



Re-submittal Form

Case Name/ Number: _____

Case Manager: _____

Re-submitted Items:

- Development Plan/ Site Plan
- Plat
- Parking/ Landscape Plan
- Engineering Documents
- Subdivision Improvements Agreement (Microsoft Word version)
- Other: _____

*** All re-submittals must have this cover sheet and a cover letter addressing review comments.**

Please note the re-submittal review period is 21 days.

The cover letter must include the following information:

- Restate each comment that requires a response
- Provide a response below the comment with a description of the revisions
- Identify any additional changes made to the original document

For County Use Only:	
Date Accepted:	
Staff (accepting intake):	
Resubmittal Active:	



September 9, 2024

To: Greg Barnes, Principal Planner
Community and Economic Development, Adams County, Colorado
4430 S Adams County Parkway, 1st Floor, Suite W2000A, Brighton, CO 80601
(p) 720-523-6853
(e) gjbarnes@adcogov.org

Re: Todd Creek PUD Amendment and Filing 1 Preliminary Development/Plat
Project#: PRC2023-00020

Dear Greg,

Please accept our resubmittal of the Todd Creek PUD Amendment and Filing 1 Preliminary Development Plan/Preliminary Plat. In this submittal, we have included the following documents per your request and the request of other reviewers:

- The Resubmittal Form
- A response to each of the comments within this letter
- Traffic (LSC) response to comments letter from updated CDOT comments
- Additional documentation on water supply and sewer provisions.
- Statement of Authority for the Seltzer Farms property
- The revised PUD Amendment document
- The revised Preliminary Plat document for Filing No. 1
- The revised Construction Plans for Filing No. 1
- Supplemental: Preliminary Landscape Plans for Filing No. 1
- The Revised Traffic Study

Below is a response to the comments received from our 3rd submittal:

A. Commenting Division: Planner Review 3rd Review

Name of Reviewer: Greg Barnes

Resubmittal Required - RESPONSE: Acknowledged.

1. PLN3-01: All color from the PUD amendment maps and the plat should be removed. The maps will ultimately be recorded in black and white, and when recorded in gray scale, they will be hard to read. You should get ahead of this now.
RESPONSE: The maps are now in grayscale.
2. PLN3-02: Please remove the "Director of Planning & Development" signature line from the first page of the PUD Amendment.
RESPONSE: The "Director of Planning & Development" has been removed.
3. PLN3-03: Is Page 2 of the PUD Amendment even necessary? It contains all of the same information that is found on Page 1.



4. PLN3-04: The map on Page 3 of the PUD Amendment is confusing. If no land use changes are proposed for areas outside of the PUD Amendment boundary, then why is there land use designations illustrated for areas outside of the amendment, but not all of those areas? What are the areas intended for that are inside the amendment boundary but that do not have a designated land use? Is there a way to more clearly differentiate trails and collector roadways on this map?

RESPONSE:

- We have removed any land uses outside of the PUD Amendment areas to eliminate any confusion that these are part of the Amendment areas.
- The missing land uses are the Oil & Gas areas – we added the Open Space hatch to these areas since the O&G will ultimately transition to OS when the O&G is plugged & abandoned.
- We have created different line dashes to differentiate trails and collector roads.

5. PLN3-05: On Pages 5-6 of the PUD Amendment, will you duplicate the column labels so that the right side of the table is easier to understand?

RESPONSE: The column labels have been duplicated.

6. PLN3-06: On Page 8 of the PUD Amendment, I think should read something like "ultimate roadway design and widths are up to the discretion of Adams County and are not subject to regulation by this Planned Unit Development." I don't like that the current wording gives the developer this discretion after approval. Is there a uniform fence design for the development?

RESPONSE:

- The note has been added.
- We have added a few options for the fence design as requested by the client.

7. PLN3-07: Page 19 of the PUD Amendment, Section IE1 states "Vehicles shall not be parked and/or stored on unapproved parking surfaces or within required front and side yard landscape areas." Please clarify the term "unapproved". Who approves these surfaces? I do not believe that the County looks at this.

RESPONSE: We have changed the wording to just paved areas, not referring to approved or unapproved.

8. PLN3-08: On Page 19 of the PUD Amendment, you identify parking requirements, but it should be clarified that these are minimum required spaces. How did you land on the minimum open space and amenity parking ratios found in IB1 and IG1? My instincts tell me that these numbers are excessively high, so I'm curious about your rationale.

RESPONSE: We used these same numbers at multiple other developments around Denver Metro. However, we will lower these numbers, as suggested, based on your knowledge of this particular area.

9. PLN3-09: I would like a commitment in writing of when all active recreation open space amenities will be constructed in relation to number of lots or filings. I would like assurances that the active recreation amenities will be provided in some general

proportion to the residential components, and will not all be constructed after the residential products are all built.

RESPONSE: We have added the commitment of development for the active recreation open space to the Open Space Chart on page #. We will commit to completing the parks and active open space within each filing/phase per the chart. These phases/filings will ultimately include parks & open spaces areas within and adjacent to the residential units that will be developed around the same time.

10. PLN3-10: On Page 19 of the PUD Amendment, In Section IIC24, you state "Landscaping shall be installed no later than one year after issuance of the Certificate of Occupancy for the home". In my opinion, this is not acceptable. Who would enforce this? What would prevent a builder from walking away with meeting the obligation?

RESPONSE: We have changed the criteria to the "next growing season". Since if a home is completed in October, this would not be a good time to plant so this allows some buffer so that it can be planted in the Spring.

11. PLN3-11: On Page 19 of the PUD Amendment, the language in Section IVA states that "Signage shall be illustrated at the time of Final P.U.D Plan. Plans shall illustrate the actual design, copy, and dimensions. All signage shall comply with Adams County standards unless a variance is approved by the County and respective Metro District within Todd Creek Village." This looks like original language. If this was not done as part of the original PUD, then it needs to be cleaned up now. Variances do not apply to PUDs. Additionally, Section IVE1 states that signs will be setback 4 feet from sidewalks. Please add language that also states that these signs are never allowed in public right-of-way.

RESPONSE: We have taken out the term "variance". We have added the note that signs must be 4' from the sidewalk and that they are not allowed in the public right-of-way.

12. PLN3-12: On Page 19 of the PUD Amendment, Section VE states "E. A fencing plan, design and typical lot shall be indicated at the time of the Final P.U.D. Plan". This was the original language and needs to be updated.

RESPONSE: We have changed to "at the time of Final Plat."

13. PLN3-13: On Page 19 of the PUD Amendment, I think the Architectural Standards in Section V1 are great, but I don't think the County should be enforcing these matters during building permits or afterwards. The PUD requirements should be the County's responsibility to enforce. Anything else, should be done through covenants or a neighborhood design committee. Please reconsider this section.

RESPONSE: We have taken out the Architectural Standards within the PUD.

14. PLN3-14: Please remove Section VII of Page 20 of the PUD Amendment. The PUD should be enforceable standards only, and an estimated timetable for development can be communicated without being codified.

RESPONSE: We have removed the estimated timetable – this was an original section.

15. PLN3-15: On Pages 21-24 of the PUD Amendment, I think we should have a meeting to discuss how these pages are displayed. Ultimately, when the project is approved and built out, these are going to be the most referred to pages by County Staff and future residents. I think the information on these pages should be as clear as possible, and scrutinized for future conflicts. Upon the sending of comments, I will set up a 30-minute meeting to discuss these pages in greater depth. Several pages related to Multi-Family Standards are labeled as Single-Family at the beginning. This is confusing and should be corrected.

RESPONSE: We have reorganized the document so that it no longer includes any of the original maps and information. It now only contains information for the PUD Amendment Areas. This has allowed the information to be more straight-forward and hopefully easier to find the necessary requirements for reference by the County.

16. PLN3-16: All references to the "Director of Planning & Development" should be changed to the "Director of Community & Economic Development".

RESPONSE: This term has been changed.

17. PLN3-17: The use table on Page 24 of the PUD Amendment can be cleaned up. Having two dogs is not a use. If there are proposed animal keeping limits, this belongs in the performance standards and not in a use table. It also creates confusion around cats or other pets. Certificate of Designation can be removed from the legend if they are not shown on the table. Additionally, some of the uses on the use table do not seem like something we would want to allow in these areas. The language at the beginning of the page references single-family and mobile home districts. I think this needs correction.

RESPONSE: This chart was an original land use chart. We have eliminated land uses and terms that do not pertain to this section or this development.

18. PLN3-18 Pages 36-63 of the PUD amendment appear to only apply to Filing 1? I find this confusing. If it does just apply to this one filing, then what about the remaining portions that have yet to be submitted for plats? I think we need to have a conversation about this entire section and what is and is not necessary.

RESPONSE: We have discussed with Greg Barnes via a phone meeting about the confusion of this part of the document. Pages 36-63 were Landscape Plans for the first Filing to go along with Filing No.1 Plat. However, this has been deemed supplemental information from Greg which can be included but is not necessary. These sheets have been relabeled as "Selzer Farms No. 1: Preliminary Landscape Plans. However, we have included conceptual plans for the Active Parks and Open Space in the PUD document to provide direction for the future development of these spaces.

19. PLN3-19: I feel like the mid-block locations of Tracts B, C, D, and E (and potentially Tract I) will create increased pedestrian traffic crossing Roads mid-block. This seems unsafe. Tell me more about your plans to ensure for safe pedestrian and bicycle crosswalks in these areas. The same can be said for Tract F's adjacency to the neighborhood park crossing a curved roadway mid-block.

RESPONSE: The civil and traffic engineers will work with the County to incorporate

traffic calming techniques into the final designs and are currently considering speed tables and raised crosswalks.

20. PLN3-20: Have you given any thought to traffic speeds on Roads O and Q. These look like long straight roadways with few opportunities for traffic calming and lots of driveways.

RESPONSE: The civil and traffic engineers will work with the County to incorporate traffic calming techniques into the final designs and are currently considering speed tables and raised crosswalks.

21. PLN3-21: Ultimately all the maps will need to be recorded in 18x24" size per the Adams County Clerk & Recorder. Please make all of these maps 18x24" now. File size has continued to be a problem in this review, and I think reducing the overall size of these documents will alleviate some of these file size issues.

RESPONSE: Unfortunately, the files have been in the 18x24" format. This is a large project and compiling it into 1 PDF creates a very huge file. We can suggest that we send a Dropbox link that contains all the information in separate folders for each submittal item – this might also make it easier for the reviewers to locate the items that they need. However, we are not sure how the system works on the County side so this may not be feasible.

22. PLN3-22: Water and sewer service for Filing 1 will need to be demonstrated for the Planning Commission and Board of County Commissioners to feel comfortable approving. Please continue to work on these issues.

RESPONSE: Acknowledged.

23. Additional changes to PUD Document: We had a "Teams" meeting with the Adams County Project Planner – Greg Barnes – to discuss the formatting of the PUD Document. We no longer reference "old language or standards" that does not pertain to these amended areas. We have deleted any reference maps that were part of the original document but do not pertain to the amended areas.

B. Commenting Division: Development Engineering Review 3rd Review

Name of Reviewer: Matthew Emmens

Resubmittal Required – **RESPONSE:** Acknowledged.

1. ENG1: COMMENT CLOSED.
2. ENG2: COMMENT CLOSED.
3. ENG3: COMMENT CLOSED.
4. ENG4: COMMENT CLOSED.
5. ENG5: COMMENT CLOSED.
6. ENG6: COMMENT CLOSED.
7. ENG7: The developer is required to construct roadway improvements adjacent to the proposed site. Roadway improvements will consist of curb, gutter and sidewalk adjacent to the site and, any roadway improvements as required by the approved traffic impact study.
 - a. APPLICANT RESPONSE: (KT) Acknowledged, proposed offsite Filing No. 1 roadway improvements include widening the south side of 168th Avenue with curb, gutter, and

sidewalk adjacent to Filing No. 1. Auxiliary lanes are proposed on Yosemite Street at 168th Avenue, Highway 7, and the Filing No. 1's west entrance. An auxiliary right turn lane is also planned for Quaker Street and Highway 7. Widening Yosemite Street with curb, gutter, and sidewalk is not planned at this time since the road will be completely realigned with the next Filing.

- b. COUNTY COMMENT: The County is amenable to phasing certain public improvements with specific filings. However, there will need to be clearly defined triggers for the requirement of improvements. The applicant will need to propose a phasing schedule for improvements.
- c. APPLICANT RESPONSE: The applicant proposes that 168th Avenue and Yosemite Street auxiliary lane improvements be constructed by the 100th building permit. We also proposed that the realignment/reconstruction of Yosemite Street be constructed by the 450th building permit.
- d. COUNTY COMMENT: The County typically ties required improvements to filings, not building permits. However, in this case, the area adjacent to Yosemite St will need to be re-platted in the future to allow for development of those area. Therefore, the Yosemite St improvements could be delayed until that plat is applied for.

RESPONSE: Acknowledged. Currently we are preparing a preliminary plat for the property west of Yosemite Street that will include the Yosemite Street improvements. We hope to have it submitted soon and have the preliminary and final plats track closely behind the Seltzer Farms Filing 1 project.

8. ENG8: COMMENT CLOSED.

9. ENG9: COMMENT CLOSED.

10. ENG10: COMMENT CLOSED.

11. ENG11: COMMENT CLOSED.

12. ENG12: <New Comment> The storm sewer outfall for the development is shown as being in Weld County. Adams County will require approval of the drainage report and/or the general outfall concept from Weld County, in writing, prior to scheduling of the Preliminary PUD Amendment hearing.

- a. APPLICANT RESPONSE: Weld County has reviewed the Phase II Drainage report and has no objections. Please see the included email from Weld County.
- b. COUNTY COMMENT: The email from Weld County was received. As long as Weld County is aware of the intention to outfall storm water from Adams County into Weld County, the case can move forward. However, additional coordination with Weld County may be needed during the final platting stages.

RESPONSE: The applicant acknowledges this requirement.

13. ENG13 (New Comment 6-24-2024): After further review of the Traffic Impact Study, County staff disagrees with the assumptions used for traffic distribution from this development. Specifically, County staff believe that more traffic will flow east into Brighton, than is currently planned for in the Traffic Impact Study (TIS). The TIS will need to be revised to include a higher percentage of traffic flowing to the east.

RESPONSE: The directional distribution has been revised as requested.

C. Commenting Division: Environmental Analyst Review 3rd Review**Name of Reviewer:** Megan Grant**Resubmittal Required – RESPONSE:** Acknowledged.

1. ENV3-1: Please indicate where the oil and gas plat note(s) are included. Responses to comments on previous submittal indicate notes were added.

RESPONSE: The oil and gas notes can be found on page 2.

2. ENV3-2: Please provide the DWR response to the letter and data sent by Jehn Water Consultants (dated May 2, 2024).

RESPONSE: Updated documents addressing DWR comments have been provided to the DWR. We are waiting for a response.**D. Commenting Division: Right-of-Way 3rd Review****Name of Reviewer:****Resubmittal Required – RESPONSE:** Acknowledged.

1. ROW1: Must revise ownership to that as provided on the Title Commitment. Stated entity has no legal interest in the property.

RESPONSE: The ownership has been revised to match the title commitment.

2. ROW2: A recorded copy of a Statement of Authority for Seltzer Farms, Inc must be provided to verify the signatory's ability to encumber the corporation, or a copy of the operating agreement.

RESPONSE: A copy of the Statement of Authority for Seltzer Farms, Inc has been provided.

3. ROW3: The title commitment provided must be updated 30 days prior to final hearing of the final plat to verify no changes to ownership, encumbrances and entitlement remain unchanged.

RESPONSE: Noted, we will provide an updated title commitment before the final Final Plat submittal.

4. ROW4: Remove "TRACTS" from the Dedication statement as no tracts will be dedicated to the county for fee simple ownership.

RESPONSE: "TRACTS" have been removed from the dedication statement.

5. ROW5: Add "-PRELIMINARY PLAT" under name and style in the ownership certificate.

RESPONSE: Preliminary plat has been added in the ownership block.

6. ROW6: Add 'EXECUTED THIS _____ DAY OF _____, 202___, prior to owners' signature

RESPONSE: The requested text has been added before the owner's signature on the cover page.

7. ROW7: Correct name of owner at signatory block, remove title reference.
KT RESPONSE: Owner's name has been corrected and the reference to their title removed.
8. ROW8: The Acknowledgement and Affirmation must state: THE FOREGOING OWNERSHIP AND DEDICATION WAS.....
RESPONSE: The requested text has been added to the owner's signature block.
9. ROW9: Revise the Planning Commission recommendation block as requested.
RESPONSE: The planning commission block has been revised as requested.
10. ROW10: Correct grammar on BoCC approval block.
RESPONSE: The grammar error has been corrected in the BoCC approval block.
11. ROW11: Revise the revision block. This is the 3rd submittal.
RESPONSE: Although the project has been reviewed three times the preliminary plat has only been reviewed twice. The preliminary plat was not included with the first submittal. Sorry for the confusion, but we think the revision block is correct showing only two revision dates including this submittal.
12. ROW12: The Title Certification is not a requirement. As there is no Note on the property not sure why the title company would want to be a signatory.
RESPONSE: The Title Certification has been removed from the cover page.
13. ROW13: See application checklist, guidelines and regulation concerning oil and gas notes as required.
 - 7.2 is not correct. Battery and well are not the same.
 - Removal of any/all pipelines within boundary of any lot is the Developers responsibility to have removed
 - No OWTS located within any oil and gas setback or easement (if applicable)
 - Remove "PUBLIC" for any access easement to subsequent operations setback locations
 - Due to existing production and/or shut-in well locations, the Final Plat will have to be amended to remove the "no build" setback to that of the P&A'd setback
 - *See Environmental comments*RESPONSE: Added oil and gas notes to the general notes section.
14. ROW14: Verify with Environment Note 10 is sufficient.
RESPONSE: Notes have been coordinated with the health department please see the attached email.
15. ROW15: Remove superfluous information regarding chain of record title and severance of the mineral estate.

RESPONSE: Removed unnecessary information.

16. ROW16: Flood Plain Note, In or out

RESPONSE: Added note stating the property is out of the floodplain.

17. ROW17: Revise all references to W. 168th Avenue to correct cardinal direction.

RESPONSE: All references to W. 168th have been revised to E. 168th.

18. ROW18: Begin providing road naming as follows:

- Road AC: Seltzer Plaza Drive?
- Road L: Alton Street
- Road M: Beeler Street
- Road N: Boston Street
- Road O: Chester Street
- Road S: Clinton Street
- Road T: Seltzer Way
- Road Q: East 167th Place
- Road R: East 167th Avenue
- Road C: East 166th Avenue (Revise portion of Road V to this on the same parallel)
- Road X: East 165th Avenue
- Road Y: Dallas Street
- Road U: Dallas Way
- Road V: Dayton Street
- Road V: East 164th Avenue: Portion of road labeled as Road V (SE Corner of property)

RESPONSE: Thank You, road names are now provided on the plan.

19. ROW19: The surveyor's note on Sheet 3 should be located within the NOTES section of Sheet 1 or 2 to provide better notice of this discrepancy.

RESPONSE: Moved the surveyor's note to the general notes on page 2 note 14.

20. ROW20: Revise the ownership and maintenance in the Land Use Summary to current owner of record.

RESPONSE: Revised the land use summary table to current owner.

21. ROW21: East 168th Avenue and Yosemite Street. Cite the following:

- The Title Commitment provided does not include the following citation, as such, this must be revised prior to final BoCC hearing of the Final Plat and verify thorough research has been provided:

Recorded: Book 101, Page 527

Grantor: Louise J. Oppegard

Grantee: Adams County Colorado

Recorded: 3/10/1923

Conveyance: Quit Claim deed for ROW located in Section 4, Township 1 South, Range 67 West

RESPONSE: Noted.

22. ROW22: You cannot plat both an active well setback and a plugged and abandoned well setback within the same boundary. If the well is active (producing or shut-in) the setback regulations apply and will affect all lots within the that boundary of “no build”. If the well has been previously plugged and abandoned those setbacks apply and should be mapped appropriately. Once the producing well is abandoned, a Plat Amendment will be required to remove the production setback to that of the plugged and abandoned requirement.

RESPONSE: We believe it is best to show both the current and proposed conditions of the setbacks to better understand the plat. At the final plat, only the applicable setbacks will be shown.

23. ROW23: The Oil and Gas pipeline easement that runs through the property, stated to be abandoned/released by separate document is a two-part situation. The statement “To be vacated by separate documents” will suffice for the Preliminary Plat. For the Final Plat, this vacation must be completed to provide a developable lot pursuant to Planning review.

RESPONSE: Noted will be vacated before the final plat is recorded.

24. ROW24: Need access easement to setback location for P&A'd well Sheet 9

RESPONSE: Tract has blanket access easement on it.

25. ROW25: The statement of “Future 50' x 100' well setback” cannot be stated. The well is currently producing, or capable of producing, or plugged and abandoned pursuant to the COGCC at the date of hearing. Revise locations as required pursuant to Environmental comments.

RESPONSE: We believe it is best to show both the current and proposed conditions of the setbacks to better understand the plat. At the final plat, only the applicable setbacks will be shown.

26. ROW26: Remove “Public” on access to active well location sheet 12.

RESPONSE: Removed public on access to active well.

27. ROW27: Need to add the vacation statement for the oil and gas pipeline that needs to be vacated on sheet 12, 13.

RESPONSE: Added “to be vacated by separate document” to the gas pipeline.

28. ROW28: SHEET 17:

- The vacation of the Signal Ditch rights must be completed for Final Platting.
- Need to use the pipeline easement to access the setback for subsequent operation area and provide the access easement to it.

RESPONSE: Noted.

29. ROW 29: Addressing will be provided for final platting. Review of the road naming convention and continued use of the road names should be used along with their current and revised designations requested.

RESPONSE: Noted.

E. **Commenting Division:** Colorado Division of Water Resources

Name of Reviewer: Ioana Comaniciu, P.E.

RESPONSE: The updated water supply documents from the Todd Creek Village Metropolitan District were provided in an email on 8/6/2024 to the project's planner to be forwarded to the DWR. These documents had also been provided again with this submittal.

F. Commenting Division: Colorado Department of Transportation

Name of Reviewer: Aaron Eyl

RESPONSE: A comment response letter was provided to CDOT after the date of these comments. LSC received additional comments from CDOT dated 7/24/2024. See our responses to those comments in a separate memo.

G. Commenting Division: Thornton City Development

Name of Reviewer: Erinn Rogowski, Planner II / Darrell Alston, Traffic Engineer

RESPONSE: We have added the (2) roundabouts instead of traffic signals, as suggested. We have added a note within the PUD document and will develop the actual plans with the preliminary plats in those areas. Also, the TIS has been revised to analyze the intersections of E.168th/Yosemite Street and 168th Avenue/Lima Street as modern roundabouts.

H. Commenting Division: 27J School District

Name of Reviewer: Kerrie Monti, Planning Manager

1. The land dedication requirement is 5.30 acres or \$562,300.06. The district requests cash in lieu of land dedication for this subdivision to be paid prior to pulling building permits.

RESPONSE: Acknowledged.

2. Prior to the approval of the final subdivision plat, we recommend that the developer enter into an agreement with the Capital Facility Fee Foundation to mitigate the impact of this development on District school facilities. Given the planned 416 residential dwelling units, the tax-deductible capital facility fees are projected to be \$407,680. CFFF fees may be paid in a lump sum or as permits are pulled.

RESPONSE: Acknowledged.

I. Commenting Division: United Power

Name of Reviewer: Emily Fore, Right of Way Agent

RESPONSE: The applicant is aware of United Power's requirements and has made accommodations for them.

J. Commenting Division: Xcel Energy

Name of Reviewer: Violeta Ciocanu, Right of Way and Permits

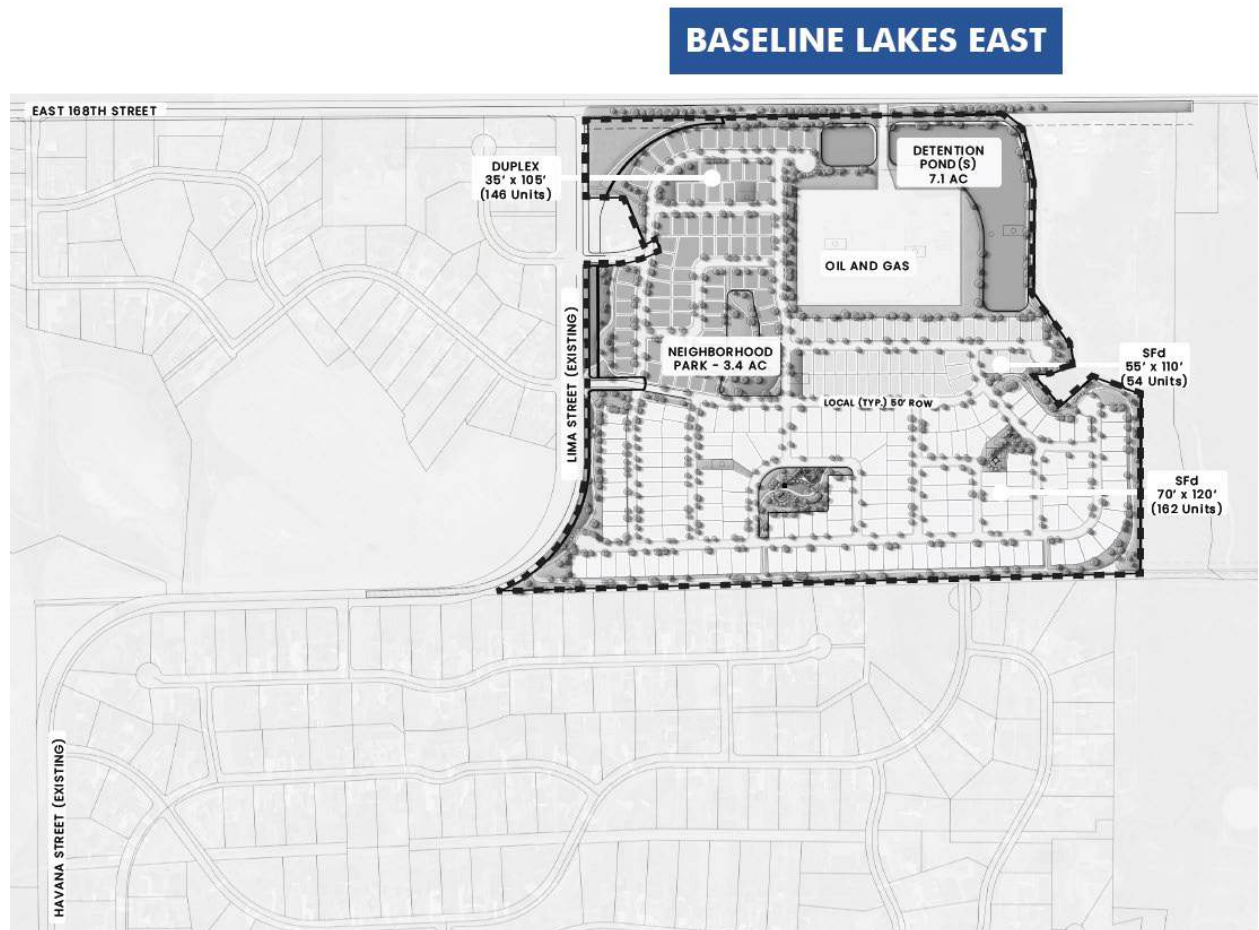
RESPONSE: The applicant is aware of Xcel's requirements and has made accommodations for them.

K. Response to Community Comments and Concerns – Letter from Debbie W.

1. It's still unclear to me from the latest developer response what is going to happen to the area just north of the Bartley subdivision/Todd Creek Riverside to the northeast of our community where Havana curves north to 168th.

RESPONSE: Below is the Concept Plan for the area in question above. Part of the PUD Amendment Area is called Baseline Lakes East. It includes Single Family

Detached homes that range from 55'x110' lots and 70'x120' lots in the southern half of the property; and some duplex lots in the northwest corner of the property near 168th Street and Lima Street intersection. It also proposed plans for several parks within the community and a perimeter trail system which is also an open space buffer around the entire property. (For clarification, the lot lines outside of the property were taken from existing GIS files overlaid on an aerial map.)



2. The concern of a collector road directly through our residential neighborhood where it meets the proposed/future proposed area described in number 1 above. I understand comments from the engineer he doesn't see that as a benefit to the developer, but it was on the initial proposal, and as the current plan for that area is not clear (at least to me), We just want it watched so it does not get put through our actual neighborhood (see the 9/5/23 letter for detail). I have no concern about Havana itself from Hwy 7 to 168th, that road makes sense.

RESPONSE: The collector road that was shown at the beginning stages of the submittal was not a part of the PUD AMENDMENT plans or concepts. The collector road in question was initially planned as a part of the ORIGINAL PUD plans. However, it was not built as a collector road, as existing today. We initially were including the ORIGINAL PUD zoning and concept plans within our submittal but have been advised to only show the proposed development zoning and concept plans within the PUD AMENDMENT because it has caused confusion, both to the

review agencies and to the community. The confusion arose since the existing residential areas today no longer match exactly the ORIGINAL PUD zoning & concept plans, therefore, there is no need to show the ORIGINAL PUD plans. Instead, we have only used aerials and the GIS existing lotting to show existing conditions for reference purposes only. We understand how this may have created a concern for the residents; however, we have no intent to change that existing residential road into a collector or to change any existing developed residential area within the ORIGINAL PUD. The PUD Amendment areas only include currently undeveloped areas.

Below is page 2 of the first submittal of the PUD AMENDMENT to show as a reference for the residential road in question (see blue arrow). Anything outside of the red outline was on the initial plans in the ORIGINAL PUD. However, the road was not built as initially planned. We also do not intend or propose to change the existing conditions of this residential road.



The current Havana/Lima Road may have improvements or may be upgraded to a collector in the future, depending on traffic studies; so far, the traffic studies show that it can remain as a local street.

3. The high-density housing still is of concern as noted more specifically earlier (apartments, houses on lots less than 4,000 sq ft. etc.).

RESPONSE: Acknowledged. However, we need to also address the future planning concerns and the vision for the larger community as outlined in the Adams County Comprehensive Plan (dated September 27, 2022). The types of housing proposed in the PUD Amendment are intended to address these concerns and vision.

4. The latest application at page 3 comments that Adams County has no rezone concerns because "the subject parcels meet the minimum 1-acre requirement." - I still don't see any acre lots at all on this current proposal, let alone it being the entire proposal so leading to no concerns.

RESPONSE: The comment was not referring to a lot size but instead a requirement to apply for a rezone application. This requirement is that in order to apply for a Rezone within a PUD, the area proposed to be rezoned needs to be a minimum of 1 acre in size.

Response to CDOT Comments by LSC Transportation Consultants, Inc.

August 28, 2024

Comments 07/24/2024 - SC

- Please provide a clear site plan. The one included in the TIS is pixelated when zoomed in on.

LSC Response: A higher resolution site plan has been included in the appendix of the updated TIS.

- Provide more information for all growth rates and factors used for analysis. Where did 3% come from? What growth rates were used from other reports? (This is an old comment that was not addressed in the previous response letter)

LSC Response: The annual growth rate has been revised to 2% based on a comparison of the existing daily traffic volumes on E. 160th Avenue (SH 7) and the Denver Area Council of Governments (DRCOG) projected 2050 daily traffic volumes.

- Page 107, the paragraph at the bottom is cut off and cannot be found anywhere else in the report.

LSC Response: Page 107 was included to identify the source of information used from other area traffic studies to determine the previous background traffic volumes. The methodology to estimate the background traffic has been revised as discussed in the comment above. The key pages from other area traffic studies have been removed from the updated TIS.

- The report states that crash data is included. Where?

LSC Response: The crash data has been included with the updated TIS

Ken Toland

From: EH Water Program <EHWaterProgram@adcogov.org>
Sent: Friday, August 16, 2024 4:52 PM
To: Ken Toland
Cc: Brian Mead; Kian McIntosh
Subject: RE: Seltzer Farms - Preliminary Plat Sceptic note

Hi Ken,

Yes, I can clarify this for you. You will need to add verbiage that the owner will need to also comply with the Adams County Health Department Regulation O-22 Onsite Wastewater Treatment Systems, specifically Section 6.8 for the Termination of Use or Abandonment of an OWTS. Here is the exact verbiage:

6.8 Termination of Use or Abandonment of an OWTS

- A. The Department shall be notified, in writing, when a tank, vault, seepage pit, or cesspool is abandoned, and a pump receipt provided.
- B. The contents of a septic tank, vault, seepage pit, or cesspool, the use of which has been terminated, shall be removed and properly disposed of.
- C. A tank may be completely removed and the parts disposed of safely.
- D. If the tank will remain in place:
 - 1) The tank must be pumped to remove as much waste as possible;
 - 2) The bottom of the tank must be broken so the tank neither floats nor fills with waste
 - 3) The top must be collapsed and the sides may be broken into the void;

- 4) The remaining void must be filled with gravel, sand or compacted soil; and
 - 5) The filled excavation will be graded to surroundings, allowing for settling.
- E. The Department may require abandonment of a tank that is deemed to be a hazard.

We would just request that the owner provide photos of the tank abandonment process if the tank is crushed in place or a manifest if the tank is taken to a landfill. In either case, we would like to get a pumping receipt for the contents of the tank. We will file these documents and then mark the system as being inactive.



Thank you for inquiring about this,

Jeff

Jeff McCarron
Environmental Health Specialist IV, Water Program
ADAMS COUNTY, COLORADO
7190 Colorado Blvd, Commerce City, CO 80022
o: 720.340.7215 | Main: | jmccarron@adcogov.org
www.adamscountyhealthdepartment.org

To responsibly serve the Adams County community with integrity and innovation

From: Ken Toland <ktoland@kteng.net>
Sent: Friday, August 16, 2024 11:38 AM

To: EH Water Program <EHWaterProgram@adcogov.org>

Subject: Seltzer Farms - Preliminary Plat Sceptic note

You don't often get email from ktoland@kteng.net. [Learn why this is important](#)

Please be cautious: This email was sent from outside Adams County

Good morning,

We are processing a preliminary plat on the property located 9230 E 168TH Ave. There is an existing septic system on the property that will eventual be removed. We have added a note on the plat on how it should be addressed. The planning department has asked that we check with the Health department to make sure this note is sufficient. Could you please review note #10 on the attach plat sheet and let me know if you would like to see anything different?

Thanks,
Ken

Ken Toland, PE

KT ENGINEERING

12500 W. 58th Ave | Suite 230

Arvada, Colorado 80002

O: 720.638.5190 | **C:** 720.413.2242

E: ktoland@kteng.net



10450 E 159th Court
Brighton, CO 80602

Phone: (303) 637-0344
Fax: (303)637-0423

August 8, 2024

Re:

Todd Creek Preliminary Development Plan Amendment and Rezoning
Case no. PRC2023-00020
Portions Sec. 2, 3, and 4 , T1S, R67W, 6th P.M.

Water Division 1, Water District 2

To whom it may concern,

Todd Creek Village Metropolitan District will answer each issue brought up in the September 18, 2023 DWR letter from Ioana Comaniciu.

[1-A water supply plan must be included.](#)

Attached is the District's most recent Water Supply Plan (WSP) completed by Gina Burke of Jehn Water Consultants Inc. This WSP was produced in September 2022. There is a letter from Gina Burke dated May 2, 2024 to update Table 4 which shows the District's current and future water commitments by subdivision in the District Service Area.

This rezoning case is included in Table 4 as the development labeled "Seltzer Farms". In Table 4 of the District's WSP Seltzer Farms is identified as having 935 single family units, so this case will not use the full allocation of reserved water as shown on Table 4.

[2-Well permit no. 69543 –](#)

The District's Rules & Regs require dedication of all groundwater under the subject property as a condition of service. The District does not have a need to use this well in its water supply plan for the approval of this subdivision. The District agrees with the requirement that the well be plugged and abandoned in accordance with State law.

[3-The District should clarify the amount of water being committed to serve the amended Preliminary Development Plan.](#)

The amount of water committed to serve the Amended Preliminary Development Plan is Shown on Table 4 of the District's WSP. Each single-family unit has 0.30 AF for indoor use and 0.34 AF for outdoor irrigation reserved upon final plat.

The developments are identified as

Seltzer Heights- 706 units

Seltzer Farms- 935 units

Baseline Lakes East- 362 units

The total amount of water committed for the Preliminary Development Plan is 1,281.92 AF per year.

Please feel free to contact me with any questions.

Thank you,



Don Summers

720-373-7373

Don@toddcreekvillage.org

Todd Creek Village Metropolitan District

Jehn Water Consultants, Inc.
Water Resources Consulting
Celebrating Over 25 Years of Excellence

88 Inverness Circle East
Suite K-102
Englewood, Colorado 80112
(303) 321-8335

May 2, 2024

Ms. Ioana Comaniciu
Division of Water Resources
1313 Sherman Street, Room 821
Denver, CO 80203

Re: Todd Creek Village Metropolitan District Updated Water Supply Plan Report
Job No. 814.1

Dear Ioana:

Attached is the current Table 4 from the Water Supply Plan Report for Todd Creek Village Metropolitan District (TCVMD), dated September 16, 2022. The reason for this letter is that at this time Adams County is processing the Todd Creek Preliminary Development Plan Amendment and Rezoning (Case No. PRC2023-00020) which is rezoning 97 acres to PUD and amending the Todd Creek Preliminary Plan. The total number of planned units has been added to our Table 4 of the Water Supply Plan for Todd Creek Village Metropolitan District, under Seltzer Farms. As shown in the attached Table 4, a total of 935 units are included as future units. TCVMD currently has plans to serve a total of 3,417 af/yr in demands, both current and future, as shown in the attached Table 4. As outlined in the 2022 Water Supply Plan, TCVMD currently has 6,671 af/yr available to meet demands utilizing their senior, junior, ground water and contracted water rights.

For your reference, I have also attached the correspondence between your office and Adams County Community and Economic Development Department, dated September 18, 2023.

After your review, if there are any questions or if you are in need of additional information, please do not hesitate to contact me.

Sincerely,

JEHN WATER CONSULTANTS, INC.



Gina Burke
President

**TABLE 4
TODD CREEK VILLAGE METROPOLITAN DISTRICT
ESTIMATED CURRENT & FUTURE DEMANDS**

	Total units	Currently Served Units	Future Units	Potable af/yr/unit	Current af/yr	Future af/yr	Total Potable af/yr	units	Irrigation af/yr/unit	Current af/yr	Future af/yr	Total Irrigation af/yr	Total Demands af/yr
Development (Platted)													
TCF 1	54	54	0	0.27	14.53	0.00	14.53	54	0.34	18.36	0.00	18.36	32.89
TCF 2	57	57	0	0.27	15.33	0.00	15.33	57	0.34	19.38	0.00	19.38	34.71
TCF 3	62	62	0	0.27	16.68	0.00	16.68	62	0.34	21.08	0.00	21.08	37.76
TCF 4	139	139	0	0.27	37.39	0.00	37.39	139	0.34	47.26	0.00	47.26	84.65
TCF 5	160	160	0	0.27	43.04	0.00	43.04	160	0.34	54.40	0.00	54.40	97.44
Thompson	4	1	3	0.30	0.30	0.90	1.20	4	0.34	0.34	1.02	1.36	2.56
Foxridge	58	58	0	0.27	15.60	0.00	15.60	58	0.34	19.72	0.00	19.72	35.32
Wheatlands	71	71	0	0.27	19.10	0.00	19.10	71	0.34	24.14	0.00	24.14	43.24
Silver Springs	52	52	0	0.27	13.99	0.00	13.99	52	0.34	17.68	0.00	17.68	31.67
Hawk Ridge	48	48	0	0.27	12.91	0.00	12.91	48	0.34	16.32	0.00	16.32	29.23
Jogan Estates	3	2	1	0.30	0.60	0.30	0.90	3	0.25	0.50	0.25	0.75	1.65
ES 1	185	185	0	0.27	49.77	0.00	49.77	185	0.34	62.90	0.00	62.90	112.67
ESS	191	191	0	0.27	51.38	0.00	51.38	191	0.34	64.94	0.00	64.94	116.32
TCM 1	79	75	4	0.27	20.18	1.08	21.25	79	0.34	25.50	1.36	26.86	48.11
Adams	1	1	0	0.27	0.27	0.00	0.27	1	0.34	0.34	0.00	0.34	0.61
TC Shook	64	64	0	0.30	19.20	0.00	19.20	64	0.34	21.76	0.00	21.76	40.96
Riverside	179	175	4	0.30	52.50	1.20	53.70	179	0.34	59.50	1.36	60.86	114.56
Carlson Baseline Lakes	140	0	140	0.30	0.00	42.00	42.00	140	0.34	0.00	47.60	47.60	89.60
Baseline Lakes	54	54	0	0.27	14.53	0.00	14.53	54	0.34	18.36	0.00	18.36	32.89
HTC	1,271	1,271	0	0.27	341.90	0.00	341.90	1,271	0.25	317.75	0.00	317.75	659.65
Seltzer Heights	706	0	706	0.30	0.00	211.80	211.80	706	0.34	0.00	240.04	240.04	451.84
Seltzer Farms	935	0	935	0.30	0.00	280.50	280.50	935	0.34	0.00	317.90	317.90	598.40
Baseline Lakes East	362	0	362	0.30	0.00	108.60	108.60	362	0.34	0.00	123.08	123.08	231.68
Subtotals	4,875	2,720	2,155		739.18	646.38	1385.56	4,875		810.23	732.61	1542.84	2928.40
Commercial (Platted - 2010 Demands)													
HTC Club/Maint							3.65					11.70	15.35
TCVMD office							0.03					-	0.03
NH Church							0.88					-	0.88
Harvest Fellowship							0.24					0.39	0.63
TCVP&R ES Park							-					8.10	8.10
TCVP&R TCM Park							-					3.98	3.98
LS areas							-					69.90	69.90
Future HTC LS areas							-					120.00	120.00
Brighton Fire													
Seltzer Heights LS areas													
Seltzer Farms LS Areas													
Baseline Lakes East LS Areas													
HTC Golf Course							-					270.00	270.00
					Total		1,390.36					2,026.91	3,417.27
					Current		743.99					1,294.30	2,038.28
					Future		646.38					732.61	1,378.99

Notes:

Demands provided by Todd Creek Village Metropolitan District

September 18, 2023

Layla Bajelan
Adams County Community & Economic Development Department
Transmitted via email:
LBajelan@adcogov.org

RE: Todd Creek Preliminary Development Plan Amendment and Rezoning
Case no. PRC2023-00020
Portions Sec. 2, 3, and 4 , T1S, R67W, 6th P.M.
Water Division 1, Water District 2

Dear Layla Bajelan,

We have reviewed the information submitted on August 15, 2023 for the referral concerning the above referenced proposal to rezone 97 acres to PUD and amend the Todd Creek Preliminary Plan to allow more types of housing.

Water Supply Demand

A Water Supply Information Summary Sheet was not provided, therefore the proposed water demand for the Preliminary Planned Development Amendment is unknown.

Source of Water Supply

The proposed water source is the Todd Creek Village Metropolitan District (District). A Conditional Will Serve letter from the District dated May 31, 2023 was provided. The letter indicates the subject properties are located within the service area of the District and the District is willing to serve potable and non-potable water and sewer service subject to the conditions of the letter.

A review of our records found well permit no. 69543 located on the subject property and permitted on June 21, 1973. Section 37-92-602(3)(b)(III), C.R.S., requires that the cumulative effect of all wells in a subdivision be considered when evaluating material injury to decreed water rights. **The applicant must either re-permit well no. 69543 pursuant to a water court approved plan for augmentation or plug and abandon the well in accordance with the Water Well Construction Rules prior to approval of the final plat.**

State Engineer's Office Opinion

This office has no comments regarding the rezoning of the subject property.

Regarding the proposed amendment of the Preliminary Development Plan; based on the above and pursuant to Section 30-28-136(1)(h)(I) and C.R.S. Section 30-28-136(1)(h)(II), C.R.S., the State Engineer's Office has not received enough information to render an opinion regarding the potential for causing material injury to decreed water rights, or the adequacy of the proposed

water supply. Prior to further review of the subdivision water supply plan the following information is required:

1. A water supply plan must be included. Details of necessary information to be included in the subdivision water supply plan can be found on Attachments A and C of the Updated Memorandum Regarding Subdivisions, available online at: <https://dnrweblink.state.co.us/dwr/ElectronicFile.aspx?docid=3565889&dbid=0>.
2. If well no. 69543 will be used to supply water to a subdivision the Applicant must clarify that the well will be re-permitted pursuant to a water court approved augmentation plan, or the well must be plugged and abandoned prior to approval of the subdivision.
3. The District should clarify the amount of water being committed to serve the amended Preliminary Development Plan.

Should you, or the Applicant, have any questions please contact Ailis Thyne in this office at 303-866-3581 x8216.

Sincerely,



Ioana Comaniciu P.E.
Water Resource Engineer

Ec: File for subdivision no. 30946

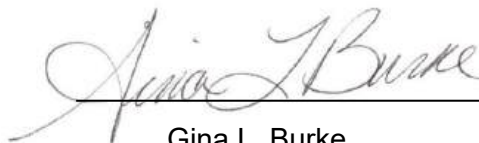
**TODD CREEK VILLAGE
METROPOLITAN DISTRICT
WATER SUPPLY PLAN**

Prepared For: Todd Creek Village Metropolitan District
10450 East 49th Ct.
Brighton, Colorado 80602

Prepared By: Jehn Water Consultants, Inc.
88 Inverness Circle East, Suite K-102
Englewood, Colorado 80112
(303)321-8335
Job No. 814.1

**TODD CREEK VILLAGE
METROPOLITAN DISTRICT
WATER SUPPLY PLAN**

September 16, 2022

A handwritten signature in cursive script, reading "Gina L. Burke", written over a horizontal line.

Gina L. Burke
President

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INTRODUCTION

This Report is the current Water Supply Report for the Todd Creek Village Metropolitan District (District) which is approved to provide services in Adams and Weld Counties, Colorado. The primary purpose of this Report is to summarize the current and future demands of the District and the water available to meet those demands.

The District controls Denver Basin ground water rights in all or portions of Sections 1 - 5, 8 - 12, 14 - 16, and 21 - 23 in Township 1 South, Range 67 West. The District's Service Area also includes Sections 21 - 24, 25 - 28, and 33 - 36 in Township 1 North, Range 67 West, all within the 6th P.M. (Figure 1). The District's Service Area currently includes approximately 12,891 acres, of which approximately 6,833 acres are located in Adams County and 6,058 acres are located in Weld County.

This Report provides a summary of the water supplies available to the District and the current potable and irrigation demands of the District. This Report also provides firm yield analyses for the District's junior water rights and existing infrastructure to evaluate the sufficiency of the District's water supplies.

DISTRICT'S WATER SUPPLY

The District controls water rights in the Denver Basin aquifers underlying the District property as well as surface water rights on the South Platte.

Decreed Denver Basin Ground Water Rights

As summarized in Table 1, a total of 1,386.2 acre-feet per year (af/yr) are decreed for use within the District. That total includes 843.4 af/yr decreed from the nontributary Laramie-Fox Hills aquifer and 542.8 af/yr decreed from the not-nontributary Lower Arapahoe aquifer. At the time of this Report, the water rights decreed in the Lower Arapahoe aquifer have not been decreed in a Water Court approved augmentation plan.

As additional properties are platted and agreements are made with the District for service, the Denver Basin ground water is conveyed to the District. Table 2 provides a summary of Denver Basin ground water rights that have either been conveyed to the District but have not yet been adjudicated, or that underlie properties that are currently in the process of being zoned or platted and will be conveyed to the District upon completion of the land use process. Based on the estimates described in Table 2, there are approximately 568 af/yr in the not-nontributary Lower Arapahoe and 948 af/yr of nontributary Laramie-Fox Hills water rights underlying Todd Creek Village, Todd Creek Shook and Todd Creek Bartley (Adams County). The Todd Creek Seltzer properties, located in both Adams and Weld Counties, may have 59 af/yr in the not-nontributary Lower Arapahoe and 103 af/yr in the nontributary Laramie-Fox Hills underlying those parcels. There is also an estimated 86 af/yr of not-nontributary Lower Arapahoe and 155 af/yr of nontributary Laramie-Fox Hills aquifer ground water underlying the Dry Creek East property. The Dry Creek East property is currently being rezoned through Weld County and once the proposed development is platted, the Denver Basin ground water associated with the property will be conveyed to the District as one of the conditions for service. In total, there is approximately 714 af/yr available in the not-nontributary Lower Arapahoe and 1,206 af/yr in the nontributary Laramie-Fox Hills aquifers that will be available to the District to meet future demands.

Surface Water Rights

The District owns surface water rights to be utilized within the District to meet current and future demands. Table 3 provides a summary of those water rights totaling approximately 17,829 af/yr.

Old Brantner Ditch

The District permanently controls 18 shares of the Old Brantner Ditch. 17 of those shares were changed to municipal uses in Case No. 08CW165. The change of use in that Case was from irrigation to municipal uses within the District. The consumptive use associated with the 17 shares is 130 af/yr.

New Brantner Ditch

The District owns 19.375 shares of the New Brantner Ditch. The District is currently working with Aurora to purchase additional shares. Currently, the District utilizes its New Brantner Ditch shares to meet irrigation demands within its two-pipe system. The District intends to continue to utilize their New Brantner Ditch rights to meet irrigation demands. Based on historic headgate delivery data for the New Brantner Ditch, the average delivery is 34 af/share or for the District's shares, the total would be 659 af/yr.

Consolidated Mutual

The District permanently controls 500 af/yr of reusable effluent from Consolidated Mutual Water Company.

Case No. 13CW3181

This decree includes conditional surface water rights from the South Platte River, both direct and storage, conditional alluvial well water rights, and a plan for augmentation and exchange. Case No. 13CW3181 includes two surface points of diversion (TCVS-01 and TCVS-02) and four augmented alluvial wells (TCQAL-1 through TCQAL-4). The decreed total annual diversion may not exceed 6,202 af/yr (10-year average) and 11,237 acre-feet in any single year. A total of 1,198 acre-feet of storage was also decreed utilizing the reservoirs within the District's Service Area (Smith, Signal 1, Signal 2, and Baselines East and West). The District is currently using about 564 acre-feet of storage, has the remaining amount under development, is currently utilizing diversions from TCVS-01, and wells TCQAL-1, TCQAL-2, and TCQAL-4.

In Water Year 2018 the District diverted approximately 2,538 acre-feet from the decreed structures and 1,509 acre-feet in Water Year 2019.

Case No. 16CW3019

TCVMD has decreed a conditional storage water right for the Mann Lakes Reservoir which is an off-channel, lined gravel pit reservoir complex consisting of three interconnected lakes know as Mann Lake No. 1, Mann Lake No. 2, and Mann Lake No. 3. A total of 3,741 acre-feet of storage is decreed to Mann Lakes. The decreed volumetric limit is 7,482 af/yr. Currently, the Mann Lakes reservoirs are legally available for use and in 2019 the District diverted approximately 1,656 acre-feet into the reservoir complex, utilizing Mann Lake Nos. 2 and 3.

Case No. 19CW3061

This decree was signed by the judge on June 15, 2022 and includes the relocation of 218 af of conditional storage rights from Baseline East, Baseline West, and Marcus Reservoir to the enlargement of Signal Reservoirs 1 & 2, enlargement rights of Signal Reservoirs 1 & 2, a partial third fill at Mann Lakes and direct flow surface rights at 14 points of diversion on the South Platte River. The enlargement of Signal Reservoir No. 1 adds 1,210 af for a total of 1,700 af. The enlargement of Signal Reservoir No. 2 (a second enlargement) adds 885 af for a total of 1,050 af. It also includes a partial third fill at Mann Lakes for an additional 2,306 acre-feet. This decree also includes 14 surface points of diversion on the South Platte River, WSP 1 – 14, with rates of 25 cfs each and 30 cfs cumulative at all 14 points of diversion. Volumetric limits were set for municipal uses in this decree. The total annual diversions under the Signal Reservoir No. 1 enlargement, the Signal Reservoir No. 2 second enlargement and municipal diversion at WSP 1 – 4 shall not exceed 2,180 af/yr on a ten-year rolling average and a single year not to exceed of 5,877 af.

Contract/Temporary Water Rights

The District is currently receiving water from South Adams County Water and Sanitation District (SACWSD) per the 2-way Mann Lakes IGA (repayment agreement section) between SACWSD and TCVMD. The agreed upon schedule is 1,000 af/yr, delivered at 250 af per month from July through October. As of the date of this report, SACWSD owes TCVMD 4,731 af. This amount increases as TCVMD spends to complete the Mann Lakes project. The total water owed is

expected to increase by another 5,000 af by the completion of the project.

EXISTING AND PROJECTED WATER DEMANDS

The District is currently relying on its surface water rights to meet the needs of the District and are utilizing their Denver Basin ground water rights as drought protection only. As of the date of this Report, the District is committed to provide potable and irrigation service to 2,865 residential units, ten commercial properties, and the irrigation of two parks, miscellaneous landscaping throughout the District and the Heritage Todd Creek Golf Course. The District manages two water rights portfolios, one to meet their potable demands and a second to meet their irrigation demands. The District runs on a two-pipe system where they only treat a portion of their surface water rights for potable uses and can provide untreated water for irrigation throughout the District. The estimated current demands, as outlined in Table 4, for those properties that are currently platted and have service agreements with the District are approximately 1,984 af/yr.

JUNIOR FIRM YIELD ANALYSIS

An operational model was built to determine what demands could be met with the water rights discussed above. This firm yield analysis utilized the Operational Model completed for Case No. 19CW3061 which includes the water rights decreed in Case Nos. 13CW3181 and 16CW3019. The total water rights available to the District at TCVS-01 and TCVS-02, as utilized in this operational analysis, are summarized in Table 5 as decreed in Case No. 13CW3181. The water rights available at Mann Lake are summarized in Table 6 as decreed in Case No. 16CW3019 and Table 7 as decreed in Case No. 19CW3061.

District Demands

Based on the demands outlined in Table 4, a total of 2,131 af/yr was utilized in the operational analysis (Table 8). This includes the potable demands and irrigation for the platted units. A conservative analysis was completed in regard to the demands of evaporation off of the storage reservoirs. It was assumed that the reservoirs were full throughout the operational model to maximize the evaporative demands on the system. As TCVMD utilizes the reservoirs as a single storage system with all the structures connect to each other, the analysis utilized a combine storage volume of 460 acre-feet at the District (Smith and Signal 2) with a combined surface area of 53 acres. For Mann Lakes, it was assumed that the District would only have available their portion of the Mann Lakes reservoir complex (58.15% of the total storage) which equates to 1,789 acre-feet and 93 surface acres. The conservative demands for evaporation at the District and Mann Lakes are provided in Tables 9 and 10, respectively. As shown, a total of 517 af/yr of evaporation was included in the operational analysis.

Analysis Results

Based on the water availability analysis and the demands on the system, a storage analysis was completed to determine the potential demands met. Table 11 shows the water remaining in storage after the monthly demands are met utilizing the District's available storage in Smith and Signal 2 totaling 460 af. This analysis provides excess storage to be carried over to meet the demands of the following month. There are months in which all demands were not met utilizing the TCVMD storage as shown in Table 12. Those additional demands were then modeled in the Mann Lakes Reservoir Complex. Table 13 shows the water remaining in storage after the remaining demands are met utilizing the District's storage in Mann Lakes and Table 14 provides

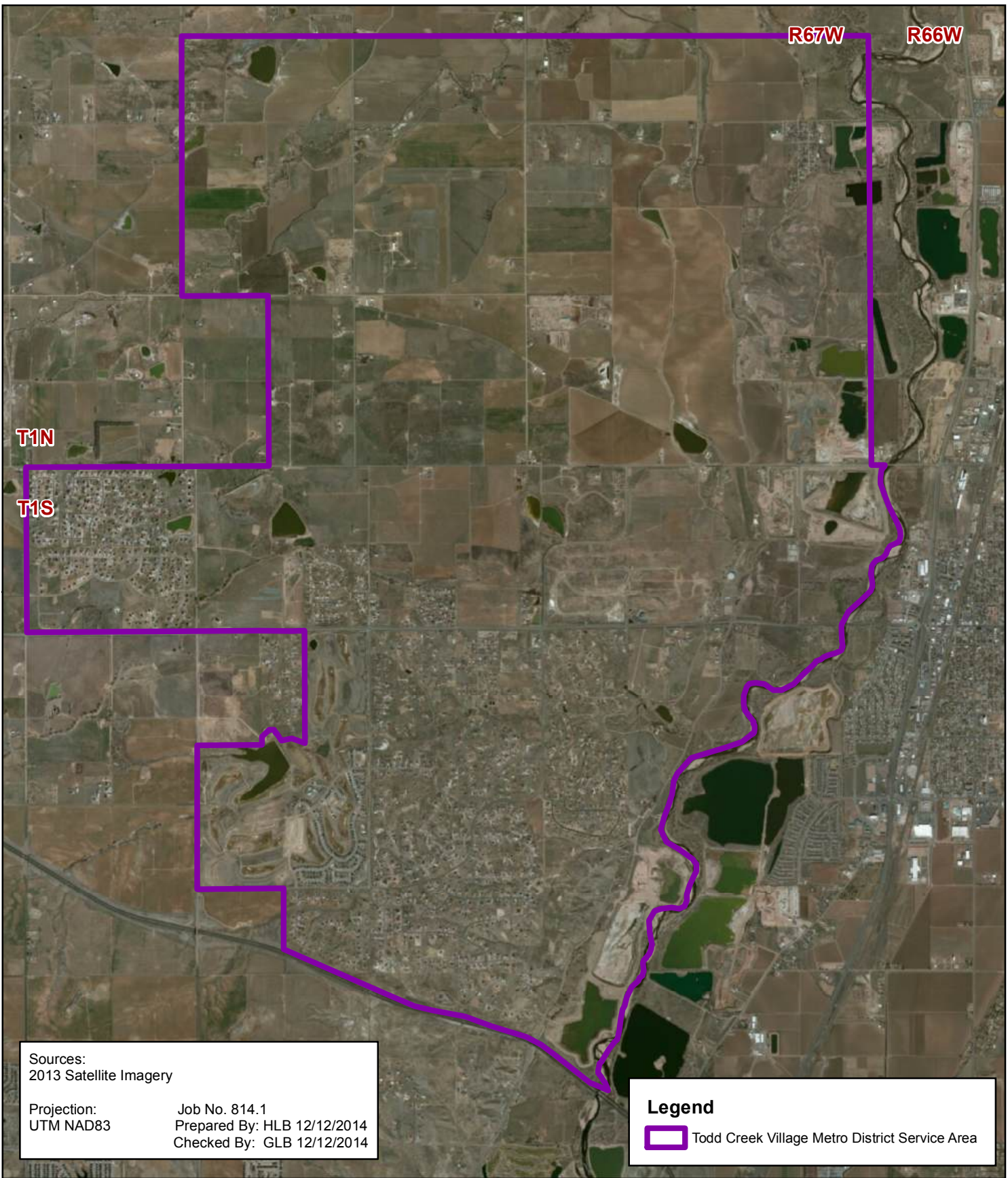
the demands met from water decreed in 16CW3019. The remaining demands not met by the water rights decreed in Case Nos. 13CW3181 and 16CW3019 were then modeled utilizing the water rights available from Case No. 19CW3061. For this update to the Water Supply Plan, we only utilized the storage available in Mann Lakes under Case No. 19CW3061 as the enlargements to Signal Reservoirs 1 and 2 have not been completed as of the date of this update. Table 15 shows the water remaining in storage after the remaining demands are met utilizing the District's refill right in Mann Lakes and the demands met is provided in Table 16.

As shown in Table 17, the junior surface water rights, with storage within the District and at Mann Lakes is sufficient to meet on average approximately 4,197 af/yr of the District's total demands. As shown in Table 18, when the District's junior water rights are added to their existing senior and ground water rights, the District can meet its total demands and has an excess of 4,540 af/yr for future demands.

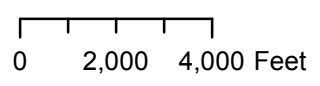
CONCLUSIONS

The Todd Creek Village Metropolitan District has sufficient water rights readily available to meet current and future demands within the District's Service Area. As of the date of this Report, the District's current and short-term future demands are approximately 1,984 af/yr. These demands will be met from water rights owned or controlled by the District. Those water rights currently include approximately 843 af/yr of currently decreed nontributary Laramie-Fox Hills ground water rights, 500 af/yr from Consolidated Mutual, 130 af/yr from the Old Brantner shares, 659 af/yr from the New Brantner shares, firm yield supplies from their decreed junior water rights, Case Nos. 13CW3181, 16CW3019, and 19CW3061 based on the analyses included herein and 4,731 af/yr in agreements. The District will also have right to withdraw and use additional Denver Basin ground water from the Laramie-Fox Hills aquifer once adjudicated in the estimated amounts of 1,206 af/yr for additional drought protection.

These readily available water rights, totaling more than 6,000 af/yr as shown in Table 18, are more than sufficient to meet the current and future needs of the District. The District's two-pipe system would allow the use of the 4,197 af/yr of firm water rights to meet the potable and irrigation demands of over 8,600 units.



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TCVMD Service Area



**Figure
1**

TABLE 1
TODD CREEK VILLAGE METROPOLITAN DISTRICT
DECREED DENVER BASIN GROUND WATER

Case No.	NNT Lower Arapahoe (af/yr)	NT LFH (af/yr)	Total af/yr
83CW136	-	27.3	27.3
87CW258	177.0	226.0	403.0
96CW242	23.8	14.5	38.3
97CW186	28.0	39.0	67.0
98CW396	27.4	38.1	65.5
98CW397	24.7	-	24.7
99CW042	-	34.0	34.0
99CW124	16.8	23.8	40.6
99CW141	28.7	38.0	66.7
00CW160	16.6	-	16.6
00CW254	41.5	133.9	175.4
02CW106	112.1	177.6	289.7
04CW108	46.2	91.2	137.4
Total	542.8	843.4	1386.2

Note: At the time of this report, the NNT Lower Arapahoe Aquifer ground water is not included in a plan for augmentation.

98CW397 was reduced by District's pro-rata share
(144 acres out of 149 acres decreed)

99CW124 was reduced by District's pro-rata share
(80 acres out of 160 acres decreed)

**TABLE 2
TODD CREEK VILLAGE METROPOLITAN DISTRICT
ESTIMATED DENVER BASIN GROUND WATER AVAILABLE**

*Dry Creek East
Township 1 North, Range 67 West, 6th P.M.*

Acres	Aquifer	Saturated Thickness ft	Sy	Estimated Appropriation acre-feet	Estimated Annual Appropriation 100 yrs af/yr	Status
530.1	Lower Arapahoe	96	0.17	8,644	86.44	NNT
	Laramie-Fox Hills	195	0.15	15,521	155.21	NT

*Todd Creek Shook
Portion of Section 3, Township 1 South, Range 67 West, 6th P.M.*

Acres	Aquifer	Saturated Thickness ft	Sy	Estimated Appropriation acre-feet	Estimated Annual Appropriation 100 yrs af/yr	Status
55	Lower Arapahoe	100	0.17	935	9.35	NNT
	Laramie-Fox Hills	189	0.15	1,559	15.59	NT

*Todd Creek Bartley
Portion of Section 2, Township 1 South, Range 67 West, 6th P.M.*

Acres	Aquifer	Saturated Thickness ft	Sy	Estimated Appropriation acre-feet	Estimated Annual Appropriation 100 yrs af/yr	Status
285	Lower Arapahoe	100	0.17	4,845	48.45	NNT
	Laramie-Fox Hills	189	0.15	8,080	80.80	NT

*Todd Creek Village
Township 1 South, Range 67 West, 6th P.M.*

Acres	Aquifer	Saturated Thickness ft	Sy	Estimated Appropriation acre-feet	Estimated Annual Appropriation 100 yrs af/yr	Status
3,004	Lower Arapahoe	100	0.17	51,068	510.68	NNT
	Laramie-Fox Hills	189	0.15	85,163	851.63	NT

*Todd Creek Seltzer
Portion of Section 34, Township 1 North, Range 67 West, and Portion of Section 3 and 4, Township 1 South,
Range 67 West, 6th P.M.*

Acres	Aquifer	Saturated Thickness ft	Sy	Estimated Appropriation acre-feet	Estimated Annual Appropriation 100 yrs af/yr	Status
381	Lower Arapahoe	91	0.17	5,913	59.13	NNT
339	Laramie-Fox Hills	203	0.15	10,295	102.95	NT

Notes: **At the time of this Report, the Denver Basin water rights included in this table have not been adjudicated.**

Dry Creek East Denver Basin water rights will be conveyed to the District once property is platted. Once conveyed, the District will adjudicate the water rights.

Todd Creek Village, Todd Creek Shook and Todd Creek Bartley Denver Basin water rights have been conveyed to the District.

The saturated thicknesses are to be considered estimates only.

**TABLE 3
TODD CREEK VILLAGE METROPOLITAN DISTRICT
SURFACE WATER RIGHTS & CONTRACTS**

Water Right	Contract/Shares	af/yr	Decree/SWSP	Uses	Notes
Old Brantner	17 shares	130	08CW165	Municipal	Decreed max annual
New Brantner	19.375 shares	659	shares	Irrigation	
Reusable Effluent	Consolidated Mutual	500	-	Municipal	Owned Water Stock/Contract
Jr Surface Water	-	6,202	13CW3181	Municipal	10-yr avg (decreed max 11,237 af/yr)
Jr Surface Water	-	7,482	16CW3019	Municipal	Decreed Volumetric Limit
Jr Surface Water	-	2,180	19CW3061	Municipal	10-yr avg (decreed max 5,877 af/yr)
SACWSD	Repayment Agreement	676	-	Municipal	To be paid annually over 7 years.
Total		17,829			

**TABLE 4
TODD CREEK VILLAGE METROPOLITAN DISTRICT
ESTIMATED CURRENT & FUTURE DEMANDS**

	Total units	Currently Served Units	Future Units	Potable af/yr/unit	Current af/yr	Future af/yr	Total Potable af/yr	Irrigation units	Irrigation af/yr/unit	Current af/yr	Future af/yr	Total Irrigation af/yr	Total Demands af/yr
Development (Platted)													
TCF 1	54	54	0	0.27	14.53	0.00	14.53	54	0.34	18.36	0.00	18.36	32.89
TCF 2	57	57	0	0.27	15.33	0.00	15.33	57	0.34	19.38	0.00	19.38	34.71
TCF 3	62	62	0	0.27	16.68	0.00	16.68	62	0.34	21.08	0.00	21.08	37.76
TCF 4	139	139	0	0.27	37.39	0.00	37.39	139	0.34	47.26	0.00	47.26	84.65
Foxridge	58	58	0	0.27	15.60	0.00	15.60	58	0.34	19.72	0.00	19.72	35.32
TCF 5	160	157	3	0.27	42.23	0.81	43.04	160	0.34	53.38	1.02	54.40	97.44
ES 1	185	184	1	0.27	49.50	0.27	49.77	185	0.34	62.56	0.34	62.90	112.67
Wheatlands	71	71	0	0.27	19.10	0.00	19.10	71	0.34	24.14	0.00	24.14	43.24
TCM 1	79	73	6	0.27	19.64	1.61	21.25	79	0.34	24.82	2.04	26.86	48.11
Silver Springs	52	52	0	0.27	13.99	0.00	13.99	52	0.34	17.68	0.00	17.68	31.67
Hawk Ridge	47	42	5	0.27	11.30	1.35	12.64	47	0.34	14.28	1.70	15.98	28.62
Jogan Estates	3	0	3	0.30	0.00	0.90	0.90	3	0.25	0.00	0.75	0.75	1.65
ESS	191	191	0	0.27	51.38	0.00	51.38	191	0.34	64.94	0.00	64.94	116.32
HTC	1,270	1,188	82	0.27	319.57	22.06	341.63	1,270	0.25	297.00	20.50	317.50	659.13
TC Bartley	179	178	1	0.30	53.40	0.30	53.70	179	0.34	60.52	0.34	60.86	114.56
TC Shook	64	64	0	0.30	19.20	0.00	19.20	64	0.34	21.76	0.00	21.76	40.96
Baseline Lakes	140	0	140	0.30	0.00	42.00	42.00	140	0.34	0.00	47.60	47.60	89.60
Baseline Lakes	54	49	5	0.27	13.18	1.35	14.53	54	0.34	16.66	1.70	18.36	32.89
Subtotals	2,865	2,619	246		712.01	70.64	782.65	2,865		783.54	75.99	859.53	1642.18
Commercial (Platted - 2010 Demands)													
HTC Club/Maint							3.65					11.70	15.35
TCVMD office							0.03					-	0.03
NH Church							0.88					-	0.88
Harvest Fellowship							0.24					0.39	0.63
TCVP&R ES Park							-					8.10	8.10
TCVP&R TCM Park							-					3.98	3.98
LS areas							-					69.90	69.90
Future HTC LS areas							-					120.00	120.00
HTC Golf Course							-					270.00	270.00
					Total		787.45					1,343.60	2,131.05
					Current		716.82					1,267.61	1,984.42
					Future		70.64					75.99	146.63

Notes:
Demands provided by Todd Creek Village Metropolitan District

TABLE 5
WATER AVAILABLE IN-PRIORITY TO A JUNIOR SOUTH PLATTE RIVER WATER RIGHT AT TCVMD
With Case No. 13CW3181 Volumetric Limits Applied
(Acre-Feet)

Water Year	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	Annual Total	10-yr Rolling Average
2001	0	1,507	2,460	2,222	2,460	2,380	209	0	0	0	0	0	11,237	
2002	2,380	2,460	2,460	2,222	1,716	0	0	0	0	0	0	0	11,237	
2003	0	0	0	0	0	0	0	79	0	0	0	0	79	
2004	0	0	0	0	0	0	0	238	0	0	79	0	317	
2005	0	0	0	0	0	79	0	1,269	0	0	0	238	1,587	
2006	0	0	0	159	476	0	0	0	0	0	0	0	635	
2007	0	555	793	555	0	635	2,460	1,666	0	0	0	0	6,665	
2008	0	1,111	1,666	0	0	0	0	0	0	238	0	0	3,015	
2009	0	793	0	0	0	555	397	2,301	714	79	555	2,460	7,855	
2010	2,380	2,460	2,460	793	2,222	923	0	0	0	0	0	0	11,237	5,386
2011	0	0	2,380	2,222	1,190	0	1,269	2,380	1,796	0	0	0	11,237	5,386
2012	2,380	2,460	2,460	2,301	1,637	0	0	0	0	0	0	0	11,237	5,386
2013	0	0	0	0	0	0	0	0	0	0	1,507	2,460	3,967	5,775
2014	476	2,380	1,725	0	0	0	0	0	0	0	0	0	4,581	6,201
2015	1,590	0	0	0	0	0	0	0	0	0	0	0	1,590	6,202
2016	625	0	0	0	0	0	0	0	0	0	0	0	625	6,201
2017	0	555	2,142	1,666	1,031	0	1,111	175	0	0	0	0	6,681	6,202
2018	0	1,349	1,650	0	0	0	0	0	0	0	0	0	2,999	6,201
Average	546	868	1,122	674	596	254	303	451	148	19	126	303	5,377	

Notes: Case No. 13CW3181 - calculations include diversion limit of 40 cfs and volumetric limits (max yr 11,237 af and 6,202 af 10-yr avg)
Months adjusted to keep within 10-yr rolling average volumetric limit - one example of how water right could be managed.

TABLE 6
WATER AVAILABLE IN-PRIORITY TO A JUNIOR SOUTH PLATTE RIVER WATER RIGHT AT MANN LAKES
With a Diversion Limitation of 21 cfs on the South Platte River - 16CW3019
(Acre-Feet)

Water Year	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	Annual Total
2001	0	791	1,291	1,166	1,291	1,250	833	583	167	0	109	0	7,482
2002	1,250	1,291	1,291	1,166	1,291	375	42	0	0	0	0	0	6,706
2003	0	0	0	0	0	0	0	42	0	0	0	0	42
2004	0	0	0	0	0	0	0	125	0	0	42	0	167
2005	0	0	0	0	0	42	0	666	0	0	0	125	833
2006	0	0	0	83	250	0	0	0	0	0	0	0	333
2007	0	292	417	292	0	333	1,291	875	0	0	0	0	3,499
2008	0	583	875	0	0	0	0	0	0	125	0	0	1,583
2009	0	417	0	0	0	292	208	1,208	375	42	292	1,291	4,124
2010	1,250	1,291	1,291	417	1,166	1,125	942	0	0	0	0	0	7,482
2011	0	0	1,250	1,166	625	0	666	1,250	1,041	0	625	859	7,482
2012	1,250	1,291	1,291	1,208	916	0	0	0	0	0	0	0	5,956
2013	0	0	0	0	0	0	0	0	0	0	791	1,291	2,083
2014	250	1,250	1,291	1,166	1,291	875	833	526	0	0	0	0	7,482
2015	1,250	1,291	1,291	1,166	1,291	833	359	0	0	0	0	0	7,482
2016	1,250	1,291	1,291	1,208	1,291	1,151	0	0	0	0	0	0	7,482
2017	0	292	1,125	875	541	0	583	791	0	0	125	1,208	5,540
2018	0	708	1,291	1,166	1,291	333	666	167	0	0	0	0	5,623
Average	361	599	778	616	625	367	357	346	88	9	110	265	4,521

Notes: Case No. 16CW3019 - calculations include diversion limit of 21 cfs and volumetric limit (7482 af)

TABLE 7
WATER AVAILABLE IN-PRIORITY TO A JUNIOR SOUTH PLATTE RIVER WATER RIGHT AT MANN LAKES
With a Diversion Limitation of 30 cfs on the South Platte River - 19CW3061
(Acre-Feet)

Water Year	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	Annual Total
2001	0	339	553	500	553	536	357	250	71	0	581	0	3,741
2002	536	553	553	500	553	161	18	0	0	0	0	0	2,874
2003	0	0	0	0	0	0	0	18	0	0	0	0	18
2004	0	0	0	0	0	0	0	54	0	0	18	0	71
2005	0	0	0	0	0	18	0	286	0	0	0	54	357
2006	0	0	0	36	107	0	0	0	0	0	0	0	143
2007	0	125	179	125	0	143	553	375	0	0	0	0	1,500
2008	0	250	375	0	0	0	0	0	0	54	0	0	678
2009	0	179	0	0	0	125	89	518	161	18	125	553	1,767
2010	536	553	553	179	500	482	498	440	0	0	0	0	3,741
2011	0	0	536	500	268	0	286	536	446	0	268	617	3,456
2012	536	553	553	518	393	0	0	0	0	0	0	0	2,553
2013	0	0	0	0	0	0	0	0	0	0	339	553	893
2014	107	536	553	500	553	375	357	760	0	0	0	0	3,741
2015	536	553	553	500	553	357	688	0	0	0	0	0	3,741
2016	536	553	553	518	553	141	886	0	0	0	0	0	3,741
2017	0	125	482	375	232	0	250	339	0	0	54	518	2,374
2018	0	303	553	500	553	143	286	71	0	0	0	0	2,410
Average	155	257	333	264	268	138	237	203	38	4	77	128	2,100

Notes: Case No. 19CW3061 - calculations include diversion limit of 30 cfs and volumetric limit (3,741 af)

**TABLE 8
TCVMD DEMANDS**

(Acre-Feet)

Water Year	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	Annual Total
2001	83	48	57	45	53	80	193	360	377	331	243	263	2,131
2002	83	48	57	45	53	80	193	360	377	331	243	263	2,131
2003	83	48	57	45	53	80	193	360	377	331	243	263	2,131
2004	83	48	57	45	53	80	193	360	377	331	243	263	2,131
2005	83	48	57	45	53	80	193	360	377	331	243	263	2,131
2006	83	48	57	45	53	80	193	360	377	331	243	263	2,131
2007	83	48	57	45	53	80	193	360	377	331	243	263	2,131
2008	83	48	57	45	53	80	193	360	377	331	243	263	2,131
2009	83	48	57	45	53	80	193	360	377	331	243	263	2,131
2010	83	48	57	45	53	80	193	360	377	331	243	263	2,131
2011	83	48	57	45	53	80	193	360	377	331	243	263	2,131
2012	83	48	57	45	53	80	193	360	377	331	243	263	2,131
2013	83	48	57	45	53	80	193	360	377	331	243	263	2,131
2014	83	48	57	45	53	80	193	360	377	331	243	263	2,131
2015	83	48	57	45	53	80	193	360	377	331	243	263	2,131
2016	83	48	57	45	53	80	193	360	377	331	243	263	2,131
2017	83	48	57	45	53	80	193	360	377	331	243	263	2,131
2018	83	48	57	45	53	80	193	360	377	331	243	263	2,131
Average	83	48	57	45	53	80	193	360	377	331	243	263	2,131

TABLE 9
TCVMD ESTIMATED RESERVOIR EVAPORATION
Conservative Analysis - Assumed Storage Full
(Acre-Feet)

Water Year	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	Annual Total
2001	7	5	5	6	9	13	19	26	27	22	18	12	168
2002	7	5	5	6	9	13	19	26	27	22	18	12	168
2003	7	5	5	6	9	13	19	26	27	22	18	12	168
2004	7	5	5	6	9	13	19	26	27	22	18	12	168
2005	7	5	5	6	9	13	19	26	27	22	18	12	168
2006	7	5	5	6	9	13	19	26	27	22	18	12	168
2007	7	5	5	6	9	13	19	26	27	22	18	12	168
2008	7	5	5	6	9	13	19	26	27	22	18	12	168
2009	7	5	5	6	9	13	19	26	27	22	18	12	168
2010	7	5	5	6	9	13	19	26	27	22	18	12	168
2011	7	5	5	6	9	13	19	26	27	22	18	12	168
2012	7	5	5	6	9	13	19	26	27	22	18	12	168
2013	7	5	5	6	9	13	19	26	27	22	18	12	168
2014	7	5	5	6	9	13	19	26	27	22	18	12	168
2015	7	5	5	6	9	13	19	26	27	22	18	12	168
2016	7	5	5	6	9	13	19	26	27	22	18	12	168
2017	7	5	5	6	9	13	19	26	27	22	18	12	168
2018	7	5	5	6	9	13	19	26	27	22	18	12	168
Average	7	5	5	6	9	13	19	26	27	22	18	12	168

Notes: Smith and Signal 2 included in study.
Conservative estimate of evaporation - assumed full year-round

TABLE 10
MANN LAKES ESTIMATED RESERVOIR EVAPORATION
Conservative Analysis - Assumed Storage Full
(Acre-Feet)

Water Year	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	Annual Total
2001	14	10	10	12	19	31	42	51	52	47	35	24	349
2002	14	10	10	12	19	31	42	51	52	47	35	24	349
2003	14	10	10	12	19	31	42	51	52	47	35	24	349
2004	14	10	10	12	19	31	42	51	52	47	35	24	349
2005	14	10	10	12	19	31	42	51	52	47	35	24	349
2006	14	10	10	12	19	31	42	51	52	47	35	24	349
2007	14	10	10	12	19	31	42	51	52	47	35	24	349
2008	14	10	10	12	19	31	42	51	52	47	35	24	349
2009	14	10	10	12	19	31	42	51	52	47	35	24	349
2010	14	10	10	12	19	31	42	51	52	47	35	24	349
2011	14	10	10	12	19	31	42	51	52	47	35	24	349
2012	14	10	10	12	19	31	42	51	52	47	35	24	349
2013	14	10	10	12	19	31	42	51	52	47	35	24	349
2014	14	10	10	12	19	31	42	51	52	47	35	24	349
2015	14	10	10	12	19	31	42	51	52	47	35	24	349
2016	14	10	10	12	19	31	42	51	52	47	35	24	349
2017	14	10	10	12	19	31	42	51	52	47	35	24	349
2018	14	10	10	12	19	31	42	51	52	47	35	24	349
Average	14	10	10	12	19	31	42	51	52	47	35	24	349

Notes: TCVMD area of 93 acres
Conservative estimate of evaporation - assumed full year-round

TABLE 11
WATER AVAILABLE IN STORAGE AFTER DEMANDS ARE MET
LIMITED TO 460 af WITHIN DISTRICT - 13CW3181
(Acre-Feet)

Water Year	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
2001	0	460	460	460	460	460	52	0	0	0	0	0
2002	460	460	460	460	460	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0	0	0	0	0	0
2005	0	0	0	0	0	0	0	460	0	0	0	0
2006	0	0	0	0	10	0	0	0	0	0	0	0
2007	0	98	425	460	0	138	460	460	0	0	0	0
2008	0	460	460	5	0	0	0	0	0	0	0	0
2009	0	336	0	0	0	59	0	460	367	0	0	460
2010	460	460	460	460	460	460	0	0	0	0	0	0
2011	0	0	460	460	460	0	460	460	460	0	0	0
2012	460	460	460	460	460	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0	0	0	0	460	460
2014	442	460	460	5	0	0	0	0	0	0	0	0
2015	460	3	0	0	0	0	0	0	0	0	0	0
2016	131	0	0	0	0	0	0	0	0	0	0	0
2017	0	98	460	460	460	0	460	0	0	0	0	0
2018	0	460	460	5	0	0	0	0	0	0	0	0
Average	134	209	254	180	154	62	80	102	46	0	26	51

**TABLE 12
DEMANDS MET WITH TCVMD STORAGE - 13CW3181**

Water Year	(Acre-Feet)												Annual Total
	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	
2001	0	452	461	449	457	484	597	52	0	0	0	0	2,953
2002	487	452	461	449	457	460	0	0	0	0	0	0	2,767
2003	0	0	0	0	0	0	0	79	0	0	0	0	79
2004	0	0	0	0	0	0	0	238	0	0	79	0	317
2005	0	0	0	0	0	79	0	764	460	0	0	238	1,541
2006	0	0	0	159	457	10	0	0	0	0	0	0	626
2007	0	452	461	449	457	484	597	764	460	0	0	0	4,124
2008	0	452	461	449	5	0	0	0	0	238	0	0	1,605
2009	0	452	336	0	0	484	455	764	781	446	555	667	4,940
2010	487	452	461	449	457	484	460	0	0	0	0	0	3,251
2011	0	0	461	449	457	460	597	764	781	460	0	0	4,430
2012	487	452	461	449	457	460	0	0	0	0	0	0	2,767
2013	0	0	0	0	0	0	0	0	0	0	647	667	1,314
2014	487	452	461	449	5	0	0	0	0	0	0	0	1,854
2015	487	452	3	0	0	0	0	0	0	0	0	0	942
2016	487	131	0	0	0	0	0	0	0	0	0	0	618
2017	0	452	461	449	457	460	597	635	0	0	0	0	3,512
2018	0	452	461	449	5	0	0	0	0	0	0	0	1,367
Average	162	283	275	258	204	215	184	226	138	64	71	87	2,167

Notes: Includes source water from 13CW3181
Storage in J.B. Smith and Signal 2

TABLE 13
WATER AVAILABLE IN STORAGE AFTER DEMANDS ARE MET
LIMITED TO 1789 af AT MANN LAKES - 16CW3019
(Acre-Feet)

Water Year	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
2001	0	781	1,789	1,789	1,789	1,789	1,789	1,610	943	161	0	0
2002	1,236	1,789	1,789	1,789	1,789	1,789	1,192	377	0	0	0	0
2003	0	0	0	0	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0	0	0	0	0	0
2005	0	0	0	0	0	0	0	616	243	0	0	0
2006	0	0	0	0	231	0	0	0	0	0	0	0
2007	0	281	687	967	947	1,249	1,789	1,789	1,416	634	0	0
2008	0	573	1,437	1,425	953	438	0	0	0	0	0	0
2009	0	406	271	0	0	260	285	1,442	1,765	1,471	1,636	1,789
2010	1,789	1,789	1,789	1,789	1,789	1,789	1,789	974	141	0	0	0
2011	0	0	1,239	1,789	1,789	1,734	1,789	1,789	1,789	1,467	1,410	1,578
2012	1,789	1,789	1,789	1,789	1,789	1,734	1,095	280	0	0	0	0
2013	0	0	0	0	0	0	0	0	0	0	757	1,789
2014	1,789	1,789	1,789	1,789	1,789	1,789	1,789	1,500	667	0	0	0
2015	1,236	1,789	1,789	1,789	1,789	1,789	1,509	695	0	0	0	0
2016	1,236	1,789	1,789	1,789	1,789	1,789	1,150	335	0	0	0	0
2017	0	281	1,395	1,789	1,789	1,734	1,789	1,789	956	174	0	517
2018	16	713	1,789	1,789	1,789	1,607	1,635	987	153	0	0	0
Average	505	765	1,075	1,127	1,112	1,083	978	788	448	217	211	315

**TABLE 14
DEMANDS MET WITH MANN LAKES STORAGE - 16CW3019**

Water Year	(Acre-Feet)												Annual Total
	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	
2001	0	0	0	0	0	0	0	712	781	735	271	0	2,498
2002	0	0	0	0	0	24	597	764	377	0	0	0	1,762
2003	0	0	0	0	0	0	0	42	0	0	0	0	42
2004	0	0	0	0	0	0	0	125	0	0	42	0	167
2005	0	0	0	0	0	42	0	0	321	243	0	125	730
2006	0	0	0	83	0	231	0	0	0	0	0	0	314
2007	0	0	0	0	0	0	0	0	321	735	634	0	1,690
2008	0	0	0	0	453	484	438	0	0	125	0	0	1,499
2009	0	0	125	271	0	0	142	0	0	289	91	0	918
2010	0	0	0	0	0	0	137	764	781	141	0	0	1,823
2011	0	0	0	0	0	24	0	0	0	275	647	667	1,612
2012	0	0	0	0	0	24	597	764	280	0	0	0	1,665
2013	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	0	0	0	0	453	484	597	764	781	667	0	0	3,745
2015	0	0	458	449	457	484	597	764	695	0	0	0	3,904
2016	0	321	461	449	457	484	597	764	335	0	0	0	3,869
2017	0	0	0	0	0	24	0	129	781	735	299	667	2,634
2018	487	0	0	0	453	484	597	764	781	153	0	0	3,719
Average	27	18	58	70	126	155	239	353	346	228	110	81	1,811

TABLE 15
WATER AVAILABLE IN STORAGE AFTER DEMANDS ARE MET
LIMITED TO 1789 af AT MANN LAKES - 19CW3061
(Acre-Feet)

Water Year	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
2001	0	339	0	0	0	0	0	179	251	251	456	0
2002	536	0	0	0	0	0	18	18	0	0	0	0
2003	0	0	0	0	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0	0	0	0	0	0
2005	0	0	0	0	0	0	0	286	286	0	0	0
2006	0	0	0	0	107	0	0	0	0	0	0	0
2007	0	125	303	428	428	540	0	0	0	0	0	0
2008	0	250	352	352	352	352	193	0	0	0	0	0
2009	0	179	179	0	0	125	214	347	24	42	153	0
2010	0	0	0	0	0	0	0	440	440	0	0	0
2011	0	0	536	0	0	0	0	0	0	0	268	211
2012	0	0	0	0	0	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0	0	0	0	339	0
2014	0	0	0	0	0	0	0	289	289	221	0	0
2015	536	0	0	0	0	0	280	280	193	0	0	0
2016	536	0	0	0	0	0	639	639	193	0	0	0
2017	0	125	394	0	0	0	0	0	0	0	0	518
2018	518	821	0	0	0	143	154	226	226	0	0	0
Average	118	102	98	43	49	64	83	150	106	29	68	40

TABLE 16
DEMANDS MET WITH MANN LAKES ADDITIONAL FILL - 19CW3061

Water Year	(Acre-Feet)												Annual Total
	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	
2001	0	0	0	0	0	0	0	0	0	0	376	456	832
2002	0	0	0	0	0	0	0	0	18	0	0	0	18
2003	0	0	0	0	0	0	0	18	0	0	0	0	18
2004	0	0	0	0	0	0	0	54	0	0	18	0	71
2005	0	0	0	0	0	18	0	0	0	286	0	54	357
2006	0	0	0	36	0	107	0	0	0	0	0	0	143
2007	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	159	193	0	54	0	0	406
2009	0	0	0	179	0	0	0	0	0	0	0	0	179
2010	0	0	0	0	0	0	0	0	0	440	0	0	440
2011	0	0	0	0	0	0	0	0	0	0	0	0	0
2012	0	0	0	0	0	0	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	0	0	0	0	0	0	0	0	0	68	221	0	289
2015	0	0	0	0	0	0	0	0	86	193	0	0	280
2016	0	0	0	0	0	0	0	0	446	193	0	0	639
2017	0	0	0	0	0	0	0	0	0	0	54	0	54
2018	0	0	0	0	0	0	0	0	0	226	0	0	226
Average	0	0	0	12	0	7	9	15	31	81	37	28	219

**TABLE 17
TOTAL DEMANDS MET**

Water Year	(Acre-Feet)												Annual Total
	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	
2001	0	452	461	449	457	484	597	764	781	735	647	456	6,283
2002	487	452	461	449	457	484	597	764	395	0	0	0	4,547
2003	0	0	0	0	0	0	0	139	0	0	0	0	139
2004	0	0	0	0	0	0	0	417	0	0	139	0	555
2005	0	0	0	0	0	139	0	764	781	528	0	417	2,629
2006	0	0	0	278	457	348	0	0	0	0	0	0	1,083
2007	0	452	461	449	457	484	597	764	781	735	634	0	5,814
2008	0	452	461	449	457	484	597	193	0	417	0	0	3,510
2009	0	452	461	449	0	484	597	764	781	735	647	667	6,036
2010	487	452	461	449	457	484	597	764	781	581	0	0	5,514
2011	0	0	461	449	457	484	597	764	781	735	647	667	6,042
2012	487	452	461	449	457	484	597	764	280	0	0	0	4,432
2013	0	0	0	0	0	0	0	0	0	0	647	667	1,314
2014	487	452	461	449	457	484	597	764	781	735	221	0	5,889
2015	487	452	461	449	457	484	597	764	781	193	0	0	5,126
2016	487	452	461	449	457	484	597	764	781	193	0	0	5,126
2017	0	452	461	449	457	484	597	764	781	735	353	667	6,199
2018	487	452	461	449	457	484	597	764	781	379	0	0	5,312
Average	190	301	333	340	330	376	431	593	515	372	219	197	4,197

TABLE 18
TOTAL WATER AVAILABLE TO TCVMD
Junior, Senior and Ground Water
 (acre-feet/year)

Junior Avg Firm Yield	Senior Surface Rights	SACWSD Agreement	Denver Basin Ground Water	Annual Total	Current Demands	Excess Avail
4,197	954	676	843	6,671	2,131	4,540

STATEMENT OF AUTHORITY

- 1. This Statement of Authority relates to an entity named Seltzer Farms, Inc., a Colorado corporation
And is executed on behalf of the entity pursuant to the provisions of Section 38-30-172, C.R.S.
2. The type of entity is a:
Corporation
Nonprofit Corporation
Limited Liability Company
General Partnership
Limited Partnership
Registered Limited Liability Partnership
Registered Limited Liability Limited Partnership
Limited Partnership Association
Government or Governmental Subdivision or Agency
Trust
3. The entity is formed under the law of the State of Colorado
4. The mailing address for the entity is 9390 E. 168th Ave., Brighton, CO 80602
5. The name and position of each person authorized to execute instruments conveying, encumbering or otherwise affecting title to real property on behalf of the entity is:
Rex A. Seltzer, President
Gregory J. Seltzer Vice President/Treasurer
Sherry L. Kreutzer Vice President/Secretary
6. The authority of the foregoing person(s) to bind the entity is X not limited
7. Other matters concerning the manner in which the entity deals with interests in real property:
8. The Statement of Authority is executed on behalf of the entity pursuant to the provisions of Section 38-30-172, C.R.S.
9. This Statement of Authority amends and supersedes in all respects any prior Statement of Authority executed on behalf of the entity.

Executed on September ____, 2024.

SELLER:
Seltzer Farms, Inc., a Colorado corporation

By: Rex A Seltzer
Name: Rex A Seltzer
Title: President

By: Gregory J Seltzer
Name: Gregory J Seltzer
Title: Vice President/Treasurer

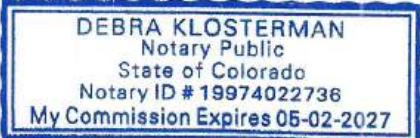
By: Sherry L Kreutzer
Name: Sherry L Kreutzer
Title: Vice President/Secretary

State of Colorado
County of Adams) ss

The foregoing instrument was acknowledged before me this 4 day of September, 2024 by Rex A. Seltzer, as President, Gregory J. Seltzer, as Vice President/Treasurer, and Sherry L. Kreutzer, as Vice President/Secretary of Seltzer Farms, Inc., a Colorado corporation.

Witness my hand and official seal

Debra Klosterman
Notary Public
My commission expires: 5-2-2027



TODD CREEK VILLAGE

PRELIMINARY PUD PLAN - MAJOR AMENDMENT

1 OF 26
CASE NO. _____

COVER SHEET

CERTIFICATE OF OWNERSHIP

(TODD CREEK VILLAGE, LLC), BEING THE OWNER OR REPRESENTATIVE OF THE TODD CREEK VILLAGE PUD LOCATED IN THE COUNTY OF ADAMS, STATE OF COLORADO, HEREBY SUBMITS THIS PRELIMINARY PLANNED UNIT DEVELOPMENT MAJOR AMENDMENT AND AGREES TO PERFORM UNDER THE TERMS NOTED HEREON.

(OWNERS SIGNATURE)

THE OWNERS SIGNATURE(S) SHALL BE ACKNOWLEDGED AS FOLLOWS:

STATE) _____

COUNTY)SS _____

CITY) _____

THE FOREGOING OWNERSHIP CERTIFICATE WAS ACKNOWLEDGED BEFORE ME THIS _____, DAY OF _____, 20____.

NOTARY PUBLIC _____

MY COMMISSION EXPIRES: _____

PLANNING COMMISSION APPROVAL:

APPROVED BY THE ADAMS COUNTY PLANNING COMMISSION THIS _____, DAY OF _____, 20____.

CHAIRMAN

BOARD OF COUNTY COMMISSIONERS APPROVAL:

APPROVED BY THE ADAMS COUNTY BOARD OF COMMISSIONERS THIS _____, DAY OF _____, 20____.

CHAIRMAN

CERTIFICATE OF THE CLERK AND RECORDER:

THIS MAJOR PUD AMENDMENT WAS FILED FOR RECORD IN THE OFFICE OF THE ADAMS COUNTY CLERK AND RECORDER IN THE STATE OF COLORADO AT ____M.

ON THE _____, DAY OF _____, 20____.

COUNTY CLERK AND RECORDER

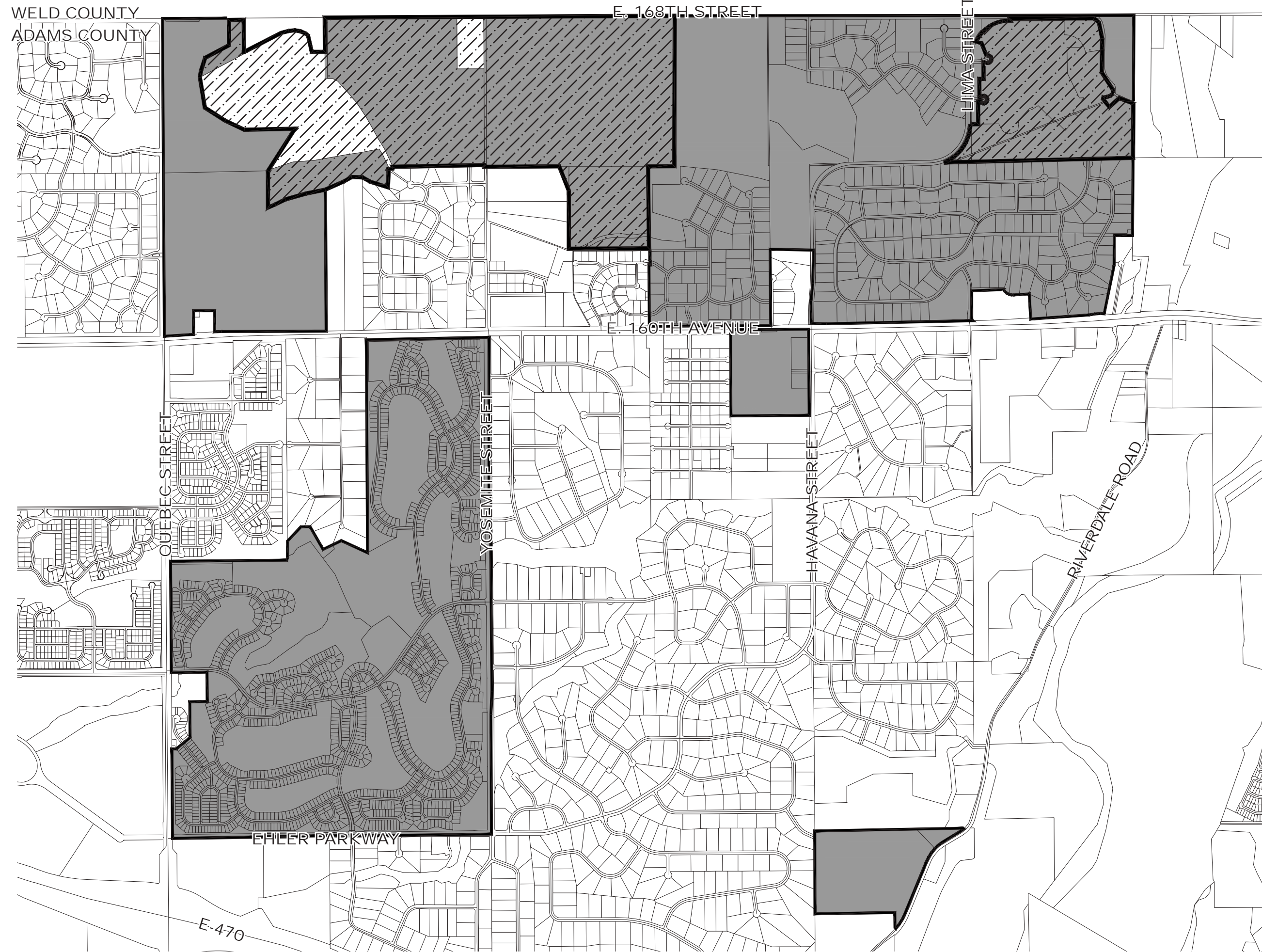
ADDITIONS AND DELETIONS BLOCK

THE FOLLOWING ADDITIONS AND DELETIONS IN THE P.U.D. WERE MADE BY THE BOARD OF COUNTY COMMISSIONERS AT THE TIME OF APPROVAL.

STAFF REVIEW:

APPROVED AS TO FORM BY:


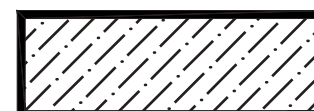
COUNTY ATTORNEY



SHEET INDEX

Sheet Title	Sheet Numbers
COVER SHEET	1
CONCEPT PLAN	2
LAND USE PLAN & SUMMARY	3
LAND USE ZONING MAP ENLARGEMENTS	4-6
PUD AMENDMENT LAND USE AND ZONING DEVELOPMENT STANDARDS	7-13
PARKS AND OPEN SPACE PLAN	14
ACTIVE OPEN SPACE & PARKS CONCEPT PLANS	15-25
MULTI-MODAL TRANSPORTATION PLAN	26

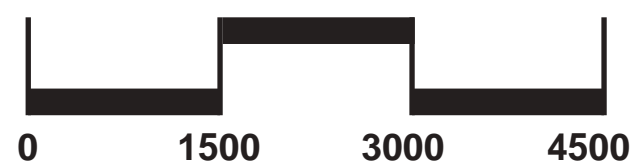
LEGEND

-  AREAS WITHIN ORIGINAL TODD CREEK VILLAGE P.U.D.
-  AREAS SUBJECT TO TODD CREEK VILLAGE MAJOR P.U.D. AMENDMENT



NORTH

SCALE: 1" = 1,500'



pcs group
LAND PLANNING / LANDSCAPE ARCHITECTURE
200 KALAMATH ST. DENVER, CO 80223
(303) 531-4905
WWW.PCSGROUPCO.COM

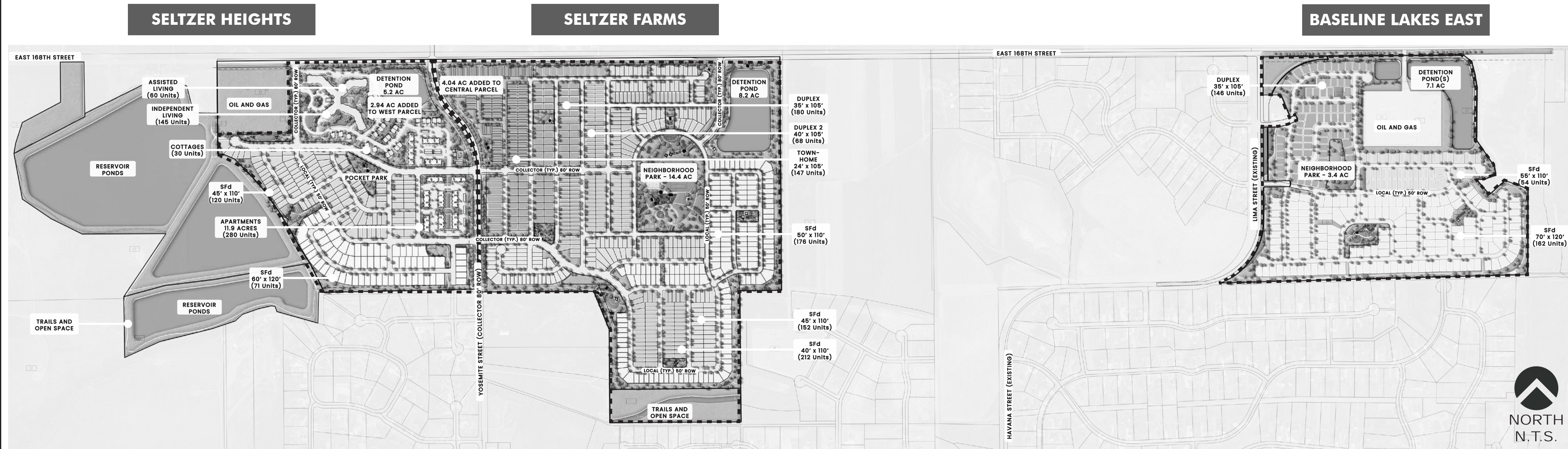
KT
KT ENGINEERING
ENGINEERS • SURVEYORS
12500 W. 58th AVE. #230
ARVADA, CO 80002
PH: 720.638.5190

DATE	REV
6-9-2023	REV-1
2-9-2024	REV-2
4-29-2024	REV-3
9-9-2024	

TODD CREEK VILLAGE

PRELIMINARY PUD PLAN - MAJOR AMENDMENT

CONCEPT PLAN



SELTZER HEIGHTS		
HOUSING TYPE	LOT SIZE	DU'S DEPICTED
SFD FRONT LOAD	45' X 110'	120 UNITS
SFD FRONT LOAD	60' X 120'	71 UNITS
Sub Total		191
APARTMENTS	11.9 ACRES	280 UNITS
394 PARKING SPOTS DEPICTED 1.4 SPOTS PER UNIT		
Sub Total		280
ASSISTED LIVING CAMPUS	18.70 ACRES	235 UNITS
INDEPENDENT LIVING	145 UNITS	
ASSISTED LIVING	60 UNITS	
COTTAGES	30 UNITS	
Sub Total		235
TOTAL		706

SELTZER FARMS		
HOUSE TYPE	LOT SIZE	DU'S DEPICTED
SFD FRONT LOAD	50' X 110'	176
SFD FRONT LOAD	45' X 105'	152
SFD FRONT LOAD	40' X 105'	212
DUPLEX	35' X 105'	180
DUPLEX 2	40' X 105'	68
TOWNHOME	24' X 105'	147
Total		935

BASELINE LAKES EAST		
HOUSE TYPE	LOT SIZE	DU'S DEPICTED
SFD FRONT LOAD	70' X 120'	162
SFD FRONT LOAD	55' X 110'	54
DUPLEX	35' X 105'	146
Total		362

TODD CREEK OVERALL PROPERTY		
HOUSE TYPE	LOT SIZE	DU'S DEPICTED
SFD FRONT LOAD	70' X 120'	162
SFD FRONT LOAD	60' X 120'	71 UNITS
SFD FRONT LOAD	55' X 110'	54
SFD FRONT LOAD	50' X 110'	176
SFD FRONT LOAD	45' X 105'	272
SFD FRONT LOAD	40' X 105'	212
DUPLEX	35' X 105'	326
DUPLEX 2	40' X 105'	68
TOWNHOME	24' X 105'	147
Sub Total		1,488
ASSISTED LIVING CAMPUS	20.80 ACRES	235 UNITS
INDEPENDENT LIVING	145 UNITS	
ASSISTED LIVING	60 UNITS	
COTTAGES	30 UNITS	
Sub Total		235
TOTAL		1,723

NOTE:

- This graphic is for illustrative and concept purposes only and may be subject to change with the design development. However, densities, # of units and planning area acreages shall remain within 10% of the proposed design without a PUD Amendment.
- The ultimate roadway design and widths are up to the discretion of Adams County and are not subject to regulation by this Planned Unit Development.

LAND PLANNING / LANDSCAPE ARCHITECTURE
200 KALAMATH ST. DENVER, CO 80223
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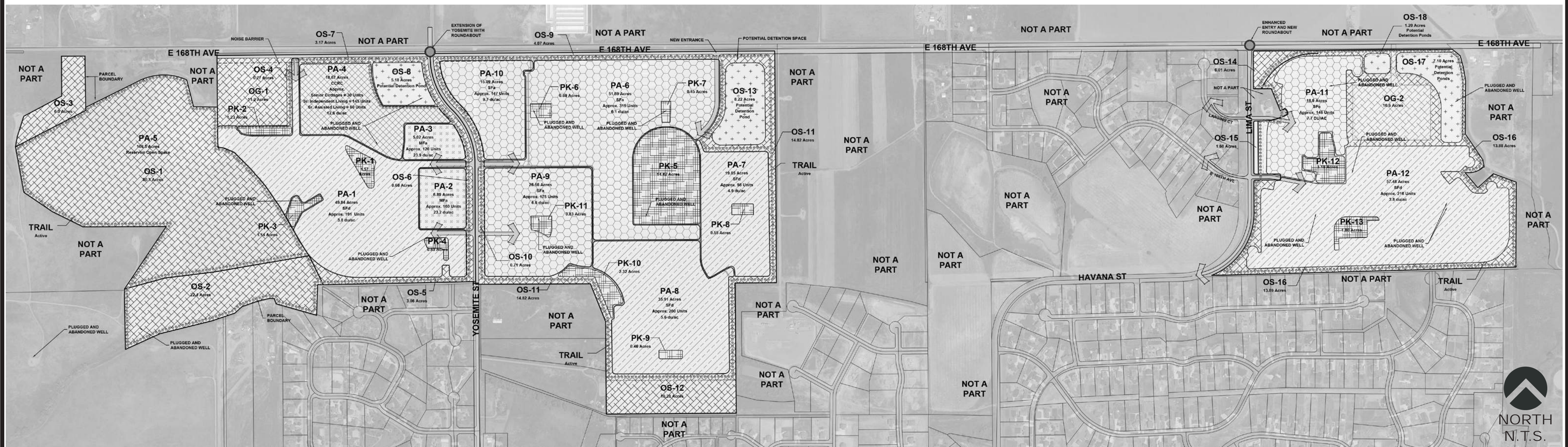
KT ENGINEERING
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12500 W. 58th AVE. #230
ARVADA, CO 80002
PH: 720.638.5190

DATE	6-9-2023
REV-1	2-9-2024
REV-2	4-29-2024
REV-3	9-9-2024

TODD CREEK VILLAGE

PRELIMINARY PUD PLAN - MAJOR AMENDMENT

LAND USE SUMMARY



LAND USE MATRIX
7/30/2024

A. Land Use Item	B. Planning Area Map Number	C. Map Area Code	D. Gross Land Area in Acres	E. Percentage of Total Land Area	F. Land Use Formula (DU/AC)	G. Proposed Maximum Density (In DUs)	H. Details and Comments
1. OPEN SPACE AND TRAIL CORRIDORS	OS-1	OS	80.1	14.4%			Gross Reservoir Open Space With Trail Corridor
	OS-2	OS	22.4	4.0%			Gross Reservoir Open Space With Trail Corridor
	OS-3	OS	6.0	1.1%			Gross Reservoir Open Space
	OS-4	OS	0.8	0.1%			Gross Open Space With Trail Corridor
	OS-5	OS	3.1	0.6%			Gross Open Space With Trail Corridor
	OS-6	OS	0.7	0.1%			Gross Open Space With Trail Corridor
	OS-7	OS	3.2	0.6%			Gross Open Space With Trail Corridor
	OS-8	OS	5.2	0.9%			Potential Detention Area
	OS-9	OS	4.1	0.7%			Gross Open Space With Trail Corridor
	OS-10	OS	0.7	0.1%			Gross Open Space With Trail Corridor
	OS-11	OS	14.8	2.7%			Gross Open Space With Trail Corridor
	OS-12	OS	10.3	1.9%			Gross Open Space
	OS-13	OS	8.2	1.5%			Potential Detention Area
	OS-14	OS	6.0	1.1%			Gross Open Space With Trail Corridor
	OS-15	OS	1.6	0.3%			Gross Open Space With Trail Corridor
	OS-16	OS	13.9	2.5%			Gross Open Space With Trail Corridor
	OS-17	OS	7.1	1.3%			Potential Detention Area
	OS-18	OS	1.2	0.2%			Potential Detention Area
OG-1	OG	11.2	2.0%				
OG-2	OG	10.6	1.9%			Oil and Gas (Will be Open Space when wells are abandoned in future)	
2. PARK & RECREATION AREAS	PK-1	PK	1.6	0.3%			Pocket Park
	PK-2	PK	1.2	0.2%			Pocket Park
	PK-3	PK	1.1	0.2%			Pocket Park
	PK-4	PK	0.8	0.1%			Pocket Park
	PK-5	PK	14.4	2.6%			Neighborhood Park
	PK-6	PK	0.7	0.1%			Pocket Park
	PK-7	PK	0.5	0.1%			Pocket Park
	PK-8	PK	0.6	0.1%			Pocket Park
	PK-9	PK	0.5	0.1%			Pocket Park
	PK-10	PK	2.3	0.4%			Pocket Park
	PK-11	PK	0.8	0.1%			Pocket Park
	PK-12	PK	3.2	0.6%			Neighborhood Park
	PK-13	PK	1.8	0.3%			Pocket Park

NOTE:

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A. Land Use Item	B. Planning Area Map Number	C. Map Area Code	D. Gross Land Area in Acres	E. Percentage of Total Land Area	F. Land Use Formula (DU/AC)	G. Proposed Maximum Density (In DUs)	H. Details and Comments
3. DEVELOPMENT AREAS	PA-1	SFd	49.8	9.0%	3.8 DU/AC	191	
	PA-2	MFa	6.9	1.2%	23.2 DU/AC	160	
	PA-3	MFa	5.0	0.9%	23.9 DU/AC	120	
	PA-4	CCRC	18.7	3.4%	12.6 DU/AC	30	Senior Cottages
						145	Senior Independent Living
						60	Senior Assisted Living
	PA-5	N/A		0.0%	0.0 DU/AC	0	
	PA-6	SFa	51.7	9.3%	6.1 DU/AC	315	
	PA-7	SFd	19.9	3.6%	5.0 DU/AC	99	
	PA-8	Sfd	35.9	6.5%	5.6 DU/AC	200	
	PA-9	SFa	26.6	4.8%	6.6 DU/AC	175	
	PA-10	SFa	15.1	2.7%	9.7 DU/AC	147	
PA-11	SFa	18.9	3.4%	7.7 DU/AC	146		
PA-12	SFd	57.5	10.4%	3.8 DU/AC	216		
4. ADJACENT ROW (YOSEMITE ST. & E. 168TH AVE)			8.8	1.6%			
5. TOTAL DEVELOPMENT AREAS - MINUS ADJACENT ROW (YOSEMITE, E-168TH AVE)			546.4	98.4%			
6. Total Map Acreage (Total figures above)			555.2	100.0%	3.61 SITE DU/AC	2,004	
7. Applicant's Acreage Listed in Application			555.2				
8. REQUIRED Open Space & Park Acreage			166.6	30%			
9. PROPOSED Open Space & Park Acreage within Property Boundaries			240.5	43.3%			

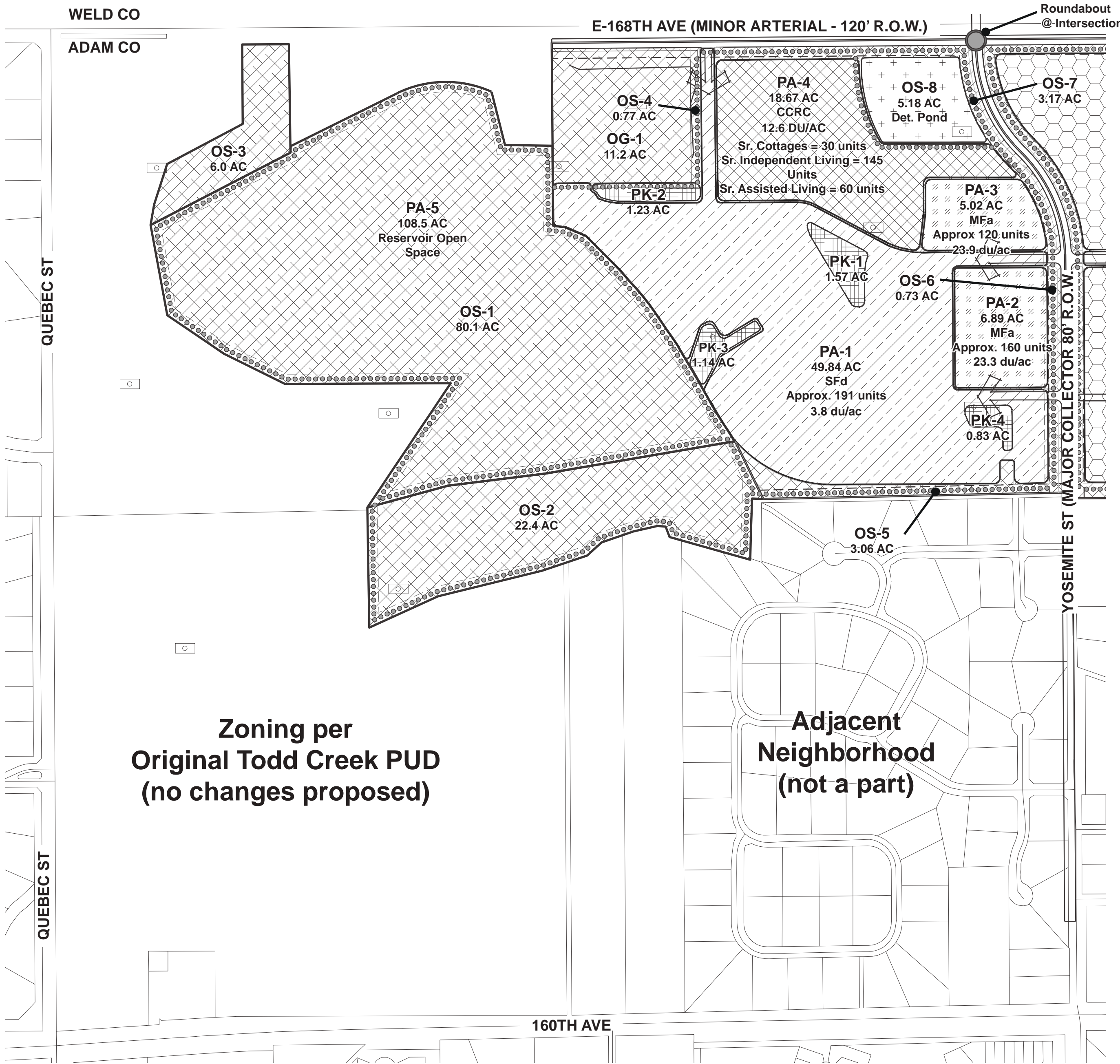


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TODD CREEK VILLAGE

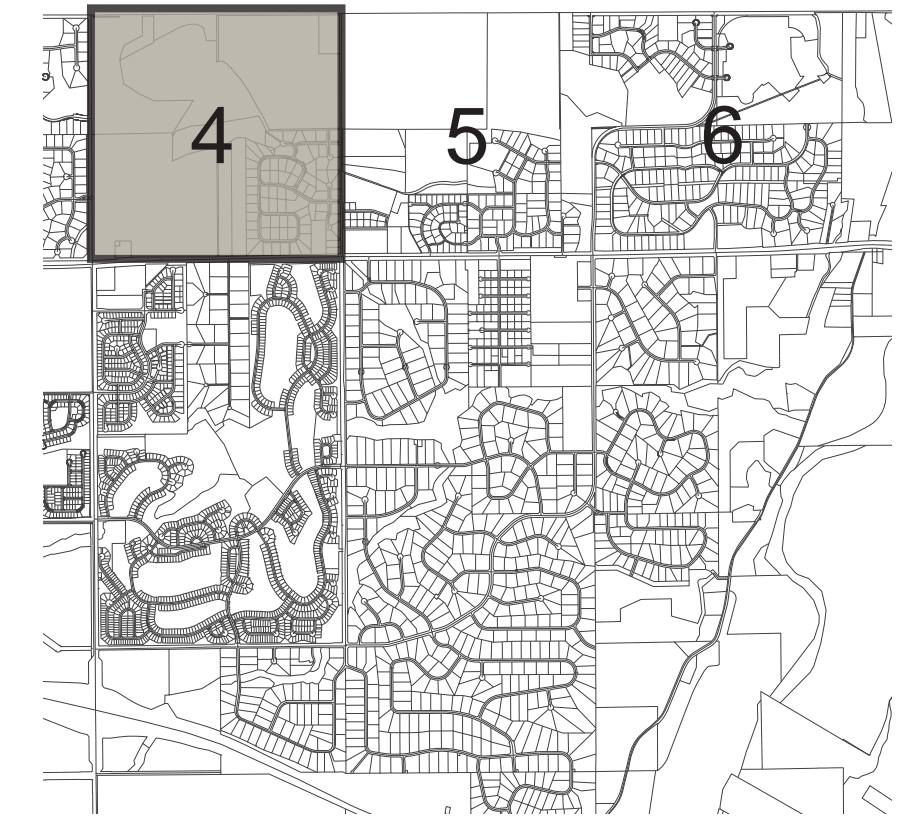
PRELIMINARY PUD PLAN - MAJOR AMENDMENT

LAND USE ZONING MAP



Zoning per
Original Todd Creek PUD
(no changes proposed)

Adjacent
Neighborhood
(not a part)



LOCATION MAP
SCALE: 1"=4,000'



LEGEND

- SF_d, SF_a, MF_a, CCRC PROPOSED ZONING FOR PARCEL
- PA-# PLANNING AREA
- OS-# OPEN SPACE AREA
- PK-# PARK AREA
- 29.5 AC APPROXIMATE ACREAGE OF PARCEL

SUMMARY - SELTZER HEIGHTS

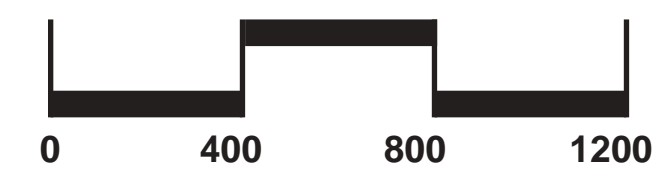
TOTAL ACREAGE: 217.80 AC
 PA-1 (SF_d) @ max. 6.0 DU/AC = 49.84 AC
 PA-2 (MF_a) @ max. 24.0 DU/AC = 6.89 AC
 PA-3 (MF_a) @ max. 24.0 DU/AC = 5.02 AC
 PA-4 (CCRC) @ max. 15.0 DU/AC = 18.67 AC
 OS = 121.41 AC
 PK = 4.77 AC
 O&G = 11.20 AC

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SCALE: 1" - 400'



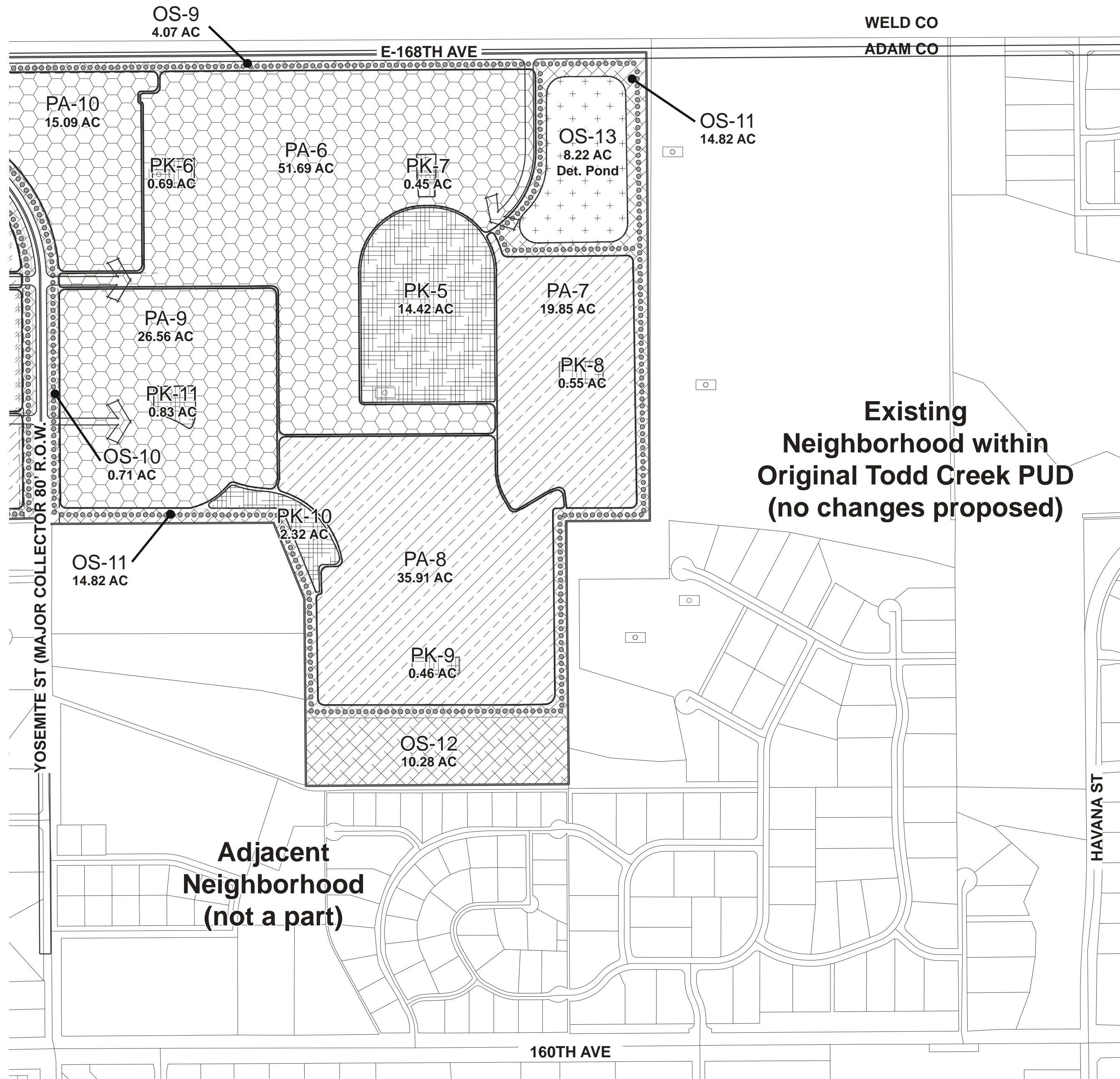
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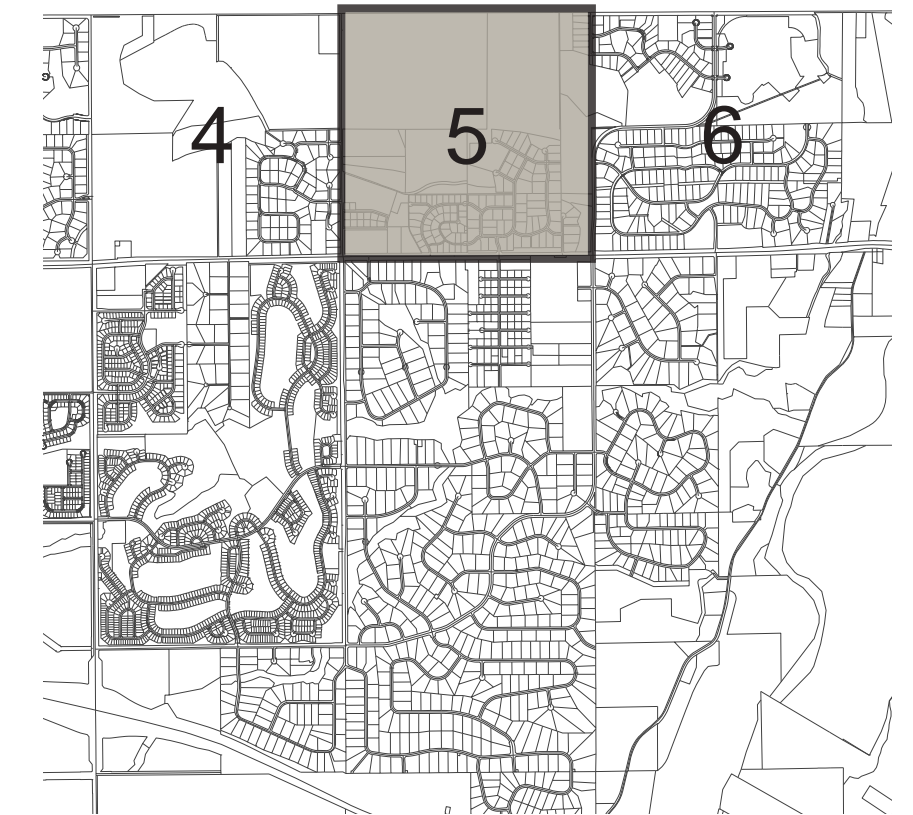
TODD CREEK VILLAGE PRELIMINARY PUD PLAN - MAJOR AMENDMENT

LAND USE ZONING MAP



Existing
Neighborhood within
Original Todd Creek PUD
(no changes proposed)

Adjacent
Neighborhood
(not a part)



LOCATION MAP
SCALE: 1"=4,000'



LEGEND

SF_d, SF_a,
MF_a, CCRC

PROPOSED ZONING FOR PARCEL

- PA-# PLANNING AREA
- OS-# OPEN SPACE AREA
- PK-# PARK AREA
- 29.5 AC APPROXIMATE ACREAGE OF PARCEL

SUMMARY - SELTZER FARMS

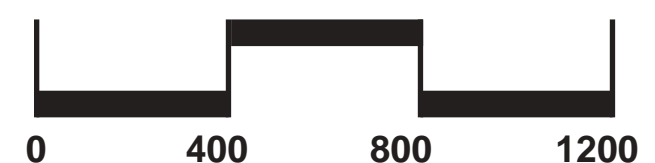
TOTAL ACREAGE: 207.46 AC
 PA-6 (SF_a) @ max. 11.0 DU/AC = 51.69 AC
 PA-7 (SF_d) @ max. 6.0 DU/AC = 19.85 AC
 PA-8 (SF_d) @ max. 6.0 DU/AC = 35.91 AC
 PA-9 (SF_a) @ max. 11.0 DU/AC = 26.56 AC
 PA-10 (SF_a) @ max. 11.0 DU/AC = 15.09 AC
 OS = 38.64 AC
 PK = 19.72 AC

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SCALE: 1" - 400'



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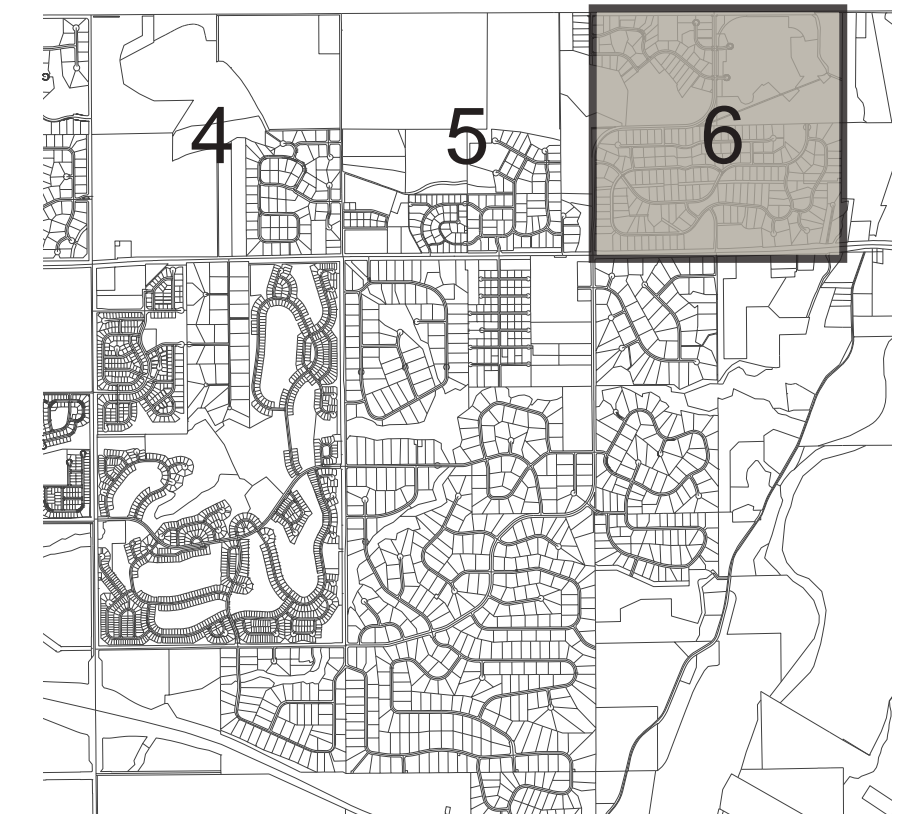
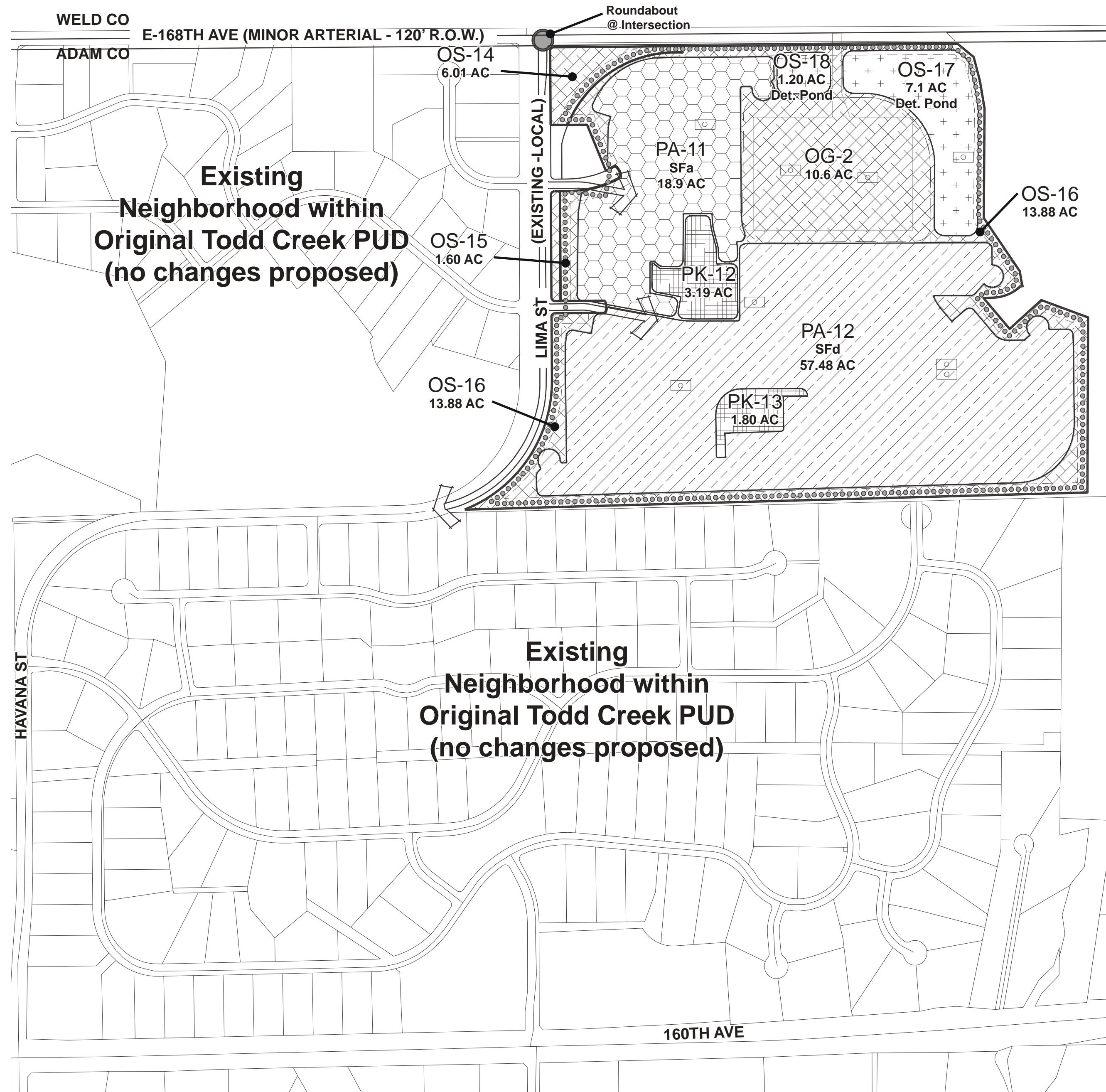
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TODD CREEK VILLAGE

PRELIMINARY PUD PLAN - MAJOR AMENDMENT

LAND USE ZONING MAP



LOCATION MAP
SCALE: 1"=4,000'
NORTH

LEGEND

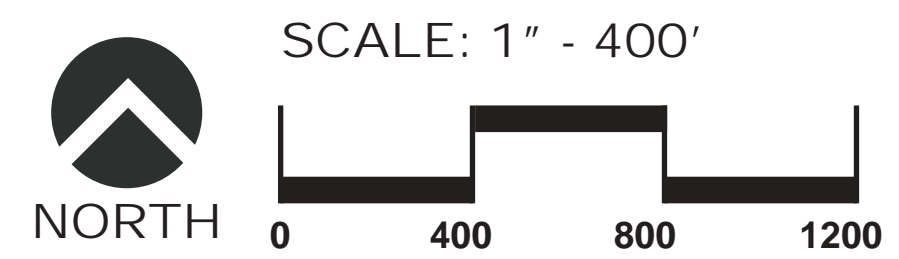
- SF_d, SF_a, MF_a, CCRC PROPOSED ZONING FOR PARCEL
- PA-# PLANNING AREA
- OS-# OPEN SPACE AREA
- PK-# PARK AREA
- 29.5 AC APPROXIMATE ACREAGE OF PARCEL

SUMMARY - BASELINE LAKES EAST

TOTAL ACREAGE: 121.77 AC
PA-11 (SF_a) @ max. 11.0 DU/AC = 18.90 AC
PA-12 (SF_d) @ max. 6.0 DU/AC = 57.48 AC
OS = 29.8 AC
PK = 4.99 AC
O&G = 10.60 AC

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TODD CREEK VILLAGE

PRELIMINARY PUD PLAN - MAJOR AMENDMENT

AMENDED PUD LAND USE AND ZONING DEVELOPMENT STANDARDS

NOTE: This section is the PUD Major Amendment Land Use and Zoning Development Standards. Areas within the PUD Amendment Area boundary will be subject to these amended Land Use and Zoning Development Standards. Areas outside of the PUD Amendment Area Boundary shall retain the Original PUD Land Use and Zoning Development Standards. If any criteria is not addressed within these amended standards, the previous standards will apply.

INTENT OF THIS PUD

The intent of the PUD Major Amendment is to create a master development plan for Residential and Parks/ Open Space Areas herein for this PUD Amendment known as Todd Creek Village. These uses are according to the Amended PUD Todd Creek Land Use Plan on Sheet 3.

(PA) Planning Areas, PA-1 through PA-12 are being established with this PUD Major Amendment. Development within PA-1 through PA-12, excluding PA-5, will be subject to SFd, SFa, MFa or CCRC (senior assisted/independent living) standards depending on the product types that are established with the Preliminary Development Plans for the site specific areas. PA-5 will be a unique open space planning area that will accommodate the reservoirs and facilities that will be required to manage them. A conceptual illustrative planning study has been provided to depict the general intent for the future Preliminary Development Plans on Sheet 2.
 SFd - Single Family Residential - Detached = 3.5 - 6.0 du/ac max.
 SFa - Single Family Residential - Detached & Attached = 6.0 - 11.0 du/ac max.
 MFa - Multifamily Residential = up to 24.0 du/ac max.
 CCRC - Senior Assisted/Independent Living = up to 15.0 du/ac max.
 Reservoir Open Space

PREVIOUS APPROVALS

- I. The Todd Creek PUD was approved and recorded on the 23rd of August 2022.
- II. This PUD Amendment calls out specific areas that are requesting revisions from the existing PUD Standards in support of the new Adams County Comprehensive Plan.

PUD DEVELOPMENT PARAMETERS

I. PARKING

- A. SFd/SFa - Single Family Residential - Detached
 - Two (2) off street parking spaces to be provided to each dwelling unit, in addition to the parking spaces provided within the garage attached to each unit.
 - These spaces shall be provided for in the driveway.
- B. SFa - Single Family Residential - Attached - Duplex
 - Two (2) off street parking spaces to be provided to each dwelling unit, in addition to the parking spaces provided within the garage attached to each unit.
 - These spaces shall be provided for in the driveway.
- C. SFa - Single Family Residential - Attached - Townhome
 - Two (2) off street parking spaces to be provided to each dwelling unit, in addition to the parking spaces provided within the garage attached to each unit.
 - Plus, one (1) additional guest parking space per every three (3) dwelling units.
 - These spaces shall be provided for in the driveway; or
 - A designated off-street parking area located within 250 feet of the primary entrance to the unit; or
 - Located on-street within 250 feet of the primary entrance to the unit (only applicable where on-street parking is allowed).
- D. MFa - Multi-Family Residential
 - For Multi-Family development the requirements shall defer to Section 4-15-04 of the Adams County Development Standards and Regulations.
- E. CCRC - see CCRC standards sheet 24
- F. Off-Street Parking Requirements for all Residential Districts:
 1. The off-street parking area shall be provided in the garage/carport and or on a paved driveway surface/parking pad such as concrete or pavers.
 2. Vehicles shall not be parked and/or stored on required front and side yard landscape areas.
- G. PK & OS - Parks and Open Spaces
 1. The # of Parking Spaces will be determined by use within a park or open space area, as follows:
 - a. Multi-purpose/sports field: 5 spaces per field
 - b. Tennis court, or similar: 1 per court
 - c. Basketball courts: 2 per court
 - d. Swimming pool deck: 2 spaces per 2,000 s.f.
 - e. Playground: 1 space per 1,000 s.f.
 - f. Picnic shelter: 1 space per 200 s.f. or 1 space per shelter (if shelter is less than 200 s.f.)
 2. The above required parking spaces may include on-street parking adjacent to the park or open space.
- H. Reservoir Open Space / PA-5
 1. Two (2) parking space for every mile of trail. The required parking spaces may include on-street parking adjacent to the Reservoir Open Space.
 2. Any buildings located on-site will follow Adams County Standards per primary use parking requirements.

II. STREET STANDARDS

- A. SFd - Single Family Residential - Detached, SFa - Single Family Residential - Detached & Attached, and MFa - Multi-Family Residential/Assisted Living Facility
 1. Local collector streets will be 36 feet of paving flow line to flow line in a 60 foot right-of-way with attached or detached sidewalks at the developers option on both sides of the street within the right-of-way. No parking on both sides.
 2. Local streets will be 30 feet of paving flow line to flow line in a 50-foot right-of-way with attached or detached sidewalks at developers option on both sides of the street within the right-of-way.
 3. Cul-de-sac turnarounds and knuckles will be 76 feet minimum diameter paving flow line to flow line with a 100-foot minimum diameter right-of-way. Landscape islands maybe incorporated within cul-de-sacs and knuckles.

III. LANDSCAPING AND OPEN SPACE

A. Open Space requirements for the P.U.D. Amendment Areas:

1. Percentage of Open Space: A minimum of 30% Open Space shall be required in this P.U.D. or as determined by the Board of County Commissioners per Adams County Code Section 3-34-03-05-06.
2. The open space requirements for the overall PUD includes dedicated tracts for parks, trails and open space. It does not include open space on individual lots.
3. Use of Open Space: At least twenty-five (25%) of the minimum required open space shall be designated for active recreation purposes, and no more than fifty percent (50%) shall be so utilized, in order to preserve a reasonable proportion of natural areas on the site as per Adams County Code Section 3-34-03-05-03.

B. Residential Landscape Standards

1. For: SFd/SFa - Single Family Residential - Detached & Duplex
 - a. Front and corner yard landscaping for each lot within Single Family Residential Areas shall be provided by the homebuilder. The minimum landscape to be provided by the homebuilder shall be on the lot and must include the following:

For Lots larger than 5,000 s.f.

Front: 10 shrubs
 2 trees (shade, ornamental, or evergreen)
 Automatic irrigation system

Front and Corner:

15 shrubs
 3 trees (shade, ornamental, or evergreen)
 Automatic irrigation system

For Lots smaller than 5,000 s.f.

Front: 5 shrubs
 1 trees (shade, ornamental, or evergreen)
 Automatic irrigation system

Front and Corner:

8 shrubs
 2 trees (shade, ornamental, or evergreen)
 Automatic irrigation system

- b. Landscaping shall be installed no later than the next growing season of the Certificate of Occupancy for the home.

C. For: SFa - Single Family Residential - Attached - Townhomes

1. Front and corner yard landscaping for each lot within Single Family Residential Areas shall be provided by the homebuilder. The minimum landscape to be provided by the homebuilder shall include the following:

- a. Provide permanent landscaping in the front yard of each home. There shall be a minimum of 60 percent of the gross front yard area, excluding driveways, landscaped with live plant materials. Mature tree and shrub canopies may count toward the 60 percent requirement.
- b. Install landscaping within the side and rear yard such that 30 percent of the combined (side and rear) yards is landscaped with live plant material.

2. For Green Court Areas:

- a. Install trees in the tract, a minimum of one tree per 1,500 square feet of landscaped area, distributed on the site.
- b. Install a minimum of one shrub per 150 square feet of landscaped area. Shrubs shall be grouped and distributed throughout the site. Trees may be substituted for up to one-half of the required shrubs at the rate of one tree for ten shrubs and vice-versa.
- c. Install groundcover, either irrigated turf maintained to appropriate standards for active recreation in active recreation areas, or where appropriate, native grass for areas that will not function as active recreation areas. Native grass shall be weed-free and maintained at an appropriate height according to species.
- d. Provide a water-efficient irrigation system for all landscaped areas, excluding native seed areas which may be temporarily irrigated.
- e. Maintain the landscaping within the common open spaces and adjacent street right-of-way.
- f. Provide a minimum of 50 percent of the entire site with landscaping of live plant materials.

3. The selection of trees shall be a mix of large deciduous (10%-30%), ornamental (10%-30%), and evergreen (50%) trees.
4. Landscaping shall be installed no later than the next growing season of the Certificate of Occupancy for the home.



D. For all Zone Districts

1. Landscaping shall be provided by the home builder or owner as illustrated at the time of Final P.U.D Plan. Landscaping shall be installed no later than the next growing season of the Certificate of Occupancy for the home.

2. Landscaping of the parks, trails or common open space within Todd Creek Village shall be provided by the developer as illustrated at the time of Final P.U.D. Plan. and then responsibility of the respective metro district or HOA thereafter.
3. Landscaping of dedicated Parks and Open Spaces (Zoned - PK or OS) within Todd Creek Village shall be the responsibility of the respective metro district or HOA developer and illustrated at the time of the Final P.U.D. Plan.
4. Open Space shall include all developed and undeveloped open space tracts within Todd Creek Village PUD. These may include drainage corridors, flood plains, detention areas, developed parks with irrigation, native areas with temporary or no irrigation, trail corridors, landscape meadows, pedestrian landscape areas, and right-of-way landscaping. The improvements shall be illustrated at the time of Final P.U.D. Plan. Maintenance of the tracts shall be the responsibility of the respective HOA or Metro District.
5. Street trees shall be provided by the respective HOA or Metro District for all streets. Street trees shall be spaced a minimum of 40 feet on center and shall be at least 2 1/2" caliper shade trees or 6-8' height evergreen trees.
6. Minimum plant sizes for Todd Creek Village PUD Amendment:
 - a. Shrubs - minimum of 5 gallons
 - b. Ornamental trees - 2" caliper
 - c. Shade tree - 2 1/2" caliper
 - d. Evergreen tree - 6'-8' height
7. Maintenance of all common open space such as parks, trails, and right-of-way landscaping shall be maintained by the respective metro district or HOA.

IV. SIGNS

- A. Todd Creek Village signage will be planned and located within the appropriate filings. Signage shall be illustrated at the time of Final P.U.D Plan. Plans shall illustrate the actual design, copy, and dimensions. All signage shall comply with Adams County standards and must be approved by the County and respective Metro District within Todd Creek Village.
- B. Height – Maximum Height. The maximum height of monument signs shall be determined by the location as follows, measured from grade to top of the sign:
 1. Along arterial streets: 12 feet
 2. Along other streets: 8 feet
- C. Minimum/Maximum Size – The maximum size of a monument sign face is 96 square feet, with a minimum of 16 square feet.
- D. Design Quality –
 1. Architectural and Visual Compatibility. Sign type, scheme, size, and illumination within a development shall be coordinated and compatible with the site's character.
 2. Sign Shape. The silhouette of signs shall be simple and compatible with the site surroundings
 3. Illumination. Illumination shall be shielded so there is no glare in the public right-of-way and adjacent properties, and directed so light does not stray above the light source horizontally. All lighting elements shall be kept in working condition.
 4. Materials. Materials and textures of signs shall be consistent with the character of the site. Supporting sign structures of monument signs shall match the primary finish and colors of the sign face. Sign materials not permitted include plywood, fabric/paper (except for temporary signs), wall siding, fencing, or roofing material, and plain concrete masonry units.
- E. Setbacks -
 1. Minimum of four feet from back of sidewalk or 21 feet from flow line; and
 2. Shall not be placed within any applicable site triangle.
 3. Shall not be placed within the public right-of-way.

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TODD CREEK VILLAGE

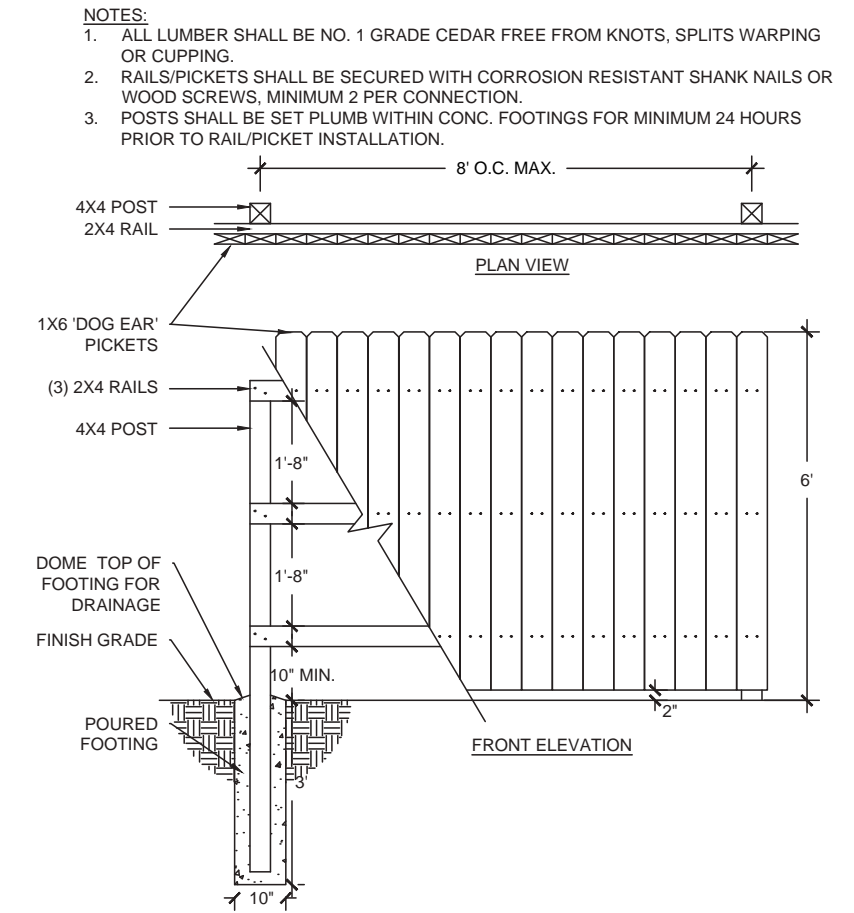
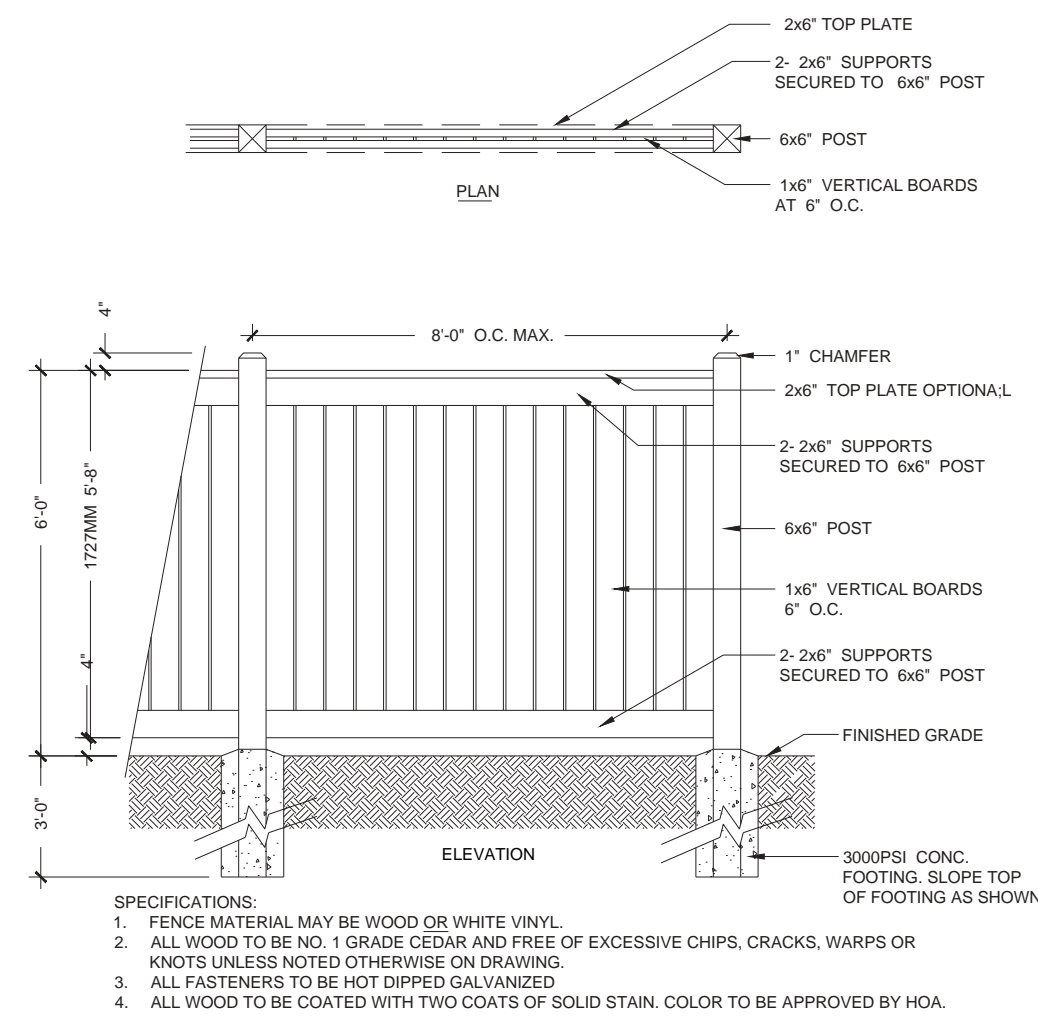
PRELIMINARY PUD PLAN - MAJOR AMENDMENT

AMENDED PUD LAND USE AND ZONING DEVELOPMENT STANDARDS

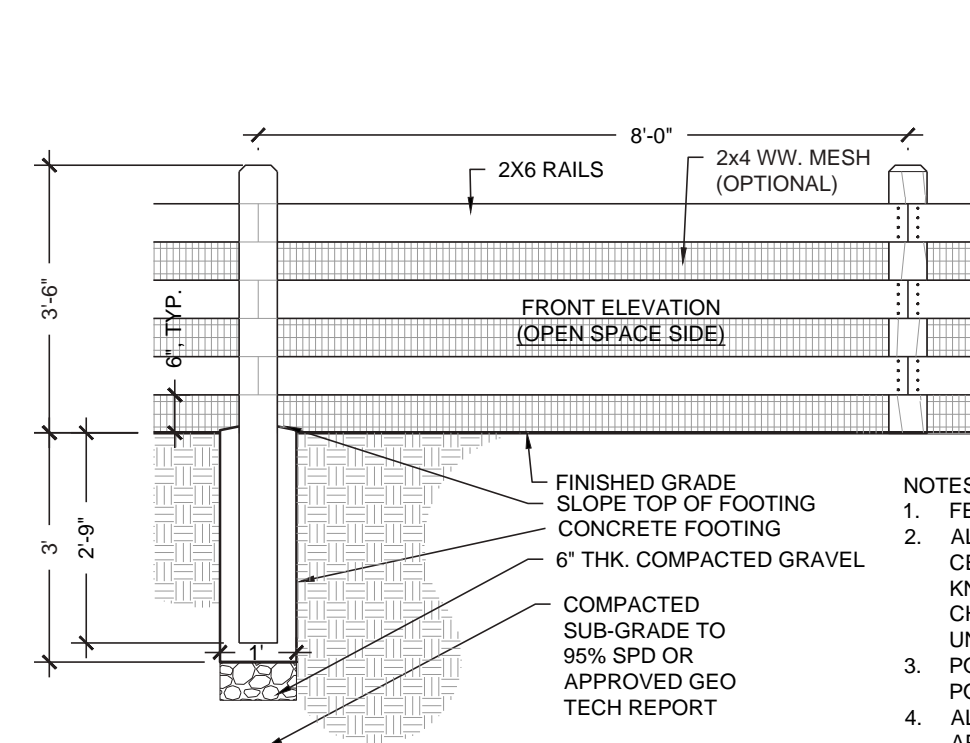
V. FENCING

- A. Fencing adjacent to parks or open space shall be the responsibility of the homebuilder or developer.
- B. Fencing with residential areas adjacent to the street shall be the responsibility of the homebuilder and/or respective metro district/HOA.
- C. Wing fencing between the homes facing the street shall be the responsibility of the homebuilder and/or respective metro district/HOA.
- D. All fencing installed by the homebuilder and/or respective metro district/HOA shall be completed within 30 days after issuance of a Certificate of Occupancy for the home, depending on weather conditions.
- E. A final fencing plan, design and typical lot shall be indicated at the time of the Final Plat.
- F. Fence Standards and Requirements:
 - 1. All fences and walls over 42" in height require a building permit.
 - 2. Any retaining walls over four (4) feet in height shall require preparation by a professional engineer as a condition for a building permit except where waived by the Building Inspections Section.
 - 3. No fence of any type more than 42" in height shall be permitted between the front setback line and a front property line. In Single Family Attached and Detached Districts, fences up to 72" in height may be permitted on the common street side of corner lots where houses are back to back.
 - 4. Neither barbed wire nor electric fences shall be permitted as an external boundary fence in any residential Zone District.
 - 5. The maximum height of any fence within a residential zone is 72" except where such development is adjacent to existing or proposed arterial streets or state highways in which case fences bordering such street may be uniformly built higher with the written permission of the Director of Community and Economic Development.
 - 6. Traffic view obstruction as outlined in Section 4.290 shall prevail in all cases relating to fence construction.

EXAMPLES OF PRIVACY FENCE OPTIONS



EXAMPLE OF AN OPEN SPACE FENCE OPTION OR PRIVATE YARD



NOTE:

The fence options listed here are examples of types of fences and materials that may be used within the Todd Creek Amendment Areas. Similar styles/materials shall be acceptable. Each neighborhood will have future Design Guidelines that may be more restrictive in terms of colors, materials, and types of fences. The final fence design, layout, and lot typical will be determined with the Final Plat.

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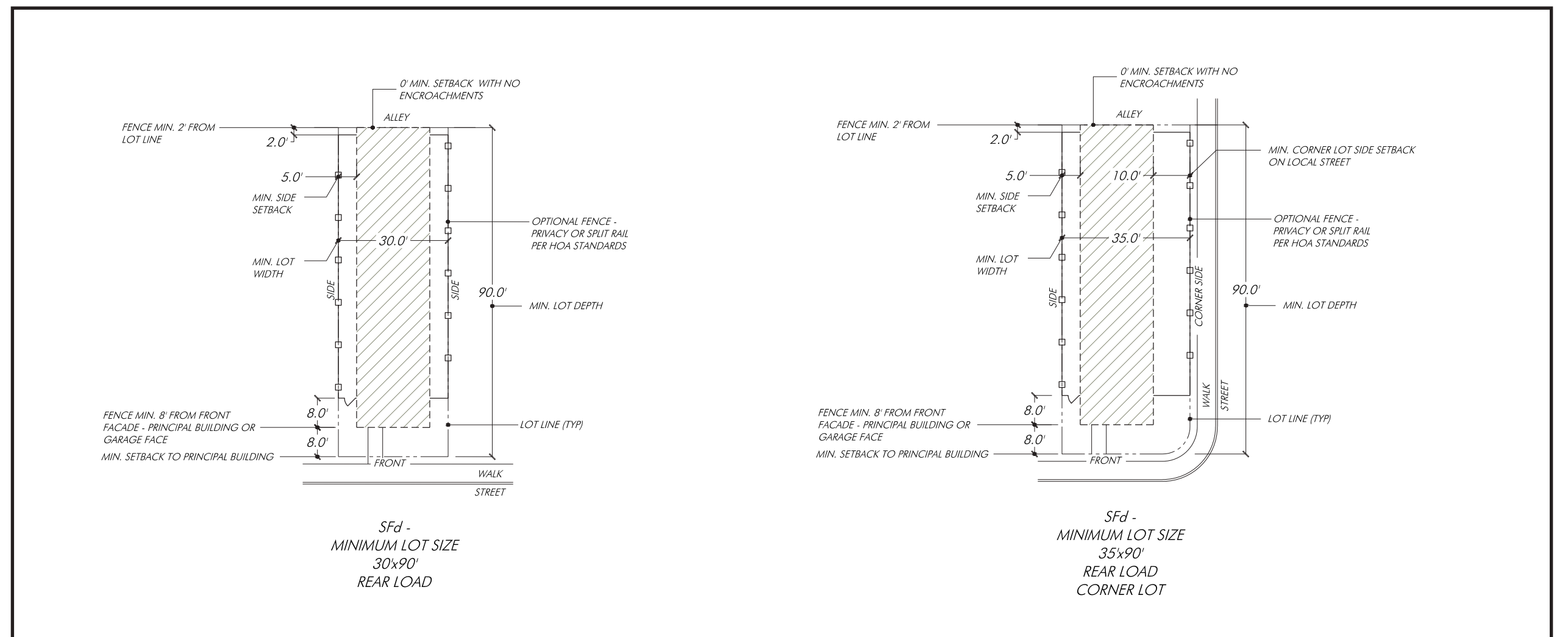
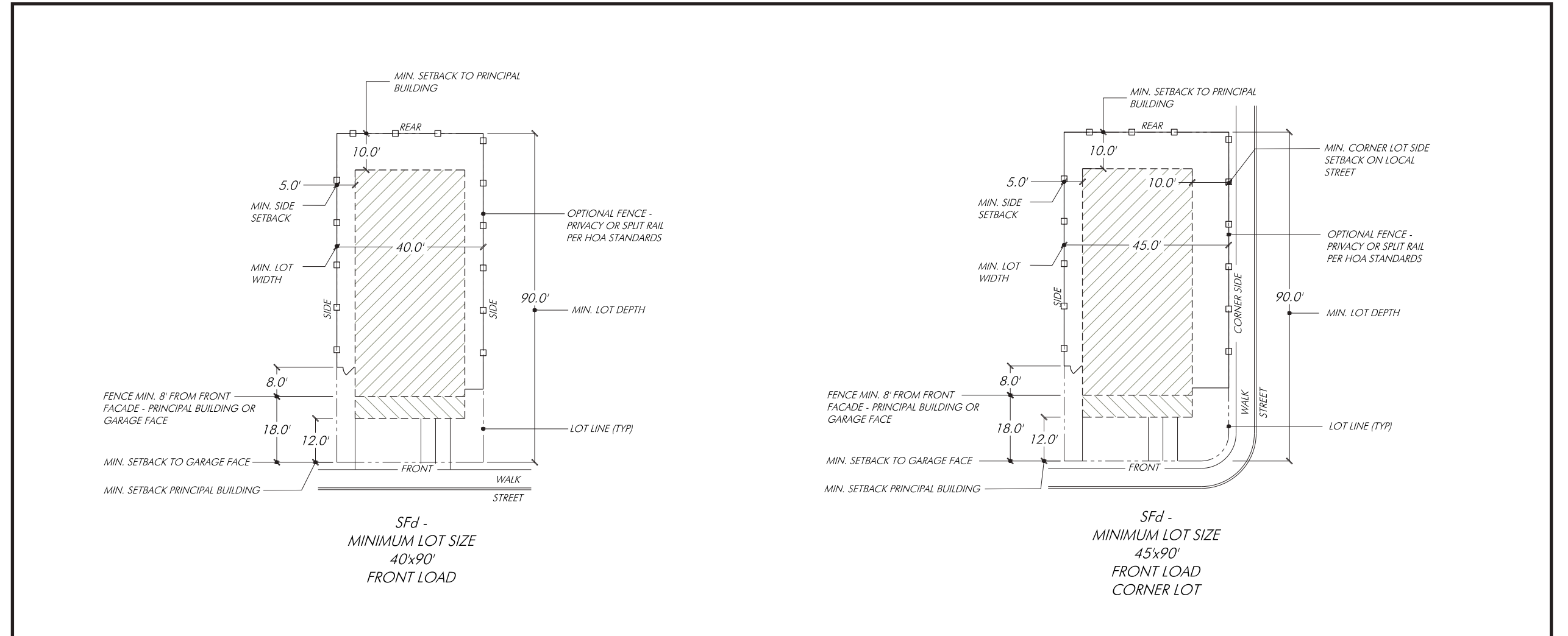
TODD CREEK VILLAGE

PRELIMINARY PUD PLAN - MAJOR AMENDMENT

AMENDED PUD LAND USE AND ZONING DEVELOPMENT STANDARDS, CONT.

VIII. DEVELOPMENT STANDARDS

- A. Residential Single Family District: SFd - Single Family Residential
1. Purpose: Residential district:
Exclusively single-family detached dwellings including the potential for ADU units.
 2. General Requirements - Single Family Detached:
 - a. Minimum Frontage Width at Building Line: Front Load Single Family Dwelling - 40' (45' corner lots), Rear Load Single Family Dwelling - 30' (35' corner lots).
 - b. Maximum Gross Residential Density: 5.5 units per acre.
 - c. Minimum Lot Depth: 90'
 - d. Minimum Setback from property line for a Dwelling or ADU - Front Load:
Front: 12' to the Principal Building, 18' to the Garage Face.
Side: 5' - (10' on corner lot on local street).
Rear: 10' to Principal Building, 20' between structures
 - e. Minimum Setback from property line for a Dwelling or ADU - Rear Load:
Front: 8' to the Principal Building, (50' on state highway or arterial street).
Side: 5' - (10' on corner lot on local street).
Rear: 0' with no permitted encroachments, 20' between structures.
 - f. Minimum Setback from property line for Accessory Building:
Front: Equal to principal dwelling on the lot.
Side: 5'; 25' from street on corner lot.
Rear: 5'
 - g. Minimum Setback from State Highway or Arterial Street for a Dwelling, ADU or Accessory Building: 50'
 - h. Maximum Height - Dwelling or ADU: 35', Accessory: 16'
 - i. Maximum total size of all accessory buildings is 900 square feet.
 - j. A maximum of one single-family dwelling is permitted on each individual lot.
 - k. Minimum Floor Area: 1,250 square feet.
 - l. SFd Lots within the Todd Creek PUD Amendment are exempt from Adams County Code Section 4-23-01-01 - 2. Lot Depth Ratio.
 - m. A single-family residence located within this District shall be compatible in architectural design with the adjacent properties; and not monotonous in appearance to adjacent properties.
 - i. Design Review Criteria.
 - The home should be displayed toward the street in a compatible manner with surrounding homes through location of windows, doors, other architectural features, or landscaping. This will be reviewed through an examination of the side of the home facing the street.
 - The exterior materials of the resident shall be compatible with adjacent properties. This feature will be reviewed by examining exterior materials described and determining whether the proposed building material is compatible with adjacent homes.
 - The home must not have a monotonous appearance in relation to the adjacent properties. This will be determined by examining application materials. Consideration will be given to the variation in setbacks, architectural features, landscaping accents, or accessory structures proposed to achieve the required appearance. If the Department determines that any one of these four criteria has not been met in the Planning Review, the application will be referred to the Planning Commission for Final Review.
 3. See Special Notes on sheet 13
 4. Diagram of Single Family Detached - Lot Typical for Minimum Lot Size (this sheet)



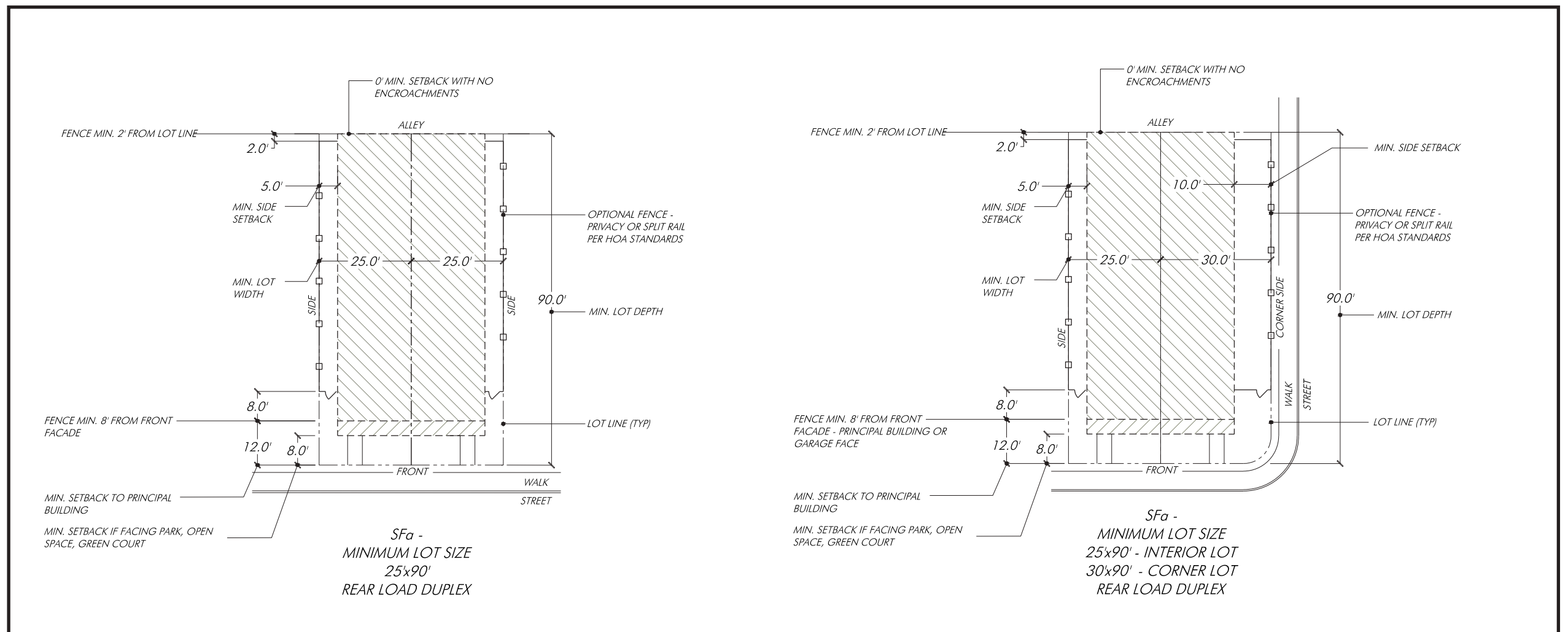
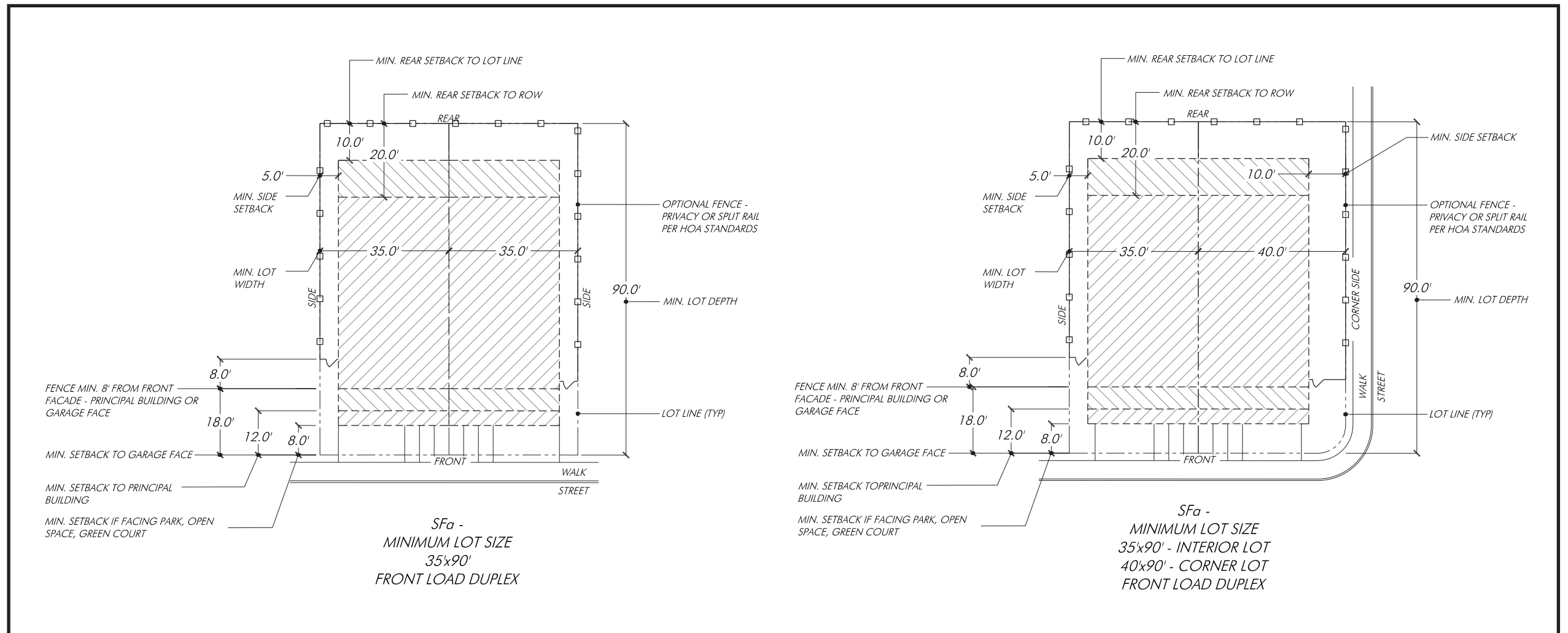
 LAND PLANNING / LANDSCAPE ARCHITECTURE 200 KALAMATH ST. DENVER, CO 80223 (303) 531-4905 WWW.PCSGROUPCO.COM	 KT ENGINEERING ENGINEERS • SURVEYORS 12500 W. 58th AVE. #230 ARVADA, CO 80002 PH: 720.638.5190	DATE	6-9-2023
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TODD CREEK VILLAGE

PRELIMINARY PUD PLAN - MAJOR AMENDMENT

AMENDED PUD LAND USE AND ZONING DEVELOPMENT STANDARDS, CONT.

- B. Residential Single Family District: SFa - Single Family Residential - Detached & Attached
1. Purpose: Residential district:
 - a. A residential area which permits both detached and attached Single Family Residential.
 - b. Building types allowed: Single Family Detached Homes, Duplexes, and Townhomes.
 2. General Requirements - Single Family Detached:
 - a. Refer to SFd - Single Family Detached Residential Requirements
 3. General Requirements - Single Family Attached - Duplex:
 - a. Minimum Setback from property line:
 - Front: 18' to garage door facing R.O.W.
12' to the principal building
8' if the Front faces a park, open space, or green court.
(Maintaining off-street parking requirement)
 - Side (End units only): 5' to lot line minimum.
10' minimum to street R.O.W.
 - Rear: 10' minimum to rear lot line.
20' minimum to street R.O.W.
0' with no encroachments, if the garage is accessed from the rear.
 - b. Minimum Distances Between Buildings:
 - Side - Side orientation: 10'.
 - Side - Rear orientation: 20'.
 - Rear - Rear orientation: 20'.
 - b. Minimum Setback from State Highway or Arterial Street for a Dwelling, ADU or Accessory Building: 50'
 - c. Maximum Building Height: 35'.
 - d. Minimum Lot Frontage Width at Building Line:
 - i. Front Loaded Duplex - 35' (40' corner lots)
 - ii. Rear Loaded Duplex - 25' (30' corner lots)
 - e. Minimum Lot Area:
 - i. Front Loaded Duplex - 3,150 sq.ft.
 - ii. Rear Loaded Duplex - 2,250 sq.ft.
 - f. SFa Lots within the Todd Creek PUD Amendment are exempt from Adams County Code Section 4-23-01-01 - 2. Lot Depth Ratio.
 4. Diagram of Single Family Attached - Duplex Lot Typical for Minimum Lot Size (this sheet)



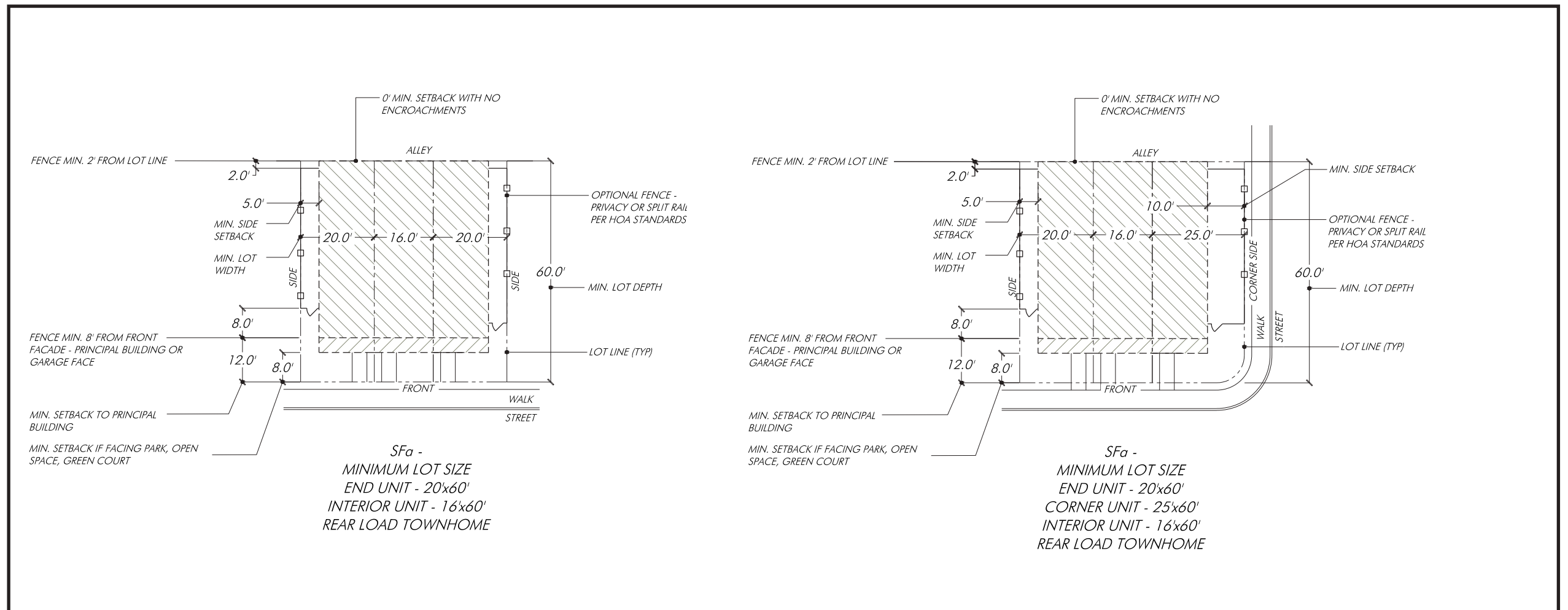
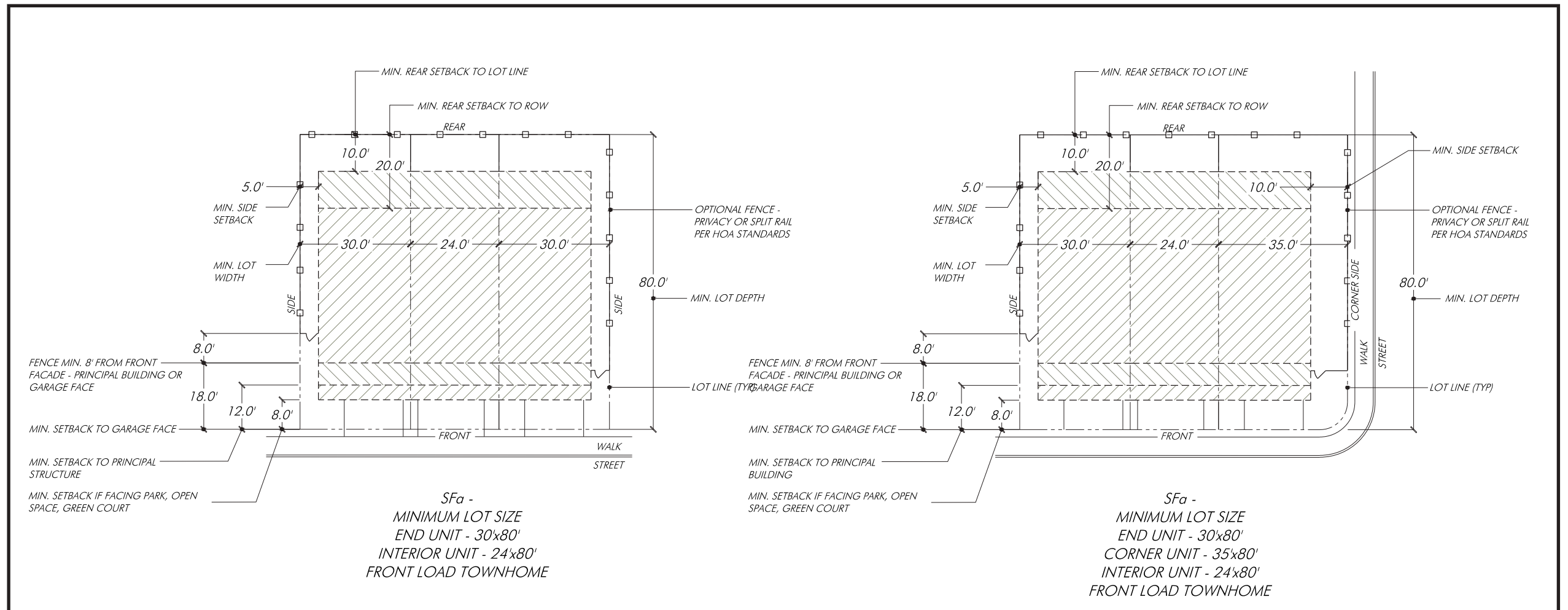
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TODD CREEK VILLAGE

PRELIMINARY PUD PLAN - MAJOR AMENDMENT

AMENDED PUD LAND USE AND ZONING DEVELOPMENT STANDARDS, CONT.

5. General Requirements - Single Family Attached - Townhomes
 - a. Minimum Setback from property line:
 - Front: 18' to garage door facing R.O.W.
12' to the principal building
8' if the Front faces a park, open space, or green court.
(Maintaining off-street parking requirement)
 - Side (End units only): 5' to lot line minimum.
10' minimum to street R.O.W.
 - Rear: 10' minimum to rear lot line.
20' minimum to street R.O.W.
0' with no encroachments, if the garage is accessed from the rear.
 - Minimum Distances Between Buildings:
 - Side - Side orientation: 10'.
 - Side - Rear orientation: 20'.
 - Rear - Rear orientation: 20'.
 - b. Minimum Setback from State Highway or Arterial Street for a Dwelling, ADU or Accessory Building: 50'
 - c. Maximum Building Height: 35'.
 - d. Minimum Lot Frontage Width at Building Line:
 - i. Front Loaded Townhome - End Unit 30' (35' corner lots), Interior Unit 24'
 - ii. Rear Loaded Townhome - End Unit 20' (25' corner lots), Interior Unit 16'
 - e. Minimum Lot Area:
 - i. Front Loaded Townhome - 2,160 sq.ft.
 - ii. Rear Loaded Townhome - 960 sq.ft.
 - f. SFa Lots within the Todd Creek PUD Amendment are exempt from Adams County Code Section 4-23-01-01 - 2. Lot Depth Ratio.
 - g. Diagram of Single Family Attached - Townhome Lot Typical for Minimum Lot Size (this sheet)
6. A single-family residence located within this District shall be compatible in architectural design with the adjacent properties; and not monotonous in appearance to adjacent properties.
 - a. The design review process as described below shall be used to determine if a single-family home meets these neighborhood design requirements.
 - b. Design Review Criteria.
 - The home should be displayed toward the street in a compatible manner with surrounding homes through location of windows, doors, other architectural features, or landscaping. This will be reviewed through an examination of the side of the home facing the street.
 - The exterior materials of the resident shall be compatible with adjacent properties. This feature will be reviewed by examining exterior materials described and determining whether the proposed building material is compatible with adjacent homes.
 - The home must not have a monotonous appearance in relation to the adjacent properties. This will be determined by examining application materials. Consideration will be given to the variation in setbacks, architectural features, landscaping accents, or accessory structures proposed to achieve the required appearance. If the Department determines that any one of these four criteria has not been met in the Planning Review, the application will be referred to the Planning Commission for Final Review.
7. See Special Notes on sheet 13



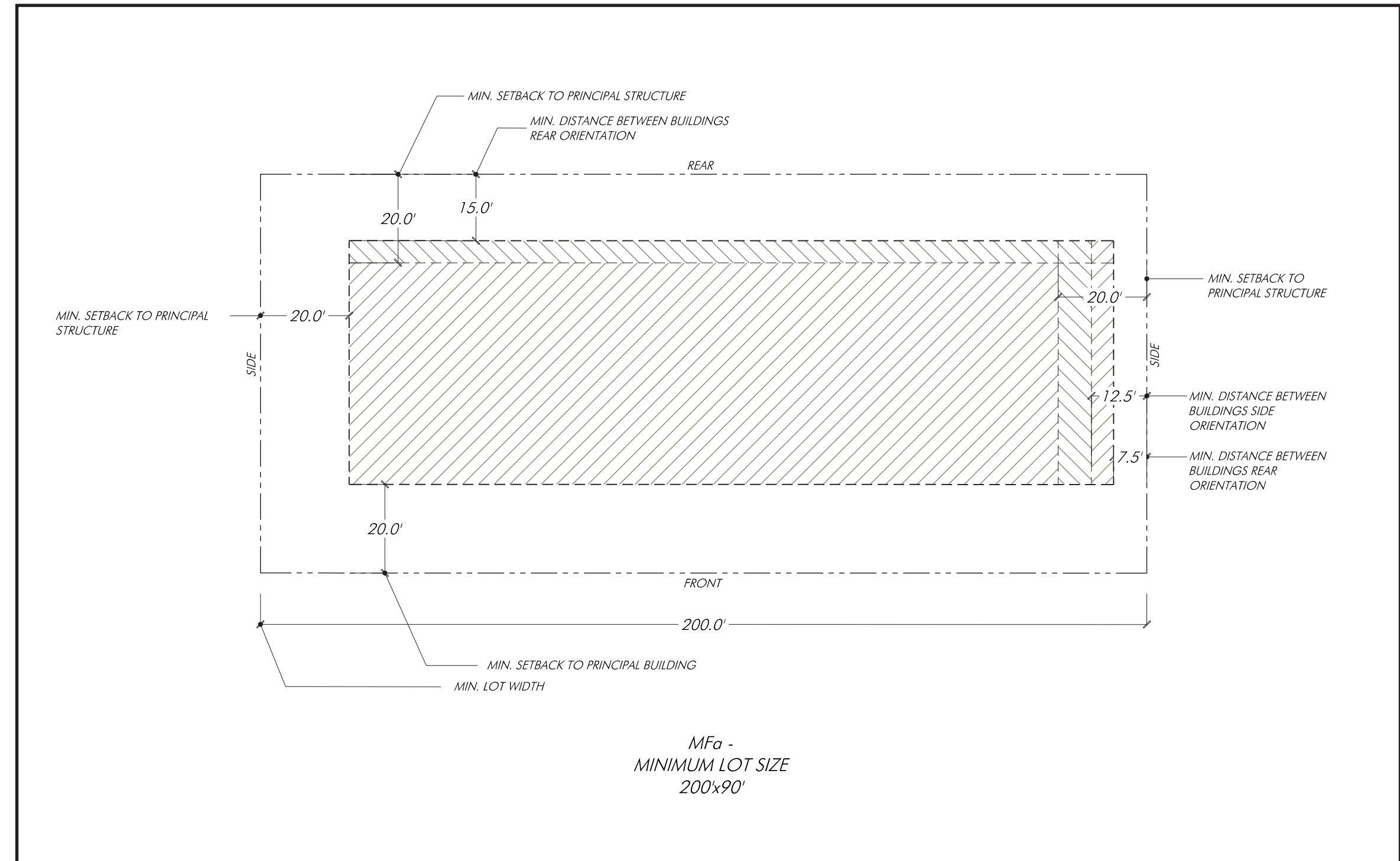
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TODD CREEK VILLAGE

PRELIMINARY PUD PLAN - MAJOR AMENDMENT

AMENDED PUD LAND USE AND ZONING DEVELOPMENT STANDARDS, CONT.

- C. Residential Multi-Family District: MFa - Multi-family Residential
1. Purpose: Residential district:
 - A residential area which permits multi-family residential dwellings.
 2. General Requirements - Multi-Family:
 - a. Building types allowed: Multi-Family buildings.
 - b. Minimum Setback:
 - Front: 20' for a Principal Structure
30' for an Accessory Structure
(Maintaining off-street parking requirement)
 - Side: 20' for a Principal Structure
30' for an Accessory Structure
(Maintaining off-street parking requirement)
 - Rear: 20' for a Principal Structure
30' for an Accessory Structure
(Maintaining off-street parking requirement)
 - Minimum Distances Between Buildings:
 - Side - Side orientation: 15'.
 - Side - Rear orientation: 25'.
 - Rear - Rear orientation: 30'.
 - c. Minimum Setback from State Highway or Arterial Street for a Principal Structure or Accessory Structure: 50'
 - d. Maximum Building Height: 45'.
 - e. Minimum Lot Width:
 - i. The minimum lot width shall be two hundred (200) feet.
 - f. Minimum Lot Size:
 - i. The minimum lot size shall be two (2) acres.
 - g. Minimum Residence Floor Area:
 - Efficiency Unit - four-hundred-fifty (450) square feet.
 - 1 bedroom - six hundred (600) square feet.
 - 2 bedroom - seven-hundred-fifty (750) square feet.
 - 3 bedroom - nine hundred (900) square feet.
 - 4 bedroom - one thousand (1,000) square feet.
 - h. MFa Lots within the Todd Creek PUD Amendment are exempt from Adams County Code Section 4-23-01-01 - 2. Lot Depth Ratio.
 - i. A multi-family residence located within this District shall be compatible in architectural design with the adjacent properties; and not monotonous in appearance to adjacent properties.
 - i. The design review process as described below shall be used to determine if a single-family home meets these neighborhood design requirements.
 - ii. Design Review Criteria.
 - All sides of a multi-family building shall display a similar level of quality and architectural detailing. The majority of a building's architectural features and treatments shall not be restricted to a single facade. Building details, including roof forms, windows, doors, trim, and siding materials, shall reflect the architectural style of the building.
 - The exterior materials of the resident shall be compatible with adjacent properties. This feature will be reviewed by examining exterior materials described and determining whether the proposed building material is compatible with adjacent homes.
 - The maximum length of any multi-family building shall be 165 feet, this standard does not apply to assisted living/nursing homes.
 - A multi-family building must not have a monotonous appearance in relation to the adjacent properties. This will be determined by examining application materials. Consideration will be given to the variation in setbacks, architectural features, landscaping accents, or accessory structures proposed to achieve the required appearance. If the Department determines that any one of these four criteria has not been met in the Planning Review, the application will be referred to the Planning Commission for Final Review.
 - i. Clustering is encouraged.
 3. See Special Notes on sheet 13 of 26
 4. Diagram of Multi-Family - Lot Typical for Minimum Lot Size (this sheet)



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TODD CREEK VILLAGE

PRELIMINARY PUD PLAN - MAJOR AMENDMENT

AMENDED PUD LAND USE AND ZONING DEVELOPMENT STANDARDS, CONT.

E. Tabulation of Uses for Residential Districts:

1. The uses allowed within each District are listed as a "Permitted", "Conditional Use", "Temporary Use", or "Prohibited." Within each Zone District only listed "Permitted" shall be permitted/use-by-right, subject to standards established in these and other regulation(s); Conditional Uses, and Temporary Uses are listed by way of example and not by way of limitation; "Prohibited" are prohibited/not allowed from the relevant Zone District. For uses not listed or clearly fitting within one or more of the categories, the Director of Planning and Development shall determine in what Zone District the use is allowed and by what means (Special Use, Use by Right, etc.).

	SFd	SFa	MFa
Accessory Uses	P	P	P
Churches, Places of Worship	C	C	C
Day Care Home	P	P	P
Dwelling - Single-Family Detached	P	P	P
Dwelling - Duplex	X	P	P
Dwelling - Townhome	X	P	P
Dwelling - Multi-Family	X	X	P
Essential Governmental Public Utility Services Not including bldg. or storage facilities With bldg. and/or storage facilities	P	P	P
Fire Station	C	C	C
Foster Family Care 1 to 5. In excess of 5 total in residence (use by right where required by State Law)	C	C	C
Golf Course	C	C	C
Group Quarters 1 to 5. In excess of 5 total in residence (use by right where required by State Law)	C	C	C
Home Occupation	P	P	P
Hospitals	C	C	C
Libraries, Public	P	P	P
Non-Commercial Radio & T.V. Tower up to 90' from ground in excess of 90'	C	C	C
Parks, Public	P	P	P
Police Stations	C	C	C
Post Office	C	C	C
Residential Uses such as Nursing Homes, Boarding Houses, Etc.	C	C	P
Roadside Stands (unsubdivided only - primarily to sell products produced on the property)	T	T	T
Schools Day Care Public, Private, Parochial, K-12	P	P	P
Sexually Oriented Businesses	X	X	X
Waste Disposal Site and/or Processing Facility	X	X	X
Water Storage (closed structure)	C	C	C

P - PERMITTED
C - CONDITIONAL USE
T- TEMPORARY USE
X - PROHIBITED

G. CCRC - Continuing Care Retirement Community / PA-4

1. CCRC Definitions:
 - a. Continuing Care Retirement Community (CCRC)
Continuing Care Retirement Community (CCRC) shall mean a large scale facility (or integrated group of facilities) which has a primary purpose of providing housing and continuing care for people over the age of 62, and which consists of CCRC Independent Living Units, CCRC Assisted Living Facilities, CCRC Skilled Care Nursing Facilities and CCRC Accessory Uses, all as defined herein (and as regulated by, where applicable, the Colorado Department of Human Services and/or the Colorado Department of Health). For purposes of this rezoning, "continuing care" means the provision of lodging, nursing, medical or other health-related services at the same or another location to an individual pursuant to an agreement effective for the life of the individual or for a period of greater than one year, including mutually terminable contracts, and in consideration of the payment of an entrance fee with or without other periodic charges to an individual who is at least sixty-two (62) years of age.
 - b. CCRC Independent Living Unit
CCRC Independent Living Unit shall mean a dwelling unit within a Continuing Care Retirement Community (CCRC) containing living area(s), bedrooms area(s), kitchen area, and bathroom(s), including studio style apartment, which house one or more people over the age of 62 in a manner in which they may live independently while receiving one or more meals per day in a congregate setting.
CCRC Assisted Living Facility
CCRC Assisted Living Facility is a facility located within a Continuing Care Retirement Community that provides a residential living environment, assisted by congregate meals, housekeeping, and personal services for person age 62 or older, who have temporary or periodic difficulties with one or more essential activities of daily living, such as feeding, bathing, dressing, or mobility [but do not require services in or of a Colorado Department of Health licensed long-term care facility or nursing facility]. A CCRC Assisted Living Facility shall include dwelling units, dining room(s), bathing areas(s), common area(s), offices, and other spaces necessary to provide the above services [and shall be operated by a legal entity holding a certificate of compliance document issued by the Colorado Department of Human Services (license), permitting the operation of a personal care home (PCH) at the location of the facility, according to appropriate Colorado Department of Human Services license or approval].
 - c. CCRC Skilled Care Nursing Facility
CCRC Skilled Nursing Facility is a facility located within a Continuing Care Retirement Community which provides board, shelter, and 24-hour skilled nursing and medical care to chronic or convalescent patients. A CCRC Skilled Care Nursing Facility shall include nursing beds and/or individual rooms, dining rooms, bathing areas, common areas, offices, clinics, therapy areas, medical facilities, and other space necessary to provide the above services [and shall be operated by a legal entity holding a certificate of compliance document issued by the Colorado Department of Human Services (license) permitting the operation of nursing facility at the location of the facility].
 - d. CCRC Accessory Uses
CCRC Accessory Uses within a Continuing Care Community shall mean any use necessary for the operation of the facility or the benefit or convenience of the residents and their guests including, but not limited to: kitchen and dining facilities, restaurants, places of worship, indoor and outdoor recreational buildings and uses, retail and banking facilities, beauty salons and barber shops, gift shops, class rooms, security facilities, conference rooms, social rooms, common areas, guest rooms, medical offices, medical clinic, dialysis center, laboratory services, dental offices, physical therapy and rehabilitation center, wellness center, ambulatory surgery, diagnostic imaging services, postal center, pharmacy maintenance facilities, craft and music rooms, various craft, health, exercise and vocational activities, classrooms, swimming pools, library and television room, as well as facilities related to the operation of the facility such as but not limited to administrative offices, food and record storage areas, property maintenance facilities, radio and satellite dish antennae, non-age restricted day care center for relatives of employees, security operations, off-street parking, and heating and cooling equipment structures, provided that the CCRC Accessory Use is for the primary benefit of the Continuing Care Retirement Community (CCRC).
 - e. CCRC Community Building
A typical CCRC campus within the Todd Creek PUD is defined by clusters of mid-rise residential buildings that surround a community building and form a neighborhood. A campus consists of three or more neighborhoods of approximately five hundred independent apartment units and one neighborhood of extended care including assisted living and skilled nursing. All of the buildings are joined with climate controlled bridges and walkways. The community buildings are designed to be the hub of services and social activities for each of these neighborhoods. A typical community building contains dining, recreational, educational, medical and other various personal service facilities for residents. A second key component to these buildings are the common open spaces, both internal and external, that create gathering areas for residents to socialize, interact with staff and help to create a sense of neighborhood.
2. Principal Uses
The following shall be allowed with an approved Preliminary Plat in accordance with the Adams County Zoning Resolution:
 - a. CCRC Independent Living Units
 - b. CCRC Assisted Living Facilities
 - c. CCRC Skilled Care nursing Facilities
 - d. Open space/ trails
 - e. Park / playground
 - f. Recreation facility - community
 - g. Construction office - temporary
 - h. Satellite office - temporary
 - i. Utility service facility



- j. Interim Agricultural Uses
 - k. Club / private recreational use
 - l. Cultural facility
 - m. Day-care center / preschool or day care home - large
3. Accessory Uses / Structures
The following shall be allowed only when a principal use has been established on the lot, in accordance with the Adams County Zoning Resolution:
 - a. CCRC accessory uses and buildings (see CCRC Definitions)
 - b. Detention facilities
 - c. Bar / Lounge - restricted to CCRC residents and their guests
 - d. Off-street parking and loading
 - e. Signs, as permitted
 - f. Church / chapel
 - g. Gatehouse / security station
 4. Standards for Principal and Accessory Uses
 - a. Maximum Gross Density: 14 dwelling units / acre in Planning Area 4
 - b. Minimum Setbacks:
 - i. From public streets: 20'
 - ii. From private drives: 15'
 - iii. Parking Lot setbacks:
 - From property lines: 20'
 - From buildings: 10'
 5. Encroachments:
 - a. A cornice canopy, eave, fireplace, wing wall or similar architectural feature may extend three feet into a required setback.
 - b. Fire escapes may extend six feet into a required setback.
 - c. An open, unenclosed, uncovered deck/porch at ground level may extend six feet into a required setback, except for a side setback.
 6. Maximum Building Height: 60'- principal, 40'- accessory
 7. Parking Standards: 1.1 space / Independent Living Unit
 - a. The minimum number of parking spaces per CCRC Independent Living Unit shall be inclusive of all staff, resident, and visitor parking and inclusive of CCRC Assisted Living Facilities and CCRC Skilled Care Nursing Facilities within the CCRC. Parking shall be provided at the time of Preliminary Plat. At no time shall the total parking provided fall below the standard of 1.1 spaces per Independent Living Unit (ILU). The breakdown is as follows:
 - 0.8 space = resident parking
 - 0.3 space = staff/visitor parking
 - 1.1 space / ILU
 - b. The total required spaces for the entire CCRC for Planning Area 4 shall be based on the overall requirement of 1.1 spaces per independent living unit. The specific number and layout of parking spaces for each phase of the project shall be determined at the time of Preliminary Plat review.
 8. Loading Standards: 1 tractor trailer loading dock per community building over 40,000 square feet; loading areas will be a minimum of 12'x50'.

IX. SPECIAL NOTES

- A. Any minimum development and performance standards not mentioned in this PUD, and only for portions of the PUD that are being revised with this Major PUD Amendment, shall conform to the Adams County Zoning Regulations dated December 8, 2020.

