PLANNING COMMISSION
Regular Meeting
April 6, 2022
6:00 PM

- **Roll Call**
- **Approval of Minutes**
- **Public Comment Period**
- **Public Hearing and Consideration of a Final Development Plan, Final plat for a Mixed-Use Development at Block 57/Former Golddigger Field, Bus Maintenance Facility, and Property West of the Former Golddigger Field.**
- **Adjournment**

IN-PERSON AND REMOTE MEETING PUBLIC ATTENDANCE AND PARTICIPATION INSTRUCTIONS

The Public is able to view and hear this meeting remotely at the following address on the City's website:
https://www.colorado.gov/pacific/idahosprings/city-council-live

To provide public comment remotely please use the link below
https://us02web.zoom.us/j/84475653302?pwd=eVJuZ2ZPQUFEVW52cHp6U0xUV3c4QT09

Passcode: 656207

For in-person Unscheduled Public Comment, please sign-in at the entrance to the Council Chambers.

Each individual that is providing public comment is limited to three (3) minutes.

PLANNING COMMISSION
MINUTES
December 01, 2021

ROLL CALL

Chairman Cindy Olson called the meeting to order at 6:01p.m. Commissioners present were Cindy Olson, Kate Collier, Chuck Howard, Tracy Stokes, Jordan Hudson, Don Reimer and Ursula Cruzalegui. Staff present are City Planner Jerad Chipman and Deputy City Clerk Wonder Martell.

APPROVAL OF MINUTES

Chuck Howard moved to approve the minutes from September 1, 2021. Ursula Cruzalegui seconded the motion, and the motion carried by unanimous voice vote.

NEW BUSINESS

Planning Commission #1, Series 2021, Idaho Springs Downtown Master Plan.
The master plan was presented by Cheney Bostic. There have been some revisions to the timeline to show the work sessions that have been done with City Council as well as added some additional concepts from the public comments on the Downtown Master Plan.

The goal is to get visitors to the business's and get them out of the neighborhoods. There has been an added concept of a circulator/trolly to be a catalyst project. Updated the graphics in the plan, addressed the oversized vehicle parking, accommodations for deliveries, saving healthy trees, also added a concept of a glamping/camping experience within walking distance of the downtown area.

Charmin Cindy Olson opened discussion with the group. Commissioner Kate Collier asked if the glamping needed to be in the Master Plan. City Planner Jerad Chipman responded that a member of another board had brought up the glamping amenity. Ms. Bostic wanted to make clear that the glamping concept would not be downtown, but within walking distance of downtown. Chairman Olson also mentioned that she was surprised that glamping was added to the master plan. Mr. Chipman stated that space is a challenge and there are several RV's/campers that would like to enjoy the downtown area.

Commissioner Collier mentioned places like Walmart, that allow camping/parking of oversized vehicles and she is concerned at the amount of refuse and human waste that is left around. The city would need more restrooms and accommodations. Ms. Bostic stated that it would be fine to remove the camping/glamping from the plan and that the commentor that brought up the concept saw it more as a privately run glamping experience.

Commissioner Cruzalegui also understood the concept as being privately run and on private property and glamping is unique and sought after. Chairman Olson brought up that our current zoning requirements do not allow for any type of camping and suggests that the glamping should

be removed from the master plan at this time. Commissioner Don Reimer stated that there should be more focus on where oversized vehicles could park and not on the camping.

Mr. Chipman stated that the provision can stay or go, that they could build a code around it and that could be done later. Commissioner Cruzalegui mentioned that there are several thins in this plan that would require changes to the code and she does not see a huge issue with the glamping/camping staying in the plan. Chairman Olson asked the board if there were any more comments and reiterated that the motion can be a recommendation and there also could be recommended changes. Commissioner Cruzalegui mentioned on page 40 of the plan that the map showed parking behind Carlson and that parking does not exist. Ms. Bostic stated that she would make those changes to the map.

Chairman Olson asked for a motion for the Planning Commission Resolution #1, Series 2021 approving the 2021 Idaho Springs Master Plan and recommending its adoption to the City Council.

Commissioner Cruzalegui motioned to approve resolution to City Council. Commissioner Collier stated she will not approve with the camping/glamping in the document. Chairman. Olson stated that if the glamping/camping was removed, that the verbiage for parking oversized vehicles needed to be improved and enhanced. Commissioner Cruzalegui asked City Planner Mr. Chipman, that if the glamping/camping was left in the plan, would they need to change the code right away. Mr. Chipman stated that is comes down to implementation and it would be phased over time. Commissioner Cruzalegui would like the camping/glamping left in the plan.

Chairman Olson assumes that council will also question the glamping and thinks that if some of the planning commission doesn't agree that the glamping should be removed from the plan. Commissioner Kate Collier stated that council should be able to trust the planning commissions decision and they should not have to review the entire plan all over again.

Chairman Olson asked for a roll call vote to approve the plan as is with the camping/glamping left in. Commissioner Don Reimer voted yes, Commissioner Kate Collier voted no, Commissioner Tracy Stokes voted no, Commissioner Ursula Cruzalegui voted yes, Commissioner Cindy Olson voted no, Commissioner Chuck Howard voted no, and Commissioner Jordan Hudson voted no.

Motion failed 5-2

New motion requested. Commissioner Kate Collier moved to approve the resolution to City Council with the removal of the camping, glamping and hostel from the plan. Commissioner Chuck Howard seconded the motion. Commissioner Cruzalegui asks that Commissioner Kate Collier modify the motion to include the hostel and low income as the studies say we need more affordable housing. Commissioner Collier stated yes, but not at this time, that we need to be clear on what we can accommodate. Chairman Olson stated she hopes to give council something they can approve.

Chairman Olson asked for a roll call vote to approve the resolution to council removing the camping, glamping and hostel from the Downtown Master Plan.
Chairman Cindy Olson voted yes, Commissioner Ursula Cruzalegui voted yes, Commissioner Jordan Hudson voted yes, Commissioner Chuck Howard voted yes, Commissioner Kate Collier voted yes, Commissioner Don Reimer voted yes, and Commissioner Tracy Stokes voted yes. Motion carries to approve the resolution to council with the removal of the camping/glamping and hostel.

City Planner Jerad Chipman went over the monthly report he also stated that he does not have a plan on having a meeting in January so there will be more coming in February. Chairman Cindy

Olson brought up that Commissioner Kate Collier will have to resign her position on Planning Commission when she takes office of City Council in January 2022. Then an alternate will take her seat and there will need to advertisement for all of the board positions that will need to be filled. Commissioner Kate Collier hopes to still watch the planning commission meetings and be the liaison to bring that information to City Council.

Adjourn

Chairman Cindy Olson adjourned the meeting at 6:45 pm.

CITY OF IDAHO SPRINGS
Planning Commission Communication

REPORT DATE: MARCH 31, 2022

MEETING DATE: APRIL 6, 2022

PRESENTED BY: JERAD CHIPMAN, AICP
COMMUNITY DEVELOPMENT PLANNER

ITEM: FINAL DEVELOPMENT PLAN, FINAL PLAT FOR A MIXED-USE DEVELOPMENT AT BLOCK 57/FORMER GOLDDIGGER FIELD, BUS MAINTENANCE FACILITY, AND PROPERTY WEST OF THE FORMER GOLDDIGGER FIELD.

PETITIONER: Four Points Funding

PROPERTY OWNER: Clear Creek School District

GENERAL LOCATION: Block 57 of Idaho Springs – Former Golddigger Field, the Bus Maintenance Facility, and the property to the west of former Golddigger Field bounded by Miner and Idaho Streets to the north, 12th Avenue to the east, 8th Avenue to the west, and Interstate 70 to the south.

REQUEST: Final Development Plan (FDP)
Final Plat

CURRENT ZONING: Planned Development (PD)
Residential One (R-1) (the parcels west of the PD)

DEVELOPMENT ACERAGE: The acreage of Area 1 is 2.75 acres including the former Golddigger Field.
The acreage of Area 2 is 0.56 acres including the former bus maintenance facility.
The acreage of the area west of the PD is 0.42 acres.
Total acreage of the site is 3.73 Acres.

COMPREHENSIVE PLAN: The proposed development is within the Exit 240 Gateway Area.
The Comprehensive Plan indicates the area as Regional Commercial.

BACKGROUND:

The Petitioner is under contract to purchase the former Golddigger field, the Clear Creek School District Bus Barn, and property west of the field. The intent is to combine the sites into one development. Last autumn, the Petitioner received approval of a Planned Development (PD), Rezoning, and Preliminary Plat and Plan for a mixed use development that would allow for a maximum of 120 apartment units, a maximum of 12,000 square feet of commercial space, and a park site. The Petitioner is requesting approval of a Final Development Plan (FDP) that is reviewed mostly within the parameters of the previously approved PD. The PD allows for a mixed-use development that would contain a maximum of 120 residential units, 12,000 square feet of commercial space, and a park site. The Petitioner proposes to incorporate additional parcels west of the PD site into this FDP. As that area of the development is proposed to contain only parking and an entry drive, its addition does not require an amendment to the PD. The use of these western parcels is governed by their existing R-1 zoning. Additionally, the Petitioner has provided a secondary plan in the unlikely event that they do not exercise the option to purchase the western property. The PD contains many other provisions that will be discussed in the rest of this report. A Final Plat has also been submitted for consideration. The Final Plat consolidates the parcels into one site and indicates utility easements.

ZONING AND CONFORMANCE WITH THE COMPREHENSIVE PLAN:

The property was recently rezoned to PD with the exception of the added parcels to the west. The PD outlines a development framework that is the foundation for the FDP. The additional parcels are zoned R-1. The Zoning Ordinance allows for parking on an adjacent parcel that is owned by the same entity as the rest of a development.

The Comprehensive Plan contemplates a mix of uses for this site focusing on commercial uses, but does not preclude residential uses as outlined in the below excerpt from the Comprehensive Plan. This excerpt provides further detail for the area beyond the Regional Commercial designation and describes the potential future land uses as follows: "In 2016, Idaho Springs and Clear Creek County Economic Development Corporation contracted with a consultant to complete the Highest and Best Use Economic Feasibility Study for the Interstate 70 Economic Hub at Exit 240. This market analysis recommended development scenarios including mixed uses, hotels, multifamily residential, office and the possibility of a mountain adventure center."

SUBDIVISION REGULATIONS AND LAND DEDICATION:

The PD addressed land dedication, vacation and the deed restriction of the park site. The Petitioner has submitted a Final Plat that consolidates the parcels that the Petitioner has acquired. The addition of the property west of the former football field site has an adjacent small area on the south side of Miner Street that is currently right-of-way.This section of right-of-way does not appear to serve a needed public purpose, and the Petitioner is requesting the area be incorporated into the site in order to clean up the property line. Staff is amenable to this vacation that is outlined within the Final Plat.

The City's Subdivision Regulations contain provisions regarding land dedication. The PD discusses the land dedication in depth on page 3. The Subdivision Regulations require a minimum of eighteen percent (18%) of land dedicated to public purposes. There are two elements to this eighteen percent. The first is a minimum of eight (8) percent of land to be used by the City for some purpose *other than* open space. The Petitioner is proposing to fulfill this requirement through the dedication of additional Miner Street right-of–way. The second element of required public land dedication is a minimum of ten (10) percent of land for public open space. The Petitioner is proposing to fulfill this requirement through the creation of a deed-restricted park to be located at Area 1, the bus maintenance facility site. The FDP complies with the land dedication provisions of the Subdivision Regulations.

LAND USE AND ZONING STANDARDS:

The proposed development consists of three (3) buildings containing 119 residential units and 2,551 square feet of retail space. Studio, one-bedroom, two-bedroom, and four-bedroom units comprise the makeup of the residential units. The proposed residential unit count and retail square footage comply with the PD.

LOT SIZE:

The FDP complies with the minimum lot size.

DENSITY:

The Municipal Code and the PD do not specify a maximum density. The PD allows a maximum of 120 residential units of various sizes. With the addition of 0.42 acres of land into the

development, the density for the development reduces from approximately thirty-six (36) units per acre to approximately thirty-two (32) units per acre.

LOT COVERAGE AND BUILDING COVERAGE:

The PD requires a minimum of 15 percent (15%) of the lot area to be unoccupied by buildings and structures across a development. This is separate and distinct from the public land dedication requirements found in Chapter 24 of the Municipal Code (Subdivision Regulations), covered above. The Petitioner is proposing to meet this requirement by utilizing the landscaped areas around the buildings, the detention area, the staircase located between Buildings 1 and 2, and open space to the west of Building 1. The proposed development more than complies with the 15% minimum unobstructed open space.

SETBACKS:

The PD contains a number of varying setbacks. The setback established along Miner Street was a minimum of five (5) feet. There were two exceptions to the five (5) foot minimum. The west corner of Building 1 was allowed to have a zero (0) setback as the existing right-of-way diverts to the south. The other exception is that twenty percent (20%) of the combined frontage of Buildings 1 and 2 would be setback twelve (12) feet. The FDP complies with the Miner Street setback.

The FDP complies with the twenty (20) foot setback located along the west property line.

The setback to the property line located to the east of Building 2 complies with the PD, which allows parking within the setback and a reduced landscape buffer. An opaque fence was required adjacent to the residential homes, and is indicated on the landscape plans.

The twenty (20) foot setback from the property line located to the north of Building 3 complies with the setback as the drive-aisle was allowed to be located in that setback.

The setback along Interstate 70 for Building 3 is indicated in the PD to be a minimum of twenty (20) feet with proposed encroachments of twelve (12) feet for twenty-five percent (25%) of Interstate 70 frontage. The FPD complies with the setback along Interstate 70.

The west side of the site adjacent to Interstate 70 complies with the setbacks as parking was allowed to encroach into the setbacks with a two (2) foot landscaped buffer.

Area 2, the park site, complies with the setbacks outlined within the PD.

MAXIMUM HEIGHT:

The existing slopes located on the north side of the site have led to a more involved maximum height calculation. The PD establishes a maximum height along Miner Street as two (2) stories

with a maximum height of thirty-five (35) feet at the center point of the peak to the eave of the building. This results in a taller building as seen from Interstate 70 to the south. Additional height was approved for the buildings fronting Miner Street, but that height is required to be setback thirty-five (35) feet south of the parcel line. The thirty-five (35) foot line is indicated on the plans as the Miner Street Zone Lot Line. The maximum height at that location is four stories and forty-six (46) feet. Note that these measurements are still taken from the grade at Miner Street for Buildings 1 and 2. A new baseline is indicated for Building 3 located near Idaho Street and 12th Avenue, which is the grade at which the new property line located south of the existing residential and the proposed Building 3 would be. The new baseline is due to the site continuing to slope down the further south the site progresses. The proposed buildings indicated in the FDP comply with the PD requirements.

ACCESS AND CONNECTIVITY:

The primary access point into Area 1 consists of a driveway extending west from Idaho Street north of proposed Building 3. Secondary access points are envisioned off of Miner Street west of Building 1 and at Miner Street east of Building 2 to accommodate a short row of parking. The western access off of Miner Street has been located farther to the west as the Petitioner intends to add land to the west of the original PD in order to allow for a driveway with a more gradual slope down into the site. The change in access point did not require a PD amendment, and is offset from 8th Avenue by the minimum of fifty (50) feet.

Miner Street is proposed to be reconstructed and widened between 8th and 10th Avenues. The reconstruction would add parallel parking spaces to both sides of the street between 9th and 10th Avenues. The substandard lane width was approved within the PD as the proposed street geometry matches the existing lane widths and parking spaces located to the east on Miner Street. The south side of the 1100 block of Idaho Street is proposed to include 90 degree parking spaces. This configuration increases the parking spaces adjacent to the Clear Creek Metropolitan Recreation District building.

Sidewalks have been indicated to be installed through the site, along the south side of Idaho Street and on both sides of Miner Street. The current plan indicates that the sidewalk on the north side of Miner Street, west of 9th Avenue end mid-block where the extent of the Petitioner's realignment of the north side of Miner Street ends. Even though mid-block is where the Petitioner's street/sidewalk work ends, it is staff's opinion that the sidewalk should be installed all the way to 8th Avenue while this work is already being done. There are some challenges to accomplishing this goal within the current right-of-way. Several parcels on the north side of Miner Street extend nearly to the back of the existing curb, restricting the space for the sidewalk. Staff is proposing that the Petitioner install sidewalk on the north side of Miner Street between 8th and 9th Avenues with the understanding that the City will seek the easements from the private property owners adjacent to the street and that the City will reimburse the Petitioner for the cost of extending the sidewalk from mid-block to 8th Avenue. The sidewalk would be constructed on the north side of the existing curb and may require some retaining walls.

TRAFFIC STUDY:

The traffic study that was associated with the PD has been updated to take into account the alterations that the FDP contains. The City has engaged a traffic engineer to review the updated study. The traffic engineer's findings are attached to this packet. The letter from the traffic engineer indicates that they have no additional comments and find the Petitioner's traffic study to be acceptable.

PARKING:

The PD states that the site is required to be parked in compliance with the Municipal Code. The FDP indicates the following parking requirement and proposed supply:

	Units and Retail Size	Spaces per Unit	Spaces Require	Spaces Proposed
Studio	40	1.25	50	
1-Bedroom	42	1.5	63	
2-Bedroom under 800 square feet	24	1.5	36	
2-Bedroom over 800 square feet	9	1.75	15.75	
4-Bedroom	4	2.5	10	
Commercial	2551	250	10.204	
Total:			185 minus the mixed use reduction = **168** parking spaces	195 spaces minus the existing spaces on Idaho Street and Miner of 13 = **182**

The proposed development exceeds the number of parking spaces required per the Zoning Ordinance by fourteen (14) spaces. These additional spaces will contribute to the public parking that is available adjacent to the CCMRD's Recreation Center.. The Petitioner has indicated that the amount of commercial square footage and the mix of residential units by bedroom number may change. It is staff's opinion that this is acceptable as long as the parking counts comply with the Zoning Ordinance provisions.

The carports that are indicated on the plan are only allowed to be six (6) cars per structure. Carport structures are allowed to be located in close proximity to each other.

LIGHTING:

The FDP complies with the provisions of the PD that the maximum height of light poles not exceed 25 feet, that light not spill beyond the horizontal plane, and that light spillage not exceed 0.06 from the property line and 0.03 for adjacent residential uses. Staff is of the opinion that additional lighting should be placed on the south and west property lines to better illuminate the parking in those locations.

BUILDING DESIGN STANDARDS:

The PD indicates that the development will comply with the provisions of the design standards found within the Code with a few approved exemptions. Those exemptions pertain to an increase in the maximum building length from 150 feet to 210 feet, and an unbroken wall and roof plane surface of fifty (50) feet rather than thirty (30) feet.

The Zoning Ordinance provides the following guidance in regards to the design of a development. (A) Design within the historic setting of the City. The City of Idaho Springs' Comprehensive Plan: Envision Idaho Springs 2017 describes individual Character Areas and the general nature of these areas. Developments shall be designed to be compatible with the Comprehensive Plan recommendations to fit into the setting of the City and protect scenic view corridors, historic districts and historic landscapes.

Each building contains different architectural elements. Buildings 1 and 2, located along Miner Street, are presented as two (2) story structures that contain varying eaves, materials and vertical delineations. Primary entrances are identified with architectural treatments. The elevation of Building 1 that faces I-70 is three (3) stories due to the grade change that descends towards I-70. Building 2 is similar to Building 1 except that there is a portion of the building that has a fourth floor and has additional deviations in the roof eave and ridgeline. Building 3 contains additional articulations in the façade and contains additional colors of siding including a mural on the south side of the building.

While Building 1 contains a variety of articulations on the roof eave, it is also required to have more roofline articulation per Section 21-220 (A)(5)(b)(b). It is staff's opinion that adding another distinct roof ridgeline be required for Building 1. All of the other building attributes comply with the Zoning Ordinance and the PD.

The building materials comply with the Zoning Ordinance. The buildings are predominately composed of several colors of lap siding, asphalt shingles, and decorative metal awnings.

PROPERTY TO BE VACATED OR DEDICATED:

Previous City approvals have indicated the areas to be vacated or dedicated in association with this development.

GARBAGE FACILITIES:

Garbage locations have been indicated on the plans. Details of the enclosures is required prior to building permit issuance to ensure compliance with the PD.

SNOW REMOVAL:

Snow Storage areas have been indicated on the engineering plans. The largest snow storage area, the detention basin, may be hard to access when automobiles are present. The snow storage areas comply with the PD and the Zoning Ordinance.

SIGNS:

Signage restrictions were approved as a part of the PD. No commercial signage is being proposed at this time. A mural is proposed on the south side of Building 3.

LANDSCAPING AND SCREENING:

The PD contains landscape provisions. The first provision indicates that the development comply with the landscape standards found within the Zoning Ordinance. The proposed landscape plan indicates a variety of plant material and surface treatments.

The park site located east of Building 3 contains a mix of surfaces and play elements. The center of the park consists of irrigated turf grass. The eastern portion of the site is a blend of pavement, mulched planting areas, and play surface surrounding the "Future Climbing Boulder". The western portion of the park contains park benches, a hardscape plaza, and a "Future Pavilion Structure".

There is perimeter landscaping around the buildings that is primarily composed of shrub and perennial planting areas. The south side of Building 3, adjacent to I-70, is proposed to consist of a native seed planting mix. The site also contains three other irrigated lawn locations. One is just west of Building 3, which is also the stormwater detention basin for the site, the second is located south of Building 2 between the building and the parking lot, and the third is located west of Building 1.

The area located at the west end of the site, beyond the access drive, is proposed to be composed of native seed planting. It is staff's opinion that there should be a privacy fence located on the western property line as the property abuts a residence and the western drive aisle angles towards that residence resulting in the potential for headlights to shine into the residence. In conjunction with a fence, the Zoning Ordinance requires landscaping to be associated with a perimeter fence. It is staff's opinion that additional evergreen trees be located near the western property line.

The size of the landscape material indicated on the plan complies with the minimum sizes required in the Zoning Ordinance. Staff recommends that the Petitioner consider adding additional evergreen trees to the site, and consider diversifying deciduous tree species.

Air conditioning units have not been indicated on the plans. Note that they are required to be screened and are not allowed in the front yard.

A garbage location has been indicated on the plans. A detail of the garbage enclosure shall be submitted for compliance review to be conducted by City staff.

CONSIDERATION FOR REVIEW AND APPROVAL;

FINAL DEVELOPMENT PLAN (FDP)

Section 21-106 (F) of the Municipal Code addresses the review and approval criteria for FDPs. That criteria is as follows:

(1) Final development plans shall conform to all use and development standards of the Idaho Springs Municipal Code as well as the Idaho Springs Standards and Specifications for Design and Construction and any underlying Planned Development.

It is staff's opinion that the proposed development contains these elements with the recommended additional conditions that staff has discussed in the report.

SUBDIVISION: FINAL PLAT

Section 24-119 of the Code provides standards for approval for proposed Final Plats. Those standards are as follows:

(1) Is in substantial conformance with the approved preliminary plat, including any conditions imposed on the approval of the preliminary plat;
(2) Is in conformance with all applicable requirements of these subdivision regulations;
(3) Is in conformance with all applicable requirements of the zone districts in which the property described in the final plat is located;
(4) Is in general conformance with the applicable goals and policies of the Comprehensive Plan; and
(5) Is in compliance with the City's regulations for areas or activities of state interest.

The Final Plat complies with the provisions found within the Subdivision Regulations.

COMMUNITY ENGAGEMENT MEETINGS:

The Petitioner held a Community Engagement Meeting on February 17th, 2022. Staff attended the meeting and heard concerns from the public regarding the placement of snow on the property, the additional traffic generated by the development, and the potential parking impacts.

REFERRALS:

Referrals were sent to the following individuals and entities for review and comment:

- City Administrator Marsh
- City Clerk Breece

- Police Chief Buseck
- Public Works Superintendent Bordoni
- City Attorney Beery
- City Engineer Lawless and a Traffic Engineering Sub-Consultant
- Building Inspector Wester
- Fire Chief Babeon
- Xcel Energy
- The Clear Creek School District
- Clear Creek County Community Development Office
- Clear Creek County GIS
- Colorado Department of Transportation (CDOT)
- Telephone and Internet Providers

STAFF SUMMARY:

It is staff's opinion that the proposed FPD meets the conditions set forth in the PD, the Municipal Code, and Standards and Specifications for Design and Construction, with the exceptions previously discussed in this report. The development would create a variety of needed workforce housing options in the community with a focus on providing teacher housing for the CCSD. Additional residential units allow for the operating costs of the water and sewer system to be spread out among users. The addition of a park site is a benefit to the community that lacks flat open space. The site design and landscaping promote enhanced aesthetics that are highly sought after by the City. These factors result in staff's recommendation for approval with conditions.

PLANNING STAFF RECOMMENDATION:

Staff recommends **APPROVAL** of the proposed Final Development Plan for the mixed-use development at Block 57/Former Golddigger Field, Bus Maintenance Facility, and additional parcels to the west to include the following conditions:

- Installing a sidewalk along the north side of Miner Street between 8th and 9th Avenues as indicated on the plans. The City will assist with any necessary easements and funding of the sidewalk extension between the indicated terminus and 9th Avenue.
- Installing additional lighting to illuminate the parking areas located near the south and west property lines.
- Adding an additional distinct roof ridgeline to Building 1.
- Installing a privacy fence and adjacent landscaping along the western property line.
- Screening air conditioning units and the garbage areas per the Municipal Code.
- Limiting carport structures to no larger than six (6) spaces.

Attached Documents:

- Engineering Review Memorandum from JVA.
- Traffic Engineer Review Letter from Stolfus
- E-mail from Fire Chief Babeon
- CDOT Review Memorandum
- Development Cover Letter
- Final Plat
- Architectural Plans
- Civil Engineering Plans
- Landscape Plans
- Traffic Study Executive Session – The entire study is available upon request
- Environmental Phase 1 Executive Study – The entire study is available upon request
- Geotechnical Soils Report by Terracon
- Engineering Comment Response Letter

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March 7, 2022

Mr. Jerad Chipman
City Planner
City of Idaho Springs
planning@idahospringsco.com

Re: Review Comments on Traffic Impact Study for Proposed Block 57 Development (FDP)

Dear Mr. Chipman:

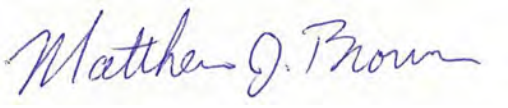
Stolfus & Associates, Inc. (Stolfus) has completed our review of the Proposed Block 57 Development Traffic Impact Study and Addendum. We concur with the statements in the Addendum that the site plan changes that have occurred since the previous submittals are minor and, if anything, will result in less traffic being generated by the site than originally contemplated in the traffic study.

In summary, we have no additional comments on the traffic study and find it acceptable for the purposes of the FDP submittal.

Thank you again for the opportunity to conduct this review on behalf of the City of Idaho Springs. Please feel free to contact me if you have any questions.

Sincerely,

STOLFUS & ASSOCIATES, INC.



Matthew J. Brown, PE, PTOE
Senior Transportation Engineer

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info@jvajva.com

www.jvajva.com

March 30, 2022

Mr. Jerad Chipman, City Planner
City of Idaho Springs
1711 Miner Street
Idaho Springs, CO 80452

RE: Digger Field / Block 57
Review of Final Development Plan Submittal
JVA Job No. 1529.45c

Dear Jerad:

JVA has reviewed a referral package for the above referenced project in Idaho Springs, Colorado, forwarded on March 1, 2022, with supplemental/revised documents forwarded on March 7 & 8, 2022. The purpose of this review is to comment to civil engineering related issues and compliance with the City of Idaho Springs Municipal Code (Code) and Standards and Specifications for Design and Construction (Standards). The submittal included the following civil engineering related documents:

- City Referral Letter dated March 1, 2022
- Civil Engineering Plans Submitted March 7, 2022 and dated March 4, 2022
- Drainage Report dated March 7, 2022
- Engineering Design Basis dated March 7, 2022

The comments generated by our review are shown in the redlined civil plan PDF file submitted separately and listed below.

1. Add Colorado P.E. seal to all plan sheets.

2. Sheet C3: Clarify how storm drainage is being handled on the north side of Miner at 8th Avenue.

3. Sheet C3: It appears that a number of storm drain lines near the proposed buildings are not connected to a manhole/inlet, please clarify.

4. Sheet C3: One of the storm drain lines extending to the proposed detention basin appears to stop short of the basin, please clarify.

5. Sheet C3.1: It appears that a number of storm drain lines near the proposed buildings are not connected to a manhole/inlet, please clarify.

6. Sheet C3.1: One of the storm drain lines extending to the proposed detention basin appears to stop short of the basin, please clarify.

7. Sheet C3.1: Clarify if the existing storm inlet within the proposed park area is to remain and if it is the be adjusted in any manner.

8. Sheet C3.2: Clarify how storm drainage is being handled on the north side of Miner at 8th Avenue.

9. Sheets C3.2 and C3.3: In many cases the pipe sizes indicated in the manhole callouts are not consistent with the sizes shown on the pipes. Revise as appropriate.

10. Sheets C3.2 and C3.3: Adjust drawing such that all storm manhole callouts are visible.

11. Sheets C3.2 and C3.3: Storm manhole diameters are not shown. Due to pipe sizes, manholes in excess of 4' diameter will be needed in several locations.

12. Sheets C3.2 and C3.3: One of the pipes extending to the proposed detention basin is not shown.

13. Sheet C3.3: Work on CDOT ROW will require a CDOT permit.

14. Sheet C3.4: In many cases the pipe sizes indicated in the manhole callouts are not consistent with the sizes shown on the pipes. Revise as appropriate.

15. Sheet C3.5: One of the pipes extending to the proposed detention basin is not shown.

16. Sheet C3.5: Provide details of the detention basin outlet structure and overflow spillway.

17. Sheet C4: Will need FDC at building 1.

18. Sheet C4: Suggest that existing water and sewer lines within the reconstructed section of Miner Street be replaced.

19. Sheet C4: Call out all fire hydrants. Locations of fire hydrants to be approved by Clear Creek Fire Authority.

20. Sheet C4.1: Show connection to exist water main.

21. Sheet C4.4: Show all utility crossings on the profiles.

22. Sheet C4.5: The force main profile indicates the line discharging 6' above the manhole invert. Coordinate discharge elevation with Idaho Springs Public Works.

23. Sheet C4.5: It appears that a manhole is shown at Sta. 2+00 on the force main profile. Revise as appropriate.

24. Sheet C4.5: On the sewer profile it appears there are multiple callouts for the same pipe segment in several locations. Revise as appropriate.

25. Sheet C4.5: Show all utility crossings on the profiles.

26. Sheet C5.0: Provide horizontal control for the curbing and paving on Miner Street.

27. Sheet C5.0: Show 8th Avenue.

28. Sheet C5.0: Show parallel parking on north side of Miner Street between 9th and 10th Avenue and provide dimensions of parallel parking stalls.

29. Sheet C5.0: Show sidewalk on north side of Miner Street between 8th and 9th Avenue.

30. Sheet C5.0: Show curb/pavement radii at entrance off of Miner Street.

31. Sheet C5.0: Provide horizontal control for curbing, sidewalk, etc. within development.

32. Sheet C5.1: Show 8th Avenue.

33. Sheets C5.1 and C5.2: Provide horizontal control for the curbing and paving on Miner Street.

34. Sheets C5.1 and C5.2: Show parallel parking on north side of Miner Street between 9th and 10th Avenue and provide dimensions of parallel parking stalls.

35. Sheet C5.1: Show sidewalk on north side of Miner Street between 8th and 9th Avenue.

36. Sheets C5.1 and C5.2: Provide detectable warnings at crosswalk on 9th Avenue.

37. Sheet C5.1: Show curb/pavement radii at entrance off of Miner Street.

38. Sheet C5.3: Provide ADA parking stall signage.

39. Sheet C5.4: Indicate how you are tying into exist street grade/elev at termini of reconstructed section in profile.

40. Sheet C5.4: Provide vertical curves at all grade breaks.

41. Sheet C5.4: Indicate exist and proposed centerline elevs at 50 foot stations.

42. Sheet C5.5: The entrance drive profile indicates a 10.5% algebraic difference in grade near the intersection with Miner Street.

Please contact me at (720) 975-1461 with any questions.

Sincerely,
JVA, INCORPORATED

By: Tracy M Lawless

Tracy M. Lawless, P.E., S.E.
Senior Project Manager

Scope of Services

JVA Inc.'s review of the submittals listed in this review letter was performed within the following limitations and parameters:

The plan and document review by the City of Idaho Springs does not necessarily include confirmation of design calculations, project approach or every project design element. Therefore, authorization from the City of Idaho Springs to proceed with construction of the project does not constitute unconditional acceptance or approval of the submitted plans or documents, particularly if specific aspects are later discovered to not be in compliance with the City of Idaho Springs municipal code, standards or regulations in effect at the time such authorization was granted. The responsibility for compliance with the City of Idaho Springs municipal code, standards, and regulations rests solely with the developer, their design engineer, and their engineer's consultants. Neither the City of Idaho Springs nor JVA, Inc, accept responsibility for the project design and/or construction of this development nor any other design consideration or standard utilized in the project.

From: Kelly Babeon
To: Jerad Chipman
Subject: Re: Block 57/Digger Field Final Development Plan and Plat Second Referral
Date: Monday, March 14, 2022 9:38:54 AM
Attachments: image001.png

Jerad,

CCFA requests have been accommodated. No further comments at this time.

On Tue, Mar 1, 2022 at 11:09 AM Jerad Chipman <planning@idahospringsco.com> wrote:

> This is a second referral request for the Block 57/Digger Field Development. The link below contains updated plan sets for the proposed development. The City of Idaho Springs would appreciate any comments you may have regarding the revised documents. Please provide comments to me by the end of the day on Wednesday, March 9, 2022. Please let me know if you have any questions.
>
> Dropbox Link
>
> https://www.dropbox.com/scl/fo/zeg8zct4k3ua6q2vt2i89/h?dl=0&rlkey=a933pg29g4d65fitdflj84euh
>
> Thank you,
>
> Jerad Chipman, City Planner
>
> City of Idaho Springs
>
> O: 303-567-4421
>
> www.idahospringsco.com
>
>

--
Kelly Babeon

Fire Chief
Clear Creek Fire Authority
PO Box 507
Dumont, CO 80436

STATE OF COLORADO

Traffic & Safety
Region 1
2829 W. Howard Place
Denver, Colorado 80204

COLORADO
Department of Transportation

Project Name: **Golddigger Field**

Print Date:	3/1/2022	Highway: 070	Mile Marker:

Drainage Comments:

02/07/2022 JK All proposed storm runoff from the site will need to be routed through detention facilities. Rip rap in CDOT right of way should be minimized by safely outfalling storm runoff at toes of slope.

Environmental Comments:

Response to Question #4: ***Has CDOT provided sound walls along the I-70 corridor in the past, and is there any opportunity for the developer to work in cooperation with CDOT to achieve some sort of sound barrier along this stretch of the highway?***

Yes, CDOT has constructed noise barriers along the I-70 corridor in the past in connection with Type I projects (or to replace noise barriers constructed under a previous Type I project). Other noise barriers have been built by private developers, local government agencies, and private citizens. Most highway noise abatement/noise barriers in Colorado are built by the Colorado Department of Transportation (CDOT) as a result of a Federal regulation (Title 23 Code of Federal Regulation Part 772 [23 CFR 772]; Procedures for Abatement of Highway Traffic Noise and Construction Noise).

In order for an area to qualify for noise abatement to be funded and constructed by CDOT, the following steps must be followed:

1. CDOT must plan a construction project in the area that is classified as "Type I", as defined under 23 CFR 772.5. Only Type I projects are analyzed for potential noise mitigation. Examples include adding through-traffic lanes, or making significant changes to the alignment of the travel lanes. Projects such as repaving or adding turn lanes are classified as Type III, and do not require noise analysis.

2. Noise analysis is conducted for all Type I projects to determine if any receptors (e.g., homes, schools, parks, offices) will be impacted due to the proposed construction project. "Impact" is defined by specific noise levels for different types of receptors under the CDOT Noise Analysis and Abatement Guidelines. "Impact" is also defined as a noise increase of at least 10 decibels from existing conditions to 20 years in the future. If analysis shows that any receptors are impacted, the feasibility and reasonableness of noise mitigation is analyzed. In order for CDOT to recommend noise mitigation, the mitigation must be shown to be feasible and reasonable.

3. Feasibility has to do with constructability. This primarily deals with engineering considerations (e.g., can a barrier be built given the topography of the location; can a substantial noise reduction be achieved given certain access, drainage, safety, or maintenance requirements; are other predominating noise sources present in the area). In addition, the barrier must be able to provide a minimum 5.0 dBA reduction for at least three impacted receptors, and noise walls must have a height of 20 feet or less.

4. Reasonableness has to do with socio-economic factors and must meet the following three criteria: (1) The barrier must reduce noise by 7 dBA or more for at least two receptors. (2) The barrier must cost no more than $34,000 per benefited receptor. (3) At least 50 percent of the receptors that will benefit from the barrier must be in favor. Prior to construction, all benefited property owners and residents would be surveyed.

Below is a link to our noise webpage, where you'll find a variety of information regarding noise analysis and abatement associated with transportation facilities, including a copy of the CDOT Noise Analysis and Abatement Guidelines, which contain a detailed description of the criteria used to determine impacted receptors and evaluate possible noise mitigation on CDOT projects

https://www.codot.gov/programs/environmental/noise

Appendix D of the CDOT Noise Analysis and Abatement Guidelines provides information regarding proposals for non-CDOT, non-federally funded noise barriers proposed for construction on state highway right-of-way. This includes noise barriers proposed by private developers, local government agencies, and private citizens. These noise barriers must meet criteria established by CDOT.

The Site Plan indicates that residences would be constructed less than 100 ft. from the nearest I-70 travel lanes. At that distance, these new receptors would very likely be impacted by traffic noise from I-70. I recommend the applicant complete a noise analysis to determine the 66 dBA noise contour for the proposed development under loudest noise-hour conditions.

Planning Comments: There is a project in the fiscally constrained plan for a mobility hub in Idaho Springs.
We would defer to the residency for what all that entails.

History/Bio: No concerns

Response to Question #1: ***The culvert work is shown on CDOT plans, NHPP 0703-445 21893, sheet 305, and sheet 306. Can the development use those culverts for our outfall? Would CDOT allow the developer to have rip rap in the CDOT easement leading to the culverts?***

Yes, rip rap is allowed in CDOT ROW. It has to be designed for the speed of the hwy, cleared with Traffic, and FHWA.

Response to Question #2: ***Coordinated landscape in the ROW, ex. Trees, native grasses, boulders - Can the developer put landscaping in CDOT ROW?***

Yes, landscaping is allowed in CDOT ROW. It has to be designed for the speed of the hwy, cleared with Traffic, and FHWA. Chapter 7 of the ROW manual has guidelines. There also must be a written agreement that applicant/Idaho Springs/County will be responsible for maintenance.

From WQ Specialist: One thing to consider is how these will be accessed and maintained. CDOT should not be maintaining these. The question about culvert use for access to Clear Creek will mainly be Hydraulics' decision.

Response to Question #5: ***Who would know about the status of the CDOT dedicated pedestrian bridge near Exit 103? Idaho Springs says there is an agreement in place that CDOT will build this bridge. The seller of the site, Clear Creek School District, wrote into the sales contract that the developer should provide concessions for the landing of said bridge. The City of Idaho Springs, through the zoning approval process, has required there be concessions for the said bridge. We are in the process of design of the site plan and project but neither entity has been able to provide further information on said bridge. Is the bridge in a vision plan for the area and is there a plan for funding it?***

CDOT has not agreed to build it. Mike Keleman would know the specifics of prior conversations.

Response to Question #6: ***Status of the Mobility Hub and associated traffic studies, site plan, and/or engineering. They anticipate the Mobility Hub will impact traffic at and in the vicinity of Exit 103 and want to ensure we are all working together to understand the bigger picture of the Exit 103 area. According to the developer the Mobility Hub will be built to the east of the intersection. Existing buildings on the east side will be moved to the existing Idaho Springs Parking lot on the west side. Who has information about that?***

We refer to DTR as they have been involved in the mobility hub conversations and possibly Tyler Brady may have information as well.

Response to Question #7: Will there be a roundabout at the 13th Avenue and Idaho Street intersection or the off/on ramps from I-70?

Not as far as we [Environmental] know.

Traffic Comments:

02/14/2022 C Lacombe

Please provide the traffic impact study that has been developed for the City of Idaho Springs for CDOT to review.

Right of Way Comments:

MJO - 2/14/2022
Can Developer put landscaping in CDOT ROW - No, they would need to acquire a permit (Kirks Allen's Group) - **SEE ALICIA"S RESPONSE BELOW**
Can Developer use CDOT Land for Snow Storage - No, they would need to acquire a permit (Kirk Allen's Group) - **SEE ALICIA"S RESPONSE BELOW**
Question 5 - CDOT ROW has no knowledge of location of proposed bridge landing. I would defer to West unit engineering. CDOT ROW is interested in location of proposed I-70 Crossing, potential A-Line Break, Crossing, or License would have to be processed thru FHWA since the development is located on I-70. Exhibits would be required. For this development the north side break or proposed break and landing area should be detailed. Language to dedicate the landing area to Idaho Springs in the plat. Idaho Springs may then later Deed to CDOT if necessary. It would be helpful and potentially less costly to know where the proposed bridge landing is, or potentially Dedicate multiple tracts to Idaho Springs which could potentially revert back to the Developer if not used.

AC 12/16/2022 :
Response to question #2: Yes, the developer can landscape, meaning to alter the appearance of a piece of land by minor grading, planting trees, shrubs, flowers, grasses, or installing an irrigation system to support plant life. It does not mean changing the contour of the land. It also does not mean placing any other items in the right of way other than those noted above. The landscaping can not compromise the integrity and the safety of the highway. The process in the ROW Manual Ch 7 Sec 7.2.19

- Permission to use CDOT right of way for landscaping can be obtained either by a permit or a license. A license may be obtained by land owners who desire to landscape small parcels of CDOT right of way adjacent to their property where a physical barrier such as a noise wall separates the requested right of way parcel from the travel surface of the CDOT facility. A permit shall be issued for all other requests.
- Regardless of the type of request, if a CDOT right of way fence separates the requestor’s property from the right of way, either a CDOT approved gate must be installed in the fence, or a fence agreement allowing for an alternative barrier must be executed and recorded at the County Clerk and Recorders Office. Also, if the landscaping activity requires crossing a deeded access control line (A-line), a license to allow for the crossing must be executed. Fencing and gate provisions and licenses to allow for crossing of deeded A-lines can be incorporated into the permission document given to the landowner to allow for the landscaping activity. All landscaping activities in interstate right of way, or that cross access control lines for interstate facilities must be approved by FHWA.

CDOT would need the proposed landscaping plans, location of where the developer plans to access the ROW for the landscaping and if a license then a form completed through HQ PM. Possibility for fence agreement and Aline Crossing License being needed.

Response to question #3: Possible use of any portion of the ROW for snow storage at peak

snowfalls? Yes, there is a possibility for use of a portion of CDOT ROW as long as it does not impact the state highway system, CDOT unit supervisors concur and CDOT does not need for their own use. If approved this would require a lease at fair market value with exhibits.

Also where is the A-line? Plans show an A-line is it shown in the correct location? I refer this question to Darren

Resident Engineer Comments:

2/15/22 B Davis:

1-4: No response, allowing other specialties to provide a response to these items.

5. **Status of Ped Bridge?** Right now CDOT does not have funding for a pedestrian bridge, but is supportive and committed to working with Idaho Springs on the development of a bridge. A letter was provided from the CDOT Chief Engineer to the Mayor of Idaho Springs discussing CDOT's position.

6. **Status of the Mobility Hub**? The mobility hub project is driven by the city of Idaho Springs and funded by the City and CDOT in partnership. An MOU agreement has been signed by both parties regarding the support of the project. Preliminary design has not been completed yet for the project. As the project progresses the city will be the best source for information regarding the project.

7. Roundabout at exit 240? I think at this time the mobility hub project is still evaluating the project scope to determine if a roundabout will be implemented at exit 240 ramp intersection. The publicly available PEIS and ROD documentation for the I-70 corridor and project documentation for subsequent projects in the I-70 corridor may have further information regarding either the need or desire for a roundabout to be implemented at this location.

Permits Comments:

2-8-2022, If the traffic on the West side of the intersection of Idaho Street and 13th Ave. will increase by 20 percent or greater, a State Highway Access permit will be required for the West connection of Idaho Street and 13th Ave. CDOT OTIS is showing this intersection to be in CDOT Right-of-Way.

Any signing for this development that is visible to the Interstate must comply with all applicable rules governing outdoor advertising in Colorado per the State of Colorado rules **2 CCR 601-3**.

-2-8-2022, Steve Loeffler

Response to questions: (similar to Environmental).

1. **Culverts?** Defer to Hydrology, Maintenance and residency. Any work in CDOT RoW wil require a permit. The maintenance of elements (Rip rap) built by developer will need to be addressed by the permit.

2. **Landscaping allowed in CDOT RoW?** Possibly under a permit. CDOT will need to review and approve such plans. Maintenance will also be addressed under the permit.

3. **Possible use of any portion of the ROW for snow storage at peak snowfalls?** Generally no. Defer to RoW to show precise locations of all A-lines and breaks therein. There was a devolution of RoW a few years back; we are not totally clear what A-lines may have remained on the local roadways. CDOT RoW must primarily accomodate snow storage removed from interstate not private property or abutting roadways.

4. **Sound Walls?** This appears to be a “rezone" of sorts and sound walls were not considered warranted at this location during the initial Cat Ex. We do allow for developers to build their own noise barriers and pending location, the maintenance associated with the highway side of the wall must be addressed. Placing such wall directly on the property line could be problematic.

5. Will CDOT work with developer on sound walls? Of course in terms of measuring noise mitigation. Work though environmental unit, but funding may not be available**.**

6. **Status of Ped Bridge?** Noted the ped bridge is shown on the City's Trails Master Plan dated 2017. It would land somewhere near 12th Ave on the east end of the project. The Cat Ex is dated 2014. The Town's Planning & Public Works would be more understanding of showing this bridge, as the Towns Transportation Master Plan (TMP) came after the Cat ex as did the SH 103 bridge & sidewalk reconstruction

7. **Status of the Mobility Hub**? Not aware of one – Table 3 of the Cat Ex did not ID this strategy – although we do support the concept along the mountain corridor. This is mostly managed through DTD and each Mobility Hub may entail a handful of amenities such as/including a Bustang stop. Ideally, if one is planned in Idaho Springs, it should appear on both their and County's TMP as well. I do not envision this interchange “gateway" designation as the same as a Mobility Hub.

8. **Possible roundabout?** Not aware of one – such proposal would need to come from the Town.

West Program Residency may have more accuracy in responding to thise questions

- RS 02-14-22

Block 57 /Former Golddigger Field – Final Development Plan Submittal

TABLE OF CONTENTS:

1. Final Development Plan and Plat Application
2. Executive Summary / Cover Letter
3. Design Intent
4. Impact Statements

Attached:

5. Final Development Plan Drawings
6. Traffic Study
7. Phase 1 Environmental Report
8. Soils Report

2/28/2022

Staff Use Only
Application Number: _____
Received By: _____
Date: _____

Idaho Springs Land Use Application

1. This is the master land use form for the City of Idaho Springs. Please use to apply for:
(Please select one of the following as appropriate)

- ☐ Administrative (Subdivision)
- ☑ Plat Major Subdivision
- ☑ Planned Development Overlay
- ☐ Sign Permit
- ☐ Temporary Use
- ☐ Annexation
- ☐ Variance or Appeal
- ☐ Minor Subdivision
- ☑ Rezoning
- ☑ Other: Alley Vacation
- ☐ Conditional Use Waiver
- ☐ RV Park
- ☐ Site Plan

2. Project Name: Block 57 Miner Street
Please print or type legibly

3. Contact information: *(a list of additional contacts may be attached)*

Owner Name: Clear Creek School Dist
Address: PO Box 3399, Idaho Springs,
Telephone: 303.567.38 Fax: _____
E-mail: Karen.Quanbeck@CCSDRE1.

Applicant Name: Four Points Funding / Ste
Address: 250 Fillmore St. #225, Denver, C
Telephone: 303.522.66 Fax: _____
E-mail: stephanie@fourpointsfunding.cor

4. Property Description:
Address or Location: Gold Digger Field between 8th and 11th Avenue on Miner Street
Existing Zoning: R1,P,C2 Existing Use: Football field and bus barn
Proposed Zoning: PD/C2 Proposed Use: Mixed Use

5. Purpose: *(describe intent of this application in 1-2 sentences)*
To entitle the property to make development feasible.

6. Certification: *(must be signed in blue ink)*

I certify that I am the lawful owner of the parcel(s) of land affected by this application and hereby consent to this action.

Owner: _____ Date: 3-1-21 **AND**

I certify that the information and attachments I have submitted are true and correct to the best of my knowledge. In filing this application, I am acting with the knowledge and consent of the property owner(s). I understand that all materials and fees required by the City of Idaho Springs must be submitted prior to processing this application.

Applicant: _____ Date: March 1, 2021

Land Use Application Form

FOUR POINTS FUNDING

CONNECTED. COLORADO. CAPITAL

Building the path for investing at scale across Colorado's emerging communities

2. EXECUTIVE SUMMARY & COVER LETTER

Four Points Funding is under contract with Clear Creek School District for the purchase of Golddigger Field and their Bus Barn properties as of December 10, 2020. In late September of 2021, the site was approved for rezoning to be Planned Development, consisting of 2.75 acres of unimproved land and .56 acres of improved land. Additionally, the project site is incorporating approximately .42 acres of Residential -2 (R-2) zoned unimproved land directly to the west. Four Points Funding with full support of the Clear Creek School District are requesting the Final Planned Development to accomplish the intent of the Comprehensive Plan and bring approximately 120 residential for rent units to this location in Idaho Springs.

The site is known to have been home to a mill in the later 1800s -early 1900s. In the year 1957 it began being used as a football field for the Clear Creek School District. In 2019, the last high school football game was played at this location as construction began on a new state of the art, regulation size field near the current high school on Floyd Hill. The primary city block where it resides is documented as city block 57 and therefore the project for entitlement reasons will be referred to as Block 57.

rental housing for middle-income earners

Following a year of negotiations with the City of Idaho Springs and the community at large, Four Points is submitting Block 57 for the Final Planned Development (FPD). The project is intended as a Mixed-Use Development with attainable Multi-Family Dwelling Units as rental housing for the residents/workers of Idaho Springs and Clear Creek County; as well as General Retail; and Park Uses programmed, in part, with the Clear Creek Metropolitan Recreation District (CCMRD). Additional documents may be necessary to set forth all Terms and Conditions: the obligations of all parties; the standards and conditions retail in conjunction with a fully constructed and operated park for the residents of Idaho Springs that will govern the development.

The Project Site has been rezoned to Planned Development to allow housing and an operated park for the residents of Idaho Springs. The final step for entitlement is the Final Development Plan for approval being submitted here.

The Project will be completed in two phases. Phase 1 being the construction of Buildings 1 and 2 along Miner Street and adjacent open spaces and parking as well as Building 3. Phase 2 will be the completion of the Community Park located on Area 2 across from the CCMRD and associated parking. Phase 2 is necessary to allow for the required Leaseback Agreement associated with the existing sales contract on the property.

Rendering of the looking at Building 1 from Miner Street.

3. DESIGN INTENT

- Introduction
- Height, Coverage, & Setbacks
- Design& Materials
- Parking & Circulation
- Open Space / Community Space

1.0 INTRODUCTION

This document is intended to provide readers with a conceptual understanding of the design of the intended project that complements Idaho Springs and provides benefits to its community and residents. The 2017, Economic @ Planning Systems (EPS), Inc. study estimated 150 additional housing units would be needed in the next 10 years. Idaho Springs is 5 years away from meeting that goal. The Project's location just off Exit 240 from a major arterial transportation connection, I-70, provides an ideal location for the placement of a significant number of these units. Block 57 will include a mix of uses: up to 120 Multi-Family Dwelling Units; up to 12k square feet of Community Centric General Retail; over 24k square feet of Park Land for Recreational Use. Its easy on-and-off access to the interstate is optimal as it reduces the to-and-from traffic impact this Project will have vs. a location in Idaho Springs city center.

Partnering with the neighboring recreation center will provide benefit to the development as well as the community at large. Open space will be designed, constructed, and maintained by the developer providing benefit to all users of the recreation facility. Additonally, 8-16 'attainable rent bedrooms shall be dedicated to housing solutions for School District staff. The Project will be parked to meet local municipal code regulations.

The 2017 City of Idaho Springs Comprehensive Plan Goals include 'provide a diversity of housing to promote a complete community and accommodate all needs to allow people to live in Idaho Springs throughout their lives'. This vision includes low and moderate income groups and contributes to meeting the city's goal of 'ensuring its economic future through responsible development'. The Block 57 Development is focused on creating solutions through prioritizing the City's economically diverse population. A succesful project will incorporate middle-income earners with safe, accessible units for rent, easy access to a healthful lifestyle, while providing the community at large open space to enjoy year round.

FOUR POINTS FUNDING
BLOCK 57 | FINAL DEVELOPMENT PLAN
IDAHO SPRINGS, CO 80452

Rendering of the proposed Building 3 and Community Park, looking west.

BLK 57
UNIT MATRIX

Date 2.28.22

Option D - 2nd Floor Retail

	STUDIO @ 461 SF	1 BDRM @ 550 SF	1 BDRM @ 658 SF	2 BDRM @ 796 SF	2 BDRM @ 870 SF	4 BDRM @ 1,446 SF	DOG WASH/ BIKE TUNE	RETAIL/ STORAGE	MECH/WATER/ OFFICE/ FIRE	Total	Square Footage	Gross SF
BLDG 1												
LEVEL 3										0	0	
LEVEL 2	5	5	2	3		0				15	8759	11133
STREET	5	5	2	3		0				15	8759	11133
GROUND	6	1	1	1		0	243	772	352	9	6137	8064
	16	11	5	7	0	0				39	23655	
										Gross SF		30330
										Circulation %	78%	
BLDG 2												
LEVEL 3	5		1			1				7	4409	5877
LEVEL 2	5	3	1	2	1	1				13	8521	10484
STREET	5	4	1	1	1	1			98	13	8373	10484
GROUND	5			1		1	431	630	583	7	6191	7993
	20	7	2	4	2	4				39	27494	
										Gross SF		34838
										Circulation %	79%	
BLDG 3												
LEVEL 3	4	1	2	3	3	0				13	8708	10470
LEVEL 2		1	4	4	2	0				11	8106	10470
STREET		1	4	3		0		2551		8	8121	10470
GROUND		1	2	3	2	0	730	307	1241	8	8272	9638
	4	4	12	13	7	0				40	33207	
										Gross SF		41048
										Circulation %	81%	
Total Unit Count	**40**	**22**	**19**	**24**	**9**	**4**				**118**	**84356**	
										Total Gross SF		106216
										Circulation %	79%	
Parking Count	**50**	**33**	**28.5**	**36**	**15.75**	**10**		**10.204**	**0**	**183.454**	**18.3454**	**165.1086**
park factor												
handicap	*IBC Table 1106.1*	*and IS Stds 3.9.2*									151-200 spaces =	6
van parking											1 per 6 =	1

CITY OF IDAHO SPRINGS VISION STATEMENT

"Idaho Springs is dedicated to preserving its culture as a historic mining community, ensuring quality of life and its economic future through both preservation and responsible development, striving for an inclusive community, designing a complete transportation system, promoting recreational opportunities and implementing the wise use of community and natural resources."

Miner Street height precedent

"redevelopment sites within the City where high density multifamily should be encouraged"

City of Idaho Springs Housing Study

2.0 HEIGHT & COVERAGE

The Project is made up of 3 buildngs. The site steps down approximately 20-12 feet where the buildings face the I-70 corridor. Therefore, the buidlings will each provide additional ground level units under the primary stories at street level. This will make the structures 1 additional story on the I-70 facing sides. For the purpose of clarity, the Project refers to "street level" as the existing level of Idaho Street and Miner Street (an 8 foot difference) where the Project faces town on the north and east perimeters of the site.

Due to the unique grade conditions present on this site, Building Height shall be measured vertically from the original adjacent grade of primary adjacent road. A Miner Street Zone Lot Line is added to shape the building form and reduce the effect of massing and shadow on the pedestrian environment and neighboring properties at Miner Street and address the low grade to the south.

Existing houses facing the Project on the north side of Miner Street and the south side of Idaho Street range from 1-story to 3-story structures. Per code any new structure in this R-1 zone could be built to a height of 35 feet. The CCMRD structure, which resides in the neighboring Commercial-2 Zoning, currently measures 39'-6" to its tallest point. Block 57, as a Planned Development, will be 2-story structrures as they face the existng Miner Street neighborhood. Designed with a gabled roof they would be approximately 24 feet from the existing street level to the bottom of the gable. The intent is to provide a pedestrian-friendly atmosphere that fits into the existing neighborhood fabric existing in other areas of Idaho Springs.

Building 3, closest to I-70, the recreation center and proposed park at the Bus Barn property to the east, will be 3-stories from street level as it faces town and therefore, 4 stories facing I-70. Setbacks to the neighboring residences along the south side of Idaho Street are a minimum of 20 feet to eliminate shading of these existing structrues for the majority of the year.

Building Coverage is propsoed as 50% for Area 1 (mixed-use) and 10% for Area 2 (park) as the City of Idaho Springs Municipal Code does not provide a restriction

PLAN ELEMENT GOALS FROM 2017 CITY OF IDAHO SPRINGS COMPREHENSIVE PLAN

LAND USE: maintain and enhance community character and quality of life, while lessening the adverse effects of growth and directing new development to appropriate locations that are cost effective to serve.

HOUSING: Respect existing single-family neighborhoods, provide a diversity of housing to promote a complete community, and accommodate all needs to allow people to live in Idaho Springs throughout their lives.

PARKS, OPEN SPACE, TRAILS & RECREATION: Aspire to be an active, healthy community that appreciates the outdoors, our connection to the natural environment and fosters sustainable recreational opportunities within our mountain community for all ages and abilities.

HISTORIC RESOURCES: Celebrate and preserve our mining history and resources to provide future generations a sense of place and connection to our past.

3.0 DESIGN & MATERIALS

Site Design shall encourage dog friendly and bike friendly options. Public spaces shall be inclusive and encourage a multitude of activities while providing safe and attractive design elements. Designer shall establish consistent use of similar street furniture, lighting, trees and pavement. As well, the site design shalll conform to standards set forth in the City of Idaho Springs Development Regulation, unless otherwise noted.

Landscaping and Lighting shall be chosen to enhance the human scale while complementing the mass and height of the adjacent buildings. Outdoor community spaces will be well lit to accommodate pedestrian activity and promote the use of space throughout the year and evenings. Care will be taken to address dark sky concerns while maintaining public safety for residents and the community.

Site Design shall incorporate the ability for bicyles and pedestrians to potentially connect to the Greenway Trail via a Colorado Department of Tranportations proposed pedestrian bridge that will land on or near the site.

Building Design will evoke a sense of place. Buildings shall be reminicent of the language of mill and mine vernacular, in terms of form or materiality. Per the Idaho Springs Municipal Code the Project is located in the Gateway area of the City and shall ‘reflect the historic mining heritage of the community’. Massing and color shall be complementary of surrounding houses and larger structures in and around Idaho Springs. New Contsrtuction shall enhance the historic feel of the larger community.

Minimal setback along Miner Street from the sidewalk promotes real interactions, and are consistent with the historiclal context of the nearby Historic District. Residents and shops will enter individual units at street level to better promote a sense of single family homes and active public spaces. Weather protection using awnings, canopies or building overhangs may be provided to add articulation to the street frontage of the buildings.

Rooftops clearly visible, shall be designed to screen utilites, infrastructure housing, HVAC,etc. Passive activities on rootops, such as green roofs, solar panels, art and or signage to make them visually interesting may be considered. Waste enclosures within the Project shall be centrally located throughout the property and screened.

The Project shall comply with the architectural standards set forth in the City of Idaho Springs Development Regulations, unless otherwise noted.

FOUR POINTS FUNDING
BLOCK 57 | FINAL DEVELOPMENT PLAN
IDAHO SPRINGS, CO 80452

COMMUNITY BENEFITS

- ✓ Bedroom accomodations for workers making the Idaho Springs area median income (AMI) of $47k or more. In some cases lower.
- ✓ Safe, Accessible, well maintained, healthful units at attainable rates for families and seniors.
- ✓ Year-round access to park space for the community (developed, constructed & maintained by the developer) and programmed in conjunction with Clear Creek Metropolitan District.
- ✓ Honor the historic high school football field and games played in the location of the site.
- ✓ Economic and community generator – providing community members a residence in Idaho Springs.
- ✓ Cooperative parking spaces during off-peak residential parking hours up to 12,000 sf of retail space, generating jobs and sales tax.
- ✓ Designed to reinforce the historic, mining culture adjacent to the historic district.
- ✓ Extension of Miner Street and the neighborhood fabric to better connect the west side with the city center.

4.0 PARKING & CIRCULATION

While vehicular circulation is necessary for residential and commercial spaces, pedestrians and bicyles shall be encouraged through and around the Project Site. Where necessary, bollards, borders, or a change in material shall delineate vehicular and pedestrian zones in the newly developed areas.

Parking is a key role in mixed-use developments. The Project shall widen Miner Street to create a pedestrian and vehicular friendly environment elsewhere in the City. By doing so, the Project will be able to provide on-street parking along the south side of Miner Street which shall be counted as required parking for the Project as the land within the existing propery line. Over the 8% required Project property will be dedicated to the widening of adjacent streets and City Impact Fees will be used toward accomplishing this shared vision and goal. Additional parking will be provided between the recreation center and proposed park at the eastern edge of the site. The majority of the parking for the Project will be centrally located along the I-70 side of the site.

Bicycle parking shall be provided in safe, visible locations. Alternate transportation options for residents will be considered as appropriate.

5.0 OPEN SPACE/ COMMUNITY SPACE

The Project is located within 1 mile of 22.76 acres of City owned space spread throughout and around the city center of Idaho Springs not including the 422 acre Virginia Canyon Mountain Park to the north side of town.

City of Idaho Springs existing open space

FOUR POINTS FUNDING
BLOCK 57 | FINAL DEVELOPMENT PLAN
IDAHO SPRINGS, CO 80452

SITE / PROPERTY SQUARE FOOTAGE	
Parcel A minus Dedication	20,321
Parcel B	18,713
Parcel C	8,504
Parcel D	29,050
Parcel E	8,795
Parcel F	4,839
Parcel G	7,254
Parcel H	16,342
9th Ave Existing Vacation	4,474
10th Ave Existing Vacation	5,006
11th Ave Vacation	4,012
Miner St Existing Vacation	1,784
Alley through site Vacation	14,042
Idaho St Vacation @ Miner	1,051
TOTAL AMMENDED PARCEL	**144,187**
8% of Total for Required Dedicated Land to City	11,535
10% of Total for Required Open Space per Subdivision	14,419
15% Open Space Required per Planned Development	**21,628**
Open Space Proposed	**33,500**
Miner Street Dedication to City	8,819
Idaho Street Dedication to City	7,196

Block 57 Open Space Calculations per the approval of the Planned Development for Block 57.

Pursuant to section 24.72 of the Idaho Springs Municipal Code, the Project is required to provide a minimum of 18% open space to meet future major subdivision requirements as calculated in the chart to the left. Additionally, 15% is approved in the associated Planned Development.

Community Space in a small community serves many functions: it is an outdoor room where social interaction creates a sense of belonging, provides variety in the built environment, and employees and residents can get outside even if their unit does not have its own outdoor space. Neither work nor home, it provides the “third place”, an essential component of neighborhood livability. Community Space serves as a focal point and assists in orientation through a development or neighborhood. It should be pedestrian friendly and create meaningful public Open Space. Adjacent buildings and structures will engage the space to ensure vibrant use.

The Project’s Open Space will consist of park community gathering space, dedicated right of way, and small landscape zones as allowed and will exceed the requirement defined by the municpal code. Flexible programming, as well as the community park use elements shall be designed in conjunction with Clear Creek Metropolitan Recreation Center and designed to be enjoyed by people of all ages and abilities.

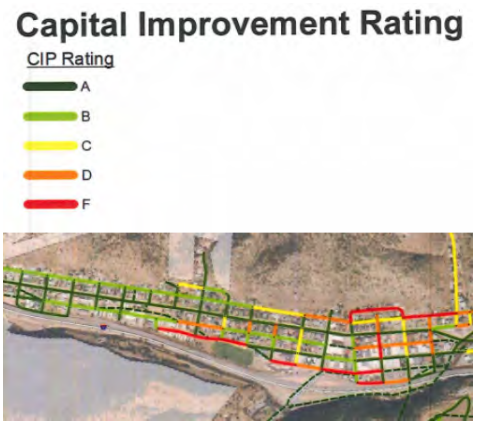
The Project’s planned Open Space shall be located east of the housing structure in anticipation of The Colorado Department of Transportation’s (CDOT) proposed pedestrian bridge landing on or adjacent to the Project Site. This pedestrian bridge will bring connectivity between the north and south sides of the highway thus connecting residents to Forest Service open space, Clear Creek water front, and child enrichments centers (like Mountain Youth Network, TREK, and the Rock House) in and near Building 103.

Block 57 Park and Interstate-70 beyond

Community Park with Rec Center in background looking northeast.

Block 57 Illustrative Site Plan

Site view from the top of the AVA Zipline



Preliminary Findings, Infrastructure Assessment by HDR

Proposed Block 57 at Miner Street - Milagro Designs

4. IMPACT STATEMENT

1.0 Purpose
2.0 Traffic & Parking
3.0 Utility Service
4.0 Environmental Mitigation Plans
5.0 Natural Resources
6.0 Water Demand/ Service
7.0 Sanitary Sewer Demand / Service
8.0 Stormwater / Drainage
9.0 Visual Impacts
10.0 Education
11.0 Emergency Services
12.0 Historic Preservation

1.0 PURPOSE

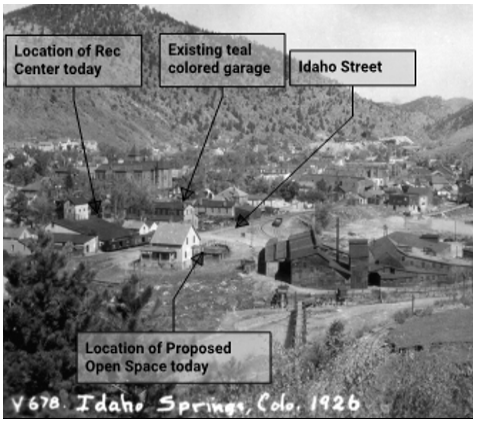
The purpose of the Former Digger Field/ Block57 Project is to provide middle-income housing to the workforce of Idaho Springs while participating in the economic growth of the city. The vision is a collaborative effort between Developer, City, School District, the recreation district and large employers to support vibrant, sustainable growth in Idaho Springs.

2.0 TRAFFIC & PARKING

The 2017 Preliminary Findings, Infrastructure Assessment for the City of Idaho Springs by HDR reports Miner Street bordering the north edge of the site with a grade ”F”, ‘Pavement Conditions’ in relatively poor condition.

The road standards applicable to the Project, and specifically the widening of Miner Street, are set forth by the Municipal Code. Two-way traffic passing lanes per an engineered certified traffic study and parallel parking and sidewalks on the north and south sides of Miner Street between 8th and 12th Avenues and street lighting shall be provided by the Developer. Improvements are estimated to cost over ($1.2M) one million two hundred thousand dollars. Extensive soil import is necessary to widen Miner Street due to existing grades on Site. Modification of standards for roads within the Project shall be determined by the City pursuant to the approval of a Final Development Plan.

Traffic for the proposed maximum 120 multi-family residential units and 12,000 square feet of retail equates to a maximum of 90 trips per hour during



Courtesy of the Idaho Springs Historical Society

Saturday peak traffic times in Idaho Springs. Two access points at Miner/9th Avenue and Idaho Street at 11th Avenue would therefore see 45 cars per hour at this peak time. Although, this number is expected to be less because as workforce housing, residents who work in town are expected to walk or ride a bicycle during peak traffic times of summer when the weather is nice.

Impacts along Colorado Boulevard are minimal. Idaho Street at 13th Avenue currently requires improvements with the amount of traffic, spacing of intersections and number of pedestrians crossing from the public lot on the west side to the downtown area. Further analysis is needed. Idaho/13th intersection would be a good candidate for implementing a 3/4 movement island restricting lefts and through movements from Idaho Street, and still allowing right turns and left/right turns from 13th Avenue. It is important to know the Colorado Department of Transportation has completed studies at this intersection in the past. There has previously been thought a traffic circle would help to manage and calm traffic accordingly and the addition of a new mixed-use development nearby may further make this need a reality.

Additional parking, crosswalk, traffic calming, and street amenities such as lighting and street scape will be provided along Idaho Street near the recreation center by the Developer. Improvements estimated to a cost of ($80,000.00) eighty thousand dollars.

The Developer will provide land for and fund design and construction of agreed transportation improvements on and along Miner Street between 8th and 11th Avenues and Idaho Street between 11th and 12th Avenues. Additionally, cross walks and safety lighting shall be provided by the Developer. Design and construction must occur in concert with the project development to complete the Project due to grading and impact of overall circulation.

3.0 UTILITY SERVICE

Electricity and gas to the Project site will be served by Xcel Energy. Xcel currently has overhead power lines on the Project site which are expected to be placed underground with development of this project. Electricity will be provided by existing power poles in the Right of Way and brought to the project site underground. Gas in not anticipated for the site. Century Link is expected to provide telecom and internet services.

4.0 ENVIRONMENTAL MITIGATION PLANS

1. The Site was occupied by several single- and multi-family homes, garages, and sheds for several decades beginning in the late 1880s. None of these structures remained on-Site past the 1950s. It is possible that when

I-70 & Former Golddigger Field

these structures were demolished, the debris, potentially containing asbestos or lead paint, was buried on-Site (see Item 3, below).

2. The Site was occupied by at least two ore treatment plants (from at least 1931 but no later than the early 1960s). Heavy metals at concentrated values, which are typically contained in ore slag, can be a biproduct of ore treatment plants. Other contaminants are also possible.

3. The Terracon geotechnical investigation indicates that fill has been placed on the Site. It is not clear what the fill contains, but there is no indication of hazardous waste. From what I know of the area, I would assume that the fill is probably made up of a mixture of mill tailings (from the former ore treatment plants), wood, trash, and construction debris.

4. There have been several underground storage tanks in use at the Site. Of the tanks we know about (the records prior to 1970-ish can be spotty), only one is still active and in service. The others appear to have been removed or closed in accordance with the regulations existing at the time. The remaining diesel tank is currently in use to fuel the School District's buses and other maintenance vehicles.

5. There is an oil/water separator on the outside of the western edge of the Bus Barn; it received wash-water from inside the Bus Barn via a central floor grate. The oil/water separator could not be inspected because there was a bus parked over it, but the floor grate leading to the oil/water separator did appear to contain oily solids.

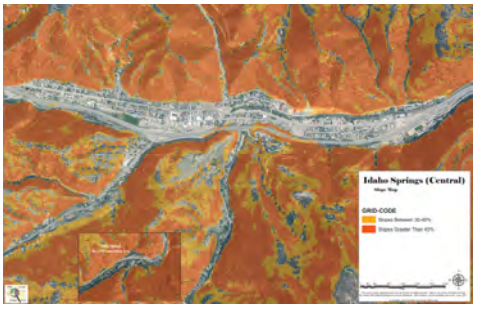
6. Overall, the interior of the Bus Barn was remarkably clean and well kept. They do store a lot of routine motor oil, engine cleaner, windshield wiper fluid, etc., but everything was very well organized and secured (including the waste materials such as waste oil, used batteries, etc.).

7. While not a part of a typical Phase I, there will likely be some asbestos in the Site structures based solely on the age of construction. I did not observe anything that would indicate an immediate hazard; it's just something that may need to be addressed as part of Site redevelopment.

The developer is required to manage impacts during construction:

1. As a best management practice, outreach to the State prior to construction. The Site is located near the Clear Creek Superfund Site, next to a mine/mill impacted creek, and there is history of ore treatment on the property.

View of former Digger Field requiring fertilizer and water for maintenance.



Slope Map of Idaho Springs from the Idaho Springs Comprehensive Plan – Envision Idaho Springs 2017.

Orange indicates slopes greater than 45%.

GOLDDIGGER FIELD MAINTENANCE

- ✓ **$1,000 to turn on the outdated lighting system per use**
- ✓ **$1,500 water per month**
- ✓ **$400 paint lines per month**
- ✓ **$50 gas per month**
- ✓ **$800 labor to mow per month**
- ✓ **$1,000 fertilizer per season**
- ✓ **$500 grass seed per season**

2. Any fill disturbed or excavated will be assessed and appropriately managed. Any mill tailings can be reused on-Site (under certain guidelines) or excavated and disposed of at a permitted facility. If the fill contains construction debris that contains asbestos, lead paint, or has indications of chemical impact (e.g., petroleum products from the Bus Barn, etc.) that material will be disposed of at an appropriate landfill.

3. The existing diesel tank will be eligible for Policy 29 funds which provides reimbursement for the removal of operating tanks (and any associated hardscape, soil, or water impacts) that will not be replaced with another tank. The oil/water separator may be able to be removed as well.

4. All motor oil, engine cleaner, windshield wiper fluid, waste fluids, etc. must be removed from the Bus Barn. The oil/water separator and floor grate must be removed as well if not completed with Policy 29 funds.

Susan Borden, PG, Partner & Principal Geologist, Indigo B2B, LLC

5.0 NATURAL RESOURCES

There are measurable shortages of fertile land, water, and fossil energy that currently exist in many regions of the world. Strategically planning for density and growth will help to manage the use of some, if not all these resources.

Construction does have an impact on land, water, energy, and biological resources. Construction of a new multi-unit development can address existing growth in population while providing the much more energy efficient systems and healthy living environments in Idaho Springs. This project is intended to house the workers already existing in Idaho Springs. While construction of the site expends energy, the completed Project will house over 150 people in up to 120 units who will be within walking distance to the multitude of restaurant jobs, education jobs, and other work opportunities. Providing housing within walking distance to work is a primary way to reduce energy consumption in today's world. Much of the land in and around Idaho Springs and Clear Creek County slopes greater than 45% which is considered "steep slope conditions" as documented in the 2017 Comprehensive Plan. See image to the left. Construction to house +150 residents most anywhere else in the county could cause devastating erosion and expend a much greater amount of energy use during construction.

The green space of the former Golddigger Field is not fertile land. The soil is expected to contain mill tailings (different than mine waste) and possibly hazardous building debris. The field costs an estimated $20,000 per year to maintain the grass alone as open space. While Park land is important to the

residents of Idaho Springs, the Project will construct a more efficient and environmentally sensitive Park space nearby to address the desire of the citizens and responsibility to the environment.

The existing electrical and lighting systems on Site are technology from the 1970s or earlier. All new electrical will meet today's energy codes and dark sky regulations to reduce light pollution. Solar power will be discussed with potential partners to further contribute to a savings on natural resources.

6.0 WATER DEMAND/ SERVICE

Water systems shall be designed and constructed in accordance with current City design regulations and standards. A development on this site will connect to the existing water transmission and distribution system in Miner Street. The Developer shall pay for all connections to the public system, 1 building tap per each of the 3 total buildings. Tap fees are to be assessed by the Building and Engineering Divisions. While providing much needed housing to the region, the addition of 120 Dwelling Units adds users to the currently robust treatment facility, potentially offsetting overall user price increases. Per the December 2016 Raftelis Report page 28 "If significant users are added, may reduce future rate increases with more users sharing O&M costs".

The proposed Project will require approximately 52,400 gallons per day of potable water, for both the residential and retail portion (peak day with 2.0 peaking factor).The existing waterline is a 6" ductile piping. A city the size of Idaho Springs typically utilizes 8" piping. The reconstruction of Miner Street, in this location, would allow the replacement of the existing 6" DIP main with a more ideal 8" DIP water main. The Project will connect to the existing main in Miner Street and loop a proposed water main through the Project to provide water quality and system strength. Sizing of the waterlines shall be reviewed by the Building and Engineering Divisions.

The Project will ensure an adequate, safe, and reasonable supply of potable water for public consumption, fire protection and irrigation for its residents. Alternate means of achieving utility service to and within the Project Site on a temporary or permanent basis will be considered at the time of a Utility Permit application. See Final Development Plan drawings for more information.

7.0 SANITARY SEWER DEMAND / SERVCE

The goal is to ensure the adequate, safe, and reliable collection of sewage or contaminated water and the conveyance of that sewage to off-site treatment

View of Clear Cleek through Idaho Springs

systems. The Developer will provide, at their cost, sewer availability to serve up the development to be constructed.

A lift station, to lift wastewater to the elevation of the City sewer system, is necessary for development to occur on the Project site. The Developer shall design and construct the lift station to serve the Project, consistent with the City's adopted level of service. All new sewer system facilities shall be designed and constructed in accordance with all State and City policies and standards. The proposed sewer system would be pumped in a forcemain and connect into the existing sewer manhole at the interception of Idaho Street and 11th Street.

Upper floor units along Miner Street are expected to be able to tie into the existing sewer line along Miner. Connection to this line is being coordinated with the City of Idaho Springs Public Works department.

Sanitary sewer demand is expected to be within typical average flows for the following uses: residential and retail. The proposed Project would require approximately 32,500 gallons per day of wastewater treatment capacity for both the residential and retail portion (peak day with 1.5 peaking factor).

The location and type of utility facilities are shown on the Civil Plans for approval. See Final Development Plan drawings for more information.

8.0 STORMWATER / DRAINAGE

Constructing a stormwater system on this particular site, which is below the typical elevation of the City of Idaho Springs, does not burden the City with excess maintenaince costs other sites may impact. The goal is to ensure the collection, treatment, and conveyance of stormwater to prevent public nuisances or hazards, protect the environment, and preserve resources.

Stormwater will be conveyed to a stormwater detention basin, in the southwest corner of the property, which will have a piped connection to the culvert existing in the CDOT Right of Way. Stormwater will be detained then released to meet historic runoff of the 100 year storm event. Stormwater will be treated to ensure water quality and best practices.

The following mechanisms may be utilized where feasible in the Project applications to integrate Low Impact Development techniques:

- Pervious asphalt and concrete
- Pervious pavers
- Install pet waste stations in common areas

9.0 SENSITIVE AREAS

At the time of construction, sensitive areas and their established buffers shall be clearly identified and marked in the field.

Impact to Wetlands is not anticipated.

Impact to Fish and Wildlife Habitat Conservation Areas is not anticipated.

Mine Hazard Areas were evaluated as there was a mill on site in the early 1900s. If during construction, it is discovered the mitigation that may be conducted at the Project, is the responsibility of the Colorado Department of Public Health and Environment (CDPHE) in cooperation with the United States Environmental Protection Agency (USEPA). Copies of the environmental mitigation plans that document CDPHE and USEPA responsibilities can be found at https://cumulis.epa.gov/supercpad/cursites/csitinfo.cfm?id=0800257

Stormwater Hot Spots are areas where stormwater discharges from activities where higher potential pollutant loading may be present such as vehicle fueling stations, vehicle service and maintenance facilities, fleet storage areas, public works storage areas, etc. All uses noted, are current on Area 2 of the Site, otherwise known as the Bus Barn property. Remediation and reclamation of Area 2, as Park, would provide the community with an environmentally healthy space for recreation.

Steep Slopes and Geologic Conditions are being investigated but are not expected to present dangers or issues to the Site or neighboring community.

View of the Site from the Greenway Trail looking northeast.

Former Bus Barn and Digger Field existing site photos from 2020.

9.0 VISUAL IMPACTS

The Site is a prominent feature from I-70 and the Exit 240 westbound on and off ramps. View sheds from critical vantage points will be carefully considered. Motorists on I-70 generally have concentrated views with reduced acuity and a fairly narrow cone of vision before and after crossing under the Exist 240 overpass. These viewers have a relatively lower sensitivity to their surroundings because of their movement, speed and short viewing duration. Motorists heading eastbound are more likely to notice the new development.

Recreationalists such and runners and bicyclists will view the development from Idaho Street and 11th Avenue and the Greenway Trail across the highway. The Park/Open Space will provide a richer visual effect than the existing Bus Barn property.

Additionally, the Project will become a prominent view from the houses and recreation center along Miner Street and Idaho Street between 8th and 12th Avenues. While some neighbors on Miner St. will experience a loss of view of mountain landscape and highway that will be blocked by buildings in their foreground, the view is expected to be vibrant and interesting with new street scape and landscape along the Site's northern edge. As well, the opening between Buildings 1 and 2 along Miner is expected to present nearby residents with light, air, and access to these views they are accustom to currently.

10.0 EDUCATION

School-age children from the Project will be served by schools as determined at the discretion of the Clear Creek School District (CCSD). A development in Idaho Springs, located on the former football field and transportation & maintenance facility properties, will provide five positive impacts for CCSD.

1. A development will provide housing for current and future families, thus bringing sustained growth of more young families with children in the area. We are a declining enrollment district, dropping from over 1200 students to just over 600 students currently. Economics shows adults are living longer in their homes and reducing the supply for young adults and young families. Additional housing will provide needed enrollment for CCSD.

2. Provide adequate, safe housing. Currently we have students who live in local hotels, double up with family on a short-term basis, share living rooms,

Elementary school students raising their hands in class – Google search

or simply move around as space becomes available. In some cases, these situations are fire and public health concerns.

3. A development will provide housing for employees. Over half of our employees live outside of Clear Creek, often driving through one to two other school districts/counties to come to work in CCSD. We lose potential hires due to lack of affordable housing in the area. As the Applicant of the Project, CCSD will negotiate Dwelling Units for CCSD staff to be attainable by first year teacher salary based per bedroom in multi-bedroom units.

4. This Project will provide increased retail, in turn increasing the overall tax base for the city and county. Every bit helps as we track assessed value in Clear Creek for our Schools.

5. This Project will provide a well-maintained park with a variety of activities for families and youth in the area. Rotating activities, programmed with, and by the Recreation Center will capture the interest of children and educators alike. The location of the park provides adequate adult supervision given its proximity to housing and the recreation center. Access to the park will provide another element for teachers, classrooms or small student groups to enrich the outdoor learning experience.

While not a negative nor positive impact, one to be acknowledged is the likely increased traffic in the area. The traffic study for the development will be reviewed by CCSD so that we will be better equipped to plan accordingly as we consider student drop off and pick up.

Karen Quanbeck, Clear Creek School District Superintendent

Aerial view of I-70 & former Digger Field – Google image search

11.0 EMERGENCY SERVICES

The City of Idaho Springs and Clear Creek County Fire Authority will be responsible for emergency services for the Project. The addition of approximately 120 residential units to the area will have a significant impact although it is anticiapted many of the the unit dwellers work in town and therefore part of the general population on any regular day. The walk-up building configuration is similar to other structures in the City of Idaho Springs. It is not anticipated that special equipment or training will be required for emergence situations.

Design of fire access has been coordinated with the Clear Creek Fire Authority. A fire command room will be provided at Building 2 near the entrance aligned with 10th Avenue. Fire hydrants will be provided within the site. See Final Development Plan drawings for more information.

View of former Digger Field and Block 57 development

View of former Digger Field 1957 game – Google image search

12.0 HISTORIC PRESERVATION

The former football field, while being in place since the later 1950s, is not currently nominated or designated as a historic site. The Developer for Block57 recoginzes it is a special place to the Idaho Springs community. Current designs include Community Space that harken back to the field on which residents once played. Design of exterior and interior spaces to pay tribute the legacy of the former football field.

12.0 FOUNDATIONS

Building 1 and 2 are anticipated to be constructed on Aggregate Piers do to the deep depth of native soil in these locations. Building 3 is expected to sit on a Slab on Grade foundation, most likely stepped from the existing Idaho Street grade. See additional information in the following letter.

Keller North America, Inc
5775 Eudora St
Commerce City, CO 80022

Tel: 303.469.1136
Fax: 303.469.3581

February 8, 2022

IMEG Corp.
1400 Glenarm Pl, Suite 101
Denver, CO 80202

Attention: Craig Carroll

Subject: Block 57 - Idaho Springs
932 Miner St
Idaho Springs, CO 80452

Mr. Carroll,

Keller North America, Inc. understands that three multi-story buildings are proposed to be constructed mentioned address.

Keller has reviewed the geotechnical report from Terracon (project no. 25215327) dated January 10, 2022 for the suitability of supporting spread footings on ground improvement elements.

Either Aggregate Pier or Low Mobility Grout Columns (LMG) are suitable ground improvement techniques for support of footing loads and floor slabs. Based on the soil information provided, Keller will design soil treatment to support up to 6,000psf loads for the spread and continuous footings. Continuous footings should have a minimum width of 24".

Support of the floor slab with aggregate piers is an option in lieu of removal of the fill material. A minimum 12" select fill should be placed over the ground improvement elements if it is decided to proceed in that direction.

If tension elements are necessary, Keller will provide the design for uplift anchors.

Liquefaction mitigation of the foundations ground improvement not been discussed. If this is required Keller will need to be provided with the necessary depth of treatment.

Specifically, Keller will design ground improvement elements for the following:

- **A maximum allowable bearing capacity of 6,000 psf for spread footings.**
- **Total static settlement estimated at 1 inch and differential settlement at ½ inch.**

It should be noted that Keller can only design elements constructed or under direct supervision of Keller. Our design cannot be put out to bid or used by another specialty contractor.

Best Regards,
Keller North America, Inc.

Phillip Gallet, P.E.
Senior Engineer – Business Development

COLORADO LICENSED PHILLIP GALLET 54656 PROFESSIONAL ENGINEER

Phillip A. Gallet, P.E.

Digitally signed by Phillip A. Gallet, P.E.
DN: cn=P. E-pgallet@haywardbaker.com, o=Hayward Baker Inc, ou=Rocky Mountain Region, title=Phillip A. Gallet, P.E.*, l=Denver, 5775 Eudora St, Commerce City, CO
Reason: I am approving this document
Contact Info: 713.561.5386
Date: 2022.02.08 12:41:22-07'00'

North America's Leader in Geotechnical Construction
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Equal Opportunity Employer
THINK SAFE

BLOCK 57/FORMER GOLDDIGGER FIELD SUBDIVISION

BLOCKS 56, 57, 66 AND S, PART OF BLOCKS 45 AND 55, A PART OF VACATED MINER STREET, A PART OF IDAHO STREET A PART OF THE NANCARROW PLACER M.S. NO. 1345 AND THE VACATED STREETS THEREIN CITY OF IDAHO SPRINGS, COUNTY OF CLEAR CREEK, STATE OF COLORADO

DEDICATION:

The undersigned, being the owner of the following described property: Blocks 56, 57, 66 and S, part of Blocks 45 and 55, a part of vacated Miner Street, a part of Idaho Street, a part of the Nancarrow Placer M.S. No. 1345 and the vacated streets therein, City of Idaho Springs, County of Clear Creek, State of Colorado more particularly described as follows:

Beginning on the Northerly line of Interstate 70 being CDOT monument 384; thence along said line North 68°11'17" West, a distance of 160.79 feet; thence North 09°38'08" East, a distance of 84.19 feet to the 7–6 line of said Nancarrow Placer; thence along said line South 43°26'26" East, a distance of 49.53 feet to the West line of said Block 66; thence along said line North 09°38'08" East, a distance of 20.24 feet to the Northwest corner of said block 66; thence along the North line of said block South 80°18'41" East, a distance of 220.00 feet to the West line of vacated Miner Street as described in book 265 at page 147; thence along the vacated portion of said Miner Street the following five (5) courses;

1. North 09°41'19" East, a distance of 30.00 feet;
2. South 89°39'51" East, a distance of 45.49 feet;
3. South 78°09'51" East, a distance of 66.20 feet;
4. South 75°39'51" East, a distance of 229.00 feet;
5. South 71°20'50" East, a distance of 103.60 feet to a point of curvature on the Southwesterly line of said Idaho Street;

thence along said line being the arc of a non–tangent curve to the right 35.48 feet, having a radius of 458.37 feet, a central angle of 04°26'04" and a chord which bears South 62°34'38" East a distance of 35.47 feet;

thence South 09°41'19" West, a distance of 110.22 feet to the centerline of the vacated alley as described in Ordinance No. 18, Series 2021 at reception no. 303373; thence along said centerline South 80°18'41" East, a distance of 176.00 feet to the west line of 11th Avenue extended; thence said line South 09°41'19" West, a distance of 30.74 feet; thence South 80°18'41" East, a distance of 40.00 feet to the east line of 11th Avenue; thence along said line North 09°41'19" East, a distance of 19.93 feet to the Northwest corner of said block 45; thence along the North line of said block South 80°18'41" East, a distance of 38.67 feet to a point of curvature on the South line of Idaho Street described in book 79 at page 526; thence along said south line the following three (3) courses;

1. along the arc of a non–tangent curve to the left 20.13 feet, having a radius of 492.47 feet, a central angle of 02°20'33" and a chord which bears South 71°06'08" East a distance of 20.13 feet to a point of curvature;
2. along the arc of a non–tangent curve to the left 68.79 feet, having a radius of 1,360.50 feet, a central angle of 02°53'49" and a chord which bears South 76°00'46" East a distance of 68.78 feet;
3. South 80°18'41" East, a distance of 136.87 feet to the East line of said block 45;

thence along said line South 09°41'19" West, a distance of 72.04 feet to said Northerly line of Interstate 70; thence along said line the following eight (8) courses;

1. South 82°40'13" West, a distance of 135.16 feet;
2. North 80°18'47" West, a distance of 233.31 feet;
3. South 47°30'17" East, a distance of 5.80 feet;
4. North 70°17'17" West, a distance of 221.04 feet;
5. North 68°11'17" West, a distance of 298.32 feet;
6. North 52°50'15" West, a distance of 47.52 feet;
7. North 80°18'47" West, a distance of 117.60 feet;
8. North 43°26'26" West, a distance of 38.70 feet to the Point of Beginning,

containing a calculated area of 178,812 square feet or 4.11 acres, has laid out, subdivided and platted the same into lots and streets as herein shown under the name and style of Block 57/Former Golddigger Field, and does hereby grant and convey to the City of Idaho Springs all such streets and avenues, alleys, parks and all utility and drainage easements over and across said lots at locations shown on the accompanying plat for construction, operation and maintenance of utilities and drainage facilities.

OWNER:

Four Points Funding LLC, A Colorado Limited Liability Company

By: _____
Agent

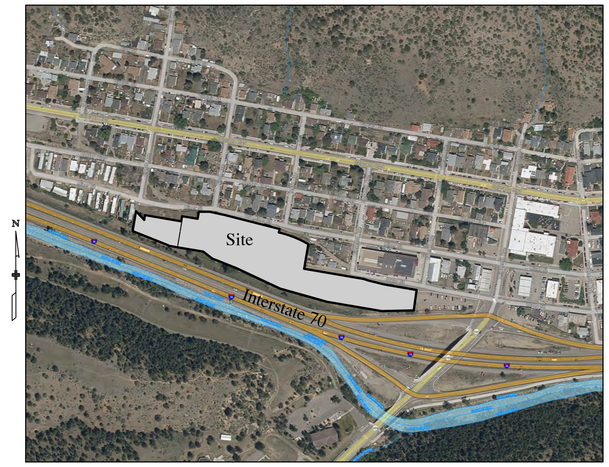
State of Colorado
City of Idaho Springs } SS

The foregoing instrument was acknowledged before me this ____ day of _____, 2022, by (NAME) of Four Points Funding LLC, A Colorado Limited Liability Company.

