



PLANNING COMMISSION REGULAR MEETING
Zoom Webinar and/or Town Council Chamber
3 S. Timber Ridge Parkway, Severance, CO 80550

AGENDA
PLANNING COMMISSION REGULAR MEETING
Wednesday, April 19, 2023, at 6:00 PM

A. CALL TO ORDER

1. Roll Call
2. Pledge of Allegiance
3. Approval of Agenda
4. Public Comment

The purpose of the Public Comment is for members of the public to speak to the Planning Commission on any subject not scheduled on the agenda. To accomplish scheduled agenda items, comments should be limited to three minute for those attending in person or an appropriate time as deemed by the Chair. The Planning Commission shall make no decisions or take action on comments, but may choose to schedule the matter for a decision later. Those addressing the Planning Commission, please state your name and address. and sign-in.

5. Approval of 3.15.23 Minutes

B. REGULAR MEETING

1. PUBLIC HEARING

Pg (CONTINUANCE) Resolution PC-2023-02R: A Resolution of the Severance Planning Commission recommending approval of a Site Development Plan for certain real property located within the Red Willow Subdivision

- Legislative
- Staff Presentation: Abdul Barzak, Town Planner

2. PUBLIC HEARING

Pg PC Resolution 2023-03R: A Resolution of The Severance Planning Commission, approving an application to amend The Town of Severance Comprehensive Plan to revise the Future Land Use Map pertaining to various areas within The Town and to incorporate an updated Parks and Trails Map

- Legislative
- Staff Presentation: Abdul Barzak, Town Planner

3. PUBLIC HEARING

Pg Resolution PC- 2023-04R: A Resolution of The Severance Planning Commission recommending approval of Site Development Plan for certain real property located within The Town of Severance

- Legislative
- Staff Presentation: Abdul Barzak, Town Planner

C. COMMUNICATIONS

Commission approval may be sought for administrative actions in association with staff reports.

1. Town Attorney
2. Town Staff
3. Town Management
4. Commission Members
5. Chair

D. ADJOURN

Planning Commission MEETING

Wednesday, April 19, 2023, 6:00 PM (MDT)

Registration URL

https://us02web.zoom.us/webinar/register/WN_OCx-DpESRiaIW915_tEgg

The Town of Severance does not discriminate on the basis of race, color, national origin, sex, religion, age or disability in the provision of services. For disabled persons needing reasonable accommodation to attend or participate in a town service, program, public meeting, or activity, call 970-686-1218 at least 72 hours in advance. Disabled access is available from the front entrance of the Town Hall.



PLANNING COMMISSION REGULAR MEETING
Zoom Webinar and Town Council Chamber
3 S. Timber Ridge Parkway, Severance, CO 80550

MINUTES
REGULAR MEETING
Wednesday, March 15, 2023, at 6:00 PM

Present:

Chair:

Julie Stout

Vice-Chair:

Derek Grimes

Commissioners:

Zach Goodell

David Rau

Joe Pirrone

Brittany Vandermark

Terence Hennessey

Absent:

Audience: Nikki & Kevin Kujala-1450 Red Fox Cir & Jen Ridenour-1403 Rox Ridge Pkwy

Staff:

Nicholas Wharton, Town Manager

Lindsay Radcliff-Coombes, Deputy Town Manager

Abdul Barzak, Town Planner

Leah Vanarsdall, Town Clerk

Mary Lynn Macsalka, Town Attorney

A. CALL TO ORDER

1. Roll Call

2. Pledge of Allegiance

3. Approval of Agenda

MOTION WAS MADE BY Commissioner Pirrone , seconded by Commissioner

Vandermark to Approve the Agenda. All Commissioners present voting Yes,

MOTION PASSED

4. Public Comment

The purpose of the Public Comment is for members of the public to speak to the Planning Commission on any subject not scheduled on the agenda. To accomplish scheduled agenda items, comments should be limited to three minute for those attending in person or an appropriate time as deemed by the Chair. The Planning Commission shall make no decisions or take action on comments, but may choose to schedule the matter for a decision later. Those addressing the Planning Commission, please state your name and address. and sign-in.

NONE

5. Approval of 11.16.22 Minutes

MOTION WAS MADE BY Commissioner Pirrone , seconded by Commissioner Grimes to Approve the 11.16.22 Minutes. All Commission Members present voting Yes,

MOTION PASSED

6. Approval of 2.15.23 Minutes

MOTION WAS MADE BY Commissioner Goodell, seconded by Commissioner Vandermark to Approve the 2.15.23 Minutes. All Commission Members present voting Yes,

MOTION PASSED

B. REGULAR MEETING

1. Appointment of Chair and Vice-Chair

- Legislative
- Staff Presentation: Nicholas Wharton, Town Manager

MOTION WAS MADE BY Commissioner Pirrone, seconded by Commissioner Grimes to Nominate/Appoint Julie Stout as Chair of the Planning Commission. All Commission Members present voting Yes,

MOTION PASSED

MOTION WAS MADE BY Commissioner Goodell, seconded by Commissioner Pirrone to Nominate/Appoint Derek Grimes as Vice-Chair of the Planning Commission. All Commission Members present voting Yes,

MOTION PASSED

2. Resolution PC-2023-02R: Ziggi's Site Plan

- Legislative
- Staff Presentation: Abdul Barzak, Town Planner

MOTION WAS MADE BY Commissioner Pirrone , seconded by Commissioner Vandermark to continue **Resolution PC-2023-02R**: A Resolution of the Severance Planning Commission recommending approval of site development plan for certain real property located within the Red Willow Subdivision. All Commission Members present voting Yes,

MOTION PASSED

C. COMMUNICATIONS

Commission approval may be sought for administrative actions in association with staff reports.

1. Town Attorney
2. Town Staff
3. Town Management
4. Commission Members
5. Chair

D. ADJOURN

6:11 pm



AGENDA ITEM SUMMARY

AGENDA ITEM	SUBMITTED BY	PRESENTED BY
PUBLIC HEARING Pg (CONTINUANCE) Resolution PC-2023-02R: A Resolution of the Severance Planning Commission recommending approval of a Site Development Plan for certain real property located within the Red Willow Subdivision	Abdul Barzak, Town Planner	Abdul Barzak, Town Planner
ACTION REQUESTED		
Community & Economic Development and Town Management ask that the Severance Planning Commission review, discuss, and take action on Resolution PC-2023-02R and forward a recommendation to the Town Council on the Ziggis Severance Site Plan. On March 9th, 2023 the applicant requested a continuance. Actions that may be taken: 1. Approve PC-2023-02R and forward a recommendation of approval to the Town Council for the Ziggis Severance Site Plan subject to the conditions listed therein. 2. Move to continue the public hearing to a date to be determined. 3. Take No Action.		<u>Resolution</u> <u>Attorney Approved</u> <u>Action Requested</u>
BRIEF SUMMARY		
The applicant has submitted a Site Plan for a proposed 4,000-square-foot building to be located at 9843 E. Harmony Road, Severance, Colorado 80550. This building will be divided into a 1,500-square-foot Ziggis Coffee Shop with a drive-thru, with the remaining 2,500 square feet to be available for future commercial tenants.		
PUBLIC SUPPORT/CONCERN		
See packet materials		
ANALYSIS AND RECOMMENDATION		
Town staff is asking for the Planning Commission to continue the public hearing for the Ziggis Severance to a date to be determined as requested by the applicant.		
MATERIALS SUBMITTED		
The following materials were submitted and included in this packet: 1. Continuance Request by Applicant 2. Town Review Form (Generated by Town Staff) 3. Engineering Memo (Staff Generated) 4. Letter of Intent (Applicant Submitted) 5. Site Plan (Applicant Submitted, Staff Reviewed)		

6. Traffic Impact Study (Applicant Submitted, Staff Reviewed)
7. Legal Description (Applicant Submitted, Staff Reviewed)
8. Combined Referral Comments
9. Combined Resident Comments
10. Resolution PC-2023-02R: Red Willow Sub-Ziggi's Site Dev Plan

From: [Micah Current](#)
To: [Abdul Barzak](#)
Cc: [Jamie McCawley](#); [Jerry Helgeson](#)
Subject: Continuance - Severance
Date: Thursday, March 9, 2023 3:49:56 PM

Caution: This is an external email and may have a suspicious subject or content. Please take care when clicking links or opening attachments. When in doubt, contact your OnixIT at support@onixit.com or (970) 223-0300.

Hi Abdul - We have decided to request a continuance with Severance while we figure out whether the stand alone Drive through idea will work.

--

Thank you,

Micah Current
(303)589-8335
VP of Operations, American Eagle Investments
Ziggi's Franchise Owner
micah.current@ziggiscoffee.com



Town of Severance Review Comments

Date: 9.12.22 Resubmitted: 12.16.22, 2.7.23
 Project Name/Contact: Ziggi's Severance/Paul Bass (TST)
 Project Address: 9843 E. Harmony Road
 Customer/Project Number: 284 - American Eagle Properties attn. Jerry Helgeson
 Review Number: 3rd Submittal
 Project Coordinator: Abdul Barzak, Town Planner
 Recipients:

- ☒ MANAGEMENT
- ☒ PLANNING
- ☒ ENGINEERING
- ☒ TRAFFIC
- ☒ TOWN ATTORNEY
- ☒ PUBLIC WORKS
- ☒ POLICE
- ☒ BUILDING
- ☐ OTHER

The following comments must be addressed in order to proceed with the development process. All subsequent submittals should be submitted electronically.

Please submit a revised document addressing all comments along with a comment response letter to the project coordinator. Large plan sets should be submitted through Dropbox and a link provided.

With the project resubmittal, please indicate whether or not the change was made and provide a response as applicable. Please contact me if you have any questions.

Project Coordinator – Abdul Barzak, Town Planner, Town of Severance

Item 1	Applicant to address Staff Redlines and Comments	Resolved?
Notes	Applicant to address all final Staff comments and redlines. - Civil - Traffic - Legal	☐ YES ☒ NO ☐ SEE ATTACHED
Applicant Response		
Notes		
Item 2	ROW	Resolved?
Notes	A portion of the private improvements (parking lot) encroaches in the public road ROW of E Harmony Rd (WCR 74). The encroachment does not impede the widening of E Harmony Rd (WCR 74) to the ultimate section of 4 lanes of	☐ YES ☒ NO ☐ SEE ATTACHED

	through traffic. As shown, when E Harmony Rd (WCR 74) is widened to the ultimate section the standard 24' landscape strip would be reduced to 10' along this property and the 6' sidewalk would be located approximately 14' inside the ultimate ROW instead of along the ROW. Town Staff and Management have no issues as the ultimate build out of E. Harmony Road will not be affected. Town staff will work with the applicant to place considerate landscaping on this portion of ROW. Please see Town Attorney Item #1. Applicant must update site plan with necessary notes.	
Applicant Response		
Notes		
Item 3	Development Agreement	Resolved?
Notes	Prior to scheduling of Town Council public meeting, the applicant will need to finalize a Development Agreement please provide comments and edits.	☐ YES ☒ NO ☐ SEE ATTACHED
Applicant Response		
Notes		
Item 4	Variance Request	Resolved?
Notes	Sec. 16.6.20.9 of the Severance Land Use code requires, "A meandering community pathway that is a minimum of ten (10) feet wide shall be located within the buffer." This is the landscape buffer between the development and the roadway. The applicant has proposed a 6' path along the property edge to match the existing path to the east of the property. Variance Requests cannot be approved by Staff and can only be approved by Council. Variance has been submitted. Applicant will need to add variance request table sheet to Site Plan, see attached example from another project.	☐ YES ☒ NO ☒ SEE ATTACHED
Applicant Response		
Notes		
Item 5	Shared Access	Resolved?
Notes	The applicant is to enter into an agreement with the owner of Lot 2 (see Legal Item #1 below) to allow for the shared access with 9845 E. Harmony Road. This can be handled separate from the Site Plan approval.	☒ YES ☐ NO ☐ SEE ATTACHED
Applicant Response	Agreement will be submitted separately	
Notes	No further comment, applicant has worked with owner of Lot 2.	
Item 6	Parking Table	Resolved?
Notes	See attached redlines, please update Site Plan	☒ YES ☐ NO ☐ SEE ATTACHED
Applicant Response	Parking table has been updated.	

Notes	No further comment, applicant has resolved comment.	
Item 7	TIS LOS F- Site Access	Resolved?
Notes	Please see Traffic Engineering Comment # 1 and #3 below. Applicant to make minor technical adjustments to Variance Request Letter.	☐ YES ☒ NO ☐ SEE ATTACHED
Applicant Response		
Item 7	Referral Comments	Resolved?
Notes	Applicant to provide response to all received referral/stakeholder comments. - Remaining stakeholder comments from Windsor Severance Fire Rescue must be finalized. - Occupancy Loads - Hydrant Flow Testing	☒ YES ☐ NO ☐ SEE ATTACHED
Applicant Response	Responses provided	
Notes	No further comment, applicant has provided referral responses to all stakeholder comments.	

Town Management – Nick Wharton & Lindsay Radcliff-Coombes, Town Management , Town of Severance

Item 1	No Comment	Resolved?
Notes	No additional comments at this time	☒ YES ☐ NO ☐ SEE ATTACHED
Applicant Response		
Notes		

Planning – Josh Olhava & Logan Graves, Community Planner , Ayres Associates

Item 1	Landscaping	Resolved?
Notes	1. Current shrub selections of <i>Cornus sericea</i>, <i>Perovskia atriplicifolia</i>, and <i>Syringa patula</i> 'Miss Kim' do not provide buffering year-round. <i>Cornus sericea</i> is one of only three main buffer plants between the proposed drive-through and residential lots, so a year-round and dense planting strip is required to screen headlight spill. 2. Ensure that there are two layers of shrubs along the road to screen headlights. 3. Please incorporate screening on the Northern edge of the property abutting the residential lots. This may require moving the drive-through or building further South. A possibility for screening may be a retaining wall with plantings on top, dense hedges, berming, etc. 4. Ensure full screening from headlights year-round for Northeastern portion of the site. This may include	☒ YES ☐ NO ☐ SEE ATTACHED

	adding a retaining wall or denser landscaping along the lot line abutting residential lot 30. - According to Code Section 16.6.20.9, a community pathway that is a minimum of ten (10) feet wide shall be located within the landscape buffer adjacent to roadways. Current plan shows a path of six (6) feet. - Please include at least one (1) shade tree per parking island. - Consider replacing unused turf on the East side of the building with a communal plaza or seating space that can be utilized by employees and patrons.	
Applicant Response	(2) Evergreen trees and shrub plantings have been added to the expanded bed adjacent to the northeastern property edge to provide a more dense planting and to further screen drive thru headlights. (2) planting layers have been added along E. Harmony Road. - Additional plantings have been added along the northern edge of drive-thru lane. Drainage and site constraints preclude the addition of a screening wall or moving drive thru or building. (2) Evergreen trees and shrub plantings have been added to the expanded bed adjacent to Lot 30. - A Variance has been requested for a 6' walk. See Item 4. Variance Request on pg. 2 of 7. - Trees have been added to islands. - East side turf area has been modified to reduce turf. More plaza space has been considered, but the current configuration works best.	
Notes	No further comments	
Item 2	Parking & Access	Resolved?
Notes	- Bike parking for commercial uses should be conveniently located on site. Placement should be carefully considered to minimize pedestrian conflicts. - The ingress portion of the access is located on the adjacent lot to the east. The applicant must provide documentation allowing for the shared access. - The access with the drive-thru adjacent appears to be challenging configuration and could result in cars backing-up into the street. Applicant should consider other arrangements/ alignments.	☒ YES ☐ NO ☐ SEE ATTACHED
Applicant Response	- Bike parking has been added to plaza space. - The access has an access easement that will be utilized to enter the site. - The layout has been considered and this alignment worked best with site constraints.	
Notes	No further comments	
Item 3	Lighting	Resolved?
Notes		☒ YES

	1. Dark sky compliant lighting will be very important given the proximity of the residential lots. Staff would like the applicant to use a softer white bulb temperature (3500K) and have the lights dim at late night hours.	☐ NO ☐ SEE ATTACHED
Applicant Response	Softer white bulbs will be used	
Notes	No further comments	
Item 4	Refuse	Resolved? ☒ YES ☐ NO ☐ SEE ATTACHED
Notes	1. Refuse enclosures should be located out of or shielded public view. Either relocate the refuse enclosure to a location out of sight from the main road or enhance screening buffers so that it is not as visible when entering the site.	
Applicant Response	Refuse area was talked about with the owner and the architect and it was decided that it was more important to have it closer to the building rather than further away and across a drive aisle.	
Notes	No further comments	Resolved? ☒ YES ☐ NO ☐ SEE ATTACHED
Item 5	Elevations	
Notes	1. Incorporate awnings into the front-facing (southern) façade. Open-ended white or metal awnings are preferred. Vinyl awnings are not appropriate. Awnings should be mounted to highlight moldings that may be found above the storefront or to fit within a sign panel that may be part of the façade design. 2. Building design should incorporate agrarian features which may include: steeply pitched roof planes, dormer windows, or building shapes similar to barns, silos, and stables. 3. Increase visual interest on rear-facing (northern) building façade. Possible incorporations include: windows, awnings, fluctuating rooflines, unique architectural features, etc. Ensure adequate transparency on this façade as well.	
Applicant Response	Elevation comments have been addressed	
Notes	No further comments	

Civil Engineering – Chris Messersmith & Amber Messersmith , P.E , Colorado Civil Group, Inc.

Item 1	See attached Memo and Redlines	Resolved? ☐ YES ☒ NO
Notes	Engineering Comment Memo and Redlines are included in the dropbox link:	

	https://www.dropbox.com/scl/fo/mequs612qj3uj2dr2m9qe/h?dl=0&rlkey=luqmv0rbqk2mte3euo9gm7y7e	☒ SEE ATTACHED
Applicant Response		
Notes		
Item 2	Potable Water	Resolved?
Notes	The potable water for this project will be provided by the Town of Severance. This anticipated demand ranges from 1,659 gallons per day (GPD) (average day demand) to 5,891 GPD (max day demand) based on utility records for an existing Ziggi's location and the proposed irrigation usage provided on the Landscape Plan. These projections include the two (2) additional 1,250 SF tenant spaces for future use. Town staff will provide additional water system capacity information at the Planning Commission and Town Council meetings.	☒ YES ☐ NO ☐ SEE ATTACHED
Applicant Response		
Notes		
Item 3	Sanitary Sewer	Resolved?
Notes	The wastewater from this project will be directed to the Town of Severance Wastewater Treatment Facility (WWTF). This project is expected to contribute 1,659 gallons per day (GPD) (average day demand) of wastewater to 4,868 GPD (max day demand) of wastewater, based on utility records for an existing Ziggi's location. These projections include the two (2) additional 1,250 SF tenant spaces for future use. In 2023, the WWTF operated at maximum of 94.3% of the permitted capacity. The WWTF remaining capacity is 8,796± GPD, which can accommodate this project.	☒ YES ☐ NO ☐ SEE ATTACHED
Applicant Response		
Notes		
Item 4	Water Dedication	Resolved?
Notes	The Town's water dedication is based on Equivalent Residential Units (ERU) and the associated water meter size. One (1) Equivalent Residential Unit (ERU) provides a maximum of 205,000 gallons/year. The Total Average Demand of 701,326 gallons/year equates to 3.42 ERU's. Per the SMC Section 13-1-120, a 1.5" water meter requires 5.0 Equivalent Residential Units (ERU) to be dedicated to the Town. The Utility Report and Site Plan Set call out a 1.5" water meter for this building.	☐ YES ☒ NO ☐ SEE ATTACHED
Applicant Response		
Notes	To be handled in Development Agreement	
Item 5	Site Plan - Encroachment	Resolved?
		☐ YES

Notes	A portion of the private improvements (parking lot) encroaches in the public road ROW of E Harmony Rd (WCR 74). The encroachment does not impede the widening of E Harmony Rd (WCR 74) to the ultimate section of 4 lanes of through traffic. As shown, when E Harmony Rd (WCR 74) is widened to the ultimate section the standard 24' landscape strip would be reduced to 10' along this property and the 6' sidewalk would be located approximately 14' inside the ultimate ROW instead of along the ROW. Engineering does not have an issue with the encroachment.	☒ NO ☐ SEE ATTACHED
Applicant Response		
Notes	To be handled in Development Agreement	

Traffic Engineering – Eli Farney, P.E, PTOE, JR Engineering, LLC

Item 1	LOF F at Site Access	Resolved?
Notes	The TIS shows a LOS F for the southbound left (SBL) at E Harmony Road and the site access in 2042. This will require a variance request from the Town's TIS criteria and TMP. Please submit a variance request letter to the Town for review.	☐ YES ☒ NO ☐ SEE ATTACHED
Applicant Response	A variance request has been included with this submittal.	
Notes	Please see Item #3 below. Variance Submitted but needs minor revisions.	
Applicant Response		
Notes		
Item 2	Future Access Control	Resolved?
Notes	The Town will need the ability to provide access control in the future if there are safety issues at E Harmony Road and the site access. Appropriate language will be included in the Developer Agreement.	☒ YES ☐ NO ☐ SEE ATTACHED
Applicant Response	Acknowledged	
Notes	To be handled in Development Agreement.	
Item 3	Variance Request	Resolved?
Notes	The variance request should discuss what is needed to make the site access operate at an acceptable LOS. Does the access need to be a RIRO or ¾ access? Would this create a hardship for the project? Are there feasibility issues?	☐ YES ☒ NO ☐ SEE ATTACHED
Applicant Response		
Notes		

Town Attorney – Keith Martin, Attorney, Hayashi & Macsalka, LLC

Item 1	Site Plan Set	Resolved?
Notes	See annotated Site Plan set for specific comments.	☐ YES ☒ NO ☐ SEE ATTACHED
Applicant Response		
Notes		

Public Works – John Zacklene, Public Works Director, Town of Severance

Item 1	No Comment	Resolved?
Notes	The asphalt from Cr21 past Fox Ridge W/B was just put down this year. We need to keep in mind of trees planted next to sidewalks for future root issues and hanging hazards. Will there be 3-meter pits going in for the splitting of the buildings water service?	☒ YES ☐ NO ☐ SEE ATTACHED
Applicant Response	There will be one meter pit to serve all three tenants	
Notes	No further comment.	

Police – Chief Gerdeman, Chief of Police, Severance Police

Item 1	No Comment	Resolved?
Notes	No comment at this time	☒ YES ☐ NO ☐ SEE ATTACHED
Applicant Response	Acknowledged	
Notes	No further comment	

Building Department– Russ Weber, Chief Building Official, SAFEbuilt

Item 1	No Comment	Resolved?
Notes	No comment at this time	☒ YES ☐ NO ☐ SEE ATTACHED
Applicant Response	Acknowledged	
Notes	No further comment	

Please revise the plans accordingly and respond to all of the above action items in the **Applicant Response** boxes provided at your earliest convenience.

Once the project is resubmitted it will be referred out as necessary and any outstanding issues will be addressed with a comment response.

If you should have any questions, please contact me at 970-692-1556, or email.

Thank you,

A handwritten signature in black ink, appearing to read 'Abdul Barzak', with a stylized flourish at the end.

Abdul Barzak

Town Planner

abarzak@townofseverance.org

Town of Severance

3 South Timber Ridge Parkway

PO BOX 339

Severance, CO 80546

970-692-1556

TO: Mr. Nick Wharton, Severance Town Manager
Ms. Lindsay Radcliff-Coombes, Severance Deputy Town Manager
Mr. Bill Cornelius, Severance Community Development Director
Mr. Abdul Barzak, Severance Town Planner

FROM: Chris Messersmith, Colorado Civil Group, Inc.
Amber Messersmith, Colorado Civil Group, Inc.
Ed Jansury, Colorado Civil Group, Inc.

DATE: February 24, 2023

SUBJECT: Ziggi's Coffee – Site Plan

CCG PROJECT NO: 0042.0012.03

TOWN CUSTOMER ID: 284

We have completed our review of the Ziggi's Coffee (Lot 1, Red Willow Subdivision) Site Plan 3rd submittal package that was received on February 7, 2023 . The following items were included with the submittal package (typically reviewed by engineering):

- Legal Description (8 ½" x 11")
- Drainage Plan (included in Site Plan Set)
- Drainage Report
- Utility Plans (included in Site Plan Set)
- Utility Report/Memo
- Variance Request Letter - Traffic Impact Study
- Variance Request Letter – Sidewalk Width
- SWMP Report
- Site Plan Set
- Response to Comments (Engineering)
- Response to Redlined Comments (Engineering)

We offer the following engineering comments:

General:

1. The property is located at 9843 CR 74 (E Harmony Road), being Lot 1, Red Willow Subdivision except for the 20' of ROW dedicated via Special Warranty Deed Reception No. 4562490.
2. The letter of intent states that the building will be split into 2 businesses (Ziggi's Coffee Shop and an Ice Cream Shop). However, the updated Utility Report states that the building will be split into 3 tenant spaces (Ziggi's Coffee Shop 1,500 sf, a 1,250 sf unknown space, and a 1,250 sf unknown space). The plans show a single water meter and single sanitary sewer service connection. The building will need to have single ownership.

3. Potable Water – The potable water for this project will be provided by the Town of Severance. This anticipated demand ranges from 1,659 gallons per day (GPD) (average day demand) to 5,891 GPD (max day demand) based on utility records for an existing Ziggi's location and the proposed irrigation usage provided on the Landscape Plan. These projections include the two (2) additional 1,250 SF tenant spaces for future use. Town staff will provide additional water system capacity information at the Planning Commission and Town Council meetings.
4. Sanitary Sewer – The wastewater from this project will be directed to the Town of Severance Wastewater Treatment Facility (WWTF). This project is expected to contribute 1,659 gallons per day (GPD) (average day demand) of wastewater to 4,868 GPD (max day demand) of wastewater, based on utility records for an existing Ziggi's location. These projections include the two (2) additional 1,250 SF tenant spaces for future use. In 2023, the WWTF operated at maximum of 94.3% of the permitted capacity. The WWTF remaining capacity is 8,796± GPD, which can accommodate this project.

Title Commitment:

5. An updated Title Commitment prepared by Chicago Title Company was provided with an effective date of October 24, 2022 and indicates the vested owners as:

AMERICAN EAGLE PROPERTIES INC., a Colorado Corporation

Oil & Gas:

6. According to COGCC website, are no oil/gas wells located on this property.

Drainage Report:

7. A Final Drainage Report titled "Final Drainage Report for Ziggi's Coffee – Severance Lot 1, Red Willow Subdivision" prepared by TST, Inc. dated February 2023 was submitted and approved.
8. Please submit a final report with the owner's certification signed and PE signature and stamp.

Utility Report:

9. A Utility Memo titled "Red Willow Subdivision Lot 1 (Ziggi's) Utility Memo" prepared by TST dated February 2023 was provided and reviewed.
10. A summary table for the water service calculations was provided. The International Plumbing Code (IPC) was used for the calculations, which is acceptable. Please provide the water fixture count tables for each of the building units in the report for the water service sizing calculations (Ziggi's, future tenant, and future tenant). (*repeat*)
11. For the Water Demand we reviewed actual water bills from a Ziggi's located in Longmont (129 Hover St.) The Longmont café style Ziggi's is smaller whereas the Severance Ziggi's is larger and has a drive-thru. According to the Applicant there is only one bathroom difference between the buildings. It was assumed that the Longmont Ziggi's had no irrigation usage. The Domestic Water usage from 2018-2022 was averaged. We assumed the future tenant spaces will have the same water usage as Ziggi's per building square foot. We calculated the following:

- Total Building Domestic Average Demand = 605,173 gallons/year
- Estimated Irrigation Demand (per Landscape Plan) = 93,153 gallons/year
- Total Average Demand = **701,326 gallons/year**

12. Water Dedication – The Town’s water dedication is based on Equivalent Residential Units (ERU) and the associated water meter size. One (1) Equivalent Residential Unit (ERU) provides a maximum of 205,000 gallons/year. The Total Average Demand of 701,326 gallons/year equates to 3.42 ERU’s. Per the SMC Section 13-1-120, a 1.5” water meter requires 5.0 Equivalent Residential Unit (ERU) to be dedicated to the Town. The Utility Report and Site Plan Set call out a 1.5” water meter for this building.
13. Refer to report for minor redline comments. Please revise and resubmit. The final utility memo needs to be stamped and signed by a P.E.

Traffic Study:

14. The Traffic Impact Study (TIS) titled “Ziggi’s Coffee Traffic Impact Study” prepared by Sustainable Traffic Solutions, Inc. dated December 9, 2022 was previously provided. A TIS Variance Request Letter dated February 6, 2023 was submitted regarding the LOS.

Geotechnical Report:

15. A Geotechnical Report titled “Geotechnical Exploration Letter Harmony Centre Severance, Colorado” prepared by Olsson dated July 22, 2019 revised September 23, 2019 was submitted. This Geotechnical Letter is an Addendum Letter to the Harmony Centre Geotechnical Report dated December 24, 2018 regarding the widening of WCR 74. The 2018 Soils Report and 2019 Addendum Letter were previously reviewed.

Site Plan:

16. Sheet 4 (Site Plan, Encroachment) – A portion of the private improvements (parking lot) encroaches in the public road ROW of E Harmony Rd (WCR 74). The encroachment does not impede the widening of E Harmony Rd (WCR 74) to the ultimate section of 4 lanes of through traffic. As shown, when E Harmony Rd (WCR 74) is widened to the ultimate section the standard 24’ landscape strip would be reduced to 10’ along this property and the 6’ sidewalk would be located approximately 14’ inside the ultimate ROW instead of along the ROW. Engineering does not have an issue with the encroachment.
17. Sheet 4 (Site Plan, Site Access) – The site access is an existing private access created for the adjacent lot which contains the Dollar General Store. Refer to Town Attorney Comments. Site access modifications and construction need to be coordinated with Dollar General.
18. Sheet 6 (Utility Plan) – The plan shows a proposed 1.5-inch water service and meter and connection to the existing 4-inch sanitary sewer service stub-out. Utility connections are off utilities in E Harmony Rd (WCR 74).
19. If the disturbed area of the project is greater than 1-acre, the Applicant will need to prepare a SWMP report and obtain a CDPHE permit prior to construction. A SWMP report was included with this submittal.
20. Sheet 13 (Landscape Plan) – Call out the POC (point of connection) for the irrigation system, which must be downstream of the water meter (*repeat*).

21. Sheets 9-10 (Water Details) – The City of Greeley has updated their Water and Sewer Design Criteria and Construction Specifications as of January 2023. The Town of Severance needs to review the updated 2023 City of Greeley details and determine which details are appropriate for this project.
22. Sheet 11 (Detail) - Add a pavement section detail for the Recommend Pavement Thickness for E Harmony Rd per Table 4 & 5 of the Geotechnical Report titled “Geotechnical Exploration Letter Harmony Centre Severance, Colorado” prepared by Olsson dated July 22, 2019 revised September 23, 2019. *(repeat)*
23. Refer to the Site Plan redlines for any additional comments.

Additional comments can be found on the document redlines, which are listed below and included in the dropbox link below:

<https://www.dropbox.com/scl/fo/mequs612qj3uj2dr2m9qe/h?dl=0&rlkey=luqmv0rbqk2mte3euo9gm7y7e>

- 0042.0012.03 CD-SP 3rdRedlines_(2023.02.24).pdf
- 0042.0012.03 UR Redlines_(2023.02.24).pdf

Please let us know if you have any questions or comments regarding this memo. We would be willing to meet with the applicant to review these comments.



July 6, 2022

Ziggy's Drive Thru-Severance – Letter of Intent
Project No. 1076.0005

This project is situated on Lot 1 of the Red Willow Subdivision, located west of the intersection of Weld County Road 21 and the Weld County Road 74. Zoned as Suburban Perimeter and consisting of 0.74 acres, this project will include a 4,036 sf building divided into a 2000sf Ziggy's Drive Thru coffee shop and a 2000sf ice cream shop. The Ziggy's Coffee shop, located on the west end of the building, will utilize a drive thru lane running alongside the east, north and west side of the building with the order sign situated along the northern leg of the drive-thru lane and a service window located on the western side of the building.

Off street parking is provided for patrons with a total of 27 total parking spots. As required by Severance Code, two accessible spaces have also been provided.

Access to the site will be provided from an existing connection to West 4th Street / CR 74. This access is shared with the existing Dollar General Store, located to the east of the project site. There is currently a Traffic Impact Study in progress to account for the traffic generated by this project. The report will be provided to the Town when it is completed. Pedestrian access will be provided from the proposed walk running along the south side of the property.

Utilities are to be extended north from existing water and sanitary sewer services running along West 4th Street / CR 74.

Landscaping along West 4th Street / CR 74 is designed to provide shade to proposed sidewalk users with shade trees and screen headlights from the proposed parking lot with evergreen shrub material. Evergreen screening has also been provided along the western edge of the drive thru lane to screen headlights as customers utilize the drive thru lane. Finally, native seeding will cover open space in the interim area between existing road conditions for 4th Street / CR 74 and the ultimate road condition.

If there are any questions, concerns, or if additional information is required, please feel free to contact me.

Sincerely,

TST, INC. CONSULTING ENGINEERS

Paul D. Bass, ASLA

748 Whalers Way
Suite 200
Fort Collins, CO 80525
970.226.0557 main
970.226.0204 fax

ideas@tstinc.com
www.tstinc.com

ZIGGI'S SEVERANCE SITE PLAN

LOT 1 RED WILLOW SUBDIVISION SITUATE IN SECTION 34, TOWNSHIP 7 NORTH,
RANGE 67 WEST, OF THE 6TH P.M;
TOWN OF SEVERANCE, COUNTY OF WELD, STATE OF COLORADO

JANUARY 2023

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ABBREVIATIONS

AC-FT	ACRE FEET
ASSY.	ASSEMBLY
B.O.	BLOW OFF
B.V.C.	BEGIN VERTICAL CURVE
DIA	DIAMETER
ESMT	EASEMENT
E.V.C.	END VERTICAL CURVE
FES	FLARED END SECTION
F.H.	FIRE HYDRANT
FL	FLOW LINE
FG	FINISHED GRADE
GTV	GATE VALVE
H.D.P.E.	HIGH DENSITY POLYETHYLENE PIPE
HP	HIGH POINT
IN	INCH
INV	INVERT
L	LEFT
L.F.	LINEAL FEET
LP	LOW POINT
M.H.	MANHOLE
MIN.	MINIMUM
M.R.J.	MECHANICALLY RESTRAINED JOINT
N.T.S.	NOT TO SCALE
P.C.	POINT OF CURVATURE
P.I.	POINT OF INTERSECTION
P.R.C.	POINT OF REVERSE CURVE
P.T.	POINT OF TANGENCY
P.V.C.	POLY VINYL CHLORIDE PIPE
P.V.I.	POINT OF VERTICAL INTERSECTION
PKG	PARKING
R	RADIUS
R.O.W.	RIGHT OF WAY
SEWER	SANITARY SEWER
S	SLOPE
STA.	STATION
ST-X	STORM SEWER
T.B.	THRUST BLOCK
T.O.P.	TOP OF PIPE
T.R.M.	TURF REINFORCEMENT MAT
TYP.	TYPICAL
W/	WITH
W/L	WATER LINE
V.C.	VERTICAL CURVE

LEGEND

EXISTING FIRE HYDRANT	
EXISTING 5' CONTOUR	
EXISTING 1' CONTOUR	
EXISTING RIGHT-OF-WAY	
EXISTING CABLE TV	
EXISTING ELECTRIC	
EXISTING FIBER OPTIC	
EXISTING GAS	
EXISTING IRRIGATION	
EXISTING OVERHEAD ELECTRIC	
EXISTING SANITARY SEWER	
EXISTING STORM DRAIN	
EXISTING TELEPHONE	
EXISTING UTILITY PEDESTAL/VAULT	
EXISTING WATER W/ VALVE	
EXISTING EASEMENT	
PROPOSED EASEMENT	
PROPOSED RIGHT-OF-WAY	
PROPOSED 1' CONTOUR	
PROPOSED 5' CONTOUR	
PROPOSED FLOW ARROW	
TOP OF FOUNDATION ELEVATION	TOF=51.13
FINISHED GRADE	F.G.=50.63
PROPOSED SWALE CROSS-SECTION	
PROPOSED FIRE HYDRANT	
PROPOSED WATER LINE	
PROPOSED WATER SERVICE	
PROPOSED THRUST BLOCK	
PROPOSED WATER VALVE	
PROPOSED IRRIGATION LINE	
PROPOSED IRRIGATION SERVICE	
PROPOSED STORM LINE W/MANHOLE	
PROPOSED STORM INLET	
PROPOSED SANITARY SEWER W/MANHOLE	
PROPOSED SANITARY SEWER SERVICE W/MANHOLE	
PROPOSED WATTLE	
PROPOSED CURB INLET FILTER	
PROPOSED RIPRAP PAD	
PROPOSED VEHICLE TRACKING CONTROL PAD	
PROPOSED SILT FENCE	
DRAINAGE BASIN	
X = AREA, ACRES	
AB-C = BASIN NUMBER	
Y = 100-YR RUNOFF COEFFICIENT "C"	
PROPOSED DRAINAGE DESIGN POINT	
PROPOSED BASIN BOUNDARY	



VICINITY MAP
NOT TO SCALE

APPLICANT/ OWNER

JERRY HELGESON
JHELGESON@BUDHOUSEAED.COM
AMERICAN EAGLE PROPERTIES, INC.
740 DOCE LANE
WINDSOR, CO 80550
(970) 381-2500

ENGINEERING & SURVEYING

JON SWEET
JSWEET@TSTINC.COM
TST, INC. CONSULTING ENGINEERS
748 WHALERS WAY, SUITE 200
FORT COLLINS, CO 80525
(970) 226-0557

PROJECT ADDRESS

9843 COUNTY ROAD 74
SEVERANCE, CO 80550

PROJECT BENCHMARK

A 2.5" ALUMINUM CAP STAMPED LS 12374 AT THE SOUTHEAST CORNER OF SECTION 34
NAVD 88 - ELEV. 4938.86

FLOOD ZONE

THIS PROPERTY LIES IN ZONE X, AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL
CHANCE FLOODPLAIN. FEMA FIRM PANEL 08123C1213E, DATED JANUARY 20, 2016

BASIS OF BEARINGS

THE SOUTH LINE OF THE SOUTHEAST QUARTER OF SECTION 34, TOWNSHIP 7 NORTH, RANGE
67 WEST OF THE SIXTH PRINCIPAL MERIDIAN, BEING MONUMENTED AS SHOWN HERON IS
ASSUMED TO BEAR S89°40'27"W A DISTANCE OF 2634.31 FEET.

OWNER APPROVAL:

THIS UNDERSIGNED OWNER HAS REVIEWED AND APPROVES THE PROPOSED IMPROVEMENTS SHOWN IN THIS SET OF DRAWINGS.

REVIEWED THIS _____ DAY OF _____, 20__.

OWNER

PLANNING COMMISSION APPROVAL

RECOMMENDED FOR APPROVAL THIS _____ DAY OF _____, 20__.

CHAIRMAN,
SEVERANCE PLANNING COMMISSION

TOWN PLANNING REVIEW

REVIEWED THIS _____ DAY OF _____, 20__.

TOWN PLANNER

WINDSOR SEVERANCE FIRE RESCUE APPROVAL:

REVIEWED THIS THE _____ DAY OF _____, 20__.

FIRE MARSHAL

TOWN ENGINEER'S REVIEW:

CONSTRUCTION MUST BE IN ACCORDANCE WITH APPLICABLE TOWN OF SEVERANCE CONSTRUCTION STANDARDS. THE
TOWN'S ACCEPTANCE ALLOWS FOR PLAN DISTRIBUTION AND PERMIT APPLICATION. THE TOWN'S ACCEPTANCE SHALL
NOT RELIEVE THE DESIGN ENGINEER'S RESPONSIBILITY FOR ERRORS, OMISSIONS, OR DESIGN DEFICIENCIES FOR
WHICH THE TOWN IS HELD HARMLESS.

REVIEWED THIS THE _____ DAY OF _____, 20__.

TOWN ENGINEER

TOWN COUNCIL CERTIFICATE:

THIS IS TO CERTIFY THAT THE SITE PLAN WAS APPROVED ON THE _____ DAY OF _____, 20__, BY
RESOLUTION NO. _____, PASSED AND ADOPTED AT THE REGULAR MEETING OF THE TOWN COUNCIL OF THE
TOWN OF SEVERANCE, HELD ON THIS _____ DAY OF _____, 20__, AND MAY BE FILED WITH THE
CLERK AND RECORDER OF WELD COUNTY.

MAYOR

ATTEST:

TOWN CLERK

LEGAL DESCRIPTION

LOT 1, RED WILLOW SUBDIVISION. TOWN OF SEVERANCE, COUNTY OF WELD,
STATE OF COLORADO. EXCEPT THOSE PORTIONS DESCRIBED IN DEEDS RECORDED
NOVEMBER 25, 2019 AT RECEPTION NO. 4544309 AND JANUARY 30, 2020 AT
RECEPTION NO. 4562490.

WATER DEDICATION

SEE WATER DEDICATION REQUIREMENTS SUMMARY TABLE FOR THE NUMBER OF EQUIVALENT RESIDENTIAL UNITS (ERU) OF WATER REQUIRED FOR
DEVELOPMENT OF LOT. NO BUILDING PERMITS SHALL BE ISSUED UNLESS AND UNTIL THE TOWN BECOMES TITLED OWNER OF ALL WATER RIGHTS
REQUIRED FOR DEVELOPMENT. IF, IN THE FUTURE, THE ACTUAL ANNUAL WATER NEEDS OF DEVELOPMENT EXCEED THE PROJECTED WATER
DEDICATION REQUIREMENT FOR DEVELOPMENT, THEN THE TOWN RESERVES THE RIGHT TO REQUIRE OWNER TO ACQUIRE AND DEDICATED
ADDITIONAL WATER RIGHTS IN AN AMOUNT TO MAKE UP FOR ANY SHORTFALL AND IN A FORM SOLELY DETERMINED BY THE TOWN.

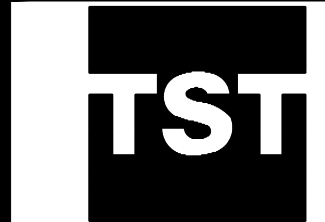
WATER DEDICATION REQUIREMENT SUMMARY TABLE								
COVERAGE	AREA (SF)	USE	DEMAND TYPE	ESTIMATED WATER DEMAND (gallons/year)	ESTIMATED TOTAL WATER DEMAND (gallons/year)	WATER METER SIZE	CALCULATED ERU ¹	REQUIRED ERU ²
Building - Unit 1	1,500	Ziggi's - Commercial	Domestic In-Building	226,940	701,327	1.5"	3.42	5
Building - Unit 2	1,250	Future - Commercial	Domestic In-Building	189,117				
Building - Unit 3	1,250	Future - Commercial	Domestic In-Building	189,117				
Irrigated Landscaping	18,371		Irrigation	96,153				

¹ Calculated ERU is based on One(1) ERU equal to 205,000 gallons/year

² Required ERU per SMC 13-1-120

ZIGGI'S SEVERANCE SITE PLAN

COVER SHEET



TST, INC.
CONSULTING ENGINEERS
748 Whalers Way
Suite 200 Fort Collins
Colorado 80525
Phone: 970.226.0557

JOB NO. 1076.0005.00

SCALE N.T.S.

DATE JANUARY 2023

SHEET

1 of 15

2/7/2023 8:59 AM

GENERAL NOTES:

1. ALL WORK WITHIN THE PUBLIC RIGHT-OF-WAY AND/OR EASEMENT AND ALL ON-SITE UTILITY WORK SHALL CONFORM TO THE TECHNICAL SPECIFICATIONS AND DESIGN CRITERIA FOR PUBLIC IMPROVEMENT PROJECTS OF THE TOWN OF SEVERANCE AND THE GRANTOR OF THE EASEMENT.
2. ALL MATERIALS AND WORKMANSHIP SHALL BE IN CONFORMANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF THE APPROPRIATE GOVERNING AGENCY. THE CONTRACTOR SHALL HAVE IN HIS POSSESSION AT ALL TIMES (1) SIGNED COPY OF THE PLANS, STANDARDS, AND SPECIFICATIONS AS APPROVED BY THE APPROPRIATE GOVERNING AGENCY. THE CONTRACTOR SHALL OBTAIN WRITTEN APPROVAL FOR ANY VARIANCE TO THE ABOVE DOCUMENTS.
3. THE CONTRACTOR SHALL OBTAIN, AT HIS OWN EXPENSE, ALL APPLICABLE CODES, LICENSES, STANDARDS, PERMITS, BONDS ETC. WHICH ARE NECESSARY TO PERFORM THE PROPOSED WORK.
4. THE EXISTING UTILITY LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE AND MAY NOT INCLUDE ALL LINES PRESENT. THE CONTRACTOR WILL BE RESPONSIBLE FOR CALLING THE UTILITY NOTIFICATION CENTER OF COLORADO AT 1-800-922-1987 AND COORDINATING FIELD LOCATIONS OF EXISTING UNDERGROUND UTILITIES PRIOR TO BEGINNING GRADING AND UTILITY WORK.
5. LOCATIONS AND ELEVATIONS OF EXISTING IMPROVEMENTS TO BE MET (OR AVOIDED) BY WORK TO BE DONE SHALL BE CONFIRMED BY THE CONTRACTOR THROUGH FIELD EXPLORATIONS PRIOR TO CONSTRUCTION. CONTRACTOR SHALL REPORT TO THE ENGINEER ANY DISCREPANCIES BETWEEN HIS MEASUREMENTS AND THESE PLANS.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING THE APPROPRIATE FIRE DEPARTMENT OF ALL STREET CLOSURES AND EXISTING FIRE HYDRANTS TAKEN OUT OF SERVICE AT LEAST 48 HOURS PRIOR TO CONSTRUCTION.
7. ANY CONSTRUCTION DEBRIS OR MUD DROPPED INTO MANHOLES, INLETS, PIPES OR TRACKED ONTO EXISTING ROADWAYS SHALL BE REMOVED IMMEDIATELY BY THE CONTRACTOR. THE CONTRACTOR SHALL REPAIR ANY EXCAVATIONS OR PAVEMENT FAILURES CAUSED BY HIS CONSTRUCTION. THE CONTRACTOR SHALL PROPERLY BARRICADE THE CONSTRUCTION SITE UNTIL CONSTRUCTION COMPLETE.
8. PRIOR TO BEGINNING THE WORK, THE CONTRACTOR SHALL OBTAIN ANY WRITTEN AGREEMENTS FOR INGRESS AND EGRESS TO THE WORK FROM ADJACENT PRIVATE PROPERTY OWNERS. ACCESS TO ANY ADJACENT PRIVATE PROPERTY SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS NOT OBTAINED BY THE OWNER OR OWNER'S REPRESENTATIVES AND PAY ALL FEES AS REQUIRED BY THE CONSTRUCTION COVERED IN THESE PLANS.
10. EXCEPT FOR MATERIALS DESIGNED TO BE RELOCATED ON THIS PLAN, ALL OTHER CONSTRUCTION MATERIALS SHALL BE NEW.
11. NO WORK SHALL BE BACKFILLED (INCLUDING BEDDING MATERIAL ABOVE THE SPRING LINE OF THE PIPE) UNTIL THE CONSTRUCTION HAS BEEN INSPECTED AND APPROVED FROM BACKFILLING BY THE APPROPRIATE GOVERNING AGENCY.
12. ALL WORK AND MATERIALS WILL BE SUBJECT TO INSPECTION AND APPROVAL BY THE OWNER OR THE OWNER'S REPRESENTATIVE.
13. SHOP DRAWINGS AND MATERIAL SPECIFICATIONS SHALL BE SUBMITTED TO OWNER OR THE OWNER'S REPRESENTATIVE.
14. ALL WORK SHALL CONFORM TO ALL LOCAL, STATE, AND FEDERAL APPLICABLE LAWS AND REGULATIONS.
15. ALL ESTIMATES OF QUANTITIES ARE FOR INFORMATIONAL PURPOSES ONLY. CONTRACTOR AND SUBCONTRACTORS SHALL BE RESPONSIBLE FOR DETERMINING ALL QUANTITIES. CONTRACTOR SHALL PROVIDED ALL WORK AND MATERIALS AS SHOWN ON THESE PLANS.
16. THE CONTRACTOR SHALL BE RESPONSIBLE FOR JOB SITE SAFETY OF HIS OWN PERSONNEL, ALL VISITORS TO THE SITE, AND THE GENERAL PUBLIC INCLUDING, BUT NOT LIMITED TO, TRENCH EXCAVATION AND SHORING, TRAFFIC CONTROL, AND SECURITY NOT LIMITED TO NORMAL WORKING HOURS.
17. THE CONTRACTOR SHALL BE RESPONSIBLE REPAIRING ALL EXISTING FEATURES TO REMAIN THAT ARE DAMAGED DURING CONSTRUCTION ACTIVITIES TO EQUAL OR BETTER CONDITION, AT HIS OWN EXPENSE.
18. CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ALL SITE IMPROVEMENTS (INCLUDING BUT NOT LIMITED TO: UTILITIES, STRUCTURES, PAVING, LANDSCAPING, ETC.) SUCH THAT NO DAMAGE IS DONE TO SITE IMPROVEMENTS (I.E.: SAWCUTTING NEW PAVEMENT). SITE IMPROVEMENTS DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE OWNER AT NO ADDITIONAL COST TO THE OWNER.
19. IF, DURING CONSTRUCTION PROCESS, CONDITIONS ARE ENCOUNTERED WHICH COULD INDICATE THAT A PRIOR UNIDENTIFIED SITUATION IS PRESENT, THE CONTRACTOR SHALL CONTACT THE ENGINEER IMMEDIATELY.
20. THE CONTRACTOR SHALL REMOVE ALL DEBRIS RESULTING FROM WORK UNDER THIS CONTRACT TO AN APPROVED DUMP SITE.
21. DIMENSIONS SHOWN ON THE PLANS ARE TO FACE OF CURB LINE IN CURBED AREA AND EXTERIOR FACE OF BUILDING, AND TO CENTERLINE OF UTILITIES, UNLESS OTHERWISE SPECIFIED.
22. USE ONLY DIMENSIONS PROVIDED ON THESE PLANS. DO NOT SCALE DRAWINGS. INFORM ENGINEER IF ANY DISCREPANCIES AND/OR MISSING INFORMATION.
23. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ACCESS TO ADJACENT PARCELS DURING ALL HOURS OF OPERATION FOR THE BUSINESSES LOCATED ON THOSE PARCELS.
24. CONTRACTOR TO OBTAIN TEMPORARY POWER, TELEPHONE AND WATER FOR THE SITE.
25. CONTRACTOR TO REFER TO DRAWINGS ISSUED BY THE ARCHITECT, TO ENSURE COORDINATION OF EXACT LOCATION AND DIMENSIONS OF BUILDING EXITS, RAMPS, TRUCK DOCKS, UTILITY ENTRANCE LOCATIONS AND GRADES AROUND THE BUILDING. IMMEDIATELY NOTIFY ENGINEER AND ARCHITECT OF ANY DISCREPANCIES.
26. REFER TO ARCHITECTURAL DRAWINGS FOR ALL IMPROVEMENTS BETWEEN THE BUILDING AND THE SIDEWALK SURROUNDING THE BUILDING.
27. CONTRACTOR MUST COORDINATE CONSTRUCTION WITH OWNER AND ADJACENT LOT OWNER/CONSTRUCTION MANAGER
28. THE CONTRACTOR SHALL OBTAIN A COPY OF THE STANDARD SPECIFICATIONS AND DETAILS OF ALL AGENCIES EXERCISING JURISDICTION OVER THIS PROJECT. A COPY OF THESE SPECIFICATIONS AND DETAILS SHALL BE MAINTAINED ON THE JOBSITE AT ALL TIMES. A COPY OF ALL APPLICABLE STANDARD DETAILS AND SPECIFICATIONS ARE INCORPORATED HEREIN BY REFERENCE.
29. THE CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING ADJACENT CITY STREETS FREE AND CLEAN OF ALL DEBRIS AND DIRT FROM JOB SITE.