F. Reservoir Open Space / PA-5

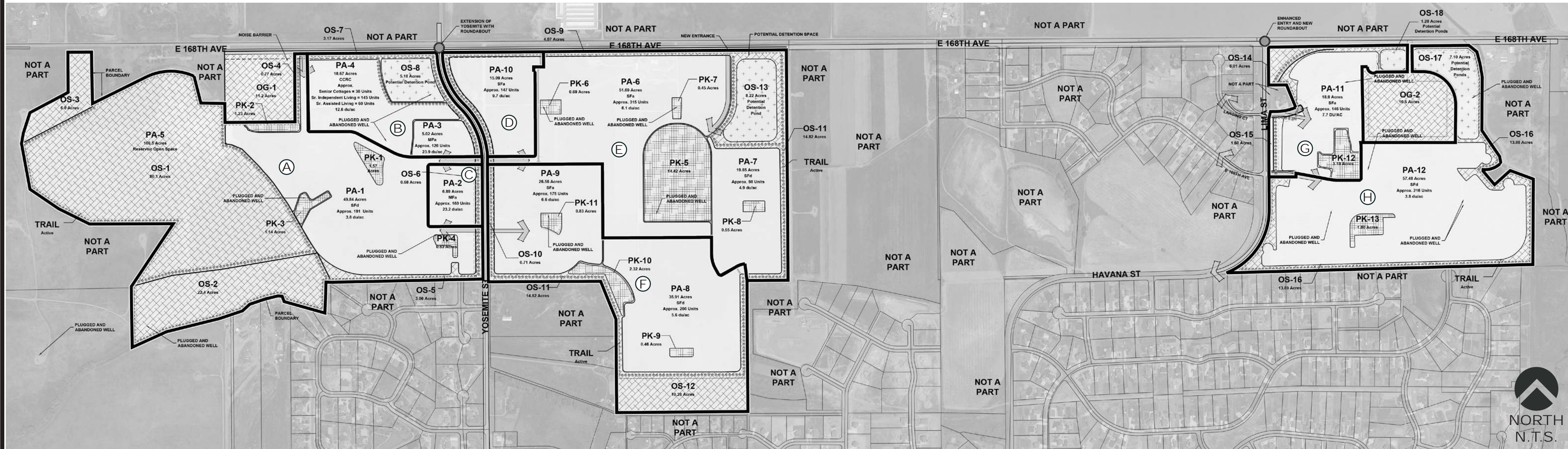
- A. Purpose: Reservoir Open Space: Contains the reservoirs ponds that will be managed by the Todd Creek Metropolitan District and used as a means of water for the community. The site may house the facility management and HOA district buildings to operate and maintain the ponds. The open space areas around the ponds will provide natural open space, as well as a community trail.
- B. Permitted Uses:
 1. Open Space
 2. Trails - crusher fines, asphalt or concrete
 3. Water Treatment Facility
 4. District Facility Buildings
 5. Maintenance Buildings
 6. District Office Buildings
 7. Reservoirs
 8. Recreational/Park Facilities

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TODD CREEK VILLAGE

PRELIMINARY PUD PLAN - MAJOR AMENDMENT

PARKS AND OPEN SPACE PLAN



8. REQUIRED Open Space & Park Acreage	166.6	30%
9. PROPOSED Open Space & Park Acreage within Property Boundaries	240.5	43.3%

PASSIVE VS. ACTIVE OPEN SPACE AREA	Total Area		Active Area		Passive Area		Description	Completion with Filing/Phase
	MINIMUM REQUIRED	166.6	41.6	25.0%	83.3	50.0%		
10. OPEN SPACE AND TRAIL CORRIDORS	OS-1	80.1	8.1		72.0		Gross Open Space With Trail Corridor 1.7 miles of trail with a 40' wide corridor equates to 8.1 acres	A
	OS-2	22.4	3.1		19.3		Gross Open Space With Trail Corridor 0.6 miles of trail with a 40' wide corridor equates to 3.1 acres	A
	OS-3	6.0	0.0		6.0		Gross Open Space	A
	OS-4	0.8	0.6		0.2		Gross Open Space With Trail Corridor 0.1 miles of trail with a 40' wide corridor equates to 0.6 acres	A
	OS-5	3.1	1.8		1.3		Gross Open Space With Trail Corridor 0.4 miles of trail with a 40' wide corridor equates to 1.8 acres	A
	OS-6	0.7	0.6		0.1		Gross Open Space With Trail Corridor 0.1 miles of trail with a 40' wide corridor equates to 0.6 acres	C
	OS-7	3.2	2.3		0.9		Gross Open Space With Trail Corridor 0.5 miles of trail with a 40' wide corridor equates to 2.3 acres	B
	OS-8	5.2	0.0		5.2		Potential Detention Area	B
	OS-9	4.1	3.7		0.4		Gross Open Space With Trail Corridor 0.8 miles of trail with a 40' wide corridor equates to 3.7 acres	E/D
	OS-10	0.7	0.6		0.1		Gross Open Space With Trail Corridor 0.1 miles of trail with a 40' wide corridor equates to 0.6 acres	F
	OS-11	14.8	9.0		5.8		Gross Open Space With Trail Corridor 1.8 miles of trail with a 40' wide corridor equates to 9.0 acres	E/F
	OS-12	10.3	0.0		10.3		Gross Open Space	F
	OS-13	8.2	0.0		8.2		Potential Detention Area	E
	OS-14	6.0	1.8		4.2		Gross Open Space With Trail Corridor 0.4 miles of trail with a 40' wide corridor equates to 1.8 acres	G
	OS-15	1.6	0.6		1.0		Gross Open Space With Trail Corridor 0.1 miles of trail with a 40' wide corridor equates to 0.6 acres	G
	OS-16	13.9	7.0		6.9		Gross Open Space With Trail Corridor 1.4 miles of trail with a 40' wide corridor equates to 7.0 acres	H
	OS-17	7.1	0.0		7.1		Potential Detention Area	H
	OS-18	1.2	0.0		1.2		Potential Detention Area	G
OG-1	11.2	0.0		11.2		Oil and Gas	N/A	
OG-2	10.6	0.0		10.6		(Will be Open Space when wells are abandoned in future)	N/A	

NOTE:

- This graphic is for illustrative and concept purposes only and may be subject to change with the design development. However, densities, # of units and planning area acreages shall remain within 10% of the proposed design without a PUD Amendment.
- The ultimate roadway design and widths are up to the discretion of Adams County and are not subject to regulation by this Planned Unit Development.
- The Phasing/Filing Designation that is depicted may or may not occur in the sequence presented, as long as adequate water system looping, traffic circulation with dual access and associated storm water conveyance and sanitary sewer outfalls are constructed in accordance with the applicable Adams County requirements.

PASSIVE VS. ACTIVE OPEN SPACE AREA	Total Area		Active Area		Passive Area		Description	Completion with Filing/Phase
11. PARK & RECREATION AREAS	PK-1	1.6	1.6					
	PK-2	1.2	1.2				Pocket Park	A
	PK-3	1.1	1.1				Pocket Park	A
	PK-4	0.8	0.8				Pocket Park	A
	PK-5	14.4	14.4				Neighborhood Park	E
	PK-6	0.7	0.7				Pocket Park	E
	PK-7	0.5	0.5				Pocket Park	E
	PK-8	0.6	0.6				Pocket Park	E
	PK-9	0.5	0.5				Pocket Park	F
	PK-10	2.3	2.3				Pocket Park	F
	PK-11	0.8	0.8				Pocket Park	F
	PK-12	3.2	3.2				Neighborhood Park	G
	PK-13	1.8	1.8				Pocket Park	H
12. Proposed Total Open Space & Park Acreage	240.5	68.6	28.5%	171.9	71.5%			

Note 1) PK-3 Pocket Parks will range in sizes but shall be a minimum of .5 acres to allow for varying sizes and locations spread out across the development in order to better serve residents needs. Neighborhood parks are to be a minimum of 3 acres per Adams County code.

ACTIVE VS PASSIVE OPEN SPACE CONCEPT

THE ACTIVE PARKS AND OPEN SPACE CONCEPT FOR THE TODD CREEK PUD AMENDMENT AREAS INCLUDES LARGER NEIGHBORHOOD PARK, POCKET PARKS, AND AN EXTENSIVE TRAIL SYSTEM THAT TRAVELS ALONG THE PERIMETER OF THE THREE (3) PROPERTIES AND ALSO THE DETENTION & RESERVOIR PONDS. THE PARKS SHALL CONTAIN ACTIVE SPACES THAT INCLUDE PLAY EQUIPMENT, CLIMBING STRUCTURES, PLAY FIELDS OR OPEN LAWN AREAS, SHADE SHELTERS, AND OTHER SITE FURNISHINGS, SUCH AS BENCHES, PET WASTE STATIONS, TRASH RECEPTACLES, AND BIKE RACKS/REPAIR STATIONS. THE PARKS SHALL CONTAIN SOME NATURALIZED PLANTINGS AND ALSO ORNAMENTAL SHRUB BEDS AND PLENTY OF SHADE TREES.

PASSIVE OPEN SPACE ARE NATURALIZED AREAS WITH NATIVE SEEDING, MINIMAL ORNAMENTAL PLANTINGS, THE DETENTION PONDS, RESERVOIR PONDS, AND THE FUTURE OPEN SPACE ONCE THE OIL & GAS TRANSITIONS.



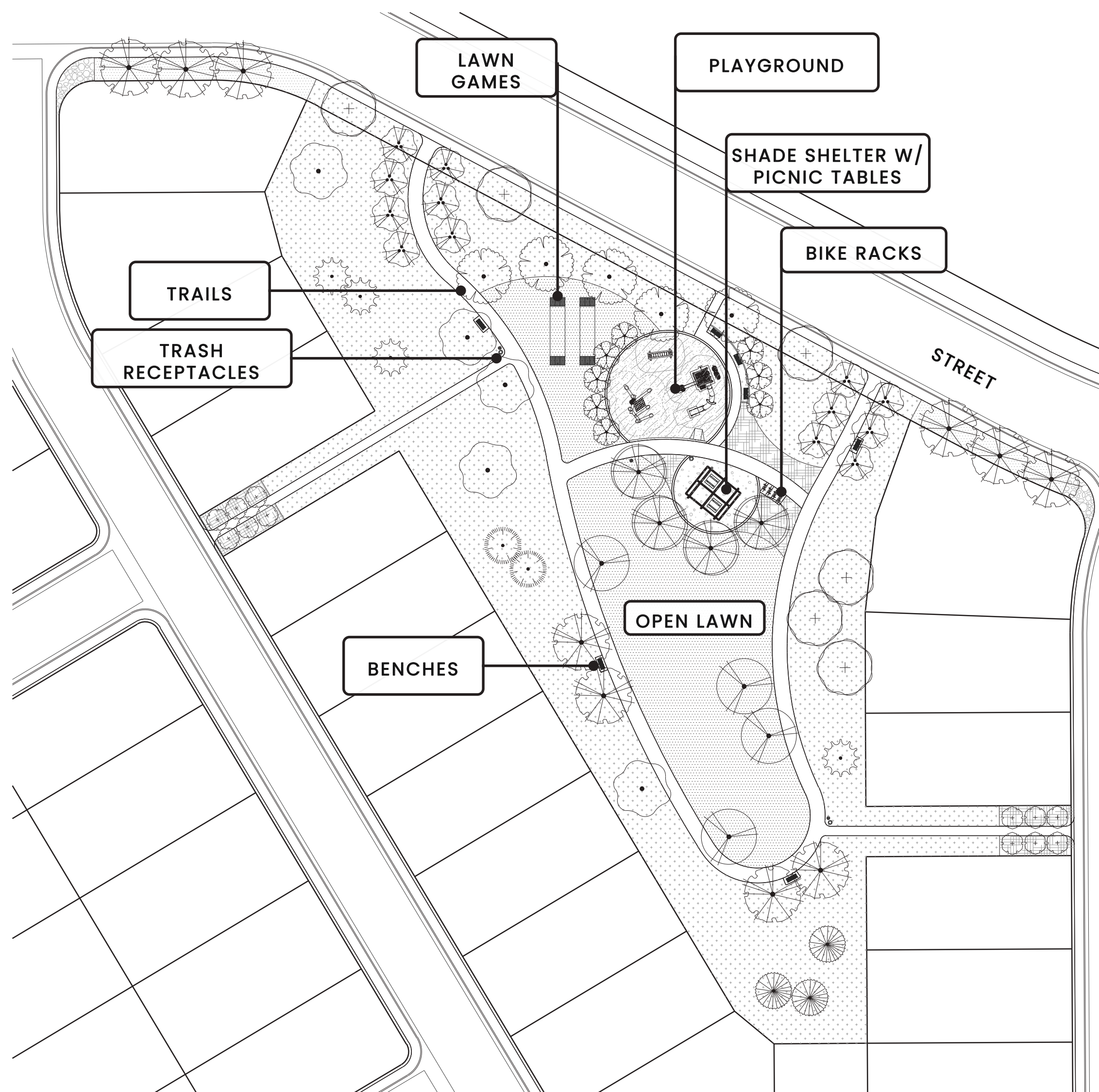
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PRELIMINARY PUD PLAN - MAJOR AMENDMENT

ACTIVE OPEN SPACE & PARKS CONCEPT PLANS

PK-1 - APPROX. 1.6 ACRES



ACTIVE OPEN SPACE CRITERIA:

NEIGHBORHOOD PARK

- SIZE: 3-15 ACRES
- MUST CONTAIN AT LEAST (1) ACTIVE USE TYPE PER 1.5 ACRES OF PARK AREA
- MUST CONTAIN ALL PARK AMENITIES LISTED BELOW

POCKET PARK

- SIZE: 0.5 - 2.9 ACRES
- MUST CONTAIN AT LEAST (1) ACTIVE USE TYPE PER 1 ACRE OF PARK AREA
- MUST CONTAIN AT LEAST (3) DIFFERENT TYPES OF PARK AMENITIES

LIST OF PARK ACTIVE USES INCLUDE THE FOLLOWING:

- TRAILS
- PLAYGROUND
- CLIMBING FEATURE
- BASKETBALL COURTS
- TENNIS/PICKLEBALL COURTS
- BOCCE BALL COURTS
- OPEN PLAY LAWN
- YARD GAMES (HORSESHOE, CORNHOLE, ETC.)
- MULTI-PURPOSE/SPORTS FIELD
- DOG PARK
- COMMUNITY GARDENS OR ORCHARDS
- TRIKE TRACK OR BIKE COURSE
- SKATE PARK
- OR SIMILAR ACTIVE USES

LIST OF PARK AMENITIES INCLUDE THE FOLLOWING:

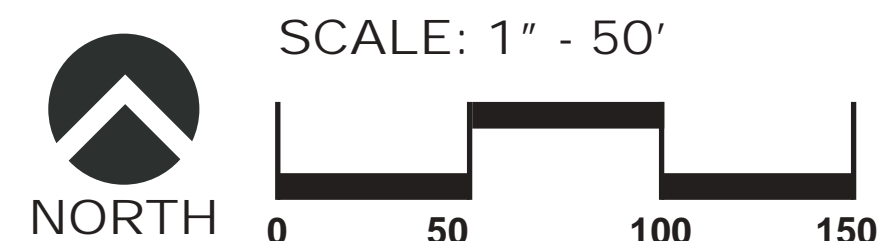
- SHADE SHELTER
- BENCHES
- TRASH RECEPTACLES
- PET WASTE STATIONS
- BIKE RACKS

ACTIVE OPEN SPACE/TRAIL SYSTEM

- SIZE: MINIMUM 0.5 ACRES
- ACTIVE USES:
 - TRAILS (MINIMUM 8' TRAIL WITHIN A 40' WIDE CORRIDOR)
- MUST CONTAIN AT LEAST (2) AMENITIES EVERY 0.5 MILES
 - SHADE SHELTER
 - BENCHES
 - PICNIC TABLE
 - TRASH RECEPTACLES
 - PET WASTE STATIONS
 - BIKE RACKS
 - BIKE REPAIR STATION

NOTE:

THE ACTIVE PARKS AND OPEN SPACE PLANS ARE CONCEPT PLANS ONLY AND MAY CHANGE WITH FUTURE DEVELOPMENT PLANS. HOWEVER, THE ACTIVE PARKS AND OPEN SPACE SHALL CONTAIN SIMILAR OR SUBSTITUTED FEATURES, AS OUTLINED IN THE ACTIVE PARKS AND OPEN SPACE CRITERIA ABOVE.



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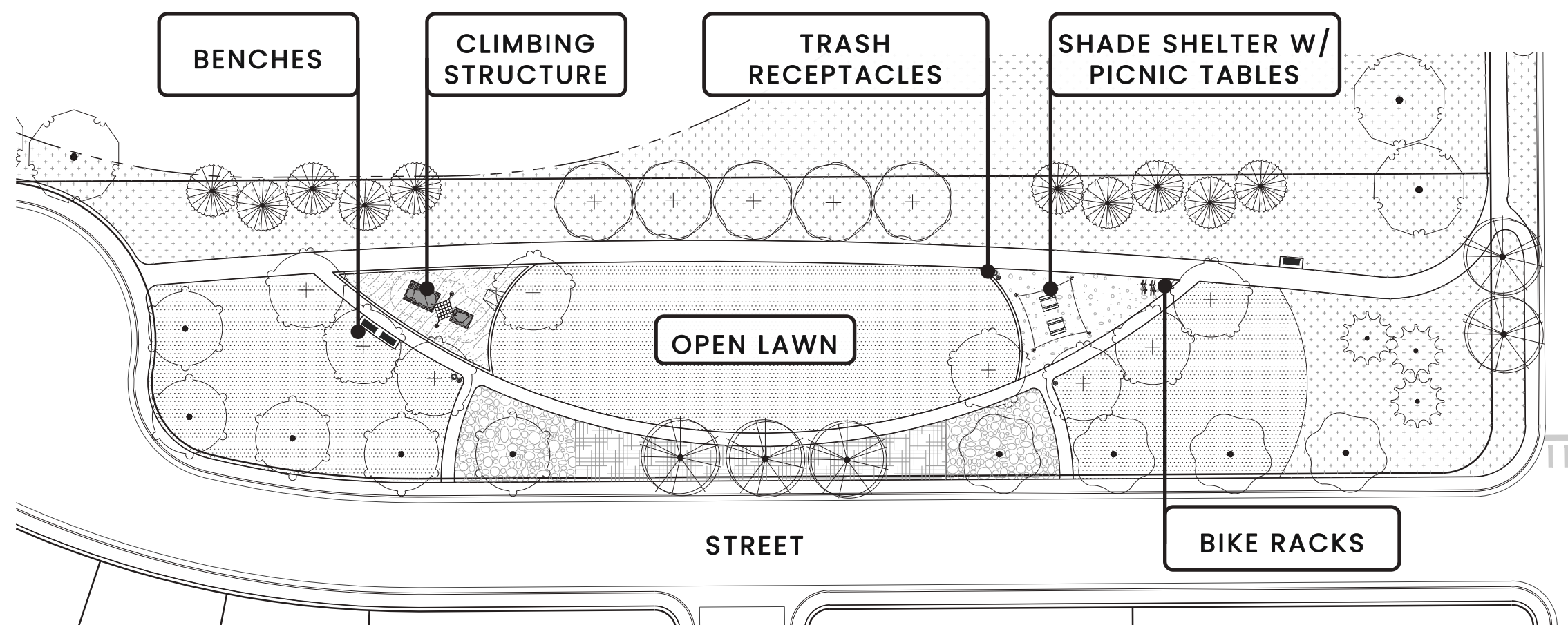
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TODD CREEK VILLAGE

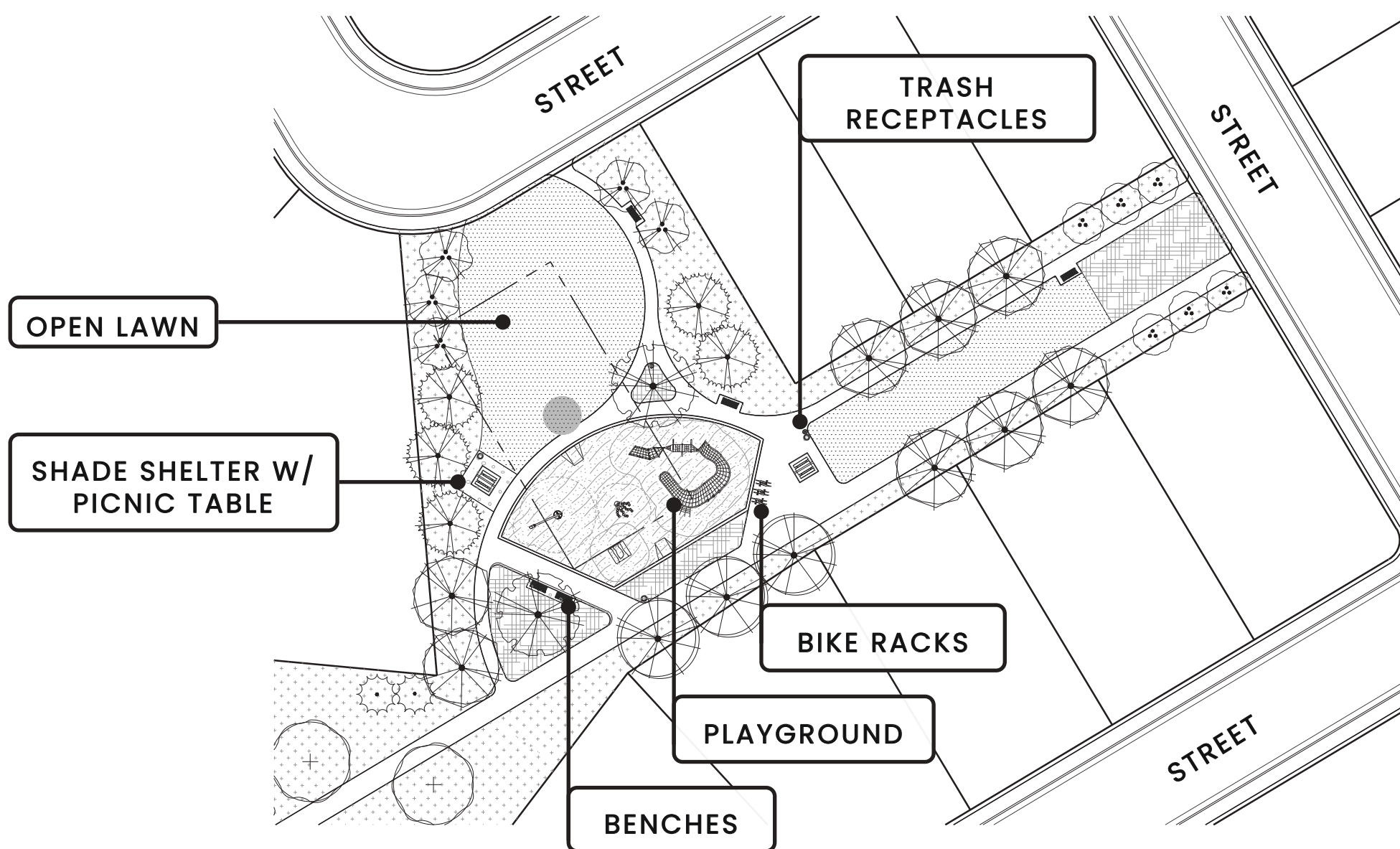
PRELIMINARY PUD PLAN - MAJOR AMENDMENT

ACTIVE OPEN SPACE & PARKS CONCEPT PLANS

PK-2 - APPROX. 1.2 ACRES



PK-3 - APPROX. 1.1 ACRES



ACTIVE OPEN SPACE CRITERIA:

NEIGHBORHOOD PARK

- SIZE: 3-15 ACRES
- MUST CONTAIN AT LEAST (1) ACTIVE USE TYPE PER 1.5 ACRES OF PARK AREA
- MUST CONTAIN ALL PARK AMENITIES LISTED BELOW

POCKET PARK

- SIZE: 0.5 - 2.9 ACRES
- MUST CONTAIN AT LEAST (1) ACTIVE USE TYPE PER 1 ACRE OF PARK AREA
- MUST CONTAIN AT LEAST (3) DIFFERENT TYPES OF PARK AMENITIES

LIST OF PARK ACTIVE USES INCLUDE THE FOLLOWING:

- TRAILS
- PLAYGROUND
- CLIMBING FEATURE
- BASKETBALL COURTS
- TENNIS/PICKLEBALL COURTS
- BOCCE BALL COURTS
- OPEN PLAY LAWN
- YARD GAMES (HORSESHOE, CORNHOLE, ETC.)
- MULTI-PURPOSE/SPORTS FIELD
- DOG PARK
- COMMUNITY GARDENS OR ORCHARDS
- TRIKE TRACK OR BIKE COURSE
- SKATE PARK
- OR SIMILAR ACTIVE USES

LIST OF PARK AMENITIES INCLUDE THE FOLLOWING:

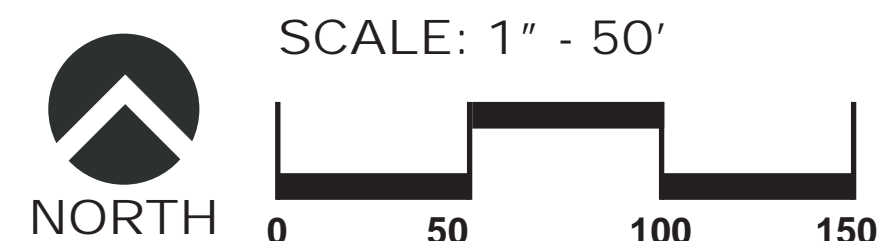
- SHADE SHELTER
- BENCHES
- TRASH RECEPTACLES
- PET WASTE STATIONS
- BIKE RACKS

ACTIVE OPEN SPACE/TRAIL SYSTEM

- SIZE: MINIMUM 0.5 ACRES
- ACTIVE USES:
 - TRAILS (MINIMUM 8' TRAIL WITHIN A 40' WIDE CORRIDOR)
 - SHADE SHELTER
 - BENCHES
 - PICNIC TABLE
 - TRASH RECEPTACLES
 - PET WASTE STATIONS
 - BIKE RACKS
 - BIKE REPAIR STATION
- MUST CONTAIN AT LEAST (2) AMENITIES EVERY 0.5 MILES

NOTE:

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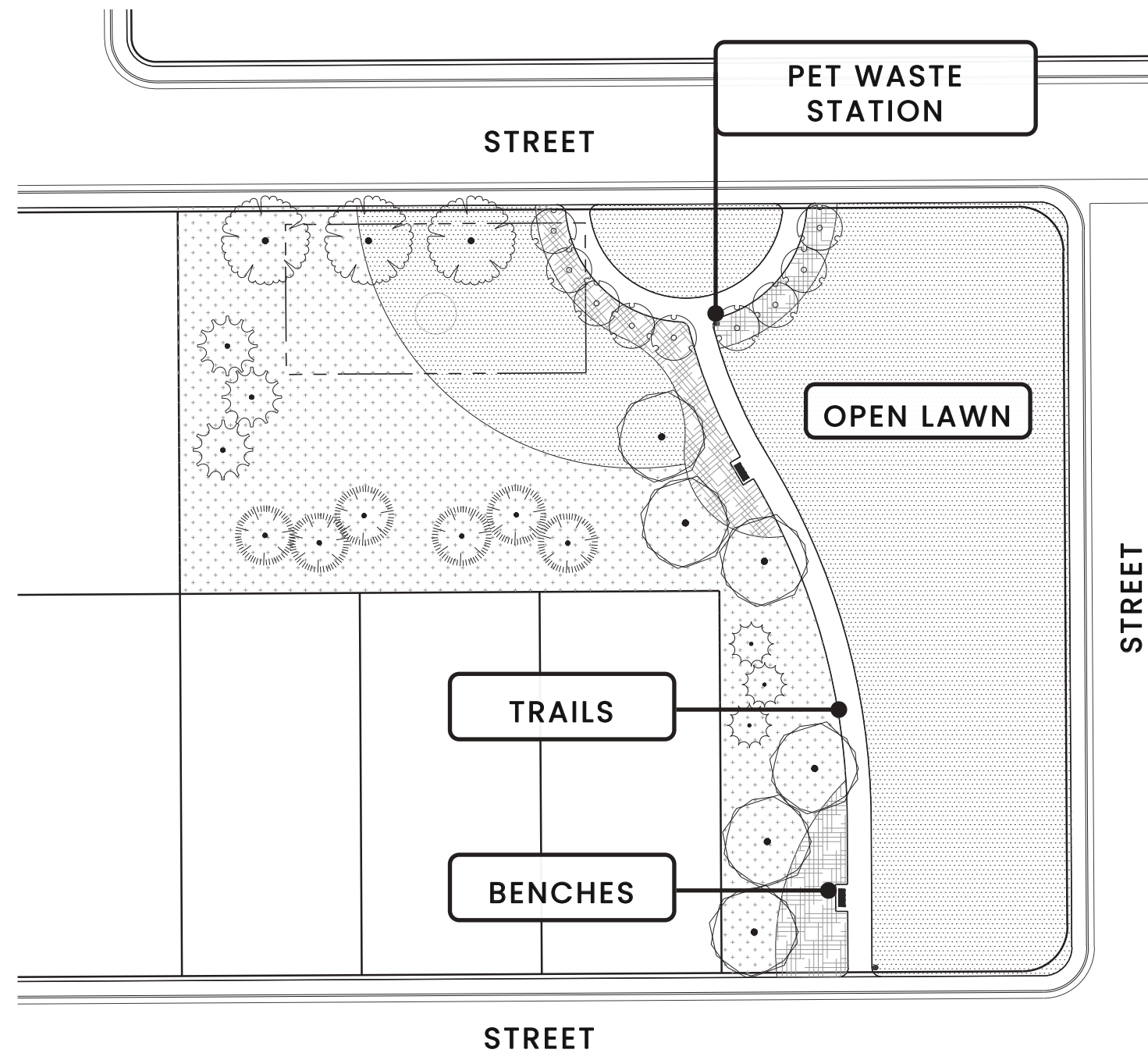
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TODD CREEK VILLAGE

PRELIMINARY PUD PLAN - MAJOR AMENDMENT

ACTIVE OPEN SPACE & PARKS CONCEPT PLANS

PK-4 - APPROX. 0.8 ACRES



ACTIVE OPEN SPACE CRITERIA:

NEIGHBORHOOD PARK

- SIZE: 3-15 ACRES
- MUST CONTAIN AT LEAST (1) ACTIVE USE TYPE PER 1.5 ACRES OF PARK AREA
- MUST CONTAIN ALL PARK AMENITIES LISTED BELOW

POCKET PARK

- SIZE: 0.5 - 2.9 ACRES
- MUST CONTAIN AT LEAST (1) ACTIVE USE TYPE PER 1 ACRE OF PARK AREA
- MUST CONTAIN AT LEAST (3) DIFFERENT TYPES OF PARK AMENITIES

LIST OF PARK ACTIVE USES INCLUDE THE FOLLOWING:

- TRAILS
- PLAYGROUND
- CLIMBING FEATURE
- BASKETBALL COURTS
- TENNIS/PICKLEBALL COURTS
- BOCCE BALL COURTS
- OPEN PLAY LAWN
- YARD GAMES (HORSESHOE, CORNHOLE, ETC.)
- MULTI-PURPOSE/SPORTS FIELD
- DOG PARK
- COMMUNITY GARDENS OR ORCHARDS
- TRIKE TRACK OR BIKE COURSE
- SKATE PARK
- OR SIMILAR ACTIVE USES

LIST OF PARK AMENITIES INCLUDE THE FOLLOWING:

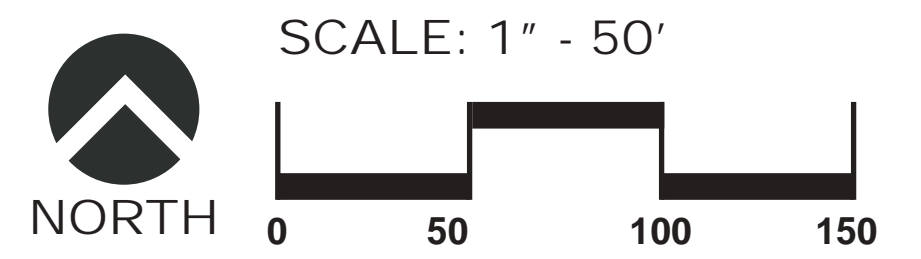
- SHADE SHELTER
- BENCHES
- TRASH RECEPTACLES
- PET WASTE STATIONS
- BIKE RACKS

ACTIVE OPEN SPACE/TRAIL SYSTEM

- SIZE: MINIMUM 0.5 ACRES
- ACTIVE USES:
 - TRAILS (MINIMUM 8' TRAIL WITHIN A 40' WIDE CORRIDOR)
- MUST CONTAIN AT LEAST (2) AMENITIES EVERY 0.5 MILES
 - SHADE SHELTER
 - BENCHES
 - PICNIC TABLE
 - TRASH RECEPTACLES
 - PET WASTE STATIONS
 - BIKE RACKS
 - BIKE REPAIR STATION

NOTE:

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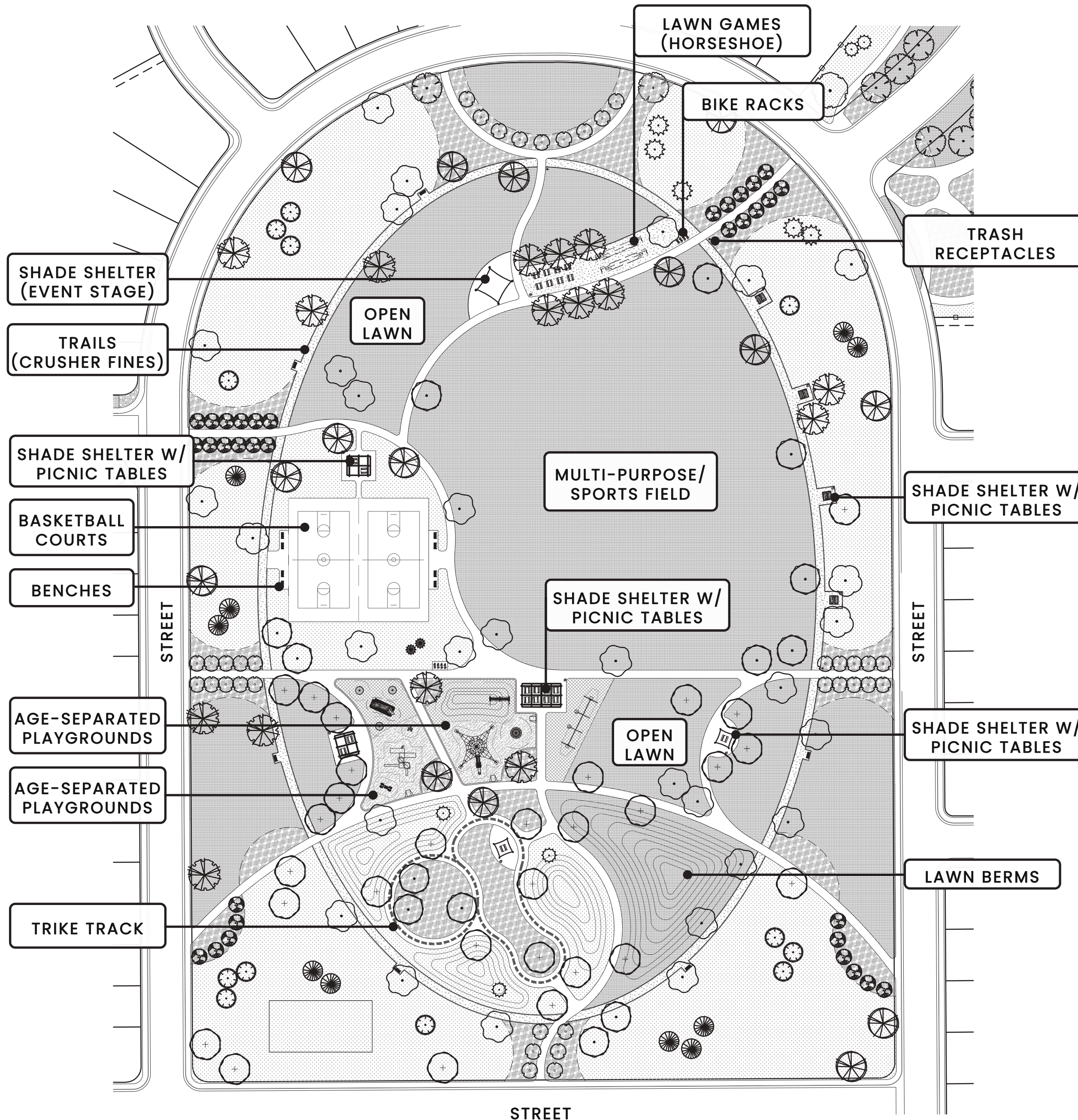
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TODD CREEK VILLAGE

PRELIMINARY PUD PLAN - MAJOR AMENDMENT

ACTIVE OPEN SPACE & PARKS CONCEPT PLANS

PK-5 - NEIGHBORHOOD PARK - APPROX. 14.4 ACRES



ACTIVE OPEN SPACE CRITERIA:

NEIGHBORHOOD PARK

- SIZE: 3-15 ACRES
- MUST CONTAIN AT LEAST (1) ACTIVE USE TYPE PER 1.5 ACRES OF PARK AREA
- MUST CONTAIN ALL PARK AMENITIES LISTED BELOW

POCKET PARK

- SIZE: 0.5 - 2.9 ACRES
- MUST CONTAIN AT LEAST (1) ACTIVE USE TYPE PER 1 ACRE OF PARK AREA
- MUST CONTAIN AT LEAST (3) DIFFERENT TYPES OF PARK AMENITIES

LIST OF PARK ACTIVE USES INCLUDE THE FOLLOWING:

- TRAILS
- PLAYGROUND
- CLIMBING FEATURE
- BASKETBALL COURTS
- TENNIS/PICKLEBALL COURTS
- BOCCE BALL COURTS
- OPEN PLAY LAWN
- YARD GAMES (HORSESHOE, CORNHOLE, ETC.)
- MULTI-PURPOSE/SPORTS FIELD
- DOG PARK
- COMMUNITY GARDENS OR ORCHARDS
- TRIKE TRACK OR BIKE COURSE
- SKATE PARK
- OR SIMILAR ACTIVE USES

LIST OF PARK AMENITIES INCLUDE THE FOLLOWING:

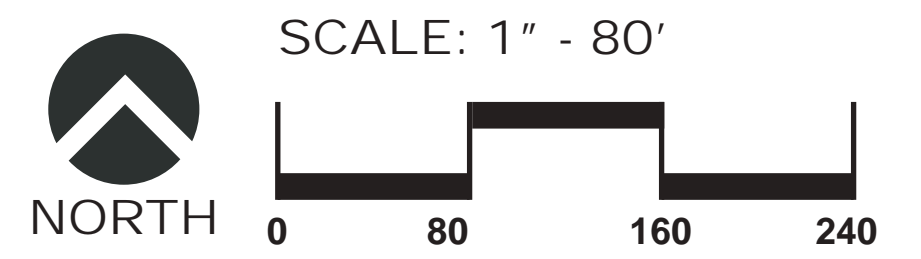
- SHADE SHELTER
- BENCHES
- TRASH RECEPTACLES
- PET WASTE STATIONS
- BIKE RACKS

ACTIVE OPEN SPACE/TRAIL SYSTEM

- SIZE: MINIMUM 0.5 ACRES
- ACTIVE USES:
 - TRAILS (MINIMUM 8' TRAIL WITHIN A 40' WIDE CORRIDOR)
- MUST CONTAIN AT LEAST (2) AMENITIES EVERY 0.5 MILES
 - SHADE SHELTER
 - BENCHES
 - PICNIC TABLE
 - TRASH RECEPTACLES
 - PET WASTE STATIONS
 - BIKE RACKS
 - BIKE REPAIR STATION

NOTE:

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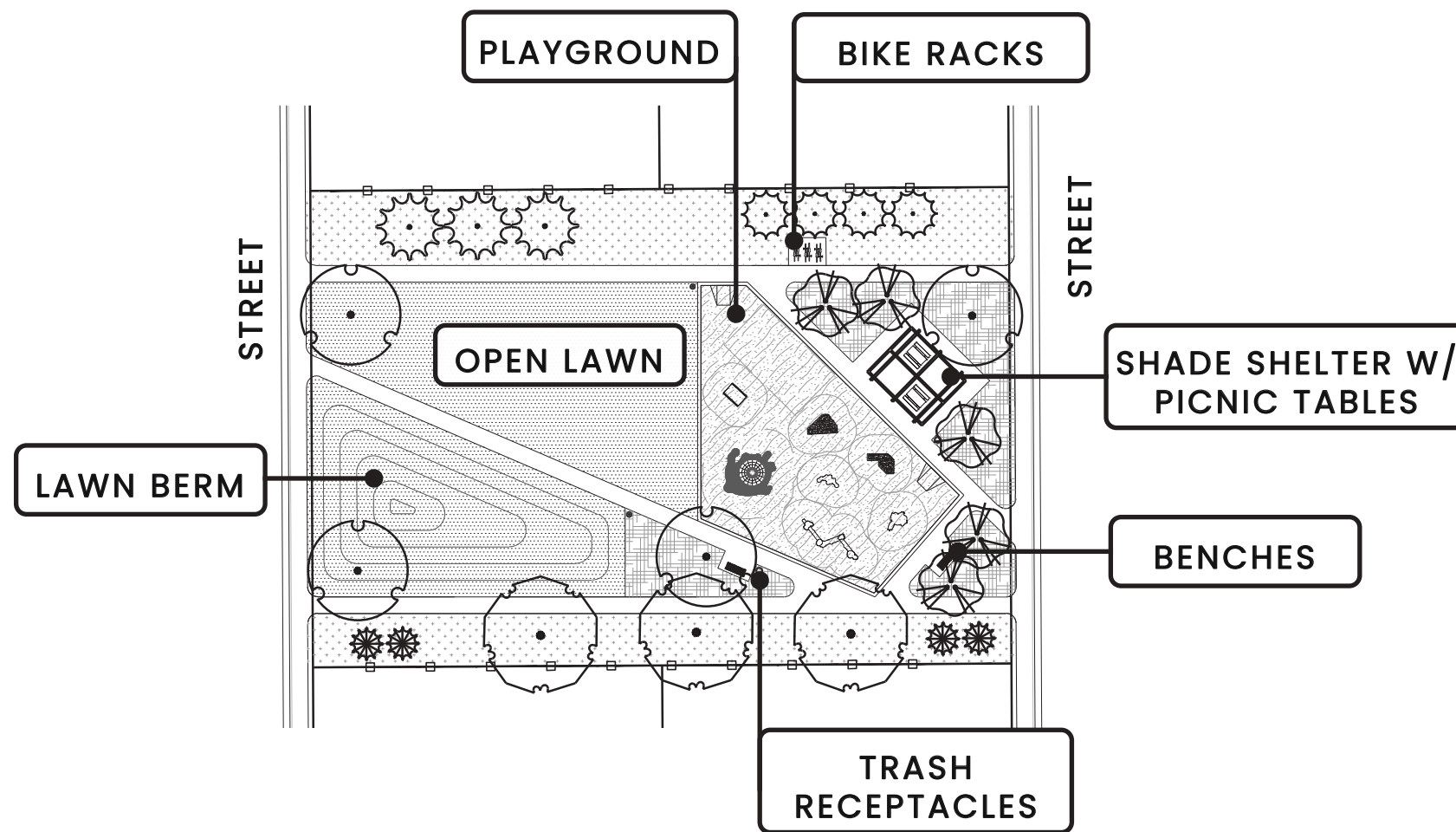
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TODD CREEK VILLAGE

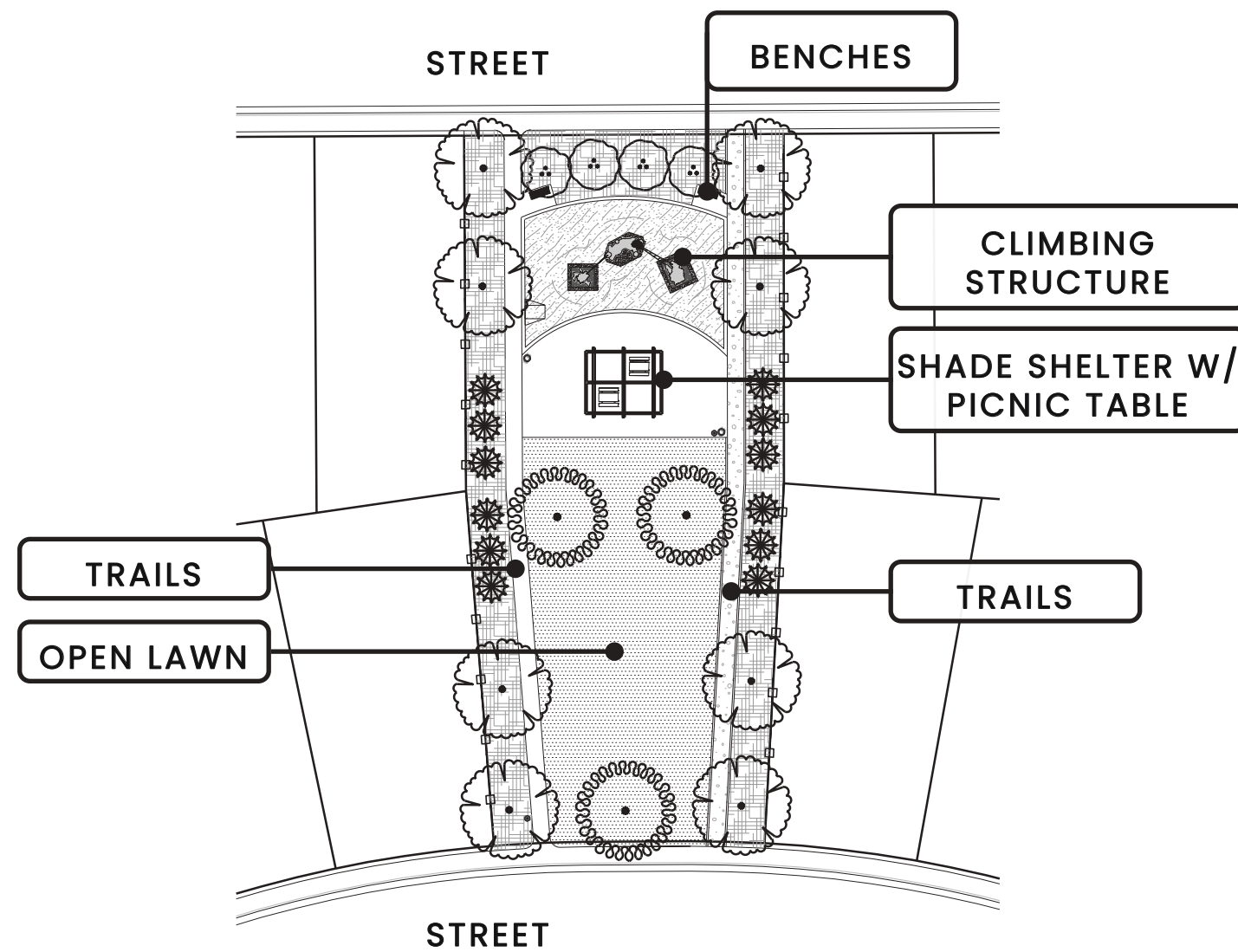
PRELIMINARY PUD PLAN - MAJOR AMENDMENT

ACTIVE OPEN SPACE & PARKS CONCEPT PLANS

PK-6 - APPROX. 0.7 ACRES



PK-7 - APPROX. 0.5 ACRES



ACTIVE OPEN SPACE CRITERIA:

NEIGHBORHOOD PARK

- SIZE: 3-15 ACRES
- MUST CONTAIN AT LEAST (1) ACTIVE USE TYPE PER 1.5 ACRES OF PARK AREA
- MUST CONTAIN ALL PARK AMENITIES LISTED BELOW

POCKET PARK

- SIZE: 0.5 - 2.9 ACRES
- MUST CONTAIN AT LEAST (1) ACTIVE USE TYPE PER 1 ACRE OF PARK AREA
- MUST CONTAIN AT LEAST (3) DIFFERENT TYPES OF PARK AMENITIES

LIST OF PARK ACTIVE USES INCLUDE THE FOLLOWING:

- TRAILS
- PLAYGROUND
- CLIMBING FEATURE
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- OPEN PLAY LAWN
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- MULTI-PURPOSE/SPORTS FIELD
- DOG PARK
- COMMUNITY GARDENS OR ORCHARDS
- TRIKE TRACK OR BIKE COURSE
- SKATE PARK
- OR SIMILAR ACTIVE USES

LIST OF PARK AMENITIES INCLUDE THE FOLLOWING:

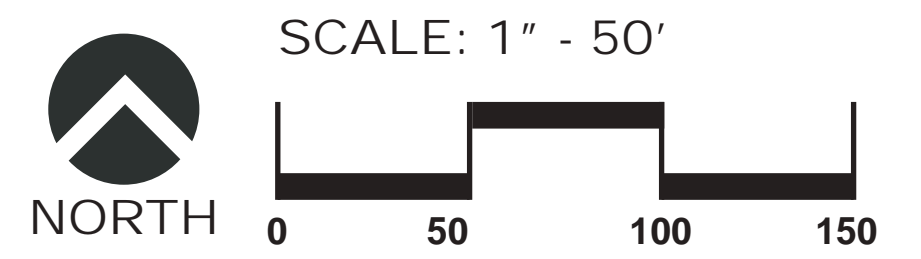
- SHADE SHELTER
- BENCHES
- TRASH RECEPTACLES
- PET WASTE STATIONS
- BIKE RACKS

ACTIVE OPEN SPACE/TRAIL SYSTEM

- SIZE: MINIMUM 0.5 ACRES
- ACTIVE USES:
 - TRAILS (MINIMUM 8' TRAIL WITHIN A 40' WIDE CORRIDOR)
- MUST CONTAIN AT LEAST (2) AMENITIES EVERY 0.5 MILES
 - SHADE SHELTER
 - BENCHES
 - PICNIC TABLE
 - TRASH RECEPTACLES
 - PET WASTE STATIONS
 - BIKE RACKS
 - BIKE REPAIR STATION

NOTE:

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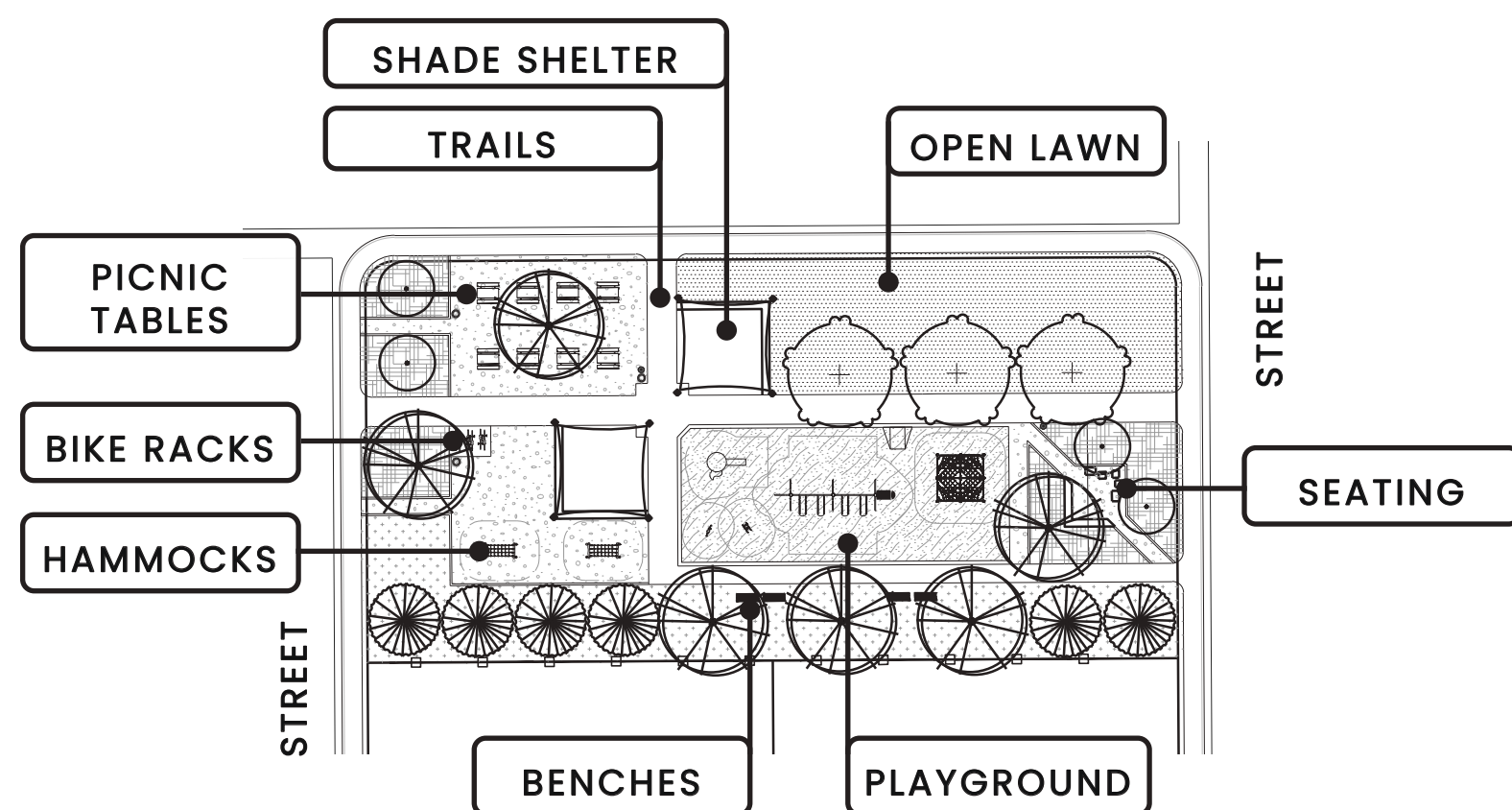
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TODD CREEK VILLAGE

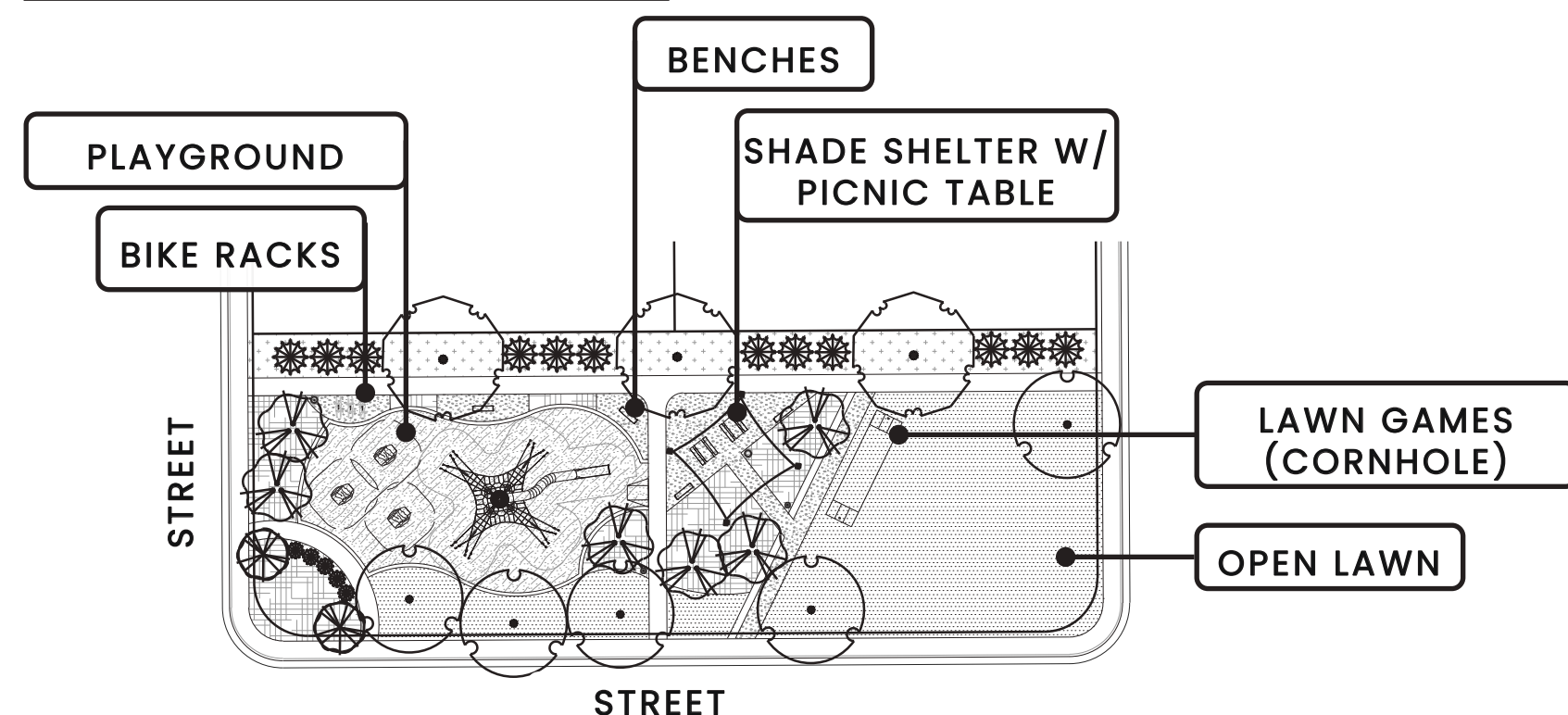
PRELIMINARY PUD PLAN - MAJOR AMENDMENT

ACTIVE OPEN SPACE & PARKS CONCEPT PLANS

PK-8 - APPROX. 0.6 ACRES



PK-9 - APPROX. 0.5 ACRES



ACTIVE OPEN SPACE CRITERIA:

NEIGHBORHOOD PARK

- SIZE: 3-15 ACRES
- MUST CONTAIN AT LEAST (1) ACTIVE USE TYPE PER 1.5 ACRES OF PARK AREA
- MUST CONTAIN ALL PARK AMENITIES LISTED BELOW

POCKET PARK

- SIZE: 0.5 - 2.9 ACRES
- MUST CONTAIN AT LEAST (1) ACTIVE USE TYPE PER 1 ACRE OF PARK AREA
- MUST CONTAIN AT LEAST (3) DIFFERENT TYPES OF PARK AMENITIES

LIST OF PARK ACTIVE USES INCLUDE THE FOLLOWING:

- TRAILS
- PLAYGROUND
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- BASKETBALL COURTS
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- BOCCIE BALL COURTS
- OPEN PLAY LAWN
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- MULTI-PURPOSE/SPORTS FIELD
- DOG PARK
- COMMUNITY GARDENS OR ORCHARDS
- TRIKE TRACK OR BIKE COURSE
- SKATE PARK
- OR SIMILAR ACTIVE USES

LIST OF PARK AMENITIES INCLUDE THE FOLLOWING:

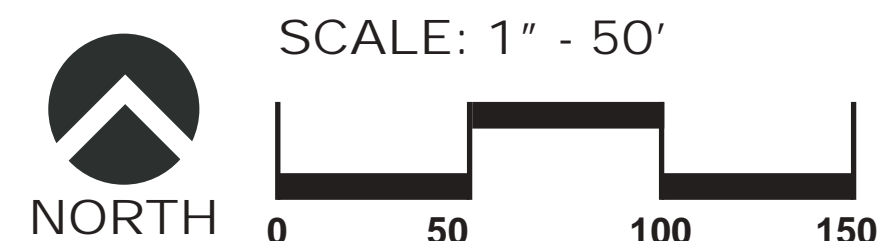
- SHADE SHELTER
- BENCHES
- TRASH RECEPTACLES
- PET WASTE STATIONS
- BIKE RACKS



ACTIVE OPEN SPACE/TRAIL SYSTEM

- SIZE: MINIMUM 0.5 ACRES
- ACTIVE USES:
 - TRAILS (MINIMUM 8' TRAIL WITHIN A 40' WIDE CORRIDOR)
- MUST CONTAIN AT LEAST (2) AMENITIES EVERY 0.5 MILES
 - SHADE SHELTER
 - BENCHES
 - PICNIC TABLE
 - TRASH RECEPTACLES
 - PET WASTE STATIONS
 - BIKE RACKS
 - BIKE REPAIR STATION

NOTE:

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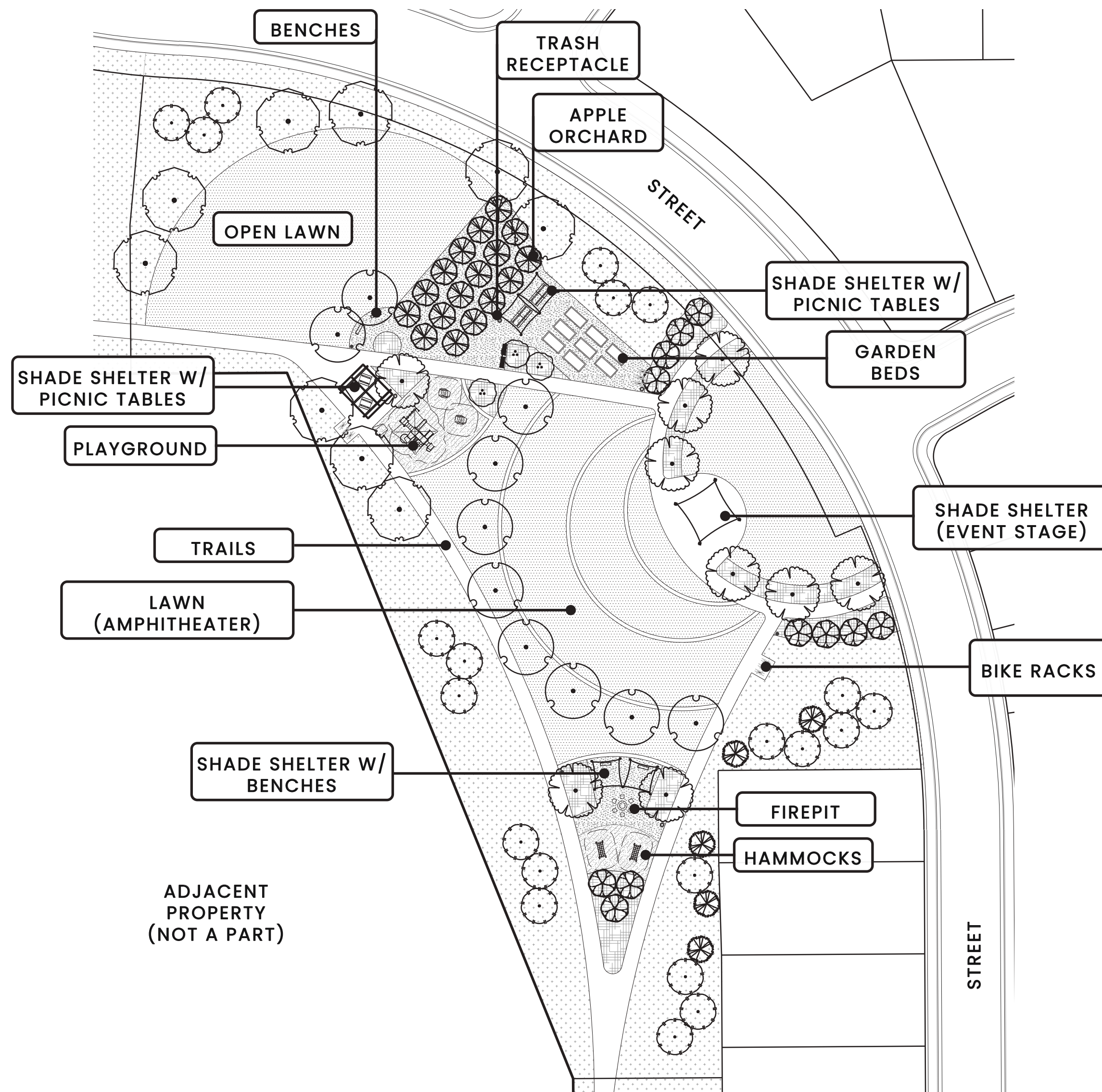
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TODD CREEK VILLAGE

PRELIMINARY PUD PLAN - MAJOR AMENDMENT

ACTIVE OPEN SPACE & PARKS CONCEPT PLANS

PK-10 - APPROX. 2.3 ACRES



ACTIVE OPEN SPACE CRITERIA:

NEIGHBORHOOD PARK

- SIZE: 3-15 ACRES
- MUST CONTAIN AT LEAST (1) ACTIVE USE TYPE PER 1.5 ACRES OF PARK AREA
- MUST CONTAIN ALL PARK AMENITIES LISTED BELOW

POCKET PARK

- SIZE: 0.5 - 2.9 ACRES
- MUST CONTAIN AT LEAST (1) ACTIVE USE TYPE PER 1 ACRE OF PARK AREA
- MUST CONTAIN AT LEAST (3) DIFFERENT TYPES OF PARK AMENITIES

LIST OF PARK ACTIVE USES INCLUDE THE FOLLOWING:

- TRAILS
- PLAYGROUND
- CLIMBING FEATURE
- BASKETBALL COURTS
- TENNIS/PICKLEBALL COURTS
- BOCCIE BALL COURTS
- OPEN PLAY LAWN
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- MULTI-PURPOSE/SPORTS FIELD
- DOG PARK
- COMMUNITY GARDENS OR ORCHARDS
- TRIKE TRACK OR BIKE COURSE
- SKATE PARK
- OR SIMILAR ACTIVE USES

LIST OF PARK AMENITIES INCLUDE THE FOLLOWING:

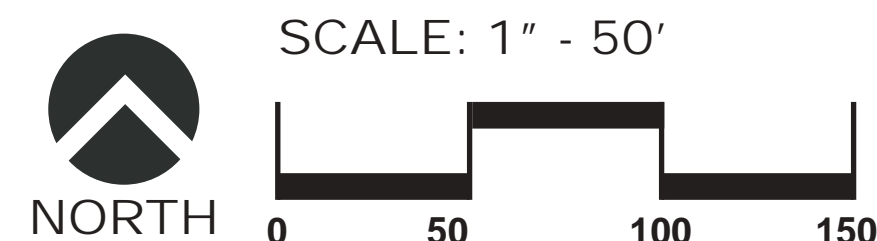
- SHADE SHELTER
- BENCHES
- TRASH RECEPTACLES
- PET WASTE STATIONS
- BIKE RACKS

ACTIVE OPEN SPACE/TRAIL SYSTEM

- SIZE: MINIMUM 0.5 ACRES
- ACTIVE USES:
 - TRAILS (MINIMUM 8' TRAIL WITHIN A 40' WIDE CORRIDOR)
- MUST CONTAIN AT LEAST (2) AMENITIES EVERY 0.5 MILES
 - SHADE SHELTER
 - BENCHES
 - PICNIC TABLE
 - TRASH RECEPTACLES
 - PET WASTE STATIONS
 - BIKE RACKS
 - BIKE REPAIR STATION

NOTE:

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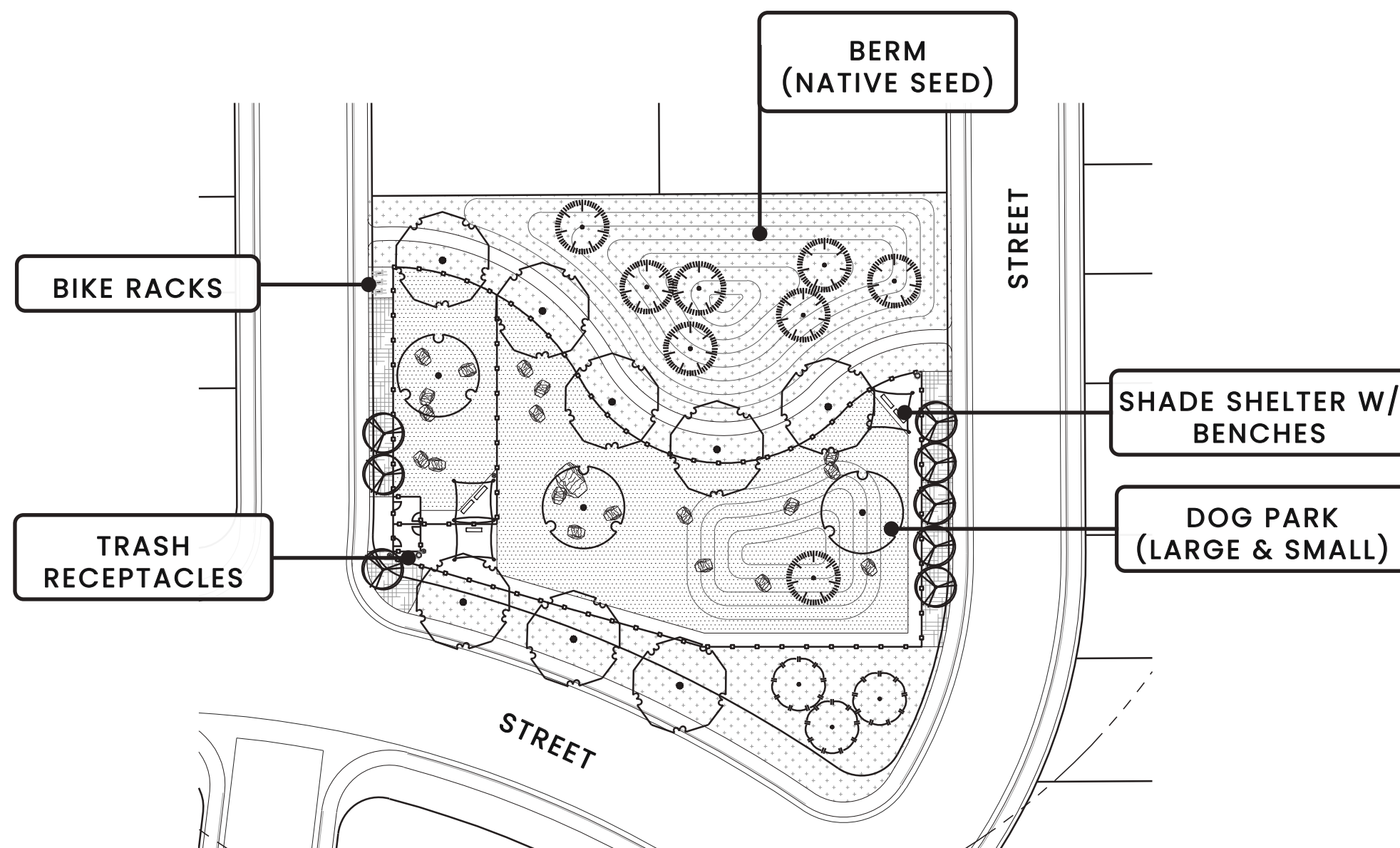
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TODD CREEK VILLAGE

PRELIMINARY PUD PLAN - MAJOR AMENDMENT

ACTIVE OPEN SPACE & PARKS CONCEPT PLANS

PK-11 - APPROX. 0.8 ACRES



ACTIVE OPEN SPACE CRITERIA:

NEIGHBORHOOD PARK

- SIZE: 3-15 ACRES
- MUST CONTAIN AT LEAST (1) ACTIVE USE TYPE PER 1.5 ACRES OF PARK AREA
- MUST CONTAIN ALL PARK AMENITIES LISTED BELOW

POCKET PARK

- SIZE: 0.5 - 2.9 ACRES
- MUST CONTAIN AT LEAST (1) ACTIVE USE TYPE PER 1 ACRE OF PARK AREA
- MUST CONTAIN AT LEAST (3) DIFFERENT TYPES OF PARK AMENITIES

LIST OF PARK ACTIVE USES INCLUDE THE FOLLOWING:

- TRAILS
- PLAYGROUND
- CLIMBING FEATURE
- BASKETBALL COURTS
- TENNIS/PICKLEBALL COURTS
- BOCCE BALL COURTS
- OPEN PLAY LAWN
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- MULTI-PURPOSE/SPORTS FIELD
- DOG PARK
- COMMUNITY GARDENS OR ORCHARDS
- TRIKE TRACK OR BIKE COURSE
- SKATE PARK
- OR SIMILAR ACTIVE USES

LIST OF PARK AMENITIES INCLUDE THE FOLLOWING:

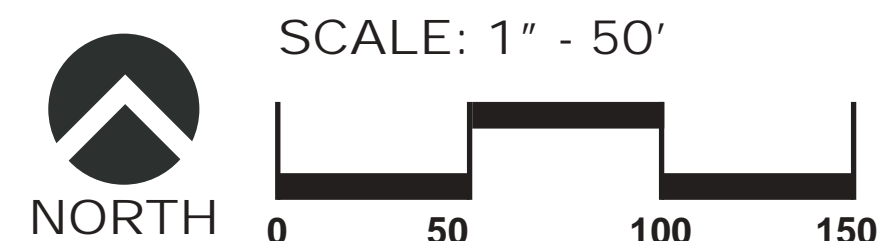
- SHADE SHELTER
- BENCHES
- TRASH RECEPTACLES
- PET WASTE STATIONS
- BIKE RACKS

ACTIVE OPEN SPACE/TRAIL SYSTEM

- SIZE: MINIMUM 0.5 ACRES
- ACTIVE USES:
 - TRAILS (MINIMUM 8' TRAIL WITHIN A 40' WIDE CORRIDOR)
 - SHADE SHELTER
 - BENCHES
 - PICNIC TABLE
 - TRASH RECEPTACLES
 - PET WASTE STATIONS
 - BIKE RACKS
 - BIKE REPAIR STATION
- MUST CONTAIN AT LEAST (2) AMENITIES EVERY 0.5 MILES

NOTE:

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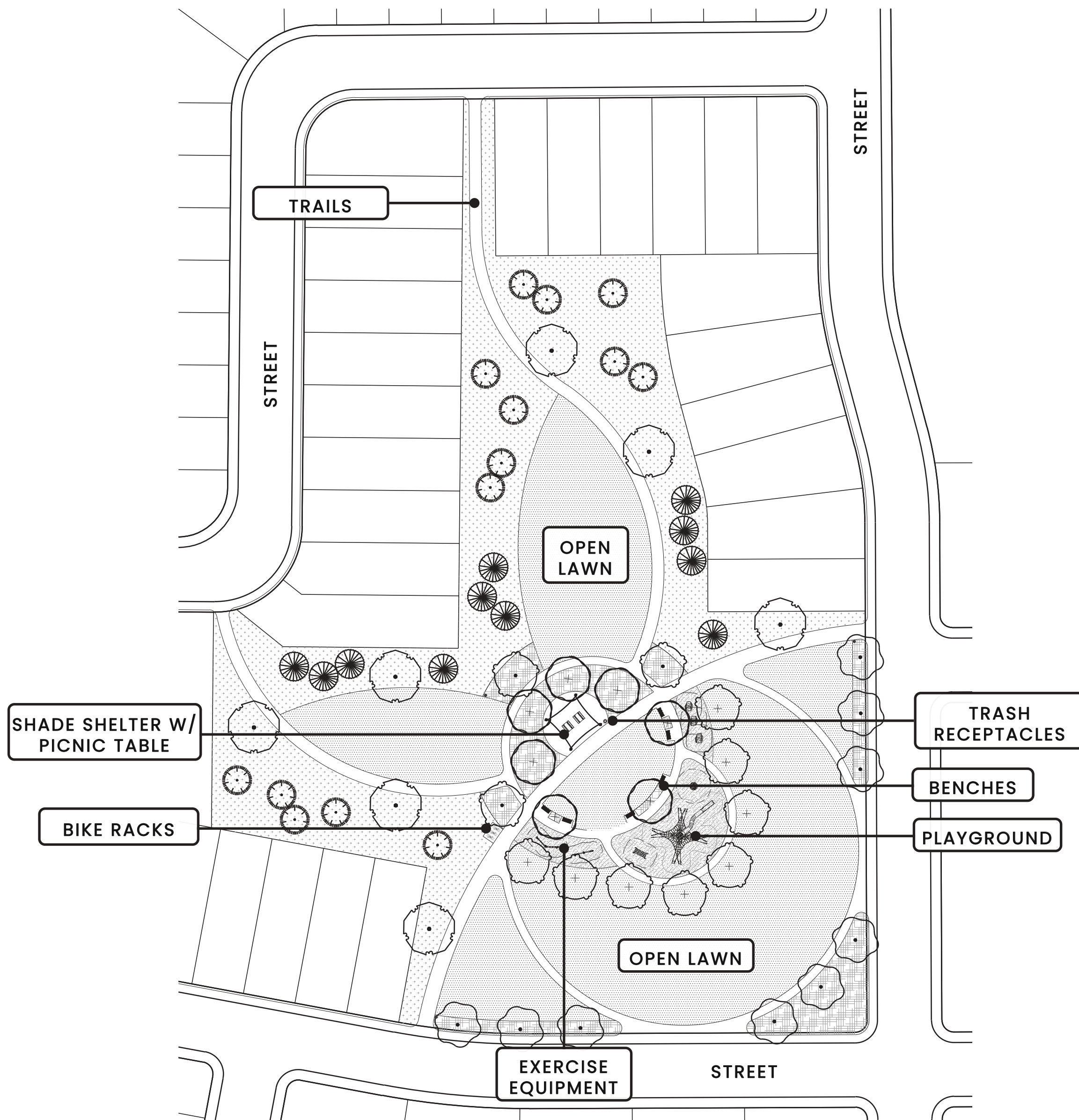
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TODD CREEK VILLAGE

PRELIMINARY PUD PLAN - MAJOR AMENDMENT

ACTIVE OPEN SPACE & PARKS CONCEPT PLANS

PK-12 - APPROX. 3.2 ACRES



ACTIVE OPEN SPACE CRITERIA:

NEIGHBORHOOD PARK

- SIZE: 3-15 ACRES
- MUST CONTAIN AT LEAST (1) ACTIVE USE TYPE PER 1.5 ACRES OF PARK AREA
- MUST CONTAIN ALL PARK AMENITIES LISTED BELOW

POCKET PARK

- SIZE: 0.5 - 2.9 ACRES
- MUST CONTAIN AT LEAST (1) ACTIVE USE TYPE PER 1 ACRE OF PARK AREA
- MUST CONTAIN AT LEAST (3) DIFFERENT TYPES OF PARK AMENITIES

LIST OF PARK ACTIVE USES INCLUDE THE FOLLOWING:

- TRAILS
- PLAYGROUND
- CLIMBING FEATURE
- BASKETBALL COURTS
- TENNIS/PICKLEBALL COURTS
- BOCCE BALL COURTS
- OPEN PLAY LAWN
- YARD GAMES (HORSESHOE, CORNHOLE, ETC.)
- MULTI-PURPOSE/SPORTS FIELD
- DOG PARK
- COMMUNITY GARDENS OR ORCHARDS
- TRIKE TRACK OR BIKE COURSE
- SKATE PARK
- OR SIMILAR ACTIVE USES

LIST OF PARK AMENITIES INCLUDE THE FOLLOWING:

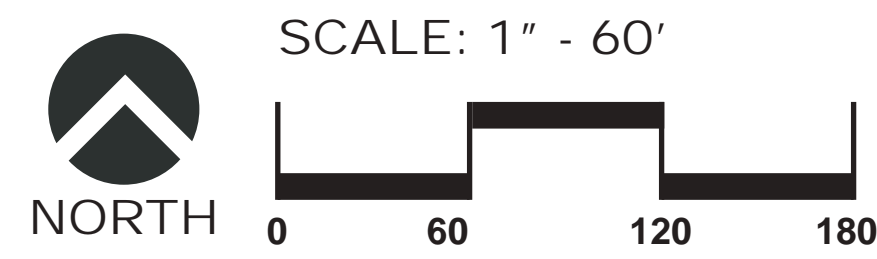
- SHADE SHELTER
- BENCHES
- TRASH RECEPTACLES
- PET WASTE STATIONS
- BIKE RACKS

ACTIVE OPEN SPACE/TRAIL SYSTEM

- SIZE: MINIMUM 0.5 ACRES
- ACTIVE USES:
 - TRAILS (MINIMUM 8' TRAIL WITHIN A 40' WIDE CORRIDOR)
- MUST CONTAIN AT LEAST (2) AMENITIES EVERY 0.5 MILES
 - SHADE SHELTER
 - BENCHES
 - PICNIC TABLE
 - TRASH RECEPTACLES
 - PET WASTE STATIONS
 - BIKE RACKS
 - BIKE REPAIR STATION

NOTE:

THE ACTIVE PARKS AND OPEN SPACE PLANS ARE CONCEPT PLANS ONLY AND MAY CHANGE WITH FUTURE DEVELOPMENT PLANS. HOWEVER, THE ACTIVE PARKS AND OPEN SPACE SHALL CONTAIN SIMILAR OR SUBSTITUTED FEATURES, AS OUTLINED IN THE ACTIVE PARKS AND OPEN SPACE CRITERIA ABOVE.



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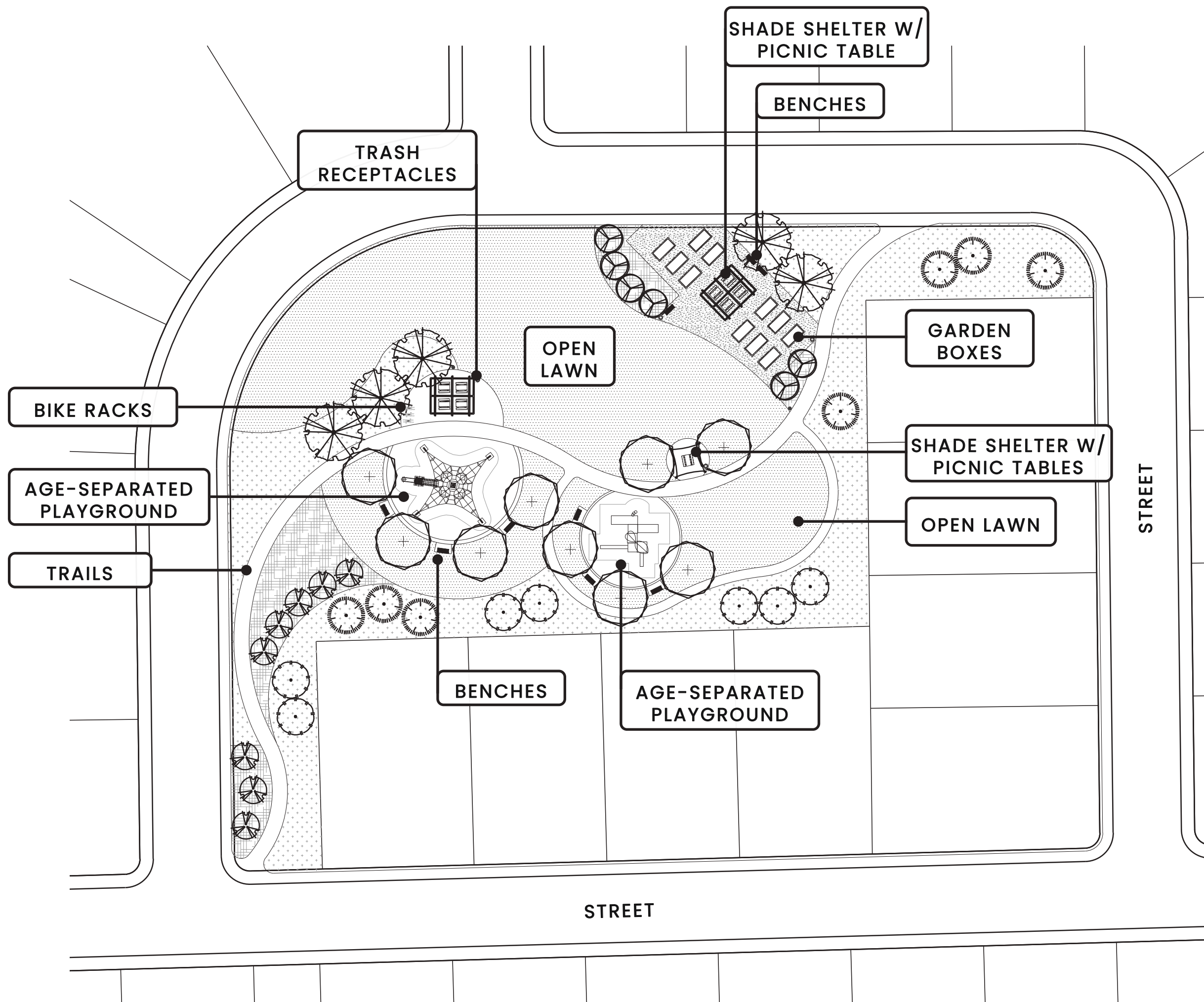
DATE	6-9-2023
REV-1	2-9-2024
REV-2	4-29-2024
REV-3	9-9-2024

TODD CREEK VILLAGE

PRELIMINARY PUD PLAN - MAJOR AMENDMENT

ACTIVE OPEN SPACE & PARKS CONCEPT PLANS

PK-13 - APPROX. 1.8 ACRES



ACTIVE OPEN SPACE CRITERIA:

NEIGHBORHOOD PARK

- SIZE: 3-15 ACRES
- MUST CONTAIN AT LEAST (1) ACTIVE USE TYPE PER 1.5 ACRES OF PARK AREA
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- DOG PARK
- COMMUNITY GARDENS OR ORCHARDS
- TRIKE TRACK OR BIKE COURSE
- SKATE PARK
- OR SIMILAR ACTIVE USES

LIST OF PARK AMENITIES INCLUDE THE FOLLOWING:

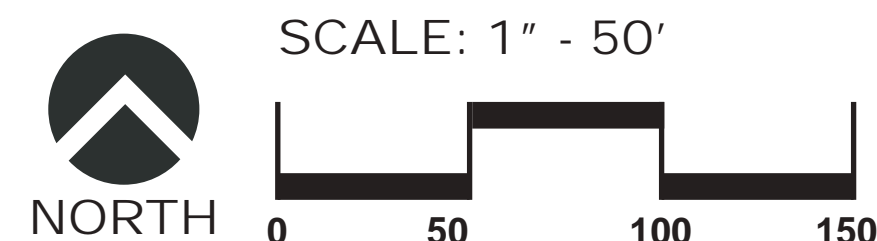
- SHADE SHELTER
- BENCHES
- TRASH RECEPTACLES
- PET WASTE STATIONS
- BIKE RACKS

ACTIVE OPEN SPACE/TRAIL SYSTEM

- SIZE: MINIMUM 0.5 ACRES
- ACTIVE USES:
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 - BIKE RACKS
 - BIKE REPAIR STATION

NOTE:

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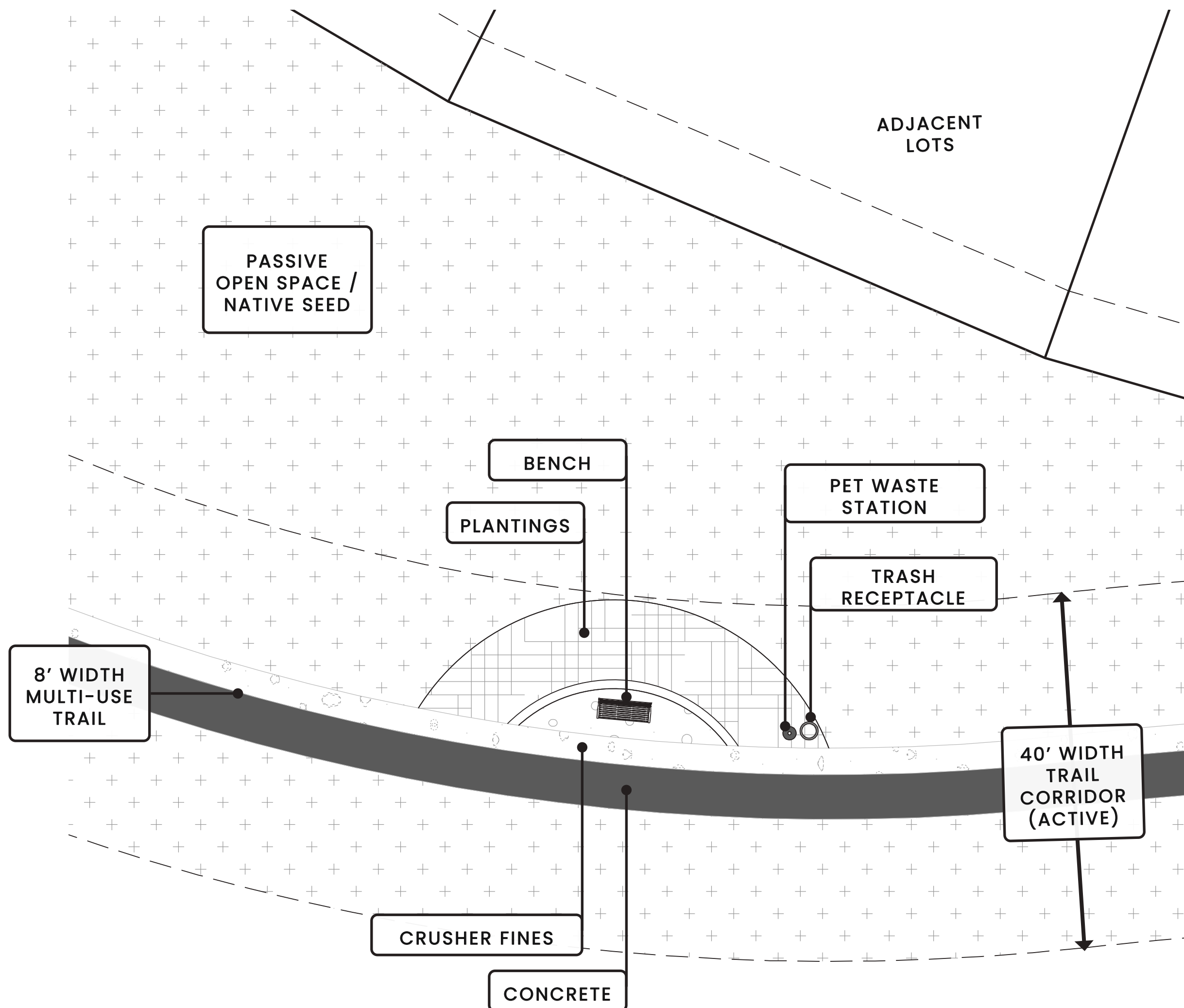
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TODD CREEK VILLAGE

PRELIMINARY PUD PLAN - MAJOR AMENDMENT

ACTIVE OPEN SPACE & PARKS CONCEPT PLANS

EXAMPLE ACTIVE TRAIL CORRIDOR & AMENITIES



ACTIVE OPEN SPACE CRITERIA:

NEIGHBORHOOD PARK

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- YARD GAMES (HORSESHOE, CORNHOLE, ETC.)
- MULTI-PURPOSE/SPORTS FIELD
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- COMMUNITY GARDENS OR ORCHARDS
- TRIKE TRACK OR BIKE COURSE
- SKATE PARK
- OR SIMILAR ACTIVE USES

LIST OF PARK AMENITIES INCLUDE THE FOLLOWING:

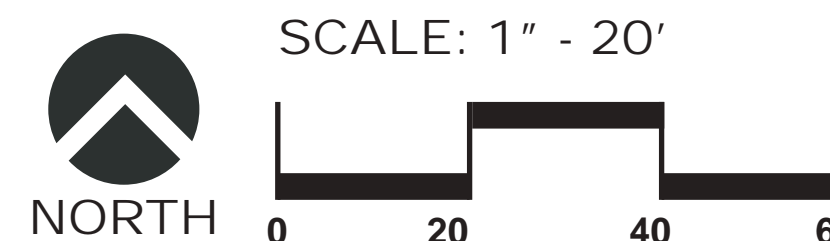
- SHADE SHELTER
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- TRASH RECEPTACLES
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ACTIVE OPEN SPACE/TRAIL SYSTEM

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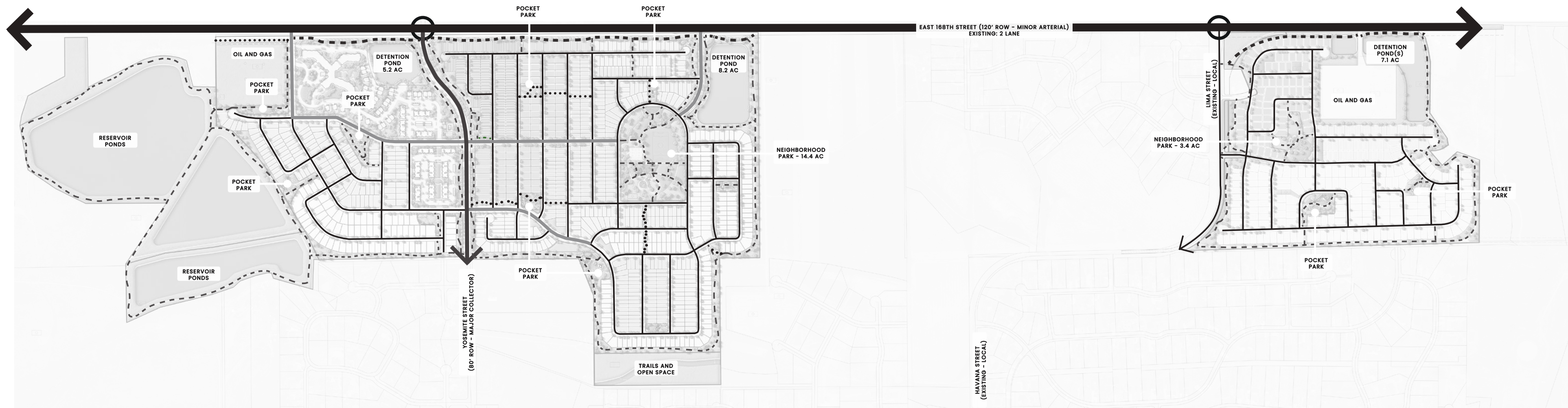

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TODD CREEK VILLAGE

PRELIMINARY PUD PLAN - MAJOR AMENDMENT

PUD AMENDMENT - MULTI-MODAL TRANSPORTATION PLAN

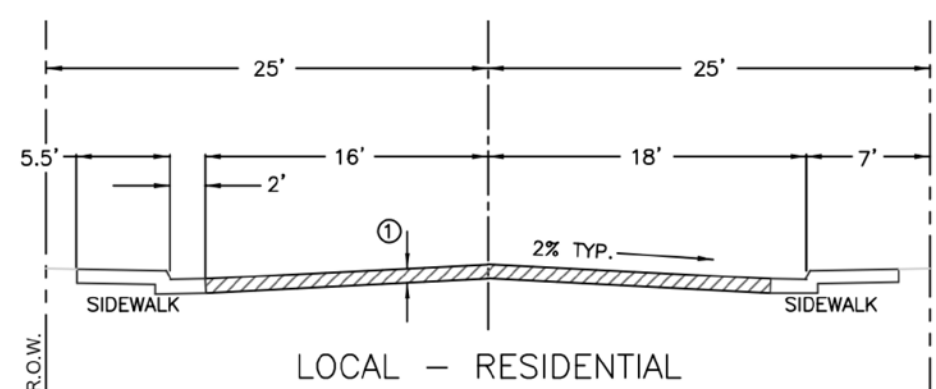


PROPOSED ROADS & TRAILS

- 5' CONCRETE TRAIL
- 8' CONCRETE TRAIL*
- 10' CONCRETE TRAIL*
- *NOTE: Bicycle & Pedestrian traffic can both travel on the 8'-10' concrete trails.
- LOCAL ROAD (50' ROW) WITH 5.5' ATTACHED SIDEWALK OR MEANDERING WALK PER PLAN
- MINOR COLLECTOR ROAD (80' ROW) WITH 5.5' ATTACHED SIDEWALK OR MEANDERING WALK PER PLAN
- MAJOR COLLECTOR (80' ROW) WITH MEANDERING 8' CONCRETE TRAIL* (5.5' REQUIRED)
- MINOR ARTERIAL (120' ROW) WITH MEANDERING 10' CONCRETE TRAIL*
- PROPOSED ROUNDABOUT @ INTERSECTION

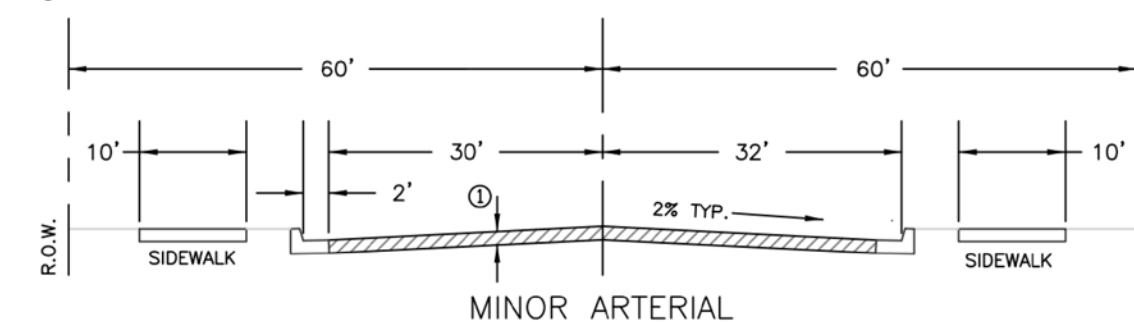
NOTE:

- This graphic is for illustrative and concept purposes only and may be subject to change.
- The ultimate roadway design and widths are up to the discretion of Adams County and are not subject to regulation by this Planned Unit Development.



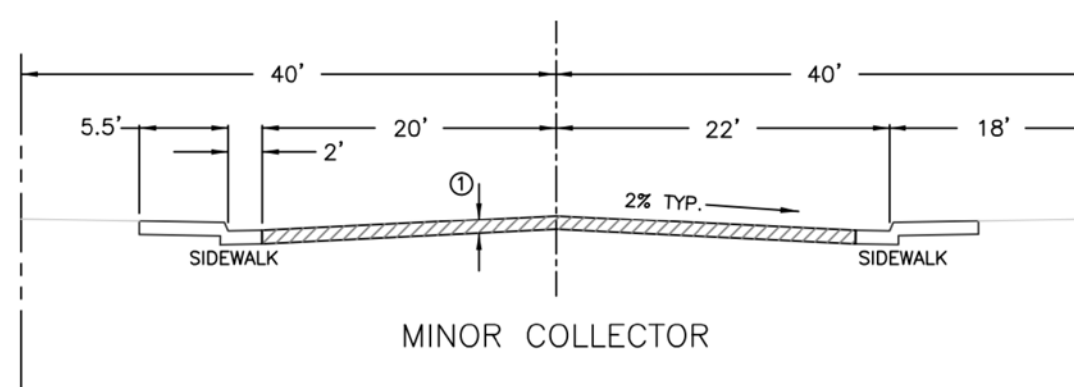
LOCAL - RESIDENTIAL

Source: Adams County Engineering Roadway Standards



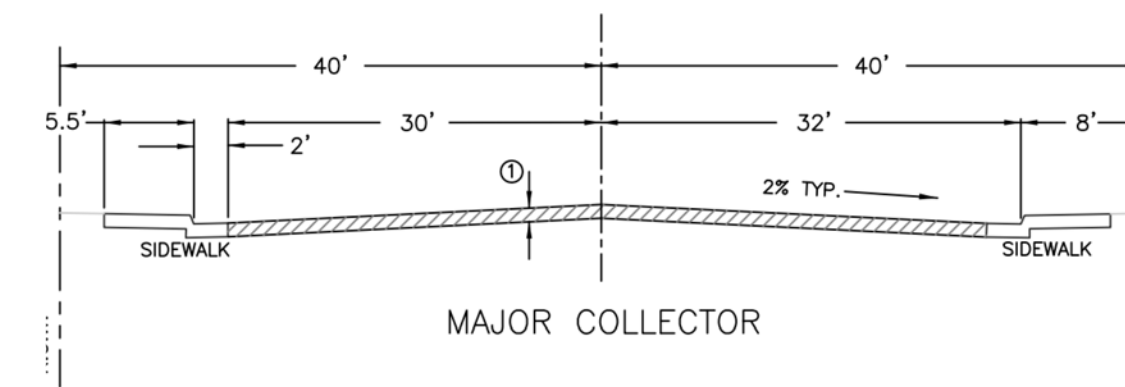
MINOR ARTERIAL

Source: Adams County Engineering Roadway Standards



MINOR COLLECTOR

Source: Adams County Engineering Roadway Standards



MAJOR COLLECTOR

Source: Adams County Engineering Roadway Standards

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OWNERSHIP AND DEDICATION CERTIFICATE:

KNOW ALL MEN BY THESE PRESENTS THAT SELTZER FARMS, INC., BEING THE SOLE OWNER OF THE FOLLOWING DESCRIBED TRACT OF LAND:

PARCEL ONE:
 THAT PART OF THE NORTH 1/2 OF SECTION 3, TOWNSHIP 1 SOUTH, RANGE 67 WEST OF THE SIXTH PRINCIPAL MERIDIAN, COUNTY OF ADAMS, STATE OF COLORADO, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:
 COMMENCING AT THE NORTHWEST CORNER OF SAID SECTION 3;
 THENCE EAST ON THE NORTH LINE OF SAID SECTION, 3,055.00 FEET;
 THENCE SOUTH 2,385.80 FEET TO A POINT ON THE EAST AND WEST CENTER LINE OF SAID SECTION;
 THENCE WEST 3,073.00 FEET TO THE CENTER OF THE WEST LINE OF SAID SECTION;
 THENCE NORTH 2,377.60 FEET TO THE PLACE OF BEGINNING,
 EXCEPTING THEREFROM, ANY PORTION OF SAID LAND AS CONTAINED WITHIN EAST 168TH AVENUE, COUNTY OF ADAMS, STATE OF COLORADO.

PARCEL TWO:
 THE NORTHEAST 1/4 OF THE SOUTHWEST 1/4 OF SECTION 3, TOWNSHIP 1 SOUTH, RANGE 67 WEST OF THE SIXTH PRINCIPAL MERIDIAN, EXCEPTING THEREFROM, THAT PORTION AS CONTAINED WITHIN THE SIGNAL DITCH AS THE SAME NOW EXISTS ON SAID LAND, COUNTY OF ADAMS, STATE OF COLORADO.

PARCEL THREE:
 THAT PART OF THE NORTHWEST 1/4 OF THE SOUTHWEST 1/4 OF SECTION 3, TOWNSHIP 1 SOUTH, RANGE 67 WEST OF THE SIXTH PRINCIPAL MERIDIAN, COUNTY OF ADAMS, STATE OF COLORADO, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:
 BEGINNING AT THE NORTHEAST CORNER OF THE NORTHWEST 1/4 OF THE SOUTHWEST 1/4 OF SAID SECTION 3;
 THENCE WEST ALONG THE NORTH LINE OF SAID NORTHWEST 1/4 OF THE SOUTHWEST 1/4 A DISTANCE OF 152.00 FEET;
 THENCE S21°57'00"E 413.00 FEET TO A POINT ON THE EAST LINE OF SAID NORTHWEST 1/4 OF THE SOUTHWEST 1/4;
 THENCE NORTH 383.00 FEET ALONG SAID EAST LINE TO THE TRUE POINT OF BEGINNING, COUNTY OF ADAMS, STATE OF COLORADO

PARCEL ONE, TWO, AND THREE ALSO DESCRIBED AS FOLLOWS:

A PARCEL OF LAND LOCATED IN SECTION 3, TOWNSHIP 1 SOUTH, RANGE 67 WEST OF THE 6TH PRINCIPAL MERIDIAN, COUNTY OF ADAMS, STATE OF COLORADO, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BASIS OF BEARINGS: BEARINGS ARE BASED ON THE ASSUMPTION THAT THE NORTH LINE OF THE NORTHWEST 1/4 OF SECTION 3 BEING N 89°32'59" E AND MONUMENTED AS FOLLOWS:

-NORTHWEST CORNER OF SECTION 3, BEING A FOUND 3.25" ALUMINUM CAP PLS 38285, PARTIALLY ILLEDGIBLE, PER MONUMENT RECORD DATED 1-27-15.

-NORTH 1/4 CORNER OF SECTION 3, BEING A FOUND 2" ALUMINUM CAP, PLS 25937, PER MONUMENT RECORD DATED 2-23-18.

BEGINNING THE NORTHWEST CORNER OF SECTION 3;

THENCE N 89°32'59" E ALONG THE NORTH LINE OF THE NORTHWEST 1/4 OF SAID SECTION 3 A DISTANCE OF 2633.02 FEET TO THE NORTH 1/4 CORNER OF SAID SECTION 3;

THENCE N89°33'48 E ALONG THE NORTH LINE OF THE NORTHEAST 1/4 OF SAID SECTION 3 A DISTANCE OF 422.14 FEET TO THE NORTHWEST CORNER OF THAT PARCEL OF LAND RECORDED AT RECEPTION NO. 2007000035868;

THENCE S 00°26'26" E ALONG THE WESTERLY BOUNDARY OF SAID PARCEL OF LAND RECORDED AT RECEPTION NO. 2007000035868 A DISTANCE OF 2385.00 FEET TO A POINT ON THE SOUTH LINE OF SAID NORTHEAST 1/4 OF SECTION 3;

THENCE S89°37'55" W ALONG SAID SOUTH LINE OF THE NORTHEAST 1/4 OF SECTION 3 A DISTANCE OF 422.14 FEET TO THE CENTER 1/4 CORNER OF SAID SECTION 3;

THENCE S 00°36'01" E ALONG THE EAST LINE OF THE NORTHEAST 1/4 OF THE SOUTHWEST 1/4 OF SAID SECTION 3 A DISTANCE OF 1322.50 FEET TO THE CENTER-SOUTH 1/16 CORNER OF SAID SECTION 3;

THENCE S 89°36'00" W ALONG THE SOUTH LINE OF SAID NORTHEAST 1/4 OF THE SOUTHWEST 1/4 OF SECTION 3 A DISTANCE OF 1322.04 FEET TO THE SOUTHWEST 1/16 CORNER OF SAID SECTION 3;

THENCE N 00°27'55" W ALONG THE WEST LINE OF SAID NORTHEAST 1/4 OF THE SOUTHWEST 1/4 SECTION 3 A DISTANCE OF 941.36 FEET TO A POINT ON THE EASTERLY BOUNDARY OF THAT PARCEL OF LAND RECORDED AT RECEPTION NO. 2015000035780;

THENCE N 22°03'34" W ALONG SAID EASTERLY BOUNDARY A DISTANCE OF 412.40 FEET TO A POINT ON THE SOUTH LINE OF SAID NORTHWEST 1/4 OF SECTION 3;

THENCE S 89°41'50" W ALONG SAID SOUTH LINE A DISTANCE OF 1167.06 FEET OF THE WEST 1/4 CORNER OF SAID SECTION 3;

THENCE N 00°19'36" W ALONG THE WEST LINE OF SAID NORTHWEST 1/4 OF SECTION 3 A DISTANCE OF 2378.05 FEET TO THE **POINT OF BEGINNING**;

EXCEPTING THEREFROM, ANY PORTION OF SAID LAND AS CONTAINED WITHIN EAST 168TH AVENUE.

EXCEPTION THEREFROM, THAT PORTION AS CONTAINED WITHIN THE SIGNAL DITCH AS THE SAME NOW EXISTS ON SAID LAND, COUNTY OF ADAMS, STATE OF COLORADO.

THE ABOVE DESCRIBED PARCELS CONTAINS A GROSS AREA OF 9,059,142 SQUARE FEET OR 207.9693

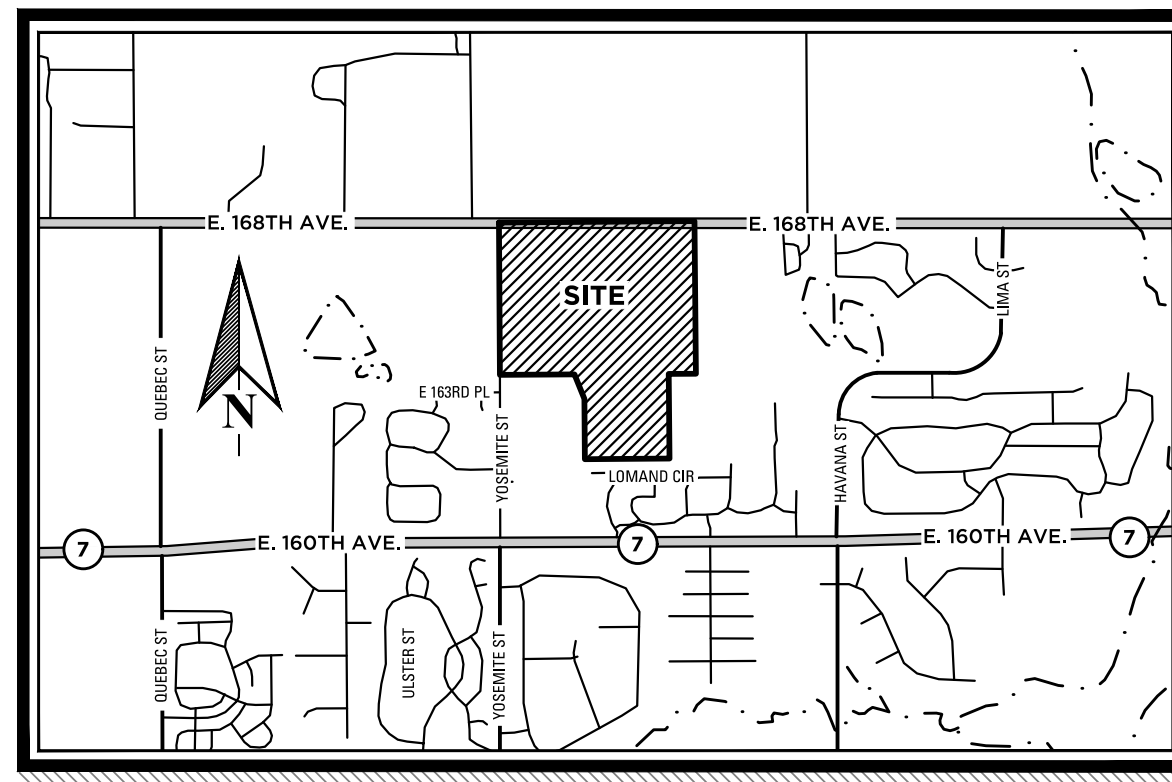
HAS BY THESE PRESENTS LAID OUT, PLATTED AND SUBDIVIDED THE SAME INTO LOTS, STREETS AND EASEMENTS AS SHOWN ON THIS PLAT UNDER THE NAME AND STYLE PRELIMINARY PLAT OF SELTZER FARMS FILING NO. 1.

ALL PUBLIC STREETS ARE HEREBY DEDICATED TO ADAMS COUNTY FOR PUBLIC USE.

THE UNDERSIGNED DOES HEREBY DEDICATE, GRANT AND CONVEY TO ADAMS COUNTY THOSE PUBLIC EASEMENTS AS SHOWN ON THE PLAT; AND FURTHER RESTRICTS THE USE OF ALL PUBLIC EASEMENT TO ADAMS COUNTY AND/OR ITS ASSIGNS, PROVIDED HOWEVER, THAT THE SOLE RIGHT AND AUTHORITY TO RELEASE OR QUITCLAIM ALL OR ANY SUCH PUBLIC EASEMENTS SHALL REMAIN EXCLUSIVELY VESTED IN ADAMS COUNTY.

PRELIMINARY PLAT
SELTZER FARMS
FILING NO. 1
 LOCATED IN SECTION 3, TOWNSHIP 1 SOUTH,
 RANGE 67 WEST OF THE 6TH P.M.,
 COUNTY OF ADAMS, STATE OF COLORADO

SHEET 1 OF 19



VICINITY MAP
 1" = 3000'

SHEET INDEX

1. COVER SHEET
2. NOTE SHEET
3. OVERALL SHEET INDEX
4. DETAILED PLAN SHEET
5. DETAILED PLAN SHEET
6. DETAILED PLAN SHEET
7. DETAILED PLAN SHEET
8. DETAILED PLAN SHEET
9. DETAILED PLAN SHEET
10. DETAILED PLAN SHEET
11. DETAILED PLAN SHEET
12. DETAILED PLAN SHEET
13. DETAILED PLAN SHEET
14. DETAILED PLAN SHEET
15. DETAILED PLAN SHEET
16. DETAILED PLAN SHEET
17. DETAILED PLAN SHEET
18. CURVE TAG TABLES
19. CURVE TAG TABLES

EXECUTED THIS _____ DAY OF _____, 20__.

OWNER:
 SELTZER FARMS INC.

BY: _____
 GUILLAUME POUCHOT

NOTARY:
 STATE OF _____)
)SS
 COUNTY OF _____)

THE FOREGOING OWNERSHIP AND DEDICATION CERTIFICATE WAS ME THIS _____ DAY OF _____, 20__.
 BY GUILLAUME POUCHOT AS MANAGER, SELTZER FARMS INC., A COLORADO CORPORATION.

WITNESS MY HAND AND SEAL _____

MY COMMISSION EXPIRES _____

PLANNING COMMISSION RECOMMENED FOR APPROVAL:

APPROVED BY ADAMS COUNTY PLANNING COMMISSION THIS _____ DAY OF _____ A.D. 2024.

CHAIR

BOARD OF COUNTY COMMISSIONERS' APPROVAL:

APPROVED BY ADAMS COUNTY BOARD OF COUNTY COMMISSIONERS THIS _____ DAY OF _____ A.D. 2024.

CHAIR

ADAMS COUNTY ATTORNEY'S OFFICE:

APPROVED AS TO FORM

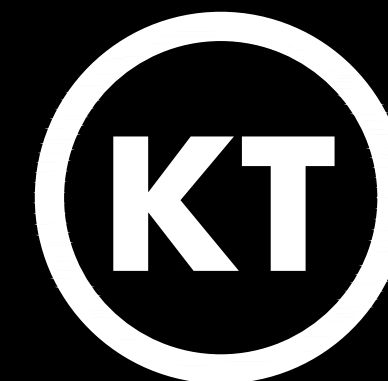
SURVEYOR'S CERTIFICATE:

I CHRISTOPHER H. McELVAIN, A REGISTERED LAND SURVEYOR IN THE STATE OF COLORADO, DO HEREBY CERTIFY THAT THE SURVEY OF SELTZER FARMS FILING NO. 1 SUBDIVISION WAS MADE UNDER MY SUPERVISION AND THE ACCOMPANYING PLAT ACCURATELY AND PROPERLY SHOWS SAID SUBDIVISION.

CHRISTOPHER H. McELVAIN, P.L.S. 36561
 FOR AND ON BEHALF OF KT ENGINEERING, LLC

J:\0109\FILING 1 SELTZER SURVEY\PLAT\DRAWINGS\PLAT SHEETS\2007-PRELIMINARY CVR.DWG

DATE SUBMITTED: 02.02.2024		
REVISION NO.	DATE	
1	04-26-24	
2	08-23-24	
3		
4		
5		
PREPARED FOR: REMINGTON HOMES, INC. 5740 OLDE WADSWORTH BLVD, ARVADA, CO 80002 303.420.2899		
SCALE: 1" = N/A	JOB NO: 0109-2207	BY: BSS
SHEET 1 OF 19		



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PRELIMINARY PLAT
SELTZER FARMS
FILING NO. 1

LOCATED IN SECTION 3, TOWNSHIP 1 SOUTH,
RANGE 67 WEST OF THE 6TH P.M.,
COUNTY OF ADAMS, STATE OF COLORADO

SHEET 2 OF 19

GENERAL NOTES:

- 1. NOTICE: ACCORDING TO THE 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 DOES NOT CONSTITUTE A TITLE SEARCH BY KT ENGINEERING, LLC. TO DETERMINE TITLE OR EASEMENTS OF RECORD. RESEARCH FOR THIS SURVEY WAS PERFORMED IN ACCORDANCE WITH CRS 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, SPECIFICALLY THOSE BOARD RULES AND POLICY STATEMENTS RELATING TO THE DEPICTION OF EASEMENTS AND RIGHTS OF WAY ON SUBDIVISION PLATS. FIDELITY NATIONAL TITLE INSURANCE COMPANY FILE NUMBER: 100-N0037848-020-CN1, AMENDMENT NO. 7 WITH AN EFFECTIVE DATE OF JANUARY 29, 2024. WAS RELIED UPON FOR ALL INFORMATION REGARDING EASEMENTS OF RECORD, RIGHTS OF WAY, TITLE OF RECORD AND CIVIL COURT ACTIONS OF RECORD.
3. DISTANCES ON THIS PLAT ARE EXPRESSED IN U.S. SURVEY FEET AND DECIMALS THEREOF. A U.S. SURVEY FOOT IS DEFINED AS EXACTLY 1200/3937 METERS.
4. 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 STATUS 18-4-508, C.R.S.
5. BASIS OF BEARINGS: BEARINGS ARE BASED ON THE ASSUMPTION THAT THE NORTH LINE OF THE NORTHWEST 1/4 OF SECTION 3 BEING N 89°32'59" E AND MONUMENTED AS FOLLOWS:
-NORTHWEST CORNER OF SECTION 3, BEING A FOUND 3.25" ALUMINUM CAP PLS 38285, PARTIALLY ILLEDGIBLE, PER MONUMENT RECORD DATED 1-27-15.
-NORTH 1/4 CORNER OF SECTION 3, BEING A POUND 2" ALUMINUM CAP, PLS 25937, PER MONUMENT RECORD DATED 2-23-18.
6. NO STRUCTURES, INCLUDING RESIDENCES AND STRUCTURES, MAY BE CONSTRUCTED WITHIN THE DESIGNED 150 FOOT BUFFER AREA AROUND AN EXISTING OIL/GAS WELL OR TANK BATTERY (SECTION 4-09-02-03-02 (9A), ADAMS COUNTY DEVELOPMENT STANDARDS AND REGULATIONS). THIS PROVISION DOES NOT APPLY TO THE FENCES, AND DOES NOT APPLY IF THE WELL HAS BEEN PLUGGED AND ABANDONED, OR THE TANK BATTERY HAS BEEN REMOVED.
7. THE OWNER SHALL COMPLY WITH ALL OIL AND GAS RELATED DESIGN AND PERFORMANCE STANDARDS OUTLINED IN SECTION 4-11-02-03-03 OF THE ADAMS COUNTY DEVELOPMENT STANDARDS AND REGULATIONS INCLUDING:
• PURSUANT TO SECTION 4-07-01-02-01-12, WHERE A NEW HOME AND/OR OTHER PERMANENT STRUCTURE WITH PLUMBING IS CONSTRUCTED WITHIN THREE HUNDRED (300) FEET OF AN EXISTING OIL AND GAS WELL, THE PROPERTY OWNER SHALL SUBMIT A SIGNED WAIVER ACKNOWLEDGING THE EXISTENCE OF THE FACILITY.
• ACTIVE OIL AND GAS WELL LOCATIONS SHALL INCLUDE A 250' BUFFER AS DEPICTED ON THIS PLAT. NO STRUCTURES MAY BE CONSTRUCTED WITHIN THIS BUFFER AREA.
• THE OWNER SHALL DISCLOSE TO PROSPECTIVE PURCHASERS OF LOTS WITHIN A RADIUS OF 200 FEET OF THE PLUGGED AND ABANDONED WELL OF (1) THE LOCATION OF THE PLUGGED AND ABANDONED WELL, (2) THE LOCATION OF THE MAINTENANCE AND WORKOVER SETBACK, AND (3) THE PURPOSE FOR THE WELL MAINTENANCE AND WORKOVER SETBACK.
• ABANDONED OIL AND GAS WELL WORKOVER SETBACKS AS DEPICTED ON THIS PLAT ARE 50'X100' AND CENTERED OVER THE ABANDONED WELL. NO STRUCTURES SHALL BE LOCATED WITHIN THIS SETBACK.
• NO UTILITY LINES SHALL BE INSTALLED WITHIN TEN FEET OF ANY PLUGGED AND ABANDONED WELL.
8. NO PORTION OF THE PROPERTY LIES WITHIN THE 100-YR FLOODPLAIN ACCORDING TO THE FIRM FLOOD INSURANCE RATE MAP NO. 08001C0326H, EFFECTIVE: OCTOBER 05, 2007 AND MAP NO. 08001C0307H, EFFECTIVE: OCTOBER 05, 2007.

GENERAL NOTES CONTINUED:

- 9. NO LOT SHALL HAVE DIRECT ACCESS TO E. 168TH AVENUE OR YOSEMITE STREET.
10. THE OWNER SHALL COMPLY WITH TITLE 25-10-101, ET SEQ. COLORADO REVISED STATUTES AND THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT WATER QUALITY CONTROL COMMISSION ON-SITE WASTEWATER TREATMENT SYSTEM REGULATION #43, 5 CCR-1002-43.
11. THE DEVELOPER/OWNER IS TO PROVIDE DEVELOPABLE LOTS BY REMOVING ANY OIL AND GAS PIPELINES AND STRUCTURES WITHIN THE BOUNDARY OF THE LOTS.
12. THERE ARE DISCREPANCIES BETWEEN THE LOCATION OF SECTIONS CORNERS REFERENCED IN JOHN WILLIAM WEIGHARDT'S DEED RECORDED AT 2007000035868 AND AS MONUMENTED AND SHOWN HEREON, CREATING POSSIBLE GAPS AND GORES BETWEEN PARCELS.
13. TERMINATION OF USE OR ABANDONMENT OF AN OWTS
A. THE DEPARTMENT SHALL BE NOTIFIED, IN WRITING, WHEN A TANK, VAULT, SEEPAGE PIT, OR CESSPOOL IS ABANDONED, AND A PUMP RECEIPT PROVIDED.
B. THE CONTENTS OF A SEPTIC TANK, VAULT, SEEPAGE PIT, OR CESSPOOL, THE USE OF WHICH HAS BEEN TERMINATED, SHALL BE REMOVED AND PROPERLY DEPOSED OF.
C. A TANK MAY BE COMPLETELY REMOVED AND THE PARTS DISPOSED OF SAFELY.
D. IF THE TANK WILL REMAIN IN PLACE:
1) THE TANK MUST BE PUMPED TO REMOVE AS MUCH WASTE AS POSSIBLE;
2) THE BOTTOM OF THE TANK MUST BE BROKEN SO THE TANK NEITHER FLOATS NOR FILLS WITH WASTE.
3) THE TOP MUST BE COLLAPSED AND THE SIDES MAY BE BROKEN INTO THE VOID;
4) THE REMAINING VOID MUST BE FILLED WITH GRAVEL, SAND OR COMPACTED SOIL; AND
5) THE FILLED EXCAVATION WILL BE GRADED TO SURROUNDINGS, ALLOWING FOR SETTLING.
E. THE DEPARTMENT MAY REQUIRE ABANDONMENT OF A TANK THAT IS DEEMED TO BE A HAZARD.

EASEMENT STATEMENT:

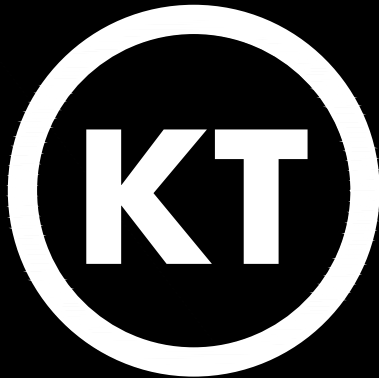
SIX-FOOT (6') WIDE UTILITY EASEMENTS ARE HEREBY DEDICATED ON PRIVATE PROPERTY ADJACENT TO THE FRONT LOT LINES OF EACH LOT IN THE SUBDIVISION. IN ADDITION, EIGHT-FOOT (8') WIDE DRY UTILITY EASEMENTS ARE HEREBY DEDICATED AROUND THE PERIMETER OF TRACTS, PARCELS AND/OR OPEN SPACE AREAS. THESE EASEMENTS ARE DEDICATED TO ADAMS COUNTY FOR THE BENEFIT OF THE APPLICABLE UTILITY PROVIDERS FOR THE INSTALLATION, MAINTENANCE, AND REPLACEMENT OF UTILITIES.

UTILITY EASEMENTS SHALL ALSO BE GRANTED WITHIN ANY ACCESS EASEMENTS IN THE SUBDIVISION. PERMANENT STRUCTURES, IMPROVEMENTS, OBJECTS, BUILDINGS, WELLS, WATER METERS AND OTHER OBJECTS THAT MAY INTERFERE WITH THE UTILITY FACILITIES OR USE THEREOF (INTERFERING OBJECTS) SHALL NOT BE PERMITTED WITHIN SAID UTILITY EASEMENTS AND THE UTILITY PROVIDERS, AS GRANTEEES, MAY REMOVE ANY INTERFERING OBJECTS AT NO COST TO SUCH GRANTEEES, INCLUDING, WITHOUT LIMITATION, VEGETATION.

STORM DRAINAGE FACILITY STATEMENT:

THE POLICY OF THE COUNTY REQUIRES THAT MAINTENANCE ACCESS SHALL BE PROVIDED TO ALL STORM DRAINAGE FACILITIES TO ASSURE CONTINUOUS OPERATIONAL CAPABILITY OF THE SYSTEM. THE PROPERTY OWNERS SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF ALL DRAINAGE FACILITIES INCLUDING INLETS, PIPES, CULVERTS, CHANNELS, DITCHES, HYDRAULIC STRUCTURES, AND DETENTION BASINS LOCATED ON THEIR LAND UNLESS MODIFIED BY THE SUBDIVISION DEVELOPMENT AGREEMENT. SHOULD THE OWNER FAIL TO MAINTAIN SAID FACILITIES, THE COUNTY SHALL HAVE THE RIGHT TO ENTER SAID LAND FOR THE SOLE PURPOSE OF OPERATIONS AND MAINTENANCE. ALL SUCH MAINTENANCE COST WILL BE ASSESSED TO THE PROPERTY OWNERS.

Table with 3 columns: REVISION NO., DATE, and PREPARED FOR. Includes details for Remington Homes, Inc. and SHEET 2 OF 19.



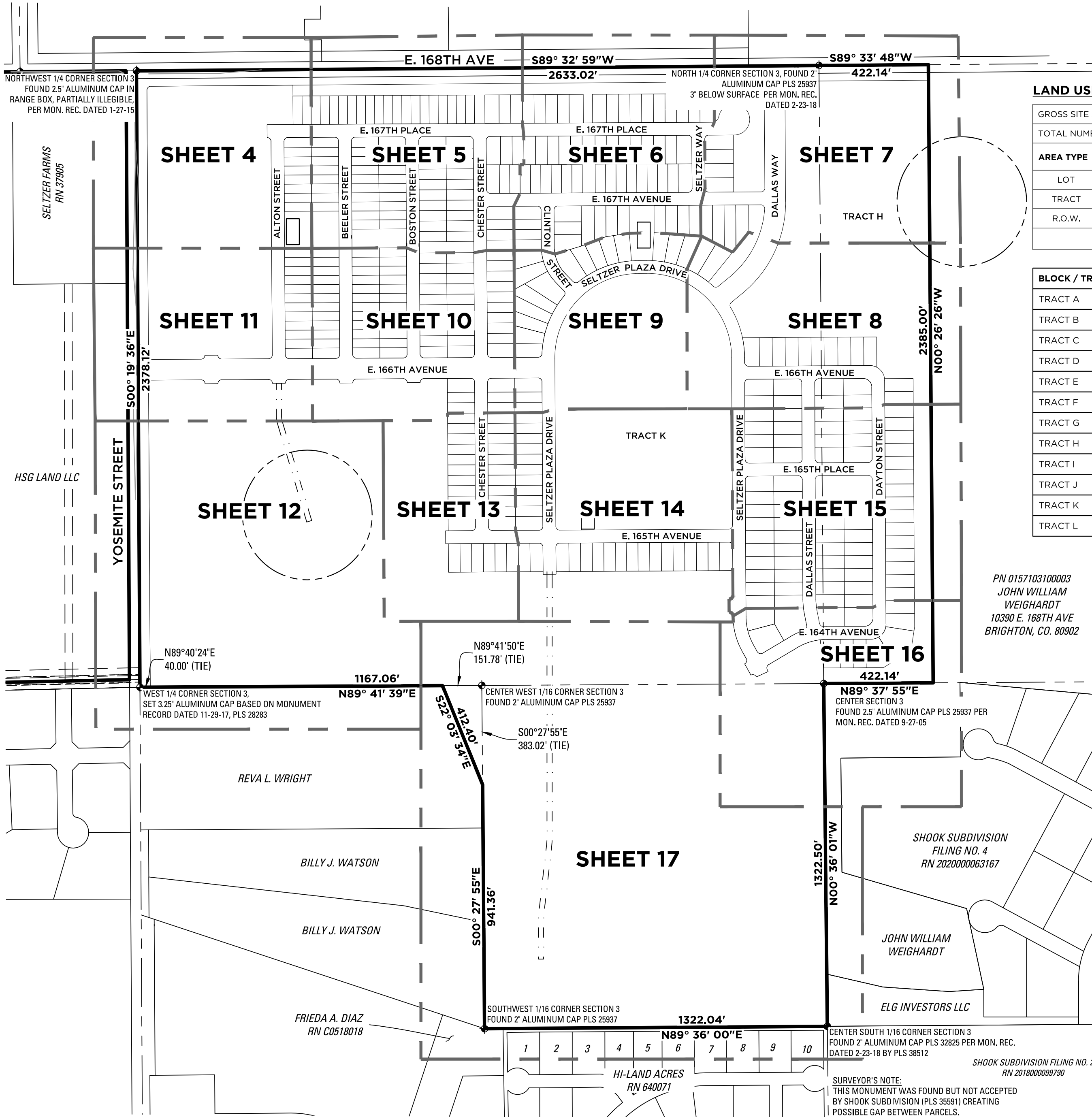
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ENGINEERS • SURVEYORS

12500 W. 58th AVE. #230
ARVADA, CO 80002
PH: 720.638.5190

TODD CREEK FARMS FILING NO. 1

LOCATED IN SECTION 3, TOWNSHIP 1 SOUTH,
RANGE 67 WEST OF THE 6TH P.M.,
COUNTY OF ADAMS, STATE OF COLORADO

SHEET 3 OF 19



LAND USE SUMMARY:

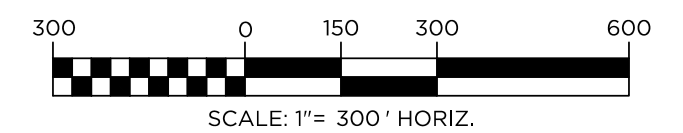
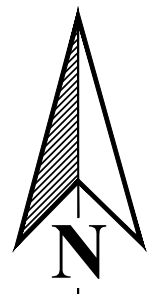
GROSS SITE AREA		9,059,143 SF		207.97 AC	
TOTAL NUMBER OF LOTS		413			
AREA TYPE	AREA USE	AREA SF	AREA AC	COMMUNITY COVERAGE	
LOT	LOTS	6,181,706 SF	141.91 AC	68.3%	68.3%
TRACT	OPEN SPACE	1,643,886 SF	37.74 AC	18.2%	18.2%
R.O.W.	PUBLIC STREET	1,233,551 SF	28.32 AC	13.5%	13.5%
TOTALS:		9,059,143 SF	207.97 AC	100.0%	100.0%

BLOCK / TRACT	OWNERSHIP & MAINTENANCE	AREA SF	AREA AC	USE / BLANKET EASEMENT
TRACT A	SELTZER FARMS, INC	132,360 SF	3.039 AC	OPEN SPACE / UTILITY & DRAINAGE
TRACT B	SELTZER FARMS, INC	30,061 SF	0.690 AC	OPEN SPACE / UTILITY, DRAINAGE & PUBLIC ACCESS
TRACT C	SELTZER FARMS, INC	15,361 SF	0.353 AC	OPEN SPACE / UTILITY & DRAINAGE
TRACT D	SELTZER FARMS, INC	9,061 SF	0.208 AC	OPEN SPACE / UTILITY & DRAINAGE
TRACT E	SELTZER FARMS, INC	10,947 SF	0.251 AC	OPEN SPACE / UTILITY & DRAINAGE
TRACT F	SELTZER FARMS, INC	19,584 SF	0.450 AC	OPEN SPACE / UTILITY, DRAINAGE & PUBLIC ACCESS
TRACT G	SELTZER FARMS, INC	19,222 SF	0.441 AC	OPEN SPACE / UTILITY & DRAINAGE
TRACT H	SELTZER FARMS, INC	739,815 SF	16.984 AC	OPEN SPACE & DETENTION POND / UTILITY & DRAINAGE
TRACT I	SELTZER FARMS, INC	23,848 SF	0.547 AC	OPEN SPACE / UTILITY & DRAINAGE
TRACT J	SELTZER FARMS, INC	4,596 SF	0.106 AC	OPEN SPACE / UTILITY & DRAINAGE
TRACT K	SELTZER FARMS, INC	628,210 SF	14.422 AC	OPEN SPACE / UTILITY, DRAINAGE & PUBLIC ACCESS
TRACT L	SELTZER FARMS, INC	7,332 SF	0.168 AC	OPEN SPACE / UTILITY & DRAINAGE

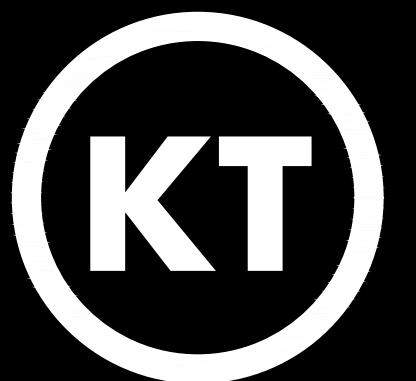
LEGEND

- MONUMENTS (SECTION CORNERS)
- PLAT BOUNDARY
- SHEET MATCHLINE
- PARCEL BOUNDARIES / RIGHT OF WAY
- SECTION LINE

PN 0157103100003
JOHN WILLIAM
WEIGHARDT
10390 E. 168TH AVE
BRIGHTON, CO. 80902



DATE SUBMITTED:		02.02.2024	
REVISION NO.	DATE		
1	04-26-24		
2	08-23-24		
3			
4			
5			
PREPARED FOR:			
REMINGTON HOMES, INC.			
5740 OLDE WADSWORTH BLVD, ARVADA, CO 80002 303.420.2899			
SCALE: 1" = 300'	JOB NO: 0109-2207	BY: BSS	
SHEET 3 OF 19			



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SURVEYOR'S NOTE:
THIS MONUMENT WAS FOUND BUT NOT ACCEPTED
BY SHOOK SUBDIVISION (PLS 35591) CREATING
POSSIBLE GAP BETWEEN PARCELS.

SHOOK SUBDIVISION FILING NO. 2
RN 2018000099790

HI-LAND ACRES
RN 640071

SOUTHWEST 1/16 CORNER SECTION 3
FOUND 2" ALUMINUM CAP PLS 25937

CENTER WEST 1/16 CORNER SECTION 3
FOUND 2" ALUMINUM CAP PLS 25937

WEST 1/4 CORNER SECTION 3
SET 3.25" ALUMINUM CAP BASED ON MONUMENT
RECORD DATED 11-29-17, PLS 28283

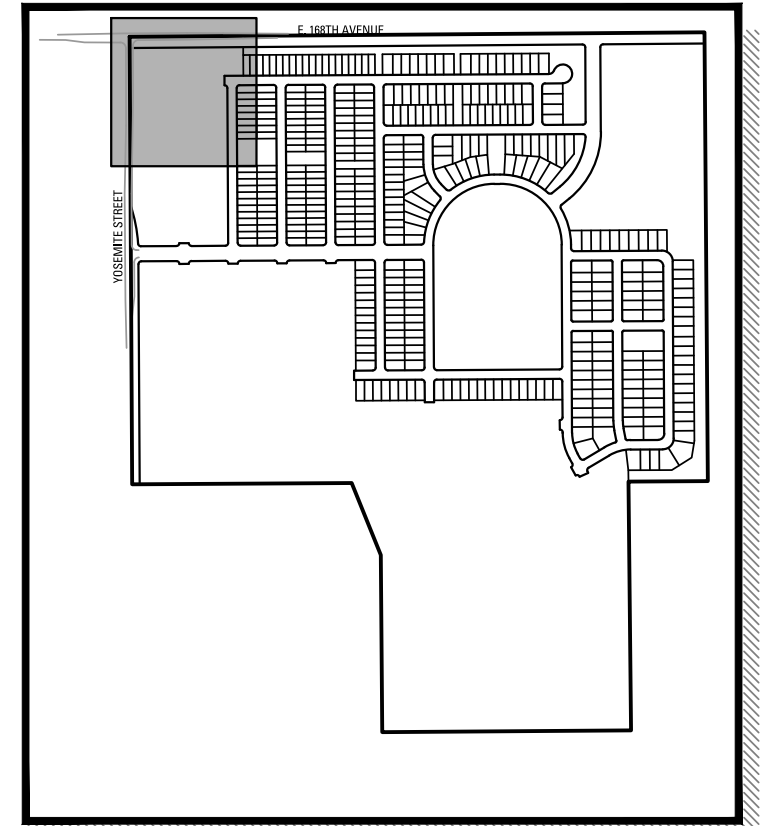
NORTHWEST 1/4 CORNER SECTION 3
FOUND 2.5" ALUMINUM CAP IN
RANGE BOX, PARTIALLY ILLEGIBLE,
PER MON. REC. DATED 1-27-15

NORTH 1/4 CORNER SECTION 3, FOUND 2"
ALUMINUM CAP PLS 25937
3' BELOW SURFACE PER MON. REC.
DATED 2-23-18

SELTZER FARMS FILING NO. 1

LOCATED IN SECTION 3, TOWNSHIP 1 SOUTH,
RANGE 67 WEST OF THE 6TH P.M.,
COUNTY OF ADAMS, STATE OF COLORADO

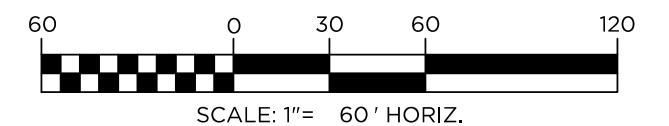
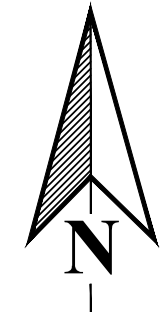
SHEET 4 OF 19



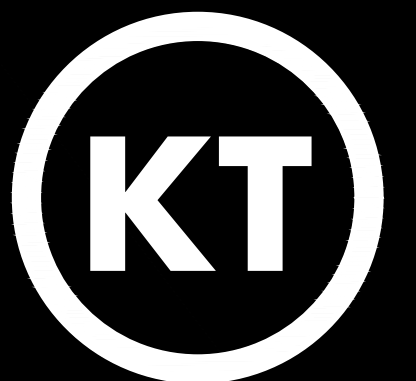
KEYMAP
NTS

LEGEND

- UE UTILITY EASEMENT
- C# CURVE TAG (REFER TO SHEETS 17 AND 18 FOR CURVE TAG TABLES)
- RN RECEPTION / RECORDING NUMBER
- SET NO. 4 REBAR W/ ORANGE CAP PLS 36561
- FOUND PROPERTY PIN
- ⊕ MONUMENTS (SECTION CORNERS)
- OIL AND GAS WELL HEAD
- PLAT BOUNDARY
- - - SHEET MATCHLINE
- - - ADJACENT PARCEL BOUNDARIES / RIGHT OF WAY
- - - SECTION LINE
- - - STREET CENTERLINE
- - - UTILITY EASEMENT
- - - OIL AND GAS SETBACK
- OIL AND GAS FLOW LINE (APPROXIMATE, PLOTTED PER COGCC DATA, NOT FIELD SURVEYED)

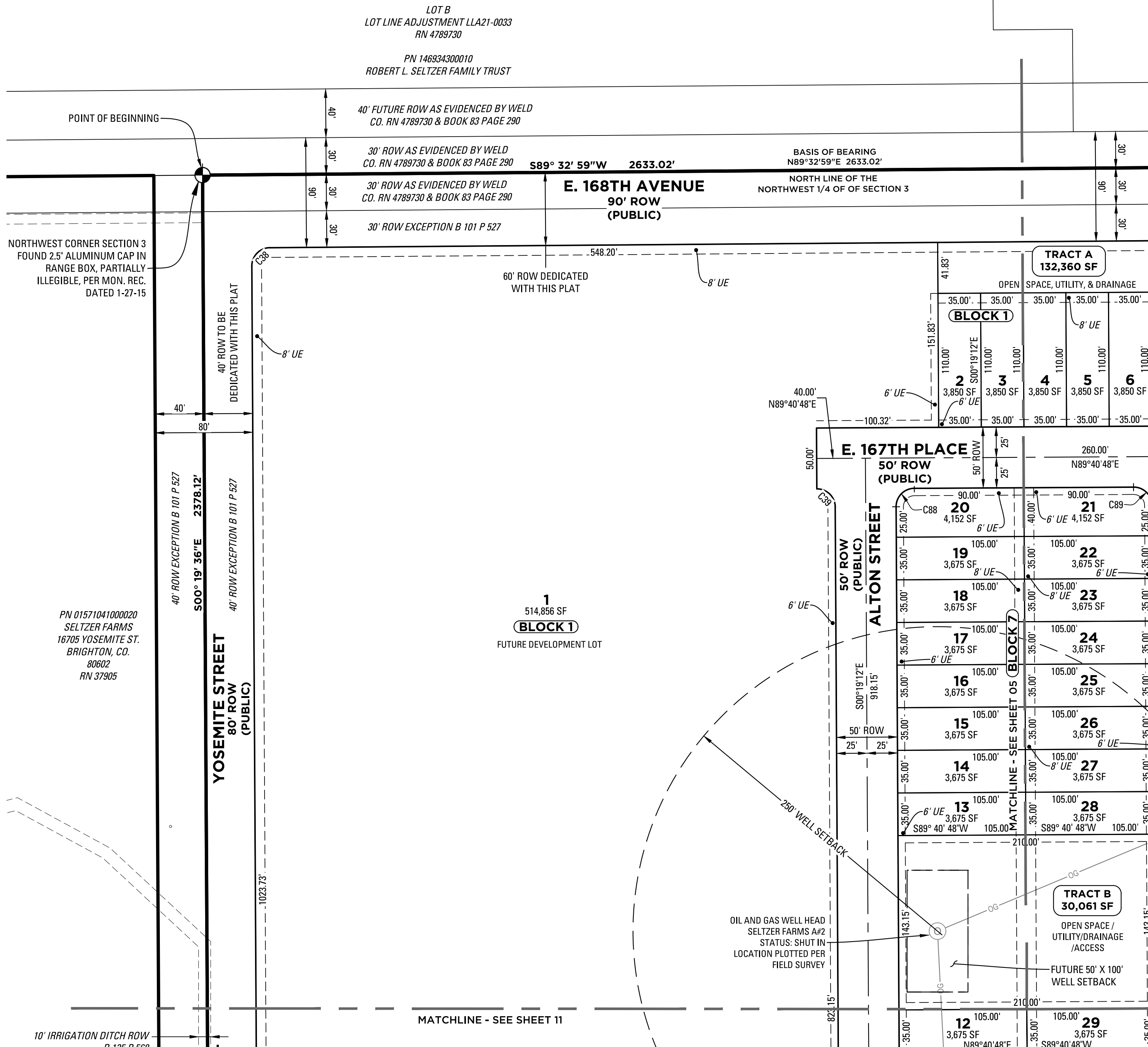


DATE SUBMITTED:		02.02.2024	
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PREPARED FOR:			
REMINGTON HOMES, INC.			
5740 OLDE WADSWORTH BLVD, ARVADA, CO 80002 303.420.2899			
SCALE:	JOB NO:	BY:	
1" = 60'	0109-2207	BSS	
SHEET 4 OF 19			



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PN 01571041000020
SELTZER FARMS
16705 YOSEMITE ST.
BRIGHTON, CO.
80602
RN 37905

LOT B
LOT LINE ADJUSTMENT LLA21-0033
RN 4789730

PN 146934300010
ROBERT L. SELTZER FAMILY TRUST

40' FUTURE ROW AS EVIDENCED BY WELD
CO. RN 4789730 & BOOK 83 PAGE 290

30' ROW AS EVIDENCED BY WELD
CO. RN 4789730 & BOOK 83 PAGE 290

30' ROW AS EVIDENCED BY WELD
CO. RN 4789730 & BOOK 83 PAGE 290

30' ROW EXCEPTION B 101 P 527

NORTHWEST CORNER SECTION 3
FOUND 2.5" ALUMINUM CAP IN
RANGE BOX, PARTIALLY
ILLEGIBLE, PER MON. REC.
DATED 1-27-15

40' ROW TO BE
DEDICATED WITH THIS PLAT

40' ROW EXCEPTION B 101 P 527
500° 19' 36"E 2378.12'
40' ROW EXCEPTION B 101 P 527

1
514,856 SF
BLOCK 1
FUTURE DEVELOPMENT LOT

TRACT A
132,360 SF

BLOCK 1

E. 167TH PLACE
50' ROW
(PUBLIC)

ALTON STREET
50' ROW
(PUBLIC)

YOSEMITE STREET
80' ROW
(PUBLIC)

TRACT B
30,061 SF

OIL AND GAS WELL HEAD
SELTZER FARMS A#2
STATUS: SHUT IN
LOCATION PLOTTED PER
FIELD SURVEY

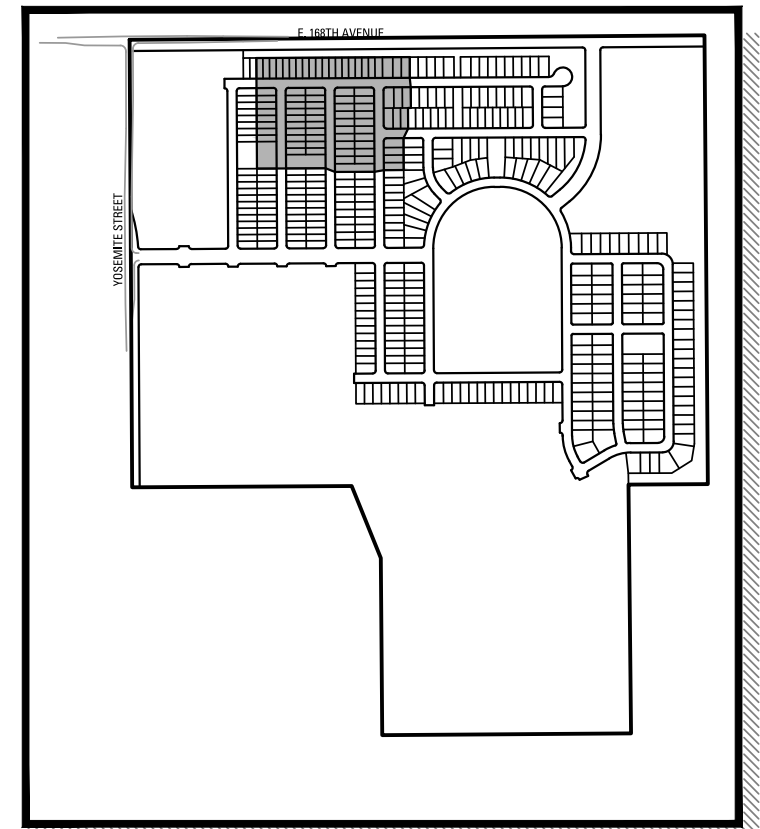
MATCHLINE - SEE SHEET 11

10' IRRIGATION DITCH ROW
D. 195 P. 559

SELTZER FARMS FILING NO. 1

LOCATED IN SECTION 3, TOWNSHIP 1 SOUTH,
RANGE 67 WEST OF THE 6TH P.M.,
COUNTY OF ADAMS, STATE OF COLORADO

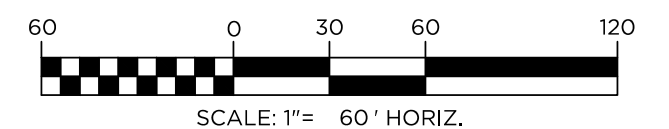
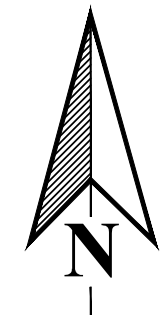
SHEET 5 OF 19



KEYMAP
NTS

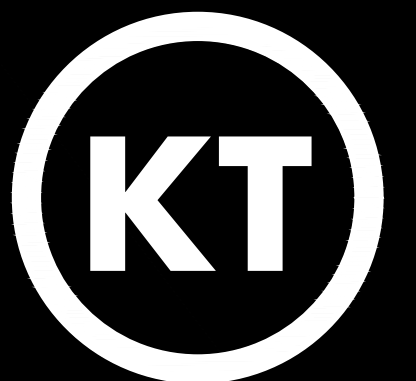
LEGEND

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- RN RECEPTION / RECORDING NUMBER
- SET NO. 4 REBAR W/ ORANGE CAP PLS 36561
- FOUND PROPERTY PIN
- ⊕ MONUMENTS (SECTION CORNERS)
- ⊙ OIL AND GAS WELL HEAD
- PLAT BOUNDARY
- - - SHEET MATCHLINE
- - - ADJACENT PARCEL BOUNDARIES / RIGHT OF WAY
- - - SECTION LINE
- - - STREET CENTERLINE
- - - UTILITY EASEMENT
- - - OIL AND GAS SETBACK
- - - OIL AND GAS FLOW LINE (APPROXIMATE, PLOTTED PER COGCC DATA, NOT FIELD SURVEYED)



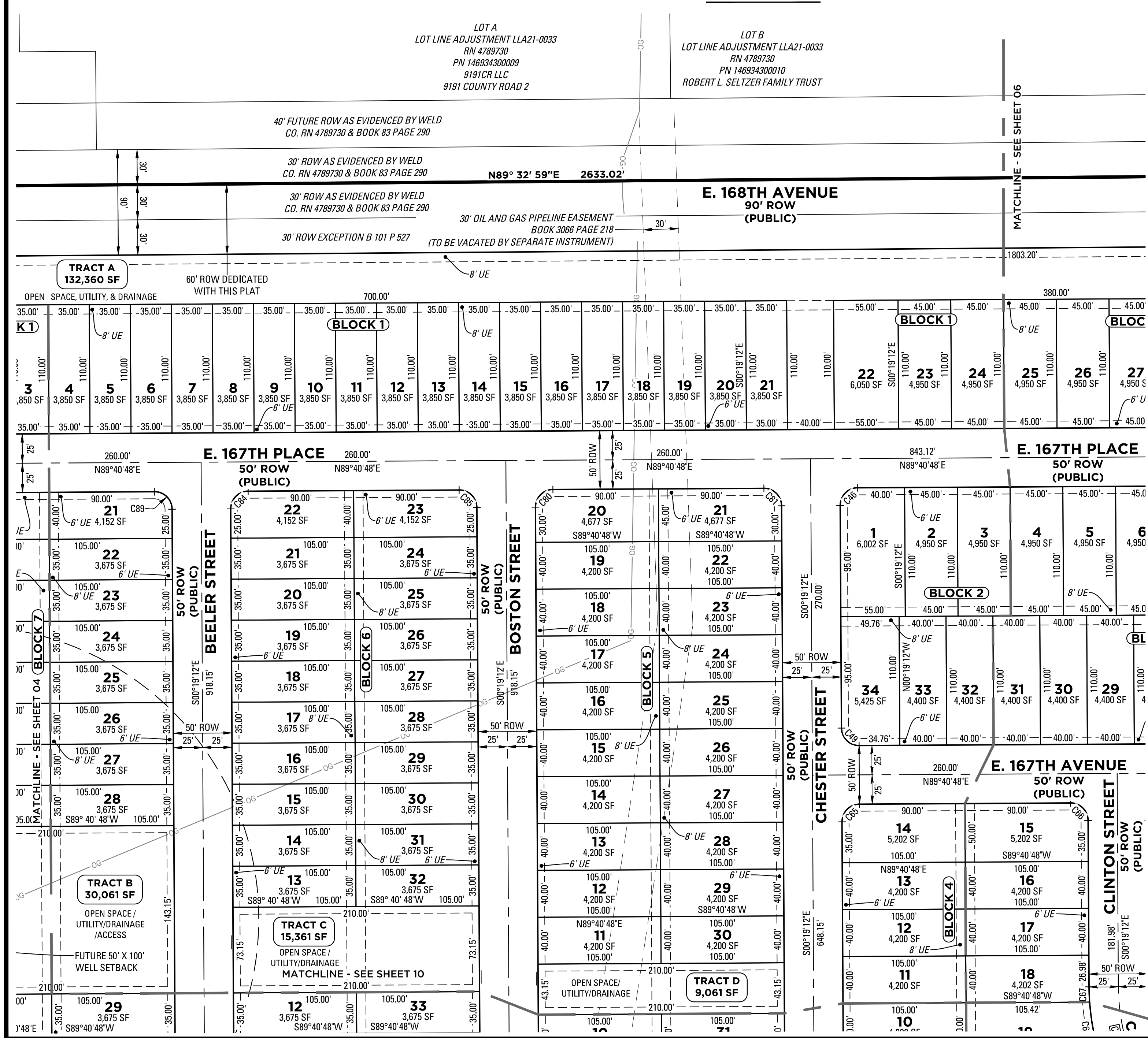
SCALE: 1" = 60' HORIZ.

DATE SUBMITTED:		02.02.2024	
REVISION NO.	1	DATE	04-26-24
	2		08-23-24
	3		
	4		
	5		
PREPARED FOR:			
REMINGTON HOMES, INC.			
5740 OLDE WADSWORTH BLVD, ARVADA, CO 80002 303.420.2899			
SCALE:	JOB NO:	BY:	
1" = 60'	0109-2207	BSS	
SHEET 5 OF 19			



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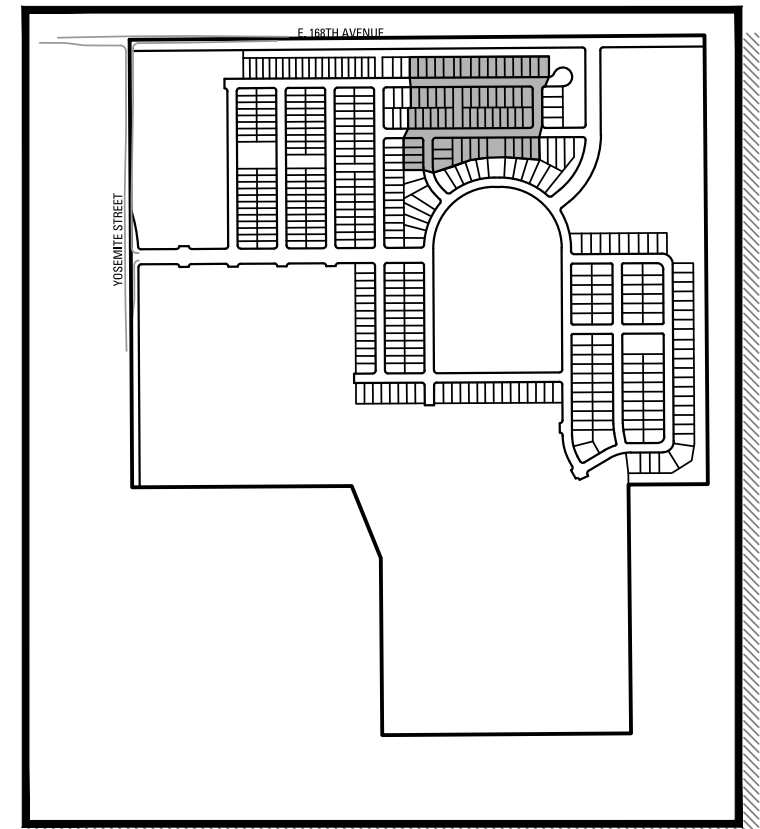


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SELTZER FARMS FILING NO. 1

LOCATED IN SECTION 3, TOWNSHIP 1 SOUTH,
RANGE 67 WEST OF THE 6TH P.M.,
COUNTY OF ADAMS, STATE OF COLORADO

SHEET 6 OF 19



KEYMAP
NTS

LOT B
LOT LINE ADJUSTMENT LLA21-0033
RN 4789730
PN 146934300010
ROBERT L. SELTZER FAMILY TRUST

40' FUTURE ROW AS EVIDENCED BY WELD
CO. RN 4789730 & BOOK 83 PAGE 290

30' ROW AS EVIDENCED BY WELD
CO. RN 4789730 & BOOK 83 PAGE 290

30' ROW AS EVIDENCED BY WELD
CO. RN 4789730 & BOOK 83 PAGE 290

30' ROW EXCEPTION B 101 P 527

S89° 32' 59"W 2633.02'
E. 168TH AVENUE
90' ROW
(PUBLIC)

TRACT A
132,360 SF

60' ROW DEDICATED
WITH THIS PLAT

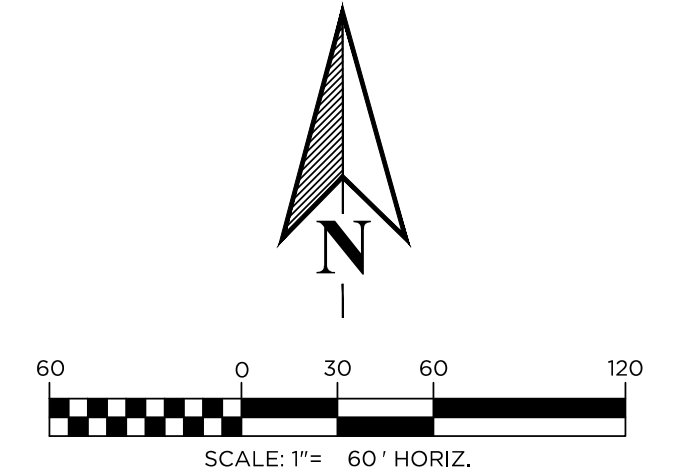
OPEN SPACE, UTILITY, & DRAINAGE

E. 167TH PLACE
50' ROW
(PUBLIC)

E. 167TH AVENUE
50' ROW
(PUBLIC)

CLINTON STREET
50' ROW
(PUBLIC)

SELTZER WAY
50' ROW
(PUBLIC)



LEGEND

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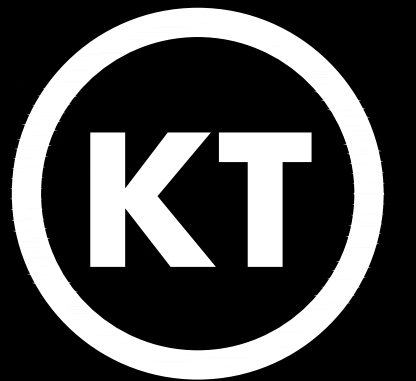
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PREPARED FOR:
REMINGTON HOMES, INC.
5740 OLDE WADSWORTH
BLVD, ARVADA, CO 80002
303.420.2899

SCALE: 1" = 60'
JOB NO: 0109-2207
BY: BSS

SHEET 6 OF 19



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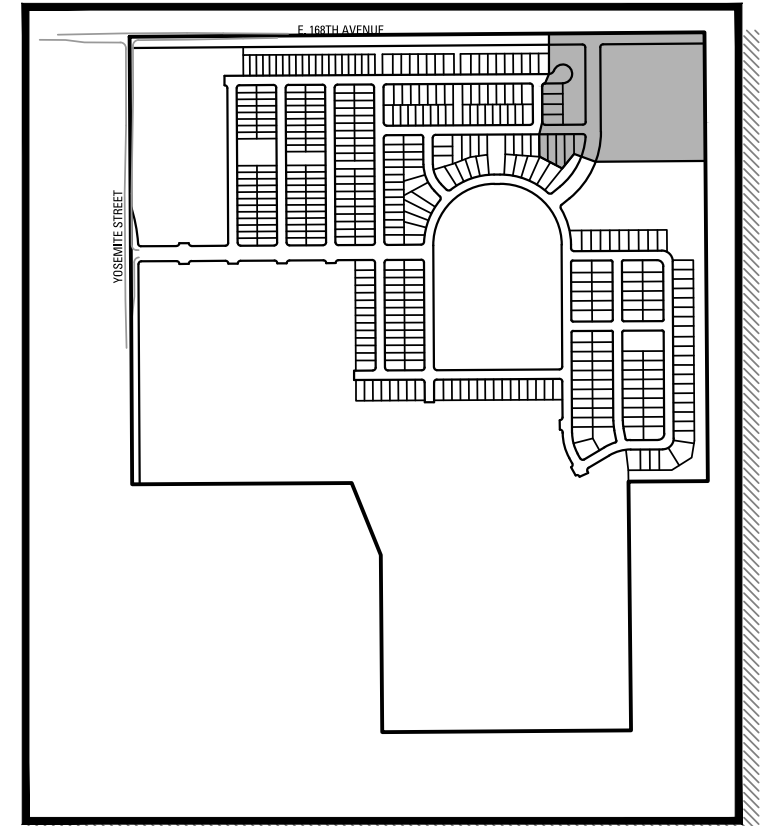
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PH: 720.638.5190

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SELTZER FARMS FILING NO. 1

LOCATED IN SECTION 3, TOWNSHIP 1 SOUTH,
RANGE 67 WEST OF THE 6TH P.M.,
COUNTY OF ADAMS, STATE OF COLORADO

SHEET 7 OF 19

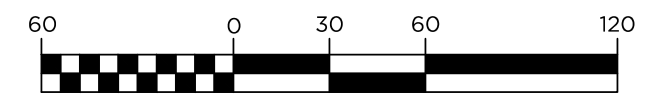
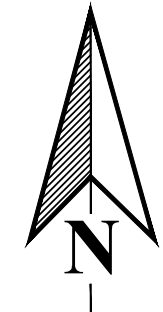


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PN 0157103100003
JOHN WILLIAM
WEIGHARDT
10390 E. 168TH AVE
BRIGHTON, CO. 80902



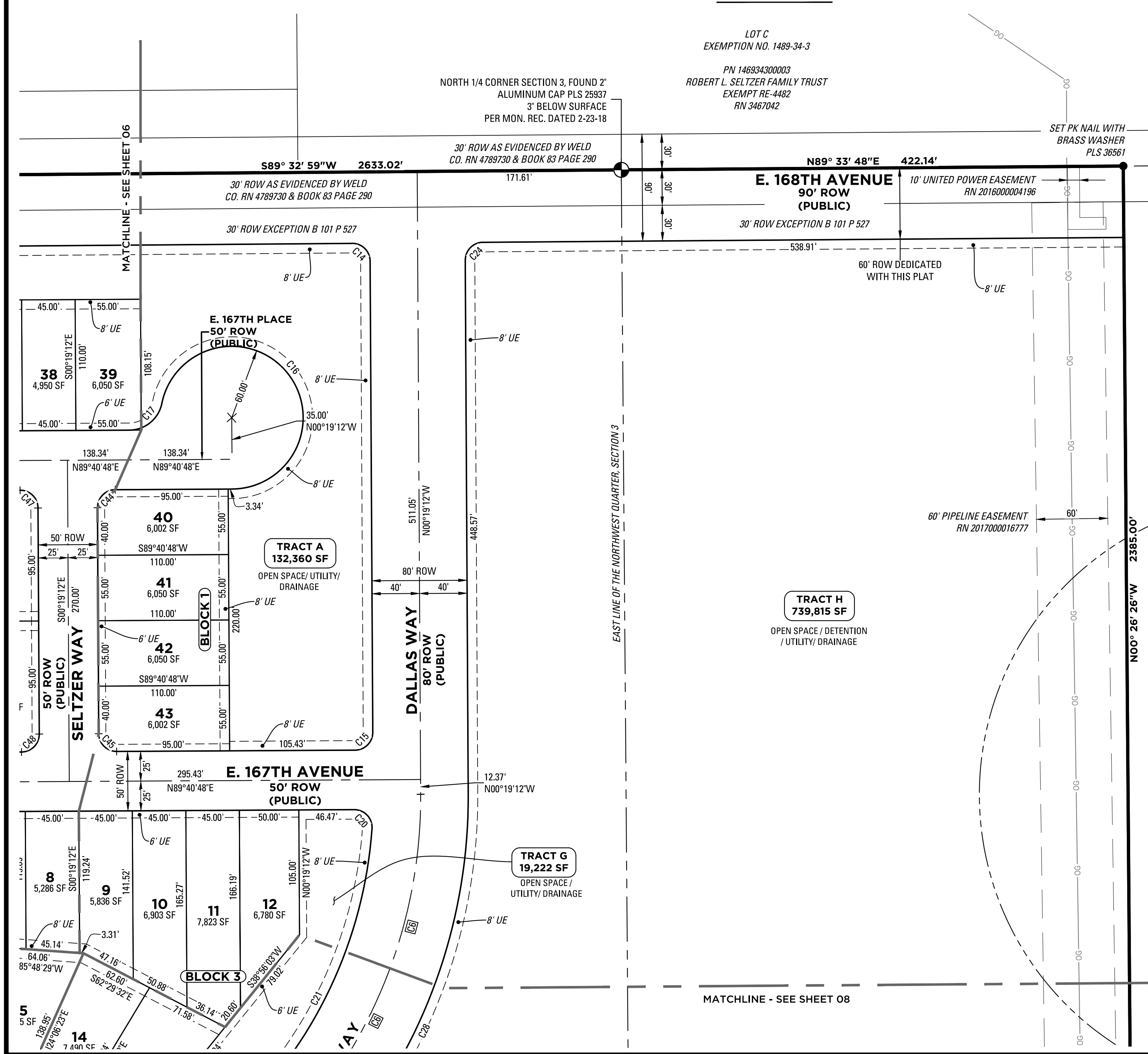
SCALE: 1" = 60' HORIZ.

DATE SUBMITTED: 02.02.2024		
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PREPARED FOR: REMINGTON HOMES, INC. 5740 OLDE WADSWORTH BLVD, ARVADA, CO 80002 303.420.2899		
SCALE: 1" = 60'	JOB NO: 0109-2207	BY: BSS
SHEET 7 OF 19		



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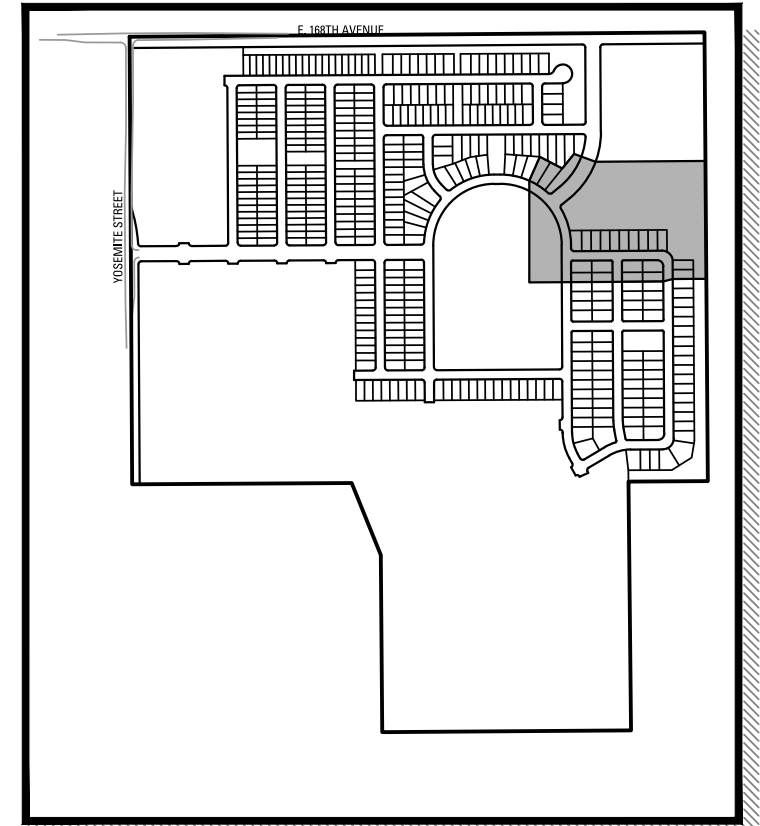
12500 W. 58th AVE. #230
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SELTZER FARMS FILING NO. 1

LOCATED IN SECTION 3, TOWNSHIP 1 SOUTH,
RANGE 67 WEST OF THE 6TH P.M.,
COUNTY OF ADAMS, STATE OF COLORADO

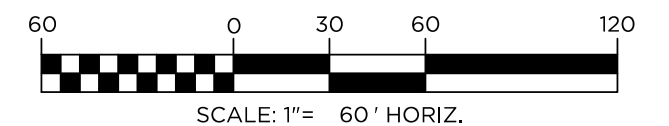
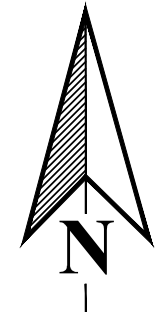


KEYMAP
NTS

LEGEND

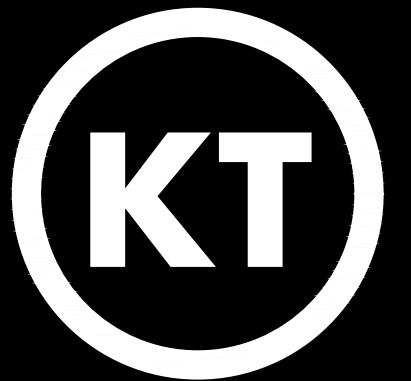
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PN 0157103100003
JOHN WILLIAM
WEIGHARDT
10390 E. 168TH AVE
BRIGHTON, CO. 80902



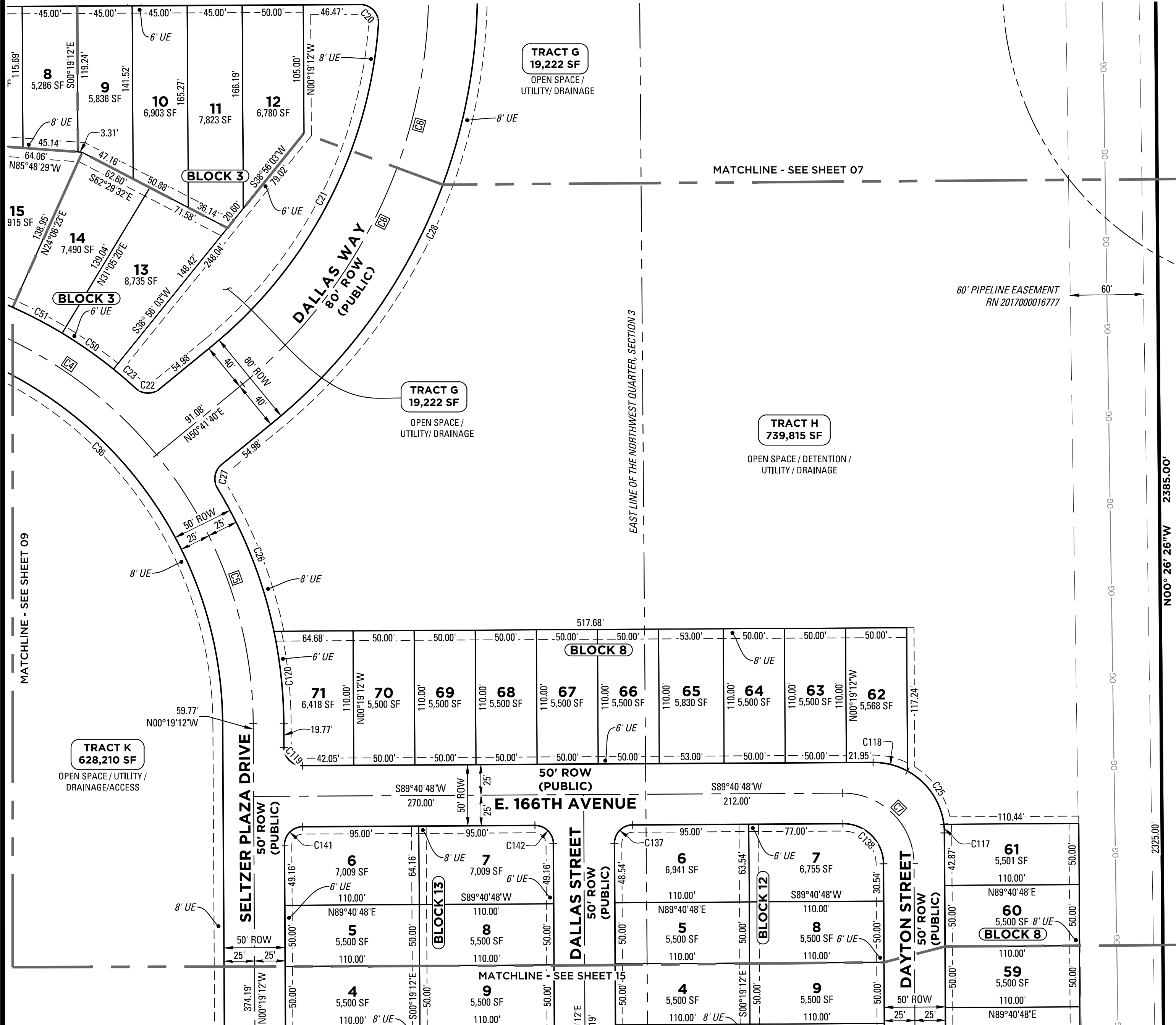
SCALE: 1" = 60' HORIZ.

DATE SUBMITTED:		02.02.2024	
REVISION NO.	DATE		
1	04-26-24		
2	08-23-24		
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PREPARED FOR:			
REMINGTON HOMES, INC.			
5740 OLDE WADSWORTH BLVD, ARVADA, CO 80002 303.420.2899			
SCALE:	JOB NO:	BY:	
1" = 60"	0109-2207	BSS	
SHEET 8 OF 19			



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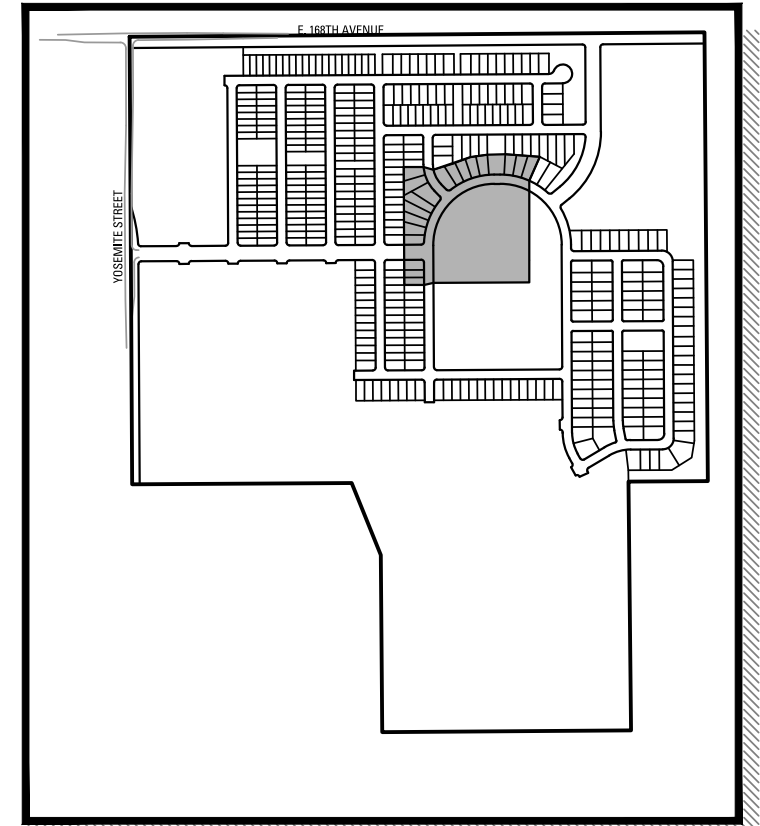
12500 W. 58th AVE. #230
ARVADA, CO 80002
PH: 720.638.5190



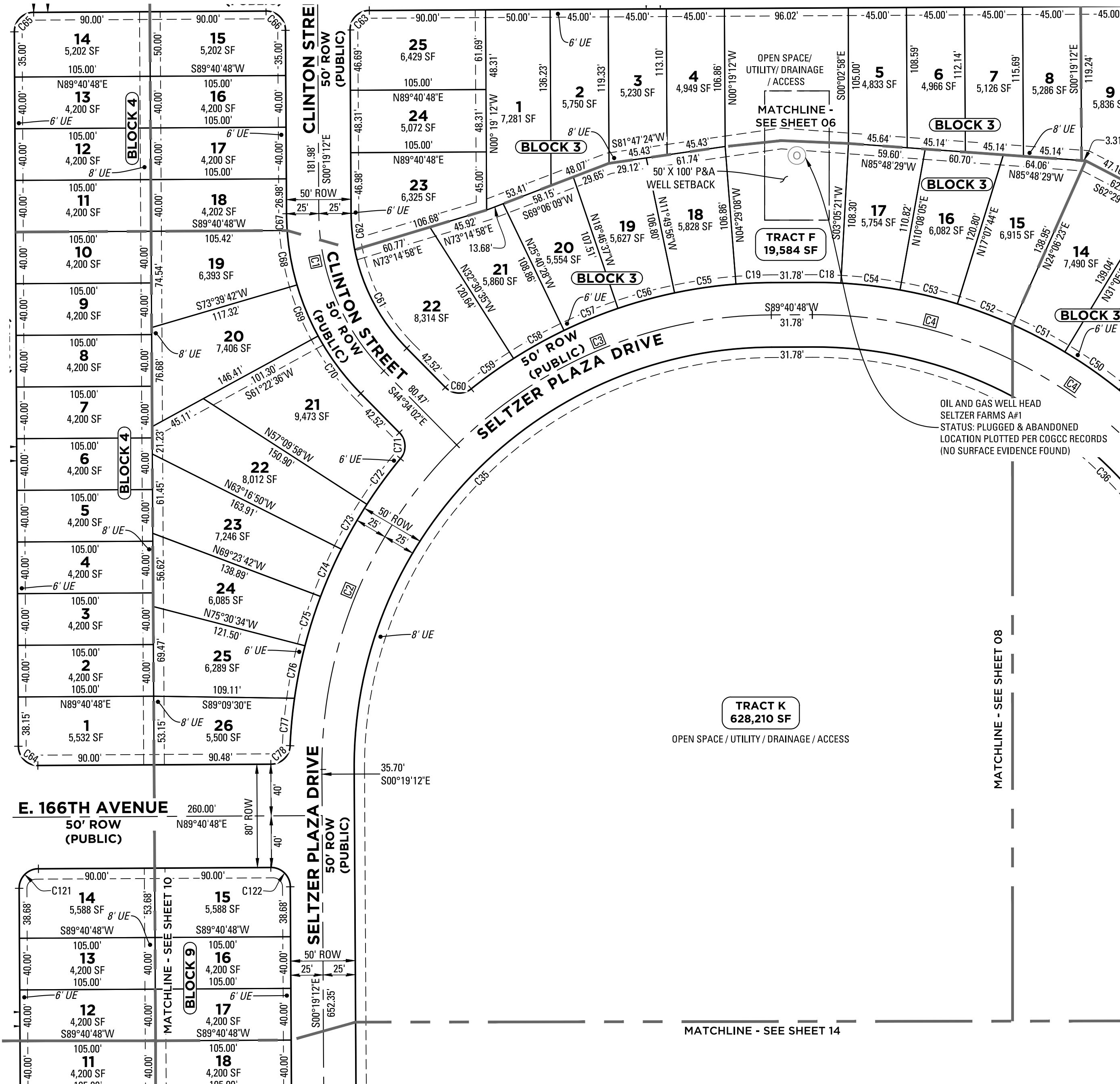
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SELTZER FARMS FILING NO. 1

LOCATED IN SECTION 3, TOWNSHIP 1 SOUTH,
RANGE 67 WEST OF THE 6TH P.M.,
COUNTY OF ADAMS, STATE OF COLORADO

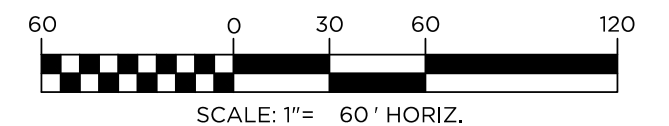
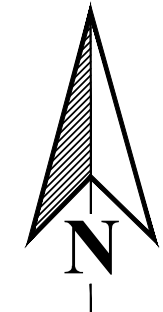


KEYMAP
NTS



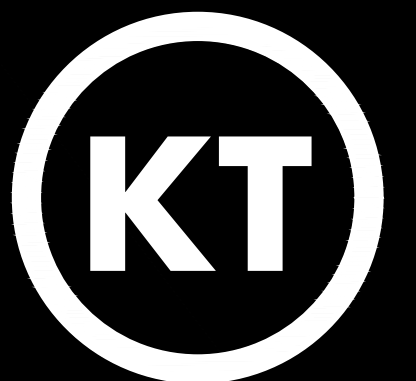
LEGEND

- UE UTILITY EASEMENT
- C# CURVE TAG (REFER TO SHEETS 17 AND 18 FOR CURVE TAG TABLES)
- RN RECEPTION / RECORDING NUMBER
- SET NO. 4 REBAR W/ ORANGE CAP PLS 36561
- FOUND PROPERTY PIN
- ⊕ MONUMENTS (SECTION CORNERS)
- OIL AND GAS WELL HEAD
- PLAT BOUNDARY
- - - SHEET MATCHLINE
- - - ADJACENT PARCEL BOUNDARIES / RIGHT OF WAY
- - - SECTION LINE
- - - STREET CENTERLINE
- - - UTILITY EASEMENT
- - - OIL AND GAS SETBACK
- OIL AND GAS FLOW LINE (APPROXIMATE, PLOTTED PER COGCC DATA, NOT FIELD SURVEYED)



SCALE: 1" = 60' HORIZ.

DATE SUBMITTED:		02.02.2024	
REVISION NO.	DATE		
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PREPARED FOR:			
REMINGTON HOMES, INC.			
5740 OLDE WADSWORTH BLVD, ARVADA, CO 80002 303.420.2899			
SCALE:	JOB NO:	BY:	
1" = 60'	0109-2207	BSS	
SHEET 9 OF 19			



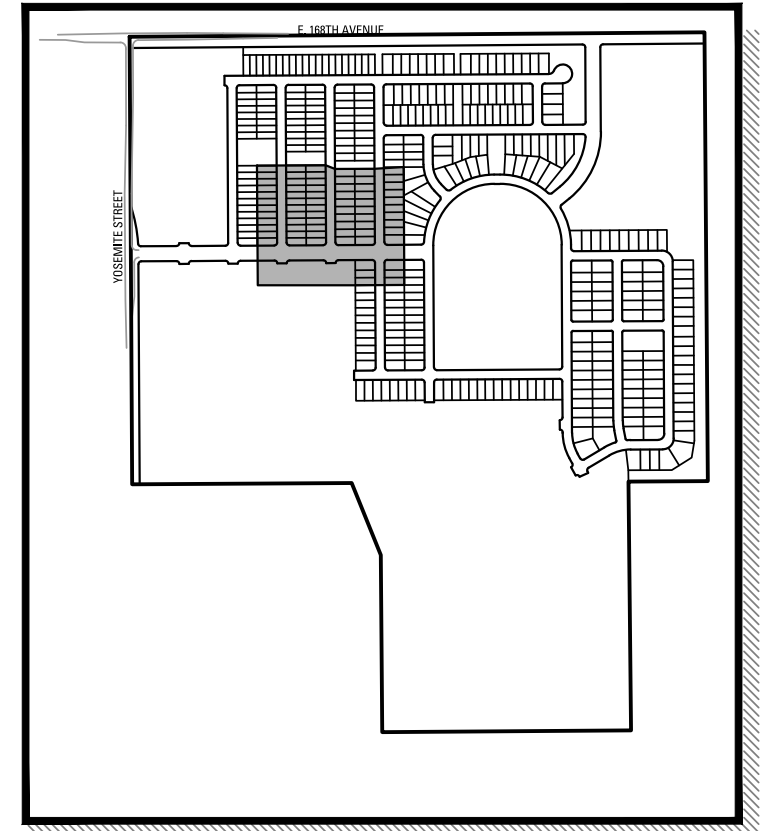
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12500 W. 58th AVE. #230
ARVADA, CO 80002
PH: 720.638.5190

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SELTZER FARMS FILING NO. 1

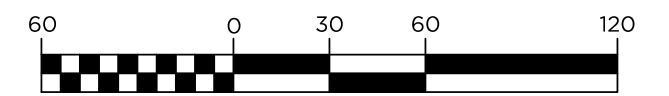
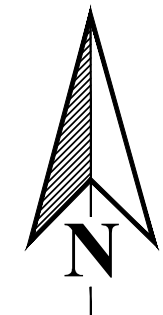
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RANGE 67 WEST OF THE 6TH P.M.,
COUNTY OF ADAMS, STATE OF COLORADO



KEYMAP
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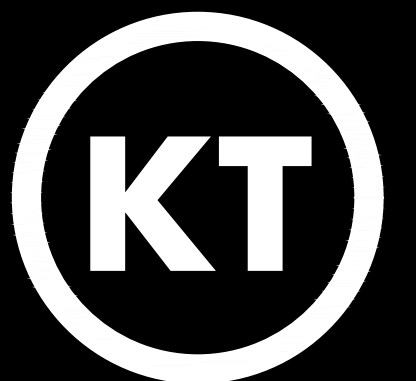
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- RN RECEPTION / RECORDING NUMBER
- SET NO. 4 REBAR W/ ORANGE CAP PLS 36561
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- - - UTILITY EASEMENT
- - - OIL AND GAS SETBACK
- - - OIL AND GAS FLOW LINE (APPROXIMATE, PLOTTED PER COGCC DATA, NOT FIELD SURVEYED)



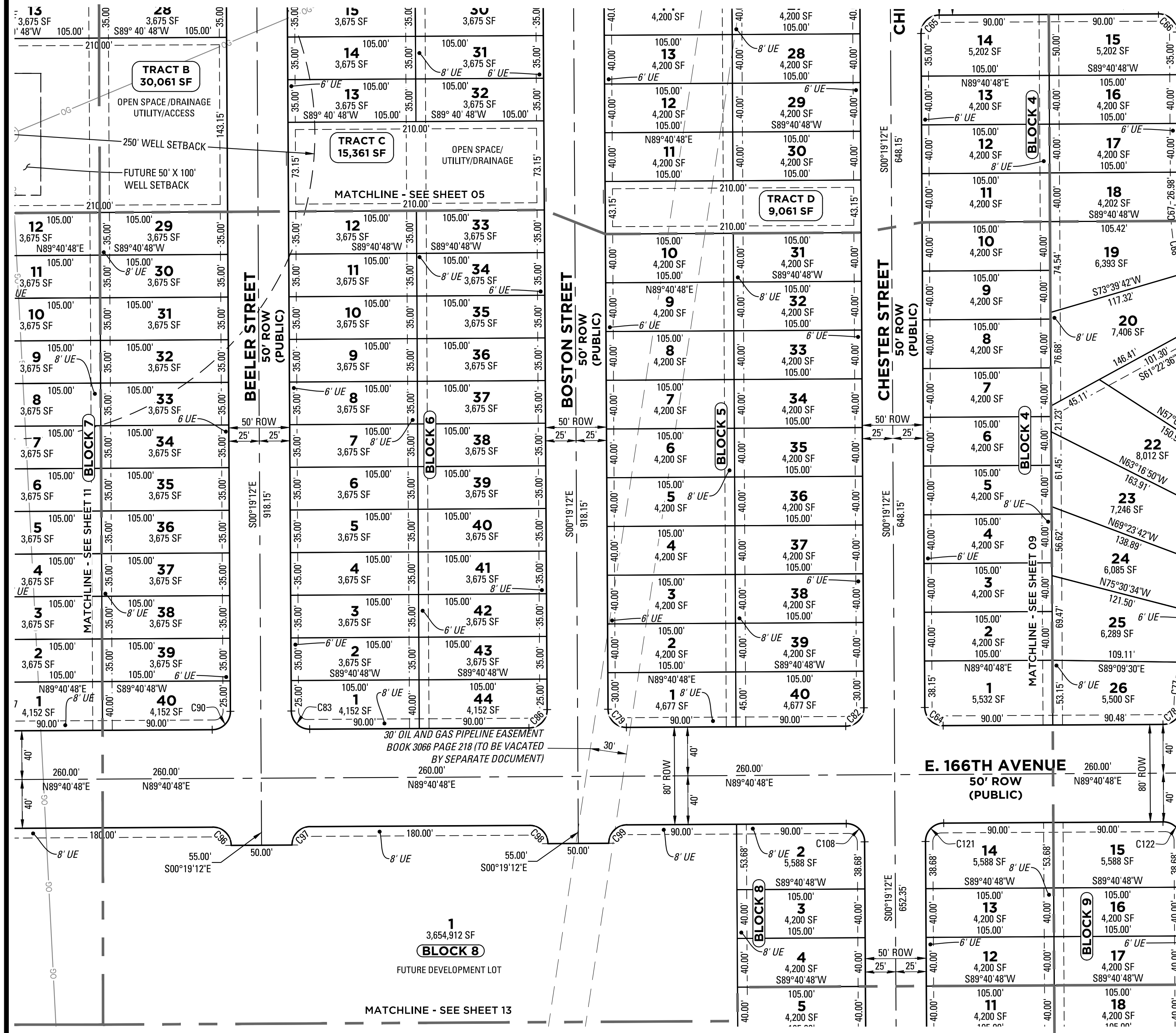
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REVISION NO.	DATE		
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PREPARED FOR:			
REMINGTON HOMES, INC.			
5740 OLDE WADSWORTH BLVD, ARVADA, CO 80002 303.420.2899			
SCALE:	JOB NO:	BY:	
1" = 60'	0109-2207	BSS	
SHEET 10 OF 19			



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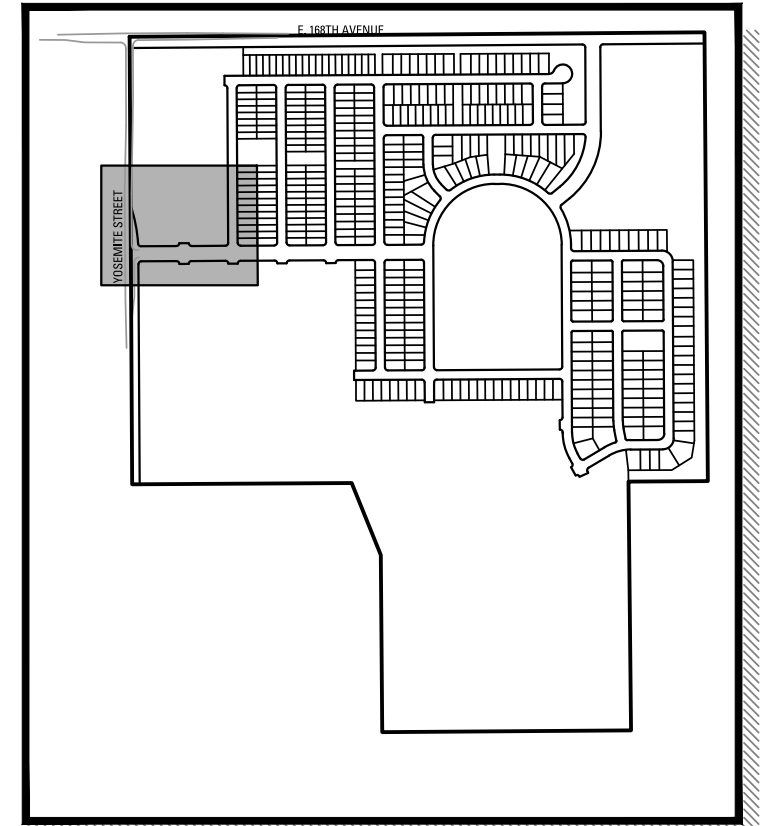
12500 W. 58th AVE. #230
ARVADA, CO 80002
PH: 720.638.5190



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SELTZER FARMS FILING NO. 1

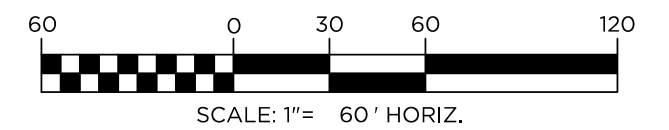
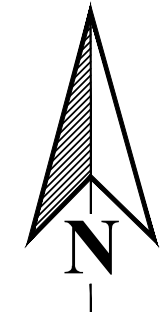
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RANGE 67 WEST OF THE 6TH P.M.,
COUNTY OF ADAMS, STATE OF COLORADO



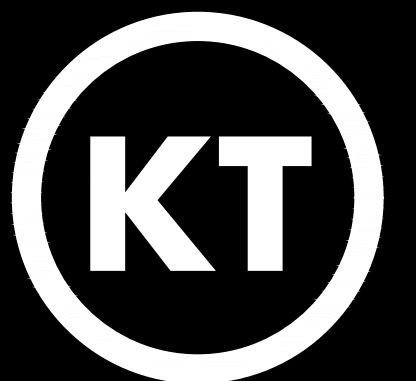
KEYMAP
NTS

LEGEND

- UE UTILITY EASEMENT
- C# CURVE TAG (REFER TO SHEETS 17 AND 18 FOR CURVE TAG TABLES)
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- ⊙ OIL AND GAS WELL HEAD
- PLAT BOUNDARY
- - - SHEET MATCHLINE
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- - - UTILITY EASEMENT
- - - OIL AND GAS SETBACK
- - - OIL AND GAS FLOW LINE (APPROXIMATE, PLOTTED PER COGCC DATA, NOT FIELD SURVEYED)

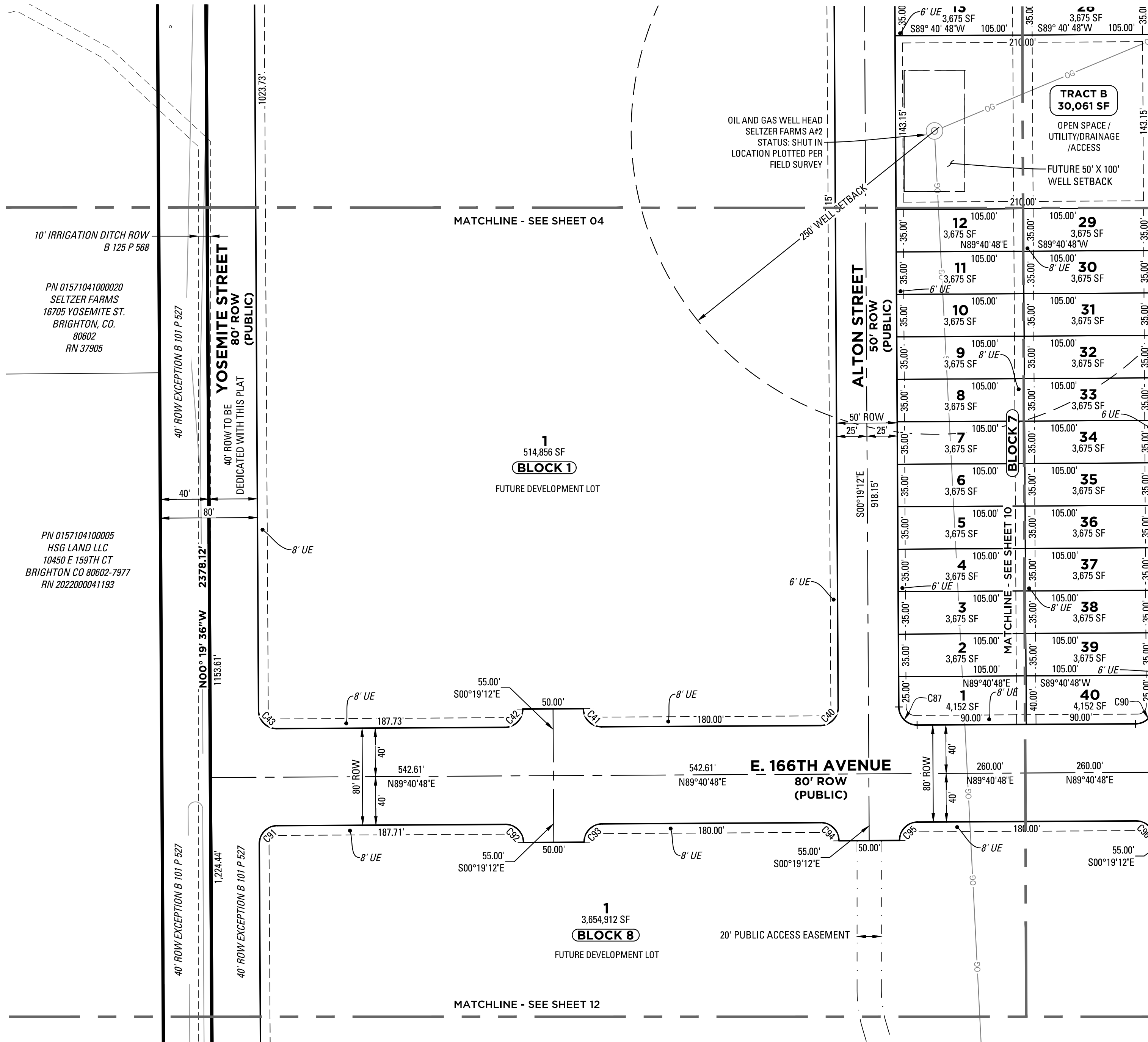


DATE SUBMITTED:		02.02.2024	
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PREPARED FOR:			
REMINGTON HOMES, INC.			
5740 OLDE WADSWORTH BLVD, ARVADA, CO 80002 303.420.2899			
SCALE: 1" = 60'	JOB NO: 0109-2207	BY: BSS	
SHEET 11 OF 19			



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12500 W. 58th AVE. #230
ARVADA, CO 80002
PH: 720.638.5190



10' IRRIGATION DITCH ROW
B 125 P 568

PN 01571041000020
SELTZER FARMS
16705 YOSEMITE ST.
BRIGHTON, CO.
80602
RN 37905

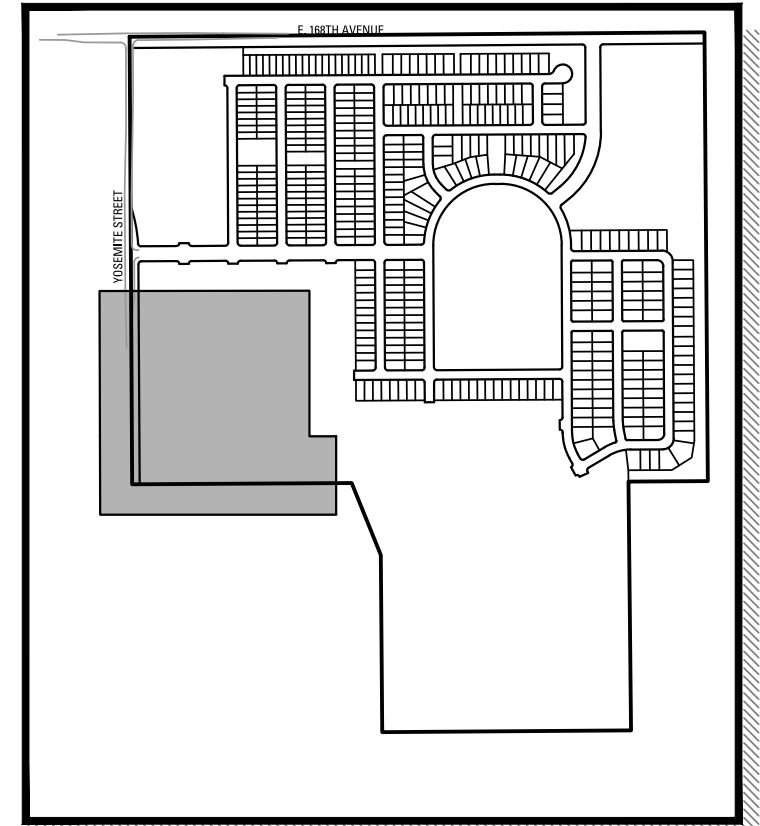
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HSG LAND LLC
10450 E 159TH CT
BRIGHTON CO 80602-7977
RN 2022000041193

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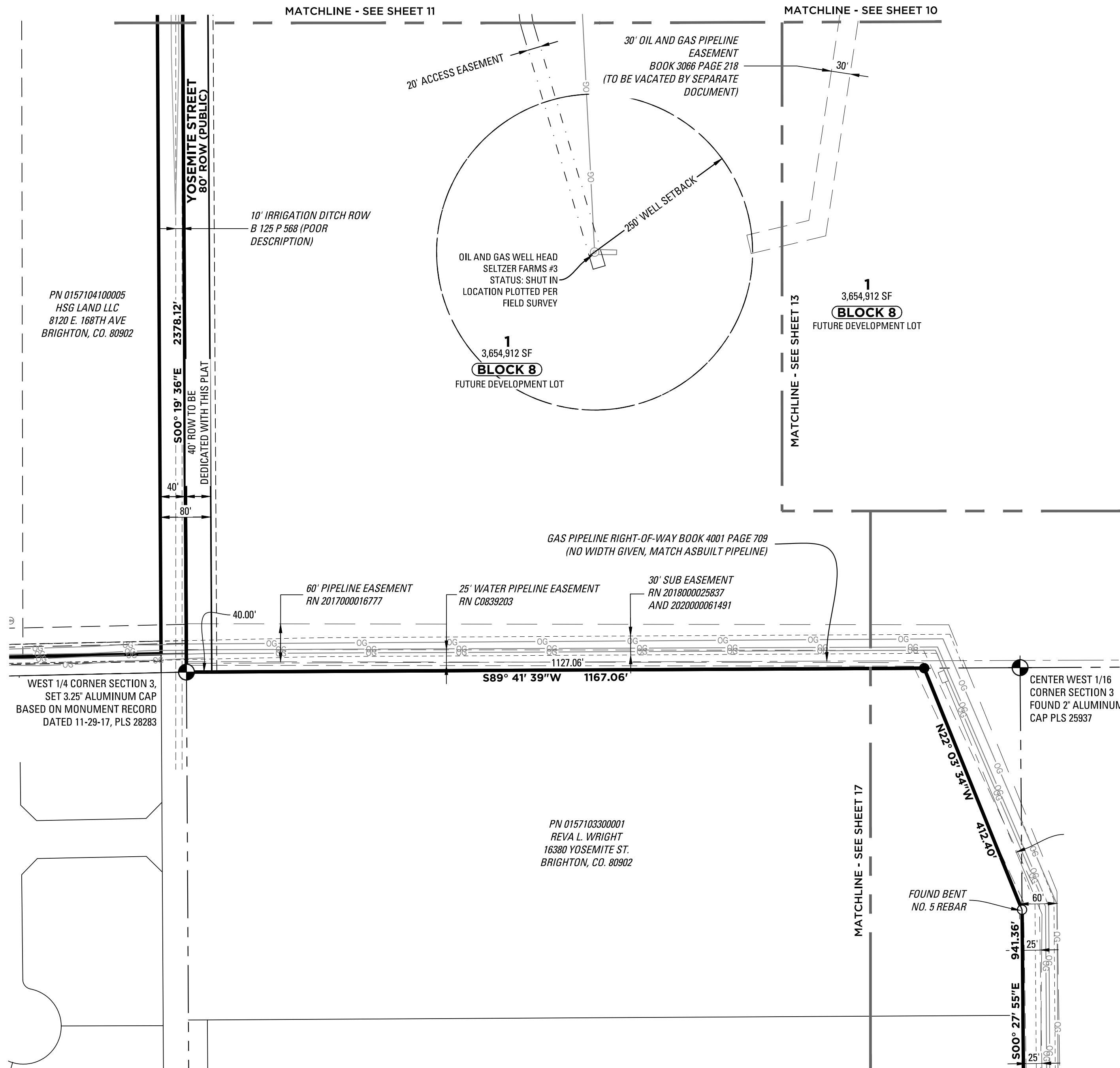
SELTZER FARMS FILING NO. 1

LOCATED IN SECTION 3, TOWNSHIP 1 SOUTH,
RANGE 67 WEST OF THE 6TH P.M.,
COUNTY OF ADAMS, STATE OF COLORADO

SHEET 12 OF 19



KEYMAP
NTS

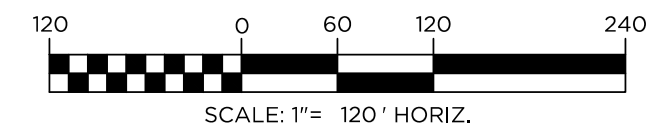
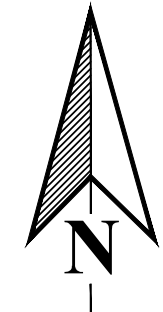


PN 0157104100005
HSG LAND LLC
8120 E. 168TH AVE
BRIGHTON, CO. 80902

PN 0157103300001
REVA L. WRIGHT
16380 YOSEMITE ST.
BRIGHTON, CO. 80902

LEGEND

- UE UTILITY EASEMENT
- C# CURVE TAG (REFER TO SHEETS 17 AND 18 FOR CURVE TAG TABLES)
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DATE SUBMITTED:		02.02.2024	
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PREPARED FOR:			
REMINGTON HOMES, INC. 5740 OLDE WADSWORTH BLVD, ARVADA, CO 80002 303.420.2899			
SCALE:	JOB NO:	BY:	
1" = 120'	0109-2207	BSS	
SHEET 12 OF 19			



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12500 W. 58th AVE. #230
ARVADA, CO 80002
PH: 720.638.5190

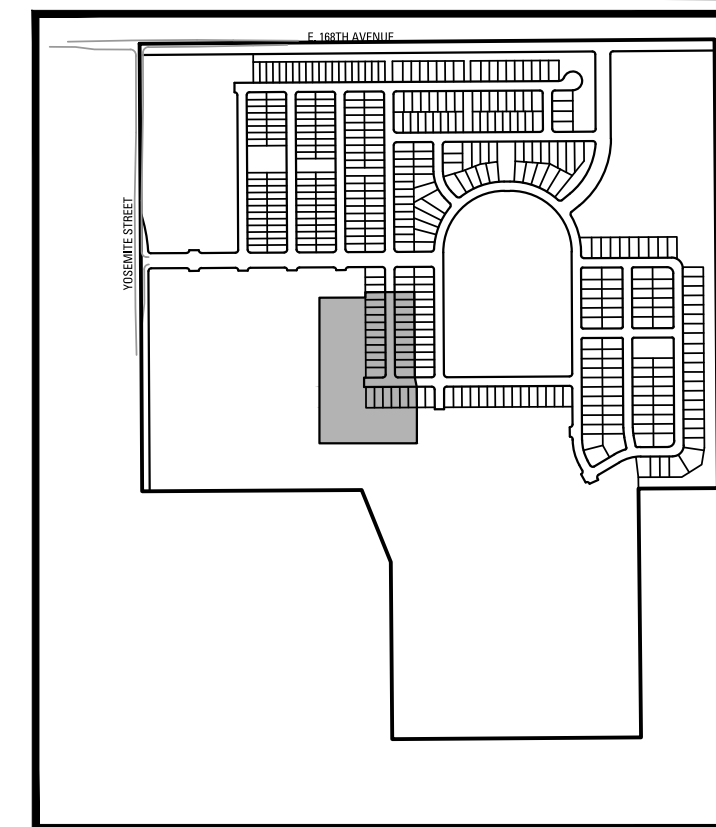
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PRELIMINARY PLAT

SELTZER FARMS FILING NO. 1

LOCATED IN SECTION 3, TOWNSHIP 1 SOUTH,
RANGE 67 WEST OF THE 6TH P.M.,
COUNTY OF ADAMS, STATE OF COLORADO

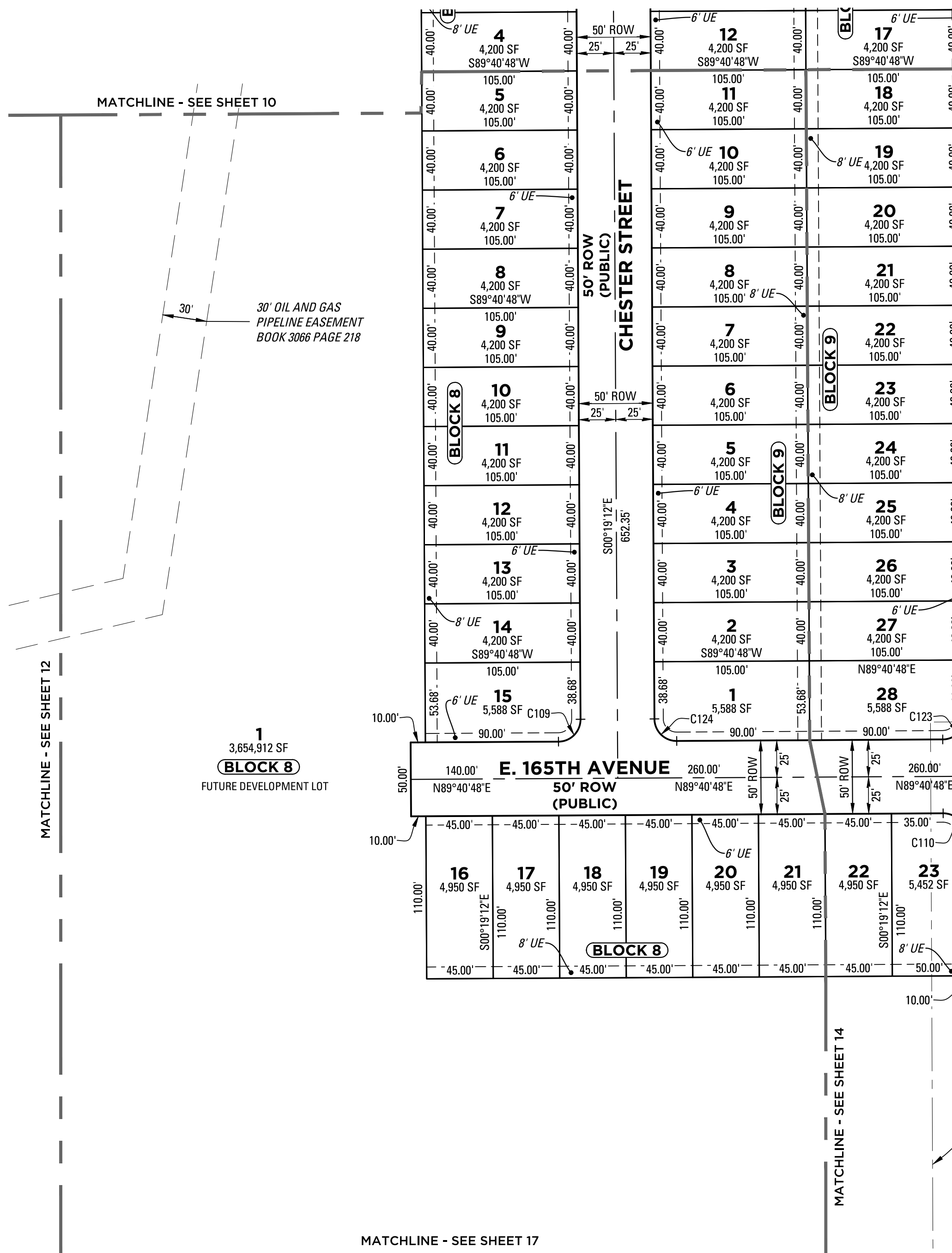
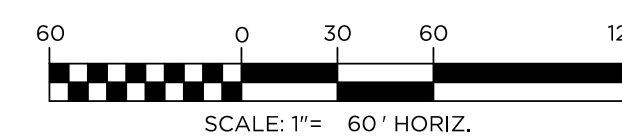
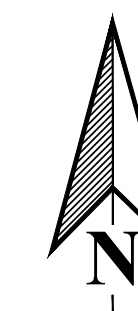
SHEET 13 OF 19



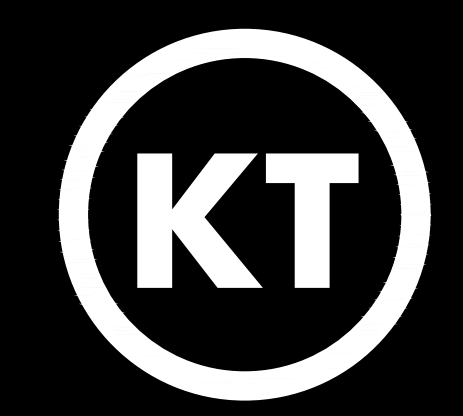
KEYMAP
NTS

LEGEND

- UE UTILITY EASEMENT
- C# CURVE TAG (REFER TO SHEETS 17 AND 18 FOR CURVE TAG TABLES)
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- SET NO. 4 REBAR W/ ORANGE CAP PLS 36561
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DATE SUBMITTED:		02.02.2024	
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1	04-26-24		
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PREPARED FOR:			
REMINGTON HOMES, INC.			
5740 OLDE WADSWORTH BULD, ARVADA, CO 80002 303.420.2899			
SCALE:	JOB NO:	BY:	
1" = 60'	0109-2207	BSS	
SHEET 13 OF 19			



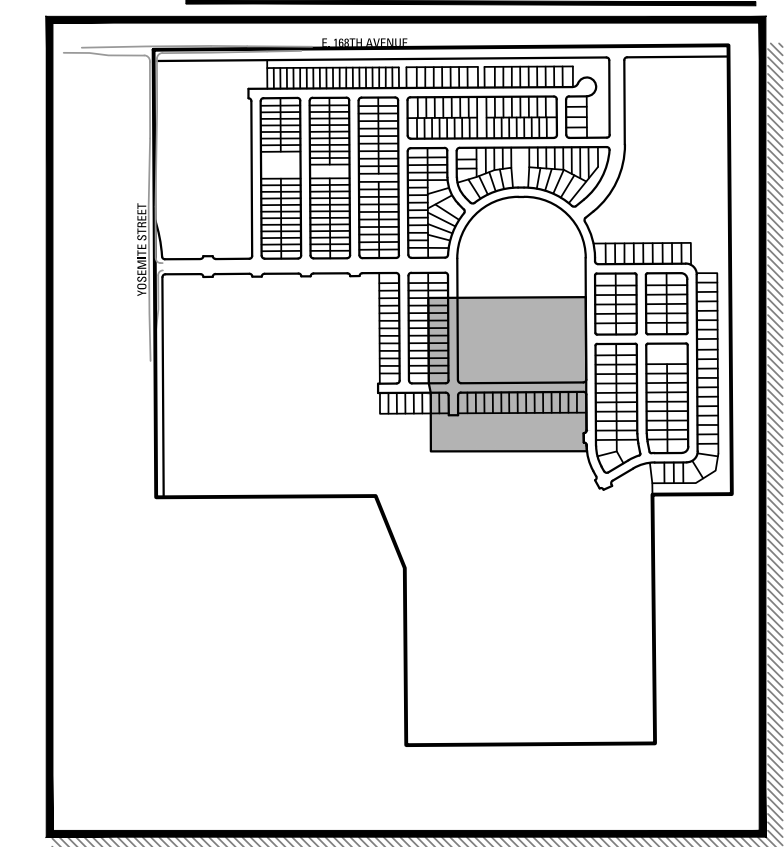
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ENGINEERS • SURVEYORS

12500 W. 58th AVE. #230
ARVADA, CO 80002
PH: 720.638.5190

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PRELIMINARY PLAT
SELTZER FARMS FILING NO. 1
 LOCATED IN SECTION 3, TOWNSHIP 1 SOUTH,
 RANGE 67 WEST OF THE 6TH P.M.,
 COUNTY OF ADAMS, STATE OF COLORADO

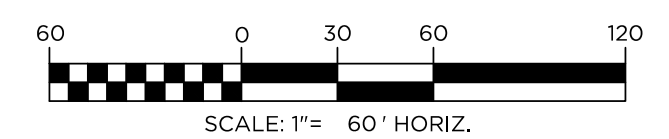
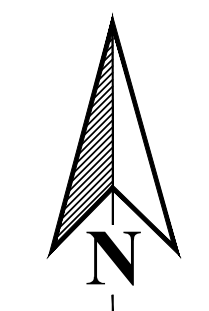
SHEET 14 OF 19



KEYMAP
NTS

LEGEND

- UE UTILITY EASEMENT
- C# CURVE TAG (REFER TO SHEETS 17 AND 18 FOR CURVE TAG TABLES)
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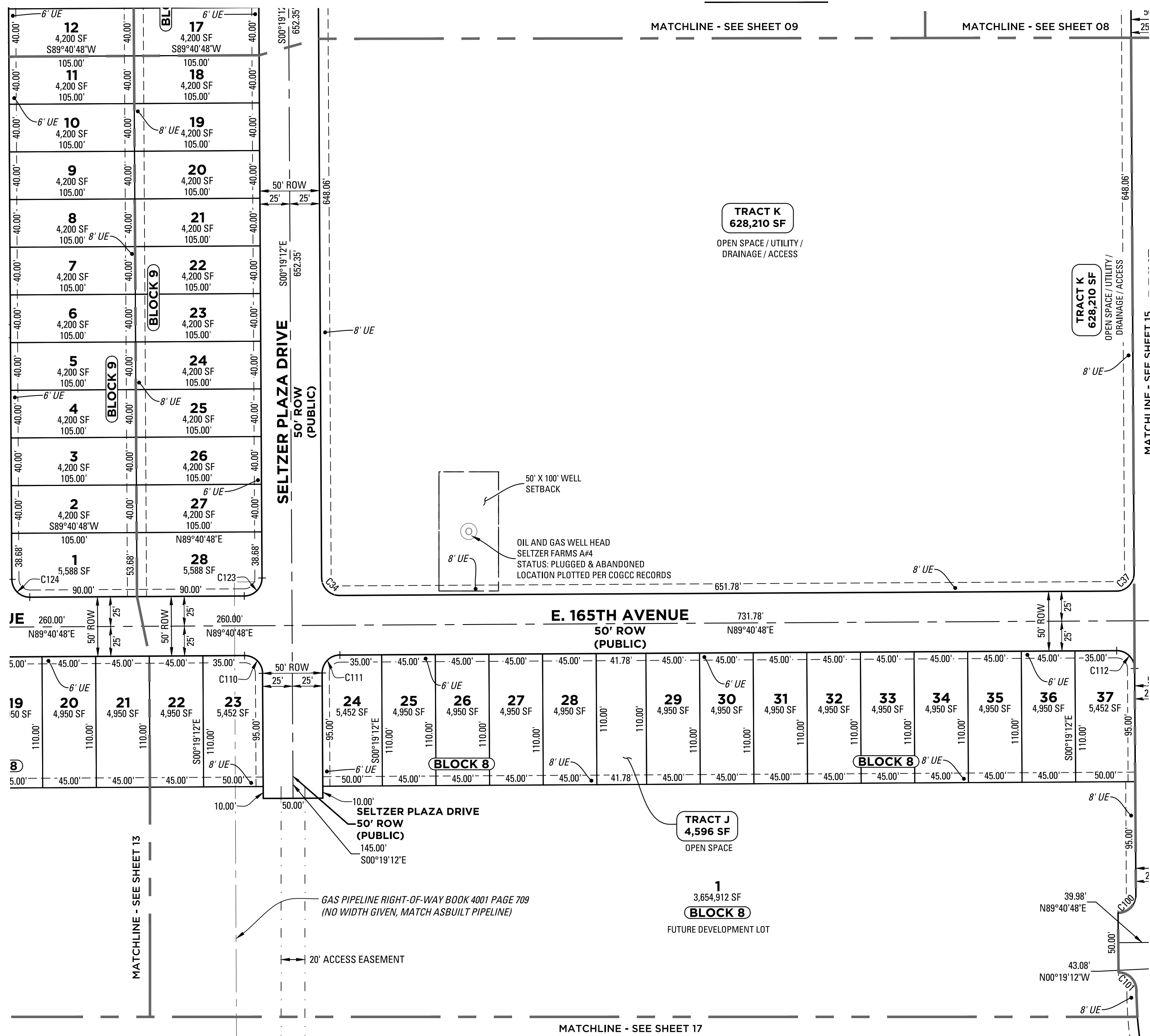


DATE SUBMITTED:		02.02.2024	
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PREPARED FOR:			
REMINGTON HOMES, INC.			
5740 OLDE WADSWORTH BLVD, ARVADA, CO 80002 303.420.2899			
SCALE:	JOB NO:	BY:	
1" = 60'	0109-2207	BSS	
SHEET 14 OF 19			



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12500 W. 58th AVE. #230
ARVADA, CO 80002
PH: 720.638.5190

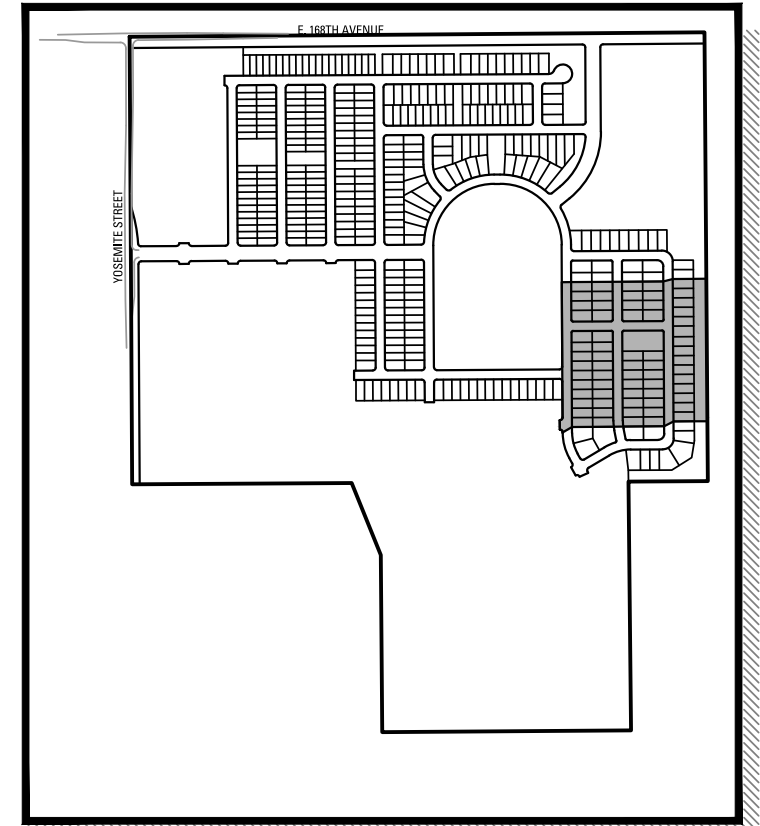


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SELTZER FARMS FILING NO. 1

LOCATED IN SECTION 3, TOWNSHIP 1 SOUTH,
RANGE 67 WEST OF THE 6TH P.M.,
COUNTY OF ADAMS, STATE OF COLORADO

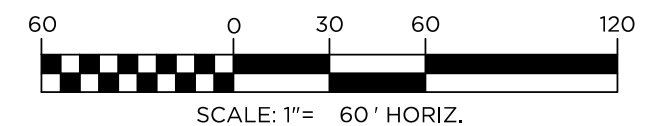
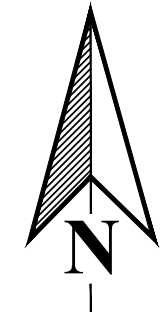
SHEET 15 OF 19



KEYMAP
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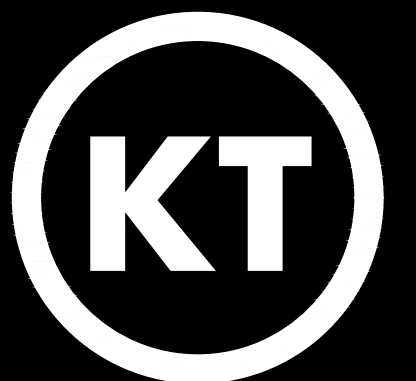
LEGEND

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- - - OIL AND GAS FLOW LINE (APPROXIMATE, PLOTTED PER COGCC DATA, NOT FIELD SURVEYED)



SCALE: 1" = 60' HORIZ.

