Exhibit F
Engineering Report & Drawings

ANB Bank
c/o Will Cofield
Alder Real Estate
Email: wcoffield@aldercos.com

RE: ANB Bank – Carbondale – Engineering Report, SE Job #19215.02

Dear Will,

Sopris Engineering, LLC (SE) has prepared the following report to support a proposed mixed use development in Carbondale, Colorado. The subject site is located north of Main Street, west of Highway 133, and east of Hendrick Drive. The property is adjacent to the Carbondale Marketplace Subdivision and the City Market grocery store and fueling station. The information presented in this report is for a Major Site Plan Review by the Town. The project team is also proposing a re-zone from the obsolete Planned Community Commercial district (PC) to Mixed Use (MU).

Background and Project Summary

The subject property is proposing development of a 2-story mixed use building that fronts Highway 133. The building is made up of an ANB Bank branch on the north side and a mix of office, retail, restaurant, and multi-family residential in the middle and south side of the building. The proposed areas for each use are shown in the table below:

Building Areas

Level 1 Overall	13,799 GFA
Level 2 Overall	13,463 GFA
Total	**27,262 GFA***
Possible Retail	4,691 GFA
Possible Restaurant	2,246 GFA
Bank	3,269 GFA
Office (Level 1 Common)	823 GFA
Office (Level 2 Common)	1040 GFA
Office (Level 2 Shell)	2,216 GFA
Multi-Family (Level 1)	2,769 GFA
Multi-Family (Level 2)	10,207 GFA
Total	**27,262 GFA***

The site also includes associated parking, landscaping, utility improvements, and stormwater management infrastructure. Parking is proposed to be located generally west of and behind the building. Access to the site is proposed off of Hendrick Drive in two locations to allow vehicle circulation including emergency vehicle access to the entire site. The re-zoning requirements have been included with the Town Application.

Public improvements to serve and support development of the site including utilities, vehicle access, and pedestrian access have been previously constructed. Development of the subject site will include additional public improvements that generally include sidewalk, street trees, landscaping, and modifications to Hendrick Drive for the accesses into the site. The public improvements are proposed to be further described and outlined in a Development Improvements Agreement (DIA) as part of the Town process. An Engineer's cost estimate for public improvements will be prepared after site plan approval is received.

Existing Conditions

The existing site is approximately 1.440 acres and has historically been vacant land. Soils general consist of a small layer of topsoil (±6") with a larger layer of gravel/sand/cobbles (essentially pitrun type material) beneath. The grade of the site generally sits higher than the road elevations that border the site. Public improvements including vehicle access to the site off Highway 133 and Main Street via Hendrick Drive, utility stubs including water, sewer, and shallow utilities, and pedestrian access have been extended to the site to serve and support future development. Gas is available from an existing line that runs parallel to the west side of Highway 133. Irrigation water for the site and the public improvements will be provided from the Town's potable system.

Hendrick Drive borders the site on the west and north. The Carbondale Marketplace Subdivision, which includes the City Market grocery store and fueling station, is located west and north of Hendrick Drive. Highway 133 borders the east boundary. A property owned by James H Luttrell Revocable Trust and Loev borders the south boundary.

Vehicle Access and Traffic Review

Vehicles will access the subject site generally from Highway 133 and Hendrick Drive. Most vehicles coming from the north will use the Hendrick Drive access off Highway 133 and continue westbound and then southbound. Vehicles coming from the south will be able to turn westbound onto Main Street at the roundabout and then turn northbound on Hendrick Drive or they could continue to the Hendrick Drive access off Highway 133. Emergency access to the site will be from the same routes.

SE has reached out to the fire department about emergency vehicle access to the site. The fire department has agreed that they have adequate access and can back their trucks directly onto Hendrick Drive if necessary.

A traffic study has been prepared by Kimley-Horn for this project that reviews the traffic generation as well as Highway 133 access permit revisions. A right turn acceleration lane at the Hendrick Drive and Highway 133 intersection is required which is further described in the traffic report. The study is attached for reference. A new highway access permit is also required. The permit is for the Hendrick Drive and Highway 133 access. The new permit will be in the Town's name.

Drainage

A separate drainage study has been prepared by SE for this project which addresses the Town requirements for stormwater drainage and management. The conclusions of the study suggest that no adverse impacts to the subject property or surrounding properties will result from the proposed development. The intent of the proposed grading and stormwater management for the project is to route stormwater over hard surfaces and landscaped surfaces to curb inlets and area drains. Drainage on the building roofs will be collected in roof drains. Once in the roof drains and inlets, the stormwater drainage will be carried through storm pipes to stormwater infrastructure. Four drywells are proposed on the site to handle the onsite detention requirements of the development. The system has been designed to retain the entire 100-year, 1-hour storm event in the storm infrastructure. SE's drainage study is attached for more details.

Construction Erosion Control

Temporary erosion control will be addressed in the Building Permit submittals. A state stormwater permit for erosion control will be necessary because the total disturbance area is more than 1.0 acre. The site will utilize erosion control which includes best management practices such as silt fence, log wattles, and truck tracking control onsite.

Utilities

Domestic Water System

The subject site falls within the Town of Carbondale's water service area. An 8" DIP water main exists under Hendrick Drive to the west of the site and two separate 6" DIP water services are stubbed off the main to serve the subject site. Both of the existing services are planned to be extended to the building.

Three fire hydrants exist that will serve the subject site. One is located in the small landscape island just south of the fueling station on the north side of Hendrick Drive. One is located in the landscape island directly west of the proposed building on the west side of Hendrick Drive at the southernmost access to the grocery store parking lot. And one is located in the landscape area between the sidewalk and the parallel parking just north of the Hendrick Drive access into the Main Street Marketplace development. SE has reached out to the fire department and received authorization that these three fire hydrants are sufficient to serve development on the subject site. All water improvements will be in compliance with the Town's rules, regulations, and specifications. See utility design drawings for more details.

Sanitary Sewer System

The subject site falls within the Town of Carbondale's sanitary sewer service area. A sewer main stub exists on the subject site directly west of the proposed building. The sewer main gravity feeds to the west across Hendrick Drive and across the Carbondale Marketplace Subdivision. It is proposed to extend the existing sewer main stub to the east and install one sewer manhole. Service lines will extend from the building to the new sewer main. All sewer improvements will be in compliance with the Town's rules, regulations, and specifications. See utility design drawings for more details.

Electric/Telephone/Cable

Comcast, Century Link, Ting Internet, and Xcel Energy utility conduits have been extended to pedestal, vault, and transformer/switch cabinet locations at the southwest corner of the subject property. Services for each of these utilities will be extended from this location to another set of pedestals and a transformer to serve the building. Services will then be extended from the new pedestals and transformer to a shared communications and power mechanical room at the building. All installation will be in accordance with utility company standards. All utility companies have confirmed that service is available to the subject site. See utility drawings for more details.

Natural Gas

Black Hills Energy has a 1 ¼" steel gas line in the Highway 133 ROW on the west side of the asphalt path (east side of the proposed building). Gas service is planned to be extended to the building from this line which requires a CDOT utility permit. That process will take place during the building permit design phase. All gas lines will be installed in accordance with the gas company standards. Black Hills Energy has confirmed that service is available to the subject site. See utility design drawings for more details.

EQR Analysis

The following describes analysis prepared by SE for the number of EQRs generated for the development and the resulting water consumption. SE has assumed 350 gal/day per EQR for water use and 300 gal/day per EQR for sewer use. This analysis should not be considered final and the number of EQRs and water usage will be determined by the Town attorney and Town water rights engineer. This analysis is for estimation and information purposes only.

In this analysis, commercial space, retail space, restaurant seats, residential units, irrigated area, and other EQR triggers were tabulated with the corresponding EQRs per the Town code. The proposed development includes:

Building Areas

Level 1 Overall	13,799 GFA
Level 2 Overall	13,463 GFA
Total	**27,262 GFA***
Possible Retail	4,691 GFA
Possible Restaurant	2,246 GFA
Bank	3,269 GFA
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Multi-Family (Level 1)	2,769 GFA
Multi-Family (Level 2)	10,207 GFA
Total	**27,262 GFA***

Multi Family Units

1 Bedroom	12 Units
2 Bedroom	04 Units
Total	**16 Units**

Unit Matrix

Unit Type	Quantity	Unit Area (SF)	Req'd Bulk Storage (CU FT)	Bulk Storage Provided (CU FT)
1 BRDM #1	1	510	170	194
1 BRDM #2	1	460	153	292
1 BRDM #3	1	452	150	292
1 BRDM #4	1	416	138	292
1 BRDM #5	4	499	166	225
1 BRDM #6	4	479	159	225
2 BRDM #1	2	900	300	317
2 BRDM #2	1	752	250	312
2 BRDM #3	1	1010	336	345
Total	16			

- 4,691 SF of Commercial Retail (assume 2 restrooms)
- 7,348 SF of Commercial Office (includes bank, assume 4 restrooms with a toilet and sink in each)
- 2,246 SF of Restaurant Space (assume 50% dining space and 12 SF/seat or approximately 95 seats)
- 12 x 1-bed units under 550 SF (treat as buffet or studio apartment)
- 4 x 2-bed units under 1,500 SF
- Irrigated Area Onsite – ±12,865 SF (0.30 acre)

The Town's EQR table located within the municipal code shows the following EQRs per development type:

- Commercial Retail Space
  - Commercial retail up to 5,000 SF including 2 restrooms – 1.00 EQR
- Commercial Office Space
  - Commercial office up to 7,000 SF with 2 restrooms – 1.00 EQR
  - Commercial office additional sink – 0.15 EQR/sink
  - Commercial office additional toilet or urinal – 0.30 EQR/toilet
  - 0.14 EQR/1,000 SF over 7,000 SF
- Restaurant Space
  - First 25 seats – 2.0 EQRs, 0.04 EQR for each additional seat
- Multi-family Units
  - Studio with 1 kitchen up to 1,500 SF – 0.60 EQR
  - Up to and including 2-bed with 1.5 baths and 1 kitchen up to 1,500 SF – 0.80 EQR

- Irrigation by sprinkler or drip system
    - Commercial or Residential per 100 SF – 0.02 EQR

The proposed development will generate the following EQRs per the Town code:

- Commercial Retail Space (4,691 SF) – **1.00 EQR**
    - Commercial up to 5,000 SF: 1 x 1.00 EQR = 1.00 EQR

- Commercial Office Space (7,348 SF) – **1.95 EQRs**
    - Commercial office up to 7,000 SF: 1 x 1.00 EQR = 1.00 EQR
    - Commercial office additional sink: 2 x 0.15 EQR = 0.30 EQR
    - Commercial office additional toilet: 2 x 0.30 EQR = 0.60 EQR
    - Commercial office additional SF over 7,000 SF: 348 SF x 0.14 EQR/1,000 SF = 0.05 EQR

- Restaurant Space (Assume 95 seats) – **4.80 EQRs**
    - First 25 seats: 1 x 2.00 EQR = 2.00 EQR
    - 0.04 EQR per additional seats: 70 seats x 0.04 EQR/seat = 2.80 EQRs

- Multi-family Units – **10.40 EQRs**
    - 1-bed units: 12 units x 0.60 EQR/unit = 7.20 EQRs
    - 2-bed units: 4 units x 0.80 EQR/unit = 3.20 EQRs

- Irrigated Area – **4.10 EQRs**
    - Total Irrigated Area: 12,865 SF x 0.02 EQR/100 SF = 2.57 EQRs

Total EQRs proposed for the development for water (including irrigation through the domestic line) equals **22.25 EQRs**. Assuming 350 gal/day per EQR for water, this generates approximately **7,790 gal/day**.

Total EQRs proposed for the development for sewer equals **22.25 EQRs**. Assuming 300 gal/day per EQR for sewer, this generates approximately **6,675 gal/day**.

Conclusion:

Based on the proposed layout and design, the existing and proposed access, drainage, traffic, utilities, irrigation, and site improvements have been addressed per the Town of Carbondale requirements for review and submittal.

If you have any questions or need any additional information, please call (970) 704-0311.

Sincerely,
SOPRIS ENGINEERING, LLC

Kyle Sanderson, PE
Project Manager

Attachments:

- Kimley-Horn Traffic Study
- Drainage Report

DRAINAGE REPORT

FOR

ANB BANK MIXED USE DEVELOPMENT
CARBONDALE, CO

Prepared for:
Town of Carbondale Major Site Plan Review

Prepared by:

Sopris Engineering, LLC
502 Main Street Suite A3
Carbondale, Colorado 81623

On Behalf of:

ANB BANK - CARBONDALE
c/o Will Coffield
Alder Real Estate

SE Project Number: 19215.02

December 22, 2022

Purpose of Drainage Study

The purpose of this Drainage Study is to:

- Evaluate the existing & historic drainage conditions and estimate flow rates to compare existing/historic versus post development drainage conditions.
- Estimate 10-year and 100-year post development peak runoff rates in support of sizing of stormwater mitigation infrastructure.
- Ensure the detention and retention systems have adequate capacity such that post development runoff rates do not exceed existing peak runoff rates for the 10-year and 100-year storm events.
- Provide Best Management Practice (BMP) recommendations to minimize sediment transport offsite

General Overview, Site Description, & Existing Conditions

The subject property (site) is located north of Main Street, west of Highway 133, and east of Hendrick Drive. The site is adjacent to the Carbondale Marketplace Subdivision and the City Market grocery store and fueling station. The subject property is proposing development of a 2-story mixed use building that fronts Highway 133. The building is made up of an ANB Bank branch on the north side and a mix of office, retail, restaurant, and multi-family residential in the middle and south side of the building. The site also includes associated parking, landscaping, utility improvements, and stormwater management infrastructure. The site is approximately 1.440 acres.

The existing site has historically been vacant land. The grade of the site generally sits higher than the road elevations that border the site. The existing surface generally grades from south to north. Soils general consist of a small layer of topsoil (±6”) with a larger layer of gravel/sand/cobbles (essentially pitrun type material) beneath. The onsite soils consist of Type ‘B’ Hydrologic Soils, according to the soil survey provided by the National Resource Conservation Service (NRCS). Type 'B' soils are conducive to moderate infiltration rates with moderately well drained soils. The NRCS soils are consistent with the site soils described in the site specific soils report prepared by Kumar and Associates Inc. See attached for NRCS soil survey report on the Hydrologic Soils group.

Public improvements to serve and support development of the site including utilities, vehicle access, and pedestrian access have been previously constructed. Development of the subject site will include additional public improvements that generally include sidewalk, street trees, landscaping, and modifications to Hendrick Drive for the accesses into the site. Landscaping is proposed around the building and in islands around the parking lot and drive aisles. The drainage infrastructure will generally include curb inlets and area inlets that will be piped to four (4) drywell structures. See attached for grading and drainage plans.

The subject property falls within Zone C on FEMA Flood Insurance Rate Map panel number 0802341858 A with a revised date of February 5, 1986. FEMA designates Zone C as minimal risk areas outside the 0.2% (500 year storm) annual chance floodplain. See attached for FEMA map.

Existing Drainage Basins

The existing drainage conditions were analyzed in order to estimate existing peak stormwater flow rates affecting the site and were based on site survey topography and site visits. The existing site conditions are uniform across the entire site and for this analysis, a single basin across the entire site was analyzed for comparison between historic and post development drainage conditions. The resultant basins and drainage calculations are described in greater detail below and are illustrated on civil sheet C-5.0.

> **Existing Basin 01 (EX-01)** is the onsite basin made up of the subject property. The storm water runoff from this basin generally flows from south to north with sheet flow drainage onto the adjacent streets.

The existing drainage basin delineation was used to estimate 10-year and 100-year peak runoff rates for the subject property to determine allowable release rates for the developed site. The hydrologic methods, assumptions, and results are summarized within Table 1 below.

Developed Drainage Basins

The entire overall development area and site improvements for the project were analyzed as a single basin even though some of the site improvements will drain off the site into the adjacent right of ways and not into the storm water mitigation infrastructure. Because some of the developed area will drain into the right of ways and not in the storm infrastructure, the analysis is considered conservative with over detention in the storm infrastructure. The proposed drainage basin is described in more detail below.

> **Post Development Basin 1 (PR-01)** includes the mixed use building, drive aisles, parking spaces, and landscaping around the site. The building roof will have roof drains that will collect flows and be hard piped under the surface to a series of 4 drywells located in the parking and drive aisles. The hardscape and landscape areas will sheet flow on the surface to area drains and curb inlets and then piped to the drywells. Flows on the landscape areas will most likely infiltrate into the soils with larger storm events sheet flowing to the road surface and then to the curb inlets.

The methodology for estimating post development peak runoff rates for the 10-year and 100-yr storm events are discussed further below and the results are summarized within Table 1.

Hydrologic Analysis Methods & Assumptions

Onsite and offsite drainage areas were analyzed using the Rational Method (Equation 1) since the cumulative total of tributary area being studied was less than 90 acres.

Equation 1: $Q = C^* I * A$

Q = Runoff Flow Rate (cfs); C = Runoff Coefficient

I = Rainfall Intensity (in/hr); A= Area of Basin (acres)

The runoff coefficient (C) is a variable representing the ratio of runoff to rainfall volumes during a storm event. The determination of C depends on the soil type, watershed imperviousness, and storm event frequency. Each drainage basin was studied to determine the percent of impervious area within the basin. Landscape areas were assumed to be 2% impervious which correlates to 10-year and 100-year runoff coefficients of 0.07 and 0.44, respectively. Hard surfaces including buildings, roofs, concrete, and asphalt were assumed to be 100% impervious or 0.86 and 0.89 for the 10-year and 100-year runoff coefficients, respectively. Each basin's total or effective percent impervious area was used to establish a weighted runoff coefficient. The Mile High Flood District (MHFD) (formerly UDFCD) out of Denver, CO has developed runoff coefficient tables in Chapter 6 of Volume 1 of their Urban Storm Drainage Criteria Manual. Runoff coefficients are based on the amount of runoff and the storm event. Table 6-5 is attached for reference at the end of this report. This table was used to determine the corresponding 10-year and 100-year weighted average runoff coefficients based on a Type B hydrologic soil classification that are found within Table 1.

The design rainfall duration used in the Rational Method is referred to as the time of concentration. The time of concentration is the cumulative travel time, including overland flow and channelized flow, for runoff to get from the furthest point upstream of a basin to a designated design point. A minimum time of concentration of 10 minutes was used for all basins given the size of the basin and the relatively short travel distances. Based on the Town of Carbondale's Intensity Duration Frequency (IDF) Curve, the 10-year and 100-year, 10-minute time of concentration rainfall intensities are 2.68 in/hr and 4.37 in/hr, respectively. The IDF Curve and Tables for Carbondale are attached at the end of this report.

The site has been analyzed for the peak rainfall runoff for storm water system sizing, and also has been analyzed for the 10-year, 1 hour storm event for detention/retention system sizing. A summary of the 10-year and 100-year estimated peak runoff rates analyzed for this project are summarized in Table 1 below:

Table 1: Existing and Post Development Peak Runoff Summary (10-min Storm)

10-YR EXISTING PEAK RUNOFF SUMMARY						100-YR EX. PEAK RUNOFF SUMMARY				
BASIN I.D.	% IMPERV.	C_{10}	I_{10} (in/hr)	AREA (acres)	Q_{10} (cfs)	BASIN I.D.	C_{100}	I_{100} (in/hr)	AREA (acres)	Q_{100} (cfs)
EX-01	2%	0.07	2.68	1.440	**0.270**	EX-01	0.44	4.37	1.440	**2.769**
10-YR DEVELOPED PEAK RUNOFF SUMMARY						**100-YR DEV. PEAK RUNOFF SUMMARY**				
PR-01	81%	0.71	2.68	1.440	**2.740**	PR-01	0.80	4.37	1.440	**5.034**
[1] TIME OF CONCENTRATION WAS ASSUMED TO BE EQUAL TO 10 MINUTES.										
[2] RATIONAL C FACTORS ARE BASED ON THE PERCENT IMPERVIOUS FROM TABLE 6-5 OF CHAPTER 6 OF THE UDFCD - URBAN STORM DRAINAGE CRITERIA MANUAL. (MILE HIGH FLOOD DISTRICT)										
[3] RAINFALL INTENSITY IS FROM THE NOAA 14 IDF CURVE FOR CARBONDALE, CO										

For detention mitigation onsite, the modified rational method was used. See below for more detail on the site detention mitigation. The detention runoff rates for this project are summarized in Table 2 below.

Table 2: Existing and Post Development Detention Runoff Summary (1-hr storm)

10-YR EXISTING DETENTION RUNOFF SUMMARY						100-YR EX. DETENTION RUNOFF SUMMARY				
BASIN I.D.	% IMPERV.	C_{10}	I_{10} (in/hr)	AREA (acres)	Q_{10} (cfs)	BASIN I.D.	C_{100}	I_{100} (in/hr)	AREA (acres)	Q_{100} (cfs)
EX-01	2%	0.07	0.777	1.440	**0.078**	EX-01	0.44	1.19	1.440	**0.754**
10-YR EXISTING DETENTION RUNOFF SUMMARY						100-YR EX. DETENTION RUNOFF SUMMARY				
PR-01	81%	0.71	0.777	1.440	**0.794**	PR-01	0.80	1.19	1.440	**1.371**
[1] TIME OF CONCENTRATION WAS ASSUMED TO BE EQUAL TO 10 MINUTES.										
[2] RATIONAL C FACTORS ARE BASED ON THE PERCENT IMPERVIOUS FROM TABLE 6-5 OF CHAPTER 6 OF THE UDFCD - URBAN STORM DRAINAGE CRITERIA MANUAL. (MILE HIGH FLOOD DISTRICT)										
[3] RAINFALL INTENSITY IS FROM THE NOAA 14 IDF CURVE FOR CARBONDALE, CO										

Hydraulic Analysis Methods & Assumptions

Storm water runoff is routed on the surface via sheet flow, then to drainage swales or curb and gutter, and then routed in storm sewer pipes which daylight into drywells. The pipes onsite have been sized according to the design flows. The pipes however may be submerged during larger storm events as the flow backs up in the drywells and underground detention system. The detention systems for the basin are interconnected to distribute and maximize the potential for infiltration. Supporting hydraulic data for all of the calculations have been provided at the end of this report. Each of the gravity storm channels were sized using Manning's Equation (Equation 2).

Equation 2: $Q = 1.49/n * R^{2/3} * A * S^{0.5}$

Q = Runoff Flow Rate (cfs); n = Manning's Roughness Coefficient

R = Hydraulic Radius (ft); A= Flow Area (sf), S = Channel Slope (ft/ft)

The hydraulic capacity calculations have been separated by standard pipe sizes for site storm water drainage with a minimum 2% slope. In general the pipes onsite collect storm water from small subareas within the larger drainage basins. The approximate maximum capacity of each size storm pipe is summarized in Table 3 below.

Table 3: Hydraulic Pipe capacity

Pipe Size (IN)	Pipe Material	Manning's n	Slope	Capacity (CFS)
4	Solid PVC	0.011	2.00%	0.33
6	Solid PVC	0.011	2.00%	1.00
8	Solid PVC	0.011	2.00%	2.18
12	ADS N12	0.011	2.00%	6.40

The terminal storm sewer pipes will utilize 12" smooth wall HDPE pipes. The pipe capacity is greater than the 100-year storm runoff rates, but the added size again provides access for maintenance and reduces the clogging potential.

The final hydraulic capacity calculations will be completed for the building permit submittal. Supporting hydraulic data for all of the calculations has been attached.

Detention Mitigation Analysis & Design

The primary drainage criterion within the Town of Carbondale includes detaining/retaining stormwater runoff onsite such that post development runoff rates exiting the site do not exceed historic levels. Because this site is adjacent and tributary to the Hendrick Drive stormwater system, it was decided to calculate detention volumes for the 10-year, 1-hr storm. Note the shorter duration high intensity storms have higher runoff rates, but the storm water runoff volume is smaller than the longer duration storms. As the storm water system retains storm events up to the 1 hour event, the shorter duration events are also retained. Also note that the storage volume calculations do not account for any infiltration, so the design provides a further conservative analysis.

Table 4 summarizes the 10 year - 1 hour existing and post development peak runoff rates contributing runoff for the entire sitet, and also summarizes the required and provided storage volumes to size the proposed storm water detention infrastructure.

Table 4: Detention Runoff Rates and storage volume:

10 YEAR - 1 HOUR STORAGE SUMMARY					
EX Q_{10} (cfs)	DE Q_{10} (cfs)	+/- Q (cfs)	DET. REQ. (cf) [1]	+/- DET. PROV. (cf)	POST DET Q_{100} (cfs)
0.27	2.74	2.47	3,249	3,678	0.00
[1] REQUIRED DETENTION CALCULATED USING THE RATIONAL METHOD DETENTION VOLUME APPROACH.					

10 YEAR - 1 HOUR STORAGE		
Duration =	60	minutes
P =	0.777	
RUNOFF VOLUME - Vr=C*(P/12)*A		
BASIN	Vr	Vr
I.D.	(ac-ft)	(CF)
PR-01	0.075	3,249

The Rational Method Detention Volume approach was used to estimate the required storage volume for the project. The proposed retention mitigation improvements include four drywells.

Drywells are being used for stormwater mitigation infrastructure. A drywell is a BMP that incorporates manhole structures with perforated barrels at the deeper depths. Washed screened rock is installed around the exterior of the perforated sections. When sub-soils are capable of moderate to high infiltration rates, drywells are considered to be a viable BMP. They dramatically reduce the increased runoff and volume of stormwater generated from surrounding impervious areas and promote infiltration; thereby improving the water quality of stormwater runoff. Based on the NRCS soils data as well as the onsite soils report prepared for this parcel, the underlying soils consist of gravel with cobbles which are ideal for infiltrating water.

The available volume provided by the drywell system includes the area within the structure as well as the available voids within the gravel backfill. The volume of the backfill gravel includes the prism associated with the 1H:1V cut slopes. A 30% void ratio was used for estimating the available volume within voids of the gravel material. The available storage within the connecting storm drains was not included in the storage calculation. In addition, the infiltration capacity of the drywell system was also neglected which was considered to be a conservative approach. Each of the four drywells has an approximate storage volume capacity of 919.5 CF for a total volume provided of 3,678 CF. The design of the drywells is summarized in details attached to the end of this report.

Sediment & Erosion Control

Current consruction standards provide parameters for mitigation of drainage and soil erosion activities relative to site development. Appropriate best management practices (BMP's) shall be applied to this site. These BMP's are primarily grouped for two stages of the development, the construction phase and the post development phase, with the main emphasis on soil erosion and sediment transport controls.

Temporary Erosion Control during the construction phase for the proposed improvements there will be potential for soil erosion and offsite sediment transport triggered by surface runoff during rain events. The contractor must at a minimum install and maintain the following BMPs during the construction phase:

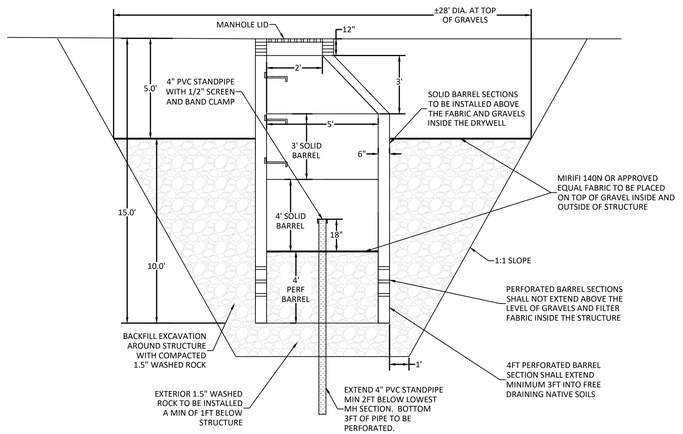
- ✓ An embedded silt fence around the disturbed soils and especially in the low receiving ends of the slopes.
- ✓ Prior to any clearing and grubbing, lot grading, and prior to any construction work, the contractor must construct temporary sediment basins in strategically located areas in order to collect runoff sediment and stop sediment from traveling offsite.
- ✓ The site must be inspected at the end of every 14-day period during construction, and silt deposits from behind the silt fencing and from the sediment pits must be removed regularly to ensure full functioning of this erosion control system. These activities must be logged in a logbook available at the site for inspection at all times.
- ✓ Vehicle tracking pads (mud racks) at the site entrance(s) must be installed to avoid mud tracking into public right of way.
- ✓ Seed & mulch must be placed over disturbed cut and fill slopes, and watered as necessary, to establish temporary vegetative ground cover until paving, gravel surface and/or landscaping is done.

A construction site can be a very dynamic area; because of this the final location and selection of construction BMPs will be left up to the contractor. All appropriate permitting must be acquired prior to commencing construction and the criteria outlined within all appropriate permits must be adhered to until the associated permits have been closed.

Permanent Erosion Control BMPs shall consist of a complete landscaping and ground covering task to permanently re-vegetate and cover bear grounds that will remain open space to avoid long-term soil erosion. This effort will reduce the risk of unnecessary degradation and failure of the drainage system. Temporary erosion control structures installed during construction shall be left in place as necessary and maintained until new vegetation has been reestablished at a 70% level. Upon reaching a satisfactory level of soil stabilization from the new vegetation, all erosion control structures shall be removed; with the exception of the proposed sediment/retention basins. These should remain in place until they become a conflict with future improvements.

Conclusions

The results of this drainage study suggest that no adverse drainage impacts to the subject property or surrounding properties will result from the proposed development. Although onsite peak runoff rates will increase with the added improvements, the site storm water improvements and retention pond will eliminate any increase in stormwater runoff leaving the site. Best Management Practices (BMPs) have been identified and will be implemented during the construction of the improvements. In addition, permanent vegetated cover should be installed as soon as construction allows.

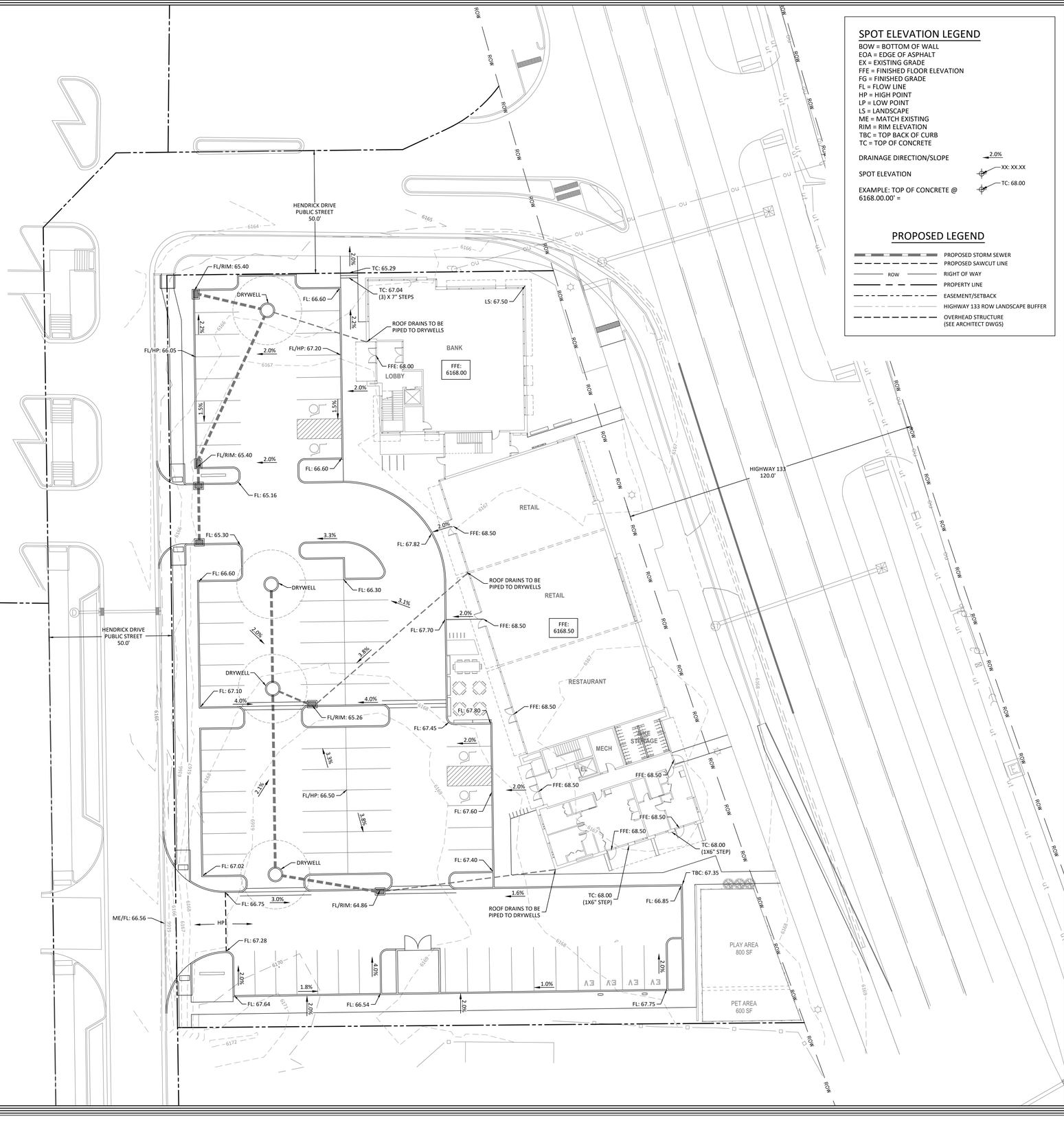


DRYWELL DETAIL

N.T.S.

DRYWELL NOTES

- CONTRACTOR TO CONFIRM WITH ENGINEER THAT THERE ARE FREE DRAINING SOILS AT THE DESIGNED DEPTH OF DRYWELL PRIOR TO INSTALLATION
- CONTRACTOR TO PROVIDE SHOP DRAWINGS OF DRYWELL PRIOR TO ORDERING MATERIALS



SPOT ELEVATION LEGEND

BOW = BOTTOM OF WALL
EOA = EDGE OF ASPHALT
EX = EXISTING GRADE
FFE = FINISHED FLOOR ELEVATION
FG = FINISHED GRADE
FL = FLOW LINE
HP = HIGH POINT
LP = LOW POINT
LS = LANDSCAPE
ME = MATCH EXISTING
RIM = RIM ELEVATION
TBC = TOP BACK OF CURB
TC = TOP OF CONCRETE

DRAINAGE DIRECTION/SLOPE — 2.0%

SPOT ELEVATION — XX: XX.XX

EXAMPLE: TOP OF CONCRETE @ 6168.00.00' = — TC: 68.00

PROPOSED LEGEND

- PROPOSED STORM SEWER
- PROPOSED SAWCUT LINE
- ROW — RIGHT OF WAY
- PROPERTY LINE
- EASEMENT/SETBACK
- HIGHWAY 133 ROW LANDSCAPE BUFFER
- OVERHEAD STRUCTURE (SEE ARCHITECT DWGS)

NORTH

Know what's **below.** **Call** before you dig.
CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

SOPRIS ENGINEERING LLC
502 MAIN STREET • SUITE A3 • CARBONDALE CO 81623
(970) 704-0311 • soprisengineering.com

DATE:	12-22-22	
JOB NO.	19215.02	
DESIGNED BY	KTS	
DRAWN BY	KTS	
CHECKED BY	YTN	

ANB BANK
MIXED USE DEVELOPMENT
CARBONDALE, COLORADO

MAJOR SITE PLAN REVIEW APPLICATION

DATE	REVISION

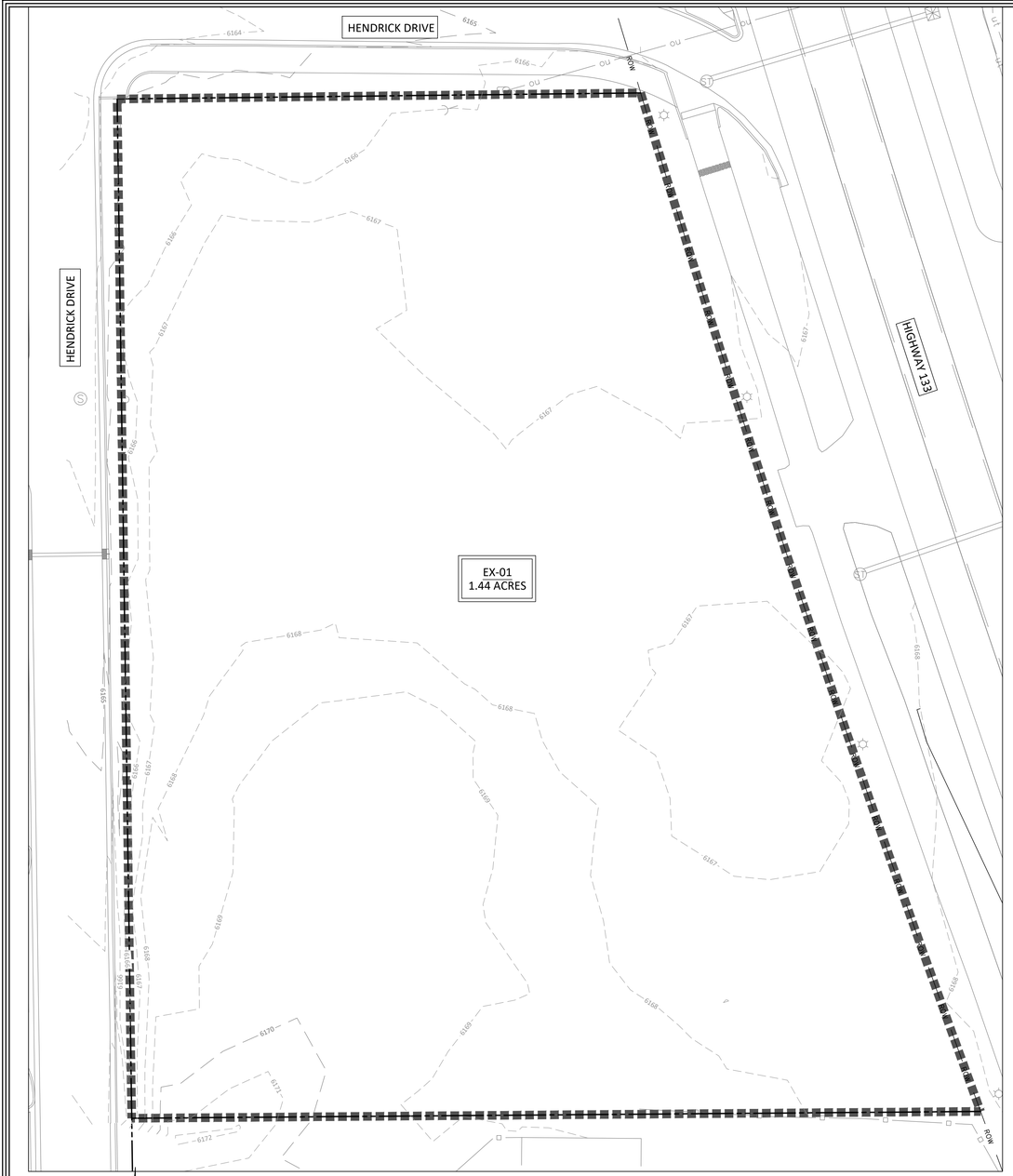
TITLE

GRADING PLAN

DRAWING NO.