GRADING:

1. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTION OF ALL PROPERTY CORNERS. ANY PROPERTY CORNERS DISTURBED OR DAMAGED BY GRADING ACTIVITIES SHALL BE RESET BY A PROFESSIONAL LAND SURVEYOR LICENSED IN THE STATE OF COLORADO, AT THE CONTRACTORS EXPENSE.
2. THE CONTOUR LINES AND BUILDING FLOOR ELEVATIONS SHOWN ARE TO FINISH GRADE FOR SURFACE OF PAVEMENT, TOP OF SIDEWALKS AND CURBS, TOP OF FLOOR SLABS, ETC. ALL SPOT ELEVATIONS SHOWN ARE TO FLOWLINE UNLESS OTHERWISE INDICATED. REFER TO TYPICAL SECTIONS FOR MULCH, SOD, PAVING, SLAB AND AGGREGATE BASE THICKNESS TO DEDUCT FOR GRADING LINE ELEVATIONS.
3. TOP OF CURB AND SIDEWALK ELEVATIONS AT LOCATIONS OTHER THAN THE SIDEWALK AROUND THE BUILDING SHALL BE 0.5' ABOVE CUTTER ELEVATIONS OTHERWISE NOTED. IN AREAS WITH SIDEWALK ABUTTING BACK OF CURB, TOP OF CURB ELEVATIONS SHALL BE EQUAL TO SIDEWALK ELEVATIONS.
4. THE CONTRACTOR SHALL FINISH GRADE SLOPES AS SHOWN NO STEEPER THAN ON FOOT VERTICAL IN FOUR FEET HORIZONTAL, UNLESS OTHERWISE NOTED.
5. CONTRACTOR SHALL GRADE LANDSCAPED AREAS TO PROVIDE POSITIVE DRAINAGE AWAY FROM BUILDINGS AND SIDEWALKS WHEN FINISH LANDSCAPE MATERIALS ARE IN PLACE.
6. THE CONTRACTOR SHALL CLEAN OUT ALL EXISTING AND PROPOSED INLETS, PIPES AND MANHOLES OF DEBRIS AND SEDIMENT AT COMPLETION OF SITEWORK. THIS WORK SHALL BE DONE TO THE SATISFACTION OF THE OWNER, AT CONTRACTOR EXPENSE.
7. CONTRACTOR SHALL COORDINATE TESTING ACTIVITIES WITH THE GEOTECHNICAL ENGINEER.
8. ALL GRADING, COMPACTION, AND PAVEMENT CONSTRUCTION WILL BE IN ACCORDANCE WITH RECOMMENDATIONS FROM THE GEOTECHNICAL INVESTIGATION. (SEE GEOTECHNICAL REPORT NOTE, THIS SHEET)

EROSION & SEDIMENT CONTROL:

1. THIS PROJECT REQUIRES A PERMIT FOR STORMWATER DISCHARGE ASSOCIATED WITH CONSTRUCTION ACTIVITY FROM THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT. CONTRACTOR TO COMMENCE WORK ON THIS SITE ONLY AFTER AN ACTIVE PERMIT NUMBER HAS BEEN OBTAINED FROM THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT.
2. THE CONTRACTOR SHALL OBTAIN AND ~~READ THE STORMWATER~~ MANAGEMENT PLAN (SWMP) PREPARED BY (xxxxxxx)FOR THIS PROJECT. THE CONTRACTOR SHALL ENSURE THAT A COPY OF THIS PLAN IS ON-SITE AT ALL TIMES AND THAT PERMIT COVERAGE IS APPLIED FOR PRIOR TO THE START OF CONSTRUCTION.
3. THE CONTRACTOR SHALL INSTALL EROSION/SEDIMENTATION CONTROLS PRIOR TO ANY SITE PREPARATION WORK (E.G., CLEARING, GRUBBING, OR EXCAVATION).
4. THE PLACEMENT OF EROSION/ SEDIMENTATION CONTROLS SHALL BE IN ACCORDANCE WITH THE EROSION CONTROL PLAN PREPARED FOR THE PROJECT.
5. CONTRACTOR TO ADJUST EROSION CONTROL MEASURES AS NEEDED FOR VARIOUS PHASES OF WORK.
6. CONTRACTOR TO ENSURE THAT NO DIRT AND SEDIMENT IS TRACKED ONTO ADJACENT STREETS AND WATERWAYS.
7. A GROUNDWATER DISCHARGE PERMIT IS REQUIRED FROM THE STATE ENGINEER'S OFFICE, PRIOR TO PUMPING IT OUT.
8. GROUNDWATER SHALL BE SAMPLED AND SENT TO AN APPROVED LABORATORY FOR TESTING PRIOR TO BEING DISCHARGED. TESTING SHALL BE IN ACCORDANCE WITH PERMIT FOR STORMWATER DISCHARGE AND ANY TOWN OF SEVERANCE REQUIREMENTS.
9. APPROVED EROSION AND SEDIMENT CONTROL "CONTROL MEASURES" (CMS) SHALL BE MAINTAINED AND KEPT IN GOOD REPAIR FOR THE DURATION OF THIS PROJECT. AT A MINIMUM, THE CONTRACTOR SHALL INSPECT ALL CMS EVERY 14 DAYS, AND AFTER ALL SIGNIFICANT PRECIPITATION EVENTS I.E. RAINFALL, SNOWMELT. ALL NECESSARY MAINTENANCE AND REPAIR ACTIVITIES SHALL BE COMPLETED WITHIN TWENTY-FOUR (24) HOURS AFTER DIRECTION BY THE CITY INSPECTOR. ACCUMULATED SEDIMENT AND CONSTRUCTION DEBRIS SHALL BE REMOVED WEEKLY FROM ALL CMS, OR AT AN TIME THAT SEDIMENT OR CONSTRUCTION DEBRIS ADVERSELY IMPACTS THE FUNCTIONING OF THE CMS.
10. TOPSOIL SHALL BE STOCKPILED WITHIN LIMITS OF CONSTRUCTION FOR USE ON AREAS TO BE RE-VEGETATED. ANY AND ALL STOCKPILES SHALL BE PLACED IN AN APPROVED LOCATION AND PROTECTED FROM EROISVE ELEMENTS USING MEASURES SPECIFIED IN THE EROSION CONTROL PLAN.
11. SOILS THAT WILL BE STOCKPILED FOR MORE THAN THIRTY (30) DAYS SHALL BE MULCHED AND SEEDED WITH A TEMPORARY OR PERMANENT GRASS COVER WITHIN FOURTEEN (14) DAYS OF STOCKPILE CONSTRUCTION.
12. ANY SETTLEMENT OR SOIL ACCUMULATIONS BEYOND THE LIMITS OF CONSTRUCTION DUE TO GRADING OR EROSION SHALL BE REPAIRED IMMEDIATELY BY THE CONTRACTOR. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR REMEDIATION OF ANY ADVERSE IMPACTS TO ADJACENT WATERWAYS, WETLANDS, PROPERTIES, ETC. RESULTING FROM WORK DONE AS PART OF THIS PROJECT.
13. A WATER SOURCE MUST BE AVAILABLE IN SITE DURING EARTHWORK OPERATIONS AND UTILIZED AS REQUIRED TO MINIMIZE DUST FROM EARTHWORK EQUIPMENT AND WIND.
14. THE CONTRACTOR MUST KEEP ALL POLLUTANTS, INCLUDING SEDIMENT, CONSTRUCTION DEBRIS AND TRENCH BACKFILL MATERIALS FROM ENTERING THE STORM SEWER SYSTEM.
15. ALL SPILLS INCLUDING, BUT NOT LIMITED TO, PETROLEUM PRODUCTS, SOLVENT, AND CEMENT SHALL BE CLEANED UP IMMEDIATELY. THE OWNER SHALL BE NOTIFIED IMMEDIATELY.
16. THE CONTRACTOR SHALL ENSURE THAT ALL LOADS OF CUT AND FILL MATERIAL IMPORTED TO OR EXPORTED FROM THE SITE SHALL BE PROPERLY COVERED TO PREVENT LOSS OF THE MATERIAL DURING TRANSPORT ON PUBLIC RIGHT-OF-WAY.
17. THE CONTRACTOR SHALL ENSURE THAT ALL MATERIAL EXPORTED FROM THE SITE, IS DISPOSED OF AT A SITE PERMITTED TO ACCEPT SUCH MATERIAL.
18. THE USE OF REBAR, STEEL STAKES OR STEEL FENCE POSTS FOR STAKING DOWN STRAW OR HAY BALES, OR TO SUPPORT SILT FENCING USED AS AN EROSION CONTROL MEASURE, IS PROHIBITED.
19. THE CLEANING OF CONCRETE DELIVERY TRUCK CHUTES IS RESTRICTED TO APPROVED LOCATIONS ON THE JOB SITE. THE DISCHARGE OF WATER CONTAINING WASTE CEMENT TO THE STORM SEWER SYSTEM IS PROHIBITED. ALL CONCRETE WASTE SHALL BE PROPERLY CLEANED UP AND DISPOSED OF AT AN APPROPRIATE LOCATION.
20. CONTRACTOR TO FILE "NOTICE OF TERMINATION" WITH CDPHE ONCE PROJECT IS COMPLETE AND ALL DISTURBED AREAS HAVE BEEN STABILIZED INCLUDING TEMPORARY CMS REMOVED.

ADA NOTES:

1. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL ACCESSIBLE AREAS ARE BUILT IN ACCORDANCE WITH THE PLANS AND THE AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES (ADAAG).
2. ALL ADA ACCESSIBLE PARKING SHALL BE CONSTRUCTED WITH A MAXIMUM SLOPE OF 2.00% IN ANY DIRECTION.
3. ALL ADA ACCESSIBLE ROUTES SHALL BE CONSTRUCTED WITH MAXIMUM SLOPE OF 2.00% AND A MAXIMUM LONGITUDINAL SLOPE OF 5.00%.
4. ALL ADA MANEUVERING AREAS SHALL BE CONSTRUCTED WITH A MAXIMUM SLOPE OF 2.00% IN ANY DIRECTION.
5. ALL ADA ACCESSIBLE RAMPS SHALL MEET THE ADA REQUIREMENTS PER ADAAG SECTION 4.7 & 4.8.

SEEDING SPECIFICATIONS:

1. SEED QUALITY
ALL BRANDS FURNISHED SHALL BE FREE FROM SUCH NOXIOUS SEEDS AS RUSSIAN OR CANADIAN THISTLE, COURSE FESCUE, EUROPEAN BINDWEED, JOHNSON GRASS, AND LEAFY SPURGE. THE SUB CONTRACTOR SHALL FURNISH TO THE CONTRACTOR A SIGNED STATEMENT CERTIFYING THAT THE SEED FURNISHED IS FROM A LOT THAT HAS BEEN TESTED BY A RECOGNIZED LABORATORY. SEED WHICH HAS BECOME WET, MOLDY, OR OTHERWISE DAMAGED IN TRANSIT OR IN STORAGE WILL NOT BE ACCEPTABLE.
2. MATERIALS
~~SEED~~
2.1. SEED TYPE AND AMOUNT OF PURE LIVE SEED (PLS) REQUIRED PER ACRE SHALL BE PER LANDSCAPING PLANS.
2.2. IF SEED AVAILABLE ON THE MARKET DOES NOT MEET THE MINIMUM PURITY AND GERMINATION PERCENTAGES SPECIFIED, THE SUBCONTRACTOR MUST COMPENSATE FOR A LESSER PERCENTAGE OF PURITY OF GERMINATION BY FURNISHING SUFFICIENT ADDITIONAL SEED TO EQUAL THE SPECIFIED PRODUCT. THE TAGS FROM THE SEED MIXES MUST BE SUPPLIED TO THE CONTRACTOR AND FORWARDED TO THE ENGINEER.
~~MULCH~~
ALL AREAS SHALL BE SEEDED AND MULCHED WITHIN THIRTY (30) DAYS OF THE DATE THE FINAL PLACEMENT OF FILL MATERIAL. ADDITIONAL TIME MAY BE GRANTED WITH WRITTEN APPROVAL FROM THE EROSION CONTROL INSPECTOR.
3. HAY OR STRAW MULCH: AFTER SEEDING HAS BEEN COMPLETED, A RATE OF 2,000 LBS/ACRE SHALL BE APPLIED UNIFORMLY, CRIMPED IN WITH A CRIMPER OR OTHER APPROVED EQUIPMENT OR OTHERWISE ATTACHED. THE CONTRACTOR MAY ORDER THE EMPLOYMENT OF HAND CRIMPING OPERATIONS ON SUCH AREAS WHERE EXCESSIVELY STEEP SLOPES OF CONFINED AREES WOULD CAUSE UNSATISFACTORY CRIMPING TO RESULT BY MECHANICAL METHODS OR USE A TACKIFIER OR JUTE NETTING TO ATTACH MULCH. THE SEEDED AREA SHALL BE MULCHED AND THE MULCH ATTACHED WITHIN 24 HOURS AFTER SEEDING. AREAS NOT MULCHED AND ATTACHED WITHIN 24 HOURS AFTER SEEDING MUST BE RESEDED WITH THE SPECIFIED MIX AT THE CONTRACTORS EXPENSE, PRIOR TO MULCHING AND ATTACHING. ON STEEP SLOPES OR OTHER SPECIFIED AREAS AS SHOWN ON THE PLANTING PLAN, WHICH ARE DIFFICULT TO MULCH AND ATTACH BY CONVENTIONAL METHOD, BURLAP OR OTHER BLANKETING MATERIALS PROPERLY ANCHORED AND SECURED MAY BE USED WHEN APPROVED BY THE CITY ENGINEER.
4. WARRANTY
THE CONTRACTOR IS RESPONSIBLE FOR WATERING AND MAINTENANCE UNTIL 90% OF GROWTH IS ACHIEVED. THE ENGINEER SHALL INSPECT THE SEEDED AREA AFTER THE FIRST GROWING SEASON, AND AREAS WITH LESS THAN NINETY PERCENT (90%) GROWTH SHALL BE RESEDED. AN ADDITIONAL ENGINEER INSPECTION AFTER THE SECOND GROWING SEASON SHALL BE MADE TO ENSURE THAT NINETY (90%) COVER HAS BEEN ACHIEVED.

DEWATERING PERMITS:

1. CONTRACTOR TO OBTAIN DEWATERING PERMIT FROM CDPHE PRIOR TO COMMENCING WORK. DISCHARGES SHALL BE MONITORED ACCORDING TO THE CONDITIONS OF THE CDPHE PERMIT.

UTILITIES:

1. CONTRACTOR TO FIELD VERIFY LOCATIONS AND SIZES OF ALL EXISTING UTILITIES BEFORE BEGINNING WORK.
2. THE CONTRACTOR SHALL COORDINATE EXACT LOCATIONS AND SIZES OF ALL UTILITY SERVICE LINE HOOKUPS TO THE BUILDINGS WITH THE MECHANICAL, ELECTRICAL AND PLUMBING PLANS AND SPECIFICATIONS, AND REPORT ANY DISCREPANCIES TO THE ENGINEER AND ARCHITECT PRIOR TO BEGINNING UTILITIES CONSTRUCTION.
3. THE CONTRACTOR SHALL CONSTRUCT THE SANITARY SEWER SERVICE CONNECTIONS IN ACCORDANCE WITH THE APPLICABLE STANDARDS AND SPECIFICATIONS OF THE CITY OF GREELEY.
4. THE CONTRACTOR SHALL CONSTRUCT ALL WATER SERVICE CONNECTIONS IN ACCORDANCE WITH THE APPLICABLE STANDARDS AND SPECIFICATIONS OF THE CITY OF GREELEY.
5. THE CONTRACTOR SHALL CONSTRUCT ALL ELECTRIC, GAS, TELEPHONE, AND CABLE TELEVISION SERVICES IN ACCORDANCE WITH THE APPLICABLE STANDARDS AND SPECIFICATIONS OF THE UTILITY PROVIDER.
6. ALL EXISTING SEWERS, PIPING AND UTILITIES SHOWN ARE NOT TO BE INTERPRETED AS THE EXACT LOCATION, OR AS THE ONLY OBSTACLES THAT MAY OCCUR ON THE SITE. VERIFY EXISTING CONDITIONS AND PROCEED WITH CAUTION AROUND ANY ANTICIPATED FEATURES. GIVE NOTICE TO ALL UTILITY COMPANIES REGARDING DESTRUCTION AND REMOVAL OF ALL SERVICE LINES AND CAP ALL LINES BEFORE PROCEEDING WITH THE WORK. UTILITIES DETERMINED TO BE ABANDONED AND LEFT IN PLACE SHALL BE GROUTED IF UNDER BUILDING.
7. ELECTRICAL, TELEPHONE, CABLE, WATER, FIBER OPTIC CABLE AND/OR GAS LINES NEEDING TO BE REMOVED OR RELOCATED SHALL BE COORDINATED WITH THE AFFECTED UTILITY COMPANY. ADEQUATE TIME SHALL BE PROVIDED FOR RELOCATION AND CLOSE COORDINATION WITH THE UTILITY COMPANY IS NECESSARY TO PROVIDE A SMOOTH TRANSITION IN UTILITY SERVICES.
8. UTILITY TRENCHES ARE TO BE SLOPED OR BRACED AND SHEETED AS NECESSARY FOR THE SAFETY OF THE WORKMEN AND THE PROTECTION OF OTHER UTILITIES IN COMPLIANCE WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL REQUIREMENTS.
9. CONTRACTOR TO SET AND ADJUST ALL MANHOLE COVERS, INLET GRATES, WATER VALVES, CLEANOUTS, AND ANY OTHER ACCESS COVERS TO FINISHED PAVEMENT SURFACE OR FINISHED GRADE.

GEOTECHNICAL REPORT NOTE:

1. CONTRACTOR TO OBTAIN AND READ THE GEOTECHNICAL REPORT (AND ALL ADDENDUMS) PREPARED BY OLSSON FOR THIS PROJECT. IN CASE OF ANY CONFLICT WITH THESE PLANS AND SITEWORK SPECIFICATIONS REGARDING PAVING AND EARTHWORK, THE GEOTECHNICAL REPORT WILL GOVERN. ALL PAVING AND EARTH WORK SHALL CONFORM TO THE RECOMMENDATIONS OF THIS REPORT.
2. REFERENCE POINTS FOR STRUCTURES ARE AS FOLLOWS:
CENTER OF MANHOLES/ DRAINAGE BASINS
CENTER OF INLET FACE AT FLOWLINE FOR CURB INLETS
CENTER OF INLET FACE FOR GRATE INLETS
3. STORM SEWER PIPE LENGTHS ARE MEASURED AS FOLLOWS:
CENTER OF MANHOLES/ DRAINAGE BASINS
0.5' INSIDE WALL OF INLET (CURB AND GRATE)
LENGTHS LISTED ARE 2D MEASUREMENTS
4. THE CONDUIT LAYING SHALL BEGIN AT THE DOWNSTREAM END OF THE CONDUIT LINE. THE LOWER SEGMENT OF THE CONDUIT SHALL BE IN CONTACT WITH THE PREPARED BEDDING THROUGHOUT ITS FULL LENGTH BELL OR GROOVE ENDS OF CONCRETE PIPE CONDUITS AND OUTSIDE CIRCUMFERENTIAL LAPS OF METAL OR PLASTIC PIPE SHALL BE PLACED FACING UPSTREAM. SEE CDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION SECTION, SECTION 603.06 FOR FURTHER EXPLANATION.
5. WHEN JOINING CONDUITS, CONCRETE SECTIONS SHALL BE JOINED IN SUCH A MANNER THAT THE ENDS ARE FULLY ENTERED AND THE INNER SURFACES ARE REASONABLY FLUSH AND EVEN. RUBBER GASKETS SHALL BE USED ON ALL CONDUIT JOINTS AND SHALL CONFORM TO CDOT STANDARD 705.03. SEE CDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, SECTION 603.06 & 603.07 FOR FURTHER EXPLANATION.
6. CONTRACTOR SHALL COORDINATE TIE-INS OF ROOF DOWNSPOUTS WITH MECHANICAL/ELECTRICAL/PLUMBING PLANS.

REVISIONS

NO.	DESCRIPTION	DATE	BY

DRAWN

BAMG

CHECKED

JFS

DESIGNED

BAMG

FILENAME

0005_COVER & NOTES

COLORADO LICENSE
SANTHAN 7-2
PENDING APPROVAL
NOT FOR CONSTRUCTION
PROFESSIONAL ENGINEER

ZIGGI'S SEVERANCE SITE PLAN

GENERAL NOTES

TST

TST, INC.

CONSULTING ENGINEERS

748 Whalers Way

Suite 200 Fort Collins

Colorado 80525

Phone: 970.226.0557

JOB NO.

1076.0005.00

SCALE

N.T.S.

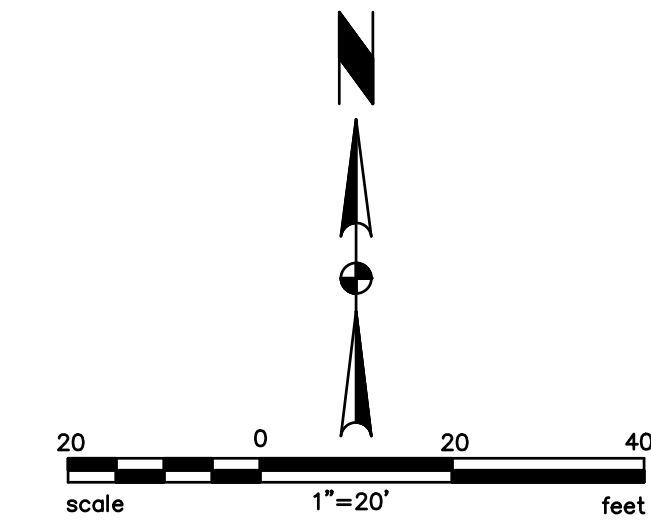
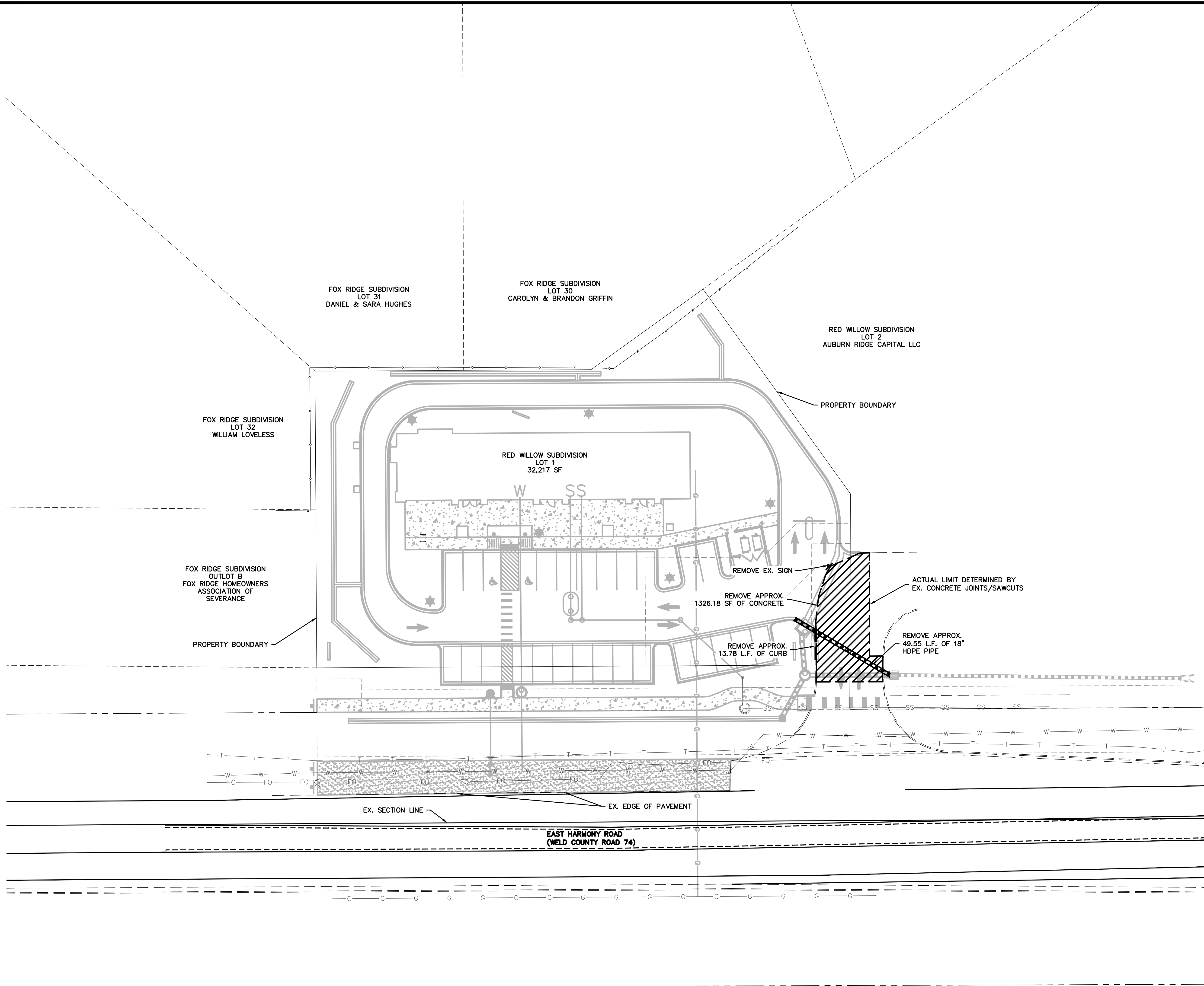
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JANUARY 2023

SHEET

2 of 15

2/7/2023 8:59 AM



- NOTES**
1. ACTUAL STREET CUT LIMITS FOR WELD COUNTY ROAD 74 WIDENING SHALL BE DETERMINED IN THE FIELD BY A TOWN INSPECTOR.

REVISIONS	
DESCRIPTION	DATE

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CHECKED	JFS
DESIGNED	BAMG
FILENAME	0005_DEMO

PENDING APPROVAL
NOT FOR CONSTRUCTION
PROFESSIONAL ENGINEER

ZIGGI'S SEVERANCE SITE PLAN

DEMOLITION PLAN

TST, INC.
CONSULTING ENGINEERS
748 Whalers Way
Suite 200 Fort Collins
Colorado 80525
Phone: 970.226.0557

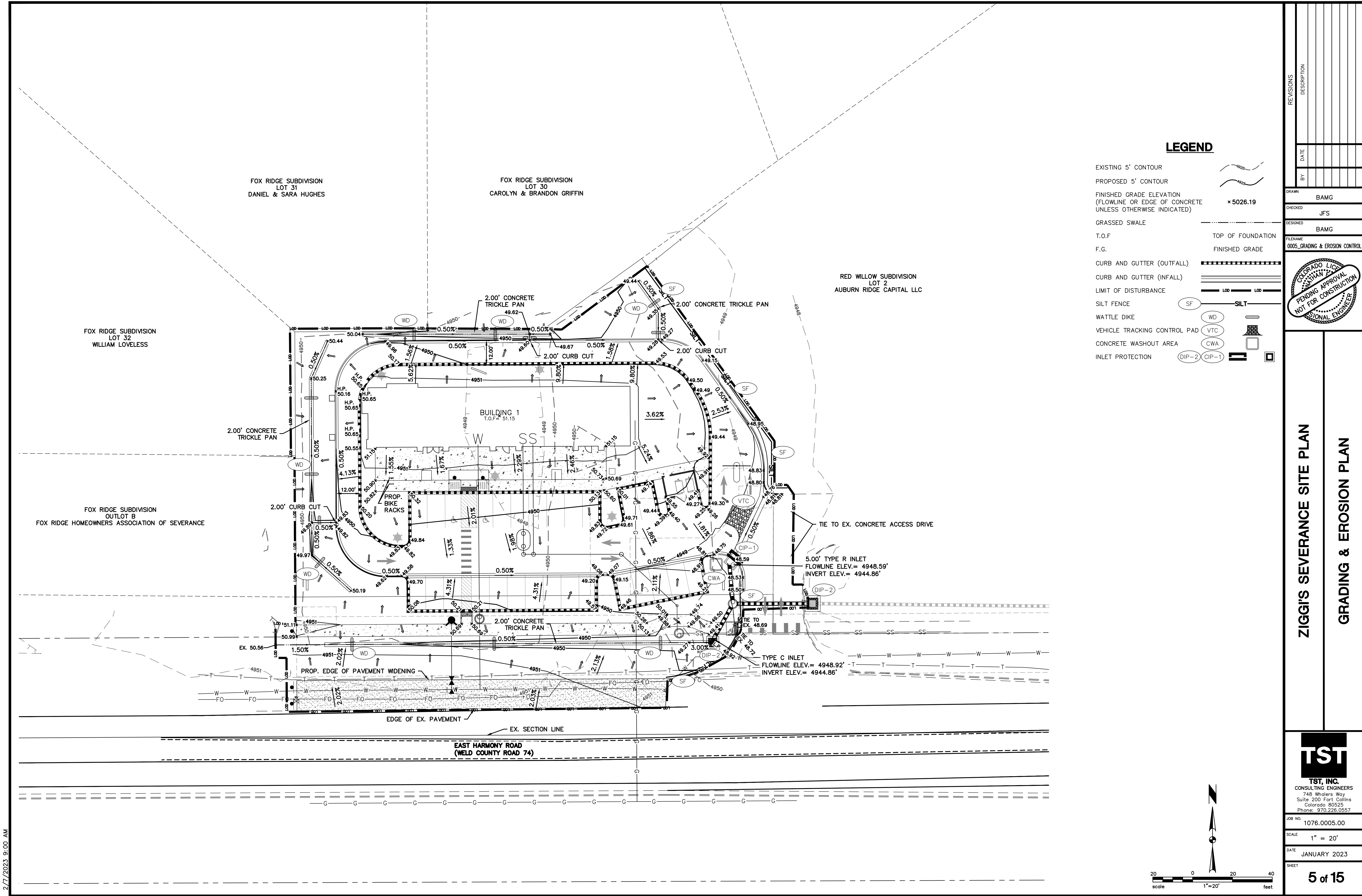
JOB NO. 1076.0005.00

SCALE 1" = 20'

DATE JANUARY 2023

SHEET

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LEGEND

- EXISTING 5' CONTOUR
- PROPOSED 5' CONTOUR
- FINISHED GRADE ELEVATION (FLOWLINE OR EDGE OF CONCRETE UNLESS OTHERWISE INDICATED)
- GRASSED SWALE
- T.O.F
- F.G.
- CURB AND GUTTER (OUTFALL)
- CURB AND GUTTER (INFALL)
- LIMIT OF DISTURBANCE
- SILT FENCE
- WATTLE DIKE
- VEHICLE TRACKING CONTROL PAD
- CONCRETE WASHOUT AREA
- INLET PROTECTION

REVISIONS	
DATE	DESCRIPTION

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CHECKED	JFS
DESIGNED	BAMG
FILENAME	0005_GRADING & EROSION CONTROL

COLORADO LICENSE
NATHAN A. ZIGGI
PENDING APPROVAL
NOT FOR CONSTRUCTION
PROFESSIONAL ENGINEER

ZIGGI'S SEVERANCE SITE PLAN

GRADING & EROSION PLAN

TST
TST, INC.
CONSULTING ENGINEERS
748 Whalers Way
Suite 200 Fort Collins
Colorado 80525
Phone: 970.226.0557

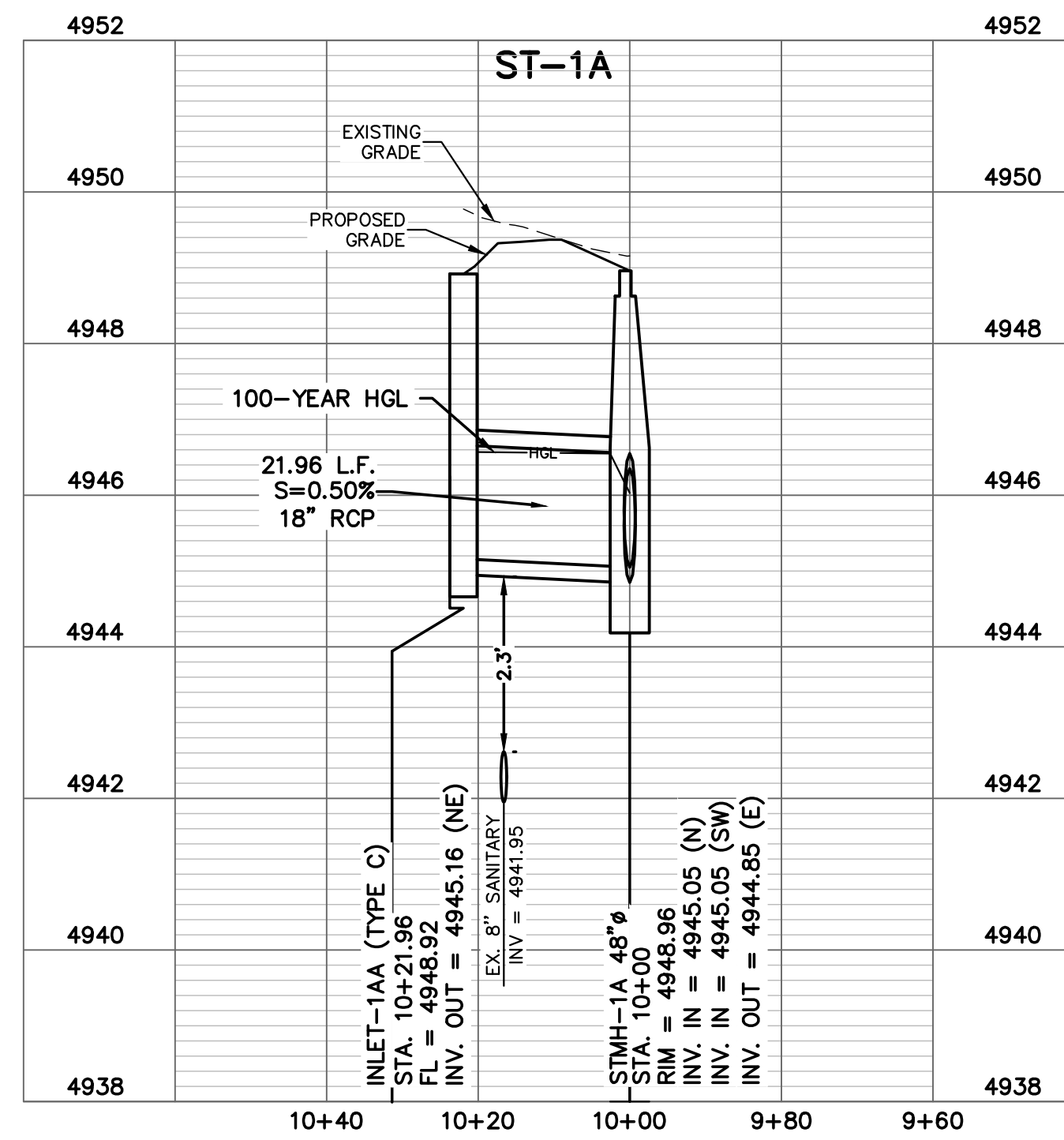
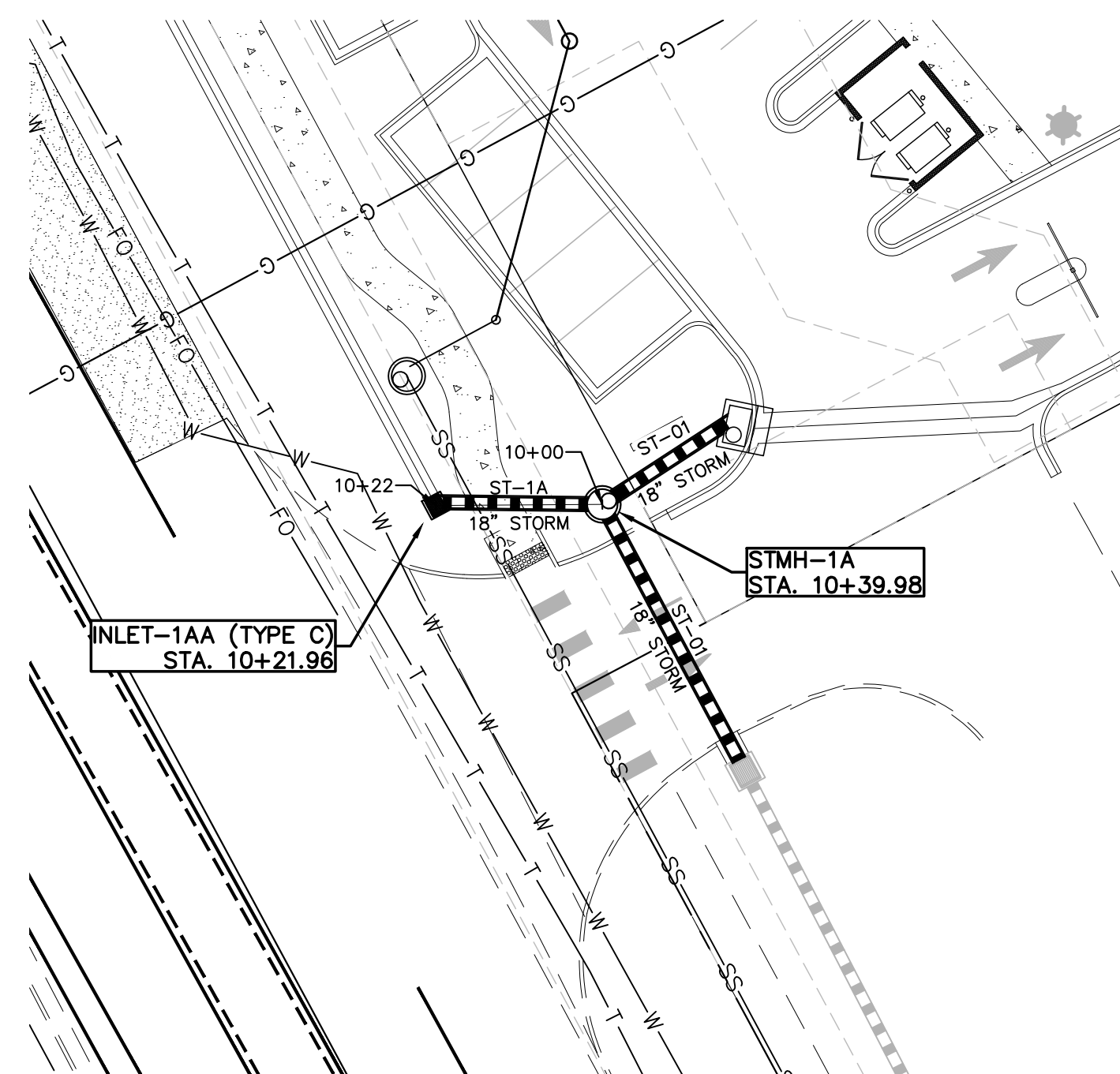
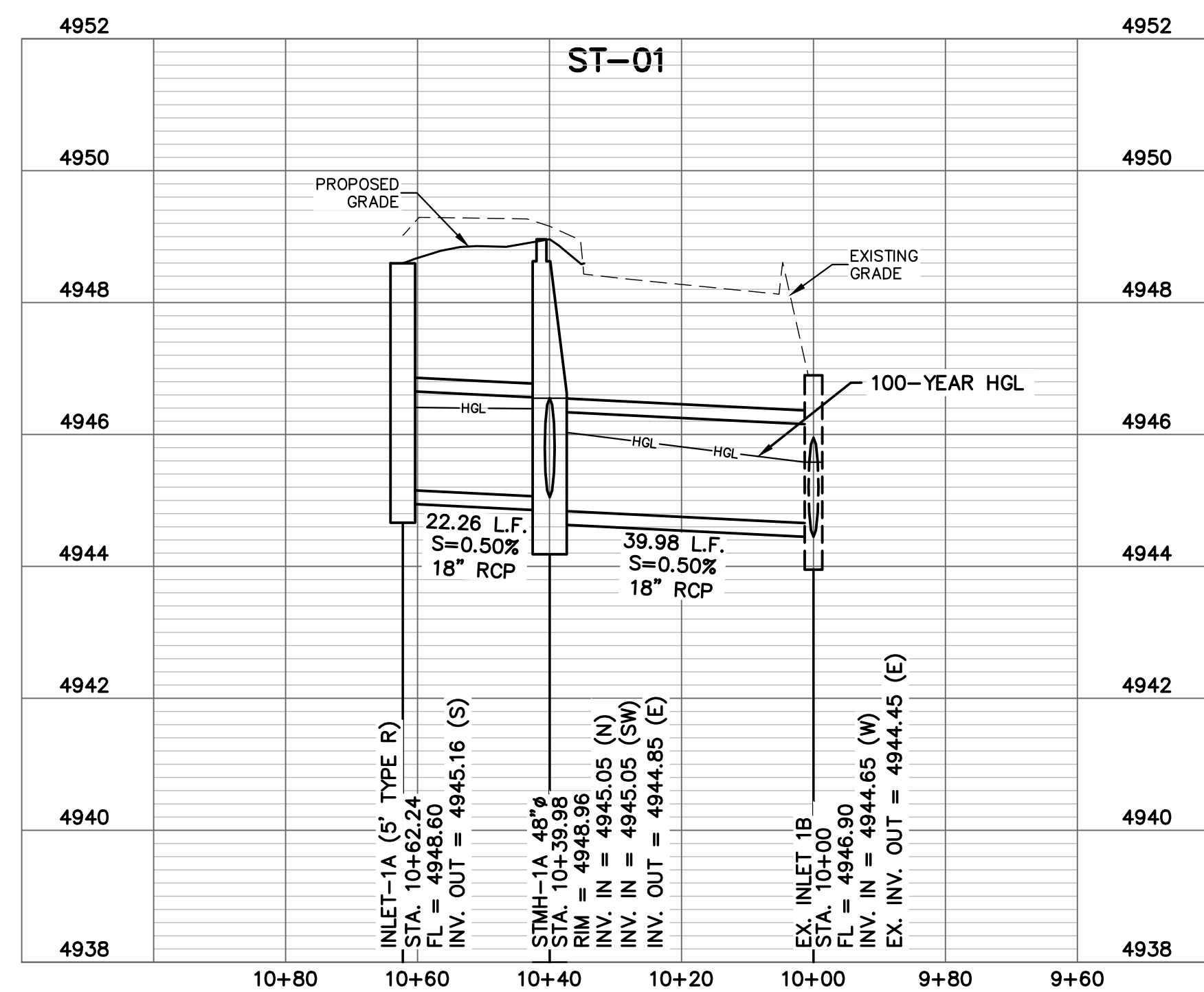
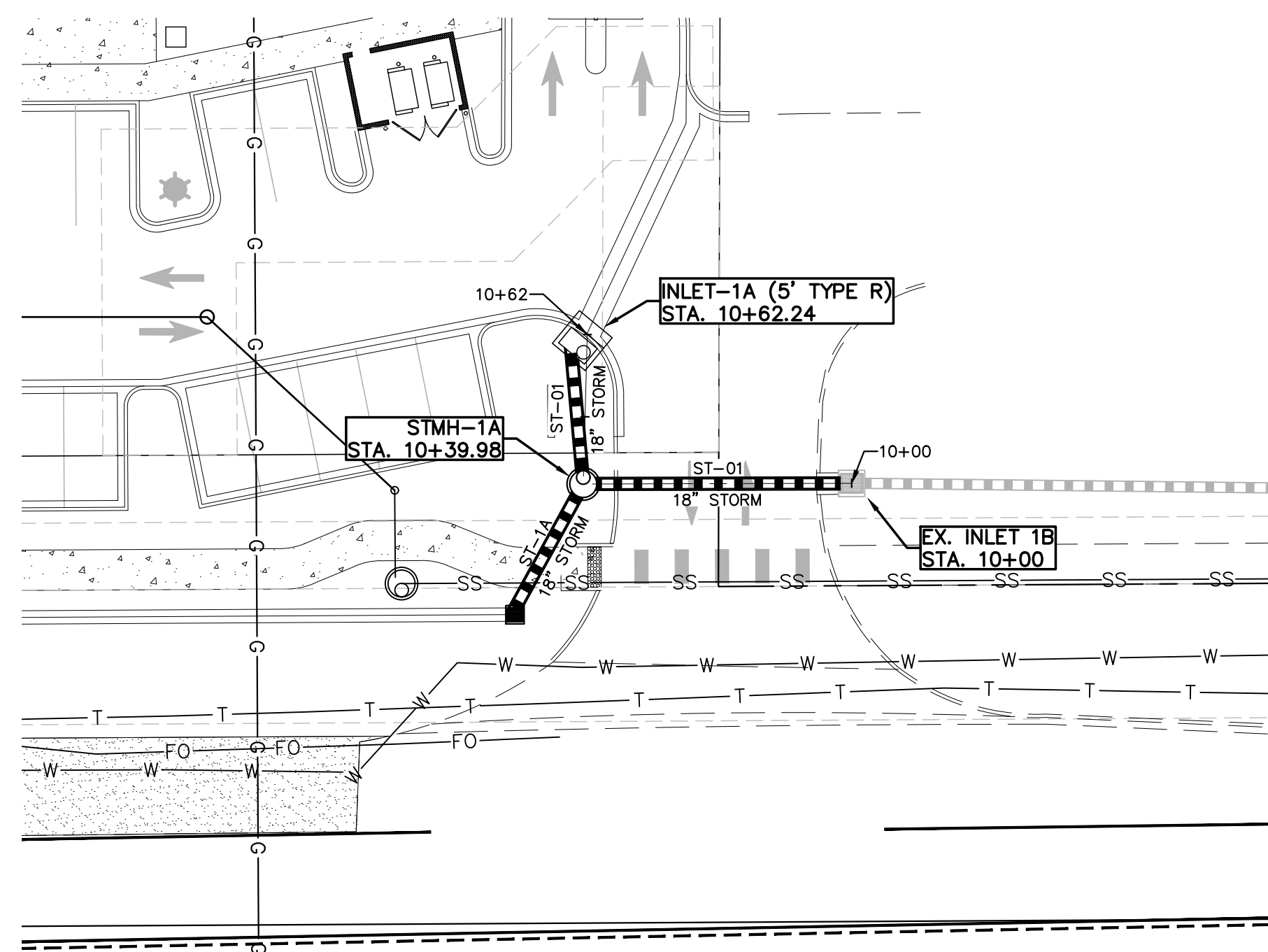
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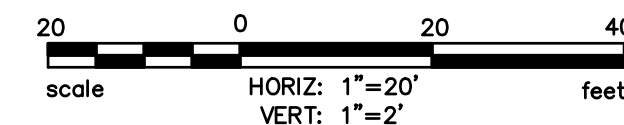
DATE JANUARY 2023

SHEET 5 of 15

2/7/2023 9:00 AM



- ## NOTES
1. STATIONS ARE BASED ON CENTER OF MANHOLE, AND INLETS. THEREFORE DISTANCES SHOWN ON PLANS ARE APPROXIMATE AND COULD VARY DUE TO VERTICAL ALIGNMENT AND STRUCTURE WIDTHS.
 2. NO TREES SHALL BE PLANTED WITHIN TEN (10) FEET OF ANY NEW STORM SEWER PIPES.
 3. CONTRACTOR SHALL VERIFY HORIZONTAL AND VERTICAL LOCATIONS OF EXISTING STORM SEWER POINTS OF CONNECTION PRIOR TO CONSTRUCTION OF ANY PROPOSED STORM SEWER.
 4. CONTRACTOR SHALL COORDINATE GAS, ELECTRIC, AND COMMUNICATIONS SERVICES WITH UTILITY PROVIDERS. COORDINATE WITH PROPOSED SITE IMPROVEMENTS AND NOTIFY ENGINEER OF ANY DISCREPANCIES.
 5. THE MINIMUM CLEARANCE BETWEEN STORM DRAIN AND WATER, IN OPEN CUTS, EITHER ABOVE OF BELOW, SHALL BE EIGHTEEN (18) INCHES. IN ADDITION, WHEN A WATER LINE LIES BELOW STORM LINE, OR WITHIN TWENTY-FOUR (24) INCHES, EXTERNAL SEALING BANDS SHALL BE INSTALLED OVER THE STORM LINE. SHALL BE INSTALLED SO THAT A JOINT IS NOT DIRECTLY ABOVE OF BELOW THE WATER MAIN.

[illegible]

TYPICAL VAULT NOTES:

- ALL METER, VALVE, AND VAULT COMPONENTS AND PRODUCT SPECIFICATIONS SHALL BE IN ACCORDANCE WITH APPROVED CONSTRUCTION DRAWINGS ALONG WITH W & S DEPARTMENT SPECIFICATIONS, LATEST REVISION.
- PIPING CONFIGURATION IS GENERAL AND INDICATES MINIMUM REQUIREMENTS. CONTRACTOR TO PROVIDE ADDITIONAL PIPING, COUPLINGS, REDUCERS, AND ACCESSORIES AS NECESSARY FOR A COMPLETE SYSTEM. VAULT MODIFICATIONS MAY BE REQUIRED FOR A COMPLETE SYSTEM.
- METER OR PRV COMPONENTS, INSTRUMENTATION, AND ELECTRICAL SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.
- CONTRACTOR TO SUBMIT VAULT MANUFACTURER'S SHOP DRAWINGS TO ENGINEERING DEVELOPMENT REVIEW FOR ACCEPTANCE A MINIMUM OF 2 WEEKS PRIOR TO ORDER AND INSTALLATION.
- APPROPRIATE LENGTH OF STRAIGHT PIPE SEGMENTS UPSTREAM AND DOWNSTREAM OF METER OR VALVE SHALL BE PROVIDED PER THE METER/VALVE MANUFACTURER'S RECOMMENDATION.
- FOR INSTALLATIONS LARGER THAN 2", ALL PIPING AND APPURTENANCES WITHIN THE VAULT SHALL BE FLANGED DIP. ALL OTHER EXTERIOR PIPING AND APPURTENANCES, BETWEEN AND INCLUDING THE EXTERIOR TEES AND VALVES, SHALL BE MECHANICAL RESTRAINED JOINT DIP.
- ALL VAULT JOINTS SHALL BE WATER TIGHT.
- ALL EQUIPMENT AND PIPING SHALL BE ADEQUATELY SUPPORTED AND ATTACHED TO THE VAULT WALL USING STAINLESS STEEL FASTENERS AND BOLTS OR APPROVED EQUIVALENT.
- VAULT COVERS SHALL BE APPROVED MANHOLE COVERS, MARKED "WATER" OR "IRRIGATION" AS REQUIRED, AND INCLUDE AN INNER FROST PROOF LID. REFER TO WATER & SEWER SPECIFICATIONS, LATEST REVISION, FOR APPROVED VAULT COVER MATERIALS AND MANUFACTURERS.
- FOR VAULTS PERMITTED IN ROAD ROW, VAULT AND RING/COVER SHALL BE RATED FOR HS-20 TRAFFIC LOADINGS.
- VAULT LADDER SHALL HAVE OSHA-APPROVED EXTENSION POST INSTALLED IF VAULT FLOOR IS GREATER THAN 5 FEET BELOW VAULT COVER.
- VAULT EXTERIOR SHALL BE COVERED WITH 2" THICK INSULATION BOARD.
- SLOPE FINAL GROUND SURFACE AWAY FROM VAULT AT A 2% MINIMUM GRADE.
- VAULT SHALL BE BACKFILLED AND COMPACTED IN ACCORDANCE WITH WATER & SEWER SPECIFICATIONS, LATEST REVISION.
- MANHOLE BASEBEAMS ARE REQUIRED FOR ALL MANHOLE VAULT INSTALLATIONS.
- ALL PIPING TO BE PRESSURE TESTED PER W & S SPECIFICATIONS, LATEST REVISION.
- ALL THREADED CONNECTIONS SHALL HAVE TEFLON TAPE OR APPROVED EQUIVALENT TO ENSURE NO LEAKING OCCURS.
- COPPER SHALL NOT SHOW ANY VISIBLE SIGNS OF CRIMPING.

VAULT ELECTRICAL SPECIFICATIONS:

- PROVIDE 100 AMP 240/120 VOLT METER LOAD CENTER COMBINATION WITH A MINIMUM 12 SPACES, LOCATED WITHIN 25' OF VAULT.
- PROVIDE 1 1/4" CONDUIT, SCHEDULE 80, FROM LOAD CENTER TO JUNCTION OR PULL BOX IN VAULT.
- JUNCTION OR PULL BOX SHALL HAVE 6"x6" MINIMUM PANEL LOCATED INSIDE VAULT FOR EXTRA CIRCUIT CONDUIT CONNECTIONS.
- PROVIDE FIVE 15-AMP BREAKERS FOR LOAD CENTER.
- PROVIDE OUTLET FOR SUMP PUMP AND DEHUMIDIFIER, 15-AMP 120 VOLT CIRCUIT.
- PROVIDE LED LIGHTING CIRCUIT: TWO 10-WATT LED LIGHTS WITH OUTDOOR SWITCH LOCATED IN VAULT ON 15-AMP 120 VOLT CIRCUIT.
- PROVIDE ONE 15-AMP GFI OUTLET FOR SERVICE WORK LOCATED INSIDE VAULT.
- ALL CONDUIT BOXES, FITTINGS, AND HANGERS SHALL BE PVC, FIBERGLASS, OR STAINLESS STEEL AND SUITABLE FOR OUTDOOR USE.
- PROVIDE DISCONNECT LOCATED BEFORE METER COMBINATION AS REQUIRED PER ELECTRIC UTILITY IF APPLICABLE.
- PROVIDE 2" SCHEDULE 80 PVC CONDUITS FROM POLE TO TRANSFORMER TO LOAD CENTER.
- PROVIDE 240 VOLT SURGE PROTECTION FOR LOAD CENTER.
- MUST MEET ALL CITY OF GREELEY AND STATE ELECTRICAL CODE REQUIREMENTS.

DEHUMIDIFIER SPECIFICATIONS:

- DEHUMIDIFIER SHALL BE A LOW TEMP 38 DEGREES OR LOWER AND BE INSTALLED TO MANUFACTURER SPECIFICATIONS.
- DEHUMIDIFIER SHALL BE INSTALLED A MINIMUM 2' FROM THE VAULT FLOOR.
- A MINIMUM 1/2" HOSE SHALL BE INSTALLED FROM DEHUMIDIFIER TO THE SUMP PIT.

METER INSTALLATION NOTES:

- IF SURFACE IS NOT TO FINAL GRADE AT TIME OF METER INSTALLATION OR GRADE CHANGES AFTER INSTALLATION, OWNER MUST ADJUST VAULT TO MEET SPECIFICATIONS.
- METER SETTING MUST BE INSPECTED BEFORE BACKFILLING. FOR INSPECTION CALL (970) 350-9317.
- NO SPRINKLER SYSTEM CONNECTION SHALL BE MADE IN THE VAULT. SPRINKLER PIT SHALL BE MINIMUM 5' DOWNSTREAM FROM THE FINAL VAULT APPURTENANCE (BYPASS TEE).
- NO MAJOR LANDSCAPING OR STRUCTURES SHALL BE LOCATED WITHIN 10' OF METER VAULT.
- PRESSURE REDUCING AND BACKFLOW DEVICES SHALL BE INSTALLED INSIDE THE BUILDING SERVED. INSTALL PER CITY OF GREELEY ADOPTED BUILDING CODE.
- REFER TO W & S SPECIFICATIONS, LATEST REVISION, FOR PRODUCT SPECIFICATIONS.
- LOCATION OF METER VAULT SHALL NOT BE MORE THAN 2 FEET DOWNSTREAM OF CURBSTOP UNLESS OTHERWISE PLACED BY METER SERVICES.

