

Planning Commission

Agenda

April 14, 2016
City Hall, Council Chambers
749 Main Street
6:30 PM

For agenda item detail see the Staff Report and other supporting documents included in the complete meeting packet.

Public Comment will be limited to three (3) minutes per speaker.

- I. Call to Order
- II. Roll Call
- III. Approval of Agenda
- IV. Approval of Minutes
 - March 10, 2016
- V. Public Comment on Items Not on the Agenda
- VI. Regular Business – Public Hearing Items
 - **Coal Creek Station Final PUD:** A request for a final plat and PUD for the existing property at the SW corner of South Boulder Road and HWY 42 owned by Coal Creek Station Properties, LLC. The project will be developed as a combination of new commercial space, to replace older existing buildings on the site and an extension of the residential neighborhood from the south.
 - Applicant and Representative: BVZ Architects (Gary Brothers)
 - Owner: Coal Creek Station Properties, LLC (Bill Arnold)
 - Case Manager: Scott Robinson, Planner II
 - **Business Center at CTC GDP Amendment:** A request for an amendment to the Business Center at CTC general development plan to allow wedding/event venues.
 - Applicant and Representative: Mark Danielson
 - Owner: EJ Louisville Land LLC
 - Case Manager: Lauren Trice, Planner I
 - **Accessory Structure Setback LMC Amendment:** A request to modify the Louisville Municipal Code to reduce the minimum setback requirements for accessory structures.
 - Staff member: Lauren Trice, Planner I
- VII. Planning Commission Comments
- VIII. Staff Comments

IX. Items Tentatively Scheduled for the regular meeting May 12, 2016:

- **Kestrel Final PUD Amendment:** A request for an amendment to the existing Kestrel PUD to allow for 9 additional affordable housing units.
 - Applicant, Owner, and Representative: Boulder County Housing Authority (Norrie Boyd)
 - Case Manager: Lauren Trice, Planner I
- **305 Arthur Final PUD:** A request for a 17,940 SF single story industrial flex building with associated site improvements on Lot 1 of the Business Center at CTC, Replat E.
 - Applicant and Representative: Etkin Johnson Real Estate Partners (Liz Cox)
 - Owner: EJ 305 South Arthur LLC
 - Case Manager: Lauren Trice, Planner I
- **Lots 6&10, Block 3, CTC 1 Final PUD:** A request for a 62,400 SF industrial building on Lots 6 and 10, Block 3, Colorado Technological Center, Filing #1.
 - Applicant: Comunale Properties (John Comunale)
 - Owner: Tech Commons, LLC
 - Representative: Kimley-Horn and Associates, Inc. (Dan Skeeahan)
 - Case Manager: Scott Robinson, Planner II
- **McCaslin Blvd Small Area Plan:** A request to review a draft copy of the McCaslin Blvd Small Area Plan.
 - Staff member: Scott Robinson, Planner II

X. Adjourn

Planning Commission

Meeting Minutes

March 10, 2016

City Hall, Council Chambers

749 Main Street

6:30 PM

Call to Order: Pritchard called the meeting to order at 6:30 PM.

Roll Call was taken and the following members were present:

Commission Members Present:

Chris Pritchard, Chairman
Cary Tengler, Vice Chairman
Ann O'Connell, Secretary
Steve Brauneis
Jeff Moline
Tom Rice
David Hsu

Commission Members Absent:

All Present

Staff Members Present:

Aaron DeJong, Director of Economic Development
Scott Robinson, Planner II

Approval of Agenda:

Brauneis moved and **Tengler** seconded a motion to approve the March 10, 2016 agenda. Motion passed by voice vote.

Approval of Minutes:

Moline moved and **Brauneis** seconded to approve the February 11, 2016 minutes. Ann O'Connell abstains due to excused absence. Motion passed by voice vote.

Public Comments: Items not on the Agenda

None.

Regular Business:

- **North End Market PUD/GDP Amendment: Resolution 6, Series 2016.** A request for a final Planned Unit Development (PUD) and General Development Plan (GDP) amendment to construct a multi-use development consisting of 65 dwelling units and allow 40,000 SF of commercial at Block 11, North End Phase II.
 - Applicant: North End Market LLC
 - Owner: Ridgeline Development Corporation
 - Representative: Chad Kipfer
 - Staff Member: Scott Robinson, Planner II

Conflict of Interest and Disclosure:

None.

Public Notice Certification:

Published in the Boulder Daily Camera on February 21, 2016. Posted in City Hall, Public Library, Recreation Center, and the Courts and Police Building and mailed to surrounding property owners and property posted on February 19, 2016.

Staff Report of Facts and Issues:

Robinson presented from Power Point:

- The subject parcel is located at the northwest corner of South Boulder Road and Blue Star Lane.
- Zoned Planned Community Zone District – Commercial (PCZD-C). It is governed by the North End General Development Plan.
- Site is 4.55 acres.
- Requesting 65 residential units (31 age-restricted for 55 years and older) and 40,000 square feet of retail and office space.
- Existing GDP allows 21 residential units and 65,650 SF of commercial space. 350 total units allowed in North End GDP.
- Currently besides the 21 units allocated for this parcel, there are another 17 units that have not been allocated anywhere in North End.
- Requesting to transfer the 17 units to this parcel, and additional 27 units. 27 units plus 4 units will be age-restricted to 55+.
- Reducing reduction from 65,650 SF of commercial to 40,000 SF.
- The 2013 Comp Plan identifies this area as an “Urban Corridor” *with focus on:*
 - *commercial*
 - *office*
 - *neighborhood retail*
- Principal NH-5
 - Mix of Housing types
 - Multi-generational needs
 - Empty nesters
- Proposing 31 age-restricted units for age 55 and over
- Fiscal Impact
 - According to the model, the previously approved GDP would yield a net positive fiscal impact of **+\$3,008,000** over a 20-year period, or **+\$150,400** per year.
 - The proposed amendment, assuming concurrent buildout, would yield a net positive fiscal impact of **+\$2,395,000** on the City over the same 20-year period, or a positive **+\$119,750** per year.
 - The delayed buildout would yield a net positive fiscal impact of **+\$2,051,000** over the same 20-year period, or **+\$102,550** per year.
- Request for plat to put easements in place. Property already platted. No request for subdivision for new lots.
- Public Land Dedication (PLD). 12% land for commercial development and 15% for residential development. North End originally had 20% PLD which exceeds PLD. With change in use and replat, no additional PLD required.
- Site Plan.
 - 7 Buildings
 - 3 residential along Hecla Way
 - 4 commercial along South Boulder Road.
- Site Access.
 - South Boulder Road (right in, right out)
 - Blue Star Lane
 - Hecla Way

- Pedestrian Circulation
 - East side access from South Boulder Road, there is no sidewalk. Staff requests additional sidewalk connection.
 - Existing large drainage swale along south side between development and South Boulder Road. No easy connection from sidewalk into development.
- Yard and Bulk Standards.
 - Governed by GDP. No proposal for change in GDP amendment.
 - Proposed buildings all comply with standards. No request for waivers for setback or height.
- Commercial Buildings. Governed by CDDSD.
 - Office/Retail
 - 2 stories. 30-33 feet.
 - Restaurant/Retail
 - 1 story. 25 feet.
- Residential Buildings. Comply with residential design standards. Compatible with nearby buildings across Hecla Way to the north.
 - 2.5 stories. 35-40 feet.
 - Parking under the building.
- Parking. Governed by GDP.
 - 86 residential spaces.
 - 162 commercial spaces. Exceeds minimal parking requirement under GDP.
 - 46 on-street spaces along Hecla Way and Blue Star Lane. Do not count towards parking but are available.

Staff Recommendations:

Staff recommends Planning Commission move to approve Resolution 06, Series 2016, with the following conditions:

1. The 55 years and older age restriction shall be placed on the deed of each age restricted unit and shall also be included in the subdivision agreement.
2. An additional sidewalk connection shall be added to the South Boulder Road sidewalk on the east side of the access drive.
3. The applicant shall continue to work with the Public Works Department on the items listed in the March 2, 2016 memo. Each item shall be completed prior to recordation.

Commission Questions of Staff:

Moline asks about the degrees of a development's fiscal performance. Do our guidelines tell us to look at something that is \$1 million or better over 20 years or if it is purely positive?

Robinson says we don't have performance standards for fiscal analysis. What we have is the Comp Plan which says in the northeast area community, we expect development to be fiscally positive. It doesn't say how positive, just fiscally positive.

Moline says looking at the South Boulder Road corridor, I thought it would have a more urban form or urban orientation. Are we getting that from this development?

Robinson says the South Boulder Road (SoBoRo) plan is not adopted yet, so we evaluate this proposal against the existing regulations. In general, based on what is in the SoBoRo plan, this would comply with what we are recommending in the South Boulder Road plan.

Brauneis says in the buildings marked as retail or office, typically those would have a significant difference in fiscal impact, whether they are retail or office. Are they required to build out that way?

Robinson says retail versus office has different impacts. In the model, the first floor was considered retail; the second floor considered office. The first floor could potentially be office, but office would be less likely to go into retail spaces because they would be paying for the frontage not necessarily needed. We see dentist offices currently go into retail spaces.

Tengler asks if you can explain the expenditure slide. Looking at the open space and parks fund in the existing GDP, if we add more residential, we are spending \$150,000 less. That seems counterintuitive to me.

Robinson says it comes from projected demand on parks. The model is set up for both residents and employees to have impact on capital facilities including parks. There is an impact per resident and per employee.

Tengler asks about age-restricted units of 55+ enabled this development to meet the housing mix requirement. Without those, would it still meet the requirement?

Robinson says they are allowed 21 units by right, and would not need to amend the GDP. Because the 17 units were already approved in the overall GDP, they hadn't been allocated. Staff would have supported allocating those there. It is the additional units that we feel need further analysis to see if they are compatible with the Comp Plan. Age-restricted units address the concern for school impact since 55+ and empty nesters typically do not have school age children.

Tengler says once again, we have bumped up Louisville Elementary School (LES) above the cap, and BVSD has said overall, we can handle it. This seems to be a recurring theme.

Robinson says BVSD has been aware of the 350 units in North End for 10 years. They have North End in their projections. Senior housing is not expected to have any impact on schools. We refer everything to BVSD and they send us correspondence stating they are okay. Steel Ranch and North End projections have been very accurate regarding student numbers. It has been students coming from Old Town that has impacted LES.

Rice says when this particular parcel was part of the original GDP, there was no residential. Then it was amended up to 12 residential units, and then amended up to 21 residential units. The present proposal is to go to 65 residential units. On this particular parcel, we have gone from zero to 65. The commercial on the last approved plan to the present will go from 65,000 SF to 40,000 SF. When the original GDP was approved, there would be 350 total housing units in this entire development. The request is to break that cap and take it up to 377, adding 27 units. As I understand it, the Comp Plan says in this area, 25 units/acre density are recommended.

Robinson says depending on how you count it, if you look at the north half of the development where the residential units are, it comes in at 30 units per acre. If you look at the whole lot and spread the units out, it comes in less.

Rice asks if the reason for the age-restricted units is the school issue.

Robinson says it is a major part of it and also because it is a type of housing the community says it wants. The Comp Plan encourages that type of housing.

Rice says as I recall when discussing a previous project, there was discussion about the commercial being built first, or at least at the same time as the residential. Can we make it a condition that the commercial be developed either before or at the same time as the residential?

Robinson says the PUD is broken down into three phases with each phase having both commercial and residential. There is text saying the commercial will be built concurrently with the residential.

Hsu asks about age restriction. The Comp Plan has a number of categories. In which category does 55+ belong? There are seniors, empty nesters, disabled renters, first time homebuyers, and all others.

Robinson says either seniors or empty nesters. The Comp Plan is a broad policy document saying these are the types of people we want to accommodate. 55+ is the standard age restriction in housing law. It can serve both seniors and empty nesters.

Hsu says the Foundry has age-restricted housing. What bothers me about the Comp Plan is that "empty nesters" may be against public policy in housing laws for family status.

Robinson says we will not restrict them to empty nesters. The Comp Plan looks at what people want to see in their community. Louisville is a great community for families but there is little accommodation for older couples with no children. In general, we want to provide the type of housing that could be suitable for these groups.

Hsu says in two recent projects, 55+ have been awarded this restricted housing whereas we have seen little for disabled renters and first time homebuyers, in part because we are trying to create fewer problems for BVSD. We are weighing toward one part of the Comp Plan without trying for a mix.

Robinson says we are accommodating some of these other groups. 31 of these units will be age-restricted but the other 34 will not be. They would be good houses for first time homebuyers. Some with elevators or first floor units would be suitable for the disabled.

Hsu asks how strong are the recommendations for the deed of an age-restricted home? If a home is foreclosed, does the age-restriction remain?

Robinson says yes, my understanding is that it would remain. If it is placed on the deed, is in the subdivision agreement, and is in the PUD, it would permanently remain 55+.

Brauneis clarifies it is for ownership, not occupancy.

Hsu asks if a 55+ buys it and rents it out to a younger family, is that allowed under this restriction?

Pritchard says these questions can be answered by the applicant.

Robinson says this is the same wording found in the Foundry PUD. This recommendation came from the City Attorney that we put a condition that it be placed in the deed as well as on the PUD.

Hsu asks about traffic impact. It seems like the peak traffic decreased but the average weekday traffic increased. Is that correct?

Robinson says it is the difference between residential traffic versus commercial traffic. If it is primarily office traffic, it is morning and evening traffic. Shifting it to residential, there are more overall trips but spread out more throughout the day.

Applicant Presentation:

Chad Kipfer, Markel Homes, 5723 Arapahoe Avenue #2B, Boulder, CO

We are here to amend Block 11 PUD. Markel Homes is a recognized brand name for quality and value. We are a certified Energy Star builder. We are currently building many subdivisions. Markel Homes has been a local builder for 40 years and we develop a diversity of housing products from single family to multi-family, townhouses to custom residential. Here is a North End overview: In 2007, we had 350 units and 65,000 SF of commercial. Phase I is complete with just a few last homes being built. Phase II is near completion with single family homes and working on multifamily units. Phase III just finished up site improvements and working on construction acceptance. Block 11 is this application. When Markel Homes came in, we did 25% land dedication. There is common open space including Hecla Lake with trails in the neighborhood connecting to Waneka Lake. The entire dam structure has been rebuilt. There are trails across South Boulder Road being used extensively. Planning Area #4 has Blocks 10, 9, 8, 7, and 6. We did PUD amendments in these areas in the past, and this is when things were adjusted for Phase II and III. In our proposal, we are requesting 27 additional units on Block 11 over the 350 number. 31 units are age-restricted. We feel strongly that condos and age-restricted housing is a needed housing segment in Louisville. We are requesting 40,000 SF which has been recommended to us as a successful number at this location. We are working with a craft brewer for the corner at Blue Star and South Boulder Road. We are proposing to build the age-restricted building and two commercial buildings in the first phase. Buildings 1, 2, and 3 are residential buildings. Buildings 4, 5, 6, and 7 are commercial buildings. The age-restricted building is Building 3. To show the phasing, we propose to build Buildings 3, 6, and 7 in first phase; then Buildings 2 and 5; and then Buildings 1 and 4. There will be commercial and residential paired together across the site. Circulation will be off of Blue Star Lane, off Hecla Way, right-in and right-out off of South Boulder Road. The commercial will be highly visible from

South Boulder Road and located forward. The traffic study shows the commercial is an acceptable level of service for what we are proposing. Parking for Buildings 1, 2, and 3 will be parked below. The proposal meets the requirements for the PUD and the ratios for the commercial and retail. The sidewalks and pedestrian circulation throughout the neighborhood includes an outdoor plaza/gathering area formed between Buildings 2 and 3. Building 7 on the corner has an outdoor area on the south side suitable for a brewery or similar use. Between the commercial and the residential, a lane will create an urban edge instead of having a “back side” to the commercial. There will be more windows and a pedestrian feel, and is multi-sided for the pedestrian experience. The residential buildings will have elevators and adds to housing need and diversity. Building 4 and Building 5 will have varied roof forms and glass.

Michael Markel, Markel Homes, 5723 Arapahoe Avenue #2B, Boulder, CO

We have been working with the City of Louisville for over 10 years on North End. The good news is this is the last block of North End. We have accomplished a lot of different goals. We started out in 2007 and decided on a certain amount of units. Markel has proposed some adjustments and changes over the years. With the economy in 2007- 2008, the homebuilding business was in a depression. We are now in an upswing and feel fortunate to be a survivor of that particular recession. We need to adjust to the general economy and what the demand is for the marketplace. We also need to adjust to the demand within the community. For Louisville, we have accomplished a lot of goals. We have a passion for creating products that are unique to each town. The units at North End are not built in any other community. We are product-driven and market-driven, not accounting-driven. This project works as the last piece of North End because on the commercial side, the site is too small to be a big anchored center and it's too big to be successful as a neighborhood service-oriented commercial area. We decided to go in this direction because our consultants and our own studies showed building the neighborhood commercial, having visibility from South Boulder Road, and providing housing not available in Louisville is beneficial. There are a couple housing segments that are difficult to target for developers. Moderately-priced condominiums for 55+ and an older segment of the population are difficult to build. That is why we are asking for some additional units. I think they are needed in the community. In the first phase in this commercial area, I am moving my company from Boulder to Louisville in the first building. We have a craft brewery willing to build a small tasting area in Building 7. I think we have a good idea here to create a successful commercial area. I hope you will approve this.

Commission Questions of Applicant:

Moline asks **Markel** to describe in more detail the orientation and treatment of the back sides of the commercial, retail, and office buildings.

Markel says we anticipate the businesses to be neighborhood-type services and deliveries to be made by vans and smaller vehicles. The retail would be a “double-sided” through unit with a front door and a back door that will be nicely detailed. We think these businesses will be more vibrant because there is good access, especially with the traffic signal one-half block away, and South Boulder Road visibility.

Brauneis asks if any units are built for wheelchair accessibility.

Markel says yes, all residential buildings and commercial buildings will be elevator accessible. The majority of the units will be beyond ADA compliance.

Brauneis asks about the challenges of building condos, whether it is the market climate or the legal climate within the State of Colorado. How are you able to do it?

Markel says we are building the most affordable residential product in Louisville. The first building is sold out and the second building is almost sold out. We are able to provide good quality products, good floorplans, and they are well-priced. We feel confident we will not run into legal conflict.

Brauneis says there will be exterior gathering spaces. Are there any other amenities internal to the buildings? Do you have thoughts on the retail versus commercial mix?

Markel says the area where I will locate my business will be the entire floor, 5,000 SF. For the commercial spaces, they will be more open with fewer walls, attracting younger millennial entrepreneurs. We have courtyard spaces/social gathering places for restaurants. We think we have a built-in market for specialty, neighborhood services whether a craft brewery or restaurant. Having additional residential units with an ability to walk to services is a big plus.

Tengler asks you mentioned avoiding litigation. Is there a specific issue you are trying to address?

Markel says in the market, there is a lot of multi-family being built. In the Denver area, there are 18,000 apartments being built. There are approximately 380 for-sale condominium units. We want affordably priced or obtainable housing for other populations, particularly younger and old people. There have been lawsuits with monetary awards. I am watching every single thing that goes into our buildings. I have third party inspections, city inspections, and private inspections. All employees have checklists. We analyze every step and document everything. I'm not afraid to show people that we are going beyond the code and recommendations.

Hsu asks about the 55 and over age restrictions. Do you think the recommendations by Staff have "teeth"? I am worried about some real estate entrepreneur 55+ buying many units and then renting them out.

Markel says there will be deed restriction for 55+. It will also be in the HOA documentation.

Hsu asks about sustainability or energy efficiency features.

Markel says we are an Energy Star builder. In North End, we have built two or three net zero energy houses. We are experimenting to go net zero. Our buildings and condos are built to a low Home Energy Rating Standard (HERS) which is a high % below existing code requirements. Not only each building but each unit is tested for energy efficiency and must pass specific criteria to qualify for certification from the Energy Star people. We also want to be Leadership in Energy and Efficiency Design Standards (LEEDS) certified to a certain level.

Pritchard says the code allows 1.5 parking spaces for a residential two bedroom. Since we are opening back up for negotiation, what would happen to this project if that ratio was pushed to an 2 spaces for a two bedroom?

Markel says the 61 residential units are directed towards a more low-impact resident. An older couple with no children may have one car, not two. The majority of the people we are targeting do not have two cars per residence. The other buildings will be single level units, elevator accessible, with parking underneath, and directed (not restricted) to people who are low impact to the community. This project does not have a clubhouse; it is exactly the opposite.

Public Comment:

Andrea McGinsey, 7755 S Lafayette Drive, #157, Lafayette, CO

I am brand new to the area. I got a wonderful position working on historic preservation in the area. I am bringing my elderly mother from Virginia. I had a rough time in this housing market, looking for something that would work for me and for my mother. She has been living in a single family house but negotiating steps will not work for much longer. We are looking for really simple condos: two bedrooms, two baths, a balcony, and an elevator. There are a bunch of dumps I found in Boulder that would not be suitable for my mother. The only place I could find is this Markel development. It really is a housing type that is not out there, but it is needed. I am one month into Generation X so I will be happily living there and aging in place. I think my mother will be happy there. No one asked me to come speak tonight. I used to be on the Board of Supervisors in my county in Virginia, so I have thought a lot about housing, sustainability, and transportation. I care about community. I support this development. I am interested in what is going in next door and was not planning to speak. I am excited there will be a bus to take me to

work. I will be able to walk to the grocery store. My bank is nearby. I will not have to get into my car which is awesome. My one criticism is that I have an electric car and I cannot charge it at this development. I think this is the direction of the future. It is a resale issue and is the future of this community. I like the product because they are beautiful homes. I think this is a win-win for the community.

Jeff Gaillard, 1813 Blue Star Lane, Louisville, CO

I live in Phase II. For those of you who don't know Markel, I can tell you that everything they said is true. This is the highest quality product I found after looking for years around Boulder. I thank Michael Markel for the care you put into building. Doing the math on parking, I get 86 spaces for 65 units which is 1.3. I am curious, Michael, for the 12 or 15 you have sold of the condos, can you broadly tell us, what is the demographic?

Markel says the demographic for the condos is a mixed new group. The majority of people are empty nesters and a few younger people who don't have children. I think putting in the elevator was huge and having elevator accessible units is attractive.

Gaillard says the parking seems light to me, whether it is 1.3 or 1.5 spaces. There is only one one-car household in Phase II that I am aware of. The impact to the rest of the neighborhood would be street parking going up into Phase III. The age-restricted concept sounds interesting. We live in one of the wealthiest counties in the county and there are plenty of people 55+ that could snap up these beautiful products and rent them. When you were talking about HOA regulation, does it mean you could not rent to someone under 55? Would that be legal? How do you protect it?

Markel says we have not made a decision on the age-restricted, whether they will be for rent or for sale. The age restriction will be on public record and the title company will have all documentation. You cannot buy a unit unless you are 55+.

Brauneis says to speak directly to that point, would the HOA not allow tenants to be under age 55?

Markel says in the age-restricted buildings, tenants must be 55+.

Brauneis says you mentioned they may be rental units only, not condos. Will the age restriction follow the tenancy?

Markel says we have not made the decision of age-restricted rentals or age-restricted for sale. The age restriction will follow the tenancy if they are sold units.

Michael Menaker, 1827 W Choke Cherry Drive, Louisville, CO

Let me jump on the age restriction issue for a brief moment. It might be new to Louisville, but it is not new to the area, and it is not new to housing. There are hundreds if not thousands in Anthem that are age-restricted 55+. The way you do this is settled and there are no questions about it. I have lots of friends who live out in those units in Anthem. It is not an issue there and it won't be an issue here. The City and County looked at this for The Foundry and as Scott mentioned, it is pretty much the same language brought forward tonight. On a broader issue, it strikes me, having spoken for this project at every phase since its inception in 2006, how much smarter we've gotten as a City, as a Planning Staff, and as a Planning Department, in how we approach these things. This was all new to us in 2006 when we started to do this. Our fiscal analysis is much better. We have adopted a marginal cost fiscal model whereas in 2006, we worked under the assumption that every housing unit costs the City money. We now understand that at a price point of around \$600,000 single family home and extrapolating downward for rentals, that the people who can afford to live in Louisville, we are revenue positive on residential units. That is a revelation and changes the way we understand the fiscal impacts to the City. This has been thoroughly vetted by the finance committee, by our Director of Finance, and it is how we are evaluating new products. We are smarter about fiscal modeling. We are much smarter about the impacts of schools. We understand the difference between students from outside our jurisdiction who are coming in (there are 39 of those now at LES). We

understand that the mystery for BVSD is the turnover in Old Town. I was going through my files today and have letters going back to the beginning of 2013 from BVSD, that make the point that what pressure there is on LES is coming from new families in existing housing stock, not new rooftops. We are smarter about retail. When this project was first proposed, our Economic Development Consultant at the time was Becky Hogan. She looked at what we were doing and the commercial requirements we put on, and just laughed. Her comment at the time was you can color it anything you want, but that location is terrible. You can't make it happen by coloring a map. Those sentiments were echoed by our next economic developer and probably would be echoed by this one, although he is not on the record for this. When I look at 40,000 SF which is a reduction of about 20,000 SF from the original requirements, to me it pales in comparison to the hundreds of thousands of under-performing square feet adjacent in Louisville Plaza, which we think of as the King Soopers Shopping Center. The opportunity to increase our performance of dollar per square foot and our existing immediately adjacent retail spaces far exceeds the opportunity lost of 20,000 SF of service oriented retail. Finally, as a side note, construction liability has been an issue and it has limited building condos. I think if you don't know, you should know that the City through our lobbying and legislative actions has drafted Letters in Support with the City of Denver and most of our adjacent jurisdictions in lobbying the State for relief on construction liability litigation. The answer is the way you avoid construction liability litigation is build good product. Mike builds a really good product. Our just resigned Director of Planning bought a house in North End. I had a chance to talk to him a couple weeks ago. He has lived in his house more than six to eight months and has yet to find one thing wrong with it. Good product is the best defense against construction liability and gives us great hope that these condos will be built. I also support apartments. It is good for the City that we have a builder like Mike Markel. I urge you to unanimously approve and endorse this project. It completes the North End. I don't think any of us thought that when this started in 2006, it would take a decade. For a modest 27 total unit increase and all the benefits we get with this well-planned and well-designed project, I think it deserves your enthusiastic support.

Hsu asks if Markel can address the electric car issues mentioned by Ms. McGinsey.

Markel says the first building has single car garages that are remote and serviced by an alley. We did not put appropriate power in the first round for charging stations. We will be installing appropriate power in the second building. When Excel put in the power, we did not account for it and it was an oversight.

Moline asks about the parking situation.

Robinson says these are the parking numbers that have always been in the GDP. Staff is comfortable with them and the type of residents who will be there. The advantage of mixed-use is there are different peak parking demands. With the office units, there will be parking during the day. When people come home in the evening, those parking spaces will be freed up. If there is overflow from the residential for visitors, Staff is comfortable that there will be plenty of parking.

Summary and request by Staff and Applicant:

Robinson says he looked in the traffic peaks. Commercial has heavier peaks than the residential. This is why the peak hours have decreased with less commercial.

Staff recommends Planning Commission move to approve Resolution 06, Series 2016, with the following conditions:

1. The 55 years and older age restriction shall be placed on the deed of each age restricted unit and shall also be included in the subdivision agreement.
2. An additional sidewalk connection shall be added to the South Boulder Road sidewalk on the east side of the access drive.

3. The applicant shall continue to work with the Public Works Department on the items listed in the March 2, 2016 memo. Each item shall be completed prior to recordation.

Closed Public Hearing and discussion by Commission:

Hsu says I have questions about 55 and over age-restrictions. I feel comfortable with the project proceeding.

Rice says this has become a familiar theme where we have projects approved in days gone by, and then we come back for amendments where commercial space gives way to residential space. Over time, it becomes greater density residential space, and this is exactly what we see here. I think it is a very complex issue and there are a lot of reasons for it. It is a matter of degree. What we have here is a request to more than double, essentially triple, the approved residential on this particular parcel. In the process of doing that, it exceeds the cap on residential units for the entire development by 27. For me, it is a bridge too far. I think if they had come in and were not asking for the additional 27 units, I probably would be supportive of the project. By increasing the density in the way they have, I think we have gone beyond what is appropriate in terms of planning for this project. With regard to the Comp Plan, this request is inconsistent with it in two ways. First as was discussed, the units per acre are a greater density than what the Comp Plan contemplates for this sort of thing. If we hadn't added the 27 units, we probably would be well below what the Comp Plan recognizes as good planning for this area. The density is too much. In terms of the positive fiscal effect of this project, there are a couple ways of looking at that. If we run the numbers, do we have positive fiscal impact? The answer is apparently yes, no matter what scenario you look at. If we look at the request here tonight to amend the plan, and then compare it to what the plan is at present, it is actually a negative fiscal impact in terms of the development being proposed. For those reasons, I am not supportive. I think if the density was more in line with what the original numbers were, I probably would be supporting it.

O'Connell says I think that Commissioner Rice brings up some great points on the density issue and I hadn't thought about it that way. Overall, I am in favor of this with the three conditions. I appreciate this is a somewhat difficult lot. It is too small for some things and too large for other things. It seems like the planning here has been a good compromise and you have adjusted these plans to the best ability to deal with the situation and the location. I am in favor.

Tengler says I am in favor. I think Commissioner Rice makes a very good point about the changes and creeping additions of residential which we tend to see on a lot of our bigger projects. I am not as concerned about the density because I take it as a parcel. If you take a look at any development and try and subdivide a parcel, and look at a specific piece of the residential, it is going to come up higher than looking at the whole piece. The way this is now laid out with the commercial and the retail facing South Boulder, and the residential offset, I think it makes a lot of sense. Rather than mixing up and keeping the density to a somewhat arbitrary number, I like the way this is laid out. I am in support of this project.

Brauneis says that is the dynamic that we have seen regularly and with this project in particular. For me, these 27 units aren't the straw to break the camel's back. I would prefer to see more landscaped area within this as characterized as walkable. If there is a place for density within Louisville, this is a prime spot due to its proximity to services and public transportation that continues to evolve. I find myself in favor of the project and appreciate the concern and the observation of that dynamic.

Moline says when the meeting began, I had some concerns about the idea of raising the cap on the number of units, given that the GDP had 350 units already spelled out. I am trying to make a decision about whether or not I feel those units are meeting the intent of the Comp Plan. There has to be some benefit that these units will bring to this development. Some of the testimony we heard here is convincing to me that this is a development responding to the things that are happening in our community. I also agree with Commissioner Brauneis that the site plan itself

seems awfully dense. While I may not have objection to seeing additional units, the site does seem awfully built up. Overall, I do like the project.

O’Connell says I would like to address two points. Regarding walkability, this is a small parcel and is dense, but it is within close walking proximity to the lake which has been dedicated and to trail connections. Taking this as an urban piece, as long as there are sidewalks, you can get out of it very quickly. Hopefully, there will be landscaping and trees to make it more aesthetically pleasing. With the density, hearing other people voice concerns about the additional units, it turns me back to the idea of parking and how we are at 1.5 spaces; the trade-off of extra density with less parking; having the bare minimum of parking; or asking for exceptions to the parking limit. Can we make a trade? Is there a sweet spot in the reduction of units and increase in parking? Is it worth it?

Rice says Commissioner Tengler talked about this a bit. It is always going to be a question of “per acre” and what acres you’re looking at. My thought, and the common sense reading of it, is if you are going to put residential on a piece of property, you should look at that part of the property that is residential. That is the density you are concerned about; at 30 units per acre as opposed to what the Comp Plan describes as an upper end of 25. That is where my concern comes from on that issue.

Pritchard say I am in support of this project. I have been here on Planning Commission the entire ten years. It has been a long process and we have made some amendments along the way. It comes down to the issue of density and I agree with Commissioner Brauneis on this. This is an ideal area for an increase in density. It provides additional housing stock that is truly coveted in this town of 55 and over. It is critical in any community. I am not a proponent of a lot of rental. It goes over what we anticipated for the number of units, but yet it is still within the range of where we want to see our population. It is keeping us within the 22-25 unit range that this community has indicated where they want to be. I like the idea of this being commercial but just because we say it, doesn’t mean someone will come and build. To see this parcel go another five, ten, or maybe never be developed, it is not an ideal parcel for access in terms of free movement. We have a development right next to it that is in need of additional rooftops to keep it going, that being the King Soopers/Louisville Plaza area. It is an underperforming property in my view. Hopefully, we will see this continue to morph out into bigger and better things in that area. I see this proposal help us accomplish what we need in terms of revenue. I have concerns about the parking because that is becoming a problem, not just in this parcel but several parcels. The market will determine whether or not there is adequate parking. If people start having problems finding places to park, the desirability of those units will be put into question. 55 and over will definitely address the concerns of the school district. I think the question of electric cars should be incorporated along the line. It sounds like the applicant has taken that into consideration. I think the applicant is in agreement with the three conditions.

Motion made by Pritchard to approve **North End Market PUD/GDP Amendment: Resolution 6, Series 2016**, A request for a final Planned Unit Development (PUD) and General Development Plan (GDP) amendment to construct a multi-use development consisting of 65 dwelling units and allow 40,000 SF of commercial at Block 11, North End Phase II, with the following conditions:

1. The 55 years and older age restriction shall be placed on the deed of each age restricted unit and shall also be included in the subdivision agreement.
2. An additional sidewalk connection shall be added to the South Boulder Road sidewalk on the east side of the access drive.
3. The applicant shall continue to work with the Public Works Department on the items listed in the March 2, 2016 memo. Each item shall be completed prior to recordation.

Seconded by Tengler. Roll call vote.

Name	Vote

Chris Pritchard	Yes
Cary Tengler	Yes
Ann O'Connell	Yes
Jeff Moline	Yes
Steve Brauneis	Yes
Tom Rice	No
David Hsu	Yes
Motion passed/failed:	Pass

Motion passes 6-0.

- **168 Centennial Parkway PUD: Resolution 7, Series 2016.** A final Planned Unit Development (PUD) to allow for the construction of a 59,629 SF multi-tenant office/flex tech space in the Centennial Valley Business Park.
- Applicant/Representative: Ware Malcomb (Mike Miranda)
 - Owner: Centennial Valley Properties VIII, LLC
 - Staff Member: Scott Robinson, Planner II

Conflict of Interest and Disclosure:

None.

Public Notice Certification:

Published in the Boulder Daily Camera on February 21, 2016. Posted in City Hall, Public Library, Recreation Center, and the Courts and Police Building, and mailed to surrounding property owners on February 19, 2016.

Staff Report of Facts and Issues:

Robinson presented from Power Point:

- Located in Centennial Valley on the south side, west of McCaslin, north of Flatirons Rehab Facility currently under construction, west of Centennial Pavilions.
- Property zoned Planned Community Zone District – Commercial (PCZD-C)
- Governed by Centennial Valley General Department Plan and required to follow CDDSG
- Site plan calls for 59,269 SF office/flex space
- 66% lot coverage between parking and drive aisle, 34% landscape coverage, exceeds the minimum requirement in the CDDSG of 30%
- Two access points, one off Centennial Parkway and new driveway built to connect out to Centennial Pavilions
- 239 parking spaces, exceeds minimal requirement under CDDSG at 4 spaces/1000 SF
- Lot slopes significantly from Centennial Parkway down towards back. Proposal for one story building on front facing Centennial Parkway and work with slope to build two stories at the back of lot. There will be retaining walls involved and slopes to the site. From Centennial Parkway, it will appear to be a one story building.
- Design has both vertical and horizontal articulation and significant amount of glazing for an office project. It complies with the CDDSG for height, setbacks, and architectural features. Complies with applicable standards for zoning, design guidelines, and GDP.

Memo and Revised Resolution entered into record:

Motion made by **Tengler** to enter memo from City Engineer and revised Resolution 07, Series 2016 into the record, seconded by **Brauneis**. Passed by voice vote.

Staff Recommendations:

Staff recommends Planning Commission move to approve Resolution 07, Series 2016, with the following condition:

1. The applicant must comply with the March 3, 2016, Public Works memo prior to recordation.

Commission Questions of Staff:

Hsu asks about commercial office space in the City. Do you know that the occupancy rate is? Is there a demand for more commercial office space?

DeJong says fourth quarter 2015 for Louisville/Superior area is 6.1% direct vacancy for submarket.

Moline says in looking at the site plan, it is difficult to believe that 34% of the site is landscaped. It appears like almost the entire site is covered by the building and parking lot.

Brauneis asks at different times, detention ponds have been included and excluded from landscaping. What is Staff's approach?

Robinson says the way it is calculated, building footprint, parking, and drive aisles count towards hardscape. Landscape area of detention ponds and hardscape plazas all count towards the 30% landscape area.

Moline asks if that driveway is considered part of this project. Is it within the lot boundary?

Robinson says the developer is proposing the driveway, but it is not in the parcel in question. It is necessary for the access to that driveway. It will need to be built for the development.

Applicant Presentation:

Mike Miranda, Ware Malcomb, 2919 West 39th Avenue, Denver, CO

Jeff Sheets, Koelbel and Company, 5291 East Yale Avenue, Denver, CO

This site is located along Centennial Parkway near McCaslin. When looking at the site, we saw a good example of mixed-use development. There are restaurants, retail, shopping, single family and multi-family residential, and some existing commercial office development. In looking at this as a long-term project, the vacancy rate is very low for office. The population continues to grow in the metro area and specifically, development continues to move along the 36 corridor. We feel Class A office space will be in high demand and we feel this is a great location and will bring in new jobs. As a speculative development, we are trying to maximize our flexibility and opportunity to attract a multitude of tenants. Specifically, we are targeting professional office, tech users, research and development, highly educated workforce, and hopefully attract new businesses into Louisville and into this community. The site is incredibly challenging because of the slope from Centennial Parkway to the east. Instead of fighting that, we are using it to drive our design. Two advantages are it minimizes our impact on the site environmentally. It gives low visual impact for the residents directly across Centennial Parkway. They will see what appears to be a one story, fairly low density development. Regarding landscaping, it is a bit deceiving. We have an ample amount of landscaping adjacent to Centennial Parkway. There is a wide buffer that is well landscaped. There is a substantial amount of landscaping around the building which provides both aesthetic advantages for tenants as well as pedestrian circulation. The detention pond does count toward the landscaping requirements. We have 360 degree access around the building for vehicular access, and 360 degree pedestrian access which is a challenge on this site because it slopes. We wanted to provide amenities on the site as well as in the building such as functional outdoor space to attract tenants. There are dedicated patio spaces which will probably be specific to the adjacent tenant. It may be an outdoor meeting space. Beyond that, we have paid attention to the main entry points to the building, which are in the corners. We created plaza spaces at the corners which count towards the landscape percentage. We have tried to landscape the entire site and take advantage of the space available. We also designed the building so there is no front or back, so an observer will see all design material and features from all points.

Commission Questions of Applicant:

Tengler asks about the number of tenants likely to occupy?

Miranda says it will be market driven. Our initial plans have three tenants on the larger upper floor and potentially four or five smaller tenants on the lower floor. If a whole building user comes along, we will entertain that.

Brauneis asks about any sustainability aspect you have pursued in the project?

Miranda says we are limited in some things we can do. All the glass is Low E glazing and energy efficient. There will be white single ply TPO roof which is reflective. The mechanical system in this building will be VAV or variable air volume system. It will provide maximum flexibility and control for all tenants as well as for the entire building. The site design itself is sustainable.

O'Connell says if you are on Centennial Parkway looking east, would you be able to see the condos behind this building? What is the impact on the condos view shed? Did you notify the tenants of the condos?

Miranda says the site falls down quite significantly, 22 feet lower than the roadway. From a building elevation perspective, the height of this building to the ground is about 20 feet. We notified the condo residents.

O'Connell asks if the intention of the detention pond is to help with drainage. Will there be any impact on adjacent buildings regarding drainage?

Miranda says since the site falls to the east naturally, we didn't fight the site but placed the detention in the natural location. All drainage should be contained and not affect the adjacent businesses.

Hsu asks how would pedestrian traffic enter and exit the building.

Miranda says the idea is to provide 360 degree architecture because we anticipate multiple tenant entries around the face of the building. The corners are where we anticipate tenant entries but also in the center of this building. In order to provide ADA accessible travel to any entry, we provide multiple areas of ADA parking. Regardless of where you access the building, you will be able to park. The sidewalk goes all around the facility and runs adjacent to the plaza areas.

Hsu says if you want to go out to lunch and hit McCaslin, where would you walk? It looks like you are hemmed in by the landscaping. Do you walk across the parking lot?

Miranda says there is pedestrian access that would take you to the sidewalk running along Centennial Parkway. I believe there will be a sidewalk connecting along the new proposed driveway. It will be around the perimeter of the site.

Tengler asks if the applicant is comfortable with the conditions in the memo from the City Engineer.

Miranda says yes.

Public Comment:

Larry Bovan, 1108 Hillside Lane, Louisville, CO

I have a few points to make. Several weeks ago, we had a McCaslin Small Area Plan meeting here in City Chambers. There were a number of suggestions from that meeting that I am bringing forward to this discussion about the planned development. Regarding the egress along Centennial Parkway, the existing tenants residing on the parkway have a single egress from their buildings. I am proposing a single egress from the west side of the property as proposed, but no egress from the east of the property to reduce and minimize congestion with the residential interface. On the east side, it would line up directly with Hillside Lane and there is residential traffic exiting onto Centennial Parkway. I believe it would cause undue traffic congestion and potential accidents at that intersection. Regarding a bike/pedestrian corridor where the east access is proposed, that would also meet some of the primary conditions of the Comp Plan for greater pedestrian and bike access to Davidson Mesa. Instead of a roadway

there, if there was a pedestrian/bike pathway through it, it would provide greater access for the tenants to go to places to eat and shop at lunchtime as well. That would be consistent with the Comp Plan. I would like to see a greater green space around this building. It seems to me that it has been minimized in this proposal. I would propose a 50 feet frontage rather than the 20 foot that is currently proposed, 20 feet from the existing roadway and sidewalk. That would be consistent with buildings west of the property. It would only reduce the parking by 40 spaces which I understand is over the minimum parking required. That would be more consistent with the current east-west use of Centennial Parkway and it would create a greater greenspace between the building and the residential interface across the street.

Brauneis asks about pedestrian accessibility and relative lack thereof. Were you able to assess in the bigger picture as to what is happening out there, and where people might want to go from a pedestrian or bicycle perspective.

Robinson says from Staff's perspective, the primary pedestrian or bike movement would be towards McCaslin, so the new driveway exit into the Centennial Pavilions would be the primary movement.

Brauneis says that bicycles would be on the street.

Robinson says there will be a sidewalk along the new driveway. If you want to place a condition that there a sidewalk be placed there, Staff would support that.

Hsu says what about the pedestrian in the northeast corner of the building. How does he get out?

Pritchard says he would walk across the parking lot, get in his car, and drive out. You could walk out and go along Centennial Parkway. There is also a road going toward McCaslin. I heard the applicant say there would be construction to tie it to the Walgreens development.

Robinson says it is a private drive, not a public street. It is the drive north of Lamar's Donuts. The development of the private drive will coincide with the construction of the building.

Brauneis says building a small sidewalk for pedestrians, especially in the winter and snowy conditions, would be good.

Jeff Sheets, Koelbel and Company, 5291 East Yale Avenue, Denver, CO

We are proposing to put that access drive in as an amenity for both lots located to the north who are trying to get the lots ready for development. The drive will connect to McCaslin. Relative to the sidewalks that cut across parking areas, if you look at an office building at the south end of the park, CB 363, you will see them. They are sidewalks that go nowhere. What has happened over time is they have eroded and we have had to pave over the top of them. Planning Commissions asked that we put in pavers to denote where the areas were. You essentially get out of your car and you walk to your entrance; you don't get out of your car and walk to a sidewalk to walk to another area. This is a business park. We hope they will walk from their business and go down to retail, using the private drive. It is not a public thoroughfare or dedicated street. It will not carry a volume of traffic. We have talked with the adjacent retail developer where there is a triangle of land used as an outdoor space. We have talked about helping to amenitize that area. I would be happy to look at trying to get some kind of path down into the retail area. As far as putting sidewalks along the private drive, I don't think it's prudent.

Brauneis says I am asking about physically being able to walk without having to go on the drive aisle through the landscape. If you exit the southeast corner of the building, to get to the private drive, is there any way to do that without walking through the drive aisle?

Sheets says you would walk across the parking lot and then on the drive aisle to the private drive. Since we do not own the triangle parcel, I cannot put a path through there. The developer said they are not using it so we can look at trying to connect those two.

O'Connell asks if there is over parking on this project, 4 per 1000 SF, which is the requirement.

Robinson says they are required to provide 231 spaces, and they are providing 239 spaces.

Summary and request by Staff and Applicant:

Staff recommends Planning Commission move to approve Resolution 07, Series 2016, a final Planned Unit Development (PUD) to allow for the construction of a 59,629 SF multi-tenant office/flex tech space in the Centennial Valley Business Park, with one condition.

1. The applicant shall continue to work with the Public Works Department on the items listed in the March 3, 2016 memo. Each item shall be completed prior to recordation.

Sheets says we appreciate you studying this project. I endorse the idea of the pedestrian link. From a practical perspective, we have done sidewalks across parking areas before. At Lowe's, there is a gazebo feature where you can ride your bike and have a picnic lunch. Some areas are not practical. Putting sidewalks across parking areas is not practical. I fully endorse trying to hook up the pedestrian connections with the retail because it is good for them, and it is good for us. Regarding outdoor plaza areas, we are studying the ways we can put internet out there. We are trying to create outdoor work places. Looking at the landscape plan, some are hardscape areas and some are intended to be tables and picnic tables where you can work.

Closed Public Hearing and discussion by Commission:

Hsu says I am struggling with this pedestrian access issue. Looking at the map, I see there is a private drive. I am not comfortable the way you exit if you are a pedestrian. If everyone assumes you will use the private driveway, I don't see why we can't facilitate that for the tenants. I like the other parts of the plan, but I am worried about the pedestrian access.

Rice says most of the activity we have seen in the last couple of years has been in the CTC. To see the Centennial Valley start to develop is terrific; to put the vacant land to work. I support this wholeheartedly.

O'Connell says I am in support because I see no reason to reject it. I am not a big fan of having eight extra parking spots, which is totally opposite from the last proposal. I look at this and think there is too much parking and it looks like a lot of asphalt. Considering the residents nearby, I'd like to see this more as a transition zone.

Tengler says I am in favor.

Brauneis says I would love to see some pedestrian access. I am in favor.

Moline says I am in favor. I share some of the concerns about hard surface. I think what the applicant has done with the building and working with the site is a nice way of minimizing the amount of grading. I appreciate it because it lowers the height from Centennial and the visual impact. Our community thinks of itself as fairly walkable and if you look at this site, I trust you can come up with some ways to make this a more walkable property.

Pritchard says I am in support. This is a hard property to develop because it has been proposed for many things, from a mall to what we currently have now. Living in that area, we talk a good game about walkability but then don't walk out there. This is private property and an office park. I am encouraged that the applicant is talking about bringing in the driveway to line up with Hillside. That road will probably have more connectivity than we have anywhere else in Centennial Valley in getting people out on McCaslin without a car. The lot is very difficult because of the slope and splitting the stories is an ideal use of the property, and is not as intrusive on the hillside. We need flex buildings because it appears to be most viable in terms of marketing. This is an underperforming property we need to see move forward.

Motion made by **Brauneis** to approve **168 Centennial Parkway PUD: Resolution 7, Series 2016**. A final Planned Unit Development (PUD) to allow for the construction of a 59,629 SF multi-tenant office/flex tech space in the Centennial Valley Business Park, with the following condition:

1. The applicant must comply with the March 3, 2016, Public Works memo prior to recordation.

Seconded by **Tengler**. Roll call vote.

Name	Vote
Chris Pritchard	Yes
Cary Tengler	Yes
Ann O'Connell	Yes
Jeff Moline	Yes
Steve Brauneis	Yes
Tom Rice	Yes
David Hsu	No
Motion passed/failed:	Pass

Motion passes 6-0.

- **South Boulder Road Small Area Plan: Resolution 5, Series 2016.** A request to review a draft copy of the South Boulder Road Small Area Plan. *Continued from February 11, 2016.*

- Staff Member: Scott Robinson, Planner II

Robinson presents. This was originally heard at the February 11, 2016 meeting and continued to tonight to provide more information. Some of the maps have been adjusted to make them more readable. Some typos were pointed out and have been corrected. There were questions about traffic impact and what the traffic would be in comparison to the 2035 projected traffic. I spoke with Curtis Rowe, our traffic consultant with Kimley Horn. When DRCOG does the 2035 does traffic projections, it is based on build out. The numbers they are projecting are very similar to what DRCOG was projecting; it is slightly higher. The traffic will be driven by the development in the community. There will be some cut-through traffic, and it will reach a point when it will stop increasing because there will be better alternatives such as Baseline, Highway 7, and Dillon Road to avoid this area. The build out numbers and the traffic projections in analysis are felt to be accurate for the 2035 projection. There was a question about storm water conveyance along South Boulder Road which is currently conveyed in the gutter. There are no underground storm pipes. The Public Works Department says they do not have this in their future plans. If they hear complaints about the amount of water, it will be discussed. It is not easy to tear up a street to install underground pipes.

Cost Estimates for the major infrastructure items and some other things in broad ranges will be rough estimates because they are designed yet. There are no accurate costs at this point. We are looking at some of these not being built for 5 or 10+ years. The cost estimates tables are located in the South Boulder Road Small Area Plan page 31.

There are four categories:

- \$ Less than \$100,000
- \$\$ Between \$100,000 and \$500,000
- \$\$\$ Between \$500,000 and \$1 million
- \$\$\$\$ More than \$1 million

Rice says you point out that you are using these categories, using dollar signs similar to Yelp. The last category is more than \$1 million, which is \$1 million to infinity. From what I have heard from people and their desires for the South Boulder Road corridor, the interconnectivity between the north and south, east and west, is key in making this improvement move people around. The underpasses are really important. Three of the principal underpasses, Highway 42, Bullhead Gulch, and Cottonwood Park are \$\$\$\$.

What does an underpass cost?

Robinson says \$1.5 million. The McCaslin Underpass cost \$1.5 million.

Rice says hasn't Bullhead Gulch already been funded?

Robinson says partially. When Steel Ranch went in, they provided some funding. A large portion of funding will come from the storm water management enterprise fund because there is a storm water connection going through there.

Rice asks about Highway 42 underpass. Does that have a funding source?

Robinson says partially. We have an agreement with Boulder County that they will provide some funding.

Rice says I understand that the Cottonwood Park underpass has no funding at present.

Robinson says yes.

Rice says on the third page of the Cost Analysis, there is roadway improvements at Highway 42 (north and south) in accordance with the Gateway Plan. It has \$\$\$\$\$. What is the magnitude?

Robinson says the last time cost estimates were done for the full plan, it was in the \$12-15 million range.

Rice says that is shown as a 1-5 year schedule. Will it be done in multiple phases?

Robinson says that project will be done in phases. We have federal money lined up. We have started work with CDOT on improvements at Short Street intersection. There is more money from the County to be used as well. I don't expect it to be done in five years, but we are starting this year. It will probably span 1-10 years.

Pritchard says I have concern about something brought up at the BRAD meeting about the elimination of the right hand turn lane going onto Main Street.

Robinson says Staff went back and looked at it. There is a discrepancy between what the drawings show and what the text describes. On page 24 of the South Boulder Road Small Area Plan, looking at the Main Street intersection sketch, we would keep the dedicated right turn lane and put in a pedestrian island (pork chop) to allow the right turn and bring pedestrians out. It is similar to McCaslin and Dillon. I would recommend modifying the language in the Main Street Improvements by Intersection from: **Remove eastbound right-turn lane** on South Boulder Road and improve geometrics of northbound Main Street right turn. Modify westbound South Boulder Road left-turn lane to create offset configuration and provide pedestrian refuge. **To: Add pedestrian island at eastbound right-turn lane** on South Boulder Road and improve geometrics of northbound Main Street right turn. Modify westbound South Boulder Road left-turn lane to create offset configuration and provide pedestrian refuge.

Hsu asks about possible traffic signal at Kaylix and Cannon. Is Staff still looking for input?

Robinson says, based on the discussion at the last meeting, the plan is to leave it in there as a possibility to be considered when development occurs. It is not in the plan recommending to "do it or not do it".

Pritchard says a light at Cannon and the existing light at Highway 42 would be tight. It could cause more problems that we might solve. I am comfortable with this document.

Motion made by **Hsu** to approve **South Boulder Road Small Area Plan, Resolution No. 5, Series 2016**: a resolution recommending approval of the South Boulder Road Small Area Plan, seconded by **Rice**. Roll call vote.

Name	Vote
Chris Pritchard	Yes
Cary Tengler	Yes
Ann O'Connell	Yes
Jeff Moline	Yes
Steve Brauneis	Yes
Tom Rice	Yes
David Hsu	Yes
Motion passed/failed:	Pass

Motion passes 7-0.

- **Citywide Wayfinding Signs: Resolution 4, Series 2016.** A request to review a draft copy of the Citywide Wayfinding Sign package. *Continued from February 11, 2016.*
 - Staff Member: Scott Robinson, Planner II

Robinson says this was continued from the February 11, 2016 meeting. You requested more information on pricing and maintenance. These prices are found in the Staff Report Update including maintenance. The prices are very rough. Our consultant asked a fabricator to take a quick look at it and give him estimate numbers.

Unit Pricing

These numbers are estimates as the designers have not yet specified materials, thicknesses, dimensions or illumination, all of which could affect the final cost. When interpreting these estimates, it would make sense to factor in a 25% contingency cost for each sign. Also, it is important to consider that materials costs fluctuate, as does the cost of labor, so these price ranges are subject to change:

- Wayfinding/Map Kiosk - \$6,000 - \$7,500
(Install \$1,000 - \$2,000)
- Gateway Monument Sign - \$8,000 - \$12,000
(Install \$3,000 - \$5,000)
- Illuminated Bollard - \$1,500 - \$3,500
(Install \$500 - \$1,500)
- Directional Marker - \$400 - \$800
(Install \$300 - \$750)
- District Seals - \$600 - \$1,200
(Install \$150 - \$450)
- Pole Mounted Directional - High Speed (including seal) - \$1,200 - \$2,600
(Install \$150 - \$450)
- Pole Mounted Banners - \$900 - \$1,800
(Install \$500 - \$850)
- Pole Mounted Directional - \$1,000 - \$3,000
Install (\$200 - \$700)
- Primary Monument Sign - \$9,000 - \$16,000
(Install \$3,000 - \$5,000)

Maintenance

Certain materials can be treated with a graffiti resistant coating to reduce damage. Powder coating on the metals can be specified to be graffiti resistant. Otherwise, everything can be repainted as needed or power washed. It becomes trickier if wood is used. There are alternatives to wood that look real, but are different materials that would be more durable.

Pritchard confirms that these materials can be used on all three sign Families.

Rice asks about the financial ranges and whether they apply to all three Families of signs.

Robinson says the cost estimates were based on Family 3.

Tengler asks Staff if he was surprised at the numbers and if they seem reasonable.

Robinson says they appear reasonable but construction prices are going up.

Pritchard, Tengler, Moline, Rice, Brauneis, O'Connell and **Hsu** like Family 3 best.

Brauneis clarifies the difference between the word Established versus the word Since. I like the word Established.

Robinson says the town was platted in 1878 and incorporated in 1881.

O'Connell asks if there is any talk about redesigning the city logo? I suggest that if there is any movement on redesigning the logo, that it be done before sign investment is made.

Robinson says yes, there has been some talk but no movement at this point.

Moline asks about the trails signage.

Robinson says OSAB and Parks Department are working a separate trails wayfinding program. We are coordinating with them.

Motion made by **Rice** to endorse the Signage and Wayfinding by Staff, seconded by **Moline**. Voice vote. Motion passes 7-0.

Planning Commission Comments:

None.

Staff Comments:

Robinson says five finalists were announced for Planning Director position. Their names are available on the City website. There will be an Open House on Tuesday, March 15, at 5:30. On Wednesday, March 16, at 8:30, there will be an exercise Mock City Council.

Items Tentatively Scheduled for the regular meeting: April 14, 2016:

- **Coal Creek Station Final PUD:** A request for a final plat and PUD for the existing property at the SW corner of South Boulder Road and HWY 42 owned by Coal Creek Station Properties, LLC. The project will be developed as a combination of new commercial space, to replace older existing buildings on the site and an extension of the residential neighborhood from the south.
 - Applicant and Representative: BVZ Architects (Gary Brothers)
 - Owner: Coal Creek Station Properties, LLC (Bill Arnold)
 - Case Manager: Scott Robinson, Planner II
- **Business Center at CTC GDP Amendment:** A request for an amendment to the Business Center at CTC general development plan to allow wedding/event venues.
 - Applicant and Representative: Mark Danielson
 - Owner: EJ Louisville Land LLC
 - Case Manager: Lauren Trice, Planner I
- **McCaslin Blvd Small Area Plan:** A request to review a draft copy of the McCaslin Blvd Small Area Plan.
 - Staff Member: Scott Robinson, Planner II
- **Accessory Structure Setback LMC Amendment:** A request to modify the Louisville Municipal Code to reduce the minimum setback requirements for accessory structures.
 - Staff Member: Lauren Trice, Planner I

Adjourn:

Tengler made motion to adjourn, **Hsu** seconded. **Pritchard** adjourned meeting at 9:33 PM.

ITEM:	Case #14-007-FP/FS, Coal Creek Station
PLANNER:	Scott Robinson, Planner II
APPLICANT:	BVZ Architects 3445 Penrose Place, Suite 220 Boulder, CO, 80301
OWNER:	Coal Creek Station LLC 1600 38 th Street, Suite 201 Boulder, CO 80301
REPRESENTATIVE:	Gary Brothers, AIA BVZ Architects
EXISTING ZONING:	Mixed-use Commercial Community (CC), Mixed-use Residential (MU-R), Residential Medium-density (RM)
LOCATION:	The property includes the land south of South Boulder Road, west of Hwy 42, north of Little Italy, and east of the BNSF tracks, excluding the Union Jack Liquor Store, Fordyce Auto, and the car wash.
LEGAL DESCRIPTION:	A subdivision in the NE1/4 NE1/4 of Section 8, T1S, R69W of the 6 th PM and a re-subdivision of Coal Creek Station Filing No. 2 and a portion of Caledonia Place
TOTAL SITE AREA:	10.97 acres
REQUEST:	A request for a final plat and final PUD for a mixed use development including 29,472 square feet of commercial and 51 residential units.



BACKGROUND:

The applicant, BVZ Architects, has submitted a plan to develop the Coal Creek Station property as a mixed use project. The property is 10.97 acres and was platted as part of the Caledonia Place subdivision in 1890. Parts of the property have been replatted over the years to allow for commercial development, including the railroad car restaurant, the Louisville Cyclery building, the former 7-11 building, and the Tim's Trains building. The small building that houses Precision Pours is on a separate lot and not part of this development. The remainder of the property is vacant.

The proposed development includes 29,472 square feet of commercial space, replacing 13,440 square feet of existing commercial space for a net increase of 16,032 square feet. The request includes 51 residential units: 34 as duplexes and 17 as townhomes.

The property is located within the Highway 42 Revitalization Area and was rezoned in accordance with Chapter 17.14 – Mixed Use Zone District in the Louisville Municipal Code (LMC) at the time of preliminary plat and PUD approval in 2013. Section 17.28.180 of the LMC requires final PUD applications be submitted within one year of preliminary PUD approval. The preliminary PUD was approved by City Council July 2, 2013 and the final PUD application was received by the City on January 31, 2014. The application has been going through the review process in the intervening two years, but because the application was received less than one year after preliminary approval, the preliminary PUD is still valid.

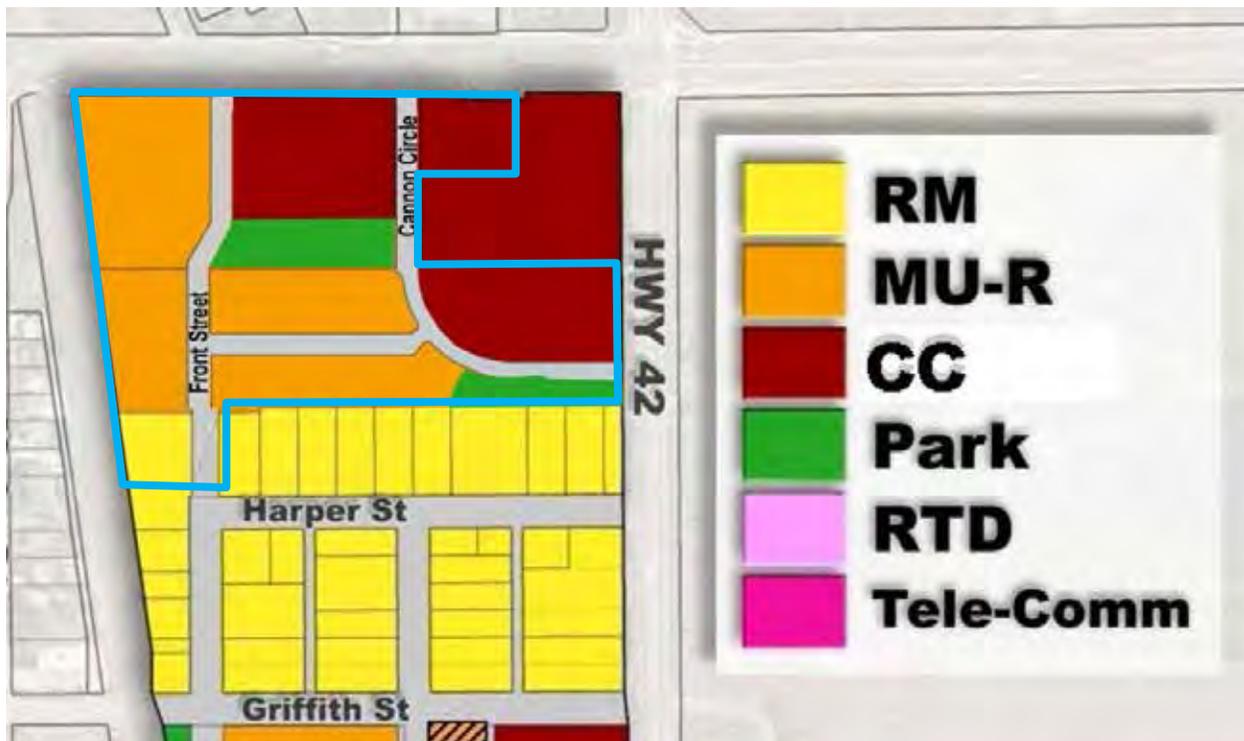
REQUEST:

The applicant is requesting a final plat and PUD to allow for the placement of 51 residential units and 29,472 square feet of commercial. The preliminary PUD included a request for 34,335 square feet of commercial, so the current request includes a reduction of 4,863 square feet of commercial and no change in the number of residential units. The changes are broken down below:

Commercial	Preliminary	Final	Difference	Change
Building A	8,010 SF	6,430 SF	-1,580 SF	-20%
Building B	11,450 SF	8,995 SF	-2,455 SF	-21%
Building C	9,575 SF	8,750 SF	-825 SF	-9%
Building D	5,300 SF	5,297 SF	-3 SF	-0.1%
Residential	Units			
Duplex	34	34	0	N/A
Townhouse	17	17	0	N/A

Zoning

The property was rezoned at the time of preliminary approval in accordance with the Land Use Plan referenced as Exhibit A in Section 17.14.020 of the LMC. The property is in the Highway 42 Revitalization Area and is governed by chapter 17.14 of the LMC and the Mixed Use Development Design Standards and Guidelines (MUDDSG).



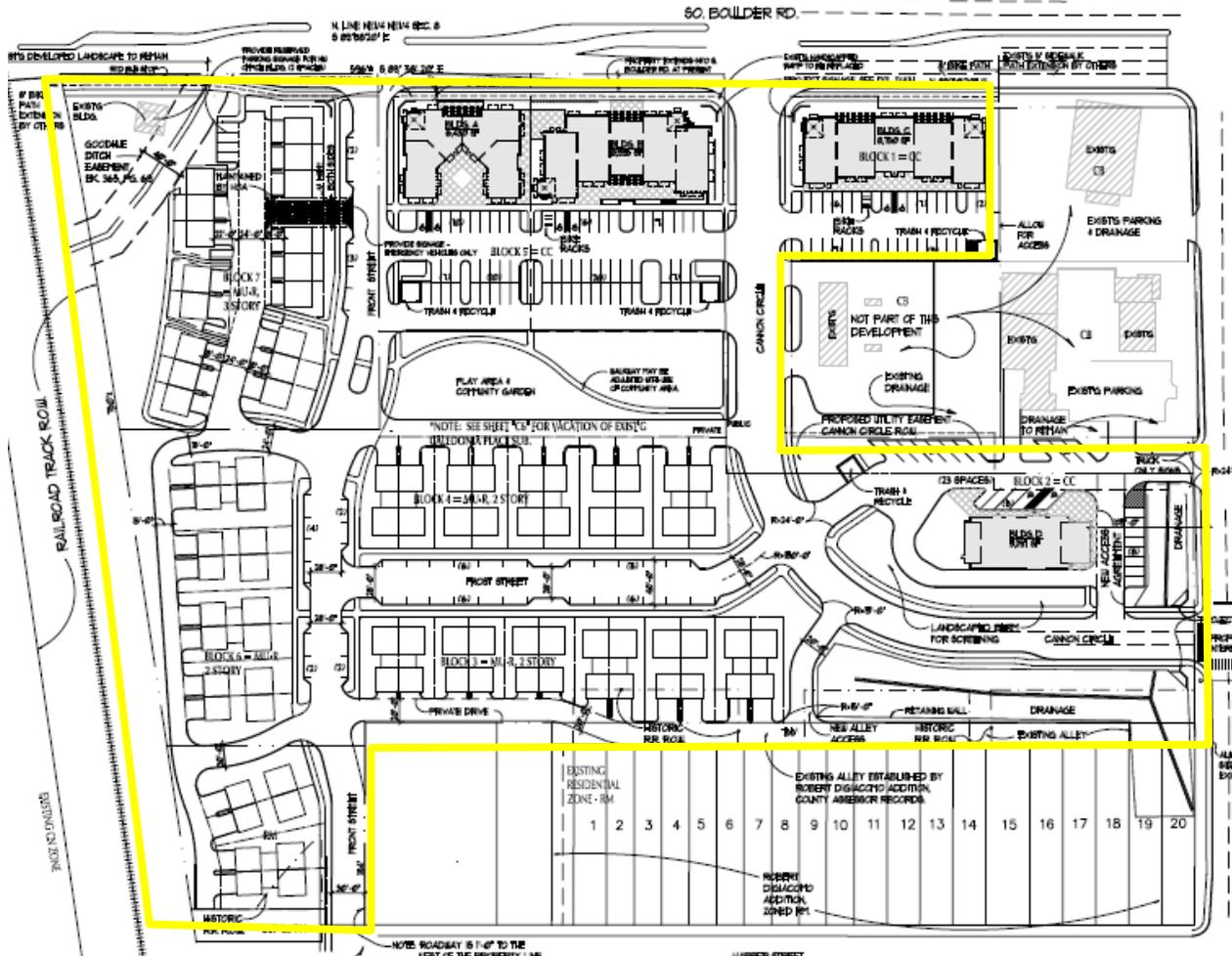
Land Use Plan (Exhibit A) and Zoning

Final Subdivision Plat

Blocks

The proposed block layout complies with the MUDDSG and matches in scale and style with the existing residential neighborhood to the south. The eastern residential portion

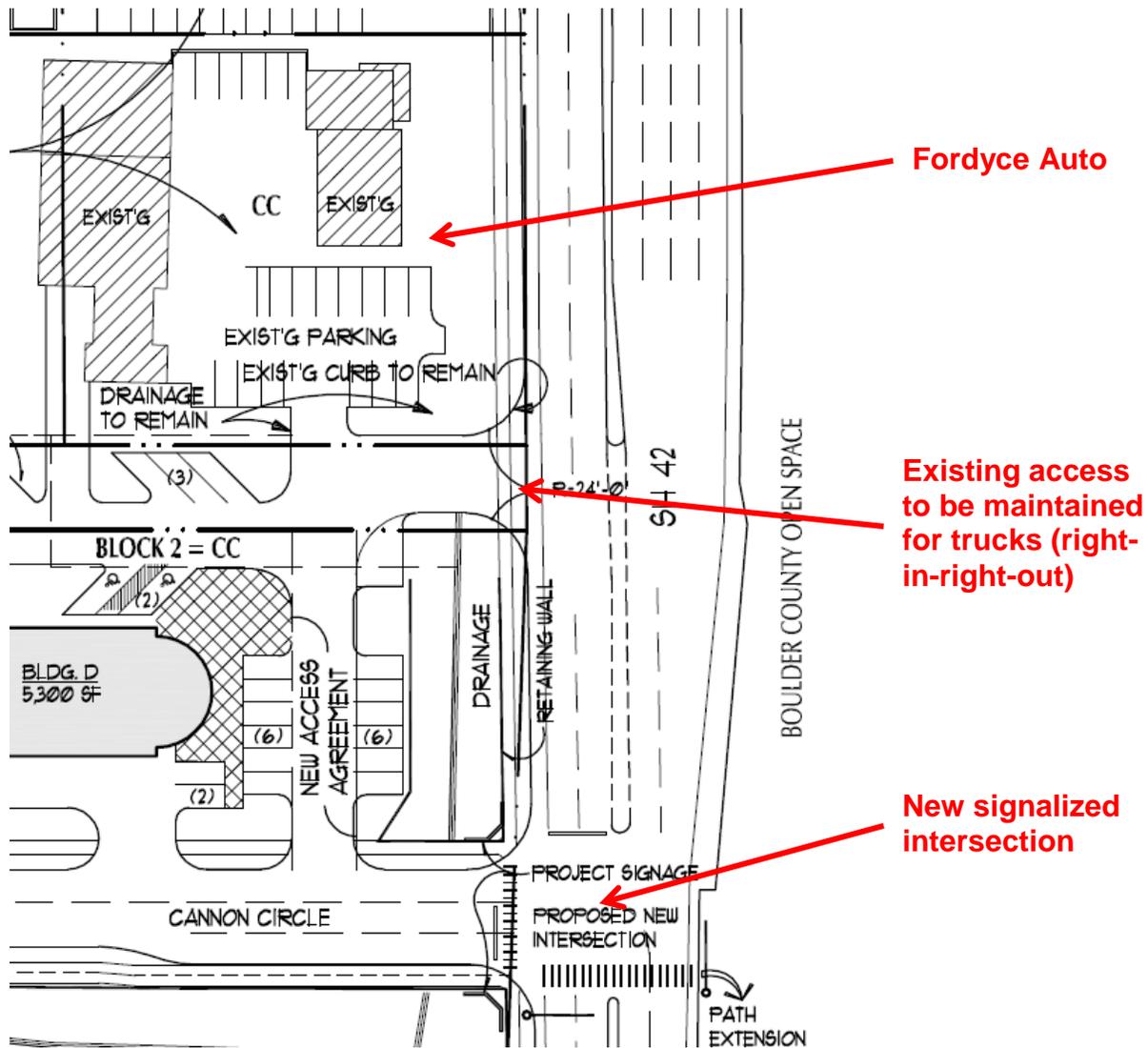
matches the north-south lot orientation of the Nicola DiGiacomo subdivision immediately to the south, while the western portion matches the east-west lot orientation of Caledonia Place. The block lengths and widths are appropriate, and alley access is provided for all residential units. The commercial section follows the requirements of the MUDDSG by moving the buildings to the street and providing parking behind.



Site Plan

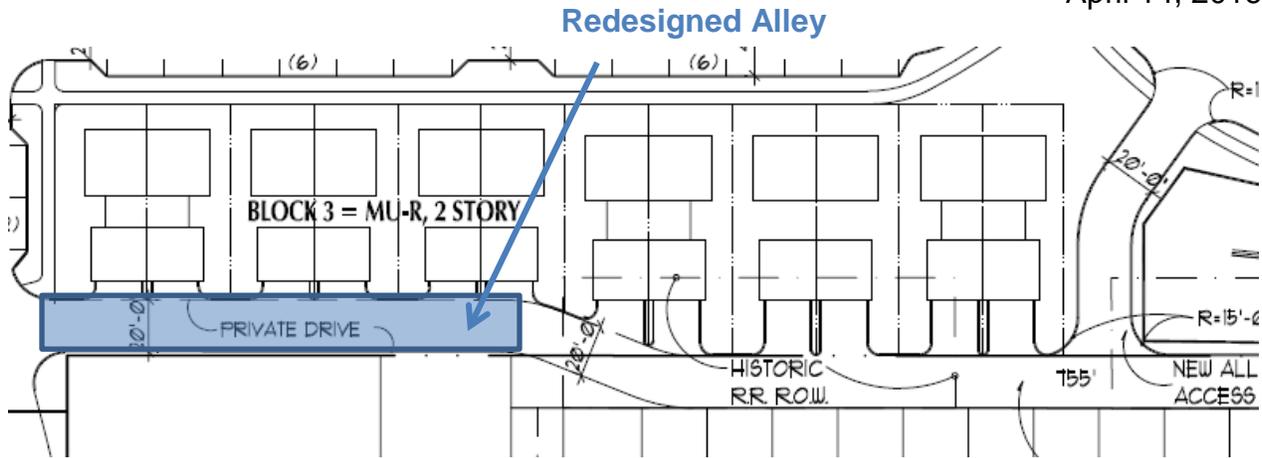
Streets and Alleys

The streets in the development are intended to serve local traffic and provide alternative routes for a small amount of through-traffic. As such, the streets are narrow and designed to accommodate on-street parking. The street sections have been approved by the Public Works Department. Sidewalks are provided on both sides of the streets, except for the southeast portion of Front Street where there is limited right-of-way. Bicycle traffic will be handled on-street, as it is in Old Town, and the low speeds and traffic volumes will provide for a safe environment without the need for dedicated bike lanes or a separate trail.



The applicant proposes realigning the southern east-west portion of Cannon Circle to better serve the development, meet signal spacing requirements to allow for a traffic signal on Highway 42, and to align with the access to the Harney/Lastoka Open Space east of Highway 42. Business access to Fordyce Auto will be provided by access easements across Lot 1, Block 1, and a right-in-right-out access will be maintained at the location of the current intersection of Cannon Circle and Highway 42 to allow for truck access to Fordyce Auto. The owner of Fordyce Auto has agreed to these changes.

The alley at the south side of the property, just north of Little Italy, is an existing platted but unimproved City alley. There was a condition of approval on the preliminary PUD that property concerns for the alley be addressed before final PUD. The applicant has acquired the remnant railroad parcels and redesigned the alley to go around the private property on the west side. There was also a condition that maintenance of the alley be determined before final. Because of the unusual design, the dead end on the east side, and the private portion on the west side, staff recommends a condition requiring the HOA to maintain the alley.



Another condition placed on the preliminary approval was that turning radii be provided to ensure fire trucks and other large vehicles could navigate the intersections. The applicant has provided the requested information, however the Louisville Fire Protection District has asked for some additional information in a memo dated February 18, 2016, which is attached. Staff recommends a condition of approval that the applicant satisfy the requests in the memo before review by City Council.

The Public Works department has reviewed the revised submittal and several items that need to be addressed in the attached memo dated April 7, 2016. None of the items should significantly impact the design or functioning of the development. Staff recommends a condition requiring the applicant to comply with the items in the memo before recordation of the plat and PUD.

Public Land Dedication

LMC Section 16.16.060 requires a public land dedication for subdivisions unless "satisfactory dedication arrangements were made and approved by the City Council at the time of annexation or previous subdivision of the same property." This property was previously subdivided as Caledonia Place in 1890 and, given its approval at that time; staff assumes the public land dedication was considered adequate by City Council.

Additionally, the applicant is providing a privately maintained public trail and park space as shown on the Land Use Map Exhibit A. Furthermore, no additional park space was identified as needed in the City of Louisville's 2011 Park Recreation Open Space and Trails Master Plan (PROST). Finally, LMC Chapter 3.18 requires that new development pay impact fees to mitigate the increased demand on City services, including parks and open space. This development will be required to pay those impact fees at the time building permits are issued. Therefore, staff has determined that a public land dedication is not required.

Final PUD Development Plan

Land Use

The proposed land uses comply with the proposed zoning and LMC Chapter 17.14, except for the residential density. LMC Section 17.14.060 sets the minimum residential density in the MU-R district at 12 units per acres; the applicant is requesting a density of 6.9 units per acre.

Section 17.14.090(A)(2)(b)(i) of the LMC allows for waivers or modifications to the underlying zoning requirements through the PUD process if “the proposed development represents an improvement in site and building design over that which could be accomplished through strict compliance with otherwise applicable district standards.”

Staff believes the waiver for reduced density is justified because it will provide a better transition between the commercial development and the existing residential neighborhoods to the south. Also, this development is outside the quarter-mile influence area for the proposed FasTracks station, so the higher densities associated with transit-oriented development are not necessary and will likely not impact ridership.

At the time of the preliminary approval, the use table in section 17.14.050 of the LMC was modified to allow duplexes as a use by right north of Griffith Street. The duplexes and triplexes proposed in the development plan comply with the municipal code as amended.

Section 17.14.050(D) of the LMC requires a minimum of two different principal uses in the MU-R district for projects larger than five acres. The proposal includes three different principal uses in the MU-R district: Duplexes, Multi-unit dwellings (apartment, condominium, townhome), and Public squares, plazas, and community amenities.

Specific tenants or uses have not been identified for the commercial portion of the development, but the designs of the sites and buildings would allow uses compatible with the zoning. At the time tenants are identified, staff will ensure the proposed uses are allowed in the use table in section 17.14.050 of the LMC.

Bulk and Dimension Standards

The proposed development complies with the yard and bulk standards of LMC Chapter 17.14 and the MUDDSG, except for a few areas for which the applicant is requesting waivers under LMC Section 17.14.090.

In the MU-R zone district, there is a 40% minimum lot coverage requirement, a maximum front setback of 10 feet, and a requirement that at least 70% of the street-facing property lines contain buildings. The proposed lot coverage for the residential lots varies between 30% and 40%. The front setback for most lots is 12 feet, though some lots have significantly larger front setbacks where the roads start to curve, going to 30 feet. The 70% frontage requirement is met on most lots, but there are a few lots with larger, curved front lot lines where the frontage drops to around 60%. Considering the reduced density, these modifications to the yard and bulk standards are justified to make an attractive and functional development.