C-4.0

G:\2019\19215\CIVIL\CIVIL DWGS\PLOTS\SHEET SET\19215-4-GRADING PLAN.DWG - Dec 22, 2022 - 11:57am



NORTH

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

CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

EXISTING BASINS

PEAK RUNOFF DRAINAGE CALCULATIONS

10-YR EXISTING PEAK RUNOFF SUMMARY						100-YR EX. PEAK RUNOFF SUMMARY				
BASIN I.D.	% IMPERV.	C_{10}	I_{10} (in/hr)	AREA (acres)	Q_{10} (cfs)	BASIN I.D.	C_{100}	I_{100} (in/hr)	AREA (acres)	Q_{100} (cfs)
EX-01	2%	0.07	2.68	1.440	**0.270**	EX-01	0.44	4.37	1.440	**2.769**
10-YR DEVELOPED PEAK RUNOFF SUMMARY						**100-YR DEV. PEAK RUNOFF SUMMARY**				
PR-01	81%	0.71	2.68	1.440	**2.740**	PR-01	0.80	4.37	1.440	**5.034**

[1] TIME OF CONCENTRATION WAS ASSUMED TO BE EQUAL TO 10 MINUTES.
[2] RATIONAL C FACTORS ARE BASED ON THE PERCENT IMPERVIOUS FROM TABLE 6-5 OF CHAPTER 6 OF THE UDFCD - URBAN STORM DRAINAGE CRITERIA MANUAL. (MILE HIGH FLOOD DISTRICT)
[3] RAINFALL INTENSITY IS FROM THE NOAA 14 IDF CURVE FOR CARBONDALE, CO

PROPOSED BASINS

PRE/POST DRAINAGE CALCULATIONS: MODIFIED RATIONAL 1-HOUR STORM EVENT

10-YR EXISTING DETENTION RUNOFF SUMMARY						100-YR EX. DETENTION RUNOFF SUMMARY				
BASIN I.D.	% IMPERV.	C_{10}	I_{10} (in/hr)	AREA (acres)	Q_{10} (cfs)	BASIN I.D.	C_{100}	I_{100} (in/hr)	AREA (acres)	Q_{100} (cfs)
EX-01	2%	0.07	0.777	1.440	**0.078**	EX-01	0.44	1.19	1.440	**0.754**
10-YR EXISTING DETENTION RUNOFF SUMMARY						**100-YR EX. DETENTION RUNOFF SUMMARY**				
PR-01	81%	0.71	0.777	1.440	**0.794**	PR-01	0.80	1.19	1.440	**1.371**

[1] TIME OF CONCENTRATION WAS ASSUMED TO BE EQUAL TO 10 MINUTES.
[2] RATIONAL C FACTORS ARE BASED ON THE PERCENT IMPERVIOUS FROM TABLE 6-5 OF CHAPTER 6 OF THE UDFCD - URBAN STORM DRAINAGE CRITERIA MANUAL. (MILE HIGH FLOOD DISTRICT)
[3] RAINFALL INTENSITY IS FROM THE NOAA 14 IDF CURVE FOR CARBONDALE, CO

DRYWELL STORAGE CALCULATION SUMMARY

10 YEAR - 1 HOUR STORAGE SUMMARY					
EX Q_{100} (cfs)	DE Q_{100} (cfs)	+/- Q (cfs)	DET. REQ. (cf) [1]	+/- DET. PROV. (cf)	POST DET Q_{100} (cfs)
0.08	0.79	0.72	3,249	3,678	0.00

[1] REQUIRED DETENTION CALCULATED USING THE RATIONAL METHOD DETENTION VOLUME APPROACH.

10 YEAR - 1 HOUR STORAGE		
Duration =	60	minutes
P =	0.777	
RUNOFF VOLUME - Vr=C*(P/12)*A		
BASIN	Vr	Vr
I.D.	(ac-ft)	(CF)
PR-01	0.075	3,249

SOPRIS ENGINEERING LLC
502 MAIN STREET • SUITE A3 • CARBONDALE CO 81623
(970) 704-0311 • soprisengineering.com

DATE:	12-22-22	
JOB NO.	19215.02	
DESIGNED BY	KTS	
DRAWN BY	KTS	
CHECKED BY	YTN	

MIXED USE DEVELOPMENT
ANB BANK
CARBONDALE, COLORADO
MAJOR SITE PLAN REVIEW APPLICATION

DATE	REVISION

TITLE

DRAWING NO.
C-5.0

G:\2019\19215\CIVIL\CIVIL DWGS\PLOTS\SHEET SET\19215-1-DRAINAGE PLAN.DWG - Dec 22, 2022 - 11:48am

Hydrologic Soil Group—Aspen-Gypsum Area, Colorado, Parts of Eagle, Garfield, and Pitkin Counties

Map Scale: 1:617 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 5 10 20 30

Feet: 0 25 50 100 150

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Aspen-Gypsum Area, Colorado, Parts of Eagle, Garfield, and Pitkin Counties
Survey Area Data: Version 11, Jun 5, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 14, 2010—Nov 1, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
13	Atencio-Azeltine complex, 3 to 6 percent slopes	B	1.4	100.0%
Totals for Area of Interest			**1.4**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

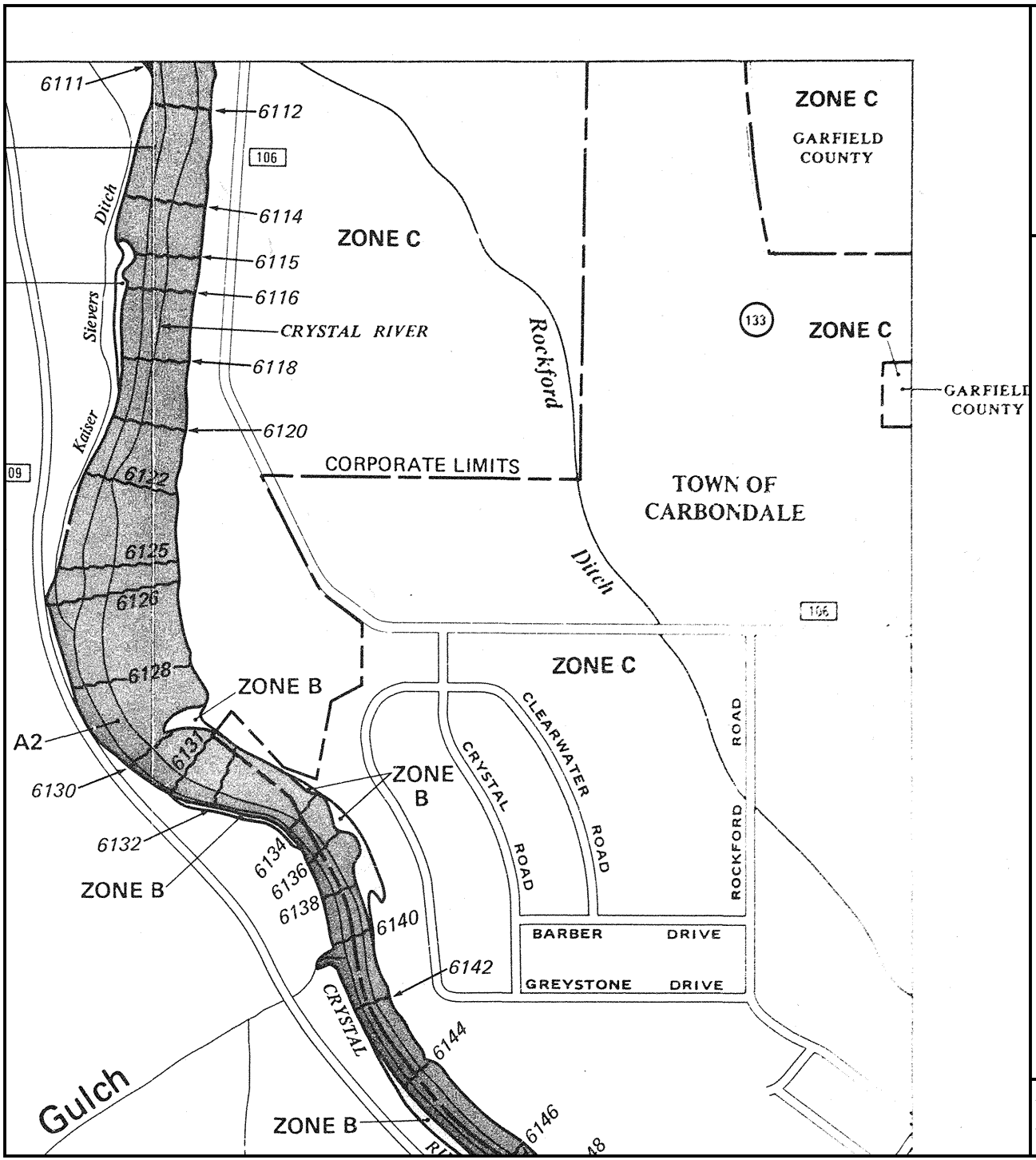
If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher



APPROXIMATE SCALE IN FEET

500 0 500

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

TOWN OF
CARBONDALE,
COLORADO
GARFIELD COUNTY

PANEL 1858 OF 1900
(SEE MAP INDEX FOR PANELS NOT PRINTED)

COMMUNITY-PANEL NUMBER
080234 1858 A

EFFECTIVE DATE:
FEBRUARY 5, 1986

Federal Emergency Management Agency

Table 6-5. Runoff coefficients, *c*

Total or Effective % Impervious	NRCS Hydrologic Soil Group A						
	2-Year	5-Year	10-Year	25-Year	50-Year	100-Year	500-Year
2%	0.01	0.01	0.01	0.01	0.04	0.13	0.27
5%	0.02	0.02	0.02	0.03	0.07	0.15	0.29
10%	0.04	0.05	0.05	0.07	0.11	0.19	0.32
15%	0.07	0.08	0.08	0.1	0.15	0.23	0.35
20%	0.1	0.11	0.12	0.14	0.2	0.27	0.38
25%	0.14	0.15	0.16	0.19	0.24	0.3	0.42
30%	0.18	0.19	0.2	0.23	0.28	0.34	0.45
35%	0.21	0.23	0.24	0.27	0.32	0.38	0.48
40%	0.25	0.27	0.28	0.32	0.37	0.42	0.51
45%	0.3	0.31	0.33	0.36	0.41	0.46	0.54
50%	0.34	0.36	0.37	0.41	0.45	0.5	0.58
55%	0.39	0.4	0.42	0.45	0.49	0.54	0.61
60%	0.43	0.45	0.47	0.5	0.54	0.58	0.64
65%	0.48	0.5	0.51	0.54	0.58	0.62	0.67
70%	0.53	0.55	0.56	0.59	0.62	0.65	0.71
75%	0.58	0.6	0.61	0.64	0.66	0.69	0.74
80%	0.63	0.65	0.66	0.69	0.71	0.73	0.77
85%	0.68	0.7	0.71	0.74	0.75	0.77	0.8
90%	0.73	0.75	0.77	0.79	0.79	0.81	0.84
95%	0.79	0.81	0.82	0.83	0.84	0.85	0.87
100%	0.84	0.86	0.87	0.88	0.88	0.89	0.9
Total or Effective % Impervious	**NRCS Hydrologic Soil Group B**						
	2-Year	**5-Year**	**10-Year**	**25-Year**	**50-Year**	**100-Year**	**500-Year**
2%	0.01	0.01	0.07	0.26	0.34	0.44	0.54
5%	0.03	0.03	0.1	0.28	0.36	0.45	0.55
10%	0.06	0.07	0.14	0.31	0.38	0.47	0.57
15%	0.09	0.11	0.18	0.34	0.41	0.5	0.59
20%	0.13	0.15	0.22	0.38	0.44	0.52	0.61
25%	0.17	0.19	0.26	0.41	0.47	0.54	0.63
30%	0.2	0.23	0.3	0.44	0.49	0.57	0.65
35%	0.24	0.27	0.34	0.47	0.52	0.59	0.66
40%	0.29	0.32	0.38	0.5	0.55	0.61	0.68
45%	0.33	0.36	0.42	0.53	0.58	0.64	0.7
50%	0.37	0.4	0.46	0.56	0.61	0.66	0.72
55%	0.42	0.45	0.5	0.6	0.63	0.68	0.74
60%	0.46	0.49	0.54	0.63	0.66	0.71	0.76
65%	0.5	0.54	0.58	0.66	0.69	0.73	0.77
70%	0.55	0.58	0.62	0.69	0.72	0.75	0.79
75%	0.6	0.63	0.66	0.72	0.75	0.78	0.81
80%	0.64	0.67	0.7	0.75	0.77	0.8	0.83
85%	0.69	0.72	0.74	0.78	0.8	0.82	0.85
90%	0.74	0.76	0.78	0.81	0.83	0.84	0.87
95%	0.79	0.81	0.82	0.85	0.86	0.87	0.88
100%	0.84	0.86	0.86	0.88	0.89	0.89	0.9

Table 6-5. Runoff coefficients, *c* (continued)

Total or Effective % Impervious	NRCS Hydrologic Soil Group C						
	2-Year	5-Year	10-Year	25-Year	50-Year	100-Year	500-Year
2%	0.01	0.05	0.15	0.33	0.40	0.49	0.59
5%	0.03	0.08	0.17	0.35	0.42	0.5	0.6
10%	0.06	0.12	0.21	0.37	0.44	0.52	0.62
15%	0.1	0.16	0.24	0.4	0.47	0.55	0.64
20%	0.14	0.2	0.28	0.43	0.49	0.57	0.65
25%	0.18	0.24	0.32	0.46	0.52	0.59	0.67
30%	0.22	0.28	0.35	0.49	0.54	0.61	0.68
35%	0.26	0.32	0.39	0.51	0.57	0.63	0.7
40%	0.3	0.36	0.43	0.54	0.59	0.65	0.71
45%	0.34	0.4	0.46	0.57	0.62	0.67	0.73
50%	0.38	0.44	0.5	0.6	0.64	0.69	0.75
55%	0.43	0.48	0.54	0.63	0.66	0.71	0.76
60%	0.47	0.52	0.57	0.65	0.69	0.73	0.78
65%	0.51	0.56	0.61	0.68	0.71	0.75	0.79
70%	0.56	0.61	0.65	0.71	0.74	0.77	0.81
75%	0.6	0.65	0.68	0.74	0.76	0.79	0.82
80%	0.65	0.69	0.72	0.77	0.79	0.81	0.84
85%	0.7	0.73	0.76	0.79	0.81	0.83	0.86
90%	0.74	0.77	0.79	0.82	0.84	0.85	0.87
95%	0.79	0.81	0.83	0.85	0.86	0.87	0.89
100%	0.83	0.85	0.87	0.88	0.89	0.89	0.9

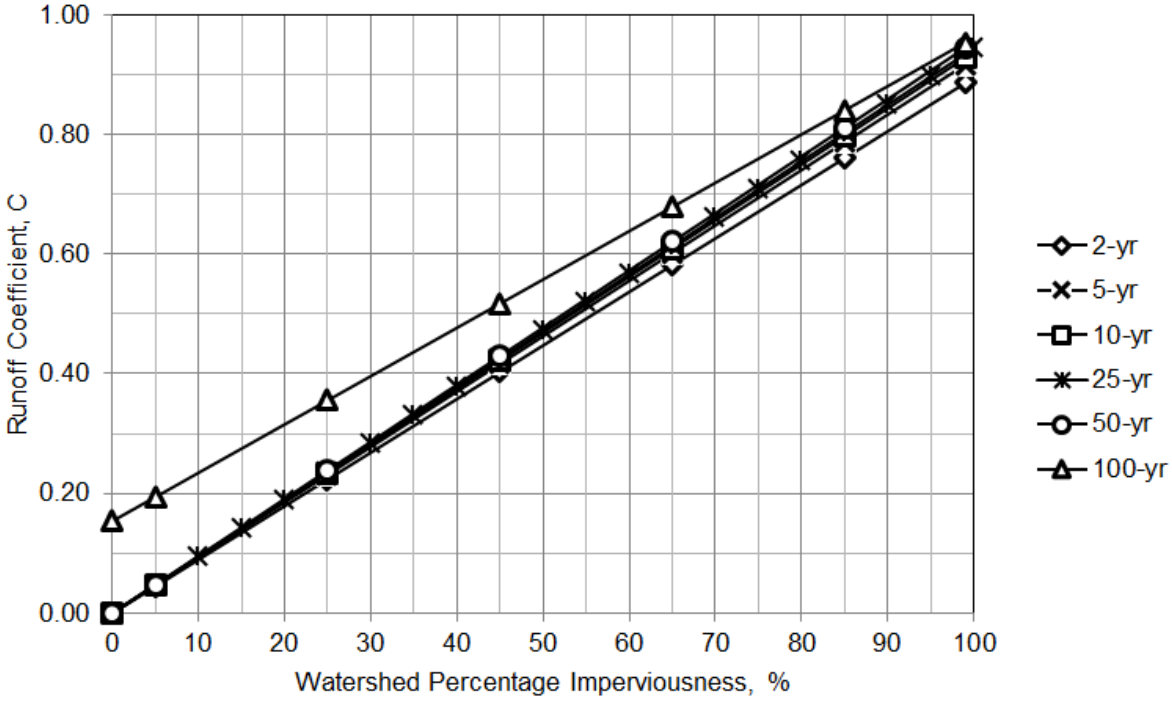


Figure 6-1. Runoff coefficient vs. watershed imperviousness NRCS HSG A

NOAA Atlas 14, Volume 8, Version 2
Location name: Carbondale, Colorado, US*
Latitude: 39.4011°, Longitude: -107.2142°
Elevation: 6174 ft*
* source: Google Maps

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Deborah Martin, Sandra Pavlovic, Ishani Roy, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Michael Yekta, Geoffery Bonnin

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches/hour)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	1.30 (1.03-1.67)	1.92 (1.52-2.48)	2.89 (2.29-3.74)	3.66 (2.87-4.76)	4.63 (3.44-6.18)	5.33 (3.89-7.26)	5.96 (4.20-8.40)	6.58 (4.42-9.56)	7.30 (4.70-11.0)	7.78 (4.92-12.1)
10-min	0.948 (0.750-1.22)	1.40 (1.12-1.81)	2.12 (1.67-2.74)	2.68 (2.10-3.49)	3.39 (2.53-4.53)	3.89 (2.84-5.32)	4.37 (3.07-6.15)	4.81 (3.23-7.00)	5.34 (3.44-8.05)	5.69 (3.61-8.85)
15-min	0.768 (0.612-0.992)	1.14 (0.908-1.48)	1.72 (1.36-2.23)	2.18 (1.71-2.83)	2.76 (2.05-3.68)	3.17 (2.31-4.32)	3.55 (2.50-5.00)	3.91 (2.63-5.70)	4.34 (2.80-6.55)	4.63 (2.93-7.20)
30-min	0.518 (0.410-0.666)	0.742 (0.588-0.958)	1.09 (0.860-1.41)	1.36 (1.07-1.77)	1.70 (1.26-2.26)	1.94 (1.41-2.64)	2.16 (1.52-3.03)	2.36 (1.59-3.43)	2.59 (1.67-3.91)	2.75 (1.74-4.27)
60-min	0.344 (0.273-0.443)	0.459 (0.364-0.593)	0.638 (0.504-0.827)	0.777 (0.610-1.01)	0.953 (0.711-1.27)	1.08 (0.787-1.47)	1.19 (0.840-1.68)	1.30 (0.874-1.89)	1.42 (0.920-2.15)	1.51 (0.954-2.34)
2-hr	0.214 (0.172-0.273)	0.274 (0.220-0.349)	0.366 (0.292-0.468)	0.438 (0.348-0.562)	0.529 (0.400-0.697)	0.594 (0.439-0.799)	0.654 (0.466-0.908)	0.710 (0.483-1.02)	0.776 (0.506-1.15)	0.820 (0.524-1.26)
3-hr	0.168 (0.136-0.212)	0.204 (0.165-0.258)	0.260 (0.209-0.330)	0.305 (0.244-0.389)	0.363 (0.277-0.476)	0.405 (0.302-0.542)	0.444 (0.319-0.613)	0.482 (0.331-0.688)	0.528 (0.348-0.781)	0.560 (0.360-0.851)
6-hr	0.111 (0.091-0.138)	0.126 (0.103-0.157)	0.151 (0.123-0.189)	0.172 (0.139-0.217)	0.202 (0.157-0.264)	0.225 (0.171-0.299)	0.248 (0.182-0.341)	0.272 (0.190-0.386)	0.304 (0.204-0.447)	0.329 (0.214-0.493)
12-hr	0.069 (0.057-0.085)	0.078 (0.064-0.096)	0.094 (0.077-0.116)	0.107 (0.088-0.133)	0.127 (0.100-0.164)	0.143 (0.110-0.188)	0.159 (0.118-0.216)	0.176 (0.124-0.247)	0.200 (0.135-0.290)	0.218 (0.143-0.322)
24-hr	0.042 (0.035-0.051)	0.048 (0.040-0.058)	0.058 (0.049-0.071)	0.067 (0.056-0.083)	0.081 (0.064-0.103)	0.091 (0.071-0.119)	0.102 (0.077-0.137)	0.114 (0.082-0.158)	0.131 (0.089-0.187)	0.143 (0.095-0.209)
2-day	0.025 (0.021-0.030)	0.028 (0.024-0.034)	0.035 (0.029-0.042)	0.040 (0.034-0.048)	0.048 (0.039-0.061)	0.055 (0.043-0.070)	0.061 (0.046-0.081)	0.069 (0.050-0.094)	0.079 (0.054-0.111)	0.087 (0.058-0.124)
3-day	0.018 (0.016-0.022)	0.021 (0.018-0.025)	0.026 (0.022-0.030)	0.029 (0.025-0.035)	0.035 (0.029-0.044)	0.040 (0.032-0.051)	0.045 (0.034-0.058)	0.050 (0.036-0.067)	0.057 (0.040-0.079)	0.062 (0.042-0.088)
4-day	0.015 (0.013-0.018)	0.017 (0.015-0.020)	0.021 (0.018-0.024)	0.024 (0.020-0.028)	0.028 (0.023-0.035)	0.032 (0.025-0.040)	0.035 (0.027-0.046)	0.039 (0.029-0.053)	0.045 (0.031-0.062)	0.049 (0.033-0.069)
7-day	0.010 (0.009-0.012)	0.011 (0.010-0.013)	0.014 (0.012-0.016)	0.016 (0.013-0.018)	0.018 (0.015-0.022)	0.020 (0.016-0.025)	0.022 (0.017-0.029)	0.025 (0.018-0.033)	0.028 (0.020-0.038)	0.030 (0.021-0.042)
10-day	0.008 (0.007-0.009)	0.009 (0.008-0.011)	0.011 (0.009-0.012)	0.012 (0.010-0.014)	0.014 (0.012-0.017)	0.016 (0.013-0.019)	0.017 (0.013-0.022)	0.019 (0.014-0.025)	0.021 (0.015-0.028)	0.023 (0.016-0.031)
20-day	0.005 (0.005-0.006)	0.006 (0.005-0.007)	0.007 (0.006-0.008)	0.008 (0.007-0.009)	0.009 (0.008-0.011)	0.010 (0.008-0.012)	0.011 (0.008-0.014)	0.012 (0.009-0.015)	0.013 (0.009-0.017)	0.014 (0.010-0.019)
30-day	0.004 (0.004-0.005)	0.005 (0.004-0.006)	0.006 (0.005-0.006)	0.006 (0.006-0.007)	0.007 (0.006-0.009)	0.008 (0.007-0.009)	0.009 (0.007-0.011)	0.009 (0.007-0.012)	0.010 (0.007-0.013)	0.011 (0.008-0.015)
45-day	0.004 (0.003-0.004)	0.004 (0.004-0.005)	0.005 (0.004-0.005)	0.005 (0.005-0.006)	0.006 (0.005-0.007)	0.006 (0.005-0.008)	0.007 (0.006-0.009)	0.007 (0.006-0.009)	0.008 (0.006-0.011)	0.009 (0.006-0.011)
60-day	0.003 (0.003-0.003)	0.003 (0.003-0.004)	0.004 (0.004-0.005)	0.005 (0.004-0.005)	0.005 (0.004-0.006)	0.006 (0.005-0.007)	0.006 (0.005-0.007)	0.006 (0.005-0.008)	0.007 (0.005-0.009)	0.007 (0.005-0.010)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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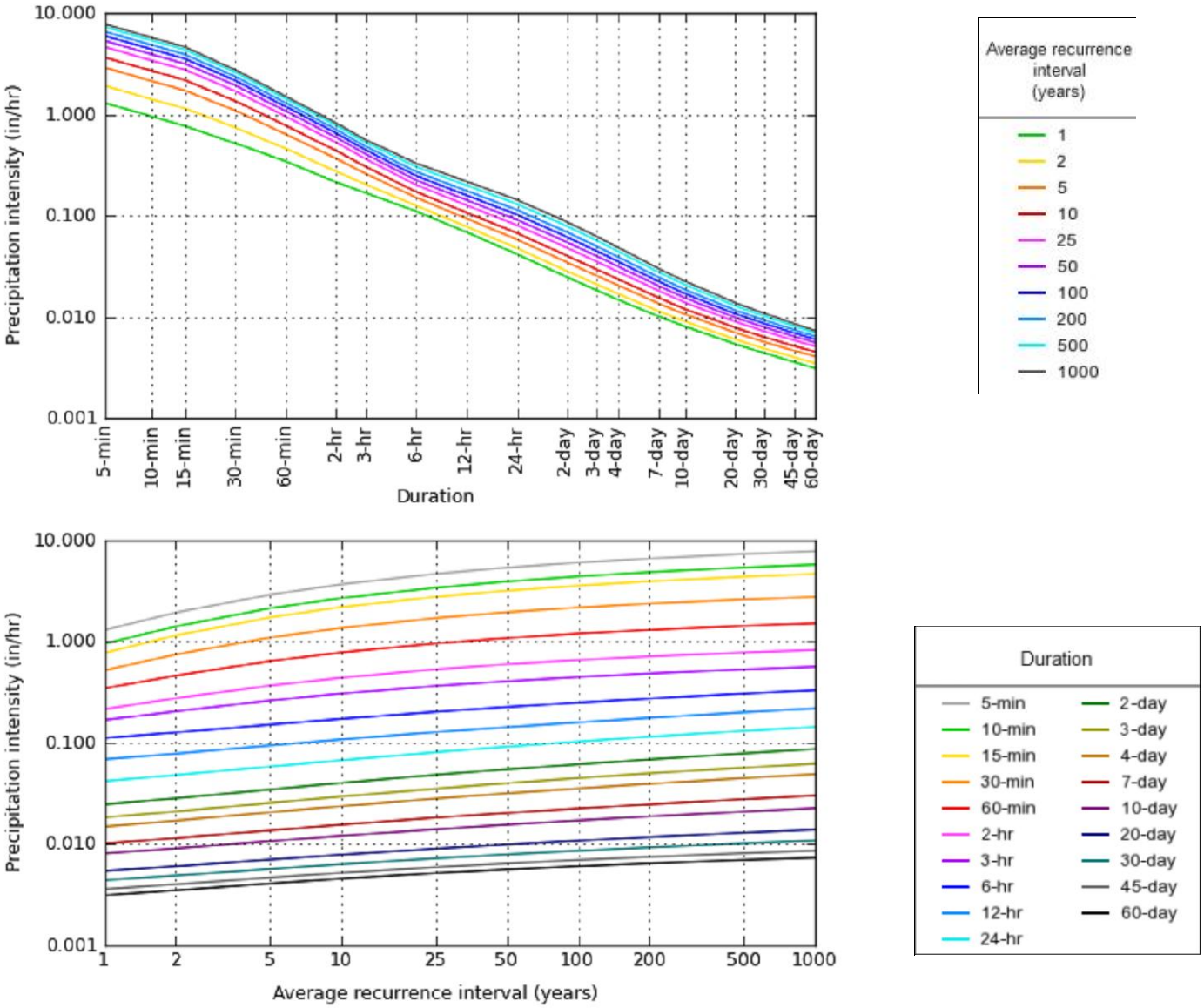
PF graphical

PDS-based intensity-duration-frequency (IDF) curves
Latitude: 39.4011°, Longitude: -107.2142°



NOAA Atlas 14, Volume 8, Version 2

Created (GMT): Fri Apr 8 12:54:05 2016

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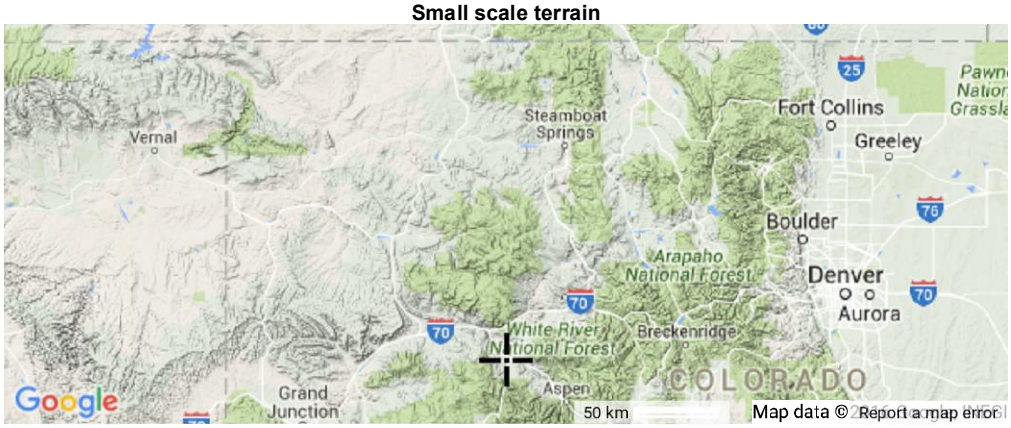
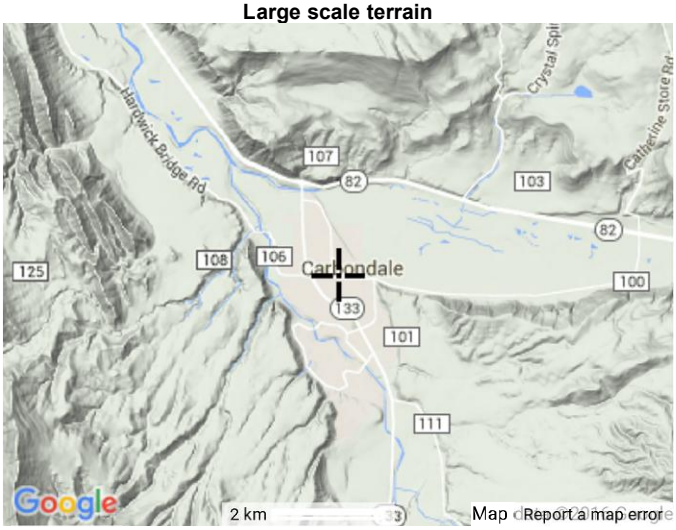
Maps & aerials

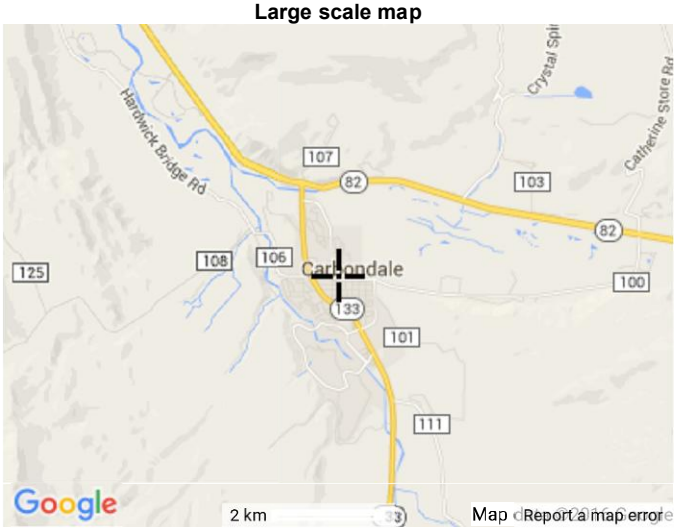
Small scale terrain



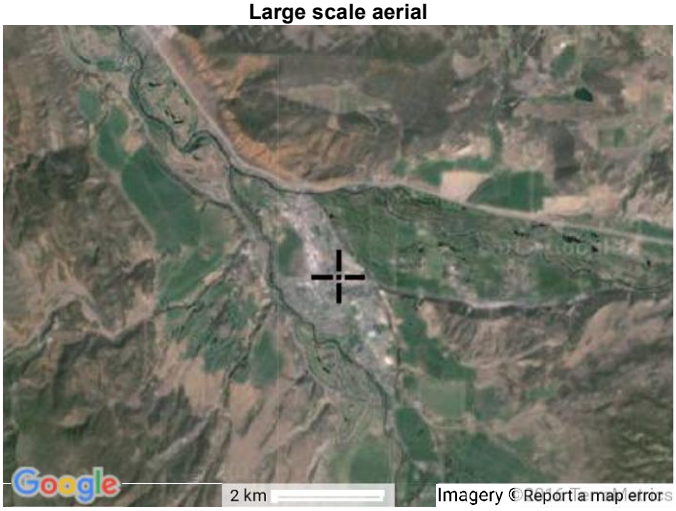
Large scale terrain



Large scale map



Large scale aerial



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US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

Disclaimer

Channel Report

Hydraflow Express Extension for Autodesk® AutoCAD® Civil 3D® by Autodesk, Inc. Wednesday, Jun 21 2017

6 IN PIPE 2% SLOPE - FLOW

Circular

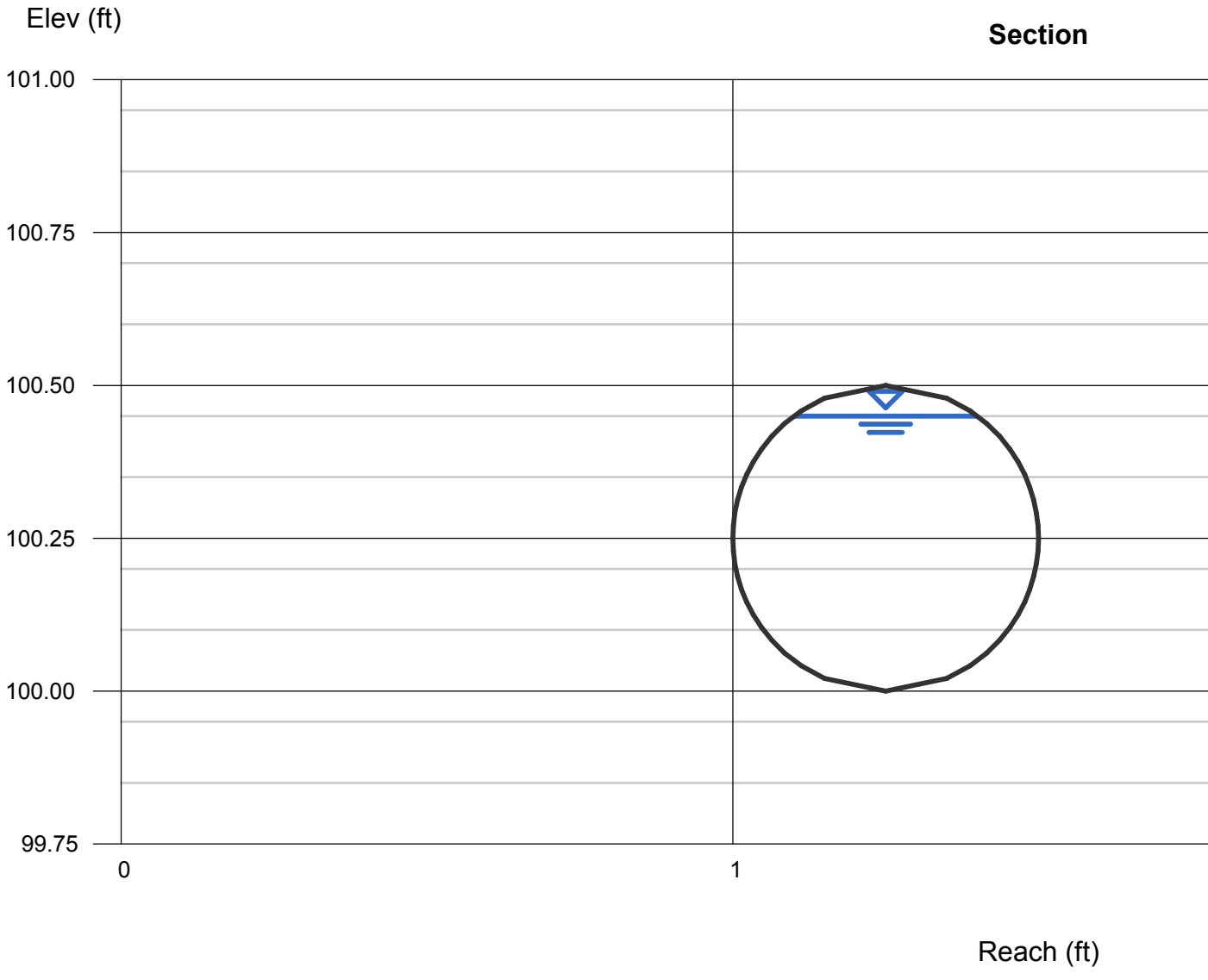
Diameter (ft)	= 0.50
Invert Elev (ft)	= 100.00
Slope (%)	= 2.00
N-Value	= 0.011

Calculations

Compute by:	Q vs Depth
No. Increments	= 10

Highlighted

Depth (ft)	= 0.45
Q (cfs)	= 0.999
Area (sqft)	= 0.19
Velocity (ft/s)	= 5.37
Wetted Perim (ft)	= 1.25
Crit Depth, Yc (ft)	= 0.48
Top Width (ft)	= 0.30
EGL (ft)	= 0.90



Channel Report

Hydraflow Express Extension for Autodesk® AutoCAD® Civil 3D® by Autodesk, Inc. Wednesday, Jun 21 2017