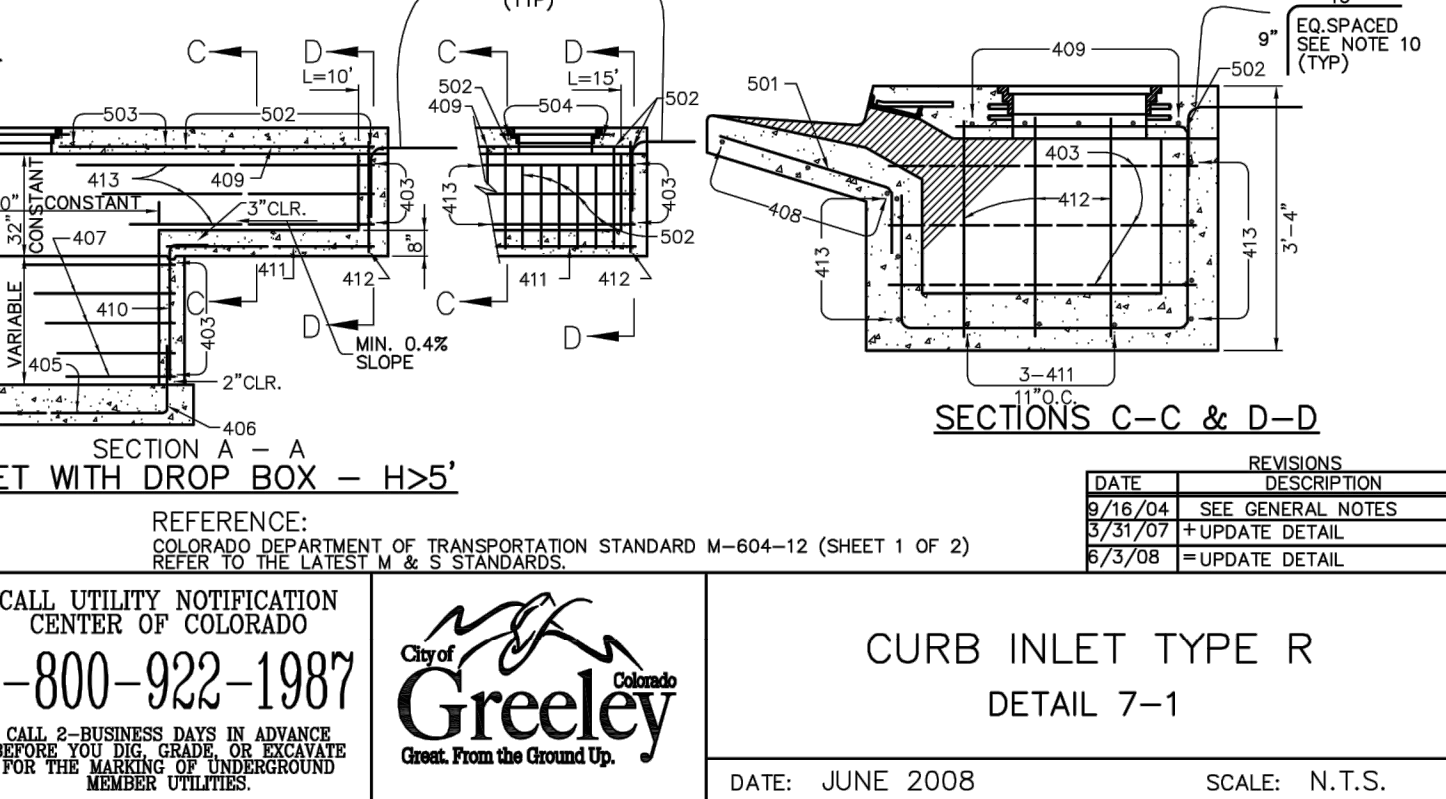
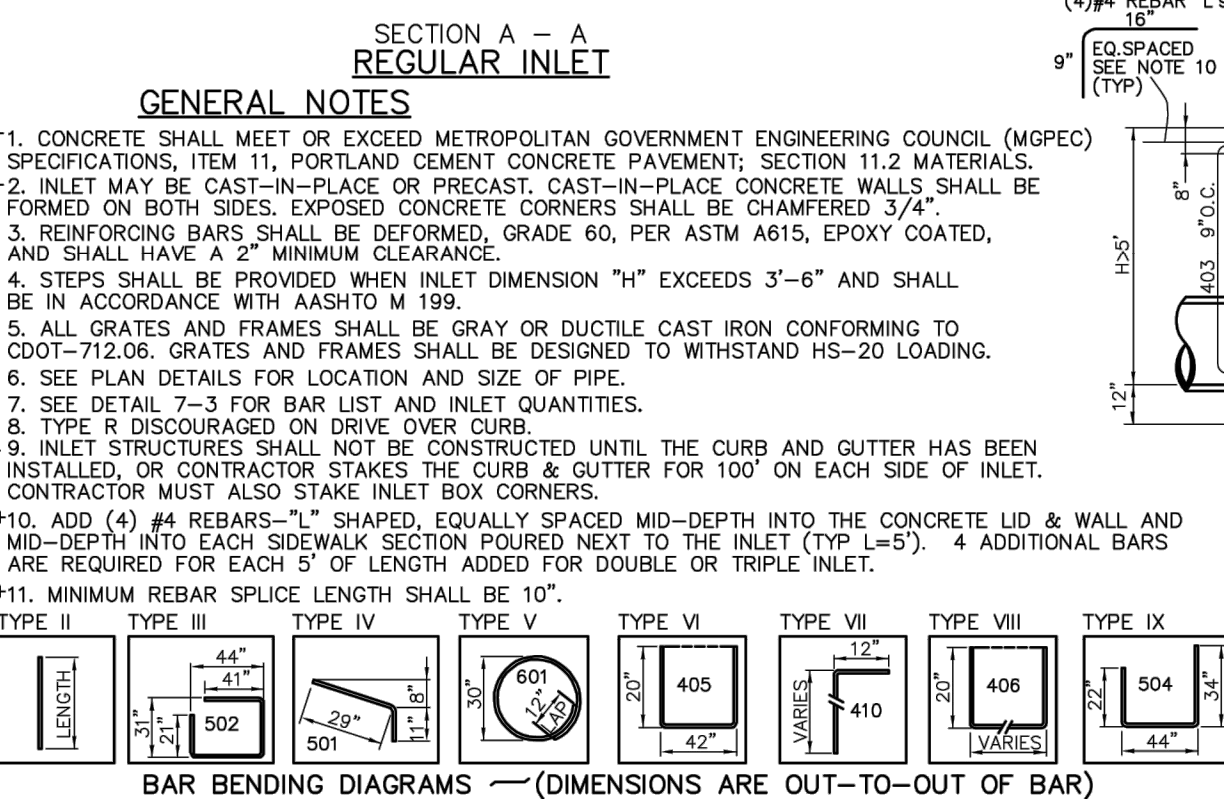
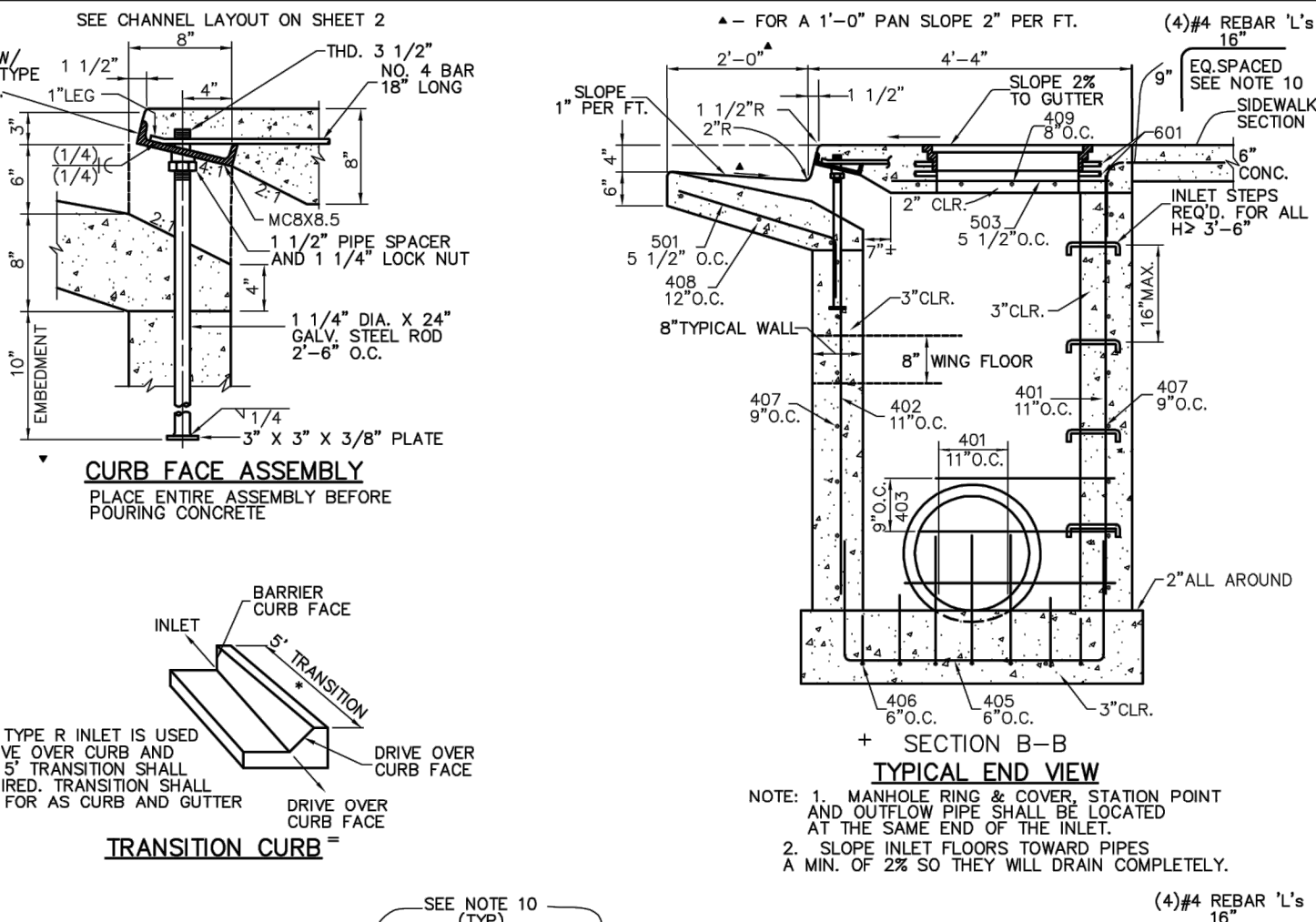
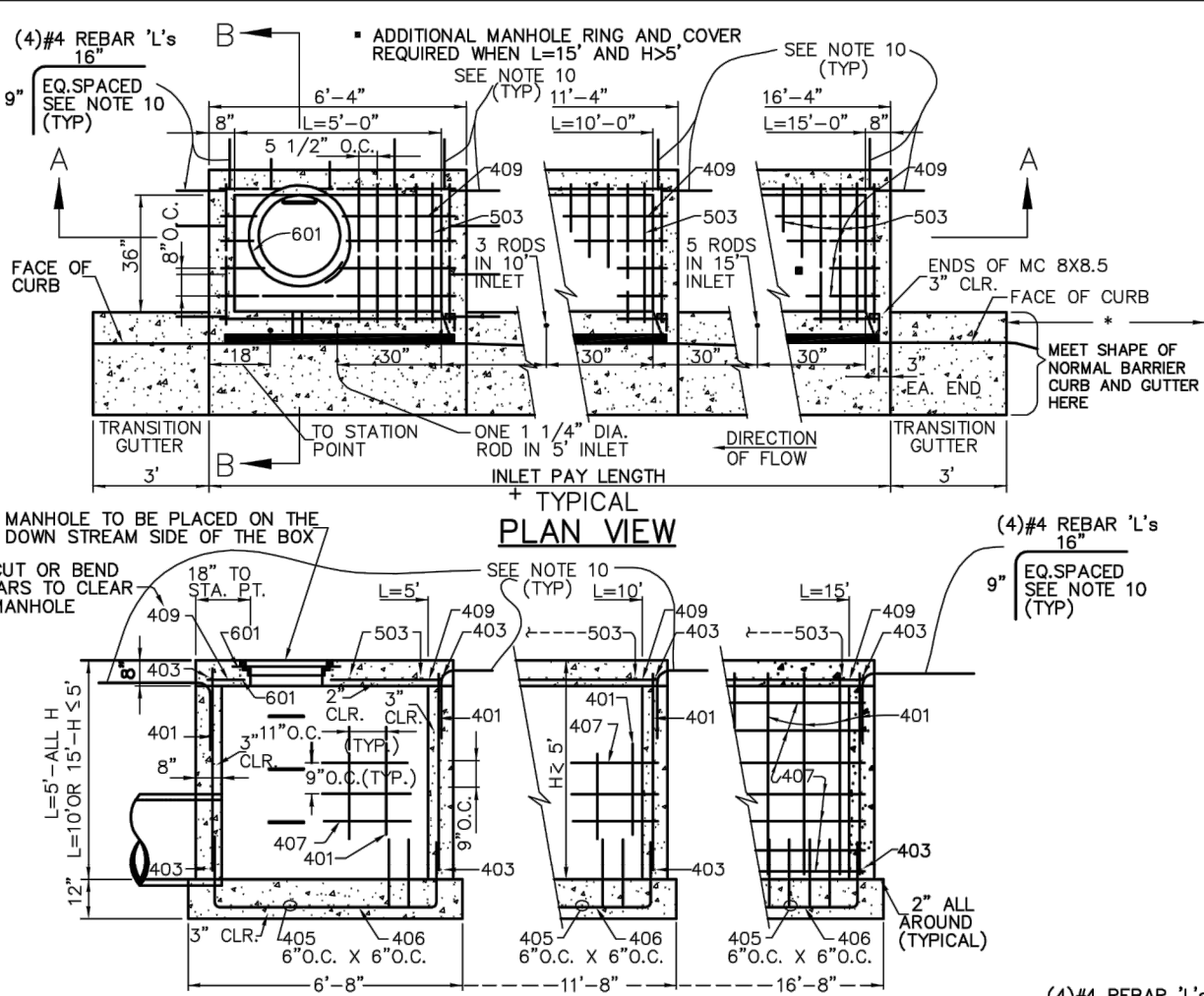


DATE: JANUARY 2021

TYPICAL VAULT NOTES

DETAIL W-15

SCALE: N.T.S.



BAR BENDING DIAGRAMS (DIMENSIONS ARE OUT-TO-OUT OF BAR)

CALL UTILITY NOTIFICATION CENTER OF COLORADO 1-800-922-1987

CALL 2-BUSINESS DAYS IN ADVANCE FOR THE MARKING OF UNDERGROUND MANHOLE UTILITIES

REFERENCE: COLORADO DEPARTMENT OF TRANSPORTATION STANDARD M-604-12 (SHEET 1 OF 2)

DATE: JUNE 2008 SCALE: N.T.S.

DATE: JANUARY 2021

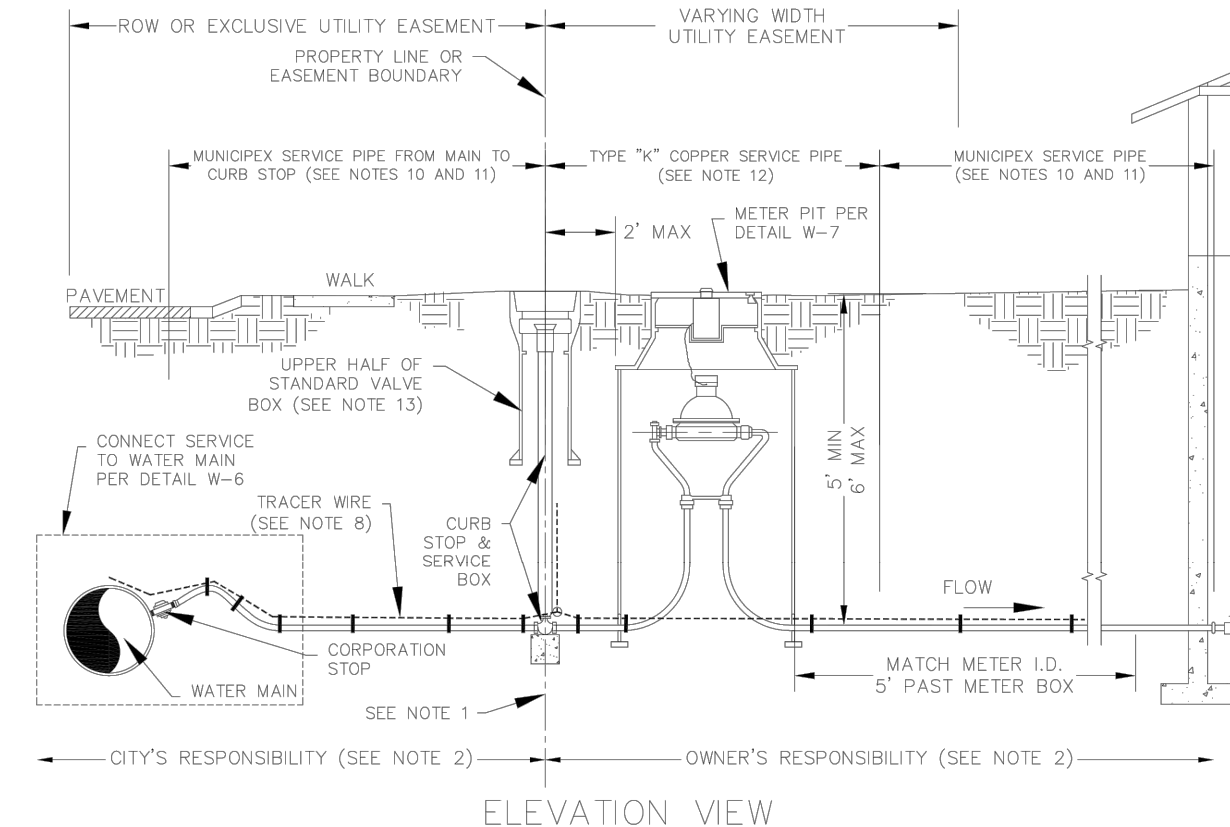
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NOTES

- PLACEMENT OF CURB STOP SERVICE BOX MAY VARY FROM A MAXIMUM OF ±1 FOOT OF THE PROPERTY LINE. PLACEMENT OF CURB STOP OUTSIDE THE PROPERTY LINE IS PREFERRED. ANY VARIANCE OF LOCATION OF CURB STOP MUST BE APPROVED PRIOR TO CONSTRUCTION.
- WATER DEPARTMENT'S RESPONSIBILITY SHALL BE THE WATER MAIN, THE METER INSIDE THE METER PIT, THE CORPORATION STOP, AND SERVICE PIPING FROM THE WATER MAIN UP TO THE TUBE NUT ON THE STREET SIDE OF THE CURB STOP. OWNER'S RESPONSIBILITY SHALL INCLUDE THE METER PIT, AND EVERYTHING FROM THE STRUCTURE UP TO AND INCLUDING THE CURB STOP AND BOX, EXCEPT FOR THE METER ITSELF.
- SHOULD ANY SITUATION ARISE OTHER THAN SHOWN CONCERNING THE DEPTH OR OBSTRUCTION OF SERVICE LINE OR THE PLACEMENT OF THE METER PIT OR STOP BOX, CALL (970) 350-9317 AND ASK FOR METER SERVICES DIVISION.
- REFER TO WATER AND SEWER STANDARD DRAWINGS AND CONSTRUCTION SPECIFICATIONS FOR METER INSTALLATION REQUIREMENTS.
- POTABLE WATER SERVICE METER PITS/ VAULTS SHALL BE LOCATED IN A LANDSCAPED AREA WITHIN 2 FEET OF THE CURB STOP ON OWNER'S PROPERTY. SEE DESIGN CRITERIA, LATEST REVISION, FOR METER PIT LOCATION.
- CURB STOP IS TO BE MINNEAPOLIS PATTERN OR APPROVED EQUAL.
- CURB STOP MUST BE INSTALLED WITH EITHER PLASTIC OR STAINLESS STEEL PIPE INSERTS TO ENSURE PROPER COMPRESSION FITTING ON MUNIPEX PIPE.
- INSTALL TRACER WIRE ACCORDING TO CITY OF GREELEY WATER & SEWER SPECIFICATIONS AND STANDARD DETAILS, LATEST REVISION.
- ALL BURIED PIPE, FITTINGS, VALVES, AND APPURTENANCES SHALL BE INSTALLED AND RESTRAINED IN ACCORDANCE WITH WATER & SEWER SPECIFICATIONS, LATEST REVISION.
- SERVICE PIPE INSTALLED FROM THE MAIN TO CURB STOP AND FROM 2 FT PAST THE METER PIT ON THE OWNER SIDE UP TO BUILDING SHALL BE MUNIPEX OR APPROVED EQUAL ACCORDING TO BUILDING CODE. REFER TO WATER & SEWER CONSTRUCTION SPECIFICATIONS FOR APPROVED SERVICE PIPE PRODUCT AND MFR REQUIREMENTS.
- SERVICE PIPE SHALL BE SIZED ACCORDING TO SERVICE TAP INSIDE DIAMETER AND MUST COMPLY WITH AWWA C904. SEE W&S DESIGN CRITERIA, LATEST REVISION.
- TYPE "K" COPPER SHALL BE PLACED FROM THE CURB STOP, THROUGH THE METER PIT, AND UP TO 2 FEET PAST THE METER PIT ON CUSTOMER SIDE.
- UPPER HALF OF STANDARD VALVE BOX SHALL BE PLACED OVER CURB STOP AND TRACER WIRE TEST STATION LOOP ACCORDING TO WATER AND SEWER SPECIFICATIONS, LATEST REVISION.

POTABLE WATER SERVICE LINE, STOP BOX, & METER INSTALLATION

DETAIL W-9

DATE: JANUARY 2021 SCALE: N.T.S.

DATE: JANUARY 2021

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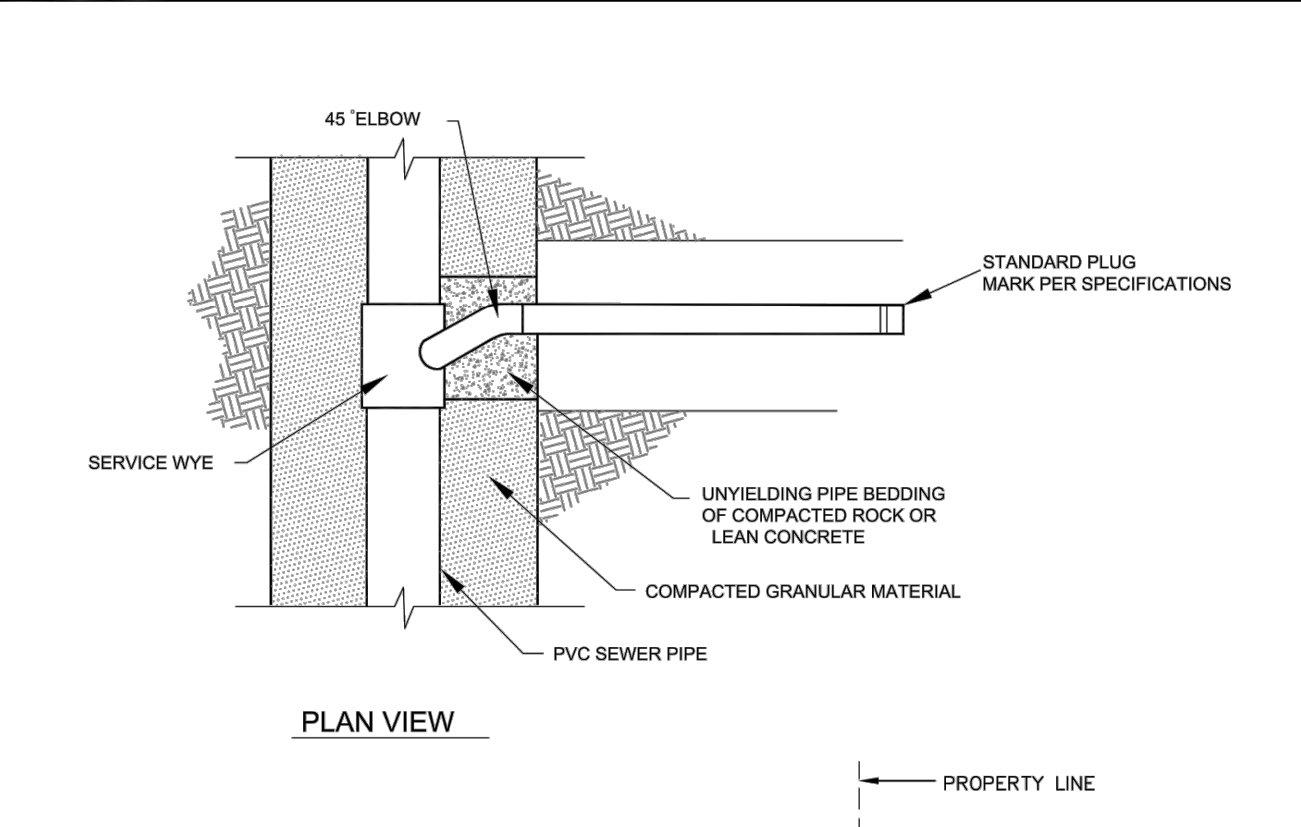
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NOTES

- IN NO CASE SHALL THE SERVICE LINE PROTRUDE INTO THE MAIN.
- SERVICES ARE 4" OR 6" IN DIAMETER AND SHALL HAVE A MINIMUM SLOPE OF 1.0% (1/8" PER FOOT) AND A MAXIMUM SLOPE OF 8.0%.
- SERVICES LARGER THAN 6" DIAMETER SHALL BE CONNECTED TO A MANHOLE.
- SERVICES SHALL EXTEND TO THE PROPERTY LINE UNLESS OTHERWISE SHOWN ON CITY ACCEPTED CONSTRUCTION DRAWINGS.

SANITARY SEWER SERVICE CONNECTION

DETAIL W-9

DATE: JANUARY 2021 SCALE: N.T.S.

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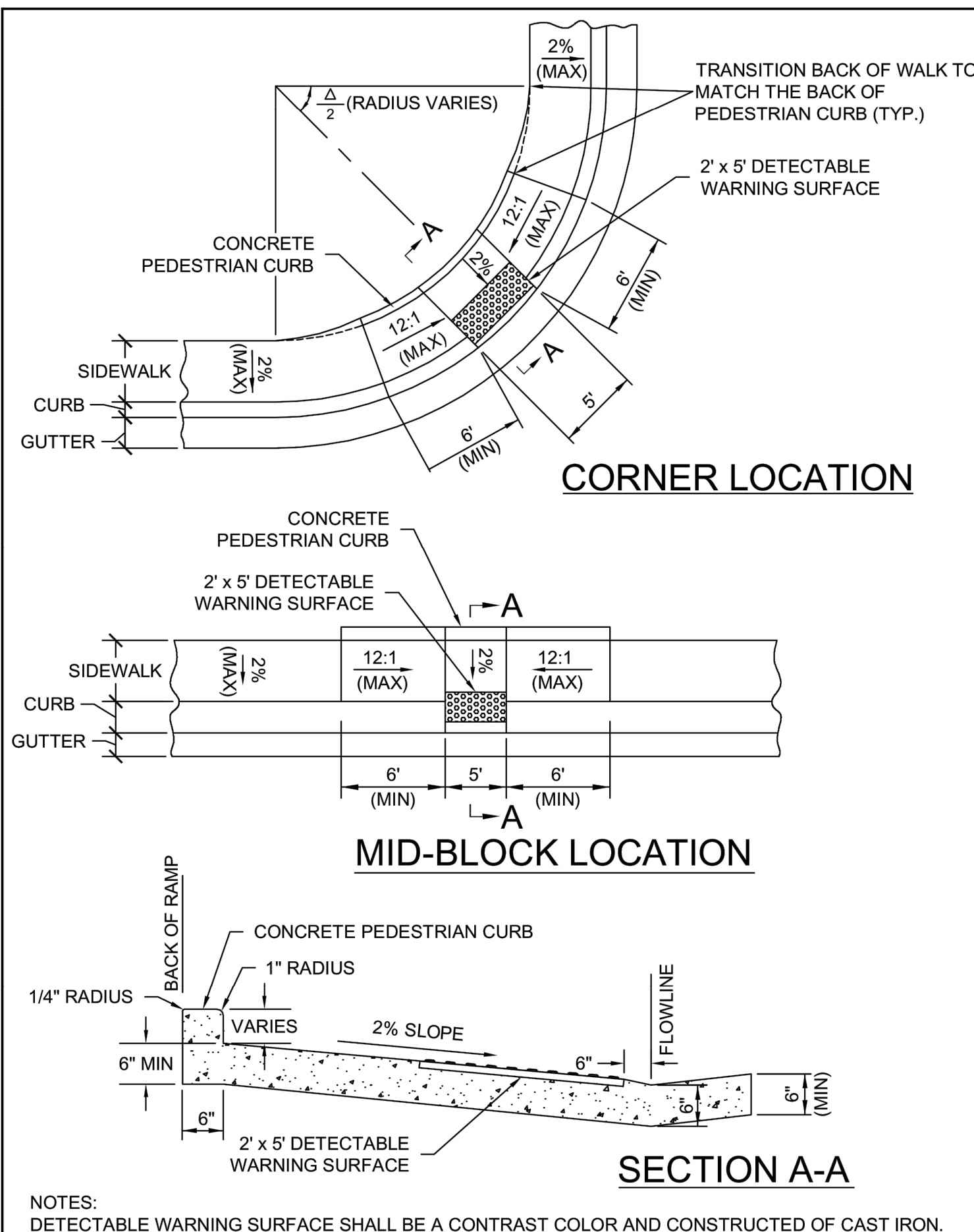
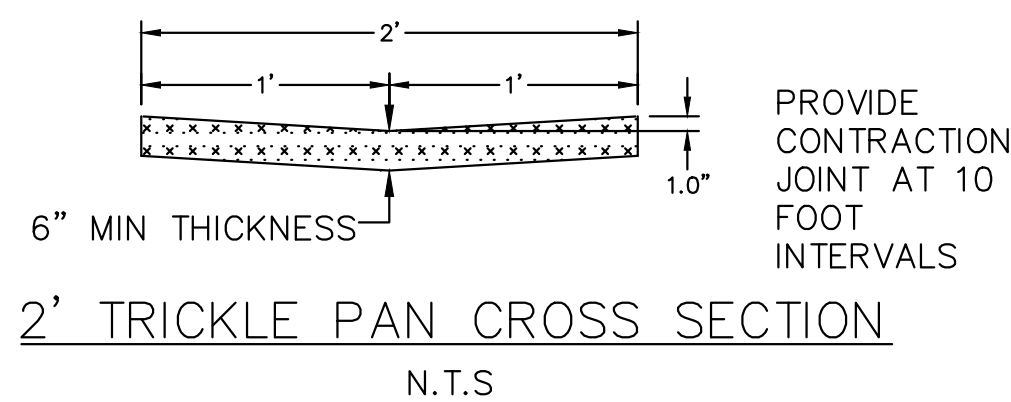
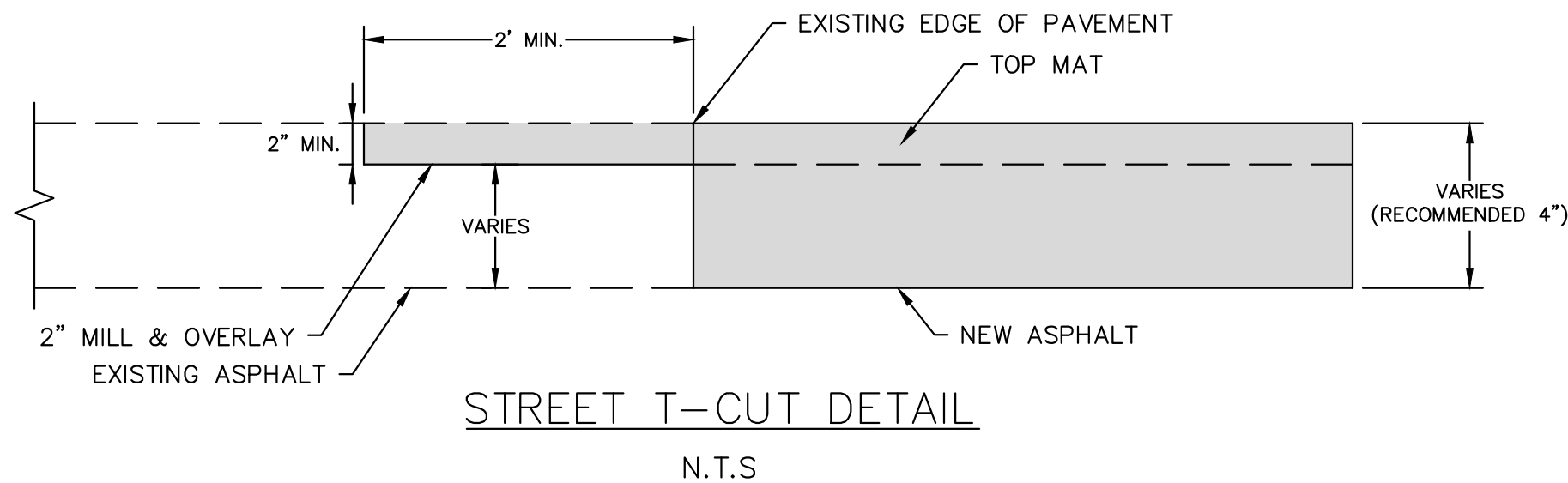
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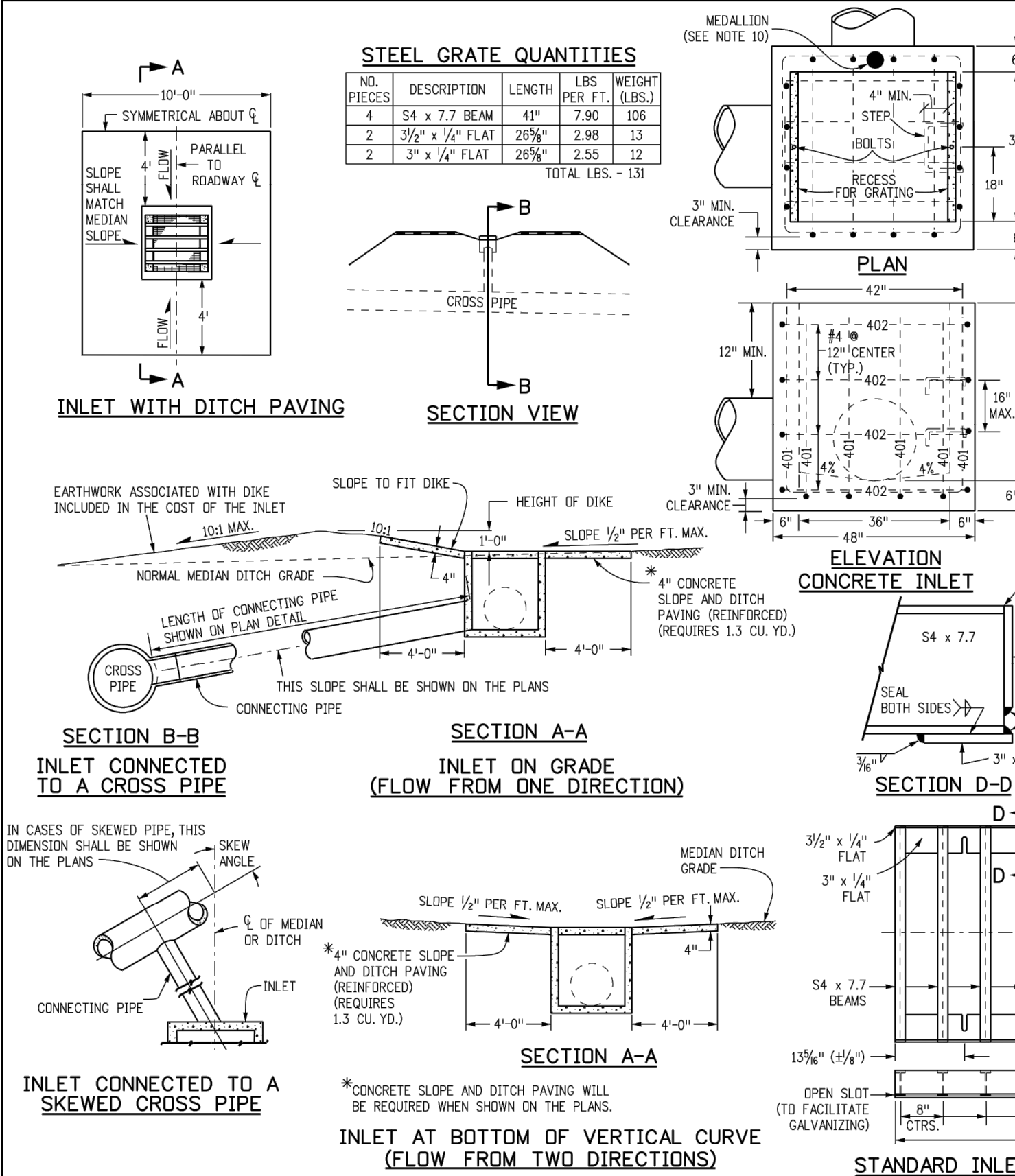
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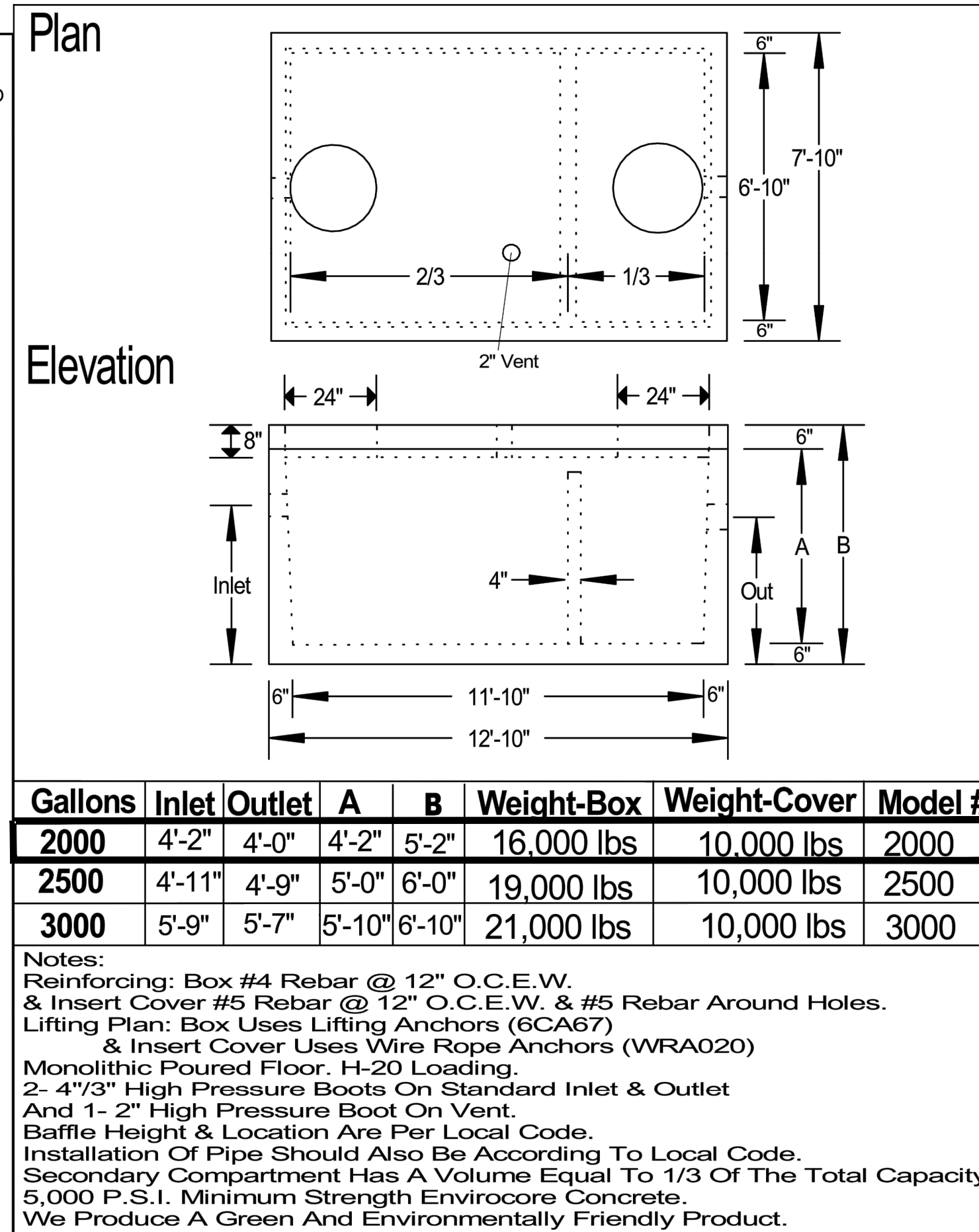
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TOWN OF WINDSOR COLORADO	ACCESS RAMPS
STANDARD CONSTRUCTION DETAILS	REVISED DATE: 10/1/2007 REVISION BY: CTT
	SCALE: N.T.S.



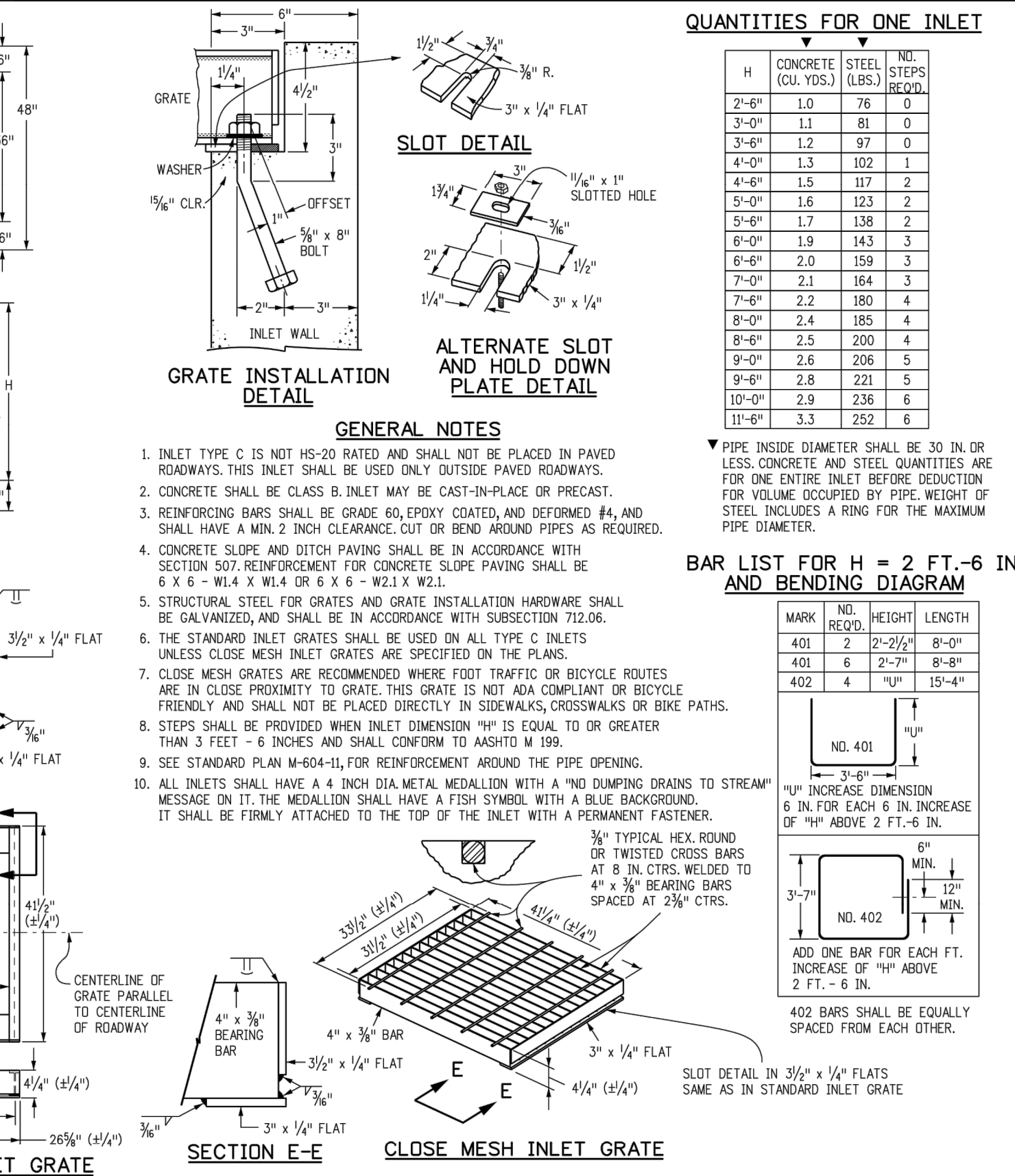
Computer File Information	Sheet Revisions	Colorado Department of Transportation
Creation Date: 07/31/19	Date:	2829 West Howard Place
Designer Initials: JBK	Comments:	CDOT HQ, 3rd Floor
Last Modification Date: 07/31/19		Denver, CO 80204
Detailer Initials: LTA		Phone: 303-757-9021 FAX: 303-757-9868
CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English		Project Development Branch JBK



Gallons	Inlet	Outlet	A	B	Weight-Box	Weight-Cover	Model #
2000	4'-2"	4'-0"	4'-2"	5'-2"	16,000 lbs	10,000 lbs	2000
2500	4'-11"	4'-9"	5'-0"	6'-0"	19,000 lbs	10,000 lbs	2500
3000	5'-9"	5'-7"	5'-10"	6'-10"	21,000 lbs	10,000 lbs	3000

Copeland Enterprises Inc.
904 South Lipan
Denver, CO 80223

2000, 2500, & 3000 Gallon
Grease Or Sand & Oil Interceptor
No Scale
Page 66



Computer File Information	Sheet Revisions	Colorado Department of Transportation
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CAD Ver.: MicroStation V8 Scale: Not to Scale Units: English		Project Development Branch JBK

INLET, TYPE C	STANDARD PLAN NO.
	M-604-10
	Standard Sheet No. 1 of 1

REVISIONS

DATE	DESCRIPTION

BAMG

JFS

BAMG

005_CONSTRUCTION DETAILS

COLORADO L/C

PENDING APPROVAL

NOT FOR CONSTRUCTION

PERSONAL ENGINEER

ZIGGI'S SEVERANCE SITE PLAN

CONSTRUCTION DETAILS

TST, INC.

CONSULTING ENGINEERS

748 Whalers Way

Suite 200 Fort Collins

Colorado 80525

Phone: 970.226.0557

JOB NO.

1076.0005.00

SCALE

N/A

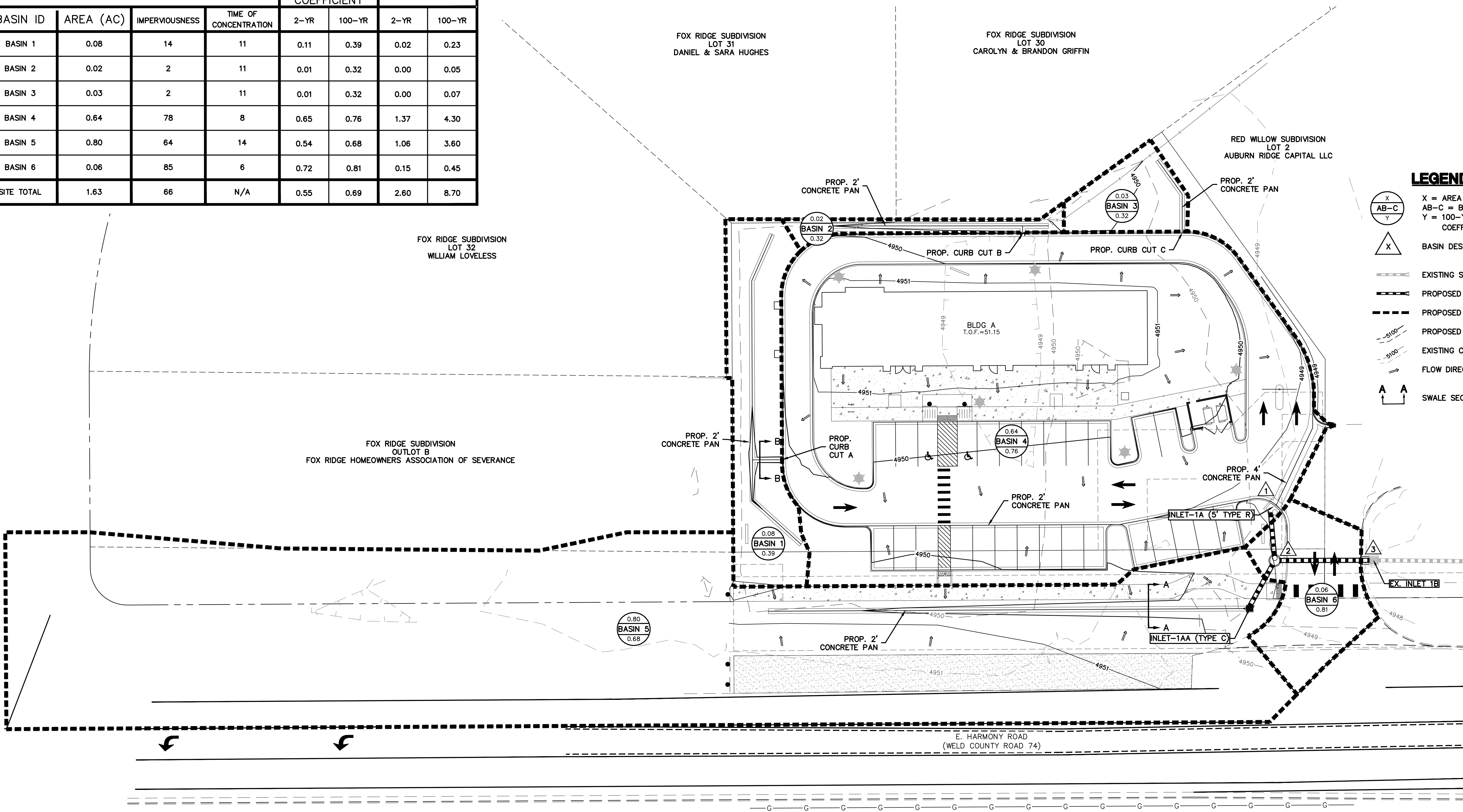
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JANUARY 2023

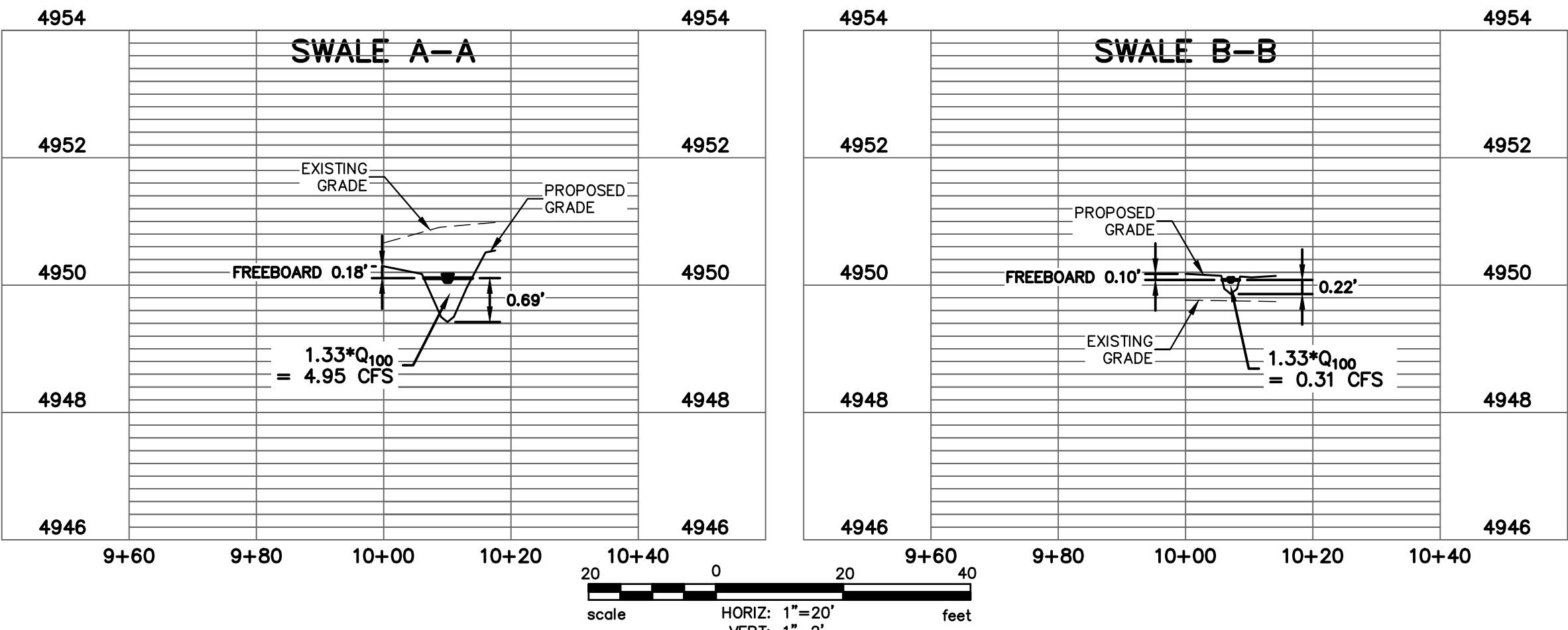
SHEET

11 of 15

BASIN ID	AREA (AC)	IMPERVIOUSNESS	TIME OF CONCENTRATION	RUNOFF COEFFICIENT		RUNOFF (CFS)	
				2-YR	100-YR	2-YR	100-YR
BASIN 1	0.08	14	11	0.11	0.39	0.02	0.23
BASIN 2	0.02	2	11	0.01	0.32	0.00	0.05
BASIN 3	0.03	2	11	0.01	0.32	0.00	0.07
BASIN 4	0.64	78	8	0.65	0.76	1.37	4.30
BASIN 5	0.80	64	14	0.54	0.68	1.06	3.60
BASIN 6	0.06	85	6	0.72	0.81	0.15	0.45
SITE TOTAL	1.63	66	N/A	0.55	0.69	2.60	8.70



- LEGEND**
- X = AREA (ACRES)
AB-C = BASIN NUMBER
Y = 100-YR RUNOFF COEFFICIENT "C"
 - BASIN DESIGN POINT
 - EXISTING STORM SEWER
 - PROPOSED STORM SEWER
 - PROPOSED BASIN BOUNDARY
 - PROPOSED CONTOURS
 - EXISTING CONTOURS
 - FLOW DIRECTION
 - SWALE SECTION



REVISIONS

NO.	DATE	DESCRIPTION

DRAWN

BAMG

CHECKED

JFS

DESIGNED

BAMG

FILENAME

0005_DRAINAGE

COLORADO LICENSE
NATHAN A. ZIGGI
PENDING APPROVAL
NOT FOR CONSTRUCTION
PROFESSIONAL ENGINEER

ZIGGI'S SEVERANCE SITE PLAN

DRAINAGE PLAN

TST

TST, INC.