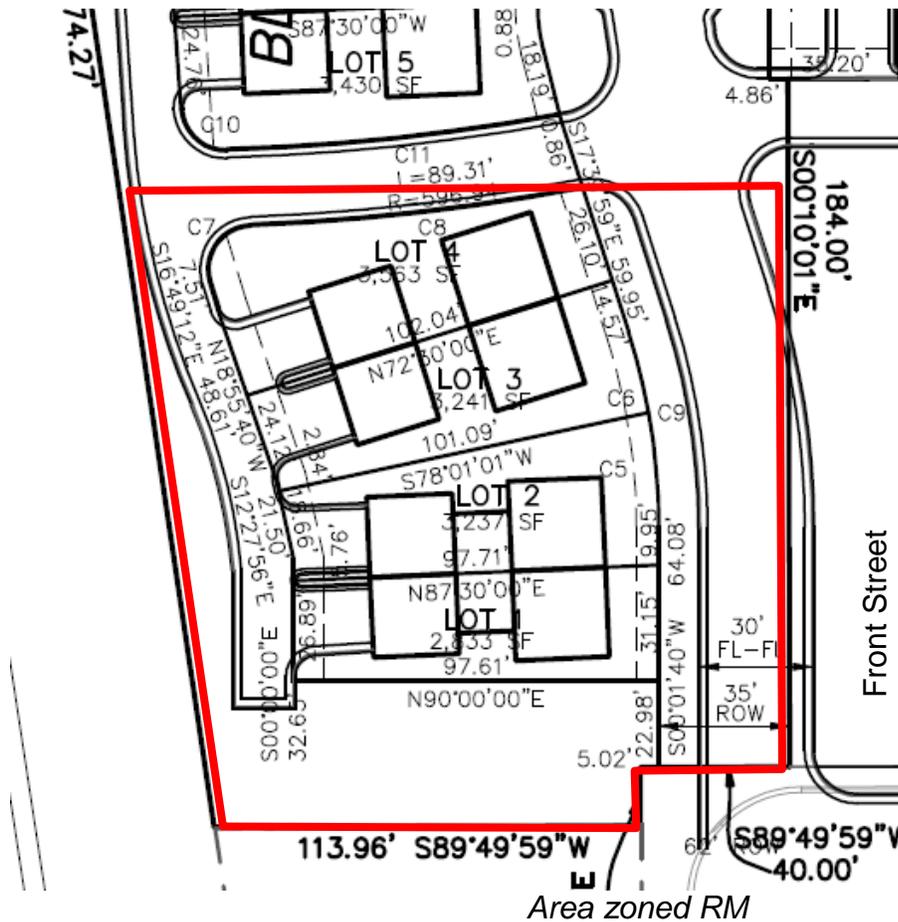
Waiver	Requirement	Request
Lot coverage	40%	30%
Front Setback	10 feet	30 feet
Lot line coverage	70%	60%

Where the southern alley has been realigned the rear setback for the adjacent structures has been reduced to seven feet. This still complies with the residential protection standards of the MUDDSG, which require at least 15 feet from the rear lot line of the RM properties. The structures would be 27 feet from the rear lot line of the RM properties.

The residential setbacks on the cover sheet of the PUD represent the minimum conditions in the development. Staff recommends a condition that the notation be modified to show the standard condition with exceptions for the minimums. This would include changing the rear setback requirement to 20 feet, with an exception of seven feet allowed for the properties adjacent to the realigned alley. It would also include modifying the side setback to state the standard is five feet, except zero may be allowed for buildings that straddle lot lines.

There are four units in two duplexes proposed for the area zoned RM. In RM, the minimum lot size is 7,000 square feet, with a minimum lot area per dwelling unit of 3,500 square feet. The four lots on which the units will sit, plus the surrounding outlot, total more than 17,000 square feet, giving over 4,250 square feet per unit. However, because each unit is on its own lot, none of the lots meet the 7,000 square foot minimum size requirement, or the 60 foot minimum width requirement. Waivers to the lot size, lot area per unit, and lot width requirements are therefore required.

	Required	Requested
Minimum lot size	7000 sq ft	2,800 sq ft
Minimum lot are per unit	3,500 sq ft	2,800 sq ft
Minimum lot width	60 ft	26 ft



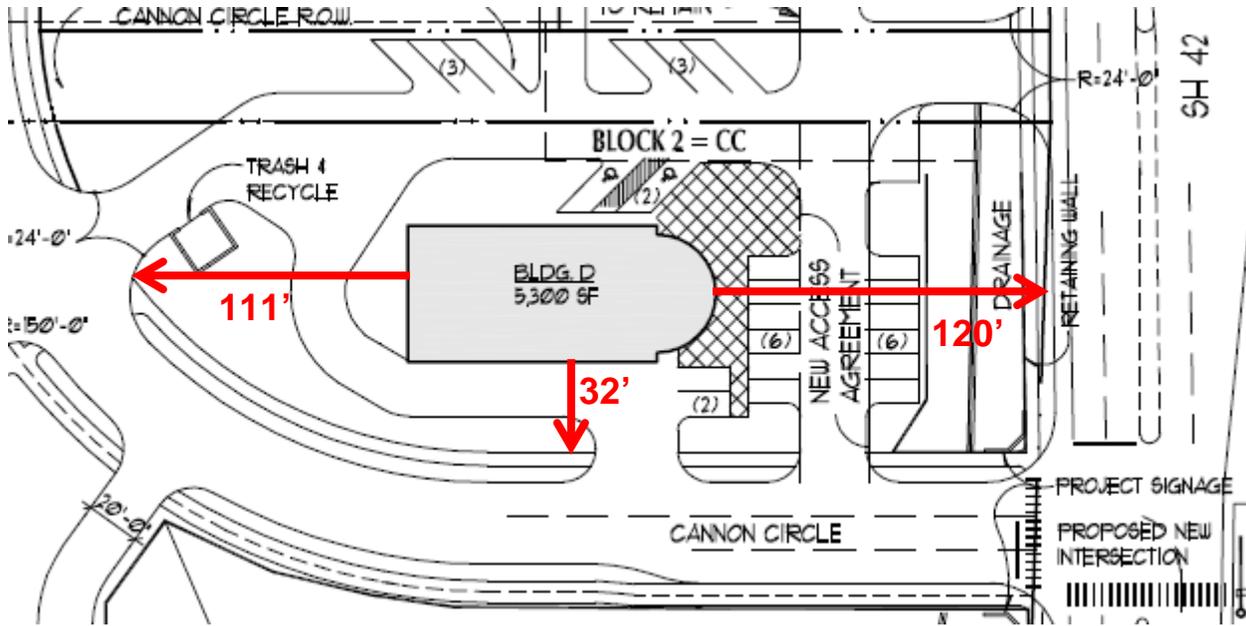
Because of the small lots and shared walls of the duplexes, there are also waivers required for setbacks and lot coverage.

Setback	Required	Requested
Front	25'	13'
Side	7'	0' (shared wall) 5' (exterior wall)
Rear	25'	20'
Lot Coverage	35%	50%

These waivers will allow the units in the RM area to match the rest of the proposed development while still providing an appropriate transition from the established Little Italy neighborhood. The overall scale and density will be the same as is allowed by right in the RM district.

In the MU-CC zone district the minimum lot coverage is 30% and the maximum setback is 60 feet from Highway 42 or South Boulder Road and 30 feet from interior streets. The proposed lot coverage for Lot 1, Block 1, on which Building D sits, is 10%. The setback to Highway 42 is 120 feet, while the setbacks to Cannon Circle are 32 feet to the south and 111 feet to the west. The low lot coverage and large setbacks are caused in part by the easement required to provide access to Fordyce Auto, and in part by the circulation

requirements of a drive-through restaurant. Given the location, constraints, and surrounding development, staff recommends these waivers be approved.



Waiver	Requirement	Request
Lot Coverage	30%	10%
Hwy 42 setback	60 feet	120 feet
Cannon Cir setback	30 feet	111 feet

As noted above, the size of the commercial buildings has been reduced between the preliminary and final submittals. As such, buildings A and B no longer meet the minimum lot coverage requirement either, covering 25% and 24% of their lots respectively. Building C meets the minimum lot coverage requirement, covering 31% of the lot, and buildings A, B, and C meet all of the other bulk and dimension standards. The applicant has requested waivers for the lot coverage requirement for buildings A and B.

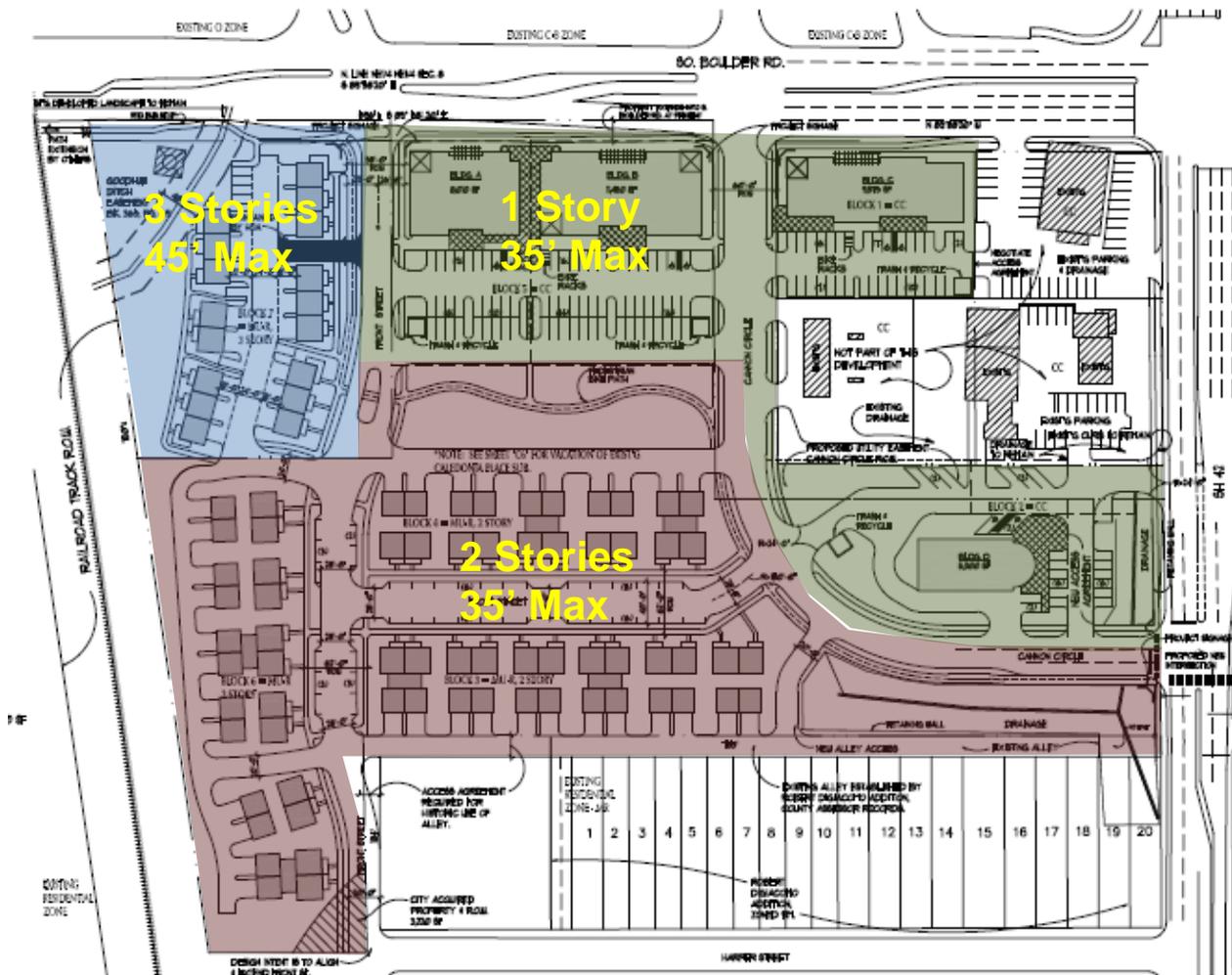
According to the applicant, “the retail spaces have intentionally been sized to promote smaller retail users which will be more in keeping with a neighborhood setting.” The amount of parking and drive aisle on each lot has remained the same. The space that was formerly part of the buildings has been converted to additional plaza and landscape area. Because the applicant is providing additional outdoor space to enhance the site design and provide more useable commercial space, staff recommends approval of the waivers.

Height

Section 17.14.060 of the LMC requires a minimum building height of 35 feet and two stories, while allowing a maximum height of 45 feet and three stories in both the CC and MU-R districts. Section 17.12.040 of the LMC allows a maximum height of 35 feet in the RM zone district. The applicant is proposing one story buildings in the CC district with a

maximum height of 35 feet. In the MU-R district, the duplexes would have two stories, with a maximum height of 35 feet and the townhomes would have three stories with a maximum height of 45 feet. The RM district would only have duplexes with a maximum height of 35 feet.

The applicant is requesting a waiver to allow one story buildings in the CC district, and buildings shorter than 35 feet in CC and MU-R. Staff recommends approving these modifications under LMC Section 17.14.090 because the lower heights will be more compatible with the density of the development and the adjacent neighborhood. The proposal complies with the height transition standards where abutting the RM zone district.



Parking

Under the MUDDSG, the development must provide 102 off-street parking spaces for the residential units, plus 7 guest spaces that may be provided on-street under Section 4.1(C). The applicant is proposing 102 off-street spaces and 40 on-street spaces in the residential area. In the commercial area, Buildings A, B, and C meet the retail parking requirement of one space per 300 square feet, but Building D exceeds the maximum

allowance of 1.25 spaces per 300 square feet for restaurants. The applicant is proposing 23 spaces, or 1.3 spaces per 300 square feet, which is one more than the maximum allowed. Staff recommends a waiver because of the use requested and the site design.

As part of an earlier agreement, this development is required to provide two parking spaces to the former State Farm office building. Those spaces are provided at the northwest corner of the development.

Transportation

The applicant has provided a Traffic Impact Analysis, which shows the traffic generated by the development will not adversely affect the surrounding roads. The South Boulder Road and Highway 42 intersection will continue to operate at a peak hour Level of Service (LOS) C, its current LOS, through the year 2035. The accesses to the development off of South Boulder Road and Highway 42 will operate at LOS A or B through 2035.

The internal streets are adequate for site circulation. The Cannon Circle connection will allow drivers going from eastbound South Boulder Road to southbound Highway 42 to avoid the signal at South Boulder Road and Highway 42, alleviating the need for a dedicated right turn lane at that intersection. The connection of Front Street to Griffith Street will allow access to Downtown and the signal at Main Street and South Boulder Road.

Parks, Recreation, Trails and Open Space

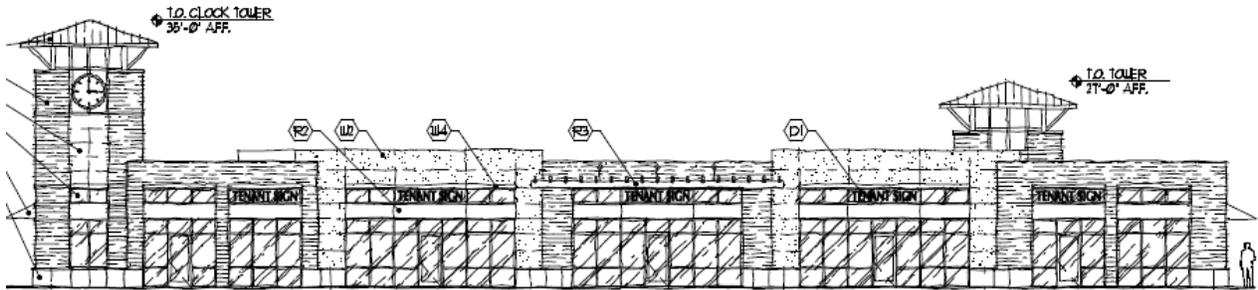
The applicant is proposing an expanded sidewalk along South Boulder Road. This would serve as a connection from the trail proposed in the draft South Boulder Road small area plan from Cottonwood Park to the Main and South Boulder Road intersection to the existing sidewalk/trail along the north side of the Harney/Lastoka open space east of Hwy 42. The portion of the sidewalk in front of Union Jack Liquor will not be expanded as it is not part of this development, but any future redevelopment of that lot will allow the path to be completed. This proposal complies with the condition placed on the preliminary approval requiring provision of the expanded sidewalk.

The applicant is also proposing a trail through the development from the Front Street and South Boulder Road intersection to the Cannon Circle and Hwy 42 intersection. Through the center of the development, the trail will run through a landscaped buffer and common area between the residential and commercial portions of the site. The applicant is proposing play areas and community gardens in the common area. The Parks and Recreation Department has reviewed the proposal and requested the trail not be dedicated to the City, but be maintained by the HOA.

Urban Form

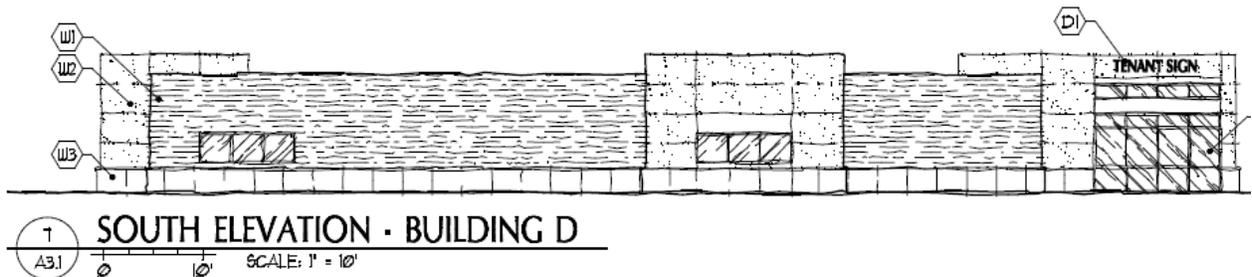
The proposed development matches the desired urban form for the Revitalization Area. Except for Building D, the commercial structures are fronted towards the street with parking provided behind the building. The residential units are on connected urban streets with alley access. The proposed development will provide an attractive anchor to

one of the most important intersections in the City while acting as a compatible neighbor to the adjacent established residential neighborhood.



Building B

The proposed commercial buildings comply with the design guidelines in the MUDDSG. They include significant glazing, a mix of compatible materials, and vertical and horizontal articulation. Awnings and canopies are provided to help define the building entrances, and except for Building D, all four sides of the buildings are treated equally in design.



The west and south elevations of Building D have less glazing and detailing, but still provide a mix of materials. These larger areas of solid walls are to accommodate the drive-through function of the proposed building. They would not be accessible to pedestrians and would be buffered by landscaping.



Residential Character Drawing

Staff has not required the applicant to provide specific elevations for residential buildings in the PUD. Specific designs are only required in PUDs for multi-family residential

projects. In addition, the MUDDSG does not include design guidelines for duplexes as they were not originally allowed in the Revitalization Area. The applicant has provided a residential character drawing in the PUD, showing what the residential buildings are anticipated to look like. The proposed designs appear to be compatible with the intent of the design guidelines and the surrounding areas. To ensure compatibility, staff recommends a condition that the applicant add a note on the PUD stating residential buildings will comply with the design standards and guidelines for multi-family residential in section 10 of the MUDDSG to the maximum extent practicable. These standards and guidelines address elements such as materials, glazing, roof forms, and porches.

Signs

Signage in the development would be governed by the Commercial Development Design Standards and Guidelines, as required by the MUDDSG. The applicant is proposing halo-lit wall signs for the commercial buildings. The PUD also includes monument signs to identify the project at the major entrances. The design of the proposed monument signs complies with the CDDSG, however staff is concerned about the number. The applicant is proposing two at each of the three major entrances, or six total. The CDDSG does not give a limit on the number of monument signs for projects of this nature, but the City has usually limited monument signs to one per entrance. Staff recommends a condition to reduce the number of monument signs to three.

Landscaping

The applicant is proposing landscaping to buffer the development from South Boulder Road and Hwy 42, as required by the MUDDSG. The proposal also includes landscaping and buffering for the parking lots, as required by the design guidelines. The landscaping around the commercial and residential buildings also meets the requirements of the MUDDSG.

STAFF RECOMMENDATION:

Staff recommends approval of the requested final plat and final PUD for the development called Coal Creek Station. The proposal would allow for the development of a mixed use project in the Highway 42 Revitalization Area with the following waivers:

- Decreased residential density in the MU-R district
- Decreased minimum lot coverage in the MU-R district
- Increased maximum front setback in the MU-R district
- Decreased minimum front lot line coverage in the MU-R district
- Decreased minimum lot size, lot area per unit, and lot width in the RM district
- Decreased minimum setbacks in the RM district
- Increased maximum lot coverage in the RM district
- Decreased minimum lot coverage for Buildings A, B, and D in the MU-CC district
- Increased maximum setbacks for Building D in the MU-CC district
- Increased maximum parking allowance for Building D in the MU-CC district
- Decreased minimum height and story requirements in both MU-R and MU-CC districts

Staff has determined the waivers are appropriate under LMC Section 17.14.090 to allow for an effective development given the location and surrounding land uses.

Staff recommends the following conditions of approval:

1. The southernmost alley will be maintained by the HOA.
2. Satisfy the comments in the Louisville Fire Protection District memo dated February 18, 2016 before City Council.
3. Comply with Public Works comments in April 6, 2016 memo before recordation.
4. Change the rear setback requirement to 20 feet, with an exception of seven feet allowed for the properties adjacent to the realigned alley. Modify the side setback to state the standard is five feet, except zero may be allowed for buildings that straddle lot lines.
5. Limit the number of monument signs to three.
6. Add a note to the PUD that the residential buildings will comply with the design standards and guidelines in section 10 of the MUDDSG to the maximum extent practicable.

ATTACHMENTS:

1. Resolution No. 8, Series 2016
2. Application documents – Land Use Application, Letter of Intent, etc.
3. Final Plat
4. Final PUD
5. Transportation impact analysis
6. Fire Department memo
7. Public Works memo

**RESOLUTION NO. 08
SERIES 2016**

A RESOLUTION RECOMMENDING APPROVAL OF A FINAL PLAT AND FINAL PLANNED UNIT DEVELOPMENT (PUD) FOR COAL CREEK STATION TO ALLOW FOR THE CONSTRUCTION OF 51 RESIDENTIAL UNITS AND 29,472 SQUARE FEET OF COMMERCIAL SPACE ON AN APPROXIMATE 11 ACRE PARCEL OF THE CALEDONIA PLACE AND COAL CREEK STATION SUBDIVISIONS.

WHEREAS, there has been submitted to the Louisville Planning Commission an application for approval of a final plat and final planned unit development (PUD) for Coal Creek Station to allow for the construction of 51 residential units and 29,472 square feet of commercial space on an approximate 11 acre parcel of the Caledonia Place and Coal Creek Station subdivisions; and

WHEREAS, the City Staff has reviewed the information submitted and found that, subject to conditions, the application complies with the Louisville zoning and subdivision regulations and other applicable sections of the Louisville Municipal Code; and;

WHEREAS, after a duly noticed public hearing on April 14, 2016, where evidence and testimony were entered into the record, including the findings in the Louisville Planning Commission Staff Report dated April 14, 2016, the Planning Commission finds the plat and PUD for Coal Creek Station should be approved with the following conditions:

1. The southernmost alley will be maintained by the HOA.
2. Satisfy the comments in the Louisville Fire Protection District memo dated February 18, 2016 before City Council.
3. Comply with Public Works comments in April 7, 2016 memo before recordation.
4. Change the rear setback requirement to 20 feet, with an exception of seven feet allowed for the properties adjacent to the realigned alley. Modify the side setback to state the standard is five feet, except zero may be allowed for buildings that straddle lot lines.
5. Limit the number of monument signs to three.
6. Add a note to the PUD that the residential buildings will comply with the design standards and guidelines in section 10 of the MUDDSG to the maximum extent practicable.

NOW THEREFORE, BE IT RESOLVED that the Planning Commission of the City of Louisville, Colorado does hereby recommend approval of a final plat and final Planned Unit Development (PUD) for Coal Creek Station to allow for the construction of 51 residential units and 29,472 square feet of commercial space on an approximate 11 acre parcel of the Caledonia Place and Coal Creek Station subdivisions with the following conditions:

1. The southernmost alley will be maintained by the HOA.
2. Satisfy the comments in the Louisville Fire Protection District memo dated February 18, 2016 before City Council.
3. Comply with Public Works comments in April 7, 2016 memo before recordation.

4. Change the rear setback requirement to 20 feet, with an exception of seven feet allowed for the properties adjacent to the realigned alley. Modify the side setback to state the standard is five feet, except zero may be allowed for buildings that straddle lot lines.
5. Limit the number of monument signs to three.
6. Add a note to the PUD that the residential buildings will comply with the design standards and guidelines in section 10 of the MUDDSG to the maximum extent practicable.

PASSED AND ADOPTED this 14th day of April, 2016.

By: _____
Chris Pritchard, Chairman
Planning Commission

Attest: _____
Ann O'Connell, Secretary
Planning Commission

LAND USE APPLICATION

CASE NO. _____

APPLICANT INFORMATION

Firm: BVZ Architects
 Contact: Gary Brothers, AIA
 Address: 3445 Penrose Place, Suite 220
Boulder, CO 80301
 Mailing Address: Same
 Telephone: 303.442.0295
 Fax: 303.442.0296
 Email: Gary@BVZArchitects.com or GLBBVZ@aol.com

OWNER INFORMATION

Firm: Coal Creek Station, LLC
 Contact: Bill Arnold, III - managing member
 Address: 1600 38th Street, Suite 201
Boulder, CO 80301
 Mailing Address: Same
 Telephone: 303.447.2655
 Fax: 303.447.2659
 Email: billarnold@covad.net

REPRESENTATIVE INFORMATION

Firm: See Above
 Contact: _____
 Address: _____
 Mailing Address: _____
 Telephone: _____
 Fax: _____
 Email: _____

PROPERTY INFORMATION

Common Address: 1032 E. South Boulder Rd.
 Legal Description: Lot _____ Blk _____
 Subdivision Coal Creek Filing #2
 Area: 476,837 +/- Sq. Ft.

TYPE (S) OF APPLICATION

- Annexation
- Zoning
- Preliminary Subdivision Plat
- Final Subdivision Plat
- Minor Subdivision Plat
- Preliminary Planned Unit Development (PUD)
- Final PUD
- Amended PUD
- Administrative PUD Amendment
- Special Review Use (SRU)
- SRU Amendment
- SRU Administrative Review
- Temporary Use Permit: _____
- CMRS Facility: _____
- Other: (easement / right-of-way; floodplain; variance; vested right; 1041 permit; oil / gas production permit)

PROJECT INFORMATION

Summary: The project is a redevelopment & replat of the existing property at the SW corner of S. Boulder Rd. & State Hwy 42 owned by Coal Creek Station, LLC. The project will be developed as a combination of new commercial space, to replace older existing buildings on the site, & an extension of the residential neighborhood from the South. This final PUD & Subdivision is as approved in the Preliminary PUD & Subdivision process.

Current zoning: MU-R/CC/RM Proposed zoning: Same

SIGNATURES & DATE

Applicant: _____
 Print: Gary Brothers w/ BVZ Architects
 Owner: _____
 Print: Bill Arnold w/ Coal Creek Station, LLC
 Representative: See Above
 Print: _____

CITY STAFF USE ONLY

- Fee paid: _____
- Check number: _____
- Date Received: _____

Letter of Request for the Redevelopment of Coal Creek Station - PUD
Final PUD and Final Subdivision Submittal, Case# 13-007-FP-FS - 1/30/2014
revised 2/12/2016

PROJECT DIRECTION AND GOALS

It is the intent of this project to become a viable part of the City's commercial and residential community. The project includes the redevelopment of Coal Creek Station, Filing 1, 2, & 3, and the balance of the vacant site. The goal is to redevelop the existing commercial along So. Boulder Rd. and State Hwy 42. The success of the commercial development is enhanced by shifting Cannon Dr. to the South along SH 42 and creating a controlled intersection. To allow for this to happen, the project "Zoning Diagram" has been adjusted to support the Final PUD uses, and has been approved by City Council. The goal of the residential portion of the site is to extend the existing residential neighborhood to the South onto our site. To allow the new residential neighborhood to be developed with a more compatible density and character, we need to request a density reduction for the MU-R zoning, Section 17.14.060, Table 3, from 12 units to 6.5 units/ac. We also need to change the use table, Section 17.14.050, Table 1 to allow duplexes in the MU-R zone district, which has been approved at the Preliminary Review level. This property is an infill site which will add to the existing fabric of the surrounding successful business and residential community. Because this development is located on an "Infill Site", it will be able to provide financial support for the existing services already in place, such as roadways, utilities, and police and fire protection, without adding to the cost of these supporting systems.

SITE CIRCULATION

This development will cater to auto-oriented traffic along with pedestrian and bike users throughout the site. Bike parking is located at each commercial location. The extension of Front St. and re-establishing Frost St. from the original "Caledonia Place" subdivision, helps extend the existing residential circulation onto the site. The development is organized to keep higher activity users closest to the major roadways, and less active users in the residential area. The development will use a Play / Community Garden area to buffer the residential activity from the commercial users. It has also been agreed on that the pedestrian/bikeway along So. Boulder Rd. be extended to connect to the establish pedestrian/bikeway on the East side of Hwy 42. As Cannon Cir. is relocated to the South an access will remain for the Fordyce property and will be tied to the new Cannon Cir. access. This will remain in place until the Pad Site to the South is developed.

BUILDING CHARACTER

The commercial buildings on the site shall be in keeping with the surrounding building

character with a 1 to 1 1/2 story height. The goal of the single story spaces will be to cater to neighborhood retail users. The retail spaces have intentionally been sized to promote smaller retail users, which will be more in keeping with a neighborhood setting.

The goal of the residential elements of the development will be to extend the existing residential neighborhood feel onto our site. We have re-establish Frost Street from the original "Caledonia Place" subdivision located on this site. In addition, the "Energy Star" standards of construction will be a key to our approach to the quality of the end product. The character study provided indicates a reference to the desired roof forms and front porch design approach. We are asking for a reduced density for the residential portion of the site from 12 units/ac to 6.5 units/ ac. We have also requested to allow "Duplexes" in the MU-R zone, Section 17.14.050, Table 1. This allows a more compatible residential character for the existing neighborhood to the South, and was approved at the Preliminary PUD review.

LANDSCAPE AND SITE PARKING

The landscape plan has incorporated the existing healthy mature trees on the site, the majority of which are on the NW corner. This allows for a great starting point for the park like Play/Community Garden area that moves across the site from West to East, providing a visual buffer from the residential neighborhood to the commercial/retail area. The Play/Community Garden area will be controlled by the homeowners of the residential area.

The parking plan provides more parking than required for the residential and commercial areas of the development. In addition, we have provided bike parking areas within the commercial parking lots to encourage the connection to the bikeway user.

ADDITIONAL WAIVER REQUESTS that were approved at the Preliminary PUD review –

Please provide a waiver for 30% minimum building coverage requirement in the CC district for Building D, as per staff's suggestion.

Please provide a waiver for 40% minimum building coverage requirement in the MU-R district, as per staff's suggestion.

Please provide a waiver for the maximum building setback for Building D in the CC district from Hwy 42 and Cannon Cir., as per staff's suggestion.

Please provide a waiver for the maximum 10' building setback for the residential

buildings in the MU-R district, as per staff's suggestion.

Please provide a waiver for the requirement that 70% of the "street facing property" include a building in the MU-R district, as per staff's suggestion.

Please provide a waiver to the Development Standards and Guidelines for the CC and MU-R district, as per staff's suggestion.

Please provide a waiver for the requirement that Building A & B meet the minimum lot coverage of 30% in the CC district, as per staff's suggestion.

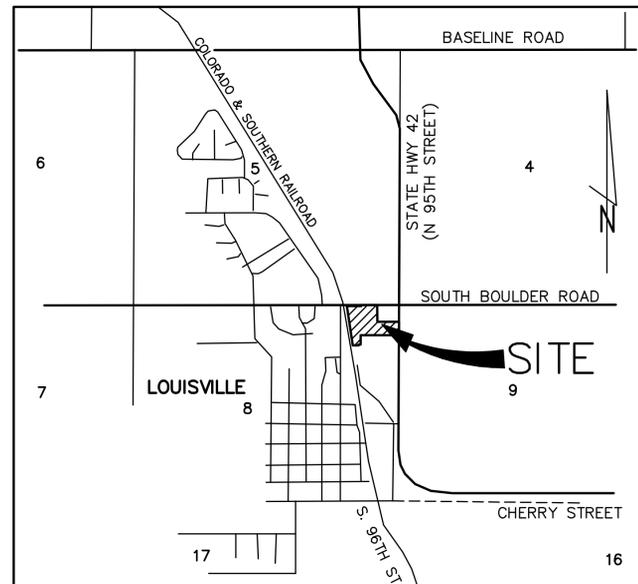
Please provide a waiver for the parking for building D from 1.25 spaces per 300 SF. to 1.35 spaces per 300 SF (adds one more space) in the CC zoning district, as per staff's suggestion.

Please provide a building height waiver from 27' to 35' for the RM portion of your site which will effect 2 buildings (4 units) in the SW corner of the site, as per staff's suggestion. See * on the plan A0.0 for location.

Please provide a building height waiver from 27' to 35' for the MU-R zoning portion of your site that is within 50 feet of the RM zoning portion of your site. This effects 1 building (2 units) in the SW corner of the site, as per staff's suggestion. See * on the plan A0.0 for location.

End of Letter of Request

COAL CREEK STATION FILING NO. 4
 PLAT SET
 SHEET 1 OF 6



VICINITY MAP
 N.T.S.

SHEET INDEX

- 1 COVER SHEET
- 2.. FINAL PLAT (SHEET 1)
- 3. FINAL PLAT (SHEET 2)
- 4. EASEMENT AND RIGHT-OF-WAY VACATION PLAN
- 5. STREET SECTIONS
- 6. PAVING PLAN
- 7. TURNING RADIUS PLAN

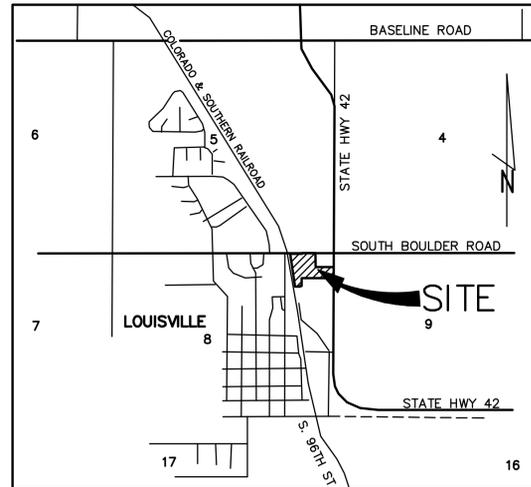


NO.	DATE	DESCRIPTION	BY
1	02/12/16	CITY COMMENTS	R.J.L.

	PARK ENGINEERING CONSULTANTS 420 21ST AVENUE, SUITE 101 LONGMONT CO. 80501 (303)651-6626		
	COAL CREEK STATION FILING NO. 4 COVER SHEET		
JOB NO. 294-1	DATE 1/30/14	CAD NO. 2941BASEREV1	SHEET NO. 1 OF 7

FINAL PLAT
COAL CREEK STATION FILING NO. 4
A REPLAT OF COAL CREEK STATION FILING NO. 2,
A PORTION OF THE PLAT OF CALEDONIA PLACE AND ADDITIONAL LAND SITUATED IN THE
NORTHEAST QUARTER OF THE NORTHEAST QUARTER OF SECTION 8, TOWNSHIP 1 SOUTH,
RANGE 69 WEST, OF THE SIXTH PRINCIPAL MERIDIAN,
CITY OF LOUISVILLE, COUNTY OF BOULDER, STATE OF COLORADO

SHEET 1 OF 2



VICINITY MAP
NOT TO SCALE

OUTLOT SUMMARY CHART				
OUTLOT	AREA	USE	OWNERSHIP	MAINTENANCE
A	0.43 AC	OPEN SPACE, UTILITY EASEMENT, PUBLIC ACCESS & DRAINAGE EASEMENT	HOA	HOA
B	0.06 AC	OPEN SPACE, UTILITY EASEMENT, PUBLIC ACCESS & DRAINAGE EASEMENT	HOA	HOA
C	0.16 AC	OPEN SPACE, UTILITY EASEMENT, PUBLIC ACCESS & DRAINAGE EASEMENT	HOA	HOA
D	0.01 AC	OPEN SPACE, UTILITY EASEMENT, PUBLIC ACCESS & DRAINAGE EASEMENT	HOA	HOA
E	0.67 AC	OPEN SPACE, UTILITY EASEMENT, PUBLIC ACCESS & DRAINAGE EASEMENT	HOA	HOA
F	0.02 AC	RIGHT-OF-WAY PURPOSES	DEDICATED TO THE CITY OF LOUISVILLE	HOA
G	1.32 AC	OPEN SPACE, UTILITY EASEMENT, PUBLIC ACCESS & DRAINAGE EASEMENT	HOA	HOA
H	0.08 AC	PRIVATE OWNERSHIP BY DEVELOPER	COAL CREEK PROPERTIES LLC	COAL CREEK PROPERTIES LLC
I	0.10 AC	PUBLIC ACCESS	HOA	HOA
TOTAL	2.85 AC			

CITY COUNCIL CERTIFICATE

APPROVED THIS _____ DAY OF _____
 2016 BY THE CITY COUNCIL OF THE CITY OF
 LOUISVILLE, COLORADO.

RESOLUTION NO. _____, SERIES _____

(CITY SEAL)

 MAYOR SIGNATURE

 CITY CLERK SIGNATURE

PLANNING COMMISSION CERTIFICATE

APPROVED THIS _____ DAY OF _____, 2016
 BY THE PLANNING COMMISSION OF THE CITY OF LOUISVILLE, COLORADO

RESOLUTION NO. _____, SERIES _____

CLERK AND RECORDER CERTIFICATE
(COUNTY OF BOULDER, STATE OF COLORADO)

I HEREBY CERTIFY THAT THIS INSTRUMENT WAS FILED IN
 MY OFFICE AT _____ O'CLOCK, ____M., THIS
 _____ DAY OF _____, 2016, AND IS

RECORDED IN PLAN FILE _____

FEE _____ PAID.

_____ FILM NO.

_____ RECEPTION.

 CLERK & RECORDER

 DEPUTY

BASIS OF BEARINGS

BEARINGS BASED ON THE NORTH LINE OF THE NORTHEAST
 QUARTER OF SECTION 8 AS BEARING N89°58'20"W, AS
 MONUMENTED AND SHOWN.

FLOODPLAIN STATEMENT

THIS LAND DOES NOT LIE WITHIN ANY DESIGNATED FLOODPLAIN

LEGAL DESCRIPTION

KNOW ALL MEN BY THESE PRESENTS, THAT THE UNDERSIGNED BEING THE OWNER OF A TRACT OF LAND IN
 SECTION 8, TOWNSHIP 1 SOUTH, RANGE 69 WEST OF THE 6TH PRINCIPAL MERIDIAN, CITY OF LOUISVILLE,
 BOULDER COUNTY, STATE OF COLORADO, AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

A PART OF THE NE ¼ OF THE NE ¼ OF SECTION 8, TOWNSHIP 1 SOUTH, RANGE 69 WEST OF THE 6TH
 PRINCIPAL MERIDIAN, CITY OF LOUISVILLE, COUNTY OF BOULDER, STATE OF COLORADO MORE
 PARTICULARLY DESCRIBED AS FOLLOWS: BEGINNING AT THE NORTHWEST CORNER OF COAL CREEK STATION
 FILING NO. 1 AS RECORDED AT BOOK R53, PAGE 29; THENCE S00°17'50"E ALONG THE WEST LINE OF SAID
 FILING NO. 1, A DISTANCE OF 330.00 FEET; THENCE S89°58'20"E, A DISTANCE OF 60.25 FEET TO THE
 SOUTHWEST CORNER OF LOT 2 OF COAL CREEK STATION FILING NO. 3 AS RECORDED AT RECEPTION NO.
 492006; THENCE ALONG THE SOUTH LINE OF SAID LOT 2 AND THE SOUTH LINES OF LOTS 1 AND 2 OF
 CRYSTAL ESTATES REPLAT A, AS RECORDED AT RECEPTION NO. 1063973, S89°58'20"E, A DISTANCE OF
 364.75 FEET TO A POINT ON THE WEST RIGHT-OF-WAY LINE OF STATE HIGHWAY 42; THENCE
 S00°17'50"E ALONG SAID WEST RIGHT-OF-WAY LINE, A DISTANCE OF 259.99 FEET TO A POINT ON THE
 NORTH LINE OF THE ALLEY LOCATED IN THE ROBERT DIGIACOMO ADDITION AS RECORDED AT BOOK 5,
 PAGE 17; THENCE ALONG SAID NORTH LINE AND NORTH LINE EXTENDED N89°58'20"W, A DISTANCE OF
 754.85 FEET TO THE NORTHWEST CORNER OF THAT PROPERTY RECORDED AT BOOK 46, PAGE 505;
 THENCE S00°01'40"W ALONG THE WEST LINE OF SAID PROPERTY DESCRIBED IN BOOK 46, PAGE 505, A
 DISTANCE OF 184.00 FEET TO THE NORTH RIGHT-OF-WAY LINE OF HARPER STREET; THENCE N89°58'20"W
 ALONG SAID NORTH RIGHT-OF-WAY LINE, A DISTANCE OF 39.06 FEET TO A POINT ON THE WEST
 RIGHT-OF-WAY LINE OF FRONT STREET; THENCE S00°18'00"E ALONG SAID WEST RIGHT-OF-WAY LINE, A
 DISTANCE OF 16.00 FEET TO THE NORTHEAST CORNER OF LOT 1, HUNT-PUSKAS SUBDIVISION AS
 RECORDED AT RECEPTION NO. 483037; THENCE S89°58'20"W ALONG THE NORTH LINE OF SAID LOT 1, A
 DISTANCE OF 114.35 FEET TO A POINT ON THE EAST RIGHT-OF-WAY LINE OF THE COLORADO AND
 SOUTHERN RAILROAD; THENCE ALONG SAID EAST RIGHT-OF-WAY LINE THE FOLLOWING SEVEN (7)
 COURSES: (1) N08°30'12"W, A DISTANCE OF 471.84 FEET; (2) N08°28'40"W, A DISTANCE OF 81.59 FEET;
 (3) N08°52'07"W, A DISTANCE OF 79.23 FEET; (4) N09°23'12"W, A DISTANCE OF 43.90 FEET; (5)
 N09°49'41"W, A DISTANCE OF 43.90 FEET; (6) N10°34'58"W, A DISTANCE OF 43.90 FEET; (7) N11°44'18"W,
 A DISTANCE OF 15.01 FEET TO A POINT ON THE SOUTH RIGHT-OF-WAY LINE OF SOUTH BOULDER ROAD;
 THENCE ALONG SAID SOUTH RIGHT-OF-WAY LINE THE FOLLOWING THREE (3) COURSES: (1) S89°58'20"E,
 A DISTANCE OF 285.10 FEET; (2) N00°17'50"W, A DISTANCE OF 20.00 FEET; (3) S89°58'20"E, A DISTANCE
 OF 315.00 FEET TO THE POINT OF BEGINNING. CONTAINING 10.70 ACRES MORE OR LESS.

CERTIFICATE OF DEDICATION AND OWNERSHIP

HAS LAID OUT, SUBDIVIDED AND PLATTED SAID LAND AS PER DRAWING HEREON
 CONTAINED UNDER THE NAME AND STYLE OF COAL CREEK STATION FILING NO. 4

A SUBDIVISION OF A PART OF THE CITY OF LOUISVILLE, COUNTY OF BOULDER, STATE
 OF COLORADO, AND BY THESE PRESENTS DO HEREBY DEDICATE TO THE CITY OF
 LOUISVILLE AND THE PUBLIC, THE INGRESS-EGRESS AND FIRE LANE EASEMENTS AS
 SHOWN ON THE ACCOMPANYING PLAT FOR VEHICULAR, PEDESTRIAN AND EMERGENCY
 ACCESS, AS SHOWN ON THE ACCOMPANYING PLAT FOR THE PUBLIC USE THEREOF
 FOREVER AND DOES FURTHER DEDICATE TO THE USE OF THE CITY OF LOUISVILLE AND
 ALL MUNICIPALLY OWNED AND/OR FRANCHISED UTILITIES AND SERVICES THOSE
 PORTIONS OF SAID REAL PROPERTY WHICH ARE SO DESIGNATED AS EASEMENTS AND
 RIGHTS-OF-WAYS FOR THE CONSTRUCTION, INSTALLATION, OPERATION, MAINTENANCE,
 REPAIR AND REPLACEMENT FOR ALL SERVICES, INCLUDING WITHOUT LIMITING THE
 GENERALITY OF THE FOREGOING, TELEPHONE AND ELECTRIC LINES, WORKS, POLES AND
 UNDERGROUND CABLES, GAS PIPELINES, WATER PIPELINES, SANITARY SEWER LINES,
 STREET LIGHTS, CULVERTS, HYDRANTS, DRAINAGE DITCHES AND DRAINS AND ALL
 APPURTENANCES THERETO, IT BEING EXPRESSLY UNDERSTOOD AND AGREED BY THE
 UNDERSIGNED THAT ALL EXPENSES AND COSTS INVOLVED IN CONSTRUCTING AND
 INSTALLING SANITARY SEWER SYSTEM WORKS AND LINES, GAS SERVICE LINES,
 ELECTRICAL SERVICE WORKS AND LINES, STORM SEWERS AND DRAINS, STREET
 LIGHTING, GRADING AND LANDSCAPING, CURBS, GUTTERS, STREET PAVEMENT,
 SIDEWALKS AND OTHER SUCH UTILITIES AND SERVICES SHALL BE GUARANTEED AND
 PAID FOR BY THE SUBDIVIDER OR ARRANGEMENTS MADE BY THE SUBDIVIDER THEREOF
 WHICH ARE APPROVED BY THE CITY OF LOUISVILLE, COLORADO, AND SUCH SUMS
 SHALL NOT BE PAID BY THE CITY OF LOUISVILLE, COLORADO, AND THAT ANY ITEM SO
 CONSTRUCTED OR INSTALLED WHEN ACCEPTED BY THE CITY OF LOUISVILLE, COLORADO,
 SHALL BECOME THE SOLE PROPERTY OF SAID CITY OF LOUISVILLE, COLORADO, EXCEPT
 PRIVATE ROADWAY CURBS, GUTTER AND PAVEMENT ITEMS OWNED BY MUNICIPALLY
 FRANCHISED UTILITIES WHICH WHEN CONSTRUCTED OR INSTALLED, SHALL REMAIN THE
 PROPERTY OF THE OWNER AND SHALL NOT BECOME THE PROPERTY OF THE CITY OF
 LOUISVILLE, COLORADO.

OWNERSHIP SIGNATURE BLOCK

HAVE LAID OUT, PLATTED AND SUBDIVIDED THE SAME INTO LOTS UNDER THE NAME
 OF COAL CREEK STATION FILING NO. 4 AND ALSO DEDICATE EASEMENTS AS SHOWN
 ON SAID COAL CREEK STATION FILING NO. 4 AS LAID OUT AND DESIGNATED ON THIS
 PLAT.

WITNESS MY/OUR HAND(S) SEAL(S) THIS _____ DAY OF

_____, 2016.

 COAL CREEK STATION PROPERTIES LLC
 WILLIAM G. ARNOLD III, MEMBER

 NOTARY NAME (PRINT)

 NOTARY SIGNATURE

SURVEYOR'S CERTIFICATE

I, KIM A. ALBERS, DO HEREBY CERTIFY THAT I AM A DULY LICENSED LAND
 SURVEYOR LICENSED UNDER THE LAWS OF THE STATE OF COLORADO, THAT THIS
 PLAT IS A TRUE, CORRECT AND COMPLETE PLAT OF " COAL CREEK STATION
 FILING NO. 4" AS LAID OUT, PLATTED, DEDICATED AND SHOWN HEREON, THAT
 SUCH PLAT WAS MADE FROM AN ACCURATE SURVEY OF SAID PROPERTY BY ME
 AND UNDER MY DIRECT RESPONSIBILITY, SUPERVISION AND CHECKING AND
 CORRECTLY SHOWS THE LOCATION AND DIMENSIONS OF THE LOTS, LAID OUT IN
 COMPLIANCE WITH ARTICLES 50-53 OF TITLE 38, COLORADO REVISED STATUTES
 GOVERNING THE SUBDIVISION OF LAND.

IN WITNESS WHEREOF, I HAVE SET MY HAND AND SEAL THIS _____ DAY OF

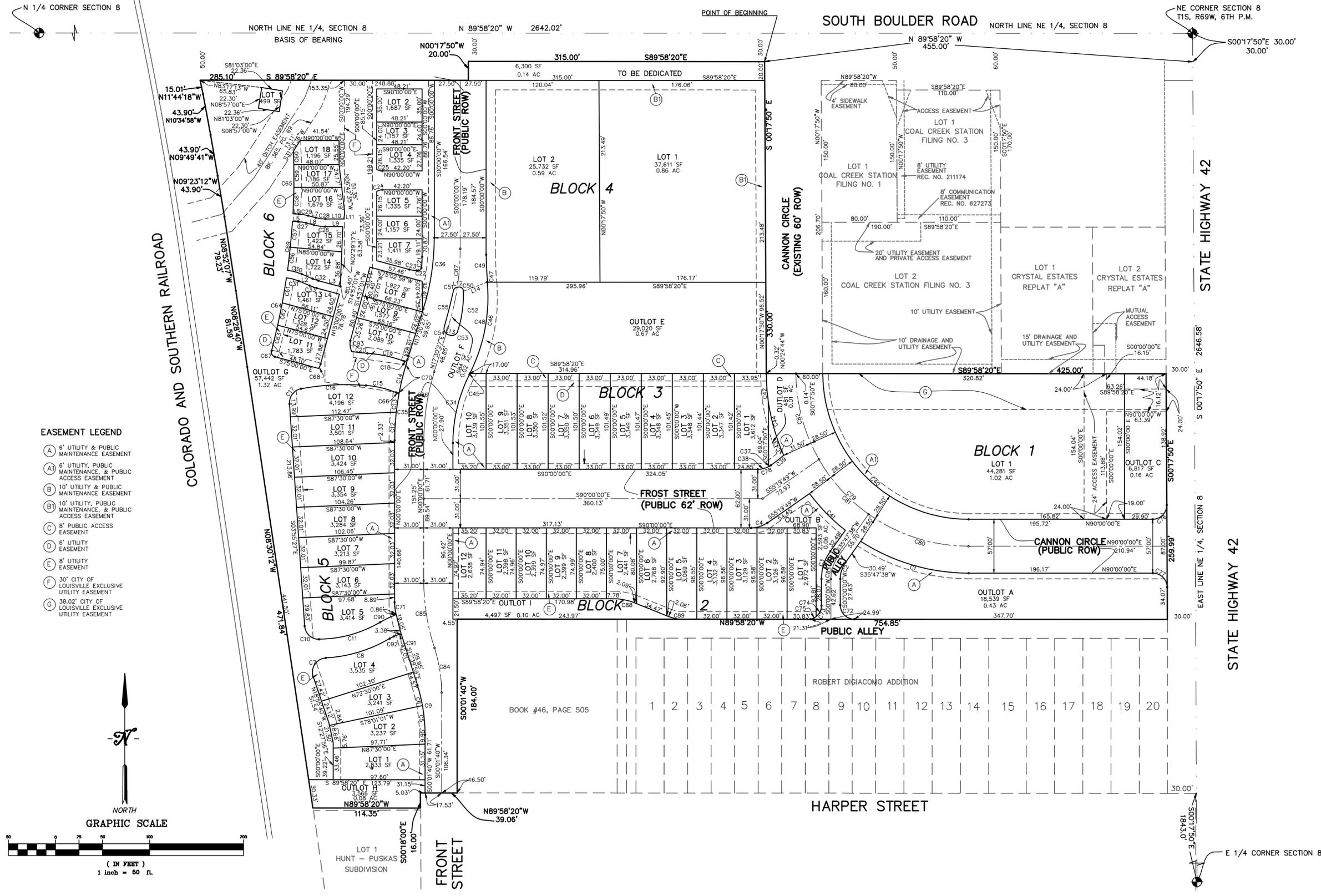
_____, 2016 A.D.

 KIM A. ALBERS
 COLORADO P.L.S. #25614

True Position LAND SURVEYS 981 East 98th Ave., Broomfield, CO. 80020 Phone: (720) 864-9446 trueposition@cox.net			
DATE	9/23/13	DRAWN BY:	R.J.L.
SCALE	1"=50'	CHECKED BY:	K.A.A.
REVISIONS - DATE BY:		REVISIONS - DATE BY:	
JOB NO.	294-1	DRAWING NO.:	2941FINAL

FINAL PLAT
COAL CREEK STATION FILING NO. 4
A REPLAT OF COAL CREEK STATION FILING NO. 2,
A PORTION OF THE PLAT OF CALEDONIA PLACE AND ADDITIONAL LAND SITUATED IN THE
NORTHEAST QUARTER OF THE NORTHEAST QUARTER OF SECTION 8,
RANGE 69 WEST, OF THE SIXTH PRINCIPAL MERIDIAN,
CITY OF LOUISVILLE, COUNTY OF BOULDER, STATE OF COLORADO

SHEET 2 OF 2



CURVE	LENGTH	RADIUS	DELTA	CHORD	CHORD BEARING
C1	121.08	212.00	32°43'23"	119.44	S73°38'18"W
C2	18.74	30.00	35°43'37"	18.44	S17°53'49"W
C3	31.24	50.00	35°47'37"	30.73	S17°53'49"W
C4	18.15	30.00	34°40'12"	17.88	N72°39'55"E
C5	30.92	171.86	10°18'33"	30.88	N05°07'37"W
C6	22.15	171.86	7°23'06"	22.14	N13°58'26"W
C7	27.71	15.00	85°58'29"	23.93	S33°59'35"W
C8	71.64	149.94	27°22'32"	70.96	N73°13'33"E
C9	53.07	171.86	17°41'39"	52.86	N08°49'10"W
C10	22.62	15.00	86°23'42"	20.54	S47°07'18"W
C11	68.36	129.94	30°08'34"	67.57	N74°36'34"E
C12	29.83	272.32	6°16'37"	29.82	S03°08'19"W
C13	19.59	272.32	4°07'20"	19.59	S08°20'17"W
C14	33.78	272.32	7°06'30"	33.76	S13°57'18"W
C15	32.91	103.67	18°11'23"	32.78	N76°50'53"W
C16	69.32	258.02	15°23'38"	69.11	S87°06'34"W
C17	21.82	15.00	83°20'12"	19.94	S37°44'39"W
C18	4.85	3.00	92°39'46"	4.34	N63°56'26"E
C19	39.76	137.67	16°32'51"	39.62	N78°00'07"W
C20	16.90	191.52	5°03'16"	16.89	S83°44'54"E
C21	11.82	100.00	5°46'20"	11.81	N03°53'10"E
C22	4.36	3.00	83°13'40"	3.98	N48°23'10"E
C23	7.85	30.00	15°00'00"	7.83	S82°30'00"E
C24	6.29	12.00	30°03'03"	6.22	S74°58'28"W
C25	6.29	12.00	30°03'03"	6.22	S74°58'28"E
C26	12.44	47.50	15°00'00"	12.40	S82°30'00"E
C27	8.59	42.50	14°34'38"	8.57	N81°34'38"E
C28	10.31	39.50	15°00'00"	10.31	S82°30'00"E
C29	10.20	50.50	11°34'38"	10.19	N80°47'19"W
C30	13.64	52.50	14°53'28"	13.61	N74°23'20"W
C31	11.57	44.50	14°53'28"	11.53	N74°23'20"W
C32	6.68	47.50	8°03'24"	6.67	S70°58'18"E
C33	7.80	55.50	8°03'24"	7.80	S70°58'18"E
C34	7.82	158.12	27°17'36"	74.61	S13°39'48"E
C35	83.24	272.32	17°30'27"	82.89	S08°45'14"W
C36	76.39	250.00	17°30'27"	76.09	N08°45'14"E
C37	2.85	25.00	6°31'16"	2.84	N59°19'20"E
C38	11.96	25.00	27°25'01"	11.85	N76°17'29"E
C39	17.24	125.00	7°54'03"	17.22	N52°06'41"E
C40	242.67	155.00	89°42'10"	218.63	S45°08'53"E
C41	54.62	212.00	14°45'42"	54.47	S44°29'19"E
C42	29.34	215.00	7°49'12"	29.32	S04°12'26"E
C43	59.51	215.00	15°51'31"	59.32	S16°02'47"E
C44	88.85	215.00	23°40'43"	88.22	S12°08'11"E
C45	1.30	177.33	0°25'14"	1.30	N27°04'59"E
C46	99.55	177.33	32°09'46"	98.24	N10°47'29"E
C47	0.20	177.33	0°03'52"	0.20	N05°19'20"W
C48	99.74	177.33	32°13'38"	98.43	N10°43'33"E
C49	28.76	307.70	5°21'16"	28.74	S02°40'38"E
C50	7.25	4.50	92°20'23"	6.49	N47°35'37"W
C51	5.80	4.50	73°54'40"	5.41	S49°16'52"W
C52	43.03	126.98	19°24'51"	42.82	N08°17'00"E
C53	9.65	6.50	85°04'25"	8.79	N60°31'38"E
C54	10.59	6.50	93°22'51"	9.46	S30°14'43"E
C55	40.86	59.75	4°07'11"	40.05	N11°34'25"E
C56	24.59	724.52	1°56'41"	24.59	N06°53'21"E
C57	27.54	724.52	2°10'40"	27.54	N04°49'41"E
C58	27.99	724.52	2°12'49"	27.99	N01°59'59"E
C59	24.00	724.52	1°53'23"	24.00	N00°03'23"W
C60	14.42	724.52	1°08'26"	14.42	N01°34'32"W
C61	26.43	724.52	2°05'23"	26.43	N05°34'42"E
C62	24.04	724.52	1°54'05"	24.04	N11°34'25"E
C63	27.99	724.52	2°12'48"	27.99	N13°37'53"E
C64	78.46	724.52	6°12'17"	78.42	N11°38'08"E
C65	66.42	724.52	5°15'08"	66.39	N00°28'49"E
C66	3.35	25.00	7°40'56"	3.35	N63°54'44"W
C67	7.88	5.00	90°15'32"	7.09	S29°52'10"E
C68	4.80	12.00	22°56'30"	4.77	N26°28'51"E
C69	58.19	724.52	4°07'11"	58.12	N05°48'01"E
C70	30.16	272.32	6°20'41"	30.15	S13°50'17"W
C71	12.32	50.00	14°06'56"	12.29	S07°03'28"E
C72	23.55	15.00	89°58'20"	21.21	S44°59'10"E
C73	19.84	15.00	75°46'10"	18.42	N37°53'06"E
C74	13.49	15.00	51°31'13"	13.04	N29°48'37"E
C75	6.35	15.00	24°44'57"	6.30	N63°38'42"E
C76	23.64	15.00	90°17'50"	21.27	N44°51'05"E
C77	23.48	15.00	89°42'10"	21.16	N45°08'55"W
C78	14.81	25.00	33°56'18"	14.59	N73°01'51"E
C79	287.29	183.50	89°42'10"	258.83	S45°08'55"E
C80	113.28	183.50	35°22'13"	111.49	S72°18'54"E
C81	78.92	183.50	24°38'34"	78.32	S42°18'30"E
C82	95.09	183.50	89°41'23"	94.03	S15°08'31"E
C83	24.99	40.00	95°47'37"	24.58	S17°53'49"W
C84	47.88	150.00	18°17'17"	47.68	N09°06'59"W
C85	72.50	227.50	18°15'37"	72.20	S09°07'49"E
C86	73.74	241.32	17°30'27"	73.45	S08°45'14"W
C87	84.79	277.50	17°30'27"	84.46	N08°45'14"E
C88	22.83	60.00	21°48'17"	22.70	S79°04'12"E
C89	15.22	40.00	21°48'17"	15.13	N79°04'12"E
C90	18.93	110.00	9°51'43"	18.91	S64°28'08"W
C91	8.58	20.00	24°34'07"	8.51	S74°51'24"W
C92	4.77	90.00	3°02'03"	4.77	S61°03'19"W
C93	11.84	20.00	33°54'34"	11.66	S06°52'42"E

LINE	LENGTH	BEARING
L1	12.57	N66°56'36"W
L2	12.57	N66°56'36"W
L3	23.85	N75°00'00"W
L4	24.93	N75°00'00"W
L5	6.14	N86°34'38"W
L6	6.14	N86°34'38"W
L7	8.43	N75°00'00"W
L8	8.43	N75°00'00"W
L9	18.44	N90°00'00"W
L10	19.52	N90°00'00"W
L11	6.57	N08°16'51"E
L12	1.75	N86°14'12"E
L13	2.06	N76°56'09"W
L14	27.01	S69°21'18"W

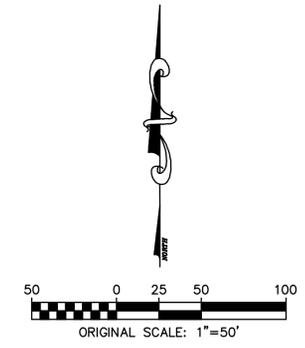
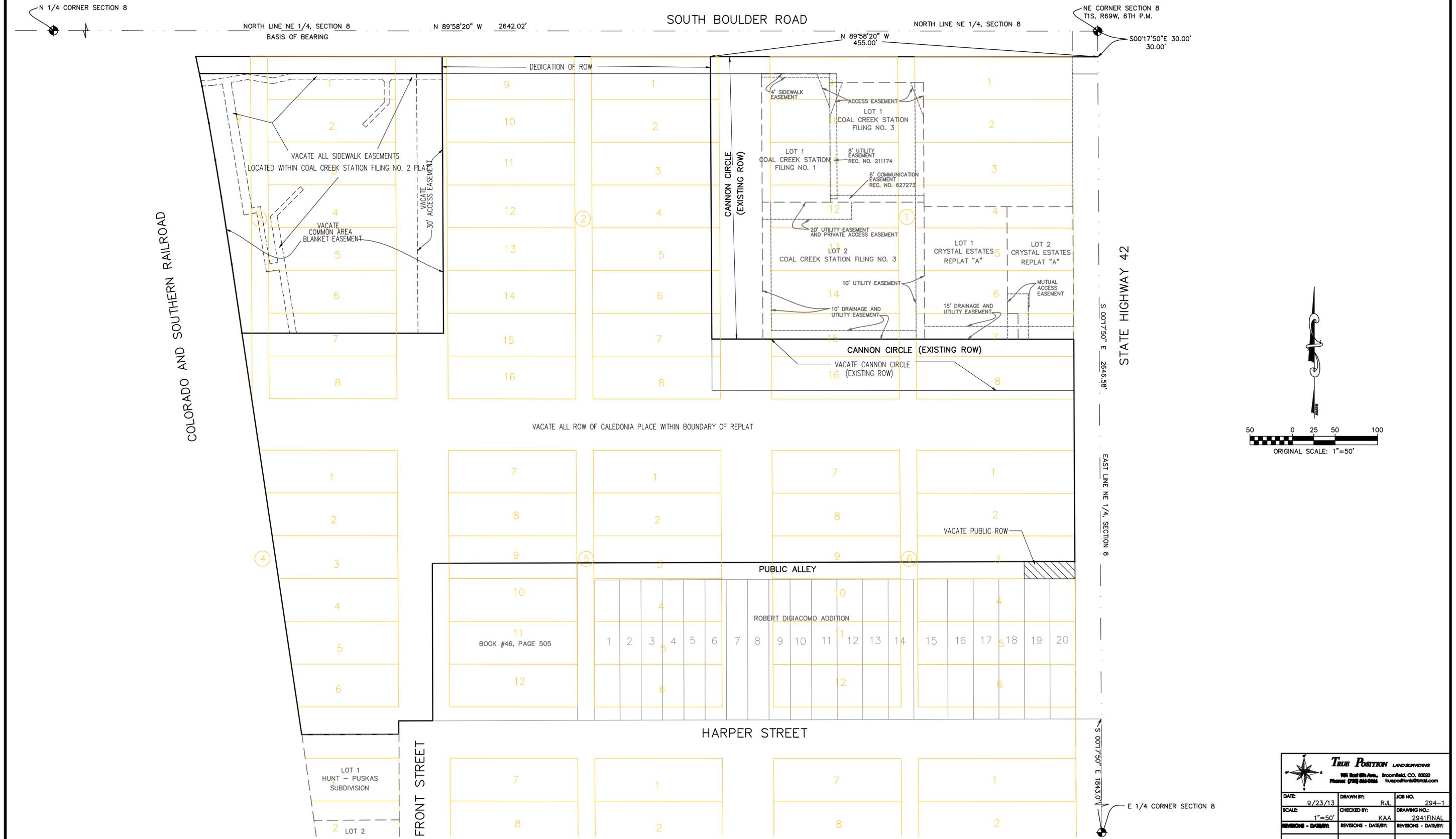
LINE	LENGTH	BEARING
L1	12.57	N66°56'36"W
L2	12.57	N66°56'36"W
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L6	6.14	N86°34'38"W
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L8	8.43	N75°00'00"W
L9	18.44	N90°00'00"W
L10	19.52	N90°00'00"W
L11	6.57	N08°16'51"E
L12	1.75	N86°14'12"E
L13	2.06	N76°56'09"W
L14	27.01	S69°21'18"W

TRUE POSITION LAND SURVEYING
 981 East 8th Ave., Broomfield, CO. 80020
 Phone: (720) 844-9446
 trueposition@trueposition.com

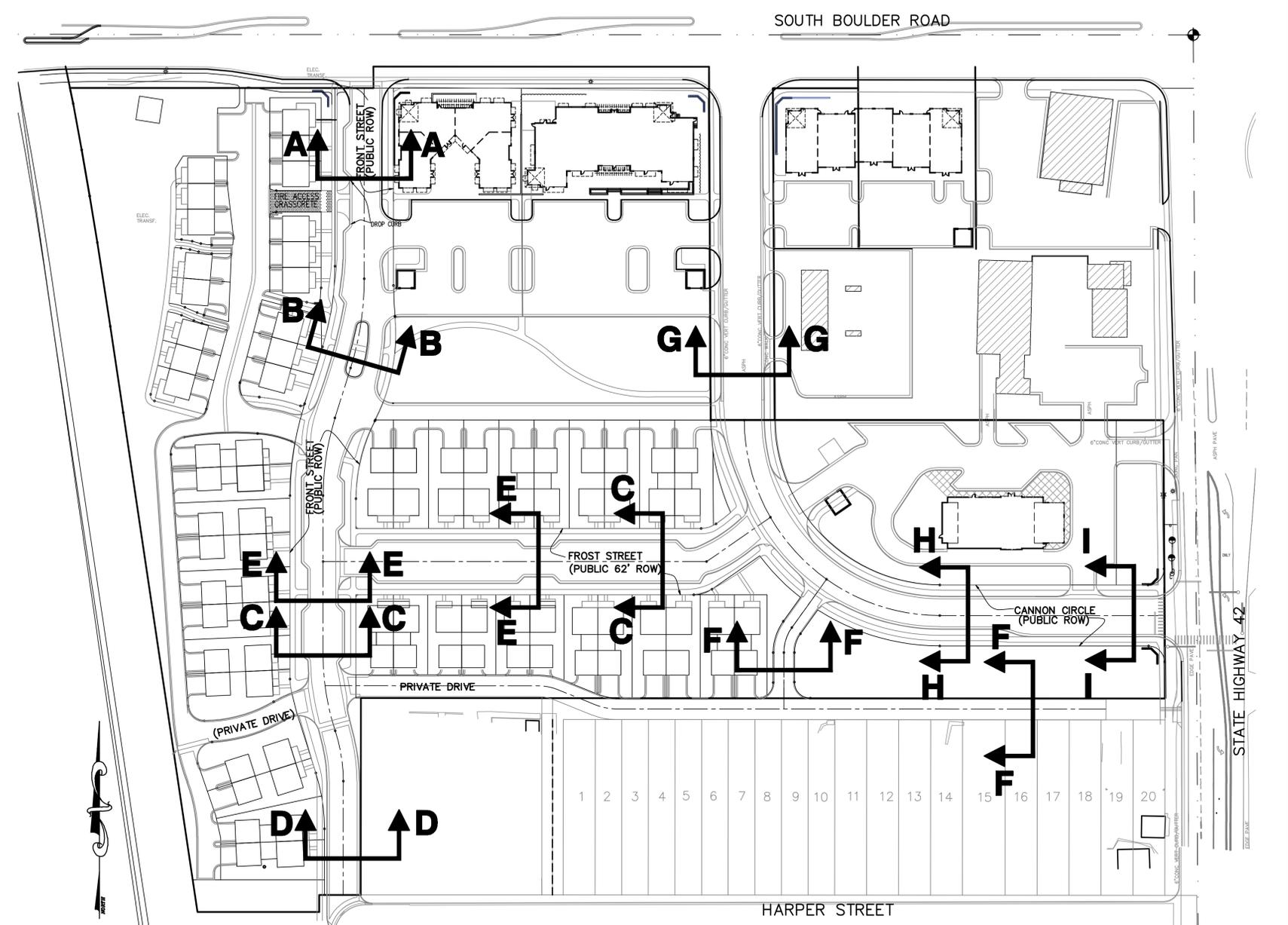
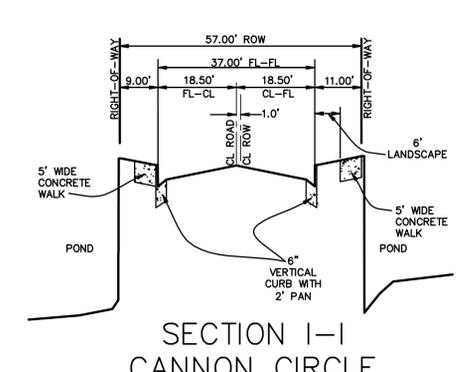
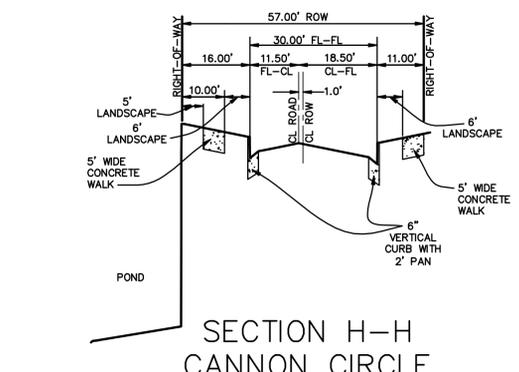
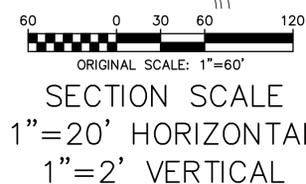
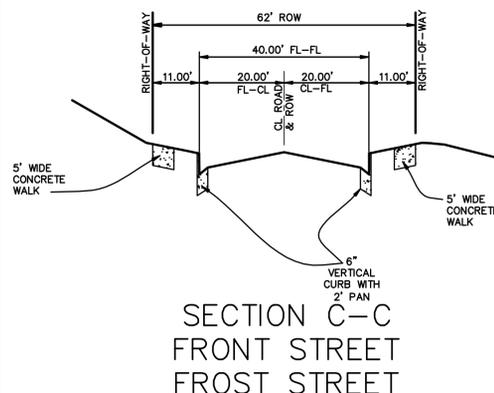
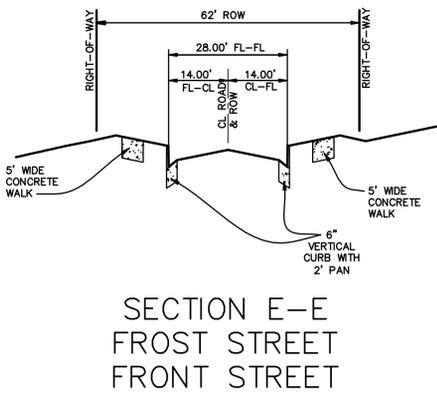
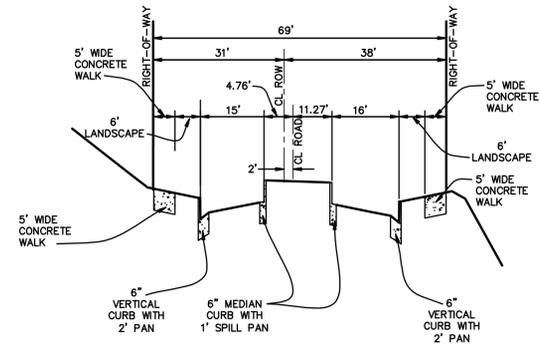
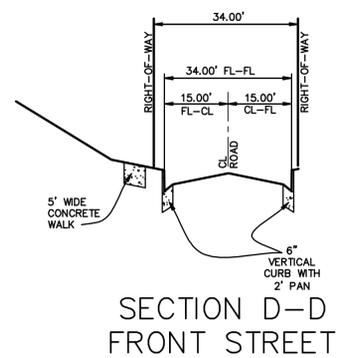
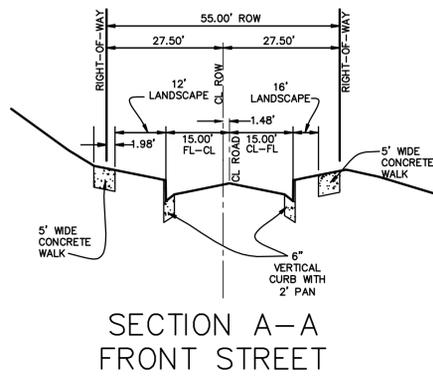
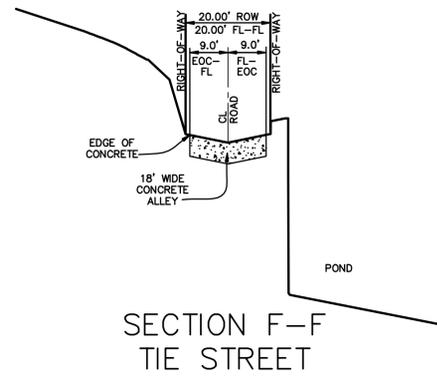
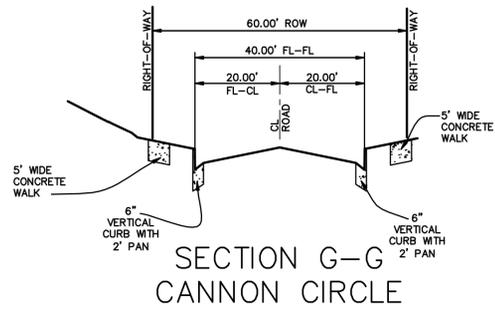
DATE:	9/23/13	DRAWN BY:	R.J.L.	JOB NO.:	294-1
SCALE:	1"=50'	CHECKED BY:	K.A.A.	DRAWING NO.:	2941FINAL
REVISIONS - DATE:		REVISIONS - DATE:		REVISIONS - DATE:	

COAL CREEK STATION FILING NO. 4

EASEMENT AND RIGHT-OF-WAY VACATION PLAN



TRUE POSITION LAND SURVEYORS 981 East 98th Ave., Broomfield, CO. 80020 Phone: (720) 864-9446 trueposition@bkd.com		
DATE: 9/23/13	DRAWN BY: R.J.L.	JOB NO.: 294-1
SCALE: 1"=50'	CHECKED BY: KAA	DRAWING NO.: 2941FINAL
REVISIONS - DATE/DR:	REVISIONS - DATE/DR:	REVISIONS - DATE/DR:



NO.	DATE	CITY COMMENTS	RUL
1	02/12/16		
NO.	DATE	DESCRIPTION	BY
PARK ENGINEERING CONSULTANTS 420 21ST AVENUE, SUITE 101 LONGMONT CO. 80501 (303)651-6626			
COAL CREEK STATION FILING NO. 4			
STREET SECTIONS			
JOB NO	DATE	CAD NO	SHEET NO
294-1	6/25/14	294FINALREV1	5 OF 7

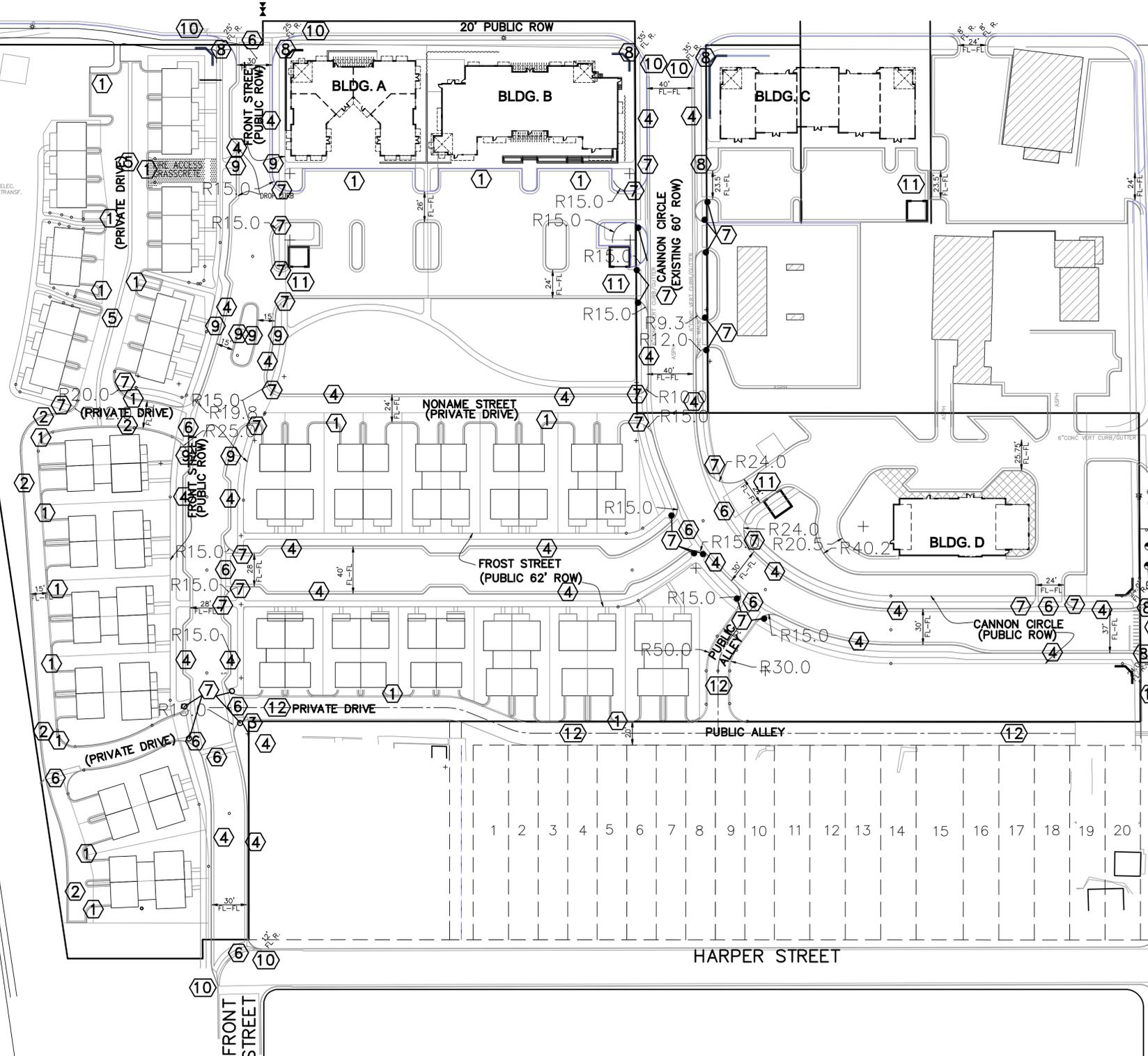
N 1/4 CORNER SECTION 8

NORTH LINE NE 1/4, SECTION 8
BASIS OF BEARING

N 89°58'20" W 2642.02'

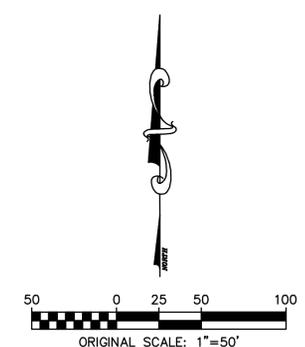
SOUTH BOULDER ROAD NORTH LINE NE 1/4, SECTION 8

NE CORNER SECTION 8
T1S, R69W, 6TH P.M.