8 IN PIPE 2% SLOPE - FLOW

Circular

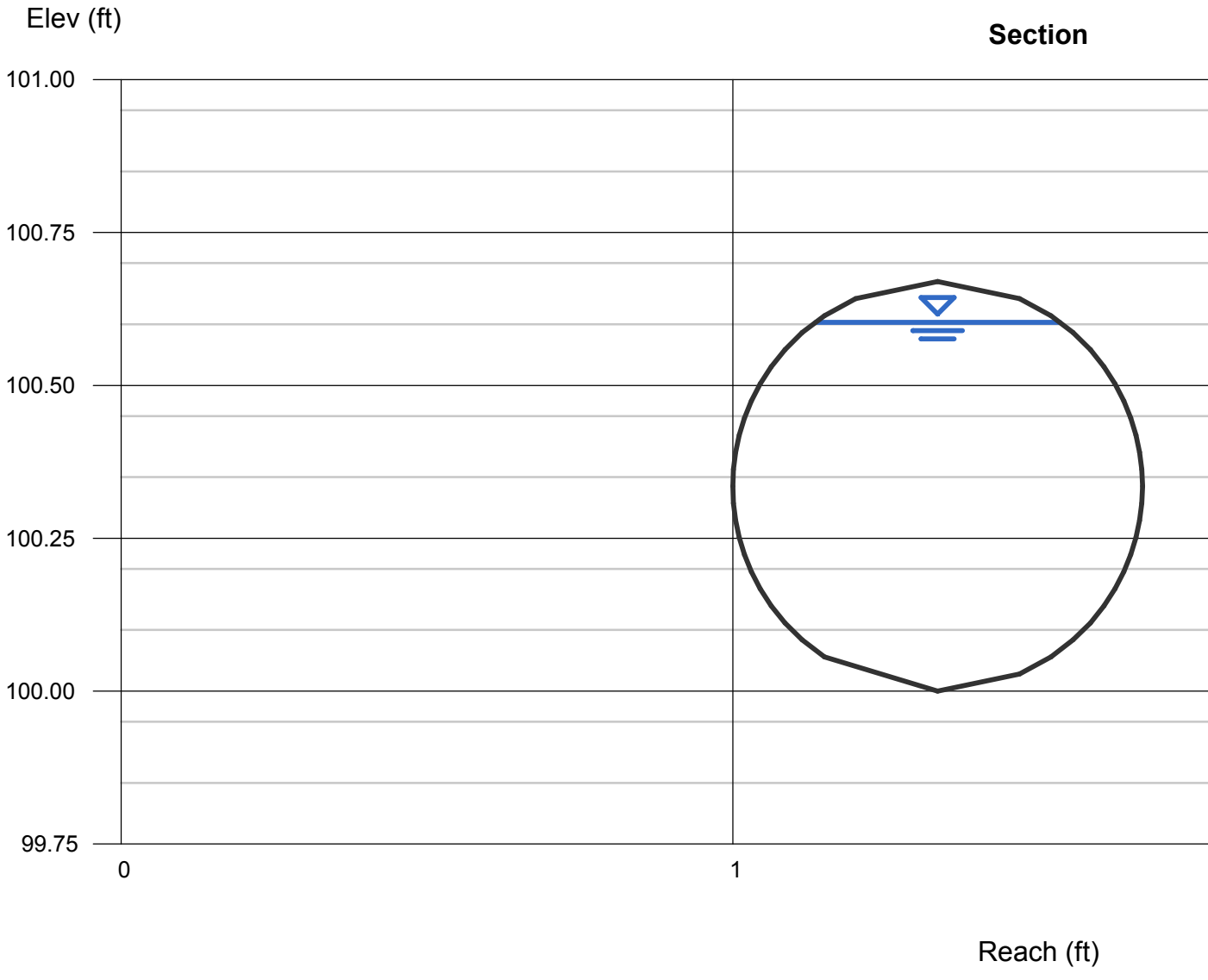
Diameter (ft)	= 0.67
Invert Elev (ft)	= 100.00
Slope (%)	= 2.00
N-Value	= 0.011

Calculations

Compute by:	Q vs Depth
No. Increments	= 10

Highlighted

Depth (ft)	= 0.60
Q (cfs)	= 2.181
Area (sqft)	= 0.33
Velocity (ft/s)	= 6.52
Wetted Perim (ft)	= 1.68
Crit Depth, Yc (ft)	= 0.64
Top Width (ft)	= 0.40
EGL (ft)	= 1.26



Channel Report

Hydraflow Express Extension for Autodesk® AutoCAD® Civil 3D® by Autodesk, Inc. Wednesday, Jun 21 2017

12 IN PIPE 2% SLOPE - FLOW

Circular

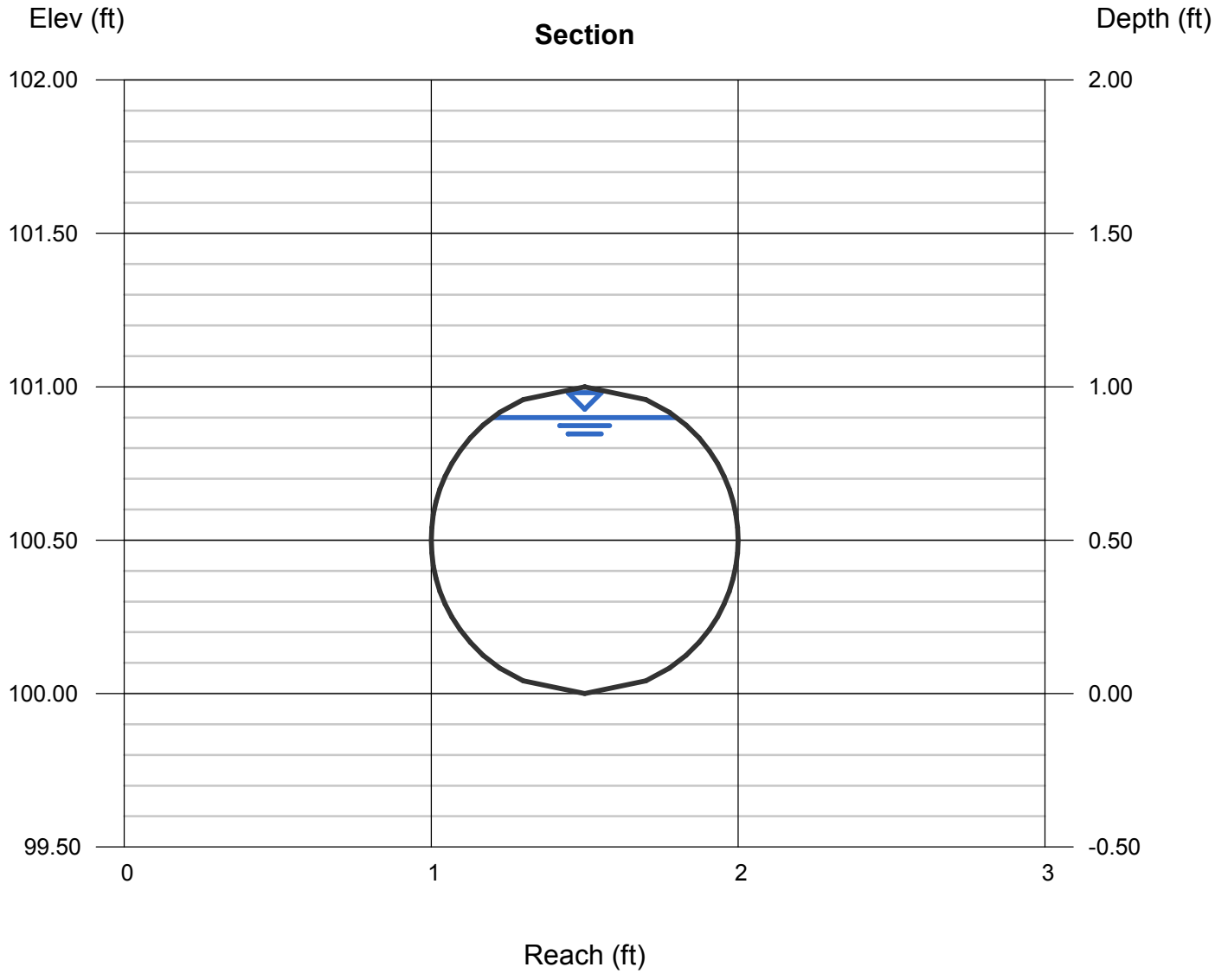
Diameter (ft)	= 1.00
Invert Elev (ft)	= 100.00
Slope (%)	= 2.00
N-Value	= 0.011

Calculations

Compute by:	Q vs Depth
No. Increments	= 10

Highlighted

Depth (ft)	= 0.90
Q (cfs)	= 6.346
Area (sqft)	= 0.74
Velocity (ft/s)	= 8.52
Wetted Perim (ft)	= 2.50
Crit Depth, Yc (ft)	= 0.97
Top Width (ft)	= 0.60
EGL (ft)	= 2.03

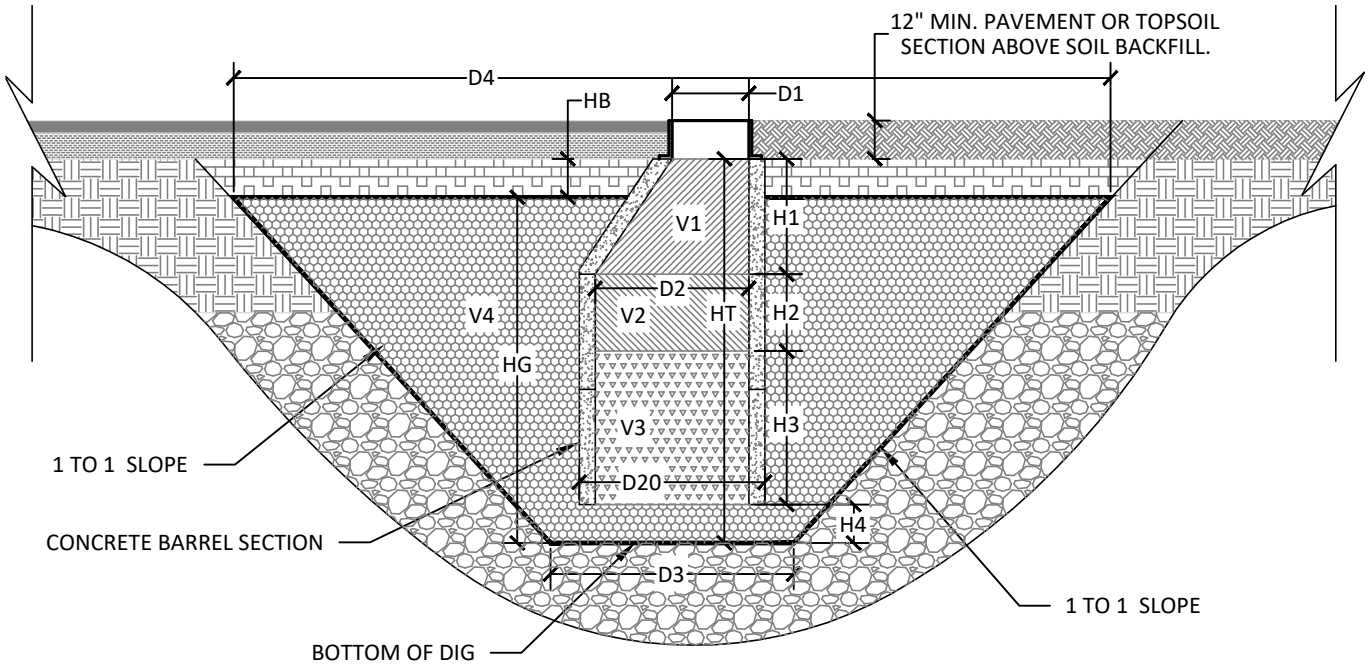


DRYWELL VOLUME DETAIL

ANB BANK MIXED USE DEVELOPMENT - SE JOB #19215.02

CARBONDALE, COLORADO

APPROXIMATE STORAGE VOLUME FOR DRYWELL



DRY WELL DATA	
D1 (FT)=	2
R1 (FT)=	1
H1 (FT)=	3
D2 (FT)=	5
R2 (FT)=	2.5
H2 (FT)=	7
H3 (FT)=	4
Structure H (FT) =	14
H4 =Gravel below structure	
H4 (FT)=	1
HT = Total Drywell Depth	
HT (FT)=	15
HB = Soil backfill on top of outside gravel	
HB (FT)=	5
HG = Height of Gravel backfill	
HG (FT)=	10
D20 (FT)=	6
R20 (FT)=	3
D3 (FT)=	8
R3 (FT)=	4
D4 (FT)=	28
R4 (FT)=	14
(Input Cells)	

V1 = Inside structure cone volume	
V1 = $1/3*PI*(R_1^2+R_1R_2+R_2^2)*H1$	
V1 (CF) =	30.6
V2 = Inside cylinder vol. (no stone)	
V2 = $PI*R_2^2*H2$	
V2 (CF) =	137.4
V3 = Inside cylinder vol (w/stone, 30% void)	
V3 = $PI*R_2^2*H3*30\%$	
V3 (CF) =	23.6
V4 = Vol gravel backfill (partial cone-cylinder*30% void)	
V4 = $(1/3*PI*(R4^2)*(HG+((1/3)*HG))-(1/3*PI*(R3^2)*(1/3)*HG)-(PI*R_{20}^2*(HG-H4)*.30$	
V4 (CF) =	728
TOTAL VOLUME =	**919.5**

SOPRIS ENGINEERING - LLC

CIVIL CONSULTANTS
502 MAIN STREET, SUITE A3
CARBONDALE, COLORADO 81623
(970) 704-0311

Traffic Impact Study

ANB Bank Carbondale

Carbondale, Colorado

Prepared for:

Sopris Engineering, LLC

Kimley»Horn

T R A F F I C I M P A C T S T U D Y

ANB Bank - Carbondale

Carbondale, Colorado

Prepared for
Sopris Engineering, LLC
502 Main Street
Suite A-3
Carbondale, Colorado 81623

Prepared by
Kimley-Horn and Associates, Inc.
4582 South Ulster Street
Suite 1500
Denver, Colorado 80237
(303) 228-2300

October 2022

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APPENDICES

LIST OF TABLES

LIST OF FIGURES

1.0 EXECUTIVE SUMMARY

ANB Bank - Carbondale is proposed to be located on the southwest corner of State Highway 133 (SH-133) and Hendrick Drive intersection in Carbondale, Colorado. ANB Bank - Carbondale is proposed to include a building with approximately a 3,271 square foot bank, 4,799 square feet of retail space, a 2,290 square foot restaurant, 4,376 square feet of office uses and 17 units of multifamily residential, located mainly above. It is expected that the ANB Bank - Carbondale building will be completed in the next couple of years. Therefore, analysis was conducted for the 2025 short-term buildout horizon as well as the 2045 long-term twenty-year planning horizon.

The purpose of this traffic study is to identify project traffic generation characteristics to determine potential project traffic related impacts on the local street system and to develop the necessary mitigation measures required for the identified traffic impacts. The following intersections were incorporated into this traffic study in accordance with Town of Carbondale and State of Colorado Department of Transportation (CDOT) standards and requirements:

- Hendrick Drive and SH-133
- Main Street and Hendrick Drive
- Main Street and SH-133 Roundabout

Regional access to the ANB Bank building development will be provided by State Highway 82 (SH-82) and State Highway 133 (SH-133). Primary access will be provided by SH-133 and Main Street. Direct access to the proposed project will be provided by driveways along Hendrick Drive. Hendrick Drive was recently constructed to extend between SH-133 and Main Street. The Hendrick Drive and SH-133 intersection is a three-quarter access (left out restricted) while the Main Street and Hendrick Drive intersection provides full turning movements.

The ANB Bank - Carbondale building development to include the mix of uses proposed is expected to generate approximately 1,070 weekday daily trips, with 47 of these trips occurring during the morning peak hour and 108 of these trips occurring during the afternoon peak hour.

Based on the analysis presented in this report, Kimley-Horn believes ANB Bank - Carbondale will be successfully incorporated into the existing and future roadway network. Analysis of the existing

street network, the proposed project development, and expected traffic volumes resulted in the following recommendations:

- It is anticipated that CDOT will require an access permit at the intersection of SH-133 and Hendrick Drive with development of the project due to project traffic volumes increasing the existing and previously permitted volumes by more than 20 percent.

- The existing street network as constructed today will accommodate full buildout of the ANB Bank – Carbondale mixed use building development successfully without the need for any additional offsite improvements in the 2025 near-term horizon.

- By 2045, the eastbound right turn from Hendrick Drive to southbound SH-133 may need to operate with free movements by the construction of an acceleration lane along southbound SH-133. Therefore, an acceleration lane with 150 feet of length and a 120-foot taper would need to be provided along southbound SH-133 based on the CDOT SHAC for the 35-mile per hour posted speed limit.

- By 2045, the eastbound and westbound approaches of the Main Street and SH-133 roundabout may need to include separate 100-foot right turn lanes. Traffic volumes should be monitored in the future at this intersection to determine if and when this improvement is necessary.

- Any on-site and off-site signing and striping improvements should be incorporated into the Civil Drawings, and conform to Town of Carbondale and CDOT standards, as well as the Manual on Uniform Traffic Control Devices – 2009 Edition (MUTCD).

2.0 INTRODUCTION

Kimley-Horn and Associates, Inc. has prepared this report to document the results of a Traffic Impact Study for ANB Bank - Carbondale proposed to be located on the southwest corner of State Highway 133 (SH-133) and Hendrick Drive intersection in Carbondale, Colorado. A vicinity map illustrating the ANB Bank - Carbondale development location is shown in **Figure 1**. ANB Bank - Carbondale is proposed to include a building with approximately a 3,271 square foot bank, 4,799 square feet of retail space, a 2,290 square foot restaurant, 4,376 square feet of office uses and 17 units of multifamily residential, located mainly above. A conceptual site plan is attached in **Appendix F**. It is expected that ANB Bank - Carbondale will be completed in the next couple of years; therefore, analysis was conducted for the 2025 short-term buildout horizon as well as the 2045 long-term twenty-year planning horizon.

The purpose of this traffic study is to identify project traffic generation characteristics to determine potential project traffic related impacts on the local street system and to develop the necessary mitigation measures required for the identified traffic impacts. The following intersections were incorporated into this traffic study in accordance with Town of Carbondale and State of Colorado Department of Transportation (CDOT) standards and requirements:

- Hendrick Drive and SH-133
- Main Street and Hendrick Drive
- Main Street and SH-133 Roundabout

Regional access to the ANB Bank building development will be provided by State Highway 82 (SH-82) and State Highway 133 (SH-133). Primary access will be provided by SH-133 and Main Street. Direct access to the proposed project will be provided by driveways along Hendrick Drive. Hendrick Drive was recently constructed to extend between SH-133 and Main Street. The Hendrick Drive and SH-133 intersection is a three-quarter access (left out restricted) while the Main Street and Hendrick Drive intersection provides full turning movements.

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NORTH
NTS 096671006

FIGURE 1
ANB BANK – CARBONDALE
CARBONDALE, COLORADO
VICINITY MAP

Kimley»Horn

3.0 EXISTING AND FUTURE CONDITIONS

3.1 Existing Study Area

The ABN Bank Carbondale site is currently vacant land. The surrounding area is currently under construction with Main Street Market Place project to the west and southwest and the City Market Grocery and Gas Station recently built to the north and northwest. To the east across SH-133 is the Sopris Shopping Center.

3.2 Existing Roadway Network

SH-133 is a CDOT roadway, categorized as NR-B: Non-Rural Arterial classification with a speed limit of 35 miles per hour adjacent to the site. SH-133 provides one lane of travel each direction, northbound and southbound, and is separated by a two-way left-turn lane.

Main Street provides one lane of travel each direction, eastbound and westbound, and has a posted speed limit of 25 miles per hour to the west of the SH-133 roundabout. Main Street is a major east-west roadway through Carbondale.

The Hendrick Drive and SH-133 three-quarter movement intersection is unsignalized with stop control on the eastbound Hendrick Drive approach. The southbound SH-133 approach consists of a right turn lane and a through lane while the northbound SH-133 approach consists of a two-way left turn lane and a through lane. The eastbound Hendrick Drive approach consists of a right turn lane operating under stop control. An aerial photo of the existing intersection configuration is below (north is up - typical).

Henrick Drive and SH-133

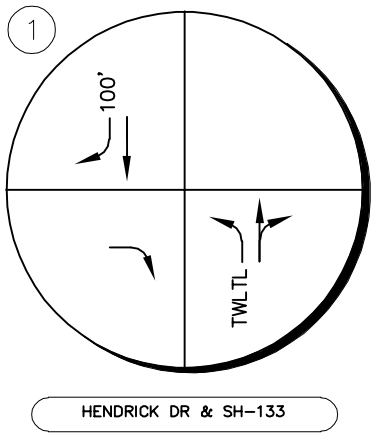
The Main Street and Hendrick Drive intersection is unsignalized with stop control on the northbound and southbound approaches of Hendrick Drive. The eastbound and westbound approaches of Main Street consist of a left turn lane and a shared through/right turn lane. The Hendrick Drive northbound and southbound approaches consist of one shared lane for all movements. An aerial photo of the existing intersection configuration is below.

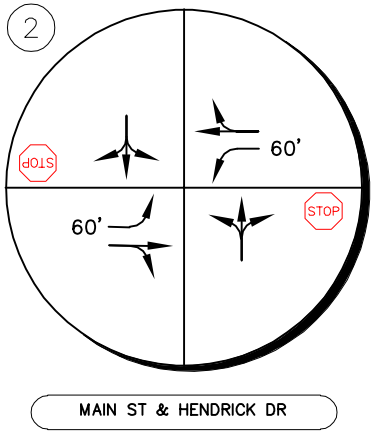
Main Street and Henrick Drive

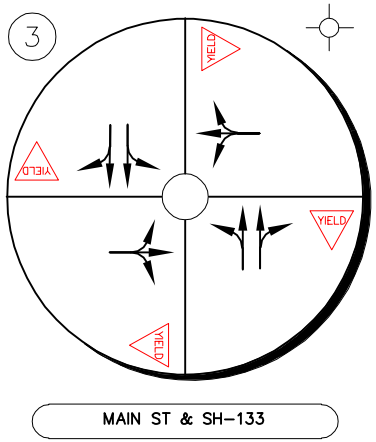
The Main Street and SH-133 intersection is a roundabout, with the northbound and southbound SH-133 approaches having two approach lanes, while the eastbound and westbound Main Street approaches have one approach lane. An aerial photo of the existing intersection configuration is below.

Main Street and SH-133

The intersection lane configuration and control for the study area intersections are shown in **Figure 2**.







LEGEND

- X — Study Area Key Intersection
- Roundabout
- YIELD — Yield Controlled Approach
- STOP — Stop Controlled Approach
- SPEED LMT XX — Roadway Speed Limit
- 100' — Turn Lane Length (feet)

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NTS 096671006

FIGURE 2
ANB BANK – CARBONDALE
CARBONDALE, COLORADO
EXISTING GEOMETRY AND CONTROL

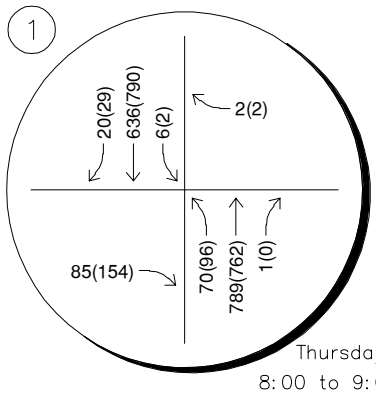
Kimley»Horn

3.3 Existing Traffic Volumes

Existing turning movement counts were conducted at the study intersections on Thursday, October 20, 2022, during the weekday morning and afternoon peak hours. The counts were conducted during the morning and afternoon peak hours of adjacent street traffic in 15-minute intervals from 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM on this count date. The existing intersection traffic volumes are shown in **Figure 3** with count sheets provided in **Appendix A**.

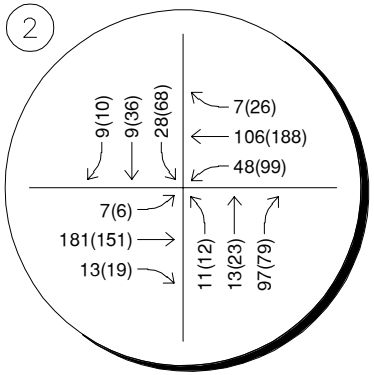
3.4 Unspecified Development Traffic Growth

According to information provided on the website for the Colorado Department of Transportation (CDOT), the 20-year growth factor along SH-133 adjacent to the site is 1.20. The 20-year growth factor equates to annual growth rate of 0.92 percent. Therefore, a one (1) percent annual growth rate was used to estimate near term 2025 and long term 2045 traffic volume projections at the key intersections. Traffic information from the CDOT Online Transportation Information System (OTIS) website is included in **Appendix B**. In addition, project traffic volume assignment for the adjacent Carbondale Marketplace Lot 5, Main Street Marketplace, and Carbondale Center (fka Sopris Shopping Center Redevelopment) were added directly to the intersections. Traffic assignment for these background studies are also included in **Appendix B** for reference. Background traffic volumes for 2025 and 2045 are shown in **Figures 4** and **5**, respectively.



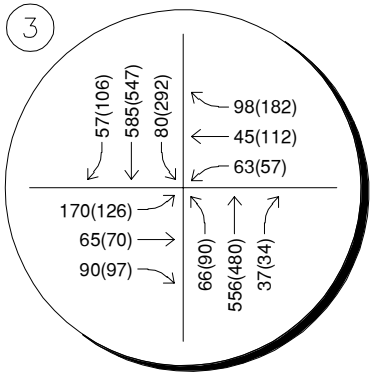
Thursday, October 20, 2022
8:00 to 9:00AM (4:30 to 5:30PM)

HENDRICK DR & SH-133



MAIN ST & HENDRICK DR

Thursday, October 20, 2022
8:00 to 9:00AM (4:15 to 5:15PM)



MAIN ST & SH-133

Thursday, October 20, 2022
8:00 to 9:00AM (4:30 to 5:30PM)

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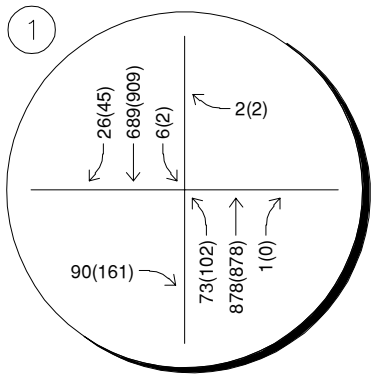
NTS 096671006

FIGURE 3
ANB BANK – CARBONDALE
CARBONDALE, COLORADO
2022 EXISTING TRAFFIC VOLUMES

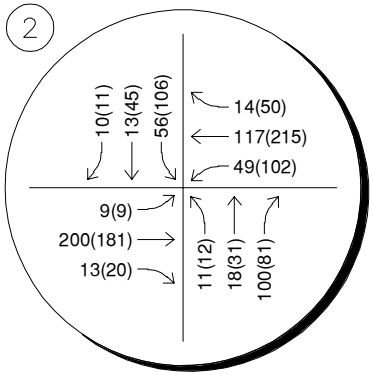
LEGEND

(X)	Study Area Key Intersection
XXX(XXX)	Weekday AM(PM) Peak Hour Traffic Volumes
XX,X00	Estimated Daily Traffic Volume

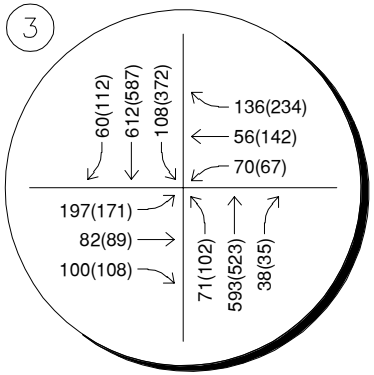
Kimley»Horn



HENDRICK DR & SH-133



MAIN ST & HENDRICK DR



MAIN ST & SH-133

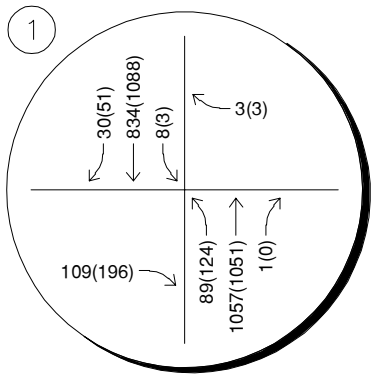
Kimley»Horn NORTH
NTS 096671006

FIGURE 4
ANB BANK – CARBONDALE
CARBONDALE, COLORADO
2025 BACKGROUND TRAFFIC VOLUMES

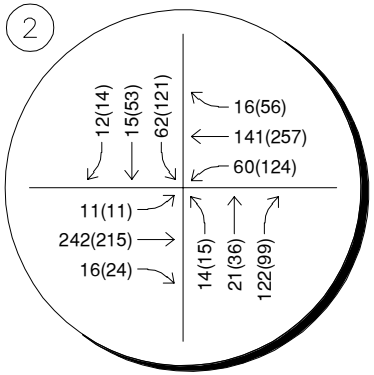
LEGEND

(X)	Study Area Key Intersection
XXX(XXX)	Weekday AM(PM) Peak Hour Traffic Volumes
XX,X00	Estimated Daily Traffic Volume

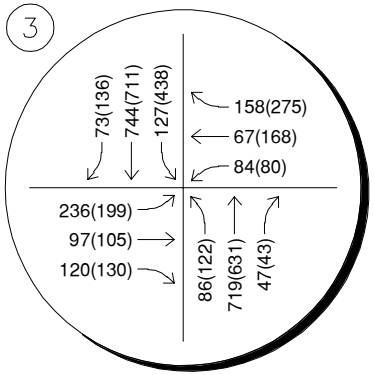
Kimley»Horn



HENDRICK DR & SH-133



MAIN ST & HENDRICK DR



MAIN ST & SH-133

Kimley»Horn NORTH
NTS 096671006

FIGURE 5
ANB BANK – CARBONDALE
CARBONDALE, COLORADO
2045 BACKGROUND TRAFFIC VOLUMES

LEGEND

(X)	Study Area Key Intersection
XXX(XXX)	Weekday AM(PM) Peak Hour Traffic Volumes
XX,X00	Estimated Daily Traffic Volume

Kimley»Horn

4.0 PROJECT TRAFFIC CHARACTERISTICS

4.1 Trip Generation

Site-generated traffic estimates are determined through a process known as trip generation. Rates and equations are applied to the proposed land use to estimate traffic generated by the development during a specific time interval. The acknowledged source for trip generation rates is the *Trip Generation Manual*[1] published by the Institute of Transportation Engineers (ITE). ITE has established trip rates in nationwide studies of similar land uses. For this study, Kimley-Horn used the ITE Trip Generation Report average rates that apply to Multifamily Low-Rise Housing (ITE Land Use Code 220), General Office Building (ITE Land Use Code 710), Strip Retail Plaza (ITE Land Use Code 822), Walk-In Bank (ITE Land Use Cade 911), and High-Turnover Sit-Down Restaurant (ITE Land Use Code 932) for traffic associated with the development. Of note, no internal capture or pass-by reductions were applied to be consistent with CDOT guidelines and provide a conservative analysis. Additionally, ANB Banks typically open at 9 am, which identifies nominal traffic generation during the morning peak hour. This is also represented by the Walk-In Bank land use code from the ITE Trip Generation as morning peak hour data and equations are not available for this use.

The ANB Bank - Carbondale building development to include the mix of uses proposed is expected to generate approximately 1,070 weekday daily trips, with 47 of these trips occurring during the morning peak hour and 108 of these trips occurring during the afternoon peak hour. Calculations were based on the procedure and information provided in the ITE *Trip Generation Manual, 11th Edition – Volume 1: User's Guide and Handbook*, 2021. **Table 1** summarizes the estimated trip generation for the ANB Bank - Carbondale. The trip generation worksheets are included in **Appendix C**.

[1] Institute of Transportation Engineers, *Trip Generation Manual*, Eleventh Edition, Washington DC, 2021.

Table 1 – ANB Bank - Carbondale Traffic Generation

Land Use and Size	Weekday Vehicle Trips						
	Daily	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Multifamily Low-Rise Housing (ITE 220) – 17 Dwelling Units	116	2	5	7	6	3	9
General Office Building (ITE 710) – 4,376 Square Feet	48	6	1	7	1	5	6
Strip Retail Plaza (ITE 822) – 4,799 Square Feet	262	7	4	11	16	16	32
Walk-In Bank (ITE 911) – 3,271 Square Feet	398	0	0	0	18	22	40
High-Turnover Sit Down (ITE 932) – 2,290 Square Feet	246	12	10	22	13	8	21
Total Project Trips	**1,070**	**27**	**20**	**47**	**54**	**54**	**108**

4.2 Trip Distribution

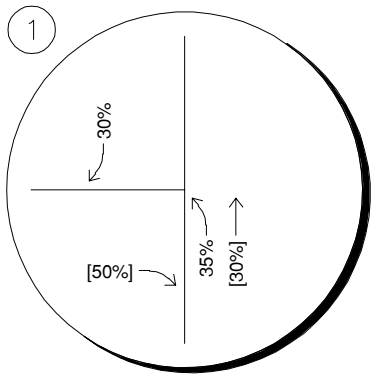
Distribution of site traffic on the street system was based on the area street system characteristics, existing traffic patterns, existing and anticipated surrounding employment, school, attraction and demographic information, and the proposed access system for the project. The directional distribution of traffic is a means to quantify the percentage of site-generated traffic that approaches the site from a given direction and departs the site back to the original source. The project trip distribution for the proposed development is illustrated in **Figure 6**.

4.3 Traffic Assignment

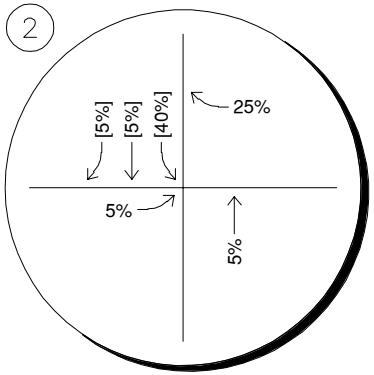
The ANB Bank - Carbondale mixed use building development traffic assignment was obtained by applying the project trip distribution to the estimated traffic generation of the development shown in **Table 1**. Traffic assignment is shown in **Figure 7.**

4.4 Total (Background Plus Project) Traffic

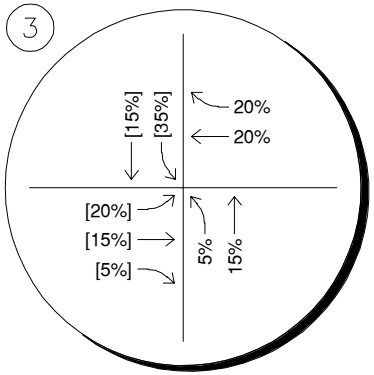
Site traffic volumes were added to the background volumes to represent estimated traffic conditions for the short-term 2025 buildout horizon and long-term 2045 twenty-year planning horizon. These total traffic volumes for the study area are illustrated for the 2025 and 2045 horizon years in **Figures 8** and **9**, respectively.



HENDRICK DR & SH-133



MAIN ST & HENDRICK DR



MAIN ST & SH-133

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FIGURE 6
ANB BANK – CARBONDALE
CARBONDALE, COLORADO
PROJECT TRIP DISTRIBUTION

LEGEND

(X)	Study Area Key Intersection
XX%	External Trip Distribution Percentage
XX%[XX%]	Entering[Exiting] Trip Distribution Percentage

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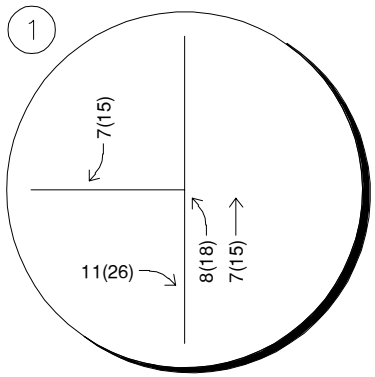

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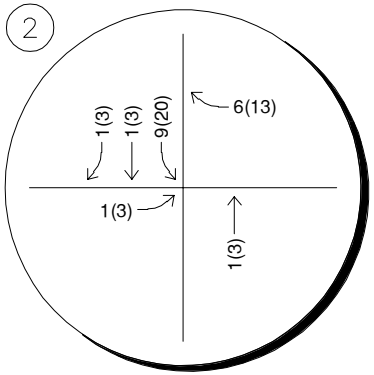

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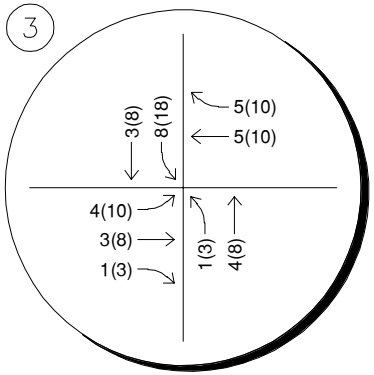

MAIN ST & SH-133

LEGEND

(X)	Study Area Key Intersection
XXX(XXX)	Weekday AM(PM) Peak Hour Traffic Volumes
XX,X00	Estimated Daily Traffic Volume

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FIGURE 7
ANB BANK – CARBONDALE
CARBONDALE, COLORADO
PROJECT TRAFFIC ASSIGNMENT

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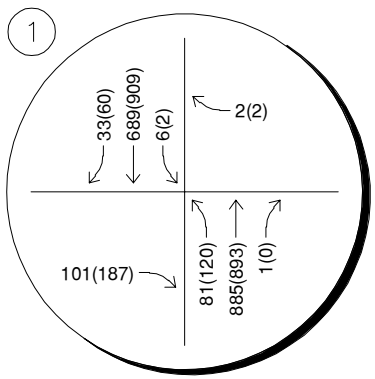

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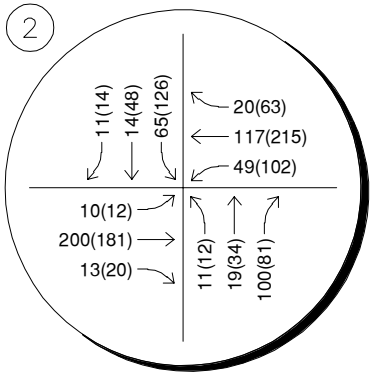

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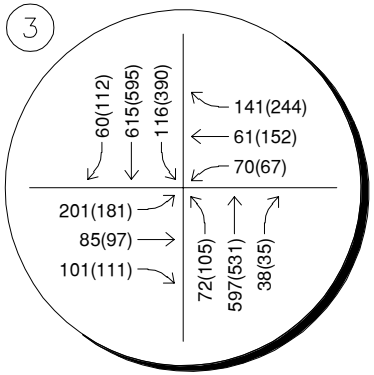

MAIN ST & SH-133

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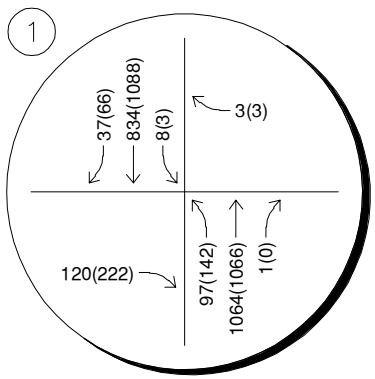
FIGURE 8
ANB BANK – CARBONDALE
CARBONDALE, COLORADO
2025 TOTAL TRAFFIC VOLUMES

LEGEND

(X)	Study Area Key Intersection
XXX(XXX)	Weekday AM(PM) Peak Hour Traffic Volumes
XX,X00	Estimated Daily Traffic Volume

Kimley»Horn



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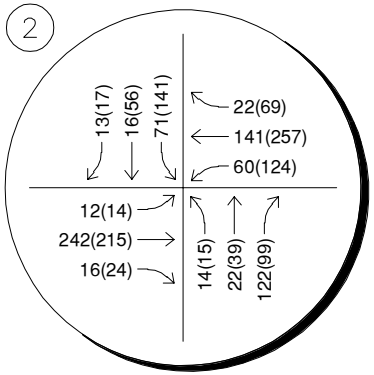
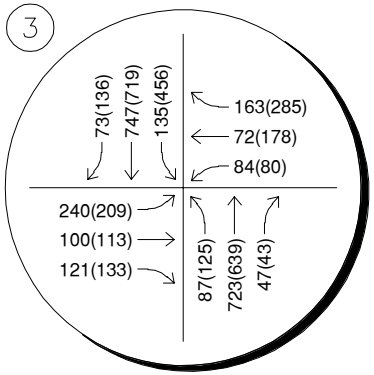


MAIN ST & HENDRICK DR



MAIN ST & SH-133

Kimley»Horn NORTH
NTS 096671006

FIGURE 9
ANB BANK – CARBONDALE
CARBONDALE, COLORADO
2045 TOTAL TRAFFIC VOLUMES

LEGEND

(X)	Study Area Key Intersection
XXX(XXX)	Weekday AM(PM) Peak Hour Traffic Volumes
XX,X00	Estimated Daily Traffic Volume

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5.0 TRAFFIC OPERATIONS ANALYSIS

Kimley-Horn's analysis of traffic operations in the site vicinity was conducted to determine potential capacity deficiencies in the 2025 and 2045 development horizons at the identified key intersections. The acknowledged source for determining overall capacity is the 6th Edition of the *Highway Capacity Manual (HCM)*[2].