CONSULTING ENGINEERS

748 Whalers Way

Suite 200 Fort Collins

Colorado 80525

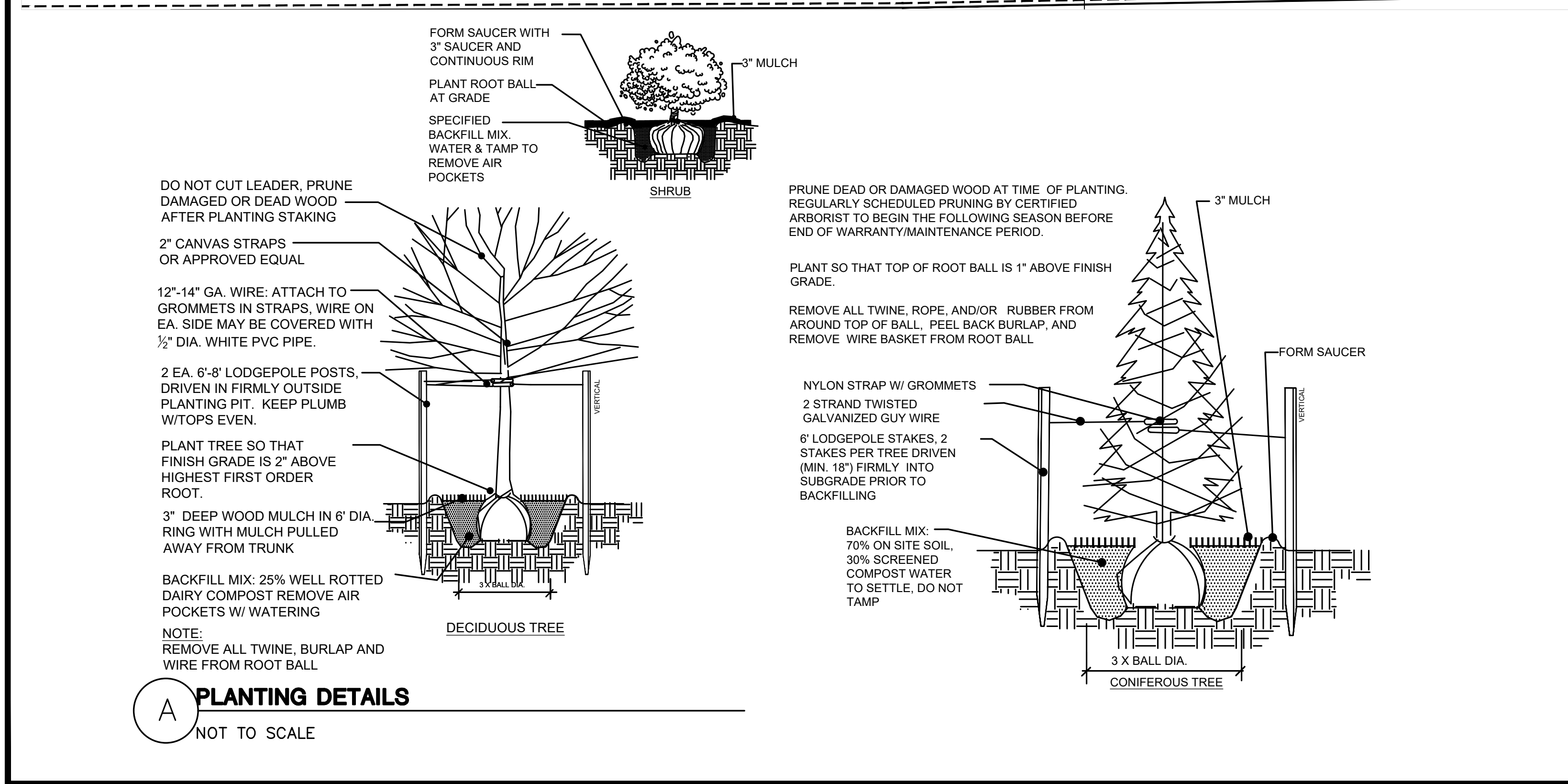
Phone: 970.226.0557

JOB NO. 1076.0005.00

SCALE 1" = 20'

DATE JANUARY 2023

SHEET 12 of 15



EVERGREEN TREES	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPREAD	HEIGHT	HYDROZONE	
PPBA	2	PICEA PUNGENS 'BAKERI'	BAKERI SPRUCE	6' HT. B&B	20'	40'	MED.	
SMALL TREES	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPREAD	HEIGHT	HYDROZONE	
ATAT	2	ACER TATARICUM	TATARIAN MAPLE	B&B 1.5" CAL MIN.	20'	20'	LOW	
STREET/LARGE TREES	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPREAD	HEIGHT	HYDROZONE	
GTII	3	GLEDTISIA TRIACANTHOS INERMIS 'IMPERIAL'	IMPERIAL HONEYLOCUST	B&B 2.0" CAL MIN.	40'	40'	LOW	
GD	3	GYMNOCLADUS DIOICA 'ESPRESSO'	KENTUCKY COFFEETREE	B&B 2.0" CAL MIN.	50'	60'	LOW	
QUME	2	QUERCUS MUEHLENBERGII	CHINKAPIN OAK	B&B 2.0" CAL MIN.	50'	50'	LOW	
QSHU	3	QUERCUS SHUMARDII	SHUMARD RED OAK	B&B 2.0" CAL MIN.	40'	50'	LOW	
UACC	3	ULMUS X 'ACCOLADE'	ACCOLADE ELM	B&B 2.0" CAL MIN.	40'	70'	MED.	
SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPREAD	HEIGHT	HYDROZONE	SPACING
SGE	22	CORNUS SERICEA 'ARTIC FIRE'	ARTIC FIRE DOGWOOD	5 GAL	4' O.C.	4'	MED.	48" o.c.
EFO	17	EUONYMUS FORTUNEI 'EMERALD GAIETY' TM	EMERALD GAIETY EUONYMUS	5 GAL	4' O.C.	2'	MED.	48" o.c.
FIN	9	FORSYTHIA X INTERMEDIA 'GOLD TIDE' TM	GOLD TIDE FORSYTHIA	5 GAL	4' O.C.	2'	MED.	48" o.c.
JCA	35	JUNIPERUS CHINENSIS 'ARMSTRONGII'	ARMSTRONG JUNIPER	5 GAL	3' O.C.	3'	LOW	36" o.c.
JCG	13	JUNIPERUS COMMUNIS 'GREEN CARPET'	GREEN CARPET JUNIPER	5 GAL	6' O.C.	1'	LOW	72" o.c.
JSC	4	JUNIPERUS SCOPULORUM	ROCKY MOUNTAIN JUNIPER	5 GAL	12' O.C.	30'	LOW	144" o.c.
JSM	7	JUNIPERUS SCOPULORUM 'MEDORA'	MEDORA JUNIPER	5 GAL	5' O.C.	20'	LOW	60" o.c.
MAC	12	MAHONIA AQUIFOLIUM 'COMPACTA'	COMPACT OREGON GRAPE	5 GAL	3' O.C.	3'	MED.	36" o.c.
PAT	6	PEROVSKIA ATRIPLICIFOLIA	RUSSIAN SAGE	5 GAL	4' O.C.	4'	LOW	48" o.c.
POL	15	PHYSCOPARUS OPULIFOLIUS 'LITTLE DEVIL' TM	DWARF NINEBARK	5 GAL	4' O.C.	3'	LOW	48" o.c.
PFR	26	POTENTILLA FRUTICOSA	BUSH CINQUEFOIL	5 GAL	4' O.C.	3'	LOW	48" o.c.
PBR	14	PRUNUS BESSEYI 'PAWNEE BUTTES'	SAND CHERRY	5 GAL	6' O.C.	2'	LOW	72" o.c.
RAR	8	RHUS ARNATICA 'GRO-LOW'	GRO-LOW FRAGRANT SUMAC	5 GAL	6' O.C.	3'	LOW	72" o.c.
SRA	9	SYRINGA PATULA 'MISS KIM'	MISS KIM LILAC	5 GAL	5' O.C.	5'	LOW	60" o.c.
VA	7	VIBURNUM TRILOBUM 'ALFREDO COMPACTUM'	ALFREDO COMPACT AMERICAN CRANBERRYBUSH	5 GAL	5' O.C.	5'	MED.	60" o.c.
GRASSES	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPREAD	HEIGHT	HYDROZONE	SPACING
BG	61	BOUTELOUA GRACILIS 'BLONDE AMBITION'	BLUE GRAMA	1 GAL	3' O.C.	3'	LOW	36" o.c.
CB	130	CALAMAGROSTIS BRACHYTRICHA	REED GRASS	5 GAL	3' O.C.	4'	LOW	36" o.c.
SS	17	SCHIZACHYRIUM SCOPARIUM 'THE BLUES'	LITTLE BLUESTEM	5 GAL	2' O.C.	4'	LOW	24" o.c.

<u>GROUND COVERS</u>	<u>COMMON NAME</u>
	COBBLE/ROCK MULCH
	NATIVE SEED - DRY LAND PASTURE MIX
	TURF

PLANT CATEGORY	SF	WATER USE	GAL / SF	GALS / SEASON
IRRIGATED TURF	3,991	HIGH	15	59,865
PLANTING BEDS	7,528	MEDIUM	3	22,584
NATIVE SEEDING	6,852	LOW	2	13,704
		TOTAL GALLONS USED		96,153.00

1. ANY DISCREPANCIES WITH THE DRAWINGS AND SITE CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE PRIOR TO PROCEEDING WITH CONSTRUCTION.
2. CONTRACTOR TO VERIFY ALL FIELD CONDITIONS, EASEMENTS, PROPERTY LINES, ETC. PRIOR TO STARTING WORK. SHOULD ANY DISCREPANCIES, OMISSIONS, OR ERRORS OCCUR, NOTIFY THE OWNER'S REPRESENTATIVE IMMEDIATELY.
3. CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UTILITIES 48 HRS. PRIOR TO ANY EXCAVATION OR PLANTING.
4. LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY COORDINATION WITH SUBCONTRACTORS AS REQUIRED TO ACCOMPLISH PLANTING OR LANDSCAPING OPERATIONS.
5. EXCAVATED MATERIAL TO BE USED AS FILL WILL HAVE ALL ROCKS, DEBRIS, WASTE MATERIAL, FROZEN MATERIAL, VEGETATION LARGER THAN 3" IN ANY DIMENSION REMOVED BEFORE PLACEMENT AND COMPACTION OF SOIL.
6. PROVIDE POSITIVE DRAINAGE AWAY FROM BUILDING FOUNDATIONS AND A SMOOTH TRANSITION BETWEEN ALL ADJACENT EXISTING GRADES AND PROPOSED GRADES.
7. ONCE COMPACTED AND FINE GRADED, ALL ROCKS, DEBRIS, WASTE MATERIAL AND VEGETATION MATERIAL LARGER THAN 2" WILL BE RAKED FROM THE SURFACE AND REMOVED FROM SITE.
8. TO THE MAXIMUM EXTENT FEASIBLE, TOPSOIL THAT IS REMOVED DURING CONSTRUCTION ACTIVITY SHALL BE CONSERVED FOR LATER USE ON AREAS REQUIRING RE-VEGETATION AND LANDSCAPING.
9. PRIOR TO ANY MAJOR INSTALLATION, THE SOIL IN ALL NON-PAVED AREAS INCLUDING PARKWAYS AND MEDIAN SHALL BE THOROUGHLY LOOSENED TO A DEPTH OF NOT LESS THAN EIGHT (8) INCHES AND SOIL AMENDMENT SHALL BE THOROUGHLY INCORPORATED INTO THE SOIL TO A DEPTH OF SIX (6) INCHES BY TILLING, DISCING OR OTHER SUITABLE METHOD, AT A RATE OF AT LEAST THREE (3) CUBIC YARDS OF SOIL AMENDMENT PER ONE THOUSAND (1,000) SQUARE FEET OF LANDSCAPED AREA.
10. ALL PLANT MATERIALS ARE SIZED AND OUTLINED IN PLANT LIST. ALL PLANTS TO BE PLANTED IN AMENDED SOIL AND STAKED AS SHOWN IN DETAILS. ALL PLANT MATERIAL SHALL MEET OR EXCEED THE CODE OF STANDARDS CURRENTLY RECOMMENDED BY THE COLORADO NURSERY ACT FOR NUMBER ONE GRADE.
11. STREET AND ORNAMENTAL TREES SHALL BE PLANTED NO CLOSER THAN FORTY (40) FEET AND FIFTEEN (15) FEET RESPECTIVELY FROM STREET LIGHTS. NO TREES SHALL BE PLANTED WITHIN TEN (10) FEET FROM WATER AND SEWER LINES, FOUR (4) FEET FROM GAS, TELEPHONE AND ELECTRIC UTILITIES, AND TEN (10) FEET FROM ANY DRIVEWAY.
12. MINIMUM CLEARANCE OF THREE (3) FEET ON EACH SIDE OF FIRE DEPARTMENT CONNECTION (FDC). NO VEGETATION OTHER THAN TURF OR GROUND COVERS PLANTED IN FRONT OF FDC.
13. IF TREES OR SHRUBS ARE LOCATED ON TOP OF FIELD VERIFIED UTILITIES, CONTRACTOR SHALL NOTIFY OWNER BEFORE ANY DIGGING HAS COMMENCED. VERIFY WITH OWNER IF AND WHICH SHRUBS OR OR TREES SHALL BE TAKEN OUT OF PROJECT CONTRACT OR RELOCATED.
14. NO TREE SHALL BE PLACED WITHIN 30' OF STOP SIGNS.
15. IF PLANTS ARE IN NEED OF REPLACEMENT DUE TO DECLINING HEALTH, DISEASE, OR DEATH, THE PLANTS MUST BE REPLACED WITH THE ORIGINALS SPECIES UNLESS APPROVED BY THE TOWN.
16. CHANGES IN PLANT SPECIES, OF PLANT LOCATIONS FROM WHAT IS LISTED ON THE LANDSCAPE PLAN WILL REQUIRE THE APPROVAL OF THE TOWN PRIOR TO INSTALLATION OF REPLACEMENT. OVERALL QUANTITY AND QUALITY TO BE CONSISTENT WITH THE APPROVED PLANS. IN THE EVENT OF CONFLICT WITH THE QUANTITIES INCLUDED IN THE PLANT LIST, SPECIES AND QUANTITIES SHALL BE PROVIDED.
17. ALL PLANT MATERIAL SHALL HAVE ALL WIRE, TWINE, BASKETS, BURLAP, AND ALL OTHER NON-BIODEGRADABLE CONTAINMENT MATERIAL REMOVED FROM THE CANOPY, TRUNK AND OR ROOT BALL OF THE PLANTS PRIOR TO PLANTING.
18. ALL SHRUB BEDS SHALL HAVE A MINIMUM 3" DEPTH OF A MIX OF 40% 1" AND 60% 2" COBBLE MIX. ONLY AREAS INDICATED ON PLAN WILL HAVE LAYER OF LANDSCAPE FABRIC OR APPROVED EQUAL INSTALLED WITH 6" OVERLAP AT SEAMS WITH 4" STAPLES 4" OC. IN ALL DIRECTIONS AND ALONG EDGES.
19. UNIFORMLY COMPACT AND FINE GRADE SOD GRASS AREAS AND PLANTING BEDS TO A SMOOTH SURFACE, FREE FROM IRREGULAR SURFACE CHANGES. CUT OUT SOFT SPOTS, FILL IN LOW SPOTS AND TRIM HIGH SPOTS TO COMPLY WITH REQUIRED GRADE TOLERANCES.
20. EDGING SHALL BE INSTALLED BETWEEN ALL TURF AREAS AND SHRUB BEDS AND SHALL BE HEAVY DUTY, ROLL TOP STEEL EDGING MIN. 1"x4" AND SHALL BE SET LEVEL WITH THE TOP OF THE ADJACENT SOD'S THATCH LINE. NO EDGING SHALL BE USED BETWEEN CEDAR MULCH AND COBBLE TRANSITIONS.
21. NATIVE SEED AREAS SHALL BE AMENDED TO A DEPTH OF SIX (6) INCHES BY TILLING, DISCING OR OTHER SUITABLE METHOD, AT A RATE OF AT LEAST ONE (1) CUBIC YARD OF SOIL AMENDMENT PER ONE THOUSAND (1,000) SQUARE FEET OF LANDSCAPED AREA.

1. ALL DISTURBED AREAS SHALL BE SEEDED AS INDICATED ON PLANS.
2. PREPARE AND AMEND SOIL PER STANDARD LANDSCAPE NOTES.
3. DRILL SEED OR APPROVED EQUAL ALL DISTURBED AREAS WITH SPECIFIED SEED MIX AND AT SPECIFIED RATE.
4. IMMEDIATELY FOLLOWING THE SEEDING OPERATION, ADD STRAW MULCH TO THE SEEDED AREAS AS REQUIRED BY SEEDING METHOD.
5. APPLY STRAW MULCH AT A MINIMUM OF 1.5 TONS PER ACRE OF AIR DRY MATERIAL. SPREAD STRAW MULCH UNIFORMLY OVER THE AREA WITH MECHANICAL MULCH SPREADER / CRIMPER. DO NOT MULCH WHEN WIND VELOCITY EXCEEDS 10 MPH.
6. WHEREVER THE USE OF CRIMPING EQUIPMENT IS PRACTICAL, PLACE MULCH IN THE MANNER NOTED ABOVE AND ANCHOR IT INTO THE SOIL. USE A DISC SUCH AS A MULCH TILLER, WITH A FLAT SERRATED DISC AT LEAST ¼ INCH IN THICKNESS, HAVING DULL EDGES, AND SPACE NO MORE THAN 9 INCHES APART, WITH DISCS OF SUFFICIENT DIAMETER TO PREVENT THE FRAME OF THE EQUIPMENT FROM PENETRATING THE MULCH TO A MINIMUM DEPTH OF 2 INCHES AND ACROSS THE SLOPE WHERE PRACTICAL WITH NO MORE THAN TWO PASSES OF THE ANCHORING EQUIPMENT.
7. IMMEDIATELY UPON COMPLETION OF THE MULCHING AND BINDING OPERATION, THE SEEDED AREAS SHALL BE IRRIGATED, KEEPING THE TOP 2 INCHES OF SOIL EVENLY MOIST UNTIL SEED HAS UNIFORMLY GERMINATED AND GROWN TO A HEIGHT OF 2-INCHES.
8. TEMPORARY IRRIGATION / WATERING APPLICATION SHALL BE DONE IN A MANNER WHICH WILL PROVIDE UNIFORM COVERAGE BUT WHICH WILL NOT CAUSE EROSION, MOVEMENT, OR DAMAGE TO THE FINISHED SURFACE.

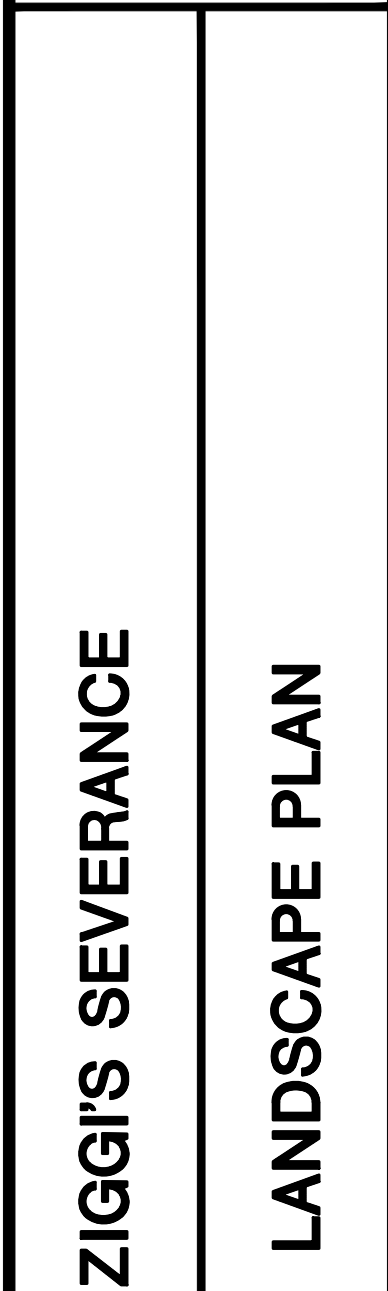
1. SOD TO BE 100% COLORADO GROWN TURF BLEND SPECIFICALLY GROWN FOR LOW WATER LAWN APPLICATIONS WITH MINIMUM THREE (3) IMPROVED VARIETIES OF TEXAS BLUEGRASS AND BLUEGRASS CULTIVARS GROWN IN COLORADO OR AS SPECIFIED AND HAVING A HEALTHY VIGOROUS ROOT SYSTEM. ONCE TURF IS LAID, IT SHALL BE PROPERLY ROLLED, COMPACTED AND PUSHED TOGETHER TO ELIMINATE ANY GAPS BETWEEN ROLLED EDGES. APPLY FERTILIZER IN THESE AREAS PER SOD FARM'S RECOMMENDATIONS.

PAWNEE BUTTES DRYLAND AGGRESSIVE PASTURE MIX #2 OR APPROVED
EQUAL.

20 PLS lbs/ACRE (PLEASE NOTE THIS IS DOUBLE THE RECOMMENDED
RATE)

(33.3%) CRESTED WHEATGRASS
(33.3%) RUSSIAN WILDRYE
(33.3%) WESTERN WHEATGRASS

DRAWN	PDB
CHECKED	MJB
DESIGNED	BEW
FILENAME	1076.0005_LA Plan



JOB NO.	1076.0005.00
SCALE	1"=20'
DATE	JANUARY 2023
SHEET	13 of 15

Schedule											
Symbol	Label	Image	Quantity	Manufacturer	Catalog Number	Description	Number Lamps	Lumens Per Lamp	Light Loss Factor	Wattage	Plot
	S2r3		1	Lithonia Lighting	DSX1 LED P4 30K T3M MVOLT	DSX1 LED P4 30K T3M MVOLT	1	13064	1	250	
	S1r3		1	Lithonia Lighting	DSX1 LED P4 30K T3M MVOLT	DSX1 LED P4 30K T3M MVOLT	1	13064	1	125	
	S2r390		2	Lithonia Lighting	DSX1 LED P4 30K T3M MVOLT	DSX1 LED P4 30K T3M MVOLT	1	13064	1	250	
	S4r3		3	Lithonia Lighting	DSX1 LED P4 30K T3M MVOLT	DSX1 LED P4 30K T3M MVOLT	1	13064	1	500	
	C		16	Gotham Architectural Lighting	EVO6WC 30/15 AR ND LSS	EVO 6IN CYLINDER, WALL MOUNT, 80 CRI, 3000K, 1500LM, NARROW DIST, CLEAR, SEMI-SPEC	1	1503	1	14.7	

Note

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

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

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

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

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

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

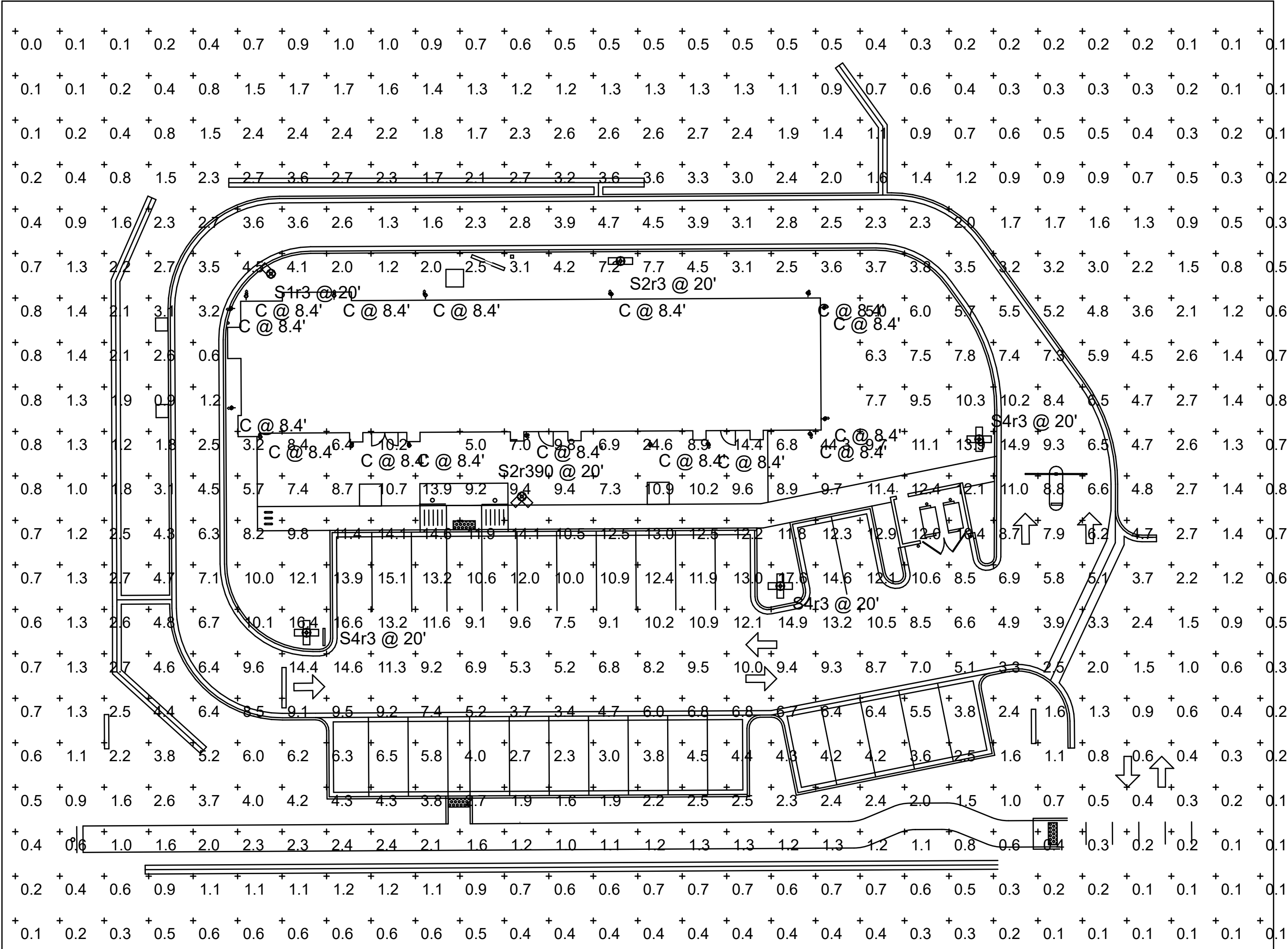
Luminaire Locations										
		Location						Aim		
No.	Label	X	Y	Z	MH	Orientation	Tilt	X	Y	Z
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1	S2r3	3241.75	1754.75	20.00	20.00	180.00	0.00			
1	S2r390	3200.50	1704.75	20.00	20.00	180.00	0.00			
2	S2r390	3228.75	1704.50	20.00	20.00	90.00	0.00			
1	S4r3	3277.75	1680.50	20.00	20.00	0.00	0.00			
2	S4r3	3169.75	1670.00	20.00	20.00	0.00	0.00			
3	S4r3	3323.50	1714.25	20.00	20.00	0.00	0.00			
1	C	3177.50	1746.50	8.40	8.40	0.00	0.00	3177.50	1746.76	0.00
2	C	3157.75	1746.50	8.40	8.40	0.00	0.00	3157.75	1746.76	0.00
3	C	3197.75	1746.50	8.40	8.40	0.00	0.00	3197.75	1746.76	0.00
4	C	3239.50	1746.50	8.40	8.40	0.00	0.00	3239.50	1746.76	0.00
5	C	3284.25	1746.50	8.40	8.40	0.00	0.00	3284.25	1746.76	0.00
6	C	3287.50	1743.75	8.40	8.40	90.00	0.00	3287.76	1743.75	0.00
7	C	3287.75	1718.75	8.40	8.40	90.00	0.00	3288.01	1718.75	0.00
8	C	3284.75	1715.25	8.40	8.40	180.00	0.00	3284.75	1714.99	0.00
9	C	3261.75	1713.00	8.40	8.40	180.00	0.00	3261.75	1712.74	0.00
10	C	3248.50	1713.25	8.40	8.40	180.00	0.00	3248.50	1712.99	0.00
11	C	3194.25	1713.25	8.40	8.40	180.00	0.00	3194.25	1712.99	0.00
12	C	3181.50	1713.25	8.40	8.40	180.00	0.00	3181.50	1712.99	0.00
13	C	3221.00	1715.25	8.40	8.40	180.00	0.00	3221.00	1714.99	0.00
14	C	3160.75	1715.25	8.40	8.40	180.00	0.00	3160.75	1714.99	0.00
15	C	3154.50	1721.00	8.40	8.40	270.00	0.00	3154.24	1721.00	0.00
16	C	3154.25	1743.25	8.40	8.40	270.00	0.00	3153.99	1743.25	0.00

Statistics

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Calc Zone #1		3.8 fc	44.3 fc	0.0 fc	N/A	N/A

Note

1.file=visual-files-june2022-ziggiseverance.vsl



Plan View

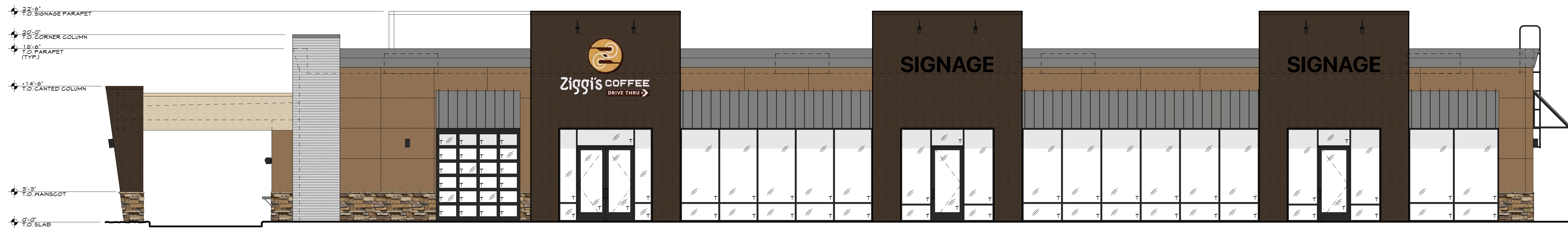
Scale - 1" = 30ft



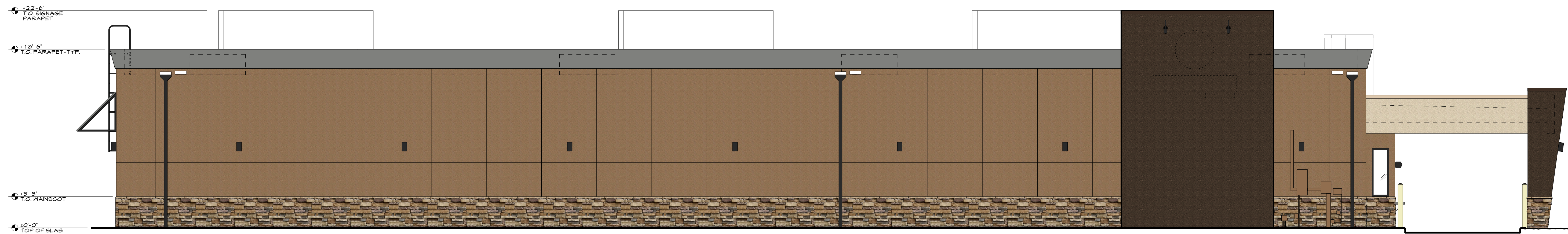
4 WEST ELEVATION
SCALE: 3/16" = 1'-0"



3 EAST ELEVATION
SCALE: 3/16" = 1'-0"



2 SOUTH ELEVATION
SCALE: 3/16" = 1'-0"



1 NORTH ELEVATION
SCALE: 3/16" = 1'-0"

Ziggi's Coffee

Traffic Impact Study

American Eagle Properties

Severance, Colorado

December 9, 2022

Prepared By:



Sustainable Traffic Solutions, Inc.

<http://www.sustainabletrafficsolutions.com/>

Joseph L. Henderson, PE, PTOE

303.589.6875

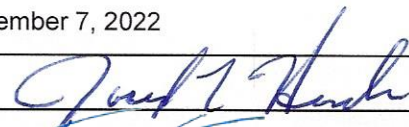
joe@sustainabletrafficsolutions.com

Transportation Impact Study

Base Assumptions Form

Project Information					
Project Name: Ziggi's Coffee					
Project Location: north side of Harmony Road and west of the Dollar General					
TIS Assumptions					
Type of Study	Master:	Full: ☒	Intermediate:	Memo:	No TIS Req:
Study Area Boundaries	North:	South:	East: Teller Street	West: Fox Ridge Parkway	
Study Years	Short-range: 2028 (completion in 2023)		Long Range: 2042		
Future Traffic Growth Rate	5% for through movements on Harmony Road, 2% for all other movements				
Study Intersections	1. Harmony/Fox Ridge Pkwy		5.		
	2. Harmony/site access		6.		
	3. Harmony/Teller Street		7.		
	4.		8.		
Time Period For Study	Peak Hour: Weekday morning and evening peak hours				
Trip Generation Rates	see attached trip generation estimate				
Trip Adjustment Factors	Passby: yes		Captive Market: no		
Overall Trip Distribution	See attached sketch				
Mode Split Assumptions	none				
Committed Roadway Improvements	Harmony Road is assumed to be widened to four through lanes by 2042				
Other Traffic Studies	N/A				
Areas Requiring Special Study					
Is the project within 1 mile of a State Highway?	Yes _____ No ☒				

Date: November 7, 2022

Traffic Engineer: 

Local Entity Staff: 

Table 3. Trip Generation Estimate

Land Use	ITE Code ¹	Size	Unit	Average Daily Trips				Morning Peak Hour Trips				Evening Peak Hour Trips			
				Rate	Total	In	Out	Rate	Total	In	Out	Rate	Total	In	Out
Coffee/Donut Shop with a Drive Through Window	937	1.5	1,000 ft ²	533.57	800	400	400	85.88	129	66	63	38.99	58	29	29
Strip Retail Plaza (<40k)	822	2.5	1,000 ft ²	54.45	136	68	68	2.36	6	4	2	6.59	16	8	8
Total	---	---	---	---	936	468	468	---	135	69	65	---	75	37	37

Pass-By Trips ^{2, 3}

Land Use	Trip Type	Morning Peak Hour				Evening Peak Hour			
		%	Total	In	Out	%	Total	In	Out
Coffee/Donut Shop with a Drive Through Window	Pass-By	90%	---	59	57	98%	---	29	29
	Non-Pass-By	10%	---	7	6	2%	---	1	1

Notes:

1. The trip generation estimate is based on rates contained in [Trip Generation, 11th Edition](#) (Institute of Transportation Engineers, September 2021).
2. Pass-by trips were estimated using information that is contained in the [Trip Generation Handbook](#) (Institute of Transportation Engineers, September 2017).
3. The [Trip Generation Handbook](#) doesn't include pass-by rates for the coffee/donut shop with a drive through window, so pass-by rates for coffee/donut shop with drive-through window and no indoor seating were used.

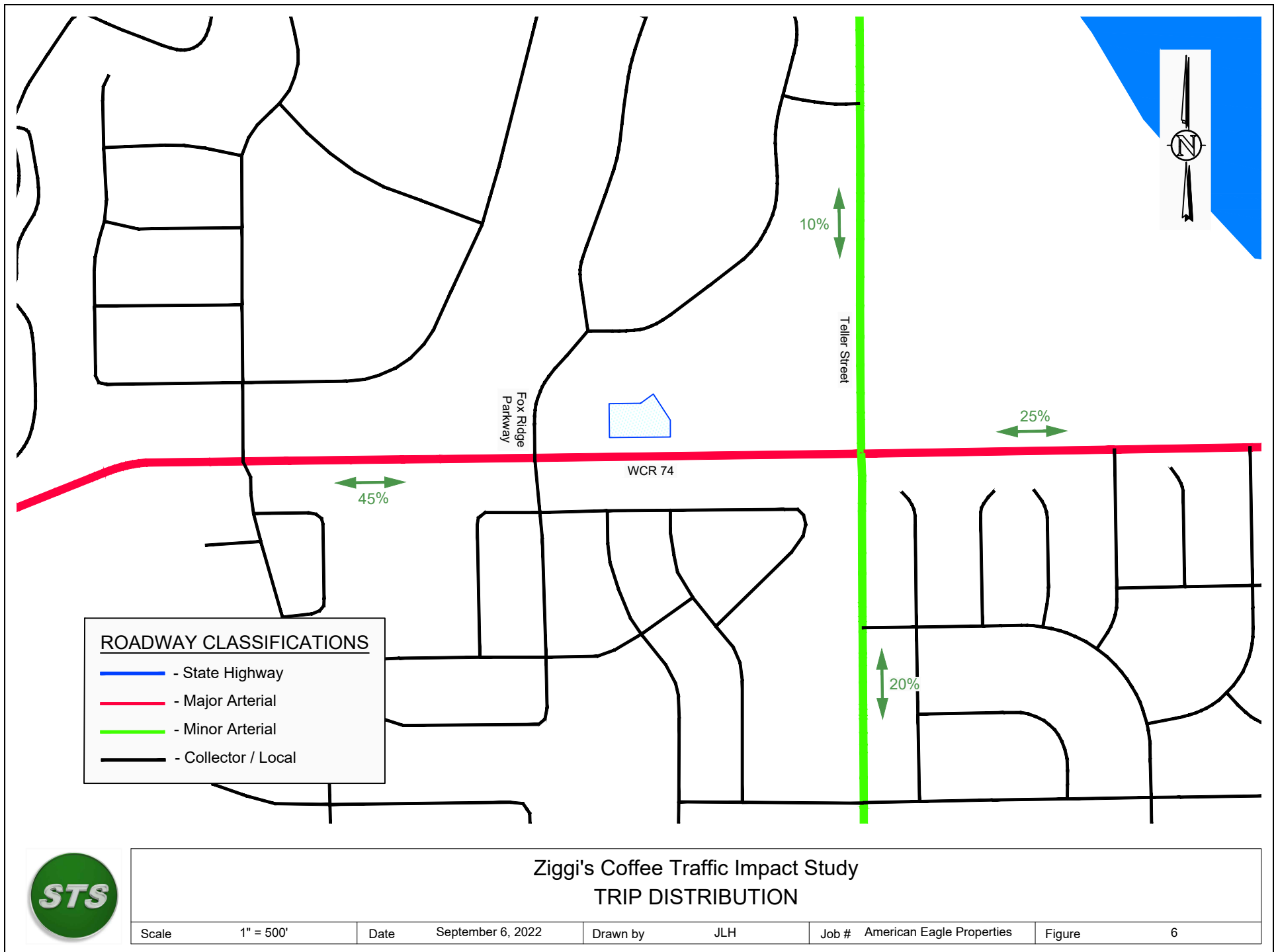


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Ziggi's Coffee

Traffic Impact Study

1.0 Introduction

A 4,000 ft² retail building is planned on the north side of East Harmony Road at 9843 East Harmony Road in Severance. The building will include a 1,500 ft² Ziggi's Coffee shop and 2,500 ft² of additional retail space. The project is expected to be completed and occupied by the Year 2023. A vicinity map is contained in Figure 1, and Figure 2 contains a site plan. The development will share an access to East Harmony Road with the Dollar General that exists east of the site.

This study has been prepared in conformance with Town of Severance requirements for traffic studies¹. A Full TIS is necessary based on the Town's requirements.

2.0 Project Description

2.1 Study Area

The study area includes the following intersections.

- East Harmony Road / Fox Ridge Parkway / Muntjac Street
- East Harmony Road / site access
- East Harmony Road / Teller Street

The existing laneage and traffic control are contained in Figure 3.

The classifications shown in Figure 1 are based on Figure 11 of the Severance Transportation Plan². East Harmony Road is classified as a major arterial roadway, and Teller Street is classified as a minor arterial roadway. All other streets in the vicinity of the site are classified as local streets.

2.2 Study Assumptions

The following assumptions were utilized for this study.

Short-Term Planning Horizon. The development is expected to be completed and occupied in the Year 2023. Considering the Town's requirement that the short-term horizon be five years following the completion of the development, the short-term planning horizon is Year 2028.

Long-Term Planning Horizon. The long-term planning horizon is Year 2042 because it is 20 years in the future.

¹ Criteria for the Development of Transportation Impact Studies. Town of Severance. September 2021.

² Severance Transportation Plan. Town of Severance. Adopted June 22, 2021.

Growth in Background Traffic. The following growth rates were used based on the Town's standards.

- East Harmony Road – 5.0%
- Teller Street – 2.0%
- Fox Ridge Parkway / Muntjac Street – 0%

Saturation Flow Rate. The saturation flow rate was assumed to be 1,900 passenger cars / hour / lane which is typical in urban areas.

Improvements to Adjacent Roadways. The following improvements were assumed in the traffic study.

- East Harmony Road is planned as a four-lane major arterial roadway. It currently has one through lane in each direction with a center left turn lane. The roadway is assumed to be expanded to four through lanes by the Year 2042.

Peak Hour Factor (PHF). For the Year 2022 and the short-term planning horizon, the PHF was based on the data collected for the traffic study. The PHF for the access to the development was assumed to be 0.85 in the short-term planning horizon. For the long-term planning horizon, the PHF was assumed to be 0.92 for all movements unless the Year 2022 PHF is higher than 0.92. In that case, the Year 2022 PHF was used in the analysis of the long-term volumes.

Traffic Signal Timing. The traffic signal timing for East Harmony Road / Teller Street was obtained from the Town for use in the analysis.

Truck Percentage. Vehicle classification data were collected on East Harmony Road east of Fox Ridge Parkway. The data were processed by Miovision, and the following FHWA vehicle classifications apply to the Miovision categories; Lights - 1 through 3, Mediums - 4 through 7, Trucks - 8 through 13. It shows that there were 2% trucks on the roadway, so the truck percentage was assumed to be 2% for all movements. The following table summarizes the data collected for the study. The data are contained in Appendix A.

Direction	Lights	Mediums	Trucks	Total	% Trucks
Eastbound	5,257	81	20	5,358	2%
Westbound	5,096	73	19	5,188	2%
Total	10,353	154	39	10,546	2%

3.0 Existing Conditions

3.1 Existing Traffic Volumes

Traffic count data for the study were collected on Thursday June 2, 2022 by All Traffic Data (see Appendix A). The existing and future daily volumes are

summarized in Table 1, and the existing peak hour volumes are contained in Figures 4 and 5.

3.2 Level of Service Analysis

To evaluate the performance of the intersections within the study area, the level of service (LOS) was calculated using PTV VISTRO software. This software package utilizes criteria described in the Highway Capacity Manual³. LOS is a measure used to describe operational conditions at an intersection. LOS categories ranging from A to F are assigned based on the predicted delay in seconds per vehicle for the intersection as a whole, as well as for individual turning movements. LOS A indicates very good operations, and LOS F indicates poor, congested operations. In Severance, thresholds for acceptable level of service are LOS A through LOS D.

The results of the analysis are summarized in the following table. It shows that all of the intersections are operating at acceptable levels of service. The level of service for intersections with side-street stop-control is determined by the movement with the highest delay value.

Existing Traffic Conditions

Intersection	Control	Peak Hour	
		Morning	Evening
1 - East Harmony Road / Fox Ridge Parkway	Side-Street Stop	C	D
2 - East Harmony Road / Site Access	Side-Street Stop	B	B
3 - East Harmony Road / Teller Street	Signalized	B	B

The detailed analysis results are summarized in Table 2 and the VISTRO analysis results are contained in Appendix B.

4.0 Site Generated Traffic Volumes

4.1 Trip Generation

In order to estimate the traffic impacts associated with the development, the amount of traffic that is expected to be generated was estimated using trip generation rates contained in the Institute of Transportation Engineers Trip Generation manual⁴. The trip generation estimate is contained in Table 3.

Not all of the trips generated by commercial developments represent new trips added to the adjacent street network. Pass-by trips are made by motorists already using the street network as intermediate stops on the way to a primary trip destination without diverting from the route. Therefore, these trips are deducted from the traffic passing by the site. They were estimated using information from the Trip Generation

³ Highway Capacity Manual, 7th Edition. National Academy of Sciences, Engineering, and Medicine. 2022.

⁴ Trip Generation, 11th Edition. Institute of Transportation Engineers. September 2021.

Handbook, 3rd Edition⁵. Pass-by rates for a coffee/donut shop with a drive-through window and no indoor seating were used because the Trip Generation Handbook doesn't include pass-by rates for the coffee/donut shop with a drive through window. The pass-by trips for the Ziggi's Coffee shop are also contained in Table 3.

4.2 Trip Distribution and Assignment

The trip distribution for the development is contained in Figure 6. It is based on the relative volumes on the adjacent roadways. The peak hour trip assignments are contained in Figures 7 and 8. The pass-by traffic is included in these figures.

5.0 Year 2028 Traffic Volumes

Construction and occupancy of the development is expected to be completed in the Year 2023. Considering the Town's requirement that the short-term horizon be evaluated five years after completion, traffic volumes for the Year 2028 were analyzed for this planning horizon. Background traffic volumes for the Year 2028 were developed by inflating the existing traffic volumes by the annual growth rates that were discussed in Section 2.2. The background traffic volume scenarios are contained in Figures 9 and 10. The total traffic volume scenarios were developed by adding the trip assignment to the background volumes. The Year 2028 total traffic volume scenarios are contained in Figures 11 and 12.

The results of the analysis of the background and total traffic volume scenarios are summarized in the following table. It shows that the Fox Ridge Parkway / Muntjac Street and site access intersections are expected to operate below the acceptable level of service D. It isn't unusual for side-street stop-control intersections on an arterial street to operate poorly. The laneage and traffic control contained in Figure 3 were assumed in the analysis.

Year 2028 Traffic Conditions

Intersection	Control	Background		Total	
		Morning	Evening	Morning	Evening
1 - East Harmony Road / Fox Ridge Parkway	Side-Street Stop	D	F	E	F
2 - East Harmony Road / Site Access	Side-Street Stop	C	B	D	E
3 - East Harmony Road / Teller Street	Signalized	B	B	B	B

The detailed analysis results are summarized in Table 2 and the VISTRO analysis results are contained in Appendix B.

6.0 Year 2042 Traffic Volumes

The Year 2042 traffic volume scenarios were developed in the same manner as the Year 2028 traffic volume scenarios. The background traffic volume scenarios are

⁵ Trip Generation Handbook, 3rd Edition. Institute of Transportation Engineers. September 2017.

contained in Figures 13 and 14, and the total traffic volume scenarios are contained in Figures 15 and 16.

The results of the analysis of the background and total traffic volume scenarios are summarized in the following table. It shows that the Fox Ridge Parkway / Muntjac Street and site access intersections are expected to operate below the acceptable level of service D. It isn't unusual for side-street stop-control intersections on an arterial street with to operate poorly. The laneage and traffic control assumed in the analysis of the background and total traffic volume scenarios are contained in Figure 17.

Year 2042 Traffic Conditions

Intersection	Control	Background		Total	
		Morning	Evening	Morning	Evening
1 - East Harmony Road / Fox Ridge Parkway	Side-Street Stop	F	F	F	F
2 - East Harmony Road / Site Access	Side-Street Stop	C	B	F	F
3 - East Harmony Road / Teller Street	Signalized	B	B	B	B

The detailed analysis results are summarized in Table 2 and the VISTRO analysis results are contained in Appendix B.

7.0 Auxiliary Lanes at the Site Access

Deceleration lanes exist for the eastbound left turn and westbound right turn movements at the site access. Analysis was performed to determine if the right turn deceleration lane will be necessary when East Harmony Road is expanded to four through lanes. The need for the right turn deceleration lane was reviewed using Detail No. S-51 from the City of Greeley standards⁶. The speed limit on East Harmony Road is 40 MPH and the approximate threshold where a right turn deceleration lane is necessary at that speed limit is 50 VPH. This threshold is not expected to be exceeded during either peak hour, therefore, a westbound right turn deceleration lane will not be warranted when East Harmony Road is expanded to four lanes.

8.0 Multi-Modal Considerations

The following bullets discuss the multi-modal facilities near the site.

- **Pedestrians.** The site plan shows the continuation of the detached sidewalk across the site. Also shown on the site plan is a marked pedestrian path from the detached walk to the front of the building.

⁶ Design Criteria and Construction Specifications – Street, Volume I. City of Greeley Department of Public Works. July 2015.

-
- **Bicycle Lane.** Based on the East Harmony Road / WCR 74 and 1st Street / WCR 23 Corridor Plans⁷, on-street bicycle lanes are planned on Harmony Road.
 - **Transit.** There is no transit in Severance.

9.0 Pedestrian and Bicycle Destinations Near the Development

Figure 18 identifies the pedestrian and bicycle destinations within a 1,320' radius of the development. The Ziggi's Coffee site is surrounded by residential development, however, the sidewalk connections are lacking that would allow pedestrians to walk to Ziggi's.

10.0 Drive-Through Queue at Ziggi's Coffee

The average queue length for the drive-through lane was estimated using the Poisson distribution. Based on information provided by Ziggi's Coffee, about 70% of the orders are expected to come from the drive-through lane and those orders are processed in an average of three minutes. Table 3 shows that 66 inbound vehicles are expected during the morning peak hour and 29 inbound vehicles during the evening peak hour. Therefore, the morning peak hour is the critical time for the drive-through queue analysis. The volume of traffic using the drive-through during the morning peak hour will be approximately 46 vehicles.

The site plan contained in Figure 2 highlights the critical elements for the drive-through queue analysis. It shows one order station and one window where payment is made and drinks are delivered. The drive-through lane has capacity for approximately 15 vehicles waiting to order including the vehicle at the order station, and there is room for five vehicles past the order station including the vehicle at the window. The analysis shows that there will be roughly 15 vehicles waiting to order and two past the order station. Based on this analysis, the average drive-through queue is not expected to exceed the capacity of the drive-through lane.

11.0 Conclusions

STS has drawn the following conclusions based on the analysis performed for this project.

Intersection Operation

East Harmony Road / Teller Street. This signalized intersection is currently operating at LOS B during the morning and evening peak hours. By the Year 2042, it is expected to continue to operate at LOS B.

East Harmony Road / Fox Ridge Parkway. This side-street stop-controlled intersection is operating at LOS C and LOS D. The operation is expected to

⁷ East Harmony Road / WCR 74 and 1st Street / WCR 23 Corridor Plans. Town of Severance. Adopted March 2022.

decrease to LOS F by the Year 2042. It isn't unusual for side-street stop-control intersections on an arterial street with to operate poorly.

East Harmony Road / Site Access. This side-street stop-controlled intersection is operating at LOS B during the morning and evening peak hours. By the Year 2042, it is expected to operate at LOS F. It isn't unusual for side-street stop-control intersections on an arterial street with to operate poorly.

Auxiliary Lanes

A right turn deceleration lane will not be required at the site access when East Harmony Road is expanded to four through lanes.

Drive-Through Queue Operation

The operation of the drive-through queue was evaluated using the Poisson distribution. The analysis showed that the average queue is not expected to exceed the capacity of the drive-through lane.

Tables

Table 1 – Estimated Daily Volumes for Key Links in the Study Area

Table 2 – Intersection Operational Summary

Table 3 – Trip Generation Estimate

Table 1. Estimated Daily Volumes for Key Links in the Study Area

Link	Year 2022	Development Traffic	Year 2028 Background	Year 2028 Total	Year 2042 Background	Year 2042 Total
East Harmony Road west of Fox Ridge Parkway	11,230	420	15,050	15,470	29,380	29,800
East Harmony Road between Fox Ridge Parkway and the Site Access	10,546	420	14,130	14,550	27,560	27,980
East Harmony Road between the Site Access and Teller Street	10,546	520	14,130	14,650	27,460	27,980
East Harmony Road east of Teller Street	7,050	230	9,450	9,680	18,480	18,710
Teller Street north of East Harmony Road	640	90	720	810	860	950
Teller Street south of East Harmony Road	4,430	190	4,990	5,180	6,390	6,580
Ziggi's Coffee / Dollar General Site Access	290	940	290	1,230	290	1,230

Note

1. The existing volumes collected for the study are highlighted in yellow. All other existing volumes were estimated based on the peak hour to daily ratio for the evening peak hour.

Table 2. Intersection Operational Summary

Signalized Intersections ¹	Year 2022				Year 2028 Background				Year 2028 Total				Year 2042 Background				Year 2042 Total			
	Morning		Evening		Morning		Evening		Morning		Evening		Morning		Evening		Morning		Evening	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
3 - East Harmony Road / Teller Street	16.5	B	14.3	B	17.6	B	16.0	B	18.5	B	16.6	B	14.8	B	13.9	B	15.4	B	14.2	B
Stop-Controlled Intersections ²	Year 2022				Year 2028 Background				Year 2028 Total				Year 2042 Background				Year 2042 Total			
	Morning		Evening		Morning		Evening		Morning		Evening		Morning		Evening		Morning		Evening	
	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1 - East Harmony Road / Fox Ridge Parkway	20.2	C	30.3	D	31.7	D	58.5	F	36.4	E	62.9	F	77.0	F	793.3	F	83.8	F	846.7	F
	NBLT		NBLT		NBLT		NBLT		NBLT		NBLT		SBLT		NBLT		SBLT		NBLT	
2 - East Harmony Road / Site Access	12.9	B	11.1	B	15.7	C	12.4	B	27.0	D	47.8	E	16.4	C	12.8	B	165.9	F	146.4	F
	SBRT		SBRT		SBRT		SBRT		SBLT		SBLT		SBRT		SBRT		SBLT		SBLT	

Notes

1. The level of service for signalized intersections is based on the delay for the entire intersection.
2. The level of service for intersections with side-street stop-control is determined by the movement with the highest delay value.

Table 3. Trip Generation Estimate

Land Use	ITE Code ¹	Size	Unit	Average Daily Trips				Morning Peak Hour Trips				Evening Peak Hour Trips			
				Rate	Total	In	Out	Rate	Total	In	Out	Rate	Total	In	Out
Coffee/Donut Shop with a Drive Through Window	937	1.5	1,000 ft ²	533.57	800	400	400	85.88	129	66	63	38.99	58	29	29
Strip Retail Plaza (<40k)	822	2.5	1,000 ft ²	54.45	136	68	68	2.36	6	4	2	6.59	16	8	8
Total	---	---	---	---	936	468	468	---	135	69	65	---	75	37	37

Pass-By Trips ^{2, 3}

Land Use	Trip Type	Morning Peak Hour				Evening Peak Hour			
		%	Total	In	Out	%	Total	In	Out
Coffee/Donut Shop with a Drive Through Window	Pass-By	83%	---	55	52	89%	---	26	26
	Non-Pass-By	17%	---	11	11	11%	---	3	3

Notes:

1. The trip generation estimate is based on rates contained in [Trip Generation, 11th Edition](#) (Institute of Transportation Engineers, September 2021).
2. Pass-by trips were estimated using information that is contained in the [Trip Generation Handbook](#) (Institute of Transportation Engineers, September 2017).
3. The [Trip Generation Handbook](#) doesn't include pass-by rates for the coffee/donut shop with a drive through window, so pass-by rates for coffee/donut shop with drive-through window and no indoor seating were used.