Witness my hand and official seal

My commission expires _____

_____
Notary Public



VICINITY MAP
SCALE 1"=300'

CONSTRUCTION COVENANT:

The undersigned owners, for themselves, their heirs, successors and assigns, covenant and agree with the City that no structure constructed on any portion of the platted land shown herein shall be occupied or used unless and until all public improvements, as defined by the Subdivision Regulations, are in place and accepted by the City or cash funds or other security for the improvements are escrowed with the City, and a Certificate of Occupancy has been issued by the City. Issuance of the Certificate of Occupancy shall be prima facie evidence that the foregoing conditions have been complied with.

Signed this____day of_____, 2022.

OWNER:

Four Points Funding LLC, A Colorado Limited Liability Company

By: _____
Agent

State of Colorado
City of Idaho Springs } SS

The foregoing instrument was acknowledged before me this ____ day of _____, 2022, by (NAME) of Four Points Funding LLC, A Colorado Limited Liability Company.

Witness my hand and official seal

My commission expires _____

_____
Notary Public

APPROVALS:

PLANNING COMMISSION APPROVAL CERTIFICATE:

Approved by the City of Idaho Springs Planning Commission this _____ day of _____, A.D., 2022.

_____
Chairman

CITY COUNCIL APPROVAL CERTIFICATE:

The foregoing plat is approved for filing, and conveyance of the streets and avenues, alleys, parks and all other places designated for public use shown thereon is accepted by the City of Idaho Springs, Colorado, this _____ day of_____, A.D., 2022, subject to the condition that the City shall undertake maintenance of any such street or avenue, alley, park or other places designated for public use only after construction of said street and avenues, alleys, parks and other places designated for public use has been satisfactorily completed by the subdivider and accepted by the City of Idaho Springs.

Approved by the City of Idaho Springs City Council this _____ day of _____, A.D., 2022.

_____
Mayor

Attest: _____
City Clerk

TITLE CERTIFICATION:

I, _____, as authorized agent for Old Republic National Title Insurance Company, and having the power and authority to legally bind Old Republic National Title Insurance Company with respect to the certification made herein, hereby certify that I have examined title to the above–described land dedication to the City of Idaho Springs, and that the parties executing the dedication have merchantable title to the above–described real property and are well seized of the property dedicated by this plat and have good, sure, perfect, absolute and indefeasible estate of inheritance, in law, in fee simple, and have good right, full power and lawful authority to dedicate the same in manner and form as aforesaid, and that the same is free and clear from all former and other grants, bargains, sales, liens, taxes, assessments, encumbrances and restrictions of whatever kind or nature except those of record and acceptable to the City.

Signed this ___ day of _____, 2022.

NOTES:

1. Notice: According to Colorado law you must commence any legal action based upon any defect in this survey within three years after you first discover such defect. In no event may any action based upon any defect in this survey be commenced more than ten years from the date of the certification shown hereon.
2. Any person who knowingly removes, alters or defaces any public land survey monument or land boundary monument or accessory, commits a class two (2) misdemeanor pursuant to state statute 18–4–508, C.R.S.
3. All dimensions shown hereon are expressed in U.S. Survey feet and decimals thereof. A U.S. Survey foot is defined as exactly 1200/3937 meters. All bearings shown here on are degrees–minutes–seconds.
4. This survey does not constitute a title search by Clear Creek Surveying. To determine title or easements of record. Research for this survey was performed in accordance with C.R.S. 38–51–106 and the rules of procedure and board policy statements of the state board of licensure for architects, professional engineers and professional land surveyors. Title commitment number ABJ70700797–4 dated January 28, 2022 at 5:00 p.m. Prepared by Old Republic National Title Insurance Company was relied upon for all information regarding easements of record, rights of way, title of record and civil court actions of record.
5. Basis of Bearings: Bearings are based on the Colorado State Plane Coordinate System, Central Zone, Colorado High Accuracy Reference Network (CHARN). Having a grid bearing of South 86°34'18" East between 170 CM–MP 204.4 to 170 CM–MP 240.6 both being CDOT type 2 monuments.
6. Portions of this site are within a 0.2% Annual Chance Flood Hazard Zone X, as determined graphic interpretation of the F.E.M.A. Flood Insurance Rate Map For City of Idaho Springs, Colorado, community panel number 080212–0207F, revised date December 20, 2019.
7. A right of access for emergency services is hereby granted on and across all areas for police, fire, medical and other emergency vehicles and for the provision of emergency services.
8. An access easement for municipal services provided by the City is hereby granted on and across all private access for the provision of such City services.
9. Certain infrastructure to support the development described in this plat will be constructed outside the plat boundaries. Off–plat easements and/or licenses for such infrastructure will be provided, as needed, by separate document.
10. Development site drainage design and stormwater management parameters were submitted. Drainage shall be contained in drainage easements.
11. Per Idaho Springs Municipal Code – District C–2: Setbacks are – Ten (10) foot for front lines, Ten (10) foot for rear lines, Five (5) foot for for side lines.

SURVEYOR'S CERTIFICATION:

I, Weston D. Spears, a Professional Land Surveyor registered in the State of Colorado, hereby certify that the survey of Block 57/Former Golddigger Field was made in accordance with applicable standards of practice, was prepared under my responsible charge and to the best of my professional knowledge, information and belief is an accurate representation said subdivision. This is not a guaranty or warranty, either expressed or implied.

_____
Weston D. Spears, Professional Land Surveyor
Colorado P.L.S. No. 38056
for and on behalf of Clear Creek Surveying

COLORADO LICENSED
WESTON D. SPEARS
03/28/2022
38056
PROFESSIONAL LAND SURVEYOR

Clear Creek Surveying
REVIEW
March 28, 2022
DATE PRINTED
NOT TO BE USED FOR RECORDING PURPOSES

CLERK AND RECORDER'S CERTIFICATE:

Accepted for filing in the office of the Clerk and Recorder of the County of Clear Creek, State of Colorado this____day of_____, A.D., 2022, at Book_____, Page_____, Reception No._____.

_____
Clerk and Recorder

REVISIONS							
Date	By	Description		Field Date		Drawn by	
Date	By	Description		Party Chief		Checked By	
Date	By	Description		PLS	WDS		
Date	By	Description					

TITLE	CLIENT		PROJECT NO.	SHEET NO.	NO. OF SHEETS
SUBDIVISION PLAT 932 MINERS STREET AND 1120 IDAHO STREET IDAHO SPRINGS, CO 80452 SEC 35, T3S, R73W of the 6th P.M.	FOUR POINTS FUNDING, LLC	CLEAR CREEK SURVEYING P.O. BOX 3184 IDAHO SPRINGS, CO 80452 (303) 681-1519	20GEN70	1	2

Z:_Survey_Projects\2020\20GEN70 Idaho Springs High School\Office\CAD\20GEN70 Plat.dwg March 28, 2022 - 4:28pm

BLOCK 57/FORMER GOLDDIGGER FIELD SUBDIVISION

BLOCKS 56, 57, 66 AND S, PART OF BLOCKS 45 AND 55, A PART OF VACATED MINER STREET, A PART OF IDAHO STREET
A PART OF THE NANCARROW PLACER M.S. NO. 1345 AND THE VACATED STREETS THEREIN
CITY OF IDAHO SPRINGS, COUNTY OF CLEAR CREEK, STATE OF COLORADO

N

GRAPHIC SCALE
50 0 25 50
(IN FEET)
1 inch = 50 ft.

8th Avenue (40' R.O.W.)
9th Avenue (39.6' R.O.W.)
10th Avenue (39.7' R.O.W.)
11th Avenue (40' R.O.W.)
12th Avenue (40' R.O.W.)
Colorado Southern Railroad (30' R.O.W.)
Miner Street
Miner Street (50' R.O.W.)
Idaho Street (30' R.O.W.)
Alley
Lot 24
Lot 23
Nancarrow MBH Addition
Lot 2
4,410 Sq. Ft.
0.10 Acres
Lot 1
137,917 Sq. Ft.
3.17 Acres
Lot 3
20,237 Sq. Ft.
0.46 Acres
Right-of-Way to be vacated by future ordinance. Not a part of this plat.
Right-of-Way dedicated per this plat
8,964 Sq. Ft.
0.21 Acres
Right-of-Way dedicated per this plat
7,284 Sq. Ft.
0.17 Acres
Point of Beginning
CDOT Monument 384
CDOT Monument 377
CDOT Monument 375
CDOT I-70 ROW
INTERSTATE 70
INTERSTATE 70
℄ 10' wide waterline easement
℄ Idaho St. 30 ft wide established by Ordinance: Book 79, Page 526
0.2% Annual Chance Flood Hazard
0.2% Annual Chance Flood Hazard

N09°38'08"E 20.24'
S43°26'26"E 49.53'
N09°38'08"E 84.19'
S80°18'41"E 220.00'
202.43'
N09°41'19"E 30.00'
S89°39'51"E 45.49'
S78°09'51"E 66.20'
S75°39'51"E 229.00'
S78°35'46"E 368.00'
S71°20'50"E 103.60'
S80°17'26"E 43.00'
L=35.48'
R=458.37'
Δ=4°26'04"
CB=S62°34'38"E
CL=35.47'
S09°41'19"W 110.22'
S09°41'19"W 30.74'
N09°41'19"E 19.93'
L=20.13'
R=492.47'
Δ=2°20'33"
CB=S71°06'08"E
CL=20.13'
L=68.79'
R=1360.50'
Δ=2°53'49"
CB=S76°00'46"E
CL=68.78'
S80°18'41"E 38.67'
S80°18'41"E 40.00'
S80°18'41"E 136.87'
N35°17'26"W 22.54'
S80°18'41"E 28.89'
S80°18'41"E 219.18'
S09°41'19"W 100.05'
S09°41'19"W 72.04'
N80°18'47"W 233.31'
S82°40'13"W 135.16'
S47°30'17"E 5.80'
N70°17'17"W 221.04'
N68°11'17"W 298.32'
N52°30'15"W 47.52'
N80°18'47"W 117.60'
N43°26'26"W 38.70'
N68°11'17"W 160.79'
S09°38'08"W 87.00'
S08°36'51"W 28.96'
S10°24'18"E 35.35'
S78°15'34"E 319.77'
S79°15'34"E 241.32'
S79°30'27"E 262.33'
S80°49'25"E 37.76'
58.49'
102.30'
98.55'
134.76'
44.55'
27.69'
28.89'
25.96'
17.57'
39.6'
39.7'
40'

LEGEND

- ● Set No. 4 rebar with 1" diameter green plastic cap stamped: CCS PLS 38056
- ◉ Found rebar with cap stamped: LS 25373
- ○ Found rebar with 1" green plastic cap stamped: LS 25373
- ○ CDOT Monument type 1 monument
- (1) Adjacent Block Number
- 1 Adjacent Lot Number
- R.O.W. Right-of-Way

Clear Creek Surveying
REVIEW
March 28, 2022
DATE PRINTED
NOT TO BE USED FOR RECORDING PURPOSES

COLORADO LICENSED
WESTON D. SZEGO
03/28/2022
38056
PROFESSIONAL LAND SURVEYOR

REVISIONS			
Date	By	Description	
Date	By	Description	
Date	By	Description	
Date	By	Description	

Field Date ____ Drawn by ____
Party Chief ____ Checked By ____
PLS WDS

TITLE: SUBDIVISION PLAT
932 MINERS STREET AND 1120 IDAHO STREET
IDAHO SPRINGS, CO 80452
SEC 35, T3S, R73W of the 6th P.M.

CLIENT: FOUR POINTS FUNDING, LLC

CLEAR CREEK SURVEYING
P.O. BOX 3184
IDAHO SPRINGS, CO 80452
(303) 681-1519

PROJECT NO. 20GEN70

SHEET NO. 2

NO. OF SHEETS 2

Z:_Survey_Projects\2020\20GEN70 Idaho Springs High School\Office\CAD\20GEN70 Plat.dwg March 28, 2022 - 4:28pm

1 VICINITY MAP

SCALE: 1 1/2" = 1'-0"

BUILDING CODE ANALYSIS:

CONSTRUCTION TYPE: V-A
NUMBER OF DWELLING UNITS: 118
NUMBER OF BUILDINGS: 3
MAXIMUM BUILDING HEIGHT: 57'-8 1/2"
FIRE PROTECTION: NFPA 13 SPRINKLERED AND 13R SPRINKLERED

OCCUPANT LOADS: TABLE 1004.1.1

OCCUPANCY CLASSIFICATION:	LOAD FACTOR	2 EXITS
(R-2) RESIDENTIAL:	200 SF/OCCUPANT	50
(A-3) COMMUNITY ROOM:	5 NET/OCCUPANT	50
(B) OFFICE:	100 SF/OCCUPANT	50
(S-1) STORAGE, MECH/ELECTRICAL:	200SF/OCCUPANT	20
(M) MERCHANTILE:	60SF/OCCUPANT	

TRAVEL DISTANCE SHALL NOT EXCEED 250' IN BUILDINGS EQUIPPED WITH AN AUTOMATIC SPRINKLER SYSTEM THOUGHOUT PER IBC 1017.

THE WIDTH, IN INCHES, OF STAIRWAYS IN THE EGRESS SYSTEM SHALL NOT BE LESS THAN THE OCCUPANT LOAD x 0.3. THE WIDTH, IN INCHES, OF OTHER COMPONENTS (RAMPS/HALLWAYS, CORRIDORS, AND EXIT PASSAGEWAYS) IN THE EGRESS SYSTEM SHALL NOT BE LESS THAN THE OCCUPANT LOAD x 0.2 BUT IN NO CASE LESS THAN THE MINIMUM SPECIFIED BY CODE. MINIMUM EXIT WIDTHS OF CORRIDORS, STAIRS, AND RAMPS SHALL BE EQUAL TO 44" MINIMUM.

WHERE 2 OR MORE EXITS ARE REQUIRED, AT LEAST TWO SHALL BE PLACED A DISTANCE APART EQUAL TO NOT LESS THAN ONE-HALF OF THE LENGTH OF THE MIXIMUM OVERALL DIAGONAL DIMENSION OF THE AREA SERVED IF THE BUIDLING IS EQUIPPED WITH AN AUTOMATIC SPRINKLER SYSTEM THROUGHOUT.

EXIT DOORS SHALL SWING IN THE DIRECTION OF THE EXIT TRAVEL WHEN THE AREA SERVED HAS AN OCCUPANT LOAD OF 50 OR MORE.

THE EXIT ACCESS SHALL BE ARRANGED SUCH THAT THERE ARE NO DEAD ENDS IN THE HALLWAYS OF CORRIDORS MORE THAN 20' IN LENGTH.

EXIT AND EXIT ACCESS DOORS SERVING GROUP A OCCUPANIES SHALL NOT BE PROVIDED WITH A LATCH OR LOCK UNLESS IT IS PANIC HARDWARE.

MINER STREET LOOKING EAST

LEGAL DESCRIPTION

PARCEL A:
LOTS 1 THROUGH 12, INCLUSIVE, BLOCK 45 IN THE CITY, FORMERLY TOWN OF IDAHO SPRINGS, EXCEPT THAT PORTION OF LOTS 1 AND 3 CONVEYED TO THE DEPARTMENT OF HIGHWAY BY QUITCLAIM DEED RECORDED SEPTEMBER 12, 1957 IN BOOK 258 AT PAGE 63, COUNTY OF CLEAR CREEK, STATE OF COLORADO.

PARCEL B:
LOTS 1 THROUGH 12, INCLUSIVE, BLOCK 56 IN THE CITY, FORMERLY TOWN OF IDAHO SPRING, COUNTY OF CLEAR CREEK, STATE OF COLORADO.

PARCEL C:
LOTS 9 THROUGH 12, INCLUSIVE, BLOCK 55 IN THE CITY, FORMERLY TOWN OF IDAHO SPRINGS, COUNTY OF CLEAR CREEK, STATE OF COLORADO.

PARCEL D:
BLOCK 57, IN THE CITY, FORMERLY TOWN OF IDAHO SPRINGS, COUNTY OF CLEAR CREEK, STATE OF COLORADO.

PARCEL E:
LOTS 1 THROUGH 12, INCLUSIVE, BLOCK S IN THE CITY, FORMERLY TOWN OF IDAHO SPRINGS, COUNTY OF CLEAR CREEK, STATE OF COLORADO.

PARCEL F:
LOTS 1 AND 2, BLOCK 66 IN THE CITY, FORMERLY TOWN OF IDAHO SPRINGS, COUNTY OF CLEAR CREEK, STATE OF COLORADO.

PARCEL G:
LOTS 3 THROUGH 5, BLOCK 66 IN THE CITY, FORMERLY TOWN OF IDAHO SPRINGS, COUNTY OF CLEAR CREEK, STATE OF COLORADO.

TOGETHER WITH A PORTION OF MINER STREET AND A PORTION OF 9TH AVENUE SOUTH OF MINER STREET AND A PORTION OF 10TH AVENUE SOUTH OF MINER STREET AS VACATED BY ORDINANCE RECORDED OCTOBER 20, 1959 IN BOOK 265 AT PAGE 147.

PARCEL H:
A TRACT OR PARCEL OF LAND IN THE NANCARROW PLACER, SURVEY NO. 1345, IN THE SOUTHEAST QUARTER OF SECTION 35, TOWNSHIP 3 SOUTH, RANGE 73 WEST, OF THE 6TH PRINCIPAL MERIDIAN, IN CLEAR CREEK COUNTY, COLORADO, SAID TRACT OR PARCEL BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON LINE 10 AND 11 OF THE CITY OF IDAHO SPRINGS SURVEY NO. 332, FROM WHICH POINT CORNER NO. 11 BEARS NORTH 87°20' WEST, A DISTANCE OF 175.30 FEET;

1. SOUTH 68°00' EAST, A DISTANCE OF 194.10 FEET;
2. SOUTH 70°06' EAST, A DISTANCE OF 221.00 FEET, TO A POINT ON LINE 9 AND 10 OF SAID SURVEY NO.332;
3. NORTH 47°19 WEST, A DISTANCE OF 201.80 FEET TO CORNER NO. 10 OF SAID IDAHO SPRINGS SURVEY NO. 332;
4. ALONG LINES 10 AND 11 OF THE SAID IDAHO SPRINGS SURVEY NO. 332, NORTH 87°20'WEST, A DISTANCE OF 239.70 FEET, MORE OR LESS, TO THE POINT OF BEGINNING, COUNTY OF CLEAR CREEK, STATE OF COLORADO.

PARCEL I:
BLOCK 66, LOTS 6-12 (PENDING FINAL TITLE WORK)

SIGNATURE AND NOTARY AREA

PROPERTY OWNER:
CLEAR CREEK SCHOOL DISTRICT

_____
KAREN QUANBECK - SUPERINTENDENT

_____
DATE

_____
SANDI SCHUESSLER - BOARD PRESIDENT

_____
DATE

THIS PLANNED DEVELOPMENT, TITLES BLOCK 57 MIXED-USE DEVELOPMENT, WAS ACCEPTED AND APPROVED THE ___DAY OF _____, 2021, BY THE IDAHO SPRINGS CITY COUNCIL.

NOTARY PUBLIC

CITY OF IDAHO SPRINGS, COUNTY OF CLEAR CREEK, STATE OF COLORADO, THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME THIS

_____DAT OF _____, 2021, BY

_____
WITNESS MY HAND AND OFFICIAL SEAL.

MY COMMISSION EXPIRES: _____

_____
NOTARY PUBLIC

CLERK AND RECORDER:

ACCEPTED FOR FILING IN THE OFFICE OF THE CITY CLERK AND RECORDER OF IDAHO SPRINGS, COLORADO ON THIS _____ DAY OF _____, 2021, AT _____ O'CLOCK _M.

_____
IDAHO SPRINGS CLERK

_____
CLEAR CREEK RECORDER

BY: _____
DEPUTY CLERK

SHEET NOTES:

APPLICABILITY STATEMENT: EXCEPT AS EXPRESSLY PROVIDED WITHIN THIS FINAL DEVELOPMENT PLAN, DEVELOPMENT OF THIS PROPERTY SHALL CONFORM TO THE CITY OF IDAHO SPRINGS LAND DEVELOPMENT REGULATIONS IN EFFECT AT THE TIME OF THE BUILDING PERMIT APPLICATIONS AND THE OFFICIAL PLANNED DEVELOPMENT APPROVED BY THE CITY OF IDAHO SPRINGS ON SEPTEMBER 27, 2021.

STANDARD FLEXIBLY STATEMENT: THE GRAPHIC DRAWINGS CONTAINED IN THIS FINAL DEVELOPMENT PLAN ARE INTENDED TO DEPICT GENERAL BUILDING FINISH MATERIAL AND ILLUSTRATE CONCEPTS OF THE TEXTURAL PROVISIONS OF THE STRUCTURES. THE FINAL DEVELOPMENT PLAN PROCESS ESTABLISHES:

A. FINAL ROAD ALIGNMENT
B. FINAL CONFIGURATION OF LOT AND TRACT SIZES AND SHAPES
C. FINAL BUILDING ENVELOPES AND SPECIFIC LOCATIONS
D. FINAL ACCESS AND PARKING LOCATIONS
E. FINAL LANDSCAPING DESIGN AND LOCATION

ROAD NAMES (IF REQUIRED), PEDESTRIAN WAYS AND CORRIDORS INTERNAL TO THE DEVELOPMENT SHALL BE DETERMINED ON APPROVAL OF THE FINAL DEVELOPMENT PLAN.

ASSOCIATED AGREEMENTS:

1. COMMUNITY BENEFITS AGREEMENT, DATED JULY 2021
2. VACATION OF A PORTION OF THE CENTRAL ALLEY AS DESCRIBED IN THE ASSOCIATED PLANNED DEVELOPMENT.
3. VACATION OF A PORTION OF 11TH AVENUE AS DESCRIBED IN THE ASSOCIATED PLANNED DEVELOPMENT.
4. DEDICATION OF A PORTION OF MINER STREET AS DESCRIBED IN THE ASSOCIATED PLANNED DEVELOPMENT.
5. VACATION OF A PORTION OF IDAHO STREET AS DESCRIBED IN THE ASSOCIATED PLANNED DEVELOPMENT.
6. AGREEMENT FOR WORKFORCE HOUSING AS DESCRIBED IN THE CONTRACT OF SALE FOR THIS PROPERTY.

PURPOSE

THE PURPOSE OF THE MIXED-USE DEVELOPMENT IS TO PROVIDE MIDDLE-INCOME HOUSING UNITS TO THE RENTAL MARKET OF IDAHO SPRINGS AND ITS SURROUNDING COMMUNITIES WHILE PROVIDING A SHARED VISION AND COMMUNITY RESOURCE AS REFERENCED IN ACCOMPANYING COMMUNITY BENEFITS AGREEMENT DATED JULY 2021.

- CREATE A SAFE AND HEALTHY, THRIVING DEVELOPMENT;
- PROVIDE A STRONG COMMUNITY RESOURCE ADJACENT TO THE CLEAR CREEK METROPOLITAN RECREATION CENTER;
- DEVELOP A SENSE OF HOME TO FIT INTO THE HISTORIC FABRIC AND RECREATIONAL ASSETS OF THE CITY OF IDAHO SPRINGS AND CLEAR CREEK COUNTY.

DRAWING INDEX - FDP

T0.00	TITLE SHEET	02/28/22
T0.01	SURVEY	02/28/22
T0.10	SITE PLAN	02/28/22
C1	CIVIL COVER SHEET	02/28/22
C2	DEMOLITION PLAN	02/28/22
C2.1	UNDERCUT AND BACKFILL PLAN	02/28/22
C3	GRADING PLAN - WEST	02/28/22
C3.1	GRADING PLAN - EAST	02/28/22
C3.2	DRAINGAGE PLAN - WEST	02/28/22
C3.3	DRAINAGE PLAN - EAST	02/28/22
C3.4	DETENTION PLAN & DETAILS	02/28/22
C3.5	SNOW REMOVAL PLAN	02/28/22
C3.7	EROSION & SEDIMENT CONTROL PLAN - WEST	02/28/22
C3.8	EROSION & SEDIMENT CONTROL PLAN - EAST	02/28/22
C3.9	EROSION & SEDIMENT CONTROL DETAILS	02/28/22
C4	UTILITY & WATER PLAN - WEST	02/28/22
C4.1	UTILITY & WATER PLAN - EAST	02/28/22
C4.2	UTILITY & WATER DETAILS	02/28/22
C4.3	UTILITY & WATER DETAILS	02/28/22
C4.4	SEWER LINE PROFILES	02/28/22
C4.5	SEWAGE LIFT STATION & DETIALS	02/28/22
C5.0	PAVING PLAN	02/28/22
C5.1	STREET PLAN - WEST	02/28/22
C5.2	STREET PLAN - EAST	02/28/22
C5.3	STRIPING & SIGNAGE PLAN	02/28/22
C5.4	MINER STREET PROFILE & SECTIONS	02/28/22
C5.5	DRIVE PROFILES & SECTIONS	02/28/22
C5.6	ROADWAY DETAILS	02/28/22
L1.00	ILLUSTRATIVE SITE PLAN	02/28/22
L2.00	OVERALL LANDSCAPE PLAN	02/28/22
L3.00	LANDSCAPE ENLARGEMENT PLAN - WEST	02/28/22
L3.01	LANDSCAPE ENLARGEMENT PLAN - EAST	02/28/22
L4.00	PLANTING PLAN - WEST	02/28/22
L4.01	PLANTING PLAN - EAST	02/28/22
L5.00	LIGHTING & PHOTOMETRIC PLAN	02/28/22
L6.00	LANDSCAPE SECTIONS	02/28/22
A0.11	13TH AVE SITE PLAN	02/28/22
A0.40	EGRESS PLANS	02/28/22
A0.41	EGRESS PLANS	02/28/22
A5.10	ELEVATIONS	02/28/22
A5.11	ELEVATIONS	02/28/22
A5.20	ELEVATIONS	02/28/22
A5.21	ELEVATIONS	02/28/22
A5.30	ELEVATIONS	02/28/22
A5.31	ELEVATIONS	02/28/22
A6.10	BUILDING SECTIONS	02/28/22
A6.20	BUILDING SECTIONS	02/28/22
A6.30	BUILDING SECTIONS	02/28/22
A6.40	SITE SECTIONS	02/28/22
A6.50	MASSING	02/28/22

APPLICANT:
FOUR POINTS FUNDING
250 FILLMORE STREET, UNIT #225
DENVER, CO 80206
CONTACT: STEPHANIE COPELAND
PHONE NUMBER: 303.522.6655

SURVEYOR:
CLEAR CREEK SURVEYING INC.
PO BOX 3184
IDAHO SPRINGS, CO 80452
CONTACT; WESTON SPEARS
PHONE: 303.681.1519

ARCHITECT:
SPACE INC
PO BOX 3173
IDAHO SPRINGS, CO 80452
CONTACT: CARLA POKRYWKA COLE
PHONE 720.234.6121

CIVIL ENGINEER:
ELEVATED CIVIL
PO BOX 3370
EVERGREEN, CO 80439
CONTACT: MARK CLADNEY
PHONE 303.932.8287

STRUCTURAL ENGINEER:
IMEG
1400 GLENARM PLACE, SUITE 101
DENVER, CO 80202
CONATCT: CRAIG CARROLL
PHONE: 303.623.4927

LANDSCAPE ARCHITECT:
BACK 40
2329 CHERRY STREET
DENVER, CO 80207
CONTACT: NATHAN KROHN
PHONE: 402.841.2858

ZONING ANALYSIS:

ZONING: AREA 1 & 2: PLANNED DEVELOPMENT (PD);
AREA 3: RESIDENTIAL-2 (R-2)
COMPREHENSIVE PLAN: C-2; COMMERCIAL 2

PROPOSED PARCEL SIZE:
AREA 1 = 2.75 ACRES (119,854 SF)
AREA 2 = .56 ACRES (24,333 SF)
AREA 3 = .42 ACRES (18,181 SF)
GROSS = 3.73 ACRES (162,367 SF)

POTENTIAL EMPLOYEES: 14 FTE

EXISTING SF: APPROXIMATELY 7,020 SF
PROPOSED SF: MAXIMUM 110,000 SF

BUILDING 1: 30,330 SF
BUILDING 2: 34,838 SF
BUILDING 3: 41,048 SF
TOTAL: 106,216 SF

SPACE BY USE	MAX. ALLOWED	PROPOSED
# OF DWELLING UNITS	120 UNITS	118 UNITS
RETAIL SF	12,000 SF	3,000 SF-8,000 SF

DWELLING UNIT DENSITIES: 32 UNITS PER ACRES

PROPOSED UNIT MIX:
40: STUDIO UNITS
41: 1-BEDROOM UNITS
29: 2-BEDROOM (<800 SF) UNITS
4: 2-BEDROOM (>800 SF) UNITS
4: 4-BEDROOM UNITS

OPEN SPACE		REQUIRED	PROPOSED
SECTION 24-72 (a) DEDICATED TO CITY ROW	(8%)	12,989.36 SF	13,098 SF
SECTION 24-72 (b) PUBLIC OPEN SPACE	(10%)	16,236.7 SF	24,830 SF
SECTION 21-63 OPEN SPACE (PERVIOUS)	(15%)	24,355.05 SF	41,185 SF
TOTAL:		53,581.11 SF	79,113 SF

PARKING REQUIRED:	166 SPACES	195 SPACES

PRELIMINARY
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BLOCK 57 / FORMER GOLDDIGGER FIELD & MAINTENANCE FACILITY

8TH-12TH AVE. & MINER STREET
IDAHO SPRINGS, CO 80452

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Architecture, Interiors, & Master Planning

Four Points Funding

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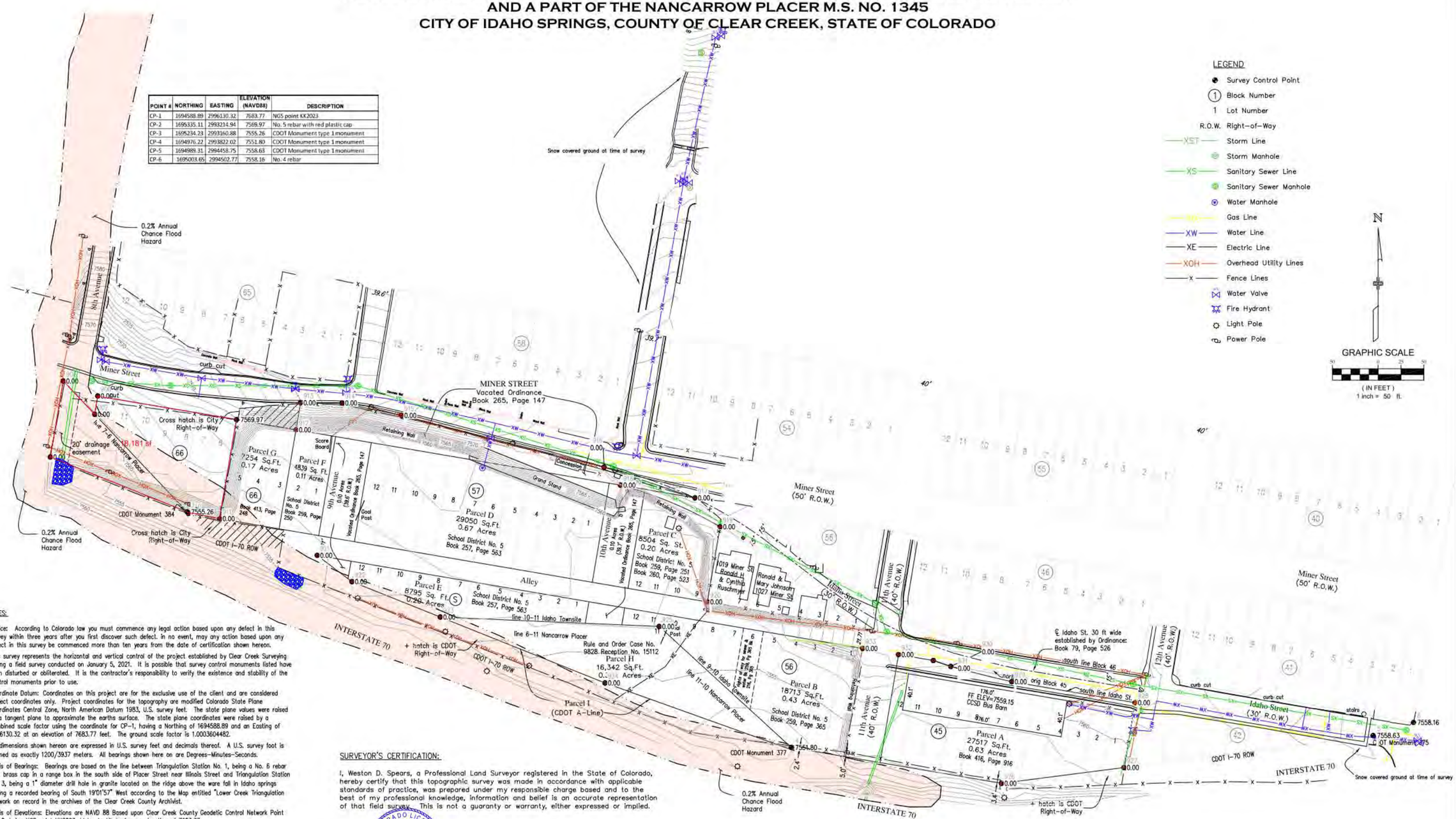
TOPOGRAPHIC MAP

BLOCK 57, BLOCK 66, PARTS OF BLOCK 45, 55, 56 AND S AND THE VACATED STREETS THEREIN, AND A PART OF THE NANCARROW PLACER M.S. NO. 1345
CITY OF IDAHO SPRINGS, COUNTY OF CLEAR CREEK, STATE OF COLORADO

POINT #	NORTHING	EASTING	ELEVATION (NAVD88)	DESCRIPTION
CP-1	1694588.89	2996130.32	7683.77	NGS point KK2023
CP-2	1695335.11	2993214.94	7569.97	No. 5 rebar with red plastic cap
CP-3	1695234.23	2993160.88	7555.26	CDOT Monument type 1 monument
CP-4	1694976.22	2993822.02	7551.80	CDOT Monument type 1 monument
CP-5	1694989.31	2994458.75	7558.63	CDOT Monument type 1 monument
CP-6	1695003.65	2994502.77	7558.16	No. 4 rebar



LEGEND

- Survey Control Point
- (1) Block Number
- 1 Lot Number
- R.O.W. Right-of-Way
- XST Storm Line
- Storm Manhole
- XS Sanitary Sewer Line
- Sanitary Sewer Manhole
- Water Manhole
- Gas Line
- XW Water Line
- XE Electric Line
- XOH Overhead Utility Lines
- x Fence Lines
- Water Valve
- Fire Hydrant
- Light Pole
- Power Pole

N

GRAPHIC SCALE
50 0 25 50
(IN FEET)
1 inch = 50 ft.

GENERAL NOTES:

1. Notice: According to Colorado law you must commence any legal action based upon any defect in this survey within three years after you first discover such defect. In no event, may any action based upon any defect in this survey be commenced more than ten years from the date of certification shown hereon.
2. This survey represents the horizontal and vertical control of the project established by Clear Creek Surveying during a field survey conducted on January 5, 2021. It is possible that survey control monuments listed have been disturbed or obliterated. It is the contractor's responsibility to verify the existence and stability of the control monuments prior to use.
3. Coordinate Datum: Coordinates on this project are for the exclusive use of the client and are considered project coordinates only. Project coordinates for the topography are modified Colorado State Plane Coordinates Central Zone, North American Datum 1983, U.S. survey feet. The state plane values were raised to a tangent plane to approximate the earths surface. The state plane coordinates were raised by a combined scale factor using the coordinate for CP-1, having a Northing of 1694588.89 and an Easting of 2996130.32 at an elevation of 7683.77 feet. The ground scale factor is 1.0003604482.
4. All dimensions shown hereon are expressed in U.S. survey feet and decimals thereof. A U.S. survey foot is defined as exactly 1200/3937 meters. All bearings shown here on are Degrees-Minutes-Seconds.
5. Basis of Bearings: Bearings are based on the line between Triangulation Station No. 1, being a No. 6 rebar with brass cap in a range box in the south side of Placer Street near Illinois Street and Triangulation Station No. 3, being a 1" diameter drill hole in granite located on the ridge above the ware fall in Idaho springs having a recorded bearing of South 19°01'57" West according to the Map entitled "Lower Creek Triangulation Network on record in the archives of the Clear Creek County Archivist.
6. Basis of Elevations: Elevations are NAVD 88 Based upon Clear Creek County Geodetic Control Network Point No. 8, being NGS point KK2023, Idaho Az Mk having an elevation of 7683.77.
7. Utilities are shown per visible and apparent surface evidence, record drawings of the constructed utility lines and markings established by Tom Richardson, LLC utility locate company. If more accurate locations of underground utilities are required, the utility will have to be verified by either field potholing or contact the appropriate utility company. Clear Creek Surveying and the surveyor of record shall not be liable for the location of or the failure to note the location of non-visible utilities.
8. Portions of this site are within a 0.2% Annual Chance Flood Hazard Zone X, as determined graphic interpretation of the F.E.M.A. Flood Insurance Rate Map For City of Idaho Sptings, Colorado, community panel number 080212-0207F, revised date December 20, 2019.

SURVEYOR'S CERTIFICATION:

I, Weston D. Spears, a Professional Land Surveyor registered in the State of Colorado, hereby certify that this topographic survey was made in accordance with applicable standards of practice, was prepared under my responsible charge based and to the best of my professional knowledge, information and belief is an accurate representation of that field survey. This is not a guaranty or warranty, either expressed or implied.

COLORADO LICENSED PROFESSIONAL LAND SURVEYOR 12/11/2021 38056

Weston D. Spears, Professional Land Surveyor
Colorado P.L.S. No. 38056
for and on behalf of Clear Creek Surveying

REVISIONS
DATE 7/22/2021 BY WDS DESCRIPTION UPDATED TITLE COMMITMENT
DATE 8/19/2021 BY WDS DESCRIPTION LABELED LINE FOR PARCEL I
DATE BY DESCRIPTION
DATE BY DESCRIPTION

FIELD DATE DRAWN BY
PARTY CHIEF CHECKED BY
PLS WDS

TITLE: ALTA/NSPS LAND TITLE SURVEY
932 MINERS STREET AND 1120 IDAHO STREET
IDAHO SPRINGS, CO 80452
SEC 35, T3S, R73W OF THE 6TH P.M.

CLIENT: FOUR POINTS FUNDING, LLC

CLEAR CREEK SURVEYING
P.O. BOX 3184
IDAHO SPRINGS, CO 80452
(303) 681-1519

PROJECT NO. 20GEN70
SHEET NO. 2
NO. OF SHEETS 2

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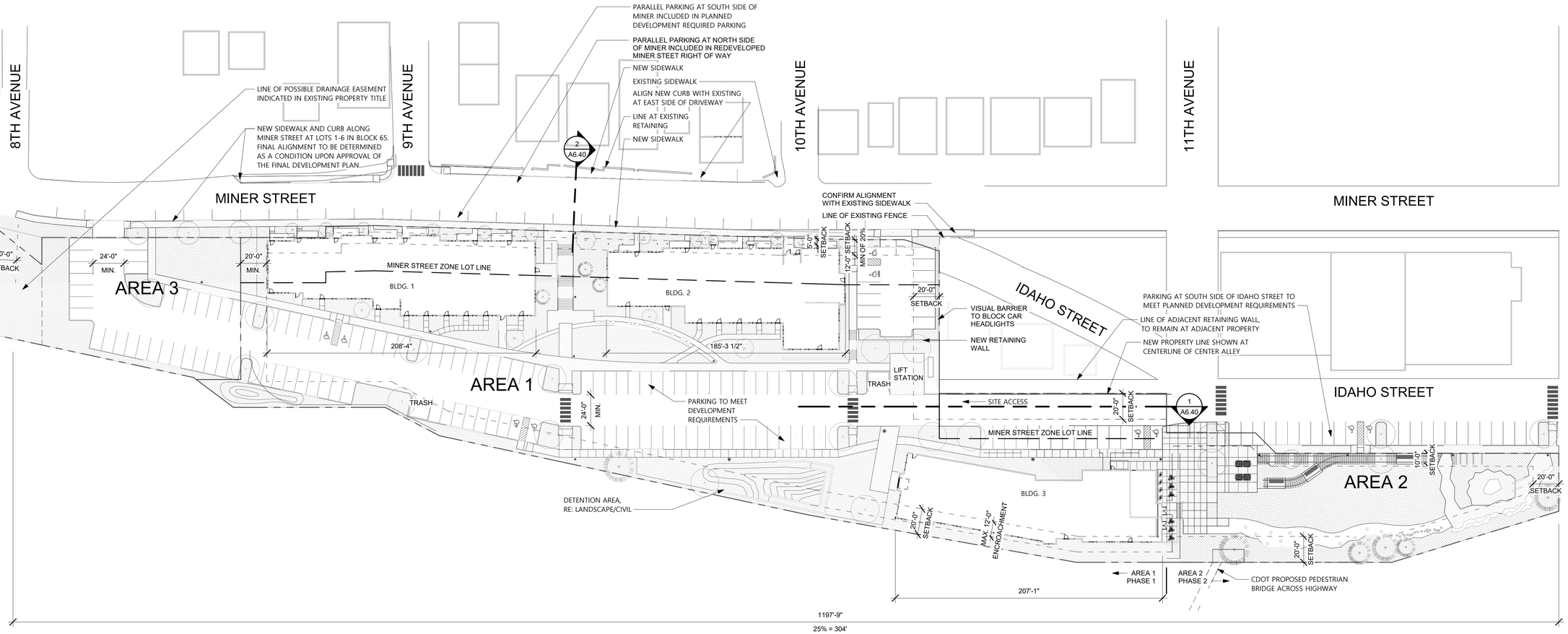
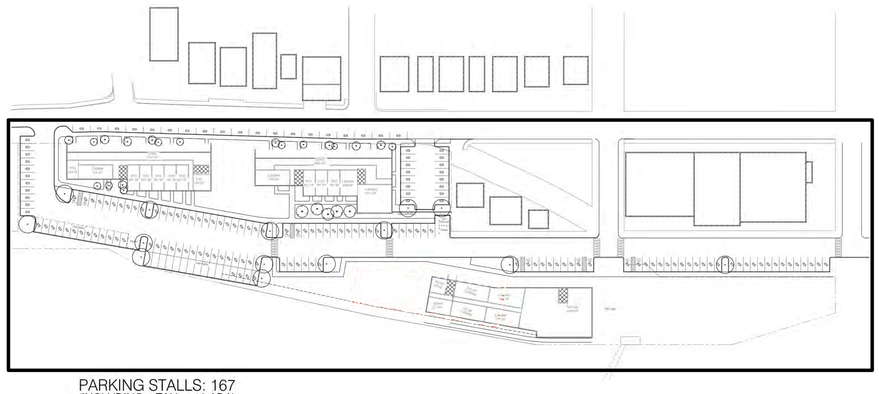


1 SITE PLAN

SCALE: 1" = 40'-0"

SITE PLAN ALTERNATE IN LIEU OF AREA 3
PARCEL BEING ADDED TO THE PROJECT



PARKING STALLS: 167
(INCLUDING 4 TAN + 10 ADA)

ADDITIONAL TAN: 12

TOTAL: 179

SHEET NOTES:
1. FINAL PLANTING PLAN, RE LANDSCAPE

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checked by

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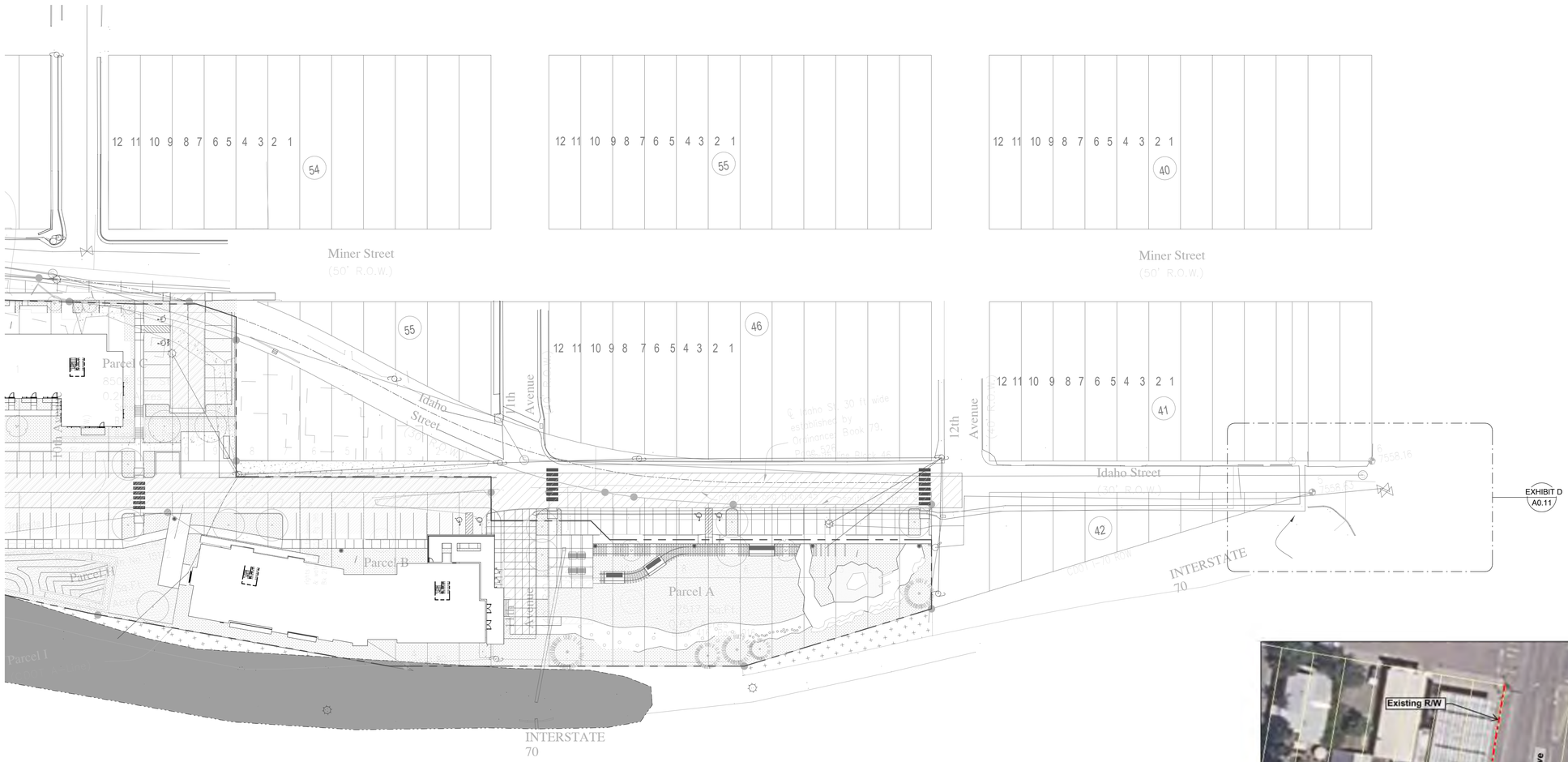

1 13TH AVE SITE PLAN

SCALE: 1" = 40'-0"

SHEET NOTES:

A RAISED CONCRETE ISLAND IS BEING PROPOSED AT THE INTERSECTION OF 13TH AVENUE AND IDAHOE STREET TO DIRECT LEFT TURNS ONLY HEADING EASTBOUND ON IDAHOE STREET. ADDITIONALLY, TO ENURE SAFETY AT THE INTERSECTION, SIGNAGE INDICATING ONE-WAY TRAFFIC ONLY AT THE EAST SIDE OF IDAHOE STREET, ADJACENT TO KUM & GO IS PROPOSED, SEE SKETCH ON THIS SHEET FOR ADDITIONAL INFROMATION REGARDING SIGNAGE, ETC.

EXHIBIT D
IDAHO STREET & 13TH AVENUE
ONE-WAY (13TH-14TH) - RIGHT-OUT OPTION

CIVTRANS Engineering Inc.
P.O. BOX 150335 • LAKEWOOD, CO 80215 • 303-653-9200

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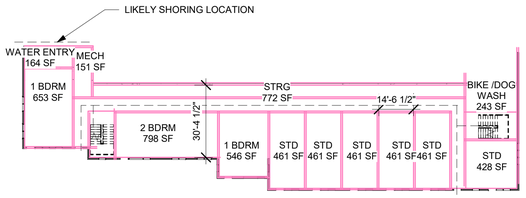
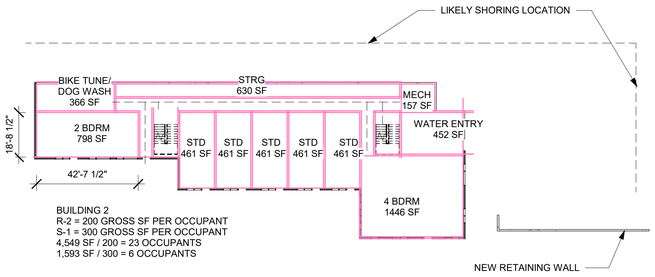
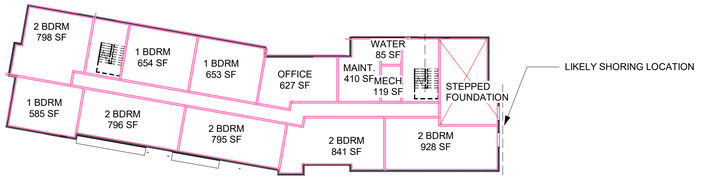


BUILDING 1
R-2 = 200 GROSS SF PER OCCUPANT
S-1 = 300 GROSS SF PER OCCUPANT
4,756 SF / 200 = 24 OCCUPANTS
1,055 SF / 300 = 4 OCCUPANTS



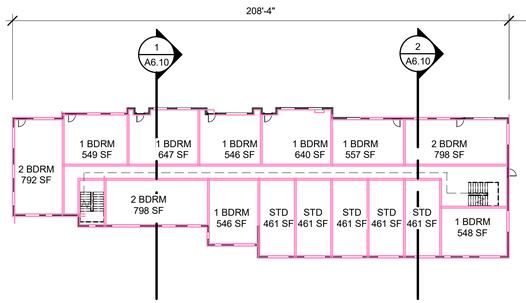
BUILDING 2
R-2 = 200 GROSS SF PER OCCUPANT
S-1 = 300 GROSS SF PER OCCUPANT
4,549 SF / 200 = 23 OCCUPANTS
1,593 SF / 300 = 6 OCCUPANTS



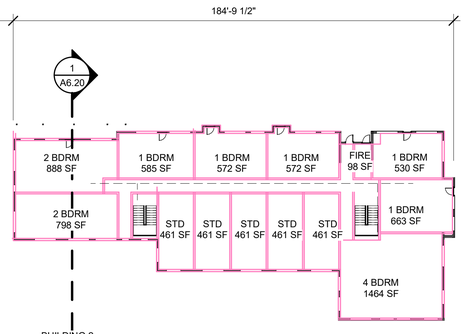
BUILDING 3
R-2 = 200 GROSS SF PER OCCUPANT
M = 60 GROSS SF PER OCCUPANT
B = 100 SF PER OCCUPANT
1,699 SF / 200 = 9 OCCUPANTS
7,020 SF / 60 = 81 OCCUPANTS
758 SF / 100 = 8 OCCUPANTS

1 LEVEL G - LIVING AREA

SCALE: 1" = 30'-0"



BUILDING 1
R-2 = 200 GROSS SF PER OCCUPANT
8,606 SF / 200 = 44 OCCUPANTS



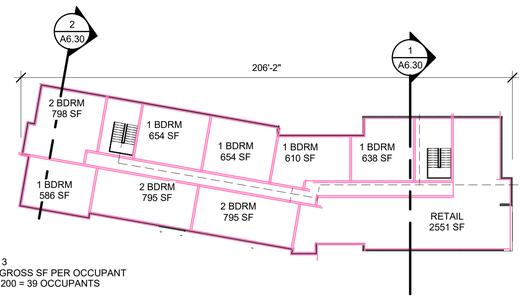
BUILDING 2
R-2 = 200 GROSS SF PER OCCUPANT
8,393 SF / 200 = 42 OCCUPANTS

BLK 57
UNIT MATRIX

Date 3.9.22

Option D - 2nd Floor Retail

		STUDIO @ 461 SF	1 BDRM @ 550 SF	1 BDRM @ 658 SF	2 BDRM @ 796 SF	2 BDRM @ 870 SF	4 BDRM @ 1,446 SF	DOG WASH/ BIKE TUNE	RETAIL/ STORAGE	MECH/WATER/O FFICE/ FIRE	Total	Square Footage	Gross SF
BLDG 1													
	LEVEL 3										0	0	
	LEVEL 2	5	5	2	3		0				15	8759	11133
	STREET	5	5	2	3		0				15	8759	11133
	GROUND	6	1	1	1		0	243	772	352	9	6137	8064
		16	11	5	7	0	0				39	23655	
											Gross SF		30330
											Circulation %	78%	
BLDG 2													
	LEVEL 3	5		1			1				7	4409	5877
	LEVEL 2	5	3	1	2	1	1				13	8521	10484
	STREET	5	4	1	1	1	1			98	13	8373	10484
	GROUND	5			1		1	431	630	583	7	6191	7993
		20	7	3	4	2	4				40	27494	
											Gross SF		34838
											Circulation %	79%	
BLDG 3													
	LEVEL 3	4	1	2	3	3	0				13	8708	10470
	LEVEL 2		1	4	4	2	0				11	8106	10470
	STREET		1	4	3		0		2551		8	8121	10470
	GROUND		1	2	3	2	0	730	307	1241	8	8272	9638
		4	4	12	13	7	0				40	33207	
											Gross SF		41048
											Circulation %	81%	
Total Unit Count		40	22	20	24	9	4				119	84356	
											Total Gross SF		106216
											Circulation %	79%	
Parking Required		50	33	30	36	15.75	10		10.204	0	184.954	168.14	16.814
Parking Provided												195	
							Existing Milner and Idaho parallel parking to be dis-counted and reconfigured				13	182	
	park factor												
	handicap	iBC Table 2106.1 and IS Stds 3.9.2										151-200 spaces =	6
	van parking											1 per 6 =	1



BUILDING 3
R-2 = 200 GROSS SF PER OCCUPANT
7,800 SF / 200 = 39 OCCUPANTS

2 LEVEL S - LIVING AREA

SCALE: 1" = 30'-0"

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BLOCK 57 / FORMER GOLDDIGGER FIELD & MAINTENANCE FACILITY

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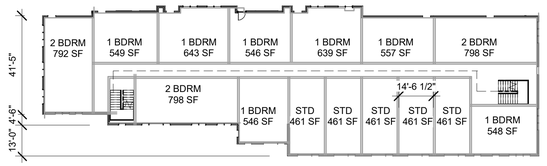
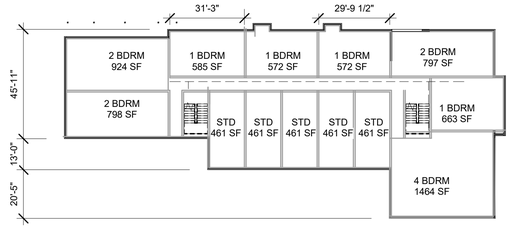
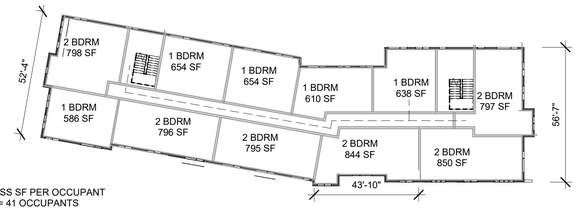


BUILDING 1
R-2 = 200 GROSS SF PER OCCUPANT
8,606 SF / 200 = 44 OCCUPANTS



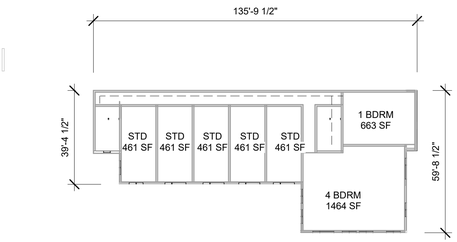
BUILDING 2
R-2 = 200 GROSS SF PER OCCUPANT
8,475 SF / 200 = 43 OCCUPANTS



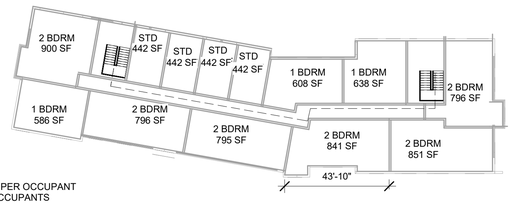
BUILDING 3
R-2 = 200 GROSS SF PER OCCUPANT
8,117 SF / 200 = 41 OCCUPANTS

1 LEVEL 2 - LIVING AREA

SCALE: 1" = 30'-0"



BUILDING 2
R-2 = 200 GROSS SF PER OCCUPANT
4,428 SF / 200 = 23 OCCUPANTS



BUILDING 3
R-2 = 200 GROSS SF PER OCCUPANT
8,799 SF / 200 = 44 OCCUPANTS

2 LEVEL 3 - LIVING AREA

SCALE: 1" = 30'-0"

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SHEET NOTES

1 BLDG 1 NORTH ELEVATION @ MINER STREET

SCALE: 1/8" = 1'-0"

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IDAHO SPRINGS, CO 80452

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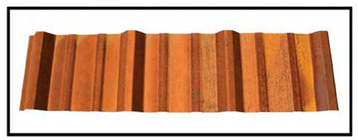
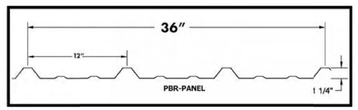
Roof & Awnings: Asphalt Shingle

Mftr: Owens Corning
Color: Carbon
Location: Bldg 1-3
RE: Elevations & Massing Model

Website:
https://www.owenscorning.com/en-us/roofing/shingles/woodmoor?color=carbon

Exterior Awning & Dormer Material: Hot Rolled Raw Metal





Mftr: Corten Steel
Style/Profile:
R Panel/ PBR Panel
A606-4 AKA Corten
Weathered Steel
Location: Bldg 1-3 RE:
Elevations & Massing Model

Awning Style

Website:
https://www.cortenroofing.com/corten-r-panel-pbr-a606-4-weathering-steel-roofing.html

Exterior Wall Material: Vertical Lap Siding & Solid Trim

Mftr: LP Smart Siding
Finish: Northwest Factory Finishes Colorstrand
Color: Deep Grain Lap Acadia
Location Bldg 1-3 Facing
RE: Elevations & Massing Model

Trim: Colorstrand, Solid Color Trim Bronze
Location Bldg. 1-3 @ siding locations

Website:
https://www.northwestfactoryfinishes.com/products/engineered-wood#products_e=0&products_color=Gray|%7CDark%20Brown&products_texture=Deep%20Grain%20Lap|%7CSolid%20Color%20Lap%7C%7COther

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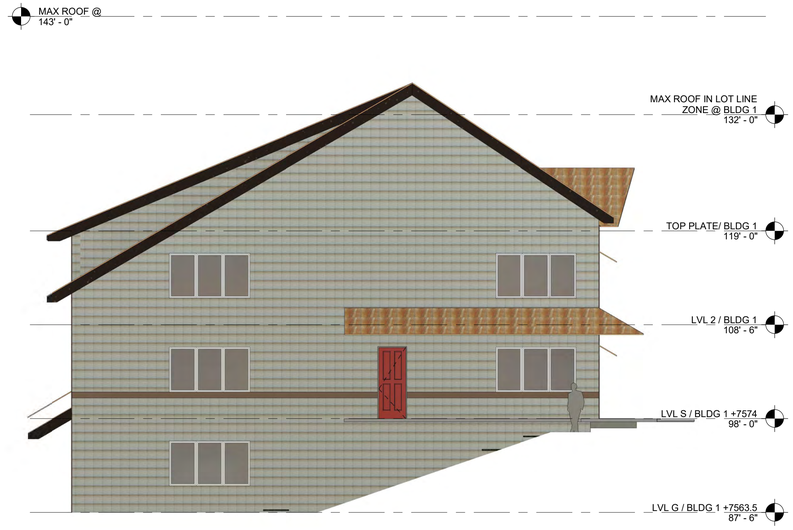
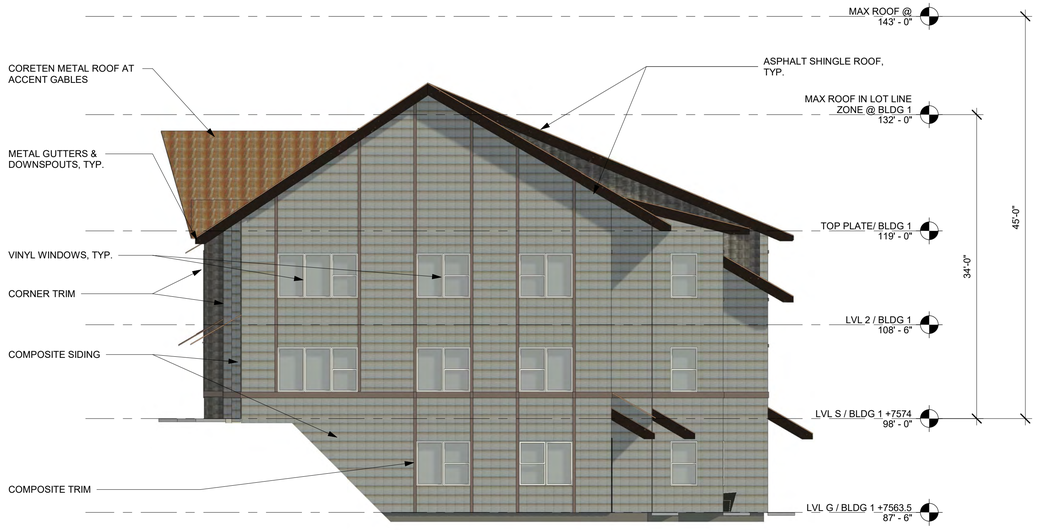


1 BLDG 1 EAST ELEVATION

SCALE: 1/8" = 1'-0"



2 BLDG 1 WEST ELEVATION

SCALE: 1/8" = 1'-0"

3 BLDG 1 SOUTH ELEVATION

SCALE: 1/8" = 1'-0"

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BLOCK 57 / FORMER
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FACILITY

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SHEET NOTES

1 BLDG 2 NORTH ELEVATION

SCALE: 1/8" = 1'-0"

Building 1 &2 Materials

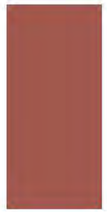
Roof & Awning Material

Metal Awnings & Dormers

Downspouts & Gutters Color

Facing Material

Trim



Door Color

Windows

Exterior Wall Material: Vertical Lap Siding & Solid Trim

Mftr: LP Smart Siding
Finish: Northwest Factory Finishes Colorstrand
Color: Deep Grain Lap Acadia
Location Bldg 1-3 Facing
RE: Elevations & Massing Model

Trim: Colorstrand, Solid Color Trim Bronze
Location Bldg. 1-3 @ siding locations

Website:
https://www.northwestfactoryfinishes.com/products/engineered-wood#products_e=0&products_color=Gray|%7CDark%20Brown&products_texture=Deep%20Grain%20Lap|%7CSolid%20Color%20Lap%7C%7COther

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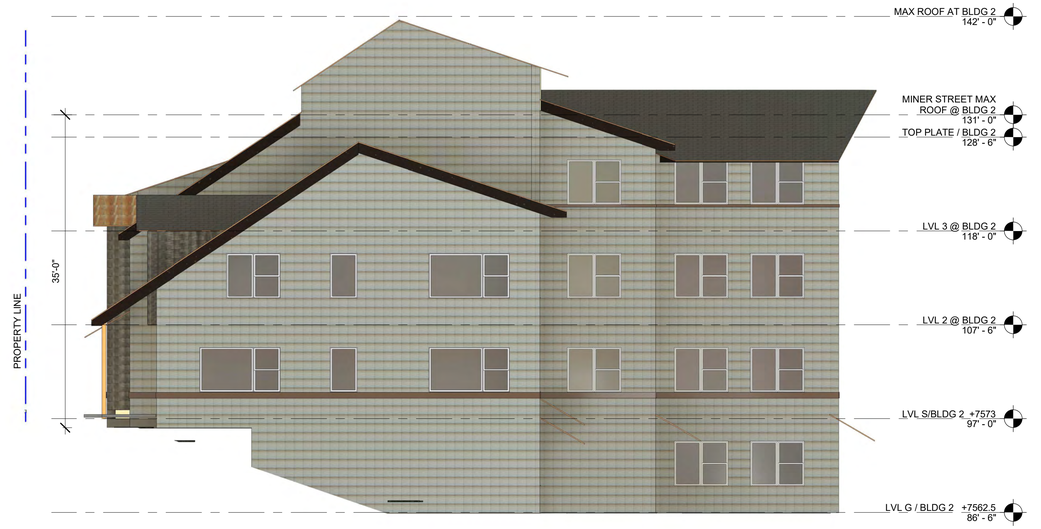
1 BLDG 2 EAST ELEVATION

SCALE: 1/8" = 1'-0"



2 BLDG 2 WEST ELEVATION

SCALE: 1/8" = 1'-0"

3 BLDG 2 SOUTH ELEVATION

SCALE: 1/8" = 1'-0"

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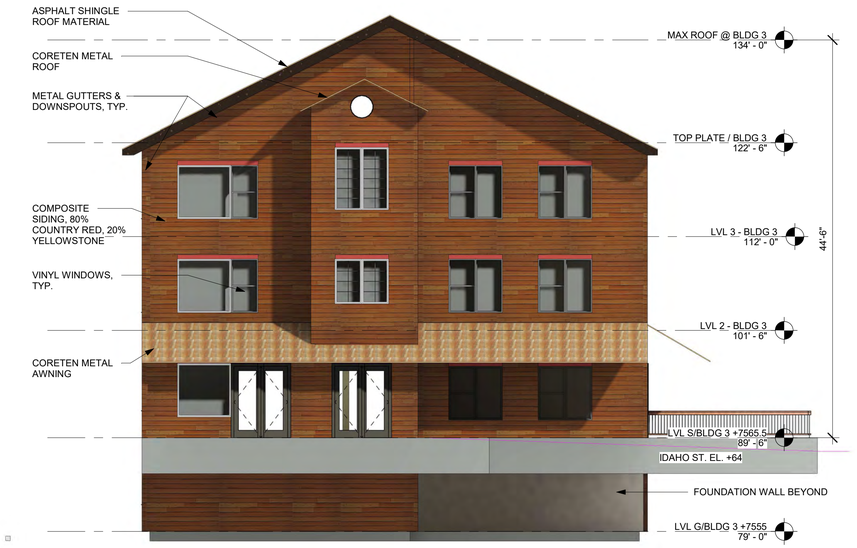
COLORSTRAND LP SMARTSIDE

DEEP GRAIN LAP COUNTRY RED

COLORSTRAND LP SMARTSIDE

DEEP GRAIN LAP YELLOWSTONE



1 BLDG 3 EAST ELEVATION

SCALE: 1/8" = 1'-0"

2 BLDG 3 NORTH ELEVATION

SCALE: 1/8" = 1'-0"

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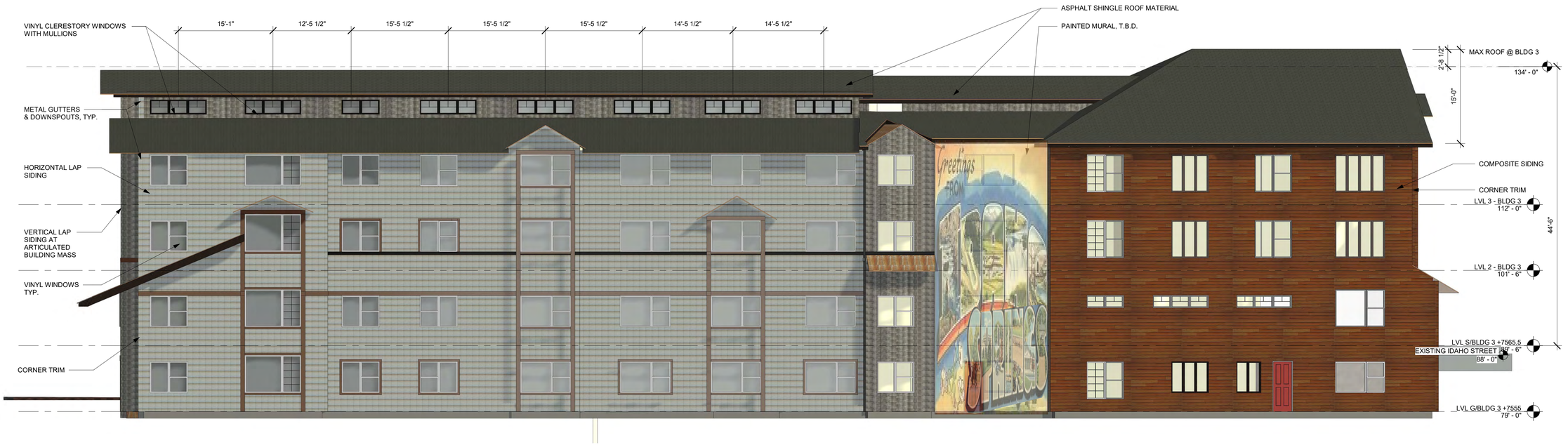
Building 3 Materials

1 BLDG 3 NORTHWEST ELEVATION

SCALE: 1/8" = 1'-0"



2 BLDG 3 SOUTHWEST ELEVATION

SCALE: 1/8" = 1'-0"

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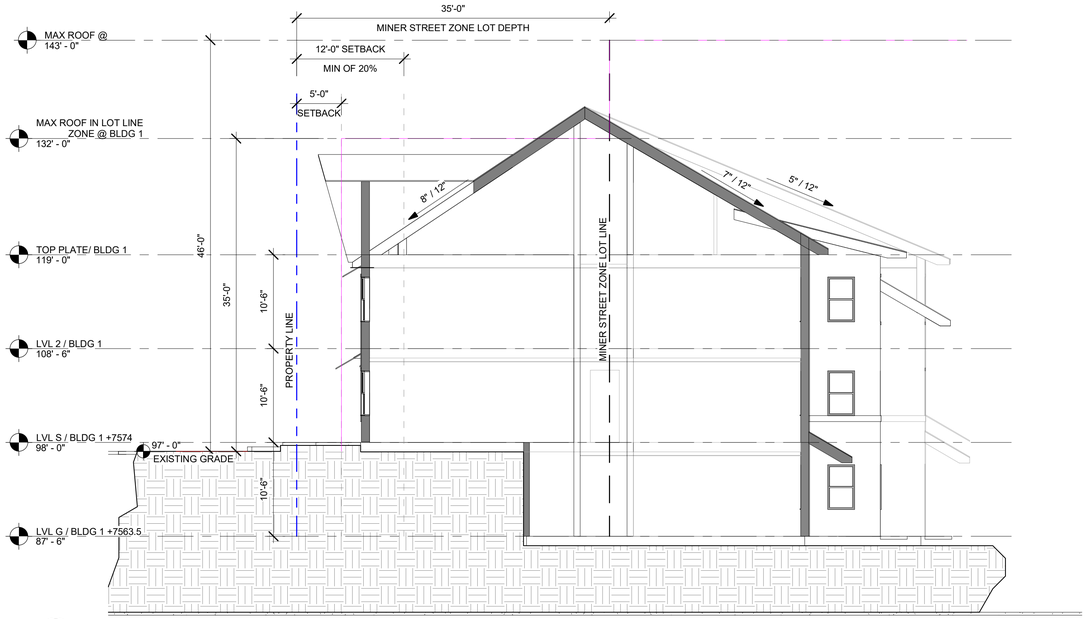
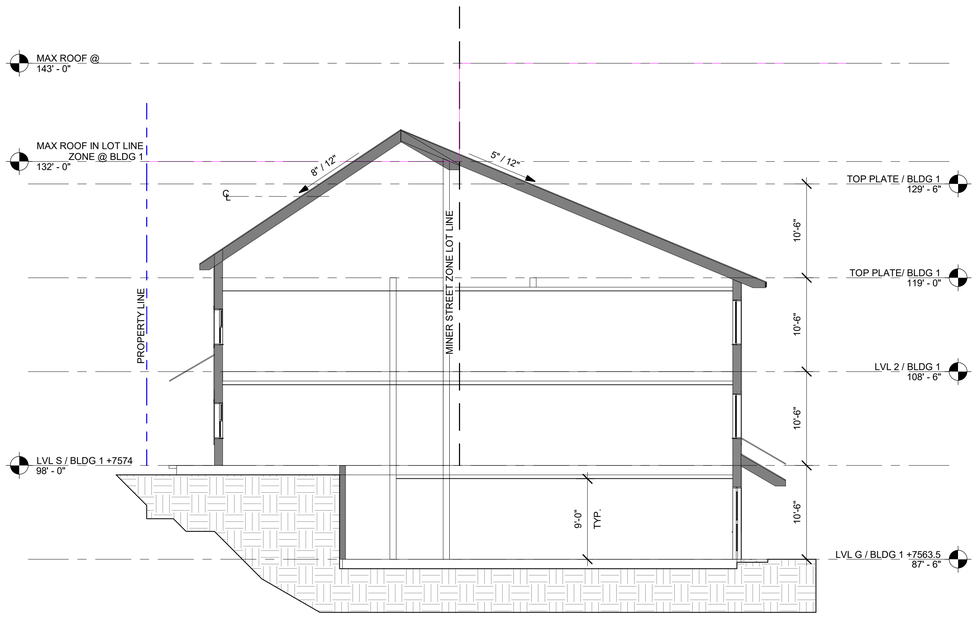


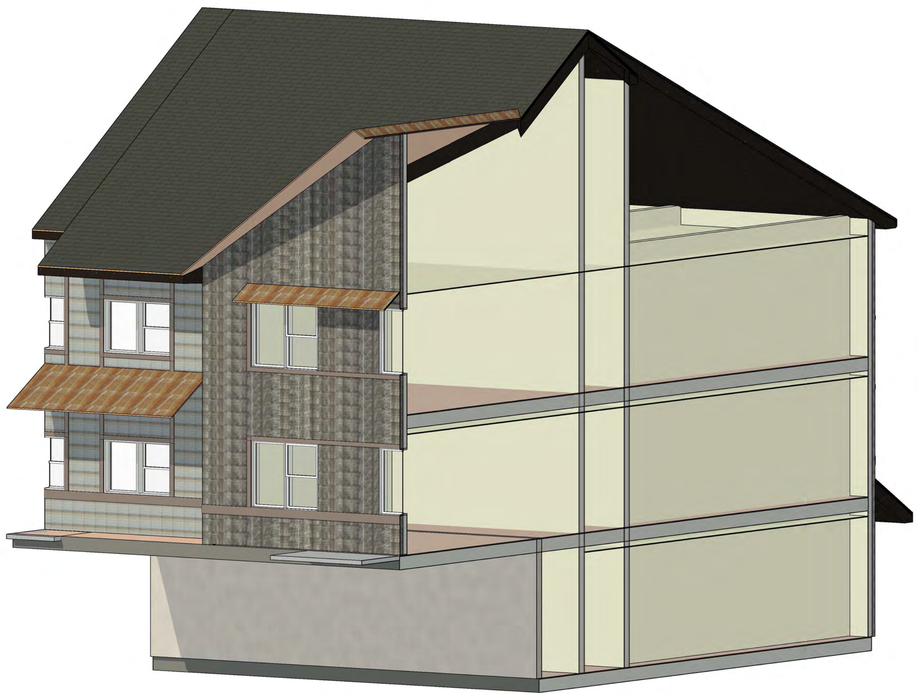
1 BLDG 1 LATITUDINAL SECTION @ WEST END

SCALE: 1/8" = 1'-0"



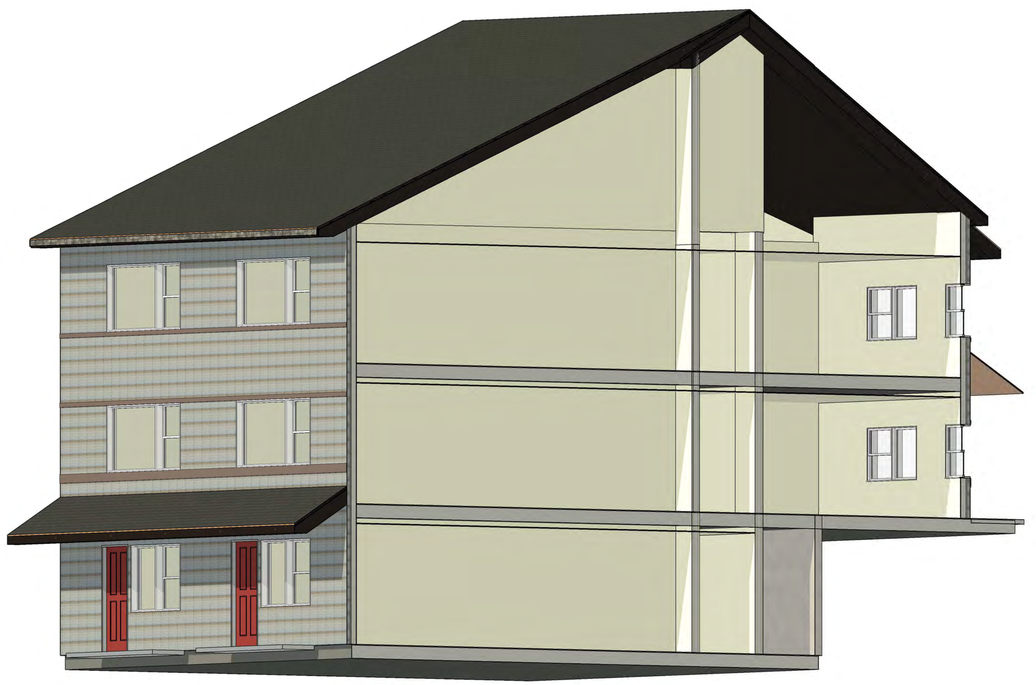
2 BLDG 1 LATITUDINAL SECTION @ EAST END

SCALE: 1/8" = 1'-0"



3 BLDG 1 -3D SECTION @ MINER STREET

SCALE:



4 BLDG 1 -3D SECTION @ INTERSTATE 70

SCALE:

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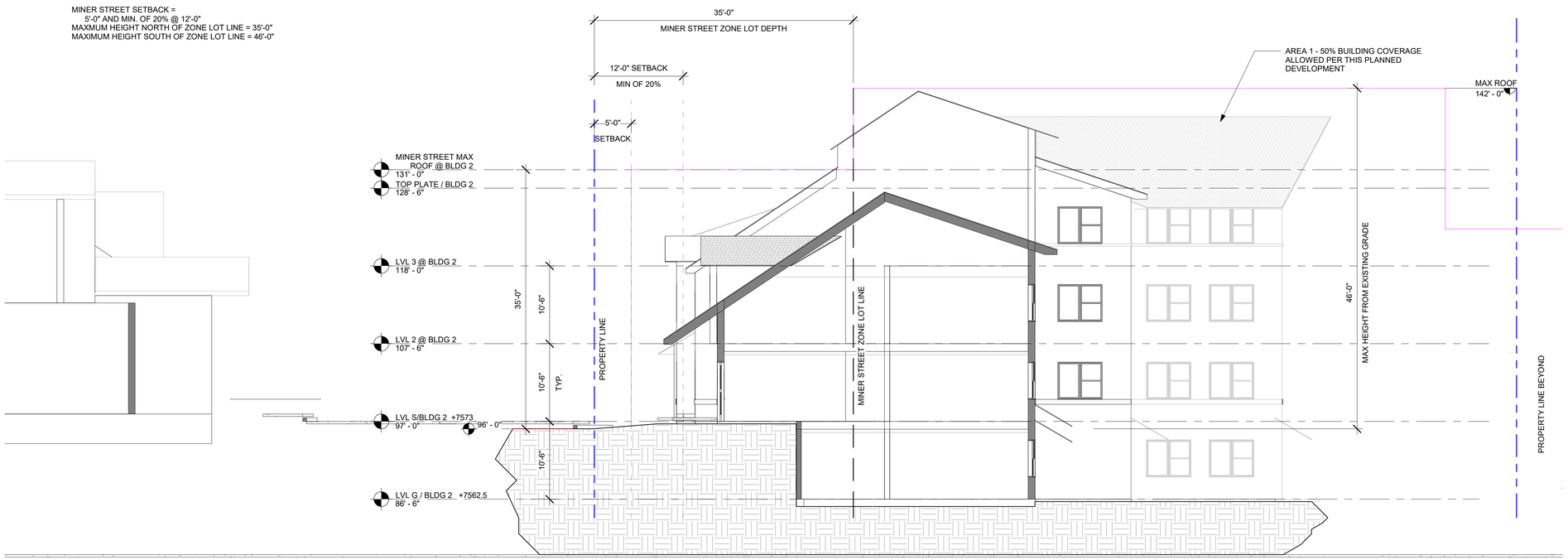
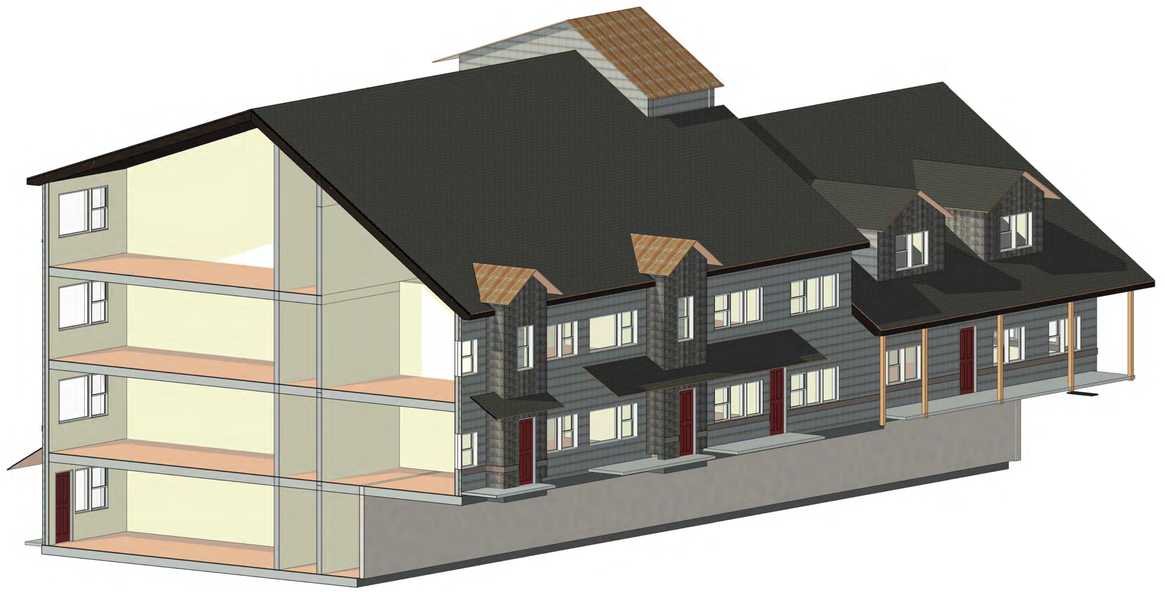


1 BLDG 2 LATITUDINAL SECTION WEST

SCALE: 1/8" = 1'-0"

2 BLDG 2 -3D SECTION @ INTERSTATE 70

SCALE:



3 BLDG 2 -3D SECTION @ MINER STREET

SCALE:

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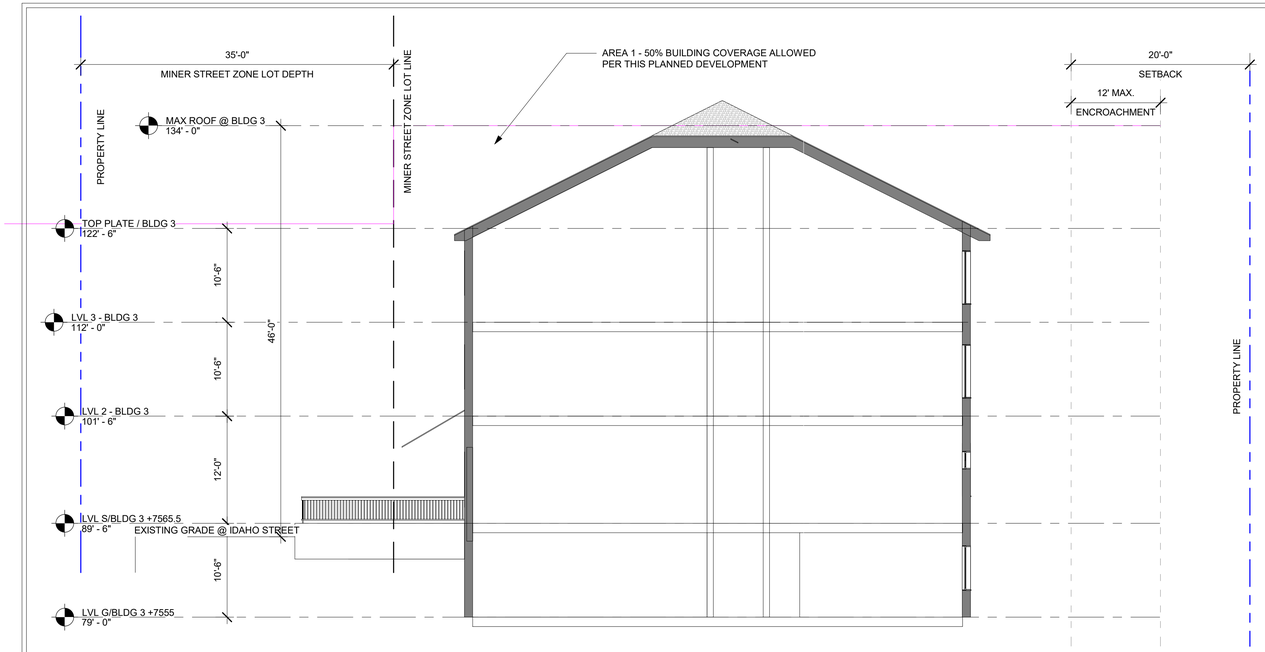
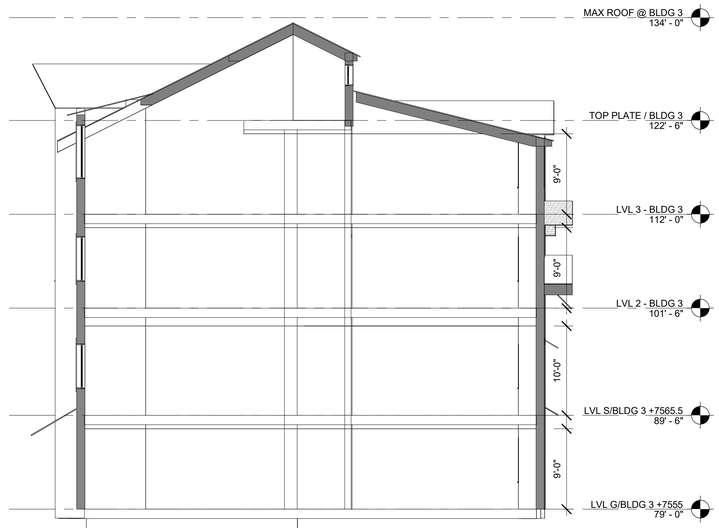


1 BLDG 3 LATITUDINAL SECTION EAST

SCALE: 1/8" = 1'-0"



2 BLDG 3 LATITUDINAL SECTION WEST

SCALE: 1/8" = 1'-0"

3 BLDG 3 - 3D SECTION @ INTERSTATE 70

SCALE:

4 BLDG 3 - 3D SECTION @ CENTRAL ALLEY

SCALE:

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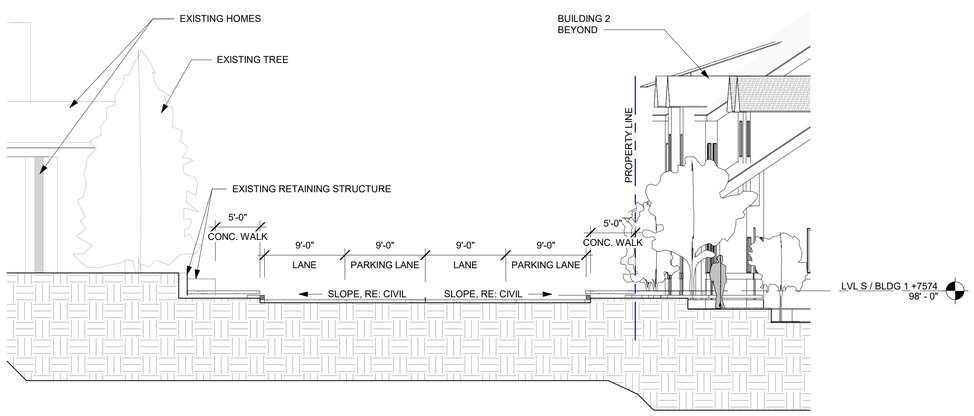
1 LONGITUDINAL SECTION @ CENTRAL ALLEY

SCALE: 1/8" = 1'-0"



2 MINER STREET LATITUDINAL SECTION TO CENTRAL LAWN

SCALE: 1/8" = 1'-0"

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1 I-70 LOOKING NORTHEAST
SCALE:

2 I-70 LOOKING WEST
SCALE:

3 CENTRAL ALLEY LOOKING WEST
SCALE:

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Legend

	ELECTRICAL VAULT
	TELEPHONE/DATA
HP	HIGH POINT
FF	FINISH FLOOR
TOS	TOP OF SLAB
FF	FINISH FLOOR
A.C.	ASPHALT CONCRETE
I.E.	INVERT ELEVATION
O.E.	OUTLET ELEVATION
T.O.P.	TOP OF PAD
TYP.	TYPICAL
STA	SOIL TREATMENT AREA
U.O.N.	UNLESS OTHERWISE NOTED
BM	BENCH MARK
F.V.	FIELD VERIFY
MH	MANHOLE
SMH	SEWER MANHOLE
D.I.P.	DUCTILE IRON PIPE
RCP	REINFORCED CONCRETE PIPE
CPP	CORRUGATED PLASTIC PIPE (HDPE)
TELECO	TELECOMMUNICATIONS
LOC	LIMITS OF CONSTRUCTION

EXISTING GRADE

PROPOSED MAJOR CONTOUR

PROPOSED MINOR CONTOUR

P/L P/L PROPERTY LINE

XS XS EXISTING SEWER LINE

XW XW EXISTING WATER LINE

XE XE EXISTING ELECTRIC LINE

XG XG EXISTING GAS LINE

XT XT EXISTING TELECO LINE

S S NEW SEWER LINE

W W NEW WATER LINE

SD SD NEW STORM SEWER LINE

E E NEW ELECTRIC LINE

G G NEW GAS LINE

T T NEW TELECO LINE

NEW

MANHOLE

CLEANOUT

CATCH BASIN

POLLUTION CONTROL MANHOLE

DW DRYWELL

WATER METER

FIRE HYDRANT

FDC FIRE DEPT. CONNECTION

GATE VALVE

BUTTERFLY VALVE

REDUCER

BLOWOFF

R RESERVOIR

PS PUMP STATION

METER VAULT

PRS PRESSURE REDUCING STATION

PS PRESSURE SENSOR

PR PRESSURE REDUCER

AR AIR RELIEF VALVE (OFFSET)

AR AIR RELIEF VALVE (ON LINE)

CHECK VALVE

LIGHT

T FITTING

ANGLE FITTING

UTILITY POLE

TYPICAL SECTION & DETAIL DESIGNATIONS

SECTION LETTER DESIGNATION

SECTIONS:

SHEET WHERE SECTION IS SHOWN

SHEET WHERE FIRST CALLED

DETAIL NUMBER

DETAILS:

SHEET WHERE DETAIL IS FOUND

BEFORE YOU DIG
Dial 811
Utility Locate Required

GENERAL NOTES

1. THE CONTRACTOR SHALL PROTECT ALL OF THE ADJACENT IMPROVEMENTS (BUILDINGS, ROADWAYS, FENCES, PARKING LOTS, UTILITIES, ETC…) FROM DAMAGE AND EROSION. ALL DISTURBED AREAS OFF-SITE SHALL BE RESTORED TO THEIR ORIGINAL CONDITION.
2. THE CONTRACTOR SHALL ERECT A CONSTRUCTION FENCE BEFORE THE START OF ANY CONSTRUCTION, SHALL MAINTAIN THE FENCE AND MODIFY, EXPAND AND RECONFIGURE THE FENCE AS NECESSARY TO PROTECT THE GENERAL PUBLIC AND ISOLATE CONSTRUCTION AREAS.
3. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS, AT HIS EXPENSE, TO COMPLETE THE PROPOSED WORK, AND SHALL COMPLY WITH ALL LOCAL STATE AND FEDERAL REGULATIONS.
4. THE CONTRACTOR WILL BE REQUIRED TO OBTAIN A STORMWATER DISCHARGE PERMIT FROM THE STATE OF COLORADO. THE CONTRACTOR SHALL MAINTAIN DRAINAGE DURING CONSTRUCTION, IN ACCORDANCE WITH A SITE-SPECIFIC STORM MANAGEMENT PLAN. ANY REWORK OF MATERIALS DUE TO LACK OF THIS MAINTENANCE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
5. SUBGRADE STABILIZATION CONSISTS OF THE COMBINATION OF EXCAVATION OF EXISTING ON SITE SOILS AND MATERIALS, SCREENING AND GRADING OF THE MATERIALS FOR POSSIBLE USE AS FILL MATERIALS, IF APPROVED BY THE GEOTECHNICAL ENGINEER, REMOVAL AND DISPOSAL OF ALL UNUSABLE OR EXCESS MATERIAL, AND REPLACEMENT OF REMOVED MATERIALS WITH COMPACTED FILL, TO THE SUBGRADE ELEVATIONS REQUIRED BY THE PLANS. RE: GEOTECHNICAL REPORT
6. COMPACTION AND MOISTURE CONTROL IN NATIVE AND AGGREGATE MATERIALS SHALL BE TO 95% OF MAXIMUM MODIFIED PROCTOR DENSITY, AT +/- 2% OPTIMUM MOISTURE, OR AS DIRECTED BY A SITE-SPECIFIC GEOTECHNICAL EVALUATION.
7. CONTRACTOR SHALL PROTECT ALL NEW ASPHALT PAVEMENT.
8. ANY PAVEMENT, CURB AND GUTTER, OR SIDEWALK MATERIAL THAT IS DAMAGED AS A RESULT OF THE CONTRACTOR'S OPERATION, AND IS NOT DESIGNATED FOR REMOVAL, SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
9. ANY DAMAGE TO PUBLIC ROADWAYS SHALL BE REPAIRED IMMEDIATELY AND PRIOR TO CONTINUING OPERATIONS. DUST SHALL BE PROPERLY CONTROLLED AND ANY MUD OR OTHER MATERIALS TRACTOR OTHERWISE DEPOSITED ON THE ROADWAY SHALL BE REMOVED DAILY, OR AS ORDERED BY THE ENGINEER.
10. ALL EXTERIOR CONCRETE SHALL BE A 4,000 PSI (MIN.) MIX, AFTER 28 DAYS, CONTAIN AIR ENTRAINMENT AT 6% +/- 1% BY VOLUME, SHALL CONTAIN FIBER MESH, SHALL HAVE A SLUMP BETWEEN 2 AND 5 IN, AND SHALL BE GIVEN A LIGHT BROOM FINISH.
11. RIPRAP SHALL BE SOUND, ANGULAR ROCK OF THE DIMENSIONS INDICATED.
12. SHOULD ANY QUESTIONS ARISE OR ANY DISCREPANCIES BE NOTED IN THE PLANS, THE ENGINEER SHOULD BE CONSULTED PRIOR TO CONSTRUCTION OF THE AFFECTED ITEMS.

