 hrs
Time interval	= 2 min	Hyd. volume	= 8,666 cuft
Drainage area	= 13.000 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 2.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



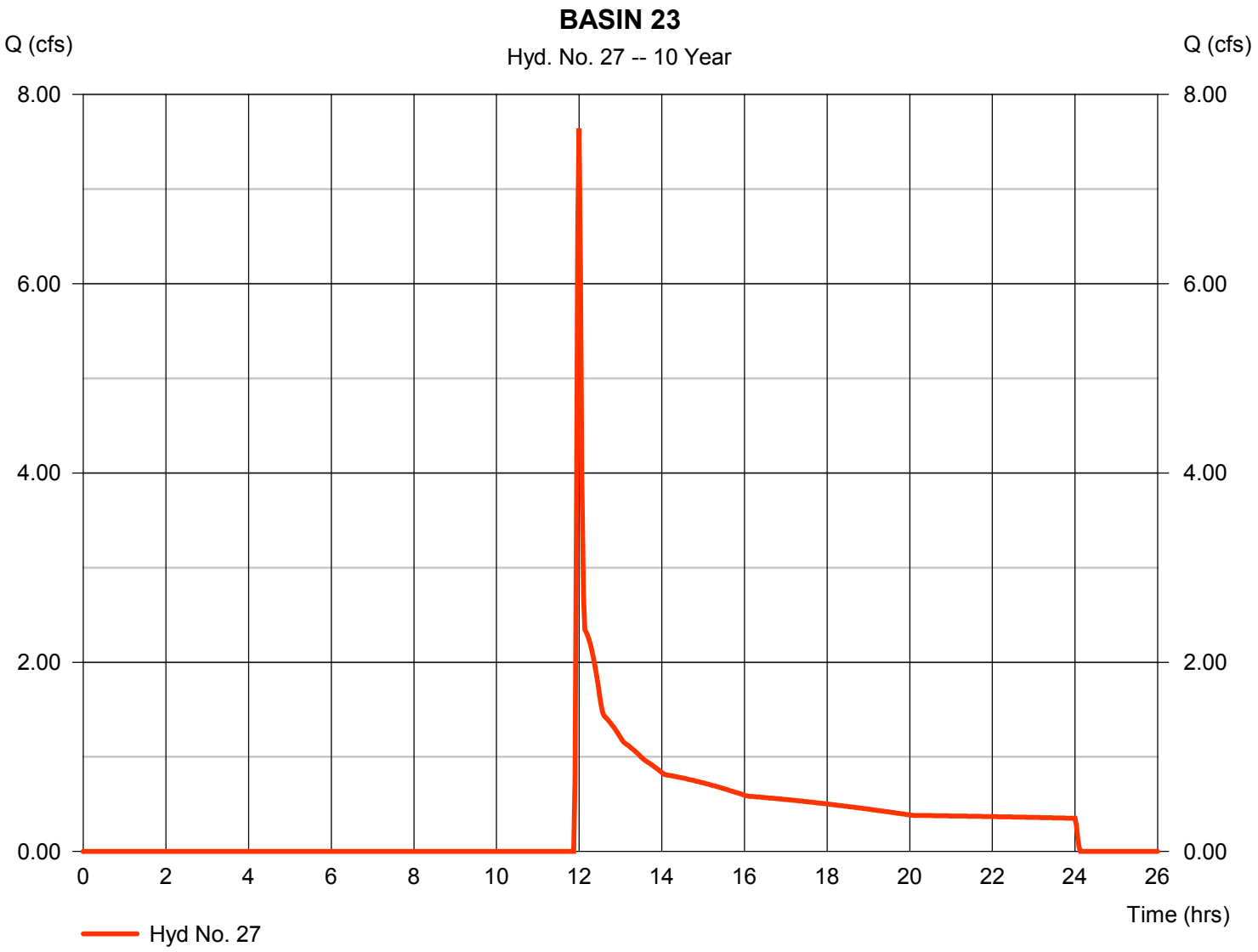
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 Thursday, Nov 1, 2012

Hyd. No. 27

BASIN 23

Hydrograph type	= SCS Runoff	Peak discharge	= 7.642 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.00 hrs
Time interval	= 2 min	Hyd. volume	= 30,396 cuft
Drainage area	= 45.600 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 2.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



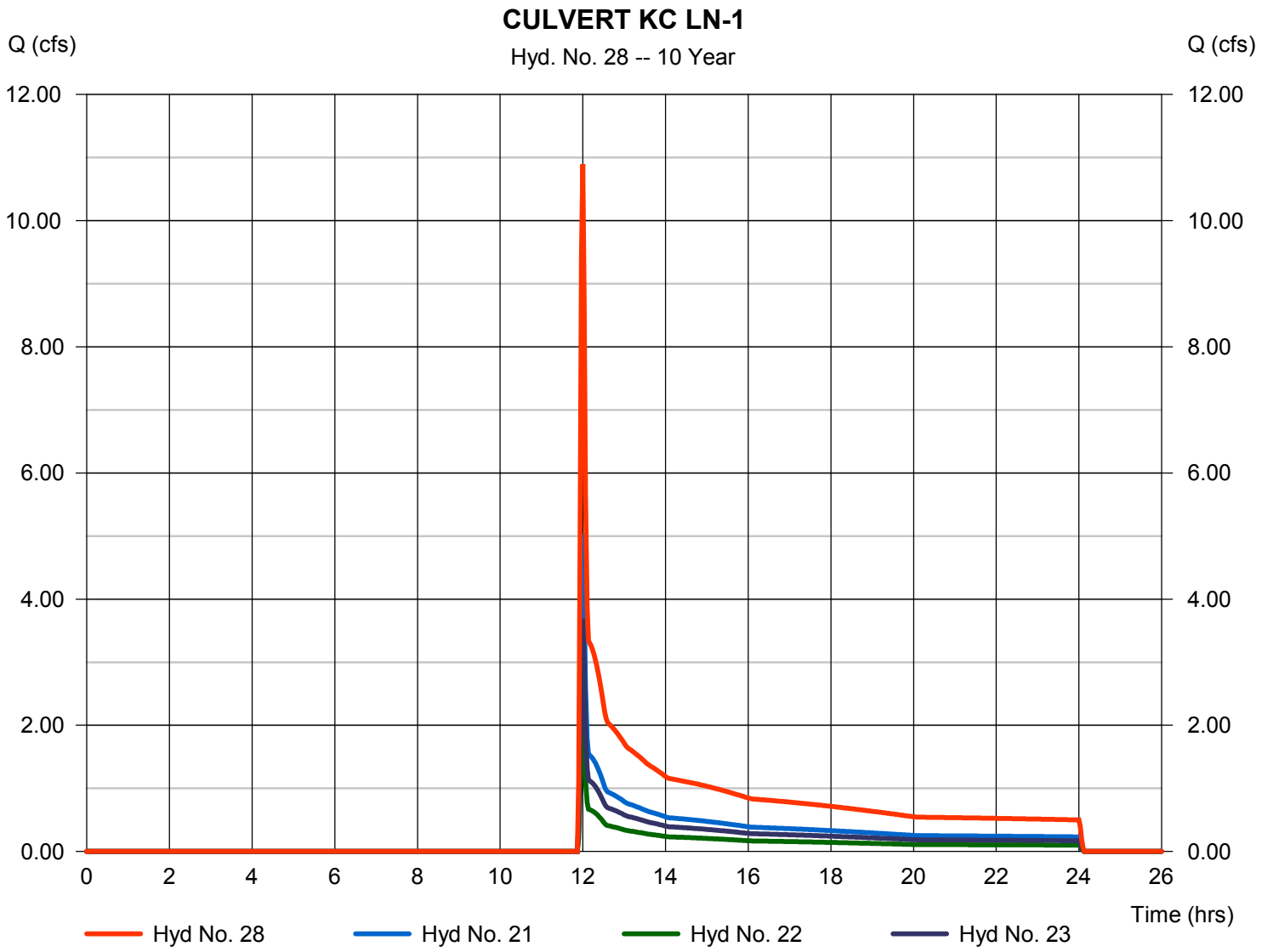
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 Thursday, Nov 1, 2012

Hyd. No. 28

CULVERT KC LN-1

Hydrograph type	= Combine	Peak discharge	= 10.89 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.00 hrs
Time interval	= 2 min	Hyd. volume	= 43,328 cuft
Inflow hyds.	= 21, 22, 23	Contrib. drain. area	= 65.000 ac



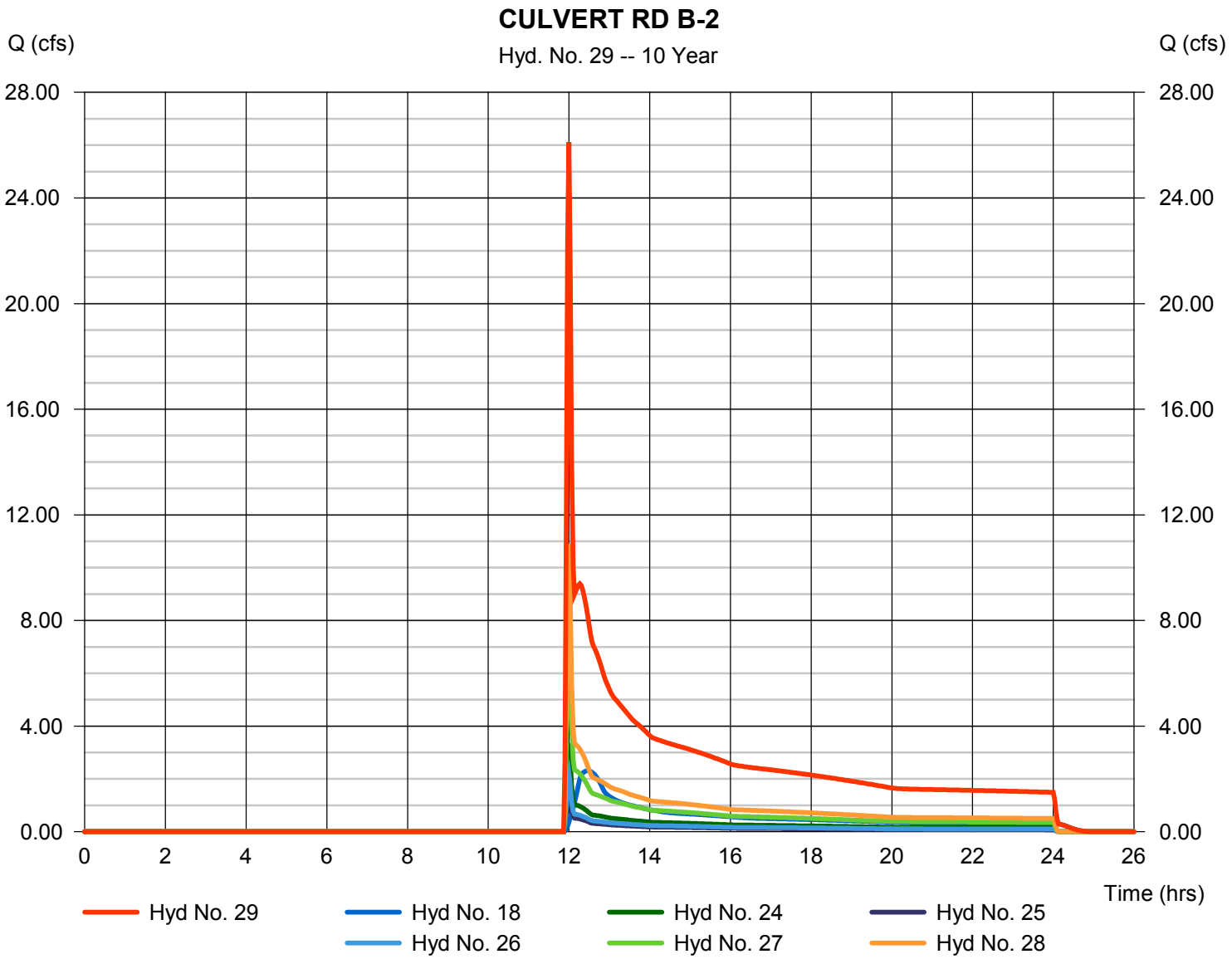
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 Thursday, Nov 1, 2012