Figures

Figure 1 – Vicinity Map

Figure 2 – Site Plan

Figure 3 – Laneage and Traffic Control – Existing

Figure 4 – Existing Traffic Volumes – Morning Peak Hour

Figure 5 – Existing Traffic Volumes – Evening Peak Hour

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Figure 7 – Trip Assignment – Morning Peak Hour

Figure 8 – Trip Assignment – Evening Peak Hour

Figure 9 – Year 2028 Background Traffic Volumes – Morning Peak Hour

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Figure 11 – Year 2028 Total Traffic Volumes – Morning Peak Hour

Figure 12 – Year 2028 Total Traffic Volumes – Evening Peak Hour

Figure 13 – Year 2042 Background Traffic Volumes – Morning Peak Hour

Figure 14 – Year 2042 Background Traffic Volumes – Evening Peak Hour

Figure 15 – Year 2042 Total Traffic Volumes – Morning Peak Hour

Figure 16 – Year 2042 Total Traffic Volumes – Evening Peak Hour

Figure 17 – Laneage and Traffic Control – Year 2042 Traffic Volume Scenarios

Figure 18 – Pedestrian and Bicycle Destinations within 1,320' of the Site

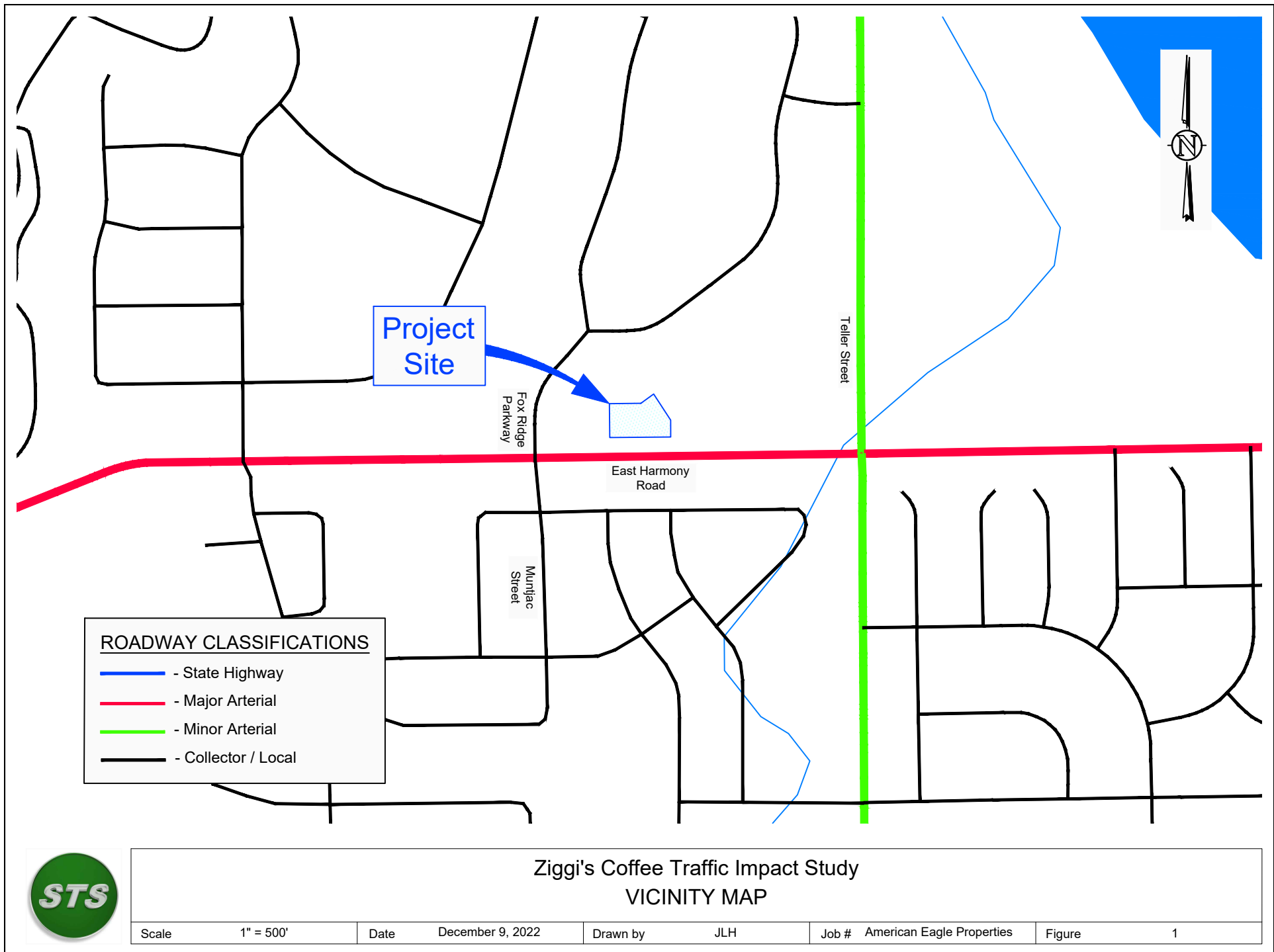


Figure 3 – Laneage and Traffic Control – Existing

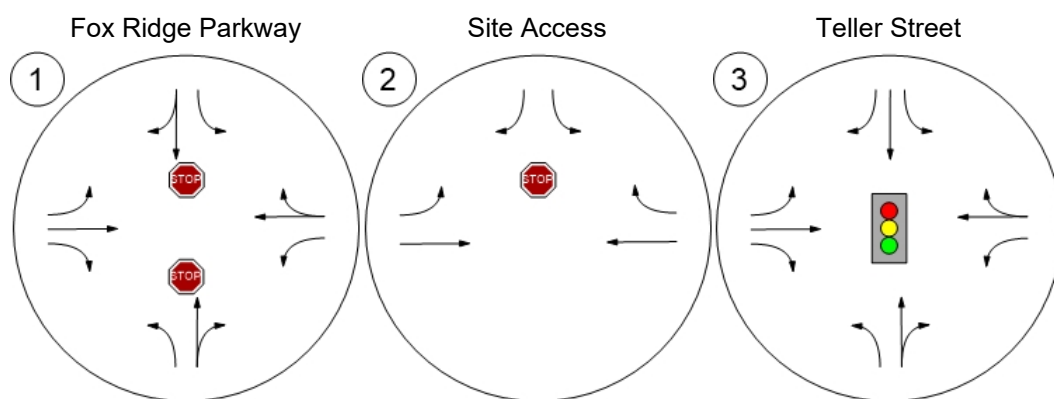


Figure 4 – Existing Traffic Volumes – Morning Peak Hour

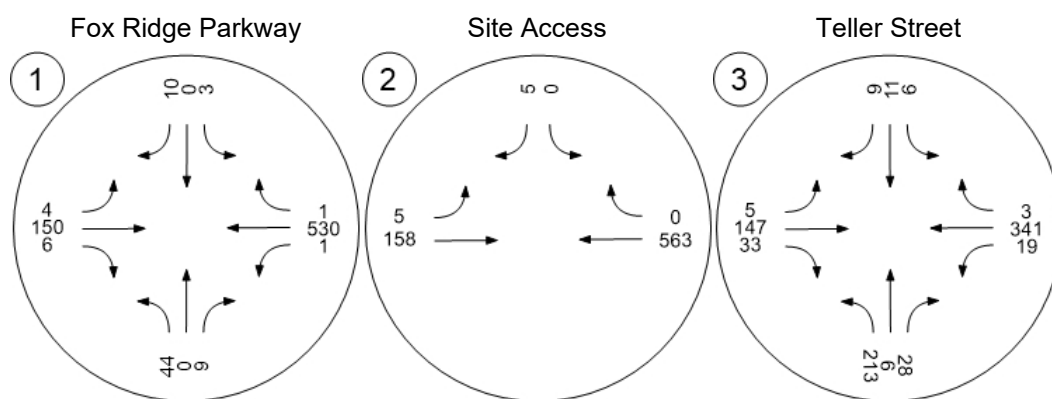
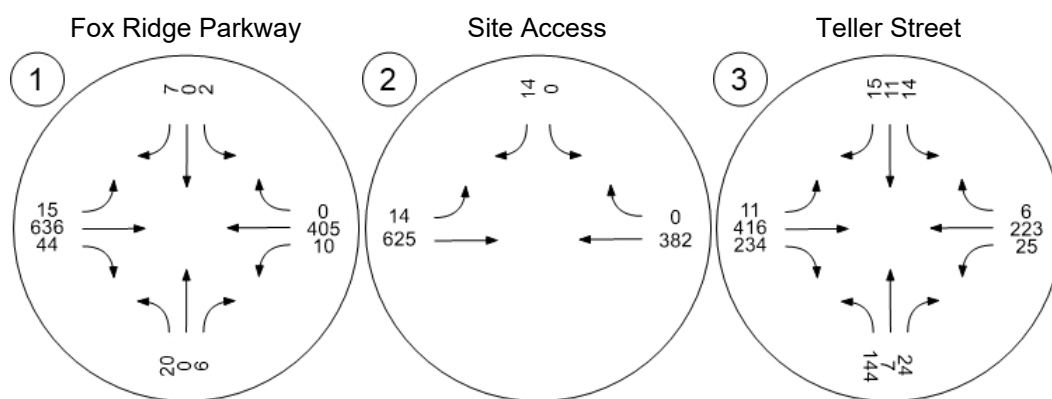


Figure 5 – Existing Traffic Volumes – Evening Peak Hour



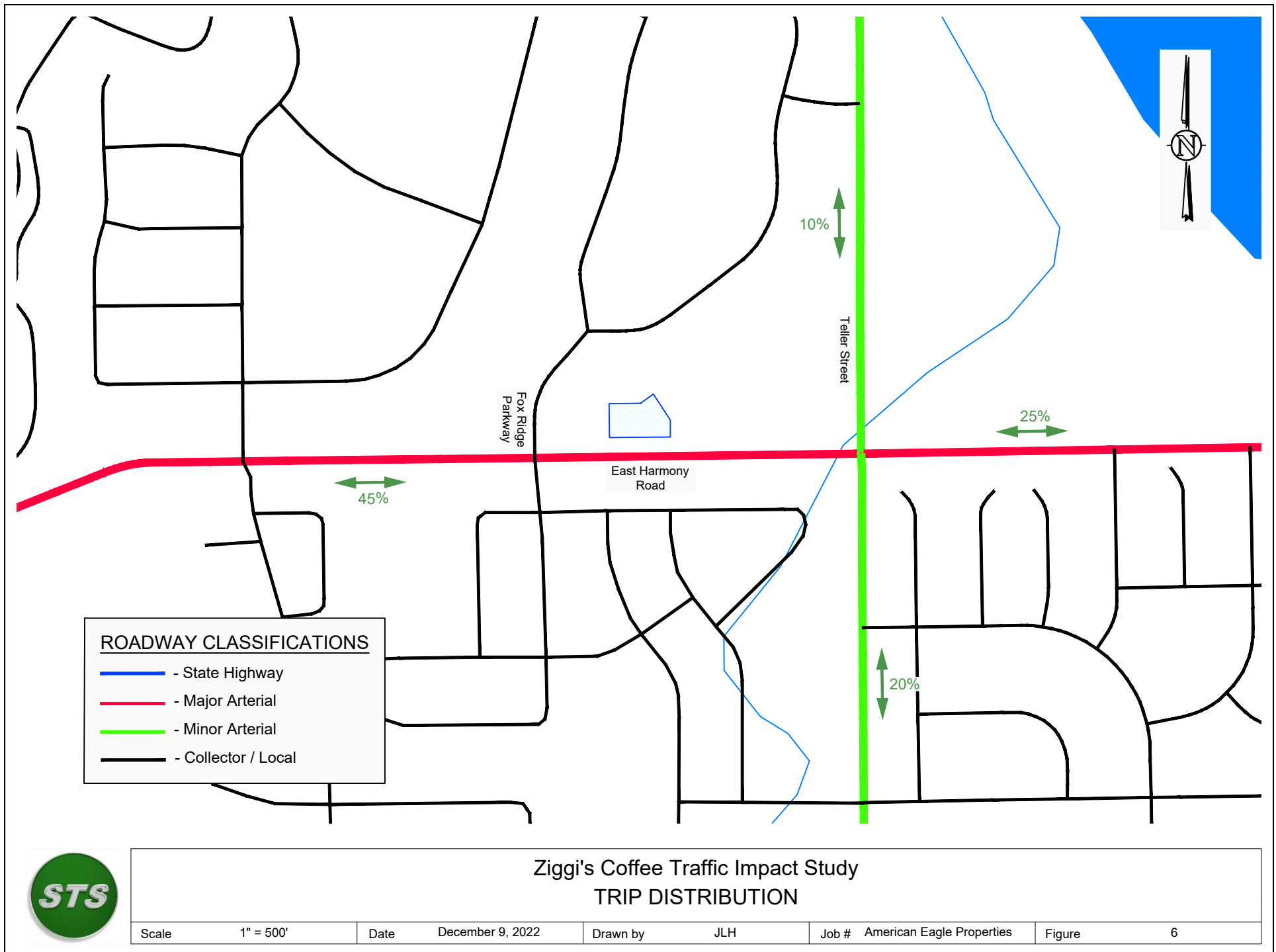


Figure 7 – Trip Assignment – Morning Peak Hour

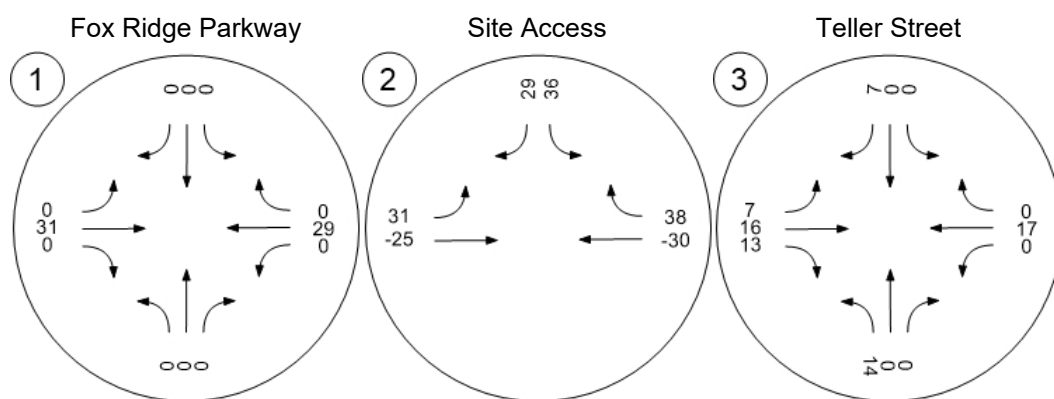


Figure 8 – Trip Assignment – Evening Peak Hour

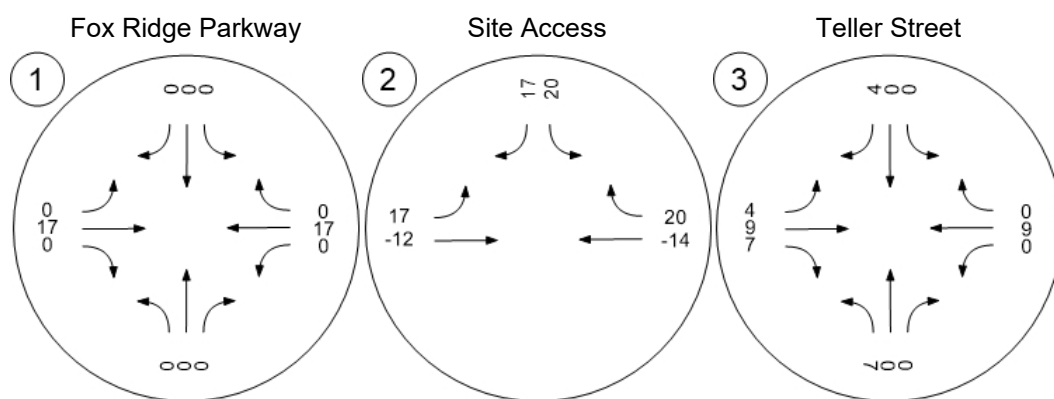


Figure 9 – Year 2028 Background Traffic Volumes – Morning Peak Hour

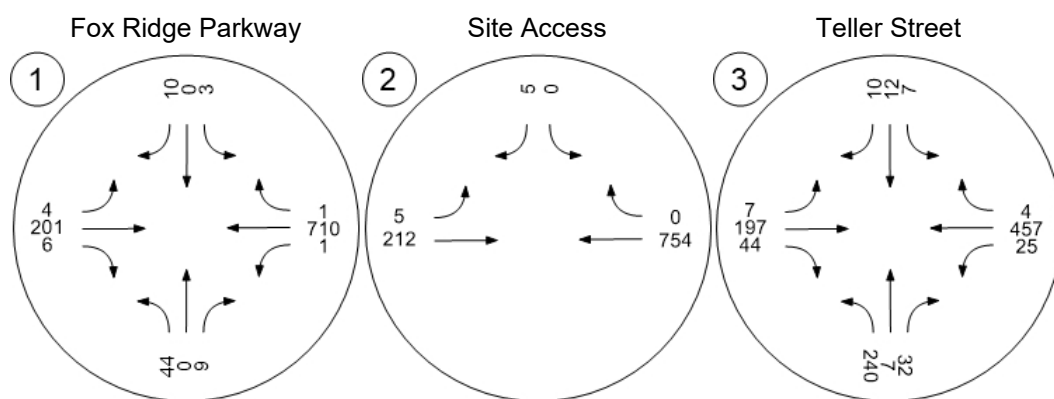


Figure 10 – Year 2028 Background Traffic Volumes – Evening Peak Hour

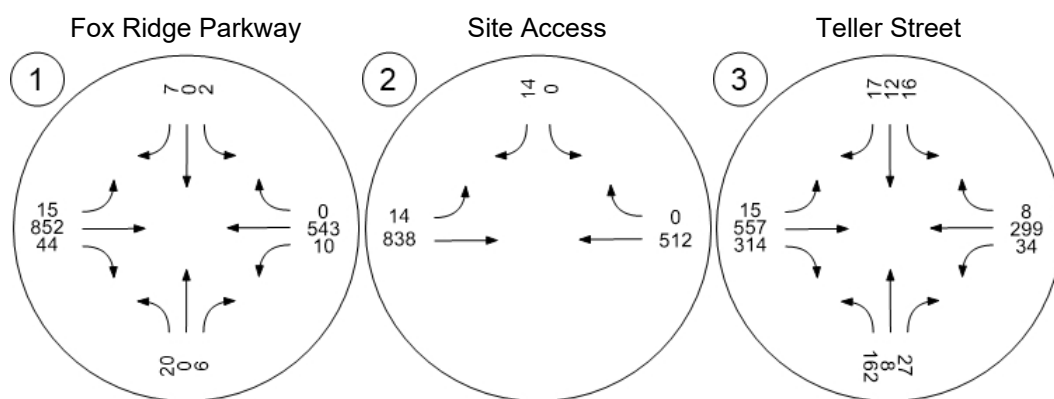


Figure 11 – Year 2028 Total Traffic Volumes – Morning Peak Hour

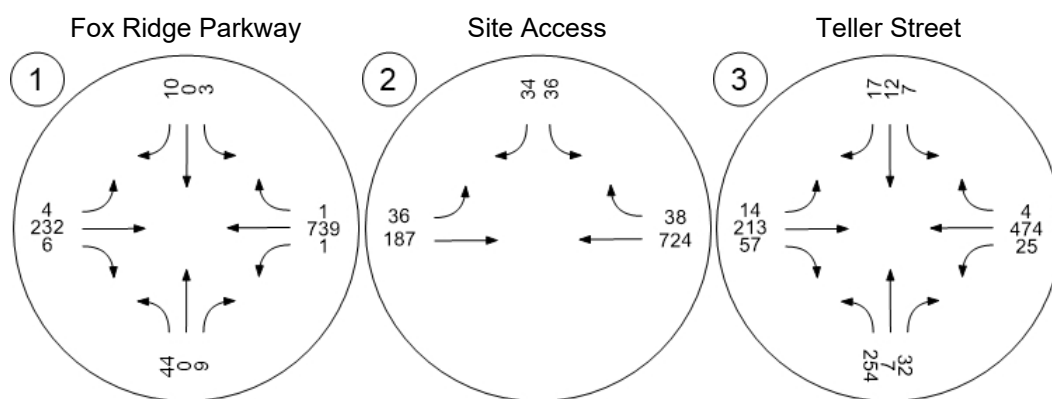


Figure 12 – Year 2028 Total Traffic Volumes – Evening Peak Hour

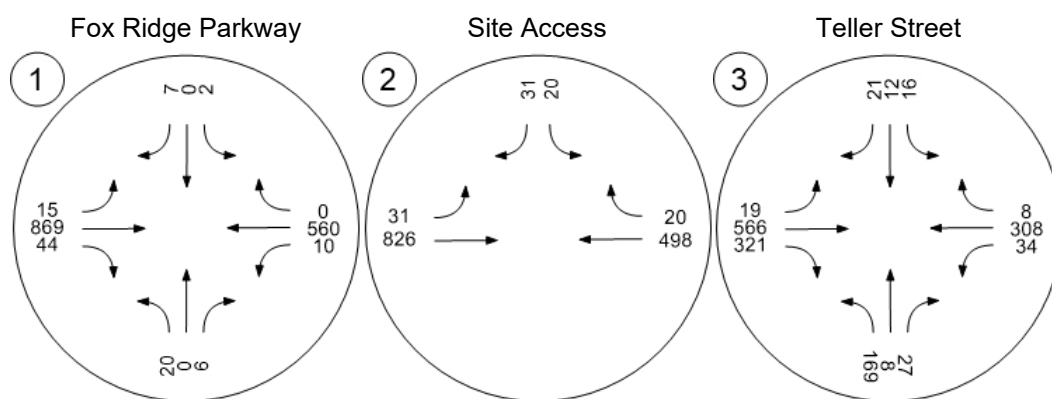


Figure 13 – Year 2042 Background Traffic Volumes – Morning Peak Hour

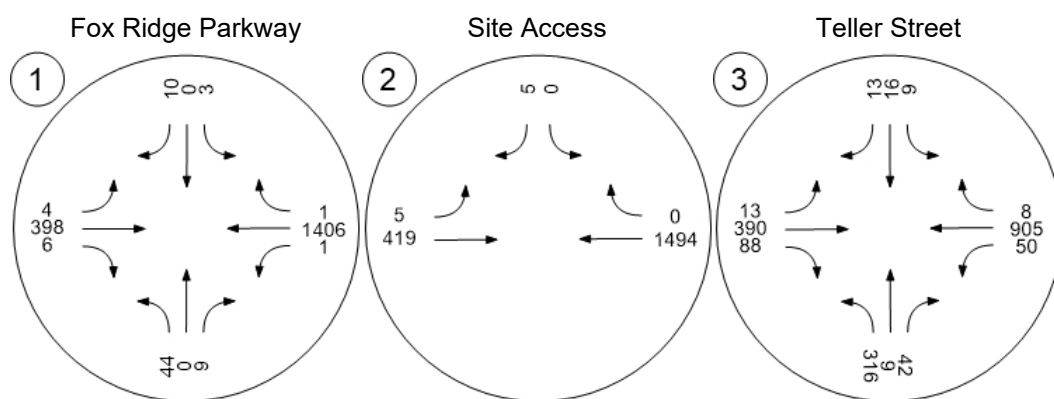


Figure 14 – Year 2042 Background Traffic Volumes – Evening Peak Hour

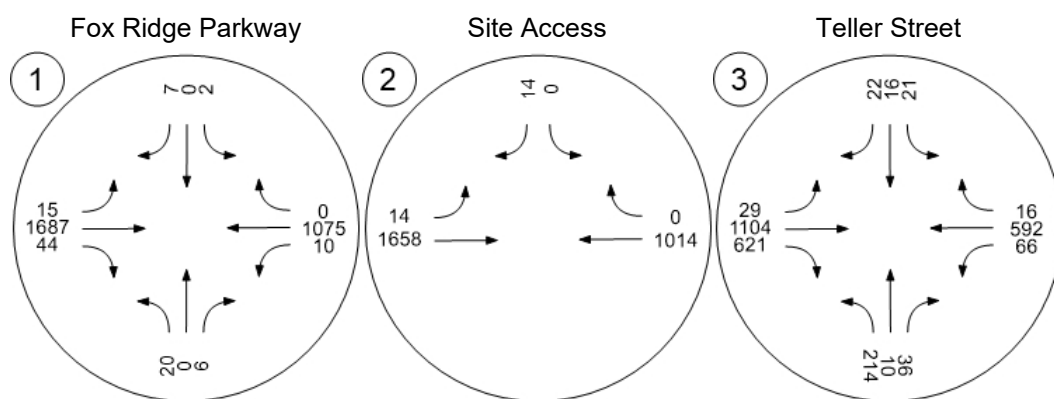


Figure 15 – Year 2042 Total Traffic Volumes – Morning Peak Hour

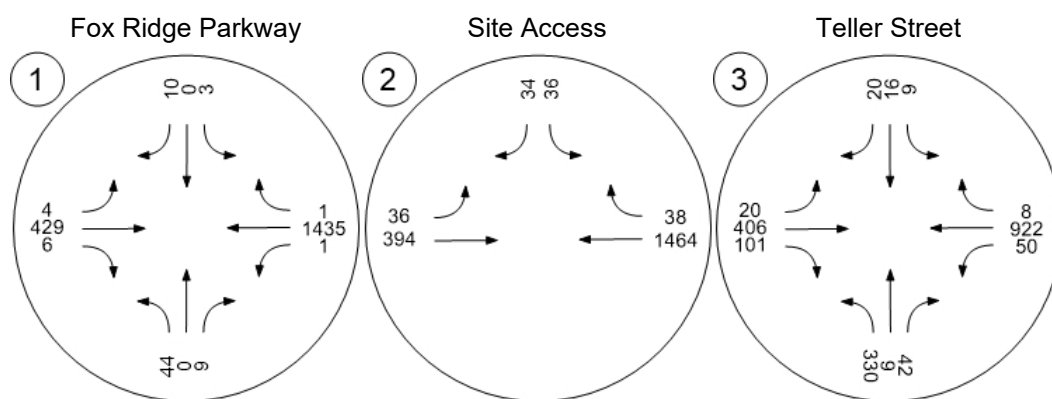


Figure 16 – Year 2042 Total Traffic Volumes – Evening Peak Hour

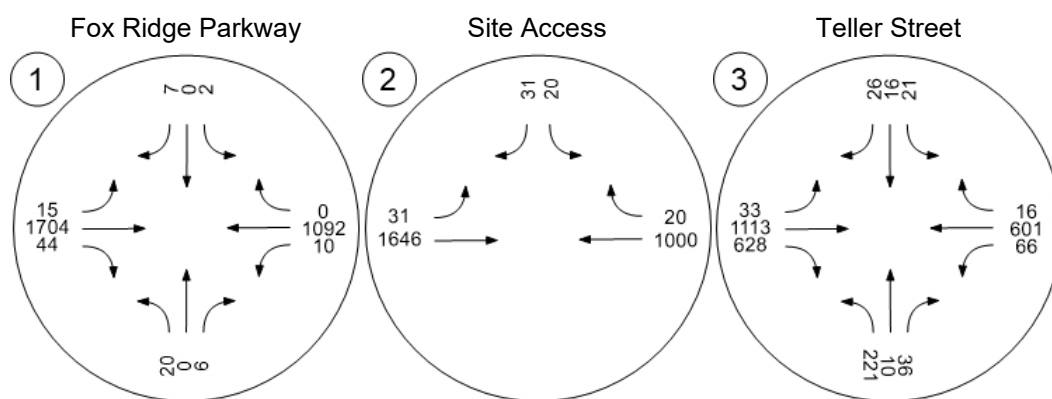
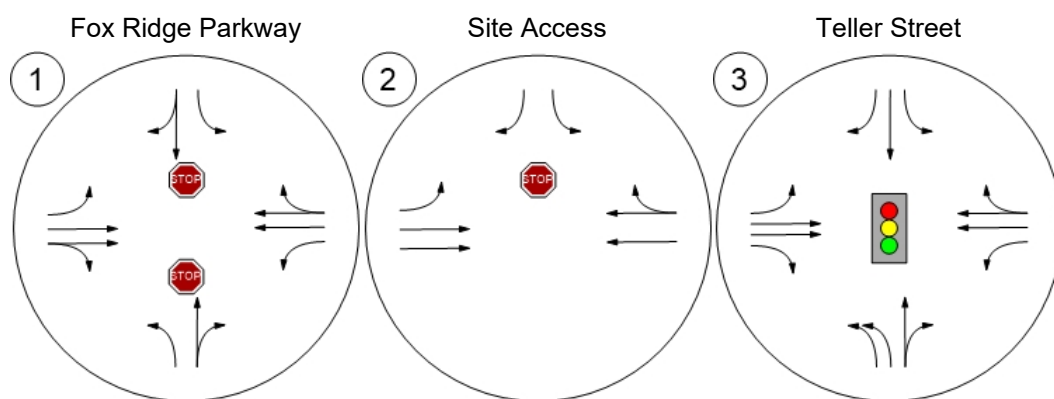
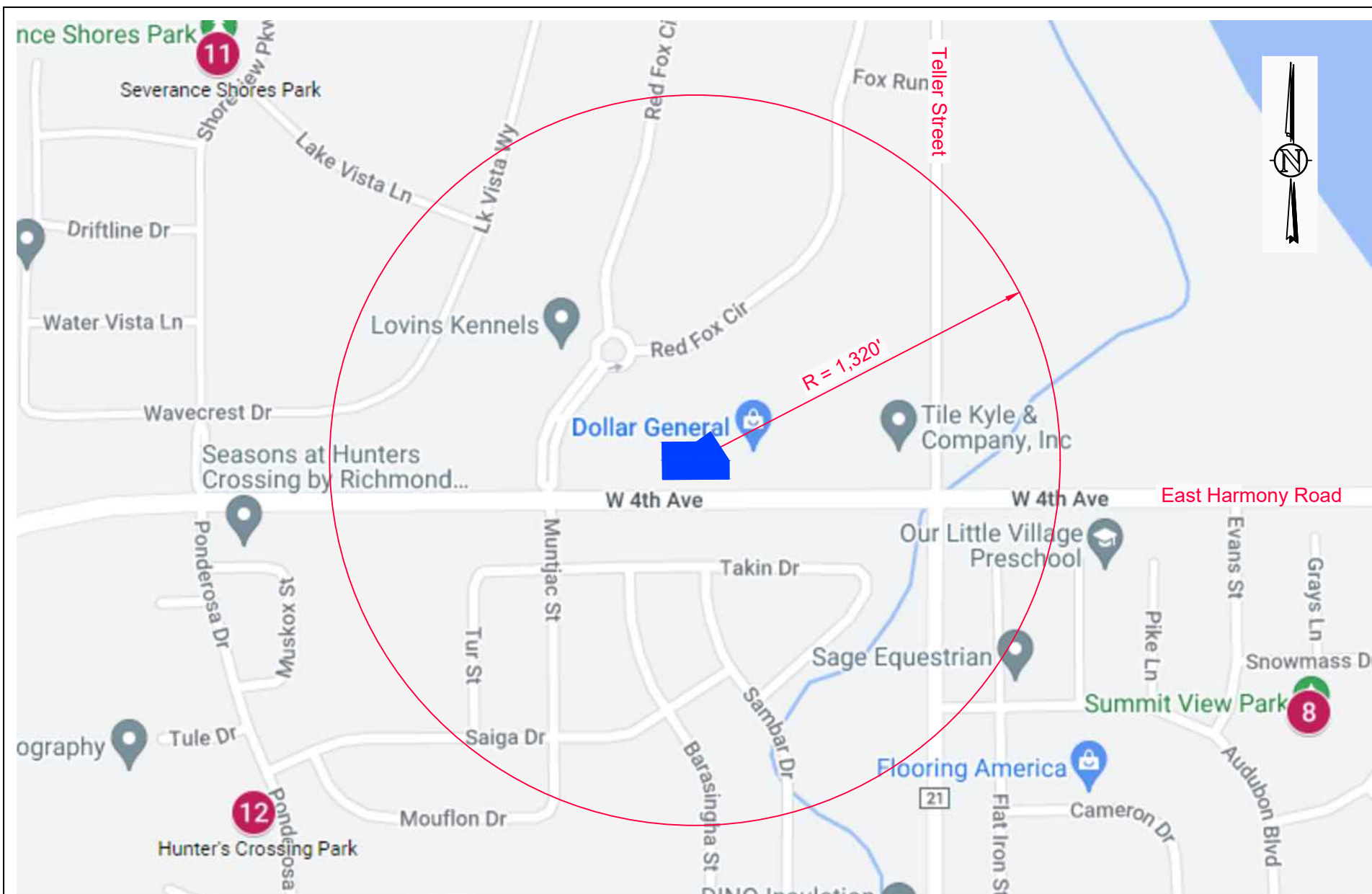


Figure 17 – Laneage and Traffic Control – Year 2042 Traffic Volume Scenarios





Ziggi's Coffee Traffic Impact Study PEDESTRIAN AND BICYCLE DESTINATIONS WITHIN 1,320' OF THE SITE

Scale	1" = 500'	Date	December 9, 2022	Drawn by	JLH	Job #	American Eagle Properties	Figure	18
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Appendix A

Traffic Count Data



ALL TRAFFIC DATA SERVICES

(303) 216-2439

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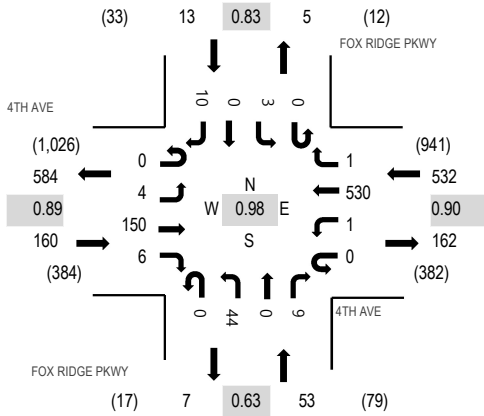
Location: 1 FOX RIDGE PKWY & 4TH AVE AM

Date: Thursday, June 2, 2022

Peak Hour: 07:00 AM - 08:00 AM

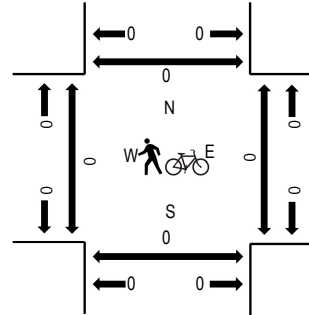
Peak 15-Minutes: 07:30 AM - 07:45 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	4TH AVE Eastbound				4TH AVE Westbound				FOX RIDGE PKWY Northbound				FOX RIDGE PKWY 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	2	29	3	0	1	129	0	0	18	0	3	0	1	0	3	189	758	0	0	0	0
7:15 AM	0	0	27	0	0	0	146	1	0	11	0	3	0	0	0	2	190	740	0	0	0	0
7:30 AM	0	1	41	1	0	0	139	0	0	9	0	1	0	2	0	0	194	725	0	0	0	0
7:45 AM	0	1	53	2	0	0	116	0	0	6	0	2	0	0	0	5	185	700	0	0	0	0
8:00 AM	0	0	40	2	0	1	111	2	0	8	0	1	0	1	0	5	171	679	0	0	0	0
8:15 AM	0	1	58	2	0	0	102	0	0	7	0	0	0	0	0	5	175		0	1	0	0
8:30 AM	0	0	56	2	0	1	100	0	0	6	0	0	0	0	0	4	169		0	0	0	0
8:45 AM	0	2	61	0	0	2	88	2	0	3	0	1	0	2	0	3	164		0	0	0	0
Count Total	0	7	365	12	0	5	931	5	0	68	0	11	0	6	0	27	1,437		0	1	0	0
Peak Hour	0	4	150	6	0	1	530	1	0	44	0	9	0	3	0	10	758		0	0	0	0



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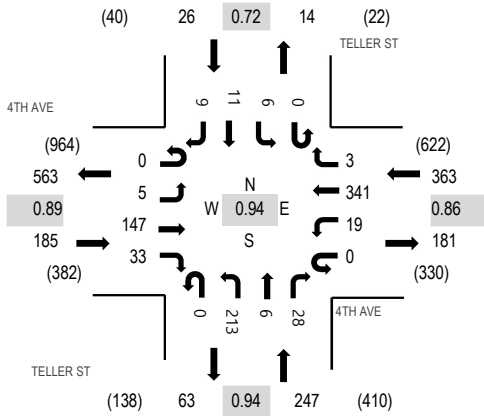
Location: 2 TELLER ST & 4TH AVE AM

Date: Thursday, June 2, 2022

Peak Hour: 07:00 AM - 08:00 AM

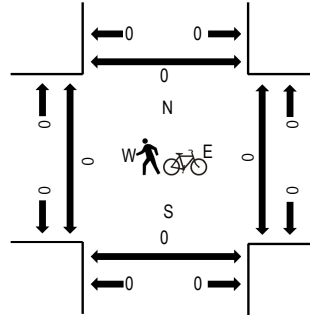
Peak 15-Minutes: 07:15 AM - 07:30 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	4TH AVE Eastbound				4TH AVE Westbound				TELLER ST Northbound				TELLER ST 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	27	4	0	3	81	1	0	53	3	7	0	0	3	0	182	821	0	0	0	0
7:15 AM	0	1	32	11	0	4	102	0	0	55	0	6	0	4	2	1	218	793	0	0	0	0
7:30 AM	0	0	46	7	0	7	86	1	0	50	1	6	0	0	1	6	211	731	0	0	0	0
7:45 AM	0	4	42	11	0	5	72	1	0	55	2	9	0	2	5	2	210	694	0	0	0	0
8:00 AM	0	0	28	19	0	2	65	0	0	28	1	9	0	0	0	2	154	633	0	0	0	0
8:15 AM	0	2	32	13	0	2	57	0	0	42	0	2	0	0	4	2	156		0	0	0	0
8:30 AM	0	2	31	12	0	3	76	0	0	44	2	2	0	0	1	1	174		0	0	0	0
8:45 AM	0	0	42	16	0	3	51	0	0	29	1	3	0	0	0	4	149		0	1	0	1
Count Total	0	9	280	93	0	29	590	3	0	356	10	44	0	6	16	18	1,454		0	1	0	1
Peak Hour	0	5	147	33	0	19	341	3	0	213	6	28	0	6	11	9	821		0	0	0	0



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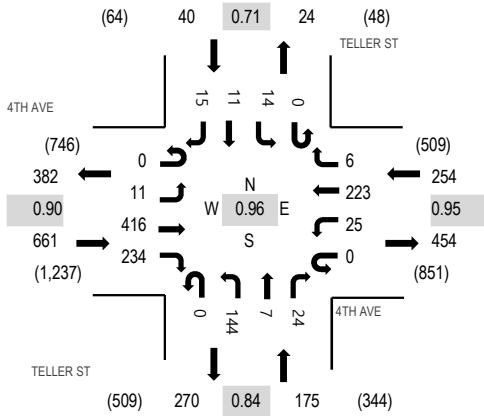
Location: 2 TELLER ST & 4TH AVE PM

Date: Thursday, June 2, 2022

Peak Hour: 04:45 PM - 05:45 PM

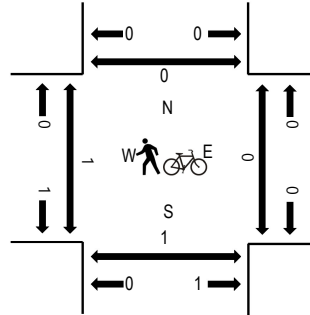
Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	4TH AVE Eastbound				4TH AVE Westbound				TELLER ST Northbound				TELLER ST 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	3	84	45	0	5	56	1	0	36	4	10	0	3	1	3	251	1,025	0	0	0	0
4:15 PM	0	3	88	54	0	4	53	2	0	28	1	7	0	0	4	1	245	1,047	0	0	0	1
4:30 PM	0	0	88	53	0	5	58	2	0	32	1	7	0	2	1	2	251	1,095	1	0	1	0
4:45 PM	0	1	99	54	0	6	53	1	0	47	1	5	0	2	6	3	278	1,130	0	0	0	0
5:00 PM	0	2	102	54	0	6	61	2	0	28	2	5	0	2	3	6	273	1,129	1	0	1	0
5:15 PM	0	6	114	65	0	7	54	1	0	32	2	8	0	3	1	0	293		0	0	0	0
5:30 PM	0	2	101	61	0	6	55	2	0	37	2	6	0	7	1	6	286		0	0	0	0
5:45 PM	0	3	94	61	0	2	66	1	0	28	3	12	0	2	4	1	277		0	0	0	0
Count Total	0	20	770	447	0	41	456	12	0	268	16	60	0	21	21	22	2,154		2	0	2	1
Peak Hour	0	11	416	234	0	25	223	6	0	144	7	24	0	14	11	15	1,130		1	0	1	0



All Traffic Data Services

SITE 1_E - 4TH AVE EAST OF FOX RIDGE PKWY

EB	Time	Lights	Mediums	Trucks	Total
	6/2/2022	7	0	0	7
	6/2/2022 12:15:00 AM	7	0	0	7
	6/2/2022 12:30:00 AM	5	0	0	5
	6/2/2022 12:45:00 AM	6	0	0	6
	Hour	25	0	0	25
	6/2/2022 1:00:00 AM	5	0	0	5
	6/2/2022 1:15:00 AM	5	0	0	5
	6/2/2022 1:30:00 AM	2	0	0	2
	6/2/2022 1:45:00 AM	5	0	0	5
	Hour	17	0	0	17
	6/2/2022 2:00:00 AM	3	0	0	3
	6/2/2022 2:15:00 AM	4	0	0	4
	6/2/2022 2:30:00 AM	1	0	0	1
	6/2/2022 2:45:00 AM	3	0	0	3
	Hour	11	0	0	11
	6/2/2022 3:00:00 AM	2	0	0	2
	6/2/2022 3:15:00 AM	2	0	0	2
	6/2/2022 3:30:00 AM	2	0	0	2
	6/2/2022 3:45:00 AM	2	0	0	2
	Hour	8	0	0	8
	6/2/2022 4:00:00 AM	6	0	0	6
	6/2/2022 4:15:00 AM	2	0	0	2
	6/2/2022 4:30:00 AM	3	0	0	3
	6/2/2022 4:45:00 AM	3	0	0	3
	Hour	14	0	0	14
	6/2/2022 5:00:00 AM	6	0	0	6
	6/2/2022 5:15:00 AM	10	0	0	10
	6/2/2022 5:30:00 AM	17	0	0	17
	6/2/2022 5:45:00 AM	29	0	0	29
	Hour	62	0	0	62
	6/2/2022 6:00:00 AM	20	0	0	20
	6/2/2022 6:15:00 AM	22	0	0	22
	6/2/2022 6:30:00 AM	31	0	0	31
	6/2/2022 6:45:00 AM	40	2	1	43
	Hour	113	2	1	116
	6/2/2022 7:00:00 AM	33	0	0	33
	6/2/2022 7:15:00 AM	28	2	0	30
	6/2/2022 7:30:00 AM	43	1	0	44
	6/2/2022 7:45:00 AM	53	2	0	55
	Hour	157	5	0	162
	6/2/2022 8:00:00 AM	39	2	1	42
	6/2/2022 8:15:00 AM	56	2	0	58
	6/2/2022 8:30:00 AM	52	4	0	56
	6/2/2022 8:45:00 AM	61	2	1	64
	Hour	208	10	2	220
	6/2/2022 9:00:00 AM	43	4	1	48
	6/2/2022 9:15:00 AM	39	0	0	39
	6/2/2022 9:30:00 AM	59	3	0	62
	6/2/2022 9:45:00 AM	29	1	0	30
	Hour	170	8	1	179
	6/2/2022 10:00:00 AM	42	3	0	45
	6/2/2022 10:15:00 AM	42	2	0	44
	6/2/2022 10:30:00 AM	58	1	0	59
	6/2/2022 10:45:00 AM	83	0	0	83
	Hour	225	6	0	231
	6/2/2022 11:00:00 AM	61	1	1	63
	6/2/2022 11:15:00 AM	62	1	1	64
	6/2/2022 11:30:00 AM	77	2	1	80
	6/2/2022 11:45:00 AM	81	5	0	86
	Hour	281	9	3	293
	Total	1,291	40	7	1,338
	Percentage	96.5%	3.0%	0.5%	



All Traffic Data Services

SITE 1_E - 4TH AVE EAST OF FOX RIDGE PKWY

EB	Time	Lights	Mediums	Trucks	Total
	6/2/2022 12:00:00 PM	69	4	0	73
	6/2/2022 12:15:00 PM	58	0	0	58
	6/2/2022 12:30:00 PM	78	4	0	82
	6/2/2022 12:45:00 PM	83	3	1	87
	Hour	288	11	1	300
	6/2/2022 1:00:00 PM	72	0	0	72
	6/2/2022 1:15:00 PM	78	2	0	80
	6/2/2022 1:30:00 PM	68	4	0	72
	6/2/2022 1:45:00 PM	74	0	0	74
	Hour	292	6	0	298
	6/2/2022 2:00:00 PM	77	2	0	79
	6/2/2022 2:15:00 PM	92	0	0	92
	6/2/2022 2:30:00 PM	99	1	0	100
	6/2/2022 2:45:00 PM	92	0	2	94
	Hour	360	3	2	365
	6/2/2022 3:00:00 PM	106	1	0	107
	6/2/2022 3:15:00 PM	101	1	1	103
	6/2/2022 3:30:00 PM	113	1	1	115
	6/2/2022 3:45:00 PM	145	3	2	150
	Hour	465	6	4	475
	6/2/2022 4:00:00 PM	132	0	0	132
	6/2/2022 4:15:00 PM	153	5	1	159
	6/2/2022 4:30:00 PM	99	1	1	101
	6/2/2022 4:45:00 PM	153	0	0	153
	Hour	537	6	2	545
	6/2/2022 5:00:00 PM	142	1	0	143
	6/2/2022 5:15:00 PM	170	0	0	170
	6/2/2022 5:30:00 PM	174	3	1	178
	6/2/2022 5:45:00 PM	149	0	0	149
	Hour	635	4	1	640
	6/2/2022 6:00:00 PM	130	1	0	131
	6/2/2022 6:15:00 PM	122	0	1	123
	6/2/2022 6:30:00 PM	131	0	0	131
	6/2/2022 6:45:00 PM	107	1	0	108
	Hour	490	2	1	493
	6/2/2022 7:00:00 PM	92	2	1	95
	6/2/2022 7:15:00 PM	81	0	0	81
	6/2/2022 7:30:00 PM	66	0	0	66
	6/2/2022 7:45:00 PM	73	0	0	73
	Hour	312	2	1	315
	6/2/2022 8:00:00 PM	70	1	0	71
	6/2/2022 8:15:00 PM	76	0	0	76
	6/2/2022 8:30:00 PM	64	0	0	64
	6/2/2022 8:45:00 PM	62	0	1	63
	Hour	272	1	1	274
	6/2/2022 9:00:00 PM	50	0	0	50
	6/2/2022 9:15:00 PM	57	0	0	57
	6/2/2022 9:30:00 PM	46	0	0	46
	6/2/2022 9:45:00 PM	35	0	0	35
	Hour	188	0	0	188
	6/2/2022 10:00:00 PM	28	0	0	28
	6/2/2022 10:15:00 PM	23	0	0	23
	6/2/2022 10:30:00 PM	19	0	0	19
	6/2/2022 10:45:00 PM	19	0	0	19
	Hour	89	0	0	89
	6/2/2022 11:00:00 PM	14	0	0	14
	6/2/2022 11:15:00 PM	19	0	0	19
	6/2/2022 11:30:00 PM	2	0	0	2
	6/2/2022 11:45:00 PM	3	0	0	3
	Hour	38	0	0	38
	Total	3,966	41	13	4,020
	Percentage	98.7%	1.0%	0.3%	
	Grand Total	5,257	81	20	5,358
	Percentage	98.1%	1.5%	0.4%	



All Traffic Data Services

SITE 1_E - 4TH AVE EAST OF FOX RIDGE PKWY

WB	Time	Lights	Mediums	Trucks	Total
	6/2/2022	2	0	1	3
	6/2/2022 12:15:00 AM	2	0	0	2
	6/2/2022 12:30:00 AM	1	0	0	1
	6/2/2022 12:45:00 AM	1	0	0	1
	Hour	6	0	1	7
	6/2/2022 1:00:00 AM	3	0	0	3
	6/2/2022 1:15:00 AM	1	0	0	1
	6/2/2022 1:30:00 AM	0	0	0	0
	6/2/2022 1:45:00 AM	2	0	0	2
	Hour	6	0	0	6
	6/2/2022 2:00:00 AM	2	0	0	2
	6/2/2022 2:15:00 AM	2	0	0	2
	6/2/2022 2:30:00 AM	0	0	0	0
	6/2/2022 2:45:00 AM	3	0	0	3
	Hour	7	0	0	7
	6/2/2022 3:00:00 AM	3	0	0	3
	6/2/2022 3:15:00 AM	5	0	0	5
	6/2/2022 3:30:00 AM	8	0	0	8
	6/2/2022 3:45:00 AM	4	0	0	4
	Hour	20	0	0	20
	6/2/2022 4:00:00 AM	5	0	0	5
	6/2/2022 4:15:00 AM	8	0	0	8
	6/2/2022 4:30:00 AM	12	0	0	12
	6/2/2022 4:45:00 AM	17	0	0	17
	Hour	42	0	0	42
	6/2/2022 5:00:00 AM	29	0	0	29
	6/2/2022 5:15:00 AM	43	0	0	43
	6/2/2022 5:30:00 AM	51	0	0	51
	6/2/2022 5:45:00 AM	55	0	0	55
	Hour	178	0	0	178
	6/2/2022 6:00:00 AM	73	0	0	73
	6/2/2022 6:15:00 AM	75	1	0	76
	6/2/2022 6:30:00 AM	123	0	0	123
	6/2/2022 6:45:00 AM	110	1	0	111
	Hour	381	2	0	383
	6/2/2022 7:00:00 AM	130	0	0	130
	6/2/2022 7:15:00 AM	146	0	1	147
	6/2/2022 7:30:00 AM	138	0	1	139
	6/2/2022 7:45:00 AM	114	2	0	116
	Hour	528	2	2	532
	6/2/2022 8:00:00 AM	112	2	0	114
	6/2/2022 8:15:00 AM	101	1	0	102
	6/2/2022 8:30:00 AM	99	0	2	101
	6/2/2022 8:45:00 AM	91	1	0	92
	Hour	403	4	2	409
	6/2/2022 9:00:00 AM	81	2	0	83
	6/2/2022 9:15:00 AM	90	2	0	92
	6/2/2022 9:30:00 AM	85	2	1	88
	6/2/2022 9:45:00 AM	66	0	0	66
	Hour	322	6	1	329
	6/2/2022 10:00:00 AM	99	0	0	99
	6/2/2022 10:15:00 AM	59	4	0	63
	6/2/2022 10:30:00 AM	82	2	0	84
	6/2/2022 10:45:00 AM	72	2	1	75
	Hour	312	8	1	321
	6/2/2022 11:00:00 AM	72	0	0	72
	6/2/2022 11:15:00 AM	87	1	0	88
	6/2/2022 11:30:00 AM	79	2	0	81
	6/2/2022 11:45:00 AM	79	2	0	81
	Hour	317	5	0	322
	Total	2,522	27	7	2,556
	Percentage	98.7%	1.1%	0.3%	



All Traffic Data Services

SITE 1_E - 4TH AVE EAST OF FOX RIDGE PKWY

WB	Time	Lights	Mediums	Trucks	Total
	6/2/2022 12:00:00 PM	76	2	1	79
	6/2/2022 12:15:00 PM	63	0	1	64
	6/2/2022 12:30:00 PM	83	1	0	84
	6/2/2022 12:45:00 PM	70	4	0	74
	Hour	292	7	2	301
	6/2/2022 1:00:00 PM	62	3	1	66
	6/2/2022 1:15:00 PM	73	3	2	78
	6/2/2022 1:30:00 PM	58	2	0	60
	6/2/2022 1:45:00 PM	66	4	2	72
	Hour	259	12	5	276
	6/2/2022 2:00:00 PM	50	2	1	53
	6/2/2022 2:15:00 PM	63	1	0	64
	6/2/2022 2:30:00 PM	71	2	0	73
	6/2/2022 2:45:00 PM	59	3	0	62
	Hour	243	8	1	252
	6/2/2022 3:00:00 PM	70	1	0	71
	6/2/2022 3:15:00 PM	77	0	0	77
	6/2/2022 3:30:00 PM	79	1	0	80
	6/2/2022 3:45:00 PM	86	1	1	88
	Hour	312	3	1	316
	6/2/2022 4:00:00 PM	76	2	0	78
	6/2/2022 4:15:00 PM	85	0	0	85
	6/2/2022 4:30:00 PM	95	4	0	99
	6/2/2022 4:45:00 PM	106	0	0	106
	Hour	362	6	0	368
	6/2/2022 5:00:00 PM	98	2	0	100
	6/2/2022 5:15:00 PM	105	0	0	105
	6/2/2022 5:30:00 PM	102	1	1	104
	6/2/2022 5:45:00 PM	79	2	0	81
	Hour	384	5	1	390
	6/2/2022 6:00:00 PM	78	3	1	82
	6/2/2022 6:15:00 PM	71	0	0	71
	6/2/2022 6:30:00 PM	68	0	0	68
	6/2/2022 6:45:00 PM	48	0	0	48
	Hour	265	3	1	269
	6/2/2022 7:00:00 PM	56	0	1	57
	6/2/2022 7:15:00 PM	57	1	0	58
	6/2/2022 7:30:00 PM	42	0	0	42
	6/2/2022 7:45:00 PM	37	0	0	37
	Hour	192	1	1	194
	6/2/2022 8:00:00 PM	35	0	0	35
	6/2/2022 8:15:00 PM	28	0	0	28
	6/2/2022 8:30:00 PM	37	0	0	37
	6/2/2022 8:45:00 PM	26	0	0	26
	Hour	126	0	0	126
	6/2/2022 9:00:00 PM	15	1	0	16
	6/2/2022 9:15:00 PM	26	0	0	26
	6/2/2022 9:30:00 PM	24	0	0	24
	6/2/2022 9:45:00 PM	8	0	0	8
	Hour	73	1	0	74
	6/2/2022 10:00:00 PM	8	0	0	8
	6/2/2022 10:15:00 PM	15	0	0	15
	6/2/2022 10:30:00 PM	15	0	0	15
	6/2/2022 10:45:00 PM	4	0	0	4
	Hour	42	0	0	42
	6/2/2022 11:00:00 PM	6	0	0	6
	6/2/2022 11:15:00 PM	7	0	0	7
	6/2/2022 11:30:00 PM	6	0	0	6
	6/2/2022 11:45:00 PM	5	0	0	5
	Hour	24	0	0	24
	Total	2,574	46	12	2,632
	Percentage	97.8%	1.7%	0.5%	
	Grand Total	5,096	73	19	5,188
	Percentage	98.2%	1.4%	0.4%	

Appendix B

VISTRO Analysis Results

Year 2022 Volumes

Ziggi's Coffee TIS

Vistro File: C:\...\AM.vistro
Report File: C:\...\Existing AM.pdf

Scenario 1 Existing AM
12/9/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Fox Ridge Parkway	Two-way stop	HCM 7th Edition	NB Left	0.228	20.2	C
2	Site Access	Two-way stop	HCM 7th Edition	SB Right	0.013	12.9	B
3	Teller Street	Signalized	HCM 7th Edition	SB Thru	0.341	16.5	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Fox Ridge Parkway

Control Type: Two-way stop
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 20.2
Level Of Service: C
Volume to Capacity (v/c): 0.228