5.1 Analysis Methodology

Capacity analysis results are listed in terms of Level of Service (LOS). LOS is a qualitative term describing operating conditions a driver will experience while traveling on a particular street or highway during a specific time interval. It ranges from A (very little delay) to F (long delays and congestion). For intersections and roadways in this study area, standard traffic engineering practice recommends overall intersection LOS D and movement/approach LOS E as the minimum desirable thresholds for acceptable operations. **Table 2** shows the definition of level of service for signalized and unsignalized intersections.

Table 2 – Level of Service Definitions

Level of Service	Signalized Intersection Average Total Delay (sec/veh)	Unsignalized Intersection Average Total Delay (sec/veh)
A	≤ 10	≤ 10
B	> 10 and ≤ 20	> 10 and ≤ 15
C	> 20 and ≤ 35	> 15 and ≤ 25
D	> 35 and ≤ 55	> 25 and ≤ 35
E	> 55 and ≤ 80	> 35 and ≤ 50
F	> 80	> 50

Definitions provided from the Highway Capacity Manual, Sixth Edition, Transportation Research Board, 2016.

Study area intersections were analyzed based on average total delay analysis for signalized and unsignalized intersections. Under the unsignalized analysis, the LOS for a two-way stop-controlled intersection is determined by the computed or measured control delay and is defined for each minor movement. LOS for a two-way stop-controlled intersection is not defined for the intersection as a whole. LOS for signalized, roundabout, and all-way stop controlled intersections are defined for each approach and for the overall intersection.

[2] Transportation Research Board, *Highway Capacity Manual*, Sixth Edition, Washington DC, 2016.

5.2 Key Intersection Operational Analysis

Calculations for the operational level of service at the key intersections for the study area are provided in **Appendix D**. The existing year analysis is based on the lane geometry and intersection control shown in **Figure 2.** Existing peak hour factors were utilized in the existing and 2025 horizon analysis years while the HCM urban standard of 0.92 was used for the long-term 2045 horizon analysis. Synchro traffic analysis software was used to analyze the signalized, and unsignalized key intersections for HCM level of service. Whereas Sidra software was used to analyze the roundabout key intersections.

Hendrick Drive and SH-133

The SH-133 and Hendrick Drive unsignalized intersection is three-quarter with stop control on the eastbound Hendrick Drive right turn only approach. The existing intersection movements operate with LOS C or better during the morning and afternoon peak hours. With the addition of all the surrounding developments and this project traffic in 2025, all movements at this intersection are anticipated to operate acceptably with LOS E or better during both the morning and afternoon peak hours. However, if future 2045 traffic volumes are realized, the eastbound right turn may need to be converted from a STOP condition to a channelized FREE right turn with a 150-foot plus 120-foot taper acceleration lane constructed along southbound SH-133. With this improvement in 2045, all movements at this intersection are expected to operate at LOS B or better during both peak hours. **Table 3** summarizes the intersection LOS.

Table 3 – Hendrick Drive & SH-133 LOS Results

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2022 Existing				
Northbound Left	9.5	A	10.6	B
Eastbound Right	15.2	C	24.5	C
2025 Background				
Northbound Left	9.8	A	11.6	B
Eastbound Right	16.4	C	34.2	D
2025 Background Plus Project				
Northbound Left	9.9	A	11.9	B
Eastbound Right	16.9	C	41.4	E
2045 Background				
Northbound Left	10.7	B	13.5	B
Eastbound Right	21.5	C	86.5	F
2045 Background Plus Project #				
Northbound Left	10.9	B	14.1	B
Eastbound Right	0.0	A	0.0	A

= Addition of a EBR to SBT Acceleration Lane along southbound SH-133

Main Street and Henrick Drive

The Main Street and Hendrick Drive intersection is unsignalized with stop control on the northbound and southbound Hendrick Drive approaches. The intersection movements currently operate at LOS C or better during both peak hours. With the addition of all the surrounding developments and this project, the movements at this intersection are anticipated to operate acceptably with LOS D or better during both the morning and afternoon peak hours through the long-term 2045 horizon. **Table 4** provides the results of the level of service at this intersection.

Table 4 – Main Street & Hendrick Drive LOS Results

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2022 Existing				
Northbound Approach	10.8	B	11.4	B
Eastbound Left	7.5	A	7.7	A
Westbound Left	7.8	A	7.8	A
Southbound Approach	12.6	B	15.7	C
2025 Background				
Northbound Approach	11.3	B	12.3	B
Eastbound Left	7.6	A	7.8	A
Westbound Left	7.9	A	7.8	A
Southbound Approach	14.3	B	19.9	C
2025 Background Plus Project				
Northbound Approach	11.3	B	12.6	B
Eastbound Left	7.6	A	7.8	A
Westbound Left	7.9	A	7.8	A
Southbound Approach	14.8	B	22.1	C
2045 Background				
Northbound Approach	12.2	B	13.8	B
Eastbound Left	7.6	A	7.9	A
Westbound Left	8.0	A	8.0	A
Southbound Approach	16.5	C	28.0	D
2045 Background Plus Project				
Northbound Approach	12.3	B	14.2	B
Eastbound Left	7.6	A	8.0	A
Westbound Left	8.0	A	8.0	A
Southbound Approach	17.2	C	33.6	D

Main Street and SH-133

The existing intersection of Main Street and SH-133 is a roundabout intersection. The northbound and southbound SH-133 approaches consist of two lanes, while the eastbound and westbound Main Street approaches consist of one lane. With the existing configuration, this intersection currently operates with LOS B during both the morning and afternoon peak hours. With the existing lane configurations and the addition of all the surrounding developments and this project traffic, this intersection is expected to operate acceptably with LOS C or better during the morning and afternoon peak hours in 2025.

By 2045, this roundabout intersection may operate overall with LOS E and with failing approaches prior to the addition of project traffic. Therefore, the eastbound and westbound approaches may need to include separate 100-foot right turn lanes. With this improvement in 2045, this intersection and all approaches are expected to operate acceptably during the peak hours. However, it is important to recognize that this is the twenty-year long-term horizon and these future traffic volumes may not be realized. Future study is recommended when this redevelopment occurs to determine if these future traffic volumes are realized. **Table 5** provides the results of the level of service at this intersection.

Table 5 – Main Street & SH-133 LOS Results

Scenario	AM Peak Hour		PM Peak Hour	
	Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
2022 Existing	**11.1**	**B**	**13.5**	**B**
Northbound Approach	9.9	A	10.9	B
Westbound Approach	12.5	B	16.8	C
Southbound Approach	8.8	A	12.3	B
Eastbound Approach	17.5	C	18.5	C
2025 Background	**14.0**	**B**	**21.5**	**C**
Northbound Approach	11.6	B	14.6	B
Westbound Approach	16.9	C	32.1	D
Southbound Approach	9.7	A	16.2	C
Eastbound Approach	25.4	D	36.3	E
2025 Background Plus Project	**14.7**	**B**	**24.9**	**C**
Northbound Approach	11.9	B	15.8	C
Westbound Approach	17.8	C	38.7	E
Southbound Approach	9.9	A	17.4	C
Eastbound Approach	27.2	D	45.5	E
2045 Background	**26.0**	**D**	**49.1**	**E**
Northbound Approach	16.4	C	22.2	C
Westbound Approach	29.7	D	89.7	F
Southbound Approach	12.7	B	27.8	D
Eastbound Approach	69.4	F	112.4	F
2045 Background Plus Project #	**16.8**	**C**	**29.6**	**D**
Northbound Approach	17.0	C	26.2	D
Westbound Approach	15.1	C	20.2	C
Southbound Approach	13.0	B	32.7	D
Eastbound Approach	25.7	D	38.0	E

= Addition of EB and WB Right Turn Lanes

5.3 CDOT Turn Bay Length Analysis

The threshold for requiring an access permit along Colorado Department of Transportation (CDOT) roadways occurs when project traffic is anticipated to increase the existing access traffic volumes by more than 20 percent. Based on traffic projections, the addition of project traffic on the west leg of Hendrick Drive at SH-133 is anticipated to increase existing traffic by more than 20 percent. Therefore, access permits are anticipated to be needed at Hendrick Drive at SH-133 as development occurs.

SH-133 is categorized as an NR-B: Non-Rural Arterial roadway with a 35 miles per hour speed limit, as such turn lanes requirements are to be designed per the State Highway Access Code (SHAC). According to the State Highway Access Code for category NR-B roadways with a speed limit of less than or equal to 40 miles per hour the turn lane warrants are as follows:

- A left turn lane with storage plus taper is required for any access with a projected peak hour left ingress turning volume greater than 25 (vph).
- A right turn lane with storage length plus taper is required for any access with a projected peak hour right ingress turning volume greater than 50 (vph).
- An acceleration lane is generally not required.

Based on the 2045 traffic volume projections, turn lane requirements at Hendrick Drive intersections along SH-133 are as follows:

- A northbound left turn deceleration lane **is** warranted with the projected left turn volumes being 142 vph and the threshold for requiring a left turn deceleration lane being 25 vph. This left turn lane exists today as a two-way left turn lane. Therefore, no modifications are needed for the existing northbound left turn lane.
- A southbound right turn deceleration lane **is** warranted with the projected right turn volume being 66 vph and the threshold for requiring a right turn deceleration lane being 50 vph. However, a southbound right turn lane currently exists and provides a length of 100 feet plus 120-foot (10 to 1) taper. Therefore, this meets current CDOT standards and no modification is needed.
- Based on the SH-133 roadway classification of NR-B with a 35 mile per hour posted speed limit, an acceleration lane is generally not required; however, it was found that one may be needed operationally by the 2045 long term horizon if future traffic projections are

realized. Therefore, based on the speed limit and classification, an acceleration lane of 150 feet in length plus 120-foot taper may be considered if needed in the future.

5.4 Vehicle Queuing Analysis

A vehicle queuing analysis was conducted for the study area intersections. The queuing analysis was performed using Synchro presenting the results of the 95th percentile queue lengths. Results are shown in the following **Table 6** with calculations provided within the level of service operational sheets of **Appendix D** for unsignalized intersections and **Appendix E** for signalized intersections.

Table 6 – Turn Lane Queuing Analysis Results

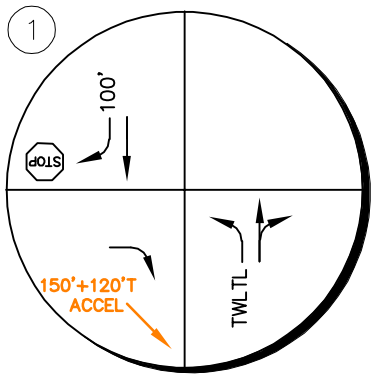
Intersection Turn Lane	Existing Turn Lane Length (feet)	2025 Calculated Queue (feet)	2025 Recommended Length (feet)	2045 Calculated Queue (feet)	2045 Recommended Length (feet)
Hendrick Dr & SH-133					
Northbound Left	TWLTL	25’	TWLTL	25’	TWLTL
Eastbound Right	200’	125’	200’	0’	200’
Main St & Hendrick Dr					
Northbound Approach	C	25’	C	50’	C
Eastbound Left	60’	25’	60’	25’	60’
Westbound Left	60	25’	60	25’	60
Southbound Approach	C	75’	C	125’	C
Main St & SH-133					
Northbound Approach	275’	83’	275’	151’	275’
Westbound Approach	150’	**247’**	150’	-	150’
Westbound Left/Through	-	-	-	71’	150’
Westbound Right	-	-	-	76’	**100’**
Southbound Approach	650’	215’	650’	483’	650’
Eastbound Approach	325’	209’	325’	-	325’
Eastbound Left/Through	-	-	-	160'	325’
Eastbound Right	-	-	-	32’	**100’**

DNE = Does Not Exist; C = Continuous; **Red** Text = Storage Deficiency; **Blue** Text = Recommendation

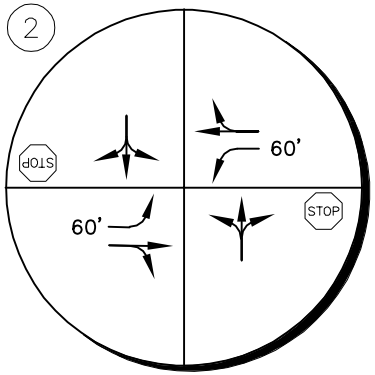
As shown, all queues fall within the existing storage lengths throughout the long term 2045 horizon with exception of the Subway access along the east leg of Main Street restricting the westbound approach to the SH-133 roundabout. At times, this driveway along the south side of Main Street is likely blocked from a westbound queue to the adjacent roundabout. Of note, 100-foot eastbound and westbound right turn lanes may be needed at the Main Street and SH-133 roundabout intersection in the future. This improvement reduces the queue on the approach to approximately 75 feet, which means that the Subway access should be clear of a queue when this improvement is implemented.

5.5 Improvement Summary

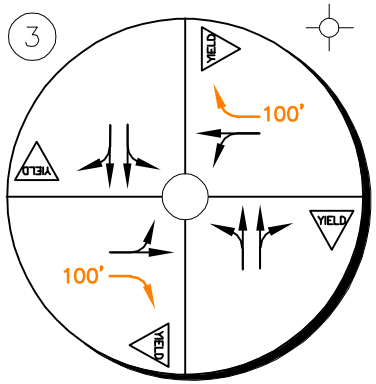
Based on the results of the operational and queuing analysis, the existing street network as constructed is anticipated accommodate full buildout of the ANB Bank – Carbondale mixed use building development successfully without the need for any additional offsite improvements in the 2025 near-term horizon. However, an acceleration lane along southbound SH-133 from Hendrick Drive as well as eastbound and westbound right turn lanes at the Main Street/SH-133 roundabout may be needed The recommended lane configurations and control for 2045 is illustrated in **Figure 10.**



HENDRICK DR & SH-133



MAIN ST & HENDRICK DR



MAIN ST & SH-133

LEGEND

- X — Study Area Key Intersection
- Roundabout
- YIELD — Yield Controlled Approach
- STOP — Stop Controlled Approach
- Improvement
- 100' — Turn Lane Length (feet)

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NTS 096671006

FIGURE 10
ANB BANK – CARBONDALE
CARBONDALE, COLORADO
2045 RECOMMENDED GEOMETRY AND CONTROL

Kimley»Horn

6.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the analysis presented in this report, Kimley-Horn believes ANB Bank - Carbondale will be successfully incorporated into the existing and future roadway network. Analysis of the existing street network, the proposed project development, and expected traffic volumes resulted in the following recommendations:

- It is anticipated that CDOT will require an access permit at the intersection of SH-133 and Hendrick Drive with development of the project due to project traffic volumes increasing the existing and previously permitted volumes by more than 20 percent.

- The existing street network as constructed today will accommodate full buildout of the ANB Bank – Carbondale mixed use building development successfully without the need for any additional offsite improvements in the 2025 near-term horizon.

- By 2045, the eastbound right turn from Hendrick Drive to southbound SH-133 may need to operate with free movements by the construction of an acceleration lane along southbound SH-133. Therefore, an acceleration lane with 150 feet of length and a 120-foot taper would need to be provided along southbound SH-133 based on the CDOT SHAC for the 35-mile per hour posted speed limit.

- By 2045, the eastbound and westbound approaches of the Main Street and SH-133 roundabout may need to include separate 100-foot right turn lanes. Traffic volumes should be monitored in the future at this intersection to determine if and when this improvement is necessary.

- Any on-site and off-site signing and striping improvements should be incorporated into the Civil Drawings, and conform to Town of Carbondale and CDOT standards, as well as the Manual on Uniform Traffic Control Devices – 2009 Edition (MUTCD).

APPENDICES

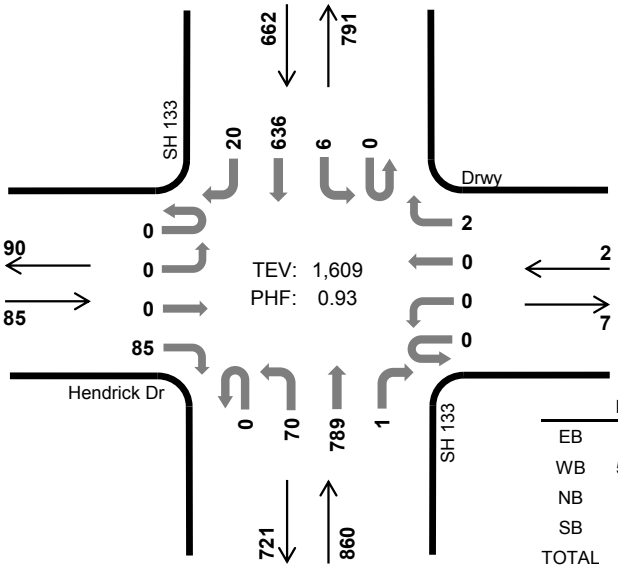
APPENDIX A

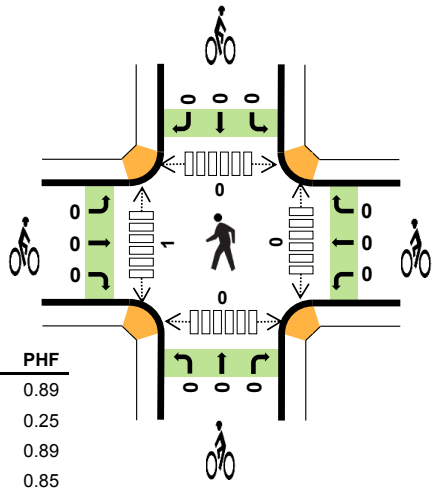
Intersection Count Sheets

SH 133
Hendrick Dr

Date: 10/20/2022
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 8:00 AM to 9:00 AM

Peak Hour





	HV %:	PHF
EB	5.9%	0.89
WB	50.0%	0.25
NB	5.5%	0.89
SB	5.0%	0.85
TOTAL	5.3%	0.93

Two-Hour Count Summaries

Interval Start	Hendrick Dr Eastbound				Drwy Westbound				SH 133 Northbound				SH 133 Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	18	0	0	0	0	0	8	119	0	0	2	64	4	215	0
7:15 AM	0	1	0	6	0	0	0	0	0	10	132	0	0	0	81	3	233	0
7:30 AM	0	0	0	19	0	0	0	0	0	11	186	0	0	2	93	4	315	0
7:45 AM	0	0	0	12	0	0	0	0	0	8	178	0	0	1	149	5	353	1,116
8:00 AM	**0**	**0**	**0**	**18**	**0**	**0**	**0**	**0**	**0**	**16**	**203**	**1**	**0**	**1**	**190**	**4**	**433**	1,334
8:15 AM	**0**	**0**	**0**	**23**	**0**	**0**	**0**	**0**	**0**	**22**	**220**	**0**	**0**	**2**	**154**	**8**	**429**	1,530
8:30 AM	**0**	**0**	**0**	**24**	**0**	**0**	**0**	**2**	**0**	**14**	**178**	**0**	**0**	**2**	**124**	**5**	**349**	1,564
8:45 AM	**0**	**0**	**0**	**20**	**0**	**0**	**0**	**0**	**0**	**18**	**188**	**0**	**0**	**1**	**168**	**3**	**398**	**1,609**
Count Total	0	1	0	140	0	0	0	2	0	107	1,404	1	0	11	1,023	36	2,725	0
Peak Hour All	**0**	**0**	**0**	**85**	**0**	**0**	**0**	**2**	**0**	**70**	**789**	**1**	**0**	**6**	**636**	**20**	**1,609**	**0**
Peak Hour HV	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**1**	**0**	**0**	**47**	**0**	**0**	**1**	**31**	**1**	**86**	**0**
Peak Hour HV%	**-**	**-**	**-**	**6%**	**-**	**-**	**-**	**50%**	**-**	**0%**	**6%**	**0%**	**-**	**17%**	**5%**	**5%**	**5%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	1	0	8	3	*12*	0	0	0	0	*0*	0	2	0	0	*2*
7:15 AM	1	0	4	5	*10*	0	0	0	2	*2*	0	2	0	0	*2*
7:30 AM	1	0	7	8	*16*	0	0	0	2	*2*	0	2	0	0	*2*
7:45 AM	0	0	13	11	*24*	0	0	0	0	*0*	0	1	0	0	*1*
8:00 AM	**2**	**0**	**11**	**10**	***23***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**0**	**0**	*1*
8:15 AM	**0**	**0**	**14**	**11**	***25***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
8:30 AM	**2**	**1**	**12**	**6**	***21***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
8:45 AM	**1**	**0**	**10**	**6**	***17***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	***0***
Count Total	8	1	79	60	*148*	0	0	0	4	*4*	0	8	0	0	*8*
Peak Hour	**5**	**1**	**47**	**33**	***86***	**0**	**0**	**0**	**0**	***0***	**0**	**1**	**0**	**0**	***1***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Hendrick Dr				Drwy				SH 133				SH 133				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	0	1	0	0	0	0	0	0	8	0	0	0	3	0	12	0
7:15 AM	0	0	0	1	0	0	0	0	0	0	4	0	0	0	5	0	10	0
7:30 AM	0	0	0	1	0	0	0	0	0	0	7	0	0	0	8	0	16	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	13	0	0	0	11	0	24	62
8:00 AM	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**11**	**0**	**0**	**0**	**10**	**0**	**23**	73
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**14**	**0**	**0**	**0**	**11**	**0**	**25**	88
8:30 AM	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**1**	**0**	**0**	**12**	**0**	**0**	**1**	**4**	**1**	**21**	93
8:45 AM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**10**	**0**	**0**	**0**	**6**	**0**	**17**	**86**
Count Total	0	0	0	8	0	0	0	1	0	0	79	0	0	1	58	1	148	0
Peak Hour	**0**	**0**	**0**	**5**	**0**	**0**	**0**	**1**	**0**	**0**	**47**	**0**	**0**	**1**	**31**	**1**	**86**	**0**

Two-Hour Count Summaries - Bikes

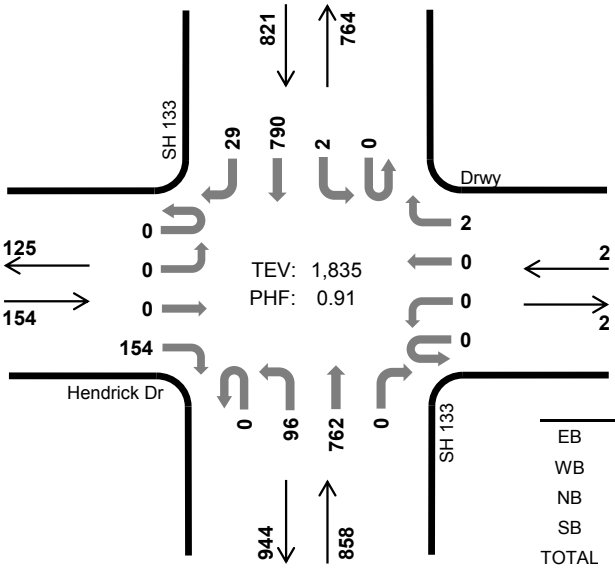
Interval Start	Hendrick Dr			Drwy			SH 133			SH 133			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	2	0	2	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	2	0	2	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	4
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	4
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	2
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
8:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Count Total	0	0	0	0	0	0	0	0	0	0	4	0	4	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

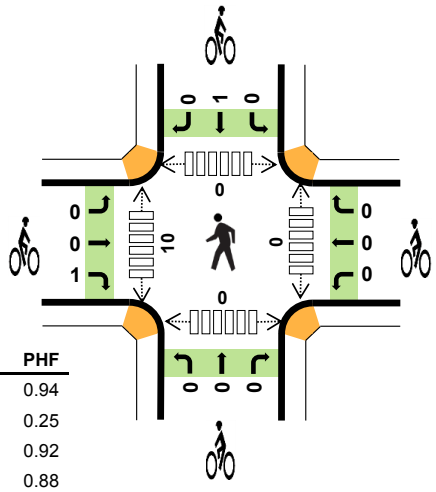
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

SH 133
Hendrick Dr

Date: 10/20/2022
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM

Peak Hour





	HV %:	PHF
EB	3.9%	0.94
WB	0.0%	0.25
NB	3.7%	0.92
SB	2.1%	0.88
TOTAL	3.0%	0.91

Two-Hour Count Summaries

Interval Start		Hendrick Dr Eastbound				Drwy Westbound				SH 133 Northbound				SH 133 Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	1	0	38	0	0	0	0	0	33	200	0	0	0	156	3	431	0
4:15 PM		0	0	0	35	0	0	0	0	0	29	195	1	1	1	170	10	442	0
4:30 PM		**0**	**0**	**0**	**40**	**0**	**0**	**0**	**2**	**0**	**16**	**174**	**0**	**0**	**1**	**189**	**10**	**432**	0
4:45 PM		**0**	**0**	**0**	**41**	**0**	**0**	**0**	**0**	**0**	**27**	**194**	**0**	**0**	**0**	**180**	**7**	**449**	1,754
5:00 PM		**0**	**0**	**0**	**38**	**0**	**0**	**0**	**0**	**0**	**25**	**208**	**0**	**0**	**0**	**229**	**5**	**505**	1,828
5:15 PM		**0**	**0**	**0**	**35**	**0**	**0**	**0**	**0**	**0**	**28**	**186**	**0**	**0**	**1**	**192**	**7**	**449**	**1,835**
5:30 PM		0	0	0	38	0	0	0	0	0	28	154	0	0	0	186	8	414	1,817
5:45 PM		0	0	0	39	0	0	0	0	0	39	154	0	0	1	162	11	406	1,774
Count Total		0	1	0	304	0	0	0	2	0	225	1,465	1	1	4	1,464	61	3,528	0
Peak Hour	**All**	**0**	**0**	**0**	**154**	**0**	**0**	**0**	**2**	**0**	**96**	**762**	**0**	**0**	**2**	**790**	**29**	**1,835**	**0**
	HV	**0**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**2**	**30**	**0**	**0**	**1**	**15**	**1**	**55**	**0**
	HV%	**-**	**-**	**-**	**4%**	**-**	**-**	**-**	**0%**	**-**	**2%**	**4%**	**-**	**-**	**50%**	**2%**	**3%**	**3%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	2	0	5	9	*16*	0	0	0	0	*0*	0	2	0	0	*2*
4:15 PM	3	0	10	4	*17*	0	0	0	0	*0*	0	3	0	0	*3*
4:30 PM	**0**	**0**	**7**	**5**	***12***	**0**	**0**	**0**	**0**	***0***	**0**	**2**	**0**	**0**	*2*
4:45 PM	**2**	**0**	**10**	**3**	***15***	**0**	**0**	**0**	**0**	***0***	**0**	**3**	**0**	**0**	*3*
5:00 PM	**2**	**0**	**6**	**6**	***14***	**1**	**0**	**0**	**1**	***2***	**0**	**3**	**0**	**0**	*3*
5:15 PM	**2**	**0**	**9**	**3**	***14***	**0**	**0**	**0**	**0**	***0***	**0**	**2**	**0**	**0**	***2***
5:30 PM	2	0	5	1	*8*	0	0	0	2	*2*	0	1	1	0	*2*
5:45 PM	1	0	6	3	*10*	1	0	0	3	*4*	0	3	0	0	*3*
Count Total	14	0	58	34	*106*	2	0	0	6	*8*	0	19	1	0	*20*
Peak Hour	**6**	**0**	**32**	**17**	***55***	**1**	**0**	**0**	**1**	***2***	**0**	**10**	**0**	**0**	***10***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Hendrick Dr				Drwy				SH 133				SH 133				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	2	0	0	0	0	0	1	4	0	0	0	9	0	16	0
4:15 PM	0	0	0	3	0	0	0	0	0	0	10	0	0	0	4	0	17	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**6**	**0**	**0**	**0**	**5**	**0**	**12**	0
4:45 PM	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**1**	**9**	**0**	**0**	**0**	**3**	**0**	**15**	60
5:00 PM	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**0**	**0**	**0**	**6**	**0**	**14**	58
5:15 PM	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**9**	**0**	**0**	**1**	**1**	**1**	**14**	**55**
5:30 PM	0	0	0	2	0	0	0	0	0	0	5	0	0	0	1	0	8	51
5:45 PM	0	0	0	1	0	0	0	0	0	0	6	0	0	0	3	0	10	46
Count Total	0	0	0	14	0	0	0	0	0	3	55	0	0	1	32	1	106	0
Peak Hour	**0**	**0**	**0**	**6**	**0**	**0**	**0**	**0**	**0**	**2**	**30**	**0**	**0**	**1**	**15**	**1**	**55**	**0**

Two-Hour Count Summaries - Bikes

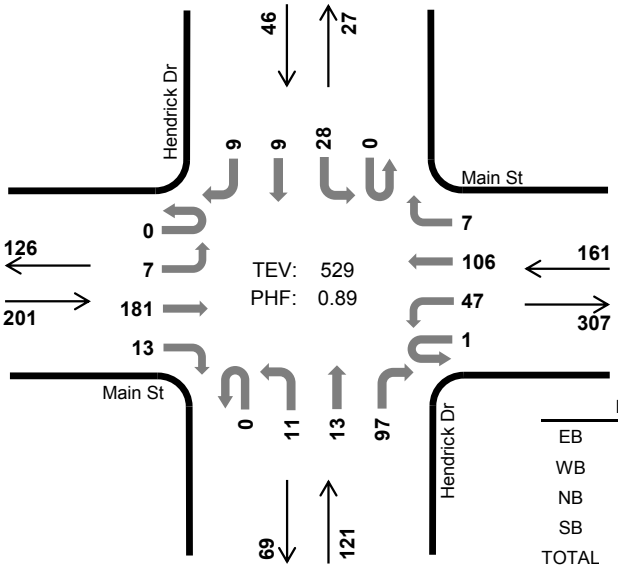
Interval Start	Hendrick Dr			Drwy			SH 133			SH 133			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
5:00 PM	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**2**	2
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**
5:30 PM	0	0	0	0	0	0	0	0	0	0	2	0	2	4
5:45 PM	0	0	1	0	0	0	0	0	0	0	3	0	4	8
Count Total	0	0	2	0	0	0	0	0	0	0	6	0	8	0
Peak Hour	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**2**	**0**

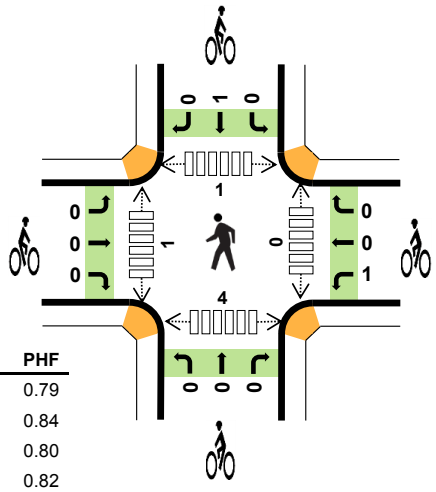
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Hendrick Dr
Main St

Date: 10/20/2022
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 8:00 AM to 9:00 AM

Peak Hour





	HV %:	PHF
EB	7.0%	0.79
WB	3.1%	0.84
NB	3.3%	0.80
SB	2.2%	0.82
TOTAL	4.5%	0.89

Two-Hour Count Summaries

Interval Start		Main St Eastbound				Main St Westbound				Hendrick Dr Northbound				Hendrick Dr Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM		0	0	12	0	0	2	15	1	0	1	0	17	0	1	2	1	52	0
7:15 AM		0	2	27	0	0	6	12	2	0	1	1	17	0	3	1	1	73	0
7:30 AM		0	2	39	1	0	7	17	1	0	1	5	21	0	10	0	2	106	0
7:45 AM		0	1	55	2	0	3	20	0	0	3	1	18	0	7	0	3	113	344
8:00 AM		**0**	**4**	**56**	**4**	**0**	**9**	**35**	**2**	**0**	**3**	**1**	**26**	**0**	**5**	**1**	**3**	**149**	441
8:15 AM		**0**	**2**	**46**	**3**	**1**	**17**	**28**	**2**	**0**	**4**	**3**	**31**	**0**	**7**	**3**	**0**	**147**	515
8:30 AM		**0**	**0**	**41**	**3**	**0**	**8**	**24**	**2**	**0**	**2**	**3**	**17**	**0**	**9**	**2**	**3**	**114**	523
8:45 AM		**0**	**1**	**38**	**3**	**0**	**13**	**19**	**1**	**0**	**2**	**6**	**23**	**0**	**7**	**3**	**3**	**119**	**529**
Count Total		0	12	314	16	1	65	170	11	0	17	20	170	0	49	12	16	873	0
Peak Hour	**All**	**0**	**7**	**181**	**13**	**1**	**47**	**106**	**7**	**0**	**11**	**13**	**97**	**0**	**28**	**9**	**9**	**529**	**0**
	HV	**0**	**0**	**14**	**0**	**0**	**2**	**3**	**0**	**0**	**1**	**0**	**3**	**0**	**1**	**0**	**0**	**24**	**0**
	HV%	**-**	**0%**	**8%**	**0%**	**0%**	**4%**	**3%**	**0%**	**-**	**9%**	**0%**	**3%**	**-**	**4%**	**0%**	**0%**	**5%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	1	0	0	0	*1*	0	0	1	0	*1*	0	0	0	0	*0*
7:15 AM	2	3	0	0	*5*	0	0	0	0	*0*	0	0	0	0	*0*
7:30 AM	0	3	1	0	*4*	0	0	0	0	*0*	1	0	0	0	*1*
7:45 AM	0	2	0	1	*3*	0	1	0	0	*1*	1	0	0	1	*2*
8:00 AM	**1**	**3**	**2**	**0**	***6***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
8:15 AM	**7**	**2**	**0**	**0**	***9***	**0**	**1**	**0**	**0**	***1***	**0**	**0**	**0**	**1**	*1*
8:30 AM	**4**	**0**	**0**	**1**	***5***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**1**	**1**	*2*
8:45 AM	**2**	**0**	**2**	**0**	***4***	**0**	**0**	**0**	**1**	***1***	**0**	**1**	**0**	**2**	***3***
Count Total	17	13	5	2	*37*	0	2	1	1	*4*	2	1	1	5	*9*
Peak Hour	**14**	**5**	**4**	**1**	***24***	**0**	**1**	**0**	**1**	***2***	**0**	**1**	**1**	**4**	***6***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Main St Eastbound				Main St Westbound				Hendrick Dr Northbound				Hendrick Dr Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
7:15 AM	0	0	2	0	0	0	2	1	0	0	0	0	0	0	0	0	5	0
7:30 AM	0	0	0	0	0	1	2	0	0	0	0	1	0	0	0	0	4	0
7:45 AM	0	0	0	0	0	0	2	0	0	0	0	0	0	1	0	0	3	13
8:00 AM	**0**	**0**	**1**	**0**	**0**	**1**	**2**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**6**	18
8:15 AM	**0**	**0**	**7**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**9**	22
8:30 AM	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**5**	23
8:45 AM	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**4**	**24**
Count Total	0	0	17	0	0	3	9	1	0	1	0	4	0	2	0	0	37	0
Peak Hour	**0**	**0**	**14**	**0**	**0**	**2**	**3**	**0**	**0**	**1**	**0**	**3**	**0**	**1**	**0**	**0**	**24**	**0**

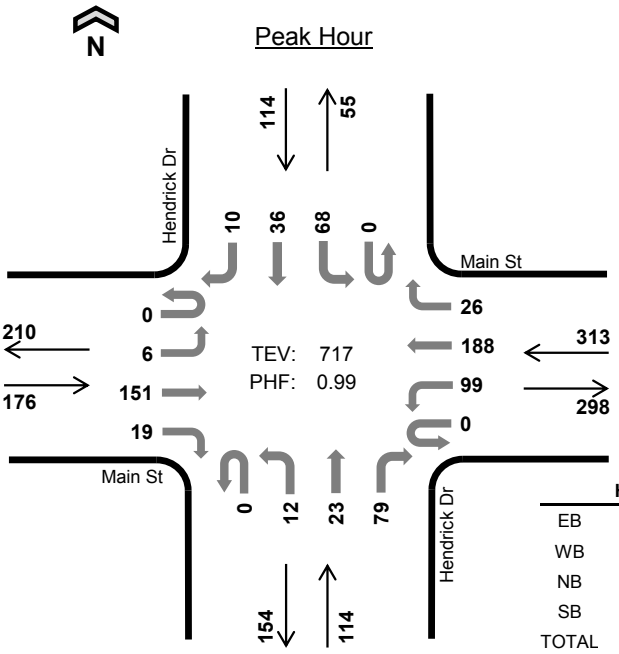
Two-Hour Count Summaries - Bikes

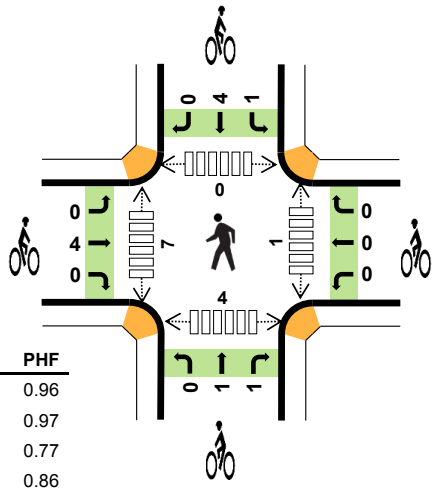
Interval Start	Main St Eastbound			Main St Westbound			Hendrick Dr Northbound			Hendrick Dr Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	1	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	1	0	0	0	0	0	0	1	2
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	1
8:15 AM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	2
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	2
8:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**2**
Count Total	0	0	0	1	0	1	0	1	0	0	1	0	4	0
Peak Hour	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**2**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Hendrick Dr
Main St

Date: 10/20/2022
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:15 PM to 5:15 PM