City of Idaho Springs, Colorado
Adopted Codes:

2018 International Building Code
2018 nternational Plumbing Code
2018 nternational Fire Code
2020 National Electric Code

City of Idaho Springs, Specifications for Design and Construction
2nd Amendment, November, 2018

Colorado Department of Transportation (CDOT) Standard Specifications 2021

Contractor shall comply with all referenced and applicable codes,
material and installation specifications as if reiterated herein.

Permitting Authorities:

City of Idaho Springs, CO
State of Colorado, Dept of Public Health and Environment (CDPHE)
Colorado Department of Transportation (CDOT)

THESE CONSTRUCTION PLANS FOR BLOCK 57/ FORMERLY GOLDDDIGGER FIELD & MAINTENANCE FACILITY, WERE PREPARED BY ME (OR UNDER MY DIRECT SUPERVISION) IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY OF IDAHO SPRINGS STANDARDS AND SPECIFIICATION FOR DESIGN AND CONSTRUCTION.
MARK G. CLADNY, PE
ELEVATED CIVIL LLC

GENERAL NOTES- CITY OF IDAHO SPRINGS, COLORADO

- THE CITY SIGNATURE AFFIXED TO THIS DOCUMENT INDICATES THE CITY HAS REVIEWED THE DOCUMENT AND FOUND IT IN GENERAL CONFORMANCE WITH THE CITY OF IDAHO SPRINGS STANDARDS AND SPECIFICATIONS FOR DESIGN AND CONSTRUCTION OR APPROVED VARIANCES TO THOSE REGULATIONS. THE CITY, THROUGH ACCEPTANCE OF THIS DOCUMENT, ASSUMES NO RESPONSIBILITY, OTHER THAN STATED ABOVE, FOR THE COMPLETENESS AND/OR ACCURACY OF THESE DOCUMENTS. THE OWNER AND ENGINEER UNDERSTAND THAT THE RESPONSIBILITY FOR THE ENGINEERING ADEQUACY OF THE FACILITIES DEPICTED IN THIS DOCUMENT LIES SOLELY WITH THE LICENSED PROFESSIONAL ENGINEER WHOSE STAMP AND SIGNATURE IS AFFIXED TO THIS DOCUMENT.
- ALL ROADWAY CONSTRUCTION SHALL CONFORM TO CITY OF IDAHO SPRINGS STANDARDS AND SPECIFICATIONS FOR DESIGN AND CONSTRUCTION.
- ALL MATERIALS AND WORKMANSHIP SHALL BE SUBJECT TO INSPECTION BY THE CITY. THE CITY RESERVES THE RIGHT TO ACCEPT OR REJECT ANY SUCH MATERIALS AND WORKMANSHIP THAT DOES NOT CONFORM TO ITS STANDARDS AND SPECIFICATIONS. THIS MAY RESULT IN A “STOP WORK ORDER” THAT WILL REMAIN IN EFFECT UNTIL APPROPRIATE CORRECTIONS ARE MADE TO THE SATISFACTION OF THE CITY OF IDAHO SPRINGS.
- THE CONTRACTOR PRIOR TO ACTUAL CONSTRUCTION SHALL VERIFY THE LOCATION OF EXISTING UTILITIES.
- THE CONTRACTOR SHALL PROVIDE ALL LIGHTS, SIGNS, BARRICADES, FLAGMEN, OR OTHER DEVICES NECESSARY TO PROVIDE FOR THE SAFETY IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES AND THE COLORADO SUPPLEMENT TO THE FEDERAL MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
- THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS AT AND ADJACENT TO THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS.
- THE CITY’S RIGHT TO CONDUCT CONSTRUCTION INSPECTIONS AND REVIEW OF THE CONTRACTOR’S PERFORMANCE IS NOT INTENDED TO INCLUDE REVIEW OF THE CONTRACTOR’S SAFETY MEASURES IN, ON, OR NEAR THE CONSTRUCTION SITE.
- IT SHALL BE THE CONTRACTOR’S RESPONSIBILITY TO NOTIFY THE OWNER/APPLICANT OF ANY PROBLEM IN CONFORMING TO THE APPROVED PLANS FOR ANY ELEMENT OF THE PROPOSED IMPROVEMENTS PRIOR TO ITS CONSTRUCTION.
- IF CONSTRUCTION HAS NOT COMMENCED WITHIN TWO (2) YEARS OF APPROVAL, THE CONSTRUCTION PLANS MAY BE CONSIDERED INVALID. THESE PLANS MAY BE SUBJECT TO RE-REVIEW AND REAPPROVAL BY THE CITY.
- PAVING SHALL NOT START UNTIL A SOILS REPORT AND PAVEMENT DESIGN IS ACCEPTED BY THE CITY AND SUBGRADE COMPACTION TESTS ARE TAKEN AND ACCEPTED BY THE GEOTECHNICAL ENGINEER.
- IF DEWATERING IS USED TO INSTALL UTILITIES, CULVERTS, ETC., THEN A STATE CONSTRUCTION DEWATERING WASTEWATER DISCHARGE PERMIT IS REQUIRED FOR DISCHARGE INTO A STORM SEWER, CHANNEL IRRIGATION DITCH, OR ANY WATER OF THE UNITED STATES. A COPY OF THE PERMIT SHALL BE KEPT ON SITE AND FILED WITH THE PUBLIC WORKS DEPARTMENT.

Contents

Sheet	Title
C1:	Cover Sheet
C2:	Demolition Plan
C2.1:	Undercut and Backfill Plan
C3:	Grading Plan- West
C3.1:	Grading Plan-East
C3.2:	Drainage Plan-West
C3.3:	Drainage Plan-East
C3.4:	Detention Plan & Details
C3.5:	Snow Removal Plan
C3.7:	Erosion & Sediment Control Plan- West
C3.8:	Erosion & Sediment Control Plan-East
C3.9:	Erosion & Sediment Control Details
C4:	Utility & Water Plan-West
C4.1:	Utility & Water Plan-East
C4.2:	Utility & Water Details
C4.3:	Utility & Water Details
C4.4:	Sewer Line Profiles
C4.5:	Sewage Lift Station Plan & Details
C5.0:	Paving Plan
C5.1:	Street Plan-West
C5.2:	Street Plan-East
C5.3:	Striping & Signage Plan
C5.4:	Miner St. Profile & Sections
C5.5:	Drive Profiles & Sections
C5.6:	Roadway Details

PRELIMINARY
NOT FOR CONSTRUCTION

FINAL DEVELOPMENT PLAN SUBMITTAL

BLOCK 57/FORMERLY GOLDDIGGER FIELD & MAINTENANCE FACILITY

8TH-12TH AVE. & MINER ST.,
IDAHO SPRINGS, CO 80452

[SPACE INC]
Architecture. Interiors. & Master Planning

4P Four Points Funding

Elevated Civil

Back 40 Landscape Architecture

IMEG

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Cover Sheet

File Name DD 2-28-22.vwx

date 2/28/22

project #

drawn by: MC

C1

IMEG

January 6, 2022

Space Inc.
carlacole@spaceinccocom

Attn: Carla L. Pokrywka Cole

RE: Block 57 Idaho Springs, Colorado
Foundation/shoring narrative
IMEG#21008392

Dear Ms. Cole:

Block 57 Idaho Springs is a 3 building for rent project in Idaho Springs, CO. The scope includes the widening of miner street requiring temporary shoring to support the road during construction. The following is a short narrative of the design parameters for the shoring and foundations for the project.

Shoring
Shoring will be required at various locations around the perimeter of the site to allow excavation for the foundation to be constructed without affecting the grade of adjacent property such as the Miner Street Rebuild. The most likely type of shoring would be drilled piers with steel columns and wood lagging with the possible requirement for steel tiebacks. The shoring would only be required during construction and would be abandoned in place when the final backfilling operation is completed. The shoring will most likely be required in the northwest corner of building 1, the complete north side of building 2, and possible along the east side of building 3.

Foundations
At the time of this narrative there has not been a formal geotechnical report, but Terracon provided a geotechnical report previously and has been hired to provide the geotechnical report. Preliminary soil borings indicate up to 7 feet of undocumented fill over the site underlain by native soil. The undocumented fill will need to be replaced but the existing fill can apparently be reused after modified. An alternative to this would be to reinforce the existing soil with a ground improvement system such as Geo-Piers which are stone filled columns installed within the soil. The above 2 options to modify the existing soil below the buildings will result in the use of a shallow foundation system of concrete footings located below frost depth, concrete foundation walls, and a concrete slab on grade. A concrete mat foundation can be considered but it has not been mentioned by the geotechnical engineer and is generally used where the soil is expansive or the water table is quite close to the ground floor elevation.

Sincerely,

Craig Carroll, P.E
Associate Principal/Project Executive

MCB/csp

1400 Glenarm Pl, Suite101, Denver, CO 80202
303.623.4927 imegcorp.com

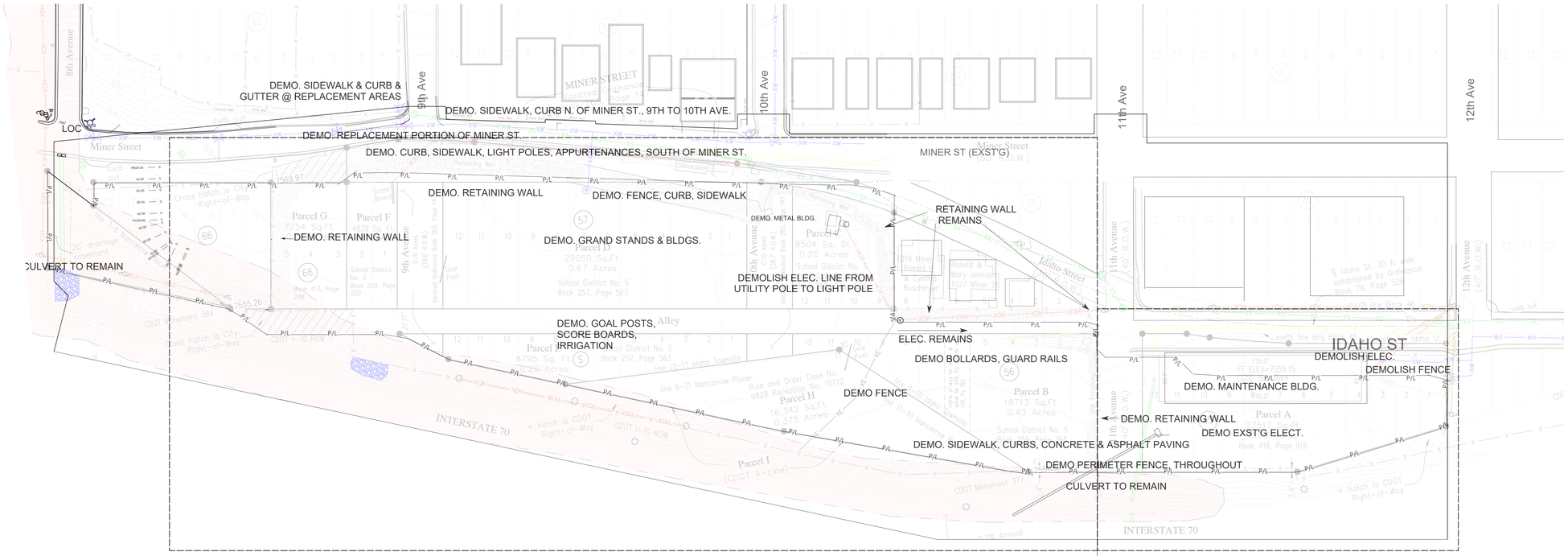
Shoring of existing roads and structures is required. Contractor shall provide a design/build shoring system to preceed demolition and construction of all building foundations and structures.

RE: GEOTECHNICAL INVESTIGATION:

Geotechnical Engineering Report
Proposed Idaho Springs Mixed Use Developement
Idaho Springs, Colorado
January 10, 2022
Prepared by: Terracon Consultants, Inc.

Notes- Site Preparation & Demolition

1. Contractor shall prepare and submit a demolition plan showing the schedule and phasing of work.
2. Adequately shore existing Miner St. and structures prior to demolition of existing retaining structures.
3. Contractor to verify removal or salvage of all signs and other City or School District items with relevant agencies.
4. Surface demolition shown only. Contractor is responsible for field review and verification of all on site conditions.
5. Notify the Architect and Engineer of any utilities which may conflict with the proposed work.
6. On-site storage of contractors excavated material will not be available.
7. Contractor shall protect all new asphalt pavement.
8. Demolish existing concrete retaining walls, grand stands, concession structures, metal buildings, scoreboards, goal posts, fencing, and foundations.
9. Clearing and grubbing shall include removal of all trees, logs, limbs, stumps, brush, trash, etc… to an off-site location. Tree removal shall include the roots.



PHASE 1
AREA 1

PHASE 2, AREA 2,-Commencing No Earlier Than 1/1/2024

0 30 FT

1 Demolition Plan
Scale: 1" = 50'-0"

PRELIMINARY
NOT FOR CONSTRUCTION

FINAL DEVELOPMENT PLAN SUBMITTAL

BLOCK 57/FORMERLY GOLDDIGGER FIELD & MAINTENANCE FACILITY

8TH-12TH AVE. & MINER ST.,
IDAHO SPRINGS, CO 80452

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Demolition Plan

File Name 00-2-28-22.vwx

date 2/28/22

project #

drawn by: MC

C2

RE: GEOTECHNICAL INVESTIGATION:

Geotechnical Engineering Report
Proposed Idaho Springs Mixed Use Developement
Idaho Springs, Colorado
January 10, 2022
Prepared by: Terracon Consultants, Inc.

Keller North America, Inc
5775 Eudora St
Commerce City, CO 80022

Tel: 303.469.1136
Fax: 303.469.3581

February 8, 2022

IMEG Corp.
1400 Glenarm Pl, Suite 101
Denver, CO 80202

Attention: Craig Carroll

Subject: Block 57 - Idaho Springs
932 Miner St
Idaho Springs, CO 80452

Mr. Carroll,

Keller North America, Inc. understands that three multi-story buildings are proposed to be constructed mentioned address.

Keller has reviewed the geotechnical report from Terracon (project no. 25215327) dated January 10, 2022 for the suitability of supporting spread footings on ground improvement elements.

Either Aggregate Pier or Low Mobility Grout Columns (LMG) are suitable ground improvement techniques for support of footing loads and floor slabs. Based on the soil information provided, Keller will design soil treatment to support up to 6,000psf loads for the spread and continuous footings. Continuous footings should have a minimum width of 24".

Support of the floor slab with aggregate piers is an option in lieu of removal of the fill material. A minimum 12" select fill should be placed over the ground improvement elements if it is decided to proceed in that direction.

If tension elements are necessary, Keller will provide the design for uplift anchors.

Liquefaction mitigation of the foundations ground improvement not been discussed. If this is required Keller will need to be provided with the necessary depth of treatment.

Specifically, Keller will design ground improvement elements for the following:

- **A maximum allowable bearing capacity of 6,000 psf for spread footings.**
- **Total static settlement estimated at 1 inch and differential settlement at ½ inch.**

It should be noted that Keller can only design elements constructed or under direct supervision of Keller. Our design cannot be put out to bid or used by another specialty contractor.

Best Regards,
Keller North America, Inc.

Phillip Gallet, P.E.
Senior Engineer – Business Development

North America's Leader in Geotechnical Construction
www.keller-na.com
Equal Opportunity Employer
THINK SAFE

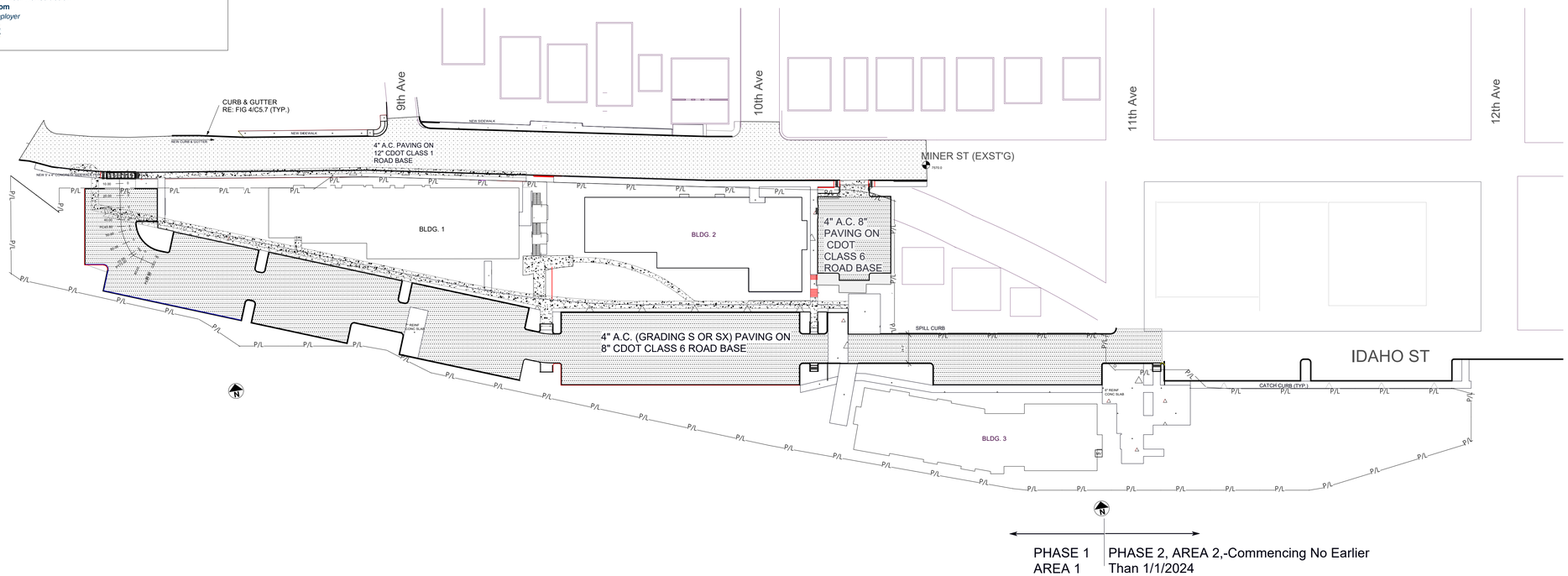
NOTES- UNDERCUT & BACKFILL

GEOTECHNICAL BORINGS HAVE INDICATED THAT THE SITE IS UNDERLAIN BY FILL MATERIAL, RE: GEOTECHNICAL INVESTIGATION.

IN ALL AREAS WITH FUTURE BUILDINGS, PAVEMENT, SIDEWALKS, SLABS, CURBS AND OTHER STRUCTURES, REMOVE TOP 2' (MIN.) OF EXISTING FILL MATERIAL. REPLACE REMOVED MATERIALS WITH ACCEPTABLE FILL, COMPACTED TO 95% RELATIVE COMPACTION, PER THE GEOTECHNICAL REPORT, TO A HEIGHT MATCHING THE NEW SUBGRADE ELEVATIONS.

UNDER BUILDINGS 1 AND 2, ACCEPTABLE FILL, COMPACTED TO 95% RELATIVE COMPACTION, PER THE GEOTECHNICAL REPORT, TO A HEIGHT MATCHING THE NEW SUBGRADE ELEVATIONS, MAY BE PLACED DIRECTLY ON THE EXISTING SOIL, STRIPPED OF TOPSOIL AND ORGANIC MATTER, WITHOUT 2' OF REMOVAL AND REPLACEMENT, AS THESE BUILDING FOUNDATIONS ARE SUPPORTED BY PIERS.

AREAS OF STRUCTURES AND PAVING INDICATED



1 Undercut & Replacement Backfill Plan
Scale: 1" = 50'-0"

PRELIMINARY
NOT FOR CONSTRUCTION

FINAL DEVELOPMENT PLAN SUBMITTAL

BLOCK 57/FORMERLY GOLDDIGGER FIELD & MAINTENANCE FACILITY

8TH-12TH AVE. & MINER ST.,
IDAHO SPRINGS, CO 80452

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Undercut and Backfill Plan

File Name 00 2-28-22.vwx

date 2/28/22

project #

drawn by: MC

C2.1

NOTES:

1. ALL AREAS WITHIN THE PROJECT BOUNDARY ARE TO BE ROUGH GRADED, COMPACTED, AND THOROUGHLY PROOF ROLLED WITH A LOADED TANDEM AXLE DUMP TRUCK PRIOR TO FINAL GRADING AND PAVING, RE: SOILS REPORT.

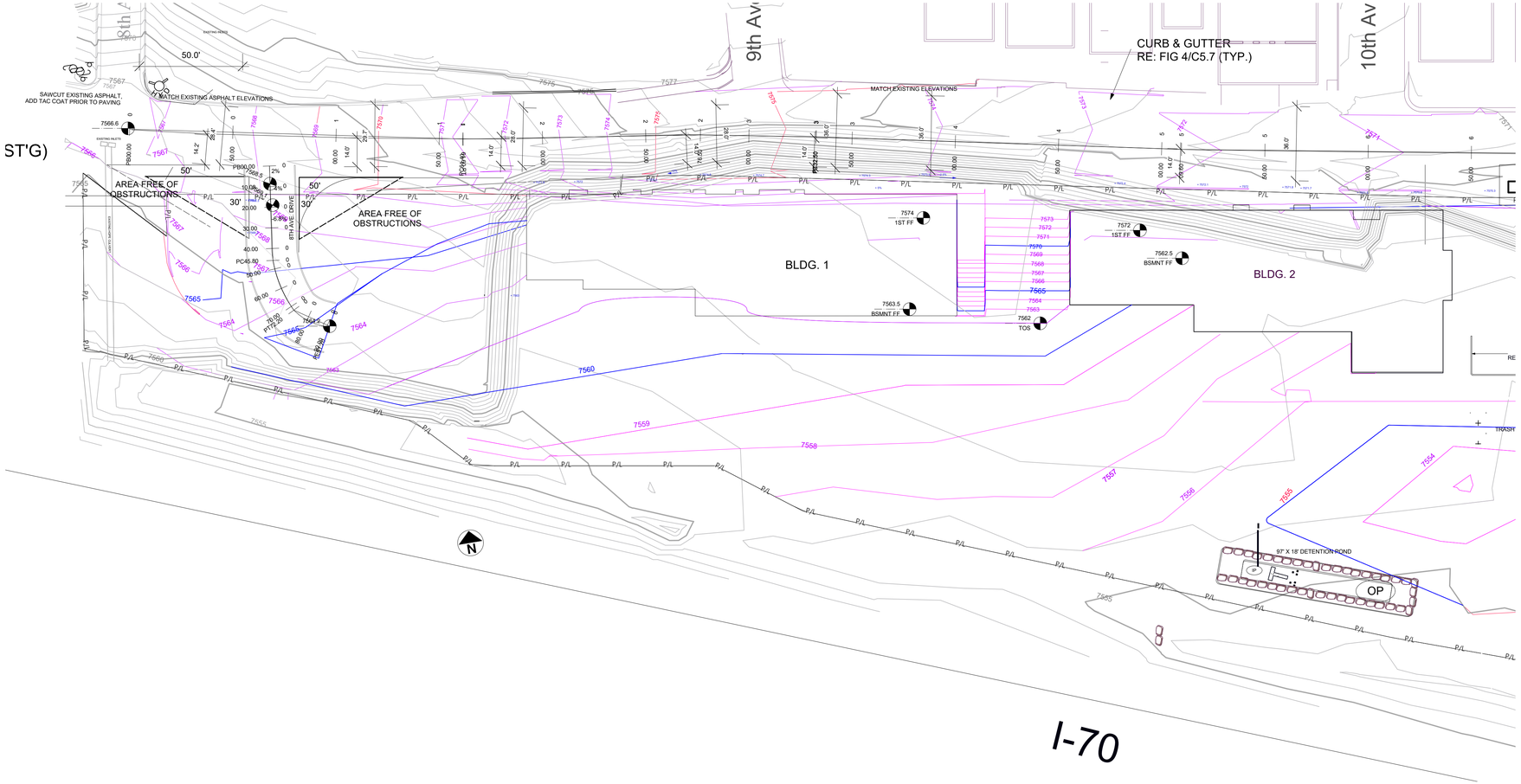
2. ALL FILL SHALL BE TESTED FOR WATER CONTENT AND COMPACTION DURING PLACEMENT. SHOULD THE RESULTS OF THE IN-PLACE DENSITY TESTS INDICATED THE SPECIFIED WATER OR COMPACTION LIMITS HAVE NOT BEEN MET, THE AREA REPRESENTED BY THE TEST SHOULD BE REWORKED AND RETESTED, AS REQUIRED, UNTIL THE SPECIFIED WATER AND COMPACTION REQUIREMENTS ARE ACHIEVED.

PRELIMINARY
NOT FOR CONSTRUCTION

FINAL DEVELOPMENT PLAN SUBMITTAL

BLOCK 57/FORMERLY GOLDDIGGER FIELD & MAINTENANCE FACILITY

8TH-12TH AVE. & MINER ST.,
IDAHO SPRINGS, CO 80452



1 Grading Plan-West
Scale: 1" = 30'-0"

TOPOGRAPHIC INFORMATION FROM SURVEY BY CLEAR SCREEK SURVEYING, ALTA SURVEY REV. 8-19-21

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Grading Plan- West

File Name 00 2-28-22.vwx

date 2/28/22

project #

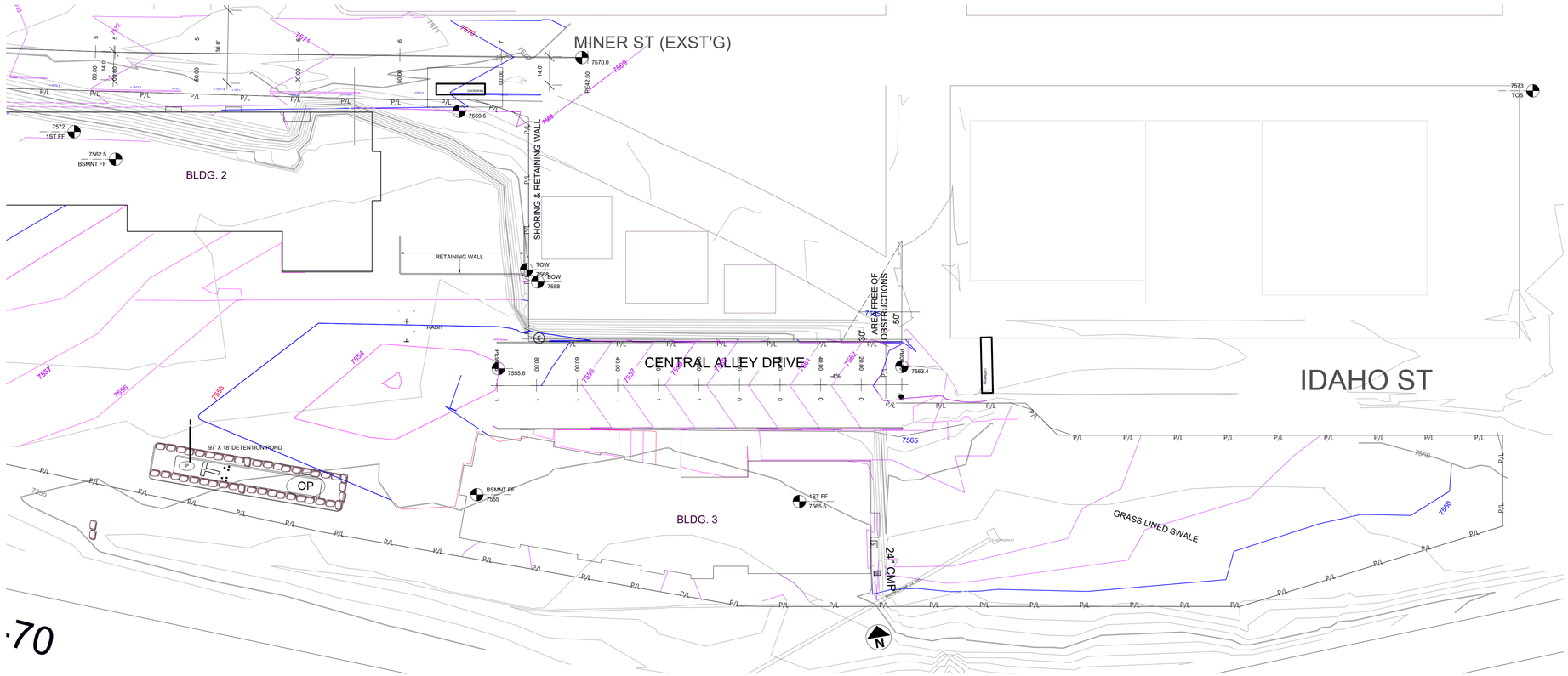
drawn by: MC

C3

NOTES:

1. ALL AREAS WITHIN THE PROJECT BOUNDARY ARE TO BE ROUGH GRADED, COMPACTED, AND THOROUGHLY PROOF ROLLED WITH A LOADED TANDEM AXLE DUMP TRUCK PRIOR TO FINAL GRADING AND PAVING, RE: SOILS REPORT.

2. ALL FILL SHALL BE TESTED FOR WATER CONTENT AND COMPACTION DURING PLACEMENT. SHOULD THE RESULTS OF THE IN-PLACE DENSITY TESTS INDICATED THE SPECIFIED WATER OR COMPACTION LIMITS HAVE NOT BEEN MET, THE AREA REPRESENTED BY THE TEST SHOULD BE REWORKED AND RETESTED, AS REQUIRED, UNTIL THE SPECIFIED WATER AND COMPACTION REQUIREMENTS ARE ACHIEVED.



1 Grading Plan-East
Scale: 1" = 30'-0"

TOPOGRAPHIC INFORMATION FROM SURVEY BY CLEAR SCREEK SURVEYING, ALTA SURVEY REV. 8-19-21

PRELIMINARY
NOT FOR CONSTRUCTION

FINAL DEVELOPMENT PLAN SUBMITTAL

BLOCK 57/FORMERLY GOLDDIGGER FIELD & MAINTENANCE FACILITY

8TH-12TH AVE. & MINER ST.,
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Grading Plan-East

File Name 00 2-28-22.vwx

date 2/28/22

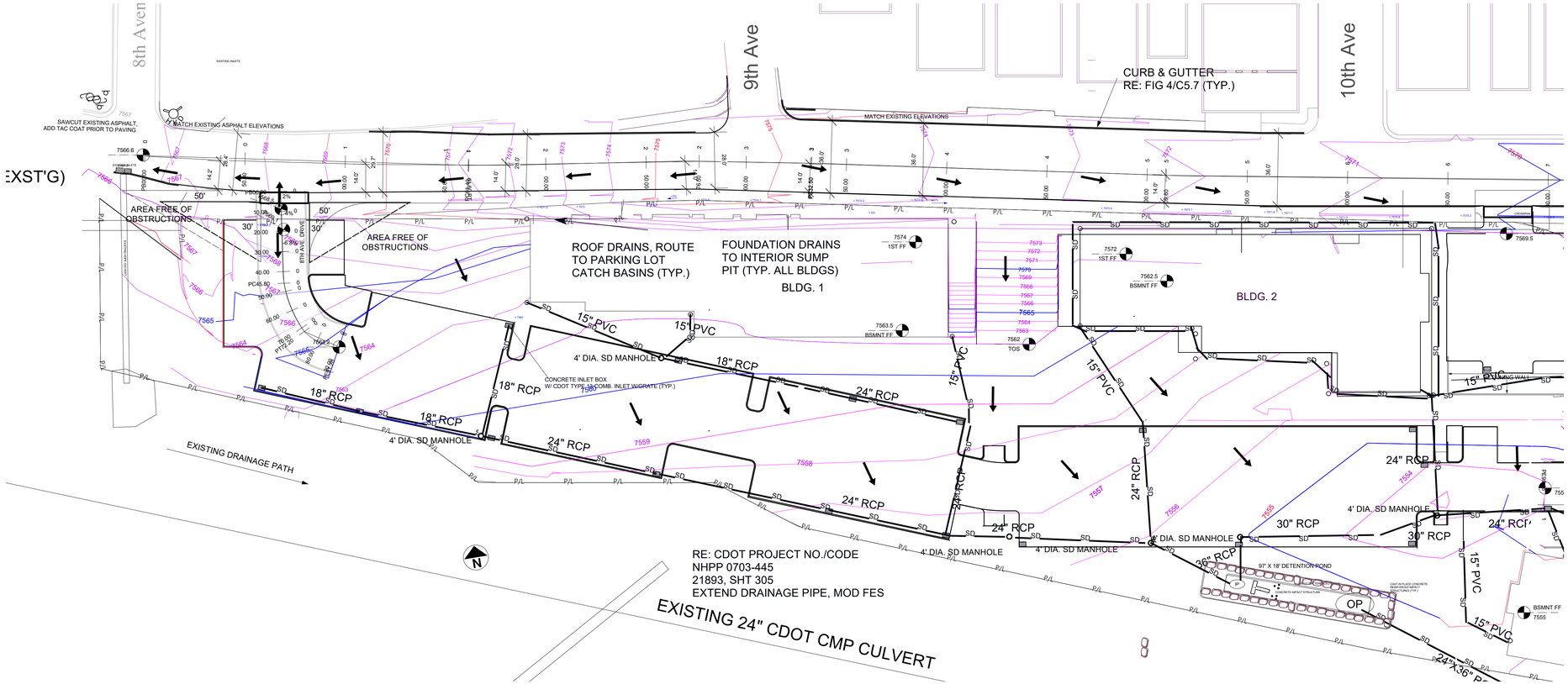
project #

drawn by: MC

C3.1

Reinforced concrete pipe is the standard pipe used for storm sewer collection main piping and fittings.
PVC pipe can be used at 15” diameter or less

Size of Pipe – Storm sewer mains shall be of the following sizes and classes:
- 12-inch RCP Class V, with modified tongue-and-groove compression gasket joints
- 15-inch RCP Class IV (unless specified as Class V), with modified tongueand-groove compression gasket joints
- 18-inch through 24-inch RCP Class III (unless specified as Class IV or V), with modified tongue-and-groove compression gasket joints
- 24-inch through 36-inch RCP Class II (unless specified as Class III, IV, or V), with modified tongue-and-groove compression gasket joints



1 Drainage Plan-West
Scale: 1" = 30'-0"

PRELIMINARY
NOT FOR CONSTRUCTION

FINAL DEVELOPMENT PLAN SUBMITTAL

BLOCK 57/FORMERLY GOLDDIGGER FIELD & MAINTENANCE FACILITY

8TH-12TH AVE. & MINER ST.,
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Drainage Plan-West

File Name 00 2-28-22.vwx

date 2/28/22

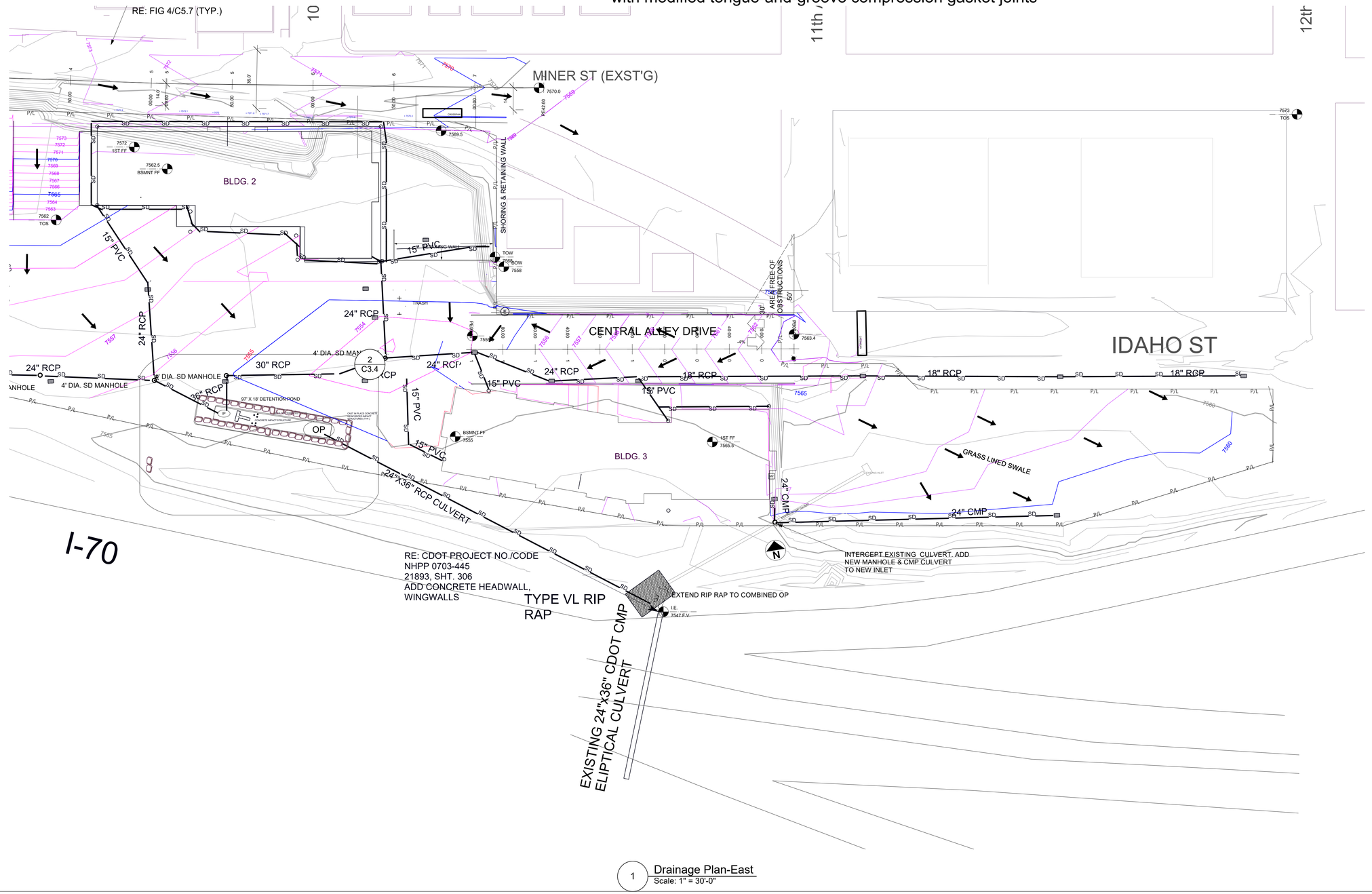
project #

drawn by: MC

C3.2

Reinforced concrete pipe is the standard pipe used for storm sewer collection main piping and fittings.
PVC pipe can be used at 15” diameter or less

Size of Pipe – Storm sewer mains shall be of the following sizes and classes:
- 12-inch RCP Class V, with modified tongue-and-groove compression gasket joints
- 15-inch RCP Class IV (unless specified as Class V), with modified tongueand-groove compression gasket joints
- 18-inch through 24-inch RCP Class III (unless specified as Class IV or V), with modified tongue-and-groove compression gasket joints
- 24-inch through 36-inch RCP Class II (unless specified as Class III, IV, or V), with modified tongue-and-groove compression gasket joints



1 Drainage Plan-East
Scale: 1" = 30'-0"

PRELIMINARY
NOT FOR CONSTRUCTION

FINAL DEVELOPMENT PLAN SUBMITTAL

BLOCK 57/FORMERLY GOLDDIGGER FIELD & MAINTENANCE FACILITY

8TH-12TH AVE. & MINER ST.,
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Drainage Plan-East

File Name DD 2-28-22.vwx

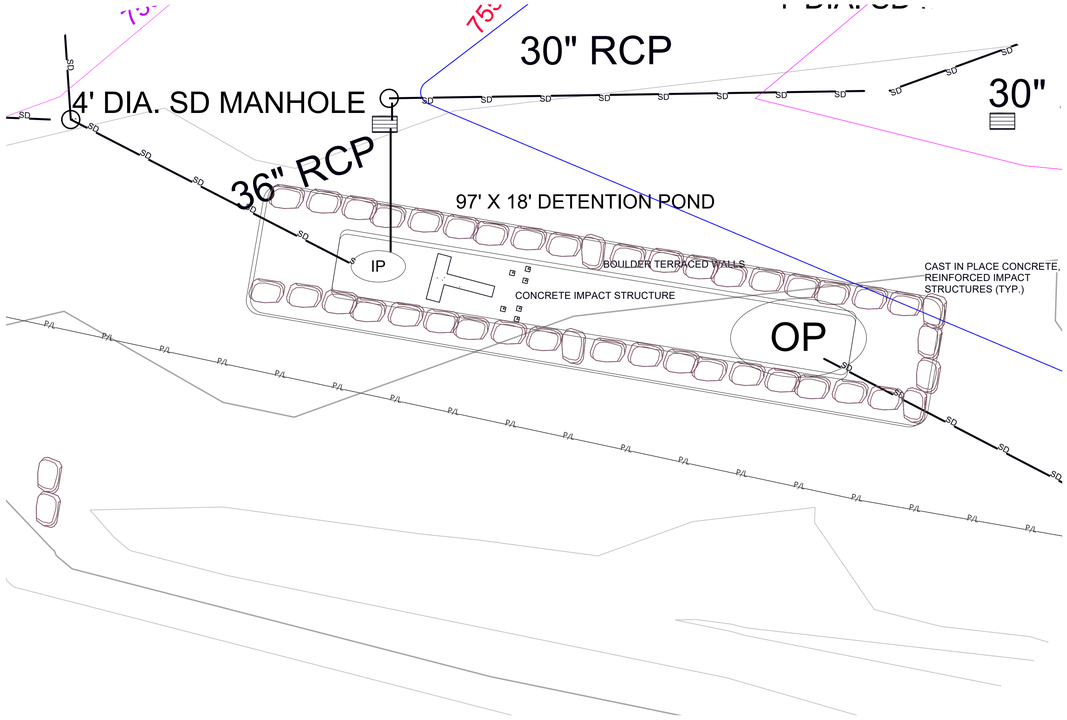
date 2/28/22

project #

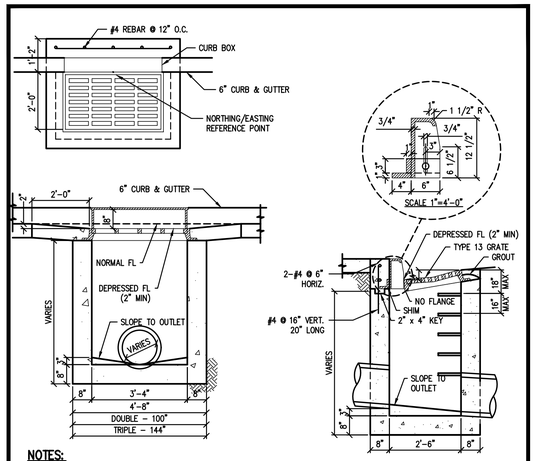
drawn by: MC

C3.3

WQCV=6,663 CF



2 Detention Pond
Scale: 1" = 10'-0"



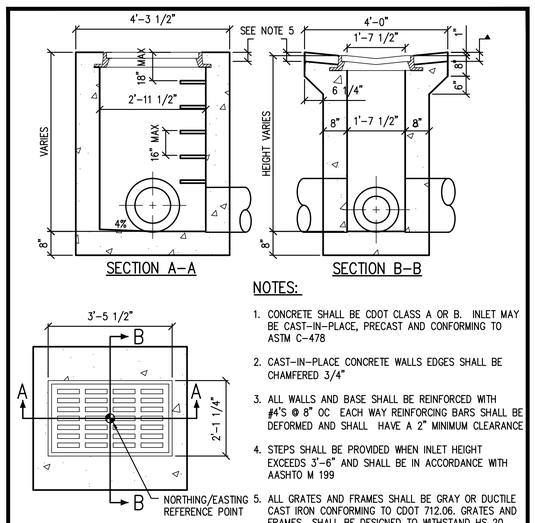
NOTES:

1. INLET STRUCTURES SHALL ALSO INCLUDE 2'-0" CURB & GUTTER TRANSITION SECTION AT EACH END OF INLET PLUS SIDEWALK SECTIONS WHERE REQ'D BEHIND INLET STRUCTURE AND TRANSITION SECTIONS
2. FLOOR SLOPE MAY BE POURED MONOLITHIC WITH BASE
3. OUTLET PIPE(S) TO BE SET FLUSH WITH INSIDE FACE OF INLET WALL
4. UNLESS OTHERWISE SPECIFIED ON THE DRAWINGS OR OTHERWISE APPROVED, ALL No 13 COMBINATION INLETS SHALL BE CONSTRUCTED WITH AN ADJUSTABLE CI CURB BOX
5. STD INLET DEPTHS AND PIPE SIZE ARE NOTED ON THE FOLLOWING TABLE. DEVIATIONS FROM THESE MIN REQUIREMENTS SHALL BE SUBSTANTIATED WITH APPROPRIATE HYDRAULIC ANALYSIS
6. STEPS SHALL BE CONSTRUCTED AS PER PLASTIC STEP DETAIL
7. NORTHING/EASTING REFERENCE POINT TO BE AT FLOWLINE AT MIDPOINT OF INLET. FLOWLINE ELEVATIONS SHOWN ON PLANS REFER TO NORMAL FLOWLINE. DEPRESS AND TRANSITION FLOWLINE AT OPENING AND ADJACENT TO CURB AND GUTTER AS SHOWN.

Type 13 Combination Inlet

CITY OF IDAHO SPRINGS
Standard Details Fig 18 May 2017

FILENAME: FIG 18 – TYPE13C.DWG



PLAN OF TYPE 13 INLET

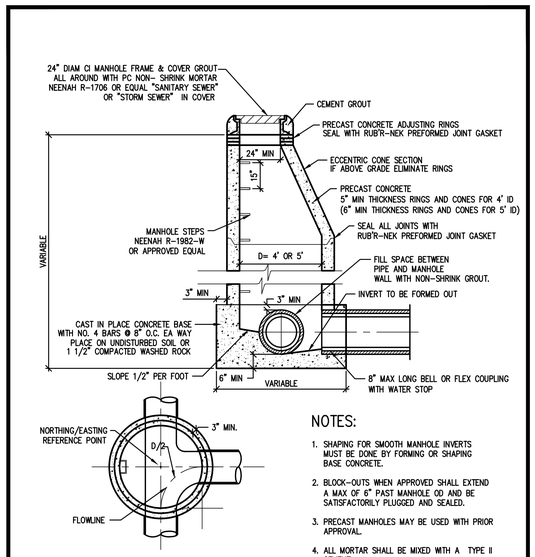
NOTES:

1. CONCRETE SHALL BE CDOT CLASS A OR B. INLET MAY BE CAST-IN-PLACE, PRECAST AND CONFORMING TO ASTM C-478
2. CAST-IN-PLACE CONCRETE WALLS EDGES SHALL BE CHAMFERED 3/4"
3. ALL WALLS AND BASE SHALL BE REINFORCED WITH #4'S @ 8" OC EACH WAY REINFORCING BARS SHALL BE DEFORMED AND SHALL HAVE A 2" MINIMUM CLEARANCE
4. STEPS SHALL BE PROVIDED WHEN INLET HEIGHT EXCEEDS 3'-6" AND SHALL BE IN ACCORDANCE WITH AASHTO M 199
5. ALL GRATES AND FRAMES SHALL BE GRAY OR DUCTILE CAST IRON CONFORMING TO CDOT 712.06. GRATES AND FRAMES SHALL BE DESIGNED TO WITHSTAND HS 20 LOADING
6. SEE PLAN DETAILS FOR LOCATION AND SIZE OF PIPE
7. WHEN BITUMINOUS MATERIAL IS TO EXTEND TO THE EDGE OF THE GRATING FRAME, CONCRETE MAY BE DEPRESSED
8. STEPS SHALL BE CONSTRUCTED AS PER PLASTIC STEP DETAIL

Type 13 Field Inlet

CITY OF IDAHO SPRINGS
Standard Details Fig 17 May 2017

FILENAME: FIG 17 – TYPE13.DWG



NOTES:

1. SHAPING FOR SMOOTH MANHOLE INVERTS MUST BE DONE BY FORMING OR SHAPING BASE CONCRETE.
2. BLOCK-OUTS WHEN APPROVED SHALL EXTEND A MAX OF 6" PAST MANHOLE OD AND BE SATISFACTORILY PLUGGED AND SEALED.
3. PRECAST MANHOLES MAY BE USED WITH PRIOR APPROVAL.
4. ALL MORTAR SHALL BE MIXED WITH A TYPE II CEMENT.
5. BENCH MUST HAVE A BRUSHED, NON-SKID SURFACE.

Typical Storm Sewer Manhole

CITY OF IDAHO SPRINGS
Standard Details Fig 16 May 2017

FILENAME: FIG 16 – STORM MH.DWG

PRELIMINARY
NOT FOR CONSTRUCTION

FINAL DEVELOPMENT PLAN SUBMITTAL

BLOCK 57/FORMERLY GOLDDIGGER FIELD & MAINTENANCE FACILITY

8TH-12TH AVE. & MINER ST.,
IDAHO SPRINGS, CO 80452

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Detention Plan & Details

File Name 00-2-28-22.vwx

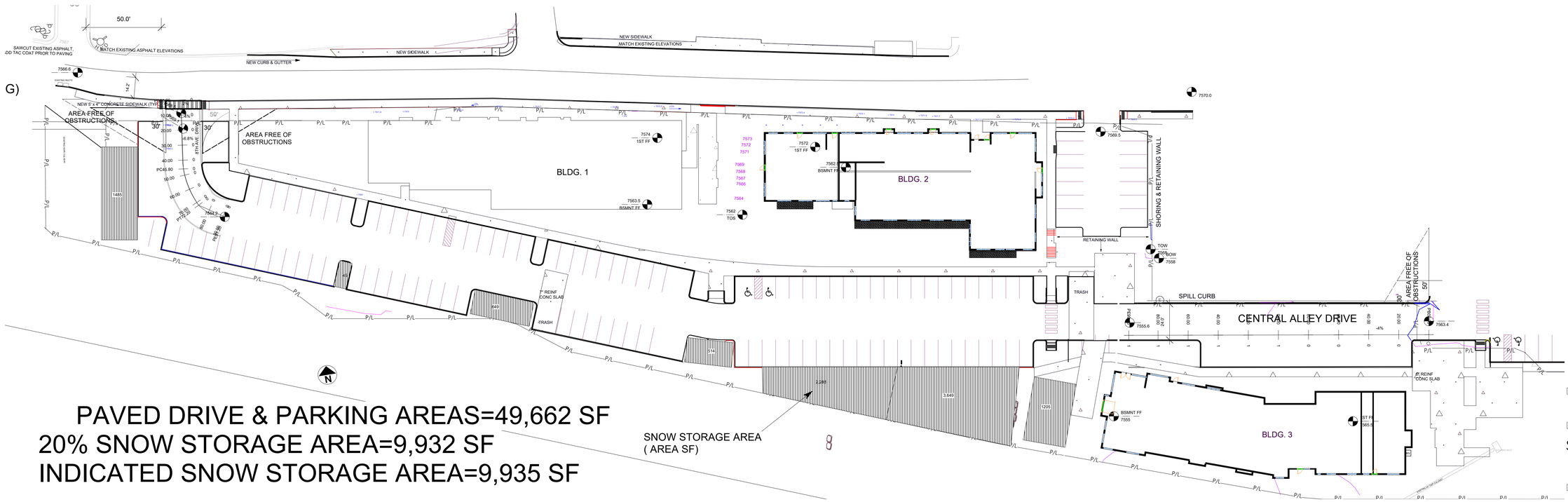
date 2/28/22

project #

drawn by: MC

C3.4

G)



PAVED DRIVE & PARKING AREAS=49,662 SF

20% SNOW STORAGE AREA=9,932 SF

INDICATED SNOW STORAGE AREA=9,935 SF

1 Snow Storage Plan
Scale: 1:400

PRELIMINARY
NOT FOR CONSTRUCTION

FINAL DEVELOPMENT PLAN SUBMITTAL

BLOCK 57/FORMERLY GOLDDIGGER FIELD & MAINTENANCE FACILITY

8TH-12TH AVE. & MINER ST.,
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Snow Removal Plan

File Name 00 2-28-22.vwx

date 2/28/22

project #

drawn by: MC

C3.5

RE-VEGETATION SEED MIX

Conifer Mix or Mountain Home Mix

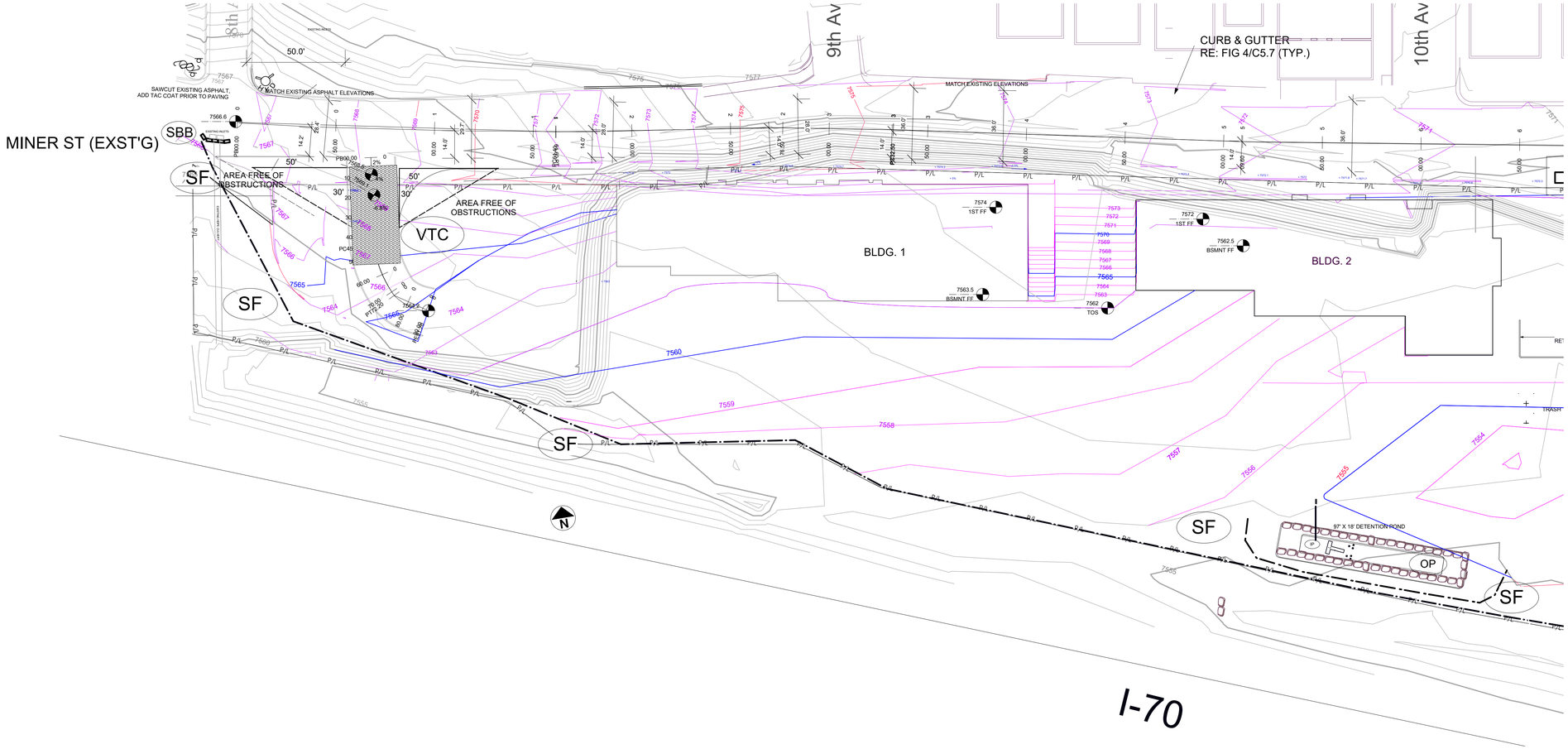
D - Conifer Mix				
Species	**Variety**	**Percent of Mix**	**(Drilled Planting) PLS lbs./Acre**	**(Broadcast) PLS lbs./Acre**
Arizona fescue	Redondo	20	0.9	1.8
Western wheatgrass	Rosana	15	2.4	4.8
Big bluegrass	Sherman	15	0.5	1
Sheep fescue	Covar	15	0.7	1.4
Blue grama	Lovington	15	0.5	1
Slender wheatgrass	San Luis	10	1.1	2.2
Mountain brome	Bromar	10	1.9	3.8
TOTAL:		100	8.0 lbs./ac.	16.0 lbs./ac.
E - Mountain Home "Firewise" Mix				
Species	**Variety**	**Percent of Mix**	**(Drilled Planting) PLS lbs./Acre**	**(Broadcast) PLS lbs./Acre**
Blue grama	Lovington	20	0.6	1.2
Streambank wheatgrass	Sodar	20	2.2	4.4
Western wheatgrass	Rosana	10	1.6	3.2
Thickspike wheatgrass	Critana	10	1.1	2.2
Canby bluegrass	Canbar	20	0.8	1.5
Sheep fescue	Covar	20	1	2
TOTAL:		100	7.3 lbs./ac.	14.5 lbs./ac.

SEEDING RATE: 20-30 LBS. PER ACRE OR AS RECOMMENDED BY THE SEEDING RATE IS LISTED ON THE SEED TAG.
BROADCASTING RATE: 40-60 LBS. PER ACRE
SEEDING DATES: SEED IN THE SPRING OR FALL WHEN THE SOIL TEMPERATURE IS 60 TO 70 DEGREES AND WHEN ALL LAND DISTURBANCE HAS BEEN COMPLETED.
PREPARATION: SCARIFY AND ROUGHEN ALL SOIL TO BE RE-SEEDED. CULTIVATE WITH TOPSOIL, COVER WITH COMPOST AND ORGANIC MULCH. INCORPORATION OF A STARTER FERTILIZER WILL HELP PROVIDE PROPER NUTRIENTS FOR EARLY GROWTH.
SEEDING: USING A DROP SPREADER OR A BROADCAST SPREADER, SPREAD HALF THE SEED LENGTHWISE OVER YOUR SITE, THEN THE OTHER HALF CROSSWISE OVER YOUR SITE.
MOISTURE: TO HELP PROMOTE GOOD SEED GERMINATION, KEEP THE NEWLY SEEDED AREA MOIST AT ALL TIMES.
MAINTENANCE: OVERSEED BARE SPOTS TO MINIMIZE WEED GROWTH. SPRING OR FALL ARE EXCELLENT TIMES FOR OVERSEEDING.

OR

HYDRO-SEED/HYDROMULCH WITH RE-VEGETATION MIX & APPLICATION RATE, WITH ADDED TACKIFIER. MOISTEN AND MAINTAIN PER THE ABOVE.

EROSION CONTROL PLAN INDICATES INITIAL EROSION MEASURES ONLY. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING A STATE OF COLORADO STORMWATER DISCHARGE PERMIT AND PRODUCING THE REQUIRED MANAGEMENT PLAN ACCORDINGLY.



Erosion Control BMPs

CWA	WASHOUT AREA
ECB	EROSION CONTROL BLANKET
SCL	SEDIMENT CONTROL LOG
SF	SILT FENCE
SP	STOCKPILE MANAGEMENT
VTC	VEHICLE TRACKING CONTROL
IP	INLET PROTECTION
OP	OUTLET PROTECTION
RC	ROCK CHECK DAM

4 Key- BMP
Scale: 1" = 50'-0"

3 Erosion Control Plan-West
Scale: 1" = 30'-0"

PRELIMINARY
NOT FOR CONSTRUCTION

FINAL DEVELOPMENT PLAN SUBMITTAL

BLOCK 57/FORMERLY GOLDDIGGER FIELD & MAINTENANCE FACILITY

8TH-12TH AVE. & MINER ST.,
IDAHO SPRINGS, CO 80452

[SPACE INC]
Architecture. Interiors. & Master Planning

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drawn by: MC

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RE-VEGETATION SEED MIX

Conifer Mix or Mountain Home Mix

D - Conifer Mix				
Species	**Variety**	**Percent of Mix**	**(Drilled Planting) PLS lbs./Acre**	**(Broadcast) PLS lbs./Acre**
Arizona fescue	Redondo	20	0.9	1.8
Western wheatgrass	Rosana	15	2.4	4.8
Big bluegrass	Sherman	15	0.5	1
Sheep fescue	Covar	15	0.7	1.4
Blue grama	Lovington	15	0.5	1
Slender wheatgrass	San Luis	10	1.1	2.2
Mountain brome	Bromar	10	1.9	3.8
TOTAL:		100	8.0 lbs./ac.	16.0 lbs./ac.
E - Mountain Home "Firewise" Mix				
Species	**Variety**	**Percent of Mix**	**(Drilled Planting) PLS lbs./Acre**	**(Broadcast) PLS lbs./Acre**
Blue grama	Lovington	20	0.6	1.2
Streambank wheatgrass	Sodar	20	2.2	4.4
Western wheatgrass	Rosana	10	1.6	3.2
Thickspike wheatgrass	Critana	10	1.1	2.2
Canby bluegrass	Canbar	20	0.8	1.5
Sheep fescue	Covar	20	1	2
TOTAL:		100	7.3 lbs./ac.	14.5 lbs./ac.

SEEDING RATE: 20-30 LBS. PER ACRE OR AS RECOMMENDED BY THE SEEDING RATE IS LISTED ON THE SEED TAG.
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MAINTENANCE: OVERSEED BARE SPOTS TO MINIMIZE WEED GROWTH. SPRING OR FALL ARE EXCELLENT TIMES FOR OVERSEEDING.

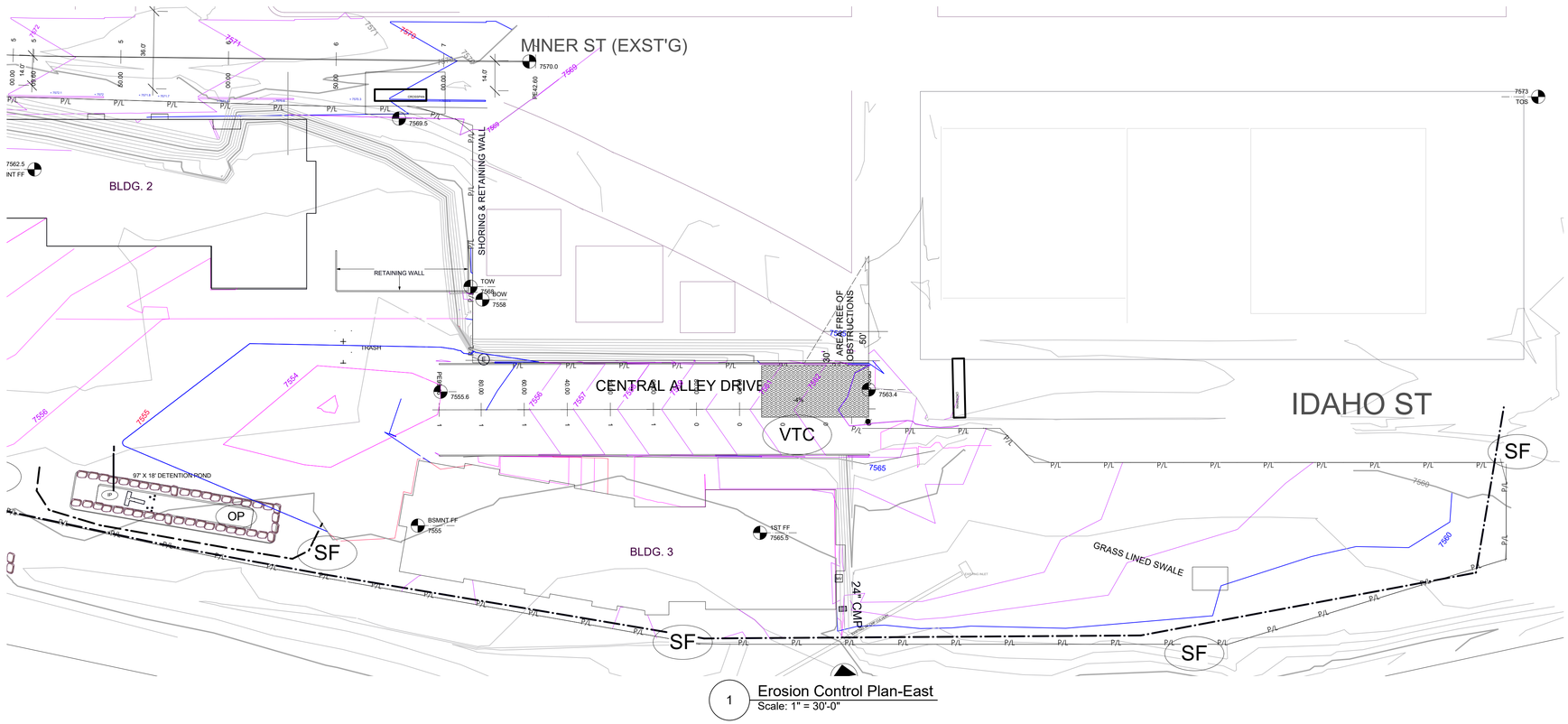
OR

HYDRO-SEED/HYDROMULCH WITH RE-VEGETATION MIX & APPLICATION RATE, WITH ADDED TACKIFIER. MOISTEN AND MAINTAIN PER THE ABOVE.

EROSION CONTROL PLAN INDICATES INITIAL EROSION MEASURES ONLY. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING A STATE OF COLORADO STORMWATER DISCHARGE PERMIT AND PRODUCING THE REQUIRED MANAGEMENT PLAN ACCORDINGLY.

RE-VEGETATION SEED MIX

Conifer Mix or Mountain Home Mix



1 Erosion Control Plan-East
Scale: 1" = 30'-0"

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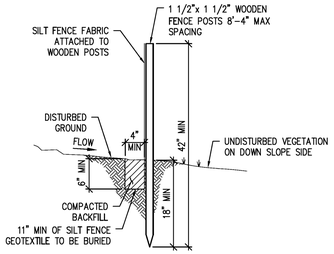


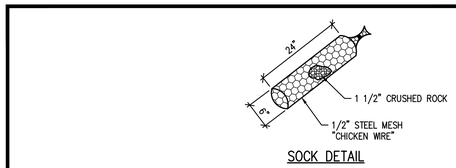
NOTES:
1. SILT FENCE MUST BE PLACED AWAY FROM TOE OF SLOPE TO ALLOW FOR WATER PONDING.
2. SILT FENCE MAY BE USED ALONG PERIMETERS SO LONG AS SLOPES DO NOT EXCEED 5% IF SLOPE IS GREATER THAN 5%, THEN SILT FENCE MAY BE INSTALLED ALONG THE CONTOUR OR A DIVERSION DIKE MAY BE REQUIRED.
3. ANCHOR TRENCH SHALL BE EXCAVATED WITH TRENCHER, OR WITH SILT FENCE INSTALLATION MACHINE; NO ROAD GRADERS, BACKHOES, ETC. SHALL BE USED. TRENCH SHALL BE COMPACTED BY HAND WITH "JUMPING JACK", OR BY WHEEL ROLLING. COMPACTION SHALL BE SUCH THAT SILT FENCE RESISTS BEING PULLED OUT OF ANCHOR TRENCH BY HAND.
4. SILT FENCE INDICATED ON PLAN SHALL BE INSTALLED PRIOR TO ANY LAND-DISTRUBING ACTIVITIES UNLESS NOTED OTHERWISE.
5. SEDIMENT ACCUMULATED UPSTREAM OF SILT FENCE SHALL BE REMOVED WHEN THE UPSTREAM SEDIMENT REACHES A DEPTH OF 6-INCHES.
6. USE WIRED REINFORCED SILT FENCE AT AREA OF CONCENTRATED FLOWS.

SF SILT FENCE DETAIL NTS

Silt Fence

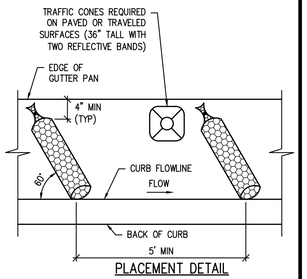
CITY OF IDAHO SPRINGS
Standard Details Fig 21 May 2017

FILENAME: FIG 21 – FIG 22 – SILT FENCE AND CURB SOCK.DWG



SOCK DETAIL

MAX SPACING ALONG STREET GRADE	
STREET SLOPE	CURB SOCK SPACING
0.50%	100
1.00%	100
2.00%	75
3.00%	50
4.00%	50
5.00%	25
6.00%	25
7.00%	25
8.00%	25



PLACEMENT DETAIL

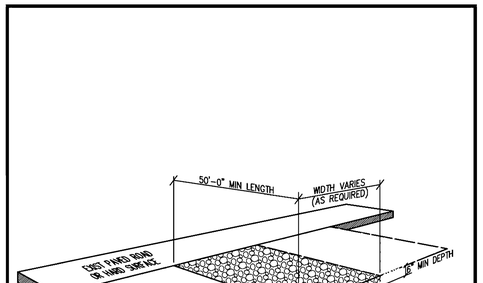
NOTES:
1. SOCKS WILL BE USED UPGRADIENT OF INLET ANGLED AS SHOWN AND FLUSH WITH CURB.
2. AT INLETS, NO LESS THAN THREE 6-INCH DIAMETER SOCKS MUST BE USED IN SEQUENCE, SPACE NO MORE THAN FIVE FEET APART.
3. INCLINE AT 30° FROM PERPENDICULAR, OPPOSITE DIRECTION OF FLOW.

CS CURB SOCK DETAIL NTS

Curb Sock

CITY OF IDAHO SPRINGS
Standard Details Fig 22 May 2017

FILENAME: FIG 21 – FIG 22 – SILT FENCE AND CURB SOCK.DWG

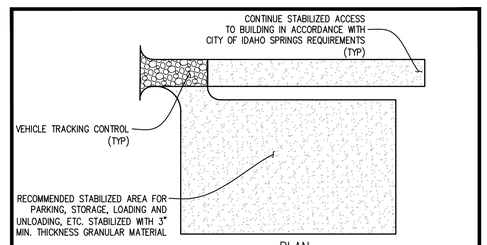


NOTE:
EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL CONSTRUCTION IS COMPLETED, OR AS DIRECTED BY THE JURISDICTION.

Vehicle Tracking Control

CITY OF IDAHO SPRINGS
Standard Details Fig 20 May 2017

FILENAME: FIG 20 – VEHICLE TRACKING CONTROL.DWG



PLAN

INSTALLATION NOTES

1. CONTRACTOR MAY MODIFY LOCATION AND SIZE OF CONSTRUCTION STABILIZED AREA BASED ON FIELD CONDITIONS.
2. CONSTRUCTION STABILIZED ACCESS AREA SHALL BE LARGE ENOUGH TO FULLY CONTAIN PARKING, STORAGE, AND UNLOADING AND LOADING OPERATIONS.
3. AREA SHALL BE STABILIZED PRIOR TO ANY OTHER MAJOR OPERATIONS ON THE SITE.
4. THE CONSTRUCTION STABILIZED AREA SHALL CONSIST OF A MINIMUM OF 3" OF GRANULAR MATERIAL.

MAINTENANCE NOTES

1. THE CONTRACTOR SHALL INSPECT THE STABILIZED ACCESS AREA WEEKLY, DURING AND AFTER ANY STORM EVENT AND MAKE REPAIRS OR CLEAN OUT UPSTREAM SEDIMENT AS NECESSARY.
2. THE CONTRACTOR SHALL PROVIDE ADDITIONAL THICKNESS OF GRANULAR MATERIAL IF ANY RUTTING OCCURS OR UNDERLYING SUBGRADE BECOMES EXPOSED.
3. STABILIZED STAGING AREA SHALL BE ENLARGED IF NECESSARY TO CONTAIN PARKING, STORAGE, AND UNLOADING AND LOADING OPERATIONS.
4. ANY ACCUMULATED DIRT OR MUD SHALL BE REMOVED FROM THE SURFACE OF THE STABILIZED STAGING AREA.
5. THE STABILIZED STAGING AREA SHALL BE REMOVED AND REVEGETATED OR INCORPORATED INTO THE FINAL DRIVEWAY DESIGN AT THE END OF CONSTRUCTION.

Construction Stabilized Access

CITY OF IDAHO SPRINGS
Standard Details Fig 10 May 2017

FILENAME: FIG 10 – STABILIZED STAGING.DWG

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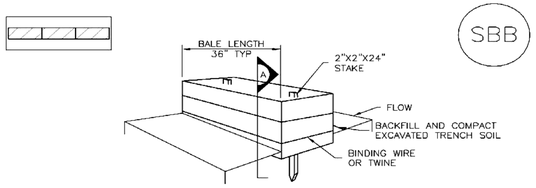
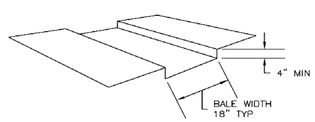
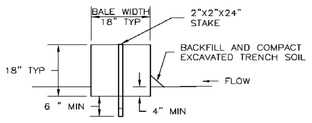


STRAW BALE

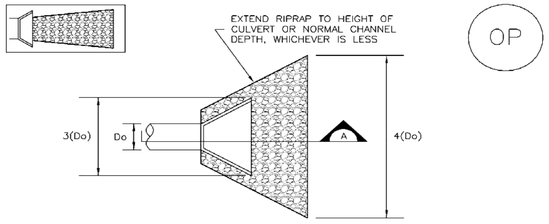


TRENCH FOR STRAW BALE

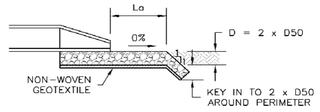


SECTION A

SBB–1. STRAW BALE



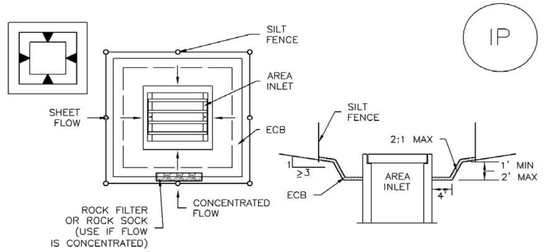
TEMPORARY OUTLET PROTECTION PLAN



SECTION A

TABLE OP–1. TEMPORARY OUTLET PROTECTION SIZING TABLE			
PIPE DIAMETER, Do (INCHES)	DISCHARGE, Q (CFS)	APRON LENGTH, La (FT)	RIPRAP D50 DIAMETER MIN (INCHES)
8	2.5 5	5 10	4 6
12	5 10	10 13	4 6
18	10 20 30 40	10 16 23 26	6 9 12 16
24	30 40 50 60	16 26 26 30	9 9 12 16

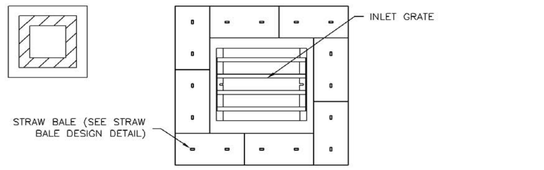
OP–1. TEMPORARY OUTLET PROTECTION



IP–5. OVEREXCAVATION INLET PROTECTION

OVEREXCAVATION INLET PROTECTION INSTALLATION NOTES

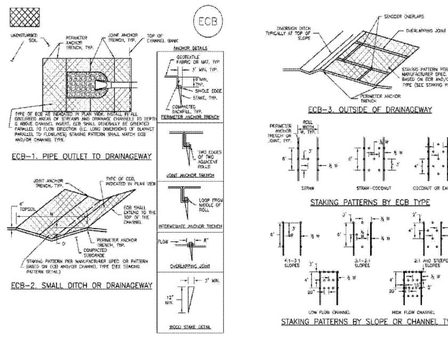
1. THIS FORM OF INLET PROTECTION IS PRIMARILY APPLICABLE FOR SITES THAT HAVE NOT YET REACHED FINAL GRADE AND SHOULD BE USED ONLY FOR INLETS WITH A RELATIVELY SMALL CONTRIBUTING DRAINAGE AREA.
2. WHEN USING FOR CONCENTRATED FLOWS, SHAPE BASIN IN 2:1 RATIO WITH LENGTH ORIENTED TOWARDS DIRECTION OF FLOW.
3. SEDIMENT MUST BE PERIODICALLY REMOVED FROM THE OVEREXCAVATED AREA.



IP–6. STRAW BALE FOR SUMP INLET PROTECTION

STRAW BALE BARRIER INLET PROTECTION INSTALLATION NOTES

1. SEE STRAW BALE DESIGN DETAIL FOR INSTALLATION REQUIREMENTS.
2. BALES SHALL BE PLACED IN A SINGLE ROW AROUND THE INLET WITH ENDS OF BALES TIGHTLY ABUTTING ONE ANOTHER.



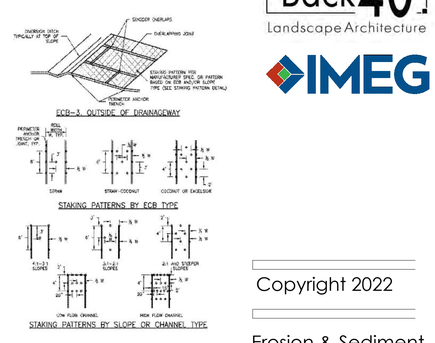
EROSION CONTROL BLANKET INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   - LOCATION OF ECB
   - TYPE OF ECB (STRAW, STRAW-COCONUT, COCONUT, OR EXCELSIOR)
   - AND, A IN SOLID LINES OR BLOW-TYPE OF ECB.
2. 100% NATURAL AND BIODEGRADABLE MATERIALS ARE PREFERRED FOR ECBs.
3. IN AREAS WHERE ECBs ARE SHOWN ON THE PLANS, THE PERMITTEE SHALL PLACE TOPSOIL AND PERFORM FINAL SURFACE PREPARATION, AND SEEDING AND MULCHING. SUBGRADE SHALL BE SMOOTH AND MOIST PRIOR TO ECB INSTALLATION AND THE ECB SHALL BE IN FULL CONTACT WITH SUBGRADE. NO GAPS OR VOIDS SHALL EXIST UNDER THE BLANKET.
4. PERIMETER ANCHOR TRENCH SHALL BE USED ALONG THE OUTSIDE PERIMETER OF THE ENTIRE AREA TO BE LINED.
5. JOINT ANCHOR TRENCH SHALL BE USED TO JOIN ROLLS OF ECBs. ECBs SHALL BE INSTALLED SHINGLE STYLE WITH UPSTREAM ECB ON TOP SO WATER FLOWS EASILY OVER ANY LINE OF OVERLAPPING JOINT.
6. INTERMEDIATE ANCHOR TRENCH SHALL BE USED AT SPACING OF ONE-HALF ROLL LENGTH FOR COCONUT AND EXCELSIOR ECBs.
7. OVERLAPPING JOINT DETAIL SHALL BE USED TO JOIN ROLLS OF ECBs TOGETHER FOR ECBs ON SLOPES.
8. MATERIAL SPECIFICATIONS OF ECBs SHALL CONFORM TO TABLE ECB-1.
9. ANY AREAS OF SEEDING AND MULCHING DISTURBED IN THE PROCESS OF INSTALLING ECBS SHALL BE RESEEDED AND MULCHED.
10. DETAILS ON DESIGN PLANS FOR SLOPE DRAINAGEWAY STABILIZATION WILL GOVERN IF DIFFERENT FROM THOSE SHOWN HERE.

TABLE ECB-1. ECB MATERIAL SPECIFICATION

TYPE	COCONUT CONTENT	STRAW CONTENT	EXCELSIOR CONTENT	RECOMMENDED SLOPE
STRAW*	-	100%	-	SINGLE/ DOUBLE NATURAL
STRAW-COCONUT	30% MIN	70% MAX	-	SINGLE/ DOUBLE NATURAL
COCONUT	100%	-	-	SINGLE/ DOUBLE NATURAL
EXCELSIOR	-	-	100%	SINGLE/ DOUBLE NATURAL

*STRAW ECBS MAY ONLY BE USED OUTSIDE OF STREAM AND DRAINAGE CHANNELS



EROSION CONTROL BLANKET MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
4. ECBs SHALL BE LEFT IN PLACE TO EVENTUALLY BIODEGRADE, UNLESS REQUESTED TO BE REMOVED BY JEFFERSON COUNTY.
5. ANY ECB PULLED OUT, TORN, OR OTHERWISE DAMAGED SHALL BE RE-PAIRED OR RE-INSTALLED. ANY SUBGRADE AREAS BELOW THE GEOTEXTILE THAT HAVE ERODED TO CREATE A VOID UNDER THE BLANKET, OR THAT REMAIN DEVOID OF GRASS SHALL BE REPAIRED, RE-SEEDED AND MULCHED AND THE ECB RE-INSTALLED.

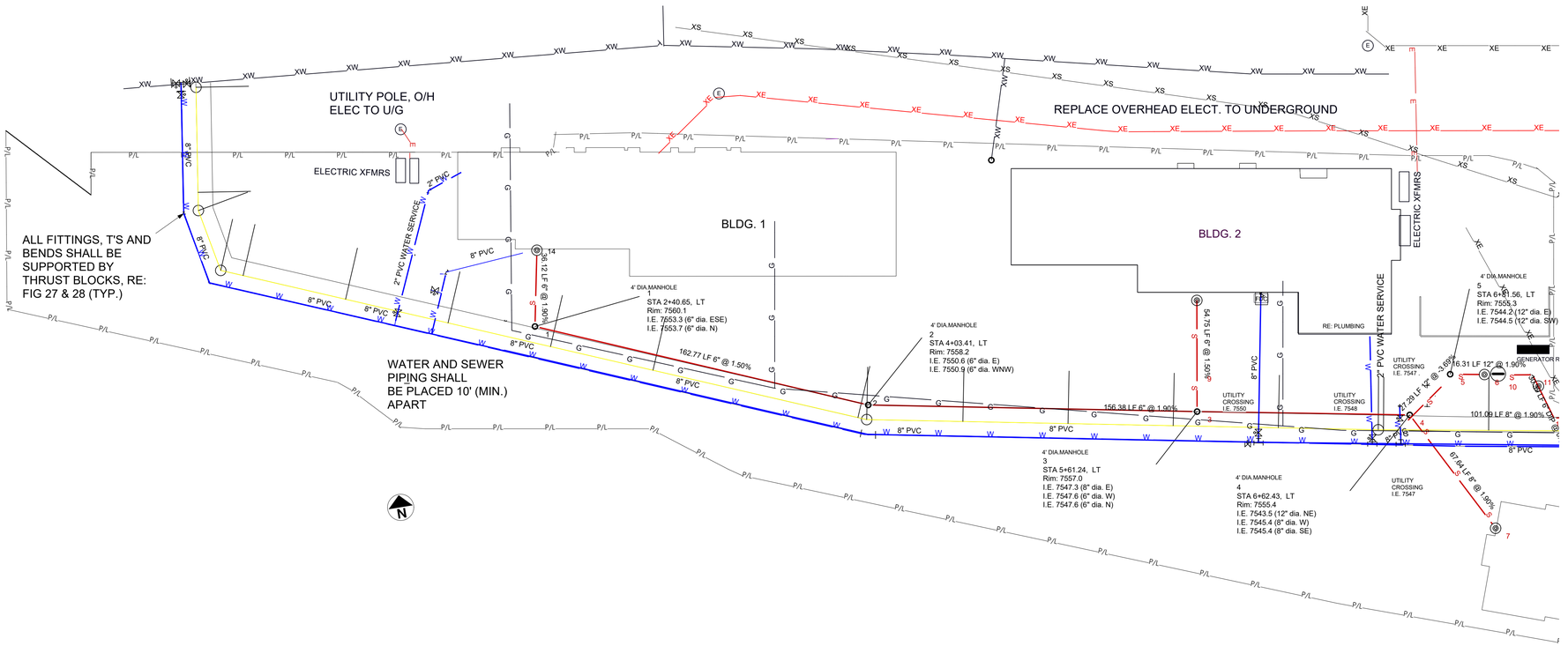
ROLLED EROSION CONTROL PRODUCTS
ECB
Detail 2

WATER & SEWER NOTES

1. ALL WATER INFRASTRUCTURE SHALL BE CONSTRUCTED IN CONFORMANCE WITH THE CITY OF IDAHO SPRINGS STANDARDS AND SPECIFICATIONS FOR DESIGN AND CONSTRUCTION MANUAL, LATEST VERSION.
2. ALL BENDS IN WATER PIPE SHALL BE ACCOMPLISHED WITH STANDARD FITTINGS, OR A COMBINATION OF STANDARD FITTINGS. SMALL VARIANCES FROM STANDARD FITTING ANGLES SHALL BE TAKEN UP IN PIPE AND JOINT DEFLECTION, OR CURVED SECTIONS OF PIPE, AS ALLOWED BY THE MANUFACTURER.
3. THE OWNER MAY BE REQUIRED TO PROVIDE A WATER LINE EASEMENT FOR THE WATER MAINS THAT ARE TO BE CONSTRUCTED. THE SERVICE CONNECTION POINT, AND ANY NECESSARY EASEMENT FOR THE LINE, SHALL BE MODIFIED AND ESTABLISHED, AS NECESSARY, BASED ON THE ACTUAL WATER MAIN LOCATION.
4. 10' MINIMUM SEPARATION BETWEEN SEWER & WATER LINES. 6' MINIMUM WATER LINE BURY DEPTH.
5. PVC WATER SUPPLY PIPE SHALL BE ANSI C900 RATED, DR 14 FOR ALL WATER MAINS.
6. CROSSINGS. SANITARY SEWER MAINS SHALL BE SEPARATED A MINIMUM OF 18 INCHES VERTICALLY FROM WATER AND STORM SEWER LINES, AND ALL OTHER UTILITIES.
7. SANITARY SEWER MAINS SHALL BE BELOW WATER MAINS.
8. MANHOLE SPACING. MANHOLES SHALL BE SPACED A MAXIMUM OF EVERY 400 FEET WITHIN THE SANITARY SEWER SYSTEM.
9. VALVES ARE REQUIRED IN ALL WATER MAINS AT A MINIMUM INTERVAL OF 400 FEET, AND BETWEEN THE WATER MAIN AND FIRE HYDRANTS. A MINIMUM OF TWO (2) VALVES SHALL BE PLACED AT TEES. A MINIMUM OF THREE (3) VALVES SHALL BE PLACED AT CROSSES.