Hyd. No. 29

CULVERT RD B-2

Hydrograph type	= Combine	Peak discharge	= 26.11 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.00 hrs
Time interval	= 2 min	Hyd. volume	= 129,098 cuft
Inflow hyds.	= 18, 24, 25, 26, 27, 28	Contrib. drain. area	= 126.600 ac



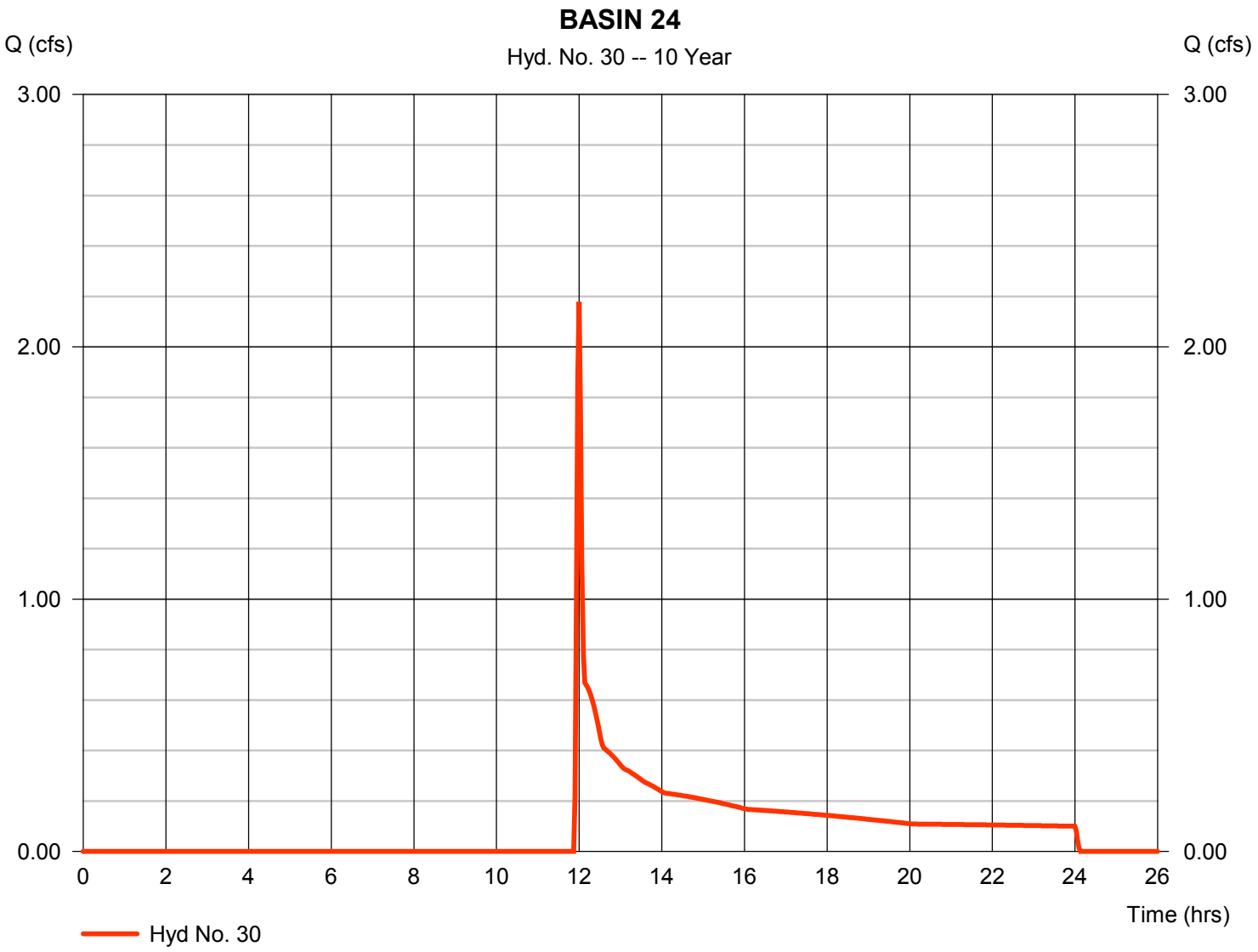
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 Thursday, Nov 1, 2012

Hyd. No. 30

BASIN 24

Hydrograph type	= SCS Runoff	Peak discharge	= 2.179 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.00 hrs
Time interval	= 2 min	Hyd. volume	= 8,666 cuft
Drainage area	= 13.000 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 2.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



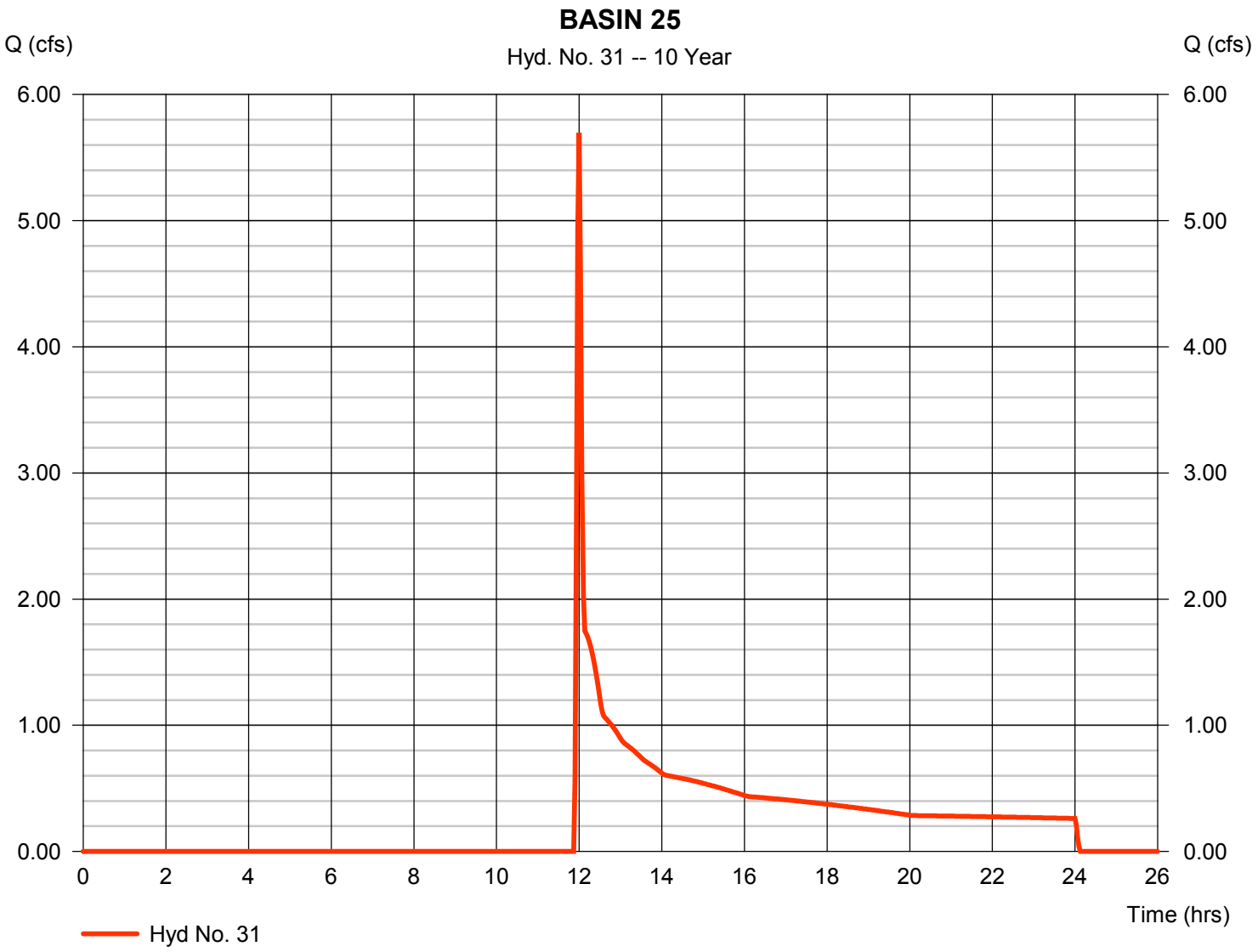
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 Thursday, Nov 1, 2012

Hyd. No. 31

BASIN 25

Hydrograph type	= SCS Runoff	Peak discharge	= 5.698 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.00 hrs
Time interval	= 2 min	Hyd. volume	= 22,664 cuft
Drainage area	= 34.000 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 2.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