PLANIMETRIC LEGEND

- ① CURB & 1' SPILL GUTTER
- ② CURB & 1' CATCH GUTTER
- ③ CURB & 2' SPILL GUTTER
- ④ CURB & 2' CATCH GUTTER
- ⑤ 3' VALLEY PAN
- ⑥ 8' CROSS PAN
- ⑦ DIRECTIONAL HANDICAP RAMP
- ⑧ RADIAL HANDICAP RAMP
- ⑨ MID BLOCK RAMP
- ⑩ TIE INTO EXISTING
- ⑪ 24'x24' CONCRETE PAD ADJACENT TO TRASH ENCLOSURE GATES
- ⑫ 18' WIDE INVERTED CROWN CONCRETE ALLEY



NOTES:

1. THE GEOTECHNICAL REPORT HAS NOT BEEN COMPLETE AT THE TIME OF PRINTING. IT IS ASSUMED THAT ALL ASPHALT PAVING WILL BE AT 6" FULL DEPTH AND CONCRETE PAVING WILL BE 6" UNLESS AS OTHERWISE SPECIFIED ON CITY DETAILS. (SEE SHEETS D1-D5)

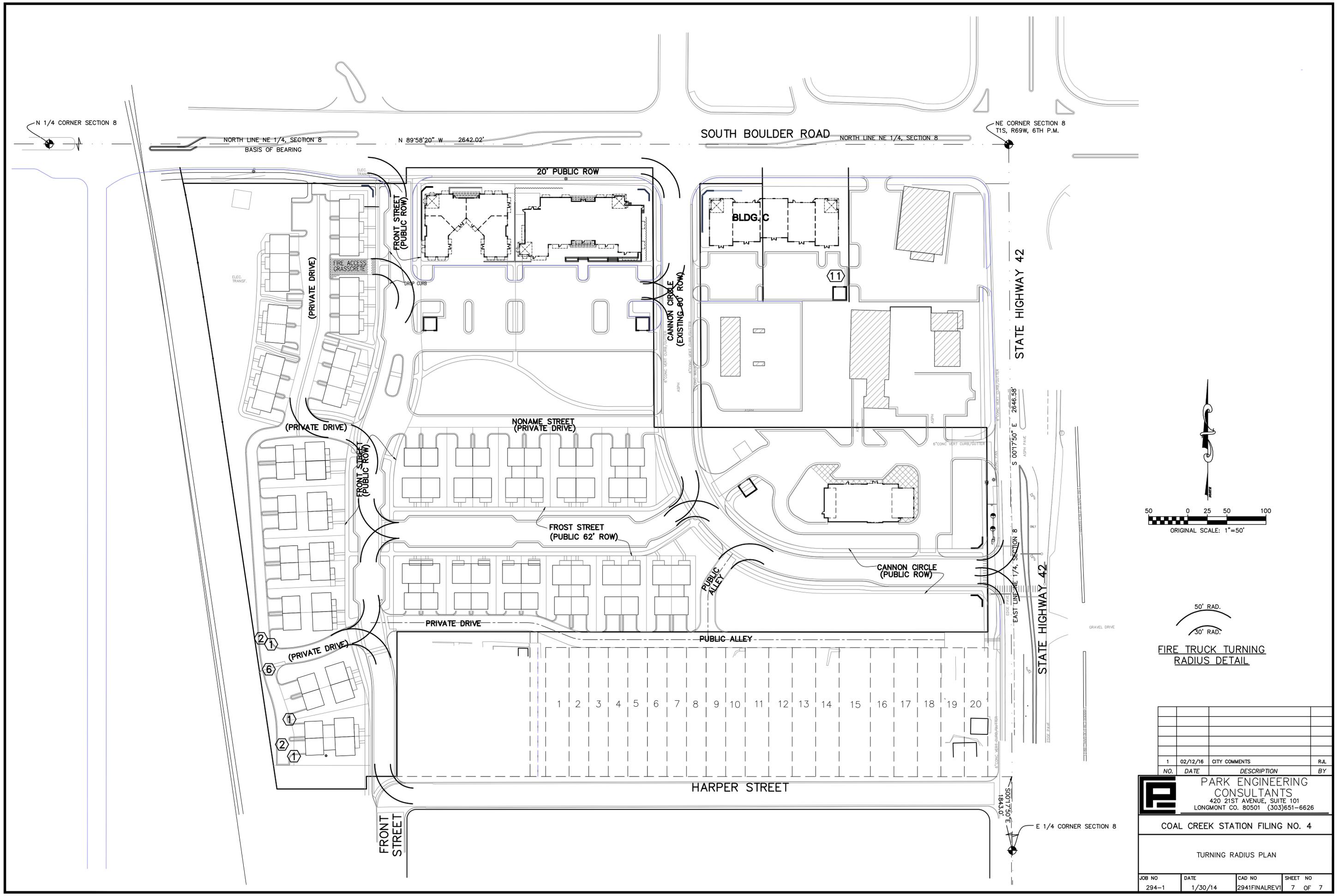
NO.	DATE	CITY COMMENTS	RJL
1	02/12/16		
NO.	DATE	DESCRIPTION	BY

PARK ENGINEERING CONSULTANTS
420 21ST AVENUE, SUITE 101
LONGMONT CO. 80501 (303)651-6626

COAL CREEK STATION FILING NO. 4

PAVING PLAN

JOB NO	DATE	CAD NO	SHEET NO
294-1	1/30/14	2941FINALREV1	6 OF 7



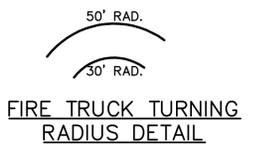
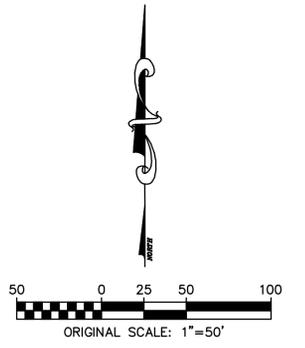
N 1/4 CORNER SECTION 8

NORTH LINE NE 1/4, SECTION 8
BASIS OF BEARING

N 89°58'20" W 2642.02'

SOUTH BOULDER ROAD NORTH LINE NE 1/4, SECTION 8

NE CORNER SECTION 8
T1S, R69W, 6TH P.M.



NO.	DATE	DESCRIPTION	RJL	BY
1	02/12/16	CITY COMMENTS		

PARK ENGINEERING CONSULTANTS
420 21ST AVENUE, SUITE 101
LONGMONT CO. 80501 (303)651-6626

COAL CREEK STATION FILING NO. 4

TURNING RADIUS PLAN

JOB NO	DATE	CAD NO	SHEET NO
294-1	1/30/14	2941FINALREV1	7 OF 7



VIEW FROM SOUTH BOULDER ROAD



RESIDENTIAL STUDY

PROJECT DESCRIPTION

A REDEVELOPMENT OF THE COAL CREEK STATION SITE INTO A MIXED USE COMMUNITY CONTAINING FOUR COMMERCIAL BUILDINGS AND MULTI-FAMILY RESIDENCES. INCLUDED ARE PLAZA SPACES AND A BIKE PATH CONNECTING THE NORTHWEST CORNER OF THE SITE TO THE SOUTHEAST CORNER, ALLOWING A FORMAL CONNECTION TO THE BOULDER COUNTY OPEN SPACE ACROSS HIGHWAY 42. CANNON STREET HAS BEEN RECONFIGURED TO FACILITATE CIRCULATION.

LEGAL DESCRIPTION

A SUBDIVISION IN THE NE1/4 NE1/4 OF SECTION 8, T1S, R63W OF THE 6TH PM, AND A RESUBDIVISION OF COAL CREEK STATION FILING NO. 2 AND A PORTION OF CALEDONIA PLACE, CITY OF LOUISVILLE, COUNTY OF BOULDER, STATE OF COLORADO

PROJECT SUMMARY

ZONING DISTRICT CURRENT: COMMERCIAL COMMUNITY MIXED USE RESIDENTIAL RESIDENTIAL MEDIUM DENSITY

PROPOSED: PUD

BUILDING SETBACKS FROM PROPERTY LINES	COMMERCIAL	RESIDENTIAL
FRONT	5'	10'
BACK	20'	7'
SIDES	5'	0'

TOTAL SITE AREA: 476,837 SF = 10.95 ACRES

COMMERCIAL BUILDING FOOTPRINTS	AREA
BUILDING A:	6,430 SF
BUILDING B:	8,935 SF
BUILDING C:	8,750 SF
BUILDING D:	5,291 SF
TOTAL:	29,412 SF
(REPLACING 13,440 SF OF EXIST'G COMMERCIAL)	

FLOOR AREA RATIO (FAR): 25 : 1

LANDSCAPE COVERAGE: 160,300 SF = 3.68 ACRES

DWELLING UNITS: 51 UNITS, 6.9 DU PER ACRE
- 11 (3) STORY UNITS
- 34 (2) STORY UNITS

PARKING PROVIDED RETAIL: 98 SPACES = 12 SP / 300 SF
DRIVE THRU PAD: 23 SPACES = 13 SP PER 300 SF
RESIDENTIAL: 95 SP, + 40 STREET GUEST

TOTAL PARKING LOT & STREET PARKING PROVIDED: 161 SPACES

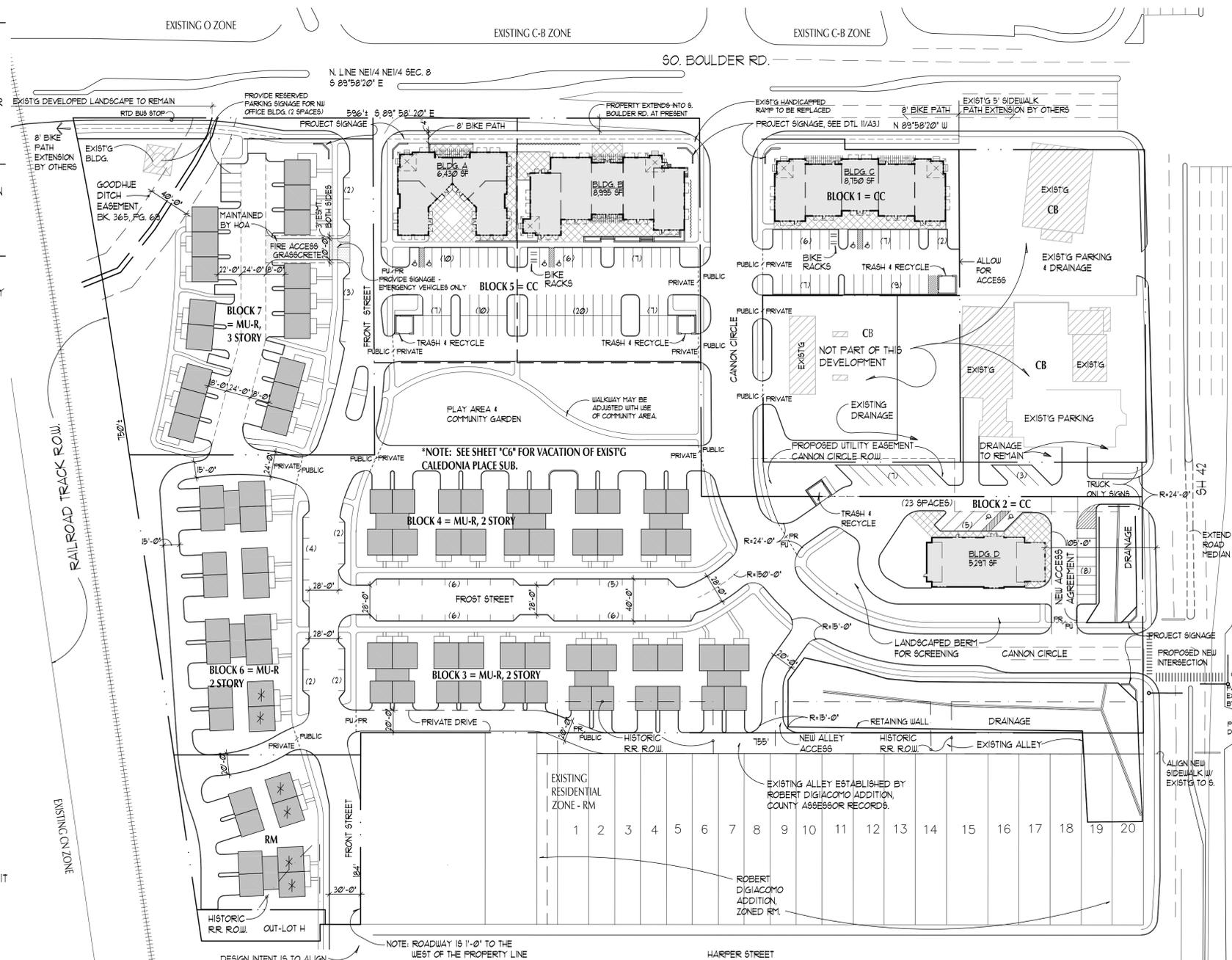
BUILDING HEIGHTS	HEIGHT
BUILDING A:	35' MAX
BUILDING B:	35' MAX
BUILDING C:	35' MAX
BUILDING D:	35' MAX
RESIDENTIAL:	2 STORY-35', 3 STORY-45'

WATER USAGE DOMESTIC: 51 RESIDENTIAL UNITS ASSUME 2 & 3 BEDRMS PER UNIT
COMMERCIAL: FOUR COMMERCIAL BUILDING SITES

IRRIGATION AREAS FOR THE RESIDENTIAL HOA & COMMERCIAL LANDSCAPED AREAS = 3.63 ACRES, ASSUME 50% TO BE XERISCAPE PLANTING.

NOTES

- FOR ADDITIONAL UTILITY EASEMENT LOCATIONS SEE ENGINEERING PLAN C4. SEE SHEET C3 FOR SURROUNDING DEVELOPMENT INFORMATION.
- THIS PROPERTY HAS BEEN PREVIOUSLY PLATTED AS THE 'CALEDONIA PLACE' SUBDIVISION & IS A 'REPLAT'. SEE FINAL PLAT FOR MORE INFORMATION.
- THE PROPERTY OWNER'S ASSOCIATION SHALL MAINTAIN LANDSCAPE IMPROVEMENTS WITHIN PARKWAY & RIGHT OF WAY'S ADJACENT TO SOUTH BOULDER ROAD & SH 42. MAINTENANCE OF LANDSCAPING WITHIN LOCAL & COLLECTOR STREET RIGHT OF WAY'S SHALL BE CONSISTENT WITH CITY MUNICIPAL CODE. PROPERTY OWNERS / ASSOCIATION WILL BE RESPONSIBLE FOR SNOW REMOVAL.
- THE SIGNALIZATION OF SH 42 & CANNON CR. AS WELL AS ANY MODIFICATIONS TO SH 42 MEDIANS SHALL BE FUNDED & CONSTRUCTED BY THE APPLICANT.
- ALL FENCING & LANDSCAPING WITHIN THE CANON CIRCLE UTILITY EASEMENT SHALL BE REMOVABLE.
- ALL STREET CORNER INTERSECTIONS TO HAVE A MINIMUM TURNING RADIUS OF 15'
- * INDICATES UNITS THAT NEED A HEIGHT VARIANCE FROM 21'-0" TO 35'-0"



OVERALL DEVELOPMENT PLAN SCALE: 1" = 60'

OWNERSHIP SIGNATURE BLOCK

HAVE LAID OUT, PLATTED AND SUBDIVIDED THE SAME INTO LOTS UNDER THE NAME OF _____ AND ALSO DEDICATED EASEMENTS AS SHOWN ON SAID _____ AS LAID OUT AND DESIGNATED ON THAT PLAT. WITNESS MY / OUR HAND(S) SEAL(S) THIS _____ DAY OF _____, 20____.

OWNER NAME AND SIGNATURE _____

NOTARY NAME AND SIGNATURE _____

PLANNING COMMISSION CERTIFICATE

APPROVED THIS _____ DAY OF _____ 20____ BY THE PLANNING COMMISSION OF THE CITY OF LOUISVILLE, COLORADO. RESOLUTION NO. _____, SERIES _____

CITY COUNCIL CERTIFICATE

APPROVED THIS _____ DAY OF _____ 20____ BY THE CITY COUNCIL OF THE CITY OF LOUISVILLE, COLORADO. RESOLUTION NO. _____, SERIES _____

MAYOR SIGNATURE _____

CITY CLERK SIGNATURE _____

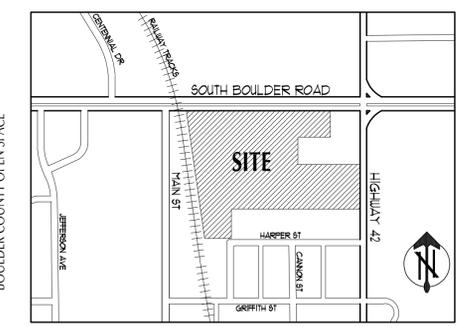
CLERK AND RECORDER CERTIFICATE (COUNTY OF BOULDER, STATE OF COLORADO)

I HEREBY CERTIFY THAT THIS INSTRUMENT WAS FILED IN MY OFFICE AT _____ O'CLOCK, _____ M., THIS _____ DAY OF _____ 20____, AND IS RECORDED IN PLAN FILE _____, FEE _____ PAID, _____ FILM NO. _____ RECEPTION.

CLERK AND RECORDER _____

DEPUTY _____

VICINITY MAP



SHEET INDEX

A0.0	COVER SHEET & GENERAL INFO
A1.0	SITE PLAN
A1.1	LANDSCAPE PLAN
A2.0	BUILDING FLOOR PLANS
A3.0	ELEVATIONS - BUILDINGS A & B
A3.1	ELEVATIONS - BUILDINGS C & D
F1.0	PHOTOMETRIC PLAN
F2.0	LIGHTING TYPES
C1.0	UTILITY PLAN
C2.0	DRAINAGE PLAN
C3.0	GRADING PLAN

LEGEND

[Pattern]	PLAZA AREA
[Pattern]	COMMERCIAL
[Pattern]	RESIDENTIAL

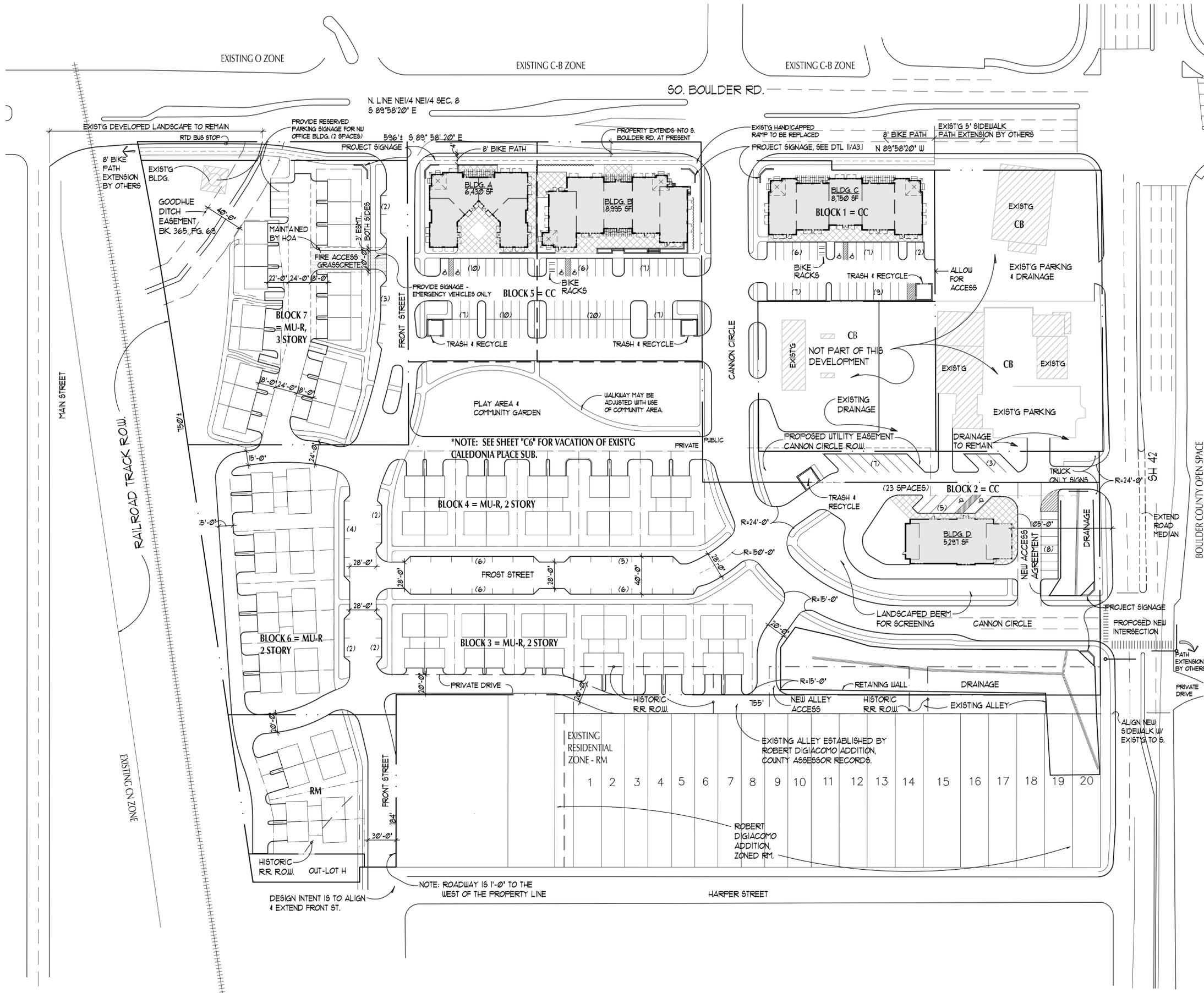
A REDEVELOPMENT OF
COAL CREEK STATION FILING NO. 4
 SOUTH BOULDER ROAD & U.S. HIGHWAY 42, LOUISVILLE, COLORADO 80027

BVZ ARCHITECTS
 3445 Penrose Place Suite 220
 Boulder, Colorado 80301
 303-442-0295 • Fax: 303-442-0296

FINAL P.U.D.

PROJECT #1044
 1/31/13
 REV. 5/17/13
 REV. 2/12/16

A0.0



NOTE: PROPOSED INTERSECTION IMPROVEMENTS TO BE COORDINATED WITH CDOT FOR APPROVAL & SCHEDULING. PROPOSED ROAD MEDIAN EXTENSION & TRAFFIC SIGNALS TO BE PART OF DEVELOPMENT.

- LEGEND**
- PLAZA AREA
 - COMMERCIAL

A REDEVELOPMENT OF
COAL CREEK STATION FILING NO. 4
 SOUTH BOULDER ROAD & U.S. HIGHWAY 42, LOUISVILLE, COLORADO 80027

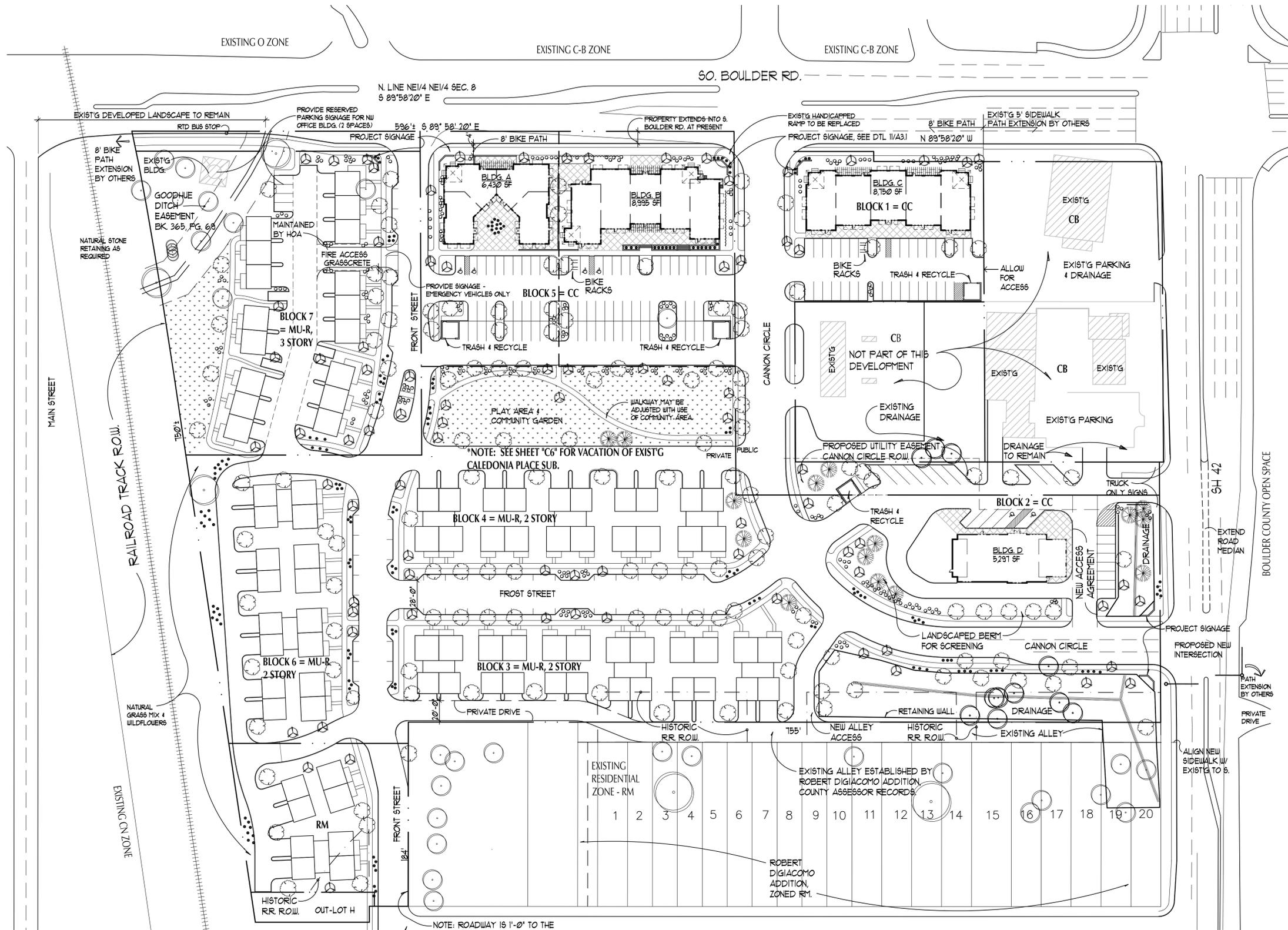
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FINAL P.U.D.

PROJECT #1044
 1/31/13
 REV. 5/17/13
 REV. 2/12/16

SITE PLAN
 SCALE: 1" = 50'

A1.0



LANDSCAPE LEGEND

- DECIDUOUS TREE
- EVERGREEN TREE
- ORNAMENTAL TREE
- EXISTING TREE TO REMAIN
- BUSH
- PERENNIALS / ORNAMENTAL GRASSES
- TURF AREA WITH IRRIGATION SYSTEM
- DRAINAGE SYSTEM / XERISCAPE AREAS OR HOME OWNER PROPERTY
- PLAZA AREA

SUGGESTED PLANTING LIST

COMMON NAME	BOTANIC NAME
DECIDUOUS TREES	
AMERICAN LINDEN	TILIA AMERICANA
HONEY LOCUST	GLEDITSIA TRIACANTHOS INERMIS
NORTHERN RED OAK	QUERCUS RUBRA BOREALIS
NORWAY MAPLE	ACER PLATANOIDES
QUAKING ASPEN	POPULUS TREMULOIDES
RED MAPLE	ACER RUBRUM
SUNBURST HONEY LOCUST	GLEDITSIA TRIACANTHOS
WESTERN HACKBERRY	CELTIS OCCIDENTALIS
EVERGREEN TREES	
AUSTRIAN PINE	PINUS NIGRA
COLORADO BLUE SPRUCE	PICIA PUNGENS
DOUGLAS FIR	PSEUDOTSUGA MENZIESII
MUGHO PINE	PINUS MUGO
PINYON PINE	PINUS EDULIS
SCOTCH PINE	PINUS SYLVESTRIS
ORNAMENTAL TREES	
AMUR MAPLE	ACER GINNALA
COLORADO PAPER BIRCH	BETULA X ANDREWSII
CRABAPPLE HOPA	MALUS HOPA
DOWNY HAWTHORNE	CRATAEGUS MOLLISS
GALLERY PEAR	PIRUS CELLERYANA
GREY DOGWOOD	CORNUS RACEMOSA
JAPANESE TREE LILAC	SYRINA RETICULATA
NEWPORT PLUM	PRUNUS CERASIFERA
SHUBERT CHOKECHERRY	PRUNUS VIRGINIANA
TATARIAN MAPLE	ACER TATARICUM
DECIDUOUS SHRUBS	
AMERICAN PLUM	PRUNUS AMERICANA
AROMATIC SUMAC	RHUS AROMATICA
BLUE MIST SPIREA	CARYOPTERIS X CLANDONIS
BURNING BUSH	EUONYMUS ALATA
BUTTERFLY BUSH	BUDDLEIA SP.
CHOKO CHERRY	MELANOCARPA
CLIFFROSE	COWANIA MEXICANA
CREeping OREGON GRAPE HOLLY	MAHONIA HAEMATOCARPA
FREEMONT'S DESERT HOLLY	MAHONIA FREEMONTII
LILAC	SYRINGA PATULA
MOCKORANGE	PHILADELPHUS
MOUNTAIN NINEBARK	PHYSOCARPUS MONOGYNUS
QUINCE	CHAENOMELES SPP.
RABBITBUSH	CHYSOETHAMNUS NAUSEOSUS
RED BARBERRY	BERBERIS THUNBERGII ATROPURPUREA
RED LEAF JAPANESE BARBERRY	BERBERIS THUNBERGII
RED TWIG DOGWOOD	CORNUS SERICEA
ROCK SPIREA	HOLIDISCUUS DUMOSUS
ROSE	ROSA
RUSSIAN SAGE	PEROVSKIA ATRIPLICIFOLIA
SILVER FOUNTAIN BUTTERFLY BUSH	BUDDLEIA ALTERNIFOLIA 'ARGENTEA'
SMOOTH SUMAC	RHUS GLABRA
SNOWFALL COMMON NINEBARK	PHYSOCARPUS OPUULIFOLIUS 'SNOWFALL'
SPIREA	SPIREA
STAGHORN SUMAC	RHUS TYPHINA
THREELAF SUMAC	RHUS TRILOBATA
WESTERN SAND CHERRY	PRUNUS BESSEYI
YELLOW TWIG DOGWOOD	CORNUS SERICEA 'FLVIRAMEA'
EVERGREEN SHRUBS	
ALPINE CARPET JUNIPER	JUNIPRUS COMMUNIS 'ALPINE CARPET'
CREeping HOLLY GRAPE	MAHONIA REPENS
EUONYMUS MANHATTAN	EUONYMUS KIAUTSCHOVICUS 'MANHATTAN'
JUNIPER	JUNIPERUS SP.
OREGON GRAPE	MAHONIA AQUIFOLIUM
YEW	TAXUS X MEDIA 'HICKSII'
PERENNIALS - (SUGGESTED BUT NOT LIMITED TO)	
ALNUM JOY SEDUM	SEDUM SPECTABILE 'ALNUM JOY'
BLACK EYED SUSAN	RUDBECKIA FULGIDA 'GOLDSTURM'
CORAL BELLS	HELCERA CHOCOLATE RUFFLES
ENGLISH LAVENDER	LANADIAL ANCLUSTIFOLIA 'MUNSTEAD'
LILLY OF THE VALLEY	CONVALLARIA MAJALIS
PRARIE CONEFLOWER	DALEA PURPUREA
ROCKY MOUNTAIN COLOMBINE	AQUILEGIA CAERULEA
SIBERIAN IRIS	IRIS SIBIRCA
TERRA COTTA YARROW	ACHILLEA MILLEFOLIUM TERRA COTTA
WHITE YARROW	ACHILLEA LANULOSA

LANDSCAPING NOTES

- THE LANDSCAPE PLAN IS SCHEMATIC IN NATURE & SUBJECT TO MODIFICATION TO MEET THE CITY'S REQUIREMENTS, THE DEVELOPER'S PROGRAM, OR OTHER NECESSARY REQUIREMENTS.
- LOCATION OF LANDSCAPE PLANTINGS MAY BE ALTERED TO PROVIDE ADEQUATE CLEARANCE FROM THE FINAL LOCATION OF UNDERGROUND UTILITIES. ALL TREES TO BE A MINIMUM OF 1' FROM ALL WET UTILITIES.
- DECIDUOUS TREES SHALL BE 2 1/2" CALIPER MIN. EVERGREEN TREES SHALL BE 6'-8" HIGH MIN. ALL SHRUBS SHALL BE 3 GALLON MIN.
- PROVIDE SUBSURFACE IRRIGATION FOR PARKWAY AREAS LESS THAN 8 FEET.
- GRASS AREAS DESIGNATED AS IRRIGATED TURF SHALL BE SEEDED OR SODDED WITH A DROUGHT TOLERANT GRASS MIXTURE.
- THE LANDSCAPE ASSOCIATED WITH EACH RESIDENTIAL UNIT & ITS ADJACENT ROW OR COMMONS SPACE SHALL BE IRRIGATED UTILIZING THAT UNIT'S DOMESTIC TAP.
- LANDSCAPE AND MAINTENANCE IMPROVEMENTS IN THE PUBLIC ROW SHALL BE THE RESPONSIBILITY OF THE HOA.
- LANDSCAPE AROUND BUILDINGS SHALL BE DRIP IRRIGATED & XERISCAPING IN NATURE.



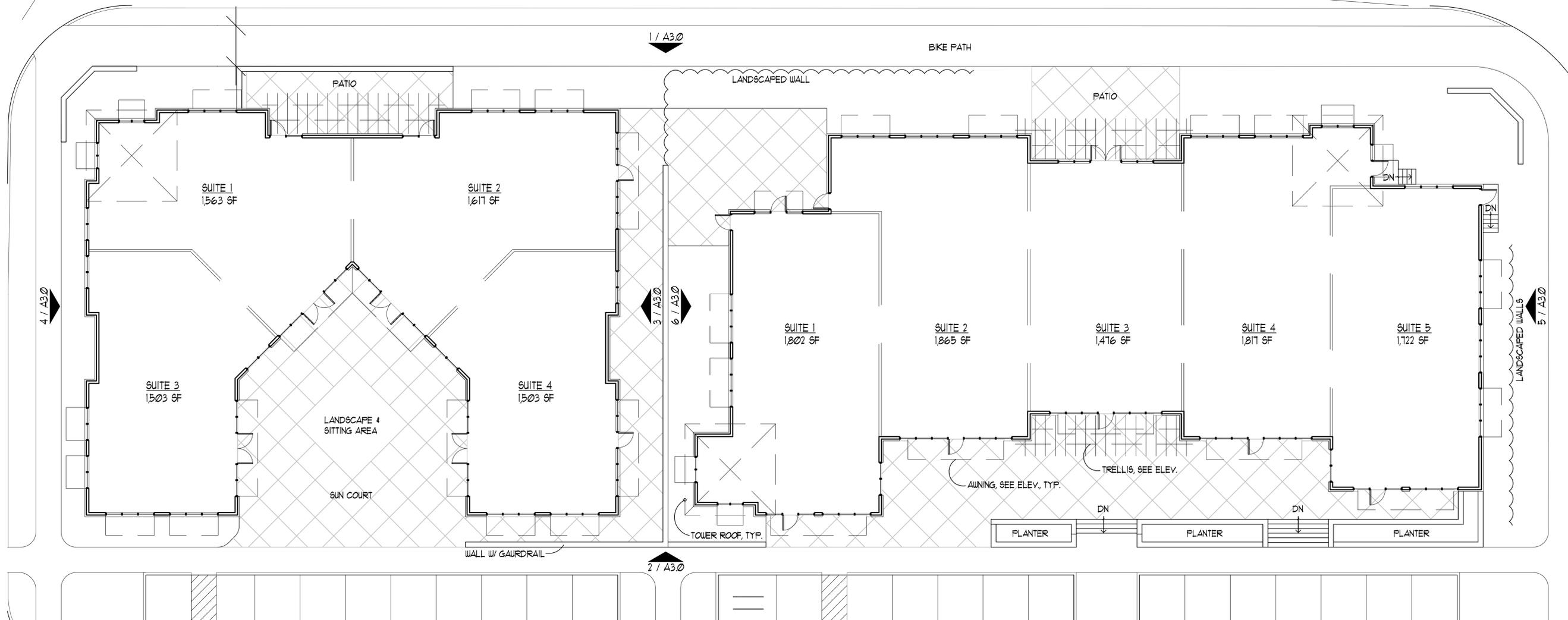
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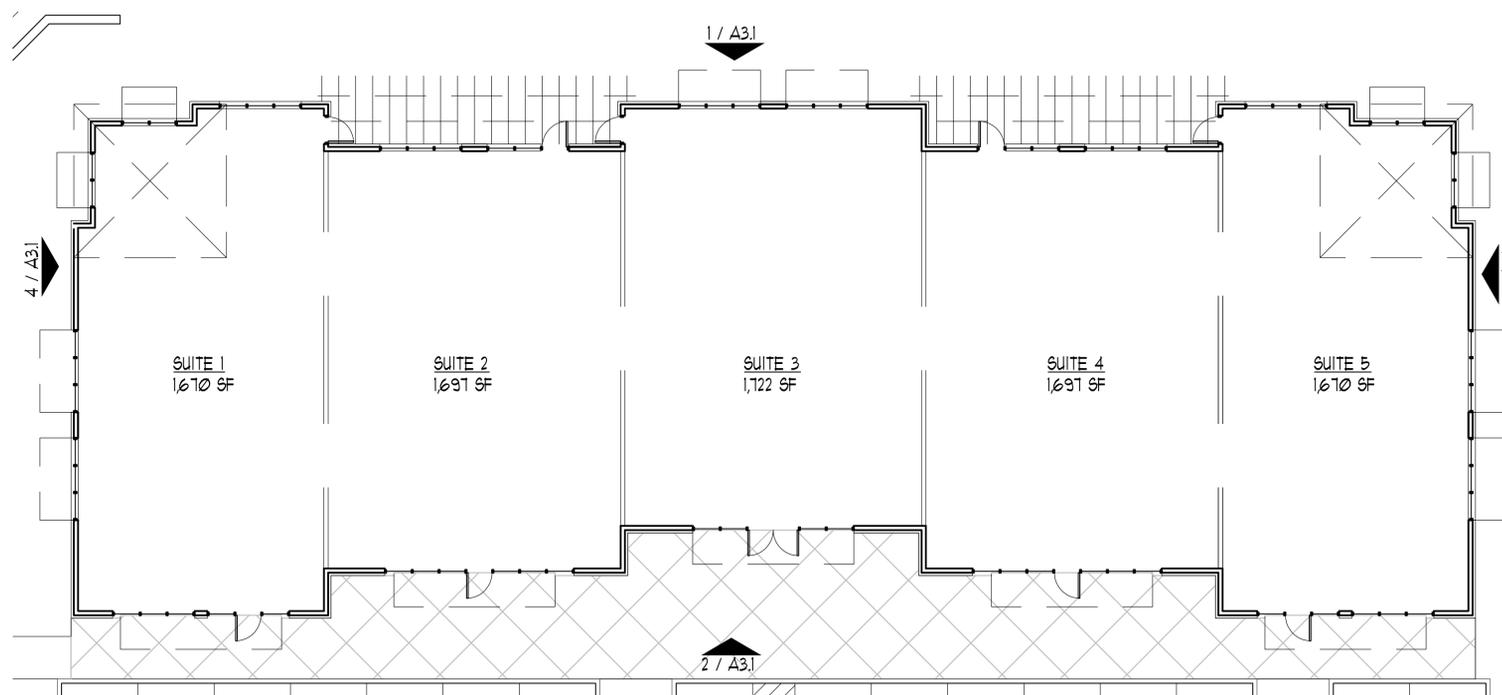
PROJECT #1044
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A1.1



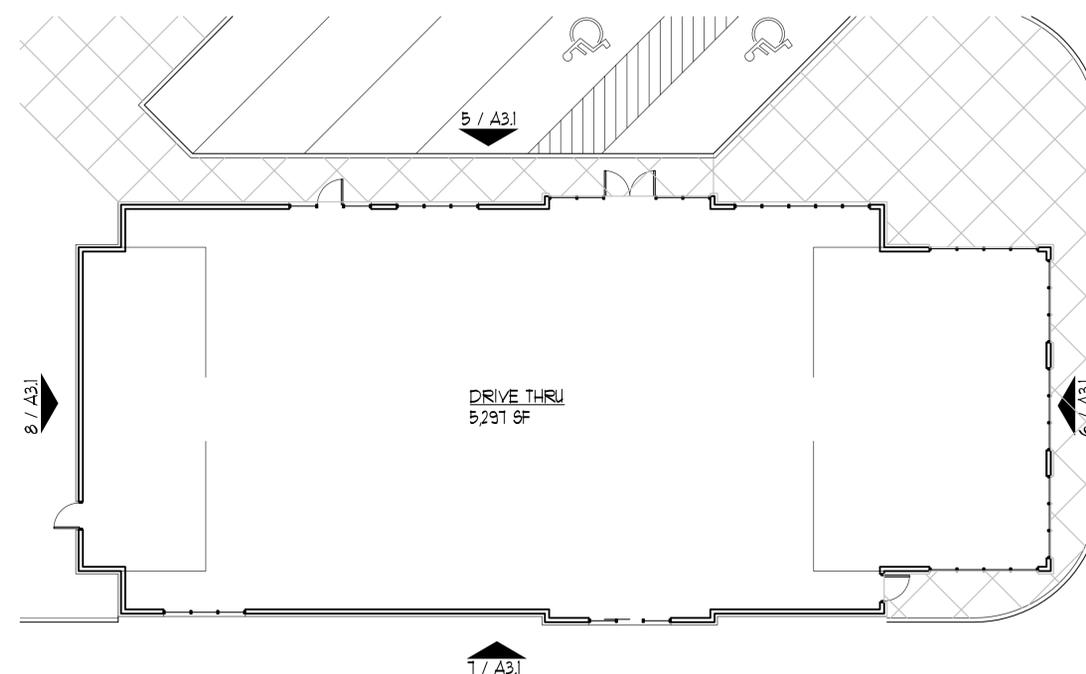
BUILDING A & B FLOOR PLANS
 SCALE: 1" = 10'

BUILDING A - 6,430 SF
 BUILDING B - 8,995 SF



BUILDING C FLOOR PLAN
 SCALE: 1" = 10'

BUILDING C - 8,150 SF



BUILDING D FLOOR PLAN
 SCALE: 1" = 10'

BUILDING D - 5,297 SF

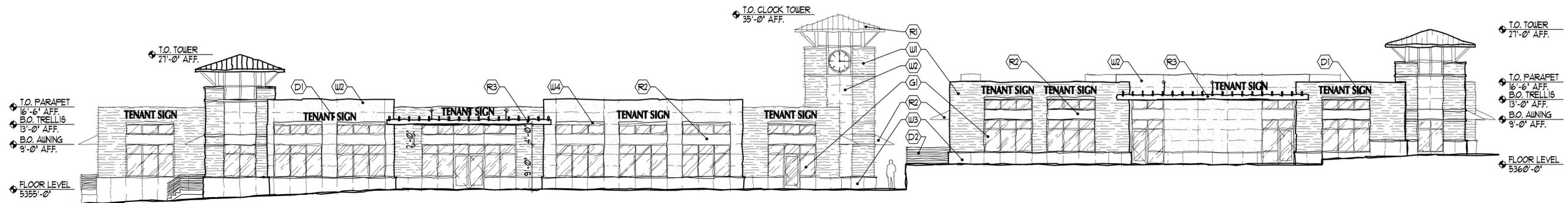
A REDEVELOPMENT OF
COAL CREEK STATION FILING NO. 4
 SOUTH BOULDER ROAD & U.S. HIGHWAY 42, LOUISVILLE, COLORADO 80027

BVZ
 ARCHITECTS
 3445 Penrose Place Suite 220
 Boulder, Colorado 80301
 303-442-0295 • Fax 303-442-0296

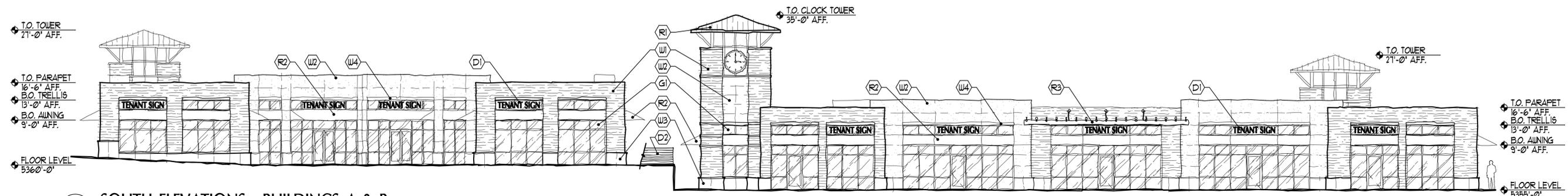
**FINAL
 P.U.D.**

PROJECT #1044
 1/31/13
 REV. 5/17/13
 REV. 2/12/16

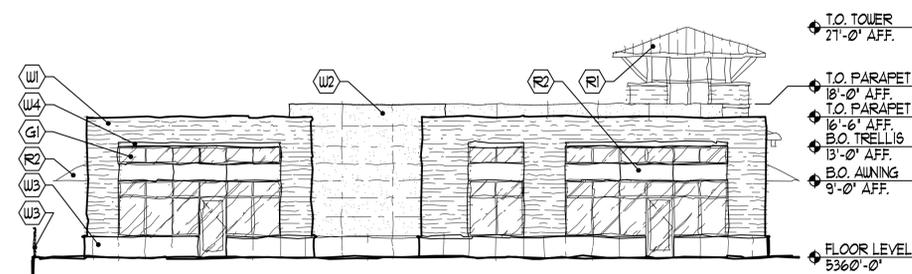
A2.0



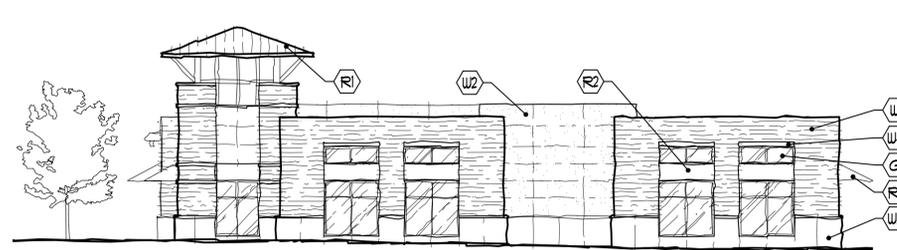
1 NORTH ELEVATIONS - BUILDINGS A & B
A3.0 0 10' SCALE: 1" = 10'



2 SOUTH ELEVATIONS - BUILDINGS A & B
A3.0 0 10' SCALE: 1" = 10'



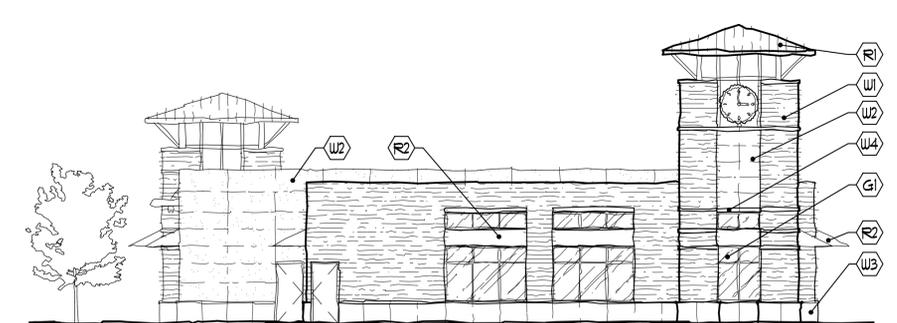
3 EAST ELEVATION - BUILDING A
A3.0 0 10' SCALE: 1" = 10'



4 WEST ELEVATION - BUILDING A
A3.0 0 10' SCALE: 1" = 10'



5 EAST ELEVATION - BUILDING B
A3.0 0 10' SCALE: 1" = 10'



6 WEST ELEVATION - BUILDING B
A3.0 0 10' SCALE: 1" = 10'

MATERIAL KEYNOTES

- (W1) VANEER MASONRY
- (W2) STUCCO
- (W3) STONE VANEER
- (W4) EXPRESSED STEEL
- (R1) METAL ROOF
- (R2) FABRIC CANOPY
- (R3) METAL TRELLIS
- (G1) GLASS STOREFRONT - INSULATED / LOW E
- (D1) TENANT SIGNAGE, BACKLIT LETTERS, SEE DETL. 9 & 10, 6HT, A3.1
- (D2) METAL GAUDDRAIL, 42" HIGH

GENERAL NOTES

1. ALL BUILDING MATERIAL COLORS TO BE EARTH TONE
2. AWNING TO BE COMPLEMENTARY PRIMARY COLORS
3. BUILDING SIGNAGE TO BE REGULATED BY CDD&G. TENANT SIGN LOCATIONS SHOWN ARE FOR POTENTIAL LOCATIONS ONLY. EACH TENANT WILL BE LIMITED TO ONE WALL SIGN PER FRONTAGE.

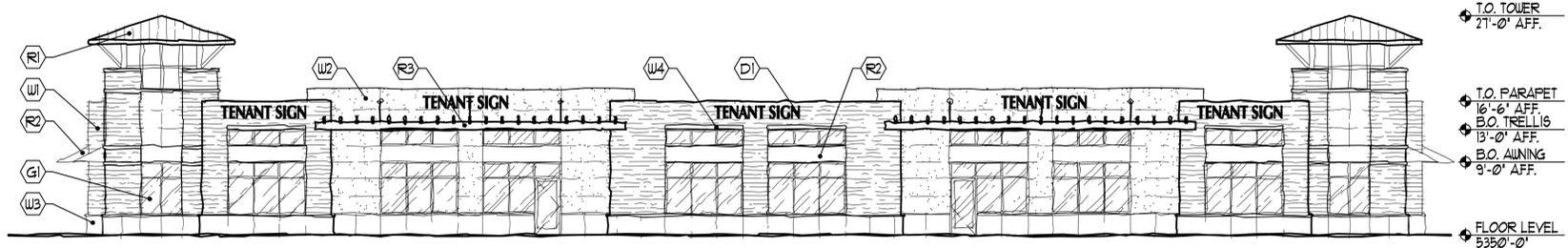
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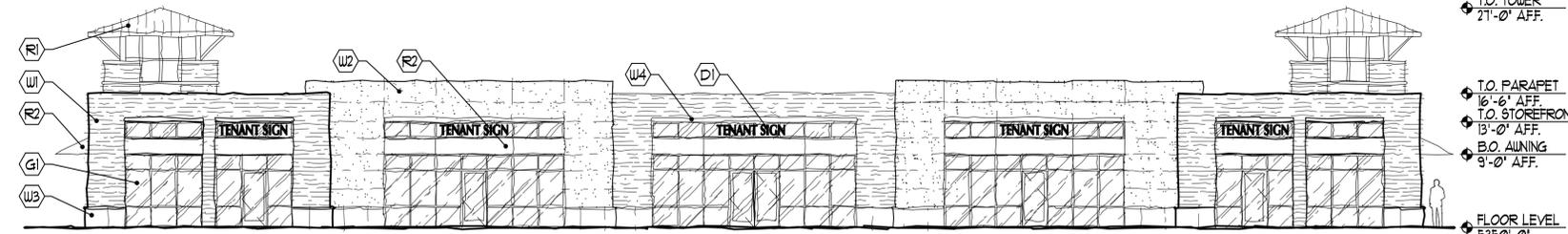
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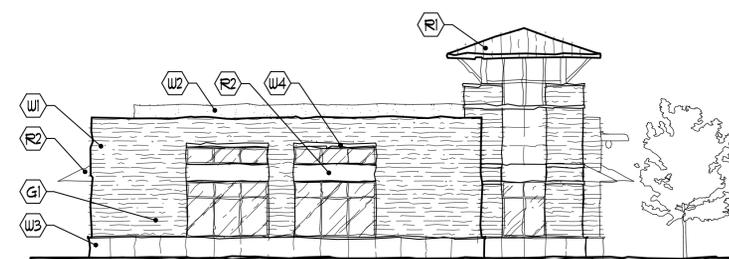
A3.0



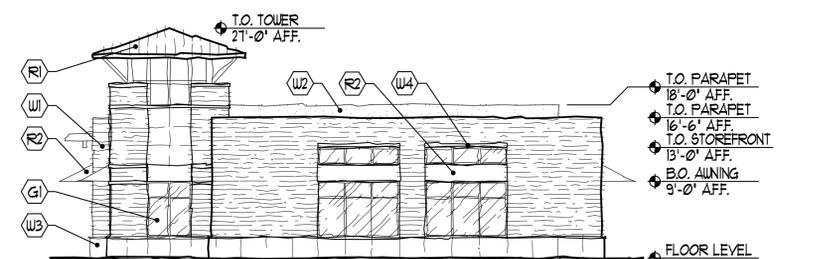
1 NORTH ELEVATION - BUILDING C
A3.1 SCALE: 1" = 10'



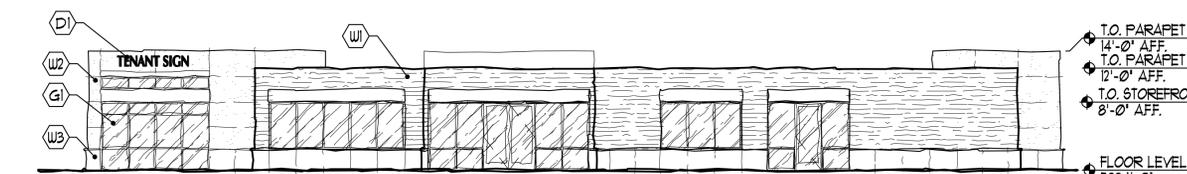
2 SOUTH ELEVATION - BUILDING C
A3.1 SCALE: 1" = 10'



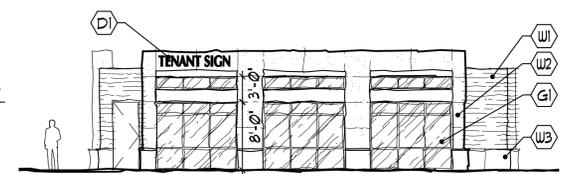
3 EAST ELEVATION - BUILDING C
A3.1 SCALE: 1" = 10'



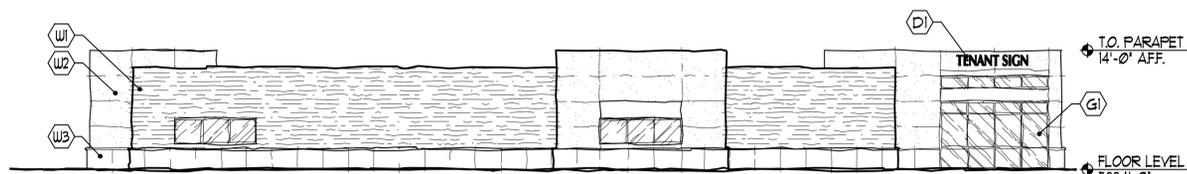
4 WEST ELEVATION - BUILDING C
A3.1 SCALE: 1" = 10'



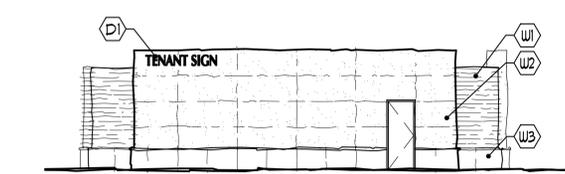
5 NORTH ELEVATION - BUILDING D
A3.1 SCALE: 1" = 10'



6 EAST ELEVATION - BUILDING D
A3.1 SCALE: 1" = 10'



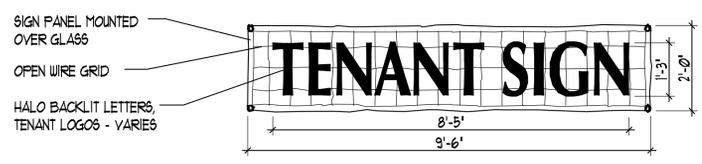
7 SOUTH ELEVATION - BUILDING D
A3.1 SCALE: 1" = 10'



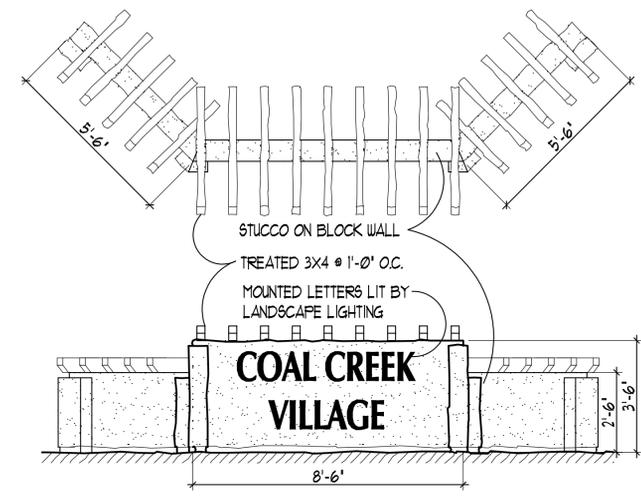
8 WEST ELEVATION - BUILDING D
A3.1 SCALE: 1" = 10'



9 SIGNAGE - NORTH ELEVATIONS
A3.1 SCALE: 1/2" = 1'-0"



10 SIGNAGE PANEL - SOUTH ELEVATIONS
A3.1 SCALE: 1/2" = 1'-0" BOTTOM OF ALL BUILDING SIGNAGE TO BE A MIN. OF 8'-0" AFF.



11 MONUMENT SIGN - TYPICAL
A3.1 SCALE: 3/8" = 1'-0"

MATERIAL KEYNOTES

- (W1) VANEER MASONRY
- (W2) STUCCO
- (W3) STONE VANEER
- (W4) EXPRESSED STEEL
- (R1) METAL ROOF
- (R2) FABRIC CANOPY
- (R3) METAL TRELLIS
- (G1) GLASS STOREFRONT - INSULATED / LOW E
- (D1) TENANT SIGNAGE, BACKLIT LETTERS, SEE DETL. 9 & 10, 6HT, A3.1
- (D2) METAL GAUDDRAIL, 42" HIGH

GENERAL NOTES

1. ALL BUILDING MATERIAL COLORS TO BE EARTH TONE
2. AWNINGS TO BE COMPLEMENTARY PRIMARY COLORS
3. BUILDING SIGNAGE TO BE REGULATED BY CDD&G. TENANT SIGN LOCATIONS SHOWN ARE FOR POTENTIAL LOCATIONS ONLY. EACH TENANT WILL BE LIMITED TO ONE WALL SIGN PER FRONTAGE.

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 REV. 5/17/13
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A3.1

COAL CREEK STATION FILING NO. 4

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P1.0

Symbol	Label	Quantity	Manufacturer	Catalog Number	Description	Lamp	Number Lamps	Filename	Lumens Per Lamp	Light Loss Factor	Wattage
□	A	17	Lithonia Lighting	DSXO LED 20C 1000 50K T3M MVOLT	DSXO LED WITH (1) 20 LED LIGHT ENGINE, TYPE T3M OPTIC, 5000K, @ 1000mA	LED	1	DSXO_LED_20C_1000_50K_T3M_MVOLT.ies	6748.258	0.92	72
□	B	4	Lithonia Lighting	DSXO LED 20C 1000 50K T3M MVOLT	DSXO LED WITH (1) 20 LED LIGHT ENGINE, TYPE T3M OPTIC, 5000K, @ 1000mA	LED	1	DSXO_LED_20C_1000_50K_T3M_MVOLT.ies	6748.258	0.92	144
○	C	3	Lithonia Lighting	DSXB LED 16C 700 50K SYM MVOLT	DSXB WITH 4 LIGHT BOARDS (16 LEDs), 700mA DRIVER, 5000K COLOR TEMP, AND SYMMETRIC OPTIC	LED	1	DSXB_LED_16C_700_50K_SYM_MVOLT.ies	2215.076	0.97	39
^	D	30	Lithonia Lighting	DSXW1 LED 20C 700 50K T4M MVOLT	DSXW1 LED WITH 2 LIGHT ENGINES, 20 LED'S, 700MA DRIVER, 5000K LED, TYPE 4 MEDIUM OPTIC	LED	1	DSXW1_LED_20C_700_50K_T4M_MVOLT.ies	4643.226	0.93	47
□	E	3	Lithonia Lighting	DSXO LED 20C 1000 50K T2S MVOLT	DSXO LED WITH (1) 20 LED LIGHT ENGINE, TYPE T2S OPTIC, 5000K, @ 1000mA	LED	1	DSXO_LED_20C_1000_50K_T2S_MVOLT.ies	6763.671	0.92	72

No.	Label	X	Y	Z	MH	Orientation	Tilt	X	Y	Z	Aim
4	A	197.00	-157.00	20.00	20.00	287.84	0.00	195.75	-157.05	0.00	
6	A	104.00	-1.00	20.00	20.00	0.00	0.00	104.00	0.25	0.00	
8	A	368.00	-142.00	20.00	20.00	0.00	0.00	368.00	-142.75	0.00	
13	A	718.00	-181.00	20.00	20.00	10.62	0.00	718.23	-179.77	0.00	
15	A	939.00	-191.00	20.00	20.00	0.00	0.00	939.00	-189.75	0.00	
16	A	929.00	-92.00	20.00	20.00	-90.00	0.00	927.75	-92.00	0.00	
18	A	834.00	-6.00	20.00	20.00	180.00	0.00	834.00	-7.25	0.00	
19	A	760.00	-54.00	20.00	20.00	0.00	0.00	760.00	-52.75	0.00	
20	A	876.00	-53.00	20.00	20.00	0.00	0.00	876.00	-51.75	0.00	
21	A	685.00	-6.00	20.00	20.00	180.00	0.00	685.00	-7.25	0.00	
25	A	549.00	102.00	20.00	20.00	90.00	0.00	550.25	102.00	0.00	
26	A	551.00	211.00	20.00	20.00	94.76	0.00	552.25	210.90	0.00	
27	A	640.00	170.00	20.00	20.00	0.00	0.00	640.00	171.25	0.00	
28	A	754.00	171.00	20.00	20.00	0.00	0.00	754.00	172.25	0.00	
31	A	239.00	69.00	20.00	20.00	-78.56	0.00	237.77	69.25	0.00	
34	A	237.00	226.00	20.00	20.00	268.90	0.00	235.75	225.96	0.00	
36	A	641.13	-74.60	20.00	20.00	232.98	0.00	640.13	-75.35	0.00	
1	B	274.00	154.00	20.00	20.00	90.00	0.00				
2	B	359.00	154.00	20.00	20.00	90.00	0.00				
3	B	439.00	154.00	20.00	20.00	90.00	0.00				
4	B	519.00	160.00	20.00	20.00	90.00	0.00				
1	C	351.00	98.00	3.00	3.00	0.00	0.00	351.00	98.00	0.00	
2	C	537.00	42.00	3.00	3.00	0.00	0.00	537.00	42.00	0.00	
3	C	251.00	87.00	3.00	3.00	0.00	0.00	251.00	87.00	0.00	
1	D	759.00	-96.00	10.00	10.00	-90.00	0.00	759.00	-96.00	0.00	
2	D	657.00	-105.00	10.00	10.00	90.00	0.00	657.00	-105.00	0.00	
3	D	826.00	-57.00	10.00	10.00	0.00	0.00	826.00	-57.00	0.00	
4	D	791.00	-66.00	10.00	10.00	0.00	0.00	791.00	-66.00	0.00	
5	D	759.00	243.00	10.00	10.00	180.00	0.00	759.00	243.00	0.00	
6	D	732.00	248.00	10.00	10.00	180.00	0.00	732.00	248.00	0.00	
7	D	697.00	253.00	10.00	10.00	180.00	0.00	697.00	253.00	0.00	
8	D	662.00	248.00	10.00	10.00	180.00	0.00	662.00	248.00	0.00	
9	D	635.00	243.00	10.00	10.00	180.00	0.00	635.00	243.00	0.00	
10	D	722.00	301.00	10.00	10.00	0.00	0.00	722.00	301.00	0.00	
11	D	671.00	300.00	10.00	10.00	0.00	0.00	671.00	300.00	0.00	
12	D	646.00	301.00	10.00	10.00	90.00	0.00	646.00	301.00	0.00	
13	D	528.00	293.00	10.00	10.00	90.00	0.00	528.00	293.00	0.00	
14	D	453.00	302.00	10.00	10.00	0.00	0.00	453.00	302.00	0.00	
15	D	388.00	292.00	10.00	10.00	0.00	0.00	388.00	292.00	0.00	
16	D	397.00	292.00	10.00	10.00	-90.00	0.00	397.00	292.00	0.00	
17	D	378.00	288.00	10.00	10.00	-90.00	0.00	378.00	288.00	0.00	
18	D	390.00	230.00	10.00	10.00	180.00	0.00	390.00	230.00	0.00	
19	D	423.00	244.00	10.00	10.00	180.00	0.00	423.00	244.00	0.00	
20	D	453.00	249.00	10.00	10.00	180.00	0.00	453.00	249.00	0.00	
21	D	483.00	244.00	10.00	10.00	180.00	0.00	483.00	244.00	0.00	
22	D	507.00	235.00	10.00	10.00	180.00	0.00	507.00	235.00	0.00	
23	D	357.00	243.00	10.00	10.00	90.00	0.00	357.00	243.00	0.00	
24	D	357.00	298.00	10.00	10.00	90.00	0.00	357.00	298.00	0.00	
25	D	325.00	244.00	10.00	10.00	-90.00	0.00	325.00	244.00	0.00	
26	D	282.00	243.00	10.00	10.00	90.00	0.00	282.00	243.00	0.00	
27	D	310.00	271.00	10.00	10.00	220.82	0.00	310.00	271.00	0.00	
28	D	297.00	272.00	10.00	10.00	142.70	0.00	297.00	272.00	0.00	
29	D	748.00	301.00	10.00	10.00	-90.00	0.00	748.00	301.00	0.00	
30	D	509.00	299.00	10.00	10.00	90.00	0.00	509.00	299.00	0.00	
1	E	699.00	238.00	20.00	20.00	0.00	0.00	699.00	238.25	0.00	
2	E	453.00	232.00	20.00	20.00	0.00	0.00	453.00	233.25	0.00	
3	E	302.00	231.00	20.00	20.00	0.00	0.00	302.00	232.25	0.00	

NOTE: STREET LIGHTING ON PUBLIC STREETS WILL BE PROVIDED BY XCEL ENERGY AT THE EXPENSE OF THE DEVELOPER.

PHOTOMETRIC PLAN
SCALE: 1" = 50'

D-Series Size 1 LED Area Luminaire



Specifications
 EPA: 1.2 ft² (0.11 sqm)
 Length: 33" (83.8 cm)
 Width: 13" (33.0 cm)
 Height: 7.1/2" (190.2 mm)
 Weight: 27 lbs (12.2 kg)

Introduction
 The modern styling of the D-Series is striking yet unobtrusive—making a bold, progressive statement even as it blends seamlessly with its environment.

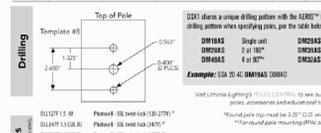
The D-Series distills the benefits of the latest in LED technology into a high performance, high efficacy, long-life luminaire. The outstanding photometric performance results in sites with excellent uniformity, greater pole spacing and lower power density. It is ideal for replacing 100–400W metal halide in pedestrian and area lighting applications with typical energy savings of 65% and expected service life of over 100,000 hours.

Ordering Information

EXAMPLE: DSX1 LED 60C 1000 40K T3M MVOLT SPA DDBXD

Series	LEDs	Drive current	Color temperature	Distribution	Voltage	Mounting	Control options	Other options	Finish
DSX1 LED	Forward optics 30C 30 LEDs 10W 40C 40 LEDs 15W 60C 60 LEDs 20W	530 mA 700 mA 900 mA	3000K 4000K 5000K	T15 T25 T3M T4M T5M	120V 208V 240V 277V 480V	SPA RPA WBA SRBMA FTFM FRHMA BSL50	None DIM SF DCK DSC PIR PRH BL30 BL50	None AST DCK DSC T15 L150 R90	DBX0 DBL0 DBW0 DBR0 DBS0 DBW0 DBW0 DBW0

Drilling



Accessories

Tenon Mounting Slipfitter**

Part	1-2"	2-4"	4-6"	6-8"	8-10"
DSX1	8215-20	8215-30	8215-40	8215-50	8215-60

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Performance Data

Lumen Ambient Temperature (LAT) Multipliers

Ambient	20°C	25°C	30°C	35°C	40°C
Lumen Multiplier	1.00	0.97	0.94	0.91	0.89

Electrical Load

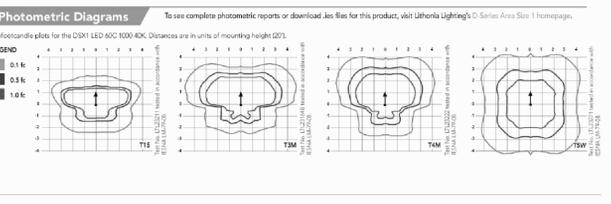
Current (A)	120	208	240	277	347	480
30	530	532	535	538	541	544
40	708	710	713	716	719	722
60	1062	1064	1067	1070	1073	1076

Projected LED Lumen Maintenance

Operating Hours	0	25,000	50,000	100,000
Lumen Maintenance Factor	1.0	0.96	0.92	0.88

Photometric Diagrams

To see complete photometric reports or download .jas files for this product, visit Lithonia Lighting's D-Series Area Size 1 homepage.



FEATURES & SPECIFICATIONS

INTENDED USE
 The sleek design of the D-Series 1 reflects the embedded high performance LED technology. It is ideal for many commercial and municipal applications, such as parking lots, plazas, campuses, and embankments.

CONSTRUCTION
 Single-piece die-cast aluminum housing has integral heat sink fins to optimize thermal management through conduction and convection cooling. Modular design allows for ease of maintenance and future light engine upgrades. The LED driver is mounted in direct contact with the casting to promote low operating temperature and long life. Housing is completely sealed against moisture and environmental contaminants (IP65, Low EMI, D-18) for optimized pole wind loading.

FINISH
 Exterior parts are protected by a zinc-influenced Super Durable TiO₂ ceramic powder coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures a minimum 3-mil thickness for a finish that can withstand extreme climate changes without cracking or peeling. Available in both textured and non-textured finishes.

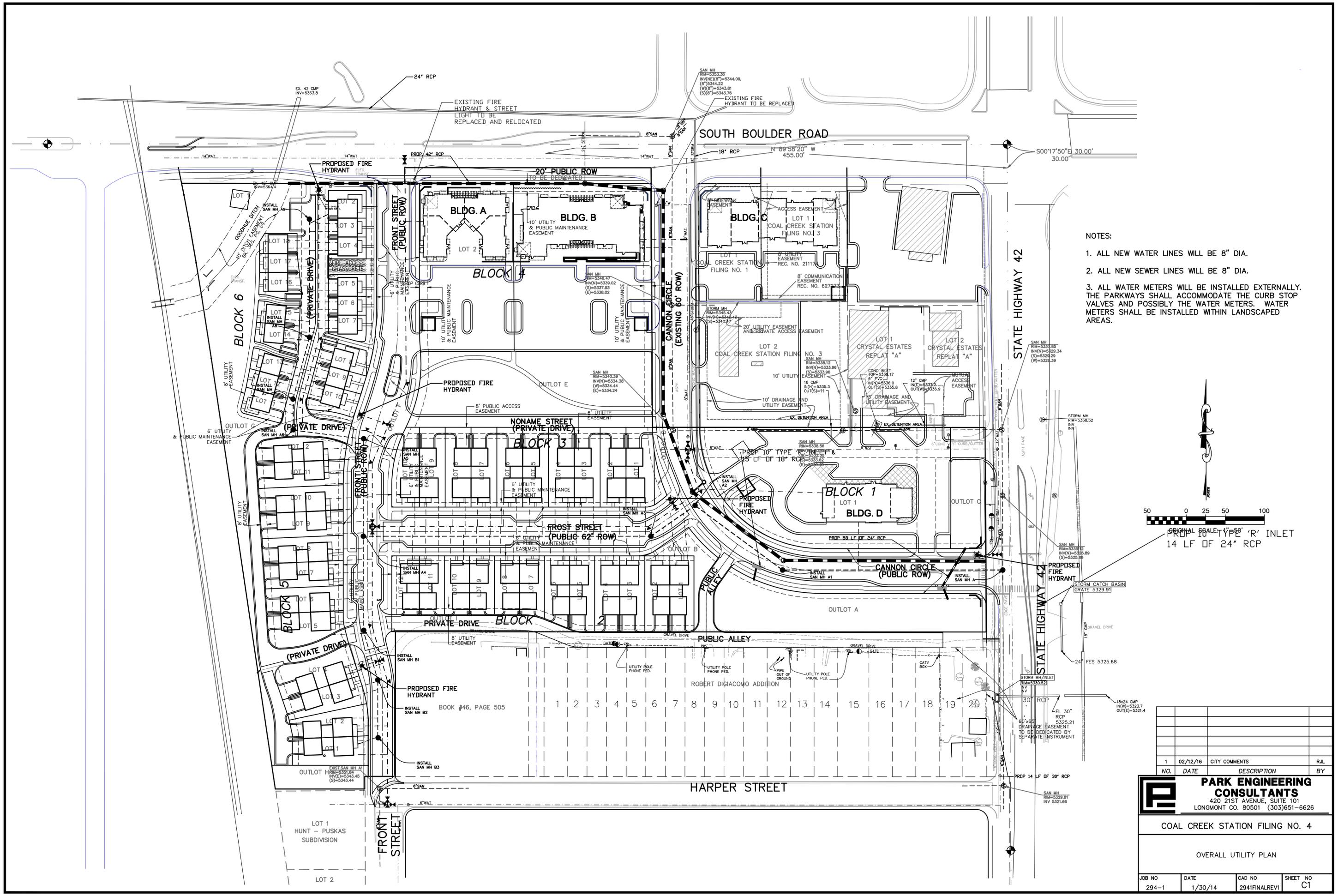
OPTICS
 Precision-molded proprietary acrylic lenses are engineered for superior area lighting distribution, uniformity, and glare control. Light engines are available in options for 4000K CRI minimum (3000 or 3000K 60 minimum CRI), 5000K 67 CRI configurations. The D-Series Size 1 has an uplight and a light engine. Front and back lenses are available in a consistent with the LED's and Green Glides™ criteria for eliminating wasteful uplight.

ELECTRICAL
 Light engine configurations consist of 30, 40 or 60 high-efficiency LEDs mounted to metal-core circuit boards to maximize heat dissipation and promote long life up to 100,000 hours at 25°C Class 1 electronic drivers are designed to have a power factor >0.90, THD < 5%, and an

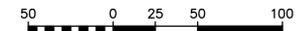
expected life of 100,000 hours with <1% failure rate. Easily serviceable, 18W or 30W surge protection device meets a minimum Category C Line operator per ANSI/IEEE C62.41.2.

INSTALLATION
 Included mounting block and integral arm facilitate quick and easy installation. Slipless cone bolts feature the same design as the mounting block to ensure proper fit. The D-Series Size 1 is designed to be installed on a 3.0" aluminum rod (not included) per ANSI C106.31. The D-Series Size 1 utilizes the AER™ series pole drilling pattern. Optional non-metallic back, top, lens, and LED's polymer resin caps are available.

LISTINGS
 CSA certified for U.S. and Canadian standards. Light engines are IP66 rated. International per IEC. Listed for 40°C maximum ambient. U.S. Patent Nos. 7,672,925, 7,672,926, 7,672,927, 7,672,928, 7,672,929, 7,672,930, 7,672,931, 7,672,932, 7,672,933, 7,672,934, 7,672,935, 7,672,936, 7,672,937, 7,672,938, 7,672,939, 7,672,940, 7,672,941, 7,672,942, 7,672,943, 7,672,944, 7,672,945, 7,672,946, 7,672,947, 7,672,948, 7,672,949, 7,672,950, 7,672,951, 7,672,952, 7,672,953, 7,672,954, 7,672,955, 7,672,956, 7,672,957, 7,672,958, 7,672,959, 7,672,960, 7,672,961, 7,672,962, 7,672,963, 7,672,964, 7,672,965, 7,672,966, 7,672,967, 7,672,968, 7,672,969, 7,672,970, 7,672,971, 7,672,972, 7,672,973, 7,672,974, 7,672,975, 7,672,976, 7,672,977, 7,672,978, 7,672,979, 7,672,980, 7,672,981, 7,672,982, 7,672,983, 7,672,984, 7,672,985, 7,672,986, 7,672,987, 7,672,988, 7,672,989, 7,672,990, 7,672,991, 7,672,992, 7,672,993, 7,672,994, 7,672,995, 7,672,996, 7,672,997, 7,672,998, 7,672,999, 7,673,000, 7,673,001, 7,673,002, 7,673,003, 7,673,004, 7,673,005, 7,673,006, 7,673,007, 7,673,008, 7,673,009, 7,673,010, 7,673,011, 7,673,012, 7,673,013, 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7,673,378, 7,673,379, 7,673,380, 7,673,381, 7,673,382, 7,673,383, 7,673,384, 7,673,385, 7,673,386, 7,673,387, 7,673,388, 7,673,389, 7,673,390, 7,673,391, 7,673,392, 7,673,393, 7,673,394, 7,673,395, 7,673,396, 7,673,397, 7,673,398, 7,673,399, 7,673,400, 7,673,401, 7,673,402, 7,673,403, 7,673,404, 7,673,405, 7,673,406, 7,673,407, 7,673,408, 7,673,409, 7,673,410, 7,673,411, 7,673,412, 7,673,413, 7,673,414, 7,673,415, 7,673,416, 7,673,417, 7,673,418, 7,673,419, 7,673,420, 7,673,421, 7,673,422, 7,673,423, 7,673,424, 7,673,425, 7,673,426, 7,673,427, 7,673,428, 7,673,429, 7,673,430, 7,673,431, 7,673,432, 7,673,433, 7,673,434, 7,673,435, 7,673,436, 7,673,437, 7,673,438, 7,673,439, 7,673,440, 7,673,441, 7,673,442, 7,673,443, 7,673,444, 7,673,445, 7,673,446, 7,673,447, 7,673,448, 7,673,449, 7,673,450, 7,673,451, 7,673,452, 7,673,453, 7,673,454, 7,673,455, 7,673,456, 7,673,457, 7,673,458, 7,673,459, 7,673,460, 7,673,461, 7,673,462, 7,673,463, 7,673,464, 7,673,465, 7,673,466, 7,673,467, 7,673,468, 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- NOTES:
1. ALL NEW WATER LINES WILL BE 8" DIA.
 2. ALL NEW SEWER LINES WILL BE 8" DIA.
 3. ALL WATER METERS WILL BE INSTALLED EXTERNALLY. THE PARKWAYS SHALL ACCOMMODATE THE CURB STOP VALVES AND POSSIBLY THE WATER METERS. WATER METERS SHALL BE INSTALLED WITHIN LANDSCAPED AREAS.