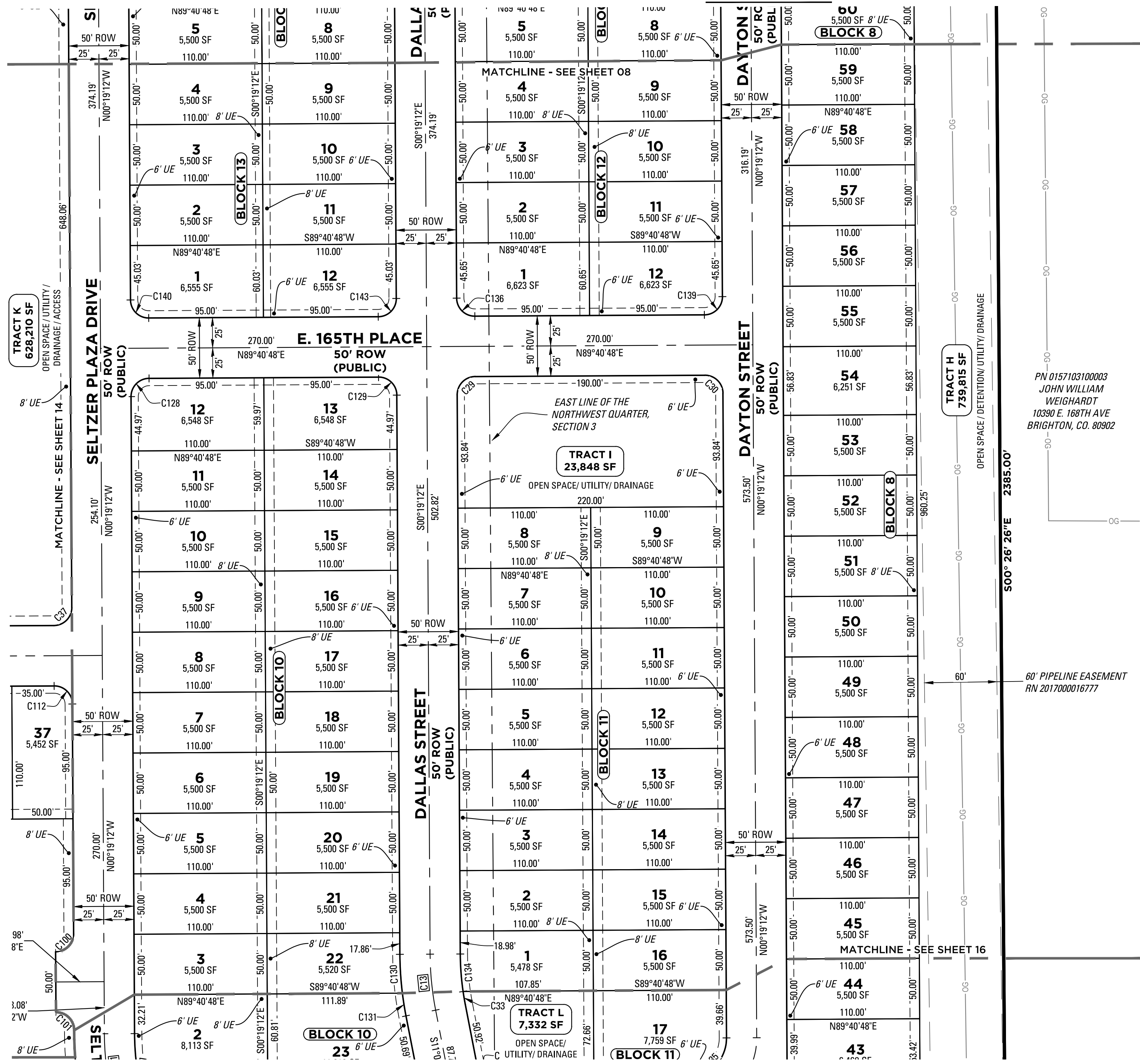
DATE SUBMITTED:		02.02.2024	
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PREPARED FOR:			
REMINGTON HOMES, INC.			
5740 OLDE WADSWORTH BLVD, ARVADA, CO 80002 303.420.2899			
SCALE: 1" = 60'	JOB NO: 0109-2207	BY: BSS	
SHEET 15 OF 19			



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12500 W. 58th AVE. #230
ARVADA, CO 80002
PH: 720.638.5190

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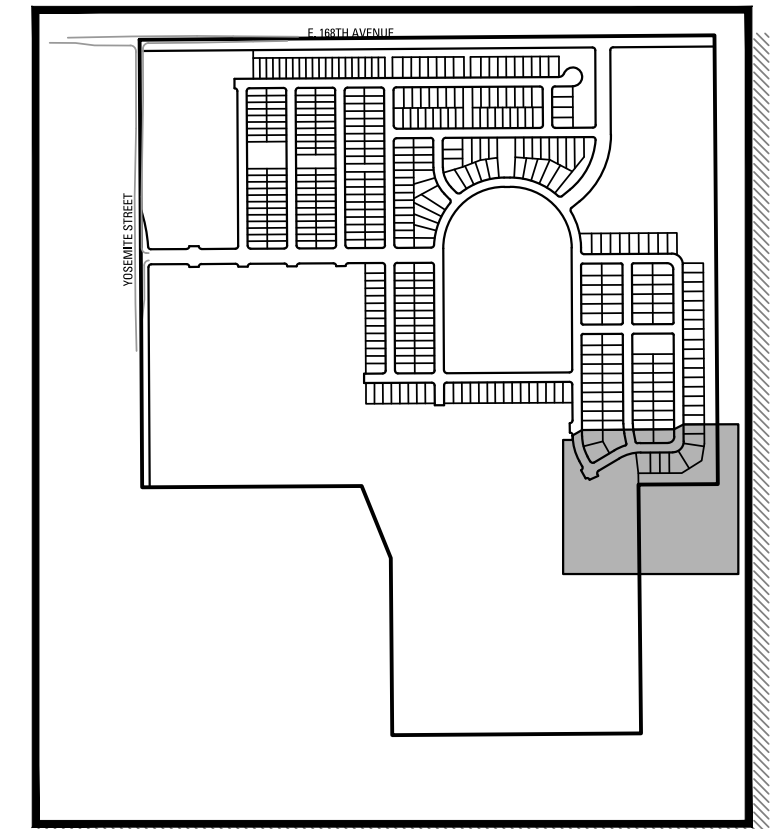
PN 0157103100003
JOHN WILLIAM
WEIGHARDT
10390 E. 168TH AVE
BRIGHTON, CO. 80902

60' PIPELINE EASEMENT
RN 2017000016777

SELTZER FARMS FILING NO. 1

LOCATED IN SECTION 3, TOWNSHIP 1 SOUTH,
RANGE 67 WEST OF THE 6TH P.M.,
COUNTY OF ADAMS, STATE OF COLORADO

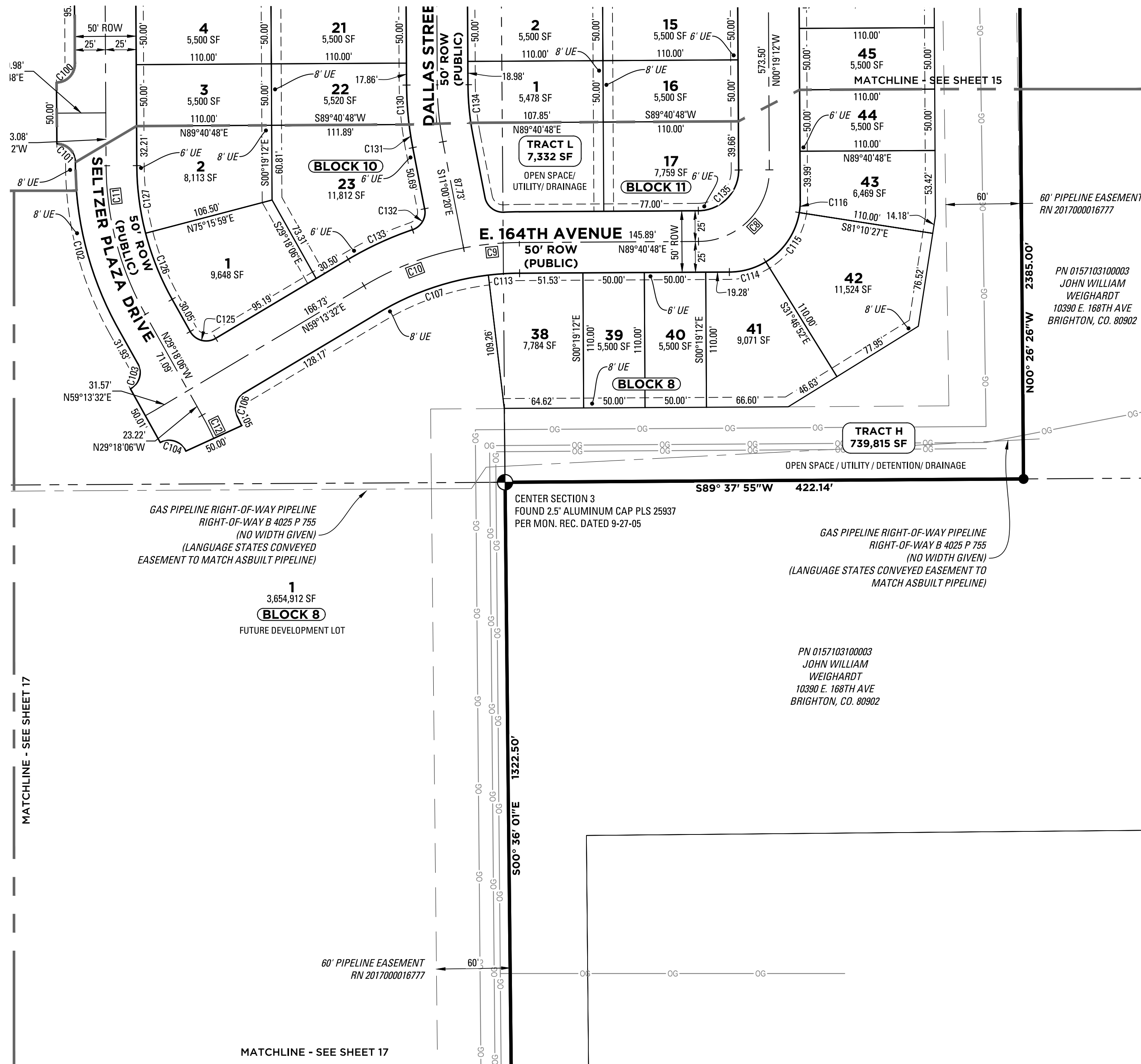
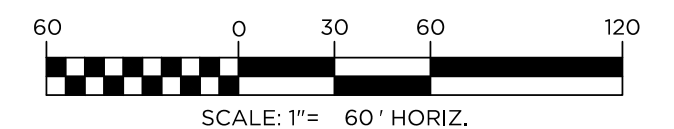
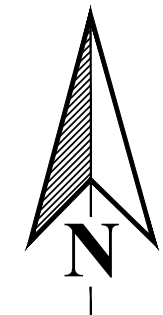
SHEET 16 OF 19



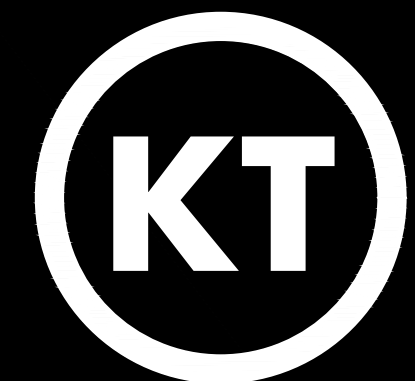
KEYMAP
NTS

LEGEND

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PREPARED FOR:		
REMINGTON HOMES, INC. 5740 OLDE WADSWORTH BLVD, ARVADA, CO 80002 303.420.2899		
SCALE: 1" = 60'	JOB NO: 0109-2207	BY: BSS
SHEET 16 OF 19		



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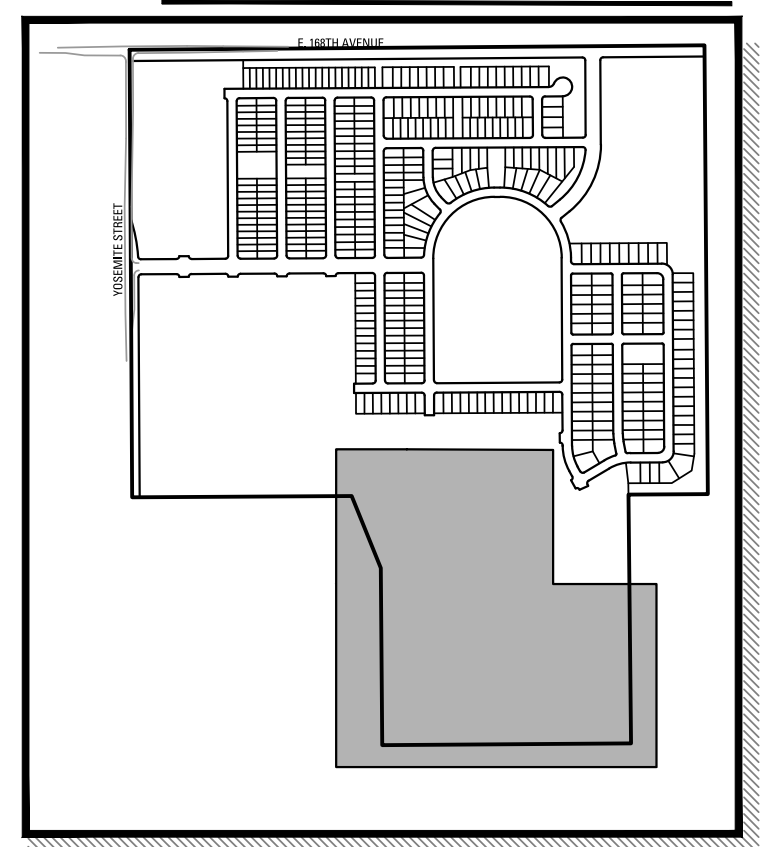
12500 W. 58th AVE. #230
ARVADA, CO 80002
PH: 720.638.5190

PRELIMINARY PLAT

SELTZER FARMS FILING NO. 1

LOCATED IN SECTION 3, TOWNSHIP 1 SOUTH,
RANGE 67 WEST OF THE 6TH P.M.,
COUNTY OF ADAMS, STATE OF COLORADO

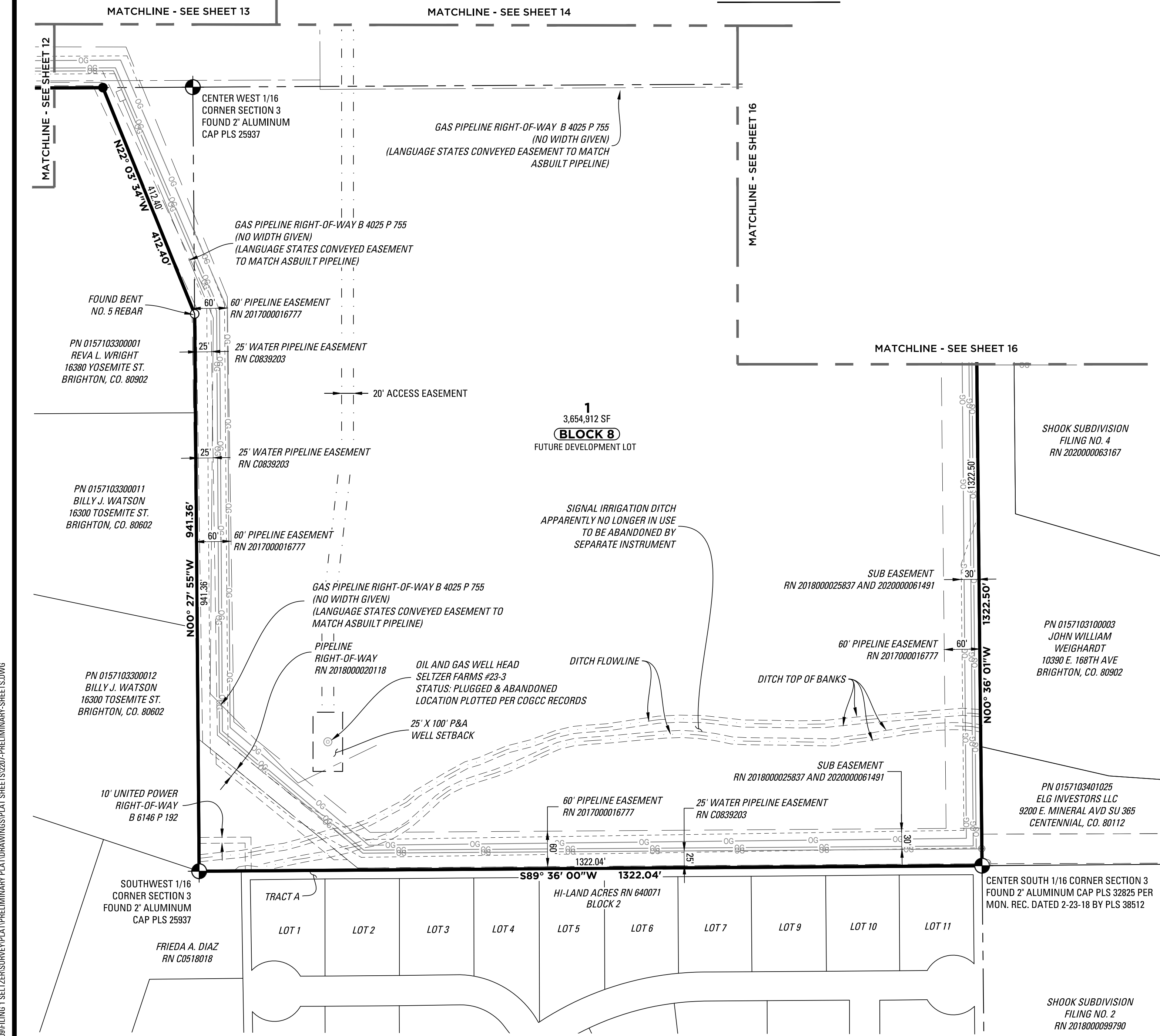
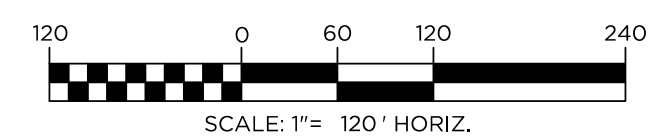
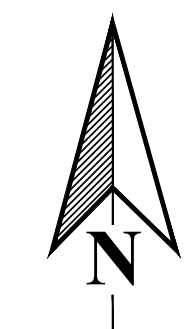
SHEET 17 OF 19



KEYMAP
NTS

LEGEND

- UE UTILITY EASEMENT
- C# CURVE TAG (REFER TO SHEETS 17 AND 18 FOR CURVE TAG TABLES)
- RN RECEPTION / RECORDING NUMBER
- SET NO. 4 REBAR W/ ORANGE CAP PLS 36561
- FOUND PROPERTY PIN
- ⊕ MONUMENTS (SECTION CORNERS)
- OIL AND GAS WELL HEAD
- PLAT BOUNDARY
- - - SHEET MATCHLINE
- - - ADJACENT PARCEL BOUNDARIES / RIGHT OF WAY
- - - SECTION LINE
- - - STREET CENTERLINE
- - - UTILITY EASEMENT
- - - OIL AND GAS SETBACK
- - - OIL AND GAS FLOW LINE (APPROXIMATE, PLOTTED PER COGCC DATA, NOT FIELD SURVEYED)



J:\0109\FILING 1 SELTZER SURVEY\PLAT\DRAWINGS\PLAT SHEETS\207-PRELIMINARY-SHEETS.DWG

DATE SUBMITTED:		02.02.2024	
REVISION NO.	DATE		
1	04-26-24		
2	08-23-24		
3			
4			
5			
PREPARED FOR:			
REMINGTON HOMES, INC.			
5740 OLDE WADSWORTH BLVD, ARVADA, CO 80002 303.420.2899			
SCALE:	JOB NO:	BY:	
1" = 120'	0109-2207	BSS	
SHEET 17 OF 19			



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12500 W. 58th AVE. #230
ARVADA, CO 80002
PH: 720.638.5190

SHOOK SUBDIVISION
FILING NO. 2
RN 2018000099790

SHOOK SUBDIVISION
FILING NO. 4
RN 202000063167

PN 0157103100003
JOHN WILLIAM
WEIGHARDT
10390 E. 168TH AVE
BRIGHTON, CO. 80902

PN 0157103401025
ELG INVESTORS LLC
9200 E. MINERAL AVD SU 365
CENTENNIAL, CO. 80112

SOUTHWEST 1/16
CORNER SECTION 3
FOUND 2\"/>

PN 0157103300001
REVA L. WRIGHT
16380 YOSEMITE ST.
BRIGHTON, CO. 80902

PN 0157103300011
BILLY J. WATSON
16300 TOSEMITE ST.
BRIGHTON, CO. 80602

PN 0157103300012
BILLY J. WATSON
16300 TOSEMITE ST.
BRIGHTON, CO. 80602

1
3,654,912 SF
(BLOCK 8)
FUTURE DEVELOPMENT LOT

OIL AND GAS WELL HEAD
SELTZER FARMS #23-3
STATUS: PLUGGED & ABANDONED
LOCATION PLOTTED PER COGCC RECORDS

GAS PIPELINE RIGHT-OF-WAY B 4025 P 755
(NO WIDTH GIVEN)
(LANGUAGE STATES CONVEYED EASEMENT TO MATCH
ASBUILT PIPELINE)

GAS PIPELINE RIGHT-OF-WAY B 4025 P 755
(NO WIDTH GIVEN)
(LANGUAGE STATES CONVEYED EASEMENT
TO MATCH ASBUILT PIPELINE)

25' WATER PIPELINE EASEMENT
RN C0839203

25' WATER PIPELINE EASEMENT
RN C0839203

60' PIPELINE EASEMENT
RN 2017000016777

GAS PIPELINE RIGHT-OF-WAY B 4025 P 755
(NO WIDTH GIVEN)
(LANGUAGE STATES CONVEYED EASEMENT TO
MATCH ASBUILT PIPELINE)

PIPELINE
RIGHT-OF-WAY
RN 2018000020118

25' X 100' P&A
WELL SETBACK

SIGNAL IRRIGATION DITCH
APPARENTLY NO LONGER IN USE
TO BE ABANDONED BY
SEPARATE INSTRUMENT

SUB EASEMENT
RN 2018000025837 AND 2020000061491

60' PIPELINE EASEMENT
RN 2017000016777

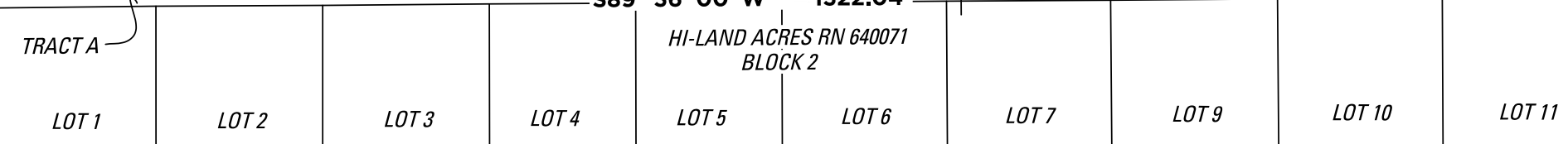
SUB EASEMENT
RN 2018000025837 AND 2020000061491

60' PIPELINE EASEMENT
RN 2017000016777

25' WATER PIPELINE EASEMENT
RN C0839203

HI-LAND ACRES RN 640071
BLOCK 2

CENTER SOUTH 1/16 CORNER SECTION 3
FOUND 2\"/>



SELTZER FARMS FILING NO. 1

LOCATED IN SECTION 3, TOWNSHIP 1 SOUTH,
RANGE 67 WEST OF THE 6TH P.M.,
COUNTY OF ADAMS, STATE OF COLORADO

SHEET 18 OF 19

CENTERLINE CURVE TABLE

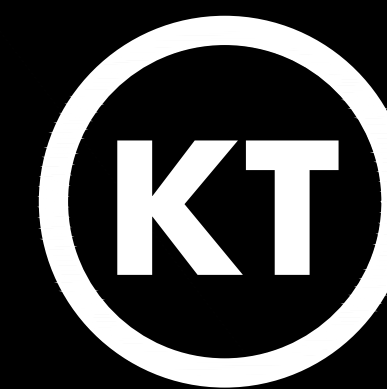
CURVE #	DELTA	RADIUS	LENGHT	CHD BEARING	CHD LENGTH
C1	44°14'49"	175.00'	135.14'	S22°26'37"E	131.81'
C2	45°45'11"	350.00'	279.49'	S22°33'23"W	272.12'
C3	44°14'49"	350.00'	270.29'	S67°33'23"W	263.62'
C4	51°00'52"	350.00'	311.63'	N64°48'46"W	301.44'
C5	38°59'08"	350.00'	238.15'	N19°48'46"W	233.58'
C6	51°00'52"	415.00'	369.50'	N25°11'14"E	357.42'
C7	90°00'00"	58.00'	91.11'	N45°19'12"W	82.02'
C8	90°00'00"	58.00'	91.11'	N44°40'48"E	82.02'
C9	10°28'32"	250.00'	45.71'	N84°25'24"E	45.64'
C10	19°57'36"	250.00'	87.09'	N69°12'20"E	86.65'
C11	28°58'54"	250.00'	126.46'	N14°48'39"W	125.11'
C12	4°48'55"	250.00'	21.01'	N26°53'39"W	21.00'
C13	10°41'08"	250.00'	46.62'	S05°39'46"E	46.56'

TRACTS CURVE TABLE

CURVE #	DELTA	RADIUS	LENGTH	CHD BEARING	CHD LENGTH
C14	90°07'49"	15.00'	23.60'	S45°23'07"E	21.24'
C16	258°11'50"	60.00'	270.38'	N39°25'07"W	93.13'
C17	57°16'20"	28.00'	27.99'	S40°07'08"W	26.84'
C18	3°24'33"	375.00'	22.31'	N88°36'56"W	22.31'
C19	4°09'55"	375.00'	27.26'	S87°35'50"W	27.26'
C20	94°16'57"	15.01'	24.71'	S43°07'09"E	22.01'
C21	46°43'55"	374.10'	305.12'	S27°23'17"W	296.74'
C22	83°22'27"	14.78'	21.51'	N88°21'33"W	19.66'
C23	5°08'04"	266.85'	23.91'	N49°14'21"W	23.90'
C24	89°53'00"	15.00'	23.53'	N44°37'18"E	21.19'
C25	54°01'00"	58.00'	54.68'	N34°23'09"W	52.68'
C26	19°18'18"	375.00'	126.35'	N21°32'45"W	125.75'
C27	81°53'34"	15.00'	21.44'	N9°44'53"E	19.66'
C28	51°00'52"	455.00'	405.12'	N25°11'14"E	391.87'
C29	90°00'00"	15.00'	23.56'	N44°40'48"E	21.21'
C30	90°00'00"	15.00'	23.56'	S45°19'12"E	21.21'
C31	2°35'27"	275.00'	12.43'	S88°23'04"W	12.43'
C32	81°54'19"	15.00'	21.44'	N51°57'29"W	19.66'
C33	2°45'44"	225.00'	10.85'	N9°37'28"W	10.85'
C34	90°00'00"	15.00'	23.56'	N45°19'12"W	21.21'
C35	90°00'00"	325.00'	510.51'	N44°40'48"E	459.62'
C36	90°00'00"	325.00'	510.51'	S45°19'12"E	459.62'
C37	90°00'00"	15.00'	23.56'	S44°40'48"W	21.21'

J:\009\FILING 1 SELTZER SURVEY\PLAT\PRELIMINARY PLAT\DRAWINGS\PLAT SHEETS\2207-PRELIMINARY-SHEETS.DWG

DATE SUBMITTED: 02.02.2024		
REVISION NO.	DATE	
1	04-26-24	
2	08-23-24	
3		
4		
5		
PREPARED FOR: REMINGTON HOMES, INC. 5740 OLDE WADSWORTH BLVD, ARVADA, CO 80002 303.420.2899		
SCALE: NA	JOB NO: 0109-2207	BY: BSS
SHEET 18 OF 19		



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ARVADA, CO 80002
PH: 720.638.5190

SELTZER FARMS FILING NO. 1

LOCATED IN SECTION 3, TOWNSHIP 1 SOUTH,
RANGE 67 WEST OF THE 6TH P.M.,
COUNTY OF ADAMS, STATE OF COLORADO

SHEET 19 OF 19

LOTS CURVE TABLE

CURVE #	DELTA	RADIUS	LENGTH	CHD BEARING	CHD LENGTH
C38	89°52'35"	15.00'	23.53'	N44°36'42"E	21.19'
C39	90°00'00"	15.00'	23.56'	S45°19'12"E	21.21'
C40	90°00'00"	15.00'	23.56'	S44°40'48"W	21.21'
C41	90°00'00"	15.00'	23.56'	N45°19'12"W	21.21'
C42	90°00'00"	15.00'	23.56'	S44°40'48"W	21.21'
C43	89°59'36"	15.00'	23.56'	N45°19'24"W	21.21'
C44	90°00'00"	15.00'	23.56'	N44°40'48"E	21.21'
C45	90°00'00"	15.00'	23.56'	N45°19'12"W	21.21'
C46	90°00'00"	15.00'	23.56'	N44°40'48"E	21.21'
C47	90°00'00"	15.00'	23.56'	S45°19'12"E	21.21'
C48	90°00'00"	15.00'	23.56'	S44°40'48"W	21.21'
C49	90°00'00"	15.00'	23.56'	N45°19'12"W	21.21'
C50	7°50'43"	375.00'	51.35'	N54°59'18"W	51.31'
C51	6°58'57"	375.00'	45.70'	N62°24'08"W	45.67'
C52	6°58'40"	375.00'	45.67'	N69°22'56"W	45.64'
C53	6°59'38"	375.00'	45.78'	N76°22'05"W	45.75'
C54	7°02'45"	375.00'	46.11'	N83°23'17"W	46.09'
C55	7°20'48"	375.00'	48.08'	S81°50'28"W	48.05'
C56	6°56'41"	375.00'	45.45'	S74°41'44"W	45.43'
C57	6°53'51"	375.00'	45.14'	S67°46'27"W	45.12'
C58	6°50'07"	375.00'	44.74'	S60°54'28"W	44.71'
C59	6°10'14"	375.00'	40.39'	S54°24'18"W	40.37'
C60	84°06'47"	15.00'	22.02'	N86°37'25"W	20.10'
C61	33°24'46"	150.00'	87.47'	N27°51'39"W	86.24'
C62	10°50'03"	150.00'	28.36'	N5°44'14"W	28.32'
C63	90°00'00"	15.00'	23.56'	N44°40'48"E	21.21'
C64	90°00'00"	15.00'	23.56'	N45°19'12"W	21.21'
C65	90°00'00"	15.00'	23.56'	N44°40'48"E	21.21'
C66	90°00'00"	15.00'	23.56'	S45°19'12"E	21.21'
C67	3°43'57"	200.00'	13.03'	S2°11'11"E	13.03'
C68	12°17'09"	200.00'	42.89'	S10°11'44"E	42.80'
C69	12°17'06"	200.00'	42.88'	S22°28'51"E	42.80'
C70	15°56'38"	200.00'	55.65'	S36°35'43"E	55.47'
C71	84°06'47"	15.00'	22.02'	S2°30'38"E	20.10'
C72	6°42'44"	375.00'	43.93'	S36°11'24"W	43.91'
C73	6°06'52"	375.00'	40.02'	S29°46'36"W	40.00'
C74	6°06'52"	375.00'	40.02'	S23°39'44"W	40.00'
C75	6°06'52"	375.00'	40.02'	S17°32'52"W	40.00'
C76	6°20'26"	375.00'	41.50'	S11°19'13"W	41.48'
C77	5°38'01"	375.00'	36.87'	S5°19'59"W	36.86'

LOTS CURVE TABLE

CURVE #	DELTA	RADIUS	LENGTH	CHD BEARING	CHD LENGTH
C78	87°09'49"	15.00'	22.82'	S46°05'53"W	20.68'
C79	90°00'00"	15.00'	23.56'	N45°19'12"W	21.21'
C80	90°00'00"	15.00'	23.56'	N44°40'48"E	21.21'
C81	90°00'00"	15.00'	23.56'	S45°19'12"E	21.21'
C82	90°00'00"	15.00'	23.56'	S44°40'48"W	21.21'
C83	90°00'00"	15.00'	23.56'	N45°19'12"W	21.21'
C84	90°00'00"	15.00'	23.56'	N44°40'48"E	21.21'
C85	90°00'00"	15.00'	23.56'	S45°19'12"E	21.21'
C86	90°00'00"	15.00'	23.56'	S44°40'48"W	21.21'
C87	90°00'00"	15.00'	23.56'	N45°19'12"W	21.21'
C88	90°00'00"	15.00'	23.56'	N44°40'48"E	21.21'
C89	90°00'00"	15.00'	23.56'	S45°19'12"E	21.21'
C90	90°00'00"	15.00'	23.56'	S44°40'48"W	21.21'
C91	90°00'24"	15.00'	23.56'	N44°40'36"E	21.21'
C92	90°00'00"	15.00'	23.56'	S45°19'12"E	21.21'
C93	90°00'00"	15.00'	23.56'	N44°40'48"E	21.21'
C94	90°00'00"	15.00'	23.56'	S45°19'12"E	21.21'
C95	90°00'00"	15.00'	23.56'	N44°40'48"E	21.21'
C96	90°00'00"	15.00'	23.56'	S45°19'12"E	21.21'
C97	90°00'00"	15.00'	23.56'	N44°40'48"E	21.21'
C98	90°00'00"	15.00'	23.56'	S45°19'12"E	21.21'
C99	90°00'00"	15.00'	23.56'	N44°40'48"E	21.21'
C100	90°00'00"	15.00'	23.56'	S44°40'48"W	21.21'
C101	90°27'31"	15.00'	23.68'	S44°56'25"E	21.30'
C102	29°35'30"	275.00'	142.03'	S14°30'47"E	140.46'
C103	91°10'49"	15.00'	23.87'	S16°17'18"W	21.43'
C104	93°51'05"	15.00'	24.57'	S71°24'44"E	21.91'
C105	1°41'45"	275.00'	8.14'	N25°20'04"W	8.14'
C106	85°24'29"	15.00'	22.36'	N16°31'17"E	20.35'
C107	23°57'37"	225.00'	94.09'	N71°12'21"E	93.41'
C108	90°00'00"	15.00'	23.56'	S45°19'12"E	21.21'
C109	90°00'00"	15.00'	23.56'	S44°40'48"W	21.21'
C110	90°00'00"	15.00'	23.56'	S45°19'12"E	21.21'
C111	90°00'00"	15.00'	23.56'	N44°40'48"E	21.21'
C112	90°00'00"	15.00'	23.56'	S45°19'12"E	21.21'
C113	6°29'38"	225.00'	25.50'	N86°25'59"E	25.49'
C114	30°46'53"	58.00'	31.16'	N74°17'21"E	30.79'
C115	49°20'52"	58.00'	49.95'	N34°13'29"E	48.42'
C116	9°52'15"	58.00'	9.99'	N4°36'55"E	9.98'
C117	8°21'37"	48.97'	7.15'	N3°50'56"W	7.14'

LOTS CURVE TABLE

CURVE #	DELTA	RADIUS	LENGTH	CHD BEARING	CHD LENGTH
C118	27°07'29"	61.77'	29.24'	N75°51'26"W	28.97'
C119	90°00'00"	15.00'	23.56'	N45°19'12"W	21.21'
C120	11°34'24"	375.00'	75.75'	N6°06'24"W	75.62'
C121	90°00'00"	15.00'	23.56'	N44°40'48"E	21.21'
C122	90°00'00"	15.00'	23.56'	S45°19'12"E	21.21'
C123	90°00'00"	15.00'	23.56'	S44°40'48"W	21.21'
C124	90°00'00"	15.00'	23.56'	N45°19'12"W	21.21'
C125	91°28'22"	15.00'	23.95'	N75°02'17"W	21.48'
C126	14°48'20"	225.00'	58.14'	N21°53'57"W	57.98'
C127	14°10'35"	225.00'	55.67'	N7°24'30"W	55.53'
C128	90°00'00"	15.00'	23.56'	N44°40'48"E	21.21'
C129	90°00'00"	15.00'	23.56'	S45°19'12"E	21.21'
C130	6°42'45"	275.00'	32.22'	S3°40'34"E	32.20'
C131	3°58'23"	275.00'	19.07'	S9°01'08"E	19.07'
C132	82°14'18"	15.00'	21.53'	S30°06'49"W	19.73'
C133	12°00'26"	275.00'	57.63'	S65°13'45"W	57.53'
C134	7°55'24"	225.00'	31.11'	N4°16'54"W	31.09'
C135	90°00'00"	33.00'	51.84'	S44°40'48"W	46.67'
C136	90°00'00"	15.00'	23.56'	N45°19'12"W	21.21'
C137	90°00'00"	15.00'	23.56'	N44°40'48"E	21.21'
C138	90°00'00"	33.00'	51.84'	S45°19'12"E	46.67'
C139	90°00'00"	15.00'	23.56'	S44°40'48"W	21.21'
C140	90°00'00"	15.00'	23.56'	N45°19'12"W	21.21'
C141	90°00'00"	15.00'	23.56'	N44°40'48"E	21.21'
C142	90°00'00"	15.00'	23.56'	S45°19'12"E	21.21'
C143	90°00'00"	15.00'	23.56'	S44°40'48"W	21.21'

DATE SUBMITTED: 02.02.2024		
REVISION NO.	DATE	
1	04-26-24	
2	08-23-24	
3		
4		
5		
PREPARED FOR: REMINGTON HOMES, INC. 5740 OLDE WADSWORTH BLVD, ARVADA, CO 80002 303.420.2899		
SCALE: NA	JOB NO: 0109-2207	BY: BSS
SHEET 19 OF 19		



KT ENGINEERING
ENGINEERS • SURVEYORS

12500 W. 58th AVE. #230
ARVADA, CO 80002
PH: 720.638.5190

J:\0109\FILING 1 SELTZER SURVEY\PLAT\PRELIMINARY PLAT\DRAWINGS\PLAT SHEETS\2027-PRELIMINARY-SHEETS.DWG

SELTZER FARMS FILING NO. 1

PRELIMINARY ROADWAY & UTILITY CONSTRUCTION PLANS

LOCATED IN SECTION 3, TOWNSHIP 1 SOUTH, RANGE 67 WEST OF THE 6TH P.M.,
COUNTY OF ADAMS, STATE OF COLORADO
207.97 ACRES - 413 LOTS / 13 TRACTS

BASIS OF BEARING:

BASIS OF BEARINGS: BEARINGS ARE BASED ON THE ASSUMPTION THAT THE NORTH LINE OF THE NORTHWEST 1/4 OF SECTION 3 BEING N 89°32'59" E AND MONUMENTED AS FOLLOWS:

- NORTHWEST CORNER OF SECTION 3, BEING A FOUND 3.25" ALUMINUM CAP PLS 38285, PARTIALLY ILLEDGIBLE, PER MONUMENT RECORD DATED 1-27-15.
- NORTH 1/4 CORNER OF SECTION 3, BEING A POUND 2" ALUMINUM CAP, PLS 25937, PER MONUMENT RECORD DATED 2-23-18.

VERTICAL DATUM - SITE BENCHMARK:

CENTER 1/4 CORNER, SECTION 3, TOWNSHIP 1 SOUTH, RANGE 67 WEST OF THE 6TH P.M., COUNTY OF ADAMS, BEING A FOUND 2.5" ALUMINUM CAP, STAMPED PLS 25937 AND HAVING AN ELEVATION OF 5090.02 (NAVD 88). ELEVATION BASED ON NGS OPUS OBSERVATIONS - NAVD 88 COMPUTED USING GEOID 18.

LEGAL DESCRIPTION:

A PARCEL OF LAND LOCATED IN SECTION 3, TOWNSHIP 1 SOUTH, RANGE 67 WEST OF THE 6TH PRINCIPAL MERIDIAN, COUNTY OF ADAMS, STATE OF COLORADO, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BASIS OF BEARINGS: BEARINGS ARE BASED ON THE ASSUMPTION THAT THE NORTH LINE OF THE NORTHWEST 1/4 OF SECTION 3 BEING N 89°32'59" E AND MONUMENTED AS FOLLOWS:

-NORTHWEST CORNER OF SECTION 3, BEING A FOUND 3.25" ALUMINUM CAP PLS 38285, PARTIALLY ILLEDGIBLE, PER MONUMENT RECORD DATED 1-27-15.

-NORTH 1/4 CORNER OF SECTION 3, BEING A POUND 2" ALUMINUM CAP, PLS 25937, PER MONUMENT RECORD DATED 2-23-18.

BEGINNING THE NORTHWEST CORNER OF SECTION 3;

THENCE N 89°32'59" E ALONG THE NORTH LINE OF THE NORTHWEST 1/4 OF SAID SECTION 3 A DISTANCE OF 2633.02 FEET TO THE NORTH 1/4 CORNER OF SAID SECTION 3;

THENCE N 89°33'48" E ALONG THE NORTH LINE OF THE NORTHEAST 1/4 OF SAID SECTION 3 A DISTANCE OF 422.14 FEET TO THE NORTHWEST CORNER OF THAT PARCEL OF LAND RECORDED AT RECEPTION NO. 2007000035868;

THENCE S 00°26'26" E ALONG THE WESTERLY BOUNDARY OF SAID PARCEL OF LAND RECORDED AT RECEPTION NO. 2007000035868 A DISTANCE OF 2385.00 FEET TO A POINT ON THE SOUTH LINE OF SAID NORTHEAST 1/4 OF SECTION 3;

THENCE S 89°37'55" W ALONG SAID SOUTH LINE OF THE NORTHEAST 1/4 OF SECTION 3 A DISTANCE OF 422.14 FEET TO THE CENTER 1/4 CORNER OF SAID SECTION 3;

THENCE S 00°36'01" E ALONG THE EAST LINE OF THE NORTHEAST 1/4 OF THE SOUTHWEST 1/4 OF SAID SECTION 3 A DISTANCE OF 1322.50 FEET TO THE CENTER-SOUTH 1/16 CORNER OF SAID SECTION 3;

THENCE S 89°36'00" W ALONG THE SOUTH LINE OF SAID NORTHEAST 1/4 OF THE SOUTHWEST 1/4 OF SECTION 3 A DISTANCE OF 1322.04 FEET TO THE SOUTHWEST 1/16 CORNER OF SAID SECTION 3;

THENCE N 00°27'55" W ALONG THE WEST LINE OF SAID NORTHEAST 1/4 OF THE SOUTHWEST 1/4 SECTION 3 A DISTANCE OF 941.36 FEET TO A POINT ON THE EASTERLY BOUNDARY OF THAT PARCEL OF LAND RECORDED AT RECEPTION NO. 2015000035780;

THENCE N 22°03'34" W ALONG SAID EASTERLY BOUNDARY A DISTANCE OF 412.40 FEET TO A POINT ON THE SOUTH LINE OF SAID NORTHWEST 1/4 OF SECTION 3;

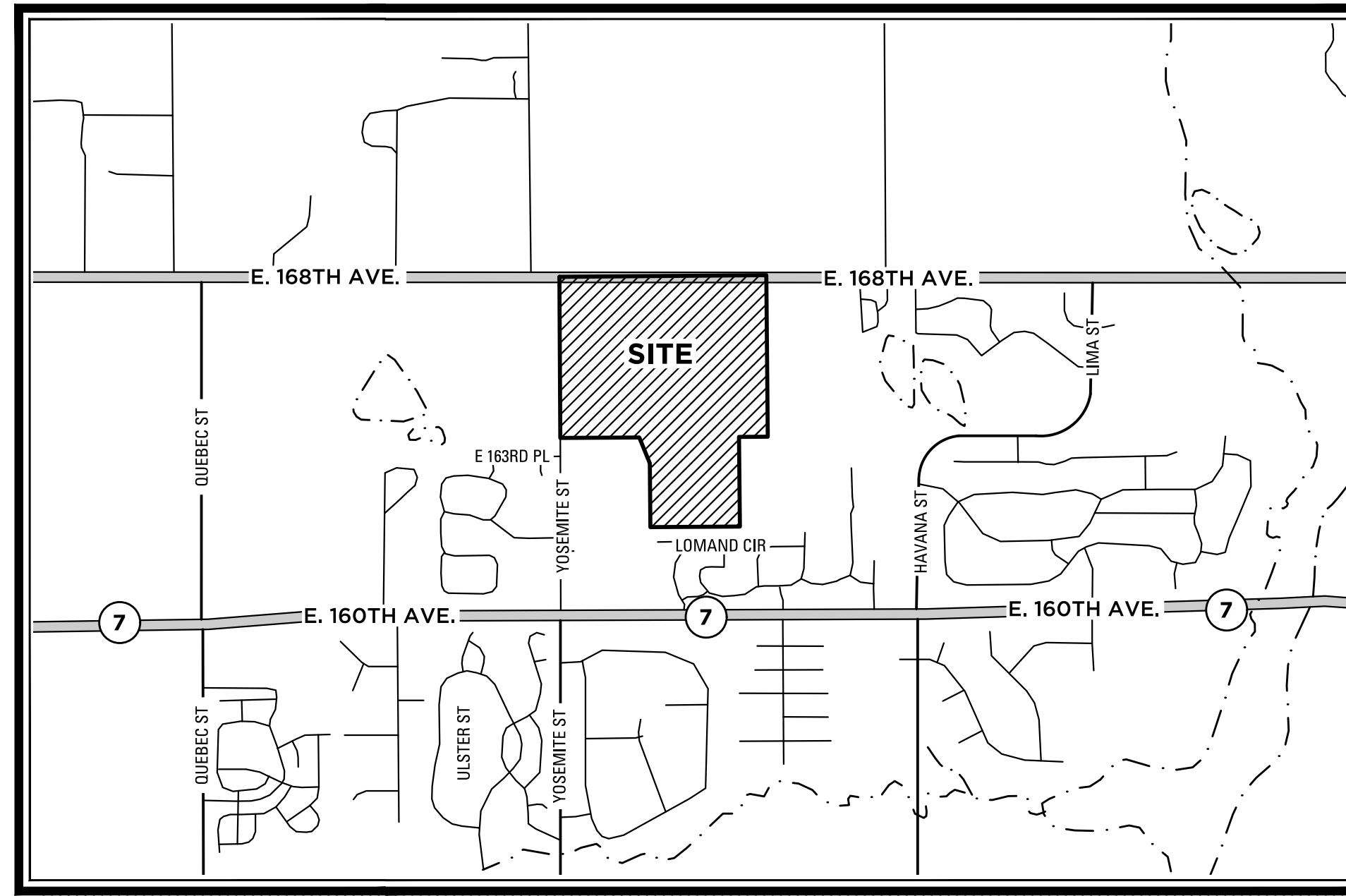
THENCE S 89°41'50" W ALONG SAID SOUTH LINE A DISTANCE OF 1167.06 FEET TO THE WEST 1/4 CORNER OF SAID SECTION 3;

THENCE N 00°19'36" W ALONG THE WEST LINE OF SAID NORTHWEST 1/4 OF SECTION 3 A DISTANCE OF 2378.05 FEET TO THE POINT OF BEGINNING.

EXCEPTING THEREFROM, ANY PORTION OF SAID LAND AS CONTAINED WITHIN EAST 168TH AVENUE.

EXCEPTING THEREFROM, THAT PORTION AS CONTAINED WITHIN THE SIGNAL DITCH AS THE SAME NOW EXISTS ON SAID LAND, COUNTY OF ADAMS, STATE OF COLORADO.

THE ABOVE DESCRIBED PARCEL CONTAINS A GROSS AREA OF 9,059,142 SQUARE FEET OR 207.9693



VICINITY MAP
1" = 2000'

SHEET INDEX:

SHEET #	SHEET TITLE
01	COVER SHEET
02	TYPICAL ROAD SHEETS
03	EXISTING CONDITION
04	OVERALL UTILITY
05	OVERALL GRADING
06	DETAILED INTERSECTIONS
07	EROSION CONTROL PLAN
08	SITE DETAILS - 1
09	SITE DETAILS - 2
10	SITE DETAILS - 3
11	SITE DETAILS - 4
12	STORM DETAILS - 1

LIST OF CONTACTS:

PROJECT DEVELOPER

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PHONE: 303-659-4101

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BRIGHTON, CO 80601
PHONE: 303-659-2120
CONTACT: GREG BARNES

GAS

XCEL ENERGY
2655 N. 63RD
BOULDER, CO, 80301
PHONE: 720.491.0568

ELECTRIC

UNTIED POWER
500 COOPERATIVE WAY
BRIGHTON, CO 80603
PHONE: 303-637-1300

LEGEND:

	5400	EXISTING MAJOR CONTOUR
	E	EXISTING MINOR CONTOUR
		EXISTING ELECTRIC UTILITY LINE
		EXISTING UTILITY POLE
		EXISTING ELECTRICAL TRANSFORMER
	G	EXISTING GAS UTILITY LINE
		EXISTING WATER MAIN
		EXISTING FIRE HYDRANT
	5400	PROPOSED MAJOR CONTOUR
		PROPOSED MINOR CONTOUR
		PROPOSED BOUNDARY LINE
		PROPOSED CENTER LINE
		PROPOSED EASEMENT
		PROPOSED LOT LINE
		PROPOSED RIGHT-OF-WAY
		PROPOSED SETBACK
	100 LF 8" SAN	PROPOSED SANITARY SEWER LINE
	SS STA: 1+00.00	PROPOSED SANITARY SEWER SERVICE
		PROPOSED SANITARY SEWER MANHOLE
		PROPOSED UNDERDRAIN
	100 LF 18" RCP	PROPOSED STORM SEWER LINE
		PROPOSED TYPE R INLET
		PROPOSED TYPE 16 INLET
		PROPOSED BOX BASE MANHOLE
		PROPOSED CIRCULAR MANHOLE
		PROPOSED FLARED END SECTION
		PROPOSED RIPRAP
	100 LF 8" WAT	PROPOSED WATER LINE
		PROPOSED WATER SERVICE AND METER
		PROPOSED IRRIGATION SERVICE AND METER
		PROPOSED WATER GATE VALVE
		PROPOSED FIRE HYDRANT
		PROPOSED REDUCER
		PROPOSED BLOW-OFF
		PROPOSED BEND W/ THRUST BLOCK
		PROPOSED CROSS
		PROPOSED TEE
		PROPOSED AIR RELEASE VALVE
		PROPOSED PRESSURE REDUCING VALVE
		PROPOSED 100 YR WATER SURFACE ELEVATION
		PROPOSED FLOWLINE SWALE



KT ENGINEERING

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ARVADA, CO 80002
P: 720.638.5190

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PREPARED FOR:
REMINGTON HOMES

REVISIONS:

NO.	DATE	BY	REVISION DESCRIPTION
1			
2			
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STAMP:

NOT FOR CONSTRUCTION

SHEET INFO:

SELTZER FARMS FILING NO. 1

COVER SHEET

PROJECT NO:
0109-2207

DRAWN BY:
EST
DESIGNED BY:
KPT

SCALE:
1" = N/A'

SUBMITTED ON:
02/09/24

01
OF 12

TYPE

MINOR ARTERIAL

W. 168TH AVENUE
"INTERIM"

MAJOR COLLECTOR

YOSEMITE STREET
"INTERIM"

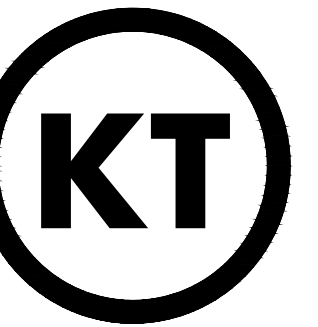
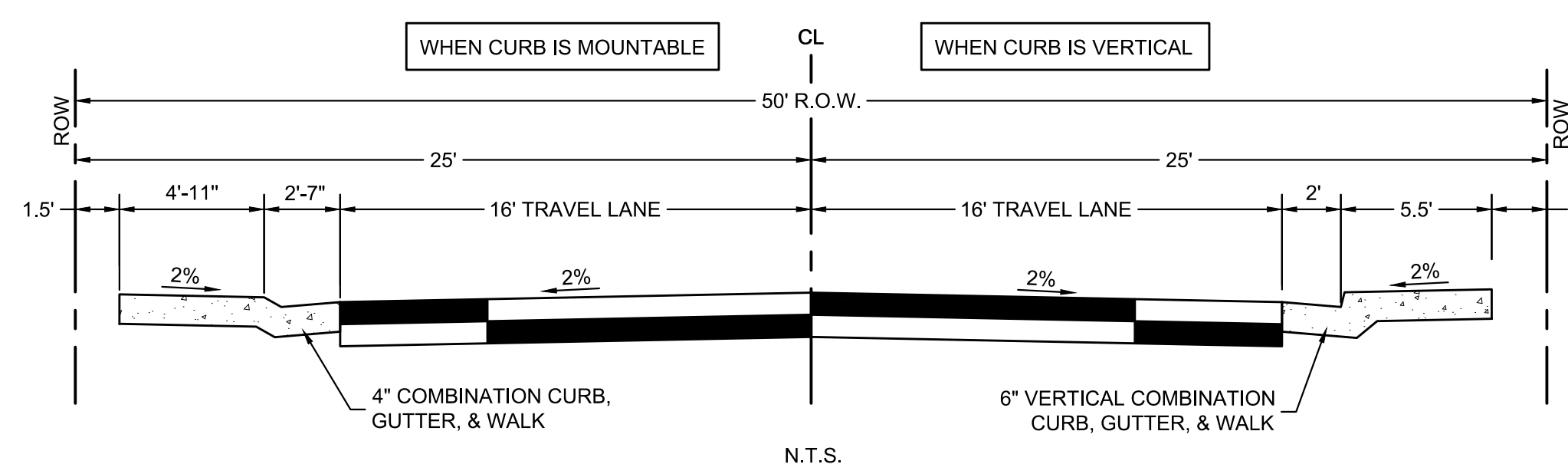
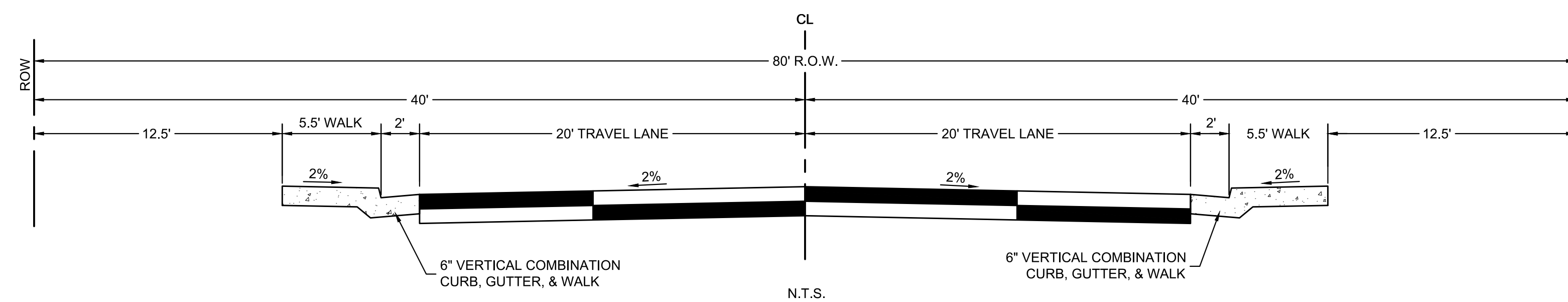
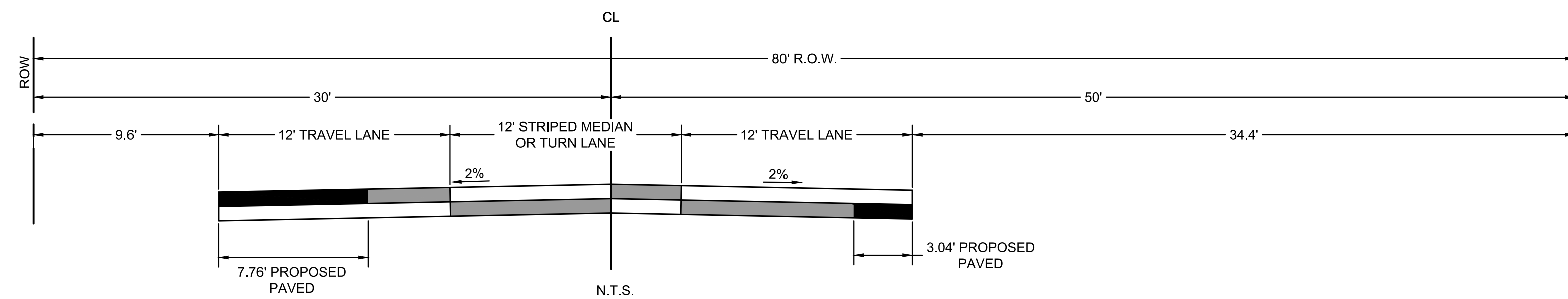
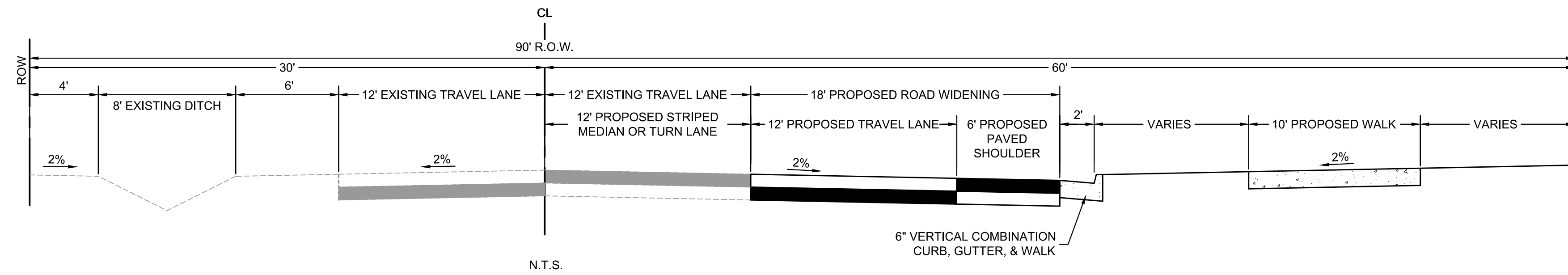
MINOR COLLECTOR

ROAD C & ROAD U

LOCAL (RESIDENTIAL)

ROAD L, M, N, O, Q, R, S,
T, V, X, Y, Z, AC

TYPICAL STREET SECTION



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STAMP:

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CONSTRUCTION

SHEET INFO:

SELTZER FARMS FILING NO. 1

TYPICAL ROAD SECTIONS

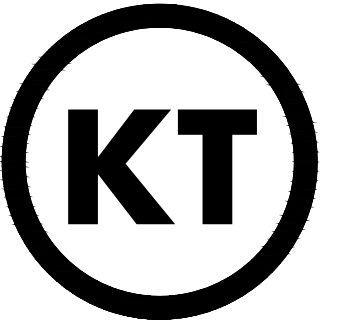
PROJECT NO:
0109-2207

DRAWN BY:
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DESIGNED BY:
KPT

SCALE:
1" = N/A

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02/09/24

02
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CONSTRUCTION**

SHEET INFO:

SELTZER FARMS FILING NO. 1

EXISTING CONDITION

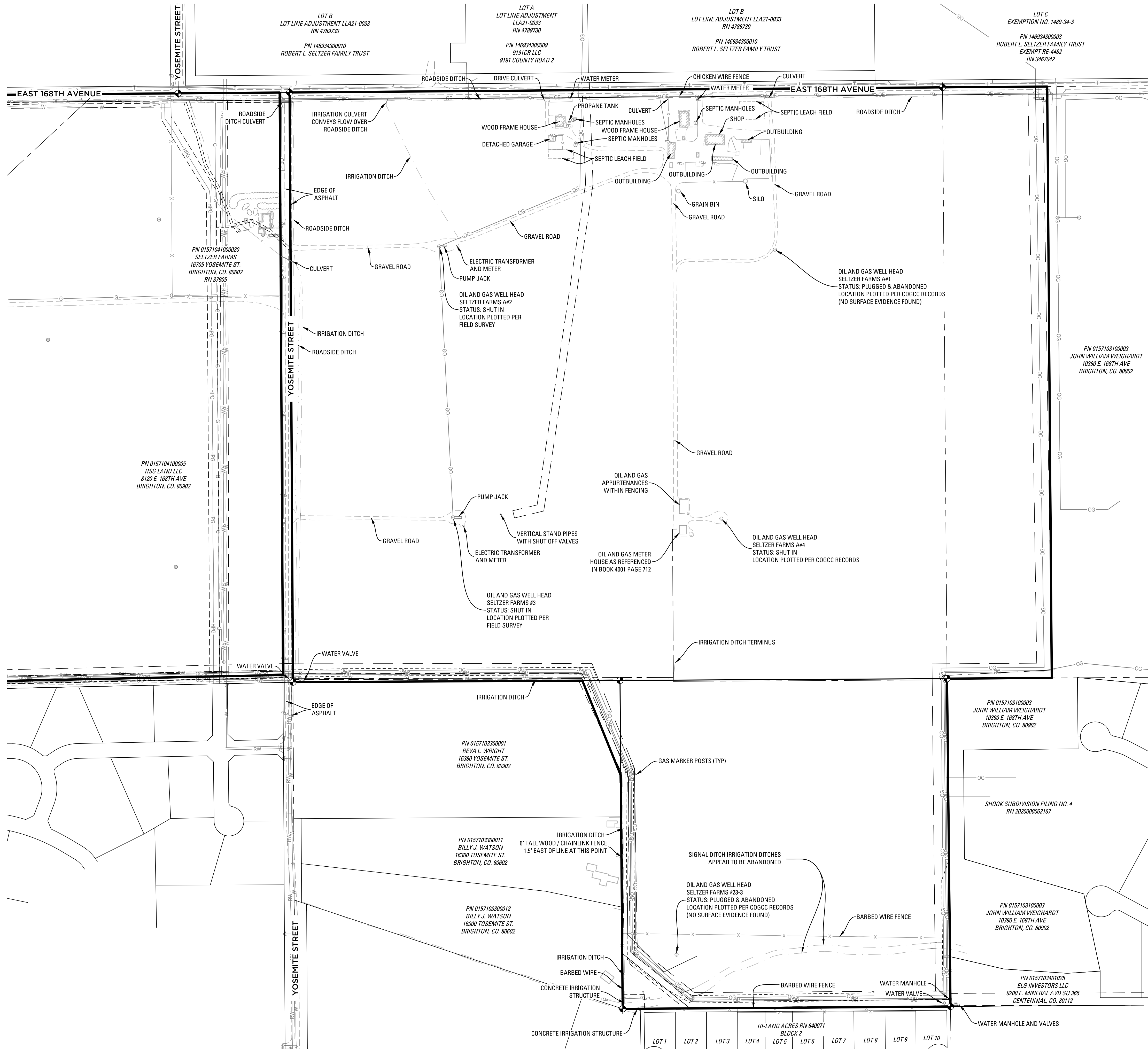
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0109-2207

DRAWN BY:
EST
DESIGNED BY:
KPT

SCALE:
1" = 200'

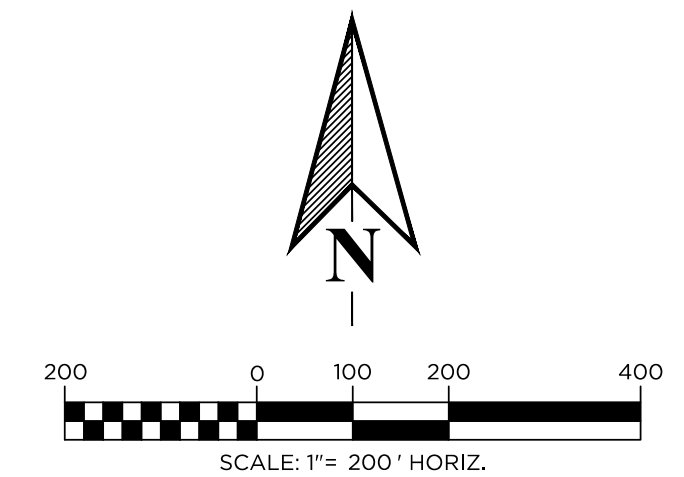
SUBMITTED ON:
02/09/24

03
OF 12



LEGEND

- EXISTING ELECTRIC UTILITY LINE
- EXISTING UTILITY POLE
- EXISTING ELECTRICAL TRANSFORMER
- EXISTING GAS UTILITY LINE
- EXISTING WATER MAIN
- EXISTING FIRE HYDRANT
- EXISTING GRAVEL ROAD
- EXISTING EDGE ASPHALT
- EXISTING EDGE CONCRETE
- EXISTING STORM MAIN
- EXISTING OVERHEAD ELECTRIC
- EXISTING OIL AND GAS
- EXISTING FENCE
- EXISTING SWALE





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NO.	DATE	BY	REVISION DESCRIPTION
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STAMP:

NOT FOR CONSTRUCTION

SHEET INFO:

SELTZER FARMS FILING NO. 1
OVERALL UTILITY

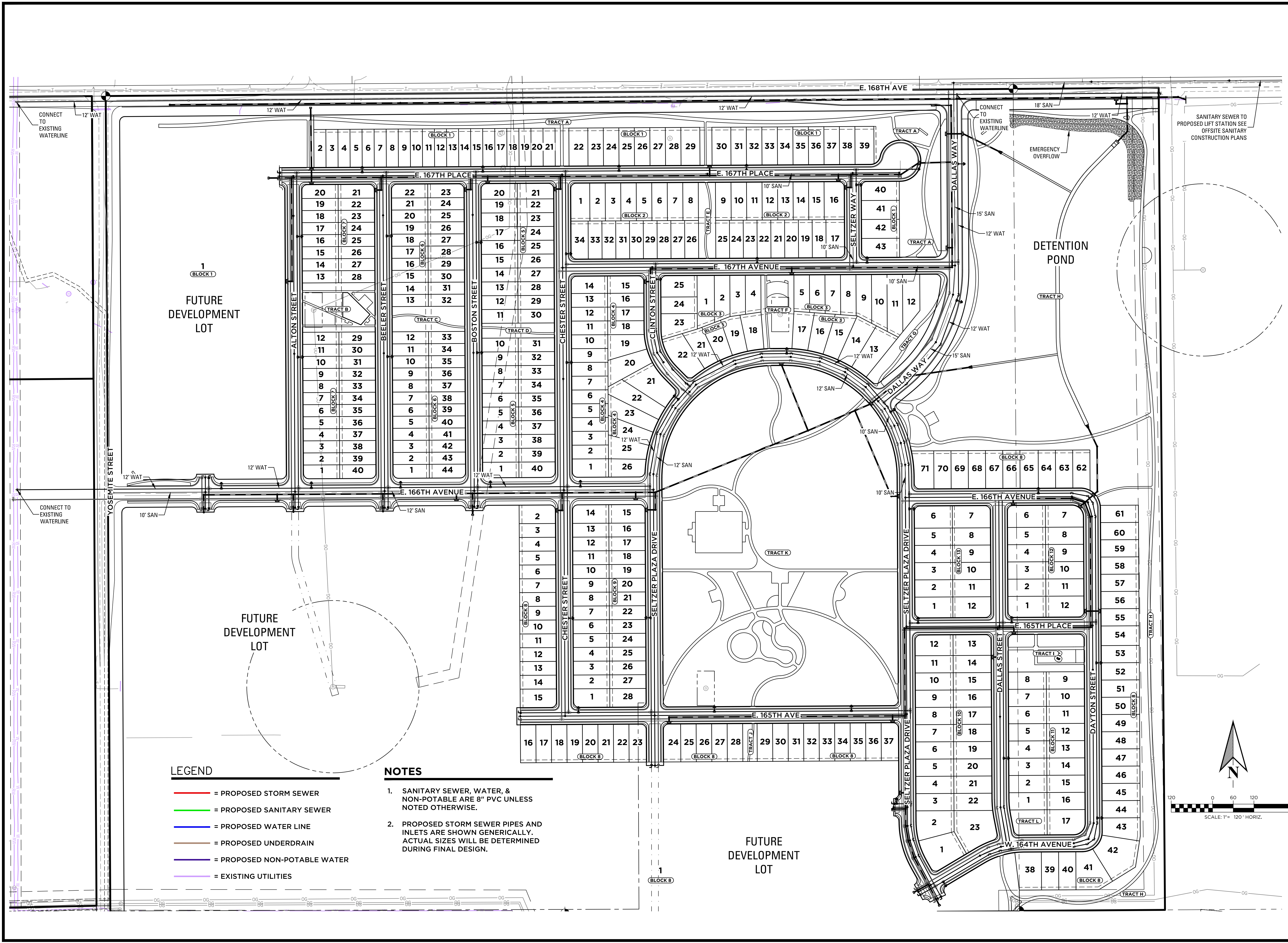
PROJECT NO:
0109-2207

DRAWN BY:
EST
 DESIGNED BY:
KPT

SCALE:
1" = 120'

SUBMITTED ON:
02/09/24

04
 OF 12



LEGEND

- = PROPOSED STORM SEWER
- = PROPOSED SANITARY SEWER
- = PROPOSED WATER LINE
- = PROPOSED UNDERDRAIN
- = PROPOSED NON-POTABLE WATER
- = EXISTING UTILITIES

NOTES

1. SANITARY SEWER, WATER, & NON-POTABLE ARE 8" PVC UNLESS NOTED OTHERWISE.
2. PROPOSED STORM SEWER PIPES AND INLETS ARE SHOWN GENERICALLY. ACTUAL SIZES WILL BE DETERMINED DURING FINAL DESIGN.

J:\0109\FILING 1 SELTZER FARMS FILING NO. 1 - PRELIMINARY OVERALL UTILITY.dwg



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NO.	DATE	BY	REVISION DESCRIPTION
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STAMP:

NOT FOR CONSTRUCTION

SHEET INFO:

SELTZER FARMS FILING NO. 1
OVERALL GRADING

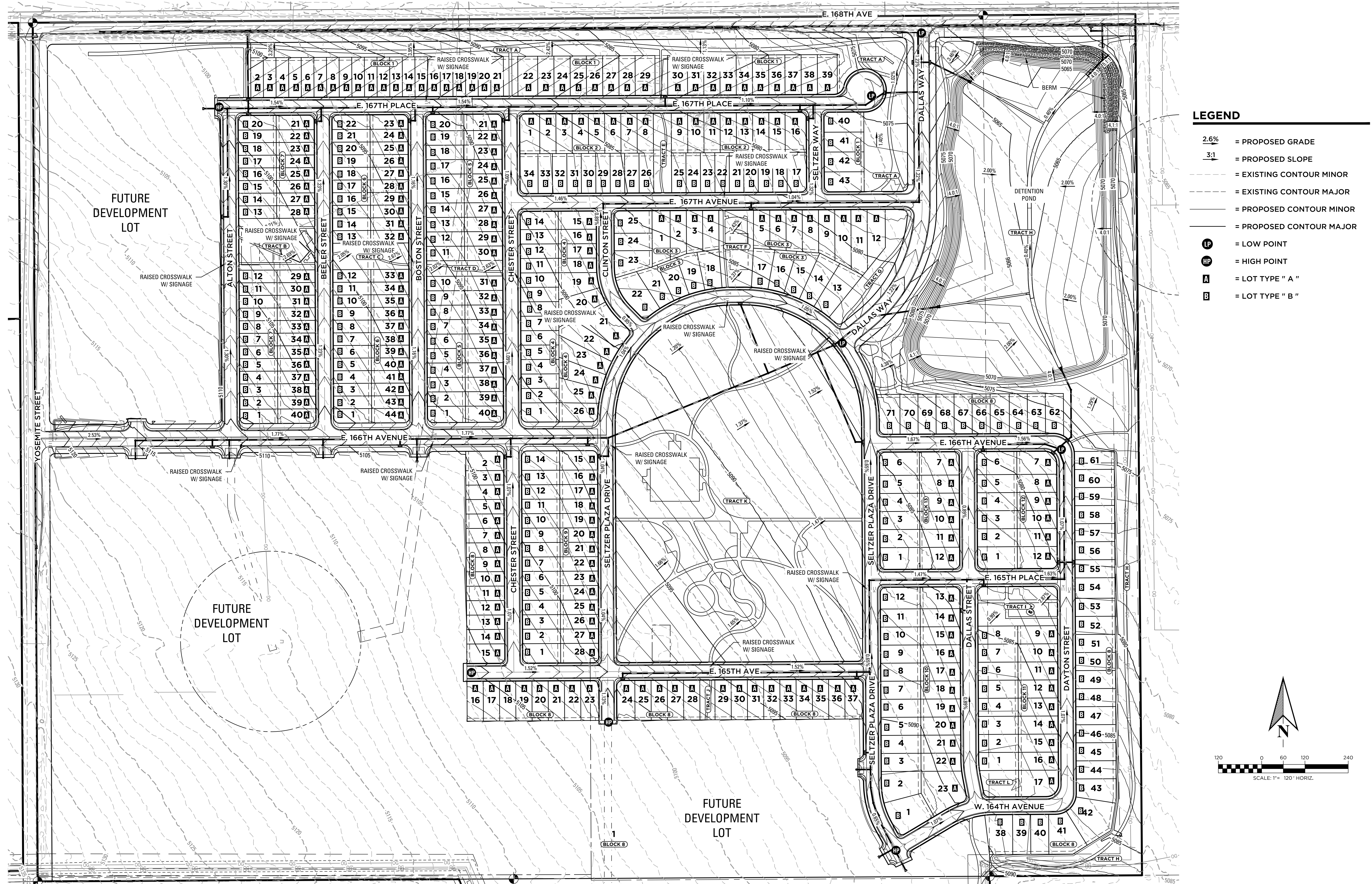
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0109-2207

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 DESIGNED BY:
KPT

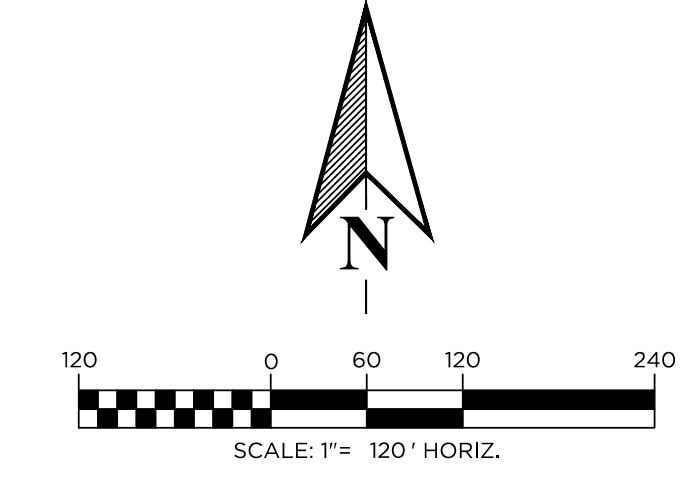
SCALE:
1" = 120'

SUBMITTED ON:
02/09/24

05
 OF 12



- LEGEND**
- 2.6% = PROPOSED GRADE
 - 3:1 = PROPOSED SLOPE
 - - - = EXISTING CONTOUR MINOR
 - - - = EXISTING CONTOUR MAJOR
 - - - = PROPOSED CONTOUR MINOR
 - - - = PROPOSED CONTOUR MAJOR
 - LP = LOW POINT
 - HP = HIGH POINT
 - A = LOT TYPE "A"
 - B = LOT TYPE "B"



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NO.	DATE	BY	REVISION DESCRIPTION
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SHEET INFO:

SELTZER FARMS FILING NO. 1
DETAILED INTERSECTIONS

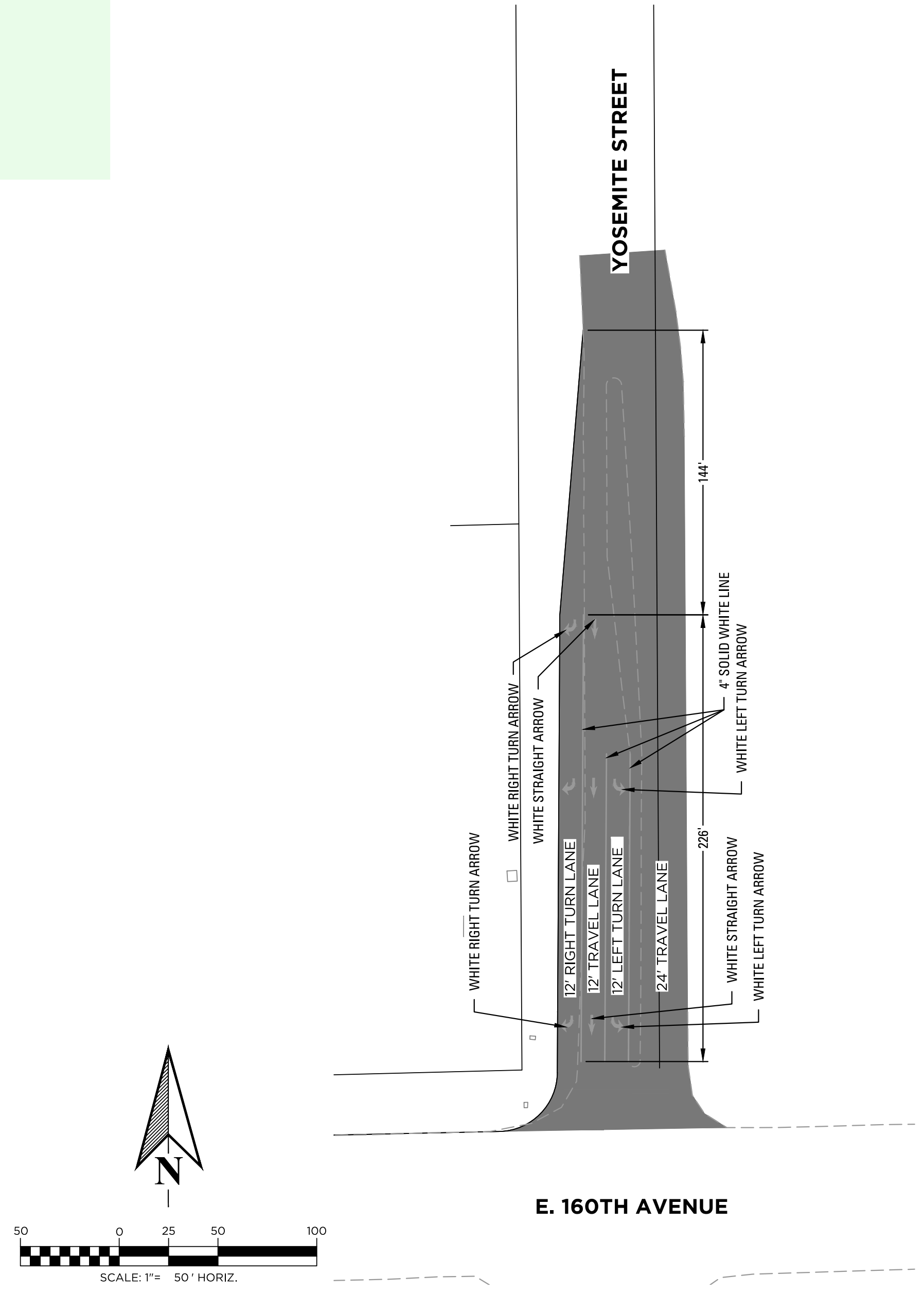
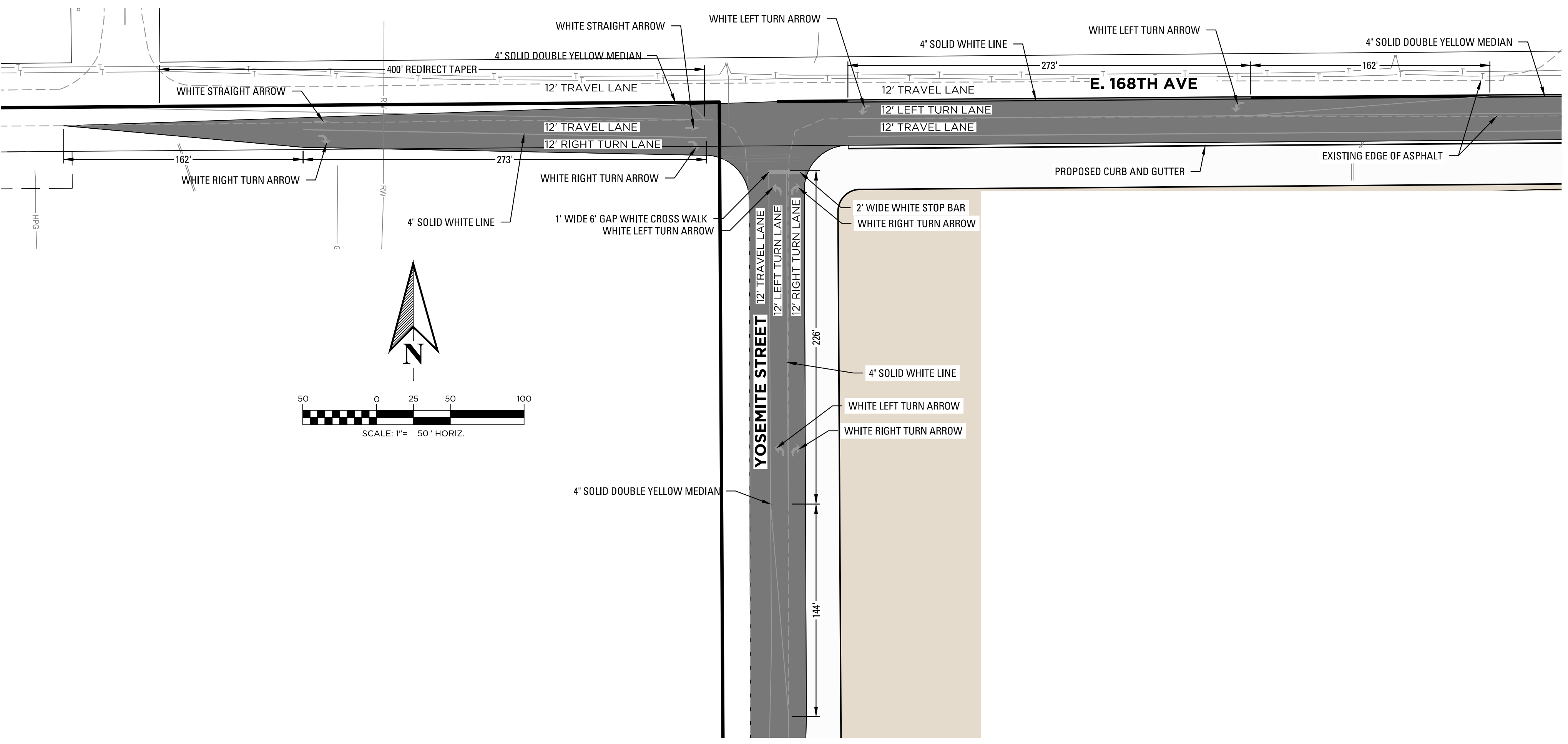
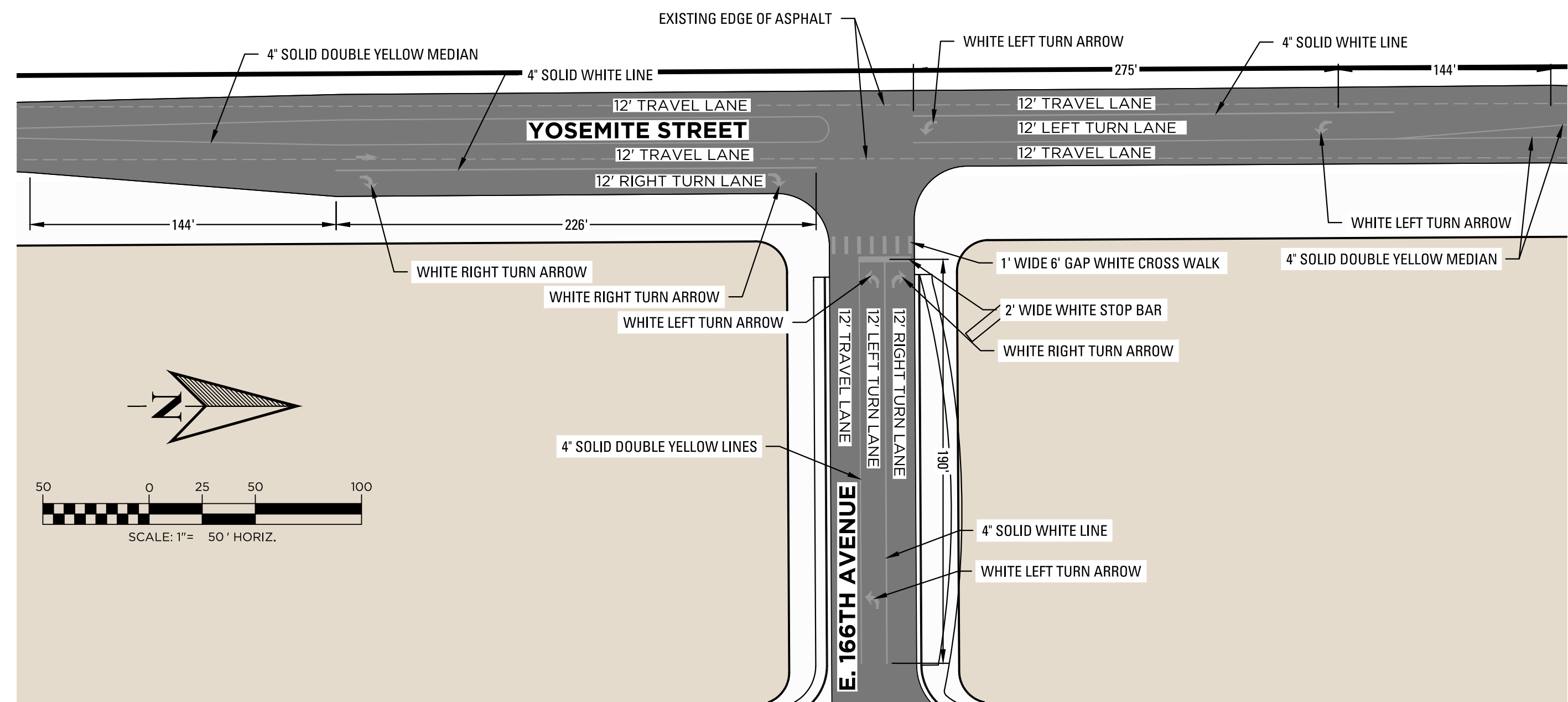
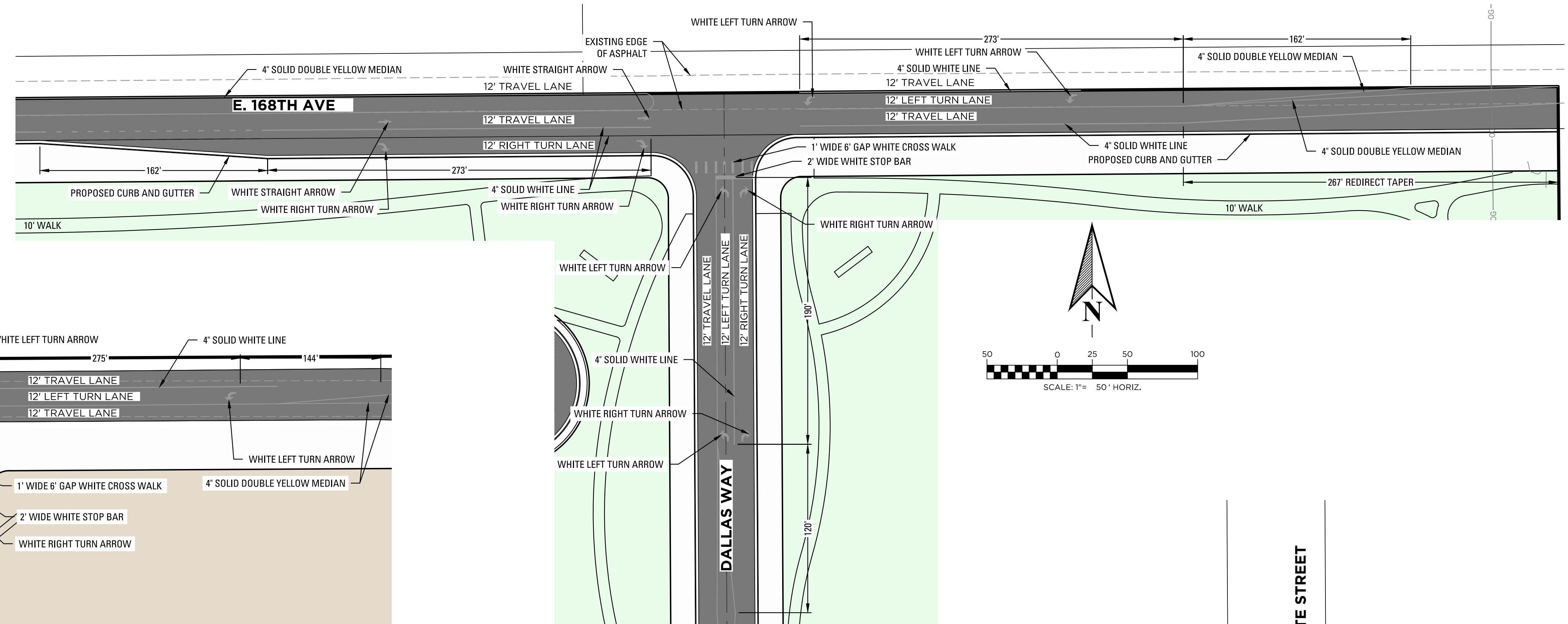
PROJECT NO:
0109-2207

DRAWN BY:
EST
 DESIGNED BY:
KPT

SCALE:
AS SHOWN

SUBMITTED ON:
02/09/24

06
 OF 12





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REVISIONS:

NO.	DATE	BY	REVISION DESCRIPTION
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STAMP:
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SHEET INFO:

SELTZER FARMS FILING NO. 1
EROSION CONTROL PLAN

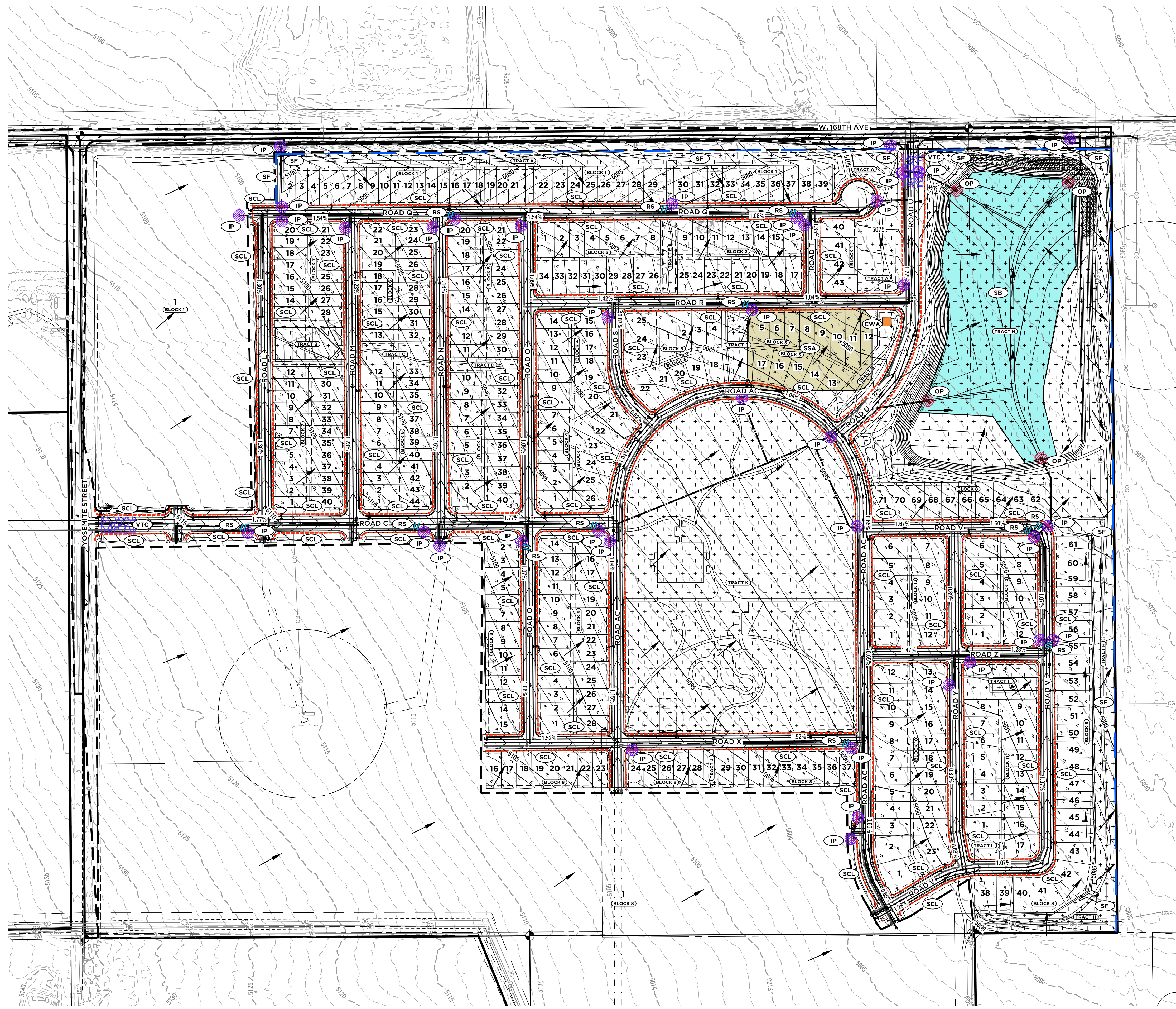
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0109-2207

DRAWN BY:
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 DESIGNED BY:
KPT

SCALE:
1" = 150'

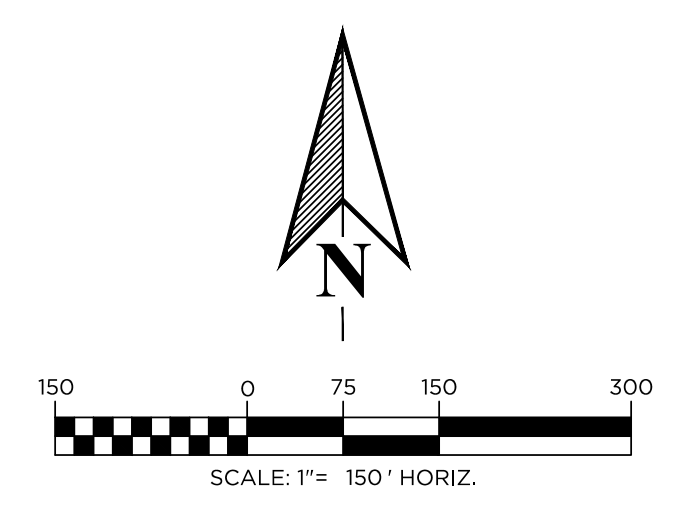
SUBMITTED ON:
02/09/24

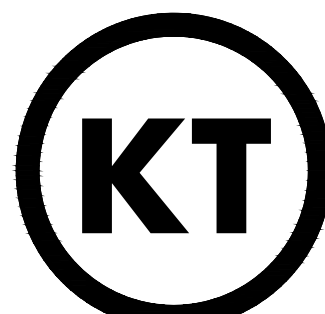
07
 OF 12



BMP LEGEND

- CHECK DAM CD
- INLET PROTECTION IP
- OUTLET PROTECTION OP
- SILT FENCE SF
- CONSTRUCTION FENCE CF
- SEDIMENT CONTROL LOG SCL
- EXISTING CONTOUR MINOR
- EXISTING CONTOUR MAJOR
- PROPOSED CONTOUR MINOR
- PROPOSED CONTOUR MAJOR
- VEHICLE TRACKING CONTROL VTC
- SEDIMENT BASIN SB
- STABILIZED STAGING AREA SSA
- CONCRETE WASHOUT AREA CWA
- TEMPORARY SEEDING/MULCHING TS
- PERMANENT SEEDING/MULCHING PS
- SURFACE FLOW ARROW
- LIMITS OF CONSTRUCTION
- ROCK SOCK RS





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STAMP:

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SHEET INFO:

SELTZER FARMS FILING NO. 1
DETAILS
SITE-1

PROJECT NO:
0109-2207

DRAWN BY:
EST
 DESIGNED BY:
KPT

SCALE:
1" = 120'

SUBMITTED ON:
02/09/24

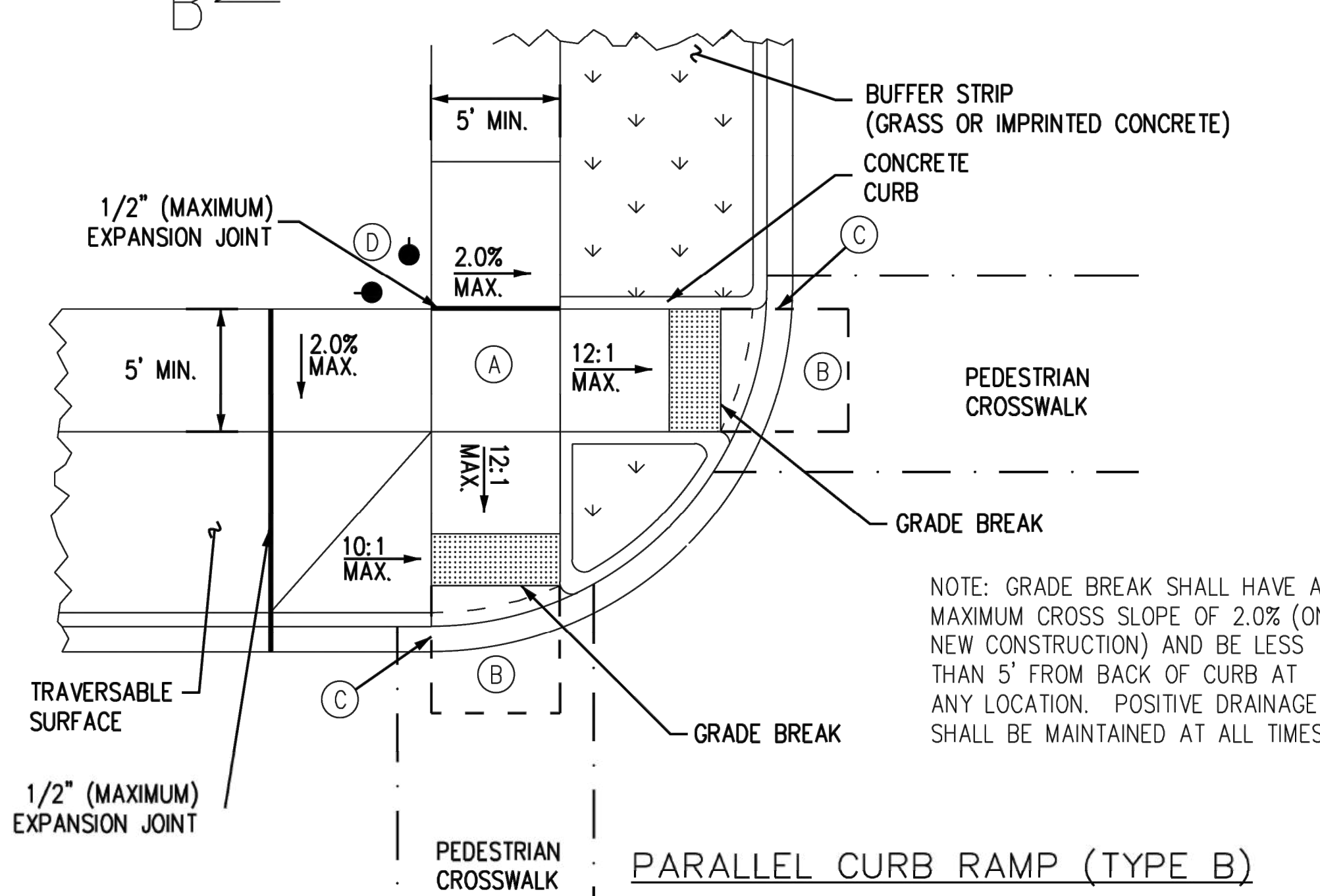
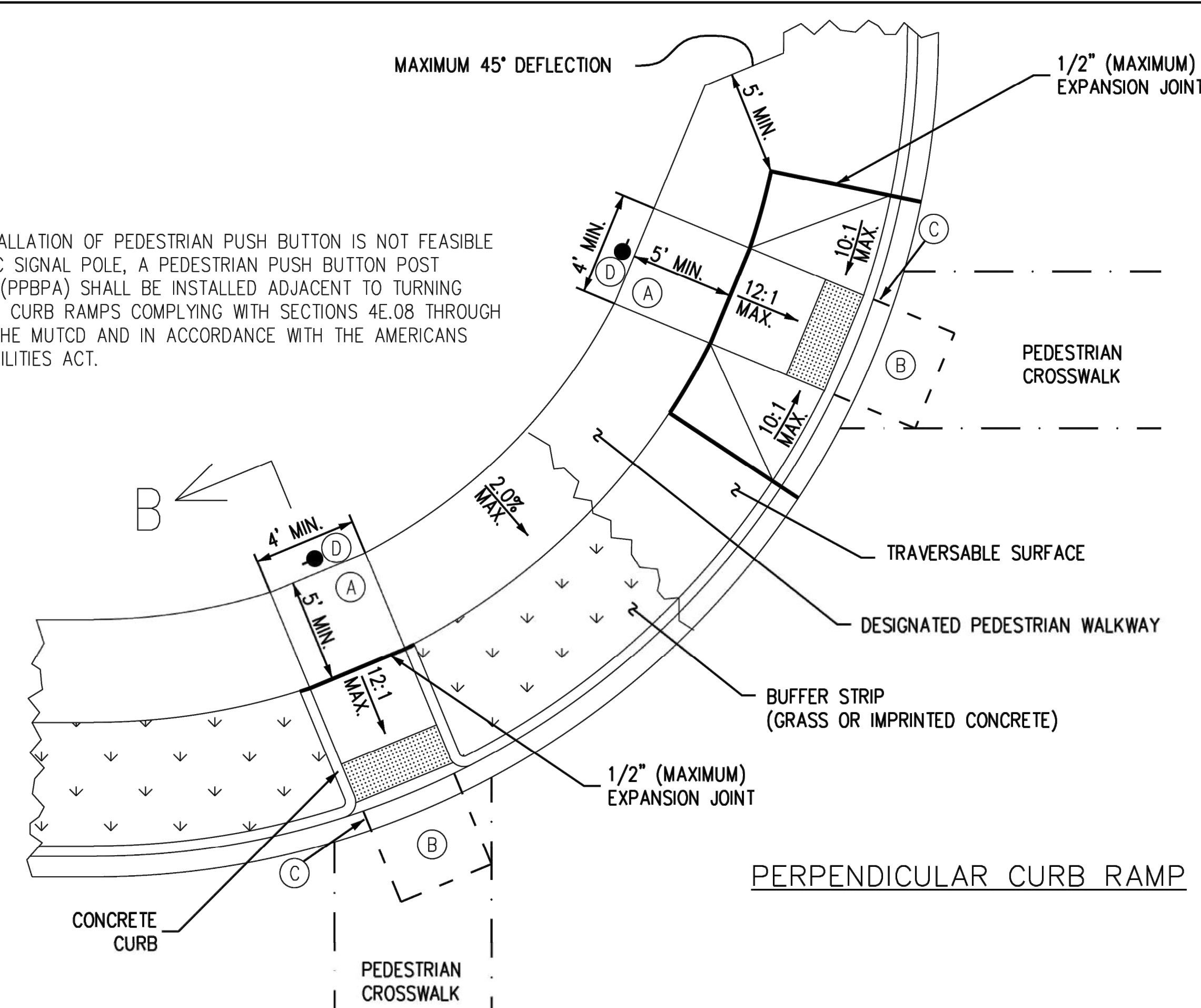
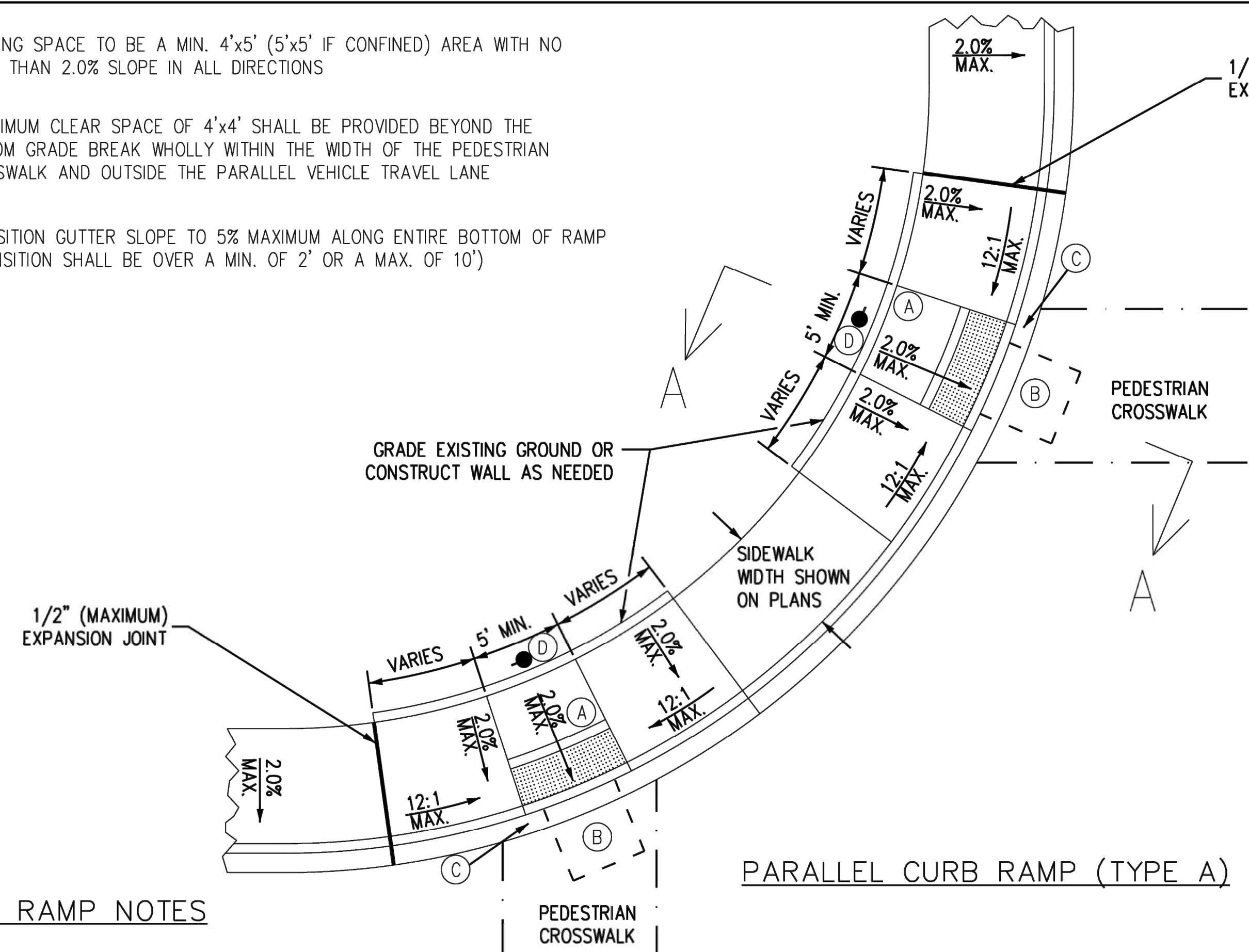
08
OF 12

(A) TURNING SPACE TO BE A MIN. 4'x5' (5'x5' IF CONFINED) AREA WITH NO MORE THAN 2.0% SLOPE IN ALL DIRECTIONS

(B) A MINIMUM CLEAR SPACE OF 4'x4' SHALL BE PROVIDED BEYOND THE BOTTOM GRADE BREAK WHOLLY WITHIN THE WIDTH OF THE PEDESTRIAN CROSSWALK AND OUTSIDE THE PARALLEL VEHICLE TRAVEL LANE

(C) TRANSITION GUTTER SLOPE TO 5% MAXIMUM ALONG ENTIRE BOTTOM OF RAMP (TRANSITION SHALL BE OVER A MIN. OF 2' OR A MAX. OF 10')

(D) WHEN INSTALLATION OF PEDESTRIAN PUSH BUTTON IS NOT FEASIBLE ON TRAFFIC SIGNAL POLE, A PEDESTRIAN PUSH BUTTON POST ASSEMBLY (PPBPA) SHALL BE INSTALLED ADJACENT TO TURNING SPACES OF CURB RAMPS COMPLYING WITH SECTIONS 4E.08 THROUGH 4E.13 OF THE MUTCD AND IN ACCORDANCE WITH THE AMERICANS WITH DISABILITIES ACT.



CURB RAMP NOTES

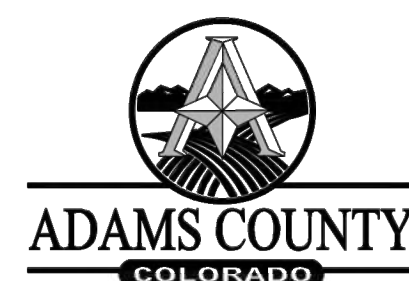
- RAMP SLOPES SHALL BE 12:1 MAXIMUM AND 20:1 MINIMUM.
- RAMP GRADE BREAKS MUST BE PERPENDICULAR TO THE RUNNING SLOPE.
- CURB RAMPS SHALL BE A MINIMUM OF 6" THICK. CURB RAMPS ADJACENT TO A CROSS PAN SHALL BE POURED MONOLITHIC AND THE GUTTER THICKNESS SHALL MATCH THE THICKNESS OF THE CROSS PAN (8" MINIMUM).
- CURB RAMP OPENINGS SHALL BE WHOLLY LOCATED WITHIN PEDESTRIAN CROSSWALK. GUTTERLINE PROFILE SHALL MATCH ROADWAY SLOPE. CROSSWALKS ON NEW CONSTRUCTION SHALL MEET ADA REQUIREMENTS AS DESCRIBED IN THE CODE OF FEDERAL REGULATIONS TITLE II.
- ALL CONCRETE SIDEWALK AND CURB RAMP SURFACES SHALL HAVE A BROOM FINISH PERPENDICULAR TO THE DIRECTION OF TRAVEL.
- EXPANSION JOINTS (SEE JOINT DETAIL) SHALL BE PROVIDED AT ALL LOCATIONS WHERE NEW CONCRETE MEETS EXISTING CONCRETE OR AT LOCATIONS SHOWN IN THESE DETAILS.
- DETECTABLE WARNING SURFACES SHALL BE INSTALLED AT SIDEWALK TO STREET TRANSITIONS AND BE OF A CONTRASTING COLOR. THE U.S. ACCESS BOARD PROPOSED GUIDELINES FOR ACCESSIBLE RIGHTS-OF-WAY (PROWAG) CHAPTER R3 TECHNICAL REQUIREMENTS PROVIDES GUIDANCE ON DETECTABLE WARNING SURFACES. FOR REFERENCE, THE COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) HAS AN APPROVED PRODUCTS LIST (APL) OF TRUNCATED DOME PANELS. THE COUNTY RESERVES THE RIGHT TO ACCEPT OR REJECT ANY PROPOSED DETECTABLE WARNING SURFACES.
- ALL DETECTABLE WARNING SURFACE AREAS SHALL BE WITHIN A MAXIMUM OF 2 IN. FROM THE BACK OF CURB (EXCEPT AS SHOWN IN TYPE B PARALLEL RAMP). ALL DETECTABLE WARNING SURFACES SHALL BE 2 FT. IN LENGTH, MEASURED ALONG THE DIRECTION OF PEDESTRIAN TRAVEL, AND COVER THE COMPLETE WIDTH OF THE RAMP AREA.
- DO NOT INSTALL DRAINAGE STRUCTURES, TRAFFIC SIGNAL EQUIPMENT, JUNCTION BOXES, AND OTHER OBSTRUCTIONS IN FRONT OF OR WITHIN THE RAMP CLEAR SPACE.
- PERPENDICULAR AND PARALLEL CURB RAMPS SHOWN ARE ACCEPTABLE FOR USE AT MID-BLOCK INSTALLATIONS.
- THE CONTRACTOR SHOULD ACCOUNT FOR CONSTRUCTION TOLERANCES TO PREVENT EXCEEDING MAXIMUM SLOPES AND MINIMUM DIMENSIONS SHOWN. THE COUNTY MAY REQUIRE REMOVAL AND RECONSTRUCTION TO ACHIEVE SPECIFIED DIMENSIONS AND SLOPES.
- WHEN ISSUES ARISE THAT REQUIRE ADJUSTMENTS TO PROVIDE AN ADA COMPLIANT CURB RAMP, THE CURB RAMP SHOWN ON THE PLANS MAY BE ADJUSTED IN THE FIELD BY THE CONTRACTOR TO ACCOMMODATE DIFFERING ELEVATIONS, VARIANCES IN SLOPE, OR TRANSITIONS TO EXISTING FEATURES AS LONG AS THE MINIMUM DIMENSIONS ARE ACHIEVED AND THE MAXIMUM SLOPES ARE NOT EXCEEDED.
- WHEN ISSUES ARISE THAT REQUIRE MODIFICATIONS (I.E. CHANGE CURB RAMP TYPE, ADDITION OR DELETION OF CURB RAMP FEATURES, ETC.) THE ENGINEER OF RECORD SHALL SUBMIT REVISIONS TO THE COUNTY USING THE APPROVED CONSTRUCTION PLANS FOR REVIEW AND APPROVAL.
- THE CONTRACTOR SHALL NOTIFY THE COUNTY AT LEAST TWO (2) BUSINESS DAYS PRIOR TO NEEDING A CONCRETE FORM INSPECTION.
- FOR ADDITIONAL GUIDANCE ON CURB RAMP LAYOUT AND CONSTRUCTION, PROWAG SHALL BE REFERENCED.

Computer File Information

Creation Date:	12/03/15	Initials:	BPM
Last Modification Date:	12/10/16	Initials:	JEH
Full Path:	Q:\2015 ADA TRANSITION PLAN\CURB RAMP DETAILS		
Drawing File Name:	CURB RAMP DETAILS.DWG		
Acad Ver.	2013	Scale:	N/A
		Units:	ENGLISH

Sheet Revisions

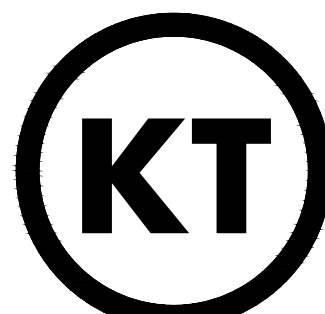
NO.	DATE	BY	DESCRIPTION
1	03/31/17	ADAMS COUNTY	ACS



ADAMS COUNTY
 TRANSPORTATION DEPARTMENT
 4430 S. ADAMS COUNTY PARKWAY
 BRIGHTON, CO 80601

CURB RAMP DETAILS

Sheet Number: 1 of 3



KT ENGINEERING

12500 W. 58TH AVE. #230
ARVADA, CO 80002
P: 720.638.5190

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PREPARED FOR:
REMINGTON HOMES

REVISIONS:

NO.	DATE	REVISION DESCRIPTION
1		
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6		
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8		

STAMP:

NOT FOR CONSTRUCTION

SHEET INFO:

SELTZER FARMS FILING NO. 1
DETAILS
SITE-2

PROJECT NO:
0109-2207

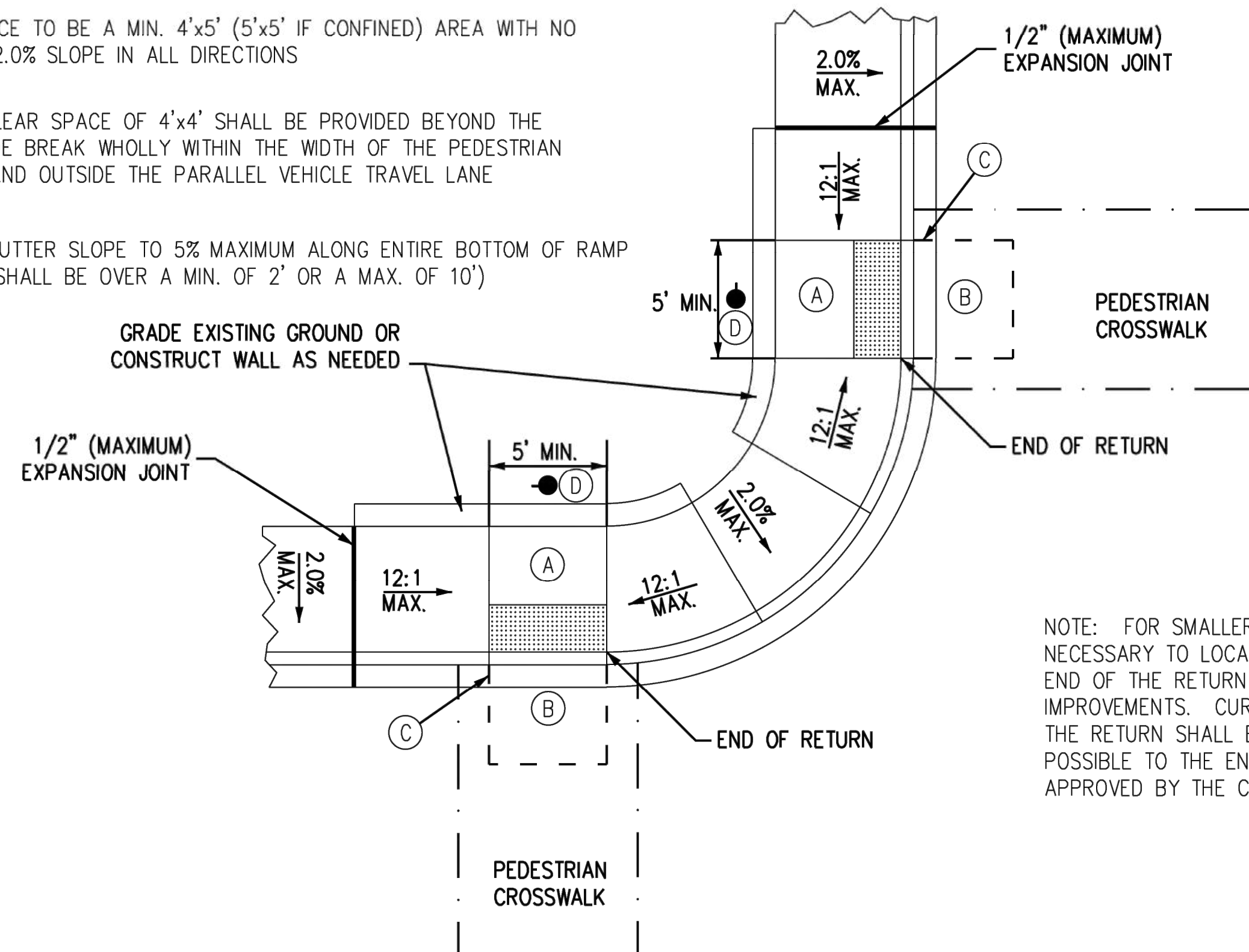
DRAWN BY:
EST
DESIGNED BY:
KPT

SCALE:
1" = 120'

SUBMITTED ON:
02/09/24

09
OF **12**

- (A) TURNING SPACE TO BE A MIN. 4'x5' (5'x5' IF CONFINED) AREA WITH NO MORE THAN 2.0% SLOPE IN ALL DIRECTIONS
- (B) A MINIMUM CLEAR SPACE OF 4'x4' SHALL BE PROVIDED BEYOND THE BOTTOM GRADE BREAK WHOLLY WITHIN THE WIDTH OF THE PEDESTRIAN CROSSWALK AND OUTSIDE THE PARALLEL VEHICLE TRAVEL LANE
- (C) TRANSITION CUTTER SLOPE TO 5% MAXIMUM ALONG ENTIRE BOTTOM OF RAMP (TRANSITION SHALL BE OVER A MIN. OF 2' OR A MAX. OF 10')

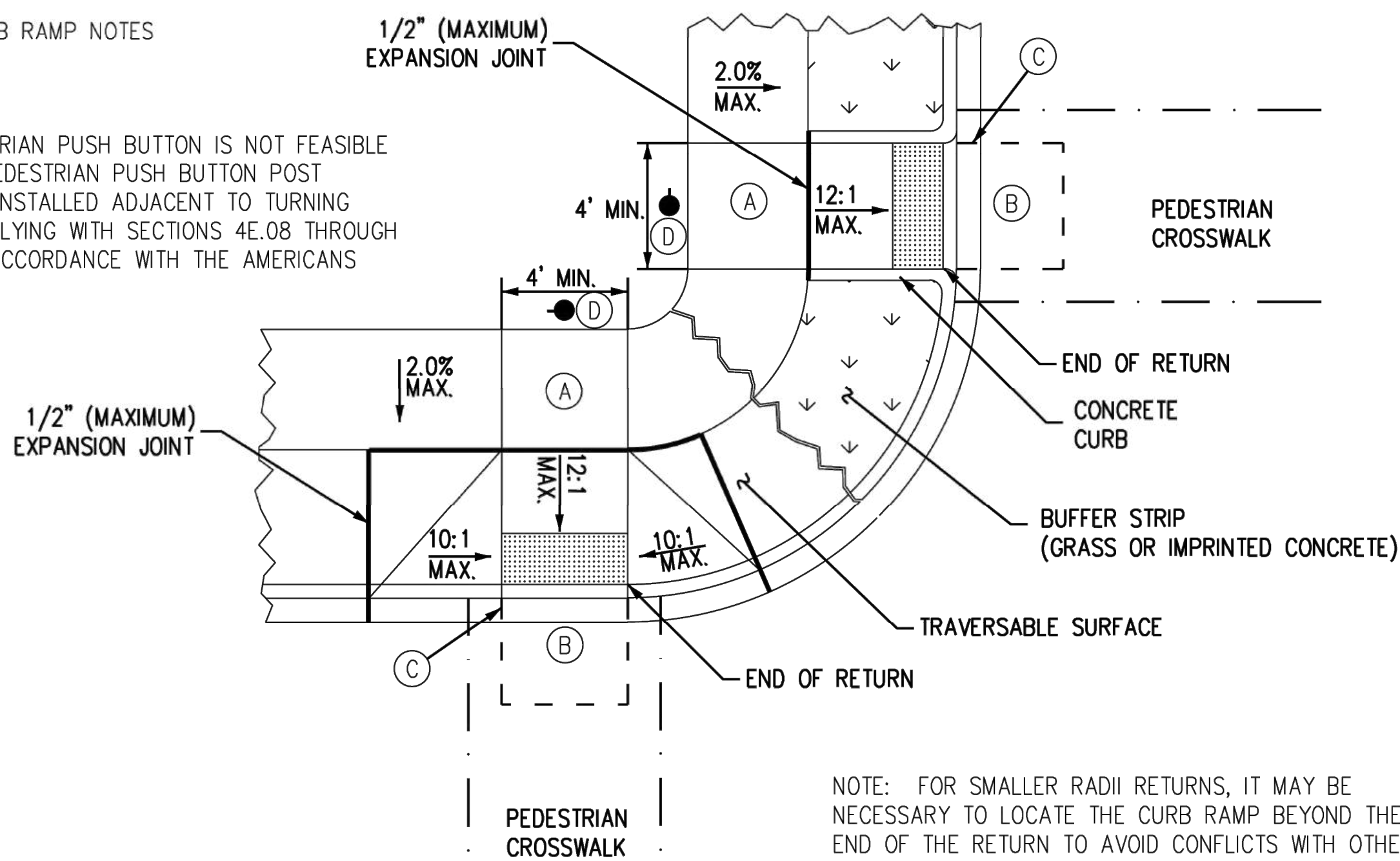


PARALLEL CURB RAMPS - SMALL RADIUS

* SEE SHEET 1 FOR CURB RAMP NOTES

- (D) WHEN INSTALLATION OF PEDESTRIAN PUSH BUTTON IS NOT FEASIBLE ON TRAFFIC SIGNAL POLE, A PEDESTRIAN PUSH BUTTON POST ASSEMBLY (PPBPA) SHALL BE INSTALLED ADJACENT TO TURNING SPACES OF CURB RAMPS COMPLYING WITH SECTIONS 4E.08 THROUGH 4E.13 OF THE MUTCD AND IN ACCORDANCE WITH THE AMERICANS WITH DISABILITIES ACT.

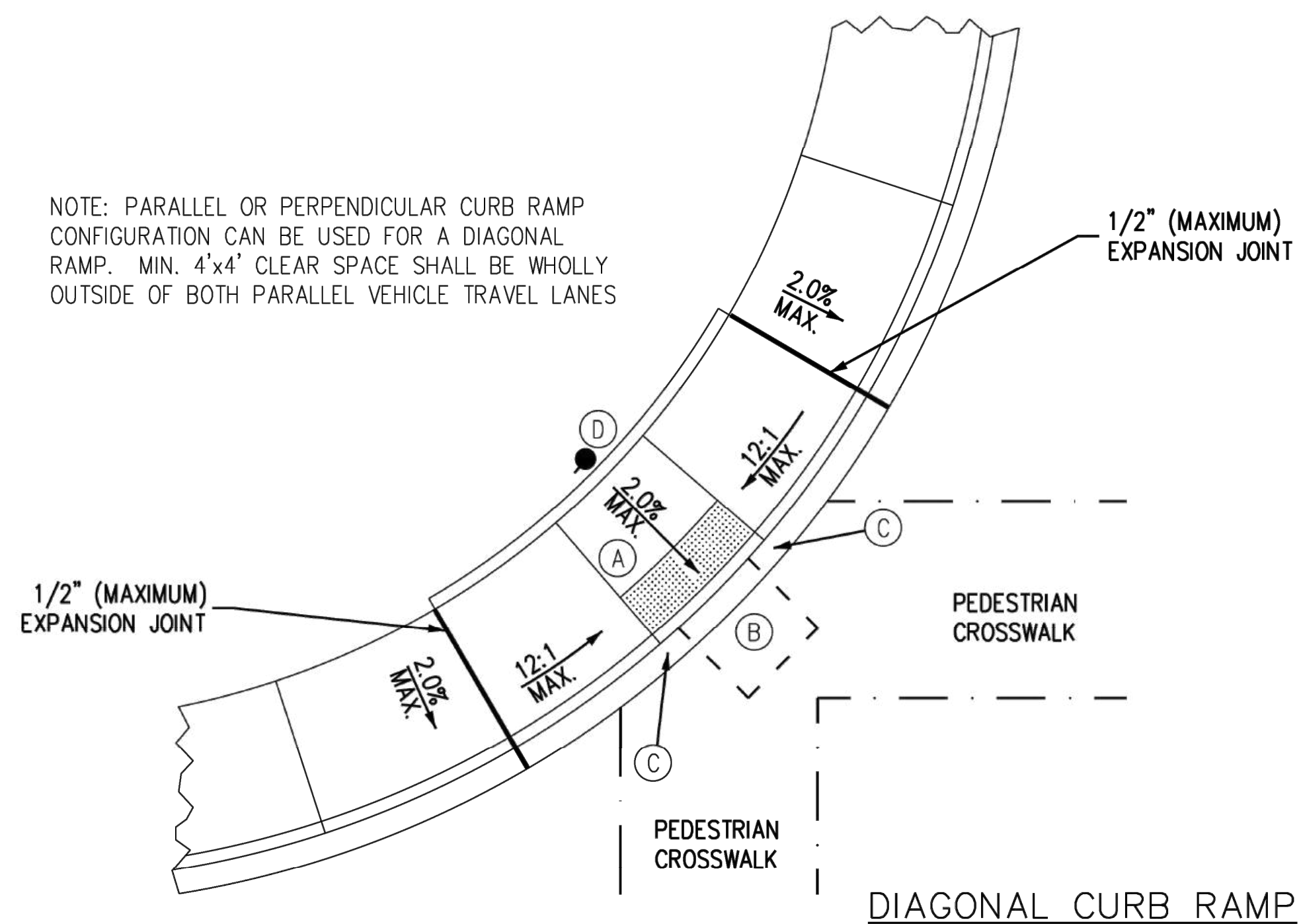
NOTE: FOR SMALLER RADIi RETURNS, IT MAY BE NECESSARY TO LOCATE THE CURB RAMP BEYOND THE END OF THE RETURN TO AVOID CONFLICTS WITH OTHER IMPROVEMENTS. CURB RAMPS BEYOND THE END OF THE RETURN SHALL BE LOCATED AS CLOSE AS POSSIBLE TO THE END OF THE RETURN AND SHALL BE APPROVED BY THE COUNTY.



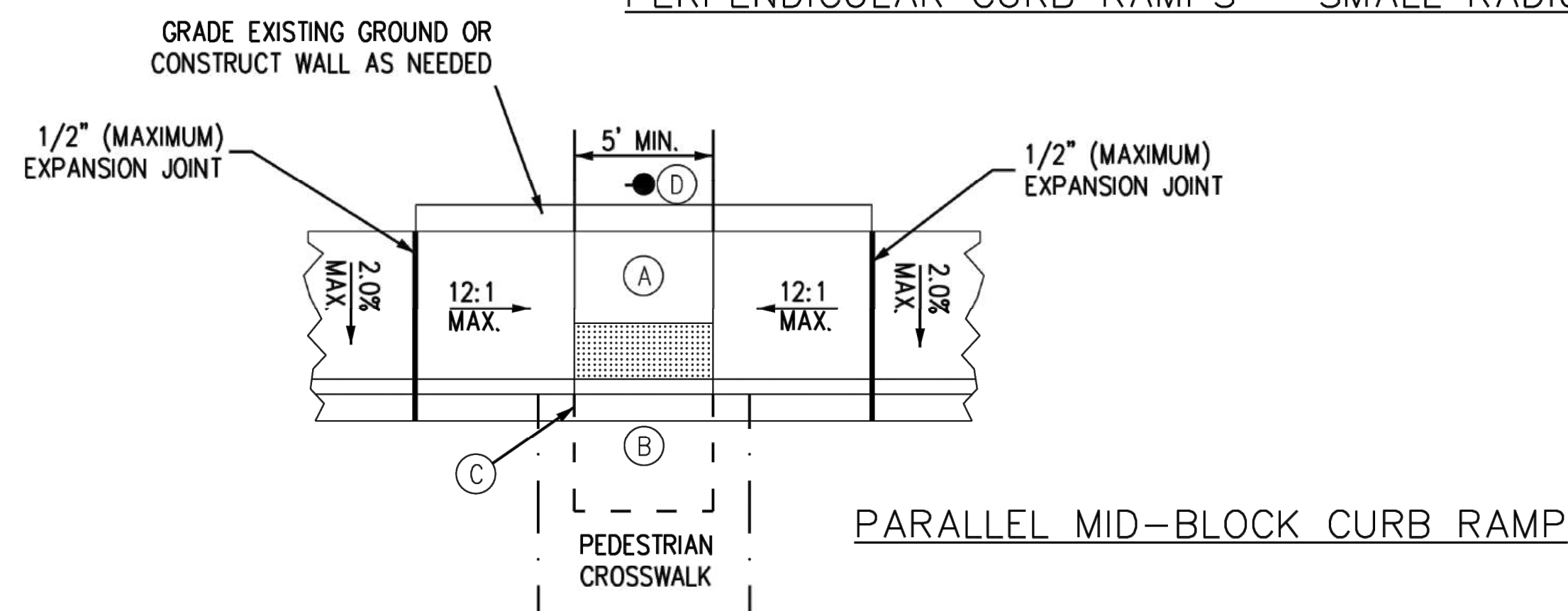
NOTE: FOR SMALLER RADIi RETURNS, IT MAY BE NECESSARY TO LOCATE THE CURB RAMP BEYOND THE END OF THE RETURN TO AVOID CONFLICTS WITH OTHER IMPROVEMENTS. CURB RAMPS BEYOND THE END OF THE RETURN SHALL BE LOCATED AS CLOSE AS POSSIBLE TO THE END OF THE RETURN AND SHALL BE APPROVED BY THE COUNTY.

PERPENDICULAR CURB RAMPS - SMALL RADIUS

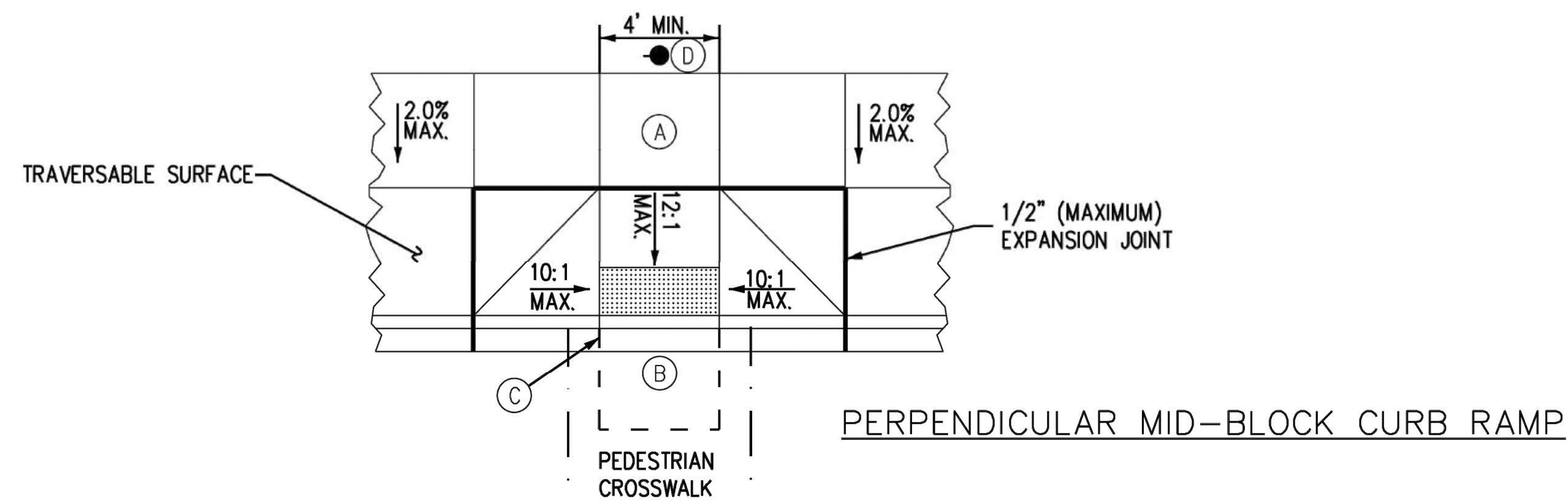
NOTE: PARALLEL OR PERPENDICULAR CURB RAMP CONFIGURATION CAN BE USED FOR A DIAGONAL RAMP. MIN. 4'x4' CLEAR SPACE SHALL BE WHOLLY OUTSIDE OF BOTH PARALLEL VEHICLE TRAVEL LANES



DIAGONAL CURB RAMP



PARALLEL MID-BLOCK CURB RAMP



PERPENDICULAR MID-BLOCK CURB RAMP

Computer File Information

Creation Date:	12/03/15	Initials:	BPM
Last Modification Date:	12/10/16	Initials:	JEH
Full Path:	Q:\2015 ADA TRANSITION PLAN\CURB RAMP DETAILS		
Drawing File Name:	CURB RAMP DETAILS.DWG		
Acad Ver.	2013	Scale:	N/A
Units:	ENGLISH		

Sheet Revisions

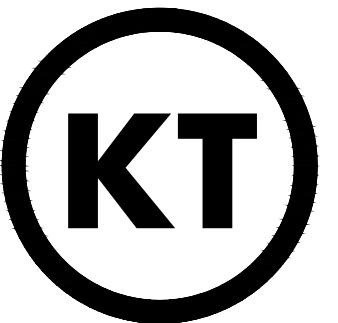
NO.	DATE	DESCRIPTION	BY
1	03/31/17	ADAMS COUNTY	ACS



ADAMS COUNTY
TRANSPORTATION DEPARTMENT
4430 S. ADAMS COUNTY PARKWAY
BRIGHTON, CO 80601

CURB RAMP DETAILS

Sheet Number: 2 of 3



KT ENGINEERING

12500 W. 58TH AVE. #230
ARVADA, CO 80002
P: 720.638.5190

WWW.KTENG.NET

PREPARED FOR:
REMINGTON HOMES

REVISIONS:

NO.	BY	DATE	REVISION DESCRIPTION
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STAMP:

NOT FOR
CONSTRUCTION

SHEET INFO:

SELTZER FARMS FILING NO. 1
DETAILS
SITE-3

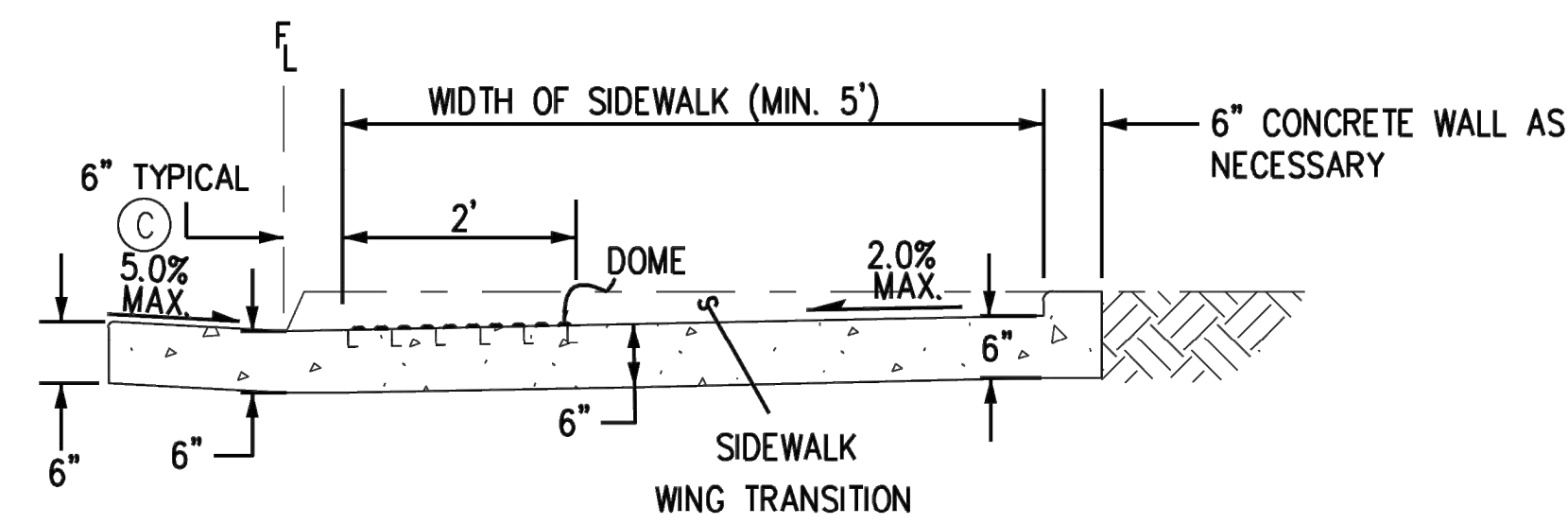
PROJECT NO:
0109-2207

DRAWN BY:
EST
DESIGNED BY:
KPT

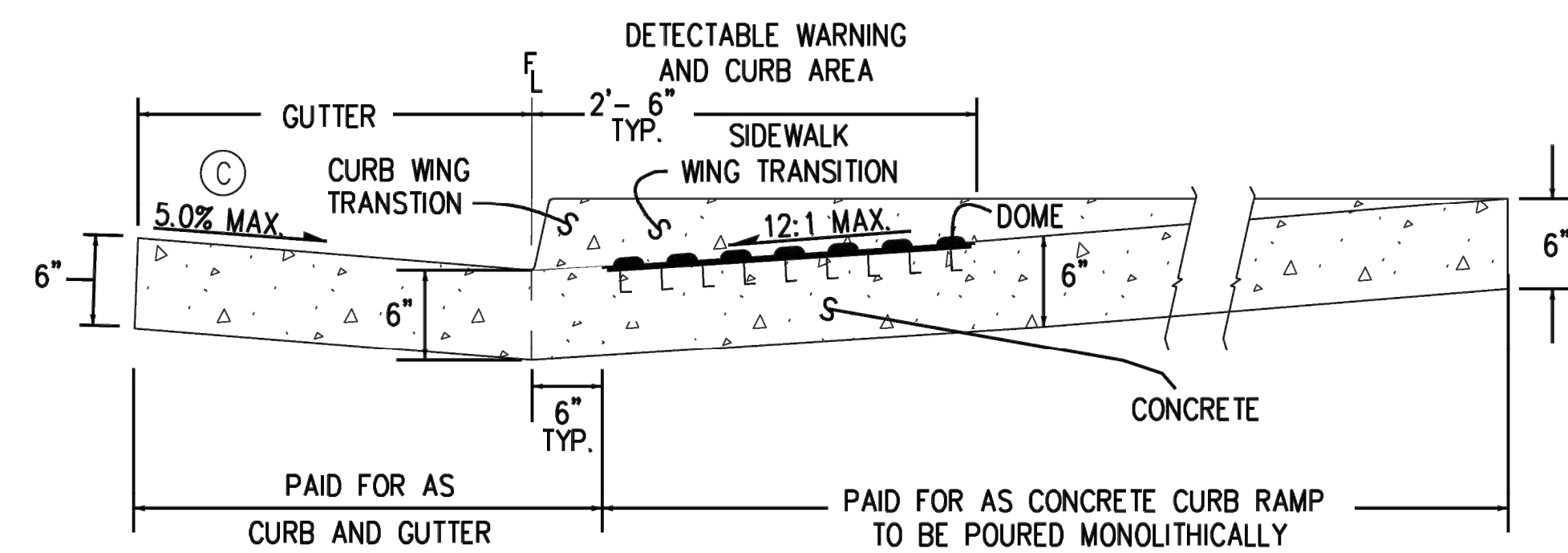
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1" = 120'

SUBMITTED ON:
02/09/24

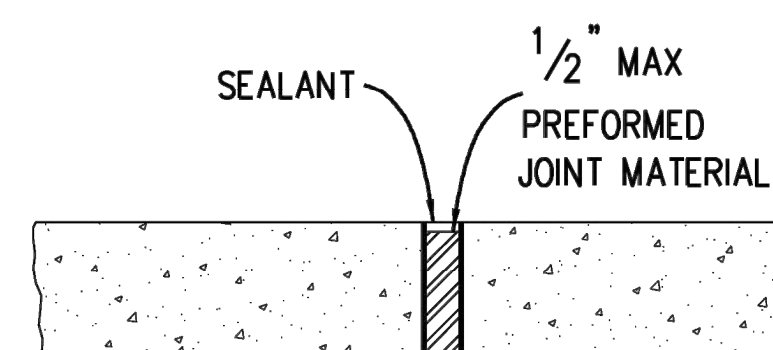
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OF 12



SECTION A-A CURB RAMP PROFILE



SECTION B-B CURB RAMP PROFILE

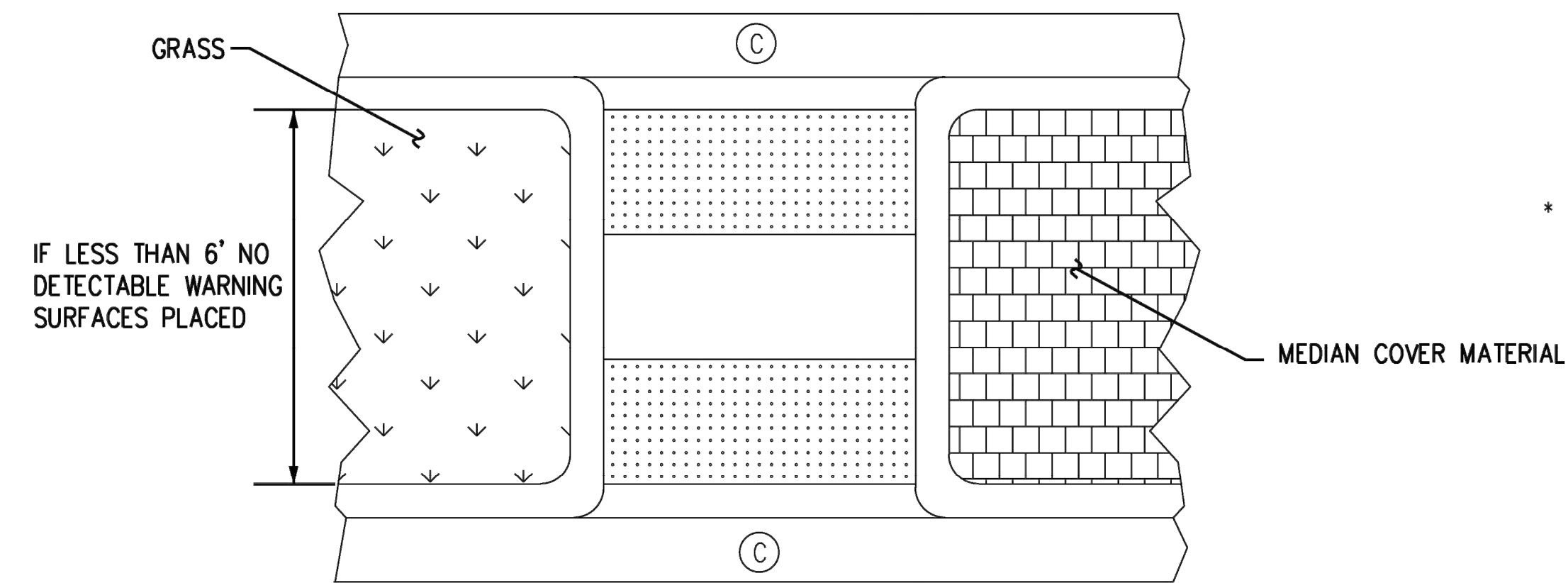


NOTE:
EXPANSION JOINTS SHALL NOT BE PLACED WITHIN THE RAMP AREA

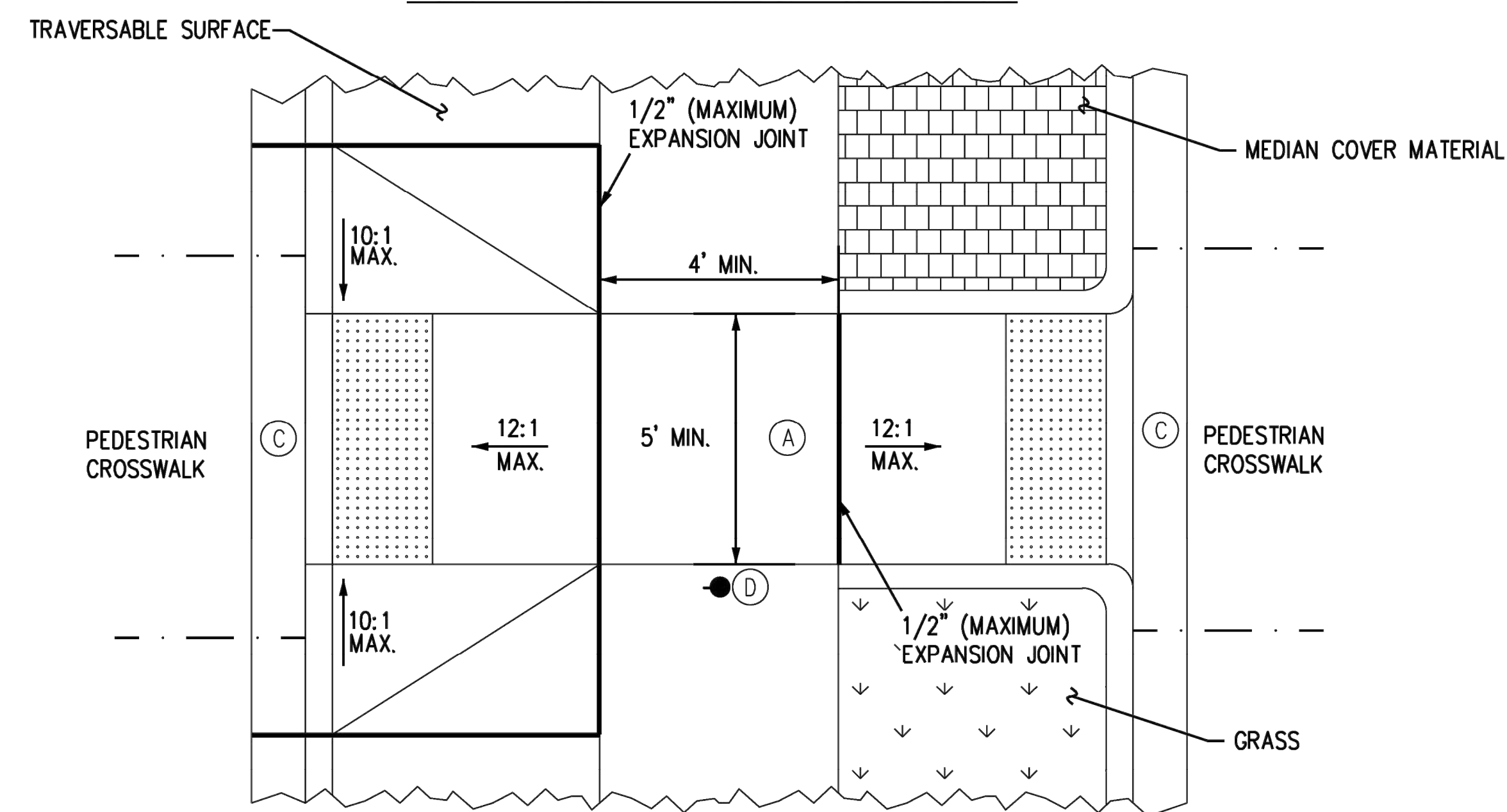
EXPANSION JOINT

DOMES PANEL NOTES

1. DETECTABLE WARNING SURFACES SHALL BE OF A CONTRASTING COLOR AND MEET CHAPTER R3 TECHNICAL REQUIREMENTS IN THE U.S. ACCESS BOARD PROPOSED GUIDELINES FOR ACCESSIBLE RIGHTS-OF-WAY (PROWAG) AS APPROVED BY THE COUNTY. FOR REFERENCE, THE COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) HAS AN APPROVED PRODUCTS LIST (APL) OF TRUNCATED DOME PANELS. THE COUNTY RESERVES THE RIGHT TO ACCEPT OR REJECT ANY PROPOSED DETECTABLE WARNING SURFACES.
2. DETECTABLE WARNINGS SHALL BE INSTALLED AT SIDEWALK TO STREET TRANSITIONS.
3. THE TRUNCATED DOME PANEL SHALL BE EMBEDDED IN THE CONCRETE CURB RAMP WHILE CONCRETE IS PLASTIC.
4. WHEN DETECTABLE WARNING SURFACE IS CUT, GRIND OFF REMAINING PORTION OF ANY CUT DOMES. SEAL ALL CUT PANEL EDGES TO PREVENT WATER DAMAGE.
5. IF BRICKS OR PAVERS ARE USED FOR DETECTABLE WARNING SURFACE, THE UNDERLYING CONCRETE SHALL BE A MINIMUM OF 4 INCHES THICK.
6. JOINT SEALANT SHALL BE A PRODUCT ON THE CDOT APL OR AN APPROVED EQUAL BY THE COUNTY.



MEDIAN CUT THROUGH CROSSING



PEDESTRIAN MEDIAN REFUGE

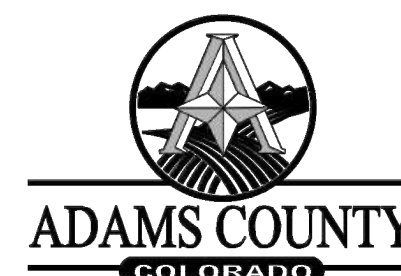
- (A) TURNING SPACE TO BE A MIN. 4'x5' (5'x5' IF CONFINED) AREA WITH NO MORE THAN 2.0% SLOPE IN ALL DIRECTIONS
- (C) TRANSITION GUTTER SLOPE TO 5% MAXIMUM ALONG ENTIRE BOTTOM OF RAMP (TRANSITION SHALL BE OVER A MIN. OF 2' OR A MAX. OF 10')
- (D) ● WHEN INSTALLATION OF PEDESTRIAN PUSH BUTTON IS NOT FEASIBLE ON TRAFFIC SIGNAL POLE, A PEDESTRIAN PUSH BUTTON POST ASSEMBLY (PPBPA) SHALL BE INSTALLED ADJACENT TO TURNING SPACES OF CURB RAMP COMPLIING WITH SECTIONS 4E.08 THROUGH 4E.13 OF THE MUTCD AND IN ACCORDANCE WITH THE AMERICANS WITH DISABILITIES ACT.

Computer File Information

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Acad Ver.	2013	Scale:	N/A
		Units:	ENGLISH

Sheet Revisions

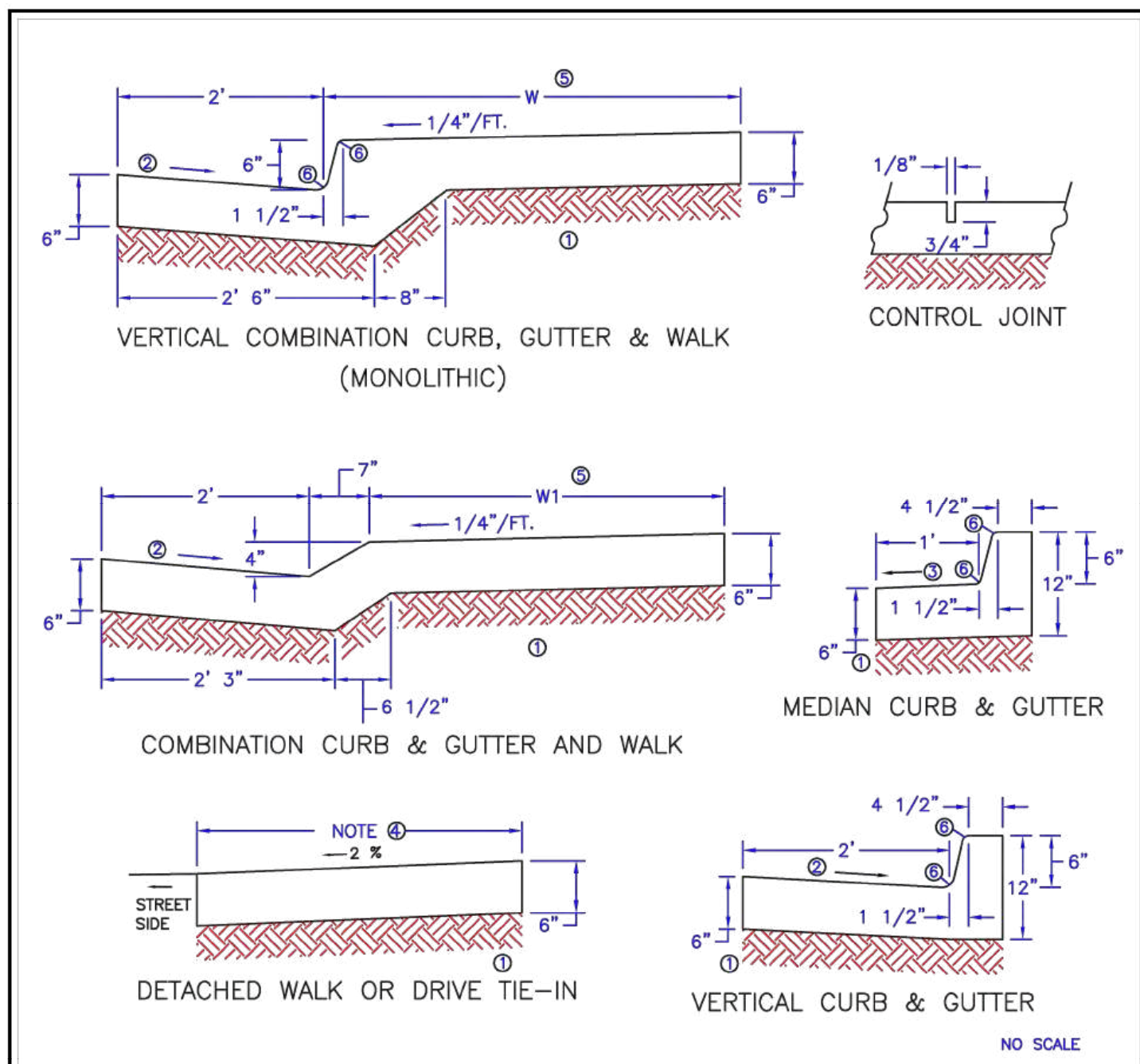
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ADAMS COUNTY
TRANSPORTATION DEPARTMENT
4430 S. ADAMS COUNTY PARKWAY
BRIGHTON, CO 80601

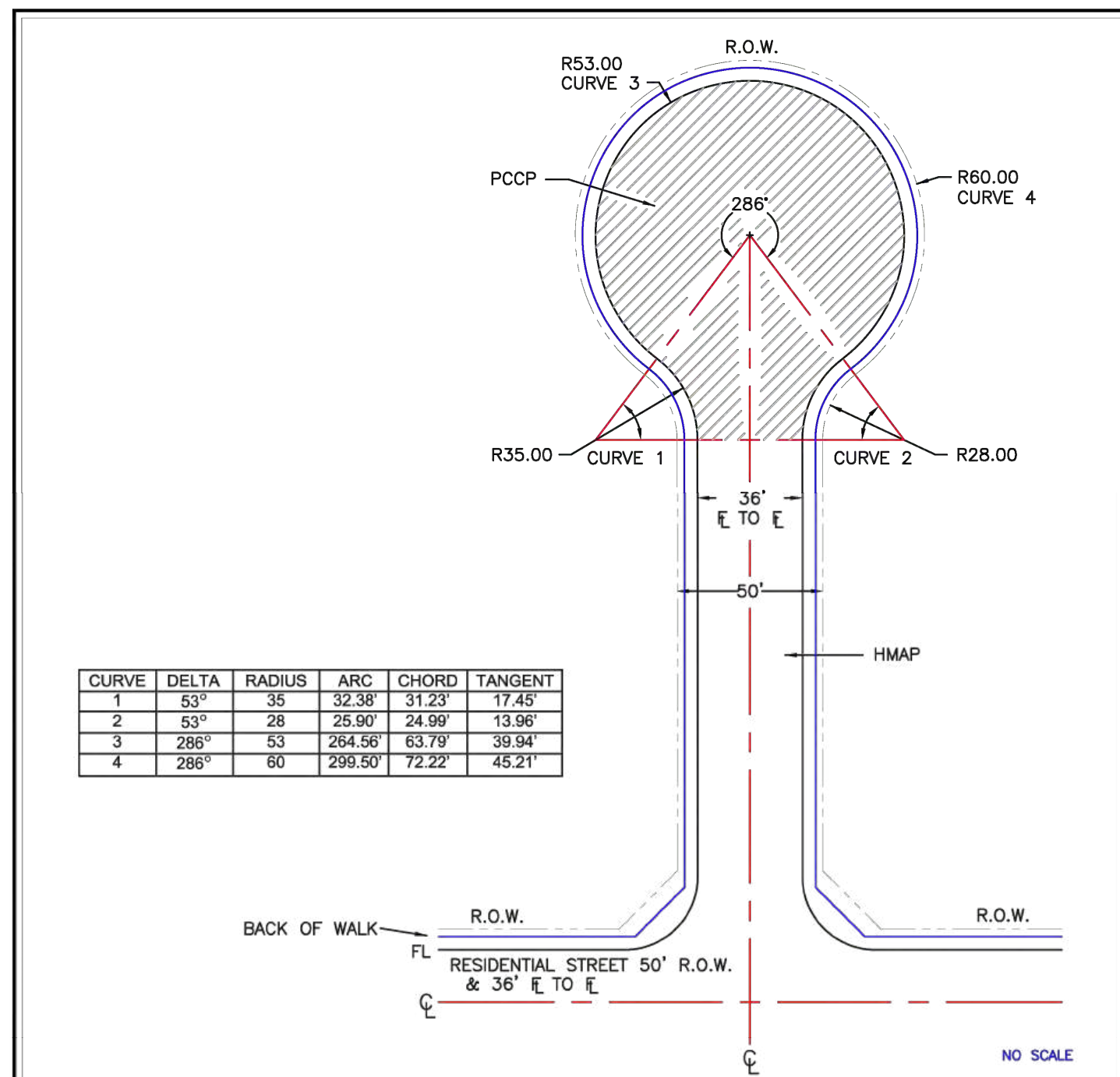
CURB RAMP DETAILS

Sheet Number: 3 of 3



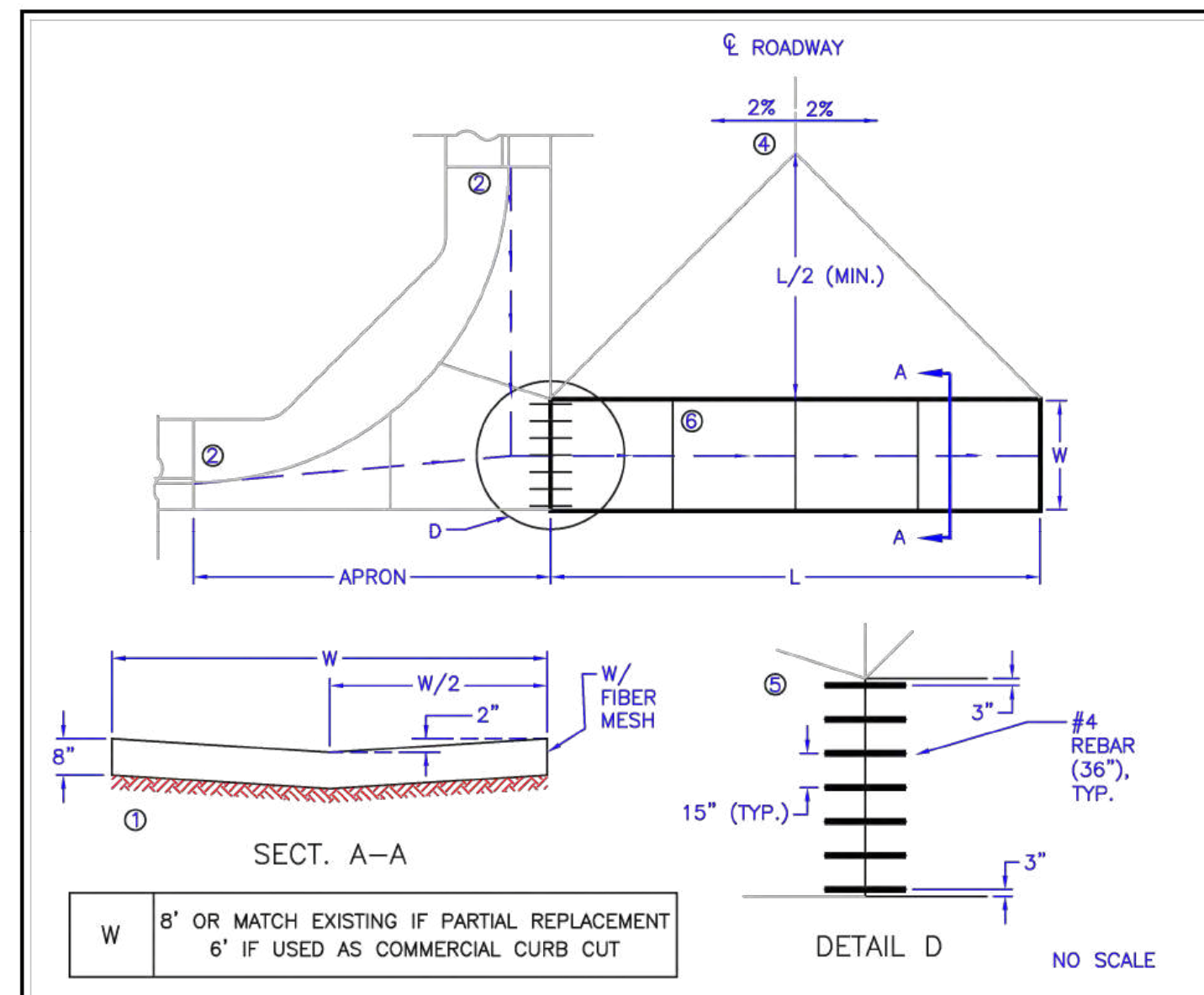
- NOTES:
- 1 COMPACTED SUBGRADE
 - 2 GUTTER CROSS SLOPE SHALL BE 1"/ft
 - 3 GUTTER CROSS SLOPE SHALL BE 1/2"/ft
 - 4 DETACHED SIDEWALK WIDTH SHALL BE 5'-0" FOR NEW CONSTRUCTION
 - 5 W=5'-6" AND W1=4'-11" TYPICAL (MIN. REQUIRED FOR NEW CONSTRUCTION)
 - 6 1 1/2" RADIUS

ADAMS COUNTY TRANSPORTATION DEPARTMENT /ENGINEERING	CURB, GUTTER & WALK	ADAMS COUNTY TRANSPORTATION DEPARTMENT /CONSTRUCTION INSPECTION
4430 S. ADAMS COUNTY PKWY. BRIGHTON, CO 80601	REVISION DATE: 06/02/14 FILE NAME: CG&W_D.DWG	4430 S. ADAMS COUNTY PKWY. BRIGHTON, CO 80601



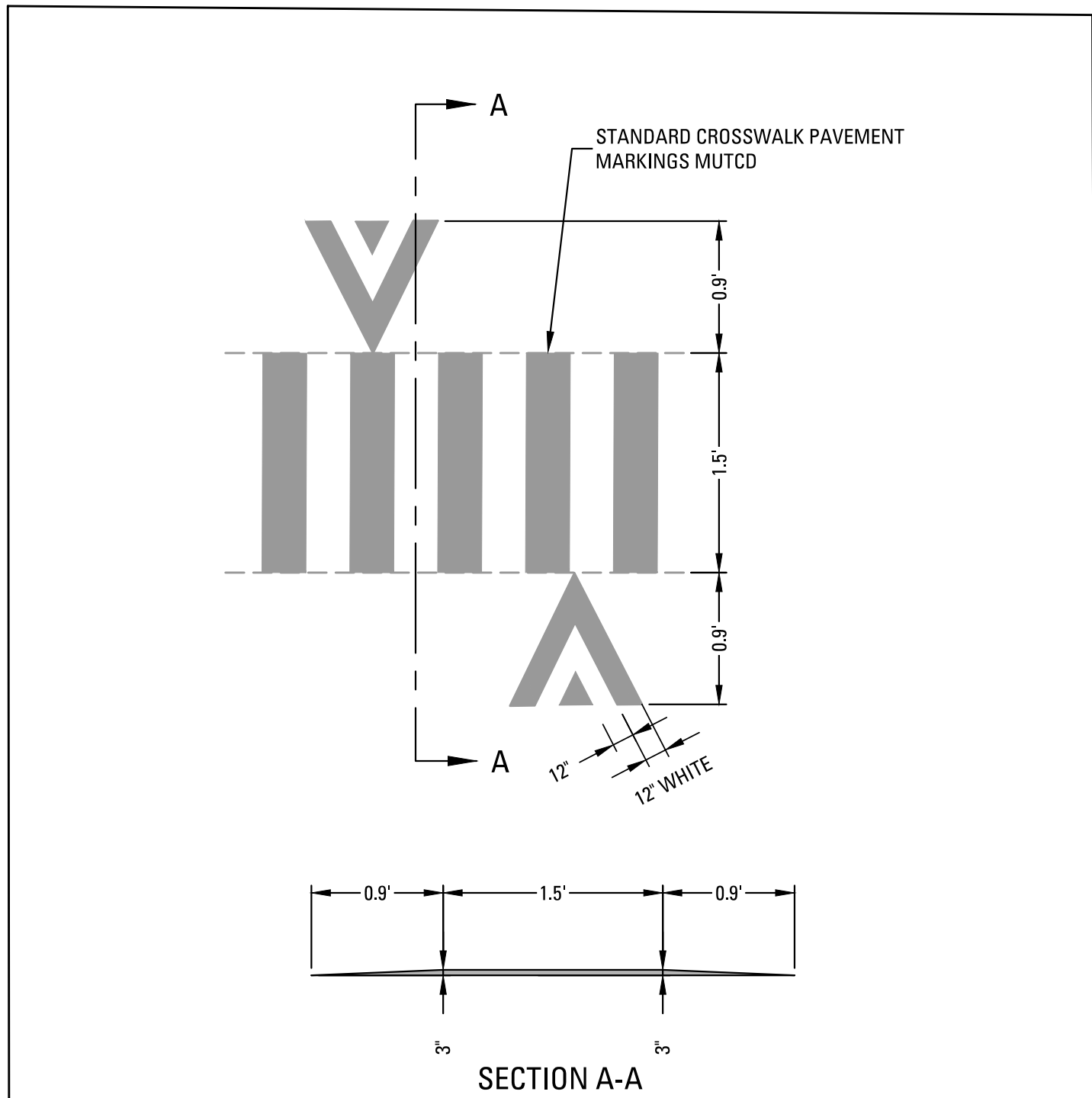
- NOTES:
- 1 SEE SUBDIVISION REGULATIONS FOR MAXIMUM DISTANCE, CENTER OF INTERSECTION TO RADIUS POINT.
 - 2 5.5' COMBINATION CURB, GUTTER & WALK, SEE CURB, GUTTER AND WALK & RADIUS DETAILS
 - 3 HANDICAP RAMPS WILL BE REQUIRED, SEE DETAILS
 - 4 FOR MINIMUM RADIUS RETURN VALUES - SEE CHAPT. 7 OF ROADWAY STANDARDS

ADAMS COUNTY TRANSPORTATION DEPARTMENT /ENGINEERING	PAVED CUL-DE-SAC LOCAL, RESIDENTIAL	ADAMS COUNTY TRANSPORTATION DEPARTMENT /CONSTRUCTION INSPECTION
4430 S. ADAMS COUNTY PKWY. BRIGHTON, CO 80601	REVISION DATE: 06/02/14 FILE NAME: RESIDENT_CULDESAC.DWG	4430 S. ADAMS COUNTY PKWY. BRIGHTON, CO 80601

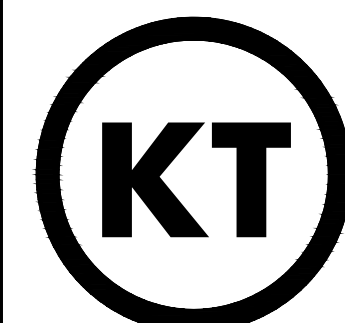


- NOTES:
- 1 COMPACTED SUBGRADE
 - 2 1/8" WIDE CONTROL JOINT WITH 3/4" MINIMUM DEPTH
 - 3 ADAMS COUNTY TO DETERMINE REINFORCEMENT REQUIREMENTS IF REINFORCEMENT IS NEEDED
 - 4 WHERE PAVEMENT IS TO BE RECONSTRUCTED CROWN SHALL BE TRANSITIONED OVER L/2' (MIN). NO CROWN SHALL EXIST AT THE CROSSSPAN
 - 5 COLD JOINTS SHALL BE DOWELED AS PER "D" (MINIMUM, 2 BARS). JOINT TO BE FILLED WITH JOINT FILLER
 - 6 CONTRACTION JOINTS SHALL BE SPACED @ MAXIMUM 10' INTERVALS
 - 7 CROSSPANS SHALL BE CONSTRUCTED IN HALVES TO ALLOW TRAFFIC MOVEMENT

ADAMS COUNTY TRANSPORTATION DEPARTMENT /ENGINEERING	TYPICAL CROSSSPAN	ADAMS COUNTY TRANSPORTATION DEPARTMENT /CONSTRUCTION INSPECTION
4430 S. ADAMS COUNTY PKWY. BRIGHTON, CO 80601	REVISION DATE: 06/02/14 FILE NAME: TYP_XPAN_D.DWG	4430 S. ADAMS COUNTY PKWY. BRIGHTON, CO 80601



ADAMS COUNTY TRANSPORTATION DEPARTMENT /ENGINEERING	RAISED CROSS WALK DETAIL	ADAMS COUNTY TRANSPORTATION DEPARTMENT /CONSTRUCTION INSPECTION
4430 S. ADAMS COUNTY PKWY. BRIGHTON, CO 80601		4430 S. ADAMS COUNTY PKWY. BRIGHTON, CO 80601



KT ENGINEERING
12500 W. 58TH AVE. #230
ARVADA, CO 80002
P: 720.638.5190
WWW.KTENG.NET

PREPARED FOR:
REMINGTON HOMES

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SELTZER FARMS FILING NO. 1

DETAILS

SITE-4

PROJECT NO:
0109-2207

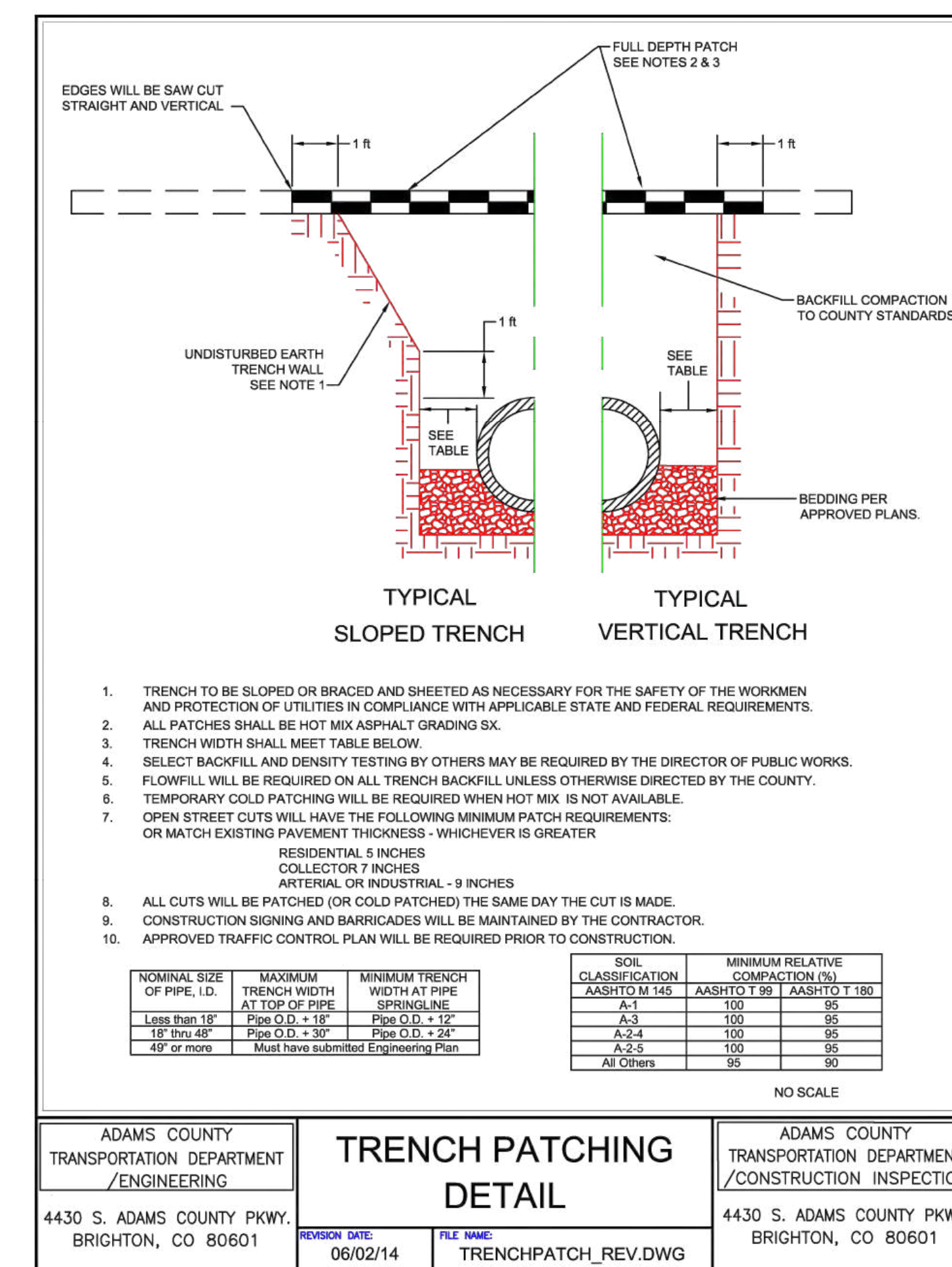
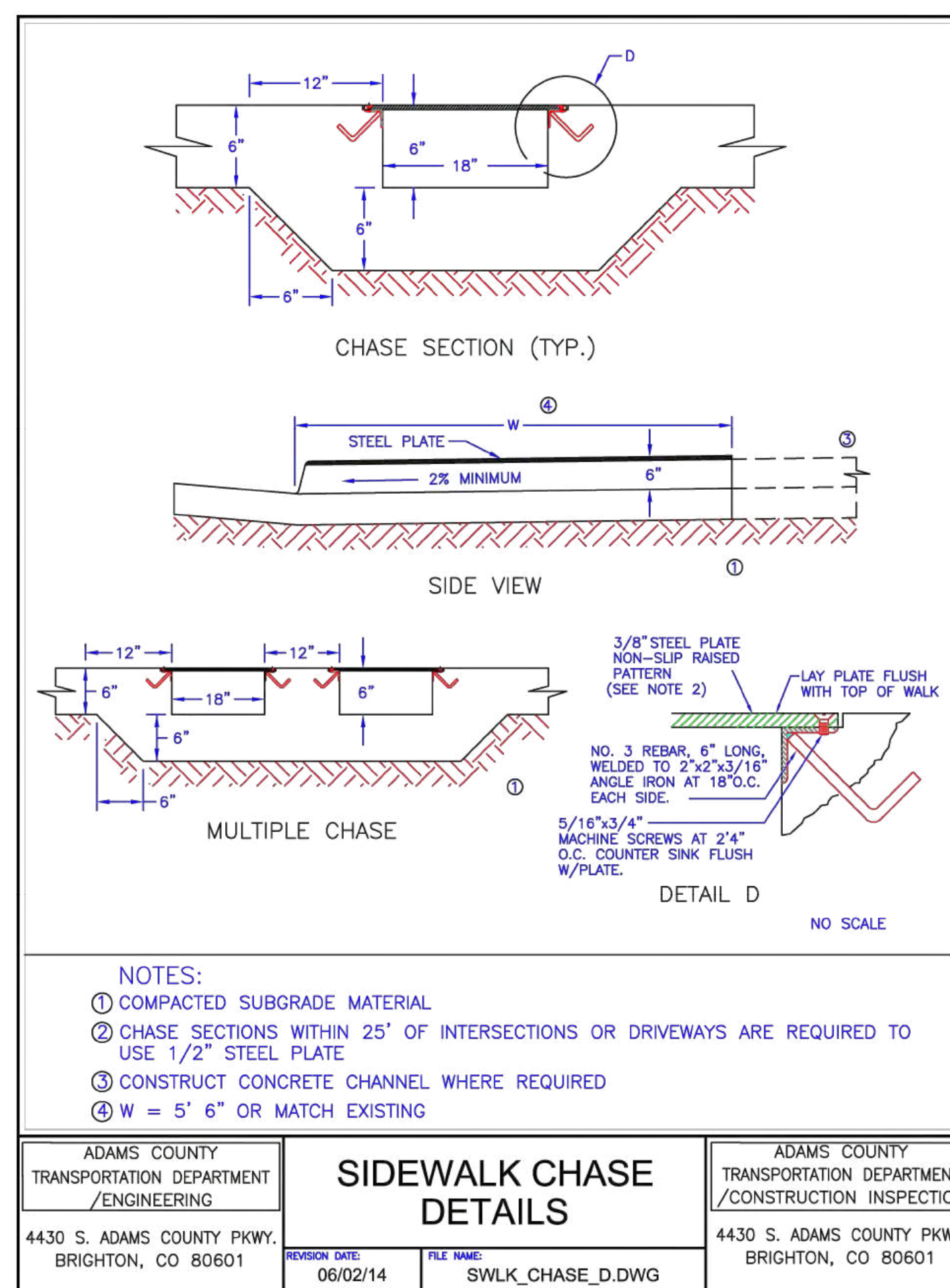
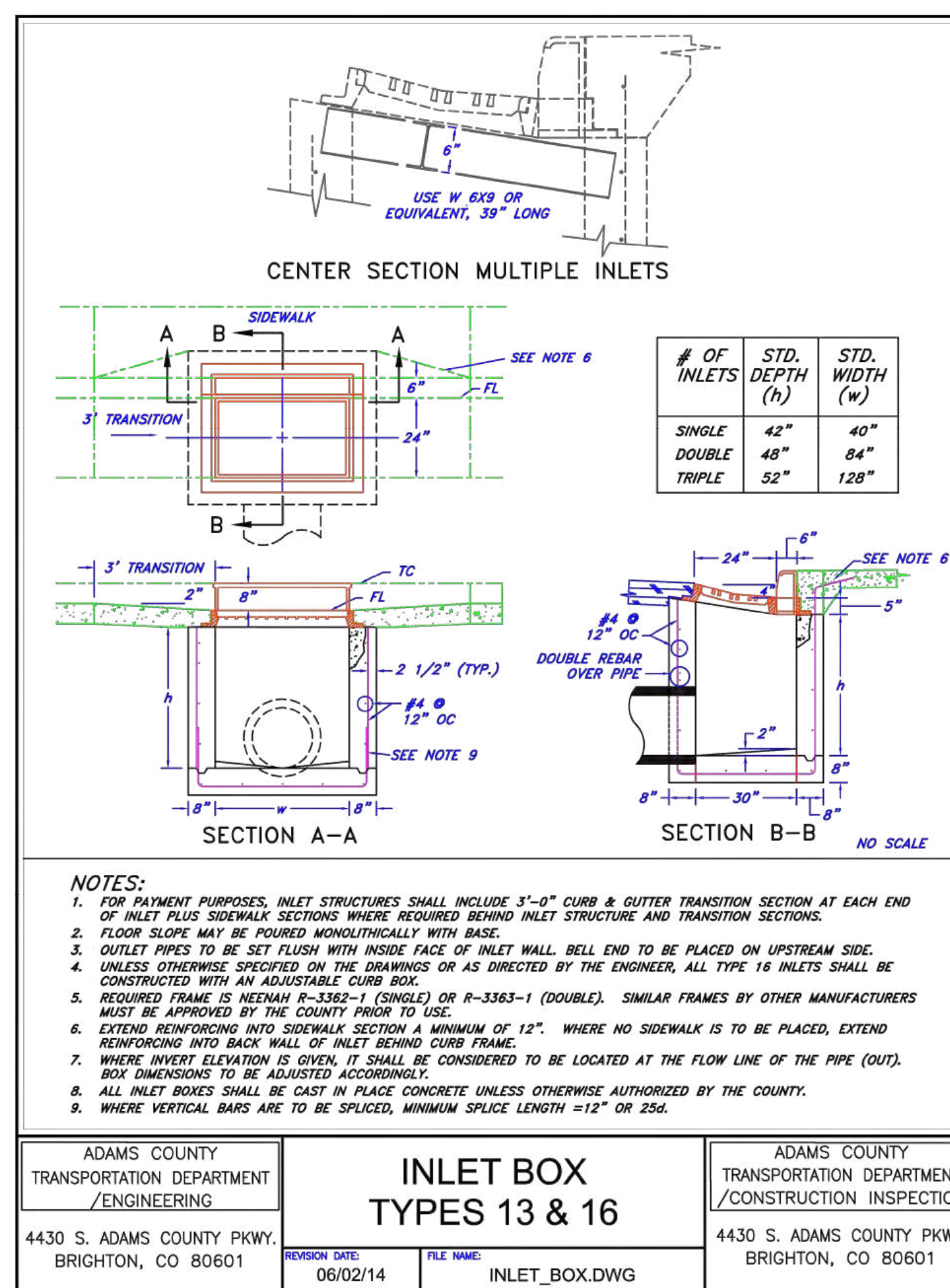
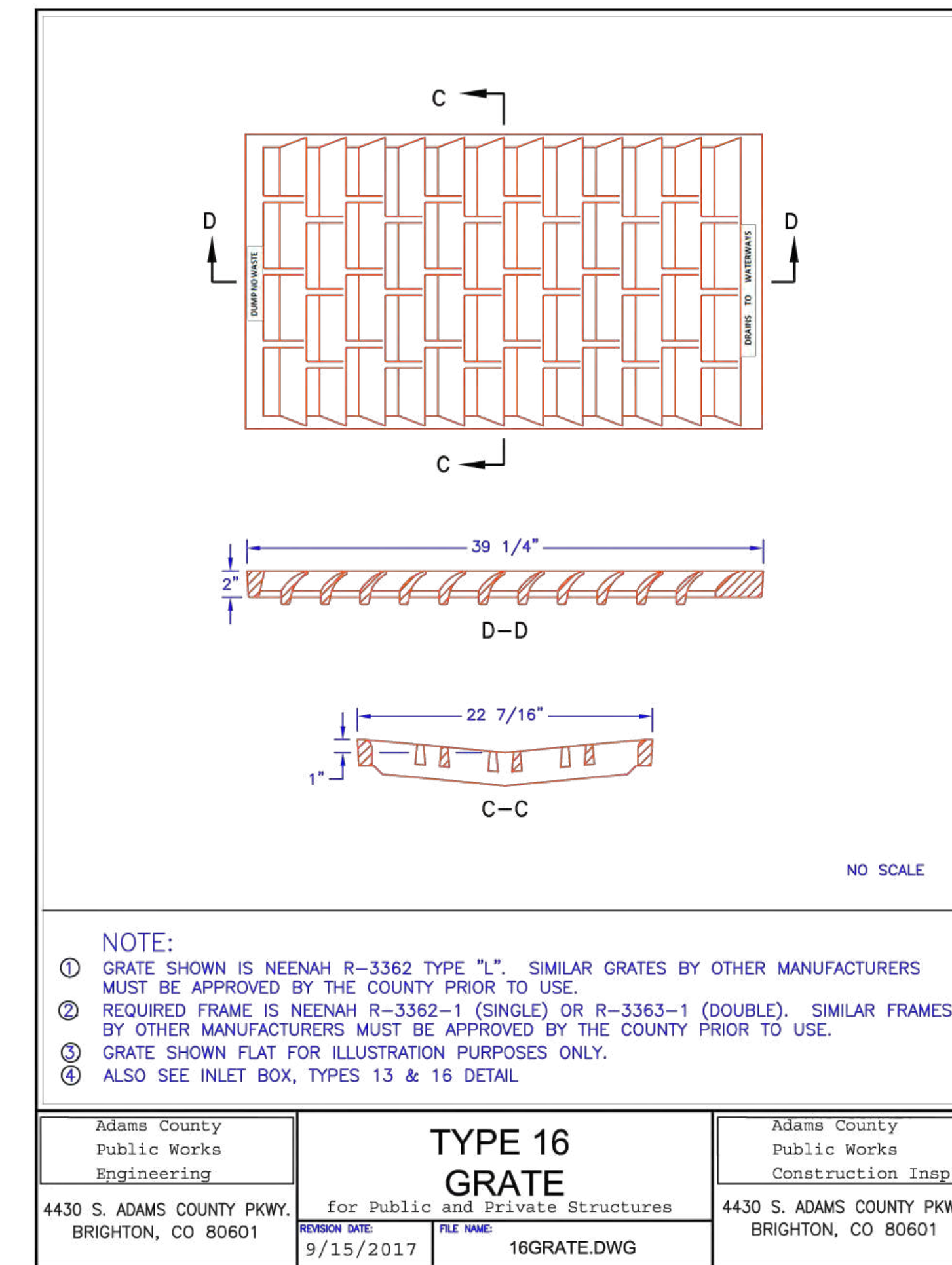
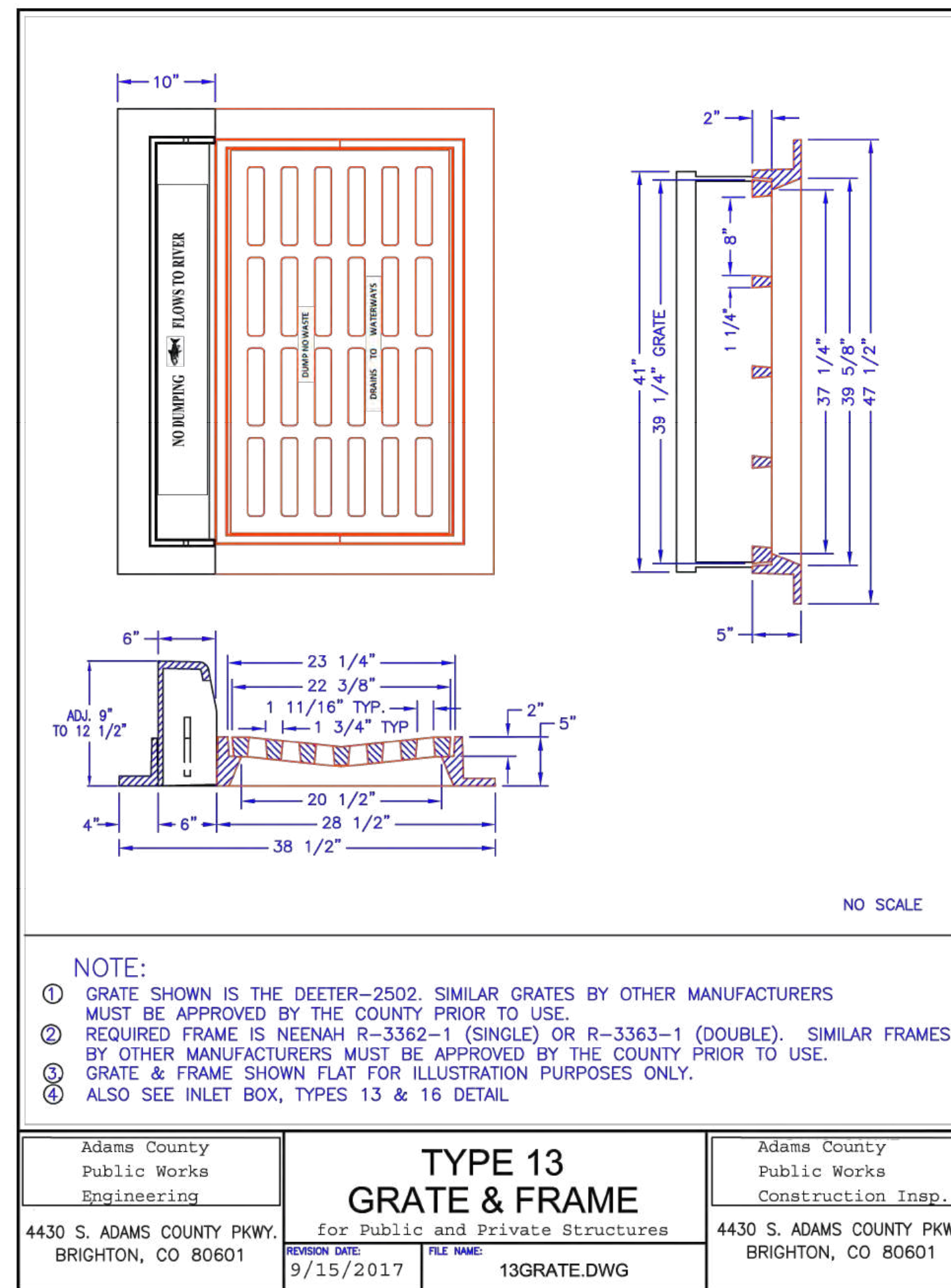
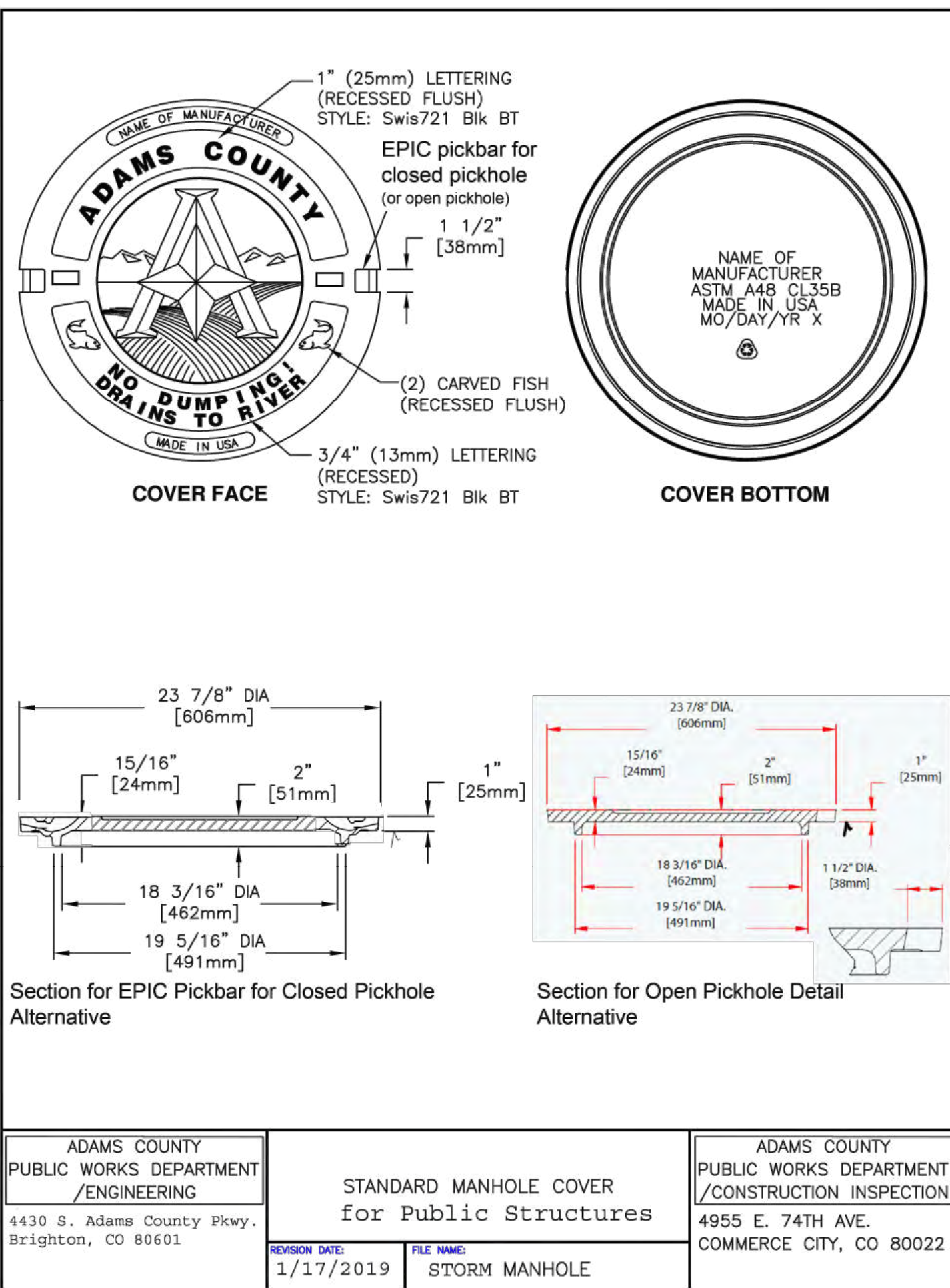
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EST

DESIGNED BY:
KPT

SCALE:
1" = 120'

SUBMITTED ON:
02/09/24

11
OF 12



KT ENGINEERING
 12500 W. 58TH AVE. #230
 ARVADA, CO 80002
 P: 720.638.5190
 WWW.KTENG.NET

PREPARED FOR:
REMINGTON HOMES

REVISIONS:

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SHEET INFO:

SELTZER FARMS FILING NO. 1

DETAILS STORM 1

PROJECT NO:
0109-2207

DRAWN BY:
EST

DESIGNED BY:
KPT

SCALE:
1" = 120'

SUBMITTED ON:
02/09/24

12 OF 12

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SELTZER FARMS FILING NO.1

PRELIMINARY LANDSCAPE PLANS

LOCATED IN SECTION 3, TOWNSHIP 1 SOUTH, RANGE 67 WEST OF THE 6TH P.M.,
 COUNTY OF ADAMS, STATE OF COLORADO
 207.97 ACRES - 413 LOTS / 12 TRACTS

CASE NO. PRC2023-00020

Prepared For



5740 OLDE WADSWORTH BLVD
 UNIT A
 ARVADA, CO 80002
 PHONE: 303.472.4633
 MATT CAVANAUGH

Land Planning



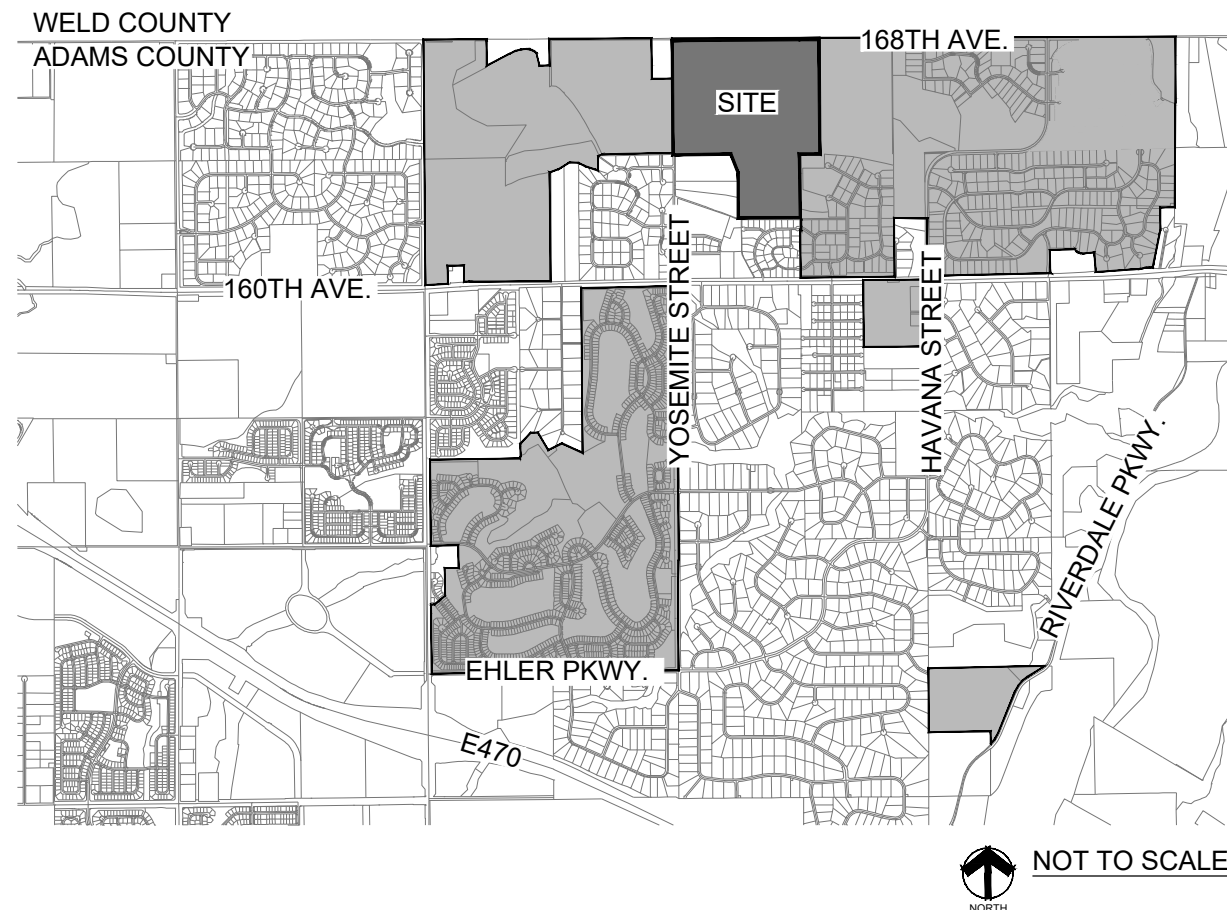
www.pcsgroupco.com
 p.o. box 18287
 denver, co 80218
 † 303.531.4905 . † 303.531.4908

Civil Engineering



12500 W. 58TH AVE #230
 ARVADA, CO 80002
 PHONE: 720.638.5190

VICINITY MAP



LEGAL DESCRIPTION

PARCEL ONE:
 THAT PART OF THE NORTH 1/4 OF SECTION 3, TOWNSHIP 1 SOUTH, RANGE 67 WEST OF THE SIXTH PRINCIPAL MERIDIAN, COUNTY OF ADAMS, STATE OF COLORADO, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:
 COMMENCING AT THE NORTHWEST CORNER OF SAID SECTION 3;
 THENCE EAST ON THE NORTH LINE OF SAID SECTION, 3,055.00 FEET;
 THENCE SOUTH 2,385.80 FEET TO A POINT ON THE EAST AND WEST CENTER LINE OF SAID SECTION;
 THENCE WEST 3,073.00 FEET TO THE CENTER OF THE WEST LINE OF SAID SECTION;
 THENCE NORTH 2,377.60 FEET TO THE PLACE OF BEGINNING,
 EXCEPTING THEREFROM, ANY PORTION OF SAID LAND AS CONTAINED WITHIN EAST 168TH AVENUE, COUNTY OF ADAMS, STATE OF COLORADO.