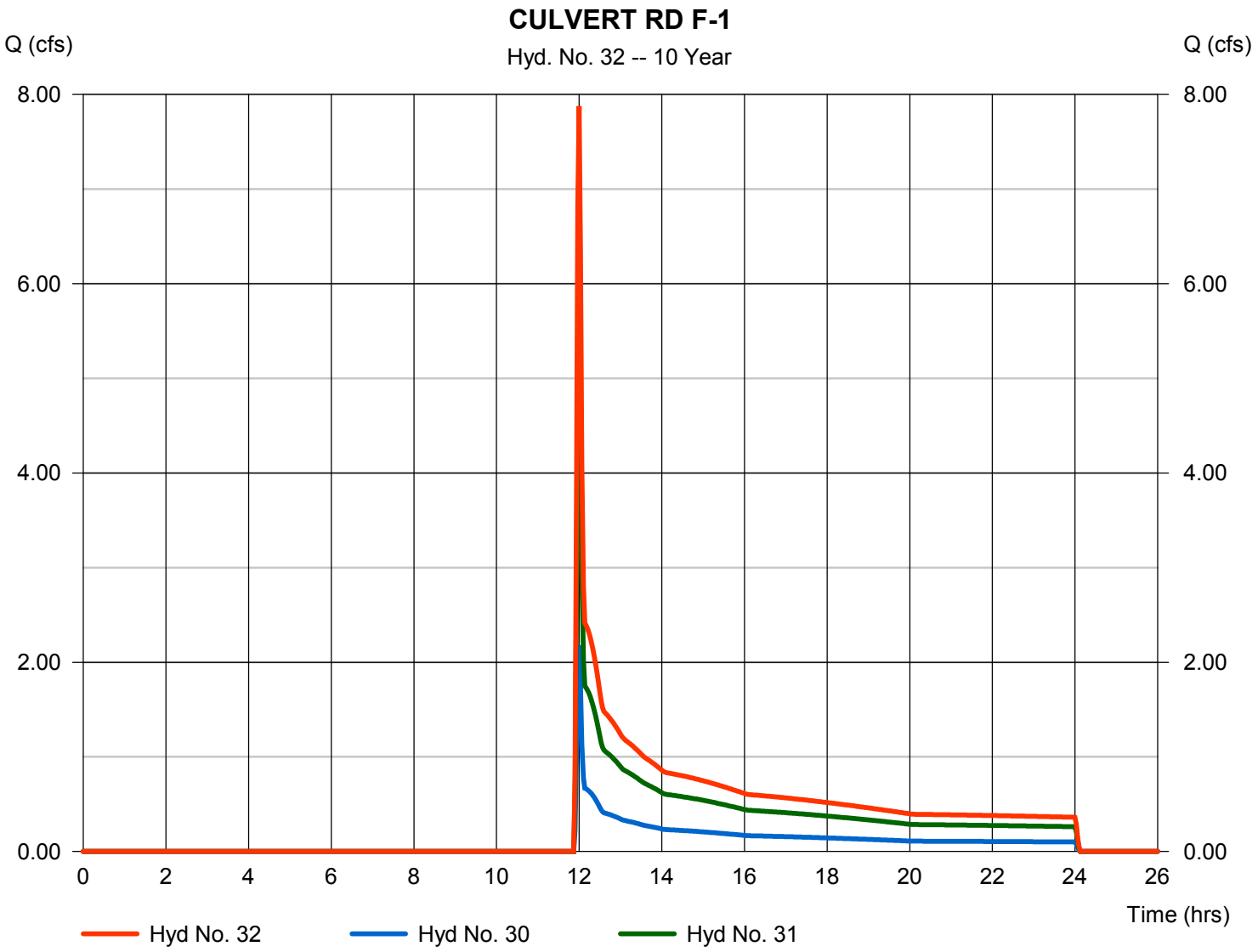
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 Thursday, Nov 1, 2012

Hyd. No. 32

CULVERT RD F-1

Hydrograph type	= Combine	Peak discharge	= 7.877 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.00 hrs
Time interval	= 2 min	Hyd. volume	= 31,329 cuft
Inflow hyds.	= 30, 31	Contrib. drain. area	= 47.000 ac



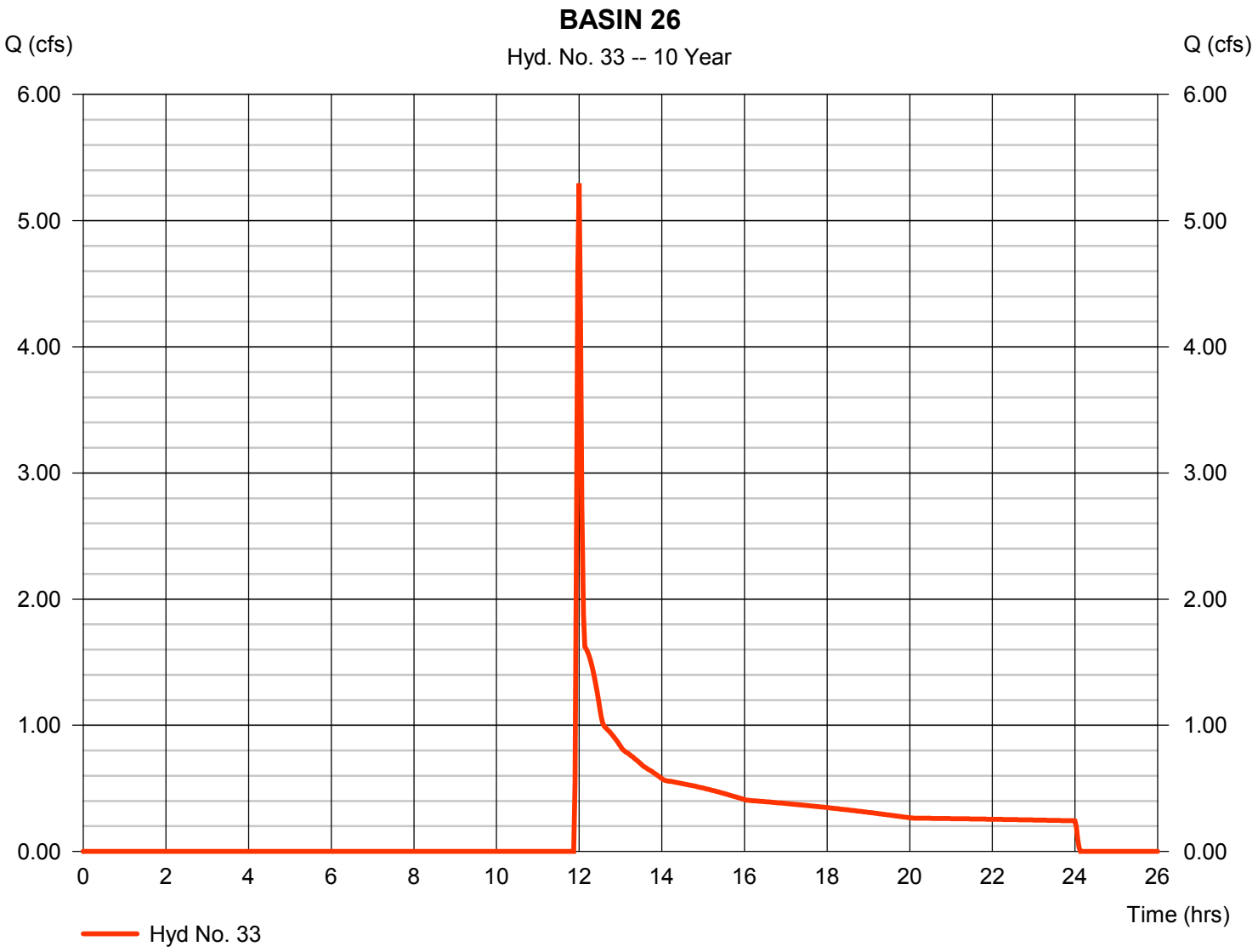
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 Thursday, Nov 1, 2012

Hyd. No. 33

BASIN 26

Hydrograph type	= SCS Runoff	Peak discharge	= 5.296 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.00 hrs
Time interval	= 2 min	Hyd. volume	= 21,064 cuft
Drainage area	= 31.600 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 2.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



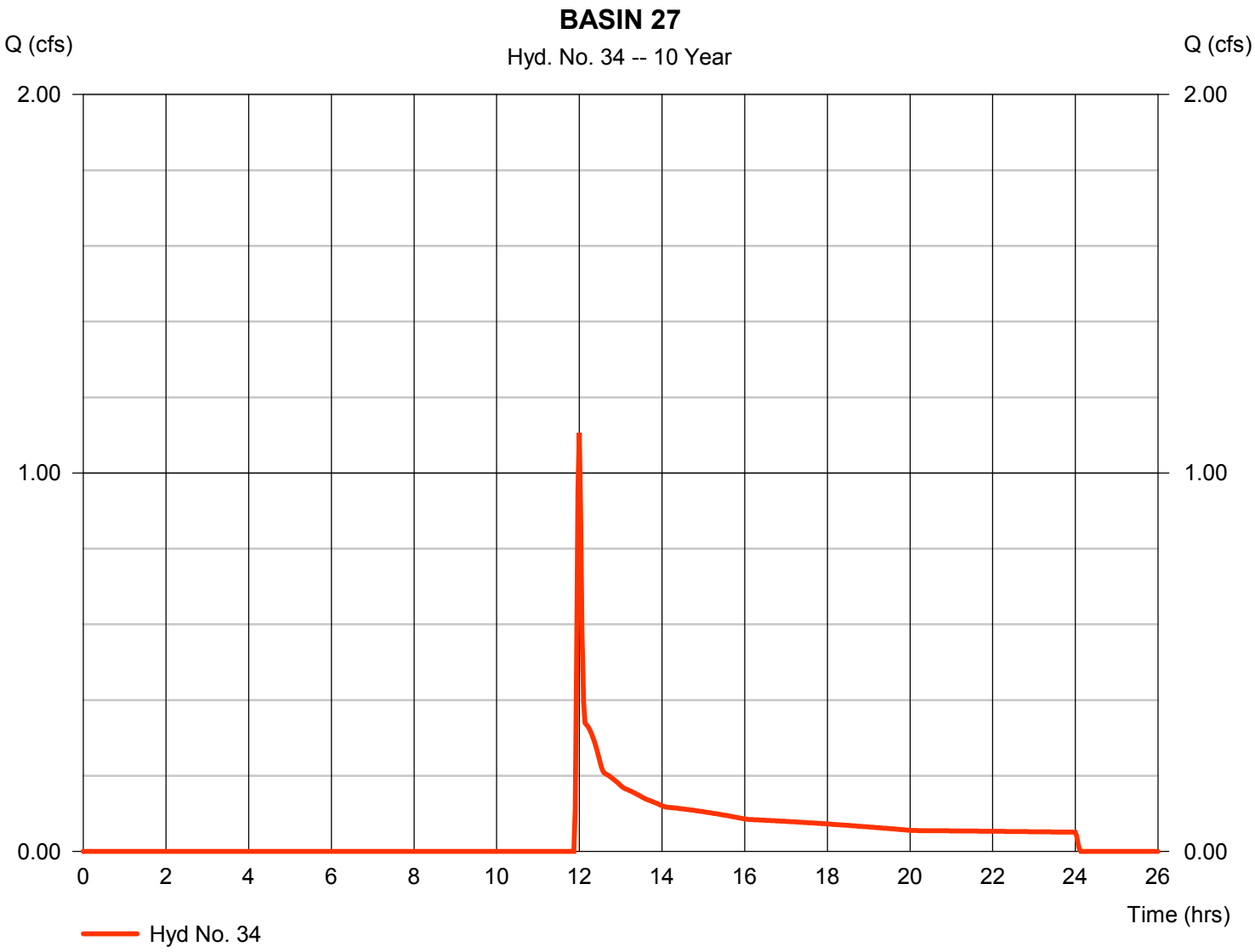
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 Thursday, Nov 1, 2012