	HV %:	PHF
EB	2.8%	0.96
WB	1.0%	0.97
NB	1.8%	0.77
SB	2.6%	0.86
TOTAL	1.8%	0.99

Two-Hour Count Summaries

Interval Start		Main St Eastbound				Main St Westbound				Hendrick Dr Northbound				Hendrick Dr Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	0	22	3	0	21	33	5	0	3	4	29	0	12	11	3	146	0
4:15 PM		**0**	**0**	**43**	**3**	**0**	**27**	**44**	**7**	**0**	**1**	**7**	**18**	**0**	**17**	**8**	**3**	**178**	0
4:30 PM		**0**	**2**	**33**	**4**	**0**	**27**	**38**	**8**	**0**	**1**	**5**	**31**	**0**	**18**	**11**	**2**	**180**	0
4:45 PM		**0**	**2**	**41**	**3**	**0**	**24**	**51**	**6**	**0**	**4**	**7**	**18**	**0**	**15**	**5**	**2**	**178**	682
5:00 PM		**0**	**2**	**34**	**9**	**0**	**21**	**55**	**5**	**0**	**6**	**4**	**12**	**0**	**18**	**12**	**3**	**181**	**717**
5:15 PM		0	3	32	2	0	10	54	8	0	5	6	14	0	17	6	4	161	700
5:30 PM		0	1	24	3	0	15	43	8	0	5	5	19	0	15	16	3	157	677
5:45 PM		0	2	37	7	0	20	27	7	1	2	6	16	0	14	8	5	152	651
Count Total		0	12	266	34	0	165	345	54	1	27	44	157	0	126	77	25	1,333	0
Peak Hour	**All**	**0**	**6**	**151**	**19**	**0**	**99**	**188**	**26**	**0**	**12**	**23**	**79**	**0**	**68**	**36**	**10**	**717**	**0**
	HV	**0**	**0**	**5**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**2**	**0**	**3**	**0**	**0**	**13**	**0**
	HV%	**-**	**0%**	**3%**	**0%**	**-**	**0%**	**2%**	**0%**	**-**	**0%**	**0%**	**3%**	**-**	**4%**	**0%**	**0%**	**2%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	0	0	0	*0*	0	0	0	3	*3*	0	0	0	2	*2*
4:15 PM	**1**	**3**	**1**	**1**	***6***	**2**	**0**	**1**	**2**	***5***	**0**	**3**	**0**	**0**	*3*
4:30 PM	**0**	**0**	**1**	**1**	***2***	**0**	**0**	**0**	**0**	***0***	**0**	**2**	**0**	**2**	*4*
4:45 PM	**1**	**0**	**0**	**1**	***2***	**0**	**0**	**1**	**0**	***1***	**1**	**0**	**0**	**1**	*2*
5:00 PM	**3**	**0**	**0**	**0**	***3***	**2**	**0**	**0**	**3**	***5***	**0**	**2**	**0**	**1**	***3***
5:15 PM	1	0	0	0	*1*	0	0	1	0	*1*	1	1	0	0	*2*
5:30 PM	2	2	0	1	*5*	0	2	0	0	*2*	1	2	0	2	*5*
5:45 PM	0	0	0	0	*0*	0	1	0	2	*3*	0	6	0	2	*8*
Count Total	8	5	2	4	*19*	4	3	3	10	*20*	3	16	0	10	*29*
Peak Hour	**5**	**3**	**2**	**3**	***13***	**4**	**0**	**2**	**5**	***11***	**1**	**7**	**0**	**4**	***12***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Main St Eastbound				Main St Westbound				Hendrick Dr Northbound				Hendrick Dr Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	**0**	**0**	**1**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**6**	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**2**	0
4:45 PM	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**2**	10
5:00 PM	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**13**
5:15 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	8
5:30 PM	0	0	2	0	0	0	2	0	0	0	0	0	0	1	0	0	5	11
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9
Count Total	0	0	8	0	0	0	5	0	0	0	0	2	0	4	0	0	19	0
Peak Hour	**0**	**0**	**5**	**0**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**2**	**0**	**3**	**0**	**0**	**13**	**0**

Two-Hour Count Summaries - Bikes

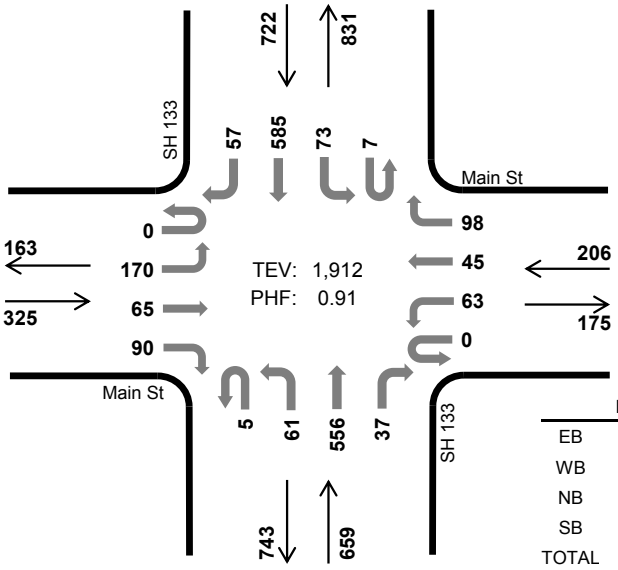
Interval Start	Main St Eastbound			Main St Westbound			Hendrick Dr Northbound			Hendrick Dr Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	2	1	0	3	0
4:15 PM	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**2**	**0**	**5**	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	9
5:00 PM	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**2**	**0**	**5**	**11**
5:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	1	7
5:30 PM	0	0	0	0	2	0	0	0	0	0	0	0	2	9
5:45 PM	0	0	0	0	1	0	0	0	0	0	2	0	3	11
Count Total	0	4	0	0	3	0	0	2	1	3	7	0	20	0
Peak Hour	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**1**	**4**	**0**	**11**	**0**

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

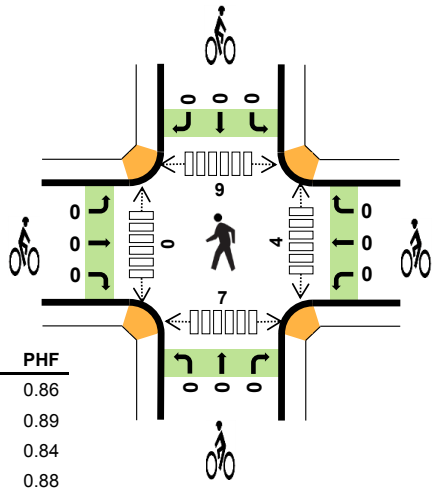
SH 133
Main St

Peak Hour

Date: 10/20/2022
Count Period: 7:00 AM to 9:00 AM
Peak Hour: 8:00 AM to 9:00 AM



	HV %:	PHF
EB	5.8%	0.86
WB	6.3%	0.89
NB	3.5%	0.84
SB	4.3%	0.88
TOTAL	4.5%	0.91



Two-Hour Count Summaries

Interval Start	Main St Eastbound				Main St Westbound				SH 133 Northbound				SH 133 Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	25	7	5	0	8	8	10	1	6	86	8	0	7	75	3	249	0
7:15 AM	0	28	11	10	0	6	2	15	1	5	96	6	1	8	82	2	273	0
7:30 AM	0	46	11	14	0	8	14	23	0	8	124	5	1	7	102	3	366	0
7:45 AM	0	40	8	41	0	10	8	22	1	10	113	9	0	15	133	12	422	1,310
8:00 AM	**0**	**47**	**14**	**34**	**0**	**22**	**9**	**25**	**2**	**21**	**135**	**6**	**3**	**25**	**160**	**16**	**519**	1,580
8:15 AM	**0**	**46**	**19**	**25**	**0**	**18**	**16**	**24**	**1**	**22**	**159**	**13**	**2**	**20**	**148**	**15**	**528**	1,835
8:30 AM	**0**	**40**	**18**	**11**	**0**	**15**	**12**	**22**	**1**	**10**	**125**	**8**	**1**	**12**	**123**	**14**	**412**	1,881
8:45 AM	**0**	**37**	**14**	**20**	**0**	**8**	**8**	**27**	**1**	**8**	**137**	**10**	**1**	**16**	**154**	**12**	**453**	**1,912**
Count Total	0	309	102	160	0	95	77	168	8	90	975	65	9	110	977	77	3,222	0
Peak Hour All	**0**	**170**	**65**	**90**	**0**	**63**	**45**	**98**	**5**	**61**	**556**	**37**	**7**	**73**	**585**	**57**	**1,912**	**0**
Peak Hour HV	**0**	**12**	**2**	**5**	**0**	**0**	**5**	**8**	**1**	**1**	**21**	**0**	**1**	**0**	**28**	**2**	**86**	**0**
Peak Hour HV%	**-**	**7%**	**3%**	**6%**	**-**	**0%**	**11%**	**8%**	**20%**	**2%**	**4%**	**0%**	**14%**	**0%**	**5%**	**4%**	**4%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
7:00 AM	2	3	4	4	*13*	0	0	0	0	*0*	1	0	3	2	*6*
7:15 AM	1	3	1	6	*11*	0	0	0	0	*0*	0	0	1	1	*2*
7:30 AM	1	6	5	8	*20*	0	0	0	0	*0*	0	0	2	1	*3*
7:45 AM	1	3	5	11	*20*	0	0	0	0	*0*	0	0	2	2	*4*
8:00 AM	**5**	**4**	**5**	**10**	***24***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**0**	**0**	*0*
8:15 AM	**6**	**3**	**5**	**8**	***22***	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**2**	**1**	*4*
8:30 AM	**5**	**1**	**7**	**7**	***20***	**0**	**0**	**0**	**0**	***0***	**2**	**0**	**3**	**3**	*8*
8:45 AM	**3**	**5**	**6**	**6**	***20***	**0**	**0**	**0**	**0**	***0***	**1**	**0**	**4**	**3**	***8***
Count Total	24	28	38	60	*150*	0	0	0	0	*0*	5	0	17	13	*35*
Peak Hour	**19**	**13**	**23**	**31**	***86***	**0**	**0**	**0**	**0**	***0***	**4**	**0**	**9**	**7**	***20***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Main St Eastbound				Main St Westbound				SH 133 Northbound				SH 133 Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
7:00 AM	0	2	0	0	0	0	0	3	0	0	4	0	0	0	4	0	13	0
7:15 AM	0	1	0	0	0	0	1	2	0	0	1	0	0	2	4	0	11	0
7:30 AM	0	1	0	0	0	0	1	5	0	2	3	0	0	1	6	1	20	0
7:45 AM	0	1	0	0	0	0	1	2	0	0	5	0	0	0	9	2	20	64
8:00 AM	**0**	**3**	**0**	**2**	**0**	**0**	**1**	**3**	**1**	**1**	**3**	**0**	**1**	**0**	**7**	**2**	**24**	75
8:15 AM	**0**	**5**	**0**	**1**	**0**	**0**	**2**	**1**	**0**	**0**	**5**	**0**	**0**	**0**	**8**	**0**	**22**	86
8:30 AM	**0**	**3**	**1**	**1**	**0**	**0**	**0**	**1**	**0**	**0**	**7**	**0**	**0**	**0**	**7**	**0**	**20**	86
8:45 AM	**0**	**1**	**1**	**1**	**0**	**0**	**2**	**3**	**0**	**0**	**6**	**0**	**0**	**0**	**6**	**0**	**20**	**86**
Count Total	0	17	2	5	0	0	8	20	1	3	34	0	1	3	51	5	150	0
Peak Hour	**0**	**12**	**2**	**5**	**0**	**0**	**5**	**8**	**1**	**1**	**21**	**0**	**1**	**0**	**28**	**2**	**86**	**0**

Two-Hour Count Summaries - Bikes

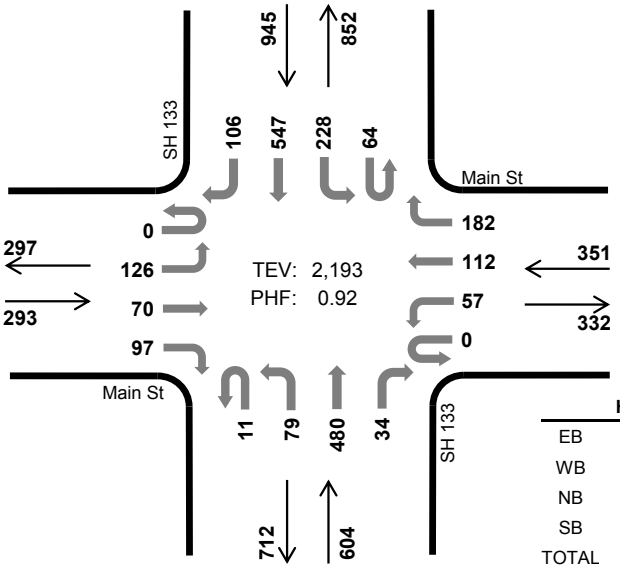
Interval Start	Main St Eastbound			Main St Westbound			SH 133 Northbound			SH 133 Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
8:15 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
8:30 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
8:45 AM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Count Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Peak Hour	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

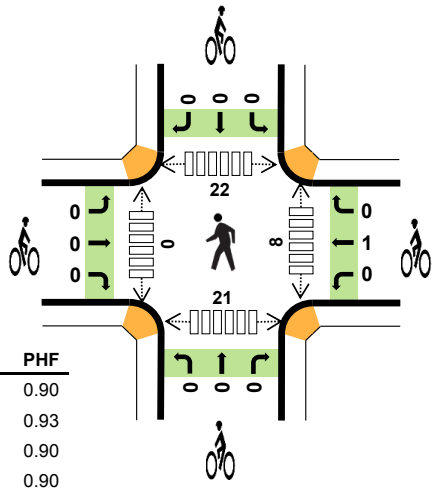
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

SH 133
Main St

Peak Hour

Date: 10/20/2022
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 4:30 PM to 5:30 PM





	HV %:	PHF
EB	2.7%	0.90
WB	3.7%	0.93
NB	3.6%	0.90
SB	2.1%	0.90
TOTAL	2.9%	0.92

Two-Hour Count Summaries

Interval Start		Main St Eastbound				Main St Westbound				SH 133 Northbound				SH 133 Southbound				15-min Total	Rolling One Hour
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM		0	30	18	14	0	9	27	51	0	9	138	9	10	50	125	16	506	0
4:15 PM		0	40	22	16	0	12	27	42	1	22	121	6	12	56	120	22	519	0
4:30 PM		**0**	**38**	**19**	**24**	**0**	**16**	**23**	**46**	**3**	**15**	**96**	**7**	**14**	**64**	**119**	**29**	**513**	0
4:45 PM		**0**	**31**	**20**	**28**	**0**	**12**	**36**	**41**	**2**	**22**	**132**	**5**	**13**	**52**	**137**	**21**	**552**	2,090
5:00 PM		**0**	**28**	**16**	**24**	**0**	**17**	**28**	**49**	**3**	**25**	**131**	**9**	**20**	**56**	**157**	**30**	**593**	2,177
5:15 PM		**0**	**29**	**15**	**21**	**0**	**12**	**25**	**46**	**3**	**17**	**121**	**13**	**17**	**56**	**134**	**26**	**535**	**2,193**
5:30 PM		0	40	8	13	0	23	24	38	2	23	90	14	15	57	131	24	502	2,182
5:45 PM		0	45	11	20	0	10	18	40	7	11	86	16	14	58	110	22	468	2,098
Count Total		0	281	129	160	0	111	208	353	21	144	915	79	115	449	1,033	190	4,188	0
Peak Hour	**All**	**0**	**126**	**70**	**97**	**0**	**57**	**112**	**182**	**11**	**79**	**480**	**34**	**64**	**228**	**547**	**106**	**2,193**	**0**
	HV	**0**	**4**	**1**	**3**	**0**	**2**	**3**	**8**	**0**	**1**	**20**	**1**	**0**	**3**	**17**	**0**	**63**	**0**
	HV%	**-**	**3%**	**1%**	**3%**	**-**	**4%**	**3%**	**4%**	**0%**	**1%**	**4%**	**3%**	**0%**	**1%**	**3%**	**0%**	**3%**	**0**

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	0	2	2	9	*13*	0	0	0	0	*0*	5	0	12	10	*27*
4:15 PM	2	4	4	7	*17*	2	0	0	0	*2*	3	0	4	4	*11*
4:30 PM	**1**	**3**	**4**	**5**	***13***	**0**	**0**	**0**	**0**	***0***	**3**	**0**	**4**	**2**	*9*
4:45 PM	**3**	**3**	**6**	**4**	***16***	**0**	**0**	**0**	**0**	***0***	**4**	**0**	**6**	**6**	*16*
5:00 PM	**2**	**4**	**5**	**7**	***18***	**0**	**1**	**0**	**0**	***1***	**1**	**0**	**7**	**7**	*15*
5:15 PM	**2**	**3**	**7**	**4**	***16***	**0**	**0**	**0**	**0**	***0***	**0**	**0**	**5**	**6**	***11***
5:30 PM	2	4	2	3	*11*	0	0	0	1	*1*	3	0	5	4	*12*
5:45 PM	2	2	2	3	*9*	0	0	0	0	*0*	2	0	7	7	*16*
Count Total	14	25	32	42	*113*	2	1	0	1	*4*	21	0	50	46	*117*
Peak Hour	**8**	**13**	**22**	**20**	***63***	**0**	**1**	**0**	**0**	***1***	**8**	**0**	**22**	**21**	***51***

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	Main St Eastbound				Main St Westbound				SH 133 Northbound				SH 133 Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	2	0	0	2	0	0	4	5	0	13	0
4:15 PM	0	1	1	0	0	1	1	2	0	1	3	0	0	3	4	0	17	0
4:30 PM	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**3**	**0**	**0**	**4**	**0**	**0**	**1**	**4**	**0**	**13**	0
4:45 PM	**0**	**2**	**0**	**1**	**0**	**0**	**2**	**1**	**0**	**0**	**6**	**0**	**0**	**0**	**4**	**0**	**16**	59
5:00 PM	**0**	**1**	**0**	**1**	**0**	**2**	**0**	**2**	**0**	**1**	**4**	**0**	**0**	**2**	**5**	**0**	**18**	64
5:15 PM	**0**	**1**	**1**	**0**	**0**	**0**	**1**	**2**	**0**	**0**	**6**	**1**	**0**	**0**	**4**	**0**	**16**	**63**
5:30 PM	0	2	0	0	0	0	3	1	0	0	2	0	0	1	2	0	11	61
5:45 PM	0	2	0	0	0	0	0	2	1	0	1	0	0	2	1	0	9	54
Count Total	0	9	2	3	0	3	7	15	1	2	28	1	0	13	29	0	113	0
Peak Hour	**0**	**4**	**1**	**3**	**0**	**2**	**3**	**8**	**0**	**1**	**20**	**1**	**0**	**3**	**17**	**0**	**63**	**0**

Two-Hour Count Summaries - Bikes

Interval Start	Main St Eastbound			Main St Westbound			SH 133 Northbound			SH 133 Southbound			15-min Total	Rolling One Hour
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	2	0	0	0	0	0	0	0	0	0	0	2	0
4:30 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	0
4:45 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	2
5:00 PM	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	3
5:15 PM	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
5:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	1	2
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Count Total	0	2	0	0	1	0	0	0	0	1	0	0	4	0
Peak Hour	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**

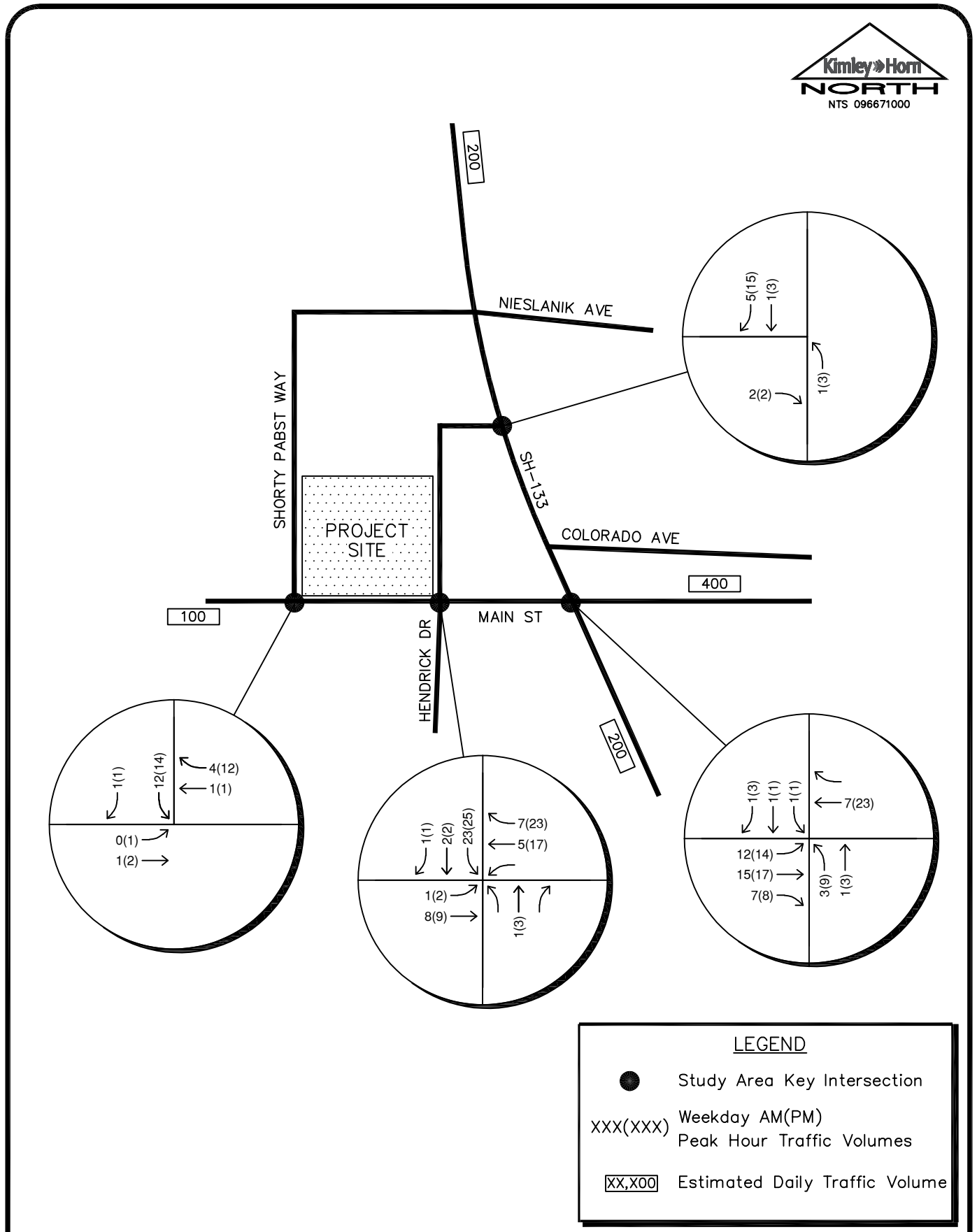
Note: U-Turn volumes for bikes are included in Left-Turn, if any.

APPENDIX B

Future Traffic Projections

CDOT OTIS Growth Projections: ANB Bank Carbondale

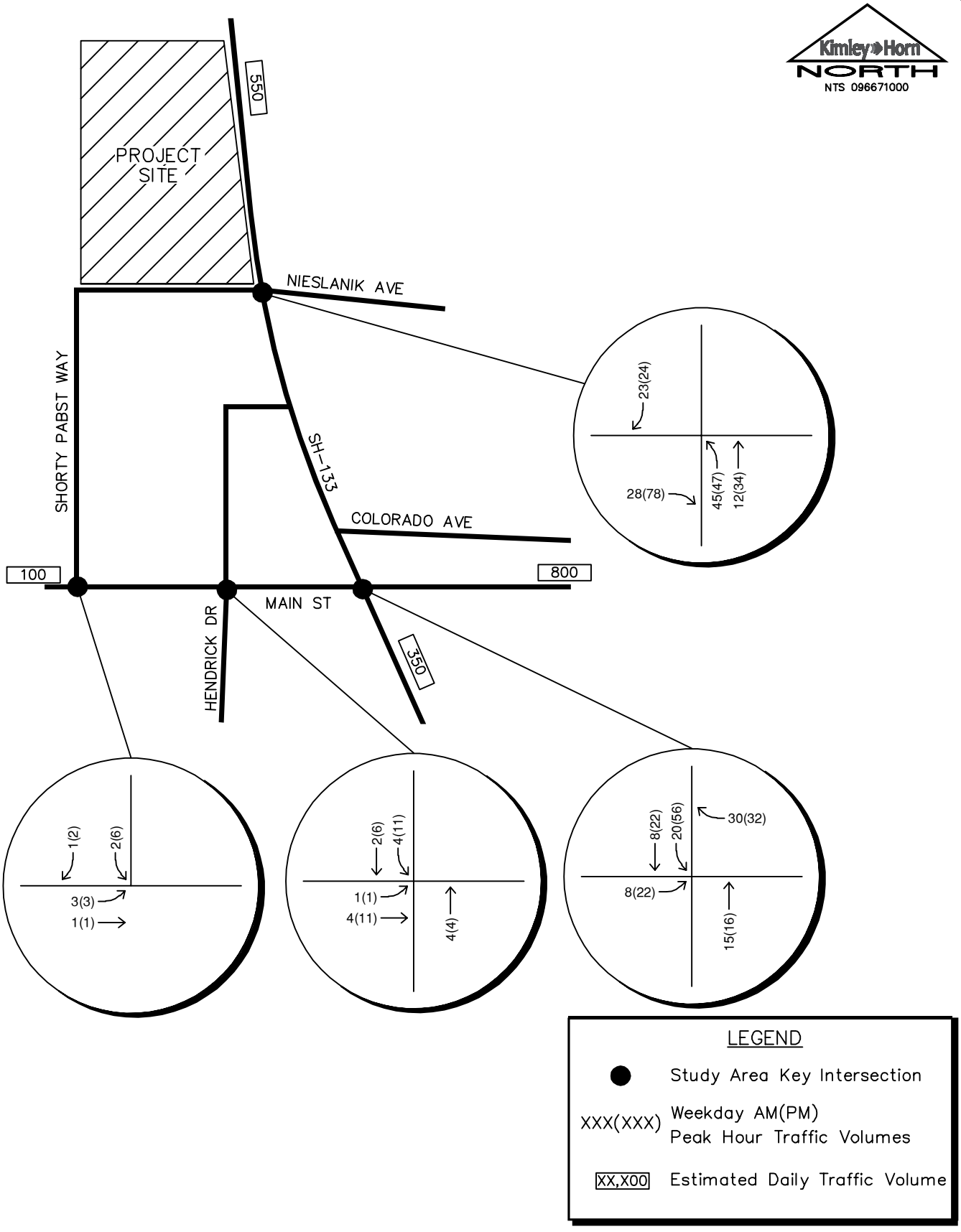
ROUTE	REFPT	ENDREFPT	LENGTH	UPDATEYR	AADT	YR20FACTOR	Annual Growth %	DHV	DD	LOCATION
133A	67.799	68.821	1.043	2021	17000	1.2	0.92%	11.5	57	ON SH 133 S/O SH 82 CARBONDALE



MAIN STREET MARKETPLACE
(NWC SH-133 AND MAIN STREET)
2040 PROJECT TRAFFIC ASSIGNMENT

FIGURE 9

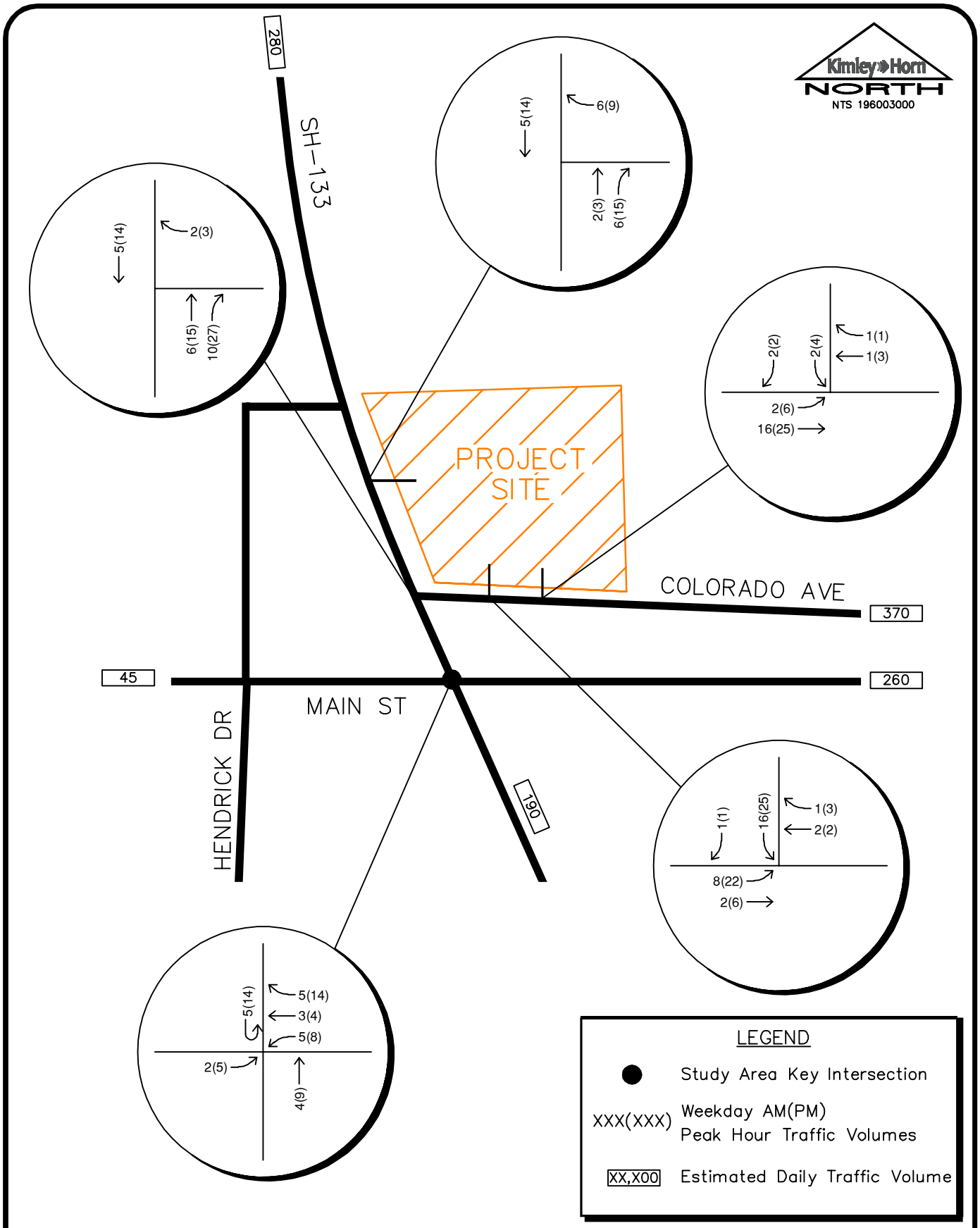
Kimley»Horn



CARBONDALE MARKETPLACE LOTS 5A/5B/5C
(NWC SH-133 AND NIESLANIK AVE)
PROJECT TRAFFIC ASSIGNMENT

FIGURE 8

Kimley»Horn



SOPRIS SHOPPING CENTER REDEVELOPMENT
CARBONDALE, CO
PROJECT TRAFFIC ASSIGNMENT

FIGURE 7

Kimley»Horn

APPENDIX C

Trip Generation Worksheets

Kimley»Horn

Project	ANB Bank Carbondale				
Subject	Trip Generation for Multifamily Housing (Low-Rise)				
Designed by	MAG	*Date*	October 26, 2022	*Job No.*	096671006
Checked by		*Date*		*Sheet No.*	of

TRIP GENERATION MANUAL TECHNIQUES

ITE Trip Generation Manual 11th Edition, Average Rate Equations

Land Use Code - Multifamily Housing (Low-Rise) (220)

Independent Variable - Dwelling Units (X)

X = 17
T = Average Vehicle Trip Ends

Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m. (200 Series Page 255)

Average Weekday — Directional Distribution: 24% ent. 76% exit.
(T) = 0.40 (X) — T = 7 Average Vehicle Trip Ends
(T) = 0.40 * (17.0) — 2 entering 5 exiting

2 + 5 = 7

Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m. (200 Series Page 256)

Average Weekday — Directional Distribution: 63% ent. 37% exit.
(T) = 0.51(X) — T = 9 Average Vehicle Trip Ends
(T) = 0.51 * (17.0) — 6 entering 3 exiting

6 + 3 = 9

Weekday (200 Series Page 254)

Average Weekday — Directional Distribution: 50% entering, 50% exiting
(T) = 6.74 (X) — T = 116 Average Vehicle Trip Ends
(T) = 6.74 * (17.0) — 58 entering 58 exiting

58 + 58 = 116

Kimley»Horn

Project	ANB Bank Carbondale				
Subject	Trip Generation for General Office Building				
Designed by	MAG	*Date*	October 26, 2022	*Job No.*	096671006
Checked by		*Date*		*Sheet No.*	1 of 1

TRIP GENERATION MANUAL TECHNIQUES

ITE Trip Generation Manual 11th Edition, Average Rates

Land Use Code - General Office Building (710)

Independent Variable - 1000 Square Feet (X)
SF = 4,376
X = 4.376
T = Average Vehicle Trip Ends

Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m. (700 Series Page 710)

Directional Distribution: 88% ent. 12% exit.
(T) = 1.52 (X) T = 7 Average Vehicle Trip Ends
(T) = 1.52 * (4.4) 6 entering 1 exiting

6 + 1 = 7

Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m. (700 Series Page 711)

Directional Distribution: 17% ent. 83% exit.
(T) = 1.44 (X) T = 6 Average Vehicle Trip Ends
(T) = 1.44 * (4.4) 1 entering 5 exiting

1 + 5 = 6

Weekday (700 Series Page 709)

Directional Distribution: 50% ent. 50% exit.
(T) = 10.84 (X) T = 48 Average Vehicle Trip Ends
(T) = 10.84 * (4.4) 24 entering 24 exiting

24 + 24 = 48

Kimley»Horn

Project ANB Bank Carbondale
Subject Trip Generation for Strip Retail Plaza (<40k)
Designed by MAG *Date* October 26, 2022 *Job No.* 096671006
Checked by *Date* *Sheet No.* *of*

TRIP GENERATION MANUAL TECHNIQUES

ITE Trip Generation Manual 11th Edition, Average Rate Equations

Land Use Code - Strip Retail Plaza (<40k) (822)

Independent Variable - 1000 Square Feet Gross Leasable Area (X)

Gross Leasable Area = 4,799 Square Feet
X = 4.799
T = Average Vehicle Trip Ends

Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m. (800 Series Page 230)

Average Weekday — Directional Distribution: 60% ent. 40% exit.
T = 2.36 * (X) — T = 11 Average Vehicle Trip Ends
T = 2.36 * 4.799 — 7 entering 4 exiting

7 + 4 = 11

Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m. (800 Series page 231)

Average Weekday — Directional Distribution: 50% ent. 50% exit.
T = 6.59 * (X) — T = 32 Average Vehicle Trip Ends
T = 6.59 * 4.799 — 16 entering 16 exiting

16 + 16 = 32

Weekday (800 Series page 229)

Average Weekday — Directional Distribution: 50% entering, 50% exiting
T = 54.45 * (X) — T = 262 Average Vehicle Trip Ends
T = 54.45 * 4.799 — 131 entering 131 exiting

131 + 131 = 262

Non Pass-By Trip Volumes (Per ITE Trip Generation Manual, 11th Edition)

AM Peak Hour = 60% Non-Pass By — PM Peak Hour = 60% Non-Pass By

	IN	Out	Total	Pass-By Rates from ITE 821
AM Peak	4	2	7	PM Peak Hour Rate Applied to AM Peak Hour
PM Peak	10	10	20	
Daily	79	79	158	PM Peak Hour Rate Applied to Daily

Pass-By Trip Volumes (Per ITE Trip Generation Manual, 11th Edition)

AM Peak Hour = 40% Pass By — PM Peak Hour = 40% Pass By

	IN	Out	Total	
AM Peak	3	2	5	PM Peak Hour Rate Applied to AM Peak Hour
PM Peak	6	6	13	
Daily	52	52	104	PM Peak Hour Rate Applied to Daily

Kimley»Horn

Project	ANB Bank Carbondale				
Subject	Trip Generation for Walk-in Bank				
Designed by	MAG	*Date*	October 26, 2022	*Job No.*	096671006
Checked by		*Date*		*Sheet No.*	of

TRIP GENERATION MANUAL TECHNIQUES

ITE Trip Generation Manual 11th Edition, Average Rates

Land Use Code - Walk-in Bank (911)

Independent Variable - 1000 Square Feet (X)
SF = 3,271
X = 3.271
T = Average Vehicle Trip Ends

Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m. (900 Series Page 592)

(T) = 12.13 (X)
(T) = 12.13 * (3.3)

Directional Distribution: 44% ent. 56% exit.
T = 40 Average Vehicle Trip Ends
18 entering 22 exiting

18 + 22 = 40

Weekday
*Assumed to be 10 times the PM Peak Hour

(T) = 10 * PM Peak Hour
(T) = 10 * PM Peak Hour (39.7)

Directional Distribution: 50% ent. 50% exit.
T = 398 Average Vehicle Trip Ends
199 entering 199 exiting

199 + 199 = 398

Kimley»Horn

Project	ANB Bank Carbondale				
Subject	Trip Generation for High Turnover Sit-Down Restaurant				
Designed by	MAG	*Date*	October 26, 2022	*Job No.*	096671006
Checked by		*Date*		*Sheet No.*	of

TRIP GENERATION MANUAL TECHNIQUES

ITE Trip Generation Manual 11th Edition, Average Rates

Land Use Code - High Turnover Sit-Down Restaurant (932)

Independent Variable - 1000 Square Feet (X)
SF = 2,290
X = 2.290
T = Average Vehicle Trip Ends

Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m. (900 Series Page 674)

Directional Distribution: 55% ent. 45% exit.
(T) = 9.57 (X) T = 22 Average Vehicle Trip Ends
(T) = 9.57 * (2.3) 12 entering 10 exiting

12 + 10 = 22

Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m. (900 Series Page 674)

Directional Distribution: 61% ent. 39% exit.
(T) = 9.05 (X) T = 21 Average Vehicle Trip Ends
(T) = 9.05 * (2.3) 13 entering 8 exiting

13 + 8 = 21

Weekday (900 Series Page 673)

Directional Distribution: 50% ent. 50% exit.
(T) = 107.20 (X) T = 246 Average Vehicle Trip Ends
(T) = 107.20 * (2.3) 123 entering 123 exiting

123 + 123 = 246

Non Pass-By Trip Volumes (Per ITE Trip Generation Manual, 11th Edition)

AM Peak Hour = 57% Non-Pass By PM Peak Hour = 57% Non-Pass By

	IN	Out	Total	
AM Peak	7	6	13	PM Peak Hour Rate Applied to AM Peak Hour
PM Peak	7	4	11	
Daily	70	70	140	PM Peak Hour Rate Applied to Daily

Pass-By Trip Volumes (Per ITE Trip Generation Manual, 11th Edition)

AM Peak Hour = 43% Pass By PM Peak Hour = 43% Pass By

	IN	Out	Total	
AM Peak	5	4	9	PM Peak Hour Rate Applied to AM Peak Hour
PM Peak	6	4	10	
Daily	53	53	106	PM Peak Hour Rate Applied to Daily

APPENDIX D

Intersection Analysis Worksheets

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	85	70	789	636	20
Future Vol, veh/h	0	85	70	789	636	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	100	-	-	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	0	91	75	848	684	22

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	684	706	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.25	4.15	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.345	2.245	-	-	-
Pot Cap-1 Maneuver	0	444	878	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	444	878	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.2	0.8	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	878	-	444	-	-
HCM Lane V/C Ratio	0.086	-	0.206	-	-
HCM Control Delay (s)	9.5	-	15.2	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.3	-	0.8	-	-

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	154	96	762	790	29
Future Vol, veh/h	0	154	96	762	790	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	100	-	-	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	169	105	837	868	32

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	868	900	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.23	4.13	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	0	350	751	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	350	751	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	24.5	1.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	751	-	350	-	-
HCM Lane V/C Ratio	0.14	-	0.484	-	-
HCM Control Delay (s)	10.6	-	24.5	-	-
HCM Lane LOS	B	-	C	-	-
HCM 95th %tile Q(veh)	0.5	-	2.5	-	-

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	90	73	878	689	26
Future Vol, veh/h	0	90	73	878	689	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	100	-	-	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	0	97	78	944	741	28

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	741	769	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.25	4.15	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.345	2.245	-	-	-
Pot Cap-1 Maneuver	0	411	832	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	411	832	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.4	0.8	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	832	-	411	-	-
HCM Lane V/C Ratio	0.094	-	0.235	-	-
HCM Control Delay (s)	9.8	-	16.4	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.3	-	0.9	-	-

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	161	102	878	909	45
Future Vol, veh/h	0	161	102	878	909	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	100	-	-	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	177	112	965	999	49

