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October 4, 2024
Jeremiah Fettig
City of Aurora
Planning Department

Re: Third Submission Review – DA 2170-07 – Stafford Logistics Center Commercial – Master Plan Amendment, Infrastructure Site Plan, and Plat.
Application Number: DA-2170-07
Case Numbers: 2024-3001-00; 2019-7001-04; 2024-6002-00

Dear Jeremiah Fettig,

Thank you for your review of our third Master Plan amendment, Infrastructure Site Plan, and Plat submittal which was submitted on September 6, 2024. Enclosed you will find our responses to comments in blue. Should you have any questions or see a need for further discussion regarding our responses, please feel free to contact me at 303.561.3333

Sincerely,

Max Newstrom, P.E.
Project Manager

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PLANNING DEPARTMENT COMMENTS

1. Community Questions, Comments and Concerns

1A. No public comment has been received.

WM Response: Understood, thank you.

2. Completeness and Clarity of the Application

2A. The invoice has been paid. No fees are due.

WM Response: Understood, thank you.

2B. Cloud all revisions being made within each TAB. Update the cover sheet denoting the second amendment.

WM Response: Cover sheet with rev clouds has been added to the PIP.

3. Master Plan

3A. Consider revising the abandonment of the existing/old Picadilly Road.

WM Response: As discussed with the City previously, the revision to existing Picadilly was due to a potential Multifamily user and requirements of their site. This is no longer the case, as such, the language of the existing/old Picadilly Road abandonment is to remain with this project. Future transition of this roadway to a local street is to be the responsibility of the Site plan and multifamily developer at the time of that land area's site development plan.

4. Infrastructure Site Plan Comments

4A. Sheet #1: Remove the recorder's certificate. It is no longer used.

WM Response: Recorder's certificate has been removed.

5. Public Improvement Plan Comments

5A. Staff encourages the applicant to revise language regarding the existing/old Picadilly Road. Removal of language regarding abandonment is recommended. The need for existing/old Picadilly Road should be evaluated with future development. The transition of the roadway to a local street would improve connectivity and frontage requirements depending on land use.

WM Response: As discussed with the City previously, the revision to existing Picadilly was due to a potential Multifamily user and requirements of their site. This is no longer the case, as such, the language of the existing/old Picadilly Road abandonment is to remain with this project. Future transition of this roadway to a local street is to be the responsibility of the Site plan and multifamily developer at the time of that land area's site development plan.

6. Landscaping (Kelly Bish / 303-739-7189 / kbish@auroragov.org / Comments in bright teal)

6A. Landscaping has reviewed and has no additional comments at this time.

WM Response: Thank you for your review.

REFERRAL COMMENTS FROM OTHER DEPARTMENTS

7. Traffic Engineering (Steven Gomez / 303-739-7336 / sgomez@auroragov.org / (Comments in orange))

Public Improvement Plan Comments:

7A. Additional comments on the PIP may be required based on addressing TIS comments.

WM Response: Understood, Public Improvement Plan has been updated to remain consistent with the TIS

7B. Page #5: Add percentages.

WM Response: Percentages added accordingly.

7C. Page #13: Previous comment not addressed 50%.

WM Response: Apologies, text has been updated accordingly.

7D. Page #15: RIRO access shown in TIS.

WM Response: PIP now calls out this RIRO access.

TIS Comments:

7E. Page #1:

- Provide intersection LOS/delay tables for existing and all horizon years for all traffic conditions. For signalized intersections provide LOS/delay for the overall intersection and each traffic movement
FHU Response: Appendix H includes LOS/Delay as a table.
- Per pre-app notes a site buildout year and/or before the Picadilly/I-70 interchange being opened to traffic analysis is required.
FHU Response: Added short term 2030.
- Verify queues at multiple intersections can be accommodated and will not require the adjacent intersections to have restricted movements.
FHU Response: Queues look ok.

7F. Page #4: Site buildout year and/or before the Picadilly/I-70 interchange is opened and interim Picadilly Road cross-section traffic analysis is required.

FHU Response: Added 2030 Time Horizon.

7G. Page #11: No comment response for previous comments:

- Internal capture seems high, verify.
- Verify that pass-by was determined after internal capture reduction.
FHU Response: Updated Trip Generation with internal capture followed by pass by.

7H. Page #14: Show and evaluate access on Colfax Ave associated with these site traffic volumes.

FHU Response: Found and updated misplaced paths in vistro that wrapped around the Amazon site.

7I. Page #14: Align accesses, consistent with the Site Plan, typ for all graphics. Adjust intersection numbering.

FHU Response: Graphics not to scale.

7J. Page #14: Verify traffic assignment with trip generation/distribution.

FHU Response: Clarified trip distribution. 10% to SW, 15% to SE.

7K. Page #15: Add short-term background traffic volumes.

FHU Response: Added 2030 Time Horizon.

7L. Page #17: Add STOP sign.

FHU Response: No stop control at this intersection.

7M. Page #20: Add STOP sign.

FHU Response: No stop control at this intersection.

7N. Page #20: Verify that NB left, and SB left turn lanes, including tapers can be accommodated based on reported queues. Intersection 2 may need to be restricted to RIRO only.

FHU Response: This should fit, 375 ft NBL and 50 ft SBL, about 460 feet of space. This plus taper should fit into the available space.

7O. Page #23: Verify that NB left, and SB left turn lanes, including tapers can be accommodated. Intersection 2 may need to be restricted to RIRO only.

FHU Response: These bays appear to fit tin the available space.

7P. Page #23: Add intersection 3.

FHU Response: No queues at intersection three.

7Q. Page #50: Percentages high, verify.

FHU Response: This follows the NCHRP 684 methodology, percentages have not been changed from the standard.

8. Civil Engineering (Christopher Eravelly / 303-739- 7457 / ceravelly@auroragov.org) **Infrastructure Site Plan Comments:**

8A. Engineering has reviewed the submittal and has no additional comments at this time

WM Response: Thank you for your review.

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9. Fire / Life Safety (Erick Bumpass / 303-739-7627 / ebumpass@auroragov.org / Comments in blue)
Infrastructure Site Plan Comments:

9A. Please provide a Cyclone Turn Template for the Fire Apparatus.

WM Response: Cyclone Turn Template for the Fire Apparatus is now provided with submittal.

10. Aurora Water/Utilities (Samantha Bayliff / sbayliff@auroragov.org

10A. Aurora Water has reviewed the submittal and has no additional comments at this time. Future revisions/changes may necessitate comments.

WM Response: Understood, thank you for your review.

11. PROS (Erick Del Angel / 303-739-7131 / edelange@auroragov.org / Comments in mauve)
Public Improvement Plan Comments:

11A. Tab 9 identifies PA-9 as a potential MF site. Remove it there or update this description with a note at the beginning mentioning that it is a potential MF site, similar to what is written for PA-13.

WM Response: The callout on TAB 9 is incorrect and has been revised. It no longer states that PA-9 is a potential MF site.

Tab 8 - Land Use Matrix Comments:

11B. Tab 9 calls out this area as a potential MF site. If this is the case, then include PA-9 in this text at the top stating that PA-9 parkland will be required on-site as well.

WM Response: Callout on Tab 9 was incorrect and has been removed. Apologies for the confusion.

11C. Merge cells and insert the following text: Density will be limited to the ability of the planning area to meet PROS Parkland Dedication and Open Space Requirements on-site. Comment added to Tab 8 to include Form J as well.

WM Response: Cells have been merged and text revised accordingly. We have elected to proceed with the second option provided on TAB 9. Note was added to TAB 9 stating that MF density will be limited to the ability of PA-13 and PA-9 to meet PROS Parkland Dedication and Open Space Requirements on their respective sites. In addition, it should be noted that the 70' Regional trail Corridor along Colfax will be credited towards meeting some of the PROS requirement depending on the proposed multifamily density at site planning stage.

11D. Insert "Construction of parkland and open space assets to be completed by the time CO is issued for MF component."

WM Response: "NA" has been replaced with the note above.

11E. Merge this cell with the two cells to the right and insert the following text: Density will be limited to the ability of the planning area to meet PROS Parkland Dedication and Open Space Requirements on-site.

WM Response: PA-9 has remained as it is no longer proposed as a residential parcel.

11F. Merge this cell with the two cells to the right and insert the following text: Density will be limited to the ability of the planning area to meet PROS Parkland Dedication and Open Space Requirements on-site.

WM Response: Cells merged and note added. Thank you.

Tab 9 - Open Space Comments:

11G. Remove this as a potential MF site or update PIP with a note at the beginning of the PA-9 description mentioning that it is a potential MF site, like what is written for PA-13. Also, include mention of PA-9 in the text at the top of this sheet.

WM Response: Potential MF callout has been removed. Apologies for the confusion.

11H. Form J should be included at this point as a residential component has been added to the development.

There are two options to reconcile this:

- Add a Form J to this document filling out all fields that may already be known and putting "TBD" on the rest. If this option is chosen, column A should include PA-13 for trail corridor, parkland, and open space, PA-10 for trail corridor and open space, PA-9 for parkland and open space, PA-3 for trail corridor, and PA-2 for trail corridor.
- Don't add Form J, but include a note on this sheet stating the following: "MF density will be limited to the ability of PA-13 and PA-9 to meet PROS Parkland Dedication and Open Space Requirements on their respective sites. In addition, it should be noted that the 70' Regional Trail Corridor along Colfax will be credited towards meeting some of the PROS requirements depending on the proposed multifamily density at the site planning stage."

WM Response: We have elected to proceed with option 2. Note has been added to TAB 9 accordingly.

12. Land Development Services (Maurice Brooks / 303-739-7294 / mbrooks@auroragov.org / Comments in magenta)

Plat Comments:

12A. Sheet #1: Send in the updated Title Commitment to be dated within 30 calendar days of the plat approval date. (This Commitment should be submitted at the time of your final submittal of the electronic Plat for recording.)

WM Response: Understood. Thank you.

12B. Sheet #1: Send in the Statement of Authority to confirm the owner's signature block.

WM Response: Statement of Authority to be provided with submittal.

12C. Sheet #3: Add easements for hydrants – all instances. These items have no connection to the WE & DE inside the Tracts and need the connections.

WM Response: Easements for hydrants have been added to plat.

12D. Sheet #3: Add the Bar Scale on the details (Typ.)

WM Response: Scale bars added to details.

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12E. Sheet #4: Detail C is showing two different types of easements. If there are two types of easements, then a line of delineation will be needed at the change of the easements.

WM Response: Plat updated accordingly.

12F. Sheet #4: Connect the easement lines - extend the easement here.

WM Response: This line was not needed after label update.

12G. Sheet #4: Detail D: connect the Drainage easement to the other Drainage easement in the Tract.

WM Response: Plat updated accordingly.

Site Plan:

12H. Sheet #3: Please see if the hammerhead turnaround needs to be in an easement. Confirm with Fire/Life Safety.

WM Response: Per conversations with Mike Dean, an easement is not required for this turnaround area because we do not need fire lane in these properties in the future.

12I. Sheet #3: Fix the text duplications and area differences (Lot 3).

WM Response: Text duplications have been removed and lot areas now match the plat.

12J. Sheet #3: Revise text overlap.

WM Response: Text overlap has been revised.

12K. Sheet #9: Check the R.O.W. line on Colfax.

WM Response: Dimension has been updated to the correct ROW line.

12L. Sheet #10: Confirm with Aurora Water Dept. if these facilities need to be covered by an easement.

WM Response: Stubs are now covered by an easement

12M. Sheet #10: Add hydrant easements – all instances.

WM Response: Water easement now added for each hydrant.

12N. Sheet #11: Add hydrant easements – all instances.

WM Response: Water easement now added for each hydrant.

12O. Sheet #12: Add hydrant easement.

WM Response: Water easement is now called out.

12P. Sheet #13: Address all easement comments.

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WM Response: All easement comments have been addressed.

12Q. Sheet #14: Address all easement comments.

WM Response: All easement comments have been addressed.

12R. Sheet #15: Add hydrant easements – all instances.

WM Response: Hydrants are now covered by water easement.

12S. Sheet #15: Revise sheet number. Two #14 sheets.

WM Response: Sheet numbering has been corrected.

12T. Sheet #16: Add hydrant easement.

WM Response: Hydrant easement has been added.

13. Land Development Services Easements (Grace Gray / ggray@auroragov.org)

13A. All new easements are to be dedicated by plat. Encroachments into easements require a license agreement.

WM Response: Understood, thank you.

14. Public Art (Roberta Bloom / 303-739-6747 / rbloom@auroragov.org)

14A. At the time of this letter, no comments have been received from Public Art. Once I receive these, I will forward them to you.

WM Response: Understood, thank you.

REFERRAL COMMENTS FROM OTHER AGENCIES

15. Xcel Energy (PSCO)

15A. Comment letter attached.

WM Response: Thank you for your review. The developer is aware that the application process for any new natural gas or electric, or any modification to any of the existing facilities is at the website provided.

 mments provided on 09/23/24 seg

1. previous comment not addressed
provide intersection LOS/delay tables for existing and all horizon years for all traffic conditions. For signalized intersections provide LOS/delay for overall intersection and each traffic movement

2. per pre-app notes a site buildout year and/or prior to the Picadilly/I-70 interchange being opened to traffic analysis is required.

3. Verify queues at multiple intersections can be accommodated and will not require the adjacent intersections to have restricted movements.

TF
Sta

NorthPoint Development
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Prepared by:

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FHU Reference No. 123785-01

May 2024

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I. INTRODUCTION

NorthPoint Development is proposing to develop approximately 350 acres primarily in the southwest quadrant of the Picadilly Road and Colfax Avenue intersection in Aurora, Colorado.

The proposed industrial development will consist of approximately 4.2 million square feet of industrial park, which is well underway with four of six proposed buildings already completed. The development will also include mixed retail and multifamily housing. The commercial portion will be located in the northeast corner of the overall site and will have a gas station, a shopping center, several fast-food restaurants, a car wash, multifamily housing, and other commercial land uses. This Transportation Impact Study (TIS) addresses the commercial and residential component of the site, which comprises the northeastern-most 50 acres focused around the intersection of Picadilly Road and 13th Avenue.

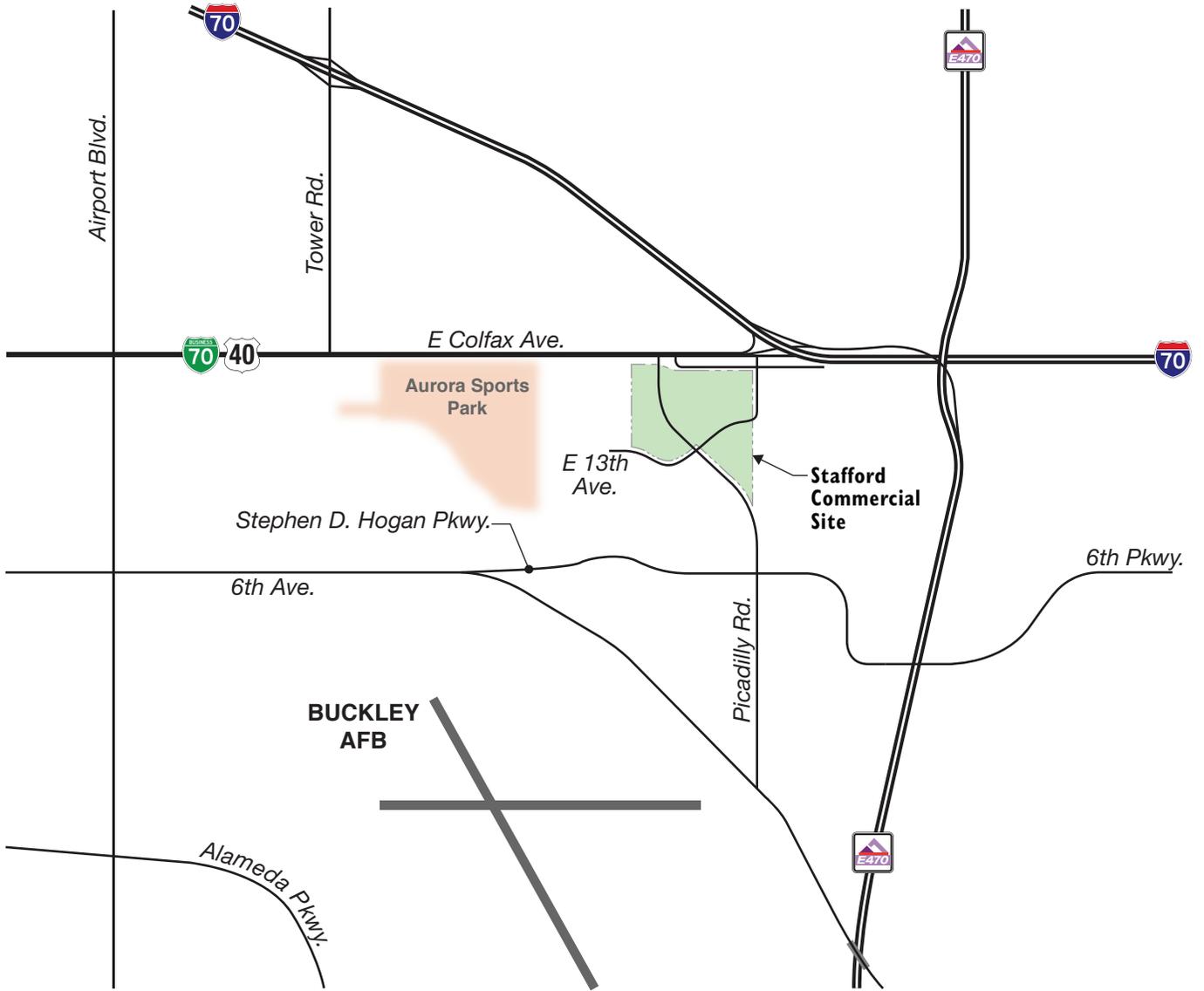
Figure 1 illustrates the location of the commercial site and the adjacent primary roadway network (existing and future planned roadways). **Figure 2** depicts the current site plan concept.

The purpose of this TIS is to estimate the potential impacts specific to the proposed development and to identify any resultant required roadway and/or intersection improvements and traffic control needs. This study examines the traffic impacts within the context of the year 2040 horizon.

This TIS provides operational information, including intersection level of service (LOS) and peak hour queue lengths, both of which inform recommendations in achieving long-term functionality. This TIS serves as an update to the Stafford Logistics Center Traffic Study completed in March 2021 specific to the commercial and residential parcels.



site buildout year and/or prior to the Picadilly/I-70 interchange being opened and interim Picadilly Road cross section traffic analysis is required.



II. EXISTING CONDITIONS

II.A. Land Use

The proposed commercial site is currently undeveloped. The industrial component of the site has mostly begun to build out over the last few years. Limited development around the site exists, including the Aurora Sports Park and M & M Auto to its west, single-family housing to its north (which is set back from Colfax), and large-lot residential development southeast of the site. An approved mixed-use development, Horizon Uptown, is planned east of the site across Picadilly Road and has begun residential development approximately one-half-mile south along the east side of Picadilly Road near Stephen D. Hogan Parkway.

II.B. Roadway System

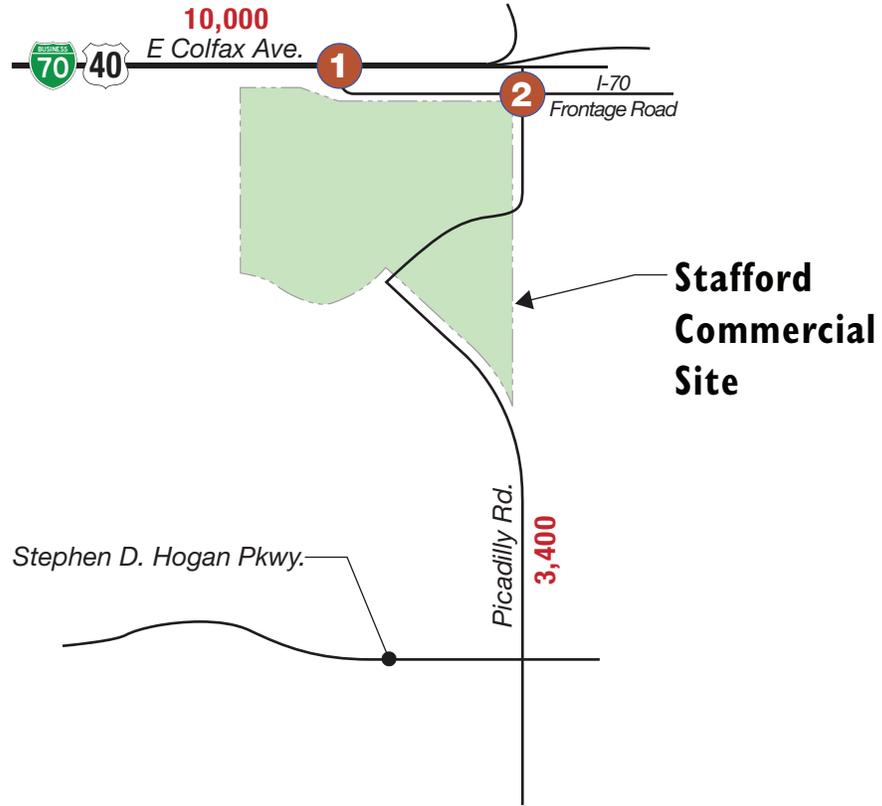
Roadways near the site are further described as follows:

- **Colfax Avenue** is a four-lane divided east-west state highway (US 40 and Business I-70) along the site's northern boundary. Currently a four-lane median-separated highway adjacent to the site, this roadway extends west through Aurora to downtown Denver and further to Golden. To the east, Colfax Avenue directly merges with I-70. Drivers also have the option of using the I-70 Frontage Road along the south side of Colfax Avenue, which connects to Gun Club Road through the I-70/E-470 interchange and parallels I-70 along its south side to the east. The posted speed limit adjacent to the site is 55 miles per hour (MPH).
- **Picadilly Road** is a two-lane north-south road that currently extends along the site's east side. Picadilly Road extends approximately 2 miles south from the I-70 Frontage Road to State Highway 30 (SH 30). Longer term, this roadway's alignment is planned to shift west near Colfax Avenue, extend north to a new interchange with I-70, and connect with the existing Picadilly Road north of Smith Road. Its ultimate cross-section is planned to be a six-lane major arterial facility. Adjacent to the site, the existing posted speed limit is 45 MPH. Initial phases of this realignment have occurred from the southern edge of the Stafford Commercial site up to 13th Avenue. While also completed, the segment between 13th Avenue and Colfax Avenue remains closed until phasing with the proposed interchange is completed.
- **13th Avenue** is a three-lane local roadway constructed west of realigned Picadilly Road through the already completed industrial portions of the Stafford Logistics Center with a posted speed of 35 MPH. A half section of the ultimate four-lane arterial segment of 13th Avenue has also been completed to the east of realigned Picadilly Road to the existing Picadilly Road alignment to maintain connectivity with Colfax Avenue via the I-70 Frontage Road prior to opening the northern section of realigned Picadilly Road as part of the phasing of the I-70/Picadilly Road interchange anticipated to be completed in 2025.

II.C. Traffic Volumes and Operations

Weekday AM and PM peak hour turning movement counts were collected along Colfax Avenue as part of the last TIS for this site. Traffic counts data along Picadilly Road were obtained from the 6th Avenue Extension study in support of the Stephen D. Hogan Parkway. **Figure 3** shows the data. These improvements have been developed based on the current understanding of the I-70/Picadilly Road interchange project and the findings of the 2020 I-70/Picadilly Road System Level Study (SLS). It is acknowledged that results of the interchange project study may provide additional recommendations at arterial intersections in the study area. **Appendix A** contains count data sheets.

KEY MAP



LEGEND

XXX(XXX) = AM(PM) Peak Hour Traffic Volumes

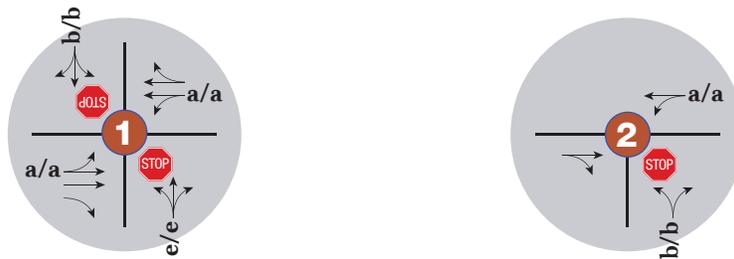
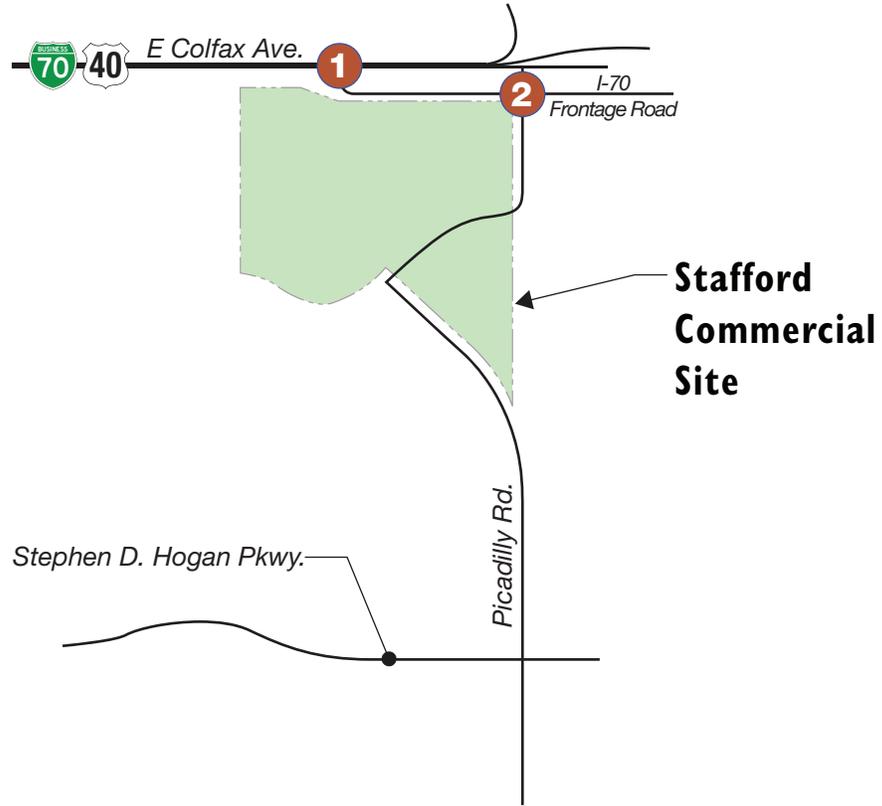
XXXX = Daily Traffic Volumes

As shown, Colfax Avenue serves 10,000 vehicles per day (VPD). Picadilly Road serves a fraction of the traffic that Colfax Avenue serves at 3,400 VPD and approximately 300 vehicles per hour during peak hours. Turning movements at the Picadilly Road/I-70 Frontage Road and the Colfax Avenue/I-70 Frontage Road intersections indicate a strong pattern between Colfax Avenue to the west and Picadilly Road to the south. While it is acknowledged that the exiting counts have aged beyond what is typically accepted, City staff has agreed that new counts would provide little value given the temporary nature of current roadway alignments that will change again over the course of the next two years with the I-70/Picadilly Road interchange project.

Traffic operations within the study area were evaluated according to techniques documented in the Highway Capacity Manual, 6th Edition (Transportation Research Board, 2016) using the existing traffic volumes, intersection geometry, and traffic control. Trafficware's Synchro traffic analysis software (Version 10.3) was used to perform the LOS calculations. LOS is a qualitative measure of traffic operational conditions based on roadway capacity and vehicle delay. LOS is described by a letter designation ranging from A to F, with LOS A representing almost free-flow travel, while LOS F represents congested conditions. For STOP controlled intersections, LOS is calculated for each movement that must yield the right-of-way. In urbanized areas, LOS D is typically considered to be acceptable for peak hour traffic operations and is the standard set in the City of Aurora TIS Guidelines.

Figure 4 shows the existing traffic control, intersection geometry and the results of the LOS analyses (Existing LOS worksheets are included in **Appendix B**). As indicated, all intersections currently operate within acceptable parameters, at LOS B or better, during peak times with the exception of the northbound approach at the Colfax Avenue/I-70 Frontage Road intersection, which operates at LOS E during both the AM and PM peak hours due to heavy northbound left turns. Previous analysis provided in the 2021 Stafford Logistics Center TIS indicated that signalization at the intersection of Colfax Avenue/I-70 Frontage Road is warranted under current conditions. However, Colorado Department of Transportation (CDOT) does not support signalization of this location as this intersection will be eliminated upon realignment of Picadilly Road, and the new intersection of Picadilly Road/Colfax Avenue should be signalized upon construction of the realignment as a part of the I-70/Picadilly Road interchange project.

KEY MAP



LEGEND

x/x = AM/PM Peak Hour Unsignalized Intersection Level of Service

 = Stop Sign

III. PROPOSED CONDITIONS

III.A. Site Trip Generation

A trip generation analysis for the proposed site is presented in Trip Generation, 11th Edition, Institute of Transportation Engineers (ITE) generation estimates.

no comment response for previous comments

1. Internal capture seems high, verify

2. verify pass-by was determined after internal capture reduction

Table I. Stafford Com

Land Use (Trip Generation Category)	Quantity	Daily Vehicle Trips	AM Peak Hour Trips			PM Peak Hour Trips		
			In	Out	Total	In	Out	Total
Shopping Center w/ no Grocery (#821)	52.5 KSF	3,545	56	35	91	134	138	272
Coffee/Donut Shop w/ Drive-Through (#937)	2.3 KSF	1,227	101	97	198	45	45	90
Multifamily Housing (Mid-Rise) (#221)	280 DUs	1,289	26	86	112	67	43	110
Mini-Warehouse (#151)	231.7 KSF	336	12	9	21	16	19	35
Automated Car Wash (#948)	1 Tunnel	780	10	10	20	39	39	78
Fast Food Restaurant w/ Drive-Through (#934)	3 KSF (3x) and 5.1 KSF	6,590	320	310	630	244	221	465
Gas/Service Station (#944)	24 pumps	4,128	123	124	247	167	167	334
Subtotal		17,895	648	671	1,319	712	672	1,384
Pass by Reduction²		4,692	4	254	508	277	277	554
Internal Capture Reduction¹		2,280	25	25	50	4	114	228
Net New Trips		10,923	369	392	761	321	281	602

- Daily internal capture is assumed to be 10 times the PM value as calculated using ITE methodology. See attached NCHRP 684 Worksheets for peak hours.
- Pass by reduction applied using current ITE rates for Gas/Service Station (63% AM, 57% PM), Shopping Center (40% AM, 40% PM, 29% Daily), Fast Food Restaurant (50% AM, 55% PM), and Coffee/Doughnut Shop for current site plan.

National Cooperative Highway Research Program (NCHRP) 684 provides the methodology for internal capture reductions based on the interactions of different land uses within mixed-use developments, including office, retail, restaurant, residential, cinema, and hotel. The methodology considers that mixed-use developments will keep a portion of the trips generated internal to the site, thereby reducing impacts to the adjacent roadway network. This methodology was applied to the site based on the specific land use mix presented in **Table I**.

Pass-by reductions are also taken for uses where vehicles traveling on a roadway adjacent to the site may stop to use certain services along the route of an existing trip. Pass-by reductions were taken for the Shopping Center, Coffee/Donut Shop, Fast Food Restaurant, and Gas/Service station based on percentages for these uses found in the ITE Trip Generation Manual.

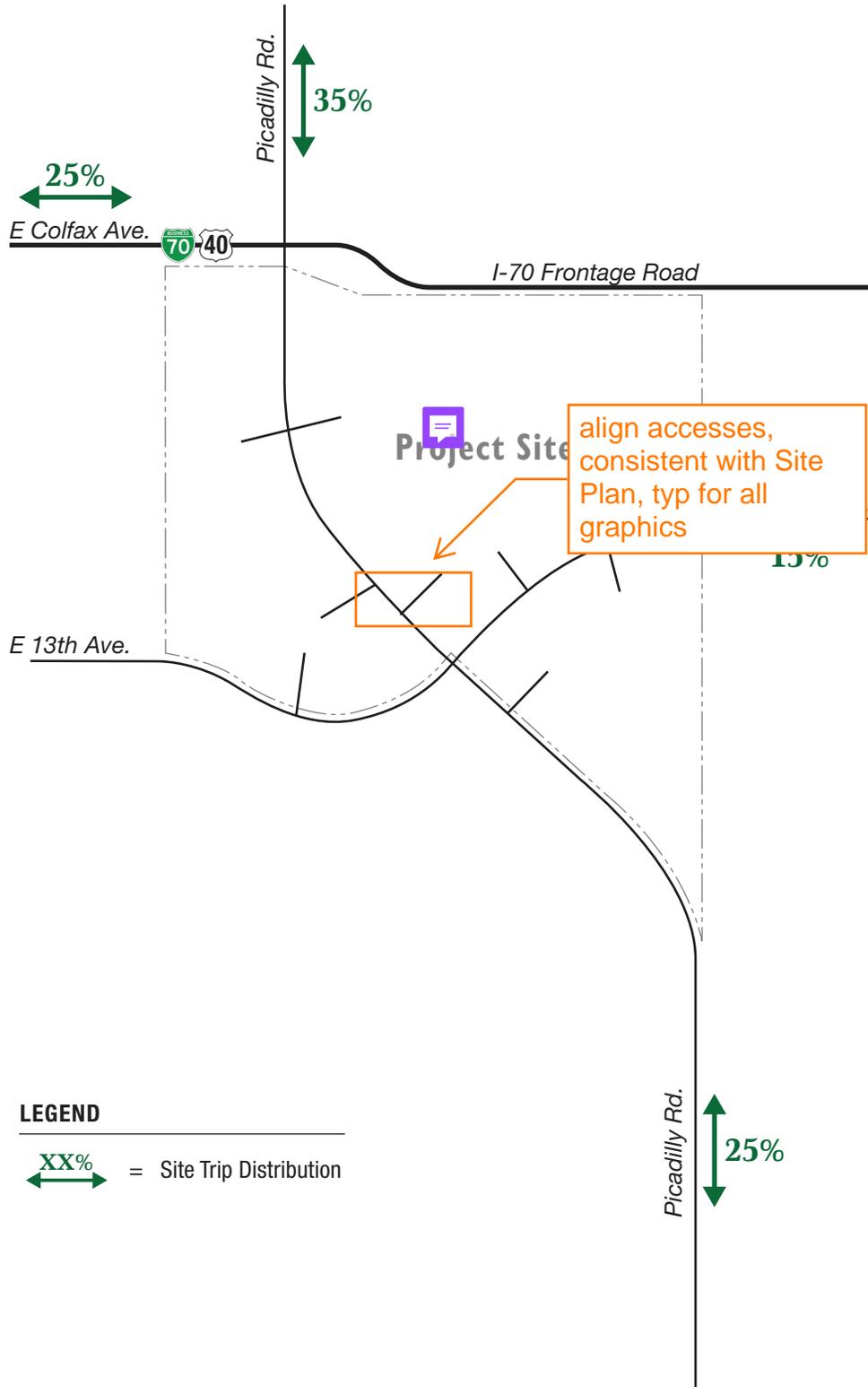
A comparative analysis of trip generation between the current site plan and the 2021 Stafford Logistics Center TIS for the commercial parcels was prepared to help guide the site plan development. That analysis in **Appendix C** includes ITE trip generation rates, pass-by percentages, and NCHRP 684 internal capture worksheets.

As shown in **Table I**, the proposed development would generate approximately 10,923 new external trips per day, with approximately 761 AM peak hour trips and approximately 602 PM peak hour trips.

III.B. Trip Distribution and Traffic Assignment

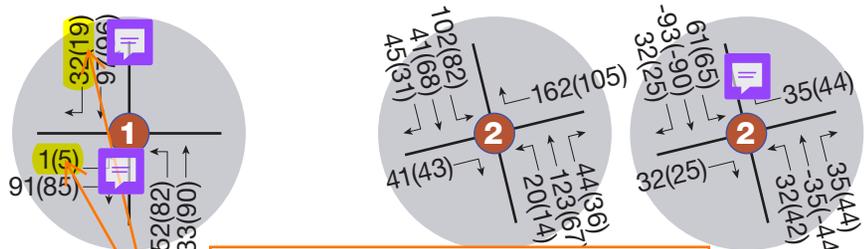
Trip distribution percentages for this site were based, in part, on the turning movement counts and on the Northeast Aurora Transportation Study (NEATS) travel demand model. While not fully in the NEATS study area, the site is immediately adjacent to the NEATS study area, and the City of Aurora requested that travel demand model be used for this project.

Figure 5 shows the long-term site-trip distribution percentages for the retail portions of the site. Twenty-five percent of trips come into and out of the site from the west using Colfax Avenue or streets accessed via Colfax. A further 25 percent come from the south using Picadilly Road to access Stephen D. Hogan Parkway. Thirty-five percent use Picadilly Road to the north to access the I-70 interchange. A final 15 percent will use 13th Avenue to the east. **Figure 6** shows the long-term trip assignments resulting from applying the percentages for the commercial and residential portions of the site. At intersections where pass-by trips apply, these trips are shown separately. Picadilly Road is projected to serve approximately 6,500 VPD south of Colfax Avenue and 1,400 VPD south of 13th Avenue. 13th Avenue is projected to serve approximately 2,500 VPD east of Picadilly Road and 2,800 VPD west of Picadilly Road.



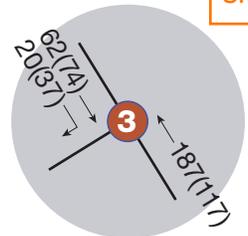
LEGEND

XX% = Site Trip Distribution

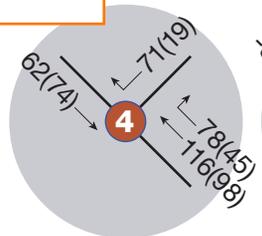
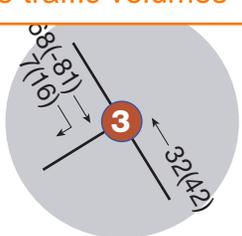


show and evaluate access on Colfax Ave associated with these site traffic volumes

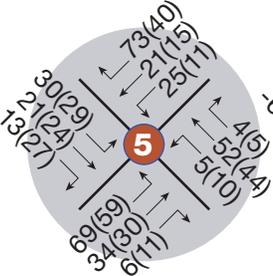
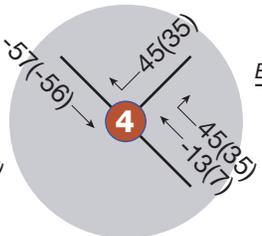
Pass-By Trips



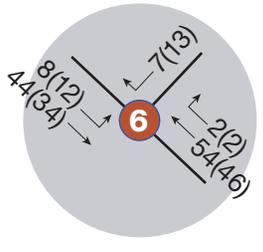
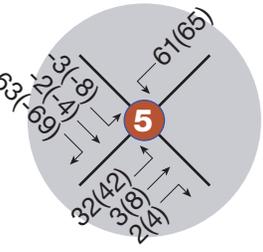
Pass-By Trips



Pass-By Trips



Pass-By Trips

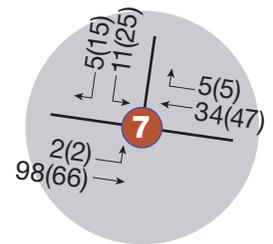
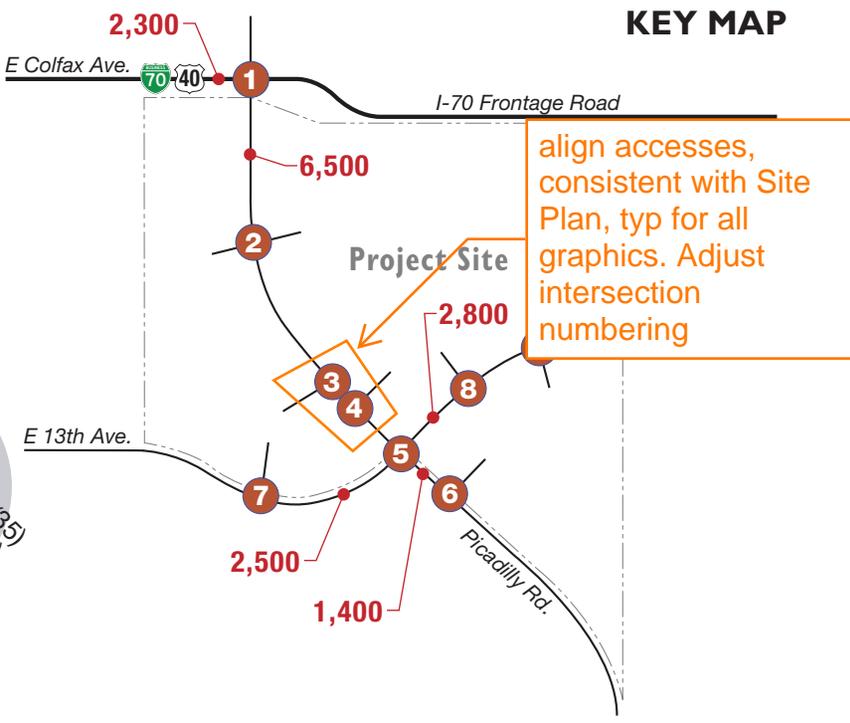


verify traffic assignment with trip generation/distribution.

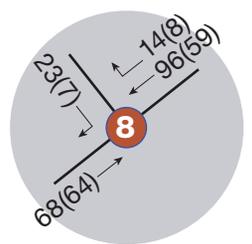
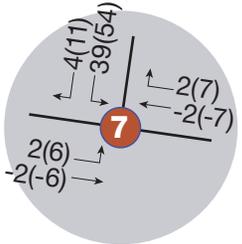
LEGEND

XXX(XXX) = AM(PM) Peak Hour Traffic Volumes

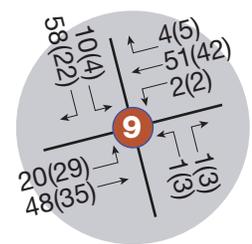
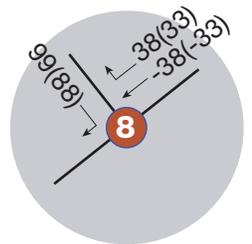
Site Access Traffic Volumes



Pass-By Trips



Pass-By Trips



IV. FUTURE CONDITIONS

IV.A. Long-term Future Background

Roadway System

By Year 2040, Stafford is assumed to be built out. This includes the existing roadways, as well as:

- Full realignment of Picadilly Road to the west at Colfax Avenue and buildout to a six-lane arterial cross-section.
- Extension of Picadilly Road north of Colfax Avenue crossing over I-70 and connecting with Picadilly Road at Smith Road.
- A reconfigured interchange between I-70 and Picadilly Road providing all movements to/from I-70 (not all are provided today), and the narrowing of the east leg of the Colfax Avenue/Picadilly Road intersection to a two-lane cross-section for the purposes of providing access to the property located in the northeast quadrant of the intersection.
- Completion of 13th Avenue to the east of realigned Picadilly Road across the Horizon Uptown Development to the I-70/E-470 interchange complex as a four-lane arterial.

Traffic Volumes

Long-term background traffic has been estimated from traffic projections made in the 2021 FHU TIS of this development. The commercial site generated traffic volumes were subtracted from the 2040 total traffic volumes to find 2040 background traffic volumes. The 2021 projections were adjusted to reflect current Denver Regional Council of Governments (DRCOG) travel demand factors. The 2021 projections were made in the I-70/Picadilly Road Interchange SLS. In developing background traffic volumes, adjustments were made to the interchange projections to remove trip volumes associated with the Stafford development. Volumes were also added for the southbound legs of intersections along Colfax Avenue to account for the undeveloped strip of land between Colfax Avenue and the residential development to the north and the 65-acre parcel between Lisbon Street and Picadilly Road, which are all zoned for commercial use. ITE land use 820 (Shopping Center) with an FAR of 0.2 was assumed for these properties. Results of the above background traffic forecasts are illustrated on **Figure 7**. Picadilly Road is projected to serve approximately 25,000 VPD south of Colfax Avenue and 22,300 VPD south of 13th Avenue. 13th Avenue is projected to serve approximately 5,700 VPD east of Picadilly Road and 23,500 VPD west of Picadilly Road.

previous comment
add short term background traffic volumes

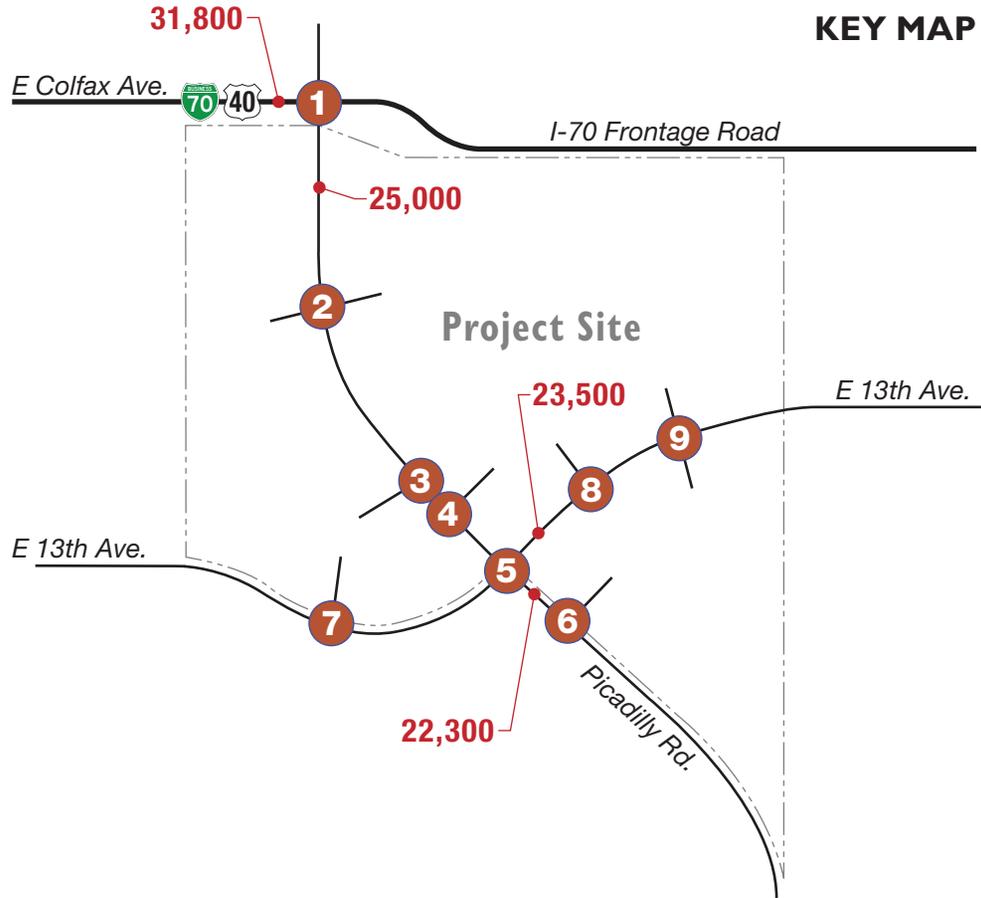
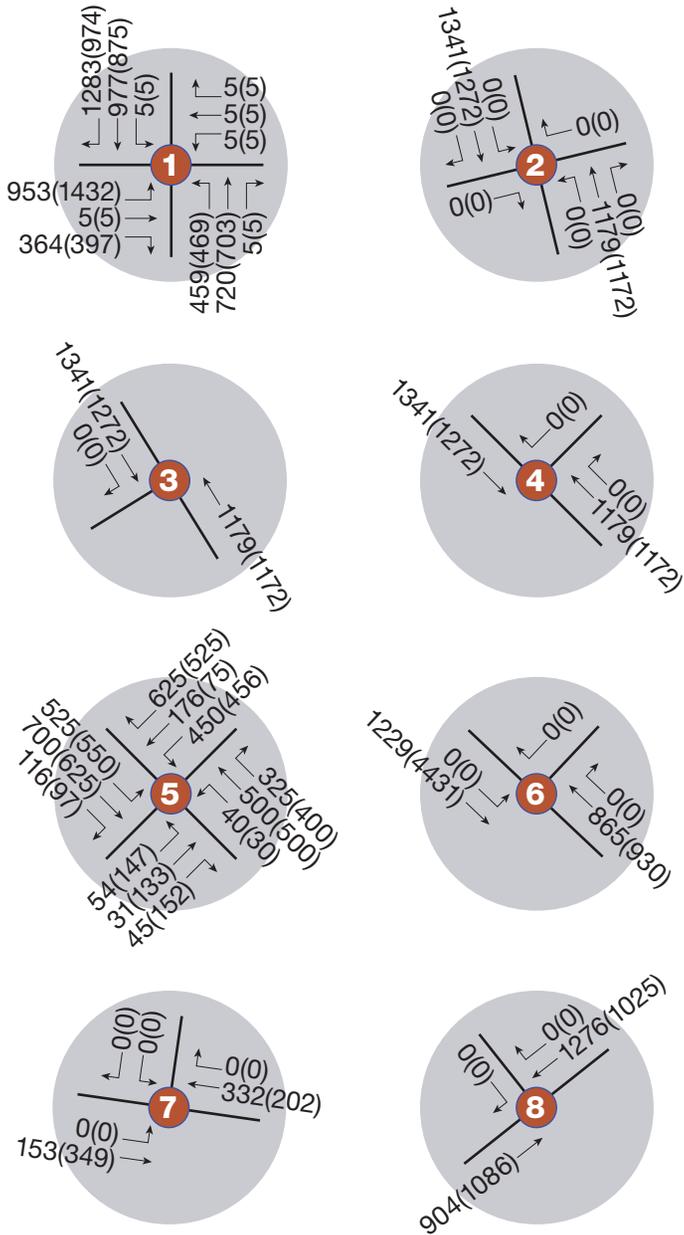
Traffic Control

Signalization of the Colfax Avenue/Picadilly Road and Picadilly Road/13th Avenue intersections is assumed in the long-term background traffic conditions. Signalization of both intersections was identified in the 2020 I-70/Picadilly Road SLS and further vetted in the 2021 Stafford Logistics Center TIS.

Traffic Operations

Long-term future background traffic volumes were used as the basis for intersection capacity analyses, the results of which are shown on **Figure 8** (**Appendix D** includes long term background LOS worksheets).

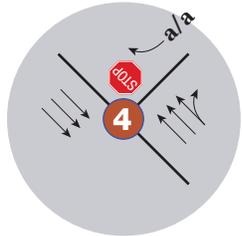
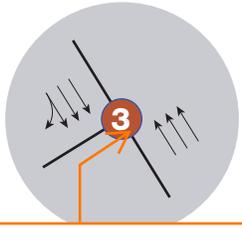
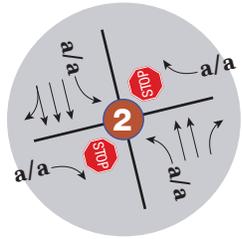
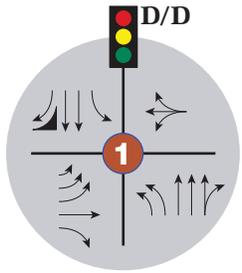
As indicated, all intersections are projected to operate within acceptable parameters, at LOS D or better during peak hours. Key laneage needs include a six-lane cross-section of Picadilly Road and a four-lane cross-section of 13th Avenue east of Picadilly Road. The major intersections, such as Colfax Avenue/Picadilly Road and Picadilly Road/13th Avenue, will also need dual left-turn lanes and separate right-turn lanes along select approaches due to background traffic demands alone.