Hyd. No. 34

BASIN 27

Hydrograph type	= SCS Runoff	Peak discharge	= 1.106 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.00 hrs
Time interval	= 2 min	Hyd. volume	= 4,399 cuft
Drainage area	= 6.600 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 2.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



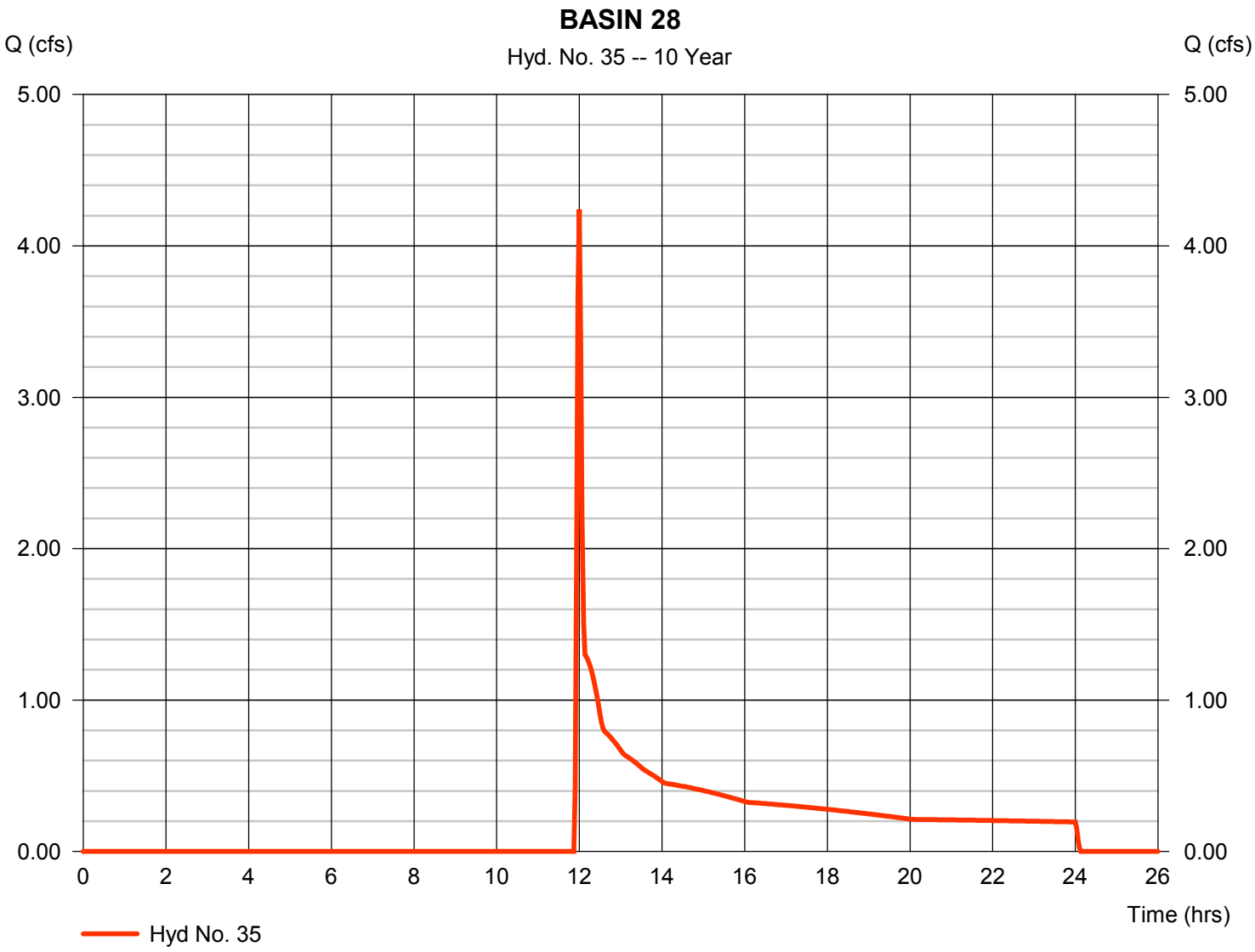
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 Thursday, Nov 1, 2012

Hyd. No. 35

BASIN 28

Hydrograph type	= SCS Runoff	Peak discharge	= 4.240 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.00 hrs
Time interval	= 2 min	Hyd. volume	= 16,864 cuft
Drainage area	= 25.300 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 2.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



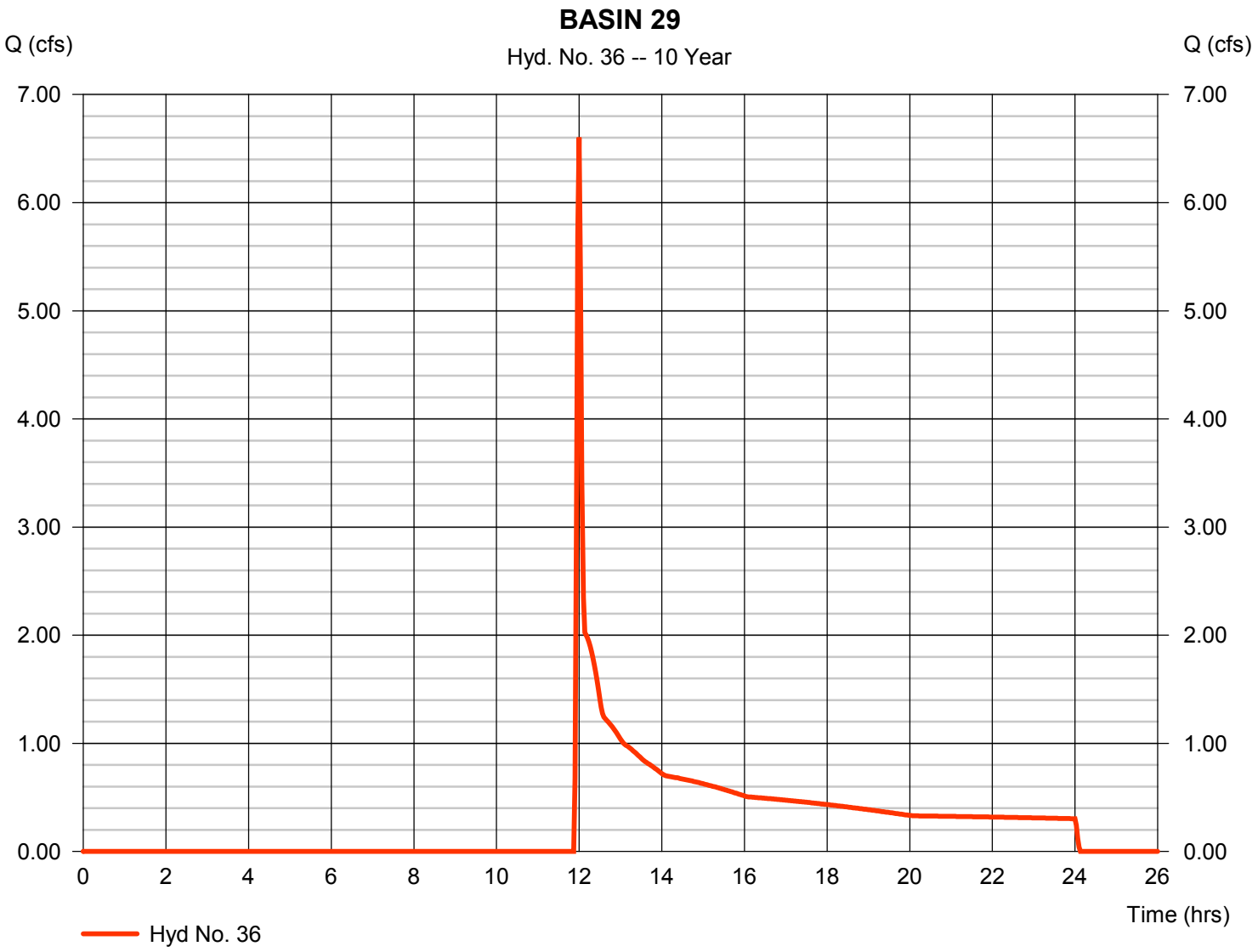
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 Thursday, Nov 1, 2012

Hyd. No. 36

BASIN 29

Hydrograph type	= SCS Runoff	Peak discharge	= 6.603 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.00 hrs
Time interval	= 2 min	Hyd. volume	= 26,263 cuft
Drainage area	= 39.400 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 2.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