PARCEL TWO:
 THE NORTHEAST 1/4 OF THE SOUTHWEST 1/4 OF SECTION 3, TOWNSHIP 1 SOUTH, RANGE 67 WEST OF THE SIXTH PRINCIPAL MERIDIAN, EXCEPTING THEREFROM, THAT PORTION AS CONTAINED WITHIN THE SIGNAL DITCH AS THE SAME NOW EXISTS ON SAID LAND, COUNTY OF ADAMS, STATE OF COLORADO.

PARCEL THREE:
 THAT PART OF THE NORTHWEST 1/4 OF THE SOUTHWEST 1/4 OF SECTION 3, TOWNSHIP 1 SOUTH, RANGE 67 WEST OF THE 6TH PRINCIPAL MERIDIAN, COUNTY OF ADAMS, STATE OF COLORADO, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:
 BEGINNING AT THE NORTHEAST CORNER OF THE NORTHWEST 1/4 OF THE SOUTHWEST 1/4 OF SAID SECTION 3;
 THENCE WEST ALONG THE NORTH LINE OF SAID NORTHWEST 1/4 OF THE SOUTHWEST 1/4 A DISTANCE OF 152.00 FEET;
 THENCE S21°57'00"E 413.00 FEET TO A POINT ON THE EAST LINE OF SAID NORTHWEST 1/4 OF THE SOUTHWEST 1/4;
 THENCE NORTH 383.00 FEET ALONG SAID EAST LINE TO THE TRUE POINT OF BEGINNING, COUNTY OF ADAMS, STATE OF COLORADO

PARCELS ONE, TWO, AND THREE ALSO DESCRIBED AS FOLLOWS:
 A PARCEL OF LAND LOCATED IN SECTION 3, TOWNSHIP 1 SOUTH, RANGE 67 WEST OF THE 6TH PRINCIPAL MERIDIAN, COUNTY OF ADAMS, STATE OF COLORADO, MORE PARTICULARLY DESCRIBED AS FOLLOWS:
BASIS OF BEARINGS: BEARINGS ARE BASED ON THE ASSUMPTION THAT THE NORTH LINE OF THE NORTHWEST 1/4 OF SECTION 3 BEING N 89°32'59" E AND MONUMENTED AS FOLLOWS:
 -NORTHWEST CORNER OF SECTION 3, BEING A FOUND 3.25" ALUMINUM CAP PLS 38285, PARTIALLY ILLEDGIBLE, PER MONUMENT RECORD DATED 1-27-15.
 -NORTH 1/4 CORNER OF SECTION 3, BEING A POUND 2" ALUMINUM CAP, PLS 25937, PER MONUMENT RECORD DATED 2-23-18.
BEGINNING THE NORTHWEST CORNER OF SECTION 3;
 THENCE N 89°32'59" E ALONG THE NORTH LINE OF THE NORTHWEST 1/4 OF SAID SECTION 3 A DISTANCE OF 2633.02 FEET TO THE NORTH 1/4 CORNER OF SAID SECTION 3;
 THENCE N 89°33'48" E ALONG THE NORTH LINE OF THE NORTHEAST 1/4 OF SAID SECTION 3 A DISTANCE OF 422.14 FEET TO THE NORTHWEST CORNER OF THAT PARCEL OF LAND RECORDED AT RECEPTION NO. 2007000035868;
 THENCE S 00°26'26" E ALONG THE WESTERLY BOUNDARY OF SAID PARCEL OF LAND RECORDED AT RECEPTION NO. 2007000035868 A DISTANCE OF 2385.00 FEET TO A POINT ON THE SOUTH LINE OF SAID NORTHEAST 1/4 OF SECTION 3;
 THENCE S 89°37'55" W ALONG SAID SOUTH LINE OF THE NORTHEAST 1/4 OF SECTION 3 A DISTANCE OF 422.14 FEET TO THE CENTER 1/4 CORNER OF SAID SECTION 3;
 THENCE S 00°36'01" E ALONG THE EAST LINE OF THE NORTHEAST 1/4 OF THE SOUTHWEST 1/4 OF SAID SECTION 3 A DISTANCE OF 1322.50 FEET TO THE CENTER-SOUTH 1/16 CORNER OF SAID SECTION 3;
 THENCE S 89°36'00" W ALONG THE SOUTH LINE OF SAID NORTHEAST 1/4 OF THE SOUTHWEST 1/4 OF SECTION 3 A DISTANCE OF 1322.04 FEET TO THE SOUTHWEST 1/16 CORNER OF SAID SECTION 3;
 THENCE N 00°27'55" W ALONG THE WEST LINE OF SAID NORTHEAST 1/4 OF THE SOUTHWEST 1/4 SECTION 3 A DISTANCE OF 941.36 FEET TO A POINT ON THE EASTERLY BOUNDARY OF THAT PARCEL OF LAND RECORDED AT RECEPTION NO. 2015000035780;
 THENCE N 22°03'34" W ALONG SAID EASTERLY BOUNDARY A DISTANCE OF 412.40 FEET TO A POINT ON THE SOUTH LINE OF SAID NORTHWEST 1/4 OF SECTION 3;
 THENCE S 89°41'50" W ALONG SAID SOUTH LINE A DISTANCE OF 1167.06 FEET TO THE WEST 1/4 CORNER OF SAID SECTION 3;
 THENCE N 00°19'36" W ALONG THE WEST LINE OF SAID NORTHWEST 1/4 OF SECTION 3 A DISTANCE OF 2378.05 FEET TO THE **POINT OF BEGINNING**;
 EXCEPTING THEREFROM, ANY PORTION OF SAID LAND AS CONTAINED WITHIN EAST 168TH AVENUE. EXCEPTING THEREFROM, THAT PORTION AS CONTAINED WITHIN THE SIGNAL DITCH AS THE SAME NOW EXISTS ON SAID LAND, COUNTY OF ADAMS, STATE OF COLORADO.
 THE ABOVE DESCRIBED PARCEL CONTAINS A GROSS AREA OF 9,059,142 SQUARE FEET OR 207.9693

OWNER:
 SELTZER FARMS INVESTMENT, LLC

GUILLAME POUCHOT AS MANAGER

NOTARY:
 THE OWNERS SIGNATURE(S) SHALL BE ACKNOWLEDGED AS FOLLOWS:
 STATE OF _____
 COUNTY OF _____

THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME THIS ____ DAY OF _____, 20__.

WITNESS MY HAND AND SEAL _____

MY COMMISSION EXPIRES _____

TITLE CERTIFICATE:

I, _____, AN AUTHORIZED REPRESENTATIVE OF FIDELITY NATIONAL TITLE INSURANCE COMPANY DULY FORMED AND EXISTING PURSUANT TO THE STATUES OF COLORADO FOR THE PURPOSE OF INSURING TITLES TO REAL PROPERTY IN COLORADO, DO HEREBY CERTIFY THAT I HAVE EXAMINED THE TITLE OF ALL THE LANDS HEREIN ABOVE INDICATED AND SHOWN UPON THE WITHIN PLAT AS PUBLIC WAYS AND EASEMENTS AND THAT THE TITLE TO SUCH LANDS IS THAT OF THE DEDICATOR'S, FREE AND CLEAR OF ALL LIENS AND ENCUMBRANCES OF RECORD, EXCEPT THOSE LIENS AND ENCUMBRANCES SHOWN IN TITLE INSURANCE COMMITMENT FILE NO. 100-N0037848-020-CN1, AMENDMENT NO. 7 WITH AN EFFECTIVE DATE OF JANUARY 29, 2024.

SIGNED AND DATED THIS ____ DAY OF _____, 20__.

FIDELITY NATION TITLE INSURANCE COMPANY:

SIGNATURE _____
 NAME _____
 TITLE _____

SURVEYOR'S CERTIFICATE:
 I, CHRISTOPHER H. McELVAIN, A REGISTERED LAND SURVEYOR IN THE STATE OF COLORADO, DO HEREBY CERTIFY THAT THE SURVEY OF SELTZER FARMS FILING NO. 1 SUBDIVISION WAS MADE UNDER MY SUPERVISION AND THE ACCOMPANYING PLAT ACCURATELY AND PROPERLY SHOWS SAID SUBDIVISION.

CHRISTOPHER H. McELVAIN, P.L.S. 36561
 FOR AND ON BEHALF OF KT ENGINEERING, LLC

PLANNING COMMISSION:
 RECOMMENDED BY THE ADAMS COUNTY PLANNING COMMISSION THIS ____ DAY OF _____, 20__.

CHAIR _____

BOARD OF COUNTY COMMISSIONERS:
 RECOMMENDED BY THE ADAMS COUNTY BOARD OF COMMISSIONERS THIS ____ DAY OF _____, 20__.

CHAIR _____

ADAMS COUNTY ATTORNEY'S OFFICE:

APPROVED AS TO FORM _____

SELTZER FARMS FILING NO. 1
 PRELIMINARY LANDSCAPE PLANS
 ADAMS COUNTY, COLORADO

Issue Date: 02/09/2024

REVISIONS:	DATE:
1 2ND SUBMITTAL	4/29/24
2 3RD SUBMITTAL	8/23/24
3	

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Sheet Name
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Sheet Number

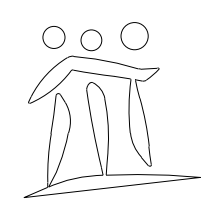
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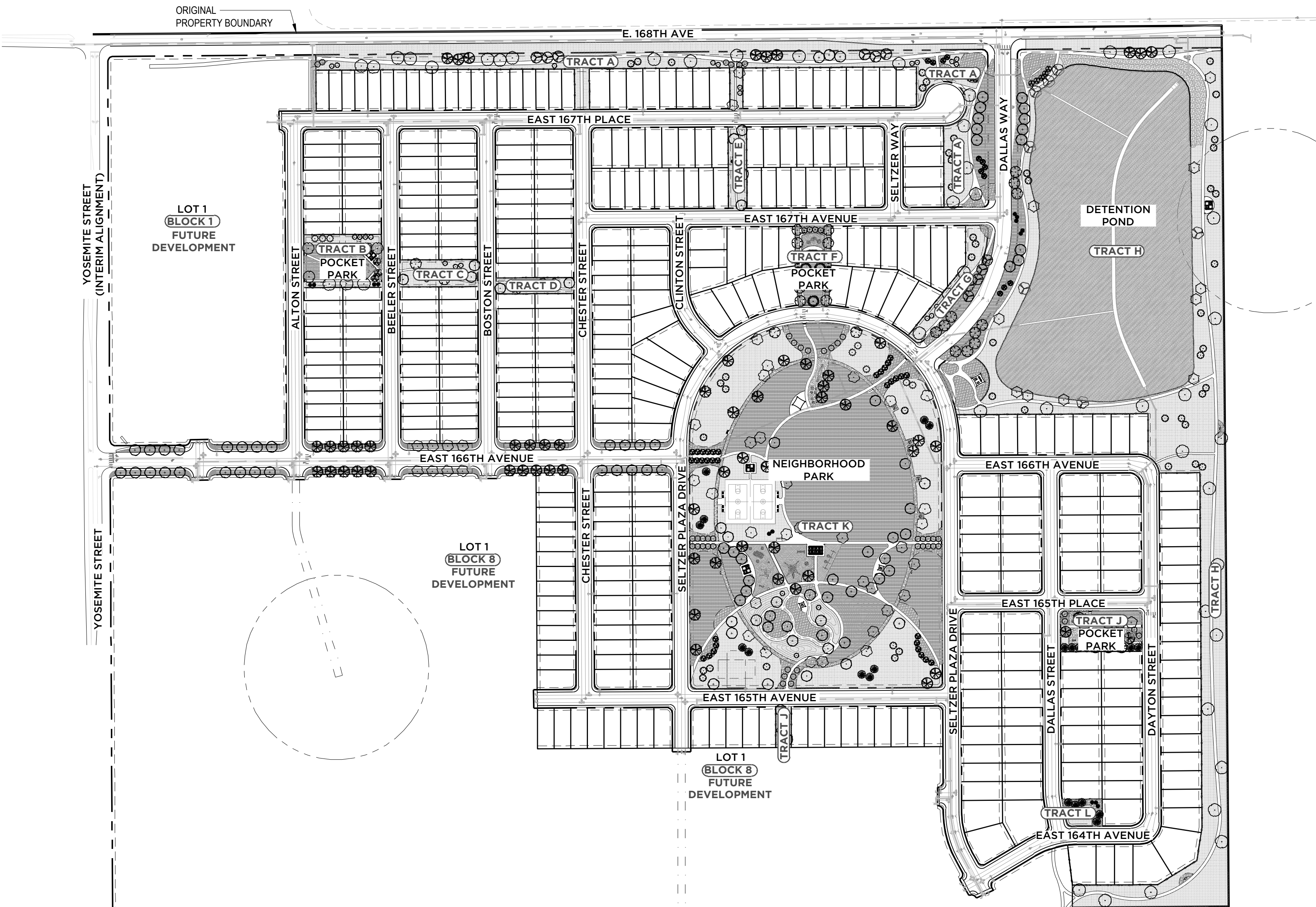
SHEET INDEX	
SHEET NUMBER	SHEET TITLE
L0.0	COVER SHEET
L0.1	OVERALL SITE PLAN
L0.2-L0.3	DEVELOPMENT STANDARDS
L0.4	FENCE PLAN
L1.0	PLANT SCHEDULE & CALCULATIONS
L1.1 - L1.17	LANDSCAPE PLANS
L2.0 - L2.3	LANDSCAPE & SITE DETAILS

DEVELOPER
 REMINGTON HOMES
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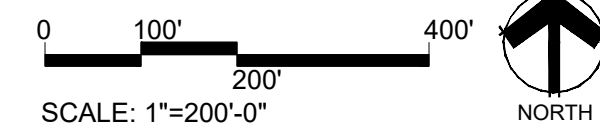
PLANNER/LANDSCAPE ARCHITECT
 PCS GROUP, INC.
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 PHONE: 303.531.4905
 JOHN PRESTWICH

CIVIL ENGINEER/SURVEYOR
 KT ENGINEERING, INC.
 12500 W. 58TH AVE #230
 ARVADA, CO 80002
 PHONE: 720.638.5190
 KEN TOLAND





OPEN SPACE TABULATIONS			
DESCRIPTION	REQUIRED AREA (AC.)	PROPOSED AREA (AC.)	% OF TOTAL
TOTAL TODD CREEK A MENDMENT PUD AREA	555.2	555.2	100.0%
OPEN SPACE REQUIRED (30%)	166.56	240.5	43.3%
ACTIVE OPEN SPACE REQUIRED (25% OF OPEN SPACE)	41.64	68.2	28.4%
SELTZER FARMS FIL. NO. 1 TOTAL AREA - 207.97			
	AREA (AC.)	OPEN SPACE (AC.)	% OF TOTAL PD AREA
FUTURE DEVELOPMENT: LOT 1/BLOCK 1 & BLOCK 8	95.73	N/A	N/A
DEDICATED PUBLIC R.O.W.	28.32	N/A	N/A
FILING NO. 1 PD AREAS OF DEVELOPMENT	83.92	37.74	45.0%



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Sheet Name
OVERALL SITE PLAN

Sheet Number
L0.1

DEVELOPMENT STANDARDS

Residential Single Family District: SFd - Single Family Residential

Purpose: Residential district:

Exclusively single-family detached dwellings including the potential for ADU units.

General Requirements - Single Family Detached:

Minimum Frontage Width at Building Line:

Front Load Single Family Dwelling - 40' (45' corner lots).

Rear Load Single Family Dwelling - 30' (35' corner lots).

Maximum Gross Residential Density: 5.5 units per acre.

Minimum Lot Depth: 90'

Minimum Setback from property line for a Dwelling or ADU - Front Load:

Front: 12' to the Principal Building, 18' to the Garage Face.

Side: 5' - (10' on corner lot on local street).

Rear: 10' to Principal Building, 20' between structures

Minimum Setback from property line for a Dwelling or ADU - Rear Load:

Front: 8' to the Principal Building, (50' on state highway or arterial street).

Side: 5' - (10' on corner lot on local street).

Rear: 0' with no permitted encroachments, 20' between structures.

Minimum Setback from property line for Accessory Building:

Front: Equal to principal dwelling on the lot.

Side: 5'; 25' from street on corner lot.

Rear: 5'

Minimum Setback from State Highway or Arterial Street for a Dwelling, ADU or Accessory Building: 50'

Maximum Height - Dwelling or ADU: 35', Accessory; 16'

Maximum total size of all accessory buildings is 900 square feet.

A maximum of one single-family dwelling is permitted on each individual lot.

Minimum Floor Area: 1,250 square feet.

SFd Lots within the Todd Creek PUD Amendment are exempt from Adams County Code Section

4-23-01-01 – 2. Lot Depth Ratio.

A single-family residence located within this District shall be compatible in architectural design with the adjacent properties; and not monotonous in appearance to adjacent properties.

Design Review Criteria.

The home should be displayed toward the street in a compatible manner with surrounding homes through location of windows, doors, other architectural features, or landscaping. This will be reviewed through an examination of the side of the home facing the street.

The exterior materials of the resident shall be compatible with adjacent properties. This feature will be reviewed by examining exterior materials described and determining whether the proposed building material is compatible with adjacent homes.

The home must not have a monotonous appearance in relation to the adjacent properties. This will be determined by examining application materials. Consideration will be given to the variation in setbacks, architectural features, landscaping accents, or accessory structures proposed to achieve the required appearance. If the Department determines that any one of these four criteria has not been met in the Planning Review, the application will be referred to the Planning Commission for Final Review.

SPECIAL NOTES:

Any minimum development and performance standards not mentioned in this PD or within the Todd Creek Major PUD Amendment, shall conform to the Adams County Zoning Regulations dated December 8, 2020.

LOT TYPICALS

CASE NO. PRC2023-00020

Prepared For

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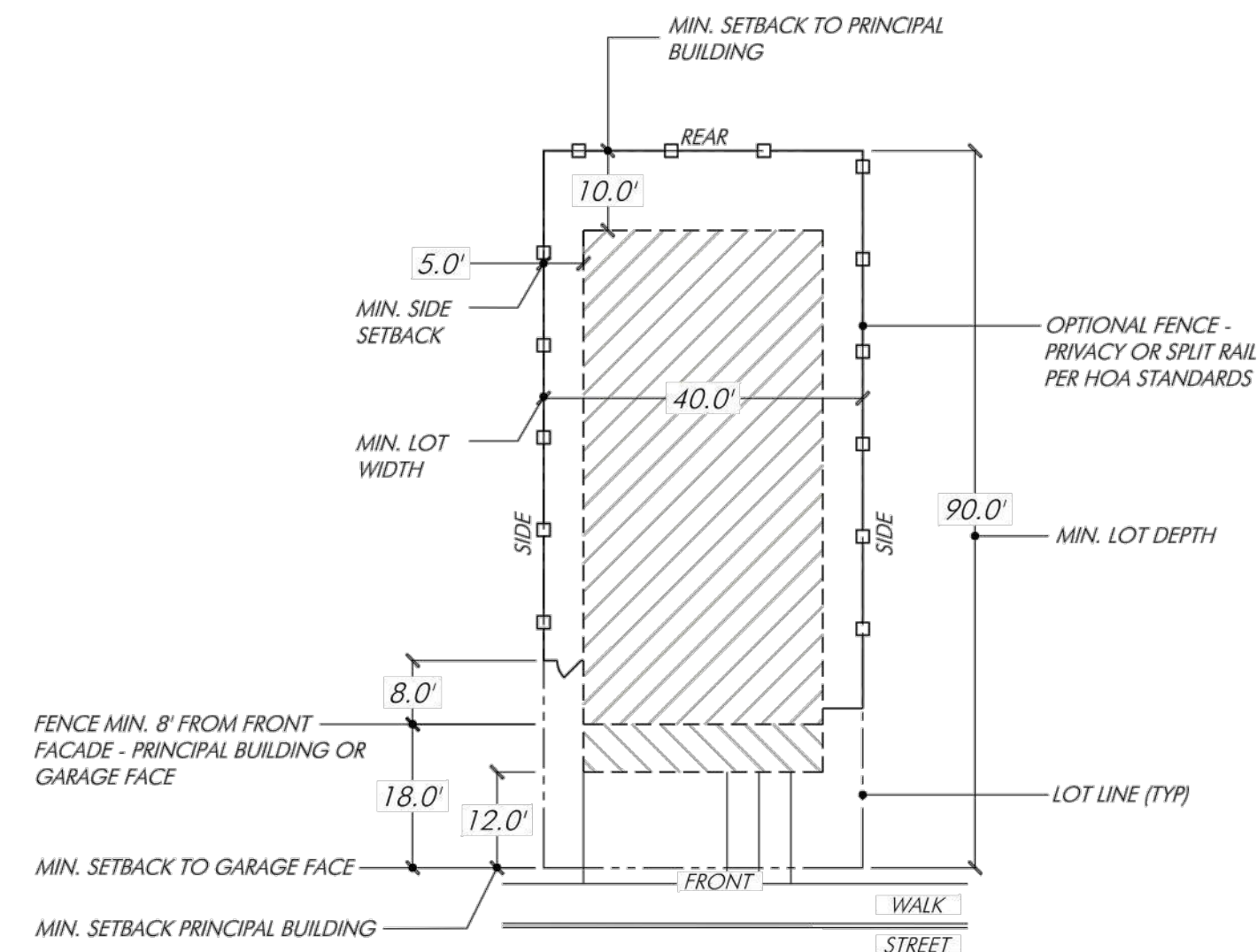
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Sheet Name

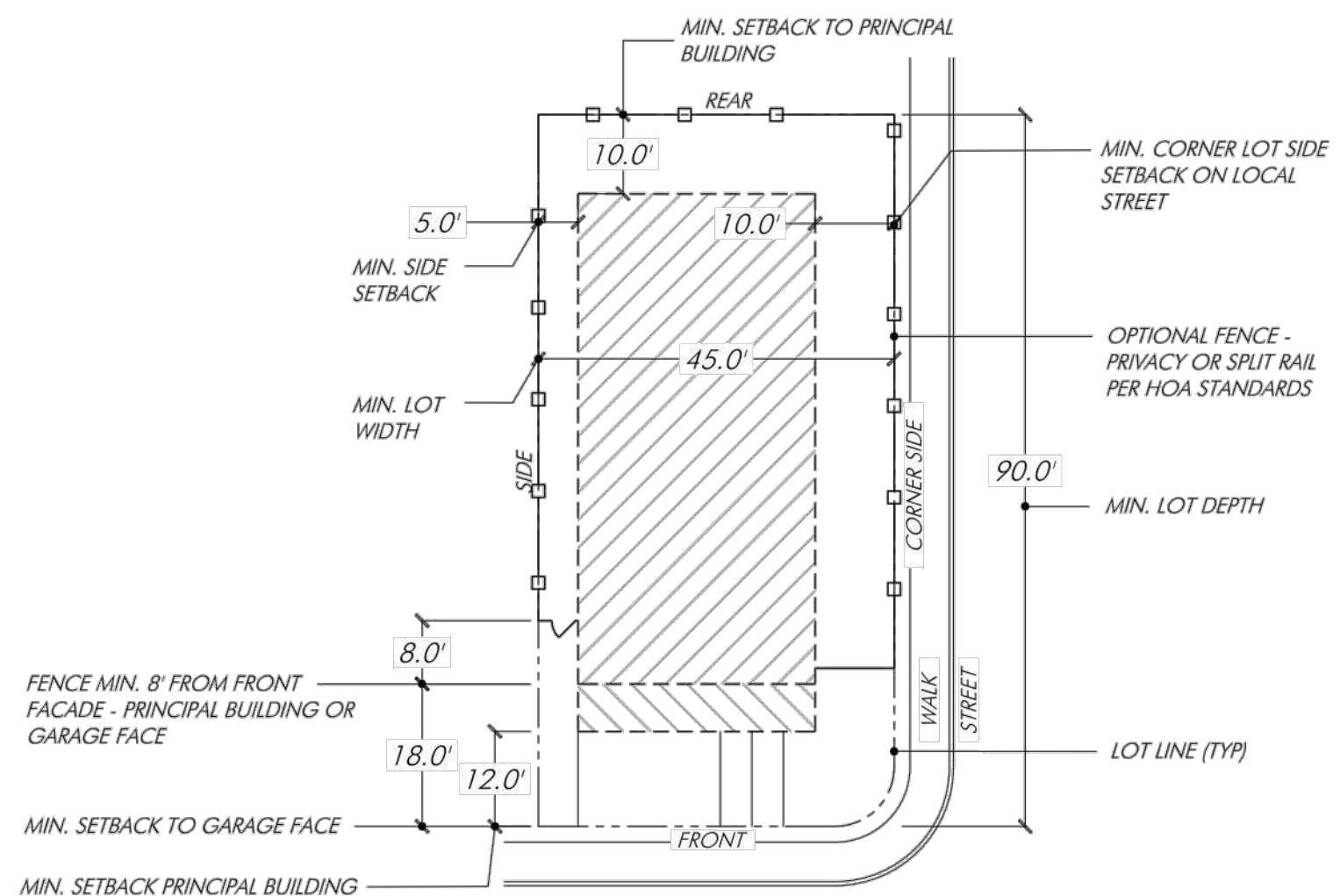
DEVELOPMENT STANDARDS

Sheet Number

L0.2



SFd -
MINIMUM LOT SIZE
40x90'
FRONT LOAD



SFd -
MINIMUM LOT SIZE
45x90'
FRONT LOAD
CORNER LOT

DEVELOPMENT STANDARDS

Residential Single Family District: SFa - Single Family Residential - Detached & Attached
 Purpose: Residential district:
 A residential area which permits both detached and attached Single Family Residential.

General Requirements - Single Family Detached:
 Refer to SFd - Single Family Detached Residential Requirements

General Requirements - Single Family Attached - Front Load Duplex:

Minimum Setback from property line:

Front: 18' to garage door facing R.O.W.
 12' to the principal building
 8' if the Front faces a park, open space, or green court.
 (Maintaining off-street parking requirement)

Side (End units only): 5' to lot line minimum.
 10' minimum to street R.O.W.

Rear: 10' minimum to rear lot line.
 20' minimum to street R.O.W.

Minimum Distances Between Buildings:

Side - Side orientation: 10'.
 Side - Rear orientation: 20'.
 Rear - Rear orientation: 20'.

Minimum Setback from State Highway or Arterial Street for a Dwelling, ADU or Accessory Building: 50'

Maximum Building Height: 35'.

Minimum Lot Frontage Width at Building Line:

Front Loaded Duplex - 35' (40' corner lots)

Minimum Lot Area:

Front Loaded Duplex - 3,150 sq.ft.

SFa Lots within the Todd Creek PUD Amendment are exempt from Adams County Code Section 4-23-01-01 - 2. Lot Depth Ratio.

A single-family residence located within this District shall be compatible in architectural design with the adjacent properties; and not monotonous in appearance to adjacent properties.

The design review process as described below shall be used to determine if a single-family home meets these neighborhood design requirements.

Design Review Criteria.

The home should be displayed toward the street in a compatible manner with surrounding homes through location of windows, doors, other architectural features, or landscaping. This will be reviewed through an examination of the side of the home facing the street.

The exterior materials of the resident shall be compatible with adjacent properties.

This feature will be reviewed by examining exterior materials described and determining whether the proposed building material is compatible with adjacent homes.

The home must not have a monotonous appearance in relation to the adjacent properties. This will be determined by examining application materials.

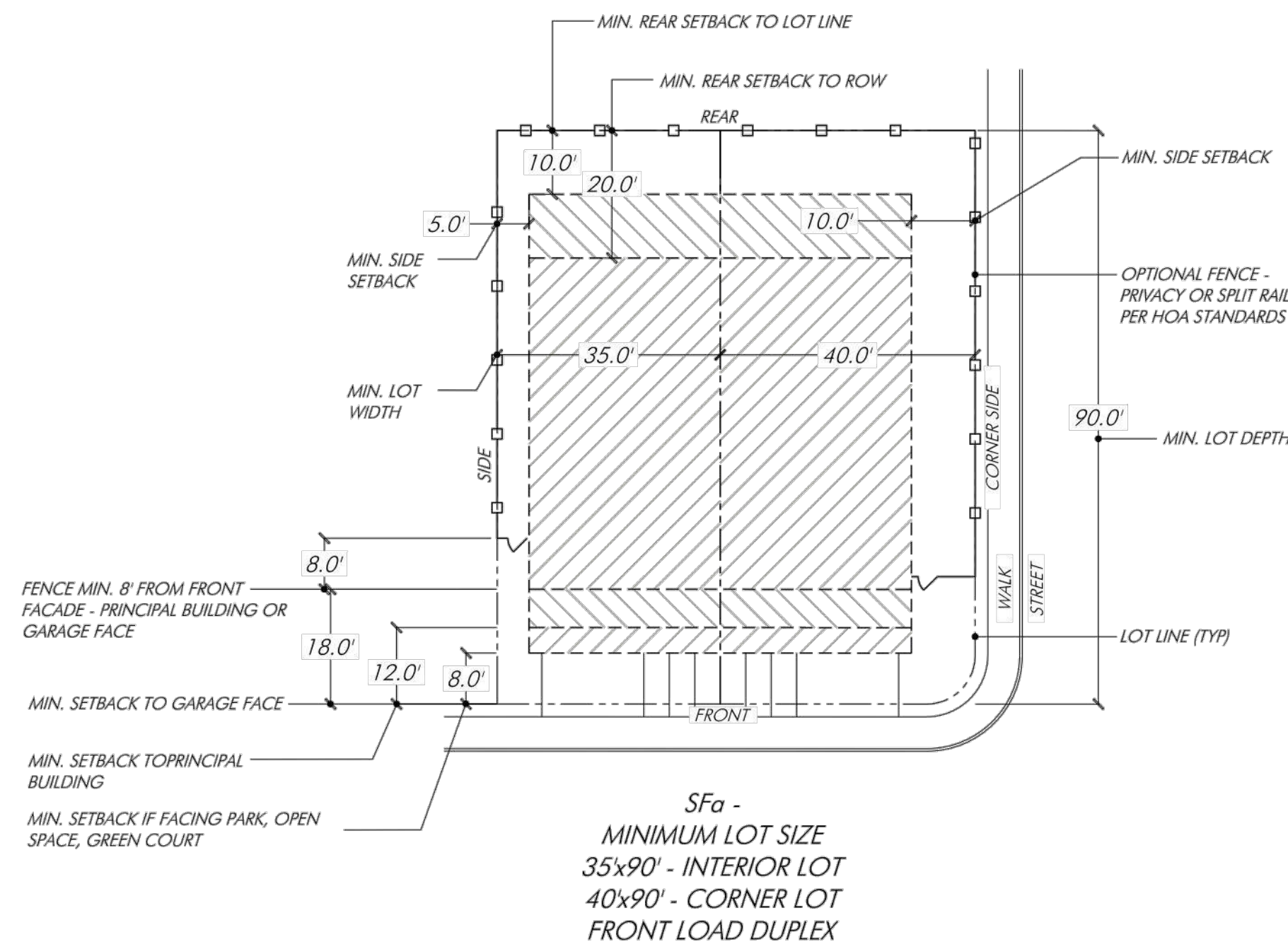
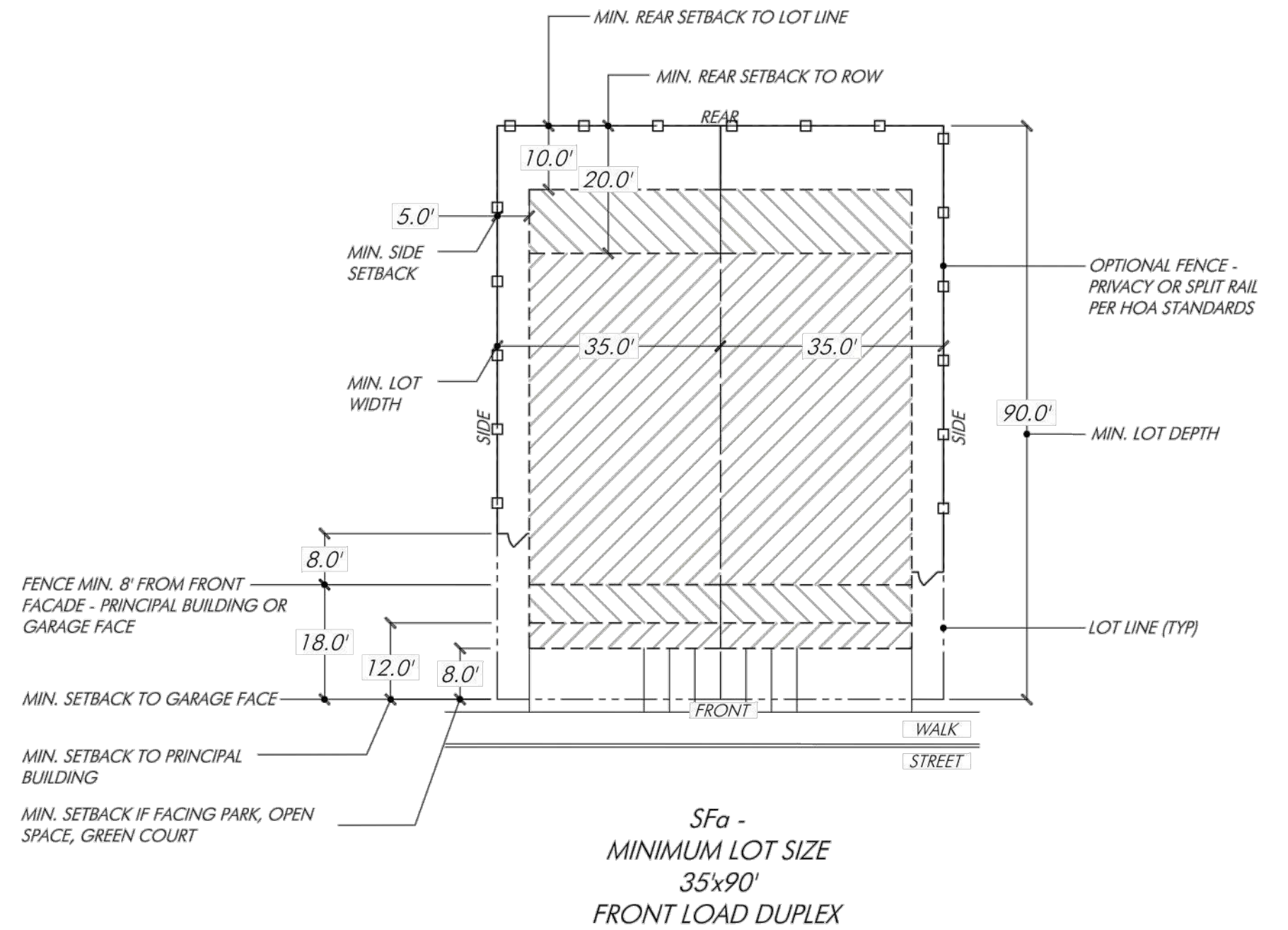
Consideration will be given to the variation in setbacks, architectural features, landscaping accents, or accessory structures proposed to achieve the required appearance. If the Department determines that any one of these four criteria has not been met in the Planning Review, the application will be referred to the Planning Commission for Final Review.

SPECIAL NOTES:

Any minimum development and performance standards not mentioned in this PD or within the Todd Creek Major PUD Amendment, shall conform to the Adams County Zoning Regulations dated December 8, 2020.

LOT TYPICALS

CASE NO. PRC2023-00020



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Sheet Name
 DEVELOPMENT STANDARDS

Sheet Number
L0.3

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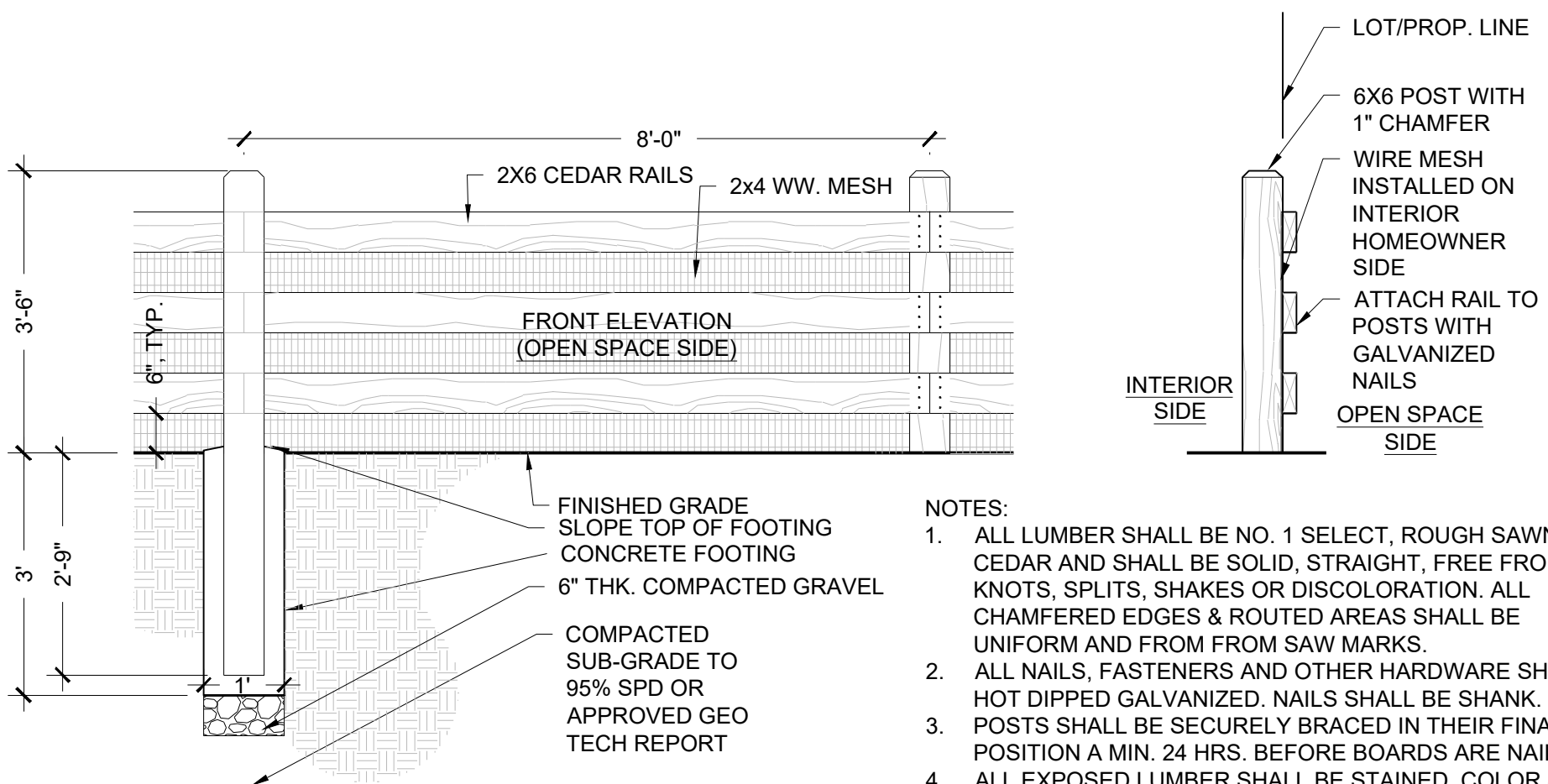
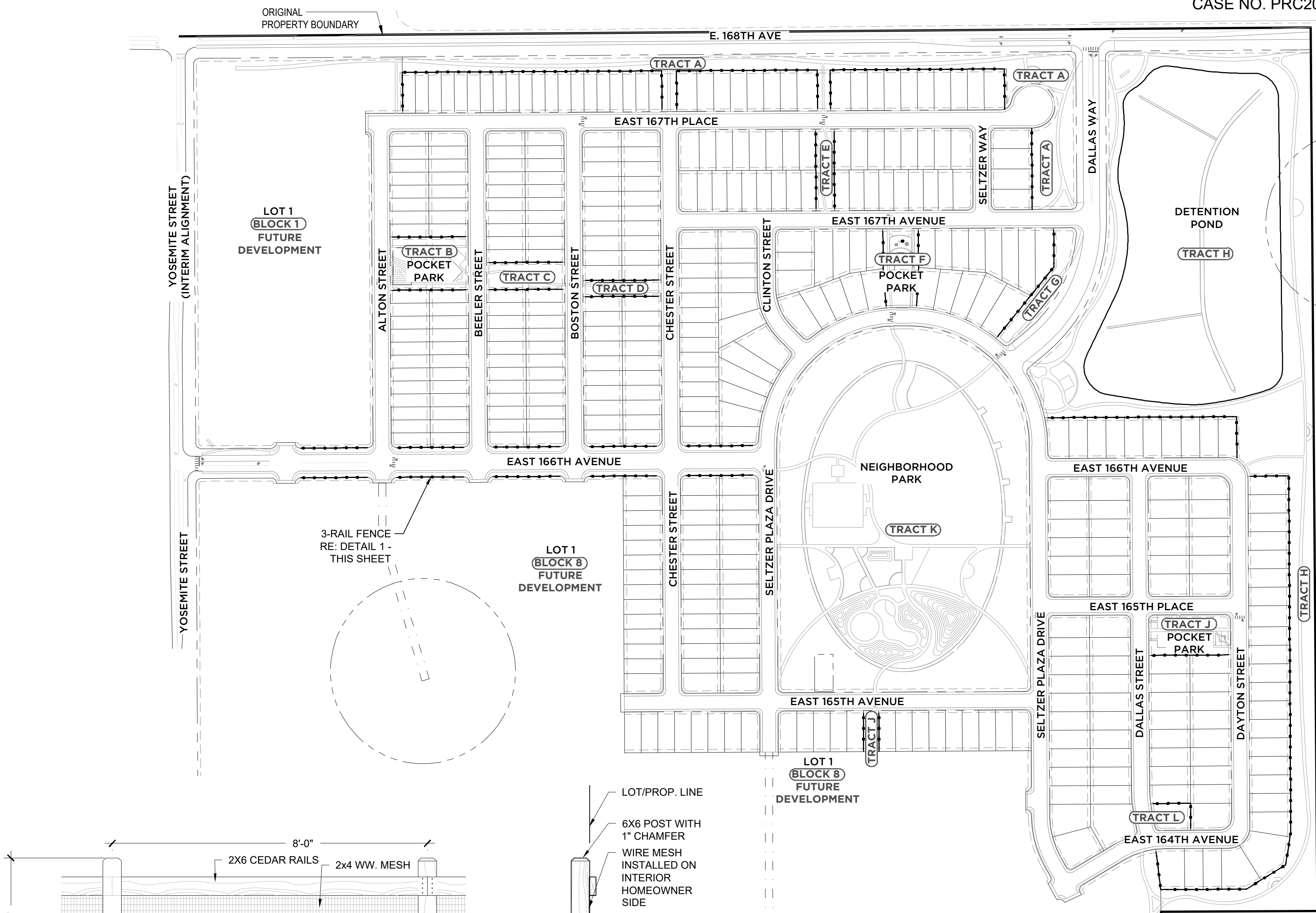
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FENCE PLAN

L0.4



- NOTES:
1. ALL LUMBER SHALL BE NO. 1 SELECT, ROUGH SAWN CEDAR AND SHALL BE SOLID, STRAIGHT, FREE FROM KNOTS, SPLITS, SHAKES OR DISCOLORATION. ALL CHAMFERED EDGES & ROUTED AREAS SHALL BE UNIFORM AND FROM FROM SAW MARKS.
 2. ALL NAILS, FASTENERS AND OTHER HARDWARE SHALL BE HOT DIPPED GALVANIZED. NAILS SHALL BE SHANK.
 3. POSTS SHALL BE SECURELY BRACED IN THEIR FINAL POSITION A MIN. 24 HRS. BEFORE BOARDS ARE NAILED.
 4. ALL EXPOSED LUMBER SHALL BE STAINED. COLOR SHALL BE SELECTED BY ARC.

1 3-RAIL FENCE

NOT TO SCALE



PLANT & GROUND COVER SCHEDULE

CASE NO. PRC2023-00020

Prepared For

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Sheet Name

PLANT SCHEDULE

Sheet Number

L1.0

SEED & SOD MIXES

DRYLAND MIX

COMMON NAME	%MIX
COMMON WHEATGRASS	20%
SLENDER WHEATGRASS	15%
MEADOW FESCUE	10%
PUBESCENT WHEATGRASS	10%
HARD FESCUE	10%
CANADA BLUEGRASS	10%
INDIAN GRASS	8%
SIDEOATS GRAMA	7%
BLUE GRAMA	5%
SWITCHGRASS	5%
	100%

SEED RATE: 15-20 LBS/AC. (DRILLED)
SUPPLIER: ARKANSAS VALLEY SEED

WETLAND MIX

COMMON NAME	%MIX
CANADA WILD RYE	21%
SLENDER WHEATGRASS	14%
SAND BLUESTEM	21%
SIDEOATS GRAMA	14%
PRAIRIE DROPSEED	7%
SWITCHGRASS	6%
SAND DROPSEED	1%
ANALOGUE SEDGE	1%
AWLFRUIT SEDGE	1%
INLAND SALTGRASS	7%
CALIFORNIAL POPPY	7%
	100%

SEED RATE: 14-16 LBS/AC. (DRILLED)
SUPPLIER: ARKANSAS VALLEY SEED

IRRIGATED SOD

PRODUCT: 'ENVIROTURF'
SUPPLIER: TURF MASTER

RIGHT OF WAY LANDSCAPE TABULATIONS			
STREET ROW	ROW LENGTH	TREES	
		Required*	Provided
168th Ave	2342'	59	59
East 166th Avenue (from Yosemite Street to Seltzer Plaza Drive)	2106'	53	53
Dallas Way	1665'	42	42
TOTAL		154	154

*Notes:
 1) Based on the Todd Creek PUD Amendment, there shall be one (1) street tree per forty (40) linear feet of frontage.
 2) The ROW trees lie between the edge of flowline to the edge of walk.
 3) Except along 168th St, the County prefers the trees to be out of the ROW. The ROW trees were determined from ROW to back of lot line.

CODE	QTY	COMMON / BOTANICAL NAME	ROOT	CALIPER/HT.
DECIDUOUS TREES				
UA	3	Allee Lacebark Elm / Ulmus parvifolia 'Allee'	B & B	2"Cal
AE	9	American Elm / Ulmus x 'Frontier'	B & B	3"Cal
QM	48	Burr Oak / Quercus macrocarpa	B & B	2"Cal
CO	23	Common Hackberry / Celtis occidentalis	B & B	3"Cal
AE2	3	Emerald Queen Maple / Acer platanoides 'Emerald Queen'	B & B	2"Cal
UE	4	Emerald Sunshine Elm / Ulmus propinqua 'Emerald Sunshine'	B & B	2"Cal
QR	6	English Oak / Quercus robur	B & B	2"Cal
GL	24	Greenspire Littleleaf Linden / Tilia cordata 'Greenspire'	B & B	3"Cal
GK	36	Kentucky Coffee Tree - 'Espresso' / Gymnocladus dioica 'Espresso'	B & B	3"Cal
PB3	7	London Plane Tree / Platanus x acerifolia 'Bloodgood'	B & B	2"Cal
AS	24	Miyabei Maple / Acer miyabei 'State Street'	B & B	2"Cal
CS	5	Northern Catalpa / Catalpa speciosa	B & B	3"Cal
QS	60	Shumard Red Oak / Quercus shumardii	B & B	3"Cal
AF	5	Sugar Maple / Acer saccharum 'Fall Fiesta'	B & B	2"Cal
GI3	40	Sunburst Common Honeylocust / Gleditsia triacanthos inermis 'Sunburst'	B & B	3"Cal
QB	10	Swamp White Oak / Quercus bicolor	B & B	2"Cal

CODE	QTY	COMMON / BOTANICAL NAME	ROOT	CALIPER/HT.
EVERGREEN TREES				
PN3	21	Austrian Black Pine / Pinus nigra	B & B	6'-8' Ht
PGD	32	Black Hills Spruce / Picea glauca densata	B & B	6' Ht. Min.
PH3	29	Bosnian Pine / Pinus heldreichii	B & B	6' Ht. Min.
PP6-8	49	Ponderosa Pine / Pinus ponderosa	B & B	6'-8' Ht
PS	8	Scotch Pine / Pinus sylvestris	B & B	6' Ht. Min.
VP	8	Vanderwolf's Pyramid Pine / Pinus flexilis 'Vanderwolf's Pyramid'	B & B	6' Ht. Min.

CODE	QTY	COMMON / BOTANICAL NAME	ROOT	CALIPER/HT.
ORNAMENTAL TREE				
AG2	10	'Autumn Brilliance' Serviceberry / Amelanchier x grandiflora 'Autumn Brilliance'	B & B	6'-8' Clump
WKH	40	'Winter King' Hawthorn / Crataegus viridis 'Winter King'	B & B	1.5"Cal
AG	33	Flame Amur Maple / Acer ginnala 'Flame'	Clump	6'-8' Clump
AH	4	Hot Wings Tatarian Maple / Acer tataricum 'Hot Wings'	B & B	6'-8' Clump
AP	8	Pattern Perfect Tatarian Maple / Acer tataricum 'Pattern Perfect'	B & B	2"Cal
CI2	5	Thornless Hawthorn / Crataegus crus-galli 'Inermis'	B & B	1.5"Cal
PT	4	Toka Plum / Prunus x americana Toka	B & B	2"Cal

SYMBOL	QTY	COMMON / BOTANICAL NAME	CONT
GROUND COVERS			
	31,225 sf	CRUSHER FINES / GREY BREEZE	SF
	377,476 sf	DETENTION SEED MIX / DETENTION SEED MIX	SF
	18,358 sf	FIBAR / FIBAR	SF
	678,694 sf	NATIVE SEED / LOW GROW MIX	seed
	9,490 sf	PLAY SURFACING / POURED-IN-PLACE RUBBER	SF
	5,266 sf	RIVER COBBLE / 3"-6" GREY ROSE COBBLE	mulch
	98,700 sf	SHRUB BED / SHRUB BED	mulch
	361,579 sf	SOD / RTF WATER SAVER SOD OR EQUAL	sod

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Sheet Name
LANDSCAPE PLAN

Sheet Number
L1.1

LEGEND

- RIGHT OF WAY
- EASEMENT
- STEEL EDGER
- DUG SPADE EDGE
- FENCE

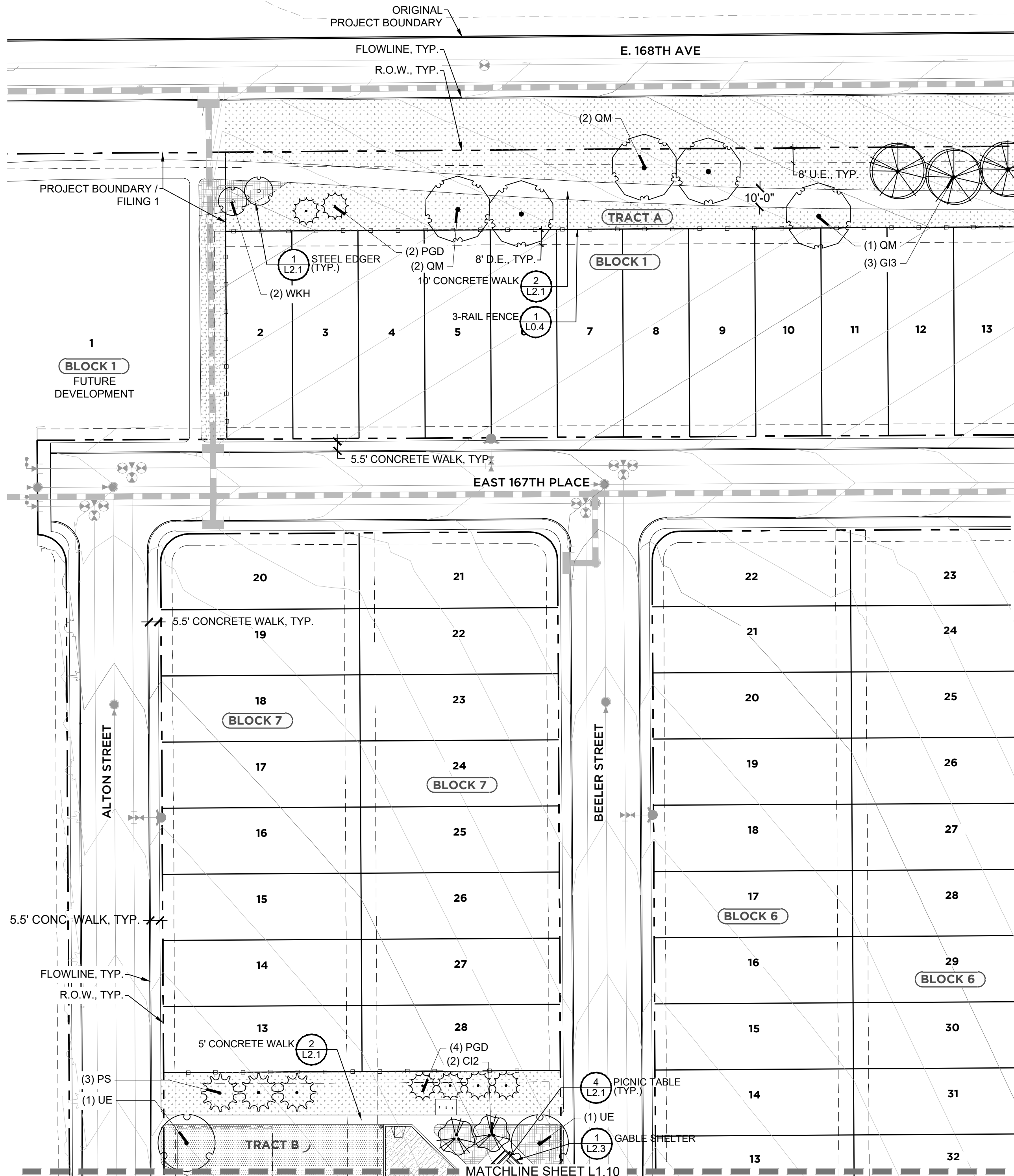
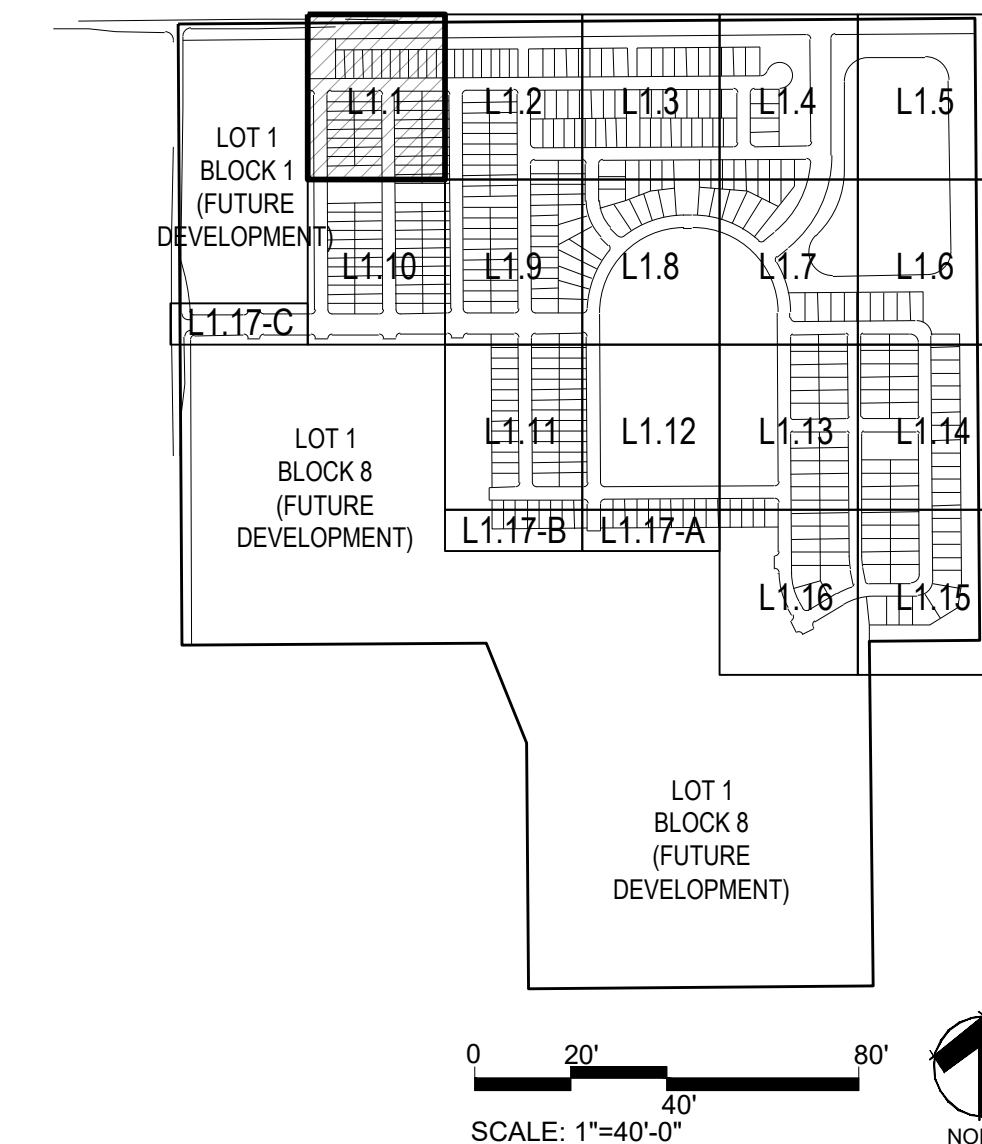
GROUND COVERS

- BLUEGRASS SOD
- FIBAR
- PLAY SURFACING
- PEA GRAVEL, COLOR: MULTI/GREY
- ROCK MULCH, 2"- 4" COBBLE
- DETENTION SEED MIX
- NATIVE SEED MIX
- SHRUB BEDS

NOTES:

- NO FENCES OR STRUCTURES WILL BE ALLOWED WITHIN SIGHT TRIANGLES. TREES WITHIN THE SIGHT TRIANGLES SHALL BE LIMBED UP 8' FROM THE GROUND.
- SHRUBS & PERENNIALS WITHIN SIGHT TRIANGLES WILL BE NO HIGHER THAN 2'
- TREES ARE NOT TO BE PLANTED WITHIN 10' OF EITHER SIDE OF WATER, SEWER, OR STORM DRAIN MAIN LINES OR WITHIN 5' OF EITHER SIDE OF WATER AND SEWER LINES.

KEY MAP (NOT TO SCALE)



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Sheet Name
LANDSCAPE PLAN

Sheet Number

L1.2

LEGEND

- RIGHT OF WAY
- - - - - EASEMENT
- - - - - STEEL EDGER
- - - - - DUG SPADE EDGE
- ○ ○ ○ ○ FENCE

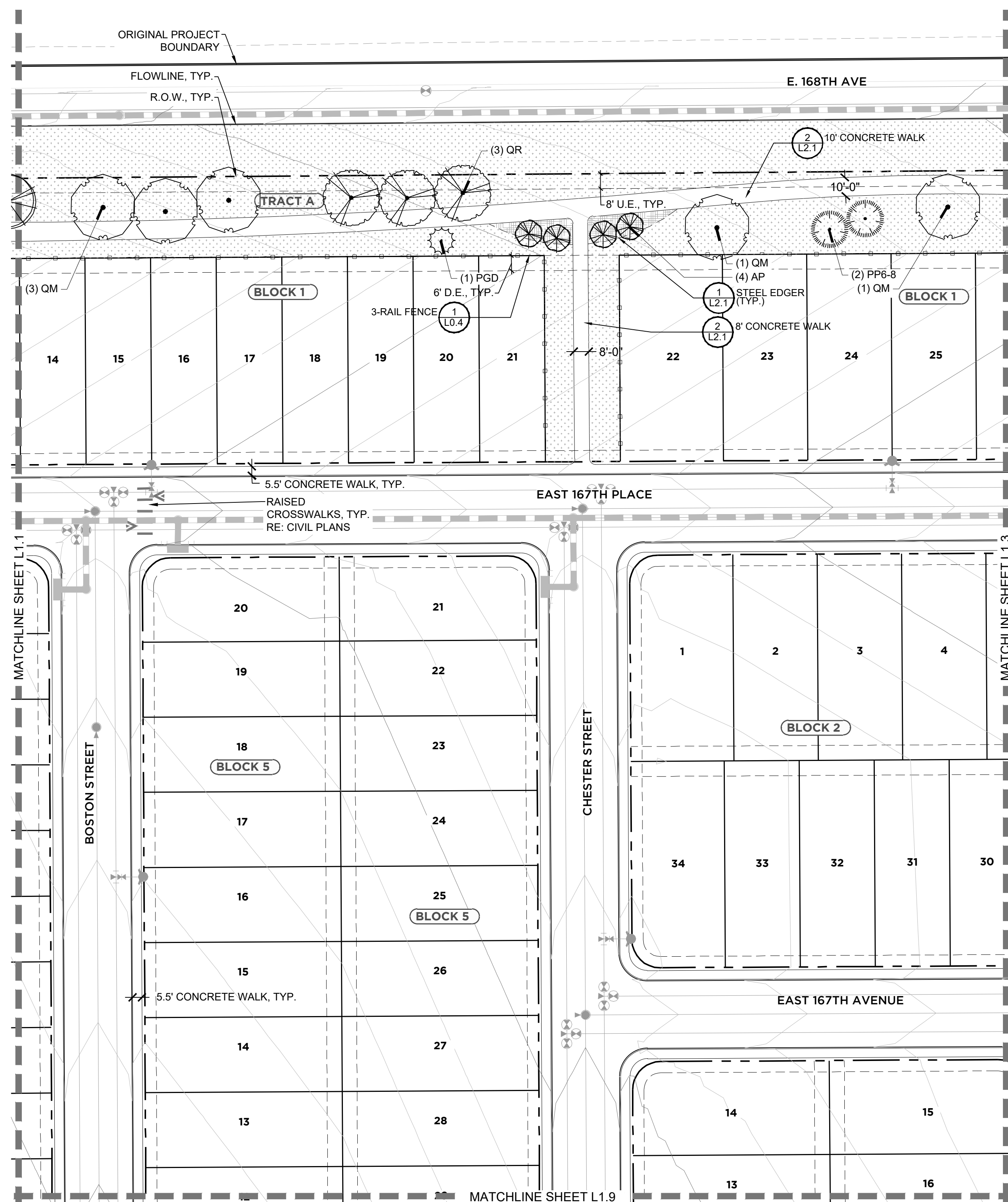
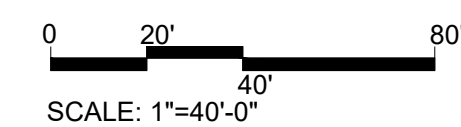
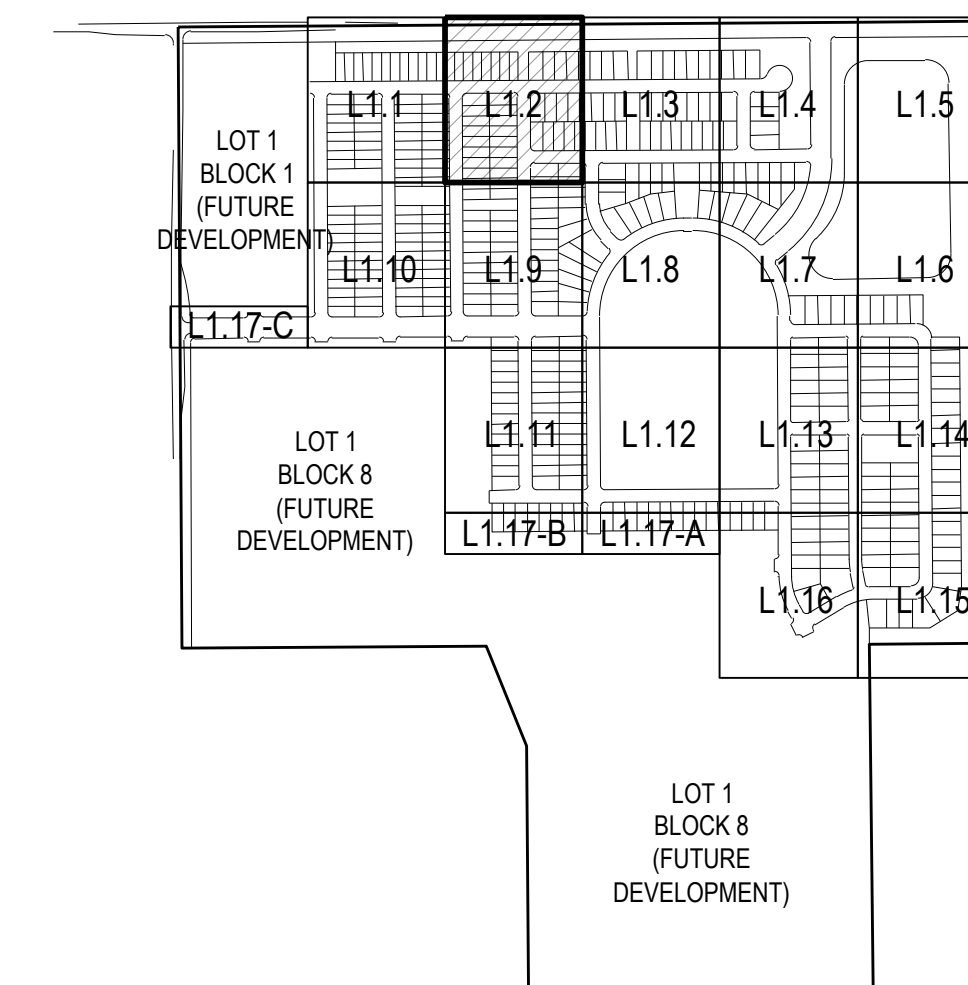
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- DETENTION SEED MIX
- NATIVE SEED MIX
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KEY MAP (NOT TO SCALE)



MATCHLINE SHEET L1.9

MATCHLINE SHEET L1.1

MATCHLINE SHEET L1.3

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Sheet Name
LANDSCAPE PLAN

Sheet Number

L1.3

LEGEND

- RIGHT OF WAY
- - - - - EASEMENT
- - - - - STEEL EDGER
- - - - - DUG SPADE EDGE
- ○ ○ ○ ○ FENCE

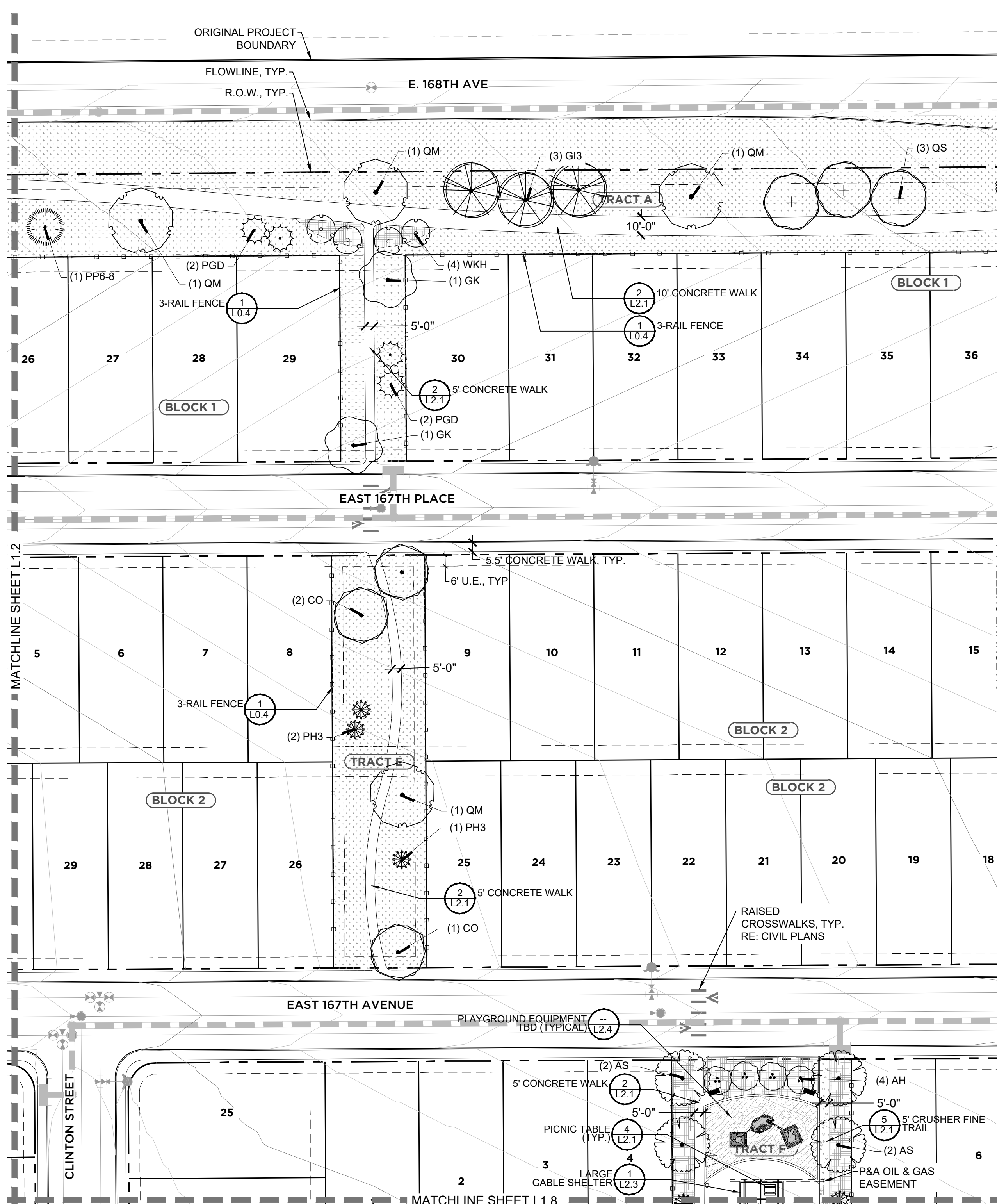
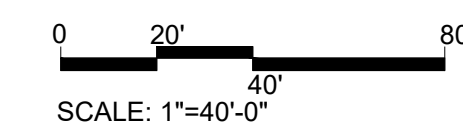
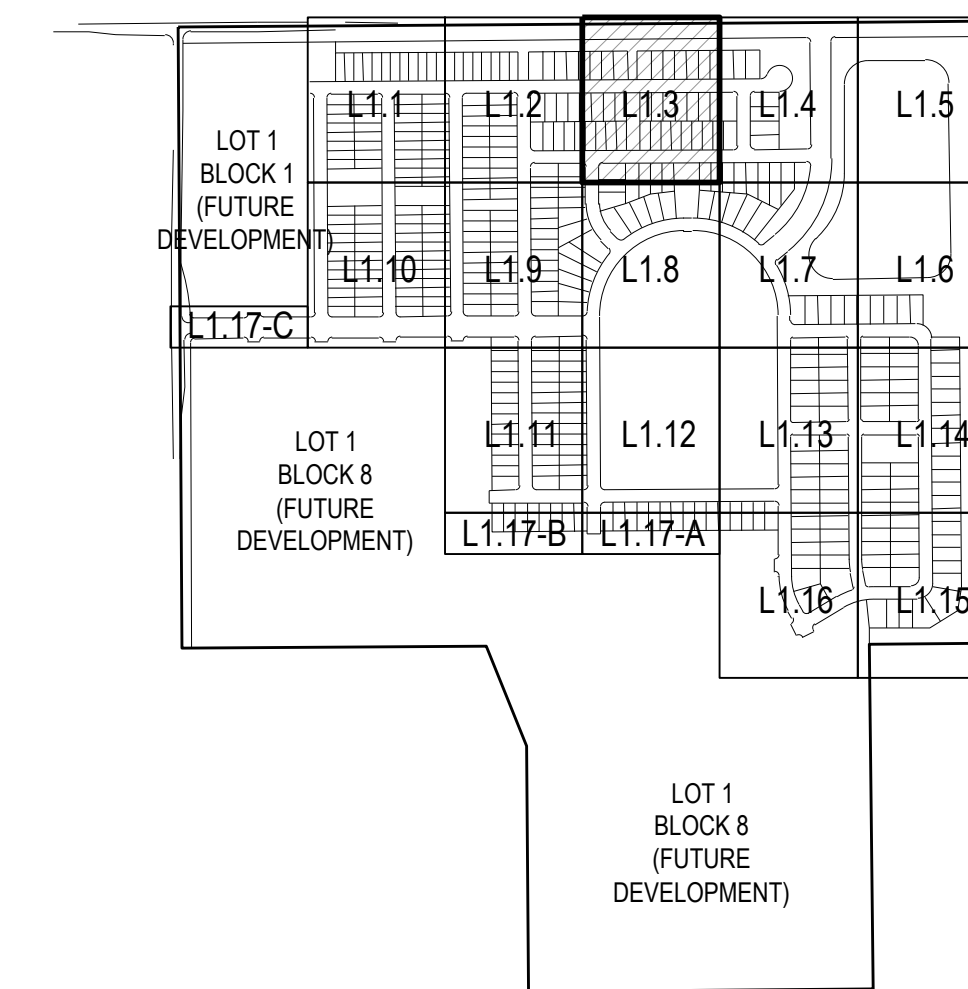
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- ROCK MULCH, 2"- 4" COBBLE
- DETENTION SEED MIX
- NATIVE SEED MIX
- SHRUB BEDS

NOTES:

1. NO FENCES OR STRUCTURES WILL BE ALLOWED WITHIN SIGHT TRIANGLES. TREES WITHIN THE SIGHT TRIANGLES SHALL BE LIMBED UP 8' FROM THE GROUND.
2. SHRUBS & PERENNIALS WITHIN SIGHT TRIANGLES WILL BE NO HIGHER THAN 2'
3. TREES ARE NOT TO BE PLANTED WITHIN 10' OF EITHER SIDE OF WATER, SEWER, OR STORM DRAIN MAIN LINES OR WITHIN 5' OF EITHER SIDE OF WATER AND SEWER LINES.

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5740 OLDE WADSWORTH BLVD
UNIT A
ARVADA, CO 80002
PHONE: 303.472.4633
MATT CAVANAUGH



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t 303.531.4905 . f 303.531.4908

12500 W. 58TH AVE #230
ARVADA, CO 80002
PHONE: 720.638.5190

SELTZER FARMS FILING NO. 1
PRELIMINARY LANDSCAPE PLANS
 ADAMS COUNTY, COLORADO

Issue Date: 02/09/2024

REVISIONS:	DATE:
1 2ND SUBMITTAL	4/29/24
2 3RD SUBMITTAL	8/23/24
3	

NOT FOR CONSTRUCTION

Sheet Name
LANDSCAPE PLAN

Sheet Number

L1.4

LEGEND

- RIGHT OF WAY
- - - - - EASEMENT
- - - - - STEEL EDGER
- - - - - DUG SPADE EDGE
- ○ ○ ○ ○ FENCE

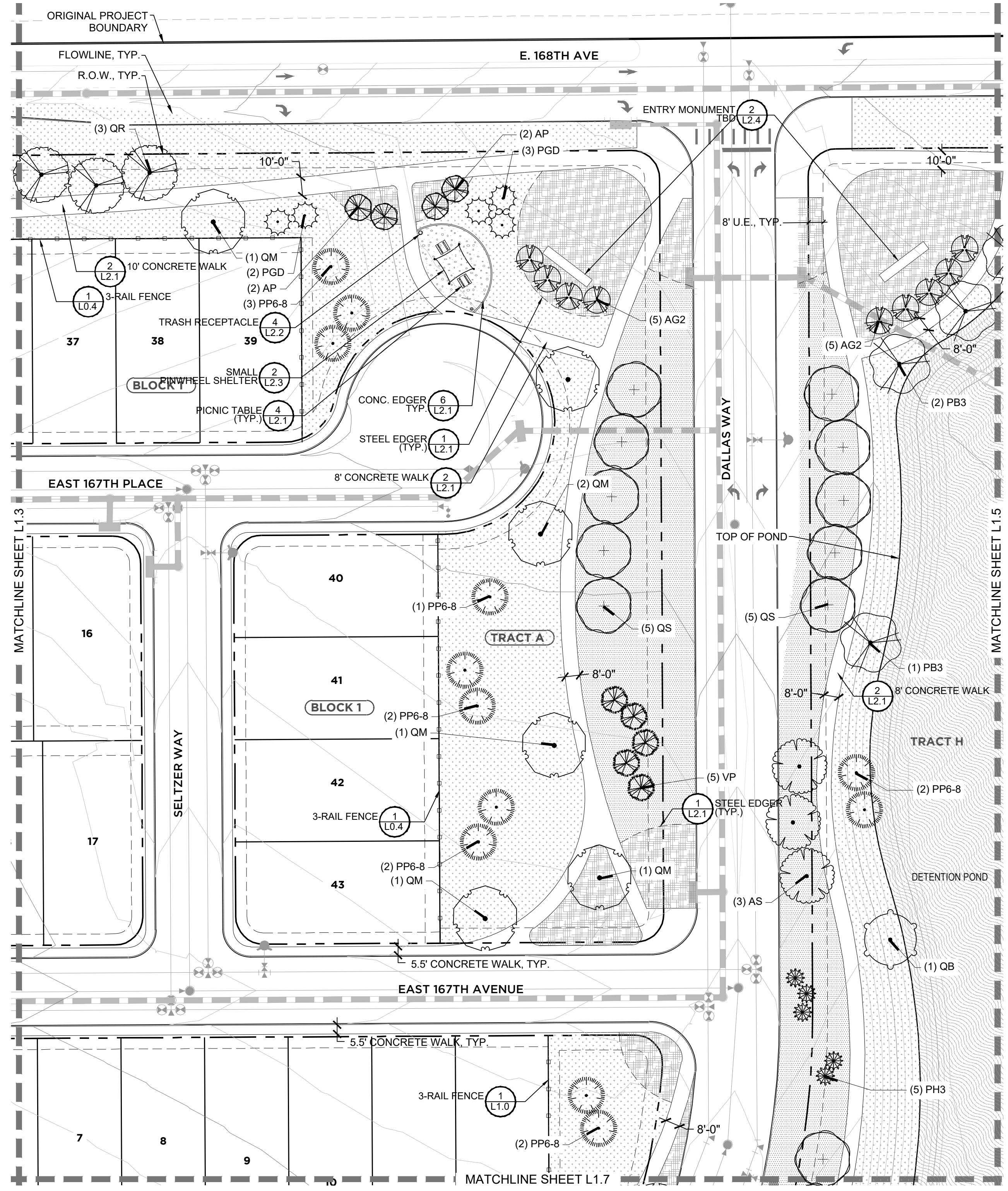
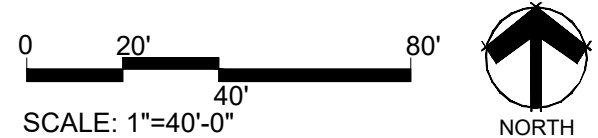
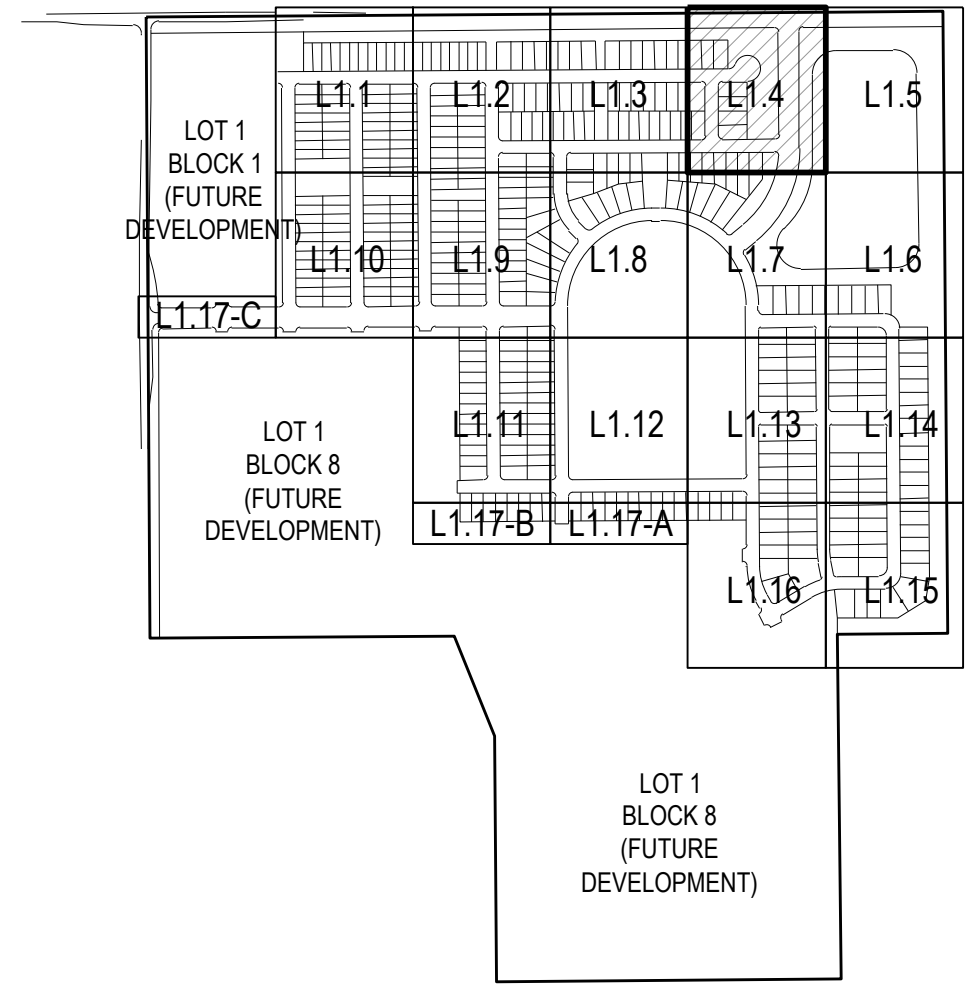
GROUND COVERS

- BLUEGRASS SOD
- FIBAR
- PLAY SURFACING
- PEA GRAVEL, COLOR: MULTI/GREY
- ROCK MULCH, 2"- 4" COBBLE
- DETENTION SEED MIX
- NATIVE SEED MIX
- SHRUB BEDS

NOTES:

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KEY MAP (NOT TO SCALE)



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Sheet Name
LANDSCAPE PLAN

Sheet Number

L1.5

LEGEND

- RIGHT OF WAY
- EASEMENT
- - - - - STEEL EDGER
- - - - - DUG SPADE EDGE
- FENCE

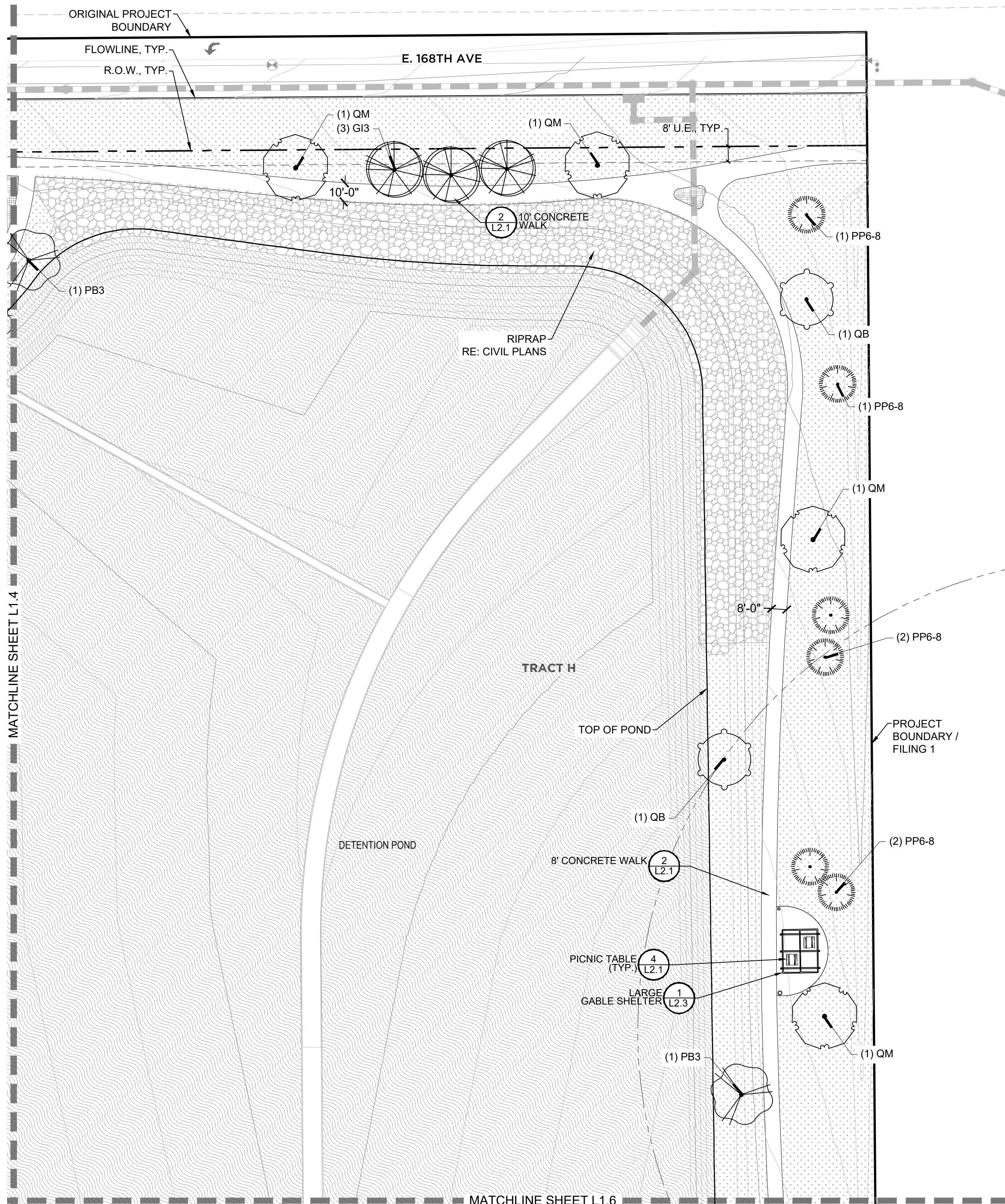
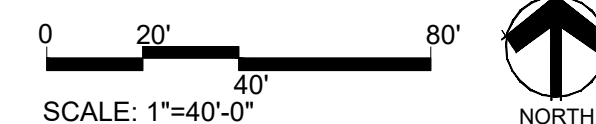
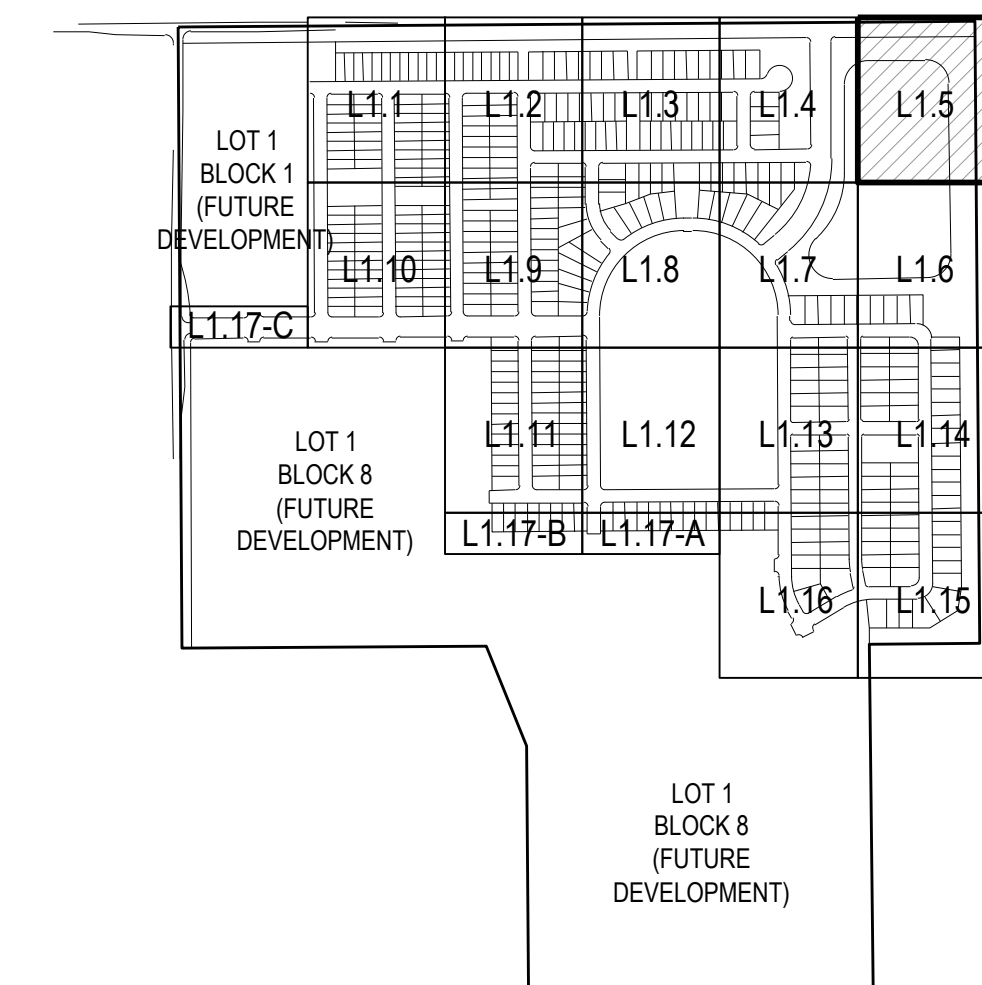
GROUND COVERS

- [Pattern] BLUEGRASS SOD
- [Pattern] FIBAR
- [Pattern] PLAY SURFACING
- [Pattern] PEA GRAVEL, COLOR: MULTI/GREY
- [Pattern] ROCK MULCH, 2"- 4" COBBLE
- [Pattern] DETENTION SEED MIX
- [Pattern] NATIVE SEED MIX
- [Pattern] SHRUB BEDS

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KEY MAP (NOT TO SCALE)



MATCHLINE SHEET L1.4

MATCHLINE SHEET L1.6

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Sheet Name
LANDSCAPE PLAN

Sheet Number

L1.6

LEGEND

- RIGHT OF WAY
- - - - - EASEMENT
- - - - - STEEL EDGER
- - - - - DUG SPADE EDGE
- FENCE

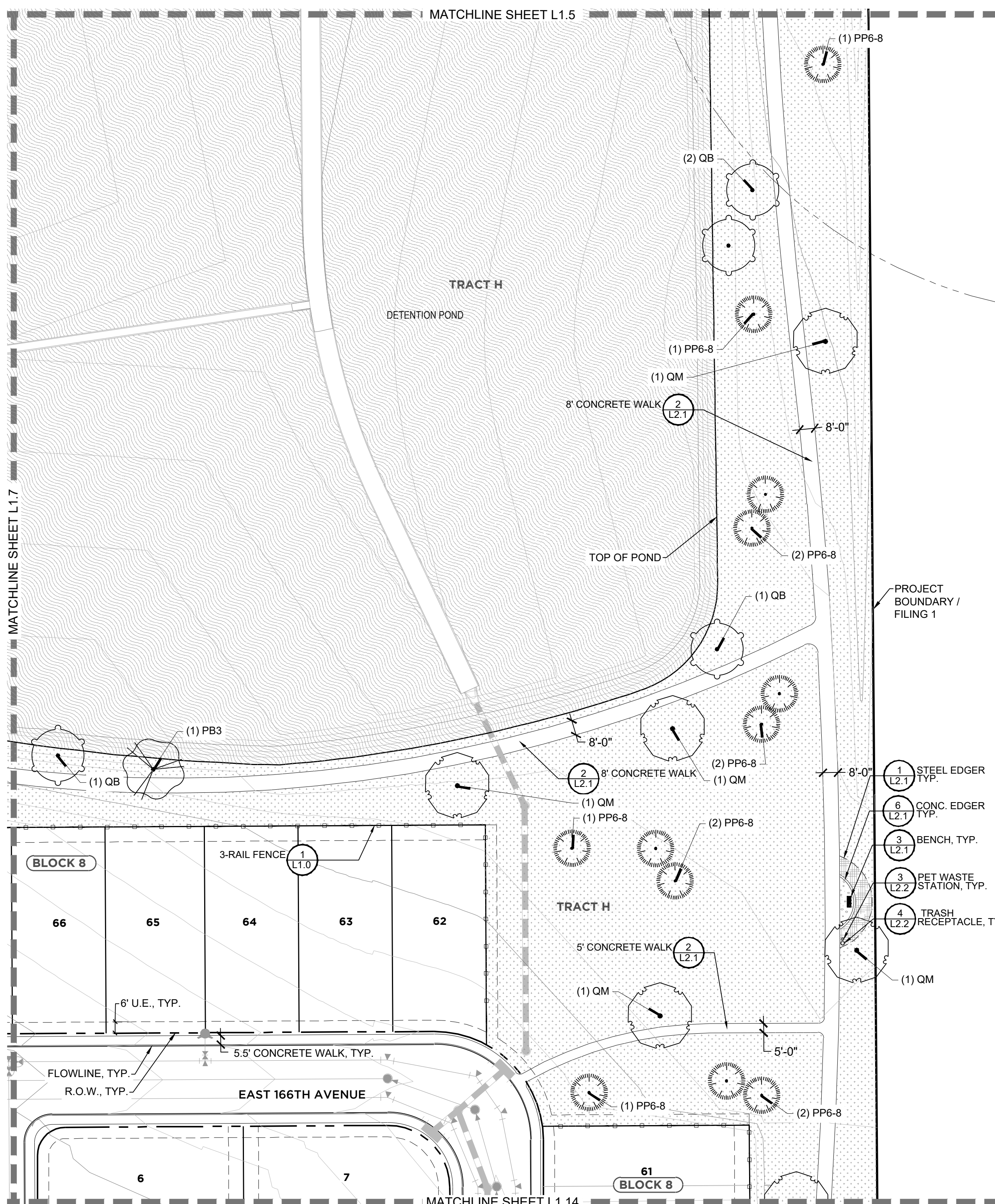
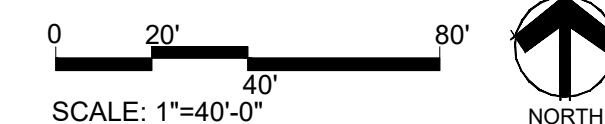
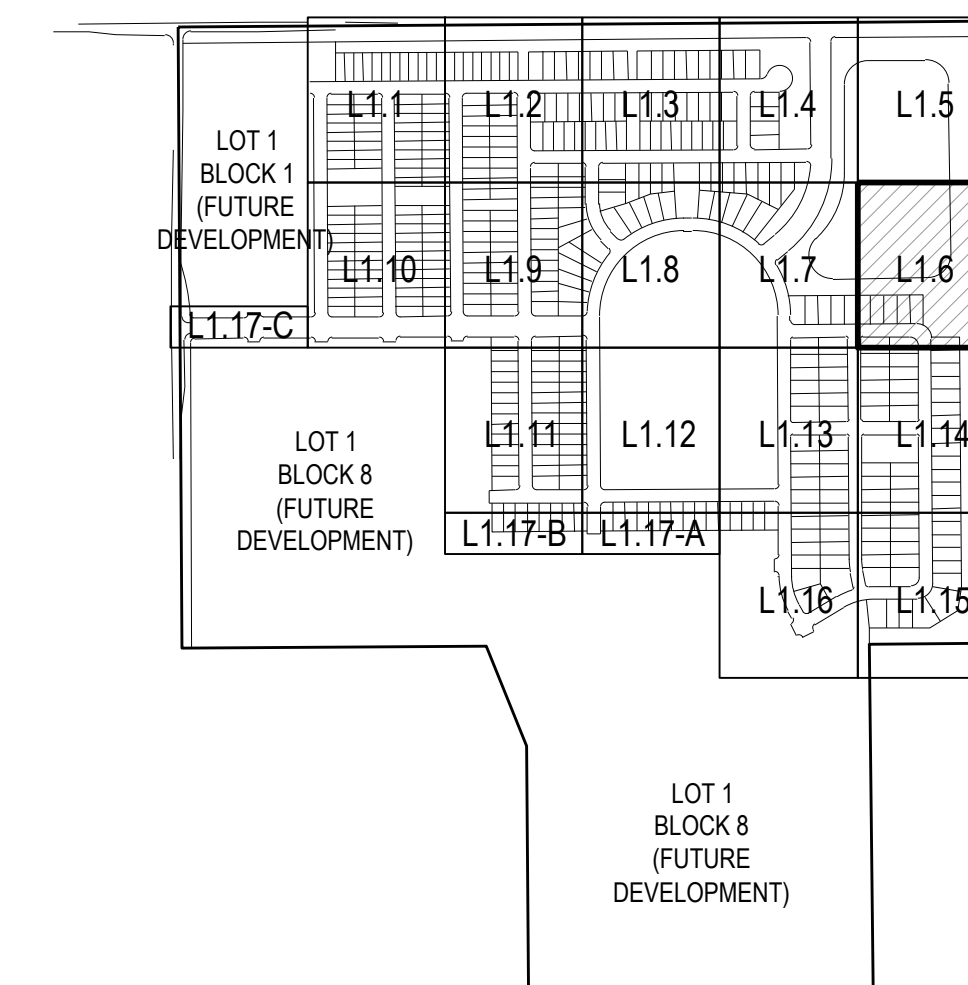
GROUND COVERS

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- FIBAR
- PLAY SURFACING
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KEY MAP (NOT TO SCALE)



MATCHLINE SHEET L1.7

MATCHLINE SHEET L1.5

MATCHLINE SHEET L1.14

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Sheet Name
LANDSCAPE PLAN

Sheet Number

L1.7

LEGEND

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- - - - - STEEL EDGER
- - - - - DUG SPADE EDGE
- FENCE

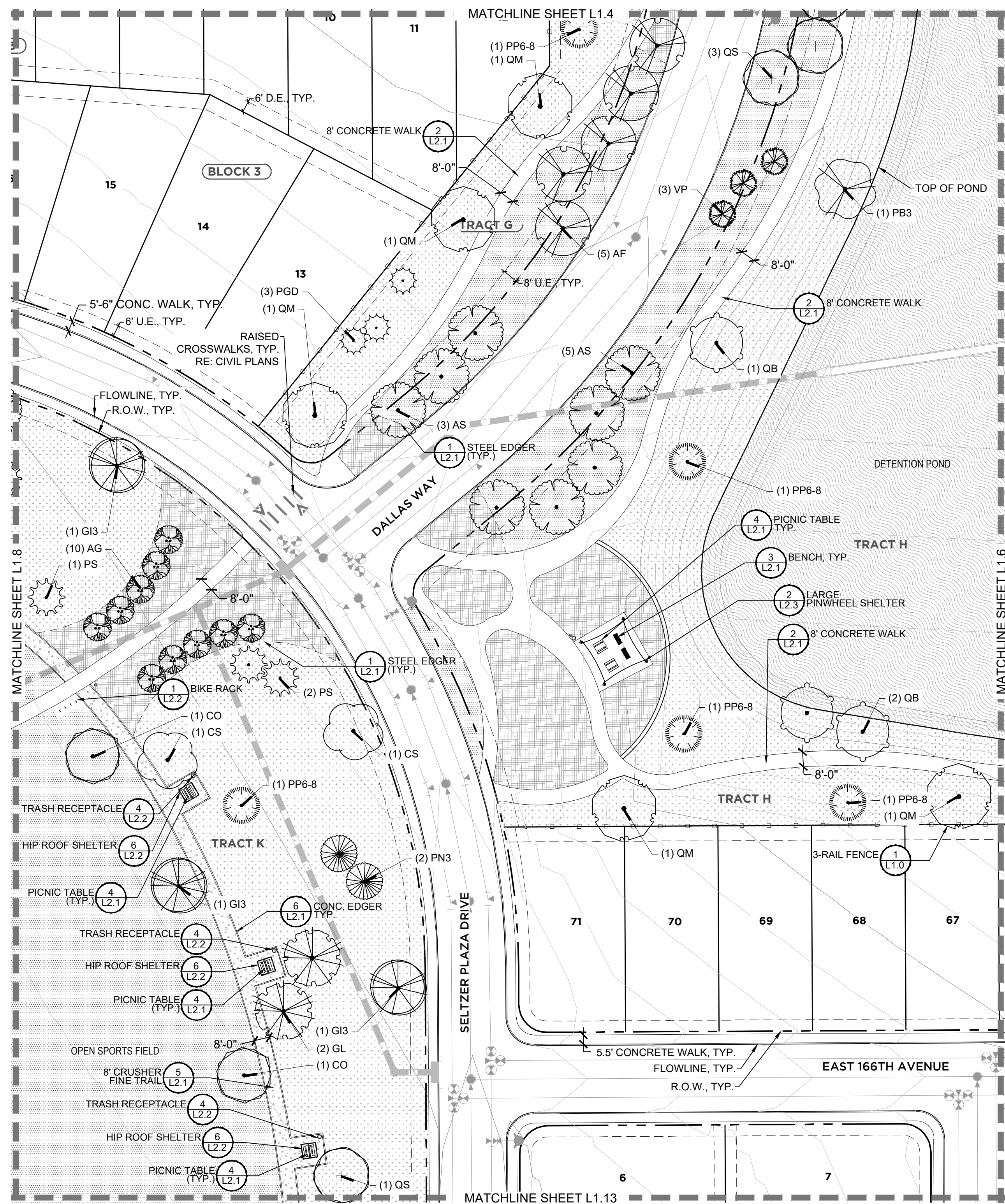
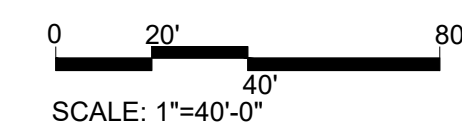
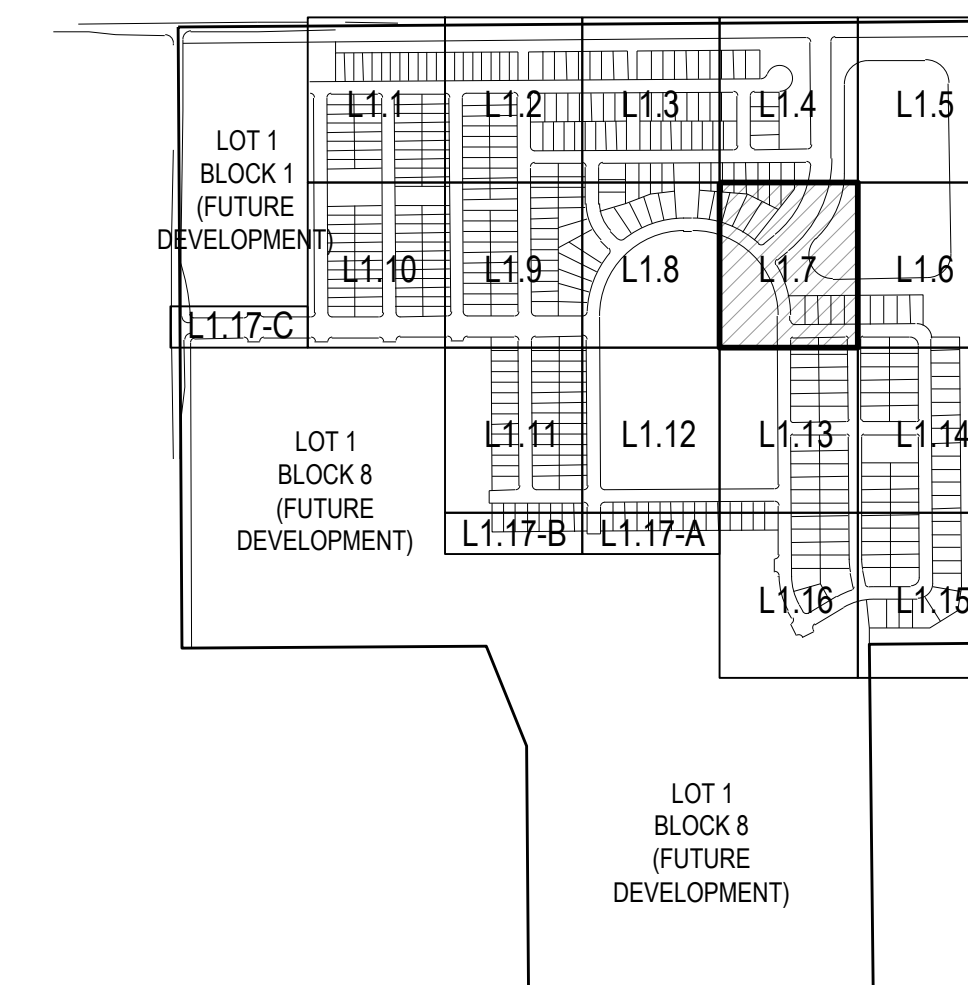
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Civil Engineering

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Sheet Name
LANDSCAPE PLAN

Sheet Number
L1.8

LEGEND

- RIGHT OF WAY
- - - - - EASEMENT
- - - - - STEEL EDGER
- - - - - DUG SPADE EDGE
- FENCE

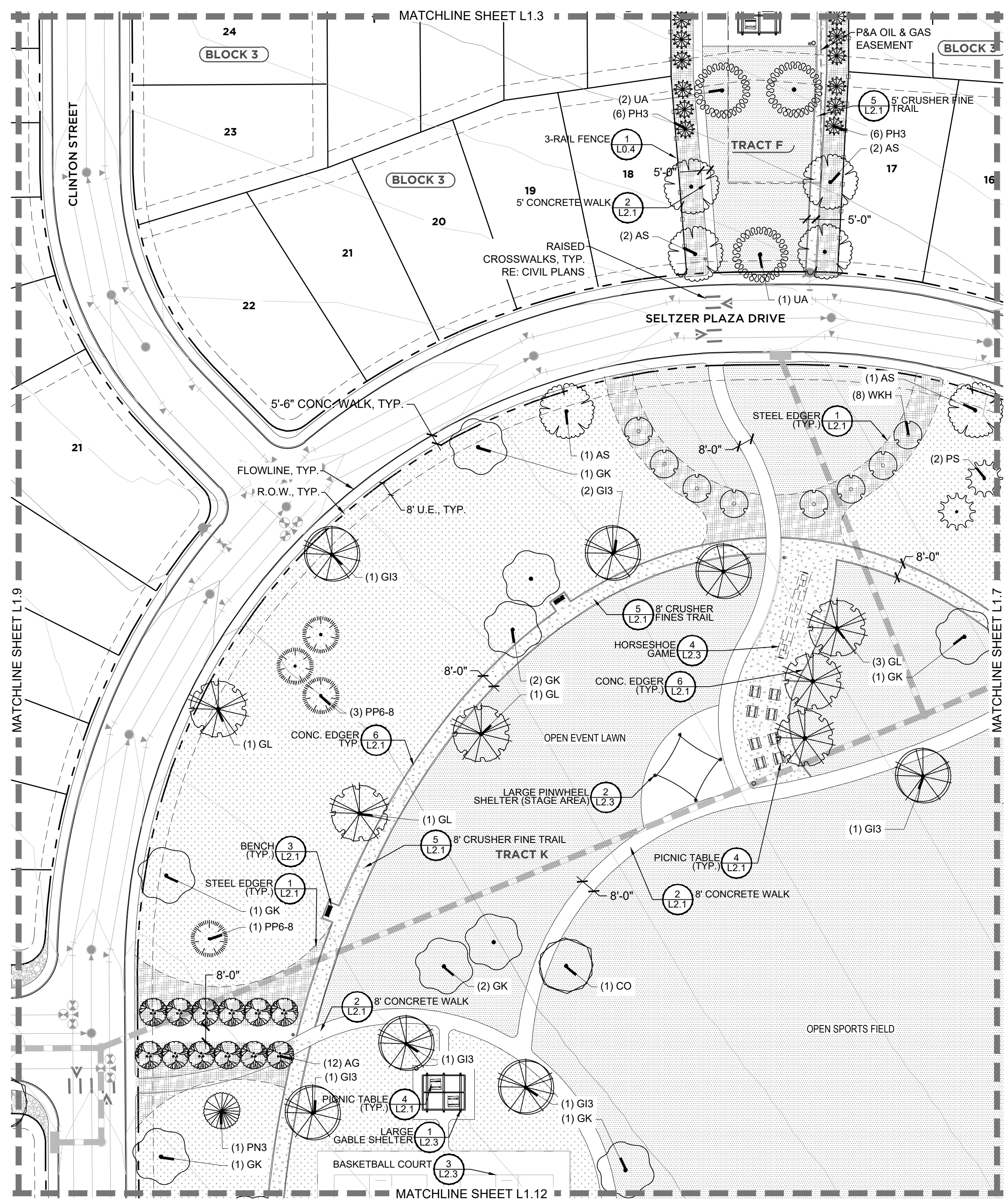
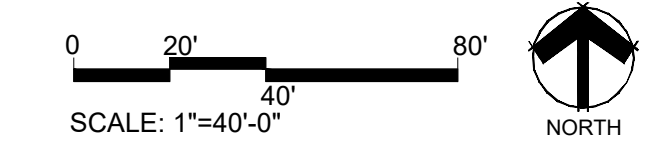
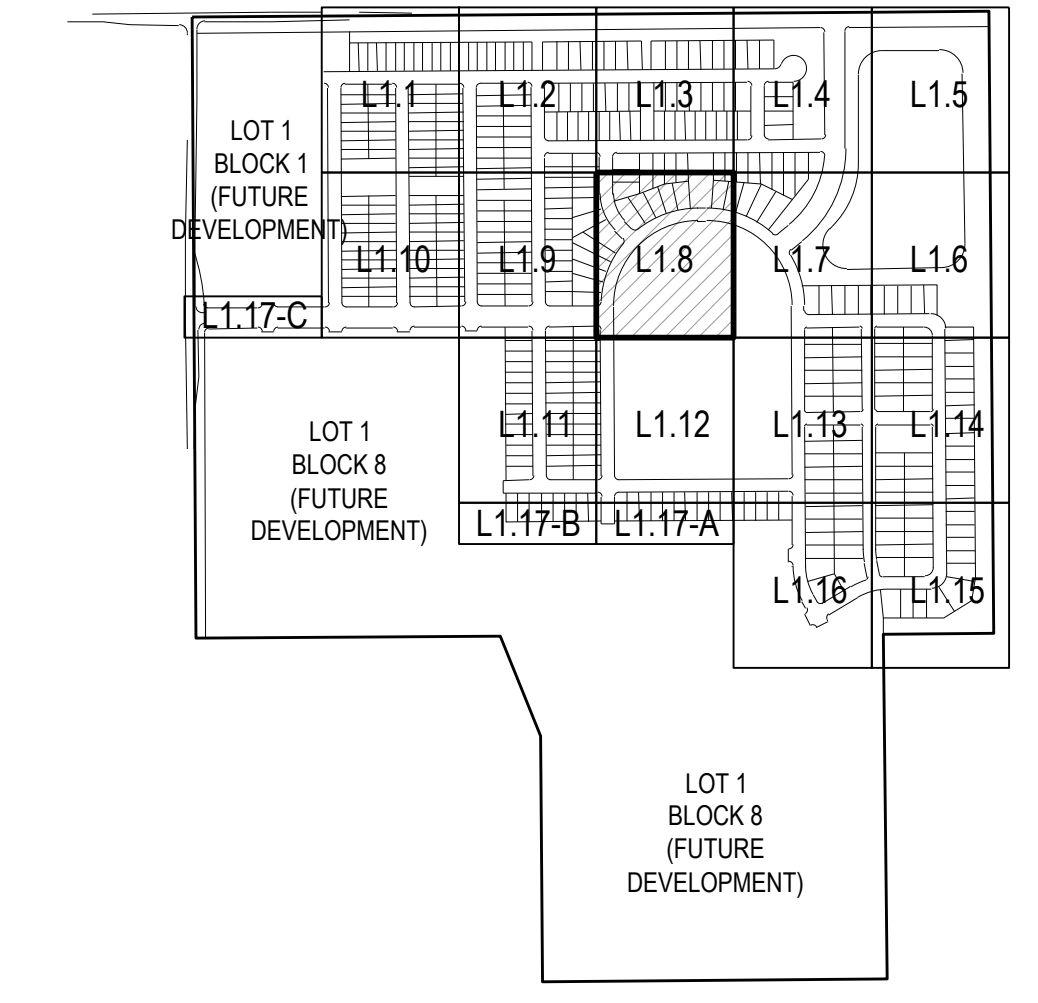
GROUND COVERS

- [Pattern] BLUEGRASS SOD
- [Pattern] FIBAR
- [Pattern] PLAY SURFACING
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NOT FOR CONSTRUCTION

Sheet Name
LANDSCAPE PLAN

Sheet Number

L1.9

LEGEND

- RIGHT OF WAY
- - - - - EASEMENT
- - - - - STEEL EDGER
- - - - - DUG SPADE EDGE
- ○ ○ ○ ○ FENCE

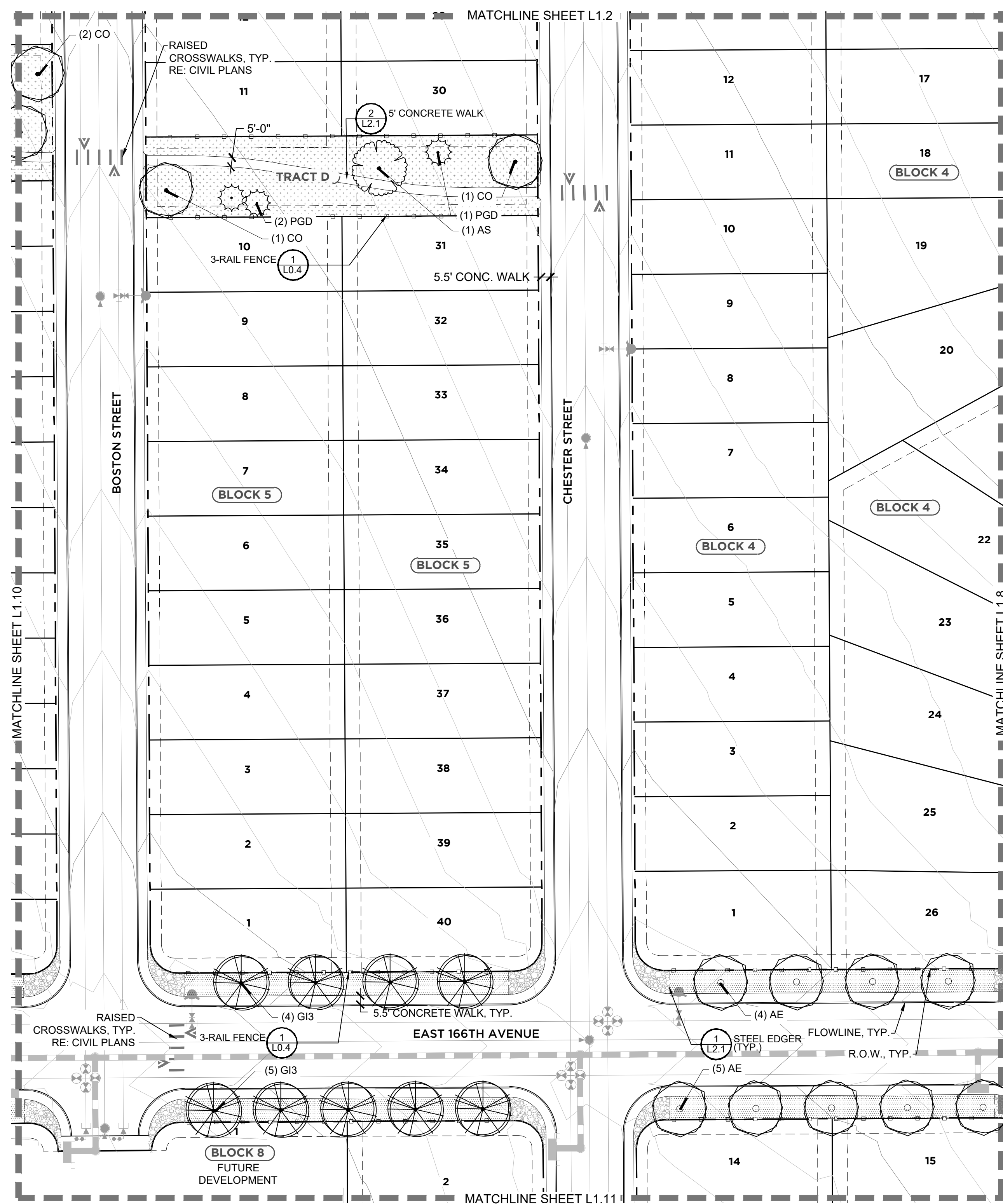
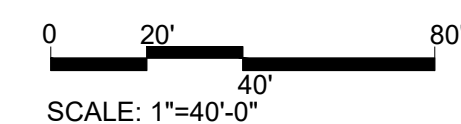
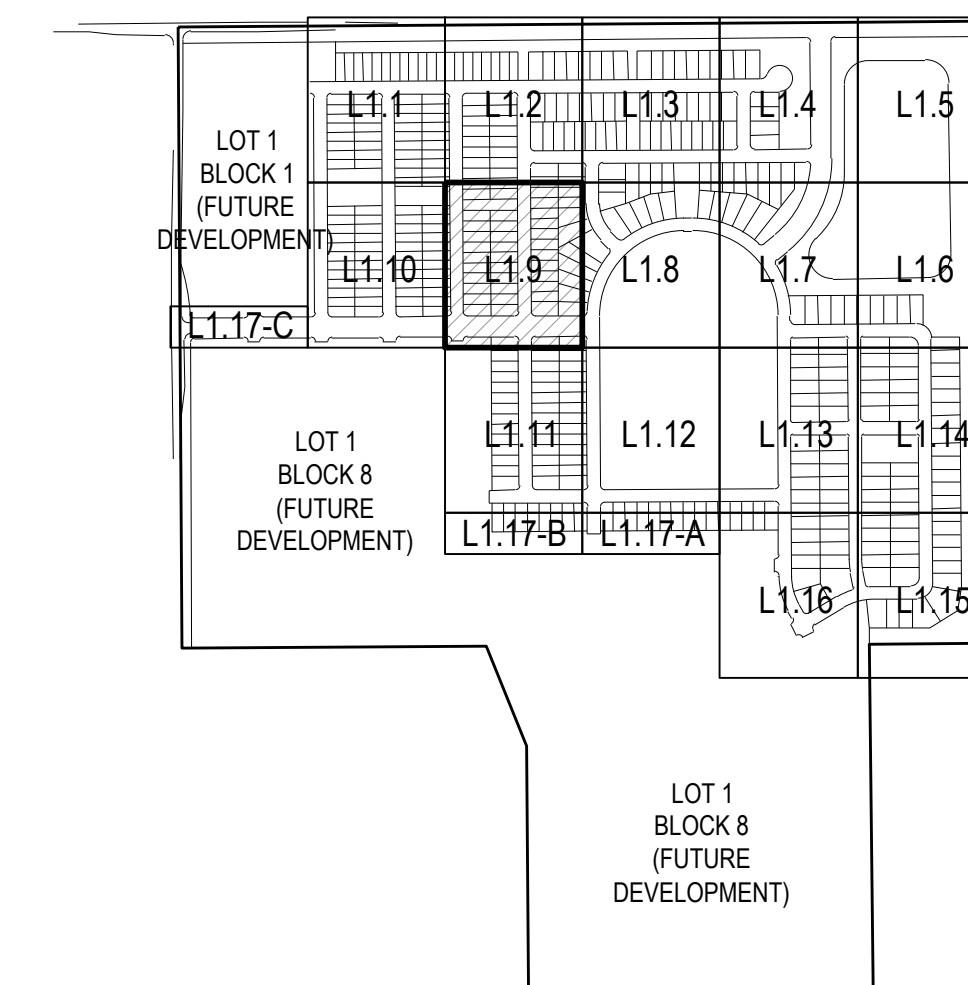
GROUND COVERS

- [Pattern] BLUEGRASS SOD
- [Pattern] FIBAR
- [Pattern] PLAY SURFACING
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Sheet Name
LANDSCAPE PLAN

Sheet Number

L1.10

LEGEND

- RIGHT OF WAY
- - - - - EASEMENT
- - - - - STEEL EDGER
- - - - - DUG SPADE EDGE
- FENCE

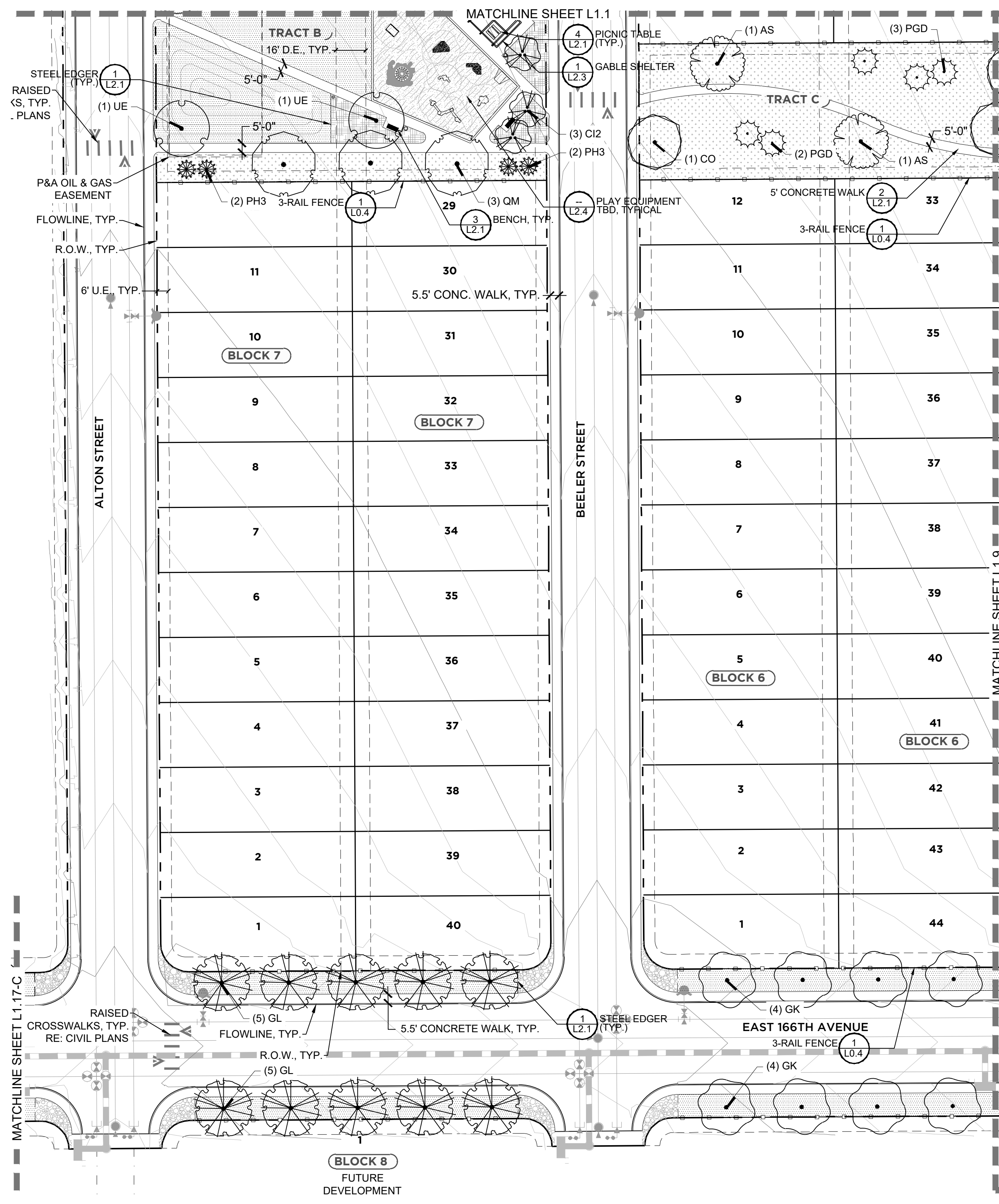
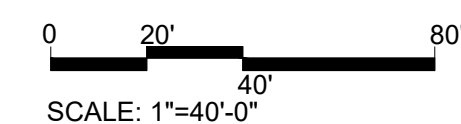
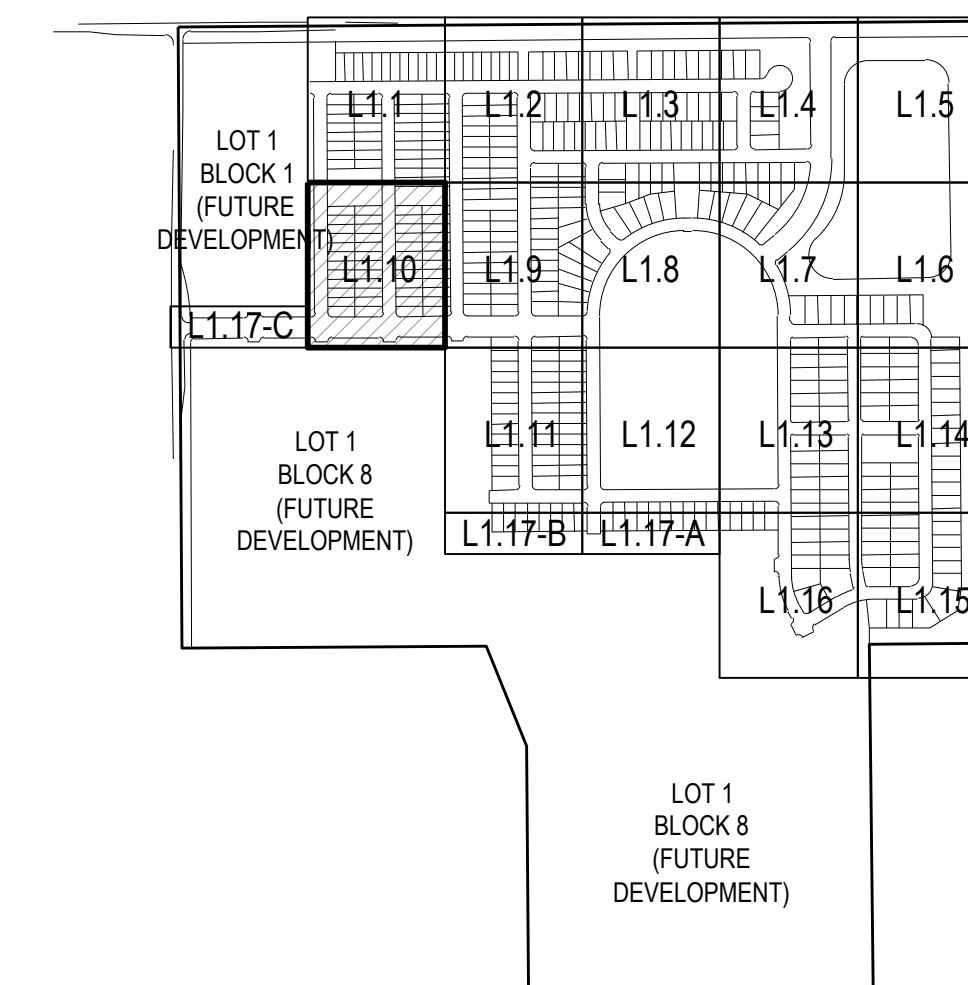
GROUND COVERS

- [Pattern] BLUEGRASS SOD
- [Pattern] FIBAR
- [Pattern] PLAY SURFACING
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Sheet Name
LANDSCAPE PLAN

Sheet Number

L1.11

LEGEND

- RIGHT OF WAY
- - - - - EASEMENT
- - - - - STEEL EDGER
- - - - - DUG SPADE EDGE
- □ □ □ FENCE

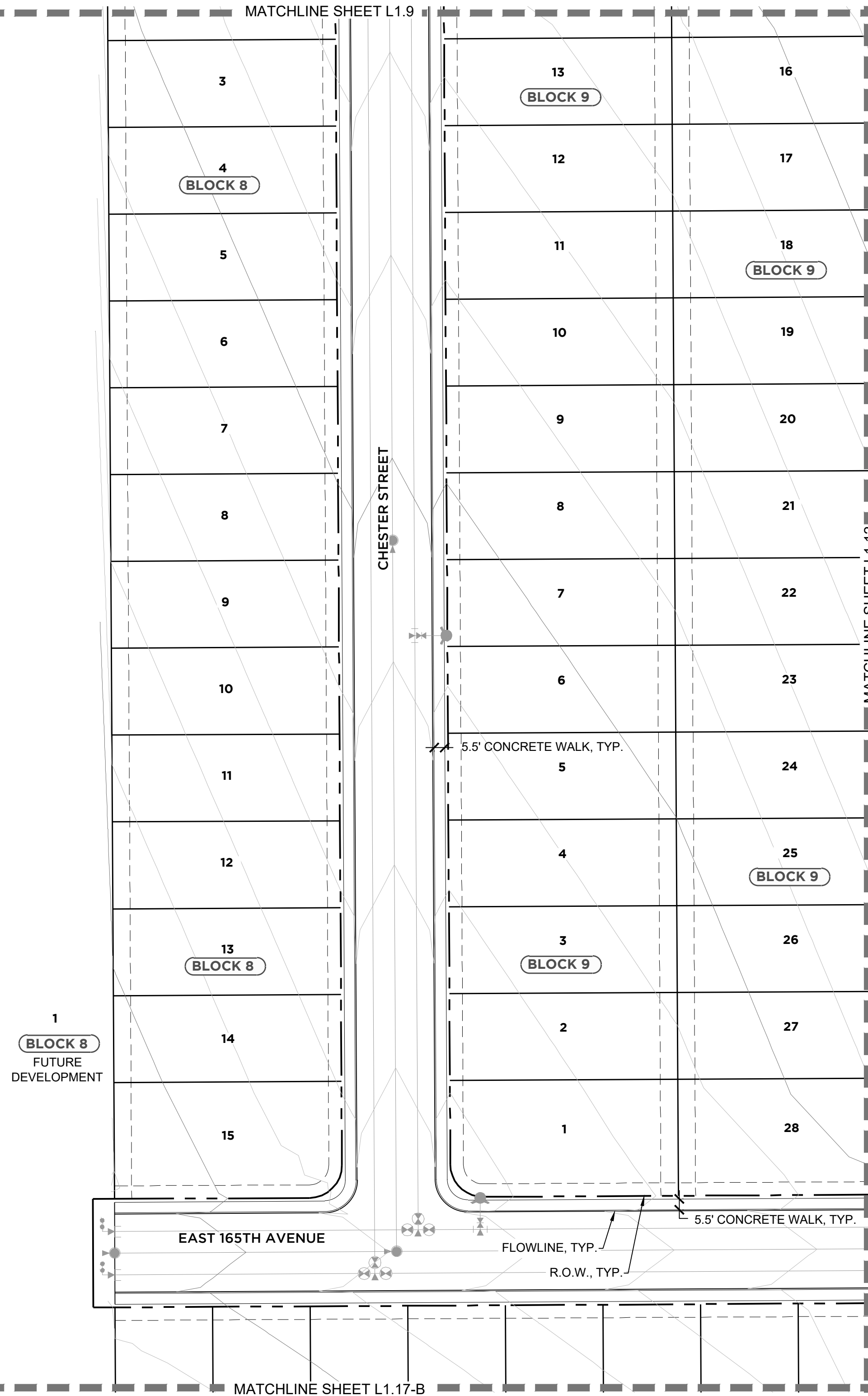
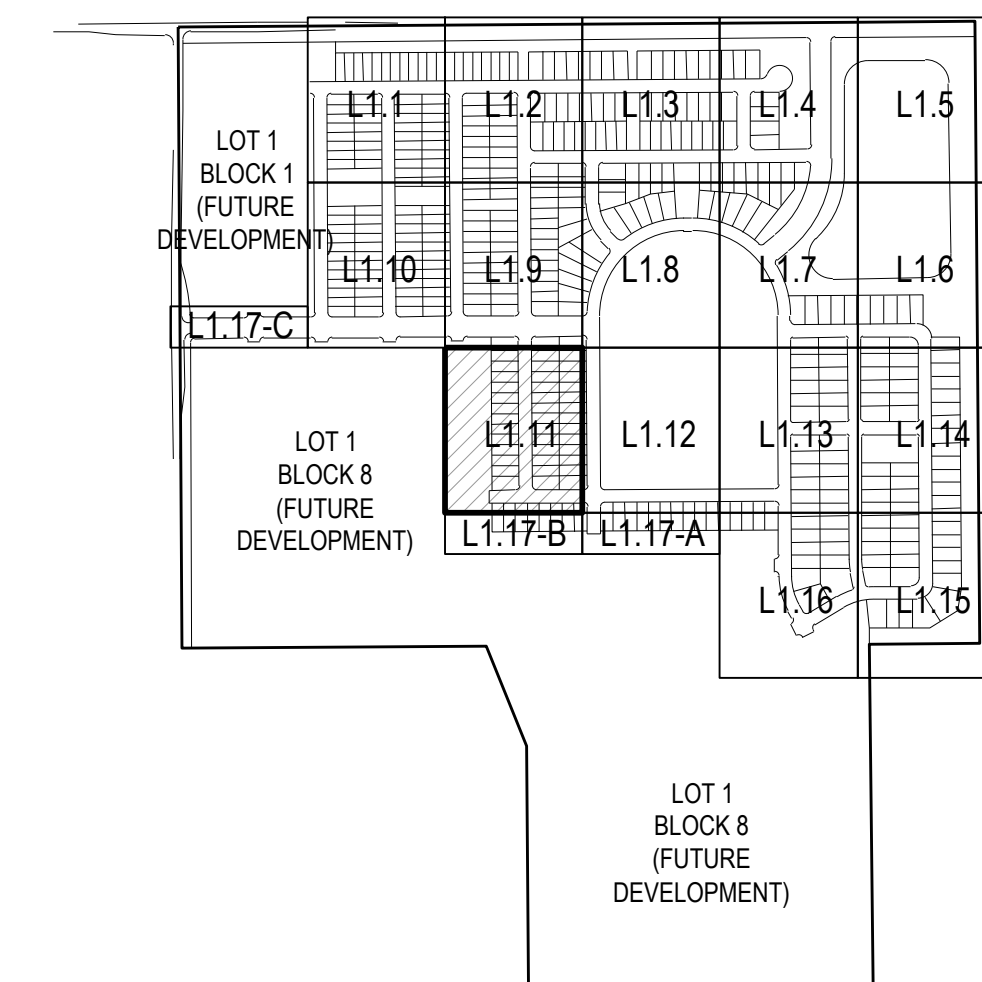
GROUND COVERS

- [Pattern] BLUEGRASS SOD
- [Pattern] FIBAR
- [Pattern] PLAY SURFACING
- [Pattern] PEA GRAVEL, COLOR: MULTI/GREY
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KEY MAP (NOT TO SCALE)



1
BLOCK 8
FUTURE DEVELOPMENT

MATCHLINE SHEET L1.17-B

MATCHLINE SHEET L1.9

MATCHLINE SHEET L1.12

CHESTER STREET

EAST 165TH AVENUE

FLOWLINE, TYP.
R.O.W., TYP.

5.5' CONCRETE WALK, TYP.

5.5' CONCRETE WALK, TYP.

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Sheet Name
LANDSCAPE PLAN

Sheet Number

L1.12

LEGEND

- RIGHT OF WAY
- - - - - EASEMENT
- - - - - STEEL EDGER
- - - - - DUG SPADE EDGE
- FENCE

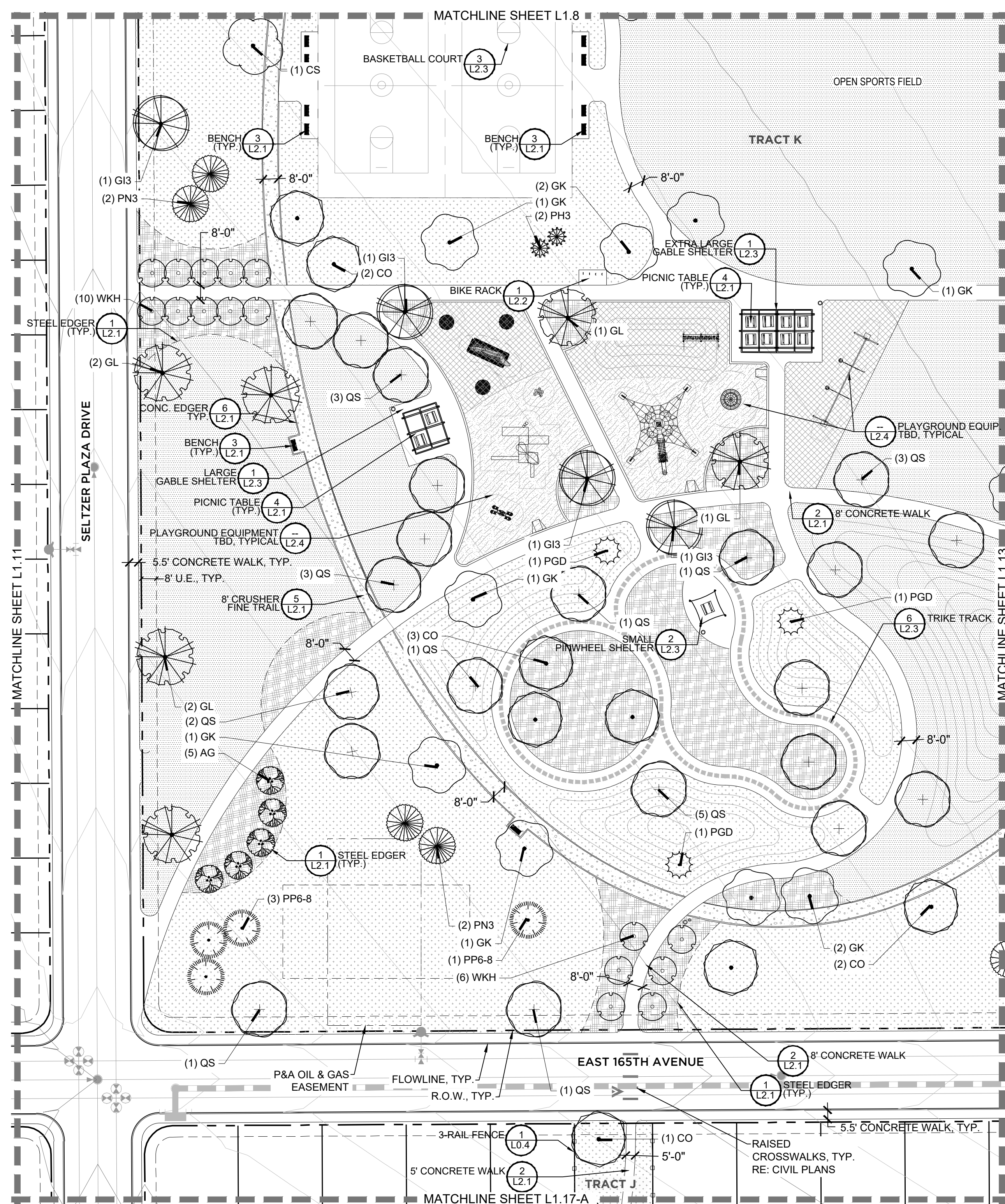
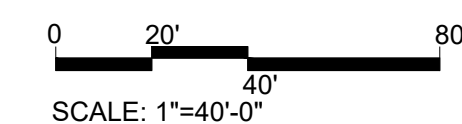
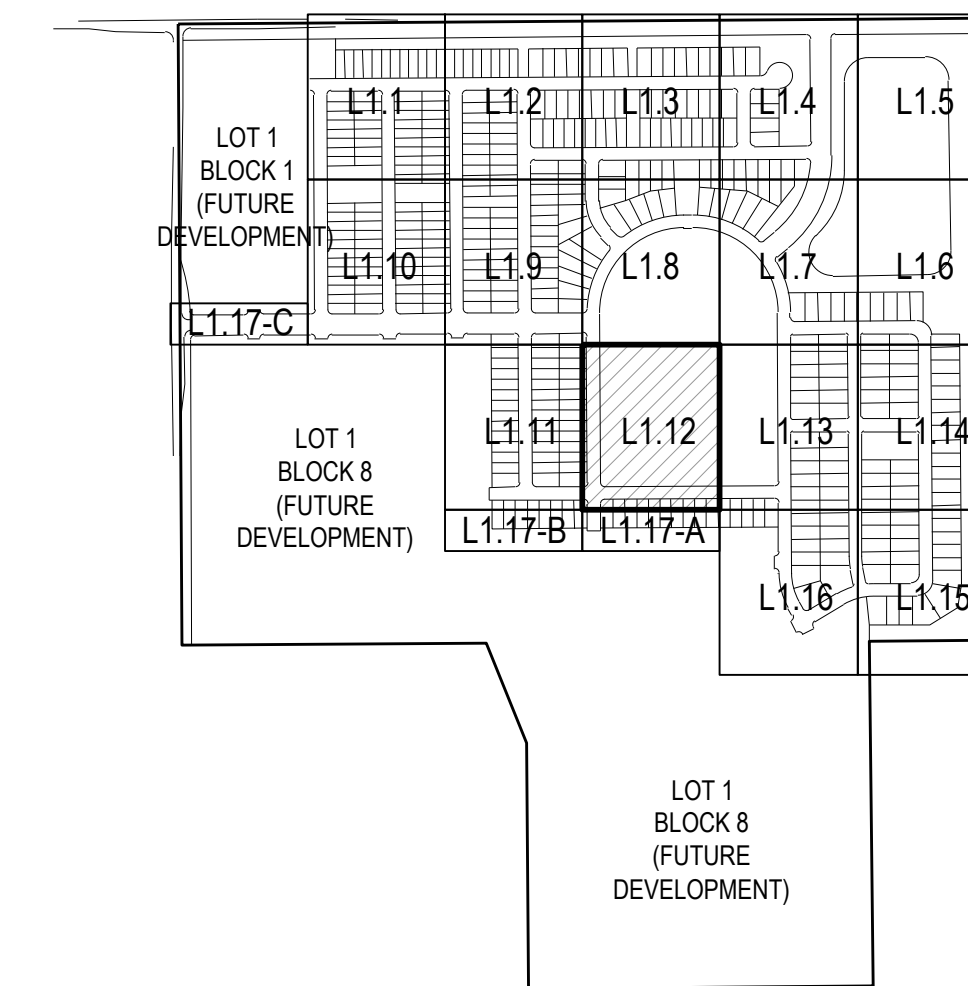
GROUND COVERS

- [Pattern] BLUEGRASS SOD
- [Pattern] FIBAR
- [Pattern] PLAY SURFACING
- [Pattern] PEA GRAVEL, COLOR: MULTI/GREY
- [Pattern] ROCK MULCH, 2"- 4" COBBLE
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Sheet Name
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Sheet Number

L1.13

LEGEND

- RIGHT OF WAY
- - - - - EASEMENT
- - - - - STEEL EDGER
- - - - - DUG SPADE EDGE
- FENCE

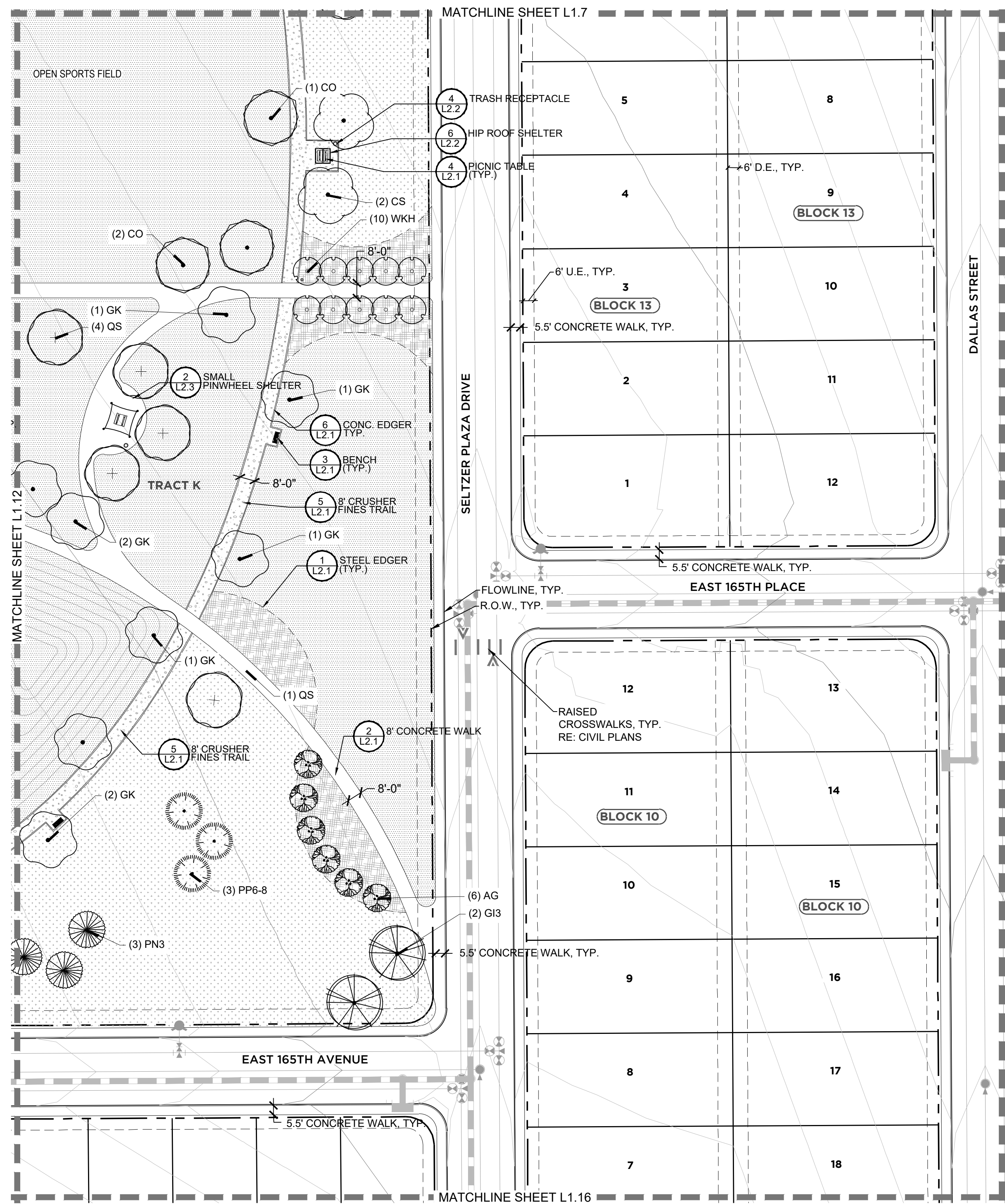
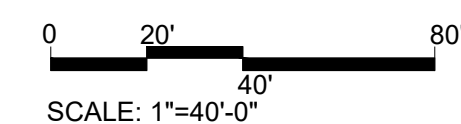
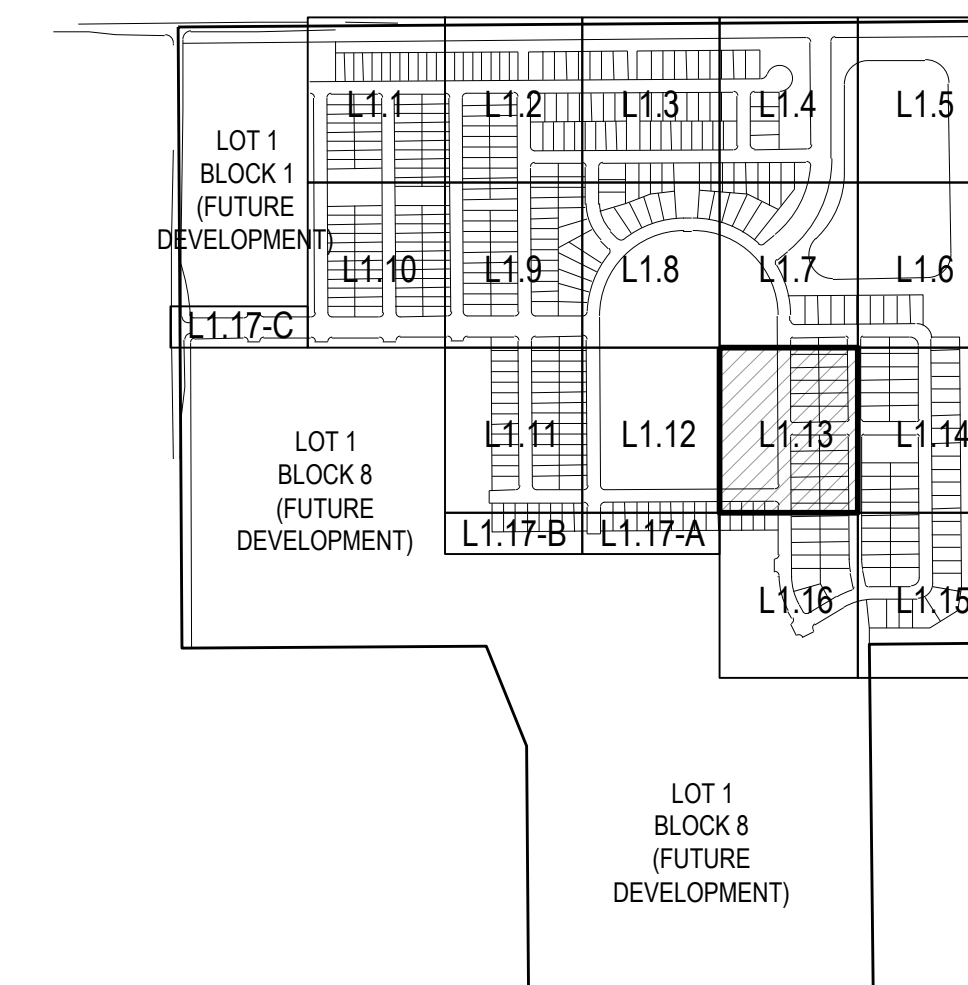
GROUND COVERS

- [Pattern] BLUEGRASS SOD
- [Pattern] FIBAR
- [Pattern] PLAY SURFACING
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3. TREES ARE NOT TO BE PLANTED WITHIN 10' OF EITHER SIDE OF WATER, SEWER, OR STORM DRAIN MAIN LINES OR WITHIN 5' OF EITHER SIDE OF WATER AND SEWER LINES.

KEY MAP (NOT TO SCALE)



5740 OLDE WADSWORTH BLVD
UNIT A
ARVADA, CO 80002
PHONE: 303.472.4633
MATT CAVANAUGH



www.pcsgroupco.com
p.o. box 18287
denver, co 80218
t 303.531.4905 . f 303.531.4908

12500 W. 58TH AVE #230
ARVADA, CO 80002
PHONE: 720.638.5190

SELTZER FARMS FILING NO. 1
PRELIMINARY LANDSCAPE PLANS
 ADAMS COUNTY, COLORADO

Issue Date: 02/09/2024

REVISIONS:	DATE:
1 2ND SUBMITTAL	4/29/24
2 3RD SUBMITTAL	8/23/24
3	

NOT FOR CONSTRUCTION

Sheet Name
LANDSCAPE PLAN

Sheet Number

L1.14

LEGEND

- RIGHT OF WAY
- - - - - EASEMENT
- - - - - STEEL EDGER
- - - - - DUG SPADE EDGE
- FENCE

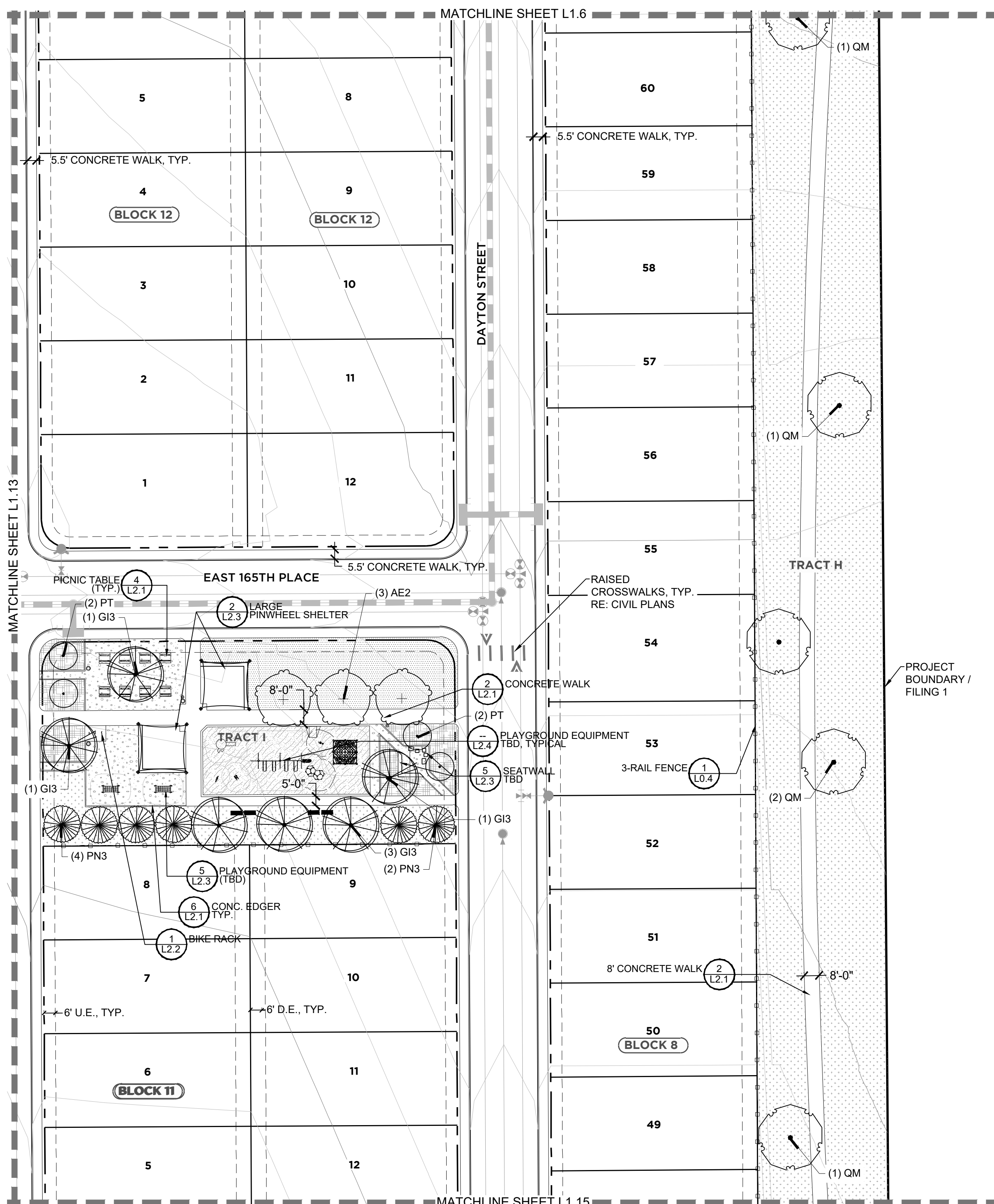
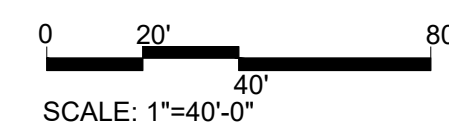
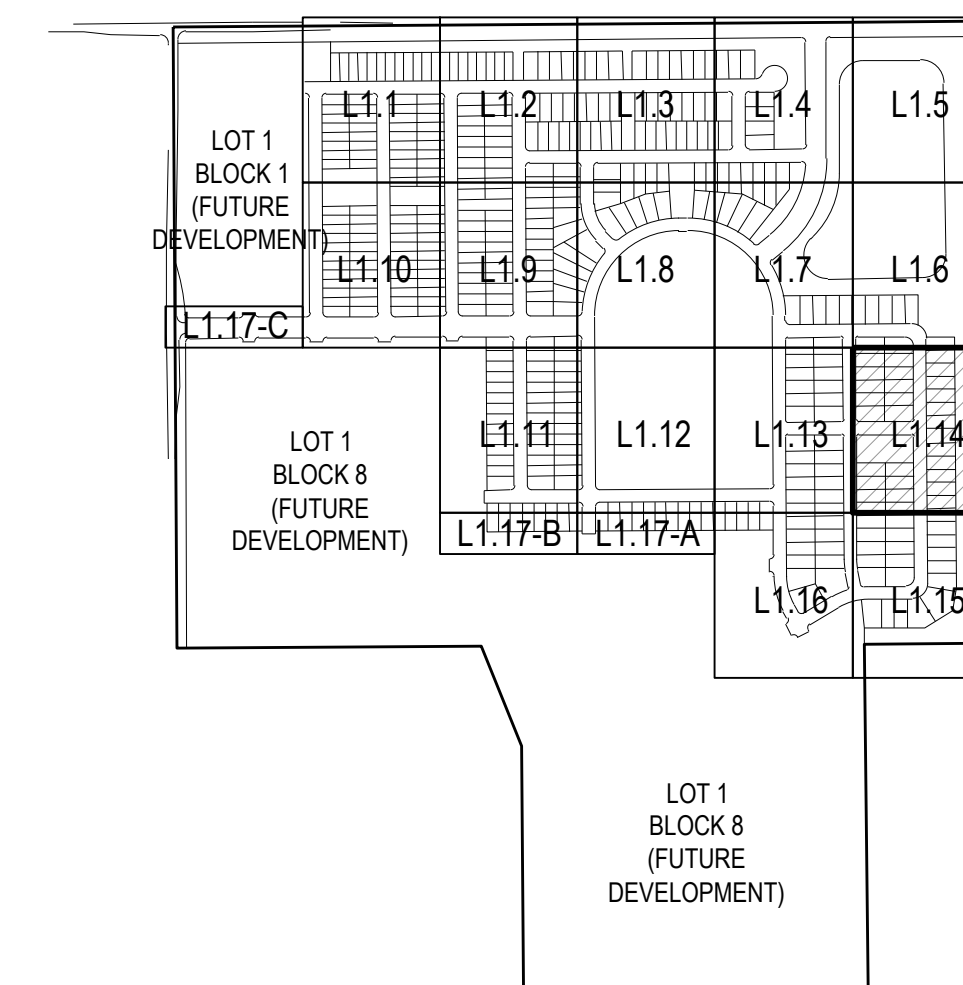
GROUND COVERS

- BLUEGRASS SOD
- FIBAR
- PLAY SURFACING
- PEA GRAVEL, COLOR: MULTI/GREY
- ROCK MULCH, 2"- 4" COBBLE
- DETENTION SEED MIX
- NATIVE SEED MIX
- SHRUB BEDS

NOTES:

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KEY MAP (NOT TO SCALE)



MATCHLINE SHEET L1.6

MATCHLINE SHEET L1.15

MATCHLINE SHEET L1.13

MATCHLINE SHEET L1.13

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Sheet Name
LANDSCAPE PLAN

Sheet Number

L1.15

LEGEND

- RIGHT OF WAY
- - - - - EASEMENT
- - - - - STEEL EDGER
- - - - - DUG SPADE EDGE
- FENCE

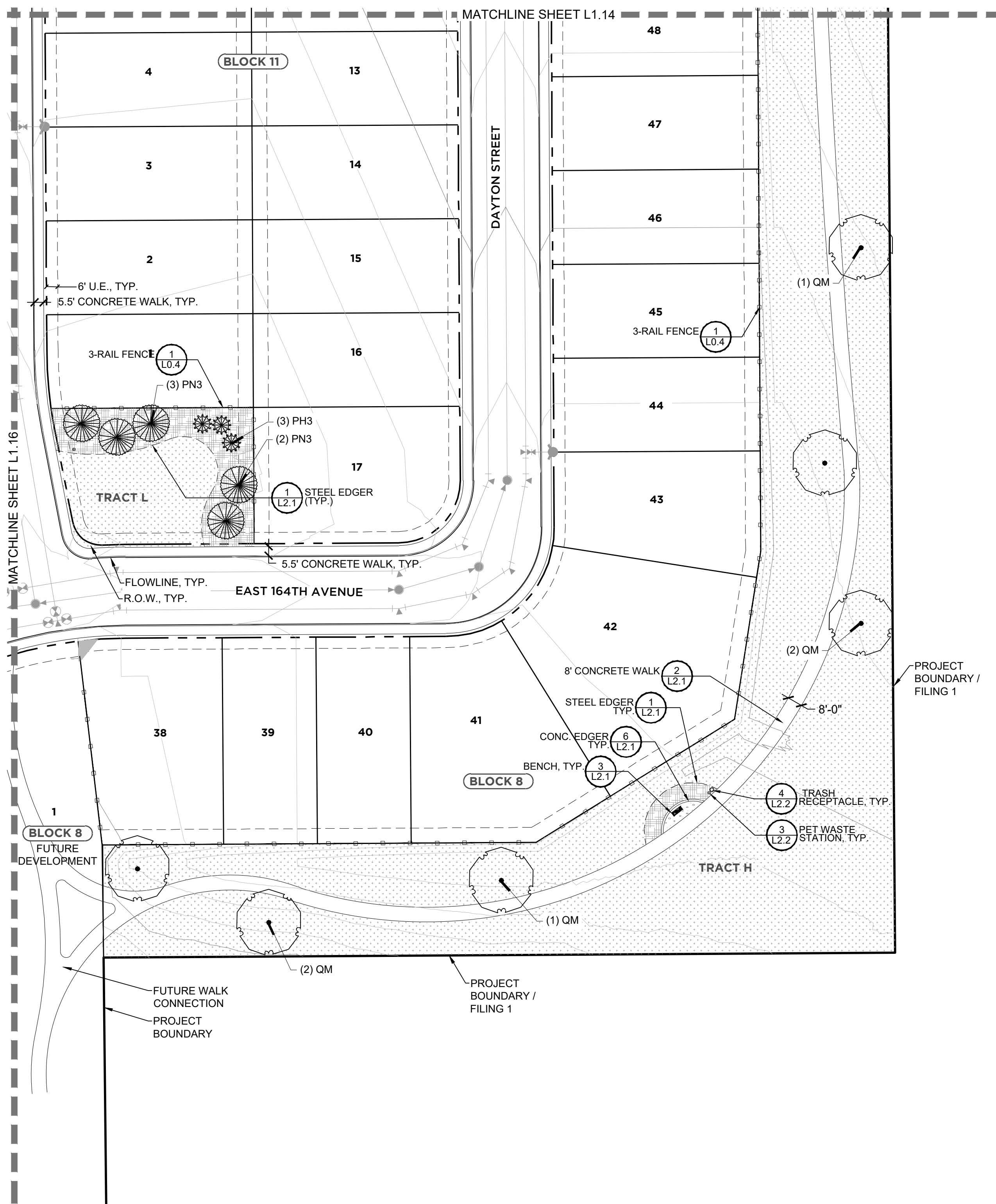
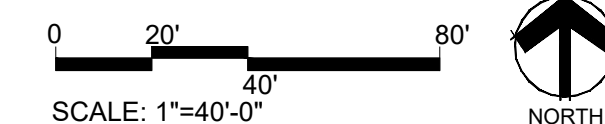
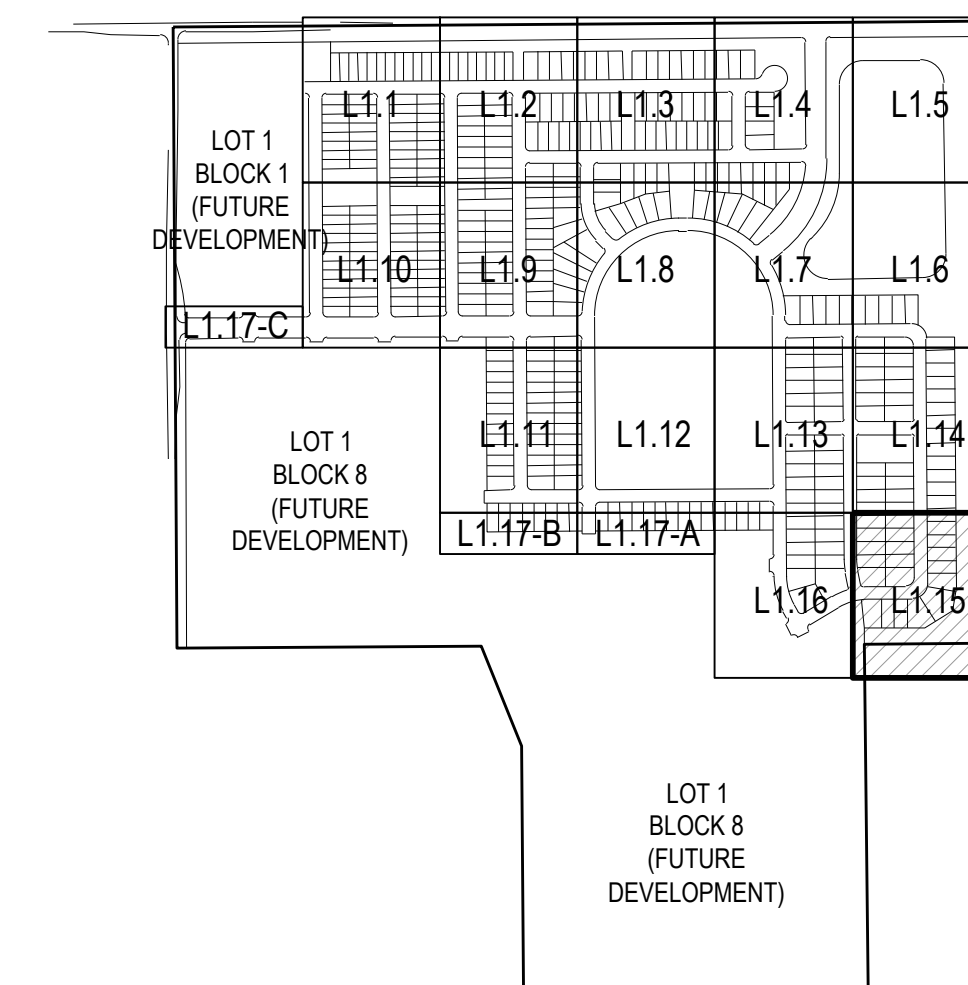
GROUND COVERS

- [Pattern] BLUEGRASS SOD
- [Pattern] FIBAR
- [Pattern] PLAY SURFACING
- [Pattern] PEA GRAVEL, COLOR: MULTI/GREY
- [Pattern] ROCK MULCH, 2"- 4" COBBLE
- [Pattern] DETENTION SEED MIX
- [Pattern] NATIVE SEED MIX
- [Pattern] SHRUB BEDS

NOTES:

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KEY MAP (NOT TO SCALE)



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NOT FOR CONSTRUCTION

Sheet Name
LANDSCAPE PLAN

Sheet Number

L1.16

LEGEND

- RIGHT OF WAY
- - - - - EASEMENT
- - - - - STEEL EDGER
- - - - - DUG SPADE EDGE
- ○ ○ ○ ○ FENCE

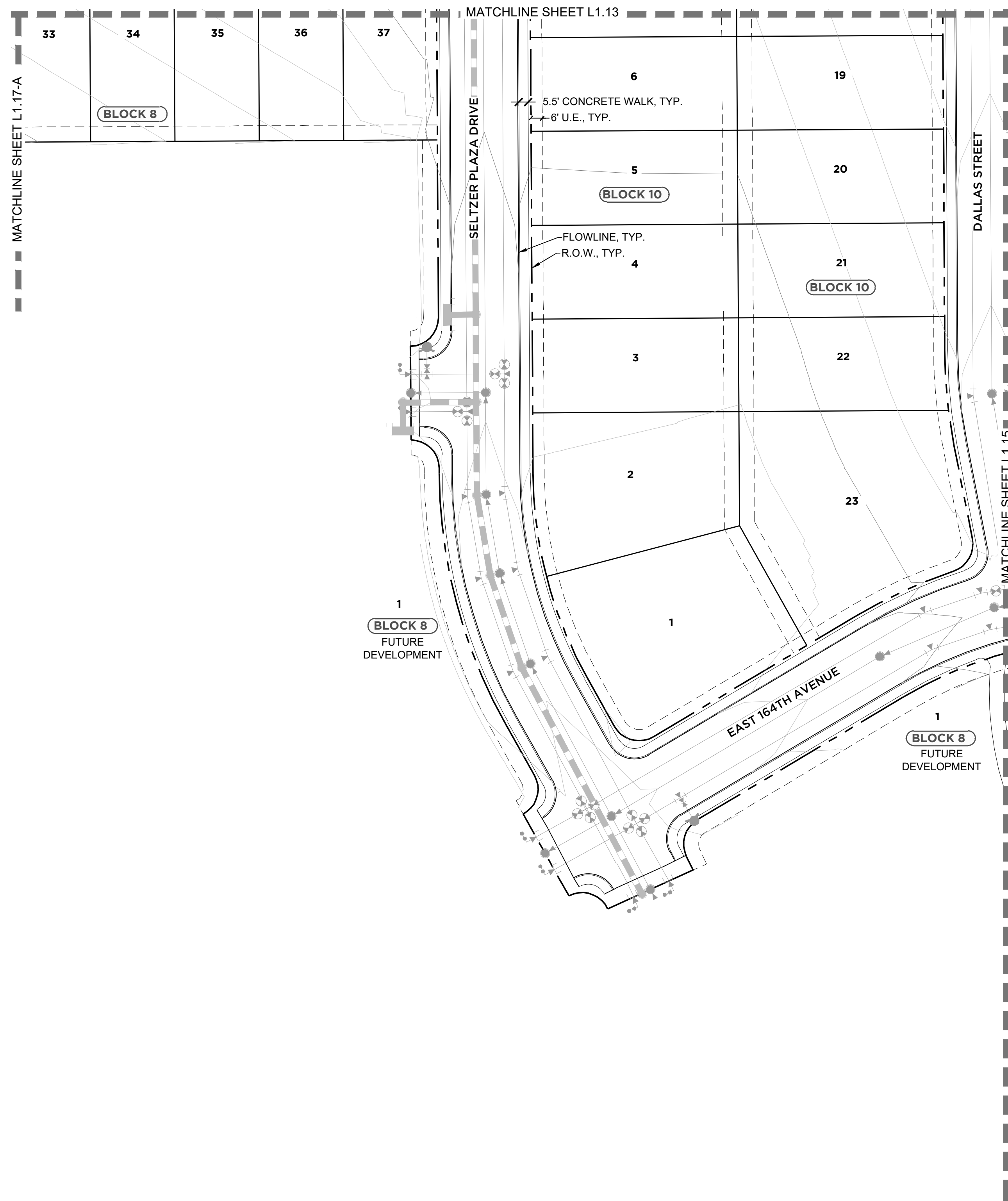
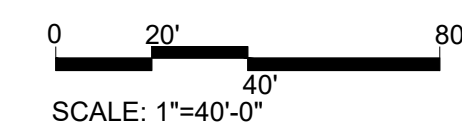
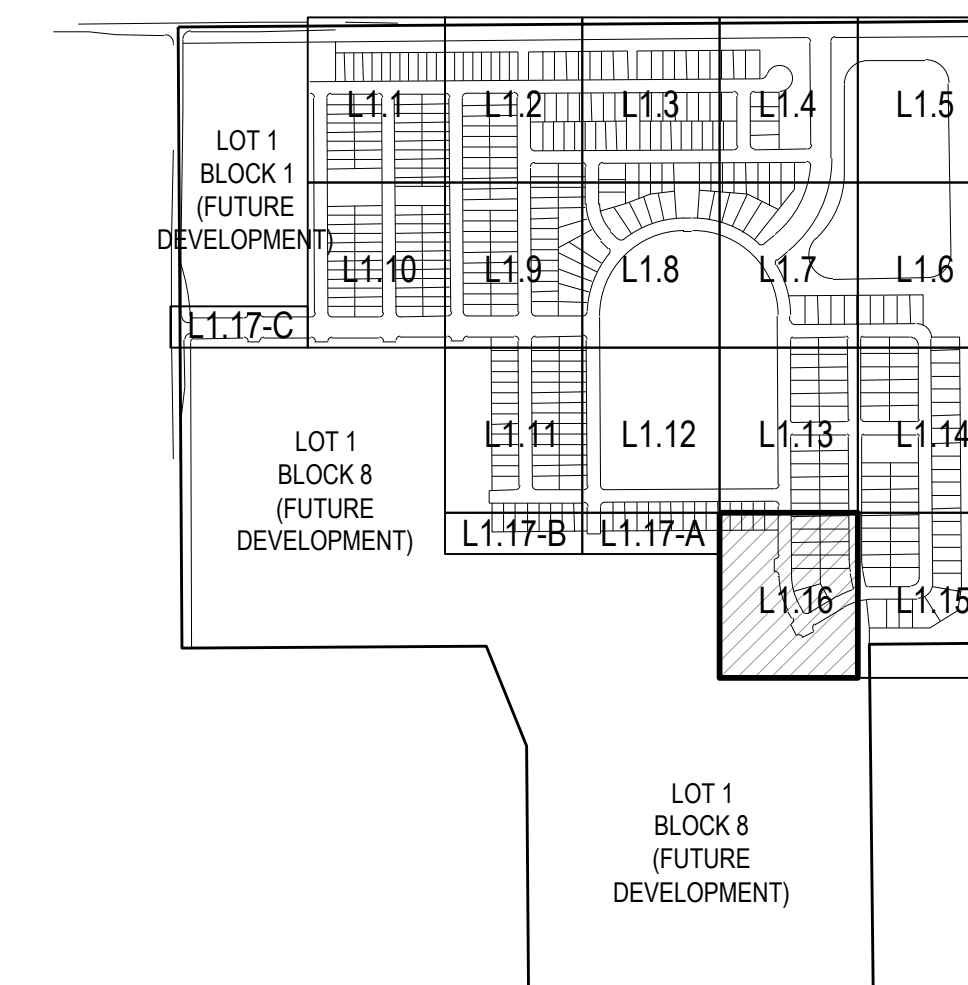
GROUND COVERS

- [Pattern] BLUEGRASS SOD
- [Pattern] FIBAR
- [Pattern] PLAY SURFACING
- [Pattern] PEA GRAVEL, COLOR: MULTI/GREY
- [Pattern] ROCK MULCH, 2"- 4" COBBLE
- [Pattern] DETENTION SEED MIX
- [Pattern] NATIVE SEED MIX
- [Pattern] SHRUB BEDS

NOTES:

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KEY MAP (NOT TO SCALE)



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Sheet Name
LANDSCAPE PLAN

Sheet Number

L1.17

LEGEND

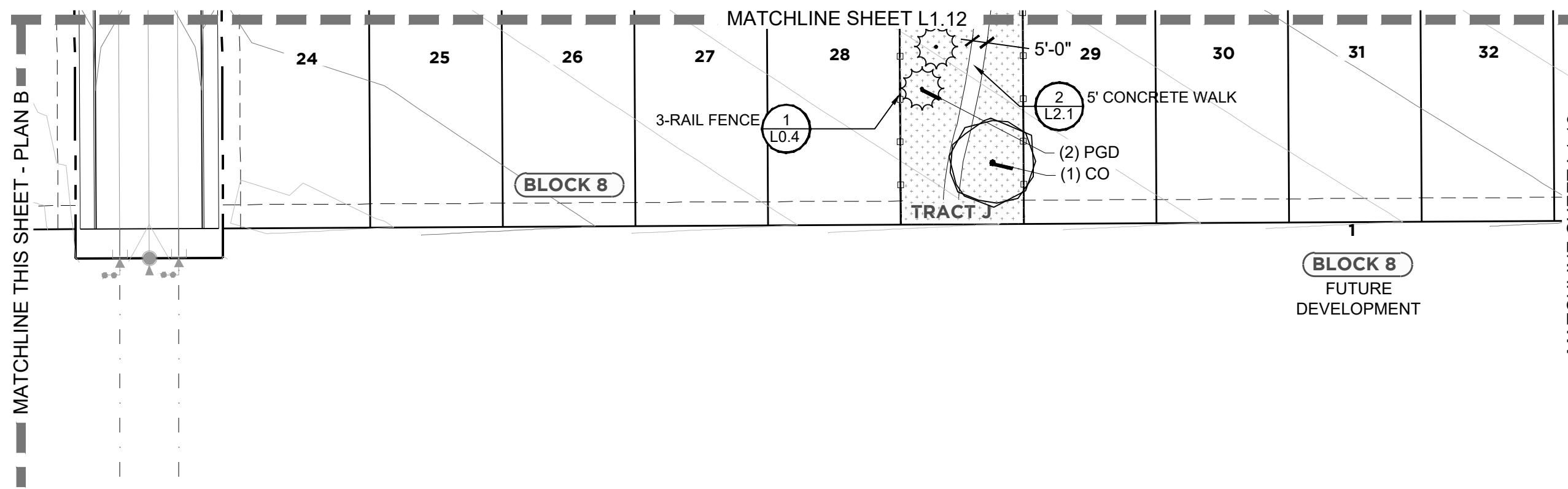
- RIGHT OF WAY
- - - - - EASEMENT
- - - - - STEEL EDGER
- - - - - DUG SPADE EDGE
- ○ ○ ○ ○ FENCE

GROUND COVERS

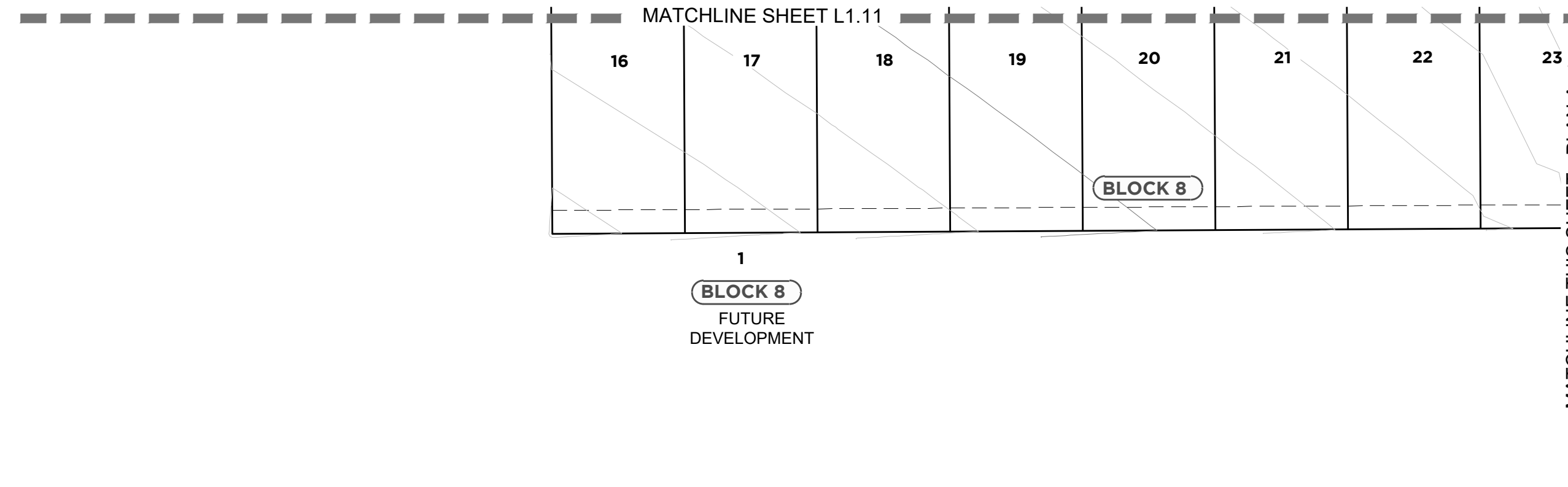
- BLUEGRASS SOD
- FIBAR
- PLAY SURFACING
- PEA GRAVEL, COLOR: MULTI/GREY
- ROCK MULCH, 2"- 4" COBBLE
- DETENTION SEED MIX
- NATIVE SEED MIX
- SHRUB BEDS

NOTES:

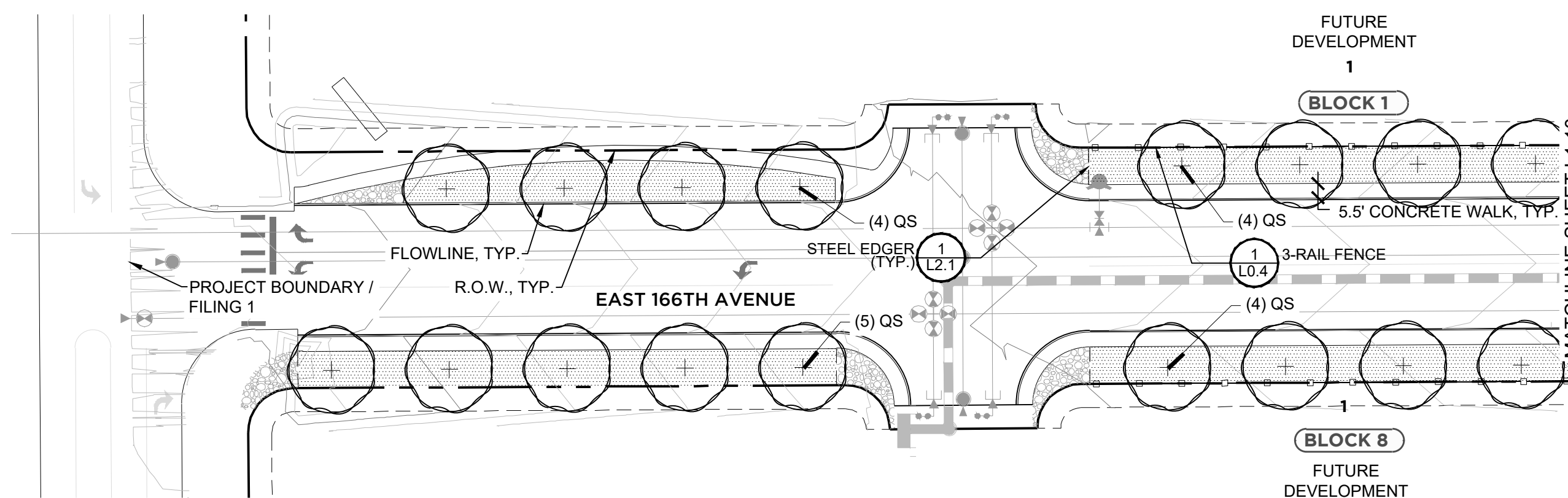
- NO FENCES OR STRUCTURES WILL BE ALLOWED WITHIN SIGHT TRIANGLES. TREES WITHIN THE SIGHT TRIANGLES SHALL BE LIMBED UP 8' FROM THE GROUND.
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A - LANDSCAPE PLAN

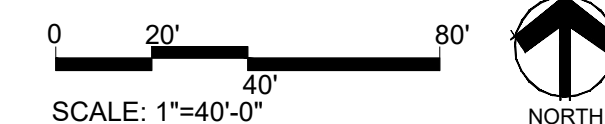
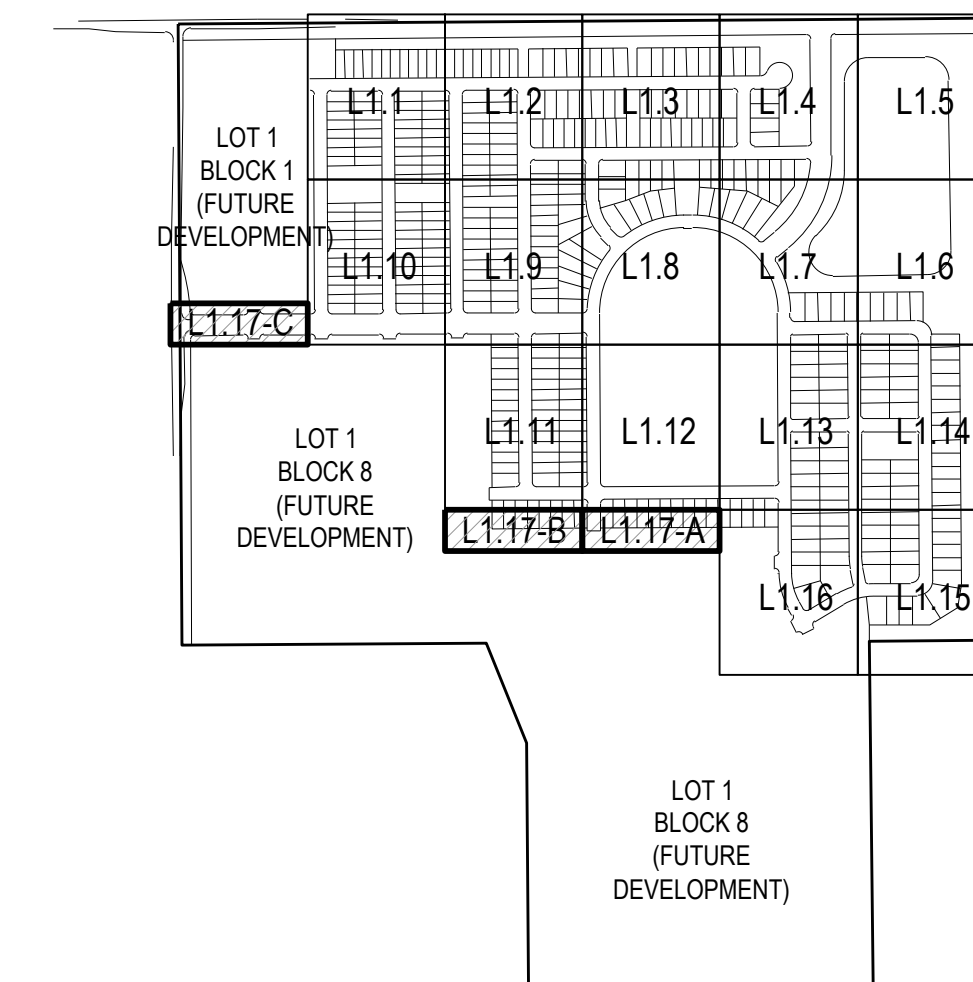


B - LANDSCAPE PLAN



C - LANDSCAPE PLAN

KEY MAP (NOT TO SCALE)



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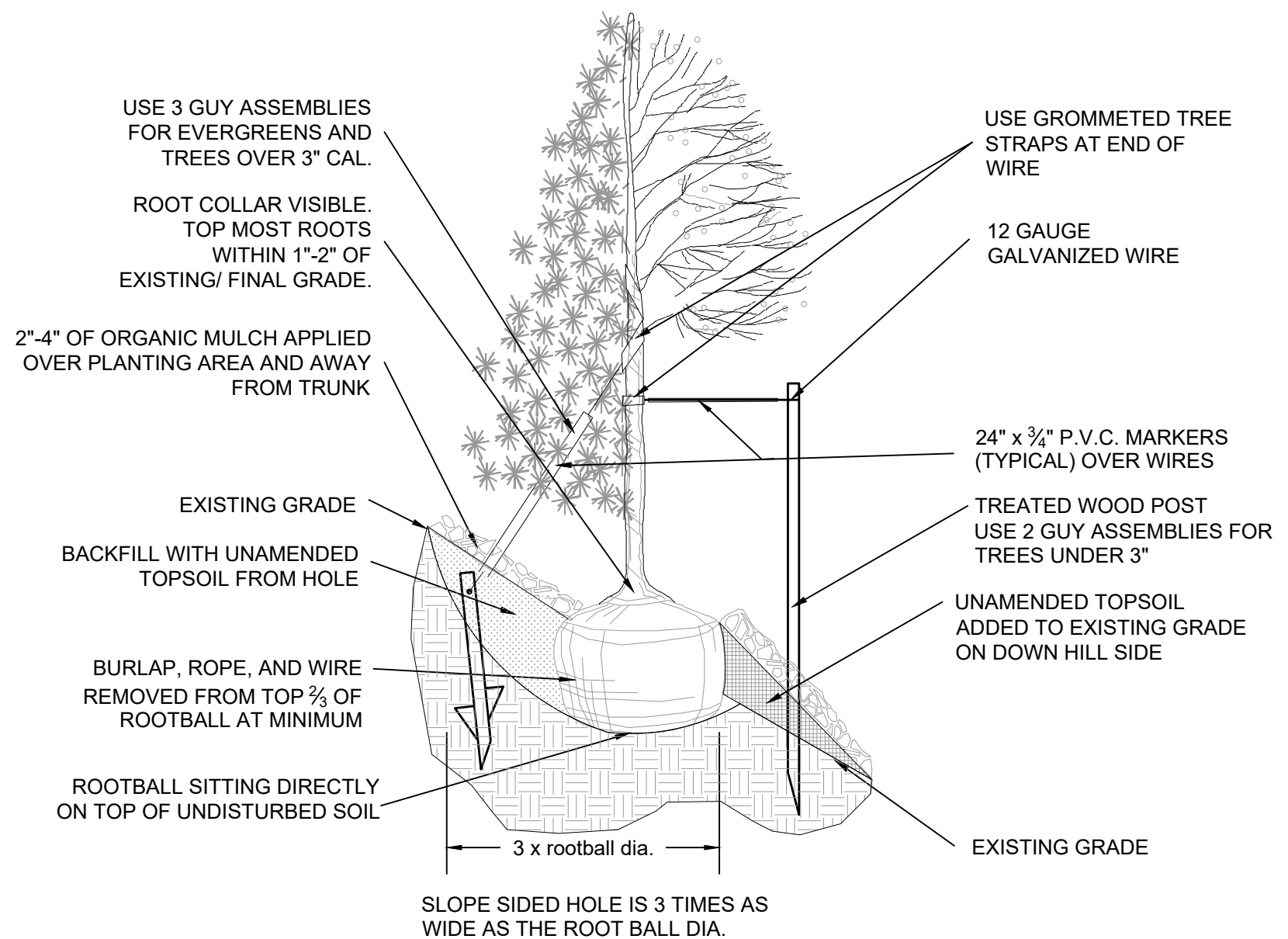
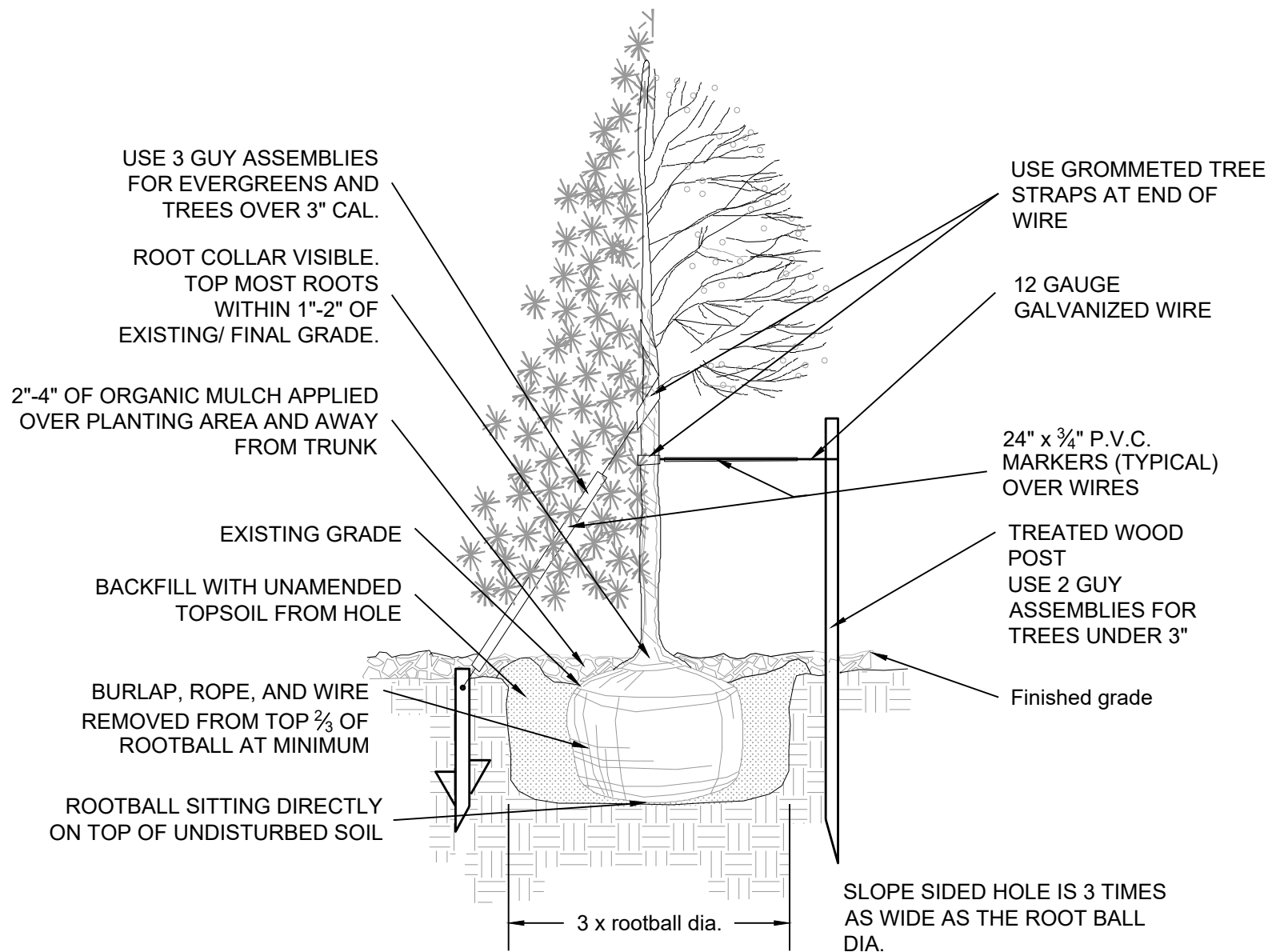
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3	

NOT FOR CONSTRUCTION

Sheet Name
LANDSCAPE & SITE DETAILS

Sheet Number

L2.0

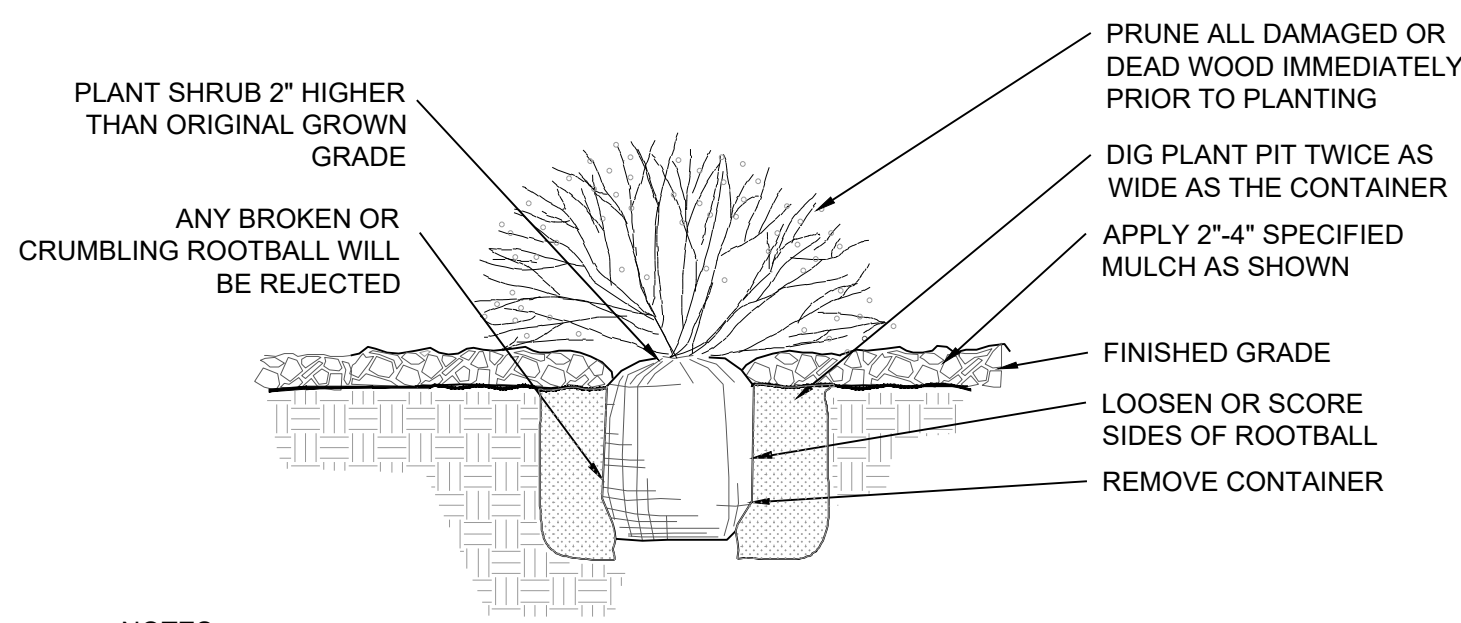


NOTES:

- ALL WORK TO BE DONE AT TIME OF PLANTING
- PEEL BACK ONLY TOP OF BURLAP REQUIRED TO PERFORM WORK. REPLACE BURLAP BEFORE MOVING TREE INTO PLANTING PIT. DO NOT REMOVE WIRE BASKET UNTIL INSIDE PLANTING PIT.
- MEASURE NEW HEIGHT OF ROOTBALL AND DIG PLANTING PIT SO FINAL TOP ROOTBALL GRADE IS 3" ABOVE FINAL GRADE SURROUNDING BALL.
- EXCAVATE PLANTING HOLES WITH SLOPING SIDES. MAKE EXCAVATIONS AT LEAST THREE TIMES AS WIDE AS THE ROOT BALL DIAMETER AND NO DEEPER THAN THE DISTANCE FROM THE TOP MOST ROOTS IN THE ROOT BALL TO THE BOTTOM OF THE ROOT BALL TO ALLOW FOR SETTLING. DO NOT DISTURB SOIL AT BOTTOM OF PLANTING HOLES, BUT DO SCORE THE SIDES OF THE PLANTING HOLE. THE PLANTING AREA SHALL BE LOOSENED AND AERATED AT LEAST THREE TIMES THE DIAMETER OF THE ROOT BALL. BACKFILL SHALL CONSIST OF EXISTING SITE TOPSOIL - NO AMENDMENTS SHALL BE USED UNLESS OTHERWISE SPECIFIED.
- TREES SHALL BE PLANTED WITH THE ROOT COLLAR/FLARE VISIBLE ABOVE GRADE AND TWO OR MORE STRUCTURAL ROOTS LOCATED WITHIN THE TOP 1" TO 2" OF THE ROOT BALL/FINISHED GRADE MEASURED 3" TO 4" FROM TRUNK. THIS INCLUDES TREES THAT ARE SET ON SLOPES (SEE SLOPE PLANTING DETAIL). TREES THAT DO NOT HAVE A VISIBLE ROOT COLLAR SHALL BE REJECTED. DO NOT COVER THE ROOT BALL WITH SOIL.
- WHEN ROOT BALL WILL REMAIN INTACT, CUT OFF BOTTOM 1/4 OF WIRE BASKET BEFORE PLACING TREE IN HOLE, CUT OFF REMAINDER OF BASKET AFTER TREE IS SET IN HOLE, REMOVE BASKET COMPLETELY. AT A MINIMUM, THE TOP 2/3 OF THE BURLAP AND BASKET SHALL BE REMOVED FROM THE ROOT BALL ON ALL TREES. REMOVE ALL NYLON TIES, TWINE, ROPE AND BURLAP. REMOVE UNNECESSARY PACKING MATERIAL.
- FORM SOIL INTO A 3" TO 5" TALL WATERING RING (SAUCER) AROUND PLANTING AREA. THIS IS NOT NECESSARY IN IRRIGATED TURF AREAS. APPLY 2" TO 4" DEPTH OF SPECIFIED MULCH OVER PLANTING AREA AND INSIDE SAUCERS, AWAY FROM TRUNK.
- STAKING AND GUYING OF TREES IS OPTIONAL IN MOST PLANTING SITUATIONS. IN AREAS OF EXTREME WINDS OR ON STEEP SLOPES, STAKING MAY BE REQUIRED TO STABILIZE TREES. STAKING AND GUYING MUST BE REMOVED WITHIN 1 YEAR OF PLANTING DATE.
- TREE WRAP IS NOT TO BE USED ON ANY NEW PLANTINGS, EXCEPT IN LATE FALL PLANTING SITUATIONS AND ONLY THEN AFTER CONSULTATION WITH THE TOWN ARBORIST.
- RESETTING OF IMPROPERLY PLANTED TREES WILL ONLY BE ALLOWED IF IT IS DETERMINED THAT DOING SO WILL IN NO WAY COMPROMISE THE ROOT BALL, AND SHALL ONLY BE DONE WITH APPROVAL OF THE TOWN ARBORIST.
- BROKEN OR CRUMBLING ROOTBALLS WILL BE REJECTED. REMOVING THE CONTAINERS WILL NOT BE AN EXCUSE FOR DAMAGED ROOTBALLS.
- PRUNE ALL DEAD OR DAMAGED WOOD AFTER PLANTING.