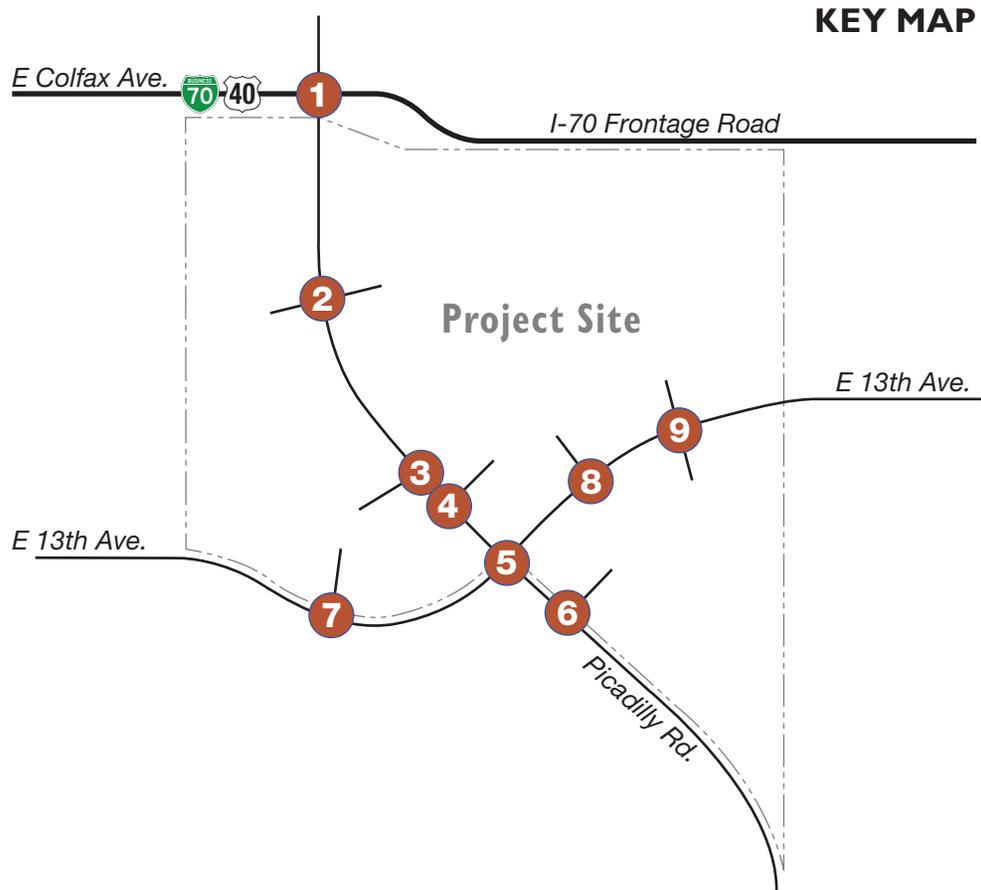
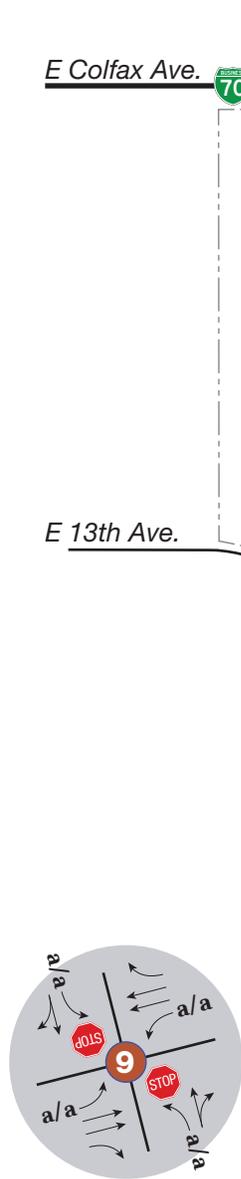
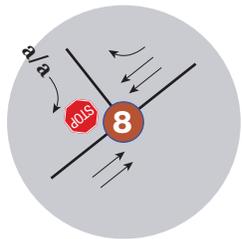
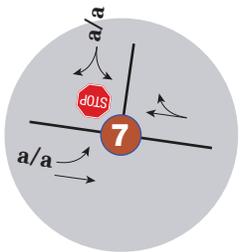
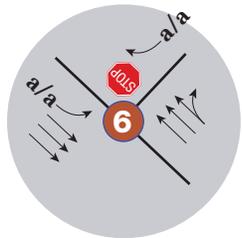
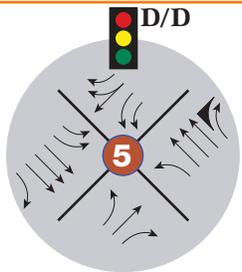
LEGEND

XXX(XXX) = AM(PM) Peak Hour Traffic Volumes

XXXX = Daily Traffic Volumes



add STOP sign



LEGEND

- X/X = AM/PM Peak Hour Signalized Intersection Level of Service
- x/x = AM/PM Peak Hour Unsignalized Intersection Level of Service
- STOP = Stop Sign
- Traffic Signal Icon = Traffic Signal

IV.B. Total Traffic Conditions

Long-Term Future

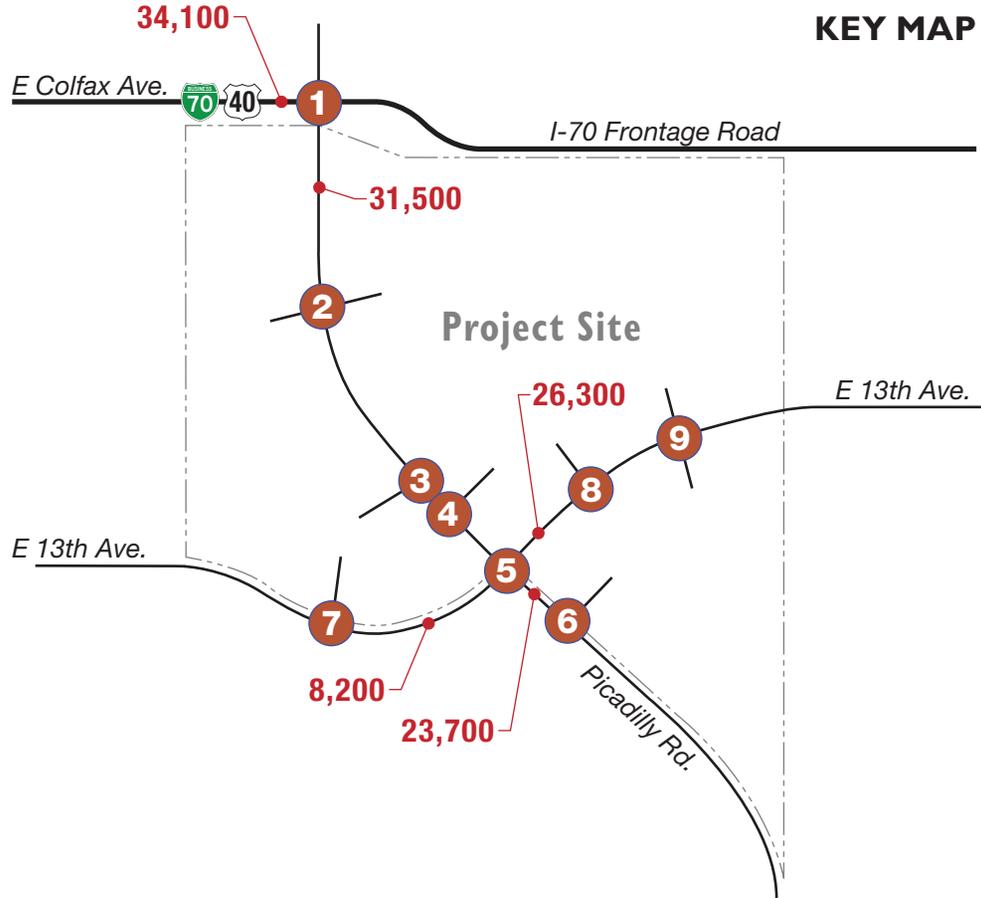
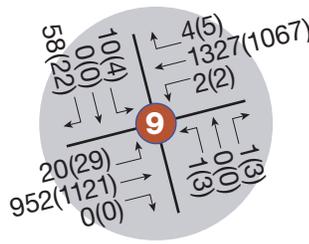
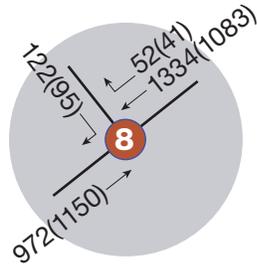
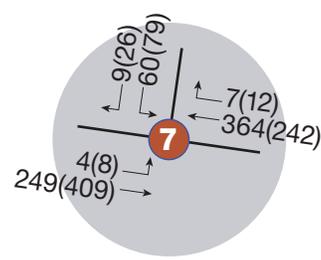
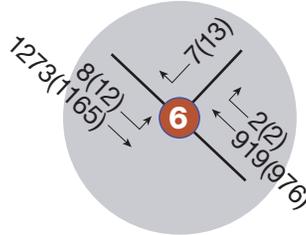
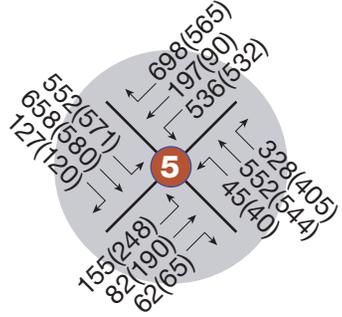
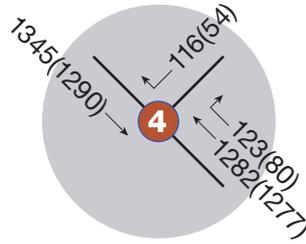
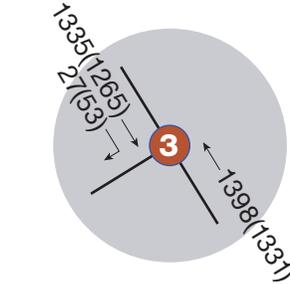
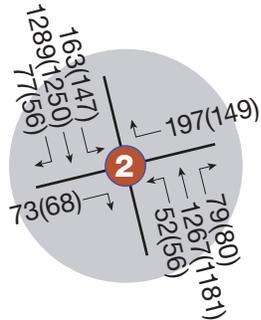
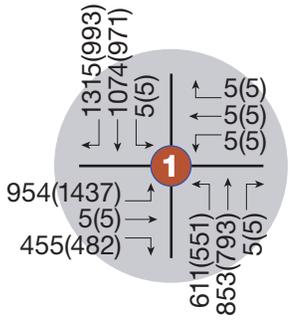
The 2040 site generated traffic volumes (**Figure 6**) were added to the long-term future background traffic volumes (**Figure 7**) to produce the year 2040 total traffic volumes illustrated on **Figure 9**. Picadilly Road is projected to serve approximately 31,500 VPD south of Colfax Avenue and 23,700 VPD south of 13th Avenue. 13th Avenue is projected to serve approximately 8,200 VPD east of Picadilly Road and 26,300 VPD west of Picadilly Road.

Intersection capacity analyses were conducted using the long-term total peak hour volumes and intersection geometries. LOS results are shown on **Figure 10** (**Appendix E** includes long-term total LOS worksheets).

These improvements have been developed based on the current understanding of the I-70/Picadilly Road interchange project. It is acknowledged that the interchange project may provide additional recommendations at arterial intersections in the study area. Note that site driveways have been labeled based on the corresponding intersection number. Results for each intersection are summarized below:

- **Colfax Avenue/Picadilly Road (Intersection #1)** – Signal. Colfax Avenue is a major arterial, and Picadilly Road is planned to be a major arterial that will have a new interchange with I-70. This intersection will remain a four-leg intersection, with the eastern leg reduced to a two-lane cross-section for the purpose of providing access to the parcel in the northeast quadrant. The intersection should include two exclusive through-lanes north-south, northbound dual left-turn lanes and a shared through/right-turn lane, triple left-turn lanes along the eastbound approach and a shared through/right-turn lane, a left-turn lane, a separate right-turn lane with overlap signal phasing along the southbound approach, and a channelized eastbound right-turn lane. This geometry is consistent with the recently published Picadilly/I-70 SLS report apart from the channelized eastbound right-turn lane. Despite a heavy eastbound right-turn volume, a separate right-turn lane is not required since the eastbound through traffic (per the SHAC) is not met. However, due to high demand and unknown development in the northeast quadrant of the intersection, the City of Aurora has requested this additional lane. This intersection is projected to operate at LOS D during both the AM and PM peak hours. This is the same as the LOS expected for the background condition, which indicates that site generated traffic will not have a significant impact on operations at this signal and remains consistent with the findings of the 2021 Stafford Logistics Center TIS.
- **Picadilly Road/Stafford Access Drive #2 (Intersection #2)** – Intersection #2 will be a $\frac{3}{4}$ movement side-street stop-controlled access serving development on both the east and west sides of realigned Picadilly Road. The intersection will have northbound and southbound exclusive left turn lanes and shared through/right lanes along Picadilly Road. Stop-controlled and yielding movements are projected to operate at LOS B during both the AM and PM peak hours.
- **Picadilly Road/Stafford Access Drive #3 (Intersection #3)** – Intersection #3 will be side-street stop-controlled right-in only tee intersection. This intersection provides access to businesses on the west side of Picadilly Road. The intersection will have a southbound shared through/right lane along Picadilly Road.
- **Picadilly Road/ Stafford Access Drive #4 (Intersection #4)** – Intersection #4 will be side-street stop-controlled right-in/right-out tee intersection. This intersection provides access to businesses on the east side of Picadilly Road. The intersection will have a northbound shared through/right lane along Picadilly Road. It is close to Intersection #3 but they are offset from each other. Stop-controlled movements are projected to operate at LOS B during both the AM and PM peak hours.

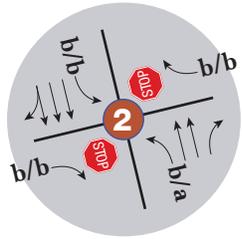
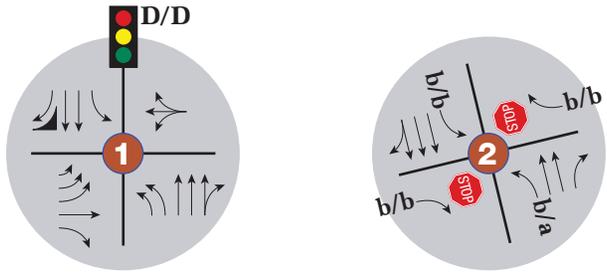
- **Picadilly Road/13th Avenue (Intersection #5)** – Signal. Picadilly Road is a planned six-lane major arterial. The west leg of the intersection will serve as a site access roadway into the industrial portions of the Stafford Logistics Center and has been constructed as a 3-lane local roadway. The east leg serves as the planned four-lane minor arterial, 13th Avenue through the planned Horizon Uptown development. Separate right-turn lanes should be included at all approaches with signal phasing overlaps included on the northbound approaches, channelization of the westbound approach right turn, and left-turn lanes at all approaches with dual left for the southbound and westbound approaches. The signal is expected to operate with LOS D during both AM and PM peak hours and remains consistent with the findings of the 2021 Stafford Logistics Center TIS.
- **Picadilly Road/ Stafford Access Drive #6 (Intersection #6)** – Intersection #6 will be a side-street stop-controlled $\frac{3}{4}$ movement tee intersection. The intersection will have a northbound shared through/right lane and an exclusive southbound left turn lane along Picadilly Road. Stop controlled movements are projected to operate with LOS B during both the AM and PM peak hours.
- **13th Avenue/ Stafford Access Drive #7 (Intersection #7)** – Intersection #7 will be a side-street stop-controlled full access tee intersection. The 13th Avenue alignment has been constructed as a three-lane local roadway through the industrial portions of Stafford Logistics Center west of realigned Picadilly Road. The intersection will have an exclusive eastbound left turn lane striped from the existing three-lane cross-section and a shared westbound through/right lane along 13th Avenue. The southbound shared left/right turn is projected to operate with LOS B during the AM peak hour and LOS C during the PM peak hour. The eastbound and southbound lefts are projected to operate at LOS A during both the AM and PM peak hours.
- **13th Avenue /Stafford Access Drive #8 (Intersection #8)** – Intersection #8 will be a side-street stop-controlled right-in/right-out tee intersection. The intersection will have an exclusive westbound right turn lane along 13th Avenue. The southbound right is projected to operate at LOS C during both the AM and PM peak hours.
- **13th Avenue/Stafford Access Drive #9 (Intersection #9)** – Intersection #9 will be a side-street stop-controlled full movement access. Peak hour and 4-hour signal warrants were analyzed for the intersection in the 2021 Stafford Logistics Center TIS, but due to changes in land use and placement of additional access points, it is no longer anticipated to meet signalization warrants. The intersection will have eastbound and westbound exclusive left turn lanes and shared through/right lanes along 13th Avenue, as well as exclusive left turn and shared through/right turn lanes along the northbound and southbound site access driveways. The southbound left is projected to operate with LOS F during both the AM and PM peak hours. The southbound through/right will operate with LOS C during both the AM and PM peak hours. The northbound left is projected to operate with LOS E during the AM peak hour and F during the PM peak hour. The northbound through/right is projected to operate with LOS B during both the AM and PM peak hours. The eastbound left is projected to operate at LOS B during both the AM and PM peak hours. The westbound left is projected to operate at LOS A during both the AM and PM peak hours. While the side-street stop-controlled left turns along both the northbound and southbound approaches are projected to operate below the typical standard of LOS D, it is common for unsignalized access points along arterial roadways. The volumes for these movements are low and queuing would remain limited. Separating these movements into exclusive left turn lanes as recommended limits their impact on other movements and is all that is recommended for mitigation purposes.



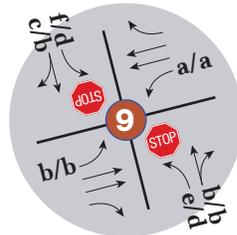
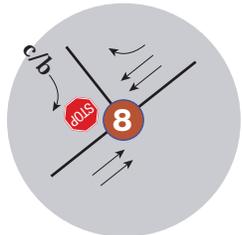
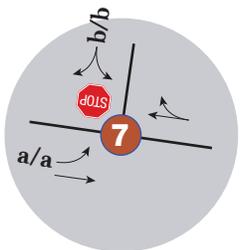
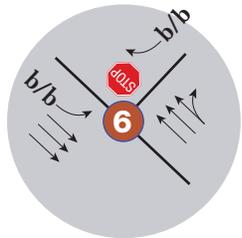
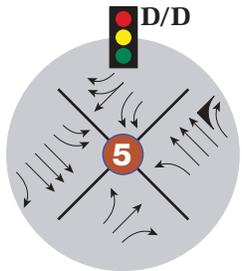
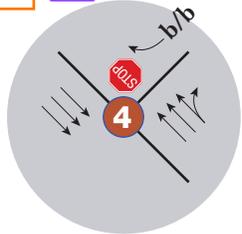
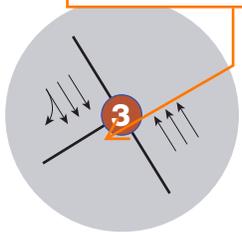
LEGEND

XXX(XXX) = AM(PM) Peak Hour Traffic Volumes

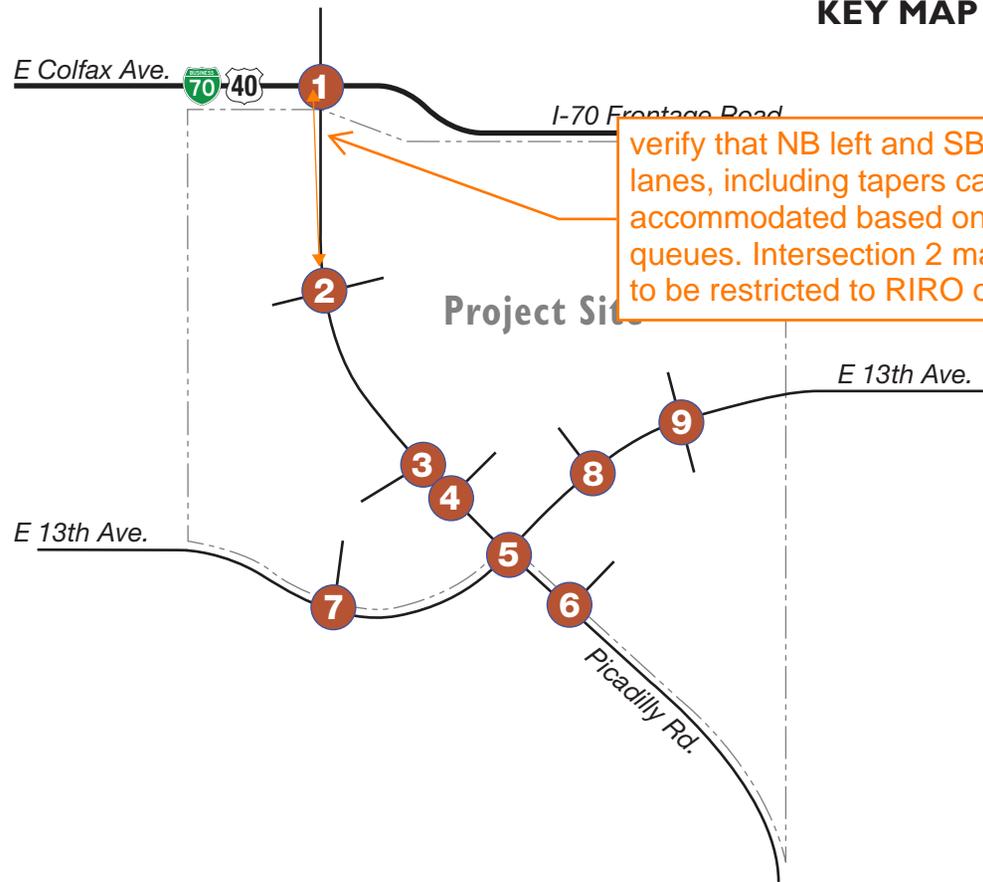
XXXX = Daily Traffic Volumes



add STOP sign



KEY MAP



verify that NB left and SB left turn lanes, including tapers can be accommodated based on reported queues. Intersection 2 may need to be restricted to RIRO only

LEGEND

- X/X = AM/PM Peak Hour Signalized Intersection Level of Service
- x/x = AM/PM Peak Hour Unsignalized Intersection Level of Service
- STOP = Stop Sign
- Traffic Signal Icon = Traffic Signal

City of Aurora *Traffic Impact Study Guidelines* indicate that the *CDOT State Highway Access Code (SHAC)* be used to determine storage and taper lengths of auxiliary lanes. These values sometimes yield conservative results and provide storage well in excess of 95th percentile queues (which already incorporate a heavy vehicle percentage). Rather, the recommendation is that the values in **Table 2** corresponding to the 95th percentile lengths be used for storage lengths, plus a lead-in taper. It was assumed that Picadilly Road and Colfax Avenue are classified as NR-A Non-Rural Arterials. Table 4-8 in the *SHAC* was used to determine the recommended storage lengths.

Output from the traffic analysis effort was used to recommend these storage lengths, using the following methodology:

- **Left turn lane storage lengths** – At signalized intersections, the greater of the HCM 6th Edition or Synchro methodology queue calculations were reported. For unsignalized intersections, the HCM 6th Edition calculation was reported.
- **Through movements** – For signalized intersections, the greater of the HCM 6th Edition or Synchro methodology queue calculations were reported. No through movement queues are reported for unsignalized intersections as the through movements are free.
- **Right turn movements** – The Synchro queue length was used for signalized intersections. HCM 6th Edition information was not used because HCM’s signalized intersection methodology does not account for right turns on red and assumes channelized rights to be removed from the intersection resulting in a reported value of zero. For unsignalized intersections, HCM 6th Edition calculation was reported.

Table 2.

Lo
St

Verify that NB left and SB left turn lanes, including tapers can be accommodated. Intersection 2 may need to be restricted to RIRO only

eing -

Intersection	Approach	Movement	2040 95 th Percentile Queue Length (ft) ¹		Recommended Storage Length	2040 SHAC Recommended Storage Length ²
			AM	PM		
Colfax Avenue/ Picadilly Road (Intersection #1)	Eastbound	Left*	375	550	575	575
		Through	25	25	Continuous	Continuous
		Right	150	275	600	600
	Westbound	Left/Through/ Right	50	50	Continuous	Continuous
	Northbound	Left*	325	350	350	400
		Through	175	125	Continuous	Continuous
		Through/Right	175	125	Continuous	Continuous
	Southbound	Left	25	25	50	25
		Through	725	675	Continuous	Continuous
Right		150	25	150	1600	
Picadilly Road/ Site Driveway (Intersection #2)	Eastbound	Right	25	25	Continuous	Continuous
	Westbound	Right	50	25	Continuous	Continuous
	Northbound	Left	25	25	50	75
	Southbound	Left	25	25	50	175
Picadilly Road/ Site Driveway (Intersection #4)	Westbound	Right	25	25	Continuous	Continuous
Picadilly Road/ E 13 th Avenue (Intersection #5)	Eastbound	Left	275	275	275	300
		Through	125	225	Continuous	Continuous
		Right	25	25	50	75
	Westbound	Left*	250	275	275	325
		Through	550	325	Continuous	Continuous
		Right	100	100	100	425
	Northbound	Left	50	75	75	75
		Through	225	200	Continuous	Continuous
		Right	50	275	275	500
Southbound	Left*	200	275	275	375	
	Through	125	100	Continuous	Continuous	
	Right	25	25	50	175	
Picadilly Road/ Site Driveway (Intersection #6)	Westbound	Right	25	25	50	25
	Southbound	Left	25	25	50	25

add Intersection 3

Intersection	Approach	Movement	2040 95 th Percentile Queue Length (ft) ¹		Recommended Storage Length	2040 SHAC Recommended Storage Length ²
			AM	PM		
E 13 th Avenue/ Site Driveway (Intersection #7)	Eastbound	Left	25	25	50	25
	Southbound	Left/Right	25	25	Continuous	Continuous
E 13 th Avenue/ Site Driveway (Intersection #8)	Southbound	Right	50	50	Continuous	Continuous
13 th Avenue/ Site Driveway (Intersection #9)	Eastbound	Left	25	25	50	50
	Westbound	Left	25	25	50	25
	Northbound	Left	25	25	50	25
		Through/Right	25	25	Continuous	Continuous
	Southbound	Left	25	25	50	25
		Through/Right	25	25	Continuous	Continuous

*Dual/triple left-turn queues and storage are per lane.

¹Calculations based on HCM methodology using a heavy vehicle percentage of 10 percent network wide with adjustments at driveway locations based on site layout.

²Number shown is based on volume adjustments of 3 PCE per heavy vehicle.

V. SUMMARY AND RECOMMENDATIONS

NorthPoint Development is proposing a 350-acre industrial park in the northeastern-most 50 acres focused around the intersection of Picadilly Road and 13th Avenue to provide commercial and multifamily residential, which is the subject of the TIS. The commercial portion will have a gas station, a shopping center, several fast-food restaurants, a car wash, multifamily housing, and other commercial land uses. Primary access to the commercial parcels will be via Picadilly Road and 13th Avenue. To date four of the six industrial buildings are completed, along with the majority of the internal site roadway network and initial realignment of Picadilly Road anticipated to become fully operational with the anticipated 2025 completion date of the new I-70/Picadilly Road interchange.

The proposed Stafford Commercial development is estimated to generate approximately 10,923 new external trips per day, with about 761 AM peak hour trips and about 602 PM peak hour trips. The potential traffic impacts of the development were evaluated under long-term future (2040) conditions. The long-term analysis reflects buildout of Stafford and the surrounding area per travel demand modeling represented in the I-70/Picadilly Road interchange study, which accounts for a full interchange at I-70/Picadilly Road and the continuity of Picadilly Road north of Colfax Avenue, across I-70, and connecting with Picadilly Road at Smith Road.

Long-term future (2040) traffic reflects buildout of the area. The following roadway sections are needed to accommodate future traffic.

- Picadilly Road will be continued to the north providing an interchange with I-70 and is projected to be constructed as a six-lane major-arterial cross-section.
- The intersections of Colfax Avenue/Picadilly Road and Picadilly Road/13th Avenue are projected to be signalized.
- 13th Avenue will be constructed east of Picadilly Road as a three four-lane minor arterial cross-section extending through the Horizon Uptown development to the I-70/E-470 interchange complex.

These improvements have been developed based on the current I-70/Picadilly Road interchange SLS.

The City of Aurora bases the need for auxiliary turn lanes on the CDOT SHAC (and Colfax Avenue being a state highway already requires the SHAC's application). Ultimate turn lane storage lengths are shown in **Table 2** for auxiliary lanes at study area intersections.

All operations are projected at LOS D or better during the AM and PM peak hours with the following exceptions:

- The stop-controlled northbound left turns at 13th Avenue/Site Driveway #9 are projected at LOS E during the AM peak hour and LOS F during the PM peak hour. This intersection was previously assumed to be signalized in the 2021 Stafford Logistics Center TIS but no longer meets warrants. The volume for this left turn is low and excessive queuing is not anticipated. To mitigate the impact of this below standard LOS, it is recommended that an exclusive left turn and a shared through/right turn lane be provided for the northbound approach to limit how this movement affects other movements on the approach.
- The stop-controlled southbound left turns at 13th Avenue/Site Driveway #9 are projected at LOS F during both the AM and PM peak hours. This intersection was previously assumed to be signalized in the 2021 Stafford Logistics Center TIS but no longer meets warrants. The volume for this left turn is low and excessive queuing is not anticipated. To mitigate the impact of this below standard LOS, it is recommended that an exclusive left turn and a shared through/right turn lane be provided for the southbound approach to limit how this movement affects other movements on the approach.

APPENDIX A. TRAFFIC COUNTS

All Traffic Data Services
Wheat Ridge, CO 80033

Site Code: 6
Station ID: 6
COLFAX AVE W.O. I70 FRONTAGE RD

Start Time	11-Dec-18 Tue	EB	WB							Total
12:00 AM		38	22							60
01:00		19	46							65
02:00		9	18							27
03:00		11	23							34
04:00		59	62							121
05:00		108	180							288
06:00		268	398							666
07:00		357	573							930
08:00		250	391							641
09:00		190	262							452
10:00		187	260							447
11:00		182	267							449
12:00 PM		247	242							489
01:00		191	217							408
02:00		323	269							592
03:00		454	382							836
04:00		536	322							858
05:00		608	343							951
06:00		330	241							571
07:00		176	112							288
08:00		127	91							218
09:00		75	70							145
10:00		58	53							111
11:00		37	43							80
Total		4840	4887							9727
Percent		49.8%	50.2%							
AM Peak	-	07:00	07:00	-	-	-	-	-	-	07:00
Vol.	-	357	573	-	-	-	-	-	-	930
PM Peak	-	17:00	15:00	-	-	-	-	-	-	17:00
Vol.	-	608	382	-	-	-	-	-	-	951

All Traffic Data Services
Wheat Ridge, CO 80033

Site Code: 6
Station ID: 6
COLFAX AVE W.O. I70 FRONTAGE RD

Start Time	12-Dec-18 Wed	EB	WB							Total
12:00 AM		37	40							77
01:00		12	54							66
02:00		12	24							36
03:00		14	30							44
04:00		42	57							99
05:00		114	200							314
06:00		282	443							725
07:00		369	658							1027
08:00		221	415							636
09:00		194	309							503
10:00		180	247							427
11:00		195	228							423
12:00 PM		235	231							466
01:00		240	247							487
02:00		354	279							633
03:00		489	389							878
04:00		581	326							907
05:00		612	376							988
06:00		295	217							512
07:00		174	119							293
08:00		168	92							260
09:00		90	80							170
10:00		55	34							89
11:00		40	34							74
Total		5005	5129							10134
Percent		49.4%	50.6%							
AM Peak	-	07:00	07:00	-	-	-	-	-	-	07:00
Vol.	-	369	658	-	-	-	-	-	-	1027
PM Peak	-	17:00	15:00	-	-	-	-	-	-	17:00
Vol.	-	612	389	-	-	-	-	-	-	988

All Traffic Data Services
Wheat Ridge, CO 80033

Site Code: 6
Station ID: 6
COLFAX AVE W.O. I70 FRONTAGE RD

Start Time	13-Dec-18 Thu	EB	WB							Total
12:00 AM		36	41							77
01:00		15	36							51
02:00		15	28							43
03:00		13	22							35
04:00		55	65							120
05:00		112	186							298
06:00		246	407							653
07:00		397	644							1041
08:00		223	422							645
09:00		147	261							408
10:00		166	217							383
11:00		178	228							406
12:00 PM		212	227							439
01:00		226	230							456
02:00		367	257							624
03:00		504	341							845
04:00		602	383							985
05:00		646	374							1020
06:00		354	243							597
07:00		187	132							319
08:00		134	106							240
09:00		124	70							194
10:00		71	46							117
11:00		47	49							96
Total		5077	5015							10092
Percent		50.3%	49.7%							
AM Peak	-	07:00	07:00	-	-	-	-	-	-	07:00
Vol.	-	397	644	-	-	-	-	-	-	1041
PM Peak	-	17:00	16:00	-	-	-	-	-	-	17:00
Vol.	-	646	383	-	-	-	-	-	-	1020
Grand Total		14922	15031							29953
Percent		49.8%	50.2%							
ADT		ADT 9,984	AADT 9,984							

All Traffic Data Services
Wheat Ridge, CO 80033

Site Code: 7
Station ID: 7
PICADILLY RD S.O. I70 FRONTAGE RD

Start Time	11-Dec-18 Tue	NB	SB	Total						
12:00 AM		4	14	18						
01:00		6	8	14						
02:00		10	4	14						
03:00		5	7	12						
04:00		21	20	41						
05:00		50	43	93						
06:00		88	149	237						
07:00		102	166	268						
08:00		94	111	205						
09:00		66	78	144						
10:00		53	75	128						
11:00		69	95	164						
12:00 PM		55	88	143						
01:00		63	101	164						
02:00		84	136	220						
03:00		110	207	317						
04:00		113	243	356						
05:00		115	228	343						
06:00		49	155	204						
07:00		31	86	117						
08:00		22	66	88						
09:00		23	37	60						
10:00		10	45	55						
11:00		10	29	39						
Total		1253	2191	3444						
Percent		36.4%	63.6%							
AM Peak	-	07:00	07:00	-	-	-	-	-	-	07:00
Vol.	-	102	166	-	-	-	-	-	-	268
PM Peak	-	17:00	16:00	-	-	-	-	-	-	16:00
Vol.	-	115	243	-	-	-	-	-	-	356

All Traffic Data Services
Wheat Ridge, CO 80033

Site Code: 7
Station ID: 7
PICADILLY RD S.O. I70 FRONTAGE RD

Start Time	12-Dec-18 Wed	NB	SB							Total
12:00 AM		3	14							17
01:00		4	9							13
02:00		8	7							15
03:00		11	5							16
04:00		19	17							36
05:00		61	50							111
06:00		92	145							237
07:00		112	166							278
08:00		75	107							182
09:00		59	78							137
10:00		47	88							135
11:00		52	74							126
12:00 PM		49	90							139
01:00		72	100							172
02:00		86	167							253
03:00		99	194							293
04:00		118	242							360
05:00		100	231							331
06:00		47	133							180
07:00		41	83							124
08:00		30	85							115
09:00		17	45							62
10:00		14	33							47
11:00		12	34							46
Total		1228	2197							3425
Percent		35.9%	64.1%							
AM Peak	-	07:00	07:00	-	-	-	-	-	-	07:00
Vol.	-	112	166	-	-	-	-	-	-	278
PM Peak	-	16:00	16:00	-	-	-	-	-	-	16:00
Vol.	-	118	242	-	-	-	-	-	-	360

All Traffic Data Services
Wheat Ridge, CO 80033

Site Code: 7
Station ID: 7
PICADILLY RD S.O. I70 FRONTAGE RD

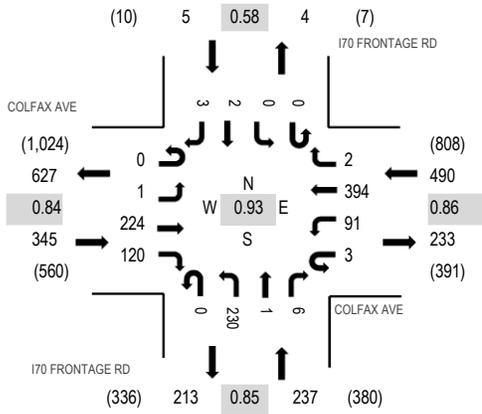
Start Time	13-Dec-18 Thu	NB	SB							Total
12:00 AM		6	13							19
01:00		4	10							14
02:00		11	4							15
03:00		6	5							11
04:00		18	20							38
05:00		59	51							110
06:00		82	136							218
07:00		109	167							276
08:00		86	114							200
09:00		57	83							140
10:00		56	73							129
11:00		49	76							125
12:00 PM		47	103							150
01:00		57	100							157
02:00		65	120							185
03:00		118	221							339
04:00		114	244							358
05:00		105	242							347
06:00		57	155							212
07:00		31	74							105
08:00		23	65							88
09:00		15	50							65
10:00		8	43							51
11:00		15	28							43
Total		1198	2197							3395
Percent		35.3%	64.7%							
AM Peak	-	07:00	07:00	-	-	-	-	-	-	07:00
Vol.	-	109	167	-	-	-	-	-	-	276
PM Peak	-	15:00	16:00	-	-	-	-	-	-	16:00
Vol.	-	118	244	-	-	-	-	-	-	358



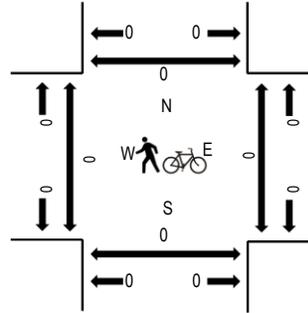
(303) 216-2439
www.alltrafficdata.net

Location: 4 I70 FRONTAGE RD & COLFAX AVE AM
Date and Start Time: Wednesday, December 12, 2018
Peak Hour: 07:00 AM - 08:00 AM
Peak 15-Minutes: 07:15 AM - 07:30 AM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles on Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

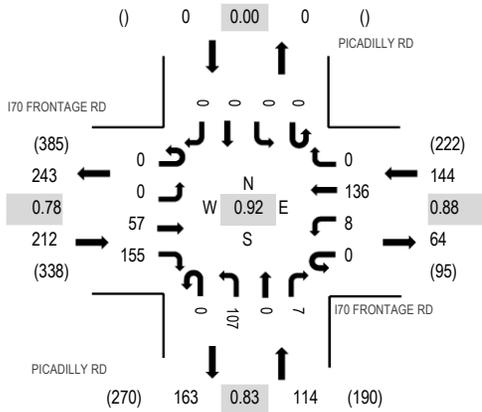
Interval Start Time	COLFAX AVE Eastbound				COLFAX AVE Westbound				I70 FRONTAGE RD Northbound				I70 FRONTAGE RD Southbound				Total	Rolling Hour	Pedestrian Crossings					
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North		
7:00 AM	0	1	71	31	1	25	99	0	0	0	46	0	3	0	0	0	0	1	278	1,077	0	0	0	0
7:15 AM	0	0	60	32	1	33	107	1	0	0	53	1	0	0	0	0	0	1	289	1,017	0	0	0	0
7:30 AM	0	0	47	30	1	17	104	0	0	0	67	0	3	0	0	2	0	0	271	914	0	0	0	0
7:45 AM	0	0	46	27	0	16	84	1	0	0	64	0	0	0	0	0	1	0	239	790	0	0	0	0
8:00 AM	0	1	47	24	1	12	82	2	0	0	46	0	2	0	0	0	1	0	218	681	0	0	0	0
8:15 AM	0	0	32	16	3	15	72	0	0	0	43	0	2	0	1	0	2	0	186		0	0	0	0
8:30 AM	0	0	28	16	0	14	58	0	0	0	30	0	1	0	0	0	0	0	147		0	0	0	0
8:45 AM	0	0	36	15	5	11	43	0	0	0	19	0	0	0	0	0	1	0	130		0	0	0	0
Count Total	0	2	367	191	12	143	649	4	0	0	368	1	11	0	1	2	7	1,758		0	0	0	0	
Peak Hour	0	1	224	120	3	91	394	2	0	0	230	1	6	0	0	2	3	1,077		0	0	0	0	



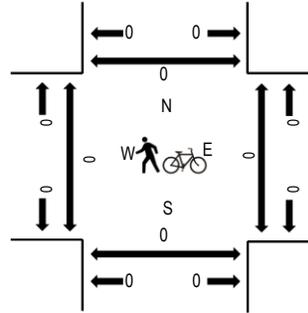
(303) 216-2439
www.alltrafficdata.net

Location: 5 PICADILLY RD & I70 FRONTAGE RD AM
Date and Start Time: Wednesday, December 12, 2018
Peak Hour: 07:00 AM - 08:00 AM
Peak 15-Minutes: 07:15 AM - 07:30 AM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles on Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

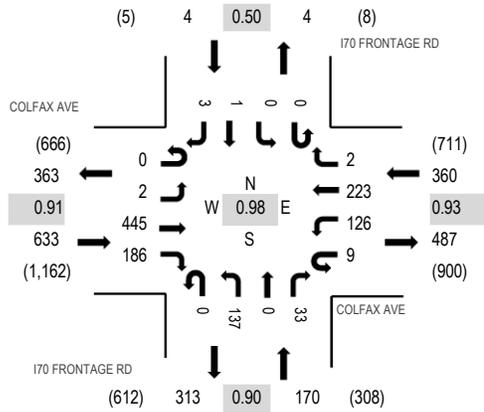
Interval Start Time	I70 FRONTAGE RD Eastbound				I70 FRONTAGE RD Westbound				PICADILLY RD Northbound			PICADILLY RD Southbound				Total	Rolling Hour	Pedestrian Crossings					
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru			Right	West	East	South	North	
7:00 AM	0	0	16	38	0	1	31	0	0	0	22	0	1	0	0	0	0	109	470	0	0	0	0
7:15 AM	0	0	17	51	0	4	35	0	0	0	19	0	2	0	0	0	0	128	448	0	0	0	0
7:30 AM	0	0	13	35	0	1	40	0	0	0	30	0	4	0	0	0	0	123	400	0	0	0	0
7:45 AM	0	0	11	31	0	2	30	0	0	0	36	0	0	0	0	0	0	110	338	0	0	0	0
8:00 AM	0	0	12	26	0	3	22	0	0	0	23	0	1	0	0	0	0	87	280	0	0	0	0
8:15 AM	0	0	5	26	0	2	21	0	0	0	25	0	1	0	0	0	0	80		0	0	0	0
8:30 AM	0	0	3	27	0	1	15	0	0	0	14	0	1	0	0	0	0	61		0	0	0	0
8:45 AM	0	0	7	20	0	2	12	0	0	0	10	0	1	0	0	0	0	52		0	0	0	0
Count Total	0	0	84	254	0	16	206	0	0	0	179	0	11	0	0	0	0	750		0	0	0	0
Peak Hour	0	0	57	155	0	8	136	0	0	0	107	0	7	0	0	0	0	470		0	0	0	0



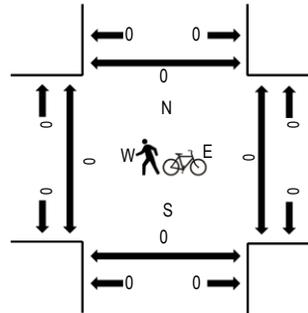
(303) 216-2439
www.alltrafficdata.net

Location: 4 I70 FRONTAGE RD & COLFAX AVE PM
Date and Start Time: Wednesday, December 12, 2018
Peak Hour: 04:30 PM - 05:30 PM
Peak 15-Minutes: 05:00 PM - 05:15 PM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles on Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

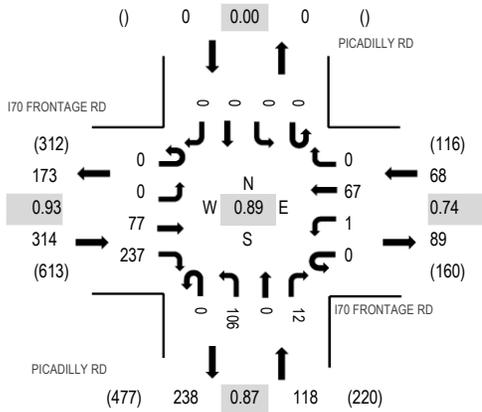
Interval Start Time	COLFAX AVE Eastbound				COLFAX AVE Westbound				I70 FRONTAGE RD Northbound				I70 FRONTAGE RD Southbound				Total	Rolling Hour	Pedestrian Crossings				
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North	
4:00 PM	0	0	93	35	2	36	45	0	0	0	30	0	6	0	1	0	0	248	1,088	0	0	0	0
4:15 PM	0	1	106	38	1	41	39	1	0	0	27	0	13	0	0	0	0	267	1,137	0	0	0	0
4:30 PM	0	1	112	43	1	39	55	1	0	0	31	0	9	0	0	0	0	293	1,167	0	0	0	0
4:45 PM	0	0	100	46	2	32	61	0	0	0	31	0	8	0	0	0	0	280	1,156	0	0	0	0
5:00 PM	0	1	126	47	2	22	52	1	0	0	37	0	7	0	0	0	0	297	1,098	0	0	0	0
5:15 PM	0	0	107	50	4	33	55	0	0	0	38	0	9	0	0	1	0	297		0	0	0	0
5:30 PM	0	0	107	40	1	40	54	2	0	0	33	0	5	0	0	0	0	282		0	0	0	0
5:45 PM	0	0	71	38	2	31	56	0	0	0	19	0	5	0	0	0	0	222		0	0	0	0
Count Total	0	3	822	337	15	274	417	5	0	0	246	0	62	0	1	1	3	2,186		0	0	0	0
Peak Hour	0	2	445	186	9	126	223	2	0	0	137	0	33	0	0	1	3	1,167		0	0	0	0



(303) 216-2439
www.alltrafficdata.net

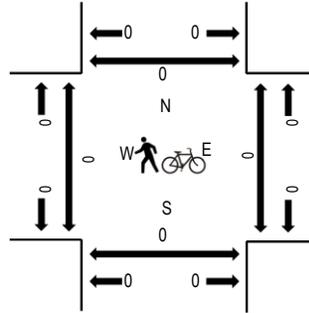
Location: 5 PICADILLY RD & I70 FRONTAGE RD PM
Date and Start Time: Wednesday, December 12, 2018
Peak Hour: 04:30 PM - 05:30 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	I70 FRONTAGE RD Eastbound				I70 FRONTAGE RD Westbound				PICADILLY RD Northbound			PICADILLY RD Southbound				Total	Rolling Hour	Pedestrian Crossings				
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru			Right	West	East	South	North
4:00 PM	0	0	10	60	0	0	10	0	0	24	0	3	0	0	0	0	107	474	0	0	0	0
4:15 PM	0	0	17	62	0	0	10	0	0	32	0	2	0	0	0	0	123	482	0	0	0	0
4:30 PM	0	0	22	57	0	0	16	0	0	24	0	1	0	0	0	0	120	500	0	0	0	0
4:45 PM	0	0	16	64	0	1	13	0	0	26	0	4	0	0	0	0	124	497	0	0	0	0
5:00 PM	0	0	15	56	0	0	15	0	0	27	0	2	0	0	0	0	115	475	0	0	0	0
5:15 PM	0	0	24	60	0	0	23	0	0	29	0	5	0	0	0	0	141		0	0	0	0
5:30 PM	0	0	20	58	0	2	12	0	0	24	0	1	0	0	0	0	117		0	0	0	0
5:45 PM	0	0	17	55	0	2	12	0	0	15	0	1	0	0	0	0	102		0	0	0	0
Count Total	0	0	141	472	0	5	111	0	0	201	0	19	0	0	0	0	949		0	0	0	0
Peak Hour	0	0	77	237	0	1	67	0	0	106	0	12	0	0	0	0	500		0	0	0	0

APPENDIX B. EXISTING CONDITIONS LEVEL OF SERVICE

Intersection												
Int Delay, s/veh	11.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕	↕		↕↕			↕↕			↕↕	
Traffic Vol, veh/h	1	224	120	91	394	2	230	1	6	0	2	3
Future Vol, veh/h	1	224	120	91	394	2	230	1	6	0	2	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									
Storage Length	-	-	325	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	241	129	98	424	2	247	1	6	0	2	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	426	0	0	370	0	0	652	865	121	744	993	213
Stage 1	-	-	-	-	-	-	243	243	-	621	621	-
Stage 2	-	-	-	-	-	-	409	622	-	123	372	-
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	1130	-	-	1185	-	-	353	290	908	303	244	792
Stage 1	-	-	-	-	-	-	739	703	-	442	477	-
Stage 2	-	-	-	-	-	-	590	477	-	868	617	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1130	-	-	1185	-	-	320	258	908	275	217	792
Mov Cap-2 Maneuver	-	-	-	-	-	-	320	258	-	275	217	-
Stage 1	-	-	-	-	-	-	738	702	-	442	425	-
Stage 2	-	-	-	-	-	-	521	425	-	860	616	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			1.8			46.7			14.5		
HCM LOS							E			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	325	1130	-	-	1185	-	-	384
HCM Lane V/C Ratio	0.784	0.001	-	-	0.083	-	-	0.014
HCM Control Delay (s)	46.7	8.2	0	-	8.3	0.3	-	14.5
HCM Lane LOS	E	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	6.3	0	-	-	0.3	-	-	0

Intersection						
Int Delay, s/veh	2.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	57	155	8	136	107	7
Future Vol, veh/h	57	155	8	136	107	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	62	168	9	148	116	8

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	230	0	312
Stage 1	-	-	-	-	146
Stage 2	-	-	-	-	166
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	-	-	1338	-	681
Stage 1	-	-	-	-	881
Stage 2	-	-	-	-	863
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1338	-	676
Mov Cap-2 Maneuver	-	-	-	-	676
Stage 1	-	-	-	-	881
Stage 2	-	-	-	-	857

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	11.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	687	-	-	1338	-
HCM Lane V/C Ratio	0.18	-	-	0.006	-
HCM Control Delay (s)	11.4	-	-	7.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.7	-	-	0	-

Intersection												
Int Delay, s/veh	7.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕	↗		↕↕			↕↕			↕↕	
Traffic Vol, veh/h	2	445	186	126	223	2	137	0	33	0	1	3
Future Vol, veh/h	2	445	186	126	223	2	137	0	33	0	1	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									
Storage Length	-	-	325	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	454	190	129	228	2	140	0	34	0	1	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	230	0	0	644	0	0	831	946	227	718	1135	115
Stage 1	-	-	-	-	-	-	458	458	-	487	487	-
Stage 2	-	-	-	-	-	-	373	488	-	231	648	-
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	1335	-	-	937	-	-	262	260	776	316	201	916
Stage 1	-	-	-	-	-	-	552	565	-	531	549	-
Stage 2	-	-	-	-	-	-	620	548	-	751	464	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1335	-	-	937	-	-	228	218	776	265	169	916
Mov Cap-2 Maneuver	-	-	-	-	-	-	228	218	-	265	169	-
Stage 1	-	-	-	-	-	-	551	564	-	530	462	-
Stage 2	-	-	-	-	-	-	519	461	-	717	463	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			3.6			41.4			13.4		
HCM LOS							E			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	264	1335	-	-	937	-	-	435
HCM Lane V/C Ratio	0.657	0.002	-	-	0.137	-	-	0.009
HCM Control Delay (s)	41.4	7.7	0	-	9.5	0.4	-	13.4
HCM Lane LOS	E	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	4.2	0	-	-	0.5	-	-	0

Intersection						
Int Delay, s/veh	2.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	77	237	1	67	106	12
Future Vol, veh/h	77	237	1	67	106	12
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	87	266	1	75	119	13

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	353	0	297
Stage 1	-	-	-	-	220
Stage 2	-	-	-	-	77
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	-	-	1206	-	694
Stage 1	-	-	-	-	817
Stage 2	-	-	-	-	946
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1206	-	693
Mov Cap-2 Maneuver	-	-	-	-	693
Stage 1	-	-	-	-	817
Stage 2	-	-	-	-	945

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	11.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	704	-	-	1206	-
HCM Lane V/C Ratio	0.188	-	-	0.001	-
HCM Control Delay (s)	11.3	-	-	8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.7	-	-	0	-

APPENDIX C. TRIP GENERATION COMPARISON LETTER



November 29, 2023

Mr. Grant Polley
Development Manager
NorthPoint Development
3315 N. Oak Trafficway
Kansas City, MO 64116

**RE: Stafford Commercial Traffic Conformance
FHU Project No. 123785-01**

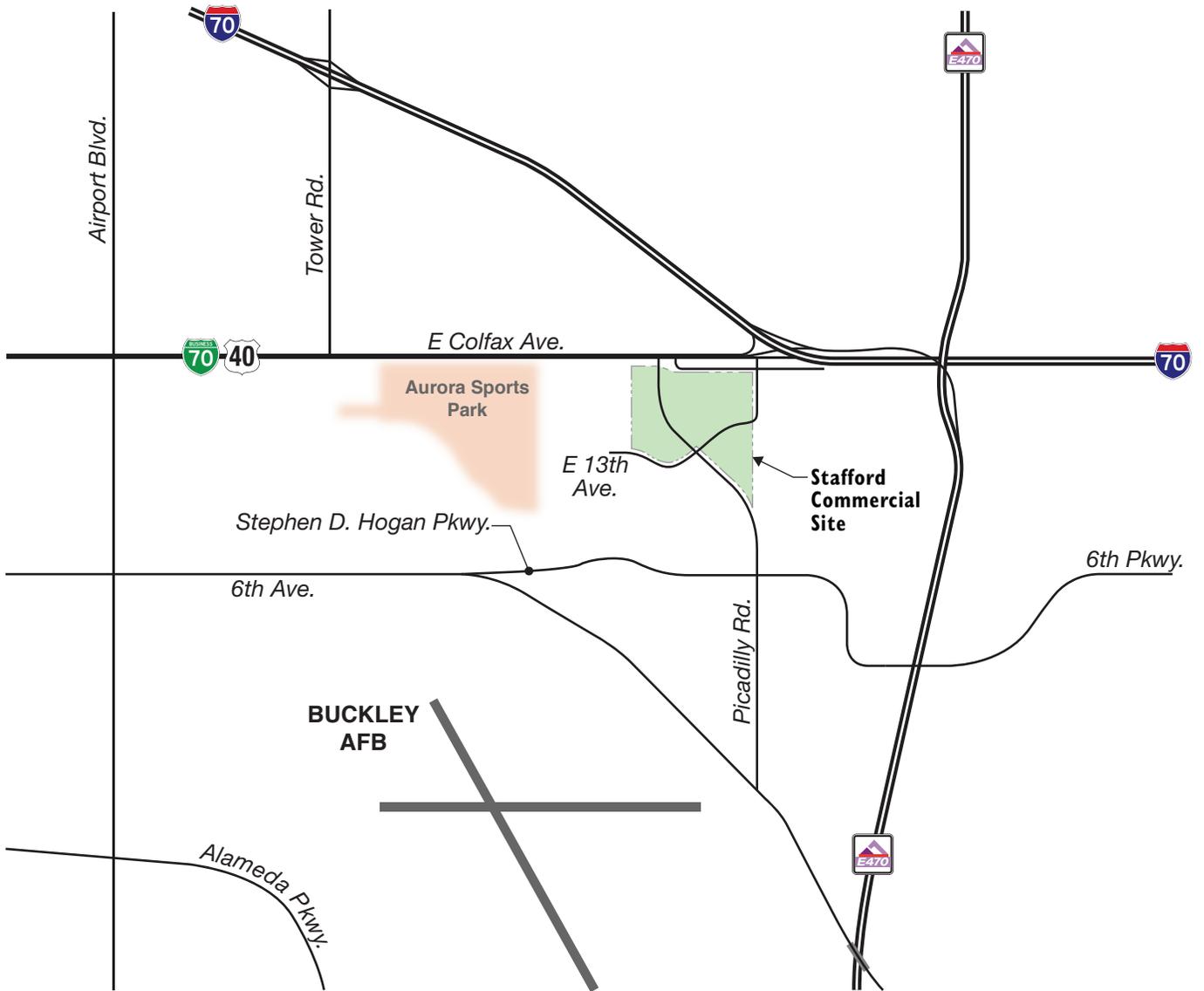
Dear Mr. Polley:

Felsburg Holt & Ullevig (FHU) prepared a traffic impact study for the Stafford Logistics Center in August 2021. That report used the Institute of Transportation Engineers' (ITE) publication *Trip Generation Manual, 10th Edition* (2017) to forecast vehicle-trips based on the land use types and sizes. Within that report, a portion of the property near the intersection of Picadilly Road and 13th Avenue was slated for commercial development, the location of the site is illustrated in the attached **Figure 1**. The current proposal for these parcels is to continue to provide commercial, albeit with an updated mix of uses, and multifamily housing. The current site plan contemplates 14 acres of multifamily at a density of 20 units per acre for a total of 280 units, an automated car wash, a 231,700 square foot self-storage facility, a 2,300 square foot coffee shop, four fast-food restaurant pads totaling 14,100 square feet, five general commercial pads totaling 52,500 square feet of general commercial space, and a 24 pump gas station. The site plan is detailed on the attached **Figure 2**. The TIS for Stafford Logistics Center assumed 75 KSF of retail, a 34 KSF supermarket, a 200-room hotel, a bank, and a gas station.