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	999	1048	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.23	4.13	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	0	294	660	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	294	660	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	34.2	1.2	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	660	-	294	-	-
HCM Lane V/C Ratio	0.17	-	0.602	-	-
HCM Control Delay (s)	11.6	-	34.2	-	-
HCM Lane LOS	B	-	D	-	-
HCM 95th %tile Q(veh)	0.6	-	3.6	-	-

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	101	81	885	689	33
Future Vol, veh/h	0	101	81	885	689	33
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	100	-	-	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	0	109	87	952	741	35

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	741	776	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.25	4.15	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.345	2.245	-	-	-
Pot Cap-1 Maneuver	0	411	827	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	411	827	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.9	0.8	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	827	-	411	-	-
HCM Lane V/C Ratio	0.105	-	0.264	-	-
HCM Control Delay (s)	9.9	-	16.9	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.4	-	1	-	-

Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	187	120	893	909	60
Future Vol, veh/h	0	187	120	893	909	60
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	100	-	-	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	205	132	981	999	66

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	999	1065	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.23	4.13	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	0	294	650	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	294	650	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	41.4	1.4	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	650	-	294	-	-
HCM Lane V/C Ratio	0.203	-	0.699	-	-
HCM Control Delay (s)	11.9	-	41.4	-	-
HCM Lane LOS	B	-	E	-	-
HCM 95th %tile Q(veh)	0.8	-	4.8	-	-

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	109	89	1057	834	30
Future Vol, veh/h	0	109	89	1057	834	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	100	-	-	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	0	117	96	1137	897	32

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	897	929	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.25	4.15	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.345	2.245	-	-	-
Pot Cap-1 Maneuver	0	334	724	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	334	724	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	21.5	0.8	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	724	-	334	-	-
HCM Lane V/C Ratio	0.132	-	0.351	-	-
HCM Control Delay (s)	10.7	-	21.5	-	-
HCM Lane LOS	B	-	C	-	-
HCM 95th %tile Q(veh)	0.5	-	1.5	-	-

Intersection	
Int Delay, s/veh	7.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	196	124	1051	1088	51
Future Vol, veh/h	0	196	124	1051	1088	51
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	100	-	-	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	213	135	1142	1183	55

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	1183	1238	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.23	4.13	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	0	230	559	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	230	559	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	86.5	1.4	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	559	-	230	-	-
HCM Lane V/C Ratio	0.241	-	0.926	-	-
HCM Control Delay (s)	13.5	-	86.5	-	-
HCM Lane LOS	B	-	F	-	-
HCM 95th %tile Q(veh)	0.9	-	7.9	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	120	97	1064	834	37
Future Vol, veh/h	0	120	97	1064	834	37
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	None	-	None
Storage Length	-	0	100	-	-	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	0	129	104	1144	897	40

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	-	937	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.15	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	2.245	-	-	-
Pot Cap-1 Maneuver	0	0	719	-	-	-
Stage 1	0	0	-	-	-	-
Stage 2	0	0	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	-	719	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0.9	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	719	-	-	-	-
HCM Lane V/C Ratio	0.145	-	-	-	-
HCM Control Delay (s)	10.9	-	0	-	-
HCM Lane LOS	B	-	A	-	-
HCM 95th %tile Q(veh)	0.5	-	-	-	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	222	142	1066	1088	66
Future Vol, veh/h	0	222	142	1066	1088	66
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Free	-	None	-	None
Storage Length	-	0	100	-	-	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	0	241	154	1159	1183	72

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	-	1255	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	4.13	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	2.227	-	-	-
Pot Cap-1 Maneuver	0	0	551	-	-	-
Stage 1	0	0	-	-	-	-
Stage 2	0	0	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	-	551	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	1.7	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	551	-	-	-	-
HCM Lane V/C Ratio	0.28	-	-	-	-
HCM Control Delay (s)	14.1	-	0	-	-
HCM Lane LOS	B	-	A	-	-
HCM 95th %tile Q(veh)	1.1	-	-	-	-

Intersection	
Int Delay, s/veh	4.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	181	13	48	106	7	11	13	97	28	9	9
Future Vol, veh/h	7	181	13	48	106	7	11	13	97	28	9	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	60	-	-	60	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	8	199	14	53	116	8	12	14	107	31	10	10

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	124	0	0	213	0	0	458	452	206	509	455	120
Stage 1	-	-	-	-	-	-	222	222	-	226	226	-
Stage 2	-	-	-	-	-	-	236	230	-	283	229	-
Critical Hdwy	4.15	-	-	4.15	-	-	7.15	6.55	6.25	7.15	6.55	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.55	-	6.15	5.55	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.55	-	6.15	5.55	-
Follow-up Hdwy	2.245	-	-	2.245	-	-	3.545	4.045	3.345	3.545	4.045	3.345
Pot Cap-1 Maneuver	1444	-	-	1340	-	-	508	499	827	470	497	923
Stage 1	-	-	-	-	-	-	774	714	-	770	711	-
Stage 2	-	-	-	-	-	-	760	708	-	718	709	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1444	-	-	1340	-	-	479	476	827	387	474	923
Mov Cap-2 Maneuver	-	-	-	-	-	-	553	532	-	460	520	-
Stage 1	-	-	-	-	-	-	769	710	-	765	683	-
Stage 2	-	-	-	-	-	-	712	680	-	609	705	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	2.3	10.8	12.6
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	749	1444	-	-	1340	-	-	523
HCM Lane V/C Ratio	0.178	0.005	-	-	0.039	-	-	0.097
HCM Control Delay (s)	10.8	7.5	-	-	7.8	-	-	12.6
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.6	0	-	-	0.1	-	-	0.3

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	151	19	99	188	26	12	23	79	68	36	10
Future Vol, veh/h	6	151	19	99	188	26	12	23	79	68	36	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	60	-	-	60	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	99	99	99	99	99	99	99	99	99	99	99	99
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	153	19	100	190	26	12	23	80	69	36	10

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	216	0	0	172	0	0	601	591	163	629	587	203
Stage 1	-	-	-	-	-	-	175	175	-	403	403	-
Stage 2	-	-	-	-	-	-	426	416	-	226	184	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1354	-	-	1405	-	-	412	420	882	395	422	838
Stage 1	-	-	-	-	-	-	827	754	-	624	600	-
Stage 2	-	-	-	-	-	-	606	592	-	777	747	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1354	-	-	1405	-	-	360	389	882	325	390	838
Mov Cap-2 Maneuver	-	-	-	-	-	-	434	454	-	422	448	-
Stage 1	-	-	-	-	-	-	824	751	-	622	557	-
Stage 2	-	-	-	-	-	-	520	550	-	682	744	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	2.5	11.4	15.7
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	679	1354	-	-	1405	-	-	450
HCM Lane V/C Ratio	0.17	0.004	-	-	0.071	-	-	0.256
HCM Control Delay (s)	11.4	7.7	-	-	7.8	-	-	15.7
HCM Lane LOS	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.6	0	-	-	0.2	-	-	1

Intersection	
Int Delay, s/veh	5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	200	13	49	117	14	11	18	100	56	13	10
Future Vol, veh/h	9	200	13	49	117	14	11	18	100	56	13	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	60	-	-	60	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	10	220	14	54	129	15	12	20	110	62	14	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	144	0	0	234	0	0	504	499	227	557	499	137
Stage 1	-	-	-	-	-	-	247	247	-	245	245	-
Stage 2	-	-	-	-	-	-	257	252	-	312	254	-
Critical Hdwy	4.15	-	-	4.15	-	-	7.15	6.55	6.25	7.15	6.55	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.55	-	6.15	5.55	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.55	-	6.15	5.55	-
Follow-up Hdwy	2.245	-	-	2.245	-	-	3.545	4.045	3.345	3.545	4.045	3.345
Pot Cap-1 Maneuver	1420	-	-	1316	-	-	473	469	805	436	469	904
Stage 1	-	-	-	-	-	-	750	696	-	752	698	-
Stage 2	-	-	-	-	-	-	741	693	-	692	692	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1420	-	-	1316	-	-	440	446	805	352	446	904
Mov Cap-2 Maneuver	-	-	-	-	-	-	523	510	-	430	500	-
Stage 1	-	-	-	-	-	-	745	691	-	747	669	-
Stage 2	-	-	-	-	-	-	687	665	-	576	687	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	2.1	11.3	14.3
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	714	1420	-	-	1316	-	-	472
HCM Lane V/C Ratio	0.199	0.007	-	-	0.041	-	-	0.184
HCM Control Delay (s)	11.3	7.6	-	-	7.9	-	-	14.3
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.7	0	-	-	0.1	-	-	0.7

Intersection	
Int Delay, s/veh	6.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	181	20	102	215	50	12	31	81	106	45	11
Future Vol, veh/h	9	181	20	102	215	50	12	31	81	106	45	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	60	-	-	60	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	99	99	99	99	99	99	99	99	99	99	99	99
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	183	20	103	217	51	12	31	82	107	45	11

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	268	0	0	203	0	0	688	685	193	717	670	243
Stage 1	-	-	-	-	-	-	211	211	-	449	449	-
Stage 2	-	-	-	-	-	-	477	474	-	268	221	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1296	-	-	1369	-	-	360	371	849	345	378	796
Stage 1	-	-	-	-	-	-	791	728	-	589	572	-
Stage 2	-	-	-	-	-	-	569	558	-	738	720	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1296	-	-	1369	-	-	305	341	849	276	347	796
Mov Cap-2 Maneuver	-	-	-	-	-	-	388	417	-	379	415	-
Stage 1	-	-	-	-	-	-	785	723	-	585	529	-
Stage 2	-	-	-	-	-	-	474	516	-	634	715	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	2.2	12.3	19.9
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	618	1296	-	-	1369	-	-	403
HCM Lane V/C Ratio	0.203	0.007	-	-	0.075	-	-	0.406
HCM Control Delay (s)	12.3	7.8	-	-	7.8	-	-	19.9
HCM Lane LOS	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.8	0	-	-	0.2	-	-	1.9

Intersection	
Int Delay, s/veh	5.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	200	13	49	117	20	11	19	100	65	14	11
Future Vol, veh/h	10	200	13	49	117	20	11	19	100	65	14	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	60	-	-	60	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	11	220	14	54	129	22	12	21	110	71	15	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	151	0	0	234	0	0	511	508	227	563	504	140
Stage 1	-	-	-	-	-	-	249	249	-	248	248	-
Stage 2	-	-	-	-	-	-	262	259	-	315	256	-
Critical Hdwy	4.15	-	-	4.15	-	-	7.15	6.55	6.25	7.15	6.55	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.55	-	6.15	5.55	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.55	-	6.15	5.55	-
Follow-up Hdwy	2.245	-	-	2.245	-	-	3.545	4.045	3.345	3.545	4.045	3.345
Pot Cap-1 Maneuver	1412	-	-	1316	-	-	468	463	805	432	466	900
Stage 1	-	-	-	-	-	-	748	695	-	749	696	-
Stage 2	-	-	-	-	-	-	736	688	-	690	690	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1412	-	-	1316	-	-	434	440	805	348	443	900
Mov Cap-2 Maneuver	-	-	-	-	-	-	518	505	-	427	497	-
Stage 1	-	-	-	-	-	-	742	689	-	743	667	-
Stage 2	-	-	-	-	-	-	680	660	-	573	684	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	2.1	11.3	14.8
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	710	1412	-	-	1316	-	-	467
HCM Lane V/C Ratio	0.201	0.008	-	-	0.041	-	-	0.212
HCM Control Delay (s)	11.3	7.6	-	-	7.9	-	-	14.8
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.7	0	-	-	0.1	-	-	0.8

Intersection	
Int Delay, s/veh	7.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	181	20	102	215	63	12	34	81	126	48	14
Future Vol, veh/h	12	181	20	102	215	63	12	34	81	126	48	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	60	-	-	60	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	99	99	99	99	99	99	99	99	99	99	99	99
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	183	20	103	217	64	12	34	82	127	48	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	281	0	0	203	0	0	703	704	193	730	682	249
Stage 1	-	-	-	-	-	-	217	217	-	455	455	-
Stage 2	-	-	-	-	-	-	486	487	-	275	227	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1282	-	-	1369	-	-	352	361	849	338	372	790
Stage 1	-	-	-	-	-	-	785	723	-	585	569	-
Stage 2	-	-	-	-	-	-	563	550	-	731	716	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1282	-	-	1369	-	-	295	331	849	268	341	790
Mov Cap-2 Maneuver	-	-	-	-	-	-	377	408	-	372	411	-
Stage 1	-	-	-	-	-	-	778	716	-	580	526	-
Stage 2	-	-	-	-	-	-	464	509	-	623	710	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	2.1	12.6	22.1
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	603	1282	-	-	1369	-	-	397
HCM Lane V/C Ratio	0.213	0.009	-	-	0.075	-	-	0.478
HCM Control Delay (s)	12.6	7.8	-	-	7.8	-	-	22.1
HCM Lane LOS	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.8	0	-	-	0.2	-	-	2.5

Intersection	
Int Delay, s/veh	5.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	242	16	60	141	16	14	21	122	62	15	12
Future Vol, veh/h	11	242	16	60	141	16	14	21	122	62	15	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	60	-	-	60	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	12	263	17	65	153	17	15	23	133	67	16	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	170	0	0	280	0	0	602	596	272	666	596	162
Stage 1	-	-	-	-	-	-	296	296	-	292	292	-
Stage 2	-	-	-	-	-	-	306	300	-	374	304	-
Critical Hdwy	4.15	-	-	4.15	-	-	7.15	6.55	6.25	7.15	6.55	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.55	-	6.15	5.55	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.55	-	6.15	5.55	-
Follow-up Hdwy	2.245	-	-	2.245	-	-	3.545	4.045	3.345	3.545	4.045	3.345
Pot Cap-1 Maneuver	1389	-	-	1266	-	-	407	413	760	369	413	875
Stage 1	-	-	-	-	-	-	706	663	-	710	666	-
Stage 2	-	-	-	-	-	-	697	660	-	641	658	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1389	-	-	1266	-	-	372	388	760	280	388	875
Mov Cap-2 Maneuver	-	-	-	-	-	-	469	466	-	362	454	-
Stage 1	-	-	-	-	-	-	700	657	-	704	632	-
Stage 2	-	-	-	-	-	-	635	626	-	506	652	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	2.2	12.2	16.5
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	667	1389	-	-	1266	-	-	408
HCM Lane V/C Ratio	0.256	0.009	-	-	0.052	-	-	0.237
HCM Control Delay (s)	12.2	7.6	-	-	8	-	-	16.5
HCM Lane LOS	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	1	0	-	-	0.2	-	-	0.9

Intersection	
Int Delay, s/veh	8.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	215	24	124	257	56	15	36	99	121	53	14
Future Vol, veh/h	11	215	24	124	257	56	15	36	99	121	53	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	60	-	-	60	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	99	99	99	99	99	99	99	99	99	99	99	99
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	217	24	125	260	57	15	36	100	122	54	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	317	0	0	241	0	0	824	818	229	858	802	289
Stage 1	-	-	-	-	-	-	251	251	-	539	539	-
Stage 2	-	-	-	-	-	-	573	567	-	319	263	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1243	-	-	1326	-	-	292	311	810	277	317	750
Stage 1	-	-	-	-	-	-	753	699	-	527	522	-
Stage 2	-	-	-	-	-	-	505	507	-	693	691	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1243	-	-	1326	-	-	234	279	810	207	285	750
Mov Cap-2 Maneuver	-	-	-	-	-	-	321	364	-	313	362	-
Stage 1	-	-	-	-	-	-	746	693	-	522	473	-
Stage 2	-	-	-	-	-	-	398	459	-	570	685	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	2.3	13.8	28
HCM LOS			B	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	560	1243	-	-	1326	-	-	341
HCM Lane V/C Ratio	0.271	0.009	-	-	0.094	-	-	0.557
HCM Control Delay (s)	13.8	7.9	-	-	8	-	-	28
HCM Lane LOS	B	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	1.1	0	-	-	0.3	-	-	3.2

Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	242	16	60	141	22	14	22	122	71	16	13
Future Vol, veh/h	12	242	16	60	141	22	14	22	122	71	16	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	60	-	-	60	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5
Mvmt Flow	13	263	17	65	153	24	15	24	133	77	17	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	177	0	0	280	0	0	609	605	272	671	601	165
Stage 1	-	-	-	-	-	-	298	298	-	295	295	-
Stage 2	-	-	-	-	-	-	311	307	-	376	306	-
Critical Hdwy	4.15	-	-	4.15	-	-	7.15	6.55	6.25	7.15	6.55	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.55	-	6.15	5.55	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.55	-	6.15	5.55	-
Follow-up Hdwy	2.245	-	-	2.245	-	-	3.545	4.045	3.345	3.545	4.045	3.345
Pot Cap-1 Maneuver	1381	-	-	1266	-	-	403	408	760	366	410	872
Stage 1	-	-	-	-	-	-	704	662	-	707	664	-
Stage 2	-	-	-	-	-	-	693	656	-	639	656	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1381	-	-	1266	-	-	367	384	760	277	385	872
Mov Cap-2 Maneuver	-	-	-	-	-	-	465	463	-	359	452	-
Stage 1	-	-	-	-	-	-	698	656	-	701	630	-
Stage 2	-	-	-	-	-	-	629	623	-	503	650	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	2.2	12.3	17.2
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	663	1381	-	-	1266	-	-	403
HCM Lane V/C Ratio	0.259	0.009	-	-	0.052	-	-	0.27
HCM Control Delay (s)	12.3	7.6	-	-	8	-	-	17.2
HCM Lane LOS	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	1	0	-	-	0.2	-	-	1.1

Intersection	
Int Delay, s/veh	9.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	215	24	124	257	69	15	39	99	141	56	17
Future Vol, veh/h	14	215	24	124	257	69	15	39	99	141	56	17
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	60	-	-	60	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	99	99	99	99	99	99	99	99	99	99	99	99
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	217	24	125	260	70	15	39	100	142	57	17

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	330	0	0	241	0	0	839	837	229	872	814	295
Stage 1	-	-	-	-	-	-	257	257	-	545	545	-
Stage 2	-	-	-	-	-	-	582	580	-	327	269	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1229	-	-	1326	-	-	285	303	810	271	312	744
Stage 1	-	-	-	-	-	-	748	695	-	523	519	-
Stage 2	-	-	-	-	-	-	499	500	-	686	687	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1229	-	-	1326	-	-	225	271	810	200	280	744
Mov Cap-2 Maneuver	-	-	-	-	-	-	311	357	-	306	358	-
Stage 1	-	-	-	-	-	-	740	687	-	517	470	-
Stage 2	-	-	-	-	-	-	388	453	-	560	679	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	2.2	14.2	33.6
HCM LOS			B	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	547	1229	-	-	1326	-	-	334
HCM Lane V/C Ratio	0.283	0.012	-	-	0.094	-	-	0.647
HCM Control Delay (s)	14.2	8	-	-	8	-	-	33.6
HCM Lane LOS	B	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	1.2	0	-	-	0.3	-	-	4.3

APPENDIX E

Queue Analysis Worksheets

MOVEMENT SUMMARY

Site: 3 [2022 Existing AM (Site Folder: General)]

Main Street & SH-133
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] ft	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed mph
South: SH-133														
3	L2	66	5.0	73	5.0	0.438	10.0	LOS A	1.9	49.4	0.46	0.48	0.56	29.9
8	T1	556	5.0	611	5.0	0.438	9.9	LOS A	1.9	49.4	0.44	0.46	0.54	29.9
18	R2	37	5.0	41	5.0	0.438	9.8	LOS A	1.8	47.4	0.43	0.45	0.53	29.3
Approach		659	5.0	724	5.0	0.438	9.9	LOS A	1.9	49.4	0.44	0.47	0.55	29.9
East: Main Street														
1	L2	63	5.0	69	5.0	0.399	12.5	LOS B	1.4	37.5	0.59	0.67	0.87	30.9
6	T1	45	5.0	49	5.0	0.399	12.5	LOS B	1.4	37.5	0.59	0.67	0.87	30.9
16	R2	98	5.0	108	5.0	0.399	12.5	LOS B	1.4	37.5	0.59	0.67	0.87	30.0
Approach		206	5.0	226	5.0	0.399	12.5	LOS B	1.4	37.5	0.59	0.67	0.87	30.5
North: SH-133														
7	L2	80	5.0	88	5.0	0.426	8.9	LOS A	1.6	41.5	0.35	0.26	0.35	30.3
4	T1	585	5.0	643	5.0	0.426	8.8	LOS A	1.6	41.5	0.34	0.26	0.34	30.3
14	R2	57	5.0	63	5.0	0.426	8.8	LOS A	1.5	39.1	0.33	0.25	0.33	29.6
Approach		722	5.0	793	5.0	0.426	8.8	LOS A	1.6	41.5	0.34	0.26	0.34	30.3
West: Main Street														
5	L2	170	5.0	187	5.0	0.597	17.5	LOS C	3.3	84.6	0.65	0.92	1.28	21.6
2	T1	65	5.0	71	5.0	0.597	17.5	LOS C	3.3	84.6	0.65	0.92	1.28	21.2
12	R2	90	5.0	99	5.0	0.597	17.5	LOS C	3.3	84.6	0.65	0.92	1.28	20.7
Approach		325	5.0	357	5.0	0.597	17.5	LOS C	3.3	84.6	0.65	0.92	1.28	21.3
All Vehicles		1912	5.0	2101	5.0	0.597	11.1	LOS B	3.3	84.6	0.45	0.49	0.63	28.1

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 3 [2022 Existing PM (Site Folder: General)]

Main Street & SH-133
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] ft	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed mph
South: SH-133														
3	L2	90	3.0	98	3.0	0.445	11.1	LOS B	2.1	53.1	0.54	0.63	0.78	29.3
8	T1	480	3.0	522	3.0	0.445	10.9	LOS B	2.1	53.1	0.52	0.61	0.77	29.5
18	R2	34	3.0	37	3.0	0.445	10.8	LOS B	2.0	51.5	0.51	0.60	0.76	28.9
Approach		604	3.0	657	3.0	0.445	10.9	LOS B	2.1	53.1	0.52	0.62	0.77	29.4
East: Main Street														
1	L2	57	3.0	62	3.0	0.600	16.8	LOS C	3.5	89.3	0.65	0.92	1.26	22.0
6	T1	112	3.0	122	3.0	0.600	16.8	LOS C	3.5	89.3	0.65	0.92	1.26	21.6
16	R2	182	3.0	198	3.0	0.600	16.8	LOS C	3.5	89.3	0.65	0.92	1.26	21.1
Approach		351	3.0	382	3.0	0.600	16.8	LOS C	3.5	89.3	0.65	0.92	1.26	21.4
North: SH-133														
7	L2	292	3.0	317	3.0	0.578	12.4	LOS B	4.5	115.0	0.50	0.59	0.79	28.2
4	T1	547	3.0	595	3.0	0.578	12.3	LOS B	4.5	115.0	0.49	0.58	0.78	28.8
14	R2	106	3.0	115	3.0	0.578	12.3	LOS B	4.4	112.1	0.48	0.57	0.77	28.4
Approach		945	3.0	1027	3.0	0.578	12.3	LOS B	4.5	115.0	0.49	0.58	0.78	28.6
West: Main Street														
5	L2	126	3.0	137	3.0	0.586	18.5	LOS C	2.9	74.5	0.70	0.95	1.32	21.5
2	T1	70	3.0	76	3.0	0.586	18.5	LOS C	2.9	74.5	0.70	0.95	1.32	21.1
12	R2	97	3.0	105	3.0	0.586	18.5	LOS C	2.9	74.5	0.70	0.95	1.32	20.6
Approach		293	3.0	318	3.0	0.586	18.5	LOS C	2.9	74.5	0.70	0.95	1.32	21.1
All Vehicles		2193	3.0	2384	3.0	0.600	13.5	LOS B	4.5	115.0	0.55	0.69	0.93	26.2

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 3 [2025 Background AM (Site Folder: General)]

Main Street & SH-133
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] ft	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed mph
South: SH-133														
3	L2	71	5.0	78	5.0	0.495	11.7	LOS B	2.7	70.2	0.52	0.64	0.81	29.2
8	T1	593	5.0	652	5.0	0.495	11.5	LOS B	2.7	70.2	0.51	0.63	0.80	29.3
18	R2	38	5.0	42	5.0	0.495	11.5	LOS B	2.6	68.3	0.50	0.61	0.78	28.7
Approach		702	5.0	771	5.0	0.495	11.6	LOS B	2.7	70.2	0.51	0.63	0.80	29.3
East: Main Street														
1	L2	70	5.0	77	5.0	0.536	16.9	LOS C	2.4	62.4	0.67	0.82	1.20	29.2
6	T1	56	5.0	62	5.0	0.536	16.9	LOS C	2.4	62.4	0.67	0.82	1.20	29.2
16	R2	136	5.0	149	5.0	0.536	16.9	LOS C	2.4	62.4	0.67	0.82	1.20	28.4
Approach		262	5.0	288	5.0	0.536	16.9	LOS C	2.4	62.4	0.67	0.82	1.20	28.8
North: SH-133														
7	L2	108	5.0	119	5.0	0.470	9.8	LOS A	1.8	47.7	0.39	0.31	0.39	29.8
4	T1	612	5.0	673	5.0	0.470	9.7	LOS A	1.8	47.7	0.38	0.30	0.38	29.9
14	R2	60	5.0	66	5.0	0.470	9.7	LOS A	1.7	45.1	0.37	0.30	0.37	29.3
Approach		780	5.0	857	5.0	0.470	9.7	LOS A	1.8	47.7	0.38	0.30	0.38	29.9
West: Main Street														
5	L2	197	5.0	216	5.0	0.733	25.4	LOS D	5.2	134.7	0.75	1.19	1.80	20.1
2	T1	82	5.0	90	5.0	0.733	25.4	LOS D	5.2	134.7	0.75	1.19	1.80	19.8
12	R2	100	5.0	110	5.0	0.733	25.4	LOS D	5.2	134.7	0.75	1.19	1.80	19.4
Approach		379	5.0	416	5.0	0.733	25.4	LOS D	5.2	134.7	0.75	1.19	1.80	19.8
All Vehicles		2123	5.0	2333	5.0	0.733	14.0	LOS B	5.2	134.7	0.52	0.63	0.87	27.1

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 3 [2025 Background PM (Site Folder: General)]

Main Street & SH-133
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] ft	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed mph
South: SH-133														
3	L2	102	3.0	111	3.0	0.546	14.8	LOS B	3.0	76.8	0.63	0.80	1.11	27.9
8	T1	523	3.0	568	3.0	0.546	14.6	LOS B	3.0	76.8	0.61	0.78	1.10	28.1
18	R2	35	3.0	38	3.0	0.546	14.4	LOS B	2.9	75.4	0.61	0.77	1.09	27.6
Approach		660	3.0	717	3.0	0.546	14.6	LOS B	3.0	76.8	0.62	0.78	1.10	28.1
East: Main Street														
1	L2	67	3.0	73	3.0	0.819	32.1	LOS D	7.7	197.8	0.81	1.43	2.29	19.2
6	T1	142	3.0	154	3.0	0.819	32.1	LOS D	7.7	197.8	0.81	1.43	2.29	18.9
16	R2	234	3.0	254	3.0	0.819	32.1	LOS D	7.7	197.8	0.81	1.43	2.29	18.5
Approach		443	3.0	482	3.0	0.819	32.1	LOS D	7.7	197.8	0.81	1.43	2.29	18.7
North: SH-133														
7	L2	372	3.0	404	3.0	0.683	16.3	LOS C	7.6	194.9	0.62	0.89	1.25	26.8
4	T1	587	3.0	638	3.0	0.683	16.2	LOS C	7.6	194.9	0.60	0.87	1.24	27.5
14	R2	112	3.0	122	3.0	0.683	16.1	LOS C	7.5	192.1	0.60	0.86	1.23	27.1
Approach		1071	3.0	1164	3.0	0.683	16.2	LOS C	7.6	194.9	0.61	0.87	1.24	27.2
West: Main Street														
5	L2	171	3.0	186	3.0	0.815	36.3	LOS E	6.2	159.6	0.86	1.43	2.33	18.4
2	T1	89	3.0	97	3.0	0.815	36.3	LOS E	6.2	159.6	0.86	1.43	2.33	18.1
12	R2	108	3.0	117	3.0	0.815	36.3	LOS E	6.2	159.6	0.86	1.43	2.33	17.8
Approach		368	3.0	400	3.0	0.815	36.3	LOS E	6.2	159.6	0.86	1.43	2.33	18.1
All Vehicles		2542	3.0	2763	3.0	0.819	21.5	LOS C	7.7	197.8	0.68	1.03	1.55	23.8

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 3 [2025 Total AM (Site Folder: General)]

Main Street & SH-133
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] ft	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed mph
South: SH-133														
3	L2	72	5.0	79	5.0	0.505	12.0	LOS B	2.8	73.3	0.53	0.66	0.85	29.1
8	T1	597	5.0	656	5.0	0.505	11.9	LOS B	2.8	73.3	0.52	0.65	0.84	29.2
18	R2	38	5.0	42	5.0	0.505	11.8	LOS B	2.7	71.4	0.51	0.64	0.83	28.5
Approach		707	5.0	777	5.0	0.505	11.9	LOS B	2.8	73.3	0.52	0.65	0.84	29.1
East: Main Street														
1	L2	70	5.0	77	5.0	0.561	17.8	LOS C	2.6	67.8	0.69	0.85	1.26	28.9
6	T1	61	5.0	67	5.0	0.561	17.8	LOS C	2.6	67.8	0.69	0.85	1.26	28.9
16	R2	141	5.0	155	5.0	0.561	17.8	LOS C	2.6	67.8	0.69	0.85	1.26	28.1
Approach		272	5.0	299	5.0	0.561	17.8	LOS C	2.6	67.8	0.69	0.85	1.26	28.5
North: SH-133														
7	L2	116	5.0	127	5.0	0.479	10.0	LOS A	1.9	49.1	0.40	0.33	0.40	29.7
4	T1	615	5.0	676	5.0	0.479	9.9	LOS A	1.9	49.1	0.39	0.32	0.39	29.8
14	R2	60	5.0	66	5.0	0.479	9.9	LOS A	1.8	46.4	0.38	0.31	0.38	29.2
Approach		791	5.0	869	5.0	0.479	9.9	LOS A	1.9	49.1	0.39	0.32	0.39	29.8
West: Main Street														
5	L2	201	5.0	221	5.0	0.755	27.2	LOS D	5.6	145.7	0.76	1.25	1.91	19.8
2	T1	85	5.0	93	5.0	0.755	27.2	LOS D	5.6	145.7	0.76	1.25	1.91	19.5
12	R2	101	5.0	111	5.0	0.755	27.2	LOS D	5.6	145.7	0.76	1.25	1.91	19.1
Approach		387	5.0	425	5.0	0.755	27.2	LOS D	5.6	145.7	0.76	1.25	1.91	19.5
All Vehicles		2157	5.0	2370	5.0	0.755	14.7	LOS B	5.6	145.7	0.54	0.66	0.92	26.9

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 3 [2025 Total PM (Site Folder: General)]

Main Street & SH-133
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] ft	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed mph
South: SH-133														
3	L2	105	3.0	114	3.0	0.572	16.0	LOS C	3.2	82.8	0.65	0.83	1.19	27.5
8	T1	531	3.0	577	3.0	0.572	15.7	LOS C	3.2	82.8	0.64	0.82	1.18	27.7
18	R2	35	3.0	38	3.0	0.572	15.5	LOS C	3.2	81.5	0.63	0.81	1.17	27.3
Approach		671	3.0	729	3.0	0.572	15.8	LOS C	3.2	82.8	0.64	0.82	1.18	27.7
East: Main Street														
1	L2	67	3.0	73	3.0	0.870	38.7	LOS E	9.7	247.1	0.85	1.64	2.75	18.2
6	T1	152	3.0	165	3.0	0.870	38.7	LOS E	9.7	247.1	0.85	1.64	2.75	17.9
16	R2	244	3.0	265	3.0	0.870	38.7	LOS E	9.7	247.1	0.85	1.64	2.75	17.5
Approach		463	3.0	503	3.0	0.870	38.7	LOS E	9.7	247.1	0.85	1.64	2.75	17.7
North: SH-133														
7	L2	390	3.0	424	3.0	0.707	17.5	LOS C	8.4	215.7	0.65	0.96	1.37	26.4
4	T1	595	3.0	647	3.0	0.707	17.3	LOS C	8.4	215.7	0.63	0.94	1.36	27.1
14	R2	112	3.0	122	3.0	0.707	17.3	LOS C	8.3	212.9	0.63	0.94	1.35	26.7
Approach		1097	3.0	1192	3.0	0.707	17.4	LOS C	8.4	215.7	0.64	0.95	1.36	26.8
West: Main Street														
5	L2	181	3.0	197	3.0	0.879	45.5	LOS E	8.2	209.4	0.90	1.67	2.89	17.1
2	T1	97	3.0	105	3.0	0.879	45.5	LOS E	8.2	209.4	0.90	1.67	2.89	16.9
12	R2	111	3.0	121	3.0	0.879	45.5	LOS E	8.2	209.4	0.90	1.67	2.89	16.6
Approach		389	3.0	423	3.0	0.879	45.5	LOS E	8.2	209.4	0.90	1.67	2.89	16.9
All Vehicles		2620	3.0	2848	3.0	0.879	24.9	LOS C	9.7	247.1	0.71	1.15	1.79	23.0

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 3 [2045 Background AM (Site Folder: General)]

Main Street & SH-133
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] ft	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed mph
South: SH-133														
3	L2	86	5.0	95	5.0	0.639	16.6	LOS C	5.0	128.8	0.64	0.89	1.29	27.5
8	T1	719	5.0	790	5.0	0.639	16.4	LOS C	5.0	128.8	0.63	0.87	1.27	27.6
18	R2	47	5.0	52	5.0	0.639	16.2	LOS C	4.9	126.9	0.61	0.86	1.26	27.0
Approach		852	5.0	936	5.0	0.639	16.4	LOS C	5.0	128.8	0.63	0.87	1.27	27.5
East: Main Street														
1	L2	84	5.0	92	5.0	0.731	29.7	LOS D	4.3	111.3	0.81	1.10	1.88	25.1
6	T1	67	5.0	74	5.0	0.731	29.7	LOS D	4.3	111.3	0.81	1.10	1.88	25.0
16	R2	158	5.0	174	5.0	0.731	29.7	LOS D	4.3	111.3	0.81	1.10	1.88	24.5
Approach		309	5.0	340	5.0	0.731	29.7	LOS D	4.3	111.3	0.81	1.10	1.88	24.8
North: SH-133														
7	L2	127	5.0	140	5.0	0.588	12.7	LOS B	4.6	120.8	0.49	0.58	0.78	28.7
4	T1	744	5.0	818	5.0	0.588	12.7	LOS B	4.6	120.8	0.48	0.56	0.77	28.8
14	R2	73	5.0	80	5.0	0.588	12.6	LOS B	4.5	117.7	0.47	0.55	0.76	28.2
Approach		944	5.0	1037	5.0	0.588	12.7	LOS B	4.6	120.8	0.48	0.57	0.77	28.8
West: Main Street														
5	L2	236	5.0	259	5.0	1.000	69.4	LOS F	16.8	435.8	1.00	2.53	4.84	14.5
2	T1	97	5.0	107	5.0	1.000	69.4	LOS F	16.8	435.8	1.00	2.53	4.84	14.4
12	R2	120	5.0	132	5.0	1.000	69.4	LOS F	16.8	435.8	1.00	2.53	4.84	14.1
Approach		453	5.0	498	5.0	1.000	69.4	LOS F	16.8	435.8	1.00	2.53	4.84	14.4
All Vehicles		2558	5.0	2811	5.0	1.000	26.0	LOS D	16.8	435.8	0.66	1.08	1.79	23.7

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 3 [2045 Background PM (Site Folder: General)]

Main Street & SH-133
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] ft	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed mph
South: SH-133														
3	L2	122	3.0	133	3.0	0.705	22.5	LOS C	5.2	132.6	0.73	1.03	1.64	25.6
8	T1	631	3.0	686	3.0	0.705	22.1	LOS C	5.2	132.6	0.72	1.02	1.63	25.7
18	R2	43	3.0	47	3.0	0.705	21.8	LOS C	5.2	131.9	0.71	1.01	1.62	25.4
Approach		796	3.0	865	3.0	0.705	22.2	LOS C	5.2	132.6	0.72	1.02	1.63	25.7
East: Main Street														
1	L2	80	3.0	87	3.0	1.079	89.7	LOS F	26.8	686.5	1.00	3.25	6.59	12.9
6	T1	168	3.0	183	3.0	1.079	89.7	LOS F	26.8	686.5	1.00	3.25	6.59	12.8
16	R2	275	3.0	299	3.0	1.079	89.7	LOS F	26.8	686.5	1.00	3.25	6.59	12.6
Approach		523	3.0	568	3.0	1.079	89.7	LOS F	26.8	686.5	1.00	3.25	6.59	12.7
North: SH-133														
7	L2	438	3.0	476	3.0	0.849	28.0	LOS D	16.4	419.4	0.83	1.45	2.29	23.6
4	T1	711	3.0	773	3.0	0.849	27.7	LOS D	16.4	419.4	0.82	1.44	2.27	24.1
14	R2	136	3.0	148	3.0	0.849	27.6	LOS D	16.4	418.6	0.81	1.43	2.27	23.8
Approach		1285	3.0	1397	3.0	0.849	27.8	LOS D	16.4	419.4	0.82	1.44	2.28	23.9
West: Main Street														
5	L2	199	3.0	216	3.0	1.122	112.4	LOS F	26.0	664.8	1.00	3.39	7.43	11.4
2	T1	105	3.0	114	3.0	1.122	112.4	LOS F	26.0	664.8	1.00	3.39	7.43	11.3
12	R2	130	3.0	141	3.0	1.122	112.4	LOS F	26.0	664.8	1.00	3.39	7.43	11.2
Approach		434	3.0	472	3.0	1.122	112.4	LOS F	26.0	664.8	1.00	3.39	7.43	11.3
All Vehicles		3038	3.0	3302	3.0	1.122	49.1	LOS E	26.8	686.5	0.85	1.92	3.59	18.5

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 3 [2045 Total AM +RT Lanes (Site Folder: General)]

Main Street & SH-133
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] ft	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed mph
South: SH-133														
3	L2	87	5.0	96	5.0	0.651	17.2	LOS C	5.1	133.3	0.65	0.91	1.34	27.3
8	T1	723	5.0	795	5.0	0.651	17.0	LOS C	5.1	133.3	0.64	0.90	1.33	27.4
18	R2	47	5.0	52	5.0	0.651	16.8	LOS C	5.1	131.5	0.63	0.89	1.32	26.8
Approach		857	5.0	942	5.0	0.651	17.0	LOS C	5.1	133.3	0.64	0.90	1.33	27.3
East: Main Street														
1	L2	84	5.0	92	5.0	0.395	15.6	LOS C	1.4	35.1	0.70	0.79	1.02	29.3
6	T1	72	5.0	79	5.0	0.395	15.6	LOS C	1.4	35.1	0.70	0.79	1.02	29.2
16	R2	163	5.0	179	5.0	0.389	14.6	LOS B	1.3	33.5	0.68	0.76	0.99	29.6
Approach		319	5.0	351	5.0	0.395	15.1	LOS C	1.4	35.1	0.69	0.77	1.00	29.4
North: SH-133														
7	L2	135	5.0	148	5.0	0.597	13.0	LOS B	4.9	128.5	0.50	0.61	0.83	28.6
4	T1	747	5.0	821	5.0	0.597	13.0	LOS B	4.9	128.5	0.49	0.59	0.82	28.7
14	R2	73	5.0	80	5.0	0.597	12.9	LOS B	4.8	125.4	0.48	0.58	0.80	28.1
Approach		955	5.0	1049	5.0	0.597	13.0	LOS B	4.9	128.5	0.49	0.60	0.82	28.6
West: Main Street														
5	L2	240	5.0	264	5.0	0.758	30.5	LOS D	5.0	129.2	0.81	1.28	1.99	19.2
2	T1	100	5.0	110	5.0	0.758	30.5	LOS D	5.0	129.2	0.81	1.28	1.99	18.9
12	R2	121	5.0	133	5.0	0.285	12.2	LOS B	0.8	21.9	0.64	0.69	0.76	22.1
Approach		461	5.0	507	5.0	0.758	25.7	LOS D	5.0	129.2	0.77	1.12	1.67	19.8
All Vehicles		2592	5.0	2848	5.0	0.758	16.8	LOS C	5.1	133.3	0.61	0.81	1.16	26.2