Intersection Setup

Name	Muntjac Street			Fox Ridge Parkway			East Harmony Road			East Harmony Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Entry Pocket Length [ft]	75.00	100.00	100.00	50.00	100.00	100.00	175.00	100.00	175.00	175.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Muntjac Street			Fox Ridge Parkway			East Harmony Road			East Harmony Road		
Base Volume Input [veh/h]	44	0	9	3	0	10	4	150	6	1	530	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	44	0	9	3	0	10	4	150	6	1	530	1
Peak Hour Factor	0.6300	0.6300	0.6300	0.8300	0.8300	0.8300	0.8900	0.8900	0.8900	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	17	0	4	1	0	3	1	42	2	0	147	0
Total Analysis Volume [veh/h]	70	0	14	4	0	12	4	169	7	1	589	1
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.23	0.00	0.02	0.01	0.00	0.02	0.00	0.00	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	20.19	15.98	9.18	16.89	16.18	12.26	8.67	0.00	0.00	7.57	0.00	0.00
Movement LOS	C	C	A	C	C	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.86	0.05	0.05	0.04	0.07	0.07	0.01	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	21.58	1.22	1.22	0.99	1.81	1.81	0.31	0.00	0.00	0.05	0.00	0.00
d_A, Approach Delay [s/veh]	18.36			13.42			0.19			0.01		
Approach LOS	C			B			A			A		
d_I, Intersection Delay [s/veh]	2.07											
Intersection LOS	C											

Intersection Level Of Service Report
Intersection 2: Site Access

Control Type: Two-way stop
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 12.9
Level Of Service: B
Volume to Capacity (v/c): 0.013

Intersection Setup

Name	Site Access		East Harmony Road		East Harmony Road	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	130.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Site Access		East Harmony Road		East Harmony Road	
Base Volume Input [veh/h]	0	5	5	158	563	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	5	5	158	563	0
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	1	1	46	166	0
Total Analysis Volume [veh/h]	0	6	6	186	662	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.01	0.01	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	16.10	12.90	8.91	0.00	0.00	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.04	0.02	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.99	0.49	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	12.90		0.28		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.15					
Intersection LOS	B					

Intersection Level Of Service Report

Intersection 3: Teller Street

Control Type: Signalized
 Analysis Method: HCM 7th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 16.5
 Level Of Service: B
 Volume to Capacity (v/c): 0.341

Intersection Setup

Name	Teller Street			Teller Street			East Harmony Road			East Harmony road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	200.00	100.00	200.00	250.00	100.00	300.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

Volumes

Name	Teller Street			Teller Street			East Harmony Road			East Harmony road		
Base Volume Input [veh/h]	213	6	28	6	11	9	5	147	33	19	341	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	14	0	0	5	0	0	17	0	0	2
Total Hourly Volume [veh/h]	213	6	14	6	11	4	5	147	16	19	341	1
Peak Hour Factor	0.9400	0.9400	0.9400	0.7200	0.7200	0.7200	0.8900	0.8900	0.8900	0.8600	0.8600	0.8600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	57	2	4	2	4	1	1	41	4	6	99	0
Total Analysis Volume [veh/h]	227	6	15	8	15	6	6	165	18	22	397	1
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	4	10	0	4	10	0	4	15	0	4	10	0
Maximum Green [s]	15	45	0	15	45	0	15	45	0	15	45	0
Amber [s]	3.0	4.1	0.0	3.0	4.1	0.0	3.0	4.4	0.0	3.0	4.4	0.0
All red [s]	1.0	2.0	0.0	1.0	2.0	0.0	1.0	2.0	0.0	1.0	2.0	0.0
Split [s]	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	4.1	0.0	2.0	4.1	0.0	2.0	4.4	0.0	2.0	4.4	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	Yes		No	Yes	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	40.0	40.0	0.0	40.0	40.0	0.0	40.0	40.0	0.0	40.0	40.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	R	L	C
C, Cycle Length [s]	82	82	82	82	82	82	82	82	82	82
L, Total Lost Time per Cycle [s]	6.10	6.10	6.10	6.10	6.10	6.40	6.40	6.40	6.40	6.40
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	4.10	0.00	4.10	4.10	0.00	4.40	4.40	0.00	4.40
g_i, Effective Green Time [s]	19	15	19	4	4	51	45	45	51	46
g / C, Green / Cycle	0.23	0.18	0.23	0.05	0.05	0.61	0.55	0.55	0.61	0.56
(v / s)_i Volume / Saturation Flow Rate	0.14	0.01	0.01	0.01	0.00	0.01	0.09	0.01	0.02	0.21
s, saturation flow rate [veh/h]	1661	1661	1445	1870	1589	1026	1870	1589	1242	1869
c, Capacity [veh/h]	515	296	460	89	76	638	1019	866	838	1043
d1, Uniform Delay [s]	27.67	28.23	24.25	37.73	37.57	6.83	9.37	8.64	6.34	10.24
k, delay calibration	0.24	0.11	0.11	0.11	0.11	0.50	0.50	0.50	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.30	0.10	0.01	0.88	0.44	0.03	0.34	0.04	0.01	1.06
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.44	0.07	0.02	0.17	0.08	0.01	0.16	0.02	0.03	0.38
d, Delay for Lane Group [s/veh]	28.96	28.33	24.26	38.60	38.01	6.85	9.71	8.68	6.35	11.30
Lane Group LOS	C	C	C	D	D	A	A	A	A	B
Critical Lane Group	Yes	No	No	Yes	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	4.00	0.35	0.12	0.31	0.12	0.04	1.46	0.15	0.14	3.96
50th-Percentile Queue Length [ft/ln]	99.89	8.69	2.99	7.70	3.08	1.02	36.42	3.69	3.39	98.93
95th-Percentile Queue Length [veh/ln]	7.19	0.63	0.22	0.55	0.22	0.07	2.62	0.27	0.24	7.12
95th-Percentile Queue Length [ft/ln]	179.80	15.63	5.38	13.87	5.55	1.83	65.55	6.64	6.10	178.07

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	28.96	28.33	28.33	24.26	38.60	38.01	6.85	9.71	8.68	6.35	11.30	11.30
Movement LOS	C	C	C	C	D	D	A	A	A	A	B	B
d_A, Approach Delay [s/veh]	28.91			34.52			9.52			11.04		
Approach LOS	C			C			A			B		
d_I, Intersection Delay [s/veh]	16.48											
Intersection LOS	B											
Intersection V/C	0.341											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0			0.0			0.0			0.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	0.00			0.00			0.00			0.00		
I_p,int, Pedestrian LOS Score for Intersection	0.000			0.000			0.000			0.000		
Crosswalk LOS	F			F			F			F		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	1092			1092			1092			1092		
d_b, Bicycle Delay [s]	8.50			8.50			8.50			8.50		
I_b,int, Bicycle LOS Score for Intersection	1.992			1.616			1.900			2.256		
Bicycle LOS	A			A			A			B		

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Ziggi's Coffee TIS

Vistro File: C:\...\pm.vistro
Report File: C:\...\Existing PM.pdf

Scenario 1 Existing PM
12/9/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Fox Ridge Parkway	Two-way stop	HCM 7th Edition	NB Left	0.145	30.3	D
2	Site Access	Two-way stop	HCM 7th Edition	SB Right	0.026	11.1	B
3	Teller Street	Signalized	HCM 7th Edition	SB Thru	0.351	14.3	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Fox Ridge Parkway

Control Type: Two-way stop
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 30.3
Level Of Service: D
Volume to Capacity (v/c): 0.145

Intersection Setup

Name	Muntjac Street			Fox Ridge Parkway			East Harmony Road			East Harmony Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Entry Pocket Length [ft]	75.00	100.00	100.00	50.00	100.00	100.00	175.00	100.00	175.00	175.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Muntjac Street			Fox Ridge Parkway			East Harmony Road			East Harmony Road		
Base Volume Input [veh/h]	20	0	6	2	0	7	15	636	44	10	405	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	0	6	2	0	7	15	636	44	10	405	0
Peak Hour Factor	0.8300	0.8300	0.8300	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	0	2	1	0	2	4	173	12	3	103	0
Total Analysis Volume [veh/h]	24	0	7	2	0	8	16	691	48	10	413	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.14	0.00	0.02	0.01	0.00	0.01	0.01	0.01	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	30.31	23.92	13.23	27.86	25.14	10.70	8.19	0.00	0.00	9.20	0.00	0.00
Movement LOS	D	C	B	D	D	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.49	0.05	0.05	0.04	0.04	0.04	0.04	0.00	0.00	0.03	0.00	0.00
95th-Percentile Queue Length [ft/ln]	12.33	1.20	1.20	0.95	0.95	0.95	1.06	0.00	0.00	0.87	0.00	0.00
d_A, Approach Delay [s/veh]	26.46			14.14			0.17			0.22		
Approach LOS	D			B			A			A		
d_I, Intersection Delay [s/veh]	0.97											
Intersection LOS	D											

Intersection Level Of Service Report
Intersection 2: Site Access

Control Type: Two-way stop
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 11.1
Level Of Service: B
Volume to Capacity (v/c): 0.026

Intersection Setup

Name	Site Access		East Harmony Road		East Harmony Road	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	130.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Site Access		East Harmony Road		East Harmony Road	
Base Volume Input [veh/h]	0	14	14	625	382	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	14	14	625	382	0
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	4	4	184	112	0
Total Analysis Volume [veh/h]	0	16	16	735	449	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.03	0.01	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	23.26	11.06	8.29	0.00	0.00	0.00
Movement LOS	C	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.08	0.04	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	2.02	1.10	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	11.06		0.18		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.25					
Intersection LOS	B					

Intersection Level Of Service Report

Intersection 3: Teller Street

Control Type: Signalized
 Analysis Method: HCM 7th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 14.3
 Level Of Service: B
 Volume to Capacity (v/c): 0.351

Intersection Setup

Name	Teller Street			Teller Street			East Harmony Road			East Harmony Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	200.00	100.00	200.00	250.00	100.00	300.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

Volumes

Name	Teller Street			Teller Street			East Harmony Road			East Harmony Road		
Base Volume Input [veh/h]	144	7	24	14	11	15	11	416	234	25	223	6
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	12	0	0	8	0	0	117	0	0	3
Total Hourly Volume [veh/h]	144	7	12	14	11	7	11	416	117	25	223	3
Peak Hour Factor	0.8400	0.8400	0.8400	0.7100	0.7100	0.7100	0.9000	0.9000	0.9000	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	43	2	4	5	4	2	3	116	33	7	59	1
Total Analysis Volume [veh/h]	171	8	14	20	15	10	12	462	130	26	235	3
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	4	10	0	4	10	0	4	15	0	4	10	0
Maximum Green [s]	15	45	0	15	45	0	15	45	0	15	45	0
Amber [s]	3.0	4.1	0.0	3.0	4.1	0.0	3.0	4.4	0.0	3.0	4.4	0.0
All red [s]	1.0	2.0	0.0	1.0	2.0	0.0	1.0	2.0	0.0	1.0	2.0	0.0
Split [s]	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	4.1	0.0	2.0	4.1	0.0	2.0	4.4	0.0	2.0	4.4	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	Yes		No	Yes	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	40.0	40.0	0.0	40.0	40.0	0.0	40.0	40.0	0.0	40.0	40.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	R	L	C
C, Cycle Length [s]	80	80	80	80	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	6.10	6.10	6.10	6.10	6.10	6.40	6.40	6.40	6.40	6.40
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	4.10	0.00	4.10	4.10	0.00	4.40	4.40	0.00	4.40
g_i, Effective Green Time [s]	17	12	17	4	4	51	45	45	51	46
g / C, Green / Cycle	0.21	0.15	0.21	0.05	0.05	0.63	0.56	0.56	0.63	0.57
(v / s)_i Volume / Saturation Flow Rate	0.10	0.01	0.01	0.01	0.01	0.01	0.25	0.08	0.03	0.13
s, saturation flow rate [veh/h]	1634	1681	1468	1870	1589	1179	1870	1589	896	1866
c, Capacity [veh/h]	477	246	437	102	87	803	1044	888	575	1061
d1, Uniform Delay [s]	27.52	29.76	25.16	36.28	36.22	5.71	10.43	8.55	6.52	8.58
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.50	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.45	0.16	0.04	0.65	0.58	0.03	1.36	0.35	0.03	0.49
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.36	0.09	0.05	0.15	0.11	0.01	0.44	0.15	0.05	0.22
d, Delay for Lane Group [s/veh]	27.97	29.92	25.20	36.94	36.80	5.74	11.79	8.90	6.55	9.07
Lane Group LOS	C	C	C	D	D	A	B	A	A	A
Critical Lane Group	Yes	No	Yes	No	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.84	0.37	0.30	0.29	0.20	0.07	4.67	1.07	0.15	1.98
50th-Percentile Queue Length [ft/ln]	71.00	9.30	7.56	7.36	4.94	1.81	116.71	26.80	3.66	49.55
95th-Percentile Queue Length [veh/ln]	5.11	0.67	0.54	0.53	0.36	0.13	8.21	1.93	0.26	3.57
95th-Percentile Queue Length [ft/ln]	127.80	16.74	13.61	13.26	8.90	3.25	205.29	48.23	6.59	89.19

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	27.97	29.92	29.92	25.20	36.94	36.80	5.74	11.79	8.90	6.55	9.07	9.07
Movement LOS	C	C	C	C	D	D	A	B	A	A	A	A
d_A, Approach Delay [s/veh]	28.19			31.69			11.04			8.83		
Approach LOS	C			C			B			A		
d_I, Intersection Delay [s/veh]	14.35											
Intersection LOS	B											
Intersection V/C	0.351											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0			0.0			0.0			0.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	0.00			0.00			0.00			0.00		
I_p,int, Pedestrian LOS Score for Intersection	0.000			0.000			0.000			0.000		
Crosswalk LOS	F			F			F			F		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	1119			1119			1119			1119		
d_b, Bicycle Delay [s]	7.81			7.81			7.81			7.81		
I_b,int, Bicycle LOS Score for Intersection	1.898			1.647			2.749			2.000		
Bicycle LOS	A			A			B			B		

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Year 2028 Traffic Volume Scenarios

Ziggi's Coffee TIS

Vistro File: C:\...\AM.vistro

Scenario 6 2028 Back AM

Report File: C:\...\2028 Back AM.pdf

12/9/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Fox Ridge Parkway	Two-way stop	HCM 7th Edition	NB Left	0.344	31.7	D
2	Site Access	Two-way stop	HCM 7th Edition	SB Right	0.017	15.7	C
3	Teller Street	Signalized	HCM 7th Edition	SB Thru	0.429	17.6	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Fox Ridge Parkway

Control Type: Two-way stop
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 31.7
Level Of Service: D
Volume to Capacity (v/c): 0.344

Intersection Setup

Name	Muntjac Street			Fox Ridge Parkway			East Harmony Road			East Harmony Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Entry Pocket Length [ft]	75.00	100.00	100.00	50.00	100.00	100.00	175.00	100.00	175.00	175.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Muntjac Street			Fox Ridge Parkway			East Harmony Road			East Harmony Road		
Base Volume Input [veh/h]	44	0	9	3	0	10	4	150	6	1	530	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.3401	1.0000	1.0000	1.3401	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	44	0	9	3	0	10	4	201	6	1	710	1
Peak Hour Factor	0.6300	0.6300	0.6300	0.8300	0.8300	0.8300	0.8900	0.8900	0.8900	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	17	0	4	1	0	3	1	56	2	0	197	0
Total Analysis Volume [veh/h]	70	0	14	4	0	12	4	226	7	1	789	1
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.34	0.00	0.02	0.02	0.00	0.03	0.00	0.00	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	31.68	20.50	9.50	22.92	20.85	14.51	9.36	0.00	0.00	7.70	0.00	0.00
Movement LOS	D	C	A	C	C	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	1.45	0.05	0.05	0.06	0.09	0.09	0.01	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	36.17	1.31	1.31	1.49	2.37	2.37	0.36	0.00	0.00	0.06	0.00	0.00
d_A, Approach Delay [s/veh]	27.98			16.61			0.16			0.01		
Approach LOS	D			C			A			A		
d_I, Intersection Delay [s/veh]	2.36											
Intersection LOS	D											

Intersection Level Of Service Report
Intersection 2: Site Access

Control Type: Two-way stop
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 15.7
Level Of Service: C
Volume to Capacity (v/c): 0.017

Intersection Setup

Name	Site Access		East Harmony Road		East Harmony Road	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	130.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Site Access		East Harmony Road		East Harmony Road	
Base Volume Input [veh/h]	0	5	5	158	563	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.3401	1.3401	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	5	5	212	754	0
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	1	1	62	222	0
Total Analysis Volume [veh/h]	0	6	6	249	887	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.02	0.01	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	21.51	15.68	9.75	0.00	0.00	0.00
Movement LOS	C	C	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.05	0.02	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	1.33	0.59	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	15.68		0.23		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.13					
Intersection LOS	C					

Intersection Level Of Service Report

Intersection 3: Teller Street

Control Type: Signalized
 Analysis Method: HCM 7th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 17.6
 Level Of Service: B
 Volume to Capacity (v/c): 0.429

Intersection Setup

Name	Teller Street			Teller Street			East Harmony Road			East Harmony road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	200.00	100.00	200.00	250.00	100.00	300.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

Volumes

Name	Teller Street			Teller Street			East Harmony Road			East Harmony road		
Base Volume Input [veh/h]	213	6	28	6	11	9	5	147	33	19	341	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.1262	1.1262	1.1262	1.1262	1.1262	1.1262	1.3401	1.3401	1.3401	1.3401	1.3401	1.3401
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	16	0	0	5	0	0	22	0	0	2
Total Hourly Volume [veh/h]	240	7	16	7	12	5	7	197	22	25	457	2
Peak Hour Factor	0.9400	0.9400	0.9400	0.7200	0.7200	0.7200	0.8900	0.8900	0.8900	0.8600	0.8600	0.8600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	64	2	4	2	4	2	2	55	6	7	133	1
Total Analysis Volume [veh/h]	255	7	17	10	17	7	8	221	25	29	531	2
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	4	10	0	4	10	0	4	15	0	4	10	0
Maximum Green [s]	15	45	0	15	45	0	15	45	0	15	45	0
Amber [s]	3.0	4.1	0.0	3.0	4.1	0.0	3.0	4.4	0.0	3.0	4.4	0.0
All red [s]	1.0	2.0	0.0	1.0	2.0	0.0	1.0	2.0	0.0	1.0	2.0	0.0
Split [s]	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	4.1	0.0	2.0	4.1	0.0	2.0	4.4	0.0	2.0	4.4	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	Yes		No	Yes	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	40.0	40.0	0.0	40.0	40.0	0.0	40.0	40.0	0.0	40.0	40.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	R	L	C
C, Cycle Length [s]	85	85	85	85	85	85	85	85	85	85
L, Total Lost Time per Cycle [s]	6.10	6.10	6.10	6.10	6.10	6.40	6.40	6.40	6.40	6.40
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	4.10	0.00	4.10	4.10	0.00	4.40	4.40	0.00	4.40
g_i, Effective Green Time [s]	21	16	21	4	4	51	45	45	51	46
g / C, Green / Cycle	0.25	0.19	0.25	0.05	0.05	0.60	0.53	0.53	0.60	0.55
(v / s)_i Volume / Saturation Flow Rate	0.15	0.01	0.01	0.01	0.00	0.01	0.12	0.02	0.02	0.29
s, saturation flow rate [veh/h]	1662	1662	1440	1870	1589	920	1870	1589	1185	1869
c, Capacity [veh/h]	536	322	476	98	83	517	992	843	766	1020
d1, Uniform Delay [s]	27.77	27.99	23.93	38.43	38.25	8.26	10.60	9.49	7.02	12.23
k, delay calibration	0.32	0.11	0.11	0.11	0.11	0.50	0.50	0.50	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.91	0.10	0.02	0.83	0.43	0.05	0.52	0.07	0.02	1.91
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.48	0.07	0.02	0.17	0.08	0.02	0.22	0.03	0.04	0.52
d, Delay for Lane Group [s/veh]	29.68	28.09	23.95	39.26	38.68	8.31	11.11	9.56	7.04	14.14
Lane Group LOS	C	C	C	D	D	A	B	A	A	B
Critical Lane Group	Yes	No	No	Yes	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	4.68	0.40	0.15	0.36	0.15	0.06	2.18	0.22	0.20	6.35
50th-Percentile Queue Length [ft/ln]	116.90	10.02	3.77	8.90	3.66	1.50	54.61	5.55	4.88	158.67
95th-Percentile Queue Length [veh/ln]	8.22	0.72	0.27	0.64	0.26	0.11	3.93	0.40	0.35	10.48
95th-Percentile Queue Length [ft/ln]	205.56	18.04	6.78	16.02	6.59	2.70	98.29	10.00	8.78	261.97

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	29.68	28.09	28.09	23.95	39.26	38.68	8.31	11.11	9.56	7.04	14.14	14.14
Movement LOS	C	C	C	C	D	D	A	B	A	A	B	B
d_A, Approach Delay [s/veh]	29.54			34.64			10.87			13.78		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	17.65											
Intersection LOS	B											
Intersection V/C	0.429											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0			0.0			0.0			0.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	0.00			0.00			0.00			0.00		
I_p,int, Pedestrian LOS Score for Intersection	0.000			0.000			0.000			0.000		
Crosswalk LOS	F			F			F			F		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	1063			1063			1063			1063		
d_b, Bicycle Delay [s]	9.31			9.31			9.31			9.31		
I_b,int, Bicycle LOS Score for Intersection	2.046			1.624			2.015			2.490		
Bicycle LOS	B			A			B			B		

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Ziggi's Coffee TIS

Vistro File: C:\...\pm.vistro

Scenario 6 2028 Back PM

Report File: C:\...\2028 Back PM.pdf

12/9/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Fox Ridge Parkway	Two-way stop	HCM 7th Edition	NB Left	0.265	58.5	F
2	Site Access	Two-way stop	HCM 7th Edition	SB Right	0.032	12.4	B
3	Teller Street	Signalized	HCM 7th Edition	SB Thru	0.450	16.0	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Fox Ridge Parkway

Control Type: Two-way stop
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 58.5
Level Of Service: F
Volume to Capacity (v/c): 0.265

Intersection Setup

Name	Muntjac Street			Fox Ridge Parkway			East Harmony Road			East Harmony Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Entry Pocket Length [ft]	75.00	100.00	100.00	50.00	100.00	100.00	175.00	100.00	175.00	175.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Muntjac Street			Fox Ridge Parkway			East Harmony Road			East Harmony Road		
Base Volume Input [veh/h]	20	0	6	2	0	7	15	636	44	10	405	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.3401	1.0000	1.0000	1.3401	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	0	6	2	0	7	15	852	44	10	543	0
Peak Hour Factor	0.8300	0.8300	0.8300	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	0	2	1	0	2	4	232	12	3	139	0
Total Analysis Volume [veh/h]	24	0	7	2	0	8	16	926	48	10	554	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.27	0.00	0.02	0.02	0.00	0.02	0.02	0.01	0.00	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	58.51	37.05	16.30	47.54	39.13	11.87	8.60	0.00	0.00	10.16	0.00	0.00
Movement LOS	F	E	C	E	E	B	A	A	A	B	A	A
95th-Percentile Queue Length [veh/ln]	0.97	0.07	0.07	0.07	0.05	0.05	0.05	0.00	0.00	0.04	0.00	0.00
95th-Percentile Queue Length [ft/ln]	24.22	1.64	1.64	1.76	1.14	1.14	1.20	0.00	0.00	1.07	0.00	0.00
d_A, Approach Delay [s/veh]	48.98			19.00			0.14			0.18		
Approach LOS	E			C			A			A		
d_I, Intersection Delay [s/veh]	1.22											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 2: Site Access

Control Type: Two-way stop
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 12.4
Level Of Service: B
Volume to Capacity (v/c): 0.032

Intersection Setup

Name	Site Access		East Harmony Road		East Harmony Road	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	130.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Site Access		East Harmony Road		East Harmony Road	
Base Volume Input [veh/h]	0	14	14	625	382	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.3401	1.3401	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	14	14	838	512	0
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	4	4	246	151	0
Total Analysis Volume [veh/h]	0	16	16	986	602	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.03	0.02	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	37.28	12.44	8.75	0.00	0.00	0.00
Movement LOS	E	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.10	0.05	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	2.48	1.25	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	12.44		0.14		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.21					
Intersection LOS	B					

Intersection Level Of Service Report

Intersection 3: Teller Street

Control Type: Signalized
 Analysis Method: HCM 7th Edition
 Analysis Period: 15 minutes

Delay (sec / veh): 16.0
 Level Of Service: B
 Volume to Capacity (v/c): 0.450

Intersection Setup

Name	Teller Street			Teller Street			East Harmony Road			East Harmony Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	200.00	100.00	200.00	250.00	100.00	300.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

Volumes

Name	Teller Street			Teller Street			East Harmony Road			East Harmony Road		
Base Volume Input [veh/h]	144	7	24	14	11	15	11	416	234	25	223	6
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.1262	1.1262	1.1262	1.1262	1.1262	1.1262	1.3401	1.3401	1.3401	1.3401	1.3401	1.3401
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	14	0	0	9	0	0	157	0	0	4
Total Hourly Volume [veh/h]	162	8	13	16	12	8	15	557	157	34	299	4
Peak Hour Factor	0.8400	0.8400	0.8400	0.7100	0.7100	0.7100	0.9000	0.9000	0.9000	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	48	2	4	6	4	3	4	155	44	9	79	1
Total Analysis Volume [veh/h]	193	10	15	23	17	11	17	619	174	36	315	4
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	4	10	0	4	10	0	4	15	0	4	10	0
Maximum Green [s]	15	45	0	15	45	0	15	45	0	15	45	0
Amber [s]	3.0	4.1	0.0	3.0	4.1	0.0	3.0	4.4	0.0	3.0	4.4	0.0
All red [s]	1.0	2.0	0.0	1.0	2.0	0.0	1.0	2.0	0.0	1.0	2.0	0.0
Split [s]	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	4.1	0.0	2.0	4.1	0.0	2.0	4.4	0.0	2.0	4.4	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	Yes		No	Yes	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	40.0	40.0	0.0	40.0	40.0	0.0	40.0	40.0	0.0	40.0	40.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	R	L	C
C, Cycle Length [s]	83	83	83	83	83	83	83	83	83	83
L, Total Lost Time per Cycle [s]	6.10	6.10	6.10	6.10	6.10	6.40	6.40	6.40	6.40	6.40
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	4.10	0.00	4.10	4.10	0.00	4.40	4.40	0.00	4.40
g_i, Effective Green Time [s]	19	13	19	5	5	51	45	45	51	46
g / C, Green / Cycle	0.23	0.16	0.23	0.06	0.06	0.62	0.55	0.55	0.62	0.56
(v / s)_i Volume / Saturation Flow Rate	0.12	0.01	0.02	0.01	0.01	0.02	0.33	0.11	0.05	0.17
s, saturation flow rate [veh/h]	1635	1691	1463	1870	1589	1107	1870	1589	776	1866
c, Capacity [veh/h]	495	269	451	110	94	717	1019	866	452	1038
d1, Uniform Delay [s]	27.62	29.65	24.95	36.92	36.84	6.37	12.80	9.62	8.43	9.81
k, delay calibration	0.17	0.11	0.11	0.11	0.11	0.50	0.50	0.50	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.77	0.15	0.05	0.64	0.55	0.06	2.70	0.52	0.07	0.77
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.39	0.09	0.05	0.15	0.12	0.02	0.61	0.20	0.08	0.31
d, Delay for Lane Group [s/veh]	28.39	29.80	25.00	37.57	37.39	6.43	15.50	10.14	8.50	10.58
Lane Group LOS	C	C	C	D	D	A	B	B	A	B
Critical Lane Group	Yes	No	Yes	No	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	3.32	0.43	0.35	0.34	0.22	0.11	7.74	1.60	0.22	3.02
50th-Percentile Queue Length [ft/ln]	82.89	10.68	8.78	8.51	5.54	2.79	193.39	39.95	5.56	75.46
95th-Percentile Queue Length [veh/ln]	5.97	0.77	0.63	0.61	0.40	0.20	12.30	2.88	0.40	5.43
95th-Percentile Queue Length [ft/ln]	149.20	19.23	15.81	15.32	9.97	5.02	307.43	71.91	10.00	135.83

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	28.39	29.80	29.80	25.00	37.57	37.39	6.43	15.50	10.14	8.50	10.58	10.58
Movement LOS	C	C	C	C	D	D	A	B	B	A	B	B
d_A, Approach Delay [s/veh]	28.55			31.86			14.16			10.37		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	16.04											
Intersection LOS	B											
Intersection V/C	0.450											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0			0.0			0.0			0.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	0.00			0.00			0.00			0.00		
I_p,int, Pedestrian LOS Score for Intersection	0.000			0.000			0.000			0.000		
Crosswalk LOS	F			F			F			F		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	1091			1091			1091			1091		
d_b, Bicycle Delay [s]	8.53			8.53			8.53			8.53		
I_b,int, Bicycle LOS Score for Intersection	1.942			1.659			3.155			2.152		
Bicycle LOS	A			A			C			B		

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Ziggi's Coffee TIS

Vistro File: C:\...\AM.vistro

Scenario 3 2028 Total AM

Report File: C:\...\2028 Total AM.pdf

12/11/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Fox Ridge Parkway	Two-way stop	HCM 7th Edition	NB Left	0.383	36.4	E
2	Site Access	Two-way stop	HCM 7th Edition	SB Left	0.205	27.0	D
3	Teller Street	Signalized	HCM 7th Edition	SB Thru	0.448	18.5	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Fox Ridge Parkway

Control Type: Two-way stop
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 36.4
Level Of Service: E
Volume to Capacity (v/c): 0.383

Intersection Setup

Name	Muntjac Street			Fox Ridge Parkway			East Harmony Road			East Harmony Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Entry Pocket Length [ft]	75.00	100.00	100.00	50.00	100.00	100.00	175.00	100.00	175.00	175.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Muntjac Street			Fox Ridge Parkway			East Harmony Road			East Harmony Road		
Base Volume Input [veh/h]	44	0	9	3	0	10	4	150	6	1	530	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.3401	1.0000	1.0000	1.3401	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	31	0	0	29	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	44	0	9	3	0	10	4	232	6	1	739	1
Peak Hour Factor	0.6300	0.6300	0.6300	0.8300	0.8300	0.8300	0.8900	0.8900	0.8900	0.9000	0.9000	0.9000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	17	0	4	1	0	3	1	65	2	0	205	0
Total Analysis Volume [veh/h]	70	0	14	4	0	12	4	261	7	1	821	1
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.38	0.00	0.02	0.02	0.00	0.03	0.00	0.00	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	36.39	21.99	9.71	24.97	22.37	14.94	9.48	0.00	0.00	7.78	0.00	0.00
Movement LOS	E	C	A	C	C	B	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	1.66	0.05	0.05	0.07	0.10	0.10	0.01	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	41.59	1.37	1.37	1.66	2.48	2.48	0.37	0.00	0.00	0.06	0.00	0.00
d_A, Approach Delay [s/veh]	31.94			17.45			0.14			0.01		
Approach LOS	D			C			A			A		
d_I, Intersection Delay [s/veh]	2.52											
Intersection LOS	E											

Intersection Level Of Service Report
Intersection 2: Site Access

Control Type: Two-way stop
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 27.0
Level Of Service: D
Volume to Capacity (v/c): 0.205

Intersection Setup

Name	Site Access		East Harmony Road		East Harmony Road	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	130.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Site Access		East Harmony Road		East Harmony Road	
Base Volume Input [veh/h]	0	5	5	158	563	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.3401	1.3401	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	36	29	31	0	0	38
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	-25	-30	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	36	34	36	187	724	38
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	11	10	11	55	213	11
Total Analysis Volume [veh/h]	42	40	42	220	852	45
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.20	0.11	0.06	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	26.99	16.27	10.04	0.00	0.00	0.00
Movement LOS	D	C	B	A	A	A
95th-Percentile Queue Length [veh/ln]	0.74	0.37	0.18	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	18.61	9.31	4.40	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	21.76		1.61		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	1.78					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 3: Teller Street

Control Type: Signalized
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 18.5
Level Of Service: B
Volume to Capacity (v/c): 0.448

Intersection Setup

Name	Teller Street			Teller Street			East Harmony Road			East Harmony road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	200.00	100.00	200.00	250.00	100.00	300.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

Volumes

Name	Teller Street			Teller Street			East Harmony Road			East Harmony road		
Base Volume Input [veh/h]	213	6	28	6	11	9	5	147	33	19	341	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.1262	1.1262	1.1262	1.1262	1.1262	1.1262	1.3401	1.3401	1.3401	1.3401	1.3401	1.3401
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	14	0	0	0	0	7	7	16	13	0	17	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	16	0	0	9	0	0	29	0	0	2
Total Hourly Volume [veh/h]	254	7	16	7	12	8	14	213	28	25	474	2
Peak Hour Factor	0.9400	0.9400	0.9400	0.7200	0.7200	0.7200	0.8900	0.8900	0.8900	0.8600	0.8600	0.8600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	68	2	4	2	4	3	4	60	8	7	138	1
Total Analysis Volume [veh/h]	270	7	17	10	17	11	16	239	31	29	551	2
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	4	10	0	4	10	0	4	15	0	4	10	0
Maximum Green [s]	15	45	0	15	45	0	15	45	0	15	45	0
Amber [s]	3.0	4.1	0.0	3.0	4.1	0.0	3.0	4.4	0.0	3.0	4.4	0.0
All red [s]	1.0	2.0	0.0	1.0	2.0	0.0	1.0	2.0	0.0	1.0	2.0	0.0
Split [s]	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	4.1	0.0	2.0	4.1	0.0	2.0	4.4	0.0	2.0	4.4	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	Yes		No	Yes	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	40.0	40.0	0.0	40.0	40.0	0.0	40.0	40.0	0.0	40.0	40.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	R	L	C
C, Cycle Length [s]	86	86	86	86	86	86	86	86	86	86
L, Total Lost Time per Cycle [s]	6.10	6.10	6.10	6.10	6.10	6.40	6.40	6.40	6.40	6.40
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	4.10	0.00	4.10	4.10	0.00	4.40	4.40	0.00	4.40
g_i, Effective Green Time [s]	22	18	22	5	5	51	45	45	51	46
g / C, Green / Cycle	0.26	0.20	0.26	0.06	0.06	0.59	0.52	0.52	0.59	0.53
(v / s)_i Volume / Saturation Flow Rate	0.16	0.01	0.01	0.01	0.01	0.02	0.13	0.02	0.02	0.30
s, saturation flow rate [veh/h]	1657	1662	1437	1870	1589	915	1870	1589	1162	1869
c, Capacity [veh/h]	551	341	489	109	92	494	977	831	734	993
d1, Uniform Delay [s]	27.64	27.60	23.59	38.54	38.45	9.01	11.24	10.00	7.48	13.44
k, delay calibration	0.36	0.11	0.11	0.11	0.11	0.50	0.50	0.50	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.26	0.09	0.02	0.66	0.57	0.12	0.59	0.08	0.02	2.26
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.49	0.07	0.02	0.16	0.12	0.03	0.24	0.04	0.04	0.56
d, Delay for Lane Group [s/veh]	29.90	27.68	23.60	39.20	39.02	9.13	11.84	10.09	7.50	15.69
Lane Group LOS	C	C	C	D	D	A	B	B	A	B
Critical Lane Group	Yes	No	No	Yes	No	Yes	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	5.04	0.40	0.15	0.36	0.23	0.13	2.49	0.29	0.21	7.14
50th-Percentile Queue Length [ft/ln]	126.07	10.01	3.77	8.92	5.80	3.17	62.28	7.20	5.14	178.49
95th-Percentile Queue Length [veh/ln]	8.73	0.72	0.27	0.64	0.42	0.23	4.48	0.52	0.37	11.52
95th-Percentile Queue Length [ft/ln]	218.14	18.03	6.78	16.05	10.44	5.71	112.10	12.97	9.26	288.04

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	29.90	27.68	27.68	23.60	39.20	39.02	9.13	11.84	10.09	7.50	15.69	15.69
Movement LOS	C	C	C	C	D	D	A	B	B	A	B	B
d_A, Approach Delay [s/veh]	29.72			35.04			11.50			15.28		
Approach LOS	C			D			B			B		
d_I, Intersection Delay [s/veh]	18.54											
Intersection LOS	B											
Intersection V/C	0.448											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0			0.0			0.0			0.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	0.00			0.00			0.00			0.00		
I_p,int, Pedestrian LOS Score for Intersection	0.000			0.000			0.000			0.000		
Crosswalk LOS	F			F			F			F		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	1047			1047			1047			1047		
d_b, Bicycle Delay [s]	9.77			9.77			9.77			9.77		
I_b,int, Bicycle LOS Score for Intersection	2.071			1.637			2.079			2.523		
Bicycle LOS	B			A			B			B		

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Ziggi's Coffee TIS

Vistro File: C:\...\pm.vistro

Scenario 3 2028 Total PM

Report File: C:\...\2028 Total PM.pdf

12/11/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Fox Ridge Parkway	Two-way stop	HCM 7th Edition	NB Left	0.281	62.9	F
2	Site Access	Two-way stop	HCM 7th Edition	SB Left	0.223	47.8	E
3	Teller Street	Signalized	HCM 7th Edition	SB Right	0.459	16.6	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Fox Ridge Parkway

Control Type: Two-way stop
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 62.9
Level Of Service: F
Volume to Capacity (v/c): 0.281

Intersection Setup

Name	Muntjac Street			Fox Ridge Parkway			East Harmony Road			East Harmony Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Entry Pocket Length [ft]	75.00	100.00	100.00	50.00	100.00	100.00	175.00	100.00	175.00	175.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Muntjac Street			Fox Ridge Parkway			East Harmony Road			East Harmony Road		
Base Volume Input [veh/h]	20	0	6	2	0	7	15	636	44	10	405	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.3401	1.0000	1.0000	1.3401	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	17	0	0	17	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	0	6	2	0	7	15	869	44	10	560	0
Peak Hour Factor	0.8300	0.8300	0.8300	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	0	2	1	0	2	4	236	12	3	143	0
Total Analysis Volume [veh/h]	24	0	7	2	0	8	16	945	48	10	571	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.28	0.00	0.02	0.02	0.00	0.02	0.02	0.01	0.00	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	62.87	38.73	16.59	50.19	40.92	12.03	8.65	0.00	0.00	10.24	0.00	0.00
Movement LOS	F	E	C	F	E	B	A	A	A	B	A	A
95th-Percentile Queue Length [veh/ln]	1.03	0.07	0.07	0.07	0.05	0.05	0.05	0.00	0.00	0.04	0.00	0.00
95th-Percentile Queue Length [ft/ln]	25.84	1.69	1.69	1.87	1.17	1.17	1.22	0.00	0.00	1.09	0.00	0.00
d_A, Approach Delay [s/veh]	52.42			19.66			0.14			0.18		
Approach LOS	F			C			A			A		
d_I, Intersection Delay [s/veh]	1.26											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 2: Site Access

Control Type: Two-way stop
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 47.8
Level Of Service: E
Volume to Capacity (v/c): 0.223

Intersection Setup

Name	Site Access		East Harmony Road		East Harmony Road	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	130.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Site Access		East Harmony Road		East Harmony Road	
Base Volume Input [veh/h]	0	14	14	625	382	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.3401	1.3401	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	20	17	17	0	0	20
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	-12	-14	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	31	31	826	498	20
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	9	9	243	146	6
Total Analysis Volume [veh/h]	24	36	36	972	586	24
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.22	0.07	0.04	0.01	0.01	0.00
d_M, Delay for Movement [s/veh]	47.80	12.59	8.86	0.00	0.00	0.00
Movement LOS	E	B	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.80	0.23	0.12	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	20.00	5.67	2.89	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	26.67		0.32		0.00	
Approach LOS	D		A		A	
d_I, Intersection Delay [s/veh]	1.14					
Intersection LOS	E					

Intersection Level Of Service Report
Intersection 3: Teller Street

Control Type: Signalized
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 16.6
Level Of Service: B
Volume to Capacity (v/c): 0.459

Intersection Setup

Name	Teller Street			Teller Street			East Harmony Road			East Harmony Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	200.00	100.00	200.00	250.00	100.00	300.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

Volumes

Name	Teller Street			Teller Street			East Harmony Road			East Harmony Road		
Base Volume Input [veh/h]	144	7	24	14	11	15	11	416	234	25	223	6
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.1262	1.1262	1.1262	1.1262	1.1262	1.1262	1.3401	1.3401	1.3401	1.3401	1.3401	1.3401
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	7	0	0	0	0	4	4	9	7	0	9	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	14	0	0	11	0	0	161	0	0	4
Total Hourly Volume [veh/h]	169	8	13	16	12	10	19	566	160	34	308	4
Peak Hour Factor	0.8400	0.8400	0.8400	0.7100	0.7100	0.7100	0.9000	0.9000	0.9000	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	50	2	4	6	4	4	5	157	44	9	81	1
Total Analysis Volume [veh/h]	201	10	15	23	17	14	21	629	178	36	324	4
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	4	10	0	4	10	0	4	15	0	4	10	0
Maximum Green [s]	15	45	0	15	45	0	15	45	0	15	45	0
Amber [s]	3.0	4.1	0.0	3.0	4.1	0.0	3.0	4.4	0.0	3.0	4.4	0.0
All red [s]	1.0	2.0	0.0	1.0	2.0	0.0	1.0	2.0	0.0	1.0	2.0	0.0
Split [s]	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	4.1	0.0	2.0	4.1	0.0	2.0	4.4	0.0	2.0	4.4	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	Yes		No	Yes	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	40.0	40.0	0.0	40.0	40.0	0.0	40.0	40.0	0.0	40.0	40.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	R	L	C
C, Cycle Length [s]	83	83	83	83	83	83	83	83	83	83
L, Total Lost Time per Cycle [s]	6.10	6.10	6.10	6.10	6.10	6.40	6.40	6.40	6.40	6.40
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	4.10	0.00	4.10	4.10	0.00	4.40	4.40	0.00	4.40
g_i, Effective Green Time [s]	20	14	20	5	5	51	45	45	51	46
g / C, Green / Cycle	0.23	0.17	0.23	0.06	0.06	0.62	0.54	0.54	0.62	0.55
(v / s)_i Volume / Saturation Flow Rate	0.12	0.01	0.02	0.01	0.01	0.02	0.34	0.11	0.05	0.18
s, saturation flow rate [veh/h]	1632	1691	1460	1870	1589	1103	1870	1589	768	1866
c, Capacity [veh/h]	505	282	459	118	100	703	1009	858	439	1023
d1, Uniform Delay [s]	27.52	29.40	24.73	36.95	36.94	6.67	13.32	9.96	8.86	10.33
k, delay calibration	0.19	0.11	0.11	0.11	0.11	0.50	0.50	0.50	0.11	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.89	0.13	0.04	0.56	0.63	0.08	2.90	0.55	0.08	0.83
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.40	0.09	0.05	0.14	0.14	0.03	0.62	0.21	0.08	0.32
d, Delay for Lane Group [s/veh]	28.41	29.53	24.78	37.51	37.57	6.75	16.22	10.50	8.94	11.15
Lane Group LOS	C	C	C	D	D	A	B	B	A	B
Critical Lane Group	Yes	No	Yes	No	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	3.49	0.43	0.35	0.34	0.28	0.14	8.16	1.68	0.23	3.24
50th-Percentile Queue Length [ft/ln]	87.15	10.67	8.78	8.52	7.08	3.58	204.05	42.12	5.76	81.02
95th-Percentile Queue Length [veh/ln]	6.27	0.77	0.63	0.61	0.51	0.26	12.85	3.03	0.41	5.83
95th-Percentile Queue Length [ft/ln]	156.87	19.21	15.81	15.34	12.75	6.44	321.18	75.81	10.37	145.83

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	28.41	29.53	29.53	24.78	37.51	37.57	6.75	16.22	10.50	8.94	11.15	11.15
Movement LOS	C	C	C	C	D	D	A	B	B	A	B	B
d_A, Approach Delay [s/veh]	28.53			32.10			14.75			10.93		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	16.56											
Intersection LOS	B											
Intersection V/C	0.459											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0			0.0			0.0			0.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	0.00			0.00			0.00			0.00		
I_p,int, Pedestrian LOS Score for Intersection	0.000			0.000			0.000			0.000		
Crosswalk LOS	F			F			F			F		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	1081			1081			1081			1081		
d_b, Bicycle Delay [s]	8.80			8.80			8.80			8.80		
I_b,int, Bicycle LOS Score for Intersection	1.956			1.667			3.191			2.167		
Bicycle LOS	A			A			C			B		

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Year 2042 Traffic Volume Scenarios

Ziggi's Coffee TIS

Vistro File: C:\...\AM.vistro

Scenario 7 2042 Back AM

Report File: C:\...\2042 Back AM.pdf

12/11/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Fox Ridge Parkway	Two-way stop	HCM 7th Edition	SB Left	0.057	77.0	F
2	Site Access	Two-way stop	HCM 7th Edition	SB Right	0.016	16.4	C
3	Teller Street	Signalized	HCM 7th Edition	SB Thru	0.366	14.8	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Fox Ridge Parkway

Control Type: Two-way stop
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 77.0
Level Of Service: F
Volume to Capacity (v/c): 0.057

Intersection Setup

Name	Muntjac Street			Fox Ridge Parkway			East Harmony Road			East Harmony Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Entry Pocket Length [ft]	75.00	100.00	100.00	50.00	100.00	100.00	175.00	100.00	175.00	175.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Muntjac Street			Fox Ridge Parkway			East Harmony Road			East Harmony Road		
Base Volume Input [veh/h]	44	0	9	3	0	10	4	150	6	1	530	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	2.6533	1.0000	1.0000	2.6533	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	44	0	9	3	0	10	4	398	6	1	1406	1
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	0	2	1	0	3	1	108	2	0	382	0
Total Analysis Volume [veh/h]	48	0	10	3	0	11	4	433	7	1	1528	1
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.36	0.00	0.01	0.06	0.00	0.03	0.01	0.00	0.00	0.00	0.02	0.00
d_M, Delay for Movement [s/veh]	46.86	64.35	9.65	77.01	64.89	15.74	13.42	0.00	0.00	8.23	0.00	0.00
Movement LOS	E	F	A	F	F	C	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	1.49	0.04	0.04	0.18	0.10	0.10	0.03	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	37.33	0.97	0.97	4.38	2.46	2.46	0.70	0.00	0.00	0.07	0.00	0.00
d_A, Approach Delay [s/veh]	40.44			28.87			0.12			0.01		
Approach LOS	E			D			A			A		
d_I, Intersection Delay [s/veh]	1.37											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 2: Site Access

Control Type: Two-way stop
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 16.4
Level Of Service: C
Volume to Capacity (v/c): 0.016

Intersection Setup

Name	Site Access		East Harmony Road		East Harmony Road	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Site Access		East Harmony Road		East Harmony Road	
Base Volume Input [veh/h]	0	5	5	158	563	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	2.6533	2.6533	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	5	5	419	1494	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	1	1	114	406	0
Total Analysis Volume [veh/h]	0	5	5	455	1624	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.02	0.01	0.00	0.02	0.00
d_M, Delay for Movement [s/veh]	61.39	16.36	14.19	0.00	0.00	0.00
Movement LOS	F	C	B	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.05	0.04	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	1.18	0.96	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	16.36		0.15		0.00	
Approach LOS	C		A		A	
d_I, Intersection Delay [s/veh]	0.07					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 3: Teller Street

Control Type: Signalized
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 14.8
Level Of Service: B
Volume to Capacity (v/c): 0.366

Intersection Setup

Name	Teller Street			Teller Street			East Harmony Road			East Harmony road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵↵↵			↵↵↵			↵↵↵			↵↵↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	200.00	100.00	200.00	250.00	100.00	300.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.21	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

Volumes

Name	Teller Street			Teller Street			East Harmony Road			East Harmony road		
Base Volume Input [veh/h]	213	6	28	6	11	9	5	147	33	19	341	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.4859	1.4859	1.4859	1.4859	1.4859	1.4859	2.6533	2.6533	2.6533	2.6533	2.6533	2.6533
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	21	0	0	7	0	0	44	0	0	4
Total Hourly Volume [veh/h]	316	9	21	9	16	6	13	390	44	50	905	4
Peak Hour Factor	0.9400	0.9400	0.9400	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	84	2	6	2	4	2	4	106	12	14	246	1
Total Analysis Volume [veh/h]	336	10	22	10	17	7	14	424	48	54	984	4
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	4	10	0	4	10	0	4	15	0	4	10	0
Maximum Green [s]	30	45	0	15	45	0	15	45	0	15	45	0
Amber [s]	3.0	4.1	0.0	3.0	4.1	0.0	3.0	4.4	0.0	3.0	4.4	0.0
All red [s]	1.0	2.0	0.0	1.0	2.0	0.0	1.0	2.0	0.0	1.0	2.0	0.0
Split [s]	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	4.1	0.0	2.0	4.1	0.0	2.0	4.4	0.0	2.0	4.4	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	Yes		No	Yes	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	40.0	40.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	83	83	83	83	83	83	83	83	83	83	83
L, Total Lost Time per Cycle [s]	6.10	6.10	6.10	6.10	6.10	6.40	6.40	6.40	6.40	6.40	6.40
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	4.10	0.00	4.10	4.10	0.00	4.40	4.40	0.00	4.40	4.40
g_i, Effective Green Time [s]	18	13	18	4	4	52	45	45	52	47	47
g / C, Green / Cycle	0.22	0.16	0.22	0.05	0.05	0.63	0.55	0.55	0.63	0.57	0.57
(v / s)_i Volume / Saturation Flow Rate	0.11	0.02	0.01	0.01	0.00	0.02	0.12	0.03	0.05	0.26	0.26
s, saturation flow rate [veh/h]	3192	1668	1263	1870	1589	643	3560	1589	1002	1870	1867
c, Capacity [veh/h]	862	271	463	99	84	441	1938	865	700	1057	1056
d1, Uniform Delay [s]	27.77	29.57	25.23	37.42	37.25	6.91	9.75	8.85	6.09	10.61	10.61
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.29	0.19	0.02	0.82	0.42	0.13	0.26	0.12	0.05	1.49	1.49
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.39	0.12	0.02	0.17	0.08	0.03	0.22	0.06	0.08	0.47	0.47
d, Delay for Lane Group [s/veh]	28.06	29.76	25.25	38.24	37.67	7.04	10.01	8.98	6.14	12.10	12.10
Lane Group LOS	C	C	C	D	D	A	B	A	A	B	B
Critical Lane Group	Yes	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.82	0.55	0.15	0.35	0.14	0.10	1.89	0.40	0.32	5.18	5.18
50th-Percentile Queue Length [ft/ln]	70.62	13.69	3.83	8.65	3.56	2.40	47.16	10.07	8.08	129.56	129.39
95th-Percentile Queue Length [veh/ln]	5.08	0.99	0.28	0.62	0.26	0.17	3.40	0.73	0.58	8.92	8.91
95th-Percentile Queue Length [ft/ln]	127.12	24.64	6.89	15.56	6.41	4.32	84.88	18.13	14.54	222.89	222.66

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	28.06	29.76	29.76	25.25	38.24	37.67	7.04	10.01	8.98	6.14	12.10	12.10
Movement LOS	C	C	C	C	D	D	A	B	A	A	B	B
d_A, Approach Delay [s/veh]	28.21			34.30			9.82			11.79		
Approach LOS	C			C			A			B		
d_I, Intersection Delay [s/veh]	14.82											
Intersection LOS	B											
Intersection V/C	0.366											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0			0.0			0.0			0.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	0.00			0.00			0.00			0.00		
I_p,int, Pedestrian LOS Score for Intersection	0.000			0.000			0.000			0.000		
Crosswalk LOS	F			F			F			F		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	1090			1090			1090			1090		
d_b, Bicycle Delay [s]	8.54			8.54			8.54			8.54		
I_b,int, Bicycle LOS Score for Intersection	2.201			1.627			1.997			2.423		
Bicycle LOS	B			A			A			B		

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Ziggi's Coffee TIS

Vistro File: C:\...\pm.vistro

Scenario 7 2042 Back PM

Report File: C:\...\2042 Back PM.pdf

12/11/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Fox Ridge Parkway	Two-way stop	HCM 7th Edition	NB Left	1.511	793.3	F
2	Site Access	Two-way stop	HCM 7th Edition	SB Right	0.031	12.8	B
3	Teller Street	Signalized	HCM 7th Edition	SB Thru	0.426	13.9	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Fox Ridge Parkway

Control Type: Two-way stop
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 793.3
Level Of Service: F
Volume to Capacity (v/c): 1.511

Intersection Setup

Name	Muntjac Street			Fox Ridge Parkway			East Harmony Road			East Harmony Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Entry Pocket Length [ft]	75.00	100.00	100.00	50.00	100.00	100.00	175.00	100.00	175.00	175.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Muntjac Street			Fox Ridge Parkway			East Harmony Road			East Harmony Road		
Base Volume Input [veh/h]	20	0	6	2	0	7	15	636	44	10	405	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	2.6533	1.0000	1.0000	2.6533	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	0	6	2	0	7	15	1687	44	10	1075	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	0	2	1	0	2	4	458	12	3	274	0
Total Analysis Volume [veh/h]	22	0	7	2	0	8	16	1834	48	10	1097	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	1.51	0.00	0.03	0.07	0.00	0.02	0.03	0.02	0.00	0.03	0.01	0.00
d_M, Delay for Movement [s/veh]	793.27	294.02	18.99	138.64	304.54	12.63	10.84	0.00	0.00	16.81	0.00	0.00
Movement LOS	F	F	C	F	F	B	B	A	A	C	A	A
95th-Percentile Queue Length [veh/ln]	3.37	0.08	0.08	0.21	0.05	0.05	0.08	0.00	0.00	0.10	0.00	0.00
95th-Percentile Queue Length [ft/ln]	84.37	2.03	2.03	5.25	1.27	1.27	1.95	0.00	0.00	2.46	0.00	0.00
d_A, Approach Delay [s/veh]	606.37			37.83			0.09			0.15		
Approach LOS	F			E			A			A		
d_I, Intersection Delay [s/veh]	6.01											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 2: Site Access

Control Type: Two-way stop
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 12.8
Level Of Service: B
Volume to Capacity (v/c): 0.031

Intersection Setup

Name	Site Access		East Harmony Road		East Harmony Road	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Site Access		East Harmony Road		East Harmony Road	
Base Volume Input [veh/h]	0	14	14	625	382	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	2.6533	2.6533	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	14	14	1658	1014	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	4	4	451	276	0
Total Analysis Volume [veh/h]	0	15	15	1802	1102	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.03	0.02	0.02	0.01	0.00
d_M, Delay for Movement [s/veh]	79.51	12.77	10.86	0.00	0.00	0.00
Movement LOS	F	B	B	A	A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.10	0.07	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	2.43	1.83	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	12.77		0.09		0.00	
Approach LOS	B		A		A	
d_I, Intersection Delay [s/veh]	0.12					
Intersection LOS	B					

Intersection Level Of Service Report
Intersection 3: Teller Street

Control Type: Signalized
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 13.9
Level Of Service: B
Volume to Capacity (v/c): 0.426