Trip Generation

The currently proposed site uses *Trip Generation Manual, 11th Edition* (2020) to forecast vehicle-trips, an update on the version utilized for the master TIS for the development. **Table 1** shows the trip generation rates and equations for each land use code for the current site plan.

Table 2 shows the estimated trip generation for the current proposed site and a comparison to what was projected in the Stafford Logistics Center TIS.



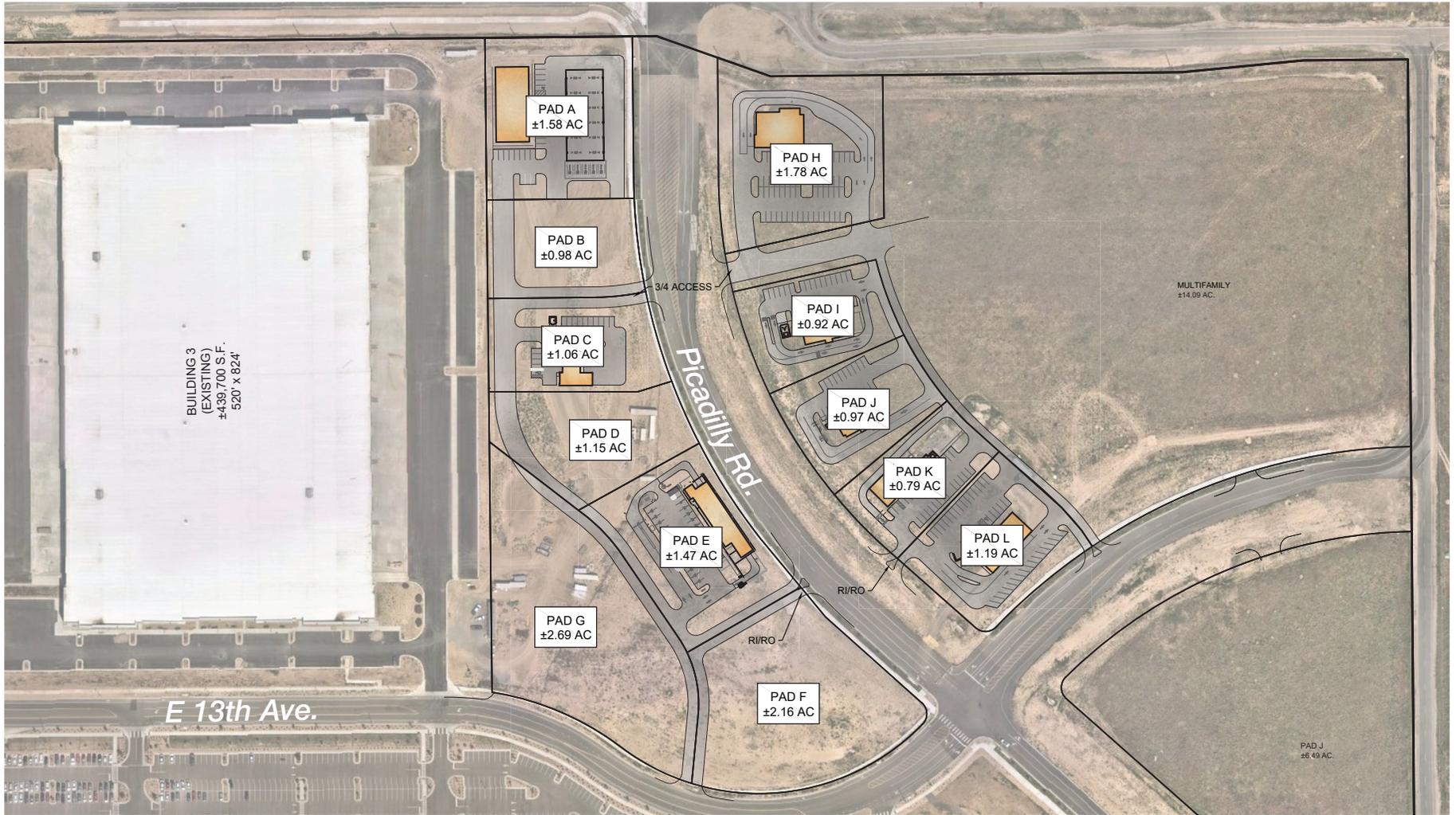


Table 1. ITE Trip Generation Rates and Equations (11th Edition)

Land Use	ITE Code	Unit	Daily	Peak	Equations & Rates	Pass-by	Distributions	
							In	Out
Mini-Warehouse	130	KSF	T=1.45*X	AM	T=0.09*X	n/a	59%	41%
				PM	T=0.15*X	n/a	47%	53%
Multifamily Housing (Mid-Rise)	220	DUs	T=4.77*X-46.46	AM	T=0.44*X-11.61	n/a	23%	77%
				PM	T=0.39*X+0.34	n/a	61%	39%
Strip Retail Plaza (40-150 KSF w/o Supermarket)	821	KSF	T=76.96*X+1412.79	AM	T=1.73*X	40% ²	62%	38%
				PM	T=5.19*X	40%	49%	51%
Fast Food Restaurant w/ Drive-Through	934	KSF	T=467.48*X	AM	T=44.61*X	50%	51%	49%
				PM	T=33.03*X	55%	52%	48%
Coffee/Donut Shop w/ Drive-Through	937	KSF	T=533.57*X	AM	T=85.88*X	90% ³	51%	49%
				PM	T=38.99*X	84% ³	50%	50%
Gas/Service Station	944	Vehicle Fueling Positions/Pumps	T=172.01* X	AM	T=10.28*X	63%	50%	50%
				PM	T=13.91*X	57%	50%	50%
Automated Car Wash	948	Tunnels	N/A ¹	AM	N/A ¹	n/a	N/A	N/A
				PM	T=77.50* X	n/a	50%	50%

¹Data not available, assumed AM to be 50% of PM and Daily to be 10x PM

²Data not available, assumed AM to be 40% to match PM value

³Data not available, assumed to be similar to land use #938 Coffee/Donut Show w/ Drive-Through only

Table 2. Stafford Commercial Trip Generation Comparison

Land Use (Trip Generation Category)	Quantity	Daily Vehicle Trips	AM Peak Hour Trips			PM Peak Hour Trips		
			In	Out	Total	In	Out	Total
Current Stafford Commercial Plan								
Shopping Center w/ no Grocery (#821)	52.5 KSF	3,545	56	35	91	134	138	272
Coffee/Donut Show w/ Drive-Through (#937)	2.3 KSF	1,227	101	97	198	45	45	90
Multifamily Housing (Mid- Rise) (#221)	280 DUs	1,289	26	86	112	67	43	110
Mini-Warehouse (#151)	231.7 KSF	336	12	9	21	16	19	35
Automated Car Wash (#948)	1 Tunnel	780	10	10	20	39	39	78
Fast Food Restaurant w/ Drive-Through (#934)	3 KSF (3x) and 5.1 KSF	6,590	320	310	630	244	221	465
Gas/Service Station (#944)	24 pumps	4,128	123	124	247	167	167	334
	Subtotal	17,895	648	671	1,319	712	672	1,384
	Internal Capture Reduction¹	2,280	25	25	50	114	114	228
	Pass by Reduction²	4,692	254	254	508	277	277	554
	Net New Trips	10,923	369	392	761	321	281	602
2021 Stafford MTIS (Commercial Parcels only)								
Shopping Center (#820)	120 KSF	4,971	118	72	190	212	230	442
Supermarket (#850)	34 KSF	3,623	78	52	130	178	171	349
Drive-in Bank (#912)	6 KSF	614	33	24	57	61	62	123
Hotel (#310)	200 Rooms	1,672	56	39	95	63	61	124
Gas/Service Station (#944)	16 pumps	2,752	82	82	164	112	112	224
	Subtotal	13,632	367	269	636	626	636	1,262
	Internal Capture Reduction¹	380	5	5	10	19	19	38
	Pass by Reduction²	1,376	41	41	82	56	56	112
	Net New Trips	11,876	321	223	544	551	561	1,112
	Change from Previous Plan	-953	48	169	217	-230	-280	-510
	Percent Change	-8.0 %	--	--	+39.9%	--	--	-45.9%

1. Daily internal capture is assumed to be 10 times the PM value as calculated using ITE methodology. See attached NCHRP 684 Worksheets for peak hours.

2. Pass by reduction of 50% for Gas/Service Station from MTIS and according to current ITE rates for Gas/Service Station, Shopping Center and Fast Food Restaurant for current site plan.

November 29, 2023

Mr. Grant Polley

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The comparison of trip generation indicates an increase of 217 trips in the AM peak hour and a decrease of 510 trips in the PM peak hour. These correspond to a percentage increase of 39.9 in the AM peak hour and a decrease of 45.9 in the PM peak hour.

Conclusions

The study resulted in the following conclusions:

- The newly proposed mix of commercial uses is generally in conformance with the previous analysis contained in the 2021 Stafford Logistics Center TIS. PM peak hour trips from the master TIS were approximately 800 trips higher than in the AM so despite the more balanced peaks with the current plan, PM is likely to still be the worst case for traffic operations. Therefore, it is anticipated that previous analysis and proposed intersection layouts will remain valid.
- The current site plan assumes additional access locations along Picadilly Road, two right-in/right-out north of the intersection of Picadilly Road/13th Avenue on both the east and west side. Also, along 13th Avenue, one full movement west of the intersection of Picadilly Road/13th Avenue on the north side of the roadway and one right-in/right-out east of the intersection of Picadilly Road/13th Avenue on the north side of the roadway.
- A full TIS is being prepared for submittal to City of Aurora to fully analyze all the driveway connections as well as confirm prior analysis for the intersections of Picadilly Road/Colfax Avenue and Picadilly Road/13th Avenue.

Please let me know if you have any questions about this letter or need any additional information.



Philip Dunham, PE, PTOE
Transportation Engineer

Attachment

NCHRP 684 Internal Trip Capture Estimation Tool						
Project Name:	Stafford Commercial			Organization:	Felsburg Holt & Ullevig	
Project Location:	Aurora, CO			Performed By:	PJD	
Scenario Description:	Buildout			Date:	11/22/2023	
Analysis Year:	2040			Checked By:		
Analysis Period:	AM Street Peak Hour			Date:		

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)						
Land Use	Development Data (For Information Only)			Estimated Vehicle-Trips ³		
	ITE LUCs ¹	Quantity	Units	Total	Entering	Exiting
Office				0	0	0
Retail	821	52,500	SF	55	38	17
Restaurant	934, 937	14,100 & 2,300	SF	512	263	249
Cinema/Entertainment				0	0	0
Residential	221	280	DUs	112	26	86
Hotel				0	0	0
All Other Land Uses ²	151, 944	231.7 & 24	KSF and pumps	132	67	65
				811	394	417

Table 2-A: Mode Split and Vehicle Occupancy Estimates						
Land Use	Entering Trips			Exiting Trips		
	Veh. Occ. ⁴	% Transit	% Non-Motorized	Veh. Occ. ⁴	% Transit	% Non-Motorized
Office	1.00			1.00		
Retail	1.00			1.00		
Restaurant	1.00			1.00		
Cinema/Entertainment	1.00			1.00		
Residential	1.00			1.00		
Hotel	1.00			1.00		
All Other Land Uses ²	1.00			1.00		

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail	0		2	0	1	0
Restaurant	0	3		0	1	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	1	17	0		0
Hotel	0	0	0	0	0	

Table 5-A: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	811	394	417
Internal Capture Percentage	6%	6%	6%
External Vehicle-Trips ⁵	761	369	392
External Transit-Trips ⁶	0	0	0
External Non-Motorized Trips ⁶	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use		
Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	11%	18%
Restaurant	7%	2%
Cinema/Entertainment	N/A	N/A
Residential	8%	21%
Hotel	N/A	N/A

¹Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

²Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

³Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

⁴Enter vehicle occupancy assumed in Table 1-A vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made to Tables 5-A, 9-A (O and D). Enter transit, non-motorized percentages that will result with proposed mixed-use project complete.

⁵Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.

⁶Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

Project Name:	Stafford Commercial
Analysis Period:	AM Street Peak Hour

Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	0	0	1.00	0	0
Retail	1.00	38	38	1.00	17	17
Restaurant	1.00	263	263	1.00	249	249
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	26	26	1.00	86	86
Hotel	1.00	0	0	1.00	0	0

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	5		2	0	2	0
Restaurant	77	35		0	10	7
Cinema/Entertainment	0	0	0		0	0
Residential	2	1	17	0		0
Hotel	0	0	0	0	0	

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		12	60	0	0	0
Retail	0		132	0	1	0
Restaurant	0	3		0	1	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	6	53	0		0
Hotel	0	2	16	0	0	

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²
Office	0	0	0	0	0	0
Retail	4	34	38	34	0	0
Restaurant	19	244	263	244	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	2	24	26	24	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses ³	0	67	67	67	0	0

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²
Office	0	0	0	0	0	0
Retail	3	14	17	14	0	0
Restaurant	4	245	249	245	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	18	68	86	68	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses ³	0	65	65	65	0	0

¹Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

²Person-Trips

³Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	Stafford Commercial	Organization:	Felsburg Holt & Ullevig
Project Location:	Aurora, CO	Performed By:	PJD
Scenario Description:	Buildout	Date:	11/22/2023
Analysis Year:	2040	Checked By:	
Analysis Period:	PM Street Peak Hour	Date:	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)						
Land Use	Development Data (For Information Only)			Estimated Vehicle-Trips ³		
	ITE LUCs ¹	Quantity	Units	Total	Entering	Exiting
Office				0	0	0
Retail	821	52,500	SF	164	80	84
Restaurant	934, 937	14,100 & 2,300	SF	299	161	138
Cinema/Entertainment				0	0	0
Residential	221	280	DUs	110	67	43
Hotel				0	0	0
All Other Land Uses ²	151, 944	231.7 & 24	KSF and pumps	257	127	130
				830	435	395

Table 2-P: Mode Split and Vehicle Occupancy Estimates						
Land Use	Entering Trips			Exiting Trips		
	Veh. Occ. ⁴	% Transit	% Non-Motorized	Veh. Occ. ⁴	% Transit	% Non-Motorized
Office	1.00			1.00		
Retail	1.00			1.00		
Restaurant	1.00			1.00		
Cinema/Entertainment	1.00			1.00		
Residential	1.00			1.00		
Hotel	1.00			1.00		
All Other Land Uses ²	1.00			1.00		

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		24	0	22	0
Restaurant	0	40		0	11	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	8	9	0		0
Hotel	0	0	0	0	0	

%s high, verify

Table 5-P: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	830	435	395
Internal Capture Percentage	27%	26%	29%
External Vehicle-Trips ⁵	602	321	281
External Transit-Trips ⁶	0	0	0
External Non-Motorized Trips ⁶	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use		
Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	60%	55%
Restaurant	20%	37%
Cinema/Entertainment	N/A	N/A
Residential	49%	40%
Hotel	N/A	N/A

¹Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

²Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

³Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

⁴Enter vehicle occupancy assumed in Table 1-P vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made.

⁵Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.

⁶Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

Project Name:	Stafford Commercial
Analysis Period:	PM Street Peak Hour

Land Use	Table 7-P (D): Entering Trips			Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	0	0	1.00	0	0
Retail	1.00	80	80	1.00	84	84
Restaurant	1.00	161	161	1.00	138	138
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	67	67	1.00	43	43
Hotel	1.00	0	0	1.00	0	0

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	2		24	3	22	4
Restaurant	4	57		11	25	10
Cinema/Entertainment	0	0	0		0	0
Residential	2	18	9	0		1
Hotel	0	0	0	0	0	

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		6	3	0	3	0
Retail	0		47	0	31	0
Restaurant	0	40		0	11	0
Cinema/Entertainment	0	3	5		3	0
Residential	0	8	23	0		0
Hotel	0	2	8	0	0	

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²
Office	0	0	0	0	0	0
Retail	48	32	80	32	0	0
Restaurant	33	128	161	128	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	33	34	67	34	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses ³	0	127	127	127	0	0

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles ¹	Transit ²	Non-Motorized ²
Office	0	0	0	0	0	0
Retail	46	38	84	38	0	0
Restaurant	51	87	138	87	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	17	26	43	26	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses ³	0	130	130	130	0	0

¹Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P
²Person-Trips
³Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator
*Indicates computation that has been rounded to the nearest whole number.

APPENDIX D. LONG-TERM BACKGROUND LEVEL OF SERVICE

Timings
1: Picadilly Rd & Colfax Ave

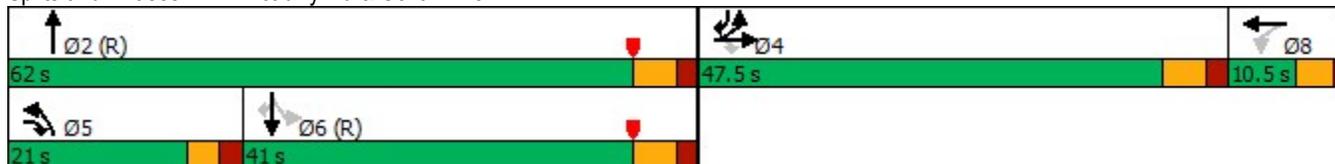
2040 Background Conditions
AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations										
Traffic Volume (vph)	953	5	364	5	5	459	720	5	977	1283
Future Volume (vph)	953	5	364	5	5	459	720	5	977	1283
Turn Type	Split	NA	pm+ov	Perm	NA	Prot	NA	Perm	NA	pm+ov
Protected Phases	4	4	5		8	5	2		6	4
Permitted Phases			4	8				6		6
Detector Phase	4	4	5	8	8	5	2	6	6	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)	24.0	24.0	10.0	10.0	10.0	10.0	24.0	24.0	24.0	24.0
Total Split (s)	47.5	47.5	21.0	10.5	10.5	21.0	62.0	41.0	41.0	47.5
Total Split (%)	39.6%	39.6%	17.5%	8.8%	8.8%	17.5%	51.7%	34.2%	34.2%	39.6%
Yellow Time (s)	4.0	4.0	3.0	3.5	3.5	3.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	1.0	1.0	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
Total Lost Time (s)	6.0	6.0	5.0		4.5	5.0	6.0	6.0	6.0	6.0
Lead/Lag			Lead			Lead		Lag		Lag
Lead-Lag Optimize?			Yes			Yes		Yes		Yes
Recall Mode	None	None	None	None	None	None	C-Min	C-Min	C-Min	None
Act Effct Green (s)	41.5	41.5	61.5		5.8	16.0	62.3	41.3	41.3	88.8
Actuated g/C Ratio	0.35	0.35	0.51		0.05	0.13	0.52	0.34	0.34	0.74
v/c Ratio	0.63	0.01	0.46		0.18	1.14	0.31	0.02	0.91	1.17
Control Delay	34.9	26.0	10.6		47.6	129.2	19.4	30.2	51.0	102.2
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.9	26.0	10.6		47.6	129.2	19.4	30.2	51.0	102.2
LOS	C	C	B		D	F	B	C	D	F
Approach Delay		28.2			47.6		62.0		80.0	
Approach LOS		C			D		E		E	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 92 (77%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
 Natural Cycle: 150
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.17
 Intersection Signal Delay: 61.1
 Intersection Capacity Utilization 109.6%
 Analysis Period (min) 15
 Intersection LOS: E
 ICU Level of Service H

Splits and Phases: 1: Picadilly Rd & Colfax Ave



Queues
1: Picadilly Rd & Colfax Ave

2040 Background Conditions
AM Peak Hour



Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	1003	5	383	15	483	763	5	1028	1351
v/c Ratio	0.63	0.01	0.46	0.18	1.14	0.31	0.02	0.91	1.17
Control Delay	34.9	26.0	10.6	47.6	129.2	19.4	30.2	51.0	102.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.9	26.0	10.6	47.6	129.2	19.4	30.2	51.0	102.2
Queue Length 50th (ft)	228	3	103	8	~227	139	2	374	~1166
Queue Length 95th (ft)	276	12	141	31	m#298	m153	13	#599	#1502
Internal Link Dist (ft)		479		447		398		388	
Turn Bay Length (ft)	325		325		300		150		150
Base Capacity (vph)	1600	597	824	87	424	2446	208	1129	1155
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.01	0.46	0.17	1.14	0.31	0.02	0.91	1.17

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM 6th Signalized Intersection Summary
1: Picadilly Rd & Colfax Ave

2040 Background Conditions
AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	953	5	364	5	5	5	459	720	5	5	977	1283
Future Volume (veh/h)	953	5	364	5	5	5	459	720	5	5	977	1283
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	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752
Adj Flow Rate, veh/h	1003	5	383	5	5	5	483	758	5	5	1028	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	10	10	10	10	10	10	10	10	10	10	10	10
Cap, veh/h	1253	467	593	9	9	9	432	2842	19	327	1347	
Arrive On Green	0.27	0.27	0.27	0.02	0.02	0.02	0.04	0.19	0.19	0.40	0.40	0.00
Sat Flow, veh/h	4705	1752	1485	542	542	542	3237	4902	32	659	3328	1485
Grp Volume(v), veh/h	1003	5	383	15	0	0	483	493	270	5	1028	0
Grp Sat Flow(s),veh/h/ln	1568	1752	1485	1627	0	0	1618	1594	1746	659	1664	1485
Q Serve(g_s), s	23.9	0.3	25.0	1.1	0.0	0.0	16.0	15.8	15.8	0.5	31.9	0.0
Cycle Q Clear(g_c), s	23.9	0.3	25.0	1.1	0.0	0.0	16.0	15.8	15.8	0.5	31.9	0.0
Prop In Lane	1.00		1.00	0.33		0.33	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	1253	467	593	27	0	0	432	1849	1012	327	1347	
V/C Ratio(X)	0.80	0.01	0.65	0.56	0.00	0.00	1.12	0.27	0.27	0.02	0.76	
Avail Cap(c_a), veh/h	1627	606	711	81	0	0	432	1849	1012	327	1347	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	41.0	32.4	29.1	58.6	0.0	0.0	57.4	26.8	26.8	21.4	30.8	0.0
Incr Delay (d2), s/veh	2.2	0.0	1.5	17.2	0.0	0.0	79.9	0.4	0.6	0.1	4.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	14.1	0.2	13.6	1.0	0.0	0.0	18.2	11.1	12.0	0.2	19.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.3	32.4	30.7	75.8	0.0	0.0	137.3	27.1	27.4	21.5	34.9	0.0
LnGrp LOS	D	C	C	E	A	A	F	C	C	C	C	
Approach Vol, veh/h		1391			15			1246			1033	
Approach Delay, s/veh		39.8			75.8			69.9			34.8	
Approach LOS		D			E			E			C	
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		75.6		38.0	21.0	54.6		6.5				
Change Period (Y+Rc), s		6.0		6.0	5.0	6.0		4.5				
Max Green Setting (Gmax), s		56.0		41.5	16.0	35.0		6.0				
Max Q Clear Time (g_c+I1), s		17.8		27.0	18.0	33.9		3.1				
Green Ext Time (p_c), s		5.0		4.9	0.0	0.7		0.0				

Intersection Summary

HCM 6th Ctrl Delay	48.7
HCM 6th LOS	D

Notes

- User approved pedestrian interval to be less than phase max green.
- Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗			↗	↗ ↑↑↑			↗ ↑↑↑		
Traffic Vol, veh/h	0	0	0	0	0	0	0	1179	0	0	1341	0
Future Vol, veh/h	0	0	0	0	0	0	0	1179	0	0	1341	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	-	-	0	-	-	0	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	10	2	2	10	2
Mvmt Flow	0	0	0	0	0	0	0	1241	0	0	1412	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	-	-	706	-	-	621	1412	0	0	1241	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	7.14	-	-	7.14	5.34	-	-	5.34	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.92	-	-	3.92	3.12	-	-	3.12	-	-
Pot Cap-1 Maneuver	0	0	*610	0	0	*653	*767	-	-	*821	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %			1			1	1	-	-	1	-	-
Mov Cap-1 Maneuver	-	-	*610	-	-	*653	*767	-	-	*821	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	* 767	-	-	-	-	* 821	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	0	0	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-	0	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↑ ↑ ↑	↑ ↑ ↑			↑ ↑ ↑
Traffic Vol, veh/h	0	0	1179	0	0	1341
Future Vol, veh/h	0	0	1179	0	0	1341
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	95	95	95	95	95	95
Heavy Vehicles, %	2	2	10	2	2	10
Mvmt Flow	0	0	1241	0	0	1412

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	-	621	0	0	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-
Pot Cap-1 Maneuver	0	*663	-	-	0
Stage 1	0	-	-	-	0
Stage 2	0	-	-	-	0
Platoon blocked, %		1	-	-	-
Mov Cap-1 Maneuver	-	*663	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	-	-	0
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Timings
5: Picadilly Rd & 13th Ave/Realigned Colfax Ave

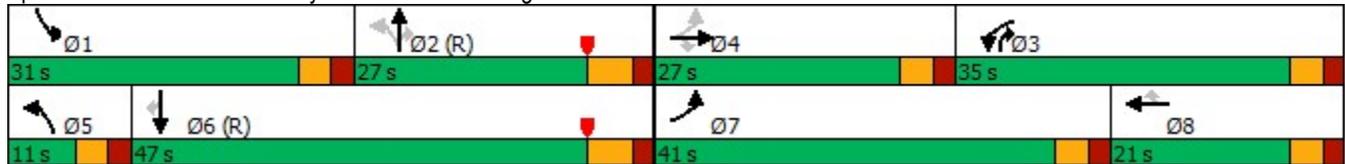
2040 Background Conditions
AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	45	54	450	176	625	40	500	325	525	700	116
Future Volume (vph)	54	45	54	450	176	625	40	500	325	525	700	116
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	pm+ov	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases	4		4			8	2		2			6
Detector Phase	7	4	4	3	8	8	5	2	3	1	6	6
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)	11.0	23.0	23.0	24.0	24.0	24.0	10.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	41.0	27.0	27.0	35.0	21.0	21.0	11.0	27.0	35.0	31.0	47.0	47.0
Total Split (%)	34.2%	22.5%	22.5%	29.2%	17.5%	17.5%	9.2%	22.5%	29.2%	25.8%	39.2%	39.2%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0	3.0	3.0	4.0	4.0
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	6.0	5.0	5.0	6.0	6.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes											
Recall Mode	None	C-Min	None	None	C-Min	C-Min						
Act Effct Green (s)	9.5	8.7	8.7	23.7	22.8	22.8	51.3	44.4	70.1	24.3	65.0	65.0
Actuated g/C Ratio	0.08	0.07	0.07	0.20	0.19	0.19	0.43	0.37	0.58	0.20	0.54	0.54
v/c Ratio	0.44	0.38	0.19	0.76	1.35	0.69	0.13	0.30	0.34	0.86	0.29	0.14
Control Delay	62.3	60.9	1.4	53.2	209.8	10.3	15.6	29.9	1.8	63.1	5.0	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	0.0
Total Delay	62.3	60.9	1.4	53.2	209.8	10.3	15.6	29.9	1.8	63.1	5.0	0.3
LOS	E	E	A	D	F	B	B	C	A	E	A	A
Approach Delay		40.3			91.6			18.7			27.4	
Approach LOS		D			F			B			C	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 14 (12%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow
 Natural Cycle: 95
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.35
 Intersection Signal Delay: 48.1
 Intersection Capacity Utilization 68.3%
 Analysis Period (min) 15
 Intersection LOS: D
 ICU Level of Service C

Splits and Phases: 5: Picadilly Rd & 13th Ave/Realigned Colfax Ave



Queues
5: Picadilly Rd & 13th Ave/Realigned Colfax Ave

2040 Background Conditions
AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	57	47	57	474	435	408	42	526	342	553	737	122
v/c Ratio	0.44	0.38	0.19	0.76	1.35	0.69	0.13	0.30	0.34	0.86	0.29	0.14
Control Delay	62.3	60.9	1.4	53.2	209.8	10.3	15.6	29.9	1.8	63.1	5.0	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	0.0
Total Delay	62.3	60.9	1.4	53.2	209.8	10.3	15.6	29.9	1.8	63.1	5.0	0.3
Queue Length 50th (ft)	43	35	0	179	~431	0	12	110	0	159	31	0
Queue Length 95th (ft)	85	74	0	223	#592	95	34	161	26	m173	m64	m0
Internal Link Dist (ft)		372			156			282				189
Turn Bay Length (ft)	150		150	200			150		150	150		150
Base Capacity (vph)	492	316	439	795	323	595	317	1745	1059	689	2553	866
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	0.12	0.15	0.13	0.60	1.35	0.69	0.13	0.30	0.32	0.80	0.29	0.14

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

HCM 6th Signalized Intersection Summary
5: Picadilly Rd & 13th Ave/Realigned Colfax Ave

2040 Background Conditions
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	54	45	54	450	176	625	40	500	325	525	700	116
Future Volume (veh/h)	54	45	54	450	176	625	40	500	325	525	700	116
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	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752
Adj Flow Rate, veh/h	57	47	57	474	540	422	42	526	342	553	737	122
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	10	10	10	10	10	10	10	10	10	10	10	10
Cap, veh/h	133	92	78	555	307	260	361	1977	861	624	2749	853
Arrive On Green	0.04	0.05	0.05	0.17	0.18	0.18	0.03	0.41	0.41	0.06	0.19	0.19
Sat Flow, veh/h	1668	1752	1485	3337	1752	1485	1668	4782	1485	3237	4782	1485
Grp Volume(v), veh/h	57	47	57	474	540	422	42	526	342	553	737	122
Grp Sat Flow(s),veh/h/ln	1668	1752	1485	1668	1752	1485	1668	1594	1485	1618	1594	1485
Q Serve(g_s), s	4.1	3.1	4.0	16.6	21.0	21.0	1.7	8.7	8.4	20.3	15.8	8.2
Cycle Q Clear(g_c), s	4.1	3.1	4.0	16.6	21.0	21.0	1.7	8.7	8.4	20.3	15.8	8.2
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	133	92	78	555	307	260	361	1977	861	624	2749	853
V/C Ratio(X)	0.43	0.51	0.73	0.85	1.76	1.62	0.12	0.27	0.40	0.89	0.27	0.14
Avail Cap(c_a), veh/h	561	321	272	834	307	260	392	1977	861	701	2749	853
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
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	56.7	55.4	43.3	48.6	49.5	49.5	19.0	23.2	5.0	54.9	27.1	24.0
Incr Delay (d2), s/veh	2.2	4.3	12.4	5.6	355.6	297.8	0.1	0.3	1.4	12.2	0.2	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(95%),veh/ln	3.2	2.7	3.5	11.7	61.4	46.0	1.2	5.8	4.5	15.0	11.0	5.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.9	59.7	55.7	54.2	405.1	347.3	19.1	23.5	6.3	67.0	27.3	24.4
LnGrp LOS	E	E	E	D	F	F	B	C	A	E	C	C
Approach Vol, veh/h		161			1436			910			1412	
Approach Delay, s/veh		58.0			272.3			16.9			42.6	
Approach LOS		E			F			B			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	28.1	55.6	25.0	11.3	8.8	75.0	10.3	26.0				
Change Period (Y+Rc), s	5.0	6.0	5.0	5.0	5.0	6.0	5.0	5.0				
Max Green Setting (Gmax), s	26.0	21.0	30.0	22.0	6.0	41.0	36.0	16.0				
Max Q Clear Time (g_c+I1), s	22.3	10.7	18.6	6.0	3.7	17.8	6.1	23.0				
Green Ext Time (p_c), s	0.8	3.3	1.4	0.3	0.0	5.2	0.1	0.0				
Intersection Summary												
HCM 6th Ctrl Delay	121.4											
HCM 6th LOS	F											
Notes												
User approved pedestrian interval to be less than phase max green.												
User approved volume balancing among the lanes for turning movement.												

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗ ↑↑↑	↗ ↑↑↑		↘ ↑↑↑	↘ ↑↑↑
Traffic Vol, veh/h	0	0	865	0	0	1229
Future Vol, veh/h	0	0	865	0	0	1229
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	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	10	2	2	10
Mvmt Flow	0	0	911	0	0	1294

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	-	456	0	0	911
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	5.34
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	3.12
Pot Cap-1 Maneuver	0	472	-	-	432
Stage 1	0	-	-	-	-
Stage 2	0	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	-	472	-	-	432
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	432	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↑	↗		↘	
Traffic Vol, veh/h	0	153	332	0	0	0
Future Vol, veh/h	0	153	332	0	0	0
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	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	10	10	2	2	2
Mvmt Flow	0	161	349	0	0	0

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	349	0	-	0	510 349
Stage 1	-	-	-	-	349 -
Stage 2	-	-	-	-	161 -
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	-	-	-	*606 *816
Stage 1	-	-	-	-	*769 -
Stage 2	-	-	-	-	*868 -
Platoon blocked, %	1	-	-	-	1 1
Mov Cap-1 Maneuver	*1221	-	-	-	*606 *816
Mov Cap-2 Maneuver	-	-	-	-	*606 -
Stage 1	-	-	-	-	*769 -
Stage 2	-	-	-	-	*868 -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	* 1221	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑	↑		↑
Traffic Vol, veh/h	0	904	1276	0	0	0
Future Vol, veh/h	0	904	1276	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	150	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	10	10	2	2	2
Mvmt Flow	0	952	1343	0	0	0

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	-	0	-	0	672
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0 398
Stage 1	0	-	-	-	0 -
Stage 2	0	-	-	-	0 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	398
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	-	0
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	-

HCM 6th TWSC
 9: Realigned Colfax Ave & Site Driveway #3

2040 Background Conditions
 AM Peak Hour

Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗		↖	↖↗		↖	↗		↖	↗	
Traffic Vol, veh/h	0	904	0	0	1276	0	0	0	0	0	0	0
Future Vol, veh/h	0	904	0	0	1276	0	0	0	0	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									
Storage Length	150	-	-	150	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	10	2	2	10	2	2	2	2	2	2	2
Mvmt Flow	0	952	0	0	1343	0	0	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1343	0	0	952	0	0	1624	2295	476	1819	2295	672
Stage 1	-	-	-	-	-	-	952	952	-	1343	1343	-
Stage 2	-	-	-	-	-	-	672	1343	-	476	952	-
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	509	-	-	*1063	-	-	*152	*43	*711	*93	*43	398
Stage 1	-	-	-	-	-	-	*670	*587	-	*160	*219	-
Stage 2	-	-	-	-	-	-	*412	*219	-	*670	*587	-
Platoon blocked, %		-	-	1	-	-	1	1	1	1	1	
Mov Cap-1 Maneuver	509	-	-	*1063	-	-	*152	*43	*711	*93	*43	398
Mov Cap-2 Maneuver	-	-	-	-	-	-	*152	*43	-	*93	*43	-
Stage 1	-	-	-	-	-	-	*670	*587	-	*160	*219	-
Stage 2	-	-	-	-	-	-	*412	*219	-	*670	*587	-

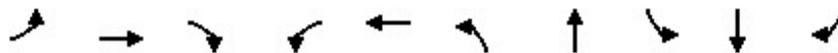
Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	0
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	-	-	509	-	-	*1063	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-	-	-
HCM Control Delay (s)	0	0	0	-	-	0	-	-	0	0
HCM Lane LOS	A	A	A	-	-	A	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	-	-	0	-	-	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Timings
1: Picadilly Rd & Colfax Ave

2040 Background Conditions
PM Peak Hour



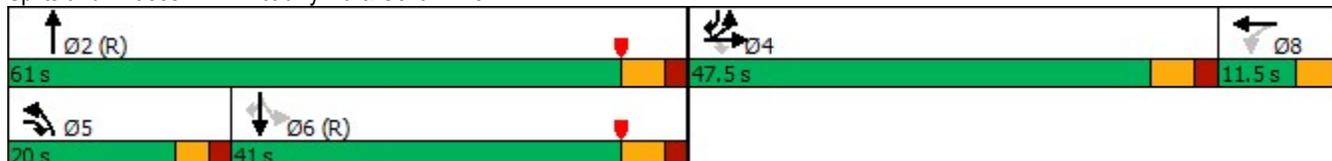
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	←←←	↑	↗		↔	↗↗	↑↑↑	↘	↑↑	↗
Traffic Volume (vph)	1432	5	397	5	5	469	703	5	875	974
Future Volume (vph)	1432	5	397	5	5	469	703	5	875	974
Turn Type	Split	NA	pm+ov	Perm	NA	Prot	NA	Perm	NA	pm+ov
Protected Phases	4	4	5		8	5	2		6	4
Permitted Phases			4	8				6		6
Detector Phase	4	4	5	8	8	5	2	6	6	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)	24.0	24.0	10.0	10.0	10.0	10.0	24.0	24.0	24.0	24.0
Total Split (s)	47.5	47.5	20.0	11.5	11.5	20.0	61.0	41.0	41.0	47.5
Total Split (%)	39.6%	39.6%	16.7%	9.6%	9.6%	16.7%	50.8%	34.2%	34.2%	39.6%
Yellow Time (s)	4.0	4.0	3.0	3.5	3.5	3.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	1.0	1.0	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
Total Lost Time (s)	6.0	6.0	5.0		4.5	5.0	6.0	6.0	6.0	6.0
Lead/Lag			Lead			Lead		Lag		Lag
Lead-Lag Optimize?			Yes			Yes		Yes		Yes
Recall Mode	None	None	None	None	None	None	C-Min	C-Min	C-Min	None
Act Effct Green (s)	41.5	41.5	60.5		6.2	15.0	61.9	41.9	41.9	89.4
Actuated g/C Ratio	0.35	0.35	0.50		0.05	0.12	0.52	0.35	0.35	0.74
v/c Ratio	0.94	0.01	0.51		0.17	1.24	0.31	0.02	0.80	0.87
Control Delay	50.8	26.0	10.8		46.8	176.8	9.5	30.0	42.8	18.9
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.8	26.0	10.8		46.8	176.8	9.5	30.0	42.8	18.9
LOS	D	C	B		D	F	A	C	D	B
Approach Delay		42.0			46.8		76.2		30.2	
Approach LOS		D			D		E		C	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 94 (78%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
 Natural Cycle: 110
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.24
 Intersection Signal Delay: 45.8
 Intersection Capacity Utilization 90.8%
 Analysis Period (min) 15

Intersection LOS: D
 ICU Level of Service E

Splits and Phases: 1: Picadilly Rd & Colfax Ave



Queues
1: Picadilly Rd & Colfax Ave

2040 Background Conditions
PM Peak Hour



Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	1507	5	418	15	494	745	5	921	1025
v/c Ratio	0.94	0.01	0.51	0.17	1.24	0.31	0.02	0.80	0.87
Control Delay	50.8	26.0	10.8	46.8	176.8	9.5	30.0	42.8	18.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.8	26.0	10.8	46.8	176.8	9.5	30.0	42.8	18.9
Queue Length 50th (ft)	399	3	112	8	~252	62	2	315	285
Queue Length 95th (ft)	#497	12	150	30	#364	116	13	#505	#933
Internal Link Dist (ft)		479		447		398		388	
Turn Bay Length (ft)	325		325		300		150		150
Base Capacity (vph)	1600	597	826	96	397	2430	215	1145	1173
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.94	0.01	0.51	0.16	1.24	0.31	0.02	0.80	0.87

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary
1: Picadilly Rd & Colfax Ave

2040 Background Conditions
PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1432	5	397	5	5	5	469	703	5	5	875	974
Future Volume (veh/h)	1432	5	397	5	5	5	469	703	5	5	875	974
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	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752
Adj Flow Rate, veh/h	1507	5	418	5	5	5	494	740	5	5	921	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	10	10	10	10	10	10	10	10	10	10	10	10
Cap, veh/h	1605	598	692	9	9	9	405	2475	17	287	1126	
Arrive On Green	0.34	0.34	0.34	0.02	0.02	0.02	0.25	1.00	1.00	0.34	0.34	0.00
Sat Flow, veh/h	4705	1752	1485	542	542	542	3237	4901	33	670	3328	1485
Grp Volume(v), veh/h	1507	5	418	15	0	0	494	481	264	5	921	0
Grp Sat Flow(s),veh/h/ln	1568	1752	1485	1627	0	0	1618	1594	1746	670	1664	1485
Q Serve(g_s), s	37.3	0.2	25.1	1.1	0.0	0.0	15.0	0.0	0.0	0.6	30.4	0.0
Cycle Q Clear(g_c), s	37.3	0.2	25.1	1.1	0.0	0.0	15.0	0.0	0.0	0.6	30.4	0.0
Prop In Lane	1.00		1.00	0.33		0.33	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	1605	598	692	27	0	0	405	1610	882	287	1126	
V/C Ratio(X)	0.94	0.01	0.60	0.56	0.00	0.00	1.22	0.30	0.30	0.02	0.82	
Avail Cap(c_a), veh/h	1627	606	699	95	0	0	405	1610	882	287	1126	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	38.3	26.1	23.8	58.6	0.0	0.0	45.0	0.0	0.0	26.5	36.3	0.0
Incr Delay (d2), s/veh	10.9	0.0	1.5	17.2	0.0	0.0	119.9	0.5	0.9	0.1	6.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	21.6	0.2	13.4	1.0	0.0	0.0	18.7	0.2	0.4	0.2	19.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.3	26.1	25.3	75.8	0.0	0.0	164.9	0.5	0.9	26.6	43.0	0.0
LnGrp LOS	D	C	C	E	A	A	F	A	A	C	D	
Approach Vol, veh/h		1930			15			1239			926	
Approach Delay, s/veh		44.0			75.8			66.1			42.9	
Approach LOS		D			E			E			D	
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		66.6		46.9	20.0	46.6		6.5				
Change Period (Y+Rc), s		6.0		6.0	5.0	6.0		4.5				
Max Green Setting (Gmax), s		55.0		41.5	15.0	35.0		7.0				
Max Q Clear Time (g_c+I1), s		2.0		39.3	17.0	32.4		3.1				
Green Ext Time (p_c), s		5.0		1.7	0.0	1.5		0.0				
Intersection Summary												
HCM 6th Ctrl Delay				50.5								
HCM 6th LOS				D								
Notes												
User approved pedestrian interval to be less than phase max green.												
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 6th TWSC
2: Picadilly Rd & Site Driveway #2

2040 Background Conditions
PM Peak Hour

Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗			↗	↗ ↑↑↑			↗ ↑↑↑		
Traffic Vol, veh/h	0	0	0	0	0	0	0	1177	0	0	1272	0
Future Vol, veh/h	0	0	0	0	0	0	0	1177	0	0	1272	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	-	-	0	-	-	0	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	10	2	2	10	10
Mvmt Flow	0	0	0	0	0	0	0	1239	0	0	1339	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	-	-	670	-	-	620	1339	0	0	1239	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	7.14	-	-	7.14	5.34	-	-	5.34	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.92	-	-	3.92	3.12	-	-	3.12	-	-
Pot Cap-1 Maneuver	0	0	*632	0	0	*653	*794	-	-	*821	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %			1			1	1	-	-	1	-	-
Mov Cap-1 Maneuver	-	-	*632	-	-	*653	*794	-	-	*821	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	* 794	-	-	-	-	* 821	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	0	0	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-	0	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↑ ↑ ↑	↑ ↑ ↑			↑ ↑ ↑
Traffic Vol, veh/h	0	0	1172	0	0	1272
Future Vol, veh/h	0	0	1172	0	0	1272
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	95	95	95	95	95	95
Heavy Vehicles, %	2	2	10	2	2	10
Mvmt Flow	0	0	1234	0	0	1339

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	-	617	0	0	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-
Pot Cap-1 Maneuver	0	*663	-	-	0
Stage 1	0	-	-	-	0
Stage 2	0	-	-	-	0
Platoon blocked, %		1	-	-	-
Mov Cap-1 Maneuver	-	*663	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Control Delay (s)	-	-	0
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Timings
5: Picadilly Rd & 13th Ave/Realigned Colfax Ave