ORIGINAL 18" DIA. TYPE 'R' INLET
14 LF OF 24" RCP

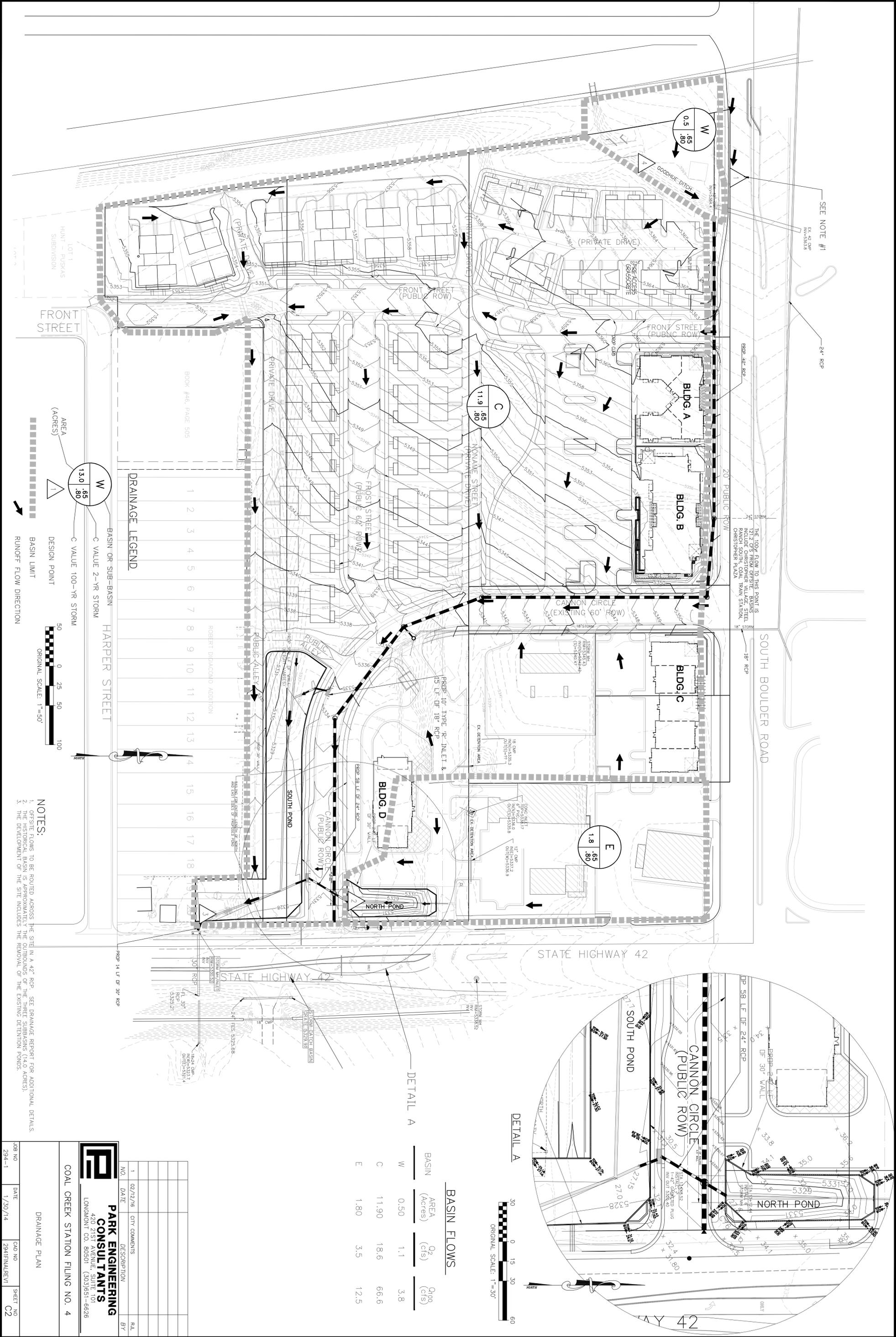
NO.	DATE	CITY COMMENTS	R/L
1	02/12/16		

PARK ENGINEERING CONSULTANTS
420 21ST AVENUE, SUITE 101
LONGMONT CO. 80501 (303)651-6626

COAL CREEK STATION FILING NO. 4

OVERALL UTILITY PLAN

JOB NO	DATE	CAD NO	SHEET NO
294-1	1/30/14	2941FINALREV1	C1



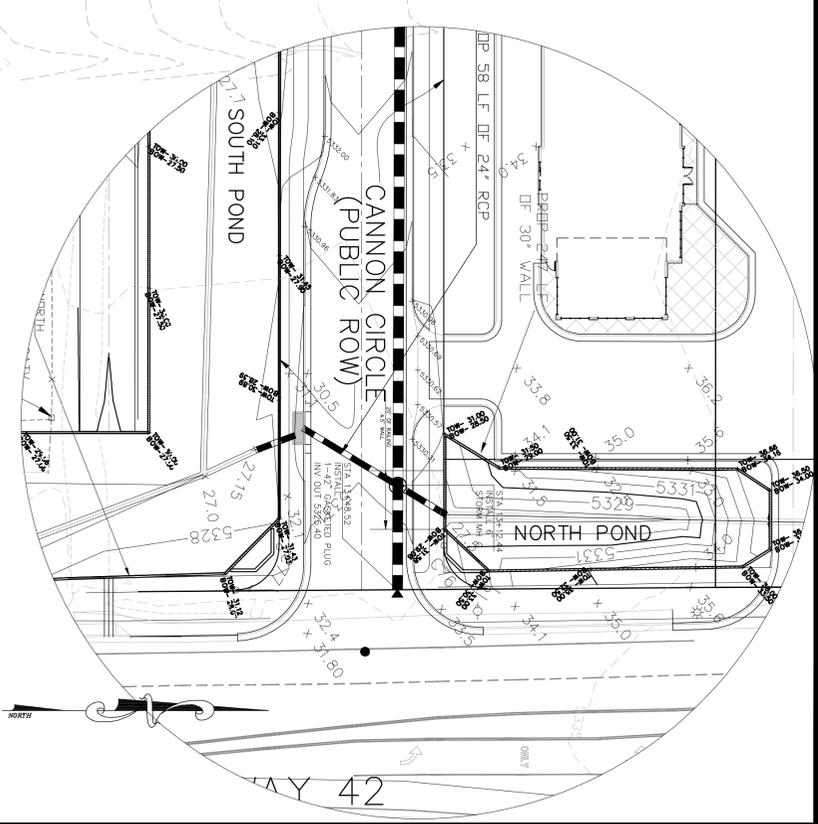
SEE NOTE #1
EX. 42 CMP
N.V. 53583.8

THE 100' FLOW TO THIS POINT IS
121.2' FROM OFFSITE BASINS
INCLUDE CHRISTOPHER WALLACE STEEL
RAILROAD CHRISTOPHER WALLACE STATION
CHRISTOPHER PLAZA

SOUTH BOULDER ROAD
18' RCP

STATE HIGHWAY 42

STATE HIGHWAY 42



DETAIL A



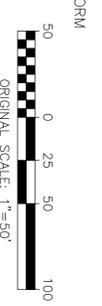
BASIN FLOWS

BASIN	AREA (Acres)	Q ₂ (cfs)	Q ₁₀₀ (cfs)
W	0.50	1.1	3.8
C	11.90	18.6	66.6
E	1.80	3.5	12.5

DETAIL A

DRAINAGE LEGEND

- BASIN OR SUB-BASIN
- C VALUE 2-YR STORM
- C VALUE 100-YR STORM
- DESIGN POINT
- RUNOFF FLOW DIRECTION



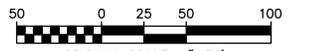
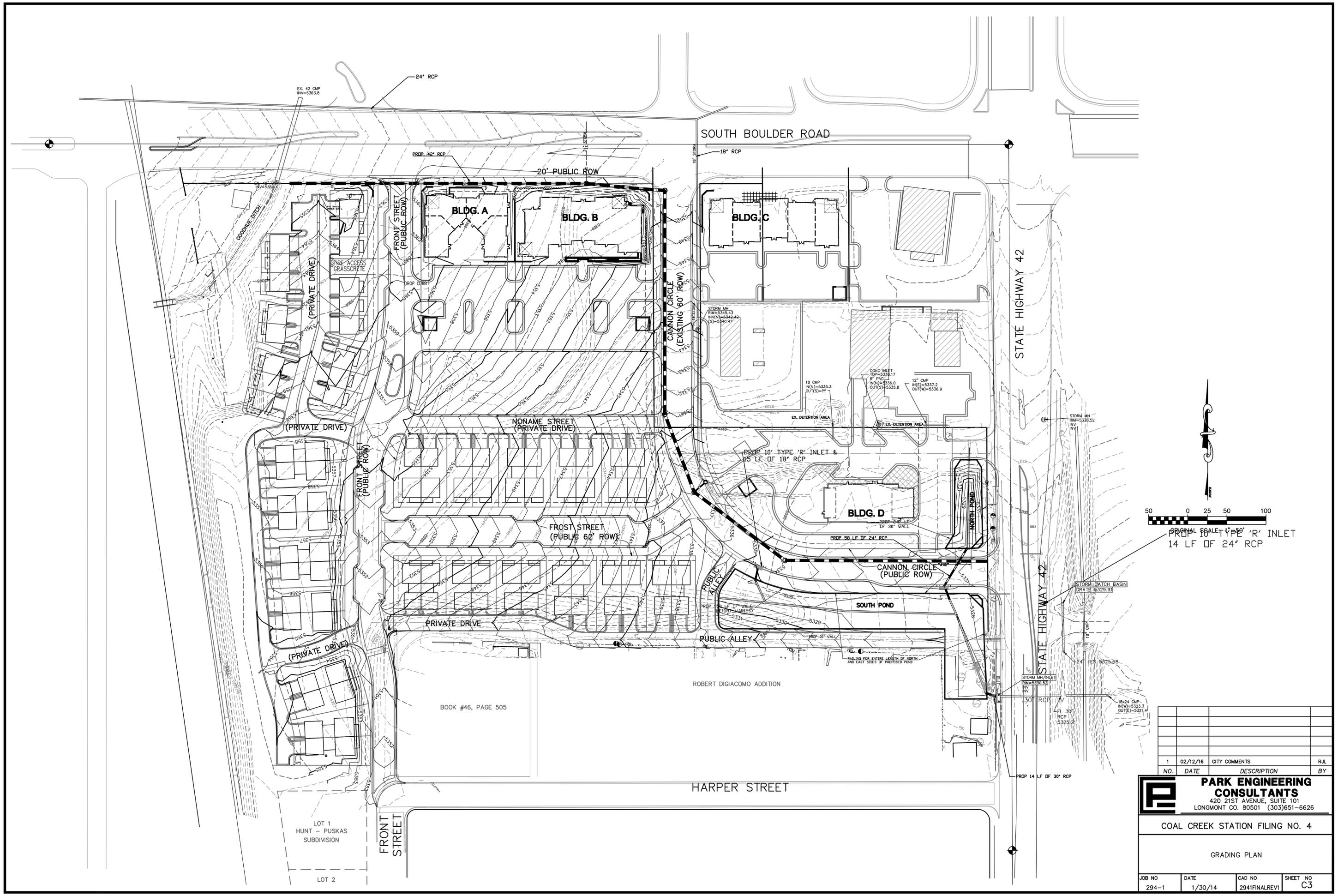
- NOTES:**
- OFFSITE FLOWS TO BE ROUTED ACROSS THE SITE IN A 42" RCP. SEE DRAINAGE REPORT FOR ADDITIONAL DETAILS.
 - THE HISTORICAL BASIN IS APPROXIMATELY THE OUTBOUNDS OF THE THREE SUBBASINS (4.0 ACRES).
 - THE DEVELOPMENT OF THE SITE INCLUDES THE REMOVAL OF THE EXISTING DETENTION POND(S).

PARK ENGINEERING CONSULTANTS
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LONGMONT CO. 80501 (303)951-6626

COAL CREEK STATION FILING NO. 4

DRAINAGE PLAN

JOB NO	DATE	CAD NO	SHEET NO
294-1	1/30/14	2941FALEBEV1	C2



PROPOSED 10' TYPE 'R' INLET & 15 LF OF 18" RCP
 14 LF OF 24" RCP

NO.	DATE	DESCRIPTION	BY
1	02/12/16	CITY COMMENTS	RJL

PARK ENGINEERING CONSULTANTS
 420 21ST AVENUE, SUITE 101
 LONGMONT CO. 80501 (303)651-6626

COAL CREEK STATION FILING NO. 4

GRADING PLAN

JOB NO	DATE	CAD NO	SHEET NO
294-1	1/30/14	2941FINALREV1	C3

Coal Creek Station

Traffic Impact Study

Eastpark Associates

Louisville, Colorado

May 17, 2013

Prepared By:



Sustainable Traffic Solutions, Inc.

823 West 124th Drive

Westminster, CO 80234

303.589.6875

Joseph L. Henderson, PE, PTOE



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Coal Creek Station

Traffic Impact Study

1.0 Introduction

Eastpark Associates is proposing to redevelop the southwest corner of SH 42 / South Boulder Road in Louisville (see Figure 1). The site has some existing businesses, some of which will remain. The new development will include additional retail and residential uses. This study has been prepared in conformance with Colorado Department of Transportation requirements for traffic studies¹.

Questions posed by the City that are answered in the study include:

- Should the alley bordering the south side of the site be closed or made one-way? If it is made one-way, which direction should the traffic flow? (see Section 2.2)
- What are the 95th percentile queues for the left turn bays? (see Sections 4.3, 6.5, and 7.3)
- How much development traffic will use Front Street and Griffith Street? (see Section 5.2)
- Is an eastbound right turn lane necessary at SH 42 / South Boulder Road? (see Section 7.4)
- How will signal progression on SH 42 be impacted by the new signal in the short term and long term? (see Section 8.0)

2.0 Project Description

2.1 Proposed Development

The proposed development will have the following uses.

Land Use	Size	Unit
Self-Service Car Wash - Existing	4	Wash Stall
Automotive Care Center - Existing	8	1000 FT2 GFA
Liquor Store - Existing	5	1000 FT2 GFA
Specialty Retail - Buildings A, B, and C	26	1000 FT2 GFA
Fast Food with Drive Thru - Building D	5	1000 FT2 GFA
Residential Condominium / Townhouse	50	DU

¹ State Highway Access Code. Transportation Commission of Colorado. March 2002.

2.2 Existing and Proposed Streets and Intersections

The roadways providing access to the development include SH 42 and South Boulder Road (See Figure 2). A description of these roadways is presented below:

SH 42 is a north / south major arterial street that is classified as an NR-A roadway by CDOT². It is a four lane street with auxiliary lanes north of South Boulder Road and narrows to a two lane street with auxiliary lanes south of the development site. The speed limit is 45 MPH in the vicinity of the site.

South Boulder Road a four lane east / west major arterial street with auxiliary lanes at intersections. It is owned and operated by the City. The signalized intersection at SH 42 is owned by CDOT and maintained by the City. The speed limit is 35 MPH in the vicinity of the site.

Several accesses are proposed to the site including:

- Full movement access to South Boulder Road, SH 42, and Front Street are proposed. The intersection on SH 42 will warrant signalization at the completion of the development.
- Right-in / right-out access is proposed on South Boulder Road and SH 42.

Recommendation. Right turn deceleration and acceleration lanes are not necessary at the South Boulder Road accesses because turning volumes are not expected to be high enough to warrant them. On SH 42, it is not feasible to construct right turn acceleration and deceleration lanes because of the existing land uses on the west side of the corridor and the Boulder County Open Space on the east side. Left turn deceleration lanes are necessary at the full movement intersections.

An alley exists north of Harper Street and south of the Coal Creek Station development. The new signalized intersection that will provide access to the development will be less than 50' from the alley. The alley provides access to 12 properties which all have access to Harper Street. Volumes in the alley from the properties are extremely low. There are four options for access to the alley from SH 42 including:

- **Close the Alley at SH 42.** If the alley is closed at SH 42, the only access would be at Front Street and Cannon Circle (as shown in the site plan). Closing the alley would eliminate the possibility that it would be used as a cut through to avoid the signalized intersection.
- **Right-in / Right-out at SH 42.** Limiting the alley to right-in / right-out at SH 42 could result in cut through traffic to avoid the new

² State Highway Access Category Assignment Schedule. Transportation Commission of Colorado. June 30, 2010.

signalized intersection. This option would result in the highest number of conflicts with traffic on SH 42.

- **One-Way Eastbound.** Making the alley one-way eastbound at SH 42 would result in traffic from the alley entering SH 42. Motorists would be restricted to the eastbound to southbound right turn movement which would limit the number of conflicts with traffic on SH 42. Cut through traffic is a possibility to avoid the signalized intersection.
- **One-Way Westbound.** Making the alley one-way westbound at SH 42 would result in traffic turning from SH 42 into the alley. In this situation, turning movements would be restricted to the southbound to westbound right turn. Cut through traffic is a possibility, but not as likely as it would be if the alley is limited to westbound traffic.

Recommendation. Given these options, STS recommends that the alley be closed at SH 42 to minimize conflicts with traffic on this high speed major arterial. Access to the alley would be at Front Street and Cannon Circle as shown in the site plan.

2.3 Study Assumptions

The following assumptions were utilized for this study.

- **Short Term Horizon.** The study assumes that the development will be completed in one phase by 2015.
- **Long Term Horizon.** The long term horizon is assumed to be 2035 to coincide with the current DRCOG planning model.
- **Peak Hour to Daily Ratio.** The current peak-hour-to-daily ratio at SH 42 / South Boulder Road ranges from 4% to 7% depending on the leg and peak hour. These ratios were assumed for the Year 2015 and Year 2035 horizons. A low peak hour to daily ratio (4%) says that traffic volumes are similar, by approach, throughout the day. That's not uncommon on busy corridors that have regional significance.
- **Saturation Flow Rate.** The saturation flow rate was assumed to be 1,900 passenger vehicles / hour / lane which is the default value in Synchro.
- **Peak Hour Factor.** The peak hour factor for the existing traffic was used for the analysis of the existing and Year 2015 traffic. A peak hour factor of 0.92 was assumed for the Year 2035 analysis.
- **Truck Percentage.** The percentage of trucks was assumed to be 5%.

3.0 Corridor Access

Sustainable Traffic Solutions, Inc. (STS) performed a traffic study for the City of Louisville to evaluate the potential for a signalized access on SH 42 for the proposed development. The study determined that a

signalized access on SH 42 is feasible based on the existing access control plan and the CDOT access code requirements. A summary of the access on the corridor is contained in Figure 3 and the letter report is contained in Appendix A.

4.0 Existing Conditions

4.1 Existing Traffic Volumes

Traffic count, classification, and speed data were collected by Navjoy Consulting Services on Thursday December 2, 2010. In anticipation of future turn restrictions at SH 42 / Harper Street and SH 42 / Griffith Street, morning and evening peak hour counts were collected at these intersections in November 2012. A summary of the data is contained in Figure 4 and the raw data are contained in Appendix B.

4.2 Level of Service Analysis

To evaluate the performance of the intersections within the study area, the Level of Service (LOS) was calculated using Synchro software. This software package utilizes criteria described in the Highway Capacity Manual³. LOS is a measure used to describe operational conditions at an intersection. LOS categories ranging from A to F are assigned based on the predicted delay in seconds per vehicle for the intersection as a whole, as well as for individual turning movements. LOS A indicates very good operations, and LOS F indicates poor, congested operations. Acceptable intersection operation in urban areas is typically considered LOS D or better.

Analysis Results. The analysis shows that the intersection of SH 42 / South Boulder Road operates at LOS C during the morning and evening peak hours. Appendix C contains the LOS analysis worksheets.

4.3 Existing Queue Lengths

The queue lengths for the existing peak hours were estimated based on analysis performed using SimTraffic and are summarized in the following table. SimTraffic output is contained in Appendix C.

Analysis Results. The analysis shows that there is sufficient capacity to accommodate the existing traffic volumes.

³ Highway Capacity Manual (HCM2010). Transportation Research Board. National Research Council. 2010.
Sustainable Traffic Solutions, Inc. 4

SH 42 / South Boulder Road Peak Hour Queues

Left Turn	Left Turn Capacity (feet)	Peak Hour Queues (feet)			
		AM		PM	
		50th	95th	50th	95th
NB	450	43	78	34	80
SB	340	13	36	36	90
EB	500	46	85	92	152
WB	470	37	75	51	89

4.4 Safety Analysis

Three years of crash data were requested from the City of Louisville for the following intersections and segments:

- SH 42 / South Boulder Road,
- SH 42 from South Boulder Road to Cannon Circle, and
- South Boulder Road from SH 42 west to the adjacent grade crossing.

The following table summarizes the information received from the City. The data provided by the City are contained in Appendix D.

Crash History

Intersecton	Year		
	2010	2011	2012
SH 42 / South Boulder Road	28	15	23
SH 42 / Cannon Circle	0	2	0
South Boulder Road Accesses	0	0	0

5.0 Site Generated Traffic Volumes

5.1 Trip Generation

In order to determine the traffic impacts associated with the Coal Creek Station development, the amount of traffic generated by the proposed development was estimated using trip generation rates contained in the Institute of Transportation Engineers (ITE) Trip Generation manual⁴. Trip generation for the development is contained in Table 1.

⁴ Trip Generation. Institute of Transportation Engineers. 8th Edition. 2008.

5.2 Trip Distribution and Assignment

The trip distribution for the development area was assumed based on the existing traffic patterns. Figure 5 contains the distribution for the development and the assignment is contained in Figure 6.

The amount of traffic from the development that will use Front Street and Griffith Street south of the development is expected to be minimal. This assumption is based on the fact that the development is bounded by two major arterials and has a signalized access to one of them. In addition, there are very few destinations in downtown Louisville as compared with the many destinations along South Boulder Road and SH 42.

6.0 Year 2015 Traffic Volumes

6.1 Background and Total Volumes

The projected daily volumes at the completion of the project were developed assuming a straight line increase from Year 2010 volumes to Year 2035 volumes. Year 2035 daily volumes were provided by DRCOG and are contained in Appendix B. Background daily and peak hour volumes assuming no development on the site are contained in Figure 7 and total volumes assuming the development of the site are contained in Figure 8.

6.2 Traffic Signal Warrant at SH 42 / Cannon Circle

A signal warrant study was conducted at SH 42 / Cannon Circle based on the requirements contained in the MUTCD⁵. The data available only allowed STS to evaluate the peak hour warrant. The criteria used to evaluate the warrant included the following:

- **Intersection Geometry.** SH 42 was evaluated assuming one lane in each direction. While there are two through lanes on the southbound approach to the intersection, the curbside lane transitions into a right turn lane at Harper Street making the effective laneage on the approach one through lane and one right turn lane. On the side street, only the left turns were included in the warrant study.
- **Main Street Speeds.** The 85th percentile speeds collected on SH 42 are above 40 MPH requiring the use of Figure 4C-4 for the evaluation.

Analysis Results. Figure 9 contains the evaluation of the warrant showing that a signal will be warranted during the evening peak hour at the completion of the development.

6.3 Need for a Southbound Right Turn Lane at Cannon Circle

The CDOT access code requires that a southbound right turn lane be constructed at Cannon Circle, however, the existing development on

⁵ Manual on Uniform Traffic Control Devices. Federal Highway Administration. 2009.

the west side of the corridor and the Boulder County Open Space on the east side make constructing this lane infeasible. Therefore, a southbound right turn lane has not been assumed in the analysis.

6.4 Level of Service Analysis

Analysis Results. The level of service analysis shows that all of the intersections are expected to operate at LOS D or better in Year 2015 with or without the development. The following table contains a summary of the analysis with the detailed summary contained in Appendix C.

Intersection	Volume Scenario			
	Background		Total	
	AM Peak	PM Peak	AM Peak	PM Peak
SH 42 / South Boulder Road	C	C	C	C
South Boulder Road / Access A	---	---	A	A
South Boulder Road / Access B	---	---	A	A
South Boulder Road / Access C	---	---	A	A
SH 42 / Access D	---	---	A	A
SH 42 / Access E	---	---	A	A
SH 42 / Cannon Circle	---	---	B	A

6.5 Total Volume Queue Lengths

The queue lengths for the Year 2015 peak hours were estimated based on analysis using SimTraffic and are summarized in the following tables. SimTraffic output is contained in Appendix C.

Analysis Results. The analysis shows that there is sufficient capacity to accommodate the total traffic volumes in Year 2015.

SH 42 / South Boulder Road Peak Hour Queues

Left Turn	Left Turn Capacity (feet)	Peak Hour Queues (feet)			
		AM		PM	
		50th	95th	50th	95th
NB	450	37	62	30	55
SB	340	18	57	39	101
EB	500	63	123	116	174
WB	470	49	98	62	115

SH 42 / Cannon Circle Peak Hour Queues

Left Turn	Left Turn Capacity (feet)	Peak Hour Queues (feet)			
		AM		PM	
		50th	95th	50th	95th
NB	250	11	36	12	39
EB	150	62	121	74	129

7.0 Year 2035 Traffic Volumes

7.1 Background and Total Volumes

The Year 2035 volumes were developed based on projected daily volumes provided by DRCOG. A letter from DRCOG with the projected volumes is contained in Appendix B. Background volumes assuming no development on the site are contained in Figure 10 and total volumes assuming the development of the site are contained in Figure 11. Laneage shown in Figure 11 is based on the corridor design developed by Atkins that is dated March 6, 2013.

The total peak hour volumes for SH 42 / South Boulder Road were developed based on procedures contained in NCHRP 255⁶, and the background volumes resulted from subtracting the development traffic contained in Figure 6 from the total volumes in Figure 11.

7.2 Level of Service Analysis

Analysis Results. The level of service analysis shows that all of the intersections are expected to operate at LOS D or better in Year 2035 with or without the development. The table below contains a summary of the analysis with the detailed summary contained in Appendix C.

Intersection	Volume Scenario			
	Background		Total	
	AM Peak	PM Peak	AM Peak	PM Peak
SH 42 / South Boulder Road	C	C	C	C
South Boulder Road / Access A	---	---	A	A
South Boulder Road / Access B	---	---	A	A
South Boulder Road / Access C	---	---	A	A
SH 42 / Access D	---	---	A	A
SH 42 / Access E	---	---	A	A
SH 42 / Cannon Circle	---	---	B	A

⁶ Highway Traffic Data for Urbanized Area Project Planning and Design. National Cooperative Highway Research Program Report 255. Transportation Research Board. December 1982.

7.3 Total Volume Queue Lengths

The queue lengths for the Year 2035 peak hours were estimated based on analysis performed using SimTraffic and are summarized in the following table. Synchro output is contained in Appendix C.

Analysis Results. The analysis shows that there is sufficient capacity to accommodate the projected traffic volumes.

SH 42 / South Boulder Road Peak Hour Queues

Left Turn	Left Turn Capacity (feet)	Peak Hour Queues (feet)			
		AM		PM	
		50th	95th	50th	95th
NB	450	37	63	33	62
SB	340	29	44	47	222
EB	500	69	132	133	176
WB	470	53	109	70	122

SH 42 / Cannon Circle Peak Hour Queues

Left Turn	Left Turn Capacity (feet)	Peak Hour Queues (feet)			
		AM		PM	
		50th	95th	50th	95th
NB	250	12	38	12	38
EB	150	80	143	92	147

7.4 Need for an Eastbound Right Turn Lane at SH 42 / South Boulder Road

A Synchro analysis was used to determine the benefit of an eastbound right turn lane at SH 42 / South Boulder Road. The analysis shows that the addition of an eastbound right turn lane would provide very little benefit to the intersection or any of the approaches.

Analysis Results. An eastbound right turn lane should not be constructed at the intersection.

8.0 Progression Study on SH 42

A progression study was performed using Synchro for the Year 2015 and 2035 peak hours assuming the traffic and signal associated with the Coal Creek Station development. The existing signalized intersections at South Boulder Road, Pine Street, and Lock Street are assumed for the Year 2015 analysis, and the signals shown in Figure 3 were assumed for the 2035 analysis. The time-space diagrams

were based on 70% of max since SH 42 / South Boulder Road are expected to operate at LOS C during all peak hours analyzed.

The progression study was conducted to verify that CDOT criteria can be met for this NR-A roadway. The CDOT access code requires 35% bandwidth efficiency on an NR-A roadway when signals are not spaced at ½ mile intervals. The access code also requires that the side street splits are long enough to accommodate pedestrians crossing the main street. Appropriate pedestrian clearance time was assumed for all signals.

Analysis Results. The following table demonstrates that the required minimum 35% bandwidth efficiency can be obtained in 2015 and 2035 with the signal at the Coal Creek Station access. Time-space diagrams for each of the volumes and signal configurations are contained in Appendix E.

Peak Hour	Cycle Length	Minimum Bandwidth Required	Bandwidth Obtained
Year 2015 AM	100	35	43 / 39
Year 2015 PM	90	32	33 / 33
Year 2035 AM	110	39	40 / 41
Year 2035 PM	95	33	34 / 34

9.0 Conclusions

STS has drawn the following conclusions based on the analysis performed and documented in this report.

- **Acceleration and Deceleration Lanes at Site Accesses.** Right turn deceleration or acceleration lanes are not necessary at the South Boulder Road accesses because turning volumes are not expected to be high enough to warrant them. On SH 42, it is not feasible to construct right turn acceleration and deceleration lanes because of the existing land use on the west side of the corridor and the Boulder County Open Space on the east side. Left turn deceleration lanes are necessary at the full movement intersections.
- **Signalization of SH 42 / Cannon Circle.** This intersection will warrant signalization as a result of this development.
- **Intersection Operation.** All of the intersections are expected to operate at LOS D or better when the development is complete.
- **Turn Bay Lengths.** The existing turn bay lengths at SH 42 / South Boulder Road are expected to be long enough to accommodate the Year 2035 total traffic volumes.

-
- **Signal Progression on SH 42.** The signal progression on SH 42 will meet CDOT's minimum requirements for an NR-A roadway with the new signal at Cannon Circle.

Tables

Table 1 – Weekday Trip Generation Estimate

Table 1. Trip Generation Estimate

Land Use ²	ITE Code ¹	Size ²	Unit	Average Daily Trips ¹				Morning Peak Hour Trips ¹				Evening Peak Hour Trips ¹			
				Rate	Total	In	Out	Rate	Total	In	Out	Rate	Total	In	Out
Self-Service Car Wash - Existing	947	4	Wash Stall	108	432	216	216	8.00	32	16	16	5.54	22	11	11
Automotive Care Center - Existing	942	7.5	1000 FT ² GFA	23.72	178	89	89	2.94	22	15	8	3.38	25	12	13
Liquor Store - Existing	814	4.8	1000 FT ² GFA	44.32	213	106	106	0.68	3	2	2	2.71	13	6	7
Specialty Retail ³ - Buildings A, B, and C	814	26.5	1000 FT ² GFA	44.32	1,174	587	587	0.68	18	9	9	2.71	72	32	40
Fast Food with Drive Thru - Building D	934	5.3	1000 FT ² GFA	496.12	2,629	1,315	1,315	49.35	262	133	128	33.84	179	93	86
Residential Condominium / Townhouse	230	50	DU	5.81	291	145	145	0.44	22	4	18	0.52	26	17	9
Total					4,917	2,458	2,458		359	178	181		338	171	166

Notes:

1. Trip generation estimates are based on rates contained in Trip Generation, 8th Edition (Institute of Transportation Engineers, 2012).
2. Land use estimates were provided by BVZ Architects.
3. ITE does not contain morning peak hour trip generation estimates for the specialty retail land use. A trip generation rate of 25% of the evening peak hour rate was assumed.

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Figures

Figure 1 – Vicinity Map

Figure 2 – Site Plan

Figure 3 – SH 42 Corridor Access

Figure 4 – Existing Weekday Traffic Volumes

Figure 5 – Trip Distribution

Figure 6 – Trip Assignment

Figure 7 – Year 2015 Background Traffic Volumes

Figure 8 – Year 2015 Total Traffic Volumes

Figure 9 – SH 42 / Cannon Circle Signal Warrant Study – Year 2015 Total Traffic

Figure 10 – Year 2035 Background Traffic Volumes

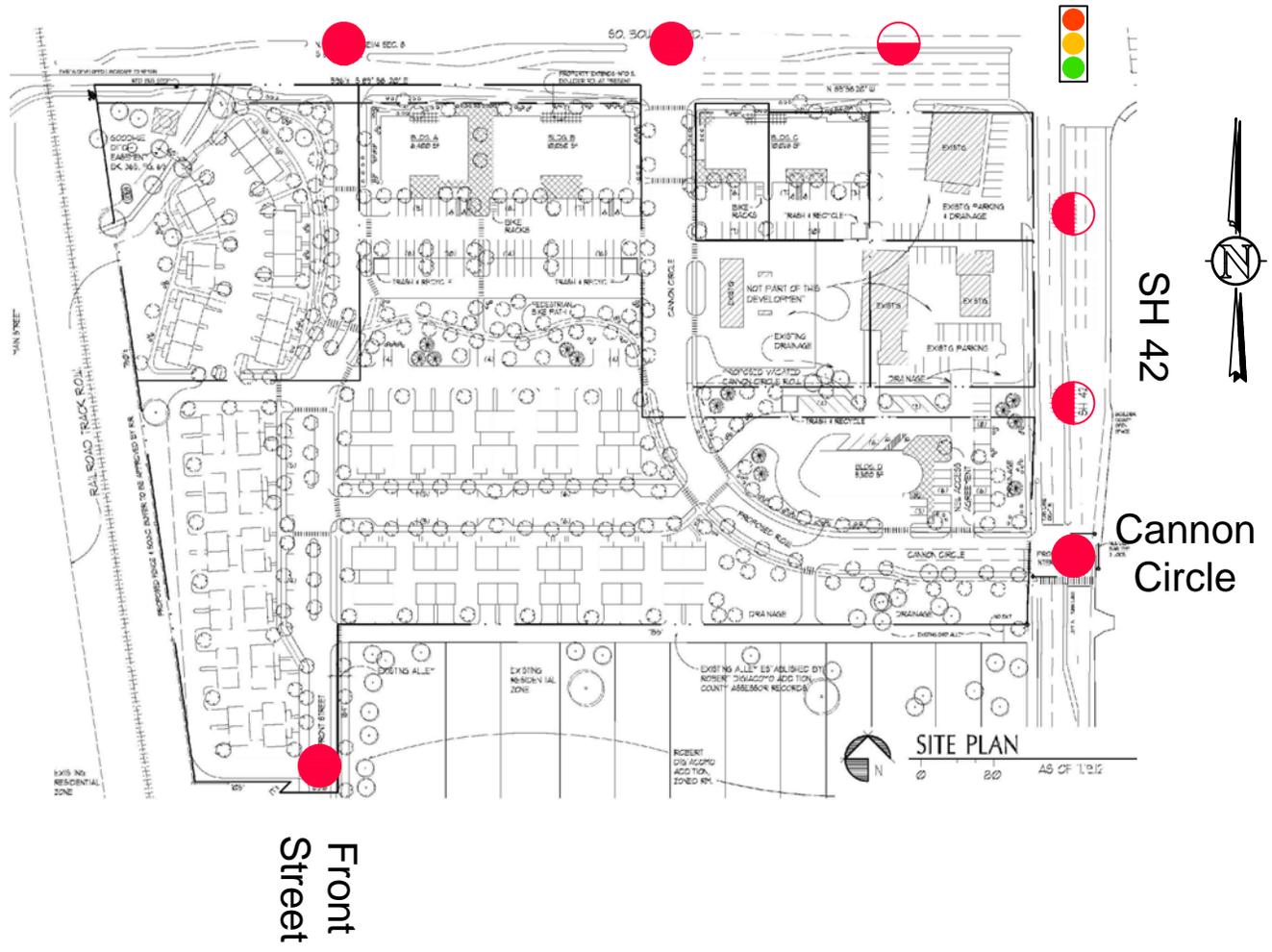
Figure 11 – Year 2035 Total Traffic Volumes



Coal Creek Station
VICINITY MAP

Scale	1" = 2,000'	Date	May 17, 2013	Drawn by	JBH	Job #	Eastpark Associates	Figure	1
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South Boulder Road



Access Legend

- Full Movement
- ◐ Right-in/Right-out

Front Street

Cannon Circle

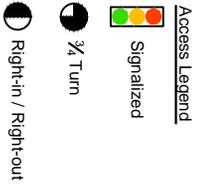
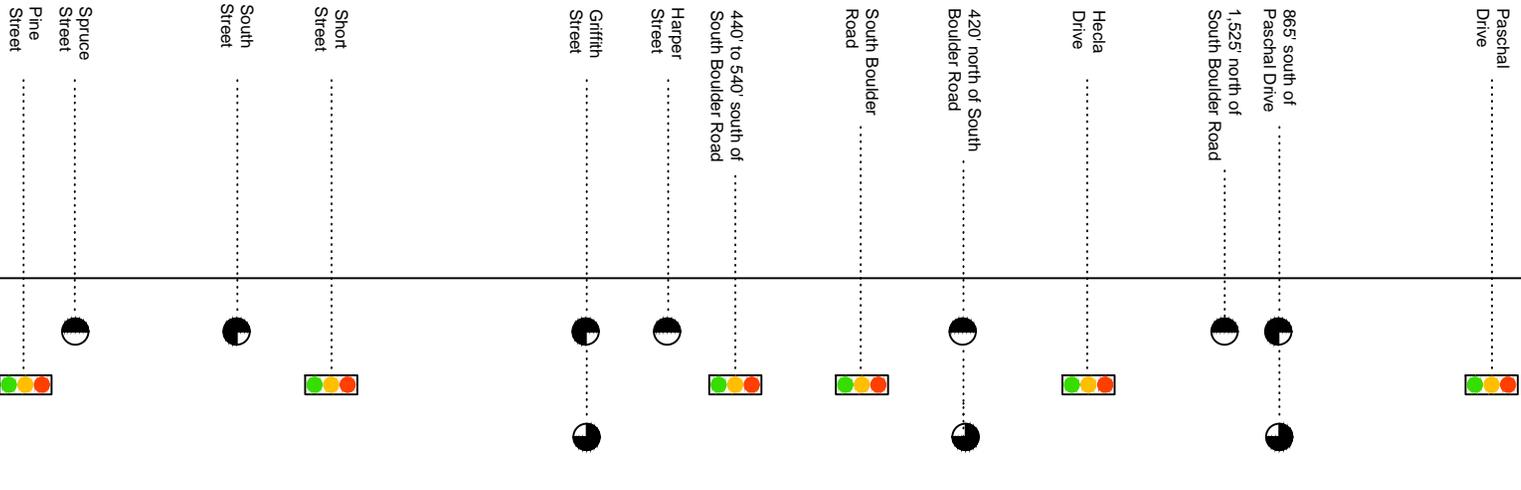
SH 42

SITE PLAN



Coal Creek Station SITE PLAN

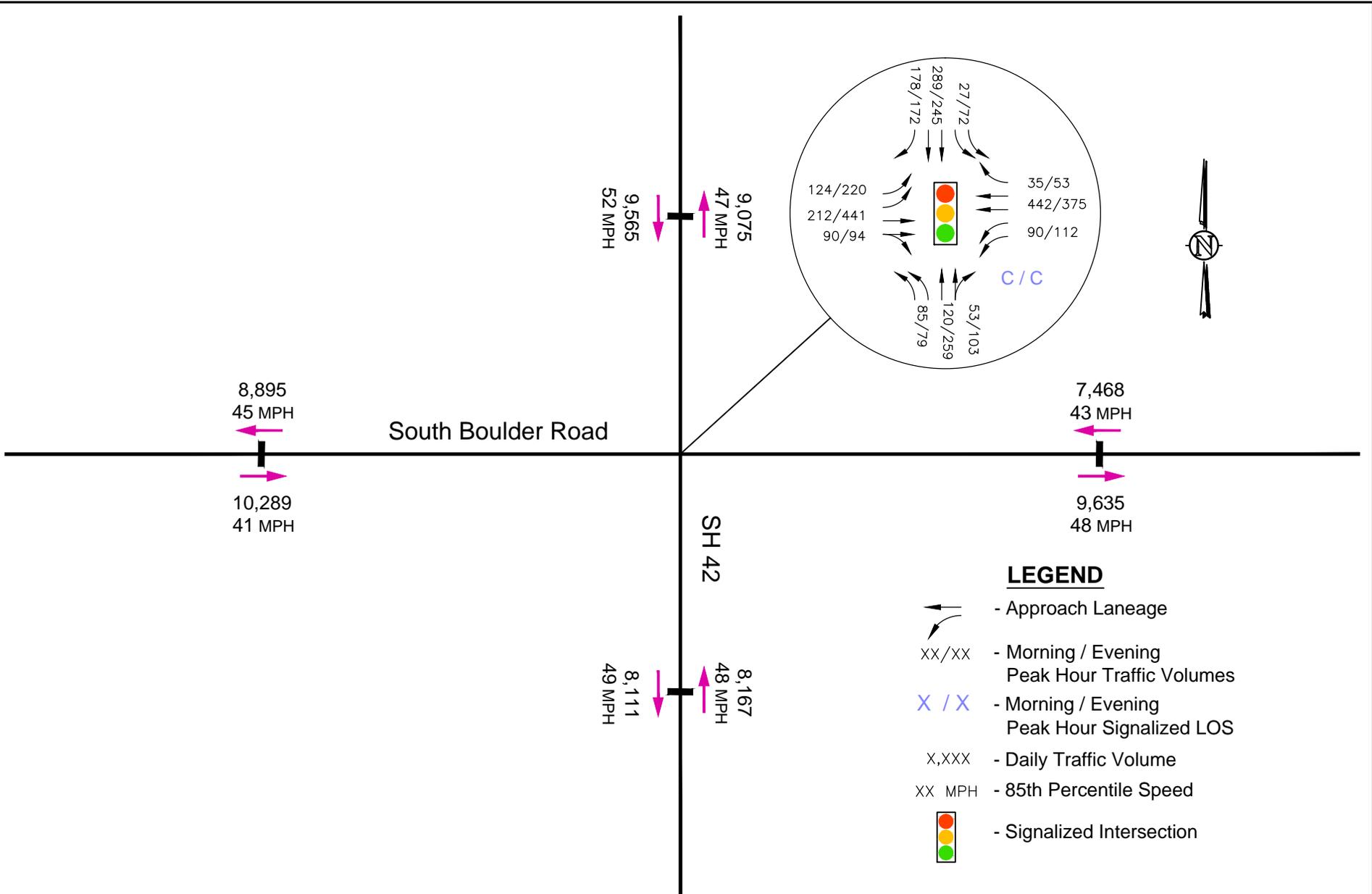
Scale	1" = 200'	Date	May 17, 2013	Drawn by	JBH	Job #	Eastpark Associates	Figure	2
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Coal Creek Station SH 42 CORRIDOR ACCESS

Scale	NTS	Date	May 17, 2013	Drawn by	JBH	Job #	Eastpark Associates	Figure	3
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Coal Creek Station
EXISTING WEEKDAY TRAFFIC VOLUMES

Scale	NTS	Date	May 17, 2013	Drawn by	JBH	Job #	Eastpark Associates	Figure	4
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20%

South Boulder Road

30%

25%



SH 42



LEGEND

XX% - Peak Hour Trip Distribution

5%

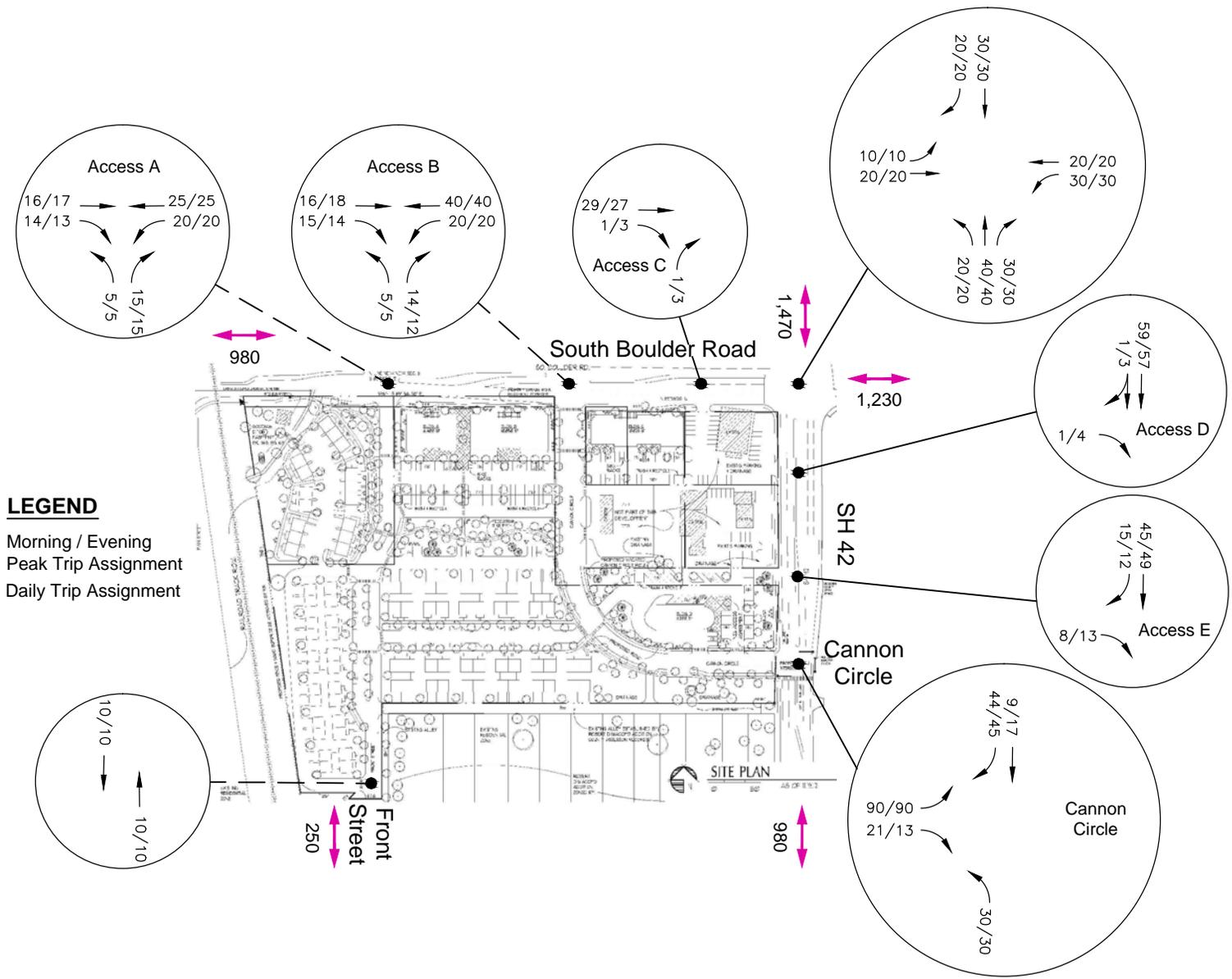
Front Street

20%



Coal Creek Station
TRIP DISTRIBUTION

Scale	NTS	Date	May 17, 2013	Drawn by	JBH	Job #	Eastpark Associates	Figure	5
-------	-----	------	--------------	----------	-----	-------	---------------------	--------	---

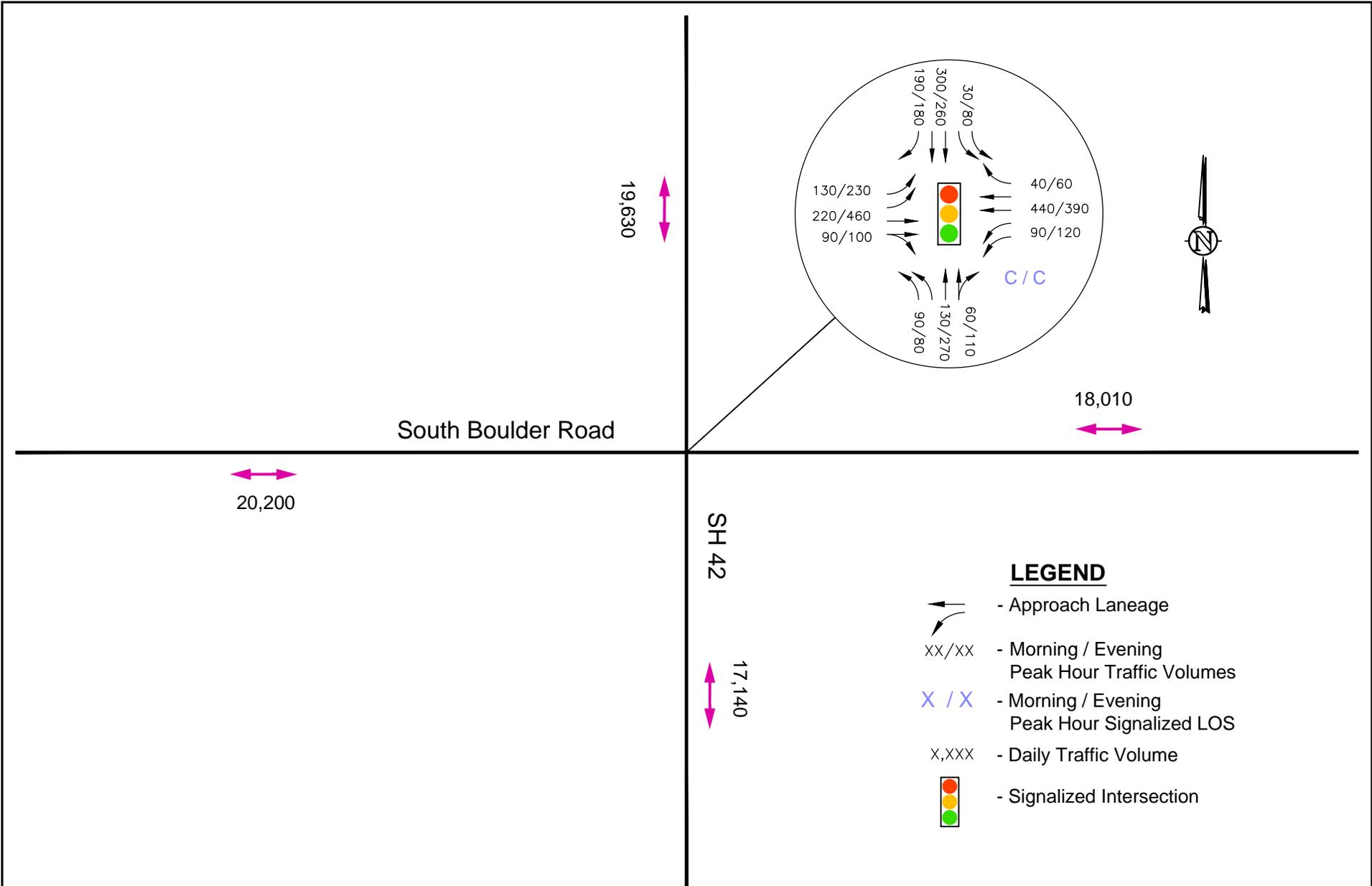


LEGEND
 xx/xx - Morning / Evening Peak Trip Assignment
 x,xxx - Daily Trip Assignment

Coal Creek Station TRIP ASSIGNMENT



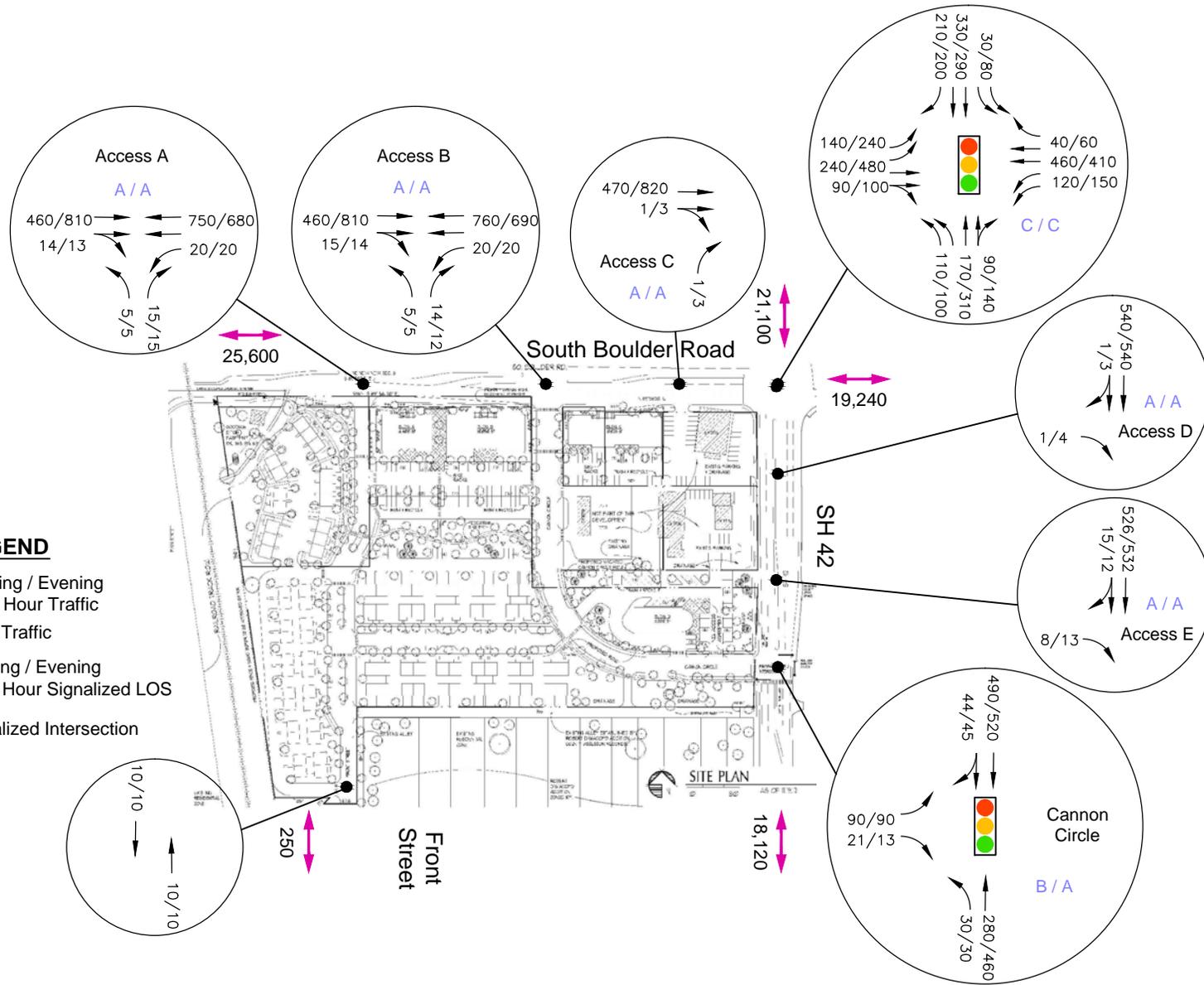
Scale	1" = 300'	Date	May 17, 2013	Drawn by	JBH	Job #	Eastpark Associates	Figure	6
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Coal Creek Station YEAR 2015 BACKGROUND TRAFFIC VOLUMES									
Scale	NTS	Date	May 17, 2013	Drawn by	JBH	Job #	Eastpark Associates	Figure	7

LEGEND

- XX/XX - Morning / Evening Peak Hour Traffic
- X,XXX - Daily Traffic
- X / X - Morning / Evening Peak Hour Signalized LOS
-  - Signalized Intersection

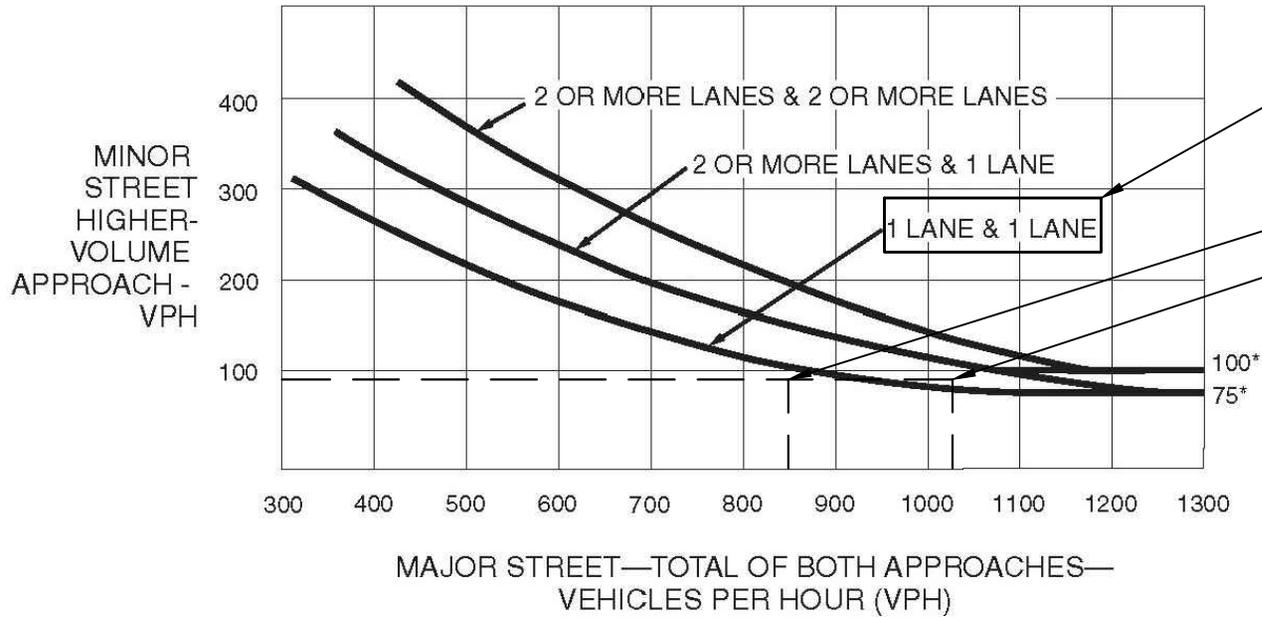


**Coal Creek Station
YEAR 2015 TOTAL TRAFFIC VOLUMES**

Scale	1" = 300'	Date	May 17, 2013	Drawn by	JBH	Job #	Eastpark Associates	Figure	8
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Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



Intersection Geometry

Main Street - 1 lane
Side Street - 1 lane

Peak Hour Volumes

AM Peak (849, 90)
PM Peak (1027, 90)

85th Percentile Speeds

NB - 48 MPH
SB - 49 MPH

Warrant Satisfied

PM Peak Hour

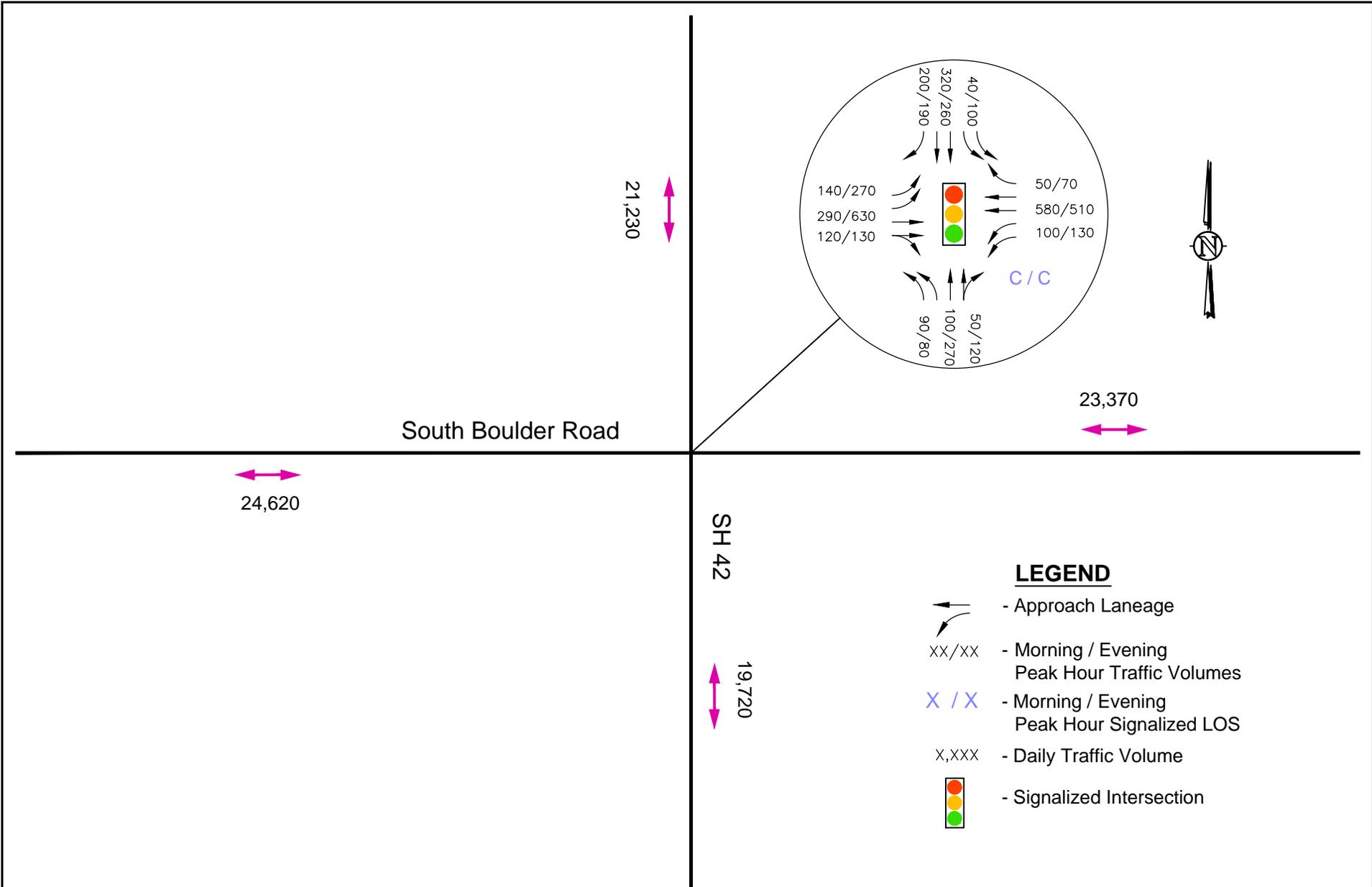
*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.



Coal Creek Station

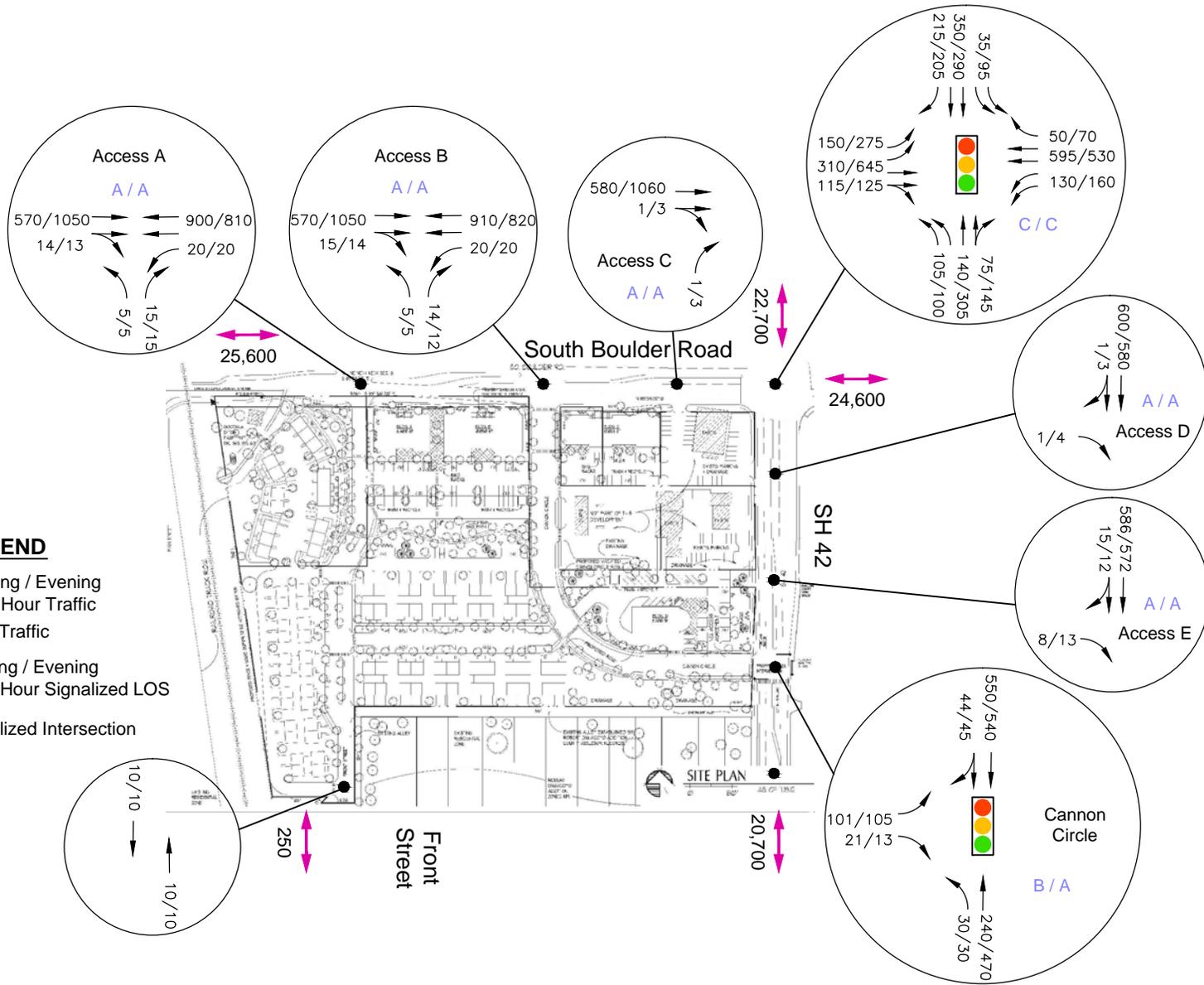
SH 42 / Cannon Circle Signal Warrant Study - Year 2015 Total Traffic

Scale	NTS	Date	May 17, 2013	Drawn by	JBH	Job #	Eastpark Associates	Figure	9
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Coal Creek Station
YEAR 2035 BACKGROUND TRAFFIC VOLUMES

Scale	NTS	Date	May 17, 2013	Drawn by	JBH	Job #	Eastpark Associates	Figure	10
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LEGEND

- xx/xx - Morning / Evening Peak Hour Traffic
- x,xxx - Daily Traffic
- X / X - Morning / Evening Peak Hour Signalized LOS
- Signalized Intersection



**Coal Creek Station
YEAR 2035 TOTAL TRAFFIC VOLUMES**

Scale	1" = 300'	Date	May 17, 2013	Drawn by	JBH	Job #	Eastpark Associates	Figure	11
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Appendix A
Corridor Access Report



July 30, 2010

Bonnie Star
Economic Development Director
City of Louisville
749 Main Street
Louisville, CO 80027

RE: Signalized Access to the Property on the Southwest Corner of SH 42 / South Boulder Road and Modification of the SH 42 Access Control Plan

Dear Bonnie:

Based on your request, Sustainable Traffic Solutions has evaluated the potential to create a signalized access on SH 42 for the southwest corner of SH 42 / South Boulder Road. This corner is partially developed with space for more development. The existing development functionally has full movement access; however, the volume of traffic on the corridors limits this access to right-in / right-out during the peak hours.

The signalized access would serve an area that is bounded by South Boulder road on the north, an alley north of Harper Street on the south, SH 42 on the east, and the railroad on the west. The existing businesses on this corner could utilize the new signalized access and abandon their current accesses on SH 42.

An access control plan (ACP) for the corridor exists in an IGA between the City of Louisville, Boulder County, and CDOT¹. The accesses in the ACP that are proposed to be modified by this study are summarized in the following table (see Figure 1).

Intersection	Current ACP	Proposed Access
Cannon Circle (west side, public street 400 feet south of South Boulder Road)	Right-in / Right-out	Access to be eliminated
Commercial Access (west side 440' to 540' south of South Boulder Road)	Access does not exist	Signalized
Griffith Street	Signalized	¾-Turn
Short Street – west side	Right-in / Right-out	Signalized

The City recently contracted with Carter-Burgess to study the corridor². The resulting study recommended a ¾-turn access at Cannon Circle; however, the City has determined that the ¾-turn access is making the property difficult to develop with businesses that generate significant sales tax revenue. A signalized intersection on SH 42 will be much more attractive to potential developers. Therefore, this study was performed to determine if it is possible to signalize a site access on SH 42.

¹ "Intergovernmental Agreement between the City of Louisville, the County of Boulder, and the State of Colorado State Department of Highways." May 22, 1991.

² State Highway 42 Traffic and Access Study. City of Louisville. February 9, 2007.

Based on discussions with Gloria Hice-Idler, CDOT Region 4 Access Coordinator, the study will need to demonstrate that the potential development will warrant a traffic signal on SH 42 and that corridor progression can be maintained to 35% efficiency as required for an NR-A roadway under the current CDOT access code³.

Study Assumptions

The following assumptions were utilized for this study.

- **Peak Hour to Daily Ratio.** The peak hour to daily ratio was assumed to be 8% for the Year 2030 morning and evening peak hours.
- **Saturation Flow Rate.** The saturation flow rate was assumed to be 1,900 passenger vehicles / hour / lane which is the default value in Synchro.
- **Peak Hour Factor.** The peak hour factor was assumed to be 0.92 for all movements.
- **Truck Percentage.** The percentage of trucks was assumed to be 2%.
- **Left Turn Phasing on SH 42.** The signal phasing was assumed to be protected / permitted for single left turns that are leading. Protected left turn phasing was assumed for dual left turns and lagging left turns.

Trip Generation for the Corner

A trip generation estimate was prepared for the southwest corner of the intersection and is contained in the table below. The components of the mixed use commercial development have not been defined, so the trip generation rate for a shopping center was assumed since it contains a mix of commercial and retail uses.

Land Use	ITE Land Use Code	Size	Morning Peak Hour			Evening Peak Hour		
			Rate	In	Out	Rate	In	Out
Mixed Use Commercial	820	110,000 sf	1.00	67	43	3.73	201	209
Walgreens	881	15,000 sf	2.47	21	16	10.47	74	83
Total				88	59		275	292

Year 2030 Volumes, Signal Warrant, Intersection Operation, and Corridor Progression

The projected peak hour volumes for SH 42 / South Boulder Road were developed based on procedures contained in NCHRP 255⁴ (see Figure 2). The peak hour volumes for this intersection and the projected side street and main street turning volumes along the corridor contained in the Carter-Burgess study were used to develop volume scenarios for the corridor. These volume scenarios were analyzed to estimate the intersection operation and corridor progression.

Figure 1 also contains the assignment for the development on the southwest corner. The assignment shows that a signal will be warranted based on the MUTCD during the evening peak hour of an average weekday⁵.

³ State Highway Access Code. The Transportation Commission of Colorado. March 2002.

⁴ Highway Traffic Data for Urbanized Area Project Planning and Design. National Cooperative Highway Research Program Report 255. Transportation Research Board. December 1982

⁵ Manual on Uniform Traffic Control Devices. Federal Highway Administration. 2009.

The expected peak hour intersection operation in Year 2030 was estimated using Synchro software and is summarized in the table below. This software package utilizes criteria described in the Highway Capacity Manual⁶. Level of service (LOS) is a measure used to describe operational conditions at an intersection. LOS categories ranging from A to F are assigned based on the predicted delay in seconds per vehicle for the intersection as a whole, as well as for individual turning movements. LOS A indicates very good operations, and LOS F indicates poor, congested operations. Acceptable intersection operation in urban areas is typically considered LOS D or better. The analysis summary for each intersection is attached.

SH 42 Intersection	Peak Hour LOS	
	Morning Peak	Evening Peak
Paschal Drive	B	B
Hecla Drive	B	A
South Boulder Road	D	D
New Commercial Access	A	A
Short Street	A	A
Pine Street	B	B
Lock Street	B	B

The progression during the Year 2030 weekday peak hours was also estimated using Synchro software. SH 42 is classified by CDOT an NR-A roadway. The CDOT access code requires 35% bandwidth efficiency on an NR-A roadway when signals are not spaced at ½ mile intervals. Time-space diagrams are attached for both peak hours to demonstrate the bandwidth efficiency. The following table demonstrates that the bandwidth efficiency can be obtained with the proposed signal locations.

Peak Hour	Bandwidth Efficiency Required by CDOT	Cycle Length (sec)	Minimum Bandwidth Efficiency to Satisfy CDOT Criteria (sec)	Bandwidth Efficiency Obtained (sec)
Morning	35%	110	39	39 / 41
Evening	35%	90	32	33 / 33

Conclusion

Sustainable Traffic Solutions, Inc. has studied the SH 42 corridor to determine if the 1991 access control plan can be amended to include signalized intersections at a new commercial access 440' to 540' south of South Boulder Road and at Short Street. Based on the analysis presented in this report:

- A traffic signal is expected to be warranted at the new commercial access.
- All of the signalized intersections are expected to operate at LOS D or better in Year 2030.
- A minimum progression efficiency of 35% is expected to be obtained in Year 2030 with the proposed signal locations.

⁶ Highway Capacity Manual - Special Report 209. Transportation Research Board. National Research Council. 2000.

Bonnie Star
July 30, 2010
Page 4

Therefore, the proposed signalized intersection locations should be acceptable to CDOT allowing the ACP to be modified.

Please contact me at 303.589.6875 or at trafficczar@live.com with questions.

Sincerely,

SUSTAINABLE TRAFFIC SOLUTIONS, INC.

A handwritten signature in blue ink that reads "Joseph L. Henderson". The signature is written in a cursive style with a large initial "J".