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 3 [2045 Total PM + RT Lanes (Site Folder: General)]

Main Street & SH-133
Site Category: (None)
Roundabout

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] ft	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed mph
South: SH-133														
3	L2	125	3.0	136	3.0	0.752	26.7	LOS D	5.9	151.0	0.77	1.13	1.88	24.4
8	T1	639	3.0	695	3.0	0.752	26.2	LOS D	5.9	151.0	0.76	1.12	1.87	24.6
18	R2	43	3.0	47	3.0	0.752	25.8	LOS D	5.9	150.7	0.76	1.11	1.86	24.3
Approach		807	3.0	877	3.0	0.752	26.2	LOS D	5.9	151.0	0.76	1.12	1.87	24.6
East: Main Street														
1	L2	80	3.0	87	3.0	0.579	20.0	LOS C	2.8	70.5	0.74	0.98	1.35	21.4
6	T1	178	3.0	193	3.0	0.579	20.0	LOS C	2.8	70.5	0.74	0.98	1.35	21.0
16	R2	285	3.0	310	3.0	0.605	20.3	LOS C	3.0	76.4	0.74	1.00	1.40	20.4
Approach		543	3.0	590	3.0	0.605	20.2	LOS C	3.0	76.4	0.74	0.99	1.38	20.7
North: SH-133														
7	L2	456	3.0	496	3.0	0.886	33.0	LOS D	18.8	482.5	0.90	1.64	2.70	22.5
4	T1	719	3.0	782	3.0	0.886	32.6	LOS D	18.9	483.0	0.89	1.63	2.69	22.9
14	R2	136	3.0	148	3.0	0.886	32.5	LOS D	18.9	483.0	0.88	1.62	2.69	22.6
Approach		1311	3.0	1425	3.0	0.886	32.7	LOS D	18.9	483.0	0.89	1.63	2.69	22.8
West: Main Street														
5	L2	209	3.0	227	3.0	0.853	46.8	LOS E	6.3	160.4	0.91	1.55	2.66	16.9
2	T1	113	3.0	123	3.0	0.853	46.8	LOS E	6.3	160.4	0.91	1.55	2.66	16.7
12	R2	133	3.0	145	3.0	0.378	16.9	LOS C	1.2	31.6	0.75	0.86	1.05	21.1
Approach		455	3.0	495	3.0	0.853	38.0	LOS E	6.3	160.4	0.86	1.35	2.19	17.9
All Vehicles		3116	3.0	3387	3.0	0.886	29.6	LOS D	18.9	483.0	0.83	1.35	2.18	21.9

Site Level of Service (LOS) Method: Delay & v/c (HCM 2010). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: Traditional M1.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

APPENDIX F

Conceptual Site Plan

Carbondale - ANB Bank Mixed Use Development
Level 1 Plan

Building Areas

Level 1 Overall	14,085 GFA
Level 2 Overall	12,896 GFA
Total	**26,981 GFA***
Possible Retail	4,593 GFA
Possible Restaurant (Indoor + Outdoor Dining)	2,505 GFA
Bank	3,269 GFA
Office (Level 1 Common)	439 GFA
Office (Level 2 Common)	1040 GFA
Office (Level 2 Shell)	2,216 GFA
Multi-Family (Level 1)	3,279 GFA
Multi-Family (Level 2)	9,640 GFA
Total	**26,981 GFA***

**Gross floor area calculations used for the purposes of parking requirements exclude mechanical and elevator shafts and do not include stair shafts above Level 1.*
**Gross floor Area includes 300 sf Outdoor Dining Area as shown in the site plan for use of parking requirements*

Building Height

Max Allowed	35'
Bank / Residences	32' / 28'-8" and 31'

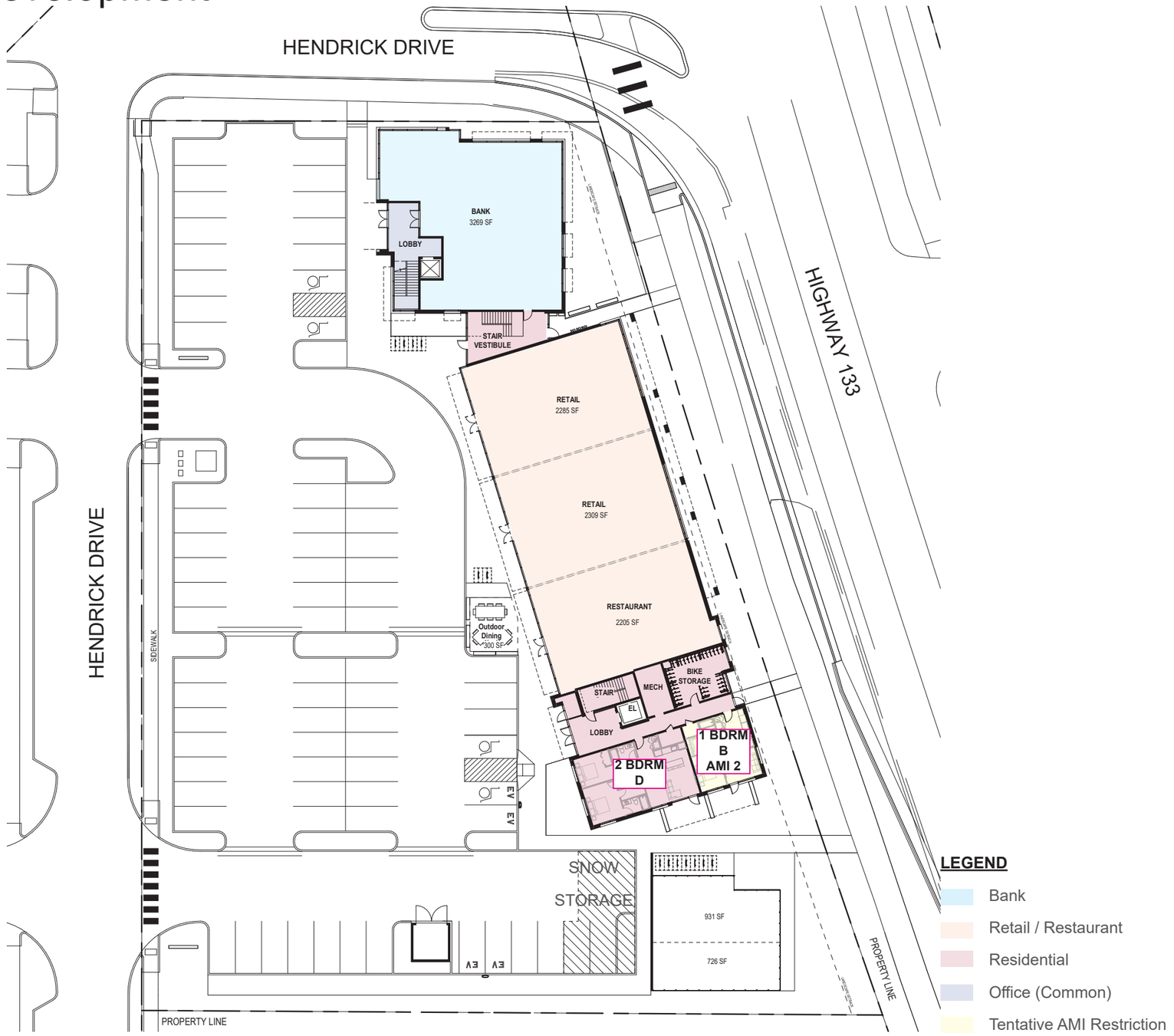
Unit Matrix

Unit Type	Quantity	Unit Area* (GFA)	Required Bulk Storage (Cu. Ft)	Provided Bulk Storage (Cu. Ft)	Bulk Storage Dimensions	AMI Deed Restriction
Studio A	2	545	182	189	5.25'x4'x9'	1,3
Studio B	1	395	132	139	4.75'x3.25'x9'	-
1Bdrm A	8	550	184	189	5.25'x4'x9'	-
1Bdrm B	1	590	197	198	4'x5.5'x9'	2
2 Bdrm A	1	956	319	324	4'x9'x9'	-
2 Bdrm B	1	780	260	262	6'x5.25'x9'	-
2 Bdrm C	1	956	319	326	7.25'x5'x9'	-
2 Bdrm D	1	1000	333	335	8'x4.66'x9'	-
Total	**16**	--	--	--	--	-

** GFA unit calculation excludes covered private outdoor space and is measured from centerline of demising unit walls and outside face of exterior wall.*
***Provided design layouts of the residential units, and possible retail/restaurant space are conceptual and subject to change.*

Parking

Required:			
Bank -	(4/1000 GFA)	3,269 GFA	13.1 Stalls
Office -	(1/300 GFA)	3,695 GFA	12.3 Stalls
Retail -	(1/200 GFA)	4,593 GFA	23.0 Stalls
Restaurant (Dining) -	(1/150 GFA)	2,505 GFA	16.7 Stalls
Household Living:			
Studio (Efficiency) Unit	(1.25/ Unit)	3 Units	3.75 Stalls
One Bdrm Units	(1.5/ Unit)	9 Units	13.5 Stalls
Two Bbrm (Under 800)	(1.5/ Unit)	1 Units	1.5 Stalls
Two Bdrm (Over 800)	(1.75/ Unit)	3 Units	5.25 Stalls
Total Required			89.1 Stalls
Reductions:	5.8.4.D1	(89.1 x .15)	-13.4 Stalls
	5.8.4.D2	(24 x .15)	- 3.6 Stalls
Total Required (w/ reduction)			72.1 Stalls
Total Provided			**74 Stalls**



Level 1 Plan

Scale : 1" = 40'-0"

N

**Each AMI # correlates to thier specific category. For example, AMI is Category 1 AMI.*

All unit design layouts are conceptual and are subject to change.

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Carbondale - ANB Bank Mixed Use Development
Level 2 Plan

Building Areas

Level 1 Overall	14,085 GFA
Level 2 Overall	12,896 GFA
Total	**26,981 GFA***
Possible Retail	4,593 GFA
Possible Restaurant (Indoor + Outdoor Dining)	2,505 GFA
Bank	3,269 GFA
Office (Level 1 Common)	439 GFA
Office (Level 2 Common)	1040 GFA
Office (Level 2 Shell)	2,216 GFA
Multi-Family (Level 1)	3,279 GFA
Multi-Family (Level 2)	9,640 GFA
Total	**26,981 GFA***

**Gross floor area calculations used for the purposes of parking requirements exclude mechanical and elevator shafts and do not include stair shafts above Level 1.*
**Gross floor Area includes 300 sf Outdoor Dining Area as shown in the site plan for use of parking requirements*

Building Height

Max Allowed	35'
Bank / Residences	32' / 28'-8" and 31'

Unit Matrix

Unit Type	Quantity	Unit Area* (GFA)	Required Bulk Storage (Cu. Ft)	Provided Bulk Storage (Cu. Ft)	Bulk Storage Dimensions	AMI Deed Restriction
Studio A	2	545	182	189	5.25'x4'x9'	1,3
Studio B	1	395	132	139	4.75'x3.25'x9'	-
1Bdrm A	8	550	184	189	5.25'x4'x9'	-
1Bdrm B	1	590	197	198	4'x5.5'x9'	2
2 Bdrm A	1	956	319	324	4'x9'x9'	-
2 Bdrm B	1	780	260	262	6'x5.25'x9'	-
2 Bdrm C	1	956	319	326	7.25'x5'x9'	-
2 Bdrm D	1	1000	333	335	8'x4.66'x9'	-
Total	**16**	--	--	--	--	-

** GFA unit calculation excludes covered private outdoor space and is measured from centerline of demising unit walls and outside face of exterior wall.*
***Provided design layouts of the residential units, and possible retail/restaurant space are conceptual and subject to change.*

Parking

Required:			
Bank -	(4/1000 GFA)	3,269 GFA	13.1 Stalls
Office -	(1/300 GFA)	3,695 GFA	12.3 Stalls
Retail -	(1/200 GFA)	4,593 GFA	23.0 Stalls
Restaurant (Dining) -	(1/150 GFA)	2,505 GFA	16.7 Stalls
Household Living:			
Studio (Efficiency) Unit	(1.25/ Unit)	3 Units	3.75 Stalls
One Bdrm Units	(1.5/ Unit)	9 Units	13.5 Stalls
Two Bbrm (Under 800)	(1.5/ Unit)	1 Units	1.5 Stalls
Two Bdrm (Over 800)	(1.75/ Unit)	3 Units	5.25 Stalls
Total Required			89.1 Stalls
Reductions:	5.8.4.D1	(89.1 x .15)	-13.4 Stalls
	5.8.4.D2	(24 x .15)	- 3.6 Stalls
Total Required (w/ reduction)			72.1 Stalls
Total Provided			**74 Stalls**

Level 2 Plan

Scale : 1" = 40'-0"

0' 10' 20' 40' 80'

N

**Each AMI # correlates to thier specific category. For example, AMI is Category 1 AMI.*

All unit design layouts are conceptual and are subject to change.

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IMPROVEMENT SURVEY PLAT/TOPOGRAPHICAL MAP OF:

ANB BANK PROPERTY

A PARCEL OF LAND SITUATED IN LOT 9 OF SECTION 33 TOWNSHIP 7 SOUTH, RANGE 88 WEST OF THE 6th P.M. COUNTY OF GARFIELD, STATE OF COLORADO

SHEET 1 OF 1

CURVE TABLE						
CURVE	LENGTH	RADIUS	TANGENT	CHORD	BEARING	DELTA
C1	322.65'	5695.90'	161.37'	322.61'	S 18°28'00" E	3°14'44"

TITLE PROPERTY DESCRIPTION

A TRACT OF LAND SITUATED IN LOT 9 OF SECTION 33, TOWNSHIP 7 SOUTH, RANGE 88 WEST OF THE 6TH PRINCIPAL MERIDIAN, LYING WESTERLY OF STATE HIGHWAY NO. 133 AND EASTERLY OF A FENCE AS CONSTRUCTED AND IN PLACE DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE WESTERLY RIGHT-0F-WAY LINE OF STATE HIGHWAY NO. 133
(BEING FEDERAL AID PROJECT NO. S0163 (1)) WHENCE THE STREET CENTER MONUMENT LOCATED AT THE
INTERSECTION OF EIGHTH STREET AND MAIN STREET IN THE TOWN OF CARBONDALE, COLORADO
BEARS S 60 DEGREES 30' 30" E. 1707.14 FEET;
THENCE S 17 DEGREES 13' 27" E 47.14 FEET
ALONG THE WESTERLY RIGHT-OF-WAY LINE OF SAID HIGHWAY;
THENCE S 17 DEGREES 24' 15" E 53.79 FEET
ALONG THE WESTERLY RIGHT-OF-WAY LINE OF SAID HIGHWAY;
THENCE S 18 DEGREES 41' 00" E 47.42 FEET
ALONG THE WESTERLY RIGHT-OF-WAY LINE OF SAID HIGHWAY;
THENCE S 18 DEGREES 29' 03" E 99.10 FEET
ALONG THE WESTERLY RIGHT-OF-WAY LINE OF SAID HIGHWAY;
THENCE S 19 DEGREES 30' 38" E 63.51 FEET
ALONG THE WESTERLY RIGHT-OF-WAY LINE OF SAID HIGHWAY;
THENCE S 20 DEGREES 45' 46" E 11.63 FEET
ALONG THE WESTERLY RIGHT-OF-WAY LINE OF SAID HIGHWAY;
THENCE S 89 DEGREES 31' 30" W 254.53 FEET
TO A POINT IN SAID FENCE;
THENCE N 00 DEGREES 50' 00" W 306.29 FEET
ALONG SAID FENCE;
THENCE N 89 DEGREES 19' 30" E 157.00 FEET
TO A POINT ON THE WESTERLY RIGHT-OF-WAY LINE OF SAID HIGHWAY, THE POINT OF BEGINNING.

SURVEYED PROPERTY DESCRIPTION

A TRACT OF LAND SITUATED IN GOVERNMENT LOT 9 OF SECTION 33,
TOWNSHIP 7 SOUTH, RANGE 88 WEST OF THE 6TH PRINCIPAL MERIDIAN,
LYING WESTERLY OF STATE HIGHWAY NO. 133 AND EASTERLY OF THE WESTERLY BOUNDARY OF
SAID GOVERNMENT LOT 9.

BEGINNING AT A POINT ON THE WESTERLY RIGHT-0F-WAY LINE OF STATE HIGHWAY NO. 133
(BEING FEDERAL AID PROJECT NO. S0163 (1)) WHENCE THE STREET CENTER MONUMENT LOCATED AT THE
INTERSECTION OF EIGHTH STREET AND MAIN STREET IN THE TOWN OF CARBONDALE, COLORADO
BEARS S 60 DEGREES 30' 10" E. 1706.90 FEET;
THENCE ALONG THE WESTERLY RIGHT-OF-WAY LINE OF SAID HIGHWAY;
322.65 FEET ALONG A CURVE TO THE LEFT HAVING RADIUS OF 5695.90'
AND A DELTA ANGLE OF 3°14'44" (THE CHORD OF WHICH BEARS S 18°28'00" E 322.61')
TO A POINT ON THE NORTHERLY BOUNDARY OF VELASQUEZ PROPERTY WHICH WAS
RESUBDIVIDED BY THE EXEMPTION PLAT RECORDED MARCH 28nd 1988 AS RECEPTION No. 390757.
THENCE ALONG SAID NORTHERLY BOUNDARY THENCE S 89 DEGREES 31' 30" W 255.02 FEET
TO A POINT ON THE WESTERLY BOUNDARY OF GOVERNMENT LOT 9, SECTION 33,
TOWNSHIP 7 SOUTH RANGE 88 WEST OF THE SIXTH PRINCIPAL MERIDIAN,
POINT ALSO BEING ON THE EASTERLY BOUNDARY OF THE HENDRICK DRIVE AS DEDICATED ON RECEPTION No. 903693
THENCE ALONG SAID WESTERLY BOUNDARY OF GOVERNMENT LOT 9 & EASTERLY BOUNDARY OF HENDRICK DRIVE
N 00 DEGREES 50' 00" W 306.29 FEET TO A POINT ON THE SOUTHERLY BOUNDARY OF SAID HENDRICK DRIVE
THENCE ALONG THE SOUTHERLY BOUNDARY OF HENDRICK DRIVE N 89 DEGREES 19' 30" E 157.29 FEET
TO A POINT ON THE WESTERLY RIGHT-OF-WAY LINE OF SAID HIGHWAY, THE POINT OF BEGINNING.

EXISTING CONDITIONS LEGEND

C	CATV PEDESTAL	ou ou	OVERHEAD UTILITIES
T	TELEPHONE PEDESTAL	uu uu	UNDERGROUND UTILITIES
E	ELECTRIC TRANSFORMER	ot ot	OVERHEAD TELEPHONE
	LIGHT POLE	ut ut	UNDERGROUND TELEPHONE
	UTILITY POLE	oe oe	OVERHEAD ELECTRIC
	GUY WIRE	ue ue	UNDERGROUND ELECTRIC
S	SEWER MANHOLE	ss ss	SEWER LINE
	SEWER CLEANOUT	w w	WATER LINE
8" SS	SEWER STUB	ug ug	GAS LINE
	WATER HYDRANT	▫ ▫	WOODEN FENCE
WV	WATER VALVE	x x	WIRE FENCE
	WATER SHUT OFF		
6" WS	WATER STUB		
ST	DRYWELL WITH GRATE		
	CURB INLET		
	FIELD INLET		
	SIGN		
D	STORM MANHOLE		

GRAPHIC SCALE

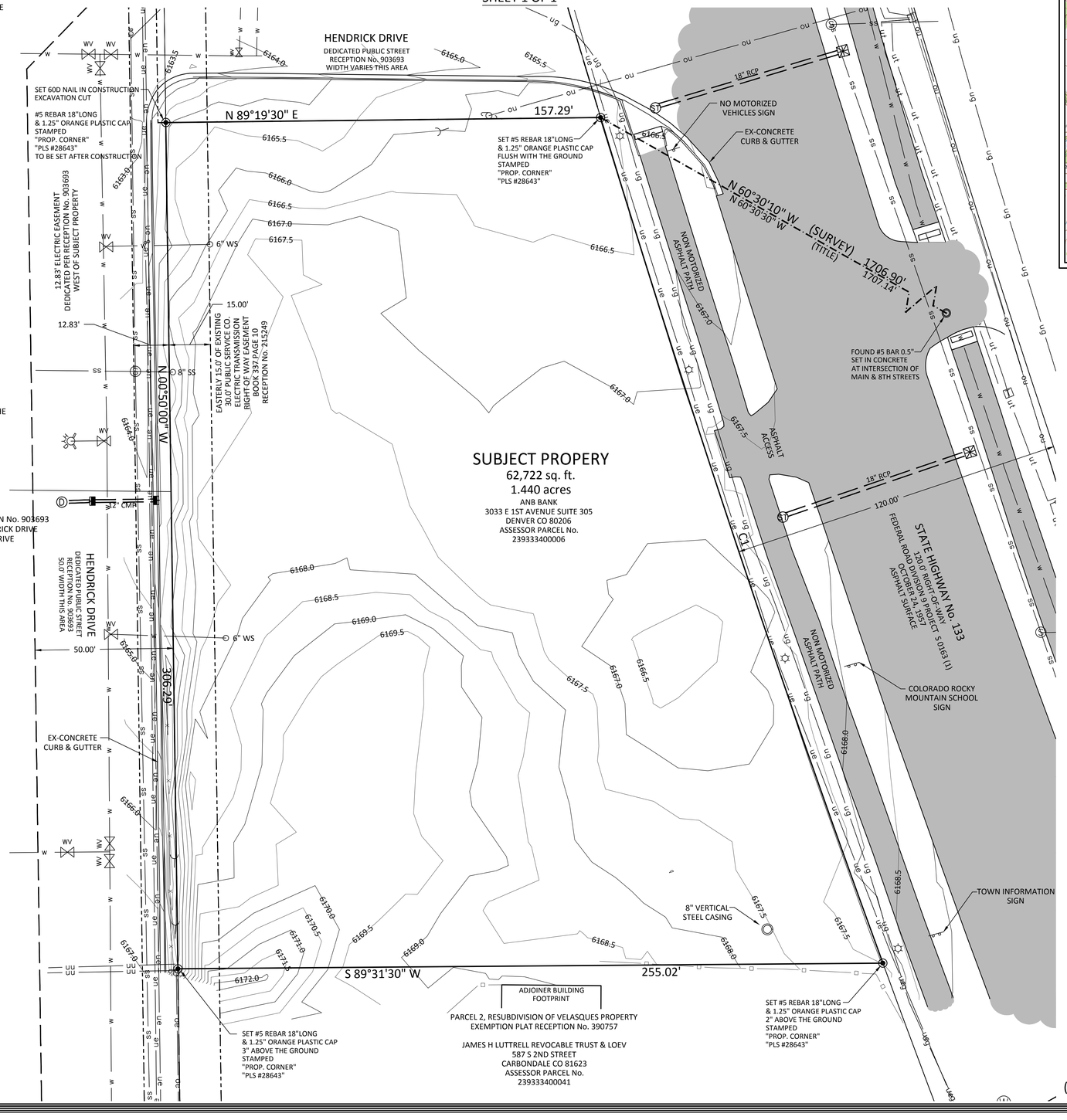
20 0 10 20 40 80

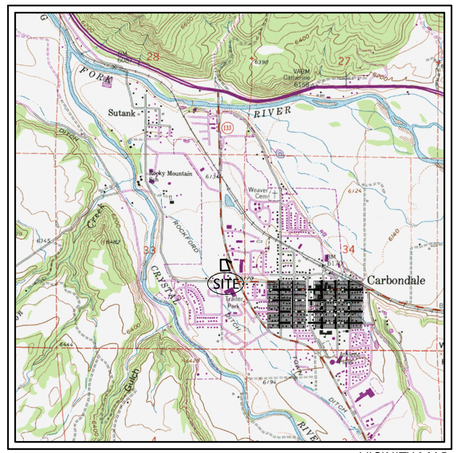
(IN FEET)
1 inch = 20 ft.

GENERAL UTILITY NOTES:

1. The locations of underground utilities have been plotted based on utility maps, construction/design plans, other information provided by utility companies and actual field locations in some instances. These utilities, as shown, may not represent actual field conditions. It is the responsibility of the contractor to contact all utility companies for field location of utilities prior to construction.

NOTICE: ACCORDING TO COLORADO LAW YOU MUST COMMENCE ANY LEGAL ACTION BASED UPON ANY DEFECT IN THIS SURVEY WITHIN THREE YEARS AFTER YOU FIRST DISCOVER SUCH DEFECT. IN NO EVENT MAY ANY ACTION BASED UPON ANY DEFECT IN THIS SURVEY BE COMMENCED MORE THAN TEN YEARS FROM THE DATE OF CERTIFICATION SHOWN HEREON.





VICINITY MAP
SCALE: 1" = 2000'

NOTES

1) Date of Survey: October 11th-29th, 2019.

2) Date of Preparation: October 11th-31th, 2019.

3) Basis of Bearing: A bearing of S 00°03'00" W from the steel bar in concrete located at the intersection of 8th & Main Streets and the steel bar located inside a valve box at the intersection of 8th and Euclid Avenue.

4) Basis of Survey: The Crystal River Market Place/CRMS Lot Line AdjustmentPlat recorded at Reception No.791487,The Map of Territory to be annexed to the Town of Carbondale, prepared by Lines in Space dated May 16, 1979, the Colorado Rocky Mountain School Subdivision Exemption Plat recorded March 13, 1998 at Reception No. 521824, The Subdivision Exemption Plat of the Resubdivision of the Velasquez property recorded March 28, 1988 at Reception No. 390757, The Colorado Department of Highways right-of-way maps for State Highway No. 133 Federal Aid Project No. S 0163 (1), The Final Plat of Carbondale MarketPlace Subdivision recorded February 28th, 2018 as Reception No. 903693 various documents of record and the found survey monuments, as shown.

5) This survey does not constitute a title search by Sopris Engineering, LLC (SE) to determine ownership or easements of record. For all information regarding easements, rights of way and/or title of record, SE relied upon the above said items described in note 4, and the Title Commitment prepared by Land Title Guarantee Company Order No. ABS63013936-4 with an effective date of June 14, 2019.

6.) Basis of Elevation: Project based on Global Position System (GPS) observation from the Continuous Operating Reference Station (CORS) SE01 utilizing the Continental United States 2012 Geoid Model (GEOID 12B Conus) and based the 1988 North American Vertical Datum (NAVD88), project benchmarks to be set on request due to extensive constuction surrounding subject property

7.) Contour Interval: One Half (0.50) foot.

SURVEYOR'S CERTIFICATE

I hereby state that this Improvement Survey Plat was prepared by Sopris Engineering, LLC (SE) for

ANB BANK
& LAND TITLE GUARANTEE COMPANY

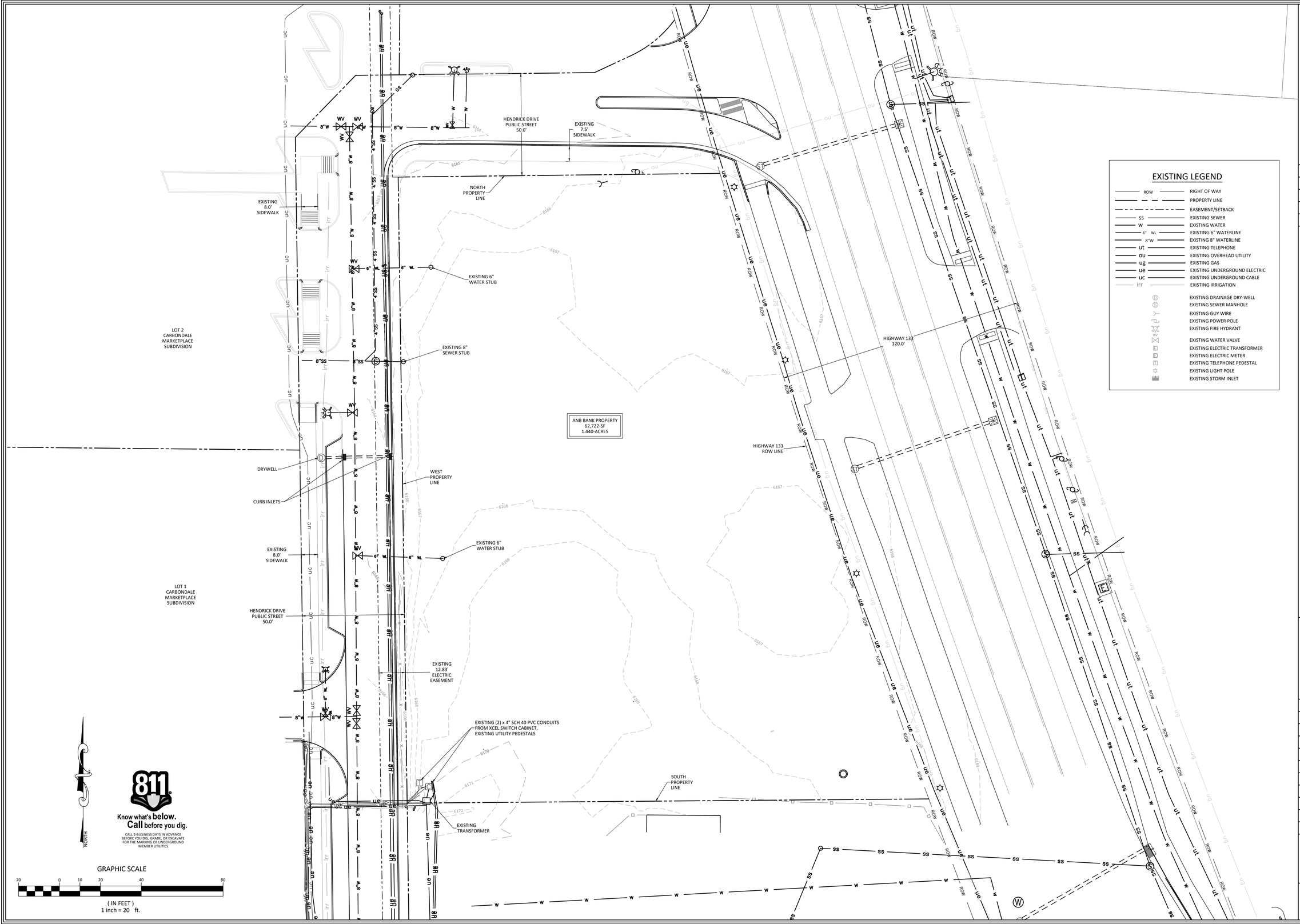
I furthermore state that the improvements on the above described parcel on this date, October 29th 2019, except utility connections are entirely within the boundaries of the parcel except as shown, that there are no encroachments upon the described premises by improvements on any adjoining premises, except as indicated, and that there is no apparent evidence or sign of any easement crossing or burdening any part of said parcel, except as noted. I furthermore state that this property is subject to reservations, restrictions, covenants and easements of record or in place.

COLORADO REGISTERED PROFESSIONAL LAND SURVEYOR MARK S. BECKLER 28643

Mark S. Beckler L.S. #28643

SOPRIS ENGINEERING - LLC
CIVIL CONSULTANTS
502 MAIN STREET, SUITE A3
CARBONDALE, COLORADO 81623
(970) 704-0311 SOPRISENG@SOPRISENG.COM

RAB 11-05-19 19215BASE.DWG



EXISTING LEGEND

ROW	RIGHT OF WAY
	PROPERTY LINE
	EASEMENT/SETBACK
SS	EXISTING SEWER
W	EXISTING WATER
6" WL	EXISTING 6" WATERLINE
8"W	EXISTING 8" WATERLINE
ut	EXISTING TELEPHONE
ou	EXISTING OVERHEAD UTILITY
ug	EXISTING GAS
ue	EXISTING UNDERGROUND ELECTRIC
uc	EXISTING UNDERGROUND CABLE
irr	EXISTING IRRIGATION
	EXISTING DRAINAGE DRY-WELL
	EXISTING SEWER MANHOLE
	EXISTING GUY WIRE
	EXISTING POWER POLE
	EXISTING FIRE HYDRANT
	EXISTING WATER VALVE
	EXISTING ELECTRIC TRANSFORMER
	EXISTING ELECTRIC METER
	EXISTING TELEPHONE PEDESTAL
	EXISTING LIGHT POLE
	EXISTING STORM INLET

SOPRIS ENGINEERING LLC
502 MAIN STREET • SUITE A3 • CARBONDALE CO 81623
(970) 704•0311 • soprisengineering.com

DATE:	07-05-23	
JOB NO.	19215.02	
DESIGNED BY	KTS	
DRAWN BY	KTS	
CHECKED BY	YTN	

ANB BANK
MIXED USE DEVELOPMENT
CARBONDALE, COLORADO

REZONING, MAJOR SITE PLAN, & CONDITIONAL USE PERMIT APPLICATION

COLORADO LICENSED
48383
07/05/23
PROFESSIONAL ENGINEER

DATE	REVISION

TITLE
EXISTING
CONDITIONS

DRAWING NO.
C-1.0

G:\2019\19215\CIVIL\LOVIL DWGS\PLOTSHEET SET\19215 - EXISTING CONDITIONS.DWG - Jul 06, 2023 - 6:29am

UNIT MATRIX				
UNIT TYPE	QUANTITY	UNIT AREA (GFA)	REQ'D BULK STORAGE (CF)	PROVIDED BULK STORAGE (CF)
STUDIO A	2	545	182	189
STUDIO B	1	395	132	139
1 BDRM A	8	550	184	189
1 BDRM B	1	590	197	198
2 BDRM A	1	956	319	324
2 BDRM B	1	780	260	262
2 BDRM C	1	956	319	326
2 BDRM D	1	1,000	333	335

LOT SIZE:	**62,722-SF**	**1.440-ACRES**

SETBACKS		
FRONT:	0-FT	MINIMUM
	10-FT	MAXIMUM
SIDE:	0-FT	MINIMUM
HWY 133:	10-FT	LANDSCAPE WIDTH

TOTAL IMPERVIOUS SURFACES		
AREA:	50,590-SF	1.161-ACRES
80.66% OF TOTAL LOT AREA		
MAXIMUM ALLOWED (MU ZONE DISTRICT) = 90%		

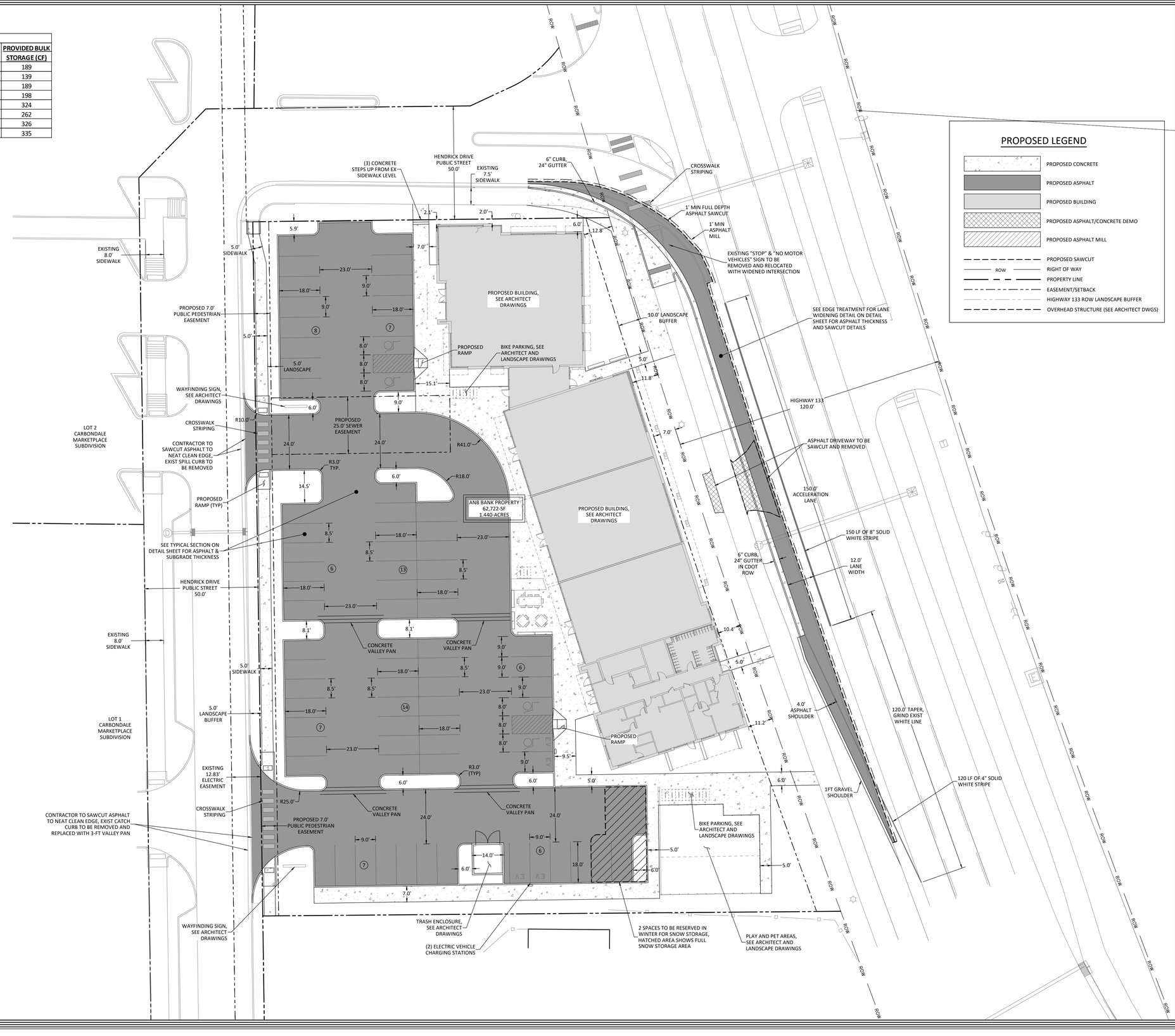
TOTAL LANDSCAPE AREA		
AREA:	12,132-SF	0.279-ACRES
19.34% OF TOTAL LOT AREA		
MINIMUM ALLOWED (MU ZONE DISTRICT) = 10%		

VEHICLE PARKING		
TYPE	**CRITERIA**	**SPACES**
BANK	3,269 GFA (4/1000 GFA)	13.1
OFFICE	3,695 GFA (1/300 GFA)	12.3
RETAIL	4,593 GFA (1/200 GFA)	23.0
RESTAURANT	2,505 GFA (1/150 GFA)	16.7
STUDIO UNIT	(3) (1.25/UNIT)	3.8
1 BDRM	(9) (1.5/UNIT)	13.5
2 BDRM <800SF	(1) (1.5/UNIT)	1.5
2 BDRM >800SF	(3) (1.75/UNIT)	5.2
	TOTAL REQUIRED	**89.1**
UDC 5.8.5 - MU ZONING = 15% REDUCTION UDC 5.8.4.D.2 - W/IN 300-FT OF TRANSIT STOP, MULTIFAMILY RESIDENTIAL DWELLINGS = 15% REDUCTION		
	REDUCTION FOR MU ZONING	**13.4**
	ADD'L REDUCTION FOR TRANSIT	**3.6**
	REDUCED PARKING REQUIRED	**72.1**
	TOTAL VEHICLE SPACES PROVIDED	**74**
NOTE THAT 2 SPACES ARE TO BE RESERVED IN WINTER FOR SNOW STORAGE (300SF OUTDOOR DINING) LEAVING 72 SPACES FOR WINTER PARKING. SEE PLANS FOR DETAILS.		