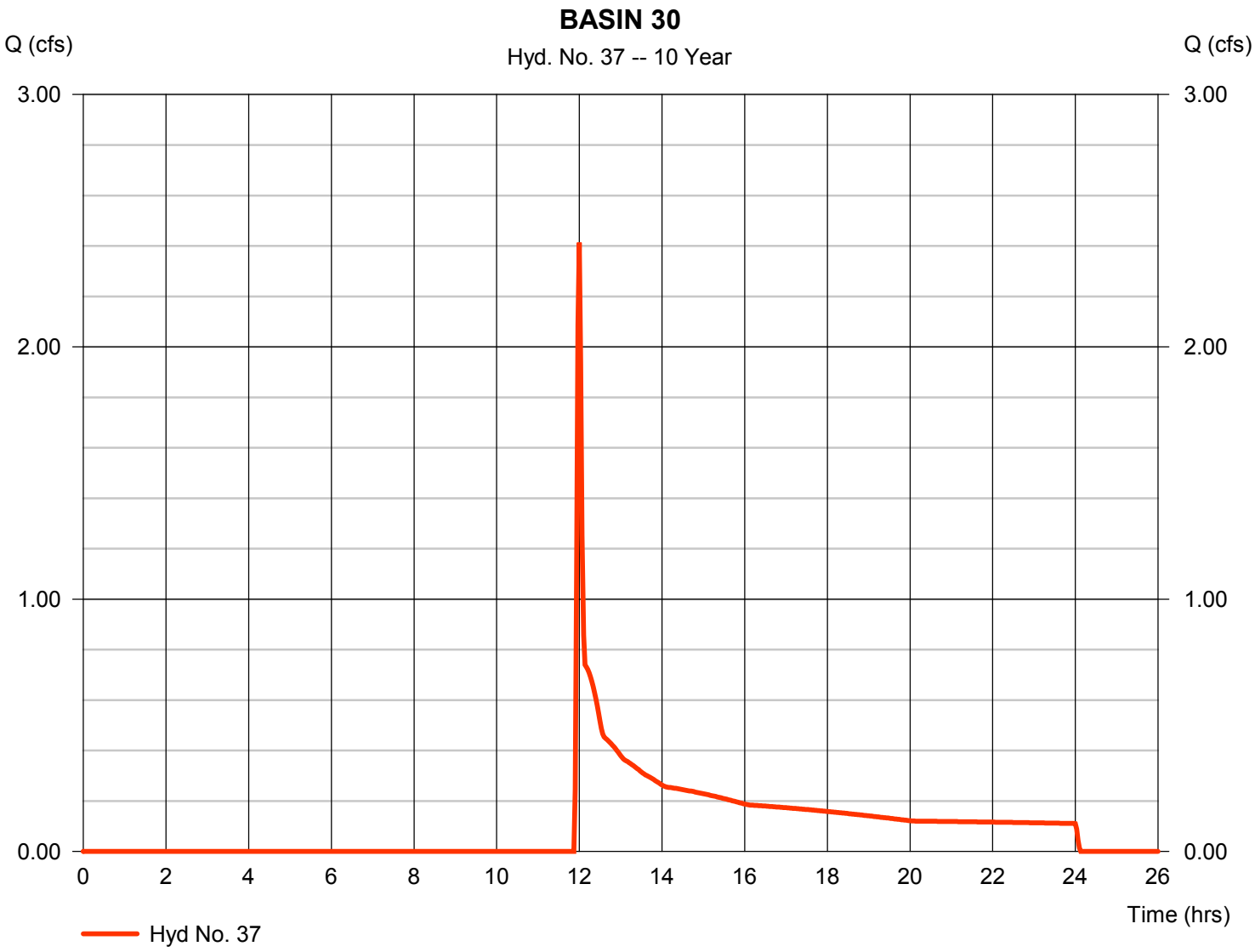
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 Thursday, Nov 1, 2012

Hyd. No. 37

BASIN 30

Hydrograph type	= SCS Runoff	Peak discharge	= 2.413 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.00 hrs
Time interval	= 2 min	Hyd. volume	= 9,599 cuft
Drainage area	= 14.400 ac	Curve number	= 61
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 5.00 min
Total precip.	= 2.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



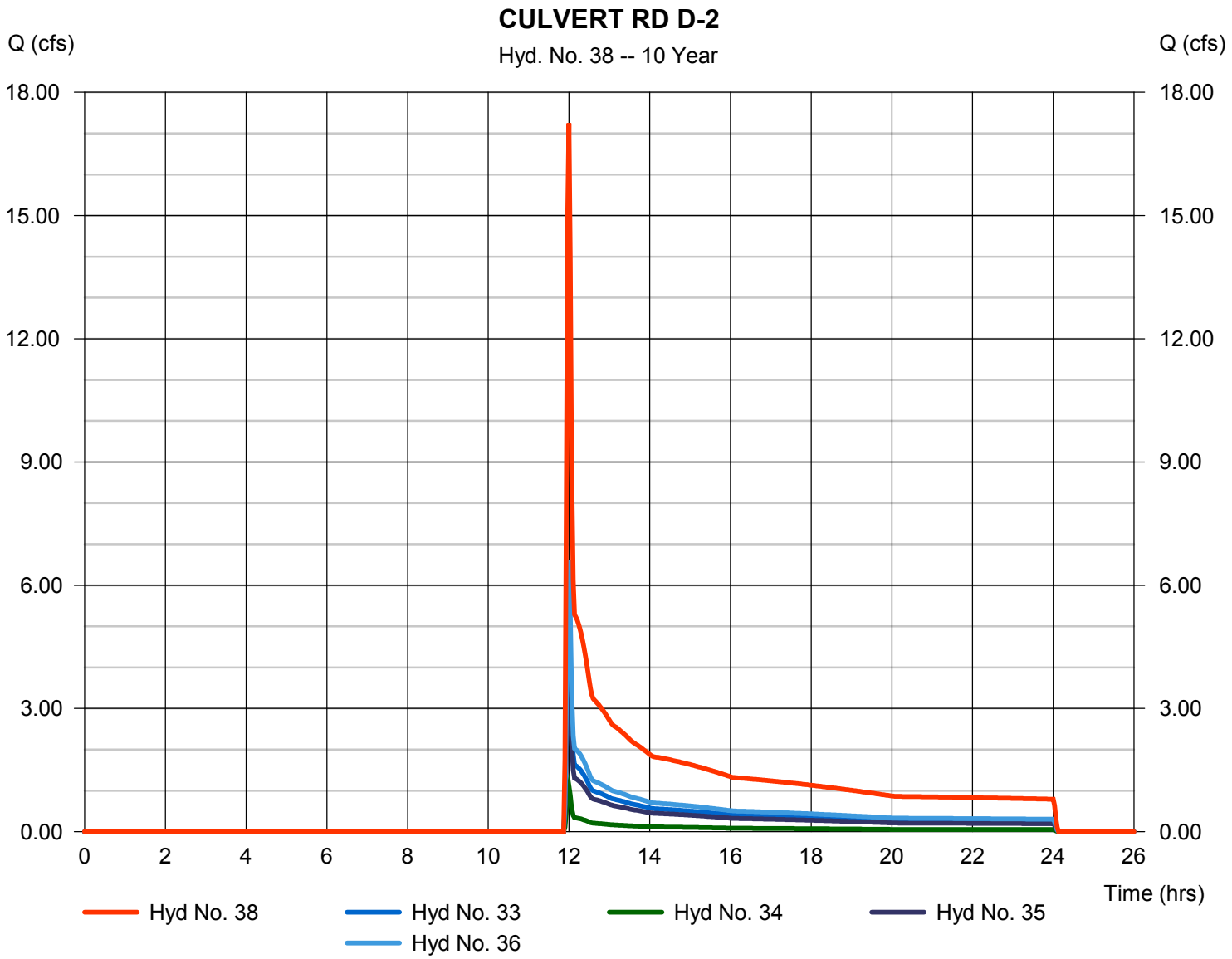
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 Thursday, Nov 1, 2012

Hyd. No. 38

CULVERT RD D-2

Hydrograph type	= Combine	Peak discharge	= 17.24 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.00 hrs
Time interval	= 2 min	Hyd. volume	= 68,591 cuft
Inflow hyds.	= 33, 34, 35, 36	Contrib. drain. area	= 102.900 ac



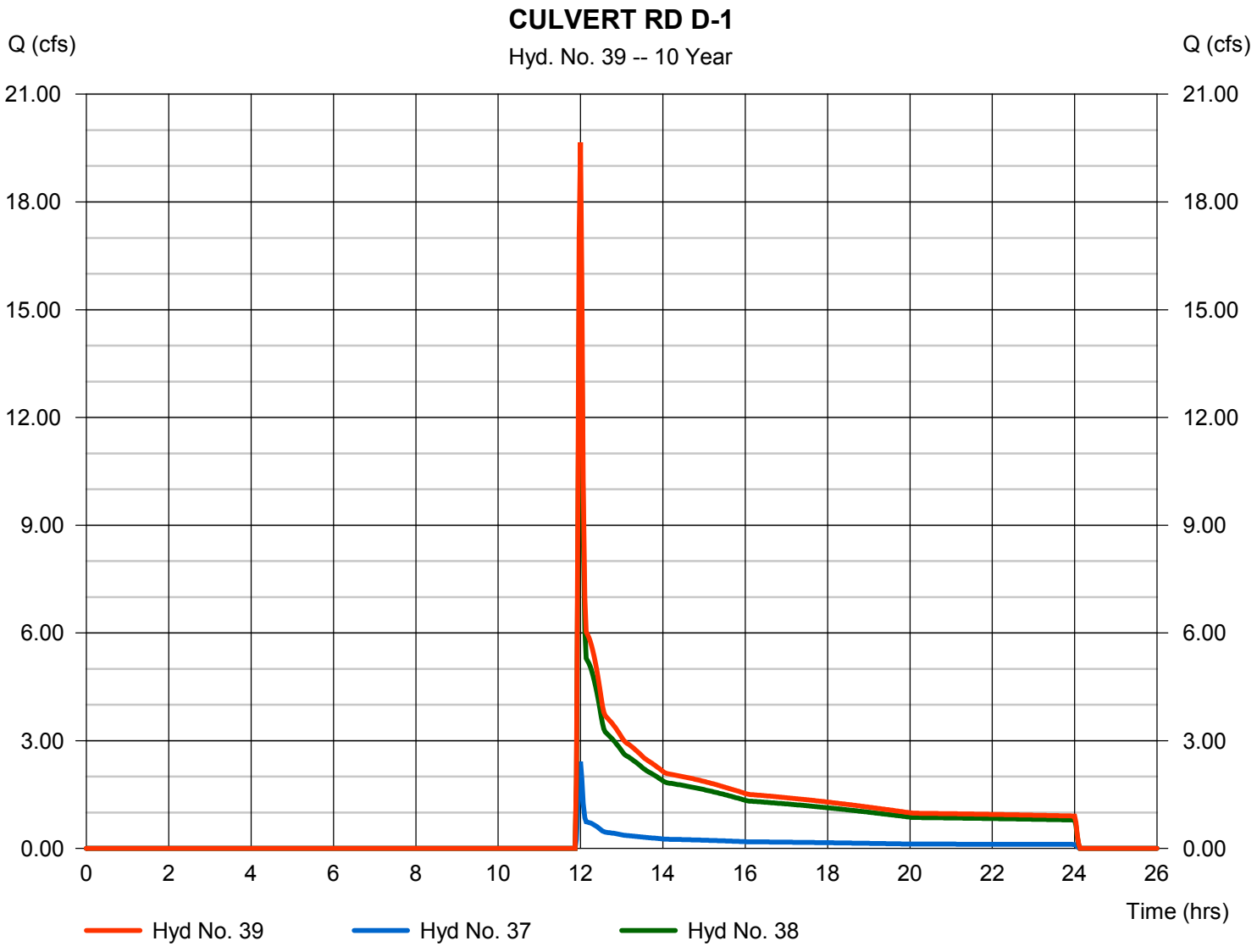
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 Thursday, Nov 1, 2012