Joseph L. Henderson, PE, PTOE
Project Manager / Principal

Attachments
SH 42 Access Letter Report



	Access Control Plan			
	Existing		Proposed Change	
	West Side	East Side	West Side	East Side
Paschal Drive				
865' south of Paschal Drive				
1,525' north of South Boulder Road				
Hecla Drive				
420' north of South Boulder Road				
South Boulder Road				
400' south of South Boulder Road				
440' to 540' south of South Boulder Road				
Harper Street				
Griffith Street				
Short Street				
South Street				
Spruce Street				
Pine Street				



- Access Legend**
- Signalized
 - 1/4 Turn
 - Right-in / Right-out
 - Eliminated

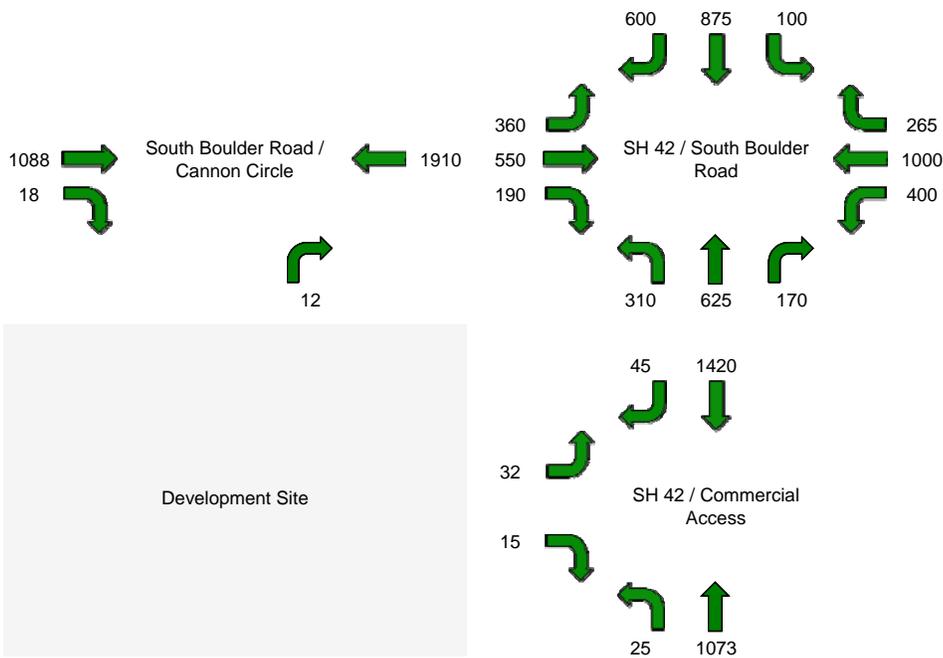
**SH 42 Access Control Plan
EXISTING AND PROPOSED ACCESS CONTROL PLANS**

Scale	NTS	Date	July 30, 2010	Drawn by	JLH	Job #	Louisville	Figure	1
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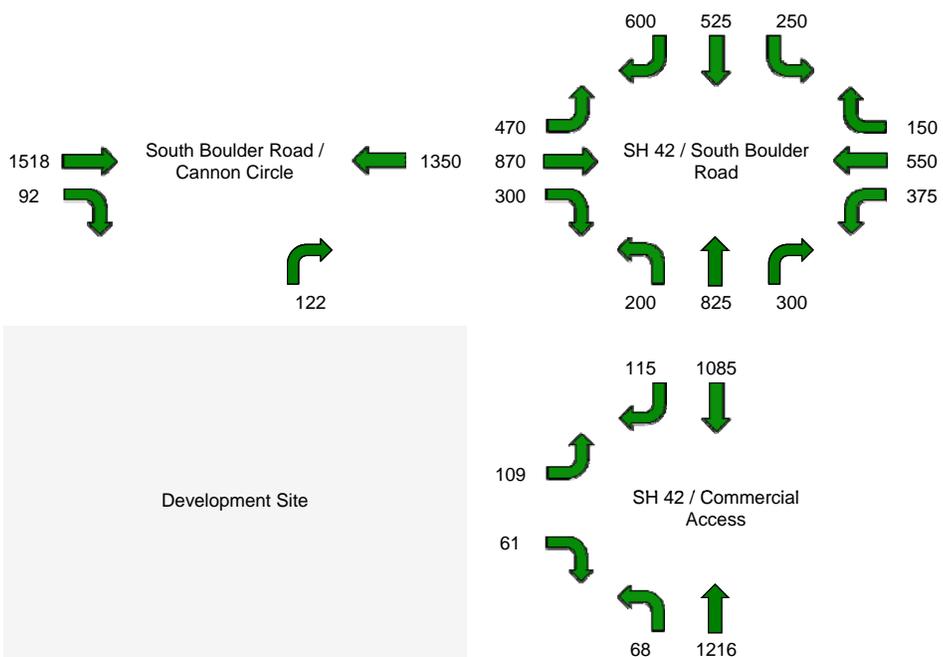


Figure 2. Year 2030 Peak Hour Volumes at SH 42 / South Boulder Road

2030 Morning Peak Hour

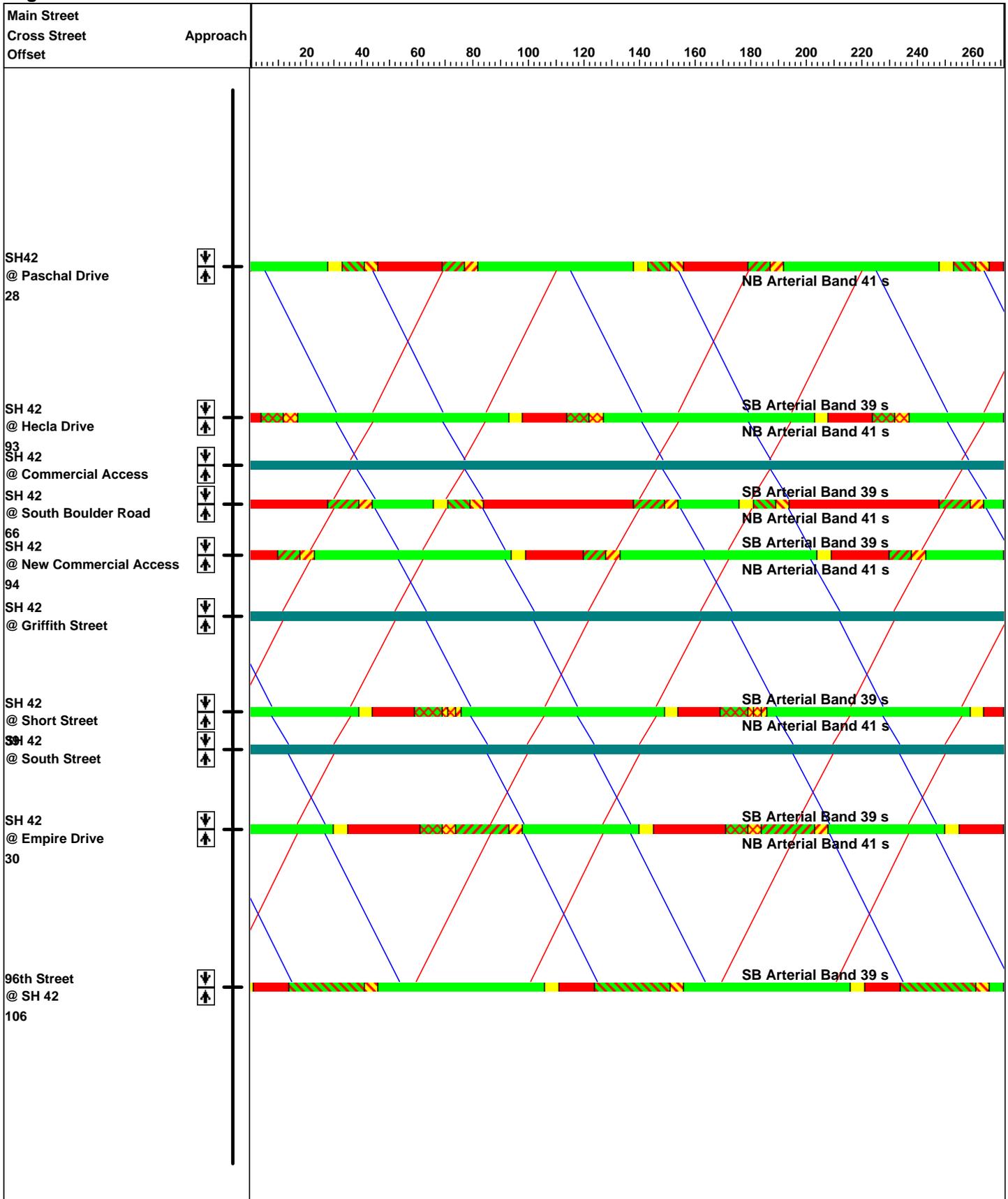


2030 Evening Peak Hour



Time-Space Diagram - SH 42
Signal on SH 42

Timing Plan: AM Peak
7/13/2010



1: South Boulder Road & SH 42
Signal on SH 42

Timing Plan: AM Peak

7/13/2010

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	360	550	190	400	1000	265	310	625	170	100	875	600	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Adj. Flow (vph)	360	550	190	400	1000	265	310	625	170	100	875	600	
RTOR Reduction (vph)	0	0	144	0	0	116	0	0	111	0	0	184	
Lane Group Flow (vph)	360	550	46	400	1000	149	310	625	59	100	875	416	
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm	
Protected Phases	7	4		3	8		5	2		1	6		
Permitted Phases			4			8			2			6	
Actuated Green, G (s)	12.0	26.9	26.9	17.1	32.0	32.0	11.0	38.0	38.0	8.0	35.0	35.0	
Effective Green, g (s)	12.0	26.9	26.9	17.1	32.0	32.0	11.0	38.0	38.0	8.0	35.0	35.0	
Actuated g/C Ratio	0.11	0.24	0.24	0.16	0.29	0.29	0.10	0.35	0.35	0.07	0.32	0.32	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	375	865	387	534	1030	461	343	1223	547	250	1126	504	
v/s Ratio Prot	c0.10	0.16		0.12	c0.28		c0.09	0.18		0.03	0.25		
v/s Ratio Perm			0.03			0.09			0.04			c0.26	
v/c Ratio	0.96	0.64	0.12	0.75	0.97	0.32	0.90	0.51	0.11	0.40	0.78	0.83	
Uniform Delay, d1	48.8	37.2	32.3	44.4	38.5	30.5	49.0	28.6	24.5	48.7	34.0	34.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.84	0.77	0.93	0.71	0.66	0.60	
Incremental Delay, d2	58.5	1.6	0.1	5.9	33.7	0.4	33.2	1.5	0.4	0.9	4.7	13.8	
Delay (s)	107.2	38.7	32.5	50.3	72.3	30.9	74.3	23.5	23.2	35.6	27.1	34.6	
Level of Service	F	D	C	D	E	C	E	C	C	D	C	C	
Approach Delay (s)		60.1			60.4			37.7			30.5		
Approach LOS		E			E			D			C		
Intersection Summary													
HCM Average Control Delay			47.1									HCM Level of Service	D
HCM Volume to Capacity ratio			0.91										
Actuated Cycle Length (s)			110.0									Sum of lost time (s)	20.0
Intersection Capacity Utilization			87.6%									ICU Level of Service	E
Analysis Period (min)			60										
c Critical Lane Group													

8: Hecla Drive & SH42
Signal on SH 42

Timing Plan: AM Peak
7/13/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	5	35	20	5	18	17	1180	62	21	1570	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Flt	1.00	0.87		1.00	0.88		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1618		1770	1644		1770	3539	1583	1770	3539	1583
Flt Permitted	0.74	1.00		0.73	1.00		0.13	1.00	1.00	0.21	1.00	1.00
Satd. Flow (perm)	1383	1618		1362	1644		239	3539	1583	400	3539	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	50	5	35	20	5	18	17	1180	62	21	1570	10
RTOR Reduction (vph)	0	32	0	0	17	0	0	0	15	0	0	2
Lane Group Flow (vph)	50	8	0	20	6	0	17	1180	47	21	1570	8
Turn Type	Perm			Perm			pm+pt			Perm	pm+pt	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	7.9	7.9		7.9	7.9		87.1	83.9	83.9	87.1	83.9	83.9
Effective Green, g (s)	7.9	7.9		7.9	7.9		87.1	83.9	83.9	87.1	83.9	83.9
Actuated g/C Ratio	0.07	0.07		0.07	0.07		0.79	0.76	0.76	0.79	0.76	0.76
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	99	116		98	118		234	2699	1207	357	2699	1207
v/s Ratio Prot		0.00			0.00		c0.00	0.33		0.00	c0.44	
v/s Ratio Perm	c0.04			0.01			0.06		0.03	0.04		0.00
v/c Ratio	0.51	0.06		0.20	0.05		0.07	0.44	0.04	0.06	0.58	0.01
Uniform Delay, d1	49.2	47.6		48.1	47.6		3.8	4.6	3.2	2.8	5.6	3.1
Progression Factor	1.00	1.00		1.00	1.00		1.50	1.48	2.82	0.44	1.52	0.90
Incremental Delay, d2	4.1	0.2		1.0	0.2		0.1	0.4	0.0	0.1	0.8	0.0
Delay (s)	53.2	47.8		49.1	47.8		5.9	7.3	9.1	1.3	9.2	2.8
Level of Service	D	D		D	D		A	A	A	A	A	A
Approach Delay (s)		50.8			48.4			7.4			9.1	
Approach LOS		D			D			A			A	
Intersection Summary												
HCM Average Control Delay			10.2			HCM Level of Service			B			
HCM Volume to Capacity ratio			0.56									
Actuated Cycle Length (s)			110.0			Sum of lost time (s)			15.0			
Intersection Capacity Utilization			61.2%			ICU Level of Service			B			
Analysis Period (min)			60									
c Critical Lane Group												

11: Paschal Drive & SH 42
Signal on SH 42

Timing Plan: AM Peak

7/13/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	74	5	59	114	5	79	33	1185	30	13	1428	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Flt	1.00	0.86		1.00	0.86		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1605		1770	1600		1770	3539	1583	1770	3539	1583
Flt Permitted	0.70	1.00		0.72	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1308	1605		1332	1600		1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	74	5	59	114	5	79	33	1185	30	13	1428	48
RTOR Reduction (vph)	0	51	0	0	69	0	0	0	8	0	0	15
Lane Group Flow (vph)	74	13	0	114	15	0	33	1185	22	13	1428	33
Turn Type	Perm			Perm			Prot			Perm	Prot	Perm
Protected Phases	4			8			5	2		1	6	
Permitted Phases	4			8					2			6
Actuated Green, G (s)	14.1	14.1		14.1	14.1		4.9	79.3	79.3	1.6	76.0	76.0
Effective Green, g (s)	14.1	14.1		14.1	14.1		4.9	79.3	79.3	1.6	76.0	76.0
Actuated g/C Ratio	0.13	0.13		0.13	0.13		0.04	0.72	0.72	0.01	0.69	0.69
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	168	206		171	205		79	2551	1141	26	2445	1094
v/s Ratio Prot		0.01			0.01		0.02	c0.33		0.01	c0.40	
v/s Ratio Perm	0.06			c0.09					0.01			0.02
v/c Ratio	0.44	0.06		0.67	0.07		0.42	0.46	0.02	0.50	0.58	0.03
Uniform Delay, d1	44.3	42.1		45.7	42.2		51.2	6.4	4.3	53.8	8.8	5.4
Progression Factor	1.00	1.00		1.00	1.00		0.89	1.58	1.84	1.00	1.00	1.00
Incremental Delay, d2	1.9	0.1		9.9	0.2		3.3	0.6	0.0	15.0	1.0	0.1
Delay (s)	46.2	42.3		55.6	42.4		48.7	10.8	8.0	68.8	9.8	5.4
Level of Service	D	D		E	D		D	B	A	E	A	A
Approach Delay (s)		44.3			50.0			11.7			10.2	
Approach LOS		D			D			B			B	
Intersection Summary												
HCM Average Control Delay			14.9	HCM Level of Service				B				
HCM Volume to Capacity ratio			0.60									
Actuated Cycle Length (s)			110.0	Sum of lost time (s)				15.0				
Intersection Capacity Utilization			60.8%	ICU Level of Service				B				
Analysis Period (min)			60									
c Critical Lane Group												

15: Short Street & SH 42
Signal on SH 42

Timing Plan: AM Peak

7/13/2010

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	5	20	5	5	5	80	1098	5	10	1243	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.97	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Flt	1.00	0.88		1.00	0.93		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	1639		1770	1723		1770	3539	1583	1770	3539	1583
Flt Permitted	0.75	1.00		0.74	1.00		0.18	1.00	1.00	0.26	1.00	1.00
Satd. Flow (perm)	2714	1639		1380	1723		343	3539	1583	478	3539	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	30	5	20	5	5	5	80	1098	5	10	1243	150
RTOR Reduction (vph)	0	19	0	0	5	0	0	0	1	0	0	38
Lane Group Flow (vph)	30	6	0	5	5	0	80	1098	4	10	1243	112
Turn Type	Perm		Perm			pm+pt		Perm	pm+pt	Perm		
Protected Phases	4		8			5		2	1		6	
Permitted Phases	4		8			2		2		6		6
Actuated Green, G (s)	6.4	6.4		6.4	6.4		93.4	87.0	87.0	83.8	82.2	82.2
Effective Green, g (s)	6.4	6.4		6.4	6.4		93.4	87.0	87.0	83.8	82.2	82.2
Actuated g/C Ratio	0.06	0.06		0.06	0.06		0.85	0.79	0.79	0.76	0.75	0.75
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	158	95		80	100		374	2799	1252	383	2645	1183
v/s Ratio Prot	0.00		0.00			c0.01		c0.31	0.00		c0.35	
v/s Ratio Perm	c0.01		0.00			0.17		0.00		0.02		0.07
v/c Ratio	0.19	0.06		0.06	0.05		0.21	0.39	0.00	0.03	0.47	0.09
Uniform Delay, d1	49.3	49.0		49.0	48.9		2.7	3.5	2.4	3.1	5.4	3.8
Progression Factor	1.00	1.00		1.00	1.00		0.49	0.69	0.54	1.25	1.20	3.44
Incremental Delay, d2	0.6	0.3		0.3	0.2		0.3	0.4	0.0	0.0	0.5	0.1
Delay (s)	49.9	49.3		49.3	49.2		1.6	2.8	1.3	3.9	7.1	13.2
Level of Service	D	D		D	D		A	A	A	A	A	B
Approach Delay (s)	49.6		49.2			2.7		7.7				
Approach LOS	D		D			A		A				
Intersection Summary												
HCM Average Control Delay	6.6		HCM Level of Service				A					
HCM Volume to Capacity ratio	0.46											
Actuated Cycle Length (s)	110.0		Sum of lost time (s)				20.0					
Intersection Capacity Utilization	61.0%		ICU Level of Service				B					
Analysis Period (min)	60											
c Critical Lane Group												

21: Pine Street & SH 42
Signal on SH 42

Timing Plan: AM Peak

7/13/2010

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	275	15	265	10	20	40	325	873	15	25	943	295
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Lane Util. Factor	0.97	1.00		1.00	1.00		1.00	0.95		1.00	0.95	1.00
Flt	1.00	0.86		1.00	0.90		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1598		1770	1676		1770	3530		1770	3539	1583
Flt Permitted	0.40	1.00		0.62	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1456	1598		1164	1676		1770	3530		1770	3539	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	275	15	265	10	20	40	325	873	15	25	943	295
RTOR Reduction (vph)	0	218	0	0	38	0	0	1	0	0	0	160
Lane Group Flow (vph)	275	62	0	10	22	0	325	887	0	25	943	135
Turn Type	pm+pt			Perm			Prot			Prot		Perm
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases	4			8								6
Actuated Green, G (s)	19.4	19.4		6.4	6.4		25.1	70.8		4.8	50.5	50.5
Effective Green, g (s)	19.4	19.4		6.4	6.4		25.1	70.8		4.8	50.5	50.5
Actuated g/C Ratio	0.18	0.18		0.06	0.06		0.23	0.64		0.04	0.46	0.46
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	401	282		68	98		404	2272		77	1625	727
v/s Ratio Prot	c0.05	0.04			0.01		c0.18	0.25		0.01	c0.27	
v/s Ratio Perm	c0.07			0.01								0.09
v/c Ratio	0.69	0.22		0.15	0.23		0.80	0.39		0.32	0.58	0.19
Uniform Delay, d1	40.7	38.8		49.2	49.4		40.1	9.3		51.0	21.9	17.6
Progression Factor	1.00	1.00		1.00	1.00		1.10	0.35		1.22	0.25	0.29
Incremental Delay, d2	4.9	0.4		1.0	1.2		10.4	0.4		2.3	1.4	0.5
Delay (s)	45.6	39.2		50.2	50.6		54.4	3.7		64.6	6.9	5.5
Level of Service	D	D		D	D		D	A		E	A	A
Approach Delay (s)		42.4			50.6			17.3			7.7	
Approach LOS		D			D			B			A	
Intersection Summary												
HCM Average Control Delay			18.6				HCM Level of Service				B	
HCM Volume to Capacity ratio			0.65									
Actuated Cycle Length (s)			110.0				Sum of lost time (s)			15.0		
Intersection Capacity Utilization			73.7%				ICU Level of Service			D		
Analysis Period (min)			60									
c Critical Lane Group												

24: Lock Street & SH 42
Signal on SH 42

Timing Plan: AM Peak

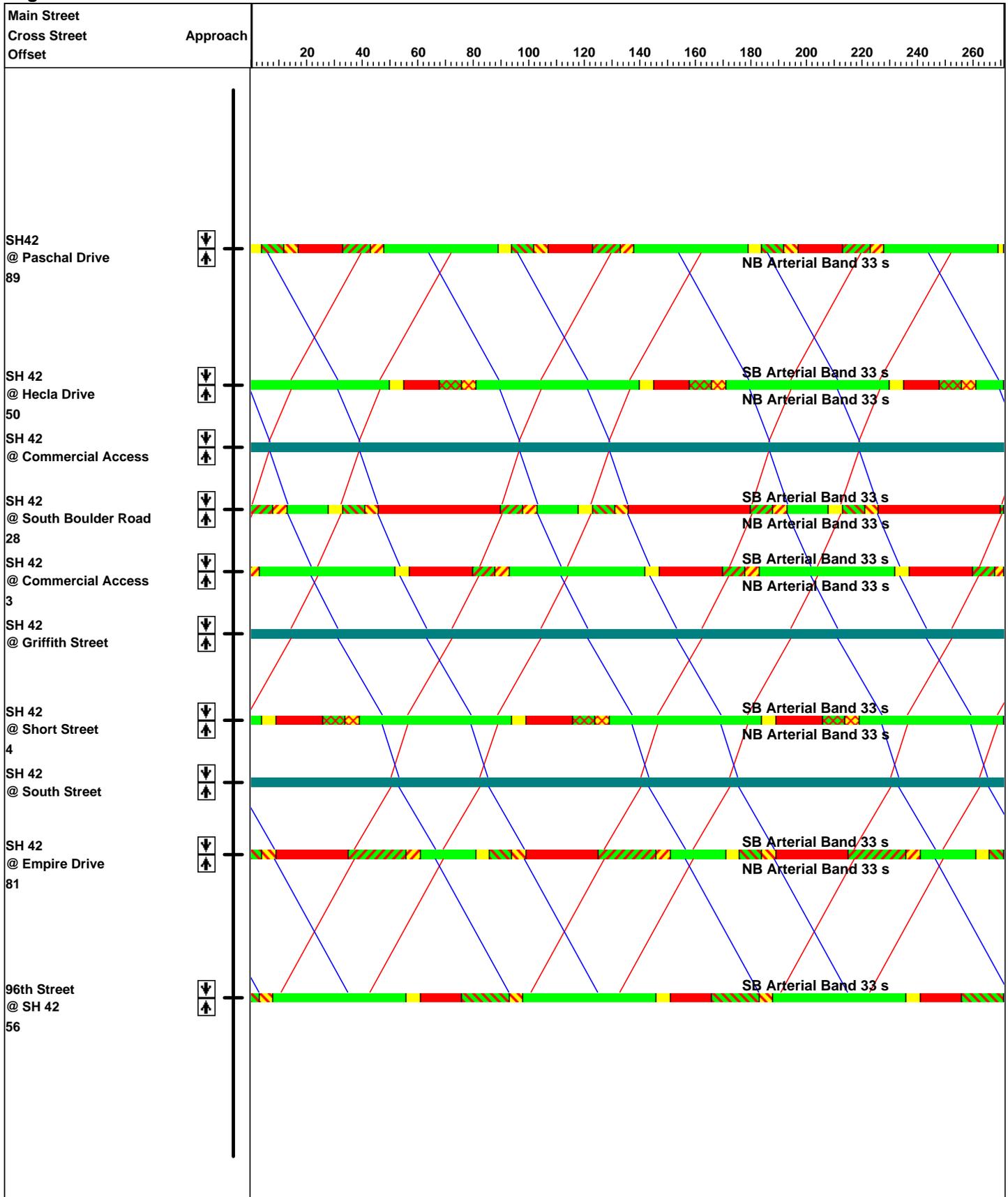
7/13/2010

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	15	10	15	40	10	450	10	748	5	650	548	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0	4.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00	1.00	0.97	1.00	
Fr _t		0.95			1.00	0.85	1.00	1.00	0.85	1.00	0.99	
Fl _t Protected		0.98			0.96	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1736			1791	1583	1770	1863	1583	3433	1853	
Fl _t Permitted		0.86			0.86	1.00	0.45	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1513			1594	1583	840	1863	1583	3433	1853	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	15	10	15	40	10	450	10	748	5	650	548	20
RTOR Reduction (vph)	0	14	0	0	0	0	0	0	2	0	1	0
Lane Group Flow (vph)	0	26	0	0	50	450	10	748	3	650	567	0
Turn Type	Perm			Perm		Free	Perm		Perm	Prot		
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8		Free	2		2			
Actuated Green, G (s)		6.4			6.4	110.0	63.9	63.9	63.9	24.7	93.6	
Effective Green, g (s)		6.4			6.4	110.0	63.9	63.9	63.9	24.7	93.6	
Actuated g/C Ratio		0.06			0.06	1.00	0.58	0.58	0.58	0.22	0.85	
Clearance Time (s)		5.0			5.0		5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		88			93	1583	488	1082	920	771	1577	
v/s Ratio Prot								c0.40		c0.19	0.31	
v/s Ratio Perm		0.02			c0.03	0.28	0.01		0.00			
v/c Ratio		0.29			0.54	0.28	0.02	0.69	0.00	0.84	0.36	
Uniform Delay, d ₁		49.6			50.4	0.0	9.8	16.1	9.7	40.8	1.8	
Progression Factor		1.00			1.00	1.00	1.00	1.00	1.00	0.64	1.22	
Incremental Delay, d ₂		1.9			6.0	0.5	0.1	3.7	0.0	7.6	0.5	
Delay (s)		51.5			56.3	0.5	9.9	19.8	9.7	33.8	2.7	
Level of Service		D			E	A	A	B	A	C	A	
Approach Delay (s)		51.5			6.0			19.6			19.3	
Approach LOS		D			A			B			B	
Intersection Summary												
HCM Average Control Delay			17.3			HCM Level of Service				B		
HCM Volume to Capacity ratio			0.72									
Actuated Cycle Length (s)			110.0			Sum of lost time (s)			15.0			
Intersection Capacity Utilization			79.4%			ICU Level of Service				D		
Analysis Period (min)			60									
c Critical Lane Group												

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	43	20	25	1062	1420	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.15	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	274	3539	3539	1583
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	43	20	25	1062	1420	45
RTOR Reduction (vph)	0	19	0	0	0	11
Lane Group Flow (vph)	43	1	25	1062	1420	34
Turn Type		Perm	pm+pt			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Actuated Green, G (s)	7.3	7.3	92.7	92.7	82.9	82.9
Effective Green, g (s)	7.3	7.3	92.7	92.7	82.9	82.9
Actuated g/C Ratio	0.07	0.07	0.84	0.84	0.75	0.75
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	117	105	296	2982	2667	1193
v/s Ratio Prot	c0.02		0.00	c0.30	c0.40	
v/s Ratio Perm		0.00	0.07			0.02
v/c Ratio	0.37	0.01	0.08	0.36	0.53	0.03
Uniform Delay, d1	49.1	48.0	3.2	1.9	5.6	3.4
Progression Factor	1.00	1.00	1.08	1.00	1.15	2.20
Incremental Delay, d2	2.0	0.0	0.1	0.3	0.5	0.0
Delay (s)	51.1	48.0	3.6	2.3	7.0	7.5
Level of Service	D	D	A	A	A	A
Approach Delay (s)	50.1			2.3	7.0	
Approach LOS	D			A	A	
Intersection Summary						
HCM Average Control Delay			6.1		HCM Level of Service	A
HCM Volume to Capacity ratio			0.52			
Actuated Cycle Length (s)			110.0		Sum of lost time (s)	15.0
Intersection Capacity Utilization			54.3%		ICU Level of Service	A
Analysis Period (min)			60			
c Critical Lane Group						

Time-Space Diagram - SH 42
Signal on SH 42

Timing Plan: PM Peak
7/13/2010



1: South Boulder Road & SH 42
Signal on SH 42

Timing Plan: PM Peak

7/13/2010

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations													
Volume (vph)	470	870	300	375	550	150	200	825	300	250	525	600	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	0.97	0.95	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	3433	3539	1583	3433	3539	1583	3433	3539	1583	3433	3539	1583	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	511	946	326	408	598	163	217	897	326	272	571	652	
RTOR Reduction (vph)	0	0	196	0	0	129	0	0	225	0	0	241	
Lane Group Flow (vph)	511	946	130	408	598	34	217	897	101	272	571	411	
Turn Type	Prot		Perm	Prot		Perm	Prot		Perm	Prot		Perm	
Protected Phases	7	4		3	8		5	2		1	6		
Permitted Phases			4			8			2			6	
Actuated Green, G (s)	15.1	22.0	22.0	12.0	18.9	18.9	8.0	28.0	28.0	8.0	28.0	28.0	
Effective Green, g (s)	15.1	22.0	22.0	12.0	18.9	18.9	8.0	28.0	28.0	8.0	28.0	28.0	
Actuated g/C Ratio	0.17	0.24	0.24	0.13	0.21	0.21	0.09	0.31	0.31	0.09	0.31	0.31	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	576	865	387	458	743	332	305	1101	492	305	1101	492	
v/s Ratio Prot	c0.15	c0.27		0.12	0.17		0.06	c0.25		0.08	0.16		
v/s Ratio Perm			0.08			0.02			0.06			c0.26	
v/c Ratio	0.89	1.09	0.34	0.89	0.80	0.10	0.71	0.81	0.21	0.89	0.52	0.84	
Uniform Delay, d1	36.6	34.0	28.0	38.4	33.8	28.7	39.9	28.6	22.8	40.6	25.5	28.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.02	0.67	0.39	0.76	0.66	0.57	
Incremental Delay, d2	15.3	59.4	0.5	19.0	6.3	0.1	6.6	5.8	0.8	23.7	1.5	13.7	
Delay (s)	51.9	93.4	28.5	57.4	40.1	28.8	47.2	24.9	9.8	54.7	18.3	30.3	
Level of Service	D	F	C	E	D	C	D	C	A	D	B	C	
Approach Delay (s)		69.6			44.6			24.8			30.1		
Approach LOS		E			D			C			C		
Intersection Summary													
HCM Average Control Delay			43.7		HCM Level of Service						D		
HCM Volume to Capacity ratio			0.98										
Actuated Cycle Length (s)			90.0		Sum of lost time (s)						20.0		
Intersection Capacity Utilization			81.4%		ICU Level of Service						D		
Analysis Period (min)			15										
c Critical Lane Group													

8: Hecla Drive & SH42
Signal on SH 42

Timing Plan: PM Peak

7/13/2010

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	33	5	16	12	5	35	23	1474	30	29	1448	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Flt	1.00	0.88		1.00	0.87		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1647		1770	1616		1770	3539	1583	1770	3539	1583
Flt Permitted	0.83	1.00		0.83	1.00		0.13	1.00	1.00	0.11	1.00	1.00
Satd. Flow (perm)	1552	1647		1552	1616		240	3539	1583	212	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	36	5	17	13	5	38	25	1602	33	32	1574	51
RTOR Reduction (vph)	0	16	0	0	36	0	0	0	9	0	0	13
Lane Group Flow (vph)	36	6	0	13	7	0	25	1602	24	32	1574	38
Turn Type	Perm			Perm			pm+pt			Perm	pm+pt	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	4.8	4.8		4.8	4.8		68.6	65.4	65.4	71.8	67.0	67.0
Effective Green, g (s)	4.8	4.8		4.8	4.8		68.6	65.4	65.4	71.8	67.0	67.0
Actuated g/C Ratio	0.05	0.05		0.05	0.05		0.76	0.73	0.73	0.80	0.74	0.74
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	83	88		83	86		237	2572	1150	252	2635	1178
v/s Ratio Prot		0.00			0.00		0.00	c0.45		c0.01	0.44	
v/s Ratio Perm	c0.02			0.01			0.08		0.02	0.09		0.02
v/c Ratio	0.43	0.07		0.16	0.08		0.11	0.62	0.02	0.13	0.60	0.03
Uniform Delay, d1	41.3	40.5		40.7	40.5		3.6	6.1	3.4	4.0	5.3	3.0
Progression Factor	1.00	1.00		1.00	1.00		0.19	0.16	0.02	0.28	0.50	0.19
Incremental Delay, d2	3.6	0.3		0.9	0.4		0.1	0.8	0.0	0.2	0.8	0.0
Delay (s)	44.9	40.8		41.6	40.9		0.8	1.8	0.1	1.3	3.5	0.6
Level of Service	D	D		D	D		A	A	A	A	A	A
Approach Delay (s)		43.3			41.1			1.7			3.3	
Approach LOS		D			D			A			A	
Intersection Summary												
HCM Average Control Delay			3.8				HCM Level of Service			A		
HCM Volume to Capacity ratio			0.58									
Actuated Cycle Length (s)			90.0				Sum of lost time (s)			15.0		
Intersection Capacity Utilization			57.6%				ICU Level of Service			B		
Analysis Period (min)			15									
c Critical Lane Group												

11: Paschal Drive & SH 42
Signal on SH 42

Timing Plan: PM Peak

7/13/2010

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	76	5	58	43	5	32	80	1337	125	47	1423	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Flt	1.00	0.86		1.00	0.87		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1604		1770	1618		1770	3539	1583	1770	3539	1583
Flt Permitted	0.73	1.00		0.71	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1362	1604		1328	1618		1770	3539	1583	1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	83	5	63	47	5	35	87	1453	136	51	1547	95
RTOR Reduction (vph)	0	57	0	0	32	0	0	0	42	0	0	33
Lane Group Flow (vph)	83	11	0	47	8	0	87	1453	94	51	1547	62
Turn Type	Perm			Perm			Prot			Perm	Prot	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8					2			6
Actuated Green, G (s)	8.3	8.3		8.3	8.3		7.6	61.9	61.9	4.8	59.1	59.1
Effective Green, g (s)	8.3	8.3		8.3	8.3		7.6	61.9	61.9	4.8	59.1	59.1
Actuated g/C Ratio	0.09	0.09		0.09	0.09		0.08	0.69	0.69	0.05	0.66	0.66
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	126	148		122	149		149	2434	1089	94	2324	1040
v/s Ratio Prot		0.01			0.01		0.05	c0.41		0.03	c0.44	
v/s Ratio Perm	c0.06			0.04					0.06			0.04
v/c Ratio	0.66	0.07		0.39	0.06		0.58	0.60	0.09	0.54	0.67	0.06
Uniform Delay, d1	39.5	37.3		38.4	37.3		39.7	7.4	4.7	41.5	9.4	5.5
Progression Factor	1.00	1.00		1.00	1.00		1.08	0.94	1.24	1.00	1.00	1.00
Incremental Delay, d2	11.8	0.2		2.0	0.2		4.8	0.9	0.1	6.3	1.5	0.1
Delay (s)	51.3	37.5		40.5	37.4		47.5	7.9	5.9	47.8	11.0	5.6
Level of Service	D	D		D	D		D	A	A	D	B	A
Approach Delay (s)		45.1			39.1			9.8			11.8	
Approach LOS		D			D			A			B	
Intersection Summary												
HCM Average Control Delay			12.9			HCM Level of Service				B		
HCM Volume to Capacity ratio			0.68									
Actuated Cycle Length (s)			90.0			Sum of lost time (s)			15.0			
Intersection Capacity Utilization			69.4%			ICU Level of Service				C		
Analysis Period (min)			15									
c Critical Lane Group												

15: Short Street & SH 42
Signal on SH 42

Timing Plan: PM Peak

7/13/2010

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	163	10	123	5	5	5	45	1271	60	40	1079	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	0.97	1.00		1.00	1.00		1.00	0.95	1.00	1.00	0.95	1.00
Flt	1.00	0.86		1.00	0.93		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	1605		1770	1723		1770	3539	1583	1770	3539	1583
Flt Permitted	0.75	1.00		0.54	1.00		0.20	1.00	1.00	0.14	1.00	1.00
Satd. Flow (perm)	2714	1605		1010	1723		367	3539	1583	269	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	177	11	134	5	5	5	49	1382	65	43	1173	103
RTOR Reduction (vph)	0	118	0	0	4	0	0	0	22	0	0	35
Lane Group Flow (vph)	177	27	0	5	6	0	49	1382	43	43	1173	68
Turn Type	Perm			Perm			pm+pt			Perm	pm+pt	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	10.6	10.6		10.6	10.6		64.4	59.6	59.6	64.4	59.6	59.6
Effective Green, g (s)	10.6	10.6		10.6	10.6		64.4	59.6	59.6	64.4	59.6	59.6
Actuated g/C Ratio	0.12	0.12		0.12	0.12		0.72	0.66	0.66	0.72	0.66	0.66
Clearance Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	320	189		119	203		337	2344	1048	273	2344	1048
v/s Ratio Prot		0.02			0.00		0.01	c0.39		c0.01	0.33	
v/s Ratio Perm	c0.07			0.00			0.10		0.03	0.10		0.04
v/c Ratio	0.55	0.14		0.04	0.03		0.15	0.59	0.04	0.16	0.50	0.07
Uniform Delay, d1	37.5	35.6		35.2	35.1		4.5	8.4	5.3	5.3	7.7	5.4
Progression Factor	1.00	1.00		1.00	1.00		0.55	0.43	0.35	0.38	0.94	1.20
Incremental Delay, d2	2.1	0.3		0.1	0.1		0.2	0.9	0.1	0.2	0.7	0.1
Delay (s)	39.5	36.0		35.3	35.2		2.6	4.5	1.9	2.3	7.9	6.5
Level of Service	D	D		D	D		A	A	A	A	A	A
Approach Delay (s)		37.9			35.2			4.3			7.6	
Approach LOS		D			D			A			A	
Intersection Summary												
HCM Average Control Delay			9.3			HCM Level of Service			A			
HCM Volume to Capacity ratio			0.56									
Actuated Cycle Length (s)			90.0			Sum of lost time (s)		15.0				
Intersection Capacity Utilization			57.0%			ICU Level of Service			B			
Analysis Period (min)			15									
c Critical Lane Group												

21: Pine Street & SH 42
Signal on SH 42

Timing Plan: PM Peak
7/13/2010

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	240	20	260	10	30	25	250	1116	15	20	906	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	5.0
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00		1.00	0.95		1.00	0.95	1.00
Frt	1.00	1.00	0.85	1.00	0.93		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3433	1863	1583	1770	1737		1770	3532		1770	3539	1583
Flt Permitted	0.40	1.00	1.00	0.74	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1456	1863	1583	1384	1737		1770	3532		1770	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	261	22	283	11	33	27	272	1213	16	22	985	283
RTOR Reduction (vph)	0	0	222	0	25	0	0	1	0	0	0	164
Lane Group Flow (vph)	261	22	61	11	35	0	272	1228	0	22	985	119
Turn Type	pm+pt		Perm	Perm			Prot			Prot		Perm
Protected Phases	7	4			8		5	2		1	6	
Permitted Phases	4		4	8								6
Actuated Green, G (s)	19.4	19.4	19.4	6.4	6.4		17.9	52.4		3.2	37.7	37.7
Effective Green, g (s)	19.4	19.4	19.4	6.4	6.4		17.9	52.4		3.2	37.7	37.7
Actuated g/C Ratio	0.22	0.22	0.22	0.07	0.07		0.20	0.58		0.04	0.42	0.42
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	490	402	341	98	124		352	2056		63	1482	663
v/s Ratio Prot	c0.05	0.01			0.02		c0.15	0.35		0.01	c0.28	
v/s Ratio Perm	c0.07		0.04	0.01								0.07
v/c Ratio	0.53	0.05	0.18	0.11	0.28		0.77	0.60		0.35	0.66	0.18
Uniform Delay, d1	30.1	28.0	28.8	39.1	39.6		34.1	12.0		42.4	21.1	16.4
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.97	0.50		0.51	0.29	0.16
Incremental Delay, d2	1.1	0.1	0.3	0.5	1.2		8.4	1.1		3.0	2.1	0.5
Delay (s)	31.2	28.1	29.1	39.7	40.9		41.6	7.1		24.7	8.2	3.1
Level of Service	C	C	C	D	D		D	A		C	A	A
Approach Delay (s)		30.0			40.7			13.4			7.3	
Approach LOS		C			D			B			A	
Intersection Summary												
HCM Average Control Delay			14.4				HCM Level of Service				B	
HCM Volume to Capacity ratio			0.65									
Actuated Cycle Length (s)			90.0				Sum of lost time (s)			15.0		
Intersection Capacity Utilization			64.9%				ICU Level of Service			C		
Analysis Period (min)			15									
c Critical Lane Group												

24: Lock Street & SH 42
Signal on SH 42

Timing Plan: PM Peak

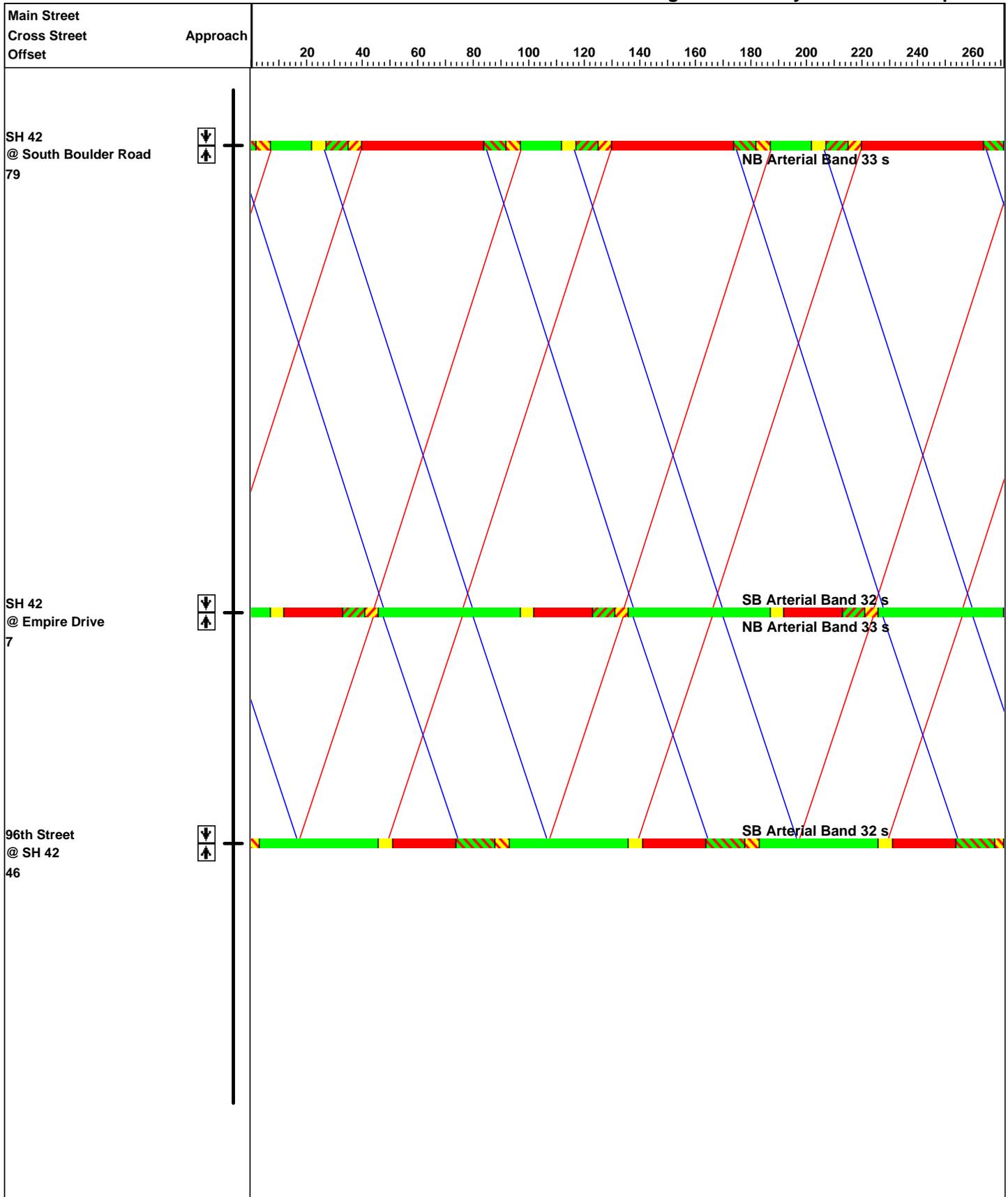
7/13/2010

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	10	10	75	5	675	10	696	25	450	716	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0	4.0	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor		1.00			1.00	1.00	1.00	1.00	1.00	0.97	1.00	
Flt		0.95			1.00	0.85	1.00	1.00	0.85	1.00	1.00	
Flt Protected		0.98			0.95	1.00	0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1750			1779	1583	1770	1863	1583	3433	1859	
Flt Permitted		0.86			0.71	1.00	0.37	1.00	1.00	0.95	1.00	
Satd. Flow (perm)		1534			1330	1583	684	1863	1583	3433	1859	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	11	11	82	5	734	11	757	27	489	778	11
RTOR Reduction (vph)	0	10	0	0	0	0	0	0	12	0	1	0
Lane Group Flow (vph)	0	23	0	0	87	734	11	757	15	489	788	0
Turn Type	Perm			Perm		Free	Perm		Perm		Prot	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8		Free	2		2			
Actuated Green, G (s)		7.9			7.9	90.0	51.0	51.0	51.0	16.1	72.1	
Effective Green, g (s)		7.9			7.9	90.0	51.0	51.0	51.0	16.1	72.1	
Actuated g/C Ratio		0.09			0.09	1.00	0.57	0.57	0.57	0.18	0.80	
Clearance Time (s)		5.0			5.0		5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		135			117	1583	388	1056	897	614	1489	
v/s Ratio Prot								c0.41		c0.14	0.42	
v/s Ratio Perm		0.01			0.07	c0.46	0.02		0.01			
v/c Ratio		0.17			0.74	0.46	0.03	0.72	0.02	0.80	0.53	
Uniform Delay, d1		38.0			40.1	0.0	8.6	14.2	8.5	35.4	3.1	
Progression Factor		1.00			1.00	1.00	1.00	1.00	1.00	1.30	0.82	
Incremental Delay, d2		0.6			22.3	1.0	0.1	4.2	0.0	5.7	1.1	
Delay (s)		38.6			62.3	1.0	8.7	18.4	8.6	51.7	3.6	
Level of Service		D			E	A	A	B	A	D	A	
Approach Delay (s)		38.6			7.5			17.9			22.0	
Approach LOS		D			A			B			C	
Intersection Summary												
HCM Average Control Delay			17.0									B
HCM Volume to Capacity ratio			0.69									
Actuated Cycle Length (s)			90.0							10.0		
Intersection Capacity Utilization			72.5%									C
Analysis Period (min)			15									
c Critical Lane Group												

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations				 	 	
Volume (vph)	109	78	80	1325	1125	142
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00
Satd. Flow (prot)	1770	1583	1770	3539	3539	1583
Flt Permitted	0.95	1.00	0.16	1.00	1.00	1.00
Satd. Flow (perm)	1770	1583	301	3539	3539	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	118	85	87	1440	1223	154
RTOR Reduction (vph)	0	74	0	0	0	56
Lane Group Flow (vph)	118	11	87	1440	1223	98
Turn Type		Perm	pm+pt			Perm
Protected Phases	4		5	2	6	
Permitted Phases		4	2			6
Actuated Green, G (s)	11.5	11.5	68.5	68.5	57.1	57.1
Effective Green, g (s)	11.5	11.5	68.5	68.5	57.1	57.1
Actuated g/C Ratio	0.13	0.13	0.76	0.76	0.63	0.63
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	226	202	334	2694	2245	1004
v/s Ratio Prot	c0.07		0.02	c0.41	0.35	
v/s Ratio Perm		0.01	0.18			0.06
v/c Ratio	0.52	0.05	0.26	0.53	0.54	0.10
Uniform Delay, d1	36.7	34.5	5.0	4.3	9.2	6.4
Progression Factor	1.00	1.00	0.57	0.89	0.63	0.50
Incremental Delay, d2	2.2	0.1	0.3	0.6	0.8	0.2
Delay (s)	38.9	34.6	3.2	4.5	6.6	3.4
Level of Service	D	C	A	A	A	A
Approach Delay (s)	37.1			4.4	6.2	
Approach LOS	D			A	A	
Intersection Summary						
HCM Average Control Delay			7.3	HCM Level of Service		A
HCM Volume to Capacity ratio			0.53			
Actuated Cycle Length (s)			90.0	Sum of lost time (s)		10.0
Intersection Capacity Utilization			56.9%	ICU Level of Service		B
Analysis Period (min)			15			
c Critical Lane Group						

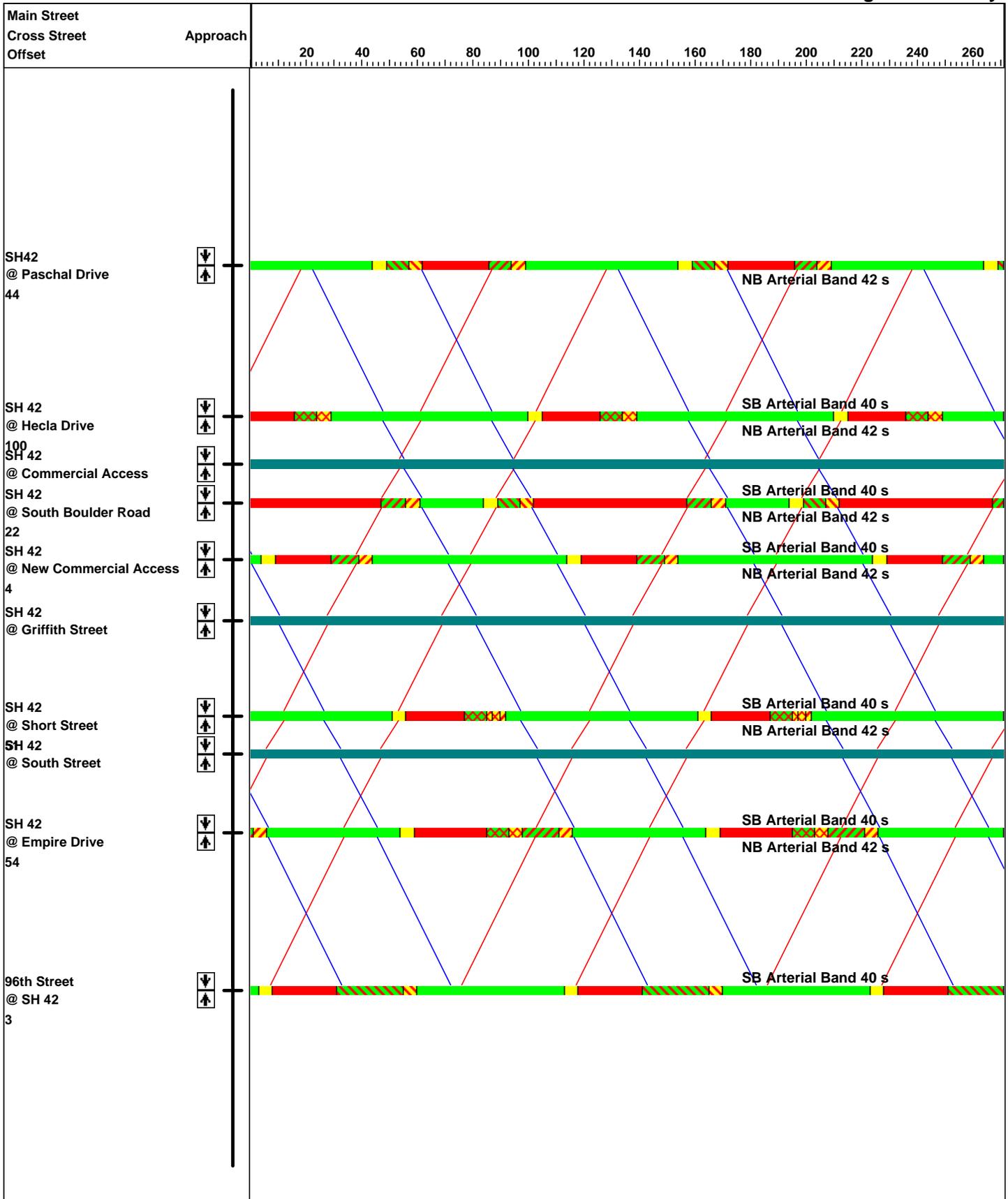
**Time-Space Diagram - SH 42
Coal Creek Station**

**Timing Plan: PM Peak
Year 2015 Progression Study - Minus Development**



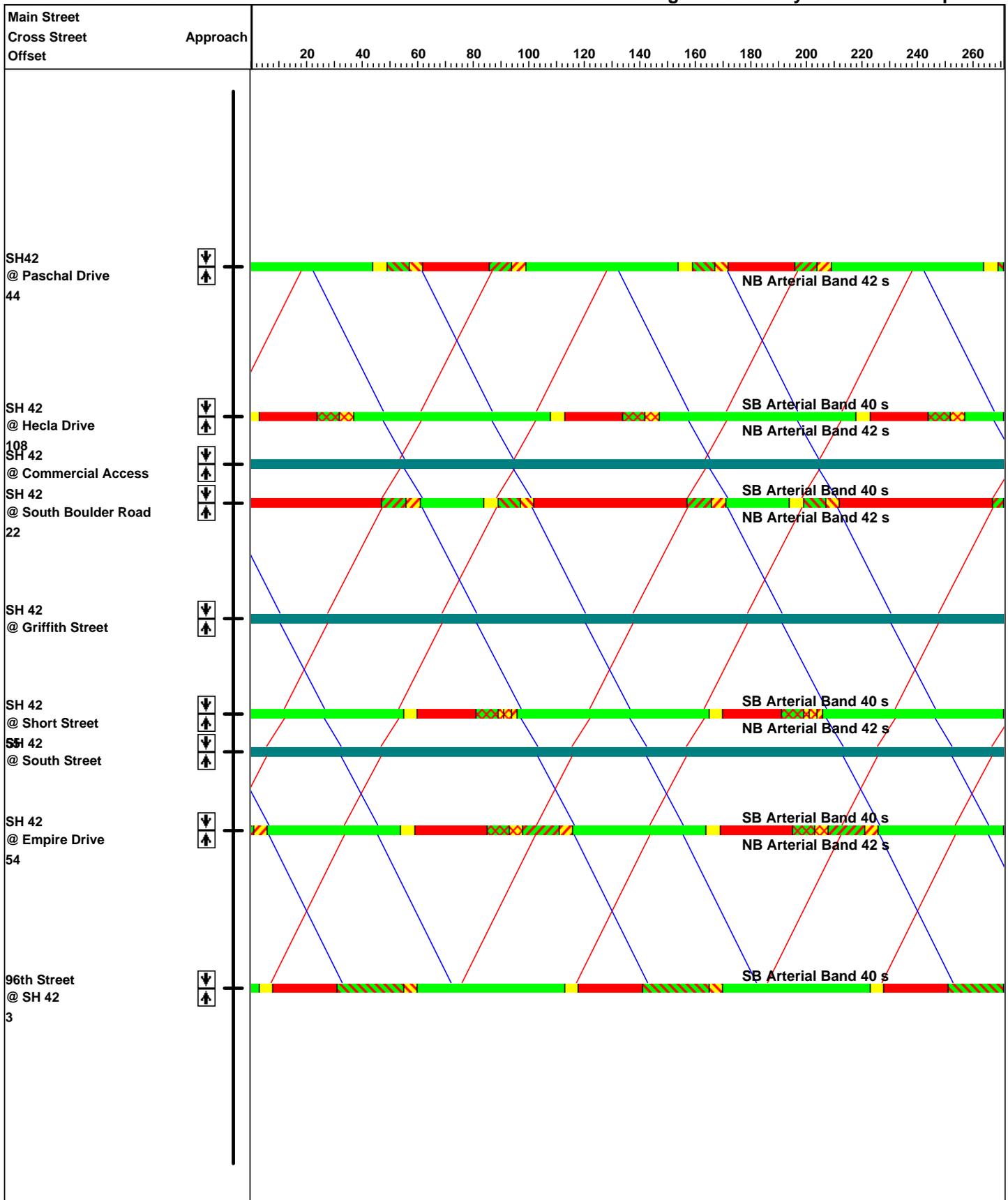
**Time-Space Diagram - 96th Street
Coal Creek Station**

**Timing Plan: AM Peak
Year 2030 Progression Study**



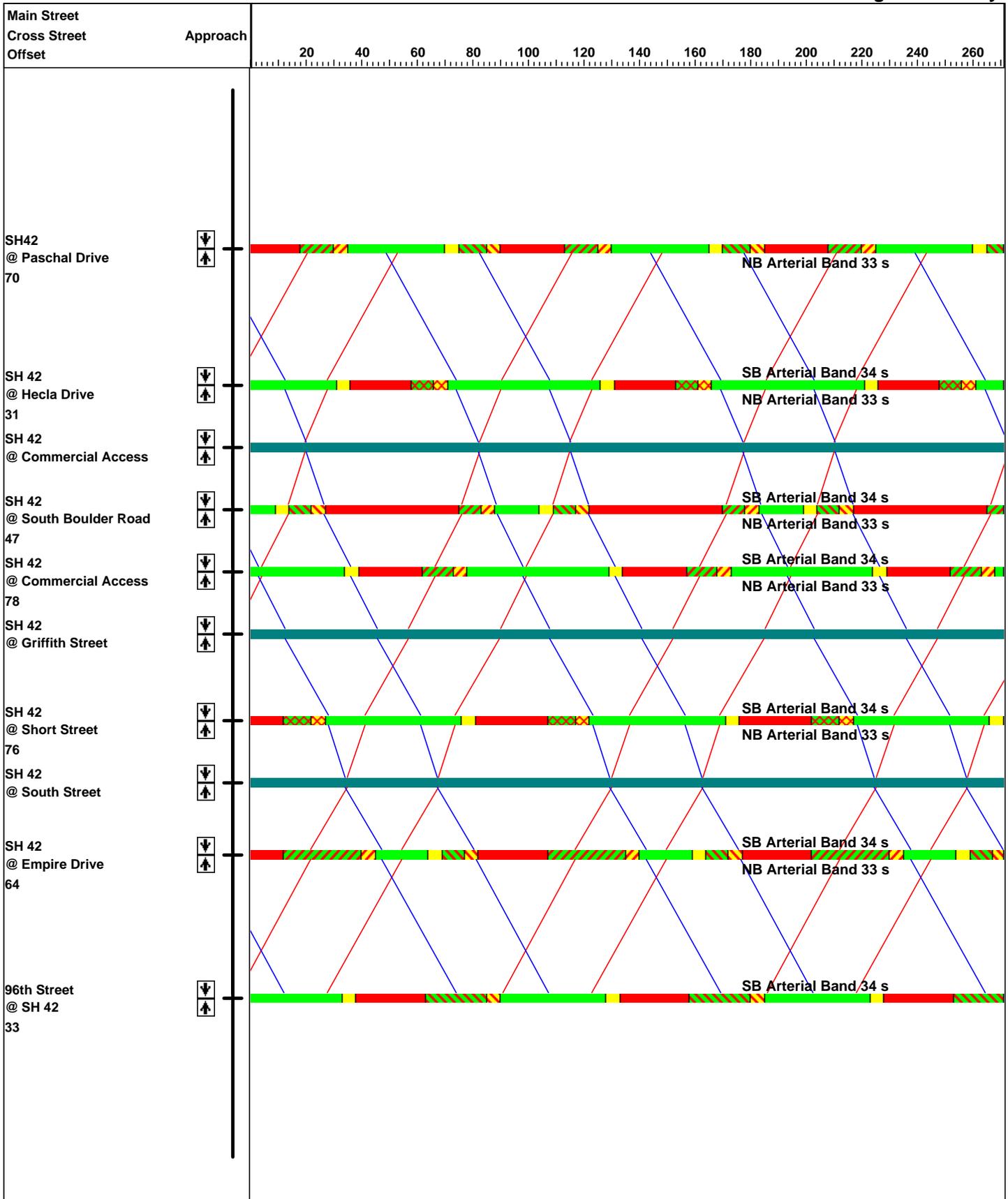
**Time-Space Diagram - SH 42
Coal Creek Station**

**Timing Plan: AM Peak
Year 2030 Progression Study - Minus Development**



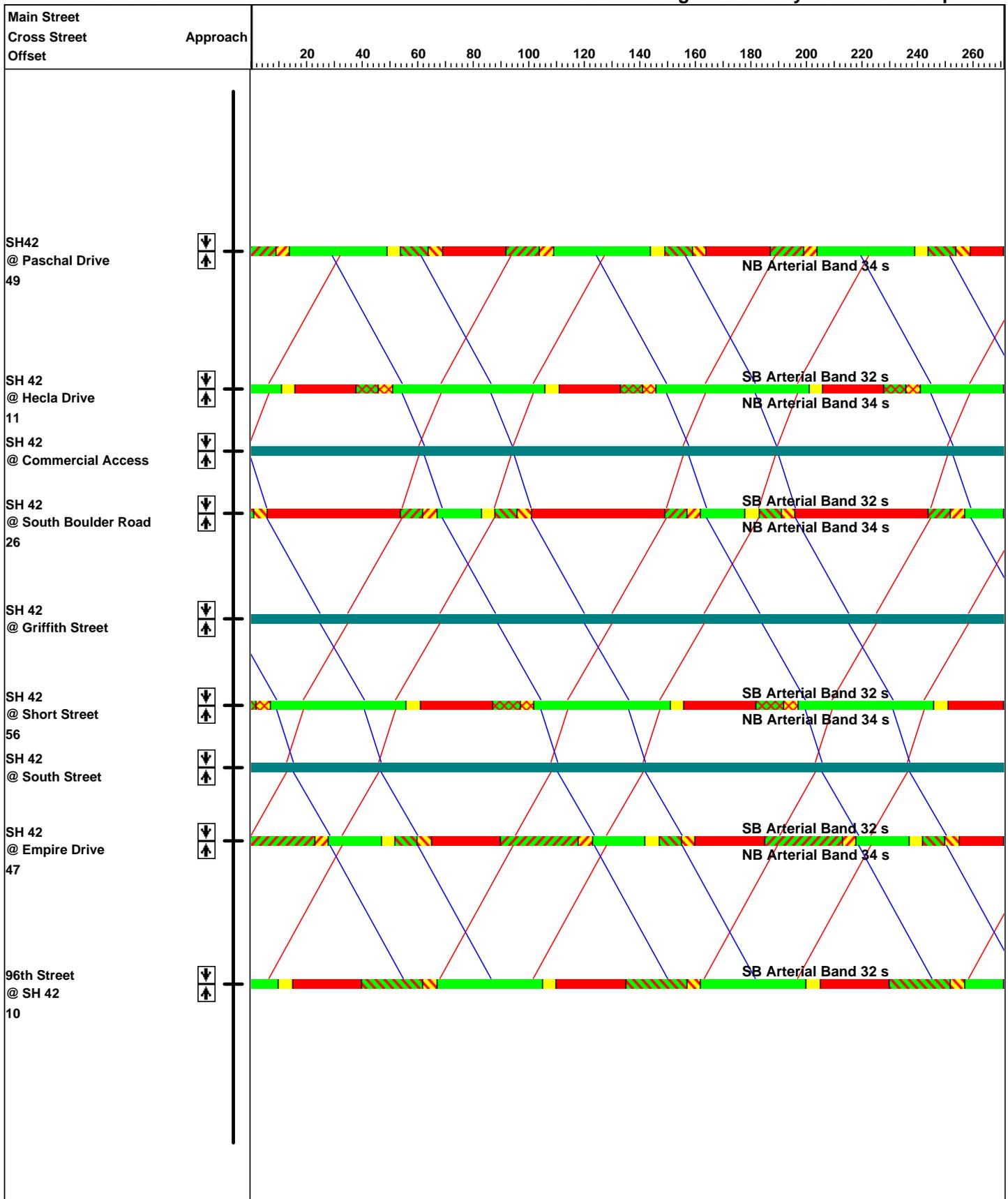
**Time-Space Diagram - SH 42
Coal Creek Station**

**Timing Plan: PM Peak
Year 2030 Progression Study**



**Time-Space Diagram - 96th Street
Coal Creek Station**

**Timing Plan: PM Peak
Year 2030 Progression Study - Minus Development**



Appendix B

Traffic Count Data

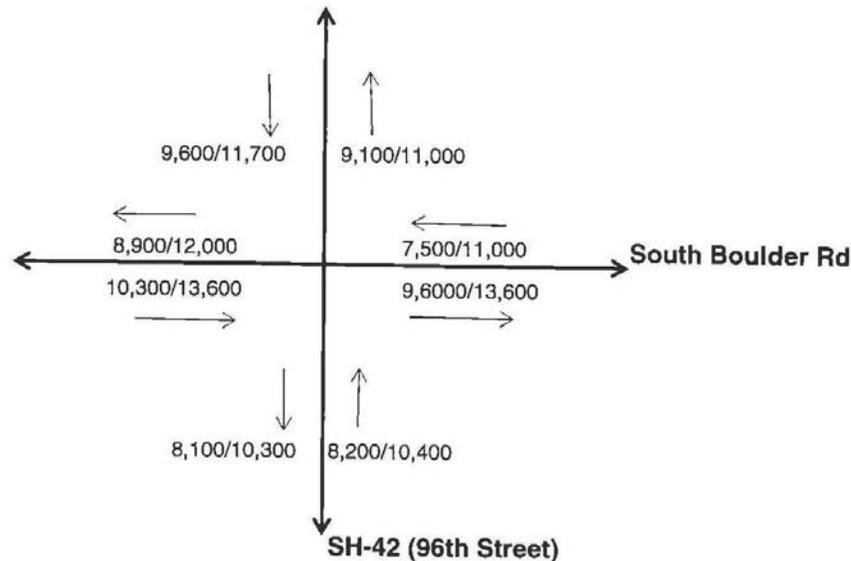
November 19, 2012

Joseph L. Henderson, PE, PTOE
Sustainable Traffic Solutions, Inc.
823 W. 124th Dr.
Westminster, CO 80234

Dear Mr. Henderson:

Per your request, below are the existing and future forecasted traffic volumes at South Boulder Road and SH-42 (96th Street):

Existing Traffic AwDT / 2035 Forecasted AwDT



Sustainable Traffic Solutions provided the existing traffic volumes and the future estimated volumes were from the adopted 2035 RTP fiscally constrained model travel network. The National Cooperative Highway Research Report Procedure, Report #255 was used as a guide in preparing the 2035 forecast on the requested links. The average weekday traffic excludes holidays, special events, and weekend traffic.

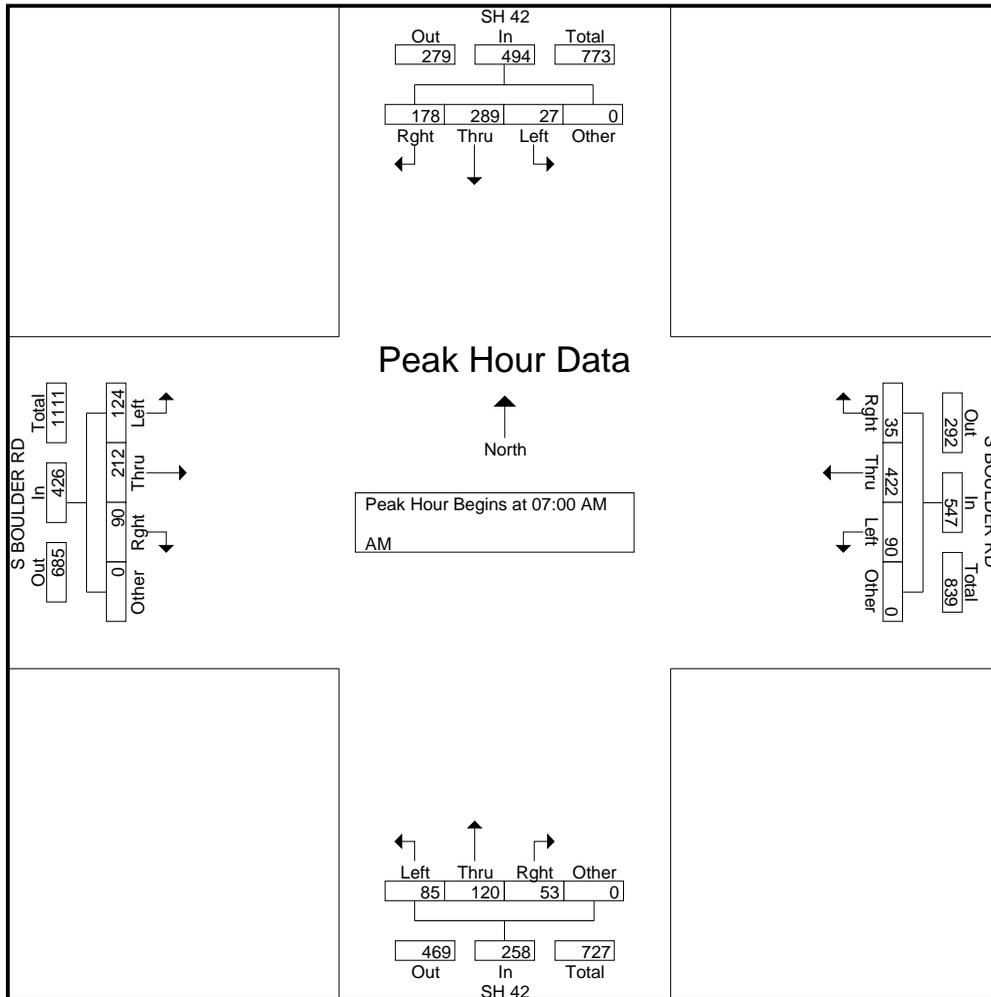
A fee of \$112.50 is charged for processing this data. An invoice is attached. Contact me should you have any questions.

Thanks,

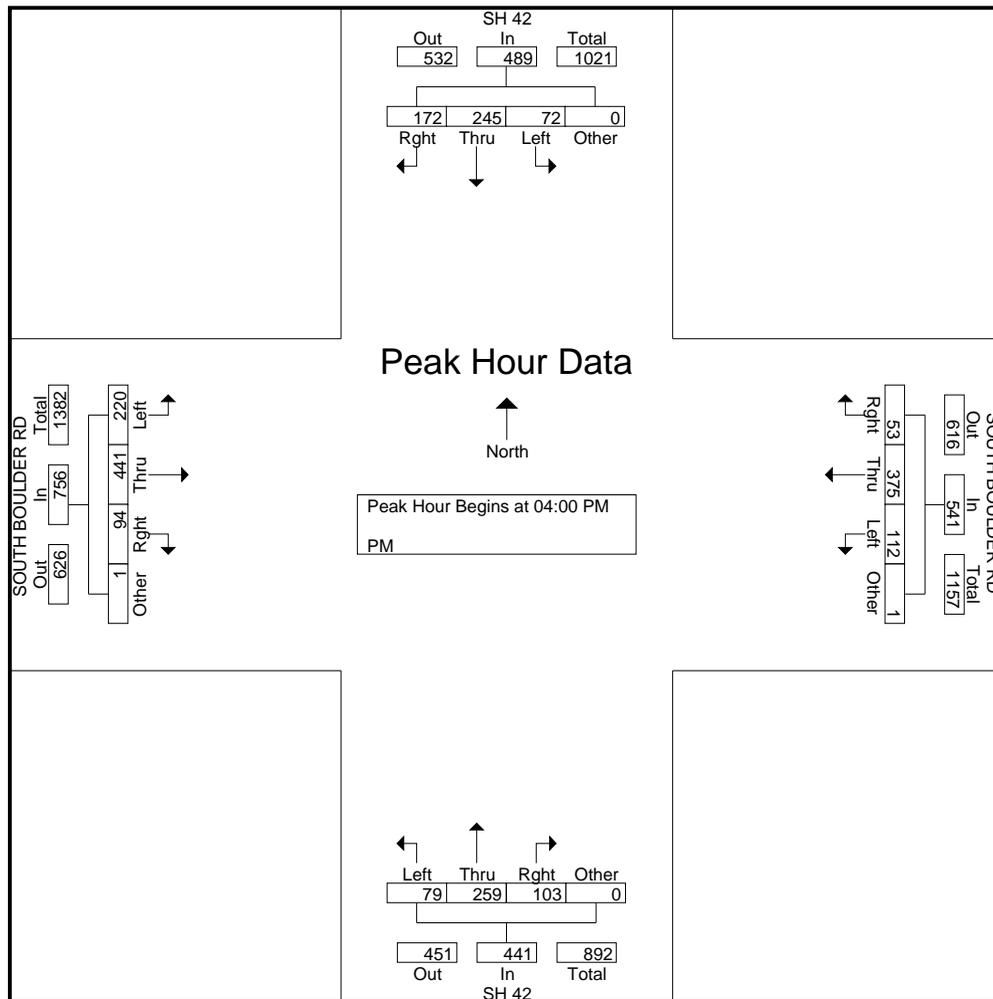
Lawrence N. Tilong
Transportation Planner



Start Time	SH 42 Southbound					S BOULDER RD Westbound					SH 42 Northbound					S BOULDER RD Eastbound					Int. Total
	Left	Thru	Right	Other	App. Total	Left	Thru	Right	Other	App. Total	Left	Thru	Right	Other	App. Total	Left	Thru	Right	Other	App. Total	
Peak Hour Analysis From 07:00 AM to 07:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	11	74	26	0	111	16	101	15	0	132	16	25	10	0	51	30	42	24	0	96	390
07:15 AM	11	84	42	0	137	15	71	8	0	94	26	43	13	0	82	27	57	20	0	104	417
07:30 AM	4	61	49	0	114	25	129	6	0	160	21	17	11	0	49	33	52	22	0	107	430
07:45 AM	1	70	61	0	132	34	121	6	0	161	22	35	19	0	76	34	61	24	0	119	488
Total Volume	27	289	178	0	494	90	422	35	0	547	85	120	53	0	258	124	212	90	0	426	1725
% App. Total	5.5	58.5	36	0		16.5	77.1	6.4	0		32.9	46.5	20.5	0		29.1	49.8	21.1	0		
PHF	.614	.860	.730	.000	.901	.662	.818	.583	.000	.849	.817	.698	.697	.000	.787	.912	.869	.938	.000	.895	.884



Start Time	SH 42 Southbound					SOUTH BOULDER RD Westbound					SH 42 Northbound					SOUTH BOULDER RD Eastbound					Int. Total
	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	Left	Thru	Rght	Other	App. Total	
Peak Hour Analysis From 04:00 PM to 04:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	17	62	28	0	107	36	112	14	0	162	21	88	27	0	136	58	119	24	0	201	606
04:15 PM	11	57	43	0	111	23	67	14	0	104	18	53	28	0	99	50	120	20	0	190	504
04:30 PM	19	60	41	0	120	20	79	12	0	111	22	52	26	0	100	40	99	23	1	163	494
04:45 PM	25	66	60	0	151	33	117	13	1	164	18	66	22	0	106	72	103	27	0	202	623
Total Volume	72	245	172	0	489	112	375	53	1	541	79	259	103	0	441	220	441	94	1	756	2227
% App. Total	14.7	50.1	35.2	0		20.7	69.3	9.8	0.2		17.9	58.7	23.4	0		29.1	58.3	12.4	0.1		
PHF	.720	.928	.717	.000	.810	.778	.801	.946	.250	.825	.898	.736	.920	.000	.811	.764	.919	.870	.250	.936	.894



Sustainable Traffic Solutions, Inc.

823 West 124th Drive
Westminster, CO 80234

sustainabletrafficsolutions.com

SH 42 / Harper Street
Eastpark Associates

File Name : SH 42-Harper AM

Site Code : 11152012

Start Date : 11/15/2012

Page No : 1

Data by JL

Groups Printed- Unshifted

Start Time	SH 42 Southbound					Westbound					SH 42 Northbound					Harper Street Eastbound					Int. Total	
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total		
07:00 AM	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
07:15 AM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	2	3
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	2	2
07:45 AM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	3
Total	0	0	4	0	4	0	0	0	0	0	0	0	0	0	0	4	0	2	0	0	6	10
08:00 AM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Grand Total	0	0	5	0	5	0	0	0	0	0	0	0	0	0	0	4	0	2	0	0	6	11
Apprch %	0	0	100	0		0	0	0	0		0	0	0	0		66.7	0	33.3	0			
Total %	0	0	45.5	0	45.5	0	0	0	0	0	0	0	0	0	0	36.4	0	18.2	0	0	54.5	

Sustainable Traffic Solutions, Inc.

823 West 124th Drive
Westminster, CO 80234

sustainabletrafficsolutions.com

SH 42 / Harper Street
Eastpark Associates

File Name : SH 42-Harper PM
Site Code : 11152012
Start Date : 11/15/2012
Page No : 1

Data by KA

Groups Printed- Unshifted

Start Time	SH 42 Southbound					Westbound					SH 42 Northbound					Harper Street Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
04:00 PM	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	1	0	2	0	3	5
*** BREAK ***																					
04:30 PM	0	0	5	0	5	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	7
04:45 PM	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	2	0	2	0	4	7
Total	0	0	10	0	10	0	0	0	0	0	0	0	0	0	0	5	0	4	0	9	19
05:00 PM	0	0	1	0	1	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	2
05:15 PM	0	0	5	0	5	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	6
05:30 PM	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	5
05:45 PM	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2	4
Total	0	0	10	0	10	0	0	0	0	0	1	0	0	0	1	1	0	5	0	6	17
Grand Total	0	0	20	0	20	0	0	0	0	0	1	0	0	0	1	6	0	9	0	15	36
Apprch %	0	0	100	0		0	0	0	0		100	0	0	0		40	0	60	0		
Total %	0	0	55.6	0	55.6	0	0	0	0	0	2.8	0	0	0	2.8	16.7	0	25	0	41.7	

Sustainable Traffic Solutions, Inc.

823 West 124th Drive
Westminster, CO 80234

sustainabletrafficsolutions.com

SH 42 / Griffith Street
Eastpark Associates

File Name : SH 42-Griffith AM
Site Code : 11202012
Start Date : 11/20/2012
Page No : 1

Data by KA

Groups Printed- Unshifted

Start Time	SH 42 Southbound					Griffith Street Westbound					SH 42 Northbound					Griffith Street Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
07:00 AM	0	0	1	0	1	0	0	0	0	0	2	0	0	0	2	0	0	3	0	3	6
07:15 AM	0	0	4	0	4	0	0	0	0	0	1	0	0	0	1	0	0	6	0	6	11
07:30 AM	0	0	1	0	1	0	0	0	0	0	4	0	0	0	4	4	0	2	0	6	11
07:45 AM	0	0	6	0	6	0	0	0	0	0	3	0	0	0	3	3	0	6	0	9	18
Total	0	0	12	0	12	0	0	0	0	0	10	0	0	0	10	7	0	17	0	24	46
08:00 AM	0	0	5	0	5	0	0	0	0	0	5	0	0	0	5	1	0	2	0	3	13
08:15 AM	1	0	5	0	6	0	0	1	0	1	2	0	0	0	2	0	0	10	0	10	19
Grand Total	1	0	22	0	23	0	0	1	0	1	17	0	0	0	17	8	0	29	0	37	78
Apprch %	4.3	0	95.7	0		0	0	100	0		100	0	0	0		21.6	0	78.4	0		
Total %	1.3	0	28.2	0	29.5	0	0	1.3	0	1.3	21.8	0	0	0	21.8	10.3	0	37.2	0	47.4	

Sustainable Traffic Solutions, Inc.