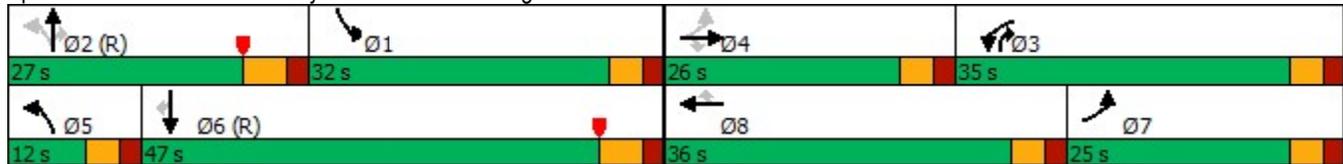
2040 Background Conditions
PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	147	152	50	456	75	525	30	500	400	550	625	97
Future Volume (vph)	147	152	50	456	75	525	30	500	400	550	625	97
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	pm+ov	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases	4		4			8	2		2			6
Detector Phase	7	4	4	3	8	8	5	2	3	1	6	6
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)	11.0	23.0	23.0	24.0	24.0	24.0	10.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	25.0	26.0	26.0	35.0	36.0	36.0	12.0	27.0	35.0	32.0	47.0	47.0
Total Split (%)	20.8%	21.7%	21.7%	29.2%	30.0%	30.0%	10.0%	22.5%	29.2%	26.7%	39.2%	39.2%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0	3.0	3.0	4.0	4.0
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	6.0	5.0	5.0	6.0	6.0
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lag	Lag
Lead-Lag Optimize?	Yes											
Recall Mode	None	C-Min	None	None	C-Min	C-Min						
Act Effct Green (s)	33.2	16.1	16.1	24.1	23.1	23.1	34.5	33.5	63.6	25.3	56.6	56.6
Actuated g/C Ratio	0.28	0.13	0.13	0.20	0.19	0.19	0.29	0.28	0.53	0.21	0.47	0.47
v/c Ratio	0.53	0.69	0.14	0.75	0.85	0.60	0.17	0.40	0.49	0.86	0.30	0.13
Control Delay	44.5	64.8	0.7	52.5	48.0	9.2	39.1	38.6	13.4	37.1	12.7	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	0.0
Total Delay	44.5	64.8	0.7	52.5	48.0	9.2	39.1	38.6	13.4	37.1	12.7	0.3
LOS	D	E	A	D	D	A	D	D	B	D	B	A
Approach Delay		47.0			39.1			27.8			22.3	
Approach LOS		D			D			C			C	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 80 (67%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow
 Natural Cycle: 95
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.86
 Intersection Signal Delay: 31.0
 Intersection Capacity Utilization 65.7%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service C

Splits and Phases: 5: Picadilly Rd & 13th Ave/Realigned Colfax Ave



Queues
5: Picadilly Rd & 13th Ave/Realigned Colfax Ave

2040 Background Conditions
PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	155	160	53	480	322	310	32	526	421	579	658	102
v/c Ratio	0.53	0.69	0.14	0.75	0.85	0.60	0.17	0.40	0.49	0.86	0.30	0.13
Control Delay	44.5	64.8	0.7	52.5	48.0	9.2	39.1	38.6	13.4	37.1	12.7	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	0.0
Total Delay	44.5	64.8	0.7	52.5	48.0	9.2	39.1	38.6	13.4	37.1	12.7	0.3
Queue Length 50th (ft)	82	120	0	181	160	0	18	124	119	221	56	0
Queue Length 95th (ft)	113	186	0	226	263	77	50	181	226	#227	78	m0
Internal Link Dist (ft)		372			156			282			189	
Turn Bay Length (ft)	150		150	200			150		150	150		150
Base Capacity (vph)	330	302	436	795	467	590	198	1315	852	716	2223	774
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	0.47	0.53	0.12	0.60	0.69	0.53	0.16	0.40	0.49	0.81	0.30	0.13

Intersection Summary

- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

HCM 6th Signalized Intersection Summary
 5: Picadilly Rd & 13th Ave/Realigned Colfax Ave

2040 Background Conditions
 PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	147	152	50	456	75	525	30	500	400	550	625	97
Future Volume (veh/h)	147	152	50	456	75	525	30	500	400	550	625	97
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	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752
Adj Flow Rate, veh/h	155	160	53	480	0	606	32	526	421	579	658	102
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	10	10	10	10	10	10	10	10	10	10	10	10
Cap, veh/h	234	195	165	561	0	671	139	689	464	1273	2479	770
Arrive On Green	0.05	0.11	0.11	0.17	0.00	0.23	0.03	0.14	0.14	0.66	0.87	0.87
Sat Flow, veh/h	1668	1752	1485	3337	0	2969	1668	4782	1485	3237	4782	1485
Grp Volume(v), veh/h	155	160	53	480	0	606	32	526	421	579	658	102
Grp Sat Flow(s),veh/h/ln	1668	1752	1485	1668	0	1485	1668	1594	1485	1618	1594	1485
Q Serve(g_s), s	0.2	10.7	3.5	16.8	0.0	23.8	2.1	12.7	12.5	10.5	2.9	0.9
Cycle Q Clear(g_c), s	0.2	10.7	3.5	16.8	0.0	23.8	2.1	12.7	12.5	10.5	2.9	0.9
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	234	195	165	561	0	671	139	689	464	1273	2479	770
V/C Ratio(X)	0.66	0.82	0.32	0.86	0.00	0.90	0.23	0.76	0.91	0.45	0.27	0.13
Avail Cap(c_a), veh/h	423	307	260	834	0	767	191	837	510	1273	2479	770
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.67	1.67	1.67
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.1	52.2	37.7	48.5	0.0	45.2	47.6	49.4	39.6	14.3	4.1	1.9
Incr Delay (d2), s/veh	3.2	9.6	1.1	5.8	0.0	12.9	0.8	7.9	24.2	0.3	0.3	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(95%),veh/ln	8.2	9.0	2.7	11.9	0.0	15.1	1.6	9.2	10.8	5.5	1.5	0.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.3	61.8	38.8	54.3	0.0	58.1	48.4	57.3	63.8	14.5	4.3	2.3
LnGrp LOS	D	E	D	D	A	E	D	E	E	B	A	A
Approach Vol, veh/h		368			1086			979			1339	
Approach Delay, s/veh		54.9			56.4			59.8			8.6	
Approach LOS		D			E			E			A	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	53.2	23.3	25.2	18.3	8.3	68.2	11.4	32.1				
Change Period (Y+Rc), s	6.0	* 6	5.0	5.0	5.0	6.0	5.0	5.0				
Max Green Setting (Gmax), s	27.0	* 21	30.0	21.0	7.0	41.0	20.0	31.0				
Max Q Clear Time (g_c+I1), s	12.5	14.7	18.8	12.7	4.1	4.9	2.2	25.8				
Green Ext Time (p_c), s	1.8	2.6	1.4	0.6	0.0	5.0	0.4	1.3				
Intersection Summary												
HCM 6th Ctrl Delay			40.2									
HCM 6th LOS			D									
Notes												
User approved volume balancing among the lanes for turning movement.												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗ ↑↑↑	↗ ↑↑↑		↘ ↑↑↑	↘ ↑↑↑
Traffic Vol, veh/h	0	0	930	0	0	1131
Future Vol, veh/h	0	0	930	0	0	1131
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	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	10	2	2	10
Mvmt Flow	0	0	979	0	0	1191

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	-	490	0	0	979
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	5.34
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	3.12
Pot Cap-1 Maneuver	0	448	-	-	401
Stage 1	0	-	-	-	-
Stage 2	0	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	-	448	-	-	401
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	401	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	0	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↙	↑	↘		↘	
Traffic Vol, veh/h	0	349	202	0	0	0
Future Vol, veh/h	0	349	202	0	0	0
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	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	10	10	2	2	2
Mvmt Flow	0	367	213	0	0	0

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	213	0	-	0	580 213
Stage 1	-	-	-	-	213 -
Stage 2	-	-	-	-	367 -
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	*1377	-	-	-	*503 *920
Stage 1	-	-	-	-	*867 -
Stage 2	-	-	-	-	*701 -
Platoon blocked, %	1	-	-	-	1 1
Mov Cap-1 Maneuver	*1377	-	-	-	*503 *920
Mov Cap-2 Maneuver	-	-	-	-	*503 -
Stage 1	-	-	-	-	*867 -
Stage 2	-	-	-	-	*701 -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	* 1377	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑	↑		↑
Traffic Vol, veh/h	0	1086	1025	0	0	0
Future Vol, veh/h	0	1086	1025	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	150	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	10	10	2	2	2
Mvmt Flow	0	1143	1079	0	0	0

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	-	0	-	0	540
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	486
Stage 1	0	-	-	-	-
Stage 2	0	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	486
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-
HCM Control Delay (s)	-	-	-	0
HCM Lane LOS	-	-	-	A
HCM 95th %tile Q(veh)	-	-	-	-

Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↵	↕		↵	↕		↵	↕		↵	↕	
Traffic Vol, veh/h	0	1086	0	0	1025	0	0	0	0	0	0	0
Future Vol, veh/h	0	1086	0	0	1025	0	0	0	0	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									
Storage Length	150	-	-	150	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	10	2	2	10	2	2	2	2	2	2	2
Mvmt Flow	0	1143	0	0	1079	0	0	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1079	0	0	1143	0	0	1683	2222	572	1651	2222	540
Stage 1	-	-	-	-	-	-	1143	1143	-	1079	1079	-
Stage 2	-	-	-	-	-	-	540	1079	-	572	1143	-
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	642	-	-	607	-	-	61	43	463	65	43	486
Stage 1	-	-	-	-	-	-	213	273	-	233	293	-
Stage 2	-	-	-	-	-	-	494	293	-	472	273	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	642	-	-	607	-	-	61	43	463	65	43	486
Mov Cap-2 Maneuver	-	-	-	-	-	-	61	43	-	65	43	-
Stage 1	-	-	-	-	-	-	213	273	-	233	293	-
Stage 2	-	-	-	-	-	-	494	293	-	472	273	-

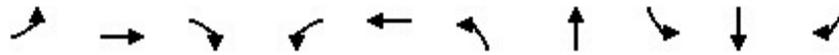
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			0			0		
HCM LOS							A			A		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	-	-	642	-	-	607	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-	-	-
HCM Control Delay (s)	0	0	0	-	-	0	-	-	0	0
HCM Lane LOS	A	A	A	-	-	A	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	-	-	0	-	-	-	-

APPENDIX E. LONG-TERM TOTAL LEVEL OF SERVICE

Timings
1: Picadilly Rd & Colfax Ave

2040 Total Conditions
AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	←←←	↑	↗		↔	←←←	↑↑↑	↘	↑↑	↗
Traffic Volume (vph)	954	5	455	5	5	611	853	5	1074	1315
Future Volume (vph)	954	5	455	5	5	611	853	5	1074	1315
Turn Type	Split	NA	pm+ov	Perm	NA	Prot	NA	Perm	NA	Free
Protected Phases	4	4	5		8	5	2		6	
Permitted Phases			4	8				6		Free
Detector Phase	4	4	5	8	8	5	2	6	6	
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	24.0	24.0	10.0	22.5	22.5	10.0	24.0	24.0	24.0	
Total Split (s)	34.0	34.0	34.0	15.0	15.0	34.0	71.0	37.0	37.0	
Total Split (%)	28.3%	28.3%	28.3%	12.5%	12.5%	28.3%	59.2%	30.8%	30.8%	
Yellow Time (s)	4.0	4.0	3.0	3.5	3.5	3.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	1.0	1.0	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	
Total Lost Time (s)	6.0	6.0	5.0		4.5	5.0	6.0	6.0	6.0	
Lead/Lag			Lead			Lead		Lag	Lag	
Lead-Lag Optimize?			Yes			Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	C-Min	C-Min	C-Min	
Act Effct Green (s)	28.0	28.0	59.8		6.5	27.8	75.1	42.4	42.4	120.0
Actuated g/C Ratio	0.23	0.23	0.50		0.05	0.23	0.63	0.35	0.35	1.00
v/c Ratio	0.93	0.01	0.56		0.18	0.87	0.31	0.03	0.98	0.94
Control Delay	60.4	35.6	9.3		46.6	50.4	8.7	31.2	60.6	15.1
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.4	35.6	9.3		46.6	50.4	8.7	31.2	60.6	15.1
LOS	E	D	A		D	D	A	C	E	B
Approach Delay		43.8			46.6		26.1		35.5	
Approach LOS		D			D		C		D	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 106 (88%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
 Natural Cycle: 145
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.98
 Intersection Signal Delay: 35.1
 Intersection Capacity Utilization 86.1%
 Analysis Period (min) 15

Intersection LOS: D
 ICU Level of Service E

Splits and Phases: 1: Picadilly Rd & Colfax Ave



Queues
1: Picadilly Rd & Colfax Ave

2040 Total Conditions
AM Peak Hour



Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	1004	5	479	15	643	903	5	1131	1384
v/c Ratio	0.93	0.01	0.56	0.18	0.87	0.31	0.03	0.98	0.94
Control Delay	60.4	35.6	9.3	46.6	50.4	8.7	31.2	60.6	15.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.4	35.6	9.3	46.6	50.4	8.7	31.2	60.6	15.1
Queue Length 50th (ft)	271	3	100	8	250	43	2	429	0
Queue Length 95th (ft)	#354	14	140	30	m315	m165	14	#710	#127
Internal Link Dist (ft)		479		447		398		388	
Turn Bay Length (ft)	325		325		300		150		150
Base Capacity (vph)	1079	402	873	132	769	2949	184	1158	1468
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.93	0.01	0.55	0.11	0.84	0.31	0.03	0.98	0.94

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM 6th Signalized Intersection Summary
1: Picadilly Rd & Colfax Ave

2040 Total Conditions
AM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	954	5	455	5	5	5	611	853	5	5	1074	1315
Future Volume (veh/h)	954	5	455	5	5	5	611	853	5	5	1074	1315
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	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752
Adj Flow Rate, veh/h	1004	5	479	5	5	5	643	898	5	5	1131	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	10	10	10	10	10	10	10	10	10	10	10	10
Cap, veh/h	1098	409	675	9	9	9	715	3007	17	262	1165	
Arrive On Green	0.23	0.23	0.23	0.02	0.02	0.02	0.07	0.20	0.20	0.35	0.35	0.00
Sat Flow, veh/h	4705	1752	1485	542	542	542	3237	4908	27	578	3328	1485
Grp Volume(v), veh/h	1004	5	479	15	0	0	643	583	320	5	1131	0
Grp Sat Flow(s),veh/h/ln	1568	1752	1485	1627	0	0	1618	1594	1747	578	1664	1485
Q Serve(g_s), s	25.0	0.3	28.0	1.1	0.0	0.0	23.7	18.6	18.6	0.7	40.1	0.0
Cycle Q Clear(g_c), s	25.0	0.3	28.0	1.1	0.0	0.0	23.7	18.6	18.6	0.7	40.1	0.0
Prop In Lane	1.00		1.00	0.33		0.33	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	1098	409	675	27	0	0	715	1954	1070	262	1165	
V/C Ratio(X)	0.91	0.01	0.71	0.56	0.00	0.00	0.90	0.30	0.30	0.02	0.97	
Avail Cap(c_a), veh/h	1098	409	675	142	0	0	782	1954	1070	262	1165	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	44.8	35.4	26.4	58.6	0.0	0.0	54.3	26.0	26.0	25.6	38.4	0.0
Incr Delay (d2), s/veh	11.7	0.0	3.5	17.2	0.0	0.0	12.6	0.4	0.7	0.1	20.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	15.9	0.2	16.4	1.0	0.0	0.0	17.0	12.6	13.7	0.2	26.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.5	35.4	29.8	75.8	0.0	0.0	66.9	26.4	26.7	25.7	58.6	0.0
LnGrp LOS	E	D	C	E	A	A	E	C	C	C	E	
Approach Vol, veh/h		1488			15			1546			1136	
Approach Delay, s/veh		47.8			75.8			43.3			58.5	
Approach LOS		D			E			D			E	
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		79.5		34.0	31.5	48.0		6.5				
Change Period (Y+Rc), s		6.0		6.0	5.0	6.0		4.5				
Max Green Setting (Gmax), s		65.0		28.0	29.0	31.0		10.5				
Max Q Clear Time (g_c+I1), s		20.6		30.0	25.7	42.1		3.1				
Green Ext Time (p_c), s		6.3		0.0	0.9	0.0		0.0				
Intersection Summary												
HCM 6th Ctrl Delay				49.1								
HCM 6th LOS				D								
Notes												
User approved pedestrian interval to be less than phase max green.												
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 6th TWSC
2: Picadilly Rd & Site Driveway #2

2040 Total Conditions
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	0	73	0	0	197	52	1267	79	163	1289	77
Future Vol, veh/h	0	0	73	0	0	197	52	1267	79	163	1289	77
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	-	-	0	-	-	0	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	10	2	2	10	2
Mvmt Flow	0	0	77	0	0	207	55	1334	83	172	1357	81

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	-	-	719	-	-	709	1438	0	0	1417	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	7.14	-	-	7.14	5.34	-	-	5.34	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.92	-	-	3.92	3.12	-	-	3.12	-	-
Pot Cap-1 Maneuver	0	0	*632	0	0	*632	750	-	-	774	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %			1			1	1	-	-	1	-	-
Mov Cap-1 Maneuver	-	-	*632	-	-	*632	750	-	-	774	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	11.5		13.5		0.4		1.2	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	750	-	-	632	632	774	-	-
HCM Lane V/C Ratio	0.073	-	-	0.122	0.328	0.222	-	-
HCM Control Delay (s)	10.2	-	-	11.5	13.5	11	-	-
HCM Lane LOS	B	-	-	B	B	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.4	1.4	0.8	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 6th TWSC
4: Picadilly Rd & Site Driveway #4

2040 Total Conditions
AM Peak Hour

Intersection						
Int Delay, s/veh	0.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗ ↑↑↑	↑↑↑			↑↑↑
Traffic Vol, veh/h	0	116	1282	123	0	1345
Future Vol, veh/h	0	116	1282	123	0	1345
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	95	95	95	95	95	95
Heavy Vehicles, %	2	2	10	2	2	10
Mvmt Flow	0	122	1349	129	0	1416

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	-	739	0	0	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-
Pot Cap-1 Maneuver	0	*642	-	-	0
Stage 1	0	-	-	-	0
Stage 2	0	-	-	-	0
Platoon blocked, %		1	-	-	-
Mov Cap-1 Maneuver	-	*642	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.9	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	642
HCM Lane V/C Ratio	-	-	0.19
HCM Control Delay (s)	-	-	11.9
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.7

Notes
~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Timings
5: Picadilly Rd & 13th Ave/Realigned Colfax Ave

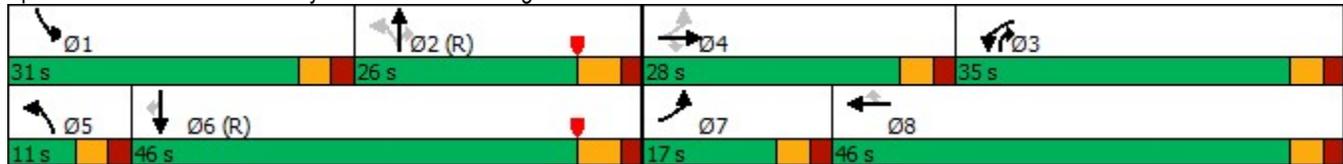
2040 Total Conditions
AM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	155	82	62	536	197	698	45	552	328	552	658	127
Future Volume (vph)	155	82	62	536	197	698	45	552	328	552	658	127
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	pm+ov	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases	4		4			8	2		2			6
Detector Phase	7	4	4	3	8	8	5	2	3	1	6	6
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)	11.0	23.0	23.0	24.0	24.0	24.0	10.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	17.0	28.0	28.0	35.0	46.0	46.0	11.0	26.0	35.0	31.0	46.0	46.0
Total Split (%)	14.2%	23.3%	23.3%	29.2%	38.3%	38.3%	9.2%	21.7%	29.2%	25.8%	38.3%	38.3%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0	3.0	3.0	4.0	4.0
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	6.0	5.0	5.0	6.0	6.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes											
Recall Mode	None	C-Min	None	None	C-Min	C-Min						
Act Effct Green (s)	11.9	11.3	11.3	39.5	38.9	38.9	30.3	23.4	63.8	24.8	44.4	44.4
Actuated g/C Ratio	0.10	0.09	0.09	0.33	0.32	0.32	0.25	0.20	0.53	0.21	0.37	0.37
v/c Ratio	1.01	0.53	0.23	0.54	0.92	0.60	0.22	0.63	0.38	0.88	0.40	0.21
Control Delay	126.5	62.9	1.8	35.2	58.2	6.3	25.3	49.0	2.8	42.7	14.6	1.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	126.5	62.9	1.8	35.2	58.2	6.3	25.3	49.0	2.8	42.7	14.6	1.7
LOS	F	E	A	D	E	A	C	D	A	D	B	A
Approach Delay		83.2			33.9			31.5			25.0	
Approach LOS		F			C			C			C	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 23 (19%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow
 Natural Cycle: 95
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.01
 Intersection Signal Delay: 34.0
 Intersection Capacity Utilization 77.1%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service D

Splits and Phases: 5: Picadilly Rd & 13th Ave/Realigned Colfax Ave



Queues
5: Picadilly Rd & 13th Ave/Realigned Colfax Ave

2040 Total Conditions
AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	163	86	65	564	486	456	47	581	345	581	693	134
v/c Ratio	1.01	0.53	0.23	0.54	0.92	0.60	0.22	0.63	0.38	0.88	0.40	0.21
Control Delay	126.5	62.9	1.8	35.2	58.2	6.3	25.3	49.0	2.8	42.7	14.6	1.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	126.5	62.9	1.8	35.2	58.2	6.3	25.3	49.0	2.8	42.7	14.6	1.7
Queue Length 50th (ft)	128	65	0	177	331	0	21	158	10	176	142	17
Queue Length 95th (ft)	#271	115	0	246	#544	82	45	202	38	m178	m119	m9
Internal Link Dist (ft)		372			156			282				189
Turn Bay Length (ft)	150		150	200			150		150	150		150
Base Capacity (vph)	164	331	413	1046	552	776	213	918	920	689	1745	640
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	0.99	0.26	0.16	0.54	0.88	0.59	0.22	0.63	0.38	0.84	0.40	0.21

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM 6th Signalized Intersection Summary
 5: Picadilly Rd & 13th Ave/Realigned Colfax Ave

2040 Total Conditions
 AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	155	82	62	536	197	698	45	552	328	552	658	127
Future Volume (veh/h)	155	82	62	536	197	698	45	552	328	552	658	127
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	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752
Adj Flow Rate, veh/h	163	86	65	564	603	471	47	581	345	581	693	134
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	10	10	10	10	10	10	10	10	10	10	10	10
Cap, veh/h	227	121	102	1244	599	507	229	876	825	648	1676	520
Arrive On Green	0.10	0.07	0.07	0.37	0.34	0.34	0.03	0.18	0.18	0.07	0.12	0.12
Sat Flow, veh/h	1668	1752	1485	3337	1752	1485	1668	4782	1485	3237	4782	1485
Grp Volume(v), veh/h	163	86	65	564	603	471	47	581	345	581	693	134
Grp Sat Flow(s),veh/h/ln	1668	1752	1485	1668	1752	1485	1668	1594	1485	1618	1594	1485
Q Serve(g_s), s	11.7	5.8	4.5	15.3	41.0	36.7	2.7	13.6	8.8	21.4	16.2	9.9
Cycle Q Clear(g_c), s	11.7	5.8	4.5	15.3	41.0	36.7	2.7	13.6	8.8	21.4	16.2	9.9
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	227	121	102	1244	599	507	229	876	825	648	1676	520
V/C Ratio(X)	0.72	0.71	0.63	0.45	1.01	0.93	0.21	0.66	0.42	0.90	0.41	0.26
Avail Cap(c_a), veh/h	227	336	285	1244	599	507	257	876	825	701	1676	520
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
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	53.8	54.7	41.6	28.4	39.5	38.1	37.9	45.6	5.5	54.8	41.6	38.8
Incr Delay (d2), s/veh	10.5	7.5	6.3	0.3	38.6	23.6	0.4	3.9	1.6	13.6	0.8	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(95%),veh/ln	9.4	5.0	3.7	10.2	31.9	23.1	2.0	9.4	4.8	15.8	11.3	7.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.2	62.2	48.0	28.7	78.1	61.7	38.4	49.5	7.1	68.5	42.4	40.0
LnGrp LOS	E	E	D	C	F	E	D	D	A	E	D	D
Approach Vol, veh/h		314			1638			973			1408	
Approach Delay, s/veh		60.3			56.4			33.9			52.9	
Approach LOS		E			E			C			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	29.0	28.0	49.7	13.3	9.0	48.0	17.0	46.0				
Change Period (Y+Rc), s	5.0	6.0	5.0	5.0	5.0	6.0	5.0	5.0				
Max Green Setting (Gmax), s	26.0	20.0	30.0	23.0	6.0	40.0	12.0	41.0				
Max Q Clear Time (g_c+I1), s	23.4	15.6	17.3	7.8	4.7	18.2	13.7	43.0				
Green Ext Time (p_c), s	0.6	2.0	1.8	0.5	0.0	4.9	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay			50.5									
HCM 6th LOS			D									
Notes												
User approved pedestrian interval to be less than phase max green.												
User approved volume balancing among the lanes for turning movement.												

HCM 6th TWSC
6: Picadilly Rd & Site Driveway #6

2040 Total Conditions
AM Peak Hour

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗ ↑↑↑			↘ ↑↑↑	
Traffic Vol, veh/h	0	7	919	2	8	1273
Future Vol, veh/h	0	7	919	2	8	1273
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	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	10	2	2	10
Mvmt Flow	0	7	967	2	8	1340

Major/Minor	Minor1	Major1	Major2	Major2	Major2
Conflicting Flow All	-	485	0	0	969
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	5.34
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	3.12
Pot Cap-1 Maneuver	0	452	-	-	405
Stage 1	0	-	-	-	-
Stage 2	0	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	-	452	-	-	405
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.1	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	452	405
HCM Lane V/C Ratio	-	-	0.016	0.021
HCM Control Delay (s)	-	-	13.1	14.1
HCM Lane LOS	-	-	B	B
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	4	249	364	7	60	9
Future Vol, veh/h	4	249	364	7	60	9
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	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	10	10	2	2	2
Mvmt Flow	4	262	383	7	63	9

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	390	0	-	0	657 387
Stage 1	-	-	-	-	387 -
Stage 2	-	-	-	-	270 -
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	*1182	-	-	-	*476 *790
Stage 1	-	-	-	-	*744 -
Stage 2	-	-	-	-	*775 -
Platoon blocked, %	1	-	-	-	1 1
Mov Cap-1 Maneuver	*1182	-	-	-	*475 *790
Mov Cap-2 Maneuver	-	-	-	-	*475 -
Stage 1	-	-	-	-	*742 -
Stage 2	-	-	-	-	*775 -

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	13.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	* 1182	-	-	-	501
HCM Lane V/C Ratio	0.004	-	-	-	0.145
HCM Control Delay (s)	8.1	-	-	-	13.4
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.5

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 6th TWSC
8: Realigned Colfax Ave & Site Driveway #8

2040 Total Conditions
AM Peak Hour

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑	↑		↑
Traffic Vol, veh/h	0	972	1334	52	0	122
Future Vol, veh/h	0	972	1334	52	0	122
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	150	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	10	10	2	2	2
Mvmt Flow	0	1023	1404	55	0	128

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	-	0	-	0	702
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0 381
Stage 1	0	-	-	-	0 -
Stage 2	0	-	-	-	0 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	381
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	19.2
HCM LOS			C

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	381
HCM Lane V/C Ratio	-	-	-	0.337
HCM Control Delay (s)	-	-	-	19.2
HCM Lane LOS	-	-	-	C
HCM 95th %tile Q(veh)	-	-	-	1.5

HCM 6th TWSC
9: Realigned Colfax Ave & Site Driveway #3

2040 Total Conditions
AM Peak Hour

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	20	952	0	2	1327	4	1	0	1	10	0	58
Future Vol, veh/h	20	952	0	2	1327	4	1	0	1	10	0	58
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									
Storage Length	150	-	-	150	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	10	2	2	10	2	2	2	2	2	2	2
Mvmt Flow	21	1002	0	2	1397	4	1	0	1	11	0	61

Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	1401	0	0	1002	0	0	1747	2449	501	1946	2447	701
Stage 1	-	-	-	-	-	-	1044	1044	-	1403	1403	-
Stage 2	-	-	-	-	-	-	703	1405	-	543	1044	-
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	484	-	-	*1024	-	-	*121	*31	*685	*71	*31	381
Stage 1	-	-	-	-	-	-	*645	*566	-	*147	*205	-
Stage 2	-	-	-	-	-	-	*394	*204	-	*645	*566	-
Platoon blocked, %		-	-	1	-	-	1	1	1	1	1	
Mov Cap-1 Maneuver	484	-	-	*1024	-	-	*98	*30	*685	*68	*30	381
Mov Cap-2 Maneuver	-	-	-	-	-	-	*98	*30	-	*68	*30	-
Stage 1	-	-	-	-	-	-	*618	*542	-	*141	*205	-
Stage 2	-	-	-	-	-	-	*330	*204	-	*617	*542	-

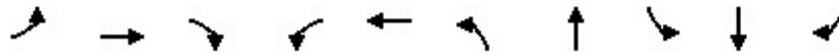
Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0	26.2	23.7
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	98	685	484	-	-	*1024	-	-	68	381
HCM Lane V/C Ratio	0.011	0.002	0.043	-	-	0.002	-	-	0.155	0.16
HCM Control Delay (s)	42.1	10.3	12.8	-	-	8.5	-	-	67.4	16.2
HCM Lane LOS	E	B	B	-	-	A	-	-	F	C
HCM 95th %tile Q(veh)	0	0	0.1	-	-	0	-	-	0.5	0.6

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Timings
1: Picadilly Rd & Colfax Ave

2040 Total Conditions
PM Peak Hour

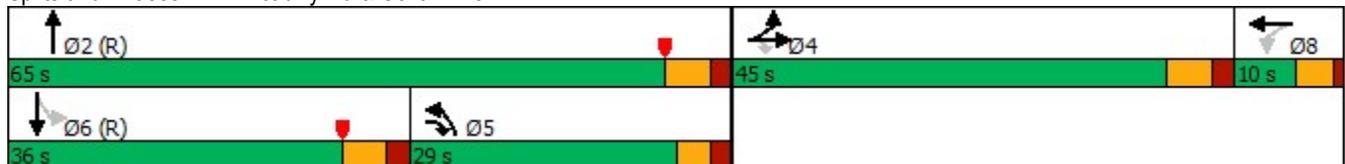


Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations	←←←	↑	↗		↔	↗↘	↑↑↑	↘	↑↑	↗
Traffic Volume (vph)	1437	5	482	5	5	551	793	5	971	993
Future Volume (vph)	1437	5	482	5	5	551	793	5	971	993
Turn Type	Split	NA	pm+ov	Perm	NA	Prot	NA	Perm	NA	Free
Protected Phases	4	4	5		8	5	2		6	
Permitted Phases			4	8				6		Free
Detector Phase	4	4	5	8	8	5	2	6	6	
Switch Phase										
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	24.0	24.0	10.0	10.0	10.0	10.0	24.0	24.0	24.0	
Total Split (s)	45.0	45.0	29.0	10.0	10.0	29.0	65.0	36.0	36.0	
Total Split (%)	37.5%	37.5%	24.2%	8.3%	8.3%	24.2%	54.2%	30.0%	30.0%	
Yellow Time (s)	4.0	4.0	3.0	3.5	3.5	3.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0	2.0	1.0	1.0	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	
Total Lost Time (s)	6.0	6.0	5.0		4.5	5.0	6.0	6.0	6.0	
Lead/Lag			Lag			Lag		Lead	Lead	
Lead-Lag Optimize?			Yes			Yes		Yes	Yes	
Recall Mode	None	None	None	None	None	None	C-Min	C-Min	C-Min	
Act Effct Green (s)	39.0	39.0	68.8		5.5	23.8	65.0	36.2	36.2	120.0
Actuated g/C Ratio	0.32	0.32	0.57		0.05	0.20	0.54	0.30	0.30	1.00
v/c Ratio	1.01	0.01	0.56		0.19	0.92	0.33	0.04	1.03	0.71
Control Delay	65.4	27.6	13.5		48.6	55.0	8.5	34.4	78.7	3.0
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.4	27.6	13.5		48.6	55.0	8.5	34.4	78.7	3.0
LOS	E	C	B		D	D	A	C	E	A
Approach Delay		52.3			48.6		27.5		40.4	
Approach LOS		D			D		C		D	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 72 (60%), Referenced to phase 2:NBT and 6:SBTL, Start of Yellow
 Natural Cycle: 140
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 1.03
 Intersection Signal Delay: 41.5
 Intersection Capacity Utilization 90.7%
 Analysis Period (min) 15
 Intersection LOS: D
 ICU Level of Service E

Splits and Phases: 1: Picadilly Rd & Colfax Ave



Queues
1: Picadilly Rd & Colfax Ave

2040 Total Conditions
PM Peak Hour



Lane Group	EBL	EBT	EBR	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	1513	5	507	15	580	840	5	1022	1045
v/c Ratio	1.01	0.01	0.56	0.19	0.92	0.33	0.04	1.03	0.71
Control Delay	65.4	27.6	13.5	48.6	55.0	8.5	34.4	78.7	3.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.4	27.6	13.5	48.6	55.0	8.5	34.4	78.7	3.0
Queue Length 50th (ft)	~419	3	161	8	237	69	3	401	0
Queue Length 95th (ft)	#528	12	260	31	m#332	m109	14	#652	0
Internal Link Dist (ft)		479		447		398		388	
Turn Bay Length (ft)	325		325		300		150		150
Base Capacity (vph)	1503	561	896	80	636	2552	139	990	1468
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.01	0.01	0.57	0.19	0.91	0.33	0.04	1.03	0.71

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

HCM 6th Signalized Intersection Summary
 1: Picadilly Rd & Colfax Ave

2040 Total Conditions
 PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1437	5	482	5	5	5	551	793	5	5	971	993
Future Volume (veh/h)	1437	5	482	5	5	5	551	793	5	5	971	993
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	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752
Adj Flow Rate, veh/h	1513	5	507	5	5	5	580	835	5	5	1022	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	10	10	10	10	10	10	10	10	10	10	10	10
Cap, veh/h	1529	569	811	9	9	9	716	2556	15	213	832	
Arrive On Green	0.32	0.32	0.32	0.02	0.02	0.02	0.44	1.00	1.00	0.25	0.25	0.00
Sat Flow, veh/h	4705	1752	1485	542	542	542	3237	4905	29	613	3328	1485
Grp Volume(v), veh/h	1513	5	507	15	0	0	580	543	297	5	1022	0
Grp Sat Flow(s),veh/h/ln	1568	1752	1485	1627	0	0	1618	1594	1747	613	1664	1485
Q Serve(g_s), s	38.4	0.2	1.7	1.1	0.0	0.0	18.7	0.0	0.0	0.7	30.0	0.0
Cycle Q Clear(g_c), s	38.4	0.2	1.7	1.1	0.0	0.0	18.7	0.0	0.0	0.7	30.0	0.0
Prop In Lane	1.00		1.00	0.33		0.33	1.00		0.02	1.00		1.00
Lane Grp Cap(c), veh/h	1529	569	811	27	0	0	716	1661	910	213	832	
V/C Ratio(X)	0.99	0.01	0.63	0.56	0.00	0.00	0.81	0.33	0.33	0.02	1.23	
Avail Cap(c_a), veh/h	1529	569	811	75	0	0	716	1661	910	213	832	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	40.3	27.4	18.8	58.6	0.0	0.0	31.3	0.0	0.0	34.0	45.0	0.0
Incr Delay (d2), s/veh	20.5	0.0	1.5	17.2	0.0	0.0	7.0	0.5	1.0	0.2	113.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	23.7	0.2	14.2	1.0	0.0	0.0	10.1	0.2	0.4	0.2	37.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.8	27.4	20.3	75.8	0.0	0.0	38.3	0.5	1.0	34.2	158.3	0.0
LnGrp LOS	E	C	C	E	A	A	D	A	A	C	F	
Approach Vol, veh/h		2025			15			1420			1027	
Approach Delay, s/veh		50.5			75.8			16.0			157.6	
Approach LOS		D			E			B			F	
Timer - Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		68.5		45.0	32.5	36.0		6.5				
Change Period (Y+Rc), s		6.0		6.0	6.0	* 6		4.5				
Max Green Setting (Gmax), s		59.0		39.0	24.0	* 30		5.5				
Max Q Clear Time (g_c+I1), s		2.0		40.4	20.7	32.0		3.1				
Green Ext Time (p_c), s		5.8		0.0	0.8	0.0		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			64.2									
HCM 6th LOS			E									
Notes												
User approved pedestrian interval to be less than phase max green.												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 6th TWSC
2: Picadilly Rd & Site Driveway #2

2040 Total Conditions
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	0	68	0	0	149	56	1181	80	147	1250	56
Future Vol, veh/h	0	0	68	0	0	149	56	1181	80	147	1250	56
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	-	-	0	-	-	0	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	10	2	2	10	2
Mvmt Flow	0	0	72	0	0	157	59	1243	84	155	1316	59

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	-	-	688	-	-	664	1375	0	0	1327	0	0
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	7.14	-	-	7.14	5.34	-	-	5.34	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	3.92	-	-	3.92	3.12	-	-	3.12	-	-
Pot Cap-1 Maneuver	0	0	*632	0	0	*653	*794	-	-	783	-	-
Stage 1	0	0	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	0	0	-	-	-	-	-	-	-
Platoon blocked, %			1			1	1	-	-	1	-	-
Mov Cap-1 Maneuver	-	-	*632	-	-	*653	*794	-	-	783	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB		WB		NB			SB		
HCM Control Delay, s	11.4		12.2		0.4			1.1		
HCM LOS	B		B							

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	* 794	-	-	632	653	783	-	-
HCM Lane V/C Ratio	0.074	-	-	0.113	0.24	0.198	-	-
HCM Control Delay (s)	9.9	-	-	11.4	12.2	10.7	-	-
HCM Lane LOS	A	-	-	B	B	B	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.4	0.9	0.7	-	-

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 6th TWSC
4: Picadilly Rd & Site Driveway #4

2040 Total Conditions
PM Peak Hour

Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗ ↑↑↑	↑↑↑			↑↑↑
Traffic Vol, veh/h	0	54	1277	80	0	1290
Future Vol, veh/h	0	54	1277	80	0	1290
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	95	95	95	95	95	95
Heavy Vehicles, %	2	2	10	2	2	10
Mvmt Flow	0	57	1344	84	0	1358

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	-	714	0	0	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-
Pot Cap-1 Maneuver	0	*642	-	-	0
Stage 1	0	-	-	-	0
Stage 2	0	-	-	-	0
Platoon blocked, %		1	-	-	-
Mov Cap-1 Maneuver	-	*642	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.2	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	642
HCM Lane V/C Ratio	-	-	0.089
HCM Control Delay (s)	-	-	11.2
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.3

Notes
~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Timings
5: Picadilly Rd & 13th Ave/Realigned Colfax Ave

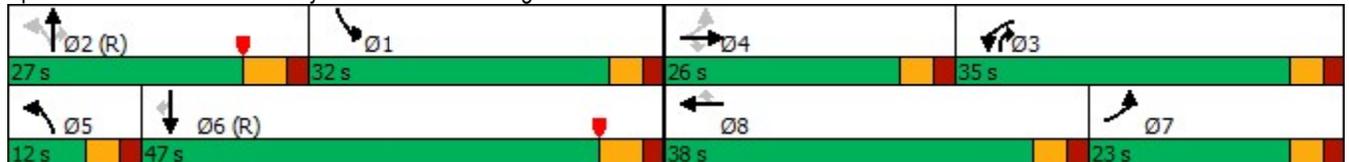
2040 Total Conditions
PM Peak Hour

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	248	190	65	532	90	565	40	544	405	571	580	120
Future Volume (vph)	248	190	65	532	90	565	40	544	405	571	580	120
Turn Type	pm+pt	NA	Perm	Prot	NA	Perm	pm+pt	NA	pm+ov	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases	4		4			8	2		2			6
Detector Phase	7	4	4	3	8	8	5	2	3	1	6	6
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)	11.0	23.0	23.0	24.0	24.0	24.0	10.0	24.0	24.0	24.0	24.0	24.0
Total Split (s)	23.0	26.0	26.0	35.0	38.0	38.0	12.0	27.0	35.0	32.0	47.0	47.0
Total Split (%)	19.2%	21.7%	21.7%	29.2%	31.7%	31.7%	10.0%	22.5%	29.2%	26.7%	39.2%	39.2%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0	3.0	3.0	4.0	4.0
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	6.0	5.0	5.0	6.0	6.0
Lead/Lag	Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lag	Lag
Lead-Lag Optimize?	Yes											
Recall Mode	None	C-Min	None	None	C-Min	C-Min						
Act Effct Green (s)	36.0	17.9	17.9	26.5	26.3	26.3	29.9	28.9	61.4	25.7	50.0	50.0
Actuated g/C Ratio	0.30	0.15	0.15	0.22	0.22	0.22	0.25	0.24	0.51	0.21	0.42	0.42
v/c Ratio	0.86	0.78	0.17	0.80	0.86	0.59	0.24	0.51	0.52	0.88	0.31	0.18
Control Delay	68.6	69.0	0.9	53.1	50.1	8.3	43.3	43.2	16.9	43.4	14.5	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	68.6	69.0	0.9	53.1	50.1	8.3	43.3	43.2	16.9	43.4	14.5	0.9
LOS	E	E	A	D	D	A	D	D	B	D	B	A
Approach Delay		60.1			40.1			32.4			26.2	
Approach LOS		E			D			C			C	

Intersection Summary

Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 80 (67%), Referenced to phase 2:NBTL and 6:SBT, Start of Yellow
 Natural Cycle: 95
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.88
 Intersection Signal Delay: 36.2
 Intersection LOS: D
 Intersection Capacity Utilization 74.3%
 ICU Level of Service D
 Analysis Period (min) 15

Splits and Phases: 5: Picadilly Rd & 13th Ave/Realigned Colfax Ave



Queues
5: Picadilly Rd & 13th Ave/Realigned Colfax Ave

2040 Total Conditions
PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	261	200	68	560	351	339	42	573	426	601	611	126
v/c Ratio	0.86	0.78	0.17	0.80	0.86	0.59	0.24	0.51	0.52	0.88	0.31	0.18
Control Delay	68.6	69.0	0.9	53.1	50.1	8.3	43.3	43.2	16.9	43.4	14.5	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	68.6	69.0	0.9	53.1	50.1	8.3	43.3	43.2	16.9	43.4	14.5	0.9
Queue Length 50th (ft)	134	149	0	209	190	0	26	147	154	232	91	6
Queue Length 95th (ft)	#260	229	0	267	303	80	61	197	261	m259	m99	m5
Internal Link Dist (ft)		372			156			282			189	
Turn Bay Length (ft)	150		150	200			150		150	150		150
Base Capacity (vph)	306	302	436	795	483	629	176	1134	806	716	1965	702
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	0.85	0.66	0.16	0.70	0.73	0.54	0.24	0.51	0.53	0.84	0.31	0.18

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM 6th Signalized Intersection Summary
 5: Picadilly Rd & 13th Ave/Realigned Colfax Ave

2040 Total Conditions
 PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	248	190	65	532	90	565	40	544	405	571	580	120
Future Volume (veh/h)	248	190	65	532	90	565	40	544	405	571	580	120
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	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752	1752
Adj Flow Rate, veh/h	261	200	68	560	0	658	42	573	426	601	611	126
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	10	10	10	10	10	10	10	10	10	10	10	10
Cap, veh/h	293	234	198	640	0	724	142	726	510	1099	2239	695
Arrive On Green	0.08	0.13	0.13	0.19	0.00	0.24	0.03	0.15	0.15	0.57	0.78	0.78
Sat Flow, veh/h	1668	1752	1485	3337	0	2969	1668	4782	1485	3237	4782	1485
Grp Volume(v), veh/h	261	200	68	560	0	658	42	573	426	601	611	126
Grp Sat Flow(s),veh/h/ln	1668	1752	1485	1668	0	1485	1668	1594	1485	1618	1594	1485
Q Serve(g_s), s	7.1	13.4	4.3	19.6	0.0	25.8	2.7	13.9	8.7	14.0	4.2	1.7
Cycle Q Clear(g_c), s	7.1	13.4	4.3	19.6	0.0	25.8	2.7	13.9	8.7	14.0	4.2	1.7
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	293	234	198	640	0	724	142	726	510	1099	2239	695
V/C Ratio(X)	0.89	0.86	0.34	0.87	0.00	0.91	0.30	0.79	0.83	0.55	0.27	0.18
Avail Cap(c_a), veh/h	407	307	260	834	0	817	187	837	545	1099	2239	695
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.67	1.67	1.67
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.8	50.9	35.5	47.1	0.0	44.1	47.1	49.0	36.2	20.2	7.4	3.3
Incr Delay (d2), s/veh	16.4	16.5	1.0	8.3	0.0	13.1	1.2	8.5	14.9	0.6	0.3	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(95%),veh/ln	13.8	11.3	3.4	13.7	0.0	16.1	2.1	9.9	19.4	7.6	2.4	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.1	67.4	36.6	55.4	0.0	57.2	48.3	57.6	51.1	20.8	7.7	3.9
LnGrp LOS	E	E	D	E	A	E	D	E	D	C	A	A
Approach Vol, veh/h		529			1218			1041			1338	
Approach Delay, s/veh		62.3			56.3			54.6			13.2	
Approach LOS		E			E			D			B	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	46.7	24.2	28.0	21.0	8.8	62.2	14.8	34.3				
Change Period (Y+Rc), s	6.0	* 6	5.0	5.0	5.0	6.0	5.0	5.0				
Max Green Setting (Gmax), s	27.0	* 21	30.0	21.0	7.0	41.0	18.0	33.0				
Max Q Clear Time (g_c+I1), s	16.0	15.9	21.6	15.4	4.7	6.2	9.1	27.8				
Green Ext Time (p_c), s	1.7	2.4	1.5	0.6	0.0	4.7	0.5	1.4				
Intersection Summary												
HCM 6th Ctrl Delay			42.7									
HCM 6th LOS			D									
Notes												
User approved volume balancing among the lanes for turning movement.												
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.												

Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗ ↑↑↑	↗ ↑↑↑		↘ ↑↑↑	↘ ↑↑↑
Traffic Vol, veh/h	0	13	976	2	12	1165
Future Vol, veh/h	0	13	976	2	12	1165
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	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	10	2	2	10
Mvmt Flow	0	14	1027	2	13	1226

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	-	515	0	0	1029
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	5.34
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	3.12
Pot Cap-1 Maneuver	0	432	-	-	379
Stage 1	0	-	-	-	-
Stage 2	0	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	-	432	-	-	379
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.6	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	432	379
HCM Lane V/C Ratio	-	-	0.032	0.033
HCM Control Delay (s)	-	-	13.6	14.8
HCM Lane LOS	-	-	B	B
HCM 95th %tile Q(veh)	-	-	0.1	0.1

Intersection						
Int Delay, s/veh	2.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↑	↗		↖	
Traffic Vol, veh/h	8	409	242	12	79	26
Future Vol, veh/h	8	409	242	12	79	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	0	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	10	10	2	2	2
Mvmt Flow	8	431	255	13	83	27

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	268	0	-	0	709
Stage 1	-	-	-	-	262
Stage 2	-	-	-	-	447
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	1332	-	-	-	*414
Stage 1	-	-	-	-	*843
Stage 2	-	-	-	-	*644
Platoon blocked, %	1	-	-	-	1
Mov Cap-1 Maneuver	1332	-	-	-	*411
Mov Cap-2 Maneuver	-	-	-	-	*411
Stage 1	-	-	-	-	*838
Stage 2	-	-	-	-	*644

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	14.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1332	-	-	-	474
HCM Lane V/C Ratio	0.006	-	-	-	0.233
HCM Control Delay (s)	7.7	-	-	-	14.9
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.9

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 6th TWSC
8: Realigned Colfax Ave & Site Driveway #8

2040 Total Conditions
PM Peak Hour

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑	↑		↑
Traffic Vol, veh/h	0	1150	1083	41	0	95
Future Vol, veh/h	0	1150	1083	41	0	95
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	150	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	10	10	2	2	2
Mvmt Flow	0	1211	1140	43	0	100

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	-	0	-	0	570
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	3.32
Pot Cap-1 Maneuver	0	-	-	-	0 465
Stage 1	0	-	-	-	0 -
Stage 2	0	-	-	-	0 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	465
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	14.9
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	465
HCM Lane V/C Ratio	-	-	-	0.215
HCM Control Delay (s)	-	-	-	14.9
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.8

HCM 6th TWSC
 9: Realigned Colfax Ave & Site Driveway #3

2040 Total Conditions
 PM Peak Hour

Intersection												
Int Delay, s/veh	0.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↖↗		↖	↖↗		↖	↗		↖	↗	
Traffic Vol, veh/h	29	1121	0	2	1067	5	3	0	3	4	0	22
Future Vol, veh/h	29	1121	0	2	1067	5	3	0	3	4	0	22
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									
Storage Length	150	-	-	150	-	-	0	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	10	2	2	10	2	2	2	2	2	2	2
Mvmt Flow	31	1180	0	2	1123	5	3	0	3	4	0	23

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1128	0	0	1180	0	0	1808	2374	590	1782	2372	564
Stage 1	-	-	-	-	-	-	1242	1242	-	1130	1130	-
Stage 2	-	-	-	-	-	-	566	1132	-	652	1242	-
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	615	-	-	*907	-	-	*137	*39	*607	*148	*40	469
Stage 1	-	-	-	-	-	-	*572	*501	-	*217	*277	-
Stage 2	-	-	-	-	-	-	*476	*276	-	*572	*501	-
Platoon blocked, %		-	-	1	-	-	1	1	1	1	1	
Mov Cap-1 Maneuver	615	-	-	*907	-	-	*125	*37	*607	*142	*38	469
Mov Cap-2 Maneuver	-	-	-	-	-	-	*125	*37	-	*142	*38	-
Stage 1	-	-	-	-	-	-	*543	*476	-	*206	*276	-
Stage 2	-	-	-	-	-	-	*451	*275	-	*540	*476	-

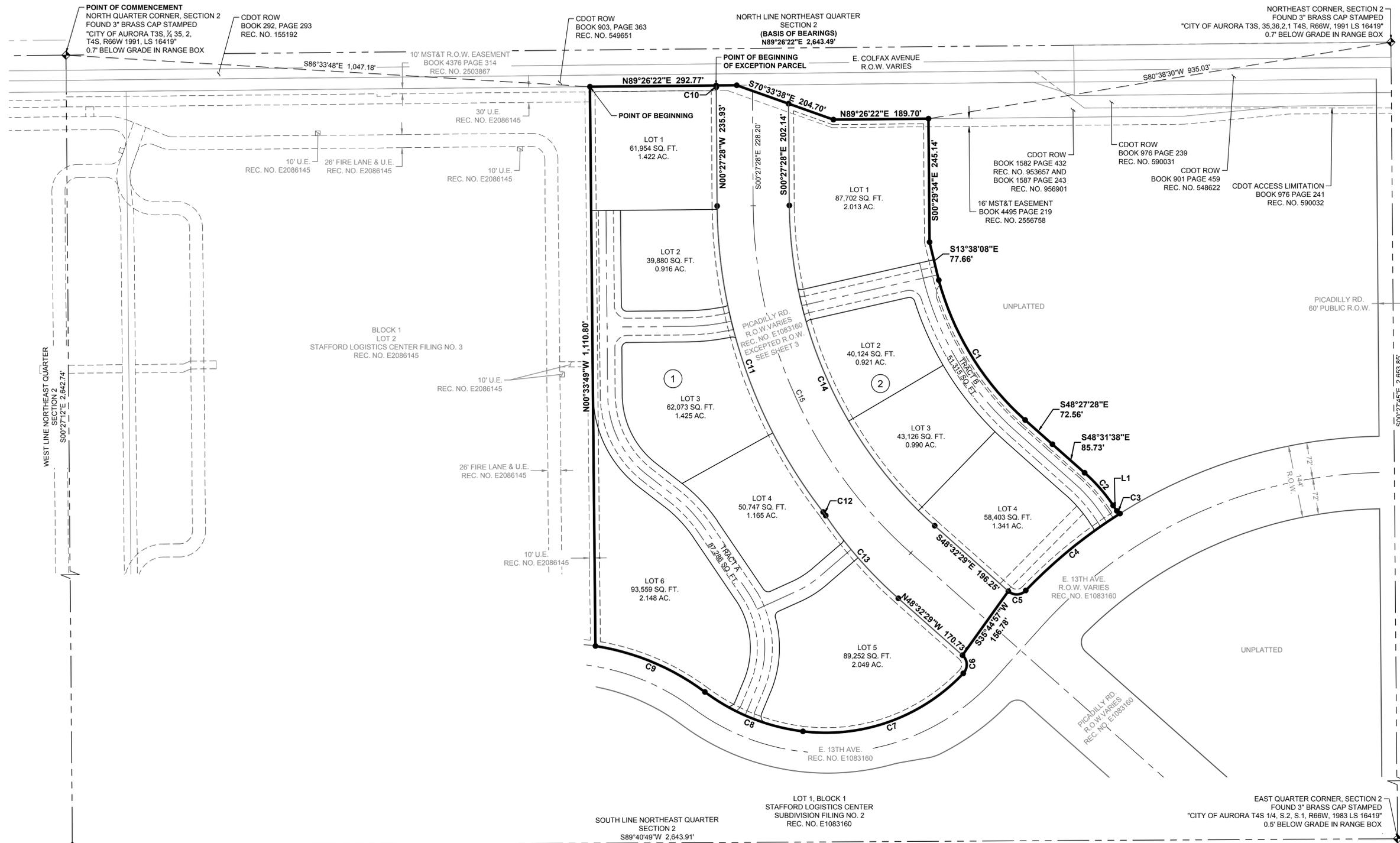
Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0	22.8	15.9
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	125	607	615	-	-	*907	-	-	142	469
HCM Lane V/C Ratio	0.025	0.005	0.05	-	-	0.002	-	-	0.03	0.049
HCM Control Delay (s)	34.5	11	11.2	-	-	9	-	-	31.1	13.1
HCM Lane LOS	D	B	B	-	-	A	-	-	D	B
HCM 95th %tile Q(veh)	0.1	0	0.2	-	-	0	-	-	0.1	0.2

Notes
 ~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

STAFFORD LOGISTICS CENTER SUBDIVISION FILING NO. 6

SITUATED IN THE NORTHEAST QUARTER OF SECTION 2,
TOWNSHIP 4 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN,
CITY OF AURORA, COUNTY OF ARAPAHOE, STATE OF COLORADO



LEGEND

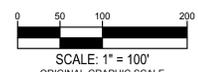
- SECTION CORNER AS DESCRIBED
SET 18" #5 REBAR WITH 1.25" YELLOW PLASTIC CAP MARKED "PLS 25965"
- BLOCK NUMBER
- SECTION LINE
- RANGE LINE
- TRACT CENTER LINE
- SITE BOUNDARY
- LOT LINES
- EASEMENT
- PROPOSED EASEMENT
- D.E. DRAINAGE EASEMENT
- U.E. UTILITY EASEMENT
- W.E. WATER EASEMENT
- R.O.W. RIGHT-OF-WAY
- SQ. FT. SQUARE FEET
- AC. ACRES

NOTE

LINE AND CURVE TABLES ON SHEET 4

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CENTER QUARTER CORNER,
SECTION 2
SET NO. 6 REBAR WITH
2.5" ALUMINUM CAP STAMPED
"T4S R66W- C14 S2 2023- PLS 26965"
FLUSH WITH GRADE



900 south broadway st.
suite 320
denver, co 80209
p 303.561.3333
waremalcomb.com

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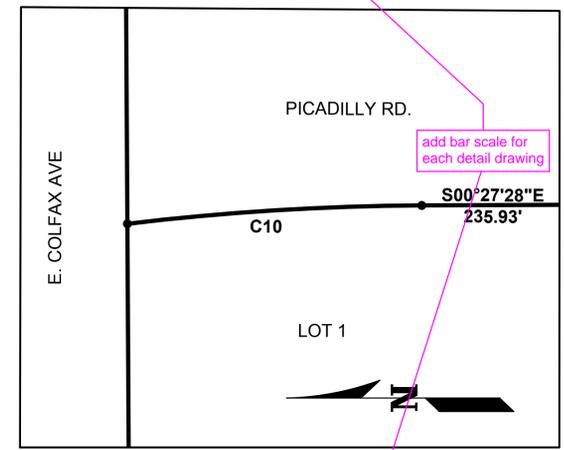
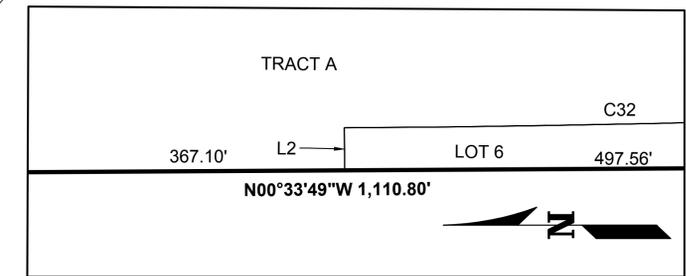
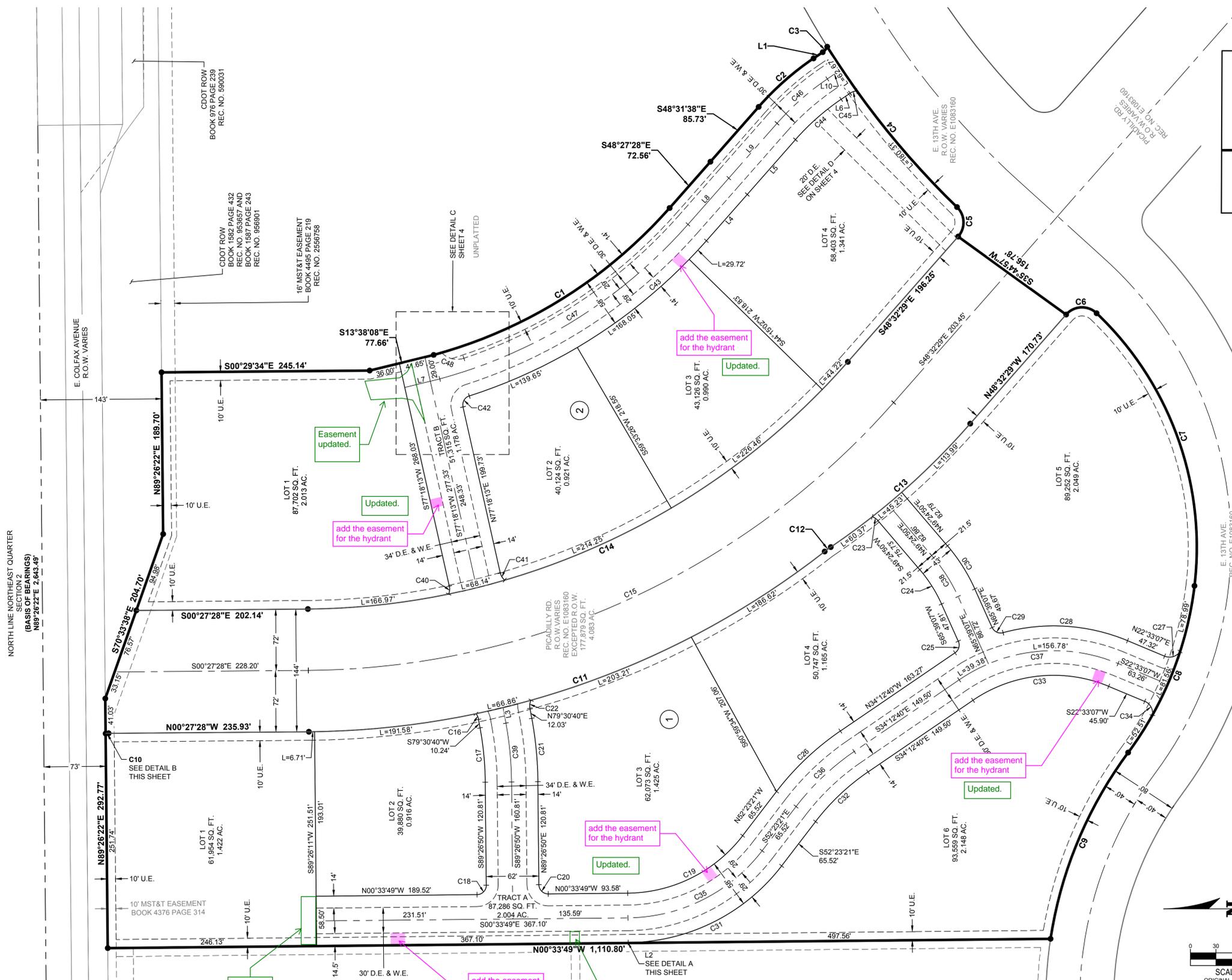
JOB NO. DCS23-4056
DATE: 12-05-2023
SCALE: 1"=100'
Sheet 2 of 4

NO.	DATE	REMARKS
4	07/24/2024	LOT & ESMT UPDATES
3	05/23/2024	LOT & ESMT UPDATES
2	03/15/2024	EASEMENT UPDATES
1	02/16/2024	CITY COMMENTS

DRAWN BY: CJD PA/PM: JCS

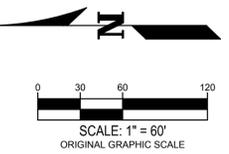
STAFFORD LOGISTICS CENTER SUBDIVISION FILING NO. 6

SITUATED IN THE NORTHEAST QUARTER OF SECTION 2,
TOWNSHIP 4 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN,
CITY OF AURORA, COUNTY OF ARAPAHOE, STATE OF COLORADO



- LEGEND**
- ◆ SECTION CORNER AS DESCRIBED
 - SET 18" #5 REBAR WITH 1.25" YELLOW PLASTIC CAP MARKED "PLS 29965"
 - # BLOCK NUMBER
 - SECTION LINE
 - RANGE LINE
 - TRACT CENTER LINE
 - SITE BOUNDARY
 - LOT LINES
 - EASEMENT
 - PROPOSED EASEMENT
 - D.E. DRAINAGE EASEMENT
 - U.E. UTILITY EASEMENT
 - W.E. WATER EASEMENT
 - R.O.W. RIGHT-OF-WAY
 - SQ. FT. SQUARE FEET
 - AC. ACRES

NOTE
LINE AND CURVE TABLES ON SHEET 4



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suite 320
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waremalcomb.com

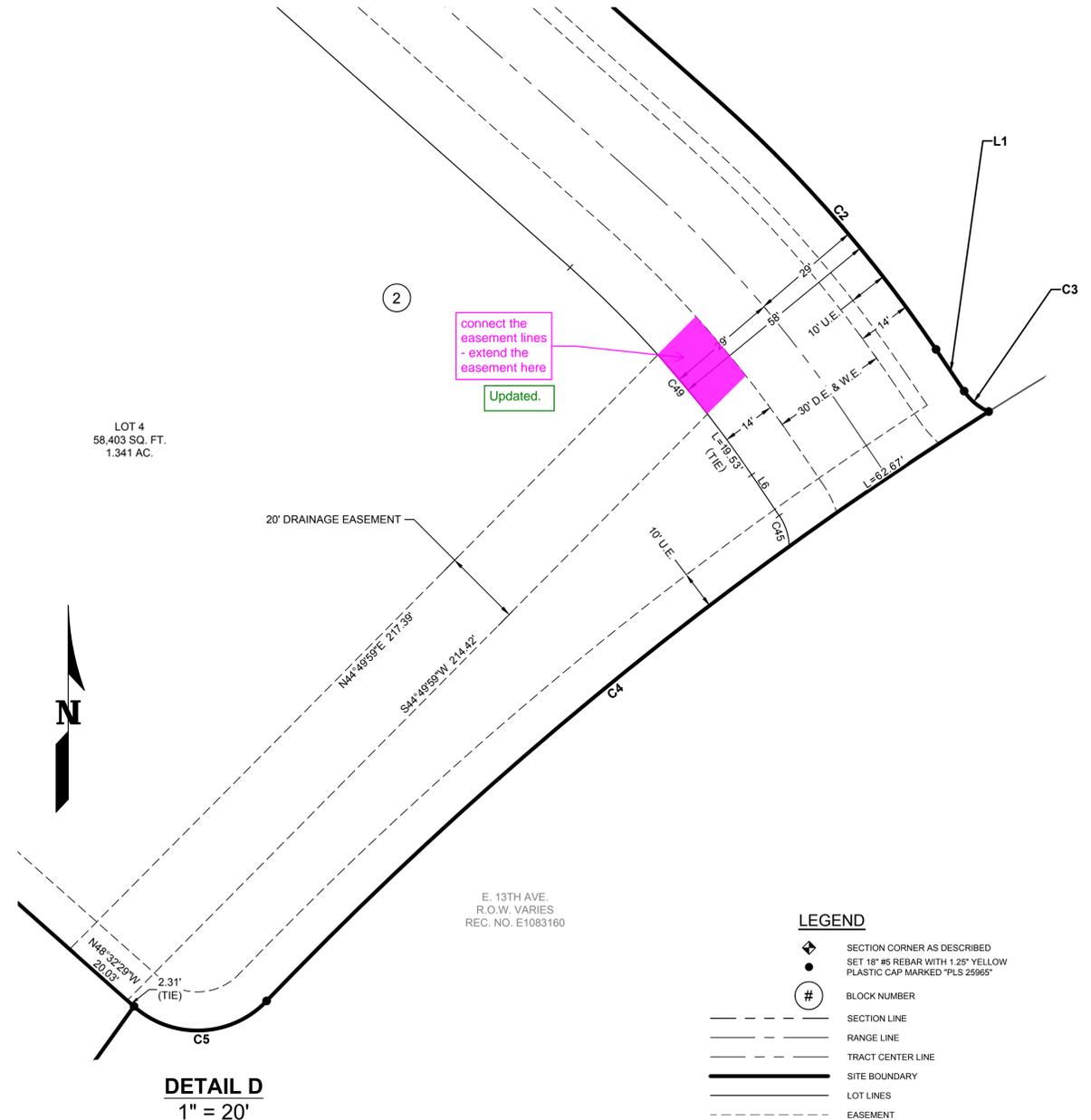
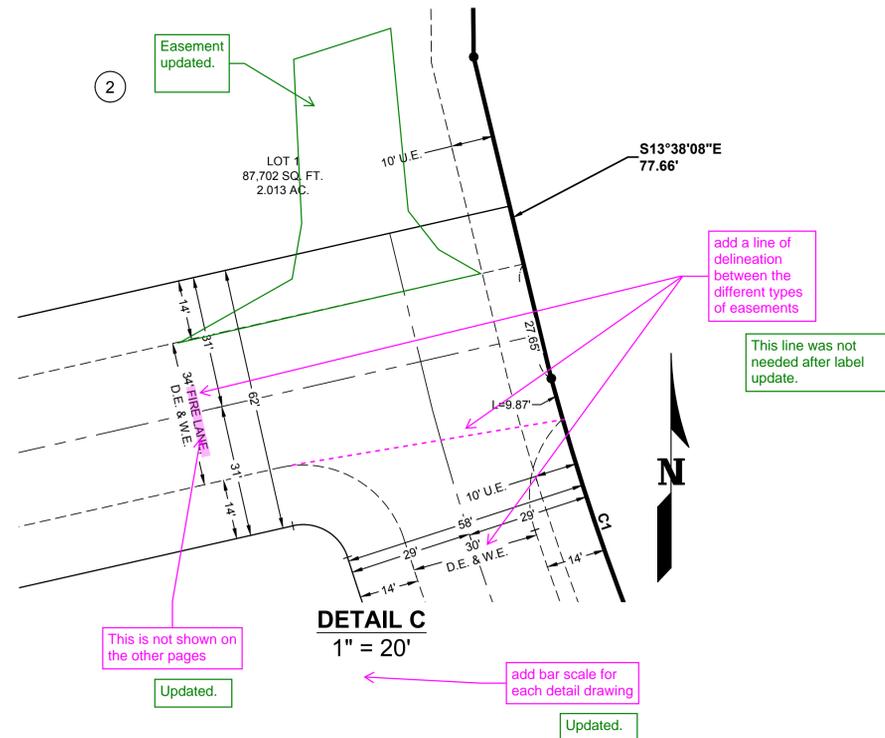
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CIVIL ENGINEERING & SURVEYING

JOB NO. DCS23-4056	
DATE: 12-05-2023	
SCALE: 1"=60'	
Sheet 3 of 4	
4	07/24/2024 LOT & ESMT UPDATES
3	05/23/2024 LOT & ESMT UPDATES
2	03/15/2024 EASEMENT UPDATES
1	02/16/2024 CITY COMMENTS
NO.	DATE REMARKS
DRAWN BY:	CJD P/A/PM: JCS

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STAFFORD LOGISTICS CENTER SUBDIVISION FILING NO. 6

SITUATED IN THE NORTHEAST QUARTER OF SECTION 2,
TOWNSHIP 4 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN,
CITY OF AURORA, COUNTY OF ARAPAHOE, STATE OF COLORADO



CURVE TABLE					
CURVE #	DELTA	RADIUS	ARC LENGTH	CHORD DIRECTION	CHORD LENGTH
C1	33°16'52"	571.00'	331.68'	S31°49'02"E	327.03'
C2	14°23'40"	344.00'	86.42'	N41°19'48"W	86.20'
C3	32°10'43"	15.00'	8.42'	S50°13'19"E	8.31'
C4	13°53'39"	1002.00'	242.98'	S50°54'26"W	242.39'
C5	87°29'55"	25.00'	38.18'	N87°42'33"E	34.58'
C6	91°59'51"	25.00'	40.14'	N02°32'34"W	35.97'
C7	53°26'50"	378.00'	352.61'	N70°10'47"E	339.96'
C8	29°46'31"	410.00'	213.07'	S68°12'33"E	210.68'
C9	27°57'52"	490.00'	239.15'	N67°18'13"W	236.79'
C10	6°38'56"	30.00'	3.48'	N03°46'56"W	3.48'
C11	37°27'11"	1002.00'	654.99'	N19°11'04"W	643.39'
C12	3°55'16"	130.00'	8.90'	N35°57'01"W	8.89'
C13	14°48'07"	850.00'	219.59'	N41°23'27"W	218.98'
C14	48°05'01"	858.00'	720.05'	N24°29'59"W	699.10'
C15	48°05'01"	930.00'	780.47'	S24°29'59"E	757.77'
C16	27°56'56"	15.00'	7.32'	S65°32'12"W	7.24'
C17	9°56'09"	369.00'	63.99'	S84°28'45"W	63.91'
C18	89°59'08"	11.00'	17.28'	N45°33'37"W	15.55'
C19	51°49'32"	173.00'	156.48'	N26°28'35"W	151.20'
C20	89°55'45"	11.00'	17.27'	N44°24'03"E	15.55'
C21	9°56'09"	431.00'	74.74'	N84°28'45"E	74.65'
C22	36°50'28"	15.00'	9.65'	S82°04'06"E	9.48'
C23	31°34'32"	15.00'	8.27'	S33°37'34"W	8.16'
C24	16°14'17"	169.00'	47.90'	S57°31'59"W	47.74'
C25	80°08'12"	11.00'	15.39'	N74°16'46"W	14.16'

CURVE TABLE					
CURVE #	DELTA	RADIUS	ARC LENGTH	CHORD DIRECTION	CHORD LENGTH
C26	18°10'40"	327.00'	103.75'	N43°18'01"W	103.31'
C27	78°28'34"	15.00'	20.54'	N16°41'10"W	18.98'
C28	37°45'49"	227.00'	149.62'	N03°40'12"E	146.92'
C29	80°51'49"	11.00'	15.52'	N25°13'13"E	14.27'
C30	16°14'17"	212.00'	60.08'	N57°31'59"E	59.88'
C31	51°49'32"	231.00'	208.95'	S26°28'35"E	201.90'
C32	18°10'40"	269.00'	85.34'	S43°18'01"E	84.99'
C33	56°45'47"	169.00'	167.43'	S05°49'47"E	160.67'
C34	76°08'27"	15.00'	19.93'	S60°37'20"W	18.50'
C35	51°49'32"	202.00'	182.71'	S26°28'35"E	176.55'
C36	18°10'40"	298.00'	94.54'	S43°18'01"E	94.15'
C37	56°45'47"	198.00'	196.16'	S05°49'47"E	188.24'
C38	16°14'17"	190.50'	53.99'	N57°31'59"E	53.81'
C39	9°56'09"	400.00'	69.37'	S84°28'45"W	69.28'
C40	36°01'12"	15.00'	9.43'	N84°41'11"W	9.28'
C41	38°23'38"	15.00'	10.05'	N58°06'24"E	9.86'
C42	84°58'29"	11.00'	16.31'	S60°12'32"E	14.86'
C43	15°18'29"	629.00'	168.05'	N38°05'49"W	167.55'
C44	14°23'40"	286.00'	71.85'	S41°19'48"E	71.66'
C45	32°34'07"	15.00'	8.53'	S17°50'54"E	8.41'
C46	14°23'40"	315.00'	79.14'	S41°19'48"E	78.93'
C47	33°19'08"	600.00'	348.92'	S31°47'54"E	344.02'
C48	65°02'21"	25.00'	28.38'	N14°04'40"E	26.88'
C49	4°01'25"	286.00'	20.08'	S40°03'26"E	20.08'

LINE TABLE		
LINE #	BEARING	DISTANCE
L1	S34°07'58"E	13.06'
L2	S89°26'11"W	0.50'
L3	S79°30'40"W	18.55'
L4	S48°27'28"E	72.60'
L5	S48°31'38"E	85.77'
L6	S34°07'58"E	12.76'
L7	S13°38'08"E	42.52'
L8	S48°27'28"E	72.58'
L9	S48°31'38"E	85.75'
L10	S34°07'58"E	20.45'

LEGEND	
	SECTION CORNER AS DESCRIBED SET 18" #5 REBAR WITH 1.25" YELLOW PLASTIC CAP MARKED "PLS 25965"
	BLOCK NUMBER
	SECTION LINE
	RANGE LINE
	TRACT CENTER LINE
	SITE BOUNDARY
	LOT LINES
	EASEMENT
	PROPOSED EASEMENT
	D.E. DRAINAGE EASEMENT
	U.E. UTILITY EASEMENT
	W.E. WATER EASEMENT
	R.O.W. RIGHT-OF-WAY
	SQ. FT. SQUARE FEET
	AC. ACRES

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JOB NO. DCS23-4056		
DATE: 12-05-2023		
SCALE: 1"=20'		
Sheet 4 of 4		
4	07/24/2024	LOT & ESMT UPDATES
3	05/23/2024	LOT & ESMT UPDATES
2	03/15/2024	EASEMENT UPDATES
1	02/16/2024	CITY COMMENTS
NO.	DATE	REMARKS
DRAWN BY:	CJD	PA/PM: JCS

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PUBLIC IMPROVEMENT PLAN NARRATIVE

STAFFORD LOGISTICS CENTER

Traffic Impact Study (TIS) has not been approved. Comments on TIS may impact PIP.

Understood, revised TIS is consistent with the Public Improvement Plan

Prepared: December 14, 2018
Revised: May 8, 2020
April 5, 2021 – 1st (Amendment 2)
June 22nd, 2023 2nd (Amendment 3)
December 8, 2023 (Amendment 4)

WM: DCS18-4121
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*REMOVED FROM PLAN SET

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Introduction

The Stafford Logistics Center is proposed at the southwest corner of Picadilly Road and Colfax Avenue in Aurora, CO. The site is bounded by Colfax Avenue to the North, existing Picadilly Road **immediately** to the east with the Horizon Uptown Development beyond, and the proposed Stephen D. Hogan parkway to the south.



VICINITY MAP

The development consists of 347 acres with a mix of ~~E-470 Light Industrial I-1 (Business & Tech District)~~ and ~~E-470 Mixed Commercial Zoning MU-C (Mixed Use Corridor District)~~. The proposed improvements will be constructed in stages to meet the needs of both the present and future developments within the overall Stafford Logistics Center. The ~~E-470 Light Industrial I-1 (Business & Tech District)~~ phases will be started upon approval of the ~~Framework Development Plan (FDP) Master Plan (MP)~~; however, the ~~E-470 Mixed Commercial MU-C (Mixed Use Corridor District)~~ phases will be postponed until the public improvement project (realignment) at Picadilly Road and Colfax Avenue is completed and would allow for development. The following describes the general parameters of each planning area and the improvements necessary to service the planning areas independently. Each planning area will be required to meet Fire Life Safety requirements. The roadway network adjacent to and proposed within the development will need to be evaluated when each planning area is developed.

General Development Parameters

Land Development

The Stafford Logistics Center will be divided into ~~10~~ **12** planning areas (**PA1A, PA1B, PA2, PA3, PA4, PA6, PA7, PA9, PA10, PA11, PA-12, PA-13**). PA 1 – 6 will be zoned ~~Light Industrial I-1 (Business & Tech District)~~ and PA 7, 9, 10, 11, 12, & 13 will be zoned ~~E-470 Mixed Commercial MU-C (Mixed Use Corridor District)~~. **Planning areas 5 and 8 have been removed from the Public Improvement Plan and have been absorbed by PA-3.**

A public roadway network will be developed to city standards through the site to provide vehicular access to the various planning areas. Utilities will be installed within the public right of ways to provide service to the planning areas throughout the development.

The requirements of development for the various planning areas will be detailed later in this narrative.

Roadway Improvements

The perimeter public improvements required for the development of Stafford Logistics Center include:

- Perimeter roadway improvements for the south side of Colfax Avenue to include acceleration and deceleration lanes at the access points to the development. Intersection improvements, including a future traffic signal, at the intersection of Colfax Avenue and Lisbon Street when warranted. Existing U-turn cross over points proximate to the proposed access locations are to be eliminated when median improvements are required as associated with the full buildout of Colfax **or as warranted by the CDOT access permits.**
- A right in / right out public access at the northwest corner of the overall Stafford Logistics Center Development with an associated deceleration lane. This is a secondary point of entry and exiting which is on the west side of planning area #1A **and is to serve as the primary access to the adjacent property to the west.**
- Perimeter roadway improvements to construct the northside (ultimate westbound lanes) of Stephen D. Hogan Parkway (6th Avenue) across the frontage of the property and associated acceleration and deceleration lanes at the Lisbon Street intersection. Intersection improvements, including traffic signal at the intersection, Stephen D. Hogan Parkway and Lisbon Street when warranted.

The internal roadway improvements to service the development of the Stafford Logistics Center include:

Two collector streets, 80' ROW, will be installed to service the Business and Tech District zoning areas. Lisbon Street will be extended from the Colfax Avenue to Stephen D. Hogan Parkway and 13th Avenue will be extended from Lisbon Street to the realigned Picadilly Road. From the realigned Picadilly Road, 13th Ave, 144' ROW, will extend east through old Picadilly Rd to Gun Club Rd. The proposed streets shall be designed to the City of Aurora Roadway Standards.

The internal public improvements required for the development of Stafford Logistics Center include:

- The construction of two (2) collector streets (80' ROW). Lisbon Street in the north – south direction and 13th Avenue in the east – west direction.
- ~~The construction of 1 alternate collector (68' ROW). 12th Avenue from Lisbon street to the connection at 13th Avenue.~~
- An internal public trail network linking the Aurora Sports Park along the western property limits to the eastern property limits. The regional High Plains Trail extension from Horizon Uptown to Picadilly Road will be required to be designed as part of the individual planning area site plans.

The Lisbon Street extension to Stephen D. Hogan Parkway will be completed as part of PA 6 or as required based on traffic generation from the industrial zoned areas. It is anticipated that the Lisbon Street Extension to Stephen D. Hogan Parkway will be required per traffic generation internal to the development.

Roadways will be constructed to service the planning areas immediately adjacent, however roadways may be required to be constructed to provide both vehicular and fire life safety access to planning areas not immediately adjacent. The construction of half roadway sections will be reviewed during the development of planning areas on a case by case basis.

(50%)

Text revised accordingly.

The internal public improvements which will be constructed within the development as a result of the regional public improvement project (Picadilly Road Re-Alignment) include:

- Installation of the re-aligned Picadilly Road, including traffic signals at the intersections of the realigned Picadilly Road and Colfax Avenue and the realigned Picadilly Road and realigned Colfax 13th Avenue **(144' ROW)**.
 - Two (2) lanes of the re-aligned Picadilly Road, with necessary turn lanes, acceleration/deceleration lanes, and sidewalk along the west side of the roadway, will be required to be installed when any of the conditions below are met. The proposed street shall be designed to the City of Aurora Roadway Standards.

(100%)

Text revised accordingly.

- Development of the third (3rd) proposed building of the Stafford Logistics Center.
- ADT on existing Picadilly Road exceeds LOS C as identified in the NEATS.
- Construction of adjacent development to the planned realigned roadway.
- The four (4) outside lanes of the re-aligned Picadilly Road, including necessary turn lanes, acceleration/deceleration lanes, and sidewalks along both sides of the roadway, will be required to be installed when the Picadilly Interchange (Regional Transportation Project) construction begins.
- The full six (6) lane section of the re-aligned Picadilly Road will be required to be installed when the ADT on Picadilly Road exceeds the lower value of the 4-lane Major Arterial's LOS D (36,000 ADT) as identified in the NEATS.
- ~~Realigned Colfax 13th Avenue~~ **(144' ROW)** from the realigned Picadilly Road east to the property limits.
 - Construction of one half (1/2) of the full section of ~~realigned Colfax 13th Avenue~~ **(144' ROW)** from the eastern property limits to the realigned Picadilly Road will be required to be installed when any of the conditions below are met.
 - Any of Planning areas 3, 7, & **(PA8 Removed)**, 9, 10, or 13 are developed.
 - Construction of the full section of ~~realigned Colfax 13th Avenue~~ **(144' ROW)** from the eastern property limits to the realigned Picadilly Road will be required to be installed when any of the conditions below are met.
 - **Planning Area 9 is developed, if Planning Area 10 or 13 has already been developed.**
 - **Planning Area 10 or 13 is developed, if Planning Area 9 has already been developed.**

Table 2.
Recommended Traffic Volume Thresholds

ROADWAY CLASSIFICATION	NUMBER OF LANES EACH DIRECTION	RECOMMENDED DAILY TRAFFIC VOLUME LOS THRESHOLDS (VEHICLES PER DAY)		
		C	D ⁽²⁾	E
Collector	1	> 9,500 to 10,500	> 10,500 to 12,000	> 12,000 to 13,500
Minor Arterial	2	> 22,500 to 25,500	> 25,500 to 28,500	> 28,500 to 32,000
Minor Arterial ⁽¹⁾	3	>30,000 to 34,500	>34,500 to 38,500	>38,500 to 43,000
Major Arterial	2	> 30,000 to 36,000	> 36,000 to 40,000	> 40,000 to 45,000
Major Arterial	3	> 46,000 to 53,000	> 53,000 to 60,000	> 60,000 to 67,000
Major Arterial ⁽¹⁾	4	> 56,000 to 64,000	> 64,000 to 72,000	> 72,000 to 80,000
Expressway	2	> 38,000 to 44,000	> 44,000 to 49,000	> 49,000 to 55,000
Expressway	3	> 56,000 to 64,000	> 64,000 to 72,000	> 72,000 to 80,000

⁽¹⁾ System performance evaluation only.

⁽²⁾ LOS D threshold volumes used for development roadway planning consistent with traffic impact study guidelines.

Table 2 - ADT Thresholds Table per NEATS 2018 Update

The above table is the ADT thresholds table per the 2018 NEATS study update. The city of Aurora uses the NEATS to provide more insight into systems level multimodal transportation facility needs now and into the future. Existing and planned development in this area continues to evolve, and it is important for transportation infrastructure plans to reflect the projected area needs. It is used to determine when lane expansions are required for the phased boulevards within the project.

The I-70 frontage road connection to Colfax Avenue will be eventually be transitioned to a 2-lane frontage road connecting to existing Colfax when Picadilly road is realigned. It is anticipated that existing traffic will be routed south onto the existing Picadilly Road to the realigned Colfax 13th Avenue (144' ROW) and then onto the realigned Picadilly Road. The above traffic pattern will exist until the realigned Colfax 13th Avenue (144' ROW) is installed as part of the neighboring development.

Signal Escrows will be required per the City of Aurora Signal Escrow Ordinance. Escrow will be assessed at the time of development of planning areas adjacent to signalized intersections. As previously indicated the realignment of Piccadilly Road due to the Regional Transportation Project places future traffic signals within the limits of the Stafford Logistics Center whereas they would otherwise be located along the periphery of the project. Stafford Logistics Center will be responsible for 100% escrow of the proposed traffic signal at the intersection of the realigned Colfax 13th Avenue (144' ROW) and the realigned Picadilly Road and 50% of the proposed traffic signal at the intersection at existing Colfax Avenue and the realigned Picadilly Road. **As well as a ½ signal escrow for the intersection of Lisbon at existing Colfax, and a 100% signal escrow for the intersection of Lisbon S.D. Hogan Pkwy.** The proposed roadway improvements shall be consistent with the approved Traffic Impact Study prepared by Felsburg Holt & Ullevig prepared for the Stafford Logistics Center and approved with the Framework Development Plan.

Mobility Improvements

Colfax Avenue and Picadilly Road will have public transit stops, specific locations are to be identified in future with RTD. A mobility hub will be located in the vicinity of Colfax Avenue and Picadilly Road intersection the Stafford Logistics Center will provide internal site circulation to support walking or biking to the mobility hub.

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Drainage Improvements

The Stafford Logistics Center Development is entirely within the Sand Creek drainage basin. The proposed development will comply to the Sand Creek (I-225 – E-470) Right Bank Tributaries Outfall Systems Plan (OSP).

A regional stormwater basin to provide stormwater detention and water quality volume will be constructed to service the northern area of the Stafford Logistics Center development, including PAs **1A, 1B, 2, 3, and 4 (PA5 removed) and 7, 9, 10, 13 (PA8 Removed)** and a portion of PA 6. A stormwater channel will also be installed to convey stormwater flows from the Horizon Uptown development and further upstream areas to the regional stormwater basin. The regional basin and channel will be designed to be maintenance eligible per UDFCD standards.

The regional basin will be fully constructed with the first planning area to be constructed. The stormwater channel will be constructed concurrently with the first development to be constructed that is tributary to the channel (PA-3, PA-4, ~~PA-5 (PA5 removed)~~, PA-7, ~~PA-8 (PA8 removed)~~, PA-9 or PA-10, PA-13, and the entirety of the channel will be constructed in a single phase.

Planning Area 6 straddles a local drainage divide. The north limits of the planning will drain to the regional pond and the southern extents of the planning area will have a stormwater basin to service the areas tributary to the south.

Water Main Improvements

The Stafford Logistics Center will be serviced by the existing 24" water main within Colfax Avenue, the existing 30" water main along the southern extents of the property and a proposed 12" water main along Piccadilly Road to be installed per the Horizon Uptown Development PIP.

Watermain will be installed within proposed Lisbon Street, ~~12th Avenue~~, and 13th Avenue ROW's. Additional watermain will be installed to provide the necessary looped water main around the proposed developments within the Stafford Logistics Center to provide fire protection and domestic service for all buildings per the Master Utility Study.

Sanitary Sewer Improvements

The Stafford Logistics Center will be serviced by the existing 42" Sand Creek Interceptor that is adjacent to the southern extents of the site.

A public sanitary sewer will be installed within Lisbon Street and outfall to the Sand Creek Interceptor. A public sanitary sewer will also be installed within the ~~12th~~ **13th** Avenue ROW and extend to the far northeast extents of the site.

Specific Planning Area Improvement Descriptions

Planning Area 1A (33.50 Acres) E-470 Light Industrial I-1 (Business and Tech District):

Prior to the development of PA 1 the following public improvements shall be designed and approved for construction:

- The intersection of Colfax Avenue and Lisbon Street Public Roadway will be improved and signalized, when warrants are met.
- ~~Additional~~ **Auxiliary** lane adjacent to the eastbound lanes of Colfax Avenue and a right in – right out access constructed at the northwest corner of PA-1A.
- **Center median improvements and restoration on Colfax Avenue.**
- Lisbon Street Public Roadway improvements to the southern extent of PA-1A and public utilities will also be installed within this right of way.
- ~~13th Street~~ **Avenue** Private Roadway improvements extend to the western extent from Lisbon. PA-1A and public utilities will also be installed within this private drive.
- Secondary Emergency Access roads adjacent to the proposed developments.
- Domestic water connection and fire loop will be provided from the existing 24-inch watermain within the Colfax Avenue ROW to service PA 1A and future planning areas adjacent.
- Sanitary sewer extension within the planned Lisbon Street Public Roadway ROW from PA-1A to the Sand Creek Interceptor.
- Storm sewer to provide conveyance from the planning area to the regional stormwater basin.

Planning Area 1B (18.46 Acres) E-470 Light Industrial I-1 (Business and Tech District):

Prior to the development of PA 1 the following public improvements shall be designed and approved for construction:

- The intersection of Colfax Avenue and Lisbon Street Public Roadway will be improved and signalized, when warrants are met.
- ~~Additional~~ **Auxiliary** lane adjacent to the eastbound lanes of Colfax Avenue.
- **Center median improvements and restoration on Colfax Avenue.**
- Lisbon Street Public Roadway improvements to the southern extent of PA-1B and public utilities will also be installed within this right of way.
- ~~13th Street~~ **Avenue (80' ROW)** Public Roadway improvements extend from Lisbon to the eastern extent of PA-1B. Public utilities associated with PA-1B will also be installed within this right of way.
- Secondary Emergency Access roads adjacent to the proposed developments.
- Domestic water connection and fire loop will be provided from the existing 24-inch watermain within the Colfax Avenue ROW to service PA 1B and future planning areas adjacent.
- Sanitary sewer extension within the planned ~~12th~~ **13th** Avenue Roadway and Lisbon Street Public Roadway ROW from PA-1B to the Sand Creek Interceptor.
- Storm sewer to provide conveyance from the planning area to the regional stormwater basin.

Planning Area 2 (37.38 Acres) E-470 Light Industrial I-1 (Business and Tech District):

Prior to the development of PA 2 the following public improvements shall be designed and approved for construction:

- All necessary Public improvements are in place as proposed for Planning Area 1 or will need to be approved.
- Lisbon Street Public Roadway improvements to the southern extent of PA-2 and public utilities will also be installed within this right of way.
- Secondary Emergency Access roads adjacent to the proposed developments.
- Watermain to service this planning area.
- Sanitary sewer to service this planning area.
- Storm sewer to provide conveyance from the planning area to the regional stormwater basin.

Planning Area 3 (72.06 Acres) E-470 Light Industrial I-1 (Business and Tech District):

Prior to the development of PA 3 the following public improvements shall be designed and approved for construction:

- All necessary Public improvements are in place as proposed for Planning Area 1 or will need to be approved.
- **13th Street Avenue (80' ROW)** Public Roadway improvements to the eastern extent of PA-3 and public utilities will also be installed within this right of way.
- A Roadway connection from **13th Street Avenue (80' ROW)** to the realigned Picadilly Road will be installed.
- ½ section of ~~realigned Colfax~~ **13th Avenue (144' ROW)** is required.
- Half Right of Way improvements of the realigned Picadilly Road noted in the Roadway Improvements section previously discussed from the ~~realigned Colfax~~ **13th Avenue (144' ROW)** to the existing Picadilly Road, including a bridge / box culvert at the Channel Crossing.
- The construction of the Stafford responsible improvements to realigned Picadilly Road from Colfax Avenue to the existing Picadilly Road is required based on existing background or proposed traffic counts.
- Secondary Emergency Access roads adjacent to the proposed developments.
- Watermain to service this planning area.
- Sanitary sewer will be provided by the public sanitary sewer constructed per Planning Area 1 or will need to be approved.
- Storm sewer to provide conveyance from the planning area to the stormwater drainage channel. If the stormwater conveyance channel has not been installed prior it will be installed with this Planning Area.
- 25% signal escrow shall apply for the signal at realigned Picadilly and ~~realigned Colfax~~ **13th Avenue (144' ROW)**.
- **Potential for public art site in the open space on the east side of the planning area. Public Art Plan amendment to be differed to individual site plan if determined necessary per city requirements.**

Planning Area 4 (24.32 Acres) E-470 Light Industrial I-1 (Business and Tech District):

Prior to the development of PA 4 the following public improvements shall be designed and approved for construction:

- All necessary Public improvements are in place as proposed for Planning Area 1 or will need to be approved.
- **13th Street Avenue (80' ROW)** Public Roadway improvements to the eastern extent of PA-4 and public utilities will also be installed within this right of way.
- Secondary Emergency Access roads adjacent to the proposed developments.
- Watermain to service this planning area.
- Sanitary sewer to service this planning area.
- Storm sewer to provide conveyance from the planning area to the stormwater drainage channel. If the stormwater conveyance channel has not been installed prior it will be installed with this Planning Area.

Planning Area 5 (15.33 Acres) E-470 Light Industrial:

Planning areas 5 has been removed from the Public Improvement Plan and has been absorbed by PA-3.

Prior to the development of PA 5 the following public improvements shall be designed and approved for construction:

- ~~All necessary Public improvements are in place as proposed for Planning Areas 1, 3, and 4 or will need to be approved.~~
- ~~12th Avenue Public Roadway improvements to the northern extent of Planning Area 5.~~
- ~~Secondary Emergency Access roads adjacent to the proposed developments.~~
- ~~Watermain to service this planning area.~~
- ~~Sanitary sewer to service this planning area.~~
- ~~Storm sewer to provide conveyance from the planning area to the stormwater drainage channel. If the stormwater conveyance channel has not been installed prior it will be installed with this Planning Area.~~

Planning Area 6 (70.06 Acres) E-470 Light Industrial I-1 (Business and Tech District):

Prior to the development of PA 6 the following public improvements shall be designed and approved for construction:

- The northside (ultimate westbound lanes) of Stephen D. Hogan Parkway (6th Avenue) across the frontage of the property. Intersection improvements, including potential traffic signal and auxiliary lanes at the intersection Stephen D. Hogan Parkway and the Lisbon Street.
- Lisbon Street Public Roadway improvements from Stephen D. Hogan Parkway to Colfax Avenue and public utilities will also be installed within this right of way.
- Secondary Emergency Access roads adjacent to the proposed developments.
- Watermain to service this planning area.
- Sanitary sewer to service this planning area.
- Storm sewer to provide conveyance from the planning area to the regional stormwater basin.
- Storm sewer to provide conveyance to the on-site stormwater detention basin along the southern limits of the planning area.
- 100% signal escrow shall apply for the signal at Lisbon St. and existing Stephan D. Hogan Parkway.

Planning Area 7 (13.59 Acres) E-470 Mixed Commercial MU-C (Mixed Use Corridor District):

Prior to the development of PA 7 the following public improvements shall be designed and approved for construction:

- Half Right of Way improvements of the realigned Picadilly Road noted in the Roadway Improvements section previously discussed from the connection of Colfax Avenue to the southern boundary of PA 7. A connection to 13th Avenue Public Road, the construction of the half ROW of the realigned Colfax 13th Avenue (**144' ROW**), and the construction of the half ROW of the realigned Picadilly Road to the existing Picadilly Road is required to provide multiple access points for the development. **A CDOT access permit will be required for the new access of Picadilly Ave at existing Colfax Ave.**
- The construction of the Stafford responsible improvements to realigned Picadilly Road from Colfax Avenue to the existing Picadilly Road may be required based on existing background or proposed traffic counts.
- Secondary Emergency Access roads adjacent to the proposed developments.
- Domestic water connection and fire loop, if required, will be provided from adjacent planning areas within the Stafford Logistic Center.
- Sanitary sewer will be provided by the public sanitary sewer constructed per Planning Areas 1 & 3 or will need to be approved.
- Storm sewer to provide conveyance from the planning area to the stormwater drainage channel. If the stormwater conveyance channel has not been installed prior it will be installed with this Planning Area.
- 25% signal escrow shall apply for the signal at realigned Picadilly and Existing Colfax Avenue.
- 25% signal escrow shall apply for the signal at realigned Picadilly and realigned Colfax 13th Avenue (**144' ROW**).
- **Potential for public art site. Public Art Plan amendment to be deferred to individual site plan if determined necessary per City requirements.**

Planning Area 8 (30.38 Acres) E-470 Light Industrial:

Planning area 8 has been removed from the Public Improvement Plan and has been absorbed by PA-3.

~~Prior to the development of PA 8 the following public improvements shall be designed and approved for construction:~~

- ~~• All necessary Public improvements are in place as proposed for Planning Areas 1, 3, and 5 or will need to be approved.~~
- ~~• 13th Street Avenue Public Roadway improvements to the eastern extent of PA 8 and public utilities will also be installed within this right of way.~~
- ~~• A Roadway connection from 13th Street Avenue to the realigned Picadilly Road will be installed.~~
- ~~• ½ section of realigned Colfax 13th Avenue (**144' ROW**) is required.~~
- ~~• Half Right of Way improvements of the realigned Picadilly Road noted in the Roadway Improvements section previously discussed from the realigned Colfax 13th Avenue (**144' ROW**) to the existing Picadilly Road, including a bridge / box culvert at the Channel Crossing.~~
- ~~• The construction of the Stafford responsible improvements to realigned Picadilly Road from Colfax Avenue to the existing Picadilly Road is required based on existing background or proposed traffic counts.~~
- ~~• Secondary Emergency Access roads adjacent to the proposed developments.~~
- ~~• Watermain to service this planning area.~~
- ~~• Sanitary sewer will be provided by the public sanitary sewer constructed per Planning Areas 1, 3, and 5 or will need to be approved.~~
- ~~• Storm sewer to provide conveyance from the planning area to the stormwater drainage channel. If the stormwater conveyance channel has not been installed prior it will be installed with this Planning Area.~~
- ~~• 25% signal escrow shall apply for the signal at realigned Picadilly and realigned Colfax 13th Avenue (**144' ROW**).~~

Tab 9 identifies PA-9 as a potential MF site. Remove it there or update this description with a note at the beginning mentioning that it is a potential MF site, similar to what is written for PA-13.

Planning Area 9 (9.47 Acres) E-470 Mixed Commercial MU-C (Mixed Use Corridor District):

TAB 9 is incorrect and has been revised. No longer states that PA-9 is a potential MF site.

Prior to the development of PA 9 the following public improvements shall be designed and approved for construction:

- Half Right of Way improvements of the realigned Picadilly Road noted in the Roadway Improvements section previously discussed from the realigned Colfax 13th Avenue (144' ROW) to the existing Picadilly Road, including a bridge / box culvert at the Channel Crossing.
- The construction of the Stafford responsible improvements to realigned Picadilly Road from Colfax Avenue to the existing Picadilly Road is required based on existing background or proposed traffic counts.
- Realigned Colfax 13th Avenue (144' ROW) Public Roadway improvements may be required to provide multiple access points for the development.
- Intersection improvements, including potential traffic signal and auxiliary lanes at the realigned Picadilly Road and the realigned Colfax 13th Avenue (144' ROW).
- Intersection improvements of the common access point of PA 9 and PA 10 onto the realigned Colfax 13th Avenue (144' ROW). Signalization at this intersection is not required and shall be controlled by stop signs, per TIS study.
- Secondary Emergency Access roads adjacent to the proposed developments.
- Domestic water connection and fire loop, if required, will be provided from the existing 24-inch watermain within the existing Colfax Ave ROW and constructed 13th Ave.
- Sanitary sewer will be provided by the public sanitary sewer constructed per Planning Areas 1 & 3 or will need to be approved.
- Storm sewer to provide conveyance from the planning area to the stormwater drainage channel. If the stormwater conveyance channel has not been installed prior it will be installed with this Planning Area.
- 25% signal escrow shall apply for the signal at realigned Picadilly and realigned Colfax 13th Avenue (144' ROW).

Planning Area 10 (25.79 9.78 Acres) E-470 Mixed Commercial MU-C (Mixed Use Corridor District):

Prior to the development of PA 10 the following public improvements shall be designed and approved for construction:

- Half Right of Way improvements of the realigned Picadilly Road noted in the Roadway Improvements section previously discussed from the connection of Colfax Avenue to the southern boundary of PA 10. A connection to 13th Avenue Public Road (80' ROW), the construction of the half ROW of the realigned Colfax 13th Avenue (144' ROW), and the construction of the half ROW of the realigned Picadilly Road to the existing Picadilly Road is required to provide multiple access points for the development. **A CDOT access permit will be required for the new access of Picadilly Ave at existing Colfax Ave.**
- The construction of the Stafford responsible improvements to realigned Picadilly Road from Colfax Avenue to the existing Picadilly Road may be required based on existing background or proposed traffic counts.
- Intersection improvements, including potential traffic signal and auxiliary lanes at the realigned Picadilly Road and the realigned Colfax 13th Avenue (144' ROW).
- Intersection improvements including possible signalization of the common access point of PA 9 and PA 10 onto the realigned Colfax 13th Avenue (144' ROW). Signalization at this intersection will need further study to ensure minimum signal spacing criteria, at the time of development, are met.
- Secondary Emergency Access roads adjacent to the proposed developments.
- Sanitary sewer will be provided by the public sanitary sewer constructed per Planning Areas 1 & 3 or will need to be approved.
- Domestic water connection and fire loop, if required, will be provided from the existing 24-inch watermain within the existing Colfax Ave ROW and constructed 13th Ave.
- Storm sewer to provide conveyance from the planning area to the stormwater drainage channel. If the stormwater conveyance channel has not been installed prior, it will be installed with this Planning Area.