ELECTRICAL NOTES

1. RELOCATE OVERHEAD POWER LINE IN MINER ST. FROM 8TH TO 11TH AVE TO UNDERGROUND
CONDUITS.
2. EMERGENCY GENERATOR FOR SEWAGE PUMPS MUST BE AT FULL RPM FREQUENCY CAPACITY AT PUMP STARTUP, RE: ELECTRICL
3. SEWAGE PUMP CONTROL AND ALARM PANEL REQUIRES DEDICATED CIRCUT.



1 Utility Plan- West
Scale: 1" = 30'-0"

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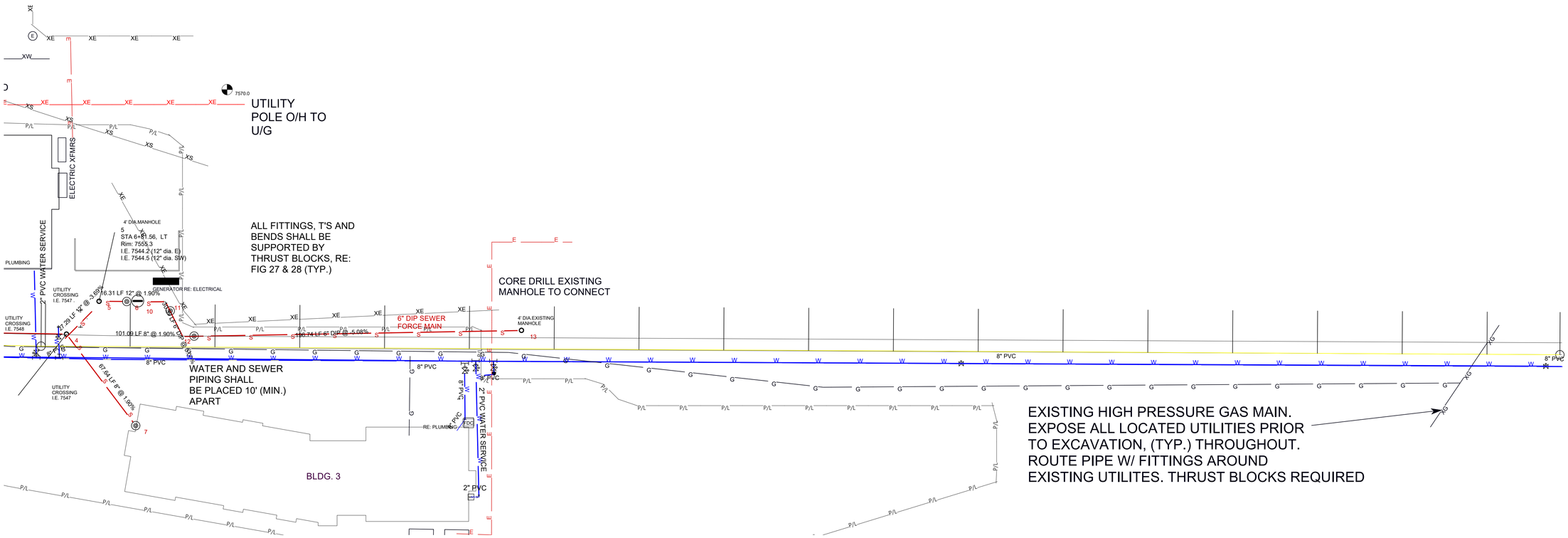
C4

WATER & SEWER NOTES

1. ALL WATER INFRASTRUCTURE SHALL BE CONSTRUCTED IN CONFORMANCE WITH THE CITY OF IDAHO SPRINGS STANDARDS AND SPECIFICATIONS FOR DESIGN AND CONSTRUCTION MANUAL, LATEST VERSION.
2. ALL BENDS IN WATER PIPE SHALL BE ACCOMPLISHED WITH STANDARD FITTINGS, OR A COMBINATION OF STANDARD FITTINGS. SMALL VARIANCES FROM STANDARD FITTING ANGLES SHALL BE TAKEN UP IN PIPE AND JOINT DEFLECTION, OR CURVED SECTIONS OF PIPE, AS ALLOWED BY THE MANUFACTURER.
3. THE OWNER MAY BE REQUIRED TO PROVIDE A WATER LINE EASEMENT FOR THE WATER MAINS THAT ARE TO BE CONSTRUCTED. THE SERVICE CONNECTION POINT, AND ANY NECESSARY EASEMENT FOR THE LINE, SHALL BE MODIFIED AND ESTABLISHED, AS NECESSARY, BASED ON THE ACTUAL WATER MAIN LOCATION.
4. 10' MINIMUM SEPARATION BETWEEN SEWER & WATER LINES. 6' MINIMUM WATER LINE BURY DEPTH.
5. PVC WATER SUPPLY PIPE SHALL BE ANSI C900 RATED, DR 14 FOR ALL WATER MAINS.
6. CROSSINGS. SANITARY SEWER MAINS SHALL BE SEPARATED A MINIMUM OF 18 INCHES VERTICALLY FROM WATER AND STORM SEWER LINES, AND ALL OTHER UTILITIES.
7. SANITARY SEWER MAINS SHALL BE BELOW WATER MAINS.
8. MANHOLE SPACING. MANHOLES SHALL BE SPACED A MAXIMUM OF EVERY 400 FEET WITHIN THE SANITARY SEWER SYSTEM.
9. VALVES ARE REQUIRED IN ALL WATER MAINS AT A MINIMUM INTERVAL OF 400 FEET, AND BETWEEN THE WATER MAIN AND FIRE HYDRANTS. A MINIMUM OF TWO (2) VALVES SHALL BE PLACED AT TEES. A MINIMUM OF THREE (3) VALVES SHALL BE PLACED AT CROSSES.

ELECTRICAL NOTES

1. RELOCATE OVERHEAD POWER LINE IN MINER ST. FROM 8TH TO 11TH AVE TO UNDERGROUND CONDUITS.
2. EMERGENCY GENERATOR FOR SEWAGE PUMPS MUST BE AT FULL RPM FREQUENCY CAPACITY AT PUMP STARTUP, RE: ELECTRICL
3. SEWAGE PUMP CONTROL AND ALARM PANEL REQUIRES DEDICATED CIRCUT.



PHASE 1
AREA 1

PHASE 2, AREA 2,-Commencing No Earlier Than 1/1/2024

1 Utility Plan- East
Scale: 1" = 30'-0"

PRELIMINARY
NOT FOR CONSTRUCTION

FINAL DEVELOPMENT PLAN SUBMITTAL

BLOCK 57/FORMERLY GOLDDIGGER FIELD & MAINTENANCE FACILITY

8TH-12TH AVE. & MINER ST.,
IDAHO SPRINGS, CO 80452

[SPACE INC]
Architecture. Interiors. & Master Planning

Four Points Funding

Elevated Civil

Back 40 Landscape Architecture

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Utility & Water Plan-East

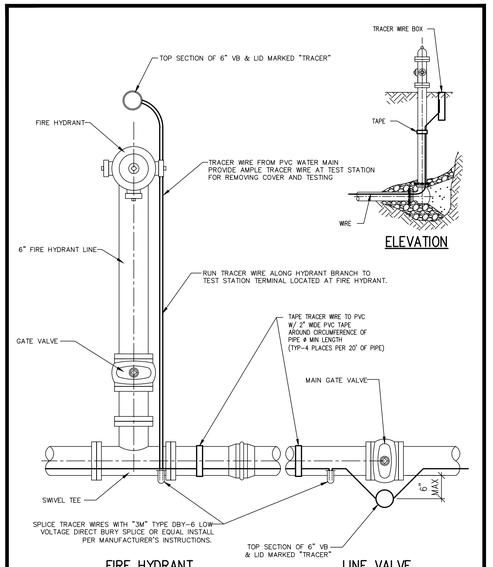
File Name 00-2-28-22.vwx

date 2/28/22

project #

drawn by: MC

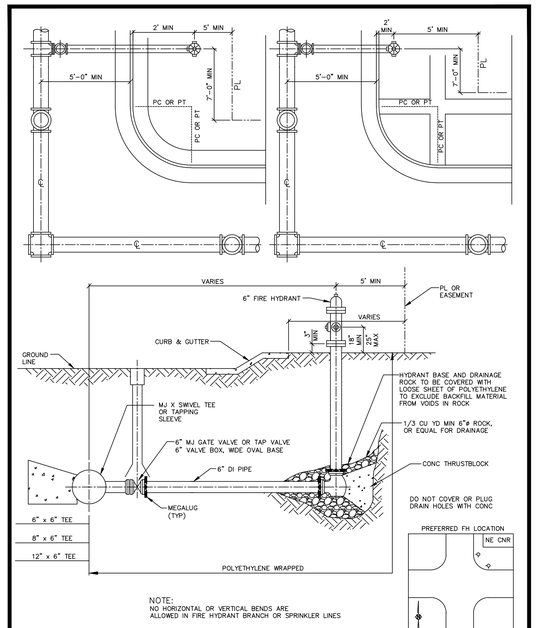
C4.1



Tracer Wire

CITY OF IDAHO SPRINGS
Standard Details Fig 29 May 2017

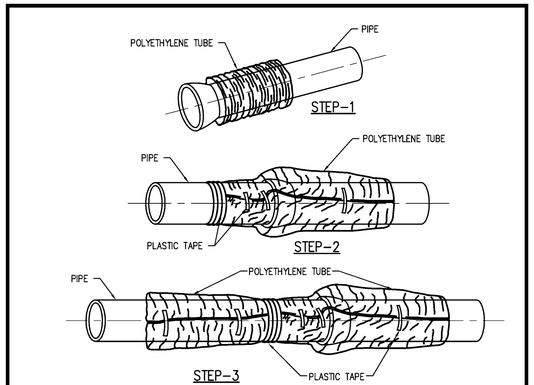
FILENAME: FIG 29 – TRACER WIRE.DWG



Fire Hydrants Plan, Profile, and Location

CITY OF IDAHO SPRINGS
Standard Details Fig 31 May 2017

FILENAME: FIG 31 – FIRE HYDRANTS PLAN.DWG



FIELD INSTALLATION–POLYETHYLENE WRAP

STEP-1 PLACE TUBE OF POLYETHYLENE MATERIAL AROUND PIPE PRIOR TO LOWERING PIPE INTO TRENCH

STEP-2 PULL THE TUBE OVER THE LENGTH OF THE PIPE. TAPE TUBE TO PIPE AT JOINT FOLD MATERIAL AROUND THE ADJACENT SPIGOT END AND WRAP WITH THREE CIRCUMFERENTIAL TURNS OF TWO-INCH WIDE PLASTIC TAPE TO HOLD PLASTIC TUBE AROUND SPIGOT END

STEP-3 ADJACENT TUBE OVERLAPS FIRST TUBE AND IS SECURED WITH PLASTIC ADHESIVE TAPE. THE POLYETHYLENE TUBE MATERIAL COVERING THE PIPE WILL BE LOOSE. EXCESS MATERIAL AND SHOULD BE NEATLY DRAWN UP AROUND THE PIPE BARREL, FOLDED INTO AN OVERLAP ON TOP OF THE PIPE AND HELD IN PLACE BY MEANS OF PIECES OF THE PLASTIC TAPE AT APPROXIMATELY THREE TO FIVE FOOT INTERVALS

NOTE:
ALL RODDING TO BE ENCASED IN POLYETHYLENE SEPARATED FROM THE PIPE

Polyethylene Wrap

CITY OF IDAHO SPRINGS
Standard Details Fig 30 May 2017

FILENAME: FIG 30 – POLYETHYLENE WRAP.DWG

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BLOCK 57/FORMERLY GOLDDIGGER FIELD & MAINTENANCE FACILITY

8TH-12TH AVE. & MINER ST.,
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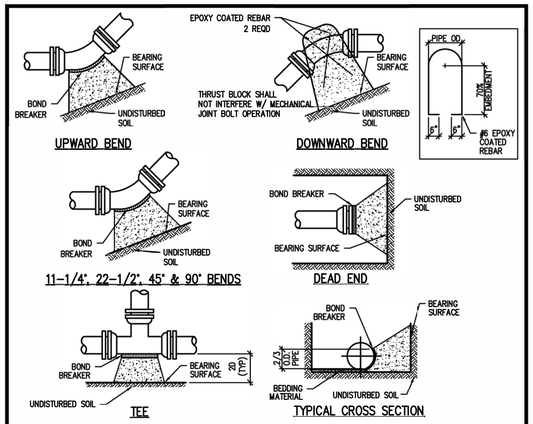


NOTES:
1. BEARING SURFACES SHOWN IN CHART ARE MINIMUM
2. BASED ON 150 PSI INTERNAL PIPE PRESSURE PLUS WATER HAMMER
4", 6", 8", & 12" WATER HAMMER = 110 PSI
16", 20' AND 24" WATER HAMMER = 70 PSI
3. BASED ON 3000psf SOIL BEARING CAPACITY

SIZE OF PIPE	SURFACE AREA (SQ FT) TEE OR DEAD END	BENDS 11-1/4°	22-1/2°	45°	90°
4"	1.50	1.00	1.00	1.00	N/A
6"	3.00	1.00	1.25	2.25	N/A
8"	5.25	1.00	2.00	4.00	N/A
12"	11.25	2.25	4.50	8.75	N/A
16"	19.00	3.50	7.50	14.50	27.00
20"	25.00	5.00	10.00	19.50	35.50
24"	36.00	7.00	14.00	27.75	51.00

MINIMUM BEARING SURFACE AREA (IN SQUARE FEET)

Concrete Thrust Blocks - 1 of 2

CITY OF IDAHO SPRINGS
Standard Details Fig 27 May 2017

FILENAME: FIG 27 – CONCRETE THRUST BLOCKS.DWG

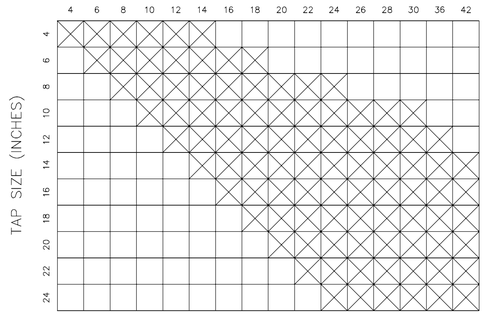
CONCRETE THRUST BLOCKS

WATER MAIN AND TAP SIZE COMBINATIONS WHICH REQUIRE A CONC THRUST BLOCK BEHIND THE MAIN AT THE TAPPING SLEEVE OR SADDLE

ALL WATER MAINS

☒ INDICATED CONC THRUST BLOCK REQD

MAIN SIZE (INCHES)

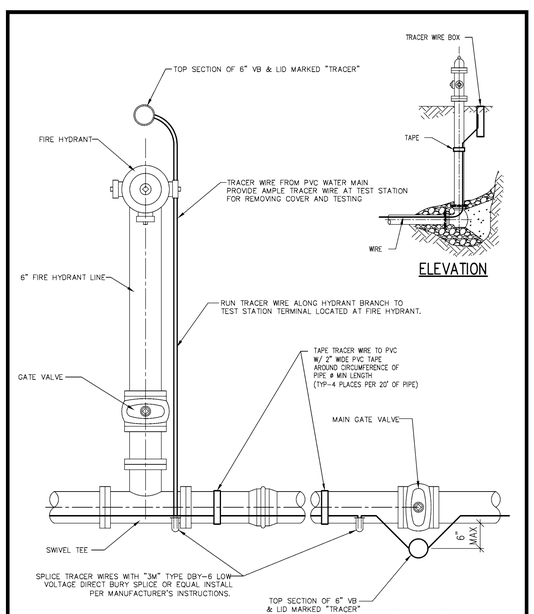


ANY THRUST BLOCK REQUIREMENTS FOR WATER MAIN AND TAP SIZE COMBINATIONS OTHER THAN THOSE SHOWN ABOVE WILL REQUIRE SPECIAL DESIGN APPROVAL BY THE ENGINEER.

Concrete Thrust Blocks - 2 of 2

CITY OF IDAHO SPRINGS
Standard Details Fig 28 May 2017

FILENAME: FIG 28 – CONCRETE THRUST BLOCKS TABLE.DWG



Tracer Wire

CITY OF IDAHO SPRINGS
Standard Details Fig 29 May 2017

FILENAME: FIG 29 – TRACER WIRE.DWG

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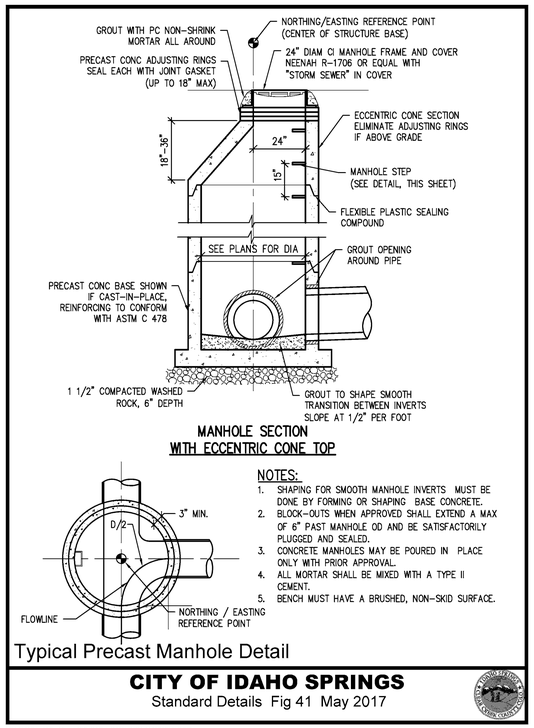


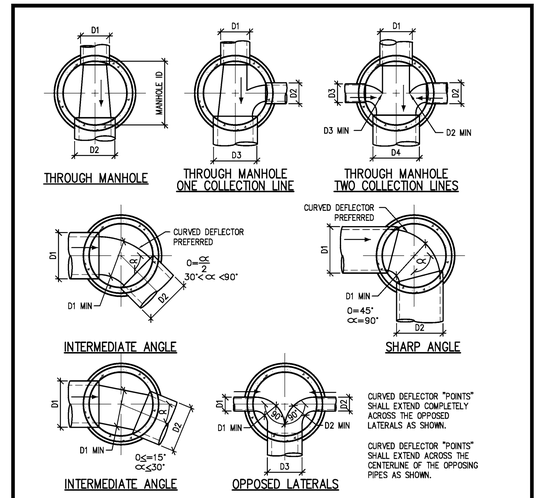
MANHOLE SECTION
WITH ECCENTRIC CONE TOP

NOTES:
1. SHAPING FOR SMOOTH MANHOLE INVERTS MUST BE DONE BY FORMING OR SHAPING BASE CONCRETE.
2. BLOCK-OUTS WHEN APPROVED SHALL EXTEND A MAX OF 6" PAST MANHOLE OD AND BE SATISFACTORILY PLUGGED AND SEALED.
3. CONCRETE MANHOLES MAY BE POURED IN PLACE ONLY WITH PRIOR APPROVAL.
4. ALL MORTAR SHALL BE MIXED WITH A TYPE II CEMENT.
5. BENCH MUST HAVE A BRUSHED, NON-SKID SURFACE.

Typical Precast Manhole Detail

CITY OF IDAHO SPRINGS
Standard Details Fig 41 May 2017

FILENAME: FIG 41 – PRECAST SANITARY MANHOLE.DWG

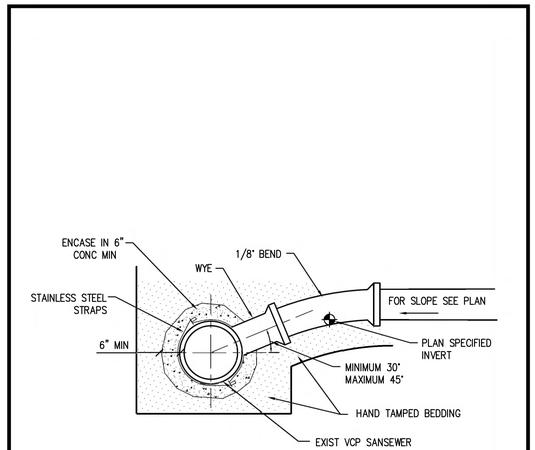


NOTES:
1. PIPE INVERT ELEVATION AND DROP THROUGH MANHOLES SHALL BE IN CONFORMANCE WITH THE REVIEW AND SIGNED CONSTRUCTION PLANS. THE INTENTION IS TO PROMOTE SMOOTH, NON-TURBULANT FLOW THROUGH THE MANHOLES BY KEEPING THE LARGER LINES LOWER IN THE MANHOLE AND BRINGING THE SMALLER LINES IN SLIGHTLY HIGHER.
2. MAX INSIDE DROP THROUGH ANY MANHOLE SHALL BE 18 INCHES
3. MIN DROP THROUGH ANY MANHOLE SHALL BE 0.2 FEET
4. ALL INVERT DEFLECTORS SHALL BE CURVED IN SHAPE TO PROVIDE SMOOTH FLOW TRANSITIONS AS SHOWN IN THIS DETAIL
5. MINIMUM ANGLE BETWEEN THE CENTERLINE OF ANY INCOMING PIPE AND THE CENTER OF THE OUTGOING PIPE SHALL BE 90 DEGREES

Manhole Base & Deflector

CITY OF IDAHO SPRINGS
Standard Details Fig 44 May 2017

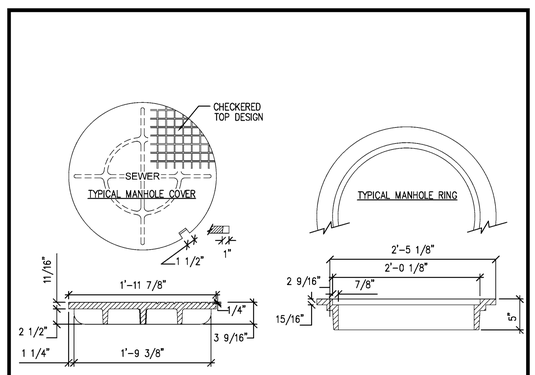
FILENAME: FIG 44 – MANHOLE BASE AND DEFLECTOR.DWG



VCP Sanitary Sewer Tapping

CITY OF IDAHO SPRINGS
Standard Details Fig 48 May 2017

FILENAME: FIG 48 – VCP SANITARY SEWER TAPPING.DWG

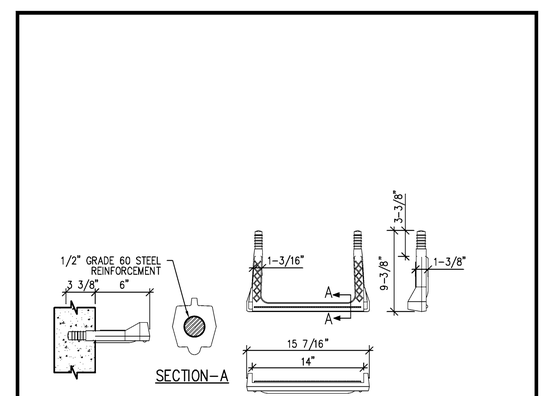


NOTES:
1. ASTM DESIGNATION A-48 CLASS 35B (UNPAINTED)
2. LETTERING ON COVER INDICATING SEWER
3. ALL BEARING SURFACES TO BE MATCHED
4. TOTAL MINIMUM WEIGHT APPROXIMATELY 400 LBS CAST IRON ONLY
5. LIFTING NOTCH SHALL NOT EXTEND PAST INSIDE FACE OF RING SEAT
6. MIN FRAME WEIGHT 235 LBS, MIN LID WEIGHT 165 LBS NEENAH R - 1706, OR EQUAL
7. HOT DIP CASTINGS AT FOUNDRY WITH ASPHALT VARNISH 6 MILS THICK

Manhole Cover

CITY OF IDAHO SPRINGS
Standard Details Fig 43 May 2017

FILENAME: FIG 43 – MANHOLE COVER.DWG

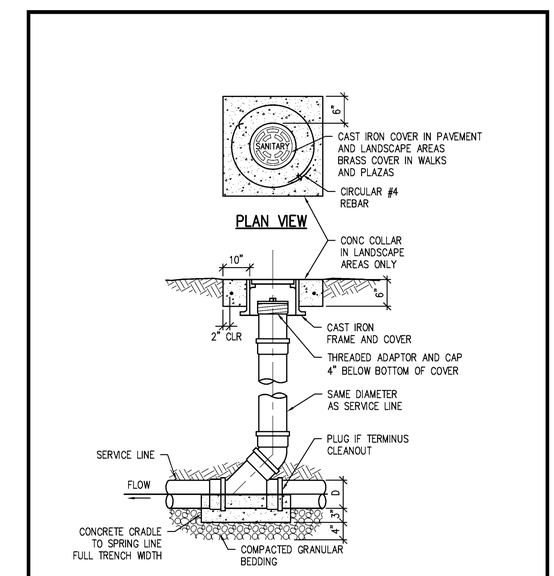


NOTE: COPOLYMER POLYPROPYLENE PLASTIC
AS MANUFACTURED BY M.A. INDUSTRIES (MODEL NO. PS2-PF) OR AN APPROVED EQUIVALENT SPACED AT 15"

Plastic Manhole Step

CITY OF IDAHO SPRINGS
Standard Details Fig 42 May 2017

FILENAME: FIG 42 – PLASTIC MANHOLE STEP.DWG



Sanitary Sewer Cleanout

CITY OF IDAHO SPRINGS
Standard Details Fig 46 May 2017

FILENAME: FIG 46 – SANITARY SEWER CLEANOUT.DWG

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BLOCK 57/FORMERLY GOLDDIGGER FIELD & MAINTENANCE FACILITY

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File Name 00-2-28-22.vwx

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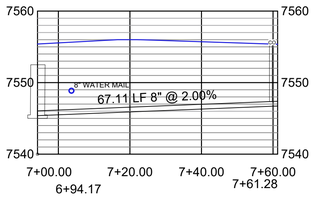
drawn by: MC

C4.3

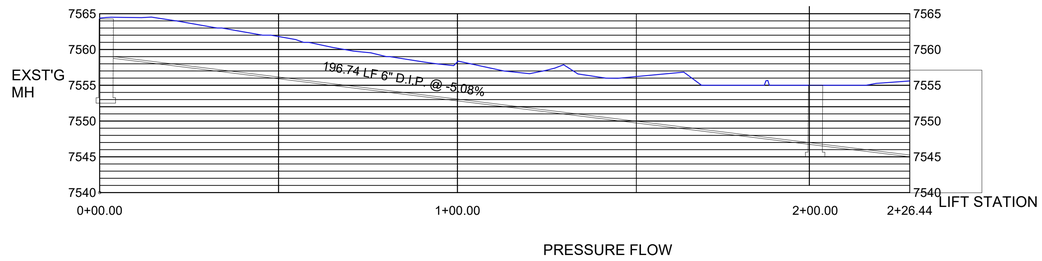
UTILITY CROSSING

4
STA 6+94.17, RT
Rim: 7555.4
I.E. 7545.1 (12" dia. NE)
I.E. 7545.4 (8" dia. W)
I.E. 7545.4 (8" dia. SE)

9
STA 7+61.28, RT
Rim: 7555.4
I.E. 7546.7 (8" dia. NW)



6 Sewer Line to Bldg 3 Profile
Scale: 1" = 20'-0"



4 Pressure Main Sewer Profile
Scale: 1" = 20'-0"

14
STA 2+33.36, LT
Rim: 7556.8
I.E. 7554.2 (6" dia. S)

1
STA 2+40.65, LT
Rim: 7560.1
I.E. 7553.3 (6" dia. ESE)
I.E. 7553.7 (6" dia. N)

2
STA 4+03.41, LT
Rim: 7558.2
I.E. 7550.6 (6" dia. E)
I.E. 7550.9 (6" dia. WNW)

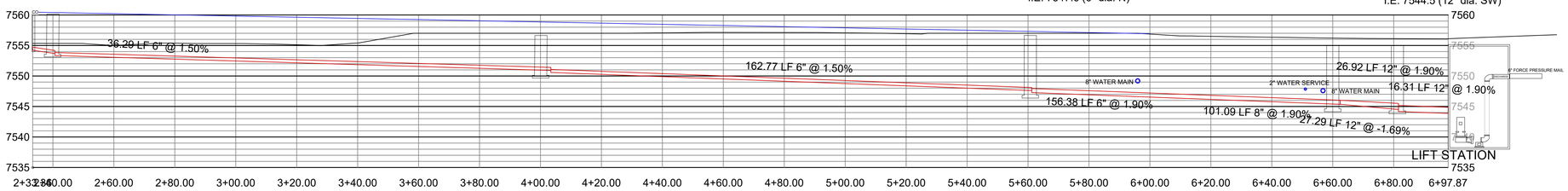
UTILITY CROSSING

3
STA 5+61.24, LT
Rim: 7557.0
I.E. 7547.3 (8" dia. E)
I.E. 7547.6 (6" dia. W)
I.E. 7547.6 (6" dia. N)

UTILITY CROSSINGS

4
STA 6+62.43, LT
Rim: 7555.4
I.E. 7543.5 (12" dia. NE)
I.E. 7545.4 (8" dia. W)
I.E. 7545.4 (8" dia. SE)

5
STA 6+81.56, LT
Rim: 7555.3
I.E. 7544.2 (12" dia. E)
I.E. 7544.5 (12" dia. SW)



1 Sewer Line @ Utility Cooridor Profile

PRELIMINARY
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FINAL DEVELOPMENT PLAN SUBMITTAL

BLOCK 57/FORMERLY GOLDDIGGER FIELD & MAINTENANCE FACILITY

8TH-12TH AVE. & MINER ST.,
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Sewer Line Profiles

File Name 00-2-28-22.vwx

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drawn by: MC

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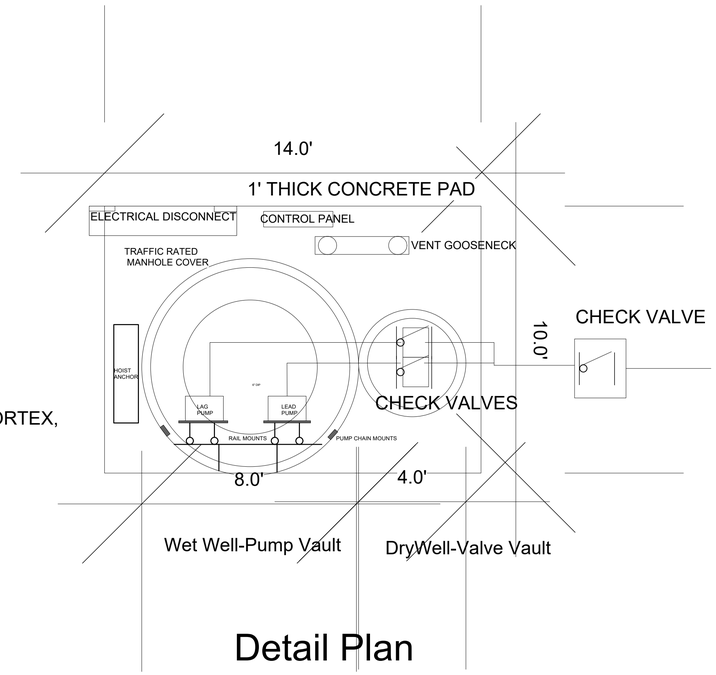
NOTES:

1. PUMPS ARE DUAL, REDUNDANT, 250 GMP, SUBMERSIBLE, JMP (JAMES M. PLEASANTS) VORTEX SEWAGE PUMPS, OPERATING IN TANDEM.

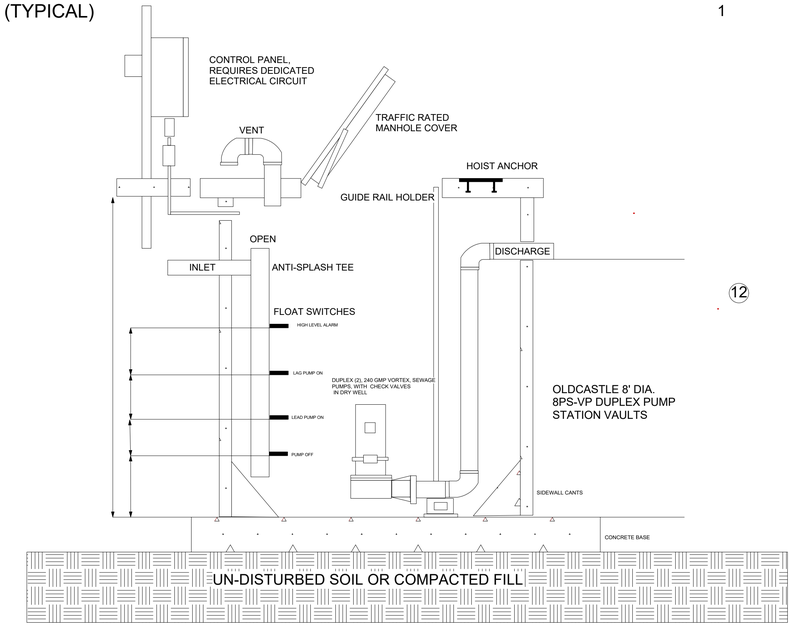
2. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COMPLETE THE LIFT STATION DESIGN, SUFFICIENT TO MEET ALL CODE REQUIREMENTS, INCLUDING COLORADO DEPT. OF HEALTH AND ENVIRONMENT (CDPHE) REGULATION 22. THE FINAL DESIGN SHALL BE SUBMITTED TO CDPHE WITH APPLICATION AND DESIGN DOCUMENTS SUFFICIENT TO GAIN CDPHE APPROVAL.

3. GENERATOR, RE: ELECTRICAL

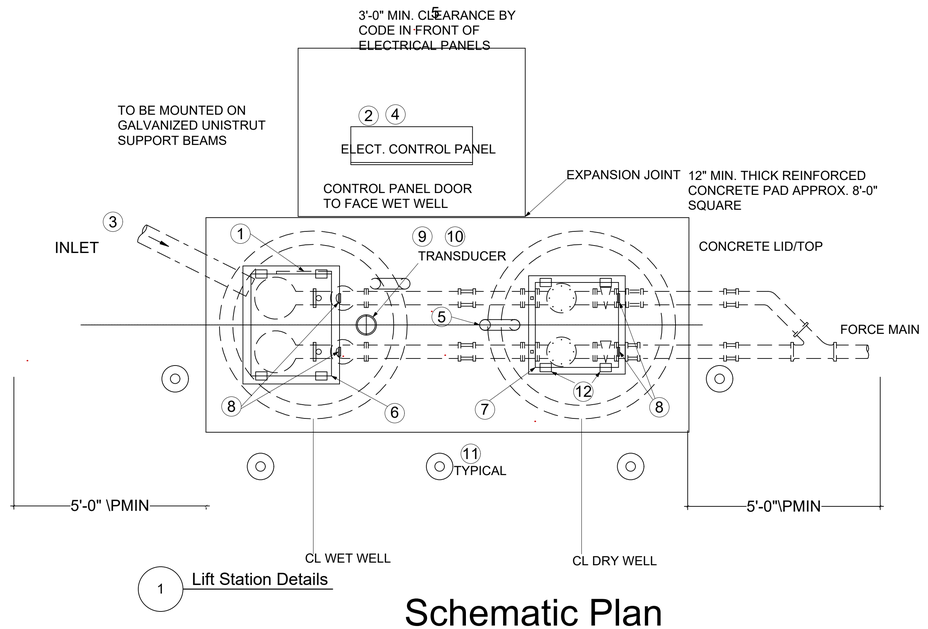
1. LOCATE CABLE RACK ON SAME SIDE OF CONTROL PANEL, DO NOT LOCATE TRANSDUCER AND FLOAT IN DIRECT LINE WITH INLET AND DISCHARGE LINES.
2. LOCATE TOP OF ELECTRICAL CONTROL PANEL 6 FEET ABOVE CONCRETE PAD.
3. DUCTILE IRON PIPE.
4. LOCATION OF ALARM BEACON WITH FLASHER SHALL BE VISIBLE TO ROAD TRAFFIC AND NOT BEHIND BUILDING OR IN LOW AREA.
5. VENT PIPE
6. 48" X 36" HINGED ACCESS DOOR AND FRAME WITH HINGED SAFETY GRATING
7. 36" X 36" HINGED ACCESS DOOR AND FRAME WITH HINGED SAFETY GRATING
8. ACCESS DOOR HINGES (TYPICAL)
9. SEE ELECTRICAL DETAIL
10. LOCATE TO PROVIDE CLEAR SPACE BELOW FOR ACCURATE LIQUID LEVEL MONITORING.
11. TYPICAL BOLLARD AS REQUIRED TO PROTECT STATION FROM VEHICLE ACCESS.
12. SAFETY GRATE HINGES (TYPICAL)



Detail Plan



Section- Wet Well



Schematic Plan

PRELIMINARY
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FINAL DEVELOPMENT PLAN SUBMITTAL

BLOCK 57/FORMERLY GOLDDIGGER FIELD & MAINTENANCE FACILITY

8TH-12TH AVE. & MINER ST., IDAHO SPRINGS, CO 80452

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Sewage Lift Station Plan & Details

File Name 00-2-28-22.vwx

date 2/28/22

project #

drawn by: MC

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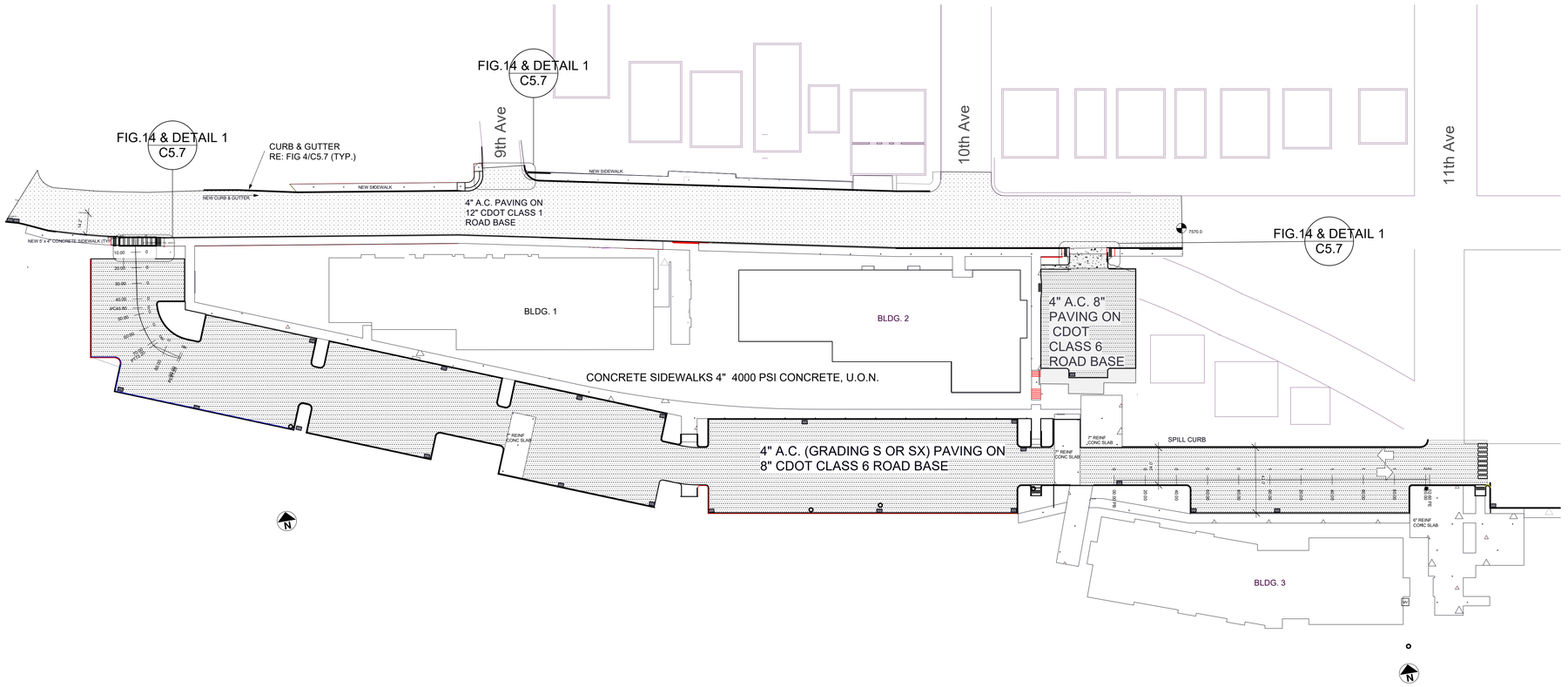
Subgrade areas to be occupied by concrete curbs, gutters and sidewalks, base course or asphaltic concrete shall, at a minimum, be stripped of all top soil and excavated to a depth of twelve (12) inches below final subgrade level, be backfilled in two (2) six inch lifts and compacted to establish final subgrade level.



3 Paving Plan
Scale: 1" = 40'-0"

NOTES- PAVING, HARDSCAPE & SIGNAGE

1. COMPACTION AND MOISTURE CONTROL IN NATIVE AND AGGREGATE MATERIALS SHALL BE TO 95% OF MAXIMUM MODIFIED PROCTOR DENSITY, AT +/- 2% OPTIMUM MOISTURE, OR AS DIRECTED BY A SITE-SPECIFIC GEOTECHNICAL EVALUATION.
2. SUBGRADE AREAS TO BE OCCUPIED BY CONCRETE CURBS, GUTTERS AND SIDEWALKS, BASE COURSE OR ASPHALTIC CONCRETE SHALL, AT A MINIMUM, BE STRIPPED OF ALL TOP SOIL AND EXCAVATED TO A DEPTH OF TWELVE (12) INCHES BELOW FINAL SUBGRADE LEVEL, BE BACKFILLED IN TWO (2) SIX INCH LIFTS AND COMPACTED TO ESTABLISH FINAL SUBGRADE LEVEL.
3. CONTRACTOR SHALL PROTECT ALL NEW ASPHALT PAVEMENT.
4. ANY PAVEMENT, CURB AND GUTTER, OR SIDEWALK MATERIAL THAT IS DAMAGED AS A RESULT OF THE CONTRACTOR'S OPERATION, AND IS NOT DESIGNATED FOR REMOVAL, SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
5. ANY DAMAGE TO PUBLIC ROADWAYS SHALL BE REPAIRED IMMEDIATELY AND PRIOR TO CONTINUING OPERATIONS. DUST SHALL BE PROPERLY CONTROLLED AND ANY MUD OR OTHER MATERIALS TRACTOR OTHERWISE DEPOSITED ON THE ROADWAY SHALL BE REMOVED DAILY, OR AS ORDERED BY THE ENGINEER.
6. ALL ASPHALT PROVIDED FOR THIS PROJECT SHALL BE A 75 GYRATION LEVEL SUPER-PAVE MIX, HAVE SX GRADING AND PG 58-28 BINDER, WITH A MIX DESIGN THAT HAS BEEN APPROVED FOR MUNICIPAL PROJECTS WITHIN 2 YEARS. HOT MIX ASPHALT SHALL BE COMPACTED TO 92% TO 96% MAXIMUM THEORETICAL DENSITY, AND SHALL HAVE A PROPER GRADATION, OIL, AND VOIDS AS APPROPRIATE FOR THE MIX BEING USED, OR AS SPECIFIED BY THE GEOTECHNICAL ENGINEER ACCORDING TO THE SUB-GRADE EVALUATION.
7. ALL EXTERIOR CONCRETE SHALL BE A 4,000 PSI (MIN.) MIX, AFTER 28 DAYS, CONTAIN AIR ENTRAINMENT AT 6% +/- 1% BY VOLUME, SHALL CONTAIN FIBER MESH, SHALL HAVE A SLUMP BETWEEN 2 AND 5 IN, AND SHALL BE GIVEN A LIGHT BROOM FINISH.
8. RIPRAP SHALL BE SOUND, ANGULAR ROCK OF THE DIMENSIONS INDICATED.
9. THE CONTRACTOR SHALL PROVIDE ALL LIGHTS, SIGNS, BARRICADES, FENCING, FLAGGERS, OR OTHER DEVICES NECESSARY TO MAINTAIN A SAFE SITE, IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL GUIDELINES AND STANDARDS. TRAFFIC SIGNS MAYBE REMOVED, FOR THE CONVENIENCE OF THE CONTRACTOR, BUT, AT NO TIME, SHALL AN INTERSECTION BE LEFT IN AN UNSAFE CONFIGURATION. TEMPORARY STOP SIGNS, ETC… SHALL BE INSTALLED BY THE CONTRACTOR, WHEN SUCH SIGNS ARE TO BE REMOVED, FOR ANY EXTENDED PERIOD OF TIME. ANY EXISTING SIGNS DAMAGED BY THE CONTRACTOR SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
10. THE CONTRACTOR SHALL PROVIDE ALL LIGHTS, SIGNS, BARRICADES, FENCING, FLAGGERS, OR OTHER DEVICES NECESSARY TO MAINTAIN A SAFE SITE, IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL GUIDELINES AND STANDARDS.
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12. WHERE NEW ASPHALT PAVEMENT IS TO ABUT EXISTING PAVEMENT, THE CONTRACTOR SHALL SAW CUT THE EDGE OF THE EXISTING ASPHALT, TO PROVIDE A CLEAN JOINT BETWEEN EXISTING ASPHALT AND ASPHALT PATCHES, OR TIE INS. TACK COAT BE SHALL BE APPLIED TO ADJACENT ASPHALT SURFACE, WHERE A TIGHT JOINT IS REQUIRED.

PRELIMINARY
NOT FOR CONSTRUCTION

FINAL DEVELOPMENT PLAN SUBMITTAL

BLOCK 57/FORMERLY GOLDDIGGER FIELD & MAINTENANCE FACILITY

8TH-12TH AVE. & MINER ST.,
IDAHO SPRINGS, CO 80452

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Paving Plan

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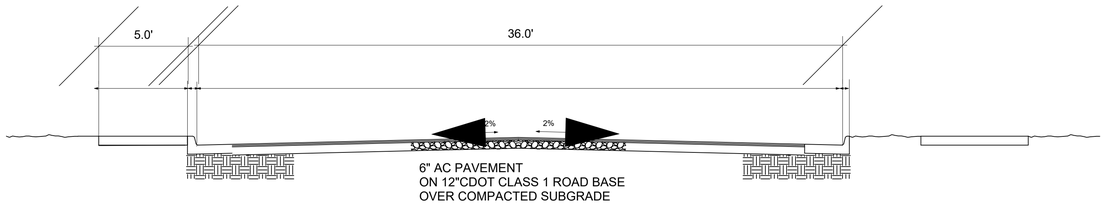

Subgrade areas to be occupied by concrete curbs, gutters and sidewalks, base course or asphaltic concrete shall, at a minimum, be stripped of all top soil and excavated to a depth of twelve (12) inches below final subgrade level, be backfilled in two (2) six inch lifts and compacted to establish final subgrade level.

2 Miner St. Section Profile
Scale: 1/4" = 1'-0"

Subgrade areas to be occupied by concrete curbs, gutters and sidewalks, base course or asphaltic concrete shall, at a minimum, be stripped of all top soil and excavated to a depth of twelve (12) inches below final subgrade level, be backfilled in two (2) six inch lifts and compacted to establish final subgrade level.

Notes- Paving, Hardscape & Signage

1. Compaction and moisture control in native and aggregate materials shall be to 95% of maximum modified Proctor density, at +/- 2% optimum moisture, or as directed by a site-specific geotechnical evaluation.
2. Subgrade areas to be occupied by concrete curbs, gutters and sidewalks, base course or asphaltic concrete shall, at a minimum, be stripped of all top soil and excavated to a depth of twelve (12) inches below final subgrade level, be backfilled in two (2) six inch lifts and compacted to establish final subgrade level.
3. Contractor shall protect all new asphalt pavement.
4. Any pavement, curb and gutter, or sidewalk material that is damaged as a result of the contractor's operation, and is not designated for removal, shall be replaced at the contractor's expense.
5. Any damage to public roadways shall be repaired immediately and prior to continuing operations. Dust shall be properly controlled and any mud or other materials tractor otherwise deposited on the roadway shall be removed daily, or as ordered by the engineer.
6. All asphalt provided for this project shall be a 75 gyration level Super-Pave mix, have SX grading and PG 58-28 binder, with a mix design that has been approved for municipal projects within 2 years. Hot mix asphalt shall be compacted to 92% to 96% maximum theoretical density, and shall have a proper gradation, oil, and voids as appropriate for the mix being used, or as specified by the geotechnical engineer according to the sub-grade evaluation.
7. All exterior concrete shall be a 4,000 PSI (min.) mix, after 28 days, contain air entrainment at 6% +/- 1% by volume, shall contain fiber mesh, shall have a slump between 2 and 5 in, and shall be given a light broom finish.
8. Riprap shall be sound, angular rock of the dimensions indicated.
9. The contractor shall provide all lights, signs, barricades, fencing, flaggers, or other devices necessary to maintain a safe site, in accordance with local, State and Federal guidelines and standards. Traffic signs maybe removed, for the convenience of the contractor, but, at no time, shall an intersection be left in an unsafe configuration. Temporary stop signs, etc… shall be installed by the contractor, when such signs are to be removed, for any extended period of time. Any existing signs damaged by the contractor shall be replaced at the contractor's expense.
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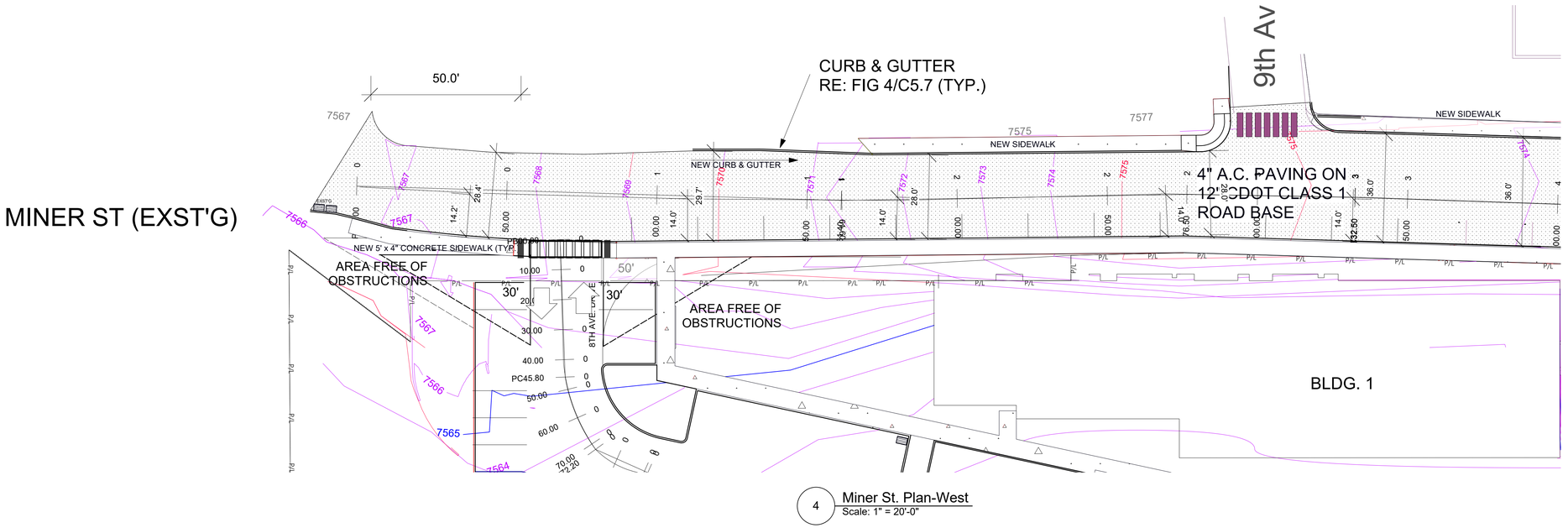
12. Where new asphalt pavement is to abut existing pavement, the contractor shall saw cut the edge of the existing asphalt, to provide a clean joint between existing asphalt and asphalt patches, or tie ins. Tack coat be shall be applied to adjacent asphalt surface, where a tight joint is required.



4 Miner St. Plan-West
Scale: 1" = 20'-0"

PRELIMINARY
NOT FOR CONSTRUCTION

FINAL DEVELOPMENT PLAN SUBMITTAL

BLOCK 57/FORMERLY GOLDDIGGER FIELD & MAINTENANCE FACILITY

8TH-12TH AVE. & MINER ST.,
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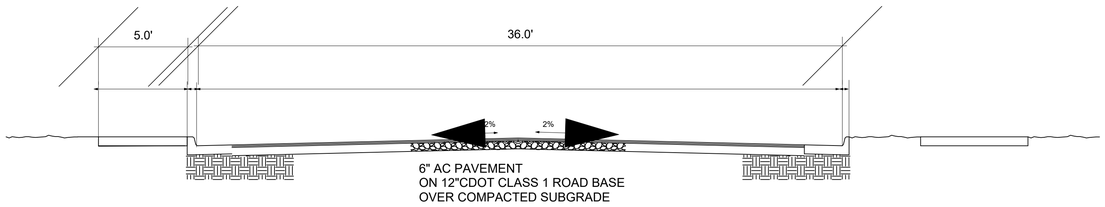

PENDING PAVEMENT DESIGN

2 Roadway Section Profile
Scale: 1/4" = 1'-0"

Subgrade areas to be occupied by concrete curbs, gutters and sidewalks, base course or asphaltic concrete shall, at a minimum, be stripped of all top soil and excavated to a depth of twelve (12) inches below final subgrade level, be backfilled in two (2) six inch lifts and compacted to establish final subgrade level.

Notes- Paving, Hardscape & Signage

1. Compaction and moisture control in native and aggregate materials shall be to 95% of maximum modified Proctor density, at +/- 2% optimum moisture, or as directed by a site-specific geotechnical evaluation.
2. Subgrade areas to be occupied by concrete curbs, gutters and sidewalks, base course or asphaltic concrete shall, at a minimum, be stripped of all top soil and excavated to a depth of twelve (12) inches below final subgrade level, be backfilled in two (2) six inch lifts and compacted to establish final subgrade level.
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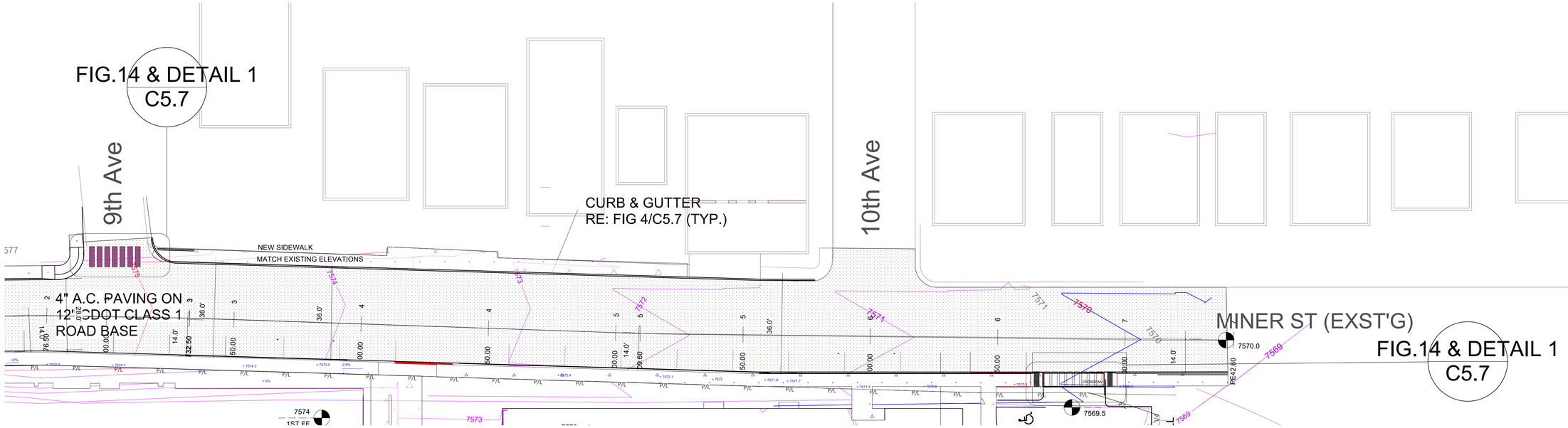

1 Miner St. Plan-East
Scale: 1" = 20'-0"

PRELIMINARY
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FINAL DEVELOPMENT PLAN SUBMITTAL

BLOCK 57/FORMERLY GOLDDIGGER FIELD & MAINTENANCE FACILITY

8TH-12TH AVE. & MINER ST.,
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Street Plan-East

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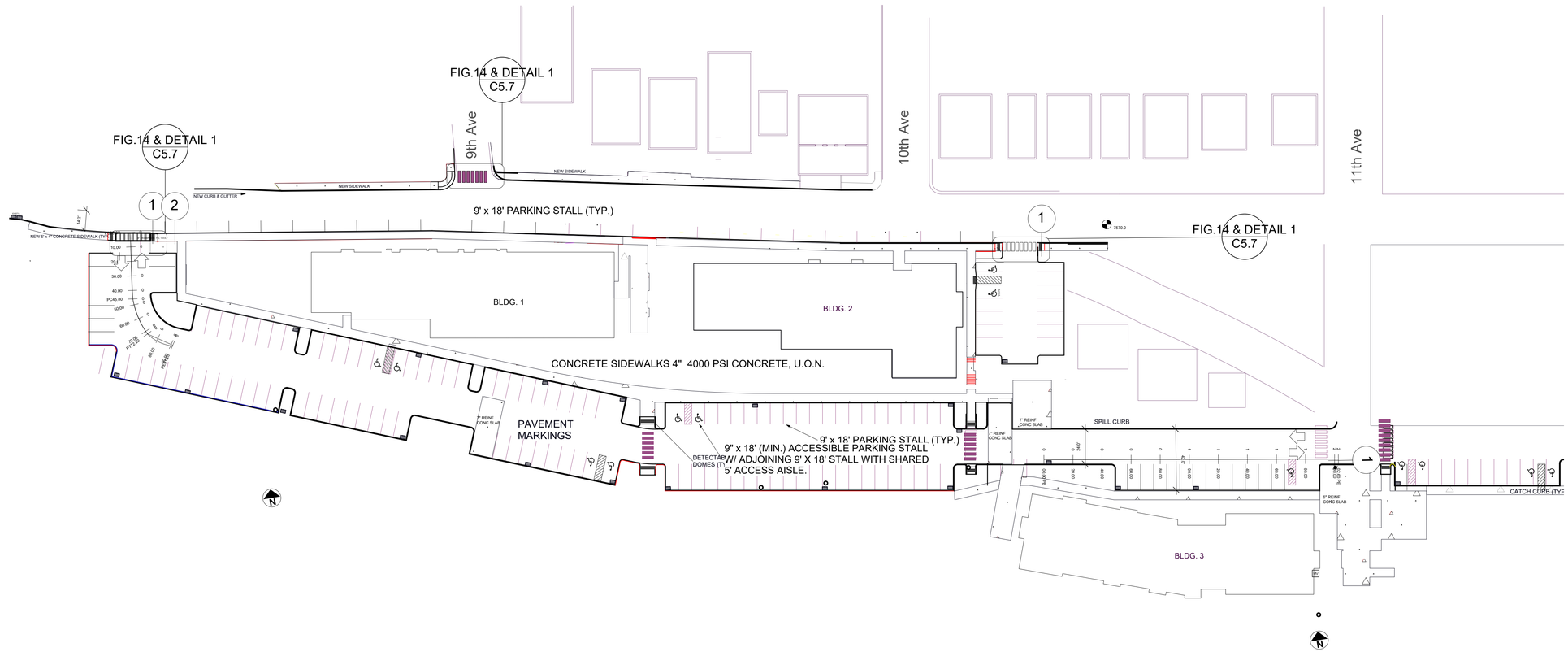
1 STOP SIGN

2 RIGHT TURN ONLY SIGN



3 Striping & Signage Plan
Scale: 1" = 40'-0"

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Striping & Signage Plan

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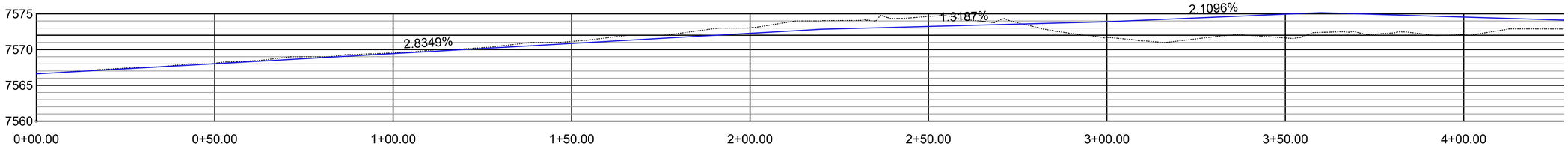
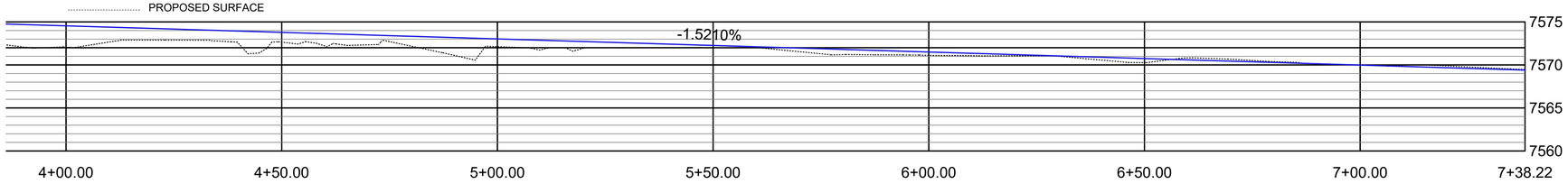
C5.3



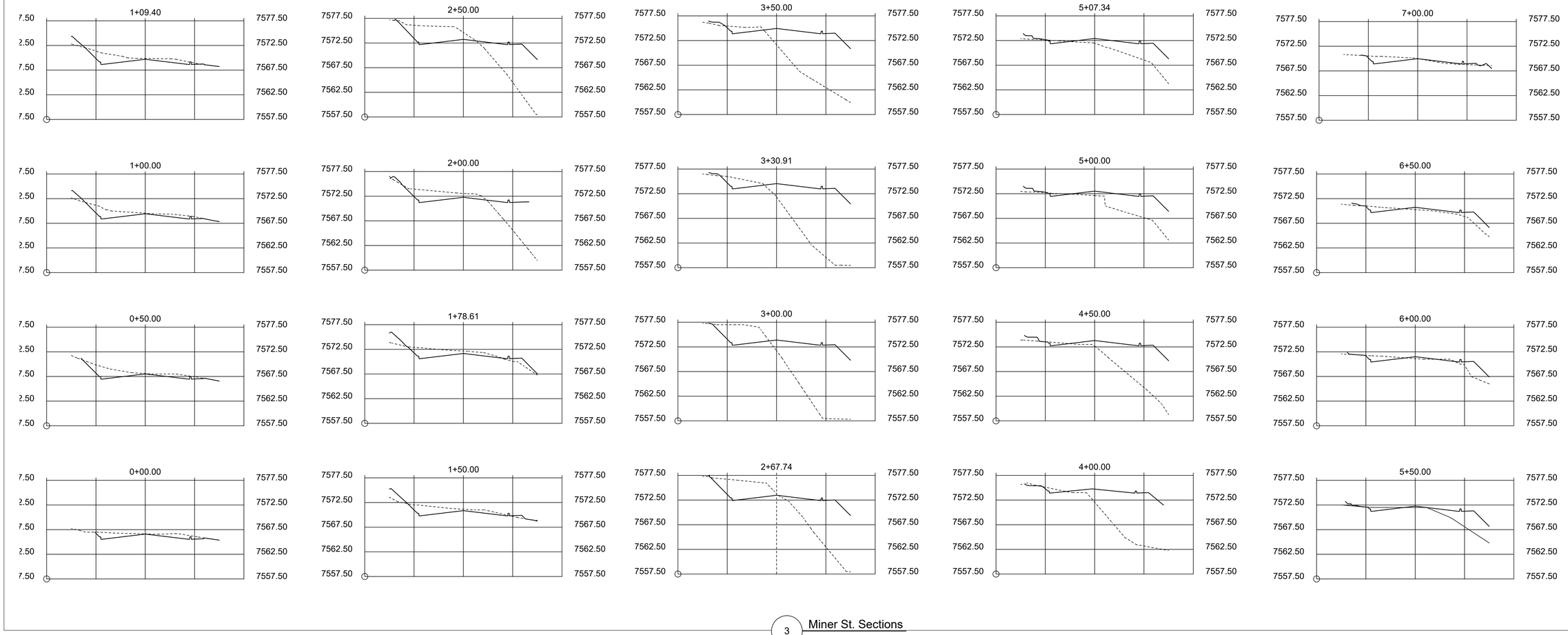
4 Miner St. Profile- West

EXISTING GRADE

PROPOSED SURFACE



6 Miner St. Profile-East



3 Miner St. Sections

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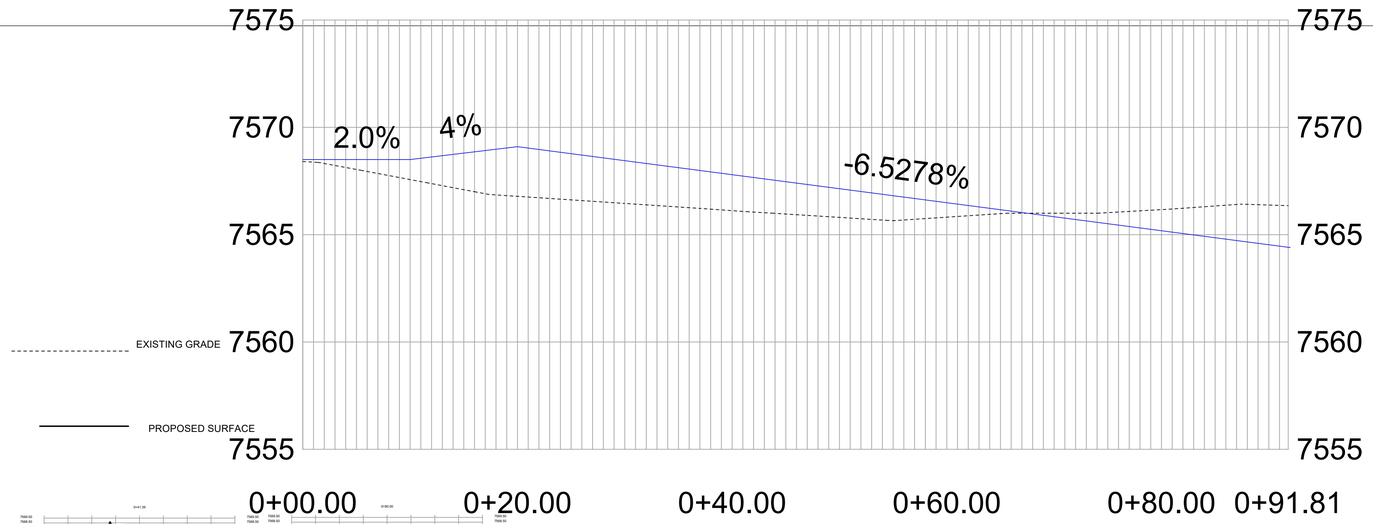
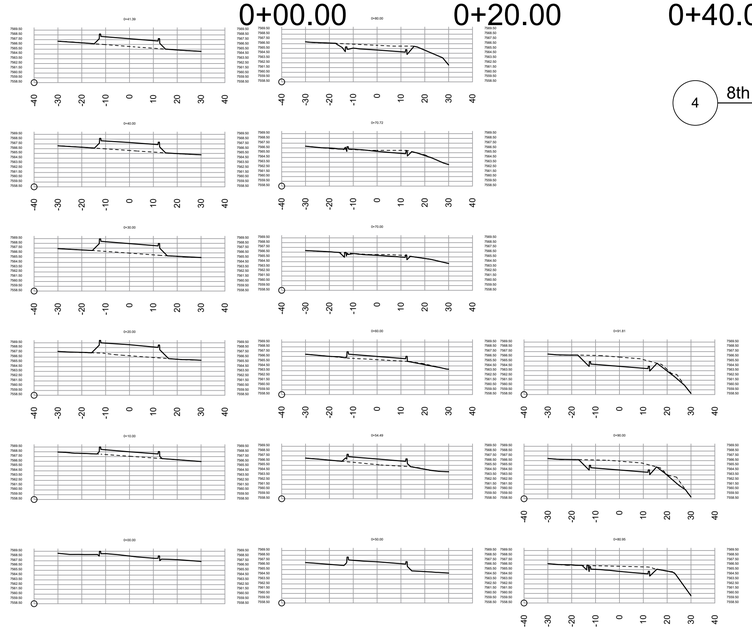
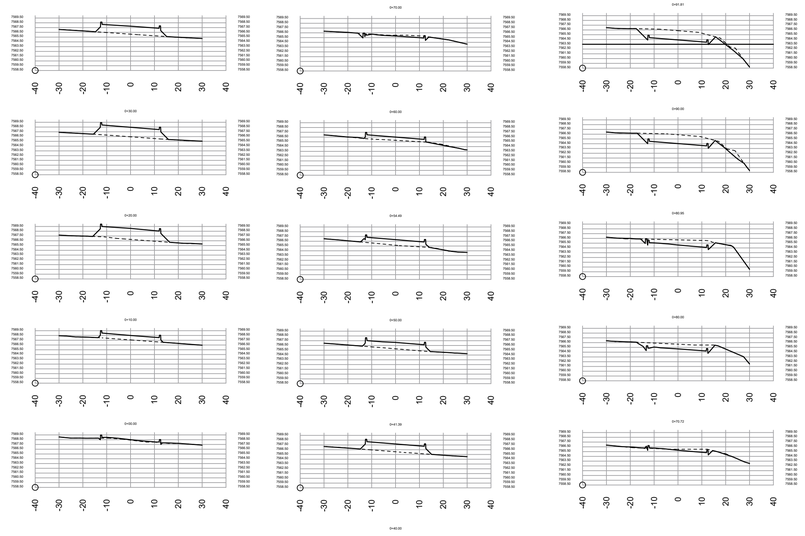


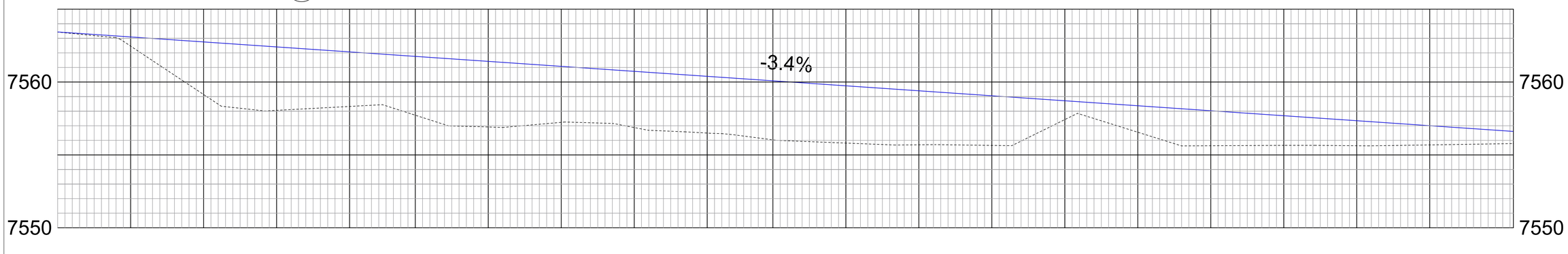
4 8th Ave. Drive Profile



2 Central Alley Drive Sections



3 8th Ave. Drive Sections



1 Central Alley Drive Profile

PRELIMINARY
NOT FOR CONSTRUCTION

FINAL DEVELOPMENT PLAN SUBMITTAL

BLOCK 57/FORMERLY GOLDDIGGER FIELD & MAINTENANCE FACILITY

8TH-12TH AVE. & MINER ST.,
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Drive Profiles & Sections

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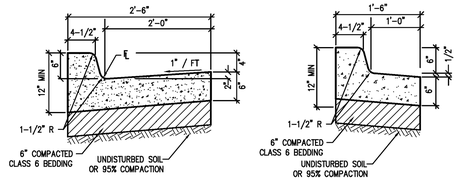
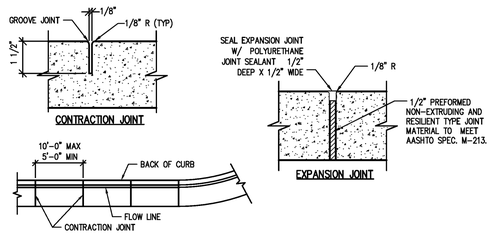


TYPE 1 CURB & GUTTER (CATCH GUTTER)

TYPE 2 CURB & GUTTER (SPILL GUTTER)

CURB & GUTTER (TYPE 1 & 2)

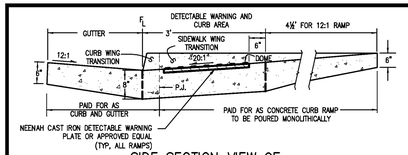


Curb and Gutter Details

CITY OF IDAHO SPRINGS

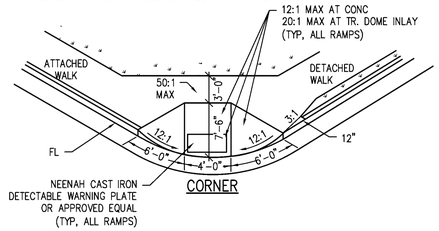
Standard Details Fig 4 May 2017

FILENAME: FIG 4 – CURB & GUTTER.DWG



SIDE SECTION VIEW OF DETECTABLE WARNING, WELL, CURB, AND GUTTER

P.J. = PERMISSIBLE JOINT WITH EPOXY-COATED DEFORMED NO. 4 BY 18 IN. BARS CONFORMING TO AASHTO M 284 AT 18 IN. SPACING.



CORNER

NOTES:

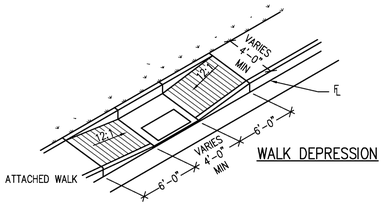
1. THERE SHALL BE NO LIP WHERE THE RAMP MEETS THE GUTTER
2. CURB RAMPS SHALL BE PROVIDED AT ALL CORNERS OF STREET INTERSECTIONS AND AT "T" INTERSECTIONS WHERE THERE IS EXISTING OR PROPOSED SIDEWALK AND CURB.
3. RAMP LOCATION SHALL BE SPECIFIED ON THE CONSTRUCTION PLANS.
4. NEENAH CAST IRON DETECTABLE WARNING PLATE OR APPROVED EQUAL.
5. CONCRETE RAMP AND WING SURFACES SHALL BE TEXTURED WITH A COARSE BROOMED SURFACE ONLY.
6. SEE CDOT DRAWING M-608-1 FOR FULL NOTES, DETAILS AND DIMENSIONS AND SHALL MEET CURRENT ADA STANDARDS.

Curb Ramps 1 of 2

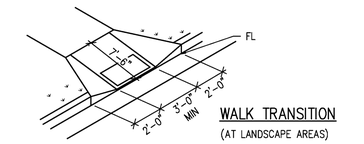
CITY OF IDAHO SPRINGS

Standard Details Fig 6 May 2017

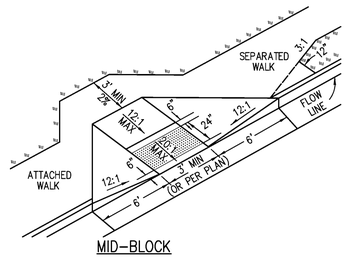
FILENAME: FIG 6 – FIG 7 – CURB RAMP.DWG



WALK DEPRESSION



WALK TRANSITION (AT LANDSCAPE AREAS)



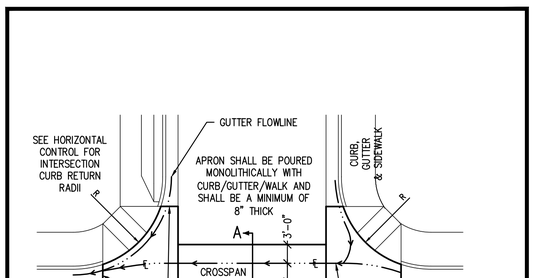
MID-BLOCK

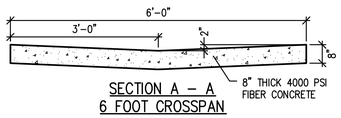
Curb Ramps 2 of 2

CITY OF IDAHO SPRINGS

Standard Details Fig 7 May 2017

FILENAME: FIG 6 – FIG 7 – CURB RAMP.DWG





SECTION A – A
6 FOOT CROSSPAN

NOTES:

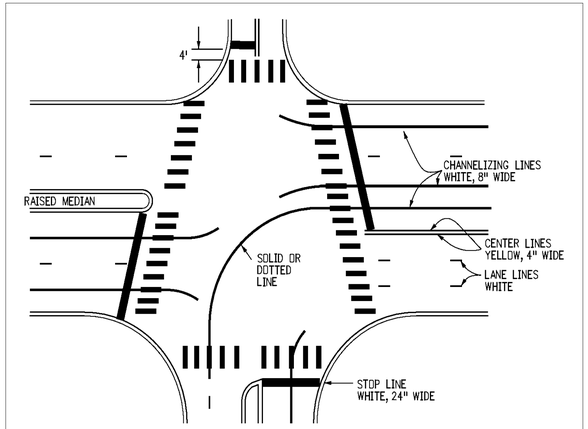
1. SEE THIS SHEET FOR CONCRETE JOINT DETAILS
2. SEE THIS SHEET FOR CURB RAMP DETAILS
3. EXPANSION JOINTS ARE REQUIRED AT PCR'S
4. CROSSPANS ARE NOT PERMITTED ACROSS ARTERIAL/COLLECTOR STREETS

Typical Intersection Crosspan

CITY OF IDAHO SPRINGS

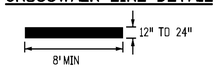
Standard Details Fig 14 May 2017

FILENAME: FIG 14 – INTERSECTION CROSSPAN.DWG



TYPICAL CONTINENTAL CROSSWALK MARKINGS

CROSSWALK LINE DETAIL



LEGEND

→ Direction of Travel

CONTINENTAL CROSSWALK NOTES

1. CENTER CROSSWALKS ON CURB RAMPS. IF SUCH RAMPS ARE NOT PROVIDED, CENTER ON SIGNAL POLES WHEREVER PRACTICAL.
2. CENTER CROSSWALKS ON EDGE LINES, LANE LINES AND CHANNELIZING LINES.
3. CENTER CROSSWALKS BETWEEN ADJACENT LINES.
4. MARKINGS SHALL NOT BE WITHIN WHEEL PATH OF VEHICLES.
5. CENTER ON EXTENDED FLOW LINE.
6. LINES AND SPACES TO APPROXIMATE ADJACENT PATTERN.

CROSSWALKS

DETAIL A

PRELIMINARY
NOT FOR CONSTRUCTION

FINAL DEVELOPMENT PLAN SUBMITTAL

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8TH-12TH AVE. & MINER ST., IDAHO SPRINGS, CO 80452

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Roadway Details

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date 2/28/22

project #

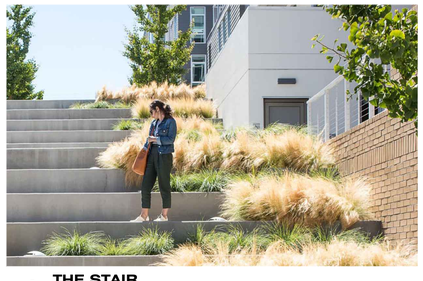
drawn by: MC

C5.6

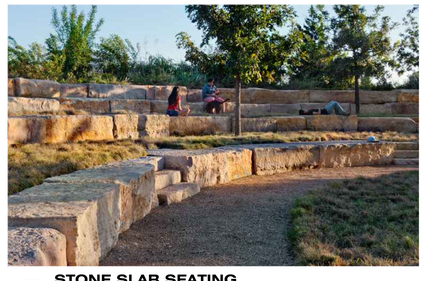
1 ILLUSTRATIVE SITE PLAN

SCALE: 1" = 50-0"

N 0' 25' 50' 100'



A THE STAIR
DESIGN INTENT IMAGE



B STONE SLAB SEATING
DESIGN INTENT IMAGE

C HISTORIC RAIL
DESIGN INTENT IMAGE

D LANDSCAPE ART
DESIGN INTENT IMAGE

E THE LAWN
DESIGN INTENT IMAGE

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sheet title
ILLUSTRATIVE SITE PLAN

revision

date 02.28.2022

project # 21-037

drawn by NK
checked by WB

L1.00

PARKING NOTES

THE OVERALL SITE PLAN SHOWS ONE HUNDRED SEVENTY ONE (171) PARKING STALLS. AT MOST, THE SITE WILL REQUIRE ONE HUNDRED EIGHTY (180) STALLS WHICH WE WILL PROVIDE ON THE SITE PLAN FOR THE FINAL FDP SUBMITTAL AS THE FINAL COUNT IS REFINED. TEN (10) OF THE ONE HUNDRED SEVENTY ONE (171) STALLS SHOWN ARE ACCESSIBLE.

LANDSCAPING NOTES

MINIMUM LANDSCAPE AT PARKING STALLS SHALL EQUAL 4 SQUARE FEET TO EVERY STALL.