823 West 124th Drive
Westminster, CO 80234

sustainabletrafficsolutions.com

SH 42 / Griffith Street
Eastpark Associates

File Name : SH 42-Griffith PM
Site Code : 11192912
Start Date : 11/19/2012
Page No : 1

Data by KA

Groups Printed- Unshifted

Start Time	SH 42 Southbound					Griffith Street Westbound					SH 42 Northbound					Griffith Street Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
04:00 PM	0	0	11	0	11	1	0	0	0	1	1	0	0	0	1	0	0	3	0	3	16
04:15 PM	0	0	7	0	7	0	0	0	0	0	2	0	1	0	3	4	0	2	0	6	16
04:30 PM	1	0	5	0	6	0	0	1	0	1	5	0	0	0	5	3	0	2	0	5	17
04:45 PM	1	0	15	0	16	0	0	1	0	1	7	0	0	0	7	1	0	11	0	12	36
Total	2	0	38	0	40	1	0	2	0	3	15	0	1	0	16	8	0	18	0	26	85
05:00 PM	0	0	13	0	13	0	0	0	0	0	4	0	0	0	4	4	0	5	0	9	26
05:15 PM	0	0	11	0	11	0	0	0	0	0	4	0	0	0	4	2	0	3	0	5	20
05:30 PM	0	0	8	0	8	0	0	0	0	0	8	0	0	0	8	3	0	7	0	10	26
05:45 PM	0	0	2	0	2	0	0	0	0	0	2	0	0	0	2	0	0	5	0	5	9
Total	0	0	34	0	34	0	0	0	0	0	18	0	0	0	18	9	0	20	0	29	81
Grand Total	2	0	72	0	74	1	0	2	0	3	33	0	1	0	34	17	0	38	0	55	166
Apprch %	2.7	0	97.3	0		33.3	0	66.7	0		97.1	0	2.9	0		30.9	0	69.1	0		
Total %	1.2	0	43.4	0	44.6	0.6	0	1.2	0	1.8	19.9	0	0.6	0	20.5	10.2	0	22.9	0	33.1	

Navjoy Consulting Services, Inc

1385 S. Colorado Blvd Suite A-707
Denver, CO 80222
303-502-7343

Site Code: 4
Station ID: 4
S BOULDER RD E/O SH 42

EB

126

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
12/1/10	11	15	18	0	3	0	0	0	0	0	0	0	0	47
01:00	6	15	15	0	1	0	0	0	0	0	0	0	0	37
02:00	3	8	8	0	0	0	0	0	0	0	0	0	0	19
03:00	2	9	4	0	0	0	0	0	1	0	0	0	0	16
04:00	3	6	1	0	1	0	0	0	0	0	0	0	0	11
05:00	6	13	13	0	1	0	0	0	0	0	0	0	0	33
06:00	27	61	40	4	11	2	0	0	0	0	0	0	0	145
07:00	76	206	182	7	32	2	1	1	0	1	0	0	0	508
08:00	105	219	166	15	25	3	0	2	1	0	0	0	0	536
09:00	68	169	123	7	23	1	2	4	2	1	0	0	0	400
10:00	92	224	139	4	47	4	1	3	2	1	0	0	0	517
11:00	72	219	154	6	50	6	0	2	2	1	0	0	0	512
12 PM	85	232	206	5	48	5	3	6	2	0	0	0	0	592
13:00	117	270	205	3	42	5	1	6	4	0	0	0	0	653
14:00	120	287	244	4	39	3	1	9	6	2	0	0	2	717
15:00	148	328	206	11	72	7	1	7	4	1	0	0	0	785
16:00	158	375	265	6	64	7	0	1	9	7	0	0	0	892
17:00	180	414	306	4	60	4	6	6	10	5	0	0	1	996
18:00	139	295	246	2	48	4	2	4	6	1	0	0	0	747
19:00	112	164	168	2	34	2	1	0	1	2	0	0	0	486
20:00	81	130	138	3	15	0	0	0	1	0	0	0	0	368
21:00	77	132	94	1	16	0	0	1	1	0	0	0	0	322
22:00	36	58	80	2	6	0	0	1	0	0	0	0	0	183
23:00	27	46	34	1	4	0	1	0	0	0	0	0	0	113
Day Total	1751	3895	3055	87	642	55	20	53	52	22	0	0	3	9635
Percent	18.2%	40.4%	31.7%	0.9%	6.7%	0.6%	0.2%	0.6%	0.5%	0.2%	0.0%	0.0%	0.0%	
AM Peak	08:00	10:00	07:00	08:00	11:00	11:00	09:00	09:00	09:00	07:00				08:00
Vol.	105	224	182	15	50	6	2	4	2	1				536
PM Peak	17:00	17:00	17:00	15:00	15:00	15:00	17:00	14:00	17:00	16:00			14:00	17:00
Vol.	180	414	306	11	72	7	6	9	10	7			2	996
Grand Total	1751	3895	3055	87	642	55	20	53	52	22	0	0	3	9635
Percent	18.2%	40.4%	31.7%	0.9%	6.7%	0.6%	0.2%	0.6%	0.5%	0.2%	0.0%	0.0%	0.0%	

Navjoy Consulting Services, Inc

1385 S. Colorado Blvd Suite A-707
Denver, CO 80222
303-502-7343

Site Code: 4
Station ID: 4
S BOULDER RD E/O SH 42

WB

127

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
12/1/10	0	20	4	0	0	0	0	0	0	0	0	0	0	24
01:00	0	15	3	0	0	0	0	0	0	0	0	0	0	18
02:00	0	9	4	0	0	0	0	0	0	0	0	0	0	13
03:00	0	10	1	0	0	0	0	1	0	0	0	0	0	12
04:00	0	16	2	0	1	0	0	0	1	0	0	0	0	20
05:00	1	60	16	1	4	0	0	0	0	0	0	0	0	82
06:00	1	155	43	4	10	2	1	3	0	1	0	0	0	220
07:00	2	469	106	7	24	2	3	30	0	6	0	1	0	650
08:00	2	450	100	5	27	2	6	26	0	4	0	0	1	623
09:00	0	332	62	4	21	4	1	14	2	0	0	0	0	440
10:00	4	351	51	5	15	1	2	12	0	1	0	2	0	444
11:00	2	360	76	3	17	1	2	16	0	1	0	0	0	478
12 PM	3	377	100	3	25	5	1	29	1	6	1	1	0	552
13:00	1	349	70	2	10	3	3	16	0	4	0	0	0	458
14:00	6	353	108	4	23	0	2	25	3	7	0	0	0	531
15:00	4	426	99	6	19	3	0	25	1	4	2	1	0	590
16:00	8	399	69	4	15	1	0	23	1	3	0	1	1	525
17:00	4	378	59	2	12	5	1	24	0	5	0	0	0	490
18:00	2	398	72	2	11	0	1	10	0	6	1	1	0	504
19:00	0	240	43	2	2	1	0	10	0	2	0	0	0	300
20:00	0	161	34	2	2	0	0	3	0	0	0	0	0	202
21:00	0	132	22	1	4	0	0	2	1	0	0	0	0	162
22:00	0	65	10	1	1	0	0	0	1	0	0	0	0	78
23:00	0	42	8	0	2	0	0	0	0	0	0	0	0	52
Day Total	40	5567	1162	58	245	30	23	269	11	50	4	7	2	7468
Percent	0.5%	74.5%	15.6%	0.8%	3.3%	0.4%	0.3%	3.6%	0.1%	0.7%	0.1%	0.1%	0.0%	
AM Peak	10:00	07:00	07:00	07:00	08:00	09:00	08:00	07:00	09:00	07:00		10:00	08:00	07:00
Vol.	4	469	106	7	27	4	6	30	2	6		2	1	650
PM Peak	16:00	15:00	14:00	15:00	12:00	12:00	13:00	12:00	14:00	14:00	15:00	12:00	16:00	15:00
Vol.	8	426	108	6	25	5	3	29	3	7	2	1	1	590
Grand Total	40	5567	1162	58	245	30	23	269	11	50	4	7	2	7468
Percent	0.5%	74.5%	15.6%	0.8%	3.3%	0.4%	0.3%	3.6%	0.1%	0.7%	0.1%	0.1%	0.0%	

Navjoy Consulting Services, Inc

1385 S. Colorado Blvd Suite A-707
Denver, CO 80222
303-502-7343

Site Code: 4
Station ID: 4
S BOULDER RD E/O SH 42

EB

128

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	Pace Speed	Number in Pace
12/1/10	12	0	0	0	1	7	17	10	0	0	0	0	0	0	47	39-48	27
01:00	9	0	0	0	0	6	15	6	1	0	0	0	0	0	37	37-46	22
02:00	4	0	0	0	0	3	8	4	0	0	0	0	0	0	19	38-47	13
03:00	5	0	1	0	3	3	1	3	0	0	0	0	0	0	16	29-38	6
04:00	4	0	0	0	1	5	1	0	0	0	0	0	0	0	11	32-41	7
05:00	3	0	0	0	3	6	6	9	6	0	0	0	0	0	33	40-49	16
06:00	33	0	0	1	5	30	39	28	6	2	1	0	0	0	145	36-45	69
07:00	107	0	0	8	29	96	138	88	34	8	0	0	0	0	508	36-45	234
08:00	125	0	1	6	39	98	132	92	37	6	0	0	0	0	536	36-45	230
09:00	83	0	1	1	22	85	100	75	30	2	1	0	0	0	400	36-45	185
10:00	119	0	4	11	49	116	106	87	20	5	0	0	0	0	517	36-45	222
11:00	95	0	3	12	50	111	124	85	29	2	1	0	0	0	512	36-45	235
12 PM	92	0	0	15	73	137	151	88	32	3	1	0	0	0	592	36-45	288
13:00	144	0	0	16	59	135	151	101	41	6	0	0	0	0	653	36-45	286
14:00	148	0	2	28	77	161	156	100	37	7	1	0	0	0	717	36-45	317
15:00	177	1	6	16	69	180	147	145	36	8	0	0	0	0	785	36-45	327
16:00	206	0	15	42	108	200	154	122	36	9	0	0	0	0	892	36-45	354
17:00	239	0	9	36	117	214	190	136	46	7	2	0	0	0	996	36-45	404
18:00	164	1	6	19	73	165	151	125	35	8	0	0	0	0	747	36-45	316
19:00	125	0	0	3	33	103	102	94	23	3	0	0	0	0	486	36-45	205
20:00	90	0	0	0	15	70	87	83	22	1	0	0	0	0	368	41-50	170
21:00	92	0	0	1	12	71	76	54	16	0	0	0	0	0	322	36-45	147
22:00	41	0	0	0	8	44	45	39	3	2	1	0	0	0	183	36-45	89
23:00	30	0	0	0	6	24	30	17	6	0	0	0	0	0	113	36-45	54
Total	2147	2	48	215	852	2070	2127	1591	496	79	8	0	0	0	9635		
Percent	22.3%	0.0%	0.5%	2.2%	8.8%	21.5%	22.1%	16.5%	5.1%	0.8%	0.1%	0.0%	0.0%	0.0%			
AM Peak	08:00		10:00	11:00	11:00	10:00	07:00	08:00	08:00	07:00	06:00						08:00
Vol.	125		4	12	50	116	138	92	37	8	1						536
PM Peak	17:00	15:00	16:00	16:00	17:00	17:00	17:00	15:00	17:00	16:00	17:00						17:00
Vol.	239	1	15	42	117	214	190	145	46	9	2						996
Total	2147	2	48	215	852	2070	2127	1591	496	79	8	0	0	0	9635		
Percent	22.3%	0.0%	0.5%	2.2%	8.8%	21.5%	22.1%	16.5%	5.1%	0.8%	0.1%	0.0%	0.0%	0.0%			

15th Percentile : 11 MPH
50th Percentile : 39 MPH
85th Percentile : 48 MPH
95th Percentile : 52 MPH

Stats
10 MPH Pace Speed : 36-45 MPH
Number in Pace : 4197
Percent in Pace : 43.6%
Number of Vehicles > 55 MPH : 87
Percent of Vehicles > 55 MPH : 0.9%
Mean Speed(Average) : 34 MPH

Navjoy Consulting Services, Inc

1385 S. Colorado Blvd Suite A-707
Denver, CO 80222
303-502-7343

Site Code: 4
Station ID: 4
S BOULDER RD E/O SH 42

WB

129

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	999	Total	Pace Speed	Number in Pace
12/1/10	0	0	0	1	5	12	6	0	0	0	0	0	0	0	0	24	32-41	18
01:00	0	0	0	0	3	6	7	1	0	1	0	0	0	0	0	18	33-42	13
02:00	0	0	0	0	1	9	3	0	0	0	0	0	0	0	0	13	34-43	13
03:00	0	0	0	0	1	6	5	0	0	0	0	0	0	0	0	12	35-44	11
04:00	0	0	0	0	3	9	8	0	0	0	0	0	0	0	0	20	34-43	17
05:00	0	0	1	1	10	34	26	8	1	1	0	0	0	0	0	82	36-45	60
06:00	1	0	0	6	26	94	77	13	3	0	0	0	0	0	0	220	36-45	171
07:00	11	0	1	15	120	292	177	31	2	0	1	0	0	0	0	650	36-45	469
08:00	15	0	2	12	113	274	184	20	2	1	0	0	0	0	0	623	36-45	458
09:00	10	0	0	25	106	217	65	15	2	0	0	0	0	0	0	440	31-40	323
10:00	4	0	1	22	127	174	96	17	3	0	0	0	0	0	0	444	31-40	301
11:00	7	0	0	23	138	178	112	19	1	0	0	0	0	0	0	478	31-40	316
12 PM	14	0	1	30	153	241	90	21	2	0	0	0	0	0	0	552	31-40	394
13:00	11	0	1	32	136	199	66	12	1	0	0	0	0	0	0	458	31-40	335
14:00	5	0	0	26	144	239	97	18	2	0	0	0	0	0	0	531	31-40	383
15:00	23	1	3	36	194	236	77	17	3	0	0	0	0	0	0	590	31-40	430
16:00	5	0	1	22	174	236	76	9	2	0	0	0	0	0	0	525	31-40	410
17:00	13	0	0	39	142	215	73	8	0	0	0	0	0	0	0	490	31-40	357
18:00	10	0	1	28	124	240	94	6	1	0	0	0	0	0	0	504	31-40	364
19:00	6	0	5	19	84	133	52	1	0	0	0	0	0	0	0	300	31-40	217
20:00	1	0	2	5	46	90	49	9	0	0	0	0	0	0	0	202	35-44	140
21:00	0	0	0	7	33	79	34	8	1	0	0	0	0	0	0	162	33-42	114
22:00	0	0	0	2	21	36	15	4	0	0	0	0	0	0	0	78	31-40	57
23:00	0	0	1	2	12	21	14	2	0	0	0	0	0	0	0	52	34-43	36
Total	136	1	20	353	1916	3270	1503	239	26	3	1	0	0	0	0	7468		
Percent	1.8%	0.0%	0.3%	4.7%	25.7%	43.8%	20.1%	3.2%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00		08:00	09:00	11:00	07:00	08:00	07:00	06:00	01:00	07:00					07:00		
Vol.	15		2	25	138	292	184	31	3	1	1					650		
PM Peak	15:00	15:00	19:00	17:00	15:00	12:00	14:00	12:00	15:00							15:00		
Vol.	23	1	5	39	194	241	97	21	3							590		
Total	136	1	20	353	1916	3270	1503	239	26	3	1	0	0	0	0	7468		
Percent	1.8%	0.0%	0.3%	4.7%	25.7%	43.8%	20.1%	3.2%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

15th Percentile : 32 MPH
 50th Percentile : 37 MPH
 85th Percentile : 43 MPH
 95th Percentile : 45 MPH

Stats
 10 MPH Pace Speed : 31-40 MPH
 Number in Pace : 5186
 Percent in Pace : 69.4%
 Number of Vehicles > 55 MPH : 4
 Percent of Vehicles > 55 MPH : 0.1%
 Mean Speed(Average) : 37 MPH

Navjoy Consulting Services, Inc

1385 S. Colorado Blvd Suite A-707
Denver, CO 80222
303-502-7343

Site Code: 2
Station ID: 2
S BOULDER RD W/O SH 42

EB

130

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	Pace Speed	Number in Pace
12/1/10	8	0	1	0	4	13	6	4	0	0	0	0	0	0	36	32-41	19
01:00	4	0	0	0	4	14	4	1	0	0	0	0	0	0	27	32-41	19
02:00	0	0	0	2	4	4	0	0	0	0	0	0	0	0	10	29-38	9
03:00	4	0	1	1	4	6	4	2	0	0	0	0	0	0	22	32-41	11
04:00	13	0	0	1	1	11	15	4	0	0	0	0	0	0	45	36-45	26
05:00	20	0	2	4	4	24	35	12	3	0	0	0	0	0	104	36-45	59
06:00	50	3	4	20	40	83	67	19	1	0	0	0	0	0	287	36-45	150
07:00	141	7	25	81	166	238	139	31	3	0	0	0	0	0	831	31-40	404
08:00	144	8	24	84	193	244	141	21	2	0	0	0	0	0	861	31-40	437
09:00	134	7	22	77	179	227	131	19	2	0	0	0	0	0	798	31-40	406
10:00	79	1	8	48	129	216	97	22	0	0	0	0	0	0	600	31-40	345
11:00	95	1	12	49	130	197	101	21	1	0	0	0	0	0	607	31-40	327
12 PM	130	1	15	76	142	205	100	7	1	0	0	0	0	0	677	31-40	347
13:00	121	3	11	67	166	194	82	28	1	0	0	0	0	0	673	31-40	360
14:00	130	2	21	59	167	213	96	19	4	1	0	0	0	0	712	31-40	380
15:00	126	4	40	92	178	189	88	15	3	0	0	0	0	0	735	31-40	367
16:00	114	8	39	114	186	193	66	4	3	0	0	0	0	0	727	31-40	379
17:00	115	5	31	97	212	217	67	7	1	0	0	0	0	0	752	31-40	429
18:00	101	0	8	76	156	190	60	8	2	0	0	0	0	0	601	31-40	346
19:00	63	0	9	40	85	157	63	12	1	0	0	0	0	0	430	31-40	242
20:00	46	0	5	22	68	121	49	8	3	0	0	0	0	0	322	31-40	189
21:00	36	0	1	9	47	83	41	8	1	0	0	0	0	0	226	31-40	130
22:00	14	0	2	6	26	60	24	0	0	0	0	0	0	0	132	31-40	86
23:00	11	0	0	4	13	24	20	2	0	0	0	0	0	0	74	36-45	44
Total	1699	50	281	1029	2304	3123	1496	274	32	1	0	0	0	0	10289		
Percent	16.5%	0.5%	2.7%	10.0%	22.4%	30.4%	14.5%	2.7%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	08:00	07:00	08:00	08:00	08:00	08:00	07:00	05:00							08:00	
Vol.	144	8	25	84	193	244	141	31	3							861	
PM Peak	12:00	16:00	15:00	16:00	17:00	17:00	12:00	13:00	14:00	14:00						17:00	
Vol.	130	8	40	114	212	217	100	28	4	1						752	
Total	1699	50	281	1029	2304	3123	1496	274	32	1	0	0	0	0	10289		
Percent	16.5%	0.5%	2.7%	10.0%	22.4%	30.4%	14.5%	2.7%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%			

15th Percentile : 14 MPH
50th Percentile : 35 MPH
85th Percentile : 41 MPH
95th Percentile : 45 MPH

Stats
10 MPH Pace Speed : 31-40 MPH
Number in Pace : 5427
Percent in Pace : 52.7%
Number of Vehicles > 55 MPH : 1
Percent of Vehicles > 55 MPH : 0.0%
Mean Speed(Average) : 31 MPH

Navjoy Consulting Services, Inc

1385 S. Colorado Blvd Suite A-707
Denver, CO 80222
303-502-7343

Site Code: 2
Station ID: 2
S BOULDER RD W/O SH 42

WB	Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	Pace Speed	Number in Pace
	12/1/10	0	0	0	0	2	13	17	10	0	0	0	0	0	0	42	36-45	30
	01:00	1	0	0	0	2	5	13	8	0	0	0	0	0	0	29	39-48	21
	02:00	0	0	0	0	0	3	6	7	1	0	0	0	0	0	17	38-47	13
	03:00	1	0	0	0	0	4	4	3	0	1	0	0	0	0	13	37-46	9
	04:00	0	0	1	2	1	7	12	2	1	0	0	0	0	0	26	36-45	19
	05:00	0	0	0	5	7	12	24	17	6	1	0	0	0	0	72	39-48	41
	06:00	2	0	0	4	14	41	65	49	10	3	0	0	0	0	188	40-49	114
	07:00	10	0	1	7	48	146	142	76	22	3	2	0	0	0	457	36-45	288
	08:00	13	0	2	13	72	175	159	60	16	4	3	0	0	0	517	36-45	334
	09:00	12	0	2	12	67	163	148	56	15	4	3	0	0	0	482	36-45	311
	10:00	9	0	1	15	90	168	134	51	11	0	0	0	0	0	479	36-45	302
	11:00	14	0	1	13	91	191	166	73	14	2	1	0	0	0	566	36-45	357
	12 PM	17	0	1	39	110	212	148	50	5	1	0	0	0	0	583	36-45	360
	13:00	11	1	3	23	139	215	147	48	11	3	0	0	0	0	601	36-45	362
	14:00	18	0	10	48	109	220	175	53	20	3	1	0	0	0	657	36-45	395
	15:00	24	3	15	49	171	258	151	41	12	2	0	0	0	0	726	31-40	429
	16:00	47	7	33	84	191	263	134	45	6	0	0	0	0	0	810	31-40	454
	17:00	31	0	19	86	283	276	148	39	8	0	0	0	0	0	890	31-40	559
	18:00	19	0	1	23	103	221	157	60	18	4	2	0	0	0	608	36-45	378
	19:00	5	0	2	9	55	100	134	66	12	5	0	0	0	0	388	36-45	234
	20:00	4	0	0	3	30	96	110	48	10	4	0	0	0	0	305	36-45	206
	21:00	3	0	0	2	18	76	94	35	9	3	0	0	0	0	240	36-45	170
	22:00	3	0	0	2	13	37	49	22	5	2	0	0	0	0	133	36-45	86
	23:00	2	0	0	1	9	11	26	12	5	0	0	0	0	0	66	38-47	39
	Total	246	11	92	440	1625	2913	2363	931	217	45	12	0	0	0	8895		
	Percent	2.8%	0.1%	1.0%	4.9%	18.3%	32.7%	26.6%	10.5%	2.4%	0.5%	0.1%	0.0%	0.0%	0.0%			
AM Peak	11:00			08:00	10:00	11:00	11:00	11:00	07:00	07:00	08:00	08:00				11:00		
Vol.	14			2	15	91	191	166	76	22	4	3				566		
PM Peak	16:00	16:00	16:00	17:00	17:00	17:00	14:00	19:00	14:00	19:00	18:00					17:00		
Vol.	47	7	33	86	283	276	175	66	20	5	2					890		
Total	246	11	92	440	1625	2913	2363	931	217	45	12	0	0	0	0	8895		
Percent	2.8%	0.1%	1.0%	4.9%	18.3%	32.7%	26.6%	10.5%	2.4%	0.5%	0.1%	0.0%	0.0%	0.0%				

131

15th Percentile : 32 MPH
50th Percentile : 39 MPH
85th Percentile : 45 MPH
95th Percentile : 50 MPH

Stats
10 MPH Pace Speed : 36-45 MPH
Number in Pace : 5276
Percent in Pace : 59.3%
Number of Vehicles > 55 MPH : 57
Percent of Vehicles > 55 MPH : 0.6%
Mean Speed(Average) : 38 MPH

Navjoy Consulting Services, Inc

1385 S. Colorado Blvd Suite A-707
Denver, CO 80222
303-502-7343

Site Code: 2
Station ID: 2
S BOULDER RD W/O SH 42

EB

132

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
12/1/10	0	20	10	0	4	1	0	0	0	1	0	0	0	36
01:00	0	13	13	0	0	0	0	0	0	0	0	0	0	26
02:00	0	6	5	0	0	0	0	0	0	0	0	0	0	11
03:00	0	10	10	1	1	0	0	0	0	0	0	0	0	22
04:00	1	23	14	1	4	1	0	0	0	0	0	0	0	44
05:00	1	54	34	0	11	2	0	1	0	0	0	0	0	103
06:00	3	157	86	14	25	5	2	2	2	0	0	0	0	296
07:00	9	467	280	15	39	6	2	22	4	2	0	0	2	848
08:00	6	532	246	12	57	11	1	22	12	1	2	0	0	902
09:00	6	494	229	11	53	10	1	20	11	1	2	0	0	838
10:00	6	376	179	0	29	12	3	1	3	4	0	0	0	613
11:00	5	383	171	7	32	12	2	8	7	7	0	0	0	634
12 PM	7	426	181	6	41	13	1	3	6	4	0	0	1	689
13:00	8	446	164	8	26	10	2	4	8	2	0	0	0	678
14:00	9	427	207	8	27	14	3	8	5	1	0	0	0	709
15:00	8	418	239	6	36	10	4	18	8	3	0	0	1	751
16:00	8	418	248	6	24	10	2	13	9	4	0	0	1	743
17:00	8	413	257	6	35	13	6	17	9	4	0	0	3	771
18:00	6	351	194	0	16	9	2	17	10	4	0	0	1	610
19:00	5	237	158	3	13	5	3	4	4	1	0	0	0	433
20:00	3	187	117	3	12	0	0	3	2	1	0	0	0	328
21:00	3	145	69	1	3	1	0	1	2	0	0	0	2	227
22:00	1	90	38	1	4	1	0	0	0	0	0	0	0	135
23:00	1	44	24	0	5	0	0	0	0	0	0	0	0	74
Day Total	104	6137	3173	109	497	146	34	164	102	40	4	0	11	10521
Percent	1.0%	58.3%	30.2%	1.0%	4.7%	1.4%	0.3%	1.6%	1.0%	0.4%	0.0%	0.0%	0.1%	
AM Peak	07:00	08:00	07:00	07:00	08:00	10:00	10:00	07:00	08:00	11:00	08:00		07:00	08:00
Vol.	9	532	280	15	57	12	3	22	12	7	2		2	902
PM Peak	14:00	13:00	17:00	13:00	12:00	14:00	17:00	15:00	18:00	12:00			17:00	17:00
Vol.	9	446	257	8	41	14	6	18	10	4			3	771
Grand Total	104	6137	3173	109	497	146	34	164	102	40	4	0	11	10521
Percent	1.0%	58.3%	30.2%	1.0%	4.7%	1.4%	0.3%	1.6%	1.0%	0.4%	0.0%	0.0%	0.1%	

Navjoy Consulting Services, Inc

1385 S. Colorado Blvd Suite A-707
Denver, CO 80222
303-502-7343

Site Code: 2
Station ID: 2
S BOULDER RD W/O SH 42

WB

133

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
12/1/10	0	31	13	0	5	0	0	0	0	0	0	0	0	49
01:00	0	24	5	0	0	0	0	0	0	0	0	0	0	29
02:00	0	13	4	0	0	0	0	0	0	0	0	0	0	17
03:00	0	11	1	0	1	0	0	0	1	0	0	0	0	14
04:00	0	14	6	1	5	0	0	3	1	0	0	0	0	30
05:00	2	55	17	1	12	0	0	1	0	0	0	0	0	88
06:00	0	142	35	4	28	0	1	4	0	0	0	0	0	214
07:00	4	378	52	7	44	0	1	8	0	2	0	0	0	496
08:00	0	404	84	7	64	3	2	10	0	1	0	0	0	575
09:00	0	376	78	7	60	3	2	9	0	1	0	0	0	536
10:00	0	341	79	4	33	3	1	14	0	2	0	1	0	478
11:00	4	421	94	10	36	1	0	9	0	2	0	0	0	577
12 PM	2	436	77	5	46	4	3	16	0	2	0	0	0	591
13:00	2	458	76	8	29	2	0	13	0	3	1	0	0	592
14:00	3	498	84	4	31	2	0	16	1	2	1	1	0	643
15:00	2	521	106	8	41	6	1	25	0	0	1	1	0	712
16:00	4	589	86	7	27	6	0	25	1	3	0	1	0	749
17:00	4	687	76	4	40	1	1	25	0	3	0	1	0	842
18:00	4	492	56	3	18	1	1	7	0	2	0	1	0	585
19:00	0	320	55	2	15	3	0	5	0	0	0	0	0	400
20:00	0	248	43	4	14	0	0	6	1	0	0	0	0	316
21:00	0	209	28	2	3	0	1	2	0	0	0	0	0	245
22:00	0	114	20	2	5	0	0	1	0	0	0	0	0	142
23:00	1	60	6	1	6	0	0	0	0	0	0	0	0	74
Day Total	32	6842	1181	91	563	35	14	199	5	23	3	6	0	8994
Percent	0.4%	76.1%	13.1%	1.0%	6.3%	0.4%	0.2%	2.2%	0.1%	0.3%	0.0%	0.1%	0.0%	
AM Peak	07:00	11:00	11:00	11:00	08:00	08:00	08:00	10:00	03:00	07:00		10:00		11:00
Vol.	4	421	94	10	64	3	2	14	1	2		1		577
PM Peak	16:00	17:00	15:00	13:00	12:00	15:00	12:00	15:00	14:00	13:00	13:00	14:00		17:00
Vol.	4	687	106	8	46	6	3	25	1	3	1	1		842
Grand Total	32	6842	1181	91	563	35	14	199	5	23	3	6	0	8994
Percent	0.4%	76.1%	13.1%	1.0%	6.3%	0.4%	0.2%	2.2%	0.1%	0.3%	0.0%	0.1%	0.0%	

Navjoy Consulting Services, Inc

1385 S. Colorado Blvd Suite A-707
Denver, CO 80222
303-502-7343

Site Code: 1
Station ID: 1
SH 42 N/O S BOULDER RD

NB

134

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
12/1/10	0	23	3	0	2	0	0	0	0	0	0	0	0	28
01:00	0	14	2	0	0	0	0	0	0	0	0	0	0	16
02:00	0	15	2	0	0	0	0	0	1	0	0	0	0	18
03:00	0	9	1	0	1	0	0	0	0	1	0	0	0	12
04:00	0	15	3	0	0	0	0	1	0	0	0	0	0	19
05:00	1	60	10	1	1	1	0	0	0	0	0	0	0	74
06:00	3	160	26	1	4	2	0	1	0	0	0	0	0	197
07:00	1	471	41	1	16	1	0	1	1	0	0	0	0	533
08:00	3	572	83	1	23	7	0	6	3	0	0	0	0	698
09:00	2	413	45	1	6	0	0	0	0	0	0	0	0	467
10:00	1	329	53	2	10	8	0	4	2	0	0	0	0	409
11:00	2	423	59	4	9	9	0	4	0	0	0	0	0	510
12 PM	2	448	85	1	29	6	0	4	2	0	0	0	0	577
13:00	0	459	81	1	20	15	0	6	0	0	0	0	0	582
14:00	3	555	74	1	18	8	0	5	0	0	0	0	0	664
15:00	1	618	93	0	27	3	0	8	1	0	0	0	0	751
16:00	3	715	93	2	21	0	0	10	1	1	1	1	0	848
17:00	1	783	65	1	7	0	0	9	0	2	2	0	0	870
18:00	1	603	67	3	11	0	0	5	0	0	0	0	0	690
19:00	0	344	41	0	7	0	0	1	0	0	0	0	0	393
20:00	0	332	23	0	7	1	0	0	0	0	0	0	0	363
21:00	0	174	19	0	1	0	0	0	0	0	0	0	0	194
22:00	0	101	10	0	0	0	0	0	1	0	0	0	0	112
23:00	0	45	5	0	1	0	0	0	0	0	0	0	0	51
Day Total	24	7681	984	20	221	61	0	65	12	4	3	1	0	9076
Percent	0.3%	84.6%	10.8%	0.2%	2.4%	0.7%	0.0%	0.7%	0.1%	0.0%	0.0%	0.0%	0.0%	
AM Peak	06:00	08:00	08:00	11:00	08:00	11:00		08:00	08:00	03:00				08:00
Vol.	3	572	83	4	23	9		6	3	1				698
PM Peak	14:00	17:00	15:00	18:00	12:00	13:00		16:00	12:00	17:00	17:00	16:00		17:00
Vol.	3	783	93	3	29	15		10	2	2	2	1		870
Grand Total	24	7681	984	20	221	61	0	65	12	4	3	1	0	9076
Percent	0.3%	84.6%	10.8%	0.2%	2.4%	0.7%	0.0%	0.7%	0.1%	0.0%	0.0%	0.0%	0.0%	

Navjoy Consulting Services, Inc

1385 S. Colorado Blvd Suite A-707
Denver, CO 80222
303-502-7343

Site Code: 1
Station ID: 1
SH 42 N/O S BOULDER RD

SB

135

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
12/1/10	0	17	8	0	1	0	0	0	0	0	0	0	0	26
01:00	0	7	2	0	0	0	0	0	0	0	0	0	0	9
02:00	0	4	2	0	0	0	0	0	0	0	0	0	0	6
03:00	0	3	7	0	0	0	0	0	0	0	0	0	0	10
04:00	1	13	16	0	0	1	0	0	0	0	0	0	0	31
05:00	0	45	47	0	4	1	0	0	0	0	0	0	0	97
06:00	2	186	124	3	9	0	0	1	1	0	0	0	0	326
07:00	6	595	306	4	19	2	1	12	0	0	0	0	0	945
08:00	4	499	307	4	22	5	0	13	1	0	0	0	0	855
09:00	0	353	212	0	11	4	0	3	0	0	0	0	0	583
10:00	0	283	234	4	14	9	0	7	0	0	0	0	0	551
11:00	2	290	240	5	16	5	0	4	0	0	0	0	0	562
12 PM	5	257	281	7	17	10	1	9	0	0	0	0	0	587
13:00	2	285	280	10	19	6	2	13	0	0	1	0	0	618
14:00	3	278	279	4	16	3	0	15	0	0	0	0	0	598
15:00	8	307	329	6	16	5	2	9	0	0	0	0	0	682
16:00	9	364	343	2	18	1	1	29	3	0	0	0	0	770
17:00	5	530	322	3	15	1	8	35	0	0	0	0	0	919
18:00	6	263	245	1	13	0	3	16	0	0	0	0	0	547
19:00	0	157	136	0	7	0	0	5	0	0	0	0	0	305
20:00	0	123	101	0	4	0	0	0	0	0	0	0	0	228
21:00	0	85	67	0	3	0	0	0	0	0	0	0	0	155
22:00	0	44	46	0	2	0	0	0	0	0	0	0	0	92
23:00	0	30	17	0	1	0	0	0	0	0	0	0	0	48
Day Total	53	5018	3951	53	227	53	18	171	5	0	1	0	0	9550
Percent	0.6%	52.5%	41.4%	0.6%	2.4%	0.6%	0.2%	1.8%	0.1%	0.0%	0.0%	0.0%	0.0%	
AM Peak	07:00	07:00	08:00	11:00	08:00	10:00	07:00	08:00	06:00					07:00
Vol.	6	595	307	5	22	9	1	13	1					945
PM Peak	16:00	17:00	16:00	13:00	13:00	12:00	17:00	17:00	16:00		13:00			17:00
Vol.	9	530	343	10	19	10	8	35	3		1			919
Grand Total	53	5018	3951	53	227	53	18	171	5	0	1	0	0	9550
Percent	0.6%	52.5%	41.4%	0.6%	2.4%	0.6%	0.2%	1.8%	0.1%	0.0%	0.0%	0.0%	0.0%	

Navjoy Consulting Services, Inc

1385 S. Colorado Blvd Suite A-707
Denver, CO 80222
303-502-7343

Site Code: 1
Station ID: 1
SH 42 N/O S BOULDER RD

NB	Start	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	Pace	Number
	Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999			
12/1/10	0	0	0	0	0	0	8	14	5	1	0	0	0	0	0	28	36-45	22
01:00	0	0	0	0	0	3	3	7	3	0	0	0	0	0	0	16	38-47	12
02:00	0	0	0	0	0	3	4	7	3	1	0	0	0	0	0	18	37-46	12
03:00	0	0	0	2	0	2	3	4	4	1	0	0	0	0	0	12	39-48	8
04:00	0	0	0	0	0	0	4	9	4	0	1	0	1	0	0	19	37-46	14
05:00	1	0	0	0	0	3	9	39	19	3	0	0	0	0	0	74	41-50	58
06:00	7	0	0	0	0	1	26	103	58	1	0	1	0	0	0	197	41-50	161
07:00	56	0	0	1	14	94	244	109	14	1	0	0	0	0	0	533	41-50	353
08:00	51	0	0	10	26	147	299	147	18	0	0	0	0	0	0	698	38-47	448
09:00	31	0	0	2	23	131	176	87	16	0	0	0	0	0	0	466	36-45	307
10:00	18	0	2	9	17	111	169	77	6	0	0	0	0	0	0	409	36-45	280
11:00	32	0	3	11	18	94	231	114	6	1	0	0	0	0	0	510	41-50	345
12 PM	34	0	1	5	31	94	235	152	22	3	0	0	0	0	0	577	41-50	387
13:00	34	0	2	3	15	103	257	143	22	2	1	0	0	0	0	582	41-50	400
14:00	47	1	3	10	19	115	304	146	17	1	1	0	0	0	0	664	41-50	450
15:00	43	0	1	2	21	135	359	163	25	1	1	0	0	0	0	751	41-50	522
16:00	68	0	5	7	39	205	381	132	11	0	0	0	0	0	0	848	36-45	586
17:00	101	0	2	10	75	337	292	50	3	0	0	0	0	0	0	870	36-45	629
18:00	43	0	0	2	39	197	327	74	7	0	1	0	0	0	0	690	36-45	524
19:00	11	0	0	3	13	123	186	53	4	0	0	0	0	0	0	393	36-45	309
20:00	7	0	0	0	31	143	153	27	2	0	0	0	0	0	0	363	36-45	296
21:00	2	1	0	2	6	71	91	20	0	0	1	0	0	0	0	194	36-45	162
22:00	0	0	0	1	5	36	56	14	0	0	0	0	0	0	0	112	36-45	92
23:00	1	0	0	0	3	15	24	8	0	0	0	0	0	0	0	51	36-45	39
Total	587	2	19	80	405	2207	3966	1612	180	10	6	1	0	0	0	9075		
Percent	6.5%	0.0%	0.2%	0.9%	4.5%	24.3%	43.7%	17.8%	2.0%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%			
AM Peak	07:00		11:00	11:00	08:00	08:00	08:00	08:00	08:00	04:00	06:00	04:00				08:00		
Vol.	56		3	11	26	147	299	147	18	1	1	1				698		
PM Peak	17:00	14:00	16:00	14:00	17:00	17:00	16:00	15:00	15:00	12:00	13:00					17:00		
Vol.	101	1	5	10	75	337	381	163	25	3	1					870		
Total	587	2	19	80	405	2207	3966	1612	180	10	6	1	0	0	0	9075		
Percent	6.5%	0.0%	0.2%	0.9%	4.5%	24.3%	43.7%	17.8%	2.0%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%			

136

15th Percentile : 36 MPH
50th Percentile : 42 MPH
85th Percentile : 47 MPH
95th Percentile : 50 MPH

Stats
10 MPH Pace Speed : 36-45 MPH
Number in Pace : 6173
Percent in Pace : 68.0%
Number of Vehicles > 55 MPH : 17
Percent of Vehicles > 55 MPH : 0.2%
Mean Speed(Average) : 40 MPH

Navjoy Consulting Services, Inc

1385 S. Colorado Blvd Suite A-707
Denver, CO 80222
303-502-7343

Site Code: 1
Station ID: 1
SH 42 N/O S BOULDER RD

SB	Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	Pace Speed	Number in Pace
	12/1/10	0	0	0	0	1	2	10	11	1	0	0	0	0	0	25	41-50	21
	01:00	0	0	0	0	0	0	1	5	3	0	0	0	0	0	9	44-53	9
	02:00	0	0	0	0	0	0	2	2	1	1	0	0	0	0	6	38-47	4
	03:00	0	0	0	0	0	2	3	1	3	1	0	0	0	0	10	34-43	5
	04:00	1	0	1	1	0	1	5	13	7	2	0	0	0	0	31	43-52	20
	05:00	3	0	0	0	1	2	10	34	29	14	6	1	0	0	100	46-55	63
	06:00	12	0	0	0	0	23	76	116	71	25	5	0	0	0	328	41-50	192
	07:00	68	0	0	1	21	113	303	289	106	24	6	0	0	0	931	41-50	592
	08:00	88	0	0	1	16	83	217	286	135	25	4	1	0	0	856	41-50	503
	09:00	45	0	2	1	21	56	154	201	88	15	0	0	0	0	583	41-50	355
	10:00	37	0	0	5	20	36	137	172	99	39	6	2	0	0	553	41-50	309
	11:00	54	1	0	0	11	27	115	173	144	33	8	2	0	0	568	46-55	317
	12 PM	60	1	2	10	16	56	108	175	135	29	5	0	0	0	597	46-55	310
	13:00	69	2	1	8	15	53	139	196	117	27	2	2	0	0	631	41-50	335
	14:00	80	0	1	2	12	54	118	185	128	24	2	0	0	0	606	46-55	313
	15:00	114	0	1	2	5	57	103	212	133	49	8	1	0	0	685	46-55	345
	16:00	108	1	1	4	22	98	187	220	106	23	3	1	0	0	774	41-50	407
	17:00	151	0	0	18	70	201	266	155	36	4	0	0	0	0	901	36-45	467
	18:00	64	0	0	2	12	61	131	171	85	21	1	0	0	0	548	41-50	302
	19:00	19	0	0	2	4	33	61	99	70	15	1	0	0	0	304	46-55	169
	20:00	12	0	0	1	6	17	69	93	23	5	0	0	0	0	226	41-50	162
	21:00	6	0	0	1	4	12	37	53	31	6	3	0	0	0	153	41-50	90
	22:00	2	0	1	1	1	7	24	34	15	3	3	1	0	0	92	41-50	58
	23:00	0	0	0	0	1	6	9	18	9	3	2	0	0	0	48	42-51	28
	Total	993	5	10	60	259	1000	2285	2914	1575	388	65	11	0	0	9565		
	Percent	10.4%	0.1%	0.1%	0.6%	2.7%	10.5%	23.9%	30.5%	16.5%	4.1%	0.7%	0.1%	0.0%	0.0%			
	AM Peak	08:00	11:00	09:00	10:00	07:00	07:00	07:00	07:00	11:00	10:00	11:00	10:00			07:00		
	Vol.	88	1	2	5	21	113	303	289	144	39	8	2			931		
	PM Peak	17:00	13:00	12:00	17:00	17:00	17:00	17:00	16:00	12:00	15:00	15:00	13:00			17:00		
	Vol.	151	2	2	18	70	201	266	220	135	49	8	2			901		
	Total	993	5	10	60	259	1000	2285	2914	1575	388	65	11	0	0	9565		
	Percent	10.4%	0.1%	0.1%	0.6%	2.7%	10.5%	23.9%	30.5%	16.5%	4.1%	0.7%	0.1%	0.0%	0.0%			

137

15th Percentile : 36 MPH
50th Percentile : 46 MPH
85th Percentile : 52 MPH
95th Percentile : 55 MPH

Stats
10 MPH Pace Speed : 41-50 MPH
Number in Pace : 5199
Percent in Pace : 54.4%
Number of Vehicles > 55 MPH : 464
Percent of Vehicles > 55 MPH : 4.9%
Mean Speed(Average) : 42 MPH

Navjoy Consulting Services, Inc

1385 S. Colorado Blvd Suite A-707
Denver, CO 80222
303-502-7343

Site Code: 3

Station ID: 3

SH 42 S/O S BOULDER RD

NB

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Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
12/1/10	1	16	8	0	3	0	0	0	0	0	0	0	0	28
01:00	0	10	4	0	0	0	0	0	0	0	0	0	0	14
02:00	0	10	2	0	0	0	0	0	0	0	0	0	0	12
03:00	0	4	3	0	2	0	0	0	1	1	0	0	0	11
04:00	0	8	3	0	1	0	0	0	0	0	0	0	0	12
05:00	0	30	10	0	5	0	0	0	0	0	0	0	0	45
06:00	1	88	45	1	16	2	0	2	0	0	0	0	0	155
07:00	8	319	131	5	42	1	0	6	1	0	1	0	0	514
08:00	1	288	246	10	54	3	0	14	4	0	0	0	0	620
09:00	1	240	113	2	45	1	0	5	1	0	0	0	0	408
10:00	2	207	113	3	36	0	0	9	0	0	0	0	0	370
11:00	0	234	165	1	36	2	0	8	0	0	0	0	0	446
12 PM	4	300	138	1	53	5	0	1	0	0	0	0	0	502
13:00	3	303	147	4	43	5	1	4	1	0	0	0	0	511
14:00	4	334	186	3	41	0	0	13	0	0	0	0	0	581
15:00	3	363	241	3	58	1	0	10	0	1	0	0	0	680
16:00	5	438	227	0	44	1	0	9	1	0	0	0	0	725
17:00	4	451	279	1	33	4	1	18	0	1	0	0	0	792
18:00	2	374	182	1	33	0	0	8	0	0	0	0	0	600
19:00	1	217	151	0	22	1	0	6	0	0	0	0	0	398
20:00	1	198	118	0	17	1	0	2	0	0	0	0	0	337
21:00	0	114	87	0	6	1	0	2	0	0	0	0	0	210
22:00	0	81	47	0	5	0	0	1	0	0	0	0	0	134
23:00	0	45	15	0	2	0	0	0	0	0	0	0	0	62
Day Total	41	4672	2661	35	597	28	2	118	9	3	1	0	0	8167
Percent	0.5%	57.2%	32.6%	0.4%	7.3%	0.3%	0.0%	1.4%	0.1%	0.0%	0.0%	0.0%	0.0%	
AM Peak	07:00	07:00	08:00	08:00	08:00	08:00		08:00	08:00	03:00	07:00			08:00
Vol.	8	319	246	10	54	3		14	4	1	1			620
PM Peak	16:00	17:00	17:00	13:00	15:00	12:00	13:00	17:00	13:00	15:00				17:00
Vol.	5	451	279	4	58	5	1	18	1	1				792
Grand Total	41	4672	2661	35	597	28	2	118	9	3	1	0	0	8167
Percent	0.5%	57.2%	32.6%	0.4%	7.3%	0.3%	0.0%	1.4%	0.1%	0.0%	0.0%	0.0%	0.0%	

Navjoy Consulting Services, Inc

1385 S. Colorado Blvd Suite A-707
Denver, CO 80222
303-502-7343

Site Code: 3
Station ID: 3
SH 42 S/O S BOULDER RD

SB

139

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
12/1/10	0	15	5	0	1	0	0	0	0	0	0	0	0	21
01:00	0	2	7	0	0	0	0	0	0	0	0	0	0	9
02:00	0	2	1	0	0	0	0	0	0	0	0	0	0	3
03:00	0	10	3	0	0	0	0	0	0	0	0	0	0	13
04:00	0	13	5	0	1	0	0	0	0	1	0	0	0	20
05:00	0	67	20	0	7	1	0	0	0	0	0	0	0	95
06:00	0	210	65	1	15	0	0	3	1	1	0	0	0	296
07:00	6	468	145	1	37	3	0	29	0	1	0	1	0	691
08:00	4	344	212	2	38	2	1	9	0	3	0	0	0	615
09:00	0	309	138	0	36	1	0	9	2	2	0	0	0	497
10:00	0	255	143	1	32	0	1	7	0	1	0	0	0	440
11:00	3	224	225	3	59	0	2	15	0	2	0	0	0	533
12 PM	0	307	167	0	37	3	1	12	2	2	0	0	1	532
13:00	1	311	158	5	47	2	0	6	0	0	1	0	0	531
14:00	4	303	182	5	52	0	1	13	0	3	0	1	0	564
15:00	4	263	236	5	58	0	1	15	0	1	0	1	0	584
16:00	11	392	213	3	51	2	0	19	1	0	0	1	0	693
17:00	15	384	221	3	31	2	1	16	1	2	1	1	0	678
18:00	2	339	143	0	47	1	0	9	0	3	0	0	0	544
19:00	2	214	79	0	9	1	0	2	0	1	0	0	0	308
20:00	1	120	42	0	11	0	0	0	0	0	0	0	0	174
21:00	1	111	35	0	8	0	0	2	0	0	0	0	0	157
22:00	0	52	18	0	3	0	0	0	0	0	0	0	0	73
23:00	1	34	5	0	0	0	0	0	0	0	0	0	0	40
Day Total	55	4749	2468	29	580	18	8	166	7	23	2	5	1	8111
Percent	0.7%	58.6%	30.4%	0.4%	7.2%	0.2%	0.1%	2.0%	0.1%	0.3%	0.0%	0.1%	0.0%	
AM Peak	07:00	07:00	11:00	11:00	11:00	07:00	11:00	07:00	09:00	08:00		07:00		07:00
Vol.	6	468	225	3	59	3	2	29	2	3		1		691
PM Peak	17:00	16:00	15:00	13:00	15:00	12:00	12:00	16:00	12:00	14:00	13:00	14:00	12:00	16:00
Vol.	15	392	236	5	58	3	1	19	2	3	1	1	1	693
Grand Total	55	4749	2468	29	580	18	8	166	7	23	2	5	1	8111
Percent	0.7%	58.6%	30.4%	0.4%	7.2%	0.2%	0.1%	2.0%	0.1%	0.3%	0.0%	0.1%	0.0%	

Navjoy Consulting Services, Inc

1385 S. Colorado Blvd Suite A-707
Denver, CO 80222
303-502-7343

Site Code: 3
Station ID: 3
SH 42 S/O S BULDER RD

NB	Start	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	Pace	Number
Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999		Speed	in Pace	
12/11/10	0	0	0	0	1	6	14	5	1	0	1	0	0	0	28	36-45	20	
01:00	0	0	1	0	2	3	4	3	1	0	0	0	0	0	14	38-47	9	
02:00	0	0	0	0	0	4	6	2	0	0	0	0	0	12	37-46	11		
03:00	0	0	0	0	2	1	1	5	1	0	1	0	0	11	42-51	7		
04:00	0	0	0	1	0	0	6	3	2	0	0	0	0	12	39-48	9		
05:00	0	0	0	0	0	6	12	15	9	2	1	0	0	45	41-50	27		
06:00	3	0	0	0	4	26	54	51	10	7	0	0	0	155	41-50	105		
07:00	42	0	0	2	17	86	177	147	37	6	0	0	0	514	41-50	324		
08:00	40	1	2	5	30	95	223	173	46	4	1	0	0	620	41-50	396		
09:00	15	1	0	1	13	65	162	117	28	6	0	0	0	408	41-50	279		
10:00	13	1	1	1	8	77	143	103	22	1	0	0	0	370	41-50	246		
11:00	20	1	1	2	17	76	173	132	19	2	1	2	0	446	41-50	305		
12 PM	19	0	2	6	24	90	218	115	23	5	0	0	0	502	41-50	333		
13:00	27	0	2	3	33	101	194	121	29	1	0	0	0	511	41-50	315		
14:00	32	2	0	5	36	120	228	125	27	5	0	0	0	581	41-50	353		
15:00	33	0	1	9	51	170	249	143	22	2	0	0	0	680	36-45	419		
16:00	49	1	1	22	64	193	260	116	19	0	0	0	0	725	36-45	453		
17:00	82	8	19	57	143	218	212	47	6	0	0	0	0	792	36-45	430		
18:00	33	1	1	2	61	171	207	106	13	4	1	0	0	600	36-45	378		
19:00	16	1	0	5	30	115	150	70	11	0	0	0	0	398	36-45	265		
20:00	6	0	0	2	26	99	133	61	9	1	0	0	0	337	36-45	232		
21:00	9	0	1	4	13	55	77	42	7	1	1	0	0	210	36-45	132		
22:00	1	0	0	2	11	39	48	27	5	1	0	0	0	134	36-45	87		
23:00	1	0	1	0	2	17	23	16	2	0	0	0	0	62	37-46	41		
Total	441	17	33	129	588	1833	2974	1745	349	48	7	2	0	1	8167			
Percent	5.4%	0.2%	0.4%	1.6%	7.2%	22.4%	36.4%	21.4%	4.3%	0.6%	0.1%	0.0%	0.0%	0.0%				
AM Peak	07:00	08:00	08:00	08:00	08:00	08:00	08:00	08:00	08:00	06:00	00:00	11:00			08:00			
Vol.	42	1	2	5	30	95	223	173	46	7	1	2			620			
PM Peak	17:00	17:00	17:00	17:00	17:00	17:00	16:00	15:00	13:00	12:00	18:00			14:00	17:00			
Vol.	82	8	19	57	143	218	260	143	29	5	1			1	792			
Total	441	17	33	129	588	1833	2974	1745	349	48	7	2	0	1	8167			
Percent	5.4%	0.2%	0.4%	1.6%	7.2%	22.4%	36.4%	21.4%	4.3%	0.6%	0.1%	0.0%	0.0%	0.0%				

140

15th Percentile : 36 MPH
50th Percentile : 42 MPH
85th Percentile : 48 MPH
95th Percentile : 50 MPH

Stats
10 MPH Pace Speed : 36-45 MPH
Number in Pace : 4807
Percent in Pace : 58.9%
Number of Vehicles > 55 MPH : 58
Percent of Vehicles > 55 MPH : 0.7%
Mean Speed(Average) : 41 MPH

Navjoy Consulting Services, Inc

1385 S. Colorado Blvd Suite A-707
Denver, CO 80222
303-502-7343

Site Code: 3
Station ID: 3
SH 42 S/O S BULDER RD

SB

141

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	Pace Speed	Number in Pace
	15	20	25	30	35	40	45	50	55	60	65	70	75	999			
12/1/10	0	0	0	0	0	4	5	8	4	0	0	0	0	0	21	39-48	13
01:00	0	0	0	0	0	3	5	1	0	0	0	0	0	0	9	37-46	9
02:00	0	0	0	0	0	2	0	1	0	0	0	0	0	0	3	28-37	2
03:00	0	0	0	0	1	1	6	2	3	0	0	0	0	0	13	40-49	8
04:00	0	0	0	1	0	4	6	5	4	0	0	0	0	0	20	37-46	11
05:00	0	0	0	0	1	6	32	42	11	3	0	0	0	0	95	41-50	74
06:00	7	0	0	0	4	20	129	101	31	1	2	0	1	0	296	41-50	230
07:00	60	2	2	2	18	99	261	192	47	7	1	0	0	0	691	41-50	453
08:00	59	2	2	5	14	58	154	229	80	11	0	1	0	0	615	41-50	383
09:00	34	0	0	1	6	55	184	175	38	3	1	0	0	0	497	41-50	359
10:00	28	0	2	3	12	58	172	126	30	5	3	1	0	0	440	41-50	298
11:00	31	0	1	8	25	69	163	179	52	4	1	0	0	0	533	41-50	342
12 PM	32	0	4	6	14	94	190	152	35	5	0	0	0	0	532	41-50	342
13:00	49	0	3	5	10	70	197	158	36	3	0	0	0	0	531	41-50	355
14:00	53	0	1	8	12	87	203	158	36	6	0	0	0	0	564	41-50	361
15:00	50	2	0	5	10	58	182	194	72	11	0	0	0	0	584	41-50	376
16:00	84	1	1	3	23	115	234	172	51	7	2	0	0	0	693	41-50	406
17:00	89	1	2	11	37	138	202	156	38	4	0	0	0	0	678	41-50	358
18:00	47	0	3	7	15	87	199	152	31	2	0	0	1	0	544	41-50	351
19:00	28	0	3	6	9	59	112	77	14	0	0	0	0	0	308	41-50	189
20:00	10	0	1	1	6	16	77	55	8	0	0	0	0	0	174	41-50	132
21:00	7	0	0	2	6	8	64	64	6	0	0	0	0	0	157	41-50	128
22:00	1	0	0	0	2	14	25	27	3	1	0	0	0	0	73	41-50	52
23:00	0	0	0	2	1	7	12	13	5	0	0	0	0	0	40	39-48	25
Total	669	8	25	76	226	1132	2814	2439	635	73	10	2	2	0	8111		
Percent	8.2%	0.1%	0.3%	0.9%	2.8%	14.0%	34.7%	30.1%	7.8%	2.8%	0.1%	0.0%	0.0%	0.0%			
AM Peak	07:00	07:00	07:00	11:00	11:00	07:00	07:00	08:00	08:00	08:00	10:00	08:00	06:00		07:00		
Vol.	60	2	2	8	25	99	261	229	80	11	3	1	1		691		
PM Peak	17:00	15:00	12:00	17:00	17:00	17:00	16:00	15:00	15:00	15:00	16:00		18:00		16:00		
Vol.	89	2	4	11	37	138	234	194	72	11	2		1		693		
Total	669	8	25	76	226	1132	2814	2439	635	73	10	2	2	0	8111		
Percent	8.2%	0.1%	0.3%	0.9%	2.8%	14.0%	34.7%	30.1%	7.8%	2.8%	0.1%	0.0%	0.0%	0.0%			

15th Percentile : 36 MPH
50th Percentile : 44 MPH
85th Percentile : 49 MPH
95th Percentile : 53 MPH

Stats
10 MPH Pace Speed : 41-50 MPH
Number in Pace : 5253
Percent in Pace : 64.8%
Number of Vehicles > 55 MPH : 87
Percent of Vehicles > 55 MPH : 1.1%
Mean Speed(Average) : 41 MPH

Appendix C

Synchro and SimTraffic Analysis Results

3: SH 42 & South Boulder Road
Coal Creek Station

Timing Plan: AM Peak
Existing

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	124	212	90	90	442	35	85	120	53	27	289	178
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Queue, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking, Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow Rate	1810	1810	1810	1810	1810	1810	1810	1810	1810	1810	1810	1810
Lanes	2	2	0	2	2	1	2	2	0	2	2	1
Capacity, veh/h	235	896	369	186	1214	543	185	493	208	65	578	259
Arriving On Green	0.07	0.37	0.37	0.06	0.35	0.00	0.06	0.20	0.20	0.02	0.17	0.00
Sat Flow, veh/h	3343.3	2438.3	1003.6	3343.3	1538.1	1538.1	3343.3	2418.5	1020.4	3343.3	1538.1	1538.1
Grp Volume(v), veh/h	140.9	176.8	166.3	105.9	520.0	0.0	107.6	111.9	107.1	30.0	321.1	0.0
Grp Sat Flow(s),veh/h/ln	1671.7	1809.5	1632.4	1671.7	1719.0	1538.1	1671.7	1809.5	1629.4	1671.7	1719.0	1538.1
Q Serve(g_s), s	2.5	4.3	4.5	1.9	7.2	0.0	2.0	3.3	3.5	0.6	5.3	0.0
Cycle Q Clear(g_c), s	2.5	4.3	4.5	1.9	7.2	0.0	2.0	3.3	3.5	0.6	5.3	0.0
Proportion In Lane	1.000		0.615	1.000		1.000	1.000		0.626	1.000		1.000
Lane Grp Cap(c), veh/h	234.8	665.2	600.1	186.3	1214.1	543.1	185.0	369.2	332.5	65.2	578.3	258.7
V/C Ratio(X)	0.600	0.266	0.277	0.568	0.428	0.000	0.582	0.303	0.322	0.460	0.555	0.000
Avail Cap(c_a), veh/h	697.6	665.2	600.1	858.6	1214.1	543.1	536.6	1074.7	967.7	322.0	1821.1	814.7
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.000	1.000	1.000	1.000	1.000	0.000	1.000	1.000	1.000	1.000	1.000	0.000
Uniform Delay (d), s/veh	28.1	13.8	13.9	28.7	15.4	0.0	28.7	21.0	21.1	30.2	23.8	0.0
Incr Delay (d2), s/veh	2.5	0.2	0.2	2.7	0.2	0.0	2.9	0.5	0.6	5.0	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane Group Delay (d), s/veh	30.6	14.0	14.1	31.4	15.6	0.0	31.6	21.5	21.7	35.2	24.6	0.0
Lane Group LOS	C	B	B	C	B		C	C	C	D	C	
Approach Volume, veh/h		484			626			327			351	
Approach Delay, s/veh		18.9			18.3			24.9			25.5	
Approach LOS		B			B			C			C	
Timer												
Assigned Phase	5	2		1	6		3	8		7	4	
Phase Duration (G+Y+Rc), s	9.37	28.90		8.47	28.00		8.45	18.71		6.21	16.48	
Change Period (Y+Rc), s	5.00	6.00		5.00	6.00		5.00	6.00		5.00	6.00	
Max Green Setting (Gmax), s	13.00	19.00		16.00	22.00		10.00	37.00		6.00	33.00	
Max Q Clear Time (g_c+I1), s	4.55	6.47		3.92	9.18		3.96	5.49		2.55	7.34	
Green Extension Time (p_c)	0.24	4.37		0.21	4.42		0.12	3.25		0.01	3.14	
Intersection Summary												
HCM 2010 Control Delay				21.1								
HCM 2010 Level of Service				C								

3: SH 42 & South Boulder Road
Coal Creek Station

Timing Plan: PM Peak
Existing

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	220	441	94	112	375	53	79	259	103	72	245	172
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	181.0	181.0	181.0	181.0	181.0	181.0	181.0	181.0	181.0	181.0	181.0	181.0
Lanes	2	2	0	2	2	1	2	2	0	2	2	1
Cap, veh/h	329	1324	282	203	1483	664	157	464	181	145	648	290
Arrive On Green	0.10	0.47	0.47	0.06	0.43	0.00	0.05	0.19	0.19	0.04	0.19	0.00
Sat Flow, veh/h	3343	2823	600	3343	3438	1538	3343	2420	942	3343	3438	1538
Grp Volume(v), veh/h	247	301	301	135	452	0	98	225	222	89	302	0
Grp Sat Flow(s),veh/h/ln	1672	1719	1704	1672	1719	1538	1672	1719	1643	1672	1719	1538
Q Serve(g_s), s	6.7	10.6	10.7	3.7	8.1	0.0	2.7	11.4	11.8	2.5	7.3	0.0
Cycle Q Clear(g_c), s	6.7	10.6	10.7	3.7	8.1	0.0	2.7	11.4	11.8	2.5	7.3	0.0
Prop In Lane	1.00		0.35	1.00		1.00	1.00		0.57	1.00		1.00
Lane Grp Cap(c), veh/h	329	807	799	203	1483	664	157	330	315	145	648	290
V/C Ratio(X)	0.75	0.37	0.38	0.67	0.30	0.00	0.62	0.68	0.70	0.61	0.47	0.00
Avail Cap(c_a), veh/h	606	807	799	392	1483	664	321	623	596	321	1247	558
HCM Platoon Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	41.1	16.0	16.0	43.1	17.5	0.0	43.9	35.2	35.4	44.1	33.9	0.0
Incr Delay (d2), s/veh	3.4	1.3	1.4	3.7	0.5	0.0	4.0	2.5	2.8	4.1	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	3.0	4.4	4.4	1.7	3.3	0.0	1.2	5.1	5.0	1.1	3.2	0.0
Lane Grp Delay (d), s/veh	44.6	17.3	17.4	46.8	18.0	0.0	47.9	37.7	38.2	48.2	34.4	0.0
Lane Grp LOS	D	B	B	D	B		D	D	D	D	C	
Approach Vol, veh/h		849			587			545			391	
Approach Delay, s/veh		25.3			24.6			39.8			37.5	
Approach LOS		C			C			D			D	
Timer												
Assigned Phs	5	2		1	6		3	8		7	4	
Phs Duration (G+Y+Rc), s	14.2	50.0		10.7	46.5		9.4	24.0		9.1	23.7	
Change Period (Y+Rc), s	5.0	6.0		5.0	6.0		5.0	6.0		5.0	6.0	
Max Green Setting (Gmax), s	17.0	44.0		11.0	38.0		9.0	34.0		9.0	34.0	
Max Q Clear Time (g_c+I1), s	8.7	12.7		5.7	10.1		4.7	13.8		4.5	9.3	
Green Ext Time (p_c), s	0.5	7.6		0.2	7.4		0.1	4.2		0.1	4.4	
Intersection Summary												
HCM 2010 Ctrl Delay				30.5								
HCM 2010 LOS				C								
Notes												

Intersection: 3: SH 42 & South Boulder Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	L	T	TR	L	L	T	T	R	L	L	T
Maximum Queue (ft)	88	115	112	142	65	113	172	176	5	76	122	133
Average Queue (ft)	28	64	51	58	20	54	92	83	0	14	57	55
95th Queue (ft)	69	101	94	113	55	94	149	147	5	50	105	107
Link Distance (ft)			2068	2068			1998	1998				1118
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	240	240			245	245			280	225	225	
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 3: SH 42 & South Boulder Road

Movement	NB	SB	SB	SB	SB	SB
Directions Served	TR	L	L	T	T	R
Maximum Queue (ft)	122	24	86	219	185	61
Average Queue (ft)	41	2	23	124	71	7
95th Queue (ft)	91	12	59	195	162	37
Link Distance (ft)	1118			738	738	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		165	165			300
Storage Blk Time (%)				3		
Queuing Penalty (veh)				1		

Network Summary

Network wide Queuing Penalty: 1

Intersection: 3: SH 42 & South Boulder Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	L	T	TR	L	L	T	T	R	L	L	T
Maximum Queue (ft)	172	185	192	208	97	115	155	162	25	74	132	213
Average Queue (ft)	75	108	95	109	33	68	86	77	1	14	53	133
95th Queue (ft)	142	161	159	181	71	106	140	141	16	51	109	194
Link Distance (ft)			2068	2068			1998	1998				1118
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	240	240			245	245			280	225	225	
Storage Blk Time (%)	0	0										0
Queuing Penalty (veh)	0	0										0

Intersection: 3: SH 42 & South Boulder Road

Movement	NB	SB	SB	SB	SB	SB
Directions Served	TR	L	L	T	T	R
Maximum Queue (ft)	218	106	162	223	176	52
Average Queue (ft)	117	9	63	128	73	5
95th Queue (ft)	198	51	128	198	157	30
Link Distance (ft)	1118			738	738	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		165	165			300
Storage Blk Time (%)		0	0	2		
Queuing Penalty (veh)		0	0	2		

Network Summary

Network wide Queuing Penalty: 2

3: SH 42 & South Boulder Road
Coal Creek Station

Timing Plan: AM Peak
Short Term Background

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	130	220	90	90	440	40	90	130	60	30	300	190
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	181.0	181.0	181.0	181.0	181.0	181.0	181.0	181.0	181.0	181.0	181.0	181.0
Lanes	2	2	0	2	2	1	2	2	0	2	2	1
Cap, veh/h	243	878	349	186	1196	535	194	489	216	70	596	267
Arrive On Green	0.07	0.37	0.37	0.06	0.35	0.00	0.06	0.21	0.21	0.02	0.17	0.00
Sat Flow, veh/h	3343	2405	955	3343	3438	1538	3343	2323	1025	3343	3438	1538
Grp Volume(v), veh/h	148	177	175	106	518	0	114	120	121	33	333	0
Grp Sat Flow(s),veh/h/ln	1672	1719	1641	1672	1719	1538	1672	1719	1629	1672	1719	1538
Q Serve(g_s), s	2.7	4.6	4.8	2.0	7.3	0.0	2.1	3.8	4.0	0.6	5.6	0.0
Cycle Q Clear(g_c), s	2.7	4.6	4.8	2.0	7.3	0.0	2.1	3.8	4.0	0.6	5.6	0.0
Prop In Lane	1.00		0.58	1.00		1.00	1.00		0.63	1.00		1.00
Lane Grp Cap(c), veh/h	243	628	599	186	1196	535	194	362	343	70	596	267
V/C Ratio(X)	0.61	0.28	0.29	0.57	0.43	0.00	0.59	0.33	0.35	0.47	0.56	0.00
Avail Cap(c_a), veh/h	687	628	599	846	1196	535	529	1006	953	317	1795	803
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	28.4	14.2	14.3	29.1	15.8	0.0	29.0	21.2	21.3	30.6	23.9	0.0
Incr Delay (d2), s/veh	2.4	1.1	1.2	2.7	1.1	0.0	2.8	0.5	0.6	4.9	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	1.2	1.9	1.9	0.8	2.9	0.0	0.9	1.5	1.5	0.3	2.3	0.0
Lane Grp Delay (d), s/veh	30.9	15.3	15.5	31.9	17.0	0.0	31.9	21.7	21.9	35.5	24.7	0.0
Lane Grp LOS	C	B	B	C	B		C	C	C	D	C	
Approach Vol, veh/h		500			624			355			366	
Approach Delay, s/veh		20.0			19.5			25.0			25.7	
Approach LOS		B			B			C			C	
Timer												
Assigned Phs	5	2		1	6		3	8		7	4	
Phs Duration (G+Y+Rc), s	9.6	29.1		8.5	28.0		8.7	19.3		6.3	17.0	
Change Period (Y+Rc), s	5.0	6.0		5.0	6.0		5.0	6.0		5.0	6.0	
Max Green Setting (Gmax), s	13.0	19.0		16.0	22.0		10.0	37.0		6.0	33.0	
Max Q Clear Time (g_c+I1), s	4.7	6.8		4.0	9.3		4.1	6.0		2.6	7.6	
Green Ext Time (p_c), s	0.3	4.3		0.2	4.4		0.1	3.5		0.0	3.4	
Intersection Summary												
HCM 2010 Ctrl Delay				21.9								
HCM 2010 LOS				C								
Notes												

3: SH 42 & South Boulder Road
Coal Creek Station

Timing Plan: PM Peak
Short Term Background

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	230	460	100	120	390	60	80	270	110	80	260	180
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	181.0	181.0	181.0	181.0	181.0	181.0	181.0	181.0	181.0	181.0	181.0	181.0
Lanes	2	2	0	2	2	1	2	2	0	2	2	1
Cap, veh/h	342	1282	277	215	1436	642	158	479	192	158	687	307
Arrive On Green	0.10	0.46	0.46	0.06	0.42	0.00	0.05	0.20	0.20	0.05	0.20	0.00
Sat Flow, veh/h	3343	2814	607	3343	3438	1538	3343	2397	961	3343	3438	1538
Grp Volume(v), veh/h	258	315	314	145	470	0	99	237	232	99	321	0
Grp Sat Flow(s),veh/h/ln	1672	1719	1702	1672	1719	1538	1672	1719	1640	1672	1719	1538
Q Serve(g_s), s	7.1	11.5	11.6	4.0	8.7	0.0	2.7	12.1	12.4	2.7	7.8	0.0
Cycle Q Clear(g_c), s	7.1	11.5	11.6	4.0	8.7	0.0	2.7	12.1	12.4	2.7	7.8	0.0
Prop In Lane	1.00		0.36	1.00		1.00	1.00		0.59	1.00		1.00
Lane Grp Cap(c), veh/h	342	783	776	215	1436	642	158	343	328	158	687	307
V/C Ratio(X)	0.76	0.40	0.41	0.68	0.33	0.00	0.63	0.69	0.71	0.63	0.47	0.00
Avail Cap(c_a), veh/h	638	783	776	425	1436	642	319	619	591	319	1239	554
HCM Platoon Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	41.2	17.1	17.2	43.2	18.5	0.0	44.1	35.1	35.2	44.1	33.3	0.0
Incr Delay (d2), s/veh	3.4	1.5	1.6	3.7	0.6	0.0	4.0	2.5	2.8	4.0	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	3.1	4.9	4.9	1.8	3.6	0.0	1.2	5.3	5.3	1.2	3.3	0.0
Lane Grp Delay (d), s/veh	44.6	18.7	18.7	46.9	19.1	0.0	48.2	37.5	38.0	48.2	33.8	0.0
Lane Grp LOS	D	B	B	D	B		D	D	D	D	C	
Approach Vol, veh/h		887			615			568			420	
Approach Delay, s/veh		26.2			25.7			39.6			37.2	
Approach LOS		C			C			D			D	
Timer												
Assigned Phs	5	2		1	6		3	8		7	4	
Phs Duration (G+Y+Rc), s	14.6	49.0		11.1	45.4		9.5	24.9		9.5	24.9	
Change Period (Y+Rc), s	5.0	6.0		5.0	6.0		5.0	6.0		5.0	6.0	
Max Green Setting (Gmax), s	18.0	43.0		12.0	37.0		9.0	34.0		9.0	34.0	
Max Q Clear Time (g_c+I1), s	9.1	13.6		6.0	10.7		4.7	14.4		4.7	9.8	
Green Ext Time (p_c), s	0.6	7.9		0.2	7.7		0.1	4.4		0.1	4.7	
Intersection Summary												
HCM 2010 Ctrl Delay				31.0								
HCM 2010 LOS				C								
Notes												

3: SH 42 & South Boulder Road
Coal Creek Station

Timing Plan: AM Peak
Short Term Total

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 		 	 		 	 	 	 	 	
Volume (veh/h)	140	240	90	120	460	40	110	170	90	30	330	210
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	181.0	181.0	190.0	181.0	181.0	181.0	181.0	181.0	190.0	181.0	181.0	181.0
Lanes	2	2	0	2	2	1	2	2	0	2	2	1
Cap, veh/h	252	864	315	235	1216	517	224	525	267	69	672	286
Arrive On Green	0.08	0.34	0.34	0.07	0.34	0.00	0.11	0.39	0.39	0.02	0.19	0.00
Sat Flow, veh/h	3343	2531	924	3343	3619	1538	3343	2263	1153	3343	3619	1538
Grp Volume(v), veh/h	156	189	178	141	541	0	139	170	159	33	367	0
Grp Sat Flow(s),veh/h/ln	1672	1810	1646	1672	1810	1538	1672	1810	1606	1672	1810	1538
Q Serve(g_s), s	3.0	5.0	5.2	2.7	7.6	0.0	2.6	4.5	4.8	0.6	6.0	0.0
Cycle Q Clear(g_c), s	3.0	5.0	5.2	2.7	7.6	0.0	2.6	4.5	4.8	0.6	6.0	0.0
Prop In Lane	1.00		0.56	1.00		1.00	1.00		0.72	1.00		1.00
Lane Grp Cap(c), veh/h	252	617	562	235	1216	517	224	420	372	69	672	286
V/C Ratio(X)	0.62	0.31	0.32	0.60	0.44	0.00	0.62	0.41	0.43	0.48	0.55	0.00
Avail Cap(c_a), veh/h	664	617	562	817	1216	517	511	1023	908	306	1824	775
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.67	1.67	1.67	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	29.4	15.9	15.9	29.5	17.0	0.0	28.3	16.8	16.9	31.7	24.2	0.0
Incr Delay (d2), s/veh	2.5	1.3	1.5	2.5	1.2	0.0	2.8	0.6	0.8	5.0	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	1.3	2.3	2.2	1.1	3.3	0.0	1.1	1.8	1.7	0.3	2.6	0.0
Lane Grp Delay (d), s/veh	31.8	17.1	17.4	32.0	18.1	0.0	31.1	17.4	17.6	36.7	24.9	0.0
Lane Grp LOS	C	B	B	C	B		C	B	B	D	C	
Approach Vol, veh/h		523			682			468			400	
Approach Delay, s/veh		21.6			21.0			21.5			25.8	
Approach LOS		C			C			C			C	
Timer												
Assigned Phs	5	2		1	6		3	8		7	4	
Phs Duration (G+Y+Rc), s	9.9	28.3		9.6	28.0		9.4	21.2		6.4	18.2	
Change Period (Y+Rc), s	5.0	6.0		5.0	6.0		5.0	6.0		5.0	6.0	
Max Green Setting (Gmax), s	13.0	19.0		16.0	22.0		10.0	37.0		6.0	33.0	
Max Q Clear Time (g_c+I1), s	5.0	7.2		4.7	9.6		4.6	6.8		2.6	8.0	
Green Ext Time (p_c), s	0.3	4.4		0.3	4.6		0.2	4.3		0.0	4.1	
Intersection Summary												
HCM 2010 Ctrl Delay				22.2								
HCM 2010 LOS				C								
Notes												

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	90	21	30	280	490	44
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	181.0	181.0	181.0	181.0	181.0	181.0
Lanes	1	1	1	1	1	1
Cap, veh/h	147	131	532	1416	1280	1088
Arrive On Green	0.09	0.09	0.02	0.78	0.71	0.71
Sat Flow, veh/h	1723	1538	1723	1810	1810	1538
Grp Volume(v), veh/h	114	10	38	354	620	35
Grp Sat Flow(s),veh/h/ln	1723	1538	1723	1810	1810	1538
Q Serve(g_s), s	5.9	0.5	0.5	4.8	13.8	0.6
Cycle Q Clear(g_c), s	5.9	0.5	0.5	4.8	13.8	0.6
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	147	131	532	1416	1280	1088
V/C Ratio(X)	0.78	0.08	0.07	0.25	0.48	0.03
Avail Cap(c_a), veh/h	323	288	573	1416	1280	1088
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.7	38.2	4.4	2.7	5.9	4.0
Incr Delay (d2), s/veh	8.6	0.2	0.1	0.4	1.3	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	2.9	0.0	0.1	1.4	5.1	0.2
Lane Grp Delay (d), s/veh	49.2	38.5	4.4	3.1	7.2	4.0
Lane Grp LOS	D	D	A	A	A	A
Approach Vol, veh/h	124			392	655	
Approach Delay, s/veh	48.4			3.2	7.1	
Approach LOS	D			A	A	
Timer						
Assigned Phs			5	2	6	
Phs Duration (G+Y+Rc), s			6.8	77.0	70.2	
Change Period (Y+Rc), s			5.0	6.0	6.0	
Max Green Setting (Gmax), s			4.0	71.0	62.0	
Max Q Clear Time (g_c+I1), s			2.5	6.8	15.8	
Green Ext Time (p_c), s			0.0	7.1	7.0	
Intersection Summary						
HCM 2010 Ctrl Delay			10.1			
HCM 2010 LOS			B			
Notes						

Intersection

Intersection Delay, s/veh 0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	460	14	20	750	5	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	60	-	60	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	511	16	22	833	6	17

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	527
Stage 1	-	-	-
Stage 2	-	-	-
Follow-up Headway	-	-	2
Pot Capacity-1 Maneuver	-	-	1015
Stage 1	-	-	-
Stage 2	-	-	-
Time blocked-Platoon, %	-	-	-
Mov Capacity-1 Maneuver	-	-	1015
Mov Capacity-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	13

Minor Lane / Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	237	726	-	-	1015	-
HCM Lane V/C Ratio	0.023	0.023	-	-	0.022	-
HCM Control Delay (s)	20.6	10.1	-	-	8.626	-
HCM Lane LOS	C	B			A	
HCM 95th %tile Q(veh)	0.072	0.07	-	-	0.067	-

Notes

~ : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection

Intersection Delay, s/veh 0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	8	0	370	526	15
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	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	0	9	0	402	572	16

Major/Minor

	Minor2	Major1			Major2	
Conflicting Flow All	781	294	588	0	-	0
Stage 1	580	-	-	-	-	-
Stage 2	201	-	-	-	-	-
Follow-up Headway	4	3	2	-	-	-
Pot Capacity-1 Maneuver	325	693	963	-	-	-
Stage 1	515	-	-	-	-	-
Stage 2	804	-	-	-	-	-
Time blocked-Platoon, %				-	-	-
Mov Capacity-1 Maneuver	325	693	963	-	-	-
Mov Capacity-2 Maneuver	325	-	-	-	-	-
Stage 1	515	-	-	-	-	-
Stage 2	804	-	-	-	-	-

Approach

HCM Control Delay, s EB 10 NB 0 SB 0

Minor Lane / Major Mvmt

	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	963	-	693	-	-
HCM Lane V/C Ratio	-	-	0.013	-	-
HCM Control Delay (s)	0	-	10.3	-	-
HCM Lane LOS	A		B		
HCM 95th %tile Q(veh)	0	-	0.038	-	-

Notes

~ : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection

Intersection Delay, s/veh 0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	460	15	20	760	5	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	511	17	22	844	6	16

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	528
Stage 1	-	-	-
Stage 2	-	-	-
Follow-up Headway	-	-	2
Pot Capacity-1 Maneuver	-	-	1015
Stage 1	-	-	-
Stage 2	-	-	-
Time blocked-Platoon, %	-	-	-
Mov Capacity-1 Maneuver	-	-	1015
Mov Capacity-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	13

Minor Lane / Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	235	725	-	-	1015	-
HCM Lane V/C Ratio	0.024	0.021	-	-	0.022	-
HCM Control Delay (s)	20.7	10.1	-	-	8.626	-
HCM Lane LOS	C	B			A	
HCM 95th %tile Q(veh)	0.072	0.066	-	-	0.067	-

Notes

~ : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection

Intersection Delay, s/veh 0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	1	0	370	540	1
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	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	79	79	79	79	79	79
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	0	1	0	468	684	1

Major/Minor	Minor2	Major1			Major2	
Conflicting Flow All	918	342	685	0	-	0
Stage 1	684	-	-	-	-	-
Stage 2	234	-	-	-	-	-
Follow-up Headway	4	3	2	-	-	-
Pot Capacity-1 Maneuver	265	645	885	-	-	-
Stage 1	454	-	-	-	-	-
Stage 2	774	-	-	-	-	-
Time blocked-Platoon, %				-	-	-
Mov Capacity-1 Maneuver	265	645	885	-	-	-
Mov Capacity-2 Maneuver	265	-	-	-	-	-
Stage 1	454	-	-	-	-	-
Stage 2	774	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11	0	0

Minor Lane / Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	885	-	645	-	-
HCM Lane V/C Ratio	-	-	0.002	-	-
HCM Control Delay (s)	0	-	10.6	-	-
HCM Lane LOS	A		B		
HCM 95th %tile Q(veh)	0	-	0.006	-	-

Notes

~ : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection

Intersection Delay, s/veh 0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	470	1	0	780	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	522	1	0	867	0	1

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	523
Stage 1	-	-	523
Stage 2	-	-	433
Follow-up Headway	-	-	2
Pot Capacity-1 Maneuver	-	-	1019
Stage 1	-	-	551
Stage 2	-	-	613
Time blocked-Platoon, %	-	-	-
Mov Capacity-1 Maneuver	-	-	1019
Mov Capacity-2 Maneuver	-	-	251
Stage 1	-	-	551
Stage 2	-	-	613

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10

Minor Lane / Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	728	-	-	1019	-
HCM Lane V/C Ratio	0.002	-	-	-	-
HCM Control Delay (s)	10	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.005	-	-	0	-

Notes

~ : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

3: SH 42 & South Boulder Road
Coal Creek Station

Timing Plan: PM Peak
Short Term Total

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	230	460	90	140	400	50	100	300	130	70	280	190
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	181.0	181.0	190.0	181.0	181.0	181.0	181.0	181.0	190.0	181.0	181.0	181.0
Lanes	2	2	0	2	2	1	2	2	0	2	2	1
Cap, veh/h	325	1296	253	239	1500	637	187	533	227	140	750	319
Arrive On Green	0.10	0.44	0.44	0.07	0.41	0.00	0.02	0.07	0.07	0.04	0.21	0.00
Sat Flow, veh/h	3343	2943	575	3343	3619	1538	3343	2411	1027	3343	3619	1538
Grp Volume(v), veh/h	245	300	285	169	482	0	123	276	254	86	346	0
Grp Sat Flow(s),veh/h/ln	1672	1810	1708	1672	1810	1538	1672	1810	1628	1672	1810	1538
Q Serve(g_s), s	7.0	10.8	11.0	4.8	8.8	0.0	3.6	14.6	14.9	2.5	8.2	0.0
Cycle Q Clear(g_c), s	7.0	10.8	11.0	4.8	8.8	0.0	3.6	14.6	14.9	2.5	8.2	0.0
Prop In Lane	1.00		0.34	1.00		1.00	1.00		0.63	1.00		1.00
Lane Grp Cap(c), veh/h	325	797	752	239	1500	637	187	400	360	140	750	319
V/C Ratio(X)	0.75	0.38	0.38	0.71	0.32	0.00	0.66	0.69	0.70	0.61	0.46	0.00
Avail Cap(c_a), veh/h	616	797	752	411	1500	637	308	630	567	308	1260	535
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	42.9	18.3	18.4	44.4	19.3	0.0	47.0	42.0	42.2	46.0	33.9	0.0
Incr Delay (d2), s/veh	3.5	1.4	1.5	3.8	0.6	0.0	3.9	2.1	2.5	4.3	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	3.1	4.9	4.7	2.1	3.9	0.0	1.6	7.4	6.8	1.1	3.7	0.0
Lane Grp Delay (d), s/veh	46.5	19.7	19.8	48.2	19.9	0.0	50.9	44.1	44.7	50.3	34.4	0.0
Lane Grp LOS	D	B	B	D	B		D	D	D	D	C	
Approach Vol, veh/h		830			651			653			432	
Approach Delay, s/veh		27.7			27.2			45.6			37.6	
Approach LOS		C			C			D			D	
Timer												
Assigned Phs	5	2		1	6		3	8		7	4	
Phs Duration (G+Y+Rc), s	14.5	49.0		12.0	46.5		10.5	27.6		9.1	26.2	
Change Period (Y+Rc), s	5.0	6.0		5.0	6.0		5.0	6.0		5.0	6.0	
Max Green Setting (Gmax), s	18.0	43.0		12.0	37.0		9.0	34.0		9.0	34.0	
Max Q Clear Time (g_c+I1), s	9.0	13.0		6.8	10.8		5.6	16.9		4.5	10.2	
Green Ext Time (p_c), s	0.5	7.7		0.2	7.4		0.1	4.7		0.1	5.3	
Intersection Summary												
HCM 2010 Ctrl Delay			33.8									
HCM 2010 LOS			C									
Notes												