1 TREE PLANTING

NOT TO SCALE

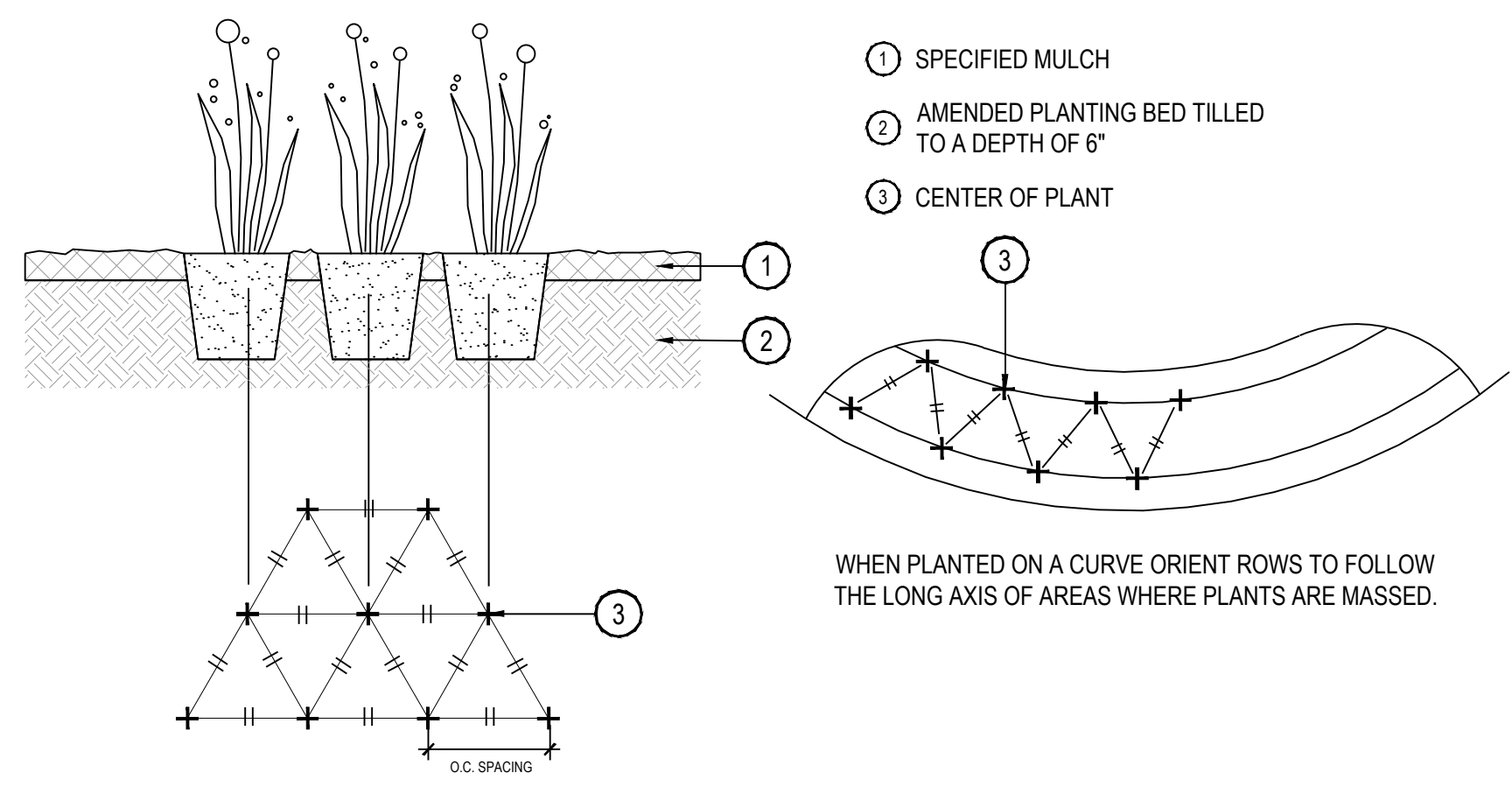


NOTES:

- BACKFILL AND WATER-IN THOROUGHLY.
- BROKEN OR CRUMBLING ROOTBALLS WILL BE REJECTED. REMOVING THE CONTAINERS WILL NOT BE AN EXCUSE FOR DAMAGED ROOTBALLS

2 SHRUB PLANTING

NOT TO SCALE



3 PERENNIAL PLANTING

NOT TO SCALE

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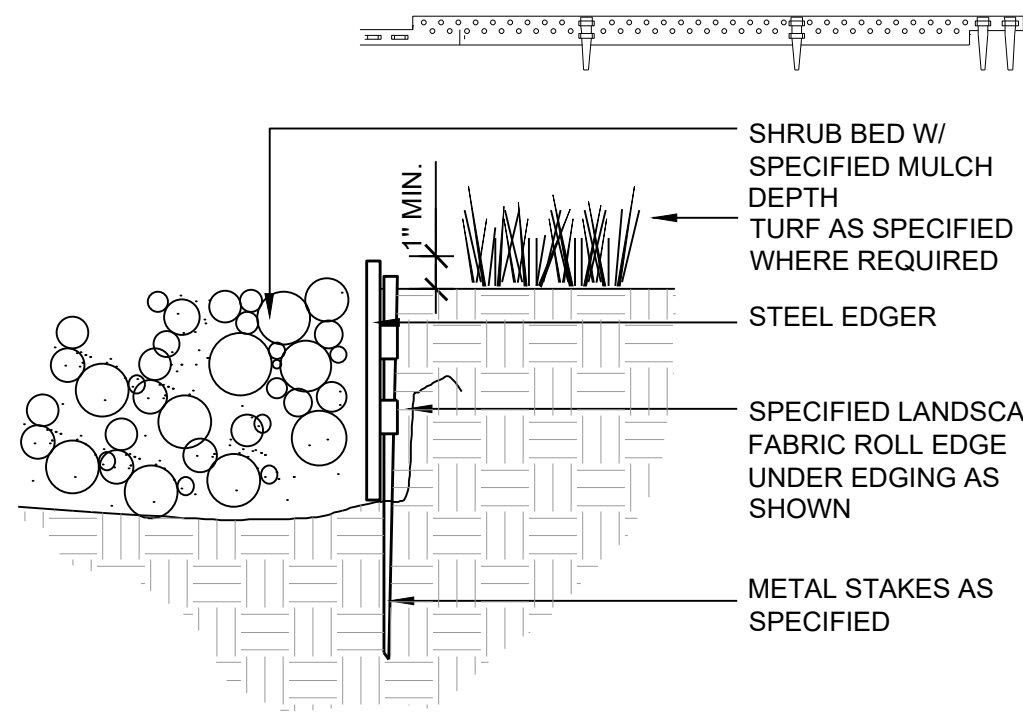
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NOT FOR CONSTRUCTION

Sheet Name
LANDSCAPE & SITE DETAILS

Sheet Number

L2.1



PRODUCT: PERFEDGE, 4", 16 GA., ROLLED TOP
COLOR: GREEN
MANUF: COYOTE LANDSCAPE PRODUCTS
4661 MONACO ST., DENVER, CO 802016
1-800-321-1115

- NOTES:
1. SET ALL EDGING 1" ABOVE FINISH GRADE AS SHOWN.
 2. EDGING SHALL ABUT ALL CONCRETE CURBS AND WALKS PERPENDICULAR, AND FLUSH W/ GRADES OF CONCRETE.
 3. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.

1 STEEL EDGER

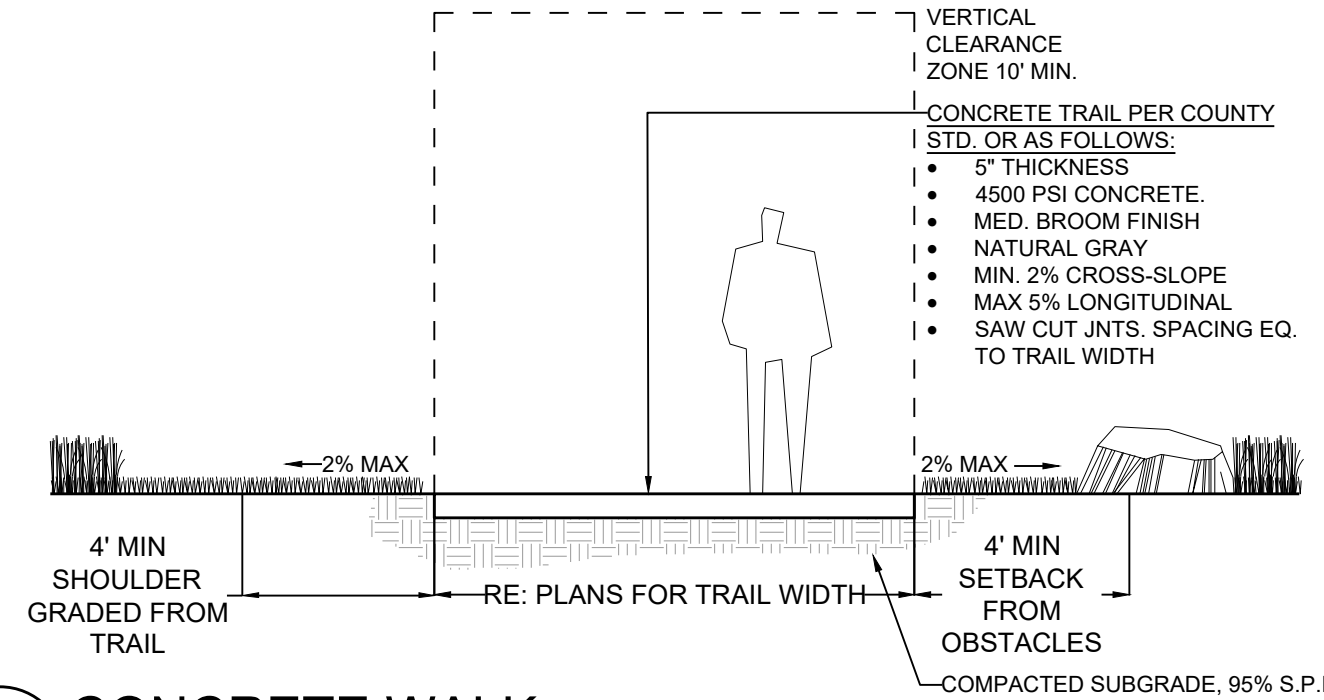
NOT TO SCALE



MANUFACTURER:
THOMAS STEELE
(<https://www.thomas-steele.com/>)
PRODUCT:
LIVINGSTON BENCH
MATERIAL:
EMBOSSED RECYCLED PLASTIC BIRCHWOOD
POWDER COAT:
ORANGE

3 BENCH

NOT TO SCALE



2 CONCRETE WALK

NOT TO SCALE

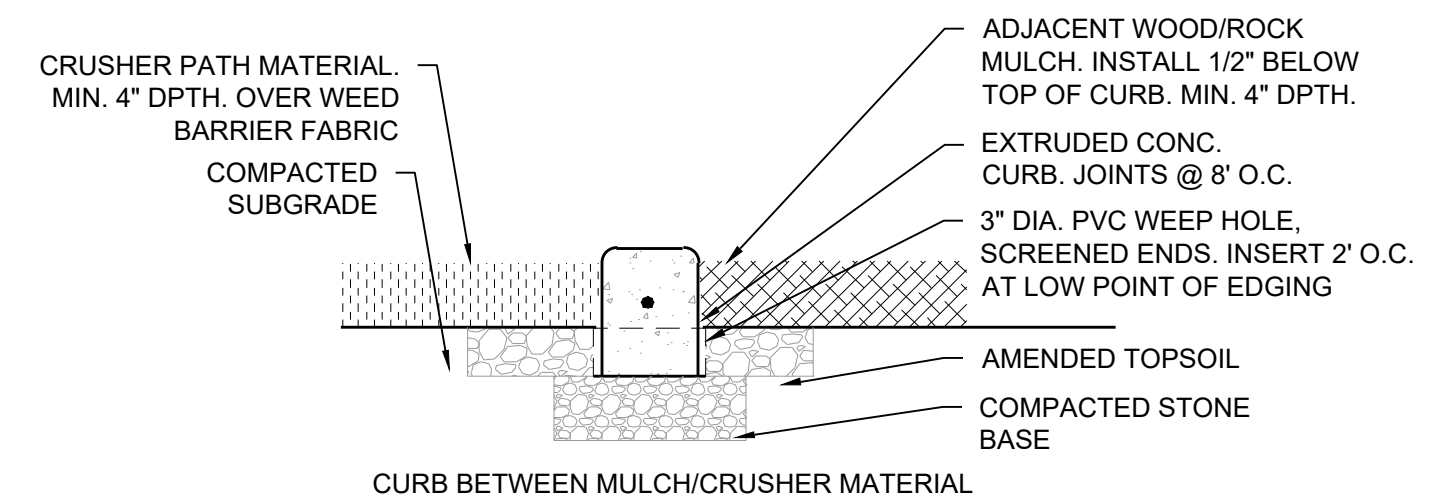
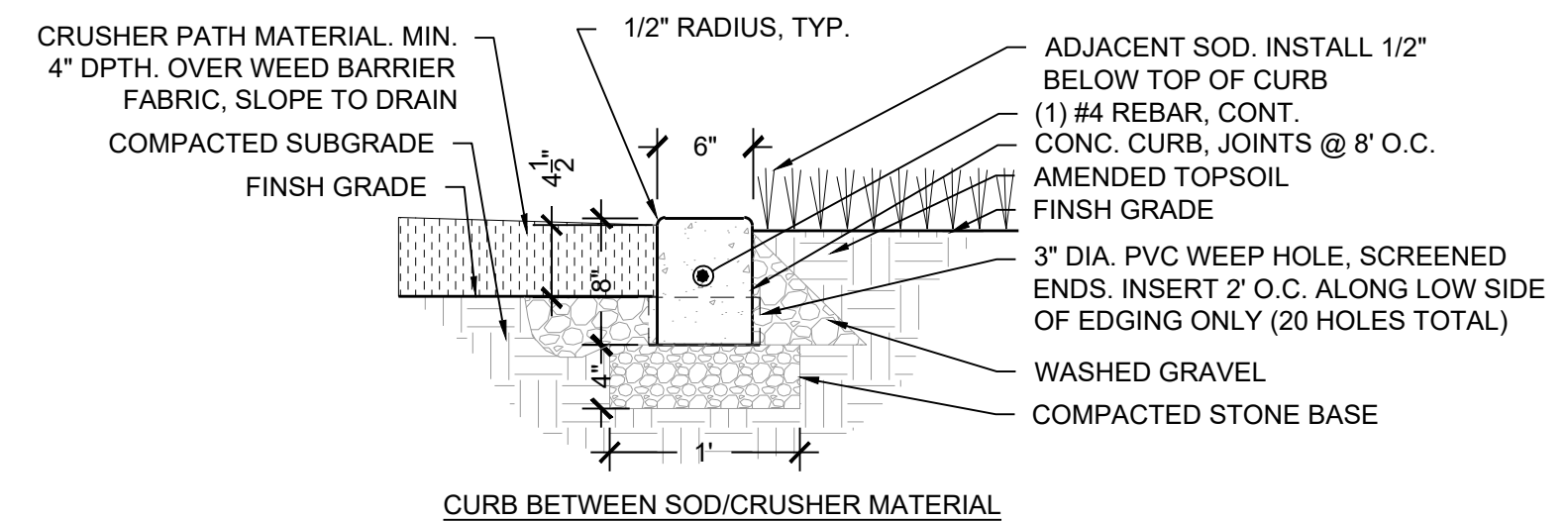


MANUFACTURER:
THOMAS STEELE
(<https://www.thomas-steele.com/>)
PRODUCT:
MONONA PICNIC TABLE
MATERIAL:
EMBOSSED RECYCLED PLASTIC BIRCHWOOD
POWDER COAT:
ORANGE

4 PICNIC TABLE

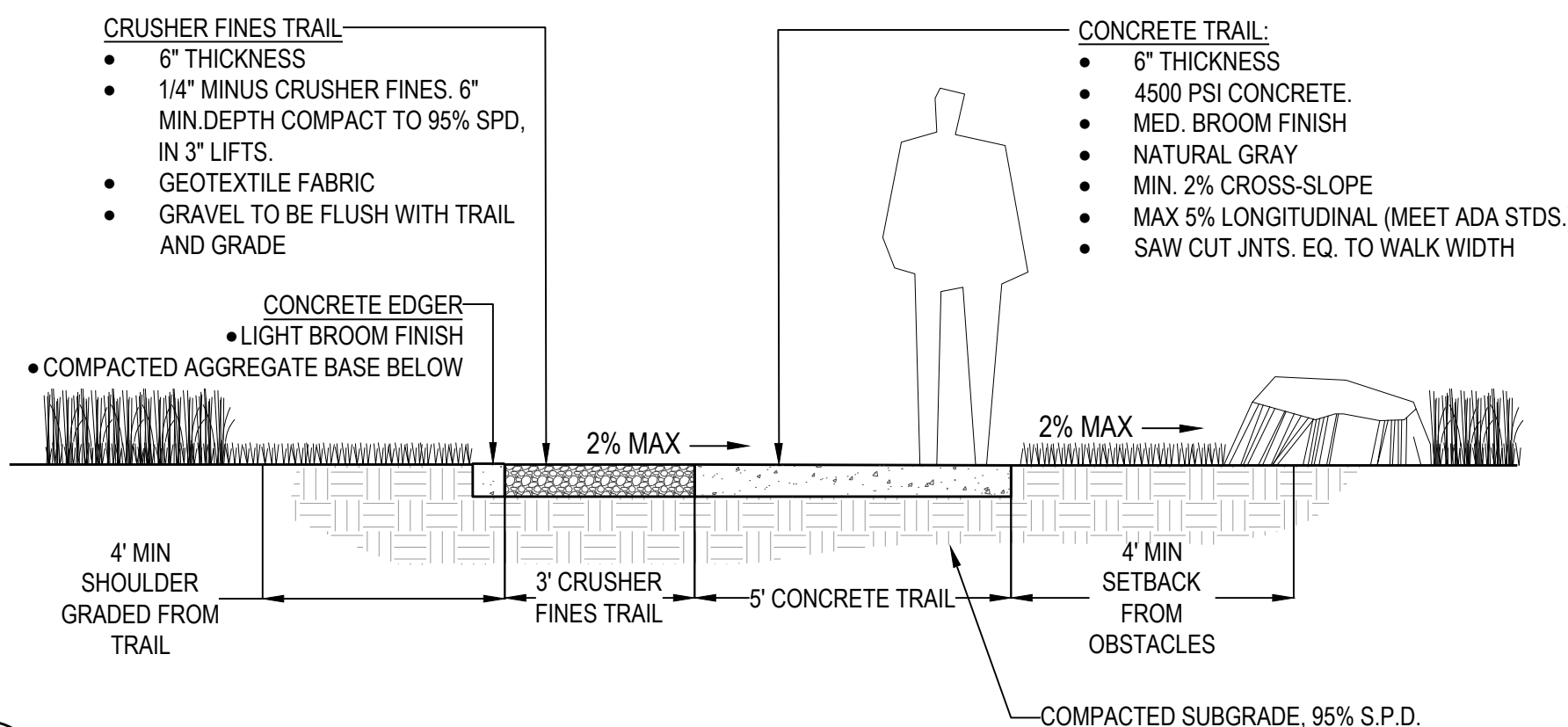
NOT TO SCALE

- NOTES:
1. 4000 PSI CONC EDGER WITH FIBER MESH REINF., STANDARD GRAY, BROOM FINISH.
 2. PROVIDE TOOLED JNTS. AT 48" O.C.
 3. EPOXY COAT REBAR.



6 CONCRETE CURB @ CRUSHER FINES

NOT TO SCALE



5 MULTI-USE TRAIL

NOT TO SCALE

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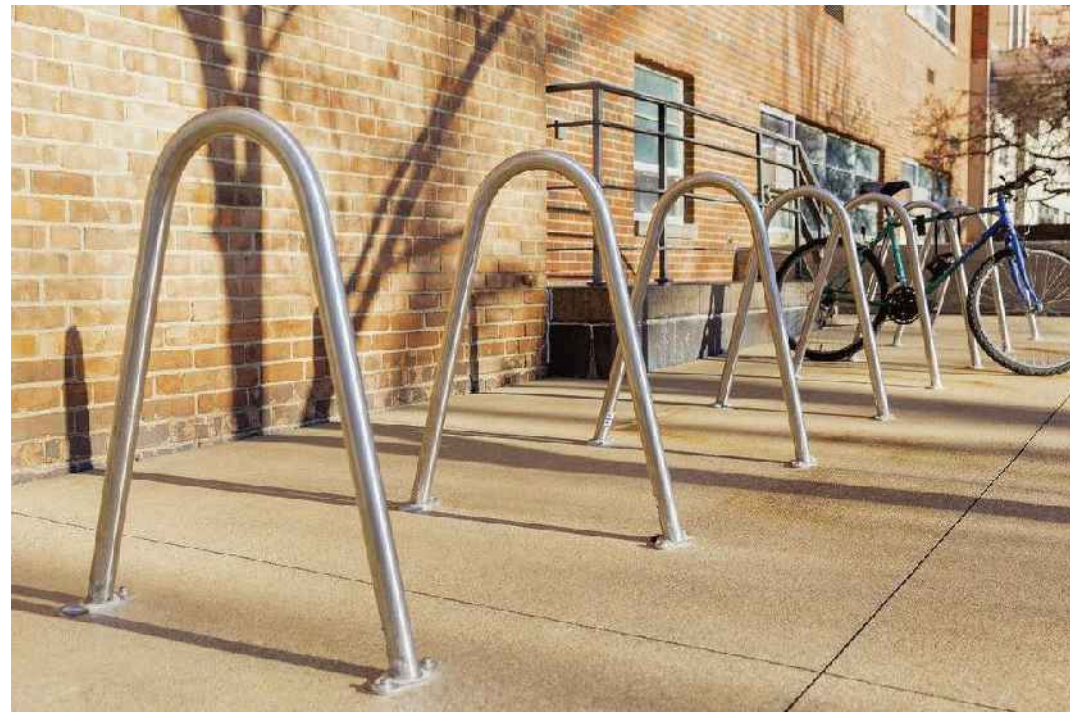
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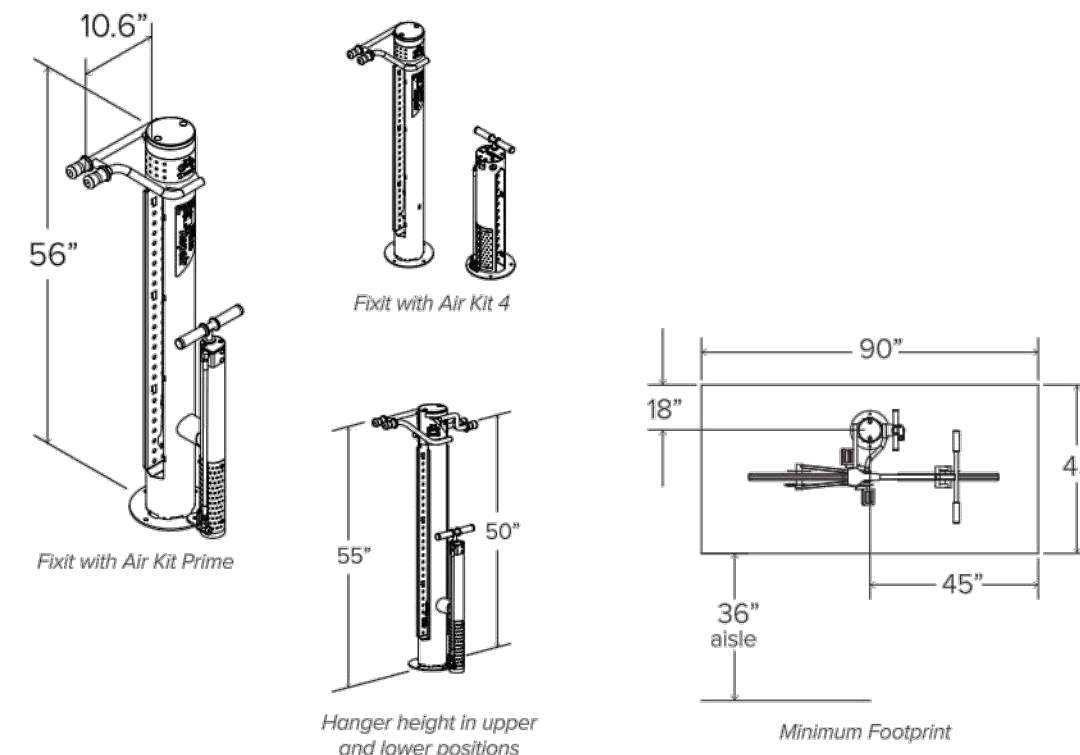
L2.2



MANUFACTURER:
THOMAS STEELE
(<https://www.thomas-steele.com/>)
PRODUCT:
WINGRA BIKE RACK
MATERIAL:
POWDER COAT:
GUNMETAL

1 BIKE RACK

NOT TO SCALE



MANUFACTURER:
DERO (dero.com)
PRODUCT:
FIX-IT PLUS WITH AIR KIT
PRIME (ATTACHED)
FINISH:
GALVANIZED

2 BIKE REPAIR STATION

NOT TO SCALE



"DOGIPOT" PET STATION IS MADE OF A COMBINATION OF ALUMINUM AND STEEL, POWDER COATED FOR LONG LIFE AND APPEARANCE. AVAILABLE IN GREEN ONLY. COMES COMPLETE WITH:

- 15.5 X 9.4 X 3.25 INCH ALUMINUM BAG DISPENSER
- LOCKING FRONT ACCESS PANEL
- CLEARLY PRINTED INSTRUCTIONS
- PLEASE CLEAN UP AFTER YOUR DOG SIGN
- 2 ROLLS (200 EA.) BIODEGRADABLE BROWN LITTER BAGS
- 8 FEET TELESCOPING GALVANIZED STEEL POST FOR DIRECT-BURY
- 10-GALLON STEEL TRASH RECEPTACLE WITH LID
- 50 HEAVY-DUTY DRAWSTRING TRASH LINER BAGS
- 12 X 18-INCH PET SIGN

3 PET WASTE STATION

NOT TO SCALE



MANUFACTURER:
THOMAS STEELE
(<https://www.thomas-steele.com/>)
PRODUCT:
CHANDLER RECEPTACLE
MATERIAL:
POWDER COAT:
GUNMETAL

4 TRASH RECEPTACLE

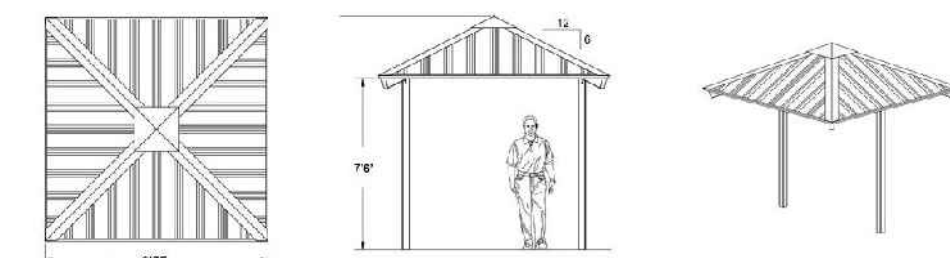
NOT TO SCALE



MANUFACTURER:
PILOT ROCK
(<https://www.pilotrock.com/>)
PRODUCT:
PREMIER PARK GRILL
(MODEL A-20)

5 PARK GRILL

NOT TO SCALE



MANUFACTURER:
POLIGON
(<https://www.poligon.com>)
PRODUCT:
HIP ROOF SUNSHELTER
SIZE: 10'x10'
ROOF COLOR:
TUDOR BROWN
POWDERCOAT - STEEL FRAME:
FOX-HOLLOW GRAY

6 HIP ROOF SUNSHELTER (SMALL)

NOT TO SCALE

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Sheet Name

LANDSCAPE &
SITE DETAILS

Sheet Number

L2.3



MANUFACTURER:
POLIGON
(<https://www.poligon.com>)
PRODUCT:
GABLE ROOF RECTANGLE
SIZE:
LARGE - 20x24
X-LARGE - 20x44
ROOF COLOR:
TUDOR BROWN
POWDERCOAT - STEEL FRAME:
FOX-HOLLOW GRAY

1 GABLE SHADE SHELTER

NOT TO SCALE

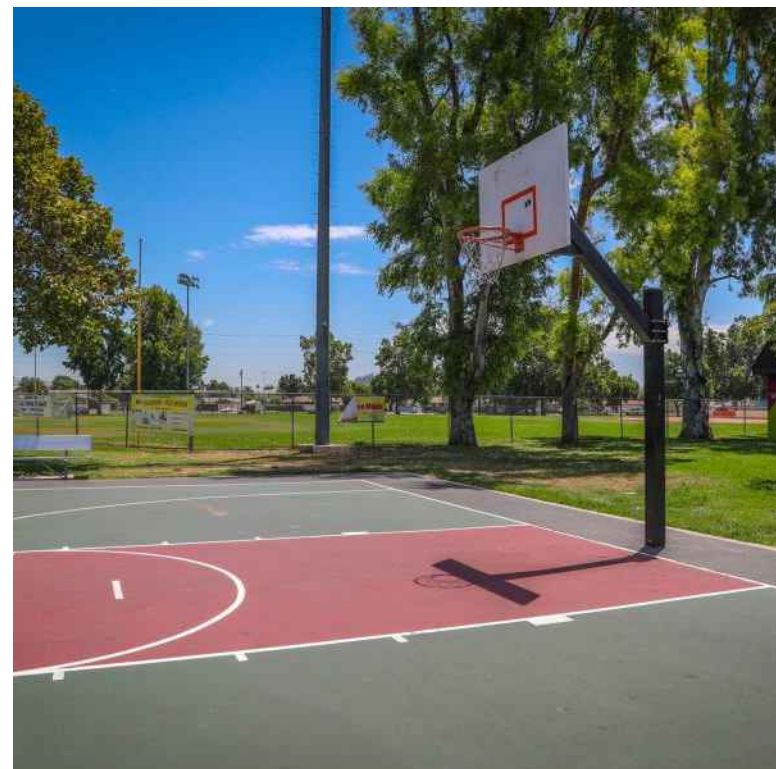
PINWHEEL SQUARE SAILS



MANUFACTURER:
POLIGON
(<https://www.poligon.com>)
PRODUCT:
PINWHEEL SQUARE SAILS
SIZE:
SMALL - 14X14
LARGE - 24X24
COLOR - FABRIC:
SUN BLAZE
POWDERCOAT - STEEL FRAME:
FOX-HOLLOW GRAY

2 PINWHEEL SQUARE SHELTER

NOT TO SCALE



3 BASKETBALL COURT

NOT TO SCALE



4 HORSESHOE GAME

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5 BOULDER SEATING

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6 TRIKE TRACK

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TRANSPORTATION
CONSULTANTS, INC.

August 28, 2024

Mr. Matthew Cavanaugh
Seltzer Farms Investments, LLC
c/o Remington Homes
5740 Wadsworth Boulevard
Arvada, CO 80401

Re: Todd Creek Village MTIA
Traffic Impact Analysis
Adams County, CO
LSC #221150

Dear Mr. Cavanaugh:

In response to your request, LSC Transportation Consultants, Inc. has prepared this updated master traffic impact analysis (MTIA) for the proposed Todd Creek Village development to address County and CDOT comments. As shown on Figure 1, the site is generally located south of E. 168th Avenue and east of Yosemite Street in Adams County, Colorado.

REPORT CONTENTS

The report contains the following: the existing roadway and traffic conditions in the vicinity of the site including the lane geometries, traffic controls, posted speed limits, etc.; the existing weekday peak-hour traffic volumes; the existing daily traffic volumes in the area; the typical weekday site-generated traffic volume projections for the site; the assignment of the projected traffic volumes to the area roadways; the projected short-term and long-term background and resulting total traffic volumes on the area roadways; the site's projected traffic impacts; and any recommended roadway improvements to mitigate the site's traffic impacts.

LAND USE AND ACCESS

Figure 2 shows the proposed concept plan. The 555.2-acre site is planned to include up to 2,004 residential dwelling units including a mix of multi-family, single-family attached, single-family detached, and senior living uses. The site also includes about 218.9 acres of open space, trail corridors, and parks. Access is proposed to E. 168th Avenue, Yosemite Street, and Lima Street.

ROADWAY AND TRAFFIC CONDITIONS

Area Roadways

The major roadways in the site's vicinity are shown on Figure 1 and are described below.

- **E. 160th Avenue (SH 7)** is an east-west, two-lane state highway south of the site. It is classified by CDOT as Regional Highway (R-A). The intersections Quebec Street, Yosemite Street, and Havana Street are signalized with auxiliary turn lanes. The posted speed limit in the vicinity of the site is 60 mph west of Riverdale Road and 50 mph east of Riverdale Road. Adams County plans for a four-lane roadway in the future.
- **E. 168th Avenue** is an east-west, two-lane arterial roadway north of the site. The intersections with CR 17, Quebec Street, CR 19, Yosemite Street, CR 23½, and Lima Street are stop-sign controlled. The posted speed limit is 45 mph in the vicinity of the site. This roadway will likely be widened to four lanes in the long term per the *Adams County Transportation Plan*.
- **Quebec Street** is a two-lane, north-south roadway west of the site. The *City of Thornton Transportation and Mobility Master Plan* shows Quebec as a six-lane Major Arterial south of E. 160th Avenue (SH 7), a four-lane Minor Arterial north of E. 160th Avenue (SH 7), and a two-lane Minor Arterial just south of E. 168th Avenue. The intersection of Quebec Street and E. 160th Avenue (SH 7) is currently traffic signal controlled with auxiliary turn lanes. The intersection of Quebec Street and E. 168th Avenue is currently stop-sign controlled with no auxiliary turn lanes. The posted speed limit is 40 mph in the vicinity of the site.
- **Yosemite Street** is a north-south, two-lane collector roadway that extends through the site. The posted speed limit in the vicinity of the site is 40 mph. The intersection with E. 160th Avenue (SH 7) is signalized with auxiliary turn lanes and the intersection with E. 168th Avenue is stop-sign controlled. Yosemite Street is planned to be realigned as part of this development to align with Weld County Road 19 at E. 168th Avenue.
- **Havana Street/Lima Street** is a north-south, two-lane collector roadway east of the site. The intersection with E. 160th Avenue (SH 7) is signalized with auxiliary turn lanes and the intersection with E. 168th Avenue is stop-sign controlled with auxiliary turn lanes. The posted speed limit in the vicinity of the site is 40 mph.
- **Tucson Street** is a north-south, two-lane collector roadway east of the site that extends from E. 160th Avenue (SH 7) to E. 168th Avenue. The posted speed limit is 40 mph.

Existing Traffic Conditions

Figure 3a shows the existing traffic volumes in the vicinity of the site on a typical weekday. The weekday peak-hour traffic and daily traffic volumes are from the attached traffic counts conducted by Counter Measures in December, 2022 and January, February, and March 2023. Figure 3b shows the existing lane geometries, traffic controls, and posted speed limits.

Crash History

The Colorado Department of Transportation (CDOT) has provided crash history data from January 2018 to December 2022 for the E. 160th Avenue (SH 7) intersections between Quebec Street and Tucson Street. A copy of the data is attached for reference. This four-mile corridor of SH 7 had 41 reported accidents over this five-year period. Approximately half of these accidents (21) occurred at or near the Yosemite Street intersection. Fifteen of the 21 accidents were

reported as rear-end accidents which are somewhat common at traffic signal controlled intersections.

2030 and 2044 Background Traffic

Figure 4a shows the estimated 2030 background traffic and Figure 5a shows the estimated 2044 background traffic. The background traffic is based on an annual growth rate of two percent for traffic on E. 168th Avenue and E. 160th Avenue (SH 7) plus traffic projected to be generated by buildout of the Baseline Lakes development located west of Havana Street/Lima Street.

The annual growth rate is based on a comparison of the existing daily traffic volumes on E. 160th Avenue (SH 7) and the Denver Area Council of Governments (DRCOG) projected 2050 daily traffic volumes.

Figures 4b and 5b show the estimated lane geometry and traffic control.

Existing, 2030, and 2044 Background Levels of Service

Level of service (LOS) is a quantitative measure of the level of congestion or delay at an intersection. Level of service is indicated on a scale from "A" to "F." LOS A is indicative of little congestion or delay and LOS F is indicative of a high level of congestion or delay. Attached are specific level of service definitions for signalized and unsignalized intersections.

The intersections in the study area were analyzed to determine the existing, 2030, and 2044 background levels of service using Synchro. Table 1 shows the level of service analysis results. The level of service reports are attached.

- 1. E. 168th Avenue/CR 17:** All movements at this unsignalized intersection currently operate at LOS "B" or better and are expected to do so through 2044.
- 2. E. 168th Avenue/Quebec Street:** All movements at this unsignalized intersection currently operate at LOS "B" or better and are expected to do so through 2044.
- 3. E. 168th Avenue/West WSP Access:** This intersection was analyzed only in the total traffic scenarios.
- 4. E. 168th Avenue/CR 19:** All movements at this unsignalized intersection currently operate at LOS "B" or better and are expected to do so through 2044.
- 5. E. 168th Avenue/Yosemite Street:** All movements at this unsignalized intersection currently operate at LOS "B" or better. Yosemite Street is planned to be realigned to align with CR 19 (Intersection #4) as part of the Todd Creek Village development. This realignment will result in the existing Yosemite Street intersection being removed.
- 6. E. 168th Avenue/East Remington Access:** This intersection was analyzed only in the total traffic scenarios.

7. **E. 168th Avenue/Lima Street:** All movements at this unsignalized intersection currently operate at LOS “B” or better and are expected to do so through 2044.
8. **E. 168th Avenue/CR 23½:** All movements at this unsignalized intersection currently operate at LOS “B” or better and are expected to do so through 2044.
9. **E. 168th Avenue/Tucson Street:** All movements at this unsignalized intersection currently operate at LOS “B” or better and are expected to do so through 2044.
10. **E. 160th Avenue (SH 7)/Quebec Street:** This signalized intersection currently operates at an overall LOS “C” during both morning and afternoon peak-hours. By 2030 it is expected to operate at an overall LOS “D” or better with no improvements. By 2044 it was assumed that E. 160th Avenue (SH 7) will be widened to a four-lane roadway per the *Adams County TMP*. This intersection is expected to operate at an overall LOS “C” or better during both morning and afternoon peak-hours with two eastbound and two westbound through lanes.
11. **E. 160th Avenue (SH 7)/Yosemite Street:** This signalized intersection currently operates at an overall LOS “B” during both morning and afternoon peak-hours through 2030 with no improvements. By 2044 it was assumed that E. 160th Avenue (SH 7) will be widened to a four-lane roadway per the *Adams County TMP*. This intersection is expected to operate at LOS “A” through 2044 with two eastbound and two westbound through lanes.
12. **E. 160th Avenue (SH 7)/Havana Street:** This signalized intersection currently operates at an overall LOS “A” during the morning peak-hour and LOS “B” during the afternoon peak-hour. In 2030, both peak-hours are expected to operate at LOS “B” with no improvements. By 2044 it was assumed that E. 160th Avenue (SH 7) will be widened to a four-lane roadway per the *Adams County TMP*. This intersection is expected to operate at LOS “A” through 2044 with two eastbound and two westbound through lanes.
13. **E. 160th Avenue (SH 7)/Riverdale Road:** The southbound approach at this intersection currently operates at LOS “F” during the afternoon peak hour. By 2030 the northbound shared left/through lane is expected to operate at LOS “E” during both peak hours. By 2044, the northbound shared left-turn/through lane and the southbound approach are expected to operate at LOS “F” in one or both peak-hours if the intersection remains a full-movement stop-sign controlled intersection.
14. **E. 160th Avenue (SH 7)/Tucson Street:** All movements at this unsignalized intersection currently operate at LOS “D” or better and are expected to operate at LOS “E” or better by 2030. By 2044, this intersection is expected to be signalized and operate at an overall LOS “A”.
15. **Quebec Street/Eagle Shadow Avenue:** All movements at this unsignalized intersection currently operate at LOS “A” and are expected to do so through 2044.
16. **Quebec Street/E. 162nd Avenue:** All movements at this unsignalized intersection currently operate at LOS “A” and are expected to do so through 2044.

- 17. Yosemite Street/N. Site Access:** This intersection was analyzed only in the total traffic scenarios.
- 18. Yosemite Street/S. Site Access:** This intersection was analyzed only in the total traffic scenarios.
- 19. Yosemite Street/E. 163rd Place:** All movements at this unsignalized intersection are expected to operate at LOS “A” through 2044.
- 20. Yosemite Street/E. 162nd Avenue:** All movements at this unsignalized intersection currently operate at LOS “A” and are expected to do so through 2044.
- 21. Lima Street/Lansing Court:** All movements at this unsignalized intersection currently operate at LOS “A” and are expected to do so through 2044.
- 22. Lima Street/E. 166th Avenue:** All movements at this unsignalized intersection currently operate at LOS “A” and are expected to do so through 2044.

TRIP GENERATION

Table 2 shows the estimated average weekday trip generation for the proposed site based on the rates from *Trip Generation, 11th Edition, 2021* by the Institute of Transportation Engineers (ITE). The trip generation estimate is based on the residential land uses only as all trips related to the proposed parks are anticipated to be internal to the site.

The site is projected to generate about 15,536 vehicle-trips on the average weekday, with about half entering and half exiting during a 24-hour period. During the morning peak-hour, which generally occurs for one hour between 6:30 and 8:30 a.m., about 290 vehicles would enter and about 793 vehicles would exit the site. During the afternoon peak-hour, which generally occurs for one hour between 4:00 and 6:00 p.m., about 858 vehicles would enter and about 544 vehicles would exit.

TRIP DISTRIBUTION

Figure 6 shows the estimated directional distribution of the site-generated traffic volumes on the area roadways. The estimates were based on the location of the site with respect to the regional population, employment, and activity centers; the site’s proposed land use; and the traffic counts.

TRIP ASSIGNMENT

Figure 7 shows the estimated site-generated traffic volumes based on the directional distribution percentages (from Figure 6) and the trip generation estimate (from Table 2).

2030 AND 2044 TOTAL TRAFFIC

Figure 8a shows the 2030 total traffic which is the sum of the 2030 background traffic volumes (from Figure 4a) and the site-generated traffic volumes (from Figure 7). Figure 8b shows the recommended 2030 lane geometry and traffic control.

Figure 9a shows the 2044 total traffic which is the sum of 2044 background traffic volumes (from Figure 5a) and the site-generated traffic volumes (from Figure 7). Figure 9b shows the recommended 2044 lane geometry and traffic control.

PROJECTED LEVELS OF SERVICE

The intersections in the study area were analyzed to determine the 2030 and 2044 total levels of service. Table 1 shows the level of service analysis results. The level of service reports are attached.

1. **E. 168th Avenue/CR 17:** All movements at this unsignalized intersection are expected to operate at LOS “C” or better through 2044.
2. **E. 168th Avenue/Quebec Street:** All movements at this unsignalized intersection are expected to operate at LOS “C” or better through 2044.
3. **E. 168th Avenue/West WSP Access:** All movements at this unsignalized intersection are expected to operate at LOS “C” or better through 2044.
4. **E. 168th Avenue/CR 19:** All approaches at this intersection are expected to operate at LOS “A” during the peak-hours through 2044 if it is constructed as a modern roundabout.
5. **E. 168th Avenue/Yosemite Street:** Yosemite Street is planned to be realigned to align with CR 19 (Intersection #4) as part of the Todd Creek Village development. This realignment will result in the existing Yosemite Street intersection being removed.
6. **E. 168th Avenue/East Remington Access:** All movements at this unsignalized intersection are expected to operate at LOS “B” or better through 2044.
7. **E. 168th Avenue/Lima Street:** All approaches at this intersection are expected to operate at LOS “A” during the peak-hours through 2044 if it is reconstructed as a modern roundabout.
8. **E. 168th Avenue/CR 23½:** All movements at this unsignalized intersection are expected to operate at LOS “C” or better through 2044.
9. **E. 168th Avenue/Tucson Street:** All movements at this unsignalized intersection are expected to operate at LOS “C” or better through 2044.
10. **E. 160th Avenue (SH 7)/Quebec Street:** This signalized intersection is expected to operate “D” during the morning peak-hour and at LOS “E” during the afternoon peak-hour in 2030 if E. 160th Avenue (SH 7) remains a two-lane roadway. If E. 160th Avenue (SH 7) is widened to provide two eastbound and two westbound through lanes per the *Adams County TMP*, both peak-hours are expected to operate at an overall LOS “C” or better during both morning and afternoon peak-hours through 2044.
11. **E. 160th Avenue (SH 7)/Yosemite Street:** This signalized intersection is expected to operate at an overall LOS “C” during the morning peak-hour and LOS “B” during the afternoon peak-hour through 2030. By 2044 it was assumed that E. 160th Avenue (SH 7) will

be widened to a four-lane roadway. This intersection is expected to operate at LOS “B” or better during both morning and afternoon peak-hours through 2044 with two eastbound and two westbound through lanes per the *Adams County TMP*.

- 12. E. 160th Avenue (SH 7)/Havana Street:** This signalized intersection is expected to operate at an overall LOS “B” or better during both morning and afternoon peak-hours through 2030. By 2044 it was assumed that E. 160th Avenue (SH 7) will be widened to a four-lane roadway per the *Adams County TMP*.
- 13. E. 160th Avenue (SH 7)/Riverdale Road:** The northbound shared left/through lane and the southbound approach at this unsignalized intersection are expected to operate at “E” or “F” in one or both peak-hours through 2044 if this intersections remains a stop-sign controlled full-movement intersection. Potential mitigation would be conversion to three-quarter movement.
- 14. E. 160th Avenue (SH 7)/Tucson Street:** The southbound left-turn movement is expected to operate at LOS “F” by 2030 if this intersection remains stop-sign controlled. If it is converted to signal control it is expected to operate at an overall LOS “B” during both peak-hours through 2030. By 2044 it was assumed that E. 160th Avenue (SH 7) will be widened to a four-lane roadway. This intersection is expected to operate at LOS “A” through 2044 with two eastbound and two westbound through lanes.
- 15. Quebec Street/Eagle Shadow Avenue:** All movements at this unsignalized intersection are expected to operate at LOS “A” through 2044.
- 16. Quebec Street/E. 162nd Avenue:** All movements at this unsignalized intersection are expected to operate at LOS “A” through 2044.
- 17. Yosemite Street/N. Site Access:** All movements at this unsignalized intersection are expected to operate at LOS “B” or better through 2044.
- 18. Yosemite Street/S. Site Access:** All movements at this unsignalized intersection are expected to operate at LOS “C” or better through 2044.
- 19. Yosemite Street/E. 163rd Place:** All movements at this unsignalized intersection are expected to operate at LOS “B” or better through 2044.
- 20. Yosemite Street/E. 162nd Avenue:** All movements at this unsignalized intersection are expected to operate at LOS “B” or better through 2044.
- 21. Lima Street/Lansing Court:** All movements at this unsignalized intersection are expected to operate at LOS “B” or better through 2044.
- 22. Lima Street/E. 166th Avenue:** All movements at this unsignalized intersection are expected to operate at LOS “B” or better through 2044.

QUEUING ANALYSIS

Table 3 shows the estimated 95th percentile queue lengths at the study area intersections. Table 3 also shows the existing and recommended turn lane lengths. The recommended improvements on 160th Avenue (SH 7) are based on the criteria found in the *Colorado State Highway Access Code*.

TRAFFIC SIGNAL WARRANT ANALYSIS

The intersections expected to operate at LOS “F” for one or more movement as stop-sign controlled intersections were analyzed to determine if and when Eight-Hour, Four-Hour, and Peak-Hour Vehicular Volume Traffic Signal Warrants would be met based on the projected 2030 and 2044 traffic volumes.

Table 3 shows the results of the analysis for the intersection of E. 168th Avenue/Lima Street (#7). As shown on the table the minor street volume during both morning and afternoon peak-hours is below the minimum threshold for the Eight-Hour, Four-Hour, and Peak-Hour Vehicular Volume Traffic Signal Warrants. This intersection will not likely meet any of the traffic signal warrants even if through traffic increases significantly on E. 168th Avenue.

Table 4 shows the results of the analysis for the intersection of E. 160th Avenue (SH 7)/Riverdale Road (#13). As shown on the table this intersection will not likely meet any of the traffic signal warrants based on the projected 2044 total traffic volumes.

Table 5 shows the results of the analysis for the intersection of E. 160th Avenue (SH 7)/Tuscon Street (#14). As shown on the table this intersection is expected to meet the four-hour and peak-hour vehicular volume traffic signal warrants based on the projected 2030 total traffic volumes.

RECOMMENDED IMPROVEMENTS

The recommended improvements are shown in Figures 8b and 9b and detailed in Tables 3 and 6.

CONCLUSIONS AND RECOMMENDATIONS

Trip Generation

1. The site is projected to generate about 15,536 vehicle-trips on the average weekday, with about half entering and half exiting during a 24-hour period. During the morning peak-hour, about 290 vehicles would enter and about 793 vehicles would exit the site. During the afternoon peak-hour, about 858 vehicles would enter and about 544 vehicles would exit.

Projected Levels of Service

2. The existing signalized intersection of E. 160th Avenue (SH 7)/Quebec Street (#10) is expected to operate at LOS “E” during the afternoon peak hour by 2030 if E. 160th Avenue (SH 7) remains a two-lane roadway. If E. 160th Avenue (SH 7) is widened to provide two eastbound

and two westbound through lanes, both peak-hours are expected to operate at an overall LOS “C” during both morning and afternoon peak-hours through 2044.

3. All of the other existing signalized intersections analyzed are expected to operate at an overall LOS “D” or better during both peak-hours through 2044 with the recommended improvements.
4. The intersections of E. 168th Avenue/Yosemite Street and E. 168th Avenue/Lime Street are expected to operate at LOS “A” through 2044 if they are constructed as modern roundabouts.
5. The shared northbound left-turn and through lane and the southbound approach at the unsignalized intersection of E. 160th Avenue (SH 7)/Riverdale Road (#13) are expected to operate at LOS “E” or “F” in one or both peak-hours by 2044 with or without the proposed Todd Creek Village development if this intersection remains a stop-sign controlled full movement intersection. This intersection will not likely meet any of the traffic signal warrants based on vehicular traffic volumes. However, signalization may be possible based on maintaining a coordinated roadway network. If a traffic signal is not allowed it may be appropriate to restrict this intersection to three-quarter movement (left-in/right-in/right-out-only) in the future.
6. The southbound approach at the intersection of E. 160th Avenue (SH 7)/Tuscon Street (#14) is expected to operate at LOS “F” during the peak-hours by 2030 with buildout of the proposed Todd Creek Village development. This intersection is anticipated to meet multiple traffic signal warrants based on the 2030 total traffic volumes. The 2030 total traffic volumes assume buildout of the Todd Creek Village development. The traffic signal warrant analysis should be updated with each filing of the development to determine if traffic signal warrants are met based on the traffic volumes at that time. If signalized it is expected to operate at LOS “B” or better through 2044.
7. All movements at all of the other unsignalized intersections analyzed are expected to operate at LOS “D” or better through 2044.

Conclusions

8. The impact of the proposed Todd Creek Village development can be accommodated by the existing roadway network with the recommended improvements.

Recommendations

9. The 2030 and 2044 recommended improvements are shown in Figures 8b and 9b and are detailed in Tables 3 and 6.

* * * * *

We trust our findings will assist you in gaining approval of the proposed Todd Creek Village development. Please contact me if you have any questions or need further assistance.

Sincerely,

LSC TRANSPORTATION CONSULTANTS, INC.

By



Christopher S. McGranahan, PE
Principal/President



CSM/wc

Enclosures: Tables 1 - 6
Figures 1 - 9b
Site Plan
Traffic Count Reports
Crash Data
Level of Service Definitions
Level of Service Reports
Queuing Reports

Table 1 (Page 1 of 6)
Intersection Levels of Service Analysis
Todd Creek Village MTIA
Adams County, CO
LSC #221150; August, 2024

Intersection No. & Location	Traffic Control	Existing Traffic		2030 Background Traffic		2030 Total Traffic		2030 Total Traffic Additional Mitigation		2044 Background Traffic		2044 Total Traffic	
		Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service
		AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
1) <u>E. 168th Avenue/CR 17</u>	TWSC												
EB Left/Through		A	A	A	A	A	A			A	A	A	A
SB Approach		A	B	A	B	B	C			A	A	B	B
Critical Movement Delay		9.6	10.5	9.9	11.1	12.4	16.9			9.7	9.7	11.4	13.9
2) <u>E. 168th Avenue/Quebec Street</u>	TWSC												
NB Approach		A	B	A	B	--	--			--	--	--	--
NB Left		--	--	--	--	B	C			B	B	B	C
NB Right		--	--	--	--	A	B			A	A	A	B
WB Left/Through		A	A	A	A	A	A			A	A	A	A
Critical Movement Delay		9.4	10.6	9.7	11.1	14.4	20.9			10.7	10.7	12.9	20.1
3) <u>E. 168th Avenue/West WSP Access</u>	TWSC												
NB Left		--	--	--	--	B	C			--	--	B	C
NB Right		--	--	--	--	A	B			--	--	A	B
WB Left		--	--	--	--	A	A			--	--	A	A
Critical Movement Delay		--	--	--	--	14.8	18.9			--	--	12.7	18.2
4) <u>E. 168th Avenue/CR 19</u>	TWSC												
NB Left		--	--	--	--	--	--			B	B	--	--
NB Through/Right		--	--	--	--	--	--			A	A	--	--
EB Left/Through or Left		A	A	A	A	--	--			A	A	--	--
WB Left		--	--	--	--	--	--			A	A	--	--
SB Approach		B	B	B	B	--	--			--	--	--	--
SB Left		--	--	--	--	--	--			B	B	--	--
SB Through/Right		--	--	--	--	--	--			A	A	--	--
Critical Movement Delay		10.4	11.0	10.8	11.7	--	--			11.9	11.9	--	--
	Roundabout												
EB Approach		--	--	--	--	A	A			--	--	A	A
WB Approach		--	--	--	--	A	A			--	--	A	A
NB Approach		--	--	--	--	A	A			--	--	A	A
SB Approach		--	--	--	--	A	A			--	--	A	A
Entire Intersection Delay (sec /veh)		--	--	--	--	5.0	6.3			--	--	4.0	4.8
Entire Intersection LOS		--	--	--	--	A	A			--	--	A	A

Table 1 (Page 2 of 6)
Intersection Levels of Service Analysis
Todd Creek Village MTIA
Adams County, CO
LSC #221150; August, 2024

Intersection No. & Location	Traffic Control	Existing Traffic		2030 Background Traffic		2030 Total Traffic		2030 Total Traffic Additional Mitigation		2044 Background Traffic		2044 Total Traffic	
		Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service
		AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
5) <u>E. 168th Avenue/Yosemite Street</u>	TWSC												
NB Approach		B	B	B	B	--	--			--	--	--	--
WB Left/Through		A	A	A	A	--	--			--	--	--	--
Critical Movement Delay		10.5	10.9	10.9	11.7	--	--			--	--	--	--
6) <u>E. 168th Avenue/East Remington Access</u>	TWSC												
NB Approach		--	--	--	--	B	B			--	--	B	B
WB Left		--	--	--	--	A	A			--	--	A	A
Critical Movement Delay		--	--	--	--	11.4	14.3			--	--	10.5	13.1
7) <u>E. 168th Avenue/Lima Street</u>	TWSC												
NB Left		B	B	B	B	--	--			B	B	--	--
NB Right		A	A	A	B	--	--			A	A	--	--
WB Left		A	A	A	A	--	--			A	A	--	--
Critical Movement Delay		10.5	12.2	11.0	13.3	--	--			10.7	10.7	--	--
	Roundabout												
EB Approach		--	--	--	--	A	A			--	--	A	A
WB Approach		--	--	--	--	A	A			--	--	A	A
NB Approach		--	--	--	--	A	A			--	--	A	A
Entire Intersection Delay (sec /veh)		--	--	--	--	4.8	6.4			--	--	3.9	4.6
Entire Intersection LOS		--	--	--	--	A	A			--	--	A	A
8) <u>E. 168th Avenue/CR 23 1/2</u>	TWSC												
EB Left/Through or Left		A	A	A	A	A	A			A	A	A	A
SB Approach		A	B	B	B	B	C			B	B	B	B
Critical Movement Delay		9.8	11.0	10.1	11.6	11.5	15.1			10.1	10.1	11.0	14.3
9) <u>E. 168th Avenue/Tucson Street</u>	TWSC												
NB Approach		A	B	A	B	B	C			A	A	B	C
WB Left/Through or Left		A	A	A	A	A	A			A	A	A	A
Critical Movement Delay		9.6	10.3	9.8	11.0	12.4	17.3			9.8	9.8	12.2	18.1

Table 1 (Page 3 of 6)
Intersection Levels of Service Analysis
Todd Creek Village MTIA
Adams County, CO
LSC #221150; August, 2024

Intersection No. & Location	Traffic Control	Existing Traffic		2030 Background Traffic		2030 Total Traffic		2030 Total Traffic Additional Mitigation		2044 Background Traffic		2044 Total Traffic	
		Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service
		AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
10) <u>E. 160th Avenue (SH 7)/Quebec Street</u>	Signalized												
EB Left		D	D	D	E	E	E	D	D	D	D	D	D
EB Through		B	C	B	D	C	F	B	B	B	B	C	C
EB Right		B	B	B	B	B	A	B	B	A	A	A	A
WB Left		D	D	F	E	E	F	D	D	D	C	D	D
WB Through		B	B	C	B	C	B	B	B	B	B	C	B
WB Right		A	A	A	A	A	A	A	A	A	A	B	B
NB Left		D	D	D	E	F	F	D	D	D	C	D	D
NB Through		C	C	C	D	D	D	C	C	C	C	C	C
NB Right		C	C	C	D	D	D	C	C	A	A	A	A
SB Left		D	D	D	E	E	E	D	D	D	C	D	D
SB Through/Right		C	D	D	D	--	--	--	--	--	--	--	--
SB Through		--	--	--	--	E	D	D	D	D	C	D	D
SB Right		--	--	--	--	D	D	C	C	D	C	D	D
Entire Intersection Delay (sec /veh)		21.4	24.0	28.1	35.5	37.5	59.7	20.6	20.6	21.2	18.6	28.4	26.7
Entire Intersection LOS		C	C	C	D	D	E	C	C	C	B	C	C
11) <u>E. 160th Avenue (SH 7)/Yosemite Street</u>	Signalized												
EB Left		A	A	B	A	C	B			A	A	B	B
EB Through		A	B	A	B	B	B			A	A	B	B
EB Right		A	A	A	A	A	A			A	A	A	A
WB Left		A	A	A	A	A	B			A	A	A	B
WB Through		B	A	B	A	D	B			A	A	B	B
WB Right		A	A	A	A	A	A			A	A	A	A
NB Left		C	C	C	C	D	C			C	C	C	C
NB Through/Right		C	C	C	C	D	C			C	C	C	C
SB Left		C	C	C	C	D	D			C	C	C	C
SB Through/Right		C	C	C	C	--	--			--	--	--	--
SB Through		--	--	--	--	D	C			B	B	C	C
SB Right		--	--	--	--	D	C			B	B	C	C
Entire Intersection Delay (sec /veh)		10.1	10.2	10.9	10.5	32.7	18.6			8.3	8.3	15.0	13.8
Entire Intersection LOS		B	B	B	B	C	B			A	A	B	B

Table 1 (Page 4 of 6)
Intersection Levels of Service Analysis
Todd Creek Village MTIA
Adams County, CO
LSC #221150; August, 2024

Intersection No. & Location	Traffic Control	Existing Traffic		2030 Background Traffic		2030 Total Traffic		2030 Total Traffic Additional Mitigation		2044 Background Traffic		2044 Total Traffic	
		Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service
		AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
12) <u>E. 160th Avenue (SH 7)/Havana Street</u>	Signalized												
EB Left		A	A	A	A	A	A			A	A	A	A
EB Through		A	B	A	B	A	B			A	A	A	A
EB Right		A	A	A	A	A	A			A	A	A	A
WB Left		A	A	A	B	A	B			A	A	A	A
WB Through		B	A	B	A	B	A			A	A	A	A
WB Right		A	A	A	A	A	A			A	A	A	A
NB Left		B	C	C	C	C	C			B	B	B	C
NB Through/Right		B	C	C	C	C	C			B	B	C	C
SB Left		B	C	C	C	C	C			B	B	C	C
SB Through/Right		B	C	C	C	--	--			--	--	--	--
SB Through		--	--	--	--	C	C			B	B	B	C
SB Right		--	--	--	--	C	C			B	B	C	C
Entire Intersection Delay (sec /veh)		9.8	10.4	10.1	10.9	11.4	12.5			8.5	8.5	9.2	9.9
Entire Intersection LOS		A	B	B	B	B	B			A	A	A	A
13) <u>E. 160th Avenue (SH 7)/Riverdale Road</u>	TWSC												
NB Left/Through		D	D	E	E	E	F			F	F	F	F
NB Right		A	A	A	A	A	A			A	A	A	A
EB Left		A	A	A	A	A	A			A	A	A	A
WB Left		A	B	B	B	B	B			B	C	C	C
SB Approach		B	F	B	F	C	F			B	F	A	F
Critical Movement Delay		27.4	86.1	35.6	151.8	39.7	82.6			58.4	143.9	66.5	242.5

Table 1 (Page 5 of 6)
Intersection Levels of Service Analysis
Todd Creek Village MTIA
Adams County, CO
LSC #221150; August, 2024

Intersection No. & Location	Traffic Control	Existing Traffic		2030 Background Traffic		2030 Total Traffic		2030 Total Traffic Additional Mitigation		2044 Background Traffic		2044 Total Traffic	
		Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service
		AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
14) <u>E. 160th Avenue (SH 7)/Tucson Street</u>	TWSC												
EB Left		B	B	B	B	B	B			--	--	--	--
SB Approach		D	D	E	E	--	--			--	--	--	--
SB Left		--	--	--	--	F	F			--	--	--	--
SB Right		--	--	--	--	D	C			--	--	--	--
Critical Movement Delay		28.8	30.0	42.9	47.1	>240	>240			--	--	--	--
	Signalized												
EB Left		--	--	--	--	B	B			A	A	A	A
EB Through		--	--	--	--	A	B			A	A	A	A
WB Through		--	--	--	--	B	B			A	A	A	A
WB Right		--	--	--	--	A	A			A	A	A	A
SB Left		--	--	--	--	D	D			D	D	D	D
SB Right		--	--	--	--	D	D			D	D	D	D
Entire Intersection Delay (sec /veh)		--	--	--	--	14.5	16.3			6.4	6.4	8.1	7.4
Entire Intersection LOS		--	--	--	--	B	B			A	A	A	A
15) <u>Quebec Street/Eagle Shadow Avenue</u>	TWSC												
NB Left		A	A	A	A	A	A			A	A	A	A
EB Approach		A	A	A	A	A	A			A	A	A	A
Critical Movement Delay		8.7	8.7	8.7	8.7	8.9	8.8			8.6	8.6	8.7	8.6
16) <u>Quebec Street/E. 162nd Avenue</u>	TWSC												
NB Left/Through or Left		A	A	A	A	A	A			A	A	A	A
EB Approach		A	A	A	A	A	A			A	A	A	A
Critical Movement Delay		9.0	8.8	9.0	8.9	9.1	9.0			8.8	8.8	8.8	8.8
17) <u>Yosemite Street/N. Site Access</u>	TWSC												
NB Left		--	--	--	--	A	A			--	--	A	A
EB Approach		--	--	--	--	--	--			--	--	--	--
EB Left		--	--	--	--	B	B			--	--	B	B
EB Through/Right		--	--	--	--	A	A			--	--	A	A
WB Left		--	--	--	--	B	B			--	--	B	B
WB Through/Right		--	--	--	--	A	A			--	--	A	A
SB Left		--	--	--	--	A	A			--	--	A	A
Critical Movement Delay		--	--	--	--	11.4	14.2			--	--	11.0	13.3

Table 1 (Page 6 of 6)
Intersection Levels of Service Analysis
Todd Creek Village MTIA
Adams County, CO
LSC #221150; August, 2024

Intersection No. & Location	Traffic Control	Existing Traffic		2030 Background Traffic		2030 Total Traffic		2030 Total Traffic Additional Mitigation		2044 Background Traffic		2044 Total Traffic	
		Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service	Level of Service
		AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
18) <u>Yosemite Street/S. Site Access</u>	TWSC												
NB Left		--	--	--	--	A	A			--	--	A	A
EB Left		--	--	--	--	B	C			--	--	B	B
EB Through/Right		--	--	--	--	A	A			--	--	A	A
WB Left		--	--	--	--	B	C			--	--	B	C
WB Through/Right		--	--	--	--	A	A			--	--	A	A
SB Left		--	--	--	--	A	A			--	--	A	A
Critical Movement Delay		--	--	--	--	14.4	17.9			--	--	13.3	16.0
19) <u>Yosemite Street/E. 163rd Place</u>	TWSC												
NB Left/Through		A	A	A	A	A	A			A	A	A	A
EB Approach		A	A	A	A	B	B			A	A	B	A
Critical Movement Delay		8.5	8.5	8.5	8.5	12.2	10.0			8.4	8.4	10.8	9.7
20) <u>Yosemite Street/E. 162nd Avenue</u>	TWSC												
NB Left/Through		A	A	A	A	A	A			A	A	A	A
EB Approach		A	A	A	A	B	B			A	A	B	B
Critical Movement Delay		8.5	8.5	8.5	8.5	11.7	10.4			8.5	8.5	10.6	10.1
21) <u>Lima Street/Lansing Court</u>	TWSC												
NB Approach		A	A	A	A	A	A			A	A	A	A
EB Approach		A	A	A	A	A	B			A	A	A	A
WB Approach		A	A	A	A	A	A			A	A	A	A
SB Approach		A	A	A	A	A	A			A	A	A	A
Critical Movement Delay		9.2	9.4	8.6	8.7	9.4	10.0			8.6	8.6	9.4	9.4
22) <u>Lima Street/E. 166th Avenue</u>	TWSC												
NB Approach		A	A	A	A	A	A			A	A	A	A
EB Approach		A	A	A	A	A	A			A	A	A	A
WB Approach		--	--	--	--	A	B			--	--	A	B
SB Approach		--	--	--	--	A	A			--	--	A	A
Critical Movement Delay		8.4	8.7	8.4	8.7	9.4	10.0			8.4	8.4	9.4	10.0

Table 2
Trip Generation Estimate
Todd Creek Farms
Adams County, CO
LSC #221150; August, 2024

Planning Area	Land Use Description	Trip Generation Units	Trip Generation Rates ⁽¹⁾				Total Trips Generated					
			Average Weekday Traffic	Morning Peak Hour		Afternoon Peak Hour		Average Weekday Traffic	Morning Peak Hour		Afternoon Peak Hour	
				In	Out	In	Out		In	Out	In	Out
Seltzer Heights												
1	Single Family Detached Housing ⁽²⁾	191 DU ⁽³⁾	9.43	0.175	0.525	0.592	0.348	1,801	33	101	113	67
2	Multifamily Housing ⁽⁴⁾	160 DU	6.74	0.10	0.30	0.32	0.19	1,078	15	49	51	31
3	Multifamily Housing ⁽⁴⁾	120 DU	6.74	0.10	0.30	0.32	0.19	809	12	36	39	22
	Assisted Living ⁽⁵⁾	60 Beds	2.60	0.108	0.072	0.094	0.146	156	6	5	6	8
4	Senior Adult Housing - Multifamily ⁽⁶⁾	145 DU	3.06	0.068	0.132	0.140	0.110	444	10	19	20	16
	Senior Adult Housing - Single Family ⁽⁷⁾	30 DU	7.10	0.079	0.161	0.183	0.117	213	2	5	5	4
		706 DU or Beds						4,501	78	215	234	148
Seltzer Farms												
6	Single Family Attached Housing ⁽⁸⁾	144 DU	7.20	0.149	0.331	0.325	0.245	1,037	21	48	47	35
	Single Family Detached Housing ⁽²⁾	171 DU	9.43	0.175	0.525	0.592	0.348	1,613	30	90	101	60
7	Single Family Detached Housing ⁽²⁾	99 DU	9.43	0.175	0.525	0.592	0.348	934	17	52	59	34
8	Single Family Detached Housing ⁽²⁾	200 DU	9.43	0.175	0.525	0.592	0.348	1,886	35	105	118	70
9	Single Family Attached Housing ⁽⁸⁾	104 DU	7.20	0.149	0.331	0.325	0.245	749	15	35	34	25
	Single Family Detached Housing ⁽²⁾	71 DU	9.43	0.175	0.525	0.592	0.348	670	12	38	42	25
10	Single Family Attached Housing ⁽⁸⁾	147 DU	7.20	0.149	0.331	0.325	0.245	1,058	22	49	48	36
		936 DU						7,947	152	417	449	285
Baseline Lakes East												
11	Single Family Attached Housing ⁽⁸⁾	146 DU	7.20	0.149	0.331	0.325	0.245	1,051	22	48	47	36
12	Single Family Detached Housing ⁽²⁾	216 DU	9.43	0.175	0.525	0.592	0.348	2,037	38	113	128	75
		362 DU						3,088	60	161	175	111
	Todd Creek Farms Total	2,004 DU or Beds						15,536	290	793	858	544

Notes:

(1) Source: *Trip Generation, Institute of Transportation Engineers*, 11th Edition, 2021.

(2) ITE Land Use No. 210 - Single-Family Detached Housing

(3) DU = dwelling unit

(4) ITE Land Use No. 220 - Multifamily Housing (Low-Rise)

(5) ITE Land Use No. 254 - Assisted Living

(6) ITE Land Use No. 220 - Senior Adult Housing - Multifamily

(7) ITE Land Use No. 251 - Senior Adult Housing - Single-Family

(8) ITE Land Use No. 215 - Single-Family Attached Housing

Source: LSC Transportation Consultants, Inc.

**Table 3 (Page 1 of 4)
95th Percentile Queue Lengths
Todd Creek Village MTIA
Adams County, CO
LSC #221150; August, 2024**

Intersection No. & Location	Jurisdiction	Classification	Posted Speed Limit (mph)	Existing Lane Lengths (feet)	Proposed Lane Lengths (feet)	95th Percentile Queue Length		
						AM Peak (feet)	PM Peak (feet)	
1) <u>E. 168th Avenue/CR 17</u>								
EB Left	Adams County	Minor Arterial	45	---	273	<25	<25	
SB Approach	Weld County	Arterial	---	---	---	<25	<25	
2) <u>E. 168th Avenue/Quebec Street</u>								
NB Left	Adams County	Major Arterial	40	---	---	<25	<25	
NB Right	Adams County	Major Arterial	40	---	226	<25	<25	
WB Left	Adams County	Minor Arterial	45	---	273	<25	<25	
EB Right	Adams County	Minor Arterial	45	---	273	<25	<25	
3) <u>E. 168th Avenue/West WSP Access</u>								
NB Left	Adams County	Collector	35	---	190	<25	<25	
NB Right	Adams County	Collector	35	---	---	<25	<25	
WB Left	Adams County	Minor Arterial	45	---	273	<25	<25	
EB Right	Adams County	Minor Arterial	45	---	273	<25	<25	
4) <u>E. 168th Avenue/CR 19/Yosemite Street</u>								
EB Approach	Adams County	Minor Arterial	40	---	Construct as a modern roundabout	<25	25	
WB Approach	Adams County	Minor Arterial	40	---		25	25	
NB Approach	Adams County	Collector	40	---		<25	<25	
SB Approach	Adams County	Collector	55	---		<25	<25	
6) <u>E. 168th Avenue/East Remington Access</u>								
NB Approach	Adams County	Collector	35	---	---	<25	<25	
WB Left	Adams County	Minor Arterial	45	---	273	<25	<25	
EB Right	Adams County	Minor Arterial	45	---	273	<25	<25	
7) <u>E. 168th Avenue/Lima Street</u>								
EB Approach	Adams County	Collector	40	---	Reconstruct as a modern roundabout	<25	25	
WB Approach	Adams County	Collector	40	100		<25	25	
NB Approach	Adams County	Minor Arterial	45	250		<25	<25	
8) <u>E. 168th Avenue/CR 23 1/2</u>								
EB Left	Adams County	Minor Arterial	45	---	273	<25	<25	
SB Approach	Weld County	Collector	---	---	---	<25	<25	

Table 3 (Page 2 of 4)
95th Percentile Queue Lengths
Todd Creek Village MTIA
Adams County, CO
LSC #221150; August, 2024

Intersection No. & Location	Jurisdiction	Classification	Posted Speed Limit (mph)	Existing Lane Lengths (feet)	Proposed Lane Lengths (feet)	95th Percentile Queue Length	
						AM Peak (feet)	PM Peak (feet)
9) <u>E. 168th Avenue/Tucson Street</u>							
NB Approach	Adams County	Collector	40	---	---	<25	40
WB Left	Adams County	Minor Arterial	45	---	273	<25	<25
EB Right	Adams County	Minor Arterial	45	---	273	<25	<25
10) <u>E. 160th Avenue (SH 7)/Quebec Street</u>							
EB Left	CDOT	R-A	60	550	550	46	83
EB Through	CDOT	R-A	60	---	---	306	722
EB Right	CDOT	R-A	60	415	415	29	0
WB Left	CDOT	R-A	60	525	525	218	161
WB Through	CDOT	R-A	60	---	---	489	356
WB Right	CDOT	R-A	60	415	415	0	0
NB Left	Thornton	Major Arterial	45	250	300	192	283
NB Through	Thornton	Major Arterial	45	---	---	42	93
NB Right	Thornton	Major Arterial	45	570	570	0	0
SB Left	Adams County	Major Arterial	40	230	230	51	52
SB Through	Adams County	Major Arterial	40	---	---	65	63
SB Right	Adams County	Major Arterial	40	---	226	0	0
11) <u>E. 160th Avenue (SH 7)/Yosemite Street</u>							
EB Left	CDOT	R-A	60	440	440	31	73
EB Through	CDOT	R-A	60	---	---	190	387
EB Right	CDOT	R-A	60	615	615	4	18
WB Left	CDOT	R-A	60	800	800	23	23
WB Through	CDOT	R-A	60	---	---	406	258
WB Right	CDOT	R-A	60	700	700	19	27
NB Left	Adams County	Collector	50	lane drop	lane drop	68	68
NB Through/Right	Adams County	Collector	50	---	---	51	83
SB Left	Adams County	Collector	40	140	200	176	125
SB Through	Adams County	Collector	40	---	---	49	43
SB Right	Adams County	Collector	40	---	226	82	48

Table 3 (Page 3 of 4)
95th Percentile Queue Lengths
Todd Creek Village MTIA
Adams County, CO
LSC #221150; August, 2024

Intersection No. & Location	Jurisdiction	Classification	Posted Speed Limit (mph)	Existing Lane Lengths (feet)	Proposed Lane Lengths (feet)	95th Percentile Queue Length	
						AM Peak (feet)	PM Peak (feet)
12) <u>E. 160th Avenue (SH 7)/Havana Street</u>							
EB Left	CDOT	R-A	60	515	515	10	25
EB Through	CDOT	R-A	60	---	---	160	314
EB Right	CDOT	R-A	60	430	430	9	15
WB Left	CDOT	R-A	60	550	550	9	66
WB Through	CDOT	R-A	60	---	---	227	251
WB Right	CDOT	R-A	60	420	420	0	4
NB Left	Adams County	Collector	40	200	200	40	58
NB Through/Right	Adams County	Collector	40	---	---	41	51
SB Left	Adams County	Collector	40	275	275	23	20
SB Through	Adams County	Collector	40	---	---	22	24
SB Right	Adams County	Collector	40	---	226	38	29
13) <u>E. 160th Avenue (SH 7)/Riverdale Road</u>							
NB Left/Through	Adams County	Collector	45	---	---	<25	50
NB Right	Adams County	Collector	45	80	80	<25	<25
EB Right	CDOT	R-A	50	460	460	<25	<25
WB Left	CDOT	R-A	50	475	475	80	90
SB Approach	Adams County	Local	25	---	---	<25	<25
14) <u>E. 160th Avenue (SH 7)/Tucson Street</u>							
EB Left	CDOT	R-A	50	450	450	14	18
EB Through	CDOT	R-A	50	---	---	179	258
WB Through	CDOT	R-A	50	---	---	382	381
WB Right	CDOT	R-A	50	325	325	11	17
SB Left	Adams County	Collector	40	---	---	118	89
SB Right	Adams County	Collector	40	---	226	40	33
15) <u>Quebec Street/Eagle Shadow Avenue</u>							
EB Approach	Local	Local	25	---	---	<25	<25
NB Left	Adams County	Major Arterial	40	155	155	<25	<25
16) <u>Quebec Street/E. 162nd Avenue</u>							
EB Approach	Local	Local	25	---	---	<25	<25
NB Left	Adams County	Major Arterial	40	---	226	<25	<25

**Table 3 (Page 4 of 4)
95th Percentile Queue Lengths
Todd Creek Village MTIA
Adams County, CO
LSC #221150; August, 2024**

Intersection No. & Location	Jurisdiction	Classification	Posted Speed Limit (mph)	Existing Lane Lengths (feet)	Proposed Lane Lengths (feet)	95th Percentile Queue Length	
						AM Peak (feet)	PM Peak (feet)
17) <u>Yosemite Street/N. Site Access</u>							
NB Left	Adams County	Collector	40	---	226	<25	<25
NB Right	Adams County	Collector	40	---	226	<25	<25
EB Left	Adams County	Collector	35	---	190	<25	<25
EB Through/Right	Adams County	Collector	35	---	---	<25	<25
WB Left	Adams County	Collector	35	---	190	<25	<25
WB Through/Right	Adams County	Collector	35	---	---	<25	<25
SB Left	Adams County	Collector	40	---	226	<25	<25
SB Right	Adams County	Collector	40	---	226	<25	<25
18) <u>Yosemite Street/S. Site Access</u>							
NB Left	Adams County	Collector	40	---	226	<25	<25
NB Right	Adams County	Collector	40	---	226	<25	<25
EB Left	Adams County	Local	25	---	90	<25	<25
EB Through/Right	Adams County	Local	25	---	---	<25	<25
WB Left	Adams County	Collector	35	---	190	<25	<25
WB Through/Right	Adams County	Collector	35	---	---	<25	<25
SB Left	Adams County	Collector	40	---	226	<25	<25
SB Right	Adams County	Collector	40	---	226	<25	<25
19) <u>Yosemite Street/E. 163rd Place</u>							
EB Approach	Adams County	Local	25	---	---	<25	<25
NB Approach	Adams County	Collector	40	---	---	<25	<25
20) <u>Yosemite Street/E. 162nd Avenue</u>							
EB Approach	Adams County	Local	25	---	---	<25	<25
NB Approach	Adams County	Collector	40	---	---	<25	<25
21) <u>Lima Street/Lansing Court</u>							
NB Approach	Adams County	Collector	40	---	---	<25	<25
EB Approach	Adams County	Local	25	---	---	<25	<25
WB Approach	Adams County	Local	25	---	---	<25	<25
SB Approach	Adams County	Collector	40	---	---	<25	<25
22) <u>Lima Street/E. 166th Avenue</u>							
NB Approach	Adams County	Collector	40	---	---	<25	<25
EB Approach	Adams County	Local	25	---	---	<25	<25
WB Approach	Adams County	Local	25	---	---	<25	<25
SB Approach	Adams County	Collector	40	---	---	<25	<25

Table 4
Intersection #13 - E. 160th Avenue (SH 7)/Riverdale Road
Todd Creek Village MTIA
Adams County, CO
LSC #221150; August, 2024

Warrant Analysis⁽¹⁾

Hour	Traffic Volumes (vehicles per hour)		Warrant 1: Eight Hour Vehicular Volume Evaluation						Warrant 2: Four Hour Vehicular Volume		Warrant 3: Peak Hour Vehicular Volume	
			Warrant Thresholds				Warrant Threshold Met?		70% Warrant Threshold Minimum	Warrant Threshold Met?	70% Warrant Threshold Minimum	Warrant Threshold Met?
	Condition A (70%)		Condition B (70%)		A	B						
	Major ⁽²⁾	Minor Leg ⁽³⁾	Major	Minor			Major	Minor				

2044 Background Traffic

6-7 AM	1778	8	350	105	525	53	No	No	60	No	75	No
7-8 AM	2228	14	350	105	525	53	No	No	60	No	75	No
8-9 AM	2720	35	350	105	525	53	No	No	60	No	75	No
9-10 AM	2180	42	350	105	525	53	No	No	60	No	75	No
10-11 AM	2079	39	350	105	525	53	No	No	60	No	75	No
11-12 PM	2265	38	350	105	525	53	No	No	60	No	75	No
12-1 PM	2238	16	350	105	525	53	No	No	60	No	75	No
1-2 PM	2190	15	350	105	525	53	No	No	60	No	75	No
2-3 PM	2275	15	350	105	525	53	No	No	60	No	75	No
3-4 PM	2550	15	350	105	525	53	No	No	60	No	75	No
4-5 PM	2754	24	350	105	525	53	No	No	60	No	75	No
5-6 PM	2896	32	350	105	525	53	No	No	60	No	75	No
6-7 PM	2065	29	350	105	525	53	No	No	60	No	75	No
7-8 PM	1342	19	350	105	525	53	No	No	60	No	75	No
8-9 PM	886	15	350	105	525	53	No	No	60	No	120	No
9-10 PM	579	11	350	105	525	53	No	No	130	No	220	No

Numbers of Hours the Warrant Thresholds Are Met
Warrant Met?

0	0
No	

0
No

0
No

2044 Total Traffic

6-7 AM	1907	8	350	105	525	53	No	No	60	No	75	No
7-8 AM	2395	14	350	105	525	53	No	No	60	No	75	No
8-9 AM	2872	35	350	105	525	53	No	No	60	No	75	No
9-10 AM	2307	42	350	105	525	53	No	No	60	No	75	No
10-11 AM	2205	39	350	105	525	53	No	No	60	No	75	No
11-12 PM	2418	38	350	105	525	53	No	No	60	No	75	No
12-1 PM	2420	16	350	105	525	53	No	No	60	No	75	No
1-2 PM	2372	15	350	105	525	53	No	No	60	No	75	No
2-3 PM	2460	15	350	105	525	53	No	No	60	No	75	No
3-4 PM	2756	15	350	105	525	53	No	No	60	No	75	No
4-5 PM	2974	24	350	105	525	53	No	No	60	No	75	No
5-6 PM	3113	32	350	105	525	53	No	No	60	No	75	No
6-7 PM	2209	29	350	105	525	53	No	No	60	No	75	No
7-8 PM	1429	19	350	105	525	53	No	No	60	No	75	No
8-9 PM	939	15	350	105	525	53	No	No	60	No	95	No
9-10 PM	614	11	350	105	525	53	No	No	90	No	175	No

Numbers of Hours the Warrant Thresholds Are Met
Warrant Met?

0	0
No	

0
No

0
No

Notes:

- (1) Thresholds are based on 1 lane on the major approach and 1 lane on the minor approach with the 70% factor applied for a posted speed limit above 40 mph
- (2) The major street traffic includes all movements (left, through, and right)
- (3) The minor street traffic includes left-turn only volume from the minor street

Source: LSC Transportation Consultants, Inc.

Table 5
Intersection #14 - E. 160th Avenue (SH 7)/Tucson Street
Todd Creek Village MTIA
Adams County, CO
LSC #221150; August, 2024

Warrant Analysis⁽¹⁾

Hour	Traffic Volumes (vehicles per hour)		Warrant 1: Eight Hour Vehicular Volume Evaluation						Warrant 2: Four Hour Vehicular Volume		Warrant 3: Peak Hour Vehicular Volume	
			Warrant Thresholds				Warrant Threshold Met?		70% Warrant Threshold Minor Minimum	Warrant Threshold Met?	70% Warrant Threshold Minor Minimum	Warrant Threshold Met?
	Major ⁽²⁾	Minor Leg ⁽³⁾	Condition A (70%)		Condition B (70%)		A	B				
			Major	Minor	Major	Minor						

2030 Background Traffic

6-7 AM	1640	7	350	105	525	53	No	No	60	No	75	No
7-8 AM	1924	9	350	105	525	53	No	No	60	No	75	No
8-9 AM	1668	18	350	105	525	53	No	No	60	No	75	No
9-10 AM	1573	15	350	105	525	53	No	No	60	No	75	No
10-11 AM	1520	12	350	105	525	53	No	No	60	No	75	No
11-12 PM	1781	10	350	105	525	53	No	No	60	No	75	No
12-1 PM	1817	6	350	105	525	53	No	No	60	No	75	No
1-2 PM	1794	4	350	105	525	53	No	No	60	No	75	No
2-3 PM	1895	5	350	105	525	53	No	No	60	No	75	No
3-4 PM	2171	4	350	105	525	53	No	No	60	No	75	No
4-5 PM	2291	6	350	105	525	53	No	No	60	No	75	No
5-6 PM	2358	8	350	105	525	53	No	No	60	No	75	No
6-7 PM	1676	7	350	105	525	53	No	No	60	No	75	No
7-8 PM	1075	5	350	105	525	53	No	No	60	No	80	No
8-9 PM	657	4	350	105	525	53	No	No	90	No	175	No
9-10 PM	426	3	350	105	525	53	No	No	165	No	270	No

Numbers of Hours the Warrant Thresholds Are Met

Warrant Met?

0	0
No	

0
No

0
No

2030 Total Traffic

6-7 AM	1790	62	350	105	525	53	No	Yes	60	Yes	75	No
7-8 AM	2116	70	350	105	525	53	No	Yes	60	Yes	75	No
8-9 AM	1846	89	350	105	525	53	No	Yes	60	Yes	75	Yes
9-10 AM	1731	174	350	105	525	53	Yes	Yes	60	Yes	75	Yes
10-11 AM	1671	151	350	105	525	53	Yes	Yes	60	Yes	75	Yes
11-12 PM	1954	120	350	105	525	53	Yes	Yes	60	Yes	75	Yes
12-1 PM	2027	60	350	105	525	53	No	Yes	60	Yes	75	No
1-2 PM	2007	64	350	105	525	53	No	Yes	60	Yes	75	No
2-3 PM	2114	40	350	105	525	53	No	No	60	No	75	No
3-4 PM	2435	46	350	105	525	53	No	No	60	No	75	No
4-5 PM	2587	42	350	105	525	53	No	No	60	No	75	No
5-6 PM	2694	60	350	105	525	53	No	Yes	60	Yes	75	No
6-7 PM	1911	82	350	105	525	53	No	Yes	60	Yes	75	Yes
7-8 PM	1223	70	350	105	525	53	No	Yes	60	Yes	75	No
8-9 PM	747	52	350	105	525	53	No	No	65	No	145	No
9-10 PM	490	38	350	105	525	53	No	No	165	No	270	No

Numbers of Hours the Warrant Thresholds Are Met

Warrant Met?

3	11
Yes	

11
Yes

5
Yes

Notes:

- (1) Thresholds are based on 1 lane on the major approach and 1 lane on the minor approach with the 70% factor applied for a posted speed limit above 40 mph
- (2) The major street traffic includes all movements (left, through, and right)
- (3) The minor street traffic includes left-turn only volumes from the minor street

Source: LSC Transportation Consultants, Inc.

Table 6 (Page 1 of 3)
Recommended Improvements to Public Street Network
Todd Creek Village MTIA
Adams County, CO
LSC #221150; August, 2024

Inter-section No.	Intersection Location	Recommended Improvements by 2030 ⁽¹⁾	Responsibility	Recommended Improvements by 2044 ⁽¹⁾	Responsibility
	Yosemite Street	Align with WCR 19 at E. 168th Avenue	Applicant		
	Quebec Street			Widen to 4 Lanes	Others ⁽²⁾
	E. 168th Avenue			Widen to 4 Lanes	Others ⁽²⁾
	E. 160th Avenue (SH 7)			Widen to 4 Lanes plus 2 transit lanes	Others ⁽²⁾
#1	E. 168th Avenue/WCR 17			EB LT - construct lane - 1 @ 273 feet and 162-foot transition taper	Others ⁽³⁾
#2	E. 168th Avenue/ Quebec Street	WB LT - construct lane - 1 @ 273 feet and 162-foot transition taper	Applicant	EB RT - construct lane - 1 @ 273 feet and 162-foot transition taper	Others ⁽³⁾
		NB RT - construct lane - 1 @ 226 feet and 144-foot transition taper	Applicant		
#3	E. 168th Avenue/ West WSP Access	WB LT - construct lane - 1 @ 273 feet and 162-foot transition taper	Applicant		
		EB RT - construct lane - 1 @ 273 feet and 162-foot transition taper	Applicant		
		NB LT - construct lane - 1 @ 190 feet and 120-foot transition taper	Applicant		
#4	E. 168th Avenue/ Yosemite Street (realigned)/ WCR 19	Construct as modern roundabout	Applicant		
#5	E. 168th Avenue/ Yosemite Street (existing)	To be closed when Yosemite Street is realigned south of E. 168th Avenue	Applicant		
#6	E. 168th Avenue/ East Remington Access	WB LT - construct lane - 1 @ 273 feet and 162-foot transition taper	Applicant		
		EB RT - construct lane - 1 @ 273 feet and 162-foot transition taper	Applicant		
#7	E. 168th Avenue/Lima Street	Reconstruct as a modern roundabout	Applicant		

(1) A transition taper of 13.5:1 was used for all streets with a posted speed limit of 45 mph (162 feet). An appropriate redirect taper for 45 mph is 45:1
A transition taper of 12:1 was used for all streets with a posted speed limit of 40 mph (144 feet). An appropriate redirect taper for 40 mph is 35:1
A transition taper of 10:1 was used for all streets with a posted speed limit of 35 mph (120 feet). An appropriate redirect taper for 35 mph is 20:1
A transition taper of 7.5:1 was used for all streets with a posted speed limit of 25 mph (90 feet). An appropriate redirect taper for 25 mph is 15:1
(2) As shown on the *Thornton Transportation and Mobility Plan* adopted April 26, 2022. Widening of E. 160th Avenue (SH 7) will need to be coordinated with Adams County
(3) Assumed to be constructed as part of future widening of E. 160th to 4 lanes per the *Adams County Transportation Master Plan*.
(4) The proposed Todd Creek Farms development is not expected to add vehicles to this turning movement. The improvement will likely be the responsibility of other area developments
(5) Assumed to be constructed as part of future widening of Quebec Street to 4 lanes

Table 6 (Page 2 of 3)
Recommended Improvements to Public Street Network
Todd Creek Village MTIA
Adams County, CO
LSC #221150; August, 2024

Inter-section No.	Intersection Location	Recommended Improvements by 2030 ⁽¹⁾	Responsibility	Recommended Improvements by 2044 ⁽¹⁾	Responsibility
#8	E. 168th Avenue/WCR 23 1/2			EB LT - construct lane - 1 @ 273 feet and 162-foot transition taper	Others ⁽³⁾
#9	E. 168th Avenue/Tucson Street	EB RT - construct lane - 1 @ 273 feet and 162-foot transition taper	Applicant	WB LT - construct lane - 1 @ 273 feet and 162-foot transition taper	Others ⁽³⁾
#10	E. 160th Avenue (SH 7)/ Quebec Street	SB RT - construct lane - 1 @ 226 feet and 144-foot transition taper	Applicant	NB LT - extend existing left-turn lane if needed over time	Others ⁽⁴⁾
#11	E. 160th Avenue (SH 7)/ Yosemite Street	SB RT - construct lane - 1 @ 226 feet and 144-foot transition taper	Applicant		
#12	E. 160th Avenue (SH 7)/ Lima Street	SB RT - construct lane - 1 @ 226 feet and 144-foot transition taper	Applicant		
#13	E. 160th Avenue (SH 7)/ Riverdale Road			This intersection may need to be restricted to three-quarter movement (left-in/right-in/right-out only) over time	
#14	E. 160th Avenue (SH 7)/ Tucson Street	SB RT - construct lane - 1 @ 226 feet and 144-foot transition taper	Others		
		Traffic signalization when warranted	Others		
#15	Quebec Street/ Eagle Shadow Avenue	No improvements recommended			
#16	Quebec Street/E. 162nd Avenue			NB LT - construct lane - 1 @ 250 feet and 144-foot transition taper	Others ⁽⁵⁾
#17	Yosemite Street/ North Site Access	EB LT - construct lane - 1 @ 190 feet and 120-foot transition taper	Applicant		
		WB LT - construct lane - 1 @ 190 feet and 120-foot transition taper	Applicant		
		NB LT - construct lane - 1 @ 226 feet and 144-foot transition taper	Applicant		
		NB RT - construct lane - 1 @ 226 feet and 144-foot transition taper	Applicant		
		SB LT - construct lane - 1 @ 226 feet and 144-foot transition taper	Applicant		
		SB RT - construct lane - 1 @ 226 feet and 144-foot transition taper	Applicant		

(1) A transition taper of 13.5:1 was used for all streets with a posted speed limit of 45 mph (162 feet). An appropriate redirect taper for 45 mph is 45:1
A transition taper of 12:1 was used for all streets with a posted speed limit of 40 mph (144 feet). An appropriate redirect taper for 40 mph is 35:1
A transition taper of 10:1 was used for all streets with a posted speed limit of 35 mph (120 feet). An appropriate redirect taper for 35 mph is 20:1
A transition taper of 7.5:1 was used for all streets with a posted speed limit of 25 mph (90 feet). An appropriate redirect taper for 25 mph is 15:1
(2) As shown on the *Thornton Transportation and Mobility Plan* adopted April 26, 2022. Widening of E. 160th Avenue (SH 7) will need to be coordinated with Adams County
(3) Assumed to be constructed as part of future widening of E. 160th to 4 lanes per the *Adams County Transportation Master Plan*.
(4) The proposed Todd Creek Farms development is not expected to add vehicles to this turning movement. The improvement will likely be the responsibility of other area developments
(5) Assumed to be constructed as part of future widening of Quebec Street to 4 lanes

Table 6 (Page 3 of 3)
Recommended Improvements to Public Street Network
Todd Creek Village MTIA
Adams County, CO
LSC #221150; August, 2024

Inter-section

No.	Intersection Location	Recommended Improvements by 2030 ⁽¹⁾	Responsibility	Recommended Improvements by 2044 ⁽¹⁾	Responsibility
#18	Yosemite Street/ South Site Access	EB LT - construct lane - 1 @ 90 feet and 90-foot transition taper	Applicant		
		WB LT - construct lane - 1 @ 190 feet and 120-foot transition taper	Applicant		
		NB LT - construct lane - 1 @ 226 feet and 144-foot transition taper	Applicant		
		NB RT - construct lane - 1 @ 226 feet and 144-foot transition taper	Applicant		
		SB LT - construct lane - 1 @ 226 feet and 144-foot transition taper	Applicant		
		SB RT - construct lane - 1 @ 226 feet and 144-foot transition taper	Applicant		
#19	Yosemite Street/ E. 163rd Avenue	No improvements recommended			
#20	Quebec Street/ E. 162nd Avenue	No improvements recommended			
#21	Lima Street/ Lansing Court	No improvements recommended			
#22	Lima Street/ E. 166th Avenue	Construct east leg of the intersection	Applicant		

- (1) A transition taper of 13.5:1 was used for all streets with a posted speed limit of 45 mph (162 feet). An appropriate redirect taper for 45 mph is 45:1
A transition taper of 12:1 was used for all streets with a posted speed limit of 40 mph (144 feet). An appropriate redirect taper for 40 mph is 35:1
A transition taper of 10:1 was used for all streets with a posted speed limit of 35 mph (120 feet). An appropriate redirect taper for 35 mph is 20:1
A transition taper of 7.5:1 was used for all streets with a posted speed limit of 25 mph (90 feet). An appropriate redirect taper for 25 mph is 15:1
- (2) As shown on the *Thornton Transportation and Mobility Plan* adopted April 26, 2022. Widening of E. 160th Avenue (SH 7) will need to be coordinated with Adams County
- (3) Assumed to be constructed as part of future widening of E. 160th to 4 lanes per the *Adams County Transportation Master Plan*.
- (4) The proposed Todd Creek Farms development is not expected to add vehicles to this turning movement. The improvement will likely be the responsibility of other area developments
- (5) Assumed to be constructed as part of future widening of Quebec Street to 4 lanes

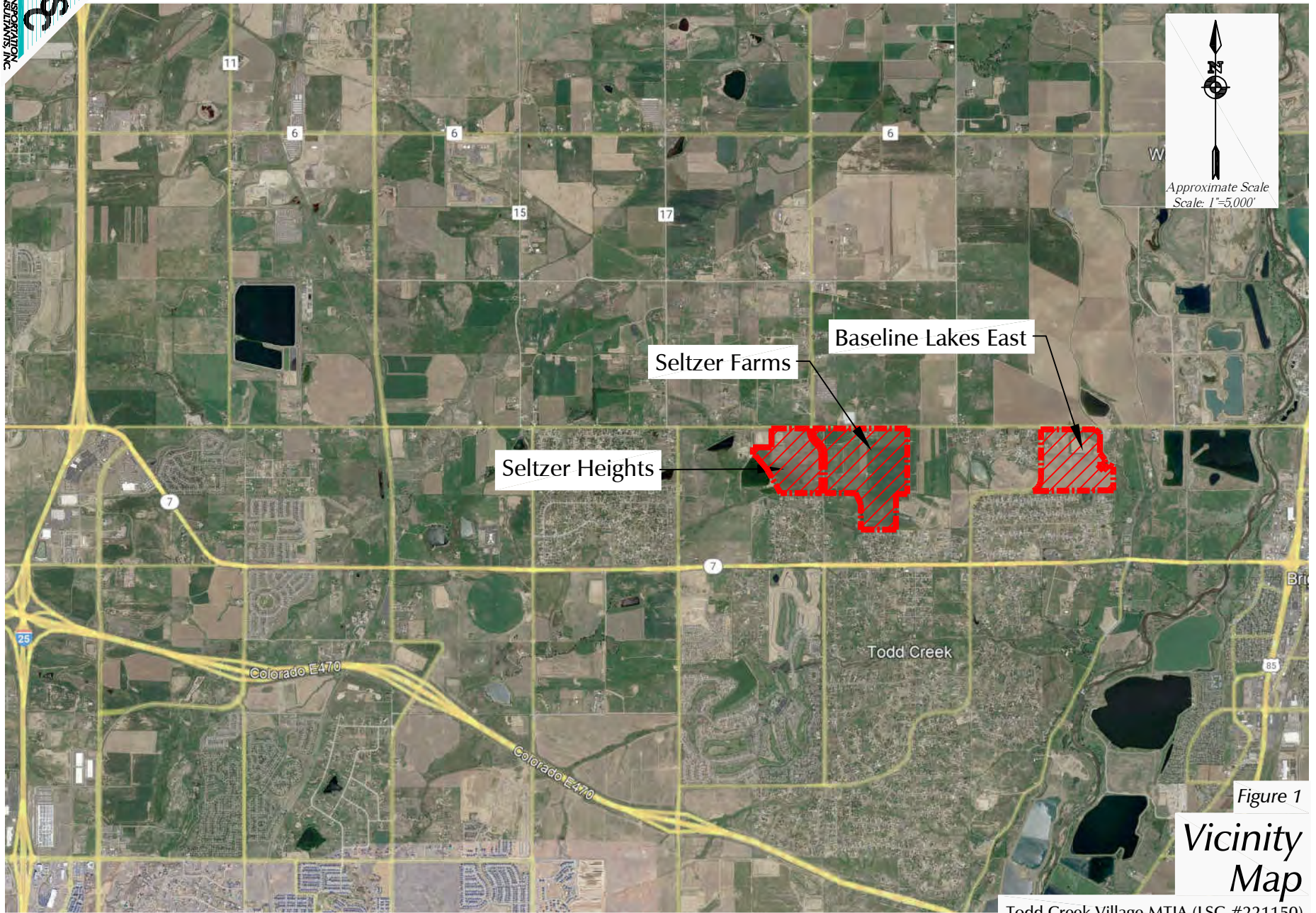


Figure 1
**Vicinity
Map**

Todd Creek Village MTIA (LSC #221150)



Note: See the appendix for a higher resolution version of the overall site plan.

Figure 2
Overall Site Plan
Todd Creek Village MTIA (LSC #221150)

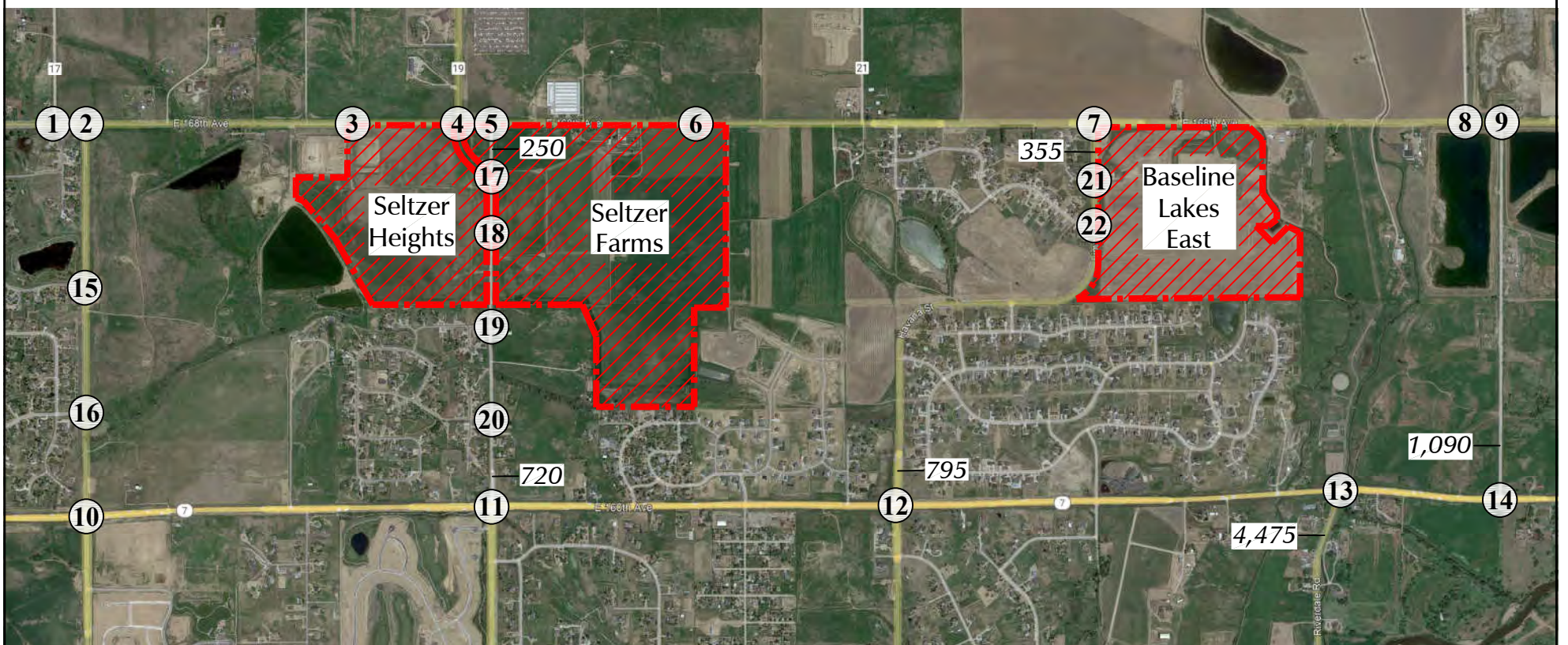
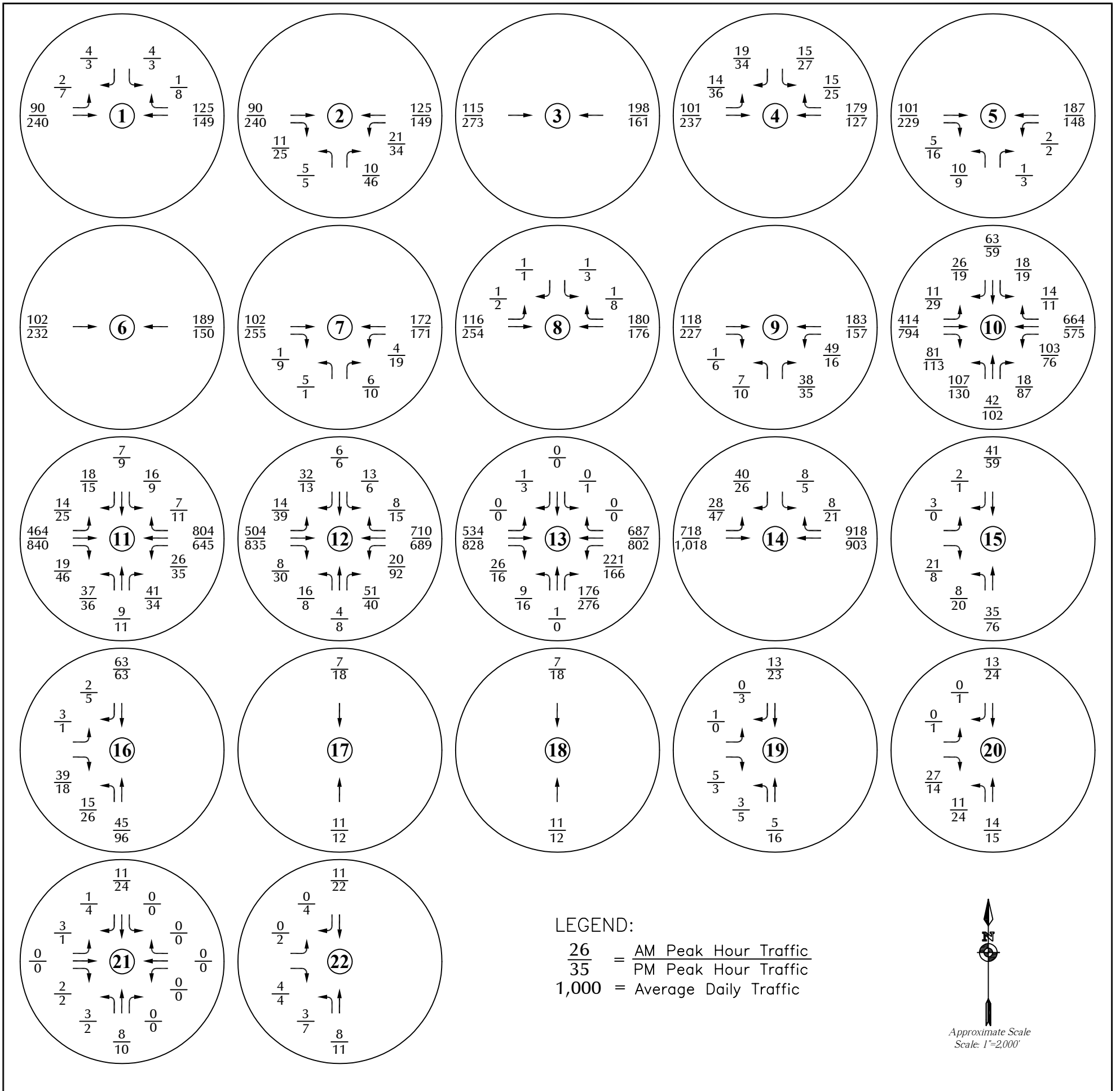


Figure 3a

Existing Traffic

Todd Creek Village MTIA (LSC #221150)



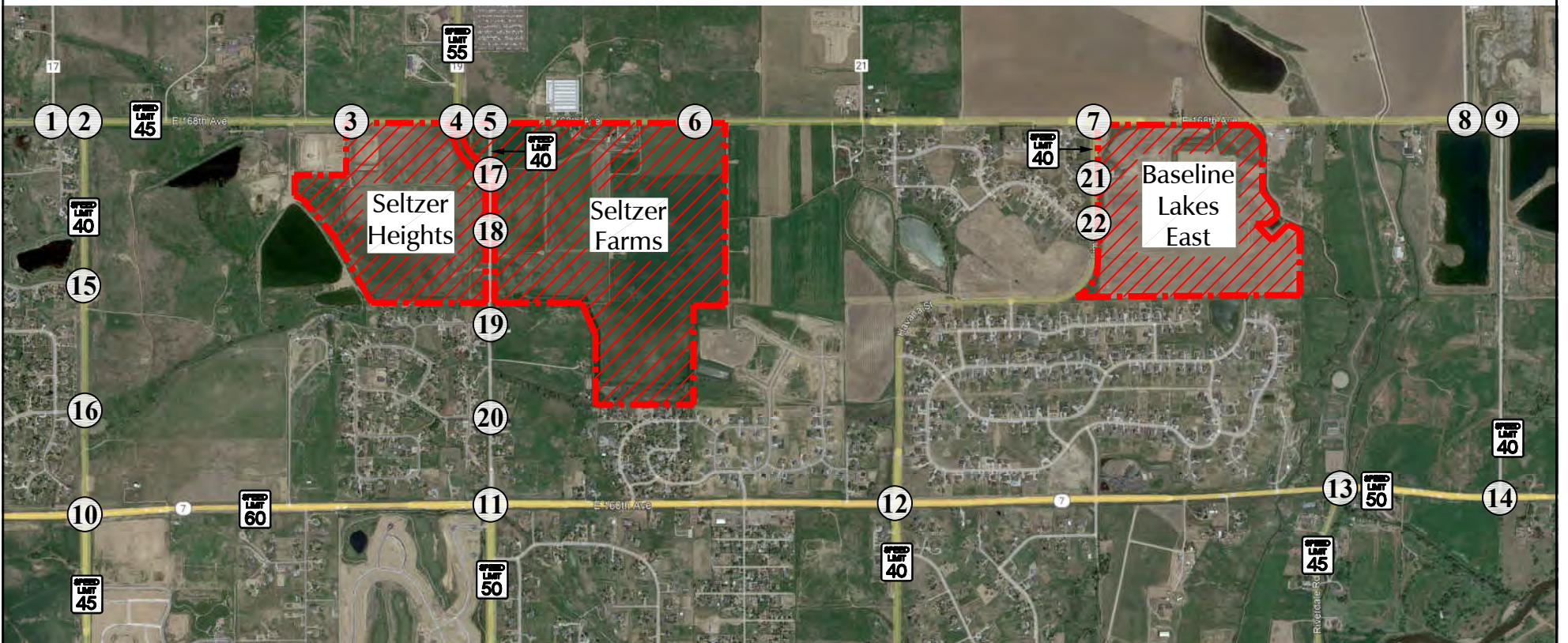
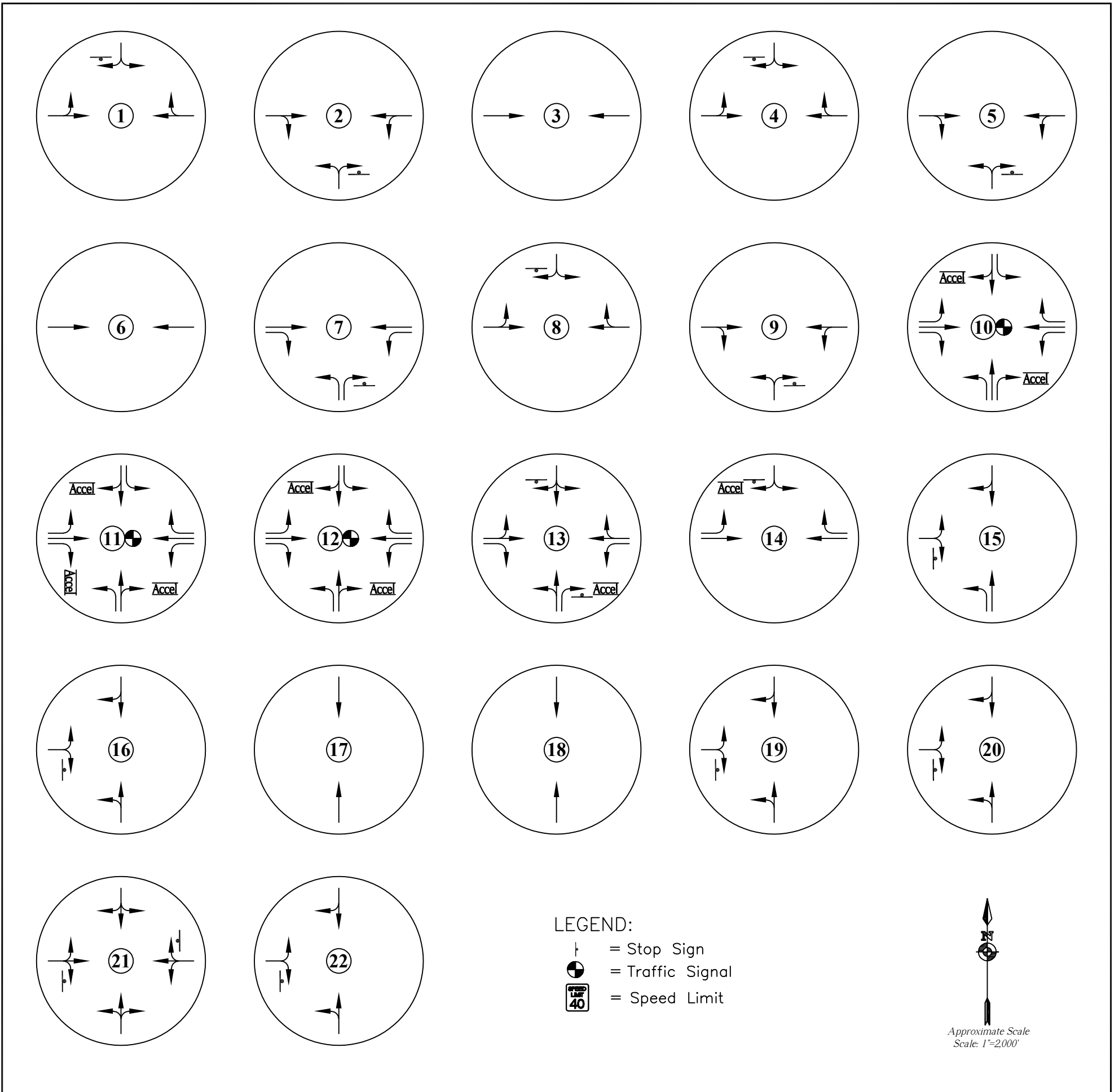
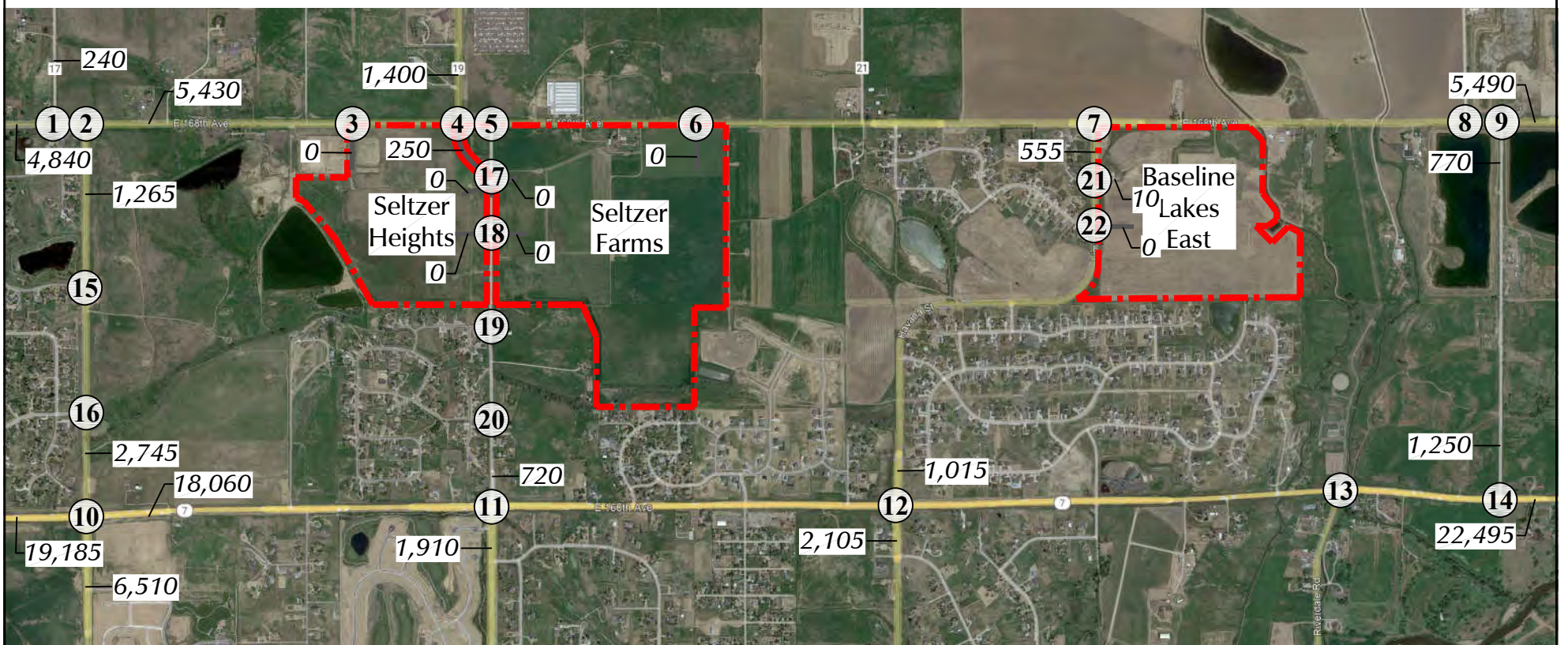
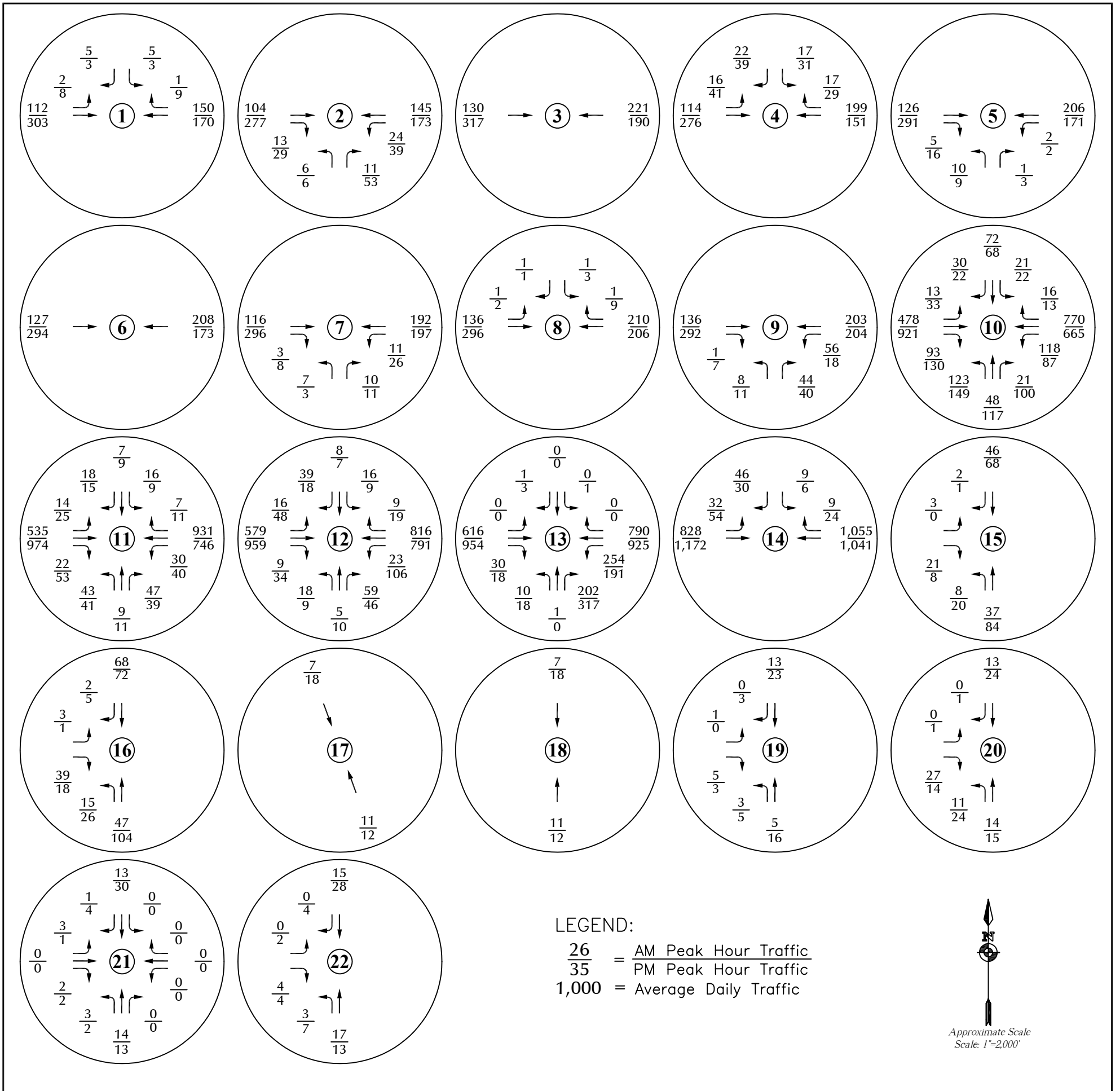


Figure 3b

Existing Lane Geometry and Traffic Control

Todd Creek Village MTIA (LSC #221150)





Note: Based on annual growth rate of two percent plus trips from the nearby Baseline Lakes development.

Figure 4a

**Year 2030
 Background Traffic**

Todd Creek Village MTIA (LSC #221150)



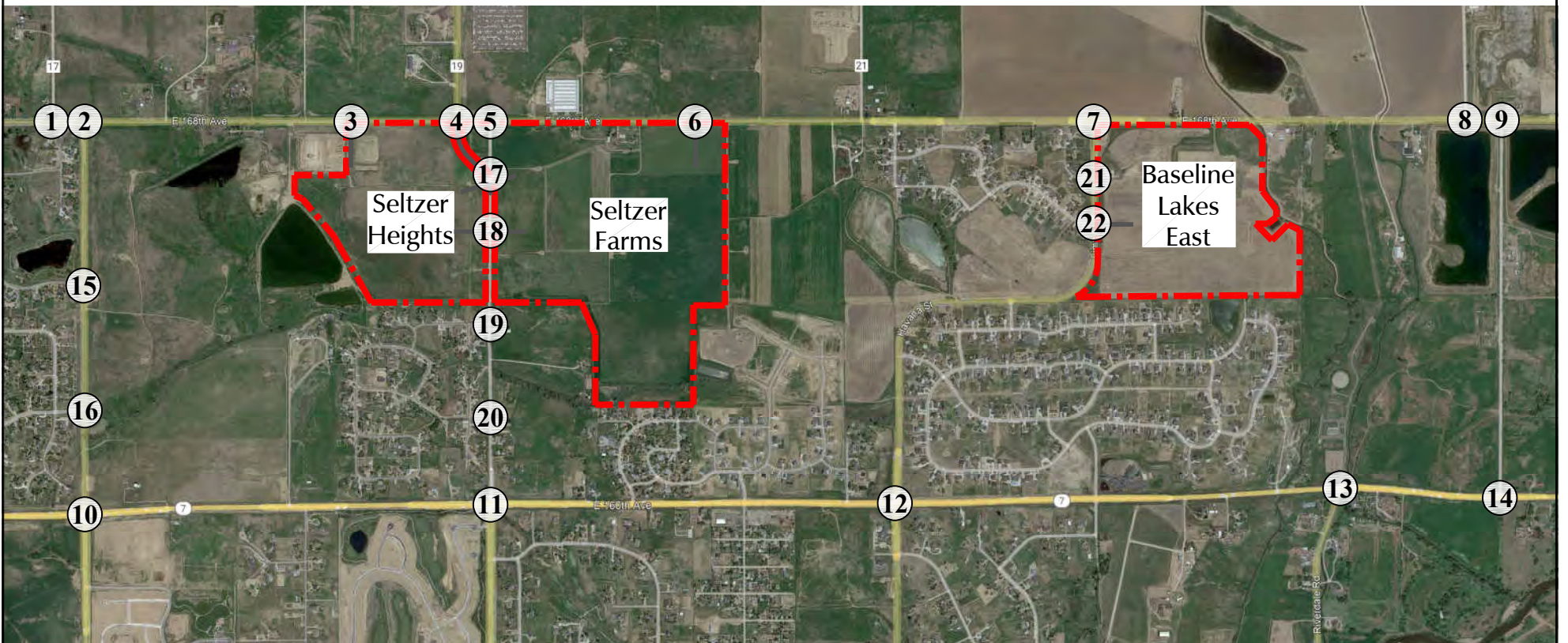
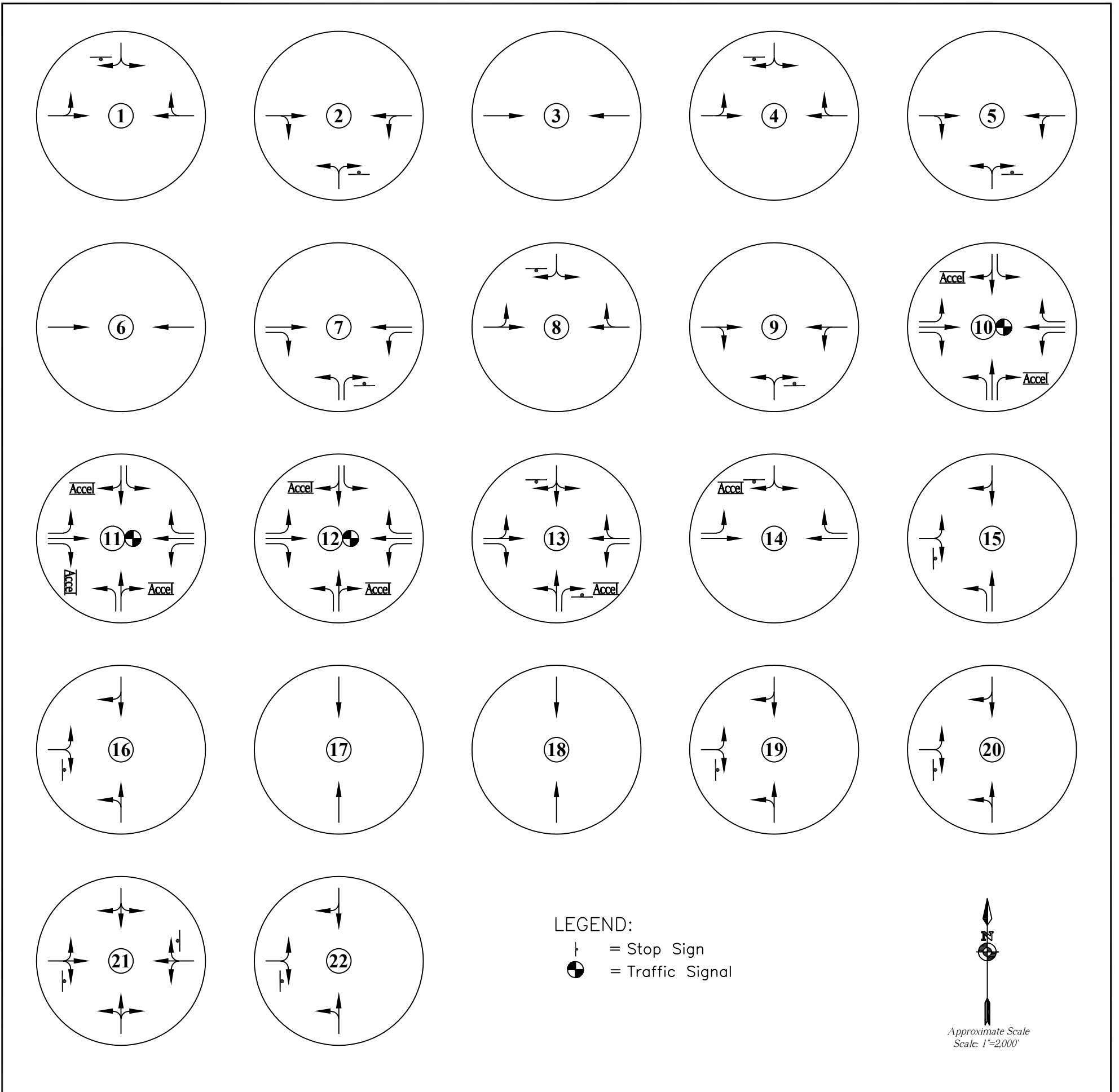
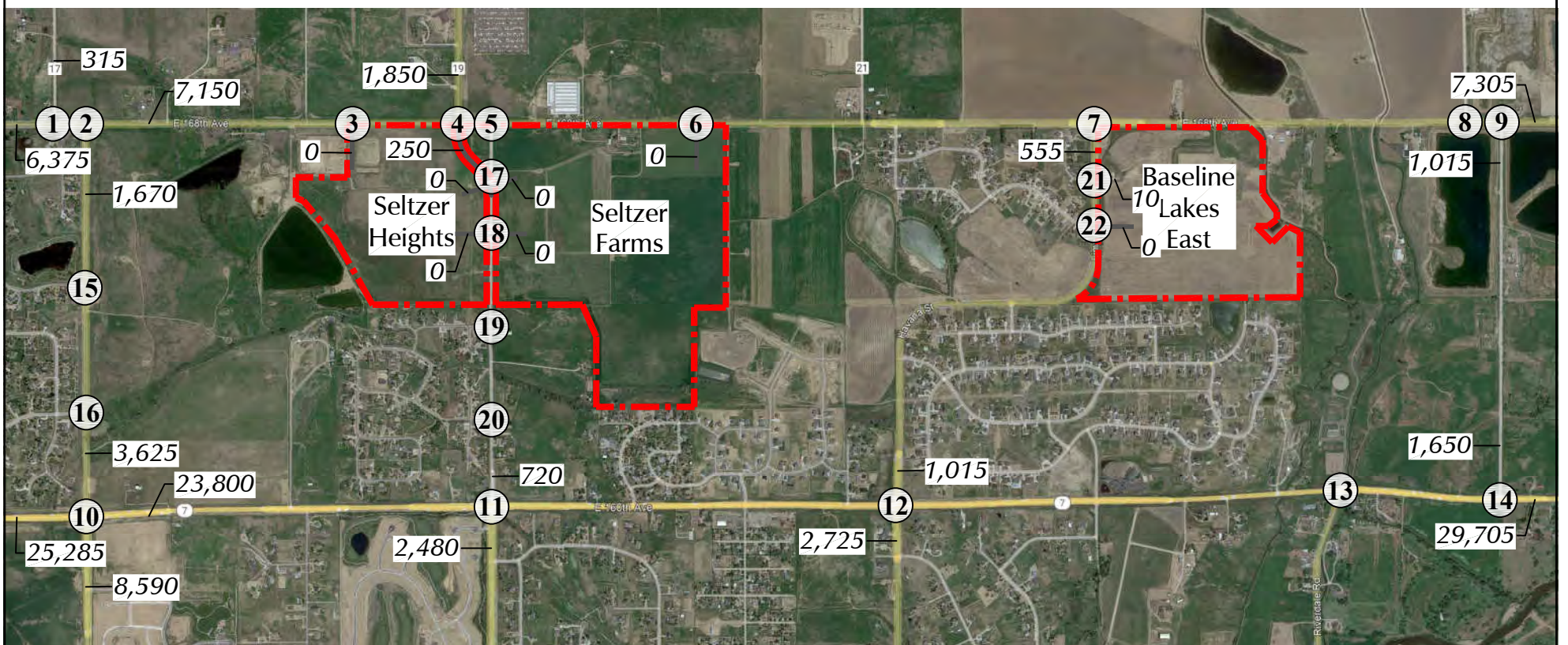
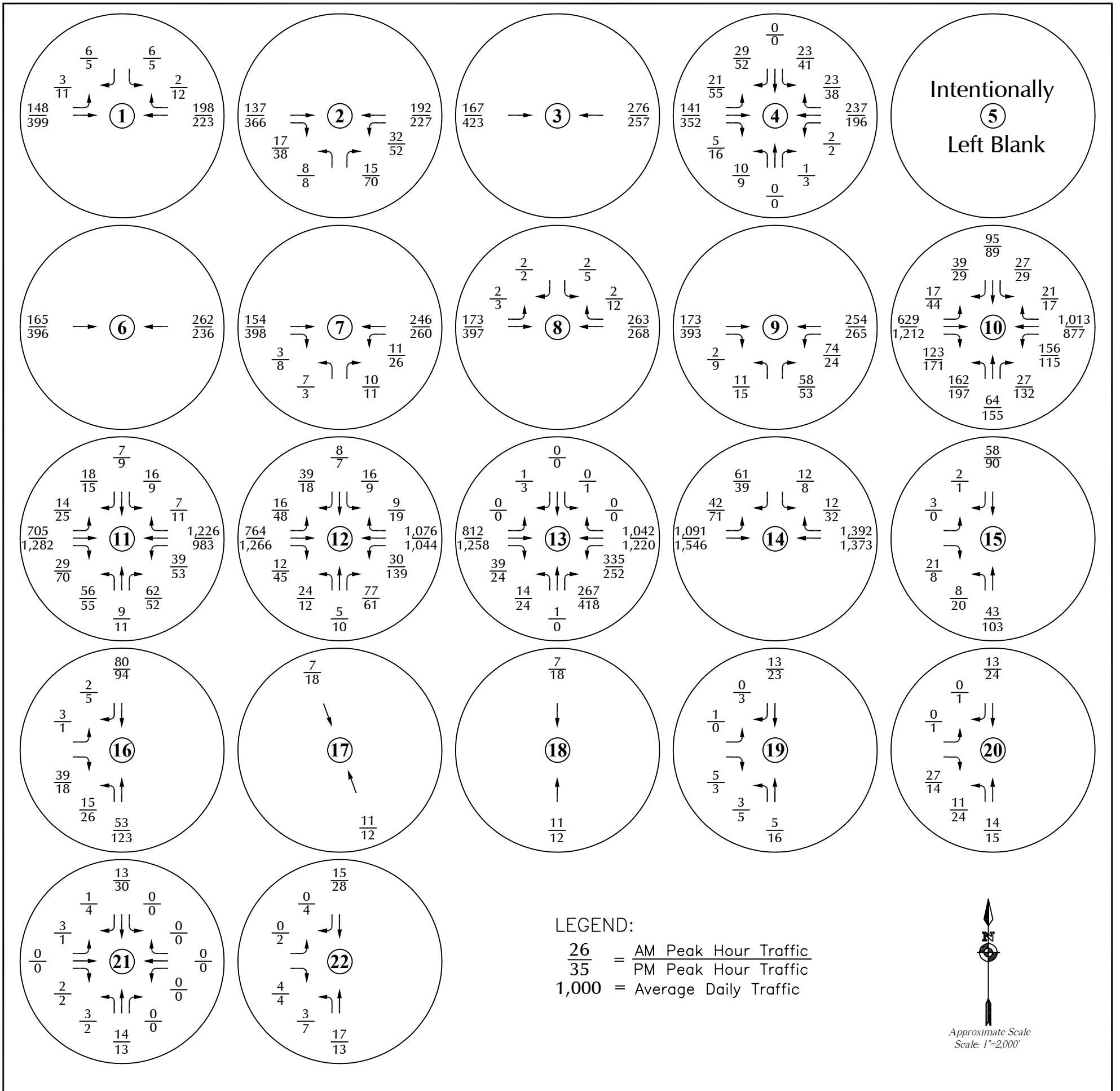


Figure 4b

**Year 2030 Background
Lane Geometry and Traffic Control**

Todd Creek Village MTIA (LSC #221150)





Note: Based on an annual growth rate of 2 percent plus trips from the nearby Baseline Lakes development.

Figure 5a

Year 2044 Background Traffic

Todd Creek Village MTIA (LSC #221150)



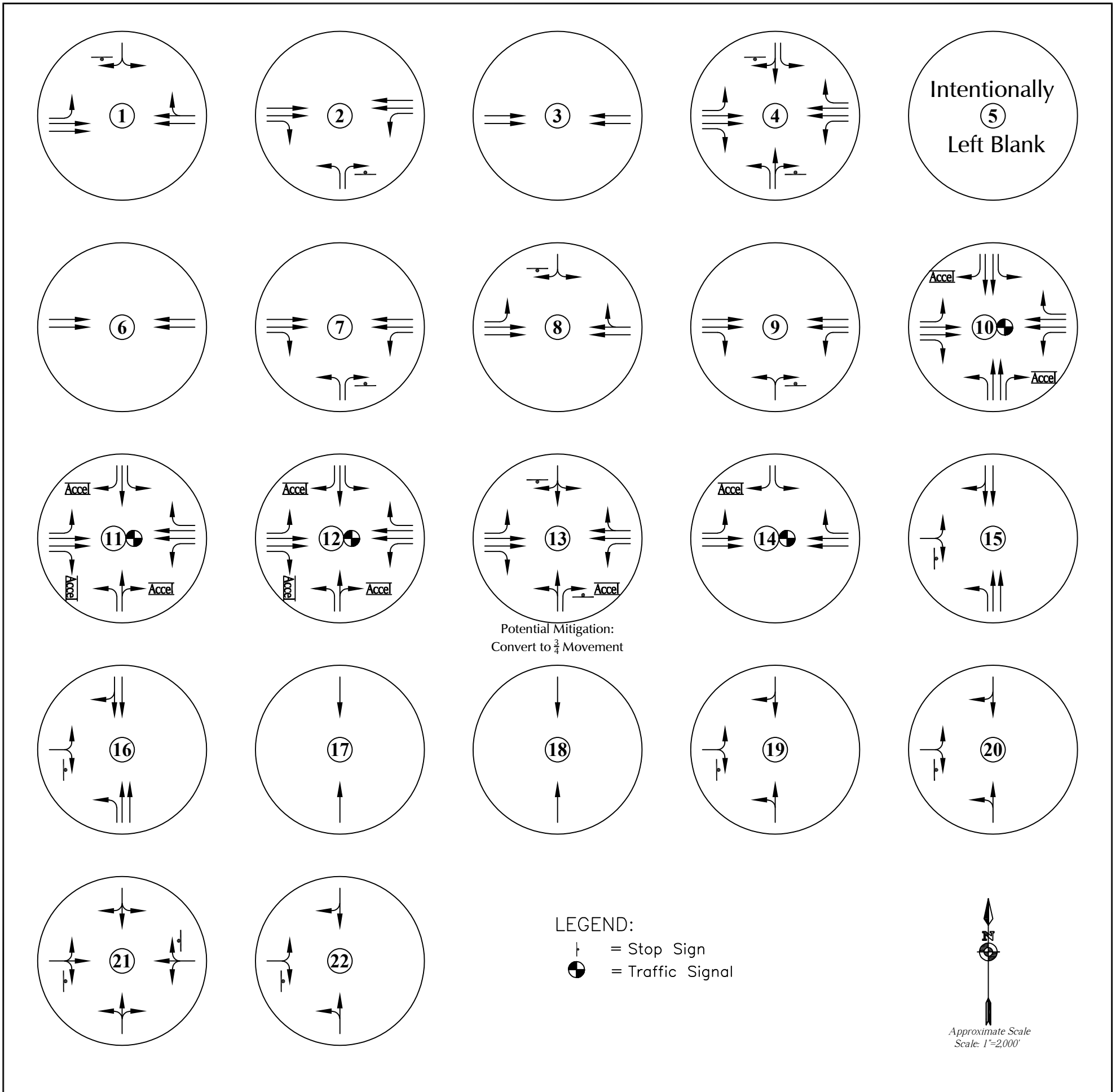


Figure 5b

Year 2044 Background
Lane Geometry and Traffic Control
Todd Creek Village MTIA (LSC #221150)





Approximate Scale
Scale: 1"=5,000'

LEGEND:

65% = Percent Directional Distribution

Figure 6
Directional Distribution of Site-Generated Traffic
Todd Creek Village MTIA (LSC #221150)

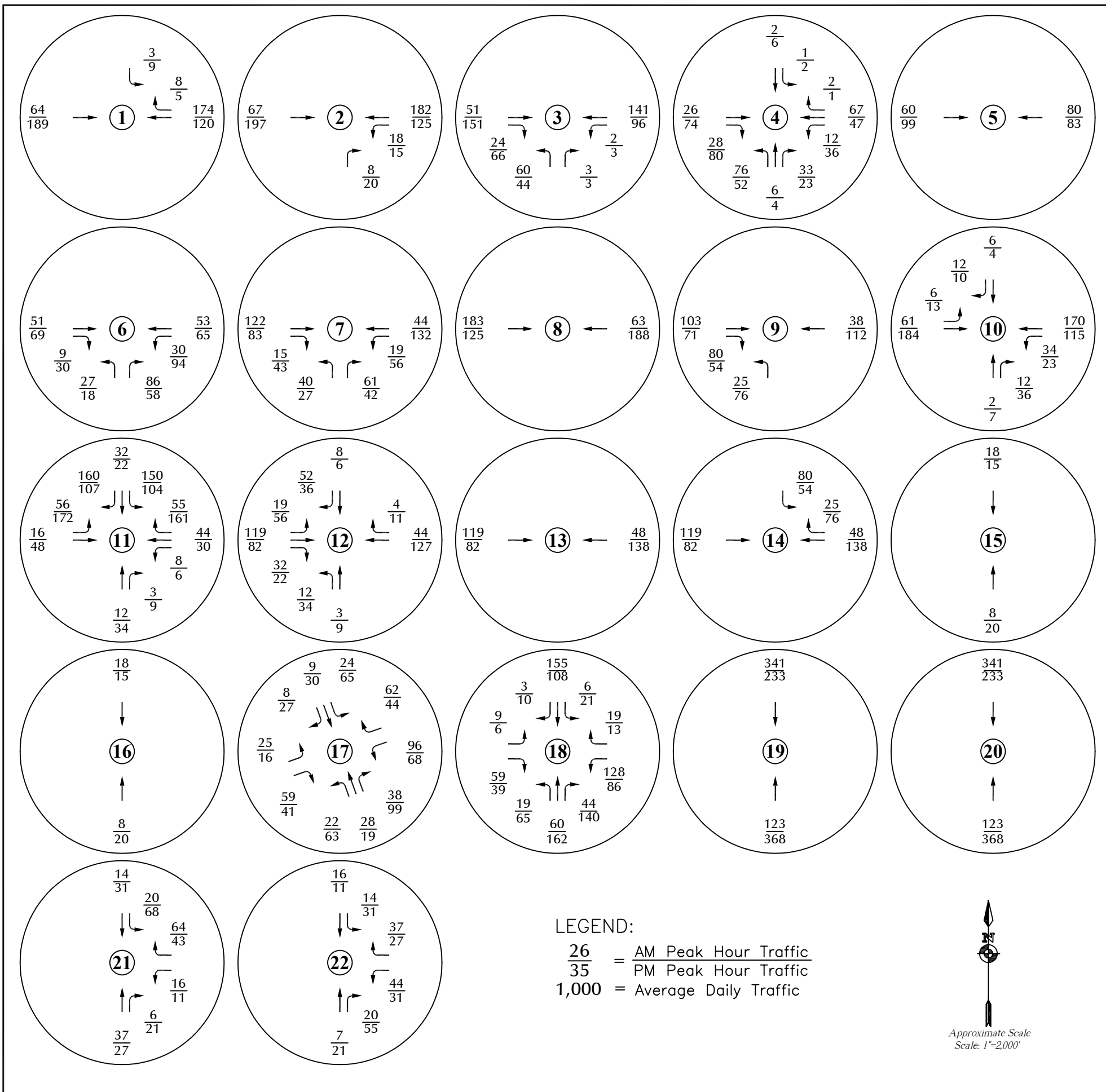
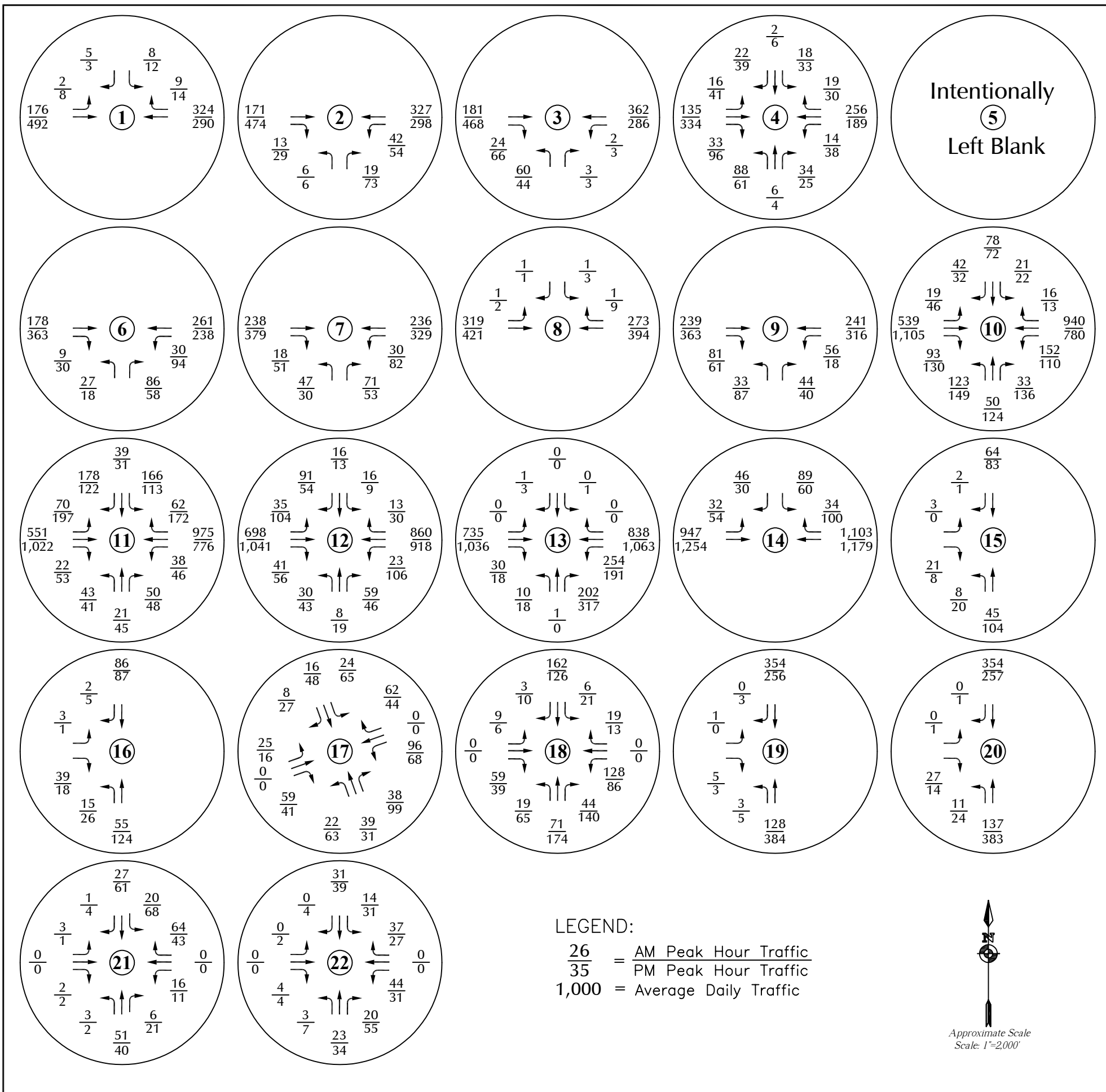


Figure 7

Assignment of Site-Generated Traffic

Todd Creek Village MTIA (LSC #221150)





Note: These volumes are the sum of the volumes in Figures 4a and 7.

Figure 8a

Year 2030 Total Traffic

Todd Creek Village MTIA (LSC #221150)



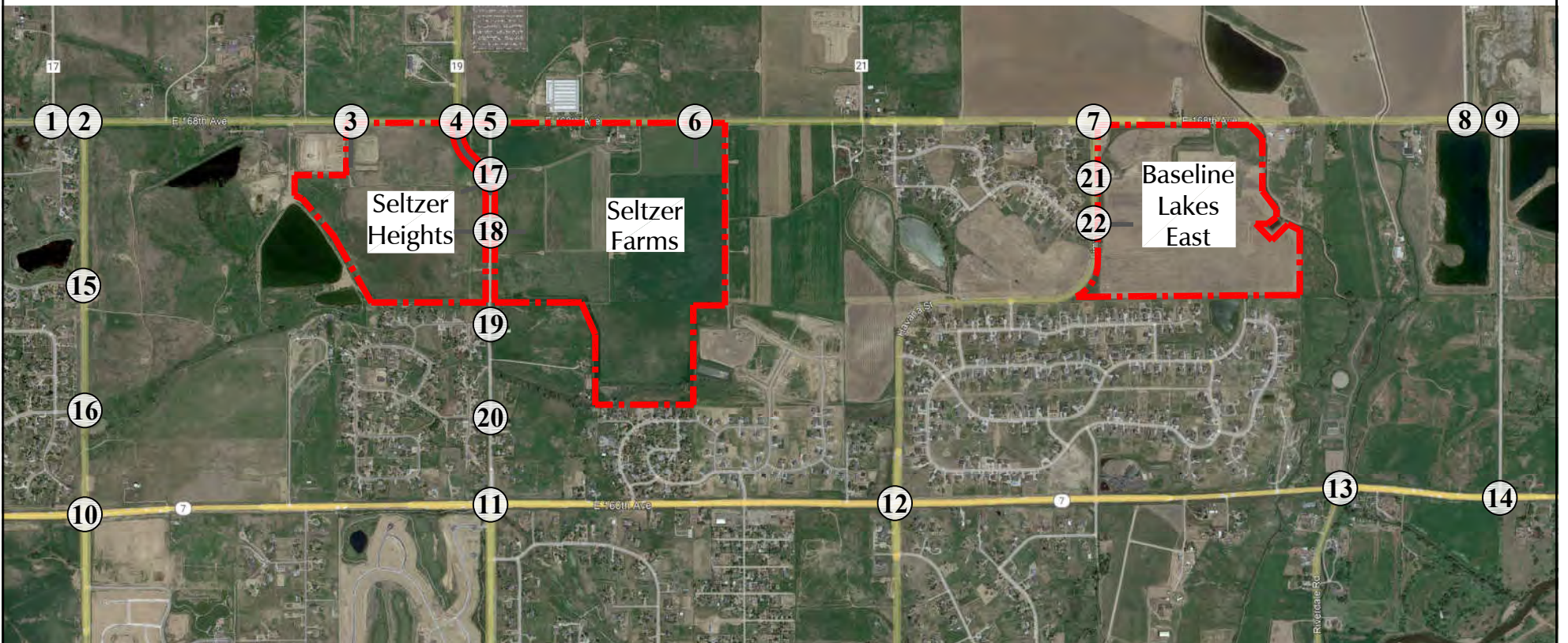
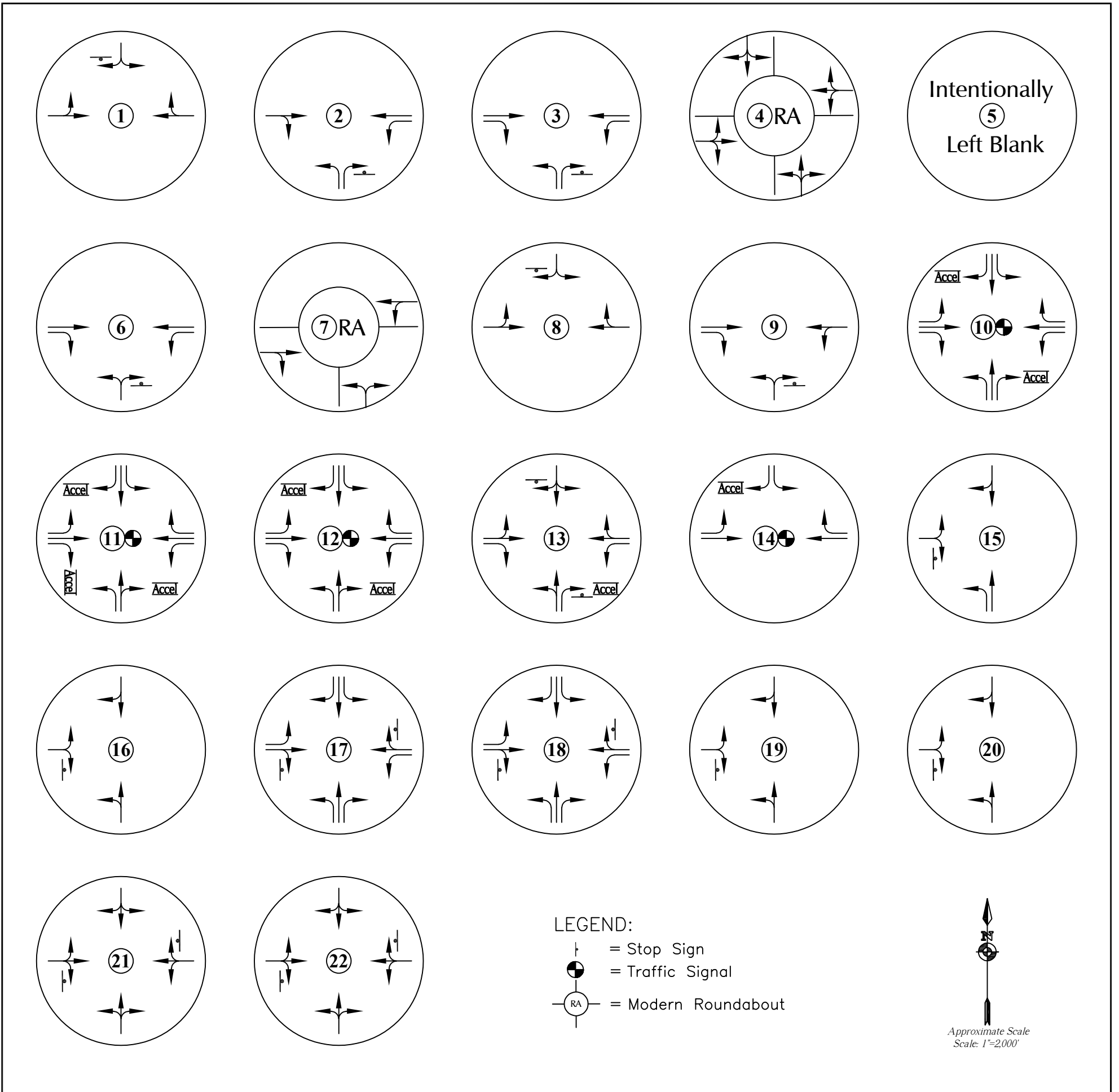
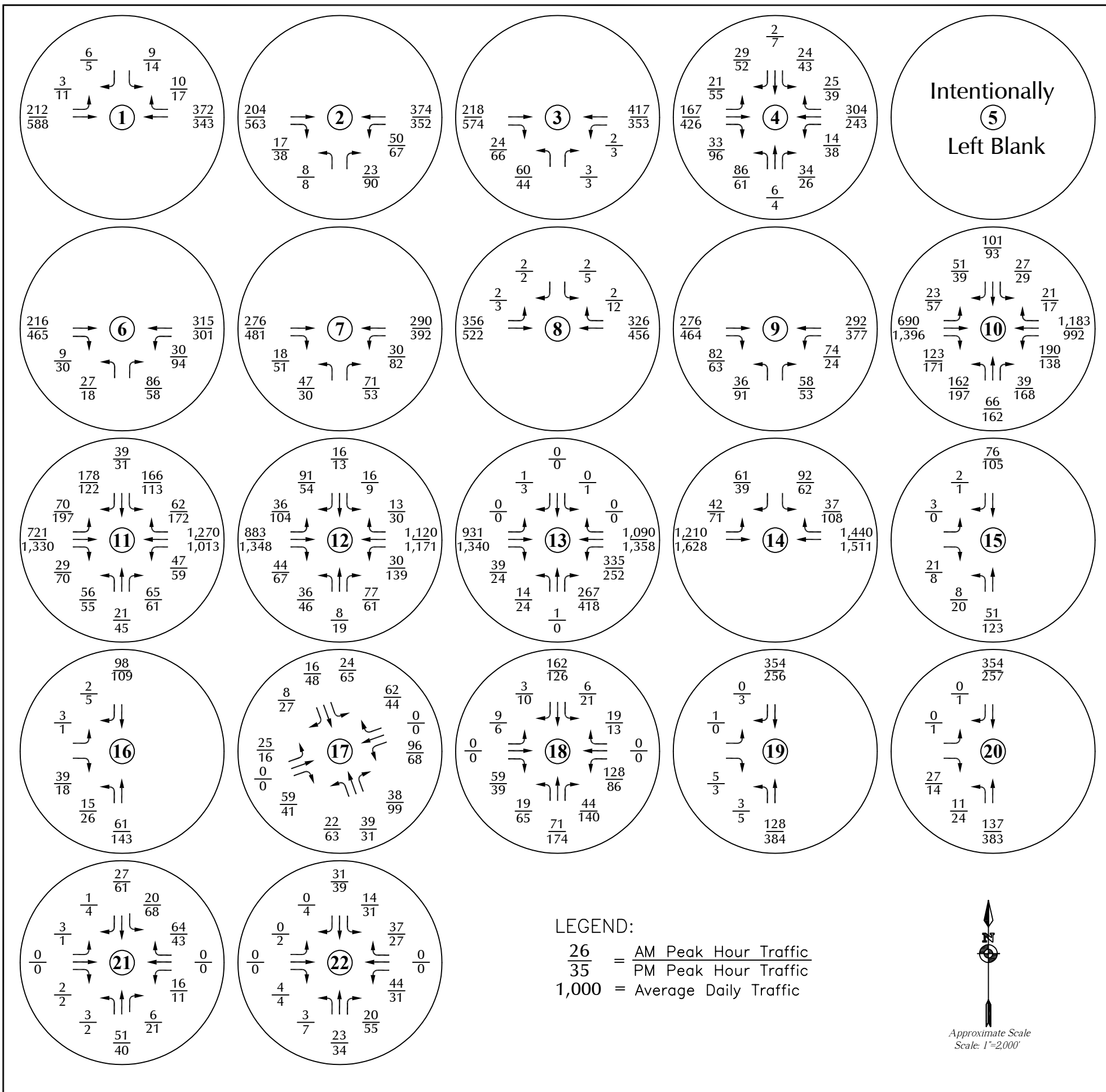


Figure 8b

Year 2030 Total Lane Geometry and Traffic Control

Todd Creek Village MTIA (LSC #221150)



Note: These volumes are the sum of the volumes in Figures 5a and 7.

Figure 9a

Year 2044 Total Traffic

Todd Creek Village MTIA (LSC #221150)



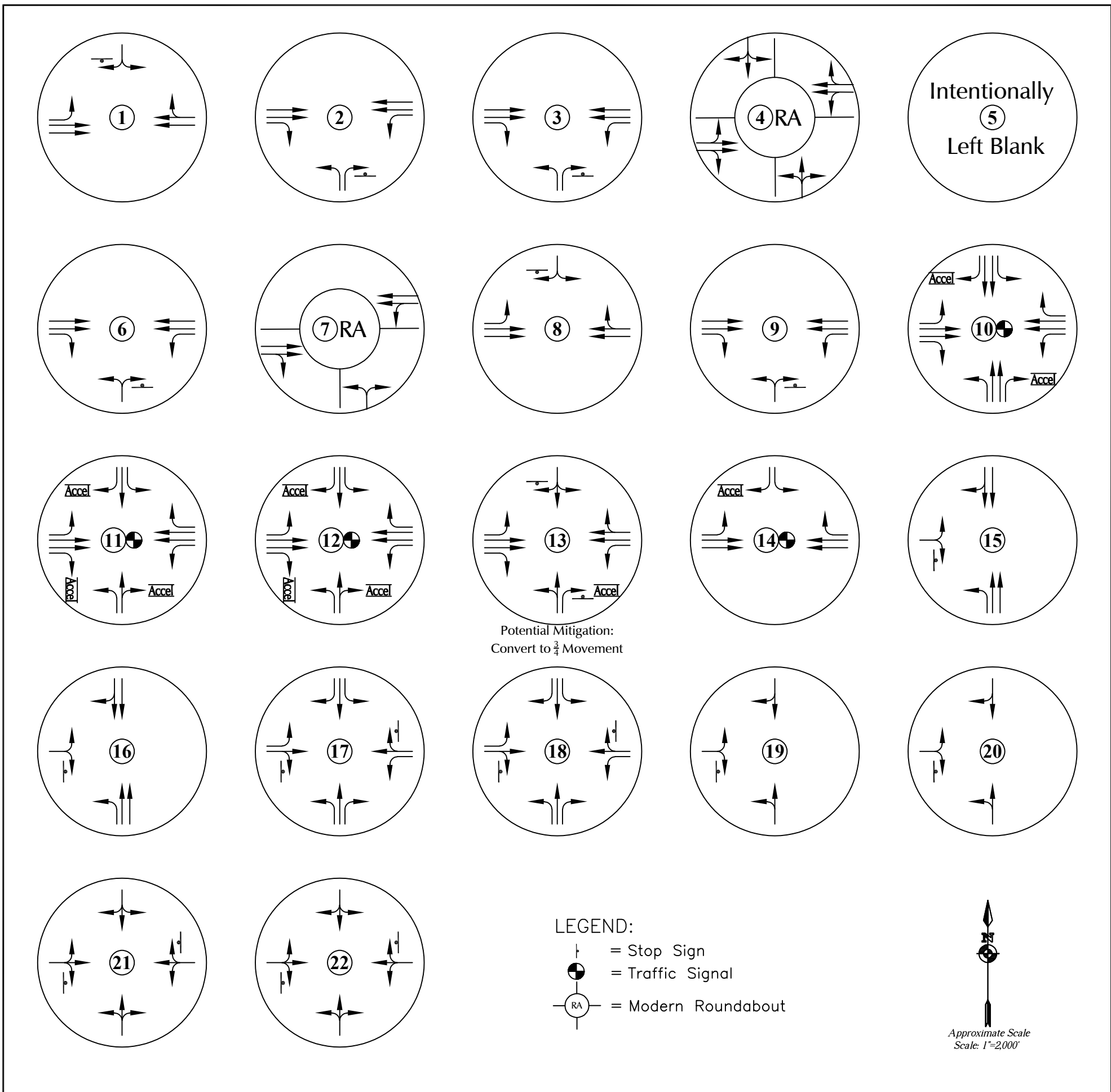


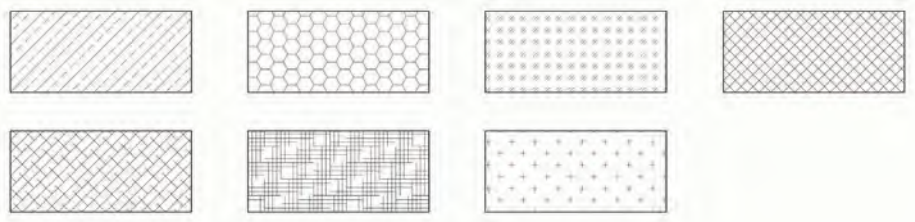
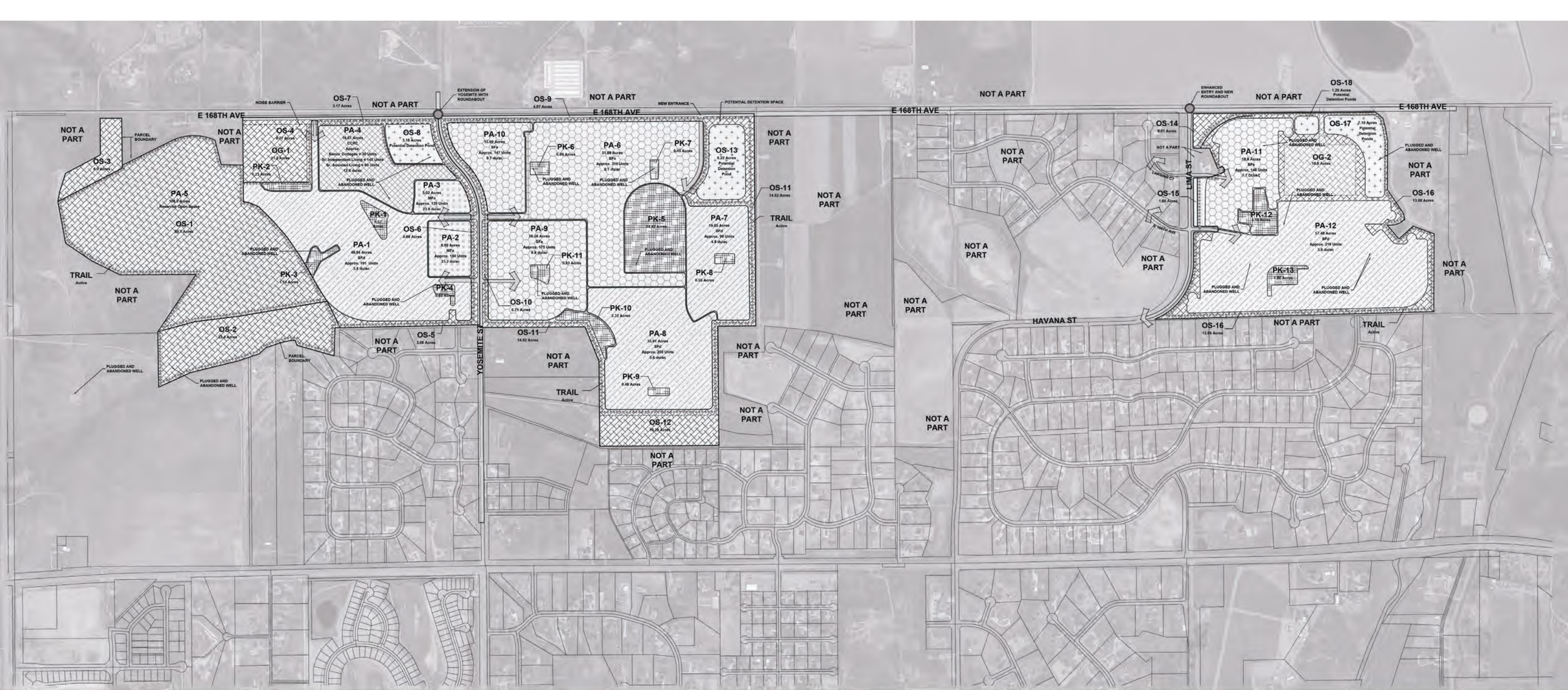
Figure 9b

Year 2044 Total Lane Geometry and Traffic Control

Todd Creek Village MTIA (LSC #221150)



Site Plan



○○○○○○ TRAIL
 ● ANTICIPATED NEW ROUNDABOUT

Traffic Counts

COUNTER MEASURES INC.

1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: CR 17
E/W STREET: E. 168TH AVE
CITY: BRIGHTON
COUNTY: ADAMS

File Name : CR17168TH
Site Code : 00000005
Start Date : 2/9/2023
Page No : 1

Groups Printed- VEHICLES

Start Time	CR 17 Southbound			E. 168TH AVE Westbound			NO ACCESS Northbound			E. 168TH AVE Eastbound			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
06:30 AM	0	0	0	0	26	0	0	0	0	0	17	0	43
06:45 AM	0	0	1	0	27	0	0	0	0	0	23	0	51
Total	0	0	1	0	53	0	0	0	0	0	40	0	94
07:00 AM	1	0	0	0	18	0	0	0	0	0	26	0	45
07:15 AM	0	0	1	0	43	1	0	0	0	0	27	0	72
07:30 AM	1	0	2	0	44	0	0	0	0	1	23	0	71
07:45 AM	2	0	1	0	32	1	0	0	0	0	19	0	55
Total	4	0	4	0	137	2	0	0	0	1	95	0	243
08:00 AM	1	0	0	0	31	0	0	0	0	1	27	0	60
08:15 AM	0	0	1	0	18	0	0	0	0	0	21	0	40
Total	1	0	1	0	49	0	0	0	0	1	48	0	100
04:00 PM	0	0	1	0	33	2	0	0	0	0	66	0	102
04:15 PM	1	0	0	0	28	1	0	0	0	2	58	0	90
04:30 PM	0	0	1	0	43	1	0	0	0	1	47	0	93
04:45 PM	2	0	1	0	26	3	0	0	0	1	49	0	82
Total	3	0	3	0	130	7	0	0	0	4	220	0	367
05:00 PM	0	0	0	0	45	2	0	0	0	2	73	0	122
05:15 PM	1	0	1	0	35	2	0	0	0	3	71	0	113
05:30 PM	1	0	1	0	38	1	0	0	0	1	79	0	121
05:45 PM	0	0	0	0	35	1	0	0	0	0	65	0	101
Total	2	0	2	0	153	6	0	0	0	6	288	0	457
Grand Total	10	0	11	0	522	15	0	0	0	12	691	0	1261
Apprch %	47.6	0.0	52.4	0.0	97.2	2.8	0.0	0.0	0.0	1.7	98.3	0.0	
Total %	0.8	0.0	0.9	0.0	41.4	1.2	0.0	0.0	0.0	1.0	54.8	0.0	

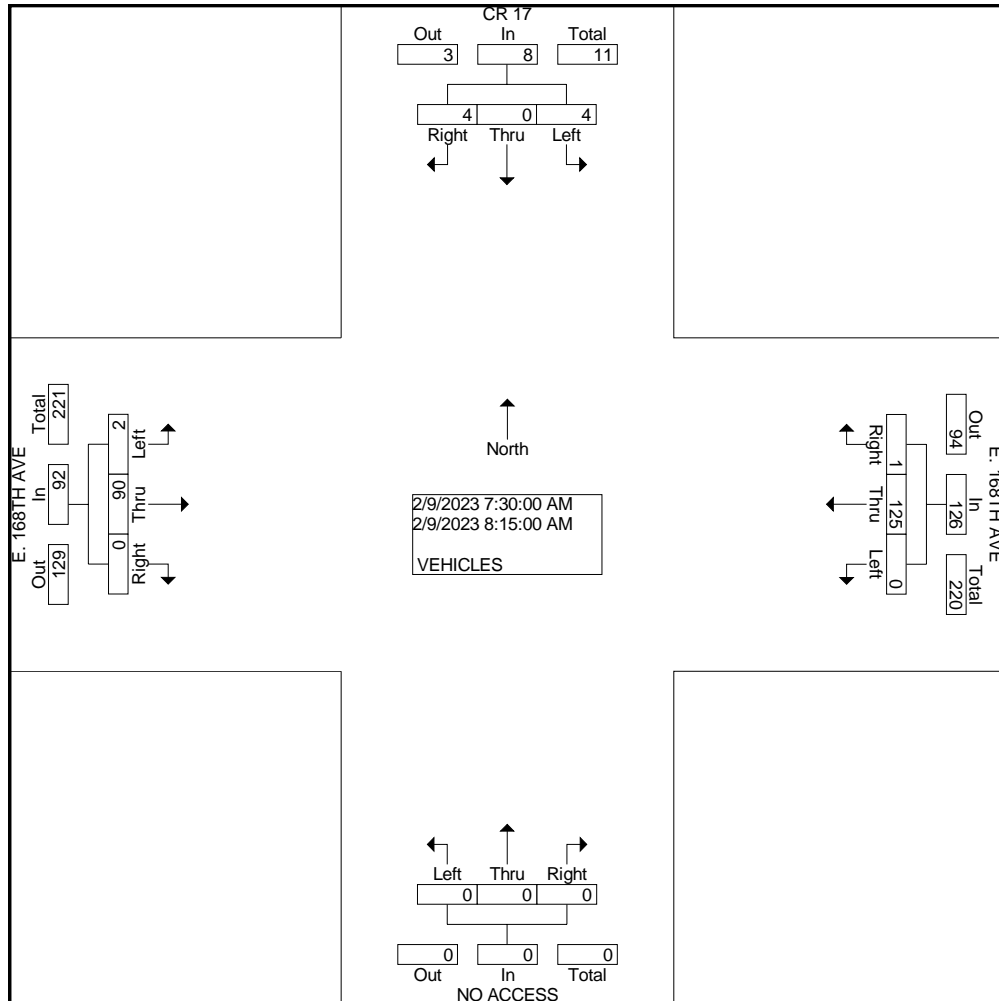
COUNTER MEASURES INC.

1889 YORK STREET
DENVER, COLORADO
303-333-7409

N/S STREET: CR 17
E/W STREET: E. 168TH AVE
CITY: BRIGHTON
COUNTY: ADAMS

File Name : CR17168TH
Site Code : 00000005
Start Date : 2/9/2023
Page No : 2

Start Time	CR 17 Southbound				E. 168TH AVE Westbound				NO ACCESS Northbound				E. 168TH AVE Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Intersection	07:30 AM																
Volume	4	0	4	8	0	125	1	126	0	0	0	0	2	90	0	92	226
Percent	50.0	0.0	50.0		0.0	99.2	0.8		0.0	0.0	0.0		2.2	97.8	0.0		
07:30 Volume	1	0	2	3	0	44	0	44	0	0	0	0	1	23	0	24	71
Peak Factor	0.796																
High Int.	07:30 AM																
Volume	1	0	2	3	0	44	0	44	0	0	0	0	1	27	0	28	
Peak Factor	0.667				0.716								0.821				



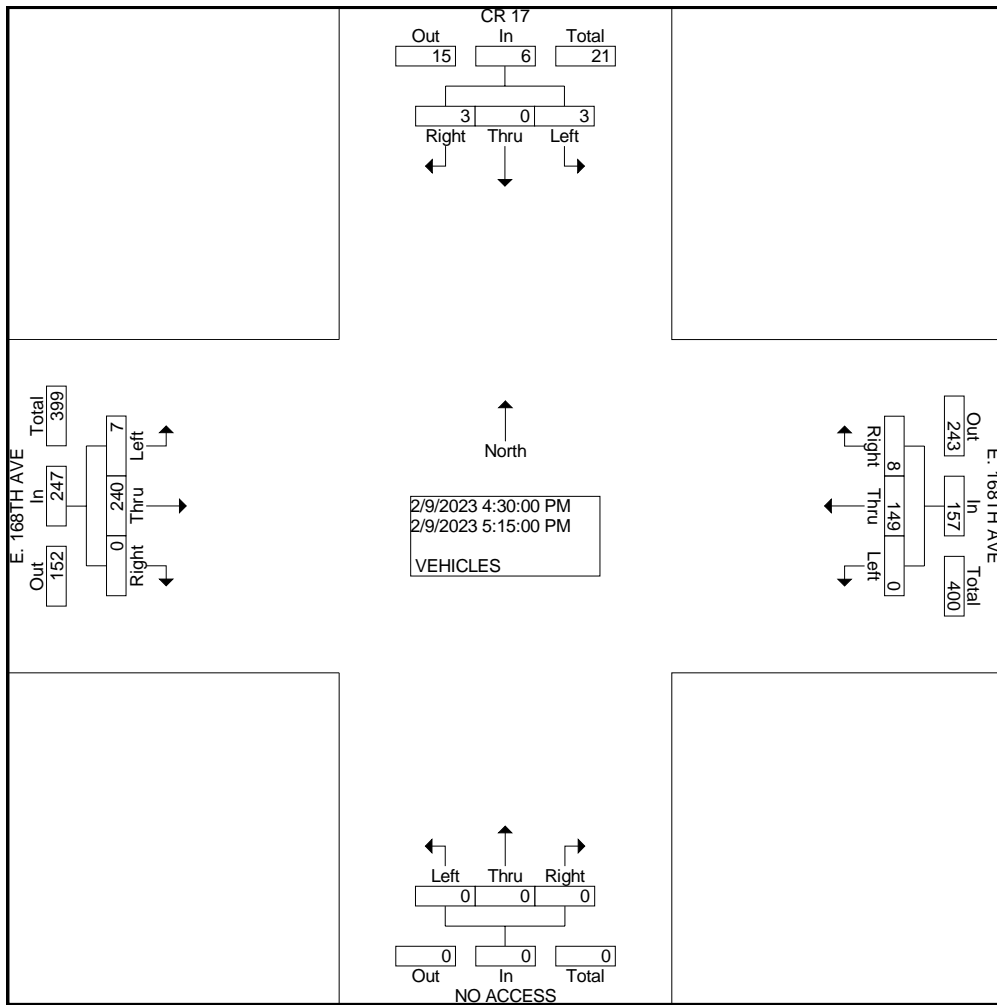
COUNTER MEASURES INC.

1889 YORK STREET
DENVER, COLORADO
303-333-7409

N/S STREET: CR 17
E/W STREET: E. 168TH AVE
CITY: BRIGHTON
COUNTY: ADAMS

File Name : CR17168TH
Site Code : 00000005
Start Date : 2/9/2023
Page No : 3

Start Time	CR 17 Southbound				E. 168TH AVE Westbound				NO ACCESS Northbound				E. 168TH AVE Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Intersection	04:30 PM																
Volume	3	0	3	6	0	149	8	157	0	0	0	0	7	240	0	247	410
Percent	50.0	0.0	50.0		0.0	94.9	5.1		0.0	0.0	0.0		2.8	97.2	0.0		
05:00																	
Volume	0	0	0	0	0	45	2	47	0	0	0	0	2	73	0	75	122
Peak Factor	0.840																
High Int.	04:45 PM																
Volume	2	0	1	3	0	45	2	47	0	0	0	0	2	73	0	75	
Peak Factor	0.500				0.835								0.823				



COUNTER MEASURES INC.

1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: CR 19
E/W STREET: E. 168TH AVE
CITY: BRIGHTON
COUNTY: ADAMS

File Name : CR19168TH
Site Code : 00000005
Start Date : 1/26/2023
Page No : 1

Groups Printed- VEHICLES

Start Time	CR 19 Southbound				E. 168TH AVE Westbound				NO ACCESS Northbound				E. 168TH AVE Eastbound				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
06:30 AM	3	0	0	0	0	34	6	0	0	0	0	0	2	19	0	0	64
06:45 AM	2	0	7	0	0	49	1	0	0	0	0	0	4	22	0	0	85
Total	5	0	7	0	0	83	7	0	0	0	0	0	6	41	0	0	149
07:00 AM	0	0	5	0	0	64	5	0	0	0	0	0	6	24	0	0	104
07:15 AM	5	0	5	0	0	69	0	0	0	0	0	0	2	26	0	0	107
07:30 AM	4	0	9	0	0	53	7	0	0	0	0	0	5	27	0	0	105
07:45 AM	4	0	4	0	0	46	5	0	0	0	0	0	4	25	0	0	88
Total	13	0	23	0	0	232	17	0	0	0	0	0	17	102	0	0	404
08:00 AM	4	0	2	0	0	39	1	0	0	0	0	0	3	31	0	0	80
08:15 AM	3	0	4	0	0	41	2	0	0	0	0	0	2	18	0	0	70
Total	7	0	6	0	0	80	3	0	0	0	0	0	5	49	0	0	150
04:00 PM	4	0	2	0	0	33	3	0	0	0	0	0	6	70	0	0	118
04:15 PM	4	0	8	0	0	38	3	0	0	0	0	0	5	61	0	0	119
04:30 PM	6	0	7	0	0	30	9	0	0	0	0	0	9	53	0	0	114
04:45 PM	7	0	12	0	0	37	4	0	0	0	0	0	9	64	0	0	133
Total	21	0	29	0	0	138	19	0	0	0	0	0	29	248	0	0	484
05:00 PM	6	0	8	0	0	32	8	0	0	0	0	0	8	75	0	0	137
05:15 PM	8	0	7	0	0	28	4	0	0	0	0	0	10	45	0	0	102
05:30 PM	3	0	3	0	0	38	4	0	0	0	0	0	4	59	0	0	111
05:45 PM	4	0	9	0	0	22	2	0	0	0	0	0	7	52	0	0	96
Total	21	0	27	0	0	120	18	0	0	0	0	0	29	231	0	0	446
Grand Total	67	0	92	0	0	653	64	0	0	0	0	0	86	671	0	0	1633
Apprch %	42.1	0.0	57.9	0.0	0.0	91.1	8.9	0.0	0.0	0.0	0.0	0.0	11.4	88.6	0.0	0.0	
Total %	4.1	0.0	5.6	0.0	0.0	40.0	3.9	0.0	0.0	0.0	0.0	0.0	5.3	41.1	0.0	0.0	

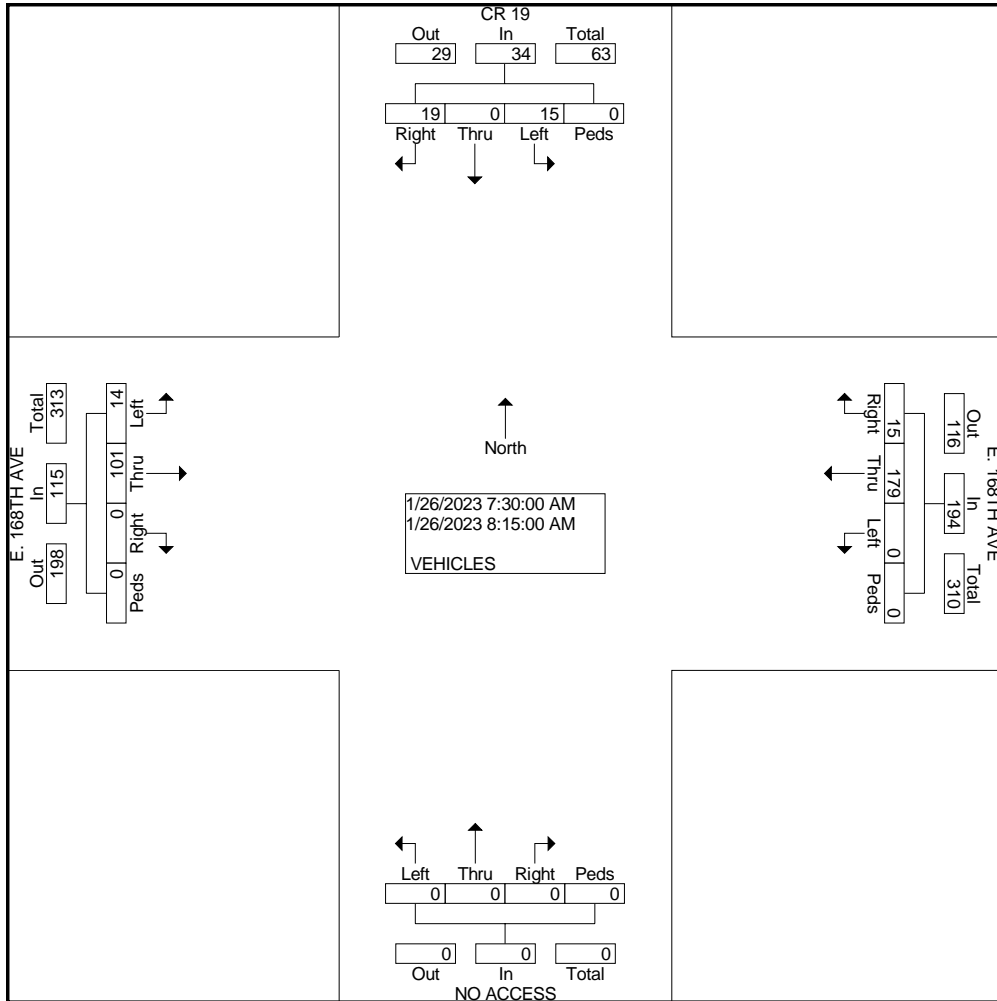
COUNTER MEASURES INC.

1889 YORK STREET
DENVER, COLORADO
303-333-7409

N/S STREET: CR 19
E/W STREET: E. 168TH AVE
CITY: BRIGHTON
COUNTY: ADAMS

File Name : CR19168TH
Site Code : 00000005
Start Date : 1/26/2023
Page No : 2

Start Time	CR 19 Southbound					E. 168TH AVE Westbound					NO ACCESS Northbound					E. 168TH AVE Eastbound					Int. Total	
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total		
Peak Hour From 07:30 AM to 08:15 AM - Peak 1 of 1																						
Intersect on 07:30 AM																						
Volume	15	0	19	0	34	0	179	15	0	194	0	0	0	0	0	14	101	0	0	115	343	
Percent	44.1	0.0	55.9	0.0		0.0	92.3	7.7	0.0		0.0	0.0	0.0	0.0		12.2	87.8	0.0	0.0			
07:30 Volume Peak Factor	4	0	9	0	13	0	53	7	0	60	0	0	0	0	0	5	27	0	0	32	105	
High Int. Volume Peak Factor	4	0	9	0	13	0	53	7	0	60	0	0	0	0	0	3	31	0	0	34	0.817	
						07:30 AM											08:00 AM					
						0.65											0.84					
						4											6					



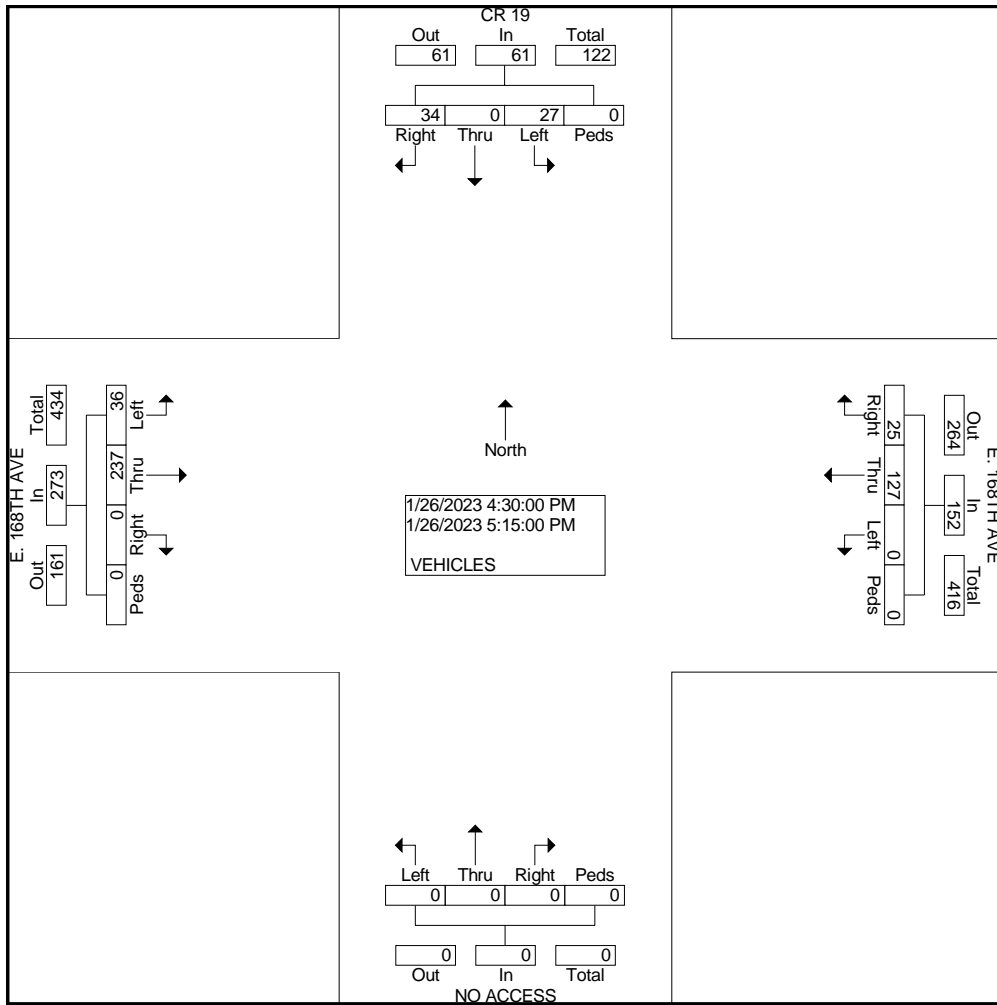
COUNTER MEASURES INC.

1889 YORK STREET
DENVER, COLORADO
303-333-7409

N/S STREET: CR 19
E/W STREET: E. 168TH AVE
CITY: BRIGHTON
COUNTY: ADAMS

File Name : CR19168TH
Site Code : 00000005
Start Date : 1/26/2023
Page No : 3

Start Time	CR 19 Southbound					E. 168TH AVE Westbound					NO ACCESS Northbound					E. 168TH AVE Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour From 04:30 PM to 05:15 PM - Peak 1 of 1																					
Intersect on	04:30 PM																				
Volume	27	0	34	0	61	0	127	25	0	152	0	0	0	0	0	36	237	0	0	273	486
Percent	44.3	0.0	55.7	0.0		0.0	83.6	16.4	0.0		0.0	0.0	0.0	0.0		13.2	86.8	0.0	0.0		
05:00 Volume	6	0	8	0	14	0	32	8	0	40	0	0	0	0	0	8	75	0	0	83	137
Peak Factor	0.887																				
High Int.	04:45 PM																				
Volume	7	0	12	0	19	0	37	4	0	41	0	0	0	0	0	8	75	0	0	83	137
Peak Factor	0.80					0.92										0.82					2



COUNTER MEASURES INC.