REQUIRED STALLS: 180
REQUIRED LANDSCAPE PLANTER ISLAND AREA: 720 SQUARE FEET

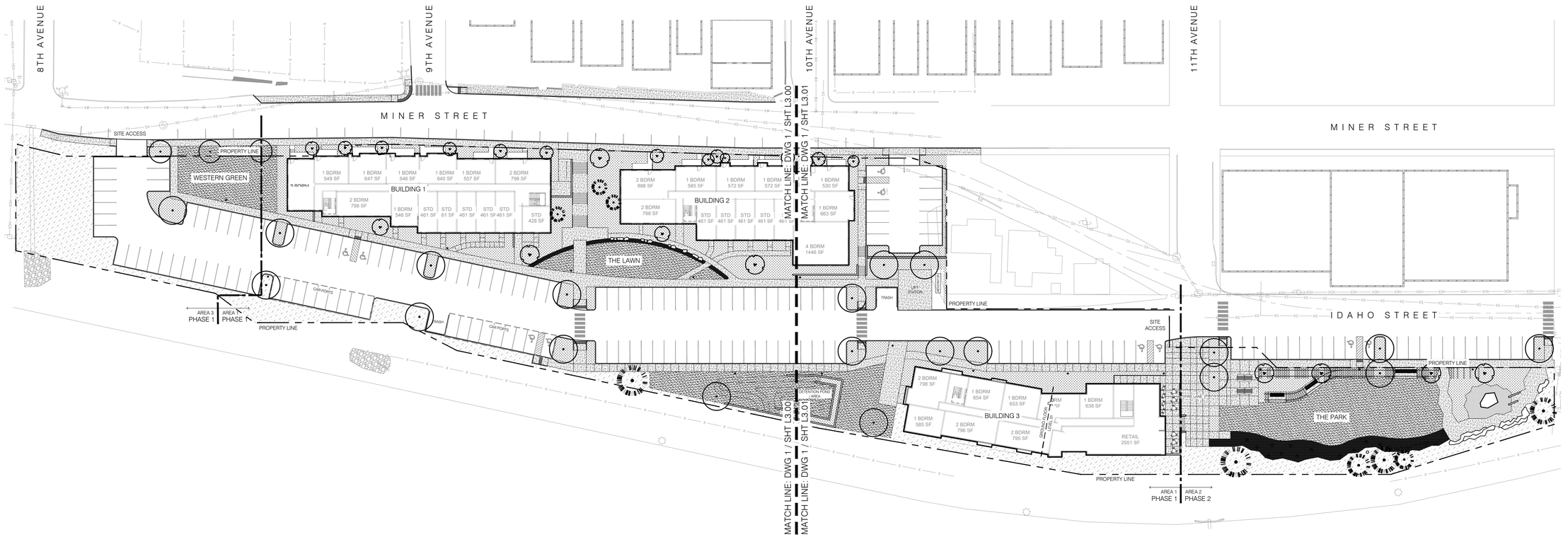
PROVIDED LANDSCAPE PLANTER ISLAND AREA: 2,440 SQUARE FEET

HATCH LEGEND

- CAST-IN-PLACE CONCRETE PAVEMENT, GRAY, SAWN JOINT, MED BROOM FIN
- DECOMPOSED GRANITE
- PLAYGROUND SURFACE
- SHRUB AND PERENNIAL PLANTING AREA
- IRRIGATED TURF
- NATIVE SEED PLANTING

UTILITY LEGEND

- SS — SANITARY SEWER LINE
- W — WATER LINE
- ST — STORM SEWER LINE
- E — ELECTRICAL LINE
- G — GAS LINE



1 OVERALL LANDSCAPE PLAN

SCALE: 1" = 40-0"

N 0' 20' 40' 80'

PRELIMINARY
NOT FOR CONSTRUCTION

FINAL DEVELOPMENT PLAN SUBMITTAL

BLOCK 57 / FORMER GOLDDIGGER FIELD & MAINTENANCE FACILITY

8TH-12TH AVE. & MINER STREET
IDAHO SPRINGS, CO 80452

[SPACE INC]
Architecture. Interiors. & Master Planning

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OVERALL LANDSCAPE PLAN

revision

date 02.28.2022

project # 21-037

drawn by NK
checked by WB

L2.00

MATERIAL KEYNOTES

- 1.0 PAVING
  - 1.1 CAST-IN-PLACE CONCRETE PAVING
  - 1.2 DECOMPOSED GRANITE
  - 1.3 PLAY SURFACE
- 2.0 PAVEMENT JOINTING (NOT USED)
- 3.0 CURBS, EDGES, STEPS
  - 3.1 CONCRETE STEPS
  - 3.2 TIERED SEATING
- 4.0 WALLS
  - 4.1 LANDSCAPE RETAINING WALL
- 5.0 SITE FURNISHINGS AND ELEMENTS
  - 5.1 FUTURE CLIMBING BOULDER
  - 5.2 RAIL LANDSCAPE FEATURE, RE IMAGE C / SHT L1.00
  - 5.3 LANDSCAPE POLE EXPRESSION, RE IMAGE D / SHT L1.00
  - 5.4 MANUFACTURED BENCH
  - 5.5 BOULDER
  - 5.6 CHILDREN'S PLAY ELEMENT
  - 5.7 FUTURE PAVILLION
  - 5.8 FENCE
  - 5.9 GUARDRAIL
- 6.0 SITE LIGHTING
  - 6.1 PEDESTRIAN POLE LIGHT, RE PHOTOMETRICS PLAN: L5.00
- 7.0 PLANTING
  - 7.1A DECIDUOUS TREE
  - 7.1B EVERGREEN TREE
  - 7.1C ORNAMENTAL TREE
  - 7.2 MULCHED PLANTING AREA
  - 7.3 IRRIGATED TURF
  - 7.4 NATIVE SEED PLANTING

MATERIALS LEGEND

- 1.1 CAST-IN-PLACE CONCRETE PAVEMENT, GRAY, SAWN JOINT, MED BROOM FIN
- 1.2 DECOMPOSED GRANITE
- 1.3 PLAYGROUND SURFACE
- 7.2 SHRUB AND PERENNIAL PLANTING AREA
- 7.3 IRRIGATED TURF
- 7.4 NATIVE SEED PLANTING

UTILITY LEGEND

- SS SANITARY SEWER LINE
- W WATER LINE
- ST STORM SEWER LINE
- E ELECTRICAL LINE
- G GAS LINE

8TH AVENUE

9TH AVENUE

MINER STREET

PROPERTY LINE

SITE ACCESS

(3 PARKING SPACES)

(7 PARKING SPACES)

(8 PARKING SPACES)

(13 PARKING SPACES)

(12 PARKING SPACES)

(11 PARKING SPACES)

(23 PARKING SPACES)

CAR PORTS (9 PARKING SPACES)

TRASH

BUILDING 1

BUILDING 2

THE LAWN

(17 PARKING SPACES)

I-70 EDGE OF PAVEMENT

I-70 LIGHT

MATCH LINE: DWG 1 / SHT L3.01

MATCH LINE: DWG 1 / SHT L3.01

1 **LANDSCAPE ENLARGEMENT PLAN (WEST)**

SCALE: 1" = 20'-0"

N 0' 10' 20' 40'

PRELIMINARY
NOT FOR CONSTRUCTION

FINAL DEVELOPMENT PLAN SUBMITTAL

BLOCK 57 / FORMER GOLDDIGGER FIELD & MAINTENANCE FACILITY

8TH-12TH AVE. & MINER STREET
IDAHO SPRINGS, CO
80452

[SPACE INC]
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LANDSCAPE ENLARGEMENT PLAN (WEST)

revision

date 02.28.2022

project # 21-037

drawn by NK
checked by WB

L3.00

MATERIAL KEYNOTES

- 1.0 PAVING
  - 1.1 CAST-IN-PLACE CONCRETE PAVING
  - 1.2 DECOMPOSED GRANITE
  - 1.3 PLAY SURFACE
- 2.0 PAVEMENT JOINTING (NOT USED)
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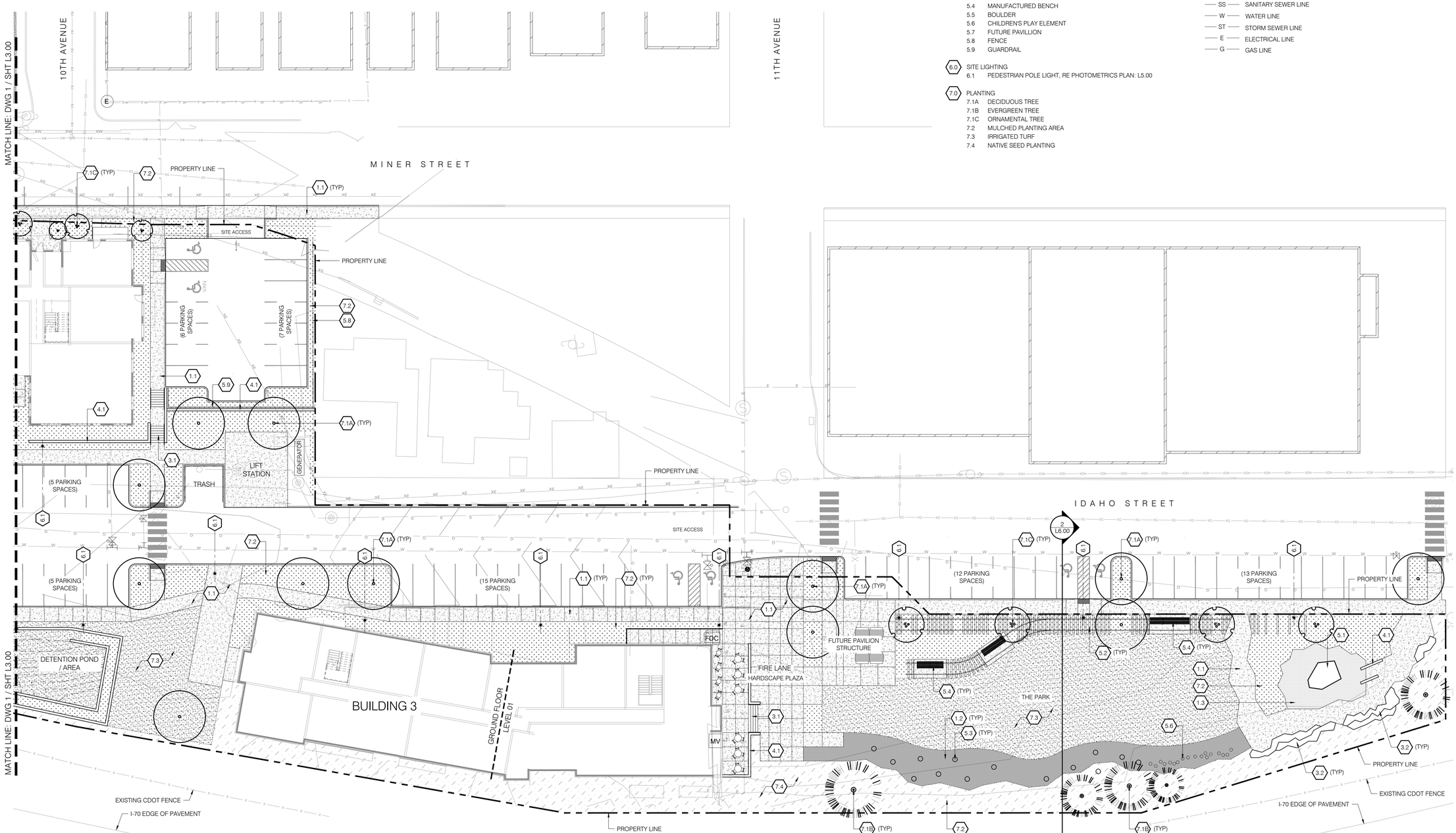
  - 3.1 CONCRETE STEPS
  - 3.2 TIERED SEATING
- 4.0 WALLS
  - 4.1 LANDSCAPE RETAINING WALL
- 5.0 SITE FURNISHINGS AND ELEMENTS
  - 5.1 FUTURE CLIMBING BOULDER
  - 5.2 RAIL LANDSCAPE FEATURE, RE IMAGE C / SHT L1.00
  - 5.3 LANDSCAPE POLE EXPRESSION, RE IMAGE D / SHT L1.00
  - 5.4 MANUFACTURED BENCH
  - 5.5 BOULDER
  - 5.6 CHILDREN'S PLAY ELEMENT
  - 5.7 FUTURE PAVILLION
  - 5.8 FENCE
  - 5.9 GUARDRAIL
- 6.0 SITE LIGHTING
  - 6.1 PEDESTRIAN POLE LIGHT, RE PHOTOMETRICS PLAN: L5.00
- 7.0 PLANTING
  - 7.1A DECIDUOUS TREE
  - 7.1B EVERGREEN TREE
  - 7.1C ORNAMENTAL TREE
  - 7.2 MULCHED PLANTING AREA
  - 7.3 IRRIGATED TURF
  - 7.4 NATIVE SEED PLANTING

MATERIALS LEGEND

- 1.1 CAST-IN-PLACE CONCRETE PAVEMENT, GRAY, SAWN JOINT, MED BROOM FIN
- 1.2 DECOMPOSED GRANITE
- 1.3 PLAYGROUND SURFACE
- 7.2 SHRUB AND PERENNIAL PLANTING AREA
- 7.3 IRRIGATED TURF
- 7.4 NATIVE SEED PLANTING

UTILITY LEGEND

- SS SANITARY SEWER LINE
- W WATER LINE
- ST STORM SEWER LINE
- E ELECTRICAL LINE
- G GAS LINE



1 **LANDSCAPE ENLARGEMENT PLAN (EAST)**

SCALE: 1" = 20'-0"

N 0' 10' 20' 40'

PRELIMINARY
NOT FOR CONSTRUCTION

FINAL DEVELOPMENT PLAN SUBMITTAL

BLOCK 57 / FORMER GOLDDIGGER FIELD & MAINTENANCE FACILITY

8TH-12TH AVE. & MINER STREET
IDAHO SPRINGS, CO 80452

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LANDSCAPE ENLARGEMENT PLAN (EAST)

revision

date 02.28.2022

project # 21-037

drawn by NK
checked by WB

L3.01

MATERIAL KEYNOTES

7.0 PLANTING
- 7.1A DECIDUOUS TREE
- 7.1B EVERGREEN TREE
- 7.1C ORNAMENTAL TREE
- 7.2 MULCHED PLANTING AREA
- 7.3 IRRIGATED TURF
- 7.4 NATIVE SEED PLANTING

MATERIALS LEGEND

7.3 IRRIGATED TURF

7.4 NATIVE SEED PLANTING

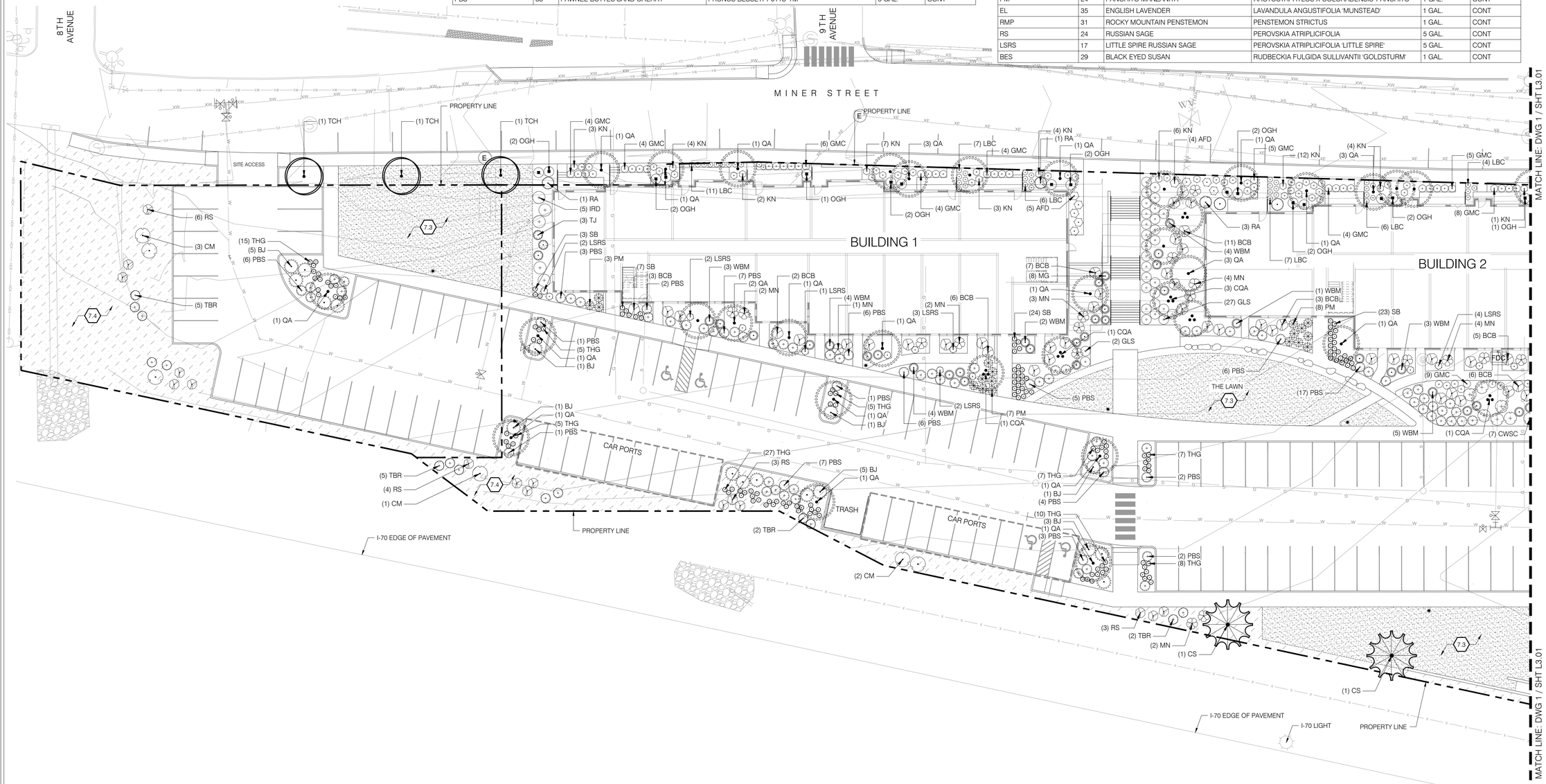
UTILITY LEGEND

- SS SANITARY SEWER LINE
- W WATER LINE
- ST STORM SEWER LINE
- E ELECTRICAL LINE
- G GAS LINE

PLANT SCHEDULE

DECIDUOUS TREES	QTY	COMMON NAME	BOTANICAL NAME	SIZE	CONTAINER
QA	46	QUAKING ASPEN	POPULUS TREMULOIDES	2" CAL.	B&B
CQA	6	CLUMP FORM QUAKING ASPEN	POPULUS TREMULOIDES 'CLUMP FORM'	MULTISTEM	B&B
EVERGREEN TREES	QTY	COMMON NAME	BOTANICAL NAME	SIZE	CONTAINER
TJ	6	TAYLOR EASTERN REDCEDAR	JUNIPERUS VIRGINIANA 'TAYLOR'	6` HT.	B&B
CS	4	COLORADO SPRUCE	PICEA PUNGENS	6` HT.	B&B
FA	1	FAT ALBERT COLORADO SPRUCE	PICEA PUNGENS 'FAT ALBERT'	6` HT.	B&B
LP	2	LIMBER PINE	PINUS FLEXILIS	6` HT.	B&B
ORNAMENTAL TREES	QTY	COMMON NAME	BOTANICAL NAME	SIZE	CONTAINER
TCH	5	THORNLESS COCKSPUR HAWTHORN	CRATAEGUS CRUS-GALLI INERMIS	1.5" CAL.	B&B
DECIDUOUS SHRUBS	QTY	COMMON NAME	BOTANICAL NAME	SIZE	CONTAINER
BCB	55	IROQUOIS BEAUTY BLACK CHOKEBERRY	ARONIA MELANOCARPA 'MORTON' TM	5 GAL.	CONT
LBC	54	LOW SCAPE MOUND BLACK CHOKEBERRY	ARONIA MELANOCARPA 'UCONNAM165' TM	5 GAL.	CONT
CM	6	MOUNTAIN MAHOGANY	CERCOCARPUS MONTANUS MONTANUS	5 GAL.	CONT
AFD	17	ARCTIC FIRE RED TWIG DOGWOOD	CORNUS SERICEA 'FARROW' TM	5 GAL.	CONT
IRD	12	ISANTI RED TWIG DOGWOOD	CORNUS SERICEA 'ISANTI'	5 GAL.	CONT
TBR	29	TALL BLUE RABBITBRUSH	ERICAMERIA NAUSEOSA SPECIOSA	5 GAL.	CONT
OGH	30	OREGON GRAPE	MAHONIA AQUIFOLIUM	5 GAL.	CONT
MN	41	MOUNTAIN NINEBARK	PHYSOCARPUS MONOGYNUS	5 GAL.	CONT
PBS	88	PAWNEE BUTTES SAND CHERRY	PRUNUS BESSEYI 'P011S' TM	5 GAL.	CONT

DECIDUOUS SHRUBS	QTY	COMMON NAME	BOTANICAL NAME	SIZE	CONTAINER
CWSC	43	CREEPING WESTERN SAND CHERRY	PRUNUS PUMILA BESSEYI PAWNEE BUTTES	5 GAL.	CONT
GLS	29	GRO-LOW FRAGRANT SUMAC	RHUS AROMATICA 'GRO-LOW'	5 GAL.	CONT
RA	14	ALPINE CURRANT	RIBES ALPINUM	5 GAL.	CONT
GMC	117	GREEN MOUND CURRANT	RIBES ALPINUM 'GREEN MOUND'	5 GAL.	CONT
EVERGREEN SHRUBS	QTY	COMMON NAME	BOTANICAL NAME	SIZE	CONTAINER
BJ	38	BUFFALO JUNIPER	JUNIPERUS SABINA 'BUFFALO'	5 GAL.	CONT
MVS	12	MESA VERDE COLORADO SPRUCE	PICEA PUNGENS 'MESA VERDE'	5 GAL.	CONT
WBM	37	WHITE BUD MUGO PINE	PINUS MUGO 'WHITE BUD'	5 GAL.	CONT
GRASSES	QTY	COMMON NAME	BOTANICAL NAME	SIZE	CONTAINER
BAG	56	BLONDE AMBITION BLUE GRAMA	BOUTELOUA GRACILIS 'BLONDE AMBITION'	5 GAL.	CONT
THG	249	TUFTED HAIR GRASS	DESCHAMPSIA CESPITOSA	1 GAL.	CONT
MG	22	MAIDEN GRASS	MISCANTHUS SINENSIS 'GRACILLIMUS'	5 GAL.	CONT
SB	108	BLAZE LITTLE BLUESTEM	SCHIZACHYRIUM SCOPARIUM 'BLAZE'	5 GAL.	CONT
PERENNIALS	QTY	COMMON NAME	BOTANICAL NAME	SIZE	CONTAINER
CWY	5	COMMON YARROW	ACHILLEA MILLEFOLIUM	1 GAL.	CONT
AF	8	BLUE FORTUNE ANISE HYSSOP	AGASTACHE X 'BLUE FORTUNE'	1 GAL.	CONT
RMC	15	ROCKY MOUNTAIN COLUMBINE	AQUILEGIA CAERULEA	1 GAL.	CONT
KN	84	KINNIKINNICK	ARCTOSTAPHYLOS UVA-URSI	1 GAL.	CONT
PM	24	PANCHITO MANZANITA	ARCTOSTAPHYLOS X COLORADENSIS 'PANCHITO'	1 GAL.	CONT
EL	35	ENGLISH LAVENDER	LAVANDULA ANGUSTIFOLIA 'MUNSTEAD'	1 GAL.	CONT
RMP	31	ROCKY MOUNTAIN PENSTEMON	PENSTEMON STRICTUS	1 GAL.	CONT
RS	24	RUSSIAN SAGE	PEROVSKIA ATRIPLICIFOLIA	5 GAL.	CONT
LSRS	17	LITTLE SPIRE RUSSIAN SAGE	PEROVSKIA ATRIPLICIFOLIA 'LITTLE SPIRE'	5 GAL.	CONT
BES	29	BLACK EYED SUSAN	RUDBECKIA FULGIDA SULLIVANTII 'GOLDSTURM'	1 GAL.	CONT



1 **PLANTING ENLARGEMENT PLAN**
SCALE: 1" = 20

N 0' 10' 20' 40'

PRELIMINARY
NOT FOR CONSTRUCTION

FINAL DEVELOPMENT PLAN SUBMITTAL

BLOCK 57 / FORMER GOLDDIGGER FIELD & MAINTENANCE FACILITY

8TH-12TH AVE. & MINER STREET
IDAHO SPRINGS, CO
80452

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LANDSCAPE PLANTING ENLARGEMENT PLAN (WEST)

revision

date 02.28.2022

project # 21-037

drawn by NK
checked by WB

L4.00

MATERIAL KEYNOTES

- 7.0 PLANTING
  - 7.1A DECIDUOUS TREE
  - 7.1B EVERGREEN TREE
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  - 7.2 MULCHED PLANTING AREA
  - 7.3 IRRIGATED TURF
  - 7.4 NATIVE SEED PLANTING

MATERIALS LEGEND

- 7.3 IRRIGATED TURF
- 7.4 NATIVE SEED PLANTING

UTILITY LEGEND

- SS SANITARY SEWER LINE
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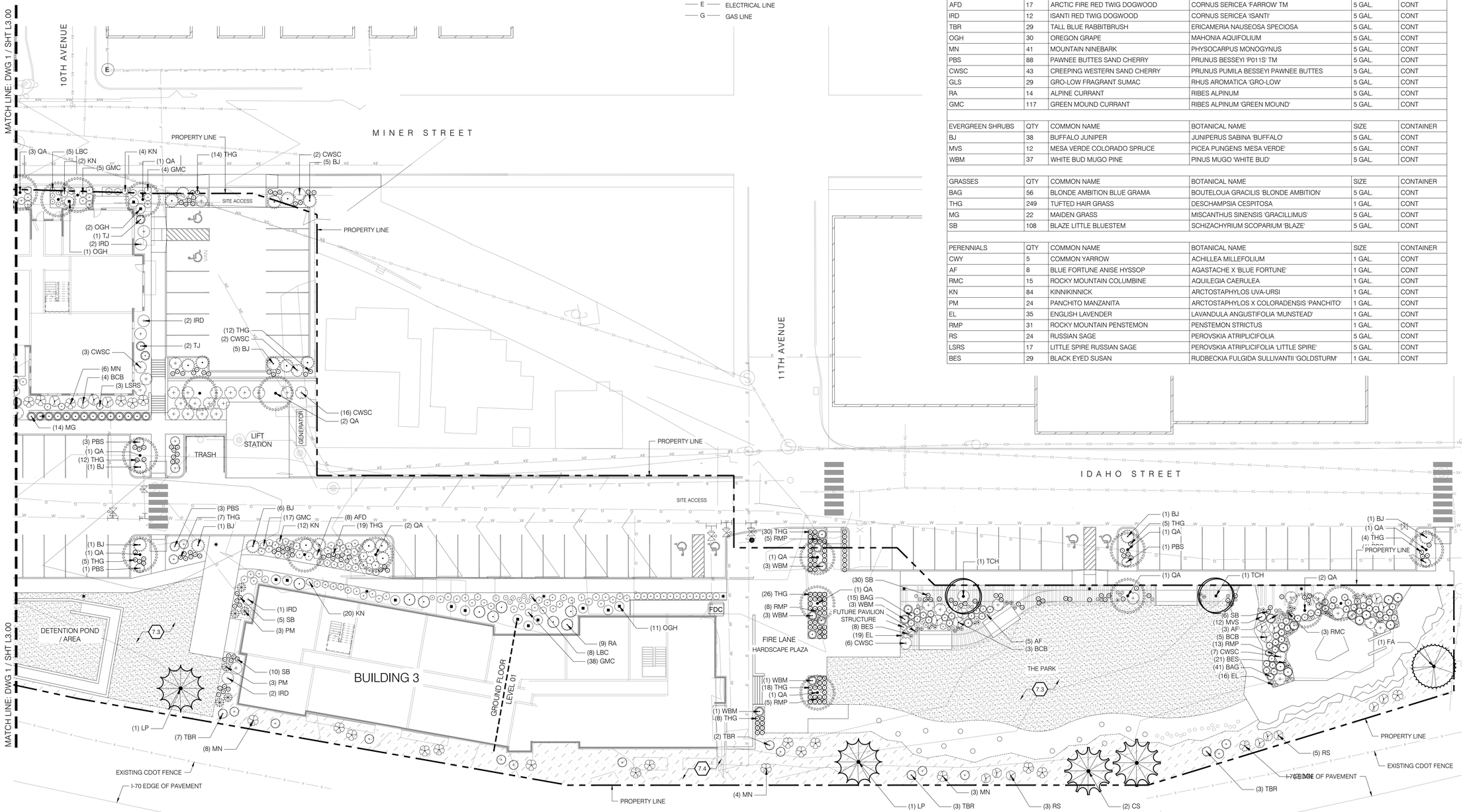

1 PLANTING ENLARGEMENT PLAN

SCALE: 1" = 20'-0"

PRELIMINARY
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FINAL DEVELOPMENT PLAN SUBMITTAL

BLOCK 57 / FORMER GOLDDIGGER FIELD & MAINTENANCE FACILITY

8TH-12TH AVE. & MINER STREET
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LANDSCAPE PLANTING ENLARGEMENT PLAN (EAST)

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date 02.28.2022

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checked by WB

L4.01

Schedule											
Symbol	Label	Quantity	Manufacturer	Catalog Number	Description	Filename	Number Lamps	Lumens Per Lamp	Light Loss Factor	Total Lamp Lumens	Wattage	Plot
	C	13	Lumca	LIO 36LED05 60W-120V L3FL-30K	LIO	LIO 36LED05 60W L3FL 30K 120m.ies	1	5838	1	5838	60.24	Max: 4138cd
	D	4	Lumca	LIO 36LED05 60W-120V L3FL-HSS-30K	LIO	LIO 36LED05 60W L3FL-HSS 30K 120m.ies	1	3735	1	3735	60.2	Max: 3559cd
	P1	7	Lithonia Lighting	RSX1 LED P1 30K R4	RSX Area Fixture Size 1 P1 Lumen Package 3000K CCT Type R4 Distribution	RSX1_LED_P1_30K_R4.ies	1	6543	1	6543	51.34	Max: 3859cd
	P2	6	Lithonia Lighting	WPX1 LED P1 30K MVolt	WPX1 LED wallpack 1500lm 3000K color temperature 120-277 Volts	WPX1_LED_P1_30K_MVolt.ies	1	1537	1	1537	11.49	Max: 687cd
	SC1	4	WAC Lighting	WS-W36614-BZ	WALL SCONCE	WS-W36614-BZ.ies	2	570	1	1139	20.731	Max: 249cd
	SC2	0	Modern Forms	WS-41912	Two if by sea	IES_WS-41912-113018.IES	1	919	1	919	15.0397	Max: 1059cd
	D1	2	Lithonia Lighting	LDN6 30/10 L06AR LD	6IN LDN, 3000K, 1000LM, CLEAR, MATTE DIFFUSE REFLECTOR, CRI90	LDN6_30_10_L06AR_LD.ies	1	839	1	839	10.44	Max: 871cd
	WS1	22	WAC Lighting	WL-LED100-C-BK	LED Step light	WL-LED100-C-BK.IES	1	31	1	31	4	Max: 43cd

Note

1.file=visual-files-feb2022-idahosprings-buildingandOfcotline.vsl

Note

Lighting calculation software is for estimating purposes only, not generating exact values.

These calculations are for the use and adoption by our clients and theirs' solely at their discretion.
This includes evaluation of the calculated lighting levels and model by the Architect, Engineer, Lighting Designer or Owner for adherence to the project's lighting specifications for levels and uniformity.

We make no guarantees of meeting any subjective expectations.
Calculations are based on a model only. Space characteristics and electrical supply to fixtures, along with installation details, may alter fixture output and model performance. Model is based on standard reflectance values unless otherwise noted.

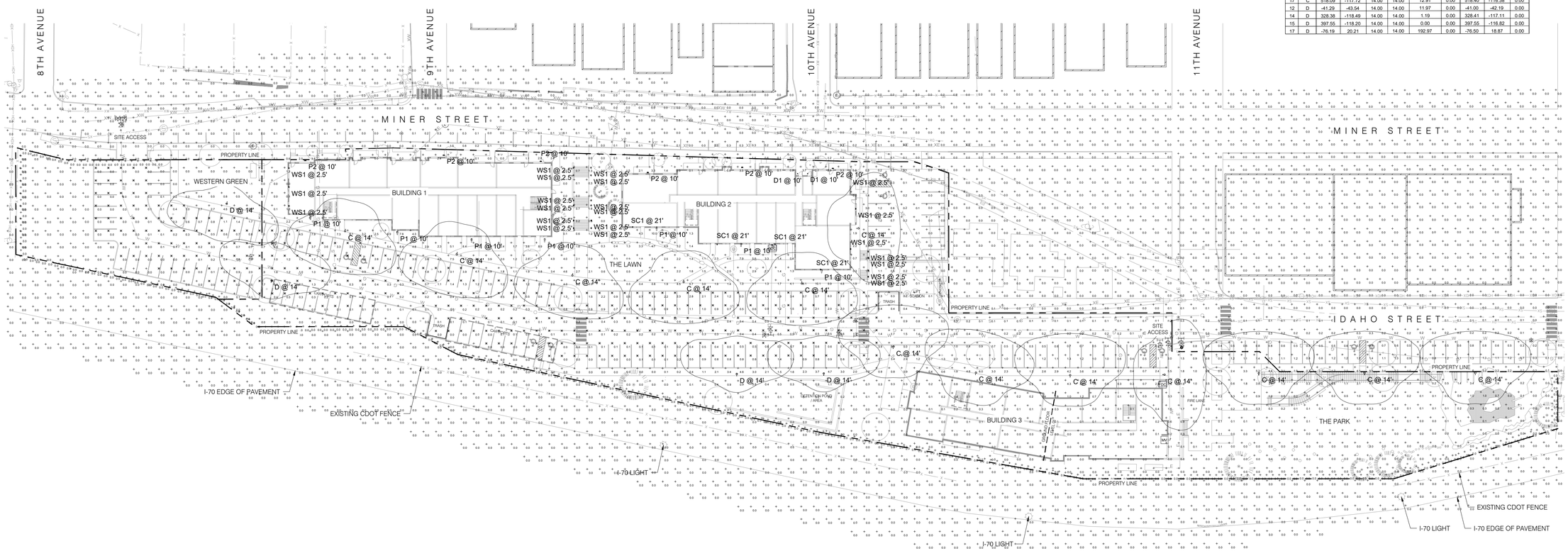
Any variance from reflectance values, obstructions, light loss factors (including both physical and electrical in nature) or dimensional data will affect the actual light levels obtained.

Final construction drawings and calculations are the responsibility of a licensed architect or engineer.

The Lighting Agency provides these calculations as a courtesy for evaluation only.

Luminaire Locations

		Location						Aim		
No.	Label	X	Y	Z	MH	Orientation	Tilt	X	Y	Z
1	D1	377.00	42.00	10.00	10.00	0.00	0.00	377.00	42.00	0.00
2	D1	385.00	42.00	10.00	10.00	0.00	0.00	385.00	42.00	0.00
1	P1	396.00	-35.00	10.00	10.00	180.00	0.00	396.00	-35.00	0.00
2	P1	332.00	-14.00	10.00	10.00	180.00	0.00	332.00	-14.00	0.00
3	P1	265.00	-1.00	10.00	10.00	180.00	0.00	265.00	-1.00	0.00
4	P1	176.00	-10.00	10.00	10.00	180.00	0.00	176.00	-10.00	0.00
5	P1	59.00	-4.00	10.00	10.00	180.00	0.00	59.00	-4.00	0.00
6	P1	-10.00	8.00	10.00	10.00	180.00	0.00	-10.00	8.00	0.00
7	P1	118.00	-10.00	10.00	10.00	180.00	0.00	118.00	-10.00	0.00
1	P2	405.00	46.00	10.00	10.00	0.00	0.00	405.00	46.00	0.00
2	P2	333.00	47.00	10.00	10.00	0.00	0.00	333.00	47.00	0.00
3	P2	258.00	43.00	10.00	10.00	0.00	0.00	258.00	43.00	0.00
4	P2	173.00	52.00	10.00	10.00	0.00	0.00	173.00	52.00	0.00
5	P2	-14.00	53.00	10.00	10.00	0.00	0.00	-14.00	53.00	0.00
6	P2	96.00	57.00	10.00	10.00	0.00	0.00	96.00	57.00	0.00
1	SC1	359.00	-14.00	21.00	21.00	180.00	0.00	359.00	-14.00	0.00
2	SC1	313.00	-14.00	21.00	21.00	180.00	0.00	313.00	-14.00	0.00
3	SC1	395.00	-34.00	21.00	21.00	180.00	0.00	395.00	-34.00	0.00
4	SC1	246.00	0.00	21.00	21.00	180.00	0.00	246.00	0.00	0.00
1	WS1	199.00	-1.00	2.50	2.50	90.00	0.00	199.00	-1.00	0.00
2	WS1	199.00	5.00	2.50	2.50	90.00	0.00	199.00	5.00	0.00
3	WS1	199.00	17.00	2.50	2.50	90.00	0.00	199.00	17.00	0.00
4	WS1	199.00	21.00	2.50	2.50	90.00	0.00	199.00	21.00	0.00
5	WS1	199.00	41.00	2.50	2.50	90.00	0.00	199.00	41.00	0.00
6	WS1	199.00	47.00	2.50	2.50	90.00	0.00	199.00	47.00	0.00
7	WS1	213.00	-1.00	2.50	2.50	270.00	0.00	213.00	-1.00	0.00
8	WS1	213.00	5.00	2.50	2.50	270.00	0.00	213.00	5.00	0.00
9	WS1	213.00	17.00	2.50	2.50	270.00	0.00	213.00	17.00	0.00
10	WS1	213.00	21.00	2.50	2.50	270.00	0.00	213.00	21.00	0.00
11	WS1	213.00	41.00	2.50	2.50	270.00	0.00	213.00	41.00	0.00
12	WS1	213.00	47.00	2.50	2.50	270.00	0.00	213.00	47.00	0.00
13	WS1	433.00	-20.00	2.50	2.50	270.00	0.00	433.00	-20.00	0.00
14	WS1	433.00	-25.00	2.50	2.50	270.00	0.00	433.00	-25.00	0.00
15	WS1	433.00	-35.00	2.50	2.50	270.00	0.00	433.00	-35.00	0.00
16	WS1	433.00	-40.00	2.50	2.50	270.00	0.00	433.00	-40.00	0.00
17	WS1	419.00	40.00	2.50	2.50	90.00	0.00	419.00	40.00	0.00
18	WS1	423.00	14.00	2.50	2.50	90.00	0.00	423.00	14.00	0.00
19	WS1	419.00	-18.00	2.50	2.50	90.00	0.00	419.00	-18.00	0.00
20	WS1	-27.00	17.00	2.50	2.50	270.00	0.00	-27.00	17.00	0.00
21	WS1	-27.00	32.00	2.50	2.50	270.00	0.00	-27.00	32.00	0.00
22	WS1	-27.00	47.00	2.50	2.50	270.00	0.00	-27.00	47.00	0.00
4	C	17.77	-1.73	14.00	14.00	192.97	0.00	17.46	-3.07	0.00
5	C	106.48	-20.28	14.00	14.00	192.97	0.00	106.17	-21.62	0.00
6	C	198.29	-37.20	14.00	14.00	192.97	0.00	197.98	-38.54	0.00
7	C	286.37	-42.60	14.00	14.00	179.24	0.00	286.39	-43.98	0.00
8	C	380.23	-43.95	14.00	14.00	179.24	0.00	380.25	-45.33	0.00
10	C	424.02	-1.60	14.00	14.00	88.55	0.00	425.39	-1.56	0.00
11	C	593.27	-119.90	14.00	14.00	0.00	0.00	593.27	-118.53	0.00
12	C	666.86	-118.24	14.00	14.00	90.00	0.00	668.24	-118.24	0.00
13	C	452.68	-97.04	14.00	14.00	0.00	0.00	452.68	-95.67	0.00
14	C	743.14	-118.58	14.00	14.00	0.00	0.00	743.14	-117.21	0.00
15	C	827.14	-118.58	14.00	14.00	0.00	0.00	827.14	-117.21	0.00
16	C	915.14	-118.58	14.00	14.00	0.00	0.00	915.14	-117.21	0.00
17	C	518.09	-117.72	14.00	14.00	12.91	0.00	518.40	-116.38	0.00
12	D	-41.29	-43.54	14.00	14.00	11.97	0.00	-41.00	-42.19	0.00
14	D	328.38	-118.49	14.00	14.00	1.19	0.00	328.41	-117.11	0.00
15	D	397.55	-118.20	14.00	14.00	0.00	0.00	397.55	-116.82	0.00
17	D	-76.19	20.21	14.00	14.00	192.97	0.00	-76.50	18.87	0.00



1 **PHOTOMETRICS PLAN**

SCALE: 1" = 40'-0"

N 0' 20' 40' 80'

PRELIMINARY
NOT FOR CONSTRUCTION

FINAL DEVELOPMENT PLAN SUBMITTAL

BLOCK 57 / FORMER GOLDDIGGER FIELD & MAINTENANCE FACILITY

8TH-12TH AVE. & MINER STREET
IDAHO SPRINGS, CO 80452

[SPACE INC]
Architecture. Interiors. & Master Planning

Four Points Funding

Elevated Civil

Back 40 Landscape Architecture

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SITE LIGHTING & PHOTOMETRICS PLAN

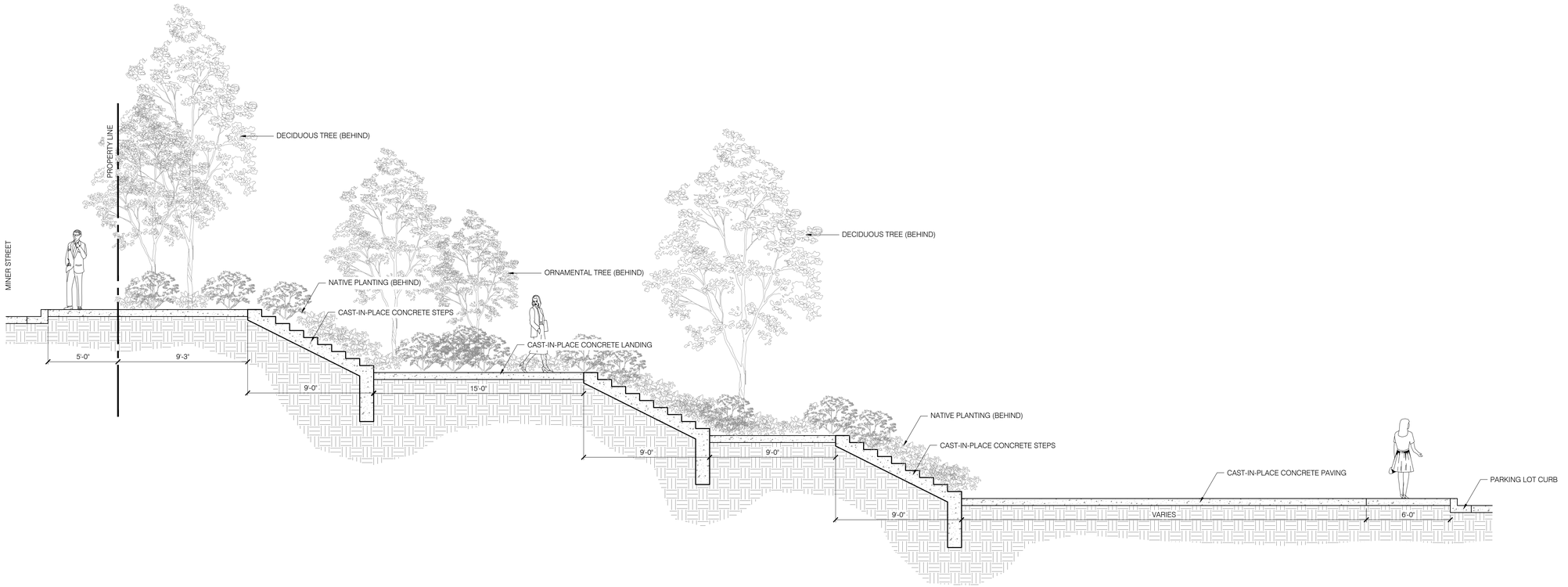
revision

date 02.28.2022

project # 21-037

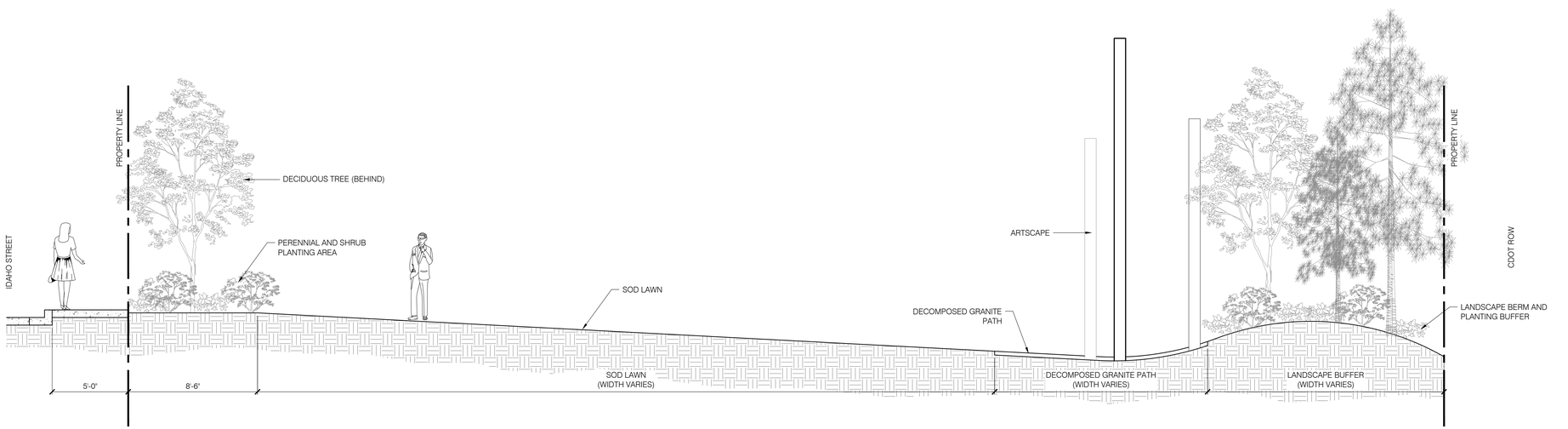
drawn by NK
checked by WB

L5.00



1 STAIR SECTION

SCALE: 1/4" = 1'-0



2 PARK SECTION

SCALE: 1/4" = 1'-0

PRELIMINARY
NOT FOR CONSTRUCTION

FINAL DEVELOPMENT PLAN SUBMITTAL

BLOCK 57 / FORMER GOLDDIGGER FIELD & MAINTENANCE FACILITY

8TH-12TH AVE. &
MINER STREET
IDAHO SPRINGS, CO
80452

[SPACE INC]
Architecture. Interiors.
& Master Planning

Four Points Funding

Elevated
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Landscape Architecture

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LANDSCAPE SECTIONS

revision

date 02.28.2022

project # 21-037

drawn by NK
checked by WB

L6.00

TRAFFIC IMPACT STUDY

Proposed Block 57 Development

Idaho Springs, Colorado

August 19, 2021
Updated: February 28, 2022

20210011

Prepared by:

CivTrans ENGINEERING INC.
Arvada, CO 80003
(303) 653-9200

This report has been prepared by the staff of CivTrans Engineering Inc. on behalf of Space Inc. under the direction of the undersigned professional engineer whose seal and signature appears hereon.

Craig A. MacPhee, PE, PTOE

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TABLE OF CONTENTS

EXECUTIVE SUMMARY 1

INTRODUCTION 5
- *Project Overview* 5
- *Purpose of the Report* 5
- *Resources* 6

ANALYSIS METHODOLOGY 10
- *Capacity Analysis* 10
- *Queuing Analysis* 11
- *Sight Distance Analysis* 11
- *Analysis Horizons* 12

EXISTING CONDITIONS 13
- *Land Use* 13
- *Existing Roadways* 13
  - *Miner Street* 13
  - *Colorado Boulevard* 13
  - *13th Avenue* 13
  - *9th Avenue* 14
  - *Idaho Street* 14
- *Study Area Intersections* 14
- *Traffic Control and Descriptions* 14
- *Traffic Volumes and Peak Hours of Operation* 15
- *Pandemic Traffic Adjustment* 15
- *Background Projects* 15
- *Ambient Traffic Growth* 15
- *Planned Transportation Improvements* 16

EXISTING LEVEL OF SERVICE AND TRAFFIC ANALYSIS 19

TRIP GENERATION AND DISTRIBUTION 23
- *Trip Generation* 23
- *Trip Types* 23
- *Trip Distribution* 25

FUTURE YEAR TRAFFIC IMPACT ANALYSIS 29
- *Short-Term Conditions (Year 2025) without Project* 30
- *Short-Term Conditions (Year 2025) with Project* 33
- *Long-range Conditions (Year 2041) without the Project* 37
- *Long-range Conditions (Year 2041) with the Project* 40

CONCLUSIONS & RECOMMENDATIONS 43

LIST OF EXHIBITS

Exhibit 1 – Vicinity Map 7
Exhibit 2 – Current Site Plan 8
Exhibit 3 – Existing Aerial 9
Exhibit 4 – Existing Lane Geometry 17
Exhibit 5 – Intersection Traffic Counts 18
Exhibit 6 – Existing Conditions (2021) Traffic Volumes 22
Exhibit 7 – Project Trip Distribution 27
Exhibit 8 – Site-Generated Vehicle Trips 28
Exhibit 9 – Short-term (2025) No Project Traffic Volumes 32
Exhibit 10 – Short-term (2025) Build Traffic Volumes 36
Exhibit 11 – Long-range (2041) No Project Traffic Volumes 39
Exhibit 12 – Long-range (2041) Build Traffic Volumes 42

LIST OF TABLES

Table 1 – Intersection Analysis Criteria 11
Table 2 – 2021 Existing Intersections Levels of Service 19
Table 3 – Existing Intersections 95th Percentile Queues (in feet) 21
Table 4 – Project Trip Generation (TGM calculated, unadjusted) 23
Table 5 – Project Trip Generation: Breakdown of Trip Type (adjusted) 25
Table 6 – Year 2025 Levels of Service without Project 30
Table 7 – Year 2025 95th Percentile Queues (in feet) without Project 31
Table 8 – Year 2025 Levels of Service with Project 33
Table 9 – Year 2025 95th Percentile Queues (in feet) with Project 34
Table 10 – Year 2041 Levels of Service without the Project 37
Table 11 – Year 2041 95th Percentile Queues (in feet) without Project 38
Table 12 – Year 2041 Levels of Service with the Project 40
Table 13 – Year 2041 95th Percentile Queues (in feet) with Project 31

TECHNICAL APPENDIX

Raw Traffic Counts; Trip Generation Calculations; Pandemic Data Calculation
Level of Service Calculations
Existing; Short-Term without Project; Short-Term with Project; Long-range without Project; Long-range with Project

EXECUTIVE SUMMARY

This Traffic Impact Study (TIS) document has been prepared to assess and identify the traffic impacts related to a proposed residential development within the Idaho Springs, Colorado. The following is a summary of the traffic information and findings included in this report.

1. The proposed Block 57 (former Golddigger Field) development is located along the south side of Miner Street and Idaho Street west of 12th Avenue, north of Interstate 70. The site has historically been used by Clear Creek School District for a football field and bus barn. A vicinity map is included as **Exhibit 1**.

2. The proposed development will include up to 120 residential dwelling units and 12,000 square feet of retail space. *The current site plan shows 118 dwelling units and 3,000 square feet of retail space, but this study was completed for the site plan presented in the rezone application. The current site plan shows less development. Therefore, the findings and recommendations still apply.* The site will provide four accesses to the adjacent roadways, one to Miner Street west of 9th Avenue, one to Miner Street east of 10th Avenue, and two at the intersection of 11th Avenue & Idaho Street that will form the south and west legs of the intersection. Off-street parking will be provided within the development and additional on-street parking will be added along Miner Street and Idaho Street as part of frontage improvements. The project is anticipated to begin construction in 2022 and be complete by 2024. A conceptual site plan for the development is included as **Exhibit 2** and an aerial of the study area is included as **Exhibit 3**.

3. The site is anticipated to generate 1,096 trips on a weekday and 1,144 trips on a Saturday. Of these trips, approximately 54 will occur on a weekday during the AM peak hour, 99 on a weekday during the PM peak hour and 107 during the Saturday midday peak hour. The trips will be made up of vehicular, pedestrian, bicycle and transit trips to access the site. It is estimated that approximately 15% of the overall trips will be pedestrian, bicycle or transit oriented. The remaining 85% are estimated to be vehicular, which corresponds to 46 AM peak, 84 PM peak, 91 Saturday peak, 940 weekday average daily trips (ADT) and 972 Saturday trips.

4. The study area was identified to include the followings intersections.

    - 9th Avenue & Colorado Boulevard
    - 13th Avenue & Miner Street
    - 13th Avenue & Idaho Street

    These intersections were analyzed for the weekday AM and PM peak hours and Saturday midday peak hour.

5. The analysis horizons considered and evaluated in this report include:

    - Existing Conditions (Year 2021)
    - Short-Term without Project Conditions (Year 2025)

- Short-Term with Project Conditions (Year 2025)
- Long-range without Project Conditions (Year 2041)
- Long-range with Project Conditions (Year 2041)

Each of these analysis horizons included intersection capacity and queuing analysis. Sight distance evaluation is included for the future "with project" analysis scenario.

6. The traffic counts for the study area intersections were collected on Saturday, July 17, 2021 and Wednesday, July 21, 2021. The counts were collected during a global pandemic that has seen a reduction in traffic volumes during weekday commuting times (AM and PM peak hours). Therefore, adjustment factors were applied to these counts to account for the pandemic impacts.

   While there is potential for a continued reduction in traffic due to the "pandemic effect" to persist as more people trend towards telecommuting (working from home), to be conservative this study assumes traffic volumes will return to pre-pandemic levels when the pandemic is over.

7. There are no known transportation improvements planned in the study area. However, Miner Street east of 14th Avenue is currently closed to vehicles to provide outdoor space for businesses to deal with restrictions associated with the pandemic. It is unclear if this will become a permanent closure moving forward. It should be noted that traffic counts were collected during this configuration, which likely impacts traffic volumes along Miner Street and Idaho Street at the study area intersections.

8. The City of Idaho Springs has established level of service (LOS) D as the minimum acceptable operating conditions within their jurisdiction. Most of the study area intersections are currently operating at LOS B or better, which is an acceptable level. The westbound approach at 13th Avenue & Idaho Street is currently operating at LOS E during the Saturday peak hour. This deficient level of service could be due to the closure of Miner Street east of 14th Avenue. If the closure of Miner Street becomes a permanent configuration, improvements will be required at the intersection of 13th Avenue & Idaho Street regardless of whether the Block 57 project moves forward or not.

9. The City of Idaho Springs or CDOT (if applicable) should consider modifying the 13th Avenue & Idaho Street intersection to restrict left turns from the westbound approach. This can be accomplished by installing a median to restrict left turns entirely (right-in/right-out) or restrict left turns and crossing maneuvers from Idaho Street (¾ movement). Converting Idaho Street to one-way (eastbound) would also accomplish this. ~~Installing a median is the preferred alternative as it also can function as a safety improvement for the pedestrian crossings at this intersection. These crossings are frequently used by visitors traveling between the public parking lot at the southwest corner of the intersection and downtown.~~ *Four improvement concept options were presented and reviewed by the City of Idaho Springs. The City's preferred improvement options is to convert Idaho Street to*

one-way (eastbound) between 13th Avenue and 14th Avenue and install a "pork chop" right turn channelization island on the west leg to restrict left turns and crossing maneuvers from the eastbound approach.

10. In addition to the capacity analysis, the queue results were reviewed to determine if the vehicle stacking along the approaches to the study area intersections are currently extending back to adjacent intersections. The 95th percentile queue for each movement is reported within the Highway Capacity Manual report as number of vehicles. An average vehicle length of 25' was used to convert number of vehicles to length. The existing calculated 95th percentile queues for the study area intersections are well within available vehicle lane storage.

11. An ambient traffic growth rate of 1.5% was used for estimating future traffic at the study area intersections. This rate is based on CDOT projected values along Colorado Boulevard and input from the City of Idaho Springs staff.

12. Background projects are development projects that are planned, but not yet built. Therefore, their traffic is not yet on the roadways and was not captured in the traffic counts. No background projects were identified for this study.

13. With the anticipated increase in traffic (1.5% annual ambient growth) over the next four years, all of the intersections within the study area are anticipated to continue to operate within acceptable levels except 13th Avenue & Idaho Street, which is anticipated to fall to LOS F on the westbound approach. The added traffic from the proposed expansion project is not anticipated to significantly impact the capacity of the study area intersections.

14. Per Figure 8 of the City of Idaho Springs Standards and Specification for Design and Construction, the required sight triangles for the proposed site driveways were determined. Miner Street, Idaho Street and 11th Avenue are classified as low volume roadways. Therefore, per Figure 8 of the City's standards, L1 = 30' and L2'=10'.

    Per 3.7.6 of the Standards, "any object within the sight triangle that is greater than 12" in diameter between three feet (3') and eight feet (8') above the roadway elevation of the adjacent street shall constitute a sight obstruction, and shall be removed. Such objects include: snow, buildings, cut slopes, hedges, trees, bushes, utility cabinets or tall crops."

    Driveways should also meet the American Association of State Highway and Transportation Officials (AASHTO) sight distance criteria as outlined in their reference, A Policy on Geometric Design of Highways and Streets. Miner Street is posted at 15 mph with a design speed of 20 mph, which means Block 57 access to Miner Street will require 225' of intersection sight distance for vehicles turning left (looking right) and 195' for vehicles turning right (looking left). These sight triangles should be shown on the civil and landscape plans to ensure that no obstructions are placed within the triangle.

15. Long-range conditions with and without the project are anticipated to operate at acceptable levels assuming the 13th Avenue & Idaho Street improvements are completed.

Based upon the analysis, field observations, assumptions, methodologies and results, which are provided in the body of this document, **this project is <u>not</u> anticipated to have significant impacts on the study area that warrant mitigation**.

It should be noted; this traffic study was completed in accordance with the City of Idaho Springs standards as well as standard traffic engineering practices. Results are quantitative and based on Highway Capacity Manual methodologies and City criteria for capacity of intersections and roadways. It does not, nor could it, address subjective measurements such as quality of life.

INTRODUCTION

Project Overview

A residential development is proposed for a site within the City of Idaho Springs that has historically been used by the Clear Creek School District for a sports (football) field and vehicle storage and maintenance (bus barn). The development proposes up to 120 residential dwelling units and 12,000 square feet of retail. It is located along the south side of Miner Street and Idaho Street west of 12th Avenue, north of Interstate 70. The site will provide four accesses to the adjacent roadways, one to Miner Street west of 9th Avenue, one to Miner Street east of 10th Avenue, and two at the intersection of 11th Avenue & Idaho Street that will form the south and west legs of the intersection. Off-street parking will be provided within the development and additional on-street parking will be added along Miner Street and Idaho Street as part of frontage improvements. Proposed parking will meet City of Idaho Springs requirements minus a reduction that is allowed for mixed-use developments. The project is anticipated to begin construction in 2022 and be completed by 2024.

The site is an irregular shape that is bound to the north by Miner Street, several existing residential parcels and Idaho Street. To the south, the site is bound by Interstate 70. To the east is City of Idaho Springs property used for public parking and to the west are existing mobile homes. Areas to the north and west are predominantly residential. The Clear Creek Metropolitan Recreation Center is at the northeast corner of 11th Avenue & Idaho Street. Three gasoline stations are located at three of the four corners for the intersection of 13th Avenue & Miner Street and the fourth corner is occupied by Carlson Elementary School. City of Idaho Springs downtown is east of the site along Miner Street east of 14th Avenue.

Local access to the site is accommodated by Miner Street, Idaho Street and 11th Avenue. These roadways connect to 13th Avenue and Colorado Boulevard, which provide access to Interstate 70 for regional access. Colorado Boulevard serves as an east-west major collector and 13th Avenue serves as a north-south collector.

Purpose of Report

The purpose of this study is to review, assess and identify potential traffic related impacts that the proposed project may have on the transportation network and recommend mitigation to minimize these impacts where necessary and possible. **Exhibit 1** shows the general vicinity of the project. The current project site plan is included as **Exhibit 2**, which shows the general layout of the proposed site in relation to existing features. **Exhibit 3** shows an aerial view of the study area.

The assumptions utilized in conducting the traffic analysis are based on coordination with the City of Idaho Springs planning staff and the City's traffic engineering consultant, JVA, Inc. The traffic impact study (TIS) was completed in accordance with the current traffic guidelines for the City of Idaho Springs as established in the *City of Idaho Springs*

Standards and Specifications for Design and Construction (November 2018) and standard traffic engineering practices.

This report includes an evaluation and assessment of the study area for the existing conditions, short-term conditions and the long-range conditions. The short-term condition considers the transportation network shortly after the completion and opening of the project. The long-range conditions considered the potential growth in traffic within the study area and how the existing transportation system will handle those volumes with and without the proposed build-out of the project approximately 20 years into the future (Year 2041). The weekday AM and PM and Saturday midday peak hours of traffic operations were used as the basis of this study.

Resources

The key resources referenced in this TIS included the following:

1. *A Policy on Geometric Design of Highways and Streets* (2018) published by AASHTO. This provides intersection sight distance criteria.
2. The City of Idaho Springs' *Standards and Specifications for Design and Construction (2018)*, which provides traffic impact study and sight distance criteria.
3. Colorado Department of Transportation's (CDOT) *Online Transportation Information System (OTIS)*, which provides traffic count data for nearby continuous counting stations. This data was used to determine pandemic adjustment factors.
4. The *Trip Generation Manual, 10th Edition (2017)* published by the Institute of Transportation Engineers. This reference was used to determine the number of trips generated by the proposed land use.
5. *Highway Capacity Manual, 6th Edition* published by the Transportation Research Board provides methodology for determining delay and capacity at intersections.

N

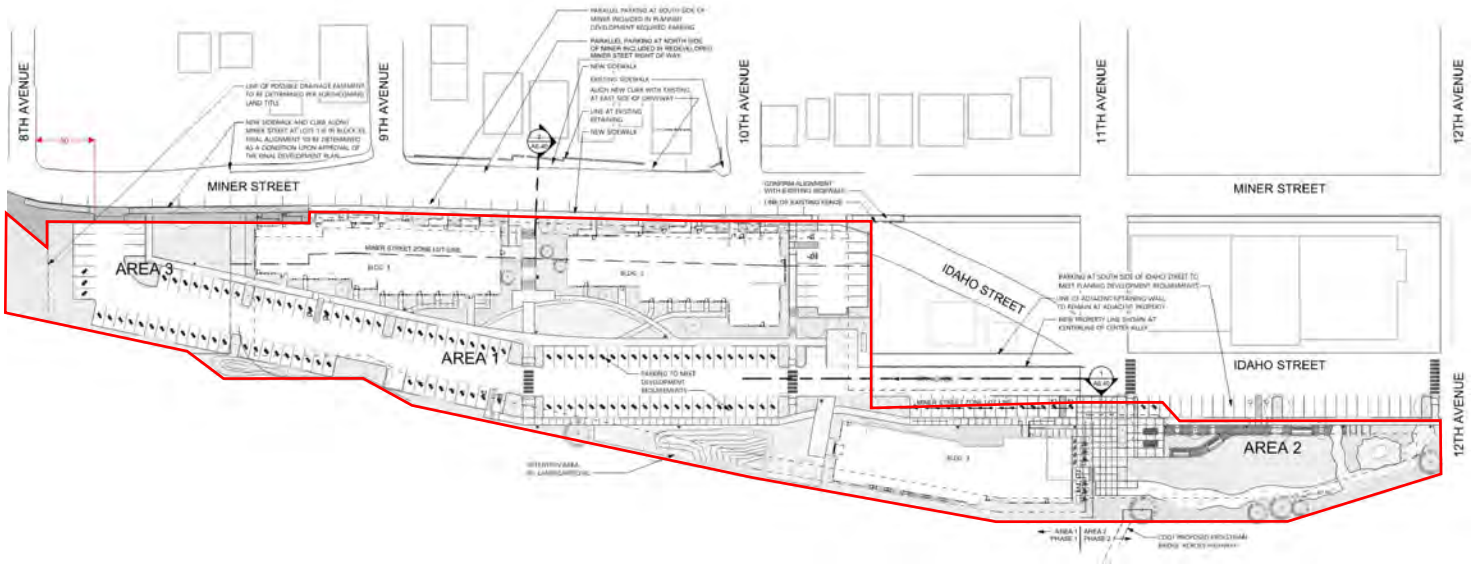
NOT TO SCALE

FEBRUARY 22, 2022

EXHIBIT 1

VICINITY MAP

CivTrans ENGINEERING INC.



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NOT TO SCALE

FEBRUARY 22, 2022

SITE PLAN PROVIDED BY SPACE INC.

EXHIBIT 2

CURRENT SITE PLAN

CivTrans ENGINEERING INC.

Source: Google Maps (2020 Aerial)

N

NOT TO SCALE

FEBRUARY 22, 2022

EXHIBIT 3

EXISTING AERIAL

Civ Trans ENGINEERING INC.

ANALYSIS METHODOLOGY

The various analyses conducted and reported in this document include intersection capacity, queuing and sight distance.

Capacity Analysis

The analyses described in this report were performed in accordance with the procedures in the *Highway Capacity Manual* (HCM) and as described below. The analyses and procedures conducted are based upon the worst-case conditions that occur during a typical weekday. Therefore, most of each weekday and the weekends will experience traffic conditions better than those described within this document, which represent the peak hours of operation only.

Level of Service (LOS) is an empirical premise developed by the transportation profession to quantify driver perception for such elements as travel time, number of stops, total amount of stopped delay, and impediments caused by other vehicles afforded to drivers who utilize the transportation network. LOS has been defined by the Transportation Research Board in the *6th Edition Highway Capacity Manual*. This document has quantified level of service into a range from "A" which indicates little, if any, vehicle delay, to "F" which indicates significant vehicle delay and traffic congestion that may lead to system breakdown due to volumes that may far exceed capacity.

The *Highway Capacity Manual* defines the level of service for a signalized intersection as the average delay per vehicle (amount of time a vehicle must spend at the intersection) for the overall intersection. For unsignalized intersections that include both stop-controlled and uncontrolled approaches (known as through/stop controlled), the *Highway Capacity Manual* defines the level of service as the average delay per vehicle for the worst approach, not the overall intersection.

The level of service letter grades as defined by the Transportation Research Board and the associated amount of delay in seconds per vehicle, as well as a brief description of the operating condition, for both signalized and unsignalized intersections are included for reference in **Table 1** on the next page.

The City of Idaho Springs has established level of service D as the minimum acceptable intersection operating condition. Analysis results indicating operations worse than the minimum acceptable level were considered for mitigation measures. In the cases where existing conditions currently operate at or future background conditions are projected to operate at states poorer than the minimum acceptable level, the future with project conditions will be evaluated to maintain the current or projected operating conditions.

Table 1 – Intersection Analysis Criteria

Signalized Intersection Level of Service Criteria

Level of Service	Delay Range (seconds/vehicle)	Expected Delay at Intersection
A	≤ 10	Very low delay. Most vehicles do not stop.
B	> 10 and ≤ 20	Generally good progression of vehicles. Slight delays.
C	> 20 and ≤ 35	Fair progression. Increased number of stopped vehicles.
D	> 35 and ≤ 55	Noticeable congestion. Large portion of vehicles stopped.
E	> 55 and ≤ 80	Poor progression. High delays and frequent cycle failure.
F	> 80	Oversaturation. Forced flow. Extensive queuing.

Unsignalized Intersection Level of Service Criteria

Level of Service	Delay Range (seconds/vehicle)	Expected Delay to Minor Street Traffic
A	≤ 10	Little or no conflicting traffic for minor street approach.
B	> 10 and ≤ 15	Minor street approach begins to notice absence of available gaps.
C	> 15 and ≤ 25	Minor street approach begins experiencing delays for available gaps.
D	> 25 and ≤ 35	Minor street approach experiences queuing due to a reduction in available gaps.
E	> 35 and ≤ 50	Extensive minor street queuing due to insufficient gaps.
F	> 50	Insufficient gaps of suitable size to allow minor street traffic demand to cross safely through a major traffic stream.

Source: Highway Capacity Manual (Transportation Research Board, 2000).

Queuing Analysis

The study area intersections were evaluated for vehicle queuing. For unsignalized, stop-controlled intersections, the 95th percentile queues are reported within the Highway Capacity Manual report generated by Synchro traffic software. Queues are reported in number of vehicles. In order to compare the calculated queues to available storage, the number of vehicles was multiplied by 25 feet per vehicle.

Sight Distance Analysis

Intersection and driveway sight distance criteria are outlined within section 3.7 of the City of Idaho Springs *Standards and Specifications for Design and Construction.* Figure 8 within these standards provides corner sight triangle length requirements based on roadway classification of the two intersecting roadways.

Per 3.7.6 of the Standards, “any object within the sight triangle that is greater than 12” in diameter between three feet (3’) and eight feet (8’) above the roadway elevation of the adjacent street shall constitute a sight obstruction, and shall be removed. Such objects include: snow, buildings, cut slopes, hedges, trees, bushes, utility cabinets or tall crops.”

Analysis Horizons

The following scenarios were analyzed as part of this study during both the weekday AM and PM peak hours and Saturday midday peak hour, with the corresponding volume and network configurations as indicated:

1. Existing Conditions

   Analysis of the existing conditions at the study area intersections was based on the traffic counts collected in July 2021. A pandemic adjustment factor was applied to account for the ongoing reduction in traffic volumes due to the COVID-19 pandemic. Traffic volumes during weekday AM and PM peak hours continue to experience impact from the pandemic with the AM peak at 20% lower volume than in 2019 and PM peak at 10% lower volume. The existing condition intersection geometry and traffic control were based on field observations.

2. Short-term without Project Conditions

   The short-term future year analysis assumes the study area intersections have the same roadway geometry as the existing conditions. The forecast volumes were calculated by applying an annual growth rate to the existing traffic volumes.

3. Short-term with Project Conditions

   The short-term “build” analysis includes the same roadway geometry as for the short-term no-project conditions. The forecast volumes were calculated by adding the short-term no-project traffic and the trips associated with the proposed project.

4. Long-range without Project Conditions

   The long-range conditions included the best available information for projecting the traffic volumes approximately 20 years into the future for the study area to the Year 2041. A long-range no-project condition analysis, without the proposed project and associated trip additions, was performed as a comparison for the condition with the project (build).

5. Long-range with Project Conditions

   The long-range future year analysis included the same roadway geometry as for the long-range no-project conditions. The forecast volumes were calculated by combining the long-range no-project volumes with the project-generated trips.

EXISTING CONDITIONS

Existing Conditions within the Study Area

The purpose of this section is to document the existing conditions within the study area for the proposed project.

Land Use

The project site has historically been used as a football field and a bus barn for the Clear Creek School District. The bus barn is still in use, but will be demolished as a part of the project. The site lies on the border of residential and commercial uses with the Clear Creek Recreation Center and downtown to the east, residential uses to the north and west and I-70 to the south.

Existing Roadways

As shown on the vicinity map, the site is currently accessed directly from Miner Street, Idaho Street and 11th Avenue. The following is a list of the surrounding streets, their functional classification, and general geometry.

Miner Street is a two-lane, two-way, east-west minor collector roadway extending from 8th Avenue to Colorado Boulevard. It provides access primarily for a mix of residential and commercial uses along its length including the Historic Core (downtown) area from 14th to 17th Avenues. It provides on-street parallel parking along most of its length. Along the site frontage, Miner Street narrows and only allows parking on one side of the street for a portion and no parking for a segment. The roadway is signed at 15 mph within the study area.

Colorado Boulevard is an east-west, two-lane, two-way major collector roadway with an I-70 business loop designation. It begins east of the site at a roundabout interchange access for I-70 and continues westerly through a commercial corridor and the heart of Idaho Springs before terminating west of Stanley Road at an eastbound I-70 on-ramp. Colorado Boulevard has on-street parallel or angled parking along most of its length. The road is posted at 25 mph within the study area and has a 20-mph school zone speed limit between 11th Avenue and 15th Avenue for the Carlson Elementary School.

13th Avenue is a north-south, two-lane, two-way major collector roadway. It begins at Interstate 70 aligning with Highway 103 (Mt Evans Road) and terminates just north of Virginia Street (a little over a block north of Colorado Boulevard). It provides an interchange access with Interstate 70 and access for several businesses along its short length. It is posted at 15 mph south of Colorado Blvd for the southbound travel lane. Northbound, the roadway is not posted with a speed limit except for a 15-mph school zone (when flashing) north of Idaho Street. Highway 103 is posted at 30 mph for the northbound direction about ½ mile south of I-70.

9th Avenue is a north-south, two-way local access roadway. Within the study area it extends three blocks from Miner Street to Virginia Street. It serves residential uses along its length. It has no posted speed limit

Idaho Street is an east-west, two-way local access roadway. Within the study area it extends four blocks from 11th Avenue to 15th Avenue. East of 13th Avenue, it provides access for the downtown businesses. West of 13th Avenue, it provides access for a public parking lot, the recreation center, the bus barn and several other properties. Boulevard to Wall Street. Near Miner Street, it narrows to one lane. It is posted at 15-mph east of 13th Avenue.

Study Area Intersections

The project study area intersections were identified through conversations with the City of Idaho Springs staff. The study area includes the following intersections:

- 9th Avenue & Colorado Boulevard
- 13th Avenue & Miner Street
- 13rd Avenue & Idaho Street

These intersections have been analyzed for level of service (LOS) for the weekday AM and PM peaks and Saturday midday peak hours and form the basis of this document.

Traffic Control and Descriptions

9th Avenue & Colorado Boulevard is an unsignalized, two-way stop-controlled intersection. 9th Avenue forms the northbound and southbound approaches, which are stop-controlled. Colorado Boulevard forms the eastbound and westbound approaches and operates freely. Each approach has one approach lane and one receiving lane. There are no dedicated turn lanes at the intersection.

13th Avenue & Miner Street is an unsignalized, all-way stop-controlled intersection. 13th Avenue forms the northbound and southbound approaches and Miner Street forms the eastbound and westbound approaches. All approaches are stop-controlled. Each approach has one approach lane and one receiving lane except the northbound approach which has a dedicated right turn lane. Pedestrian crosswalks are provided on all four legs of the intersection.

13th Avenue & Idaho Street is an unsignalized, two-way stop-controlled intersection. Idaho Street forms the eastbound and westbound approaches, which are stop-controlled. 13th Avenue forms the northbound and southbound approaches and operates freely. Each approach has one approach lane and one receiving lane. There are no dedicated turn lanes at the intersection. Pedestrian crosswalks are provided on all four legs of the intersection. However, the north-south crosswalk on the west leg connects does not connect to a sidewalk or ramp on either the northwest or southwest corner. Two pedestrian ramps have recently been installed on the southwest and southeast corners of the intersection to connect the east-west crosswalk on the south leg.

The existing geometry at each of the study area intersections is depicted in **Exhibit 4**, which follows.

Traffic Volumes and Peak Hours of Operation

The traffic counts for the study area intersections were collected on Saturday, July 17, 2021 (10:00 AM – 1:00 PM), Wednesday, July 21, 2021 (7:00 AM – 9:00 AM and 4:00 PM – 6:00 PM) by CivTrans Engineering staff. The peak hour turning movements from the traffic counts are shown on **Exhibit 5**. Since the counts were collected during 2021 amidst a global pandemic, an adjustment factor was applied to account for the pandemic impact. The pandemic adjustment factors were calculated using continuous traffic count data at the CDOT station #000120 (I-70 east of Idaho Springs). The representative "existing" peak hour volumes from these counts are shown in **Exhibit 6**. The raw count data including pedestrian volumes are provided in the Technical Appendix.

Pandemic Traffic Adjustment

During the COVID-19 pandemic, traffic volumes have seen a decrease. July 21, 2021 (Wednesday) traffic volumes were approximately 20% lower during the AM peak and 10% lower during the PM peak than what occurred on a Wednesday in mid-July in 2019. This was determined based on traffic volumes at the CDOT counting station #000120. Therefore, a pandemic adjustment of 1.20 and 1.10 was multiplied by the existing weekday AM and PM peak hour traffic counts respectively to account for the pandemic impact. While there is potential for this reduction in traffic to be permanent as more people trend towards telecommuting (working from home), to be conservative this study assumes traffic volumes will return to pre-pandemic levels when the pandemic is over. More detail on the pandemic adjustment factor calculation and supporting data can be found in the technical appendix. Saturday volumes have essentially returned to pre-pandemic levels and no adjustment was applied to the Saturday count volumes.

Background Projects

Background projects are development projects that are planned, but not yet built. Therefore, their traffic is not yet on the roadways and was not captured in the traffic counts. No background projects were identified for this study.

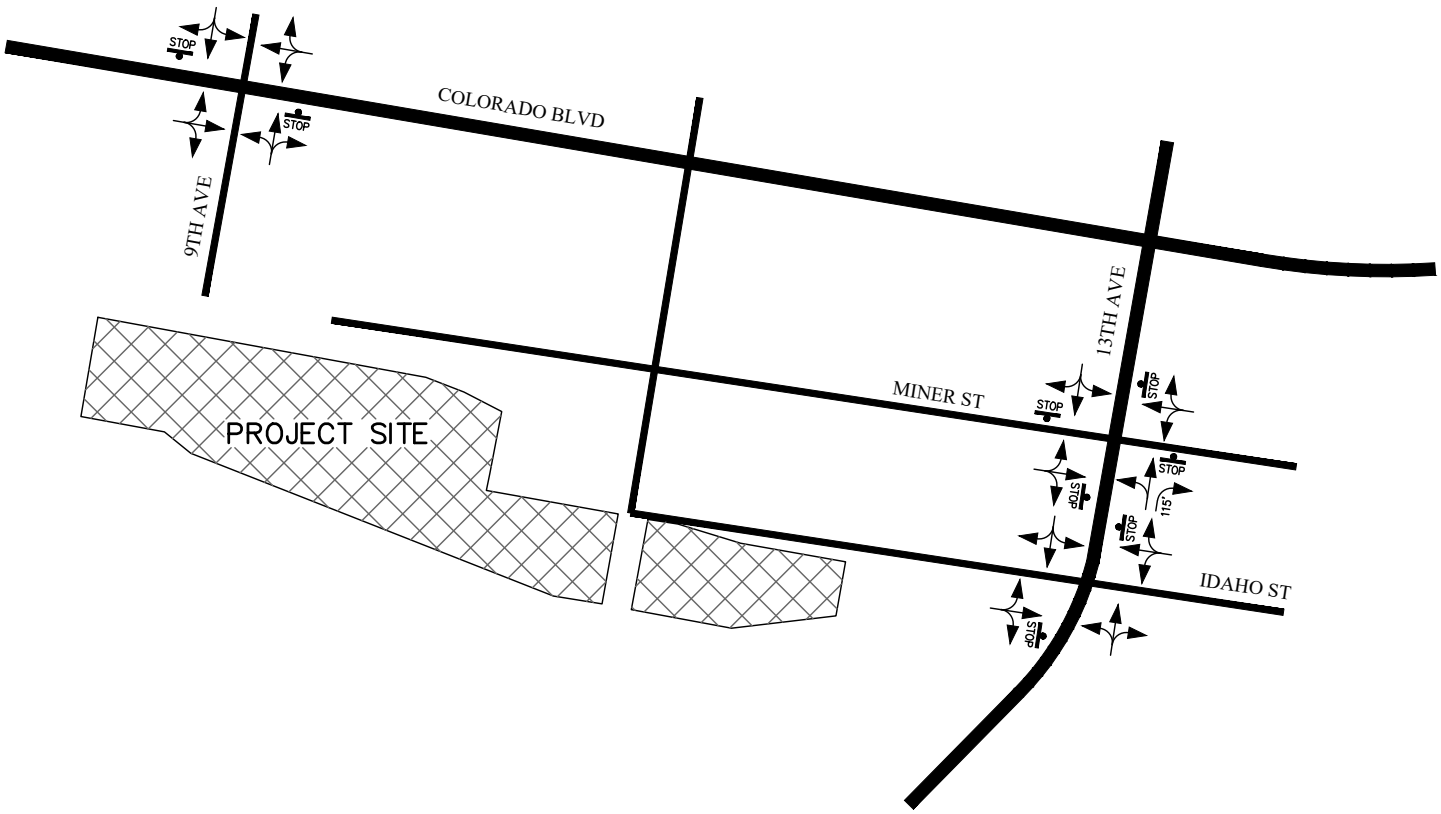
Ambient Traffic Growth

Based on review of CDOT historic counts along Colorado Boulevard (I-70 business loop) and their projected growth over the next twenty years (as defined in their OTIS data program), a growth rate of 1.0% per year is projected along this corridor. Through coordination with the City of Idaho Springs, a higher annual growth rate of 1.5% was used to account for the potential of significant development within the City. There were no historic counts for Miner Street, Idaho Street or 9th Avenue readily available. Therefore, the 1.5% annual growth rate was also applied to Miner Street and Idaho Street. No growth

was applied to 9th Avenue as it has little potential for growth in traffic due to limiting terrain. A 1.5% annual growth rate results in a growth factor of 1.06 for short-term (year 2025) conditions and 1.35 for long-range (year 2041) conditions.

Planned Transportation Improvements

There are no known transportation improvements planned in the study area. However, Miner Street east of 14th Avenue is currently closed to vehicles to increase dining and shopping area through downtown during the pandemic. It is unclear if this will become a permanent closure moving forward. It should be noted that traffic counts were collected during this configuration, which likely impacts traffic volumes along Miner Street and Idaho Street at the study area intersections.



N

NOT TO SCALE

FEBRUARY 22, 2022

– Signalized intersection

STOP – Stop controlled intersection

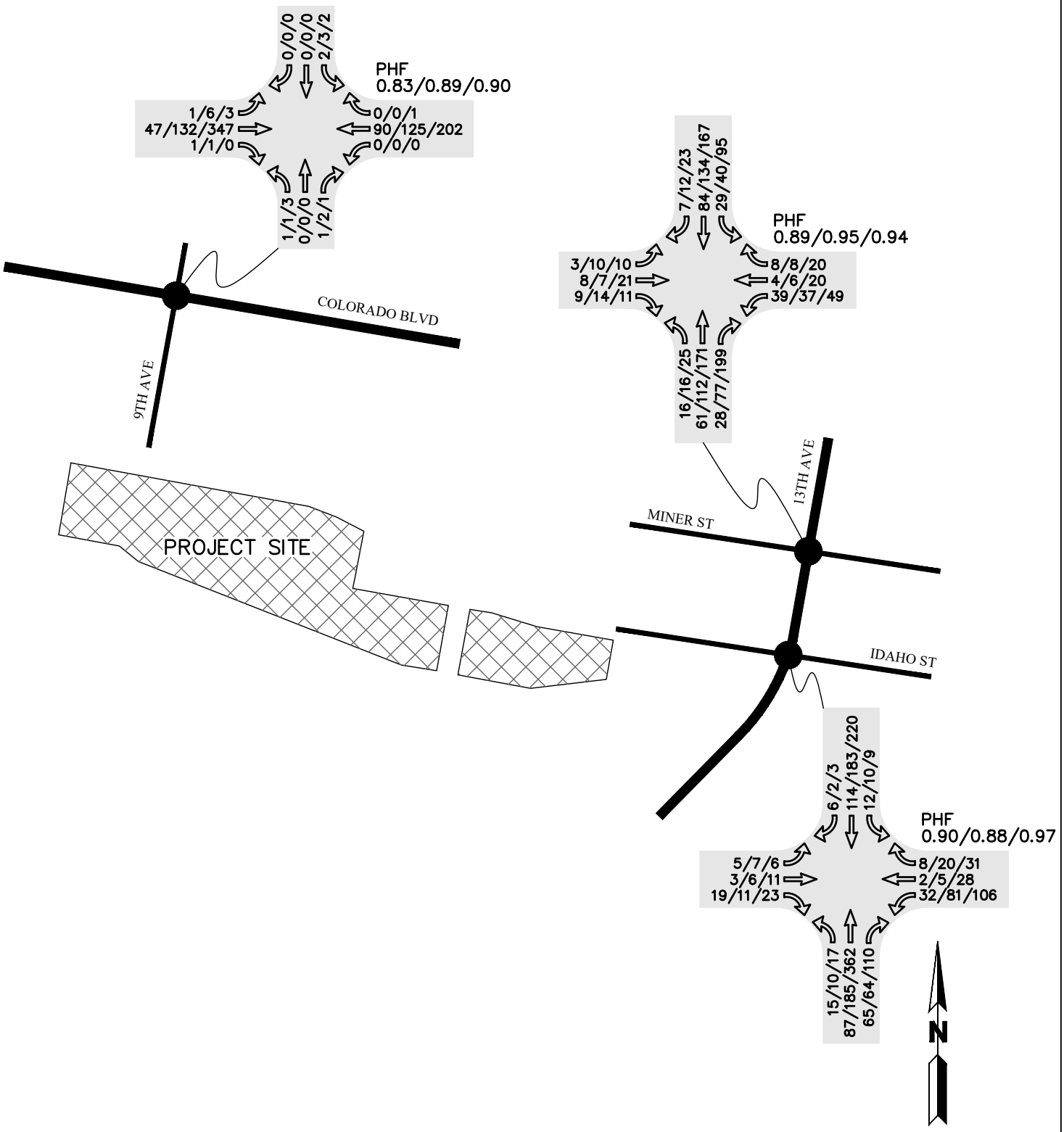
XXX' – Approximate storage length of turn lane without transition taper

AUX – Auxiliary lane where through lane from previous intersection becomes a turn lane

EXHIBIT 4

EXISTING LANE GEOMETRY

CivTrans ENGINEERING INC.



12/34/56 – AM/PM/Saturday Peak Hour
PHF – Peak Hour Factor

NOT TO SCALE

FEBRUARY 22, 2022

Source: Traffic counts collected by CivTrans Engineering on July 17 (Saturday) and 21 (Wednesday), 2021.

EXHIBIT 5

INTERSECTION TRAFFIC COUNTS

CivTrans ENGINEERING INC.

EXISTING LEVEL OF SERVICE AND TRAFFIC ANALYSIS

Level of Service

The existing levels of service at the subject intersections were calculated using the methods from the *6th Edition Highway Capacity Manual* as implemented in Synchro*, Version 10*. The existing levels of service (LOS) for the intersections within the study area are summarized on the following table. The existing traffic volumes used for this report are shown on Exhibit 6.

Table 2 -2021 Existing Intersections Levels of Service

INTERSECTION (S)ignalized (U)nsignalized		Overall or Approach	AM Peak		PM Peak Hour		Saturday Peak	
			Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS
9th Avenue & Colorado Blvd	U	NB	9.2	A	9.7	A	13.3	B
		SB	9.8	A	10.9	B	14.1	B
13th Avenue & Miner Street	U	Ovr	8.0	A	8.7	A	10.1	B
		EB	7.5	A	8.1	A	9.1	A
		WB	8.0	A	8.5	A	9.6	A
		NB	8.3	A	9.0	A	10.3	B
		SB	8.2	A	9.2	A	11.3	B
13th Avenue & Idaho Street	U	EB	10.0	B	12.5	B	16.0	C
		WB	11.3	B	17.0	C	39.8	E

*delay and LOS shown in parentheses associated with improvements

Per the City of Idaho Springs, level of service (LOS) D should be used as a guideline to maintain for operations on side street approaches at two-way stop-controlled intersections. Mitigation measures should be considered for unsignalized approaches or overall signalized intersections reported to be operating at LOS E or F. All of the study area intersections are currently operating at acceptable levels of service except the westbound approach on Idaho Street at 13th Avenue during the Saturday peak hour. The level of service reports for the existing conditions are provided in the Technical Appendix.

The 13th Avenue corridor from the eastbound I-70 ramps to Colorado Boulevard is a series of closely spaced stop-controlled intersections. The area is busy with vehicular and pedestrian traffic most weekends during the summer (and winter) with visitors to the city for shopping, eating at local restaurants, fueling at one of the three gas stations along this segment or experiencing whitewater rafting or one of the many other offerings of the city. Rafting outfitters will stage guests at buildings along Idaho Street for orientation and distributing equipment prior to commencing their on-water float. The pedestrian crossings at the study area intersections are heavily traveled during weekends from the whitewater activities and visitors parking in the public parking lot at the southwest corner of Idaho & 13th and walking to/from downtown.

The westbound approach at 13th Avenue & Idaho Street is currently operating at LOS E during the Saturday peak hour. This is largely due to the relatively high number of left turning vehicles on this approach and the volume of traffic on 13th Avenue, which could

be a result of closing Miner Street east of 14th Avenue. The intersection is unlikely to meet MUTCD warrants for signalization to mitigate this deficiency. Therefore, the City of Idaho Springs or CDOT (if applicable) should consider modifying this intersection to restrict left turns from this approach. This intersection may be a good candidate for being restricted to right-in/right-out or ¾ movement operation or converted to a one-way (eastbound) east of 13th Avenue. There is sufficient capacity at the intersection of 13th Avenue & Miner Street to accommodate the rerouted left-turning traffic through that intersection.

Right-in/right-out operation would prohibit all left turns and minor street crossing maneuvers at the intersection by installing a median. A ¾ movement operation would prohibit left turns and crossing maneuvers from the minor street only. Left turns from 13th Avenue would still be permitted. A ¾ movement operation would be accomplished by installing a modified median to allow left turns from 13th Avenue. A median for a ¾ movement intersection may require widening 13th Avenue to accommodate left turn lanes at the intersection. The median could be mountable for larger fueling trucks to be able to supply the shell gas station on the west side of 13th Avenue.

Regardless of whether Miner Street east of 14th Avenue is reopened to vehicular traffic, which might alleviate the delay currently experience on the westbound approach of Idaho Street, improvements to the 13th Avenue & Idaho Street intersection should be considered. With the high volume of pedestrian movements at Idaho Street & 13th Avenue, installing a median would also serve to improve the safety of the 13th Avenue crossings at this location and the corridor as a whole.

Four improvement concept options were presented and reviewed by the City of Idaho Springs. The City's preferred improvement options is to convert Idaho Street to one-way (eastbound) between 13th Avenue and 14th Avenue and install a "pork chop" right turn channelization island on the west leg to restrict left turns and crossing maneuvers from the eastbound approach.

Queuing Analysis

In addition to the capacity analysis, the queue results were reviewed to determine if the vehicle stacking along the approaches to the study area intersections are currently extending back to adjacent intersections. The 95th percentile queue for each movement is reported within the Highway Capacity Manual report as number of vehicles. An average vehicle length of 25' was used to convert number of vehicles to length. The following table shows the reported queues for each of the study area intersections

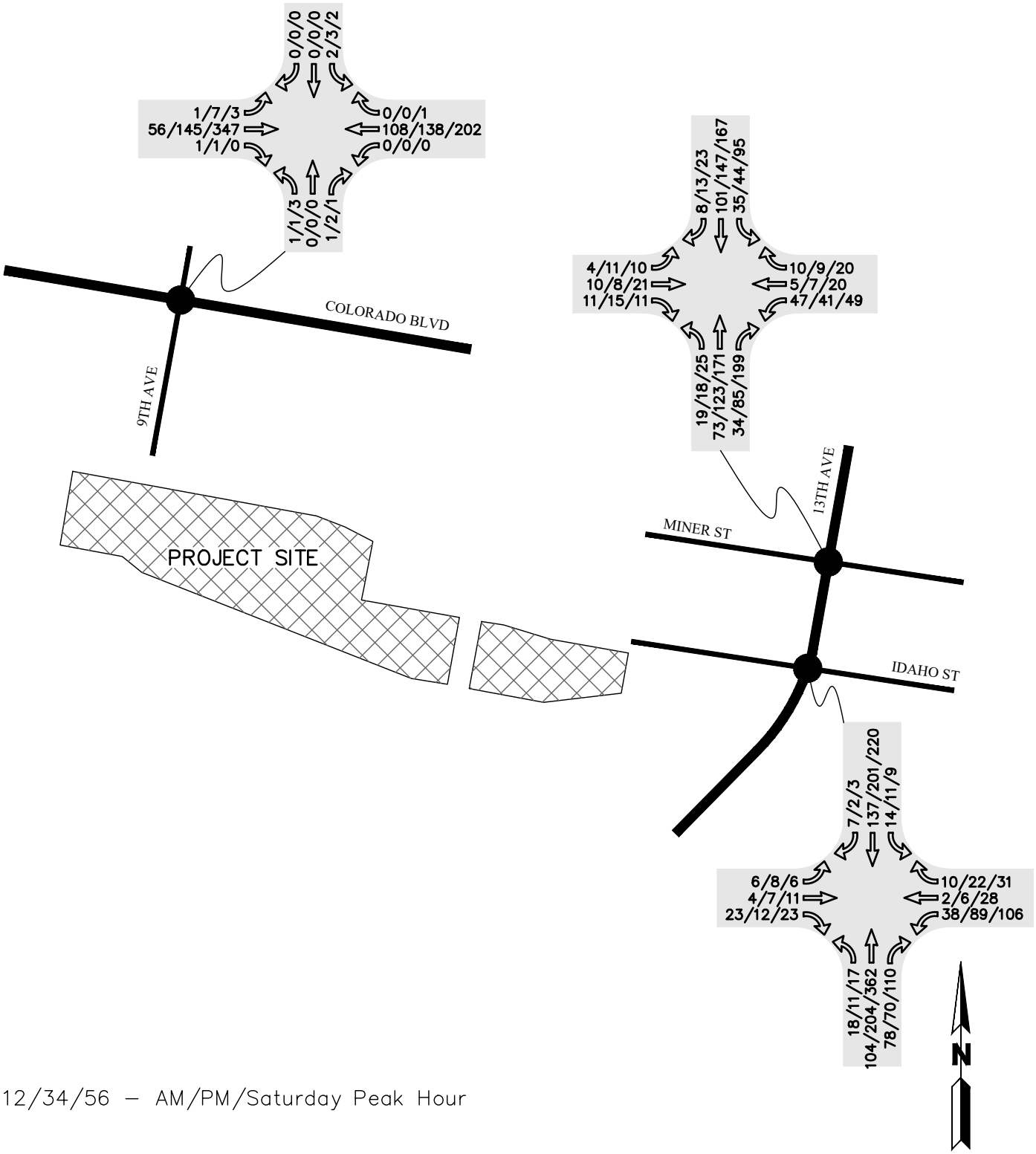
Table 3 -2021 Existing Intersections 95th Percentile Queues (in feet)

Intersection	Time	Eastbound	Westbound	Northbound	Southbound
9th Avenue & Colorado Boulevard	AM	0	0	0	0
	PM	0	0	0	0
	SAT	0	0	0	0
13th Avenue & Miner Street	AM	3	5	10	15
	PM	5	8	20	28
	SAT	5	13	33	50
13th Avenue & Idaho Street	AM	3	5	0	0
	PM	5	33	0	0
	SAT	10	100	0	0

As shown in the table above, the existing 95th percentile queues for the study area intersections are well within available storage. The westbound approach at 13th Avenue & Idaho Street is the longest at four vehicles (100'). During observations, the northbound queue at 13th Avenue & Miner Street occasionally spilled back to Idaho Street. The 95th percentile queue for stop-controlled intersections is shown within the Highway Capacity Manual (HCM) results within the technical appendix.

Intersection Sight Distance

Sight distance appears to be adequate at all of the existing study area intersections.



12/34/56 – AM/PM/Saturday Peak Hour

Note: Traffic volumes include an adjustment to account for pandemic impact. AM counts increased by 20% and PM counts increased by 10%. Saturday counts are no longer impacted. These volumes were used for "Existing Conditions" capacity analysis.

NOT TO SCALE

FEBRUARY 22, 2022

EXHIBIT 6

EXISTING CONDITIONS (2021)
TRAFFIC VOLUMES

Civtrans ENGINEERING INC.

TRIP GENERATION AND DISTRIBUTION

Trip Generation

The proposed project is anticipated to include up to 120 residential dwelling units and 12,000 square feet of retail uses. The *Trip Generation Manual, 10th Edition* published by the Institute of Transportation Engineers (ITE) is typically used to determine the number of trips generated by a proposed land use. The purpose of the Trip Generation Manual (TGM) is to compile and quantify empirical trip generation rates for specific land uses within the US, UK and Canada. The proposed project falls under land use categories 221 "Multifamily Housing (Mid-rise)" and 820 "Shopping Center." The trip generation for the proposed project is shown in the table below

Table 4 – Project Trip Generation (TGM calculated, unadjusted)

Land Use	ITE Code	Size	Units *	Daily Trips	Sat. Trips	AM Peak			PM Peak			Saturday Peak		
						In	Out	Tot	In	Out	Tot	In	Out	Tot
Multifamily Housing	221	120	DU	652	590	11	32	43	32	21	53	26	27	53
Retail	820	12.0	KSF	454	554	7	4	11	22	24	46	28	26	54
Total	**-**	**-**	**-**	**1,096**	**1,144**	**18**	**36**	**54**	**54**	**45**	**99**	**54**	**53**	**107**

*DU = Dwelling Units, KSF = 1,000 square feet

As shown in the table above, the proposed project is estimated to generate 1,096 weekday trips with 54 occurring during the AM peak hour and 99 during the PM peak hour. On a Saturday, the proposed project is anticipated to generate 1,144 trips with 107 occurring during the midday peak hour.

Trip Types

Nearly all developments are made up of the following six trip types: new (destination) trips, pass-by trips, diverted trips, shared (internal) trips, multi-modal (non-vehicular) trips, and transit-oriented trips. In order to better understand the trip types available for land access and how they relate to this project, a description of each specific type follows.

New (Destination) Trips – These types of trips occur to access a specific land use such as a new retail development or a new residential subdivision. These types of trips will travel to and from the new site and a single other destination such as home or work. This is the only trip type that will result in a net increase in the total amount of traffic within the study area. The reason primarily is that these trips represent planned trips to a specific destination that never took trips to that part of the City prior to the development being constructed and occupied. This project will develop new trips.

Pass-by Trips – These trips represent vehicles which currently use adjacent roadways providing primary access to new land uses or projects. These trips, however, have an ultimate destination other than the project in question. They should be viewed as drop-in

customers who stop in on their way home from work. A good example is a quick stop at the grocery store to pick up an ingredient for dinner on the way home from work or at a latte stand to grab a coffee on the way to work. This can make this trip pre-determined, but the stop is still on the way by. Another example would be on payday, where an individual generally drives by their bank every day without stopping, except on payday. On that day, this driver would drive into the bank, perform the prerequisite banking and then continue home. In this example, the trip started from work with a destination of home, however on the way, the driver stopped at the grocery store/latte stand and/or bank directly adjacent to their path. Pass-by trips are most always associated with commercial/retail types of developments. Therefore, pass-by trips would only be anticipated for the retail portion of the project. However, the adjacent roadway (Idaho Street) does not carry sufficient traffic volume to result in significant pass-by traffic.

Diverted (Linked) Trips - Diverted trips are like pass-by trips, but diverted trips occur from roadways that do not provide direct access to the site. Instead, one or more streets must be utilized to get to and from the site. Similar to pass-by trips, diverted trips are most always associated with commercial/retail type developments. For this project, diverted trips are anticipated to occur for the retain portion of the site from 13th Avenue, Colorado Boulevard, and I-70. Since the diverted trips would pass through the study area intersections, there is no point in calculating them separately. These trips, which could comprise 40% of the retail trips, already exist on these roadways, but will divert from their original path to access the retail along Idaho Street.

Shared (internal) Trips - Internal trips are the portion of trips generated by a mixed-use development that both begin and end within the development. When estimating trip generation for a development with several uses, each use will generate its own trips. If those trips occur between two of the onsite uses without using the external roadway system, it is considered a shared or internal trip. This trip type reduces the number of new trips generated on the public road system and is most commonly used for commercial or mix-use developments. Determining these trip types is more difficult to quantify and without specific guidance are usually determined by engineering judgment on a project-by-project basis. For this project, the residential and retail uses may experience shared trips that could result in an overall trip reduction for the site. However, for the purposes of this study, no shared (internal) trip reduction was applied to this project.