Intersection Setup

Name	Teller Street			Teller Street			East Harmony Road			East Harmony Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↔↔↔			↔↔↔			↔↔↔			↔↔↔		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	200.00	100.00	200.00	250.00	100.00	300.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.21	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

Volumes

Name	Teller Street			Teller Street			East Harmony Road			East Harmony Road		
Base Volume Input [veh/h]	144	7	24	14	11	15	11	416	234	25	223	6
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.4859	1.4859	1.4859	1.4859	1.4859	1.4859	2.6533	2.6533	2.6533	2.6533	2.6533	2.6533
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	18	0	0	11	0	0	311	0	0	8
Total Hourly Volume [veh/h]	214	10	18	21	16	11	29	1104	310	66	592	8
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	58	3	5	6	4	3	8	300	84	17	156	2
Total Analysis Volume [veh/h]	233	11	20	23	17	12	32	1200	337	69	623	8
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	4	10	0	4	10	0	4	15	0	4	10	0
Maximum Green [s]	30	45	0	15	45	0	15	45	0	15	45	0
Amber [s]	3.0	4.1	0.0	3.0	4.1	0.0	3.0	4.4	0.0	3.0	4.4	0.0
All red [s]	1.0	2.0	0.0	1.0	2.0	0.0	1.0	2.0	0.0	1.0	2.0	0.0
Split [s]	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	4.1	0.0	2.0	4.1	0.0	2.0	4.4	0.0	2.0	4.4	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	Yes		No	Yes	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	40.0	40.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	81	81	81	81	81	81	81	81	81	81	81
L, Total Lost Time per Cycle [s]	6.10	6.10	6.10	6.10	6.10	6.40	6.40	6.40	6.40	6.40	6.40
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	4.10	0.00	4.10	4.10	0.00	4.40	4.40	0.00	4.40	4.40
g_i, Effective Green Time [s]	16	11	16	5	5	52	45	45	52	46	46
g / C, Green / Cycle	0.20	0.13	0.20	0.06	0.06	0.65	0.56	0.56	0.65	0.57	0.57
(v / s)_i Volume / Saturation Flow Rate	0.07	0.02	0.02	0.01	0.01	0.04	0.34	0.21	0.14	0.17	0.17
s, saturation flow rate [veh/h]	3127	1679	1275	1870	1589	873	3560	1589	481	1870	1862
c, Capacity [veh/h]	788	220	446	114	97	623	1979	884	364	1065	1060
d1, Uniform Delay [s]	27.72	31.16	26.21	36.03	35.97	5.56	12.04	10.13	8.14	9.03	9.03
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.50	0.25	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.21	0.29	0.05	0.60	0.57	0.16	1.39	1.25	0.58	0.71	0.72
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.30	0.14	0.05	0.15	0.12	0.05	0.61	0.38	0.19	0.30	0.30
d, Delay for Lane Group [s/veh]	27.93	31.45	26.26	36.63	36.54	5.71	13.43	11.38	8.72	9.74	9.75
Lane Group LOS	C	C	C	D	D	A	B	B	A	A	A
Critical Lane Group	Yes	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.91	0.54	0.36	0.33	0.24	0.19	6.78	3.33	0.42	2.78	2.77
50th-Percentile Queue Length [ft/ln]	47.67	13.59	8.93	8.29	5.89	4.81	169.47	83.24	10.57	69.59	69.33
95th-Percentile Queue Length [veh/ln]	3.43	0.98	0.64	0.60	0.42	0.35	11.05	5.99	0.76	5.01	4.99
95th-Percentile Queue Length [ft/ln]	85.80	24.46	16.08	14.92	10.60	8.66	276.22	149.84	19.03	125.26	124.80

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	27.93	31.45	31.45	26.26	36.63	36.54	5.71	13.43	11.38	8.72	9.74	9.75
Movement LOS	C	C	C	C	D	D	A	B	B	A	A	A
d_A, Approach Delay [s/veh]	28.34			32.02			12.84			9.64		
Approach LOS	C			C			B			A		
d_I, Intersection Delay [s/veh]	13.94											
Intersection LOS	B											
Intersection V/C	0.426											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0			0.0			0.0			0.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	0.00			0.00			0.00			0.00		
I_p,int, Pedestrian LOS Score for Intersection	0.000			0.000			0.000			0.000		
Crosswalk LOS	F			F			F			F		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	1113			1113			1113			1113		
d_b, Bicycle Delay [s]	7.94			7.94			7.94			7.94		
I_b,int, Bicycle LOS Score for Intersection	2.025			1.664			3.111			2.144		
Bicycle LOS	B			A			C			B		

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Ziggi's Coffee TIS

Vistro File: C:\...\AM.vistro

Scenario 5 2042 Total AM

Report File: C:\...\2042 Total AM.pdf

12/11/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Fox Ridge Parkway	Two-way stop	HCM 7th Edition	SB Left	0.062	83.8	F
2	Site Access	Two-way stop	HCM 7th Edition	SB Left	0.715	165.9	F
3	Teller Street	Signalized	HCM 7th Edition	SB Thru	0.377	15.4	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Fox Ridge Parkway

Control Type: Two-way stop
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 83.8
Level Of Service: F
Volume to Capacity (v/c): 0.062

Intersection Setup

Name	Muntjac Street			Fox Ridge Parkway			East Harmony Road			East Harmony Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Entry Pocket Length [ft]	75.00	100.00	100.00	50.00	100.00	100.00	175.00	100.00	175.00	175.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Muntjac Street			Fox Ridge Parkway			East Harmony Road			East Harmony Road		
Base Volume Input [veh/h]	44	0	9	3	0	10	4	150	6	1	530	1
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	2.6533	1.0000	1.0000	2.6533	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	31	0	0	29	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	44	0	9	3	0	10	4	429	6	1	1435	1
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	0	2	1	0	3	1	117	2	0	390	0
Total Analysis Volume [veh/h]	48	0	10	3	0	11	4	466	7	1	1560	1
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.39	0.00	0.01	0.06	0.00	0.03	0.01	0.00	0.00	0.00	0.02	0.00
d_M, Delay for Movement [s/veh]	52.62	70.24	9.77	83.81	70.82	16.02	13.66	0.00	0.00	8.32	0.00	0.00
Movement LOS	F	F	A	F	F	C	B	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	1.66	0.04	0.04	0.19	0.10	0.10	0.03	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	41.38	0.99	0.99	4.77	2.52	2.52	0.72	0.00	0.00	0.07	0.00	0.00
d_A, Approach Delay [s/veh]	45.23			30.54			0.11			0.01		
Approach LOS	E			D			A			A		
d_I, Intersection Delay [s/veh]	1.48											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 2: Site Access

Control Type: Two-way stop
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 165.9
Level Of Service: F
Volume to Capacity (v/c): 0.715

Intersection Setup

Name	Site Access		East Harmony Road		East Harmony Road	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Site Access		East Harmony Road		East Harmony Road	
Base Volume Input [veh/h]	0	5	5	158	563	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	2.6533	2.6533	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	36	29	31	0	0	38
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	-25	-30	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	36	34	36	394	1464	38
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	10	9	10	107	398	10
Total Analysis Volume [veh/h]	39	37	39	428	1591	41
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.71	0.12	0.10	0.00	0.02	0.00
d_M, Delay for Movement [s/veh]	165.95	17.71	15.15	0.00	0.00	0.00
Movement LOS	F	C	C	A	A	A
95th-Percentile Queue Length [veh/ln]	2.97	0.39	0.33	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	74.32	9.70	8.18	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	93.78		1.26		0.00	
Approach LOS	F		A		A	
d_I, Intersection Delay [s/veh]	3.55					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 3: Teller Street

Control Type: Signalized
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 15.4
Level Of Service: B
Volume to Capacity (v/c): 0.377

Intersection Setup

Name	Teller Street			Teller Street			East Harmony Road			East Harmony road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↵↵↵			↵↵↵			↵↵↵			↵↵↵		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	200.00	100.00	200.00	250.00	100.00	300.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.21	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

Volumes

Name	Teller Street			Teller Street			East Harmony Road			East Harmony road		
Base Volume Input [veh/h]	213	6	28	6	11	9	5	147	33	19	341	3
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.4859	1.4859	1.4859	1.4859	1.4859	1.4859	2.6533	2.6533	2.6533	2.6533	2.6533	2.6533
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	14	0	0	0	0	7	7	16	13	0	17	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	21	0	0	10	0	0	51	0	0	4
Total Hourly Volume [veh/h]	330	9	21	9	16	10	20	406	50	50	922	4
Peak Hour Factor	0.9400	0.9400	0.9400	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	88	2	6	2	4	3	5	110	14	14	251	1
Total Analysis Volume [veh/h]	351	10	22	10	17	11	22	441	54	54	1002	4
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	4	10	0	4	10	0	4	15	0	4	10	0
Maximum Green [s]	30	45	0	15	45	0	15	45	0	15	45	0
Amber [s]	3.0	4.1	0.0	3.0	4.1	0.0	3.0	4.4	0.0	3.0	4.4	0.0
All red [s]	1.0	2.0	0.0	1.0	2.0	0.0	1.0	2.0	0.0	1.0	2.0	0.0
Split [s]	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	4.1	0.0	2.0	4.1	0.0	2.0	4.4	0.0	2.0	4.4	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	Yes		No	Yes	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	40.0	40.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	84	84	84	84	84	84	84	84	84	84	84
L, Total Lost Time per Cycle [s]	6.10	6.10	6.10	6.10	6.10	6.40	6.40	6.40	6.40	6.40	6.40
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	4.10	0.00	4.10	4.10	0.00	4.40	4.40	0.00	4.40	4.40
g_i, Effective Green Time [s]	19	14	19	5	5	52	45	45	52	46	46
g / C, Green / Cycle	0.23	0.17	0.23	0.06	0.06	0.62	0.54	0.54	0.62	0.55	0.55
(v / s)_i Volume / Saturation Flow Rate	0.11	0.02	0.01	0.01	0.01	0.03	0.12	0.03	0.05	0.27	0.27
s, saturation flow rate [veh/h]	3180	1668	1268	1870	1589	646	3560	1589	985	1870	1867
c, Capacity [veh/h]	885	286	473	110	93	433	1916	855	679	1034	1033
d1, Uniform Delay [s]	27.60	29.25	24.96	37.38	37.30	7.38	10.18	9.24	6.41	11.43	11.43
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.50	0.11	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.29	0.17	0.02	0.65	0.55	0.22	0.28	0.14	0.05	1.64	1.64
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.40	0.11	0.02	0.15	0.12	0.05	0.23	0.06	0.08	0.49	0.49
d, Delay for Lane Group [s/veh]	27.89	29.42	24.98	38.03	37.86	7.60	10.47	9.38	6.46	13.06	13.07
Lane Group LOS	C	C	C	D	D	A	B	A	A	B	B
Critical Lane Group	Yes	No	No	Yes	No	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.97	0.55	0.15	0.35	0.22	0.16	2.04	0.47	0.34	5.61	5.60
50th-Percentile Queue Length [ft/ln]	74.13	13.67	3.83	8.63	5.61	3.95	51.02	11.76	8.45	140.25	140.07
95th-Percentile Queue Length [veh/ln]	5.34	0.98	0.28	0.62	0.40	0.28	3.67	0.85	0.61	9.49	9.48
95th-Percentile Queue Length [ft/ln]	133.44	24.61	6.89	15.53	10.10	7.12	91.83	21.17	15.20	237.36	237.12

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	27.89	29.42	29.42	24.98	38.03	37.86	7.60	10.47	9.38	6.46	13.07	13.07
Movement LOS	C	C	C	C	D	D	A	B	A	A	B	B
d_A, Approach Delay [s/veh]	28.02			34.54			10.23			12.73		
Approach LOS	C			C			B			B		
d_I, Intersection Delay [s/veh]	15.43											
Intersection LOS	B											
Intersection V/C	0.377											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0			0.0			0.0			0.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	0.00			0.00			0.00			0.00		
I_p,int, Pedestrian LOS Score for Intersection	0.000			0.000			0.000			0.000		
Crosswalk LOS	F			F			F			F		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	1078			1078			1078			1078		
d_b, Bicycle Delay [s]	8.88			8.88			8.88			8.88		
I_b,int, Bicycle LOS Score for Intersection	2.226			1.639			2.028			2.437		
Bicycle LOS	B			A			B			B		

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Ziggi's Coffee TIS

Vistro File: C:\...\pm.vistro

Scenario 5 2042 Total PM

Report File: C:\...\2042 Total PM.pdf

12/11/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Fox Ridge Parkway	Two-way stop	HCM 7th Edition	NB Left	1.586	846.7	F
2	Site Access	Two-way stop	HCM 7th Edition	SB Left	0.491	146.4	F
3	Teller Street	Signalized	HCM 7th Edition	SB Right	0.430	14.2	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Fox Ridge Parkway

Control Type: Two-way stop
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 846.7
Level Of Service: F
Volume to Capacity (v/c): 1.586

Intersection Setup

Name	Muntjac Street			Fox Ridge Parkway			East Harmony Road			East Harmony Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	0	1	0	1	1	0	0
Entry Pocket Length [ft]	75.00	100.00	100.00	50.00	100.00	100.00	175.00	100.00	175.00	175.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	No			No			No			No		

Volumes

Name	Muntjac Street			Fox Ridge Parkway			East Harmony Road			East Harmony Road		
Base Volume Input [veh/h]	20	0	6	2	0	7	15	636	44	10	405	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	2.6533	1.0000	1.0000	2.6533	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	17	0	0	17	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	0	6	2	0	7	15	1704	44	10	1092	0
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	0	2	1	0	2	4	463	12	3	279	0
Total Analysis Volume [veh/h]	22	0	7	2	0	8	16	1852	48	10	1114	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	1.59	0.00	0.03	0.07	0.00	0.02	0.03	0.02	0.00	0.03	0.01	0.00
d_M, Delay for Movement [s/veh]	846.73	310.14	19.19	145.56	321.27	12.73	10.93	0.00	0.00	17.01	0.00	0.00
Movement LOS	F	F	C	F	F	B	B	A	A	C	A	A
95th-Percentile Queue Length [veh/ln]	3.43	0.08	0.08	0.22	0.05	0.05	0.08	0.00	0.00	0.10	0.00	0.00
95th-Percentile Queue Length [ft/ln]	85.63	2.06	2.06	5.49	1.29	1.29	1.98	0.00	0.00	2.50	0.00	0.00
d_A, Approach Delay [s/veh]	646.98			39.29			0.09			0.15		
Approach LOS	F			E			A			A		
d_I, Intersection Delay [s/veh]	6.33											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 2: Site Access

Control Type: Two-way stop
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 146.4
Level Of Service: F
Volume to Capacity (v/c): 0.491

Intersection Setup

Name	Site Access		East Harmony Road		East Harmony Road	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	No		No		No	

Volumes

Name	Site Access		East Harmony Road		East Harmony Road	
Base Volume Input [veh/h]	0	14	14	625	382	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	2.6533	2.6533	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	20	17	17	0	0	20
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	-12	-14	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	20	31	31	1646	1000	20
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	5	8	8	447	272	5
Total Analysis Volume [veh/h]	22	34	34	1789	1087	22
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Stop	Free	Free
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance	No		
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.49	0.07	0.05	0.02	0.01	0.00
d_M, Delay for Movement [s/veh]	146.38	13.15	11.09	0.00	0.00	0.00
Movement LOS	F	B	B	A	A	A
95th-Percentile Queue Length [veh/ln]	1.78	0.23	0.17	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	44.50	5.75	4.30	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	65.49		0.21		0.00	
Approach LOS	F		A		A	
d_I, Intersection Delay [s/veh]	1.35					
Intersection LOS	F					

Intersection Level Of Service Report
Intersection 3: Teller Street

Control Type: Signalized
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutes

Delay (sec / veh): 14.2
Level Of Service: B
Volume to Capacity (v/c): 0.430

Intersection Setup

Name	Teller Street			Teller Street			East Harmony Road			East Harmony Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration	↶↶↶			↷↷↷			↶↷↷			↶↷↷		
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	1	0	0	1	0	1	1	0	1	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	200.00	100.00	200.00	250.00	100.00	300.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	1	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	49.21	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			No			No			No		

Volumes

Name	Teller Street			Teller Street			East Harmony Road			East Harmony Road		
Base Volume Input [veh/h]	144	7	24	14	11	15	11	416	234	25	223	6
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Proportion of CAVs [%]	0.00											
Growth Factor	1.4859	1.4859	1.4859	1.4859	1.4859	1.4859	2.6533	2.6533	2.6533	2.6533	2.6533	2.6533
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	7	0	0	0	0	4	4	9	7	0	9	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	18	0	0	13	0	0	314	0	0	8
Total Hourly Volume [veh/h]	221	10	18	21	16	13	33	1113	314	66	601	8
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	60	3	5	6	4	4	9	302	85	17	158	2
Total Analysis Volume [veh/h]	240	11	20	23	17	14	36	1210	341	69	633	8
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			0			0			0		
v_di, Inbound Pedestrian Volume crossing m	0			0			0			0		
v_co, Outbound Pedestrian Volume crossing	0			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			0			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	0.00

Phasing & Timing

Control Type	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	3	8	0	7	4	0	5	2	0	1	6	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	4	10	0	4	10	0	4	15	0	4	10	0
Maximum Green [s]	30	45	0	15	45	0	15	45	0	15	45	0
Amber [s]	3.0	4.1	0.0	3.0	4.1	0.0	3.0	4.4	0.0	3.0	4.4	0.0
All red [s]	1.0	2.0	0.0	1.0	2.0	0.0	1.0	2.0	0.0	1.0	2.0	0.0
Split [s]	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Extension [s]	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0
Walk [s]	0	5	0	0	5	0	0	5	0	0	5	0
Pedestrian Clearance [s]	0	10	0	0	10	0	0	10	0	0	10	0
Delayed Vehicle Green [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
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	2.0	4.1	0.0	2.0	4.1	0.0	2.0	4.4	0.0	2.0	4.4	0.0
Minimum Recall	No	No		No	No		No	No		No	No	
Maximum Recall	No	No		No	No		No	Yes		No	Yes	
Pedestrian Recall	No	No		No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	40.0	40.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	L	C	R	L	C	R	L	C	C
C, Cycle Length [s]	81	81	81	81	81	81	81	81	81	81	81
L, Total Lost Time per Cycle [s]	6.10	6.10	6.10	6.10	6.10	6.40	6.40	6.40	6.40	6.40	6.40
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	4.10	0.00	4.10	4.10	0.00	4.40	4.40	0.00	4.40	4.40
g_i, Effective Green Time [s]	17	11	17	5	5	52	45	45	52	46	46
g / C, Green / Cycle	0.20	0.13	0.20	0.06	0.06	0.64	0.55	0.55	0.64	0.57	0.57
(v / s)_i Volume / Saturation Flow Rate	0.08	0.02	0.02	0.01	0.01	0.04	0.34	0.21	0.14	0.17	0.17
s, saturation flow rate [veh/h]	3122	1679	1278	1870	1589	869	3560	1589	478	1870	1862
c, Capacity [veh/h]	799	227	451	119	101	615	1969	879	359	1055	1051
d1, Uniform Delay [s]	27.64	31.00	26.08	36.01	36.00	5.72	12.32	10.36	8.40	9.32	9.33
k, delay calibration	0.11	0.11	0.11	0.11	0.11	0.50	0.50	0.50	0.26	0.50	0.50
l, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.21	0.27	0.05	0.54	0.62	0.18	1.45	1.29	0.62	0.74	0.75
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.30	0.14	0.05	0.14	0.14	0.06	0.61	0.39	0.19	0.30	0.30
d, Delay for Lane Group [s/veh]	27.85	31.27	26.12	36.55	36.62	5.90	13.77	11.65	9.02	10.07	10.07
Lane Group LOS	C	C	C	D	D	A	B	B	A	B	B
Critical Lane Group	Yes	No	Yes	No	No	No	Yes	No	Yes	No	No
50th-Percentile Queue Length [veh/ln]	1.97	0.54	0.36	0.33	0.28	0.22	6.98	3.44	0.43	2.91	2.89
50th-Percentile Queue Length [ft/ln]	49.20	13.57	8.93	8.29	6.88	5.55	174.58	85.90	10.85	72.63	72.36
95th-Percentile Queue Length [veh/ln]	3.54	0.98	0.64	0.60	0.50	0.40	11.32	6.19	0.78	5.23	5.21
95th-Percentile Queue Length [ft/ln]	88.57	24.43	16.08	14.91	12.39	9.98	282.92	154.63	19.54	130.73	130.25

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	27.85	31.27	31.27	26.12	36.55	36.62	5.90	13.77	11.65	9.02	10.07	10.07
Movement LOS	C	C	C	C	D	D	A	B	B	A	B	B
d_A, Approach Delay [s/veh]	28.24			32.13			13.14			9.97		
Approach LOS	C			C			B			A		
d_I, Intersection Delay [s/veh]	14.23											
Intersection LOS	B											
Intersection V/C	0.430											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0			0.0			0.0			0.0		
M_corner, Corner Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
M_CW, Crosswalk Circulation Area [ft ² /ped]	0.00			0.00			0.00			0.00		
d_p, Pedestrian Delay [s]	0.00			0.00			0.00			0.00		
I_p,int, Pedestrian LOS Score for Intersection	0.000			0.000			0.000			0.000		
Crosswalk LOS	F			F			F			F		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	1108			1108			1108			1108		
d_b, Bicycle Delay [s]	8.09			8.09			8.09			8.09		
I_b,int, Bicycle LOS Score for Intersection	2.036			1.670			3.128			2.152		
Bicycle LOS	B			A			C			B		

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Appendix C

Trip Generation and Pass-By Traffic Information

Land Use: 822

Strip Retail Plaza (<40k)

Description

A strip retail plaza is an integrated group of commercial establishments that is planned, developed, owned, and managed as a unit. Each study site in this land use has less than 40,000 square feet of gross leasable area (GLA). Because a strip retail plaza is open-air, the GLA is the same as the gross floor area of the building.

The 40,000 square feet GFA threshold between strip retail plaza and shopping plaza (Land Use 821) was selected based on an examination of the overall shopping center/plaza database. No shopping plaza with a supermarket as its anchor is smaller than 40,000 square feet GLA.

Shopping center (>150k) (Land use 820), shopping plaza (40-150k) (Land Use 821), and factory outlet center (Land Use 823) are related uses.

Additional Data

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip generation resource page on the ITE website (<https://www.ite.org/technical-resources/topics/trip-and-parking-generation/>).

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in Alberta (CAN), California, Delaware, Florida, New Jersey, Ontario (CAN), South Dakota, Vermont, Washington, and Wisconsin.

Source Numbers

304, 358, 423, 428, 437, 507, 715, 728, 936, 960, 961, 974, 1009

Strip Retail Plaza (<40k) (822)

Vehicle Trip Ends vs: 1000 Sq. Ft. GLA
On a: Weekday

Setting/Location: General Urban/Suburban

Number of Studies: 4

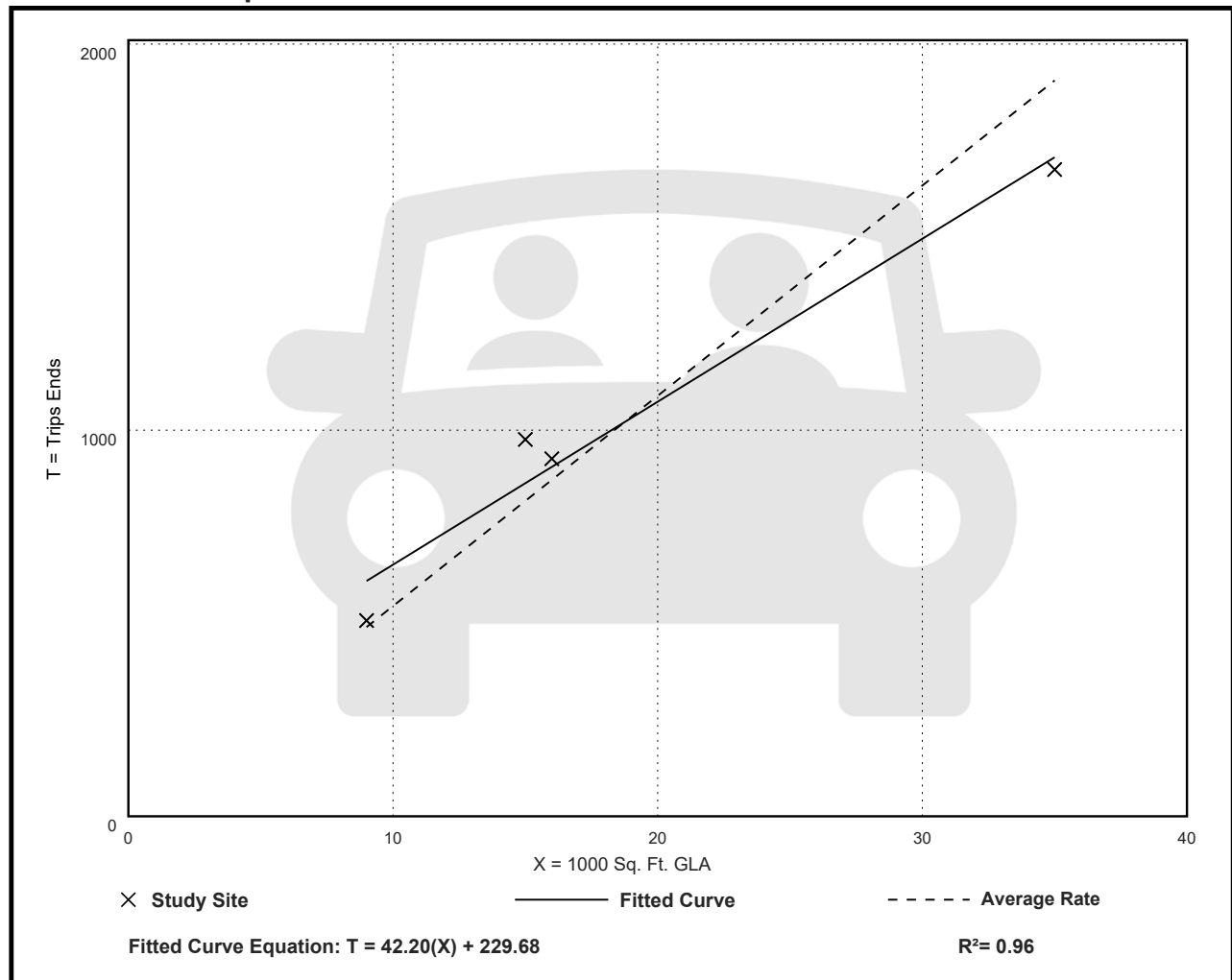
Avg. 1000 Sq. Ft. GLA: 19

Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
54.45	47.86 - 65.07	7.81

Data Plot and Equation



Strip Retail Plaza (<40k) (822)

Vehicle Trip Ends vs: 1000 Sq. Ft. GLA

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban

Number of Studies: 5

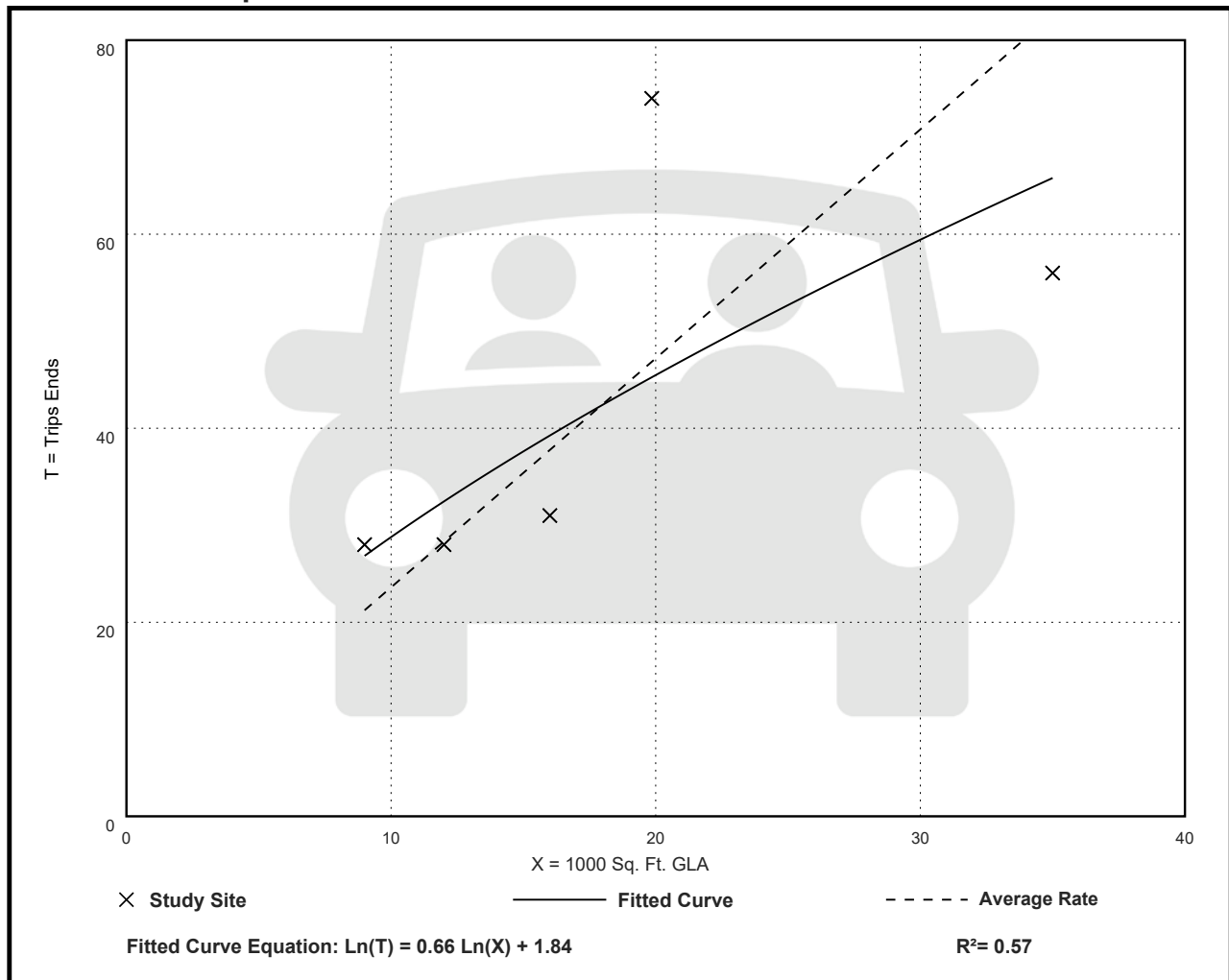
Avg. 1000 Sq. Ft. GLA: 18

Directional Distribution: 60% entering, 40% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
2.36	1.60 - 3.73	0.94

Data Plot and Equation



Strip Retail Plaza (<40k) (822)

Vehicle Trip Ends vs: 1000 Sq. Ft. GLA

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban

Number of Studies: 25

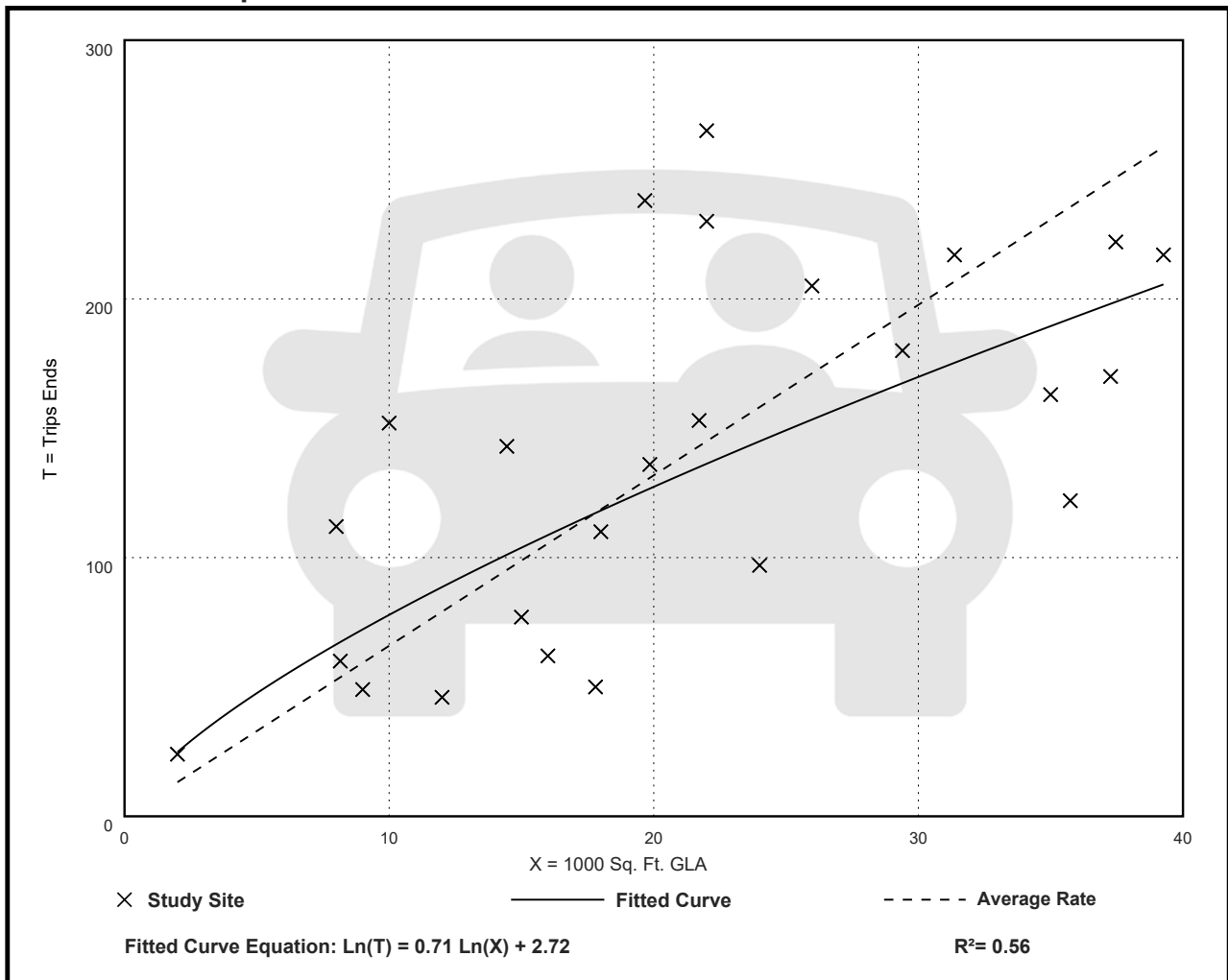
Avg. 1000 Sq. Ft. GLA: 21

Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
6.59	2.81 - 15.20	2.94

Data Plot and Equation



Strip Retail Plaza (<40k) (822)

Vehicle Trip Ends vs: 1000 Sq. Ft. GLA

On a: Weekday,

AM Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 6

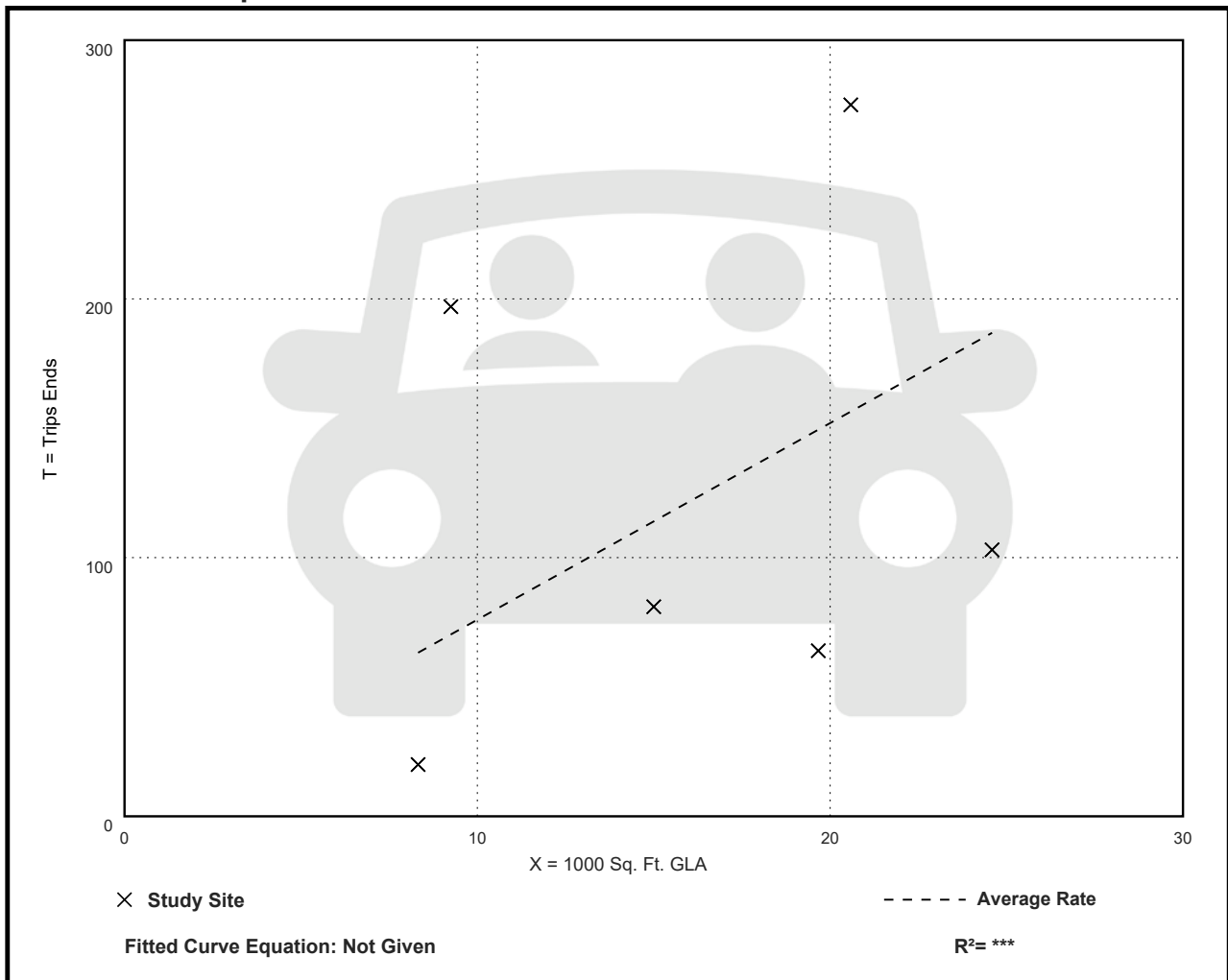
Avg. 1000 Sq. Ft. GLA: 16

Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
7.60	2.40 - 21.30	6.45

Data Plot and Equation



Strip Retail Plaza (<40k) (822)

Vehicle Trip Ends vs: 1000 Sq. Ft. GLA

On a: Weekday,

PM Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 5

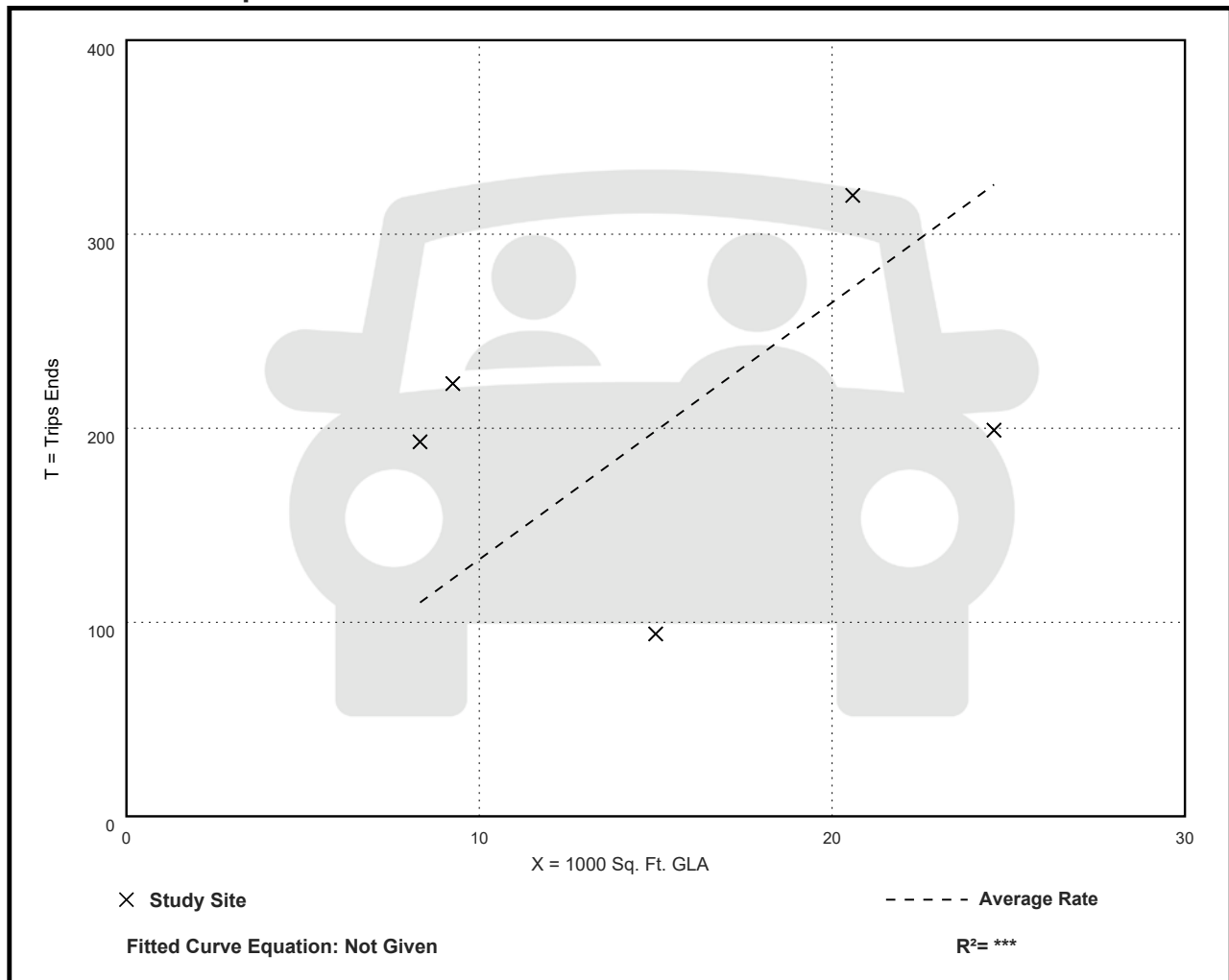
Avg. 1000 Sq. Ft. GLA: 16

Directional Distribution: 54% entering, 46% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
13.24	6.27 - 24.11	7.40

Data Plot and Equation



Strip Retail Plaza (<40k) (822)

Vehicle Trip Ends vs: 1000 Sq. Ft. GLA

On a: Saturday, Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 12

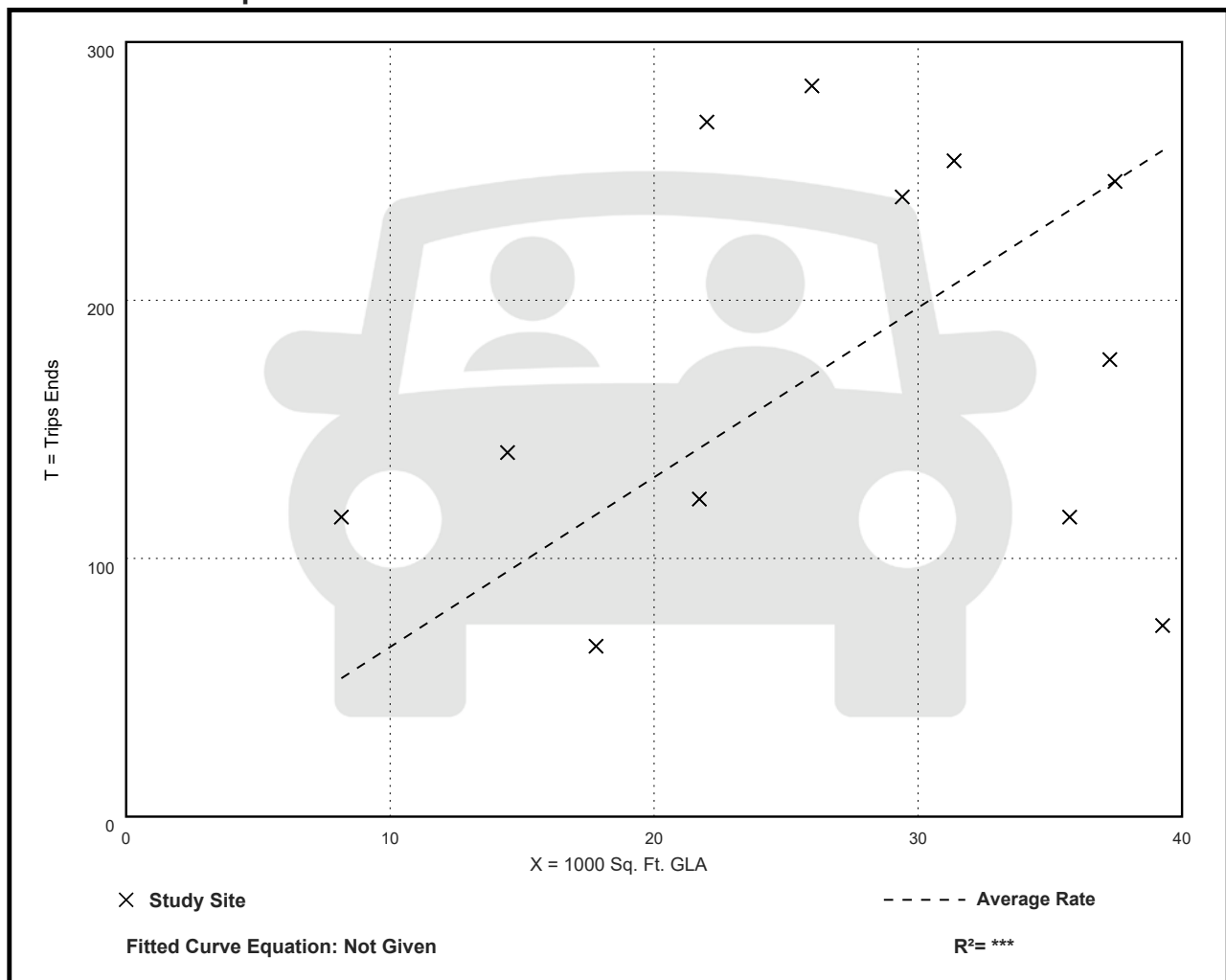
Avg. 1000 Sq. Ft. GLA: 27

Directional Distribution: 51% entering, 49% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
6.57	1.88 - 14.23	3.45

Data Plot and Equation



Strip Retail Plaza (<40k) (822)

Vehicle Trip Ends vs: Employees

On a: Weekday,

AM Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 2

Avg. Num. of Employees: 21

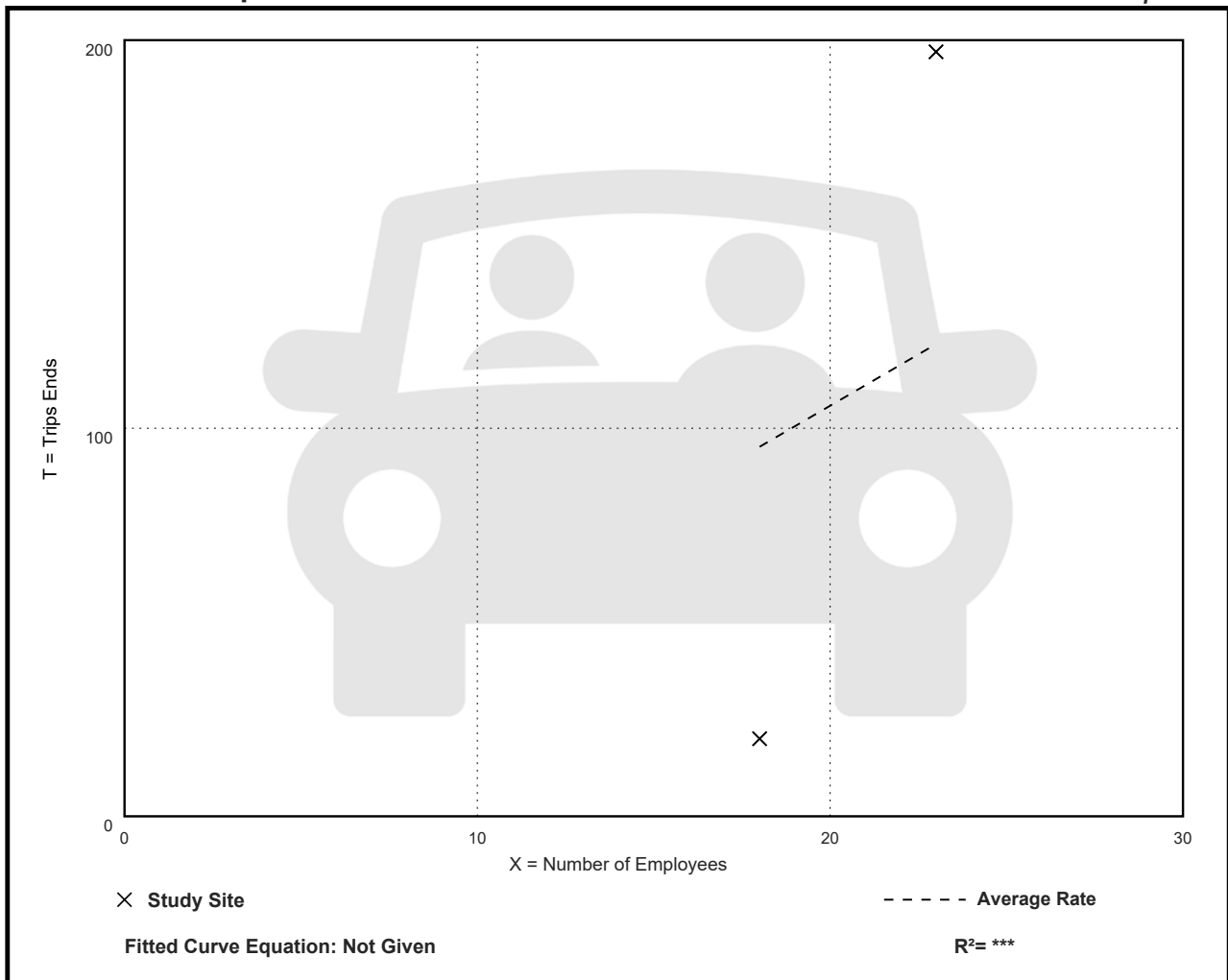
Directional Distribution: 52% entering, 48% exiting

Vehicle Trip Generation per Employee

Average Rate	Range of Rates	Standard Deviation
5.29	1.11 - 8.57	***

Data Plot and Equation

Caution – Small Sample Size



Strip Retail Plaza (<40k) (822)

Vehicle Trip Ends vs: Employees

On a: Weekday,

PM Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 2

Avg. Num. of Employees: 21

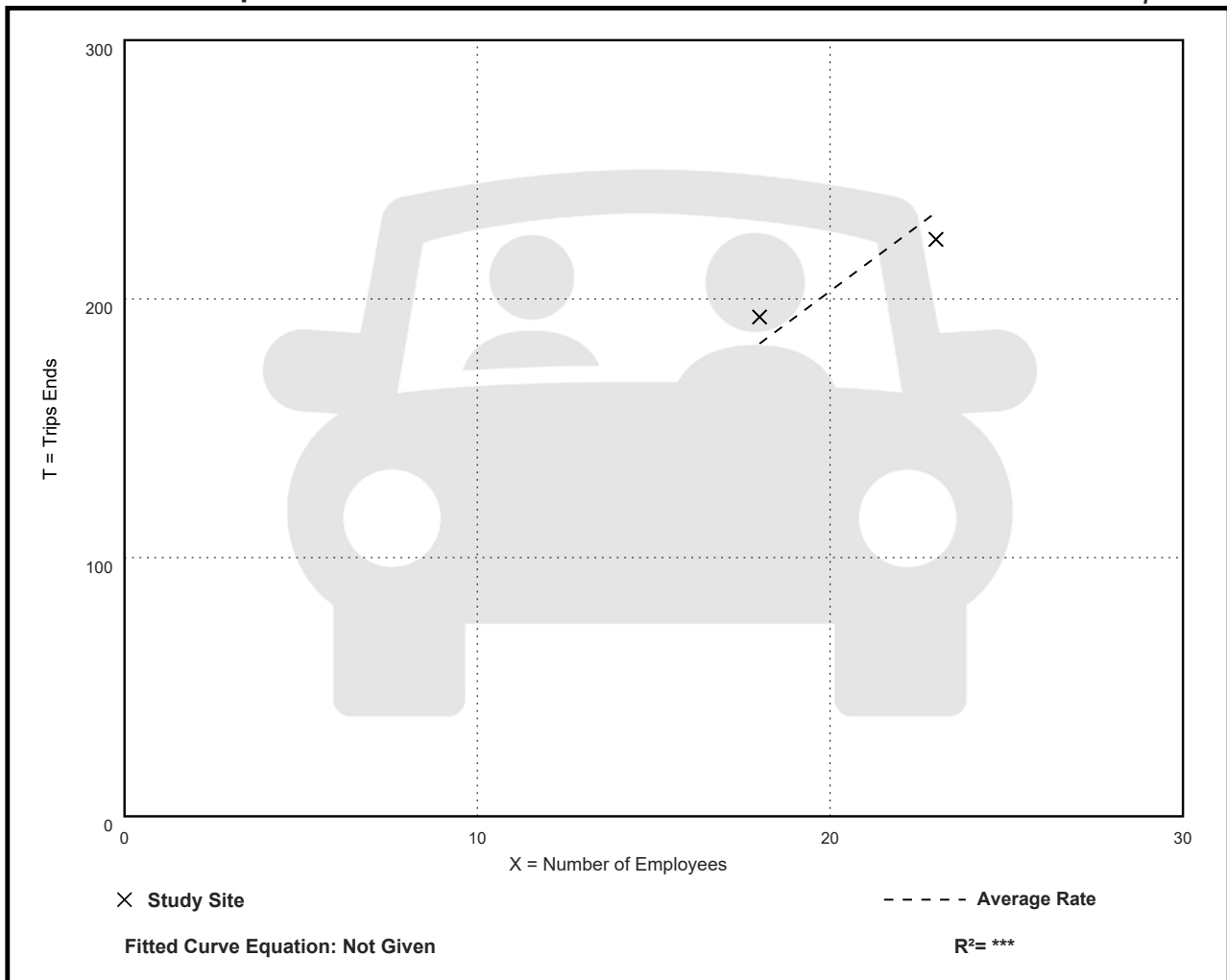
Directional Distribution: 56% entering, 44% exiting