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	90	13	30	460	500	45
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	181.0	181.0	181.0	181.0	181.0	181.0
Lanes	1	1	1	1	1	1
Cap, veh/h	140	125	557	1459	1340	1139
Arrive On Green	0.08	0.08	0.02	0.81	0.74	0.74
Sat Flow, veh/h	1723	1538	1723	1810	1810	1538
Grp Volume(v), veh/h	111	5	37	568	617	36
Grp Sat Flow(s),veh/h/ln	1723	1538	1723	1810	1810	1538
Q Serve(g_s), s	6.7	0.3	0.5	9.5	14.3	0.7
Cycle Q Clear(g_c), s	6.7	0.3	0.5	9.5	14.3	0.7
Prop In Lane	1.00	1.00	1.00			1.00
Lane Grp Cap(c), veh/h	140	125	557	1459	1340	1139
V/C Ratio(X)	0.79	0.04	0.07	0.39	0.46	0.03
Avail Cap(c_a), veh/h	355	317	606	1459	1340	1139
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.1	45.2	4.0	2.9	5.4	3.7
Incr Delay (d2), s/veh	9.6	0.1	0.0	0.8	1.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	3.4	0.0	0.2	3.0	5.2	0.2
Lane Grp Delay (d), s/veh	57.7	45.3	4.0	3.7	6.6	3.7
Lane Grp LOS	E	D	A	A	A	A
Approach Vol, veh/h	116			605	653	
Approach Delay, s/veh	57.2			3.7	6.4	
Approach LOS	E			A	A	
Timer						
Assigned Phs			5	2	6	
Phs Duration (G+Y+Rc), s			7.0	92.0	85.0	
Change Period (Y+Rc), s			5.0	6.0	6.0	
Max Green Setting (Gmax), s			5.0	86.0	76.0	
Max Q Clear Time (g_c+I1), s			2.5	11.5	16.3	
Green Ext Time (p_c), s			0.0	9.5	9.4	
Intersection Summary						
HCM 2010 Ctrl Delay			9.5			
HCM 2010 LOS			A			
Notes						

5: Access A & South Boulder Road
Coal Creek Station

Timing Plan: PM Peak
Short Term Total

Intersection

Intersection Delay, s/veh 0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	810	13	20	680	5	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	None	None	None	None	None	None
Storage Length		0	60		60	0
Median Width	12			12	12	
Grade, %	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	862	14	21	723	5	16
Number of Lanes	2	0	1	2	1	1

Major/Minor

	Major 1		Major 2			
Conflicting Flow All	0	0	876	0	1273	438
Stage 1	-	-	-	-	869	-
Stage 2	-	-	-	-	404	-
Follow-up Headway	-	-	2.25	-	3.55	3.35
Pot Capacity-1 Maneuver	-	-	748	-	155	558
Stage 1	-	-	-	-	363	-
Stage 2	-	-	-	-	634	-
Time blocked-Platoon, %	-	-	0	-	0	0
Mov Capacity-1 Maneuver	-	-	748	-	151	558
Mov Capacity-2 Maneuver	-	-	-	-	151	-
Stage 1	-	-	-	-	363	-
Stage 2	-	-	-	-	616	-

Approach

	EB	WB	NB
HCM Control Delay, s	0	0.3	16.1
HCM LOS	-	-	C

Minor Lane / Major Mvmt

	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Cap, veh/h	151	558	-	-	748	-
HCM Control Delay, s	29.7	11.6	-	-	9.954	-
HCM Lane V/C Ratio	0.04	0.03	-	-	0.03	-
HCM Lane LOS	D	B	-	-	A	-
HCM 95th-tile Q, veh	0.1	0.1	-	-	0.1	-

Notes

- : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection

Intersection Delay, s/veh 0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	810	14	20	690	5	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	None	None	None	None	None	None
Storage Length		0	0		0	0
Median Width	12			12	12	
Grade, %	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	871	15	22	742	5	13
Number of Lanes	2	0	1	2	1	1

Major/Minor

	Major 1		Major 2			
Conflicting Flow All	0	0	886	0	1292	443
Stage 1	-	-	-	-	878	-
Stage 2	-	-	-	-	414	-
Follow-up Headway	-	-	2.25	-	3.55	3.35
Pot Capacity-1 Maneuver	-	-	741	-	151	554
Stage 1	-	-	-	-	359	-
Stage 2	-	-	-	-	627	-
Time blocked-Platoon, %	-	-	0	-	0	0
Mov Capacity-1 Maneuver	-	-	741	-	147	554
Mov Capacity-2 Maneuver	-	-	-	-	147	-
Stage 1	-	-	-	-	359	-
Stage 2	-	-	-	-	608	-

Approach

	EB	WB	NB
HCM Control Delay, s	0	0.3	17.2
HCM LOS	-	-	C

Minor Lane / Major Mvmt

	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Cap, veh/h	147	554	-	-	741	-
HCM Control Delay, s	30.4	11.7	-	-	10.003	-
HCM Lane V/C Ratio	0.04	0.02	-	-	0.03	-
HCM Lane LOS	D	B	-	-	B	-
HCM 95th-tile Q, veh	0.1	0.1	-	-	0.1	-

Notes

- : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection

Intersection Delay, s/veh 0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	4	0	460	540	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None
Storage Length	0	0	0			0
Median Width	0			24	24	
Grade, %	0%			0%	0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	0	5	0	568	667	4
Number of Lanes	0	1	0	2	2	0

Major/Minor

	Major 1			Major 2	
Conflicting Flow All	953	335	670	0	0
Stage 1	669	-	-	-	-
Stage 2	284	-	-	-	-
Follow-up Headway	3.55	3.35	2.25	-	-
Pot Capacity-1 Maneuver	252	652	896	-	-
Stage 1	463	-	-	-	-
Stage 2	730	-	-	-	-
Time blocked-Platoon, %	0	0	0	-	-
Mov Capacity-1 Maneuver	252	652	896	-	-
Mov Capacity-2 Maneuver	252	-	-	-	-
Stage 1	463	-	-	-	-
Stage 2	730	-	-	-	-

Approach

	EB	NB	SB
HCM Control Delay, s	10.6	0	0
HCM LOS	B	-	-

Minor Lane / Major Mvmt

	NBL	NBT	EBLn1	SBT	SBR
Cap, veh/h	896	-	652	-	-
HCM Control Delay, s	0	-	10.6	-	-
HCM Lane V/C Ratio	-	-	0.01	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th-tile Q, veh	0.0	-	0.0	-	-

Notes

- : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection

Intersection Delay, s/veh 0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	820	3	0	760	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	None	None	None	None	None	None
Storage Length		0	0		0	0
Median Width	24			24	0	
Grade, %	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	911	3	0	844	0	3
Number of Lanes	2	0	0	2	0	1

Major/Minor	Major 1	Major 2				
Conflicting Flow All	0	0	914	0	1335	457
Stage 1	-	-	-	-	913	-
Stage 2	-	-	-	-	422	-
Follow-up Headway	-	-	2.25	-	3.55	3.35
Pot Capacity-1 Maneuver	-	-	723	-	141	543
Stage 1	-	-	-	-	344	-
Stage 2	-	-	-	-	621	-
Time blocked-Platoon, %	-	-	0	-	0	0
Mov Capacity-1 Maneuver	-	-	723	-	141	543
Mov Capacity-2 Maneuver	-	-	-	-	141	-
Stage 1	-	-	-	-	344	-
Stage 2	-	-	-	-	621	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.7
HCM LOS	-	-	B

Minor Lane / Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Cap, veh/h	543	-	-	723	-
HCM Control Delay, s	11.7	-	-	0	-
HCM Lane V/C Ratio	0.01	-	-	-	-
HCM Lane LOS	B	-	-	A	-
HCM 95th-tile Q, veh	0.0	-	-	0.0	-

Notes

- : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection: 3: SH 42 & South Boulder Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	L	T	TR	L	L	T	T	L	L	T	TR
Maximum Queue (ft)	120	153	162	154	162	81	192	180	62	74	71	70
Average Queue (ft)	45	81	77	65	77	21	105	98	39	34	39	44
95th Queue (ft)	114	132	138	124	132	63	167	163	58	66	65	65
Link Distance (ft)			171	171			1996	1996				
Upstream Blk Time (%)		0	0	0					1	2	1	1
Queuing Penalty (veh)		0	0	0					0	0	0	0
Storage Bay Dist (ft)	250	250			235	235			225	225		
Storage Blk Time (%)		0	0						1	2	1	
Queuing Penalty (veh)		0	0						1	2	1	

Intersection: 3: SH 42 & South Boulder Road

Movement	SB	SB	SB	SB	SB
Directions Served	L	L	T	T	R
Maximum Queue (ft)	25	163	318	106	64
Average Queue (ft)	2	33	162	29	8
95th Queue (ft)	16	97	265	75	41
Link Distance (ft)			738	738	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	170	170			300
Storage Blk Time (%)		0	9		
Queuing Penalty (veh)		0	3		

Intersection: 5: Access A & South Boulder Road

Movement	EB	WB	NB	NB
Directions Served	TR	L	L	R
Maximum Queue (ft)	2	37	28	52
Average Queue (ft)	0	8	4	11
95th Queue (ft)	2	31	20	38
Link Distance (ft)	293			318
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		60	60	
Storage Blk Time (%)		0		0
Queuing Penalty (veh)		0		0

Intersection: 7: Access B & South Boulder Road

Movement	WB	WB	NB	NB
Directions Served	L	T	L	R
Maximum Queue (ft)	38	22	32	47
Average Queue (ft)	6	1	5	13
95th Queue (ft)	26	11	24	40
Link Distance (ft)			240	240
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 8: SH 42 & Access D

Movement	EB	SB	SB
Directions Served	R	T	TR
Maximum Queue (ft)	18	15	13
Average Queue (ft)	1	1	1
95th Queue (ft)	9	10	9
Link Distance (ft)	122	65	65
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 9: Access C & South Boulder Road

Movement	EB	EB	NB
Directions Served	T	TR	R
Maximum Queue (ft)	14	3	15
Average Queue (ft)	1	0	1
95th Queue (ft)	12	3	8
Link Distance (ft)	105	105	240
Upstream Blk Time (%)	0		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 10: SH 42 & Cannon Circle

Movement	EB	EB	NB	NB	SB	SB
Directions Served	L	R	L	T	T	R
Maximum Queue (ft)	147	64	41	105	157	41
Average Queue (ft)	62	14	11	29	38	5
95th Queue (ft)	121	44	36	75	111	24
Link Distance (ft)		260		704	357	357
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	150		250			
Storage Blk Time (%)	1					
Queuing Penalty (veh)	0					

Network Summary

Network wide Queuing Penalty: 8

Intersection: 3: SH 42 & South Boulder Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	L	T	TR	L	L	T	T	R	L	L	T
Maximum Queue (ft)	158	170	206	186	171	119	249	322	120	50	65	114
Average Queue (ft)	102	130	146	121	96	27	40	178	4	7	53	85
95th Queue (ft)	167	180	212	189	154	76	143	284	62	33	76	110
Link Distance (ft)			171	171			1996	1996				65
Upstream Blk Time (%)	0	1	5	2						0	18	64
Queuing Penalty (veh)	0	0	21	8						0	0	146
Storage Bay Dist (ft)	250	250			235	235			280	225	225	
Storage Blk Time (%)	0	1	5				0	1	0	0	18	64
Queuing Penalty (veh)	0	2	12				0	1	0	0	28	64

Intersection: 3: SH 42 & South Boulder Road

Movement	NB	SB	SB	SB	SB	SB
Directions Served	TR	L	L	T	T	R
Maximum Queue (ft)	96	90	194	295	136	105
Average Queue (ft)	73	10	67	172	29	19
95th Queue (ft)	89	47	154	266	88	71
Link Distance (ft)	65			738	738	
Upstream Blk Time (%)	44					
Queuing Penalty (veh)	101					
Storage Bay Dist (ft)		170	170			300
Storage Blk Time (%)			0	7		
Queuing Penalty (veh)			0	5		

Intersection: 5: Access A & South Boulder Road

Movement	EB	WB	NB	NB
Directions Served	TR	L	L	R
Maximum Queue (ft)	4	39	31	54
Average Queue (ft)	0	12	6	14
95th Queue (ft)	3	39	25	42
Link Distance (ft)	293			318
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		60	60	
Storage Blk Time (%)		0		0
Queuing Penalty (veh)		0		0

Intersection: 7: Access B & South Boulder Road

Movement	EB	EB	WB	NB	NB
Directions Served	T	TR	L	L	R
Maximum Queue (ft)	97	27	46	34	51
Average Queue (ft)	6	1	11	4	12
95th Queue (ft)	43	15	37	21	39
Link Distance (ft)	283	283	105	240	240
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 8: SH 42 & Access D

Movement	EB	NB	NB	SB	SB
Directions Served	R	T	T	T	TR
Maximum Queue (ft)	29	218	211	38	8
Average Queue (ft)	3	127	116	2	0
95th Queue (ft)	19	215	210	16	6
Link Distance (ft)	122	357	357	65	65
Upstream Blk Time (%)				0	
Queuing Penalty (veh)				0	
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 9: Access C & South Boulder Road

Movement	EB	EB	WB	NB
Directions Served	T	TR	T	R
Maximum Queue (ft)	117	100	23	27
Average Queue (ft)	25	11	1	2
95th Queue (ft)	91	57	31	16
Link Distance (ft)	105	105	171	240
Upstream Blk Time (%)	1	0	0	
Queuing Penalty (veh)	5	1	0	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 10: SH 42 & Cannon Circle

Movement	EB	EB	NB	NB	SB	SB
Directions Served	L	R	L	T	T	R
Maximum Queue (ft)	143	67	50	100	286	56
Average Queue (ft)	74	13	12	25	123	10
95th Queue (ft)	129	45	39	71	244	38
Link Distance (ft)		260		704	357	357
Upstream Blk Time (%)		0			0	
Queuing Penalty (veh)		0			0	
Storage Bay Dist (ft)	150		250			
Storage Blk Time (%)	1					
Queuing Penalty (veh)	0					

Network Summary

Network wide Queuing Penalty: 393

3: SH 42 & South Boulder Road
Coal Creek Station

Timing Plan: AM Peak
Year 2035 Background

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	140	290	120	100	580	50	90	100	50	40	320	200
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	181.0	181.0	181.0	181.0	181.0	181.0	181.0	181.0	181.0	181.0	181.0	181.0
Lanes	2	2	0	2	2	1	2	2	0	2	2	1
Cap, veh/h	233	1073	434	178	1487	665	163	418	196	79	546	244
Arrive On Green	0.07	0.45	0.45	0.05	0.43	0.00	0.05	0.18	0.18	0.02	0.16	0.00
Sat Flow, veh/h	3343	2391	967	3343	3438	1538	3343	2275	1066	3343	3438	1538
Grp Volume(v), veh/h	152	225	220	109	630	0	98	81	82	43	348	0
Grp Sat Flow(s),veh/h/ln	1672	1719	1639	1672	1719	1538	1672	1719	1621	1672	1719	1538
Q Serve(g_s), s	3.4	6.3	6.5	2.4	9.6	0.0	2.2	3.1	3.3	1.0	7.2	0.0
Cycle Q Clear(g_c), s	3.4	6.3	6.5	2.4	9.6	0.0	2.2	3.1	3.3	1.0	7.2	0.0
Prop In Lane	1.00		0.59	1.00		1.00	1.00		0.66	1.00		1.00
Lane Grp Cap(c), veh/h	233	772	736	178	1487	665	163	316	298	79	546	244
V/C Ratio(X)	0.65	0.29	0.30	0.61	0.42	0.00	0.60	0.26	0.28	0.55	0.64	0.00
Avail Cap(c_a), veh/h	397	772	736	309	1487	665	309	749	706	177	1362	609
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	34.3	13.2	13.3	35.1	14.9	0.0	35.3	26.5	26.6	36.6	29.8	0.0
Incr Delay (d2), s/veh	3.1	1.0	1.0	3.4	0.9	0.0	3.5	0.4	0.5	5.8	1.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	1.5	2.5	2.5	1.1	3.8	0.0	1.0	1.3	1.3	0.5	3.0	0.0
Lane Grp Delay (d), s/veh	37.4	14.2	14.3	38.5	15.8	0.0	38.8	26.9	27.1	42.3	31.1	0.0
Lane Grp LOS	D	B	B	D	B		D	C	C	D	C	
Approach Vol, veh/h		597			739			261			391	
Approach Delay, s/veh		20.2			19.2			31.4			32.3	
Approach LOS		C			B			C			C	
Timer												
Assigned Phs	5	2		1	6		3	8		7	4	
Phs Duration (G+Y+Rc), s	10.3	40.0		9.0	38.8		8.7	19.9		6.8	18.0	
Change Period (Y+Rc), s	5.0	6.0		5.0	6.0		5.0	6.0		5.0	6.0	
Max Green Setting (Gmax), s	9.0	34.0		7.0	32.0		7.0	33.0		4.0	30.0	
Max Q Clear Time (g_c+I1), s	5.4	8.5		4.4	11.6		4.2	5.3		3.0	9.2	
Green Ext Time (p_c), s	0.1	7.6		0.1	7.0		0.1	3.0		0.0	2.8	
Intersection Summary												
HCM 2010 Ctrl Delay				23.7								
HCM 2010 LOS				C								
Notes												

3: SH 42 & South Boulder Road
Coal Creek Station

Timing Plan: PM Peak
Year 2035 Background

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	270	630	130	130	510	70	80	270	120	100	260	190
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	181.0	181.0	181.0	181.0	181.0	181.0	181.0	181.0	181.0	181.0	181.0	181.0
Lanes	2	2	0	2	2	1	2	2	0	2	2	1
Cap, veh/h	375	1382	284	208	1501	671	140	416	180	168	640	287
Arrive On Green	0.11	0.49	0.49	0.06	0.44	0.00	0.04	0.18	0.18	0.05	0.19	0.00
Sat Flow, veh/h	3343	2841	584	3343	3438	1538	3343	2337	1013	3343	3438	1538
Grp Volume(v), veh/h	293	414	412	141	554	0	87	214	209	109	283	0
Grp Sat Flow(s),veh/h/ln	1672	1719	1706	1672	1719	1538	1672	1719	1631	1672	1719	1538
Q Serve(g_s), s	8.4	16.1	16.1	4.1	10.7	0.0	2.5	11.5	11.9	3.2	7.2	0.0
Cycle Q Clear(g_c), s	8.4	16.1	16.1	4.1	10.7	0.0	2.5	11.5	11.9	3.2	7.2	0.0
Prop In Lane	1.00		0.34	1.00		1.00	1.00		0.62	1.00		1.00
Lane Grp Cap(c), veh/h	375	836	830	208	1501	671	140	306	290	168	640	287
V/C Ratio(X)	0.78	0.50	0.50	0.68	0.37	0.00	0.62	0.70	0.72	0.65	0.44	0.00
Avail Cap(c_a), veh/h	644	836	830	407	1501	671	237	523	496	271	1080	483
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	42.6	17.1	17.1	45.3	18.7	0.0	46.5	38.1	38.2	46.0	35.6	0.0
Incr Delay (d2), s/veh	3.6	2.1	2.1	3.9	0.7	0.0	4.4	2.9	3.4	4.2	0.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	3.7	6.8	6.8	1.8	4.5	0.0	1.1	5.2	5.1	1.4	3.1	0.0
Lane Grp Delay (d), s/veh	46.2	19.2	19.3	49.1	19.4	0.0	50.9	40.9	41.6	50.1	36.1	0.0
Lane Grp LOS	D	B	B	D	B		D	D	D	D	D	
Approach Vol, veh/h		1119			695			510			392	
Approach Delay, s/veh		26.3			25.4			42.9			40.0	
Approach LOS		C			C			D			D	
Timer												
Assigned Phs	5	2		1	6		3	8		7	4	
Phs Duration (G+Y+Rc), s	16.1	54.0		11.1	49.1		9.1	23.6		10.0	24.4	
Change Period (Y+Rc), s	5.0	6.0		5.0	6.0		5.0	6.0		5.0	6.0	
Max Green Setting (Gmax), s	19.0	48.0		12.0	41.0		7.0	30.0		8.0	31.0	
Max Q Clear Time (g_c+I1), s	10.4	18.1		6.1	12.7		4.5	13.9		5.2	9.2	
Green Ext Time (p_c), s	0.7	10.7		0.2	10.5		0.0	3.6		0.1	4.0	
Intersection Summary												
HCM 2010 Ctrl Delay				31.2								
HCM 2010 LOS				C								
Notes												

3: SH 42 & South Boulder Road
Coal Creek Station

Timing Plan: AM Peak
Year 2035 Total

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	150	310	115	130	595	50	105	140	75	35	350	215
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	181.0	181.0	190.0	181.0	181.0	181.0	181.0	181.0	190.0	181.0	181.0	181.0
Lanes	2	2	0	2	2	1	2	2	0	2	2	1
Cap, veh/h	244	1082	394	217	1517	645	183	455	233	72	608	259
Arrive On Green	0.07	0.43	0.43	0.07	0.42	0.00	0.05	0.20	0.20	0.02	0.17	0.00
Sat Flow, veh/h	3343	2533	923	3343	3619	1538	3343	2260	1156	3343	3619	1538
Grp Volume(v), veh/h	163	239	223	141	647	0	114	120	114	38	380	0
Grp Sat Flow(s),veh/h/ln	1672	1810	1647	1672	1810	1538	1672	1810	1606	1672	1810	1538
Q Serve(g_s), s	3.7	6.7	6.9	3.2	9.8	0.0	2.6	4.4	4.7	0.9	7.5	0.0
Cycle Q Clear(g_c), s	3.7	6.7	6.9	3.2	9.8	0.0	2.6	4.4	4.7	0.9	7.5	0.0
Prop In Lane	1.00		0.56	1.00		1.00	1.00		0.72	1.00		1.00
Lane Grp Cap(c), veh/h	244	773	703	217	1517	645	183	364	323	72	608	259
V/C Ratio(X)	0.67	0.31	0.32	0.65	0.43	0.00	0.62	0.33	0.35	0.52	0.62	0.00
Avail Cap(c_a), veh/h	390	773	703	346	1517	645	303	796	707	130	1405	597
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	34.9	14.6	14.7	35.2	15.9	0.0	35.7	26.4	26.5	37.4	29.9	0.0
Incr Delay (d2), s/veh	3.1	1.0	1.2	3.2	0.9	0.0	3.4	0.5	0.7	5.8	1.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	1.6	2.9	2.8	1.4	4.0	0.0	1.1	1.9	1.9	0.4	3.4	0.0
Lane Grp Delay (d), s/veh	38.0	15.6	15.8	38.5	16.7	0.0	39.1	26.9	27.2	43.2	30.9	0.0
Lane Grp LOS	D	B	B	D	B		D	C	C	D	C	
Approach Vol, veh/h		625			788			348			418	
Approach Delay, s/veh		21.6			20.6			31.0			32.0	
Approach LOS		C			C			C			C	
Timer												
Assigned Phs	5	2		1	6		3	8		7	4	
Phs Duration (G+Y+Rc), s	10.6	39.0		10.0	38.4		9.2	21.6		6.7	19.0	
Change Period (Y+Rc), s	5.0	6.0		5.0	6.0		5.0	6.0		5.0	6.0	
Max Green Setting (Gmax), s	9.0	33.0		8.0	32.0		7.0	34.0		3.0	30.0	
Max Q Clear Time (g_c+I1), s	5.7	8.9		5.2	11.8		4.6	6.7		2.9	9.5	
Green Ext Time (p_c), s	0.1	7.7		0.1	7.2		0.1	3.7		0.0	3.4	
Intersection Summary												
HCM 2010 Ctrl Delay			24.7									
HCM 2010 LOS			C									
Notes												

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	101	21	30	240	550	44
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	181.0	181.0	181.0	181.0	181.0	190.0
Lanes	1	1	1	1	2	0
Cap, veh/h	139	124	619	1456	2466	177
Arrive On Green	0.08	0.08	0.02	0.80	0.74	0.74
Sat Flow, veh/h	1723	1538	1723	1810	3337	240
Grp Volume(v), veh/h	110	12	33	261	324	317
Grp Sat Flow(s),veh/h/ln	1723	1538	1723	1810	1810	1767
Q Serve(g_s), s	6.5	0.8	0.5	3.4	5.9	6.0
Cycle Q Clear(g_c), s	6.5	0.8	0.5	3.4	5.9	6.0
Prop In Lane	1.00	1.00	1.00			0.14
Lane Grp Cap(c), veh/h	139	124	619	1456	1337	1306
V/C Ratio(X)	0.79	0.10	0.05	0.18	0.24	0.24
Avail Cap(c_a), veh/h	231	206	754	1456	1337	1306
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.1	44.5	3.0	2.3	4.3	4.3
Incr Delay (d2), s/veh	9.6	0.3	0.0	0.3	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	3.3	0.0	0.1	1.1	2.2	2.2
Lane Grp Delay (d), s/veh	56.8	44.8	3.0	2.6	4.8	4.8
Lane Grp LOS	E	D	A	A	A	A
Approach Vol, veh/h	122			294	641	
Approach Delay, s/veh	55.6			2.7	4.8	
Approach LOS	E			A	A	
Timer						
Assigned Phs			5	2	6	
Phs Duration (G+Y+Rc), s			6.8	90.0	83.2	
Change Period (Y+Rc), s			5.0	6.0	6.0	
Max Green Setting (Gmax), s			10.0	84.0	69.0	
Max Q Clear Time (g_c+I1), s			2.5	5.4	8.0	
Green Ext Time (p_c), s			0.0	5.7	5.7	
Intersection Summary						
HCM 2010 Ctrl Delay			10.1			
HCM 2010 LOS			B			
Notes						
Shared L-R not supported by HCM Engine. Results calculated based on TW's interpretation of HCM 2010 to continue analysis.						

Intersection

Intersection Delay, s/veh 0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	570	14	20	900	5	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	60	-	60	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	620	15	22	978	5	16

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	635
Stage 1	-	-	-
Stage 2	-	-	-
Follow-up Headway	-	-	2
Pot Capacity-1 Maneuver	-	-	924
Stage 1	-	-	-
Stage 2	-	-	-
Time blocked-Platoon, %	-	-	-
Mov Capacity-1 Maneuver	-	-	924
Mov Capacity-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	14

Minor Lane / Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	180	670	-	-	924	-
HCM Lane V/C Ratio	0.03	0.024	-	-	0.024	-
HCM Control Delay (s)	25.6	10.5	-	-	8.99	-
HCM Lane LOS	D	B			A	
HCM 95th %tile Q(veh)	0.093	0.075	-	-	0.072	-

Notes

~ : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection

Intersection Delay, s/veh 0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	8	0	341	586	15
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	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	0	9	0	371	637	16

Major/Minor	Minor2	Major1			Major2	
Conflicting Flow All	830	327	653	0	-	0
Stage 1	645	-	-	-	-	-
Stage 2	185	-	-	-	-	-
Follow-up Headway	4	3	2	-	-	-
Pot Capacity-1 Maneuver	303	660	910	-	-	-
Stage 1	476	-	-	-	-	-
Stage 2	819	-	-	-	-	-
Time blocked-Platoon, %				-	-	-
Mov Capacity-1 Maneuver	303	660	910	-	-	-
Mov Capacity-2 Maneuver	303	-	-	-	-	-
Stage 1	476	-	-	-	-	-
Stage 2	819	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10	0	0

Minor Lane / Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	910	-	660	-	-
HCM Lane V/C Ratio	-	-	0.013	-	-
HCM Control Delay (s)	0	-	10.5	-	-
HCM Lane LOS	A		B		
HCM 95th %tile Q(veh)	0	-	0.04	-	-

Notes

~ : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection

Intersection Delay, s/veh 0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	570	15	20	910	5	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	620	16	22	989	5	15

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	636
Stage 1	-	-	-
Stage 2	-	-	-
Follow-up Headway	-	-	2
Pot Capacity-1 Maneuver	-	-	923
Stage 1	-	-	-
Stage 2	-	-	-
Time blocked-Platoon, %	-	-	-
Mov Capacity-1 Maneuver	-	-	923
Mov Capacity-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	14

Minor Lane / Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	179	669	-	-	923	-
HCM Lane V/C Ratio	0.03	0.023	-	-	0.024	-
HCM Control Delay (s)	25.7	10.5	-	-	8.994	-
HCM Lane LOS	D	B			A	
HCM 95th %tile Q(veh)	0.094	0.07	-	-	0.072	-

Notes

~ : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection

Intersection Delay, s/veh 0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	1	0	341	600	1
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	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	0	1	0	371	652	1

Major/Minor	Minor2	Major1			Major2	
Conflicting Flow All	838	327	653	0	-	0
Stage 1	653	-	-	-	-	-
Stage 2	185	-	-	-	-	-
Follow-up Headway	4	3	2	-	-	-
Pot Capacity-1 Maneuver	299	660	910	-	-	-
Stage 1	472	-	-	-	-	-
Stage 2	819	-	-	-	-	-
Time blocked-Platoon, %				-	-	-
Mov Capacity-1 Maneuver	299	660	910	-	-	-
Mov Capacity-2 Maneuver	299	-	-	-	-	-
Stage 1	472	-	-	-	-	-
Stage 2	819	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10	0	0

Minor Lane / Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	910	-	660	-	-
HCM Lane V/C Ratio	-	-	0.002	-	-
HCM Control Delay (s)	0	-	10.5	-	-
HCM Lane LOS	A		B		
HCM 95th %tile Q(veh)	0	-	0.005	-	-

Notes

~ : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection

Intersection Delay, s/veh 0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	580	1	0	870	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	630	1	0	946	0	1

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	632
Stage 1	-	-	-
Stage 2	-	-	-
Follow-up Headway	-	-	2
Pot Capacity-1 Maneuver	-	-	927
Stage 1	-	-	-
Stage 2	-	-	-
Time blocked-Platoon, %	-	-	-
Mov Capacity-1 Maneuver	-	-	927
Mov Capacity-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10

Minor Lane / Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	671	-	-	927	-
HCM Lane V/C Ratio	0.002	-	-	-	-
HCM Control Delay (s)	10.4	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.005	-	-	0	-

Notes

~ : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

3: SH 42 & South Boulder Road
Coal Creek Station

Timing Plan: PM Peak
Year 2035 Total

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	275	645	125	160	530	70	100	305	145	95	290	205
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	181.0	181.0	190.0	181.0	181.0	181.0	181.0	181.0	190.0	181.0	181.0	181.0
Lanes	2	2	0	2	2	1	2	2	0	2	2	1
Cap, veh/h	377	1373	266	239	1537	653	168	471	220	159	720	306
Arrive On Green	0.11	0.47	0.47	0.07	0.42	0.00	0.02	0.07	0.07	0.05	0.20	0.00
Sat Flow, veh/h	3343	2947	571	3343	3619	1538	3343	2337	1090	3343	3619	1538
Grp Volume(v), veh/h	299	430	407	174	576	0	109	256	234	103	315	0
Grp Sat Flow(s),veh/h/ln	1672	1810	1709	1672	1810	1538	1672	1810	1617	1672	1810	1538
Q Serve(g_s), s	9.0	17.2	17.2	5.3	11.2	0.0	3.3	14.2	14.6	3.1	7.9	0.0
Cycle Q Clear(g_c), s	9.0	17.2	17.2	5.3	11.2	0.0	3.3	14.2	14.6	3.1	7.9	0.0
Prop In Lane	1.00		0.33	1.00		1.00	1.00		0.67	1.00		1.00
Lane Grp Cap(c), veh/h	377	843	796	239	1537	653	168	365	326	159	720	306
V/C Ratio(X)	0.79	0.51	0.51	0.73	0.37	0.00	0.65	0.70	0.72	0.65	0.44	0.00
Avail Cap(c_a), veh/h	617	843	796	357	1537	653	260	562	502	227	1089	463
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	44.5	19.3	19.3	46.8	20.3	0.0	49.8	45.0	45.2	48.2	36.2	0.0
Incr Delay (d2), s/veh	3.8	2.2	2.3	4.2	0.7	0.0	4.2	2.5	3.0	4.4	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	4.0	7.8	7.4	2.3	4.9	0.0	1.5	7.2	6.7	1.4	3.6	0.0
Lane Grp Delay (d), s/veh	48.3	21.5	21.6	51.0	21.0	0.0	54.0	47.5	48.2	52.6	36.6	0.0
Lane Grp LOS	D	C	C	D	C		D	D	D	D	D	
Approach Vol, veh/h		1136			750			599			418	
Approach Delay, s/veh		28.6			27.9			49.0			40.6	
Approach LOS		C			C			D			D	
Timer												
Assigned Phs	5	2		1	6		3	8		7	4	
Phs Duration (G+Y+Rc), s	16.6	54.0		12.4	49.8		10.2	26.8		9.9	26.5	
Change Period (Y+Rc), s	5.0	6.0		5.0	6.0		5.0	6.0		5.0	6.0	
Max Green Setting (Gmax), s	19.0	48.0		11.0	40.0		8.0	32.0		7.0	31.0	
Max Q Clear Time (g_c+I1), s	11.0	19.2		7.3	13.2		5.3	16.6		5.1	9.9	
Green Ext Time (p_c), s	0.6	10.9		0.2	10.6		0.1	4.1		0.0	4.6	
Intersection Summary												
HCM 2010 Ctrl Delay			34.4									
HCM 2010 LOS			C									
Notes												

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	105	13	30	470	540	45
Number	7	14	5	2	6	16
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow veh/h/ln	181.0	181.0	181.0	181.0	181.0	190.0
Lanes	1	1	1	1	2	0
Cap, veh/h	145	130	622	1439	2448	154
Arrive On Green	0.08	0.08	0.02	0.79	0.73	0.73
Sat Flow, veh/h	1723	1538	1723	1810	3370	212
Grp Volume(v), veh/h	114	3	33	511	315	309
Grp Sat Flow(s),veh/h/ln	1723	1538	1723	1810	1810	1772
Q Serve(g_s), s	6.4	0.2	0.5	8.0	5.7	5.7
Cycle Q Clear(g_c), s	6.4	0.2	0.5	8.0	5.7	5.7
Prop In Lane	1.00	1.00	1.00			0.12
Lane Grp Cap(c), veh/h	145	130	622	1439	1315	1288
V/C Ratio(X)	0.78	0.02	0.05	0.36	0.24	0.24
Avail Cap(c_a), veh/h	503	449	712	1439	1315	1288
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.6	41.7	3.1	2.9	4.5	4.5
Incr Delay (d2), s/veh	8.9	0.1	0.0	0.7	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q (50%), veh/ln	3.2	0.0	0.1	2.5	2.2	2.1
Lane Grp Delay (d), s/veh	53.6	41.8	3.2	3.6	4.9	4.9
Lane Grp LOS	D	D	A	A	A	A
Approach Vol, veh/h	117			544	624	
Approach Delay, s/veh	53.3			3.6	4.9	
Approach LOS	D			A	A	
Timer						
Assigned Phs			5	2	6	
Phs Duration (G+Y+Rc), s			6.8	85.0	78.2	
Change Period (Y+Rc), s			5.0	6.0	6.0	
Max Green Setting (Gmax), s			7.0	79.0	67.0	
Max Q Clear Time (g_c+I1), s			2.5	10.0	7.7	
Green Ext Time (p_c), s			0.0	8.0	8.0	
Intersection Summary						
HCM 2010 Ctrl Delay			8.8			
HCM 2010 LOS			A			
Notes						
Shared L-R not supported by HCM Engine. Results calculated based on TW's interpretation of HCM 2010 to continue analysis.						

Intersection

Intersection Delay, s/veh 0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	1050	13	20	900	5	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	None	None	None	None	None	None
Storage Length		0	60		60	0
Median Width	12			12	12	
Grade, %	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	1141	14	22	978	5	16
Number of Lanes	2	0	1	2	1	1

Major/Minor	Major 1		Major 2			
Conflicting Flow All	0	0	1155	0	1681	578
Stage 1	-	-	-	-	1148	-
Stage 2	-	-	-	-	533	-
Follow-up Headway	-	-	2.25	-	3.55	3.35
Pot Capacity-1 Maneuver	-	-	584	-	83	452
Stage 1	-	-	-	-	258	-
Stage 2	-	-	-	-	544	-
Time blocked-Platoon, %	-	-	0	-	0	0
Mov Capacity-1 Maneuver	-	-	584	-	80	452
Mov Capacity-2 Maneuver	-	-	-	-	80	-
Stage 1	-	-	-	-	258	-
Stage 2	-	-	-	-	524	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	23.3
HCM LOS	-	-	C

Minor Lane / Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Cap, veh/h	80	452	-	-	584	-
HCM Control Delay, s	53.3	13.3	-	-	11.403	-
HCM Lane V/C Ratio	0.07	0.04	-	-	0.04	-
HCM Lane LOS	F	B	-	-	B	-
HCM 95th-tile Q, veh	0.2	0.1	-	-	0.1	-

Notes

- : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection

Intersection Delay, s/veh 0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	1050	14	20	820	5	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	None	None	None	None	None	None
Storage Length		0	100		100	0
Median Width	12			12	12	
Grade, %	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	1141	15	22	891	5	13
Number of Lanes	2	0	1	2	1	1

Major/Minor	Major 1	Major 2	Major 1	Major 2	Major 1	Major 2
Conflicting Flow All	0	0	1157	0	1638	578
Stage 1	-	-	-	-	1149	-
Stage 2	-	-	-	-	489	-
Follow-up Headway	-	-	2.25	-	3.55	3.35
Pot Capacity-1 Maneuver	-	-	583	-	89	452
Stage 1	-	-	-	-	258	-
Stage 2	-	-	-	-	574	-
Time blocked-Platoon, %	-	-	0	-	0	0
Mov Capacity-1 Maneuver	-	-	583	-	86	452
Mov Capacity-2 Maneuver	-	-	-	-	86	-
Stage 1	-	-	-	-	258	-
Stage 2	-	-	-	-	552	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	23.9
HCM LOS	-	-	C

Minor Lane / Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Cap, veh/h	86	452	-	-	583	-
HCM Control Delay, s	49.7	13.2	-	-	11.414	-
HCM Lane V/C Ratio	0.06	0.03	-	-	0.04	-
HCM Lane LOS	E	B	-	-	B	-
HCM 95th-tile Q, veh	0.2	0.1	-	-	0.1	-

Notes

- : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection

Intersection Delay, s/veh 0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	0	4	0	470	580	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	None	None	None	None	None	None
Storage Length	0	0	0			0
Median Width	0			24	24	
Grade, %	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	0	4	0	511	630	3
Number of Lanes	0	1	0	2	2	0

Major/Minor

	Major 1			Major 2	
Conflicting Flow All	887	317	634	0	0
Stage 1	632	-	-	-	-
Stage 2	255	-	-	-	-
Follow-up Headway	3.55	3.35	2.25	-	-
Pot Capacity-1 Maneuver	278	670	925	-	-
Stage 1	484	-	-	-	-
Stage 2	755	-	-	-	-
Time blocked-Platoon, %	0	0	0	-	-
Mov Capacity-1 Maneuver	278	670	925	-	-
Mov Capacity-2 Maneuver	278	-	-	-	-
Stage 1	484	-	-	-	-
Stage 2	755	-	-	-	-

Approach

	EB	NB	SB
HCM Control Delay, s	10.4	0	0
HCM LOS	B	-	-

Minor Lane / Major Mvmt

	NBL	NBT	EBLn1	SBT	SBR
Cap, veh/h	925	-	670	-	-
HCM Control Delay, s	0	-	10.4	-	-
HCM Lane V/C Ratio	-	-	0.01	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th-tile Q, veh	0.0	-	0.0	-	-

Notes

~ : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection

Intersection Delay, s/veh 0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	1060	3	0	780	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	None	None	None	None	None	None
Storage Length		0	0		0	0
Median Width	24			24	0	
Grade, %	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	5	5	5	5	5	5
Mvmt Flow	1152	3	0	848	0	3
Number of Lanes	2	0	0	2	0	1

Major/Minor	Major 1		Major 2			
Conflicting Flow All	0	0	1155	0	1578	578
Stage 1	-	-	-	-	1154	-
Stage 2	-	-	-	-	424	-
Follow-up Headway	-	-	2.25	-	3.55	3.35
Pot Capacity-1 Maneuver	-	-	584	-	97	452
Stage 1	-	-	-	-	256	-
Stage 2	-	-	-	-	619	-
Time blocked-Platoon, %	-	-	0	-	0	0
Mov Capacity-1 Maneuver	-	-	584	-	97	452
Mov Capacity-2 Maneuver	-	-	-	-	97	-
Stage 1	-	-	-	-	256	-
Stage 2	-	-	-	-	619	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	13
HCM LOS	-	-	B

Minor Lane / Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Cap, veh/h	452	-	-	584	-
HCM Control Delay, s	13	-	-	0	-
HCM Lane V/C Ratio	0.01	-	-	-	-
HCM Lane LOS	B	-	-	A	-
HCM 95th-tile Q, veh	0.0	-	-	0.0	-

Notes

~ : Volume Exceeds Capacity; \$: Delay Exceeds 300 Seconds; Error : Computation Not Defined

Intersection: 3: SH 42 & South Boulder Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	L	T	TR	L	L	T	T	R	L	L	T
Maximum Queue (ft)	129	151	172	162	91	131	226	215	14	54	64	100
Average Queue (ft)	52	85	89	76	28	69	124	115	0	24	50	66
95th Queue (ft)	123	139	149	139	67	114	191	188	10	52	74	94
Link Distance (ft)			171	171			1996	1996				65
Upstream Blk Time (%)	0	0	0	0						0	7	22
Queuing Penalty (veh)	0	0	1	0						0	0	27
Storage Bay Dist (ft)	250	250			235	235			280	225	225	
Storage Blk Time (%)	0	0	0				0			0	7	22
Queuing Penalty (veh)	0	0	0				0			0	5	23

Intersection: 3: SH 42 & South Boulder Road

Movement	NB	SB	SB	SB	SB	SB
Directions Served	TR	L	L	T	T	R
Maximum Queue (ft)	84	25	138	236	197	73
Average Queue (ft)	47	3	37	131	90	15
95th Queue (ft)	82	17	94	201	169	57
Link Distance (ft)	65			738	738	
Upstream Blk Time (%)	7					
Queuing Penalty (veh)	8					
Storage Bay Dist (ft)		170	170			300
Storage Blk Time (%)			0	2		
Queuing Penalty (veh)			0	1		

Intersection: 5: Access A & South Boulder Road

Movement	EB	WB	NB	NB
Directions Served	TR	L	L	R
Maximum Queue (ft)	8	43	28	52
Average Queue (ft)	0	8	5	13
95th Queue (ft)	8	32	22	40
Link Distance (ft)	293			318
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		60	60	
Storage Blk Time (%)		0		0
Queuing Penalty (veh)		0		0

Intersection: 7: Access B & South Boulder Road

Movement	WB	WB	WB	NB	NB
Directions Served	L	T	T	L	R
Maximum Queue (ft)	48	22	15	30	42
Average Queue (ft)	9	1	1	4	12
95th Queue (ft)	33	10	9	20	37
Link Distance (ft)		107	107	240	240
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	100				
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 8: SH 42 & Access D

Movement	EB	NB
Directions Served	R	T
Maximum Queue (ft)	27	202
Average Queue (ft)	1	38
95th Queue (ft)	11	130
Link Distance (ft)	122	358
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9: Access C & South Boulder Road

Movement	EB	EB	WB	NB
Directions Served	T	TR	T	R
Maximum Queue (ft)	19	6	39	17
Average Queue (ft)	1	0	1	1
95th Queue (ft)	13	4	29	11
Link Distance (ft)	107	107	171	240
Upstream Blk Time (%)	0		0	
Queuing Penalty (veh)	0		0	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 10: SH 42 & Cannon Circle

Movement	EB	EB	NB	NB	SB	SB
Directions Served	L	R	L	T	T	TR
Maximum Queue (ft)	183	54	53	90	168	164
Average Queue (ft)	82	21	14	24	35	46
95th Queue (ft)	148	49	43	68	111	122
Link Distance (ft)	262	262		704	358	358
Upstream Blk Time (%)	0					
Queuing Penalty (veh)	0					
Storage Bay Dist (ft)			250			
Storage Blk Time (%)						
Queuing Penalty (veh)						

Network Summary

Network wide Queuing Penalty: 66

Intersection: 3: SH 42 & South Boulder Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB
Directions Served	L	L	T	TR	L	L	T	T	R	L	L	T
Maximum Queue (ft)	162	171	223	194	142	190	247	250	57	59	64	108
Average Queue (ft)	117	144	173	153	50	88	138	132	2	17	50	80
95th Queue (ft)	172	188	223	210	104	146	213	213	33	49	78	104
Link Distance (ft)			171	171			1996	1996				65
Upstream Blk Time (%)	0	2	14	7						0	12	57
Queuing Penalty (veh)	0	0	77	38						0	0	133
Storage Bay Dist (ft)	250	250			235	235			280	225	225	
Storage Blk Time (%)	0	2	14			0	0	0		0	12	57
Queuing Penalty (veh)	0	6	40			0	1	0		0	18	57

Intersection: 3: SH 42 & South Boulder Road

Movement	NB	SB	SB	SB	SB	SB
Directions Served	TR	L	L	T	T	R
Maximum Queue (ft)	119	112	165	207	174	82
Average Queue (ft)	71	16	72	123	85	12
95th Queue (ft)	100	69	141	186	161	55
Link Distance (ft)	65			738	738	
Upstream Blk Time (%)	39					
Queuing Penalty (veh)	92					
Storage Bay Dist (ft)		170	170			300
Storage Blk Time (%)		0	0	1		
Queuing Penalty (veh)		0	0	1		

Intersection: 5: Access A & South Boulder Road

Movement	EB	WB	NB	NB
Directions Served	T	L	L	R
Maximum Queue (ft)	10	41	34	42
Average Queue (ft)	0	13	4	13
95th Queue (ft)	8	40	21	38
Link Distance (ft)	293			318
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		60	60	
Storage Blk Time (%)		0	0	0
Queuing Penalty (veh)		0	0	0

Intersection: 7: Access B & South Boulder Road

Movement	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	TR	L	T	T	L	R
Maximum Queue (ft)	221	146	57	13	22	33	54
Average Queue (ft)	35	13	13	1	1	5	11
95th Queue (ft)	137	78	44	7	13	23	38
Link Distance (ft)	282	282		108	108		240
Upstream Blk Time (%)	0				0		
Queuing Penalty (veh)	0				0		
Storage Bay Dist (ft)			100			100	
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 8: SH 42 & Access D

Movement	EB	NB	SB	SB
Directions Served	R	T	T	TR
Maximum Queue (ft)	29	377	4	2
Average Queue (ft)	3	295	0	0
95th Queue (ft)	18	443	4	2
Link Distance (ft)	122	358	65	65
Upstream Blk Time (%)		19		
Queuing Penalty (veh)		110		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 9: Access C & South Boulder Road

Movement	EB	EB	NB
Directions Served	T	TR	R
Maximum Queue (ft)	122	119	31
Average Queue (ft)	62	32	4
95th Queue (ft)	140	103	20
Link Distance (ft)	108	108	240
Upstream Blk Time (%)	5	1	
Queuing Penalty (veh)	28	6	
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 10: SH 42 & Cannon Circle

Movement	EB	EB	NB	NB	SB	SB
Directions Served	L	R	L	T	T	TR
Maximum Queue (ft)	229	91	192	614	153	158
Average Queue (ft)	102	19	27	202	39	52
95th Queue (ft)	211	67	131	563	112	123
Link Distance (ft)	262	262		704	358	358
Upstream Blk Time (%)	3	0		3		
Queuing Penalty (veh)	0	0		0		
Storage Bay Dist (ft)			250			
Storage Blk Time (%)			0	16		
Queuing Penalty (veh)			0	5		

Network Summary

Network wide Queuing Penalty: 613

Appendix D

Crash History

SH42 & South Boulder

2012

	<u>Date</u>	<u>Time</u>	<u>VIOLATION</u>	<u>No. Injured</u>	<u># of Cars</u>	<u>Conditions</u>
1	12-Jan	12:50	Reckless Driving/Careless	0	1	
2	04-Jan	10:55	Hit and Run	0	2	
3	04-Jan	11:56	Following to Closely	0	2	
4	03-Feb	22:30	Failed to stop at red light	0	2	
5	21-Mar	17:30	Reckless Driving/Careless	1	2	
6	25-Apr	7:40	Careless Driving	0	2	
7	01-Jun	13:10	Careless Driving	1	2	
8	08-Jun	12:44	Careless Driving	0	2	
9	22-Jun	11:23	Following to Closely	0	2	
10	03-Jul	13:35	Careless Driving	0	2	
11	09-Jul	16:02	Careless Driving	0	2	
12	12-Jul	8:30	Careless Driving	1	2	Bicycle
13	16-Jul	11:46	Following to Closely	0	2	
14	24-Jul	16:47	Following to Closely	0	2	
15	08-Aug	17:05	Following to Closely	0	2	
16	20-Aug	14:52	Hit and Run	0	1	
17	21-Sep	?	Following to Closely	0	2	
18	23-Oct	17:48	Careless Driving	0	2	
19	25-Oct	12:42	Failure to yield while turning left	1	2	
20	29-Oct	11:34	Following to Closely	0	2	
21	14-Nov	11:59	Careless Driving	0	2	
22	07-Nov	19:56	Unsafe lane change	0	2	
23	07-Nov	16:34	Failed to yield right of way	0	2	

12 TOTAL

1	Unsafe Lane Change
2	Hit and Run
7	Following to closely
10	Careless Driving
1	Failed to stop
2	Failure to yield

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SH42 & South Boulder

2011

	<u>DATE</u>	<u>TIME</u>	<u>VIOLATION</u>	<u>No. Injured</u>	<u># of Cars</u>	<u>Conditions</u>
1	12-Jan	12:50	Reckless Driving	0	1	Icey
2	20-Jan	9:15	Special Hazards	0	2	
3	11-Feb	12:21	Following too close	0	2	
4	30-Mar	14:16	Careless Driving	0	2	
5	18-May	14:56	Careless Driving	0	2	
6	11-Jun	16:15	Careless Driving	0	2	
7	02-Jul	14:50	Following too close	0	2	
8	01-Aug	17:08	Following too close	0	2	
9	25-Aug	13:20	Roadways Lanes for Traffic	0	2	
10	01-Sep	2:12	Careless Driving	0	2	
11	26-Sep	7:35	Careless Driving	0	2	
12	04-Nov	10:57	Careless Driving	0	2	
13	10-Nov	9:40	Following To Closely	0	2	
14	12-Nov	15:54	Hit & Run	0	2	
15	23-Dec	8:28	Special Hazard	0	2	

11 TOTAL

6	Carless Driving
4	Following too close
2	Special Hazards
1	Reckless Driving
1	Roadway Laned for Traffic
1	Hit & Run

15

2010

	<u>DATE</u>	<u>TIME</u>	<u>VIOLATION</u>	<u>No. Injured</u>	<u># of Cars</u>	<u>Conditions</u>
1	03-Jan	16:10	DUI	0	2	
2	11-Jan	15:58	Careless Driving	0	2	Sunlight
3	15-Jan	16:30	Hit & Run	0	2	
4	19-Jan	13:15	Careless Driving	1	2	
5	27-Jan	18:50	Failed to yield while turning left	0	2	
6	04-Feb	12:29	Following too close	0	3	
7	03-Feb	11:36	Failed to yield while turning left	0	2	
8	24-Feb	14:20	Careless Driving	2	2	
9	02-Mar	18:47	Hit & Run	0	2	
10	23-Mar	17:05	Special Hazards	0	2	Snow/slush
11	16-Apr	17:40	Careless driving	0	2	
12	16-May	13:59	Failed to yield on left turn	1	2	
13	14-Jun	13:02	Careless Driving	0	2	
14	22-Jun	15:00	Careless Driving	0	3	
15	22-Jun	17:18	Rear Ended- No citation issued	0	2	
16	29-Jun	11:15	Rear Ended- No citation issued	0	2	
17	12-Jul	15:00	Careless Driving	0	2	
18	10-Aug	13:05	Following too close	0	2	
19	14-Aug	17:07	Careless Driving	0	2	
20	07-Sep	15:50	Careless Driving	0	2	
21	09-Sep	17:30	Careless Driving	0	2	
22	22-Sep	15:30	Failed to yield	0	2	
23	23-Sep	11:40	Following too close	0	2	
24	23-Oct	16:31	Following too close	0	2	
25	26-Oct	22:57	Careless Driving	1	2	
26	03-Nov	21:30	Careless Driving	2	2	
27	29-Dec	19:25	Hit & Run	0	3	
28	31-Dec	22:48	Special Hazards	0	1	Snow/ice

10 TOTAL

1	DUI
4	Failed to yield on left turn
12	Carless Driving
4	Following too close
2	Special Hazards
3	Hit & Run
2	Rear Ended

28

SBR & Centennial Drive

2012

	<u>DATE</u>	<u>TIME</u>	<u>VIOLATION</u>	<u>No. Injured</u>	<u># of Cars</u>	<u>Conditions</u>
1	23-Jan	13:30	Failed to Yield	0	2	
2	04-Mar	15:30	Careless Driving	0	2	
3	20-Mar	23:30	Careless Driving	0	2	
4	29-Aug	5:47	Failed to stop at red light	0	2	
5	25-Sep	17:40	Following too close	0	2	
6	20-Nov	17:05	Careless Driving	1	2	
7	05-Dec	17:50	Careless Driving	0	2	

12 TOTAL

4	Careless Driving
1	Failed to yield
1	Failed to stop at red light
1	Following too close

7

2011

	<u>DATE</u>	<u>TIME</u>	<u>VIOLATION</u>	<u>No. Injured</u>	<u># of Cars</u>	<u>Conditions</u>
1	17-Feb	17:15	Careless Driving	0	2	
2	01-Jul	11:35	Following too close	3	2	
3	05-Jul	17:44	Careless Driving	0	2	
4						

11 TOTAL

2	Careless Driving
1	Following too close

3

2010

	<u>DATE</u>	<u>TIME</u>	<u>VIOLATION</u>	<u>No. Injured</u>	<u># of Cars</u>	<u>Conditions</u>
1	22-Jul	16:45	Following too close	0	3	
2	26-Oct	15:30	Following too close	0	2	
3	29-Oct	15:59	Following too close	0	3	
4	14-Dec	16:26	Unsafe Backing	0	2	

10 TOTAL

	Careless Driving
3	Following too close
1	Unsafe Backing

4

SBR & Main Street

2012

	<u>DATE</u>	<u>TIME</u>	<u>VIOLATION</u>	<u>No. Injured</u>	<u># of Cars</u>	<u>Conditions</u>
1	07-Feb	12:00	Following too close	1	2	
2	02-May	14:00	Following too close	0	2	
3	23-May	19:14	Following too close	0	2	
4	01-Sep	11:25	Following too close	0	2	
5	04-Oct	13:30	Following too close	0	2	
6	30-Nov	17:15	Following too close	0	2	
7	12-Dec	11:55	Following too close	0	2	

12 TOTAL

7 Following too Close

7

2011

	<u>DATE</u>	<u>TIME</u>	<u>VIOLATION</u>	<u>No. Injured</u>	<u># of Cars</u>	<u>Conditions</u>
1	08-Jan	12:10	Disregarded RR Signal	0	1	
2	30-Jun	12:40	Careless Driving	0	2	
3	17-Aug	18:50	Careless Driving	0	2	

11 TOTAL

2 Careless Driving
1 Disregarded RR Signal

3

2010

	<u>DATE</u>	<u>TIME</u>	<u>VIOLATION</u>	<u>No. Injured</u>	<u># of Cars</u>	<u>Conditions</u>
1	17-Aug	17:23	Following too close	0	2	
2	07-Sep	17:00	Following too close	0	2	
3						

10 TOTAL

2 Following too closely

2

2009

	<u>DATE</u>	<u>TIME</u>	<u>VIOLATION</u>	<u>No. Injured</u>	<u># of Cars</u>	<u>Conditions</u>
1	22-Jul	10:00	Following too close	0	2	
2	06-Oct	10:55	Roadways laned for traffic	0	2	
3	18-Nov	17:16	Following too close	1	2	

09 TOTAL

2 Following too closely
1 Roadways laned for traffic

3

VARIOUS ACCIDENTS ALONG SH42

2012

	<u>Date</u>	<u>Time</u>	<u>SH42 at</u>	<u>VIOLATION</u>	<u>No. Injured</u>	<u># of Cars</u>	<u>Condition</u>
1	16-Jul	17:34	Harper St	Following to Closely	0	2	
2	23-Aug	17:13	S. 104th St	Failed to yield while turning left	3	2	
3	13-Dec	12:39	South St.	Following to Closely	0	2	
4	13-Sep	20:15	Harper St	Careless Driving	0	2	
5	03-Oct	18:10	Griffith	Careless Driving	0	3	
6	07-Nov	15:43	Harper St	Pending	3	2	1 Fatality

12 TOTAL

1	Failed to yield while turning
2	Carless Driving
1	Pending
2	Following too Close

6

SH42 (Courtesy Rd.) - Various

2011

	<u>DATE</u>	<u>TIME</u>	<u>SH42 at</u>	<u>VIOLATION</u>	<u>No. Injured</u>	<u># of Cars</u>	<u>Condition</u>
1	09-Jan	9:43	Via Capri	Special Hazards	0	1	Icey
2	09-Jan	11:11	Tyler	Special Hazards	0	1	Icey-Sgn Dmg
3	19-Jan	16:24	Griffith	Special Hazards	0	1	
4	25-Jan	6:33	1219 Courtesy	Careless Driving	1	2	Icey
5	03-Feb	19:20	Griffith	Special Hazards	0	1	
6	07-Feb	18:00	Spruce	Failed to yield while turning left	0	2	Sgn Dmg
7	12-Feb	6:55	Tyler	Hit & Run	0	1	
8	22-Feb	13:30	1301. Sblldr. Rd.	Careless Driving	1	2	
9	14-Mar	17:30	Griffith	Careless Driving	0	3	
10	25-Mar	12:50	833 Courtesy	Special Hazard (Medical Condition)	1	1	
11	15-Jun	13:26	Short St.	Following too close	0	2	
12	24-Jun	19:05	Eldorado Lane	Careless Driving	0	2	
13	26-Jun	16:55	Ridgeview	Careless Driving	0	2	
14	28-Jun	17:00	at Griffith	Following too close	0	2	
15	21-Jul	17:10	South St.	Careless Driving	3	4	
16	06-Aug	18:58	Short St.	Following too close	0	2	
17	09-Aug	15:40	Circle	Following too close	0	3	
18	31-Aug	15:31	Hecla Dr.	Following To Close	0	2	
19	25-Oct	16:50	Spruce St.	Followingly To Close	0	2	
20	14-Nov	17:55	Cannon	Careless Driving	0	2	
21	01-Dec	6:00	Spruce St.	Special Hazards	1	2	
22	21-Dec	19:51	104th St.	Special Hazard	0	1	Icey

11 TOTAL

7	Special Hazard
1	Failed to yield while turning
7	Carless Driving
1	Hit & Run
6	Following too Close

22

VARIOUS ACCIDENTS ALONG SH42

2010

	<u>DATE</u>	<u>SH42 at</u>	<u>VIOLATION</u>	<u>No. Injured</u>	<u># of Cars</u>	<u>Condition</u>
1	12-Jan	1100 Blk	Defective Vehicle	1	2	
2	13-Jan	Spruce	Failure to yield making L -turn	0	2	
3	02-Mar	Spruce	Following too closely	0	2	
4	12-Jun	Hecla	Failed to yield at stop sign	0	2	
5	16-Jun	Hecla	Following too closely	0	3	
6	07-Jul	Hecla	Carless Driving	0	3	
7	28-Jul	96th St	Reckless/careless Driving	0	2	
8	10-Sep	South St	Carless Driving	0	2	
9	07-Oct	CTC Blvd	Following too closely	0	2	
10	12-Oct	Griffith	Carless Driving	1	3	
11	13-Oct	Hecla	Turning Movements	0	2	
12	29-Oct	1200 Blk	Carless Driving	1	3	
13	29-Oct	1219	Following too closely	0	3	
14	12-Nov	Griffith	Following too closely	0	2	
15	01-Dec	Spruce	Failed to yield while turning	0	2	
16	11-Dec	Paschal	Carless Driving	0	2	

10 TOTAL

1	Defective Vehicle
3	Failed to yield while turning
6	Carless Driving
5	Following too closely
1	Failed to yield at stop sign

16

SH42 (Courtesy Rd.) - Various

2009

	<u>DATE</u>	<u>SH42 at</u>	<u>VIOLATION</u>	<u>No. Injured</u>	<u># of Cars</u>	<u>Condition</u>
1	30-Jun	Lock St.	Failed to yield while turning left	1	2	
2	15-Jul	Spruce St.	Carless Driving	1	3	
3	14-Jul	South Boulder Rd.	Careless Driving	1	2	
4	30-Jul	Griffith St.	Careless Driving	1	2	
5	31-Jul	CTC Blvd.	Failed to yield at intersection	1	2	Bicycle
6	19-Aug	South Boulder Rd.	Failed to yield at stop sign	0	2	
7	02-Oct	S. 104th	Failed to yield while turning left	1	3	
8	6-Oct 16:00	Pine	Following too close	1	4	
9	25-Nov	Lock St.	Careless Driving	1	2	
	04-Dec	Spruce	Careless Driving	2	2	

09 TOTAL

2	Failed to yield while turning left
1	Failed to yield at intersection
1	Failed to yield at stop sign
5	Carless Driving

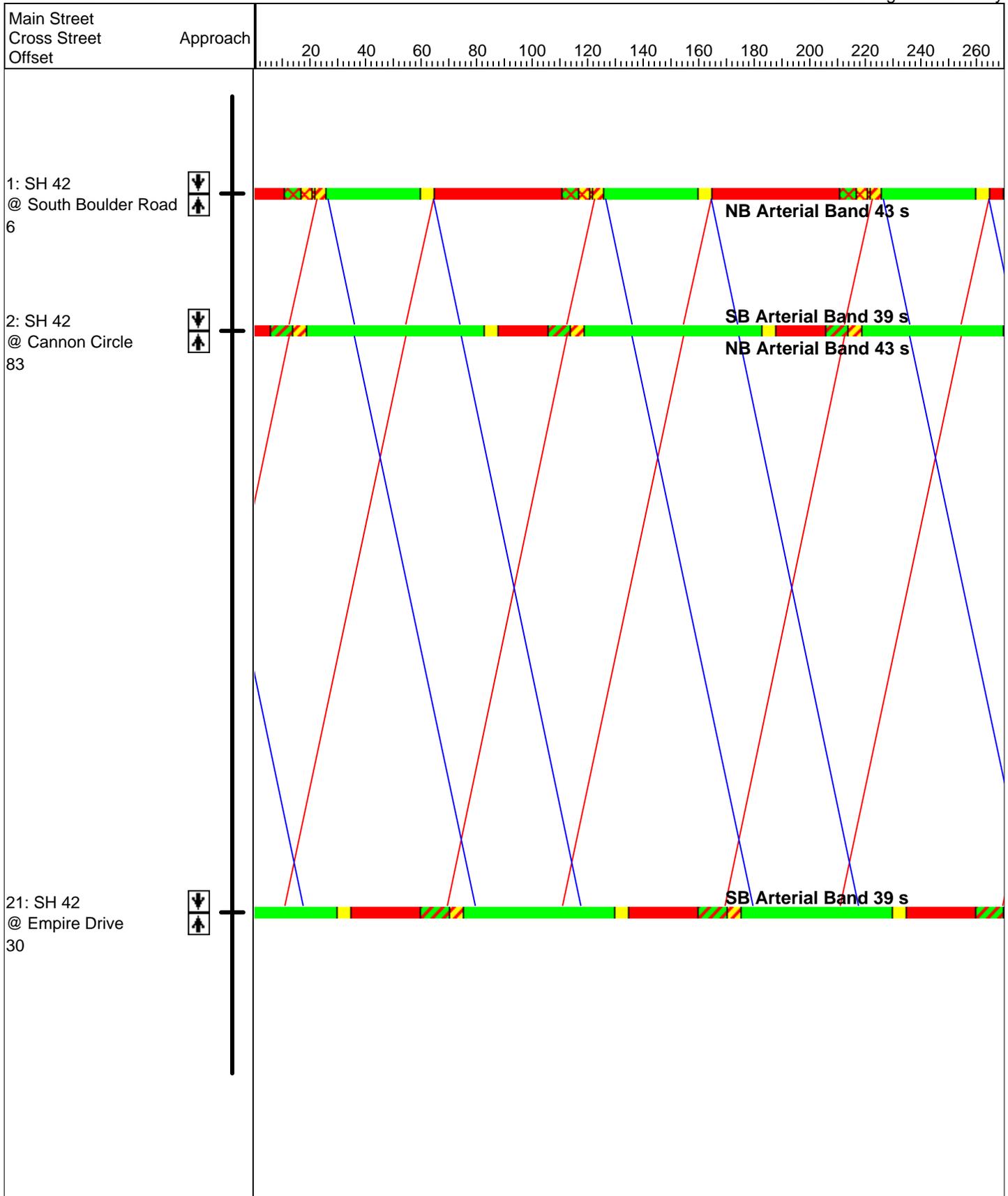
9

Appendix E

SH 42 Time Space Diagrams

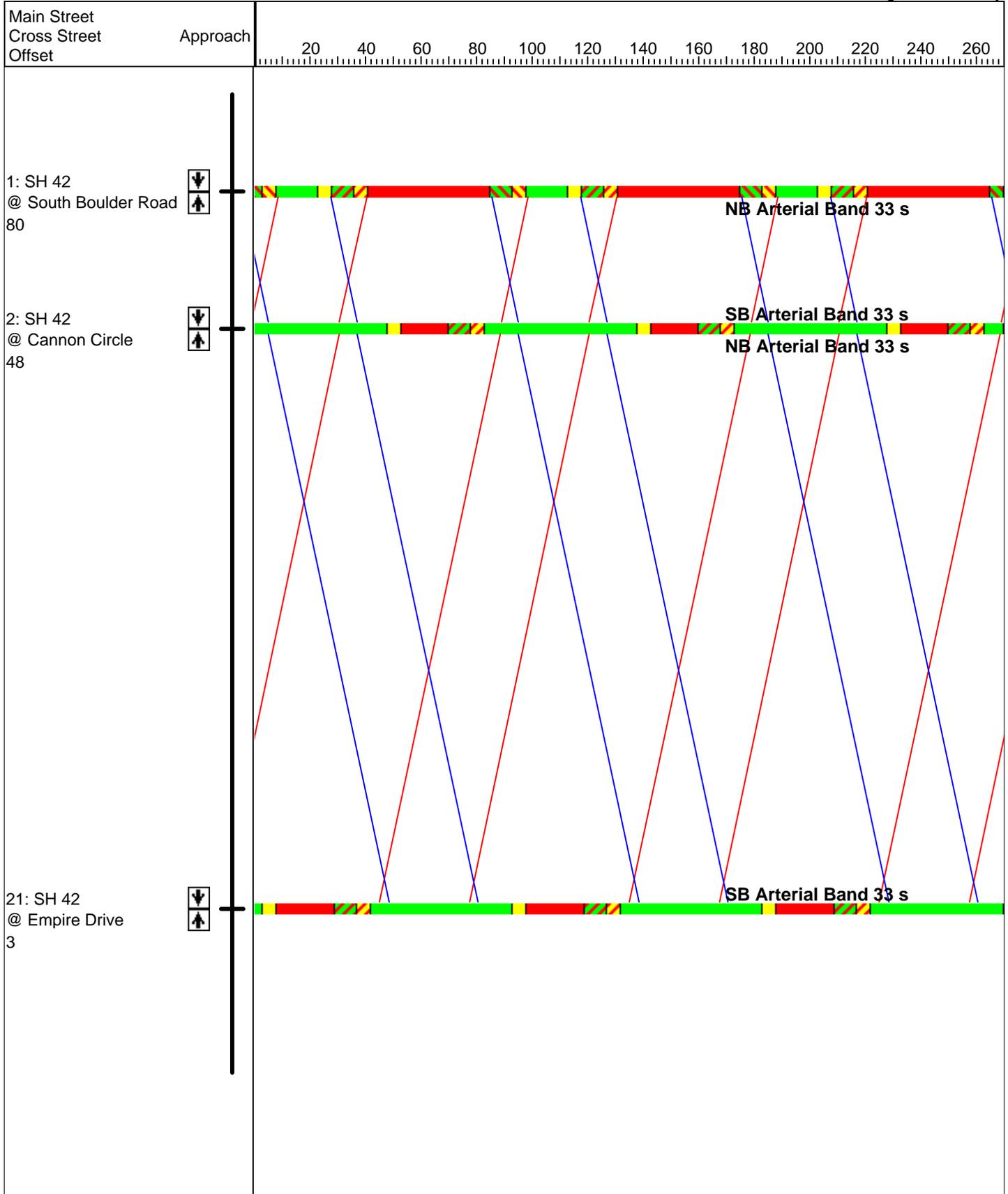
Time-Space Diagram - SH 42
Coal Creek Station

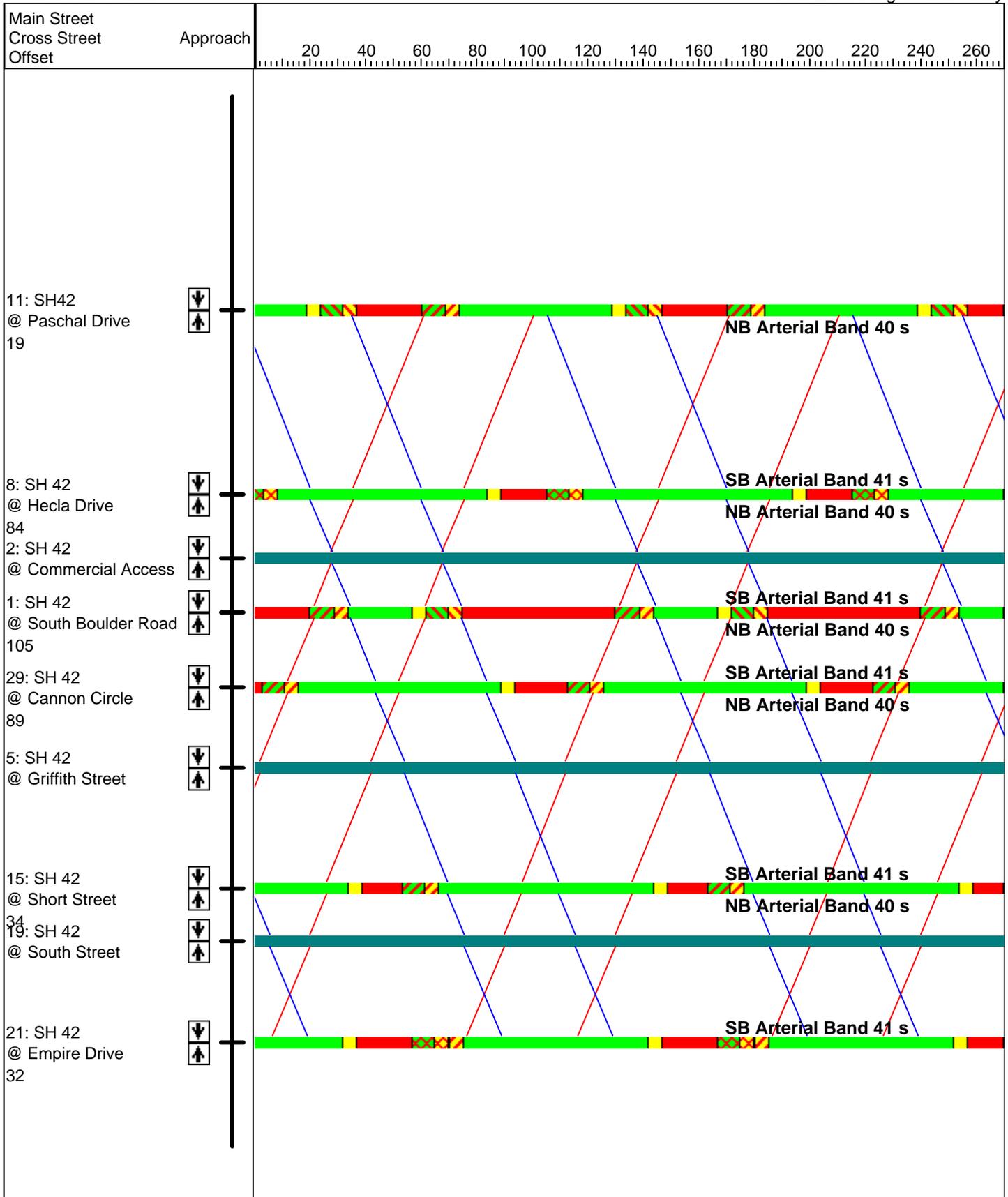
Timing Plan: AM Peak
Year 2015 Progression Study

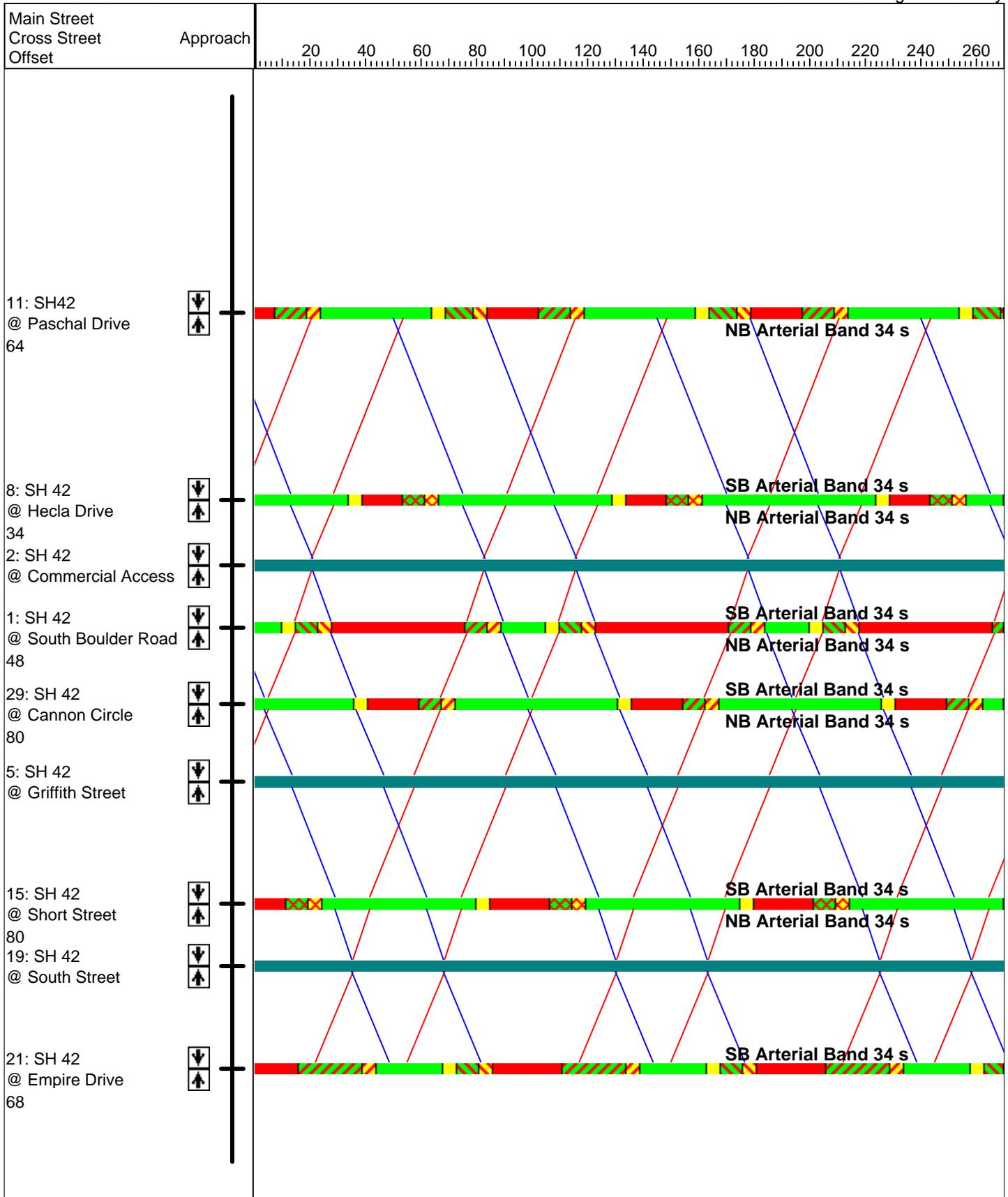


Time-Space Diagram - SH 42
Coal Creek Station

Timing Plan: PM Peak
Year 2015 Progression Study









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PROTECTION DISTRICT



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HEADQUARTERS: 303.666.6595 | FAX: 303.666.7659
LOUISVILLEFIRE.COM

February 18, 2016

Scott Robinson, Planner II
City of Louisville
749 Main Street
Louisville Colorado 80027

Re: Coal Creek Station

Dear Mr. Robinson,

I have reviewed the referral for the above address and I have listed my comments below.

1. The emergency access plan needs to show the bumper swing and the ladder swing in addition to the wheel path.
2. The emergency access plan needs to show the turning radiuses on the map that I highlighted and red lined on the emergency access plan.
3. Add fire hydrants to accommodate the fire department connection requirement per NFPA. See redline and highlighted areas on the utility map.

Please feel free to call me if you have any questions or would like to discuss further.