Multi-Modal Trips - These are non-vehicular trips to and from the site, mostly comprised of pedestrian and bicycle trips. Generally, they are local trips from the surrounding neighborhood or adjacent businesses. If a development is in an area with a high amount of bicycle and pedestrian activity, such as a downtown setting or college campus, a reduction of vehicular trips would be anticipated. During the traffic count, a significant number of pedestrians or bicycles were observed in the vicinity of the site. Residents within several blocks of the Idaho Springs Historic Core (downtown) will walk or ride their bicycle between their home and their destination. Multi-modal trips are likely to make up a significant portion of the peak hour trips for this site.

Transit Trip – The Idaho Springs area is served by Clear Creek County Transit with public bus that operates Monday through Friday. The nearest bus route to the site is along at the public parking lot at the southwest corner of 13th Avenue & Idaho Street less than two blocks from the site. The transit route operates on a loop between Idaho Springs and Georgetown with stops every hour and 15 minutes. It operates from 7:00 AM to 6:30 PM. The proximity of the transit stop to the site should allow for people visiting the retail or residents to utilize transit. The number of users is not anticipated to be substantial, but a reduction to the trip generation estimate is proposed to account for transit trips.

Based on the various trip types depicted above and the nature of the proposed project, a 15% reduction was applied to the trip generation estimates shown in Table 4 to account for multi-modal and transit trips associated with the project, but the actual percentage of trips for this site that are non-vehicular may end up being higher since the residential will primarily serve as workforce housing for the school district and restaurant workers within the City. The following table shows a breakdown of the various trips accessing the site.

Table 5 - Project Trip Generation: Breakdown of Trip Type (adjusted)

Trip Type	Weekday ADT	Saturday ADT	AM Peak			PM Peak			Saturday Peak		
			In	Out	Tot	In	Out	Tot	In	Out	Tot
New (per TGM)	1,096	1,144	18	36	54	54	45	99	54	53	107
Multi-modal and Transit	166	172	3	5	8	8	7	15	8	8	16
Vehicular	940	972	15	31	46	46	38	84	46	45	91

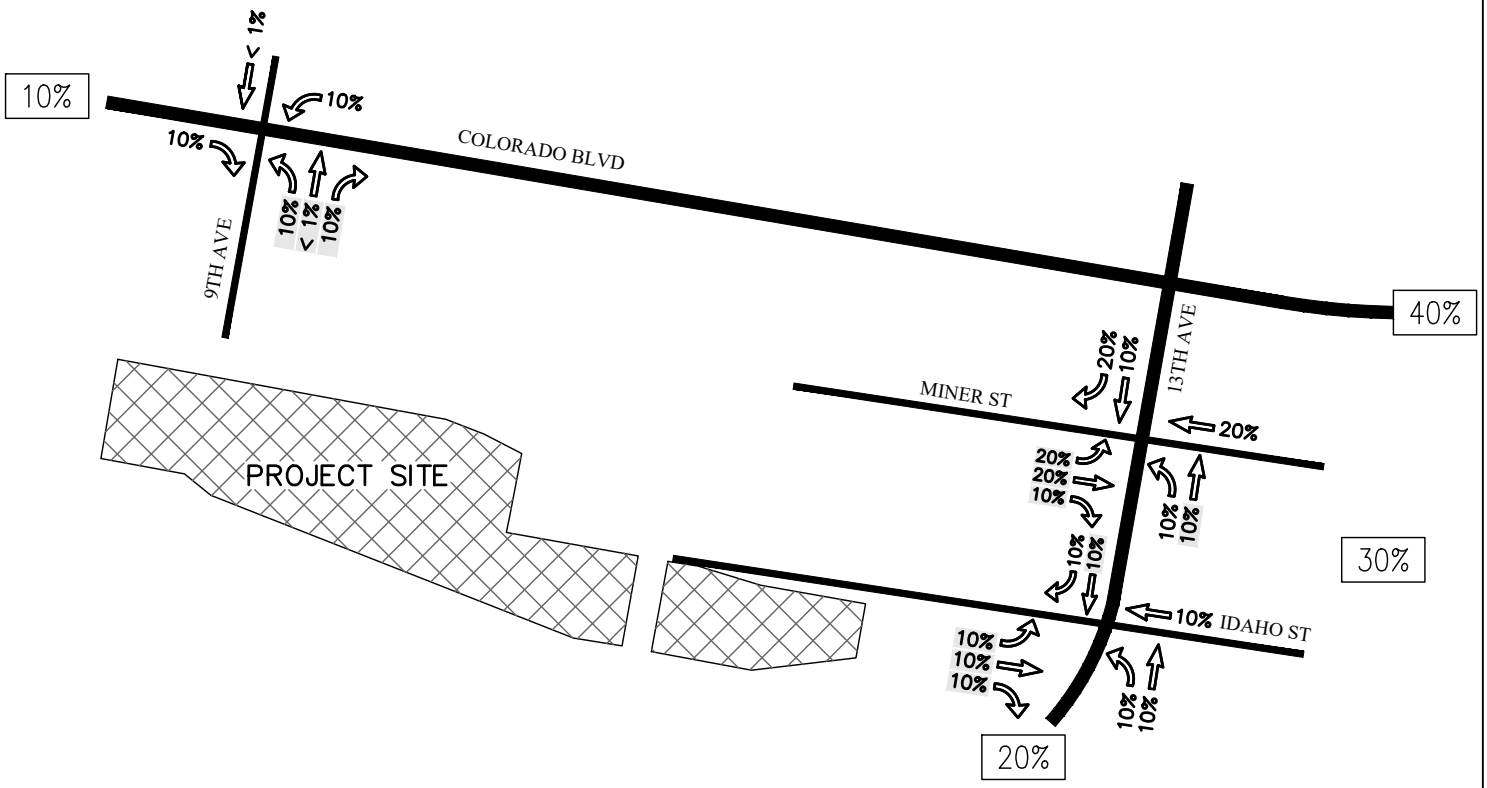
In the table above, the total vehicular trips to/from the site are anticipated to be 940 on a weekday, 972 on a Saturday, 46 during the weekday AM peak, 84 during the PM peak hour and 91 during the Saturday peak hour. These trips will be utilized in determining impacts to the surrounding transportation system.

Trip Distribution

As shown on the site plan, the site is accessed from Miner Street west of 9th Avenue, Idaho Street at 11th Avenue and 11th Avenue at Idaho Street. The project is expected to have a mix of local and regional trips, but mostly local for the residential portion. Considering many factors such as the surrounding transportation facilities, exiting travel patterns, local destinations (places of business, dining, grocery, etc.) and the geography of the area, traffic for the proposed development is anticipated as follows.

- Colorado Boulevard / I-70 west of the site – 10%
- Colorado Boulevard east of 13th Avenue – 40%
- Idaho Springs downtown – 30%
    - Via Miner Street – 20%
    - Via Idaho Street – 10%
- 13th Avenue-Highway 103 / I-70 south of the site – 20%

These trip distribution percentages are illustrated in **Exhibit 7**. The site generated trips for the proposed project are shown on **Exhibit 8**.



N

NOT TO SCALE

FEBRUARY 22, 2022

XX% – REGIONAL DISTRIBUTION

– DISTRIBUTION AT INTERSECTION

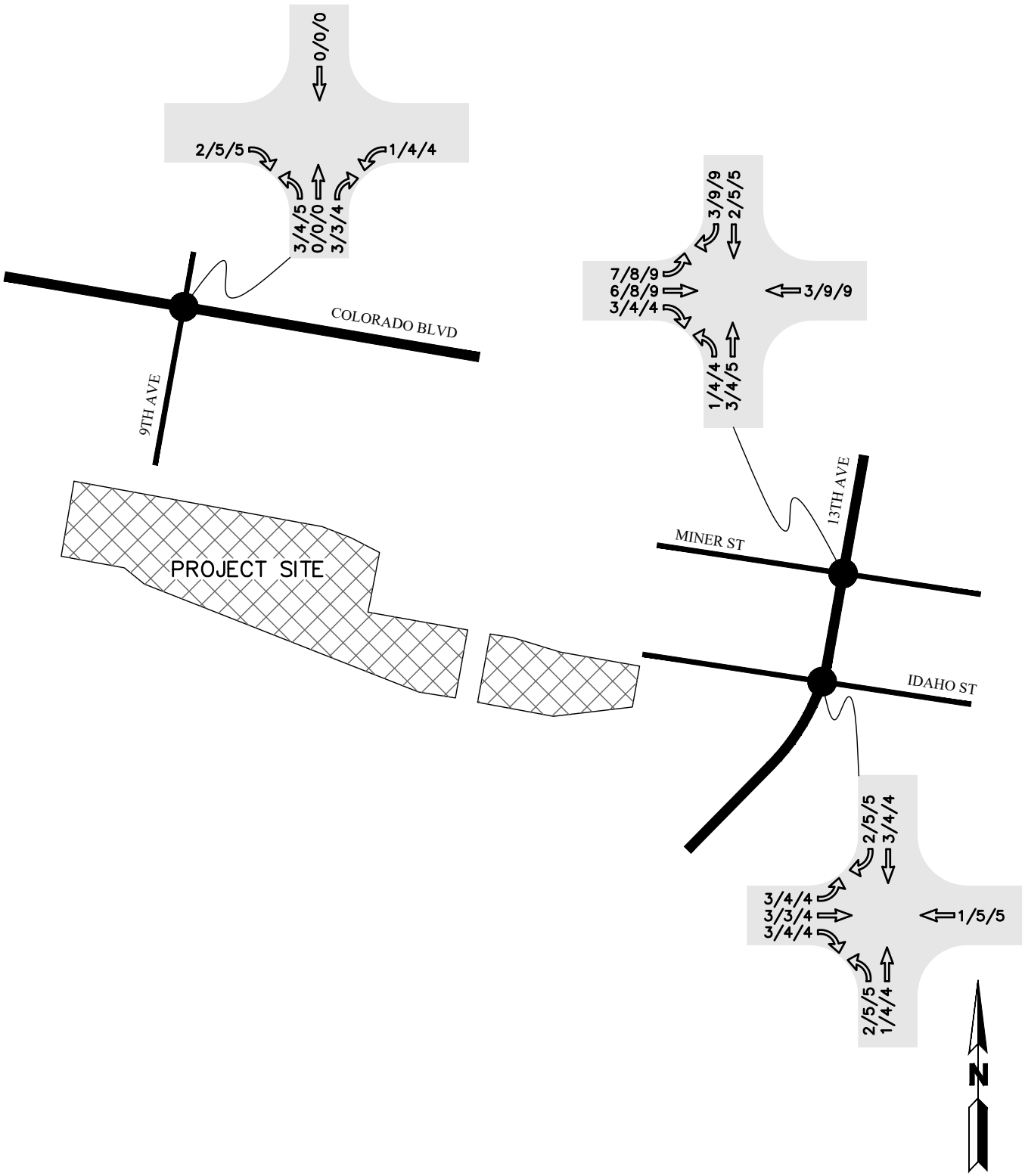
X% – PERCENTAGE OF INGRESS

X% – PERCENTAGE OF EGRESS

EXHIBIT 7

PROJECT TRIP DISTRIBUTION

Civtrans ENGINEERING INC.



NOT TO SCALE

12/34/56 – AM/PM/Saturday Peak Hour

FEBRUARY 22, 2022

EXHIBIT 8

SITE-GENERATED VEHICLE TRIPS

Civtrans ENGINEERING INC.

FUTURE YEAR TRAFFIC IMPACT ANALYSIS

Level of service calculations for the short-term (Year 2025) and long-range (2041) conditions assumed that the existing traffic volumes as shown on Exhibit 6 experience a background increase above the 2021 volumes at 1.5% per year at the study area intersections. Two scenarios were examined for the each of the future conditions, one without the project and one with the project completed. A list of the future scenarios follows.

- Short-term Condition (Year 2025) without Project
- Short-term Condition (Year 2025) with Project
- Long-range Condition (Year 2041) without Project
- Long-range Condition (Year 2041) with Project

These scenarios will allow a specific comparison of impacts to the study area intersections and allow a determination to be made as to the extent of the project's impact and if any mitigation measures will be required.

Short-Term Condition (Year 2025) without Project

The traffic volumes for this scenario include the existing (Year 2021) traffic volumes as shown on Exhibit 6 with four years of ambient growth applied (1.5% annually). The total traffic volumes anticipated under this condition are shown on Exhibit 9. A summary of the results is shown in Table 6, which follow.

Table 6 - Year 2025 Levels of Service without Project

INTERSECTION (S)ignalized (U)nsignalized		Overall or Approach	AM Peak		PM Peak Hour		Saturday Peak	
			Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS
9th Avenue & Colorado Blvd	U	NB	9.3	A	9.8	A	13.7	B
		SB	9.9	A	11.1	B	14.6	B
13th Avenue & Miner Street	U	Ovr	8.4	A	8.9	A	10.5	B
		EB	7.7	A	8.2	A	9.2	A
		WB	8.3	A	8.7	A	9.8	A
		NB	8.6	A	9.2	A	10.6	B
		SB	8.7	A	9.5	A	11.8	B
• Mitigated – ¾ movement at 13th & Idaho		(Ovr)	(8.6)	(A)	(9.7)	(A)	(12.7)	(B)
		(EB)	(8.0)	(A)	(8.7)	(A)	(10.3)	(B)
		(WB)	(8.8)	(A)	(10.1)	(B)	(13.5)	(B)
		(NB)	(8.4)	(A)	(9.1)	(A)	(11.4)	(B)
		(SB)	(8.9)	(A)	(10.2)	(B)	(14.4)	(B)
13th Avenue & Idaho Street	U	EB	10.5	B	12.8	B	16.8	C
		WB	12.5	B	18.4	C	51.4	F
• Mitigated – ¾ movement		(EB)	(9.7)	(A)	(10.6)	(B)	(12.1)	(B)
		(WB)	(9.2)	(A)	(10.1)	(B)	(12.8)	(B)

*delay and LOS within parentheses are associated with mitigated intersection

With the anticipated increase in traffic over the next four years, the westbound approach for the intersection of 13th Avenue & Idaho Street is anticipated to fall to LOS F during the Saturday midday peak hour. All of the other intersections within the study area are anticipated to continue to operate within acceptable levels. The level of service reports for the short-term without the project are provided in the Technical Appendix.

As stated in the existing conditions section, implementing a right-in / right-out or ¾ movement median at 13th Avenue & Idaho Street should be considered to mitigate the deficient westbound approach and improve the intersection safety. As shown in the table above, a ¾ movement mitigation option would improve the 13th Avenue & Idaho Street intersection and the 13th Avenue & Miner Street intersection would continue to operate at acceptable levels with the additional diverted traffic from Idaho to Miner. *Four improvement concept options were presented and reviewed by the City of Idaho Springs. The City's preferred improvement options is to convert Idaho Street to one-way (eastbound) between 13th Avenue and 14th Avenue and install a "pork chop" right turn channelization island on the west leg to restrict left turns and crossing maneuvers from the eastbound approach.*

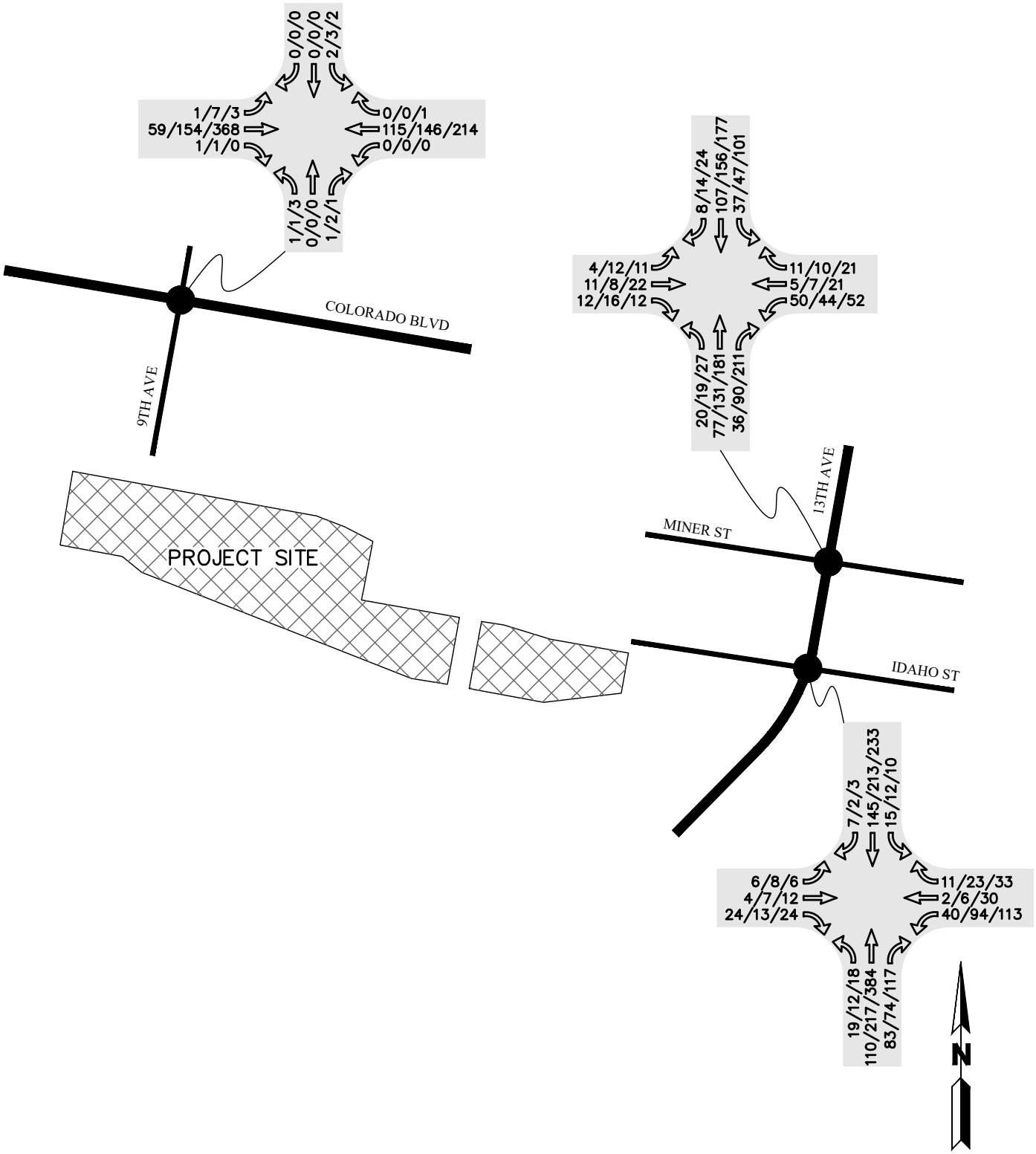
Queuing Analysis

The following table shows the reported queues for each of the study area intersections assuming no improvements to the intersections (3/4 movement) have been implemented.

Table 7 – Year 2025 95th Percentile Queues (in feet) without Project

Intersection	Time	Eastbound	Westbound	Northbound	Southbound
9th Avenue & Colorado Boulevard	AM	0	0	0	0
	PM	0	0	0	0
	SAT	0	0	0	0
13th Avenue & Miner Street	AM	5	5	13	20
	PM	5	8	20	25
	SAT	5	13	35	55
13th Avenue & Idaho Street	AM	5	10	0	0
	PM	5	38	0	0
	SAT	10	128	0	0

As shown in the table above, the short-term without project condition 95th percentile queues for the study area intersections are anticipated to continue to be well within available storage. The 95th percentile queue for stop-controlled intersections is shown within the Highway Capacity Manual (HCM) results within the technical appendix.



NOT TO SCALE

12/34/56 – AM/PM/Saturday Peak Hour

FEBRUARY 22, 2022

EXHIBIT 9

SHORT-TERM (2025) NO PROJECT TRAFFIC VOLUMES

Civtrans ENGINEERING INC.

Short-Term Condition (Year 2025) with Project

The traffic volumes included in this scenario include the short-term (Year 2025) traffic volumes as shown on Exhibit 9 with the additional traffic from the proposed project, as shown on Exhibit 8. The total traffic volumes anticipated under this condition are shown on Exhibit 10. A summary of the results is shown in Table 8, which follow.

Table 8 - Year 2025 Levels of Service with Project

INTERSECTION (S)ignalized (U)nsignalized		Overall or Approach	AM Peak		PM Peak Hour		Saturday Peak	
			Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS
9th Avenue & Colorado Blvd	U	NB	9.3	A	10.3	B	13.5	B
		SB	9.9	A	11.2	B	14.9	B
13th Avenue & Miner Street	U	Ovr	8.5	A	9.2	A	11.2	B
		EB	8.0	A	8.5	A	9.7	A
		WB	8.4	A	8.9	A	10.2	B
		NB	8.8	A	9.5	A	11.3	B
		SB	8.8	A	9.8	A	12.8	B
• Mitigated – ¾ movement at 13th & Idaho		(Ovr)	(8.8)	(A)	(10.1)	(B)	(13.8)	(B)
		(EB)	(8.3)	(A)	(9.2)	(A)	(11.2)	(B)
		(WB)	(8.9)	(A)	(10.5)	(B)	(14.7)	(B)
		(NB)	(8.6)	(A)	(9.4)	(A)	(12.1)	(B)
		(SB)	(9.1)	(A)	(10.7)	(B)	(16.0)	(C)
13th Avenue & Idaho Street	U	EB	10.9	B	13.5	B	18.8	C
		WB	12.7	B	19.7	C	61.3	F
• Mitigated – ¾ movement		(EB)	(9.8)	(A)	(10.7)	(B)	(12.2)	(B)
		(WB)	(9.2)	(A)	(10.1)	(B)	(12.8)	(B)

*delay and LOS shown in parentheses associated with improvements

With the additional traffic from the proposed project, all of the intersections within the study area are anticipated to continue to operate within acceptable levels except 13th Avenue & Idaho Street. If improvements by others are completed as described in the existing conditions section of this report, all of the study area intersection are anticipated to operate at acceptable levels. **The proposed project is not anticipated to significantly impact the capacity of the study area intersections**.

Queuing Analysis

The following table shows the reported queues for each of the study area intersections

Table 9 – Year 2025 95th Percentile Queues (in feet) with Project

Intersection	Time	Eastbound	Westbound	Northbound	Southbound
9th Avenue & Colorado Boulevard	AM	0	0	0	0
	PM	0	0	0	0
	SAT	0	0	3	0
13th Avenue & Miner Street	AM	5	8	15	20
	PM	8	10	23	33
	SAT	10	15	40	65
13th Avenue & Idaho Street	AM	5	10	3	0
	PM	8	43	0	0
	SAT	15	148	3	0

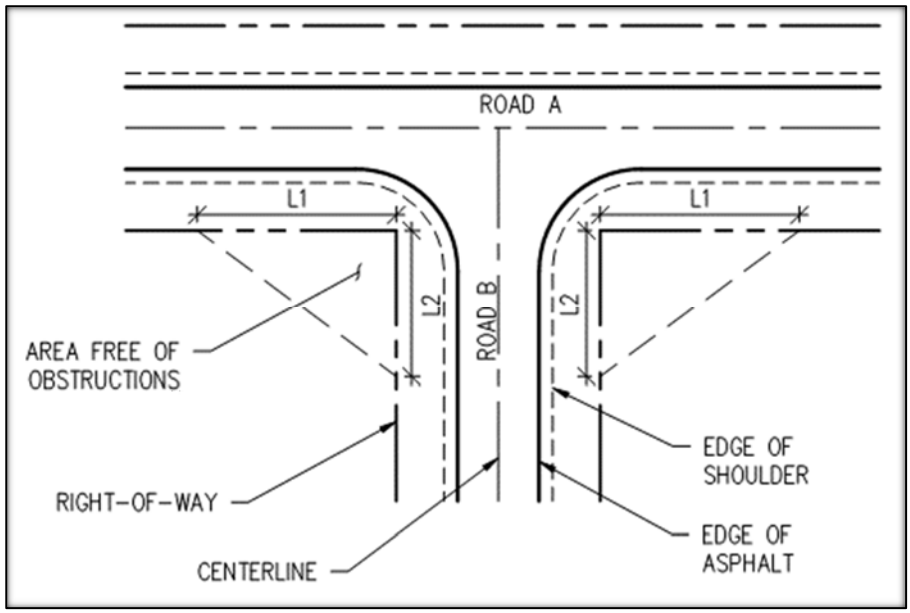
As shown in the table above, the short-term with project condition 95th percentile queues for the study area intersections are anticipated to continue to be well within available storage and **the additional traffic from the proposed project is not anticipated to significantly impact the intersection queues**. The 95th percentile queue for stop-controlled intersections is shown within the Highway Capacity Manual (HCM) results within the technical appendix.

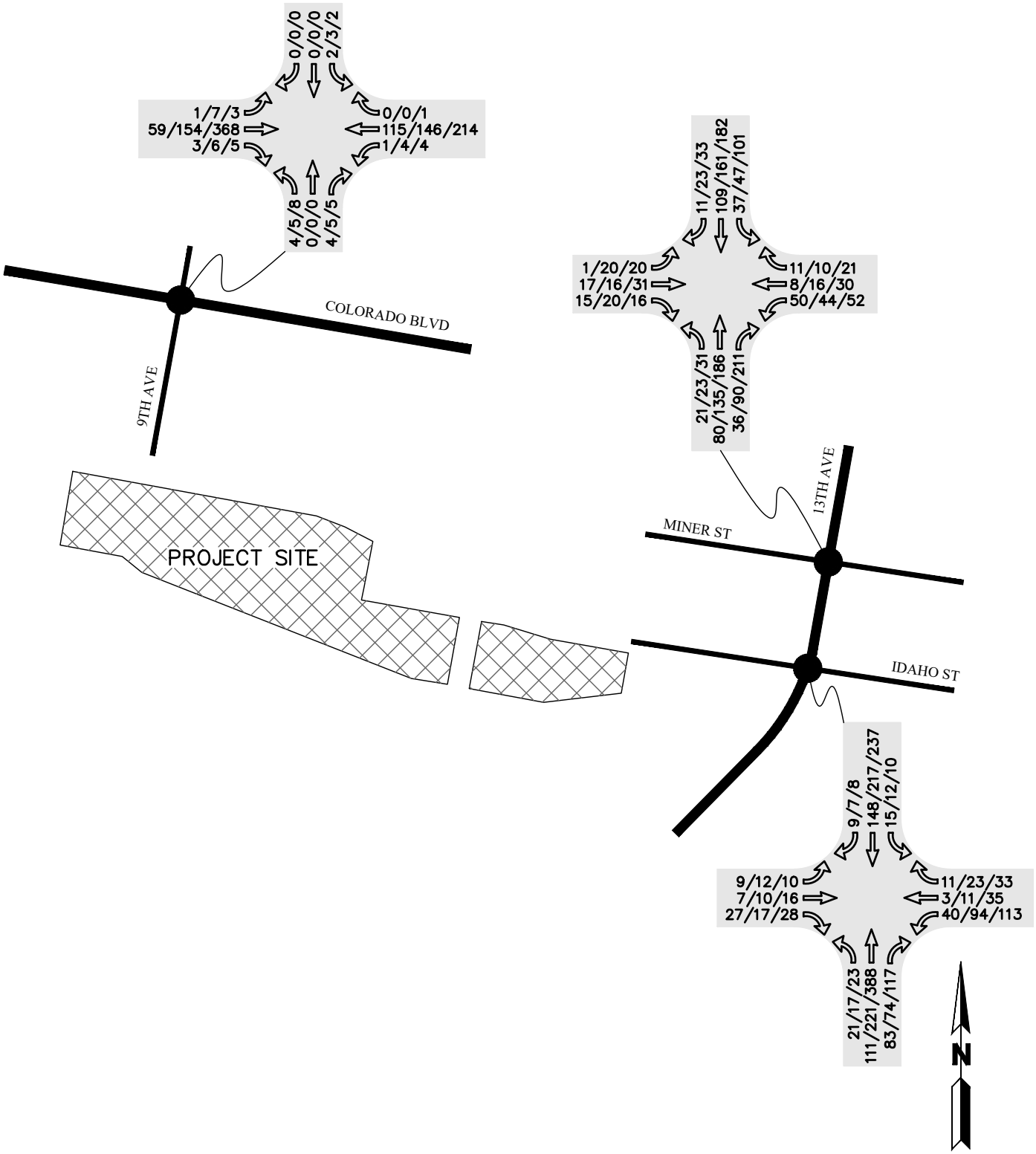
Sight Distance

Per Figure 8 of the City of Idaho Springs Standards and Specification for Design and Construction, the required sight triangles for the proposed site driveways were determined. Miner Street, Idaho Street and 11th Avenue are classified as low volume roadways. Therefore, per the clip from Figure 8 (below), L1 = 30’ and L2’=10’.

Driveways should also meet the American Association of State Highway and Transportation Officials (AASHTO) sight distance criteria as outlined in their reference, A Policy on Geometric Design of Highways and Streets. Miner Street is posted at 15 mph with a design speed of 20 mph, which means Block 57 access to Miner Street will require 225’ of intersection sight distance for vehicles turning left (looking right) and 195’ for vehicles turning right (looking left). These sight triangles should be shown on the civil and landscape plans to ensure that no obstructions are placed within the triangle.

Figure 1 – Driveway Sight Distance (City of Idaho Springs Standards)





NOT TO SCALE

12/34/56 – AM/PM/Saturday Peak Hour

FEBRUARY 22, 2022

EXHIBIT 10

SHORT-TERM (2025) BUILD TRAFFIC VOLUMES

Civtrans ENGINEERING INC.

Long-range Condition (Year 2041) without the Project

This section focuses on the long-range scenario of the year 2041 without traffic from the project. This scenario assumes that the proposed project has not developed, but ambient growth along the major roadways has continued at 1.5% per year over the next 20 years. This analysis will show how the traffic volumes will be handled by the transportation facilities and what impacts the proposed project will have on the overall operations. The traffic volumes for this scenario are shown in Exhibit 11. A summary of the level of service results are shown in Table 10, which follows.

Table 10 - Year 2041 Levels of Service Without the Project

INTERSECTION (S)ignalized (U)nsignalized		Overall or Approach	AM Peak		PM Peak Hour		Saturday Peak	
			Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS
9th Avenue & Colorado Blvd	U	NB	9.5	A	10.3	B	16.3	C
		SB	10.3	B	12.0	B	17.6	C
13th Avenue & Miner Street	U	Ovr	9.0	A	9.8	A	13.1	B
		EB	8.1	A	8.7	A	10.1	B
		WB	8.8	A	9.2	A	11.1	B
		NB	9.2	A	10.0	A	12.8	B
		SB	9.4	A	10.7	B	16.1	C
• Mitigated – ¾ movement at 13th & Idaho		(Ovr)	(9.3)	(A)	(11.2)	(B)	(19.2)	(B)
		(EB)	(8.4)	(A)	(9.6)	(A)	(12.2)	(B)
		(WB)	(9.5)	(A)	(11.5)	(B)	(20.0)	(B)
		(NB)	(8.9)	(A)	(10.2)	(B)	(15.5)	(B)
		(SB)	(9.8)	(A)	(12.3)	(B)	(25.0)	(C)
13th Avenue & Idaho Street	U	EB	11.3	B	15.5	C	22.5	C
		WB	14.7	B	31.3	D	230.4	F
• Mitigated – ¾ movement		(EB)	(10.1)	(B)	(11.5)	(B)	(13.3)	(B)
		(WB)	(9.5)	(A)	(10.7)	(B)	(14.5)	(B)

*delay and LOS shown in parentheses associated with improvements

With the anticipated growth in traffic at the study area intersections, all of the intersections are anticipated to operate at acceptable levels of service for the long-range conditions assuming improvements are completed at the intersection of 13th Avenue & Idaho Street as described previously. Intersection capacity reports are provided in the technical appendix for the long-range no project condition.

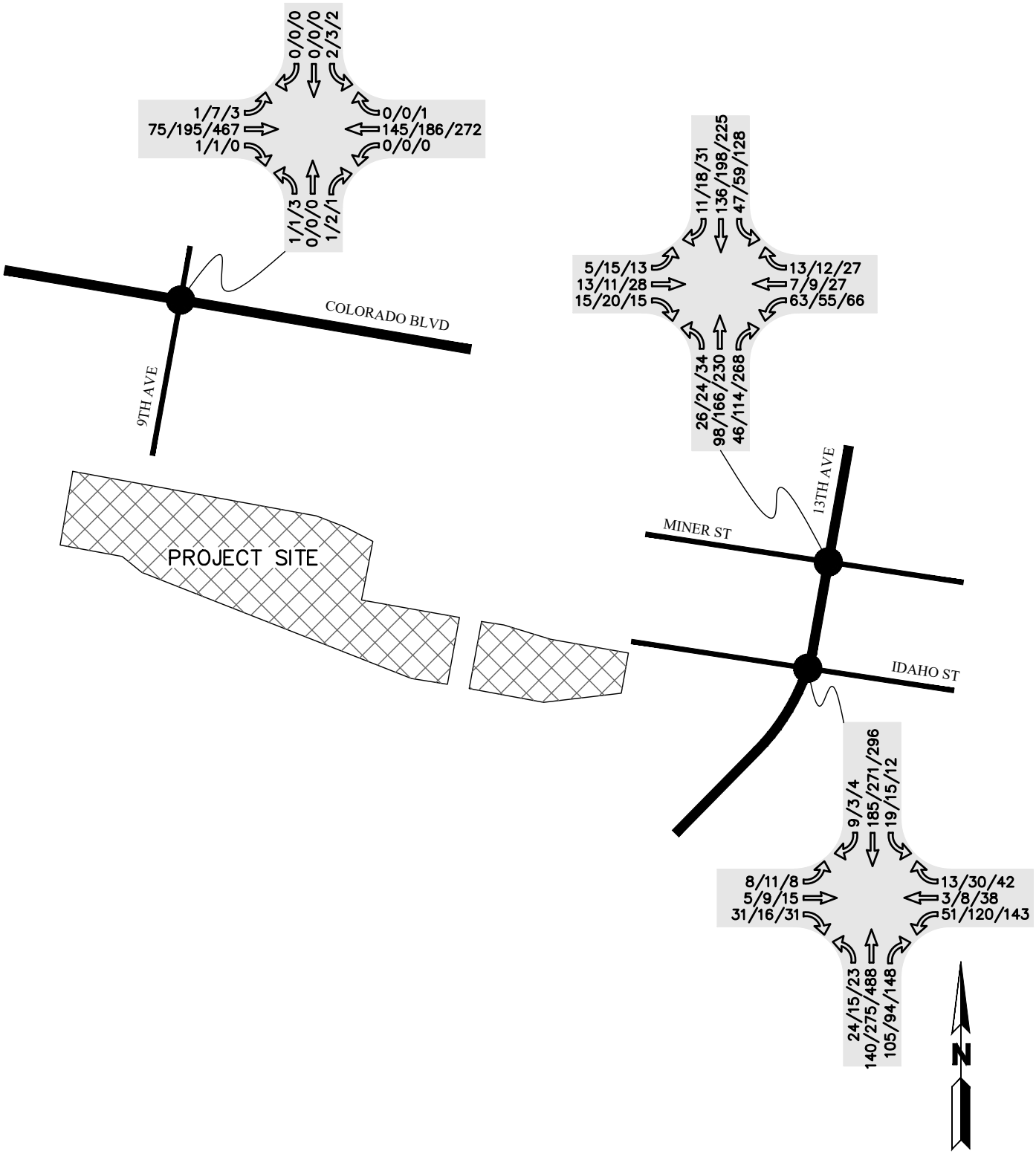
Queuing Analysis

The following table shows the reported queues for each of the study area intersections

Table 11 – Year 2041 95th Percentile Queues (in feet) without Project

Intersection	Time	Eastbound	Westbound	Northbound	Southbound
9th Avenue & Colorado Boulevard	AM	0	0	0	0
	PM	0	0	0	0
	SAT	0	0	0	0
13th Avenue & Miner Street	AM	5	10	18	28
	PM	5	10	30	45
	SAT	10	20	58	100
13th Avenue & Idaho Street	AM	8	15	3	3
	PM	10	85	0	0
	SAT	20	335	3	0

As shown in the table above, the long-range no project condition 95th percentile queues for the study area intersections are anticipated increase as growth in traffic continues. The southbound approach queue at 13th Avenue & Miner Street is anticipated to reach 100' (4 vehicles). The westbound approach on Idaho Street at 13th Avenue is anticipated to exceed 330', which would spill back to 14th Avenue. With the turn restrictions / median improvement at 13th Avenue & Idaho Street and the left turning and crossing traffic from this approach redistributed to Miner Street, the queue is drastically reduced. The additional traffic through the 13th Avenue & Miner Street intersection would result in longer queues at that intersection, but would be acceptable lengths to spill back to adjacent intersections. The 95th percentile queue for stop-controlled intersections is shown within the Highway Capacity Manual (HCM) results within the technical appendix.



NOT TO SCALE

12/34/56 – AM/PM/Saturday Peak Hour

FEBRUARY 22, 2022

EXHIBIT 11

LONG-RANGE (2041) NO PROJECT TRAFFIC VOLUMES

Civtrans ENGINEERING INC.

Long-range Conditions (Year 2041) with the Project

The traffic volumes for this scenario include the Long-range No Project (Year 2041) traffic volumes as shown on Exhibit 11 and the additional traffic from the proposed project, as shown on Exhibit 8. The total traffic volumes anticipated under this condition are shown on Exhibit 12. A summary of the results is shown in Table 12, which follows.

Table 12 - Year 2041 Levels of Service with the Project

INTERSECTION (S)ignalized (U)nsignalized		Overall or Approach	AM Peak		PM Peak Hour		Saturday Peak	
			Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS
9th Avenue & Colorado Blvd	U	NB	9.6	A	10.9	B	16.0	C
		SB	10.4	A	12.2	B	18.0	C
13th Avenue & Miner Street	U	Ovr	9.1	A	10.2	B	14.1	B
		EB	8.3	A	10.4	B	10.7	B
		WB	8.9	A	8.1	A	11.5	B
		NB	9.3	A	9.1	A	13.7	B
		SB	9.6	A	11.2	B	17.8	C
• Mitigated – ¾ movement at 13th & Idaho		(Ovr)	(9.5)	(A)	(11.8)	(B)	(22.5)	(C)
		(EB)	(8.7)	(A)	(10.2)	(B)	(13.7)	(B)
		(WB)	(9.7)	(A)	(12.4)	(B)	(23.3)	(C)
		(NB)	(9.1)	(A)	(10.6)	(B)	(17.2)	(C)
		(SB)	(10.1)	(B)	(13.2)	(B)	(31.2)	(D)
13th Avenue & Idaho Street	U	EB	11.8	B	16.3	C	26.4	D
		WB	15.0	C	34.6	D	282.2	F
• Mitigated – ¾ movement		(EB)	(10.2)	(B)	(11.5)	(B)	(13.4)	(B)
		(WB)	(9.5)	(A)	(10.7)	(B)	(14.5)	(B)

*delay and LOS shown in parentheses associated with improvements

As shown in the table above, the study area intersections are anticipated to operate at acceptable levels of service for this condition with the project completed assuming the improvements anticipated to be required due to ambient traffic growth over the next twenty years are completed. The project traffic is not anticipated to worsen the levels of service significantly for this condition. The level of service reports for the long-range with the project condition (Year 2041) are provided in the Technical Appendix.

Queuing Analysis

The following table shows the reported queues for each of the study area intersections

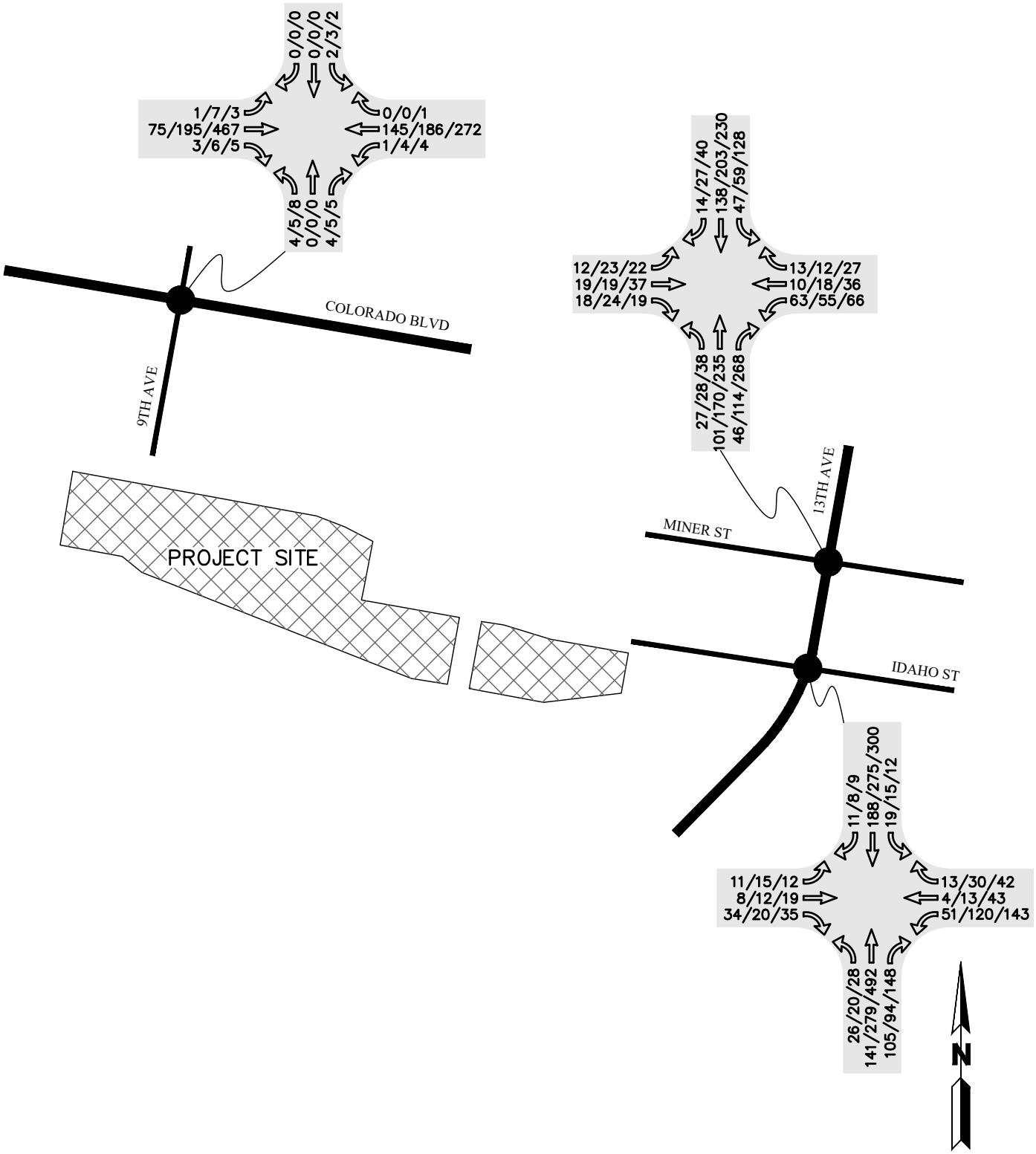
Table 13 – Year 2041 95th Percentile Queues (in feet) with Project

Intersection	Time	Eastbound	Westbound	Northbound	Southbound
9th Avenue & Colorado Boulevard	AM	0	0	0	0
	PM	0	0	3	0
	SAT	0	0	3	0
13th Avenue & Miner Street	AM	5	13	20	30
	PM	8	13	33	50
	SAT	13	25	63	115
13th Avenue & Idaho Street	AM	8	15	3	3
	PM	13	90	3	0
	SAT	30	373	3	0

As shown in the table above, the long-range with project condition 95th percentile queues for the study area intersections are slightly higher than the no-project condition. The proposed project is not anticipated to have a significant impact on the queues at the study area intersections. The 95th percentile queue for stop-controlled intersections is shown within the Highway Capacity Manual (HCM) results within the technical appendix.

Sight Distance

The site distance evaluation included in the short-term with project conditions applies to the long-range conditions as well.



NOT TO SCALE

12/34/56 – AM/PM/Saturday Peak Hour

FEBRUARY 22, 2022

EXHIBIT 12

LONG-RANGE (2041) BUILD TRAFFIC VOLUMES

CivTrans ENGINEERING INC.

CONCLUSIONS & RECOMMENDATIONS

Based upon the analysis, field observations, assumptions, methodologies and results, which are provided in the body of this document, **this project is <u>not</u> anticipated to have significant impacts on the study area that warrant mitigation**.

The study area intersections are currently operating at acceptable levels of service except the westbound approach at 13th Avenue & Idaho Street, which is operating at LOS E during the Saturday peak hour. This deficient level of service could be due to the closure of Miner Street east of 14th Avenue, which was recently completed to provide outdoor space for businesses to deal with restrictions associated with the pandemic. It is unclear if Miner Street will be reopened to vehicular traffic in the future of if the closure will become permanent. If it remains, improvements will be required at the intersection of 13th Avenue & Idaho Street to mitigate the deficient level of service. If Miner Street is reopened, improvements should still be considered at 13th Avenue & Idaho Street to improve pedestrian safety. These improvements should eliminate the ability to turn left from Idaho Street at 13th Avenue. This can be accomplished by installing a median to restrict left turns entirely (right-in/right-out) or restrict left turns and crossing maneuvers from Idaho Street (¾ movement). Converting Idaho Street to one-way (eastbound) would also accomplish this. The improvements at the intersection of 13th Avenue & Idaho Street are required to address existing and future traffic. The proposed project's impact to this intersection is not significant and no improvements should be required by the proposed development. *Four improvement concept options were presented and reviewed by the City of Idaho Springs. The City's preferred improvement options is to convert Idaho Street to one-way (eastbound) between 13th Avenue and 14th Avenue and install a "pork chop" right turn channelization island on the west leg to restrict left turns and crossing maneuvers from the eastbound approach.*

Queuing was also evaluated at the study area intersection for existing and future conditions with and without the proposed project. There are no anticipated queuing issues at the study area intersections assuming intersection improvements are completed at 13th Avenue & Idaho Street. If improvements are not completed, 95th percentile queues are anticipated to spill back to 14th Avenue on Idaho Street by the long-range time period regardless of whether the proposed development project moves forward or not.

<u>Sight Distance</u>

Per Figure 8 of the City of Idaho Springs Standards and Specification for Design and Construction, the required sight triangles for the proposed site driveways were determined. Miner Street, Idaho Street and 11th Avenue are classified as low volume roadways. Therefore, per the clip from Figure 8 in the standards, L1 = 30' and L2'=10'.

Driveways should also meet the American Association of State Highway and Transportation Officials (AASHTO) sight distance criteria as outlined in their reference, A Policy on Geometric Design of Highways and Streets. Miner Street is posted at 15 mph with a design speed of 20 mph, which means Block 57 access to Miner Street will require

225’ of intersection sight distance for vehicles turning left (looking right) and 195’ for vehicles turning right (looking left). These sight triangles should be shown on the civil and landscape plans to ensure that no obstructions are placed within the triangle.

Traffic Impact Study
Block 57 – Idaho Springs

TECHNICAL APPENDIX
February 28, 2022

CivTrans

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RAW TRAFFIC COUNTS

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CivTRANS Engineering Inc.

Peak-Hour Turning Movement Count

Intersection: **9th Avenue & Colorado Boulevard** Date: Wednesday, July 21, 2021

Start	Colorado Blvd Eastbound				Colorado Blvd Westbound				9th Ave Northbound				9th Ave Southbound				
Time	Left	Thru	Right	HV	Left	Thru	Right	HV	Left	Thru	Right	HV	Left	Thru	Right	HV	Int. Total
7:00	0	8	0	0	0	18	0	0	0	0	0	0	0	0	0	0	**26**
7:15	1	6	0	0	0	14	0	1	0	0	0	0	0	0	0	0	**21**
7:30	0	10	0	0	0	5	0	0	0	0	0	0	0	0	0	0	**15**
7:45	0	9	1	0	0	30	0	1	1	0	1	0	0	0	0	0	**42**
8:00	0	6	0	0	0	22	0	0	0	0	0	0	0	0	0	0	**28**
8:15	1	20	0	1	0	20	0	1	0	0	0	0	2	0	0	0	**43**
8:30	0	12	0	0	0	18	0	1	0	0	0	0	0	0	0	0	**30**
8:45	0	12	0	0	0	18	0	0	0	0	0	0	0	0	0	0	**30**

PEAK HOUR	Colorado Blvd Eastbound				Colorado Blvd Westbound				9th Ave Northbound				9th Ave Southbound				
	Left	Thru	Right	HV	Left	Thru	Right	HV	Left	Thru	Right	HV	Left	Thru	Right	HV	Int. Total
7:45	0	9	1	0	0	30	0	1	1	0	1	0	0	0	0	0	**42**
8:00	0	6	0	0	0	22	0	0	0	0	0	0	0	0	0	0	**28**
8:15	1	20	0	1	0	20	0	1	0	0	0	0	2	0	0	0	**43**
8:30	0	12	0	0	0	18	0	1	0	0	0	0	0	0	0	0	**30**
Hr Total	**1**	**47**	**1**	**1**	**0**	**90**	**0**	**3**	**1**	**0**	**1**	**0**	**2**	**0**	**0**	**0**	**143**

HV= 2.8% PHF= 0.83

Intersection: **9th Avenue & Colorado Boulevard** Date: Wednesday, July 21, 2021

Start	Colorado Blvd Eastbound				Colorado Blvd Westbound				9th Ave Northbound				9th Ave Southbound				
Time	Left	Thru	Right	HV	Left	Thru	Right	HV	Left	Thru	Right	HV	Left	Thru	Right	HV	Int. Total
16:00	3	30	0	0	0	34	0	0	0	0	1	0	2	0	0	0	**70**
16:15	0	34	1	1	0	40	0	0	0	0	1	0	0	0	0	0	**76**
16:30	2	37	0	0	0	28	0	1	1	0	0	0	0	0	0	0	**68**
16:45	1	31	0	0	0	23	0	0	0	0	0	0	1	0	0	0	**56**
17:00	1	30	2	0	0	27	0	0	0	0	0	0	0	0	0	0	**60**
17:15	0	18	0	0	0	30	0	0	0	0	1	0	1	0	0	0	**50**
17:30	1	31	1	0	0	31	1	0	0	0	2	0	1	0	0	0	**68**
17:45	0	18	1	0	0	32	1	0	0	0	2	0	0	0	0	0	**54**

PM PEAK HOUR	Colorado Blvd Eastbound				Colorado Blvd Westbound				9th Ave Northbound				9th Ave Southbound				
	Left	Thru	Right	HV	Left	Thru	Right	HV	Left	Thru	Right	HV	Left	Thru	Right	HV	Int. Total
16:00	3	30	0	0	0	34	0	0	0	0	1	0	2	0	0	0	**70**
16:15	0	34	1	1	0	40	0	0	0	0	1	0	0	0	0	0	**76**
16:30	2	37	0	0	0	28	0	1	1	0	0	0	0	0	0	0	**68**
16:45	1	31	0	0	0	23	0	0	0	0	0	0	1	0	0	0	**56**
Hr Total	**6**	**132**	**1**	**1**	**0**	**125**	**0**	**1**	**1**	**0**	**2**	**0**	**3**	**0**	**0**	**0**	**270**

HV= 0.7% PHF= 0.89

Peak-Hour Turning Movement Count

Intersection: **9th Avenue & Colorado Boulevard** Date: Saturday, July 17, 2021

Start	Colorado Blvd Eastbound				Colorado Blvd Westbound				9th Ave Northbound				9th Ave Southbound				
Time	Left	Thru	Right	HV	Left	Thru	Right	HV	Left	Thru	Right	HV	Left	Thru	Right	HV	Int. Total
10:00	0	25	0	0	0	24	0	0	0	0	0	0	0	0	0	0	**49**
10:15	0	28	0	0	0	28	0	0	0	0	0	0	1	0	1	0	**58**
10:30	0	36	0	1	0	35	0	0	0	0	0	0	0	0	0	0	**71**
10:45	0	46	0	1	0	39	0	1	0	0	1	0	0	0	0	0	**86**
11:00	0	62	0	0	0	40	0	0	0	0	0	0	1	0	0	0	**103**
11:15	0	44	1	1	0	40	0	0	1	0	2	0	2	0	0	0	**90**
11:30	0	65	0	1	0	41	0	0	0	0	0	0	0	0	0	0	**106**
11:45	0	81	0	1	0	56	1	0	1	0	1	0	0	0	0	0	**140**
12:00	1	103	0	2	0	50	0	0	1	0	0	0	1	0	0	0	**156**
12:15	0	67	0	0	0	52	0	1	0	0	0	0	0	0	0	0	**119**
12:30	2	96	0	1	0	44	0	1	1	0	0	0	1	0	0	0	**144**
12:45	0	92	2	2	0	40	0	0	0	0	0	0	1	0	0	0	**135**

PEAK	Colorado Blvd Eastbound				Colorado Blvd Westbound				9th Ave Northbound				9th Ave Southbound				
HOUR	Left	Thru	Right	HV	Left	Thru	Right	HV	Left	Thru	Right	HV	Left	Thru	Right	HV	Int. Total
11:45	0	81	0	1	0	56	1	0	1	0	1	0	0	0	0	0	**140**
12:00	1	103	0	2	0	50	0	0	1	0	0	0	1	0	0	0	**156**
12:15	0	67	0	0	0	52	0	1	0	0	0	0	0	0	0	0	**119**
12:30	2	96	0	1	0	44	0	1	1	0	0	0	1	0	0	0	**144**
Hr Total	**3**	**347**	**0**	**4**	**0**	**202**	**1**	**2**	**3**	**0**	**1**	**0**	**2**	**0**	**0**	**0**	**559**
													HV=	1.1%		PHF=	0.90

CivTRANS Engineering Inc.

Ped-Bike Count

Intersection: **9th Avenue & Colorado Boulevard** Date: Wednesday, July 21, 2021

Start Time	Colorado Blvd East Leg				Colorado Blvd West Leg				9th Avenue North Leg				9th Avenue South Leg				Ped Total	Bike Total
	Ped		Bike-other		Ped		Bike-other		Ped		Bike-other		Ped		Bike-other			
	NB	SB	NB	SB	NB	SB	NB	SB	EB	WB	EB	WB	EB	WB	EB	WB		
7:00	0	0	0	0	0	0	0	0	0	0	0	0	4	1	0	0	**5**	**0**
7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	1	**2**	**2**
7:30	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	**3**	**0**
7:45	0	0	0	0	0	0	0	0	0	0	1	0	0	3	0	0	**3**	**1**
8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**
8:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**
8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	**0**	**1**
8:45	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	**0**	**2**

AM PEAK HOUR	Colorado Blvd East Leg				Colorado Blvd West Leg				9th Avenue North Leg				9th Avenue South Leg				Ped Total	Bike Total
	Ped		Bike-other		Ped		Bike-other		Ped		Bike-other		Ped		Bike-other			
	NB	SB	NB	SB	NB	SB	NB	SB	EB	WB	EB	WB	EB	WB	EB	WB		
7:45	0	0	0	0	0	0	0	0	0	0	1	0	0	3	0	0	**3**	**1**
8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**
8:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**
8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	**0**	**1**
Hr Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**3**	**0**	**1**	**3**	**2**

Intersection: **9th Avenue & Colorado Boulevard** Date: Wednesday, July 21, 2021

Start Time	Colorado Blvd East Leg				Colorado Blvd West Leg				9th Avenue North Leg				9th Avenue South Leg				Ped Total	Bike Total
	Ped		Bike-other		Ped		Bike-other		Ped		Bike-other		Ped		Bike-other			
	NB	SB	NB	SB	NB	SB	NB	SB	EB	WB	EB	WB	EB	WB	EB	WB		
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	**3**	**0**
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**

PM PEAK HOUR	Colorado Blvd East Leg				Colorado Blvd West Leg				9th Avenue North Leg				9th Avenue South Leg				Ped Total	Bike Total
	Ped		Bike-other		Ped		Bike-other		Ped		Bike-other		Ped		Bike-other			
	NB	SB	NB	SB	NB	SB	NB	SB	EB	WB	EB	WB	EB	WB	EB	WB		
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	**3**	**0**
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**
Hr Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**3**	**0**

Ped-Bike Count

Intersection: **9th Avenue & Colorado Boulevard** Date: Saturday, July 17, 2021

Start Time	Colorado Blvd East Leg				Colorado Blvd West Leg				9th Avenue North Leg				9th Avenue South Leg				Ped Total	Bike Total
	Ped		Bike-other		Ped		Bike-other		Ped		Bike-other		Ped		Bike-other			
	NB	SB	NB	SB	NB	SB	NB	SB	EB	WB	EB	WB	EB	WB	EB	WB		
10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**
10:15	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	**0**	**1**
10:30	0	0	0	0	0	0	0	0	0	0	0	2	0	0	1	0	**0**	**3**
10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	**0**	**1**
11:00	0	0	0	0	0	0	0	0	1	0	0	1	2	0	0	0	**3**	**1**
11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	**0**	**1**
11:30	0	0	0	0	0	0	0	0	0	0	0	8	0	0	4	0	**0**	**12**
11:45	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	**1**	**2**
12:00	0	0	0	0	0	0	0	0	0	0	0	0	2	0	3	0	**2**	**3**
12:15	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	**0**	**2**
12:30	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4	0	**4**	**4**
12:45	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	**4**	**0**

PEAK HOUR	Colorado Blvd East Leg				Colorado Blvd West Leg				9th Avenue North Leg				9th Avenue South Leg				Ped Total	Bike Total
	Ped		Bike-other		Ped		Bike-other		Ped		Bike-other		Ped		Bike-other			
	NB	SB	NB	SB	NB	SB	NB	SB	EB	WB	EB	WB	EB	WB	EB	WB		
11:45	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	**1**	**2**
12:00	0	0	0	0	0	0	0	0	0	0	0	0	2	0	3	0	**2**	**3**
12:15	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	**0**	**2**
12:30	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4	0	**4**	**4**
Hr Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**7**	**0**	**8**	**0**	**7**	**11**

CivTRANS Engineering Inc.

Peak-Hour Turning Movement Count

Intersection: **13th Avenue & Miner Street** Date: Wednesday, July 21, 2021

Start	Miner Street Eastbound				Miner Street Westbound				13th Avenue Northbound				13th Avenue Southbound				
Time	Left	Thru	Right	HV	Left	Thru	Right	HV	Left	Thru	Right	HV	Left	Thru	Right	HV	Int. Total
7:00	1	0	3	0	2	1	1	0	1	6	2	0	0	15	2	0	**34**
7:15	0	0	1	0	3	0	0	0	2	6	2	0	3	20	1	1	**38**
7:30	2	1	5	0	6	1	1	0	4	10	8	0	1	19	1	0	**59**
7:45	0	4	3	1	9	0	3	0	6	16	2	1	5	19	1	2	**68**
8:00	3	2	1	0	10	2	2	0	4	16	9	2	8	19	1	2	**77**
8:15	0	0	2	0	9	1	2	0	3	10	10	2	10	18	3	0	**68**
8:30	0	2	3	0	11	1	1	1	3	19	7	0	6	28	2	4	**83**
8:45	0	3	1	0	8	0	2	0	5	14	6	0	6	17	4	0	**66**

PEAK HOUR	Miner Street Eastbound				Miner Street Westbound				13th Avenue Northbound				13th Avenue Southbound				
	Left	Thru	Right	HV	Left	Thru	Right	HV	Left	Thru	Right	HV	Left	Thru	Right	HV	Int. Total
7:45	0	4	3	1	9	0	3	0	6	16	2	1	5	19	1	2	**68**
8:00	3	2	1	0	10	2	2	0	4	16	9	2	8	19	1	2	**77**
8:15	0	0	2	0	9	1	2	0	3	10	10	2	10	18	3	0	**68**
8:30	0	2	3	0	11	1	1	1	3	19	7	0	6	28	2	4	**83**
Hr Total	**3**	**8**	**9**	**1**	**39**	**4**	**8**	**1**	**16**	**61**	**28**	**5**	**29**	**84**	**7**	**8**	**296**
													HV=	5.1%		PHF=	0.89

Intersection: **13th Avenue & Miner Street** Date: Wednesday, July 21, 2021

Start	Miner Street Eastbound				Miner Street Westbound				13th Avenue Northbound				13th Avenue Southbound				
Time	Left	Thru	Right	HV	Left	Thru	Right	HV	Left	Thru	Right	HV	Left	Thru	Right	HV	Int. Total
16:00	1	2	4	0	7	2	0	0	2	29	19	0	12	38	3	0	**119**
16:15	1	0	4	0	10	1	2	0	8	32	21	1	10	33	1	0	**123**
16:30	3	3	3	0	11	2	5	0	2	23	15	0	5	32	3	0	**107**
16:45	5	2	3	0	9	1	1	0	4	28	22	0	13	31	5	0	**124**
17:00	3	0	6	0	12	0	4	0	1	28	12	0	10	39	2	0	**117**
17:15	1	0	4	0	15	0	3	0	5	29	12	0	13	25	5	0	**112**
17:30	3	2	3	0	5	3	0	0	1	22	15	0	6	23	4	0	**87**
17:45	1	4	5	0	6	2	2	0	3	25	25	0	11	25	1	0	**110**

PM PEAK HOUR	Miner Street Eastbound				Miner Street Westbound				13th Avenue Northbound				13th Avenue Southbound				
	Left	Thru	Right	HV	Left	Thru	Right	HV	Left	Thru	Right	HV	Left	Thru	Right	HV	Int. Total
16:00	1	2	4	0	7	2	0	0	2	29	19	0	12	38	3	0	**119**
16:15	1	0	4	0	10	1	2	0	8	32	21	1	10	33	1	0	**123**
16:30	3	3	3	0	11	2	5	0	2	23	15	0	5	32	3	0	**107**
16:45	5	2	3	0	9	1	1	0	4	28	22	0	13	31	5	0	**124**
Hr Total	**10**	**7**	**14**	**0**	**37**	**6**	**8**	**0**	**16**	**112**	**77**	**1**	**40**	**134**	**12**	**0**	**473**
													HV=	0.2%		PHF=	0.95

Peak-Hour Turning Movement Count

Intersection: **13th Avenue & Miner Street** Date: Saturday, July 17, 2021

Start	Miner Street Eastbound				Miner Street Westbound				13th Ave Northbound				13th Ave Southbound				
Time	Left	Thru	Right	HV	Left	Thru	Right	HV	Left	Thru	Right	HV	Left	Thru	Right	HV	Int. Total
10:00	0	2	6	0	7	5	8	0	3	25	18	1	13	37	2	0	**126**
10:15	1	2	4	0	12	0	4	0	4	33	18	0	6	41	5	1	**130**
10:30	2	1	3	0	11	1	4	0	0	26	24	1	15	29	5	1	**121**
10:45	1	5	8	0	12	7	3	0	7	41	35	1	9	40	7	0	**175**
11:00	2	5	14	0	20	4	5	0	6	47	35	1	20	38	4	0	**200**
11:15	3	4	3	0	19	1	3	0	8	38	24	1	14	25	4	0	**146**
11:30	3	2	4	0	12	2	8	0	9	37	54	0	23	32	5	0	**191**
11:45	1	2	0	0	18	5	7	0	3	38	54	0	21	49	4	0	**202**
12:00	1	6	3	0	14	2	2	0	6	38	42	0	18	41	4	0	**177**
12:15	2	1	4	0	12	5	5	0	6	36	54	0	33	46	6	0	**210**
12:30	3	8	1	0	16	8	6	0	5	46	56	0	20	39	7	0	**215**
12:45	4	6	3	0	7	5	7	0	8	51	47	0	24	41	6	1	**209**

PEAK HOUR	Miner Street Eastbound				Miner Street Westbound				13th Ave Northbound				13th Ave Southbound				
	Left	Thru	Right	HV	Left	Thru	Right	HV	Left	Thru	Right	HV	Left	Thru	Right	HV	Int. Total
12:00	1	6	3	0	14	2	2	0	6	38	42	0	18	41	4	0	**177**
12:15	2	1	4	0	12	5	5	0	6	36	54	0	33	46	6	0	**210**
12:30	3	8	1	0	16	8	6	0	5	46	56	0	20	39	7	0	**215**
12:45	4	6	3	0	7	5	7	0	8	51	47	0	24	41	6	1	**209**
Hr Total	**10**	**21**	**11**	**0**	**49**	**20**	**20**	**0**	**25**	**171**	**199**	**0**	**95**	**167**	**23**	**1**	**811**
													HV=	0.1%		PHF=	0.94

CivTRANS Engineering Inc.

Ped-Bike Count

Intersection: **13th Avenue & Miner Street** Date: Wednesday, July 21, 2021

Start Time	Miner St East Leg				Miner St West Leg				13th Ave North Leg				13th Ave South Leg				Ped Total	Bike Total
	Ped		Bike-other		Ped		Bike-other		Ped		Bike-other		Ped		Bike-other			
	NB	SB	NB	SB	NB	SB	NB	SB	EB	WB	EB	WB	EB	WB	EB	WB		
7:00	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	**1**	**0**
7:15	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	**1**	**0**
7:30	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	**1**	**0**
7:45	0	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	**3**	**0**
8:00	2	0	0	0	0	0	0	0	2	1	0	0	0	1	0	0	**6**	**0**
8:15	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	**4**	**0**
8:30	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	**3**	**0**
8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**

AM PEAK HOUR	Miner St East Leg				Miner St West Leg				13th Ave North Leg				13th Ave South Leg				Ped Total	Bike Total
	Ped		Bike-other		Ped		Bike-other		Ped		Bike-other		Ped		Bike-other			
	NB	SB	NB	SB	NB	SB	NB	SB	EB	WB	EB	WB	EB	WB	EB	WB		
7:45	0	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	**3**	**0**
8:00	2	0	0	0	0	0	0	0	2	1	0	0	0	1	0	0	**6**	**0**
8:15	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	**4**	**0**
8:30	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	**3**	**0**
Hr Total	**2**	**0**	**0**	**0**	**1**	**2**	**0**	**0**	**4**	**3**	**0**	**0**	**3**	**1**	**0**	**0**	**16**	**0**

Intersection: **13th Avenue & Miner Street** Date: Wednesday, July 21, 2021

Start Time	Miner St East Leg				Miner St West Leg				13th Ave North Leg				13th Ave South Leg				Ped Total	Bike Total
	Ped		Bike-other		Ped		Bike-other		Ped		Bike-other		Ped		Bike-other			
	NB	SB	NB	SB	NB	SB	NB	SB	EB	WB	EB	WB	EB	WB	EB	WB		
16:00	0	0	0	0	0	0	0	0	0	1	0	0	3	1	0	0	**5**	**0**
16:15	1	0	1	0	0	0	0	0	0	3	0	1	5	2	0	0	**11**	**2**
16:30	0	0	0	0	0	2	0	1	0	7	0	0	0	2	0	0	**11**	**1**
16:45	0	0	0	0	0	0	0	0	2	0	0	0	4	0	0	0	**6**	**0**
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**
17:15	0	2	0	0	0	0	0	0	3	3	0	0	1	2	0	0	**11**	**0**
17:30	0	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	**3**	**0**
17:45	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	**3**	**0**

PM PEAK HOUR	Miner St East Leg				Miner St West Leg				13th Ave North Leg				13th Ave South Leg				Ped Total	Bike Total
	Ped		Bike-other		Ped		Bike-other		Ped		Bike-other		Ped		Bike-other			
	NB	SB	NB	SB	NB	SB	NB	SB	EB	WB	EB	WB	EB	WB	EB	WB		
16:00	0	0	0	0	0	0	0	0	0	1	0	0	3	1	0	0	**5**	**0**
16:15	1	0	1	0	0	0	0	0	0	3	0	1	5	2	0	0	**11**	**2**
16:30	0	0	0	0	0	2	0	1	0	7	0	0	0	2	0	0	**11**	**1**
16:45	0	0	0	0	0	0	0	0	2	0	0	0	4	0	0	0	**6**	**0**
Hr Total	**1**	**0**	**1**	**0**	**0**	**2**	**0**	**1**	**2**	**11**	**0**	**1**	**12**	**5**	**0**	**0**	**33**	**3**

Ped-Bike Count

Intersection: **13th Avenue & Miner Street** Date: Saturday, July 17, 2021

Start Time	Miner St East Leg				Miner St West Leg				13th Ave North Leg				13th Ave South Leg				Ped Total	Bike Total
	Ped		Bike-other		Ped		Bike-other		Ped		Bike-other		Ped		Bike-other			
	NB	SB	NB	SB	NB	SB	NB	SB	EB	WB	EB	WB	EB	WB	EB	WB		
10:00																	**0**	**0**
10:15																	**0**	**0**
10:30																	**0**	**0**
10:45																	**0**	**0**
11:00																	**0**	**0**
11:15																	**0**	**0**
11:30																	**0**	**0**
11:45																	**0**	**0**
12:00	2	0	0	0	0	1	0	0	6	5	0	2	25	4	0	0	**43**	**2**
12:15	0	0	1	0	2	5	0	1	2	7	0	0	21	2	0	0	**39**	**2**
12:30	0	0	0	0	0	0	0	0	12	2	0	1	50	8	1	0	**72**	**2**
12:45	0	1	0	0	0	0	0	0	1	4	0	0	13	12	0	0	**31**	**0**

PEAK HOUR	Miner St East Leg				Miner St West Leg				13th Ave North Leg				13th Ave South Leg				Ped Total	Bike Total
	Ped		Bike-other		Ped		Bike-other		Ped		Bike-other		Ped		Bike-other			
	NB	SB	NB	SB	NB	SB	NB	SB	EB	WB	EB	WB	EB	WB	EB	WB		
12:00	2	0	0	0	0	1	0	0	6	5	0	2	25	4	0	0	**43**	**2**
12:15	0	0	1	0	2	5	0	1	2	7	0	0	21	2	0	0	**39**	**2**
12:30	0	0	0	0	0	0	0	0	12	2	0	1	50	8	1	0	**72**	**2**
12:45	0	1	0	0	0	0	0	0	1	4	0	0	13	12	0	0	**31**	**0**
Hr Total	**2**	**1**	**1**	**0**	**2**	**6**	**0**	**1**	**21**	**18**	**0**	**3**	**109**	**26**	**1**	**0**	**185**	**6**

CivTRANS Engineering Inc.

Peak-Hour Turning Movement Count

Intersection: **13th Avenue & Idaho Street** Date: Wednesday, July 21, 2021

Start	Idaho Street Eastbound				Idaho Street Westbound				13th Avenue Northbound				13th Avenue Southbound				
Time	Left	Thru	Right	HV	Left	Thru	Right	HV	Left	Thru	Right	HV	Left	Thru	Right	HV	Int. Total
7:00	0	0	1		9	0	0		6	9	14	1	0	22	0		**61**
7:15	0	0	4		5	2	0		5	9	12		1	24	0	1	**62**
7:30	0	1	4		15	1	1		4	23	14		3	27	0		**93**
7:45	0	1	1		8	0	1		5	23	22	1	4	24	1	1	**90**
8:00	1	1	11	2	7	1	3		5	26	8	3	2	22	1	3	**88**
8:15	2	0	3		9	0	1		2	18	22	1	5	25	1		**88**
8:30	2	1	4		8	1	3	1	3	20	13	0	1	43	3	1	**102**
8:45	1	0	3		6	1		1	2	22	8		0	38	2		**83**

PEAK HOUR	Idaho Street Eastbound				Idaho Street Westbound				13th Avenue Northbound				13th Avenue Southbound				
	Left	Thru	Right	HV	Left	Thru	Right	HV	Left	Thru	Right	HV	Left	Thru	Right	HV	Int. Total
7:45	0	1	1		8	0	1		5	23	22	1	4	24	1	1	**90**
8:00	1	1	11	2	7	1	3		5	26	8	3	2	22	1	3	**88**
8:15	2	0	3		9	0	1		2	18	22	1	5	25	1		**88**
8:30	2	1	4		8	1	3	1	3	20	13	0	1	43	3	1	**102**
Hr Total	**5**	**3**	**19**	**2**	**32**	**2**	**8**	**1**	**15**	**87**	**65**	**5**	**12**	**114**	**6**	**5**	**368**
													HV=	3.5%		PHF=	0.90

Intersection: **13th Avenue & Idaho Street** Date: Wednesday, July 21, 2021

Start	Idaho Street Eastbound				Idaho Street Westbound				13th Avenue Northbound				13th Avenue Southbound				
Time	Left	Thru	Right	HV	Left	Thru	Right	HV	Left	Thru	Right	HV	Left	Thru	Right	HV	Int. Total
16:00	1	1	2	0	22	1	7	0	3	47	10	1	4	49	1	0	**148**
16:15	0	1	4	1	28	1	6	1	2	55	18	1	3	47	0	0	**165**
16:30	5	2	2	0	12	2	2	0	2	36	21	0	1	45	1	0	**131**
16:45	1	2	3	0	19	1	5	0	3	47	15	0	2	42	0	0	**140**
17:00	1	2	3	0	19	0	7	0	2	35	14	0	3	56	1	0	**143**
17:15	2	1	2	0	22	1	1	0	4	41	20	0	1	40	1	0	**136**
17:30	0	0	3	0	22	2	4	0	4	33	13	0	6	26	0	0	**113**
17:45	1	0	1	0	22	0	3	0	6	48	25	0	3	33	0	0	**142**

PM PEAK HOUR	Idaho Street Eastbound				Idaho Street Westbound				13th Avenue Northbound				13th Avenue Southbound				
	Left	Thru	Right	HV	Left	Thru	Right	HV	Left	Thru	Right	HV	Left	Thru	Right	HV	Int. Total
16:00	1	1	2	0	22	1	7	0	3	47	10	1	4	49	1	0	**148**
16:15	0	1	4	1	28	1	6	1	2	55	18	1	3	47	0	0	**165**
16:30	5	2	2	0	12	2	2	0	2	36	21	0	1	45	1	0	**131**
16:45	1	2	3	0	19	1	5	0	3	47	15	0	2	42	0	0	**140**
Hr Total	**7**	**6**	**11**	**1**	**81**	**5**	**20**	**1**	**10**	**185**	**64**	**2**	**10**	**183**	**2**	**0**	**584**
													HV=	0.7%		PHF=	0.88

Peak-Hour Turning Movement Count

Intersection: **13th Avenue & Idaho Street** Date: Saturday, July 17, 2021

Start	Idaho Street Eastbound				Idaho Street Westbound				13th Ave Northbound				13th Ave Southbound				
Time	Left	Thru	Right	HV	Left	Thru	Right	HV	Left	Thru	Right	HV	Left	Thru	Right	HV	Int. Total
10:00	0	2	3	0	13	3	0	0	3	49	32	1	4	43	2	1	**154**
10:15	3	0	5	1	18	0	1	0	1	51	22	0	1	55	1	1	**158**
10:30	2	3	3	0	13	2	4	0	6	58	25	1	2	33	4	1	**155**
10:45	5	1	5	0	23	2	7	0	10	71	41	0	7	51	5	0	**228**
11:00	0	1	6	0	23	1	9	1	4	81	26	0	5	72	1	0	**229**
11:15	1	2	5	0	16	0	2	1	4	68	33	0	1	48	1	0	**181**
11:30	3	2	4	0	22	3	8	0	3	90	27	0	5	48	2	0	**217**
11:45	1	0	4	0	25	3	5	0	2	96	21	0	4	60	4	0	**225**
12:00	3	2	11	0	21	7	9	0	1	75	24	0	4	55	1	0	**213**
12:15	0	3	5	0	25	10	6	0	4	91	35	0	2	58	0	0	**239**
12:30	3	3	4	0	30	3	10	0	6	96	23	0	0	57	2	0	**237**
12:45	0	3	3	0	30	8	6	0	6	100	28	0	3	50	0	1	**237**

PEAK HOUR	Idaho Street Eastbound				Idaho Street Westbound				13th Ave Northbound				13th Ave Southbound				
	Left	Thru	Right	HV	Left	Thru	Right	HV	Left	Thru	Right	HV	Left	Thru	Right	HV	Int. Total
12:00	3	2	11	0	21	7	9	0	1	75	24	0	4	55	1	0	**213**
12:15	0	3	5	0	25	10	6	0	4	91	35	0	2	58	0	0	**239**
12:30	3	3	4	0	30	3	10	0	6	96	23	0	0	57	2	0	**237**
12:45	0	3	3	0	30	8	6	0	6	100	28	0	3	50	0	1	**237**
Hr Total	**6**	**11**	**23**	**0**	**106**	**28**	**31**	**0**	**17**	**362**	**110**	**0**	**9**	**220**	**3**	**1**	**926**
													HV=	0.1%		PHF=	0.97

CivTRANS Engineering Inc.

Ped-Bike Count

Intersection: **13th Avenue & Idaho Street** Date: Wednesday, July 21, 2021

Start Time	Idaho Street East Leg				Idaho Street West Leg				13th Ave North Leg				13th Ave South Leg				Ped Total	Bike Total
	Ped		Bike-other		Ped		Bike-other		Ped		Bike-other		Ped		Bike-other			
	NB	SB	NB	SB	NB	SB	NB	SB	EB	WB	EB	WB	EB	WB	EB	WB		
7:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**
7:15	0	0	0	0	1	1	0	0	0	0	0	0	1	0	0	0	**3**	**0**
7:30	0	0	0	0	0	0	0	0	0	0	0	0	2	3	0	0	**5**	**0**
7:45	0	0	0	0	1	1	0	0	1	3	0	0	0	1	0	1	**7**	**1**
8:00	0	0	0	0	2	1	0	0	0	0	0	0	4	0	0	0	**7**	**0**
8:15	0	0	0	0	1	3	0	0	0	0	0	0	1	0	0	0	**5**	**0**
8:30	0	0	0	0	0	0	1	0	0	0	0	0	5	2	1	0	**7**	**2**
8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	**0**

AM PEAK HOUR	Idaho Street East Leg				Idaho Street West Leg				13th Ave North Leg				13th Ave South Leg				Ped Total	Bike Total
	Ped		Bike-other		Ped		Bike-other		Ped		Bike-other		Ped		Bike-other			
	NB	SB	NB	SB	NB	SB	NB	SB	EB	WB	EB	WB	EB	WB	EB	WB		
7:45	0	0	0	0	1	1	0	0	1	3	0	0	0	1	0	1	**7**	**1**
8:00	0	0	0	0	2	1	0	0	0	0	0	0	4	0	0	0	**7**	**0**
8:15	0	0	0	0	1	3	0	0	0	0	0	0	1	0	0	0	**5**	**0**
8:30	0	0	0	0	0	0	1	0	0	0	0	0	5	2	1	0	**7**	**2**
Hr Total	**0**	**0**	**0**	**0**	**4**	**5**	**1**	**0**	**1**	**3**	**0**	**0**	**10**	**3**	**1**	**1**	**26**	**3**

Intersection: **13th Avenue & Idaho Street** Date: Wednesday, July 21, 2021

Start Time	Idaho Street East Leg				Idaho Street West Leg				13th Ave North Leg				13th Ave South Leg				Ped Total	Bike Total
	Ped		Bike-other		Ped		Bike-other		Ped		Bike-other		Ped		Bike-other			
	NB	SB	NB	SB	NB	SB	NB	SB	EB	WB	EB	WB	EB	WB	EB	WB		
16:00	0	0	0	0	1	0	0	0	1	0	0	0	6	3	0	0	**11**	**0**
16:15	0	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0	**2**	**1**
16:30	4	0	0	0	0	0	1	2	0	0	0	0	4	5	0	0	**13**	**3**
16:45	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	**3**	**0**
17:00	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	**1**	**1**
17:15	0	0	0	0	0	2	0	0	0	0	0	1	0	0	0	0	**2**	**1**
17:30	0	0	0	0	0	2	0	0	0	0	0	0	1	1	0	0	**4**	**0**
17:45	1	0	0	0	1	2	0	0	0	2	0	0	4	1	0	0	**11**	**0**

PM PEAK HOUR	Idaho Street East Leg				Idaho Street West Leg				13th Ave North Leg				13th Ave South Leg				Ped Total	Bike Total
	Ped		Bike-other		Ped		Bike-other		Ped		Bike-other		Ped		Bike-other			
	NB	SB	NB	SB	NB	SB	NB	SB	EB	WB	EB	WB	EB	WB	EB	WB		
16:00	0	0	0	0	1	0	0	0	1	0	0	0	6	3	0	0	**11**	**0**
16:15	0	0	1	0	1	0	0	0	0	0	0	0	1	0	0	0	**2**	**1**
16:30	4	0	0	0	0	0	1	2	0	0	0	0	4	5	0	0	**13**	**3**
16:45	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	**3**	**0**
Hr Total	**4**	**0**	**1**	**0**	**3**	**0**	**1**	**2**	**2**	**1**	**0**	**0**	**11**	**8**	**0**	**0**	**29**	**4**

CivTRANS Engineering Inc.

Ped-Bike Count

Intersection: **13th Avenue & Idaho Street** Date: Saturday, July 17, 2021

Start Time	Idaho St East Leg				Idaho St West Leg				13th Ave North Leg				13th Ave South Leg				Ped Total	Bike Total
	Ped		Bike-other		Ped		Bike-other		Ped		Bike-other		Ped		Bike-other			
	NB	SB	NB	SB	NB	SB	NB	SB	EB	WB	EB	WB	EB	WB	EB	WB		
10:00																	**0**	**0**
10:15																	**0**	**0**
10:30																	**0**	**0**
10:45																	**0**	**0**
11:00																	**0**	**0**
11:15																	**0**	**0**
11:30																	**0**	**0**
11:45																	**0**	**0**
12:00	14	17	0	0	3	1	0	0	0	0	0	0	11	18	0	0	**64**	**0**
12:15	5	0	0	0	1	0	0	0	1	0	0	0	13	0	0	0	**20**	**0**
12:30	10	8	0	0	39	5	0	1	12	4	0	0	3	8	0	0	**89**	**1**
12:45	0	0	2	1	3	8	0	0	3	11	0	0	0	0	0	1	**25**	**4**

PEAK HOUR	Idaho St East Leg				Idaho St West Leg				13th Ave North Leg				13th Ave South Leg				Ped Total	Bike Total
	Ped		Bike-other		Ped		Bike-other		Ped		Bike-other		Ped		Bike-other			
	NB	SB	NB	SB	NB	SB	NB	SB	EB	WB	EB	WB	EB	WB	EB	WB		
12:00	14	17	0	0	3	1	0	0	0	0	0	0	11	18	0	0	**64**	**0**
12:15	5	0	0	0	1	0	0	0	1	0	0	0	13	0	0	0	**20**	**0**
12:30	10	8	0	0	39	5	0	1	12	4	0	0	3	8	0	0	**89**	**1**
12:45	0	0	2	1	3	8	0	0	3	11	0	0	0	0	0	1	**25**	**4**
Hr Total	**29**	**25**	**2**	**1**	**46**	**14**	**0**	**1**	**16**	**15**	**0**	**0**	**27**	**26**	**0**	**1**	**198**	**5**

TRIP GENERATION DATA

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Trip Generation for Proposed Block 57 Development

The current project is proposing to construct up to 120 multi-family residential units and 12,000 SF of retail. The residential is anticipated to mostly be three-story buildings with portions of the buildings dedicated to retail on the street level. LUC 221, Multifamily Housing (Mid-Rise), will be used for the residential portion of the project and LUC 820, Shopping Center, will be used for the retail portion.

Trip Generation

Per Trip Generation Manual, the following land use categories were applied.

LUC 221 - Multifamily Housing (Mid-rise)

	Fitted curve equation	Rate	R^2	% in	%out
AM Peak:	LN(T)=0.98*LN(X)-0.98	0.36	0.67	26%	74%
PM Peak:	LN(T)=0.96*LN(X)-.63	0.44	0.72	61%	39%
Sat Peak:	T=0.42(X)+6.73	0.44	0.89	49%	51%
ADT:	T=5.45(X)-1.75	5.44	0.77		
Sat ADT:	T=3.04(X)+417.11	4.91	0.73		

Low R^2 value. Therefore, average rate used.

			Total	In	Out
For X=	120.0	**AM Peak=**	**43**	**11**	**32**
		PM Peak=	**53**	**32**	**21**
		Sat Peak=	**53**	**26**	**27**
		ADT=	**652**		
		Sat ADT=	**590**		

LUC 820 - Shopping Center		rate	R^2	% in	%out
AM Peak:	T=0.50(X)+151.78	0.94	0.50	62%	38%
PM Peak:	LN(T)=0.74*LN(X)+2.89	3.81	0.82	48%	52%
Sat Peak:	LN(T)=0.79*LN(X)+2.79	4.50	0.87	52%	48%
ADT:	LN(T)=0.68*LN(X)+5.57	37.75	0.76		
Sat ADT:	LN(T)=0.62*LN(X)+6.24	46.12	0.71		

Low X value. Therefore, average rate used.

			Total	In	Out
For X=	12.0	**AM Peak=**	**11**	**7**	**4**
		PM Peak=	**46**	**22**	**24**
		Sat Peak=	**54**	**28**	**26**
		ADT=	**454**		
		Sat ADT=	**554**		

TRIP REDUCTION (MULTI-MODAL and TRANSIT) - 15% Overall Reduction due to proximity to City Center and that housing will be primarily for workforce

		Total	In	Out
Multi-Modal and Transit Trips-->	**AM Peak=**	8	3	5
	PM Peak=	15	8	7
	Sat Peak=	16	8	8
	ADT=	166		
	Sat ADT=	172		

VEHICLE TRIPS FOR ENTIRE SITE - Sum of land uses per Trip Generation Manual calculation minus "trip reduction" value.