- Closure of the Frontage Road connection to US40 if the CSP/PLAT precedes the realignment of Picadilly/ New I-70 interchange connection with the approval from CDOT.
 - 25% signal escrow shall apply for the signal at realigned Picadilly and realigned Colfax 13th Avenue (144' ROW).
 - 25% signal escrow shall apply for the signal at realigned Picadilly and Existing Colfax Avenue.
 - The regional High Plains Trail extension is acknowledged to be a part of the right of way frontage within CDOT right of way.
 - Potential for public art site per City requirements.
- previous comment not addressed
50%
- individual site plan if determined necessary

Planning Area 11 (6.11 Acres) I-1 (Business and Tech District):

Prior to the development of PA 11 the following public improvements shall be designed and approved for construction:

- Proposed fire hydrants connecting to existing watermain in the Stafford Center planning areas.
 - Domestic water connection and fire loop will be provided from the proposed 12-inch watermain within the Proposed Stafford private drive west of Planning Area 1A.
 - Secondary Emergency Access roads adjacent to the proposed developments.
 - Storm sewer to provide detention and conveyance from the planning area to the Aurora Sports Park offsite channel.
 - Improvements along the Colfax frontage include the installation of sidewalk and landscaping.
 - Street lighting for pedestrian crossings at the two intersections on the existing private road.
- As stated on page 5 of PIP, 50% of the signal escrow for the realigned Picadilly and Existing Colfax Avenue is required. 25% of this escrow is covered in Planning Area 7, and 25% is covered in Planning Area 10. Value not updated per comment as we will be holding to the 25% for PA-10. Please don't hesitate to reach out to discuss. Thank you.
- approved for construction:
- previous Stafford Logistic

Planning Area 12 (12.04) Acres I-1 (Business and Tech District):

Prior to the development of PA 12 the following public improvements shall be designed and approved for construction:

- Secondary Emergency Access roads adjacent to the proposed developments.
- Domestic water connection and fire loop will be provided from the proposed 12-inch watermain within the Proposed Stafford private drive west of Planning Area 1A.
- Sanitary sewer will be provided by the public sanitary sewer constructed per Planning Areas 1 & 3 or will need to be approved.
- Storm sewer to provide detention and conveyance from the planning area to the Aurora Sports Park offsite channel.
- All necessary Public improvements are in place as proposed for Planning Area 11 or will need to be approved.

Planning Area 13 (14.01 Acres) MU-C (Mixed Use Corridor District):

Note: This is a potential multifamily site.

Prior to the development of PA 13 the following public improvements shall be designed and approved for construction:

- Half Right of Way improvements of the realigned Picadilly Road noted in the Roadway Improvements section previously discussed from the connection of Colfax Avenue to the southern boundary of PA 10. A connection to 13th Avenue Public Road (80' ROW), the construction of the half ROW of 13th Avenue (144' ROW), and the construction of the half ROW of the realigned Picadilly Road to the existing Picadilly Road is required to provide multiple access points for the development. A CDOT access permit will be required for the new access of Picadilly Ave at existing Colfax Ave.
- The construction of the Stafford responsible improvements to realigned Picadilly Road from Colfax Avenue to the existing Picadilly Road may be required based on existing background or proposed traffic counts.

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ARCHITECTURE | PLANNING | INTERIORS

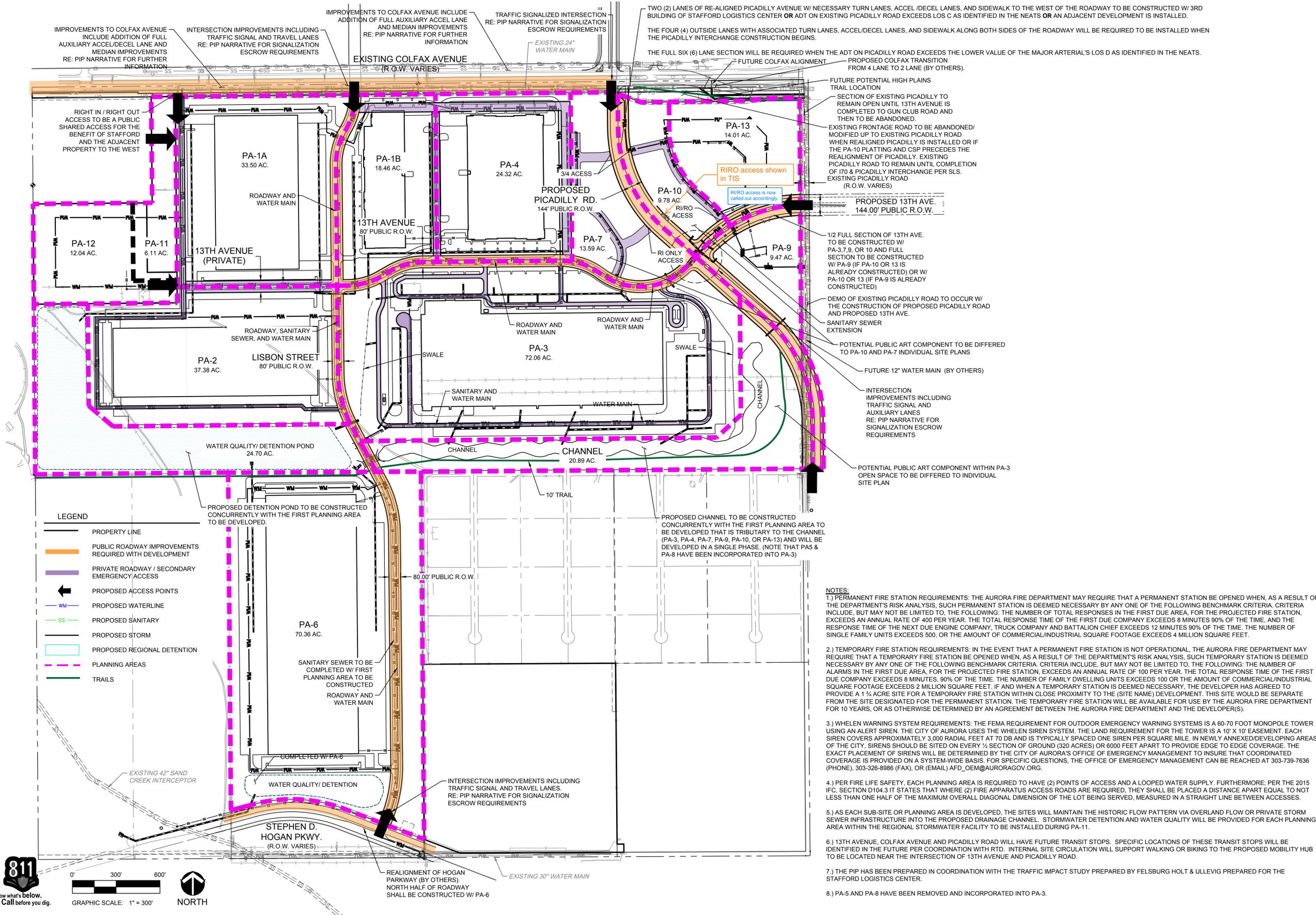
BRANDING | CIVIL ENGINEERING

- Intersection improvements, including potential traffic signal and auxiliary lanes at the realigned Picadilly Road and 13th Avenue (144' ROW).
- Intersection improvements including possible signalization of the common access point of PA 9 and PA 10 onto the 13th Avenue (144' ROW). Signalization at this intersection will need further study to ensure minimal signal spacing criteria, at the time of development, are met.
- Secondary Emergency Access roads adjacent to the proposed developments.
- Sanitary sewer will be provided by the public sanitary sewer constructed per Planning Areas 1 & 3 or will need to be approved.
- Domestic water connection and fire loop, if required, will be provided from the existing 24-inch watermain within the existing Colfax Ave ROW and constructed 13th Ave.
- Storm sewer to provide conveyance from the planning area to the stormwater drainage channel. If the stormwater conveyance channel has not been installed prior, it will be installed with this Planning Area.
- Closure of the Frontage Road connection to US40 if the CSP/PLAT precedes the realignment of Picadilly/ New I-70 interchange connection with the approval from CDOT.
- The regional High Plains Trail extension is acknowledged to be a part of the right of way frontage within CDOT right of way.

STAFFORD LOGISTICS CENTER MASTER PLAN (MP)

PUBLIC IMPROVEMENT PLAN (PIP)

LOCATED IN SECTION 2, TOWNSHIP 4 SOUTH, RANGE 66 WEST OF THE 6TH PRINCIPAL MERIDIAN, CITY OF AURORA, COUNTY OF ARAPAHOE, STATE OF COLORADO



LEGEND

- PROPERTY LINE
- PUBLIC ROADWAY IMPROVEMENTS REQUIRED WITH DEVELOPMENT
- PRIVATE ROADWAY / SECONDARY EMERGENCY ACCESS
- PROPOSED ACCESS POINTS
- PROPOSED WATERLINE
- PROPOSED SANITARY
- PROPOSED STORM
- PROPOSED REGIONAL DETENTION
- PLANNING AREAS
- TRAILS

- NOTES:**
- 1.) PERMANENT FIRE STATION REQUIREMENTS: THE AURORA FIRE DEPARTMENT MAY REQUIRE THAT A PERMANENT STATION BE OPENED WHEN, AS A RESULT OF THE DEPARTMENT'S RISK ANALYSIS, SUCH PERMANENT STATION IS DEEMED NECESSARY BY ANY ONE OF THE FOLLOWING BENCHMARK CRITERIA. CRITERIA INCLUDE, BUT MAY NOT BE LIMITED TO, THE FOLLOWING: THE NUMBER OF TOTAL RESPONSES IN THE FIRST DUE AREA, FOR THE PROJECTED FIRE STATION, EXCEEDS AN ANNUAL RATE OF 400 PER YEAR, THE TOTAL RESPONSE TIME OF THE FIRST DUE COMPANY EXCEEDS 8 MINUTES 90% OF THE TIME, AND THE RESPONSE TIME OF THE NEXT DUE ENGINE COMPANY, TRUCK COMPANY AND BATTALION CHIEF EXCEEDS 12 MINUTES 90% OF THE TIME, THE NUMBER OF SINGLE FAMILY UNITS EXCEEDS 500, OR THE AMOUNT OF COMMERCIAL/INDUSTRIAL SQUARE FOOTAGE EXCEEDS 4 MILLION SQUARE FEET.
 - 2.) TEMPORARY FIRE STATION REQUIREMENTS: IN THE EVENT THAT A PERMANENT FIRE STATION IS NOT OPERATIONAL, THE AURORA FIRE DEPARTMENT MAY REQUIRE THAT A TEMPORARY FIRE STATION BE OPENED WHEN, AS A RESULT OF THE DEPARTMENT'S RISK ANALYSIS, SUCH TEMPORARY STATION IS DEEMED NECESSARY BY ANY ONE OF THE FOLLOWING BENCHMARK CRITERIA. CRITERIA INCLUDE, BUT MAY NOT BE LIMITED TO, THE FOLLOWING: THE NUMBER OF ALARMS IN THE FIRST DUE AREA, FOR THE PROJECTED FIRE STATION, EXCEEDS AN ANNUAL RATE OF 100 PER YEAR, THE TOTAL RESPONSE TIME OF THE FIRST DUE COMPANY EXCEEDS 8 MINUTES, 90% OF THE TIME, THE NUMBER OF FAMILY DWELLING UNITS EXCEEDS 100 OR THE AMOUNT OF COMMERCIAL/INDUSTRIAL SQUARE FOOTAGE EXCEEDS 2 MILLION SQUARE FEET. IF AND WHEN A TEMPORARY STATION IS DEEMED NECESSARY, THE DEVELOPER HAS AGREED TO PROVIDE A 1 1/2 ACRE SITE FOR A TEMPORARY FIRE STATION WITHIN CLOSE PROXIMITY TO THE (SITE NAME) DEVELOPMENT. THIS SITE WOULD BE SEPARATE FROM THE SITE DESIGNATED FOR THE PERMANENT STATION. THE TEMPORARY FIRE STATION WILL BE AVAILABLE FOR USE BY THE AURORA FIRE DEPARTMENT FOR 10 YEARS, OR AS OTHERWISE DETERMINED BY AN AGREEMENT BETWEEN THE AURORA FIRE DEPARTMENT AND THE DEVELOPER(S).
 - 3.) WHELEN WARNING SYSTEM REQUIREMENTS: THE FEMA REQUIREMENT FOR OUTDOOR EMERGENCY WARNING SYSTEMS IS A 60-70 FOOT MONOPOLE TOWER USING AN ALERT SIREN. THE CITY OF AURORA USES THE WHELEN SIREN SYSTEM. THE LAND REQUIREMENT FOR THE TOWER IS A 10' X 10' EASEMENT. EACH SIREN COVERS APPROXIMATELY 3,000 RADIAL FEET AT 70 DB AND IS TYPICALLY SPACED ONE SIREN PER SQUARE MILE. IN NEWLY ANNEXED/DEVELOPING AREAS OF THE CITY, SIRENS SHOULD BE SITED ON EVERY 1/4 SECTION OF GROUND (320 ACRES) OR 8000 FEET APART TO PROVIDE EDGE TO EDGE COVERAGE. THE EXACT PLACEMENT OF SIRENS WILL BE DETERMINED BY THE CITY OF AURORA'S OFFICE OF EMERGENCY MANAGEMENT TO INSURE THAT COORDINATED COVERAGE IS PROVIDED ON A SYSTEM-WIDE BASIS. FOR SPECIFIC QUESTIONS, THE OFFICE OF EMERGENCY MANAGEMENT CAN BE REACHED AT 303-739-7636 (PHONE), 303-326-8986 (FAX), OR (EMAIL) AFD_OEM@AURORAGOV.ORG.
 - 4.) PER FIRE LIFE SAFETY, EACH PLANNING AREA IS REQUIRED TO HAVE (2) POINTS OF ACCESS AND A LOOPED WATER SUPPLY. FURTHERMORE: PER THE 2015 IFC, SECTION D104.3 IT STATES THAT WHERE (2) FIRE APPARATUS ACCESS ROADS ARE REQUIRED, THEY SHALL BE PLACED A DISTANCE APART EQUAL TO NOT LESS THAN ONE HALF OF THE MAXIMUM OVERALL DIAGONAL DIMENSION OF THE LOT BEING SERVED, MEASURED IN A STRAIGHT LINE BETWEEN ACCESSES.
 - 5.) AS EACH SUB-SITE OR PLANNING AREA IS DEVELOPED, THE SITES WILL MAINTAIN THE HISTORIC FLOW PATTERN VIA OVERLAND FLOW OR PRIVATE STORM SEWER INFRASTRUCTURE INTO THE PROPOSED DRAINAGE CHANNEL. STORMWATER DETENTION AND WATER QUALITY WILL BE PROVIDED FOR EACH PLANNING AREA WITHIN THE REGIONAL STORMWATER FACILITY TO BE INSTALLED DURING PA-11.
 - 6.) 13TH AVENUE, COLFAX AVENUE AND PICADILLY ROAD WILL HAVE FUTURE TRANSIT STOPS. SPECIFIC LOCATIONS OF THESE TRANSIT STOPS WILL BE IDENTIFIED IN THE FUTURE PER COORDINATION WITH RTD. INTERNAL SITE CIRCULATION WILL SUPPORT WALKING OR BIKING TO THE PROPOSED MOBILITY HUB TO BE LOCATED NEAR THE INTERSECTION OF 13TH AVENUE AND PICADILLY ROAD.
 - 7.) THE PIP HAS BEEN PREPARED IN COORDINATION WITH THE TRAFFIC IMPACT STUDY PREPARED BY FELSBURG HOLT & ULLEVIG PREPARED FOR THE STAFFORD LOGISTICS CENTER.
 - 8.) PA-5 AND PA-8 HAVE BEEN REMOVED AND INCORPORATED INTO PA-3.

WARE MALCOMB
LEADING DESIGN FOR COMMERCIAL REAL ESTATE

900 south broadway
suite 320
denver, co 80209
p 303.661.3333
waremalcomb.com

FOR AND ON BEHALF OF WARE MALCOMB

STAFFORD LOGISTIC CENTER
AURORA COLORADO

NO.	DATE	REVISION	REMARKS
1	05/10/2023	MP #15 (REVISION)	
2	12/08/2023	MP #15 (AMENDMENT #4)	
3	10/07/2021	MP #12 (REVISION)	
4	04/05/2021	MP #11 (REVISION)	
5	02/27/2021	MP #10 (REVISION)	
6	12/21/2020	MP #9 (REVISION)	
7	10/26/2020	FDP #8 (REVISION)	
8	08/26/2020	FDP #7 (REVISION)	

JOB NO.: DCS21-4057
PA / PM: JC
DESIGNED: JZ
DATE: 10/04/2022
PLOT DATE: 08/23/24

SHEET
PIP
Sheet PIP of

811
Know what's below.
Call before you dig.

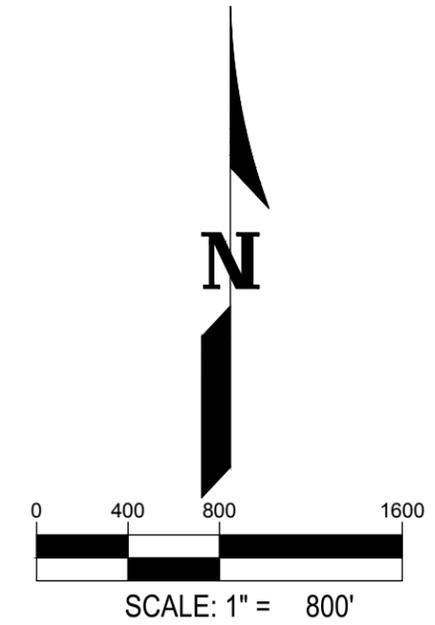
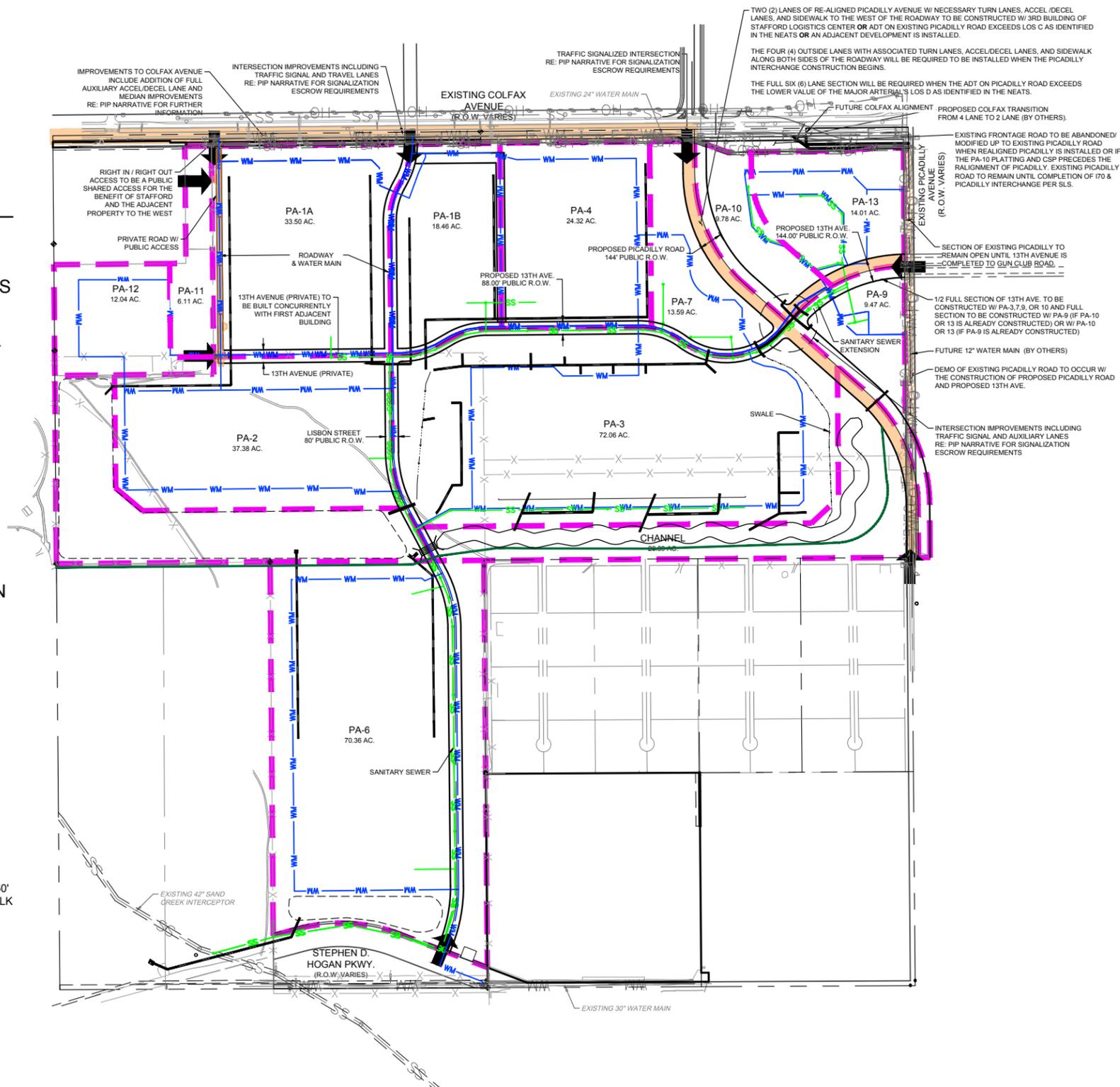
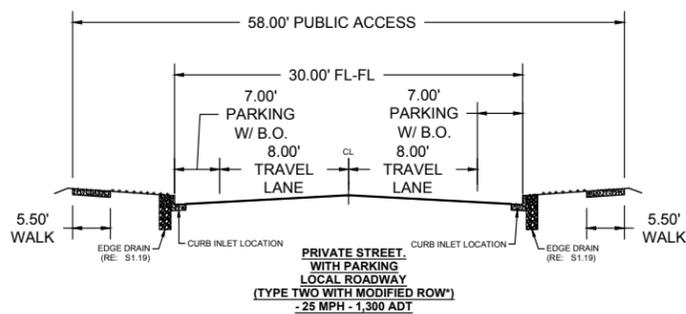
GRAPHIC SCALE: 1" = 300'

NORTH

NOT FOR CONSTRUCTION

LEGEND

-  PROPERTY LINE
-  PUBLIC ROADWAY IMPROVEMENTS REQUIRED WITH DEVELOPMENT
-  PRIVATE ROADWAY / SECONDARY EMERGENCY ACCESS
-  PROPOSED ACCESS POINTS
-  PROPOSED WATERLINE
-  PROPOSED SANITARY
-  PROPOSED STORM
-  PROPOSED REGIONAL DETENTION
-  PLANNING AREAS



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**STAFFORD LOGISTICS CENTER
AURORA COLORADO**
PLANNING AREA 9
PIP PLAN

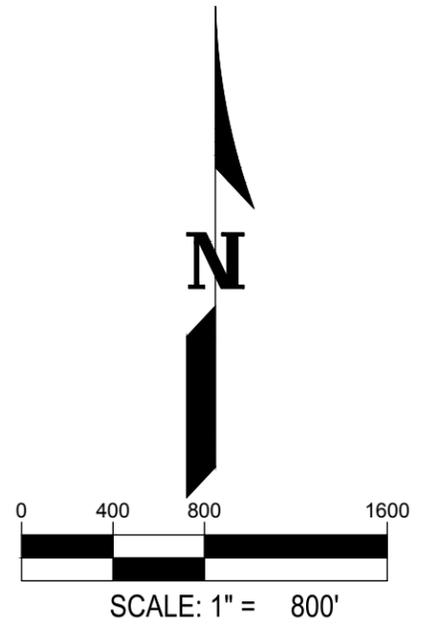
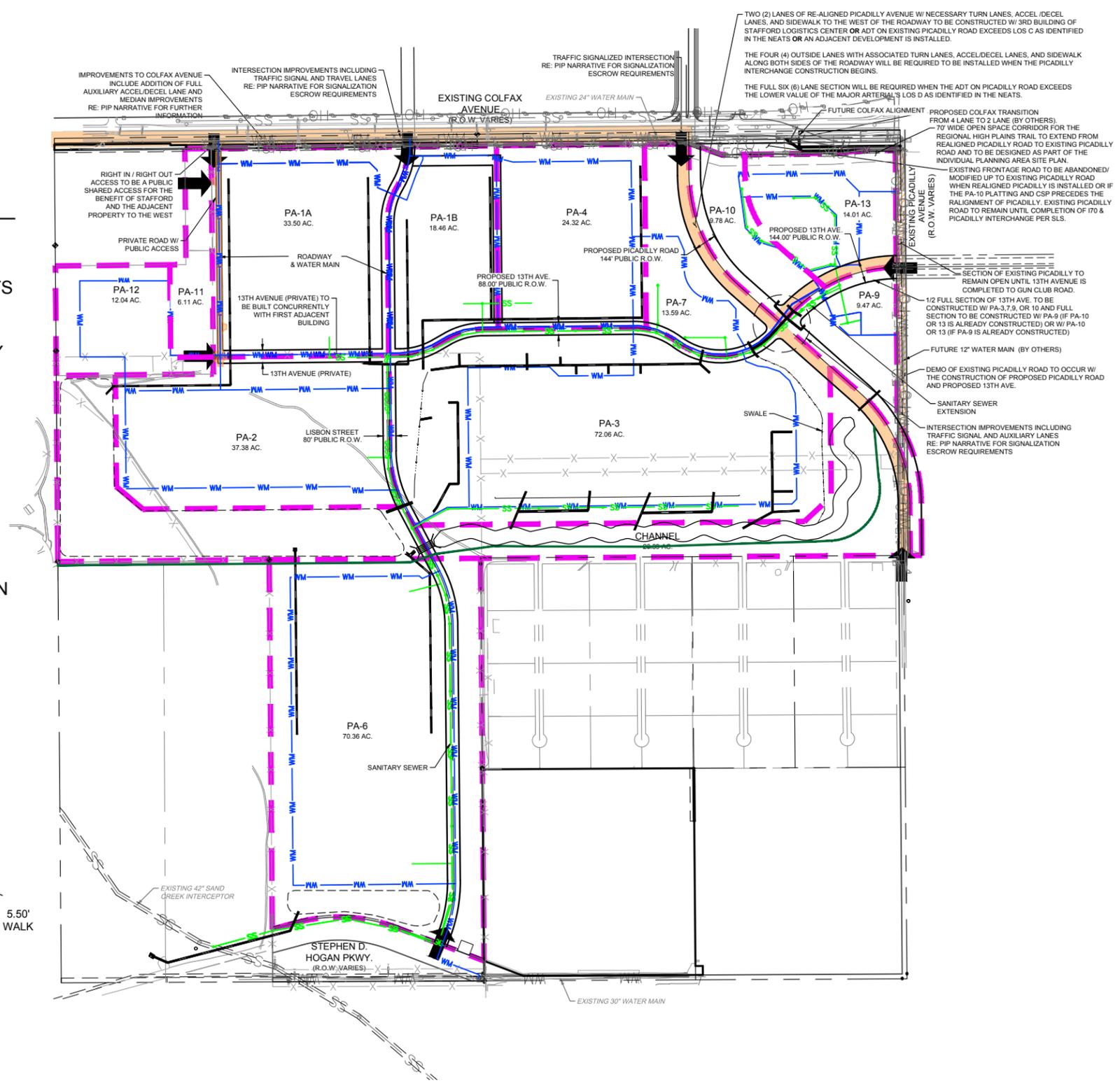
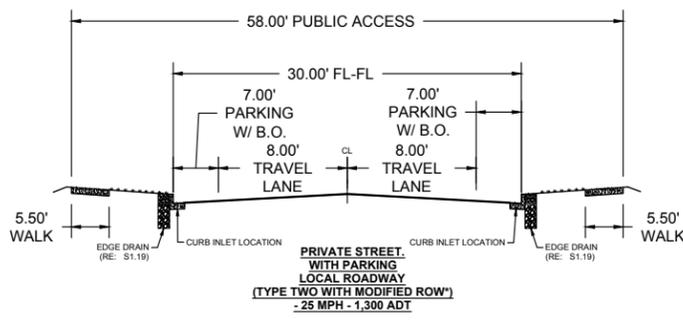
REVISIONS

NO.	DATE	REMARKS
	02/08/2023	MP #15 (REVISION)
	12/08/2023	MP #15 (AMENDMENT 5)

JOB NO.:	DCS21-4057
PA / PM:	JC
DRAWN BY:	JZ
DATE:	10/04/2022

SHEET
PA9
Sheet 11 of

- LEGEND**
-  PROPERTY LINE
 -  PUBLIC ROADWAY IMPROVEMENTS REQUIRED WITH DEVELOPMENT
 -  PRIVATE ROADWAY / SECONDARY EMERGENCY ACCESS
 -  PROPOSED ACCESS POINTS
 -  PROPOSED WATERLINE
 -  PROPOSED SANITARY
 -  PROPOSED STORM
 -  PROPOSED REGIONAL DETENTION
 -  PLANNING AREAS



WARE MALCOMB

**STAFFORD LOGISTICS CENTER
AURORA COLORADO**

PLANNING AREA 10
PIP PLAN

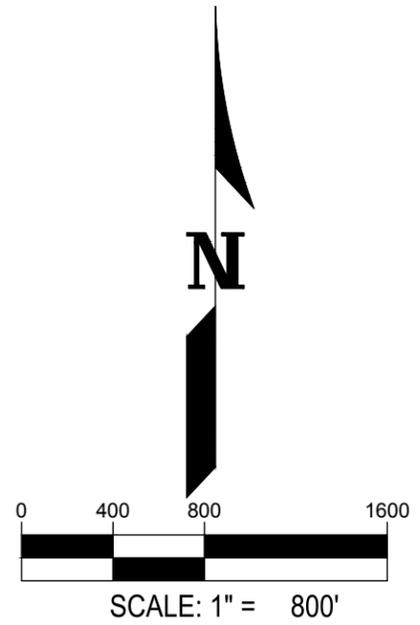
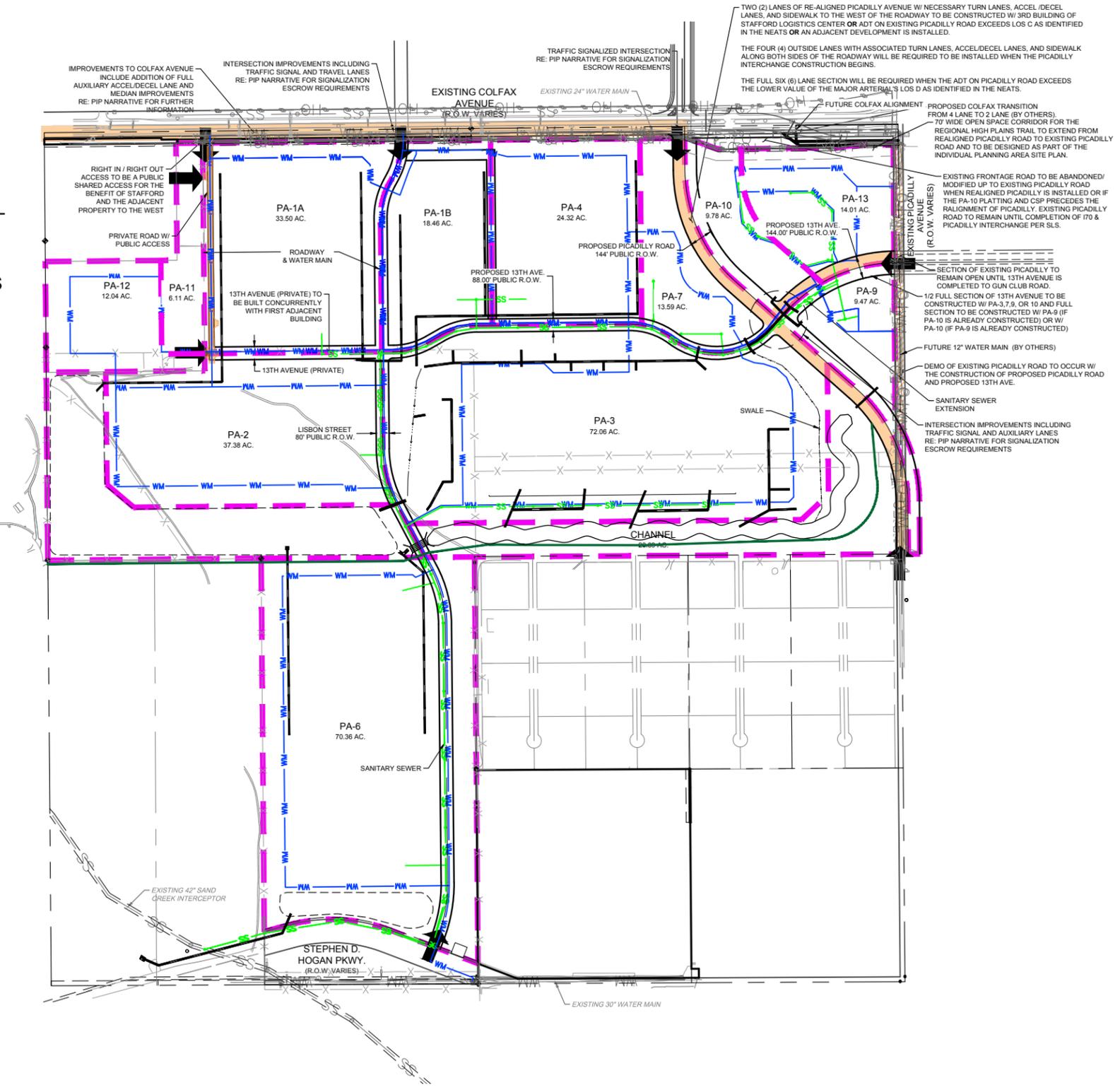
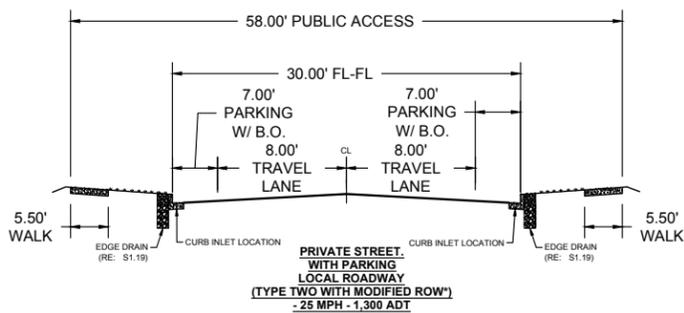
REVISIONS		
NO.	DATE	REMARKS
	02/08/2023	MP #15 (REVISION)
	12/08/2023	MP #15 (AMENDMENT 5)

JOB NO.:	DCS21-4057
PA / PM:	JC
DRAWN BY:	JZ
DATE:	10/04/2022

SHEET
PA10
Sheet 12 of

LEGEND

-  PROPERTY LINE
-  PUBLIC ROADWAY IMPROVEMENTS REQUIRED WITH DEVELOPMENT
-  PRIVATE ROADWAY / SECONDARY EMERGENCY ACCESS
-  PROPOSED ACCESS POINTS
-  PROPOSED WATERLINE
-  PROPOSED SANITARY
-  PROPOSED STORM
-  PROPOSED REGIONAL DETENTION
-  PLANNING AREAS



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**STAFFORD LOGISTICS CENTER
AURORA COLORADO**

PLANNING AREA 13
PIP PLAN

REVISIONS		
NO.	DATE	REMARKS
	02/08/2023	MP #15 (REVISION)
	12/08/2023	MP #15 (AMENDMENT 5)

JOB NO.:	DCS21-4057
PA / PM:	JC
DRAWN BY:	JZ
DATE:	10/04/2022

SHEET
PA13
Sheet 15 of

PARK / OPEN SPACE AREA TO BE DEDICATED WITHIN PA-13 IF DEVELOPED AS MULTIFAMILY. SIZE AND SCOPE TO BE DETERMINED AT THE TIME OF INDIVIDUAL DEVELOPMENT APPLICATION.

Remove this as a potential MF site or update PIP with a note at beginning of PA-9 description mentioning that it is a potential MF site, similar to what is written for PA-13. Also, include mention of PA-9 in text at the top of this sheet.

Potential MF callout has been removed. Apologies for the confusion.

Form J should be included at this point as a residential component has been added to the development. There are two options to reconcile this:

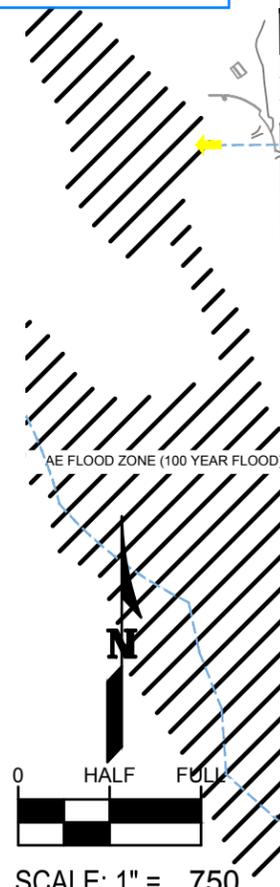
1. Add a Form J to this document filling out all fields that may already be known and putting "TBD" on the rest. If this option is chosen, column A should include PA-13 for trail corridor, parkland, and open space, PA-10 for trail corridor and open space, PA-9 for parkland and open space, PA-3 for trail corridor, and PA-2 for trail corridor.

2. Don't add Form J, but include a note on this sheet stating the following: "MF density will be limited to the ability of PA-13 and PA-9 to meet PROS Parkland Dedication and Open Space Requirements on their respective sites. In addition, it should be noted that the 70' Regional Trail Corridor along Colfax will be credited towards meeting some of the PROS requirement depending on the proposed multifamily density at site planning stage."

We have elected to proceed with option 2. Note has been added to TAB 9 accordingly however, PA-9 is no longer proposed as a residential parcel and has been removed from the note above.

BOUNDARY

- 144' ROW ARTERIAL ROAD WITH 10' DETACHED SIDEWALK
- 80' ROW ARTERIAL ROAD WITH 6' DETACHED SIDEWALK
- 26'-40' PRIVATE DRIVE (ADA PATHS PROVIDED)
- - - PROPOSED TRAIL
- - - EXISTING TRAIL
- - - PLANNING AREA BOUNDARY
- - - EXISTING EASEMENTS



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OPEN SPACE, CIRCULATION, & NEIGHBORHOOD PLAN #3

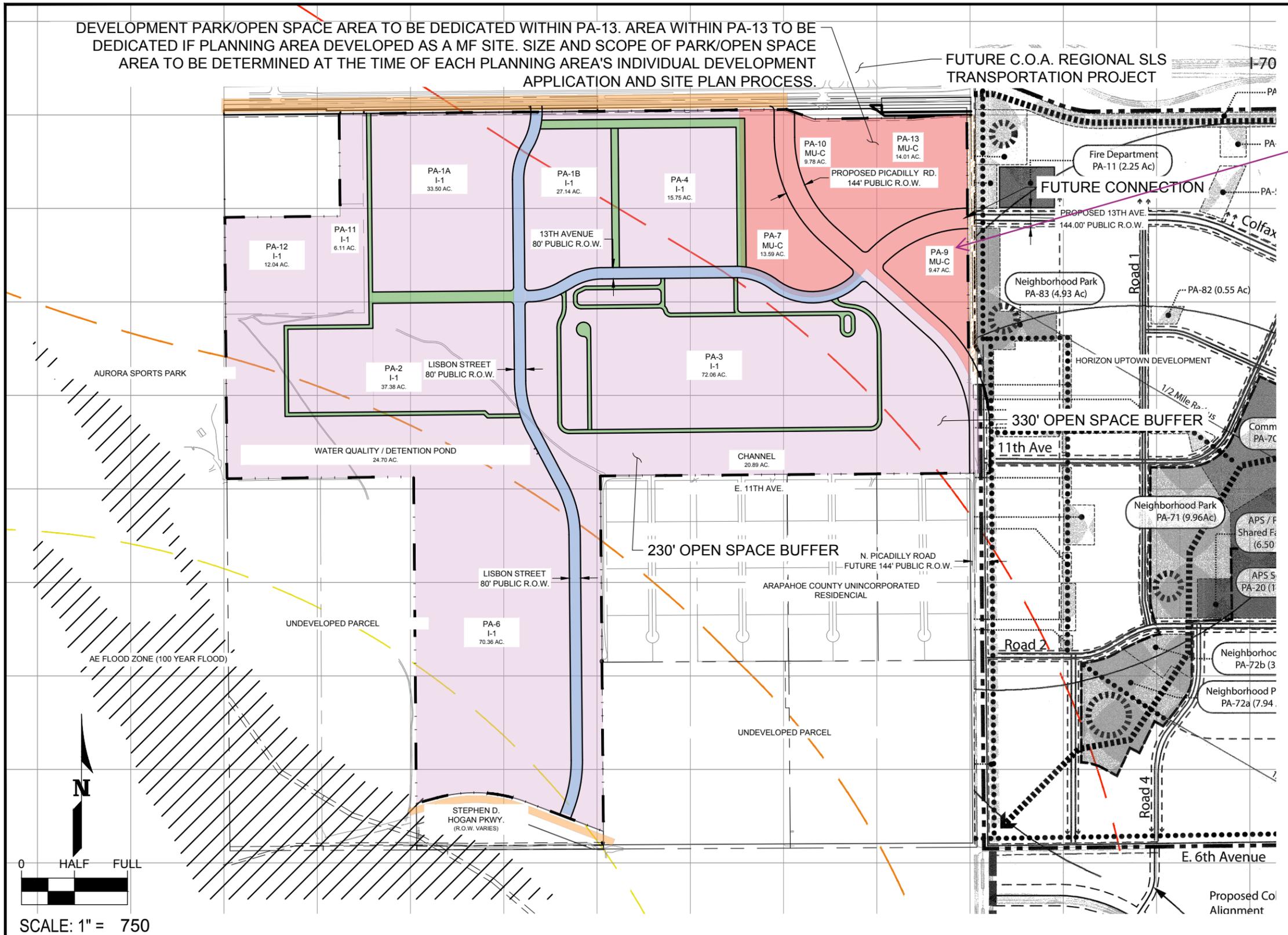
NO.	DATE	REMARKS
1	03.06.2024	AMENDMENT 2
2	06.22.2023	AMENDMENT 1

JOB NO.:	DCS23-4056
PA / PM:	S. LESSARD
DRAWN BY:	J. CARANO
DATE:	12.08.2023

SHEET
TAB 9
Sheet 1 of 1

DEVELOPMENT PARK/OPEN SPACE AREA TO BE DEDICATED WITHIN PA-13. AREA WITHIN PA-13 TO BE DEDICATED IF PLANNING AREA DEVELOPED AS A MF SITE. SIZE AND SCOPE OF PARK/OPEN SPACE AREA TO BE DETERMINED AT THE TIME OF EACH PLANNING AREA'S INDIVIDUAL DEVELOPMENT APPLICATION AND SITE PLAN PROCESS.

FUTURE C.O.A. REGIONAL SLS TRANSPORTATION PROJECT



Tab 9 calls out this area as a potential MF site. If this is the case, then include PA-9 in this text at the top stating that PA-9 parkland will be required on-site as well.

Callout on Tab 9 was incorrect and has been removed. Apologies for the confusion.

LEGEND

- OVERALL SITE BOUNDARY
- MU-C
- I-1
- EXISTING EASEMENTS
- AIRCRAFT NOISE EXPOSURE BUCKLEY AIRFORCE BASE
- 40' PRIVATE ROADWAY WITH ADA ACCESS

SCALE: 1" = 750

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LAND USE, MATRIX, & STANDARD NOTES #3

NO.	DATE	REMARKS
1	02.27.2024	AMENDMENT 2
2	06.22.2023	AMENDMENT 1

JOB NO.:	DCS23-4056
PA / PM:	S. LESSARD
DRAWN BY:	J. CARANO
DATE:	12.08.2023

SHEET
TAB 8
Sheet 1 of 1

Merge cells and insert the following text: Density will be limited to the ability of the planning area to meet PROS Parkland Dedication and Open Space Requirements on-site.
 Comment added to Tab 8 to include Form J as well.

Insert "Construction of parkland and open space assets to be completed by the time CO is issued for MF component."

Stafford Logistics Center FDP (#1263713)

TAB Cells have been merged and text revised accordingly.
Subn
2nd S
3rd S
4th S
Amer
Amer
ZON

We have elected to proceed with the second option provided on TAB 9. Note was added to TAB9 stating that MF density will be limited to the ability of PA-13 and PA-9 to meet PROS Parkland Dedication and Open Space Requirements on their respective sites. In addition, it should be noted that the 70' Regional Trail Corridor along Colfax will be credited towards meeting some of the PROS requirement depending on the proposed multifamily density at site planning stage.



"NA" has been replaced with the note above.

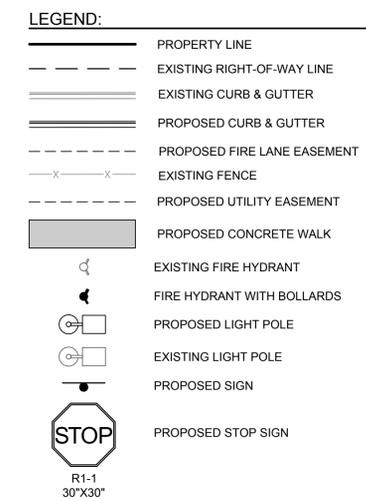
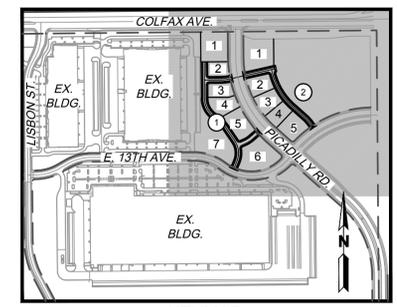
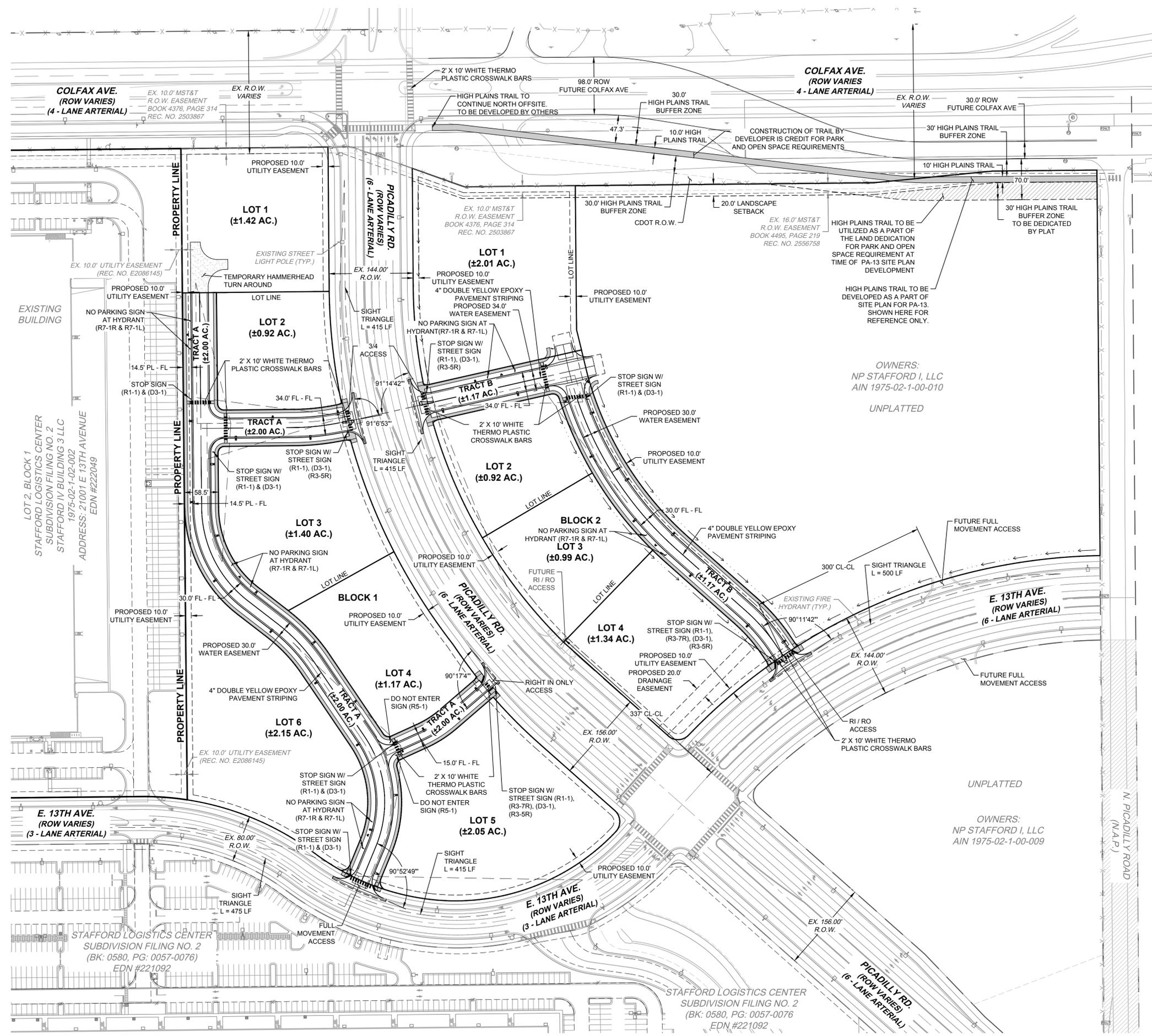
Lar	D.	E.	F.	G.	H.
1. Flood Plain Areas	NA	NA	NA	NA	NA
2. Required Land Dedication Areas for Parks, Schools, Fire Stations, Police Stations, Libraries	PA-13	MU-C	TBD	TBD	NA
3. Development Areas	PA-1A	I-1	33.50	No limit on density	NA
	PA-1B	I-1	27.14	No limit on density	NA
	PA-2	I-1	37.38	No limit on density	NA
	PA-3	I-1	72.06	No limit on density	NA
	PA-4	I-1	15.75	No limit on density	NA
PA-5 REMOVED (AMEND #3)	PA-5	I-4	45.33	No limit on density	NA
	PA-6	I-1	70.36	No limit on density	NA
	PA-7	MU-C	13.59	No limit on density	NA
PA-8 REMOVED (AMEND #3)	PA-8	I-4	30.03	No limit on density	NA
	PA-9	MU-C	9.47	No limit on density	NA
	PA-10	MU-C	9.78	No limit on density	NA
	PA-11	I-1	6.11	No limit on density	NA
	PA-12	I-1	12.04	No limit on density	NA
	PA-13	MU-C	14.01	No limit on density	NA
4. Total Map Acreage (total figures above)			366.55		
5. Less 1/2 of Perimeter Streets Not Owned by Applicant			NA		
6. Applicant's Acreage Listed in Application			366.55		
7. Total Flood Plan Acreage			NA		
8. Total Adjusted Gross FDP Acreage (Line 4 minus line 7)			366.55		

Merge this cell with the two cells to the right and insert the following text: Density will be limited to the ability of the planning area to meet PROS Parkland Dedication and Open Space Requirements on-site.

PA-9 is no longer proposed as a residential parcel

Merge this cell with the two cells to the right and insert the following text: Density will be limited to the ability of the planning area to meet PROS Parkland Dedication and Open Space Requirements on-site.

Cells merged and note added. Thank you.