Hyd. No. 39

CULVERT RD D-1

Hydrograph type	= Combine	Peak discharge	= 19.66 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.00 hrs
Time interval	= 2 min	Hyd. volume	= 78,190 cuft
Inflow hyds.	= 37, 38	Contrib. drain. area	= 14.400 ac



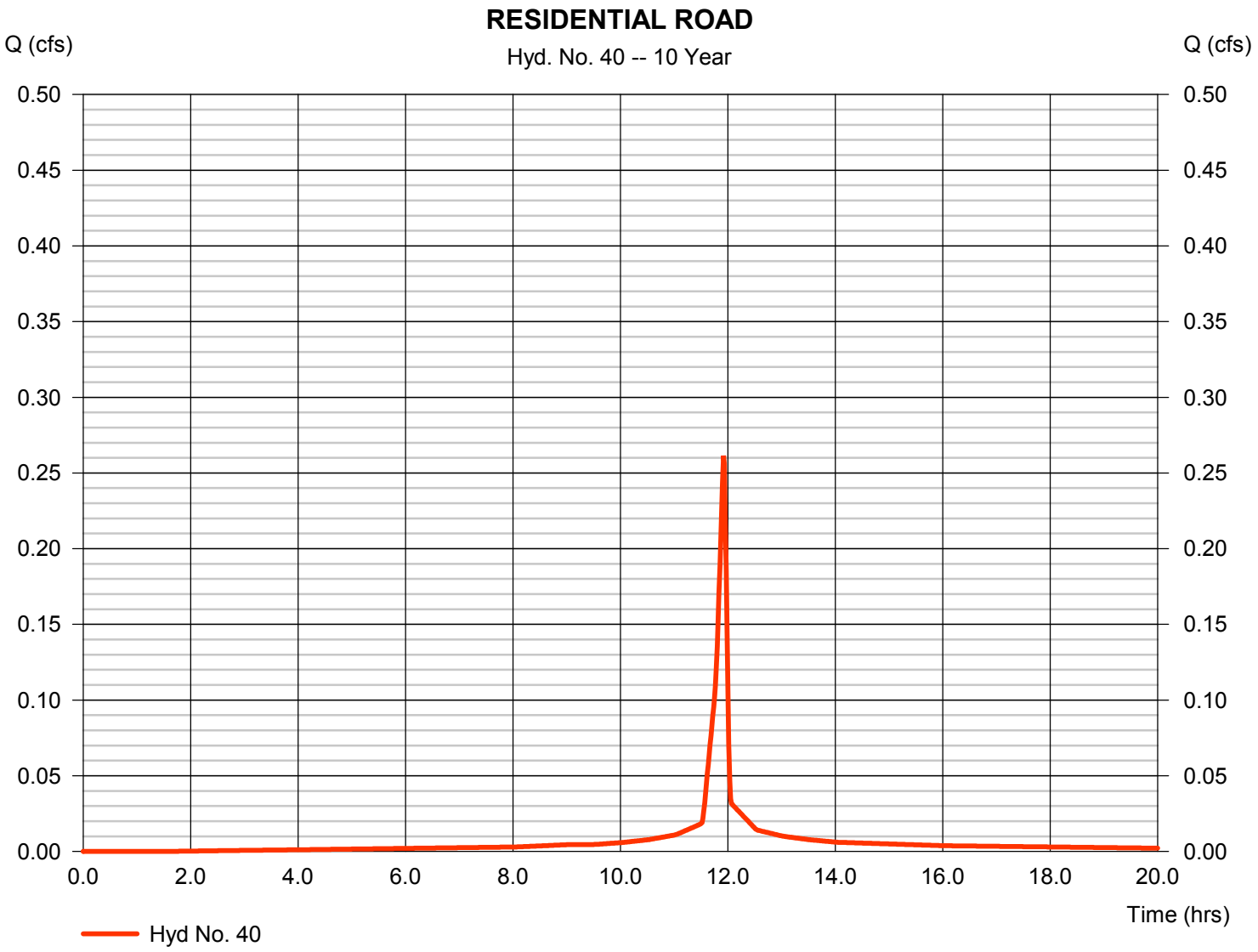
Hydrograph Report

Hydraflow Hydrographs Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. v8 Thursday, Nov 1, 2012

Hyd. No. 40

RESIDENTIAL ROAD

Hydrograph type	= SCS Runoff	Peak discharge	= 0.261 cfs
Storm frequency	= 10 yrs	Time to peak	= 11.92 hrs
Time interval	= 1 min	Hyd. volume	= 541 cuft
Drainage area	= 0.070 ac	Curve number	= 98
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= User	Time of conc. (Tc)	= 2.00 min
Total precip.	= 2.50 in	Distribution	= Type II
Storm duration	= 24 hrs	Shape factor	= 484



Hydraflow Rainfall Report

Return Period (Yrs)	Intensity-Duration-Frequency Equation Coefficients (FHA)			
	B	D	E	(N/A)
1	0.0000	0.0000	0.0000	--------
2	3.1018	0.1000	0.3634	--------
3	0.0000	0.0000	0.0000	--------
5	12.6592	5.4000	0.6606	--------
10	43.0155	12.4000	0.8784	--------
25	30.2029	8.3000	0.7447	--------
50	0.0000	0.0000	0.0000	--------
100	65.2013	11.7000	0.8536	--------

File name: Durango, CO.IDF

Intensity = B / (Tc + D)^E

Return Period (Yrs)	Intensity Values (in/hr)											
	5 min	10	15	20	25	30	35	40	45	50	55	60
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	1.72	1.34	1.16	1.04	0.96	0.90	0.85	0.81	0.78	0.75	0.72	0.70
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	2.70	2.08	1.73	1.49	1.33	1.20	1.10	1.02	0.95	0.89	0.84	0.80
10	3.50	2.80	2.35	2.03	1.79	1.60	1.45	1.33	1.23	1.14	1.06	1.00
25	4.40	3.47	2.90	2.51	2.22	2.00	1.83	1.68	1.56	1.46	1.38	1.30
50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100	5.90	4.72	3.95	3.41	3.01	2.70	2.45	2.25	2.08	1.93	1.81	1.70

Tc = time in minutes. Values may exceed 60.

ects\Land Projects 3\Edgemont Marquez Duplexes\Study Drainage\HYDRAFLOW EXPRESS\Edgemont Highlands.pcp

Storm Distribution	Rainfall Precipitation Table (in)							
	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
SCS 24-hour	0.00	1.60	0.00	0.00	2.50	0.00	0.00	3.50
SCS 6-Hr	0.00	1.00	0.00	0.00	1.60	0.00	0.00	2.40
Huff-1st	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-2nd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-3rd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-4th	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-Indy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Custom	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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LA POSTA ROAD AREA PLAN
STORMWATER STUDY
EXHIBIT 5 - CURB AND GUTTER CAPACITY

Local Road-10 yr, allowed spread = 20'

Slope (ft/ft)	Depth (ft)	Spread	Q (cfs)
0.01	0.43	20	16
0.02	0.43	20	22
0.03	0.43	20	27
0.04	0.43	20	31
0.05	0.43	20	35
0.06	0.43	20	38
0.07	0.43	20	41
0.08	0.43	20	44

Industrial Road-Local Road-10 yr, allowed spread = 12'

Slope (ft/ft)	Depth (ft)	Spread	Q (cfs)
0.01	0.27	12	4
0.02	0.27	12	6
0.03	0.27	12	7
0.04	0.27	12	8
0.05	0.27	12	9
0.06	0.27	12	10
0.07	0.27	12	11
0.08	0.27	12	11

Mountain Road - Local Road - 10 yr, allowed spread = 11'

Slope (ft/ft)	Depth (ft)	Spread	Q (cfs)
0.01	0.25	11	3
0.02	0.25	11	5
0.03	0.25	11	6
0.04	0.25	11	6
0.05	0.25	11	7
0.06	0.25	11	8
0.07	0.25	11	9
0.08	0.25	11	9

La Posta Road - Collector Road - 10 yr, allowed spread = 18'

Slope (ft/ft)	Depth (ft)	Spread	Q (cfs)
0.01	0.25	18	12
0.02	0.25	18	17
0.03	0.25	18	20
0.04	0.25	18	24
0.05	0.25	18	26
0.06	0.25	18	29
0.07	0.25	18	31
0.08	0.25	18	33

LA POSTA ROAD AREA PLAN
STORMWATER STUDY
EXHIBIT 6A - STORM DRAIN ANALYSIS

ROAD	Road Type	Length of Road	CFS/100 LF Road	Flow (Road)	Road slope (%)	allowable CFS*	Inlets Needed	Length Storm Drain Needed (ft)	Size Storm Drain Needed (ft)
LA POSTA RD	EXISTING OUTFALLS EXIST AT A SMALLER INTERVAL WHERE INLETS WILL BE PLACED								
ROAD A	Industrial	1300	0.13	1.625	1	4	no	0	
KAYCEE LANE	Industrial	2104	0.13	2.63	3	7	no	0	
ROAD B	Industrial	1192	0.13	1.49	1	4	no	0	
ROAD B	Industrial	2108	0.13	2.635	3	7	no	0	
ROAD D	Residential	3609	0.26	9.3834	3	7	yes	917	18"
SKYLINE DRIVE	Industrial	4241	0.13	5.30125	1	4	yes	1041	18"
ROAD E	Mountain	3508	0.22	7.7176	8	9	no	0	
FUTURE CONNECTOR	Industrial	6244	0.13	8.1172	1	4	yes	3167	18"