1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: CR 23.5
E/W STREET: E. 168TH AVE
CITY: BRIGHTON
COUNTY: ADAMS

File Name : CR23.5168TH
Site Code : 00000015
Start Date : 2/9/2023
Page No : 1

Groups Printed- VEHICLES

Start Time	CR 23 1/2 Southbound			E. 168TH AVE Westbound			NO ACCESS Northbound			E. 168TH AVE Eastbound			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
06:30 AM	2	0	1	0	46	0	0	0	0	0	29	0	78
06:45 AM	2	0	2	0	40	1	0	0	0	0	20	0	65
Total	4	0	3	0	86	1	0	0	0	0	49	0	143
07:00 AM	1	0	0	0	64	0	0	0	0	0	25	0	90
07:15 AM	2	0	0	0	61	0	0	0	0	0	23	0	86
07:30 AM	0	0	0	0	54	0	0	0	0	0	26	0	80
07:45 AM	0	0	1	0	46	1	0	0	0	0	33	0	81
Total	3	0	1	0	225	1	0	0	0	0	107	0	337
08:00 AM	0	0	0	0	38	0	0	0	0	0	26	0	64
08:15 AM	1	0	0	0	42	0	0	0	0	1	31	0	75
Total	1	0	0	0	80	0	0	0	0	1	57	0	139
04:00 PM	4	0	0	0	33	3	0	0	0	0	66	0	106
04:15 PM	1	0	1	0	49	1	0	0	0	1	49	0	102
04:30 PM	1	0	0	0	46	0	0	0	0	1	66	0	114
04:45 PM	0	0	1	0	39	0	0	0	0	0	63	0	103
Total	6	0	2	0	167	4	0	0	0	2	244	0	425
05:00 PM	0	0	0	0	45	5	0	1	0	1	68	0	120
05:15 PM	2	0	0	0	46	3	0	0	0	0	57	0	108
05:30 PM	0	0	1	0	34	2	0	0	0	0	47	0	84
05:45 PM	1	0	0	0	36	1	0	0	0	0	58	0	96
Total	3	0	1	0	161	11	0	1	0	1	230	0	408
Grand Total	17	0	7	0	719	17	0	1	0	4	687	0	1452
Apprch %	70.8	0.0	29.2	0.0	97.7	2.3	0.0	100.0	0.0	0.6	99.4	0.0	
Total %	1.2	0.0	0.5	0.0	49.5	1.2	0.0	0.1	0.0	0.3	47.3	0.0	

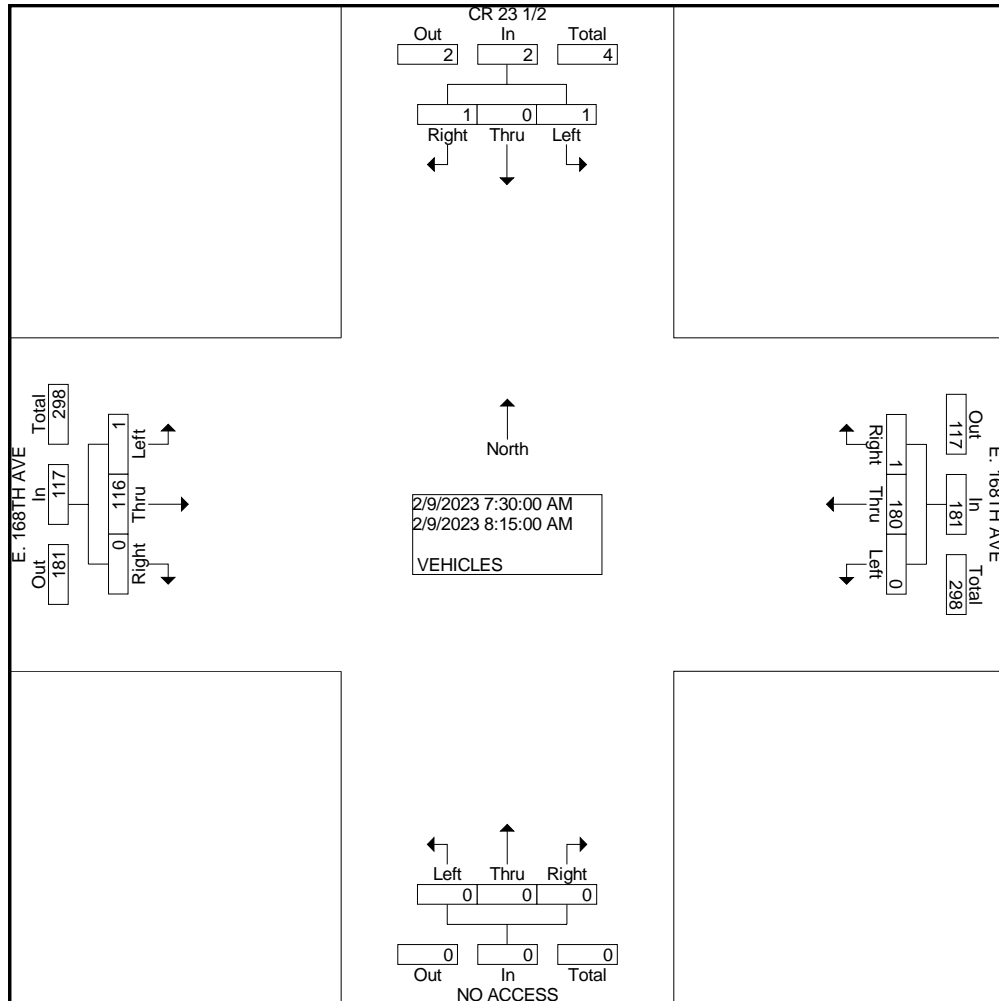
COUNTER MEASURES INC.

1889 YORK STREET
DENVER, COLORADO
303-333-7409

N/S STREET: CR 23.5
E/W STREET: E. 168TH AVE
CITY: BRIGHTON
COUNTY: ADAMS

File Name : CR23.5168TH
Site Code : 00000015
Start Date : 2/9/2023
Page No : 2

Start Time	CR 23 1/2 Southbound				E. 168TH AVE Westbound				NO ACCESS Northbound				E. 168TH AVE Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Intersection	07:30 AM																
Volume	1	0	1	2	0	180	1	181	0	0	0	0	1	116	0	117	300
Percent	50.0	0.0	50.0		0.0	99.4	0.6		0.0	0.0	0.0		0.9	99.1	0.0		
07:45																	
Volume	0	0	1	1	0	46	1	47	0	0	0	0	0	33	0	33	81
Peak Factor	0.926																
High Int.	07:45 AM																
Volume	0	0	1	1	0	54	0	54	0	0	0	0	0	33	0	33	
Peak Factor	0.500				0.838								0.886				



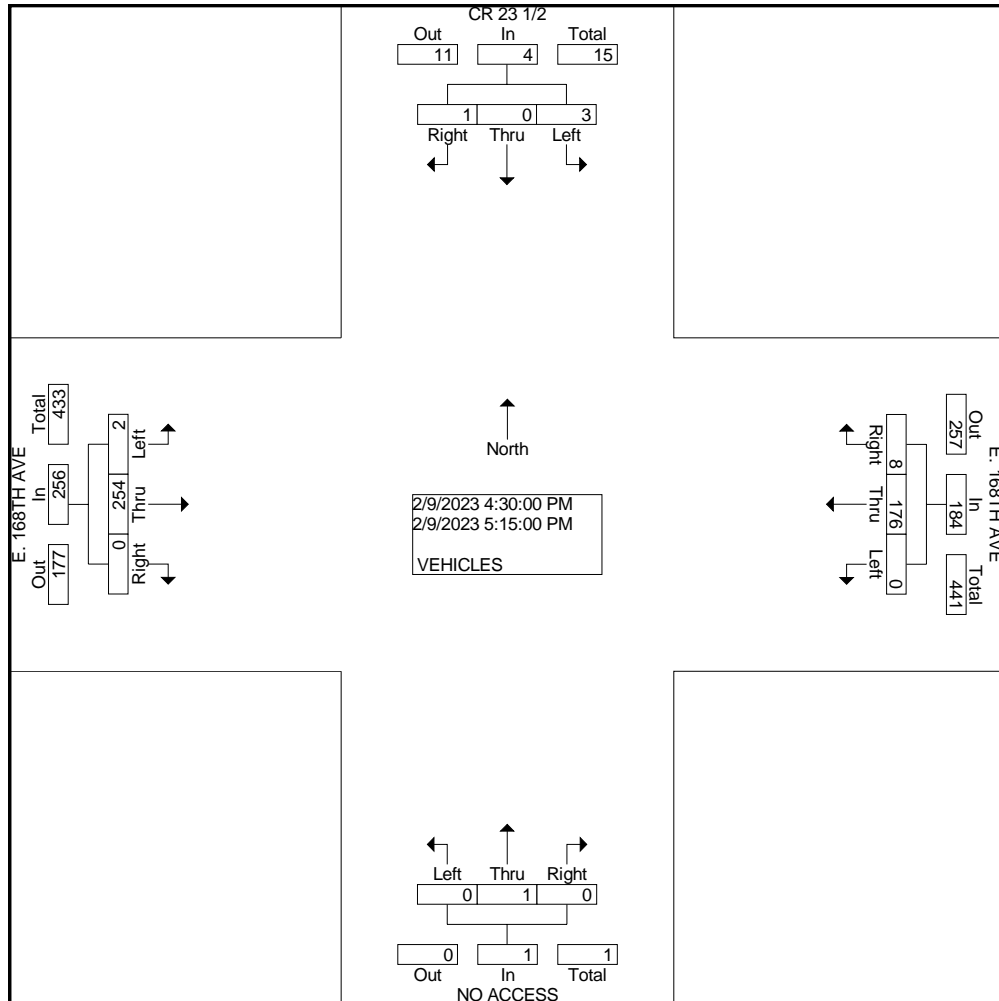
COUNTER MEASURES INC.

1889 YORK STREET
DENVER, COLORADO
303-333-7409

N/S STREET: CR 23.5
E/W STREET: E. 168TH AVE
CITY: BRIGHTON
COUNTY: ADAMS

File Name : CR23.5168TH
Site Code : 0000015
Start Date : 2/9/2023
Page No : 3

Start Time	CR 23 1/2 Southbound				E. 168TH AVE Westbound				NO ACCESS Northbound				E. 168TH AVE Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Intersection	04:30 PM																
Volume	3	0	1	4	0	176	8	184	0	1	0	1	2	254	0	256	445
Percent	75.0	0.0	25.0		0.0	95.7	4.3		0.0	100.0	0.0		0.8	99.2	0.0		
05:00 Volume	0	0	0	0	0	45	5	50	0	1	0	1	1	68	0	69	120
Peak Factor	0.927																
High Int.	05:15 PM																
Volume	2	0	0	2	0	45	5	50	0	1	0	1	1	68	0	69	
Peak Factor	0.500				0.920				0.250				0.928				



COUNTER MEASURES INC.

1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: HAVANA ST
E/W STREET: HWY 7
CITY: BRIGHTON
COUNTY: ADAMS

File Name : HAVAHWY7
Site Code : 00000005
Start Date : 1/17/2023
Page No : 1

Groups Printed- VEHICLES

Start Time	HAVANA ST Southbound				HWY 7 Westbound				HAVANA ST Northbound				HWY 7 Eastbound				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
06:30 AM	2	0	8	0	3	181	0	0	5	0	6	0	0	102	0	0	307
06:45 AM	1	1	4	0	12	147	0	0	3	0	10	0	2	114	2	0	296
Total	3	1	12	0	15	328	0	0	8	0	16	0	2	216	2	0	603
07:00 AM	2	2	7	0	3	196	1	0	7	1	13	0	3	110	0	0	345
07:15 AM	4	2	17	0	3	185	1	0	11	0	8	0	1	137	1	0	370
07:30 AM	7	5	7	0	3	184	0	0	2	0	12	0	0	143	0	0	363
07:45 AM	2	0	9	0	2	154	3	0	3	1	15	0	4	125	2	0	320
Total	15	9	40	0	11	719	5	0	23	2	48	0	8	515	3	0	1398
08:00 AM	2	1	5	0	5	187	4	0	4	2	10	0	3	114	1	0	338
08:15 AM	2	0	11	0	10	185	1	0	7	1	14	0	7	122	5	0	365
Total	4	1	16	0	15	372	5	0	11	3	24	0	10	236	6	0	703
04:00 PM	1	2	1	0	12	175	1	0	4	4	12	0	2	183	5	0	402
04:15 PM	2	1	2	0	11	162	5	0	3	0	11	0	3	171	6	0	377
04:30 PM	1	1	1	0	16	178	3	0	0	1	12	0	8	216	6	0	443
04:45 PM	1	2	8	0	35	167	4	0	2	0	15	0	16	196	5	0	451
Total	5	6	12	0	74	682	13	0	9	5	50	0	29	766	22	0	1673
05:00 PM	1	2	2	0	16	173	7	0	3	3	8	0	9	210	11	0	445
05:15 PM	3	1	2	0	25	171	1	0	3	4	5	0	6	213	8	0	442
05:30 PM	0	2	2	0	5	123	1	0	3	3	4	0	3	166	6	0	318
05:45 PM	0	0	3	0	8	107	1	0	3	2	13	0	6	163	5	0	311
Total	4	5	9	0	54	574	10	0	12	12	30	0	24	752	30	0	1516
Grand Total	31	22	89	0	169	2675	33	0	63	22	168	0	73	2485	63	0	5893
Apprch %	21.8	15.5	62.7	0.0	5.9	93.0	1.1	0.0	24.9	8.7	66.4	0.0	2.8	94.8	2.4	0.0	
Total %	0.5	0.4	1.5	0.0	2.9	45.4	0.6	0.0	1.1	0.4	2.9	0.0	1.2	42.2	1.1	0.0	

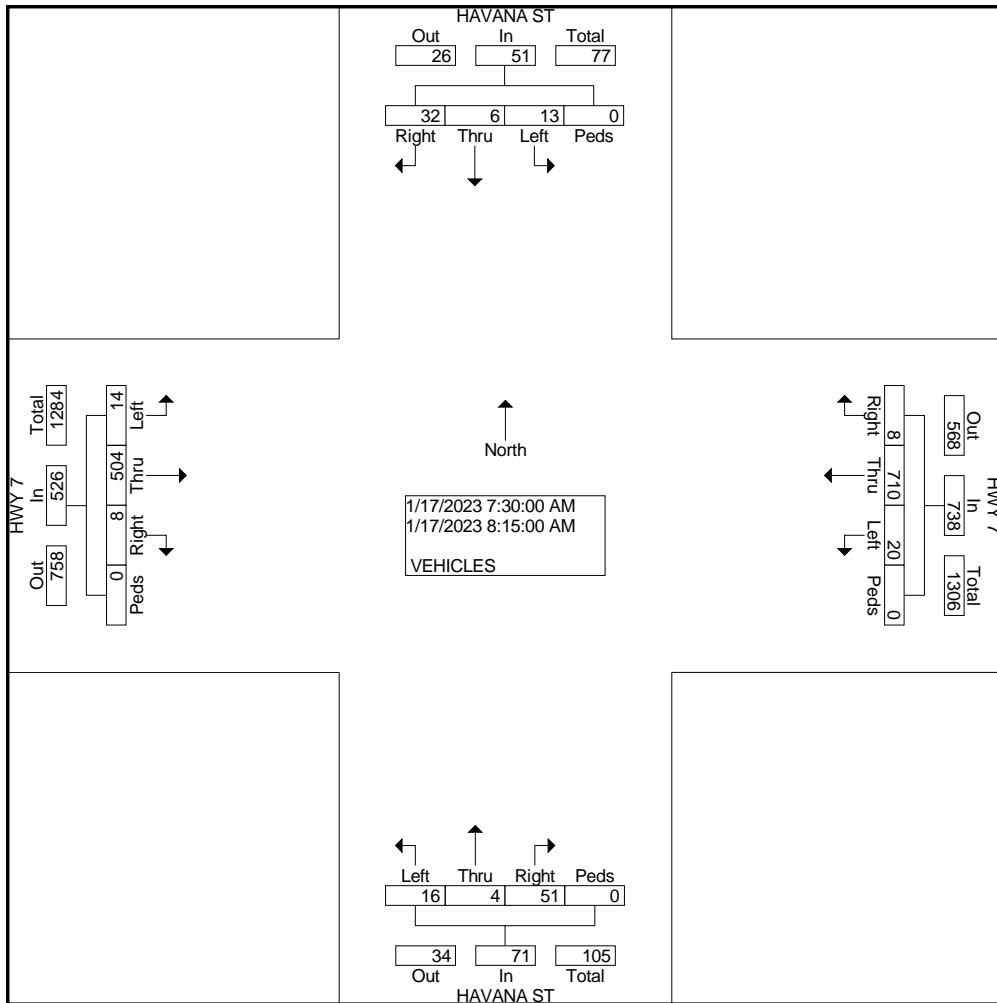
COUNTER MEASURES INC.

1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: HAVANA ST
E/W STREET: HWY 7
CITY: BRIGHTON
COUNTY: ADAMS

File Name : HAVAHWY7
Site Code : 0000005
Start Date : 1/17/2023
Page No : 2

Start Time	HAVANA ST Southbound					HWY 7 Westbound					HAVANA ST Northbound					HWY 7 Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour From 07:30 AM to 08:15 AM - Peak 1 of 1																					
Intersection	07:30 AM																				
Volume	13	6	32	0	51	20	710	8	0	738	16	4	51	0	71	14	504	8	0	526	1386
Percent	25.5	11.8	62.7	0.0		2.7	96.2	1.1	0.0		22.5	5.6	71.8	0.0		2.7	95.8	1.5	0.0		
08:15 Peak Factor																					
High Int. Volume	07:30 AM					08:00 AM					08:15 AM					07:30 AM					
Peak Factor																					0.949
Volume	7	5	7	0	19	5	187	4	0	196	7	1	14	0	22	0	143	0	0	143	
Peak Factor	0.67					0.94					0.80					0.92					0



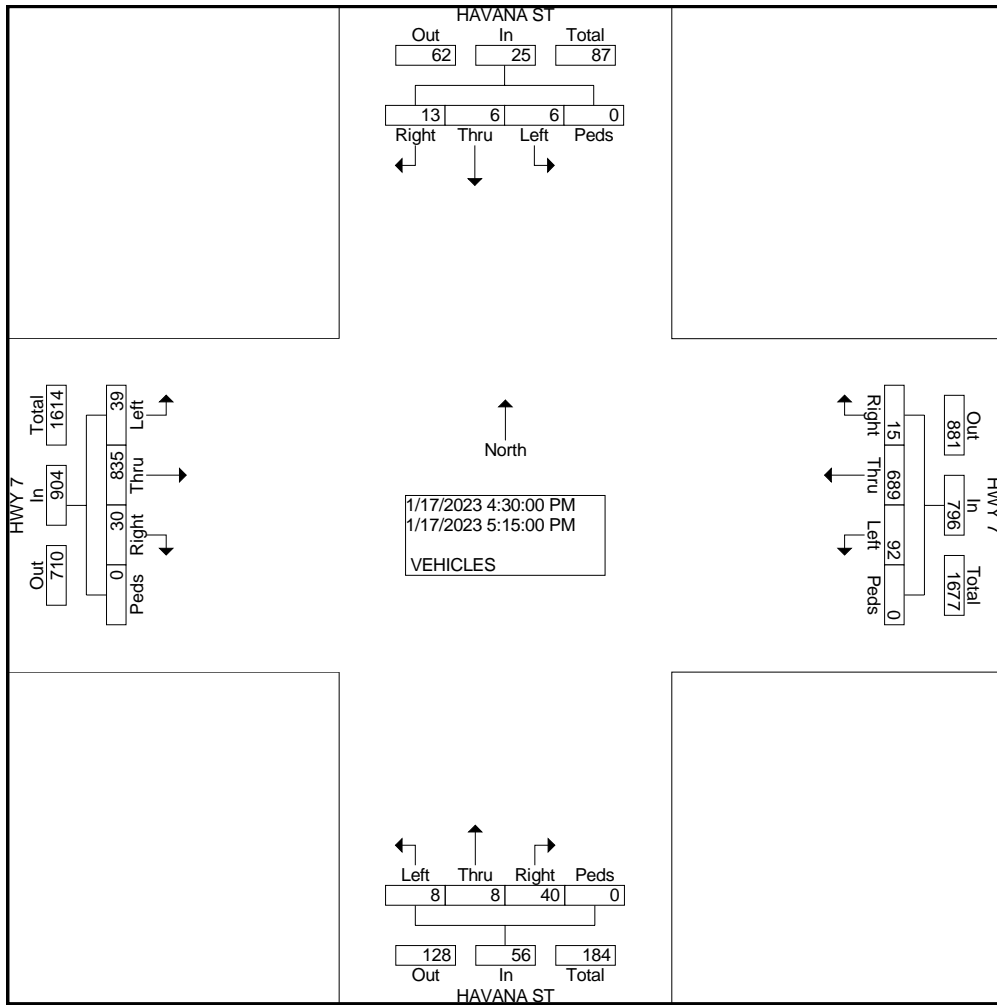
COUNTER MEASURES INC.

1889 YORK STREET
DENVER, COLORADO
303-333-7409

N/S STREET: HAVANA ST
E/W STREET: HWY 7
CITY: BRIGHTON
COUNTY: ADAMS

File Name : HAVAHWY7
Site Code : 0000005
Start Date : 1/17/2023
Page No : 3

Start Time	HAVANA ST Southbound					HWY 7 Westbound					HAVANA ST Northbound					HWY 7 Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour From 04:30 PM to 05:15 PM - Peak 1 of 1																					
Intersect on	04:30 PM																				
Volume	6	6	13	0	25	92	689	15	0	796	8	8	40	0	56	39	835	30	0	904	1781
Percent	24.	24.	52.	0.0		11.	86.	1.9	0.0		14.	14.	71.	0.0		4.3	92.	3.3	0.0		
	0	0	0			6	6				3	3	4				4				
04:45 Volume	1	2	8	0	11	35	167	4	0	206	2	0	15	0	17	16	196	5	0	217	451
Peak Factor																					
High Int.	0.987																				
Volume	04:45 PM					04:45 PM					04:45 PM					04:30 PM					
Peak Factor	1	2	8	0	11	35	167	4	0	206	2	0	15	0	17	8	216	6	0	230	
	0.56					0.96					0.82					0.98					
	8					6					4					3					



COUNTER MEASURES INC.

1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: LIMA ST
E/W STREET: E. 166TH AVE
CITY: BRIGHTON
COUNTY: ADAMS

File Name : LIMA166TH
Site Code : 00000005
Start Date : 2/2/2023
Page No : 1

Groups Printed- VEHICLES

Start Time	LIMA ST Southbound			NO ACCESS Westbound			LIMA ST Northbound			E. 166TH AVE Eastbound			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
06:30 AM	0	2	1	0	0	0	0	0	0	0	0	2	5
06:45 AM	0	1	1	0	0	0	2	3	0	1	0	2	10
Total	0	3	2	0	0	0	2	3	0	1	0	4	15
07:00 AM	0	3	0	0	0	0	0	5	0	1	0	0	9
07:15 AM	0	2	0	0	0	0	1	6	0	0	0	0	9
07:30 AM	0	2	0	0	0	0	1	1	0	0	0	1	5
07:45 AM	0	5	0	0	0	0	0	1	0	0	0	1	7
Total	0	12	0	0	0	0	2	13	0	1	0	2	30
08:00 AM	0	2	0	0	0	0	2	3	0	0	0	0	7
08:15 AM	0	2	0	0	0	0	0	3	0	0	0	2	7
Total	0	4	0	0	0	0	2	6	0	0	0	2	14
04:00 PM	0	3	2	0	0	0	0	6	0	1	0	1	13
04:15 PM	0	3	0	0	0	0	1	2	0	0	0	2	8
04:30 PM	0	0	0	0	0	0	1	2	0	0	0	2	5
04:45 PM	0	11	0	0	0	0	0	2	0	2	0	0	15
Total	0	17	2	0	0	0	2	12	0	3	0	5	41
05:00 PM	0	6	3	0	0	0	5	5	0	0	0	1	20
05:15 PM	0	5	1	0	0	0	1	2	0	0	0	1	10
05:30 PM	0	9	0	0	0	0	1	3	0	1	0	0	14
05:45 PM	0	4	0	0	0	0	0	2	0	1	0	0	7
Total	0	24	4	0	0	0	7	12	0	2	0	2	51
Grand Total	0	60	8	0	0	0	15	46	0	7	0	15	151
Apprch %	0.0	88.2	11.8	0.0	0.0	0.0	24.6	75.4	0.0	31.8	0.0	68.2	
Total %	0.0	39.7	5.3	0.0	0.0	0.0	9.9	30.5	0.0	4.6	0.0	9.9	

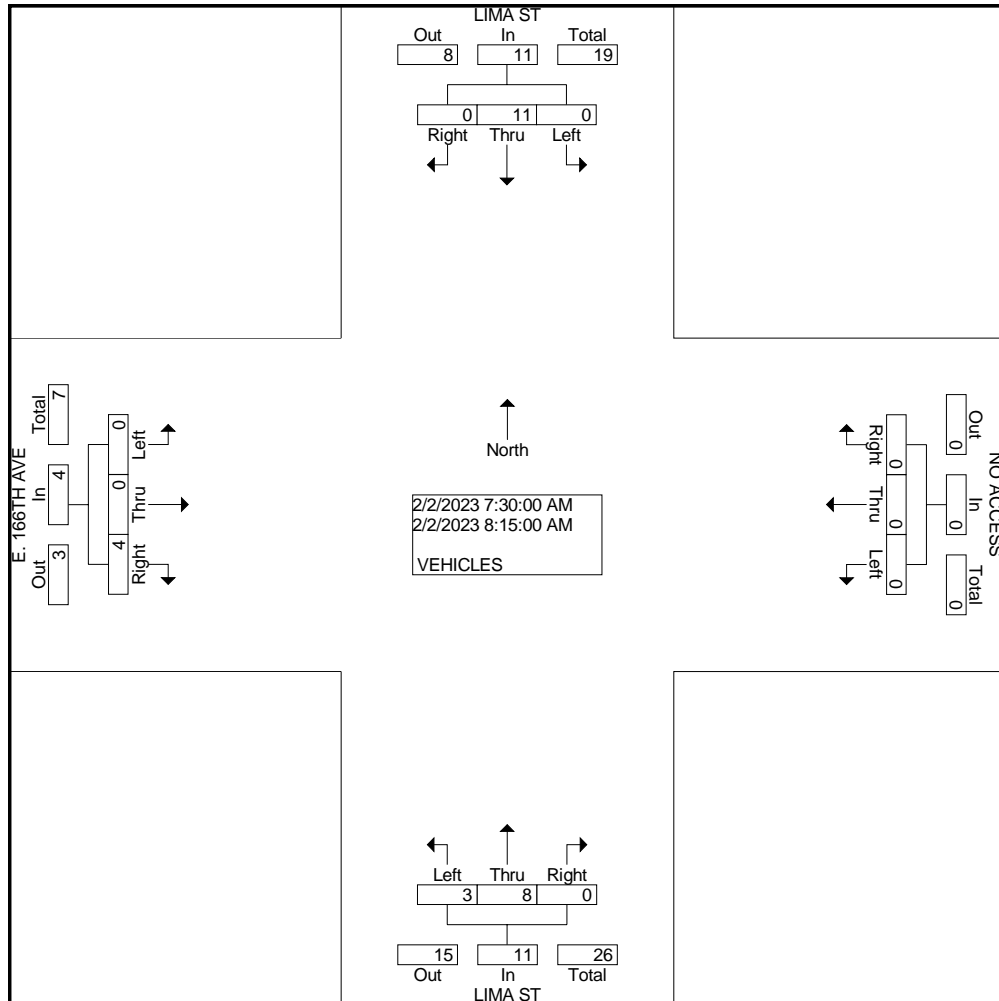
COUNTER MEASURES INC.

1889 YORK STREET
DENVER, COLORADO
303-333-7409

N/S STREET: LIMA ST
E/W STREET: E. 166TH AVE
CITY: BRIGHTON
COUNTY: ADAMS

File Name : LIMA166TH
Site Code : 00000005
Start Date : 2/2/2023
Page No : 2

Start Time	LIMA ST Southbound				NO ACCESS Westbound				LIMA ST Northbound				E. 166TH AVE Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Intersection	07:30 AM																
Volume	0	11	0	11	0	0	0	0	3	8	0	11	0	0	4	4	26
Percent	0.0	100.0	0.0		0.0	0.0	0.0		27.3	72.7	0.0		0.0	0.0	100.0		
		0												0			
08:15 Volume	0	2	0	2	0	0	0	0	0	3	0	3	0	0	2	2	7
Peak Factor	0.929																
High Int.	07:45 AM																
Volume	0	5	0	5	0	0	0	0	08:00 AM				08:15 AM				
Peak Factor				0.550					2	3	0	5	0	0	2	2	0.500
									0.550				0.500				



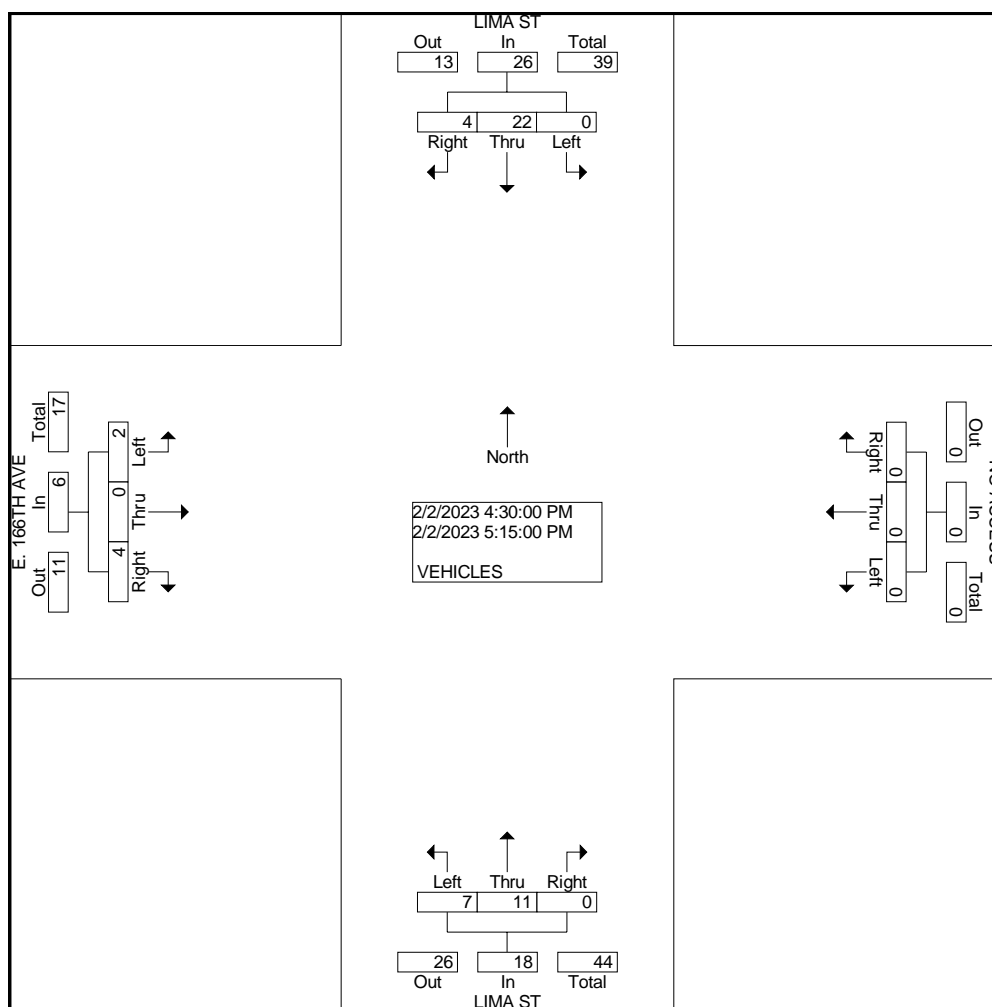
COUNTER MEASURES INC.

1889 YORK STREET
DENVER, COLORADO
303-333-7409

N/S STREET: LIMA ST
E/W STREET: E. 166TH AVE
CITY: BRIGHTON
COUNTY: ADAMS

File Name : LIMA166TH
Site Code : 00000005
Start Date : 2/2/2023
Page No : 3

Start Time	LIMA ST Southbound				NO ACCESS Westbound				LIMA ST Northbound				E. 166TH AVE Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Intersection	04:30 PM																
Volume	0	22	4	26	0	0	0	0	7	11	0	18	2	0	4	6	50
Percent	0.0	84.6	15.4		0.0	0.0	0.0		38.9	61.1	0.0		33.3	0.0	66.7		
05:00																	
Volume	0	6	3	9	0	0	0	0	5	5	0	10	0	0	1	1	20
Peak Factor	0.625																
High Int.	04:45 PM																
Volume	0	11	0	11	0	0	0	0	5	5	0	10	0	0	2	2	
Peak Factor	0.591								0.450				0.750				



COUNTER MEASURES INC.

1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: LIMA ST
E/W STREET: E. 168TH AVE (HWY 7)
CITY: BRIGHTON
COUNTY: ADAMS

File Name : LIMA168THAVE
Site Code : 00000015
Start Date : 2/2/2023
Page No : 1

Groups Printed- VEHICLES

Start Time	NO ACCESS Southbound			E. 168TH AVE Westbound			LIMA ST Northbound			E. 168TH AVE Eastbound			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
06:30 AM	0	0	0	1	29	0	0	0	1	0	19	0	50
06:45 AM	0	0	0	0	31	0	1	0	0	0	25	1	58
Total	0	0	0	1	60	0	1	0	1	0	44	1	108
07:00 AM	0	0	0	2	26	0	4	0	7	0	28	0	67
07:15 AM	0	0	0	0	41	0	3	0	1	0	29	0	74
07:30 AM	0	0	0	0	58	0	2	0	0	0	21	0	81
07:45 AM	0	0	0	3	39	0	1	0	1	0	21	1	66
Total	0	0	0	5	164	0	10	0	9	0	99	1	288
08:00 AM	0	0	0	0	45	0	2	0	2	0	35	0	84
08:15 AM	0	0	0	1	30	0	0	0	3	0	25	0	59
Total	0	0	0	1	75	0	2	0	5	0	60	0	143
04:00 PM	0	0	0	4	45	0	3	0	5	0	65	2	124
04:15 PM	0	0	0	1	32	0	1	0	1	0	51	3	89
04:30 PM	0	0	0	1	47	0	0	0	0	4	51	0	103
04:45 PM	0	0	0	10	30	0	0	0	4	0	53	3	100
Total	0	0	0	16	154	0	4	0	10	4	220	8	416
05:00 PM	0	0	0	5	52	0	0	0	4	0	72	2	135
05:15 PM	0	0	0	3	42	0	1	0	2	0	79	4	131
05:30 PM	0	0	0	4	35	0	0	0	4	0	85	6	134
05:45 PM	0	0	0	1	30	1	1	0	2	0	71	3	109
Total	0	0	0	13	159	1	2	0	12	0	307	15	509
Grand Total	0	0	0	36	612	1	19	0	37	4	730	25	1464
Apprch %	0.0	0.0	0.0	5.5	94.3	0.2	33.9	0.0	66.1	0.5	96.2	3.3	
Total %	0.0	0.0	0.0	2.5	41.8	0.1	1.3	0.0	2.5	0.3	49.9	1.7	

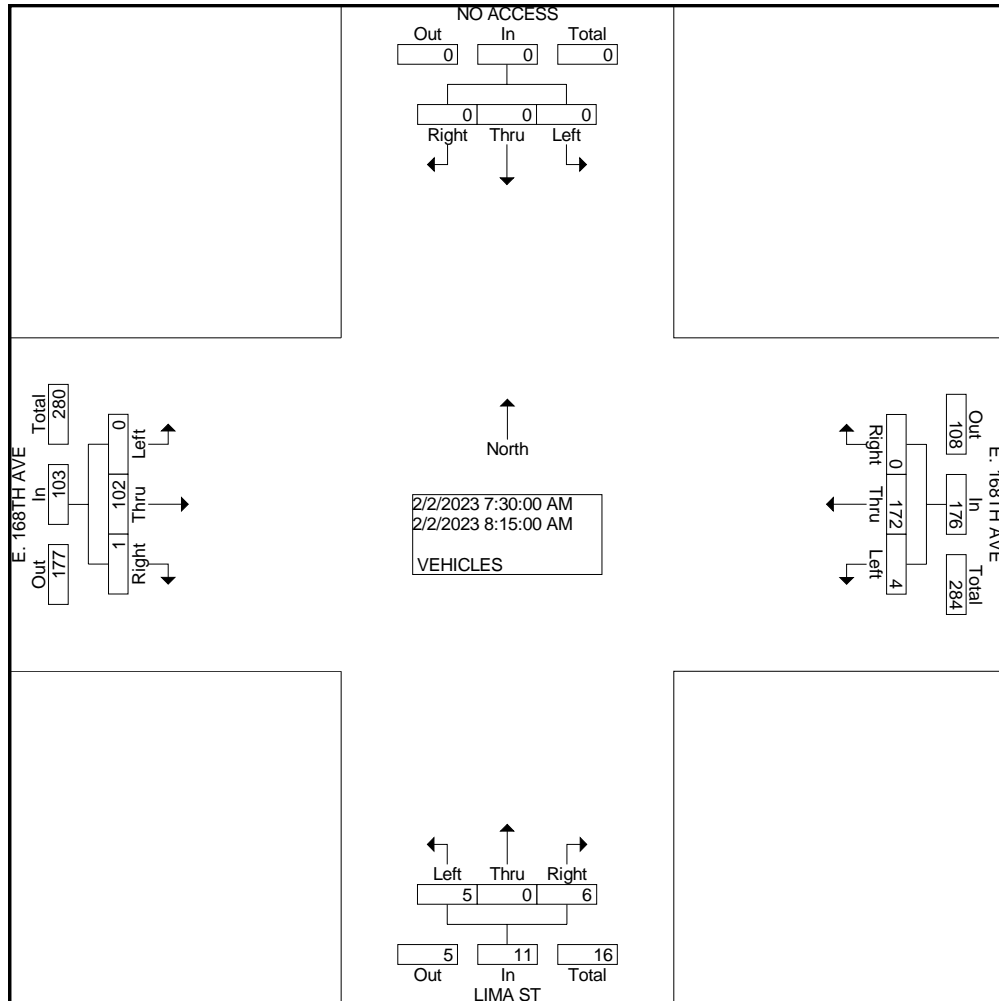
COUNTER MEASURES INC.

1889 YORK STREET
DENVER, COLORADO
303-333-7409

N/S STREET: LIMA ST
E/W STREET: E. 168TH AVE (HWY 7)
CITY: BRIGHTON
COUNTY: ADAMS

File Name : LIMA168THAVE
Site Code : 00000015
Start Date : 2/2/2023
Page No : 2

Start Time	NO ACCESS Southbound				E. 168TH AVE Westbound				LIMA ST Northbound				E. 168TH AVE Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Intersection 07:30 AM																	
Volume	0	0	0	0	4	172	0	176	5	0	6	11	0	102	1	103	290
Percent	0.0	0.0	0.0		2.3	97.7	0.0		45.5	0.0	54.5		0.0	99.0	1.0		
08:00 Volume	0	0	0	0	0	45	0	45	2	0	2	4	0	35	0	35	84
Peak Factor																	0.863
High Int.																	
08:00 Volume	0	0	0	0	07:30 AM				08:00 AM				08:00 AM				
Peak Factor	0	0	0	0	0	58	0	58	2	0	2	4	0	35	0	35	0.736
					0.759				0.688								



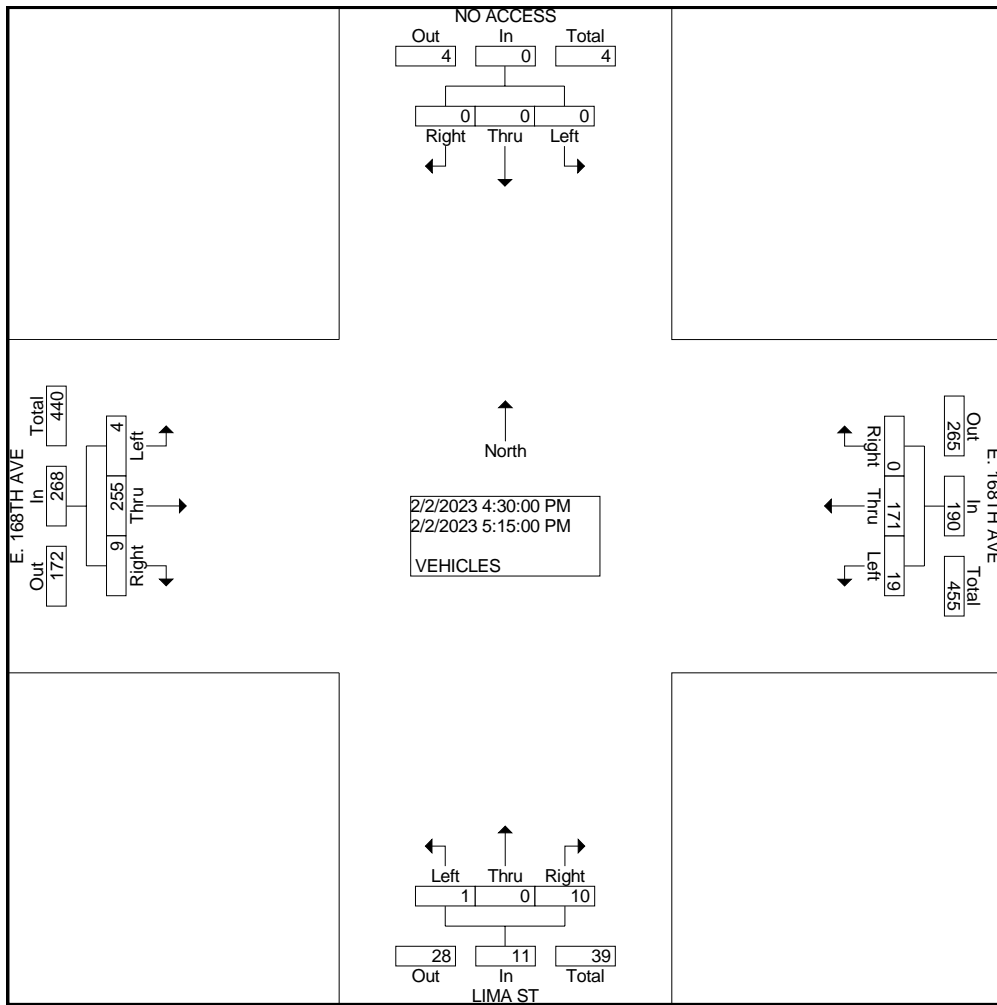
COUNTER MEASURES INC.

1889 YORK STREET
DENVER, COLORADO
303-333-7409

N/S STREET: LIMA ST
E/W STREET: E. 168TH AVE (HWY 7)
CITY: BRIGHTON
COUNTY: ADAMS

File Name : LIMA168THAVE
Site Code : 00000015
Start Date : 2/2/2023
Page No : 3

Start Time	NO ACCESS Southbound				E. 168TH AVE Westbound				LIMA ST Northbound				E. 168TH AVE Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Intersection	04:30 PM																
Volume	0	0	0	0	19	171	0	190	1	0	10	11	4	255	9	268	469
Percent	0.0	0.0	0.0	0	10.0	90.0	0.0	190	9.1	0.0	90.9	11	1.5	95.1	3.4	268	
05:00	05:00 PM																
Volume	0	0	0	0	5	52	0	57	0	0	4	4	0	72	2	74	135
Peak Factor	0.869																
High Int.	05:00 PM																
Volume	0	0	0	0	5	52	0	57	0	0	4	4	0	79	4	83	83
Peak Factor	0.807																



COUNTER MEASURES INC.

1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: LIMA ST
E/W STREET: LANSING CT
CITY: BRIGHTON
COUNTY: ADAMS

File Name : LIMALANSING
Site Code : 00000005
Start Date : 2/2/2023
Page No : 1

Groups Printed- VEHICLES

Start Time	LIMA ST Southbound			NO ACCESS Westbound			LIMA ST Northbound			LANSING CT Eastbound			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
06:30 AM	0	2	0	0	0	0	0	0	0	0	0	1	3
06:45 AM	0	1	0	0	0	0	0	3	0	0	0	1	5
Total	0	3	0	0	0	0	0	3	0	0	0	2	8
07:00 AM	0	3	0	0	0	0	0	5	0	1	0	0	9
07:15 AM	0	2	1	0	0	0	1	6	0	2	0	0	12
07:30 AM	0	2	0	0	0	0	0	1	0	0	0	1	4
07:45 AM	0	5	0	0	0	0	1	1	0	1	0	0	8
Total	0	12	1	0	0	0	2	13	0	4	0	1	33
08:00 AM	0	2	1	0	0	0	1	3	0	1	0	0	8
08:15 AM	0	2	0	0	0	0	1	3	0	1	0	1	8
Total	0	4	1	0	0	0	2	6	0	2	0	1	16
04:00 PM	0	6	0	0	0	0	1	5	0	1	0	0	13
04:15 PM	0	3	1	0	0	0	0	2	0	0	0	0	6
04:30 PM	0	0	1	0	0	0	1	1	0	0	0	0	3
04:45 PM	0	11	2	0	0	0	0	3	0	0	0	0	16
Total	0	20	4	0	0	0	2	11	0	1	0	0	38
05:00 PM	0	7	0	0	0	0	1	4	0	0	0	2	14
05:15 PM	0	6	1	0	0	0	0	2	0	1	0	0	10
05:30 PM	0	9	0	0	0	0	0	4	0	0	0	0	13
05:45 PM	0	4	0	0	0	0	0	3	0	0	0	0	7
Total	0	26	1	0	0	0	1	13	0	1	0	2	44
Grand Total	0	65	7	0	0	0	7	46	0	8	0	6	139
Apprch %	0.0	90.3	9.7	0.0	0.0	0.0	13.2	86.8	0.0	57.1	0.0	42.9	
Total %	0.0	46.8	5.0	0.0	0.0	0.0	5.0	33.1	0.0	5.8	0.0	4.3	

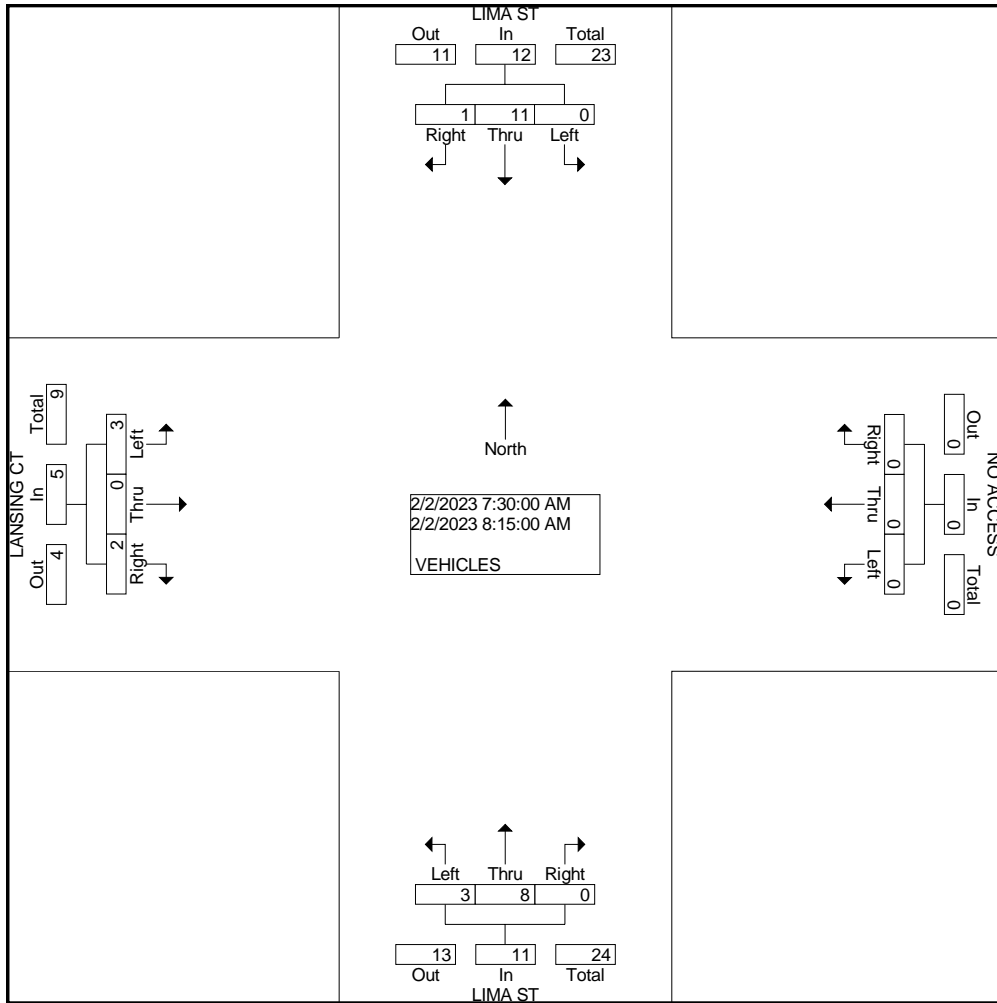
COUNTER MEASURES INC.

1889 YORK STREET
DENVER, COLORADO
303-333-7409

N/S STREET: LIMA ST
E/W STREET: LANSING CT
CITY: BRIGHTON
COUNTY: ADAMS

File Name : LIMALANSING
Site Code : 00000005
Start Date : 2/2/2023
Page No : 2

Start Time	LIMA ST Southbound				NO ACCESS Westbound				LIMA ST Northbound				LANSING CT Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Intersection	07:30 AM																
Volume	0	11	1	12	0	0	0	0	3	8	0	11	3	0	2	5	28
Percent	0.0	91.7	8.3		0.0	0.0	0.0		27.3	72.7	0.0		60.0	0.0	40.0		
08:15	08:15 AM																
Volume	0	2	0	2	0	0	0	0	1	3	0	4	1	0	1	2	8
Peak Factor	0.875																
High Int.	07:45 AM																
Volume	0	5	0	5	0	0	0	0	1	3	0	4	1	0	1	2	
Peak Factor	0.600								0.688				0.625				



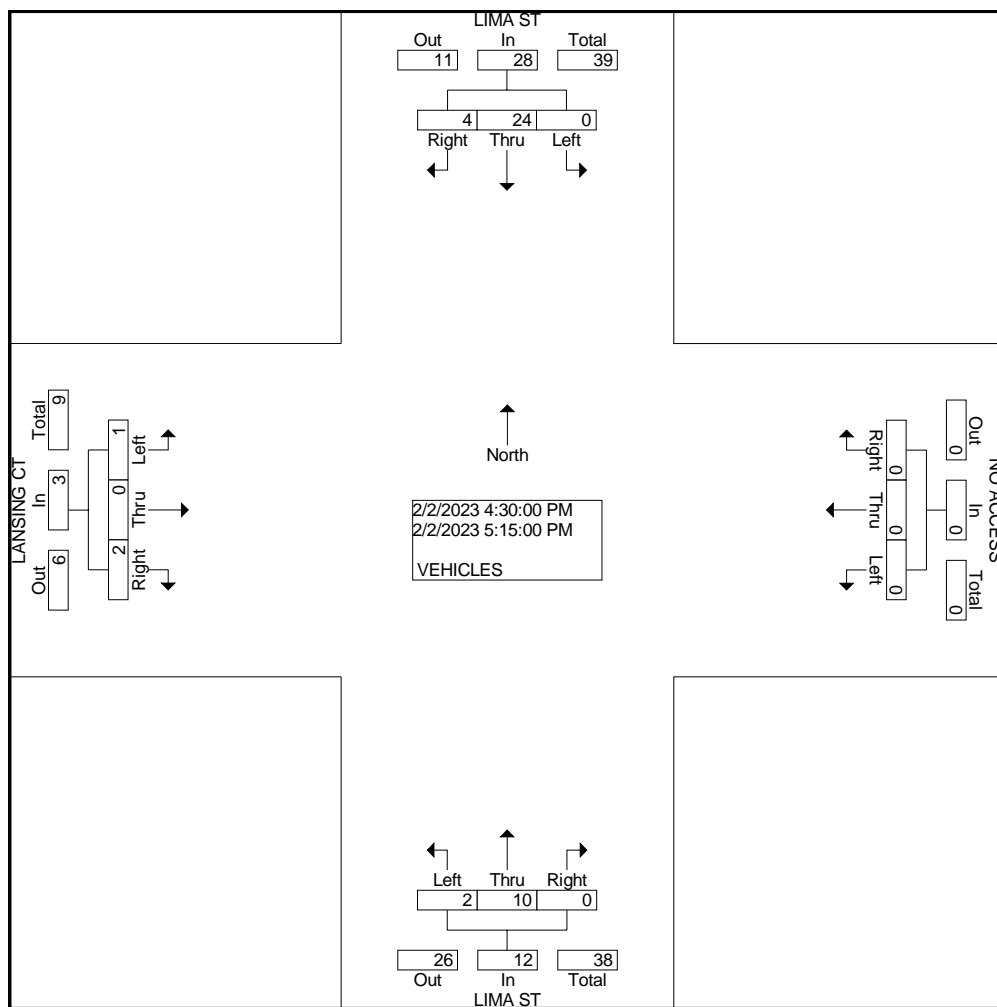
COUNTER MEASURES INC.

1889 YORK STREET
DENVER, COLORADO
303-333-7409

N/S STREET: LIMA ST
E/W STREET: LANSING CT
CITY: BRIGHTON
COUNTY: ADAMS

File Name : LIMALANSING
Site Code : 00000005
Start Date : 2/2/2023
Page No : 3

Start Time	LIMA ST Southbound				NO ACCESS Westbound				LIMA ST Northbound				LANSING CT Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Intersection	04:30 PM																
Volume	0	24	4	28	0	0	0	0	2	10	0	12	1	0	2	3	43
Percent	0.0	85.7	14.3		0.0	0.0	0.0		16.7	83.3	0.0		33.3	0.0	66.7		
04:45																	
Volume	0	11	2	13	0	0	0	0	0	3	0	3	0	0	0	0	16
Peak Factor	0.672																
High Int.	04:45 PM																
Volume	0	11	2	13	0	0	0	0	1	4	0	5	0	0	2	2	
Peak Factor	0.538								0.600				0.375				



COUNTER MEASURES INC.

1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: QUEBEC ST
E/W STREET: E. 160TH AVE (HWY 7)
CITY: BRIGHTON
COUNTY: ADAMS

File Name : QUEB160TH
Site Code : 00000013
Start Date : 1/25/2023
Page No : 1

Groups Printed- VEHICLES

Start Time	QUEBEC ST Southbound				E. 160TH AVE Westbound				QUEBEC ST Northbound				E. 160TH AVE Eastbound				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
06:30 AM	5	18	6	0	14	182	0	1	23	4	3	0	2	92	8	0	358
06:45 AM	2	12	10	0	11	176	3	0	14	5	2	0	2	95	22	0	354
Total	7	30	16	0	25	358	3	1	37	9	5	0	4	187	30	0	712
07:00 AM	2	14	4	0	18	183	1	0	23	8	5	0	0	94	15	0	367
07:15 AM	1	12	6	0	28	197	3	0	23	10	6	0	2	122	29	0	439
07:30 AM	6	25	13	0	27	206	6	0	24	16	4	0	1	107	23	0	458
07:45 AM	2	18	4	0	28	186	3	0	29	16	5	0	6	105	22	4	428
Total	11	69	27	0	101	772	13	0	99	50	20	0	9	428	89	4	1692
08:00 AM	8	12	6	0	32	117	3	0	26	6	0	0	1	98	20	0	329
08:15 AM	2	8	3	0	16	155	2	0	28	4	9	0	3	104	16	0	350
Total	10	20	9	0	48	272	5	0	54	10	9	0	4	202	36	0	679
04:00 PM	3	14	5	0	9	156	8	0	17	7	3	0	7	151	45	0	425
04:15 PM	2	15	4	0	32	126	3	0	26	19	8	0	7	178	41	0	461
04:30 PM	2	13	2	0	25	145	4	0	30	15	15	0	8	208	19	0	486
04:45 PM	3	13	10	0	15	144	4	0	43	24	26	0	5	206	26	0	519
Total	10	55	21	0	81	571	19	0	116	65	52	0	27	743	131	0	1891
05:00 PM	8	12	2	0	19	134	0	0	38	31	18	0	8	164	30	0	464
05:15 PM	6	21	5	0	17	152	3	0	19	32	28	0	8	216	38	0	545
05:30 PM	5	13	2	0	20	123	4	0	25	37	15	0	4	182	39	0	469
05:45 PM	3	7	8	0	16	119	1	0	19	13	19	0	4	178	31	0	418
Total	22	53	17	0	72	528	8	0	101	113	80	0	24	740	138	0	1896
Grand Total	60	227	90	0	327	2501	48	1	407	247	166	0	68	2300	424	4	6870
Apprch %	15.9	60.2	23.9	0.0	11.4	86.9	1.7	0.0	49.6	30.1	20.2	0.0	2.4	82.3	15.2	0.1	
Total %	0.9	3.3	1.3	0.0	4.8	36.4	0.7	0.0	5.9	3.6	2.4	0.0	1.0	33.5	6.2	0.1	

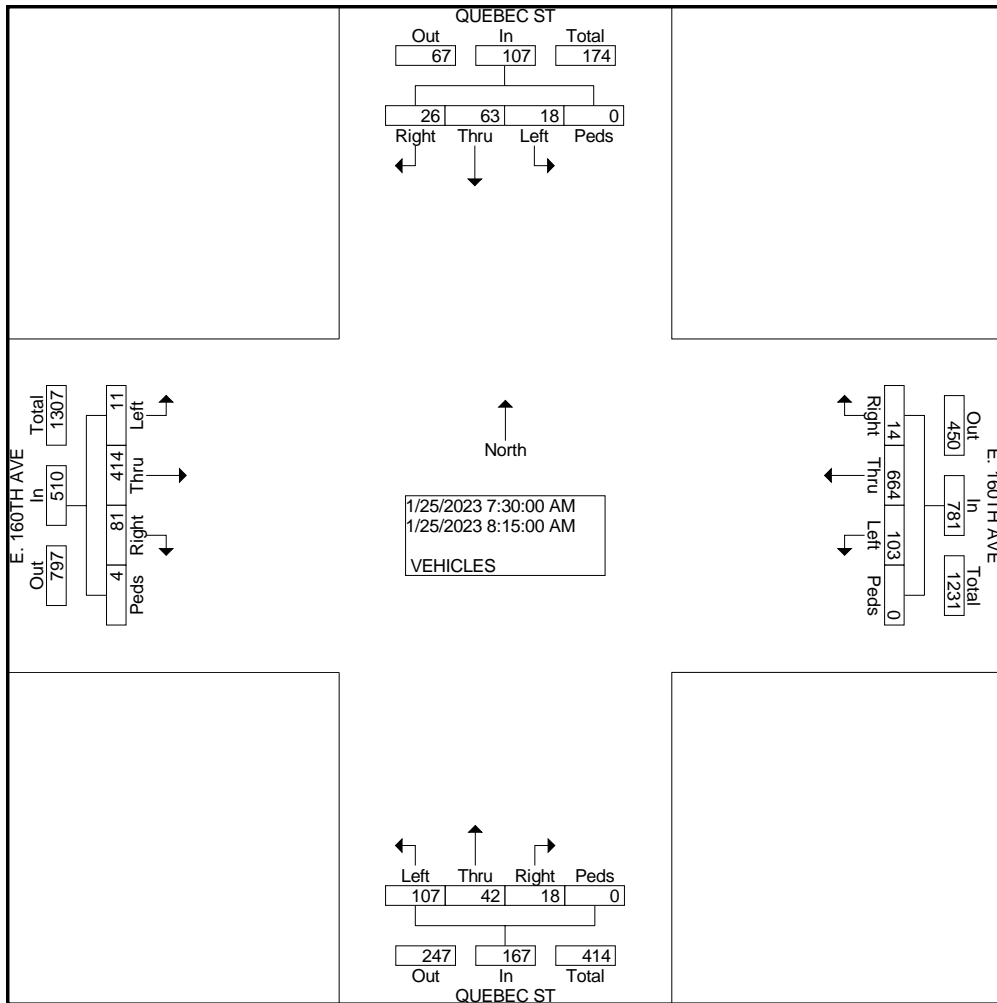
COUNTER MEASURES INC.

1889 YORK STREET
DENVER, COLORADO
303-333-7409

N/S STREET: QUEBEC ST
E/W STREET: E. 160TH AVE (HWY 7)
CITY: BRIGHTON
COUNTY: ADAMS

File Name : QUEB160TH
Site Code : 0000013
Start Date : 1/25/2023
Page No : 2

Start Time	QUEBEC ST Southbound					E. 160TH AVE Westbound					QUEBEC ST Northbound					E. 160TH AVE Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour From 07:30 AM to 08:15 AM - Peak 1 of 1																					
Intersection	07:30 AM																				
Volume	18	63	26	0	107	103	664	14	0	781	107	42	18	0	167	11	414	81	4	510	1565
Percent	16.8	58.9	24.3	0.0		13.2	85.0	1.8	0.0		64.1	25.1	10.8	0.0		2.2	81.2	15.9	0.8		
07:30 Volume	6	25	13	0	44	27	206	6	0	239	24	16	4	0	44	1	107	23	0	131	458
Peak Factor																					
High Int. Volume	07:30 AM					07:30 AM					07:45 AM					07:45 AM					
Peak Factor						0.608					0.817					0.835					0.931



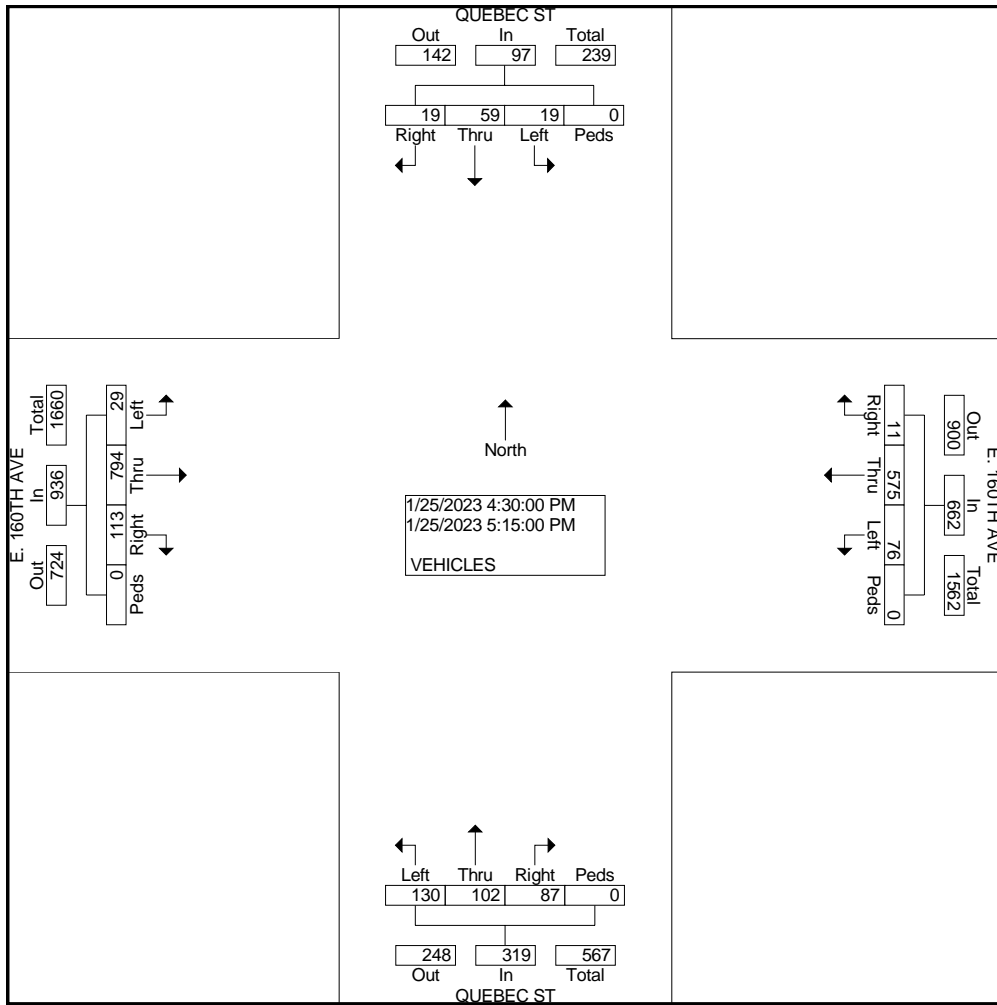
COUNTER MEASURES INC.

1889 YORK STREET
DENVER, COLORADO
303-333-7409

N/S STREET: QUEBEC ST
E/W STREET: E. 160TH AVE (HWY 7)
CITY: BRIGHTON
COUNTY: ADAMS

File Name : QUEB160TH
Site Code : 00000013
Start Date : 1/25/2023
Page No : 3

Start Time	QUEBEC ST Southbound					E. 160TH AVE Westbound					QUEBEC ST Northbound					E. 160TH AVE Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour From 04:30 PM to 05:15 PM - Peak 1 of 1																					
Intersect on	04:30 PM																				
Volume	19	59	19	0	97	76	575	11	0	662	130	102	87	0	319	29	794	113	0	936	2014
Percent	19.6	60.8	19.6	0.0		11.5	86.9	1.7	0.0		40.8	32.0	27.3	0.0		3.1	84.8	12.1	0.0		
05:15 Volume	6	21	5	0	32	17	152	3	0	172	19	32	28	0	79	8	216	38	0	262	545
Peak Factor																					0.924
High Int.	05:15 PM																				
Volume	6	21	5	0	32	04:30 PM 25	145	4	0	174	04:45 PM 43	24	26	0	93	05:15 PM 8	216	38	0	262	
Peak Factor																					0.893



COUNTER MEASURES INC.

1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: QUEBEC ST
E/W STREET: E. 168TH AVE
CITY: BRIGHTON
COUNTY: ADAMS

File Name : QUEB168TH
Site Code : 00000015
Start Date : 2/9/2023
Page No : 1

Groups Printed- VEHICLES

Start Time	NO ACCESS Southbound			E. 168TH AVE Westbound			QUEBEC ST Northbound			E. 168TH AVE Eastbound			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
06:30 AM	0	0	0	1	26	0	0	0	2	0	17	0	46
06:45 AM	0	0	0	2	27	0	1	0	3	0	23	1	57
Total	0	0	0	3	53	0	1	0	5	0	40	1	103
07:00 AM	0	0	0	3	18	0	2	0	7	0	26	1	57
07:15 AM	0	0	0	2	43	0	3	0	3	0	27	2	80
07:30 AM	0	0	0	4	44	0	2	0	2	0	23	3	78
07:45 AM	0	0	0	5	32	0	2	0	1	0	19	3	62
Total	0	0	0	14	137	0	9	0	13	0	95	9	277
08:00 AM	0	0	0	6	31	0	1	0	2	0	27	3	70
08:15 AM	0	0	0	6	18	0	0	0	5	0	21	2	52
Total	0	0	0	12	49	0	1	0	7	0	48	5	122
04:00 PM	0	0	0	4	33	0	2	0	7	0	66	2	114
04:15 PM	0	0	0	5	28	0	1	0	8	0	58	4	104
04:30 PM	0	0	0	6	43	0	1	0	11	4	47	5	117
04:45 PM	0	0	0	8	26	0	2	0	12	0	49	5	102
Total	0	0	0	23	130	0	6	0	38	4	220	16	437
05:00 PM	0	0	0	9	45	0	0	0	14	0	73	7	148
05:15 PM	0	0	0	11	35	0	2	0	9	0	71	8	136
05:30 PM	0	0	0	6	38	0	1	0	11	0	79	5	140
05:45 PM	0	0	0	4	35	0	1	0	13	0	65	6	124
Total	0	0	0	30	153	0	4	0	47	0	288	26	548
Grand Total	0	0	0	82	522	0	21	0	110	4	691	57	1487
Apprch %	0.0	0.0	0.0	13.6	86.4	0.0	16.0	0.0	84.0	0.5	91.9	7.6	
Total %	0.0	0.0	0.0	5.5	35.1	0.0	1.4	0.0	7.4	0.3	46.5	3.8	

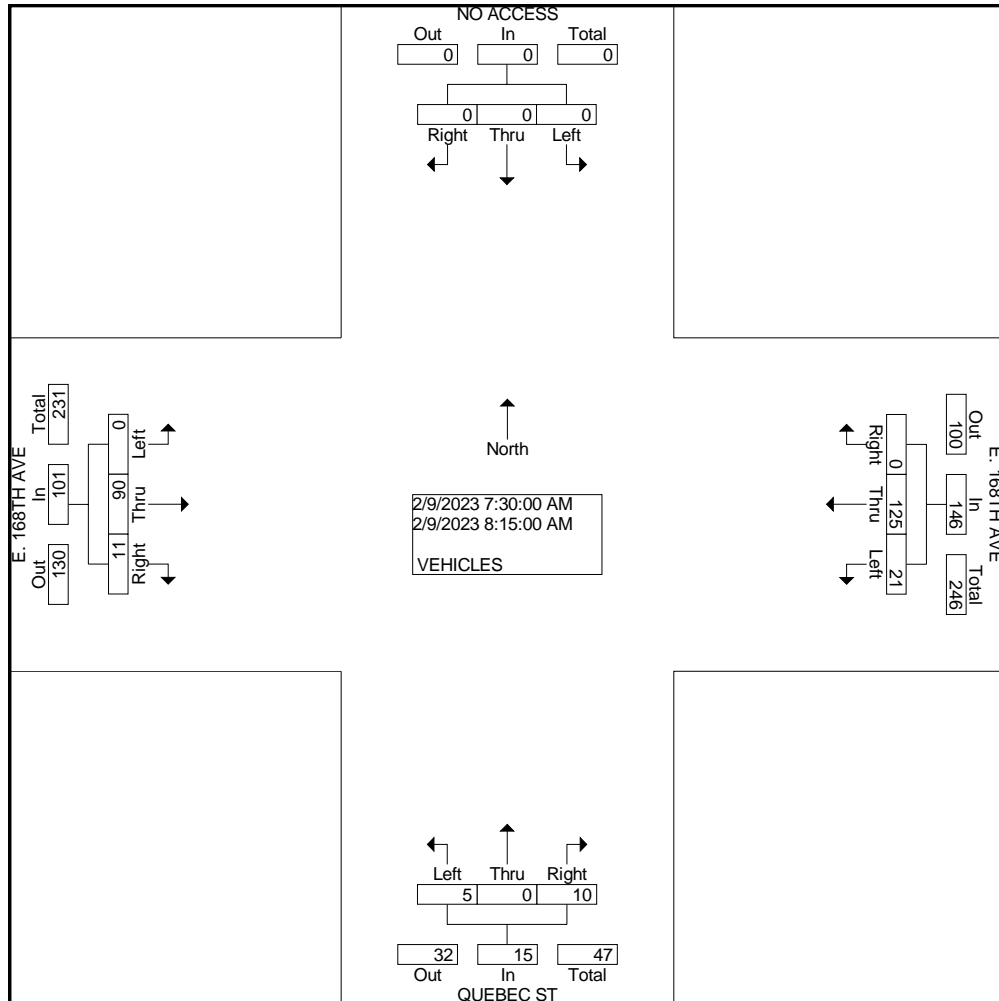
COUNTER MEASURES INC.

1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: QUEBEC ST
E/W STREET: E. 168TH AVE
CITY: BRIGHTON
COUNTY: ADAMS

File Name : QUEB168TH
Site Code : 0000015
Start Date : 2/9/2023
Page No : 2

Start Time	NO ACCESS Southbound				E. 168TH AVE Westbound				QUEBEC ST Northbound				E. 168TH AVE Eastbound				Int. Total		
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total			
Peak Hour From 07:30 AM to 08:15 AM - Peak 1 of 1																			
Intersection	07:30 AM																		
Volume	0	0	0	0	21	125	0	146	5	0	10	15	0	90	11	101	262		
Percent	0.0	0.0	0.0	0.0	14.4	85.6	0.0		33.3	0.0	66.7		0.0	89.1	10.9				
07:30 Volume	0	0	0	0	4	44	0	48	2	0	2	4	0	23	3	26	78		
Peak Factor	0.840																		
High Int.																			
Volume					07:30 AM				08:15 AM				08:00 AM						
Peak Factor	0	0	0	0	4	44	0	48	0	0	5	5	0	27	3	30	0.760	0.750	0.842



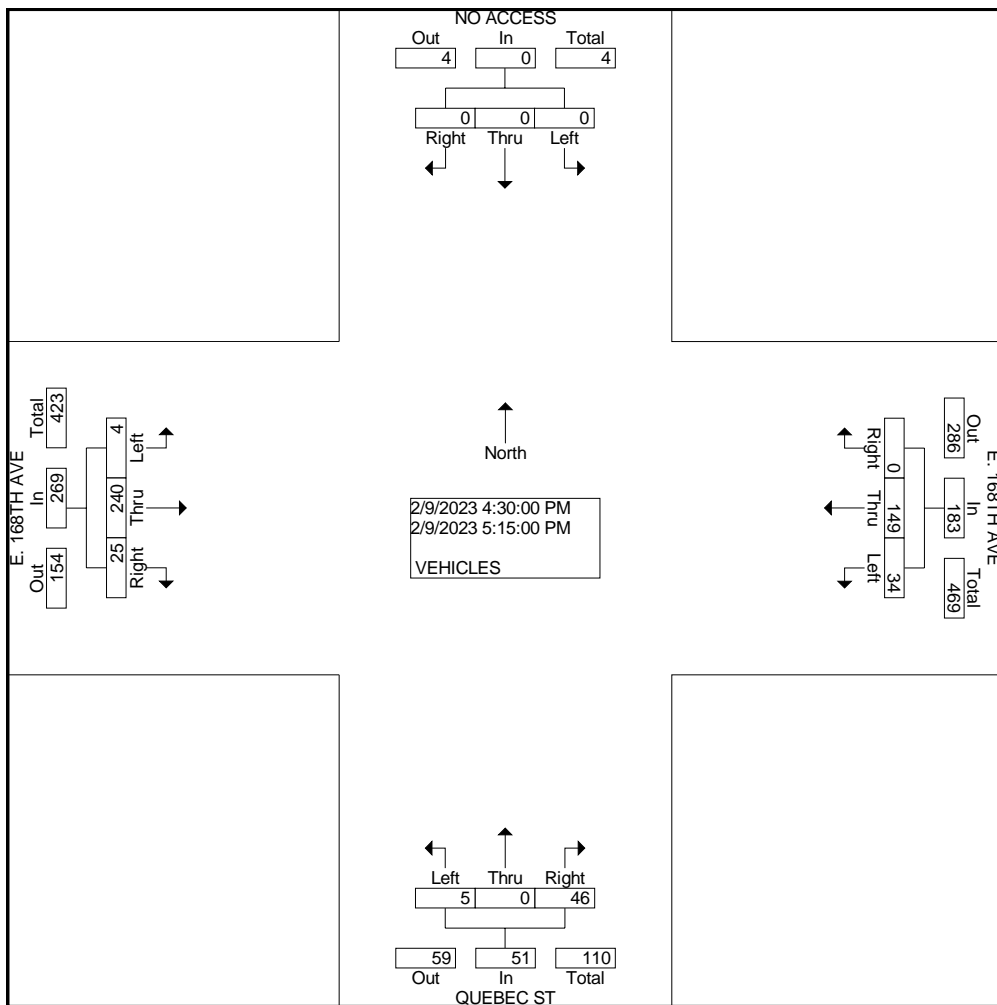
COUNTER MEASURES INC.

1889 YORK STREET
DENVER, COLORADO
303-333-7409

N/S STREET: QUEBEC ST
E/W STREET: E. 168TH AVE
CITY: BRIGHTON
COUNTY: ADAMS

File Name : QUEB168TH
Site Code : 0000015
Start Date : 2/9/2023
Page No : 3

Start Time	NO ACCESS Southbound				E. 168TH AVE Westbound				QUEBEC ST Northbound				E. 168TH AVE Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Intersection	04:30 PM																
Volume	0	0	0	0	34	149	0	183	5	0	46	51	4	240	25	269	503
Percent	0.0	0.0	0.0	0	18.6	81.4	0.0	183	9.8	0.0	90.2	51	1.5	89.2	9.3	269	
05:00	05:00 PM																
Volume	0	0	0	0	9	45	0	54	0	0	14	14	0	73	7	80	148
Peak Factor	0.850																
High Int.	05:00 PM																
Volume	0	0	0	0	9	45	0	54	2	0	12	14	0	73	7	80	
Peak Factor	0.841																



COUNTER MEASURES INC.

1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: QUEBEC ST
E/W STREET: E 162ND AVE
CITY: BRIGHTON
COUNTY: ADAMS

File Name : QUEBEAGLES
Site Code : 00000005
Start Date : 1/24/2023
Page No : 1

Groups Printed- VEHICLES

Start Time	QUEBEC ST Southbound				NO ACCESS Westbound				QUEBEC ST Northbound				E. 162ND AVE Eastbound				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
06:30 AM	0	14	0	0	2	0	0	0	1	9	0	0	1	0	5	1	33
06:45 AM	0	19	0	0	0	0	0	0	1	7	0	0	0	0	3	0	30
Total	0	33	0	0	2	0	0	0	2	16	0	0	1	0	8	1	63
07:00 AM	0	13	0	0	0	0	0	0	2	10	0	0	2	0	6	0	33
07:15 AM	0	10	0	0	0	0	0	0	0	7	0	0	0	0	14	0	31
07:30 AM	0	20	1	0	0	0	0	0	1	11	0	0	1	0	19	0	53
07:45 AM	0	17	0	0	0	0	0	0	7	10	0	0	1	0	12	0	47
Total	0	60	1	0	0	0	0	0	10	38	0	0	4	0	51	0	164
08:00 AM	0	16	1	0	0	0	0	0	3	15	0	0	1	0	4	0	40
08:15 AM	0	10	0	0	0	0	0	0	4	9	0	0	0	0	4	0	27
Total	0	26	1	0	0	0	0	0	7	24	0	0	1	0	8	0	67
04:00 PM	0	19	1	0	0	0	0	0	12	14	0	0	2	0	3	0	51
04:15 PM	0	21	0	0	0	0	0	0	5	19	0	0	0	0	5	0	50
04:30 PM	0	17	2	0	0	0	0	0	5	17	0	0	1	0	4	0	46
04:45 PM	0	19	1	0	0	0	0	0	6	29	0	0	0	0	5	0	60
Total	0	76	4	0	0	0	0	0	28	79	0	0	3	0	17	0	207
05:00 PM	0	11	2	0	0	0	0	0	10	30	0	0	0	0	3	0	56
05:15 PM	0	16	0	0	0	0	0	0	5	20	0	0	0	0	6	0	47
05:30 PM	0	10	1	0	0	0	0	0	4	21	0	0	0	0	6	0	42
05:45 PM	0	21	2	0	0	0	0	0	6	14	0	0	0	0	4	0	47
Total	0	58	5	0	0	0	0	0	25	85	0	0	0	0	19	0	192
Grand Total	0	253	11	0	2	0	0	0	72	242	0	0	9	0	103	1	693
Apprch %	0.0	95.8	4.2	0.0	100.0	0.0	0.0	0.0	22.9	77.1	0.0	0.0	8.0	0.0	91.2	0.9	
Total %	0.0	36.5	1.6	0.0	0.3	0.0	0.0	0.0	10.4	34.9	0.0	0.0	1.3	0.0	14.9	0.1	

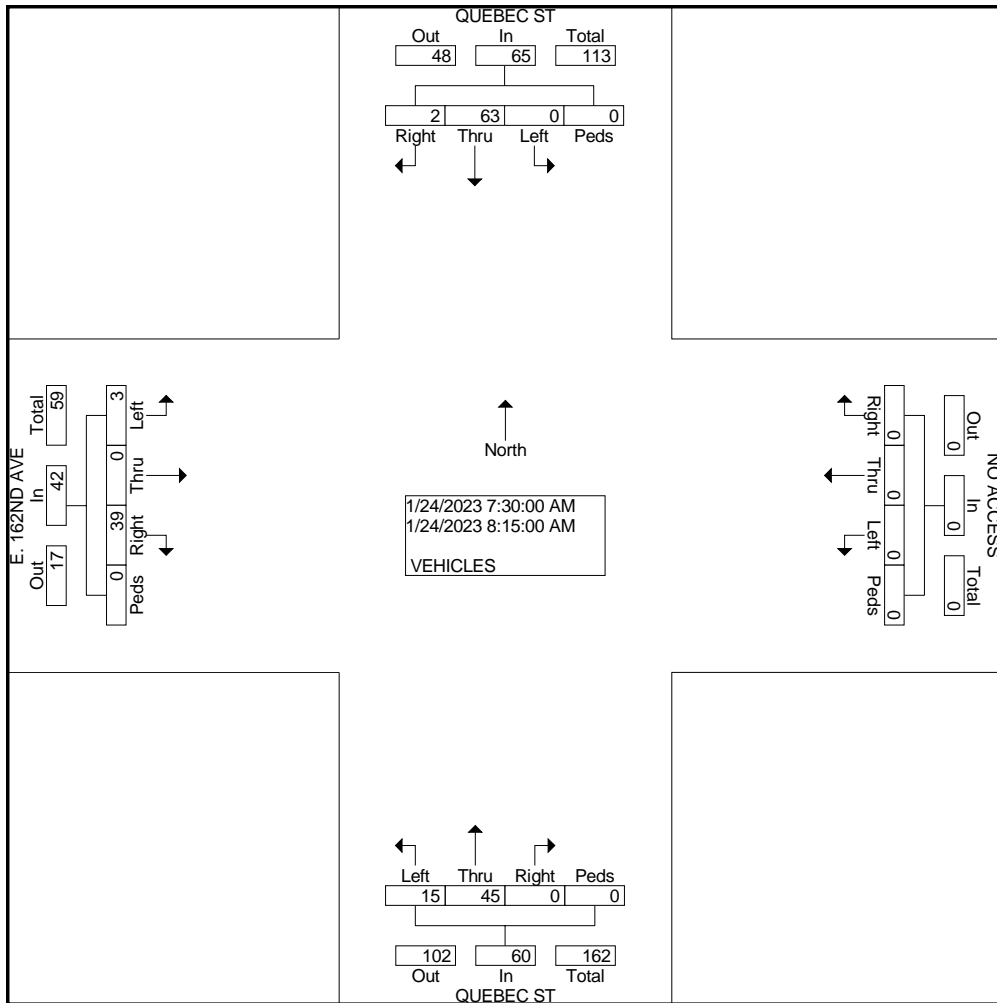
COUNTER MEASURES INC.

1889 YORK STREET
DENVER, COLORADO
303-333-7409

N/S STREET: QUEBEC ST
E/W STREET: E 162ND AVE
CITY: BRIGHTON
COUNTY: ADAMS

File Name : QUEBEAGLES
Site Code : 00000005
Start Date : 1/24/2023
Page No : 2

Start Time	QUEBEC ST Southbound					NO ACCESS Westbound					QUEBEC ST Northbound					E. 162ND AVE Eastbound					Int. Total		
	Left	Thru	Rig ht	Ped s	App. Total	Left	Thru	Rig ht	Ped s	App. Total	Left	Thru	Rig ht	Ped s	App. Total	Left	Thru	Rig ht	Ped s	App. Total			
Peak Hour From 07:30 AM to 08:15 AM - Peak 1 of 1																							
Intersecti on	07:30 AM																						
Volume	0	63	2	0	65	0	0	0	0	0	15	45	0	0	60	3	0	39	0	42	167		
Percent	0.0	96.9	3.1	0.0		0.0	0.0	0.0	0.0		25.0	75.0	0.0	0.0		7.1	0.0	92.9	0.0				
07:30 Volume	0	20	1	0	21	0	0	0	0	0	1	11	0	0	12	1	0	19	0	20	53		
Peak Factor	0.788																						
High Int. Volume	07:30 AM																						
Peak Factor	0	20	1	0	21	0	0	0	0	0	08:00 AM	3	15	0	0	18	07:30 AM	1	0	19	0	20	0.525
											0.833												



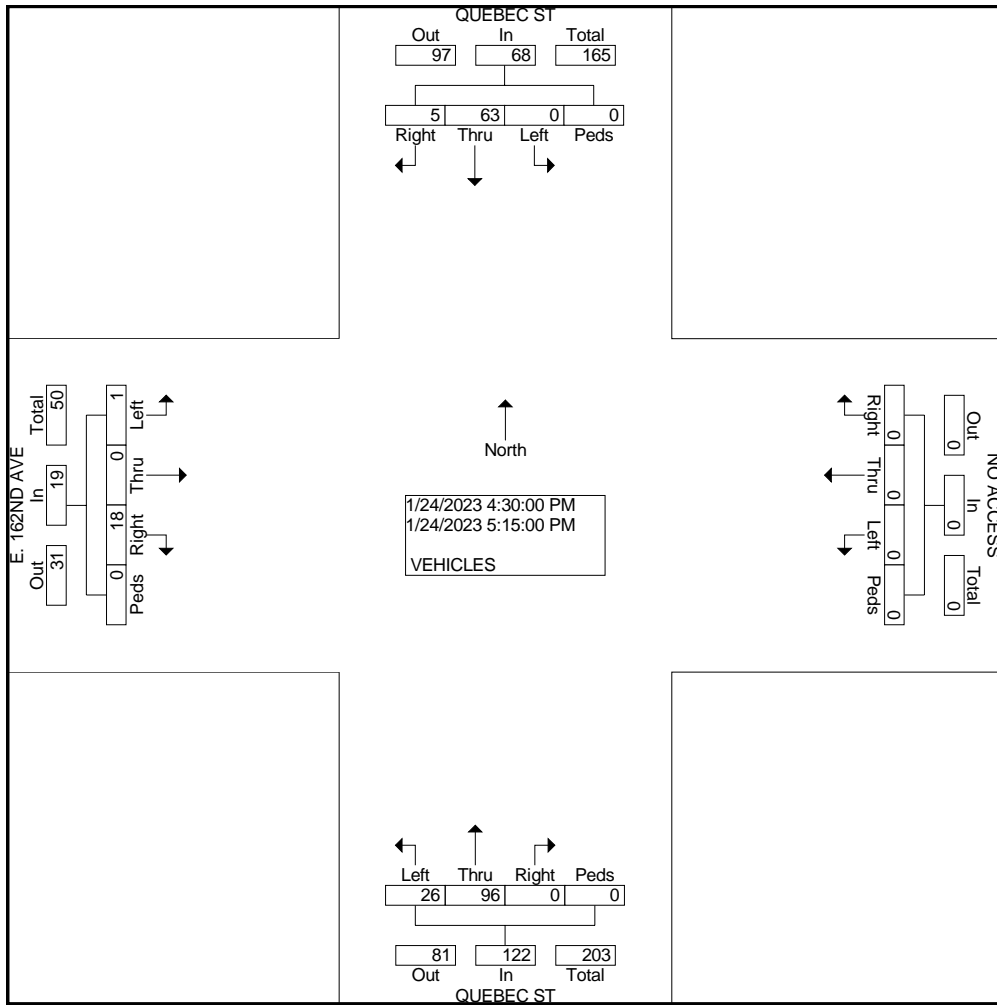
COUNTER MEASURES INC.

1889 YORK STREET
DENVER, COLORADO
303-333-7409

N/S STREET: QUEBEC ST
E/W STREET: E 162ND AVE
CITY: BRIGHTON
COUNTY: ADAMS

File Name : QUEBEAGLES
Site Code : 00000005
Start Date : 1/24/2023
Page No : 3

Start Time	QUEBEC ST Southbound					NO ACCESS Westbound					QUEBEC ST Northbound					E. 162ND AVE Eastbound					Int. Total
	Left	Thru	Rght	Peds	App. Total	Left	Thru	Rght	Peds	App. Total	Left	Thru	Rght	Peds	App. Total	Left	Thru	Rght	Peds	App. Total	
Peak Hour From 04:30 PM to 05:15 PM - Peak 1 of 1																					
Intersect on	04:30 PM																				
Volume	0	63	5	0	68	0	0	0	0	0	26	96	0	0	122	1	0	18	0	19	209
Percent	0.0	92.6	7.4	0.0		0.0	0.0	0.0	0.0		21.3	78.7	0.0	0.0		5.3	0.0	94.7	0.0		
04:45 Volume	0	19	1	0	20	0	0	0	0	0	6	29	0	0	35	0	0	5	0	5	60
Peak Factor																					
High Int.	04:45 PM																				
Volume	0	19	1	0	20	0	0	0	0	0	05:00 PM					05:15 PM					0.871
Peak Factor	0.85										0.76					0.79					2
	0										3					2					



COUNTER MEASURES INC.

1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: QUEBEC ST
E/W STREET: EAGLE SHADOW AVE
CITY: BRIGHTON
COUNTY: ADAMS

File Name : QUEBEAGLEN
Site Code : 00000011
Start Date : 1/24/2023
Page No : 1

Groups Printed- VEHICLES

Start Time	QUEBEC ST Southbound				EAGLE SHADOW AVE Westbound				QUEBEC ST Northbound				EAGLE SHADOW AVE Eastbound				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
06:30 AM	0	12	0	0	0	0	0	0	1	8	0	0	1	0	7	0	29
06:45 AM	0	12	0	0	0	0	0	0	1	6	0	0	2	0	6	0	27
Total	0	24	0	0	0	0	0	0	2	14	0	0	3	0	13	0	56
07:00 AM	0	12	1	0	0	0	0	0	0	11	0	0	1	0	3	0	28
07:15 AM	0	7	0	0	0	0	0	0	1	6	0	0	0	0	2	0	16
07:30 AM	0	10	1	0	0	0	0	0	1	10	0	0	2	0	9	0	33
07:45 AM	0	13	1	0	0	0	0	0	1	8	0	0	0	0	3	0	26
Total	0	42	3	0	0	0	0	0	3	35	0	0	3	0	17	0	103
08:00 AM	0	10	0	0	0	0	0	0	4	10	0	0	0	0	7	0	31
08:15 AM	0	8	0	0	0	0	0	0	2	7	0	0	1	0	2	0	20
Total	0	18	0	0	0	0	0	0	6	17	0	0	1	0	9	0	51
04:00 PM	0	18	0	0	0	0	0	0	3	13	0	0	1	0	2	0	37
04:15 PM	0	17	0	0	0	0	0	0	2	18	0	0	1	0	6	0	44
04:30 PM	0	15	1	0	0	0	0	0	2	16	0	0	0	0	3	0	37
04:45 PM	0	19	0	0	0	0	0	0	7	21	0	0	0	0	0	0	47
Total	0	69	1	0	0	0	0	0	14	68	0	0	2	0	11	0	165
05:00 PM	0	10	0	0	0	0	0	0	8	23	0	0	0	0	3	0	44
05:15 PM	0	15	0	0	0	0	0	0	3	16	0	0	0	0	2	0	36
05:30 PM	0	11	0	0	0	0	0	0	8	14	0	0	0	0	1	0	34
05:45 PM	0	13	1	0	0	0	0	0	3	11	0	0	1	0	8	0	37
Total	0	49	1	0	0	0	0	0	22	64	0	0	1	0	14	0	151
Grand Total	0	202	5	0	0	0	0	0	47	198	0	0	10	0	64	0	526
Apprch %	0.0	97.6	2.4	0.0	0.0	0.0	0.0	0.0	19.2	80.8	0.0	0.0	13.5	0.0	86.5	0.0	
Total %	0.0	38.4	1.0	0.0	0.0	0.0	0.0	0.0	8.9	37.6	0.0	0.0	1.9	0.0	12.2	0.0	

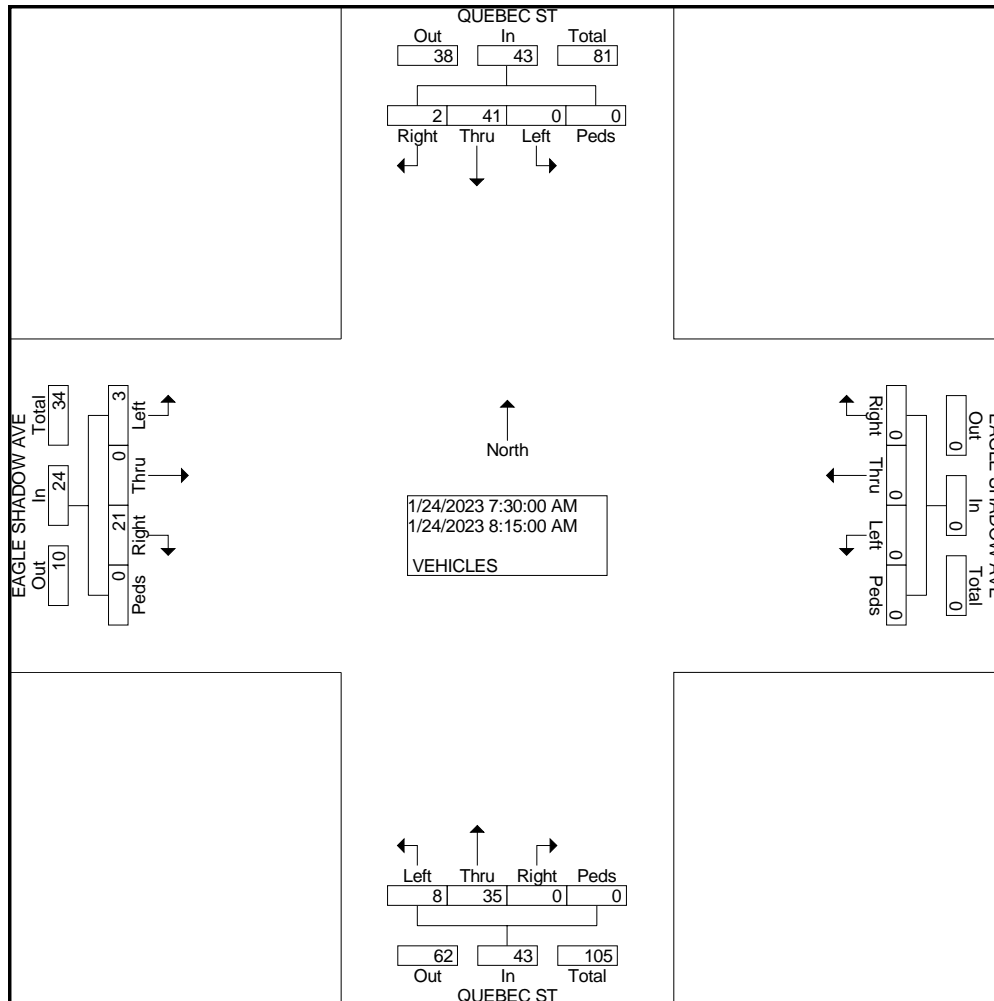
COUNTER MEASURES INC.

1889 YORK STREET
DENVER, COLORADO
303-333-7409

N/S STREET: QUEBEC ST
E/W STREET: EAGLE SHADOW AVE
CITY: BRIGHTON
COUNTY: ADAMS

File Name : QUEBEAGLEN
Site Code : 0000011
Start Date : 1/24/2023
Page No : 2

Start Time	QUEBEC ST Southbound					EAGLE SHADOW AVE Westbound					QUEBEC ST Northbound					EAGLE SHADOW AVE Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour From 07:30 AM to 08:15 AM - Peak 1 of 1																					
Intersection	07:30 AM																				
Volume	0	41	2	0	43	0	0	0	0	0	8	35	0	0	43	3	0	21	0	24	110
Percent	0.0	95.3	4.7	0.0		0.0	0.0	0.0	0.0		18.6	81.4	0.0	0.0		12.5	0.0	87.5	0.0		
07:30 Volume	0	10	1	0	11	0	0	0	0	0	1	10	0	0	11	2	0	9	0	11	33
Peak Factor	0.833																				
High Int. Volume	07:45 AM																				
Peak Factor	0	13	1	0	14	0	0	0	0	0	08:00 AM 4	10	0	0	14	07:30 AM 2	0	9	0	11	0.768
Peak Factor	0.545																				



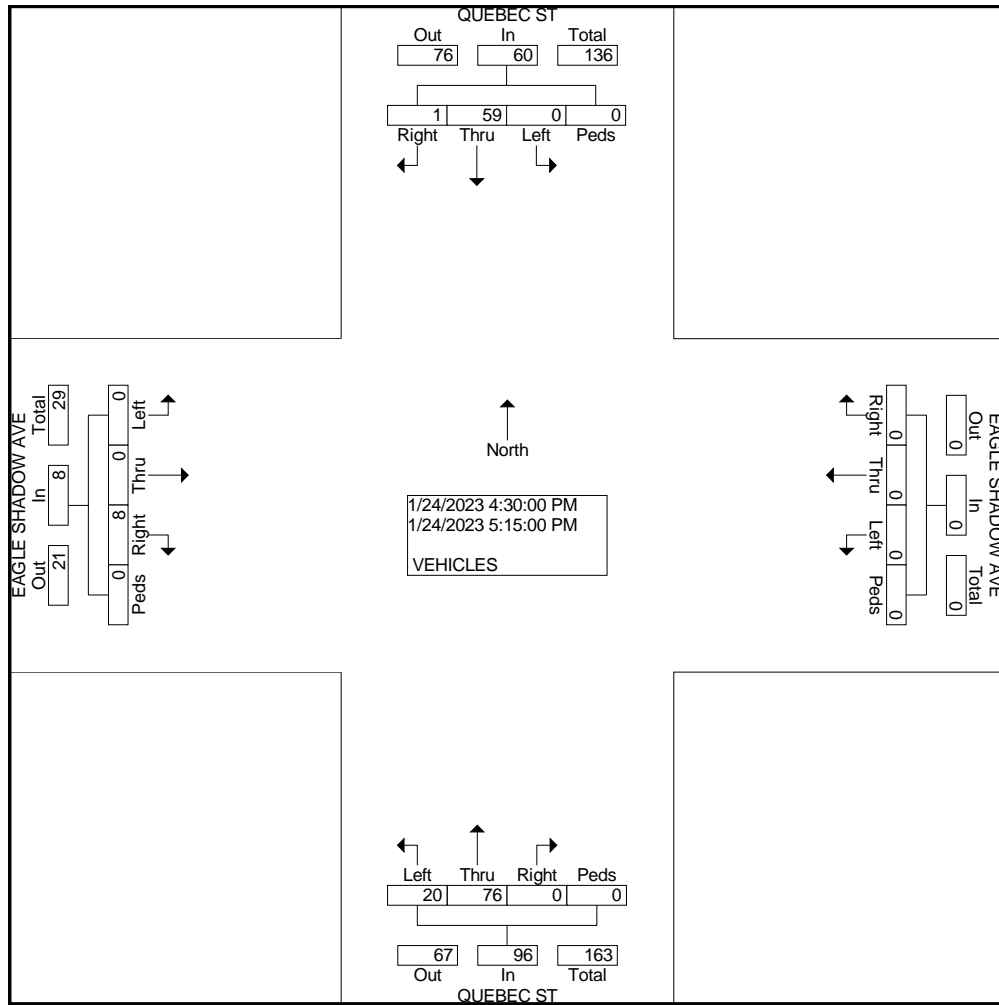
COUNTER MEASURES INC.

1889 YORK STREET
DENVER, COLORADO
303-333-7409

N/S STREET: QUEBEC ST
E/W STREET: EAGLE SHADOW AVE
CITY: BRIGHTON
COUNTY: ADAMS

File Name : QUEBEAGLEN
Site Code : 00000011
Start Date : 1/24/2023
Page No : 3

Start Time	QUEBEC ST Southbound					EAGLE SHADOW AVE Westbound					QUEBEC ST Northbound					EAGLE SHADOW AVE Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour From 04:30 PM to 05:15 PM - Peak 1 of 1																					
Intersect on	04:30 PM																				
Volume	0	59	1	0	60	0	0	0	0	0	20	76	0	0	96	0	0	8	0	8	164
Percent	0.0	98.3	1.7	0.0		0.0	0.0	0.0	0.0		20.8	79.2	0.0	0.0		0.0	0.0	100.0	0.0		
04:45 Volume	0	19	0	0	19	0	0	0	0	0	7	21	0	0	28	0	0	0	0	0	47
Peak Factor	0.872																				
High Int.	04:45 PM																				
Volume	0	19	0	0	19	0	0	0	0	0	05:00 PM					04:30 PM					
Peak Factor	0.789										0.774					0.667					



COUNTER MEASURES INC.

1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: RIVERDALE RD
E/W STREET: HWY 7
CITY: BRIGHTON
COUNTY: ADAMS

File Name : RIVERHWY7
Site Code : 00000013
Start Date : 12/7/2022
Page No : 1

Groups Printed- VEHICLES

Start Time	CONST. ACCESS Southbound				HWY 7 Westbound				RIVERDALE RD Northbound				HWY 7 Eastbound				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
06:30 AM	0	0	0	0	20	179	1	0	1	0	24	0	1	111	0	0	337
06:45 AM	0	0	0	0	24	159	1	0	2	0	17	0	0	113	2	0	318
Total	0	0	0	0	44	338	2	0	3	0	41	0	1	224	2	0	655
07:00 AM	0	0	0	0	39	189	0	0	1	0	26	0	0	136	2	0	393
07:15 AM	0	0	0	0	35	159	0	0	0	0	28	0	0	138	4	0	364
07:30 AM	0	0	1	0	57	190	0	0	1	1	35	0	0	132	5	0	422
07:45 AM	0	0	0	0	72	168	0	0	0	0	26	0	0	128	7	0	401
Total	0	0	1	0	203	706	0	0	2	1	115	0	0	534	18	0	1580
08:00 AM	0	0	0	0	63	165	0	0	1	0	41	0	0	136	9	0	415
08:15 AM	0	0	0	0	29	164	0	0	7	0	74	0	0	138	5	0	417
Total	0	0	0	0	92	329	0	0	8	0	115	0	0	274	14	0	832
04:00 PM	0	0	0	0	52	179	0	0	2	0	34	0	0	179	7	0	453
04:15 PM	0	0	2	0	56	212	0	0	2	0	32	0	0	217	1	0	522
04:30 PM	0	0	0	0	49	181	0	0	6	0	75	0	0	215	6	0	532
04:45 PM	0	0	2	0	29	203	0	0	7	0	97	0	0	185	5	0	528
Total	0	0	4	0	186	775	0	0	17	0	238	0	0	796	19	0	2035
05:00 PM	1	0	1	0	47	195	0	0	2	0	53	0	0	216	4	0	519
05:15 PM	0	0	0	0	41	223	0	0	1	0	51	0	0	212	1	0	529
05:30 PM	0	0	0	0	31	196	0	0	1	0	54	0	0	167	1	0	450
05:45 PM	0	0	0	0	35	187	0	0	8	0	56	0	0	193	0	0	479
Total	1	0	1	0	154	801	0	0	12	0	214	0	0	788	6	0	1977
Grand Total	1	0	6	0	679	2949	2	0	42	1	723	0	1	2616	59	0	7079
Apprch %	14.3	0.0	85.7	0.0	18.7	81.2	0.1	0.0	5.5	0.1	94.4	0.0	0.0	97.8	2.2	0.0	
Total %	0.0	0.0	0.1	0.0	9.6	41.7	0.0	0.0	0.6	0.0	10.2	0.0	0.0	37.0	0.8	0.0	

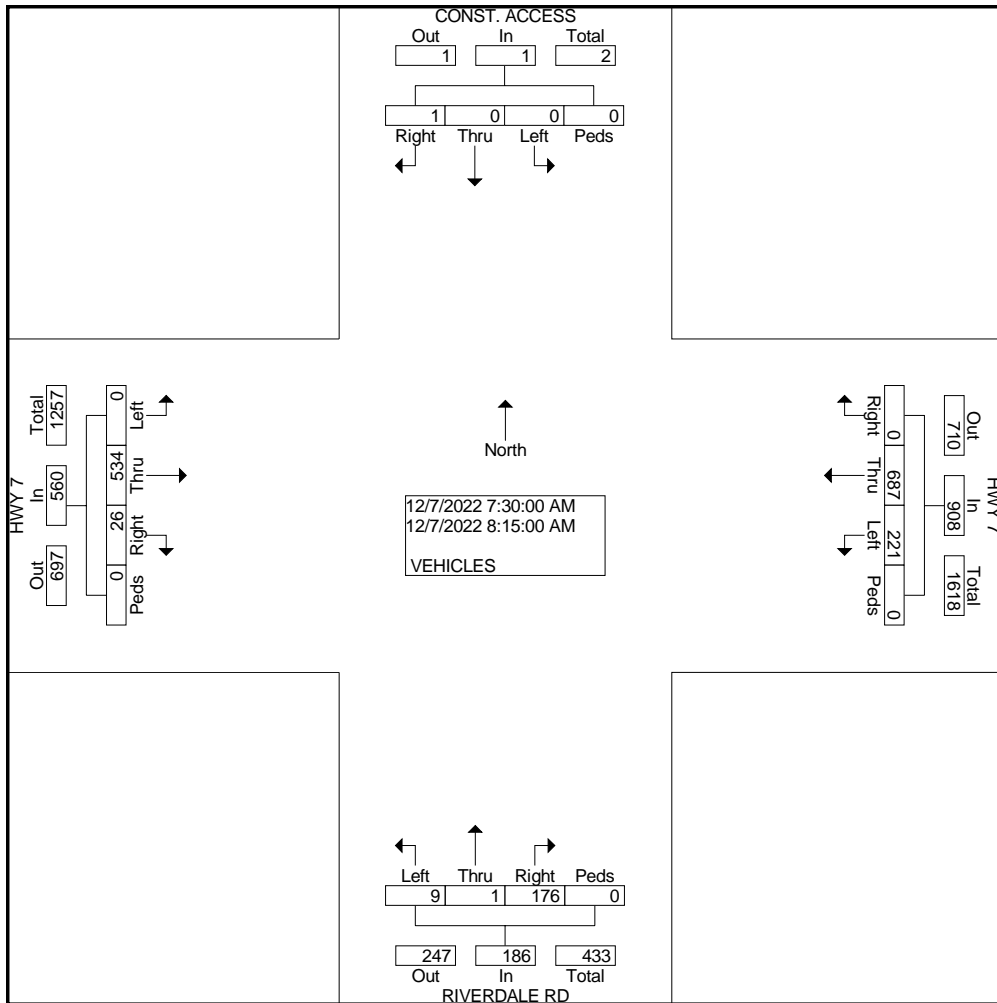
COUNTER MEASURES INC.

1889 YORK STREET
DENVER, COLORADO
303-333-7409

N/S STREET: RIVERDALE RD
E/W STREET: HWY 7
CITY: BRIGHTON
COUNTY: ADAMS

File Name : RIVERHWY7
Site Code : 00000013
Start Date : 12/7/2022
Page No : 2

Start Time	CONST. ACCESS Southbound					HWY 7 Westbound					RIVERDALE RD Northbound					HWY 7 Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Intersect on	07:30 AM																				
Volume	0	0	1	0	1	221	687	0	0	908	9	1	176	0	186	0	534	26	0	560	1655
Percent	0.0	0.0	100.0	0.0		24.3	75.7	0.0	0.0		4.8	0.5	94.6	0.0		0.0	95.4	4.6	0.0		
07:30 Volume	0	0	1	0	1	57	190	0	0	247	1	1	35	0	37	0	132	5	0	137	422
Peak Factor	0.980																				
High Int. Volume	07:30 AM																				
Peak Factor	0.25																				
08:00 AM Volume	0	0	1	0	1	57	190	0	0	247	7	0	74	0	81	0	136	9	0	145	145
Peak Factor	0.96																				
08:15 AM Volume	08:15 AM																				
Peak Factor	0.57																				
08:00 AM Volume	08:00 AM																				
Peak Factor	0.96																				



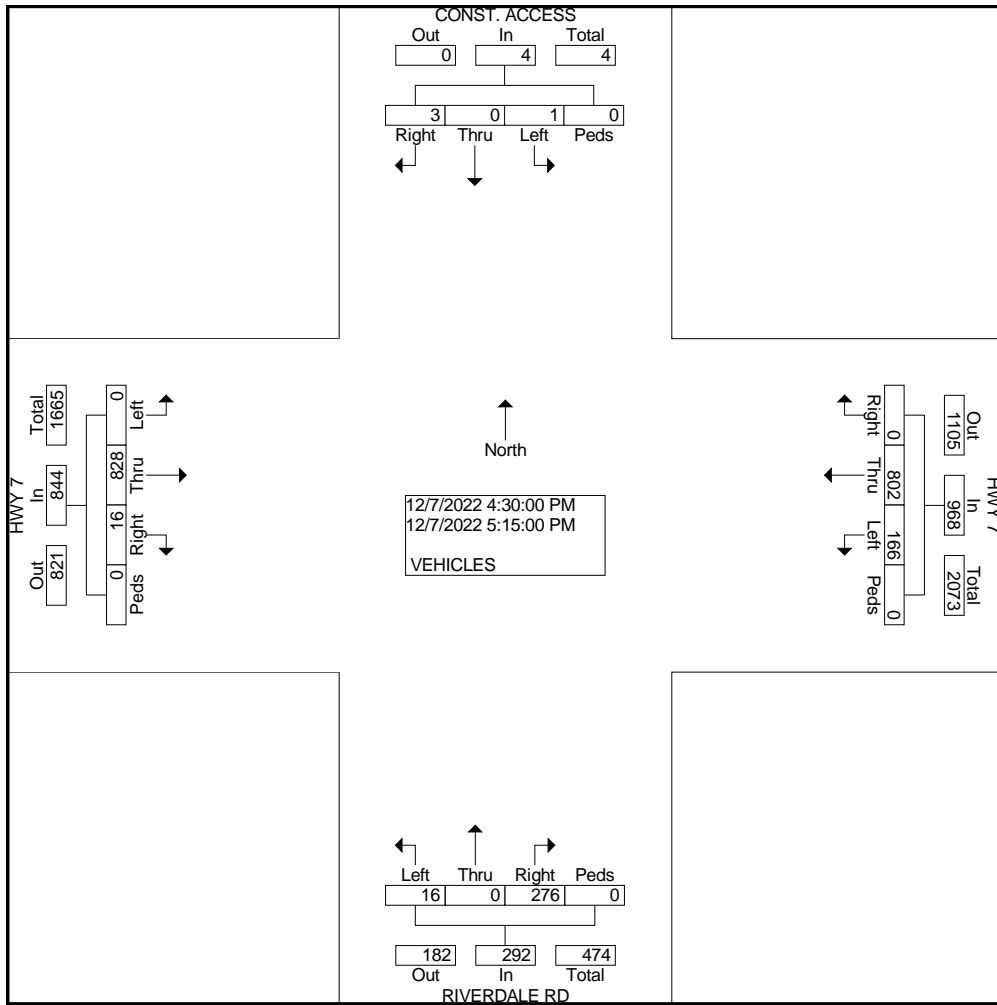
COUNTER MEASURES INC.

1889 YORK STREET
DENVER, COLORADO
303-333-7409

N/S STREET: RIVERDALE RD
E/W STREET: HWY 7
CITY: BRIGHTON
COUNTY: ADAMS

File Name : RIVERHWY7
Site Code : 00000013
Start Date : 12/7/2022
Page No : 3

Start Time	CONST. ACCESS Southbound					HWY 7 Westbound					RIVERDALE RD Northbound					HWY 7 Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Intersect on	04:30 PM																				
Volume	1	0	3	0	4	166	802	0	0	968	16	0	276	0	292	0	828	16	0	844	2108
Percent	25.0	0.0	75.0	0.0		17.1	82.9	0.0	0.0		5.5	0.0	94.5	0.0		0.0	98.1	1.9	0.0		
04:30 Volume	0	0	0	0	0	49	181	0	0	230	6	0	75	0	81	0	215	6	0	221	532
Peak Factor	0.991																				
High Int.	04:45 PM					05:15 PM					04:45 PM					04:30 PM					
Volume	0	0	2	0	2	41	223	0	0	264	7	0	97	0	104	0	215	6	0	221	
Peak Factor	0.50					0.91					0.70					0.95					
	0					7					2					5					



COUNTER MEASURES INC.

1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: TUCSON ST
E/W STREET: HWY 7
CITY: BRIGHTON
COUNTY: ADAMS

File Name : TUCSONHWY7
Site Code : 00000052
Start Date : 12/7/2022
Page No : 1

Groups Printed- VEHICLES

Start Time	TUCSON ST Southbound				HWY 7 Westbound				NO ACCESS Northbound				HWY 7 Eastbound				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
06:30 AM	0	0	8	0	0	208	1	0	0	0	0	0	6	130	0	0	353
06:45 AM	0	0	13	0	0	173	2	0	0	0	0	0	6	151	0	0	345
Total	0	0	21	0	0	381	3	0	0	0	0	0	12	281	0	0	698
07:00 AM	0	0	8	0	0	231	3	0	0	0	0	0	5	157	0	0	404
07:15 AM	2	0	8	0	0	165	2	0	0	0	0	0	5	169	0	0	351
07:30 AM	1	0	11	0	0	273	2	0	0	0	0	0	2	181	0	0	470
07:45 AM	2	0	12	0	0	244	3	0	0	0	0	0	4	169	0	0	434
Total	5	0	39	0	0	913	10	0	0	0	0	0	16	676	0	0	1659
08:00 AM	3	0	10	0	0	216	1	0	0	0	0	0	11	168	0	0	409
08:15 AM	2	0	7	0	0	185	2	0	0	0	0	0	11	200	0	0	407
Total	5	0	17	0	0	401	3	0	0	0	0	0	22	368	0	0	816
04:00 PM	1	0	13	0	0	231	6	0	0	0	0	0	3	212	0	0	466
04:15 PM	3	0	11	0	0	209	34	0	0	0	0	0	10	224	0	0	491
04:30 PM	1	0	4	0	0	206	4	0	0	0	0	0	9	250	0	0	474
04:45 PM	1	0	6	0	0	214	5	0	0	0	0	0	12	258	0	0	496
Total	6	0	34	0	0	860	49	0	0	0	0	0	34	944	0	0	1927
05:00 PM	1	0	8	0	0	239	6	0	0	0	0	0	13	257	0	0	524
05:15 PM	2	0	8	0	0	244	6	0	0	0	0	0	13	253	0	0	526
05:30 PM	1	0	4	0	0	210	1	0	0	0	0	0	8	215	0	0	439
05:45 PM	2	0	7	0	0	215	2	0	0	0	0	0	11	229	0	0	466
Total	6	0	27	0	0	908	15	0	0	0	0	0	45	954	0	0	1955
Grand Total	22	0	138	0	0	3463	80	0	0	0	0	0	129	3223	0	0	7055
Apprch %	13.8	0.0	86.3	0.0	0.0	97.7	2.3	0.0	0.0	0.0	0.0	0.0	3.8	96.2	0.0	0.0	
Total %	0.3	0.0	2.0	0.0	0.0	49.1	1.1	0.0	0.0	0.0	0.0	0.0	1.8	45.7	0.0	0.0	

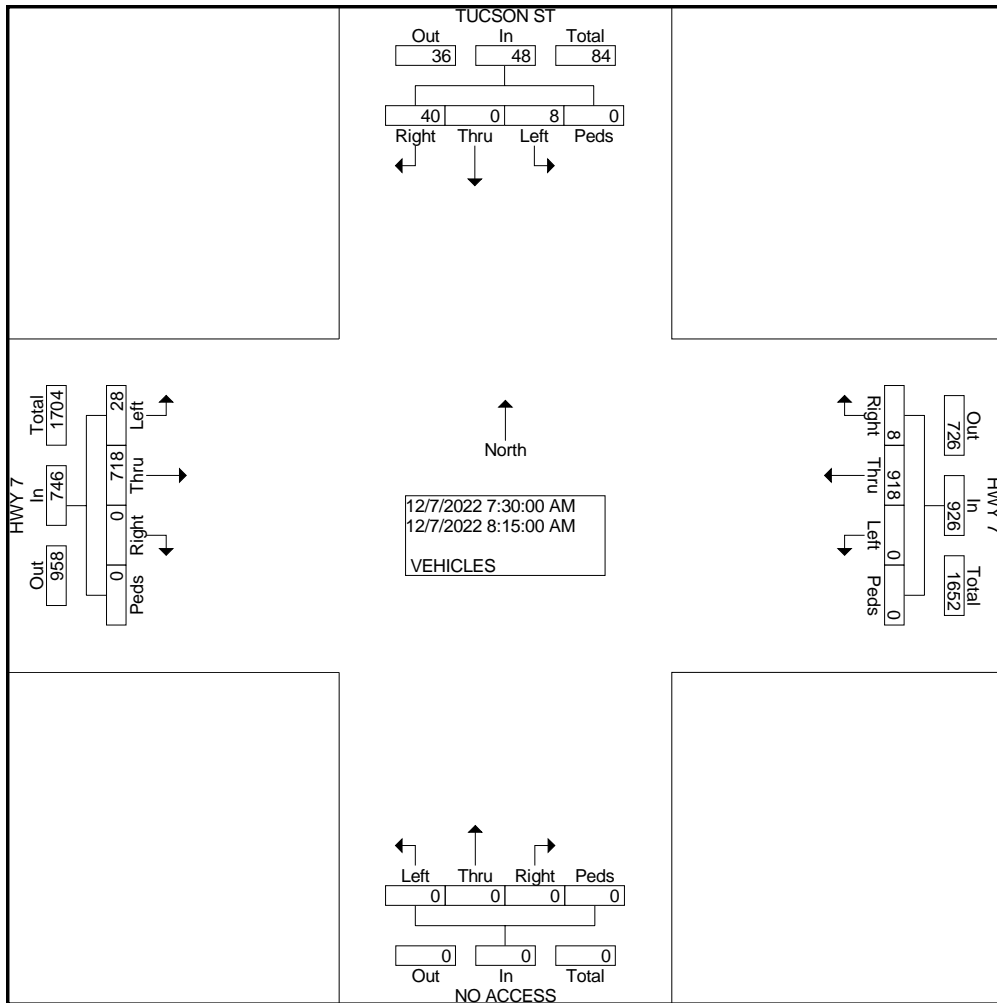
COUNTER MEASURES INC.

1889 YORK STREET
DENVER, COLORADO
303-333-7409

N/S STREET: TUCSON ST
E/W STREET: HWY 7
CITY: BRIGHTON
COUNTY: ADAMS

File Name : TUCSONHWY7
Site Code : 0000052
Start Date : 12/7/2022
Page No : 2

Start Time	TUCSON ST Southbound					HWY 7 Westbound					NO ACCESS Northbound					HWY 7 Eastbound					Int. Total
	Left	Thru	Rig ht	Ped s	App. Total	Left	Thru	Rig ht	Ped s	App. Total	Left	Thru	Rig ht	Ped s	App. Total	Left	Thru	Rig ht	Ped s	App. Total	
Peak Hour From 07:30 AM to 08:15 AM - Peak 1 of 1																					
Intersecti on	07:30 AM																				
Volume	8	0	40	0	48	0	918	8	0	926	0	0	0	0	0	28	718	0	0	746	1720
Percent	16.7	0.0	83.3	0.0		0.0	99.1	0.9	0.0		0.0	0.0	0.0	0.0		3.8	96.2	0.0	0.0		
07:30 Volume	1	0	11	0	12	0	273	2	0	275	0	0	0	0	0	2	181	0	0	183	470
Peak Factor																					
High Int. Volume	07:45 AM					07:30 AM					08:15 AM										
Peak Factor	2	0	12	0	14	0	273	2	0	275	0	0	0	0	0	11	200	0	0	211	0.915
						0.85					0.84					0.88					4
						7					2										



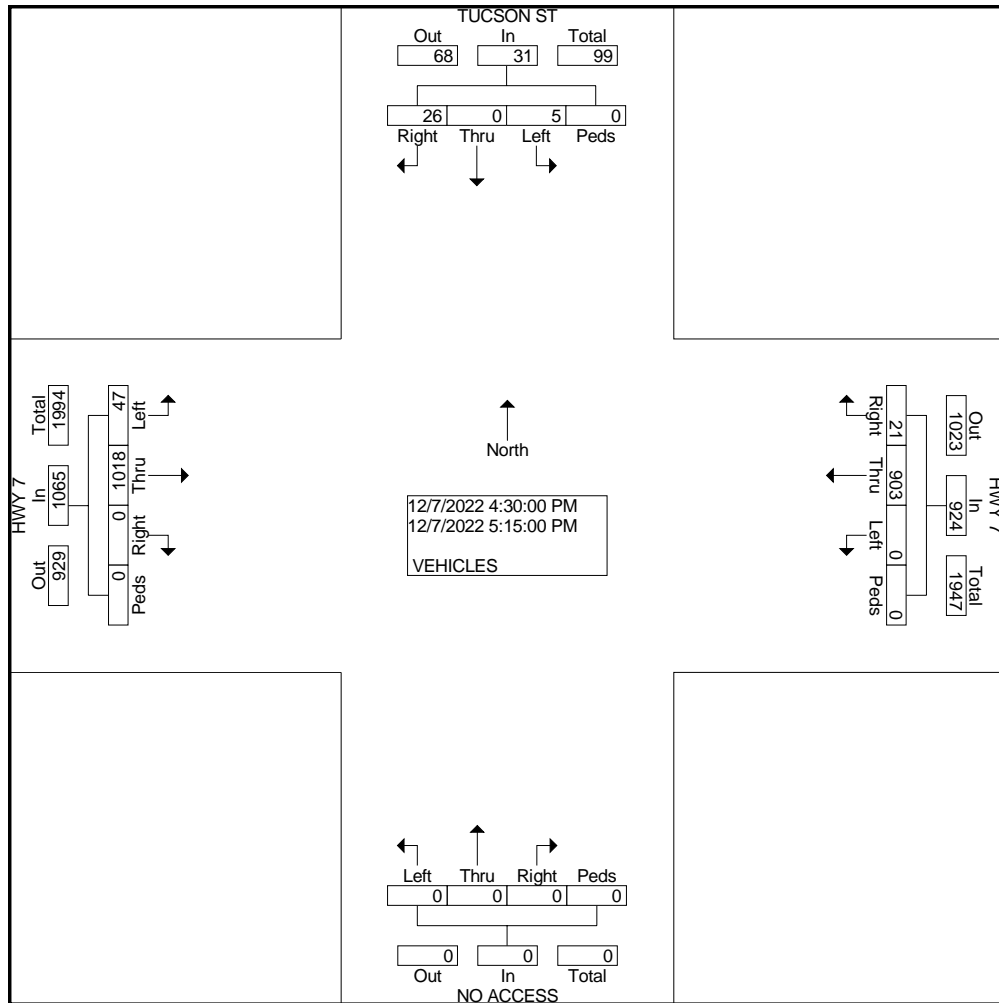
COUNTER MEASURES INC.

1889 YORK STREET
DENVER, COLORADO
303-333-7409

N/S STREET: TUCSON ST
E/W STREET: HWY 7
CITY: BRIGHTON
COUNTY: ADAMS

File Name : TUCSONHWY7
Site Code : 0000052
Start Date : 12/7/2022
Page No : 3

Start Time	TUCSON ST Southbound					HWY 7 Westbound					NO ACCESS Northbound					HWY 7 Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour From 04:30 PM to 05:15 PM - Peak 1 of 1																					
Intersecti on	04:30 PM																				
Volume	5	0	26	0	31	0	903	21	0	924	0	0	0	0	0	47	1018	0	0	1065	2020
Percent	16.1	0.0	83.9	0.0		0.0	97.7	2.3	0.0		0.0	0.0	0.0	0.0		4.4	95.6	0.0	0.0		
05:15 Volume	2	0	8	0	10	0	244	6	0	250	0	0	0	0	0	13	253	0	0	266	526
Peak Factor																					0.960
High Int. Volume	05:15 PM																				
Peak Factor	0.77					05:15 PM					0.92					04:45 PM					
	2	0	8	0	10	0	244	6	0	250	0	0	0	0	0	12	258	0	0	270	
																0.98					6
	5					4										6					



COUNTER MEASURES INC.

1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: TUCSON ST
E/W STREET: E. 168TH AVE
CITY: BRIGHTON
COUNTY: ADAMS

File Name : TUCS168TH
Site Code : 0000013
Start Date : 2/9/2023
Page No : 1

Groups Printed- VEHICLES

Start Time	NO ACCESS Southbound			E. 168TH AVE Westbound			TUCSON ST Northbound			E. 168TH AVE Eastbound			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
06:00 AM	0	0	0	3	37	0	0	0	4	0	15	1	60
06:15 AM	0	0	0	5	54	0	0	0	7	0	11	1	78
06:30 AM	0	0	0	7	47	0	0	0	5	0	33	0	92
06:45 AM	0	0	0	8	40	0	1	0	4	0	22	2	77
Total	0	0	0	23	178	0	1	0	20	0	81	4	307
07:00 AM	0	0	0	5	59	0	2	0	4	0	31	1	102
07:15 AM	0	0	0	5	64	0	1	0	0	0	26	1	97
07:30 AM	0	0	0	18	54	0	1	0	7	0	27	0	107
07:45 AM	0	0	0	14	48	0	4	0	6	0	31	0	103
Total	0	0	0	42	225	0	8	0	17	0	115	2	409
08:00 AM	0	0	0	11	36	0	1	0	12	0	28	1	89
08:15 AM	0	0	0	6	45	0	1	0	13	0	32	0	97
Total	0	0	0	17	81	0	2	0	25	0	60	1	186
04:00 PM	0	0	0	10	35	0	1	0	5	0	63	1	115
04:15 PM	0	0	0	5	41	0	2	0	7	0	43	2	100
04:30 PM	0	0	0	8	39	0	4	0	9	0	58	2	120
04:45 PM	0	0	0	5	35	0	1	0	10	0	52	0	103
Total	0	0	0	28	150	0	8	0	31	0	216	5	438
05:00 PM	0	0	0	0	35	0	4	0	10	0	61	1	111
05:15 PM	0	0	0	3	48	0	1	0	6	0	56	3	117
05:30 PM	0	0	0	5	37	0	2	0	11	0	41	2	98
05:45 PM	0	0	0	6	35	0	0	0	0	0	55	2	98
Total	0	0	0	14	155	0	7	0	27	0	213	8	424
Grand Total	0	0	0	124	789	0	26	0	120	0	685	20	1764
Apprch %	0.0	0.0	0.0	13.6	86.4	0.0	17.8	0.0	82.2	0.0	97.2	2.8	
Total %	0.0	0.0	0.0	7.0	44.7	0.0	1.5	0.0	6.8	0.0	38.8	1.1	

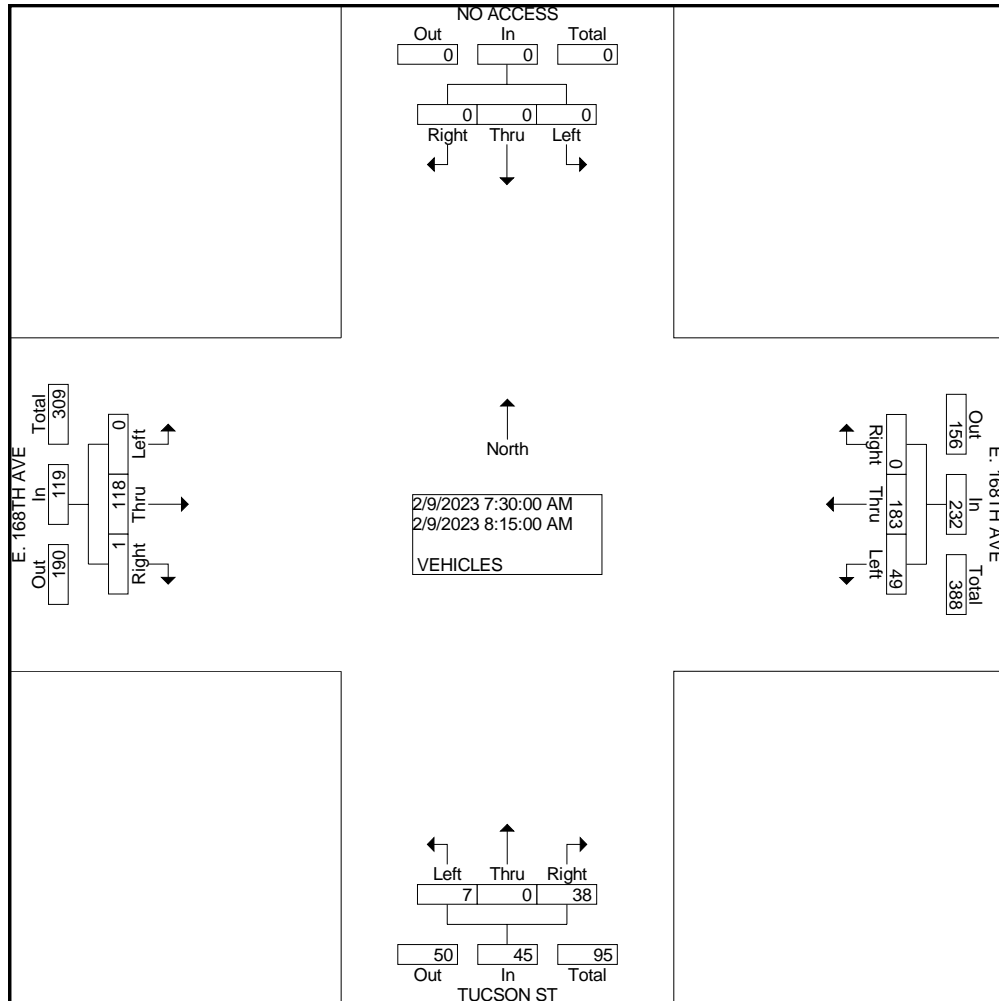
COUNTER MEASURES INC.

1889 YORK STREET
DENVER, COLORADO
303-333-7409

N/S STREET: TUCSON ST
E/W STREET: E. 168TH AVE
CITY: BRIGHTON
COUNTY: ADAMS

File Name : TUCS168TH
Site Code : 0000013
Start Date : 2/9/2023
Page No : 2

Start Time	NO ACCESS Southbound				E. 168TH AVE Westbound				TUCSON ST Northbound				E. 168TH AVE Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Intersection	07:30 AM																
Volume	0	0	0	0	49	183	0	232	7	0	38	45	0	118	1	119	396
Percent	0.0	0.0	0.0	0.0	21.1	78.9	0.0		15.6	0.0	84.4		0.0	99.2	0.8		
07:30 Volume	0	0	0	0	18	54	0	72	1	0	7	8	0	27	0	27	107
Peak Factor	0.925																
High Int.																	
08:15 Volume	0	0	0	0	18	54	0	72	1	0	13	14	0	32	0	32	
Peak Factor					0.806				0.804				0.930				



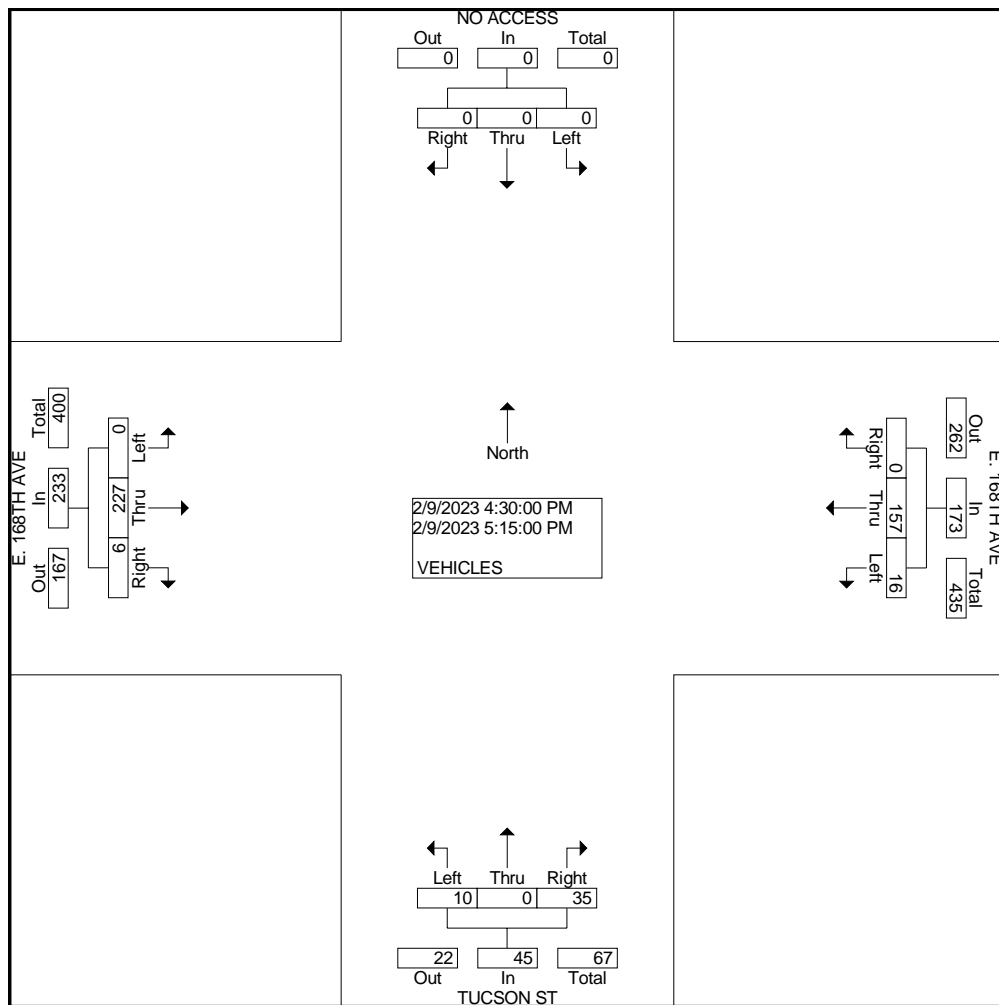
COUNTER MEASURES INC.

1889 YORK STREET
DENVER, COLORADO
303-333-7409

N/S STREET: TUCSON ST
E/W STREET: E. 168TH AVE
CITY: BRIGHTON
COUNTY: ADAMS

File Name : TUCS168TH
Site Code : 0000013
Start Date : 2/9/2023
Page No : 3

Start Time	NO ACCESS Southbound				E. 168TH AVE Westbound				TUCSON ST Northbound				E. 168TH AVE Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Intersection	04:30 PM																
Volume	0	0	0	0	16	157	0	173	10	0	35	45	0	227	6	233	451
Percent	0.0	0.0	0.0	0.0	9.2	90.8	0.0		22.2	0.0	77.8		0.0	97.4	2.6		
04:30 Volume	0	0	0	0	8	39	0	47	4	0	9	13	0	58	2	60	120
Peak Factor	0.940																
High Int.	05:15 PM																
Volume	0	0	0	0	3	48	0	51	4	0	10	14	0	61	1	62	0.940
Peak Factor	0.848																



COUNTER MEASURES INC.

1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: YOSEMITE ST
E/W STREET: E. 160TH AVE (HWY 7)
CITY: BRIGHTON
COUNTY: ADAMS

File Name : YOSE160TH
Site Code : 00000025
Start Date : 1/24/2023
Page No : 1

Groups Printed- VEHICLES

Start Time	YOSEMITE ST Southbound				E. 160TH AVE Westbound				YOSEMITE ST Northbound				E. 160TH AVE Eastbound				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
06:30 AM	1	1	4	0	1	184	1	0	10	1	6	0	1	86	5	0	301
06:45 AM	2	2	5	0	5	158	1	0	5	2	7	0	2	88	1	0	278
Total	3	3	9	0	6	342	2	0	15	3	13	0	3	174	6	0	579
07:00 AM	0	1	4	0	5	196	2	0	14	1	11	0	3	113	6	0	356
07:15 AM	5	3	11	1	2	209	3	0	19	0	4	0	1	118	7	0	383
07:30 AM	3	1	11	0	5	258	1	0	12	3	7	0	1	123	1	0	426
07:45 AM	3	4	1	0	5	172	3	0	10	3	14	0	5	112	4	0	336
Total	11	9	27	1	17	835	9	0	55	7	36	0	10	466	18	0	1501
08:00 AM	6	2	5	0	8	179	2	0	7	3	10	0	7	112	5	0	346
08:15 AM	4	0	1	0	8	195	1	0	8	0	10	0	1	117	9	0	354
Total	10	2	6	0	16	374	3	0	15	3	20	0	8	229	14	0	700
04:00 PM	5	4	1	0	10	143	3	0	3	1	8	0	5	198	12	0	393
04:15 PM	1	3	1	0	15	143	4	0	9	0	3	0	2	190	8	0	379
04:30 PM	2	3	1	0	15	157	2	0	11	1	10	0	9	199	16	0	426
04:45 PM	1	2	5	0	9	150	5	0	11	6	7	0	8	207	15	0	426
Total	9	12	8	0	49	593	14	0	34	8	28	0	24	794	51	0	1624
05:00 PM	3	1	3	0	7	179	1	0	10	3	8	0	2	220	4	0	441
05:15 PM	3	3	6	0	4	159	3	0	4	1	9	0	6	214	11	0	423
05:30 PM	2	1	2	0	10	141	1	0	11	1	12	0	5	194	12	0	392
05:45 PM	1	2	1	0	7	119	7	1	2	0	1	0	5	172	9	0	327
Total	9	7	12	0	28	598	12	1	27	5	30	0	18	800	36	0	1583
Grand Total	42	33	62	1	116	2742	40	1	146	26	127	0	63	2463	125	0	5987
Apprch %	30.4	23.9	44.9	0.7	4.0	94.6	1.4	0.0	48.8	8.7	42.5	0.0	2.4	92.9	4.7	0.0	
Total %	0.7	0.6	1.0	0.0	1.9	45.8	0.7	0.0	2.4	0.4	2.1	0.0	1.1	41.1	2.1	0.0	

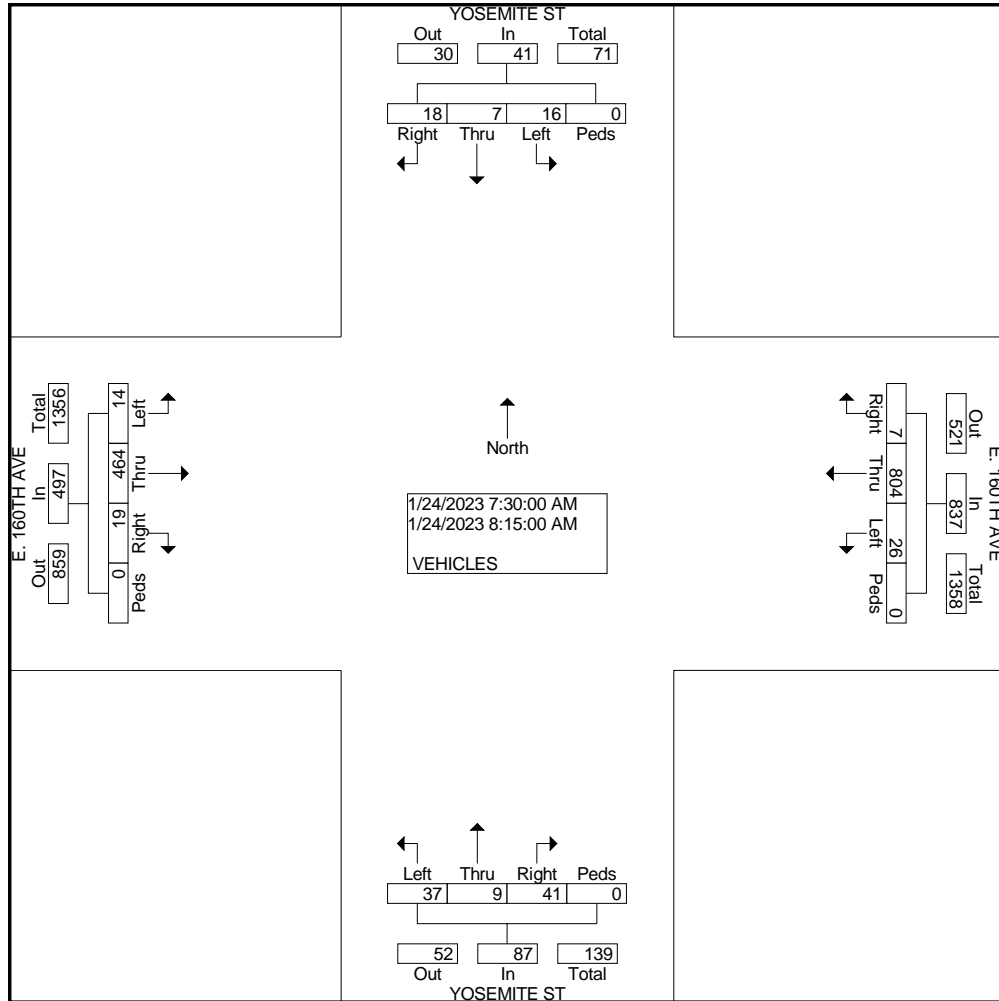
COUNTER MEASURES INC.

1889 YORK STREET
DENVER, COLORADO
303-333-7409

N/S STREET: YOSEMITE ST
E/W STREET: E. 160TH AVE (HWY 7)
CITY: BRIGHTON
COUNTY: ADAMS

File Name : YOSE160TH
Site Code : 0000025
Start Date : 1/24/2023
Page No : 2

Start Time	YOSEMITE ST Southbound					E. 160TH AVE Westbound					YOSEMITE ST Northbound					E. 160TH AVE Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour From 07:30 AM to 08:15 AM - Peak 1 of 1																					
Intersection	07:30 AM																				
Volume	16	7	18	0	41	26	804	7	0	837	37	9	41	0	87	14	464	19	0	497	1462
Percent	39.0	17.1	43.9	0.0		3.1	96.1	0.8	0.0		42.5	10.3	47.1	0.0		2.8	93.4	3.8	0.0		
07:30 Volume	3	1	11	0	15	5	258	1	0	264	12	3	7	0	22	1	123	1	0	125	426
Peak Factor																					
High Int. Volume	07:30 AM					07:30 AM					07:45 AM					08:15 AM					
Peak Factor																					0.858
	3	1	11	0	15	5	258	1	0	264	10	3	14	0	27	1	117	9	0	127	
						0.68					0.79					0.80					0.978



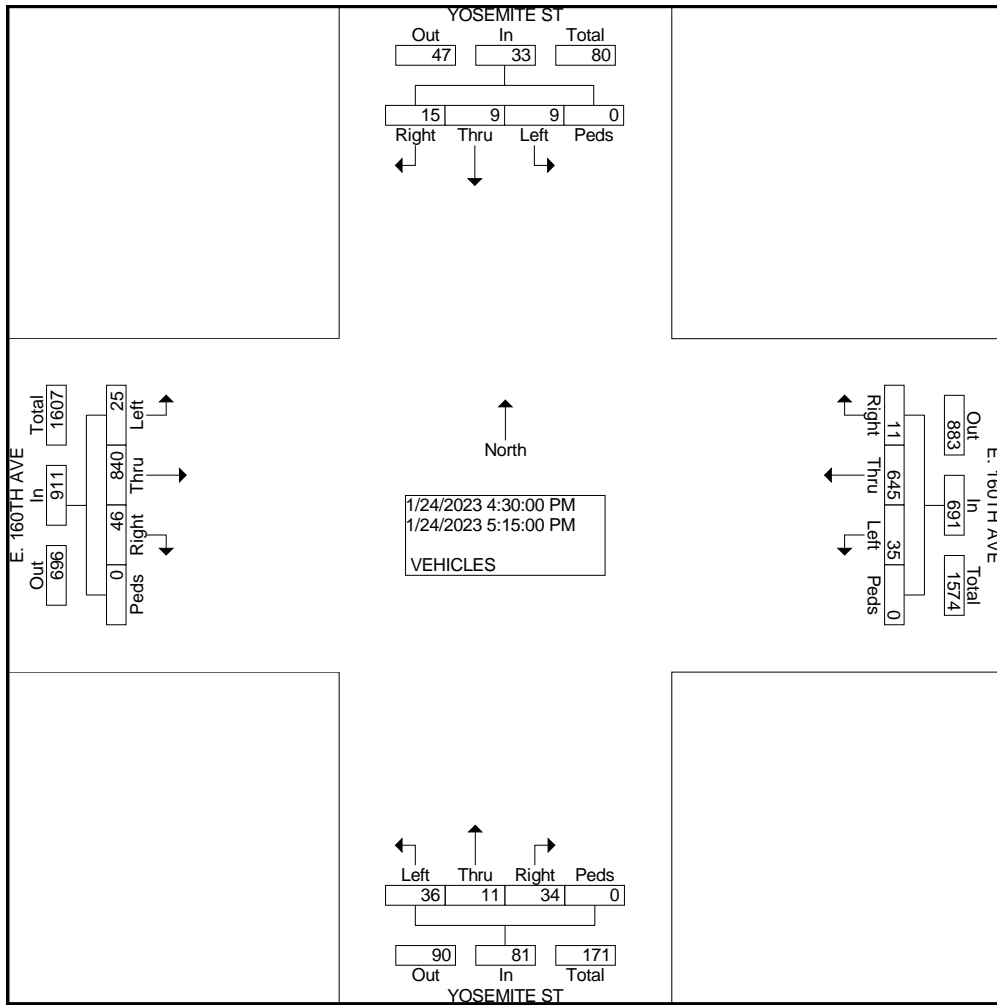
COUNTER MEASURES INC.

1889 YORK STREET
DENVER, COLORADO
303-333-7409

N/S STREET: YOSEMITE ST
E/W STREET: E. 160TH AVE (HWY 7)
CITY: BRIGHTON
COUNTY: ADAMS

File Name : YOSE160TH
Site Code : 0000025
Start Date : 1/24/2023
Page No : 3

Start Time	YOSEMITE ST Southbound					E. 160TH AVE Westbound					YOSEMITE ST Northbound					E. 160TH AVE Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour From 04:30 PM to 05:15 PM - Peak 1 of 1																					
Intersect on	04:30 PM																				
Volume	9	9	15	0	33	35	645	11	0	691	36	11	34	0	81	25	840	46	0	911	1716
Percent	27.3	27.3	45.5	0.0		5.1	93.3	1.6	0.0		44.4	13.6	42.0	0.0		2.7	92.2	5.0	0.0		
05:00 Volume	3	1	3	0	7	7	179	1	0	187	10	3	8	0	21	2	220	4	0	226	441
Peak Factor																					0.973
High Int.	05:15 PM																				
Volume	3	3	6	0	12	7	179	1	0	187	11	6	7	0	24	6	214	11	0	231	
Peak Factor	0.688										0.924					0.846					0.986



COUNTER MEASURES INC.

1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: YOSEMITE ST
E/W STREET: E. 162ND AVE
CITY: BRIGHTON
COUNTY: ADAMS

File Name : YOSE162ND
Site Code : 00000008
Start Date : 1/26/2023
Page No : 1

Groups Printed- VEHICLES

Start Time	YOSEMITE ST Southbound				PRIVATE DRIVE Westbound				YOSEMITE ST Northbound				E. 162ND AVE Eastbound				Int. Total	
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds		
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
06:30 AM	0	1	0	0	0	0	0	0	1	1	0	0	0	0	3	0	0	6
06:45 AM	0	1	0	0	0	0	0	0	1	2	0	0	0	0	2	0	0	6
Total	0	2	0	0	0	0	0	0	2	3	0	0	0	0	5	0	0	12
07:00 AM	0	3	0	0	0	0	0	0	0	3	0	0	0	0	3	0	0	9
07:15 AM	0	4	0	0	0	0	0	0	3	2	0	0	2	0	10	0	0	21
07:30 AM	0	1	0	0	1	0	0	0	2	5	0	0	0	1	14	0	0	24
07:45 AM	0	6	0	0	0	0	0	0	0	3	0	0	0	0	5	1	0	15
Total	0	14	0	0	1	0	0	0	5	13	0	0	2	1	32	1	0	69
08:00 AM	0	2	0	0	0	0	0	0	6	1	0	0	0	0	5	0	0	14
08:15 AM	0	4	0	0	0	0	0	0	3	5	0	0	0	0	3	0	0	15
Total	0	6	0	0	0	0	0	0	9	6	0	0	0	0	8	0	0	29
04:00 PM	0	3	0	0	0	0	0	0	6	3	0	2	0	0	3	0	0	17
04:15 PM	0	4	0	0	0	0	0	0	4	4	0	0	0	0	4	0	0	16
04:30 PM	0	6	1	0	0	0	0	0	5	6	0	0	0	0	3	0	0	21
04:45 PM	0	4	0	0	0	0	0	0	3	5	0	0	0	0	1	0	0	13
Total	0	17	1	0	0	0	0	0	18	18	0	2	0	0	11	0	0	67
05:00 PM	0	6	0	0	0	0	0	0	9	2	0	0	0	0	5	0	0	22
05:15 PM	0	8	0	0	0	0	0	0	7	2	0	0	1	0	5	0	0	23
05:30 PM	0	3	0	0	0	0	0	0	1	2	0	1	0	0	5	1	0	13
05:45 PM	0	2	0	0	0	0	0	0	2	3	0	0	0	0	0	0	0	7
Total	0	19	0	0	0	0	0	0	19	9	0	1	1	0	15	1	0	65
Grand Total	0	58	1	0	1	0	0	0	53	49	0	3	3	1	71	2	0	242
Apprch %	0.0	98.3	1.7	0.0	100.0	0.0	0.0	0.0	50.5	46.7	0.0	2.9	3.9	1.3	92.2	2.6	0.0	
Total %	0.0	24.0	0.4	0.0	0.4	0.0	0.0	0.0	21.9	20.2	0.0	1.2	1.2	0.4	29.3	0.8	0.0	

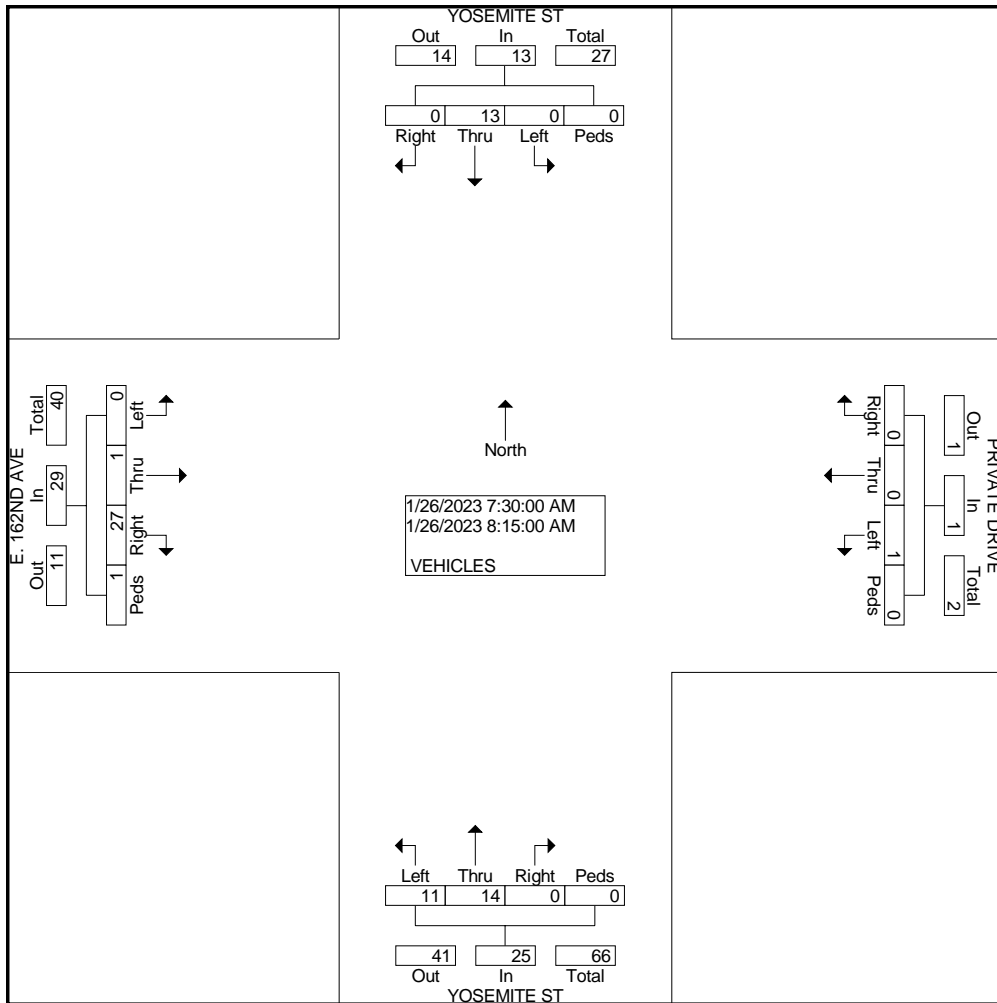
COUNTER MEASURES INC.

1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: YOSEMITE ST
E/W STREET: E. 162ND AVE
CITY: BRIGHTON
COUNTY: ADAMS

File Name : YOSE162ND
Site Code : 00000008
Start Date : 1/26/2023
Page No : 2

Start Time	YOSEMITE ST Southbound					PRIVATE DRIVE Westbound					YOSEMITE ST Northbound					E. 162ND AVE Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour From 07:30 AM to 08:15 AM - Peak 1 of 1																					
Intersection	07:30 AM																				
Volume	0	13	0	0	13	1	0	0	0	1	11	14	0	0	25	0	1	27	1	29	68
Percent	0.0	100.0	0.0	0.0		100.0	0.0	0.0	0.0		44.0	56.0	0.0	0.0		0.0	3.4	93.1	3.4		
07:30 Volume	0	1	0	0	1	1	0	0	0	1	2	5	0	0	7	0	1	14	0	15	24
Peak Factor	0.708																				
High Int.	07:45 AM																				
Volume	0	6	0	0	6	1	0	0	0	1	3	5	0	0	8	0	1	14	0	15	
Peak Factor	0.54					0.25					0.78					0.48					3



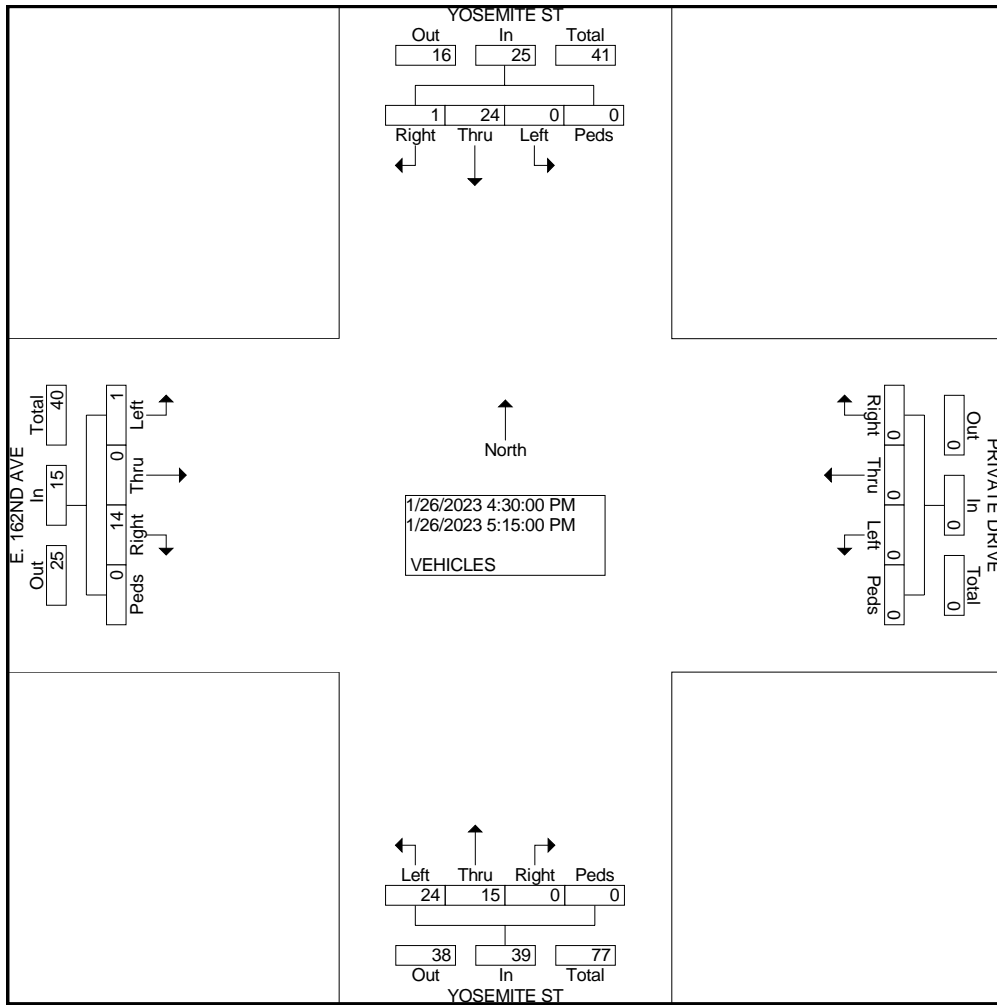
COUNTER MEASURES INC.

1889 YORK STREET
DENVER, COLORADO
303-333-7409

N/S STREET: YOSEMITE ST
E/W STREET: E. 162ND AVE
CITY: BRIGHTON
COUNTY: ADAMS

File Name : YOSE162ND
Site Code : 00000008
Start Date : 1/26/2023
Page No : 3

Start Time	YOSEMITE ST Southbound					PRIVATE DRIVE Westbound					YOSEMITE ST Northbound					E. 162ND AVE Eastbound					Int. Total	
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total		
Peak Hour From 04:30 PM to 05:15 PM - Peak 1 of 1																						
Intersect on	04:30 PM																					
Volume	0	24	1	0	25	0	0	0	0	0	24	15	0	0	39	1	0	14	0	15	79	
Percent	0.0	96.0	4.0	0.0		0.0	0.0	0.0	0.0		61.5	38.5	0.0	0.0		6.7	0.0	93.3	0.0			
05:15	05:15 PM																					
Volume	0	8	0	0	8	0	0	0	0	0	7	2	0	0	9	1	0	5	0	6	23	
Peak Factor																						0.859
High Int.	04:30 PM																					
Volume	0	8	0	0	8	0	0	0	0	0	5	6	0	0	11	05:15 PM	1	0	5	0	6	
Peak Factor	0.78										0.88					0.62					5	



COUNTER MEASURES INC.

1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: YOSEMITE ST
E/W STREET: E. 163RD AVE
CITY: BRIGHTON
COUNTY: ADAMS

File Name : YOSE163RD
Site Code : 00000005
Start Date : 1/26/2023
Page No : 1

Groups Printed- VEHICLES

Start Time	YOSEMITE ST Southbound			NO ACCESS Westbound			YOSEMITE ST Northbound			E. 163RD AVE Eastbound			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
06:30 AM	0	1	0	0	0	0	0	1	0	0	0	1	3
06:45 AM	0	1	0	0	0	0	0	2	0	0	0	0	3
Total	0	2	0	0	0	0	0	3	0	0	0	1	6
07:00 AM	0	2	1	0	0	0	1	3	0	0	0	2	9
07:15 AM	0	4	0	0	0	0	1	1	0	1	0	0	7
07:30 AM	0	2	0	0	0	0	0	3	0	0	0	1	6
07:45 AM	0	5	0	0	0	0	1	1	0	0	0	3	10
Total	0	13	1	0	0	0	3	8	0	1	0	6	32
08:00 AM	0	2	0	0	0	0	2	1	0	1	0	1	7
08:15 AM	0	4	0	0	0	0	0	0	0	0	0	0	4
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	1	1
Total	0	6	0	0	0	0	2	1	0	1	0	2	12
04:00 PM	0	3	0	0	0	0	1	3	0	0	0	1	8
04:15 PM	0	3	1	0	0	0	1	4	0	0	0	1	10
04:30 PM	0	6	0	0	0	0	0	6	0	0	0	0	12
04:45 PM	0	4	2	0	0	0	2	5	0	0	0	2	15
Total	0	16	3	0	0	0	4	18	0	0	0	4	45
05:00 PM	0	5	1	0	0	0	2	3	0	0	0	0	11
05:15 PM	0	8	0	0	0	0	1	2	0	0	0	1	12
05:30 PM	0	3	1	0	0	0	1	2	0	0	0	1	8
05:45 PM	0	2	1	0	0	0	0	3	0	0	0	2	8
Total	0	18	3	0	0	0	4	10	0	0	0	4	39
Grand Total	0	55	7	0	0	0	13	40	0	2	0	17	134
Apprch %	0.0	88.7	11.3	0.0	0.0	0.0	24.5	75.5	0.0	10.5	0.0	89.5	
Total %	0.0	41.0	5.2	0.0	0.0	0.0	9.7	29.9	0.0	1.5	0.0	12.7	

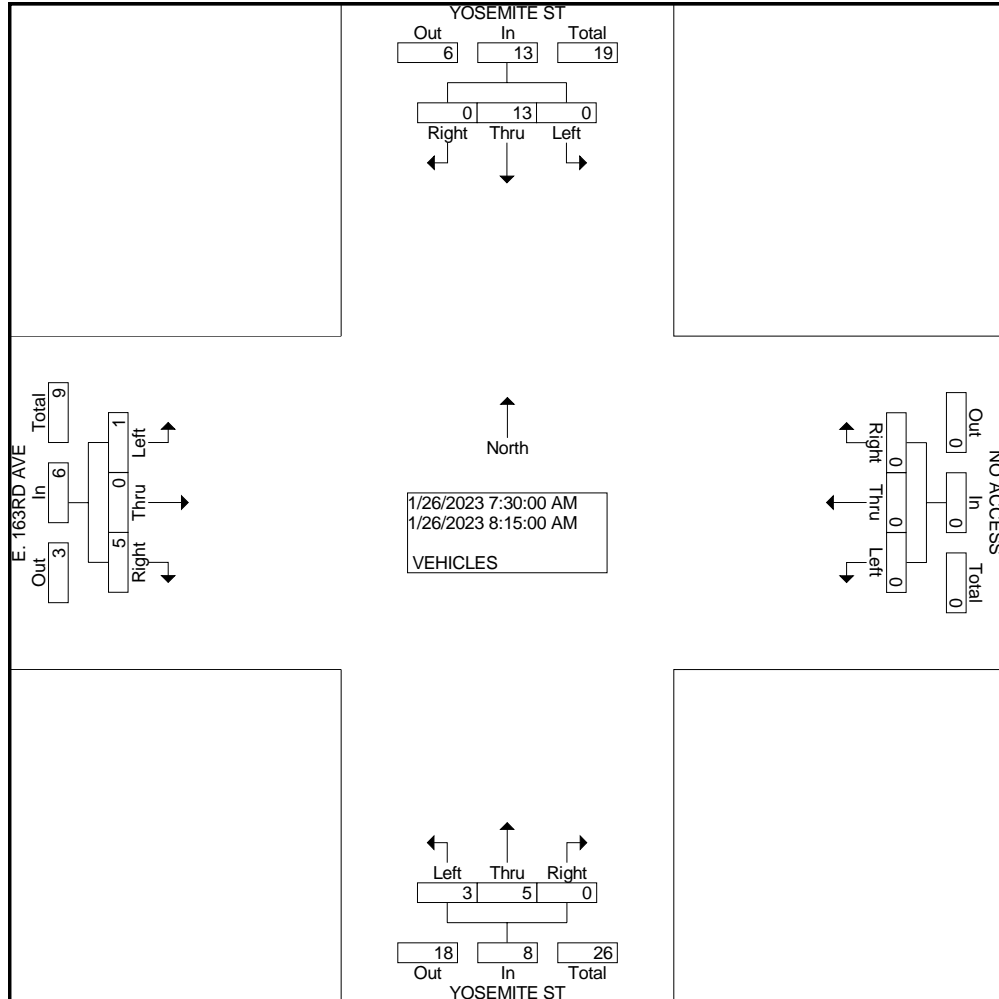
COUNTER MEASURES INC.

1889 YORK STREET
DENVER, COLORADO
303-333-7409

N/S STREET: YOSEMITE ST
E/W STREET: E. 163RD AVE
CITY: BRIGHTON
COUNTY: ADAMS

File Name : YOSE163RD
Site Code : 00000005
Start Date : 1/26/2023
Page No : 2

Start Time	YOSEMITE ST Southbound				NO ACCESS Westbound				YOSEMITE ST Northbound				E. 163RD AVE Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour From 07:30 AM to 08:15 AM - Peak 1 of 1																	
Intersection	07:30 AM																
Volume	0	13	0	13	0	0	0	0	3	5	0	8	1	0	5	6	27
Percent	0.0	100.0	0.0		0.0	0.0	0.0		37.5	62.5	0.0		16.7	0.0	83.3		
07:45 Volume	0	5	0	5	0	0	0	0	1	1	0	2	0	0	3	3	10
Peak Factor	0.675																
High Int.	07:45 AM																
Volume	0	5	0	5	0	0	0	0	0	3	0	3	0	0	3	3	
Peak Factor	0.650								0.667				0.500				



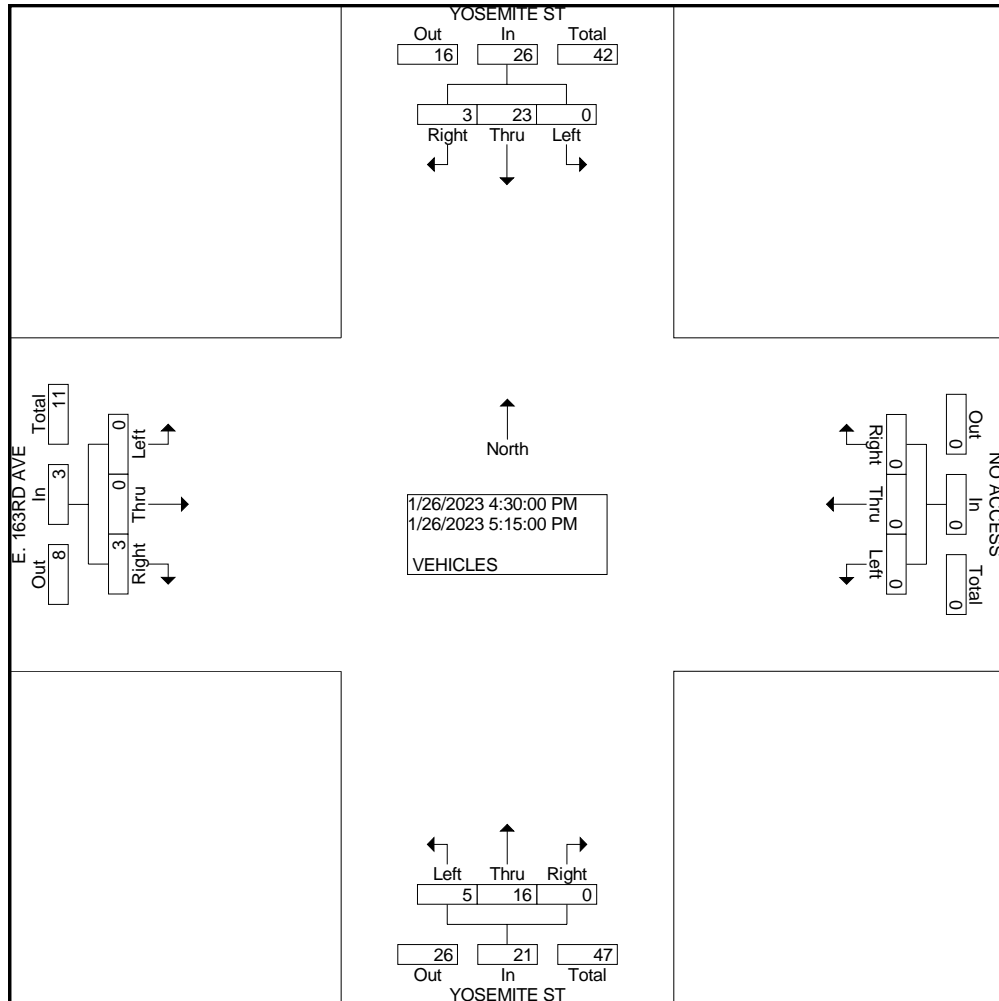
COUNTER MEASURES INC.

1889 YORK STREET
DENVER, COLORADO
303-333-7409

N/S STREET: YOSEMITE ST
E/W STREET: E. 163RD AVE
CITY: BRIGHTON
COUNTY: ADAMS

File Name : YOSE163RD
Site Code : 00000005
Start Date : 1/26/2023
Page No : 3

Start Time	YOSEMITE ST Southbound				NO ACCESS Westbound				YOSEMITE ST Northbound				E. 163RD AVE Eastbound				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour From 04:30 PM to 05:15 PM - Peak 1 of 1																	
Intersection	04:30 PM																
Volume	0	23	3	26	0	0	0	0	5	16	0	21	0	0	3	3	50
Percent	0.0	88.5	11.5		0.0	0.0	0.0		23.8	76.2	0.0		0.0	0.0	100.0		
04:45																	
Volume	0	4	2	6	0	0	0	0	2	5	0	7	0	0	2	2	15
Peak Factor	0.833																
High Int.	05:15 PM																
Volume	0	8	0	8	0	0	0	0	2	5	0	7	0	0	2	2	
Peak Factor	0.813								0.750				0.375				



COUNTER MEASURES INC.

1889 YORK STREET
DENVER.COLORADO
303-333-7409

N/S STREET: YOSEMITE ST
E/W STREET: E. 168TH AVE
CITY: BRIGHTON
COUNTY: ADAMS

File Name : YOSE168TH
Site Code : 0000011
Start Date : 1/26/2023
Page No : 1

Groups Printed- VEHICLES

Start Time	NO ACCESS Southbound				E. 168TH AVE Westbound				YOSEMITE ST Northbound				E. 168TH AVE Eastbound				Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
06:30 AM	0	0	0	0	1	35	0	0	1	0	0	0	0	25	0	0	62
06:45 AM	0	0	0	0	1	50	0	0	2	0	1	0	0	20	1	0	75
Total	0	0	0	0	2	85	0	0	3	0	1	0	0	45	1	0	137
07:00 AM	0	0	0	0	0	64	0	0	3	0	0	0	0	23	0	0	90
07:15 AM	0	0	0	0	0	63	0	0	3	0	0	0	0	28	0	0	94
07:30 AM	0	0	0	0	0	55	0	0	5	0	0	0	0	29	0	0	89
07:45 AM	0	0	0	0	1	49	0	0	2	0	0	0	0	22	2	0	76
Total	0	0	0	0	1	231	0	0	13	0	0	0	0	102	2	0	349
08:00 AM	0	0	0	0	0	41	0	0	2	0	0	0	0	32	1	0	76
08:15 AM	0	0	0	0	1	42	0	0	1	0	1	0	0	18	2	0	65
Total	0	0	0	0	1	83	0	0	3	0	1	0	0	50	3	0	141
04:00 PM	0	0	0	0	0	34	0	0	4	0	0	0	0	64	3	0	105
04:15 PM	0	0	0	0	2	35	0	0	3	0	0	0	0	59	0	0	99
04:30 PM	0	0	0	0	0	37	0	0	3	0	1	0	0	54	5	0	100
04:45 PM	0	0	0	0	1	45	0	0	3	0	1	0	0	58	4	0	112
Total	0	0	0	0	3	151	0	0	13	0	2	0	0	235	12	0	416
05:00 PM	0	0	0	0	0	34	0	0	1	0	0	0	0	72	3	0	110
05:15 PM	0	0	0	0	1	32	1	0	2	0	1	0	0	45	4	0	86
05:30 PM	0	0	0	0	1	41	0	0	1	0	1	0	0	63	2	0	109
05:45 PM	0	0	0	0	1	23	0	0	0	0	1	0	0	47	1	0	73
Total	0	0	0	0	3	130	1	0	4	0	3	0	0	227	10	0	378
Grand Total	0	0	0	0	10	680	1	0	36	0	7	0	0	659	28	0	1421
Apprch %	0.0	0.0	0.0	0.0	1.4	98.4	0.1	0.0	83.7	0.0	16.3	0.0	0.0	95.9	4.1	0.0	
Total %	0.0	0.0	0.0	0.0	0.7	47.9	0.1	0.0	2.5	0.0	0.5	0.0	0.0	46.4	2.0	0.0	

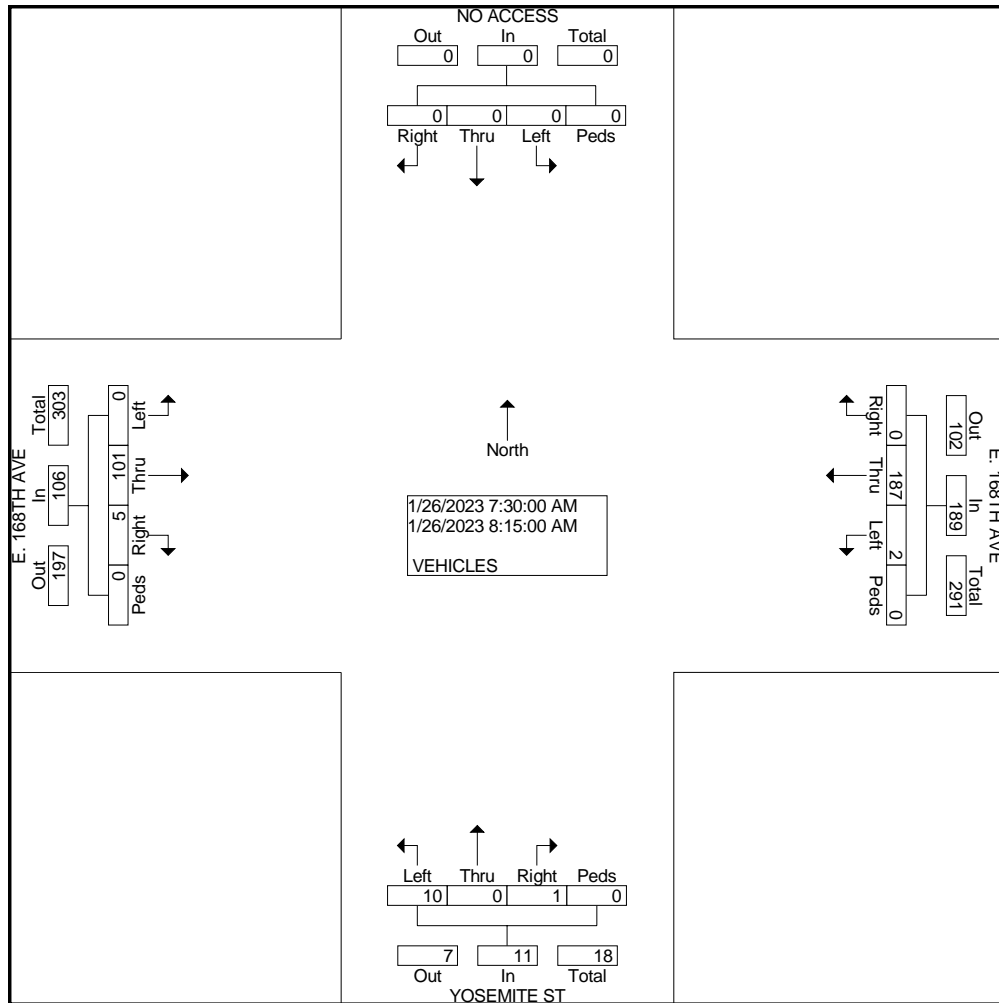
COUNTER MEASURES INC.

1889 YORK STREET
DENVER, COLORADO
303-333-7409

N/S STREET: YOSEMITE ST
E/W STREET: E. 168TH AVE
CITY: BRIGHTON
COUNTY: ADAMS

File Name : YOSE168TH
Site Code : 0000011
Start Date : 1/26/2023
Page No : 2

Start Time	NO ACCESS Southbound					E. 168TH AVE Westbound					YOSEMITE ST Northbound					E. 168TH AVE Eastbound					Int. Total
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	
Peak Hour From 07:30 AM to 08:15 AM - Peak 1 of 1																					
Intersection	07:30 AM																				
Volume	0	0	0	0	0	2	187	0	0	189	10	0	1	0	11	0	101	5	0	106	306
Percent	0.0	0.0	0.0	0.0		1.1	98.9	0.0	0.0		90.9	0.0	9.1	0.0		0.0	95.3	4.7	0.0		
07:30 Volume	0	0	0	0	0	0	55	0	0	55	5	0	0	0	5	0	29	0	0	29	89
Peak Factor																					
High Int. Volume	0	0	0	0	0	07:30 AM					07:30 AM					08:00 AM					
Peak Factor						0.859					0.559					0.803					



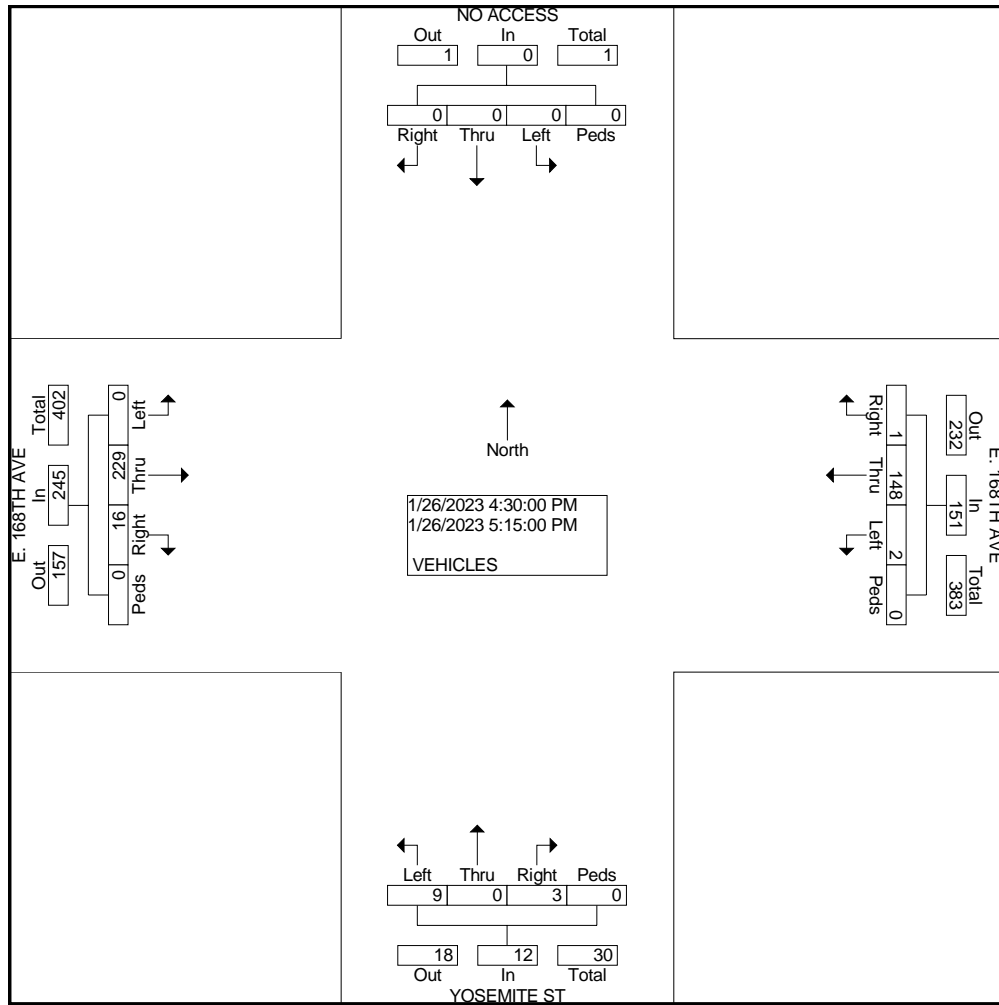
COUNTER MEASURES INC.