- NOTES:**
- ALL DIMENSIONS ARE TO FLOWLINE UNLESS OTHERWISE NOTED.
 - ALL ACCESSIBLE RAMPS SHALL BE CONSTRUCTED WITH DETECTIBLE WARNING PADS. REFERENCE AURORA STD DETAIL S9.5.
 - CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS PRIOR TO CONSTRUCTION. NOTIFY ENGINEER IMMEDIATELY OF ANY DISCREPANCIES FROM PLANS.
 - CONTRACTOR SHALL REMOVE AND REPLACE DAMAGED CURB, GUTTER, PAVING, AND LANDSCAPED AREAS OUTSIDE THE LIMITS OF SITE AND RESTORE BACK TO ITS ORIGINAL CONDITION.
 - PAVEMENT THICKNESS PER GEOTECH REPORT.
 - CROSS PANS ARE SHOWN WITHIN THIS SITE PLAN BUT NOT REVIEWED OR APPROVED WITH SITE PLAN APPROVAL. CROSS PANS WILL BE REVIEWED AND APPROVED WITH THE CIVIL PLAN DOCUMENT.
 - MULTIFAMILY SITE TO MEET OPEN SPACE DEDICATION AS A PART OF DEVELOPMENT OF THAT SITE PLAN.
 - DESIGN AND CONSTRUCTION OF HIGH PLAINS TRAIL SHOWN ADJACENT TO SITE TO BE DEFERRED UNTIL PA-13 SITE PLAN AND CONSTRUCTION PROCESS.
 - HIGH PLAINS TRAIL BUFFER SHOWN ON SITE MAY OVERLAP WITH SITE BUFFER, OPEN SPACE, AND SETBACK REQUIREMENTS.
 - HIGH PLAINS TRAIL SHOWN ON SITE AND WITHIN CDOT RIGHT OF WAY TO BE MAINTAINED BY THE CITY OF AURORA
- BENCHMARK:**
CITY OF AURORA BENCHMARK ID 4S8602SE001 BEING A 3" DIAMETER BRASS CAP ATOP A 30" LONG STEEL PIPE IN CONCRETE AT THE SOUTHWEST CORNER OF PICADILLY RD. AND E. 11TH AVE., MONUMENT IS 37 FEET WEST AND 48 FEET SOUTH OF THE NORTHEAST CORNER SOUTHWEST QUARTER SECTION 2, TOWNSHIP 4 SOUTH, RANGE 66 WEST, MONUMENT ALSO BEING JUST EAST OF NORTH SOUTH FENCE AND 5.5 FEET SOUTH OF FENCE CORNER. ELEVATION = 5527.28 NAVD 88 DATUM

WARE MALCOMB
CIVIL ENGINEERING & SURVEYING

900 south broadway
suite 320
denver, co 80209
p 303.561.3333
waremalcomb.com

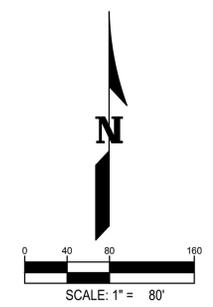
FOR AND ON BEHALF OF WARE MALCOMB

STAFFORD LOGISTIC CENTER
SITE PLAN
OVERALL SITE PLAN
AURORA, COLORADO

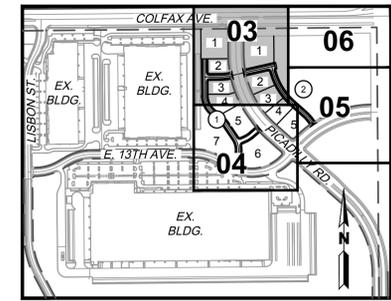
NO.	DATE	REMARKS

JOB NO.:	DCS23-4056
PA / PM:	CS
DESIGNED:	JC
DATE:	
PLOT DATE:	12/8/2023

SHEET
02
Sheet 02 of 30



NOT FOR CONSTRUCTION



KEYMAP
N.T.S.

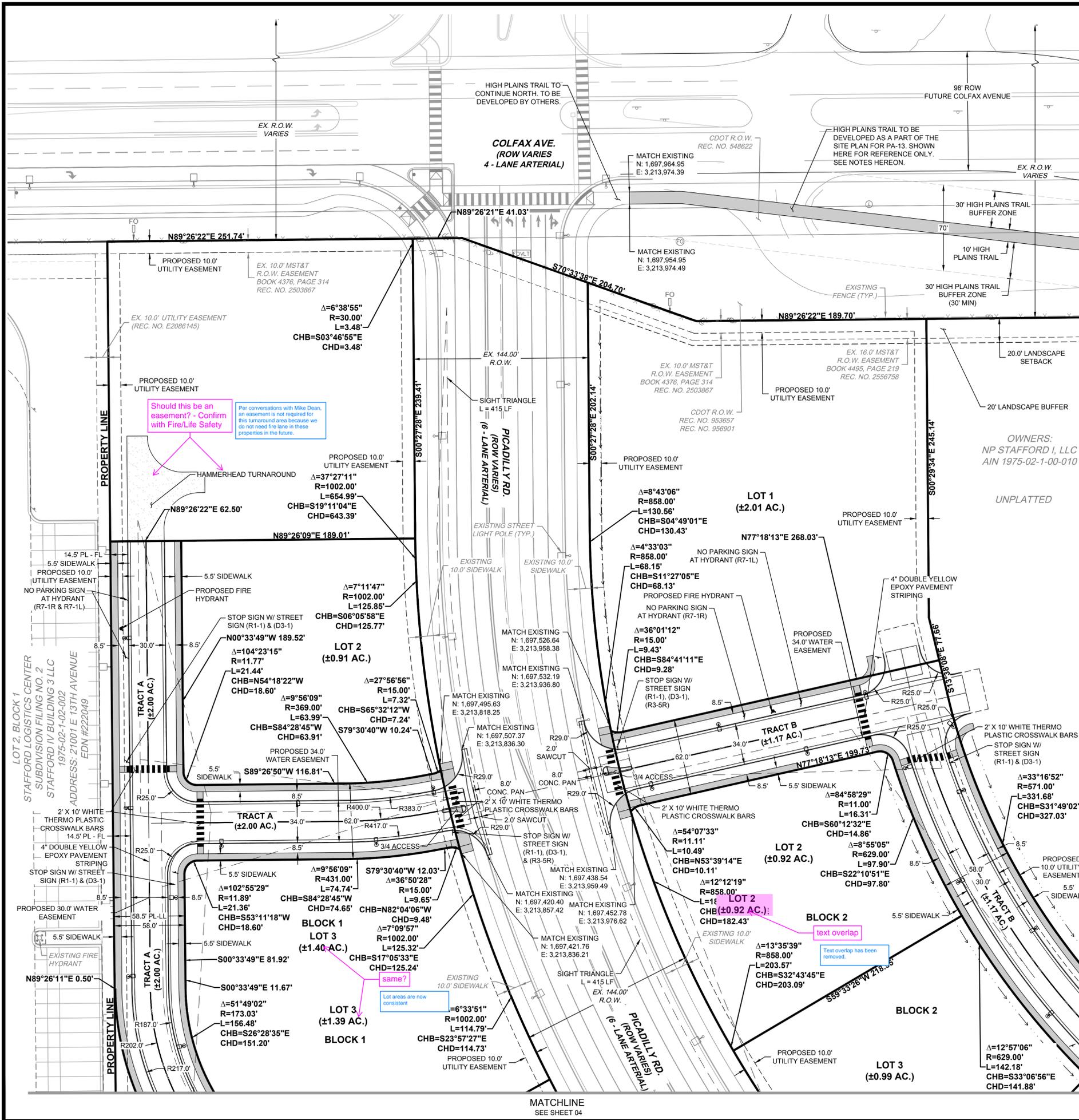
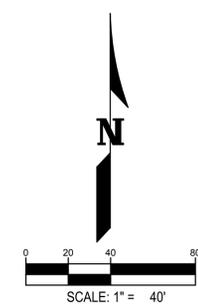
LEGEND:

- PROPERTY LINE
- EXISTING RIGHT-OF-WAY LINE
- EXISTING CURB & GUTTER
- PROPOSED CURB & GUTTER
- PROPOSED FIRE LANE EASEMENT
- EXISTING FENCE
- PROPOSED UTILITY EASEMENT
- PROPOSED CONCRETE WALK
- EXISTING FIRE HYDRANT
- FIRE HYDRANT WITH BOLLARDS
- PROPOSED LIGHT POLE
- EXISTING LIGHT POLE
- PROPOSED SIGN
- PROPOSED STOP SIGN

NOTES:

- 1) ALL DIMENSIONS ARE TO FLOWLINE UNLESS OTHERWISE NOTED.
- 2) ALL ACCESSIBLE RAMPS SHALL BE CONSTRUCTED WITH DETECTABLE WALKING PADS. REFERENCE AURORA STD DETAIL S9.5.
- 3) CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS PRIOR TO CONSTRUCTION. NOTIFY ENGINEER IMMEDIATELY OF ANY DISCREPANCIES FROM PLANS.
- 4) CONTRACTOR SHALL REMOVE AND REPLACE DAMAGED CURB, GUTTER, PAVING, AND LANDSCAPED AREAS OUTSIDE THE LIMITS OF SITE AND RESTORE BACK TO ITS ORIGINAL CONDITION.
- 5) PAVEMENT THICKNESS PER GEOTECH REPORT.
- 6) CROSS PANS ARE SHOWN WITHIN THIS SITE PLAN BUT NOT REVIEWED OR APPROVED WITH SITE PLAN APPROVAL. CROSS PANS WILL BE REVIEWED AND APPROVED WITH THE CIVIL PLAN DOCUMENT.
- 7) MULTIFAMILY SITE TO MEET OPEN SPACE DEDICATION AS A PART OF DEVELOPMENT OF THAT SITE PLAN.
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BENCHMARK:
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Should this be an easement? - Confirm with Fire/Life Safety

Per conversations with Mike Dean, an easement is not required for this turnaround area because we do not need fire lane in these properties in the future.

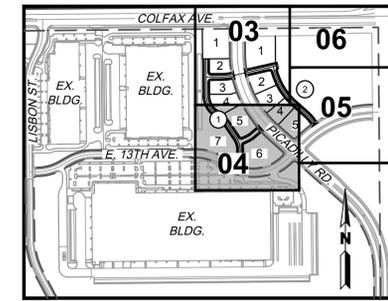
text overlap

text overlap has been removed.

Lot areas are now consistent

MATCHLINE
SEE SHEET 06

MATCHLINE
SEE SHEET 04



LEGEND:

- PROPERTY LINE
- EXISTING RIGHT-OF-WAY LINE
- EXISTING CURB & GUTTER
- PROPOSED CURB & GUTTER
- PROPOSED FIRE LANE EASEMENT
- EXISTING FENCE
- PROPOSED UTILITY EASEMENT
- PROPOSED CONCRETE WALK
- EXISTING FIRE HYDRANT
- FIRE HYDRANT WITH BOLLARDS
- PROPOSED LIGHT POLE
- EXISTING LIGHT POLE
- PROPOSED SIGN
- PROPOSED STOP SIGN

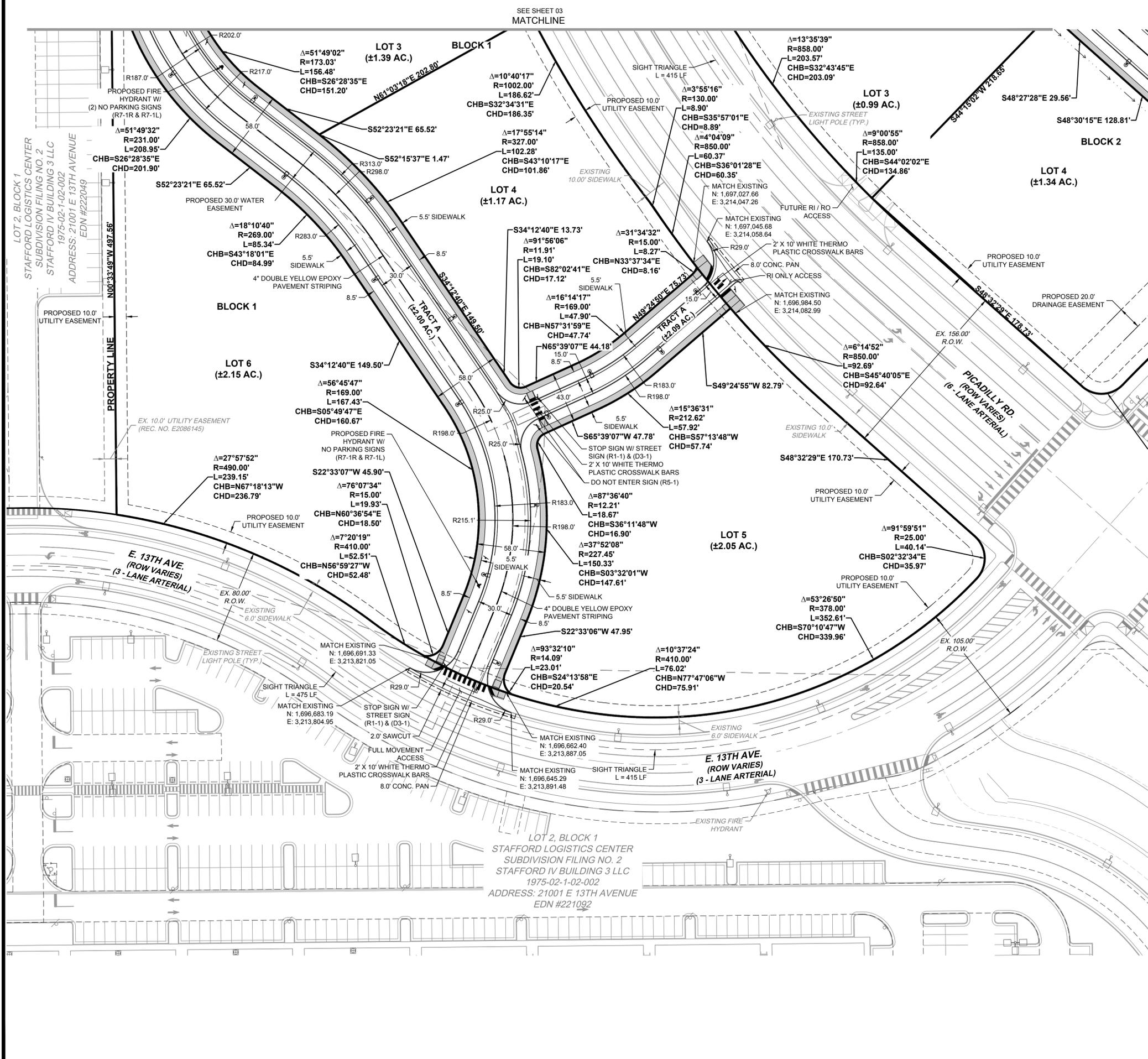
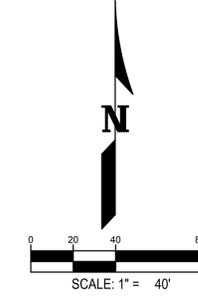
MATCHLINE SEE SHEET 05

NOTES:

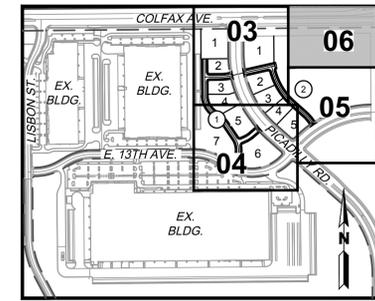
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LOT 2, BLOCK 1
STAFFORD LOGISTIC CENTER
SUBDIVISION FILING NO. 2
STAFFORD IV BUILDING 3 LLC
1975-02-1-02-002
ADDRESS: 21001 E 13TH AVENUE
EDN #221092



KEYMAP
N.T.S.

LEGEND:

- PROPERTY LINE
- EXISTING RIGHT-OF-WAY LINE
- EXISTING CURB & GUTTER
- PROPOSED CURB & GUTTER
- PROPOSED FIRE LANE EASEMENT
- EXISTING FENCE
- PROPOSED UTILITY EASEMENT
- PROPOSED CONCRETE WALK
- EXISTING FIRE HYDRANT
- FIRE HYDRANT WITH BOLLARDS
- PROPOSED LIGHT POLE
- EXISTING LIGHT POLE
- PROPOSED SIGN
- PROPOSED STOP SIGN

NOTES:

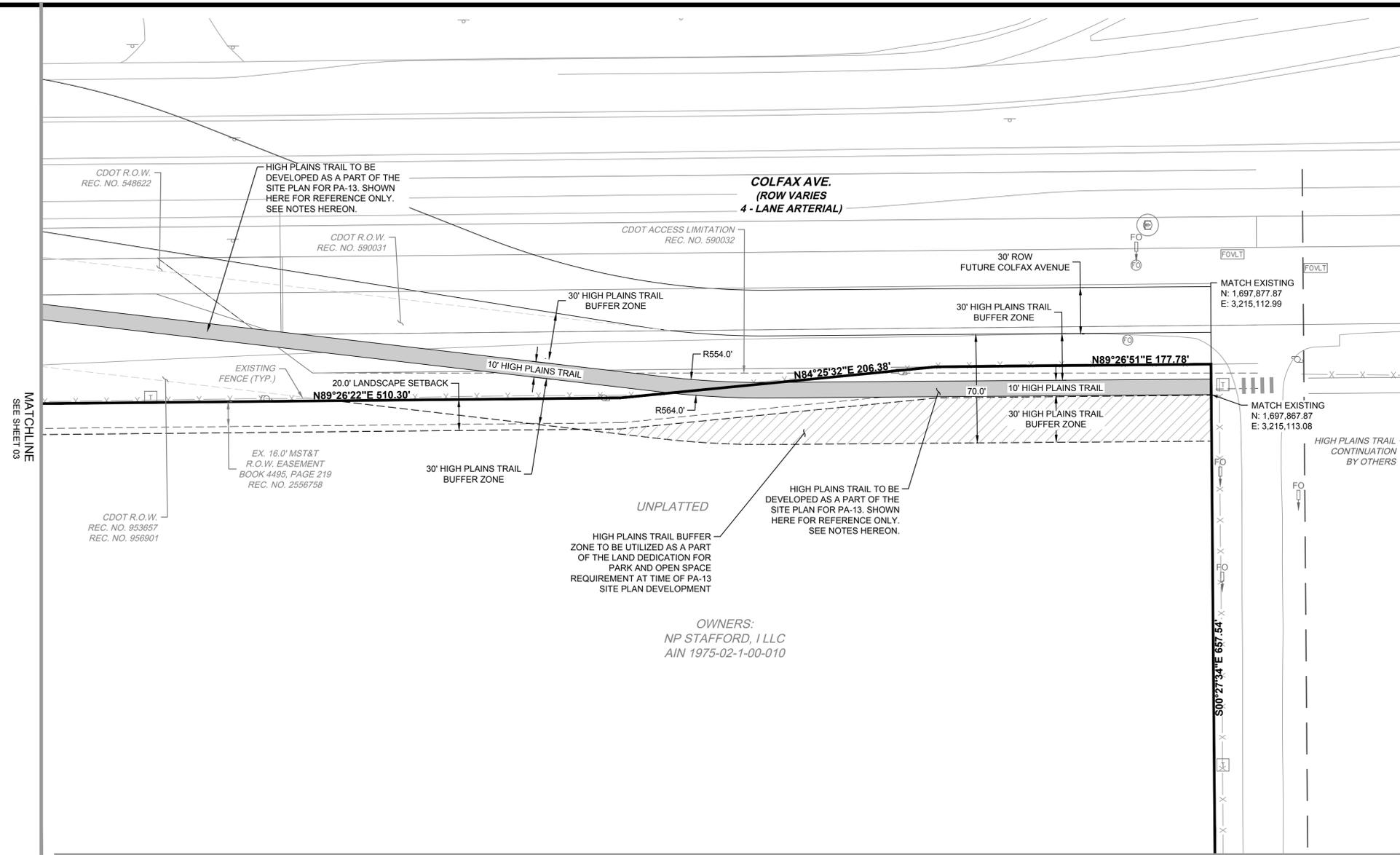
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MATCHLINE
SEE SHEET 03

MATCHLINE
SEE SHEET 05



CDOT R.O.W.
REC. NO. 548622

HIGH PLAINS TRAIL TO BE DEVELOPED AS A PART OF THE SITE PLAN FOR PA-13. SHOWN HERE FOR REFERENCE ONLY. SEE NOTES HEREON.

COLFAX AVE.
(ROW VARIES
4 - LANE ARTERIAL)

CDOT R.O.W.
REC. NO. 590031

CDOT ACCESS LIMITATION
REC. NO. 590032

30' ROW
FUTURE COLFAX AVENUE

MATCH EXISTING
N: 1,697,877.87
E: 3,215,112.99

30' HIGH PLAINS TRAIL
BUFFER ZONE

30' HIGH PLAINS TRAIL
BUFFER ZONE

EXISTING
FENCE (TYP.)

20.0' LANDSCAPE SETBACK
N89°26'22"E 510.30'

10' HIGH PLAINS TRAIL

R554.0'

N84°25'32"E 206.38'

N89°26'51"E 177.78'

10' HIGH PLAINS TRAIL

MATCH EXISTING
N: 1,697,867.87
E: 3,215,113.08

30' HIGH PLAINS TRAIL
BUFFER ZONE

HIGH PLAINS TRAIL
CONTINUATION
BY OTHERS

CDOT R.O.W.
REC. NO. 953857
REC. NO. 956901

EX. 16.0' MST&T
R.O.W. EASEMENT
BOOK 4495, PAGE 219
REC. NO. 2556758

30' HIGH PLAINS TRAIL
BUFFER ZONE

UNPLATTED

HIGH PLAINS TRAIL BUFFER ZONE TO BE UTILIZED AS A PART OF THE LAND DEDICATION FOR PARK AND OPEN SPACE REQUIREMENT AT TIME OF PA-13 SITE PLAN DEVELOPMENT

HIGH PLAINS TRAIL TO BE DEVELOPED AS A PART OF THE SITE PLAN FOR PA-13. SHOWN HERE FOR REFERENCE ONLY. SEE NOTES HEREON.

OWNERS:
NP STAFFORD, I LLC
AIN 1975-02-1-00-010

900 south broadway
suite 320
denver, co 80209
p 303.561.3333
waremalcomb.com

FOR AND ON BEHALF
OF WARE MALCOMB

STAFFORD LOGISTIC CENTER
SITE PLAN
SITE PLAN
AURORA, COLORADO

REMARKS

JOB NO.:	DCS23-4056
PA / PM:	CS
DESIGNED:	JC
DATE:	
PLOT DATE:	12/8/2023

SHEET
06
Sheet 06 of 30



**STAFFORD LOGISTIC CENTER
SITE PLAN
OVERALL GRADING PLAN
AURORA, COLORADO**

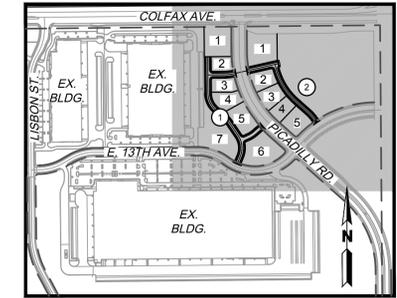
NO. DATE

REMARKS

JOB NO.: DCS23-4056
PA / PM: CS
DESIGNED: JC
DATE:
PLOT DATE: 12/8/2023

SHEET
09

Sheet 09 of 30



KEYMAP
N.T.S.

LEGEND:

- PROPERTY LINE
- EXISTING CURB & GUTTER
- PROPOSED SPILL CURB
- PROPOSED CURB
- 5820 — PROPOSED 5' CONTOUR
- 5821 — PROPOSED 1' CONTOUR
- 5820 — EXISTING 5' CONTOUR
- 5821 — EXISTING 1' CONTOUR
- STORM LINE
- STORM INLET
- EXISTING STORM LINE
- EXISTING STORM INLET
- SS — EXISTING SANITARY SEWER W/ MANHOLE
- — EXISTING LIGHT POLE
- WM — EXISTING WATERLINE & VALVE
- — EXISTING FIRE HYDRANT
- G — EXISTING GAS LINE
- T — EXISTING TELEPHONE LINE
- E — EXISTING ELECTRIC LINE
- CATV — EXISTING CABLE TV LINE
- OH — EXISTING OVERHEAD LINE
- FO — EXISTING FIBER OPTIC LINE
- — EXISTING IRRIGATION LINE
- — EXISTING UTILITY POLE
- - - PROPOSED EASEMENT LINE
- - - EXISTING EASEMENT LINE
- x.xxx — PROPOSED SLOPE AND DIRECTION

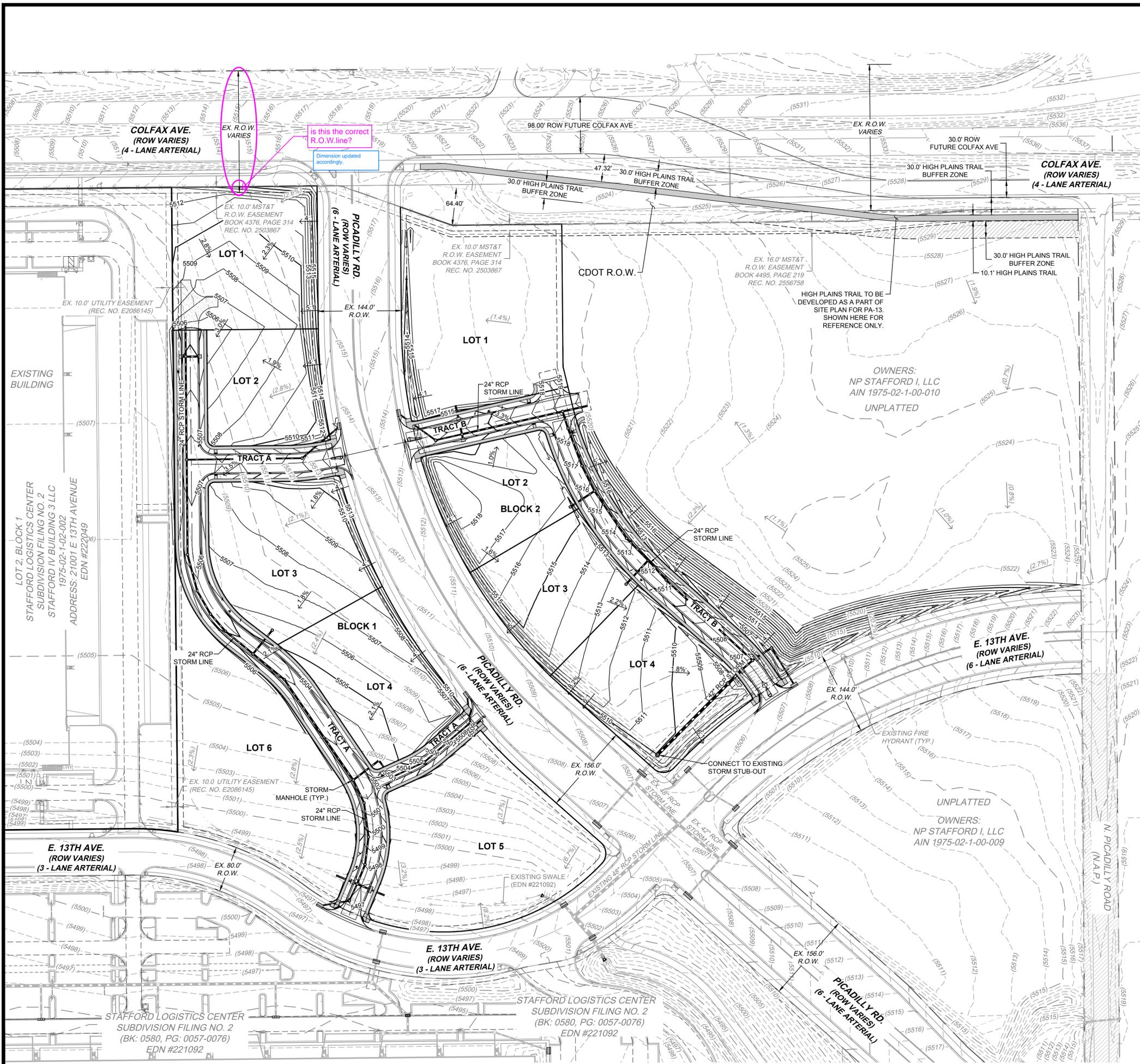
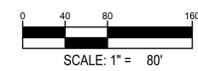
NOTES:

1. SIDEWALKS AND LANDINGS SHALL SLOPE 1.5% TOWARDS ROADS. DRIVE LANES UNLESS NOTED OTHERWISE.
2. MINIMUM PAVEMENT SLOPES: 1% FOR ASPHALT, 0.5% FOR CONCRETE.
3. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES WITH THE PROPOSED ELEVATIONS SHOWN ON THE GRADING PLAN. THE ENGINEER WILL NOT BE LIABLE FOR ANY COSTS ASSOCIATED WITH CHANGES TO THE DESIGN WITHOUT PROPER NOTIFICATION.
4. EXISTING UTILITIES STRUCTURES TO BE ADJUSTED AS NECESSARY TO MEET PROPOSED GRADE.
5. ALL STORM SEWER IS PRIVATE AND WILL BE MAINTAINED BY OWNER UNLESS OTHERWISE NOTED.
6. MINIMUM SLOPE ON UNPAVED AREAS IS 2%, MINIMUM SLOPE ON ASPHALT IS 1%, AND MINIMUM SLOPE ON CONCRETE IS 0.5%.
7. THE MAXIMUM SLOPE WITHIN ROW IS 4:1, THE MAXIMUM SLOPE FOR PROPERTY OUTSIDE OF THE ROW IS 3:1.
8. THE MAXIMUM PERMISSIBLE LONGITUDINAL GRADE FOR FIRE LANES IS 10%. THE MAXIMUM TRANSVERSE GRADE FOR A FIRE LANE IS 4% WITH A RESULTANT MAXIMUM SLOPE OF 10%.

BENCHMARK:

CITY OF AURORA BENCHMARK ID 4S6602SE001 BEING A 3" DIAMETER BRASS CAP ATOP A 30" LONG STEEL PIPE IN CONCRETE AT THE SOUTHWEST CORNER OF PICADILLY RD. AND E. 11TH AVE. MONUMENT IS 37 FEET WEST AND 48 FEET SOUTH OF THE NORTHEAST CORNER SOUTHWEST QUARTER SECTION 2, TOWNSHIP 4 SOUTH, RANGE 66 WEST. MONUMENT ALSO BEING JUST EAST OF NORTH SOUTH FENCE AND 5.5 FEET SOUTH OF FENCE CORNER. ELEVATION = 5527.28 NAVD 88 DATUM

WARE MALCOMB assumes no responsibility for utility locations. The utilities shown on this drawing have been plotted from the best available information. It is, however, the contractors responsibility to field verify the location of all utilities prior to the commencement of any construction.



is this the correct R.O.W. line?
Dimension updated accordingly.

LOT 2, BLOCK 1
STAFFORD LOGISTICS CENTER
SUBDIVISION FILING NO. 2
STAFFORD IV BUILDING 3 LLC
1975-02-1-02-002
ADDRESS: 21001 E 13TH AVENUE
EDN #222049

STAFFORD LOGISTICS CENTER
SUBDIVISION FILING NO. 2
(BK: 0580, PG: 0057-0076)
EDN #221092

STAFFORD LOGISTICS CENTER
SUBDIVISION FILING NO. 2
(BK: 0580, PG: 0057-0076)
EDN #221092

PICADILLY RD.
(6 - LANE ARTERIAL)

E. 13TH AVE.
(ROW VARIES)
(6 - LANE ARTERIAL)

COLFAX AVE.
(ROW VARIES)
(4 - LANE ARTERIAL)

COLFAX AVE.
(ROW VARIES)
(4 - LANE ARTERIAL)

E. 13TH AVE.
(ROW VARIES)
(3 - LANE ARTERIAL)

E. 13TH AVE.
(ROW VARIES)
(3 - LANE ARTERIAL)

EXISTING BUILDING

LOT 2, BLOCK 1
STAFFORD LOGISTICS CENTER
SUBDIVISION FILING NO. 2
STAFFORD IV BUILDING 3 LLC
1975-02-1-02-002
ADDRESS: 21001 E 13TH AVENUE
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(BK: 0580, PG: 0057-0076)
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PICADILLY RD.
(6 - LANE ARTERIAL)

E. 13TH AVE.
(ROW VARIES)
(6 - LANE ARTERIAL)

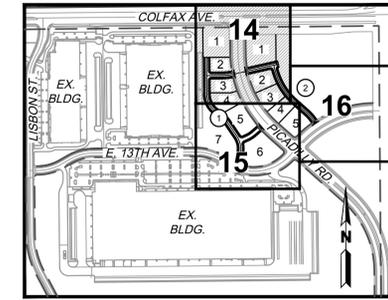
COLFAX AVE.
(ROW VARIES)
(4 - LANE ARTERIAL)

COLFAX AVE.
(ROW VARIES)
(4 - LANE ARTERIAL)

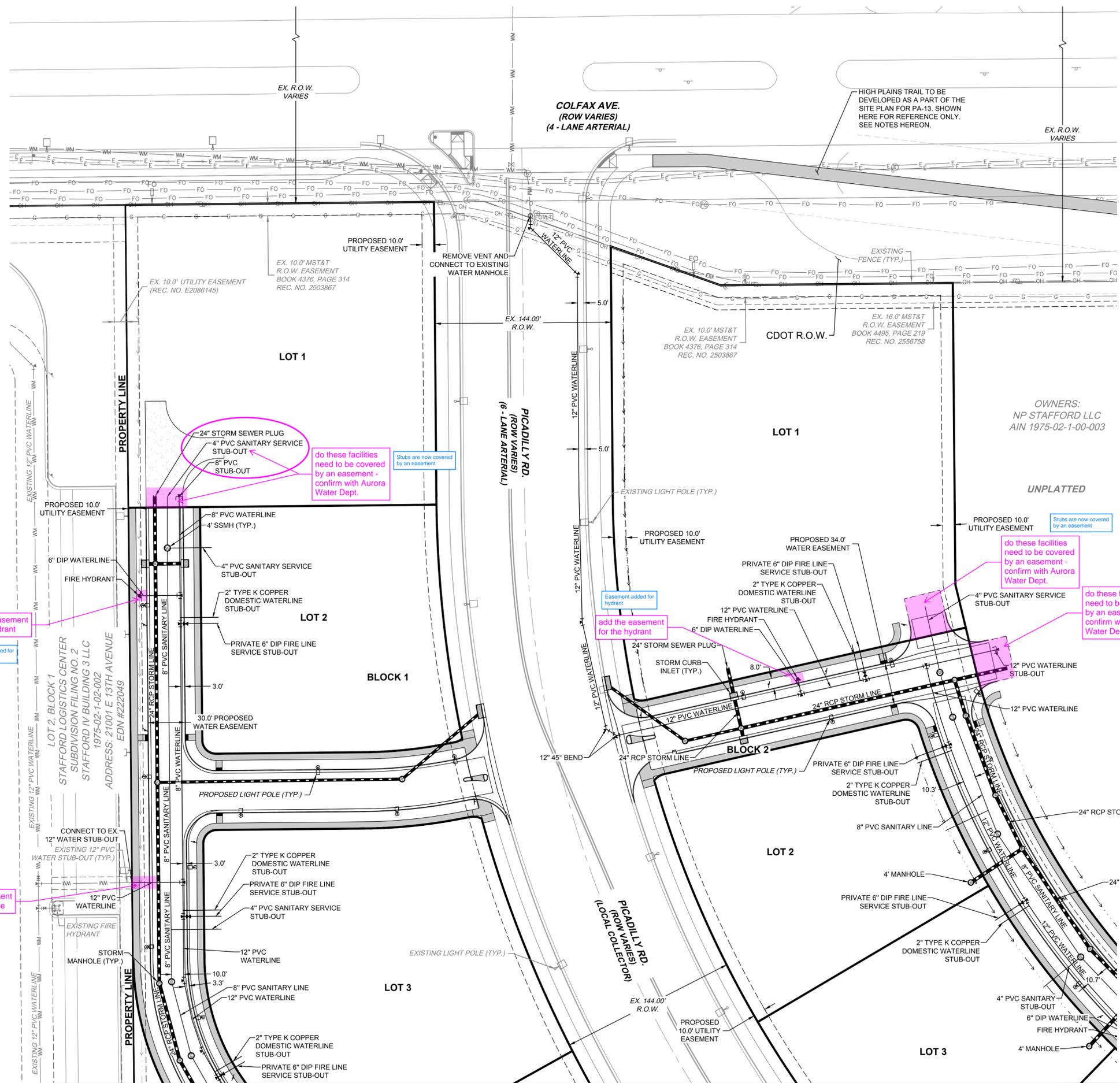
E. 13TH AVE.
(ROW VARIES)
(3 - LANE ARTERIAL)

E. 13TH AVE.
(ROW VARIES)
(3 - LANE ARTERIAL)

EXISTING BUILDING



KEYMAP
N.T.S.



LEGEND:

- PROPERTY LINE
- UTILITY CROSSING
- STORM LINE
- STORM INLET
- EXISTING STORM LINE
- EXISTING STORM INLET
- SANITARY SEWER W/ MANHOLE
- EXISTING SANITARY SEWER W/ MANHOLE
- WATERLINE & VALVE
- FIRE HYDRANT ASSEMBLY
- SITE LIGHT POLE
- EXISTING LIGHT POLE
- EXISTING WATERLINE & VALVE
- EXISTING FIRE HYDRANT
- EXISTING GAS LINE
- EXISTING TELEPHONE LINE
- EXISTING ELECTRIC LINE
- EXISTING CABLE TV LINE
- EXISTING OVERHEAD LINE
- EXISTING FIBER OPTIC LINE
- EXISTING UTILITY POLE
- PROPOSED EASEMENT LINE
- EXISTING EASEMENT LINE

NOTES

1. THE CONTRACTOR IS TO VERIFY THE ELEVATION OF ALL EXISTING UTILITIES WHERE NEW WORK WILL CONNECT AND NOTIFY THE ENGINEER IF THERE ARE ANY DISCREPANCIES.
2. MANHOLES ARE CONTROLLED AT CENTER OF MANHOLE.

BENCHMARK:

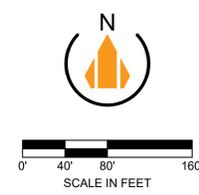
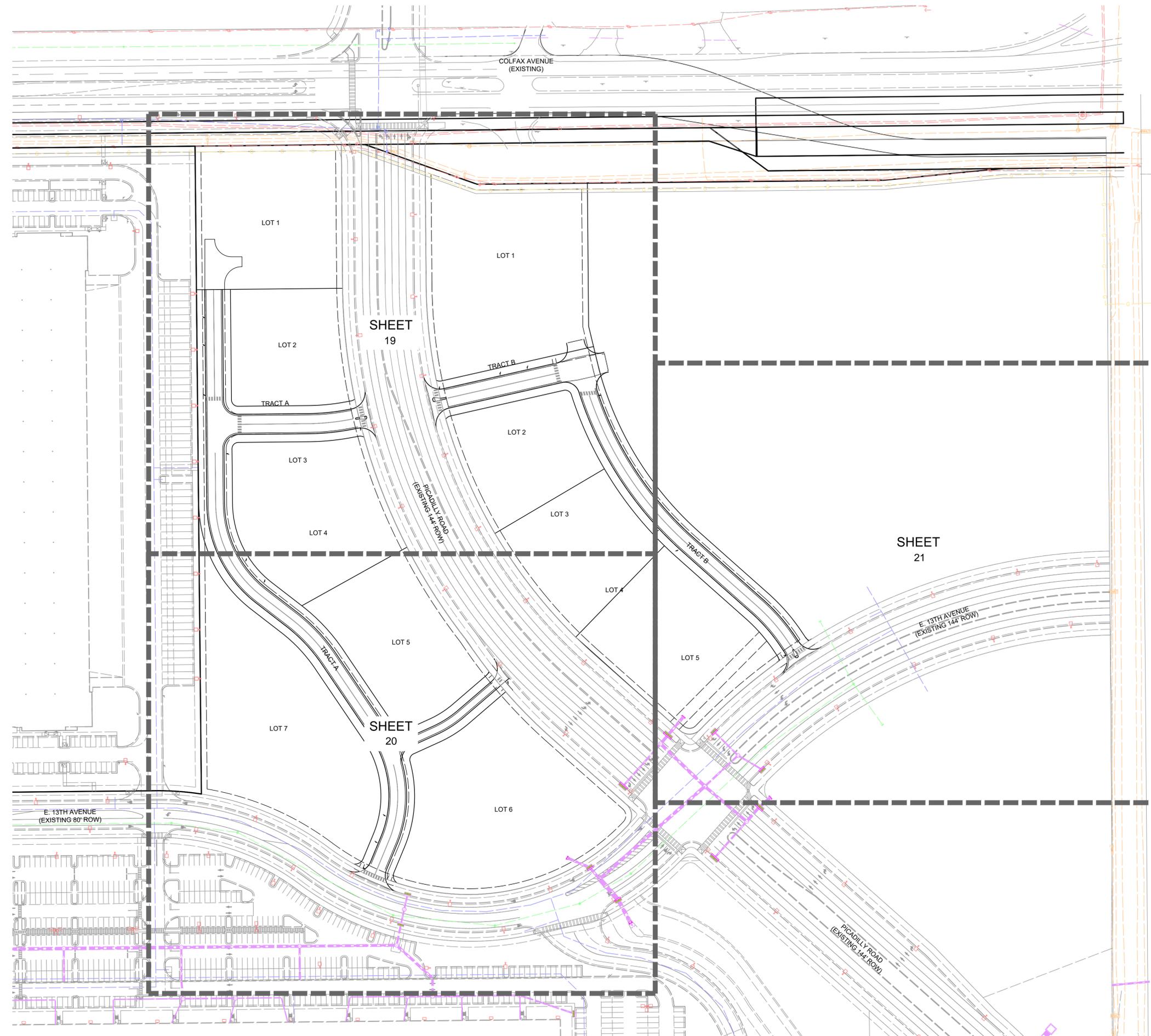
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two of these pages
Page numbers are now consistent

NO.	DATE	REMARKS

JOB NO.:	DCS23-4056
PA / PM:	CS
DESIGNED:	JC
DATE:	
PLOT DATE:	12/8/2023



SITEPOINT
 A Division of NorthPoint Development
 816.888.7380
 sitepoint@northpointkc.com

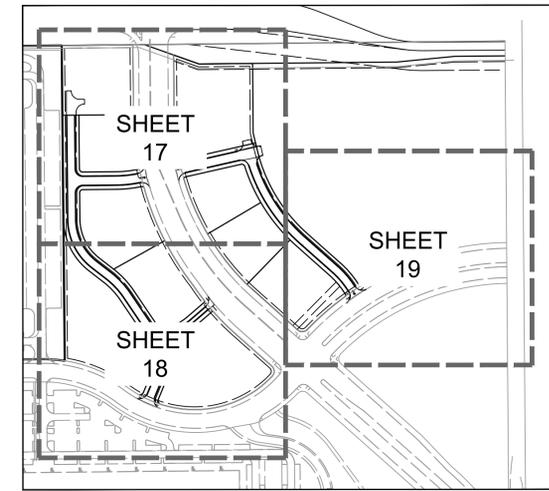
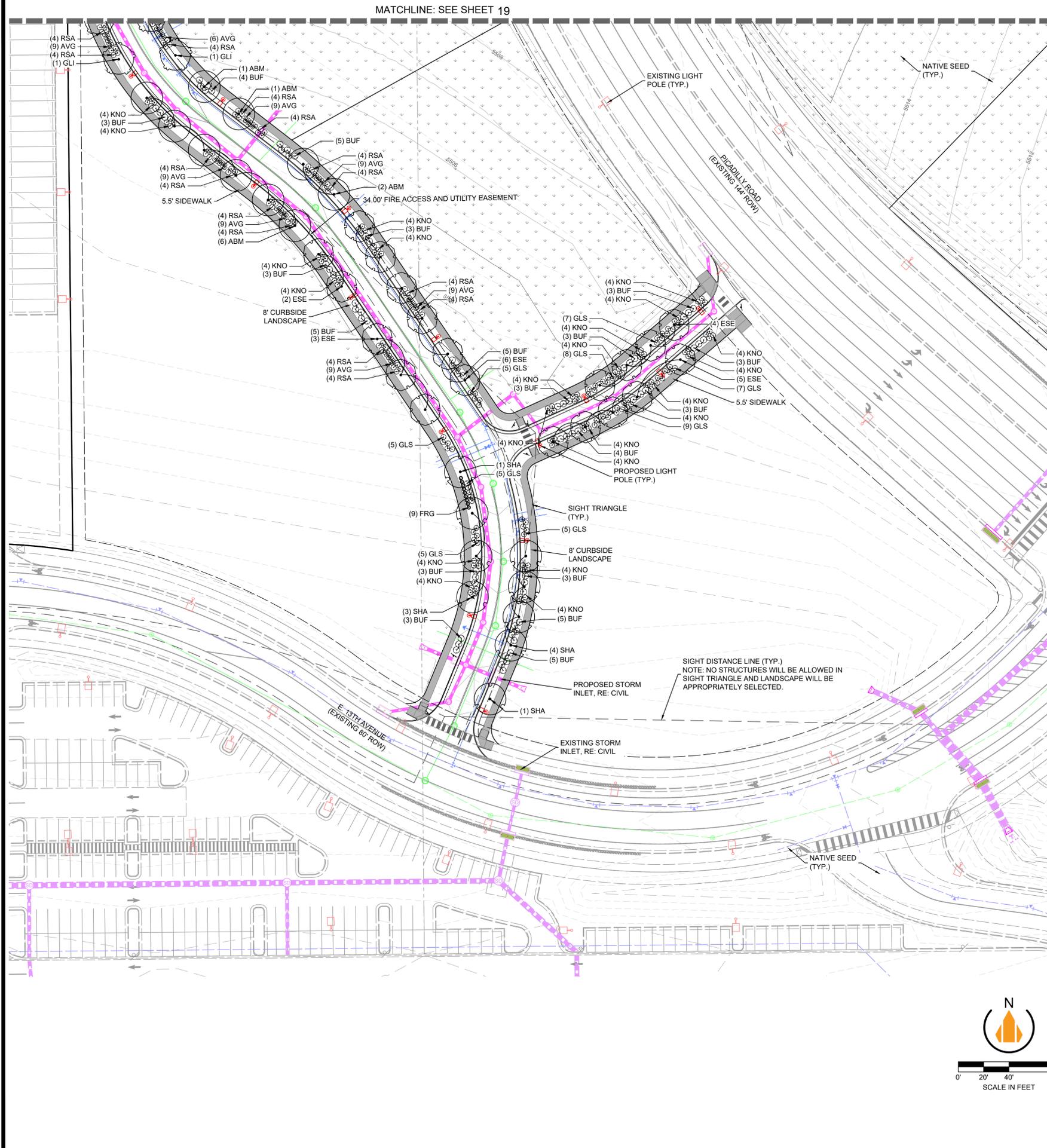
3315 N Oak Trafficway
 Kansas City, MO 64116

STAFFORD LOGISTICS CENTER
SITE PLAN
 OVERALL LANDSCAPE PLAN
 AURORA, COLORADO

NO.	DATE	REMARKS

JOB NO.:	
PA / PM:	RB
DESIGNED:	RB
DATE:	12/08/23
PLOT DATE:	12/08/23

NOT FOR CONSTRUCTION

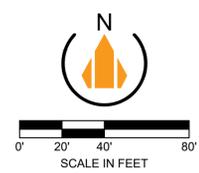


- NOTES:
- TREES SHALL NOT BE PLANTED WITHIN UTILITY EASEMENTS AND MUST BE A MINIMUM OF 10' FROM UTILITY/SEWER LINES
 - ALL PROPOSED LANDSCAPING WITHIN THE SIGHT TRIANGLE SHALL BE IN COMPLIANCE WITH COA ROADWAY SPECIFICATIONS, SECTION 4.04.2.10
 - FINAL PLANT MATERIAL LOCATIONS SHALL ADJUST TO ACCOMMODATE FUTURE PROPOSED DRIVES FOR EACH PAD SITE. LANDSCAPING MATERIAL SHOWN WITHIN THE SITE PLAN CANNOT ENCROACH INTO ROADWAYS THAT ARE DEDICATED (OR DESIGNATED) AS FIRE LANE EASEMENTS (OR CORRIDORS).

LEGEND	
GENERAL	
	EXISTING SIDEWALK
	PROPOSED SIDEWALK
	EXISTING EDGE OF PAVEMENT
	PROPOSED EDGE OF PAVEMENT
	EXISTING CURB & GUTTER
	PROPOSED CURB & GUTTER
CONTOURS	
	EXISTING INDEX CONTOURS
	EXISTING INTERMEDIATE CONTOURS
	PROPOSED INDEX CONTOURS
	PROPOSED INTERMEDIATE CONTOURS
BOUNDARIES	
	PROPOSED PROPERTY BOUNDARY
	EXISTING LOT LINE
	PROPOSED LOT LINE
	EXISTING RIGHT-OF-WAY
	PROPOSED RIGHT-OF-WAY
UTILITIES (RE: CIVIL)	
	EXISTING COMMUNICATIONS LINE
	PROPOSED COMMUNICATIONS LINE
	EXISTING NATURAL GAS MAIN
	PROPOSED NATURAL GAS MAIN
	EXISTING OVERHEAD POWER/ELECTRIC LINE
	PROPOSED OVERHEAD POWER/ELECTRIC LINE
	EXISTING UNDERGROUND POWER/ELECTRIC LINE
	PROPOSED UNDERGROUND POWER/ELECTRIC LINE
	EXISTING SANITARY SEWER
	PROPOSED SANITARY SEWER
	EXISTING STORM SEWER
	PROPOSED STORM SEWER
	EXISTING WATER MAIN
	PROPOSED WATER MAIN
SURFACE MATERIALS	
	NATIVE SEED
	CONCRETE SIDEWALK (RE: CIVIL)

PLANT SCHEDULE

SYMBOL	CODE	BOTANICAL / COMMON NAME	SIZE
TREES			
	ABM	ACER X FREEMANII 'JEFFERSRED' / AUTUMN BLAZE FREEMAN MAPLE	2.5" CAL.
	SHA	GLEDITSIA TRIACANTHOS INERMIS 'SHADEMASTER' / SHADEMASTER HONEY LOCUST	2.5" CAL.
	ROA	QUERCUS RUBRA / RED OAK	2.5" CAL.
	GLI	TILIA CORDATA 'GREENSPIRE' / GREENSPIRE LITTLELEAF LINDEN	2.5" CAL.
	ESE	ULMUS DAVIDIANA JAPONICA 'JFS-BEIBERICH' / EMERALD SUNSHINE ELM	2.5" CAL.
SHRUBS			
	BUF	JUNIPERUS SABINA 'BUFFALO' / BUFFALO JUNIPER	5 GAL.
	RSA	PEROVSKIA ATRIPPLICIFOLIA / RUSSIAN SAGE	5 GAL.
	GLS	RHUS AROMATICA 'GRO-LOW' / GRO-LOW FRAGRANT SUMAC	5 GAL.
	KNO	ROSA X 'RADRAZZ' / KNOCK OUT SHRUB ROSE	5 GAL.
ORNAMENTAL GRASSES			
	FRG	CALAMAGROSTIS X ACUTIFLORA 'KARL FOERSTER' / KARL FOERSTER FEATHER REED GRASS	5 GAL.
	AVG	HELICTOTRICHON SEMPERVIRENS / BLUE OAT GRASS	5 GAL.