		Total	In	Out
Vehicle Trips-->	**AM Peak=**	46	15	31
	PM Peak=	84	46	38
	Sat Peak=	91	46	45
	ADT=	940		
	Sat ADT=	972		

PANDEMIC ADJUSTMENT CALCULATIONS

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PANDEMIC ADJUSTMENT CALCULATION

ON I-70 E/O SH 70 BUS RT, COLORADO BLVD AT IDAHO SPRINGS TWIN TUNNELS (Station Id: 000120)

Wednesday, July 21, 2021

	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
EB	102	70	89	109	143	312	515	798	1,046	1,356	1,557	1,739	1,902	1,920	2,105	2,089	2,056	1,859	1,667	1,076	813	598	412	317
WB	175	108	109	131	289	648	1,059	1,389	1,253	1,816	2,020	1,937	1,824	2,046	1,889	1,739	1,506	1,524	1,205	930	715	460	354	266
Combined	277	178	198	240	432	960	1574	2187	2299	3172	3577	3676	3726	3966	3994	3828	3562	3383	2872	2006	1528	1058	766	583

Saturday, July 17, 2021

EB	230	133	110	108	135	266	450	836	1,221	1,881	2,340	2,976	2,884	3,024	3,170	3,298	3,214	3,113	2,362	2,083	1,474	1,159	742	506
WB	263	180	174	314	490	845	1,426	2,316	3,118	3,022	2,938	2,860	2,820	2,602	2,460	2,481	2,454	1,618	1,259	1,017	832	641	551	423
Combined	493	313	284	422	625	1111	1876	3152	4339	4903	5278	5836	5704	5626	5630	5779	5668	4731	3621	3100	2306	1800	1293	929

Wednesday, July 17, 2019

EB	202	137	108	130	136	328	665	903	1,118	1,472	1,642	1,813	1,920	2,054	2,228	2,311	2,146	2,020	1,589	1,342	979	709	586	398
WB	213	166	123	154	252	602	1,054	1,278	1,681	2,135	2,371	2,302	2,058	1,900	2,036	1,983	1,825	1,588	1,302	1,002	809	559	428	387
Combined	415	303	231	284	388	930	1719	2181	2799	3607	4013	4115	3978	3954	4264	4294	3971	3608	2891	2344	1788	1268	1014	785

Saturday, July 20, 2019

EB	237	140	134	131	164	280	445	811	1,237	1,779	2,248	2,513	2,670	2,259	2,745	2,416	2,432	2,304	2,844	3,348	2,861	1,418	831	502
WB	325	218	174	237	556	925	1,612	2,500	3,189	3,356	3,229	3,139	3,073	2,872	2,796	2,995	2,117	1,475	1,314	1,007	752	665	474	339
Combined	562	358	308	368	720	1205	2057	3311	4426	5135	5477	5652	5743	5131	5541	5411	4549	3779	4158	4355	3613	2083	1305	841

Pandemic Adjustment Factor	AM	1.2
	PM	1.1
	Sat	1.0

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LEVEL OF SERVICE CALCULATIONS EXISTING CONDITIONS

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Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	1	56	1	0	108	0	1	0	1	2	0	0
Future Vol, veh/h	1	56	1	0	108	0	1	0	1	2	0	0
Conflicting Peds, #/hr	0	0	3	3	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	67	1	0	130	0	1	0	1	2	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	130	0	0	71	0	0	203	203	71	200	203	130
Stage 1	-	-	-	-	-	-	73	73	-	130	130	-
Stage 2	-	-	-	-	-	-	130	130	-	70	73	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1455	-	-	1529	-	-	755	693	991	759	693	920
Stage 1	-	-	-	-	-	-	937	834	-	874	789	-
Stage 2	-	-	-	-	-	-	874	789	-	940	834	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1455	-	-	1525	-	-	752	690	988	757	690	920
Mov Cap-2 Maneuver	-	-	-	-	-	-	752	690	-	757	690	-
Stage 1	-	-	-	-	-	-	933	831	-	873	789	-
Stage 2	-	-	-	-	-	-	874	789	-	938	831	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	9.2	9.8
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	854	1455	-	-	1525	-	-	757
HCM Lane V/C Ratio	0.003	0.001	-	-	-	-	-	0.003
HCM Control Delay (s)	9.2	7.5	0	-	0	-	-	9.8
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Intersection	
Intersection Delay, s/veh	8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	8	9	39	4	8	16	61	28	29	84	7
Future Vol, veh/h	3	8	9	39	4	8	16	61	28	29	84	7
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	9	10	44	4	9	18	69	31	33	94	8
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	7.5	8	8	8.2
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	21%	0%	15%	76%	24%
Vol Thru, %	79%	0%	40%	8%	70%
Vol Right, %	0%	100%	45%	16%	6%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	77	28	20	51	120
LT Vol	16	0	3	39	29
Through Vol	61	0	8	4	84
RT Vol	0	28	9	8	7
Lane Flow Rate	87	31	22	57	135
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.117	0.035	0.027	0.073	0.16
Departure Headway (Hd)	4.848	4.042	4.344	4.6	4.275
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	731	873	829	783	825
Service Time	2.632	1.825	2.346	2.601	2.372
HCM Lane V/C Ratio	0.119	0.036	0.027	0.073	0.164
HCM Control Delay	8.3	7	7.5	8	8.2
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	0.4	0.1	0.1	0.2	0.6

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	3	19	32	2	8	15	87	65	12	114	6
Future Vol, veh/h	5	3	19	32	2	8	15	87	65	12	114	6
Conflicting Peds, #/hr	4	0	13	13	0	4	9	0	0	0	0	9
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	3	21	36	2	9	17	97	72	13	127	7

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	343	369	153	349	336	137	143	0	0	169	0	0
Stage 1	166	166	-	167	167	-	-	-	-	-	-	-
Stage 2	177	203	-	182	169	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	611	560	893	606	585	911	1440	-	-	1409	-	-
Stage 1	836	761	-	835	760	-	-	-	-	-	-	-
Stage 2	825	733	-	820	759	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	585	542	874	571	566	908	1428	-	-	1409	-	-
Mov Cap-2 Maneuver	585	542	-	571	566	-	-	-	-	-	-	-
Stage 1	818	747	-	824	750	-	-	-	-	-	-	-
Stage 2	801	723	-	779	745	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10	11.3	0.7	0.7
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1428	-	-	754	614	1409	-	-
HCM Lane V/C Ratio	0.012	-	-	0.04	0.076	0.009	-	-
HCM Control Delay (s)	7.6	0	-	10	11.3	7.6	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.2	0	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	7	145	1	0	138	0	1	0	2	3	0	0
Future Vol, veh/h	7	145	1	0	138	0	1	0	2	3	0	0
Conflicting Peds, #/hr	0	0	3	3	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	163	1	0	155	0	1	0	2	3	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	155	0	0	167	0	0	338	338	167	336	338	155
Stage 1	-	-	-	-	-	-	183	183	-	155	155	-
Stage 2	-	-	-	-	-	-	155	155	-	181	183	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1425	-	-	1411	-	-	616	583	877	618	583	891
Stage 1	-	-	-	-	-	-	819	748	-	847	769	-
Stage 2	-	-	-	-	-	-	847	769	-	821	748	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1425	-	-	1407	-	-	612	578	874	614	578	891
Mov Cap-2 Maneuver	-	-	-	-	-	-	612	578	-	614	578	-
Stage 1	-	-	-	-	-	-	812	741	-	842	769	-
Stage 2	-	-	-	-	-	-	847	769	-	814	741	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0	9.7	10.9
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	765	1425	-	-	1407	-	-	614
HCM Lane V/C Ratio	0.004	0.006	-	-	-	-	-	0.005
HCM Control Delay (s)	9.7	7.5	0	-	0	-	-	10.9
HCM Lane LOS	A	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Intersection	
Intersection Delay, s/veh	8.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	8	15	41	7	9	18	123	85	44	147	13
Future Vol, veh/h	11	8	15	41	7	9	18	123	85	44	147	13
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	8	16	43	7	9	19	129	89	46	155	14
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	8.1	8.5	8.4	9.2
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	13%	0%	32%	72%	22%
Vol Thru, %	87%	0%	24%	12%	72%
Vol Right, %	0%	100%	44%	16%	6%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	141	85	34	57	204
LT Vol	18	0	11	41	44
Through Vol	123	0	8	7	147
RT Vol	0	85	15	9	13
Lane Flow Rate	148	89	36	60	215
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.206	0.105	0.048	0.084	0.27
Departure Headway (Hd)	5.005	4.237	4.828	5.04	4.53
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	718	846	741	710	795
Service Time	2.727	1.96	2.862	3.072	2.553
HCM Lane V/C Ratio	0.206	0.105	0.049	0.085	0.27
HCM Control Delay	9	7.5	8.1	8.5	9.2
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	0.8	0.4	0.2	0.3	1.1

Intersection	
Int Delay, s/veh	3.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	8	7	12	89	6	22	11	204	70	11	201	2
Future Vol, veh/h	8	7	12	89	6	22	11	204	70	11	201	2
Conflicting Peds, #/hr	3	0	19	19	0	3	3	0	4	4	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	8	14	101	7	25	13	232	80	13	228	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	575	600	251	587	561	279	233	0	0	316	0	0
Stage 1	258	258	-	302	302	-	-	-	-	-	-	-
Stage 2	317	342	-	285	259	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	429	415	788	421	436	760	1335	-	-	1244	-	-
Stage 1	747	694	-	707	664	-	-	-	-	-	-	-
Stage 2	694	638	-	722	694	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	400	402	772	391	422	755	1331	-	-	1239	-	-
Mov Cap-2 Maneuver	400	402	-	391	422	-	-	-	-	-	-	-
Stage 1	736	684	-	696	653	-	-	-	-	-	-	-
Stage 2	654	628	-	680	684	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.5	17	0.3	0.4
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1331	-	-	510	432	1239	-	-
HCM Lane V/C Ratio	0.009	-	-	0.06	0.308	0.01	-	-
HCM Control Delay (s)	7.7	0	-	12.5	17	7.9	0	-
HCM Lane LOS	A	A	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	1.3	0	-	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	3	347	0	0	202	1	3	0	1	2	0	0
Future Vol, veh/h	3	347	0	0	202	1	3	0	1	2	0	0
Conflicting Peds, #/hr	0	0	7	7	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	386	0	0	224	1	3	0	1	2	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	225	0	0	393	0	0	624	624	393	618	624	225
Stage 1	-	-	-	-	-	-	399	399	-	225	225	-
Stage 2	-	-	-	-	-	-	225	225	-	393	399	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1344	-	-	1166	-	-	398	402	656	402	402	814
Stage 1	-	-	-	-	-	-	627	602	-	778	718	-
Stage 2	-	-	-	-	-	-	778	718	-	632	602	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1344	-	-	1158	-	-	394	398	652	400	398	814
Mov Cap-2 Maneuver	-	-	-	-	-	-	394	398	-	400	398	-
Stage 1	-	-	-	-	-	-	621	596	-	776	718	-
Stage 2	-	-	-	-	-	-	778	718	-	629	596	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	13.3	14.1
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	437	1344	-	-	1158	-	-	400
HCM Lane V/C Ratio	0.01	0.002	-	-	-	-	-	0.006
HCM Control Delay (s)	13.3	7.7	0	-	0	-	-	14.1
HCM Lane LOS	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Intersection	
Intersection Delay, s/veh	10.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	21	11	49	20	20	25	171	199	95	167	23
Future Vol, veh/h	10	21	11	49	20	20	25	171	199	95	167	23
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	22	12	52	21	21	27	182	212	101	178	24
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	9.1	9.6	9.5	11.3
HCM LOS	A	A	A	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	13%	0%	24%	55%	33%
Vol Thru, %	87%	0%	50%	22%	59%
Vol Right, %	0%	100%	26%	22%	8%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	196	199	42	89	285
LT Vol	25	0	10	49	95
Through Vol	171	0	21	20	167
RT Vol	0	199	11	20	23
Lane Flow Rate	209	212	45	95	303
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.304	0.263	0.069	0.146	0.409
Departure Headway (Hd)	5.244	4.474	5.546	5.534	4.862
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	682	798	639	643	737
Service Time	3.001	2.231	3.638	3.614	2.922
HCM Lane V/C Ratio	0.306	0.266	0.07	0.148	0.411
HCM Control Delay	10.3	8.8	9.1	9.6	11.3
HCM Lane LOS	B	A	A	A	B
HCM 95th-tile Q	1.3	1.1	0.2	0.5	2

Intersection	
Int Delay, s/veh	8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	6	11	23	106	28	31	17	362	110	9	220	3
Future Vol, veh/h	6	11	23	106	28	31	17	362	110	9	220	3
Conflicting Peds, #/hr	31	0	53	53	0	31	60	0	54	54	0	60
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	11	24	109	29	32	18	373	113	9	227	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	834	883	342	837	828	515	290	0	0	540	0	0
Stage 1	307	307	-	520	520	-	-	-	-	-	-	-
Stage 2	527	576	-	317	308	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	288	285	701	286	306	560	1272	-	-	1028	-	-
Stage 1	703	661	-	539	532	-	-	-	-	-	-	-
Stage 2	535	502	-	694	660	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	221	247	628	233	265	516	1199	-	-	975	-	-
Mov Cap-2 Maneuver	221	247	-	233	265	-	-	-	-	-	-	-
Stage 1	649	617	-	501	494	-	-	-	-	-	-	-
Stage 2	449	466	-	616	616	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16	39.8	0.3	0.3
HCM LOS	C	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1199	-	-	369	266	975	-	-
HCM Lane V/C Ratio	0.015	-	-	0.112	0.639	0.01	-	-
HCM Control Delay (s)	8	0	-	16	39.8	8.7	0	-
HCM Lane LOS	A	A	-	C	E	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.4	4	0	-	-

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LEVEL OF SERVICE CALCULATIONS YEAR 2025 CONDITIONS WITHOUT PROJECT

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Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	59	1	0	115	0	1	0	1	2	0	0
Future Vol, veh/h	1	59	1	0	115	0	1	0	1	2	0	0
Conflicting Peds, #/hr	0	0	3	3	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	71	1	0	139	0	1	0	1	2	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	139	0	0	75	0	0	216	216	75	213	216	139
Stage 1	-	-	-	-	-	-	77	77	-	139	139	-
Stage 2	-	-	-	-	-	-	139	139	-	74	77	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1445	-	-	1524	-	-	740	682	986	744	682	909
Stage 1	-	-	-	-	-	-	932	831	-	864	782	-
Stage 2	-	-	-	-	-	-	864	782	-	935	831	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1445	-	-	1520	-	-	737	679	983	743	679	909
Mov Cap-2 Maneuver	-	-	-	-	-	-	737	679	-	743	679	-
Stage 1	-	-	-	-	-	-	928	828	-	863	782	-
Stage 2	-	-	-	-	-	-	864	782	-	933	828	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	9.3	9.9
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	842	1445	-	-	1520	-	-	743
HCM Lane V/C Ratio	0.003	0.001	-	-	-	-	-	0.003
HCM Control Delay (s)	9.3	7.5	0	-	0	-	-	9.9
HCM Lane LOS	A	A	A	-	A	-	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Intersection	
Intersection Delay, s/veh	8.4
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	11	12	50	5	11	20	77	36	37	107	8
Future Vol, veh/h	4	11	12	50	5	11	20	77	36	37	107	8
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	12	13	56	6	12	22	87	40	42	120	9
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	7.7	8.3	8.2	8.7
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	21%	0%	15%	76%	24%
Vol Thru, %	79%	0%	41%	8%	70%
Vol Right, %	0%	100%	44%	17%	5%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	97	36	27	66	152
LT Vol	20	0	4	50	37
Through Vol	77	0	11	5	107
RT Vol	0	36	12	11	8
Lane Flow Rate	109	40	30	74	171
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.152	0.047	0.038	0.098	0.212
Departure Headway (Hd)	5.022	4.216	4.532	4.762	4.472
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	716	851	791	754	804
Service Time	2.739	1.932	2.554	2.781	2.487
HCM Lane V/C Ratio	0.152	0.047	0.038	0.098	0.213
HCM Control Delay	8.6	7.1	7.7	8.3	8.7
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	0.5	0.1	0.1	0.3	0.8

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	4	24	40	2	11	19	110	83	15	145	7
Future Vol, veh/h	6	4	24	40	2	11	19	110	83	15	145	7
Conflicting Peds, #/hr	4	0	13	13	0	4	9	0	0	0	0	9
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	4	27	44	2	12	21	122	92	17	161	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	429	464	187	438	422	172	178	0	0	214	0	0
Stage 1	208	208	-	210	210	-	-	-	-	-	-	-
Stage 2	221	256	-	228	212	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	536	495	855	529	523	872	1398	-	-	1356	-	-
Stage 1	794	730	-	792	728	-	-	-	-	-	-	-
Stage 2	781	696	-	775	727	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	508	476	837	490	503	869	1386	-	-	1356	-	-
Mov Cap-2 Maneuver	508	476	-	490	503	-	-	-	-	-	-	-
Stage 1	774	713	-	779	716	-	-	-	-	-	-	-
Stage 2	752	684	-	726	710	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.5	12.5	0.7	0.7
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1386	-	-	695	539	1356	-	-
HCM Lane V/C Ratio	0.015	-	-	0.054	0.109	0.012	-	-
HCM Control Delay (s)	7.6	0	-	10.5	12.5	7.7	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.4	0	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	7	154	1	0	146	0	1	0	2	3	0	0
Future Vol, veh/h	7	154	1	0	146	0	1	0	2	3	0	0
Conflicting Peds, #/hr	0	0	3	3	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	173	1	0	164	0	1	0	2	3	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	164	0	0	177	0	0	357	357	177	355	357	164
Stage 1	-	-	-	-	-	-	193	193	-	164	164	-
Stage 2	-	-	-	-	-	-	164	164	-	191	193	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1414	-	-	1399	-	-	598	569	866	600	569	881
Stage 1	-	-	-	-	-	-	809	741	-	838	762	-
Stage 2	-	-	-	-	-	-	838	762	-	811	741	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1414	-	-	1395	-	-	594	564	864	596	564	881
Mov Cap-2 Maneuver	-	-	-	-	-	-	594	564	-	596	564	-
Stage 1	-	-	-	-	-	-	802	734	-	833	762	-
Stage 2	-	-	-	-	-	-	838	762	-	804	734	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0	9.8	11.1
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	750	1414	-	-	1395	-	-	596
HCM Lane V/C Ratio	0.004	0.006	-	-	-	-	-	0.006
HCM Control Delay (s)	9.8	7.6	0	-	0	-	-	11.1
HCM Lane LOS	A	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Intersection	
Intersection Delay, s/veh	8.9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	8	16	44	7	10	19	131	90	47	156	14
Future Vol, veh/h	12	8	16	44	7	10	19	131	90	47	156	14
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	8	17	46	7	11	20	138	95	49	164	15
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	8.2	8.7	8.6	9.5
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	13%	0%	33%	72%	22%
Vol Thru, %	87%	0%	22%	11%	72%
Vol Right, %	0%	100%	44%	16%	6%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	150	90	36	61	217
LT Vol	19	0	12	44	47
Through Vol	131	0	8	7	156
RT Vol	0	90	16	10	14
Lane Flow Rate	158	95	38	64	228
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.221	0.112	0.052	0.091	0.29
Departure Headway (Hd)	5.035	4.268	4.9	5.105	4.564
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	714	839	729	701	788
Service Time	2.763	1.996	2.941	3.143	2.592
HCM Lane V/C Ratio	0.221	0.113	0.052	0.091	0.289
HCM Control Delay	9.2	7.5	8.2	8.7	9.5
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	0.8	0.4	0.2	0.3	1.2

Intersection	
Int Delay, s/veh	4.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	8	7	13	94	6	23	12	217	74	12	213	2
Future Vol, veh/h	8	7	13	94	6	23	12	217	74	12	213	2
Conflicting Peds, #/hr	3	0	19	19	0	3	3	0	4	4	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	8	15	107	7	26	14	247	84	14	242	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	611	637	265	623	596	296	247	0	0	335	0	0
Stage 1	274	274	-	321	321	-	-	-	-	-	-	-
Stage 2	337	363	-	302	275	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	406	395	774	398	417	743	1319	-	-	1224	-	-
Stage 1	732	683	-	691	652	-	-	-	-	-	-	-
Stage 2	677	625	-	707	683	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	377	382	758	368	403	738	1315	-	-	1219	-	-
Mov Cap-2 Maneuver	377	382	-	368	403	-	-	-	-	-	-	-
Stage 1	720	672	-	679	641	-	-	-	-	-	-	-
Stage 2	636	614	-	664	672	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.8	18.4	0.3	0.4
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1315	-	-	494	408	1219	-	-
HCM Lane V/C Ratio	0.01	-	-	0.064	0.343	0.011	-	-
HCM Control Delay (s)	7.8	0	-	12.8	18.4	8	0	-
HCM Lane LOS	A	A	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	1.5	0	-	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	3	368	0	0	214	1	3	0	1	2	0	0
Future Vol, veh/h	3	368	0	0	214	1	3	0	1	2	0	0
Conflicting Peds, #/hr	0	0	7	7	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	409	0	0	238	1	3	0	1	2	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	239	0	0	416	0	0	661	661	416	655	661	239
Stage 1	-	-	-	-	-	-	422	422	-	239	239	-
Stage 2	-	-	-	-	-	-	239	239	-	416	422	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1328	-	-	1143	-	-	376	383	637	379	383	800
Stage 1	-	-	-	-	-	-	609	588	-	764	708	-
Stage 2	-	-	-	-	-	-	764	708	-	614	588	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1328	-	-	1135	-	-	373	379	633	377	379	800
Mov Cap-2 Maneuver	-	-	-	-	-	-	373	379	-	377	379	-
Stage 1	-	-	-	-	-	-	603	582	-	762	708	-
Stage 2	-	-	-	-	-	-	764	708	-	611	582	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	13.7	14.6
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	416	1328	-	-	1135	-	-	377
HCM Lane V/C Ratio	0.011	0.003	-	-	-	-	-	0.006
HCM Control Delay (s)	13.7	7.7	0	-	0	-	-	14.6
HCM Lane LOS	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Intersection	
Intersection Delay, s/veh	10.5
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	22	12	52	21	21	27	181	211	101	177	24
Future Vol, veh/h	11	22	12	52	21	21	27	181	211	101	177	24
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	23	13	55	22	22	29	193	224	107	188	26
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	9.2	9.8	9.8	11.8
HCM LOS	A	A	A	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	13%	0%	24%	55%	33%
Vol Thru, %	87%	0%	49%	22%	59%
Vol Right, %	0%	100%	27%	22%	8%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	208	211	45	94	302
LT Vol	27	0	11	52	101
Through Vol	181	0	22	21	177
RT Vol	0	211	12	21	24
Lane Flow Rate	221	224	48	100	321
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.326	0.282	0.077	0.156	0.439
Departure Headway (Hd)	5.296	4.525	5.755	5.632	4.92
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	675	788	626	630	726
Service Time	3.063	2.292	3.755	3.727	2.989
HCM Lane V/C Ratio	0.327	0.284	0.077	0.159	0.442
HCM Control Delay	10.6	9.1	9.2	9.8	11.8
HCM Lane LOS	B	A	A	A	B
HCM 95th-tile Q	1.4	1.2	0.2	0.5	2.2

Intersection	
Int Delay, s/veh	10.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	12	24	113	30	33	18	384	117	10	233	3
Future Vol, veh/h	6	12	24	113	30	33	18	384	117	10	233	3
Conflicting Peds, #/hr	31	0	53	53	0	31	60	0	54	54	0	60
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	12	25	116	31	34	19	396	121	10	240	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	880	931	355	882	872	542	303	0	0	571	0	0
Stage 1	322	322	-	549	549	-	-	-	-	-	-	-
Stage 2	558	609	-	333	323	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	268	267	689	267	289	540	1258	-	-	1002	-	-
Stage 1	690	651	-	520	516	-	-	-	-	-	-	-
Stage 2	514	485	-	681	650	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	202	231	617	215	250	497	1186	-	-	950	-	-
Mov Cap-2 Maneuver	202	231	-	215	250	-	-	-	-	-	-	-
Stage 1	635	607	-	482	478	-	-	-	-	-	-	-
Stage 2	425	450	-	601	606	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.8	51.4	0.3	0.4
HCM LOS	C	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1186	-	-	348	247	950	-	-
HCM Lane V/C Ratio	0.016	-	-	0.124	0.735	0.011	-	-
HCM Control Delay (s)	8.1	0	-	16.8	51.4	8.8	0	-
HCM Lane LOS	A	A	-	C	F	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.4	5.1	0	-	-

Intersection	
Intersection Delay, s/veh	8.6
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	15	12	90	7	11	20	71	36	37	107	8
Future Vol, veh/h	10	15	12	90	7	11	20	71	36	37	107	8
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	17	13	101	8	12	22	80	40	42	120	9
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	8	8.8	8.4	8.9
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	22%	0%	27%	83%	24%
Vol Thru, %	78%	0%	41%	6%	70%
Vol Right, %	0%	100%	32%	10%	5%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	91	36	37	108	152
LT Vol	20	0	10	90	37
Through Vol	71	0	15	7	107
RT Vol	0	36	12	11	8
Lane Flow Rate	102	40	42	121	171
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.147	0.049	0.054	0.163	0.219
Departure Headway (Hd)	5.191	4.377	4.693	4.832	4.621
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	691	818	762	743	777
Service Time	2.919	2.105	2.728	2.86	2.649
HCM Lane V/C Ratio	0.148	0.049	0.055	0.163	0.22
HCM Control Delay	8.8	7.3	8	8.8	8.9
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	0.5	0.2	0.2	0.6	0.8

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	24	0	0	11	19	110	83	15	185	7
Future Vol, veh/h	0	0	24	0	0	11	19	110	83	15	185	7
Conflicting Peds, #/hr	4	0	13	13	0	4	9	0	0	0	0	9
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	27	0	0	12	21	122	92	17	206	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	232	-	-	172	223	0	0	214	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.22	-	-	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.318	-	-	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	0	0	807	0	0	872	1346	-	-	1356	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	790	-	-	869	1334	-	-	1356	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.7	9.2	0.7	0.6
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1334	-	-	790	869	1356	-	-
HCM Lane V/C Ratio	0.016	-	-	0.034	0.014	0.012	-	-
HCM Control Delay (s)	7.7	0	-	9.7	9.2	7.7	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

Intersection	
Intersection Delay, s/veh	9.7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	15	16	138	13	10	19	125	90	47	156	14
Future Vol, veh/h	20	15	16	138	13	10	19	125	90	47	156	14
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	16	17	145	14	11	20	132	95	49	164	15
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	8.7	10.1	9.1	10.2
HCM LOS	A	B	A	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	13%	0%	39%	86%	22%
Vol Thru, %	87%	0%	29%	8%	72%
Vol Right, %	0%	100%	31%	6%	6%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	144	90	51	161	217
LT Vol	19	0	20	138	47
Through Vol	125	0	15	13	156
RT Vol	0	90	16	10	14
Lane Flow Rate	152	95	54	169	228
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.228	0.122	0.078	0.247	0.312
Departure Headway (Hd)	5.406	4.634	5.199	5.256	4.92
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	661	767	682	678	726
Service Time	3.172	2.399	3.286	3.327	2.985
HCM Lane V/C Ratio	0.23	0.124	0.079	0.249	0.314
HCM Control Delay	9.8	8.1	8.7	10.1	10.2
HCM Lane LOS	A	A	A	B	B
HCM 95th-tile Q	0.9	0.4	0.3	1	1.3

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	13	0	0	23	12	217	74	12	307	2
Future Vol, veh/h	0	0	13	0	0	23	12	217	74	12	307	2
Conflicting Peds, #/hr	3	0	19	19	0	3	3	0	4	4	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	15	0	0	26	14	247	84	14	349	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	372	-	-	296	354	0	0	335	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.22	-	-	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.318	-	-	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	0	0	674	0	0	743	1205	-	-	1224	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	660	-	-	738	1202	-	-	1219	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.6	10.1	0.3	0.3
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1202	-	-	660	738	1219	-	-
HCM Lane V/C Ratio	0.011	-	-	0.022	0.035	0.011	-	-
HCM Control Delay (s)	8	0	-	10.6	10.1	8	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-

Intersection	
Intersection Delay, s/veh	12.7
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	34	12	165	51	21	27	175	211	101	177	24
Future Vol, veh/h	17	34	12	165	51	21	27	175	211	101	177	24
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	36	13	176	54	22	29	186	224	107	188	26
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	10.3	13.5	11.4	14.4
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	13%	0%	27%	70%	33%
Vol Thru, %	87%	0%	54%	22%	59%
Vol Right, %	0%	100%	19%	9%	8%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	202	211	63	237	302
LT Vol	27	0	17	165	101
Through Vol	175	0	34	51	177
RT Vol	0	211	12	21	24
Lane Flow Rate	215	224	67	252	321
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.362	0.33	0.119	0.424	0.506
Departure Headway (Hd)	6.063	5.285	6.373	6.056	5.674
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	591	678	559	592	633
Service Time	3.817	3.038	4.451	4.113	3.729
HCM Lane V/C Ratio	0.364	0.33	0.12	0.426	0.507
HCM Control Delay	12.2	10.6	10.3	13.5	14.4
HCM Lane LOS	B	B	B	B	B
HCM 95th-tile Q	1.6	1.4	0.4	2.1	2.9

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	24	0	0	33	18	384	117	10	346	3
Future Vol, veh/h	0	0	24	0	0	33	18	384	117	10	346	3
Conflicting Peds, #/hr	31	0	53	53	0	31	60	0	54	54	0	60
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	25	0	0	34	19	396	121	10	357	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	472	-	-	542	420	0	0	571	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.22	-	-	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.318	-	-	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	0	0	592	0	0	540	1139	-	-	1002	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	530	-	-	497	1074	-	-	950	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.1	12.8	0.3	0.2
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1074	-	-	530	497	950	-	-
HCM Lane V/C Ratio	0.017	-	-	0.047	0.068	0.011	-	-
HCM Control Delay (s)	8.4	0	-	12.1	12.8	8.8	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.2	0	-	-

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LEVEL OF SERVICE CALCULATIONS YEAR 2025 CONDITIONS WITH PROJECT

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Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	1	59	3	1	115	0	4	0	4	2	0	0
Future Vol, veh/h	1	59	3	1	115	0	4	0	4	2	0	0
Conflicting Peds, #/hr	0	0	3	3	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	71	4	1	139	0	5	0	5	2	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	139	0	0	78	0	0	219	219	76	219	221	139
Stage 1	-	-	-	-	-	-	78	78	-	141	141	-
Stage 2	-	-	-	-	-	-	141	141	-	78	80	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1445	-	-	1520	-	-	737	679	985	737	678	909
Stage 1	-	-	-	-	-	-	931	830	-	862	780	-
Stage 2	-	-	-	-	-	-	862	780	-	931	828	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1445	-	-	1516	-	-	734	676	982	733	675	909
Mov Cap-2 Maneuver	-	-	-	-	-	-	734	676	-	733	675	-
Stage 1	-	-	-	-	-	-	927	827	-	861	779	-
Stage 2	-	-	-	-	-	-	861	779	-	926	825	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.1	9.3	9.9
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	840	1445	-	-	1516	-	-	733
HCM Lane V/C Ratio	0.011	0.001	-	-	0.001	-	-	0.003
HCM Control Delay (s)	9.3	7.5	0	-	7.4	0	-	9.9
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Intersection	
Intersection Delay, s/veh	8.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	17	15	50	8	11	21	80	36	37	109	11
Future Vol, veh/h	11	17	15	50	8	11	21	80	36	37	109	11
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	19	17	56	9	12	24	90	40	42	122	12
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	8	8.4	8.4	8.8
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	21%	0%	26%	72%	24%
Vol Thru, %	79%	0%	40%	12%	69%
Vol Right, %	0%	100%	35%	16%	7%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	101	36	43	69	157
LT Vol	21	0	11	50	37
Through Vol	80	0	17	8	109
RT Vol	0	36	15	11	11
Lane Flow Rate	113	40	48	78	176
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.16	0.048	0.062	0.104	0.222
Departure Headway (Hd)	5.086	4.278	4.646	4.812	4.523
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	707	838	771	745	796
Service Time	2.808	2	2.675	2.839	2.543
HCM Lane V/C Ratio	0.16	0.048	0.062	0.105	0.221
HCM Control Delay	8.8	7.2	8	8.4	8.8
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	0.6	0.2	0.2	0.3	0.8

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	9	7	27	40	3	11	21	111	83	15	148	9
Future Vol, veh/h	9	7	27	40	3	11	21	111	83	15	148	9
Conflicting Peds, #/hr	4	0	13	13	0	4	9	0	0	0	0	9
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	10	8	30	44	3	12	23	123	92	17	164	10

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	439	473	191	450	432	173	183	0	0	215	0	0
Stage 1	212	212	-	215	215	-	-	-	-	-	-	-
Stage 2	227	261	-	235	217	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	528	490	851	519	516	871	1392	-	-	1355	-	-
Stage 1	790	727	-	787	725	-	-	-	-	-	-	-
Stage 2	776	692	-	768	723	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	499	470	833	476	495	868	1380	-	-	1355	-	-
Mov Cap-2 Maneuver	499	470	-	476	495	-	-	-	-	-	-	-
Stage 1	769	710	-	772	711	-	-	-	-	-	-	-
Stage 2	744	679	-	713	706	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.9	12.7	0.7	0.7
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1380	-	-	658	525	1355	-	-
HCM Lane V/C Ratio	0.017	-	-	0.073	0.114	0.012	-	-
HCM Control Delay (s)	7.7	0	-	10.9	12.7	7.7	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0.4	0	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	7	154	6	4	146	0	5	0	5	3	0	0
Future Vol, veh/h	7	154	6	4	146	0	5	0	5	3	0	0
Conflicting Peds, #/hr	0	0	3	3	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	173	7	4	164	0	6	0	6	3	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	164	0	0	183	0	0	368	368	180	368	371	164
Stage 1	-	-	-	-	-	-	196	196	-	172	172	-
Stage 2	-	-	-	-	-	-	172	172	-	196	199	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1414	-	-	1392	-	-	588	561	863	588	559	881
Stage 1	-	-	-	-	-	-	806	739	-	830	756	-
Stage 2	-	-	-	-	-	-	830	756	-	806	736	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1414	-	-	1388	-	-	582	554	861	580	552	881
Mov Cap-2 Maneuver	-	-	-	-	-	-	582	554	-	580	552	-
Stage 1	-	-	-	-	-	-	799	732	-	825	754	-
Stage 2	-	-	-	-	-	-	828	754	-	796	729	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.2	10.3	11.2
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	695	1414	-	-	1388	-	-	580
HCM Lane V/C Ratio	0.016	0.006	-	-	0.003	-	-	0.006
HCM Control Delay (s)	10.3	7.6	0	-	7.6	0	-	11.2
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Intersection	
Intersection Delay, s/veh	9.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	16	20	44	16	10	23	135	90	47	161	23
Future Vol, veh/h	20	16	20	44	16	10	23	135	90	47	161	23
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	17	21	46	17	11	24	142	95	49	169	24
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	8.5	8.9	8.8	9.8
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	15%	0%	36%	63%	20%
Vol Thru, %	85%	0%	29%	23%	70%
Vol Right, %	0%	100%	36%	14%	10%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	158	90	56	70	231
LT Vol	23	0	20	44	47
Through Vol	135	0	16	16	161
RT Vol	0	90	20	10	23
Lane Flow Rate	166	95	59	74	243
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.238	0.115	0.082	0.106	0.314
Departure Headway (Hd)	5.15	4.372	5.038	5.196	4.643
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	697	819	708	687	773
Service Time	2.885	2.107	3.091	3.247	2.678
HCM Lane V/C Ratio	0.238	0.116	0.083	0.108	0.314
HCM Control Delay	9.5	7.7	8.5	8.9	9.8
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	0.9	0.4	0.3	0.4	1.3

Intersection	
Int Delay, s/veh	4.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	12	10	17	94	11	23	17	221	74	12	217	7
Future Vol, veh/h	12	10	17	94	11	23	17	221	74	12	217	7
Conflicting Peds, #/hr	3	0	19	19	0	3	3	0	4	4	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	11	19	107	13	26	19	251	84	14	247	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	636	659	273	648	621	300	258	0	0	339	0	0
Stage 1	282	282	-	335	335	-	-	-	-	-	-	-
Stage 2	354	377	-	313	286	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	391	384	766	383	403	740	1307	-	-	1220	-	-
Stage 1	725	678	-	679	643	-	-	-	-	-	-	-
Stage 2	663	616	-	698	675	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	357	369	750	348	388	735	1303	-	-	1215	-	-
Mov Cap-2 Maneuver	357	369	-	348	388	-	-	-	-	-	-	-
Stage 1	710	667	-	664	629	-	-	-	-	-	-	-
Stage 2	614	602	-	648	664	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.5	19.7	0.4	0.4
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1303	-	-	468	388	1215	-	-
HCM Lane V/C Ratio	0.015	-	-	0.095	0.375	0.011	-	-
HCM Control Delay (s)	7.8	0	-	13.5	19.7	8	0	-
HCM Lane LOS	A	A	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3	1.7	0	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	368	5	4	214	1	8	0	5	2	0	0
Future Vol, veh/h	3	368	5	4	214	1	8	0	5	2	0	0
Conflicting Peds, #/hr	0	0	7	7	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	409	6	4	238	1	9	0	6	2	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	239	0	0	422	0	0	672	672	419	668	675	239
Stage 1	-	-	-	-	-	-	425	425	-	247	247	-
Stage 2	-	-	-	-	-	-	247	247	-	421	428	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1328	-	-	1137	-	-	370	377	634	372	376	800
Stage 1	-	-	-	-	-	-	607	586	-	757	702	-
Stage 2	-	-	-	-	-	-	757	702	-	610	585	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1328	-	-	1129	-	-	366	372	630	367	371	800
Mov Cap-2 Maneuver	-	-	-	-	-	-	366	372	-	367	371	-
Stage 1	-	-	-	-	-	-	601	580	-	755	699	-
Stage 2	-	-	-	-	-	-	754	699	-	603	579	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.1	13.5	14.9
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	436	1328	-	-	1129	-	-	367
HCM Lane V/C Ratio	0.033	0.003	-	-	0.004	-	-	0.006
HCM Control Delay (s)	13.5	7.7	0	-	8.2	0	-	14.9
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

Intersection	
Intersection Delay, s/veh	11.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	31	16	52	30	21	31	186	211	101	182	33
Future Vol, veh/h	20	31	16	52	30	21	31	186	211	101	182	33
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	21	33	17	55	32	22	33	198	224	107	194	35
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	9.7	10.2	10.4	12.8
HCM LOS	A	B	B	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	14%	0%	30%	50%	32%
Vol Thru, %	86%	0%	46%	29%	58%
Vol Right, %	0%	100%	24%	20%	10%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	217	211	67	103	316
LT Vol	31	0	20	52	101
Through Vol	186	0	31	30	182
RT Vol	0	211	16	21	33
Lane Flow Rate	231	224	71	110	336
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.355	0.296	0.117	0.179	0.479
Departure Headway (Hd)	5.532	4.753	5.902	5.872	5.129
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	653	759	607	611	706
Service Time	3.239	2.46	3.941	3.909	3.137
HCM Lane V/C Ratio	0.354	0.295	0.117	0.18	0.476
HCM Control Delay	11.3	9.4	9.7	10.2	12.8
HCM Lane LOS	B	A	A	B	B
HCM 95th-tile Q	1.6	1.2	0.4	0.6	2.6

Intersection	
Int Delay, s/veh	12.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	10	16	28	113	35	33	23	388	117	10	237	8
Future Vol, veh/h	10	16	28	113	35	33	23	388	117	10	237	8
Conflicting Peds, #/hr	31	0	53	53	0	31	60	0	54	54	0	60
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	10	16	29	116	36	34	24	400	121	10	244	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	903	951	361	907	895	546	312	0	0	575	0	0
Stage 1	328	328	-	563	563	-	-	-	-	-	-	-
Stage 2	575	623	-	344	332	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	258	260	684	257	280	538	1248	-	-	998	-	-
Stage 1	685	647	-	511	509	-	-	-	-	-	-	-
Stage 2	503	478	-	671	644	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	189	223	612	202	241	495	1177	-	-	947	-	-
Mov Cap-2 Maneuver	189	223	-	202	241	-	-	-	-	-	-	-
Stage 1	627	603	-	471	469	-	-	-	-	-	-	-
Stage 2	407	440	-	583	600	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	18.8	61.3	0.4	0.3
HCM LOS	C	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1177	-	-	317	235	947	-	-
HCM Lane V/C Ratio	0.02	-	-	0.176	0.794	0.011	-	-
HCM Control Delay (s)	8.1	0	-	18.8	61.3	8.8	0	-
HCM Lane LOS	A	A	-	C	F	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.6	5.9	0	-	-

Intersection	
Intersection Delay, s/veh	8.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	24	15	90	11	11	21	71	36	37	109	11
Future Vol, veh/h	20	24	15	90	11	11	21	71	36	37	109	11
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	27	17	101	12	12	24	80	40	42	122	12
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	8.3	8.9	8.6	9.1
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	23%	0%	34%	80%	24%
Vol Thru, %	77%	0%	41%	10%	69%
Vol Right, %	0%	100%	25%	10%	7%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	92	36	59	112	157
LT Vol	21	0	20	90	37
Through Vol	71	0	24	11	109
RT Vol	0	36	15	11	11
Lane Flow Rate	103	40	66	126	176
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.152	0.05	0.088	0.171	0.23
Departure Headway (Hd)	5.281	4.462	4.781	4.886	4.69
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	678	801	747	734	764
Service Time	3.017	2.198	2.824	2.923	2.725
HCM Lane V/C Ratio	0.152	0.05	0.088	0.172	0.23
HCM Control Delay	9	7.4	8.3	8.9	9.1
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	0.5	0.2	0.3	0.6	0.9

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	27	0	0	11	21	111	83	15	188	9
Future Vol, veh/h	0	0	27	0	0	11	21	111	83	15	188	9
Conflicting Peds, #/hr	4	0	13	13	0	4	9	0	0	0	0	9
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	30	0	0	12	23	123	92	17	209	10

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	236	-	-	173	228	0	0	215	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.22	-	-	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.318	-	-	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	0	0	803	0	0	871	1340	-	-	1355	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	786	-	-	868	1329	-	-	1355	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.8	9.2	0.8	0.5
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1329	-	-	786	868	1355	-	-
HCM Lane V/C Ratio	0.018	-	-	0.038	0.014	0.012	-	-
HCM Control Delay (s)	7.8	0	-	9.8	9.2	7.7	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0	0	-	-

Intersection	
Intersection Delay, s/veh	10.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	32	26	20	138	27	10	23	123	90	47	161	23
Future Vol, veh/h	32	26	20	138	27	10	23	123	90	47	161	23
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	34	27	21	145	28	11	24	129	95	49	169	24
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	9.2	10.5	9.4	10.7
HCM LOS	A	B	A	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	16%	0%	41%	79%	20%
Vol Thru, %	84%	0%	33%	15%	70%
Vol Right, %	0%	100%	26%	6%	10%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	146	90	78	175	231
LT Vol	23	0	32	138	47
Through Vol	123	0	26	27	161
RT Vol	0	90	20	10	23
Lane Flow Rate	154	95	82	184	243
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.237	0.126	0.124	0.274	0.34
Departure Headway (Hd)	5.563	4.777	5.433	5.346	5.028
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	638	740	664	665	708
Service Time	3.359	2.572	3.433	3.443	3.122
HCM Lane V/C Ratio	0.241	0.128	0.123	0.277	0.343
HCM Control Delay	10.1	8.3	9.2	10.5	10.7
HCM Lane LOS	B	A	A	B	B
HCM 95th-tile Q	0.9	0.4	0.4	1.1	1.5

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	17	0	0	23	17	221	74	12	311	7
Future Vol, veh/h	0	0	17	0	0	23	17	221	74	12	311	7
Conflicting Peds, #/hr	3	0	19	19	0	3	3	0	4	4	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	19	0	0	26	19	251	84	14	353	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	379	-	-	300	364	0	0	339	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.22	-	-	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.318	-	-	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	0	0	668	0	0	740	1195	-	-	1220	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	654	-	-	735	1192	-	-	1215	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.7	10.1	0.4	0.3
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1192	-	-	654	735	1215	-	-
HCM Lane V/C Ratio	0.016	-	-	0.03	0.036	0.011	-	-
HCM Control Delay (s)	8.1	0	-	10.7	10.1	8	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-

Intersection	
Intersection Delay, s/veh	13.8
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	47	16	165	65	21	31	176	211	101	182	33
Future Vol, veh/h	30	47	16	165	65	21	31	176	211	101	182	33
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	32	50	17	176	69	22	33	187	224	107	194	35
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	11.2	14.7	12.1	16
HCM LOS	B	B	B	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	15%	0%	32%	66%	32%
Vol Thru, %	85%	0%	51%	26%	58%
Vol Right, %	0%	100%	17%	8%	10%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	207	211	93	251	316
LT Vol	31	0	30	165	101
Through Vol	176	0	47	65	182
RT Vol	0	211	16	21	33
Lane Flow Rate	220	224	99	267	336
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.386	0.344	0.183	0.463	0.549
Departure Headway (Hd)	6.308	5.52	6.672	6.244	5.883
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	566	646	541	574	608
Service Time	4.09	3.301	4.672	4.329	3.966
HCM Lane V/C Ratio	0.389	0.347	0.183	0.465	0.553
HCM Control Delay	13.1	11.2	11.2	14.7	16
HCM Lane LOS	B	B	B	B	C
HCM 95th-tile Q	1.8	1.5	0.7	2.4	3.3

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	28	0	0	33	23	388	117	10	350	8
Future Vol, veh/h	0	0	28	0	0	33	23	388	117	10	350	8
Conflicting Peds, #/hr	31	0	53	53	0	31	60	0	54	54	0	60
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	29	0	0	34	24	400	121	10	361	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	478	-	-	546	429	0	0	575	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.22	-	-	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.318	-	-	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	0	0	587	0	0	538	1130	-	-	998	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	526	-	-	495	1065	-	-	947	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.2	12.8	0.4	0.2
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1065	-	-	526	495	947	-	-
HCM Lane V/C Ratio	0.022	-	-	0.055	0.069	0.011	-	-
HCM Control Delay (s)	8.5	0	-	12.2	12.8	8.8	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0.2	0	-	-

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LEVEL OF SERVICE CALCULATIONS YEAR 2041 CONDITIONS WITHOUT PROJECT

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Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	1	75	1	0	145	0	1	0	1	2	0	0
Future Vol, veh/h	1	75	1	0	145	0	1	0	1	2	0	0
Conflicting Peds, #/hr	0	0	3	3	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	90	1	0	175	0	1	0	1	2	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	175	0	0	94	0	0	271	271	94	268	271	175
Stage 1	-	-	-	-	-	-	96	96	-	175	175	-
Stage 2	-	-	-	-	-	-	175	175	-	93	96	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1401	-	-	1500	-	-	682	636	963	685	636	868
Stage 1	-	-	-	-	-	-	911	815	-	827	754	-
Stage 2	-	-	-	-	-	-	827	754	-	914	815	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1401	-	-	1496	-	-	679	633	960	684	633	868
Mov Cap-2 Maneuver	-	-	-	-	-	-	679	633	-	684	633	-
Stage 1	-	-	-	-	-	-	907	812	-	826	754	-
Stage 2	-	-	-	-	-	-	827	754	-	912	812	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	9.5	10.3
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	795	1401	-	-	1496	-	-	684
HCM Lane V/C Ratio	0.003	0.001	-	-	-	-	-	0.004
HCM Control Delay (s)	9.5	7.6	0	-	0	-	-	10.3
HCM Lane LOS	A	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Intersection	
Intersection Delay, s/veh	9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	13	15	63	7	13	26	98	46	47	136	11
Future Vol, veh/h	5	13	15	63	7	13	26	98	46	47	136	11
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	15	17	71	8	15	29	110	52	53	153	12
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	8.1	8.8	8.7	9.4
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	21%	0%	15%	76%	24%
Vol Thru, %	79%	0%	39%	8%	70%
Vol Right, %	0%	100%	45%	16%	6%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	124	46	33	83	194
LT Vol	26	0	5	63	47
Through Vol	98	0	13	7	136
RT Vol	0	46	15	13	11
Lane Flow Rate	139	52	37	93	218
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.199	0.062	0.049	0.129	0.278
Departure Headway (Hd)	5.144	4.335	4.771	4.988	4.594
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	698	826	749	718	783
Service Time	2.872	2.063	2.811	3.023	2.621
HCM Lane V/C Ratio	0.199	0.063	0.049	0.13	0.278
HCM Control Delay	9.2	7.4	8.1	8.8	9.4
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	0.7	0.2	0.2	0.4	1.1

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	8	5	31	51	3	13	24	140	105	19	185	9
Future Vol, veh/h	8	5	31	51	3	13	24	140	105	19	185	9
Conflicting Peds, #/hr	4	0	13	13	0	4	9	0	0	0	0	9
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	6	34	57	3	14	27	156	117	21	206	10

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	543	589	233	555	536	219	225	0	0	273	0	0
Stage 1	262	262	-	269	269	-	-	-	-	-	-	-
Stage 2	281	327	-	286	267	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	451	421	806	442	451	821	1344	-	-	1290	-	-
Stage 1	743	691	-	737	687	-	-	-	-	-	-	-
Stage 2	726	648	-	721	688	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	421	400	789	400	428	818	1332	-	-	1290	-	-
Mov Cap-2 Maneuver	421	400	-	400	428	-	-	-	-	-	-	-
Stage 1	719	672	-	719	671	-	-	-	-	-	-	-
Stage 2	690	632	-	663	669	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.3	14.7	0.7	0.7
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1332	-	-	622	445	1290	-	-
HCM Lane V/C Ratio	0.02	-	-	0.079	0.167	0.016	-	-
HCM Control Delay (s)	7.8	0	-	11.3	14.7	7.8	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0.6	0.1	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	7	195	1	0	186	0	1	0	2	3	0	0
Future Vol, veh/h	7	195	1	0	186	0	1	0	2	3	0	0
Conflicting Peds, #/hr	0	0	3	3	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	219	1	0	209	0	1	0	2	3	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	209	0	0	223	0	0	448	448	223	446	448	209
Stage 1	-	-	-	-	-	-	239	239	-	209	209	-
Stage 2	-	-	-	-	-	-	209	209	-	237	239	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1362	-	-	1346	-	-	521	506	817	523	506	831
Stage 1	-	-	-	-	-	-	764	708	-	793	729	-
Stage 2	-	-	-	-	-	-	793	729	-	766	708	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1362	-	-	1342	-	-	517	501	815	519	501	831
Mov Cap-2 Maneuver	-	-	-	-	-	-	517	501	-	519	501	-
Stage 1	-	-	-	-	-	-	756	701	-	787	729	-
Stage 2	-	-	-	-	-	-	793	729	-	759	701	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0	10.3	12
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	684	1362	-	-	1342	-	-	519
HCM Lane V/C Ratio	0.005	0.006	-	-	-	-	-	0.006
HCM Control Delay (s)	10.3	7.7	0	-	0	-	-	12
HCM Lane LOS	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Intersection	
Intersection Delay, s/veh	9.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	11	20	55	9	12	24	166	114	59	198	18
Future Vol, veh/h	15	11	20	55	9	12	24	166	114	59	198	18
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	12	21	58	9	13	25	175	120	62	208	19
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	8.7	9.2	9.2	10.7
HCM LOS	A	A	A	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	13%	0%	33%	72%	21%
Vol Thru, %	87%	0%	24%	12%	72%
Vol Right, %	0%	100%	43%	16%	7%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	190	114	46	76	275
LT Vol	24	0	15	55	59
Through Vol	166	0	11	9	198
RT Vol	0	114	20	12	18
Lane Flow Rate	200	120	48	80	289
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.288	0.147	0.07	0.12	0.38
Departure Headway (Hd)	5.179	4.411	5.223	5.411	4.721
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	692	810	681	658	758
Service Time	2.925	2.156	3.295	3.477	2.766
HCM Lane V/C Ratio	0.289	0.148	0.07	0.122	0.381
HCM Control Delay	10	7.9	8.7	9.2	10.7
HCM Lane LOS	A	A	A	A	B
HCM 95th-tile Q	1.2	0.5	0.2	0.4	1.8

Intersection	
Int Delay, s/veh	6.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	11	9	16	120	8	30	15	275	94	15	271	31
Future Vol, veh/h	11	9	16	120	8	30	15	275	94	15	271	31
Conflicting Peds, #/hr	3	0	19	19	0	3	3	0	4	4	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	10	18	136	9	34	17	313	107	17	308	35

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	788	821	348	798	785	374	346	0	0	424	0	0
Stage 1	363	363	-	405	405	-	-	-	-	-	-	-
Stage 2	425	458	-	393	380	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	309	309	695	304	325	672	1213	-	-	1135	-	-
Stage 1	656	625	-	622	598	-	-	-	-	-	-	-
Stage 2	607	567	-	632	614	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	277	295	680	274	311	668	1210	-	-	1131	-	-
Mov Cap-2 Maneuver	277	295	-	274	311	-	-	-	-	-	-	-
Stage 1	642	611	-	608	584	-	-	-	-	-	-	-
Stage 2	555	554	-	583	600	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.5	31.3	0.3	0.4
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1210	-	-	384	311	1131	-	-
HCM Lane V/C Ratio	0.014	-	-	0.107	0.577	0.015	-	-
HCM Control Delay (s)	8	0	-	15.5	31.3	8.2	0	-
HCM Lane LOS	A	A	-	C	D	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.4	3.4	0	-	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	3	467	0	0	272	1	3	0	1	2	0	0
Future Vol, veh/h	3	467	0	0	272	1	3	0	1	2	0	0
Conflicting Peds, #/hr	0	0	7	7	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	519	0	0	302	1	3	0	1	2	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	303	0	0	526	0	0	835	835	526	829	835	303
Stage 1	-	-	-	-	-	-	532	532	-	303	303	-
Stage 2	-	-	-	-	-	-	303	303	-	526	532	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1258	-	-	1041	-	-	287	304	552	290	304	737
Stage 1	-	-	-	-	-	-	531	526	-	706	664	-
Stage 2	-	-	-	-	-	-	706	664	-	535	526	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1258	-	-	1034	-	-	284	301	548	289	301	737
Mov Cap-2 Maneuver	-	-	-	-	-	-	284	301	-	289	301	-
Stage 1	-	-	-	-	-	-	526	521	-	704	664	-
Stage 2	-	-	-	-	-	-	706	664	-	532	521	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	16.3	17.6
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	323	1258	-	-	1034	-	-	289
HCM Lane V/C Ratio	0.014	0.003	-	-	-	-	-	0.008
HCM Control Delay (s)	16.3	7.9	0	-	0	-	-	17.6
HCM Lane LOS	C	A	A	-	A	-	-	C
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Intersection	
Intersection Delay, s/veh	13.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	13	28	15	66	27	27	34	230	268	128	225	31
Future Vol, veh/h	13	28	15	66	27	27	34	230	268	128	225	31
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	30	16	70	29	29	36	245	285	136	239	33
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	10.1	11.1	11.7	16.1
HCM LOS	B	B	B	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	13%	0%	23%	55%	33%
Vol Thru, %	87%	0%	50%	22%	59%
Vol Right, %	0%	100%	27%	23%	8%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	264	268	56	120	384
LT Vol	34	0	13	66	128
Through Vol	230	0	28	27	225
RT Vol	0	268	15	27	31
Lane Flow Rate	281	285	60	128	409
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.442	0.388	0.105	0.221	0.602
Departure Headway (Hd)	5.666	4.893	6.342	6.235	5.301
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	635	736	564	576	682
Service Time	3.397	2.623	4.395	4.28	3.332
HCM Lane V/C Ratio	0.443	0.387	0.106	0.222	0.6
HCM Control Delay	12.8	10.7	10.1	11.1	16.1
HCM Lane LOS	B	B	B	B	C
HCM 95th-tile Q	2.3	1.8	0.4	0.8	4

Intersection	
Int Delay, s/veh	42.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	8	15	31	143	38	42	23	488	148	12	296	4
Future Vol, veh/h	8	15	31	143	38	42	23	488	148	12	296	4
Conflicting Peds, #/hr	31	0	53	53	0	31	60	0	54	54	0	60
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	15	32	147	39	43	24	503	153	12	305	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1091	1149	420	1090	1075	665	369	0	0	710	0	0
Stage 1	391	391	-	682	682	-	-	-	-	-	-	-
Stage 2	700	758	-	408	393	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	192	198	633	193	220	460	1190	-	-	889	-	-
Stage 1	633	607	-	440	450	-	-	-	-	-	-	-
Stage 2	430	415	-	620	606	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	127	168	567	~ 146	187	423	1122	-	-	843	-	-
Mov Cap-2 Maneuver	127	168	-	~ 146	187	-	-	-	-	-	-	-
Stage 1	576	563	-	403	412	-	-	-	-	-	-	-
Stage 2	327	380	-	531	562	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	22.5	230.4	0.3	0.4
HCM LOS	C	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1122	-	-	261	174	843	-	-
HCM Lane V/C Ratio	0.021	-	-	0.213	1.321	0.015	-	-
HCM Control Delay (s)	8.3	0	-	22.5	230.4	9.3	0	-
HCM Lane LOS	A	A	-	C	F	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.8	13.4	0	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Intersection Delay, s/veh	9.3
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	13	18	15	114	10	13	26	90	46	47	136	11
Future Vol, veh/h	13	18	15	114	10	13	26	90	46	47	136	11
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	20	17	128	11	15	29	101	52	53	153	12
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	8.4	9.5	8.9	9.8
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	22%	0%	28%	83%	24%
Vol Thru, %	78%	0%	39%	7%	70%
Vol Right, %	0%	100%	33%	9%	6%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	116	46	46	137	194
LT Vol	26	0	13	114	47
Through Vol	90	0	18	10	136
RT Vol	0	46	15	13	11
Lane Flow Rate	130	52	52	154	218
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.194	0.065	0.071	0.217	0.29
Departure Headway (Hd)	5.371	4.553	4.971	5.067	4.796
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	666	783	716	705	745
Service Time	3.122	2.304	3.034	3.118	2.845
HCM Lane V/C Ratio	0.195	0.066	0.073	0.218	0.293
HCM Control Delay	9.4	7.6	8.4	9.5	9.8
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	0.7	0.2	0.2	0.8	1.2

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	31	0	0	13	24	140	105	19	236	9
Future Vol, veh/h	0	0	31	0	0	13	24	140	105	19	236	9
Conflicting Peds, #/hr	4	0	13	13	0	4	9	0	0	0	0	9
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	34	0	0	14	27	156	117	21	262	10

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	289	-	-	219	281	0	0	273	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.22	-	-	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.318	-	-	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	0	0	750	0	0	821	1282	-	-	1290	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	734	-	-	818	1271	-	-	1290	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.1	9.5	0.7	0.6
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1271	-	-	734	818	1290	-	-
HCM Lane V/C Ratio	0.021	-	-	0.047	0.018	0.016	-	-
HCM Control Delay (s)	7.9	0	-	10.1	9.5	7.8	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.1	0.1	-	-

Intersection	
Intersection Delay, s/veh	11.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	26	20	20	175	17	12	24	155	114	59	198	18
Future Vol, veh/h	26	20	20	175	17	12	24	155	114	59	198	18
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	27	21	21	184	18	13	25	163	120	62	208	19
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	9.6	11.7	10.2	12.3
HCM LOS	A	B	B	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	13%	0%	39%	86%	21%
Vol Thru, %	87%	0%	30%	8%	72%
Vol Right, %	0%	100%	30%	6%	7%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	179	114	66	204	275
LT Vol	24	0	26	175	59
Through Vol	155	0	20	17	198
RT Vol	0	114	20	12	18
Lane Flow Rate	188	120	69	215	289
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.304	0.168	0.112	0.341	0.428
Departure Headway (Hd)	5.814	5.038	5.786	5.72	5.324
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	618	712	618	629	677
Service Time	3.545	2.768	3.83	3.755	3.353
HCM Lane V/C Ratio	0.304	0.169	0.112	0.342	0.427
HCM Control Delay	11.1	8.8	9.6	11.7	12.3
HCM Lane LOS	B	A	A	B	B
HCM 95th-tile Q	1.3	0.6	0.4	1.5	2.1

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	16	0	0	30	15	275	94	15	391	31
Future Vol, veh/h	0	0	16	0	0	30	15	275	94	15	391	31
Conflicting Peds, #/hr	3	0	19	19	0	3	3	0	4	4	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	18	0	0	34	17	313	107	17	444	35

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	484	-	-	374	482	0	0	424	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.22	-	-	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.318	-	-	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	0	0	583	0	0	672	1081	-	-	1135	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	571	-	-	668	1078	-	-	1131	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.5	10.7	0.3	0.3
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1078	-	-	571	668	1131	-	-
HCM Lane V/C Ratio	0.016	-	-	0.032	0.051	0.015	-	-
HCM Control Delay (s)	8.4	0	-	11.5	10.7	8.2	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.2	0	-	-

Intersection	
Intersection Delay, s/veh	19.2
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	21	43	15	209	65	27	34	222	268	128	225	31
Future Vol, veh/h	21	43	15	209	65	27	34	222	268	128	225	31
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	46	16	222	69	29	36	236	285	136	239	33
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	12.2	20	15.5	25
HCM LOS	B	C	C	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	13%	0%	27%	69%	33%
Vol Thru, %	87%	0%	54%	22%	59%
Vol Right, %	0%	100%	19%	9%	8%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	256	268	79	301	384
LT Vol	34	0	21	209	128
Through Vol	222	0	43	65	225
RT Vol	0	268	15	27	31
Lane Flow Rate	272	285	84	320	409
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.518	0.48	0.176	0.608	0.73
Departure Headway (Hd)	6.851	6.067	7.537	6.84	6.437
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	526	593	474	528	560
Service Time	4.602	3.818	5.611	4.888	4.485
HCM Lane V/C Ratio	0.517	0.481	0.177	0.606	0.73
HCM Control Delay	16.8	14.3	12.2	20	25
HCM Lane LOS	C	B	B	C	C
HCM 95th-tile Q	2.9	2.6	0.6	4	6.1

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	31	0	0	42	23	488	148	12	439	4
Future Vol, veh/h	0	0	31	0	0	42	23	488	148	12	439	4
Conflicting Peds, #/hr	31	0	53	53	0	31	60	0	54	54	0	60
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	32	0	0	43	24	503	153	12	453	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	568	-	-	665	517	0	0	710	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.22	-	-	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.318	-	-	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	0	0	522	0	0	460	1049	-	-	889	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	467	-	-	423	989	-	-	843	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.3	14.5	0.3	0.2
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	989	-	-	467	423	843	-	-
HCM Lane V/C Ratio	0.024	-	-	0.068	0.102	0.015	-	-
HCM Control Delay (s)	8.7	0	-	13.3	14.5	9.3	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0.3	0	-	-

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LEVEL OF SERVICE CALCULATIONS YEAR 2041 CONDITIONS WITH PROJECT

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Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	75	3	1	145	0	4	0	4	2	0	0
Future Vol, veh/h	1	75	3	1	145	0	4	0	4	2	0	0
Conflicting Peds, #/hr	0	0	3	3	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	90	4	1	175	0	5	0	5	2	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	175	0	0	97	0	0	274	274	95	274	276	175
Stage 1	-	-	-	-	-	-	97	97	-	177	177	-
Stage 2	-	-	-	-	-	-	177	177	-	97	99	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1401	-	-	1496	-	-	678	633	962	678	632	868
Stage 1	-	-	-	-	-	-	910	815	-	825	753	-
Stage 2	-	-	-	-	-	-	825	753	-	910	813	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1401	-	-	1492	-	-	675	630	959	673	629	868
Mov Cap-2 Maneuver	-	-	-	-	-	-	675	630	-	673	629	-
Stage 1	-	-	-	-	-	-	906	812	-	824	752	-
Stage 2	-	-	-	-	-	-	824	752	-	905	810	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.1	9.6	10.4
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	792	1401	-	-	1492	-	-	673
HCM Lane V/C Ratio	0.012	0.001	-	-	0.001	-	-	0.004
HCM Control Delay (s)	9.6	7.6	0	-	7.4	0	-	10.4
HCM Lane LOS	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Intersection	
Intersection Delay, s/veh	9.1
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	19	18	63	10	13	27	101	46	47	138	14
Future Vol, veh/h	12	19	18	63	10	13	27	101	46	47	138	14
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	21	20	71	11	15	30	113	52	53	155	16
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	8.3	8.9	8.8	9.6
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	21%	0%	24%	73%	24%
Vol Thru, %	79%	0%	39%	12%	69%
Vol Right, %	0%	100%	37%	15%	7%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	128	46	49	86	199
LT Vol	27	0	12	63	47
Through Vol	101	0	19	10	138
RT Vol	0	46	18	13	14
Lane Flow Rate	144	52	55	97	224
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.208	0.063	0.075	0.135	0.289
Departure Headway (Hd)	5.21	4.4	4.881	5.044	4.649
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	687	812	732	709	771
Service Time	2.948	2.137	2.927	3.087	2.685
HCM Lane V/C Ratio	0.21	0.064	0.075	0.137	0.291
HCM Control Delay	9.3	7.4	8.3	8.9	9.6
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	0.8	0.2	0.2	0.5	1.2

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	11	8	34	51	4	13	26	141	105	19	188	11
Future Vol, veh/h	11	8	34	51	4	13	26	141	105	19	188	11
Conflicting Peds, #/hr	4	0	13	13	0	4	9	0	0	0	0	9
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	9	38	57	4	14	29	157	117	21	209	12

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	553	598	237	568	546	220	230	0	0	274	0	0
Stage 1	266	266	-	274	274	-	-	-	-	-	-	-
Stage 2	287	332	-	294	272	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	444	416	802	434	445	820	1338	-	-	1289	-	-
Stage 1	739	689	-	732	683	-	-	-	-	-	-	-
Stage 2	720	644	-	714	685	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	413	394	785	388	421	817	1327	-	-	1289	-	-
Mov Cap-2 Maneuver	413	394	-	388	421	-	-	-	-	-	-	-
Stage 1	714	670	-	713	665	-	-	-	-	-	-	-
Stage 2	682	627	-	650	666	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.8	15	0.7	0.7
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1327	-	-	587	434	1289	-	-
HCM Lane V/C Ratio	0.022	-	-	0.1	0.174	0.016	-	-
HCM Control Delay (s)	7.8	0	-	11.8	15	7.8	0	-
HCM Lane LOS	A	A	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0.6	0.1	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	7	195	6	4	186	0	5	0	5	3	0	0
Future Vol, veh/h	7	195	6	4	186	0	5	0	5	3	0	0
Conflicting Peds, #/hr	0	0	3	3	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	219	7	4	209	0	6	0	6	3	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	209	0	0	229	0	0	459	459	226	459	462	209
Stage 1	-	-	-	-	-	-	242	242	-	217	217	-
Stage 2	-	-	-	-	-	-	217	217	-	242	245	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1362	-	-	1339	-	-	512	499	813	512	497	831
Stage 1	-	-	-	-	-	-	762	705	-	785	723	-
Stage 2	-	-	-	-	-	-	785	723	-	762	703	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1362	-	-	1335	-	-	507	493	811	505	491	831
Mov Cap-2 Maneuver	-	-	-	-	-	-	507	493	-	505	491	-
Stage 1	-	-	-	-	-	-	754	698	-	780	721	-
Stage 2	-	-	-	-	-	-	783	721	-	751	696	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.2	10.9	12.2
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	624	1362	-	-	1335	-	-	505
HCM Lane V/C Ratio	0.018	0.006	-	-	0.003	-	-	0.007
HCM Control Delay (s)	10.9	7.7	0	-	7.7	0	-	12.2
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

Intersection	
Intersection Delay, s/veh	10.2
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	23	19	24	55	18	12	28	170	114	59	203	27
Future Vol, veh/h	23	19	24	55	18	12	28	170	114	59	203	27
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	20	25	58	19	13	29	179	120	62	214	28
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	9.1	9.5	9.6	11.2
HCM LOS	A	A	A	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	14%	0%	35%	65%	20%
Vol Thru, %	86%	0%	29%	21%	70%
Vol Right, %	0%	100%	36%	14%	9%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	198	114	66	85	289
LT Vol	28	0	23	55	59
Through Vol	170	0	19	18	203
RT Vol	0	114	24	12	27
Lane Flow Rate	208	120	69	89	304
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.307	0.151	0.103	0.137	0.407
Departure Headway (Hd)	5.3	4.523	5.358	5.511	4.812
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	675	787	662	644	742
Service Time	3.061	2.284	3.447	3.597	2.871
HCM Lane V/C Ratio	0.308	0.152	0.104	0.138	0.41
HCM Control Delay	10.4	8.1	9.1	9.5	11.2
HCM Lane LOS	B	A	A	A	B
HCM 95th-tile Q	1.3	0.5	0.3	0.5	2

Intersection	
Int Delay, s/veh	7.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	15	12	20	120	13	30	20	279	94	15	275	8
Future Vol, veh/h	15	12	20	120	13	30	20	279	94	15	275	8
Conflicting Peds, #/hr	3	0	19	19	0	3	3	0	4	4	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	14	23	136	15	34	23	317	107	17	313	9

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	799	829	340	810	780	378	325	0	0	428	0	0
Stage 1	355	355	-	421	421	-	-	-	-	-	-	-
Stage 2	444	474	-	389	359	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	304	306	702	298	327	669	1235	-	-	1131	-	-
Stage 1	662	630	-	610	589	-	-	-	-	-	-	-
Stage 2	593	558	-	635	627	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	268	291	687	263	311	665	1231	-	-	1127	-	-
Mov Cap-2 Maneuver	268	291	-	263	311	-	-	-	-	-	-	-
Stage 1	643	617	-	592	572	-	-	-	-	-	-	-
Stage 2	533	542	-	579	614	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.3	34.6	0.4	0.4
HCM LOS	C	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1231	-	-	372	300	1127	-	-
HCM Lane V/C Ratio	0.018	-	-	0.144	0.617	0.015	-	-
HCM Control Delay (s)	8	0	-	16.3	34.6	8.2	0	-
HCM Lane LOS	A	A	-	C	D	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.5	3.8	0	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	3	467	5	4	272	1	8	0	5	2	0	0
Future Vol, veh/h	3	467	5	4	272	1	8	0	5	2	0	0
Conflicting Peds, #/hr	0	0	7	7	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	519	6	4	302	1	9	0	6	2	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	303	0	0	532	0	0	846	846	529	842	849	303
Stage 1	-	-	-	-	-	-	535	535	-	311	311	-
Stage 2	-	-	-	-	-	-	311	311	-	531	538	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1258	-	-	1036	-	-	282	299	550	284	298	737
Stage 1	-	-	-	-	-	-	529	524	-	699	658	-
Stage 2	-	-	-	-	-	-	699	658	-	532	522	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1258	-	-	1029	-	-	278	295	546	279	294	737
Mov Cap-2 Maneuver	-	-	-	-	-	-	278	295	-	279	294	-
Stage 1	-	-	-	-	-	-	524	519	-	697	655	-
Stage 2	-	-	-	-	-	-	696	655	-	525	517	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	16	18
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	343	1258	-	-	1029	-	-	279
HCM Lane V/C Ratio	0.042	0.003	-	-	0.004	-	-	0.008
HCM Control Delay (s)	16	7.9	0	-	8.5	0	-	18
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

Intersection	
Intersection Delay, s/veh	14.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	22	37	19	66	36	27	38	235	268	128	230	40
Future Vol, veh/h	22	37	19	66	36	27	38	235	268	128	230	40
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	23	39	20	70	38	29	40	250	285	136	245	43
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	10.7	11.5	12.5	17.8
HCM LOS	B	B	B	C

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	14%	0%	28%	51%	32%
Vol Thru, %	86%	0%	47%	28%	58%
Vol Right, %	0%	100%	24%	21%	10%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	273	268	78	129	398
LT Vol	38	0	22	66	128
Through Vol	235	0	37	36	230
RT Vol	0	268	19	27	40
Lane Flow Rate	290	285	83	137	423
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.472	0.401	0.15	0.244	0.642
Departure Headway (Hd)	5.849	5.069	6.509	6.41	5.457
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	616	710	548	559	661
Service Time	3.592	2.812	4.577	4.471	3.498
HCM Lane V/C Ratio	0.471	0.401	0.151	0.245	0.64
HCM Control Delay	13.7	11.2	10.7	11.5	17.8
HCM Lane LOS	B	B	B	B	C
HCM 95th-tile Q	2.5	1.9	0.5	1	4.6

Intersection	
Int Delay, s/veh	51.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	12	19	35	143	43	42	28	492	148	12	300	9
Future Vol, veh/h	12	19	35	143	43	42	28	492	148	12	300	9
Conflicting Peds, #/hr	31	0	53	53	0	31	60	0	54	54	0	60
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	20	36	147	44	43	29	507	153	12	309	9

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1114	1170	427	1115	1098	669	378	0	0	714	0	0
Stage 1	398	398	-	696	696	-	-	-	-	-	-	-
Stage 2	716	772	-	419	402	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	185	193	628	185	213	458	1180	-	-	886	-	-
Stage 1	628	603	-	432	443	-	-	-	-	-	-	-
Stage 2	421	409	-	612	600	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	118	163	562	~ 135	180	422	1113	-	-	840	-	-
Mov Cap-2 Maneuver	118	163	-	~ 135	180	-	-	-	-	-	-	-
Stage 1	567	559	-	393	403	-	-	-	-	-	-	-
Stage 2	313	372	-	516	556	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	26.4	282.2	0.3	0.3
HCM LOS	D	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1113	-	-	235	163	840	-	-
HCM Lane V/C Ratio	0.026	-	-	0.29	1.442	0.015	-	-
HCM Control Delay (s)	8.3	0	-	26.4	282.2	9.3	0	-
HCM Lane LOS	A	A	-	D	F	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	1.2	14.9	0	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Intersection Delay, s/veh	9.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	23	27	18	114	14	13	27	90	46	47	138	14
Future Vol, veh/h	23	27	18	114	14	13	27	90	46	47	138	14
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	26	30	20	128	16	15	30	101	52	53	155	16
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	8.7	9.7	9.1	10.1
HCM LOS	A	A	A	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	23%	0%	34%	81%	24%
Vol Thru, %	77%	0%	40%	10%	69%
Vol Right, %	0%	100%	26%	9%	7%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	117	46	68	141	199
LT Vol	27	0	23	114	47
Through Vol	90	0	27	14	138
RT Vol	0	46	18	13	14
Lane Flow Rate	131	52	76	158	224
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.2	0.067	0.107	0.226	0.303
Departure Headway (Hd)	5.464	4.642	5.055	5.128	4.871
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	653	766	703	695	733
Service Time	3.229	2.406	3.132	3.193	2.932
HCM Lane V/C Ratio	0.201	0.068	0.108	0.227	0.306
HCM Control Delay	9.6	7.7	8.7	9.7	10.1
HCM Lane LOS	A	A	A	A	B
HCM 95th-tile Q	0.7	0.2	0.4	0.9	1.3

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	34	0	0	13	26	141	105	19	239	11
Future Vol, veh/h	0	0	34	0	0	13	26	141	105	19	239	11
Conflicting Peds, #/hr	4	0	13	13	0	4	9	0	0	0	0	9
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	38	0	0	14	29	157	117	21	266	12

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	294	-	-	220	287	0	0	274	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.22	-	-	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.318	-	-	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	0	0	745	0	0	820	1275	-	-	1289	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	729	-	-	817	1264	-	-	1289	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.2	9.5	0.8	0.6
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1264	-	-	729	817	1289	-	-
HCM Lane V/C Ratio	0.023	-	-	0.052	0.018	0.016	-	-
HCM Control Delay (s)	7.9	0	-	10.2	9.5	7.8	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0.1	0.1	-	-

Intersection	
Intersection Delay, s/veh	11.8
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	38	31	24	175	31	12	28	155	114	59	203	27
Future Vol, veh/h	38	31	24	175	31	12	28	155	114	59	203	27
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	40	33	25	184	33	13	29	163	120	62	214	28
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	10.2	12.4	10.6	13.2
HCM LOS	B	B	B	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	15%	0%	41%	80%	20%
Vol Thru, %	85%	0%	33%	14%	70%
Vol Right, %	0%	100%	26%	6%	9%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	183	114	93	218	289
LT Vol	28	0	38	175	59
Through Vol	155	0	31	31	203
RT Vol	0	114	24	12	27
Lane Flow Rate	193	120	98	229	304
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.322	0.174	0.162	0.374	0.464
Departure Headway (Hd)	6.019	5.232	5.956	5.866	5.486
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	597	684	600	613	657
Service Time	3.764	2.976	4.015	3.915	3.529
HCM Lane V/C Ratio	0.323	0.175	0.163	0.374	0.463
HCM Control Delay	11.6	9.1	10.2	12.4	13.2
HCM Lane LOS	B	A	B	B	B
HCM 95th-tile Q	1.4	0.6	0.6	1.7	2.5

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	20	0	0	30	20	279	94	15	395	8
Future Vol, veh/h	0	0	20	0	0	30	20	279	94	15	395	8
Conflicting Peds, #/hr	3	0	19	19	0	3	3	0	4	4	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	23	0	0	34	23	317	107	17	449	9

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	476	-	-	378	461	0	0	428	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.22	-	-	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.318	-	-	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	0	0	589	0	0	669	1100	-	-	1131	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	577	-	-	665	1097	-	-	1127	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.5	10.7	0.4	0.3
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1097	-	-	577	665	1127	-	-
HCM Lane V/C Ratio	0.021	-	-	0.039	0.051	0.015	-	-
HCM Control Delay (s)	8.4	0	-	11.5	10.7	8.2	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.2	0	-	-

Intersection	
Intersection Delay, s/veh	22.5
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	34	56	19	209	79	27	38	223	268	128	230	40
Future Vol, veh/h	34	56	19	209	79	27	38	223	268	128	230	40
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	36	60	20	222	84	29	40	237	285	136	245	43
Number of Lanes	0	1	0	0	1	0	0	1	1	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	2	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	1	1	1
HCM Control Delay	13.7	23.3	17.2	31.2
HCM LOS	B	C	C	D

Lane	NBLn1	NBLn2	EBLn1	WBLn1	SBLn1
Vol Left, %	15%	0%	31%	66%	32%
Vol Thru, %	85%	0%	51%	25%	58%
Vol Right, %	0%	100%	17%	9%	10%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	261	268	109	315	398
LT Vol	38	0	34	209	128
Through Vol	223	0	56	79	230
RT Vol	0	268	19	27	40
Lane Flow Rate	278	285	116	335	423
Geometry Grp	7	7	2	2	5
Degree of Util (X)	0.556	0.508	0.256	0.664	0.794
Departure Headway (Hd)	7.206	6.413	7.956	7.132	6.749
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	497	559	455	503	533
Service Time	4.993	4.2	5.956	5.214	4.831
HCM Lane V/C Ratio	0.559	0.51	0.255	0.666	0.794
HCM Control Delay	18.7	15.7	13.7	23.3	31.2
HCM Lane LOS	C	C	B	C	D
HCM 95th-tile Q	3.3	2.9	1	4.8	7.5

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	35	0	0	42	28	492	148	12	443	9
Future Vol, veh/h	0	0	35	0	0	42	28	492	148	12	443	9
Conflicting Peds, #/hr	31	0	53	53	0	31	60	0	54	54	0	60
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	97	97	97	97	97	97	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	36	0	0	43	29	507	153	12	457	9

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	-	-	575	-	-	669	526	0	0	714	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	6.22	-	-	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.318	-	-	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	0	0	518	0	0	458	1041	-	-	886	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	-	464	-	-	422	982	-	-	840	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.4	14.5	0.4	0.2
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	982	-	-	464	422	840	-	-
HCM Lane V/C Ratio	0.029	-	-	0.078	0.103	0.015	-	-
HCM Control Delay (s)	8.8	0	-	13.4	14.5	9.3	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0.3	0	-	-

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February 28, 2022

Jerad Chipman
City of Idaho Springs
1711 Miner Street
Idaho Springs, CO 80452

Re: Block 57 – Traffic Impact Study Addendum
Idaho Springs, Colorado

Dear Jerad:

The traffic impact study (TIS) for the proposed Block 57 project was complete on August 19, 2021, which was reviewed by the City and their traffic consultant (Stolfus & Associates). Comments on the traffic study were provided on September 1, 2021, which requested conceptual design evaluation of the proposed improvement options at the intersection of 13th Avenue & Idaho Street. Four concepts, A, B, C and D, were provided to the City for review. These concept sketches are attached. The City supports concept D for potential future implementation to improve this intersection, which shows a conversion of Idaho Street east of 13th Avenue to one-way (eastbound) and a "pork chop" right turn channelization island on the west leg.

Since this traffic study was completed, the site plan has been modified slightly. The project proponent is looking to include another adjacent parcel to the west, which would reduce the grading required to construct the west access to Miner Street and allow the access to shift to the west. The modifications to the site plan also result in fewer dwelling units and less retail space. The original TIS included 120 residential dwelling units and 12,000 square feet of retail space. The current site plan being pursued includes 118 dwelling units and 3,000 square feet of retail space. The impact to the traffic study as a result of the development size changing is anticipated to be negligible. Since the number of residences and retail space are being reduced, less impact would be anticipated.

Enclosed is the stamped and signed traffic impact study as well as the 13th Avenue & Idaho Street concept sketches. Please let me know if you need anything else related to traffic analysis for this project. I can be contacted at the following email address: craig@civtrans.com.

Sincerely,

Craig MacPhee, PE, PTOE
President
CivTrans Engineering Inc.

EXHIBIT A

IDAHO STREET & 13TH AVENUE
RIGHT-IN / RIGHT-OUT OPTION

CivTrans ENGINEERING INC.

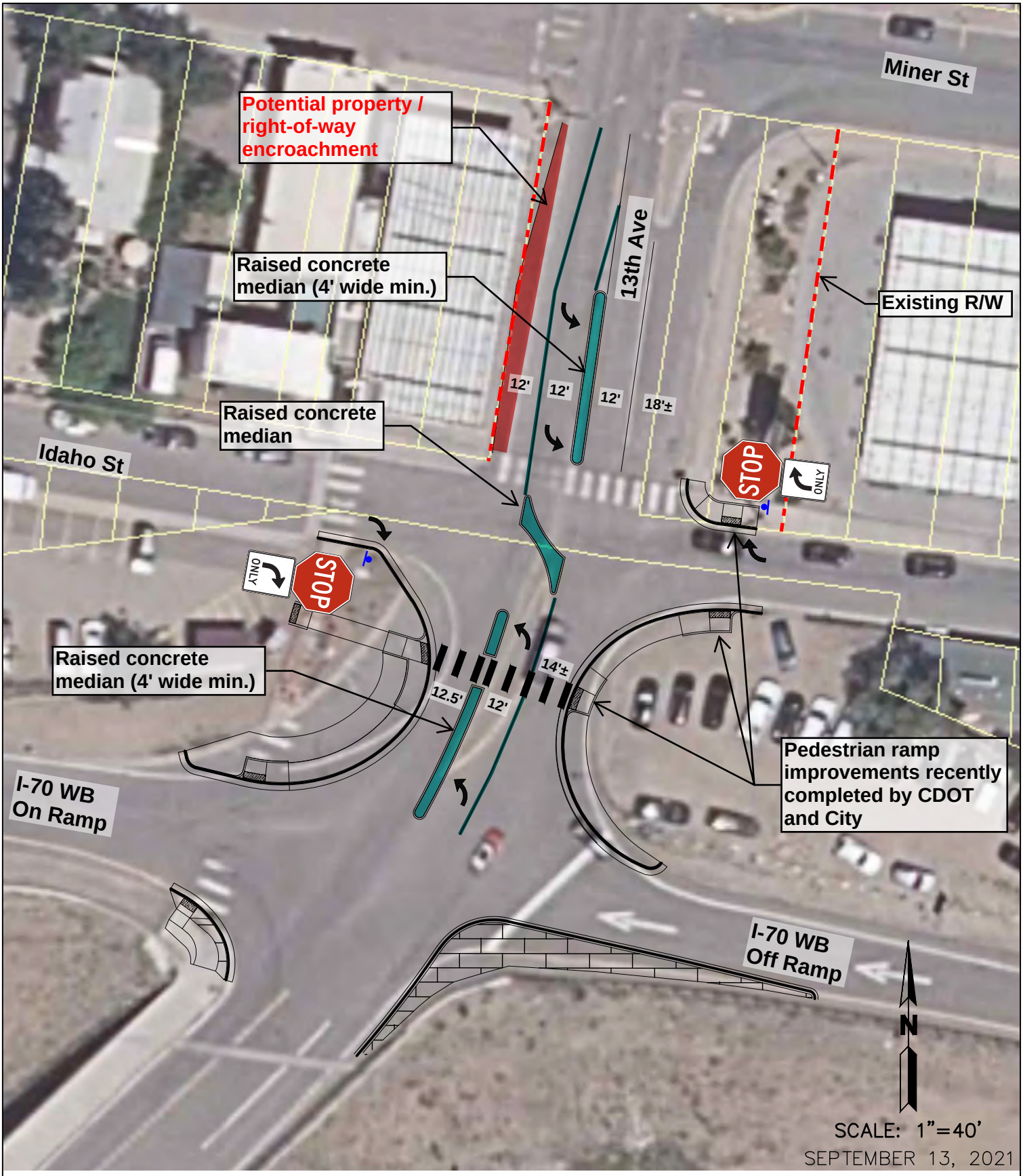


EXHIBIT B

IDAHO STREET & 13TH AVENUE
3/4 - MOVEMENT OPTION

CivTrans ENGINEERING INC.

EXHIBIT C

IDAHO STREET & 13TH AVENUE
ONE-WAY (13TH-14TH) OPTION

Civ Trans ENGINEERING INC.

EXHIBIT D

IDAHO STREET & 13TH AVENUE
ONE-WAY (13TH-14TH) - RIGHT-OUT OPTION

CivTrans ENGINEERING INC.

February 4, 2022

To: Stephanie Copeland
Four Points Funding, LLC
345 Lincoln Avenue, Suite 206,
Steamboat Springs, CO 80487
Via Email: stephanie@fourpointsfunding.com

Re: Phase I Environmental Site Assessment
Block 57 Planned Development Project
Idaho Springs, Clear Creek County, Colorado
Indigo Project No. FPF-057-2043.SO2

Ms. Copeland:

Indigo B2B, LLC (Indigo) has completed the Phase I Environmental Site Assessment (Phase I ESA) of the Block 57 Planned Development Project, Idaho Springs, Clear Creek County, Colorado (Site). Our findings, opinions, and conclusions are summarized in Sections 9.0 and 10.0 of the Phase I ESA report, which is attached.

While Indigo identified recognized environmental conditions (RECs), historical recognized environmental conditions (HRECs), and de minimus conditions during the Phase I ESA, it is important to note that Four Points has no obligation to remediate the Site prior to or during construction. While Four Points will be required to manage environmental impacts in accordance with existing regulations as they may be encountered, current statute does not require the Four Points fully remediate impacted soil or groundwater.

For the purposes of pre-construction and design planning, Indigo notes that:

1. Fill material appears to have been placed on the Site. Based on information obtained from Terracon Consultants, Inc. (Terracon), a portion of the placed fill consists of mill-related waste materials and waste rock. While some of the fill material also included construction debris, none of the construction debris appeared to contain asbestos or lead-based paint. Four Points will have a variety of options to manage disturbed fill, including:

   - If it meets geotechnical standards, fill material that does not contain mill-related waste materials and waste rock (i.e., construction debris, etc.) that is also otherwise unimpacted (i.e., asbestos, staining, unusual odors, etc.) may be reused on-Site. Further, mill-related waste

materials and waste rock can be reused on-Site assuming they meet the definition of a Bevill Amendment exempt waste. To reuse the Site's fill material, Four Points will need to obtain a Beneficial Use Permit (BUD) permit from the Colorado Department of Human Health and Environment (CDPHE). Indigo is currently in the process of preparing a BUD application permit on the behalf of Four Points.

- If Four Points has no need to reuse the disturbed fill material (i.e., the reuse of the fill would not be beneficial to Four Points), it may be removed and disposed of at an off-Site landfill.
- Construction debris that contains asbestos or lead-based paint (if any), fill that has been impacted by other contaminants (i.e., is stained, contains unusual odors, etc.), or waste that does not meet the definition of exempt under the Bevill Amendment cannot be reused on-Site. These wastes will need to be segregated, assessed, and managed in accordance with applicable regulations. Indigo is currently in the process of preparing a Materials Management Plan (MMP) to be used during Site redevelopment. The MMP will describe the protocols and procedures to manage fill material disturbed during construction that cannot be reused on-Site, to ensure compliance with existing regulations and to protect human health and the environment.

2. Five underground storage tanks (USTs) were installed at the Site in 1970. A 10,000-gallon diesel UST is still in operation, and no reports of releases from this UST have been reported. The status of a waste-oil tank, which has been reported as either a 500- or 1,000-gallon UST, is not clear. The records reviewed by Indigo regarding the waste-oil UST did not include information as to its removal, and the Clear Creek County School District RE-1 representatives interviewed by Indigo had no knowledge of the waste-oil tank's status. A 5,000-gallon and two 3,000-gallon gasoline USTs were removed in 1989 in accordance with regulations existing at that time; while approximately 20 cubic yards of gasoline-impacted soil were removed at that time, no widespread soil or groundwater impacts were identified.

   It is likely the existing diesel UST, and potentially the waste-oil UST (if it still exists at the Site), would be eligible for State of Colorado Policy 29 funds. The Policy 29 program provides up to 100% reimbursement for the removal of operating USTs (and any associated soil or water impacts) that will not be replaced with another UST. Indigo recommends that Four Points work with the Clear Creek County School District (the owner of the USTs) to remove and remediate the existing UST(s) prior to construction.

3. An oil/water separator is located immediately outside and to the west of the Bus Barn building. According to Clear Creek County School District RE-1 representatives, the oil/water separator receives wash-water from inside the Bus Barn via a central floor grate. Due to a parked car, Indigo was unable to inspect the interior of oil/water separator; however, the floor grate leading to the oil/water separator appeared to contain oily solids. Indigo recommends that the Clear Creek County School District RE-1 remove the contents of the oil/water separator when operations at the Bus Barn cease.

Please contact us should have any questions regarding this letter, the Phase I ESA, or if we can be of additional assistance.

Sincerely,

INDIGO B2B, LLC

Susan Luke Borden, PG
Partner & Principal Geologist

cc: Carla Pokrywka Cole, Space, Inc.

Attachment: Phase I Environmental Site Assessment/Block 57 Planned Development Project

Geotechnical Engineering Report

Proposed Multi-family Apartments
Miner Street and 10th Avenue
Idaho Springs, Colorado
September 30, 2019
Terracon Project No. 25195228

Prepared for:
Range Development LLC
Georgetown, Colorado

Prepared by:
Terracon Consultants, Inc.
Wheat Ridge, Colorado

September 30, 2019

Range Development LLC
612 6th Street, Unit B
Georgetown, Colorado 80444

Attn: Mr. Kurt Soukup
P: (610) 299-0422
E: soukup@mac.com

Re: Geotechnical Engineering Report
Proposed Multi-family Apartments
Miner Street and 10th Avenue
Idaho Springs, Colorado
Terracon Project No. 25195228

Mr. Soukup:

We have completed the Geotechnical Engineering services for the above referenced project. This study was performed in general accordance with Terracon Proposal No. P25195228 dated January 1, 2019. This report presents the findings of the subsurface exploration and provides geotechnical recommendations concerning earthwork and the design and construction of foundations, floor slabs, and pavements for the proposed project.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning this report or if we may be of further service, please contact us.

Sincerely,
Terracon Consultants, Inc.

Gabriel A. Burgess, P.E.
Senior Geotechnical Engineer

Scott B. Myers, P.E.
Regional Senior Consultant

REPORT TOPICS

REPORT COVER PAGE 1
REPORT COVER LETTER TO SIGN 1
REPORT TOPICS 1
REPORT SUMMARY I
INTRODUCTION 1
SITE CONDITIONS 1
PROJECT DESCRIPTION 2
GEOTECHNICAL CHARACTERIZATION 3
Typical Profile 3
Groundwater Conditions 4
GEOTECHNICAL OVERVIEW 5
Existing Fill Materials 5
Loose Soils 6
Temporary Dewatering 6
Shoring 6
Difficult Excavations and Material Reuse – Cobbles and Boulders 7
Existing Structures 7
EARTHWORK 8
Site Preparation 8
Material Types 8
Compaction Requirements 10
Excavation 10
Grading and Drainage 11
Earthwork Construction Considerations 11
SHALLOW FOUNDATIONS 12
SEISMIC CONSIDERATIONS 14
FLOOR SLABS 14
Interior Floors 14
EXTERIOR FLATWORK 15
BELOW-GRADE STRUCTURES 16
LATERAL EARTH PRESSURES 16
PAVEMENTS 17
Design Traffic 18
Subgrade Soils 18
Recommended Minimum Pavement Sections and Materials 18
Pavement Maintenance 19
Pavement Construction Considerations 20
CORROSIVITY 20
GENERAL COMMENTS 21

Note: This report was originally delivered in a web-based format. For more interactive features, please view your project online at client.terracon.com.

ATTACHMENTS

EXPLORATION AND TESTING PROCEDURES
SITE LOCATION AND EXPLORATION PLANS
EXPLORATION RESULTS
SUPPORTING INFORMATION

Note: Refer to each individual Attachment cover page for a listing of contents.

REPORT SUMMARY

A geotechnical engineering exploration program has been performed for the Proposed Multi-family Apartments to be located at Miner Street and 10th Avenue in Idaho Springs, Colorado. Based on the information obtained from this subsurface exploration and the laboratory testing completed, the site appears suitable for the proposed construction; however, the following geotechnical conditions will need to be considered:

- Up to about 7 feet of fill materials were encountered in the borings drilled for this project. Based on our knowledge of the site and Idaho Springs historical development, deeper fills may be present. We do not possess any information regarding whether the fill was placed under the observation of a geotechnical engineer; therefore, we consider the fill to be undocumented. Based on observations of the fill materials, it appears that some fill materials may be from previous mining operations in the area. It is our opinion the existing undocumented fill should not be used to support foundation, interior slab, pavement, or exterior slab construction without complete removal and modification. Support of pavement construction and exterior slab construction on the existing fill materials can be considered, provided a portion of the existing fill materials are over-excavated, processed, moisture conditioned and recompacted and some movement can be tolerated.

- Test boring data indicate that loose soils may be locally present. Consequently, loose soils could be encountered below foundations or other improvements and these conditions will likely require some corrective work. Corrective work could involve removal and re compaction or replacement, in-place soil densification, or deepening footing excavations to suitable bearing materials.

- Cobbles and boulders were encountered during our exploration. It is anticipated that excavations for construction will require heavy-duty earthmoving equipment, and care must be taken when reusing oversize materials. Large boulders may be present within the proposed excavations that may require the use of jack-hammering and/or blasting to remove. Recommendations for difficult excavation and material reuse are presented in this report.

- Based on the geotechnical engineering analyses, the proposed apartment buildings may be constructed on shallow spread footing foundation systems bottomed on native soils or new engineered fill, provided the owner is willing to accept the associated risk of movement.

- Based on the properties of the subsurface materials, the floor system for the proposed apartments may consist of slabs-on-grade constructed on native soils or new engineered fill, provided the owner is willing to accept the risk of movement.

- Based on the 2015 International Building Code (IBC) Section 1613.3.2 and the subsurface conditions encountered in the borings, the seismic site classification for this site is D.

- Existing fill will most likely be encountered at exterior flatwork and pavement construction elevation. Construction of exterior flatwork and pavements on a zone of new engineered fill is recommended to improve performance.

- The amount of movement associated with foundations, floor slabs, slabs-on-grade, etc. will be related to the wetting of the underlying soils. Therefore, it is imperative the recommendations outlined in the **Grading and Drainage** subsection of **Earthwork** be followed to reduce potential movement. Moisture conditioning and/or replacement of the on-site fill materials and/or native soils should follow the recommendations outlined in **Earthwork**.

This summary should be used in conjunction with the entire report for design purposes. It should be recognized that details were not included or fully developed in this section, and the report must be read in its entirety for a comprehensive understanding of the items contained herein. The section titled **General Comments** should be read for an understanding of the report limitations.