1889 YORK STREET
DENVER, COLORADO
303-333-7409

N/S STREET: YOSEMITE ST
E/W STREET: E. 168TH AVE
CITY: BRIGHTON
COUNTY: ADAMS

File Name : YOSE168TH
Site Code : 0000011
Start Date : 1/26/2023
Page No : 3

Start Time	NO ACCESS Southbound					E. 168TH AVE Westbound					YOSEMITE ST Northbound					E. 168TH AVE Eastbound					Int. Total	
	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total		
Peak Hour From 04:30 PM to 05:15 PM - Peak 1 of 1																						
Intersect on	04:30 PM																					
Volume	0	0	0	0	0	2	148	1	0	151	9	0	3	0	12	0	229	16	0	245	408	
Percent	0.0	0.0	0.0	0.0		1.3	98.0	0.7	0.0		75.0	0.0	25.0	0.0		0.0	93.5	6.5	0.0			
04:45 Volume	0	0	0	0	0	1	45	0	0	46	3	0	1	0	4	0	58	4	0	62	112	
Peak Factor																						0.911
High Int. Volume	04:45 PM					04:30 PM					05:00 PM											
Peak Factor	0	0	0	0	0	1	45	0	0	46	3	0	1	0	4	0	72	3	0	75	0.81	
											0.75					0.81					7	
											1					0						



COUNTER MEASURES INC.
1889 YORK STREET
DENVER, COLORADO 80206
303-333-7409

Location: TUCSON ST N-O HWY7
 City: BRIGHTON
 County: ADAMS
 Direction: NORTH/SOUTH

Site Code: 232820
 Station ID: 232820

Start Time	28-Mar-23 Tue	NORTH	SOUTH							Total
12:00 AM		*	*							*
01:00		*	*							*
02:00		*	*							*
03:00		*	*							*
04:00		*	*							*
05:00		*	*							*
06:00		*	*							*
07:00		*	*							*
08:00		*	*							*
09:00		*	*							*
10:00		*	*							*
11:00		21	26							47
12:00 PM		19	31							50
01:00		21	24							45
02:00		23	23							46
03:00		37	21							58
04:00		51	30							81
05:00		80	41							121
06:00		61	35							96
07:00		41	26							67
08:00		25	19							44
09:00		21	14							35
10:00		11	9							20
11:00		6	5							11
Total		417	304							721
Percent		57.8%	42.2%							
AM Peak	-	11:00	11:00	-	-	-	-	-	-	11:00
Vol.	-	21	26	-	-	-	-	-	-	47
PM Peak	-	17:00	17:00	-	-	-	-	-	-	17:00
Vol.	-	80	41	-	-	-	-	-	-	121

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Location: TUCSON ST N-O HWY7
 City: BRIGHTON
 County: ADAMS
 Direction: NORTH/SOUTH

Site Code: 232820
 Station ID: 232820

Start Time	29-Mar-23 Wed	NORTH	SOUTH							Total
12:00 AM		4	4							8
01:00		3	4							7
02:00		4	3							7
03:00		6	3							9
04:00		12	11							23
05:00		15	16							31
06:00		21	18							39
07:00		26	23							49
08:00		28	45							73
09:00		32	39							71
10:00		26	31							57
11:00		21	26							47
12:00 PM		19	33							52
01:00		21	16							37
02:00		*	*							*
03:00		*	*							*
04:00		*	*							*
05:00		*	*							*
06:00		*	*							*
07:00		*	*							*
08:00		*	*							*
09:00		*	*							*
10:00		*	*							*
11:00		*	*							*
Total		238	272							510
Percent		46.7%	53.3%							
AM Peak	-	09:00	08:00	-	-	-	-	-	-	08:00
Vol.	-	32	45	-	-	-	-	-	-	73
PM Peak	-	13:00	12:00	-	-	-	-	-	-	12:00
Vol.	-	21	33	-	-	-	-	-	-	52
Grand Total		655	576							1231
Percent		53.2%	46.8%							
ADT		ADT 1,092	AADT 1,092							

COUNTER MEASURES INC.
1889 YORK STREET
DENVER, COLORADO 80206
303-333-7409

Location: RIVERDALE RD S-O HWY 7
 City: BRIGHTON
 County: ADAMS
 Direction: NORTH/SOUTH

Site Code: 232819
 Station ID: 232819

Start Time	28-Mar-23 Tue	NB	SB							Total
12:00 AM		*	*							*
01:00		*	*							*
02:00		*	*							*
03:00		*	*							*
04:00		*	*							*
05:00		*	*							*
06:00		*	*							*
07:00		*	*							*
08:00		*	*							*
09:00		*	*							*
10:00		131	128							259
11:00		126	112							238
12:00 PM		128	121							249
01:00		119	109							228
02:00		122	101							223
03:00		121	98							219
04:00		189	145							334
05:00		251	211							462
06:00		231	165							396
07:00		149	120							269
08:00		121	108							229
09:00		89	77							166
10:00		43	51							94
11:00		23	41							64
Total		1843	1587							3430
Percent		53.7%	46.3%							
AM Peak	-	10:00	10:00	-	-	-	-	-	-	10:00
Vol.	-	131	128	-	-	-	-	-	-	259
PM Peak	-	17:00	17:00	-	-	-	-	-	-	17:00
Vol.	-	251	211	-	-	-	-	-	-	462

COUNTER MEASURES INC.
1889 YORK STREET
DENVER, COLORADO 80206
303-333-7409

Location: RIVERDALE RD S-O HWY 7
 City: BRIGHTON
 County: ADAMS
 Direction: NORTH/SOUTH

Site Code: 232819
 Station ID: 232819

Start Time	29-Mar-23 Wed	NB	SB	Total
12:00 AM		19	32	51
01:00		16	21	37
02:00		11	13	24
03:00		10	14	24
04:00		16	21	37
05:00		19	31	50
06:00		26	40	66
07:00		47	77	124
08:00		118	231	349
09:00		142	140	282
10:00		*	*	*
11:00		*	*	*
12:00 PM		*	*	*
01:00		*	*	*
02:00		*	*	*
03:00		*	*	*
04:00		*	*	*
05:00		*	*	*
06:00		*	*	*
07:00		*	*	*
08:00		*	*	*
09:00		*	*	*
10:00		*	*	*
11:00		*	*	*
Total		424	620	1044
Percent		40.6%	59.4%	
AM Peak	-	09:00	08:00	08:00
Vol.	-	142	231	349
PM Peak	-	-	-	-
Vol.	-	-	-	-
Grand Total		2267	2207	4474
Percent		50.7%	49.3%	
ADT		ADT 3,267	AADT 3,267	

COUNTER MEASURES INC.
1889 YORK STREET
DENVER, COLORADO 80206
303-333-7409

Location: HAVANA ST N-O HWY 7
 City: BRIGHTON
 County: ADAMS
 Direction: NORTH/SOUTH

Site Code: 232808
 Station ID: 232808

Start Time	29-Mar-23 Wed	NB	SB	Total						
12:00 AM		1	2	3						
01:00		3	0	3						
02:00		2	1	3						
03:00		5	2	7						
04:00		4	9	13						
05:00		9	21	30						
06:00		16	51	67						
07:00		21	24	45						
08:00		24	23	47						
09:00		19	17	36						
10:00		17	18	35						
11:00		16	20	36						
12:00 PM		19	14	33						
01:00		20	13	33						
02:00		21	19	40						
03:00		37	24	61						
04:00		49	24	73						
05:00		48	32	80						
06:00		21	24	45						
07:00		19	14	33						
08:00		16	9	25						
09:00		12	7	19						
10:00		11	5	16						
11:00		9	4	13						
Total		419	377	796						
Percent		52.6%	47.4%							
AM Peak	-	08:00	06:00	-	-	-	-	-	-	06:00
Vol.	-	24	51	-	-	-	-	-	-	67
PM Peak	-	16:00	17:00	-	-	-	-	-	-	17:00
Vol.	-	49	32	-	-	-	-	-	-	80

COUNTER MEASURES INC.
1889 YORK STREET
DENVER, COLORADO 80206
303-333-7409

Location: HAVANA ST N-O HWY 7
 City: BRIGHTON
 County: ADAMS
 Direction: NORTH/SOUTH

Site Code: 232808
 Station ID: 232808

Start Time	30-Mar-23 Thu	NB	SB							Total
12:00 AM		3	3							6
01:00		*	*							*
02:00		*	*							*
03:00		*	*							*
04:00		*	*							*
05:00		*	*							*
06:00		*	*							*
07:00		*	*							*
08:00		*	*							*
09:00		*	*							*
10:00		*	*							*
11:00		*	*							*
12:00 PM		*	*							*
01:00		*	*							*
02:00		*	*							*
03:00		*	*							*
04:00		*	*							*
05:00		*	*							*
06:00		*	*							*
07:00		*	*							*
08:00		*	*							*
09:00		*	*							*
10:00		*	*							*
11:00		*	*							*
Total		3	3							6
Percent		50.0%	50.0%							
AM Peak	-	00:00	00:00	-	-	-	-	-	-	00:00
Vol.	-	3	3	-	-	-	-	-	-	6
PM Peak	-	-	-	-	-	-	-	-	-	-
Vol.	-	-	-	-	-	-	-	-	-	-
Grand Total		422	380							802
Percent		52.6%	47.4%							
ADT		ADT 521	AADT 521							

COUNTER MEASURES INC.
1889 YORK STREET
DENVER, COLORADO 80206
303-333-7409

Location: YOSEMITE ST N-O HWY 7
 City: BRIGHTON
 County: ADAMS
 Direction: NORTH/SOUTH

Site Code: 232803
 Station ID: 232803

Start Time	29-Mar-23 Wed	NB	SB	Total						
12:00 AM		2	3	5						
01:00		0	2	2						
02:00		0	0	0						
03:00		1	1	2						
04:00		1	2	3						
05:00		5	9	14						
06:00		9	21	30						
07:00		11	51	62						
08:00		26	24	50						
09:00		16	23	39						
10:00		12	17	29						
11:00		13	18	31						
12:00 PM		18	20	38						
01:00		13	14	27						
02:00		16	13	29						
03:00		21	19	40						
04:00		27	24	51						
05:00		48	24	72						
06:00		39	32	71						
07:00		25	24	49						
08:00		17	14	31						
09:00		11	9	20						
10:00		8	7	15						
11:00		4	5	9						
Total		343	376	719						
Percent		47.7%	52.3%							
AM Peak	-	08:00	07:00	-	-	-	-	-	-	07:00
Vol.	-	26	51	-	-	-	-	-	-	62
PM Peak	-	17:00	18:00	-	-	-	-	-	-	17:00
Vol.	-	48	32	-	-	-	-	-	-	72

COUNTER MEASURES INC.
1889 YORK STREET
DENVER, COLORADO 80206
303-333-7409

Location: YOSEMITE ST N-O HWY 7
 City: BRIGHTON
 County: ADAMS
 Direction: NORTH/SOUTH

Site Code: 232803
 Station ID: 232803

Start Time	30-Mar-23 Thu	NB	SB							Total
12:00 AM		3	4							7
01:00		*	*							*
02:00		*	*							*
03:00		*	*							*
04:00		*	*							*
05:00		*	*							*
06:00		*	*							*
07:00		*	*							*
08:00		*	*							*
09:00		*	*							*
10:00		*	*							*
11:00		*	*							*
12:00 PM		*	*							*
01:00		*	*							*
02:00		*	*							*
03:00		*	*							*
04:00		*	*							*
05:00		*	*							*
06:00		*	*							*
07:00		*	*							*
08:00		*	*							*
09:00		*	*							*
10:00		*	*							*
11:00		*	*							*
Total		3	4							7
Percent		42.9%	57.1%							
AM Peak	-	00:00	00:00	-	-	-	-	-	-	00:00
Vol.	-	3	4	-	-	-	-	-	-	7
PM Peak	-	-	-	-	-	-	-	-	-	-
Vol.	-	-	-	-	-	-	-	-	-	-
Grand Total		346	380							726
Percent		47.7%	52.3%							
ADT		ADT 373	AADT 373							

COUNTER MEASURES INC.
1889 YORK STREET
DENVER, COLORADO 80206
303-333-7409

Location: YOSEMITE ST S-O 168TH AVE
 City: BRIGHTON
 County: ADAMS
 Direction: NORTH/SOUTH

Site Code: 232903
 Station ID: 232903

Start Time	29-Mar-23 Wed	NB	SB	Total						
12:00 AM		1	1	2						
01:00		0	0	0						
02:00		0	1	1						
03:00		1	1	2						
04:00		1	2	3						
05:00		4	3	7						
06:00		5	3	8						
07:00		14	4	18						
08:00		6	8	14						
09:00		5	5	10						
10:00		5	4	9						
11:00		5	4	9						
12:00 PM		5	3	8						
01:00		7	4	11						
02:00		7	5	12						
03:00		9	7	16						
04:00		12	9	21						
05:00		8	16	24						
06:00		9	12	21						
07:00		9	9	18						
08:00		7	7	14						
09:00		5	5	10						
10:00		4	5	9						
11:00		2	2	4						
Total		131	120	251						
Percent		52.2%	47.8%							
AM Peak	-	07:00	08:00	-	-	-	-	-	-	07:00
Vol.	-	14	8	-	-	-	-	-	-	18
PM Peak	-	16:00	17:00	-	-	-	-	-	-	17:00
Vol.	-	12	16	-	-	-	-	-	-	24

COUNTER MEASURES INC.
1889 YORK STREET
DENVER, COLORADO 80206
303-333-7409

Location: YOSEMITE ST S-O 168TH AVE
 City: BRIGHTON
 County: ADAMS
 Direction: NORTH/SOUTH

Site Code: 232903
 Station ID: 232903

Start Time	30-Mar-23 Thu	NB	SB							Total
12:00 AM		2	2							4
01:00		*	*							*
02:00		*	*							*
03:00		*	*							*
04:00		*	*							*
05:00		*	*							*
06:00		*	*							*
07:00		*	*							*
08:00		*	*							*
09:00		*	*							*
10:00		*	*							*
11:00		*	*							*
12:00 PM		*	*							*
01:00		*	*							*
02:00		*	*							*
03:00		*	*							*
04:00		*	*							*
05:00		*	*							*
06:00		*	*							*
07:00		*	*							*
08:00		*	*							*
09:00		*	*							*
10:00		*	*							*
11:00		*	*							*
Total		2	2							4
Percent		50.0%	50.0%							
AM Peak	-	00:00	00:00	-	-	-	-	-	-	00:00
Vol.	-	2	2	-	-	-	-	-	-	4
PM Peak	-	-	-	-	-	-	-	-	-	-
Vol.	-	-	-	-	-	-	-	-	-	-
Grand Total		133	122							255
Percent		52.2%	47.8%							
ADT		ADT 293	ADT 293							AADT 293

COUNTER MEASURES INC.
1889 YORK STREET
DENVER, COLORADO 80206
303-333-7409

Location: LIMA ST S-O 168TH AVE
 City: BRIGHTON
 County: ADAMS
 Direction: NORTH/SOUTH

Site Code: 232920
 Station ID: 232920

Start Time	29-Mar-23 Wed	NB	SB	Total						
12:00 AM		1	2	3						
01:00		1	4	5						
02:00		0	0	0						
03:00		0	0	0						
04:00		1	1	2						
05:00		2	6	8						
06:00		2	4	6						
07:00		6	5	11						
08:00		17	14	31						
09:00		11	8	19						
10:00		7	4	11						
11:00		4	5	9						
12:00 PM		3	5	8						
01:00		4	5	9						
02:00		6	8	14						
03:00		5	10	15						
04:00		7	18	25						
05:00		4	24	28						
06:00		14	30	44						
07:00		16	21	37						
08:00		9	14	23						
09:00		8	11	19						
10:00		6	9	15						
11:00		4	8	12						
Total		138	216	354						
Percent		39.0%	61.0%							
AM Peak	-	08:00	08:00	-	-	-	-	-	-	08:00
Vol.	-	17	14	-	-	-	-	-	-	31
PM Peak	-	19:00	18:00	-	-	-	-	-	-	18:00
Vol.	-	16	30	-	-	-	-	-	-	44

COUNTER MEASURES INC.
1889 YORK STREET
DENVER, COLORADO 80206
303-333-7409

Location: LIMA ST S-O 168TH AVE
 City: BRIGHTON
 County: ADAMS
 Direction: NORTH/SOUTH

Site Code: 232920
 Station ID: 232920

Start Time	30-Mar-23 Thu	NB	SB	Total
12:00 AM		3	9	12
01:00		*	*	*
02:00		*	*	*
03:00		*	*	*
04:00		*	*	*
05:00		*	*	*
06:00		*	*	*
07:00		*	*	*
08:00		*	*	*
09:00		*	*	*
10:00		*	*	*
11:00		*	*	*
12:00 PM		*	*	*
01:00		*	*	*
02:00		*	*	*
03:00		*	*	*
04:00		*	*	*
05:00		*	*	*
06:00		*	*	*
07:00		*	*	*
08:00		*	*	*
09:00		*	*	*
10:00		*	*	*
11:00		*	*	*
Total		3	9	12
Percent		25.0%	75.0%	
AM Peak	-	00:00	00:00	-
Vol.	-	3	9	-
PM Peak	-	-	-	-
Vol.	-	-	-	-
Grand Total		141	225	366
Percent		38.5%	61.5%	
ADT		ADT 306	AADT 306	

Crash Data



CDOT
DiExSys™ Vision Zero Suite
General Summary Report

12/15/2023

SH7 Segment MP 72.6-76.4 **Type: Segment** **Search Name: Rt: 7 Section: DMM: [72.6 - 76.4]** **From: 1/1/2018** **To: 12/31/2022**

Crash Severity			
By	Crashes:	Number of	People:
FAT:	2	Killed:	2
INJ:	15	Injured:	28
PDO:	24		
TOTAL:	41		

Crash Location	
On Road:	36
Off Road Left:	0
Off Road Right:	4
Off Road at Tee:	0
Off in Median:	1
Off Unknown:	0
Unknown:	0
TOTAL:	41

Weather Conditions	
None:	40
Rain:	0
Snow/Sleet/Hail:	1
Fog:	0
Dust:	0
Wind:	0
Unknown:	0
TOTAL:	41

Crash Type			
Overtaking:	1	Bridge Abutment:	0
Other Non-Collision:	0	Column/Pier:	0
Pedestrian:	0	Culvert/Headwall:	0
Broadside:	0	Embankment:	2
Head On:	4	Curb:	0
Rear End:	21	Delineator Post:	0
Sideswipe (Same):	2	Fence:	1
Sideswipe (Opposite):	2	Tree:	0
Approach Turn:	0	Lrg Bldrs or Rocks:	0
Overtaking Turn:	3	Barricade:	0
Parked Motor Veh:	0	Wall/Building:	0
Railway Veh:	0	Crash Cushion:	0
Bicycle:	0	Mailbox:	0
Motorized Bicycle:	0	Other Fixed Object:	0
Domestic Animal:	1	Total Fixed Objects:	3
Wild Animal:	3	Rocks in Roadway:	0
Light/Utility Pole:	0	Vehicle Cargo/Debris:	1
Traffic Signal Pole:	0	Road Maint Equip:	0
Sign:	0	Involving Other Object:	0
Bridge Rail:	0	Total Other Object:	1
Guard Rail:	0	TOTAL:	41
Cable Rail:	0		
Concrete Barrier:	0		

Lighting Conditions	
Daylight:	22
Dawn/Dusk:	2
Dark-Lighted:	2
Dark-Unlighted:	15
Unknown:	0
TOTAL:	41

Road Conditions	
Dry:	40
Wet:	0
Muddy:	0
Snowy:	1
Icy:	0
Slushy:	0
Foreign Material:	0
Road Treatment:	0
Unknown:	0
TOTAL:	41

Number of Vehicles	
One Car:	7
Two Car:	29
Three or More:	5
Unknown:	0
TOTAL:	41

Road Description Details by Vehicle	
At Intersection:	0
At Driveway Access:	0
Intersection Related:	0
Non Intersection:	41
In Alley:	0
Roundabout:	0
Ramp:	0
Parking Lot:	0
Unknown:	0
TOTAL:	41



CDOT
DiExSys™ Vision Zero Suite
General Summary Report

12/15/2023

SH7 Segment MP 72.6-76.4

Type: Segment Search Name: Rt: 7 Section: DMM: [72.6 - 76.4] From: 1/1/2018 To: 12/31/2022

Vehicle Type Details by Vehicle

Veh:	Vehicle 1	Vehicle 2	Vehicle 3
Psgr Car/Psgr Van:	20	15	2
Psgr Car/Psgr Van w/Trl:	0	0	0
Pickup Truck/Utility Van:	8	7	1
Pickup Truck/Utility Van w/Trl:	0	0	0
SUV:	10	9	0
SUV w/Trl:	0	0	0
Truck 10k lbs or Less:	0	0	0
Trucks > 10k lbs/Busses > 15 People:	3	1	1
Motor Home:	0	0	0
School Bus 15 People or Less:	0	0	0
Non School Bus 15 People or Less:	0	0	0
Motorcycle:	0	0	0
Bicycle:	0	0	0
Motorized Bicycle:	0	0	0
Farm Equipment:	0	0	0
Hit and Run/Unknown Vehicle:	0	1	1
Other:	0	0	0
Unknown:	0	1	0
TOTAL:	41	34	5

Mainline/Ramps/Frontage

Crossroad A:	0
B:	0
C:	0
D:	0
E:	0
F:	0
G:	0
H:	0
I:	0
J:	0
Left Frontage Road (L):	0
K:	0
M:	0
N:	0
O:	0
P:	0
Mainline/HOV:	41
Right Frontage Road (R):	0
Rest Area/Truck Ramp (T):	0
Other (Z):	0
TOTAL:	41

Crash Rates

PDO:	0.21 / MVMT
Injury:	0.13 / MVMT
Fatal:	1.77 / 100MVMT
Total:	0.36 / MVMT



CDOT
DiExSys™ Vision Zero Suite
Diagnostics Report

12/15/2023

SH7 Cutoff: 5 Acc's @ 95

Category/Trait	Statewide Average		This Location		Probability
	%	# Crashes		%	%
<u>Crash Severity</u>					
Injury (INJ)	25.73%	15		36.59%	95.74%
<u>Number Of Vehicles</u>					
Two Vehicle Accidents	13.41%	29		70.73%	100%
Three or More Vehicle Accidents	1.34%	5		12.2%	100%
<u>Crash Location</u>					
On Road	55.78%	36		87.8%	100%
<u>Crash Type</u>					
Rear End	4.48%	21		51.22%	100%

Highway Class: CO - Rural Flat and Rolling 2-Lane UnDivided Highways - AADT All Totals (2016)

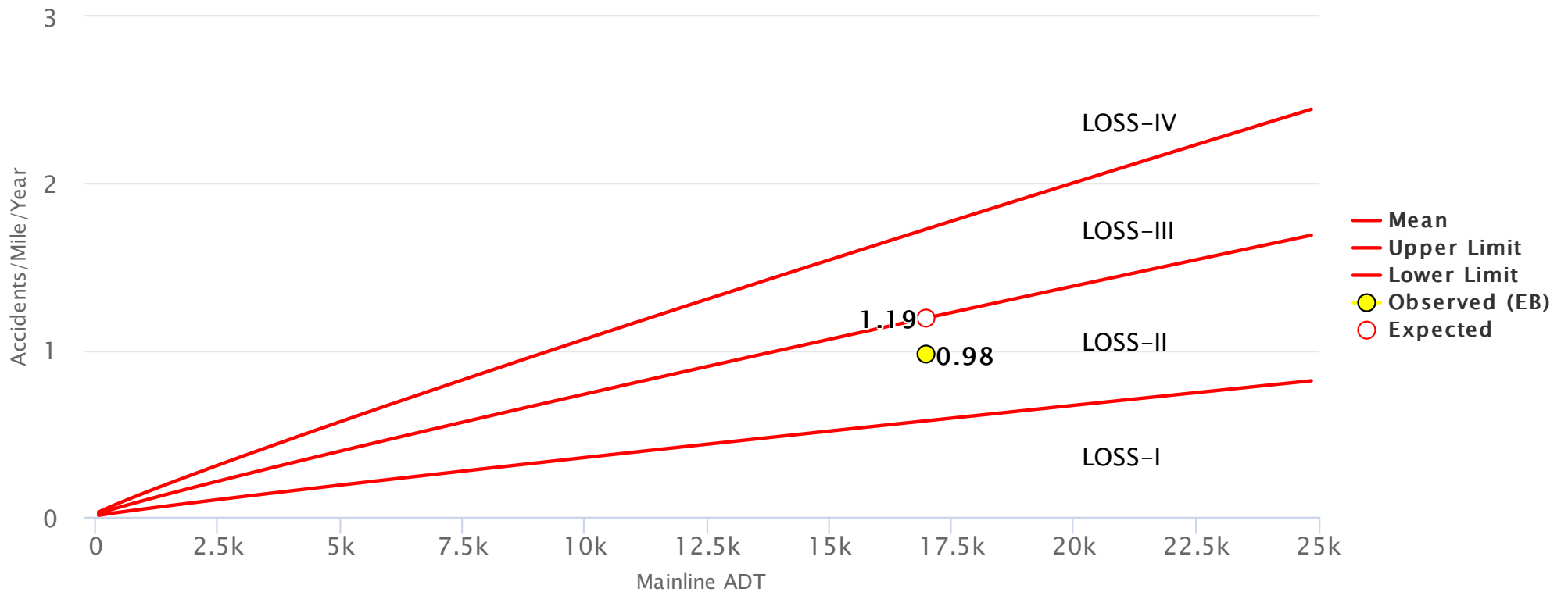
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12/19/2023

SH7 Severity SPFs Type: Segment Search Name: Rt: 7 Section: D MM: [72.6 - 76.4] From: 1/1/2018 To: 12/31/2022

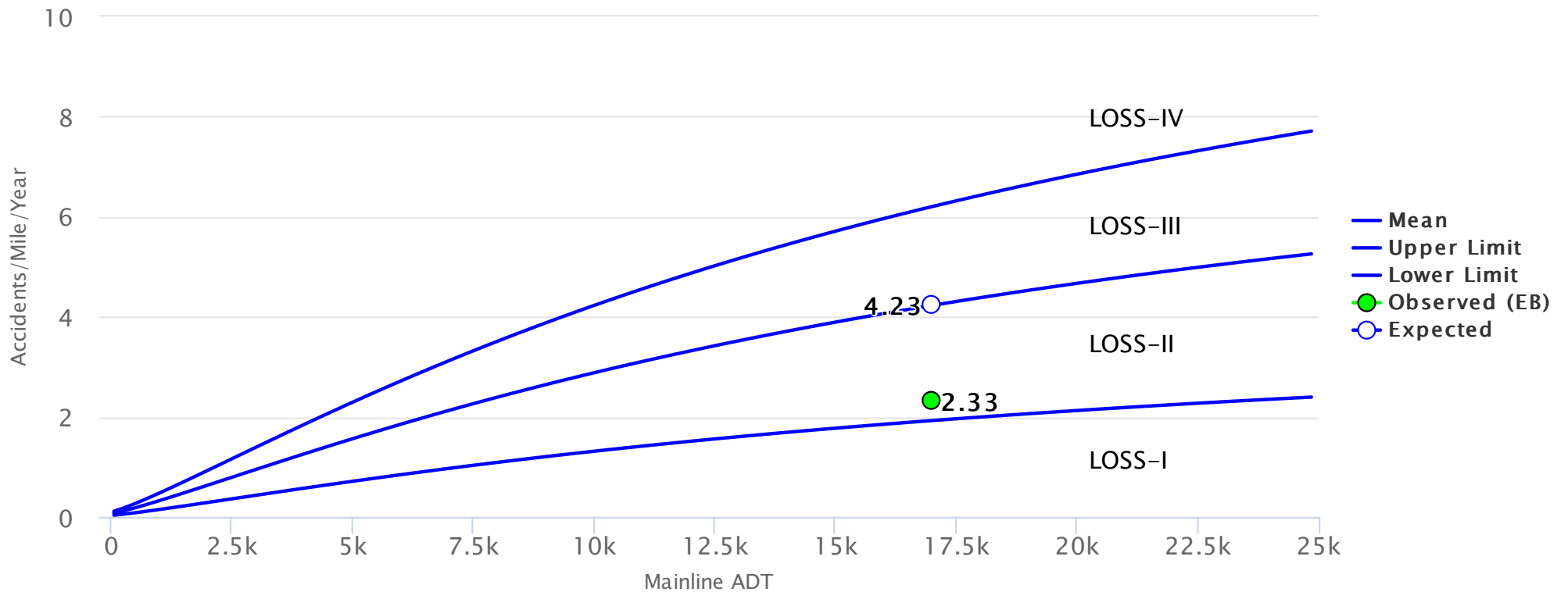




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12/19/2023

SH7 Total SPFs Type: Segment Search Name: Rt: 7 Section: D MM: [72.6 - 76.4] From: 1/1/2018 To: 12/31/2022





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DiExSys™ Vision Zero Suite
General Summary Report

12/13/2023

Summary **Type: Intersection** **Search Name: Rt: 7 Section: DMM: [72.7 - 72.9]** **From: 1/1/2018** **To: 12/31/2022**

Crash Severity			
By	Crashes:	Number of	People:
FAT:	0	Killed:	0
INJ:	5	Injured:	8
PDO:	16		
TOTAL:	21		

Crash Location	
On Road:	20
Off Road Left:	0
Off Road Right:	1
Off Road at Tee:	0
Off in Median:	0
Off Unknown:	0
Unknown:	0
TOTAL:	21

Weather Conditions	
None:	20
Rain:	1
Snow/Sleet/Hail:	0
Fog:	0
Dust:	0
Wind:	0
Unknown:	0
TOTAL:	21

Crash Type			
Overturning:	0	Bridge Abutment:	0
Other Non-Collision:	0	Column/Pier:	0
Pedestrian:	0	Culvert/Headwall:	1
Broadside:	3	Embankment:	0
Head On:	1	Curb:	0
Rear End:	15	Delineator Post:	0
Sideswipe (Same):	1	Fence:	0
Sideswipe (Opposite):	0	Tree:	0
Approach Turn:	0	Lrg Bldrs or Rocks:	0
Overtaking Turn:	0	Barricade:	0
Parked Motor Veh:	0	Wall/Building:	0
Railway Veh:	0	Crash Cushion:	0
Bicycle:	0	Mailbox:	0
Motorized Bicycle:	0	Other Fixed Object:	0
Domestic Animal:	0	Total Fixed Objects:	1
Wild Animal:	0	Rocks in Roadway:	0
Light/Utility Pole:	0	Vehicle Cargo/Debris:	0
Traffic Signal Pole:	0	Road Maint Equip:	0
Sign:	0	Involving Other Object:	0
Bridge Rail:	0	Total Other Object:	0
Guard Rail:	0	TOTAL:	21
Cable Rail:	0		
Concrete Barrier:	0		

Lighting Conditions	
Daylight:	17
Dawn/Dusk:	1
Dark-Lighted:	3
Dark-Unlighted:	0
Unknown:	0
TOTAL:	21

Road Conditions	
Dry:	19
Wet:	2
Muddy:	0
Snowy:	0
Icy:	0
Slushy:	0
Foreign Material:	0
Road Treatment:	0
Unknown:	0
Dry W/Icy Road Treatment:	0
Wet W/Icy Road Treatment:	0
Snowy W/Icy Road Treatment:	0
Icy W/Icy Road Treatment:	0
Slushy W/Icy Road Treatment:	0
TOTAL:	21

Number of Vehicles	
One Car:	1
Two Car:	17
Three or More:	3
Unknown:	0
TOTAL:	21

Road Description Details by Vehicle	
At Intersection:	10
At Driveway Access:	0
Intersection Related:	11
Non Intersection:	0
In Alley:	0
Roundabout:	0
Ramp:	0
Parking Lot:	0
Unknown:	0
TOTAL:	21



CDOT
DiExSys™ Vision Zero Suite
General Summary Report

12/13/2023

Summary **Type: Intersection** **Search Name: Rt: 7 Section: DMM: [72.7 - 72.9]** **From: 1/1/2018** **To: 12/31/2022**

Vehicle Type Details by Vehicle

Veh:	Vehicle 1	Vehicle 2	Vehicle 3
Psgr Car/Psgr Van:	9	9	2
Psgr Car/Psgr Van w/Trl:	0	0	0
Pickup Truck/Utility Van:	5	5	0
Pickup Truck/Utility Van w/Trl:	0	0	0
SUV:	5	5	1
SUV w/Trl:	0	0	0
Truck 10k lbs or Less:	0	0	0
Trucks > 10k lbs/Busses > 15 People:	2	1	0
Motor Home:	0	0	0
School Bus 15 People or Less:	0	0	0
Non School Bus 15 People or Less:	0	0	0
Motorcycle:	0	0	0
Bicycle:	0	0	0
Motorized Bicycle:	0	0	0
Farm Equipment:	0	0	0
Hit and Run/Unknown Vehicle:	0	0	0
Other:	0	0	0
Unknown:	0	0	0
TOTAL:	21	20	3

Mainline/Ramps/Frontage

Crossroad A:	0
B:	0
C:	0
D:	0
E:	0
F:	0
G:	0
H:	0
I:	0
J:	0
Left Frontage Road (L):	0
K:	0
M:	0
N:	0
O:	0
P:	0
Mainline/HOV:	21
Right Frontage Road (R):	0
Rest Area/Truck Ramp (T):	0
Other (Z):	0
TOTAL:	21

Crash Rates

PDO: 2.74 / MVMT
 Injury: 0.86 / MVMT
 Fatal: 0 / 100MVMT
 Total: 3.6 / MVMT

Human Contributing Factor Details by Vehicle

Veh:	Vehicle 1	Vehicle 2	Vehicle 3
No Apparent Contributing Factor:	11	19	2
Asleep at the Wheel:	0	0	0
Illness:	0	0	0
Distracted by Passenger:	1	0	0
Driver Inexperience:	2	0	0
Driver Fatigue:	0	0	0
Driver Preoccupied:	3	0	0
Driver Unfamiliar with Area:	1	0	0
Driver Emotionally Upset:	0	0	0
Evading Law Enforcement Officer:	0	0	0
Physical Disability:	0	0	0
Unknown:	3	1	1
TOTAL:	21	20	3



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DiExSys™ Vision Zero Suite
General Summary Report

12/13/2023

Summary **Type: Intersection** **Search Name: Rt: 7 Section: DMM: [72.7 - 72.9]** **From: 1/1/2018** **To: 12/31/2022**

Condition of Driver Details by Vehicle

	Veh:	Vehicle 1	Vehicle 2	Vehicle 3
No Impairment Suspected:		18	19	3
Alcohol Involved:		1	0	0
RX, Meds or Drugs Involved:		1	0	0
Illegal Drugs Involved:		1	1	0
Alcohol and Drugs Involved:		0	0	0
Driver/Ped not Observed:		0	0	0
Unknown:		0	0	0
TOTAL:		21	20	3

Vehicle Direction Details by Vehicle

	Veh:	Vehicle 1	Vehicle 2	Vehicle 3
North:		2	3	0
Northeast:		0	0	0
East:		12	11	2
Southeast:		0	0	0
South:		1	0	0
Southwest:		0	0	0
West:		6	6	1
Northwest:		0	0	0
Unknown:		0	0	0
TOTAL:		21	20	3

Vehicle Movement Factor Detail by Vehicle

	Veh:	Vehicle 1	Vehicle 2	Vehicle 3
Going Straight:		14	1	0
Slowing:		3	5	0
Stopped in Traffic:		1	12	3
Making Right Turn:		1	1	0
Making Left Turn:		1	1	0
Making U-Turn:		0	0	0
Passing:		0	0	0
Backing:		0	0	0
Entering/Leaving Parked Position:		0	0	0
Starting in Traffic:		0	0	0
Parked:		0	0	0
Changing Lanes:		0	0	0
Avoiding Objects in Roadway:		0	0	0
Weaving:		0	0	0
Wrong Way:		1	0	0
Other:		0	0	0
Unknown:		0	0	0
TOTAL:		21	20	3



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Diagnostics Report

12/20/2023

6 Cutoff: 5 Acc's @ 95

Category/Trait	Statewide Average		This Location		Probability
	%	# Crashes		%	%
Crash Type					
Rear End	52.84%	15		71.43%	97.5%

Highway Class: CO - Urban 2-Lane Divided Signalized 4-Leg Intersections - AADT All Totals (2021)

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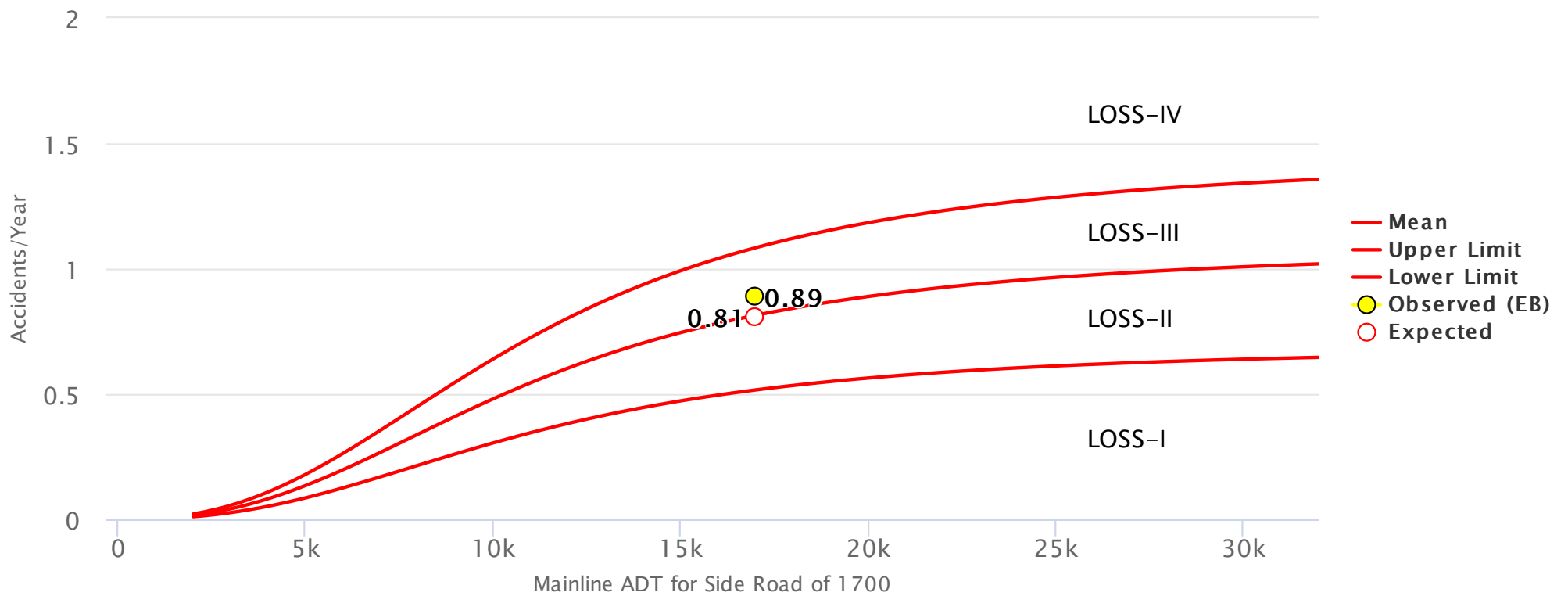


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12/20/2023

5

Type: Intersection Search Name: Rt: 7 Section: D MM: [72.7 - 72.9] From: 1/1/2018 To: 12/31/2022



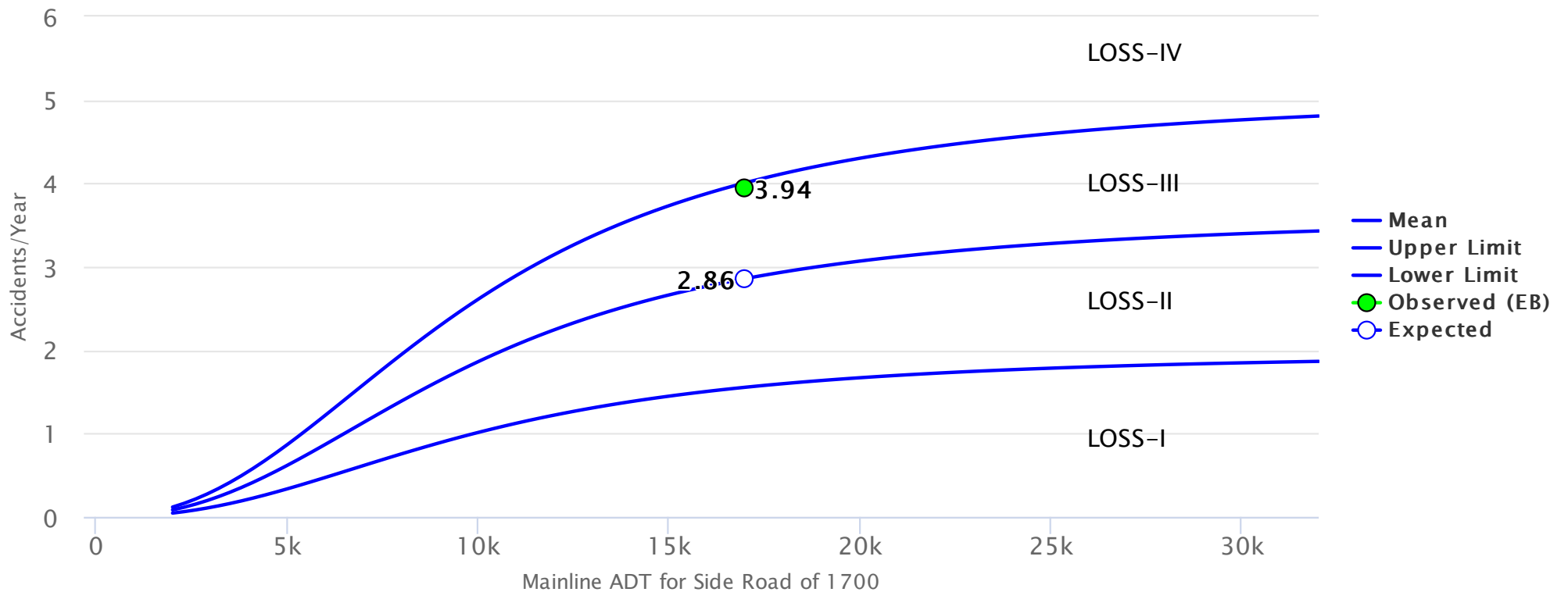


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12/20/2023

4

Type: Intersection Search Name: Rt: 7 Section: D MM: [72.7 - 72.9] From: 1/1/2018 To: 12/31/2022





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DiExSys™ Vision Zero Suite
General Summary Report

12/13/2023

Summary **Type: Intersection Search Name: Rt: 7 Section: D MM: [73.7 - 74] From: 1/1/2018 To: 12/31/2022**

Crash Severity			
By	Crashes:	Number of	People:
FAT:	0	Killed:	0
INJ:	7	Injured:	8
PDO:	3		
TOTAL:	10		

Crash Location	
On Road:	10
Off Road Left:	0
Off Road Right:	0
Off Road at Tee:	0
Off in Median:	0
Off Unknown:	0
Unknown:	0
TOTAL:	10

Weather Conditions	
None:	9
Rain:	0
Snow/Sleet/Hail:	1
Fog:	0
Dust:	0
Wind:	0
Unknown:	0
TOTAL:	10

Crash Type			
Overturning:	0	Bridge Abutment:	0
Other Non-Collision:	0	Column/Pier:	0
Pedestrian:	0	Culvert/Headwall:	0
Broadside:	0	Embankment:	0
Head On:	0	Curb:	0
Rear End:	5	Delineator Post:	0
Sideswipe (Same):	0	Fence:	0
Sideswipe (Opposite):	1	Tree:	0
Approach Turn:	4	Lrg Bldrs or Rocks:	0
Overtaking Turn:	0	Barricade:	0
Parked Motor Veh:	0	Wall/Building:	0
Railway Veh:	0	Crash Cushion:	0
Bicycle:	0	Mailbox:	0
Motorized Bicycle:	0	Other Fixed Object:	0
Domestic Animal:	0	Total Fixed Objects:	0
Wild Animal:	0	Rocks in Roadway:	0
Light/Utility Pole:	0	Vehicle Cargo/Debris:	0
Traffic Signal Pole:	0	Road Maint Equip:	0
Sign:	0	Involving Other Object:	0
Bridge Rail:	0	Total Other Object:	0
Guard Rail:	0	TOTAL:	10
Cable Rail:	0		
Concrete Barrier:	0		

Lighting Conditions	
Daylight:	9
Dawn/Dusk:	0
Dark-Lighted:	1
Dark-Unlighted:	0
Unknown:	0
TOTAL:	10

Road Conditions	
Dry:	9
Wet:	0
Muddy:	0
Snowy:	1
Icy:	0
Slushy:	0
Foreign Material:	0
Road Treatment:	0
Unknown:	0
Dry W/Icy Road Treatment:	0
Wet W/Icy Road Treatment:	0
Snowy W/Icy Road Treatment:	0
Icy W/Icy Road Treatment:	0
Slushy W/Icy Road Treatment:	0
TOTAL:	10

Number of Vehicles	
One Car:	0
Two Car:	10
Three or More:	0
Unknown:	0
TOTAL:	10

Road Description Details by Vehicle	
At Intersection:	7
At Driveway Access:	0
Intersection Related:	3
Non Intersection:	0
In Alley:	0
Roundabout:	0
Ramp:	0
Parking Lot:	0
Unknown:	0
TOTAL:	10



CDOT
DiExSys™ Vision Zero Suite
General Summary Report

12/13/2023

Summary **Type: Intersection** **Search Name: Rt: 7 Section: D MM: [73.7 - 74]** **From: 1/1/2018** **To: 12/31/2022**

Vehicle Type Details by Vehicle

	Veh:	Vehicle 1	Vehicle 2	Vehicle 3
Psg'r Car/Psg'r Van:		4	3	0
Psg'r Car/Psg'r Van w/Trl:		0	0	0
Pickup Truck/Utility Van:		2	3	0
Pickup Truck/Utility Van w/Trl:		1	0	0
SUV:		3	4	0
SUV w/Trl:		0	0	0
Truck 10k lbs or Less:		0	0	0
Trucks > 10k lbs/Busses > 15 People:		0	0	0
Motor Home:		0	0	0
School Bus 15 People or Less:		0	0	0
Non School Bus 15 People or Less:		0	0	0
Motorcycle:		0	0	0
Bicycle:		0	0	0
Motorized Bicycle:		0	0	0
Farm Equipment:		0	0	0
Hit and Run/Unknown Vehicle:		0	0	0
Other:		0	0	0
Unknown:		0	0	0
TOTAL:		10	10	0

Mainline/Ramps/Frontage

Crossroad A:	0
B:	0
C:	0
D:	0
E:	0
F:	0
G:	0
H:	0
I:	0
J:	0
Left Frontage Road (L):	0
K:	0
M:	0
N:	0
O:	0
P:	0
Mainline/HOV:	10
Right Frontage Road (R):	0
Rest Area/Truck Ramp (T):	0
Other (Z):	0
TOTAL:	10

Crash Rates

PDO: 0.49 / MVMT
 Injury: 1.14 / MVMT
 Fatal: 0 / 100MVMT
 Total: 1.63 / MVMT

Human Contributing Factor Details by Vehicle

	Veh:	Vehicle 1	Vehicle 2	Vehicle 3
No Apparent Contributing Factor:		3	8	0
Asleep at the Wheel:		0	0	0
Illness:		0	0	0
Distracted by Passenger:		0	0	0
Driver Inexperience:		1	0	0
Driver Fatigue:		0	0	0
Driver Preoccupied:		3	1	0
Driver Unfamiliar with Area:		1	0	0
Driver Emotionally Upset:		1	0	0
Evading Law Enforcement Officer:		0	0	0
Physical Disability:		0	0	0
Unknown:		1	1	0
TOTAL:		10	10	0



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DiExSys™ Vision Zero Suite
General Summary Report

12/13/2023

Summary **Type: Intersection Search Name: Rt: 7 Section: DMM: [73.7 - 74] From: 1/1/2018 To: 12/31/2022**

Condition of Driver Details by Vehicle

	Veh:	Vehicle 1	Vehicle 2	Vehicle 3
No Impairment Suspected:		10	10	0
Alcohol Involved:		0	0	0
RX, Meds or Drugs Involved:		0	0	0
Illegal Drugs Involved:		0	0	0
Alcohol and Drugs Involved:		0	0	0
Driver/Ped not Observed:		0	0	0
Unknown:		0	0	0
TOTAL:		10	10	0

Vehicle Direction Details by Vehicle

	Veh:	Vehicle 1	Vehicle 2	Vehicle 3
North:		0	1	0
Northeast:		0	0	0
East:		4	6	0
Southeast:		0	0	0
South:		1	0	0
Southwest:		0	0	0
West:		5	3	0
Northwest:		0	0	0
Unknown:		0	0	0
TOTAL:		10	10	0

Vehicle Movement Factor Detail by Vehicle

	Veh:	Vehicle 1	Vehicle 2	Vehicle 3
Going Straight:		5	4	0
Slowing:		0	1	0
Stopped in Traffic:		0	5	0
Making Right Turn:		0	0	0
Making Left Turn:		4	0	0
Making U-Turn:		0	0	0
Passing:		0	0	0
Backing:		0	0	0
Entering/Leaving Parked Position:		0	0	0
Starting in Traffic:		0	0	0
Parked:		0	0	0
Changing Lanes:		0	0	0
Avoiding Objects in Roadway:		0	0	0
Weaving:		1	0	0
Wrong Way:		0	0	0
Other:		0	0	0
Unknown:		0	0	0
TOTAL:		10	10	0



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Diagnostics Report

12/20/2023

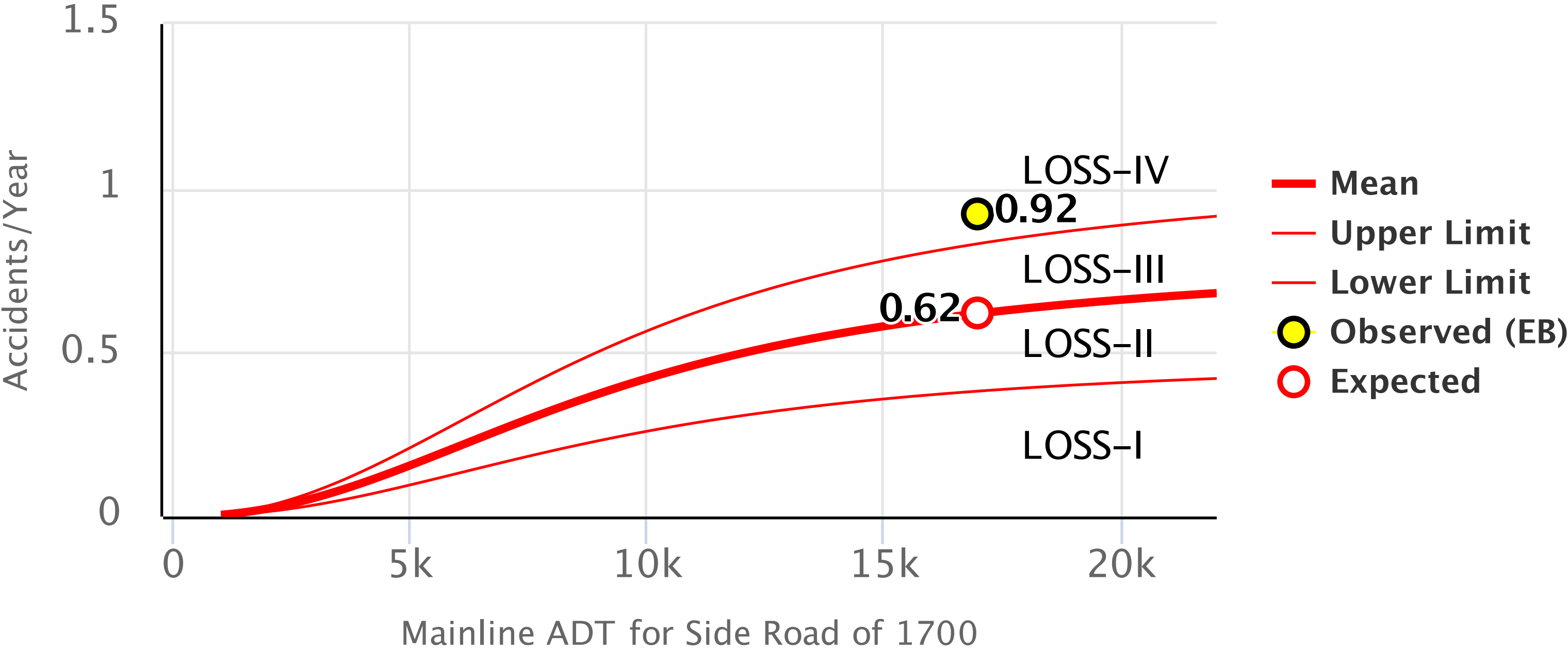
Diagnostics **Cutoff: 5 Acc's @ 95**

Category/Trait	Statewide Average		This Location		Probability
	%	# Crashes		%	%
Crash Severity					
Injury (INJ)	29.81%	7		70%	99.85%
Number Of Vehicles					
Two Vehicle Accidents	83.65%	10		100%	100%
Crash Location					
On Road	87.98%	10		100%	100%

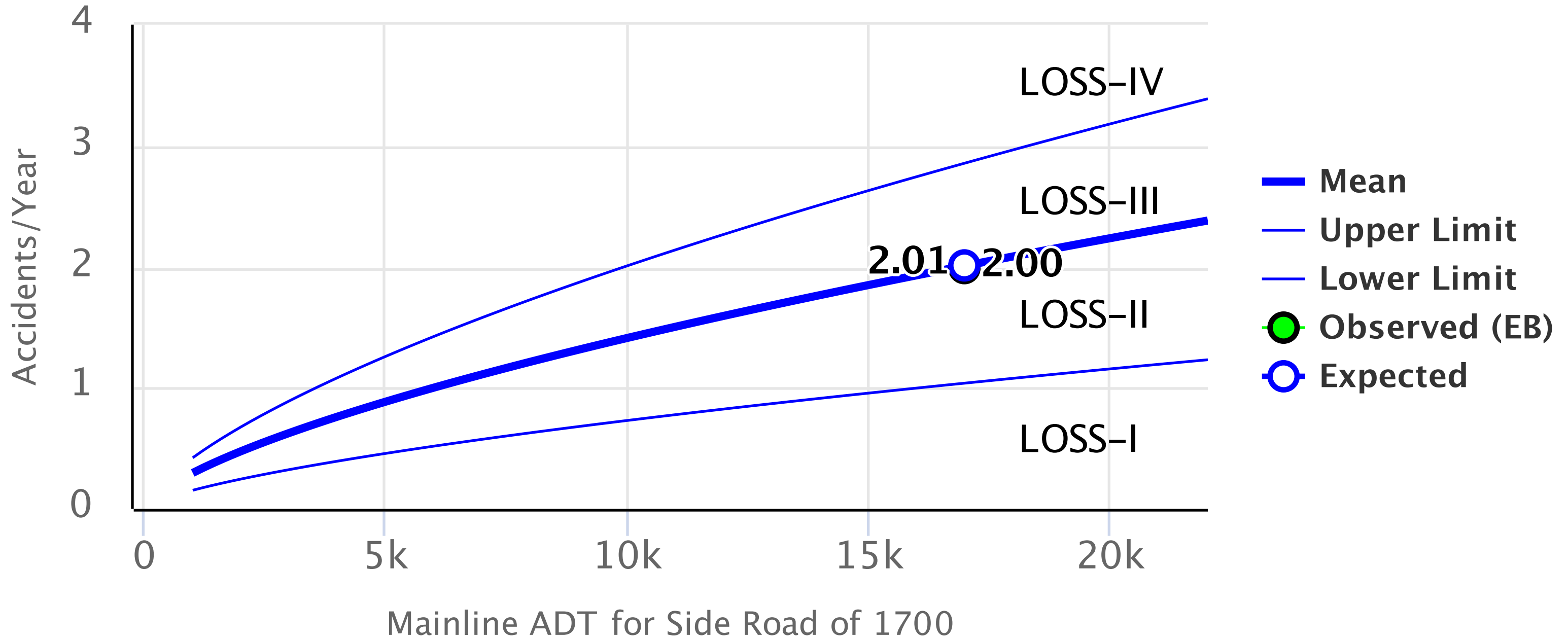
Highway Class: CO - Urban 2-Lane UnDivided UnSignalized 4-Leg Intersections (2018)

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Severity



Total





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General Summary Report

12/13/2023

Summary **Type: Intersection** **Search Name: Rt: 7 Section: D MM: [74.75 - 75]** **From: 1/1/2018** **To: 12/31/2022**

Crash Severity			
By	Crashes:	Number of	People:
FAT:	0	Killed:	0
INJ:	5	Injured:	7
PDO:	9		
TOTAL:	14		

Crash Location	
On Road:	14
Off Road Left:	0
Off Road Right:	0
Off Road at Tee:	0
Off in Median:	0
Off Unknown:	0
Unknown:	0
TOTAL:	14

Weather Conditions	
None:	13
Rain:	1
Snow/Sleet/Hail:	0
Fog:	0
Dust:	0
Wind:	0
Unknown:	0
TOTAL:	14

Crash Type			
Overturning:	0	Bridge Abutment:	0
Other Non-Collision:	0	Column/Pier:	0
Pedestrian:	0	Culvert/Headwall:	0
Broadside:	2	Embankment:	0
Head On:	1	Curb:	0
Rear End:	5	Delineator Post:	0
Sideswipe (Same):	0	Fence:	0
Sideswipe (Opposite):	0	Tree:	0
Approach Turn:	5	Lrg Bldrs or Rocks:	0
Overtaking Turn:	0	Barricade:	0
Parked Motor Veh:	0	Wall/Building:	0
Railway Veh:	0	Crash Cushion:	0
Bicycle:	0	Mailbox:	0
Motorized Bicycle:	0	Other Fixed Object:	0
Domestic Animal:	0	Total Fixed Objects:	0
Wild Animal:	0	Rocks in Roadway:	0
Light/Utility Pole:	0	Vehicle Cargo/Debris:	1
Traffic Signal Pole:	0	Road Maint Equip:	0
Sign:	0	Involving Other Object:	0
Bridge Rail:	0	Total Other Object:	1
Guard Rail:	0	TOTAL:	14
Cable Rail:	0		
Concrete Barrier:	0		

Lighting Conditions	
Daylight:	11
Dawn/Dusk:	0
Dark-Lighted:	3
Dark-Unlighted:	0
Unknown:	0
TOTAL:	14

Road Conditions	
Dry:	13
Wet:	1
Muddy:	0
Snowy:	0
Icy:	0
Slushy:	0
Foreign Material:	0
Road Treatment:	0
Unknown:	0
Dry W/Icy Road Treatment:	0
Wet W/Icy Road Treatment:	0
Snowy W/Icy Road Treatment:	0
Icy W/Icy Road Treatment:	0
Slushy W/Icy Road Treatment:	0
TOTAL:	14

Number of Vehicles	
One Car:	0
Two Car:	14
Three or More:	0
Unknown:	0
TOTAL:	14

Road Description Details by Vehicle	
At Intersection:	10
At Driveway Access:	0
Intersection Related:	4
Non Intersection:	0
In Alley:	0
Roundabout:	0
Ramp:	0
Parking Lot:	0
Unknown:	0
TOTAL:	14



CDOT
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General Summary Report

12/13/2023

Summary **Type: Intersection** **Search Name: Rt: 7 Section: D MM: [74.75 - 75]** **From: 1/1/2018** **To: 12/31/2022**

Vehicle Type Details by Vehicle

Veh:	Vehicle 1	Vehicle 2	Vehicle 3
Psg Car/Psg Van:	7	8	0
Psg Car/Psg Van w/Trl:	0	0	0
Pickup Truck/Utility Van:	6	3	0
Pickup Truck/Utility Van w/Trl:	0	0	0
SUV:	1	3	0
SUV w/Trl:	0	0	0
Truck 10k lbs or Less:	0	0	0
Trucks > 10k lbs/Busses > 15 People:	0	0	0
Motor Home:	0	0	0
School Bus 15 People or Less:	0	0	0
Non School Bus 15 People or Less:	0	0	0
Motorcycle:	0	0	0
Bicycle:	0	0	0
Motorized Bicycle:	0	0	0
Farm Equipment:	0	0	0
Hit and Run/Unknown Vehicle:	0	0	0
Other:	0	0	0
Unknown:	0	0	0
TOTAL:	14	14	0

Mainline/Ramps/Frontage

Crossroad A:	0
B:	0
C:	0
D:	0
E:	0
F:	0
G:	0
H:	0
I:	0
J:	0
Left Frontage Road (L):	0
K:	0
M:	0
N:	0
O:	0
P:	0
Mainline/HOV:	14
Right Frontage Road (R):	0
Rest Area/Truck Ramp (T):	0
Other (Z):	0
TOTAL:	14

Crash Rates

PDO: 0.81 / MVMT
 Injury: 0.45 / MVMT
 Fatal: 0 / 100MVMT
 Total: 1.26 / MVMT

Human Contributing Factor Details by Vehicle

Veh:	Vehicle 1	Vehicle 2	Vehicle 3
No Apparent Contributing Factor:	7	14	0
Asleep at the Wheel:	0	0	0
Illness:	0	0	0
Distracted by Passenger:	0	0	0
Driver Inexperience:	1	0	0
Driver Fatigue:	0	0	0
Driver Preoccupied:	1	0	0
Driver Unfamiliar with Area:	0	0	0
Driver Emotionally Upset:	0	0	0
Evading Law Enforcement Officer:	0	0	0
Physical Disability:	0	0	0
Unknown:	5	0	0
TOTAL:	14	14	0



CDOT
DiExSys™ Vision Zero Suite
General Summary Report

12/13/2023

Summary **Type: Intersection** **Search Name: Rt: 7 Section: D MM: [74.75 - 75]** **From: 1/1/2018** **To: 12/31/2022**

Condition of Driver Details by Vehicle

	Veh:	Vehicle 1	Vehicle 2	Vehicle 3
No Impairment Suspected:		14	14	0
Alcohol Involved:		0	0	0
RX, Meds or Drugs Involved:		0	0	0
Illegal Drugs Involved:		0	0	0
Alcohol and Drugs Involved:		0	0	0
Driver/Ped not Observed:		0	0	0
Unknown:		0	0	0
TOTAL:		14	14	0

Vehicle Direction Details by Vehicle

	Veh:	Vehicle 1	Vehicle 2	Vehicle 3
North:		0	0	0
Northeast:		0	0	0
East:		4	7	0
Southeast:		0	0	0
South:		2	0	0
Southwest:		0	0	0
West:		8	7	0
Northwest:		0	0	0
Unknown:		0	0	0
TOTAL:		14	14	0

Vehicle Movement Factor Detail by Vehicle

	Veh:	Vehicle 1	Vehicle 2	Vehicle 3
Going Straight:		6	9	0
Slowing:		1	1	0
Stopped in Traffic:		0	4	0
Making Right Turn:		0	0	0
Making Left Turn:		5	0	0
Making U-Turn:		1	0	0
Passing:		0	0	0
Backing:		0	0	0
Entering/Leaving Parked Position:		0	0	0
Starting in Traffic:		0	0	0
Parked:		0	0	0
Changing Lanes:		0	0	0
Avoiding Objects in Roadway:		0	0	0
Weaving:		0	0	0
Wrong Way:		1	0	0
Other:		0	0	0
Unknown:		0	0	0
TOTAL:		14	14	0



CDOT
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Diagnostics Report

12/20/2023

SH7 Cutoff: 5 Acc's @ 95

Category/Trait	Statewide Average		This Location		Probability
	%	# Crashes		%	%
Number Of Vehicles					
Two Vehicle Accidents	83.9%	14		100%	100%
Crash Type					
Approach Turn	18.48%	5		35.71%	96.92%

Highway Class: CO - Urban 2-Lane Divided Signalized 4-Leg Intersections - AADT All Totals (2021)

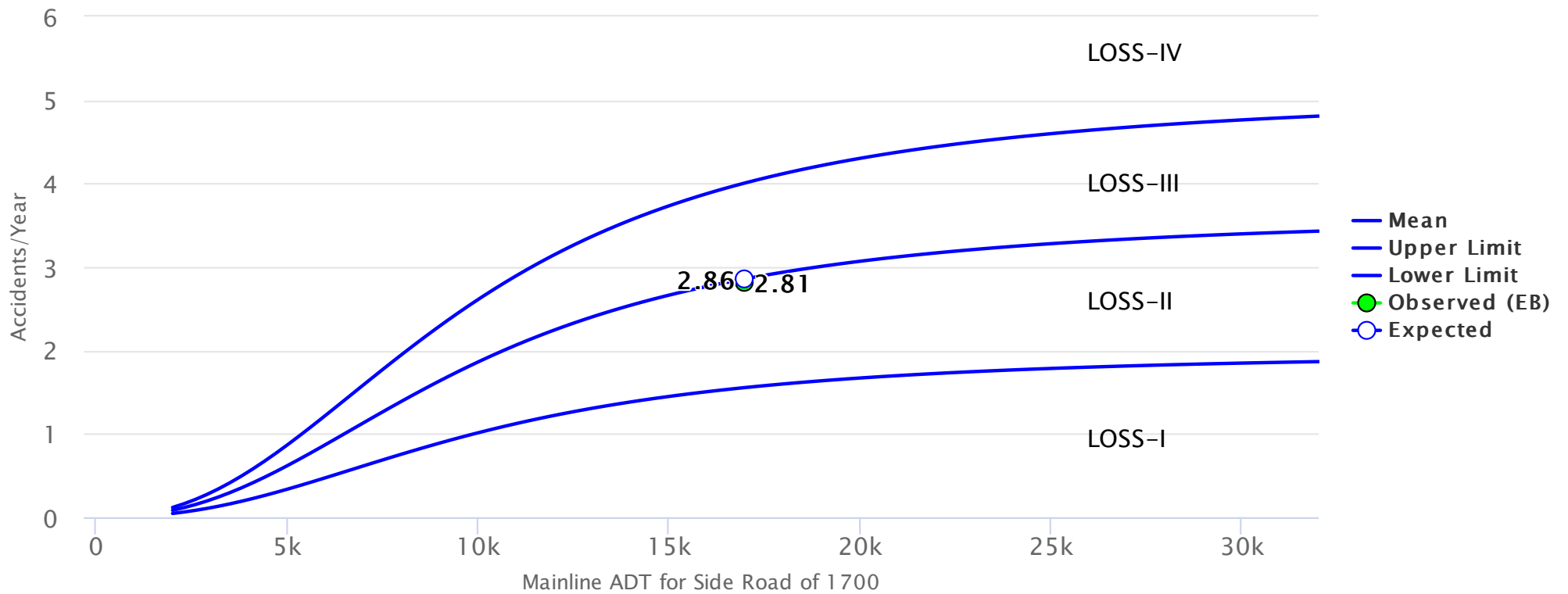
Any intentional or inadvertent release of this data or any data derived from its use shall not constitute a waiver of privilege pursuant to 23 USC 409.



CDOT DiExSys™ Vision Zero Suite

12/20/2023

SH7 Type: Intersection Search Name: Map Boundary Search From: 1/1/2018 To: 12/31/2022

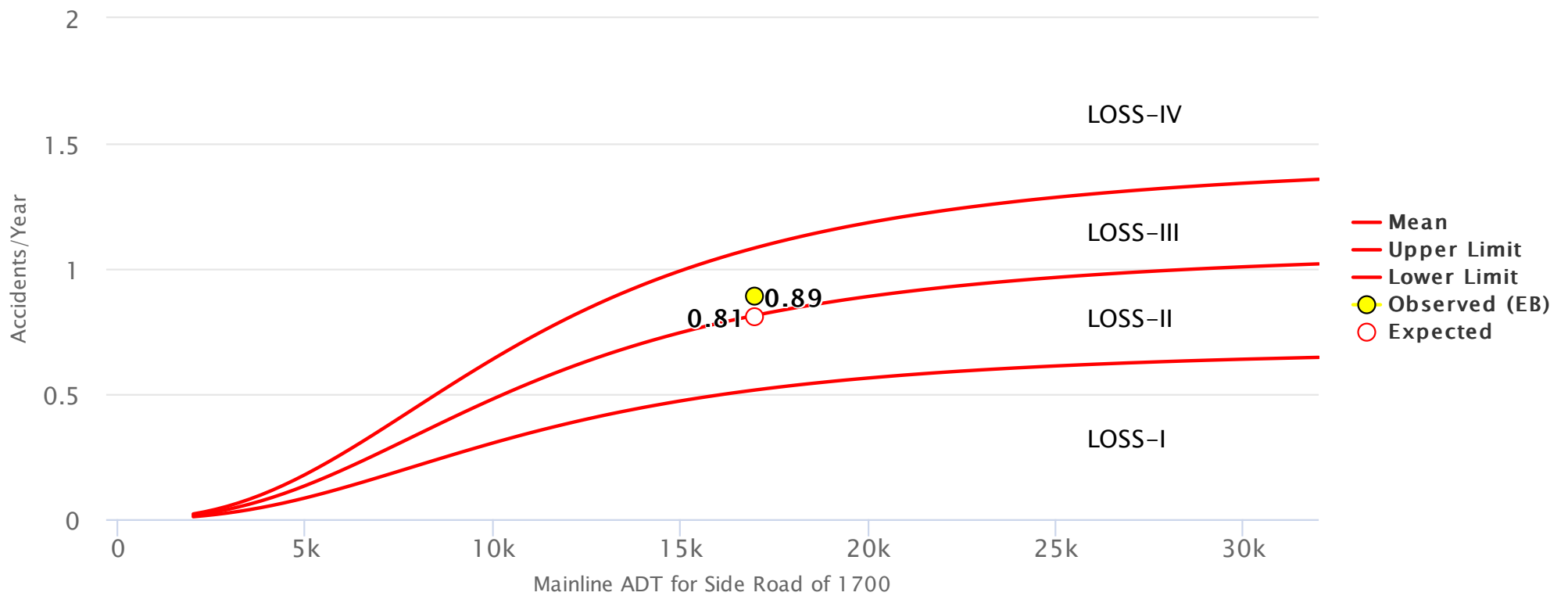




CDOT DiExSys™ Vision Zero Suite

12/20/2023

SH7 Type: Intersection Search Name: Map Boundary Search From: 1/1/2018 To: 12/31/2022





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General Summary Report

12/20/2023

Summary **Type: Intersection** **Search Name: Rt: 7 Section: DMM: [75.2 - 75.6]** **From: 1/1/2018** **To: 12/31/2022**

Crash Severity			
By	Crashes:	Number of	People:
FAT:	0	Killed:	0
INJ:	1	Injured:	1
PDO:	1		
TOTAL:	2		

Crash Location	
On Road:	2
Off Road Left:	0
Off Road Right:	0
Off Road at Tee:	0
Off in Median:	0
Off Unknown:	0
Unknown:	0
TOTAL:	2

Weather Conditions	
None:	2
Rain:	0
Snow/Sleet/Hail:	0
Fog:	0
Dust:	0
Wind:	0
Unknown:	0
TOTAL:	2

Crash Type			
Overturning:	0	Bridge Abutment:	0
Other Non-Collision:	0	Column/Pier:	0
Pedestrian:	0	Culvert/Headwall:	0
Broadside:	1	Embankment:	0
Head On:	0	Curb:	0
Rear End:	1	Delineator Post:	0
Sideswipe (Same):	0	Fence:	0
Sideswipe (Opposite):	0	Tree:	0
Approach Turn:	0	Lrg Bldrs or Rocks:	0
Overtaking Turn:	0	Barricade:	0
Parked Motor Veh:	0	Wall/Building:	0
Railway Veh:	0	Crash Cushion:	0
Bicycle:	0	Mailbox:	0
Motorized Bicycle:	0	Other Fixed Object:	0
Domestic Animal:	0	Total Fixed Objects:	0
Wild Animal:	0	Rocks in Roadway:	0
Light/Utility Pole:	0	Vehicle Cargo/Debris:	0
Traffic Signal Pole:	0	Road Maint Equip:	0
Sign:	0	Involving Other Object:	0
Bridge Rail:	0	Total Other Object:	0
Guard Rail:	0	TOTAL:	2
Cable Rail:	0		
Concrete Barrier:	0		

Lighting Conditions	
Daylight:	2
Dawn/Dusk:	0
Dark-Lighted:	0
Dark-Unlighted:	0
Unknown:	0
TOTAL:	2

Road Conditions	
Dry:	2
Wet:	0
Muddy:	0
Snowy:	0
Icy:	0
Slushy:	0
Foreign Material:	0
Road Treatment:	0
Unknown:	0
Dry W/Icy Road Treatment:	0
Wet W/Icy Road Treatment:	0
Snowy W/Icy Road Treatment:	0
Icy W/Icy Road Treatment:	0
Slushy W/Icy Road Treatment:	0
TOTAL:	2

Number of Vehicles	
One Car:	0
Two Car:	2
Three or More:	0
Unknown:	0
TOTAL:	2

Road Description Details by Vehicle	
At Intersection:	1
At Driveway Access:	0
Intersection Related:	1
Non Intersection:	0
In Alley:	0
Roundabout:	0
Ramp:	0
Parking Lot:	0
Unknown:	0
TOTAL:	2



CDOT
DiExSys™ Vision Zero Suite
General Summary Report

12/20/2023

Summary **Type: Intersection** **Search Name: Rt: 7 Section: DMM: [75.2 - 75.6]** **From: 1/1/2018** **To: 12/31/2022**

Vehicle Type Details by Vehicle

Veh:	Vehicle 1	Vehicle 2	Vehicle 3
Psgr Car/Psgr Van:	0	0	0
Psgr Car/Psgr Van w/Trl:	0	0	0
Pickup Truck/Utility Van:	0	1	0
Pickup Truck/Utility Van w/Trl:	0	0	0
SUV:	2	1	0
SUV w/Trl:	0	0	0
Truck 10k lbs or Less:	0	0	0
Trucks > 10k lbs/Busses > 15 People:	0	0	0
Motor Home:	0	0	0
School Bus 15 People or Less:	0	0	0
Non School Bus 15 People or Less:	0	0	0
Motorcycle:	0	0	0
Bicycle:	0	0	0
Motorized Bicycle:	0	0	0
Farm Equipment:	0	0	0
Hit and Run/Unknown Vehicle:	0	0	0
Other:	0	0	0
Unknown:	0	0	0
TOTAL:	2	2	0

Mainline/Ramps/Frontage

Crossroad A:	0
B:	0
C:	0
D:	0
E:	0
F:	0
G:	0
H:	0
I:	0
J:	0
Left Frontage Road (L):	0
K:	0
M:	0
N:	0
O:	0
P:	0
Mainline/HOV:	2
Right Frontage Road (R):	0
Rest Area/Truck Ramp (T):	0
Other (Z):	0
TOTAL:	2

Crash Rates

PDO: 0.09 / MVMT
 Injury: 0.09 / MVMT
 Fatal: 0 / 100MVMT
 Total: 0.18 / MVMT

Human Contributing Factor Details by Vehicle

Veh:	Vehicle 1	Vehicle 2	Vehicle 3
No Apparent Contributing Factor:	0	2	0
Asleep at the Wheel:	0	0	0
Illness:	0	0	0
Distracted by Passenger:	0	0	0
Driver Inexperience:	0	0	0
Driver Fatigue:	0	0	0
Driver Preoccupied:	1	0	0
Driver Unfamiliar with Area:	0	0	0
Driver Emotionally Upset:	0	0	0
Evading Law Enforcement Officer:	0	0	0
Physical Disability:	0	0	0
Unknown:	1	0	0
TOTAL:	2	2	0



CDOT
DiExSys™ Vision Zero Suite
General Summary Report

12/20/2023

Summary **Type: Intersection** **Search Name: Rt: 7 Section: DMM: [75.2 - 75.6]** **From: 1/1/2018** **To: 12/31/2022**

Condition of Driver Details by Vehicle

	Veh:	Vehicle 1	Vehicle 2	Vehicle 3
No Impairment Suspected:		1	2	0
Alcohol Involved:		1	0	0
RX, Meds or Drugs Involved:		0	0	0
Illegal Drugs Involved:		0	0	0
Alcohol and Drugs Involved:		0	0	0
Driver/Ped not Observed:		0	0	0
Unknown:		0	0	0
TOTAL:		2	2	0

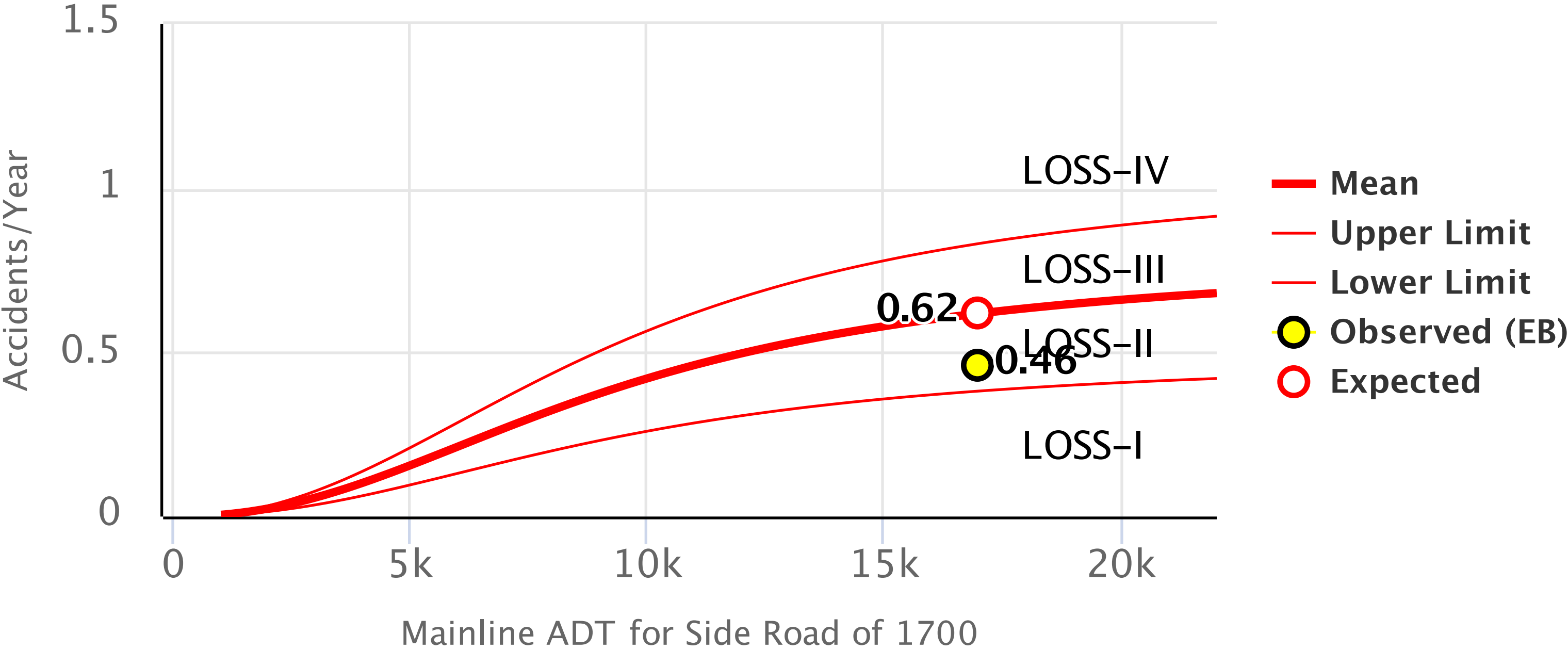
Vehicle Direction Details by Vehicle

	Veh:	Vehicle 1	Vehicle 2	Vehicle 3
North:		1	0	0
Northeast:		0	0	0
East:		0	1	0
Southeast:		0	0	0
South:		0	0	0
Southwest:		0	0	0
West:		1	1	0
Northwest:		0	0	0
Unknown:		0	0	0
TOTAL:		2	2	0

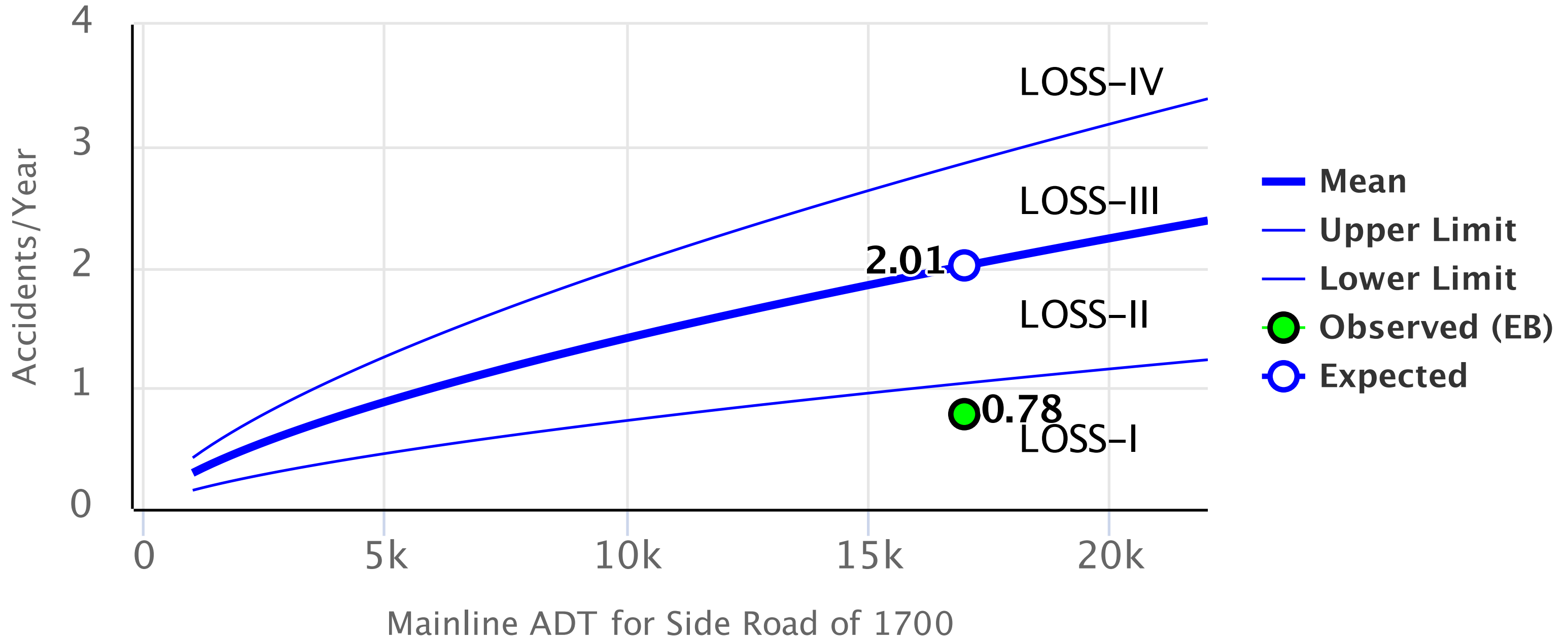
Vehicle Movement Factor Detail by Vehicle

	Veh:	Vehicle 1	Vehicle 2	Vehicle 3
Going Straight:		1	1	0
Slowing:		0	1	0
Stopped in Traffic:		0	0	0
Making Right Turn:		0	0	0
Making Left Turn:		1	0	0
Making U-Turn:		0	0	0
Passing:		0	0	0
Backing:		0	0	0
Entering/Leaving Parked Position:		0	0	0
Starting in Traffic:		0	0	0
Parked:		0	0	0
Changing Lanes:		0	0	0
Avoiding Objects in Roadway:		0	0	0
Weaving:		0	0	0
Wrong Way:		0	0	0
Other:		0	0	0
Unknown:		0	0	0
TOTAL:		2	2	0

Severity



Total





CDOT
DiExSys™ Vision Zero Suite
General Summary Report

12/20/2023

Detailed Summary **Type: Intersection** **Search Name: Rt: 7 Section: DMM: [76.2 - 76.4]** **From: 1/1/2018** **To: 12/31/2022**

Crash Severity			
By	Crashes:	Number of	People:
FAT:	0	Killed:	0
INJ:	0	Injured:	0
PDO:	2		
TOTAL:	2		

Crash Location	
On Road:	2
Off Road Left:	0
Off Road Right:	0
Off Road at Tee:	0
Off in Median:	0
Off Unknown:	0
Unknown:	0
TOTAL:	2

Weather Conditions	
None:	2
Rain:	0
Snow/Sleet/Hail:	0
Fog:	0
Dust:	0
Wind:	0
Unknown:	0
TOTAL:	2

Crash Type			
Overturning:	0	Bridge Abutment:	0
Other Non-Collision:	0	Column/Pier:	0
Pedestrian:	0	Culvert/Headwall:	0
Broadside:	1	Embankment:	0
Head On:	0	Curb:	0
Rear End:	0	Delineator Post:	0
Sideswipe (Same):	0	Fence:	0
Sideswipe (Opposite):	0	Tree:	0
Approach Turn:	0	Lrg Bldrs or Rocks:	0
Overtaking Turn:	0	Barricade:	0
Parked Motor Veh:	0	Wall/Building:	0
Railway Veh:	0	Crash Cushion:	0
Bicycle:	0	Mailbox:	0
Motorized Bicycle:	0	Other Fixed Object:	0
Domestic Animal:	0	Total Fixed Objects:	0
Wild Animal:	1	Rocks in Roadway:	0
Light/Utility Pole:	0	Vehicle Cargo/Debris:	0
Traffic Signal Pole:	0	Road Maint Equip:	0
Sign:	0	Involving Other Object:	0
Bridge Rail:	0	Total Other Object:	0
Guard Rail:	0	TOTAL:	2
Cable Rail:	0		
Concrete Barrier:	0		

Lighting Conditions	
Daylight:	1
Dawn/Dusk:	0
Dark-Lighted:	0
Dark-Unlighted:	1
Unknown:	0
TOTAL:	2

Road Conditions	
Dry:	2
Wet:	0
Muddy:	0
Snowy:	0
Icy:	0
Slushy:	0
Foreign Material:	0
Road Treatment:	0
Unknown:	0
Dry W/Icy Road Treatment:	0
Wet W/Icy Road Treatment:	0
Snowy W/Icy Road Treatment:	0
Icy W/Icy Road Treatment:	0
Slushy W/Icy Road Treatment:	0
TOTAL:	2

Number of Vehicles	
One Car:	1
Two Car:	1
Three or More:	0
Unknown:	0
TOTAL:	2

Road Description Details by Vehicle	
At Intersection:	2
At Driveway Access:	0
Intersection Related:	0
Non Intersection:	0
In Alley:	0
Roundabout:	0
Ramp:	0
Parking Lot:	0
Unknown:	0
TOTAL:	2



CDOT
DiExSys™ Vision Zero Suite
General Summary Report

12/20/2023

Detailed Summary **Type: Intersection** **Search Name: Rt: 7 Section: DMM: [76.2 - 76.4]** **From: 1/1/2018** **To: 12/31/2022**

Vehicle Type Details by Vehicle

	Veh:	Vehicle 1	Vehicle 2	Vehicle 3
Psgr Car/Psgr Van:		1	0	0
Psgr Car/Psgr Van w/Trl:		0	0	0
Pickup Truck/Utility Van:		0	1	0
Pickup Truck/Utility Van w/Trl:		0	0	0
SUV:		0	0	0
SUV w/Trl:		0	0	0
Truck 10k lbs or Less:		0	0	0
Trucks > 10k lbs/Busses > 15 People:		1	0	0
Motor Home:		0	0	0
School Bus 15 People or Less:		0	0	0
Non School Bus 15 People or Less:		0	0	0
Motorcycle:		0	0	0
Bicycle:		0	0	0
Motorized Bicycle:		0	0	0
Farm Equipment:		0	0	0
Hit and Run/Unknown Vehicle:		0	0	0
Other:		0	0	0
Unknown:		0	0	0
TOTAL:		2	1	0

Mainline/Ramps/Frontage

Crossroad A:	0
B:	0
C:	0
D:	0
E:	0
F:	0
G:	0
H:	0
I:	0
J:	0
Left Frontage Road (L):	0
K:	0
M:	0
N:	0
O:	0
P:	0
Mainline/HOV:	2
Right Frontage Road (R):	0
Rest Area/Truck Ramp (T):	0
Other (Z):	0
TOTAL:	2

Crash Rates

PDO: 0.32 / MVMT
 Injury: 0 / MVMT
 Fatal: 0 / 100MVMT
 Total: 0.32 / MVMT

Human Contributing Factor Details by Vehicle

	Veh:	Vehicle 1	Vehicle 2	Vehicle 3
No Apparent Contributing Factor:		2	1	0
Asleep at the Wheel:		0	0	0
Illness:		0	0	0
Distracted by Passenger:		0	0	0
Driver Inexperience:		0	0	0
Driver Fatigue:		0	0	0
Driver Preoccupied:		0	0	0
Driver Unfamiliar with Area:		0	0	0
Driver Emotionally Upset:		0	0	0
Evading Law Enforcement Officer:		0	0	0
Physical Disability:		0	0	0
Unknown:		0	0	0
TOTAL:		2	1	0



CDOT
DiExSys™ Vision Zero Suite
General Summary Report

12/20/2023

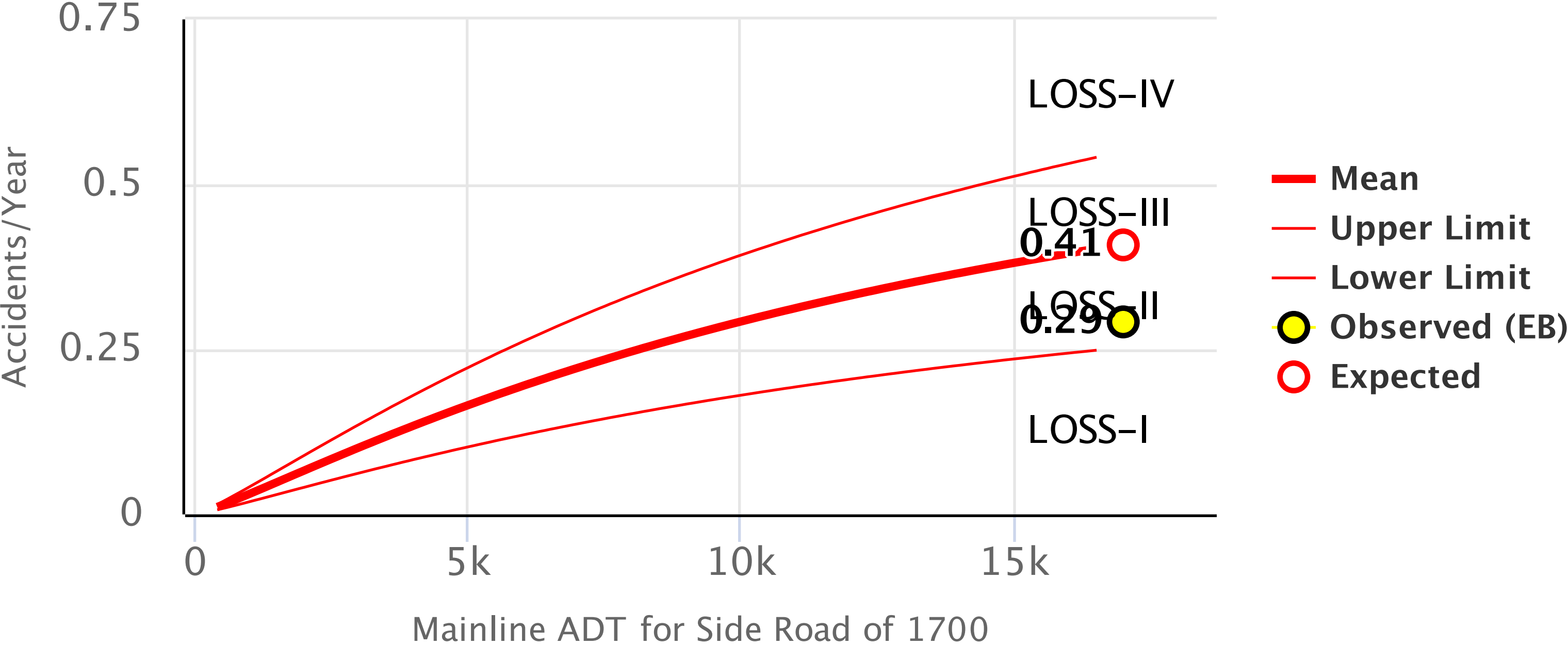
Detailed Summary **Type: Intersection** **Search Name: Rt: 7 Section: DMM: [76.2 - 76.4]** **From: 1/1/2018** **To: 12/31/2022**

Condition of Driver Details by Vehicle	Veh:	Vehicle 1	Vehicle 2	Vehicle 3
No Impairment Suspected:		2	1	0
Alcohol Involved:		0	0	0
RX, Meds or Drugs Involved:		0	0	0
Illegal Drugs Involved:		0	0	0
Alcohol and Drugs Involved:		0	0	0
Driver/Ped not Observed:		0	0	0
Unknown:		0	0	0
TOTAL:		2	1	0

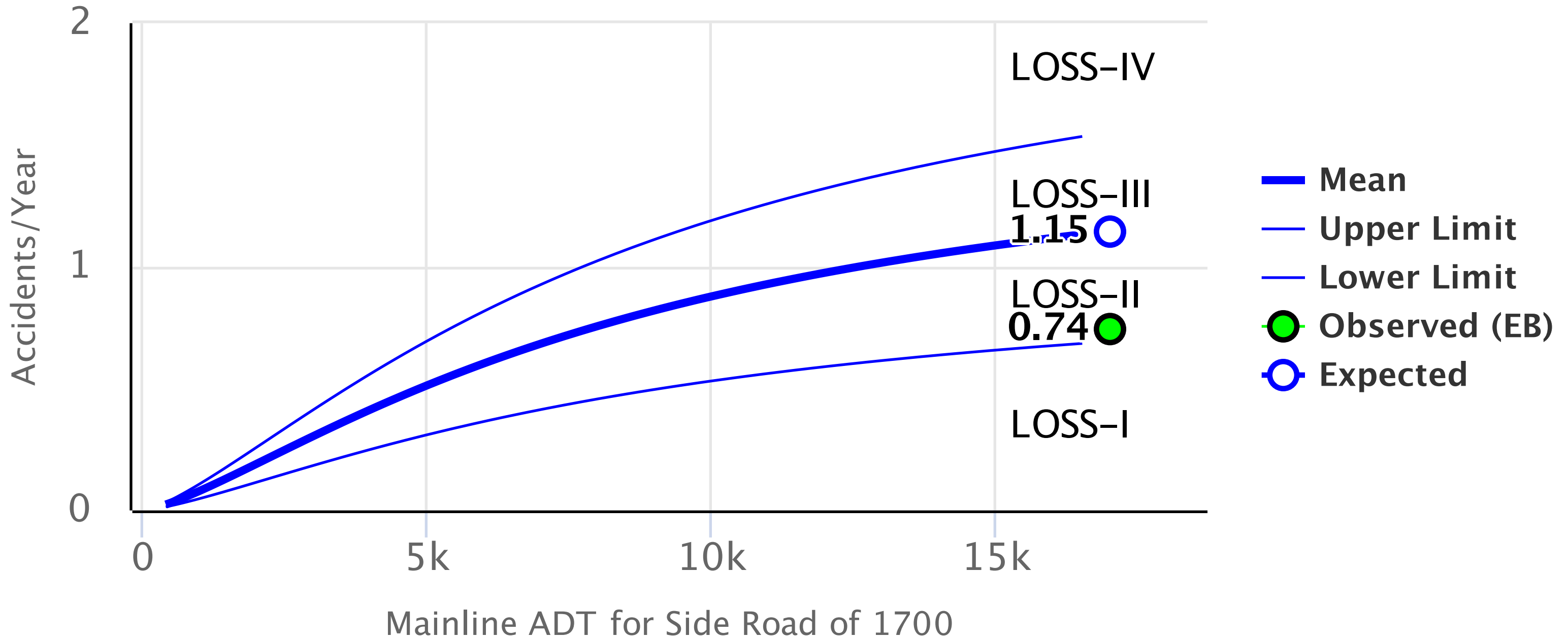
Vehicle Direction Details by Vehicle	Veh:	Vehicle 1	Vehicle 2	Vehicle 3
North:		0	0	0
Northeast:		0	0	0
East:		1	0	0
Southeast:		0	0	0
South:		1	0	0
Southwest:		0	0	0
West:		0	1	0
Northwest:		0	0	0
Unknown:		0	0	0
TOTAL:		2	1	0

Vehicle Movement Factor Detail by Vehicle	Veh:	Vehicle 1	Vehicle 2	Vehicle 3
Going Straight:		1	1	0
Slowing:		0	0	0
Stopped in Traffic:		0	0	0
Making Right Turn:		1	0	0
Making Left Turn:		0	0	0
Making U-Turn:		0	0	0
Passing:		0	0	0
Backing:		0	0	0
Entering/Leaving Parked Position:		0	0	0
Starting in Traffic:		0	0	0
Parked:		0	0	0
Changing Lanes:		0	0	0
Avoiding Objects in Roadway:		0	0	0
Weaving:		0	0	0
Wrong Way:		0	0	0
Other:		0	0	0
Unknown:		0	0	0
TOTAL:		2	1	0

Severity



Total



Level of Service Definitions

LEVEL OF SERVICE DEFINITIONS

From *Highway Capacity Manual*, Transportation Research Board, 2016, 6th Edition

SIGNALIZED INTERSECTION LEVEL OF SERVICE (LOS)

<u>LOS</u>	<u>Average Vehicle Delay</u> sec/vehicle	<u>Operational Characteristics</u>
A	<10 seconds	Describes operations with low control delay, up to 10 sec/veh. This LOS occurs when progression is extremely favorable and most vehicles arrive during the green phase. Many vehicles do not stop at all. Short cycle lengths may tend to contribute to low delay values.
B	10 to 20 seconds	Describes operations with control delay greater than 10 seconds and up to 20 sec/veh. This level generally occurs with good progression, short cycle lengths, or both. More vehicles stop than with LOS A, causing higher levels of delay.
C	20 to 35 seconds	Describes operations with control delay greater than 20 and up to 35 sec/veh. These higher delays may result from only fair progression, longer cycle length, or both. Individual cycle failures may begin to appear at this level. Cycle failure occurs when a given green phase does not serve queued vehicles, and overflows occur. The number of vehicles stopping is significant at this level, though many still pass through the intersection without stopping.
D	35 to 55 seconds	Describes operations with control delay greater than 35 and up to 55 sec/veh. At LOS D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, and high v/c ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	55 to 80 seconds	Describes operations with control delay greater than 55 and up to 80 sec/veh. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios. Individual cycle failures are frequent.
F	>80 seconds	Describes operations with control delay in excess of 80 sec/veh. This level, considered unacceptable to most drivers, often occurs with over-saturation, that is, when arrival flow rates exceed the capacity of lane groups. It may also occur at high v/c ratios with many individual cycle failures. Poor progression and long cycle lengths may also contribute significantly to high delay levels.

LEVEL OF SERVICE DEFINITIONS

From *Highway Capacity Manual*, Transportation Research Board, 2016, 6th Edition

UNSIGNALIZED INTERSECTION LEVEL OF SERVICE (LOS)

Applicable to Two-Way Stop Control, All-Way Stop Control, and Roundabouts

LOS	Average Vehicle Control Delay	<u>Operational Characteristics</u>
A	<10 seconds	Normally, vehicles on the stop-controlled approach only have to wait up to 10 seconds before being able to clear the intersection. Left-turning vehicles on the uncontrolled street do not have to wait to make their turn.
B	10 to 15 seconds	Vehicles on the stop-controlled approach will experience delays before being able to clear the intersection. <u>The delay could be up to 15 seconds.</u> Left-turning vehicles on the uncontrolled street may have to wait to make their turn.
C	15 to 25 seconds	Vehicles on the stop-controlled approach can expect delays in the range of 15 to 25 seconds before clearing the intersection. Motorists may begin to take chances due to the long delays, thereby posing a safety risk to through traffic. <u>Left-turning vehicles on the uncontrolled street will now be required to wait to make their turn causing a queue to be created in the turn lane.</u>
D	25 to 35 seconds	<u>This is the point at which a traffic signal may be warranted for this intersection.</u> The delays for the stop-controlled intersection are not considered to be excessive. The length of the queue may begin to block other public and private access points.
E	35 to 50 seconds	The delays for all critical traffic movements are considered to be unacceptable. The length of the queues for the stop-controlled approaches as well as the left-turn movements are extremely long. <u>There is a high probability that this intersection will meet traffic signal warrants.</u> The ability to install a traffic signal is affected by the location of other existing traffic signals. Consideration may be given to restricting the accesses by eliminating the left-turn movements from and to the stop-controlled approach.
F	>50 seconds	The delay for the critical traffic movements are probably in excess of 100 seconds. The length of the queues are extremely long. Motorists are selecting alternative routes due to the long delays. <u>The only remedy for these long delays is installing a traffic signal or restricting the accesses.</u> The potential for accidents at this intersection are extremely high due to motorist taking more risky chances. If the median permits, motorists begin making two-stage left-turns.

Level of Service Reports

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	
Traffic Vol, veh/h	2	90	125	1	4	4
Future Vol, veh/h	2	90	125	1	4	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	113	156	1	5	5

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	157	0	0	276	157
Stage 1	-	-	-	157	-
Stage 2	-	-	-	119	-
Critical Hdwy	4.12	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	3.518	3.318
Pot Cap-1 Maneuver	1423	-	-	714	889
Stage 1	-	-	-	871	-
Stage 2	-	-	-	906	-
Platoon blocked, %		-	-		
Mov Cap-1 Maneuver	1423	-	-	713	889
Mov Cap-2 Maneuver	-	-	-	713	-
Stage 1	-	-	-	869	-
Stage 2	-	-	-	906	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	9.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1423	-	-	-	791
HCM Lane V/C Ratio	0.002	-	-	-	0.013
HCM Control Delay (s)	7.5	0	-	-	9.6
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection						
Int Delay, s/veh	1.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	90	11	21	125	5	10
Future Vol, veh/h	90	11	21	125	5	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	107	13	25	149	6	12

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	120	0	313
Stage 1	-	-	-	-	114
Stage 2	-	-	-	-	199
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1468	-	680
Stage 1	-	-	-	-	911
Stage 2	-	-	-	-	835
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1468	-	667
Mov Cap-2 Maneuver	-	-	-	-	667
Stage 1	-	-	-	-	911
Stage 2	-	-	-	-	819

Approach	EB	WB	NB
HCM Control Delay, s	0	1.1	9.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	827	-	-	1468	-
HCM Lane V/C Ratio	0.022	-	-	0.017	-
HCM Control Delay (s)	9.4	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

Intersection						
Int Delay, s/veh	1.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	↷
Traffic Vol, veh/h	14	101	179	15	15	19
Future Vol, veh/h	14	101	179	15	15	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	17	125	221	19	19	23

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	240	0	-	0	390 231
Stage 1	-	-	-	-	231 -
Stage 2	-	-	-	-	159 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1327	-	-	-	614 808
Stage 1	-	-	-	-	807 -
Stage 2	-	-	-	-	870 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1327	-	-	-	605 808
Mov Cap-2 Maneuver	-	-	-	-	605 -
Stage 1	-	-	-	-	796 -
Stage 2	-	-	-	-	870 -

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	10.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1327	-	-	-	704
HCM Lane V/C Ratio	0.013	-	-	-	0.06
HCM Control Delay (s)	7.7	0	-	-	10.4
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Intersection						
Int Delay, s/veh	0.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	101	5	2	187	10	1
Future Vol, veh/h	101	5	2	187	10	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	117	6	2	217	12	1

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	123	0	341
Stage 1	-	-	-	-	120
Stage 2	-	-	-	-	221
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1464	-	655
Stage 1	-	-	-	-	905
Stage 2	-	-	-	-	816
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1464	-	654
Mov Cap-2 Maneuver	-	-	-	-	654
Stage 1	-	-	-	-	905
Stage 2	-	-	-	-	814

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	10.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	672	-	-	1464	-
HCM Lane V/C Ratio	0.019	-	-	0.002	-
HCM Control Delay (s)	10.5	-	-	7.5	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection						
Int Delay, s/veh	0.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↘	↑	↘	↗
Traffic Vol, veh/h	102	1	4	172	5	6
Future Vol, veh/h	102	1	4	172	5	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	170	250	-	0	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	119	1	5	200	6	7

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	120	0	329
Stage 1	-	-	-	-	119
Stage 2	-	-	-	-	210
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1468	-	665
Stage 1	-	-	-	-	906
Stage 2	-	-	-	-	825
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1468	-	663
Mov Cap-2 Maneuver	-	-	-	-	663
Stage 1	-	-	-	-	906
Stage 2	-	-	-	-	823

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	9.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	663	933	-	-	1468	-
HCM Lane V/C Ratio	0.009	0.007	-	-	0.003	-
HCM Control Delay (s)	10.5	8.9	-	-	7.5	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0	0	-	-	0	-

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	
Traffic Vol, veh/h	1	116	180	1	1	1
Future Vol, veh/h	1	116	180	1	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	125	194	1	1	1

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	195	0	-	0	322 195
Stage 1	-	-	-	-	195 -
Stage 2	-	-	-	-	127 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1378	-	-	-	672 846
Stage 1	-	-	-	-	838 -
Stage 2	-	-	-	-	899 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1378	-	-	-	671 846
Mov Cap-2 Maneuver	-	-	-	-	671 -
Stage 1	-	-	-	-	837 -
Stage 2	-	-	-	-	899 -

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	9.8
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1378	-	-	-	748
HCM Lane V/C Ratio	0.001	-	-	-	0.003
HCM Control Delay (s)	7.6	0	-	-	9.8
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection						
Int Delay, s/veh	2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	118	1	49	183	7	38
Future Vol, veh/h	118	1	49	183	7	38
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	127	1	53	197	8	41

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	128	0	431
Stage 1	-	-	-	-	128
Stage 2	-	-	-	-	303
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1458	-	581
Stage 1	-	-	-	-	898
Stage 2	-	-	-	-	749
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1458	-	557
Mov Cap-2 Maneuver	-	-	-	-	557
Stage 1	-	-	-	-	898
Stage 2	-	-	-	-	718

Approach	EB	WB	NB
HCM Control Delay, s	0	1.6	9.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	837	-	-	1458	-
HCM Lane V/C Ratio	0.058	-	-	0.036	-
HCM Control Delay (s)	9.6	-	-	7.6	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Timings
10: Quebec St & E. 160th Ave (SH 7)

Existing Traffic
AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	11	414	81	103	664	14	107	42	18	18	63
Future Volume (vph)	11	414	81	103	664	14	107	42	18	18	63
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	5	2		1	6		3	8		7	4
Permitted Phases			2			6			8		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	20.0	20.0	10.0	20.0	20.0	10.0	20.0	20.0	10.0	20.0
Total Split (s)	12.0	71.0	71.0	12.0	71.0	71.0	12.0	25.0	25.0	12.0	25.0
Total Split (%)	10.0%	59.2%	59.2%	10.0%	59.2%	59.2%	10.0%	20.8%	20.8%	10.0%	20.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min
Act Effect Green (s)	6.4	30.7	30.7	7.5	41.9	41.9	7.5	19.1	19.1	6.6	10.1
Actuated g/C Ratio	0.08	0.40	0.40	0.10	0.54	0.54	0.10	0.25	0.25	0.09	0.13
v/c Ratio	0.09	0.70	0.14	0.71	0.77	0.02	0.74	0.11	0.04	0.14	0.43
Control Delay	44.2	23.4	2.4	63.3	20.3	0.0	66.0	33.4	0.2	44.1	37.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	44.2	23.4	2.4	63.3	20.3	0.0	66.0	33.4	0.2	44.1	37.2
LOS	D	C	A	E	C	A	E	C	A	D	D
Approach Delay		20.7			25.6			50.8			38.3
Approach LOS		C			C			D			D

Intersection Summary

























Cycle Length: 120
 Actuated Cycle Length: 77.1
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.77
 Intersection Signal Delay: 27.4
 Intersection LOS: C
 Intersection Capacity Utilization 64.2%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 10: Quebec St & E. 160th Ave (SH 7)



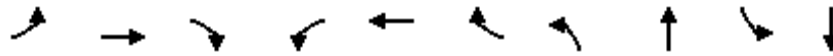
HCM 6th Signalized Intersection Summary
 10: Quebec St & E. 160th Ave (SH 7)

Existing Traffic
 AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	414	81	103	664	14	107	42	18	18	63	26
Future Volume (veh/h)	11	414	81	103	664	14	107	42	18	18	63	26
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	13	518	95	121	781	16	126	49	21	21	74	31
Peak Hour Factor	0.85	0.80	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	29	780	661	154	912	773	160	298	253	43	117	49
Arrive On Green	0.02	0.42	0.42	0.09	0.49	0.49	0.09	0.16	0.16	0.02	0.09	0.09
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	1252	524
Grp Volume(v), veh/h	13	518	95	121	781	16	126	49	21	21	0	105
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	0	1776
Q Serve(g_s), s	0.5	14.3	2.4	4.3	23.5	0.3	4.4	1.4	0.7	0.7	0.0	3.6
Cycle Q Clear(g_c), s	0.5	14.3	2.4	4.3	23.5	0.3	4.4	1.4	0.7	0.7	0.0	3.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.30
Lane Grp Cap(c), veh/h	29	780	661	154	912	773	160	298	253	43	0	166
V/C Ratio(X)	0.45	0.66	0.14	0.78	0.86	0.02	0.79	0.16	0.08	0.48	0.00	0.63
Avail Cap(c_a), veh/h	195	1928	1634	195	1928	1634	195	584	495	195	0	555
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	31.2	15.0	11.6	28.7	14.4	8.5	28.5	23.2	22.9	30.8	0.0	28.0
Incr Delay (d2), s/veh	10.7	1.0	0.1	14.9	2.4	0.0	15.8	0.3	0.1	8.1	0.0	3.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	4.9	0.7	2.3	7.7	0.1	2.4	0.6	0.3	0.4	0.0	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.0	16.0	11.7	43.5	16.9	8.5	44.3	23.5	23.1	39.0	0.0	31.9
LnGrp LOS	D	B	B	D	B	A	D	C	C	D	A	C
Approach Vol, veh/h		626			918			196			126	
Approach Delay, s/veh		15.9			20.2			36.8			33.0	
Approach LOS		B			C			D			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	10.6	31.7	10.8	11.0	6.0	36.2	6.6	15.2				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	7.0	66.0	7.0	20.0	7.0	66.0	7.0	20.0				
Max Q Clear Time (g_c+I1), s	6.3	16.3	6.4	5.6	2.5	25.5	2.7	3.4				
Green Ext Time (p_c), s	0.0	3.5	0.0	0.4	0.0	5.7	0.0	0.2				
Intersection Summary												
HCM 6th Ctrl Delay			21.4									
HCM 6th LOS			C									

Timings
11: Yosemite St & E. 160th Ave (SH 7)

Existing Traffic
AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	14	464	19	26	804	7	37	9	16	7
Future Volume (vph)	14	464	19	26	804	7	37	9	16	7
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	5	2		1	6			8		4
Permitted Phases	2		2	6		6	8		4	
Detector Phase	5	2	2	1	6	6	8	8	4	4
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	20.0	20.0	10.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	12.0	83.0	83.0	12.0	83.0	83.0	25.0	25.0	25.0	25.0
Total Split (%)	10.0%	69.2%	69.2%	10.0%	69.2%	69.2%	20.8%	20.8%	20.8%	20.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	None	None	Min	Min	Min	Min
Act Effect Green (s)	36.6	34.7	34.7	37.2	36.5	36.5	8.7	8.7	8.7	8.7
Actuated g/C Ratio	0.63	0.60	0.60	0.64	0.63	0.63	0.15	0.15	0.15	0.15
v/c Ratio	0.05	0.49	0.02	0.05	0.80	0.01	0.21	0.20	0.10	0.11
Control Delay	3.1	8.7	0.1	3.1	14.4	0.0	33.2	15.8	32.7	19.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.1	8.7	0.1	3.1	14.4	0.0	33.2	15.8	32.7	19.8
LOS	A	A	A	A	B	A	C	B	C	B
Approach Delay		8.2			13.9			23.2		24.9
Approach LOS		A			B			C		C

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 58.3
 Natural Cycle: 75
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.80
 Intersection Signal Delay: 12.8
 Intersection LOS: B
 Intersection Capacity Utilization 59.4%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 11: Yosemite St & E. 160th Ave (SH 7)



HCM 6th Signalized Intersection Summary
 11: Yosemite St & E. 160th Ave (SH 7)

Existing Traffic
 AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	464	19	26	804	7	37	9	41	16	7	18
Future Volume (veh/h)	14	464	19	26	804	7	37	9	41	16	7	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	16	540	0	30	935	8	43	10	48	19	8	21
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	288	1089		556	1115	945	248	27	129	222	44	115
Arrive On Green	0.02	0.58	0.00	0.03	0.60	0.60	0.10	0.10	0.10	0.10	0.10	0.10
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1381	281	1347	1345	456	1198
Grp Volume(v), veh/h	16	540	0	30	935	8	43	0	58	19	0	29
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1381	0	1628	1345	0	1655
Q Serve(g_s), s	0.2	8.8	0.0	0.3	21.0	0.1	1.5	0.0	1.7	0.7	0.0	0.8
Cycle Q Clear(g_c), s	0.2	8.8	0.0	0.3	21.0	0.1	2.4	0.0	1.7	2.4	0.0	0.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.83	1.00		0.72
Lane Grp Cap(c), veh/h	288	1089		556	1115	945	248	0	156	222	0	159
V/C Ratio(X)	0.06	0.50		0.05	0.84	0.01	0.17	0.00	0.37	0.09	0.00	0.18
Avail Cap(c_a), veh/h	492	2799		735	2799	2372	646	0	625	609	0	635
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	8.2	6.4	0.0	4.7	8.5	4.3	22.8	0.0	22.1	23.2	0.0	21.7
Incr Delay (d2), s/veh	0.1	0.4	0.0	0.0	1.8	0.0	0.3	0.0	1.5	0.2	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.8	0.0	0.1	4.4	0.0	0.5	0.0	0.6	0.2	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.3	6.7	0.0	4.7	10.3	4.3	23.1	0.0	23.5	23.4	0.0	22.2
LnGrp LOS	A	A		A	B	A	C	A	C	C	A	C
Approach Vol, veh/h		556			973			101				48
Approach Delay, s/veh		6.8			10.0			23.4				22.7
Approach LOS		A			B			C				C
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.8	35.4		10.0	6.0	36.1		10.0				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	7.0	78.0		20.0	7.0	78.0		20.0				
Max Q Clear Time (g_c+I1), s	2.3	10.8		4.4	2.2	23.0		4.4				
Green Ext Time (p_c), s	0.0	3.3		0.1	0.0	8.1		0.3				

Intersection Summary

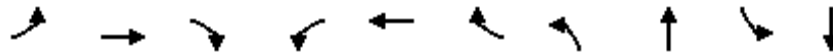
HCM 6th Ctrl Delay	10.1
HCM 6th LOS	B

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Timings
12: Havana St & E. 160th Ave (SH 7)

Existing Traffic
AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	14	504	8	20	710	8	16	4	13	6
Future Volume (vph)	14	504	8	20	710	8	16	4	13	6
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	5	2		1	6			8		4
Permitted Phases	2		2	6		6	8		4	
Detector Phase	5	2	2	1	6	6	8	8	4	4
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	20.0	20.0	10.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	12.0	83.0	83.0	12.0	83.0	83.0	25.0	25.0	25.0	25.0
Total Split (%)	10.0%	69.2%	69.2%	10.0%	69.2%	69.2%	20.8%	20.8%	20.8%	20.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	None	None	Min	Min	Min	Min
Act Effect Green (s)	25.2	24.4	24.4	25.0	24.3	24.3	6.9	6.9	6.9	6.9
Actuated g/C Ratio	0.58	0.56	0.56	0.57	0.55	0.55	0.16	0.16	0.16	0.16
v/c Ratio	0.04	0.52	0.01	0.04	0.73	0.01	0.08	0.19	0.07	0.14
Control Delay	3.0	8.1	0.0	3.0	12.3	0.0	24.0	11.3	23.9	13.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.0	8.1	0.0	3.0	12.3	0.0	24.0	11.3	23.9	13.1
LOS	A	A	A	A	B	A	C	B	C	B
Approach Delay		7.8			11.9			14.2		15.9
Approach LOS		A			B			B		B

Intersection Summary

























Cycle Length: 120
 Actuated Cycle Length: 43.8
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.73
 Intersection Signal Delay: 10.6
 Intersection LOS: B
 Intersection Capacity Utilization 53.3%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 12: Havana St & E. 160th Ave (SH 7)



HCM 6th Signalized Intersection Summary
 12: Havana St & E. 160th Ave (SH 7)

Existing Traffic
 AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	504	8	20	710	8	16	4	51	13	6	32
Future Volume (veh/h)	14	504	8	20	710	8	16	4	51	13	6	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	15	536	9	21	755	9	17	4	54	14	6	34
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	328	940	797	477	952	807	301	13	176	284	29	163
Arrive On Green	0.02	0.50	0.50	0.03	0.51	0.51	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1367	110	1491	1345	243	1379
Grp Volume(v), veh/h	15	536	9	21	755	9	17	0	58	14	0	40
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1367	0	1602	1345	0	1622
Q Serve(g_s), s	0.2	8.5	0.1	0.2	14.1	0.1	0.5	0.0	1.4	0.4	0.0	0.9
Cycle Q Clear(g_c), s	0.2	8.5	0.1	0.2	14.1	0.1	1.4	0.0	1.4	1.8	0.0	0.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.93	1.00		0.85
Lane Grp Cap(c), veh/h	328	940	797	477	952	807	301	0	189	284	0	191
V/C Ratio(X)	0.05	0.57	0.01	0.04	0.79	0.01	0.06	0.00	0.31	0.05	0.00	0.21
Avail Cap(c_a), veh/h	588	3440	2916	725	3440	2916	784	0	756	760	0	765
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	7.2	7.4	5.3	5.6	8.6	5.1	17.6	0.0	17.1	17.9	0.0	16.9
Incr Delay (d2), s/veh	0.1	0.5	0.0	0.0	1.5	0.0	0.1	0.0	0.9	0.1	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.7	0.0	0.0	2.9	0.0	0.1	0.0	0.5	0.1	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.2	7.9	5.3	5.7	10.1	5.1	17.6	0.0	18.0	18.0	0.0	17.5
LnGrp LOS	A	A	A	A	B	A	B	A	B	B	A	B
Approach Vol, veh/h		560			785			75				54
Approach Delay, s/veh		7.8			9.9			17.9				17.6
Approach LOS		A			A			B				B
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.1	26.3		10.0	5.8	26.6		10.0				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	7.0	78.0		20.0	7.0	78.0		20.0				
Max Q Clear Time (g_c+I1), s	2.2	10.5		3.8	2.2	16.1		3.4				
Green Ext Time (p_c), s	0.0	3.3		0.1	0.0	5.5		0.2				
Intersection Summary												
HCM 6th Ctrl Delay			9.8									
HCM 6th LOS			A									

HCM 6th TWSC
13: Riverdale Rd & E. 160th Ave (SH 7)

Existing Traffic
AM Peak Hour

Intersection												
Int Delay, s/veh	1.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗	↖	↗	↖		↕	↗		↕	
Traffic Vol, veh/h	0	534	26	221	687	0	9	1	176	0	0	1
Future Vol, veh/h	0	534	26	221	687	0	9	1	176	0	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	Free	-	-	None
Storage Length	-	-	475	475	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	98	98	98	98	85	98	85	98	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	545	27	226	701	0	9	1	180	0	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	701	0	0	572	0	0	1699	1698	-	1712	1725	701
Stage 1	-	-	-	-	-	-	545	545	-	1153	1153	-
Stage 2	-	-	-	-	-	-	1154	1153	-	559	572	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	-	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	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	896	-	-	1001	-	-	73	92	0	71	89	439
Stage 1	-	-	-	-	-	-	523	519	0	240	272	-
Stage 2	-	-	-	-	-	-	240	272	0	513	504	-
Platoon blocked, %		-	-	-	-	-						
Mov Cap-1 Maneuver	896	-	-	1001	-	-	60	71	-	58	69	439
Mov Cap-2 Maneuver	-	-	-	-	-	-	169	191	-	58	69	-
Stage 1	-	-	-	-	-	-	523	519	-	240	211	-
Stage 2	-	-	-	-	-	-	185	211	-	512	504	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			2.3			27.4			13.2		
HCM LOS							D			B		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	171	-	896	-	-	1001	-	-	439
HCM Lane V/C Ratio	0.061	-	-	-	-	0.225	-	-	0.003
HCM Control Delay (s)	27.4	0	0	-	-	9.6	-	-	13.2
HCM Lane LOS	D	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.2	-	0	-	-	0.9	-	-	0

Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	28	718	918	8	8	40
Future Vol, veh/h	28	718	918	8	8	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	450	-	-	325	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	30	780	998	9	9	43

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	1007	0	-	0	1838 998
Stage 1	-	-	-	-	998 -
Stage 2	-	-	-	-	840 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	688	-	-	-	83 296
Stage 1	-	-	-	-	357 -
Stage 2	-	-	-	-	424 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	688	-	-	-	79 296
Mov Cap-2 Maneuver	-	-	-	-	79 -
Stage 1	-	-	-	-	341 -
Stage 2	-	-	-	-	424 -

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	28.8
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	688	-	-	-	203
HCM Lane V/C Ratio	0.044	-	-	-	0.257
HCM Control Delay (s)	10.5	-	-	-	28.8
HCM Lane LOS	B	-	-	-	D
HCM 95th %tile Q(veh)	0.1	-	-	-	1

Intersection						
Int Delay, s/veh	2.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↑	↑	
Traffic Vol, veh/h	3	21	8	35	41	2
Future Vol, veh/h	3	21	8	35	41	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	155	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	25	10	42	49	2

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	112	50	51	0	0
Stage 1	50	-	-	-	-
Stage 2	62	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	885	1018	1555	-	-
Stage 1	972	-	-	-	-
Stage 2	961	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	880	1018	1555	-	-
Mov Cap-2 Maneuver	880	-	-	-	-
Stage 1	966	-	-	-	-
Stage 2	961	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.7	1.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1555	-	998	-	-
HCM Lane V/C Ratio	0.006	-	0.029	-	-
HCM Control Delay (s)	7.3	-	8.7	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection						
Int Delay, s/veh	2.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	39	15	45	63	2
Future Vol, veh/h	3	39	15	45	63	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	79	79	79	79	79	79
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	49	19	57	80	3

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	177	82	83	0	0
Stage 1	82	-	-	-	-
Stage 2	95	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	813	978	1514	-	-
Stage 1	941	-	-	-	-
Stage 2	929	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	802	978	1514	-	-
Mov Cap-2 Maneuver	802	-	-	-	-
Stage 1	929	-	-	-	-
Stage 2	929	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9	1.9	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1514	-	963	-	-
HCM Lane V/C Ratio	0.013	-	0.055	-	-
HCM Control Delay (s)	7.4	0	9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection						
Int Delay, s/veh	2.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		
Traffic Vol, veh/h	1	5	3	5	13	0
Future Vol, veh/h	1	5	3	5	13	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	66	66	66	66	66	66
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	8	5	8	20	0

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	38	20	20	0	0
Stage 1	20	-	-	-	-
Stage 2	18	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	974	1058	1596	-	-
Stage 1	1003	-	-	-	-
Stage 2	1005	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	971	1058	1596	-	-
Mov Cap-2 Maneuver	971	-	-	-	-
Stage 1	1000	-	-	-	-
Stage 2	1005	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.5	2.7	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1596	-	1042	-	-
HCM Lane V/C Ratio	0.003	-	0.009	-	-
HCM Control Delay (s)	7.3	0	8.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection						
Int Delay, s/veh	4.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	0	27	11	14	13	0
Future Vol, veh/h	0	27	11	14	13	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	71	71	71	71	71	71
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	38	15	20	18	0

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	68	18	18	0	0
Stage 1	18	-	-	-	-
Stage 2	50	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	937	1061	1599	-	-
Stage 1	1005	-	-	-	-
Stage 2	972	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	929	1061	1599	-	-
Mov Cap-2 Maneuver	929	-	-	-	-
Stage 1	996	-	-	-	-
Stage 2	972	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.5	3.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1599	-	1061	-	-
HCM Lane V/C Ratio	0.01	-	0.036	-	-
HCM Control Delay (s)	7.3	0	8.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

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	3	0	2	0	1	0	3	8	0	0	11	1
Future Vol, veh/h	3	0	2	0	1	0	3	8	0	0	11	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
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	3	0	2	0	1	0	3	9	0	0	13	1

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	30	29	14	30	29	9	14	0	0	9	0	0
Stage 1	14	14	-	15	15	-	-	-	-	-	-	-
Stage 2	16	15	-	15	14	-	-	-	-	-	-	-
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	979	864	1066	979	864	1073	1604	-	-	1611	-	-
Stage 1	1006	884	-	1005	883	-	-	-	-	-	-	-
Stage 2	1004	883	-	1005	884	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	976	862	1066	975	862	1073	1604	-	-	1611	-	-
Mov Cap-2 Maneuver	976	862	-	975	862	-	-	-	-	-	-	-
Stage 1	1004	884	-	1003	881	-	-	-	-	-	-	-
Stage 2	1001	881	-	1003	884	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	8.6		9.2		2		0	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1604	-	-	1010	862	1611	-	-
HCM Lane V/C Ratio	0.002	-	-	0.006	0.001	-	-	-
HCM Control Delay (s)	7.2	0	-	8.6	9.2	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-

Intersection						
Int Delay, s/veh	2.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	0	4	3	8	11	0
Future Vol, veh/h	0	4	3	8	11	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	73	73	73	73	73	73
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	5	4	11	15	0

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	34	15	15	0	0
Stage 1	15	-	-	-	-
Stage 2	19	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	979	1065	1603	-	-
Stage 1	1008	-	-	-	-
Stage 2	1004	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	976	1065	1603	-	-
Mov Cap-2 Maneuver	976	-	-	-	-
Stage 1	1005	-	-	-	-
Stage 2	1004	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.4	2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1603	-	1065	-	-
HCM Lane V/C Ratio	0.003	-	0.005	-	-
HCM Control Delay (s)	7.3	0	8.4	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	↷
Traffic Vol, veh/h	7	240	149	8	3	3
Future Vol, veh/h	7	240	149	8	3	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	286	177	10	4	4

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	187	0	-	0	484 182
Stage 1	-	-	-	-	182 -
Stage 2	-	-	-	-	302 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1387	-	-	-	542 861
Stage 1	-	-	-	-	849 -
Stage 2	-	-	-	-	750 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1387	-	-	-	538 861
Mov Cap-2 Maneuver	-	-	-	-	538 -
Stage 1	-	-	-	-	843 -
Stage 2	-	-	-	-	750 -

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	10.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1387	-	-	-	662
HCM Lane V/C Ratio	0.006	-	-	-	0.011
HCM Control Delay (s)	7.6	0	-	-	10.5
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection						
Int Delay, s/veh	1.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	240	25	34	149	5	46
Future Vol, veh/h	240	25	34	149	5	46
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	282	29	40	175	6	54

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	311	0	552	297
Stage 1	-	-	-	-	297	-
Stage 2	-	-	-	-	255	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1249	-	495	742
Stage 1	-	-	-	-	754	-
Stage 2	-	-	-	-	788	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1249	-	478	742
Mov Cap-2 Maneuver	-	-	-	-	478	-
Stage 1	-	-	-	-	754	-
Stage 2	-	-	-	-	760	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.5	10.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	704	-	-	1249	-
HCM Lane V/C Ratio	0.085	-	-	0.032	-
HCM Control Delay (s)	10.6	-	-	8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-

Intersection						
Int Delay, s/veh	1.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	36	237	127	25	27	34
Future Vol, veh/h	36	237	127	25	27	34
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	40	266	143	28	30	38

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	171	0	-	0	503
Stage 1	-	-	-	-	157
Stage 2	-	-	-	-	346
Critical Hdwy	4.12	-	-	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	2.218	-	-	-	3.518
Pot Cap-1 Maneuver	1406	-	-	-	528
Stage 1	-	-	-	-	871
Stage 2	-	-	-	-	716
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1406	-	-	-	511
Mov Cap-2 Maneuver	-	-	-	-	511
Stage 1	-	-	-	-	842
Stage 2	-	-	-	-	716

Approach	EB	WB	SB
HCM Control Delay, s	1	0	11
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1406	-	-	-	670
HCM Lane V/C Ratio	0.029	-	-	-	0.102
HCM Control Delay (s)	7.6	0	-	-	11
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3

Intersection						
Int Delay, s/veh	0.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	229	16	2	148	9	3
Future Vol, veh/h	229	16	2	148	9	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	252	18	2	163	10	3

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	270	0	428
Stage 1	-	-	-	-	261
Stage 2	-	-	-	-	167
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1293	-	584
Stage 1	-	-	-	-	783
Stage 2	-	-	-	-	863
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1293	-	583
Mov Cap-2 Maneuver	-	-	-	-	583
Stage 1	-	-	-	-	783
Stage 2	-	-	-	-	861

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	10.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	622	-	-	1293	-
HCM Lane V/C Ratio	0.021	-	-	0.002	-
HCM Control Delay (s)	10.9	-	-	7.8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection						
Int Delay, s/veh	0.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↘	↑	↘	↗
Traffic Vol, veh/h	255	9	19	171	1	10
Future Vol, veh/h	255	9	19	171	1	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	170	250	-	0	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	293	10	22	197	1	11

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	303	0	534 293
Stage 1	-	-	-	-	293 -
Stage 2	-	-	-	-	241 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	1258	-	507 746
Stage 1	-	-	-	-	757 -
Stage 2	-	-	-	-	799 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1258	-	498 746
Mov Cap-2 Maneuver	-	-	-	-	498 -
Stage 1	-	-	-	-	757 -
Stage 2	-	-	-	-	785 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	10.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	498	746	-	-	1258	-
HCM Lane V/C Ratio	0.002	0.015	-	-	0.017	-
HCM Control Delay (s)	12.2	9.9	-	-	7.9	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0	0	-	-	0.1	-

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	2	254	176	8	3	1
Future Vol, veh/h	2	254	176	8	3	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	273	189	9	3	1

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	198	0	-	0	471 194
Stage 1	-	-	-	-	194 -
Stage 2	-	-	-	-	277 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1375	-	-	-	551 847
Stage 1	-	-	-	-	839 -
Stage 2	-	-	-	-	770 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1375	-	-	-	550 847
Mov Cap-2 Maneuver	-	-	-	-	550 -
Stage 1	-	-	-	-	837 -
Stage 2	-	-	-	-	770 -

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	11
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1375	-	-	-	603
HCM Lane V/C Ratio	0.002	-	-	-	0.007
HCM Control Delay (s)	7.6	0	-	-	11
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection						
Int Delay, s/veh	1.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	227	6	16	157	10	35
Future Vol, veh/h	227	6	16	157	10	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	241	6	17	167	11	37

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	247	0	445 244
Stage 1	-	-	-	-	244 -
Stage 2	-	-	-	-	201 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	1319	-	571 795
Stage 1	-	-	-	-	797 -
Stage 2	-	-	-	-	833 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1319	-	563 795
Mov Cap-2 Maneuver	-	-	-	-	563 -
Stage 1	-	-	-	-	797 -
Stage 2	-	-	-	-	821 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0.7	10.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	728	-	-	1319	-
HCM Lane V/C Ratio	0.066	-	-	0.013	-
HCM Control Delay (s)	10.3	-	-	7.8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Timings
10: Quebec St & E. 160th Ave (SH 7)

Existing Traffic
PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	29	794	113	76	575	11	130	102	87	19	59
Future Volume (vph)	29	794	113	76	575	11	130	102	87	19	59
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	5	2		1	6		3	8		7	4
Permitted Phases			2			6			8		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	20.0	20.0	10.0	20.0	20.0	10.0	20.0	20.0	10.0	20.0
Total Split (s)	12.0	68.0	68.0	12.0	68.0	68.0	15.0	25.0	25.0	15.0	25.0
Total Split (%)	10.0%	56.7%	56.7%	10.0%	56.7%	56.7%	12.5%	20.8%	20.8%	12.5%	20.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min
Act Effect Green (s)	6.6	50.8	50.8	7.2	56.6	56.6	10.2	20.6	20.6	6.9	9.8
Actuated g/C Ratio	0.07	0.52	0.52	0.07	0.57	0.57	0.10	0.21	0.21	0.07	0.10
v/c Ratio	0.27	0.90	0.14	0.65	0.58	0.01	0.77	0.29	0.23	0.17	0.45
Control Delay	55.0	34.8	2.6	72.7	17.5	0.0	74.0	41.2	8.1	51.6	46.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.0	34.8	2.6	72.7	17.5	0.0	74.0	41.2	8.1	51.6	46.9
LOS	D	C	A	E	B	A	E	D	A	D	D
Approach Delay		31.6			23.6			45.5			47.8
Approach LOS		C			C			D			D

Intersection Summary

























Cycle Length: 120	
Actuated Cycle Length: 98.5	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay: 31.9	Intersection LOS: C
Intersection Capacity Utilization 72.4%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 10: Quebec St & E. 160th Ave (SH 7)



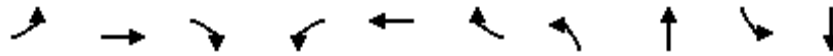
HCM 6th Signalized Intersection Summary
 10: Quebec St & E. 160th Ave (SH 7)

Existing Traffic
 PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	794	113	76	575	11	130	102	87	19	59	19
Future Volume (veh/h)	29	794	113	76	575	11	130	102	87	19	59	19
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	32	863	123	83	625	12	141	111	95	21	64	21
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	56	972	824	107	1025	868	176	280	237	41	100	33
Arrive On Green	0.03	0.52	0.52	0.06	0.55	0.55	0.10	0.15	0.15	0.02	0.07	0.07
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	1348	442
Grp Volume(v), veh/h	32	863	123	83	625	12	141	111	95	21	0	85
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	0	1791
Q Serve(g_s), s	1.4	33.2	3.3	3.7	18.3	0.3	6.3	4.3	4.4	0.9	0.0	3.7
Cycle Q Clear(g_c), s	1.4	33.2	3.3	3.7	18.3	0.3	6.3	4.3	4.4	0.9	0.0	3.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.25
Lane Grp Cap(c), veh/h	56	972	824	107	1025	868	176	280	237	41	0	133
V/C Ratio(X)	0.57	0.89	0.15	0.78	0.61	0.01	0.80	0.40	0.40	0.51	0.00	0.64
Avail Cap(c_a), veh/h	154	1459	1236	154	1459	1236	221	463	393	221	0	443
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.6	17.3	10.1	37.4	12.4	8.3	35.6	31.1	31.1	39.0	0.0	36.3
Incr Delay (d2), s/veh	8.6	4.8	0.1	14.2	0.6	0.0	15.5	0.9	1.1	9.3	0.0	5.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	12.5	1.0	1.9	6.1	0.1	3.3	1.9	1.7	0.5	0.0	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.2	22.1	10.2	51.7	13.0	8.3	51.1	32.0	32.2	48.2	0.0	41.4
LnGrp LOS	D	C	B	D	B	A	D	C	C	D	A	D
Approach Vol, veh/h		1018			720			347			106	
Approach Delay, s/veh		21.4			17.4			39.8			42.8	
Approach LOS		C			B			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	9.8	47.0	13.0	11.0	7.6	49.3	6.9	17.1				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	7.0	63.0	10.0	20.0	7.0	63.0	10.0	20.0				
Max Q Clear Time (g_c+I1), s	5.7	35.2	8.3	5.7	3.4	20.3	2.9	6.4				
Green Ext Time (p_c), s	0.0	6.7	0.1	0.3	0.0	4.1	0.0	0.6				
Intersection Summary												
HCM 6th Ctrl Delay			24.0									
HCM 6th LOS			C									

Timings
11: Yosemite St & E. 160th Ave (SH 7)

Existing Traffic
PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations	↙	↑	↗	↙	↑	↗	↙	↗	↙	↗
Traffic Volume (vph)	25	840	46	35	645	11	36	11	9	9
Future Volume (vph)	25	840	46	35	645	11	36	11	9	9
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	5	2		1	6			8		4
Permitted Phases	2		2	6		6	8		4	
Detector Phase	5	2	2	1	6	6	8	8	4	4
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	20.0	20.0	10.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	12.0	83.0	83.0	12.0	83.0	83.0	25.0	25.0	25.0	25.0
Total Split (%)	10.0%	69.2%	69.2%	10.0%	69.2%	69.2%	20.8%	20.8%	20.8%	20.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	37.1	34.1	34.1	37.9	36.1	36.1	8.3	8.3	8.3	8.3
Actuated g/C Ratio	0.62	0.57	0.57	0.64	0.61	0.61	0.14	0.14	0.14	0.14
v/c Ratio	0.05	0.81	0.05	0.10	0.59	0.01	0.19	0.18	0.05	0.10
Control Delay	2.9	17.5	1.3	3.3	9.9	0.0	33.9	17.7	32.4	22.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	2.9	17.5	1.3	3.3	9.9	0.0	33.9	17.7	32.4	22.1
LOS	A	B	A	A	A	A	C	B	C	C
Approach Delay		16.2			9.4			24.9		24.9
Approach LOS		B			A			C		C

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 59.4
 Natural Cycle: 70
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.81
 Intersection Signal Delay: 14.1
 Intersection Capacity Utilization 61.2%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service B

Splits and Phases: 11: Yosemite St & E. 160th Ave (SH 7)



HCM 6th Signalized Intersection Summary
 11: Yosemite St & E. 160th Ave (SH 7)

Existing Traffic
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	840	46	35	645	11	36	11	34	9	9	15
Future Volume (veh/h)	25	840	46	35	645	11	36	11	34	9	9	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	26	866	0	36	665	11	37	11	35	9	9	15
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	450	1046		329	1063	901	266	39	126	246	63	105
Arrive On Green	0.03	0.56	0.00	0.04	0.57	0.57	0.10	0.10	0.10	0.10	0.10	0.10
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1387	393	1252	1360	630	1051
Grp Volume(v), veh/h	26	866	0	36	665	11	37	0	46	9	0	24
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1387	0	1645	1360	0	1681
Q Serve(g_s), s	0.3	18.9	0.0	0.4	11.9	0.2	1.2	0.0	1.3	0.3	0.0	0.6
Cycle Q Clear(g_c), s	0.3	18.9	0.0	0.4	11.9	0.2	1.9	0.0	1.3	1.6	0.0	0.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.76	1.00		0.63
Lane Grp Cap(c), veh/h	450	1046		329	1063	901	266	0	165	246	0	169
V/C Ratio(X)	0.06	0.83		0.11	0.63	0.01	0.14	0.00	0.28	0.04	0.00	0.14
Avail Cap(c_a), veh/h	647	2927		509	2927	2481	683	0	660	655	0	675
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.6	9.0	0.0	7.9	7.2	4.7	21.3	0.0	20.7	21.5	0.0	20.5
Incr Delay (d2), s/veh	0.1	1.7	0.0	0.1	0.6	0.0	0.2	0.0	0.9	0.1	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	4.2	0.0	0.1	2.5	0.0	0.4	0.0	0.5	0.1	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.7	10.8	0.0	8.1	7.8	4.7	21.6	0.0	21.7	21.5	0.0	20.8
LnGrp LOS	A	B		A	A	A	C	A	C	C	A	C
Approach Vol, veh/h		892			712			83				33
Approach Delay, s/veh		10.6			7.8			21.6				21.0
Approach LOS		B			A			C				C
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.0	32.9		10.0	6.5	33.3		10.0				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	7.0	78.0		20.0	7.0	78.0		20.0				
Max Q Clear Time (g_c+I1), s	2.4	20.9		3.6	2.3	13.9		3.9				
Green Ext Time (p_c), s	0.0	6.9		0.1	0.0	4.5		0.2				

Intersection Summary

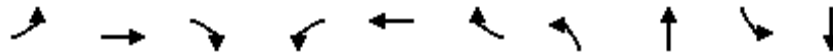
HCM 6th Ctrl Delay	10.2
HCM 6th LOS	B

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Timings
12: Havana St & E. 160th Ave (SH 7)

Existing Traffic
PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↗
Traffic Volume (vph)	39	835	30	92	689	15	8	8	6	6
Future Volume (vph)	39	835	30	92	689	15	8	8	6	6
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	5	2		1	6			8		4
Permitted Phases	2		2	6		6	8		4	
Detector Phase	5	2	2	1	6	6	8	8	4	4
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	20.0	20.0	10.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	12.0	83.0	83.0	12.0	83.0	83.0	25.0	25.0	25.0	25.0
Total Split (%)	10.0%	69.2%	69.2%	10.0%	69.2%	69.2%	20.8%	20.8%	20.8%	20.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	39.3	34.6	34.6	40.6	37.1	37.1	6.7	6.7	6.7	6.7
Actuated g/C Ratio	0.65	0.57	0.57	0.67	0.61	0.61	0.11	0.11	0.11	0.11
v/c Ratio	0.08	0.79	0.03	0.25	0.61	0.02	0.05	0.22	0.04	0.10
Control Delay	2.7	17.2	0.5	4.2	10.9	0.0	31.6	16.5	31.5	21.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	2.7	17.2	0.5	4.2	10.9	0.0	31.6	16.5	31.5	21.4
LOS	A	B	A	A	B	A	C	B	C	C
Approach Delay		16.1			9.9			18.6		23.8
Approach LOS		B			A			B		C

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 60.6
 Natural Cycle: 70
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.79
 Intersection Signal Delay: 13.5
 Intersection LOS: B
 Intersection Capacity Utilization 68.2%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 12: Havana St & E. 160th Ave (SH 7)



HCM 6th Signalized Intersection Summary
 12: Havana St & E. 160th Ave (SH 7)

Existing Traffic
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↑	↔	↔	↑	↔	↔	↔		↔	↔	
Traffic Volume (veh/h)	39	835	30	92	689	15	8	8	40	6	6	13
Future Volume (veh/h)	39	835	30	92	689	15	8	8	40	6	6	13
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	39	843	30	93	696	15	8	8	40	6	6	13
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	449	1016	861	372	1071	908	259	26	131	232	51	110
Arrive On Green	0.04	0.54	0.54	0.07	0.57	0.57	0.10	0.10	0.10	0.10	0.10	0.10
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1393	271	1355	1357	526	1139
Grp Volume(v), veh/h	39	843	30	93	696	15	8	0	48	6	0	19
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1393	0	1626	1357	0	1665
Q Serve(g_s), s	0.5	19.4	0.5	1.1	13.1	0.2	0.3	0.0	1.4	0.2	0.0	0.5
Cycle Q Clear(g_c), s	0.5	19.4	0.5	1.1	13.1	0.2	0.8	0.0	1.4	1.6	0.0	0.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.83	1.00		0.68
Lane Grp Cap(c), veh/h	449	1016	861	372	1071	908	259	0	157	232	0	161
V/C Ratio(X)	0.09	0.83	0.03	0.25	0.65	0.02	0.03	0.00	0.31	0.03	0.00	0.12
Avail Cap(c_a), veh/h	615	2814	2385	486	2814	2385	662	0	627	625	0	642
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.9	9.9	5.5	8.3	7.5	4.8	21.8	0.0	21.8	22.6	0.0	21.4
Incr Delay (d2), s/veh	0.1	1.8	0.0	0.3	0.7	0.0	0.0	0.0	1.1	0.0	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	4.8	0.1	0.2	2.8	0.0	0.1	0.0	0.5	0.1	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.0	11.7	5.5	8.7	8.2	4.8	21.8	0.0	22.9	22.6	0.0	21.7
LnGrp LOS	A	B	A	A	A	A	C	A	C	C	A	C
Approach Vol, veh/h		912			804			56				25
Approach Delay, s/veh		11.2			8.2			22.7				21.9
Approach LOS		B			A			C				C
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.7	33.2		10.0	7.1	34.7		10.0				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	7.0	78.0		20.0	7.0	78.0		20.0				
Max Q Clear Time (g_c+I1), s	3.1	21.4		3.6	2.5	15.1		3.4				
Green Ext Time (p_c), s	0.1	6.7		0.0	0.0	4.9		0.2				

Intersection Summary

HCM 6th Ctrl Delay	10.4
HCM 6th LOS	B

HCM 6th TWSC
13: Riverdale Rd & E. 160th Ave (SH 7)

Existing Traffic
PM Peak Hour

Intersection												
Int Delay, s/veh	1.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗	↖	↗	↖		↕	↗		↕	
Traffic Vol, veh/h	0	828	16	166	802	0	16	0	276	3	0	1
Future Vol, veh/h	0	828	16	166	802	0	16	0	276	3	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	Free	-	-	None
Storage Length	-	-	475	475	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	99	99	99	99	85	99	85	99	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	836	16	168	810	0	16	0	279	4	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	810	0	0	852	0	0	1983	1982	-	1990	1998	810
Stage 1	-	-	-	-	-	-	836	836	-	1146	1146	-
Stage 2	-	-	-	-	-	-	1147	1146	-	844	852	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	-	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	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	816	-	-	787	-	-	46	61	0	45	60	380
Stage 1	-	-	-	-	-	-	362	382	0	242	274	-
Stage 2	-	-	-	-	-	-	242	274	0	358	376	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	816	-	-	787	-	-	38	48	-	38	47	380
Mov Cap-2 Maneuver	-	-	-	-	-	-	162	182	-	38	47	-
Stage 1	-	-	-	-	-	-	362	382	-	242	216	-
Stage 2	-	-	-	-	-	-	190	216	-	358	376	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			1.9			29.7			86.1		
HCM LOS							D			F		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	162	-	816	-	-	787	-	-	49
HCM Lane V/C Ratio	0.1	-	-	-	-	0.213	-	-	0.096
HCM Control Delay (s)	29.7	0	0	-	-	10.8	-	-	86.1
HCM Lane LOS	D	A	A	-	-	B	-	-	F
HCM 95th %tile Q(veh)	0.3	-	0	-	-	0.8	-	-	0.3

HCM 6th TWSC
 14: E. 160th Ave (SH 7) & Tuscon St

Existing Traffic
 PM Peak Hour

Intersection						
Int Delay, s/veh	0.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	47	1018	903	21	5	26
Future Vol, veh/h	47	1018	903	21	5	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	450	-	-	325	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	49	1060	941	22	5	27

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	963	0	-	0	2099 941
Stage 1	-	-	-	-	941 -
Stage 2	-	-	-	-	1158 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	715	-	-	-	57 319
Stage 1	-	-	-	-	380 -
Stage 2	-	-	-	-	299 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	715	-	-	-	53 319
Mov Cap-2 Maneuver	-	-	-	-	53 -
Stage 1	-	-	-	-	354 -
Stage 2	-	-	-	-	299 -

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	30
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	715	-	-	-	176
HCM Lane V/C Ratio	0.068	-	-	-	0.183
HCM Control Delay (s)	10.4	-	-	-	30
HCM Lane LOS	B	-	-	-	D
HCM 95th %tile Q(veh)	0.2	-	-	-	0.7

HCM 6th TWSC
15: Quebec St & Eagle Shadow Ave

Existing Traffic
PM Peak Hour

Intersection						
Int Delay, s/veh	1.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	8	20	76	59	1
Future Vol, veh/h	0	8	20	76	59	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	155	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	9	23	87	68	1

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	202	69	69	0	-	0
Stage 1	69	-	-	-	-	-
Stage 2	133	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	787	994	1532	-	-	-
Stage 1	954	-	-	-	-	-
Stage 2	893	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	775	994	1532	-	-	-
Mov Cap-2 Maneuver	775	-	-	-	-	-
Stage 1	940	-	-	-	-	-
Stage 2	893	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.7	1.5	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1532	-	994	-	-
HCM Lane V/C Ratio	0.015	-	0.009	-	-
HCM Control Delay (s)	7.4	-	8.7	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection						
Int Delay, s/veh	1.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	1	18	26	96	63	5
Future Vol, veh/h	1	18	26	96	63	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	21	30	110	72	6

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	245	75	78	0	0
Stage 1	75	-	-	-	-
Stage 2	170	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	743	986	1520	-	-
Stage 1	948	-	-	-	-
Stage 2	860	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	727	986	1520	-	-
Mov Cap-2 Maneuver	727	-	-	-	-
Stage 1	928	-	-	-	-
Stage 2	860	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.8	1.6	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1520	-	968	-	-
HCM Lane V/C Ratio	0.02	-	0.023	-	-
HCM Control Delay (s)	7.4	0	8.8	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Intersection						
Int Delay, s/veh	1.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	0	3	5	16	23	3
Future Vol, veh/h	0	3	5	16	23	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	4	6	19	28	4

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	61	30	32	0	0
Stage 1	30	-	-	-	-
Stage 2	31	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	945	1044	1580	-	-
Stage 1	993	-	-	-	-
Stage 2	992	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	941	1044	1580	-	-
Mov Cap-2 Maneuver	941	-	-	-	-
Stage 1	989	-	-	-	-
Stage 2	992	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.5	1.7	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1580	-	1044	-	-
HCM Lane V/C Ratio	0.004	-	0.003	-	-
HCM Control Delay (s)	7.3	0	8.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection						
Int Delay, s/veh	3.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	1	14	24	15	24	1
Future Vol, veh/h	1	14	24	15	24	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	16	28	17	28	1

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	102	29	29	0	0
Stage 1	29	-	-	-	-
Stage 2	73	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	896	1046	1584	-	-
Stage 1	994	-	-	-	-
Stage 2	950	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	880	1046	1584	-	-
Mov Cap-2 Maneuver	880	-	-	-	-
Stage 1	976	-	-	-	-
Stage 2	950	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.5	4.5	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1584	-	1033	-	-
HCM Lane V/C Ratio	0.018	-	0.017	-	-
HCM Control Delay (s)	7.3	0	8.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

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	1	0	2	0	1	0	2	10	0	0	24	4
Future Vol, veh/h	1	0	2	0	1	0	2	10	0	0	24	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
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	67	67	67	67	67	67	67	67	67	67	67	67
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	3	0	1	0	3	15	0	0	36	6

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	61	60	39	62	63	15	42	0	0	15	0	0
Stage 1	39	39	-	21	21	-	-	-	-	-	-	-
Stage 2	22	21	-	41	42	-	-	-	-	-	-	-
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	934	831	1033	933	828	1065	1567	-	-	1603	-	-
Stage 1	976	862	-	998	878	-	-	-	-	-	-	-
Stage 2	996	878	-	974	860	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	931	829	1033	929	826	1065	1567	-	-	1603	-	-
Mov Cap-2 Maneuver	931	829	-	929	826	-	-	-	-	-	-	-
Stage 1	974	862	-	996	876	-	-	-	-	-	-	-
Stage 2	992	876	-	971	860	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	8.6		9.4		1.2		0	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1567	-	-	997	826	1603	-
HCM Lane V/C Ratio	0.002	-	-	0.004	0.002	-	-
HCM Control Delay (s)	7.3	0	-	8.6	9.4	0	-
HCM Lane LOS	A	A	-	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-

Intersection						
Int Delay, s/veh	2.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	2	4	7	11	22	4
Future Vol, veh/h	2	4	7	11	22	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	63	63	63	63	63	63
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	6	11	17	35	6

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	77	38	41	0	0
Stage 1	38	-	-	-	-
Stage 2	39	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	926	1034	1568	-	-
Stage 1	984	-	-	-	-
Stage 2	983	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	920	1034	1568	-	-
Mov Cap-2 Maneuver	920	-	-	-	-
Stage 1	977	-	-	-	-
Stage 2	983	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.7	2.8	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1568	-	993	-	-
HCM Lane V/C Ratio	0.007	-	0.01	-	-
HCM Control Delay (s)	7.3	0	8.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	2	112	150	1	5	5
Future Vol, veh/h	2	112	150	1	5	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	140	188	1	6	6

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	189	0	0	335	189
Stage 1	-	-	-	189	-
Stage 2	-	-	-	146	-
Critical Hdwy	4.12	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	3.518	3.318
Pot Cap-1 Maneuver	1385	-	-	660	853
Stage 1	-	-	-	843	-
Stage 2	-	-	-	881	-
Platoon blocked, %		-	-		
Mov Cap-1 Maneuver	1385	-	-	659	853
Mov Cap-2 Maneuver	-	-	-	659	-
Stage 1	-	-	-	841	-
Stage 2	-	-	-	881	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	9.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1385	-	-	-	744
HCM Lane V/C Ratio	0.002	-	-	-	0.017
HCM Control Delay (s)	7.6	0	-	-	9.9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection						
Int Delay, s/veh	1.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	104	13	24	145	6	11
Future Vol, veh/h	104	13	24	145	6	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	124	15	29	173	7	13

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	139	0	363
Stage 1	-	-	-	-	132
Stage 2	-	-	-	-	231
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1445	-	636
Stage 1	-	-	-	-	894
Stage 2	-	-	-	-	807
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1445	-	622
Mov Cap-2 Maneuver	-	-	-	-	622
Stage 1	-	-	-	-	894
Stage 2	-	-	-	-	789

Approach	EB	WB	NB
HCM Control Delay, s	0	1.1	9.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	786	-	-	1445	-
HCM Lane V/C Ratio	0.026	-	-	0.02	-
HCM Control Delay (s)	9.7	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

Intersection						
Int Delay, s/veh	1.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	16	114	199	17	17	22
Future Vol, veh/h	16	114	199	17	17	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	20	141	246	21	21	27

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	267	0	0	438	257
Stage 1	-	-	-	257	-
Stage 2	-	-	-	181	-
Critical Hdwy	4.12	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	3.518	3.318
Pot Cap-1 Maneuver	1297	-	-	576	782
Stage 1	-	-	-	786	-
Stage 2	-	-	-	850	-
Platoon blocked, %		-	-		
Mov Cap-1 Maneuver	1297	-	-	566	782
Mov Cap-2 Maneuver	-	-	-	566	-
Stage 1	-	-	-	773	-
Stage 2	-	-	-	850	-

Approach	EB	WB	SB
HCM Control Delay, s	1	0	10.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1297	-	-	-	670
HCM Lane V/C Ratio	0.015	-	-	-	0.072
HCM Control Delay (s)	7.8	0	-	-	10.8
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Intersection						
Int Delay, s/veh	0.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	126	5	2	206	10	1
Future Vol, veh/h	126	5	2	206	10	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	147	6	2	240	12	1

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	153	0	394
Stage 1	-	-	-	-	150
Stage 2	-	-	-	-	244
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1428	-	611
Stage 1	-	-	-	-	878
Stage 2	-	-	-	-	797
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1428	-	610
Mov Cap-2 Maneuver	-	-	-	-	610
Stage 1	-	-	-	-	878
Stage 2	-	-	-	-	795

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	10.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	628	-	-	1428	-
HCM Lane V/C Ratio	0.02	-	-	0.002	-
HCM Control Delay (s)	10.9	-	-	7.5	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection						
Int Delay, s/veh	0.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↖	↑	↖	↗
Traffic Vol, veh/h	116	3	11	192	7	10
Future Vol, veh/h	116	3	11	192	7	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	170	250	-	0	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	135	3	13	223	8	12

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	138	0	384
Stage 1	-	-	-	-	135
Stage 2	-	-	-	-	249
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1446	-	619
Stage 1	-	-	-	-	891
Stage 2	-	-	-	-	792
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1446	-	613
Mov Cap-2 Maneuver	-	-	-	-	613
Stage 1	-	-	-	-	891
Stage 2	-	-	-	-	785

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	9.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	613	914	-	-	1446	-
HCM Lane V/C Ratio	0.013	0.013	-	-	0.009	-
HCM Control Delay (s)	11	9	-	-	7.5	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0	0	-	-	0	-

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	
Traffic Vol, veh/h	1	136	210	1	1	1
Future Vol, veh/h	1	136	210	1	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	146	226	1	1	1

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	227	0	-	0	375 227
Stage 1	-	-	-	-	227 -
Stage 2	-	-	-	-	148 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1341	-	-	-	626 812
Stage 1	-	-	-	-	811 -
Stage 2	-	-	-	-	880 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1341	-	-	-	625 812
Mov Cap-2 Maneuver	-	-	-	-	625 -
Stage 1	-	-	-	-	810 -
Stage 2	-	-	-	-	880 -

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	10.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1341	-	-	-	706
HCM Lane V/C Ratio	0.001	-	-	-	0.003
HCM Control Delay (s)	7.7	0	-	-	10.1
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection						
Int Delay, s/veh	2.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	136	1	56	203	8	44
Future Vol, veh/h	136	1	56	203	8	44
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	146	1	60	218	9	47

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	147	0	485 147
Stage 1	-	-	-	-	147 -
Stage 2	-	-	-	-	338 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	1435	-	541 900
Stage 1	-	-	-	-	880 -
Stage 2	-	-	-	-	722 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1435	-	515 900
Mov Cap-2 Maneuver	-	-	-	-	515 -
Stage 1	-	-	-	-	880 -
Stage 2	-	-	-	-	687 -

Approach	EB	WB	NB
HCM Control Delay, s	0	1.6	9.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	807	-	-	1435	-
HCM Lane V/C Ratio	0.069	-	-	0.042	-
HCM Control Delay (s)	9.8	-	-	7.6	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Timings
10: Quebec St & E. 160th Ave (SH 7)

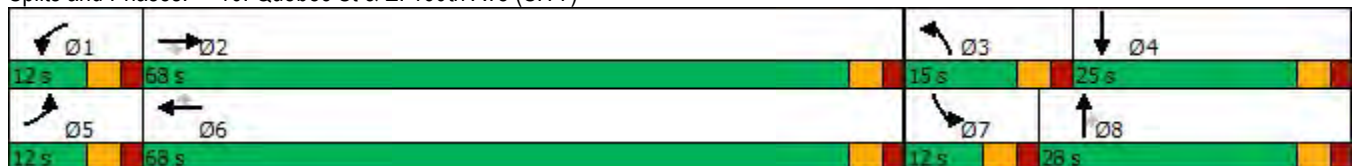
2030 Background Traffic
AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	13	478	93	118	770	16	123	48	21	21	72
Future Volume (vph)	13	478	93	118	770	16	123	48	21	21	72
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	5	2		1	6		3	8		7	4
Permitted Phases			2			6			8		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	20.0	20.0	10.0	20.0	20.0	10.0	20.0	20.0	10.0	20.0
Total Split (s)	12.0	68.0	68.0	12.0	68.0	68.0	15.0	28.0	28.0	12.0	25.0
Total Split (%)	10.0%	56.7%	56.7%	10.0%	56.7%	56.7%	12.5%	23.3%	23.3%	10.0%	20.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)	6.5	41.4	41.4	7.4	50.3	50.3	10.5	23.5	23.5	6.7	11.5
Actuated g/C Ratio	0.07	0.45	0.45	0.08	0.55	0.55	0.11	0.26	0.26	0.07	0.13
v/c Ratio	0.12	0.71	0.14	0.99	0.89	0.02	0.71	0.12	0.05	0.20	0.51
Control Delay	51.5	24.5	3.0	120.0	31.7	0.1	65.5	36.4	0.2	52.2	44.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.5	24.5	3.0	120.0	31.7	0.1	65.5	36.4	0.2	52.2	44.8
LOS	D	C	A	F	C	A	E	D	A	D	D
Approach Delay		21.9			42.7			51.1			46.1
Approach LOS		C			D			D			D

Intersection Summary

























Cycle Length: 120	
Actuated Cycle Length: 91.9	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.99	
Intersection Signal Delay: 36.8	Intersection LOS: D
Intersection Capacity Utilization 70.7%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 10: Quebec St & E. 160th Ave (SH 7)



HCM 6th Signalized Intersection Summary
 10: Quebec St & E. 160th Ave (SH 7)

2030 Background Traffic
 AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	478	93	118	770	16	123	48	21	21	72	30
Future Volume (veh/h)	13	478	93	118	770	16	123	48	21	21	72	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	15	598	109	139	906	19	145	56	25	25	85	35
Peak Hour Factor	0.85	0.80	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	31	882	747	154	1010	856	180	317	269	47	120	49
Arrive On Green	0.02	0.47	0.47	0.09	0.54	0.54	0.10	0.17	0.17	0.03	0.10	0.10
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	1259	518
Grp Volume(v), veh/h	15	598	109	139	906	19	145	56	25	25	0	120
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	0	1777
Q Serve(g_s), s	0.7	20.2	3.2	6.3	35.1	0.5	6.5	2.1	1.1	1.1	0.0	5.3
Cycle Q Clear(g_c), s	0.7	20.2	3.2	6.3	35.1	0.5	6.5	2.1	1.1	1.1	0.0	5.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.29
Lane Grp Cap(c), veh/h	31	882	747	154	1010	856	180	317	269	47	0	169
V/C Ratio(X)	0.48	0.68	0.15	0.91	0.90	0.02	0.81	0.18	0.09	0.53	0.00	0.71
Avail Cap(c_a), veh/h	154	1451	1230	154	1451	1230	219	530	449	154	0	438
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	39.5	16.7	12.2	36.8	16.7	8.7	35.7	28.9	28.5	39.0	0.0	35.7
Incr Delay (d2), s/veh	10.7	0.9	0.1	45.9	5.7	0.0	16.4	0.3	0.1	8.9	0.0	5.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	7.4	1.0	4.5	13.2	0.1	3.5	0.9	0.4	0.6	0.0	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.3	17.6	12.3	82.6	22.3	8.7	52.2	29.1	28.6	47.9	0.0	41.1
LnGrp LOS	D	B	B	F	C	A	D	C	C	D	A	D
Approach Vol, veh/h		722			1064			226			145	
Approach Delay, s/veh		17.5			30.0			43.8			42.3	
Approach LOS		B			C			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.0	43.3	13.2	12.7	6.4	48.8	7.2	18.8				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	7.0	63.0	10.0	20.0	7.0	63.0	7.0	23.0				
Max Q Clear Time (g_c+I1), s	8.3	22.2	8.5	7.3	2.7	37.1	3.1	4.1				
Green Ext Time (p_c), s	0.0	4.2	0.1	0.4	0.0	6.8	0.0	0.2				
Intersection Summary												
HCM 6th Ctrl Delay			28.1									
HCM 6th LOS			C									

Timings
11: Yosemite St & E. 160th Ave (SH 7)

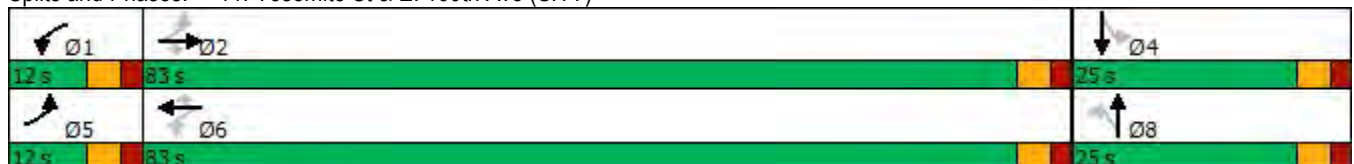
2030 Background Traffic
AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	14	535	22	30	931	7	43	9	16	7
Future Volume (vph)	14	535	22	30	931	7	43	9	16	7
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	5	2		1	6			8		4
Permitted Phases	2		2	6		6	8		4	
Detector Phase	5	2	2	1	6	6	8	8	4	4
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	20.0	20.0	10.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	12.0	83.0	83.0	12.0	83.0	83.0	25.0	25.0	25.0	25.0
Total Split (%)	10.0%	69.2%	69.2%	10.0%	69.2%	69.2%	20.8%	20.8%	20.8%	20.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	51.2	47.8	47.8	52.1	50.3	50.3	9.5	9.5	9.5	9.5
Actuated g/C Ratio	0.69	0.64	0.64	0.70	0.67	0.67	0.13	0.13	0.13	0.13
v/c Ratio	0.06	0.52	0.03	0.06	0.86	0.01	0.29	0.26	0.11	0.13
Control Delay	3.0	9.3	0.0	2.8	18.9	0.0	43.7	18.3	42.1	24.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.0	9.3	0.0	2.8	18.9	0.0	43.7	18.3	42.1	24.0
LOS	A	A	A	A	B	A	D	B	D	C
Approach Delay		8.8			18.3			29.3		31.2
Approach LOS		A			B			C		C

Intersection Summary
























Cycle Length: 120
 Actuated Cycle Length: 74.7
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.86
 Intersection Signal Delay: 16.0
 Intersection LOS: B
 Intersection Capacity Utilization 66.4%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 11: Yosemite St & E. 160th Ave (SH 7)



HCM 6th Signalized Intersection Summary
 11: Yosemite St & E. 160th Ave (SH 7)

2030 Background Traffic
 AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	535	22	30	931	7	43	9	47	16	7	18
Future Volume (veh/h)	14	535	22	30	931	7	43	9	47	16	7	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	16	622	0	35	1083	8	50	10	55	19	8	21
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	248	1207		551	1239	1050	209	22	120	177	40	104
Arrive On Green	0.02	0.65	0.00	0.04	0.66	0.66	0.09	0.09	0.09	0.09	0.09	0.09
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1381	250	1373	1337	456	1198
Grp Volume(v), veh/h	16	622	0	35	1083	8	50	0	65	19	0	29
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1381	0	1623	1337	0	1655
Q Serve(g_s), s	0.2	11.5	0.0	0.4	30.1	0.1	2.3	0.0	2.5	0.9	0.0	1.1
Cycle Q Clear(g_c), s	0.2	11.5	0.0	0.4	30.1	0.1	3.3	0.0	2.5	3.4	0.0	1.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.85	1.00		0.72
Lane Grp Cap(c), veh/h	248	1207		551	1239	1050	209	0	141	177	0	144
V/C Ratio(X)	0.06	0.52		0.06	0.87	0.01	0.24	0.00	0.46	0.11	0.00	0.20
Avail Cap(c_a), veh/h	406	2250		679	2250	1907	514	0	501	472	0	510
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	10.4	6.1	0.0	4.4	8.8	3.7	29.0	0.0	28.1	29.7	0.0	27.5
Incr Delay (d2), s/veh	0.1	0.3	0.0	0.0	2.1	0.0	0.6	0.0	2.3	0.3	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	2.5	0.0	0.1	6.7	0.0	0.7	0.0	1.0	0.3	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.5	6.4	0.0	4.5	10.9	3.7	29.6	0.0	30.5	30.0	0.0	28.2
LnGrp LOS	B	A		A	B	A	C	A	C	C	A	C
Approach Vol, veh/h		638			1126			115				48
Approach Delay, s/veh		6.5			10.6			30.1				28.9
Approach LOS		A			B			C				C
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.3	46.9		10.6	6.3	47.9		10.6				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	7.0	78.0		20.0	7.0	78.0		20.0				
Max Q Clear Time (g_c+I1), s	2.4	13.5		5.4	2.2	32.1		5.3				
Green Ext Time (p_c), s	0.0	4.1		0.1	0.0	10.8		0.3				

Intersection Summary

HCM 6th Ctrl Delay	10.9
HCM 6th LOS	B

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Timings
12: Havana St & E. 160th Ave (SH 7)

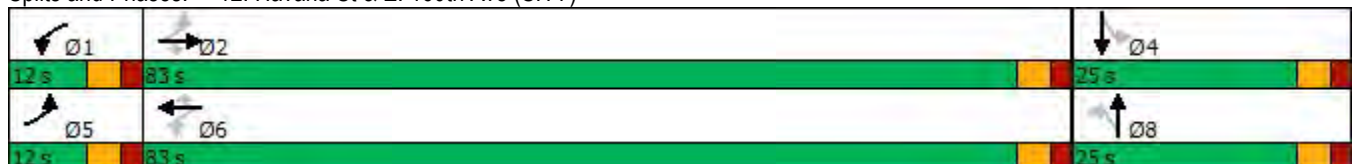
2030 Background Traffic
AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	16	579	9	23	816	9	18	5	16	8
Future Volume (vph)	16	579	9	23	816	9	18	5	16	8
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	5	2		1	6			8		4
Permitted Phases	2		2	6		6	8		4	
Detector Phase	5	2	2	1	6	6	8	8	4	4
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	20.0	20.0	10.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	12.0	83.0	83.0	12.0	83.0	83.0	25.0	25.0	25.0	25.0
Total Split (%)	10.0%	69.2%	69.2%	10.0%	69.2%	69.2%	20.8%	20.8%	20.8%	20.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	30.9	29.0	29.0	31.5	30.8	30.8	7.3	7.3	7.3	7.3
Actuated g/C Ratio	0.61	0.57	0.57	0.62	0.61	0.61	0.14	0.14	0.14	0.14
v/c Ratio	0.05	0.58	0.01	0.05	0.77	0.01	0.10	0.24	0.09	0.19
Control Delay	2.9	9.9	0.0	2.9	13.0	0.0	28.9	12.8	28.9	15.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	2.9	9.9	0.0	2.9	13.0	0.0	28.9	12.8	28.9	15.0
LOS	A	A	A	A	B	A	C	B	C	B
Approach Delay		9.6			12.6			16.3		18.5
Approach LOS		A			B			B		B

Intersection Summary

























Cycle Length: 120
 Actuated Cycle Length: 50.9
 Natural Cycle: 70
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.77
 Intersection Signal Delay: 11.9
 Intersection Capacity Utilization 58.9%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service B

Splits and Phases: 12: Havana St & E. 160th Ave (SH 7)



HCM 6th Signalized Intersection Summary
 12: Havana St & E. 160th Ave (SH 7)

2030 Background Traffic
 AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	579	9	23	816	9	18	5	59	16	8	39
Future Volume (veh/h)	16	579	9	23	816	9	18	5	59	16	8	39
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	17	616	10	24	868	10	19	5	63	17	9	41
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	305	1041	883	471	1055	894	251	12	154	235	30	139
Arrive On Green	0.02	0.56	0.56	0.03	0.56	0.56	0.10	0.10	0.10	0.10	0.10	0.10
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1355	118	1485	1333	293	1336
Grp Volume(v), veh/h	17	616	10	24	868	10	19	0	68	17	0	50
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1355	0	1603	1333	0	1630
Q Serve(g_s), s	0.2	10.5	0.1	0.3	18.2	0.1	0.6	0.0	1.9	0.6	0.0	1.4
Cycle Q Clear(g_c), s	0.2	10.5	0.1	0.3	18.2	0.1	2.0	0.0	1.9	2.5	0.0	1.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.93	1.00		0.82
Lane Grp Cap(c), veh/h	305	1041	883	471	1055	894	251	0	166	235	0	169
V/C Ratio(X)	0.06	0.59	0.01	0.05	0.82	0.01	0.08	0.00	0.41	0.07	0.00	0.30
Avail Cap(c_a), veh/h	526	3025	2563	679	3025	2563	673	0	665	649	0	676
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	7.7	7.1	4.8	5.4	8.5	4.6	20.9	0.0	20.2	21.4	0.0	20.0
Incr Delay (d2), s/veh	0.1	0.5	0.0	0.0	1.7	0.0	0.1	0.0	1.6	0.1	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.1	0.0	0.0	3.8	0.0	0.2	0.0	0.7	0.2	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.8	7.6	4.8	5.4	10.2	4.6	21.0	0.0	21.8	21.5	0.0	21.0
LnGrp LOS	A	A	A	A	B	A	C	A	C	C	A	C
Approach Vol, veh/h		643			902			87			67	
Approach Delay, s/veh		7.6			10.0			21.7			21.1	
Approach LOS		A			B			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.4	31.9		10.0	6.0	32.2		10.0				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	7.0	78.0		20.0	7.0	78.0		20.0				
Max Q Clear Time (g_c+I1), s	2.3	12.5		4.5	2.2	20.2		4.0				
Green Ext Time (p_c), s	0.0	4.0		0.2	0.0	7.0		0.3				
Intersection Summary												
HCM 6th Ctrl Delay				10.1								
HCM 6th LOS				B								

Intersection												
Int Delay, s/veh	1.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↔	↔	↔			↔	↔		↔	
Traffic Vol, veh/h	0	616	30	254	790	0	10	1	202	0	0	1
Future Vol, veh/h	0	616	30	254	790	0	10	1	202	0	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	Free	-	-	None
Storage Length	-	-	475	475	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	98	98	98	98	85	98	85	98	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	629	31	259	806	0	10	1	206	0	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	806	0	0	660	0	0	1954	1953	-	1969	1984	806
Stage 1	-	-	-	-	-	-	629	629	-	1324	1324	-
Stage 2	-	-	-	-	-	-	1325	1324	-	645	660	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	-	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	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	819	-	-	928	-	-	48	64	0	47	61	382
Stage 1	-	-	-	-	-	-	470	475	0	192	225	-
Stage 2	-	-	-	-	-	-	192	225	0	461	460	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	819	-	-	928	-	-	38	46	-	37	44	382
Mov Cap-2 Maneuver	-	-	-	-	-	-	127	148	-	37	44	-
Stage 1	-	-	-	-	-	-	470	475	-	192	162	-
Stage 2	-	-	-	-	-	-	138	162	-	460	460	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			2.5			35.6			14.5		
HCM LOS							E			B		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	129	-	819	-	-	928	-	-	382
HCM Lane V/C Ratio	0.088	-	-	-	-	0.279	-	-	0.003
HCM Control Delay (s)	35.6	0	0	-	-	10.4	-	-	14.5
HCM Lane LOS	E	A	A	-	-	B	-	-	B
HCM 95th %tile Q(veh)	0.3	-	0	-	-	1.1	-	-	0

Intersection						
Int Delay, s/veh	1.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	32	828	1055	9	9	46
Future Vol, veh/h	32	828	1055	9	9	46
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	450	-	-	325	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	35	900	1147	10	10	50

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	1157	0	0 2117 1147
Stage 1	-	-	- 1147 -
Stage 2	-	-	- 970 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	604	-	- 56 242
Stage 1	-	-	- 303 -
Stage 2	-	-	- 368 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	604	-	- 53 242
Mov Cap-2 Maneuver	-	-	- 53 -
Stage 1	-	-	- 285 -
Stage 2	-	-	- 368 -

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	42.9
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	604	-	-	-	153
HCM Lane V/C Ratio	0.058	-	-	-	0.391
HCM Control Delay (s)	11.3	-	-	-	42.9
HCM Lane LOS	B	-	-	-	E
HCM 95th %tile Q(veh)	0.2	-	-	-	1.7

Intersection						
Int Delay, s/veh	2.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	21	8	37	46	2
Future Vol, veh/h	3	21	8	37	46	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	155	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	25	10	45	55	2

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	121	56	57	0	0
Stage 1	56	-	-	-	-
Stage 2	65	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	874	1011	1547	-	-
Stage 1	967	-	-	-	-
Stage 2	958	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	869	1011	1547	-	-
Mov Cap-2 Maneuver	869	-	-	-	-
Stage 1	961	-	-	-	-
Stage 2	958	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.7	1.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1547	-	991	-	-
HCM Lane V/C Ratio	0.006	-	0.029	-	-
HCM Control Delay (s)	7.3	-	8.7	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection						
Int Delay, s/veh	2.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	39	15	47	68	2
Future Vol, veh/h	3	39	15	47	68	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	79	79	79	79	79	79
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	49	19	59	86	3

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	185	88	89	0	0
Stage 1	88	-	-	-	-
Stage 2	97	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	804	970	1506	-	-
Stage 1	935	-	-	-	-
Stage 2	927	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	794	970	1506	-	-
Mov Cap-2 Maneuver	794	-	-	-	-
Stage 1	923	-	-	-	-
Stage 2	927	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9	1.8	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1506	-	955	-	-
HCM Lane V/C Ratio	0.013	-	0.056	-	-
HCM Control Delay (s)	7.4	0	9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection						
Int Delay, s/veh	2.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	5	3	5	13	0
Future Vol, veh/h	1	5	3	5	13	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	66	66	66	66	66	66
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	8	5	8	20	0

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	38	20	20	0	0
Stage 1	20	-	-	-	-
Stage 2	18	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	974	1058	1596	-	-
Stage 1	1003	-	-	-	-
Stage 2	1005	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	971	1058	1596	-	-
Mov Cap-2 Maneuver	971	-	-	-	-
Stage 1	1000	-	-	-	-
Stage 2	1005	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.5	2.7	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1596	-	1042	-	-
HCM Lane V/C Ratio	0.003	-	0.009	-	-
HCM Control Delay (s)	7.3	0	8.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection						
Int Delay, s/veh	4.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	27	11	14	13	0
Future Vol, veh/h	0	27	11	14	13	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	71	71	71	71	71	71
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	38	15	20	18	0

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	68	18	18	0	0
Stage 1	18	-	-	-	-
Stage 2	50	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	937	1061	1599	-	-
Stage 1	1005	-	-	-	-
Stage 2	972	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	929	1061	1599	-	-
Mov Cap-2 Maneuver	929	-	-	-	-
Stage 1	996	-	-	-	-
Stage 2	972	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.5	3.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1599	-	1061	-	-
HCM Lane V/C Ratio	0.01	-	0.036	-	-
HCM Control Delay (s)	7.3	0	8.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection												
Int Delay, s/veh	1.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	0	2	0	0	0	3	14	0	0	13	1
Future Vol, veh/h	3	0	2	0	0	0	3	14	0	0	13	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
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	3	0	2	0	0	0	3	16	0	0	15	1

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	38	38	16	39	38	16	16	0	0	16	0	0
Stage 1	16	16	-	22	22	-	-	-	-	-	-	-
Stage 2	22	22	-	17	16	-	-	-	-	-	-	-
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	967	854	1063	966	854	1063	1602	-	-	1602	-	-
Stage 1	1004	882	-	996	877	-	-	-	-	-	-	-
Stage 2	996	877	-	1002	882	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	965	852	1063	962	852	1063	1602	-	-	1602	-	-
Mov Cap-2 Maneuver	965	852	-	962	852	-	-	-	-	-	-	-
Stage 1	1002	882	-	994	875	-	-	-	-	-	-	-
Stage 2	994	875	-	1000	882	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	8.6		0		1.3		0	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1602	-	-	1002	1602	-	-
HCM Lane V/C Ratio	0.002	-	-	0.006	-	-	-
HCM Control Delay (s)	7.3	0	-	8.6	0	0	-
HCM Lane LOS	A	A	-	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-	0	-

Intersection						
Int Delay, s/veh	1.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	4	3	17	15	0
Future Vol, veh/h	0	4	3	17	15	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	73	73	73	73	73	73
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	5	4	23	21	0

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	52	21	21	0	0
Stage 1	21	-	-	-	-
Stage 2	31	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	957	1056	1595	-	-
Stage 1	1002	-	-	-	-
Stage 2	992	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	954	1056	1595	-	-
Mov Cap-2 Maneuver	954	-	-	-	-
Stage 1	999	-	-	-	-
Stage 2	992	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.4	1.1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1595	-	1056	-	-
HCM Lane V/C Ratio	0.003	-	0.005	-	-
HCM Control Delay (s)	7.3	0	8.4	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	8	303	170	9	3	3
Future Vol, veh/h	8	303	170	9	3	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	361	202	11	4	4

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	213	0	-	0	589 208
Stage 1	-	-	-	-	208 -
Stage 2	-	-	-	-	381 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1357	-	-	-	471 832
Stage 1	-	-	-	-	827 -
Stage 2	-	-	-	-	691 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1357	-	-	-	467 832
Mov Cap-2 Maneuver	-	-	-	-	467 -
Stage 1	-	-	-	-	820 -
Stage 2	-	-	-	-	691 -

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	11.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1357	-	-	-	598
HCM Lane V/C Ratio	0.007	-	-	-	0.012
HCM Control Delay (s)	7.7	0	-	-	11.1
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection						
Int Delay, s/veh	1.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	277	29	39	173	6	53
Future Vol, veh/h	277	29	39	173	6	53
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	326	34	46	204	7	62

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	360	0	639	343
Stage 1	-	-	-	-	343	-
Stage 2	-	-	-	-	296	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1199	-	440	700
Stage 1	-	-	-	-	719	-
Stage 2	-	-	-	-	755	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1199	-	421	700
Mov Cap-2 Maneuver	-	-	-	-	421	-
Stage 1	-	-	-	-	719	-
Stage 2	-	-	-	-	723	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.5	11.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	656	-	-	1199	-
HCM Lane V/C Ratio	0.106	-	-	0.038	-
HCM Control Delay (s)	11.1	-	-	8.1	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.4	-	-	0.1	-

Intersection						
Int Delay, s/veh	2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	41	276	151	29	31	39
Future Vol, veh/h	41	276	151	29	31	39
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	46	310	170	33	35	44

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	203	0	-	0	589 187
Stage 1	-	-	-	-	187 -
Stage 2	-	-	-	-	402 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1369	-	-	-	471 855
Stage 1	-	-	-	-	845 -
Stage 2	-	-	-	-	676 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1369	-	-	-	452 855
Mov Cap-2 Maneuver	-	-	-	-	452 -
Stage 1	-	-	-	-	810 -
Stage 2	-	-	-	-	676 -

Approach	EB	WB	SB
HCM Control Delay, s	1	0	11.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1369	-	-	-	613
HCM Lane V/C Ratio	0.034	-	-	-	0.128
HCM Control Delay (s)	7.7	0	-	-	11.7
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	291	16	2	171	9	3
Future Vol, veh/h	291	16	2	171	9	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	320	18	2	188	10	3

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	338	0	521 329
Stage 1	-	-	-	-	329 -
Stage 2	-	-	-	-	192 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	1221	-	516 712
Stage 1	-	-	-	-	729 -
Stage 2	-	-	-	-	841 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1221	-	515 712
Mov Cap-2 Maneuver	-	-	-	-	515 -
Stage 1	-	-	-	-	729 -
Stage 2	-	-	-	-	839 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	11.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	553	-	-	1221	-
HCM Lane V/C Ratio	0.024	-	-	0.002	-
HCM Control Delay (s)	11.7	-	-	8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection						
Int Delay, s/veh	0.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↘	↑	↘	↗
Traffic Vol, veh/h	296	8	26	197	3	11
Future Vol, veh/h	296	8	26	197	3	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	170	250	-	0	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	340	9	30	226	3	13

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	349	0	626	340
Stage 1	-	-	-	-	340	-
Stage 2	-	-	-	-	286	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1210	-	448	702
Stage 1	-	-	-	-	721	-
Stage 2	-	-	-	-	763	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1210	-	437	702
Mov Cap-2 Maneuver	-	-	-	-	437	-
Stage 1	-	-	-	-	721	-
Stage 2	-	-	-	-	744	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	10.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	437	702	-	-	1210	-
HCM Lane V/C Ratio	0.008	0.018	-	-	0.025	-
HCM Control Delay (s)	13.3	10.2	-	-	8.1	-
HCM Lane LOS	B	B	-	-	A	-
HCM 95th %tile Q(veh)	0	0.1	-	-	0.1	-

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	2	296	206	9	3	1
Future Vol, veh/h	2	296	206	9	3	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	318	222	10	3	1

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	232	0	-	0	549 227
Stage 1	-	-	-	-	227 -
Stage 2	-	-	-	-	322 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1336	-	-	-	497 812
Stage 1	-	-	-	-	811 -
Stage 2	-	-	-	-	735 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1336	-	-	-	496 812
Mov Cap-2 Maneuver	-	-	-	-	496 -
Stage 1	-	-	-	-	809 -
Stage 2	-	-	-	-	735 -

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	11.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1336	-	-	-	549
HCM Lane V/C Ratio	0.002	-	-	-	0.008
HCM Control Delay (s)	7.7	0	-	-	11.6
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection						
Int Delay, s/veh	1.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	292	7	18	204	11	40
Future Vol, veh/h	292	7	18	204	11	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	311	7	19	217	12	43

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	318	0	570	315
Stage 1	-	-	-	-	315	-
Stage 2	-	-	-	-	255	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1242	-	483	725
Stage 1	-	-	-	-	740	-
Stage 2	-	-	-	-	788	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1242	-	475	725
Mov Cap-2 Maneuver	-	-	-	-	475	-
Stage 1	-	-	-	-	740	-
Stage 2	-	-	-	-	775	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.6	11
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	651	-	-	1242	-
HCM Lane V/C Ratio	0.083	-	-	0.015	-
HCM Control Delay (s)	11	-	-	7.9	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Timings
10: Quebec St & E. 160th Ave (SH 7)

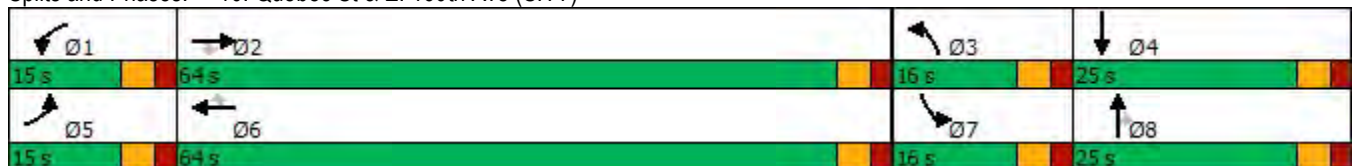
2030 Background Traffic
PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	33	921	130	87	665	13	149	117	100	22	68
Future Volume (vph)	33	921	130	87	665	13	149	117	100	22	68
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA
Protected Phases	5	2		1	6		3	8		7	4
Permitted Phases			2			6			8		
Detector Phase	5	2	2	1	6	6	3	8	8	7	4
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	20.0	20.0	10.0	20.0	20.0	10.0	20.0	20.0	10.0	20.0
Total Split (s)	15.0	64.0	64.0	15.0	64.0	64.0	16.0	25.0	25.0	16.0	25.0
Total Split (%)	12.5%	53.3%	53.3%	12.5%	53.3%	53.3%	13.3%	20.8%	20.8%	13.3%	20.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min
Act Effct Green (s)	7.6	59.1	59.1	9.4	65.4	65.4	11.0	19.3	19.3	7.0	10.8
Actuated g/C Ratio	0.07	0.54	0.54	0.09	0.59	0.59	0.10	0.17	0.17	0.06	0.10
v/c Ratio	0.30	1.00	0.15	0.63	0.65	0.01	0.92	0.39	0.30	0.21	0.53
Control Delay	55.9	56.5	2.8	68.9	20.9	0.0	100.1	46.6	10.5	54.4	51.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.9	56.5	2.8	68.9	20.9	0.0	100.1	46.6	10.5	54.4	51.7
LOS	E	E	A	E	C	A	F	D	B	D	D
Approach Delay		50.0			26.0			58.5			52.2
Approach LOS		D			C			E			D

Intersection Summary
























Cycle Length: 120	
Actuated Cycle Length: 110.3	
Natural Cycle: 100	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.00	
Intersection Signal Delay: 43.6	Intersection LOS: D
Intersection Capacity Utilization 80.7%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 10: Quebec St & E. 160th Ave (SH 7)



HCM 6th Signalized Intersection Summary
 10: Quebec St & E. 160th Ave (SH 7)

2030 Background Traffic
 PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	921	130	87	665	13	149	117	100	22	68	22
Future Volume (veh/h)	33	921	130	87	665	13	149	117	100	22	68	22
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	36	1001	141	95	723	14	162	127	109	24	74	24
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	56	1040	882	120	1108	939	190	296	251	43	102	33
Arrive On Green	0.03	0.56	0.56	0.07	0.59	0.59	0.11	0.16	0.16	0.02	0.08	0.08
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	1353	439
Grp Volume(v), veh/h	36	1001	141	95	723	14	162	127	109	24	0	98
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	0	1791
Q Serve(g_s), s	2.1	52.7	4.5	5.4	26.5	0.4	9.2	6.3	6.4	1.4	0.0	5.5
Cycle Q Clear(g_c), s	2.1	52.7	4.5	5.4	26.5	0.4	9.2	6.3	6.4	1.4	0.0	5.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.24
Lane Grp Cap(c), veh/h	56	1040	882	120	1108	939	190	296	251	43	0	136
V/C Ratio(X)	0.65	0.96	0.16	0.79	0.65	0.01	0.85	0.43	0.43	0.56	0.00	0.72
Avail Cap(c_a), veh/h	173	1070	907	173	1108	939	190	363	307	190	0	347
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	49.4	21.9	11.2	47.4	14.0	8.6	45.3	39.2	39.2	49.8	0.0	46.6
Incr Delay (d2), s/veh	12.0	18.8	0.1	14.3	1.4	0.0	29.3	1.0	1.2	10.9	0.0	7.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	24.7	1.5	2.8	9.7	0.1	5.5	2.9	2.5	0.7	0.0	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.4	40.7	11.2	61.7	15.3	8.6	74.5	40.2	40.4	60.7	0.0	53.7
LnGrp LOS	E	D	B	E	B	A	E	D	D	E	A	D
Approach Vol, veh/h		1178			832			398			122	
Approach Delay, s/veh		37.8			20.5			54.2			55.0	
Approach LOS		D			C			D			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.0	62.4	16.0	12.8	8.2	66.1	7.5	21.3				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	10.0	59.0	11.0	20.0	10.0	59.0	11.0	20.0				
Max Q Clear Time (g_c+l1), s	7.4	54.7	11.2	7.5	4.1	28.5	3.4	8.4				
Green Ext Time (p_c), s	0.0	2.6	0.0	0.3	0.0	4.9	0.0	0.7				
Intersection Summary												
HCM 6th Ctrl Delay			35.5									
HCM 6th LOS			D									

Timings
11: Yosemite St & E. 160th Ave (SH 7)

2030 Background Traffic
PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	25	974	53	40	746	11	41	11	9	9
Future Volume (vph)	25	974	53	40	746	11	41	11	9	9
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	5	2		1	6			8		4
Permitted Phases	2		2	6		6	8		4	
Detector Phase	5	2	2	1	6	6	8	8	4	4
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	20.0	20.0	10.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	12.0	83.0	83.0	12.0	83.0	83.0	25.0	25.0	25.0	25.0
Total Split (%)	10.0%	69.2%	69.2%	10.0%	69.2%	69.2%	20.8%	20.8%	20.8%	20.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	50.8	47.8	47.8	51.8	49.9	49.9	8.9	8.9	8.9	8.9
Actuated g/C Ratio	0.69	0.65	0.65	0.70	0.68	0.68	0.12	0.12	0.12	0.12
v/c Ratio	0.06	0.83	0.05	0.14	0.61	0.01	0.25	0.22	0.06	0.11
Control Delay	2.6	17.7	1.3	3.4	9.3	0.0	42.9	20.2	40.7	26.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	2.6	17.7	1.3	3.4	9.3	0.0	42.9	20.2	40.7	26.4
LOS	A	B	A	A	A	A	D	C	D	C
Approach Delay		16.5			8.9			30.4		30.3
Approach LOS		B			A			C		C

Intersection Summary























Cycle Length: 120
 Actuated Cycle Length: 73.8
 Natural Cycle: 80
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.83
 Intersection Signal Delay: 14.3
 Intersection Capacity Utilization 68.5%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service C

Splits and Phases: 11: Yosemite St & E. 160th Ave (SH 7)



HCM 6th Signalized Intersection Summary
 11: Yosemite St & E. 160th Ave (SH 7)

2030 Background Traffic
 PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	974	53	40	746	11	41	11	39	9	9	15
Future Volume (veh/h)	25	974	53	40	746	11	41	11	39	9	9	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	26	1004	0	41	769	11	42	11	40	9	9	15
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	437	1167		300	1189	1008	218	30	108	194	53	88
Arrive On Green	0.03	0.62	0.00	0.04	0.64	0.64	0.08	0.08	0.08	0.08	0.08	0.08
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1387	354	1285	1354	630	1051
Grp Volume(v), veh/h	26	1004	0	41	769	11	42	0	51	9	0	24
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1387	0	1639	1354	0	1681
Q Serve(g_s), s	0.3	26.0	0.0	0.5	15.2	0.2	1.7	0.0	1.8	0.4	0.0	0.8
Cycle Q Clear(g_c), s	0.3	26.0	0.0	0.5	15.2	0.2	2.5	0.0	1.8	2.1	0.0	0.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.78	1.00		0.63
Lane Grp Cap(c), veh/h	437	1167		300	1189	1008	218	0	137	194	0	141
V/C Ratio(X)	0.06	0.86		0.14	0.65	0.01	0.19	0.00	0.37	0.05	0.00	0.17
Avail Cap(c_a), veh/h	594	2443		435	2443	2070	567	0	549	534	0	563
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.5	9.1	0.0	9.5	6.7	4.0	26.6	0.0	25.9	26.9	0.0	25.4
Incr Delay (d2), s/veh	0.1	2.0	0.0	0.2	0.6	0.0	0.4	0.0	1.7	0.1	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	6.0	0.0	0.2	3.1	0.0	0.5	0.0	0.7	0.1	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.5	11.1	0.0	9.8	7.3	4.0	27.0	0.0	27.5	27.0	0.0	26.0
LnGrp LOS	A	B		A	A	A	C	A	C	C	A	C
Approach Vol, veh/h		1030			821			93			33	
Approach Delay, s/veh		11.0			7.4			27.3			26.3	
Approach LOS		B			A			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.5	42.3		10.0	6.8	43.0		10.0				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	7.0	78.0		20.0	7.0	78.0		20.0				
Max Q Clear Time (g_c+I1), s	2.5	28.0		4.1	2.3	17.2		4.5				
Green Ext Time (p_c), s	0.0	9.2		0.1	0.0	5.7		0.3				

Intersection Summary

HCM 6th Ctrl Delay	10.5
HCM 6th LOS	B

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Timings
12: Havana St & E. 160th Ave (SH 7)

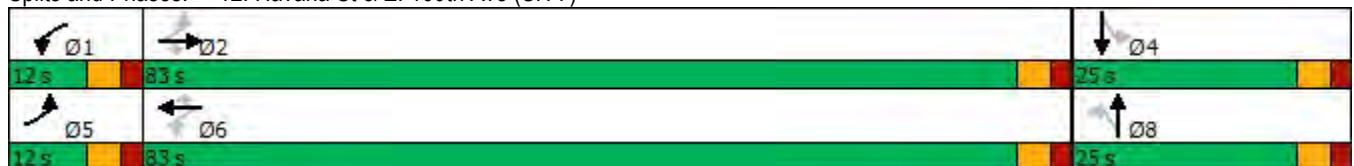
2030 Background Traffic
PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	48	959	34	106	791	19	9	10	9	7
Future Volume (vph)	48	959	34	106	791	19	9	10	9	7
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA
Protected Phases	5	2		1	6			8		4
Permitted Phases	2		2	6		6	8		4	
Detector Phase	5	2	2	1	6	6	8	8	4	4
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	20.0	20.0	10.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	12.0	83.0	83.0	12.0	83.0	83.0	25.0	25.0	25.0	25.0
Total Split (%)	10.0%	69.2%	69.2%	10.0%	69.2%	69.2%	20.8%	20.8%	20.8%	20.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag				
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes				
Recall Mode	None	None	None	None	None	None	Min	Min	Min	Min
Act Effct Green (s)	49.0	44.2	44.2	50.4	46.9	46.9	7.0	7.0	7.0	7.0
Actuated g/C Ratio	0.69	0.62	0.62	0.71	0.66	0.66	0.10	0.10	0.10	0.10
v/c Ratio	0.11	0.83	0.03	0.34	0.65	0.02	0.07	0.28	0.07	0.14
Control Delay	2.6	18.4	0.4	5.3	10.8	0.1	38.9	19.4	39.0	23.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	2.6	18.4	0.4	5.3	10.8	0.1	38.9	19.4	39.0	23.5
LOS	A	B	A	A	B	A	D	B	D	C
Approach Delay		17.1			10.0			22.1		27.6
Approach LOS		B			A			C		C

Intersection Summary























Cycle Length: 120
 Actuated Cycle Length: 70.9
 Natural Cycle: 80
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.83
 Intersection Signal Delay: 14.3
 Intersection Capacity Utilization 76.0%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service D

Splits and Phases: 12: Havana St & E. 160th Ave (SH 7)



HCM 6th Signalized Intersection Summary
 12: Havana St & E. 160th Ave (SH 7)

2030 Background Traffic
 PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	959	34	106	791	19	9	10	46	9	7	18
Future Volume (veh/h)	48	959	34	106	791	19	9	10	46	9	7	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	48	969	34	107	799	19	9	10	46	9	7	18
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	431	1128	956	339	1171	992	213	24	110	185	38	98
Arrive On Green	0.05	0.60	0.60	0.07	0.63	0.63	0.08	0.08	0.08	0.08	0.08	0.08
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1386	291	1338	1348	464	1192
Grp Volume(v), veh/h	48	969	34	107	799	19	9	0	56	9	0	25
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1386	0	1629	1348	0	1656
Q Serve(g_s), s	0.6	26.0	0.5	1.3	17.0	0.3	0.4	0.0	2.0	0.4	0.0	0.9
Cycle Q Clear(g_c), s	0.6	26.0	0.5	1.3	17.0	0.3	1.2	0.0	2.0	2.4	0.0	0.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.82	1.00		0.72
Lane Grp Cap(c), veh/h	431	1128	956	339	1171	992	213	0	134	185	0	136
V/C Ratio(X)	0.11	0.86	0.04	0.32	0.68	0.02	0.04	0.00	0.42	0.05	0.00	0.18
Avail Cap(c_a), veh/h	555	2396	2031	422	2396	2031	554	0	535	517	0	544
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	6.0	10.0	4.9	10.4	7.4	4.3	26.6	0.0	26.6	27.7	0.0	26.0
Incr Delay (d2), s/veh	0.1	2.0	0.0	0.5	0.7	0.0	0.1	0.0	2.1	0.1	0.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	6.5	0.1	0.5	3.8	0.1	0.1	0.0	0.8	0.1	0.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.1	12.0	4.9	10.9	8.2	4.3	26.7	0.0	28.6	27.8	0.0	26.7
LnGrp LOS	A	B	A	B	A	A	C	A	C	C	A	C
Approach Vol, veh/h		1051			925			65			34	
Approach Delay, s/veh		11.5			8.4			28.4			27.0	
Approach LOS		B			A			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.2	41.7		10.0	7.8	43.1		10.0				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	7.0	78.0		20.0	7.0	78.0		20.0				
Max Q Clear Time (g_c+I1), s	3.3	28.0		4.4	2.6	19.0		4.0				
Green Ext Time (p_c), s	0.1	8.7		0.1	0.0	6.1		0.2				
Intersection Summary												
HCM 6th Ctrl Delay				10.9								
HCM 6th LOS				B								

Intersection												
Int Delay, s/veh	1.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗	↖	↗			↕	↗		↕	
Traffic Vol, veh/h	0	954	18	191	925	0	18	0	317	3	0	1
Future Vol, veh/h	0	954	18	191	925	0	18	0	317	3	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	Free	-	-	None
Storage Length	-	-	475	475	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	99	99	99	99	85	99	85	99	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	964	18	193	934	0	18	0	320	4	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	934	0	0	982	0	0	2285	2284	-	2293	2302	934
Stage 1	-	-	-	-	-	-	964	964	-	1320	1320	-
Stage 2	-	-	-	-	-	-	1321	1320	-	973	982	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	-	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	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	733	-	-	703	-	-	28	40	0	28	39	322
Stage 1	-	-	-	-	-	-	307	334	0	193	226	-
Stage 2	-	-	-	-	-	-	193	226	0	303	327	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	733	-	-	703	-	-	22	29	-	22	28	322
Mov Cap-2 Maneuver	-	-	-	-	-	-	121	140	-	22	28	-
Stage 1	-	-	-	-	-	-	307	334	-	193	164	-
Stage 2	-	-	-	-	-	-	140	164	-	303	327	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			2.1			39.9			151.8		
HCM LOS							E			F		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	121	-	733	-	-	703	-	-	29
HCM Lane V/C Ratio	0.15	-	-	-	-	0.274	-	-	0.162
HCM Control Delay (s)	39.9	0	0	-	-	12	-	-	151.8
HCM Lane LOS	E	A	A	-	-	B	-	-	F
HCM 95th %tile Q(veh)	0.5	-	0	-	-	1.1	-	-	0.5

Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	54	1172	1041	24	6	30
Future Vol, veh/h	54	1172	1041	24	6	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	450	-	-	325	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	56	1221	1084	25	6	31

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	1109	0	-	0	2417 1084
Stage 1	-	-	-	-	1084 -
Stage 2	-	-	-	-	1333 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	630	-	-	-	36 264
Stage 1	-	-	-	-	324 -
Stage 2	-	-	-	-	246 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	630	-	-	-	33 264
Mov Cap-2 Maneuver	-	-	-	-	33 -
Stage 1	-	-	-	-	295 -
Stage 2	-	-	-	-	246 -

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	47.1
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	630	-	-	-	122
HCM Lane V/C Ratio	0.089	-	-	-	0.307
HCM Control Delay (s)	11.3	-	-	-	47.1
HCM Lane LOS	B	-	-	-	E
HCM 95th %tile Q(veh)	0.3	-	-	-	1.2

Intersection						
Int Delay, s/veh	1.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	8	20	84	68	1
Future Vol, veh/h	0	8	20	84	68	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	155	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	9	23	97	78	1

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	222	79	79	0	0
Stage 1	79	-	-	-	-
Stage 2	143	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	766	981	1519	-	-
Stage 1	944	-	-	-	-
Stage 2	884	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	755	981	1519	-	-
Mov Cap-2 Maneuver	755	-	-	-	-
Stage 1	930	-	-	-	-
Stage 2	884	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.7	1.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1519	-	981	-	-
HCM Lane V/C Ratio	0.015	-	0.009	-	-
HCM Control Delay (s)	7.4	-	8.7	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection						
Int Delay, s/veh	1.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	18	26	104	72	5
Future Vol, veh/h	1	18	26	104	72	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	21	30	120	83	6

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	266	86	89	0	0
Stage 1	86	-	-	-	-
Stage 2	180	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	723	973	1506	-	-
Stage 1	937	-	-	-	-
Stage 2	851	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	708	973	1506	-	-
Mov Cap-2 Maneuver	708	-	-	-	-
Stage 1	917	-	-	-	-
Stage 2	851	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.9	1.5	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1506	-	954	-	-
HCM Lane V/C Ratio	0.02	-	0.023	-	-
HCM Control Delay (s)	7.4	0	8.9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Intersection						
Int Delay, s/veh	1.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	3	5	16	23	3
Future Vol, veh/h	0	3	5	16	23	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	4	6	19	28	4

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	61	30	32	0	0
Stage 1	30	-	-	-	-
Stage 2	31	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	945	1044	1580	-	-
Stage 1	993	-	-	-	-
Stage 2	992	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	941	1044	1580	-	-
Mov Cap-2 Maneuver	941	-	-	-	-
Stage 1	989	-	-	-	-
Stage 2	992	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.5	1.7	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1580	-	1044	-	-
HCM Lane V/C Ratio	0.004	-	0.003	-	-
HCM Control Delay (s)	7.3	0	8.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection						
Int Delay, s/veh	3.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	14	24	15	24	1
Future Vol, veh/h	1	14	24	15	24	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	16	28	17	28	1

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	102	29	29	0	0
Stage 1	29	-	-	-	-
Stage 2	73	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	896	1046	1584	-	-
Stage 1	994	-	-	-	-
Stage 2	950	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	880	1046	1584	-	-
Mov Cap-2 Maneuver	880	-	-	-	-
Stage 1	976	-	-	-	-
Stage 2	950	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.5	4.5	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1584	-	1033	-	-
HCM Lane V/C Ratio	0.018	-	0.017	-	-
HCM Control Delay (s)	7.3	0	8.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

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	1	0	2	0	0	0	2	13	0	0	30	4
Future Vol, veh/h	1	0	2	0	0	0	2	13	0	0	30	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
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	67	67	67	67	67	67	67	67	67	67	67	67
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	3	0	0	0	3	19	0	0	45	6

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	73	73	48	75	76	19	51	0	0	19	0	0
Stage 1	48	48	-	25	25	-	-	-	-	-	-	-
Stage 2	25	25	-	50	51	-	-	-	-	-	-	-
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	918	817	1021	915	814	1059	1555	-	-	1597	-	-
Stage 1	965	855	-	993	874	-	-	-	-	-	-	-
Stage 2	993	874	-	963	852	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	916	815	1021	911	812	1059	1555	-	-	1597	-	-
Mov Cap-2 Maneuver	916	815	-	911	812	-	-	-	-	-	-	-
Stage 1	963	855	-	991	872	-	-	-	-	-	-	-
Stage 2	991	872	-	960	852	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	8.7		0		1		0	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1555	-	-	983	-	1597	-
HCM Lane V/C Ratio	0.002	-	-	0.005	-	-	-
HCM Control Delay (s)	7.3	0	-	8.7	0	0	-
HCM Lane LOS	A	A	-	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-	0	-

Intersection						
Int Delay, s/veh	1.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	4	7	13	28	4
Future Vol, veh/h	2	4	7	13	28	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	63	63	63	63	63	63
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	6	11	21	44	6

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	90	47	50	0	0
Stage 1	47	-	-	-	-
Stage 2	43	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	910	1022	1557	-	-
Stage 1	975	-	-	-	-
Stage 2	979	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	904	1022	1557	-	-
Mov Cap-2 Maneuver	904	-	-	-	-
Stage 1	968	-	-	-	-
Stage 2	979	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.7	2.6	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1557	-	979	-	-
HCM Lane V/C Ratio	0.007	-	0.01	-	-
HCM Control Delay (s)	7.3	0	8.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	
Traffic Vol, veh/h	2	176	324	9	8	5
Future Vol, veh/h	2	176	324	9	8	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	220	405	11	10	6

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	416	0	-	0	637 411
Stage 1	-	-	-	-	411 -
Stage 2	-	-	-	-	226 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1143	-	-	-	441 641
Stage 1	-	-	-	-	669 -
Stage 2	-	-	-	-	812 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1143	-	-	-	440 641
Mov Cap-2 Maneuver	-	-	-	-	440 -
Stage 1	-	-	-	-	667 -
Stage 2	-	-	-	-	812 -

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	12.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1143	-	-	-	500
HCM Lane V/C Ratio	0.002	-	-	-	0.033
HCM Control Delay (s)	8.2	0	-	-	12.4
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection						
Int Delay, s/veh	1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔		↔	↑	↔	↔
Traffic Vol, veh/h	171	13	42	327	6	19
Future Vol, veh/h	171	13	42	327	6	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	200	-	200	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	204	15	50	389	7	23

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	219	0	701	212
Stage 1	-	-	-	-	212	-
Stage 2	-	-	-	-	489	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1350	-	405	828
Stage 1	-	-	-	-	823	-
Stage 2	-	-	-	-	616	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1350	-	390	828
Mov Cap-2 Maneuver	-	-	-	-	390	-
Stage 1	-	-	-	-	823	-
Stage 2	-	-	-	-	593	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	10.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	390	828	-	-	1350	-
HCM Lane V/C Ratio	0.018	0.027	-	-	0.037	-
HCM Control Delay (s)	14.4	9.5	-	-	7.8	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0.1	-

Intersection						
Int Delay, s/veh	1.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↖	↑	↖	↗
Traffic Vol, veh/h	181	24	2	361	60	3
Future Vol, veh/h	181	24	2	361	60	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	250	250	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	213	28	2	425	71	4

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	241	0	642	213
Stage 1	-	-	-	-	213	-
Stage 2	-	-	-	-	429	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1326	-	438	827
Stage 1	-	-	-	-	823	-
Stage 2	-	-	-	-	657	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1326	-	437	827
Mov Cap-2 Maneuver	-	-	-	-	437	-
Stage 1	-	-	-	-	823	-
Stage 2	-	-	-	-	656	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	14.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	437	827	-	-	1326	-
HCM Lane V/C Ratio	0.162	0.004	-	-	0.002	-
HCM Control Delay (s)	14.8	9.4	-	-	7.7	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0.6	0	-	-	0	-

HCM 6th Roundabout
4: Yosemite St & E. 168th Ave

2030 Total Traffic
AM Peak Hour

Intersection				
Intersection Delay, s/veh	5.0			
Intersection LOS	A			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	226	355	148	51
Demand Flow Rate, veh/h	230	361	151	52
Vehicles Circulating, veh/h	40	130	212	441
Vehicles Exiting, veh/h	453	233	58	50
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.2	5.8	4.5	4.7
Approach LOS	A	A	A	A
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	230	361	151	52
Cap Entry Lane, veh/h	1325	1209	1112	880
Entry HV Adj Factor	0.981	0.983	0.979	0.980
Flow Entry, veh/h	226	355	148	51
Cap Entry, veh/h	1300	1187	1088	862
V/C Ratio	0.174	0.299	0.136	0.059
Control Delay, s/veh	4.2	5.8	4.5	4.7
LOS	A	A	A	A
95th %tile Queue, veh	1	1	0	0

Intersection						
Int Delay, s/veh	2.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↖	↑	↘	↙
Traffic Vol, veh/h	178	9	30	261	27	86
Future Vol, veh/h	178	9	30	261	27	86
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	250	250	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	209	11	35	307	32	101

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	220	0	586 209
Stage 1	-	-	-	-	209 -
Stage 2	-	-	-	-	377 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	1349	-	473 831
Stage 1	-	-	-	-	826 -
Stage 2	-	-	-	-	694 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1349	-	461 831
Mov Cap-2 Maneuver	-	-	-	-	461 -
Stage 1	-	-	-	-	826 -
Stage 2	-	-	-	-	676 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	11.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	697	-	-	1349	-
HCM Lane V/C Ratio	0.191	-	-	0.026	-
HCM Control Delay (s)	11.4	-	-	7.7	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.7	-	-	0.1	-

Intersection			
Intersection Delay, s/veh	4.8		
Intersection LOS	A		
Approach	EB	WB	NB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	298	309	138
Demand Flow Rate, veh/h	304	315	141
Vehicles Circulating, veh/h	36	56	283
Vehicles Exiting, veh/h	335	368	57
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	4.7	4.9	4.8
Approach LOS	A	A	A
Lane	Left	Left	Left
Designated Moves	TR	LT	LR
Assumed Moves	TR	LT	LR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	304	315	141
Cap Entry Lane, veh/h	1330	1303	1034
Entry HV Adj Factor	0.982	0.979	0.979
Flow Entry, veh/h	298	309	138
Cap Entry, veh/h	1306	1276	1012
V/C Ratio	0.229	0.242	0.136
Control Delay, s/veh	4.7	4.9	4.8
LOS	A	A	A
95th %tile Queue, veh	1	1	0

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	
Traffic Vol, veh/h	1	319	273	1	1	1
Future Vol, veh/h	1	319	273	1	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	343	294	1	1	1

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	295	0	-	0	640 295
Stage 1	-	-	-	-	295 -
Stage 2	-	-	-	-	345 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1266	-	-	-	440 744
Stage 1	-	-	-	-	755 -
Stage 2	-	-	-	-	717 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1266	-	-	-	440 744
Mov Cap-2 Maneuver	-	-	-	-	440 -
Stage 1	-	-	-	-	754 -
Stage 2	-	-	-	-	717 -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	11.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1266	-	-	-	553
HCM Lane V/C Ratio	0.001	-	-	-	0.004
HCM Control Delay (s)	7.8	0	-	-	11.5
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection						
Int Delay, s/veh	2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑		↑	↑	
Traffic Vol, veh/h	239	81	56	241	33	44
Future Vol, veh/h	239	81	56	241	33	44
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	200	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	257	87	60	259	35	47

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	344	0	636	257
Stage 1	-	-	-	-	257	-
Stage 2	-	-	-	-	379	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1215	-	442	782
Stage 1	-	-	-	-	786	-
Stage 2	-	-	-	-	692	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1215	-	416	782
Mov Cap-2 Maneuver	-	-	-	-	416	-
Stage 1	-	-	-	-	786	-
Stage 2	-	-	-	-	652	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.5	12.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	568	-	-	1215	-
HCM Lane V/C Ratio	0.146	-	-	0.05	-
HCM Control Delay (s)	12.4	-	-	8.1	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.5	-	-	0.2	-

Timings
10: Quebec St & E. 160th Ave (SH 7)

2030 Total Traffic
AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	539	93	152	940	16	123	50	33	21	78	42
Future Volume (vph)	19	539	93	152	940	16	123	50	33	21	78	42
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	20.0	20.0	10.0	20.0	20.0	10.0	20.0	20.0	10.0	20.0	20.0
Total Split (s)	12.0	63.0	63.0	18.0	69.0	69.0	14.0	25.0	25.0	14.0	25.0	25.0
Total Split (%)	10.0%	52.5%	52.5%	15.0%	57.5%	57.5%	11.7%	20.8%	20.8%	11.7%	20.8%	20.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	Min	Min	None	Min	Min
Act Effect Green (s)	6.4	58.0	58.0	13.0	71.3	71.3	9.0	17.1	17.1	7.1	10.8	10.8
Actuated g/C Ratio	0.06	0.52	0.52	0.12	0.64	0.64	0.08	0.15	0.15	0.06	0.10	0.10
v/c Ratio	0.21	0.69	0.12	0.86	0.92	0.02	1.01	0.20	0.10	0.22	0.51	0.17
Control Delay	55.7	24.9	1.0	84.6	33.4	0.0	130.0	45.8	0.5	54.5	57.4	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.7	24.9	1.0	84.6	33.4	0.0	130.0	45.8	0.5	54.5	57.4	1.2
LOS	E	C	A	F	C	A	F	D	A	D	E	A
Approach Delay		22.5			39.9			88.8			40.4	
Approach LOS		C			D			F			D	

Intersection Summary

























Cycle Length: 120
 Actuated Cycle Length: 110.8
 Natural Cycle: 120
 Control Type: Semi Act-Uncoord
 Maximum v/c Ratio: 1.01
 Intersection Signal Delay: 39.1
 Intersection LOS: D
 Intersection Capacity Utilization 79.6%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 10: Quebec St & E. 160th Ave (SH 7)



HCM 6th Signalized Intersection Summary
 10: Quebec St & E. 160th Ave (SH 7)

2030 Total Traffic
 AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	539	93	152	940	16	123	50	33	21	78	42
Future Volume (veh/h)	19	539	93	152	940	16	123	50	33	21	78	42
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	22	674	109	179	1106	19	145	59	39	25	92	49
Peak Hour Factor	0.85	0.80	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	40	1013	859	208	1190	1008	150	243	206	44	132	112
Arrive On Green	0.02	0.54	0.54	0.12	0.64	0.64	0.08	0.13	0.13	0.02	0.07	0.07
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	22	674	109	179	1106	19	145	59	39	25	92	49
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	1.3	27.6	3.6	10.6	56.4	0.5	8.7	3.0	2.3	1.5	5.1	3.2
Cycle Q Clear(g_c), s	1.3	27.6	3.6	10.6	56.4	0.5	8.7	3.0	2.3	1.5	5.1	3.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	40	1013	859	208	1190	1008	150	243	206	44	132	112
V/C Ratio(X)	0.55	0.67	0.13	0.86	0.93	0.02	0.97	0.24	0.19	0.57	0.70	0.44
Avail Cap(c_a), veh/h	116	1013	859	216	1190	1008	150	349	296	150	349	296
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.8	17.6	12.1	46.4	17.3	7.2	48.9	41.8	41.5	51.7	48.6	47.7
Incr Delay (d2), s/veh	11.3	3.5	0.3	27.0	13.9	0.0	63.8	0.5	0.4	11.3	6.5	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	11.3	1.3	6.0	23.6	0.2	6.4	1.4	0.9	0.8	2.6	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.1	21.0	12.4	73.4	31.2	7.2	112.7	42.3	42.0	63.0	55.1	50.4
LnGrp LOS	E	C	B	E	C	A	F	D	D	E	E	D
Approach Vol, veh/h		805			1304			243			166	
Approach Delay, s/veh		21.0			36.7			84.3			54.9	
Approach LOS		C			D			F			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	17.5	63.0	14.0	12.6	7.4	73.1	7.6	18.9				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	13.0	58.0	9.0	20.0	7.0	64.0	9.0	20.0				
Max Q Clear Time (g_c+I1), s	12.6	29.6	10.7	7.1	3.3	58.4	3.5	5.0				
Green Ext Time (p_c), s	0.0	4.7	0.0	0.4	0.0	3.5	0.0	0.3				
Intersection Summary												
HCM 6th Ctrl Delay												37.5
HCM 6th LOS												D

Timings
 10: Quebec St & E. 160th Ave (SH 7) W/ 2 EB/WB TH

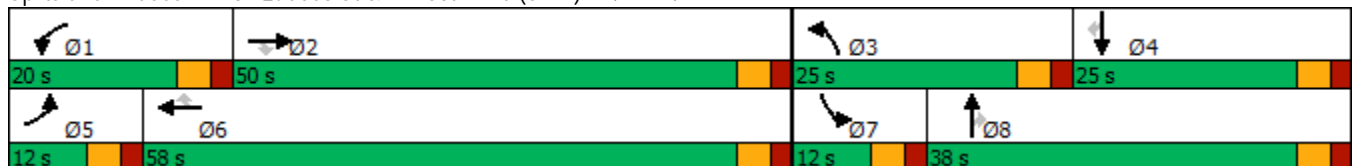
2030 Total Traffic
 AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	539	93	152	940	16	123	50	33	21	78	42
Future Volume (vph)	19	539	93	152	940	16	123	50	33	21	78	42
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	20.0	20.0	10.0	20.0	20.0	10.0	20.0	20.0	10.0	20.0	20.0
Total Split (s)	12.0	50.0	50.0	20.0	58.0	58.0	25.0	38.0	38.0	12.0	25.0	25.0
Total Split (%)	10.0%	41.7%	41.7%	16.7%	48.3%	48.3%	20.8%	31.7%	31.7%	10.0%	20.8%	20.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	Min	Min	None	Min	Min
Act Effect Green (s)	6.4	45.3	45.3	14.0	59.9	59.9	13.8	24.9	24.9	6.5	10.5	10.5
Actuated g/C Ratio	0.06	0.44	0.44	0.14	0.58	0.58	0.13	0.24	0.24	0.06	0.10	0.10
v/c Ratio	0.20	0.44	0.14	0.75	0.54	0.02	0.62	0.13	0.08	0.23	0.49	0.14
Control Delay	53.7	22.7	0.4	64.7	17.1	0.1	54.9	33.8	0.3	54.3	54.2	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.7	22.7	0.4	64.7	17.1	0.1	54.9	33.8	0.3	54.3	54.2	0.9
LOS	D	C	A	E	B	A	D	C	A	D	D	A
Approach Delay		20.5			23.4			41.0			38.5	
Approach LOS		C			C			D			D	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 103.7
 Natural Cycle: 70
 Control Type: Semi Act-Uncoord
 Maximum v/c Ratio: 0.75
 Intersection Signal Delay: 25.2
 Intersection LOS: C
 Intersection Capacity Utilization 56.1%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 10: Quebec St & E. 160th Ave (SH 7) W/ 2 EB/WB TH



HCM 6th Signalized Intersection Summary
 10: Quebec St & E. 160th Ave (SH 7) W/ 2 EB/WB TH

2030 Total Traffic
 AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑	↗	↘	↑	↗	↘	↑	↗
Traffic Volume (veh/h)	19	539	93	152	940	16	123	50	33	21	78	42
Future Volume (veh/h)	19	539	93	152	940	16	123	50	33	21	78	42
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	22	674	109	179	1106	19	145	59	39	25	92	49
Peak Hour Factor	0.85	0.80	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	42	1732	773	214	2077	926	181	280	238	46	139	117
Arrive On Green	0.02	0.49	0.49	0.12	0.58	0.58	0.10	0.15	0.15	0.03	0.07	0.07
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	22	674	109	179	1106	19	145	59	39	25	92	49
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	1.1	11.1	3.5	9.1	17.3	0.5	7.4	2.6	2.0	1.3	4.4	2.7
Cycle Q Clear(g_c), s	1.1	11.1	3.5	9.1	17.3	0.5	7.4	2.6	2.0	1.3	4.4	2.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	42	1732	773	214	2077	926	181	280	238	46	139	117
V/C Ratio(X)	0.53	0.39	0.14	0.83	0.53	0.02	0.80	0.21	0.16	0.55	0.66	0.42
Avail Cap(c_a), veh/h	135	1732	773	289	2077	926	386	669	567	135	405	343
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.6	15.0	13.0	39.7	11.6	8.1	40.6	34.4	34.2	44.4	41.6	40.8
Incr Delay (d2), s/veh	10.0	0.7	0.4	14.3	1.0	0.0	8.0	0.4	0.3	9.8	5.4	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	4.1	1.2	4.6	5.8	0.2	3.5	1.2	0.8	0.7	2.2	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.6	15.6	13.4	54.0	12.6	8.1	48.6	34.8	34.5	54.3	47.0	43.2
LnGrp LOS	D	B	B	D	B	A	D	C	C	D	D	D
Approach Vol, veh/h		805			1304			243			166	
Approach Delay, s/veh		16.4			18.2			43.0			47.0	
Approach LOS		B			B			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	16.1	50.0	14.4	11.8	7.2	59.0	7.4	18.8				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	15.0	45.0	20.0	20.0	7.0	53.0	7.0	33.0				
Max Q Clear Time (g_c+I1), s	11.1	13.1	9.4	6.4	3.1	19.3	3.3	4.6				
Green Ext Time (p_c), s	0.2	4.8	0.2	0.4	0.0	8.5	0.0	0.4				
Intersection Summary												
HCM 6th Ctrl Delay				21.9								
HCM 6th LOS				C								

Timings
11: Yosemite St & E. 160th Ave (SH 7)

2030 Total Traffic
AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	70	551	22	38	975	62	43	21	166	39	178
Future Volume (vph)	70	551	22	38	975	62	43	21	166	39	178
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	5	2		1	6			8		4	
Permitted Phases	2		2	6		6	8		4		4
Detector Phase	5	2	2	1	6	6	8	8	4	4	4
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	20.0	20.0	10.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	12.0	78.0	78.0	12.0	78.0	78.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	10.0%	65.0%	65.0%	10.0%	65.0%	65.0%	25.0%	25.0%	25.0%	25.0%	25.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	None	None	None	None	None	Min	Min	Min	Min	Min
Act Effect Green (s)	77.0	71.7	71.7	76.2	71.3	71.3	20.5	20.5	20.5	20.5	20.5
Actuated g/C Ratio	0.69	0.65	0.65	0.69	0.64	0.64	0.18	0.18	0.18	0.18	0.18
v/c Ratio	0.46	0.53	0.02	0.09	0.95	0.07	0.20	0.23	0.80	0.13	0.47
Control Delay	21.6	14.1	0.0	5.5	37.6	2.4	41.9	17.6	68.4	40.2	12.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.6	14.1	0.0	5.5	37.6	2.4	41.9	17.6	68.4	40.2	12.7
LOS	C	B	A	A	D	A	D	B	E	D	B
Approach Delay		14.4			34.4			26.8		39.6	
Approach LOS		B			C			C		D	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 111.1
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.95
 Intersection Signal Delay: 29.1
 Intersection Capacity Utilization 82.4%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service E

Splits and Phases: 11: Yosemite St & E. 160th Ave (SH 7)



HCM 6th Signalized Intersection Summary
 11: Yosemite St & E. 160th Ave (SH 7)

2030 Total Traffic
 AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	551	22	38	975	62	43	21	50	166	39	178
Future Volume (veh/h)	70	551	22	38	975	62	43	21	50	166	39	178
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	81	641	0	44	1134	72	50	24	58	193	45	207
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	155	1180		467	1167	989	272	100	241	278	384	325
Arrive On Green	0.04	0.63	0.00	0.03	0.62	0.62	0.21	0.21	0.21	0.21	0.21	0.21
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1128	486	1174	1316	1870	1585
Grp Volume(v), veh/h	81	641	0	44	1134	72	50	0	82	193	45	207
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1128	0	1659	1316	1870	1585
Q Serve(g_s), s	1.8	22.1	0.0	1.0	66.5	2.1	4.3	0.0	4.7	16.5	2.2	13.7
Cycle Q Clear(g_c), s	1.8	22.1	0.0	1.0	66.5	2.1	6.6	0.0	4.7	21.2	2.2	13.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.71	1.00		1.00
Lane Grp Cap(c), veh/h	155	1180		467	1167	989	272	0	340	278	384	325
V/C Ratio(X)	0.52	0.54		0.09	0.97	0.07	0.18	0.00	0.24	0.69	0.12	0.64
Avail Cap(c_a), veh/h	192	1190		517	1190	1009	286	0	362	295	408	345
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.4	11.9	0.0	9.0	20.6	8.5	39.8	0.0	38.1	47.0	37.1	41.7
Incr Delay (d2), s/veh	2.7	0.5	0.0	0.1	19.5	0.0	0.3	0.0	0.4	6.4	0.1	3.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	8.0	0.0	0.3	30.0	0.6	1.2	0.0	1.9	5.8	1.0	5.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.2	12.4	0.0	9.1	40.1	8.5	40.1	0.0	38.5	53.4	37.3	45.2
LnGrp LOS	C	B		A	D	A	D	A	D	D	D	D
Approach Vol, veh/h		722			1250			132			445	
Approach Delay, s/veh		14.5			37.2			39.1			47.9	
Approach LOS		B			D			D			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.8	77.4		28.5	9.6	76.5		28.5				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	7.0	73.0		25.0	7.0	73.0		25.0				
Max Q Clear Time (g_c+I1), s	3.0	24.1		23.2	3.8	68.5		8.6				
Green Ext Time (p_c), s	0.0	4.2		0.3	0.0	3.1		0.5				