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STAFFORD LOGISTICS CENTER
SITE PLAN
LANDSCAPE PLAN
AURORA, COLORADO

NO.	DATE	REMARKS

JOB NO.:	
PA / PM:	RB
DESIGNED:	RB
DATE:	12/08/23
PLOT DATE:	12/08/23

NOT FOR CONSTRUCTION

STANDARD LANDSCAPE NOTES:

- ALL UTILITY EASEMENTS SHALL REMAIN UNOBSTRUCTED AND FULLY ACCESSIBLE ALONG THEIR ENTIRE LENGTH FOR MAINTENANCE EQUIPMENT ENTRY.
- ALL SHRUBS AREAS SHALL RECEIVE THE FOLLOWING SOIL AMENDMENTS PER 1000 S.F.: 4 CUBIC YARDS "SUPREME ORGANICS" COMPOST (50% COW MANURE, 50% WOOD FINES) OR APPROVED EQUAL, PLUS 15 LBS. OF 20-10-5 COMMERCIAL FERTILIZER, ROTOTILL TO A MINIMUM DEPTH OF SIX INCHES.
- ALL LANDSCAPED AREAS AND PLANT MATERIAL, EXCEPT FOR NON-IRRIGATED NATIVE, RESTORATIVE, AND DRYLAND GRASS AREAS THAT COMPLY WITH REQUIREMENTS FOUND IN THE UNIFIED DEVELOPMENT ORDINANCE (UDO) MUST BE WATERED BY AN AUTOMATIC UNDERGROUND IRRIGATION SYSTEM. IRRIGATION SYSTEM DESIGN, INSTALLATION, OPERATION, AND MAINTENANCE SHALL CONFORM TO REQUIREMENTS FOUND IN THE CITY OF AURORA IRRIGATION ORDINANCE.
- VEHICULAR DRIVES WILL BE CONCRETE OR ASPHALT, PLAZAS WILL BE CONCRETE OR PAVERS, WALKS WILL BE CONCRETE OR CRUSHER FINES. PLEASE REFER TO ENGINEERING SITE PLANS FOR WALK MATERIAL TYPES.
- ALL LANDSCAPE BEDS AND UNPLANTED AREAS SHALL BE MULCHED WITH ROCK TO A DEPTH OF THREE INCHES MINIMUM WITH LANDSCAPE FABRIC. TREE RINGS AND PERENNIAL BEDS ARE TO BE MULCHED WITH WOOD MULCH TO A DEPTH OF THREE (3) INCHES MINIMUM WITH NO LANDSCAPE FABRIC.
- SEED TO LIMITS OF DISTURBANCE WITH PROVIDED NATIVE SEED MIX.
- STEEL EDGER SHALL BE PROVIDED AROUND ALL PLANTING BEDS ADJACENT TO TURF/NATIVE AREAS. STEEL EDGER SHALL BE ROLL TOP EDGE / GALVANIZED 1/4" X 6" DEEP.
- ALL PROPOSED LANDSCAPING WITHIN THE SIGHT TRIANGLE SHALL BE IN COMPLIANCE WITH COA ROADWAY SPECIFICATIONS, SECTION 4.04.2.10.
- THE LANDSCAPE PLAN MUST REFLECT THE LOCATION OF ALL FIRE HYDRANTS, KNOX HARDWARE AND FIRE DEPARTMENT CONNECTIONS TO ENSURE THAT THESE DEVICES ARE NOT PHYSICALLY OR VISUALLY OBSTRUCTED FROM RESPONDING FIRE CREWS. THE SEPARATION REQUIREMENTS FROM THE FIRE DEPARTMENT CONNECTIONS AND FIRE HYDRANTS MUST MEET BOTH LIFE SAFETY (TYPICALLY 5 FEET AND NO MATERIAL GREATER THAN 2 FEET IN HEIGHT) AND LANDSCAPING REQUIREMENTS. LANDSCAPING MATERIAL CANNOT BE OMITTED OR REDUCED BASED ON THE INSTALLATION OF A FIRE HYDRANT WITHIN A PARKING LOT ISLAND OR PLANT BED. IT IS RECOMMENDED THAT THE ISLAND OR PLANT BED BE CONSTRUCTED LARGE ENOUGH TO ADEQUATELY ACCOMMODATE BOTH LANDSCAPING MATERIAL AND FIRE HYDRANTS IN ORDER TO COMPLY WITH ALL CITY STANDARDS.
- THE DEVELOPER, HIS SUCCESSORS AND ASSIGNS, SHALL BE RESPONSIBLE FOR INSTALLATION, MAINTENANCE AND REPLACEMENT OF ALL LANDSCAPING MATERIALS SHOWN OR INDICATED ON THE APPROVED SITE PLAN OR LANDSCAPE PLAN ON FILE IN THE PLANNING DEPARTMENT. ALL LANDSCAPING WILL BE INSTALLED AS DELINEATED ON THE PLAN UPON COMPLETION OF THE INFRASTRUCTURE IMPROVEMENTS.
- FINAL PLANT MATERIAL LOCATIONS SHALL BE ADJUSTED OR REMOVED TO ACCOMMODATE FUTURE PROPOSED DRIVES AND UTILITY CONNECTIONS FOR EACH PAD SITE.
- IRRIGATION PLANS TO BE SUBMITTED TO AURORA WATER PER THE DEPARTMENT'S REQUIREMENTS FOLLOWING APPROVAL OF THE FINAL LANDSCAPE PLAN.
- ENSURE ALL HYDRANTS ARE WITHIN LANDSCAPED AREAS AN 5 FT. CLEAR ON ALL SIDES FROM ANY OBSTRUCTIONS, WITH THE RELOCATION OF FIRE HYDRANT PLEASE ENSURE THE FIRE HYDRANT IS WITHIN THE 3'-8" - 8' DISTANCE FROM BACK OF CURB AND FACING ADJACENT ROADWAY. TYPICAL ALL SHEETS.

PLANT SCHEDULE

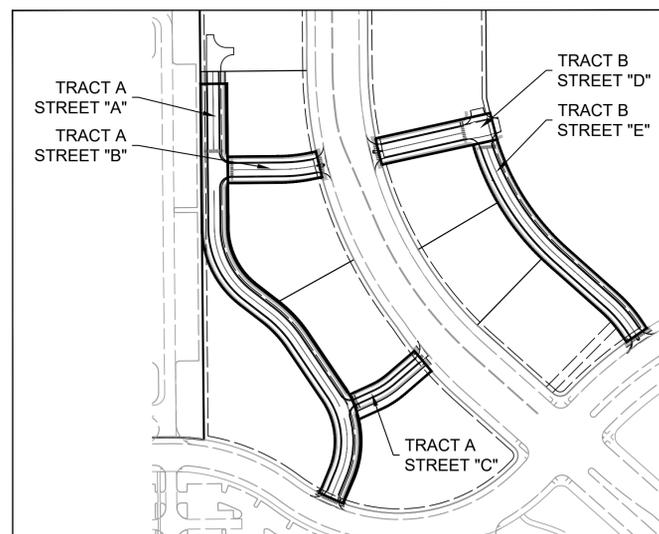
SYMBOL	CODE	BOTANICAL / COMMON NAME	SIZE	CONTAINER	QTY	WATER USE
TREES						
	ABM	ACER X FREEMANII 'JEFFERSRED' / AUTUMN BLAZE FREEMAN MAPLE	2.5" CAL.	B&B	20	X
	SHA	GLEDITSIA TRIACANTHOS INERMIS 'SHADEMASTER' / SHADEMASTER HONEY LOCUST	2.5" CAL.	B&B	16	X
	ROA	QUERCUS RUBRA / RED OAK	2.5" CAL.	B&B	9	XX
	GLI	TILIA CORDATA 'GREENSPIRE' / GREENSPIRE LITTLELEAF LINDEN	2.5" CAL.	B&B	32	N/A
	ESE	ULMUS DAVIDIANA JAPONICA 'JFS-BEIBERICH' / EMERALD SUNSHINE ELM	2.5" CAL.	B&B	35	X
SHRUBS						
	BUF	JUNIPERUS SABINA 'BUFFALO' / BUFFALO JUNIPER	5 GAL.	CONTAINER	171	XX
	RSA	PEROVSKIA ATRIPLICIFOLIA / RUSSIAN SAGE	5 GAL.	CONTAINER	242	XXX
	GLS	RHUS AROMATICA 'GRO-LOW' / GRO-LOW FRAGRANT SUMAC	5 GAL.	CONTAINER	168	XXX
	KNO	ROSA X 'RADRAZZ' / KNOCK OUT SHRUB ROSE	5 GAL.	CONTAINER	192	XX
ORNAMENTAL GRASSES						
	FRG	CALAMAGROSTIS X ACUTIFLORA 'KARL FOERSTER' / KARL FOERSTER FEATHER REED GRASS	5 GAL.	CONTAINER	23	X
	AVG	HELICTOTRICHON SEMPERVIRENS / BLUE OAT GRASS	5 GAL.	CONTAINER	171	X

LEGEND

- X PLANTS NEED 1" OF WATER PER WEEK
- XX PLANTS NEED 2" OF WATER PER WEEK
- XXX PLANTS NEED 3" OF WATER EVERY TWO WEEKS

OVERALL SITE DATA		
		AREA
TOTAL LIMIT OF CONSTRUCTION	100%	568,000 S.F.
TOTAL HARD SURFACE AREA	19.7%	111,667 S.F.
SIDE WALK	24.5%	27,350 S.F.
ROADWAY	72.6%	81,027 S.F.
GRAVEL	2.9%	3,290 S.F.
TOTAL LANDSCAPE AREA	80.3%	456,333 S.F.
CURBSIDE LANDSCAPE	7.9%	35,973 S.F.
NATIVE SEED (AREA OF DISTURBANCE)	92.1%	420,360 S.F.

NATIVE SEED MIX	
SPECIES	PLS/ACRE
HATCHITABLUE GRAMA (BOUPELLOUAGRACILIS)	4.0
BOWIE BUFFALOGRASS (BOUPELLOUADACTYLOIDES)	4.0
BUTTE SIDEGRASS (BOUPELLOUACURTIPENDULA)	6.0
SAND DROPSEED (SPOROBOLOUSCRYPTANDRUS)	1.0
ARRIBAWESTERN WHEATGRASS (PASCOPYRUMSMITHII)	1.0
PRAIRE JUNEGRASS (KOELERIAMACRANTHA)	3.0
BLAZE LITTLE BLUESTEM (SCHIZACHYRIUMSCOPARIUMBLAZE)	1.0
LORDIM GREEN NEEDLEGRASS (NASSELLAVRDUOLA)	2.0
TOTAL	22.0



CURBSIDE LANDSCAPE KEY
(N.T.S)

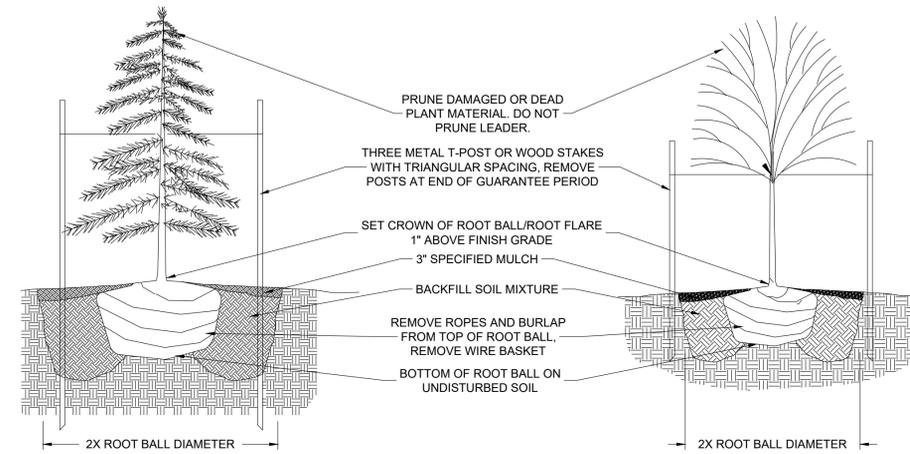
CURBSIDE LANDSCAPE							
LANDSCAPE ZONE	PROVIDED WIDTH	LENGTH	AREA	TREE REQUIREMENT	TREES PROVIDED	SHRUB REQUIREMENT	SHRUBS PROVIDED
STREET "A" (WEST)	8'-0"	1,080'	8,480 S.F.	1 TREE PER 40 L.F. 1,080/40 = 27 TREES	27 TREES	1 SHRUB PER 40 S.F. 8,480/40 = 212 SHRUBS	213 SHRUBS
STREET "A" (EAST)	8'-0"	1,002'	8,000 S.F.	2 TREE PER 40 L.F. 1,002/40 = 25 TREES	25 TREES	1 SHRUB PER 40 S.F. 8,000/40 = 200 SHRUBS	200 SHRUBS
STREET "B" (NORTH)	8'-0"	227'	1,559 S.F.	3 TREE PER 40 L.F. 227/40 = 6 TREES	6 TREES*	1 SHRUB PER 40 S.F. 1,559/40 = 39 SHRUBS	63 SHRUBS (2 TREE EQV.)
STREET "B" (SOUTH)	8'-0"	237'	1,641 S.F.	4 TREE PER 40 L.F. 237/40 = 6 TREES	6 TREES	1 SHRUB PER 40 S.F. 1,641/40 = 41 SHRUBS	42 SHRUBS
STREET "C" (NORTH)	8'-0"	196'	1,415 S.F.	5 TREE PER 40 L.F. 196/40 = 5 TREES	5 TREES*	1 SHRUB PER 40 S.F. 1,415/40 = 36 SHRUBS	48 SHRUBS (1 TREE EQV.)
STREET "C" (SOUTH)	8'-0"	211'	1,510 S.F.	6 TREE PER 40 L.F. 211/40 = 6 TREES	6 TREES*	1 SHRUB PER 40 S.F. 1,510/40 = 38 SHRUBS	50 SHRUBS (1 TREE EQV.)
STREET "D" (NORTH)	8'-0"	235'	1,894 S.F.	7 TREE PER 40 L.F. 235/40 = 6 TREES	6 TREES	1 SHRUB PER 40 S.F. 1,894/40 = 48 SHRUBS	48 SHRUBS
STREET "D" (SOUTH)	8'-0"	235'	1,885 S.F.	8 TREE PER 40 L.F. 235/40 = 6 TREES	6 TREES*	1 SHRUB PER 40 S.F. 1,885/40 = 48 SHRUBS	60 SHRUBS (1 TREE EQV.)
STREET "E" (WEST)	8'-0"	600'	4,565 S.F.	9 TREE PER 40 L.F. 600/40 = 15 TREES	15 TREES	1 SHRUB PER 40 S.F. 4,565/40 = 115 SHRUBS	117 SHRUBS
STREET "E" (EAST)	8'-0"	590'	4,441 S.F.	10 TREE PER 40 L.F. 590/40 = 15 TREES	15 TREES	1 SHRUB PER 40 S.F. 4,441/40 = 111 SHRUBS	116 SHRUBS
TOTALS				117 TREES	117 TREES	888 SHRUBS	945 SHRUBS

NOTES:

- * SHRUB TO TREE EQUIVALENT OF TWELVE (12) 5 GALLON SHRUBS TO ONE (1) 2.5" CALIPER TREE ARE APPLIED TO SPECIFIC STREETS. SHRUB EQUIVALENTS UTILIZED DUE TO 50' STOP SIGN OFFSET AND UTILITY CONFLICTS.
- * GRASS TO SHRUB EQUIVALENT OF ONE (1) 5 GALLON GRASS TO (1) 5 GALLON SHRUB IS UTILIZED FOR PLANTING DESIGN.

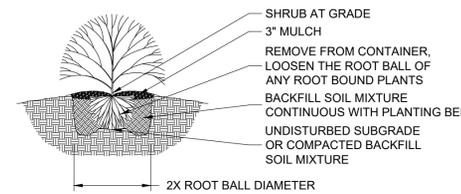
NO.	DATE	REMARKS

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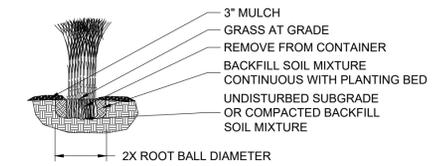


NOTES:
1. IN TURF AREA, PROVIDE 6' DIAMETER OF MULCH

1 EVERGREEN/DECIDUOUS TREE PLANTING DETAIL
N.T.S.



2 SHRUB PLANTING DETAIL
N.T.S.



3 GRASS PLANTING DETAIL
N.T.S.

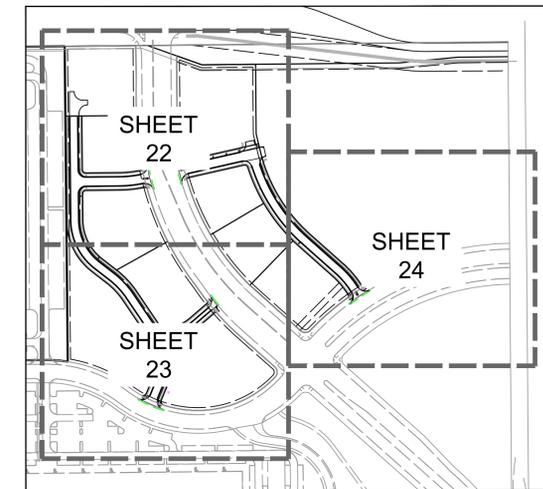
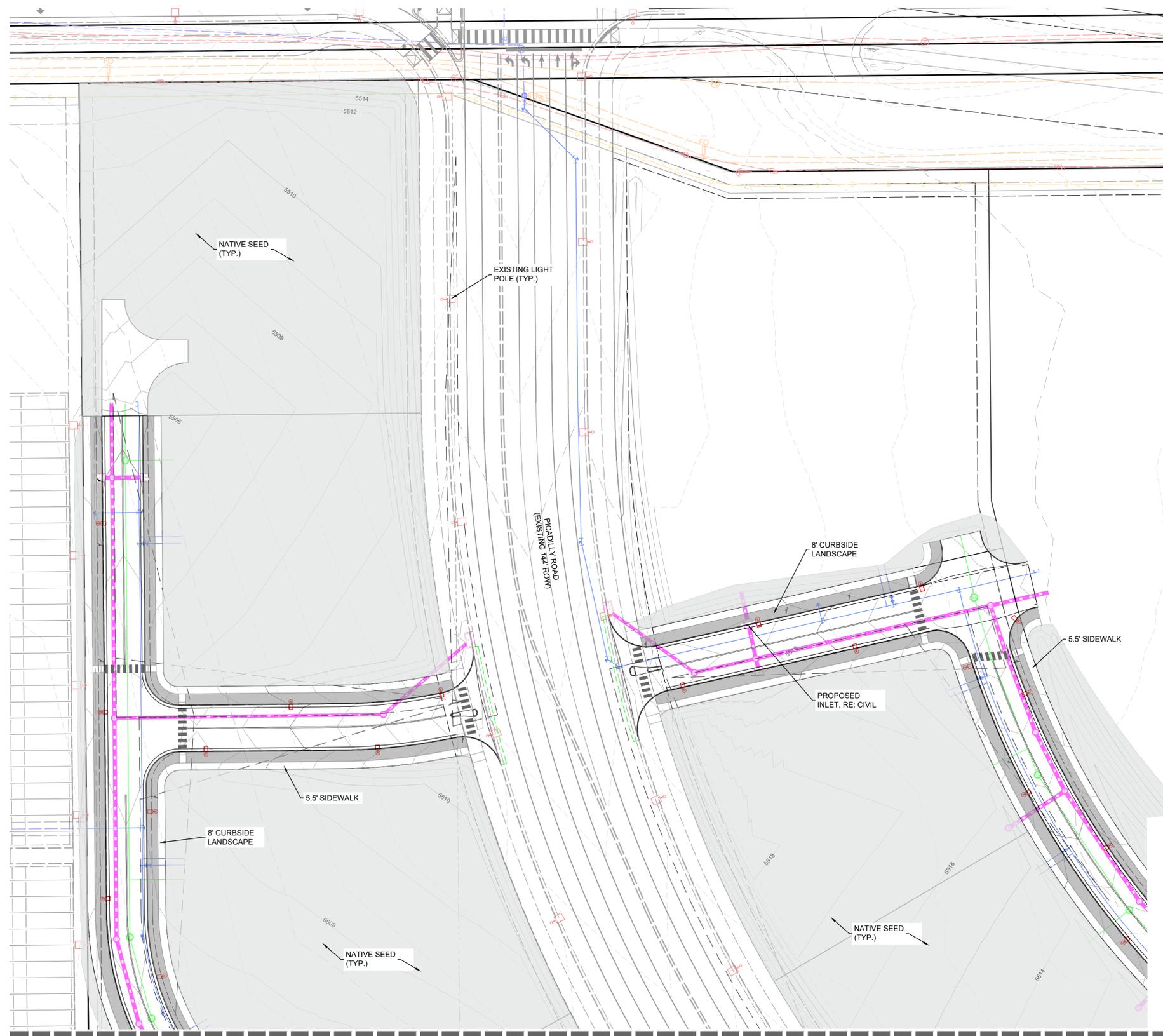


NOTES:
1. TYPE: RIVER ROCK
2. SIZE RANGE: 4-INCH MAXIMUM, 1-INCH MINIMUM

4 ROCK MULCH DETAIL
N.T.S.

NO.	DATE	REMARKS

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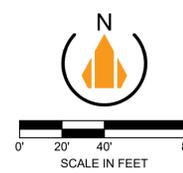


HYDROZONE DATA		
WATER USE (OVERALL DISTURBED AREA)	AREA (%)	AREA (S.F.)
TOTAL LANDSCAPE AREA	100.0%	456,333 S.F.
LOW WATER USE (CURBSIDE LANDSCAPE)	7.9%	35,973 S.F.
Z-ZONE (NATIVE SEED)	92.1%	420,360 S.F.

HYDROZONE LEGEND	
	LOW WATER USE (CURBSIDE LANDSCAPE)
	Z-ZONE (NATIVE SEED AREA)

MATCHLINE: SEE SHEET 24

MATCHLINE: SEE SHEET 23



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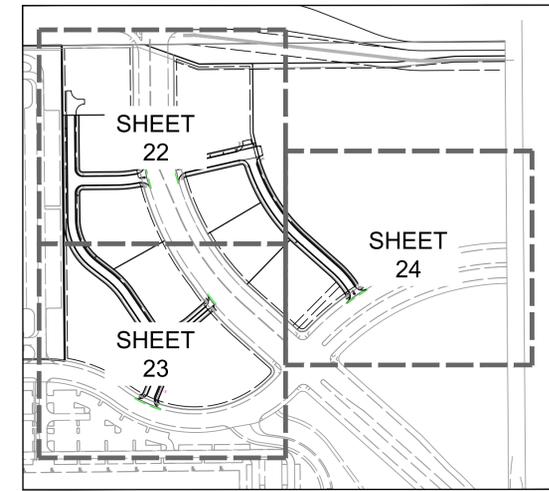
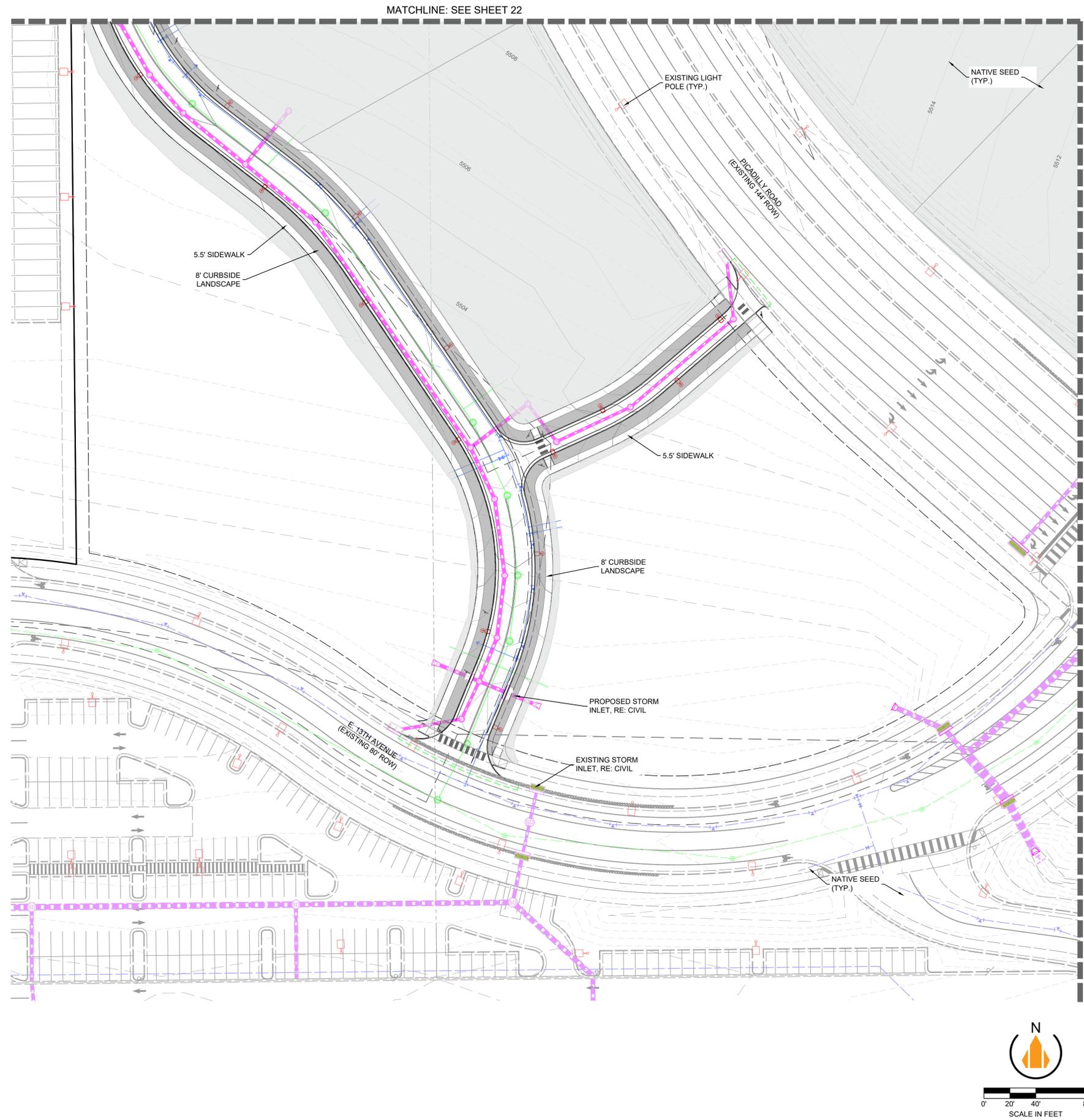
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STAFFORD LOGISTICS CENTER
SITE PLAN
HYDROZONE PLAN
AURORA, COLORADO

NO.	DATE	REMARKS

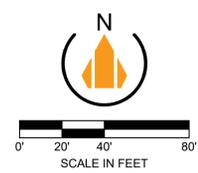
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HYDROZONE DATA		
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HYDROZONE LEGEND	
	LOW WATER USE (CURBSIDE LANDSCAPE)
	Z-ZONE (NATIVE SEED AREA)



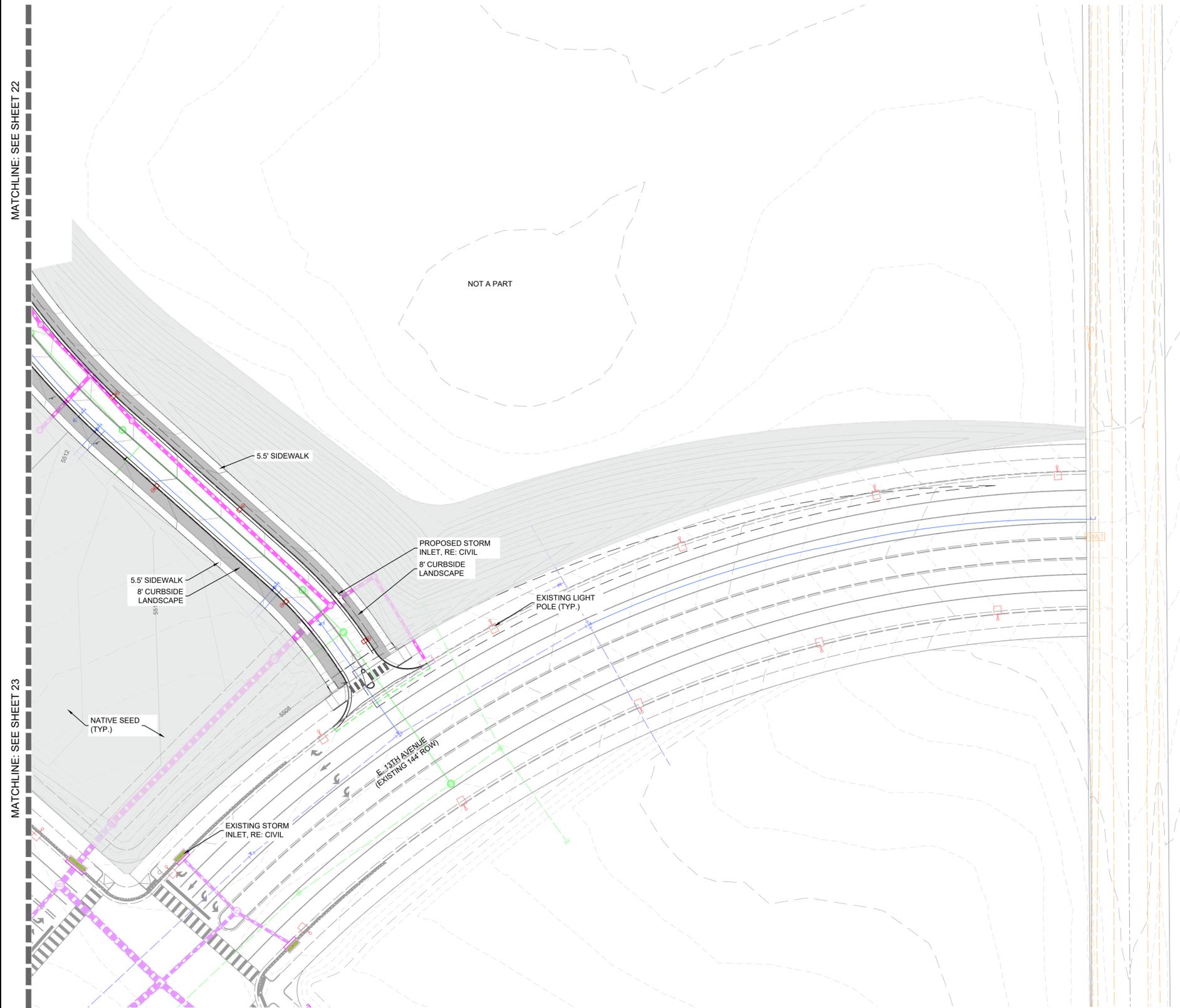
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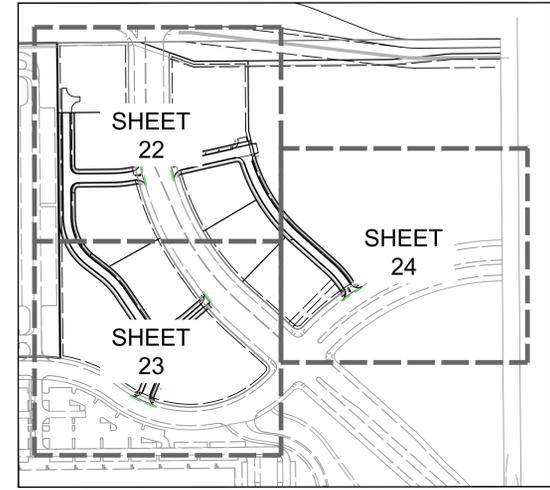
NO.	DATE	REMARKS

JOB NO.:	
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DATE:	12/08/23
PLOT DATE:	12/08/23



MATCHLINE: SEE SHEET 22

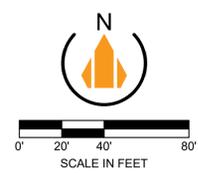
MATCHLINE: SEE SHEET 23



KEY MAP
(N.T.S)

HYDROZONE DATA		
WATER USE (OVERALL DISTURBED AREA)	AREA (%)	AREA (S.F)
TOTAL LANDSCAPE AREA	100.0%	456,333 S.F.
LOW WATER USE (CURBSIDE LANDSCAPE)	7.9%	35,973 S.F.
Z-ZONE (NATIVE SEED)	92.1%	420,360 S.F.

HYDROZONE LEGEND	
	LOW WATER USE (CURBSIDE LANDSCAPE)
	Z-ZONE (NATIVE SEED AREA)



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SITE PLAN
HYDROZONE PLAN
AURORA, COLORADO

NO.	DATE	REMARKS

JOB NO.:	
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DATE:	12/08/23
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FOR AND ON BEHALF
OF WARE MALCOMB

**STAFFORD LOGISTIC CENTER
SITE PLAN
PHOTOMETRIC SITE PLAN
AURORA, COLORADO**

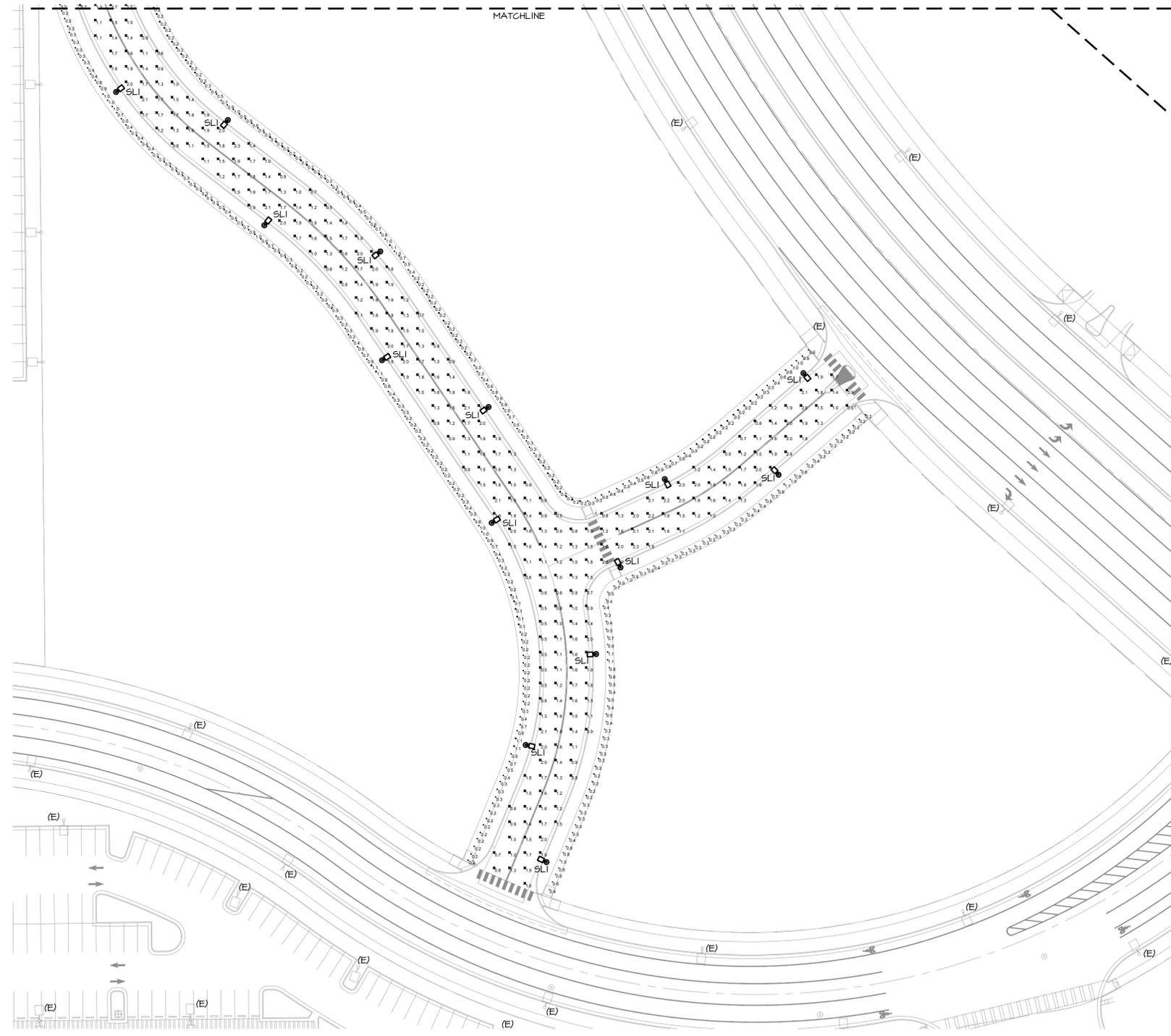
- LIGHTING GENERAL NOTES**
- LIGHTING CALCULATIONS WERE MADE USING A LIGHT LOSS FACTOR OF 1.0.
 - CALCULATION POINTS WERE TAKEN AT GRADE LEVEL ON A 10'X10' GRID. CALCULATIONS DO NOT REPRESENT ANY SLOPE OF ELEVATION CHANGE.
 - ILLUMINANCE CONTRIBUTIONS FROM STREET LIGHTING AND ADJACENT PROPERTIES ARE NOT INCLUDED.
 - ALL LIGHT FIXTURES ARE FULL-CUTOFF AND SHIELDED TO REDUCE GLARE BEYOND THE PROPERTY LINE. ALL LAMPS DO NOT EXTEND BELOW THE HOUSING OF THE FIXTURE.
 - ALL LIGHT FIXTURES TO BE CONTROLLED VIA ASTRONOMICAL TIMELOCK WITH PHOTOCELL TO ALLOW LIGHTS TO BE TURNED "ON" ONLY DURING NON-DAYLIGHT HOURS.
 - A STATEMENT OF CERTIFICATION WILL BE PROVIDED ADDRESSING ACCOUNTABILITY FOR THE CONTENT AND ACCURACY OF THE SUBMITTED LIGHTING PLAN AND THE INSTALLATION OF THE LIGHTS ACCORDING TO THE APPROVED LIGHTING PLAN. IT IS THE RESPONSIBILITY OF THE OWNER TO ENSURE COMPLIANCE TO ALL STANDARDS IN EFFECT. (ORIG. 1-23-02; RELOC. 12-13-16).
 - PRIVATE STREET LIGHTS WILL REMAIN PRIVATELY OWNED AND MAINTAINED IN PERPETUITY.
 - PUBLIC AND PRIVATE INFRASTRUCTURE CAN NOT BE TIED IN TOGETHER.
 - FIXTURES TAGGED WITH '(E)' ARE EXISTING TO REMAIN AND ARE NOT TAKEN INTO CONSIDERATION FOR THE PHOTOMETRIC CALCULATION IN THIS DRAWING.
 - SITE PHOTOMETRIC CALCULATIONS HAVE BEEN COMPLETED BASED ON CRITERIA SET BY CITY OF AURORA FOR STREET LIGHTING IN ANTICIPATION OF FUTURE USE DESIGNATION CHANGES.

- LIGHTING FIXTURES LEGEND**
- LUMINAIRE TYPE, REFERENCING LUMINAIRE SCHEDULE, TYPICAL ALL FIXTURES, SUBSCRIPT, IF SHOWN, REFERENCES WALL SWITCH
 - WALL MOUNTED SCONE LIGHT
 - EXTERIOR POLE AREA LIGHT
 - WALL MOUNTED AREA LIGHT

- KEYNOTE LEGEND**
- | KEY | VALUE |
|-----|---|
| Ⓛ | REFER TO ENGINEERING CONSTRUCTION DRAWING PACKAGE, SHEET E10 FOR POWER SOURCE OF COLFAX LIGHT POLE. |

Statistics

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Tract 1 - Sidewalk East	+	0.4 fc	1.1 fc	0.2 fc	5.5:1	2.0:1
Tract 1 - Sidewalk North	+	0.4 fc	1.0 fc	0.1 fc	10.0:1	4.0:1
Tract 1 - Sidewalk South East	+	0.5 fc	1.1 fc	0.2 fc	5.5:1	2.5:1
Tract 1 - Sidewalk West	+	0.4 fc	1.1 fc	0.1 fc	11.0:1	4.0:1
Tract 1 Street	×	1.4 fc	2.4 fc	0.3 fc	8.0:1	4.7:1
Tract 2 - Sidewalk East	◇	0.5 fc	1.1 fc	0.2 fc	5.5:1	2.5:1
Tract 2 - Sidewalk North	◇	0.4 fc	1.0 fc	0.1 fc	10.0:1	4.0:1
Tract 2 - Sidewalk West	◇	0.5 fc	1.3 fc	0.2 fc	6.5:1	2.5:1
Tract 2 Street	×	1.5 fc	2.8 fc	0.5 fc	5.6:1	3.0:1



REMARKS	
NO.	DATE

JOB NO.:	DCS23-4056
PA / PM:	CS
DESIGNED:	JC
DATE:	
PLOT DATE:	02/23/24

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FOR AND ON BEHALF
OF WARE MALCOMB

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SITE PLAN
PHOTOMETRIC SITE PLAN
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NO.	DATE	REMARKS

JOB NO.:	DCS23-4056
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- LIGHTING GENERAL NOTES**
- LIGHTING CALCULATIONS WERE MADE USING A LIGHT LOSS FACTOR OF 1.0.
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 - FIXTURES TAGGED WITH '(E)' ARE EXISTING TO REMAIN AND ARE NOT TAKEN INTO CONSIDERATION FOR THE PHOTOMETRIC CALCULATION IN THIS DRAWING.
 - SITE PHOTOMETRIC CALCULATIONS HAVE BEEN COMPLETED BASED ON CRITERIA SET BY CITY OF AURORA FOR STREET LIGHTING IN ANTICIPATION OF FUTURE USE DESIGNATION CHANGES.

LIGHTING FIXTURES LEGEND

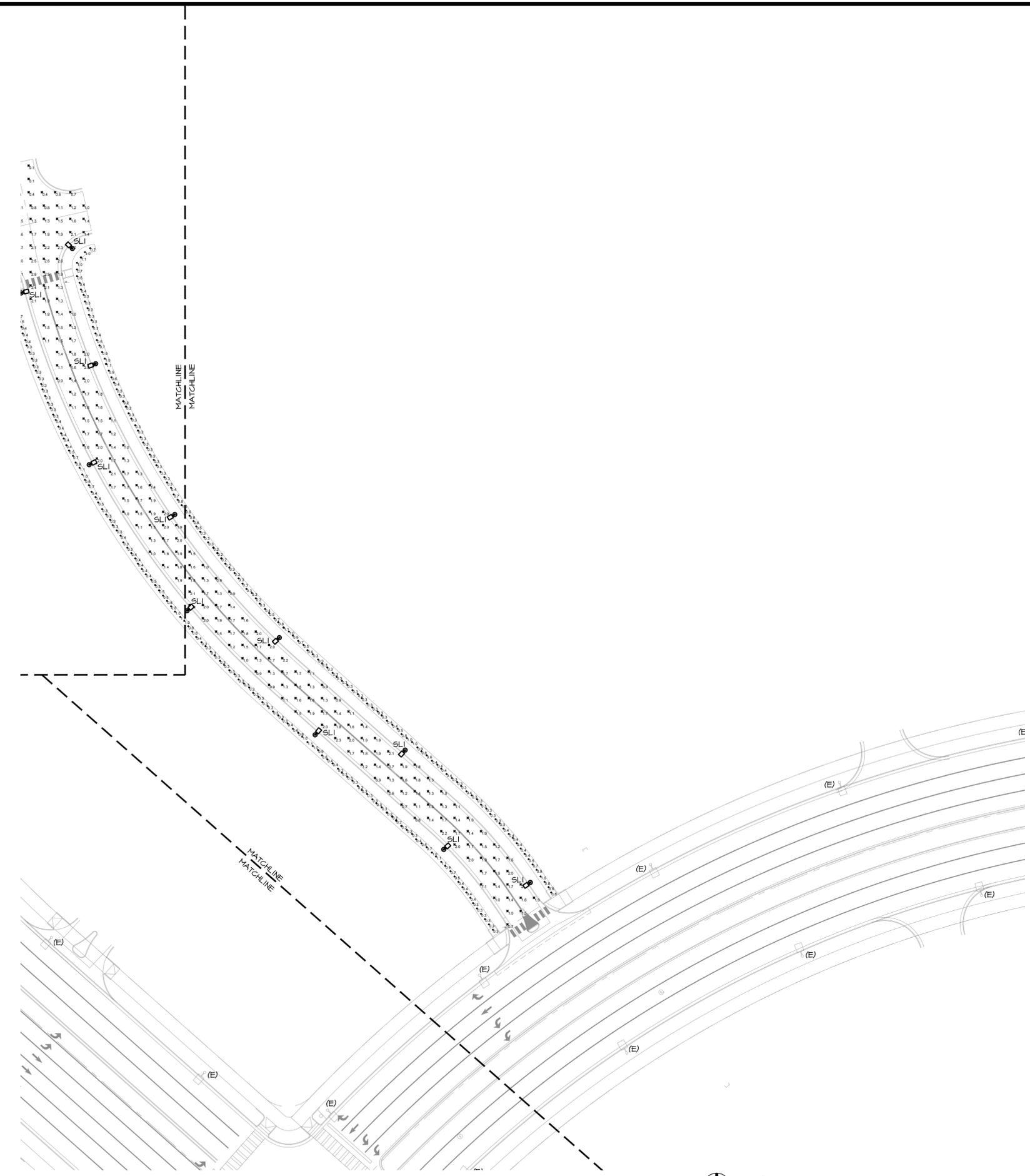
- LUMINAIRE TYPE, REFERENCING LUMINAIRE SCHEDULE, TYPICAL ALL FIXTURES, SUBSCRIPT, IF SHOWN, REFERENCES WALL SWITCH
- WALL MOUNTED SCONE LIGHT
- EXTERIOR POLE AREA LIGHT
- WALL MOUNTED AREA LIGHT

KEYNOTE LEGEND

KEY	VALUE
◇	REFER TO ENGINEERING CONSTRUCTION DRAWING PACKAGE, SHEET E10 FOR POWER SOURCE OF COLFAX LIGHT POLE.

Statistics

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Tract 1 - Sidewalk East	+	0.4 fc	1.1 fc	0.2 fc	5.5:1	2.0:1
Tract 1 - Sidewalk North	+	0.4 fc	1.0 fc	0.1 fc	10.0:1	4.0:1
Tract 1 - Sidewalk South East	+	0.5 fc	1.1 fc	0.2 fc	5.5:1	2.5:1
Tract 1 - Sidewalk West	+	0.4 fc	1.1 fc	0.1 fc	11.0:1	4.0:1
Tract 1 Street	×	1.4 fc	2.4 fc	0.3 fc	8.0:1	4.7:1
Tract 2 - Sidewalk East	◇	0.5 fc	1.1 fc	0.2 fc	5.5:1	2.5:1
Tract 2 - Sidewalk North	◇	0.4 fc	1.0 fc	0.1 fc	10.0:1	4.0:1
Tract 2 - Sidewalk West	◇	0.5 fc	1.3 fc	0.2 fc	6.5:1	2.5:1
Tract 2 Street	×	1.5 fc	2.8 fc	0.5 fc	5.6:1	3.0:1



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LIGHTING FIXTURE SCHEDULE															
TYPE	DESCRIPTION	MANUFACTURER	CATALOG NUMBER	VOLTAGE	SOURCE				MAX WATTS	LUMEN OUTPUT	DIMMING	FIXTURE FINISH	MOUNTING INFORMATION		NOTES
					LAMP QTY	WATT	TYPE	CCT/CRI					LOCATION	BOF/RFD/OFH	
SL1	SHORT ARM STYLE STREET LIGHT SINGLE HEAD LED AREA LIGHT, TYPE III OPTIC, 1000mA, 7-PIN TWISTLOCK RECEPTACLE	COOPER MCGRAW-EDISON	GLAN-SA1C-730-U-T3	277	1	57	LED	70CRI/3000K	57	7054	--		POLE MOUNTED	20'-0" BOF	

ABBREVIATIONS: BOF - BOTTOM OF FIXTURE, RFD - RECESSED FIXTURE DEPTH, OFH - OVERALL FIXTURE HEIGHT, AFF(AG) - ABOVE FINISHED FLOOR (GRADE), WFD - WALL FIXTURE DEPTH

SPECIFIC NOTES:
 1.

Project	Catalog #	Type	
Prepared by	Notes	Date	



Streetworks
GLAN Galleon II
 Area / Site Luminaire

Product Features

- Light Architect™
- BAA

Product Certifications

- IS1
- DLC ULISTC
- DLC ULISTC
- 30 VIB
- IP66
- 5 YEAR

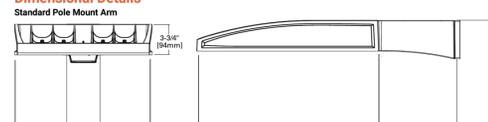
Interactive Menu

- Ordering Information page 2
- Mounting Details page 3
- Optical Distributions page 5
- Product Specifications page 5
- Energy and Performance Data page 6
- Control Options page 11

Quick Facts

- Lumen packages range from 3,300 - 73,500 (33W - 552W)
- 17 optical distributions
- Efficacy up to 159 lumens per watt
- Options to meet Buy American and other domestic preference requirements

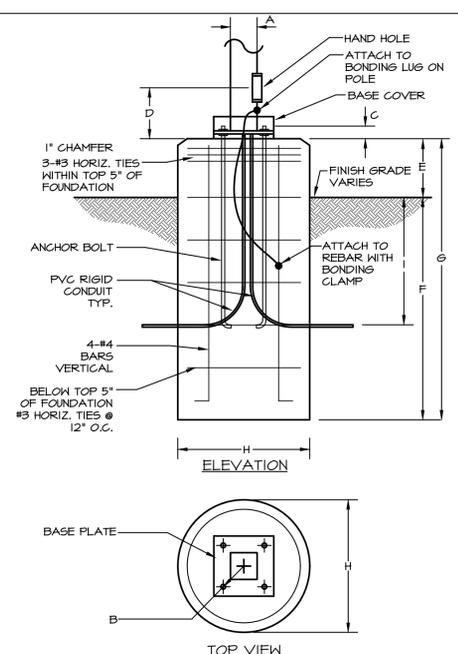
Dimensional Details
 Standard Pole Mount Arm



Connected Systems

- WaveLinX Lite
- WaveLinX

1 POLE BASE DETAIL



ELEVATION

TOP VIEW

POLE KEY	OVERALL HEIGHT	ANCHOR BOLT DATA			D	E	F	G	H	I
		B	SIZE	C						
SL1	20'0"	4"	PER MANUFACTURER		0'6"	8'0"	8'6"	24"	36"	

SP-13 SCALE: NONE

2 SL1
 SCALE: NONE

1 POLE BASE DETAIL
 SCALE: NONE

NO.	DATE	REMARKS

JOB NO.:	DCS23-4056
PA / PM:	CS
DESIGNED:	JC
DATE:	
PLOT DATE:	02/23/24

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