Geotechnical Engineering Report

Proposed Multi-family Apartments
Miner Street and 10th Avenue
Idaho Springs, Colorado

Terracon Project No. 25195228
September 30, 2019

INTRODUCTION

This report presents the results of our subsurface exploration and geotechnical engineering services performed for the proposed Multi-family Apartments to be located at Miner Street and 10th Avenue in Idaho Springs, Colorado.

The purpose of these services is to provide information and geotechnical engineering recommendations relative to:

- Subsurface soil conditions
- Groundwater levels
- Earthwork
- Drainage
- Lateral earth pressures
- Seismic site classification
- Foundation design and construction
- Floor slab design and construction
- Pavement design and construction

The geotechnical engineering Scope of Services for this project included the advancement of nine test borings (designated as Boring Nos. 1 through 7 and P1 and P2) to depths ranging from approximately 4 to 20 feet below existing site grades. Plans showing the site and boring locations are shown in the **Site Location and Exploration Plans** section. The results of the laboratory testing performed on soil samples obtained from the site during the field exploration are included on the boring logs and/or as separate graphs in the **Exploration Results** section.

SITE CONDITIONS

The following description of site conditions is derived from our site visit in association with the field exploration and our review of publicly available geologic and topographic maps.

Item	Description
Parcel Information	The project is to be located south of Miner Street and 10th Avenue in Idaho Springs, Colorado. The general location of the proposed project is 39.7420° N, 105.5227° W. The site is bounded by Miner and Idaho Streets to the north, I-70 to the south, and 13th Avenue to the East and 140 feet west of 9th Avenue on the western end. See **Site Location**
Existing Improvements	The west side of the property consists of a grass turf football field with bleachers built into the hillside on the north side of the field. The field is approximately 8 feet below the Miner Street. The east side of the property there is a metal building on the north side and asphalt parking and driveways on the south and east side of the building. The building serves as a maintenance and storage facility for local school busses. Between the building and the field is a gravel surfaced parking lot with an entrance ramp located off Idaho Street.
Current Ground Cover	The field is covered with grass, and the parking and driveway areas are covered with asphalt paving or gravel surfacing. There is slope paving on some of the hillsides adjacent to the athletic field and to the gravel surfaced parking lot west of the maintenance facility.
Existing Topography	The site generally slopes to the south and to the north, with the bus maintenance and storage facility being elevated above the athletic field. The gravel surface parking lot is sloped downwards to the west towards the athletic field.

more

I don't think to the north

PROJECT DESCRIPTION

Our final understanding of the project conditions is as follows:

Item	Description
Information Provided	Range Development provided the following PDF documents: ■ 20190528 Idaho Springs Open House Boards_.pdf ■ AQOZF One Pager.pdf ■ Barn-Gold Digger Field.pdf ■ CCEDC Property Exit 240 1.pdf ■ TOPO School-2ft contours.pdf

Item	Description
Project Description	We understand the existing building and facilities on the site will be razed prior to construction of the proposed development. We understand the project consists of constructing six three-story walk-up apartment buildings and associated access drives and parking areas. There will be a total of about 115 studio, one bedroom, and two bedroom apartments. The buildings will be constructed at grade. No below-grade levels are planned.
Building Construction	Use of light gage steel or wood framing with shallow cast-in-place concrete foundations.
Anticipated Foundation Systems	Spread footings
Maximum Loads	■ Columns: 25 to 150 kips ■ Walls: 2 to 4 kips per linear foot (klf) ■ Slabs: 150 to 250 pounds per square foot (psf)
Grading/Slopes	Cut and fill, 3 feet (+/-) max
Excavation Depth	3 feet
Below-Grade Structures	None indicated
Free-Standing Retaining Walls	None indicated.
Pavements	New pavements for privately-maintained pavement areas will likely consist of flexible asphalt and rigid concrete pavement. Traffic loads were not available at the time of this proposal. We will assume traffic loads consistent with that of similar use.
Underground Utilities	We assume underground utilities will be installed within about 5 to 8 feet of finished site grades.

Fire truck and delivery trucks possible

GEOTECHNICAL CHARACTERIZATION

We have developed a general characterization of the subsurface soil and groundwater conditions based upon our review of the data and our understanding of the geologic setting and planned construction. The following sections provide our geotechnical characterization.

The geotechnical characterization forms the basis of our geotechnical calculations and evaluation of site preparation, foundation options, and pavement options. As noted in **General Comments**, the characterization is based upon widely spaced exploration points across the site, and variations are likely.

Typical Profile

Based on the results of the borings for this exploration, subsurface conditions on the site can be generalized as follows:

Material Description	Approximate Depth to Bottom of Stratum below Existing Site Grade	Relative Density
Topsoil	About 2 to 5 inches	N/A
Existing fill consisting of sand with varying amounts of silt, clay and gravel.	About 2 to 7 feet, Maximum depth explored in Boring No. P2	Variable
Native soils consisting of sand with varying amounts of silt, gravel, cobbles and boulders and cobbles and boulders with varying amounts of silt, sand and gravel	About 4 to 20 feet, Maximum depth explored in remaining borings	Loose to very dense

1. Practical auger refusal encountered in Boring Nos. 4, 6 and 7 on boulders.

Stratification boundaries on the boring logs represent the approximate location of changes in soil and material types; in situ, the transition between materials may be gradual. Further details of the borings can be found on the boring logs in the **Exploration Results**. A summary of laboratory test results is included in the **Exploration Results**.

Groundwater Conditions

The borings were observed while drilling and upon completion of drilling for the presence and level of groundwater. The water levels encountered in the boreholes can be found on the boring logs in **Exploration Results** and are summarized below.

Boring No.	Shallowest depth to groundwater encountered while or upon completion of drilling [1]
1	About 7 feet
2	About 7 feet
3	About 8 feet
4	None encountered
5	About 10 feet
6	About 13 feet
7	None encountered
P1	None encountered
P2	None encountered

1. Due to safety concerns, borings were backfilled immediately after completion. Therefore, subsequent groundwater measurements were not obtained.

These observations represent groundwater conditions at the time of the field exploration and may not be indicative of other times or at other locations. Groundwater levels can be expected to fluctuate with varying seasonal and weather conditions.

Groundwater level fluctuations occur due to seasonal variations in the amount of rainfall, runoff, and other factors not evident at the time the borings were performed. Groundwater levels during construction or at other times in the life of the structures may be higher or lower than the levels indicated on the boring logs. The possibility of groundwater level fluctuations should be considered when developing the design and construction plans for the project.

GEOTECHNICAL OVERVIEW

Based on subsurface conditions encountered in the borings, the site appears suitable for the proposed construction from a geotechnical point of view provided certain precautions and design and construction recommendations outlined in this report are followed. We have identified geotechnical conditions that could impact design and construction of the proposed building and other site improvements.

Existing Fill Materials

Up to about 7 feet of fill materials were encountered in the borings drilled for this project. Based on our knowledge of the site and Idaho Springs historical development, deeper fills may be present. We do not possess any information regarding whether the fill was placed under the observation of a geotechnical engineer; therefore, we consider the fill to be undocumented. Based on observations of the fill materials, it appears that some fill materials may be from previous mining operations in the area.

Based upon the results of our field exploration and laboratory testing, it is our opinion the existing fill should not be used to support foundations, interior slabs, exterior slabs-on-grade, or pavement construction without complete removal and modification.

If the owner is willing to accept a higher risk of movement for pavements and exterior slabs, consideration could be given to over-excavating a portion of the existing fill materials below these elements, then processing, moisture conditioning and compacting the materials back to subgrade elevation.

It should be noted that there exists the potential for construction debris, and/or domestic trash to be encountered within the fill on some portions of the site. Because wood fragments were encountered within the exploratory borings, we believe the potential for encountering construction debris related to previous mining activities is considered to be moderate to high, while the potential for encountering domestic trash is considered to be low. The fill materials should be observed for the presence of trash and debris during site grading and construction.

Based on the subsurface conditions encountered in the exploratory borings, we anticipate the majority of the existing fill can be reused as engineered fill below foundations, slabs-on-grade, and pavements, provided the material meets the requirements of imported soils in the **Material Types** subsection in **Earthwork**, any deleterious materials are removed, and some movement can be tolerated. However, some of the existing fill materials appear to be from previous mining activities on the site. While these materials are acceptable from a geotechnical perspective, we are aware of instances in which fill from previous mining activities had environmental concerns. Assessment of environmental conditions is outside the scope of this exploration. Some removal and replacement may be required if unsuitable or soft materials are exposed.

Loose Soils

Test boring data indicate that loose soils may be locally present. Consequently, loose soils could be encountered below foundations or other improvements and these conditions will likely require some corrective work. Corrective work could involve removal and re-compaction or replacement, in-place soil densification, or deepening footing excavations to suitable bearing materials. In any event, Terracon should be contacted to observe foundation excavations to evaluate bearing conditions and to provide guidance concerning corrective work (if needed).

Temporary Dewatering

Groundwater was encountered as shallow as 7 feet below existing site grades in the exploratory borings during the field exploration. It is expected that the groundwater elevations are closely tied to Clear Creek water level elevations and may be subject to rapid rise in elevation during seasonal highwater runoff or large precipitation events. Depending upon the time of year and depth of excavations, a temporary dewatering system may be necessary for portions of the proposed construction. Based on the granular nature of soils encountered within the excavations and proximity to Clear Creek, groundwater seepage rates are anticipated to be relatively high.

Based on the subsurface conditions encountered in the exploratory borings, a temporary dewatering system consisting of well points could be considered depending on the excavation depths and extents. We recommend that a specialty dewatering contractor be contacted to consult on the most efficient temporary dewatering recommendations for the proposed project. Groundwater should be lowered a minimum of two feet below bottom of proposed excavations.

Shoring

Based on our project understanding, excavations as deep as 8 feet for utilities may be required. Temporary shoring may be required for installation of the proposed utilities and possibly removal of existing fill materials. The depth of excavation and subsurface soils will influence the type of shoring system that may be used. A qualified shoring contractor should be contacted to design and install the temporary shoring system.

The lateral earth pressure parameters provided in this report may be used for temporary shoring design; however, the use of these parameters is at the discretion of the designer. It has been our experience that shoring designers have proprietary or various earth pressure diagrams to base the shoring design. It is up to the shoring designer to interpret the provided parameters.

Due to the proximity of the existing roadway (Miner Road) and structures adjacent to the development, we strongly recommend a preconstruction survey be performed on the adjacent roadway and structures if excavations will be immediately adjacent to those facilities. The survey should include a visual observation and documentation of condition of the existing roadway condition and structures prior to excavation. In addition to a preconstruction survey, we recommend the shoring adjacent to the existing streets be monitored during construction for movement. We recommend that the shoring contractor include a monitoring program in the design and construction of the shoring system.

Difficult Excavations and Material Reuse – Cobbles and Boulders

It is anticipated that the majority of the excavations for the proposed improvements can be accomplished with heavy-duty earthmoving equipment; however, specialized equipment capable of ripping or jack hammering may be required to facilitate removal of large boulders that may be encountered in excavations. Boulders may also require blasting for removal. Consideration should be given to obtaining a unit price for difficult excavation of large boulders in the contract documents for the project.

Excavated materials greater than 12 inches in diameter should not be reused as engineered fill. Materials between 3 inches and 12 inches in diameter should be placed with care if reused as engineered fill and should meet the requirements for imported fill in the **Material Types** section of this report to reduce the risk of nesting. We recommend all excavated materials be screened prior to reuse to determine the suitability of the materials. All existing materials should be approved prior to reuse.

approved by who?

Existing Structures

We understand the existing building and facilities will be razed prior to development of the subject site. All existing foundations, below grade elements and slabs-on-grade must be completely removed. In addition, associated utilities should be abandoned as a part of the site demolition and development. All materials derived from the demolition of the structures and exterior flatwork should be removed from the site and should not be allowed for use in any on-site fills, unless the materials are properly processed and meet the requirements provided in the **Material Types** section of this report.

EARTHWORK

The following presents recommendations for site preparation, excavation, subgrade preparation, and placement of engineered fills on the project. All earthwork on the project should be observed and evaluated by Terracon.

Site Preparation

Strip and remove existing topsoil/vegetation, organics, existing foundations and building materials, slope paving, and other deleterious materials from proposed building and pavement areas. All exposed surfaces should be free of mounds and depressions that could prevent uniform compaction.

Stripped materials consisting of topsoil/vegetation, unsuitable fills, and organic materials should be wasted from the site or used to revegetate landscaped areas or exposed slopes after completion of grading operations.

Where possible, the site should be initially graded to create a relatively level surface to receive fill and to provide for a relatively uniform thickness of fill beneath the proposed buildings and pavement areas. All exposed areas that will receive fill, once properly cleared, should be scarified to a minimum depth of 12 inches, conditioned to near optimum moisture content, and compacted. It is imperative the moisture content of prepared materials be protected from moisture loss.

Although evidence of underground facilities such as grease pits, septic tanks, and basements was not observed during our exploration, such features could be encountered during construction. If unexpected fills or underground facilities are encountered, such features should be removed and the excavation should be thoroughly cleaned prior to backfill placement and/or construction.

Depending upon depth of the excavations and seasonal conditions, groundwater may be encountered in excavations on the site. Groundwater seepage rates are anticipated to be very high and may require an aggressive temporary dewatering system in order to lower the groundwater table sufficiently to facilitate construction.

The stability of subgrade soils may be affected by precipitation, repetitive construction traffic, or other factors. If unstable conditions are encountered or develop during construction, workability may be improved by over-excavation of wet zones and mixing these soils with crushed gravel. Use of geotextiles could also be considered as a stabilization technique. Lightweight excavation equipment may be required to reduce subgrade pumping.

Material Types

Fill for this project should consist of engineered fill. Engineered fill is fill that meets the criteria presented in this report and has been properly documented. Engineered fill should meet the following material property requirements:

Fill Type [1,2]	USCS Classification	Acceptable location for placement
On-site sand soils	SP, SM, SP-SM, SC-SM,	On-site sand soils are considered suitable for reuse as compacted fill below foundation, slab, and pavement areas and as general fill for this project provided material greater than 6 inches in diameter is screened from the material.
Cobbles and boulders	N/A	Excavated materials greater than 12 inches in diameter **should not** be reused as engineered fill. Materials between 3 inches and 12 inches in diameter should be placed with care if reused as engineered fill and should meet the requirements for imported fill below.
Processed Demolition Debris (concrete) [3]	N/A	Properly processed demolition debris consisting of concrete is considered suitable for reuse as compacted fill below foundations, slabs-on-grade, and pavement areas, and as general fill for this project.
Imported soils	Varies	Imported soils meeting the gradation outlined herein can be considered acceptable for use as engineered fill beneath foundation, slab, and pavement areas, and as general fill for this project.

1. Controlled, compacted fill should consist of approved materials that are free of organic matter and debris. Frozen material should not be used, and fill should not be placed on a frozen subgrade. A sample of each material type should be submitted to the geotechnical engineer for evaluation.
2. Care should be taken during the fill placement process to avoid zones of dis-similar fill. Improvements constructed over varying fill types are at a higher risk of differential movement compared to improvements over a uniform fill zone.
3. Demolition debris (concrete) should be processed to a maximum size of 3 inches and blended with on-site soils at a ratio of 50 percent demolition debris (concrete, brick, and asphalt) to 50 percent soil prior to reuse. We are aware of instances in which demolition debris had environmental concerns. Assessment of environmental conditions is outside the scope of this exploration.

Imported soils and on-site materials for engineered fill (if required) should meet the following material property requirements:

Gradation	Percent finer by weight (ASTM C136)
12”	100
3”	75-100
1”	50-100
¾”	50-100
No. 4 Sieve	50-100
No. 200 Sieve	<35

- Liquid Limit ..... 25 (max)
- Plasticity Index ..... 10 (max)
- Maximum Expansive Potential (%) 1.0*

*Measured on a sample compacted to approximately 95 percent of the ASTM D698 maximum dry density at optimum water content. The sample is confined under a 200-psf surcharge and submerged.

Compaction Requirements

Engineered fill should be placed and compacted in horizontal lifts, using equipment and procedures that will produce recommended moisture contents and densities throughout the lift.

Item	Description
Fill Lift Thickness	12 inches or less in loose thickness when heavy, self-propelled compaction equipment is used 4 to 6 inches in loose thickness when hand-guided equipment (i.e. jumping jack, plate compactor) is used
Compaction Requirements [1,2]	A minimum of 98% of the material's standard Proctor (ASTM D698) maximum dry density
Moisture Content of Cohesionless Soils (Sand Soils)	-2 to +2% of the optimum moisture content

1. We recommend that engineered fill be tested for water content and compaction during placement. Should the results of the in-place density tests indicate the specified water or compaction limits have not been met, the area represented by the test should be reworked and retested as required until the specified water and compaction requirements are achieved.
2. Water levels should be maintained low enough to allow for satisfactory compaction to be achieved without the compacted fill material pumping when proofrolled.
3. If the granular material is a coarse sand or gravel, or of a uniform size, or has a low fines content, compaction comparison to relative density may be more appropriate. In this case, granular materials should be compacted to at least 70% relative density (ASTM D4253 and D4254).

Excavation

Excavations into the subsurface soils will encounter a variety of conditions. The individual contractor(s) is responsible for designing and constructing stable, temporary excavations as required to maintain stability of both the excavation sides and bottom. All excavations should be sloped or shored in the interest of safety following local and federal regulations, including current Occupational Safety and Health Administration (OSHA) excavation and trench safety standards.

Soils penetrated by the proposed excavations may vary significantly across the site. The soil classifications are based solely on the materials encountered in the exploratory borings. The contractor should verify that similar conditions exist throughout the proposed area of excavation. If different subsurface conditions are encountered at the time of construction, the actual conditions should be evaluated to determine any excavation modifications necessary to maintain safe conditions.

Grading and Drainage

All grades must be adjusted to provide positive drainage away from the buildings during construction and maintained throughout the life of the proposed project. Infiltration of water into utility or foundation excavations must be prevented during construction. Landscaped irrigation adjacent to the foundation systems should be minimized or eliminated. Water permitted to pond near or adjacent to the perimeter of the structures (either during or post-construction) can result in significantly higher soil movements than those discussed in this report. As a result, any estimations of potential movement described in this report cannot be relied upon if positive drainage is not obtained and maintained, and water is allowed to infiltrate the fill and/or subgrade.

Permanent grades should be sloped at a minimum of 5 percent grade for at least 10 feet beyond the perimeter of the buildings. Asphalt pavement or concrete flatwork should be sloped at a minimum of 2 percent beyond the building perimeters for the life of the buildings. Where Americans with Disabilities Act (ADA) or other requirements or existing site features limit the gradient, slopes on the order of ½ to 1 percent minimum may be necessary to comply with the ADA, but do increase the risk of unanticipated movement. Backfill against footings, exterior walls, and in utility and sprinkler line trenches should be compacted in accordance with recommendations in this report and free of all construction debris to reduce the possibility of water infiltration. After building construction and prior to project completion, we recommend that verification of final grading be performed to document that positive drainage, as described above, has been achieved.

Where paving or flatwork abuts the structures, care should be taken that joints are properly sealed and maintained to prevent the infiltration of surface water.

Landscape or xeriscape areas within 10 feet of the foundation systems shall not be hindered by landscape edging, grade variations, or vegetation. In addition, consideration should be given to snow removal practices that will minimize the stockpiling of snow in planter and landscaped areas adjacent to structural improvements.

Planters located adjacent to the structures should be watertight. Sprinkler mains and spray heads should be located a minimum of 10 feet away from the building lines. Where drip line irrigation is located near the buildings, we recommend that drip line irrigation systems be located at least 5 feet from the outside edge of the foundations. Roof drains should discharge on pavements or be extended away from the structures a minimum of 10 feet through the use of splash blocks or downspout extensions.

Earthwork Construction Considerations

Upon completion of grading operations, care should be taken to maintain the moisture content of the subgrade prior to construction of slabs-on-grade, pavements, etc. Construction traffic over prepared subgrade should be minimized and avoided to the extent practical. The site should also be graded to prevent ponding of surface water on prepared subgrade or in excavations. In areas

where water is allowed to pond over a period of time, the affected area should be removed and allowed to dry out.

The geotechnical engineer should be retained during the construction phase of the project to observe earthwork and to perform necessary tests and observations during over-excavation operations, excavations, subgrade preparation; proof-rolling; placement and compaction of engineered fills; backfilling of excavations into completed subgrade, foundation subgrade, and just prior to construction of building floor slabs.

SHALLOW FOUNDATIONS

Based on the subsurface conditions encountered in the exploratory borings, the proposed buildings may be designed for spread footings constructed on native soils or new engineered fill materials, provided all existing fill materials are removed and modified or replaced and the owner is willing to accept the risk of movement.

Design recommendations for spread footing foundation systems are presented in the following table and paragraphs.

Description	Value
Overexcavation/modification depth	All existing fill materials must be removed to native soil and modified or replaced.
Supporting Stratum	Native soils or new engineered fill
Maximum Allowable Bearing Pressure [1,2]	3,000 psf
Ultimate Coefficient of Friction (Sliding)	0.50
Minimum Footing Dimensions [3]	Isolated footings: 24 inches Continuous footings: 18 inches
Minimum Embedment Below Finished Grade for Frost Protection [4]	3 feet
Approximate Total Movement [5]	About 1 inch
Estimated Differential Movement [6]	About ¾ to 1 inch

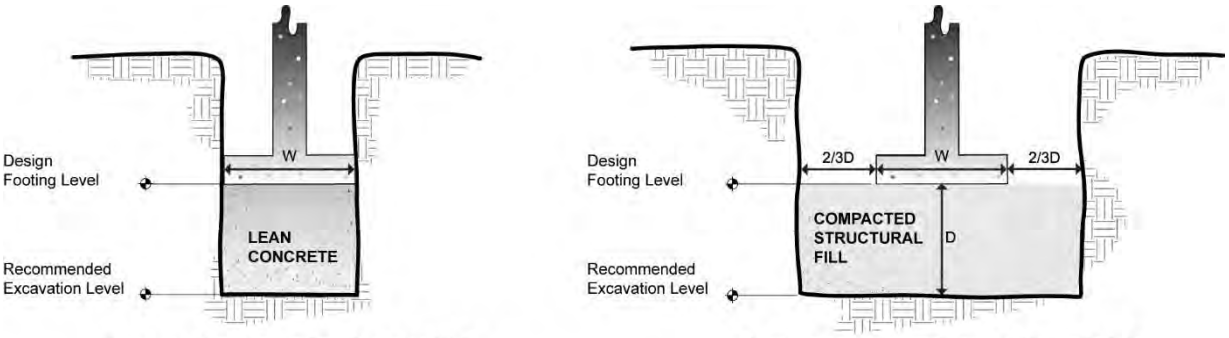
1. The recommended maximum allowable bearing pressure assumes that any existing fill or lower strength soils, if encountered, will be excavated and replaced with engineered fill.
2. The maximum allowable soil bearing pressure can be increased by 1/3 for transient loading conditions.
3. Not applicable for mat foundations or stiffened structural slab-on-grade.
4. For perimeter footings, footings beneath unheated areas, and footings that will be exposed to freezing conditions during construction. Interior footings may bottom at a minimum depth of 12 inches below finished grade in heated areas.
5. Foundation movement will depend upon the variations within the subsurface soil profile, the structural loading conditions, the embedment depth of the footings, the thickness of engineered fill, and the quality of the earthwork operations and footing construction.

Description	Value
6. Footings should be proportioned on the basis of equal total dead load pressure to reduce differential movement between adjacent footings.	

Additional foundation movements could occur if water from any source infiltrates the foundation soils; therefore, proper drainage should be provided in the final design and during construction and throughout the life of the structure. Failure to maintain the proper drainage as recommended in the **Grading and Drainage** section of **Earthwork** will nullify the movement estimates provided above.

Unstable subgrade conditions should be observed by the geotechnical engineer to assess the subgrade and provide suitable alternatives for stabilization. Stabilized areas should be proof-rolled prior to continuing construction to assess the stability of the subgrade.

Over-excavation of existing undocumented fill soils or loose or deleterious material below footings should extend laterally beyond all edges of the footings at least 8 inches per foot of over-excavation depth below footing base elevation. The over-excavation should then be backfilled up to the footing base elevation with approved fill placed in lifts of 9 inches or less in loose thickness (6 inches or less if using hand-guided compaction equipment) and compacted to at least 98 percent of the material's standard effort maximum dry density (ASTM D698). The over-excavation and backfill procedure is described in the following figure.



NOTE: Excavations in sketches shown vertical for convenience. Excavations should be sloped as necessary for safety.

The base of all foundation excavations should be free of water and loose soil prior to concrete placement. Concrete should be placed soon after excavating to reduce bearing soil disturbance. Should the soils at bearing level become excessively dry, disturbed or saturated, or frozen, the affected soil should be removed prior to placing concrete.

Footings, foundations, and masonry walls should be detailed and reinforced as necessary to reduce the potential for distress caused by differential foundation movement. The use of joints at openings or other discontinuities in masonry walls is recommended.

SEISMIC CONSIDERATIONS

Based on our subsurface exploration and laboratory testing, it is our opinion that the soils have a moderate risk of liquefaction. The following table presents the seismic site classification based on the 2015 International Building Code (IBC), and the subsurface conditions encountered within the borings:

Code Used	Site Classification
2015 International Building Code (IBC) [1,2]	D

1. In general accordance with the 2015 International Building Code, Section 1613.3.2.
2. The 2015 International Building Code (IBC) requires a site subsurface profile determination extending a depth of 100 feet for seismic site classification. The current scope requested does not include the required 100-foot subsurface profile determination. The deepest borings of this exploration extended to a maximum depth of about 20 feet and this seismic site class definition considers that similar subsurface conditions exist below the maximum depth of the subsurface exploration.

Current code is 2018 IBC

FLOOR SLABS

Interior Floors

Slab-on-grade floors may be utilized for the interior floor systems on native soils or new engineered fill, provided all existing fill materials are removed and modified or replaced and some slab movement can be tolerated. We estimate this alternative will reduce movement to about 1 inch.

The following design and construction recommendations apply to conventional slab-on-grade construction. If the owner cannot accept the risk of slab movement, a structural floor should be used. If the owner is willing to accept the risk associated with movement of a slab-on-grade floor system, slabs-on-grade should be constructed on a zone of engineered fill, as recommended above. New fill materials beneath slabs-on-grade should be placed and compacted as outlined in the **Earthwork** section of this report.

For structural design of concrete slabs-on-grade on native soils or new engineered fill, a modulus of subgrade reaction of 150 pounds per cubic inch (pci) may be used for point or limited area loads for floors supported on an engineered fill.

Additional floor slab design and construction recommendations are as follows:

- Positive separations and/or isolation joints should be provided between slabs and all foundations, columns, or utility lines to allow independent movement.
- Control joints should be provided in slabs to control the location and extent of cracking.
- Interior trench backfill placed beneath slabs should be compacted in accordance with recommended specifications described previously.

- The use of a vapor retarder should be considered beneath concrete slabs on grade that will be covered with wood, tile, carpet, or other moisture sensitive or impervious coverings, or when the slab will support equipment sensitive to moisture. When conditions warrant the use of a vapor retarder, the slab designer and slab contractor should refer to ACI 302 for procedures and cautions regarding the use and placement of a vapor retarder.
- Floor slabs should not be constructed on frozen subgrade.
- Other design and construction considerations, as outlined in Section 302.1R of the ACI Design Manual, are recommended.

Movements of slab-on-grades using the above outlined technique will likely be reduced and tend to be more uniform. The estimates outlined previously assume that the other recommendations in this report are followed. Additional movement could occur should the subsurface soils become wetted to significant depths, which could result in potential excessive movement causing uneven floor slabs and severe cracking. This could be due to over watering of landscaping, poor drainage, improperly functioning drain systems, and/or broken utility lines. Therefore, it is imperative that the recommendations outlined in this section and in the **Grading and Drainage** subsection of **Earthwork** be followed.

EXTERIOR FLATWORK

Exterior slabs-on-grade and flatwork constructed on the existing fill materials will have a moderate risk of movement. The risk of movement can be slightly reduced if the existing fill materials below exterior slabs-on-grade are overexcavated to a depth of at least 2 feet, moisture conditioned, and recompacted to grade. However, if movement of about 1-inch is required for exterior slabs-on-grade and flatwork, we recommend that all existing fill materials be removed and replaced as newly compacted, engineered fill. New fill materials beneath exterior flatwork should be placed and compacted as outlined in the **Earthwork** section of this report.

For structural design of exterior concrete slabs-on-grade, a modulus of subgrade reaction of 150 pci may be used for point or limited area loads for exterior slabs-on-grade at this site.

Additional slab design and construction recommendations are as follows:

- Minimizing moisture increases in the backfill.
- Controlling moisture-density during placement of backfill.
- Positive separations and/or isolation joints should be provided between exterior slabs and the buildings to allow independent movement.
- Control joints should be provided in slabs to control the location and extent of cracking.
- Exterior slabs should not be constructed on frozen subgrade
- Other design and construction considerations, as outlined in Section 302.1R of the ACI Design Manual, are recommended.

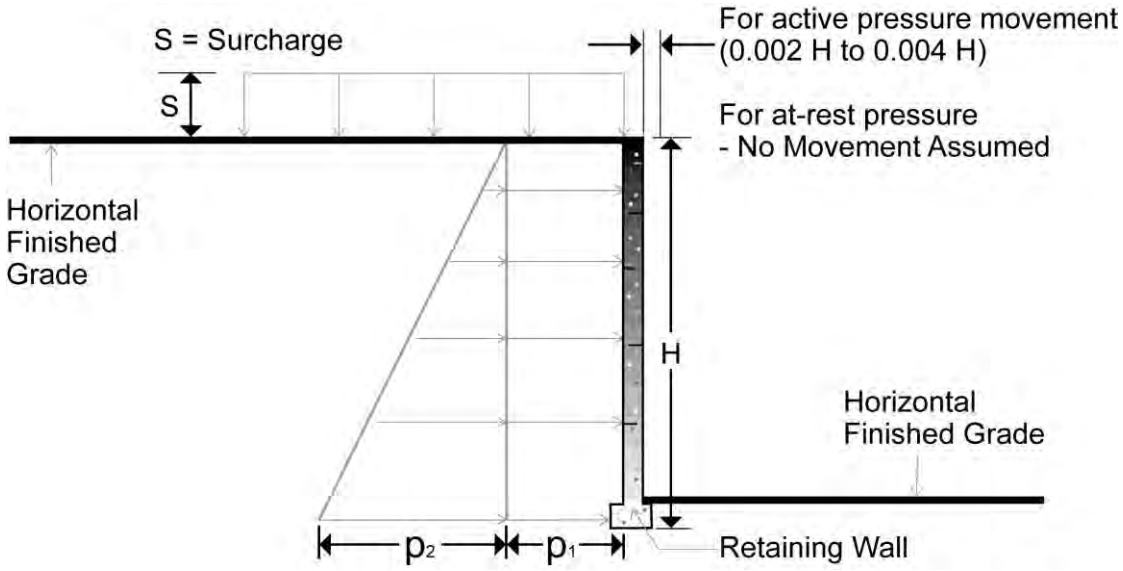
Movements of exterior slabs-on-grade using the above technique will likely be reduced and tend to be more uniform. To reduce the potential for excessive movement caused by moisture infiltration into the subgrade, it is imperative that the recommendations outlined in the **Grading and Drainage** subsection of **Earthwork** be followed.

BELOW-GRADE STRUCTURES

No below-grade structures are anticipated for this project; therefore, foundation drains are not required.

LATERAL EARTH PRESSURES

Below-grade walls or free-standing retaining walls are not anticipated for this project; however, we have included lateral earth pressures recommendations in case plans should change. Reinforced concrete walls with unbalanced backfill levels on opposite sides should be designed for earth pressures at least equal to those indicated in the following table. Earth pressures will be influenced by structural design of the walls, conditions of wall restraint, methods of construction and/or compaction and the strength of the materials being restrained. Two wall restraint conditions are shown. Active earth pressure is commonly used for design of free-standing cantilever retaining walls and assumes wall movement. The "at-rest" condition assumes no wall movement. The recommended design lateral earth pressures do not include a factor of safety and do not provide for possible hydrostatic pressure on the walls.



Earth Pressure Conditions	Lateral Earth Pressure Coefficient	Equivalent Fluid Density (pcf)	Surcharge Pressure, p_1 (psf)	Earth Pressure, p_2 (psf)
Active (Ka)	0.30	37	(0.30)S	(37)H
At-Rest (Ko)	0.46	57	(0.46)S	(57)H
Passive (Kp)	3.39	424	---	---

Applicable conditions to the above include:

- For active earth pressure, wall must rotate about base, with top lateral movements of about 0.002 H to 0.004 H, where H is wall height
- For passive earth pressure to develop, wall must move horizontally to mobilize resistance.
- Uniform surcharge, where S is surcharge pressure
- Backfill soil consisting of on-site granular soils with a backfill weight a maximum of 125 pcf
- Horizontal backfill, compacted to at least 95 percent of standard Proctor maximum dry density
- Loading from heavy compaction equipment not included
- No hydrostatic pressures acting on wall
- No dynamic loading
- No safety factor included in soil parameters

We recommend that a drain be installed behind retaining walls. The above pressures do not include the influence of surcharge, equipment, or floor loading, which should be added. Heavy equipment should not operate within a distance closer than the exposed height of retaining walls to prevent lateral pressures more than those provided.

confirm where taller walls will be necessary

The preceding data are applicable only to cast-in-place concrete or modular block walls up to 5 feet in height. **If taller single walls, tiered walls, or Mechanically Stabilized Earth (MSE) walls will be included in the proposed development, additional site-specific studies and laboratory testing will be required.** In addition, the wall designer should perform standard wall design practices including analysis for overturning, sliding, bearing capacity, and global stability, and results of these analyses should be provided for our review. Additional sampling, laboratory testing and document review associated with retaining walls is beyond the original scope of work but can be performed as a separate scope, for a separate fee.

PAVEMENTS

Design of privately maintained pavements for the project has been based on the procedures outlined by the Asphalt Institute (AI) and the American Concrete Institute (ACI).

Pavements and flatwork constructed on the existing fill materials will have a moderate risk of movement. The risk of movement can be slightly reduced by overexcavating the materials to a

depth of 2 feet and properly moisture conditioning and compacting the materials to grade. If movement within parking areas needs to be limited to about 1-inch, we recommend all existing fill materials be removed and replaced with newly compacted, structural fill prior to pavement construction.

Design Traffic

We assumed the following design parameters for AI flexible pavement thickness design:

- Parking Areas and Driveways
  - Parking stalls and parking lots for cars and pick-up trucks, up to 150 vehicles a day
  - Trash Trucks, up to 3 a week
  - Delivery Trucks, up to 15 week
  - School Bus, up to 2 a week during the school year
  - Classifies as AI Class II
- Subgrade Soil Characteristics
  - USCS Classification – SC-SM to SM (medium subgrade)

We assumed the following design parameters for ACI rigid pavement thickness design based upon the average daily truck traffic (ADTT):

- Parking Areas and Driveways
  - ACI Category A-1: Automobile parking with an ADTT of 10 over 20 years
- Subgrade Soil Characteristics
  - USCS Classification – SC-SM to SM (medium support)
- Concrete modulus of rupture value of 500 psi

We should be contacted to confirm and/or modify the recommendations contained herein if actual traffic volumes differ from the assumed values shown above.

Subgrade Soils

Based on a fill subgrade classification of SC-SM to SM per the Unified Soil Classification System (USCS), AI classifies the subgrade soil as medium subgrade, while ACI classifies the subgrade soil as medium support. We recommend overexcavating to a depth of at least 2 feet, moisture conditioning, and recompacting the material to grade to improve performance, provided the owner is willing to accept the potential for additional movement within parking areas by leaving existing fill materials in place.

Recommended Minimum Pavement Sections and Materials

Recommended alternatives for flexible and rigid pavements are summarized for each traffic area as follows:

Traffic Area	Alternative	Preliminary Recommended Pavement Thickness (Inches)			
		Asphalt Concrete Surface	Aggregate Base Course	Portland Cement Concrete	Total
Parking and Driveways (AI Class II and ACI Category A)	A	5	--	--	5
	B	4	8	--	12
	C [1]	--	--	5½	5½

1. The minimum pavement section thickness per ACI

Each alternative should be investigated with respect to current material availability and economic conditions. A minimum 7-inch thickness of rigid reinforced concrete pavement is recommended at the location of dumpsters where trash trucks park and load, and in areas of tight turning radius.

Concrete pavement joint spacing and reinforcement should be in accordance with specifications in ACI 330R-08.

For analysis of pavement costs, the following specifications should be considered for each pavement component:

Pavement Component	Colorado Department of Transportation Criteria
Asphalt Concrete Surface	Grading S or SX
Aggregate Base Course	Class 5 or 6
Portland Cement Concrete	Class P

Pavement Maintenance

Future performance of pavements constructed at this site will be dependent upon several factors, including:

- Maintaining stable moisture content of the subgrade soils both before and after pavement construction.
- Providing for a planned program of preventative maintenance.

The performance of all pavements can be enhanced by minimizing excess moisture, which can reach the subgrade soils. The following recommendations should be implemented:

- Site grading at a minimum 2 percent grade onto or away from the pavements.
- Water should not be allowed to pond behind curbs.
- Compaction of any utility trenches for landscaped areas to the same criteria as the pavement subgrade.

- Sealing all landscaped areas in or adjacent to pavements or providing drains to reduce the risk of moisture migration to subgrade soils.
- Placing compacted backfill against the exterior side of curb and gutter.
- Placing curb, gutter, and/or sidewalk directly on subgrade soils without the use of base course materials.

Preventative maintenance should be planned and provided for an ongoing pavement management program to enhance future pavement performance. Preventative maintenance activities are intended to slow the rate of pavement deterioration.

Preventative maintenance consists of both localized maintenance (e.g. crack sealing and patching) and global maintenance (e.g. surface sealing). Preventative maintenance is usually the priority when implementing a planned pavement maintenance program.

Pavement Construction Considerations

Site grading is generally accomplished early in the construction phase. However, as construction proceeds, the subgrade may be disturbed due to utility excavations, construction traffic, desiccation, or rainfall. As a result, the pavement subgrade may not be suitable for pavement construction and corrective action will be required. The subgrade should be carefully evaluated at the time of pavement construction for signs of disturbance or excessive rutting. If disturbance has occurred, pavement subgrade areas should be reworked, moisture conditioned, and properly compacted to the recommendations in this report immediately prior to paving.

We recommend the pavement areas be rough graded and then thoroughly proofrolled with a loaded tandem axle dump truck prior to final grading and paving. Particular attention should be paid to high traffic areas that were rutted and disturbed earlier and to areas where backfilled trenches are located. Areas where unsuitable conditions are located should be repaired by removing and replacing the materials with properly compacted fills. All pavement areas should be moisture conditioned and properly compacted to the recommendations in this report immediately prior to paving.

The placement of a partial pavement thickness for use during construction is not recommended without a detailed pavement analysis incorporating construction traffic. In addition, if the actual traffic varies from the assumptions outlined above, we should be contacted to confirm and/or modify the pavement thickness recommendations outlined above.

CORROSIVITY

The following table lists the results of laboratory water-soluble sulfate testing performed on samples obtained during our field exploration. These values may be used to estimate potential corrosive characteristics of the on-site soils with respect to contact with the concrete materials

which will be used for project construction. A qualified engineer should evaluate corrosion potential for various project elements as part of the design process.

Boring No.	Sample Depth (feet)	Water-Soluble Sulfate [1] (%)
1	0 – 5	<0.10
3	0 – 5	<0.10
5	0 – 5	<0.10
7	0 – 5	<0.10

1. Results of water-soluble sulfate testing indicate that samples of the on-site soils have an exposure class of S0 when classified in accordance with Table 19.3.1.1 of the American Concrete Institute (ACI) Design Manual. The results of the testing indicate ASTM Type I Portland Cement is suitable for project concrete in contact with on-site soils. However, if there is no (or minimal) cost differential, use of ASTM Type II Portland Cement is recommended for additional sulfate resistance of construction concrete. Concrete should be designed in accordance with the provisions of the ACI Design Manual, Section 318, Chapter 19.

GENERAL COMMENTS

Our analysis and opinions are based upon our understanding of the project, the geotechnical conditions in the area, and the data obtained from our site exploration. Natural variations will occur between exploration point locations or due to the modifying effects of construction or weather. The nature and extent of such variations may not become evident until during or after construction. Terracon should be retained as the Geotechnical Engineer, where noted in this report, to provide observation and testing services during pertinent construction phases. If variations appear, we can provide further evaluation and supplemental recommendations. If variations are noted in the absence of our observation and testing services on-site, we should be immediately notified so that we can provide evaluation and supplemental recommendations.

Our Scope of Services does not include either specifically or by implication any environmental or biological (e.g., mold, fungi, bacteria) assessment of the site or identification or prevention of pollutants, hazardous materials, or conditions. If the owner is concerned about the potential for such contamination or pollution, other studies should be undertaken.

Terracon's scope of services has been provided under the belief that this site will be used as apartments. As such, Terracon would like to inform the Client that if the apartment portion of this project is converted at any time to another purpose such as condominiums, the Client understands the services Terracon is providing is not applicable for a condominium project and that a separate consultant will need to be retained for such services. Terracon will have no liability for any such unintended use of our services.

Our services and any correspondence or collaboration through this system are intended for the sole benefit and exclusive use of our client for specific application to the project discussed and

are accomplished in accordance with generally accepted geotechnical engineering practices with no third-party beneficiaries intended. Any third-party access to services or correspondence is solely for information purposes to support the services provided by Terracon to our client. Reliance upon the services and any work product is limited to our client and is not intended for third parties. Any use or reliance of the provided information by third parties is done solely at their own risk. No warranties, either express or implied, are intended or made.

Site characteristics as provided are for design purposes and not to estimate excavation cost. Any use of our report in that regard is done at the sole risk of the excavating cost estimator as there may be variations on the site that are not apparent in the data that could significantly impact excavation cost. Any parties charged with estimating excavation costs should seek their own site characterization for specific purposes to obtain the specific level of detail necessary for costing. Site safety, and cost estimating including, excavation support, and dewatering requirements/design are the responsibility of others. If changes in the nature, design, or location of the project are planned, our conclusions and recommendations shall not be considered valid unless we review the changes and either verify or modify our conclusions in writing.

ATTACHMENTS

EXPLORATION AND TESTING PROCEDURES

Field Exploration

Boring Layout and Elevations: The locations of the borings are presented in the **Site Location and Exploration Plans**. The borings were located in the field by overlaying the site plan on Google Earth, recording the latitude and longitude coordinates, and staking the borings using a handheld, recreational-grade GPS unit. The accuracy of the latitude and longitude values is typically about +/- 25 feet when obtaining the values using this method. Elevations at the borings were obtained using a level and using the top of the manhole cover located on the north side of the football field (approximately 39.7423° N, 105.5231° W) as a temporary benchmark with an assigned elevation of 100.0 feet. The accuracy of the boring locations and elevations should only be assumed to the level implied by the methods used.

Subsurface Exploration Procedures: The borings were drilled with a CME-55 truck-mounted rotary drill rigs with solid-stem augers. During the drilling operations, lithologic logs of the borings were recorded by the field engineer. Relatively undisturbed samples were obtained at selected intervals using a 2½-inch outside diameter modified California barrel sampler and a 2-inch outside diameter standard split spoon sampler. Bulk samples were obtained from auger cuttings. Penetration resistance values were recorded in a manner similar to the standard penetration test (SPT). This test consists of driving the sampler into the ground with a 140-pound hammer free falling through a distance of 30 inches. The number of blows required to advance the barrel sampler 12 inches (18 inches for standard split-spoon samplers, final 12 inches are recorded) or the interval indicated is recorded and can be correlated to the standard penetration resistance value (N-value). The blow count values are indicated on the boring logs at the respective sample depths, barrel sampler blow counts are not considered N-values.

An automatic hammer was used to advance the samplers in the borings performed on this site. A greater efficiency is typically achieved with the automatic hammer compared to the conventional safety hammer operated with a cathead and rope. Published correlations between the SPT values and soil properties are based on the lower efficiency cathead and rope method. This higher efficiency affects the standard penetration resistance blow count value by increasing the penetration per hammer blow over what would be obtained using the cathead and rope method. The effect of the automatic hammer's efficiency has been considered in the interpretation and analysis of the subsurface information for this report.

The standard penetration test provides a reasonable indication of the in-place density of sandy type materials, but only provides an indication of the relative stiffness of cohesive materials since the blow count in these soils may be affected by the moisture content of the soils. In addition, considerable care should be exercised in interpreting the N-values in gravelly soils, particularly where the size of the gravel particle exceeds the inside diameter of the sampler.

Groundwater measurements were obtained in the borings at the time of drilling. Due to safety concerns, the borings were backfilled with auger cuttings. Some settlement of the backfill may occur and should be repaired as soon as possible.

Laboratory Testing

Samples retrieved during the field exploration were returned to the laboratory for observation by the project geotechnical engineer and were classified in general accordance with the Unified Soil Classification System presented in the **Supporting Information**.

An applicable laboratory-testing program was formulated to determine engineering properties of the subsurface materials. Following the completion of the laboratory testing, the field descriptions were confirmed or modified as necessary, and the boring logs were prepared. The boring logs are included in the **Exploration Results**.

Laboratory test results are included in the **Exploration Results**. These results were used for the geotechnical engineering analyses and the development of foundation, earthwork, and pavement recommendations. Laboratory tests were performed in general accordance with the applicable local or other accepted standards.

Selected soil samples were tested for the following engineering properties:

- Water content
- Dry density
- Grain size distribution
- Atterberg Limits
- Water-soluble sulfate content

SITE LOCATION AND EXPLORATION PLANS

Contents:

Site Location Plan
Exploration Plan with Aerial Image
Exploration Plan with Site Overlay

Note: All attachments are one page unless noted above.

SITE LOCATION

Proposed Multifamily Apartments ■ Idaho Springs, Colorado
September 30, 2019 ■ Terracon Project No. 25195228

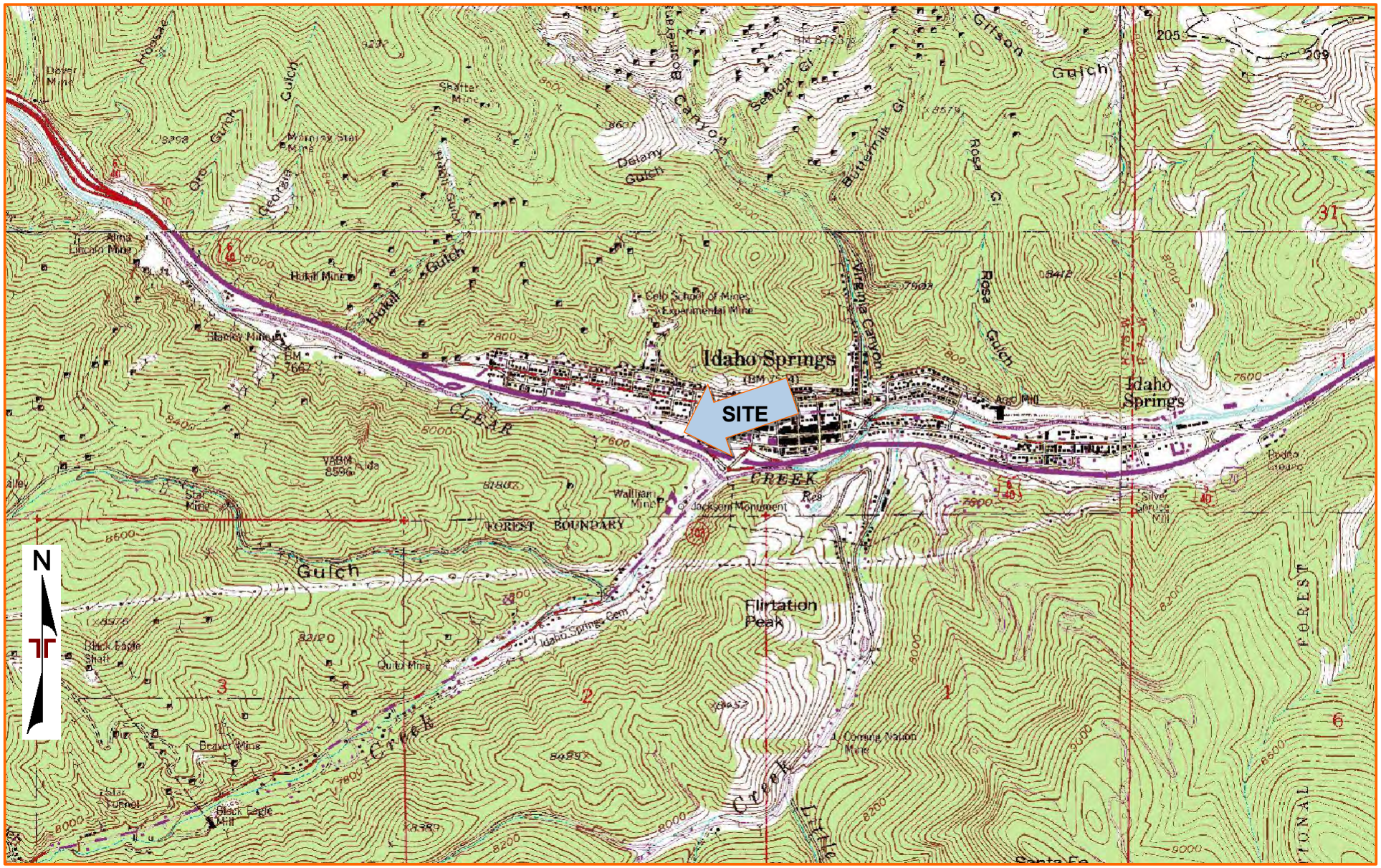


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

TOPOGRAPHIC MAP IMAGE COURTESY OF THE U.S. GEOLOGICAL SURVEY QUADRANGLES INCLUDE: CENTRAL CITY, CO (1/1/1972), BLACK HAWK, CO (1/1/1972), IDAHO SPRINGS, CO (1/1/1974) and SQUAW PASS, CO (1/1/1974).

EXPLORATION PLAN WITH AERIAL IMAGE

Proposed Multifamily Apartments ■ Idaho Springs, Colorado
September 30, 2019 ■ Terracon Project No. 25195228

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

AERIAL PHOTOGRAPHY PROVIDED BY MICROSOFT BING MAPS

EXPLORATION PLAN WITH SITE OVERLAY

Proposed Multifamily Apartments ■ Idaho Springs, Colorado
September 30, 2019 ■ Terracon Project No. 25195228

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

AERIAL PHOTOGRAPHY PROVIDED BY MICROSOFT BING MAPS

EXPLORATION RESULTS

Contents:

Boring Logs (Boring Nos. 1 to 7 and P1 and P2)
Grain Size Distribution (2 pages)
Summary of Laboratory Test Results (2 pages)

Note: All attachments are one page unless noted above.

BORING LOG NO. 1

PROJECT: Proposed Multifamily Apartments

CLIENT: Range Development LLC

**SITE: South of Miner Street and 10th Avenue
Idaho Springs, Colorado**

LOCATION See Exploration Plan

Latitude: 39.7422° Longitude: -105.5242°

Approximate Surface Elev.: 97.9 (Ft.) +/-

DEPTH	ELEVATION (Ft.)	GRAPHIC LOG	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.2	97.5+/-									
TOPSOIL, about 2 inches										
FILL - SILTY CLAYEY SAND (SC-SM), with gravel, fine to coarse grained, brown, medium dense						7-13	4		26-21-5	19
						8-13				
5.0	93+/-		5							
POORLY GRADED SAND (SP), with gravel, cobbles and boulders, fine to coarse grained, brown to yellowish brown, medium dense to very dense				▽						
				▽		6-11	11			
			10							
						50/0"				
			15							
20.0	78+/-					50/1"				
Boring Terminated at 20 Feet			20							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
4-inch solid stem continuous flight power auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

Elevation obtained using a level and assigning the top of the manhole cover rim located in front of the stands (39.7423, -105.5231) an elevation of 100.0 feet.

WATER LEVEL OBSERVATIONS

▽ *7 feet while drilling*

▽ *7.7 feet upon completion of drilling*

Terracon
10625 W I 70 Frontage Rd N, Ste 3
Wheat Ridge, CO

Boring Started: 08-15-2019 | Boring Completed: 08-15-2019

Drill Rig: CME-55 | Driller: Terracon

Project No.: 25195228

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 25195228 PROPOSED MULTIFAM.GPJ TERRACON_DATATEMPLATE.GDT 9/30/19

BORING LOG NO. 2

PROJECT: Proposed Multifamily Apartments

CLIENT: Range Development LLC

**SITE: South of Miner Street and 10th Avenue
Idaho Springs, Colorado**

LOCATION See Exploration Plan

Latitude: 39.7423° Longitude: -105.5234°

Approximate Surface Elev.: 100.0 (Ft.) +/-

DEPTH	ELEVATION (Ft.)	DESCRIPTION
0.3	99.5+/-	**TOPSOIL**, about 4 inches
		FILL - SILTY SAND (SM), fine to coarse grained, blackish gray to orangish brown, loose to medium dense
5.0	95+/-	**POORLY GRADED SAND (SP-SM)**, with silt, fine to coarse grained, brown, loose
12.0	88+/-	**POORLY GRADED SAND (SP)**, with gravel, cobbles and boulders, fine to coarse grained, brown, medium dense to very dense
20.0	80+/-	***Boring Terminated at 20 Feet***

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		10-13	13	117	22-19-3	31
		6-6				
5						
		3-3			NP	6
10						
		8-17				
15						
		50/4"				
20						

WATER LEVEL OBSERVATIONS: ▽ at 5 feet

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
7-inch hollow stem continuous flight power auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

Elevation obtained using a level and assigning the top of the manhole cover rim located in front of the stands (39.7423, -105.5231) an elevation of 100.0 feet.

WATER LEVEL OBSERVATIONS

▽ *7 feet while drilling*

Terracon
10625 W I 70 Frontage Rd N, Ste 3
Wheat Ridge, CO

Boring Started: 08-15-2019 | Boring Completed: 08-15-2019

Drill Rig: CME-55 | Driller: Terracon

Project No.: 25195228

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 25195228 PROPOSED MULTIFAM.GPJ TERRACON_DATATEMPLATE.GDT 9/30/19

BORING LOG NO. 3

PROJECT: Proposed Multifamily Apartments

CLIENT: Range Development LLC

SITE: South of Miner Street and 10th Avenue
Idaho Springs, Colorado

LOCATION See Exploration Plan

Latitude: 39.7419° Longitude: -105.5229°

Approximate Surface Elev.: 98.8 (Ft.) +/-

DEPTH	ELEVATION (Ft.)	
0.4	98.5+/-	**TOPSOIL**, about 5 inches
		FILL - SILTY CLAYEY SAND (SC-SM), fine grained, black to yellow, loose to medium dense
6.0	93+/-	**POORLY GRADED SAND (SP)**, with gravel, trace cobbles and boulders, fine to coarse grained, brown, medium dense to very dense
20.0	79+/-	***Boring Terminated at 20 Feet***

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
5		9-12		26-19-7	43
		7-5	15		
10		22-20			
15		50/7"			
20		7-11			

WATER LEVEL OBSERVATIONS: ▽ 8 feet while drilling; ▽ 13.1 feet upon completion of drilling

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
7-inch hollow stem continuous flight power auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

Elevation obtained using a level and assigning the top of the manhole cover rim located in front of the stands (39.7423, -105.5231) an elevation of 100.0 feet.

Terracon
10625 W I 70 Frontage Rd N, Ste 3
Wheat Ridge, CO

Boring Started: 08-15-2019 | Boring Completed: 08-15-2019

Drill Rig: CME-55 | Driller: Terracon

Project No.: 25195228

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 25195228 PROPOSED MULTIFAM.GPJ TERRACON_DATATEMPLATE.GDT 9/30/19

BORING LOG NO. 4

PROJECT: Proposed Multifamily Apartments

CLIENT: Range Development LLC

**SITE: South of Miner Street and 10th Avenue
Idaho Springs, Colorado**

LOCATION See Exploration Plan

Latitude: 39.7423° Longitude: -105.5226°

Approximate Surface Elev.: 100.0 (Ft.) +/-

GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		FILL - SILTY SAND (SM), fine grained, brown								
	2.0	98+/-								
		COBBLES AND BOULDERS, with sand and gravel, gray, hard				50/8"				
	4.0	96+/-				50/0"				
		Auger Refusal on Boulders at 4 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
7-inch hollow stem continuous flight power auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

Elevation obtained using a level and assigning the top of the manhole cover rim located in front of the stands (39.7423, -105.5231) an elevation of 100.0 feet.

WATER LEVEL OBSERVATIONS

None encountered while drilling

Terracon
10625 W I 70 Frontage Rd N, Ste 3
Wheat Ridge, CO

Boring Started: 08-16-2019 | Boring Completed: 08-16-2019

Drill Rig: CME-55 | Driller: Terracon

Project No.: 25195228

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 25195228 PROPOSED MULTIFAM.GPJ TERRACON_DATATEMPLATE.GDT 9/30/19

BORING LOG NO. 5

PROJECT: Proposed Multifamily Apartments

CLIENT: Range Development LLC

SITE: South of Miner Street and 10th Avenue
Idaho Springs, Colorado

LOCATION See Exploration Plan

Latitude: 39.7418° Longitude: -105.5223°

Approximate Surface Elev.: 97.4 (Ft.) +/-

DEPTH	ELEVATION (Ft.)	GRAPHIC LOG	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.3	97+/-									
TOPSOIL, about 3 inches										
FILL - SILTY SAND (SM), with wood fragments, fine to coarse grained, yellowish brown, loose						8-6			NP	26
						6-5	27	93		
6.0	91.5+/-		5							
POORLY GRADED SAND (SP), with gravel, cobbles and boulders, fine to coarse grained, brown to yellowish brown, loose to very dense										
			10	▽		7-5				
			15			50/5"	7			
20.0	77.5+/-		20			50/3"				
Boring Terminated at 20 Feet										

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
4-inch solid stem continuous flight power auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

Elevation obtained using a level and assigning the top of the manhole cover rim located in front of the stands (39.7423, -105.5231) an elevation of 100.0 feet.

WATER LEVEL OBSERVATIONS

▽ *10 feet while drilling*

Terracon
10625 W I 70 Frontage Rd N, Ste 3
Wheat Ridge, CO

Boring Started: 08-15-2019 | Boring Completed: 08-15-2019

Drill Rig: CME-55 | Driller: Terracon

Project No.: 25195228

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 25195228 PROPOSED MULTIFAM.GPJ TERRACON_DATATEMPLATE.GDT 9/30/19

BORING LOG NO. 6

PROJECT: Proposed Multifamily Apartments

CLIENT: Range Development LLC

SITE: South of Miner Street and 10th Avenue
Idaho Springs, Colorado

LOCATION See Exploration Plan

Latitude: 39.7417° Longitude: -105.5218°

Approximate Surface Elev.: 97.1 (Ft.) +/-

DEPTH	ELEVATION (Ft.)	DESCRIPTION
0	90+/-	**SILTY SAND (SM)**, trace clay, fine grained, brown, loose to medium dense
7.0		
7.0	78+/-	**POORLY GRADED SAND (SP)**, with gravel, cobbles and boulders, fine to coarse grained, brown, medium dense to very dense
19.0		
19.0		***Auger Refusal on Boulders at 19 Feet***

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
5		20-18				
		4-4	16	95		
10		12-18				
15		50/10"	10			
		50/2"				

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
7-inch hollow stem continuous flight power auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

Elevation obtained using a level and assigning the top of the manhole cover rim located in front of the stands (39.7423, -105.5231) an elevation of 100.0 feet.

WATER LEVEL OBSERVATIONS

13 feet while drilling

13 feet upon completion of drilling

Terracon
10625 W I 70 Frontage Rd N, Ste 3
Wheat Ridge, CO

Boring Started: 08-16-2019 | Boring Completed: 08-16-2019

Drill Rig: CME-55 | Driller: Terracon

Project No.: 25195228

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 25195228 PROPOSED MULTIFAM.GPJ TERRACON_DATATEMPLATE.GDT 9/30/19

BORING LOG NO. 7

PROJECT: Proposed Multifamily Apartments

CLIENT: Range Development LLC

SITE: South of Miner Street and 10th Avenue
Idaho Springs, Colorado

LOCATION See Exploration Plan

Latitude: 39.7416° Longitude: -105.5209°

Approximate Surface Elev.: 101.7 (Ft.) +/-

GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		FILL - POORLY GRADED SAND (SP-SM), with silt and gravel, fine to coarse grained, brown, loose				5-6			NP	12
	4.0	97.5+/-								
		FILL - SILTY SAND (SM), fine to coarse grained, dark brown, medium dense	5			6-10	10			
	6.0	95.5+/-								
		SILTY SAND (SM), with gravel, cobbles and boulders, fine to coarse grained, light brown to gray, dense				50/9"				
	11.0	90.5+/-	10			50/0"				
		Auger Refusal on Boulders at 11 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
4-inch solid stem continuous flight power auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

Elevation obtained using a level and assigning the top of the manhole cover rim located in front of the stands (39.7423, -105.5231) an elevation of 100.0 feet.

WATER LEVEL OBSERVATIONS

None encountered while drilling

Terracon
10625 W I 70 Frontage Rd N, Ste 3
Wheat Ridge, CO

Boring Started: 08-15-2019 | Boring Completed: 08-15-2019

Drill Rig: CME-55 | Driller: Terracon

Project No.: 25195228

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 25195228 PROPOSED MULTIFAM.GPJ TERRACON_DATATEMPLATE.GDT 9/30/19

BORING LOG NO. P1

PROJECT: Proposed Multifamily Apartments

CLIENT: Range Development LLC

SITE: South of Miner Street and 10th Avenue
Idaho Springs, Colorado

LOCATION See Exploration Plan

Latitude: 39.7424° Longitude: -105.5238°

Approximate Surface Elev.: 99.3 (Ft.) +/-

GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	0.3	99+/-								
	TOPSOIL, about 3 inches									
	FILL - SILTY SAND (SM), with gravel, fine to coarse grained, yellowish brown to brown, medium dense					9-8	3	102	NP	14
	4.0	95.5+/-								
	POORLY GRADED SAND (SP), with gravel, cobbles and boulders, fine to coarse grained, brown to grey, very dense					50/7"				
	5.0	94.5+/-	5							
	Boring Terminated at 5 Feet									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
7-inch hollow stem continuous flight power auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

Elevation obtained using a level and assigning the top of the manhole cover rim located in front of the stands (39.7423, -105.5231) an elevation of 100.0 feet.

WATER LEVEL OBSERVATIONS

None encountered while drilling

Terracon
10625 W I 70 Frontage Rd N, Ste 3
Wheat Ridge, CO

Boring Started: 08-15-2019 | Boring Completed: 08-15-2019

Drill Rig: CME-55 | Driller: Terracon

Project No.: 25195228

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 25195228 PROPOSED MULTIFAM.GPJ TERRACON_DATATEMPLATE.GDT 9/30/19

BORING LOG NO. P2

PROJECT: Proposed Multifamily Apartments

CLIENT: Range Development LLC

SITE: South of Miner Street and 10th Avenue
Idaho Springs, Colorado

LOCATION See Exploration Plan

Latitude: 39.7415° Longitude: -105.5214°

Approximate Surface Elev.: 101.2 (Ft.) +/-

GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	DRY UNIT WEIGHT (pcf)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
						7-11	15		20-18-2	15
						50/11"				
	5.0	96+/-	5							

FILL - SILTY SAND (SM), with gravel, cobbles, boulders and wood fragments, fine to coarse grained, dark brown, medium dense to dense

Boring Terminated at 5 Feet

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
7-inch hollow stem continuous flight power auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Notes:

Elevation obtained using a level and assigning the top of the manhole cover rim located in front of the stands (39.7423, -105.5231) an elevation of 100.0 feet.

WATER LEVEL OBSERVATIONS

None encountered while drilling

Terracon
10625 W I 70 Frontage Rd N, Ste 3
Wheat Ridge, CO

Boring Started: 08-16-2019 | Boring Completed: 08-16-2019

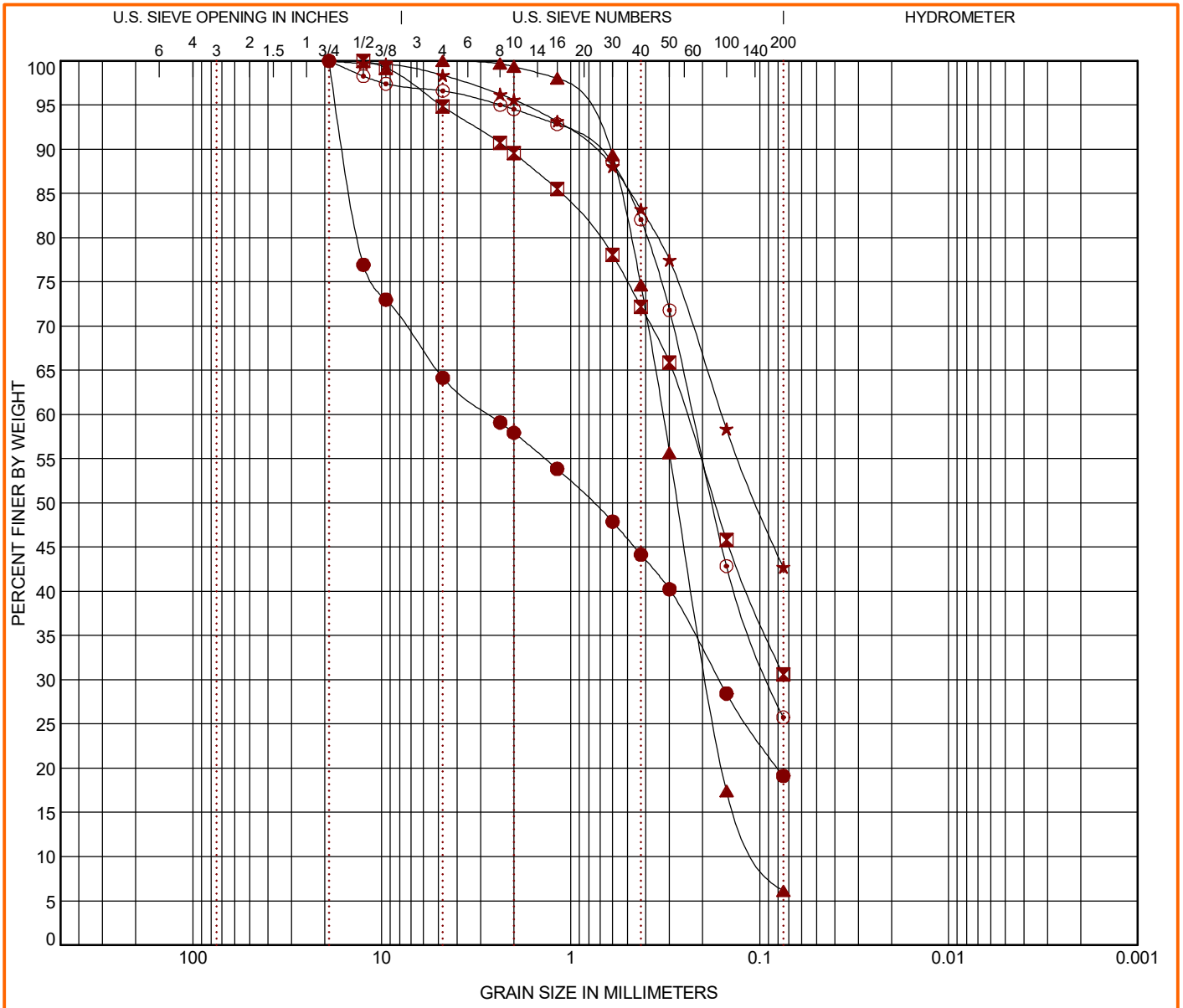
Drill Rig: CME-55 | Driller: Terracon

Project No.: 25195228

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 25195228 PROPOSED MULTIFAM.GPJ TERRACON_DATATEMPLATE.GDT 9/30/19

GRAIN SIZE DISTRIBUTION

ASTM D422 / ASTM C136



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Boring ID		Depth	USCS Classification	WC (%)	LL	PL	PI	Cc	Cu
●	1	0 - 5	SILTY, CLAYEY SAND with GRAVEL (SC-SM)		26	21	5		
⊠	2	0 - 5	SILTY SAND (SM)		22	19	3		
▲	2	9 - 10	POORLY GRADED SAND with SILT (SP-SM)		NP	NP	NP	1.15	3.42
★	3	0 - 5	SILTY, CLAYEY SAND (SC-SM)		26	19	7		
⊙	5	0 - 5	SILTY SAND (SM)		NP	NP	NP		

Boring ID		Depth	D_{100}	D_{60}	D_{30}	D_{10}	%Cobbles	%Gravel	%Sand	%Silt	%Fines	%Clay
●	1	0 - 5	19	2.672	0.164		0.0	35.9	45.0		19.1	
⊠	2	0 - 5	12.5	0.245			0.0	5.1	64.2		30.6	
▲	2	9 - 10	4.75	0.325	0.188	0.095	0.0	0.0	93.9		6.1	
★	3	0 - 5	19	0.159			0.0	1.6	55.6		42.7	
⊙	5	0 - 5	19	0.226	0.089		0.0	3.4	70.9		25.7	

PROJECT: Proposed Multifamily Apartments

PROJECT NUMBER: 25195228

SITE: South of Miner Street and 10th Avenue
Idaho Springs, Colorado

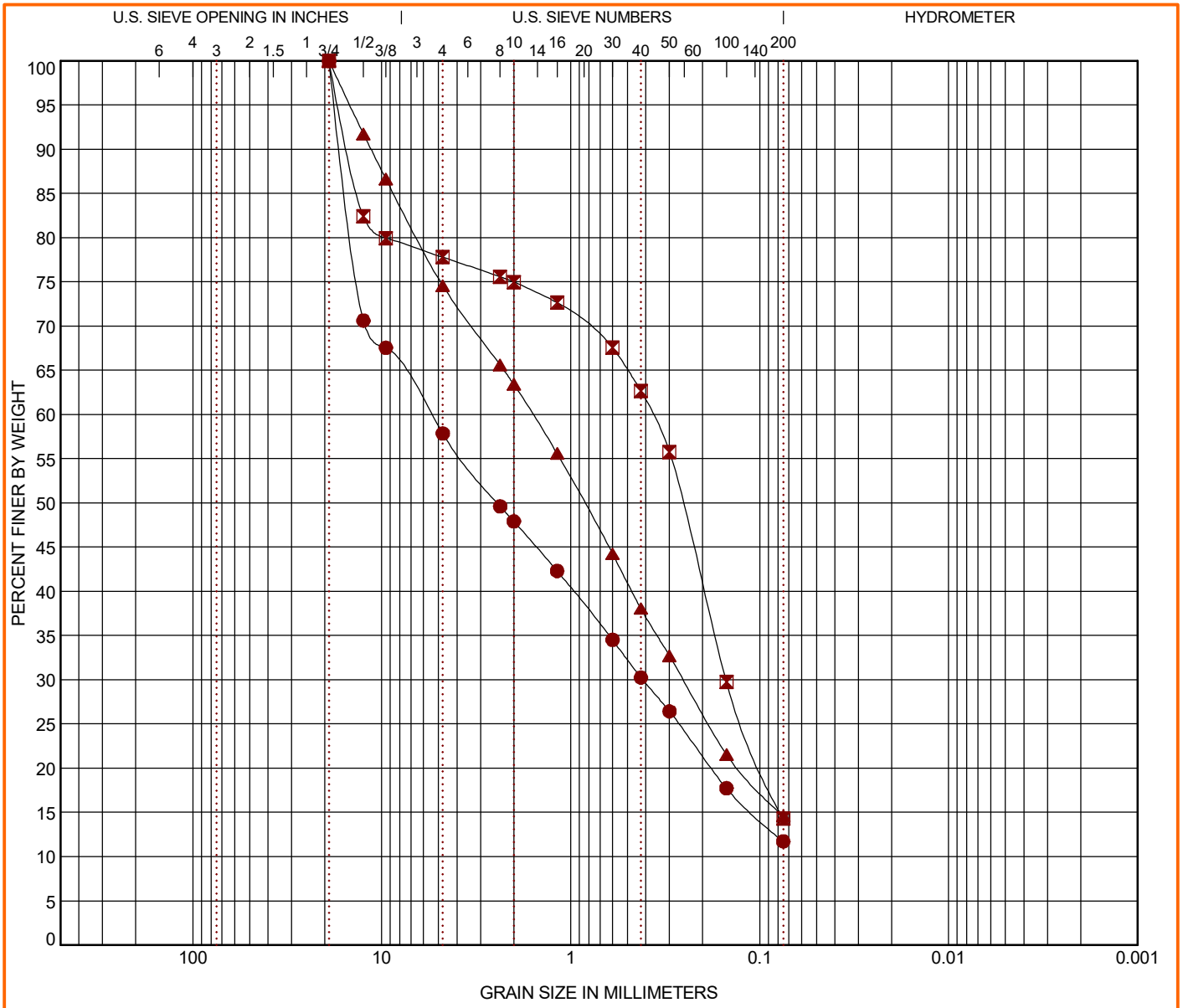
Terracon
10625 W I 70 Frontage Rd N, Ste 3
Wheat Ridge, CO

CLIENT: Range Development LLC

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GRAIN SIZE: USCS-2 25195228 PROPOSED MULTIFAM.GPJ TERRACON_DATATEMPLATE.GDT 9/25/19

GRAIN SIZE DISTRIBUTION

ASTM D422 / ASTM C136



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Boring ID		Depth	USCS Classification	WC (%)	LL	PL	PI	Cc	Cu
●	7	0 - 5	POORLY GRADED SAND with SILT and GRAVEL (SP-SM)		NP	NP	NP	0.51	90.01
⊠	P1	0 - 5	SILTY SAND with GRAVEL (SM)		NP	NP	NP		
▲	P2	0 - 5	SILTY SAND with GRAVEL (SM)		20	18	2		

Boring ID		Depth	D_{100}	D_{60}	D_{30}	D_{10}	%Cobbles	%Gravel	%Sand	%Silt	%Fines	%Clay
●	7	0 - 5	19	5.536	0.415		0.0	42.1	46.1		11.7	
⊠	P1	0 - 5	19	0.372	0.151		0.0	22.2	63.5		14.3	
▲	P2	0 - 5	19	1.588	0.254		0.0	25.4	60.0		14.6	

PROJECT: Proposed Multifamily Apartments

SITE: South of Miner Street and 10th Avenue
Idaho Springs, Colorado

Terracon
10625 W I 70 Frontage Rd N, Ste 3
Wheat Ridge, CO

PROJECT NUMBER: 25195228

CLIENT: Range Development LLC

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GRAIN SIZE: USCS-2 25195228 PROPOSED MULTIFAM.GPJ TERRACON_DATATEMPLATE.GDT 9/25/19

SUMMARY OF LABORATORY TEST RESULTS

Proposed Multifamily Apartments - Idaho Springs, Colorado

Terracon Project No. 25195228

Boring No.	Depth (ft.)	USCS Class.	Initial Water Content (%)	Initial Dry Density (pcf)	Particle Size Distribution, Percent Passing by Weight					Atterberg Limits		Water Soluble Sulfates (%)	Remarks
					3/4"	#4	#10	#40	#200	LL	PI		
1	0 - 5	SC-SM			100	64	58	44	19	26	5	<0.10	
1	2	SC-SM	4										4
1	9	SP	11										4
2	0 - 5	SM			100	95	90	72	31	22	3		
2	2	SM	13	117									4
2	9	SP-SM			100	100	99	75	6	NV	NP		
3	0 - 5	SC-SM			100	98	96	83	43	26	7	<0.10	
3	4	SC-SM	15										4
5	0 - 5	SM			100	97	95	82	26	NV	NP	<0.10	
5	4	SM	27	93									4
5	14	SP	7										4
6	4	SP	16	95									4
6	14	SP	10										4
7	0 - 5	SP-SM			100	58	48	30	12	NV	NP	<0.10	

Notes:
Initial Dry Density and Initial Water Content are in-situ values unless otherwise noted.
* = Partially disturbed sample
- = Compression/settlement
NV = no value
NP = non-plastic

Remarks:
1 Remolded Compacted density (about 95% of ASTM D698 maximum density near optimum moisture content)
2 Remolded Compacted density (about 95% of ASTM D1557 maximum density near optimum moisture content)
3 Water added to sample
4 Dry density and/or moisture content determined from one ring of a multi-ring sample
5 Minus #200 Only
6 Moisture-Density Relationship Test Method ASTM D698/AASHTO T99
7 Moisture-Density Relationship Test Method ASTM D1557/AASHTO T180

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SUMMARY OF LABORATORY TEST RESULTS

Proposed Multifamily Apartments - Idaho Springs, Colorado

Terracon Project No. 25195228

Boring No.	Depth (ft.)	USCS Class.	Initial Water Content (%)	Initial Dry Density (pcf)	Particle Size Distribution, Percent Passing by Weight					Atterberg Limits		Water Soluble Sulfates (%)	Remarks
					3/4"	#4	#10	#40	#200	LL	PI		
7	4	SM	10										4
P1	0 - 5	SM			100	78	75	63	14	NV	NP		
P1	2	SM	3	102									4
P2	0 - 5	SM			100	75	63	38	15	20	2		
P2	2	SM	15										4

Notes:
Initial Dry Density and Initial Water Content are in-situ values unless otherwise noted.
* = Partially disturbed sample
- = Compression/settlement
NV = no value
NP = non-plastic

Remarks:
1 Remolded Compacted density (about 95% of ASTM D698 maximum density near optimum moisture content)
2 Remolded Compacted density (about 95% of ASTM D1557 maximum density near optimum moisture content)
3 Water added to sample
4 Dry density and/or moisture content determined from one ring of a multi-ring sample
5 Minus #200 Only
6 Moisture-Density Relationship Test Method ASTM D698/AASHTO T99
7 Moisture-Density Relationship Test Method ASTM D1557/AASHTO T180

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SUPPORTING INFORMATION

Contents:

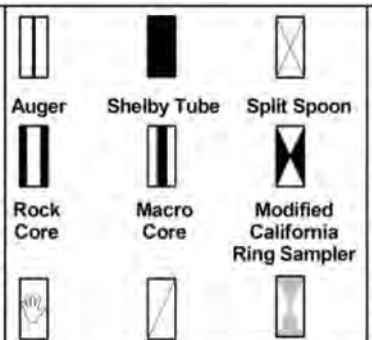
General Notes
Unified Soil Classification System

Note: All attachments are one page unless noted above.

GENERAL NOTES

DESCRIPTION OF SYMBOLS AND ABBREVIATIONS

SAMPLING



WATER LEVEL

Water levels indicated on the soil boring logs are the levels measured in the borehole at the times indicated. Groundwater level variations will occur over time. In low permeability soils, accurate determination of groundwater levels is not possible with short term water level observations.

FIELD TESTS

(HP)	Hand Penetrometer
(T)	Torvane
(b/f)	Standard Penetration Test (blows per foot)
N	N value
(PID)	Photo-Ionization Detector
(OVA)	Organic Vapor Analyzer

DESCRIPTIVE SOIL CLASSIFICATION

Soil classification is based on the Unified Soil Classification System. Coarse Grained Soils have more than 50% of their dry weight retained on a #200 sieve; their principal descriptors are: boulders, cobbles, gravel or sand. Fine Grained Soils have less than 50% of their dry weight retained on a #200 sieve; they are principally described as clays if they are plastic, and silts if they are slightly plastic or non-plastic. Major constituents may be added as modifiers and minor constituents may be added according to the relative proportions based on grain size. In addition to gradation, coarse-grained soils are defined on the basis of their in-place relative density and fine-grained soils on the basis of their consistency.

LOCATION AND ELEVATION NOTES

Unless otherwise noted, Latitude and Longitude are approximately determined using a hand-held GPS device. The accuracy of such devices is variable. Surface elevation data annotated with +/- indicates that no actual topographical survey was conducted to confirm the surface elevation. Instead, the surface elevation was approximately determined from topographic maps of the area.

STRENGTH TERMS

RELATIVE DENSITY OF COARSE-GRAINED SOILS (More than 50% retained on No. 200 sieve.) Density determined by Standard Penetration Resistance Includes gravels, sands and silts.			CONSISTENCY OF FINE-GRAINED SOILS (50% or more passing the No. 200 sieve.) Consistency determined by laboratory shear strength testing, field visual-manual procedures or standard penetration resistance				BEDROCK		
Descriptive Term (Density)	**Standard Penetration or N-Value Blows/Ft.**	**Ring Sampler Blows/Ft.**	**Descriptive Term (Consistency)**	**Unconfined Compressive Strength, Qu, psf**	**Standard Penetration or N-Value Blows/Ft.**	**Ring Sampler Blows/Ft.**	**Ring Sampler Blows/Ft.**	**Standard Penetration or N-Value Blows/Ft.**	**Descriptive Term (Consistency)**
Very Loose	0 - 3	0 - 5	Very Soft	less than 500	0 - 1	< 3	< 24	< 20	Soft
Loose	4 - 9	6 - 14	Soft	500 to 1,000	2 - 4	3 - 5	24 - 35	20 - 29	Firm
Medium Dense	10 - 29	15 - 46	Medium-Stiff	1,000 to 2,000	4 - 8	6 - 10	36 - 60	30 - 49	Medium Hard
Dense	30 - 50	47 - 79	Stiff	2,000 to 4,000	8 - 15	11 - 18	61 - 96	50 - 79	Hard
Very Dense	> 50	≥ 80	Very Stiff	4,000 to 8,000	15 - 30	19 - 36	> 96	>79	Very Hard
			Hard	> 8,000	> 30	> 36			

RELATIVE PROPORTIONS OF SAND AND GRAVEL

Descriptive Term(s) of other constituents	Percent of Dry Weight
Trace	< 15
With	15 - 29
Modifier	> 30

GRAIN SIZE TERMINOLOGY

Major Component of Sample	Particle Size
Boulders	Over 12 in. (300 mm)
Cobbles	12 in. to 3 in. (300mm to 75mm)
Gravel	3 in. to #4 sieve (75mm to 4.75 mm)
Sand	#4 to #200 sieve (4.75mm to 0.075mm
Silt or Clay	Passing #200 sieve (0.075mm)

RELATIVE PROPORTIONS OF FINES

Descriptive Term(s) of other constituents	Percent of Dry Weight
Trace	< 5
With	5 - 12
Modifier	> 12

PLASTICITY DESCRIPTION

Term	Plasticity Index
Non-plastic	0
Low	1 - 10
Medium	11 - 30
High	> 30

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UNIFIED SOIL CLASSIFICATION SYSTEM

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests [A]					Soil Classification	
					Group Symbol	Group Name [B]
Coarse Grained Soils: More than 50% retained on No. 200 sieve	**Gravels:** More than 50% of coarse fraction retained on No. 4 sieve	**Clean Gravels:** Less than 5% fines [C]	Cu ≥ 4 and 1 ≤ Cc ≤ 3 [E]		GW	Well-graded gravel [F]
			Cu < 4 and/or 1 > Cc > 3 [E]		GP	Poorly graded gravel [F]
		Gravels with Fines: More than 12% fines [C]	Fines classify as ML or MH		GM	Silty gravel [F,G,H]
			Fines classify as CL or CH		GC	Clayey gravel [F,G,H]
	Sands: 50% or more of coarse fraction passes No. 4 sieve	**Clean Sands:** Less than 5% fines [D]	Cu ≥ 6 and 1 ≤ Cc ≤ 3 [E]		SW	Well-graded sand [I]
			Cu < 6 and/or 1 > Cc > 3 [E]		SP	Poorly graded sand [I]
		Sands with Fines: More than 12% fines [D]	Fines classify as ML or MH		SM	Silty sand [G,H,I]
			Fines classify as CL or CH		SC	Clayey sand [G,H,I]
Fine-Grained Soils: 50% or more passes the No. 200 sieve	**Silts and Clays:** Liquid limit less than 50	**Inorganic:**	PI > 7 and plots on or above "A" line [J]		CL	Lean clay [K,L,M]
			PI < 4 or plots below "A" line [J]		ML	Silt [K,L,M]
		Organic:	Liquid limit - oven dried	< 0.75	OL	Organic clay [K,L,M,N]
			Liquid limit - not dried			Organic silt [K,L,M,O]
	Silts and Clays: Liquid limit 50 or more	**Inorganic:**	PI plots on or above "A" line		CH	Fat clay [K,L,M]
			PI plots below "A" line		MH	Elastic Silt [K,L,M]
		Organic:	Liquid limit - oven dried	< 0.75	OH	Organic clay [K,L,M,P]
			Liquid limit - not dried			Organic silt [K,L,M,Q]
Highly organic soils:	Primarily organic matter, dark in color, and organic odor				PT	Peat

[A] Based on the material passing the 3-inch (75-mm) sieve

[B] If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.

[C] Gravels with 5 to 12% fines require dual symbols: GW-GM well-graded gravel with silt, GW-GC well-graded gravel with clay, GP-GM poorly graded gravel with silt, GP-GC poorly graded gravel with clay.

[D] Sands with 5 to 12% fines require dual symbols: SW-SM well-graded sand with silt, SW-SC well-graded sand with clay, SP-SM poorly graded sand with silt, SP-SC poorly graded sand with clay

[E] $Cu = D_{60}/D_{10}$ $\quad Cc = \dfrac{(D_{30})^2}{D_{10} \times D_{60}}$

[F] If soil contains ≥ 15% sand, add "with sand" to group name.

[G] If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM.

[H] If fines are organic, add "with organic fines" to group name.

[I] If soil contains ≥ 15% gravel, add "with gravel" to group name.

[J] If Atterberg limits plot in shaded area, soil is a CL-ML, silty clay.

[K] If soil contains 15 to 29% plus No. 200, add "with sand" or "with gravel," whichever is predominant.

[L] If soil contains ≥ 30% plus No. 200 predominantly sand, add "sandy" to group name.

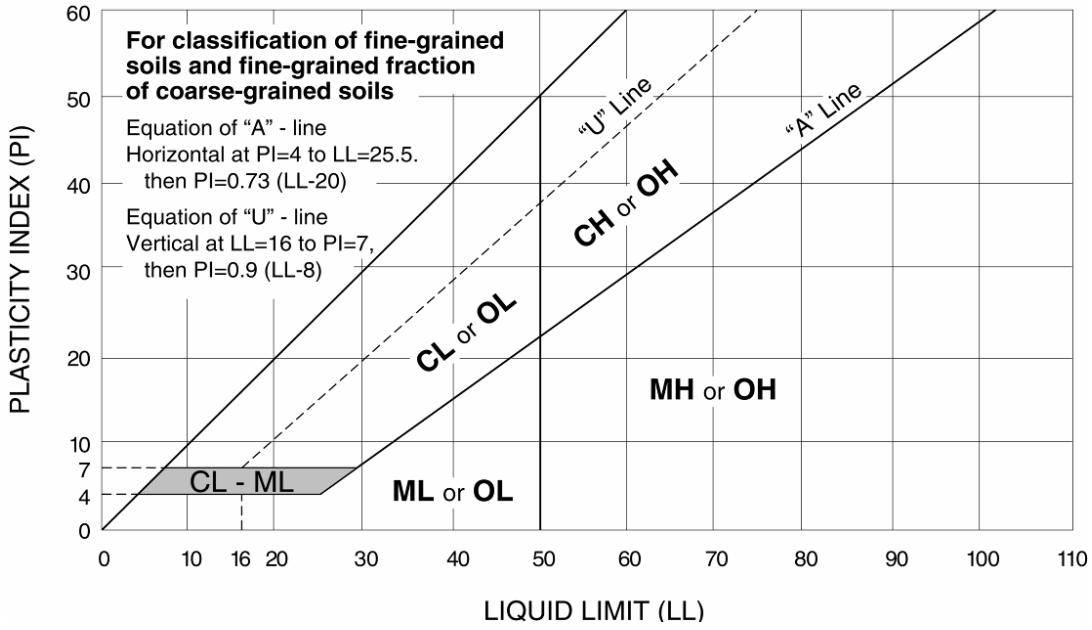
[M] If soil contains ≥ 30% plus No. 200, predominantly gravel, add "gravelly" to group name.

[N] PI ≥ 4 and plots on or above "A" line.

[O] PI < 4 or plots below "A" line.

[P] PI plots on or above "A" line.

[Q] PI plots below "A" line.



Terracon GeoReport

Elevated Civil LLC

March 30, 2022

JVA, Incorporated
1319 Spruce St.
Boulder, CO. 80302

Attn: Tracy Lawless

Re: JVA Comments
Block 57/formerly Golddigger Field
Idaho Springs, CO 80452

Dear Tracy,

Thank you for your review and comments of the Design Development Civil Engineering Plans dated 3/4/22. Many of the comments are addressed under the revised Design Development Civil Engineering Plans dated 3/30/22, submitted under separate cover.

We do want to review and discuss some more material aspects of the current civil engineering design and document status, in particular, as they relate to the JVA Comments.

1. Drainage design for the park and Idaho St. parking. The previous drainage design added new storm drain inlets, flowing west down Central Alley Drive, out-falling into the detention pond and eventually to the CDOT culvert, at the I-70 onramp from Hwy. 103. The natural grade of the park and Idaho St. is to the east. Directing the storm water west was causing shallow grades and reduced cover to the culverts, resulting in the use of a significant amount of elliptical reinforced concrete pipe. In the revised design, inlets were replaced with curb chases allowing storm water drainage to enter the park, and be directed east with the park storm water flow. The storm water flow from the park, and the Idaho St. parking area, is now directed by surface flow and swale to the existing drainage ditch and culvert.

   The revised drainage calculations support that the 100 year, two hour storm event, the volume of water directed from the site to the CDOT culvert are less in the post-developed model versus the pre-development model.

   It is anticipated that the addition of parking to Idaho St. does not modify the existing drainage patterns of Idaho St. and, therefore, the drainage in Idaho St itself remains as is. Similarly, the re-construction of Miner St. adjacent to the project does not materially affect the existing drainage patterns, and therefore, the drainage in Miner St. itself remains as is.

2. The previous drainage design anticipated roof drain runoff to inlets near the buildings. The current plans defers the design of the roof drains, downspouts or scuppers to the architectural design,

and have sidewalk chases to the parking lot to accept downspout surface drainage.

3. Storm drain piping has been resized and re-annotated. Previously, some piping size changes occurred after the details were generated, in the design documents.
4. The existing storm drain inlet in Area 2, bus parking lot, and the culvert leading to the CDOT culvert, are now shown to demolish.
5. Storm manhole sizes are and were called out by number of junctions on the plans. This design highlights those notations.
6. The detailing of the detention pond outlet structure, orifice and weir, is included in this revised design, on sheet C3.5.
7. The Horizontal Control Plan is not included in this design development set of documents. Currently changes to the west property lines, east property lines, Miner St. alignment and additions to Miner St. render a horizontal control plan obsolete, at this time.
8. Grade transitions in Miner St. now include vertical curves. The addition of the three vertical curves, however, had nearly no effect on the Miner St. grading.

Sincerely,

Elevated Civil LLC

Mark Cladny, PE