La Posta Road

Allowable flow on la posta at 1%	12	cfs
Area Imperviousness	2.80	acres
Curve number	98	
Time of Concentration	1	minute
Width Imperviousness	33	ft
yields		
Length Imperviousness allowed before needing inlet	3696	ft

Therefore

No Storm Drain needed along La Posta Road if existing outfall locations are maintained

Industrial Road

Curve number	98	
Time of Concentration	4	minute
Length Imperviousness	100	ft
Width Imperviousness	17	ft
Area Imperviousness	0.04	acres
yields	0.11	cfs/lineal foot

Mountain Road

Curve number	98	
Time of Concentration	4	minute
Length Imperviousness	100	ft
Width Imperviousness	27	ft
Area Imperviousness	0.06	acres
yields	0.22	cfs/lineal foot

Residential Road

Curve number	98	
Time of Concentration	4	minute
Length Imperviousness	100	ft
Width Imperviousness	30	ft
Area Imperviousness	0.07	acres
yields	0.26	cfs/lineal foot

EXHIBIT 6B

Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. Friday, Nov 2 2012

STORM DRAIN 18IN CMP @ 1% ROAD SLOPE

Circular

Diameter (ft)	= 1.50
Invert Elev (ft)	= 1.00
Slope (%)	= 1.00
N-Value	= 0.023

Calculations

Compute by:	Known Q
Known Q (cfs)	= 4.00

Highlighted

Depth (ft)	= 0.90
Q (cfs)	= 4.000
Area (sqft)	= 1.11
Velocity (ft/s)	= 3.60
Wetted Perim (ft)	= 2.66
Crit Depth, Yc (ft)	= 0.77
Top Width (ft)	= 1.47
EGL (ft)	= 1.10

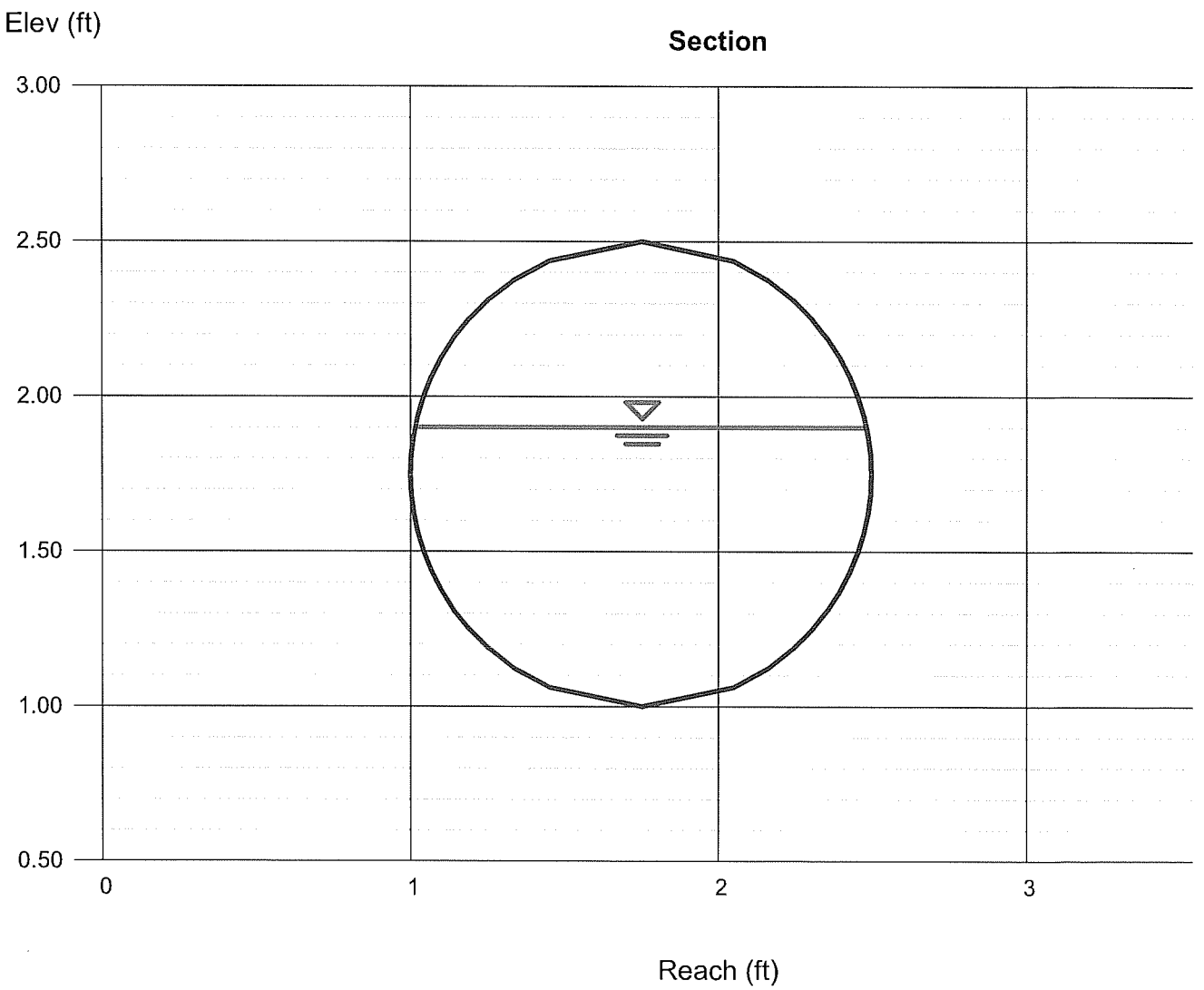


EXHIBIT 6C

Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. Friday, Nov 2 2012

STORM DRAIN 18IN CMP @ 3% ROAD SLOPE

Circular

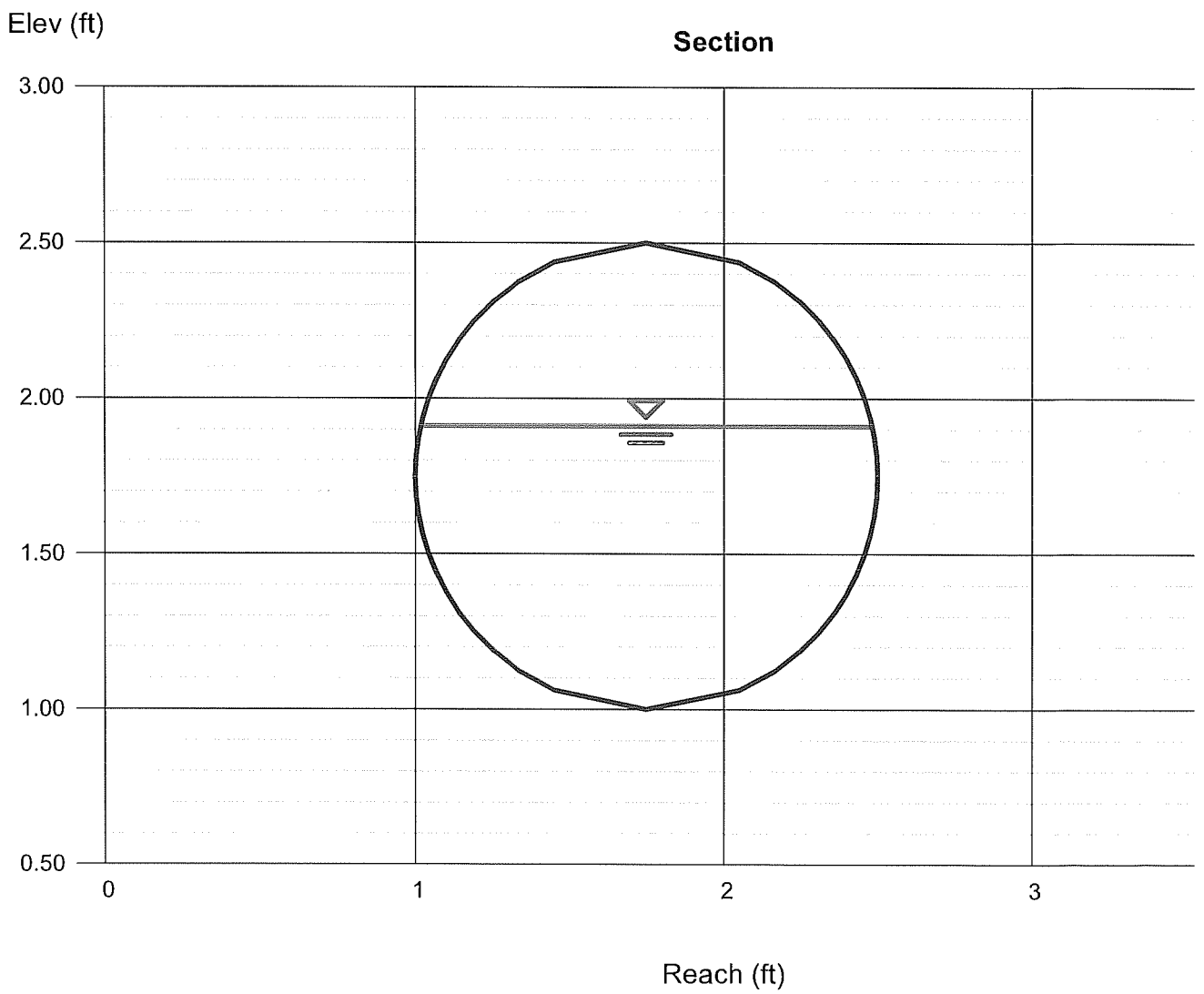
Diameter (ft)	= 1.50
Invert Elev (ft)	= 1.00
Slope (%)	= 3.00
N-Value	= 0.023

Calculations

Compute by:	Known Q
Known Q (cfs)	= 7.00

Highlighted

Depth (ft)	= 0.91
Q (cfs)	= 7.000
Area (sqft)	= 1.13
Velocity (ft/s)	= 6.22
Wetted Perim (ft)	= 2.68
Crit Depth, Yc (ft)	= 1.03
Top Width (ft)	= 1.46
EGL (ft)	= 1.51



LA POSTA ROAD AREA PLAN
STORMWATER STUDY
EXHIBIT 7 - CULVERT ANALYSIS

ROAD	CULVERT	10YR FLOW	CULVERT	LENGTH
ROAD A	RD A-1	22	30"	65
KAYCEE LANE	KC LN-1	11	24"	65
ROAD B	RD B-1	7	24"	65
ROAD B	RD B-2	26	36"	65
ROAD F	RD F-1	8	24"	65
ROAD D	RD D-1	20	30"	80
ROAD D	RD D-2	17	30"	80