Sincerely,

Chris Mestas
Fire Marshal

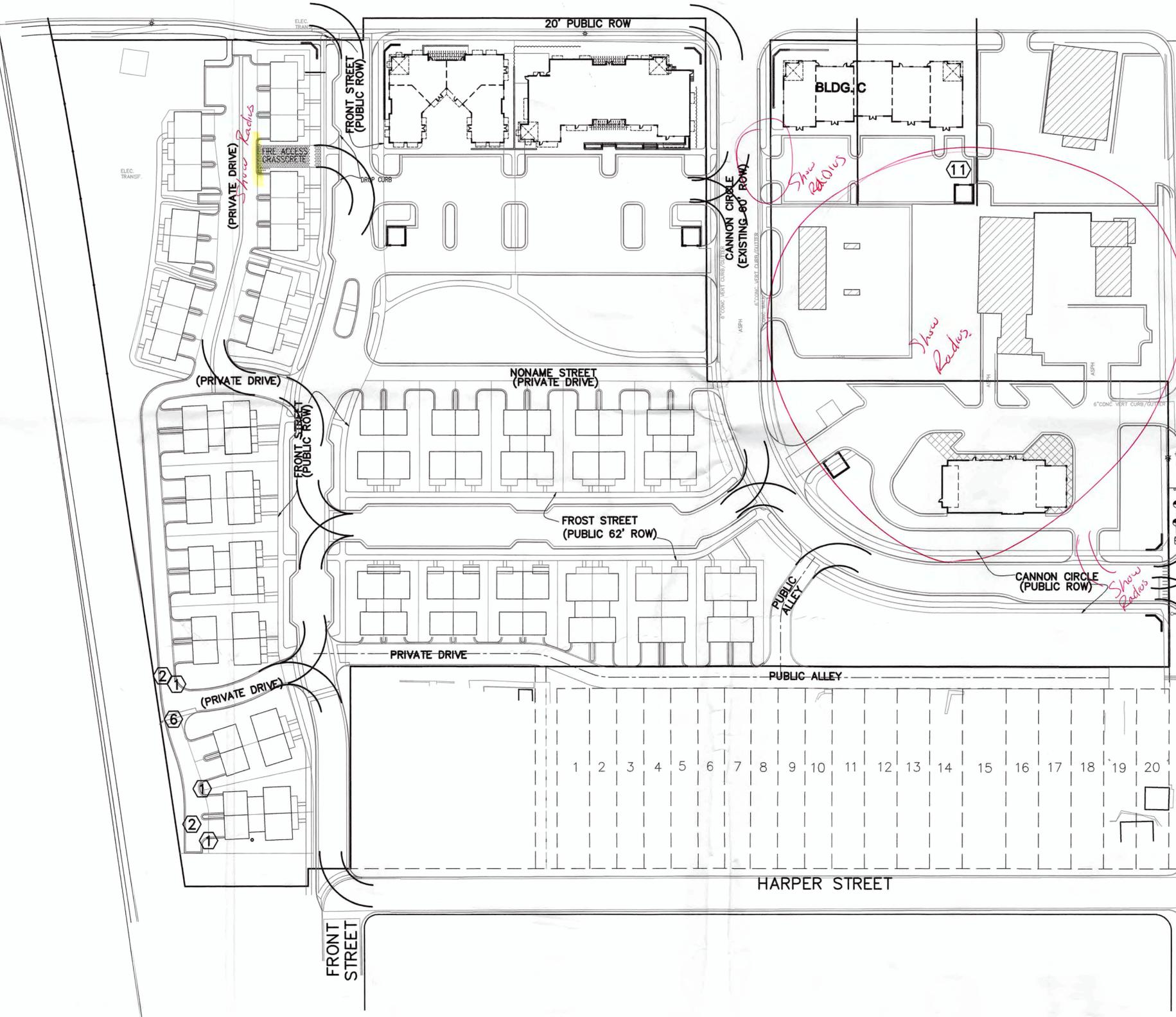
N 1/4 CORNER SECTION 8

NORTH LINE NE 1/4, SECTION 8
BASIS OF BEARING

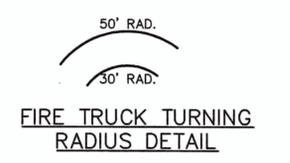
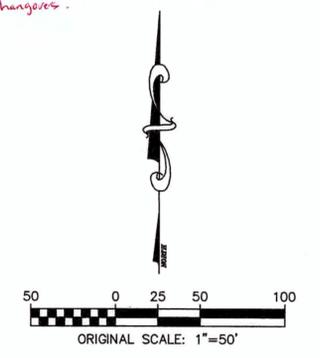
N 89°58'20" W 2642.02'

SOUTH BOULDER ROAD NORTH LINE NE 1/4, SECTION 8

NE CORNER SECTION 8
T1S, R69W, 6TH P.M.



Provide Emergency access
Plan showing with bumper or Ladder
Swings or hangers.



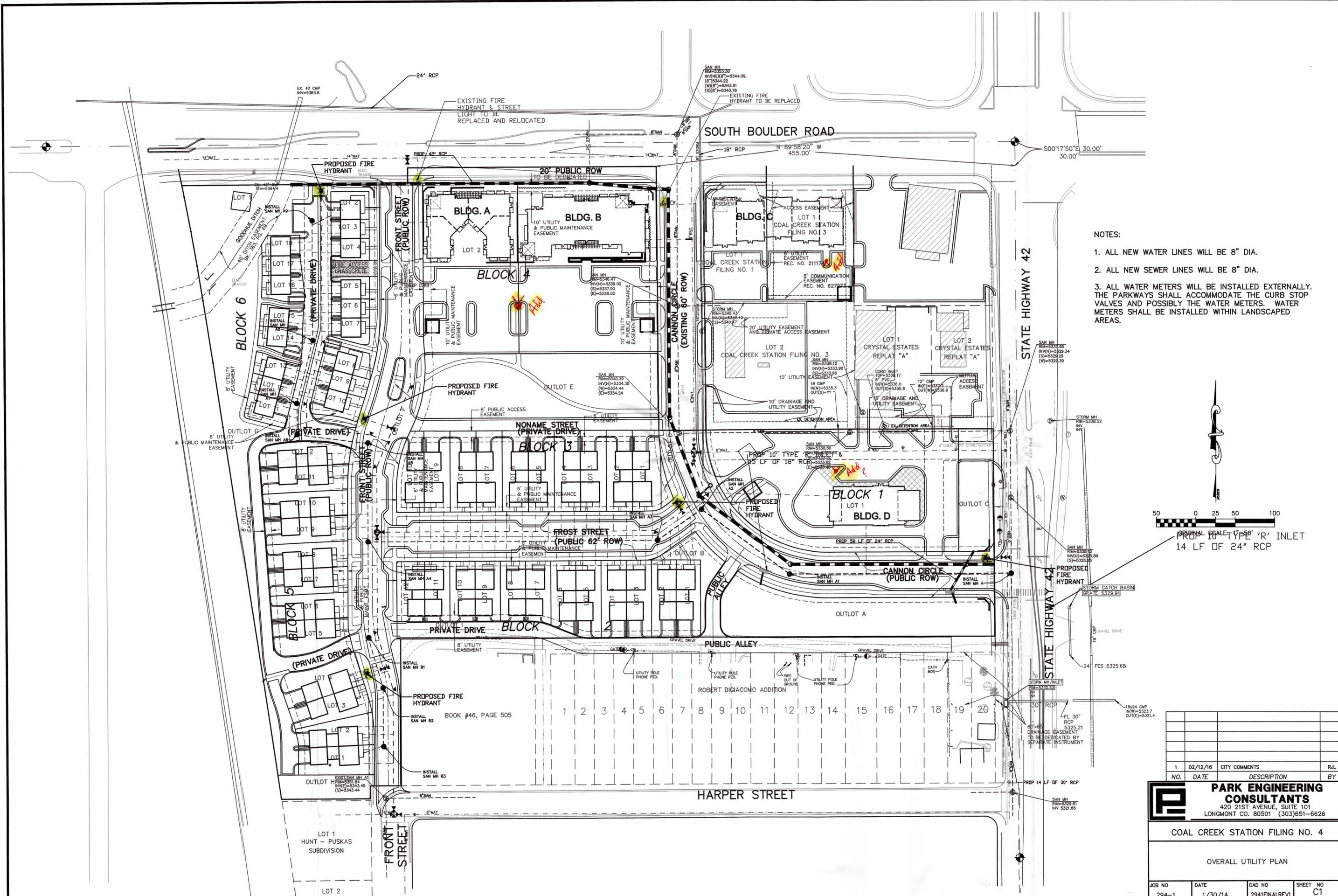
NO.	DATE	DESCRIPTION	BY
1	02/12/16	CITY COMMENTS	R.L.

PARK ENGINEERING CONSULTANTS
 420 21ST AVENUE, SUITE 101
 LONGMONT CO. 80501 (303)651-6626

COAL CREEK STATION FILING NO. 4

TURNING RADIUS PLAN

JOB NO	DATE	CAD NO	SHEET NO
294-1	1/30/14	2941FINALREV1	7 OF 7



- NOTES:
1. ALL NEW WATER LINES WILL BE 8" DIA.
 2. ALL NEW SEWER LINES WILL BE 8" DIA.
 3. ALL WATER METERS WILL BE INSTALLED EXTERNALLY. THE PARKWAYS SHALL ACCOMMODATE THE CURB STOP VALVES AND POSSIBLY THE WATER METERS. WATER METERS SHALL BE INSTALLED WITHIN LANDSCAPED AREAS.



PROPOSED 6" DIA. TYPE 'R' INLET
14 LF OF 24" RCP

NO.	DATE	CITY COMMENTS	R/L
1	02/12/16	CITY COMMENTS	R/L

PARK ENGINEERING CONSULTANTS
 420 21ST AVENUE, SUITE 101
 LONGMONT CO. 80501 (303)651-6626

COAL CREEK STATION FILING NO. 4

OVERALL UTILITY PLAN

JOB NO	DATE	CAD NO	SHEET NO
294-1	1/30/14	2941FINALREV1	C1

To: Scott Robinson, Planner II
CC: Kurt Kowar, Cameron Fowlkes, Joliette Woodson
From: Craig Duffin
Date: 4/7/16
Subject: Coal Creek Station Filing 4, Final PUD/Plat and Drainage Report – 4th Review

Public Works reviewed the above as well as the February 11, 2016 responses and has the following comments:

GENERAL

1. *Again*, please provide formal approval of the proposed development and changes to Cannon Circle, on site detention, access, etc. from the developer of Crystal Estates. Per Crystal Estates development agreement, the developer receives recovery for the construction of ½ of Cannon Circle. Also, Mr. Fordyce shall formally request or deny his legal claim for street recovery. Applicant shall also provide formal approval of the proposed development and changes to Cannon Circle and on site detention from the owner of the car wash, 1650 Cannon Circle LLC,

TRAFFIC IMPACT STUDY

1. The applicant shall submit a final traffic impact study in PDF.
2. The applicant shall revise Section 2.2; South Boulder Road/State Highway 42 is owned by CDOT and maintained by the City. *Will confirm information provided in PDF.*
3. Discuss how Highway 42/ Cannon Circle changes from a LOS B to an LOS A in 2035? State Highway 42 is not planned for 4 thru lanes. The applicant shall revise the report to match the Highway 42 Corridor plan. *Will confirm information provided in PDF.*
4. There are several reduced cross sections to address a high volume of pedestrian movement or speeding traffic. Provide data/information that will support the traffic calming devices proposed. *No data provided supporting the proposed level of traffic calming. Protected on street parking areas are difficult and time consuming to maintain. Request applicant provide snow plowing /removal and street sweeping of these parking areas on Front and Frost Streets. Keep in mind that City snow plowing efforts will windrow material to the right adjacent parking areas.*

PUD

Sheet A0.0 - Cover Sheet

1. *The existing south alley as depicted is not acceptable for City maintenance due to existing legal status, right of way width, design and terminal end. The public portion of*

- the proposed south alley has longitudinal split ownership to the west, "terminal/dead end to the east and inverted cross section. Staff does not support acceptance of the south alley for City maintenance. Request the alley be vacated and/or HOA provide complete maintenance of "public" portion of alley surfacing as proposed.*
2. *Noted that cross sections of the non-standard street/ right of way widths were provided with the Plat. This information with limits of HOA and City maintenance should be on the PUD. Also request a note be added indicating that damages caused to concrete median areas or reduced width areas due to vehicular impacts shall be repaired at the expense of the HOA.*
 3. *Again, the SH42 access to Block 2 shall be a right in/right out. Applicant shall add an island at the entry to restrict turning movements. Provide CDOT approval of the relocation of Cannon Circle and the additional access point between S. Boulder Road and Cannon Circle.*
 4. **Fire Marshall** *to accept fire access lane as proposed.*
 5. *Applicant shall note the City revised its water tap regulations. Commercial tap fee based on annual demand. Landscape demand is based on 15 gal/square foot of irrigated landscape. Annual water demand data/calculation shall be provided with building permit information.*
 6. *Noted the 38.02 ft. wide City of Louisville Exclusive Utility Easement on the plat. The exclusive utility easement width may be modified dependent on utility location and depth as shown on civil plans. Again, typically a right of way vacation is conveyed to each adjoining property owner so the south half becomes part of Coal Creek Station 4 and the north half part of the un-designated. This property transaction requires special treatment and possibly assistance from the City Attorney.*
 7. *Again, per Municipal Code, the applicant shall add surrounding zoning, subdivisions and existing utilities to the plan. Information not provided.*
 8. *Again, the applicant shall add platted subdivisions to plan. Make sure property lines are shown correctly.*
 9. *Again, provide turning templates at all intersections to determine if emergency access is adequately provided. Also provide turning template at intersections for trash trucks and larger trucks that will be using the proposed streets. The results of the evaluation may impact intersection corner radius.*
 10. *Revise the limits of City/Association maintenance on the PUD.*
 11. *Private streets and access drives shall be clearly defined by the use of concrete pans, drive ramps, etc. Staff prefers the use of ramp drives with detached walks at access points to private property. The back edge of walk at a Ramp Drive installation clearly indicates the limits of private /public improvements. Staff requests a defined delineation between private and public improvements and subsequent maintenance. Delineation was provided however the current plan does not address recent comments. Also as an example, referring to Front Street, the right of way line is not the limit of city maintenance at private drive locations.*
 12. *Again, the reduced cross sectional areas within several segments of public roadway will require "No Parking" signage and possibly centerline pavement marking to better*

channelize traffic. Request the HOA maintain the pavement marking for parking spaces or delete the item from the PUD. Applicant shall indicate if the protected parking lanes are for the local residents or the general public. These parking areas appear for the benefit of the adjacent buildings.

13. Please confirm that the S. Boulder Rd. eastbound right turn taper at Front Street and the Cannon Cr. eastbound right turn taper at SH 42 are of adequate length. *Will confirm on civil plans.*
14. *Plan note stipulates the vacation of existing Caledonia Place Sub. and references a sheet C6. Sheet C6 not included in plan. Hence it appears the document is incomplete for staff review. Provide information for staff review, comment and possible revision.*
15. *Lots 19 and 20 of Robert DiGiacomo Addition will be negatively impacted by the development and requirement for dedication of a drainage easement. Planning Department to determine if the offsite encumbrance necessitates a replat. Will the reduced lot sizes meet current code requirements?*
16. *Applicant to mention the piping of the Goodhue Ditch on the PUD.*
17. *The Front Street southerly connection to Harper Street is not completely clear. Applicant to provide a scaled blow up of the alignment with existing and proposed improvements to determine if geometrics and right of way is acceptable.*
18. *Applicant shall confirm that information required to be included with the PUD is actually submitted (names of surrounding subdivisions, utilities, topo, lot number/tract number directly east new Front Street connection, existing south alley drives, etc.)*

Sheet A1.0 – Site Plan

1. *Confirm the SH 42 improvements depicted on Cannon Cir. Intersection Detail are up to date.*
2. *Has CDOT approved the additional Right in/Right out between S Boulder Rd and Cannon Circle?*
3. *If the right of way is available and grades are satisfactory along SH 42, can portions of the walk be detached from the curb?*

Civil Engineering Plans, Overall Utility Plan, Sheet C1

1. *The existing 18" RCP connects to the new storm sewer in Cannon Circle at Block 1. Staff previously mentioned the existing 18" storm sewer needed realignment. The developer of Kestrel Subdivision has provided funding for the replacement of a portion of 18" RCP in S Boulder Road with larger diameter pipe. Staff will request replacement of the existing 18 " RCP mentioned with reimbursement up to the new northern manhole on Cannon Circle, south of S Boulder Road. The applicant shall provide storm facilities to convey the piped releases from Steel Ranch South, Christopher Village and the Kestrel development thru the site. The City will reimburse the developer for conveyance costs for the excess Goodhue Ditch flows and the Steel Ranch South connection. Public Works*

- staff is working with the Goodhue Ditch to determine if diverting ditch flows within Block 6 is appropriate thru this development.*
- 2. The utility locations and street connection at Front Street and Harper Street requires further evaluation. This will be accomplished during the civil engineering plan review process. The water main connection at Front/Harper intersection shall be made with an 8" tee and 8" gate valves with 6" downstream reducers.*
 - 3. The existing westerly extension of the 6" CI water main stub at Front Street and Harper Street intersection shall be abandoned.*
 - 4. Relocate lettering in conflict with other call outs.*
 - 5. Staff may request additional water and sewer utility line replacement after evaluation/investigation of existing conditions.*
 - 6. Again, plan indicates that the existing 24" RCP on S. Boulder Rd. is under the north curb line. The existing storm sewer is located in the center of the westbound right lane on S. Boulder Rd. The 24" RCP changes alignment (towards the north) at/near the Goodhue Ditch crossing. City has approved utility plans of the storm sewer work. Revise plan.*
 - 7. Fire Marshall** shall determine if the hydrant layout is acceptable for the development.

Civil Engineering Plans, Drainage Plan, No sheet number

- 1. The plan has no title block, border, legend, etc. Please resubmit in form consistent with other plans.*

Civil Engineering Plans, Grading Plan, Sheet C3

- 1. Relocate lettering in conflict with other call outs.*
- 2. Some call outs are too small for reading, please enlarge.*
- 3. Confirm that a 10' Type R inlet will be installed in SH 42.*

FINAL PLAT

Cover Sheet, Sheet 1 of 7

- 1. Vicinity Map, delete "Cherry Street" and revise the correct location of S 96th Street.*
- 2. Sheet Index, 2. , delete one of the "." And left justify sheet title.*
- 3. Sheet Index,*
- 4. Sheets 5 and 7 should be part of the PUD set, not the Plat. The paving plan is not applicable as a planning document and not approved.*

Final Plat, Sheet 1 of 2

1. *Recent development, the Outlot Summary table was deleted and information was included in dedication language, notes and/or depicted clearly on Plat. Revise per City Attorney comments.*
2. *Again, Add plat notes regarding the dedication of Exclusive City of Louisville Utility Easements, Dry Utility Plan approval, lot drainage easements, minimum utility separation, emergency access, etc.*
3. *Vicinity Map, S 96th Street is an old alignment. S 96th Street was reconstructed and realigned in 2005. Suggest sing an updated vicinity map.*

Final Plat, Sheet 2 of 2

1. *Again, add radius at property corners with street intersection.*
2. *The 30' Exclusive Utility Easement within Block 6 for water and sewer mains appears to cross thru private property. The easement should not be cross over private property. In addition, staff requests a turnaround for sewer truck/trailer at north end of Block.*
3. *The emergency access easement within Block 6 is not shown on the plan.*
4. *South alley right of way is inadequate for City maintenance. City has no utilities within the alley hence the applicant or HOA shall maintain the alley.*
5. *The south right of way of Frost Street is deficient in width (39'). Considering a narrower street section, parking restrictions and walk along the west side of the street, the narrower right of way appears acceptable. Note on PUD indicates roadway is 1' to west of property line. Public Works staff reserves the right to shift the roadway westerly if right of way is inadequate for maintenance.*
6. *Indicate the S. Boulder Rd. dedication as 20' public right of way. Plat indicates "To Be Dedicated".*
7. *Again, the relocation of the existing Cannon Cr. intersection eliminates the street access point onto SH42. The Plat & PUD indicates a 24' wide access drive at the same location. CDOT shall provide comments concerning this unrestricted/restricted access point.*
8. *Staff reserves the right to request additional easements when civil engineering plans are submitted for review and approval.*
9. *Please add the S Boulder Road's south right of way line for northeast properties.*
10. *Again, the applicant shall add and label surrounding subdivisions.*

Street Sections, Sheet 5 of 7

1. *As mentioned previously, remove from Plat documents.*
2. *Section A-A, need easement for west walk. Section G-G, portion of west walk on private property – need easement. Section F-F, right of way width inadequate for City maintenance – HOA to maintain. Section D-D, need walk and surface maintenance easements. Sections H-H and I-I, why is the centerline offset? Add lane width/use to Sections.*

Paving Plan, Sheet 6 of 7

1. *As mentioned previously, remove from Plat documents.*

Turning Radius Plan, Sheet 7 of 7

1. *As mentioned previously, remove from Plat documents.*
2. *Does the Radius Detail include tire and body movement? Clarify on plan.*
3. *Indicate locations where the truck movements cross private property.*
4. *Fire Marshall to confirm access is acceptable.*

FINAL DRAINAGE REPORT

1. *Again, prepare the Final Drainage Report per requirements of the Drainage Criteria Manual.*
2. *Again, add the following information to the document:*
 - a. Street runoff calculations for curbing
 - b. Inlet calculations
 - c. Pipe sizing for proposed storm sewer system
 - d. Water Quality Features for the detention ponds, soil type information.
 - e. Orifice sizing
 - f. Overflow weir design/calculation, etc.
3. Section IV. Drainage Facility Design, on-site:
 - a. *Third paragraph, Basin W boundary revised. Is the last sentence regarding the capacity of the existing 42" CMP needed in the report?*
 - b. *Fourth paragraph – Again, add more basins so that curb flow calculations can be provided to confirm the 2/100 year event are conveyed per Drainage Criteria Manual.*
4. *The drainage report didn't indicate the release rates proposed for the developed site or the pass through flows (20cfs?). The allowable 2 year release of 0.24 CFS per acre and 100 year release of 1 per acre for the developed property were not mentioned. Also, offsite flows should be routed through the pond. Add information regarding replacement of the existing 18" line in S Boulder Rd, connection to the 24" storm sewer from Steel Ranch South, additional flows from Kestrel Subdivision and conveyance to the pond.*
5. *Again, Public Works Reserves the right to make further comments with the next submittal due to several items missing from the report.*
6. *Again, the applicant shall provide the following information in the Drainage Report*
 - a. Outlet structure details and design
 - b. Street Capacity calculations – Sub-basins need to be added to evaluate the street capacities
 - c. HGL calculations and profiles for all piping
 - d. Pipe sizing calculations
 - e. Emergency spillway locations and design
 - f. Water quality design for the pond
 - g. Inlet sizing calculations

- h. Page numbering for reference
7. *Historic Drainage – Off-site – Releases from the Kestrel Subdivision shall be added to the report. Please correct the text and drainage plan to reflect this information.*
 8. *Again, Drainage Facility Design – On-site - The applicant shall provide water quality calculations for the detention pond.*
 9. *Drainage Facility Design – Off-site – Item #2 will have flows in the interim. Indicate abandonment of the 18” RCP to the East, new storm sewer piping in S Boulder Rd due to Kestrel development. Report should include a calculation concerning the required flows that need to pass thru the development (without the Goodhue ditch). Public Works to confirm the 40cfs value.*

Drainage Plan

1. Delineate the inlets more clearly.
2. Add the existing S. Boulder Rd storm sewer. 24” RCP not indicated correctly and the Kestrel connection not shown.
3. *Change font to make call outs more visible.*
4. The applicant shall verify if any off site flows enter from the DiGiacomo addition. *Mention in report.*
5. Drainage Plan- The applicant shall remove the through cross pan on Front Street. Add storm sewer or regrade area for drainage. *Can this be regraded?*
6. *Again, drainage Plan- The applicant shall provide a detail for the outlet structure.*
7. *Staff reserves the right to make additional comments when final report and civil plans are submitted for review.*

ITEM: Case #16-001- ZN, Wedding/Event Center

PLANNER: Lauren Trice, Planner I

APPLICANT: Mark Danielson
 Taylor Avenue Holdings, LLC
 33611 Old Sopris Road
 Trinidad, CO 81082

OWNER: EJ Louisville Land LLC
 1512 Larimer Street, Suite 325
 Denver, CO, 80202

EXISTING ZONING: City of Louisville Planned Community Zoned District – Industrial (PCZD-I)

LOCATION: 167 & 199 Taylor Avenue, Louisville, CO

LEGAL DESCRIPTION: Lots 11 & 12, Block 1, Business Center at CTC

TOTAL SITE AREA: 10.77 acres

REQUEST: Resolution 9, Series 2016: A request for an amendment to Lots 11 & 12, Block 1 of the Business Center at CTC General Development Plan to allow for a Wedding Event Center on Lot 12.



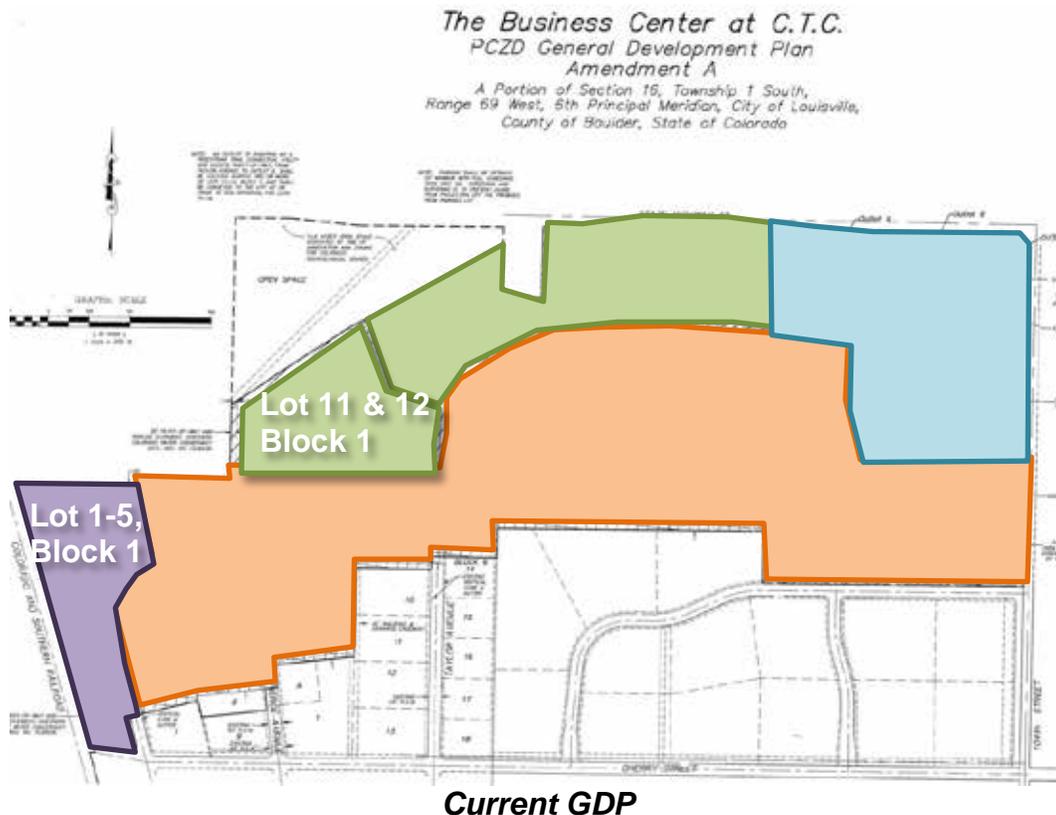
PROPOSAL:

The applicant, Mark Danielson of Taylor Avenue Holdings, LLC is requesting approval of an amendment to the Business Center at CTC General Development Plan (GDP) to allow for a wedding/event center at 167 Taylor Avenue. If the General Development Plan is amended as proposed, a wedding/event center would still require approval of a Special Review Use and Planned Unit Development. The applicant has not applied for a PUD or SRU at this time.

The lots are located in the northern part Colorado Technology Center (CTC) between Taylor Avenue and the Colorado Technology Center Open Space (Lot 11 & 12, Block 1 of the Business Center at CTC Subdivision). Three parcels within unincorporated Boulder County are directly to the west. The properties are both currently zoned Planned Community Zone District – Industrial (PCZD-I) and governed by the Business Center at CTC GDP with allowed uses limited to “office, industrial, or research/office and corporate uses” in the current sub area. The applicant is not requesting a change from PCZD-I. The request is for an expanded list of allowed uses in the GDP for Lots 11 & 12 to match the list of allowed uses for the sub area encompassing Lots 1-5, Block 1.

GDP AMENDMENT

The Business Center at CTC General Development Plan is broken into sub areas, each with a separate description of allowed uses. The request is to change the sub area for Lots 11 & 12, Block 1 and in doing so expand the list of allowed uses. The request is for an expanded list of allowed uses for Lots 11 & 12 to match the list provided for Lots 1-5, Block 1. The applicant is not requesting a change from PCZD-I zoning.



The current list of allowed uses for Lots 11 & 12, Block 1 reads as follows:

“Area to be used only for office, industrial, or research/office and corporate uses. All development irrespective of use shall be subject to the Louisville Commercial Development Design Standards, as in effect from time to time.”

The applicant is requesting a sub area change which would add a list Special Review Uses as follows:

“Area to be used only for office, industrial, or research/office and corporate uses. If office – the Louisville Commercial Development Design Standards and Guidelines shall apply as in effect from time to time, in industrial – CTC, City of other applicable Industrial Guidelines shall apply as in effect from time to time.

The following uses are uses by Special Review and may be permitted, if authorized through the City Special Review Use application process:

*Restaurants, indoor eating and drinking establishments, outdoor dining and other food service uses including but not limited to: delicatessens, **catering facilities, banquet rooms**, meeting rooms, and*

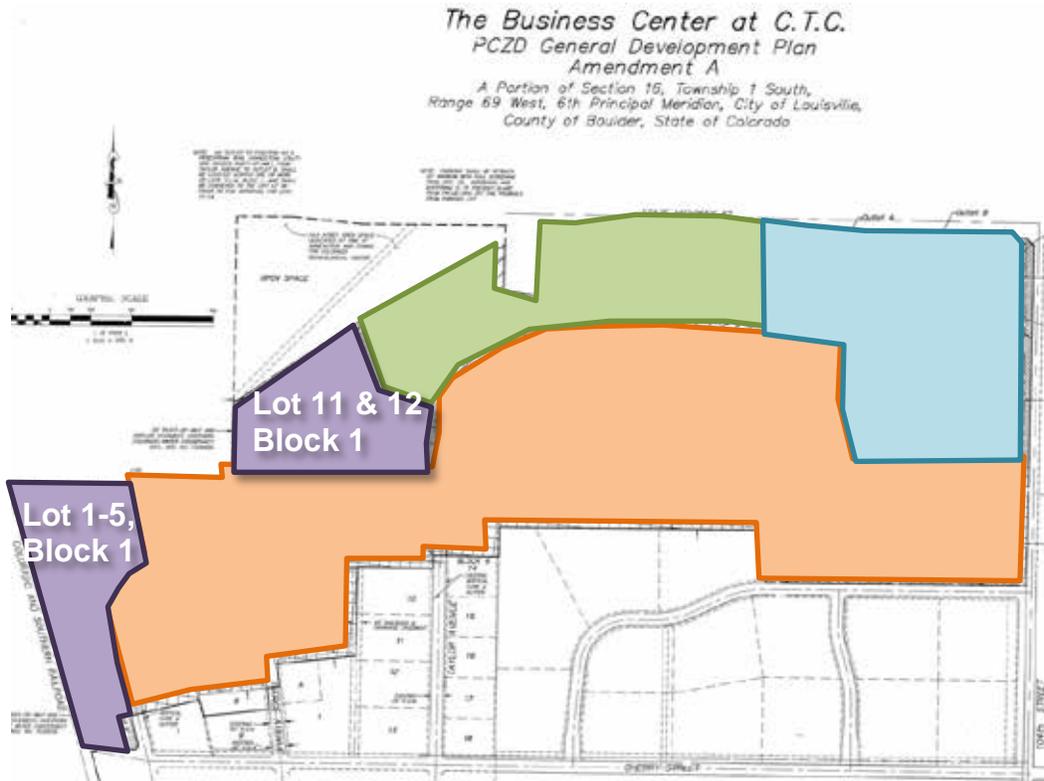
Medical and dental clinics and financial institutions, and

Studios for professional work or teaching of any form of fine arts, photography, music, drama or dance.

All other uses by Special Review shall be prohibited. No drive thru facilities for restaurant or financial institutions shall be allowed in this sub area.

All Special Review Uses in this sub area will be required to meet the Louisville Commercial Development Design Standards and Guidelines, as may be amended from time to time.”

The applicant is requesting the GDP amendment to this broader sub area to allow for a future wedding/event center on Lot 12. The proposed rezoning expands the allowable uses for both Lot 11 and Lot 12. If approved, the applicant intends to proceed with a PUD and SRU application for the proposed wedding/event center.



Proposed GDP Amendment

STAFF ANALYSIS

Section 17.72.060 guides staff's assessment of GDP amendments. The section states:

- A. *Any adopted planned community general development plan and supplementary development standards may be amended, revised or territory added thereto, pursuant to the same procedure and subject to the same limitations and requirements by which such plan was originally approved.*
- B. *The director of planning may permit amendments to the planned development community general plan, when such amendments will not affect an increase in the permitted gross density of dwelling units or result in a change in character of the overall development plan. Any such amendment by the director of planning shall have approval by the city council prior to the amendment becoming effective or the city council may direct such change be made as through subsection A of this section.*

Based on the above criteria, staff believes the request to amend the GDP to allow for a broader list of allowed uses for Lots 11 & 12, Block as stated for Lots 1-5, Block 1 will not "affect an increase in the permitted gross density of dwelling units or result in a change in character of the overall development plan". Any projects on Lots 11 & 12, Block 1 will still require a Planned Unit Development and will be evaluated based on the Commercial Development Design Standards and Guidelines.

2013 Comprehensive Plan

The City of Louisville Comprehensive Plan is reviewed to ensure GDP amendment requests are consistent with the long-range vision of the City.

The 2013 Comprehensive Plan calls out the Colorado Technology Center (CTC) as a Special District which includes “a mix of industrial, office, and research and development facilities”. Amending the GDP to allow for these properties to have a broader list of uses would still allow the property to provide “industrial, office, and research and development facilities”.

Under the Special Districts section of the 2013 Comprehensive Plan, Policy 3 encourages internal services which meet the daily needs of the people working in the district. The intention of the applicant is to provide a place for corporate events. The additional of catering and banquet facilities, along with other listed uses, has the potential to benefit the whole CTC.

Staff believes the request complies with the framework of the 2013 Comprehensive Plan.

City of Louisville Zoning Map

The City of Louisville Zoning Map is reviewed to ensure GDP amendment requests are compatible with surrounding properties,

The current City of Louisville Zoning Map shows this property has properties zoned PCZD-I to the south and east. The Colorado Technology Center Open Space is to the northwest. Three parcels within unincorporated Boulder County are directly to the west. Retaining the PCZD-I zoning and expanding the allowed uses will be consistent with the properties to the south and east. The additional uses will be evaluated through a Special Review Use, on a case by case basis, for their compatibility with the surrounding neighborhood.

STAFF RECOMMENDATION:

Staff recommends approval of Resolution 9, Series 2016, a request for an amendment to Lots 11 & 12, Block 1 of the Business Center at CTC General Development Plan to allow for a Wedding Event Center on Lot 12.

ATTACHMENTS:

1. Resolution No. 9, Series 2016
2. Application documents
3. Business Center at CTC GDP Amendment

**RESOLUTION NO. 09
SERIES 2016**

A RESOLUTION RECOMMENDING APPROVAL OF AN AMENDMENT TO LOTS 11 & 12, BLOCK 1 OF THE BUSINESS CENTER AT CTC GENERAL DEVELOPMENT PLAN TO ALLOW FOR A WEDDING EVENT CENTER ON LOT 12.

WHEREAS, there has been submitted to the Louisville Planning Commission an application for approval of an amendment to Lots 11 & 12, Block 1 of the Business Center at CTC General Development Plan to allow for a Wedding Event Center on Lot 12; and

WHEREAS, the City Staff has reviewed the information submitted and found that, subject to conditions, the application is compatible with the Louisville Zoning Map and the ; and;

WHEREAS, after a duly noticed public hearing on April 14, 2016, where evidence and testimony were entered into the record, including the findings in the Louisville Planning Commission Staff Report dated April 14, 2016, the Planning Commission finds the amendment to Lots 11 & 12, Block 1 of the Business Center at CTC General Development Plan should be approved.

NOW THEREFORE, BE IT RESOLVED that the Planning Commission of the City of Louisville, Colorado does hereby recommend approval of an amendment to Lots 11 & 12, Block 1 of the Business Center at CTC General Development Plan should be approved.

PASSED AND ADOPTED this 14^h day of April, 2016.

By: _____
Chris Pritchard, Chairman
Planning Commission

Attest: _____
Ann O'Connell, Secretary
Planning Commission

LAND USE APPLICATION

CASE NO. _____

APPLICANT INFORMATION

Firm: Mark Danielson

Contact: Mark Danielson

Address: 33611 Old Sopris Road
Trinidad, CO 81082

Mailing Address: Same

Telephone: (719) 680-2309

Fax: _____

Email: mark@downpourdw.com

OWNER INFORMATION

Firm: EJ Louisville Land LLC

Contact: Jim Vasbinder

Address: 1512 Larimer Street, Suite 100
Denver CO 80202

Mailing Address: Same

Telephone: office 303-223-2185

Fax: mobile 303-898-3907

Email: jvasbinder@etkinjohnson.com

REPRESENTATIVE INFORMATION

Firm: _____

Contact: Mark Danielson

Address: (above)

Mailing Address: _____

Telephone: _____

Fax: _____

Email: _____

PROPERTY INFORMATION

Common Address: 167 Taylor Ave

Legal Description: Lot 12 Blk 1
Subdivision Colorado Tech Center

Area: Louisville, CO Sq. Ft. 196,891

TYPE (S) OF APPLICATION

- Annexation
- Zoning
- Preliminary Subdivision Plat
- Final Subdivision Plat
- Minor Subdivision Plat
- Preliminary Planned Unit Development (PUD)
- Final PUD
- Amended PUD
- Administrative PUD Amendment
- Special Review Use (SRU)
- SRU Amendment
- SRU Administrative Review
- Temporary Use Permit: _____
- CMRS Facility: _____
- Other: (easement / right-of-way; floodplain; variance; vested right; 1041 permit; oil / gas production permit)

PROJECT INFORMATION

Summary: Request for an amendment to the CTC GDP to allow development of a Wedding/Event Venue. Currently this is a use allowed (by SUR) on lots 1-5; requesting same use authorization for Lot 12. (Lot is currently owned by EJ Louisville Land LLC/Etkins-Johnson, but under purchase contract to applicant.) _____

Current zoning: PCZD-I Proposed zoning: PCZD-I

SIGNATURES & DATE

Applicant: _____

Print: Mark Danielson

Owner: James D. Vasbinder

Print: James D. Vasbinder

Representative: _____

Print: Mark Danielson

CITY STAFF USE ONLY

- Fee paid: _____
- Check number: _____
- Date Received: _____

Mark Danielson
Taylor Avenue Holdings, LLC
33611 Old Sopris Road
Trinidad, CO 81082

Lauren Trice
Louisville Planning and Zoning
749 Main Street
Louisville, CO 80027

December 30, 2015

Re: Request for Amendment to the CTC GDP

Dear Lauren,

We respectfully request an amendment to the Colorado Tech Center GDP to allow development of a Wedding/Event Center on Block 1 - Lot 12, the site we have recently placed under contract, as well as Block 1 – Lot 11 to keep usage for the adjacent lots consistent.

Both lots are currently zoned PCZD-I in the GDP, but their specified usage includes “office, industrial or research/office, or corporate uses.” Lots 1-5, just to the west of our lot, also zoned PCZD-I, include a broader range of uses (by SUR), including “restaurants, indoor eating or drinking establishments, outdoor dining and other food service uses, including but not limited to delicatessens, catering facilities, banquet rooms, meeting rooms. . . .” Because the lots nearly adjacent to ours already allow our desired use, it seems that an amendment to allow such use (by SUR) on Lots 11 and 12 are clearly consistent with the intent of the development plan and should be a straightforward accommodation.

Our proposed use would be of benefit to the entire CTC. An event center on Lot 12 will be available for corporate parties, product introductions, charity benefits, and other events which businesses in the CTC typically can’t accommodate on their own premises. And when used as a wedding center, it will be used principally Friday nights and weekends, when other businesses in the CTC are closed. And broadening the usage for Lot 11 will enable other services to be offered the CTC if desired by future owners, without limiting their development options.

In addition, our proposed use provides a marketing and perception benefit to the CTC. Because such venues are competitive principally insofar as they create a striking context for a wedding or event, we will secure the services of a top tier architectural firm to design this building. We anticipate that it will be an award winning structure, gaining favorable media attention, like Pearl Izumi to the east. And Lot 12 is highly visible from the north. With its prominent visibility to the community, this building will help reinforce the upscale perception of the CTC and ensure its reputation as a desirable location and asset to the town of Louisville.

We anticipate bringing about 40 full time jobs to the area in the near term. And of course, by bringing 3 weddings to Louisville every week including an average of almost 600 wedding guests, the restaurants, hotels, and other service businesses will benefit as well.

While additional detail will obviously be forthcoming as we move through the PUD/SUR process, we have attached a few brief excerpts from our business plan for consideration during this amendment process.

Respectfully,

Mark Danielson
President, Taylor Avenue Holdings, LLC

Warehouse 29

Business Plan Excerpts

Executive Summary

Colorado brides trying to schedule a wedding right now can expect any of the popular venues to stretch their patience with every weekend fully booked at least one year in advance. Sometimes up to two years. And with the current stream of Millennials flooding into Colorado, the area will be asked to host 1000 more weddings each year by 2018. The market is crying for additional capacity.

In response, we will establish a premium, head-turning wedding venue featuring farm to table cuisine that will soon host some of the most beautiful weddings in the Denver/Boulder corridor. On a plot in the Colorado Tech Center in Louisville, the venue will be warehouse-inspired and finished in an industrial-chic aesthetic. (Hence the working name: *Warehouse 29*.) It will host both indoor and outdoor ceremonies. For the reception, we will feature the farm to table cuisine of a prestigious, Boulder based caterer. Our focus: offering an unforgettable experience both aesthetically and in terms of the bride's preparations. We'll be a one-stop-shop in which we provide not just a beautiful venue, but a wedding coordinator and catering in every package. Additional options will include adding cake, flowers and music, so brides can enjoy the most stress-free experience possible. She shops for dress and ring and we'll handle the rest.

During the week, the venue will serve as a corporate event facility for the Colorado Tech Center and other businesses in the area. With the same focus on upscale hospitality, it will host holiday parties, product introductions, charity benefits, etc, during either day or evening.

The structure will be approximately 10,000 SF with parking for 100. It will accommodate weddings up to 250 or events up to 400. Within 2 years of opening, we expect to create approximately 40 new jobs in the area.

Mark and Annie Danielson are the Principals and will be responsible for developing the concept, launching the venue and running the operations. Serial entrepreneurs, they have together launched, managed, and sold multiple businesses across numerous industries for 25 years out of Trinidad, CO. Sectors include design, hospitality, manufacturing, retail, and real estate development. Awards include "Co-CEOs of the Year" from *CoBiz Magazine* and "Best Social Responsibility Program <100 Employees" from the *American Business Awards* ("Stevies"). Annie's strength is creative and marketing while Mark focusses on strategy, operations and financial.

Barbara Goodrich is a partner in this new venture with a profit sharing stake. Barbara has launched and manages two wedding venues in Southern California. Over 15 years, she has fine-tuned a highly profitable business model. She will serve as tutor and consultant, giving Mark and Annie full access to her learnings, vendor relationships, financials, and operating systems.

Corporate Structure

Taylor Avenue Holdings, LLC is the holding company that will operate *Warehouse 29*. The LLC is owned exclusively by Mark & Annie Danielson. *Warehouse 29* will be leased and operated by Warehouse 29, LLC.

Why Louisville?

- The 4.5 acre site we've secured is on a bluff with a 180° panoramic view of the Front Range, from Flatirons to Longs Peak and beyond. The venue will be built to take full advantage of this stunning Colorado landscape. And it overlooks the town of Louisville. As receptions or events go into the night and the lights of Louisville come on, the view will be spectacular.
- Beyond the facility itself, success depends most heavily on the catering relationship. This venue will be just minutes away from Boulder, the foodie capital of Colorado and home to multiple world class farm-to-table caterers.

- The site is minutes away from both mid-range and premium hotels, from downtown Louisville’s restaurants and entertainment, and is easily accessed from Denver, Boulder and DIA. And it’s just a 45 minute drive from Fort Collins, which has few venues available. (Yes, that’s in view for Phase 2.)
- The City of Louisville has a reputation of being business friendly while still preserving the lifestyle of one of the most desirable communities in the USA.

PCZD General Development Plan Amendment A

A Portion of Northeast Quarter of Section 16, Township 1 South,
Range 69 West, 6th Principal Meridian, City of Louisville,
County of Boulder, State of Colorado

LEGAL DESCRIPTION

LAND USE SUMMARY

TOTAL AREA 160.96 AC.
PRESENT ZONING I (INDUSTRIAL)
PROPOSED ZONING PCZD-I - 132.85 AC
PCZD-C - 28.11 AC

PLANNING COMMISSION CERTIFICATE

APPROVED BY PLANNING COMMISSION THIS 9th DAY OF February 1999 BY THE PLANNING COMMISSION OF THE CITY OF LOUISVILLE, COLORADO.
RESOLUTION NO. 10 SERIES 1999
Belinda Bault CHAIRMAN
SECRETARY

CITY COUNCIL CERTIFICATE

APPROVED BY CITY COUNCIL THIS 6th DAY OF April 1999 BY THE CITY COUNCIL OF THE CITY OF LOUISVILLE, COLORADO.
ORDINANCE NO. 1295 SERIES 1999
Tom Davidson MAYOR
CITY CLERK

CLERK AND RECORDER CERTIFICATE

COUNTY OF BOULDER)
STATE OF COLORADO)
I HEREBY CERTIFY THAT THIS INSTRUMENT WAS FILED IN MY OFFICE AT 5:19 O'CLOCK, P.M., THIS 14th DAY OF JULY 1999, AND IS DULY RECORDED IN PLAN FILE P-48 F-3 #1 & 2.
FEE \$ 20.00 PAID \$ 20.00
FILM NO. N/A RECEPTION NO. 1960369

CHARLOTTE HOUSTON CLERK
Carol Jacobsen DEPUTY

OWNERSHIP SIGNATURE

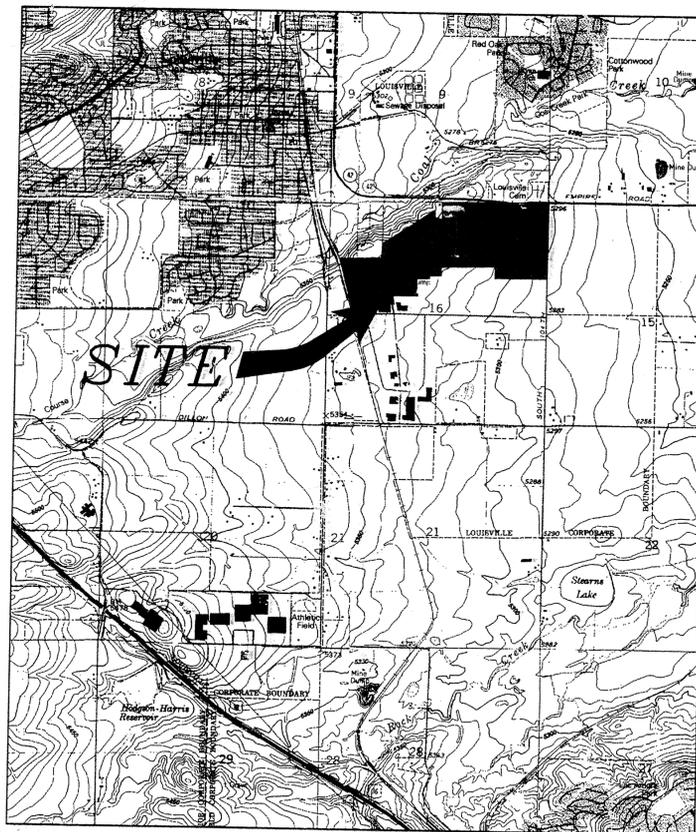
COLORADO TECH LAND COMPANY, L.C. A COLORADO LIMITED LIABILITY COMPANY
COMMUNITY DEVELOPMENT GROUP OF LOUISVILLE, MANAGER
Charles R. Bellock MANAGER

KEVIN BUCKLEY (LOT 2, BLOCK 1)

Kevin Buckley
KEVIN BUCKLEY

GEORGE A. TOPAKAS AND LURANIA K. TOPAKAS (LOTS 5, BLOCK 1)

George A. Topakas LURANIA K. TOPAKAS



VICINITY MAP

Property to be Zoned PCZD-I

A PART OF COLORADO TECHNOLOGICAL CENTER FIRST FILING, RECORDED IN PLAN FILE P-9, F-1, NOS. 38, 39 AND 40 TOGETHER WITH A PORTION OF THE NORTHEAST QUARTER OF SECTION 16, TOWNSHIP 1 SOUTH, RANGE 69 WEST, SIXTH PRINCIPAL MERIDIAN, BOULDER COUNTY, COLORADO, DESCRIBED AS FOLLOWS:

COMMENCING AT THE CENTER OF SAID SECTION 16; THENCE N 00°40'20" E 884.48 FEET ALONG THE NORTH-SOUTH CENTERLINE OF SAID SECTION 16 TO THE POINT OF BEGINNING;

THENCE N 00°40'20" E 146.41 FEET;
THENCE S 89°47'13" E 1308.73 FEET;
THENCE S 00°42'45" W 258.57 FEET;
THENCE S 89°47'04" E 1283.72 FEET TO THE WESTERLY RIGHT OF WAY OF 104TH STREET;
THENCE N 00°45'13" E 1672.00 FEET ALONG SAID WESTERLY RIGHT OF WAY TO THE SOUTHERLY RIGHT OF WAY OF EMPIRE ROAD;
THENCE ALONG SAID SOUTHERLY RIGHT OF WAY THE FOLLOWING COURSES:

1. N 44°22'11" W 51.13 FEET;
2. N 89°29'41" W 546.08 FEET;
3. 576.67 FEET ALONG THE ARC OF A CURVE TO THE RIGHT, SAID ARC SUBTENDED BY A RADIUS OF 4347.50 FEET, A CENTRAL ANGLE OF 07°36'00", AND A CHORD BEARING N 85°41'41" W 576.25 FEET;
4. N 82°52'12" W 234.04 FEET;
5. N 83°14'11" W 19.13 FEET;
6. N 89°50'56" W 549.03 FEET;
7. S 84°28'45" W 343.19 FEET;
8. N 85°57'41" W 101.50 FEET;

THENCE S 00°41'10" W 351.41 FEET;
THENCE N 81°23'28" W 195.73 FEET TO SAID NORTH-SOUTH CENTERLINE OF SECTION 16;
THENCE N 00°40'20" E 225.08 FEET TO THE SOUTHERLY BOUNDARY OF LOT 18, BLOCK 6, SAID COLORADO TECHNOLOGICAL CENTER, FIRST FILING;

THENCE ALONG SAID SOUTHERLY BOUNDARY THE FOLLOWING COURSES:

1. S 61°31'29" W 851.73 FEET;
2. S 56°20'15" W 692.71 FEET TO THE BOUNDARY OF SAID COLORADO TECHNOLOGICAL CENTER, FIRST FILING; THENCE ALONG SAID BOUNDARY THE FOLLOWING COURSES:
3. 208.85 FEET ALONG THE ARC OF A NON-TANGENT CURVE TO THE RIGHT, SAID ARC SUBTENDED BY A RADIUS OF 2939.93 FEET, A CENTRAL ANGLE OF 0°04'13" AND A CHORD BEARING S 20°07'58" E 208.81 FEET;
4. S 17°51'52" E 24.53 FEET;
5. S 17°26'23" E 24.53 FEET;
6. S 17°02'58" E 24.48 FEET;
7. S 16°42'35" E 24.41 FEET;
8. S 16°25'41" E 24.34 FEET;
9. S 16°11'05" E 24.28 FEET;
10. S 15°59'47" E 24.22 FEET;
11. S 15°50'58" E 24.16 FEET;
12. S 15°45'12" E 24.10 FEET;
13. S 15°42'22" E 24.04 FEET;

14. S 15°41'53" E 884.41 FEET TO THE SOUTHERLY BOUNDARY OF LOT 1, BLOCK 6, SAID COLORADO TECHNOLOGICAL CENTER, FIRST FILING;
THENCE S 89°38'43" E 191.65 FEET ALONG SAID SOUTHERLY BOUNDARY OF LOT 1, BLOCK 6;
THENCE 45.56 FEET ALONG THE ARC OF A CURVE TO THE LEFT TO THE WESTERLY RIGHT OF WAY OF ARTHUR AVENUE IN SAID COLORADO TECHNOLOGICAL CENTER, FIRST FILING, SAID ARC SUBTENDED BY A RADIUS OF 23.00 FEET, A CENTRAL ANGLE OF 113°29'57" AND A CHORD BEARING N 43°08'19" E 38.47 FEET;

THENCE N 13°36'40" W 144.78 FEET ALONG SAID WESTERLY RIGHT OF WAY OF ARTHUR AVENUE;
THENCE N 76°23'20" E 344.57 FEET;
THENCE S 13°36'40" E 82.49 FEET;
THENCE N 83°38'10" E 324.29 FEET;
THENCE N 06°21'50" W 104.68 FEET;
THENCE N 83°38'10" E 60.00 FEET;
THENCE N 06°21'50" W 115.04 FEET;
THENCE N 83°38'10" E 387.22 FEET;
THENCE N 00°41'41" E 438.47 FEET;

THENCE 22.05 FEET ALONG THE ARC OF A NON-TANGENT CURVE TO THE RIGHT, SAID ARC SUBTENDED BY A RADIUS OF 970.00 FEET, A CENTRAL ANGLE OF 01°18'08" AND A CHORD BEARING S 89°56'49" E 22.04 FEET;

THENCE S 89°18'19" E 322.89 FEET;
THENCE 39.29 FEET ALONG THE ARC OF A CURVE TO THE RIGHT, SAID ARC SUBTENDED BY A RADIUS OF 25.00 FEET, A CENTRAL ANGLE OF 9°02'28" AND A CHORD BEARING S 44°19'33" E 35.37 FEET;
THENCE N 00°41'41" E 88.77 FEET;
THENCE S 89°18'19" E 320.76 FEET TO THE POINT OF BEGINNING, CONTAINING 161.15 ACRES.

With The Exception Of

THAT PORTION OF THE NORTHEAST QUARTER OF SECTION 16, TOWNSHIP 1 SOUTH, RANGE 69 WEST, SIXTH PRINCIPAL MERIDIAN, BOULDER COUNTY, COLORADO DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHEAST SECTION CORNER OF SAID SECTION 16 FROM WHEN THE NORTH QUARTER-SECTION CORNER BEARS N 89°19'44" W;

THENCE N 89°19'44" W, 61.34 FEET ALONG THE NORTHERLY BOUNDARY OF SAID NORTHEAST QUARTER OF SECTION 16;
THENCE S 00°40'16" W, 75.91 FEET TO THE POINT OF BEGINNING;

- THENCE N 89°29'41" W, 546.08 FEET;
THENCE 576.67 FEET ALONG THE ARC OF A TANGENT CURVE TO THE RIGHT SAID ARC SUBTENDED BY A RADIUS OF 4347.50 FEET, A CENTRAL ANGLE OF 07°36'00", AND A CHORD BEARING N 85°41'41" W 576.25 FEET;
THENCE N 82°52'12" W, 128.34 FEET;
THENCE S 00°42'36" W, 574.97 FEET;
THENCE S 85°52'23" E, 306.57 FEET;
THENCE S 83°16'55" E, 110.00 FEET;
THENCE S 82°52'23" E, 16.24 FEET;
THENCE 119.81 FEET ALONG THE ARC OF A TANGENT CURVE TO THE LEFT SAID ARC SUBTENDED BY A RADIUS OF 2035.00 FEET, A CENTRAL ANGLE OF 03°22'24", AND A CHORD BEARING S 87°33'35" E, 119.79 FEET;
THENCE S 89°14'47" E, 247.68 FEET;
THENCE S 00°44'48" W, 571.17 FEET;
THENCE S 89°47'13" E, 484.85 FEET;
THENCE N 07°45'13" E, 1091.92 FEET;
THENCE N 44°22'11" W, 51.13 FEET TO THE POINT OF BEGINNING, CONTAINING 22.89 ACRES, MORE OR LESS;

Property to be Zoned PCZD-C

THAT PORTION OF THE NORTHEAST QUARTER OF SECTION 16, TOWNSHIP 1 SOUTH, RANGE 69 WEST, SIXTH PRINCIPAL MERIDIAN, BOULDER COUNTY, COLORADO DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHEAST SECTION CORNER OF SAID SECTION 16 FROM WHEN THE NORTH QUARTER-SECTION CORNER BEARS N 89°19'44" W;

THENCE N 89°19'44" W, 61.34 FEET ALONG THE NORTHERLY BOUNDARY OF SAID NORTHEAST QUARTER OF SECTION 16;
THENCE S 00°40'16" W, 75.91 FEET TO THE POINT OF BEGINNING;

- THENCE N 89°29'41" W, 546.08 FEET;
THENCE 576.67 FEET ALONG THE ARC OF A TANGENT CURVE TO THE RIGHT SAID ARC SUBTENDED BY A RADIUS OF 4347.50 FEET, A CENTRAL ANGLE OF 07°36'00", AND A CHORD BEARING N 85°41'41" W 576.25 FEET;
THENCE N 82°52'12" W, 128.34 FEET;
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THENCE 119.81 FEET ALONG THE ARC OF A TANGENT CURVE TO THE LEFT SAID ARC SUBTENDED BY A RADIUS OF 2035.00 FEET, A CENTRAL ANGLE OF 03°22'24", AND A CHORD BEARING S 87°33'35" E, 119.79 FEET;
THENCE S 89°14'47" E, 247.68 FEET;
THENCE S 00°44'48" W, 571.17 FEET;
THENCE S 89°47'13" E, 484.85 FEET;
THENCE N 00°45'13" E, 1091.92 FEET;
THENCE N 44°22'11" W, 51.13 FEET TO THE POINT OF BEGINNING, CONTAINING 22.89 ACRES, MORE OR LESS;

LEGAL DESCRIPTION PREPARED BY:
HURST & ASSOCIATES, INC.
4989 PEARL EAST CIRCLE,
BOULDER, CO 80301
(303) 449-9105

Revised 4/8/99

The Business Center at C.T.C.
PCZD General
Development Plan
Amendment A

SCALE	HOR. N/A	VERT. N/A	HURST & ASSOCIATES, INC. CONSULTING ENGINEERS 4626 Pearl East Circle, Suite 106 Boulder, Colorado 80501 (303) 449-9105
DESIGN	JU	ROC	
BRANN	ROC		
FILE NAME	031203CV1		
APPROVED	JU	JOB NO. 202031 DATE 6/5/98 SHEET 1 of 2	

The Business Center at C.T.C. PCZD General Development Plan Amendment A

A Portion of Section 16, Township 1 South,
Range 69 West, 6th Principal Meridian, City of Louisville,
County of Boulder, State of Colorado

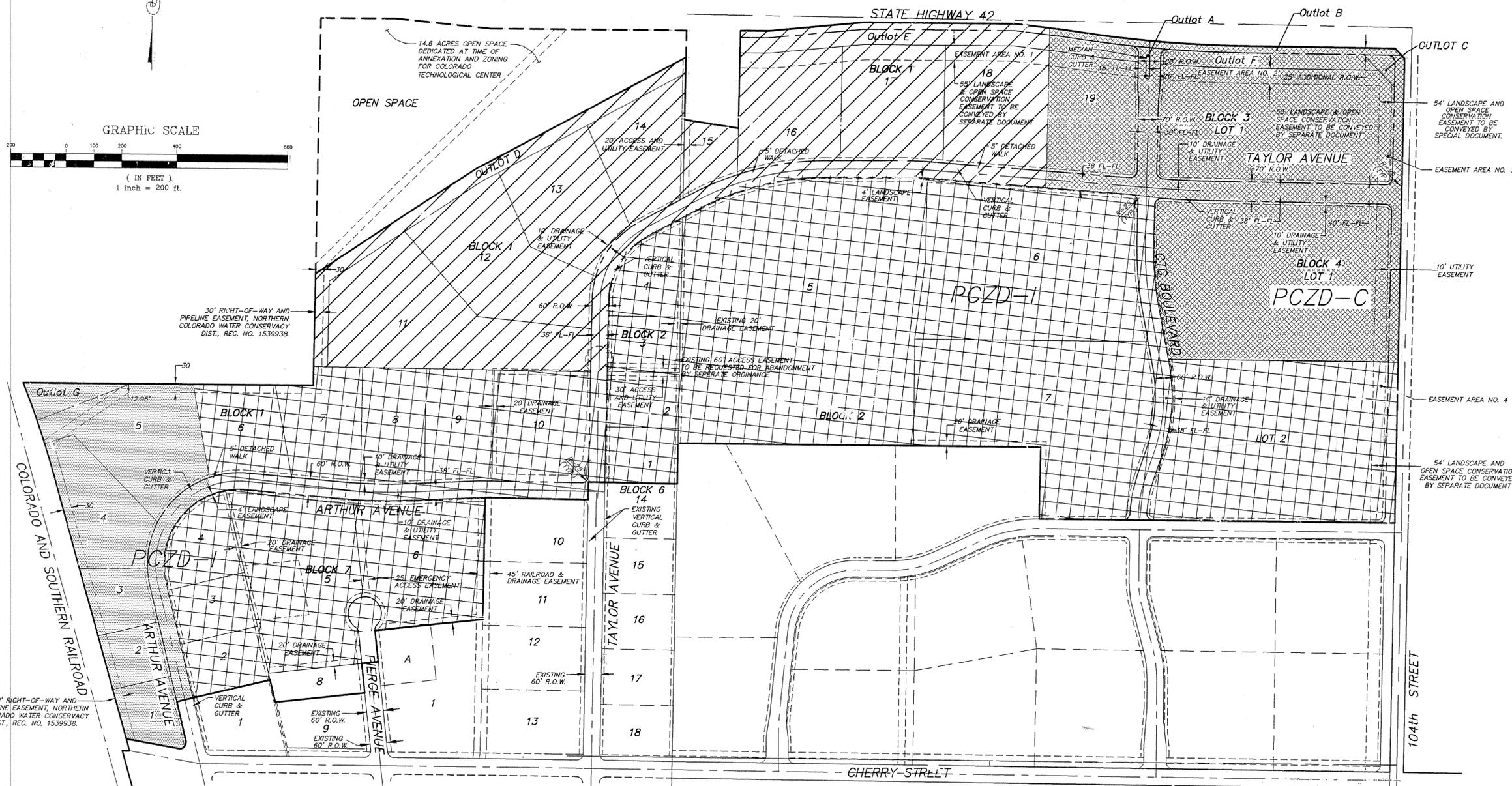
LEGEND

- AREA TO BE USED ONLY FOR OFFICE, INDUSTRIAL, OR RESEARCH/OFFICE AND CORPORATE USES. IF OFFICE - THE LOUISVILLE COMMERCIAL DEVELOPMENT DESIGN STANDARDS AND GUIDELINES SHALL APPLY AS IN EFFECT FROM TIME TO TIME. IF INDUSTRIAL - CTC, CITY OR OTHER APPLICABLE INDUSTRIAL GUIDELINES SHALL APPLY AS IN EFFECT FROM TIME TO TIME.
- THE FOLLOWING USES ARE USES BY SPECIAL REVIEW AND MAY BE PERMITTED, IF AUTHORIZED THROUGH THE CITY SPECIAL REVIEW USE APPLICATION PROCESS:
 - RESTAURANTS, INDOOR EATING AND DRINKING ESTABLISHMENTS, OUTDOOR DINING AND OTHER FOOD SERVICE USES INCLUDING BUT NOT LIMITED TO: DELICATESSENS, CATERING FACILITIES, BANQUET ROOMS, MEETING ROOMS, AND
 - MEDICAL AND DENTAL CLINICS AND FINANCIAL INSTITUTIONS, AND
 - STUDIOS FOR PROFESSIONAL WORK OR TEACHING OF ANY FORM OF FINE ARTS, PHOTOGRAPHY, MUSIC, DRAMA OR DANCE.
- ALL OTHER USES BY SPECIAL REVIEW SHALL BE PROHIBITED. NO DRIVE THRU FACILITIES FOR RESTAURANT OR FINANCIAL INSTITUTIONS SHALL BE ALLOWED IN THIS SUB AREA.
- ALL SPECIAL REVIEW USES IN THIS SUB AREA WILL BE REQUIRED TO MEET THE LOUISVILLE COMMERCIAL DEVELOPMENT DESIGN STANDARDS AND GUIDELINES AS MAY BE AMENDED FROM TIME TO TIME.
- AREA TO BE USED ONLY FOR OFFICE, INDUSTRIAL, OR RESEARCH/OFFICE AND CORPORATE USES. ALL DEVELOPMENT IRRESPECTIVE OF USE SHALL BE SUBJECT TO THE LOUISVILLE COMMERCIAL DEVELOPMENT DESIGN STANDARDS AND GUIDELINES, AS IN EFFECT FROM TIME TO TIME.
- AREA TO BE INDUSTRIAL - CTC, CITY OR OTHER APPLICABLE INDUSTRIAL GUIDELINES SHALL APPLY, AS IN EFFECT FROM TIME TO TIME. SPECIAL REVIEW USE APPROVAL IS REQUIRED FOR ANY USE IDENTIFIED IN THE LOUISVILLE MUNICIPAL CODE AS A USE BY SPECIAL REVIEW IN THE CITY'S INDUSTRIAL (I) ZONE DISTRICT REGULATIONS, AS IN EFFECT FROM TIME TO TIME.
- NOTE: AUTOMOBILE SERVICE STATIONS ARE PROHIBITED IN THE ABOVE THREE AREAS.
- THE AREA TO BE PCZD-C COMMERCIAL AND OFFICE - PERMITTED USES LIMITED TO THOSE USES IDENTIFIED IN THE LOUISVILLE MUNICIPAL CODE AS PERMITTED USES IN THE CITY'S COMMERCIAL (C-B) ZONE DISTRICT REGULATIONS, AS IN EFFECT FROM TIME TO TIME. LOUISVILLE COMMERCIAL DEVELOPMENT DESIGN STANDARDS AND GUIDELINES SHALL APPLY. SPECIAL REVIEW USE APPROVAL IS REQUIRED FOR ANY USE IDENTIFIED IN THE LOUISVILLE MUNICIPAL CODE AS A USE BY SPECIAL REVIEW IN THE CITY'S COMMERCIAL BUSINESS (C-B) ZONE DISTRICT REGULATIONS, AS IN EFFECT FROM TIME TO TIME. ANY OTHER USES ARE PROHIBITED.

NOTE: LOTS 1-5, BLOCK 1 SHALL HAVE NO SIGNAGE ON THE NORTH OR WEST FACING BUILDING ELEVATIONS.
LOTS 9-15, BLOCK 1 SHALL HAVE NO SIGNAGE ON THE NORTH FACING BUILDING ELEVATIONS OR PLACED IN A MANNER AS TO BE VISIBLE FROM STATE HIGHWAY 42.

NOTE: AN OUTLOT TO FUNCTION AS A PEDESTRIAN TRAIL CONNECTION, UTILITY AND ACCESS RIGHT-OF-WAY, FROM TAYLOR AVENUE TO OUTLOT 9, SHALL BE LOCATED ACROSS ONE OR MORE OF LOTS 11-14, BLOCK 1, AND SHALL BE CONVEYED TO THE CITY AT OR PRIOR TO FUD APPROVAL FOR LOTS 11-14.

NOTE: PARKING SHALL BE SETBACK 20' MINIMUM WITH FULL SCREENING FROM HWY. 42. SCREENING AND BUFFERING IS TO PREVENT GLARE FROM PROJECTING OFF THE PREMISES FROM PARKING LOT.



Legend Revised 4/8/99

The Business Center at C.T.C.
PCZD General
Development Plan
Amendment A

SCALE: HORIZONTAL = 200'	
VERTICAL: N/A	
DESIGN: JJ	
DRAWN: ROC	
FILE NAME: 031_ZON	
APPROVED: JJ	HURST & ASSOCIATES, INC. CONSULTING ENGINEERS 4900 Pearl East Circle, Suite 106 Boulder, Colorado 80501 (303) 448-9105 JOB NO. 202031 DATE 6/8/98 SHEET 2 OF 2

ITEM:	16-012 LMC
PLANNER:	Lauren Tice, AICP, Planner I
APPLICANT:	City of Louisville
REQUEST:	Resolution 10, Series 2016: A resolution recommending approval of an Ordinance amending Section 17.16.030 of the Louisville Municipal Code regarding accessory uses.

BACKGROUND

The Louisville Municipal Code (LMC) defines the main use of a residential property (the house) as the “principal structure”. “Incidental or subordinate structures” are termed “accessory structures”. The most common example of an accessory structure on a residential property is a detached garage. Other examples include storage sheds, tool sheds, and playhouses.

The LMC includes specific setback requirements for accessory structures. In some cases, the minimum accessory structure setback requirement is as much as 15 feet from an interior side property line, 10 feet from a rear property line, and 40 feet from a side property line adjacent to a street. Although these minimum setback requirements may be appropriate for larger accessory structures such as garages, planning staff’s opinion is they are overly restrictive for smaller accessory structures such as sheds and children’s play equipment.

The purpose of this ordinance is to reduce the setback requirements for smaller accessory structures such as storage sheds and play structures in residential zone districts. If approved, this ordinance would permit accessory structures that are less than 120 square feet to be located three feet from a side or rear property line in all residential zone districts.

TITLE 17 AMENDMENTS

Accessory structure setback requirements are found in two places in the LMC:

Sec. 17.12.040 (Yard and Bulk Requirements) establishes minimum front yard setbacks, side yard setbacks from a street, and side yard setbacks from an interior lot line for accessory structures. These setback requirements vary between zone districts.

Sec. 17.16.030 (Accessory uses) establishes a minimum rear yard setback of ten feet for accessory uses and also states that “no part of an accessory building (including eaves

and overhangs) shall be located any closer than five feet to any principal structure, either on the same lot or an adjacent lot, in residential zone districts.”

The accessory structure setback requirements in the City’s residential zone districts established by these two sections of the LMC are displayed in the following table.

Accessory Structure Setbacks in Residential Zone Districts

Area/Zone District	Front Setback (feet)	Interior Side Setback (feet)	Side Street Setback (feet)	Rear Setback (feet)
Old Town Overlay District	35	3	8-15*	0-3**
Residential Restricted Rural (R-RR)	50	20	40	10
Single Family Rural (SF-R)	50	20	40	10
Single Family Estate (SF-E)	50	15	40	10
Residential Rural (R-R)	50	15	40	10
Residential Estate (R-E)	40	5	30	10
Residential Low Density (RL)	35	5	25	10
Single Family –Low Density (SF-LD)	50	15	40	10
Single Family –Medium Density (SF-MD)	40	10	30	10
Single Family –High Density (SF-HD)	35	5	25	10
Residential Medium Density (RM)	35	5	25	10
Residential High Density (RH)	35	5	25	10

*Side yard minimum setback depends on size of lot. Larger lots have a greater setback requirement

**No minimum rear yard setback from a rear lot line is required when property is adjacent to an alley.

Staff finds the setback requirements shown in the table above are overly restrictive for smaller accessory structures such as sheds and children’s play equipment. Most residential property owners typically wish to place tool sheds and other smaller accessory structures adjacent to the side or rear property line so they do not interfere with their yard space. In some cases, the existing setbacks require these smaller accessory structures be placed near the middle of a residential backyard.

Staff recommends amending Section 17.16.030 of the LMC to establish a minimum rear and side yard setback of three feet for accessory structures less than 120 square feet. The minimum setback of three feet was selected as it will ensure that two accessory structures located on separate properties are a minimum of six feet apart (three feet on each side). Staff has selected 120 square feet as the maximum size of an accessory structure that may benefit from this reduced setback requirement because the International Building Code states that building permits are not required for structures “not greater than 120 square feet” (Section 105.2 International Building Code).

Staff also recommends adding language to Section 17.16.030 of the LMC to address the placement of accessory structures in platted easements. Most residential properties in the City of Louisville have easements that run along the side and/or rear property boundaries. These easements are typically between five and ten feet wide and are in

place to accommodate utilities (electric, water, drainage). If the side and rear setback is reduced to three feet for smaller accessory structures, it is possible these structures could be placed in platted easements. In anticipation of this occurring, staff suggests adding the following language to establish the property owner's responsibilities with regards to locating smaller accessory structures in easements.

- If a structure is placed in a platted public easement, it shall not overlay, enclose, or limit access to any city or other public facilities. It shall be the owner/occupant's responsibility to remove the encroachment in the event it interferes with the use of the easement.
- No structure shall be placed in a private easement unless the easement owner has consented to the placement, or the owner/occupant placing the structure has a property interest allowing placement of the structure.
- The easement holders shall have no liability for the cost of relocating items located in easements. Structures located in easements shall be able to be relocated easily, and shall not be placed on a permanent foundation that cannot easily be removed.

The regulations for accessory structures and encroachments into easements will be placed on the City's website, and provided in the Department of Planning and Building Safety to notify owners of their responsibilities with regards to smaller accessory structures.

IMPLEMENTATION OF ORDINANCE

Currently, when someone desires to construct a structure on their property that is less than 120 square feet, they do not have to obtain a building permit. However, the structure must comply with all applicable development standards, including setbacks. For this reason, staff currently issues a "Shed and Play Structures Location Permit" to notify property owners of the setbacks and other development standards for their structure. This permit is free and is not required by the LMC.

If the proposed ordinance is passed, staff proposes discontinuing the practice of issuing Shed and Play Structures Location Permits. Sheds and other accessory structures less than 120 square feet will be able to be installed without issuance of a permit. The setback and easement encroachment requirements for accessory structures will be available in the Department of Planning and Community Development for review, and it will be the responsibility of the property owner to know and adhere to these standards.

Staff recommends this approach as it is nearly impossible to monitor and enforce permits for accessory structures under 120 square feet. Many homes in the City have these types of accessory structures, and since 2010 staff has issued less than 30 Shed and Play Structure Location Permits. The reduced setbacks will make it easier for property owners to comply with the ordinance, and in staff's opinion, remove the need for a permitting process.

FISCAL IMPACT

Amending the LMC to reduce the minimum rear and side yard setback for smaller accessory structures will have no discernable fiscal impact on the City. These types of structures are currently allowed in the City. The proposed changes would only allow them to be placed closer to property boundaries.

RECOMMENDATION

Staff recommends the Planning Commission approve Resolution No. 10, Series 2016 recommending City Council approval of an ordinance amending Section 17.16.030 of the Louisville Municipal Code regarding accessory uses.

ATTACHMENTS:

1. Resolution 10, Series 2016;
2. Draft Ordinance No. XX, Series 2016

**RESOLUTION NO. 10
SERIES 2016**

A RESOLUTION RECOMMENDING APPROVAL OF AN ORDINANCE AMENDING SECTION 17.16.030 OF THE LOUISVILLE MUNICIPAL CODE REGARDING ACCESSORY USES

WHEREAS, the City of Louisville is a Colorado home rule municipal corporation duly organized and existing under laws of the State of Colorado and the City Charter; and

WHEREAS, the City has previously adopted Section 17.16.030 of the Louisville Municipal Code, concerning accessory structures and uses, and setbacks for accessory structures; and

WHEREAS, there are some lots in the City where the current minimum rear and side yard setbacks for accessory structures would prohibit or make impractical the use of a small accessory building; and

WHEREAS; Planning Commission recommends amending section 17.16.030 of the Louisville Municipal Code to allow for reduced minimum rear and side yard setbacks for accessory structures that are less than 120 square feet, subject to certain requirements; and

WHEREAS, based on the findings in the Louisville Planning Commission Staff Report, the recommendation of City Staff, and the testimony of the witnesses and the documents made a part of the record of the public hearing, the Planning Commission finds that the proposed ordinance should be adopted in essentially the same form as accompanies this Resolution:

NOW THEREFORE, BE IT RESOLVED BY THE PLANNING AND ZONING COMMISSION OF THE CITY OF LOUISVILLE, COLORADO:

Section 1. The Planning and Zoning Commission hereby recommends adoption of the proposed ordinance, entitled "An Ordinance amending Section 17.16.030 of the Louisville Municipal Code regarding accessory uses"

PASSED AND ADOPTED this ____ day of April, 2016

By: _____
Chris Pritchard, Chair
Planning Commission

Attest: _____
Ann O'Connell, Secretary
Planning Commission

ORDINANCE NO. _____
SERIES 2016

AN ORDINANCE AMENDING SECTION 17.16.030 OF THE LOUISVILLE MUNICIPAL CODE REGARDING ACCESSORY USES

WHEREAS, the City of Louisville is a Colorado home rule municipal corporation duly organized and existing under laws of the State of Colorado and the City Charter; and

WHEREAS, the City has previously adopted Section 17.16.030 of the Louisville Municipal Code, concerning accessory structures and uses, and setbacks for accessory structures; and

WHEREAS, there are some lots in the City where the current minimum rear and side yard setbacks for accessory structures would prohibit or make impractical the use of a small accessory building; and

WHEREAS, the City Council desires to amend Section 17.16.030 of the Louisville Municipal Code to allow for reduced minimum rear and side yard setbacks for accessory structures that are less than 120 square feet, subject to certain requirements;

NOW THEREFORE BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF LOUISVILLE, COLORADO:

Section 1. Section 17.16.030 of the Louisville Municipal Code is hereby amended to read as follows (words added are underlined; words deleted are ~~stricken through~~):

Sec. 17.16.030. Accessory uses.

Accessory uses shall comply with all requirements for the principal use except where specifically modified by this title, and shall also comply with the following limitations:

A. A greenhouse or hothouse may be maintained accessory to a dwelling only if there are no sales from the premises.

B. A guesthouse may be maintained in a residential district accessory to a dwelling provided such guesthouse is used for the occasional housing of guests of the occupants of the principal dwelling, and so long as such guesthouse is not used for commercial purposes and no charge is made for the use of such premises.

C. The minimum rear yard setback from a rear lot line for accessory structures shall be ten feet, except as specifically set forth in Subsection F of this Section. No part of an accessory building (including

eaves and overhangs) shall be located any closer than five feet to any principal structure, either on the same lot or an adjacent lot, in residential zone districts. No part of an accessory building (including eaves and overhangs) shall be located any closer than ten feet to any principal structure, either on the same lot or an adjacent lot, in nonresidential zone districts.

D. Accessory buildings on corner lots shall be set back from the side street a distance not less than that required for the principal building.

E. Except as provided in Subsection F of this Section, accessory structures and uses shall comply with the yard and bulk regulations applicable in the district in which they are located as set forth under chapters 17.12 and 17.13.

F. The minimum rear yard and side yard setback from a rear or side lot line for accessory structures that are less than 120 square feet shall be three feet, subject to the following:

1. If a structure is placed in a platted public easement, it shall not overlay, enclose, or limit access to any city or other public facilities. It shall be the owner/occupant's responsibility to remove the encroachment in the event that it interferes with the use of the easement.

2. No structure shall be placed in a private easement unless the easement owner has consented to the placement, or the owner/occupant placing the structure has a property interest allowing placement of the structure.

3. The city and franchise utility providers shall have no liability for the cost of relocating items located in easements.

4. Structures located in easements shall be able to be relocated easily, and shall not be placed on a permanent foundation that cannot easily be removed.

Section 2. If any portion of this ordinance is held to be invalid for any reason, such decision shall not affect the validity of the remaining portions of this ordinance. The City

Council hereby declares that it would have passed this ordinance and each part hereof irrespective of the fact that any one part be declared invalid.

Section 3. The repeal or modification of any provision of the Municipal Code of the City of Louisville by this ordinance shall not release, extinguish, alter, modify, or change in whole or in part any penalty, forfeiture, or liability, either civil or criminal, which shall have been incurred under such provision, and each provision shall be treated and held as still remaining in force for the purpose of sustaining any and all proper actions, suits, proceedings, and prosecutions for the enforcement of the penalty, forfeiture, or liability, as well as for the purpose of sustaining any judgment, decree, or order which can or may be rendered, entered, or made in such actions, suits, proceedings, or prosecutions.

Section 4. All other ordinances or portions thereof inconsistent or conflicting with this ordinance or any portion hereof are hereby repealed to the extent of such inconsistency or conflict.

INTRODUCED, READ, PASSED ON FIRST READING, AND ORDERED PUBLISHED this _____ day of _____, 2016.

Robert P. Muckle, Mayor

ATTEST:

Carol Hanson, Acting City Clerk

APPROVED AS TO FORM:

Light | Kelly, P.C., City Attorney

PASSED AND ADOPTED ON SECOND AND FINAL READING, this _____ day of _____, 2016.

Robert P. Muckle, Mayor

ATTEST:

Carol Hanson, Acting City Clerk