Intersection Summary

HCM 6th Ctrl Delay	32.7
HCM 6th LOS	C

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Timings
12: Havana St & E. 160th Ave (SH 7)

2030 Total Traffic
AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	35	698	41	23	860	13	30	8	16	16	91
Future Volume (vph)	35	698	41	23	860	13	30	8	16	16	91
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	5	2		1	6			8		4	
Permitted Phases	2		2	6		6	8		4		4
Detector Phase	5	2	2	1	6	6	8	8	4	4	4
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	20.0	20.0	10.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	12.0	83.0	83.0	12.0	83.0	83.0	25.0	25.0	25.0	25.0	25.0
Total Split (%)	10.0%	69.2%	69.2%	10.0%	69.2%	69.2%	20.8%	20.8%	20.8%	20.8%	20.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	None	None	None	None	None	Min	Min	Min	Min	Min
Act Effect Green (s)	41.3	39.3	39.3	39.7	36.9	36.9	8.2	8.2	8.2	8.2	8.2
Actuated g/C Ratio	0.66	0.63	0.63	0.64	0.59	0.59	0.13	0.13	0.13	0.13	0.13
v/c Ratio	0.11	0.64	0.04	0.05	0.83	0.01	0.18	0.27	0.10	0.07	0.33
Control Delay	3.1	10.1	1.0	2.7	18.5	0.0	36.4	15.5	35.8	34.9	12.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.1	10.1	1.0	2.7	18.5	0.0	36.4	15.5	35.8	34.9	12.3
LOS	A	B	A	A	B	A	D	B	D	C	B
Approach Delay		9.3			17.9			21.9		18.3	
Approach LOS		A			B			C		B	

Intersection Summary
























Cycle Length: 120
 Actuated Cycle Length: 62.5
 Natural Cycle: 75
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.83
 Intersection Signal Delay: 14.6
 Intersection Capacity Utilization 67.6%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service C

Splits and Phases: 12: Havana St & E. 160th Ave (SH 7)



HCM 6th Signalized Intersection Summary
 12: Havana St & E. 160th Ave (SH 7)

2030 Total Traffic
 AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	698	41	23	860	13	30	8	59	16	16	91
Future Volume (veh/h)	35	698	41	23	860	13	30	8	59	16	16	91
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	37	743	44	24	915	14	32	9	63	17	17	97
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	312	1109	940	406	1087	921	252	20	143	212	190	161
Arrive On Green	0.04	0.59	0.59	0.03	0.58	0.58	0.10	0.10	0.10	0.10	0.10	0.10
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1279	202	1414	1328	1870	1585
Grp Volume(v), veh/h	37	743	44	24	915	14	32	0	72	17	17	97
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1279	0	1616	1328	1870	1585
Q Serve(g_s), s	0.4	14.5	0.6	0.3	21.6	0.2	1.3	0.0	2.3	0.7	0.4	3.2
Cycle Q Clear(g_c), s	0.4	14.5	0.6	0.3	21.6	0.2	1.7	0.0	2.3	2.9	0.4	3.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.88	1.00		1.00
Lane Grp Cap(c), veh/h	312	1109	940	406	1087	921	252	0	164	212	190	161
V/C Ratio(X)	0.12	0.67	0.05	0.06	0.84	0.02	0.13	0.00	0.44	0.08	0.09	0.60
Avail Cap(c_a), veh/h	473	2702	2290	588	2702	2290	596	0	599	570	693	587
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	8.6	7.4	4.6	6.0	9.3	4.8	22.8	0.0	22.8	24.2	22.0	23.2
Incr Delay (d2), s/veh	0.2	0.7	0.0	0.1	1.9	0.0	0.2	0.0	1.8	0.2	0.2	3.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	3.1	0.1	0.1	5.1	0.0	0.4	0.0	0.8	0.2	0.2	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.8	8.1	4.6	6.1	11.1	4.8	23.0	0.0	24.7	24.3	22.2	26.8
LnGrp LOS	A	A	A	A	B	A	C	A	C	C	C	C
Approach Vol, veh/h		824			953			104			131	
Approach Delay, s/veh		8.0			10.9			24.2			25.9	
Approach LOS		A			B			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.5	37.0		10.5	7.1	36.4		10.5				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	7.0	78.0		20.0	7.0	78.0		20.0				
Max Q Clear Time (g_c+I1), s	2.3	16.5		5.2	2.4	23.6		4.3				
Green Ext Time (p_c), s	0.0	5.5		0.3	0.0	7.7		0.3				
Intersection Summary												
HCM 6th Ctrl Delay				11.4								
HCM 6th LOS				B								

HCM 6th TWSC
13: Riverdale Rd & E. 160th Ave (SH 7)

2030 Total Traffic
AM Peak Hour

Intersection												
Int Delay, s/veh	1.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗	↖	↗	↖		↕	↗		↕	
Traffic Vol, veh/h	0	735	30	254	838	0	10	1	202	0	0	1
Future Vol, veh/h	0	735	30	254	838	0	10	1	202	0	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	Free	-	-	None
Storage Length	-	-	475	475	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	98	98	98	98	85	98	85	98	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	750	31	259	855	0	10	1	206	0	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	855	0	0	781	0	0	2124	2123	-	2139	2154	855
Stage 1	-	-	-	-	-	-	750	750	-	1373	1373	-
Stage 2	-	-	-	-	-	-	1374	1373	-	766	781	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	-	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	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	785	-	-	837	-	-	36	50	0	36	48	358
Stage 1	-	-	-	-	-	-	403	419	0	180	213	-
Stage 2	-	-	-	-	-	-	180	213	0	395	405	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	785	-	-	837	-	-	27	35	-	27	33	358
Mov Cap-2 Maneuver	-	-	-	-	-	-	113	133	-	27	33	-
Stage 1	-	-	-	-	-	-	403	419	-	180	147	-
Stage 2	-	-	-	-	-	-	124	147	-	394	405	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			2.6			39.7			15.1		
HCM LOS							E			C		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	115	-	785	-	-	837	-	-	358
HCM Lane V/C Ratio	0.099	-	-	-	-	0.31	-	-	0.003
HCM Control Delay (s)	39.7	0	0	-	-	11.2	-	-	15.1
HCM Lane LOS	E	A	A	-	-	B	-	-	C
HCM 95th %tile Q(veh)	0.3	-	0	-	-	1.3	-	-	0

HCM 6th TWSC
 14: E. 160th Ave (SH 7) & Tuscon St

2030 Total Traffic
 AM Peak Hour

Intersection						
Int Delay, s/veh	34.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↗	↗	↘	↘	↘
Traffic Vol, veh/h	32	947	1103	34	89	46
Future Vol, veh/h	32	947	1103	34	89	46
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	450	-	-	325	0	200
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	35	1029	1199	37	97	50

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	1236	0	0 2298 1199
Stage 1	-	-	- 1199 -
Stage 2	-	-	- 1099 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	564	-	- ~ 43 226
Stage 1	-	-	- 286 -
Stage 2	-	-	- 319 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	564	-	- ~ 40 226
Mov Cap-2 Maneuver	-	-	- ~ 40 -
Stage 1	-	-	- 268 -
Stage 2	-	-	- 319 -

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	\$ 576.4
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	564	-	-	-	40	226
HCM Lane V/C Ratio	0.062	-	-	-	2.418	0.221
HCM Control Delay (s)	11.8	-	-	-	\$ 861.2	25.4
HCM Lane LOS	B	-	-	-	F	D
HCM 95th %tile Q(veh)	0.2	-	-	-	10.5	0.8

Notes
 -: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Timings
 14: E. 160th Ave (SH 7) & Tuscon St

2030 Total Traffic
 AM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↶	↷	↶	↷	↶	↷
Traffic Volume (vph)	32	947	1103	34	89	46
Future Volume (vph)	32	947	1103	34	89	46
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	2			6		4
Detector Phase	5	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	5.0	15.0	15.0	15.0	10.0	10.0
Minimum Split (s)	10.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	12.0	95.0	83.0	83.0	25.0	25.0
Total Split (%)	10.0%	79.2%	69.2%	69.2%	20.8%	20.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	Max	Max	Max	None	None
Act Effct Green (s)	90.0	90.0	83.4	83.4	12.1	12.1
Actuated g/C Ratio	0.80	0.80	0.74	0.74	0.11	0.11
v/c Ratio	0.17	0.69	0.87	0.03	0.51	0.23
Control Delay	4.5	8.2	21.1	2.0	56.8	15.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.5	8.2	21.1	2.0	56.8	15.2
LOS	A	A	C	A	E	B
Approach Delay		8.1	20.5		42.7	
Approach LOS		A	C		D	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 112.1
 Natural Cycle: 90
 Control Type: Semi Act-Uncoord
 Maximum v/c Ratio: 0.87
 Intersection Signal Delay: 16.4
 Intersection LOS: B
 Intersection Capacity Utilization 74.7%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 14: E. 160th Ave (SH 7) & Tuscon St



HCM 6th Signalized Intersection Summary
 14: E. 160th Ave (SH 7) & Tuscon St

2030 Total Traffic
 AM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	32	947	1103	34	89	46
Future Volume (veh/h)	32	947	1103	34	89	46
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	35	1029	1199	37	97	50
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	247	1532	1391	1179	160	143
Arrive On Green	0.03	0.82	0.74	0.74	0.09	0.09
Sat Flow, veh/h	1781	1870	1870	1585	1781	1585
Grp Volume(v), veh/h	35	1029	1199	37	97	50
Grp Sat Flow(s),veh/h/ln	1781	1870	1870	1585	1781	1585
Q Serve(g_s), s	0.5	24.3	50.3	0.7	5.8	3.3
Cycle Q Clear(g_c), s	0.5	24.3	50.3	0.7	5.8	3.3
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	247	1532	1391	1179	160	143
V/C Ratio(X)	0.14	0.67	0.86	0.03	0.61	0.35
Avail Cap(c_a), veh/h	308	1532	1391	1179	324	288
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.9	4.0	10.1	3.7	48.1	47.0
Incr Delay (d2), s/veh	0.3	2.4	7.2	0.0	3.6	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	5.0	16.3	0.2	2.7	3.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	16.2	6.4	17.3	3.7	51.8	48.4
LnGrp LOS	B	A	B	A	D	D
Approach Vol, veh/h		1064	1236		147	
Approach Delay, s/veh		6.7	16.9		50.6	
Approach LOS		A	B		D	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		95.0		14.9	8.3	86.7
Change Period (Y+Rc), s		5.0		5.0	5.0	5.0
Max Green Setting (Gmax), s		90.0		20.0	7.0	78.0
Max Q Clear Time (g_c+I1), s		26.3		7.8	2.5	52.3
Green Ext Time (p_c), s		9.9		0.3	0.0	11.3
Intersection Summary						
HCM 6th Ctrl Delay			14.5			
HCM 6th LOS			B			

Intersection						
Int Delay, s/veh	1.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	21	8	45	64	2
Future Vol, veh/h	3	21	8	45	64	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	155	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	25	10	54	77	2

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	152	78	79	0	0
Stage 1	78	-	-	-	-
Stage 2	74	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	840	983	1519	-	-
Stage 1	945	-	-	-	-
Stage 2	949	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	834	983	1519	-	-
Mov Cap-2 Maneuver	834	-	-	-	-
Stage 1	938	-	-	-	-
Stage 2	949	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.9	1.1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1519	-	962	-	-
HCM Lane V/C Ratio	0.006	-	0.03	-	-
HCM Control Delay (s)	7.4	-	8.9	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection						
Int Delay, s/veh	2.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	3	39	15	55	86	2
Future Vol, veh/h	3	39	15	55	86	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	79	79	79	79	79	79
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	49	19	70	109	3

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	219	111	112	0	0
Stage 1	111	-	-	-	-
Stage 2	108	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	769	942	1478	-	-
Stage 1	914	-	-	-	-
Stage 2	916	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	759	942	1478	-	-
Mov Cap-2 Maneuver	759	-	-	-	-
Stage 1	902	-	-	-	-
Stage 2	916	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.1	1.6	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1478	-	926	-	-
HCM Lane V/C Ratio	0.013	-	0.057	-	-
HCM Control Delay (s)	7.5	0	9.1	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

HCM 6th TWSC
 17: Yosemite St & North Site Access

2030 Total Traffic
 AM Peak Hour

Intersection												
Int Delay, s/veh	7.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↑	↗	↖	↑	↗
Traffic Vol, veh/h	25	0	59	96	0	62	22	39	38	24	16	8
Future Vol, veh/h	25	0	59	96	0	62	22	39	38	24	16	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	200	-	-	250	-	250	250	-	250
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	29	0	69	113	0	73	26	46	45	28	19	9

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	232	218	19	212	182	46	28	0	0	91	0	0
Stage 1	75	75	-	98	98	-	-	-	-	-	-	-
Stage 2	157	143	-	114	84	-	-	-	-	-	-	-
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	723	680	1059	745	712	1023	1585	-	-	1504	-	-
Stage 1	934	833	-	908	814	-	-	-	-	-	-	-
Stage 2	845	779	-	891	825	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	654	656	1059	678	687	1023	1585	-	-	1504	-	-
Mov Cap-2 Maneuver	654	656	-	678	687	-	-	-	-	-	-	-
Stage 1	919	817	-	893	801	-	-	-	-	-	-	-
Stage 2	772	767	-	817	809	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	9.3		10.4		1.6		3.7	
HCM LOS	A		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1585	-	-	654	1059	678	1023	1504	-	-
HCM Lane V/C Ratio	0.016	-	-	0.045	0.066	0.167	0.071	0.019	-	-
HCM Control Delay (s)	7.3	-	-	10.8	8.6	11.4	8.8	7.4	-	-
HCM Lane LOS	A	-	-	B	A	B	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.2	0.6	0.2	0.1	-	-

HCM 6th TWSC
 18: Yosemite St & South Site Access

2030 Total Traffic
 AM Peak Hour

Intersection												
Int Delay, s/veh	5.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷		↶	↶	↶	↶	↶	↶
Traffic Vol, veh/h	9	0	59	128	0	19	19	71	44	6	162	3
Future Vol, veh/h	9	0	59	128	0	19	19	71	44	6	162	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	200	-	-	250	-	250	250	-	250
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	0	69	151	0	22	22	84	52	7	191	4

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	370	385	191	370	337	84	195	0	0	136	0	0
Stage 1	205	205	-	128	128	-	-	-	-	-	-	-
Stage 2	165	180	-	242	209	-	-	-	-	-	-	-
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	587	549	851	587	584	975	1378	-	-	1448	-	-
Stage 1	797	732	-	876	790	-	-	-	-	-	-	-
Stage 2	837	750	-	762	729	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	565	537	851	531	572	975	1378	-	-	1448	-	-
Mov Cap-2 Maneuver	565	537	-	531	572	-	-	-	-	-	-	-
Stage 1	784	728	-	862	777	-	-	-	-	-	-	-
Stage 2	805	738	-	696	725	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB		
HCM Control Delay, s	9.9		13.7		1.1		0.3		
HCM LOS	A		B						

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1378	-	-	565	851	531	975	1448	-	-
HCM Lane V/C Ratio	0.016	-	-	0.019	0.082	0.284	0.023	0.005	-	-
HCM Control Delay (s)	7.7	-	-	11.5	9.6	14.4	8.8	7.5	-	-
HCM Lane LOS	A	-	-	B	A	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.3	1.2	0.1	0	-	-

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		
Traffic Vol, veh/h	1	5	3	128	354	0
Future Vol, veh/h	1	5	3	128	354	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	66	66	66	66	66	66
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	8	5	194	536	0

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	740	536	536	0	-	0
Stage 1	536	-	-	-	-	-
Stage 2	204	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	384	545	1032	-	-	-
Stage 1	587	-	-	-	-	-
Stage 2	830	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	382	545	1032	-	-	-
Mov Cap-2 Maneuver	382	-	-	-	-	-
Stage 1	584	-	-	-	-	-
Stage 2	830	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.2	0.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1032	-	509	-	-
HCM Lane V/C Ratio	0.004	-	0.018	-	-
HCM Control Delay (s)	8.5	0	12.2	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		
Traffic Vol, veh/h	0	27	11	137	354	0
Future Vol, veh/h	0	27	11	137	354	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	71	71	71	71	71	71
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	38	15	193	499	0

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	722	499	499	0	-	0
Stage 1	499	-	-	-	-	-
Stage 2	223	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	394	572	1065	-	-	-
Stage 1	610	-	-	-	-	-
Stage 2	814	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	388	572	1065	-	-	-
Mov Cap-2 Maneuver	388	-	-	-	-	-
Stage 1	600	-	-	-	-	-
Stage 2	814	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.7	0.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1065	-	572	-	-
HCM Lane V/C Ratio	0.015	-	0.066	-	-
HCM Control Delay (s)	8.4	0	11.7	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection												
Int Delay, s/veh	5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	0	2	16	0	64	3	51	6	20	27	1
Future Vol, veh/h	3	0	2	16	0	64	3	51	6	20	27	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
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	3	0	2	18	0	73	3	58	7	23	31	1

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	182	149	32	147	146	62	32	0	0	65	0	0
Stage 1	78	78	-	68	68	-	-	-	-	-	-	-
Stage 2	104	71	-	79	78	-	-	-	-	-	-	-
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	779	743	1042	821	745	1003	1580	-	-	1537	-	-
Stage 1	931	830	-	942	838	-	-	-	-	-	-	-
Stage 2	902	836	-	930	830	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	713	730	1042	809	732	1003	1580	-	-	1537	-	-
Mov Cap-2 Maneuver	713	730	-	809	732	-	-	-	-	-	-	-
Stage 1	929	818	-	940	836	-	-	-	-	-	-	-
Stage 2	835	834	-	914	818	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	9.4		9.2		0.4		3.1	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1580	-	-	816	957	1537	-
HCM Lane V/C Ratio	0.002	-	-	0.007	0.095	0.015	-
HCM Control Delay (s)	7.3	0	-	9.4	9.2	7.4	0
HCM Lane LOS	A	A	-	A	A	A	A
HCM 95th %tile Q(veh)	0	-	-	0	0.3	0	-

Intersection												
Int Delay, s/veh	5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	4	44	0	37	3	23	20	14	31	0
Future Vol, veh/h	0	0	4	44	0	37	3	23	20	14	31	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
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	73	85	73	85	85	85	73	73	85	85	73	73
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	5	52	0	44	4	32	24	16	42	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	148	138	42	129	126	44	42	0	0	56	0	0
Stage 1	74	74	-	52	52	-	-	-	-	-	-	-
Stage 2	74	64	-	77	74	-	-	-	-	-	-	-
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	820	753	1029	844	764	1026	1567	-	-	1549	-	-
Stage 1	935	833	-	961	852	-	-	-	-	-	-	-
Stage 2	935	842	-	932	833	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	777	742	1029	830	753	1026	1567	-	-	1549	-	-
Mov Cap-2 Maneuver	777	742	-	830	753	-	-	-	-	-	-	-
Stage 1	932	824	-	958	849	-	-	-	-	-	-	-
Stage 2	893	839	-	917	824	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	8.5		9.4		0.5		2.1	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1567	-	-	1029	909	1549	-
HCM Lane V/C Ratio	0.003	-	-	0.005	0.105	0.011	-
HCM Control Delay (s)	7.3	0	-	8.5	9.4	7.3	0
HCM Lane LOS	A	A	-	A	A	A	A
HCM 95th %tile Q(veh)	0	-	-	0	0.3	0	-

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	8	492	290	14	12	3
Future Vol, veh/h	8	492	290	14	12	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	586	345	17	14	4

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	362	0	-	0	960
Stage 1	-	-	-	-	354
Stage 2	-	-	-	-	606
Critical Hdwy	4.12	-	-	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	2.218	-	-	-	3.518
Pot Cap-1 Maneuver	1197	-	-	-	285
Stage 1	-	-	-	-	710
Stage 2	-	-	-	-	545
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1197	-	-	-	282
Mov Cap-2 Maneuver	-	-	-	-	282
Stage 1	-	-	-	-	701
Stage 2	-	-	-	-	545

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	16.9
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1197	-	-	-	320
HCM Lane V/C Ratio	0.008	-	-	-	0.056
HCM Control Delay (s)	8	0	-	-	16.9
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Intersection						
Int Delay, s/veh	1.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	474	29	54	298	6	73
Future Vol, veh/h	474	29	54	298	6	73
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	200	-	200	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	558	34	64	351	7	86

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	592	0	1054
Stage 1	-	-	-	-	575
Stage 2	-	-	-	-	479
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	984	-	250
Stage 1	-	-	-	-	563
Stage 2	-	-	-	-	623
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	984	-	234
Mov Cap-2 Maneuver	-	-	-	-	234
Stage 1	-	-	-	-	563
Stage 2	-	-	-	-	583

Approach	EB	WB	NB
HCM Control Delay, s	0	1.4	13.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	234	518	-	-	984	-
HCM Lane V/C Ratio	0.03	0.166	-	-	0.065	-
HCM Control Delay (s)	20.9	13.3	-	-	8.9	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	0.6	-	-	0.2	-

Intersection						
Int Delay, s/veh	1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↘	↑	↘	↗
Traffic Vol, veh/h	469	66	3	286	44	3
Future Vol, veh/h	469	66	3	286	44	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	250	250	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	552	78	4	336	52	4

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	630	0	896
Stage 1	-	-	-	-	552
Stage 2	-	-	-	-	344
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	952	-	311
Stage 1	-	-	-	-	577
Stage 2	-	-	-	-	718
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	952	-	310
Mov Cap-2 Maneuver	-	-	-	-	310
Stage 1	-	-	-	-	577
Stage 2	-	-	-	-	715

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	18.4
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	310	533	-	-	952	-
HCM Lane V/C Ratio	0.167	0.007	-	-	0.004	-
HCM Control Delay (s)	18.9	11.8	-	-	8.8	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	0.6	0	-	-	0	-

Intersection				
Intersection Delay, s/veh	6.3			
Intersection LOS	A			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	534	291	106	88
Demand Flow Rate, veh/h	544	297	108	90
Vehicles Circulating, veh/h	91	125	467	335
Vehicles Exiting, veh/h	334	450	168	87
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	7.3	5.2	5.5	4.6
Approach LOS	A	A	A	A
Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	544	297	108	90
Cap Entry Lane, veh/h	1258	1215	857	981
Entry HV Adj Factor	0.981	0.979	0.981	0.976
Flow Entry, veh/h	534	291	106	88
Cap Entry, veh/h	1233	1189	840	957
V/C Ratio	0.433	0.245	0.126	0.092
Control Delay, s/veh	7.3	5.2	5.5	4.6
LOS	A	A	A	A
95th %tile Queue, veh	2	1	0	0

HCM 6th TWSC
6: East Remington Access & E. 168th Ave

2030 Total Traffic
PM Peak Hour

Intersection						
Int Delay, s/veh	2.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗	↖	↑	↘	↙
Traffic Vol, veh/h	362	30	94	239	18	58
Future Vol, veh/h	362	30	94	239	18	58
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	250	250	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	426	35	111	281	21	68

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	461	0	929
Stage 1	-	-	-	-	426
Stage 2	-	-	-	-	503
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1100	-	297
Stage 1	-	-	-	-	659
Stage 2	-	-	-	-	607
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1100	-	267
Mov Cap-2 Maneuver	-	-	-	-	267
Stage 1	-	-	-	-	659
Stage 2	-	-	-	-	546

Approach	EB	WB	NB
HCM Control Delay, s	0	2.4	14.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	476	-	-	1100	-
HCM Lane V/C Ratio	0.188	-	-	0.101	-
HCM Control Delay (s)	14.3	-	-	8.6	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.7	-	-	0.3	-

Intersection			
Intersection Delay, s/veh	6.4		
Intersection LOS	A		
Approach	EB	WB	NB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adj Approach Flow, veh/h	495	472	95
Demand Flow Rate, veh/h	505	482	97
Vehicles Circulating, veh/h	96	35	445
Vehicles Exiting, veh/h	421	507	156
Ped Vol Crossing Leg, #/h	0	0	0
Ped Cap Adj	1.000	1.000	1.000
Approach Delay, s/veh	6.9	6.1	5.3
Approach LOS	A	A	A
Lane	Left	Left	Left
Designated Moves	TR	LT	LR
Assumed Moves	TR	LT	LR
RT Channelized			
Lane Util	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976
Entry Flow, veh/h	505	482	97
Cap Entry Lane, veh/h	1251	1331	876
Entry HV Adj Factor	0.981	0.980	0.979
Flow Entry, veh/h	495	472	95
Cap Entry, veh/h	1227	1305	858
V/C Ratio	0.404	0.362	0.111
Control Delay, s/veh	6.9	6.1	5.3
LOS	A	A	A
95th %tile Queue, veh	2	2	0

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	
Traffic Vol, veh/h	2	421	394	9	3	1
Future Vol, veh/h	2	421	394	9	3	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	453	424	10	3	1

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	434	0	-	0	886 429
Stage 1	-	-	-	-	429 -
Stage 2	-	-	-	-	457 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1126	-	-	-	315 626
Stage 1	-	-	-	-	657 -
Stage 2	-	-	-	-	638 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1126	-	-	-	314 626
Mov Cap-2 Maneuver	-	-	-	-	314 -
Stage 1	-	-	-	-	656 -
Stage 2	-	-	-	-	638 -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	15.1
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1126	-	-	-	359
HCM Lane V/C Ratio	0.002	-	-	-	0.012
HCM Control Delay (s)	8.2	0	-	-	15.1
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection						
Int Delay, s/veh	2.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑		↑	↑	
Traffic Vol, veh/h	363	61	18	316	87	40
Future Vol, veh/h	363	61	18	316	87	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	200	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	386	65	19	336	93	43

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	451	0	760	386
Stage 1	-	-	-	-	386	-
Stage 2	-	-	-	-	374	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1109	-	374	662
Stage 1	-	-	-	-	687	-
Stage 2	-	-	-	-	696	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1109	-	366	662
Mov Cap-2 Maneuver	-	-	-	-	366	-
Stage 1	-	-	-	-	687	-
Stage 2	-	-	-	-	681	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	17.3
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	426	-	-	1109	-
HCM Lane V/C Ratio	0.317	-	-	0.017	-
HCM Control Delay (s)	17.3	-	-	8.3	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	1.3	-	-	0.1	-

Timings
10: Quebec St & E. 160th Ave (SH 7)

2030 Total Traffic
PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	1105	130	110	780	13	149	124	136	22	72	32
Future Volume (vph)	46	1105	130	110	780	13	149	124	136	22	72	32
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	20.0	20.0	10.0	20.0	20.0	10.0	20.0	20.0	10.0	20.0	20.0
Total Split (s)	12.0	71.0	71.0	12.0	71.0	71.0	12.0	25.0	25.0	12.0	25.0	25.0
Total Split (%)	10.0%	59.2%	59.2%	10.0%	59.2%	59.2%	10.0%	20.8%	20.8%	10.0%	20.8%	20.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effect Green (s)	6.7	66.1	66.1	7.0	68.7	68.7	7.0	17.4	17.4	6.5	12.4	12.4
Actuated g/C Ratio	0.06	0.59	0.59	0.06	0.61	0.61	0.06	0.15	0.15	0.06	0.11	0.11
v/c Ratio	0.48	1.10	0.14	1.09	0.75	0.01	1.47	0.47	0.40	0.24	0.38	0.13
Control Delay	68.0	82.8	2.5	162.5	23.0	0.0	292.9	50.7	10.6	58.1	51.3	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.0	82.8	2.5	162.5	23.0	0.0	292.9	50.7	10.6	58.1	51.3	1.0
LOS	E	F	A	F	C	A	F	D	B	E	D	A
Approach Delay		74.1			39.7			125.5			39.6	
Approach LOS		E			D			F			D	

Intersection Summary
























Cycle Length: 120
 Actuated Cycle Length: 112.6
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.47
 Intersection Signal Delay: 68.8
 Intersection LOS: E
 Intersection Capacity Utilization 93.3%
 ICU Level of Service F
 Analysis Period (min) 15

Splits and Phases: 10: Quebec St & E. 160th Ave (SH 7)



HCM 6th Signalized Intersection Summary
 10: Quebec St & E. 160th Ave (SH 7)

2030 Total Traffic
 PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	1105	130	110	780	13	149	124	136	22	72	32
Future Volume (veh/h)	46	1105	130	110	780	13	149	124	136	22	72	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	50	1201	141	120	848	14	162	135	148	24	78	35
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	64	1142	968	115	1195	1013	115	217	184	42	140	119
Arrive On Green	0.04	0.61	0.61	0.06	0.64	0.64	0.06	0.12	0.12	0.02	0.08	0.08
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	50	1201	141	120	848	14	162	135	148	24	78	35
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	3.0	66.0	4.1	7.0	32.4	0.3	7.0	7.4	9.8	1.4	4.4	2.3
Cycle Q Clear(g_c), s	3.0	66.0	4.1	7.0	32.4	0.3	7.0	7.4	9.8	1.4	4.4	2.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	64	1142	968	115	1195	1013	115	217	184	42	140	119
V/C Ratio(X)	0.78	1.05	0.15	1.04	0.71	0.01	1.40	0.62	0.80	0.57	0.56	0.29
Avail Cap(c_a), veh/h	115	1142	968	115	1195	1013	115	346	293	115	346	293
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.7	21.1	9.0	50.6	12.9	7.1	50.6	45.5	46.6	52.2	48.3	47.3
Incr Delay (d2), s/veh	17.9	41.4	0.1	95.1	2.0	0.0	225.8	2.9	8.2	11.4	3.4	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	36.4	1.3	6.0	11.6	0.1	10.3	3.5	4.2	0.8	2.1	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.6	62.4	9.1	145.6	14.9	7.1	276.3	48.4	54.8	63.6	51.7	48.6
LnGrp LOS	E	F	A	F	B	A	F	D	D	E	D	D
Approach Vol, veh/h		1392			982			445			137	
Approach Delay, s/veh		57.3			30.7			133.5			53.0	
Approach LOS		E			C			F			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.0	71.0	12.0	13.1	8.9	74.1	7.6	17.5				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	7.0	66.0	7.0	20.0	7.0	66.0	7.0	20.0				
Max Q Clear Time (g_c+I1), s	9.0	68.0	9.0	6.4	5.0	34.4	3.4	11.8				
Green Ext Time (p_c), s	0.0	0.0	0.0	0.3	0.0	6.3	0.0	0.7				
Intersection Summary												
HCM 6th Ctrl Delay			59.7									
HCM 6th LOS			E									

Timings

2030 Total Traffic

10: Quebec St & E. 160th Ave (SH 7) W/ 2 EB/WB TH

PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	1105	130	110	780	13	149	124	136	22	72	32
Future Volume (vph)	46	1105	130	110	780	13	149	124	136	22	72	32
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	20.0	20.0	10.0	20.0	20.0	10.0	20.0	20.0	10.0	20.0	20.0
Total Split (s)	12.0	65.0	65.0	15.0	68.0	68.0	15.0	25.0	25.0	15.0	25.0	25.0
Total Split (%)	10.0%	54.2%	54.2%	12.5%	56.7%	56.7%	12.5%	20.8%	20.8%	12.5%	20.8%	20.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Act Effect Green (s)	6.8	39.2	39.2	9.9	47.6	47.6	10.3	21.0	21.0	6.9	10.2	10.2
Actuated g/C Ratio	0.08	0.44	0.44	0.11	0.53	0.53	0.11	0.23	0.23	0.08	0.11	0.11
v/c Ratio	0.38	0.78	0.18	0.62	0.45	0.02	0.81	0.31	0.31	0.18	0.37	0.13
Control Delay	53.4	25.6	3.3	57.3	15.2	0.0	71.9	36.5	8.9	47.3	44.9	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.4	25.6	3.3	57.3	15.2	0.0	71.9	36.5	8.9	47.3	44.9	0.9
LOS	D	C	A	E	B	A	E	D	A	D	D	A
Approach Delay		24.4			20.1			40.2			34.1	
Approach LOS		C			C			D			C	

Intersection Summary

























Cycle Length: 120	
Actuated Cycle Length: 90	
Natural Cycle: 80	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay: 25.8	Intersection LOS: C
Intersection Capacity Utilization 65.7%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 10: Quebec St & E. 160th Ave (SH 7) W/ 2 EB/WB TH



HCM 6th Signalized Intersection Summary
 10: Quebec St & E. 160th Ave (SH 7) W/ 2 EB/WB TH

2030 Total Traffic
 PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	1105	130	110	780	13	149	124	136	22	72	32
Future Volume (veh/h)	46	1105	130	110	780	13	149	124	136	22	72	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	50	1201	141	120	848	14	162	135	148	24	78	35
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	78	1606	716	153	1757	784	201	297	252	47	136	115
Arrive On Green	0.04	0.45	0.45	0.09	0.49	0.49	0.11	0.16	0.16	0.03	0.07	0.07
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	50	1201	141	120	848	14	162	135	148	24	78	35
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	2.0	20.2	3.9	4.8	11.5	0.3	6.4	4.7	6.3	1.0	2.9	1.5
Cycle Q Clear(g_c), s	2.0	20.2	3.9	4.8	11.5	0.3	6.4	4.7	6.3	1.0	2.9	1.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	78	1606	716	153	1757	784	201	297	252	47	136	115
V/C Ratio(X)	0.64	0.75	0.20	0.78	0.48	0.02	0.81	0.45	0.59	0.51	0.57	0.30
Avail Cap(c_a), veh/h	172	2947	1314	246	3094	1380	246	517	438	246	517	438
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	34.0	16.4	11.9	32.4	12.1	9.3	31.3	27.6	28.2	34.8	32.5	31.8
Incr Delay (d2), s/veh	8.4	0.7	0.1	8.4	0.2	0.0	14.8	1.1	2.2	8.3	3.8	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	6.7	1.2	2.2	3.6	0.1	3.4	2.1	2.4	0.5	1.4	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.5	17.1	12.1	40.8	12.4	9.3	46.2	28.7	30.4	43.0	36.2	33.3
LnGrp LOS	D	B	B	D	B	A	D	C	C	D	D	C
Approach Vol, veh/h		1392			982			445			137	
Approach Delay, s/veh		17.5			15.8			35.6			36.7	
Approach LOS		B			B			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.2	37.7	13.2	10.3	8.2	40.8	6.9	16.5				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	10.0	60.0	10.0	20.0	7.0	63.0	10.0	20.0				
Max Q Clear Time (g_c+I1), s	6.8	22.2	8.4	4.9	4.0	13.5	3.0	8.3				
Green Ext Time (p_c), s	0.1	10.5	0.1	0.3	0.0	6.2	0.0	0.9				
Intersection Summary												
HCM 6th Ctrl Delay				20.6								
HCM 6th LOS				C								

Timings
14: E. 160th Ave (SH 7) & Tuscon St

2030 Total Traffic
PM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↗	↗	↖	↖	↖
Traffic Volume (vph)	54	1254	1179	100	60	30
Future Volume (vph)	54	1254	1179	100	60	30
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	2			6		4
Detector Phase	5	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	5.0	15.0	15.0	15.0	10.0	10.0
Minimum Split (s)	10.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	12.0	95.0	83.0	83.0	25.0	25.0
Total Split (%)	10.0%	79.2%	69.2%	69.2%	20.8%	20.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	Max	Max	Max	None	None
Act Effect Green (s)	93.0	94.0	85.0	85.0	10.7	10.7
Actuated g/C Ratio	0.84	0.85	0.77	0.77	0.10	0.10
v/c Ratio	0.27	0.83	0.86	0.08	0.37	0.17
Control Delay	5.3	12.3	20.6	1.3	53.4	17.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.3	12.3	20.6	1.3	53.4	17.9
LOS	A	B	C	A	D	B
Approach Delay		12.0	19.1		41.6	
Approach LOS		B	B		D	

Intersection Summary
























Cycle Length: 120
 Actuated Cycle Length: 110.7
 Natural Cycle: 100
 Control Type: Semi Act-Uncoord
 Maximum v/c Ratio: 0.86
 Intersection Signal Delay: 16.4
 Intersection Capacity Utilization 82.7%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service E

Splits and Phases: 14: E. 160th Ave (SH 7) & Tuscon St



HCM 6th Signalized Intersection Summary
 11: Yosemite St & E. 160th Ave (SH 7)

2030 Total Traffic
 PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	197	1022	53	46	776	172	41	45	48	113	31	122
Future Volume (veh/h)	197	1022	53	46	776	172	41	45	48	113	31	122
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	203	1054	0	47	800	177	42	46	49	116	32	126
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	371	1163		225	1111	942	268	136	145	234	308	261
Arrive On Green	0.07	0.62	0.00	0.04	0.59	0.59	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1228	829	883	1301	1870	1585
Grp Volume(v), veh/h	203	1054	0	47	800	177	42	0	95	116	32	126
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1228	0	1711	1301	1870	1585
Q Serve(g_s), s	3.8	42.0	0.0	0.9	26.1	4.4	2.6	0.0	4.2	7.5	1.3	6.2
Cycle Q Clear(g_c), s	3.8	42.0	0.0	0.9	26.1	4.4	3.8	0.0	4.2	11.7	1.3	6.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.52	1.00		1.00
Lane Grp Cap(c), veh/h	371	1163		225	1111	942	268	0	281	234	308	261
V/C Ratio(X)	0.55	0.91		0.21	0.72	0.19	0.16	0.00	0.34	0.50	0.10	0.48
Avail Cap(c_a), veh/h	396	1695		300	1695	1436	351	0	398	322	435	368
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	11.7	14.1	0.0	15.9	12.4	8.0	32.2	0.0	31.8	37.0	30.6	32.6
Incr Delay (d2), s/veh	1.4	5.4	0.0	0.5	0.9	0.1	0.3	0.0	0.7	1.6	0.1	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	14.4	0.0	0.4	8.5	1.2	0.8	0.0	1.7	2.4	0.6	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.1	19.5	0.0	16.4	13.3	8.1	32.5	0.0	32.5	38.6	30.7	34.0
LnGrp LOS	B	B		B	B	A	C	A	C	D	C	C
Approach Vol, veh/h		1257			1024			137			274	
Approach Delay, s/veh		18.4			12.5			32.5			35.6	
Approach LOS		B			B			C			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.4	58.5		19.2	10.8	56.1		19.2				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	7.0	78.0		20.0	7.0	78.0		20.0				
Max Q Clear Time (g_c+I1), s	2.9	44.0		13.7	5.8	28.1		6.2				
Green Ext Time (p_c), s	0.0	9.5		0.5	0.1	6.7		0.4				

Intersection Summary

HCM 6th Ctrl Delay	18.6
HCM 6th LOS	B

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Timings
12: Havana St & E. 160th Ave (SH 7)

2030 Total Traffic
PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR	
Lane Configurations												
Traffic Volume (vph)	104	1041	56	106	918	30	43	19	9	13	54	
Future Volume (vph)	104	1041	56	106	918	30	43	19	9	13	54	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA	Perm	
Protected Phases	5	2		1	6			8		4		
Permitted Phases	2		2	6		6	8		4		4	
Detector Phase	5	2	2	1	6	6	8	8	4	4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	10.0	20.0	20.0	10.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	
Total Split (s)	12.0	83.0	83.0	12.0	83.0	83.0	25.0	25.0	25.0	25.0	25.0	
Total Split (%)	10.0%	69.2%	69.2%	10.0%	69.2%	69.2%	20.8%	20.8%	20.8%	20.8%	20.8%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Recall Mode	None	None	None	None	None	None	Min	Min	Min	Min	Min	
Act Effect Green (s)	60.7	55.5	55.5	60.2	55.3	55.3	8.7	8.7	8.7	8.7	8.7	
Actuated g/C Ratio	0.72	0.66	0.66	0.72	0.66	0.66	0.10	0.10	0.10	0.10	0.10	
v/c Ratio	0.29	0.85	0.05	0.40	0.75	0.03	0.30	0.30	0.07	0.07	0.25	
Control Delay	4.5	20.0	1.3	7.5	15.0	0.3	47.4	23.1	43.4	42.9	12.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	4.5	20.0	1.3	7.5	15.0	0.3	47.4	23.1	43.4	42.9	12.4	
LOS	A	B	A	A	B	A	D	C	D	D	B	
Approach Delay		17.8			13.8			32.8		21.2		
Approach LOS		B			B			C		C		

Intersection Summary
























Cycle Length: 120
 Actuated Cycle Length: 83.8
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.85
 Intersection Signal Delay: 16.8
 Intersection LOS: B
 Intersection Capacity Utilization 82.2%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 12: Havana St & E. 160th Ave (SH 7)



HCM 6th Signalized Intersection Summary
 12: Havana St & E. 160th Ave (SH 7)

2030 Total Traffic
 PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	104	1041	56	106	918	30	43	19	46	9	13	54
Future Volume (veh/h)	104	1041	56	106	918	30	43	19	46	9	13	54
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	105	1052	57	107	927	30	43	19	46	9	13	55
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	388	1199	1016	310	1200	1017	198	37	89	156	142	120
Arrive On Green	0.06	0.64	0.64	0.06	0.64	0.64	0.08	0.08	0.08	0.08	0.08	0.08
Sat Flow, veh/h	1781	1870	1585	1781	1870	1585	1333	485	1174	1337	1870	1585
Grp Volume(v), veh/h	105	1052	57	107	927	30	43	0	65	9	13	55
Grp Sat Flow(s),veh/h/ln	1781	1870	1585	1781	1870	1585	1333	0	1659	1337	1870	1585
Q Serve(g_s), s	1.3	31.5	0.9	1.3	24.1	0.5	2.1	0.0	2.6	0.4	0.4	2.3
Cycle Q Clear(g_c), s	1.3	31.5	0.9	1.3	24.1	0.5	2.6	0.0	2.6	3.0	0.4	2.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.71	1.00		1.00
Lane Grp Cap(c), veh/h	388	1199	1016	310	1200	1017	198	0	126	156	142	120
V/C Ratio(X)	0.27	0.88	0.06	0.35	0.77	0.03	0.22	0.00	0.52	0.06	0.09	0.46
Avail Cap(c_a), veh/h	458	2134	1809	379	2134	1809	487	0	485	446	547	464
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	8.3	10.1	4.6	12.4	8.7	4.5	30.6	0.0	30.4	31.8	29.4	30.2
Incr Delay (d2), s/veh	0.4	2.2	0.0	0.7	1.1	0.0	0.5	0.0	3.3	0.2	0.3	2.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	8.0	0.2	0.7	5.9	0.1	0.7	0.0	1.1	0.1	0.2	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.7	12.3	4.6	13.0	9.8	4.5	31.1	0.0	33.7	32.0	29.7	33.0
LnGrp LOS	A	B	A	B	A	A	C	A	C	C	C	C
Approach Vol, veh/h		1214			1064			108				77
Approach Delay, s/veh		11.6			10.0			32.7				32.3
Approach LOS		B			A			C				C
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.3	48.8		10.2	9.3	48.9		10.2				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	7.0	78.0		20.0	7.0	78.0		20.0				
Max Q Clear Time (g_c+I1), s	3.3	33.5		5.0	3.3	26.1		4.6				
Green Ext Time (p_c), s	0.1	10.3		0.2	0.1	8.0		0.3				
Intersection Summary												
HCM 6th Ctrl Delay				12.5								
HCM 6th LOS				B								

HCM 6th TWSC
13: Riverdale Rd & E. 160th Ave (SH 7)

2030 Total Traffic
PM Peak Hour

Intersection												
Int Delay, s/veh	1.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↕	↕	↕			↕	↕		↕	
Traffic Vol, veh/h	0	1036	18	191	1063	0	18	0	317	1	0	3
Future Vol, veh/h	0	1036	18	191	1063	0	18	0	317	1	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	Free	-	-	None
Storage Length	-	-	475	475	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	99	99	99	99	85	99	85	99	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1046	18	193	1074	0	18	0	320	1	0	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1074	0	0	1064	0	0	2508	2506	-	2515	2524	1074
Stage 1	-	-	-	-	-	-	1046	1046	-	1460	1460	-
Stage 2	-	-	-	-	-	-	1462	1460	-	1055	1064	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	-	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	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	649	-	-	655	-	-	19	29	0	19	28	267
Stage 1	-	-	-	-	-	-	276	305	0	161	194	-
Stage 2	-	-	-	-	-	-	160	194	0	273	300	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	649	-	-	655	-	-	~ 14	20	-	15	20	267
Mov Cap-2 Maneuver	-	-	-	-	-	-	97	118	-	15	20	-
Stage 1	-	-	-	-	-	-	276	305	-	161	137	-
Stage 2	-	-	-	-	-	-	111	137	-	273	300	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1.9	50.5	82.6
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	97	-	649	-	-	655	-	-	51
HCM Lane V/C Ratio	0.187	-	-	-	-	0.295	-	-	0.092
HCM Control Delay (s)	50.5	0	0	-	-	12.8	-	-	82.6
HCM Lane LOS	F	A	A	-	-	B	-	-	F
HCM 95th %tile Q(veh)	0.6	-	0	-	-	1.2	-	-	0.3

Notes
 -: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 6th TWSC
 14: E. 160th Ave (SH 7) & Tuscon St

2030 Total Traffic
 PM Peak Hour

Intersection						
Int Delay, s/veh	25.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↗	↗	↖	↖	↖
Traffic Vol, veh/h	54	1254	1179	100	60	30
Future Vol, veh/h	54	1254	1179	100	60	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	450	-	-	325	0	200
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	56	1306	1228	104	63	31

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	1332	0	0 2646 1228
Stage 1	-	-	- 1228 -
Stage 2	-	-	- 1418 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	518	-	- ~ 26 217
Stage 1	-	-	- 277 -
Stage 2	-	-	- 224 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	518	-	- ~ 23 217
Mov Cap-2 Maneuver	-	-	- ~ 23 -
Stage 1	-	-	- 247 -
Stage 2	-	-	- 224 -

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	\$ 762.5
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	518	-	-	-	23	217
HCM Lane V/C Ratio	0.109	-	-	-	2.717	0.144
HCM Control Delay (s)	12.8	-	-	-	\$ 1131.6	24.4
HCM Lane LOS	B	-	-	-	F	C
HCM 95th %tile Q(veh)	0.4	-	-	-	7.9	0.5

Notes
 -: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 6th Signalized Intersection Summary
 14: E. 160th Ave (SH 7) & Tuscon St

2030 Total Traffic
 PM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	54	1254	1179	100	60	30
Future Volume (veh/h)	54	1254	1179	100	60	30
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	56	1306	1228	104	62	31
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	232	1539	1383	1172	153	136
Arrive On Green	0.04	0.82	0.74	0.74	0.09	0.09
Sat Flow, veh/h	1781	1870	1870	1585	1781	1585
Grp Volume(v), veh/h	56	1306	1228	104	62	31
Grp Sat Flow(s),veh/h/ln	1781	1870	1870	1585	1781	1585
Q Serve(g_s), s	0.7	44.9	54.5	2.0	3.6	2.0
Cycle Q Clear(g_c), s	0.7	44.9	54.5	2.0	3.6	2.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	232	1539	1383	1172	153	136
V/C Ratio(X)	0.24	0.85	0.89	0.09	0.40	0.23
Avail Cap(c_a), veh/h	279	1539	1383	1172	326	290
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.2	5.7	10.8	4.0	47.3	46.6
Incr Delay (d2), s/veh	0.5	6.0	8.8	0.1	1.7	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	9.6	18.1	0.5	1.6	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	19.8	11.7	19.6	4.1	49.1	47.5
LnGrp LOS	B	B	B	A	D	D
Approach Vol, veh/h		1362	1332		93	
Approach Delay, s/veh		12.1	18.4		48.5	
Approach LOS		B	B		D	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		95.0		14.4	9.1	85.9
Change Period (Y+Rc), s		5.0		5.0	5.0	5.0
Max Green Setting (Gmax), s		90.0		20.0	7.0	78.0
Max Q Clear Time (g_c+I1), s		46.9		5.6	2.7	56.5
Green Ext Time (p_c), s		16.9		0.2	0.0	11.0
Intersection Summary						
HCM 6th Ctrl Delay			16.3			
HCM 6th LOS			B			

Timings
11: Yosemite St & E. 160th Ave (SH 7)

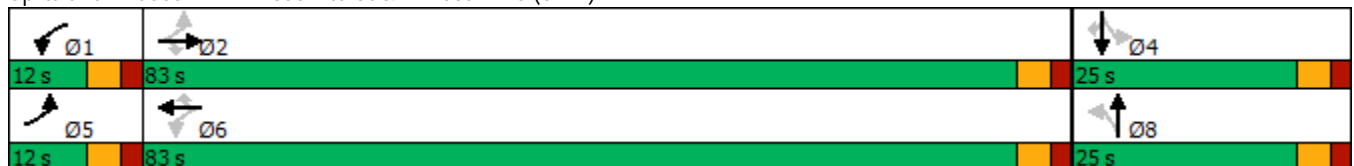
2030 Total Traffic
PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	197	1022	53	46	776	172	41	45	113	31	122
Future Volume (vph)	197	1022	53	46	776	172	41	45	113	31	122
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	5	2		1	6			8		4	
Permitted Phases	2		2	6		6	8		4		4
Detector Phase	5	2	2	1	6	6	8	8	4	4	4
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	20.0	20.0	10.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	12.0	83.0	83.0	12.0	83.0	83.0	25.0	25.0	25.0	25.0	25.0
Total Split (%)	10.0%	69.2%	69.2%	10.0%	69.2%	69.2%	20.8%	20.8%	20.8%	20.8%	20.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	None	None	None	None	None	Min	Min	Min	Min	Min
Act Effect Green (s)	64.5	61.0	61.0	60.1	53.4	53.4	14.4	14.4	14.4	14.4	14.4
Actuated g/C Ratio	0.70	0.66	0.66	0.65	0.58	0.58	0.16	0.16	0.16	0.16	0.16
v/c Ratio	0.56	0.86	0.05	0.20	0.74	0.18	0.20	0.32	0.58	0.11	0.36
Control Delay	10.4	22.5	1.6	5.7	17.9	1.6	43.2	30.1	54.7	41.5	11.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.4	22.5	1.6	5.7	17.9	1.6	43.2	30.1	54.7	41.5	11.2
LOS	B	C	A	A	B	A	D	C	D	D	B
Approach Delay		19.7			14.5			34.1		33.1	
Approach LOS		B			B			C		C	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 92.2
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.86
 Intersection Signal Delay: 19.9
 Intersection LOS: B
 Intersection Capacity Utilization 83.4%
 ICU Level of Service E
 Analysis Period (min) 15

Splits and Phases: 11: Yosemite St & E. 160th Ave (SH 7)



Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	8	20	104	83	1
Future Vol, veh/h	0	8	20	104	83	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	155	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	9	23	120	95	1

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	262	96	96	0	-	0
Stage 1	96	-	-	-	-	-
Stage 2	166	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	727	960	1498	-	-	-
Stage 1	928	-	-	-	-	-
Stage 2	863	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	716	960	1498	-	-	-
Mov Cap-2 Maneuver	716	-	-	-	-	-
Stage 1	914	-	-	-	-	-
Stage 2	863	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.8	1.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1498	-	960	-	-
HCM Lane V/C Ratio	0.015	-	0.01	-	-
HCM Control Delay (s)	7.4	-	8.8	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection						
Int Delay, s/veh	1.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	1	18	26	124	87	5
Future Vol, veh/h	1	18	26	124	87	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	21	30	143	100	6

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	306	103	106	0	0
Stage 1	103	-	-	-	-
Stage 2	203	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	686	952	1485	-	-
Stage 1	921	-	-	-	-
Stage 2	831	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	671	952	1485	-	-
Mov Cap-2 Maneuver	671	-	-	-	-
Stage 1	901	-	-	-	-
Stage 2	831	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9	1.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1485	-	931	-	-
HCM Lane V/C Ratio	0.02	-	0.023	-	-
HCM Control Delay (s)	7.5	0	9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

HCM 6th TWSC
17: Yosemite St & North Site Access

2030 Total Traffic
PM Peak Hour

Intersection												
Int Delay, s/veh	5.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↑	↗	↖	↑	↗
Traffic Vol, veh/h	16	0	41	68	0	44	63	31	99	65	48	27
Future Vol, veh/h	16	0	41	68	0	44	63	31	99	65	48	27
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	200	-	-	250	-	250	250	-	250
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	19	0	48	80	0	52	74	36	116	76	56	32

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	476	508	56	432	424	36	88	0	0	152	0	0
Stage 1	208	208	-	184	184	-	-	-	-	-	-	-
Stage 2	268	300	-	248	240	-	-	-	-	-	-	-
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	499	468	1011	534	522	1037	1508	-	-	1429	-	-
Stage 1	794	730	-	818	747	-	-	-	-	-	-	-
Stage 2	738	666	-	756	707	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	438	422	1011	470	470	1037	1508	-	-	1429	-	-
Mov Cap-2 Maneuver	438	422	-	470	470	-	-	-	-	-	-	-
Stage 1	755	691	-	778	710	-	-	-	-	-	-	-
Stage 2	667	633	-	682	670	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.1	12	2.5	3.6
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1508	-	-	438	1011	470	1037	1429	-	-
HCM Lane V/C Ratio	0.049	-	-	0.043	0.048	0.17	0.05	0.054	-	-
HCM Control Delay (s)	7.5	-	-	13.6	8.7	14.2	8.7	7.7	-	-
HCM Lane LOS	A	-	-	B	A	B	A	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.1	0.1	0.6	0.2	0.2	-	-

HCM 6th TWSC
 18: Yosemite St & South Site Access

2030 Total Traffic
 PM Peak Hour

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	6	0	39	86	0	13	65	174	140	21	126	10
Future Vol, veh/h	6	0	39	86	0	13	65	174	140	21	126	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	200	-	-	250	-	250	250	-	250
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	0	46	101	0	15	76	205	165	25	148	12

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	645	720	148	584	567	205	160	0	0	370	0	0
Stage 1	198	198	-	357	357	-	-	-	-	-	-	-
Stage 2	447	522	-	227	210	-	-	-	-	-	-	-
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	385	354	899	423	433	836	1419	-	-	1189	-	-
Stage 1	804	737	-	661	628	-	-	-	-	-	-	-
Stage 2	591	531	-	776	728	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	357	328	899	379	401	836	1419	-	-	1189	-	-
Mov Cap-2 Maneuver	357	328	-	379	401	-	-	-	-	-	-	-
Stage 1	761	722	-	625	594	-	-	-	-	-	-	-
Stage 2	549	502	-	721	713	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB				
HCM Control Delay, s	10		16.8		1.3		1.1				
HCM LOS	B		C								

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1419	-	-	357	899	379	836	1189	-	-
HCM Lane V/C Ratio	0.054	-	-	0.02	0.051	0.267	0.018	0.021	-	-
HCM Control Delay (s)	7.7	-	-	15.3	9.2	17.9	9.4	8.1	-	-
HCM Lane LOS	A	-	-	C	A	C	A	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.1	0.2	1.1	0.1	0.1	-	-

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	0	3	5	384	256	3
Future Vol, veh/h	0	3	5	384	256	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	4	6	463	308	4

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	785	310	312	0	-	0
Stage 1	310	-	-	-	-	-
Stage 2	475	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	361	730	1248	-	-	-
Stage 1	744	-	-	-	-	-
Stage 2	626	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	359	730	1248	-	-	-
Mov Cap-2 Maneuver	359	-	-	-	-	-
Stage 1	740	-	-	-	-	-
Stage 2	626	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1248	-	730	-	-
HCM Lane V/C Ratio	0.005	-	0.005	-	-
HCM Control Delay (s)	7.9	0	10	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	1	14	24	383	257	1
Future Vol, veh/h	1	14	24	383	257	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	16	28	445	299	1

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	801	300	300	0	0
Stage 1	300	-	-	-	-
Stage 2	501	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	354	740	1261	-	-
Stage 1	752	-	-	-	-
Stage 2	609	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	343	740	1261	-	-
Mov Cap-2 Maneuver	343	-	-	-	-
Stage 1	729	-	-	-	-
Stage 2	609	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.4	0.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1261	-	687	-	-
HCM Lane V/C Ratio	0.022	-	0.025	-	-
HCM Control Delay (s)	7.9	0	10.4	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Intersection												
Int Delay, s/veh	4.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	0	2	11	0	43	2	40	21	68	61	4
Future Vol, veh/h	1	0	2	11	0	43	2	40	21	68	61	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
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	67	67	67	67	67	67	67	67	67	67	67	67
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	3	16	0	64	3	60	31	101	91	6

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	410	393	94	380	381	76	97	0	0	91	0	0
Stage 1	296	296	-	82	82	-	-	-	-	-	-	-
Stage 2	114	97	-	298	299	-	-	-	-	-	-	-
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	552	543	963	578	552	985	1496	-	-	1504	-	-
Stage 1	712	668	-	926	827	-	-	-	-	-	-	-
Stage 2	891	815	-	711	666	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	487	503	963	544	512	985	1496	-	-	1504	-	-
Mov Cap-2 Maneuver	487	503	-	544	512	-	-	-	-	-	-	-
Stage 1	711	621	-	924	825	-	-	-	-	-	-	-
Stage 2	831	813	-	658	619	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	10		9.7		0.2		3.9	
HCM LOS	B		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1496	-	-	726	845	1504	-	-
HCM Lane V/C Ratio	0.002	-	-	0.006	0.095	0.067	-	-
HCM Control Delay (s)	7.4	0	-	10	9.7	7.6	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.3	0.2	-	-

Intersection												
Int Delay, s/veh	3.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	0	4	31	0	27	7	34	55	31	39	4
Future Vol, veh/h	2	0	4	31	0	27	7	34	55	31	39	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
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	63	85	63	85	85	85	63	63	85	85	63	63
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	0	6	36	0	32	11	54	65	36	62	6

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	262	278	65	249	249	87	68	0	0	119	0	0
Stage 1	137	137	-	109	109	-	-	-	-	-	-	-
Stage 2	125	141	-	140	140	-	-	-	-	-	-	-
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	691	630	999	705	654	971	1533	-	-	1469	-	-
Stage 1	866	783	-	896	805	-	-	-	-	-	-	-
Stage 2	879	780	-	863	781	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	652	609	999	683	632	971	1533	-	-	1469	-	-
Mov Cap-2 Maneuver	652	609	-	683	632	-	-	-	-	-	-	-
Stage 1	859	763	-	889	799	-	-	-	-	-	-	-
Stage 2	843	774	-	836	761	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	9.3		10		0.6		2.6	
HCM LOS	A		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1533	-	-	848	792	1469	-
HCM Lane V/C Ratio	0.007	-	-	0.011	0.086	0.025	-
HCM Control Delay (s)	7.4	0	-	9.3	10	7.5	0
HCM Lane LOS	A	A	-	A	B	A	A
HCM 95th %tile Q(veh)	0	-	-	0	0.3	0.1	-

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	148	198	2	6	6
Future Vol, veh/h	3	148	198	2	6	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	250	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	157	211	2	6	6

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	213	0	-	0	297
Stage 1	-	-	-	-	212
Stage 2	-	-	-	-	85
Critical Hdwy	4.14	-	-	-	6.84
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	2.22	-	-	-	3.52
Pot Cap-1 Maneuver	1355	-	-	-	670
Stage 1	-	-	-	-	803
Stage 2	-	-	-	-	929
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1355	-	-	-	669
Mov Cap-2 Maneuver	-	-	-	-	669
Stage 1	-	-	-	-	801
Stage 2	-	-	-	-	929

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	9.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1355	-	-	-	777
HCM Lane V/C Ratio	0.002	-	-	-	0.016
HCM Control Delay (s)	7.7	-	-	-	9.7
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection						
Int Delay, s/veh	1.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑
Traffic Vol, veh/h	137	17	32	192	8	15
Future Vol, veh/h	137	17	32	192	8	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	250	250	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	146	18	34	204	9	16

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	164	0	316	73
Stage 1	-	-	-	-	146	-
Stage 2	-	-	-	-	170	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	1412	-	652	974
Stage 1	-	-	-	-	866	-
Stage 2	-	-	-	-	843	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1412	-	636	974
Mov Cap-2 Maneuver	-	-	-	-	636	-
Stage 1	-	-	-	-	866	-
Stage 2	-	-	-	-	823	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.1	9.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	636	974	-	-	1412	-
HCM Lane V/C Ratio	0.013	0.016	-	-	0.024	-
HCM Control Delay (s)	10.7	8.8	-	-	7.6	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0	0.1	-	-	0.1	-

Intersection												
Int Delay, s/veh	1.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗		↖	↗	
Traffic Vol, veh/h	21	141	5	2	237	23	10	0	1	23	0	29
Future Vol, veh/h	21	141	5	2	237	23	10	0	1	23	0	29
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	250	250	-	250	200	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	150	5	2	252	24	11	0	1	24	0	31

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	276	0	0	155	0	0	324	474	75	375	455	126
Stage 1	-	-	-	-	-	-	194	194	-	256	256	-
Stage 2	-	-	-	-	-	-	130	280	-	119	199	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1284	-	-	1423	-	-	605	488	971	557	500	901
Stage 1	-	-	-	-	-	-	789	739	-	726	694	-
Stage 2	-	-	-	-	-	-	860	678	-	873	735	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1284	-	-	1423	-	-	576	479	971	549	491	901
Mov Cap-2 Maneuver	-	-	-	-	-	-	576	479	-	549	491	-
Stage 1	-	-	-	-	-	-	776	726	-	714	693	-
Stage 2	-	-	-	-	-	-	829	677	-	857	723	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	1			0.1			11.2			10.3		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	576	971	1284	-	-	1423	-	-	549	901
HCM Lane V/C Ratio	0.018	0.001	0.017	-	-	0.001	-	-	0.045	0.034
HCM Control Delay (s)	11.4	8.7	7.9	-	-	7.5	-	-	11.9	9.1
HCM Lane LOS	B	A	A	-	-	A	-	-	B	A
HCM 95th %tile Q(veh)	0.1	0	0.1	-	-	0	-	-	0.1	0.1

Intersection						
Int Delay, s/veh	0.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑
Traffic Vol, veh/h	154	3	11	246	7	10
Future Vol, veh/h	154	3	11	246	7	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	170	250	-	0	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	164	3	12	262	7	11

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	167	0	319
Stage 1	-	-	-	-	164
Stage 2	-	-	-	-	155
Critical Hdwy	-	-	4.14	-	6.84
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	-	-	2.22	-	3.52
Pot Cap-1 Maneuver	-	-	1408	-	649
Stage 1	-	-	-	-	848
Stage 2	-	-	-	-	857
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1408	-	643
Mov Cap-2 Maneuver	-	-	-	-	643
Stage 1	-	-	-	-	848
Stage 2	-	-	-	-	849

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	9.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	643	961	-	-	1408	-
HCM Lane V/C Ratio	0.012	0.011	-	-	0.008	-
HCM Control Delay (s)	10.7	8.8	-	-	7.6	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0	0	-	-	0	-

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	173	263	2	2	2
Future Vol, veh/h	2	173	263	2	2	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	184	280	2	2	2

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	282	0	-	0	377 141
Stage 1	-	-	-	-	281 -
Stage 2	-	-	-	-	96 -
Critical Hdwy	4.14	-	-	-	6.84 6.94
Critical Hdwy Stg 1	-	-	-	-	5.84 -
Critical Hdwy Stg 2	-	-	-	-	5.84 -
Follow-up Hdwy	2.22	-	-	-	3.52 3.32
Pot Cap-1 Maneuver	1277	-	-	-	597 881
Stage 1	-	-	-	-	741 -
Stage 2	-	-	-	-	917 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1277	-	-	-	596 881
Mov Cap-2 Maneuver	-	-	-	-	596 -
Stage 1	-	-	-	-	740 -
Stage 2	-	-	-	-	917 -

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	10.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1277	-	-	-	711
HCM Lane V/C Ratio	0.002	-	-	-	0.006
HCM Control Delay (s)	7.8	-	-	-	10.1
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection						
Int Delay, s/veh	2.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑
Traffic Vol, veh/h	173	2	74	254	11	58
Future Vol, veh/h	173	2	74	254	11	58
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	184	2	79	270	12	62

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	186	0	477 92
Stage 1	-	-	-	-	184 -
Stage 2	-	-	-	-	293 -
Critical Hdwy	-	-	4.14	-	6.84 6.94
Critical Hdwy Stg 1	-	-	-	-	5.84 -
Critical Hdwy Stg 2	-	-	-	-	5.84 -
Follow-up Hdwy	-	-	2.22	-	3.52 3.32
Pot Cap-1 Maneuver	-	-	1386	-	517 947
Stage 1	-	-	-	-	829 -
Stage 2	-	-	-	-	731 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1386	-	488 947
Mov Cap-2 Maneuver	-	-	-	-	488 -
Stage 1	-	-	-	-	829 -
Stage 2	-	-	-	-	689 -

Approach	EB	WB	NB
HCM Control Delay, s	0	1.7	9.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	824	-	-	1386	-
HCM Lane V/C Ratio	0.089	-	-	0.057	-
HCM Control Delay (s)	9.8	-	-	7.8	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0.2	-

Timings
10: Quebec St & E. 160th Ave (SH 7)

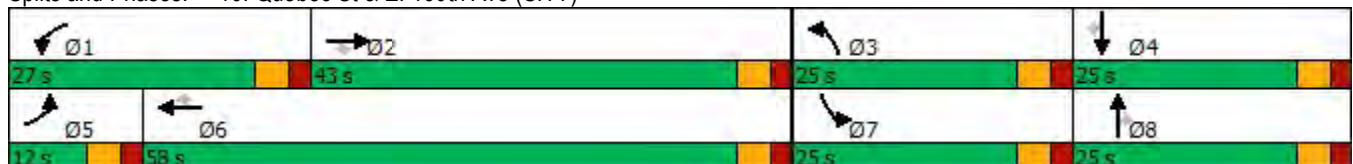
2044 Background Traffic
AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	629	123	156	1013	21	162	64	27	27	95	39
Future Volume (vph)	17	629	123	156	1013	21	162	64	27	27	95	39
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	20.0	20.0	10.0	20.0	20.0	10.0	20.0	20.0	10.0	20.0	20.0
Total Split (s)	12.0	43.0	43.0	27.0	58.0	58.0	25.0	25.0	25.0	25.0	25.0	25.0
Total Split (%)	10.0%	35.8%	35.8%	22.5%	48.3%	48.3%	20.8%	20.8%	20.8%	20.8%	20.8%	20.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effct Green (s)	6.4	40.2	40.2	14.4	55.5	55.5	14.5	17.7	17.7	7.2	8.3	8.3
Actuated g/C Ratio	0.07	0.42	0.42	0.15	0.58	0.58	0.15	0.19	0.19	0.08	0.09	0.09
v/c Ratio	0.15	0.45	0.17	0.62	0.52	0.02	0.64	0.10	0.07	0.22	0.33	0.15
Control Delay	50.1	23.1	3.1	50.0	15.7	0.0	51.0	35.2	0.3	49.5	47.0	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.1	23.1	3.1	50.0	15.7	0.0	51.0	35.2	0.3	49.5	47.0	1.1
LOS	D	C	A	D	B	A	D	D	A	D	D	A
Approach Delay		20.5			19.9			41.6			36.4	
Approach LOS		C			B			D			D	

Intersection Summary

Cycle Length: 120	
Actuated Cycle Length: 94.9	
Natural Cycle: 70	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.64	
Intersection Signal Delay: 23.5	Intersection LOS: C
Intersection Capacity Utilization 60.3%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 10: Quebec St & E. 160th Ave (SH 7)



HCM 6th Signalized Intersection Summary
 10: Quebec St & E. 160th Ave (SH 7)

2044 Background Traffic
 AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	629	123	156	1013	21	162	64	27	27	95	39
Future Volume (veh/h)	17	629	123	156	1013	21	162	64	27	27	95	39
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	18	669	0	166	1078	22	172	68	0	29	101	41
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	36	1745		204	2081	928	210	514		51	196	88
Arrive On Green	0.02	0.49	0.00	0.11	0.59	0.59	0.12	0.14	0.00	0.03	0.06	0.06
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	18	669	0	166	1078	22	172	68	0	29	101	41
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	0.9	10.7	0.0	8.2	16.3	0.5	8.5	1.5	0.0	1.5	2.5	2.3
Cycle Q Clear(g_c), s	0.9	10.7	0.0	8.2	16.3	0.5	8.5	1.5	0.0	1.5	2.5	2.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	36	1745		204	2081	928	210	514		51	196	88
V/C Ratio(X)	0.50	0.38		0.81	0.52	0.02	0.82	0.13		0.57	0.51	0.47
Avail Cap(c_a), veh/h	138	1745		433	2081	928	394	785		394	785	350
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.9	14.4	0.0	39.1	11.2	7.9	39.0	33.8	0.0	43.4	41.6	41.5
Incr Delay (d2), s/veh	10.5	0.6	0.0	7.6	0.9	0.0	7.6	0.1	0.0	9.6	2.1	3.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	3.9	0.0	3.8	5.4	0.2	4.0	0.6	0.0	0.8	1.1	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.4	15.1	0.0	46.7	12.1	7.9	46.6	33.9	0.0	53.0	43.6	45.3
LnGrp LOS	D	B		D	B	A	D	C		D	D	D
Approach Vol, veh/h		687			1266			240			171	
Approach Delay, s/veh		16.1			16.5			43.0			45.6	
Approach LOS		B			B			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	15.4	49.4	15.7	10.0	6.8	58.0	7.6	18.1				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	22.0	38.0	20.0	20.0	7.0	53.0	20.0	20.0				
Max Q Clear Time (g_c+I1), s	10.2	12.7	10.5	4.5	2.9	18.3	3.5	3.5				
Green Ext Time (p_c), s	0.3	4.2	0.3	0.5	0.0	8.3	0.0	0.2				
Intersection Summary												
HCM 6th Ctrl Delay			21.2									
HCM 6th LOS			C									
Notes												
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.												

Timings
11: Yosemite St & E. 160th Ave (SH 7)

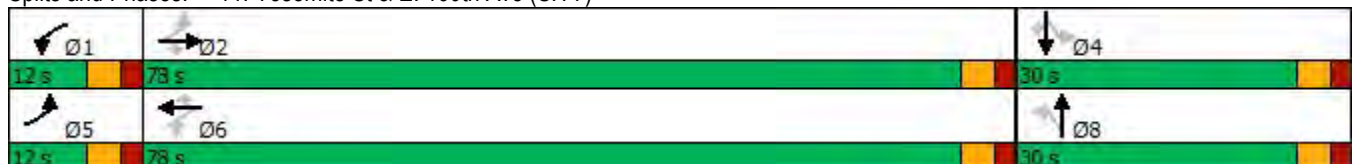
2044 Background Traffic
AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	14	705	29	39	1226	7	56	9	16	7	18
Future Volume (vph)	14	705	29	39	1226	7	56	9	16	7	18
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	5	2		1	6			8		4	
Permitted Phases	2		2	6		6	8		4		4
Detector Phase	5	2	2	1	6	6	8	8	4	4	4
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	20.0	20.0	10.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	12.0	78.0	78.0	12.0	78.0	78.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	10.0%	65.0%	65.0%	10.0%	65.0%	65.0%	25.0%	25.0%	25.0%	25.0%	25.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	None	None	None	None	None	Min	Min	Min	Min	Min
Act Effct Green (s)	27.2	25.3	25.3	28.1	27.2	27.2	8.6	8.6	8.6	8.6	8.6
Actuated g/C Ratio	0.56	0.52	0.52	0.58	0.56	0.56	0.18	0.18	0.18	0.18	0.18
v/c Ratio	0.04	0.41	0.04	0.08	0.65	0.01	0.24	0.22	0.07	0.02	0.06
Control Delay	3.9	8.5	0.8	4.0	9.5	0.0	24.8	10.9	23.5	23.1	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.9	8.5	0.8	4.0	9.5	0.0	24.8	10.9	23.5	23.1	0.3
LOS	A	A	A	A	A	A	C	B	C	C	A
Approach Delay		8.1			9.3			17.0		13.2	
Approach LOS		A			A			B		B	

Intersection Summary
























Cycle Length: 120
 Actuated Cycle Length: 48.3
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.65
 Intersection Signal Delay: 9.4
 Intersection Capacity Utilization 54.7%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 11: Yosemite St & E. 160th Ave (SH 7)



HCM 6th Signalized Intersection Summary
 11: Yosemite St & E. 160th Ave (SH 7)

2044 Background Traffic
 AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	705	29	39	1226	7	56	9	62	16	7	18
Future Volume (veh/h)	14	705	29	39	1226	7	56	9	62	16	7	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	15	750	0	41	1304	7	60	10	66	17	7	19
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	312	1882		520	1971	879	296	23	150	236	199	169
Arrive On Green	0.02	0.53	0.00	0.04	0.55	0.55	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1385	213	1405	1323	1870	1585
Grp Volume(v), veh/h	15	750	0	41	1304	7	60	0	76	17	7	19
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1385	0	1618	1323	1870	1585
Q Serve(g_s), s	0.2	5.9	0.0	0.5	12.1	0.1	1.9	0.0	2.1	0.6	0.2	0.5
Cycle Q Clear(g_c), s	0.2	5.9	0.0	0.5	12.1	0.1	2.1	0.0	2.1	2.6	0.2	0.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.87	1.00		1.00
Lane Grp Cap(c), veh/h	312	1882		520	1971	879	296	0	172	236	199	169
V/C Ratio(X)	0.05	0.40		0.08	0.66	0.01	0.20	0.00	0.44	0.07	0.04	0.11
Avail Cap(c_a), veh/h	544	5530		707	5530	2466	887	0	862	800	997	845
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	6.1	6.6	0.0	4.8	7.3	4.7	19.7	0.0	19.6	20.9	18.8	19.0
Incr Delay (d2), s/veh	0.1	0.1	0.0	0.1	0.4	0.0	0.3	0.0	1.8	0.1	0.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.1	0.0	0.1	2.2	0.0	0.5	0.0	0.7	0.2	0.1	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.2	6.7	0.0	4.8	7.7	4.7	20.1	0.0	21.4	21.0	18.9	19.2
LnGrp LOS	A	A		A	A	A	C	A	C	C	B	B
Approach Vol, veh/h		765			1352			136			43	
Approach Delay, s/veh		6.7			7.6			20.8			19.9	
Approach LOS		A			A			C			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.1	29.8		10.0	5.9	31.0		10.0				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	7.0	73.0		25.0	7.0	73.0		25.0				
Max Q Clear Time (g_c+I1), s	2.5	7.9		4.6	2.2	14.1		4.1				
Green Ext Time (p_c), s	0.0	5.2		0.1	0.0	11.9		0.5				

Intersection Summary

HCM 6th Ctrl Delay	8.3
HCM 6th LOS	A

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Timings
12: Havana St & E. 160th Ave (SH 7)

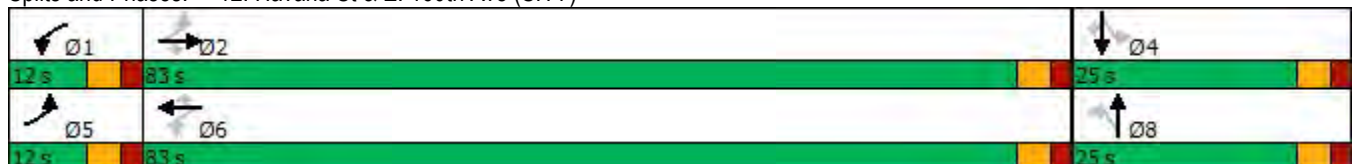
2044 Background Traffic
AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	16	764	12	30	1076	9	24	5	16	8	39
Future Volume (vph)	16	764	12	30	1076	9	24	5	16	8	39
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	5	2		1	6			8		4	
Permitted Phases	2		2	6		6	8		4		4
Detector Phase	5	2	2	1	6	6	8	8	4	4	4
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	20.0	20.0	10.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	12.0	83.0	83.0	12.0	83.0	83.0	25.0	25.0	25.0	25.0	25.0
Total Split (%)	10.0%	69.2%	69.2%	10.0%	69.2%	69.2%	20.8%	20.8%	20.8%	20.8%	20.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	None	None	None	None	None	Min	Min	Min	Min	Min
Act Effct Green (s)	22.1	20.2	20.2	22.9	22.1	22.1	6.9	6.9	6.9	6.9	6.9
Actuated g/C Ratio	0.54	0.49	0.49	0.55	0.54	0.54	0.17	0.17	0.17	0.17	0.17
v/c Ratio	0.04	0.47	0.02	0.07	0.61	0.01	0.11	0.26	0.08	0.03	0.13
Control Delay	3.5	8.8	0.0	3.6	8.5	0.0	21.2	9.4	21.1	20.4	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.5	8.8	0.0	3.6	8.5	0.0	21.2	9.4	21.1	20.4	5.6
LOS	A	A	A	A	A	A	C	A	C	C	A
Approach Delay		8.5			8.3			12.1		11.5	
Approach LOS		A			A			B		B	

Intersection Summary
























Cycle Length: 120
 Actuated Cycle Length: 41.3
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.61
 Intersection Signal Delay: 8.7
 Intersection LOS: A
 Intersection Capacity Utilization 50.6%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 12: Havana St & E. 160th Ave (SH 7)



HCM 6th Signalized Intersection Summary
 12: Havana St & E. 160th Ave (SH 7)

2044 Background Traffic
 AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	764	12	30	1076	9	24	5	77	16	8	39
Future Volume (veh/h)	16	764	12	30	1076	9	24	5	77	16	8	39
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	17	813	13	32	1145	10	26	5	82	17	9	41
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	341	1751	781	462	1806	806	323	11	177	257	220	186
Arrive On Green	0.02	0.49	0.49	0.04	0.51	0.51	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1355	92	1507	1310	1870	1585
Grp Volume(v), veh/h	17	813	13	32	1145	10	26	0	87	17	9	41
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1355	0	1599	1310	1870	1585
Q Serve(g_s), s	0.2	6.4	0.2	0.4	9.9	0.1	0.7	0.0	2.2	0.5	0.2	1.0
Cycle Q Clear(g_c), s	0.2	6.4	0.2	0.4	9.9	0.1	0.9	0.0	2.2	2.7	0.2	1.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.94	1.00		1.00
Lane Grp Cap(c), veh/h	341	1751	781	462	1806	806	323	0	188	257	220	186
V/C Ratio(X)	0.05	0.46	0.02	0.07	0.63	0.01	0.08	0.00	0.46	0.07	0.04	0.22
Avail Cap(c_a), veh/h	596	6518	2907	690	6518	2907	801	0	752	719	880	745
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	6.1	7.1	5.5	5.3	7.6	5.2	17.0	0.0	17.5	18.8	16.6	17.0
Incr Delay (d2), s/veh	0.1	0.2	0.0	0.1	0.4	0.0	0.1	0.0	1.8	0.1	0.1	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.2	0.0	0.1	1.8	0.0	0.2	0.0	0.7	0.1	0.1	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.2	7.3	5.5	5.4	8.0	5.2	17.1	0.0	19.3	18.9	16.7	17.6
LnGrp LOS	A	A	A	A	A	A	B	A	B	B	B	B
Approach Vol, veh/h		843			1187			113			67	
Approach Delay, s/veh		7.2			7.9			18.8			17.8	
Approach LOS		A			A			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.6	26.0		10.0	5.9	26.6		10.0				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	7.0	78.0		20.0	7.0	78.0		20.0				
Max Q Clear Time (g_c+I1), s	2.4	8.4		4.7	2.2	11.9		4.2				
Green Ext Time (p_c), s	0.0	5.9		0.1	0.0	9.7		0.4				
Intersection Summary												
HCM 6th Ctrl Delay			8.5									
HCM 6th LOS			A									

Intersection												
Int Delay, s/veh	2.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑			↖	↗		↕	
Traffic Vol, veh/h	0	812	39	335	1042	0	14	1	267	0	0	1
Future Vol, veh/h	0	812	39	335	1042	0	14	1	267	0	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	Free	-	-	None
Storage Length	475	-	475	475	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	864	41	356	1109	0	15	1	284	0	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1109	0	0	905	0	0	2131	2685	-	2254	2726	555
Stage 1	-	-	-	-	-	-	864	864	-	1821	1821	-
Stage 2	-	-	-	-	-	-	1267	1821	-	433	905	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	-	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	-	3.52	4.02	3.32
Pot Cap-1 Maneuver	625	-	-	747	-	-	28	22	0	23	20	475
Stage 1	-	-	-	-	-	-	315	369	0	80	127	-
Stage 2	-	-	-	-	-	-	179	127	0	571	353	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	625	-	-	747	-	-	17	12	-	14	10	475
Mov Cap-2 Maneuver	-	-	-	-	-	-	85	62	-	14	10	-
Stage 1	-	-	-	-	-	-	315	369	-	80	66	-
Stage 2	-	-	-	-	-	-	93	66	-	569	353	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			3.4			58.4			12.6		
HCM LOS							F			B		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	83	-	625	-	-	747	-	-	475
HCM Lane V/C Ratio	0.192	-	-	-	-	0.477	-	-	0.002
HCM Control Delay (s)	58.4	0	0	-	-	14.1	-	-	12.6
HCM Lane LOS	F	A	A	-	-	B	-	-	B
HCM 95th %tile Q(veh)	0.7	-	0	-	-	2.6	-	-	0

Timings
 14: E. 160th Ave (SH 7) & Tuscon St

2044 Background Traffic
 AM Peak Hour

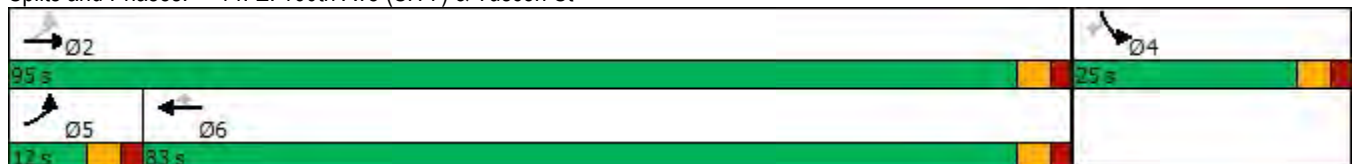


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↶	↷	↶	↷	↶	↷
Traffic Volume (vph)	42	1091	1392	12	12	61
Future Volume (vph)	42	1091	1392	12	12	61
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	2			6		4
Detector Phase	5	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	5.0	15.0	15.0	15.0	10.0	10.0
Minimum Split (s)	10.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	12.0	95.0	83.0	83.0	25.0	25.0
Total Split (%)	10.0%	79.2%	69.2%	69.2%	20.8%	20.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	Max	Max	Max	None	None
Act Effect Green (s)	93.0	94.0	85.1	85.1	10.0	10.0
Actuated g/C Ratio	0.85	0.85	0.77	0.77	0.09	0.09
v/c Ratio	0.15	0.38	0.54	0.01	0.08	0.32
Control Delay	3.0	2.7	7.4	2.2	47.2	16.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.0	2.7	7.4	2.2	47.2	16.1
LOS	A	A	A	A	D	B
Approach Delay		2.7	7.4		21.3	
Approach LOS		A	A		C	

Intersection Summary

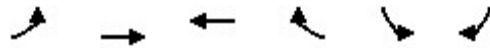
Cycle Length: 120
 Actuated Cycle Length: 110
 Natural Cycle: 60
 Control Type: Semi Act-Uncoord
 Maximum v/c Ratio: 0.54
 Intersection Signal Delay: 5.8
 Intersection Capacity Utilization 55.1%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service B

Splits and Phases: 14: E. 160th Ave (SH 7) & Tuscon St



HCM 6th Signalized Intersection Summary
 14: E. 160th Ave (SH 7) & Tuscon St

2044 Background Traffic
 AM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	42	1091	1392	12	12	61
Future Volume (veh/h)	42	1091	1392	12	12	61
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	45	1161	1481	13	13	65
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	325	2933	2648	1181	148	132
Arrive On Green	0.03	0.83	0.75	0.75	0.08	0.08
Sat Flow, veh/h	1781	3647	3647	1585	1781	1585
Grp Volume(v), veh/h	45	1161	1481	13	13	65
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585
Q Serve(g_s), s	0.6	9.2	19.8	0.2	0.7	4.3
Cycle Q Clear(g_c), s	0.6	9.2	19.8	0.2	0.7	4.3
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	325	2933	2648	1181	148	132
V/C Ratio(X)	0.14	0.40	0.56	0.01	0.09	0.49
Avail Cap(c_a), veh/h	379	2933	2648	1181	327	291
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	4.8	2.5	6.1	3.6	46.2	47.8
Incr Delay (d2), s/veh	0.2	0.4	0.9	0.0	0.3	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	1.5	5.3	0.1	0.3	3.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	5.0	2.9	6.9	3.6	46.4	50.7
LnGrp LOS	A	A	A	A	D	D
Approach Vol, veh/h		1206	1494		78	
Approach Delay, s/veh		3.0	6.9		49.9	
Approach LOS		A	A		D	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		95.0		14.1	8.7	86.3
Change Period (Y+Rc), s		5.0		5.0	5.0	5.0
Max Green Setting (Gmax), s		90.0		20.0	7.0	78.0
Max Q Clear Time (g_c+I1), s		11.2		6.3	2.6	21.8
Green Ext Time (p_c), s		9.9		0.1	0.0	14.9
Intersection Summary						
HCM 6th Ctrl Delay			6.4			
HCM 6th LOS			A			

Intersection						
Int Delay, s/veh	2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↑↑	↑↑	
Traffic Vol, veh/h	3	21	8	43	58	2
Future Vol, veh/h	3	21	8	43	58	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	200	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	22	9	46	62	2

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	104	32	64	0	0
Stage 1	63	-	-	-	-
Stage 2	41	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-
Pot Cap-1 Maneuver	883	1035	1536	-	-
Stage 1	952	-	-	-	-
Stage 2	976	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	878	1035	1536	-	-
Mov Cap-2 Maneuver	878	-	-	-	-
Stage 1	946	-	-	-	-
Stage 2	976	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.6	1.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1536	-	1012	-	-
HCM Lane V/C Ratio	0.006	-	0.025	-	-
HCM Control Delay (s)	7.4	-	8.6	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection						
Int Delay, s/veh	2.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	39	15	53	80	2
Future Vol, veh/h	3	39	15	53	80	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	200	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	41	16	56	85	2

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	146	44	87	0	0
Stage 1	86	-	-	-	-
Stage 2	60	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-
Pot Cap-1 Maneuver	832	1017	1507	-	-
Stage 1	927	-	-	-	-
Stage 2	955	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	823	1017	1507	-	-
Mov Cap-2 Maneuver	823	-	-	-	-
Stage 1	917	-	-	-	-
Stage 2	955	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.8	1.6	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1507	-	1000	-	-
HCM Lane V/C Ratio	0.011	-	0.045	-	-
HCM Control Delay (s)	7.4	-	8.8	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection						
Int Delay, s/veh	2.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	5	3	5	13	0
Future Vol, veh/h	1	5	3	5	13	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	5	3	5	14	0

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	25	14	14	0	0
Stage 1	14	-	-	-	-
Stage 2	11	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	991	1066	1604	-	-
Stage 1	1009	-	-	-	-
Stage 2	1012	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	989	1066	1604	-	-
Mov Cap-2 Maneuver	989	-	-	-	-
Stage 1	1007	-	-	-	-
Stage 2	1012	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.4	2.7	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1604	-	1052	-	-
HCM Lane V/C Ratio	0.002	-	0.006	-	-
HCM Control Delay (s)	7.2	0	8.4	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection						
Int Delay, s/veh	4.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	27	11	14	13	0
Future Vol, veh/h	0	27	11	14	13	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	29	12	15	14	0

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	53	14	14	0	0
Stage 1	14	-	-	-	-
Stage 2	39	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	955	1066	1604	-	-
Stage 1	1009	-	-	-	-
Stage 2	983	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	947	1066	1604	-	-
Mov Cap-2 Maneuver	947	-	-	-	-
Stage 1	1001	-	-	-	-
Stage 2	983	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.5	3.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1604	-	1066	-	-
HCM Lane V/C Ratio	0.007	-	0.027	-	-
HCM Control Delay (s)	7.3	0	8.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection												
Int Delay, s/veh	1.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	0	2	0	0	0	3	14	0	0	13	1
Future Vol, veh/h	3	0	2	0	0	0	3	14	0	0	13	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
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	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	0	2	0	0	0	3	15	0	0	14	1

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	36	36	15	37	36	15	15	0	0	15	0	0
Stage 1	15	15	-	21	21	-	-	-	-	-	-	-
Stage 2	21	21	-	16	15	-	-	-	-	-	-	-
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	970	856	1065	968	856	1065	1603	-	-	1603	-	-
Stage 1	1005	883	-	998	878	-	-	-	-	-	-	-
Stage 2	998	878	-	1004	883	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	968	854	1065	964	854	1065	1603	-	-	1603	-	-
Mov Cap-2 Maneuver	968	854	-	964	854	-	-	-	-	-	-	-
Stage 1	1003	883	-	996	876	-	-	-	-	-	-	-
Stage 2	996	876	-	1002	883	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	8.6		0		1.3		0	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1603	-	-	1005	1603	-	-
HCM Lane V/C Ratio	0.002	-	-	0.005	-	-	-
HCM Control Delay (s)	7.2	0	-	8.6	0	0	-
HCM Lane LOS	A	A	-	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-	0	-

Intersection						
Int Delay, s/veh	1.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	4	3	17	15	0
Future Vol, veh/h	0	4	3	17	15	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	73	73	73	73	73	73
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	5	4	23	21	0

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	52	21	21	0	0
Stage 1	21	-	-	-	-
Stage 2	31	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	957	1056	1595	-	-
Stage 1	1002	-	-	-	-
Stage 2	992	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	954	1056	1595	-	-
Mov Cap-2 Maneuver	954	-	-	-	-
Stage 1	999	-	-	-	-
Stage 2	992	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.4	1.1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1595	-	1056	-	-
HCM Lane V/C Ratio	0.003	-	0.005	-	-
HCM Control Delay (s)	7.3	0	8.4	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	148	198	2	6	6
Future Vol, veh/h	3	148	198	2	6	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	250	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	157	211	2	6	6

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	213	0	-	0	297 107
Stage 1	-	-	-	-	212 -
Stage 2	-	-	-	-	85 -
Critical Hdwy	4.14	-	-	-	6.84 6.94
Critical Hdwy Stg 1	-	-	-	-	5.84 -
Critical Hdwy Stg 2	-	-	-	-	5.84 -
Follow-up Hdwy	2.22	-	-	-	3.52 3.32
Pot Cap-1 Maneuver	1355	-	-	-	670 926
Stage 1	-	-	-	-	803 -
Stage 2	-	-	-	-	929 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1355	-	-	-	669 926
Mov Cap-2 Maneuver	-	-	-	-	669 -
Stage 1	-	-	-	-	801 -
Stage 2	-	-	-	-	929 -

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	9.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1355	-	-	-	777
HCM Lane V/C Ratio	0.002	-	-	-	0.016
HCM Control Delay (s)	7.7	-	-	-	9.7
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection						
Int Delay, s/veh	1.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑
Traffic Vol, veh/h	137	17	32	192	8	15
Future Vol, veh/h	137	17	32	192	8	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	250	250	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	146	18	34	204	9	16

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	164	0	316	73
Stage 1	-	-	-	-	146	-
Stage 2	-	-	-	-	170	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	1412	-	652	974
Stage 1	-	-	-	-	866	-
Stage 2	-	-	-	-	843	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1412	-	636	974
Mov Cap-2 Maneuver	-	-	-	-	636	-
Stage 1	-	-	-	-	866	-
Stage 2	-	-	-	-	823	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.1	9.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	636	974	-	-	1412	-
HCM Lane V/C Ratio	0.013	0.016	-	-	0.024	-
HCM Control Delay (s)	10.7	8.8	-	-	7.6	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0	0.1	-	-	0.1	-

Intersection												
Int Delay, s/veh	1.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	21	141	5	2	237	23	10	0	1	23	0	29
Future Vol, veh/h	21	141	5	2	237	23	10	0	1	23	0	29
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	250	250	-	250	200	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	150	5	2	252	24	11	0	1	24	0	31

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	276	0	0	155	0	0	324	474	75	375	455	126
Stage 1	-	-	-	-	-	-	194	194	-	256	256	-
Stage 2	-	-	-	-	-	-	130	280	-	119	199	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1284	-	-	1423	-	-	605	488	971	557	500	901
Stage 1	-	-	-	-	-	-	789	739	-	726	694	-
Stage 2	-	-	-	-	-	-	860	678	-	873	735	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1284	-	-	1423	-	-	576	479	971	549	491	901
Mov Cap-2 Maneuver	-	-	-	-	-	-	576	479	-	549	491	-
Stage 1	-	-	-	-	-	-	776	726	-	714	693	-
Stage 2	-	-	-	-	-	-	829	677	-	857	723	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	1			0.1			11.2			10.3		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	576	971	1284	-	-	1423	-	-	549	901
HCM Lane V/C Ratio	0.018	0.001	0.017	-	-	0.001	-	-	0.045	0.034
HCM Control Delay (s)	11.4	8.7	7.9	-	-	7.5	-	-	11.9	9.1
HCM Lane LOS	B	A	A	-	-	A	-	-	B	A
HCM 95th %tile Q(veh)	0.1	0	0.1	-	-	0	-	-	0.1	0.1

Intersection						
Int Delay, s/veh	0.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↗	↘	↑↑	↘	↗
Traffic Vol, veh/h	154	3	11	246	7	10
Future Vol, veh/h	154	3	11	246	7	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	170	250	-	0	100
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	164	3	12	262	7	11

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	0	0	167	0
Stage 1	-	-	-	164
Stage 2	-	-	-	155
Critical Hdwy	-	-	4.14	-
Critical Hdwy Stg 1	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	5.84
Follow-up Hdwy	-	-	2.22	-
Pot Cap-1 Maneuver	-	-	1408	-
Stage 1	-	-	-	848
Stage 2	-	-	-	857
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	1408	-
Mov Cap-2 Maneuver	-	-	-	643
Stage 1	-	-	-	848
Stage 2	-	-	-	849

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	9.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	643	961	-	-	1408	-
HCM Lane V/C Ratio	0.012	0.011	-	-	0.008	-
HCM Control Delay (s)	10.7	8.8	-	-	7.6	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0	0	-	-	0	-

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	173	263	2	2	2
Future Vol, veh/h	2	173	263	2	2	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	184	280	2	2	2

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	282	0	-	0	377 141
Stage 1	-	-	-	-	281 -
Stage 2	-	-	-	-	96 -
Critical Hdwy	4.14	-	-	-	6.84 6.94
Critical Hdwy Stg 1	-	-	-	-	5.84 -
Critical Hdwy Stg 2	-	-	-	-	5.84 -
Follow-up Hdwy	2.22	-	-	-	3.52 3.32
Pot Cap-1 Maneuver	1277	-	-	-	597 881
Stage 1	-	-	-	-	741 -
Stage 2	-	-	-	-	917 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1277	-	-	-	596 881
Mov Cap-2 Maneuver	-	-	-	-	596 -
Stage 1	-	-	-	-	740 -
Stage 2	-	-	-	-	917 -

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	10.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1277	-	-	-	711
HCM Lane V/C Ratio	0.002	-	-	-	0.006
HCM Control Delay (s)	7.8	-	-	-	10.1
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection						
Int Delay, s/veh	2.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑
Traffic Vol, veh/h	173	2	74	254	11	58
Future Vol, veh/h	173	2	74	254	11	58
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	184	2	79	270	12	62

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	186	0	477 92
Stage 1	-	-	-	-	184 -
Stage 2	-	-	-	-	293 -
Critical Hdwy	-	-	4.14	-	6.84 6.94
Critical Hdwy Stg 1	-	-	-	-	5.84 -
Critical Hdwy Stg 2	-	-	-	-	5.84 -
Follow-up Hdwy	-	-	2.22	-	3.52 3.32
Pot Cap-1 Maneuver	-	-	1386	-	517 947
Stage 1	-	-	-	-	829 -
Stage 2	-	-	-	-	731 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1386	-	488 947
Mov Cap-2 Maneuver	-	-	-	-	488 -
Stage 1	-	-	-	-	829 -
Stage 2	-	-	-	-	689 -

Approach	EB	WB	NB
HCM Control Delay, s	0	1.7	9.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	824	-	-	1386	-
HCM Lane V/C Ratio	0.089	-	-	0.057	-
HCM Control Delay (s)	9.8	-	-	7.8	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0.2	-

Timings
10: Quebec St & E. 160th Ave (SH 7)

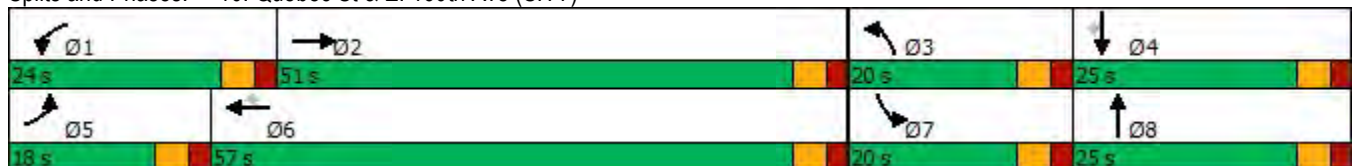
2044 Background Traffic
PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑	↗	↘	↑↑	↗	↘	↑↑	↗
Traffic Volume (vph)	17	629	123	156	1013	21	162	64	27	27	95	39
Future Volume (vph)	17	629	123	156	1013	21	162	64	27	27	95	39
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			6			Free			4
Detector Phase	5	2		1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	10.0	20.0		10.0	20.0	20.0	10.0	20.0		10.0	20.0	20.0
Total Split (s)	18.0	51.0		24.0	57.0	57.0	20.0	25.0		20.0	25.0	25.0
Total Split (%)	15.0%	42.5%		20.0%	47.5%	47.5%	16.7%	20.8%		16.7%	20.8%	20.8%
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	Min		None	Min	Min
Act Effct Green (s)	6.6	22.3	77.0	13.0	36.3	36.3	12.9	21.6	77.0	7.1	8.0	8.0
Actuated g/C Ratio	0.09	0.29	1.00	0.17	0.47	0.47	0.17	0.28	1.00	0.09	0.10	0.10
v/c Ratio	0.12	0.65	0.08	0.56	0.65	0.03	0.58	0.07	0.02	0.18	0.27	0.14
Control Delay	40.5	27.7	0.1	39.4	19.0	0.0	41.4	27.7	0.0	40.3	37.9	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.5	27.7	0.1	39.4	19.0	0.0	41.4	27.7	0.0	40.3	37.9	0.9
LOS	D	C	A	D	B	A	D	C	A	D	D	A
Approach Delay		23.5			21.3			33.5			29.4	
Approach LOS		C			C			C			C	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 77
 Natural Cycle: 70
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.65
 Intersection Signal Delay: 23.9 Intersection LOS: C
 Intersection Capacity Utilization 60.3% ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 10: Quebec St & E. 160th Ave (SH 7)



HCM 6th Signalized Intersection Summary
 10: Quebec St & E. 160th Ave (SH 7)

2044 Background Traffic
 PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	629	123	156	1013	21	162	64	27	27	95	39
Future Volume (veh/h)	17	629	123	156	1013	21	162	64	27	27	95	39
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	18	669	0	166	1078	22	172	68	0	29	101	41
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	39	1163		215	1515	676	221	631		57	304	136
Arrive On Green	0.02	0.33	0.00	0.12	0.43	0.43	0.12	0.18	0.00	0.03	0.09	0.09
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	18	669	0	166	1078	22	172	68	0	29	101	41
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	0.6	9.1	0.0	5.3	14.6	0.5	5.5	0.9	0.0	0.9	1.6	1.4
Cycle Q Clear(g_c), s	0.6	9.1	0.0	5.3	14.6	0.5	5.5	0.9	0.0	0.9	1.6	1.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	39	1163		215	1515	676	221	631		57	304	136
V/C Ratio(X)	0.47	0.58		0.77	0.71	0.03	0.78	0.11		0.51	0.33	0.30
Avail Cap(c_a), veh/h	396	2798		579	3163	1411	457	1217		457	1217	543
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.2	16.3	0.0	24.9	13.8	9.7	24.8	20.1	0.0	27.8	25.1	25.1
Incr Delay (d2), s/veh	8.5	0.5	0.0	5.7	0.6	0.0	5.9	0.1	0.0	6.8	0.6	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	3.0	0.0	2.3	4.4	0.1	2.4	0.4	0.0	0.5	0.6	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.7	16.7	0.0	30.6	14.4	9.8	30.7	20.2	0.0	34.6	25.8	26.3
LnGrp LOS	D	B		C	B	A	C	C		C	C	C
Approach Vol, veh/h		687			1266			240			171	
Approach Delay, s/veh		17.3			16.5			27.7			27.4	
Approach LOS		B			B			C			C	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	12.1	24.1	12.2	10.0	6.3	29.9	6.9	15.4				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	19.0	46.0	15.0	20.0	13.0	52.0	15.0	20.0				
Max Q Clear Time (g_c+I1), s	7.3	11.1	7.5	3.6	2.6	16.6	2.9	2.9				
Green Ext Time (p_c), s	0.3	4.4	0.2	0.5	0.0	8.3	0.0	0.2				
Intersection Summary												
HCM 6th Ctrl Delay			18.6									
HCM 6th LOS			B									
Notes												
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.												

Timings
11: Yosemite St & E. 160th Ave (SH 7)

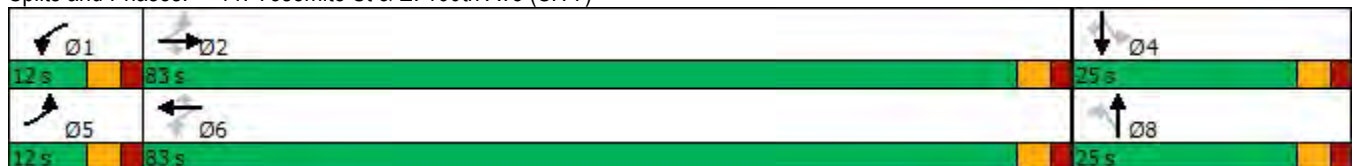
2044 Background Traffic
PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	14	705	29	39	1226	7	56	9	16	7	18
Future Volume (vph)	14	705	29	39	1226	7	56	9	16	7	18
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	5	2		1	6			8		4	
Permitted Phases	2		2	6		6	8		4		4
Detector Phase	5	2	2	1	6	6	8	8	4	4	4
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	20.0	20.0	10.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	12.0	83.0	83.0	12.0	83.0	83.0	25.0	25.0	25.0	25.0	25.0
Total Split (%)	10.0%	69.2%	69.2%	10.0%	69.2%	69.2%	20.8%	20.8%	20.8%	20.8%	20.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	None	None	None	None	None	Min	Min	Min	Min	Min
Act Effct Green (s)	27.2	25.3	25.3	28.2	27.3	27.3	8.4	8.4	8.4	8.4	8.4
Actuated g/C Ratio	0.56	0.52	0.52	0.59	0.57	0.57	0.17	0.17	0.17	0.17	0.17
v/c Ratio	0.04	0.40	0.04	0.08	0.65	0.01	0.25	0.23	0.07	0.02	0.06
Control Delay	3.8	8.4	0.8	3.9	9.3	0.0	25.0	11.0	23.7	23.3	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.8	8.4	0.8	3.9	9.3	0.0	25.0	11.0	23.7	23.3	0.3
LOS	A	A	A	A	A	A	C	B	C	C	A
Approach Delay		8.0			9.1			17.2		13.3	
Approach LOS		A			A			B		B	

Intersection Summary
























Cycle Length: 120
 Actuated Cycle Length: 48.2
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.65
 Intersection Signal Delay: 9.3
 Intersection Capacity Utilization 54.7%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 11: Yosemite St & E. 160th Ave (SH 7)



HCM 6th Signalized Intersection Summary
 11: Yosemite St & E. 160th Ave (SH 7)

2044 Background Traffic
 PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	705	29	39	1226	7	56	9	62	16	7	18
Future Volume (veh/h)	14	705	29	39	1226	7	56	9	62	16	7	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	15	750	0	41	1304	7	60	10	66	17	7	19
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	312	1885		520	1974	881	296	23	149	236	199	169
Arrive On Green	0.02	0.53	0.00	0.04	0.56	0.56	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1385	213	1405	1323	1870	1585
Grp Volume(v), veh/h	15	750	0	41	1304	7	60	0	76	17	7	19
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1385	0	1618	1323	1870	1585
Q Serve(g_s), s	0.2	5.9	0.0	0.5	12.1	0.1	1.9	0.0	2.1	0.6	0.2	0.5
Cycle Q Clear(g_c), s	0.2	5.9	0.0	0.5	12.1	0.1	2.1	0.0	2.1	2.6	0.2	0.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.87	1.00		1.00
Lane Grp Cap(c), veh/h	312	1885		520	1974	881	296	0	172	236	199	169
V/C Ratio(X)	0.05	0.40		0.08	0.66	0.01	0.20	0.00	0.44	0.07	0.04	0.11
Avail Cap(c_a), veh/h	543	5898		707	5898	2631	738	0	688	658	796	675
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	6.1	6.6	0.0	4.7	7.3	4.7	19.8	0.0	19.7	20.9	18.8	19.0
Incr Delay (d2), s/veh	0.1	0.1	0.0	0.1	0.4	0.0	0.3	0.0	1.8	0.1	0.1	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.1	0.0	0.1	2.2	0.0	0.6	0.0	0.7	0.2	0.1	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.2	6.7	0.0	4.8	7.7	4.7	20.1	0.0	21.5	21.1	18.9	19.3
LnGrp LOS	A	A		A	A	A	C	A	C	C	B	B
Approach Vol, veh/h		765			1352			136			43	
Approach Delay, s/veh		6.7			7.6			20.9			19.9	
Approach LOS		A			A			C			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.1	29.9		10.0	5.9	31.1		10.0				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	7.0	78.0		20.0	7.0	78.0		20.0				
Max Q Clear Time (g_c+I1), s	2.5	7.9		4.6	2.2	14.1		4.1				
Green Ext Time (p_c), s	0.0	5.3		0.1	0.0	12.0		0.4				

Intersection Summary

HCM 6th Ctrl Delay	8.3
HCM 6th LOS	A

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Timings
12: Havana St & E. 160th Ave (SH 7)

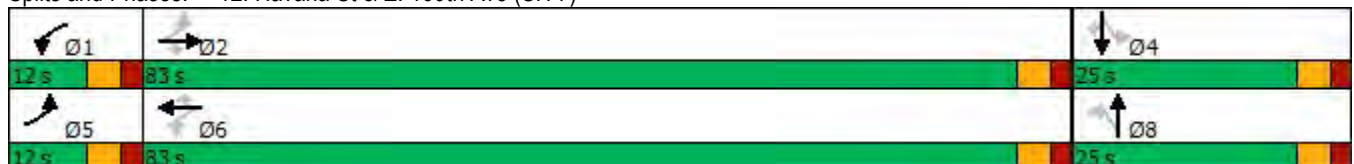
2044 Background Traffic
PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	16	764	12	30	1076	9	24	5	16	8	39
Future Volume (vph)	16	764	12	30	1076	9	24	5	16	8	39
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	5	2		1	6			8		4	
Permitted Phases	2		2	6		6	8		4		4
Detector Phase	5	2	2	1	6	6	8	8	4	4	4
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	20.0	20.0	10.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	12.0	83.0	83.0	12.0	83.0	83.0	25.0	25.0	25.0	25.0	25.0
Total Split (%)	10.0%	69.2%	69.2%	10.0%	69.2%	69.2%	20.8%	20.8%	20.8%	20.8%	20.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	None	None	None	None	None	Min	Min	Min	Min	Min
Act Effct Green (s)	22.1	20.2	20.2	22.9	22.1	22.1	6.9	6.9	6.9	6.9	6.9
Actuated g/C Ratio	0.54	0.49	0.49	0.55	0.54	0.54	0.17	0.17	0.17	0.17	0.17
v/c Ratio	0.04	0.47	0.02	0.07	0.61	0.01	0.11	0.26	0.08	0.03	0.13
Control Delay	3.5	8.8	0.0	3.6	8.5	0.0	21.2	9.4	21.1	20.4	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.5	8.8	0.0	3.6	8.5	0.0	21.2	9.4	21.1	20.4	5.6
LOS	A	A	A	A	A	A	C	A	C	C	A
Approach Delay		8.5			8.3			12.1		11.5	
Approach LOS		A			A			B		B	

Intersection Summary
























Cycle Length: 120
 Actuated Cycle Length: 41.3
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.61
 Intersection Signal Delay: 8.7
 Intersection LOS: A
 Intersection Capacity Utilization 50.6%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 12: Havana St & E. 160th Ave (SH 7)



HCM 6th Signalized Intersection Summary
 12: Havana St & E. 160th Ave (SH 7)

2044 Background Traffic
 PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	764	12	30	1076	9	24	5	77	16	8	39
Future Volume (veh/h)	16	764	12	30	1076	9	24	5	77	16	8	39
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	17	813	13	32	1145	10	26	5	82	17	9	41
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	341	1751	781	462	1806	806	323	11	177	257	220	186
Arrive On Green	0.02	0.49	0.49	0.04	0.51	0.51	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1355	92	1507	1310	1870	1585
Grp Volume(v), veh/h	17	813	13	32	1145	10	26	0	87	17	9	41
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1355	0	1599	1310	1870	1585
Q Serve(g_s), s	0.2	6.4	0.2	0.4	9.9	0.1	0.7	0.0	2.2	0.5	0.2	1.0
Cycle Q Clear(g_c), s	0.2	6.4	0.2	0.4	9.9	0.1	0.9	0.0	2.2	2.7	0.2	1.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.94	1.00		1.00
Lane Grp Cap(c), veh/h	341	1751	781	462	1806	806	323	0	188	257	220	186
V/C Ratio(X)	0.05	0.46	0.02	0.07	0.63	0.01	0.08	0.00	0.46	0.07	0.04	0.22
Avail Cap(c_a), veh/h	596	6518	2907	690	6518	2907	801	0	752	719	880	745
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	6.1	7.1	5.5	5.3	7.6	5.2	17.0	0.0	17.5	18.8	16.6	17.0
Incr Delay (d2), s/veh	0.1	0.2	0.0	0.1	0.4	0.0	0.1	0.0	1.8	0.1	0.1	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	1.2	0.0	0.1	1.8	0.0	0.2	0.0	0.7	0.1	0.1	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.2	7.3	5.5	5.4	8.0	5.2	17.1	0.0	19.3	18.9	16.7	17.6
LnGrp LOS	A	A	A	A	A	A	B	A	B	B	B	B
Approach Vol, veh/h		843			1187			113			67	
Approach Delay, s/veh		7.2			7.9			18.8			17.8	
Approach LOS		A			A			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.6	26.0		10.0	5.9	26.6		10.0				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	7.0	78.0		20.0	7.0	78.0		20.0				
Max Q Clear Time (g_c+I1), s	2.4	8.4		4.7	2.2	11.9		4.2				
Green Ext Time (p_c), s	0.0	5.9		0.1	0.0	9.7		0.4				
Intersection Summary												
HCM 6th Ctrl Delay			8.5									
HCM 6th LOS			A									

Intersection												
Int Delay, s/veh	3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑			↘	↗		↕	
Traffic Vol, veh/h	0	1258	24	252	1220	0	24	0	418	1	0	3
Future Vol, veh/h	0	1258	24	252	1220	0	24	0	418	1	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	Free	-	-	None
Storage Length	475	-	475	475	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1338	26	268	1298	0	26	0	445	1	0	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1298	0	0	1364	0	0	2523	3172	-	2503	3198	649
Stage 1	-	-	-	-	-	-	1338	1338	-	1834	1834	-
Stage 2	-	-	-	-	-	-	1185	1834	-	669	1364	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	-	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	-	3.52	4.02	3.32
Pot Cap-1 Maneuver	530	-	-	500	-	-	~ 14	10	0	14	10	412
Stage 1	-	-	-	-	-	-	161	220	0	79	125	-
Stage 2	-	-	-	-	-	-	201	125	0	413	214	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	530	-	-	500	-	-	~ 8	5	-	8	5	412
Mov Cap-2 Maneuver	-	-	-	-	-	-	57	43	-	8	5	-
Stage 1	-	-	-	-	-	-	161	220	-	79	58	-
Stage 2	-	-	-	-	-	-	93	58	-	413	214	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	3.5	111.8	143.9
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	57	-	530	-	-	500	-	-	30
HCM Lane V/C Ratio	0.448	-	-	-	-	0.536	-	-	0.142
HCM Control Delay (s)	111.8	0	0	-	-	20.2	-	-	143.9
HCM Lane LOS	F	A	A	-	-	C	-	-	F
HCM 95th %tile Q(veh)	1.7	-	0	-	-	3.1	-	-	0.4

Notes
 -: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Timings
 14: E. 160th Ave (SH 7) & Tuscon St

2044 Background Traffic
 PM Peak Hour

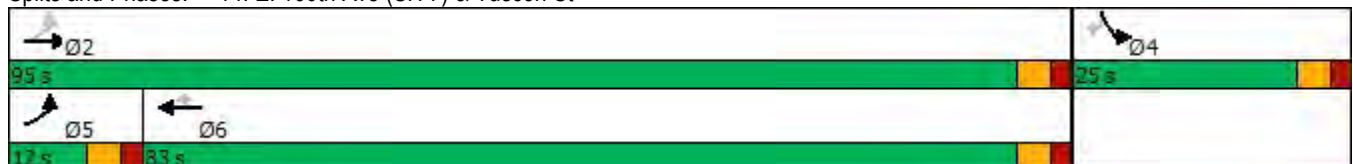


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↶	↕↕	↕↕	↷	↶	↷
Traffic Volume (vph)	42	1091	1392	12	12	61
Future Volume (vph)	42	1091	1392	12	12	61
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	2			6		4
Detector Phase	5	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	5.0	15.0	15.0	15.0	10.0	10.0
Minimum Split (s)	10.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	12.0	95.0	83.0	83.0	25.0	25.0
Total Split (%)	10.0%	79.2%	69.2%	69.2%	20.8%	20.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	Max	Max	Max	None	None
Act Effct Green (s)	93.0	94.0	85.1	85.1	10.0	10.0
Actuated g/C Ratio	0.85	0.85	0.77	0.77	0.09	0.09
v/c Ratio	0.15	0.38	0.54	0.01	0.08	0.32
Control Delay	3.0	2.7	7.4	2.2	47.2	16.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.0	2.7	7.4	2.2	47.2	16.1
LOS	A	A	A	A	D	B
Approach Delay		2.7	7.4		21.3	
Approach LOS		A	A		C	

Intersection Summary

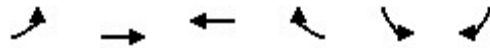
Cycle Length: 120
 Actuated Cycle Length: 110
 Natural Cycle: 60
 Control Type: Semi Act-Uncoord
 Maximum v/c Ratio: 0.54
 Intersection Signal Delay: 5.8
 Intersection Capacity Utilization 55.1%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service B

Splits and Phases: 14: E. 160th Ave (SH 7) & Tuscon St



HCM 6th Signalized Intersection Summary
 14: E. 160th Ave (SH 7) & Tuscon St

2044 Background Traffic
 PM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	42	1091	1392	12	12	61
Future Volume (veh/h)	42	1091	1392	12	12	61
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	45	1161	1481	13	13	65
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	325	2933	2648	1181	148	132
Arrive On Green	0.03	0.83	0.75	0.75	0.08	0.08
Sat Flow, veh/h	1781	3647	3647	1585	1781	1585
Grp Volume(v), veh/h	45	1161	1481	13	13	65
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585
Q Serve(g_s), s	0.6	9.2	19.8	0.2	0.7	4.3
Cycle Q Clear(g_c), s	0.6	9.2	19.8	0.2	0.7	4.3
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	325	2933	2648	1181	148	132
V/C Ratio(X)	0.14	0.40	0.56	0.01	0.09	0.49
Avail Cap(c_a), veh/h	379	2933	2648	1181	327	291
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	4.8	2.5	6.1	3.6	46.2	47.8
Incr Delay (d2), s/veh	0.2	0.4	0.9	0.0	0.3	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	1.5	5.3	0.1	0.3	3.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	5.0	2.9	6.9	3.6	46.4	50.7
LnGrp LOS	A	A	A	A	D	D
Approach Vol, veh/h		1206	1494		78	
Approach Delay, s/veh		3.0	6.9		49.9	
Approach LOS		A	A		D	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		95.0		14.1	8.7	86.3
Change Period (Y+Rc), s		5.0		5.0	5.0	5.0
Max Green Setting (Gmax), s		90.0		20.0	7.0	78.0
Max Q Clear Time (g_c+I1), s		11.2		6.3	2.6	21.8
Green Ext Time (p_c), s		9.9		0.1	0.0	14.9
Intersection Summary						
HCM 6th Ctrl Delay			6.4			
HCM 6th LOS			A			

Intersection						
Int Delay, s/veh	2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↑↑	↑↑	
Traffic Vol, veh/h	3	21	8	43	58	2
Future Vol, veh/h	3	21	8	43	58	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	200	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	22	9	46	62	2

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	104	32	64	0	0
Stage 1	63	-	-	-	-
Stage 2	41	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-
Pot Cap-1 Maneuver	883	1035	1536	-	-
Stage 1	952	-	-	-	-
Stage 2	976	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	878	1035	1536	-	-
Mov Cap-2 Maneuver	878	-	-	-	-
Stage 1	946	-	-	-	-
Stage 2	976	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.6	1.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1536	-	1012	-	-
HCM Lane V/C Ratio	0.006	-	0.025	-	-
HCM Control Delay (s)	7.4	-	8.6	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection						
Int Delay, s/veh	2.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	39	15	53	80	2
Future Vol, veh/h	3	39	15	53	80	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	200	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	41	16	56	85	2

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	146	44	87	0	0
Stage 1	86	-	-	-	-
Stage 2	60	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-
Pot Cap-1 Maneuver	832	1017	1507	-	-
Stage 1	927	-	-	-	-
Stage 2	955	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	823	1017	1507	-	-
Mov Cap-2 Maneuver	823	-	-	-	-
Stage 1	917	-	-	-	-
Stage 2	955	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.8	1.6	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1507	-	1000	-	-
HCM Lane V/C Ratio	0.011	-	0.045	-	-
HCM Control Delay (s)	7.4	-	8.8	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection						
Int Delay, s/veh	2.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	5	3	5	13	0
Future Vol, veh/h	1	5	3	5	13	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	5	3	5	14	0

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	25	14	14	0	0
Stage 1	14	-	-	-	-
Stage 2	11	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	991	1066	1604	-	-
Stage 1	1009	-	-	-	-
Stage 2	1012	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	989	1066	1604	-	-
Mov Cap-2 Maneuver	989	-	-	-	-
Stage 1	1007	-	-	-	-
Stage 2	1012	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.4	2.7	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1604	-	1052	-	-
HCM Lane V/C Ratio	0.002	-	0.006	-	-
HCM Control Delay (s)	7.2	0	8.4	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection						
Int Delay, s/veh	4.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	27	11	14	13	0
Future Vol, veh/h	0	27	11	14	13	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	29	12	15	14	0

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	53	14	14	0	0
Stage 1	14	-	-	-	-
Stage 2	39	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	955	1066	1604	-	-
Stage 1	1009	-	-	-	-
Stage 2	983	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	947	1066	1604	-	-
Mov Cap-2 Maneuver	947	-	-	-	-
Stage 1	1001	-	-	-	-
Stage 2	983	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.5	3.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1604	-	1066	-	-
HCM Lane V/C Ratio	0.007	-	0.027	-	-
HCM Control Delay (s)	7.3	0	8.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection												
Int Delay, s/veh	1.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	0	2	0	0	0	3	14	0	0	13	1
Future Vol, veh/h	3	0	2	0	0	0	3	14	0	0	13	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
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	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	0	2	0	0	0	3	15	0	0	14	1

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	36	36	15	37	36	15	15	0	0	15	0	0
Stage 1	15	15	-	21	21	-	-	-	-	-	-	-
Stage 2	21	21	-	16	15	-	-	-	-	-	-	-
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	970	856	1065	968	856	1065	1603	-	-	1603	-	-
Stage 1	1005	883	-	998	878	-	-	-	-	-	-	-
Stage 2	998	878	-	1004	883	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	968	854	1065	964	854	1065	1603	-	-	1603	-	-
Mov Cap-2 Maneuver	968	854	-	964	854	-	-	-	-	-	-	-
Stage 1	1003	883	-	996	876	-	-	-	-	-	-	-
Stage 2	996	876	-	1002	883	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	8.6		0		1.3		0	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1603	-	-	1005	-	1603	-
HCM Lane V/C Ratio	0.002	-	-	0.005	-	-	-
HCM Control Delay (s)	7.2	0	-	8.6	0	0	-
HCM Lane LOS	A	A	-	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-	0	-

Intersection						
Int Delay, s/veh	1.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	4	3	17	15	0
Future Vol, veh/h	0	4	3	17	15	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	63	63	63	63	63	63
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	6	5	27	24	0

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	61	24	24	0	0
Stage 1	24	-	-	-	-
Stage 2	37	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	945	1052	1591	-	-
Stage 1	999	-	-	-	-
Stage 2	985	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	942	1052	1591	-	-
Mov Cap-2 Maneuver	942	-	-	-	-
Stage 1	996	-	-	-	-
Stage 2	985	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.4	1.1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1591	-	1052	-	-
HCM Lane V/C Ratio	0.003	-	0.006	-	-
HCM Control Delay (s)	7.3	0	8.4	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↑↑	↑↑		↘	
Traffic Vol, veh/h	3	212	372	10	9	6
Future Vol, veh/h	3	212	372	10	9	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	250	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	226	396	11	10	6

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	407	0	-	0	521 204
Stage 1	-	-	-	-	402 -
Stage 2	-	-	-	-	119 -
Critical Hdwy	4.14	-	-	-	6.84 6.94
Critical Hdwy Stg 1	-	-	-	-	5.84 -
Critical Hdwy Stg 2	-	-	-	-	5.84 -
Follow-up Hdwy	2.22	-	-	-	3.52 3.32
Pot Cap-1 Maneuver	1148	-	-	-	485 803
Stage 1	-	-	-	-	644 -
Stage 2	-	-	-	-	893 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1148	-	-	-	484 803
Mov Cap-2 Maneuver	-	-	-	-	484 -
Stage 1	-	-	-	-	642 -
Stage 2	-	-	-	-	893 -

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	11.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1148	-	-	-	575
HCM Lane V/C Ratio	0.003	-	-	-	0.028
HCM Control Delay (s)	8.1	-	-	-	11.4
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection						
Int Delay, s/veh	1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑
Traffic Vol, veh/h	204	17	50	374	8	23
Future Vol, veh/h	204	17	50	374	8	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	250	250	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	217	18	53	398	9	24

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	235	0	522 109
Stage 1	-	-	-	-	217 -
Stage 2	-	-	-	-	305 -
Critical Hdwy	-	-	4.14	-	6.84 6.94
Critical Hdwy Stg 1	-	-	-	-	5.84 -
Critical Hdwy Stg 2	-	-	-	-	5.84 -
Follow-up Hdwy	-	-	2.22	-	3.52 3.32
Pot Cap-1 Maneuver	-	-	1329	-	484 924
Stage 1	-	-	-	-	798 -
Stage 2	-	-	-	-	721 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1329	-	465 924
Mov Cap-2 Maneuver	-	-	-	-	465 -
Stage 1	-	-	-	-	798 -
Stage 2	-	-	-	-	692 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	10
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	465	924	-	-	1329	-
HCM Lane V/C Ratio	0.018	0.026	-	-	0.04	-
HCM Control Delay (s)	12.9	9	-	-	7.8	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0.1	-

Intersection						
Int Delay, s/veh	1.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↓	↑↑	↓	↑
Traffic Vol, veh/h	218	24	2	416	60	3
Future Vol, veh/h	218	24	2	416	60	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	250	250	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	232	26	2	443	64	3

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	258	0	458
Stage 1	-	-	-	-	232
Stage 2	-	-	-	-	226
Critical Hdwy	-	-	4.14	-	6.84
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	-	-	2.22	-	3.52
Pot Cap-1 Maneuver	-	-	1304	-	531
Stage 1	-	-	-	-	785
Stage 2	-	-	-	-	790
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1304	-	530
Mov Cap-2 Maneuver	-	-	-	-	530
Stage 1	-	-	-	-	785
Stage 2	-	-	-	-	788

Approach	EB	WB	NB
HCM Control Delay, s	0	0	12.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	530	914	-	-	1304	-
HCM Lane V/C Ratio	0.12	0.003	-	-	0.002	-
HCM Control Delay (s)	12.7	9	-	-	7.8	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-

Intersection							
Intersection Delay, s/veh	4.0						
Intersection LOS	A						
Approach	EB		WB		NB		SB
Entry Lanes	2		2		1		1
Conflicting Circle Lanes	2		2		2		2
Adj Approach Flow, veh/h	235		365		133		59
Demand Flow Rate, veh/h	240		372		136		61
Vehicles Circulating, veh/h	44		121		231		437
Vehicles Exiting, veh/h	454		246		53		56
Ped Vol Crossing Leg, #/h	0		0		0		0
Ped Cap Adj	1.000		1.000		1.000		1.000
Approach Delay, s/veh	3.5		4.2		4.2		4.4
Approach LOS	A		A		A		A
Lane	Left	Right	Left	Right	Left	Left	
Designated Moves	LT	TR	LT	TR	LTR	LTR	
Assumed Moves	LT	TR	LT	TR	LTR	LTR	
RT Channelized							
Lane Util	0.471	0.529	0.470	0.530	1.000	1.000	
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.535	2.535	
Critical Headway, s	4.645	4.328	4.645	4.328	4.328	4.328	
Entry Flow, veh/h	113	127	175	197	136	61	
Cap Entry Lane, veh/h	1296	1368	1208	1281	1167	979	
Entry HV Adj Factor	0.979	0.983	0.979	0.981	0.977	0.967	
Flow Entry, veh/h	111	125	171	193	133	59	
Cap Entry, veh/h	1269	1344	1182	1257	1140	947	
V/C Ratio	0.087	0.093	0.145	0.154	0.117	0.062	
Control Delay, s/veh	3.5	3.4	4.3	4.2	4.2	4.4	
LOS	A	A	A	A	A	A	
95th %tile Queue, veh	0	0	1	1	0	0	

Intersection						
Int Delay, s/veh	2.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑
Traffic Vol, veh/h	216	9	30	315	27	86
Future Vol, veh/h	216	9	30	315	27	86
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	250	250	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	230	10	32	335	29	91

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	240	0	462 115
Stage 1	-	-	-	-	230 -
Stage 2	-	-	-	-	232 -
Critical Hdwy	-	-	4.14	-	6.84 6.94
Critical Hdwy Stg 1	-	-	-	-	5.84 -
Critical Hdwy Stg 2	-	-	-	-	5.84 -
Follow-up Hdwy	-	-	2.22	-	3.52 3.32
Pot Cap-1 Maneuver	-	-	1324	-	528 916
Stage 1	-	-	-	-	786 -
Stage 2	-	-	-	-	785 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1324	-	515 916
Mov Cap-2 Maneuver	-	-	-	-	515 -
Stage 1	-	-	-	-	786 -
Stage 2	-	-	-	-	766 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0.7	10.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	772	-	-	1324	-
HCM Lane V/C Ratio	0.156	-	-	0.024	-
HCM Control Delay (s)	10.5	-	-	7.8	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.6	-	-	0.1	-

Intersection					
Intersection Delay, s/veh	3.9				
Intersection LOS	A				
Approach	EB		WB		NB
Entry Lanes	2		2		1
Conflicting Circle Lanes	2		2		2
Adj Approach Flow, veh/h	313		341		126
Demand Flow Rate, veh/h	319		348		129
Vehicles Circulating, veh/h	33		51		300
Vehicles Exiting, veh/h	366		378		52
Ped Vol Crossing Leg, #/h	0		0		0
Ped Cap Adj	1.000		1.000		1.000
Approach Delay, s/veh	3.7		3.9		4.4
Approach LOS	A		A		A
Lane	Left	Right	Left	Right	Left
Designated Moves	LT	TR	LT	TR	LR
Assumed Moves	LT	TR	LT	TR	LR
RT Channelized					
Lane Util	0.470	0.530	0.471	0.529	1.000
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.328
Entry Flow, veh/h	150	169	164	184	129
Cap Entry Lane, veh/h	1309	1381	1288	1360	1100
Entry HV Adj Factor	0.981	0.982	0.977	0.982	0.977
Flow Entry, veh/h	147	166	160	181	126
Cap Entry, veh/h	1285	1356	1258	1335	1075
V/C Ratio	0.115	0.122	0.127	0.135	0.117
Control Delay, s/veh	3.7	3.6	3.9	3.8	4.4
LOS	A	A	A	A	A
95th %tile Queue, veh	0	0	0	0	0

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↑↑	↑↑		↘	
Traffic Vol, veh/h	2	356	326	2	2	2
Future Vol, veh/h	2	356	326	2	2	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	379	347	2	2	2

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	349	0	0	542	175
Stage 1	-	-	-	348	-
Stage 2	-	-	-	194	-
Critical Hdwy	4.14	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	3.52	3.32
Pot Cap-1 Maneuver	1207	-	-	470	838
Stage 1	-	-	-	686	-
Stage 2	-	-	-	820	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	1207	-	-	469	838
Mov Cap-2 Maneuver	-	-	-	469	-
Stage 1	-	-	-	685	-
Stage 2	-	-	-	820	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	11
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1207	-	-	-	601
HCM Lane V/C Ratio	0.002	-	-	-	0.007
HCM Control Delay (s)	8	-	-	-	11
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection						
Int Delay, s/veh	2.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑
Traffic Vol, veh/h	276	82	74	292	36	58
Future Vol, veh/h	276	82	74	292	36	58
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	294	87	79	311	38	62

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	381	0	608
Stage 1	-	-	-	-	294
Stage 2	-	-	-	-	314
Critical Hdwy	-	-	4.14	-	6.84
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	-	-	2.22	-	3.52
Pot Cap-1 Maneuver	-	-	1174	-	427
Stage 1	-	-	-	-	730
Stage 2	-	-	-	-	714
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1174	-	398
Mov Cap-2 Maneuver	-	-	-	-	398
Stage 1	-	-	-	-	730
Stage 2	-	-	-	-	666

Approach	EB	WB	NB
HCM Control Delay, s	0	1.7	12.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	599	-	-	1174	-
HCM Lane V/C Ratio	0.167	-	-	0.067	-
HCM Control Delay (s)	12.2	-	-	8.3	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.6	-	-	0.2	-

Timings
10: Quebec St & E. 160th Ave (SH 7)

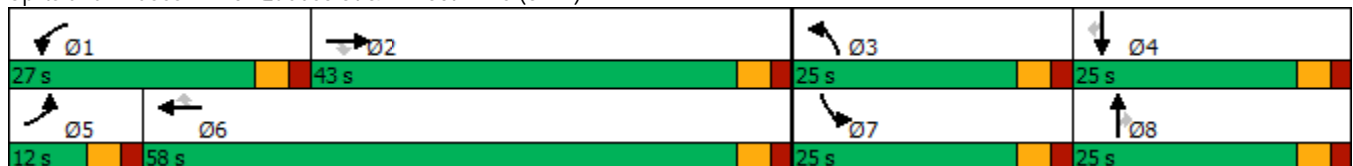
2044 Total Traffic
AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑	↗	↘	↑↑	↗	↘	↑↑	↗
Traffic Volume (vph)	23	690	123	190	1183	21	162	66	39	27	101	51
Future Volume (vph)	23	690	123	190	1183	21	162	66	39	27	101	51
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	7.0	15.0	15.0	7.0	15.0	15.0	7.0	15.0	15.0	7.0	15.0	15.0
Minimum Split (s)	12.0	20.0	20.0	12.0	20.0	20.0	12.0	20.0	20.0	12.0	20.0	20.0
Total Split (s)	12.0	43.0	43.0	27.0	58.0	58.0	25.0	25.0	25.0	25.0	25.0	25.0
Total Split (%)	10.0%	35.8%	35.8%	22.5%	48.3%	48.3%	20.8%	20.8%	20.8%	20.8%	20.8%	20.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	Max	Max	None	Max	Max	None	None	None	None	None	None
Act Effect Green (s)	7.0	39.3	39.3	16.9	54.4	54.4	15.2	27.8	27.8	7.8	15.1	15.1
Actuated g/C Ratio	0.07	0.37	0.37	0.16	0.51	0.51	0.14	0.26	0.26	0.07	0.14	0.14
v/c Ratio	0.21	0.56	0.19	0.72	0.70	0.03	0.68	0.08	0.08	0.22	0.21	0.15
Control Delay	54.8	30.0	3.4	58.4	24.0	0.0	58.4	34.0	0.3	53.5	44.0	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.8	30.0	3.4	58.4	24.0	0.0	58.4	34.0	0.3	53.5	44.0	0.9
LOS	D	C	A	E	C	A	E	C	A	D	D	A
Approach Delay		26.8			28.4			43.9			33.2	
Approach LOS		C			C			D			C	

Intersection Summary

























Cycle Length: 120
 Actuated Cycle Length: 106.6
 Natural Cycle: 80
 Control Type: Semi Act-Uncoord
 Maximum v/c Ratio: 0.72
 Intersection Signal Delay: 29.7
 Intersection LOS: C
 Intersection Capacity Utilization 66.7%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 10: Quebec St & E. 160th Ave (SH 7)



HCM 6th Signalized Intersection Summary
 10: Quebec St & E. 160th Ave (SH 7)

2044 Total Traffic
 AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	690	123	190	1183	21	162	66	39	27	101	51
Future Volume (veh/h)	23	690	123	190	1183	21	162	66	39	27	101	51
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	24	734	0	202	1259	22	172	70	0	29	107	54
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	60	1468		237	1821	812	206	790		68	515	230
Arrive On Green	0.03	0.41	0.00	0.13	0.51	0.51	0.12	0.22	0.00	0.04	0.14	0.14
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	24	734	0	202	1259	22	172	70	0	29	107	54
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	1.4	15.8	0.0	11.5	27.7	0.7	9.8	1.6	0.0	1.6	2.7	3.1
Cycle Q Clear(g_c), s	1.4	15.8	0.0	11.5	27.7	0.7	9.8	1.6	0.0	1.6	2.7	3.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	60	1468		237	1821	812	206	790		68	515	230
V/C Ratio(X)	0.40	0.50		0.85	0.69	0.03	0.84	0.09		0.43	0.21	0.24
Avail Cap(c_a), veh/h	121	1468		379	1821	812	344	790		344	687	306
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.9	22.4	0.0	43.8	19.0	12.5	44.8	31.9	0.0	48.6	39.0	39.1
Incr Delay (d2), s/veh	4.2	1.2	0.0	10.2	2.2	0.1	8.6	0.0	0.0	4.2	0.2	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	6.3	0.0	5.5	10.5	0.3	4.7	0.7	0.0	0.8	1.2	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.2	23.7	0.0	54.1	21.2	12.5	53.4	32.0	0.0	52.8	39.2	39.7
LnGrp LOS	D	C		D	C	B	D	C		D	D	D
Approach Vol, veh/h		758			1483			242			190	
Approach Delay, s/veh		24.6			25.6			47.2			41.4	
Approach LOS		C			C			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	18.8	47.7	17.0	20.0	8.5	58.0	9.0	28.0				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	22.0	38.0	20.0	20.0	7.0	53.0	20.0	20.0				
Max Q Clear Time (g_c+I1), s	13.5	17.8	11.8	5.1	3.4	29.7	3.6	3.6				
Green Ext Time (p_c), s	0.3	4.4	0.3	0.6	0.0	9.0	0.0	0.2				

Intersection Summary

HCM 6th Ctrl Delay	28.4
HCM 6th LOS	C

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Timings
11: Yosemite St & E. 160th Ave (SH 7)

2044 Total Traffic
AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	70	721	29	47	1270	62	56	21	166	39	178
Future Volume (vph)	70	721	29	47	1270	62	56	21	166	39	178
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	5	2		1	6			8		4	
Permitted Phases	2		2	6		6	8		4		4
Detector Phase	5	2	2	1	6	6	8	8	4	4	4
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	20.0	20.0	10.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	12.0	78.0	78.0	12.0	78.0	78.0	30.0	30.0	30.0	30.0	30.0
Total Split (%)	10.0%	65.0%	65.0%	10.0%	65.0%	65.0%	25.0%	25.0%	25.0%	25.0%	25.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	None	None	None	None	None	Min	Min	Min	Min	Min
Act Effect Green (s)	45.7	42.1	42.1	44.0	39.3	39.3	16.3	16.3	16.3	16.3	16.3
Actuated g/C Ratio	0.61	0.56	0.56	0.58	0.52	0.52	0.22	0.22	0.22	0.22	0.22
v/c Ratio	0.27	0.39	0.03	0.11	0.73	0.08	0.21	0.22	0.63	0.10	0.42
Control Delay	8.2	11.2	0.7	6.0	17.7	3.1	30.8	13.0	42.4	29.0	12.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.2	11.2	0.7	6.0	17.7	3.1	30.8	13.0	42.4	29.0	12.6
LOS	A	B	A	A	B	A	C	B	D	C	B
Approach Delay		10.6			16.6			20.0		27.2	
Approach LOS		B			B			C		C	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 75.5
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.73
 Intersection Signal Delay: 16.5
 Intersection LOS: B
 Intersection Capacity Utilization 67.6%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 11: Yosemite St & E. 160th Ave (SH 7)



HCM 6th Signalized Intersection Summary
 11: Yosemite St & E. 160th Ave (SH 7)

2044 Total Traffic
 AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	70	721	29	47	1270	62	56	21	65	166	39	178
Future Volume (veh/h)	70	721	29	47	1270	62	56	21	65	166	39	178
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	74	767	0	50	1351	66	60	22	69	177	41	189
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	281	1853		456	1817	811	335	87	273	330	410	347
Arrive On Green	0.05	0.52	0.00	0.04	0.51	0.51	0.22	0.22	0.22	0.22	0.22	0.22
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1151	398	1248	1306	1870	1585
Grp Volume(v), veh/h	74	767	0	50	1351	66	60	0	91	177	41	189
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1151	0	1646	1306	1870	1585
Q Serve(g_s), s	1.3	9.2	0.0	0.9	20.9	1.5	3.1	0.0	3.2	9.0	1.2	7.4
Cycle Q Clear(g_c), s	1.3	9.2	0.0	0.9	20.9	1.5	4.3	0.0	3.2	12.2	1.2	7.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.76	1.00		1.00
Lane Grp Cap(c), veh/h	281	1853		456	1817	811	335	0	361	330	410	347
V/C Ratio(X)	0.26	0.41		0.11	0.74	0.08	0.18	0.00	0.25	0.54	0.10	0.54
Avail Cap(c_a), veh/h	362	3717		555	3717	1658	495	0	590	511	670	568
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.8	10.2	0.0	7.6	13.4	8.7	23.5	0.0	22.5	27.6	21.8	24.2
Incr Delay (d2), s/veh	0.5	0.1	0.0	0.1	0.6	0.0	0.3	0.0	0.4	1.4	0.1	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	2.7	0.0	0.3	6.4	0.4	0.8	0.0	1.2	2.7	0.5	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.2	10.3	0.0	7.7	14.1	8.7	23.7	0.0	22.9	28.9	21.9	25.5
LnGrp LOS	B	B		A	B	A	C	A	C	C	C	C
Approach Vol, veh/h		841			1467			151			407	
Approach Delay, s/veh		10.4			13.6			23.2			26.6	
Approach LOS		B			B			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.1	41.4		20.3	8.8	40.7		20.3				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	7.0	73.0		25.0	7.0	73.0		25.0				
Max Q Clear Time (g_c+I1), s	2.9	11.2		14.2	3.3	22.9		6.3				
Green Ext Time (p_c), s	0.0	5.4		1.1	0.0	12.8		0.6				

Intersection Summary

HCM 6th Ctrl Delay	15.0
HCM 6th LOS	B

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Timings
12: Havana St & E. 160th Ave (SH 7)

2044 Total Traffic
AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	35	883	44	30	1120	13	36	8	16	16	91
Future Volume (vph)	35	883	44	30	1120	13	36	8	16	16	91
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	5	2		1	6			8		4	
Permitted Phases	2		2	6		6	8		4		4
Detector Phase	5	2	2	1	6	6	8	8	4	4	4
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	20.0	20.0	10.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	12.0	83.0	83.0	12.0	83.0	83.0	25.0	25.0	25.0	25.0	25.0
Total Split (%)	10.0%	69.2%	69.2%	10.0%	69.2%	69.2%	20.8%	20.8%	20.8%	20.8%	20.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	None	None	None	None	None	Min	Min	Min	Min	Min
Act Effct Green (s)	27.3	25.3	25.3	26.9	25.1	25.1	7.5	7.5	7.5	7.5	7.5
Actuated g/C Ratio	0.58	0.54	0.54	0.57	0.53	0.53	0.16	0.16	0.16	0.16	0.16
v/c Ratio	0.10	0.49	0.05	0.07	0.63	0.02	0.17	0.28	0.08	0.06	0.29
Control Delay	3.7	8.5	1.8	3.5	10.2	0.0	24.9	10.9	24.2	23.6	9.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.7	8.5	1.8	3.5	10.2	0.0	24.9	10.9	24.2	23.6	9.4
LOS	A	A	A	A	B	A	C	B	C	C	A
Approach Delay		8.0			10.0			15.0		13.1	
Approach LOS		A			A			B		B	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 47.1
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.63
 Intersection Signal Delay: 9.6
 Intersection Capacity Utilization 53.3%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service A

Splits and Phases: 12: Havana St & E. 160th Ave (SH 7)



HCM 6th Signalized Intersection Summary
 12: Havana St & E. 160th Ave (SH 7)

2044 Total Traffic
 AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑	↗	↘	↗		↘	↑	↗
Traffic Volume (veh/h)	35	883	44	30	1120	13	36	8	77	16	16	91
Future Volume (veh/h)	35	883	44	30	1120	13	36	8	77	16	16	91
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	37	939	47	32	1191	14	38	9	82	17	17	97
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	356	1845	823	420	1829	816	296	18	168	240	217	184
Arrive On Green	0.04	0.52	0.52	0.04	0.51	0.51	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1279	159	1450	1306	1870	1585
Grp Volume(v), veh/h	37	939	47	32	1191	14	38	0	91	17	17	97
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1279	0	1609	1306	1870	1585
Q Serve(g_s), s	0.4	7.9	0.7	0.4	11.2	0.2	1.2	0.0	2.4	0.6	0.4	2.6
Cycle Q Clear(g_c), s	0.4	7.9	0.7	0.4	11.2	0.2	1.6	0.0	2.4	3.0	0.4	2.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.90	1.00		1.00
Lane Grp Cap(c), veh/h	356	1845	823	420	1829	816	296	0	187	240	217	184
V/C Ratio(X)	0.10	0.51	0.06	0.08	0.65	0.02	0.13	0.00	0.49	0.07	0.08	0.53
Avail Cap(c_a), veh/h	556	6069	2707	628	6069	2707	707	0	705	660	819	694
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	6.1	7.2	5.4	5.4	8.1	5.4	18.7	0.0	18.9	20.3	18.0	19.0
Incr Delay (d2), s/veh	0.1	0.2	0.0	0.1	0.4	0.0	0.2	0.0	2.0	0.1	0.2	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	1.5	0.1	0.1	2.2	0.0	0.3	0.0	0.9	0.2	0.1	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.2	7.4	5.5	5.4	8.5	5.4	18.9	0.0	20.9	20.4	18.2	21.4
LnGrp LOS	A	A	A	A	A	A	B	A	C	C	B	C
Approach Vol, veh/h		1023			1237			129			131	
Approach Delay, s/veh		7.3			8.4			20.3			20.8	
Approach LOS		A			A			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.7	28.7		10.3	6.9	28.5		10.3				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	7.0	78.0		20.0	7.0	78.0		20.0				
Max Q Clear Time (g_c+I1), s	2.4	9.9		5.0	2.4	13.2		4.4				
Green Ext Time (p_c), s	0.0	7.3		0.3	0.0	10.3		0.5				

Intersection Summary

HCM 6th Ctrl Delay	9.2
HCM 6th LOS	A

HCM 6th TWSC
13: Riverdale Rd & E. 160th Ave (SH 7)

2044 Total Traffic
AM Peak Hour

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	0	931	39	335	1090	0	14	0	267	0	0	0
Future Vol, veh/h	0	931	39	335	1090	0	14	0	267	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	Free	-	-	None
Storage Length	475	-	475	475	-	-	-	-	85	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	2	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	990	41	356	1160	0	15	0	284	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1160	0	0	1031	0	0	2282	2862	-	2367	2903	580
Stage 1	-	-	-	-	-	-	990	990	-	1872	1872	-
Stage 2	-	-	-	-	-	-	1292	1872	-	495	1031	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	-	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	-	3.52	4.02	3.32
Pot Cap-1 Maneuver	598	-	-	670	-	-	21	16	0	18	15	458
Stage 1	-	-	-	-	-	-	264	323	0	74	120	-
Stage 2	-	-	-	-	-	-	172	120	0	525	309	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	598	-	-	670	-	-	~ 12	8	-	10	7	458
Mov Cap-2 Maneuver	-	-	-	-	-	-	73	52	-	10	7	-
Stage 1	-	-	-	-	-	-	264	323	-	74	56	-
Stage 2	-	-	-	-	-	-	81	56	-	525	309	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			3.8			66.5			0		
HCM LOS							F			A		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	73	-	598	-	-	670	-	-	-
HCM Lane V/C Ratio	0.204	-	-	-	-	0.532	-	-	-
HCM Control Delay (s)	66.5	0	0	-	-	16.3	-	-	0
HCM Lane LOS	F	A	A	-	-	C	-	-	A
HCM 95th %tile Q(veh)	0.7	-	0	-	-	3.2	-	-	-

Notes
 -: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Timings
14: E. 160th Ave (SH 7) & Tuscon St

2044 Total Traffic
AM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↶	↷	↷	↷	↶	↷
Traffic Volume (vph)	42	1210	1440	37	92	61
Future Volume (vph)	42	1210	1440	37	92	61
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	2			6		4
Detector Phase	5	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	5.0	15.0	15.0	15.0	10.0	10.0
Minimum Split (s)	10.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	12.0	90.0	78.0	78.0	30.0	30.0
Total Split (%)	10.0%	75.0%	65.0%	65.0%	25.0%	25.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	Max	Max	Max	None	None
Act Effect Green (s)	85.1	85.1	76.1	76.1	11.9	11.9
Actuated g/C Ratio	0.80	0.80	0.71	0.71	0.11	0.11
v/c Ratio	0.18	0.46	0.61	0.03	0.50	0.28
Control Delay	4.1	4.3	10.0	2.1	53.6	13.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.1	4.3	10.0	2.1	53.6	13.9
LOS	A	A	A	A	D	B
Approach Delay		4.3	9.8		37.8	
Approach LOS		A	A		D	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 107
 Natural Cycle: 65
 Control Type: Semi Act-Uncoord
 Maximum v/c Ratio: 0.61
 Intersection Signal Delay: 8.9
 Intersection Capacity Utilization 56.5%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service B

Splits and Phases: 14: E. 160th Ave (SH 7) & Tuscon St



HCM 6th Signalized Intersection Summary
 14: E. 160th Ave (SH 7) & Tuscon St

2044 Total Traffic
 AM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↶	↷	↷	↶	↶	↶
Traffic Volume (veh/h)	42	1210	1440	37	92	61
Future Volume (veh/h)	42	1210	1440	37	92	61
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	45	1287	1532	39	98	65
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	301	2879	2586	1153	168	150
Arrive On Green	0.03	0.81	0.73	0.73	0.09	0.09
Sat Flow, veh/h	1781	3647	3647	1585	1781	1585
Grp Volume(v), veh/h	45	1287	1532	39	98	65
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585
Q Serve(g_s), s	0.6	11.3	21.6	0.7	5.5	4.1
Cycle Q Clear(g_c), s	0.6	11.3	21.6	0.7	5.5	4.1
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	301	2879	2586	1153	168	150
V/C Ratio(X)	0.15	0.45	0.59	0.03	0.58	0.43
Avail Cap(c_a), veh/h	358	2879	2586	1153	424	378
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	5.7	3.0	6.8	4.0	45.5	44.9
Incr Delay (d2), s/veh	0.2	0.5	1.0	0.1	3.2	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	2.0	5.9	0.2	2.5	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	5.9	3.5	7.8	4.0	48.7	46.8
LnGrp LOS	A	A	A	A	D	D
Approach Vol, veh/h		1332	1571		163	
Approach Delay, s/veh		3.5	7.7		47.9	
Approach LOS		A	A		D	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		90.0		14.9	8.7	81.3
Change Period (Y+Rc), s		5.0		5.0	5.0	5.0
Max Green Setting (Gmax), s		85.0		25.0	7.0	73.0
Max Q Clear Time (g_c+I1), s		13.3		7.5	2.6	23.6
Green Ext Time (p_c), s		11.8		0.4	0.0	15.6
Intersection Summary						
HCM 6th Ctrl Delay			8.1			
HCM 6th LOS			A			

Intersection						
Int Delay, s/veh	1.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↔		↔	↑↑	↑↑	
Traffic Vol, veh/h	3	21	8	51	76	2
Future Vol, veh/h	3	21	8	51	76	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	200	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	22	9	54	81	2

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	127	42	83	0	0
Stage 1	82	-	-	-	-
Stage 2	45	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-
Pot Cap-1 Maneuver	854	1019	1512	-	-
Stage 1	932	-	-	-	-
Stage 2	972	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	849	1019	1512	-	-
Mov Cap-2 Maneuver	849	-	-	-	-
Stage 1	926	-	-	-	-
Stage 2	972	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.7	1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1512	-	994	-	-
HCM Lane V/C Ratio	0.006	-	0.026	-	-
HCM Control Delay (s)	7.4	-	8.7	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection						
Int Delay, s/veh	2.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y		Y	↑↑	↑↑	
Traffic Vol, veh/h	3	39	15	61	98	2
Future Vol, veh/h	3	39	15	61	98	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	200	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	41	16	65	104	2

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	170	53	106	0	-	0
Stage 1	105	-	-	-	-	-
Stage 2	65	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	804	1003	1483	-	-	-
Stage 1	908	-	-	-	-	-
Stage 2	950	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	795	1003	1483	-	-	-
Mov Cap-2 Maneuver	795	-	-	-	-	-
Stage 1	898	-	-	-	-	-
Stage 2	950	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.8	1.5	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1483	-	985	-	-
HCM Lane V/C Ratio	0.011	-	0.045	-	-
HCM Control Delay (s)	7.5	-	8.8	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

HCM 6th TWSC
17: Yosemite St & North Site Access

2044 Total Traffic
AM Peak Hour

Intersection												
Int Delay, s/veh	7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↑	↗	↖	↑	↗
Traffic Vol, veh/h	25	0	59	96	0	62	22	39	38	24	16	8
Future Vol, veh/h	25	0	59	96	0	62	22	39	38	24	16	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	200	-	-	250	-	250	250	-	250
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	27	0	63	102	0	66	23	41	40	26	17	9

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	209	196	17	192	165	41	26	0	0	81	0	0
Stage 1	69	69	-	87	87	-	-	-	-	-	-	-
Stage 2	140	127	-	105	78	-	-	-	-	-	-	-
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	748	699	1062	768	728	1030	1588	-	-	1517	-	-
Stage 1	941	837	-	921	823	-	-	-	-	-	-	-
Stage 2	863	791	-	901	830	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	684	677	1062	705	705	1030	1588	-	-	1517	-	-
Mov Cap-2 Maneuver	684	677	-	705	705	-	-	-	-	-	-	-
Stage 1	928	823	-	908	811	-	-	-	-	-	-	-
Stage 2	796	780	-	833	816	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.2	10.1	1.6	3.7
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1588	-	-	684	1062	705	1030	1517	-	-
HCM Lane V/C Ratio	0.015	-	-	0.039	0.059	0.145	0.064	0.017	-	-
HCM Control Delay (s)	7.3	-	-	10.5	8.6	11	8.7	7.4	-	-
HCM Lane LOS	A	-	-	B	A	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.2	0.5	0.2	0.1	-	-

HCM 6th TWSC
 18: Yosemite St & South Site Access

2044 Total Traffic
 AM Peak Hour

Intersection												
Int Delay, s/veh	5.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗		↖	↑	↗	↖	↑	↗
Traffic Vol, veh/h	9	0	59	128	0	19	19	71	44	6	162	3
Future Vol, veh/h	9	0	59	128	0	19	19	71	44	6	162	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	200	-	-	250	-	250	250	-	250
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	10	0	63	136	0	20	20	76	47	6	172	3

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	334	347	172	333	303	76	175	0	0	123	0	0
Stage 1	184	184	-	116	116	-	-	-	-	-	-	-
Stage 2	150	163	-	217	187	-	-	-	-	-	-	-
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	620	576	872	620	610	985	1401	-	-	1464	-	-
Stage 1	818	747	-	889	800	-	-	-	-	-	-	-
Stage 2	853	763	-	785	745	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	599	566	872	567	599	985	1401	-	-	1464	-	-
Mov Cap-2 Maneuver	599	566	-	567	599	-	-	-	-	-	-	-
Stage 1	807	744	-	877	789	-	-	-	-	-	-	-
Stage 2	824	752	-	726	742	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB			
HCM Control Delay, s	9.6		12.7		1.1		0.3			
HCM LOS	A		B							

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1401	-	-	599	872	567	985	1464	-	-
HCM Lane V/C Ratio	0.014	-	-	0.016	0.072	0.24	0.021	0.004	-	-
HCM Control Delay (s)	7.6	-	-	11.1	9.4	13.3	8.7	7.5	-	-
HCM Lane LOS	A	-	-	B	A	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0.9	0.1	0	-	-

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		
Traffic Vol, veh/h	1	5	3	128	354	0
Future Vol, veh/h	1	5	3	128	354	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	5	3	136	377	0

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	519	377	377	0	-	0
Stage 1	377	-	-	-	-	-
Stage 2	142	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	517	670	1181	-	-	-
Stage 1	694	-	-	-	-	-
Stage 2	885	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	515	670	1181	-	-	-
Mov Cap-2 Maneuver	515	-	-	-	-	-
Stage 1	692	-	-	-	-	-
Stage 2	885	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.7	0.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1181	-	638	-	-
HCM Lane V/C Ratio	0.003	-	0.01	-	-
HCM Control Delay (s)	8.1	0	10.7	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection						
Int Delay, s/veh	0.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		
Traffic Vol, veh/h	0	27	11	137	354	0
Future Vol, veh/h	0	27	11	137	354	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	29	12	146	377	0

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	547	377	377	0	-	0
Stage 1	377	-	-	-	-	-
Stage 2	170	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	498	670	1181	-	-	-
Stage 1	694	-	-	-	-	-
Stage 2	860	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	493	670	1181	-	-	-
Mov Cap-2 Maneuver	493	-	-	-	-	-
Stage 1	686	-	-	-	-	-
Stage 2	860	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.6	0.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1181	-	670	-	-
HCM Lane V/C Ratio	0.01	-	0.043	-	-
HCM Control Delay (s)	8.1	0	10.6	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection												
Int Delay, s/veh	4.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	0	2	16	0	64	3	51	6	20	27	1
Future Vol, veh/h	3	0	2	16	0	64	3	51	6	20	27	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
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	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	0	2	17	0	68	3	54	6	21	29	1

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	169	138	30	136	135	57	30	0	0	60	0	0
Stage 1	72	72	-	63	63	-	-	-	-	-	-	-
Stage 2	97	66	-	73	72	-	-	-	-	-	-	-
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	795	753	1044	835	756	1009	1583	-	-	1544	-	-
Stage 1	938	835	-	948	842	-	-	-	-	-	-	-
Stage 2	910	840	-	937	835	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	732	741	1044	823	744	1009	1583	-	-	1544	-	-
Mov Cap-2 Maneuver	732	741	-	823	744	-	-	-	-	-	-	-
Stage 1	936	823	-	946	840	-	-	-	-	-	-	-
Stage 2	847	838	-	922	823	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	9.4		9.1		0.4		3.1	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1583	-	-	831	965	1544	-	-
HCM Lane V/C Ratio	0.002	-	-	0.006	0.088	0.014	-	-
HCM Control Delay (s)	7.3	0	-	9.4	9.1	7.4	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.3	0	-	-

Intersection												
Int Delay, s/veh	5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	4	44	0	37	3	23	20	14	31	0
Future Vol, veh/h	0	0	4	44	0	37	3	23	20	14	31	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
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	73	73	73	85	85	85	73	73	85	85	73	73
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	5	52	0	44	4	32	24	16	42	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	148	138	42	129	126	44	42	0	0	56	0	0
Stage 1	74	74	-	52	52	-	-	-	-	-	-	-
Stage 2	74	64	-	77	74	-	-	-	-	-	-	-
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	820	753	1029	844	764	1026	1567	-	-	1549	-	-
Stage 1	935	833	-	961	852	-	-	-	-	-	-	-
Stage 2	935	842	-	932	833	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	777	742	1029	830	753	1026	1567	-	-	1549	-	-
Mov Cap-2 Maneuver	777	742	-	830	753	-	-	-	-	-	-	-
Stage 1	932	824	-	958	849	-	-	-	-	-	-	-
Stage 2	893	839	-	917	824	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	8.5		9.4		0.5		2.1	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1567	-	-	1029	909	1549	-	-
HCM Lane V/C Ratio	0.003	-	-	0.005	0.105	0.011	-	-
HCM Control Delay (s)	7.3	0	-	8.5	9.4	7.3	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.3	0	-	-

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↑↑	↑↑		↘	
Traffic Vol, veh/h	11	588	343	17	14	5
Future Vol, veh/h	11	588	343	17	14	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	250	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	626	365	18	15	5

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	383	0	-	0	711
Stage 1	-	-	-	-	374
Stage 2	-	-	-	-	337
Critical Hdwy	4.14	-	-	-	6.84
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	2.22	-	-	-	3.52
Pot Cap-1 Maneuver	1172	-	-	-	368
Stage 1	-	-	-	-	666
Stage 2	-	-	-	-	695
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1172	-	-	-	364
Mov Cap-2 Maneuver	-	-	-	-	364
Stage 1	-	-	-	-	659
Stage 2	-	-	-	-	695

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	13.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1172	-	-	-	426
HCM Lane V/C Ratio	0.01	-	-	-	0.047
HCM Control Delay (s)	8.1	-	-	-	13.9
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection						
Int Delay, s/veh	1.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑
Traffic Vol, veh/h	563	38	67	352	8	90
Future Vol, veh/h	563	38	67	352	8	90
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	250	250	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	599	40	71	374	9	96

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	639	0	928
Stage 1	-	-	-	-	599
Stage 2	-	-	-	-	329
Critical Hdwy	-	-	4.14	-	6.84
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	-	-	2.22	-	3.52
Pot Cap-1 Maneuver	-	-	941	-	267
Stage 1	-	-	-	-	511
Stage 2	-	-	-	-	701
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	941	-	247
Mov Cap-2 Maneuver	-	-	-	-	247
Stage 1	-	-	-	-	511
Stage 2	-	-	-	-	648

Approach	EB	WB	NB
HCM Control Delay, s	0	1.5	11.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	247	696	-	-	941	-
HCM Lane V/C Ratio	0.034	0.138	-	-	0.076	-
HCM Control Delay (s)	20.1	11	-	-	9.1	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	0.5	-	-	0.2	-

Intersection						
Int Delay, s/veh	0.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑
Traffic Vol, veh/h	575	66	3	353	44	3
Future Vol, veh/h	575	66	3	353	44	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	250	250	-	0	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	612	70	3	376	47	3

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	682	0	806
Stage 1	-	-	-	-	612
Stage 2	-	-	-	-	194
Critical Hdwy	-	-	4.14	-	6.84
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	-	-	2.22	-	3.52
Pot Cap-1 Maneuver	-	-	907	-	320
Stage 1	-	-	-	-	504
Stage 2	-	-	-	-	820
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	907	-	319
Mov Cap-2 Maneuver	-	-	-	-	319
Stage 1	-	-	-	-	504
Stage 2	-	-	-	-	818

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	17.7
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	319	690	-	-	907	-
HCM Lane V/C Ratio	0.147	0.005	-	-	0.004	-
HCM Control Delay (s)	18.2	10.2	-	-	9	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	0.5	0	-	-	0	-

Intersection							
Intersection Delay, s/veh	4.8						
Intersection LOS	A						
Approach	EB		WB		NB		SB
Entry Lanes	2		2		1		1
Conflicting Circle Lanes	2		2		2		2
Adj Approach Flow, veh/h	614		340		96		107
Demand Flow Rate, veh/h	626		347		98		109
Vehicles Circulating, veh/h	94		130		569		371
Vehicles Exiting, veh/h	386		537		151		106
Ped Vol Crossing Leg, #/h	0		0		0		0
Ped Cap Adj	1.000		1.000		1.000		1.000
Approach Delay, s/veh	5.0		4.2		5.3		4.5
Approach LOS	A		A		A		A
Lane	Left	Right	Left	Right	Left	Left	
Designated Moves	LT	TR	LT	TR	LTR	LTR	
Assumed Moves	LT	TR	LT	TR	LTR	LTR	
RT Channelized							
Lane Util	0.470	0.530	0.470	0.530	1.000	1.000	
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.535	2.535	
Critical Headway, s	4.645	4.328	4.645	4.328	4.328	4.328	
Entry Flow, veh/h	294	332	163	184	98	109	
Cap Entry Lane, veh/h	1238	1311	1198	1272	875	1036	
Entry HV Adj Factor	0.981	0.980	0.980	0.979	0.979	0.981	
Flow Entry, veh/h	289	325	160	180	96	107	
Cap Entry, veh/h	1215	1285	1174	1245	857	1016	
V/C Ratio	0.237	0.253	0.136	0.145	0.112	0.105	
Control Delay, s/veh	5.1	5.0	4.2	4.1	5.3	4.5	
LOS	A	A	A	A	A	A	
95th %tile Queue, veh	1	1	0	1	0	0	

Intersection						
Int Delay, s/veh	1.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑
Traffic Vol, veh/h	464	30	94	302	18	58
Future Vol, veh/h	464	30	94	302	18	58
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	250	250	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	494	32	100	321	19	62

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	526	0	855 247
Stage 1	-	-	-	-	494 -
Stage 2	-	-	-	-	361 -
Critical Hdwy	-	-	4.14	-	6.84 6.94
Critical Hdwy Stg 1	-	-	-	-	5.84 -
Critical Hdwy Stg 2	-	-	-	-	5.84 -
Follow-up Hdwy	-	-	2.22	-	3.52 3.32
Pot Cap-1 Maneuver	-	-	1037	-	297 753
Stage 1	-	-	-	-	579 -
Stage 2	-	-	-	-	676 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1037	-	268 753
Mov Cap-2 Maneuver	-	-	-	-	268 -
Stage 1	-	-	-	-	579 -
Stage 2	-	-	-	-	611 -

Approach	EB	WB	NB
HCM Control Delay, s	0	2.1	13.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	527	-	-	1037	-
HCM Lane V/C Ratio	0.153	-	-	0.096	-
HCM Control Delay (s)	13.1	-	-	8.8	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.5	-	-	0.3	-

Intersection					
Intersection Delay, s/veh	4.6				
Intersection LOS	A				
Approach	EB		WB		NB
Entry Lanes	2		2		1
Conflicting Circle Lanes	2		2		2
Adj Approach Flow, veh/h	566		504		88
Demand Flow Rate, veh/h	577		514		90
Vehicles Circulating, veh/h	89		33		522
Vehicles Exiting, veh/h	458		579		144
Ped Vol Crossing Leg, #/h	0		0		0
Ped Cap Adj	1.000		1.000		1.000
Approach Delay, s/veh	4.8		4.3		5.0
Approach LOS	A		A		A
Lane	Left	Right	Left	Right	Left
Designated Moves	LT	TR	LT	TR	LR
Assumed Moves	LT	TR	LT	TR	LR
RT Channelized					
Lane Util	0.470	0.530	0.471	0.529	1.000
Follow-Up Headway, s	2.667	2.535	2.667	2.535	2.535
Critical Headway, s	4.645	4.328	4.645	4.328	4.328
Entry Flow, veh/h	271	306	242	272	90
Cap Entry Lane, veh/h	1244	1317	1309	1381	911
Entry HV Adj Factor	0.981	0.980	0.978	0.981	0.978
Flow Entry, veh/h	266	300	237	267	88
Cap Entry, veh/h	1220	1290	1281	1355	891
V/C Ratio	0.218	0.232	0.185	0.197	0.099
Control Delay, s/veh	4.9	4.8	4.4	4.3	5.0
LOS	A	A	A	A	A
95th %tile Queue, veh	1	1	1	1	0

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↑↑	↑↑		↘	
Traffic Vol, veh/h	3	522	456	12	5	2
Future Vol, veh/h	3	522	456	12	5	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	200	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	555	485	13	5	2

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	498	0	-	0	776 249
Stage 1	-	-	-	-	492 -
Stage 2	-	-	-	-	284 -
Critical Hdwy	4.14	-	-	-	6.84 6.94
Critical Hdwy Stg 1	-	-	-	-	5.84 -
Critical Hdwy Stg 2	-	-	-	-	5.84 -
Follow-up Hdwy	2.22	-	-	-	3.52 3.32
Pot Cap-1 Maneuver	1062	-	-	-	334 751
Stage 1	-	-	-	-	580 -
Stage 2	-	-	-	-	739 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1062	-	-	-	333 751
Mov Cap-2 Maneuver	-	-	-	-	333 -
Stage 1	-	-	-	-	578 -
Stage 2	-	-	-	-	739 -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	14.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1062	-	-	-	396
HCM Lane V/C Ratio	0.003	-	-	-	0.019
HCM Control Delay (s)	8.4	-	-	-	14.3
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection						
Int Delay, s/veh	2.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑
Traffic Vol, veh/h	464	63	24	377	91	53
Future Vol, veh/h	464	63	24	377	91	53
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	494	67	26	401	97	56

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	561	0	747
Stage 1	-	-	-	-	494
Stage 2	-	-	-	-	253
Critical Hdwy	-	-	4.14	-	6.84
Critical Hdwy Stg 1	-	-	-	-	5.84
Critical Hdwy Stg 2	-	-	-	-	5.84
Follow-up Hdwy	-	-	2.22	-	3.52
Pot Cap-1 Maneuver	-	-	1006	-	349
Stage 1	-	-	-	-	579
Stage 2	-	-	-	-	766
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1006	-	340
Mov Cap-2 Maneuver	-	-	-	-	340
Stage 1	-	-	-	-	579
Stage 2	-	-	-	-	746

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	18.1
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	426	-	-	1006	-
HCM Lane V/C Ratio	0.36	-	-	0.025	-
HCM Control Delay (s)	18.1	-	-	8.7	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	1.6	-	-	0.1	-

Timings
10: Quebec St & E. 160th Ave (SH 7)

2044 Total Traffic
PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	1396	171	138	992	17	197	162	168	29	93	39
Future Volume (vph)	57	1396	171	138	992	17	197	162	168	29	93	39
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Free	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			Free			6			Free			4
Detector Phase	5	2		1	6	6	3	8		7	4	4
Switch Phase												
Minimum Initial (s)	7.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Minimum Split (s)	12.0	20.0		10.0	20.0	20.0	10.0	20.0		10.0	20.0	20.0
Total Split (s)	18.0	51.0		24.0	57.0	57.0	20.0	25.0		20.0	25.0	25.0
Total Split (%)	15.0%	42.5%		20.0%	47.5%	47.5%	16.7%	20.8%		16.7%	20.8%	20.8%
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	None		None	None	None	None	Min		None	Min	Min
Act Effect Green (s)	9.2	46.1	103.2	13.7	53.2	53.2	15.0	20.6	103.2	7.3	8.3	8.3
Actuated g/C Ratio	0.09	0.45	1.00	0.13	0.52	0.52	0.15	0.20	1.00	0.07	0.08	0.08
v/c Ratio	0.39	0.94	0.11	0.63	0.58	0.02	0.82	0.24	0.11	0.25	0.35	0.15
Control Delay	52.6	40.8	0.1	54.6	20.0	0.1	68.9	38.8	0.1	51.4	49.2	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.6	40.8	0.1	54.6	20.0	0.1	68.9	38.8	0.1	51.4	49.2	1.2
LOS	D	D	A	D	C	A	E	D	A	D	D	A
Approach Delay		36.9			23.9			37.7			38.1	
Approach LOS		D			C			D			D	

Intersection Summary

























Cycle Length: 120
 Actuated Cycle Length: 103.2
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.94
 Intersection Signal Delay: 32.8
 Intersection LOS: C
 Intersection Capacity Utilization 78.0%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 10: Quebec St & E. 160th Ave (SH 7)



HCM 6th Signalized Intersection Summary
 10: Quebec St & E. 160th Ave (SH 7)

2044 Total Traffic
 PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	57	1396	171	138	992	17	197	162	168	29	93	39
Future Volume (veh/h)	57	1396	171	138	992	17	197	162	168	29	93	39
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	61	1485	0	147	1055	18	210	172	0	31	99	41
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	109	1690		184	1838	820	247	587		54	201	90
Arrive On Green	0.06	0.48	0.00	0.10	0.52	0.52	0.14	0.17	0.00	0.03	0.06	0.06
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	61	1485	0	147	1055	18	210	172	0	31	99	41
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	2.9	33.3	0.0	7.1	18.0	0.5	10.2	3.8	0.0	1.5	2.4	2.2
Cycle Q Clear(g_c), s	2.9	33.3	0.0	7.1	18.0	0.5	10.2	3.8	0.0	1.5	2.4	2.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	109	1690		184	1838	820	247	587		54	201	90
V/C Ratio(X)	0.56	0.88		0.80	0.57	0.02	0.85	0.29		0.58	0.49	0.46
Avail Cap(c_a), veh/h	262	1849		383	2090	932	302	804		302	804	359
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.3	20.9	0.0	38.8	14.7	10.4	37.2	32.4	0.0	42.3	40.5	40.4
Incr Delay (d2), s/veh	4.4	4.9	0.0	7.8	0.3	0.0	17.2	0.3	0.0	9.4	1.9	3.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	12.7	0.0	3.3	6.1	0.2	5.4	1.6	0.0	0.8	1.1	0.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.7	25.8	0.0	46.6	15.0	10.4	54.4	32.7	0.0	51.8	42.3	44.0
LnGrp LOS	D	C		D	B	B	D	C		D	D	D
Approach Vol, veh/h		1546			1220			382			171	
Approach Delay, s/veh		26.5			18.7			44.6			44.4	
Approach LOS		C			B			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	14.1	47.1	17.3	10.0	10.4	50.7	7.7	19.6				
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0				
Max Green Setting (Gmax), s	19.0	46.0	15.0	20.0	13.0	52.0	15.0	20.0				
Max Q Clear Time (g_c+I1), s	9.1	35.3	12.2	4.4	4.9	20.0	3.5	5.8				
Green Ext Time (p_c), s	0.2	6.8	0.2	0.5	0.1	7.9	0.0	0.7				
Intersection Summary												
HCM 6th Ctrl Delay			26.7									
HCM 6th LOS			C									
Notes												
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.												

Timings
11: Yosemite St & E. 160th Ave (SH 7)

2044 Total Traffic
PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	197	1330	70	59	1013	172	55	45	113	31	122
Future Volume (vph)	197	1330	70	59	1013	172	55	45	113	31	122
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	5	2		1	6			8		4	
Permitted Phases	2		2	6		6	8		4		4
Detector Phase	5	2	2	1	6	6	8	8	4	4	4
Switch Phase											
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	20.0	20.0	10.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	12.0	83.0	83.0	12.0	83.0	83.0	25.0	25.0	25.0	25.0	25.0
Total Split (%)	10.0%	69.2%	69.2%	10.0%	69.2%	69.2%	20.8%	20.8%	20.8%	20.8%	20.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes					
Recall Mode	None	None	None	None	None	None	Min	Min	Min	Min	Min
Act Effect Green (s)	47.3	42.1	42.1	44.6	38.0	38.0	13.2	13.2	13.2	13.2	13.2
Actuated g/C Ratio	0.63	0.56	0.56	0.60	0.51	0.51	0.18	0.18	0.18	0.18	0.18
v/c Ratio	0.59	0.71	0.08	0.24	0.60	0.20	0.24	0.33	0.54	0.10	0.34
Control Delay	13.4	15.3	2.6	6.6	13.9	2.1	33.0	22.1	41.2	30.5	9.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.4	15.3	2.6	6.6	13.9	2.1	33.0	22.1	41.2	30.5	9.2
LOS	B	B	A	A	B	A	C	C	D	C	A
Approach Delay		14.5			12.0			25.9		25.2	
Approach LOS		B			B			C		C	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 74.6
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.71
 Intersection Signal Delay: 15.0
 Intersection LOS: B
 Intersection Capacity Utilization 66.4%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 11: Yosemite St & E. 160th Ave (SH 7)



HCM 6th Signalized Intersection Summary
 11: Yosemite St & E. 160th Ave (SH 7)

2044 Total Traffic
 PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘	↖	↗	↘	↖	↗	↘
Traffic Volume (veh/h)	197	1330	70	59	1013	172	55	45	61	113	31	122
Future Volume (veh/h)	197	1330	70	59	1013	172	55	45	61	113	31	122
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	210	1415	0	63	1078	183	59	48	65	120	33	130
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	385	1913		287	1797	802	318	134	182	272	349	296
Arrive On Green	0.08	0.54	0.00	0.05	0.51	0.51	0.19	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1223	720	975	1280	1870	1585
Grp Volume(v), veh/h	210	1415	0	63	1078	183	59	0	113	120	33	130
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1223	0	1695	1280	1870	1585
Q Serve(g_s), s	3.7	20.5	0.0	1.1	14.4	4.3	2.8	0.0	3.9	6.1	1.0	4.9
Cycle Q Clear(g_c), s	3.7	20.5	0.0	1.1	14.4	4.3	3.8	0.0	3.9	10.0	1.0	4.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.58	1.00		1.00
Lane Grp Cap(c), veh/h	385	1913		287	1797	802	318	0	317	272	349	296
V/C Ratio(X)	0.55	0.74		0.22	0.60	0.23	0.19	0.00	0.36	0.44	0.09	0.44
Avail Cap(c_a), veh/h	421	4130		381	4130	1842	454	0	505	414	557	472
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	9.4	11.9	0.0	9.8	11.8	9.3	24.2	0.0	23.8	28.1	22.6	24.2
Incr Delay (d2), s/veh	1.2	0.6	0.0	0.4	0.3	0.1	0.3	0.0	0.7	1.1	0.1	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	5.8	0.0	0.3	4.3	1.2	0.8	0.0	1.5	1.8	0.4	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.6	12.5	0.0	10.2	12.1	9.4	24.4	0.0	24.5	29.2	22.7	25.2
LnGrp LOS	B	B		B	B	A	C	A	C	C	C	C
Approach Vol, veh/h		1625			1324			172			283	
Approach Delay, s/veh		12.2			11.6			24.5			26.6	
Approach LOS		B			B			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.5	41.1		17.5	10.6	38.9		17.5				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	7.0	78.0		20.0	7.0	78.0		20.0				
Max Q Clear Time (g_c+I1), s	3.1	22.5		12.0	5.7	16.4		5.9				
Green Ext Time (p_c), s	0.0	13.6		0.6	0.1	9.7		0.6				

Intersection Summary

HCM 6th Ctrl Delay	13.8
HCM 6th LOS	B

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Timings
12: Havana St & E. 160th Ave (SH 7)

2044 Total Traffic
PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR	
Lane Configurations												
Traffic Volume (vph)	104	1348	67	139	1171	30	46	19	9	13	54	
Future Volume (vph)	104	1348	67	139	1171	30	46	19	9	13	54	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	NA	Perm	
Protected Phases	5	2		1	6			8		4		
Permitted Phases	2		2	6		6	8		4		4	
Detector Phase	5	2	2	1	6	6	8	8	4	4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	10.0	20.0	20.0	10.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	
Total Split (s)	12.0	83.0	83.0	12.0	83.0	83.0	25.0	25.0	25.0	25.0	25.0	
Total Split (%)	10.0%	69.2%	69.2%	10.0%	69.2%	69.2%	20.8%	20.8%	20.8%	20.8%	20.8%	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Recall Mode	None	None	None	None	None	None	Min	Min	Min	Min	Min	
Act Effect Green (s)	43.2	36.3	36.3	44.5	39.2	39.2	8.1	8.1	8.1	8.1	8.1	
Actuated g/C Ratio	0.65	0.54	0.54	0.67	0.59	0.59	0.12	0.12	0.12	0.12	0.12	
v/c Ratio	0.32	0.75	0.08	0.51	0.60	0.03	0.29	0.33	0.06	0.06	0.23	
Control Delay	5.5	14.3	2.2	15.2	11.1	0.6	34.8	16.4	31.1	30.7	10.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	5.5	14.3	2.2	15.2	11.1	0.6	34.8	16.4	31.1	30.7	10.7	
LOS	A	B	A	B	B	A	C	B	C	C	B	
Approach Delay		13.2			11.3			23.1		16.7		
Approach LOS		B			B			C		B		

Intersection Summary
























Cycle Length: 120
 Actuated Cycle Length: 66.8
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.75
 Intersection Signal Delay: 12.8
 Intersection LOS: B
 Intersection Capacity Utilization 66.7%
 ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 12: Havana St & E. 160th Ave (SH 7)



HCM 6th Signalized Intersection Summary
 12: Havana St & E. 160th Ave (SH 7)

2044 Total Traffic
 PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	104	1348	67	139	1171	30	46	19	61	9	13	54
Future Volume (veh/h)	104	1348	67	139	1171	30	46	19	61	9	13	54
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	111	1434	71	148	1246	32	49	20	65	10	14	57
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
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	402	2034	907	360	2056	917	239	36	118	181	175	149
Arrive On Green	0.07	0.57	0.57	0.08	0.58	0.58	0.09	0.09	0.09	0.09	0.09	0.09
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1329	387	1257	1313	1870	1585
Grp Volume(v), veh/h	111	1434	71	148	1246	32	49	0	85	10	14	57
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1329	0	1644	1313	1870	1585
Q Serve(g_s), s	1.4	16.9	1.2	1.9	13.3	0.5	2.0	0.0	2.9	0.4	0.4	2.0
Cycle Q Clear(g_c), s	1.4	16.9	1.2	1.9	13.3	0.5	2.4	0.0	2.9	3.3	0.4	2.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.76	1.00		1.00
Lane Grp Cap(c), veh/h	402	2034	907	360	2056	917	239	0	154	181	175	149
V/C Ratio(X)	0.28	0.71	0.08	0.41	0.61	0.03	0.21	0.00	0.55	0.06	0.08	0.38
Avail Cap(c_a), veh/h	488	4736	2112	435	4736	2112	568	0	562	507	639	542
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	5.9	9.0	5.6	8.2	8.0	5.3	25.3	0.0	25.3	26.9	24.2	24.9
Incr Delay (d2), s/veh	0.4	0.5	0.0	0.8	0.3	0.0	0.4	0.0	3.1	0.1	0.2	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	3.9	0.2	0.4	3.0	0.1	0.6	0.0	1.2	0.1	0.2	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.3	9.4	5.6	8.9	8.3	5.3	25.8	0.0	28.4	27.1	24.4	26.6
LnGrp LOS	A	A	A	A	A	A	C	A	C	C	C	C
Approach Vol, veh/h		1616			1426			134				81
Approach Delay, s/veh		9.0			8.3			27.4				26.2
Approach LOS		A			A			C				C
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.5	38.5		10.5	9.2	38.9		10.5				
Change Period (Y+Rc), s	5.0	5.0		5.0	5.0	5.0		5.0				
Max Green Setting (Gmax), s	7.0	78.0		20.0	7.0	78.0		20.0				
Max Q Clear Time (g_c+I1), s	3.9	18.9		5.3	3.4	15.3		4.9				
Green Ext Time (p_c), s	0.1	14.6		0.2	0.1	11.2		0.4				
Intersection Summary												
HCM 6th Ctrl Delay			9.9									
HCM 6th LOS			A									

HCM 6th TWSC
 13: Riverdale Rd & E. 160th Ave (SH 7)

2044 Total Traffic
 PM Peak Hour

Intersection												
Int Delay, s/veh	3.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑			↘	↗		↕	
Traffic Vol, veh/h	0	1340	24	252	1358	0	24	0	418	1	0	3
Future Vol, veh/h	0	1340	24	252	1358	0	24	0	418	1	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	Free	-	-	None
Storage Length	475	-	475	475	-	-	-	-	85	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1426	26	268	1445	0	26	0	445	1	0	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1445	0	0	1452	0	0	2685	3407	-	2694	3433	723
Stage 1	-	-	-	-	-	-	1426	1426	-	1981	1981	-
Stage 2	-	-	-	-	-	-	1259	1981	-	713	1452	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	-	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	-	3.52	4.02	3.32
Pot Cap-1 Maneuver	465	-	-	462	-	-	~ 10	7	0	10	7	369
Stage 1	-	-	-	-	-	-	142	199	0	63	106	-
Stage 2	-	-	-	-	-	-	181	106	0	389	194	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	465	-	-	462	-	-	~ 5	3	-	5	3	369
Mov Cap-2 Maneuver	-	-	-	-	-	-	47	34	-	5	3	-
Stage 1	-	-	-	-	-	-	142	199	-	63	45	-
Stage 2	-	-	-	-	-	-	75	45	-	389	194	-

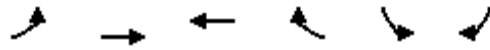
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			3.6			150			242.5		
HCM LOS							F			F		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	47	-	465	-	-	462	-	-	19
HCM Lane V/C Ratio	0.543	-	-	-	-	0.58	-	-	0.224
HCM Control Delay (s)	150	0	0	-	-	23	-	-	242.5
HCM Lane LOS	F	A	A	-	-	C	-	-	F
HCM 95th %tile Q(veh)	2	-	0	-	-	3.6	-	-	0.6

Notes
 -: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Timings
 14: E. 160th Ave (SH 7) & Tuscon St

2044 Total Traffic
 PM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↕	↕	↗	↖	↗
Traffic Volume (vph)	71	1628	1511	108	62	39
Future Volume (vph)	71	1628	1511	108	62	39
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	2			6		4
Detector Phase	5	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	5.0	15.0	15.0	15.0	10.0	10.0
Minimum Split (s)	10.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	12.0	95.0	83.0	83.0	25.0	25.0
Total Split (%)	10.0%	79.2%	69.2%	69.2%	20.8%	20.8%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	Max	Max	Max	None	None
Act Effct Green (s)	92.7	93.7	84.6	84.6	10.8	10.8
Actuated g/C Ratio	0.84	0.85	0.77	0.77	0.10	0.10
v/c Ratio	0.29	0.58	0.59	0.09	0.38	0.21
Control Delay	4.9	4.3	8.8	1.2	53.6	16.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.9	4.3	8.8	1.2	53.6	16.7
LOS	A	A	A	A	D	B
Approach Delay		4.4	8.3		39.5	
Approach LOS		A	A		D	

Intersection Summary

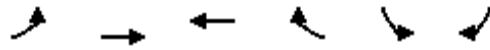
Cycle Length: 120
 Actuated Cycle Length: 110.4
 Natural Cycle: 65
 Control Type: Semi Act-Uncoord
 Maximum v/c Ratio: 0.59
 Intersection Signal Delay: 7.2
 Intersection Capacity Utilization 66.8%
 Analysis Period (min) 15
 Intersection LOS: A
 ICU Level of Service C

Splits and Phases: 14: E. 160th Ave (SH 7) & Tuscon St



HCM 6th Signalized Intersection Summary
 14: E. 160th Ave (SH 7) & Tuscon St

2044 Total Traffic
 PM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↶	↷	↷	↷	↶	↷
Traffic Volume (veh/h)	71	1628	1511	108	62	39
Future Volume (veh/h)	71	1628	1511	108	62	39
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	76	1732	1607	115	66	41
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	284	2918	2610	1164	156	139
Arrive On Green	0.04	0.82	0.73	0.73	0.09	0.09
Sat Flow, veh/h	1781	3647	3647	1585	1781	1585
Grp Volume(v), veh/h	76	1732	1607	115	66	41
Grp Sat Flow(s),veh/h/ln	1781	1777	1777	1585	1781	1585
Q Serve(g_s), s	1.0	18.6	24.0	2.3	3.8	2.7
Cycle Q Clear(g_c), s	1.0	18.6	24.0	2.3	3.8	2.7
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	284	2918	2610	1164	156	139
V/C Ratio(X)	0.27	0.59	0.62	0.10	0.42	0.29
Avail Cap(c_a), veh/h	325	2918	2610	1164	325	289
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	6.7	3.4	7.1	4.2	47.4	46.8
Incr Delay (d2), s/veh	0.5	0.9	1.1	0.2	1.8	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	3.2	6.7	0.6	1.8	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	7.2	4.3	8.2	4.3	49.2	48.0
LnGrp LOS	A	A	A	A	D	D
Approach Vol, veh/h		1808	1722		107	
Approach Delay, s/veh		4.4	7.9		48.7	
Approach LOS		A	A		D	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		95.0		14.6	9.5	85.5
Change Period (Y+Rc), s		5.0		5.0	5.0	5.0
Max Green Setting (Gmax), s		90.0		20.0	7.0	78.0
Max Q Clear Time (g_c+I1), s		20.6		5.8	3.0	26.0
Green Ext Time (p_c), s		21.0		0.2	0.0	17.8
Intersection Summary						
HCM 6th Ctrl Delay			7.4			
HCM 6th LOS			A			

HCM 6th TWSC
15: Quebec St & Eagle Shadow Ave

2044 Total Traffic
PM Peak Hour

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	8	20	123	105	1
Future Vol, veh/h	0	8	20	123	105	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	200	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	9	21	131	112	1

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	221	57	113	0	-	0
Stage 1	113	-	-	-	-	-
Stage 2	108	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	747	997	1474	-	-	-
Stage 1	899	-	-	-	-	-
Stage 2	904	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	737	997	1474	-	-	-
Mov Cap-2 Maneuver	737	-	-	-	-	-
Stage 1	886	-	-	-	-	-
Stage 2	904	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.6	1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1474	-	997	-	-
HCM Lane V/C Ratio	0.014	-	0.009	-	-
HCM Control Delay (s)	7.5	-	8.6	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection						
Int Delay, s/veh	1.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y		Y	↑↑	↑↑	
Traffic Vol, veh/h	1	18	26	143	109	5
Future Vol, veh/h	1	18	26	143	109	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	200	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	19	28	152	116	5

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	251	61	121	0	-	0
Stage 1	119	-	-	-	-	-
Stage 2	132	-	-	-	-	-
Critical Hdwy	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	5.84	-	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-	-	-
Follow-up Hdwy	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	716	991	1464	-	-	-
Stage 1	893	-	-	-	-	-
Stage 2	880	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	702	991	1464	-	-	-
Mov Cap-2 Maneuver	702	-	-	-	-	-
Stage 1	876	-	-	-	-	-
Stage 2	880	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.8	1.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1464	-	970	-	-
HCM Lane V/C Ratio	0.019	-	0.021	-	-
HCM Control Delay (s)	7.5	-	8.8	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

HCM 6th TWSC
17: Yosemite St & North Site Access

2044 Total Traffic
PM Peak Hour

Intersection												
Int Delay, s/veh	5.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷		↶	↶	↶	↶	↶	↶
Traffic Vol, veh/h	16	0	41	68	0	44	63	31	99	65	48	27
Future Vol, veh/h	16	0	41	68	0	44	63	31	99	65	48	27
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	200	-	-	250	-	250	250	-	250
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	0	44	72	0	47	67	33	105	69	51	29

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	432	461	51	393	385	33	80	0	0	138	0	0
Stage 1	189	189	-	167	167	-	-	-	-	-	-	-
Stage 2	243	272	-	226	218	-	-	-	-	-	-	-
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	534	497	1017	566	549	1041	1518	-	-	1446	-	-
Stage 1	813	744	-	835	760	-	-	-	-	-	-	-
Stage 2	761	685	-	777	723	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	475	452	1017	504	500	1041	1518	-	-	1446	-	-
Mov Cap-2 Maneuver	475	452	-	504	500	-	-	-	-	-	-	-
Stage 1	777	708	-	798	727	-	-	-	-	-	-	-
Stage 2	695	655	-	708	688	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	9.9		11.5		2.4		3.5	
HCM LOS	A		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1518	-	-	475	1017	504	1041	1446	-	-
HCM Lane V/C Ratio	0.044	-	-	0.036	0.043	0.144	0.045	0.048	-	-
HCM Control Delay (s)	7.5	-	-	12.9	8.7	13.3	8.6	7.6	-	-
HCM Lane LOS	A	-	-	B	A	B	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.1	0.5	0.1	0.2	-	-

HCM 6th TWSC
18: Yosemite St & South Site Access

2044 Total Traffic
PM Peak Hour

Intersection												
Int Delay, s/veh	3.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷		↶	↶	↶	↶	↶	↶
Traffic Vol, veh/h	6	0	39	86	0	13	65	174	140	21	126	10
Future Vol, veh/h	6	0	39	86	0	13	65	174	140	21	126	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	200	-	-	200	-	-	250	-	250	250	-	250
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	0	41	91	0	14	69	185	149	22	134	11

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	583	650	134	527	512	185	145	0	0	334	0	0
Stage 1	178	178	-	323	323	-	-	-	-	-	-	-
Stage 2	405	472	-	204	189	-	-	-	-	-	-	-
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	424	388	915	462	465	857	1437	-	-	1225	-	-
Stage 1	824	752	-	689	650	-	-	-	-	-	-	-
Stage 2	622	559	-	798	744	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	396	363	915	419	435	857	1437	-	-	1225	-	-
Mov Cap-2 Maneuver	396	363	-	419	435	-	-	-	-	-	-	-
Stage 1	784	738	-	656	619	-	-	-	-	-	-	-
Stage 2	583	532	-	748	731	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB				
HCM Control Delay, s	9.8		15.1		1.3		1.1				
HCM LOS	A		C								

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1437	-	-	396	915	419	857	1225	-	-
HCM Lane V/C Ratio	0.048	-	-	0.016	0.045	0.218	0.016	0.018	-	-
HCM Control Delay (s)	7.6	-	-	14.2	9.1	16	9.3	8	-	-
HCM Lane LOS	A	-	-	B	A	C	A	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0	0.1	0.8	0	0.1	-	-

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	0	3	5	384	256	3
Future Vol, veh/h	0	3	5	384	256	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	3	5	409	272	3

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	693	274	275	0	-	0
Stage 1	274	-	-	-	-	-
Stage 2	419	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	409	765	1288	-	-	-
Stage 1	772	-	-	-	-	-
Stage 2	664	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	407	765	1288	-	-	-
Mov Cap-2 Maneuver	407	-	-	-	-	-
Stage 1	768	-	-	-	-	-
Stage 2	664	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.7	0.1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1288	-	765	-	-
HCM Lane V/C Ratio	0.004	-	0.004	-	-
HCM Control Delay (s)	7.8	0	9.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	1	14	24	383	257	1
Future Vol, veh/h	1	14	24	383	257	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	15	26	407	273	1

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	733	274	274	0	-	0
Stage 1	274	-	-	-	-	-
Stage 2	459	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	388	765	1289	-	-	-
Stage 1	772	-	-	-	-	-
Stage 2	636	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	378	765	1289	-	-	-
Mov Cap-2 Maneuver	378	-	-	-	-	-
Stage 1	752	-	-	-	-	-
Stage 2	636	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.1	0.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1289	-	716	-	-
HCM Lane V/C Ratio	0.02	-	0.022	-	-
HCM Control Delay (s)	7.8	0	10.1	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

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	1	0	2	11	0	43	2	40	21	68	61	4
Future Vol, veh/h	1	0	2	11	0	43	2	40	21	68	61	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
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	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	0	2	12	0	46	2	43	22	72	65	4

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	292	280	67	270	271	54	69	0	0	65	0	0
Stage 1	211	211	-	58	58	-	-	-	-	-	-	-
Stage 2	81	69	-	212	213	-	-	-	-	-	-	-
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	660	628	997	683	636	1013	1532	-	-	1537	-	-
Stage 1	791	728	-	954	847	-	-	-	-	-	-	-
Stage 2	927	837	-	790	726	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	606	597	997	656	604	1013	1532	-	-	1537	-	-
Mov Cap-2 Maneuver	606	597	-	656	604	-	-	-	-	-	-	-
Stage 1	790	692	-	953	846	-	-	-	-	-	-	-
Stage 2	884	836	-	750	690	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	9.4		9.2		0.2		3.8	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1532	-	-	821	912	1537	-
HCM Lane V/C Ratio	0.001	-	-	0.004	0.063	0.047	-
HCM Control Delay (s)	7.4	0	-	9.4	9.2	7.5	0
HCM Lane LOS	A	A	-	A	A	A	A
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0.1	-

Intersection												
Int Delay, s/veh	3.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	0	4	31	0	27	7	34	55	31	39	4
Future Vol, veh/h	2	0	4	31	0	27	7	34	55	31	39	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
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	63	85	63	85	85	85	63	63	85	85	63	63
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	0	6	36	0	32	11	54	65	36	62	6

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	262	278	65	249	249	87	68	0	0	119	0	0
Stage 1	137	137	-	109	109	-	-	-	-	-	-	-
Stage 2	125	141	-	140	140	-	-	-	-	-	-	-
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	691	630	999	705	654	971	1533	-	-	1469	-	-
Stage 1	866	783	-	896	805	-	-	-	-	-	-	-
Stage 2	879	780	-	863	781	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	652	609	999	683	632	971	1533	-	-	1469	-	-
Mov Cap-2 Maneuver	652	609	-	683	632	-	-	-	-	-	-	-
Stage 1	859	763	-	889	799	-	-	-	-	-	-	-
Stage 2	843	774	-	836	761	-	-	-	-	-	-	-













Approach	EB		WB		NB		SB	
HCM Control Delay, s	9.3		10		0.6		2.6	
HCM LOS	A		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1533	-	-	848	792	1469	-
HCM Lane V/C Ratio	0.007	-	-	0.011	0.086	0.025	-
HCM Control Delay (s)	7.4	0	-	9.3	10	7.5	0
HCM Lane LOS	A	A	-	A	B	A	A
HCM 95th %tile Q(veh)	0	-	-	0	0.3	0.1	-

Queuing Reports

Queues
10: Quebec St & E. 160th Ave (SH 7)

2044 Total Traffic
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	24	734	131	202	1259	22	172	70	41	29	107	54
v/c Ratio	0.21	0.56	0.19	0.72	0.70	0.03	0.68	0.08	0.08	0.22	0.21	0.15
Control Delay	54.8	30.0	3.4	58.4	24.0	0.0	58.4	34.0	0.3	53.5	44.0	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.8	30.0	3.4	58.4	24.0	0.0	58.4	34.0	0.3	53.5	44.0	0.9
Queue Length 50th (ft)	17	212	0	138	370	0	118	21	0	20	36	0
Queue Length 95th (ft)	46	306	29	218	489	0	192	42	0	51	65	0
Internal Link Dist (ft)		888			1060			849			1281	
Turn Bay Length (ft)	550		415	525		415	250		570	230		200
Base Capacity (vph)	116	1305	681	367	1807	861	334	921	527	334	668	424
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.56	0.19	0.55	0.70	0.03	0.51	0.08	0.08	0.09	0.16	0.13
Intersection Summary												

Queues
11: Yosemite St & E. 160th Ave (SH 7)

2044 Total Traffic
AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	74	767	31	50	1351	66	60	91	177	41	189
v/c Ratio	0.27	0.39	0.03	0.11	0.73	0.08	0.21	0.22	0.63	0.10	0.42
Control Delay	8.2	11.2	0.7	6.0	17.7	3.1	30.8	13.0	42.4	29.0	12.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.2	11.2	0.7	6.0	17.7	3.1	30.8	13.0	42.4	29.0	12.6
Queue Length 50th (ft)	11	112	0	7	255	0	24	9	79	16	17
Queue Length 95th (ft)	31	190	4	23	406	19	68	51	176	49	82
Internal Link Dist (ft)		1070			840			637		1040	
Turn Bay Length (ft)	435		615	800		700	200		140		150
Base Capacity (vph)	280	3155	1418	482	3155	1418	503	654	481	690	678
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.24	0.02	0.10	0.43	0.05	0.12	0.14	0.37	0.06	0.28

Intersection Summary

Queues
12: Havana St & E. 160th Ave (SH 7)

2044 Total Traffic
AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	37	939	47	32	1191	14	38	91	17	17	97
v/c Ratio	0.10	0.49	0.05	0.07	0.63	0.02	0.17	0.28	0.08	0.06	0.29
Control Delay	3.7	8.5	1.8	3.5	10.2	0.0	24.9	10.9	24.2	23.6	9.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.7	8.5	1.8	3.5	10.2	0.0	24.9	10.9	24.2	23.6	9.4
Queue Length 50th (ft)	3	51	0	3	72	0	8	2	4	4	0
Queue Length 95th (ft)	10	160	9	9	227	0	40	41	23	22	38
Internal Link Dist (ft)		861			1065			1073		396	
Turn Bay Length (ft)	515		425	550		425	200		275		
Base Capacity (vph)	413	3539	1583	486	3539	1583	649	797	608	871	792
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.27	0.03	0.07	0.34	0.01	0.06	0.11	0.03	0.02	0.12

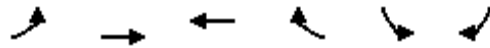
Intersection Summary

Queues

14: E. 160th Ave (SH 7) & Tuscon St

2044 Total Traffic

AM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	45	1287	1532	39	98	65
v/c Ratio	0.18	0.46	0.61	0.03	0.50	0.28
Control Delay	4.1	4.3	10.0	2.1	53.6	13.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.1	4.3	10.0	2.1	53.6	13.9
Queue Length 50th (ft)	5	112	258	0	64	0
Queue Length 95th (ft)	14	179	382	11	118	40
Internal Link Dist (ft)		1375	1198		2530	
Turn Bay Length (ft)	450			325		
Base Capacity (vph)	270	2813	2517	1137	413	419
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.46	0.61	0.03	0.24	0.16

Intersection Summary

Queues
10: Quebec St & E. 160th Ave (SH 7)

2044 Total Traffic
PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	61	1485	182	147	1055	18	210	172	179	31	99	41
v/c Ratio	0.39	0.94	0.11	0.63	0.58	0.02	0.82	0.24	0.11	0.25	0.35	0.15
Control Delay	52.6	40.8	0.1	54.6	20.0	0.1	68.9	38.8	0.1	51.4	49.2	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	52.6	40.8	0.1	54.6	20.0	0.1	68.9	38.8	0.1	51.4	49.2	1.2
Queue Length 50th (ft)	39	477	0	93	253	0	136	53	0	20	33	0
Queue Length 95th (ft)	83	#722	0	161	356	0	#283	93	0	52	62	0
Internal Link Dist (ft)		888			1060			849			1281	
Turn Bay Length (ft)	550		415	525		415	250		570	230		200
Base Capacity (vph)	223	1581	1583	326	1847	878	257	785	1583	257	687	432
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.94	0.11	0.45	0.57	0.02	0.82	0.22	0.11	0.12	0.14	0.09

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
11: Yosemite St & E. 160th Ave (SH 7)

2044 Total Traffic
PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	210	1415	74	63	1078	183	59	113	120	33	130
v/c Ratio	0.59	0.71	0.08	0.24	0.60	0.20	0.24	0.33	0.54	0.10	0.34
Control Delay	13.4	15.3	2.6	6.6	13.9	2.1	33.0	22.1	41.2	30.5	9.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.4	15.3	2.6	6.6	13.9	2.1	33.0	22.1	41.2	30.5	9.2
Queue Length 50th (ft)	28	246	0	8	164	0	24	26	51	13	0
Queue Length 95th (ft)	#73	387	18	23	258	27	68	83	125	43	48
Internal Link Dist (ft)		1070			840			637		1040	
Turn Bay Length (ft)	435		615	800		700	200		140		150
Base Capacity (vph)	353	3316	1488	285	3316	1495	392	521	364	532	545
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.43	0.05	0.22	0.33	0.12	0.15	0.22	0.33	0.06	0.24

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Queues
12: Havana St & E. 160th Ave (SH 7)

2044 Total Traffic
PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	111	1434	71	148	1246	32	49	85	10	14	57
v/c Ratio	0.32	0.75	0.08	0.51	0.60	0.03	0.29	0.33	0.06	0.06	0.23
Control Delay	5.5	14.3	2.2	15.2	11.1	0.6	34.8	16.4	31.1	30.7	10.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.5	14.3	2.2	15.2	11.1	0.6	34.8	16.4	31.1	30.7	10.7
Queue Length 50th (ft)	10	210	0	13	168	0	18	7	4	5	0
Queue Length 95th (ft)	25	314	15	66	251	4	58	51	20	24	29
Internal Link Dist (ft)		861			1065			1073		396	
Turn Bay Length (ft)	515		425	550		425	200		275		
Base Capacity (vph)	359	3473	1555	297	3473	1555	430	555	404	576	534
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.41	0.05	0.50	0.36	0.02	0.11	0.15	0.02	0.02	0.11

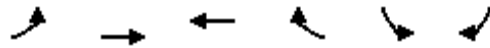
Intersection Summary

Queues

14: E. 160th Ave (SH 7) & Tuscon St

2044 Total Traffic

PM Peak Hour



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	76	1732	1607	115	66	41
v/c Ratio	0.29	0.58	0.59	0.09	0.38	0.21
Control Delay	4.9	4.3	8.8	1.2	53.6	16.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	4.9	4.3	8.8	1.2	53.6	16.7
Queue Length 50th (ft)	8	173	272	0	45	0
Queue Length 95th (ft)	18	258	381	17	89	33
Internal Link Dist (ft)		1375	1198		2530	
Turn Bay Length (ft)	450			325		
Base Capacity (vph)	272	3003	2710	1239	320	320
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.58	0.59	0.09	0.21	0.13

Intersection Summary