DIA. CMP	SLOPE	10YR FLOW
15	0.01	4
18	0.01	6
24	0.01	13
30	0.01	24
36	0.01	37

EXHIBIT 8a

Culvert Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. Thursday, Nov 1 2012

CULVERT 24IN

Invert Elev Dn (ft)	= 0.01
Pipe Length (ft)	= 70.00
Slope (%)	= 1.00
Invert Elev Up (ft)	= 0.71
Rise (in)	= 24.0
Shape	= Cir
Span (in)	= 24.0
No. Barrels	= 1
n-Value	= 0.023
Inlet Edge	= 0
Coeff. K,M,c,Y,k	= 0.0045, 2, 0.0317, 0.69, 0.5

Embankment

Top Elevation (ft)	= 3.00
Top Width (ft)	= 60.00
Crest Width (ft)	= 200.00

Calculations

Qmin (cfs)	= 0.00
Qmax (cfs)	= 100.00
Tailwater Elev (ft)	= (dc+D)/2

Highlighted

Qtotal (cfs)	= 13.00
Qpipe (cfs)	= 13.00
Qovertop (cfs)	= 0.00
Veloc Dn (ft/s)	= 4.68
Veloc Up (ft/s)	= 4.65
HGL Dn (ft)	= 1.66
HGL Up (ft)	= 2.38
Hw Elev (ft)	= 2.65
Hw/D (ft)	= 0.97
Flow Regime	= Inlet Control

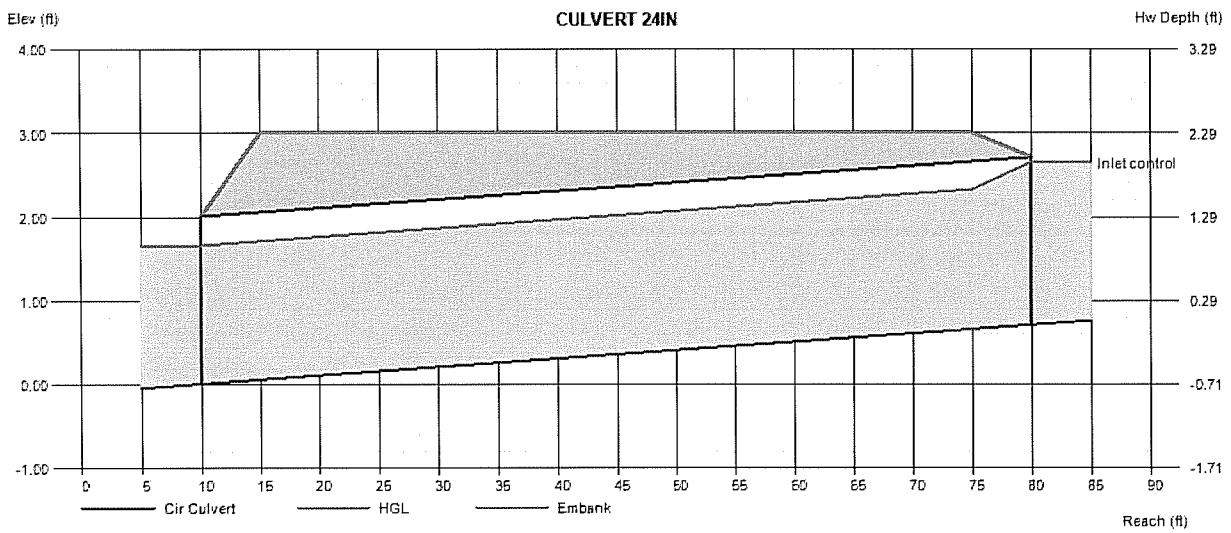


EXHIBIT 8b

Culvert Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. Thursday, Nov 1 2012

CULVERT 30IN

Invert Elev Dn (ft)	= 0.01
Pipe Length (ft)	= 70.00
Slope (%)	= 1.00
Invert Elev Up (ft)	= 0.71
Rise (in)	= 30.0
Shape	= Cir
Span (in)	= 30.0
No. Barrels	= 1
n-Value	= 0.023
Inlet Edge	= 0
Coeff. K,M,c,Y,k	= 0.0045, 2, 0.0317, 0.69, 0.5

Embankment

Top Elevation (ft)	= 4.00
Top Width (ft)	= 60.00
Crest Width (ft)	= 200.00

Calculations

Qmin (cfs)	= 0.00
Qmax (cfs)	= 100.00
Tailwater Elev (ft)	= (dc+D)/2

Highlighted

Qtotal (cfs)	= 24.00
Qpipe (cfs)	= 24.00
Qovertop (cfs)	= 0.00
Veloc Dn (ft/s)	= 5.48
Veloc Up (ft/s)	= 5.42
HGL Dn (ft)	= 2.10
HGL Up (ft)	= 2.82
Hw Elev (ft)	= 3.23
Hw/D (ft)	= 1.01
Flow Regime	= Inlet Control

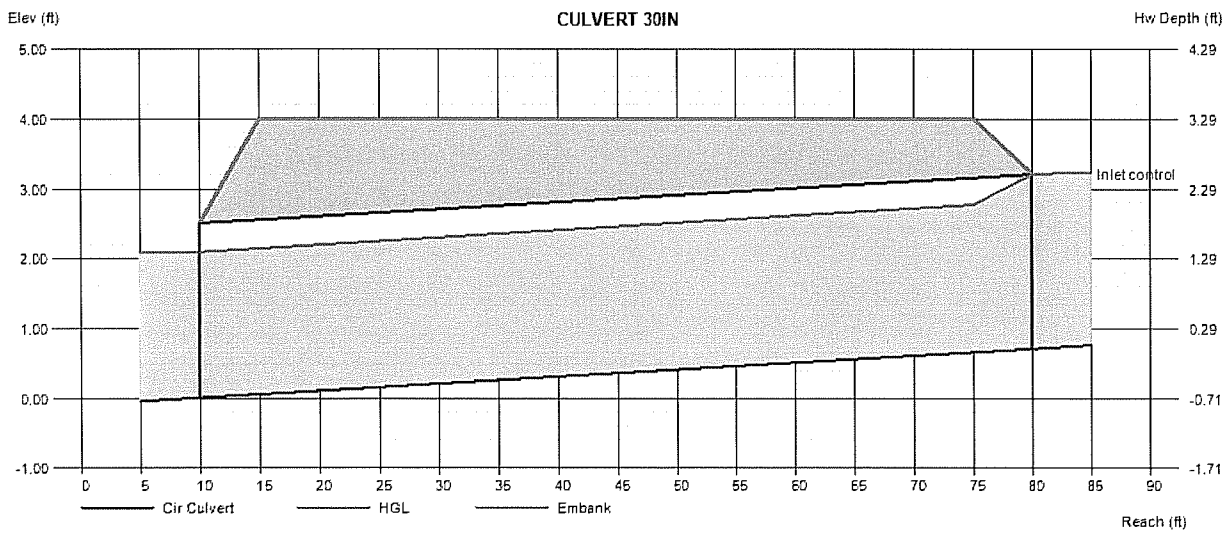


EXHIBIT 8C

Culvert Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2011 by Autodesk, Inc. Thursday, Nov 1 2012

CULVERT 36IN

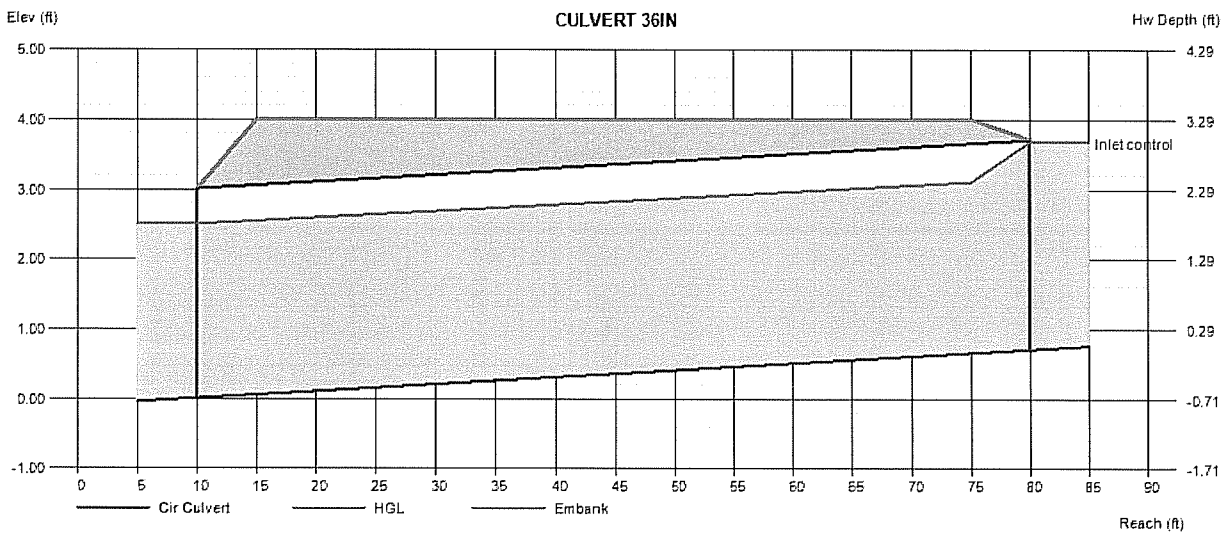
Invert Elev Dn (ft)	= 0.01
Pipe Length (ft)	= 70.00
Slope (%)	= 1.00
Invert Elev Up (ft)	= 0.71
Rise (in)	= 36.0
Shape	= Cir
Span (in)	= 36.0
No. Barrels	= 1
n-Value	= 0.023
Inlet Edge	= 0
Coeff. K,M,c,Y,k	= 0.0045, 2, 0.0317, 0.69, 0.5

Embankment

Top Elevation (ft)	= 4.00
Top Width (ft)	= 60.00
Crest Width (ft)	= 200.00

Calculations

Qmin (cfs)	= 0.00
Qmax (cfs)	= 100.00
Tailwater Elev (ft)	= (dc+D)/2

Highlighted

Qtotal (cfs)	= 37.00
Qpipe (cfs)	= 37.00
Qovertop (cfs)	= 0.00
Veloc Dn (ft/s)	= 5.89
Veloc Up (ft/s)	= 6.00
HGL Dn (ft)	= 2.50
HGL Up (ft)	= 3.15
Hw Elev (ft)	= 3.68
Hw/D (ft)	= 0.99
Flow Regime	= Inlet Control