BICYCLE PARKING	
1 BIKE SPACE IS REQUIRED FOR EVERY 3 VEHICLE SPACES PROVIDED	
TOTAL VEHICLE SPACES PROVIDED	**74**
TOTAL BIKE SPACES REQUIRED	**25**
TOTAL BIKE SPACES PROVIDED	**28**

LEVEL 1 PRIVATE OUTDOOR SPACE (LARGER OF 80SF OR 10% OF GFA, 8FT MIN DIMENSION)			
UNIT TYPE	**QUANTITY**	**PROVIDED SPACE (SF)**	**REQUIRED SPACE (SF)**
1 BDRM B	1	117	80
2 BDRM D	1	117	100

LEVEL 2 PRIVATE OUTDOOR SPACE (LARGER OF 60SF OR 5% OF LIVABLE FLOOR AREA, 6FT MIN			
UNIT TYPE	**QUANTITY**	**PROVIDED SPACE (SF)**	**REQUIRED SPACE (SF)**
STUDIO A	2	60	60
STUDIO B	1	60	60
1 BDRM A	8	60	60
2 BDRM A	1	60	60
2 BDRM B	1	60	60
2 BDRM C	1	72	60



PROPOSED LEGEND

- PROPOSED CONCRETE
- PROPOSED ASPHALT
- PROPOSED BUILDING
- PROPOSED ASPHALT/CONCRETE DEMO
- PROPOSED ASPHALT MILL
- PROPOSED SAWCUT
- ROW — RIGHT OF WAY
- PROPERTY LINE
- EASEMENT/SETBACK
- HIGHWAY 133 ROW LANDSCAPE BUFFER
- OVERHEAD STRUCTURE (SEE ARCHITECT DWGS)

NORTH

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

CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

SOPRIS ENGINEERING LLC
502 MAIN STREET • SUITE A3 • CARBONDALE CO 81623
(970) 704-0311 • soprisengineering.com

DATE:	07-05-23	
JOB NO.	19215.02	
DESIGNED BY	KTS	
DRAWN BY	KTS	
CHECKED BY	YTN	

ANB BANK
MIXED USE DEVELOPMENT
CARBONDALE, COLORADO

REZONING, MAJOR SITE PLAN, & CONDITIONAL USE PERMIT APPLICATION

COLORADO LICENSED Yvette T. Nelson 48383 07/05/23 PROFESSIONAL ENGINEER

DATE	REVISION

TITLE

SITE PLAN

DRAWING NO.

C-2.0

G:\2019\19215\CIVIL\CIVIL DWGS\PLOT\SHEET SET\19215-2-SITE PLAN.DWG - Jul 06, 2023 - 6:54am

GENERAL NOTES:

1) CONTRACTOR TO VERIFY THAT ALL PIPES, CONDUITS, AND SLEEVES RELATED TO STORM, IRRIGATION, LIGHTING, AND OTHER UTILITY IMPROVEMENTS ARE INSTALLED PRIOR TO ANY CONCRETE OR ASPHALT CONSTRUCTION ON THE PROJECT.

2) SEE LANDSCAPE PLANS FOR TREE, PLANTING, AND IRRIGATION IMPROVEMENTS DESIGN.

3) SEE ARCHITECT AND/OR MEP DRAWINGS FOR LIGHTING IMPROVEMENTS DESIGN.

4) WARNING TAPE AND/OR TRACER WIRE IS TO BE INSTALLED OVER ALL UTILITY LINES PER TOWN AND UTILITY COMPANY STANDARDS.

EXISTING FIRE HYDRANT

HENDRICK DRIVE PUBLIC STREET 50.0'

CONTRACTOR TO COORDINATE WITH UTILITY COMPANIES ON NEW LOCATION FOR GUY WIRE

WATERLINE SERVICE TO BUILDING, SIZE AND LOCATION TO BE COORDINATED WITH ARCHITECT AND MEP

EXISTING 6" DIP WATERLINE STUB

WATERLINE SERVICE, SIZE & LOCATION TO BE VERIFIED WITH MEP

SEWER SERVICE TO BUILDING, FINAL SIZE & LOCATION TO BE COORDINATED WITH ARCHITECT & MEP

ELECTRIC & TELECOMMS SERVICES AT BUILDING, TO BE COORDINATED WITH UTILITY COMPANIES AND MEP

PROPOSED SHARED UTILITY TRENCH. COMCAST, CENTURYLINK, TING INTERNET, XCEL ENERGY. NUMBER & SIZE OF CONDUITS TO BE VERIFIED WITH UTILITY COMPANIES

LOT 2 CARBONDALE MARKETPLACE SUBDIVISION

EXISTING MANHOLE INV IN (E): ±6156.60

4' DIA MH

25.0' SEWER EASEMENT

EXISTING 8" SDR-35 SEWER MAIN STUB INV: ±6156.66

SEWER SERVICE TO BUILDING, FINAL SIZE & LOCATION TO BE COORDINATED WITH ARCHITECT & MEP

EXISTING FIRE HYDRANT

TRANSFORMER AND UTILITY PEDESTALS TO BE COORDINATED WITH UTILITY COMPANIES

SEWER SERVICE, FINAL SIZE & LOCATION TO BE COORDINATED WITH ARCHITECT & MEP

HENDRICK DRIVE PUBLIC STREET 50.0'

(2) X 6" SCH 40 PVC HOLY CROSS ELECTRIC CONDUITS, EXISTING

SEWER SERVICE TO BUILDING, FINAL SIZE & LOCATION TO BE COORDINATED WITH ARCHITECT & MEP

EXISTING 6" DIP WATERLINE STUB

GREASE INTERCEPTOR, SIZE & LOCATION TO BE COORDINATED WITH MEP

WATERLINE SERVICE, SIZE & LOCATION TO BE VERIFIED WITH MEP

LOT 1 CARBONDALE MARKETPLACE SUBDIVISION

PROPOSED SHARED UTILITY TRENCH COMCAST, CENTURYLINK, TING INTERNET, XCEL ENERGY. NUMBER & SIZE OF CONDUITS TO BE VERIFIED WITH UTILITY COMPANIES

PROPOSED STORM PIPE & DRYWELLS, SEE GRADING & DRAINAGE PLANS

7.0' PUBLIC PEDESTRIAN EASEMENT

EXISTING FIRE HYDRANT

EXISTING 12.83' ELECTRIC EASEMENT

SEWER SERVICE TO BUILDING, FINAL SIZE & LOCATION TO BE COORDINATED WITH ARCHITECT & MEP

HIGHWAY 133 120.0'

PROPOSED GAS LINE TEE OFF EXISTING 1 1/4" STEEL GAS LINE IN HWY 133 ROW. CDOT UTILITY/SUP PERMIT WILL BE REQUIRED AT BUILDING PERMIT

COMCAST, CENTURYLINK, AND TING INTERNET CONDUITS TO BE EXTENDED NORTH FROM THIS LOCATION. PROJECT TEAM TO COORDINATE WITH UTILITY COMPANIES THROUGH BUILDING PERMIT DESIGN PHASE.

EXISTING (2) x 4" SCH 40 PVC CONDUITS FROM XCEL SWITCH CABINET TO BE EXTENDED TO NEW TRANSFORMER

PROPOSED LEGEND

W	PROPOSED WATER SERVICE
8"SS	PROPOSED 8" SANITARY SEWER MAIN
SS	PROPOSED 4" SANITARY SEWER SERVICE
ETC	PROPOSED ELEC, TELE, CABLE
GAS	PROPOSED GAS
UTV	PROPOSED UNDERGROUND CABLE
UEL	PROPOSED UNDERGROUND ELECTRIC
	PROPOSED STORM SEWER
	PROPOSED SAWCUT LINE
ROW	RIGHT OF WAY
	PROPERTY LINE
	EASEMENT/SETBACK
	HIGHWAY 133 ROW LANDSCAPE BUFFER
	OVERHEAD STRUCTURE (SEE ARCHITECT DWGS)

EXISTING LEGEND

SS	EXISTING SEWER
W	EXISTING WATER
6" W/L	EXISTING 6" WATERLINE
8"W	EXISTING 8" WATERLINE
ut	EXISTING TELEPHONE
ou	EXISTING OVERHEAD UTILITY
ug	EXISTING GAS
ue	EXISTING UNDERGROUND ELECTRIC
uc	EXISTING UNDERGROUND CABLE
irr	EXISTING IRRIGATION
D	EXISTING DRAINAGE DRY-WELL
S	EXISTING SEWER MANHOLE
	EXISTING GUY WIRE
	EXISTING POWER POLE
W	EXISTING FIRE HYDRANT
W	EXISTING WATER VALVE
E	EXISTING ELECTRIC TRANSFORMER
E	EXISTING ELECTRIC METER
T	EXISTING TELEPHONE PEDESTAL
	EXISTING LIGHT POLE
	EXISTING STORM INLET

NORTH

811 Know what's below. Call before you dig.
CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

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SOPRIS ENGINEERING LLC
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(970) 704-0311 • soprisengineering.com

DATE:	07-05-23	
JOB NO.	19215.02	
DESIGNED BY	KTS	
DRAWN BY	KTS	
CHECKED BY	YTN	

MIXED USE DEVELOPMENT
ANB BANK
CARBONDALE, COLORADO

REZONING, MAJOR SITE PLAN, & CONDITIONAL USE PERMIT APPLICATION

COLORADO LICENSED KRISTEN T. SOPRIS 48383 PROFESSIONAL ENGINEER 07/05/23

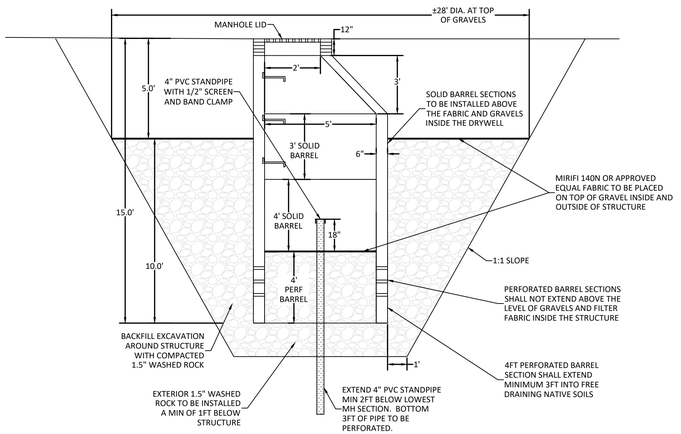
DATE	REVISION

TITLE

UTILITY PLAN

DRAWING NO.

C-3.0



DRYWELL DETAIL

N.T.S.

DRYWELL NOTES

- CONTRACTOR TO CONFIRM WITH ENGINEER THAT THERE ARE FREE DRAINING SOILS AT THE DESIGNED DEPTH OF DRYWELL PRIOR TO INSTALLATION
- CONTRACTOR TO PROVIDE SHOP DRAWINGS OF DRYWELL PRIOR TO ORDERING MATERIALS

SPOT ELEVATION LEGEND

BOW = BOTTOM OF WALL
EOA = EDGE OF ASPHALT
EX = EXISTING GRADE
FFE = FINISHED FLOOR ELEVATION
FG = FINISHED GRADE
FL = FLOW LINE
HP = HIGH POINT
LP = LOW POINT
LS = LANDSCAPE
ME = MATCH EXISTING
RIM = RIM ELEVATION
TBC = TOP BACK OF CURB
TC = TOP OF CONCRETE

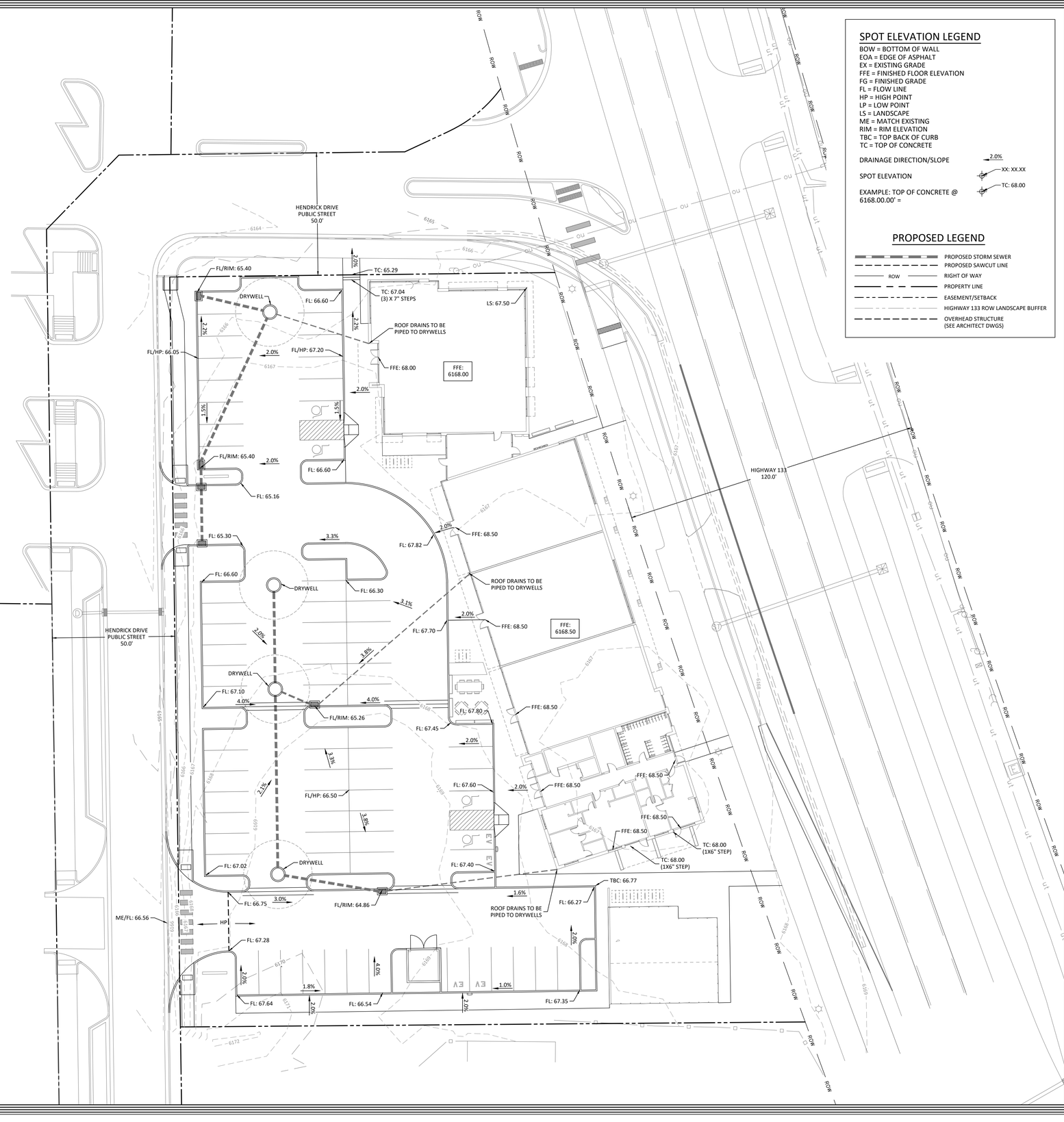
DRAINAGE DIRECTION/SLOPE — 2.0%

SPOT ELEVATION — XX: XX.XX

EXAMPLE: TOP OF CONCRETE @ 6168.00.00' = — TC: 68.00

PROPOSED LEGEND

- PROPOSED STORM SEWER
- PROPOSED SAWCUT LINE
- ROW — RIGHT OF WAY
- PROPERTY LINE
- EASEMENT/SETBACK
- HIGHWAY 133 ROW LANDSCAPE BUFFER
- OVERHEAD STRUCTURE (SEE ARCHITECT DWGS)



NORTH

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GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

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(970) 704-0311 • soprisengineering.com

DATE:	07-05-23	
JOB NO.	19215.02	
DESIGNED BY	KTS	
DRAWN BY	KTS	
CHECKED BY	YTN	

ANB BANK
MIXED USE DEVELOPMENT
CARBONDALE, COLORADO

REZONING, MAJOR SITE PLAN, & CONDITIONAL USE PERMIT APPLICATION

COLORADO LICENSED
KATHERINE T. SCHULTZ
48383
07/05/23
PROFESSIONAL ENGINEER

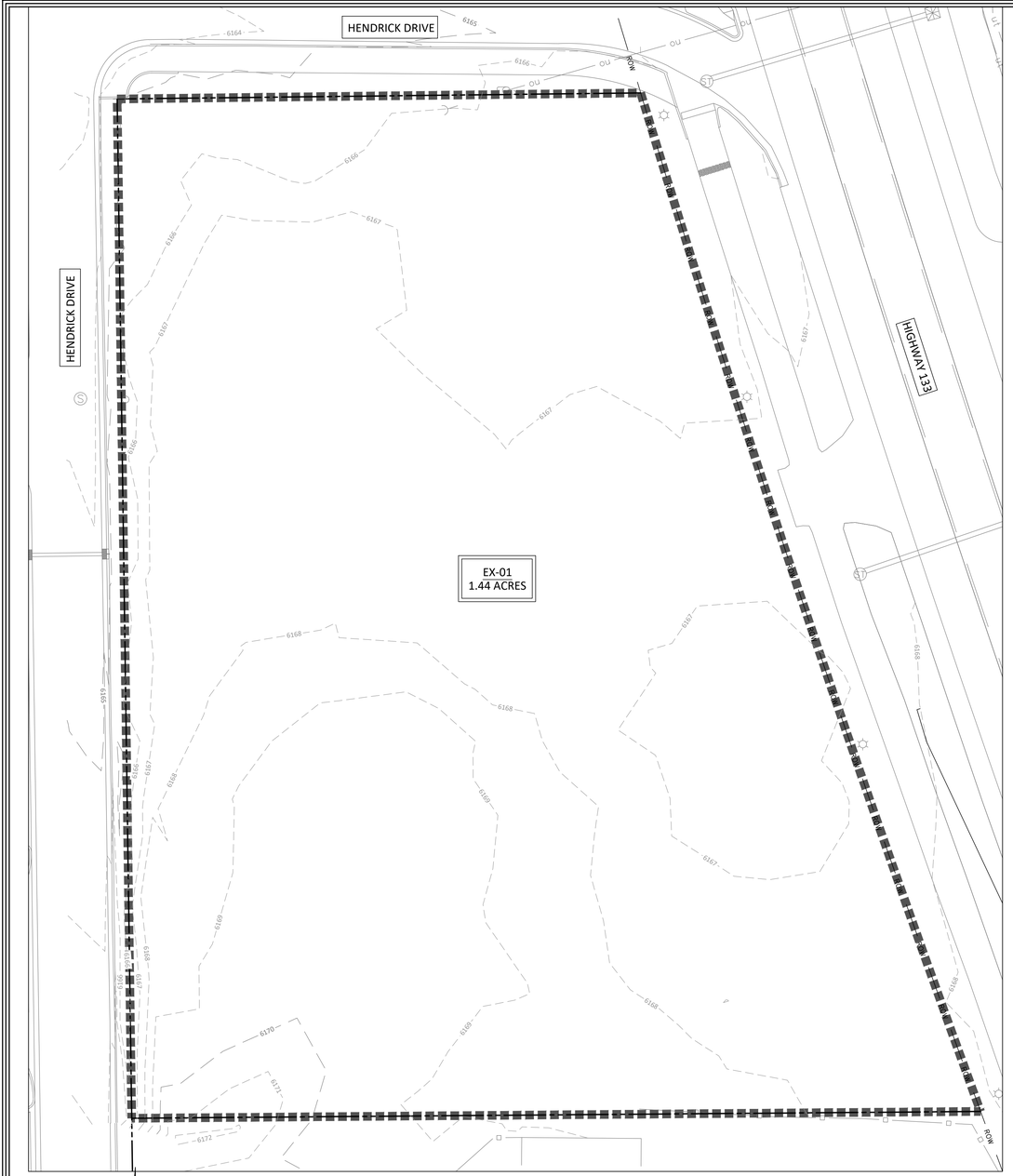
DATE	REVISION

TITLE

GRADING PLAN

DRAWING NO.

C-4.0



NORTH

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GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

EXISTING BASINS

PEAK RUNOFF DRAINAGE CALCULATIONS

10-YR EXISTING PEAK RUNOFF SUMMARY						100-YR EX. PEAK RUNOFF SUMMARY				
BASIN I.D.	% IMPERV.	C_{10}	I_{10} (in/hr)	AREA (acres)	Q_{10} (cfs)	BASIN I.D.	C_{100}	I_{100} (in/hr)	AREA (acres)	Q_{100} (cfs)
EX-01	2%	0.07	2.68	1.440	**0.270**	EX-01	0.44	4.37	1.440	**2.769**
10-YR DEVELOPED PEAK RUNOFF SUMMARY						**100-YR DEV. PEAK RUNOFF SUMMARY**				
PR-01	81%	0.71	2.68	1.440	**2.740**	PR-01	0.80	4.37	1.440	**5.034**

[1] TIME OF CONCENTRATION WAS ASSUMED TO BE EQUAL TO 10 MINUTES.
[2] RATIONAL C FACTORS ARE BASED ON THE PERCENT IMPERVIOUS FROM TABLE 6-5 OF CHAPTER 6 OF THE UDFCD - URBAN STORM DRAINAGE CRITERIA MANUAL. (MILE HIGH FLOOD DISTRICT)
[3] RAINFALL INTENSITY IS FROM THE NOAA 14 IDF CURVE FOR CARBONDALE, CO

PROPOSED BASINS

PRE/POST DRAINAGE CALCULATIONS: MODIFIED RATIONAL 1-HOUR STORM EVENT

10-YR EXISTING DETENTION RUNOFF SUMMARY						100-YR EX. DETENTION RUNOFF SUMMARY				
BASIN I.D.	% IMPERV.	C_{10}	I_{10} (in/hr)	AREA (acres)	Q_{10} (cfs)	BASIN I.D.	C_{100}	I_{100} (in/hr)	AREA (acres)	Q_{100} (cfs)
EX-01	2%	0.07	0.777	1.440	**0.078**	EX-01	0.44	1.19	1.440	**0.754**
10-YR EXISTING DETENTION RUNOFF SUMMARY						**100-YR EX. DETENTION RUNOFF SUMMARY**				
PR-01	81%	0.71	0.777	1.440	**0.794**	PR-01	0.80	1.19	1.440	**1.371**

[1] TIME OF CONCENTRATION WAS ASSUMED TO BE EQUAL TO 10 MINUTES.
[2] RATIONAL C FACTORS ARE BASED ON THE PERCENT IMPERVIOUS FROM TABLE 6-5 OF CHAPTER 6 OF THE UDFCD - URBAN STORM DRAINAGE CRITERIA MANUAL. (MILE HIGH FLOOD DISTRICT)
[3] RAINFALL INTENSITY IS FROM THE NOAA 14 IDF CURVE FOR CARBONDALE, CO

DRYWELL STORAGE CALCULATION SUMMARY

10 YEAR - 1 HOUR STORAGE SUMMARY					
EX Q_{100} (cfs)	DE Q_{100} (cfs)	+/- Q (cfs)	DET. REQ. (cf) [1]	+/- DET. PROV. (cf)	POST DET Q_{100} (cfs)
0.08	0.79	0.72	3,249	3,678	0.00

[1] REQUIRED DETENTION CALCULATED USING THE RATIONAL METHOD DETENTION VOLUME APPROACH.

10 YEAR - 1 HOUR STORAGE		
Duration =	60	minutes
P =	0.777	
RUNOFF VOLUME - Vr=C*(P/12)*A		
BASIN	Vr	Vr
I.D.	(ac-ft)	(CF)
PR-01	0.075	3,249

SOPRIS ENGINEERING LLC
502 MAIN STREET • SUITE A3 • CARBONDALE CO 81623
(970) 704-0311 • soprisengineering.com

DATE:	07-05-23	
JOB NO.	19215.02	
DESIGNED BY	KTS	
DRAWN BY	KTS	
CHECKED BY	YTN	

MIXED USE DEVELOPMENT
ANB BANK
CARBONDALE, COLORADO

REZONING, MAJOR SITE PLAN, & CONDITIONAL USE PERMIT APPLICATION

COLORADO LICENSED KATHERINE T. SOPRIS 48383 07/05/23 PROFESSIONAL ENGINEER

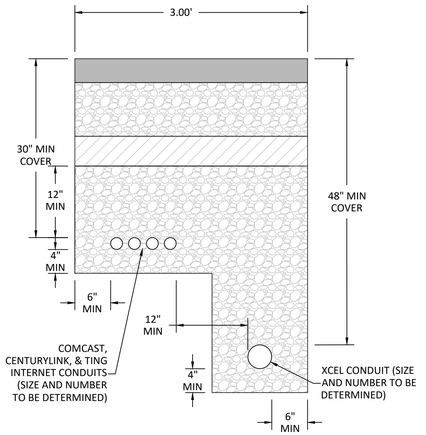
DATE	REVISION

TITLE

DRAWING NO.

C-5.0

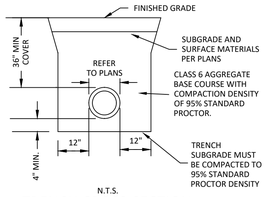
G:\2019\19215\CIVIL\CIVIL DWGS\PLOTS\SHEET SET\19215-1-DRAINAGE PLAN.DWG - Jul 06, 2023 - 8:38am



PROPOSED TYPICAL SHALLOW UTILITY TRENCH

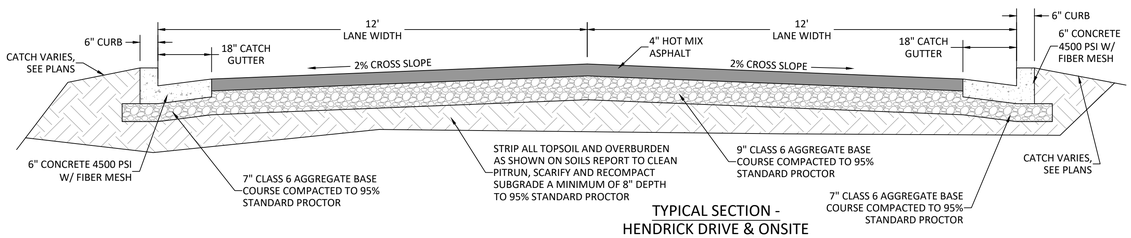
N.T.S.

NOTES:
1. BEDDING MATERIAL TO BE CLASS 6 ABC
2. MIN 4" BEDDING MATERIAL UNDER CONDUITS
3. MIN 12" CLASS 6 ABC OVER TOP OF CONDUITS
4. REMAINING TRENCH TO BE BACKFILLED WITH CLASS 6 ABC OR ONSITE SELECT NATIVE MATERIAL
5. WARNING TAPE TO BE INSTALLED ABOVE CONDUITS PER UTILITY COMPANY AND/OR TOWN STANDARDS
6. TRENCH WALLS ARE TO BE SLOPED PER CURRENT OSHA AND COSH STANDARDS AND REQ'S
7. DEPTH OF TRENCH IS TO BE MEASURED FROM FINISHED GRADE



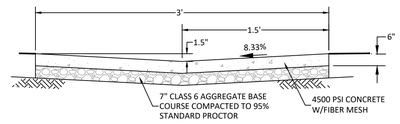
N.T.S.

TRENCH CROSS-SECTION FOR STORM PIPES



TYPICAL SECTION - HENDRICK DRIVE & ONSITE PARKING LOTS AND DRIVE AISLES

N.T.S.

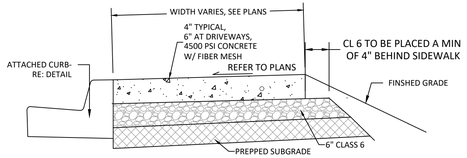


VALLEY PAN DETAIL

N.T.S.

NOTES:

1. CONTRACTOR TO STRIP ALL TOPSOIL AND OVERBURDEN TO CLEAN PITRUN, SCARIFY SUBGRADE TO A DEPTH OF 8" MINIMUM, MOISTURE TREATED TO WITHIN 2 PERCENT OF OF OPTIMUM MOISTURE CONTENT, AND RE-COMPACT TO AT LEAST 95% OF MAXIMUM STANDARD PROCTOR DENSITY.
2. AGGREGATE BASE COURSE SHALL BE LAID IN THIN LIFTS NOT TO EXCEED 6-INCHES, MOISTURE TREATED TO WITHIN 2 PERCENT OF OF OPTIMUM MOISTURE CONTENT, AND COMPACTED TO AT LEAST 95% OF MAXIMUM STANDARD PROCTOR DENSITY.

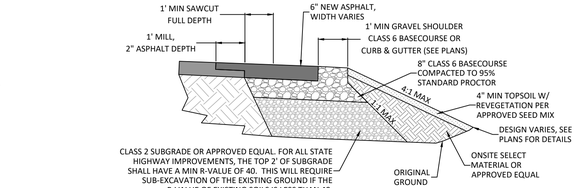


CONCRETE SIDEWALK DETAIL

N.T.S.

NOTES:

1. CONTRACTOR TO STRIP ALL TOPSOIL AND OVERBURDEN MATERIAL TO CLEAN PITRUN, SCARIFY SUBGRADE TO A DEPTH OF 8" MIN, MOISTURE TREATED TO WITHIN 2 PERCENT OF OF OPTIMUM MOISTURE CONTENT, AND RE-COMPACT TO AT LEAST 95% OF MAXIMUM STANDARD PROCTOR DENSITY.
2. AGGREGATE BASE COURSE SHALL BE LAID IN THIN LIFTS NOT TO EXCEED 6-INCHES, MOISTURE TREATED TO WITHIN 2 PERCENT OF OF OPTIMUM MOISTURE CONTENT, AND COMPACTED TO AT LEAST 95% OF MAXIMUM STANDARD PROCTOR DENSITY.
3. THE PUBLIC PEDESTRIAN AREAS HAVE BEEN DESIGNED PER THE AMERICAN'S WITH DISABILITIES ACT (ADA) STANDARDS. THE ADA CORRIDORS HAVE BEEN DESIGNED WITH A MAXIMUM CROSS SLOPE OF 2%. THE CONTINUOUS LONGITUDINAL SLOPES ARE ALL LESS THAN THE MAXIMUM 5% (1:20) SLOPE. HANDICAP PEDESTRIAN AREAS SHALL BE CONSTRUCTED TO MEET ALL ADA STANDARDS AND SPECIFICATIONS, INCLUDING, BUT NOT LIMITED TO; ACCESS WIDTHS, CROSS SLOPE, LONGITUDINAL SLOPE, CHANGE IN LEVEL, SLOT OPENINGS, SURFACE TEXTURE, AND SCORE JOINT WIDTHS.
4. STANDALONE SIDEWALK PATHS THROUGH AMENITY SPACE AND THROUGH LANDSCAPE AREAS MAY BE 4" CONCRETE THICKNESS ON 8" OF CLASS 6 BASE IF OVER TOP OF OVERBURDEN AS AN ALTERNATE SECTION. DESIRE IS TO STRIP ALL TOPSOIL AND OVERBURDEN TO CLEAN PITRUN. IF ALTERNATE SECTION IS DESIRED, TO BE VERIFIED AND CONFIRMED WITH ENGINEER PRIOR TO FINAL PRICING.



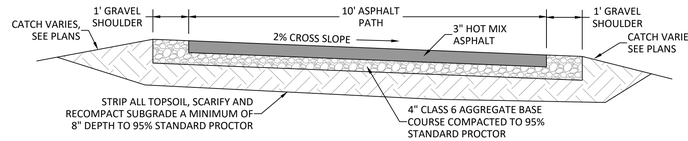
EDGE TREATMENT FOR HIGHWAY 133 LANE WIDENING & R-VALUE DESIGNATION

(NOT TO SCALE)

NOTES:
1) THE TYPICAL SECTIONS AND DESIGN PARAMETERS FOR THE PROPOSED HIGHWAY AND TRAIL REALIGNMENT IMPROVEMENTS OF THIS PROJECT HAVE BEEN DESIGNED TO MATCH THE 2014 CDOT STATE HIGHWAY 133 SAFETY IMPROVEMENTS RIGHT OF WAY PROJECT STA 133A-039, CONSTRUCTION CODE NO. 18333.
2) BINDER FOR HMA TO BE PG 58-28.
3) TACK IS TO BE USED BETWEEN ASPHALT LAYERS AT A RATE OF 0.1 GALLONS PER SY, DILUTED 50/50.

Location	Pavement Thickness	Base Course	Sub Base
Hendrick Dr Asphalt	4 IN. HMA Gr SX 75	9 IN. Class 6	Recompacted Subgrade, 95% Standard Proctor
Onsite Asphalt Drives & Parking Lot	4 IN. HMA Gr SX 75	9 IN. Class 6	Recompacted Subgrade, 95% Standard Proctor
Hwy Added Width	6 IN. HMA Gr SX 75	8 IN. Class 6	16 in Class 2 or approved equal, min R-value = 40

PROPOSED ASPHALT MATERIALS SPECIFICATION



TYPICAL ASPHALT PATH SECTION

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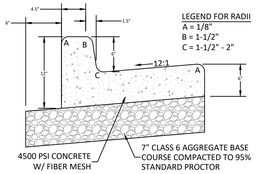
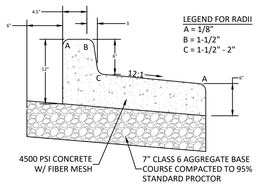


LEGEND FOR RADII
A = 1/8"
B = 1-1/2"
C = 1-1/2" - 2"

STRIP ALL TOPSOIL AND OVERBURDEN TO CLEAN PITRUN, SCARIFY AND RECOMPACT SUBGRADE A MINIMUM OF 8" DEPTH TO 95% STANDARD PROCTOR

STANDARD CATCH CURB

N.T.S.



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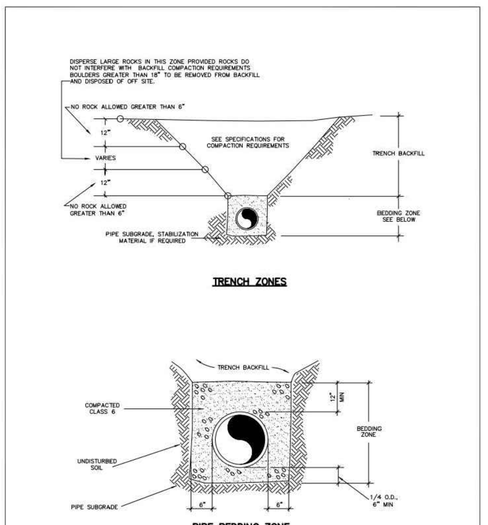
STANDARD SPILL CURB

N.T.S.

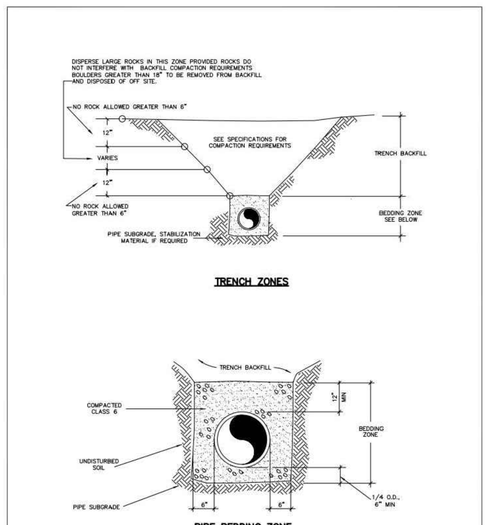


TRENCH ZONES

PIPE BEDDING ZONE

SEWER PIPE BEDDING

DETAIL "E"



TRENCH ZONES

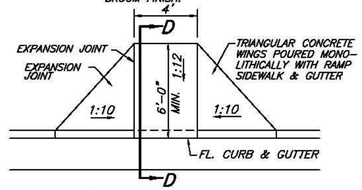
PIPE BEDDING ZONE

WATER PIPE BEDDING

DETAIL "8"

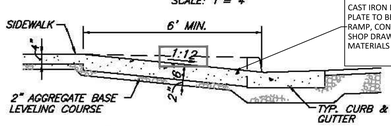
SEE SITE PLAN FOR HORIZONTAL GEOMETRY OF HANDICAP RAMP WITH CURBS ON SIDES, NOTE MAX CROSS SLOPE OF RAMP IS 2%

NOTES: 1. DIMENSIONS MAY BE ALTERED TO AVOID OBSTRUCTIONS WITH ENGINEER'S APPROVAL.
2. SURFACE OF RAMP TO HAVE COARSE BROOM FINISH.



HANDICAP RAMP

SCALE: 1"= 4'

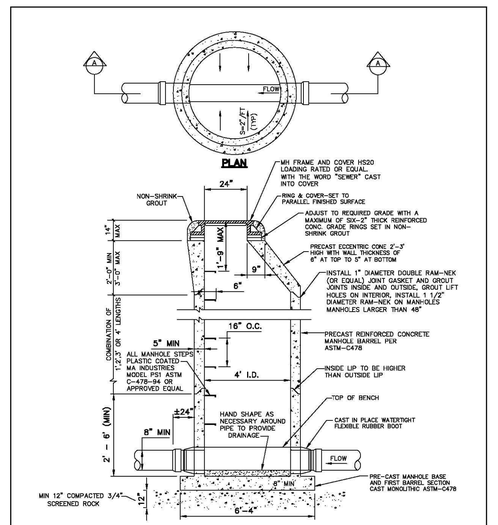


CAST IRON DETECTABLE WARNING PLATE TO BE PLACED AT BOTTOM OF RAMP, CONTRACTOR TO SUBMIT SHOP DRAWINGS PRIOR TO ORDERING MATERIALS

NOTE: HANDICAP RAMPS SHALL BE 6" THICK CONCRETE ALL OTHER CONCRETE FLATWORK SHALL BE 4" THICK. AGGREGATE BASE FOR 4" CONCRETE FLATWORK SHALL BE 2" COMPACTED CLASS 6 AGGREGATE.

SECTION D-D

SCALE: 1"= 2'



STANDARD MANHOLE

GENERAL NOTE
1. ALL CONCRETE WORK SHALL COMPLY WITH LATEST CI-318 SPECIFICATIONS
2. USE 5' I.D. WHEN PIPE SIZE 15"- 24".

DETAIL "A"

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CONSTRUCTION DETAILS

DRAWING NO.

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