Vehicle Trip Generation per Employee

Average Rate	Range of Rates	Standard Deviation
10.15	9.70 - 10.72	***

Data Plot and Equation

Caution – Small Sample Size



Strip Retail Plaza (<40k) (822)

Walk+Bike+Transit Trip Ends vs: 1000 Sq. Ft. GLA

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban

Number of Studies: 1

Avg. 1000 Sq. Ft. GLA: 20

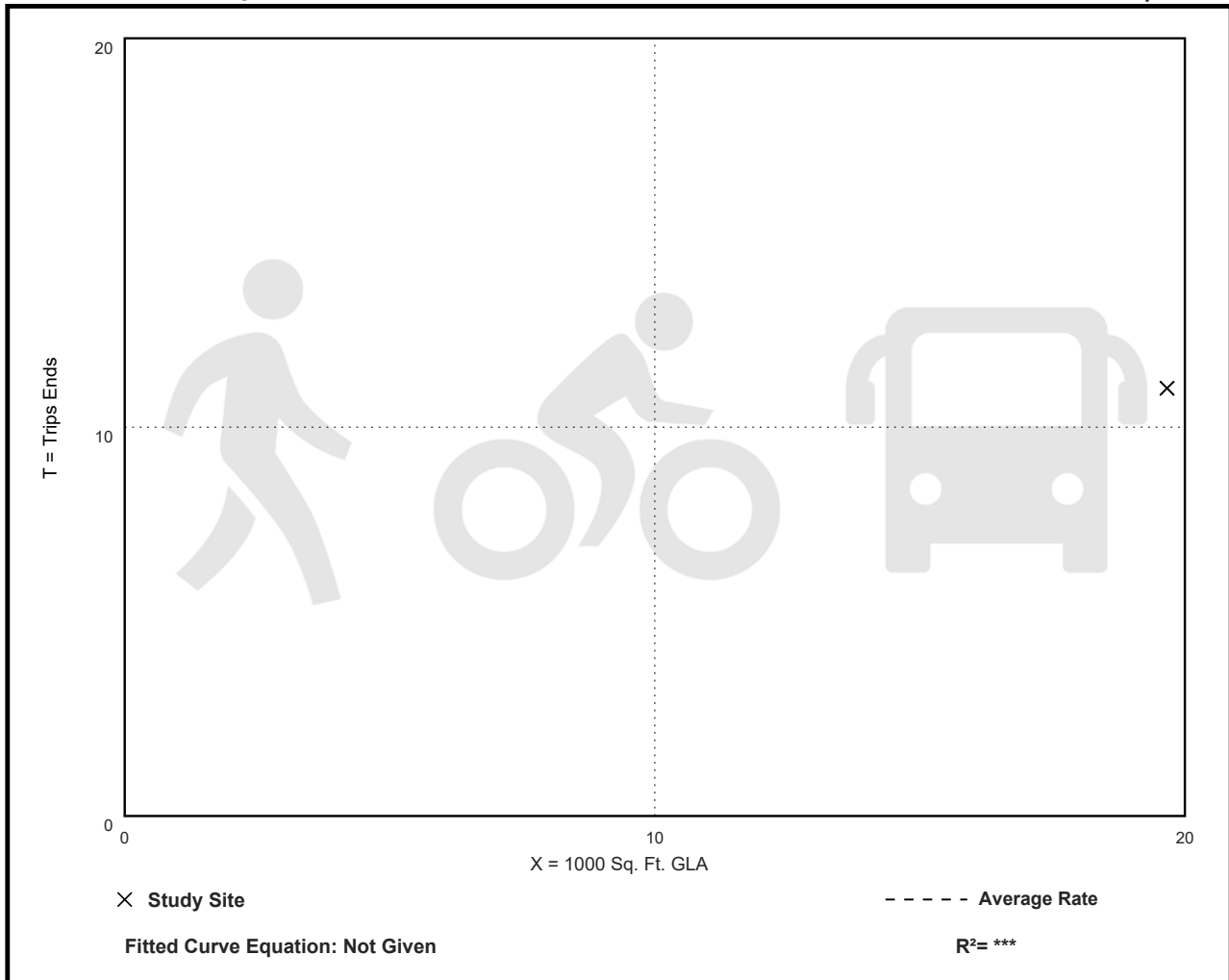
Directional Distribution: Not Available

Walk+Bike+Transit Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
0.56	0.56 - 0.56	***

Data Plot and Equation

Caution – Small Sample Size



Strip Retail Plaza (<40k) (822)

Walk+Bike+Transit Trip Ends vs: 1000 Sq. Ft. GLA

On a: Weekday,

AM Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 5

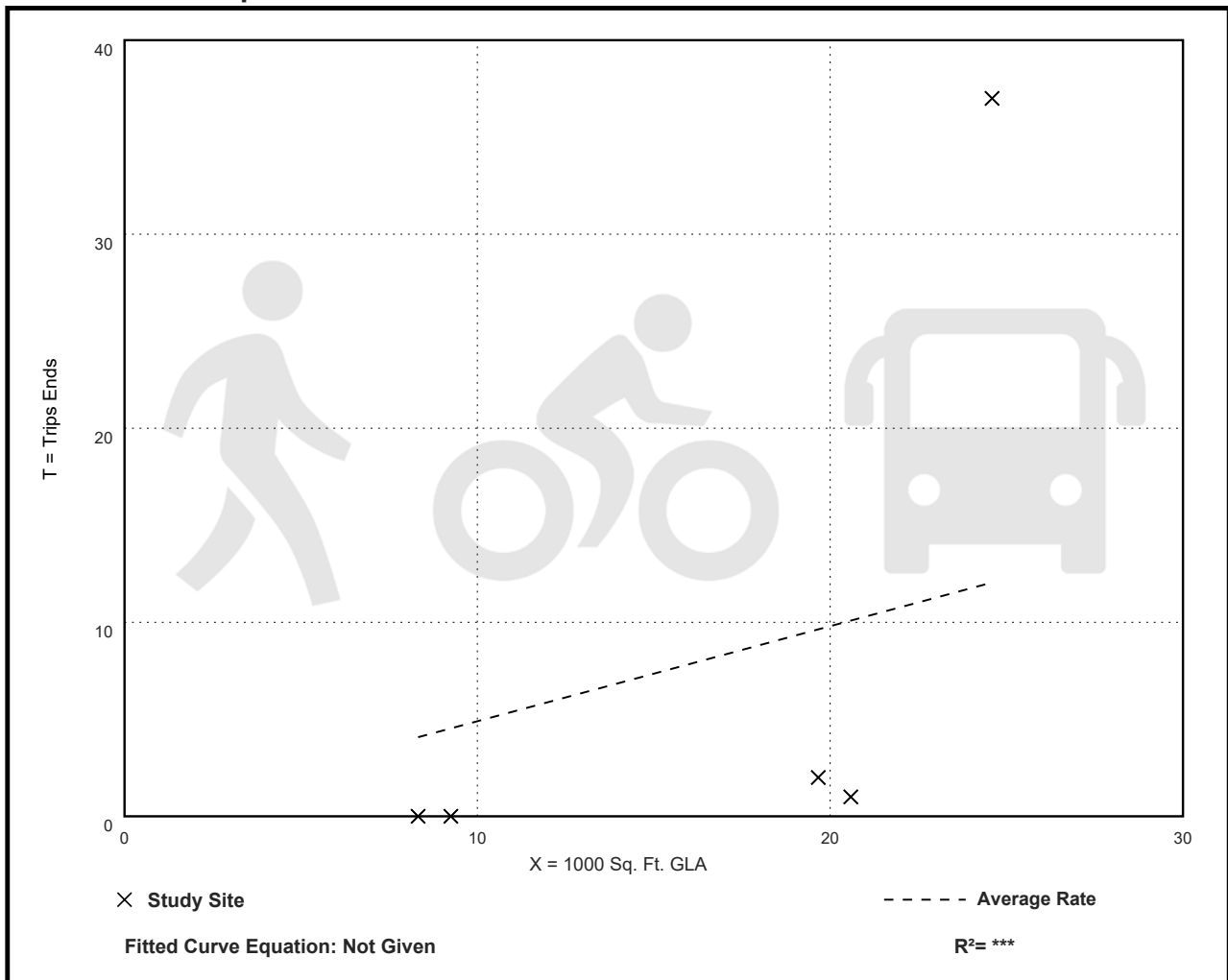
Avg. 1000 Sq. Ft. GLA: 16

Directional Distribution: Not Available

Walk+Bike+Transit Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
0.49	0.00 - 1.50	0.74

Data Plot and Equation



Strip Retail Plaza (<40k) (822)

Walk+Bike+Transit Trip Ends vs: 1000 Sq. Ft. GLA

On a: Weekday,

PM Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 5

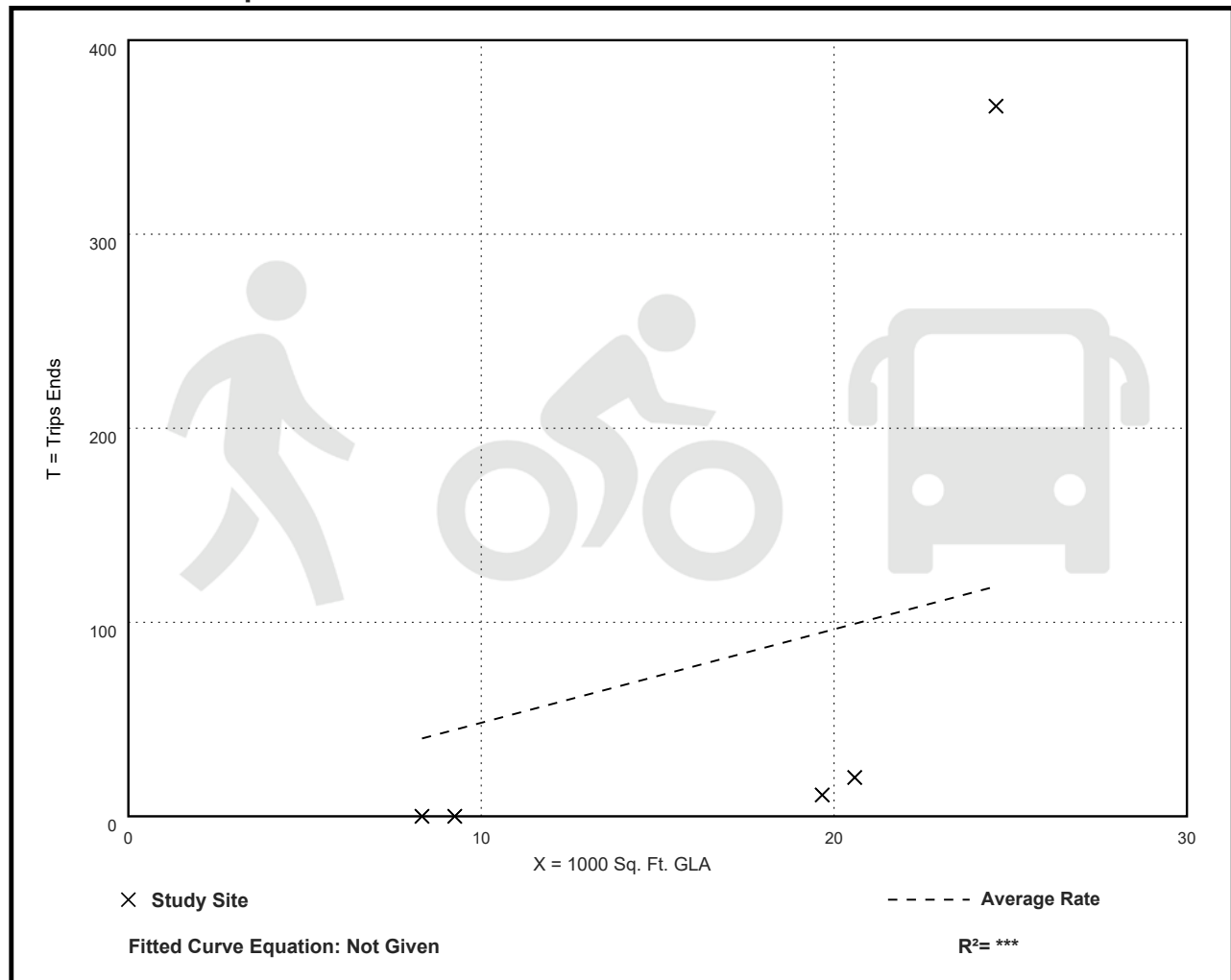
Avg. 1000 Sq. Ft. GLA: 16

Directional Distribution: Not Available

Walk+Bike+Transit Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
4.82	0.00 - 14.88	7.35

Data Plot and Equation



Strip Retail Plaza (<40k) (822)

Walk+Bike+Transit Trip Ends vs: Employees

On a: Weekday,

AM Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 2

Avg. Num. of Employees: 21

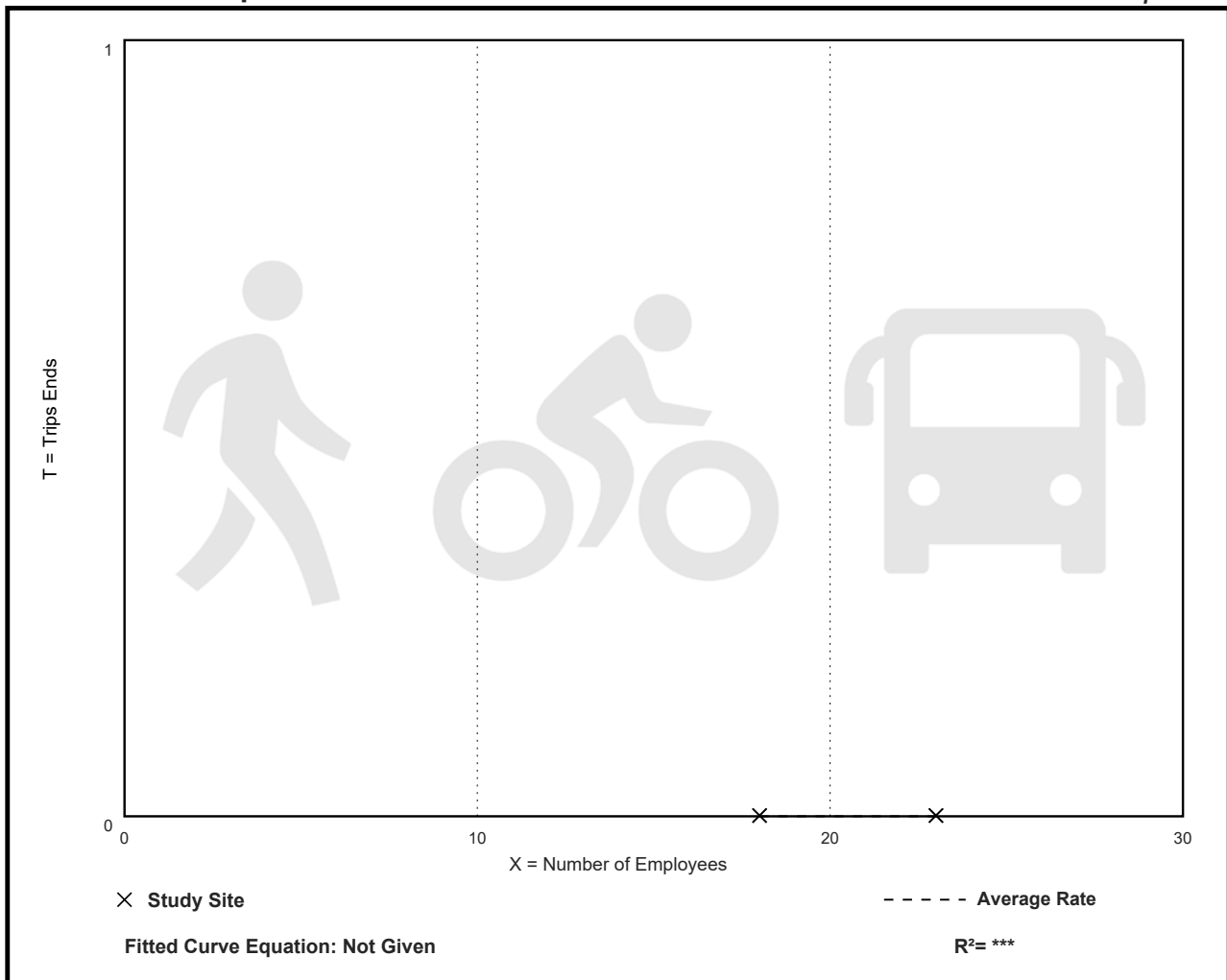
Directional Distribution: Not Available

Walk+Bike+Transit Trip Generation per Employee

Average Rate	Range of Rates	Standard Deviation
0.00	0.00 - 0.00	***

Data Plot and Equation

Caution – Small Sample Size



Strip Retail Plaza (<40k) (822)

Walk+Bike+Transit Trip Ends vs: Employees

On a: Weekday,

PM Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 2

Avg. Num. of Employees: 21

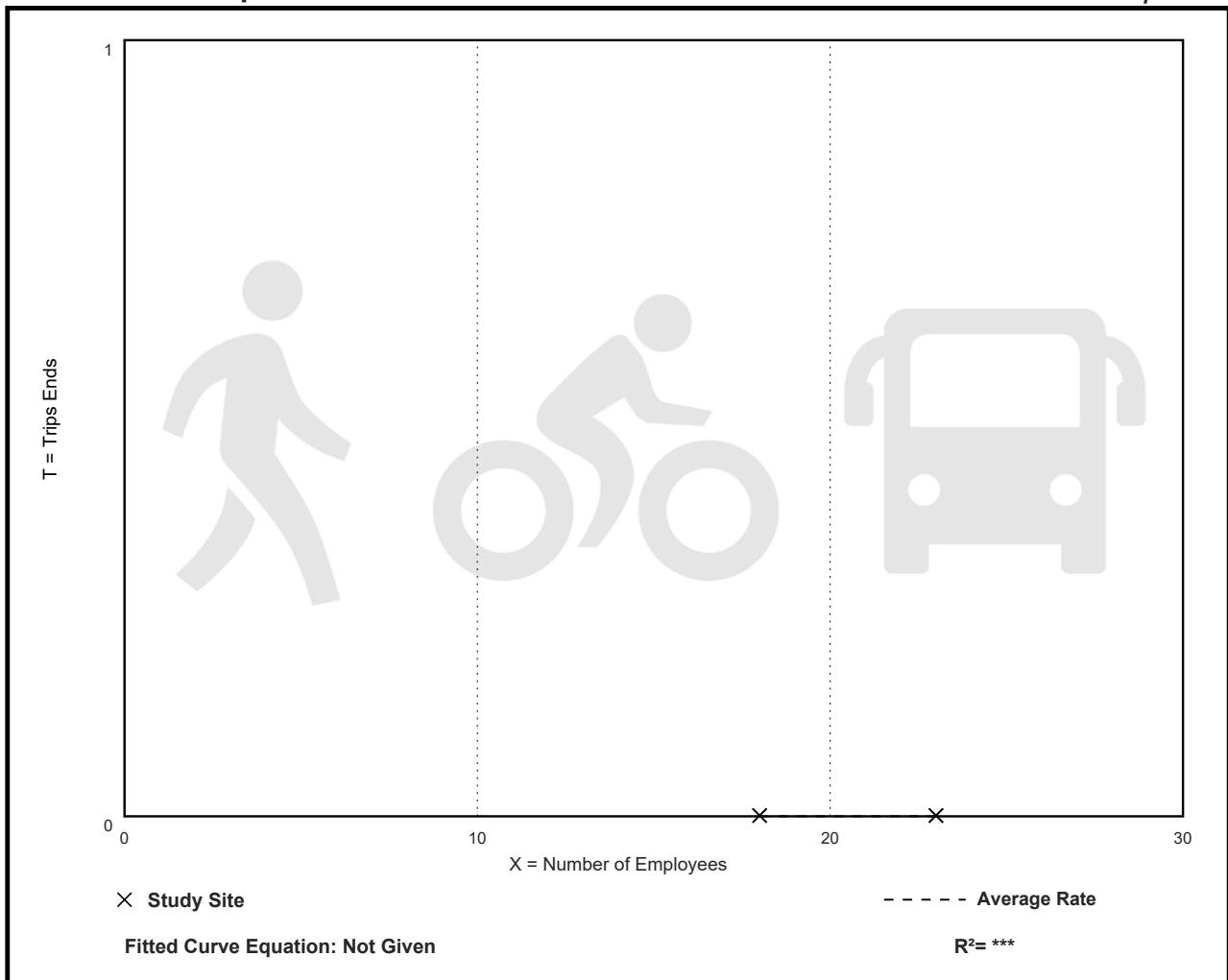
Directional Distribution: Not Available

Walk+Bike+Transit Trip Generation per Employee

Average Rate	Range of Rates	Standard Deviation
0.00	0.00 - 0.00	***

Data Plot and Equation

Caution – Small Sample Size



Land Use: 937

Coffee/Donut Shop with Drive-Through Window

Description

This land use includes any coffee and donut restaurant that has a drive-through window as well as a walk-in entrance area at which a patron can purchase and consume items. The restaurant sells freshly brewed coffee (along with coffee-related accessories) and a variety of food/drink products such as donuts, bagels, breads, muffins, cakes, sandwiches, wraps, salads, and other hot and cold beverages. The restaurant marketing and sales may emphasize coffee beverages over food (or vice versa).

A coffee/donut shop typically holds long store hours (more than 15 hours) with an early morning opening. Limited indoor seating is generally provided for patrons, but table service is not provided.

Coffee/donut shop without drive-through window (Land Use 936) and coffee/donut shop with drive-through window and no indoor seating (Land Use 938) are related uses.

Additional Data

The sites were surveyed in the 1990s, the 2000s, and the 2010s in California, Colorado, Connecticut, Illinois, Massachusetts, Minnesota, Nevada, New Hampshire, New Jersey, New York, Ontario (CAN), Pennsylvania, Quebec (CAN), Tennessee, Vermont, Washington, and Wisconsin.

Specialized Land Use Data

One study was conducted during the pandemic in 2020. Twelve sites were counted in Illinois and Missouri during the AM and PM adjacent street peak hours. The data have not been incorporated within the overall ITE trip generation database and are not reflected in the data plots for this land use. Consideration for their inclusion will be given for the 12th Edition of *Trip Generation Manual* after additional post-pandemic data are collected. Overall, the pandemic counts yielded an AM adjacent street peak weighted average rate of 84 vehicle trips per 1,000 square feet GFA, roughly equivalent to the pre-pandemic average. The PM adjacent street peak rate was 56 (roughly 40 percent higher than the pre-pandemic value). The higher PM peak rate for these coffee/donut shops conforms with anecdotal observations that with the temporary or permanent closures of many restaurants during the pandemic, the drive-through restaurants that were open did a brisk business even during their off-peak periods.

Source Numbers

594, 599, 615, 617, 618, 621, 622, 635, 639, 712, 714, 725, 726, 728, 853, 854, 892, 903, 928, 959, 979, 982, 1004, 1042, 1044

Coffee/Donut Shop with Drive-Through Window (937)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

On a: Weekday

Setting/Location: General Urban/Suburban

Number of Studies: 6

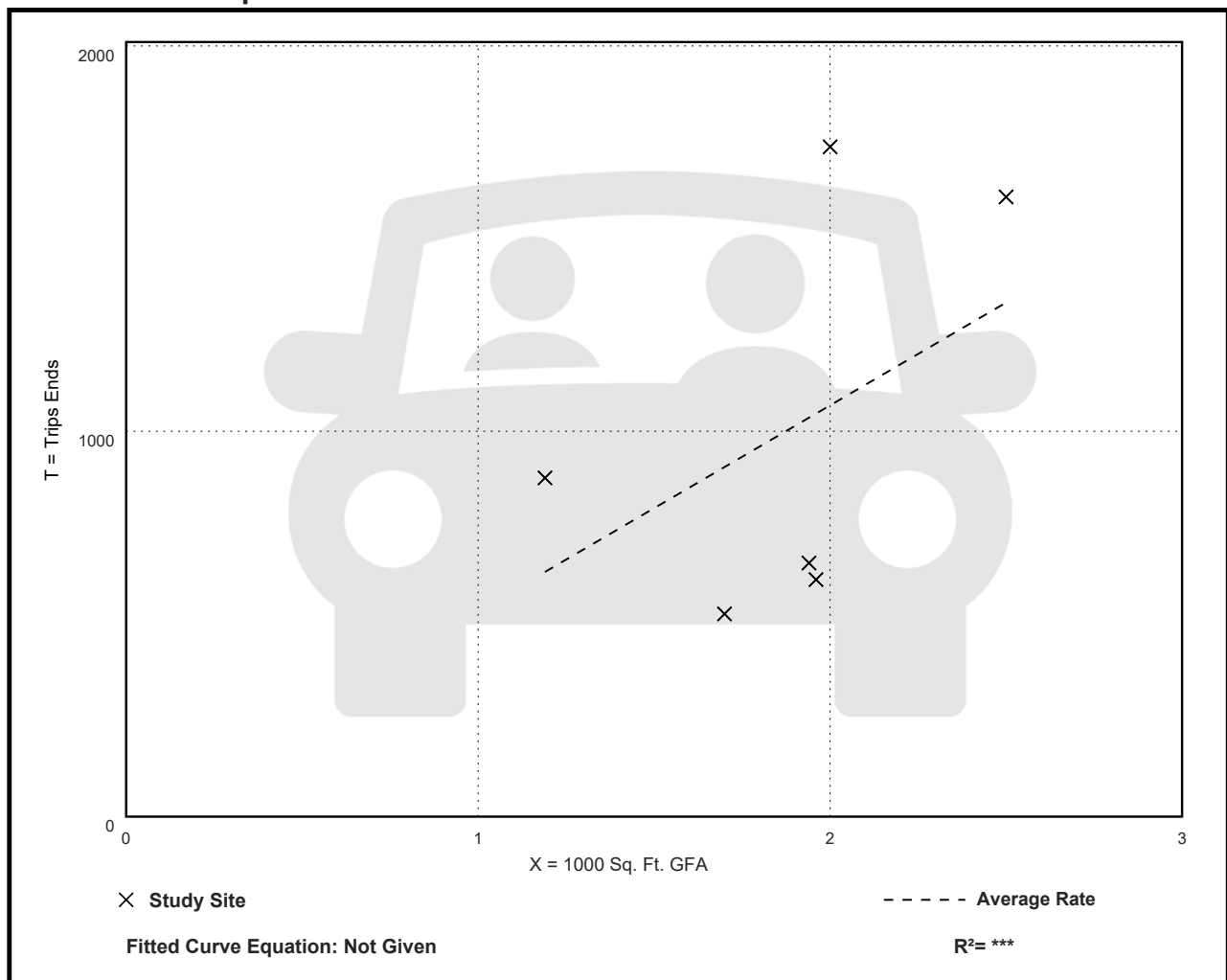
Avg. 1000 Sq. Ft. GFA: 2

Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
533.57	309.41 - 869.00	243.65

Data Plot and Equation



Coffee/Donut Shop with Drive-Through Window (937)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban

Number of Studies: 78

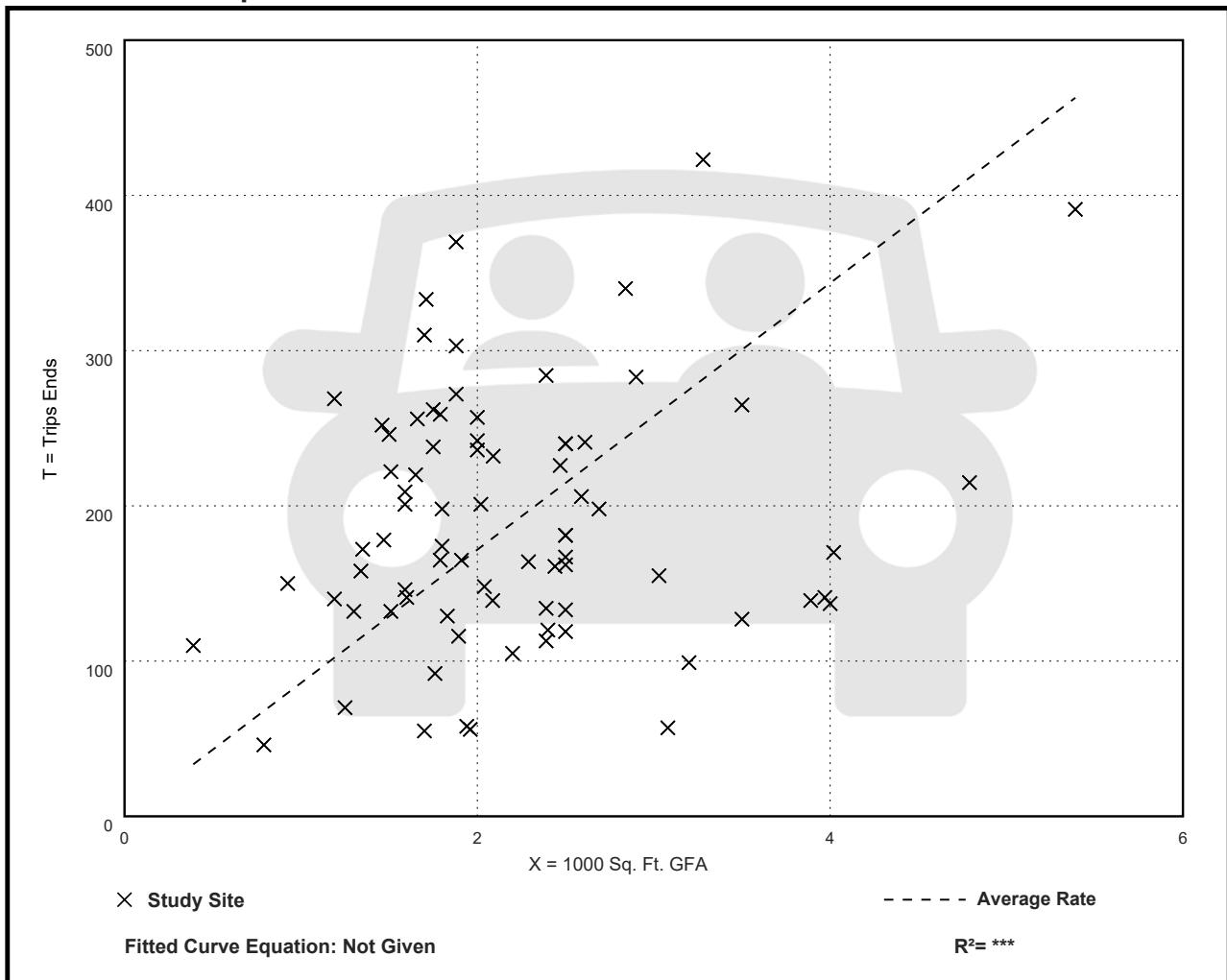
Avg. 1000 Sq. Ft. GFA: 2

Directional Distribution: 51% entering, 49% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
85.88	18.51 - 282.05	44.92

Data Plot and Equation



Coffee/Donut Shop with Drive-Through Window (937)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban

Number of Studies: 36

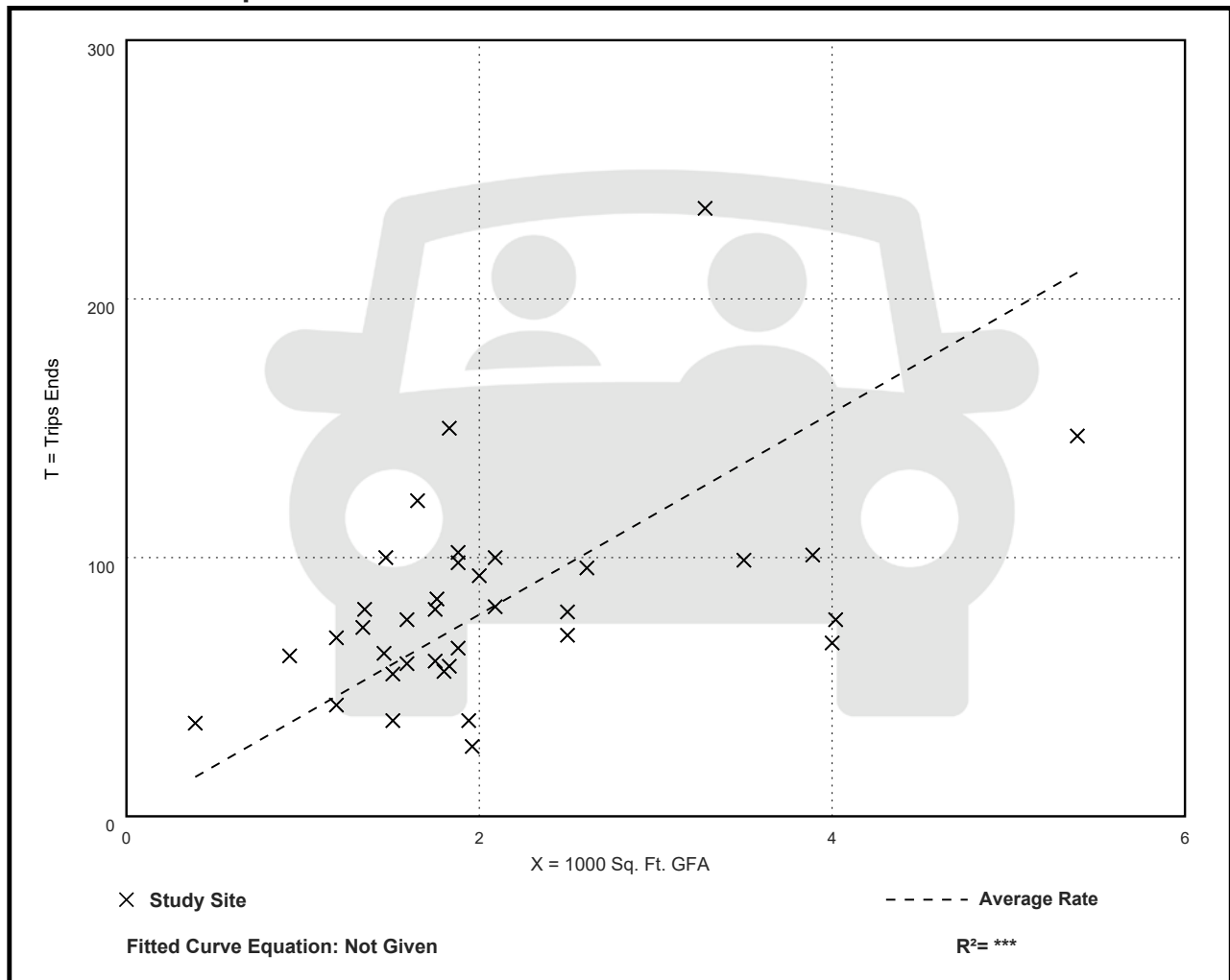
Avg. 1000 Sq. Ft. GFA: 2

Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
38.99	13.78 - 92.31	17.79

Data Plot and Equation



Coffee/Donut Shop with Drive-Through Window (937)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

On a: Weekday,

AM Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 62

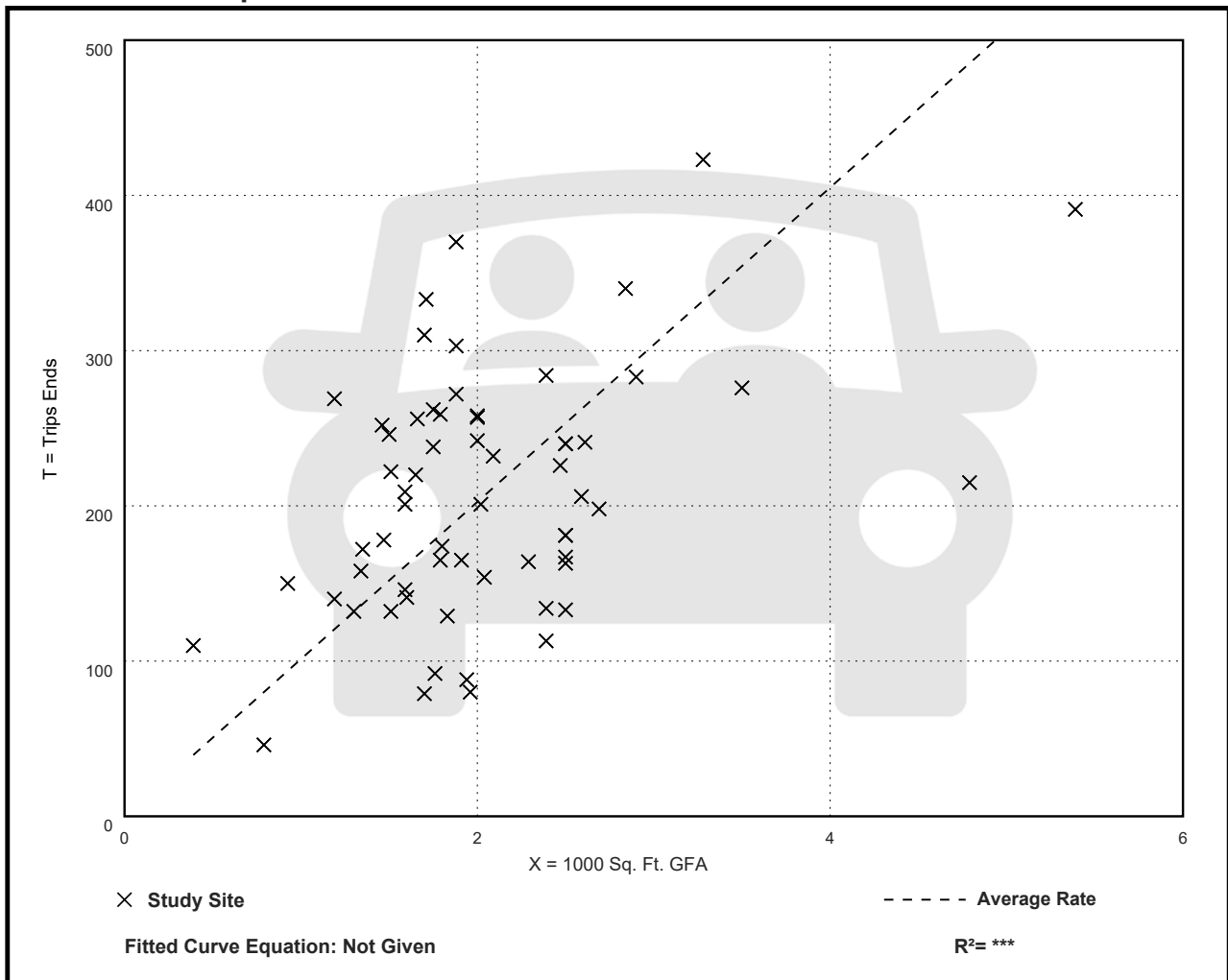
Avg. 1000 Sq. Ft. GFA: 2

Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
101.27	40.82 - 282.05	41.74

Data Plot and Equation



Coffee/Donut Shop with Drive-Through Window (937)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

On a: Weekday,

PM Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 34

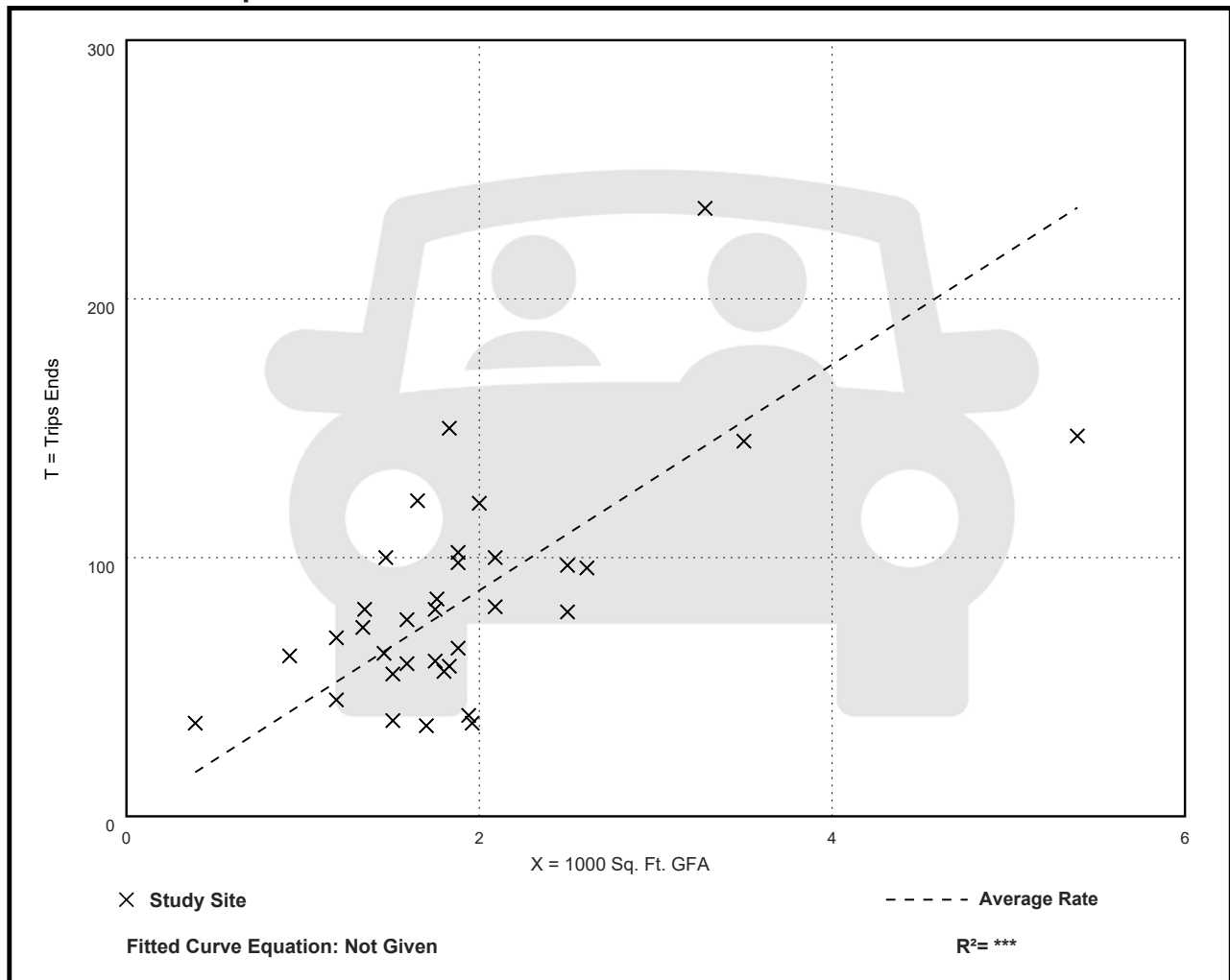
Avg. 1000 Sq. Ft. GFA: 2

Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
43.65	18.37 - 92.31	16.74

Data Plot and Equation



Coffee/Donut Shop with Drive-Through Window (937)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

On a: Saturday, Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 9

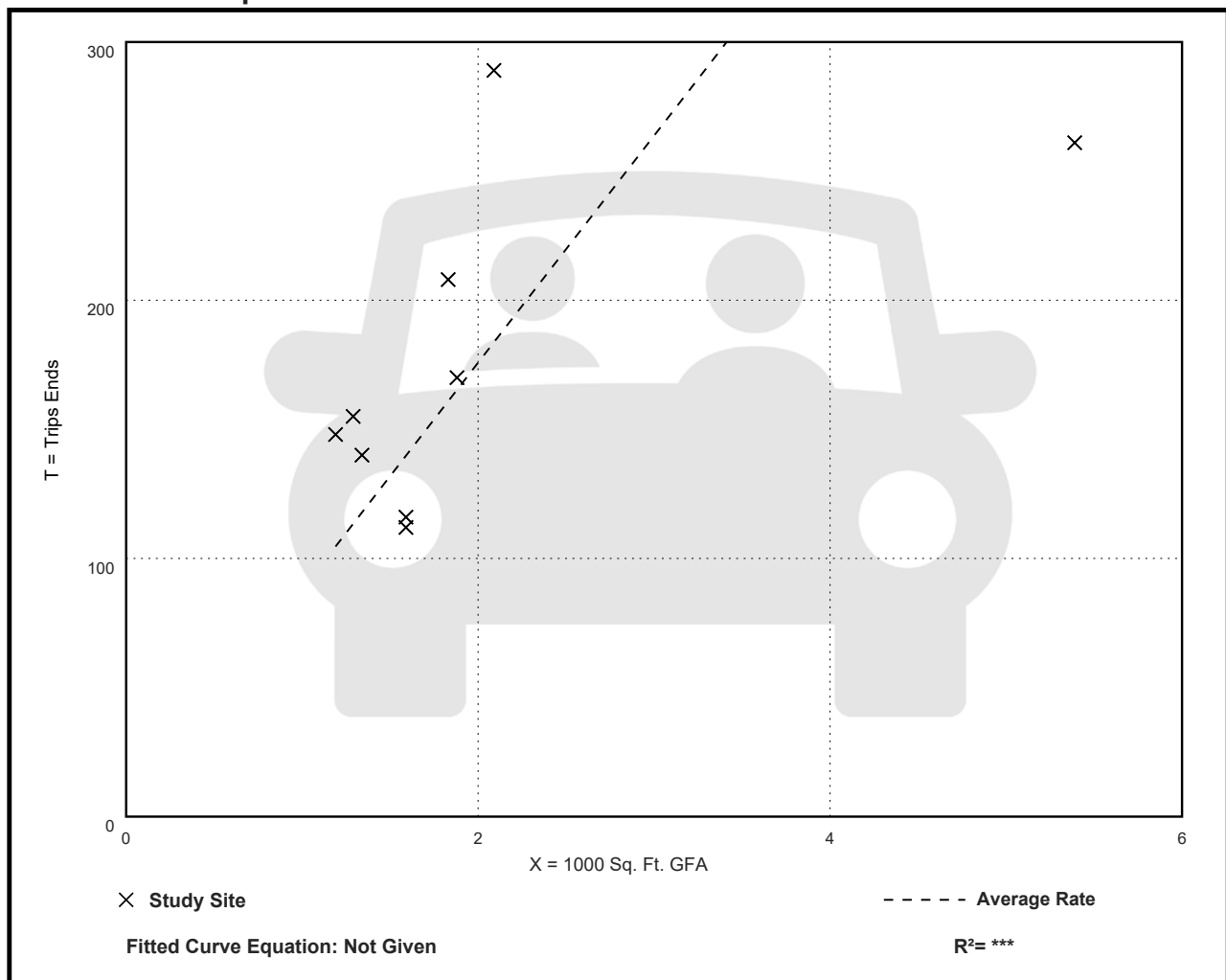
Avg. 1000 Sq. Ft. GFA: 2

Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
87.91	48.42 - 138.28	34.34

Data Plot and Equation



Coffee/Donut Shop with Drive-Through Window (937)

Vehicle Trip Ends vs: Seats

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban

Number of Studies: 4

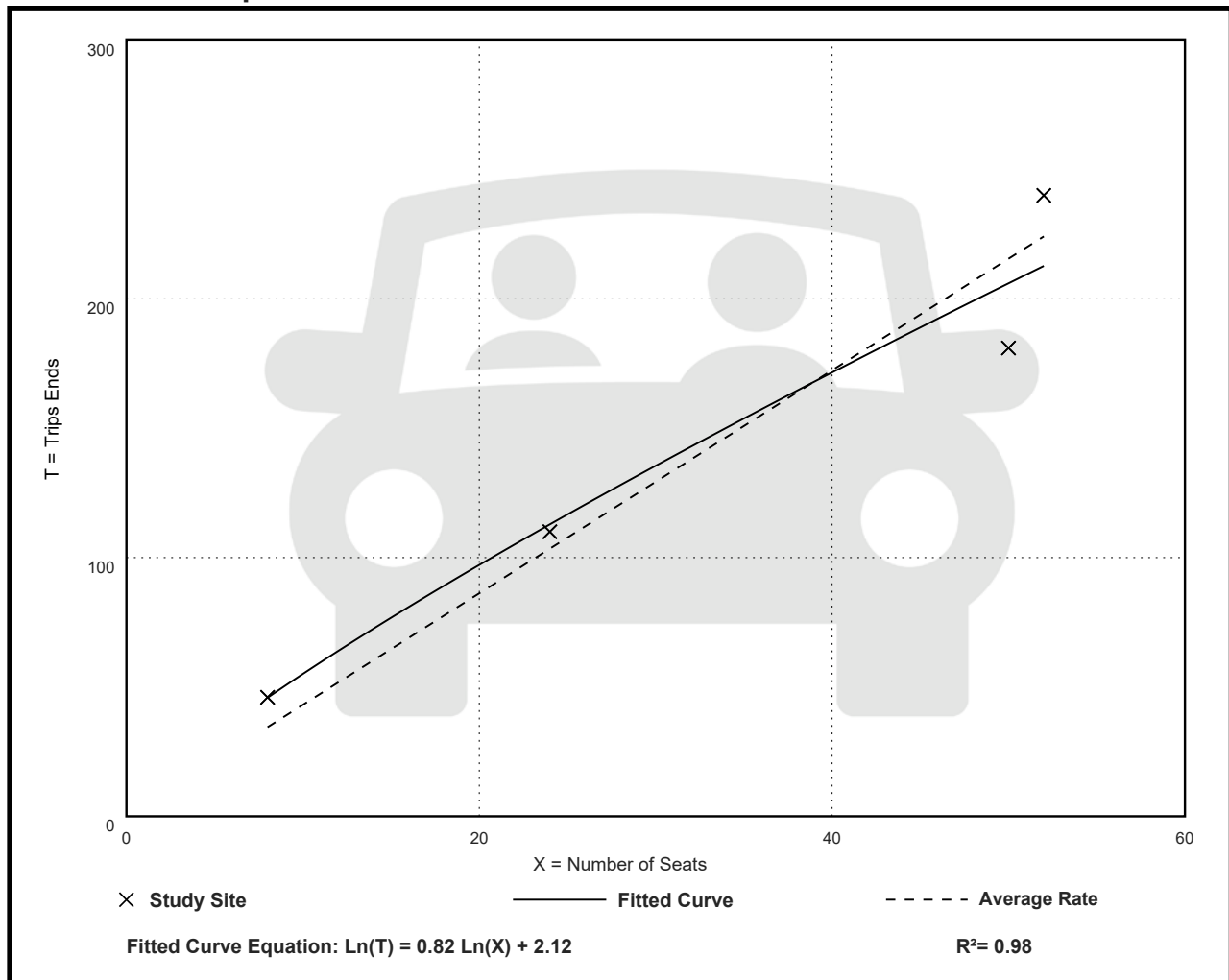
Avg. Num. of Seats: 34

Directional Distribution: 52% entering, 48% exiting

Vehicle Trip Generation per Seat

Average Rate	Range of Rates	Standard Deviation
4.31	3.62 - 5.75	0.68

Data Plot and Equation



Coffee/Donut Shop with Drive-Through Window (937)

Vehicle Trip Ends vs: Seats

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban

Number of Studies: 1

Avg. Num. of Seats: 24

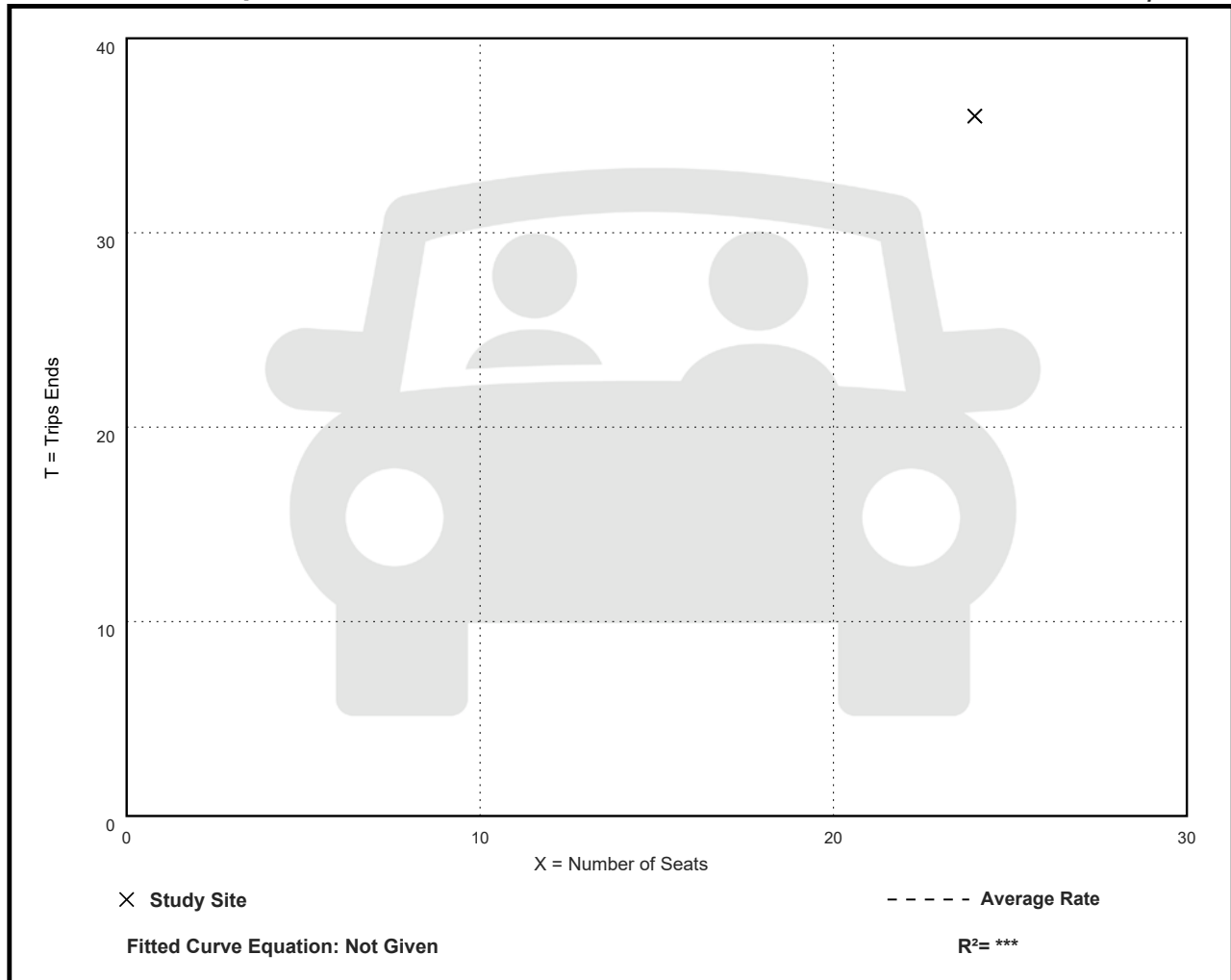
Directional Distribution: 45% entering, 55% exiting

Vehicle Trip Generation per Seat

Average Rate	Range of Rates	Standard Deviation
1.50	1.50 - 1.50	***

Data Plot and Equation

Caution – Small Sample Size



Coffee/Donut Shop with Drive-Through Window (937)

Vehicle Trip Ends vs: Seats

On a: Weekday,

AM Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 4

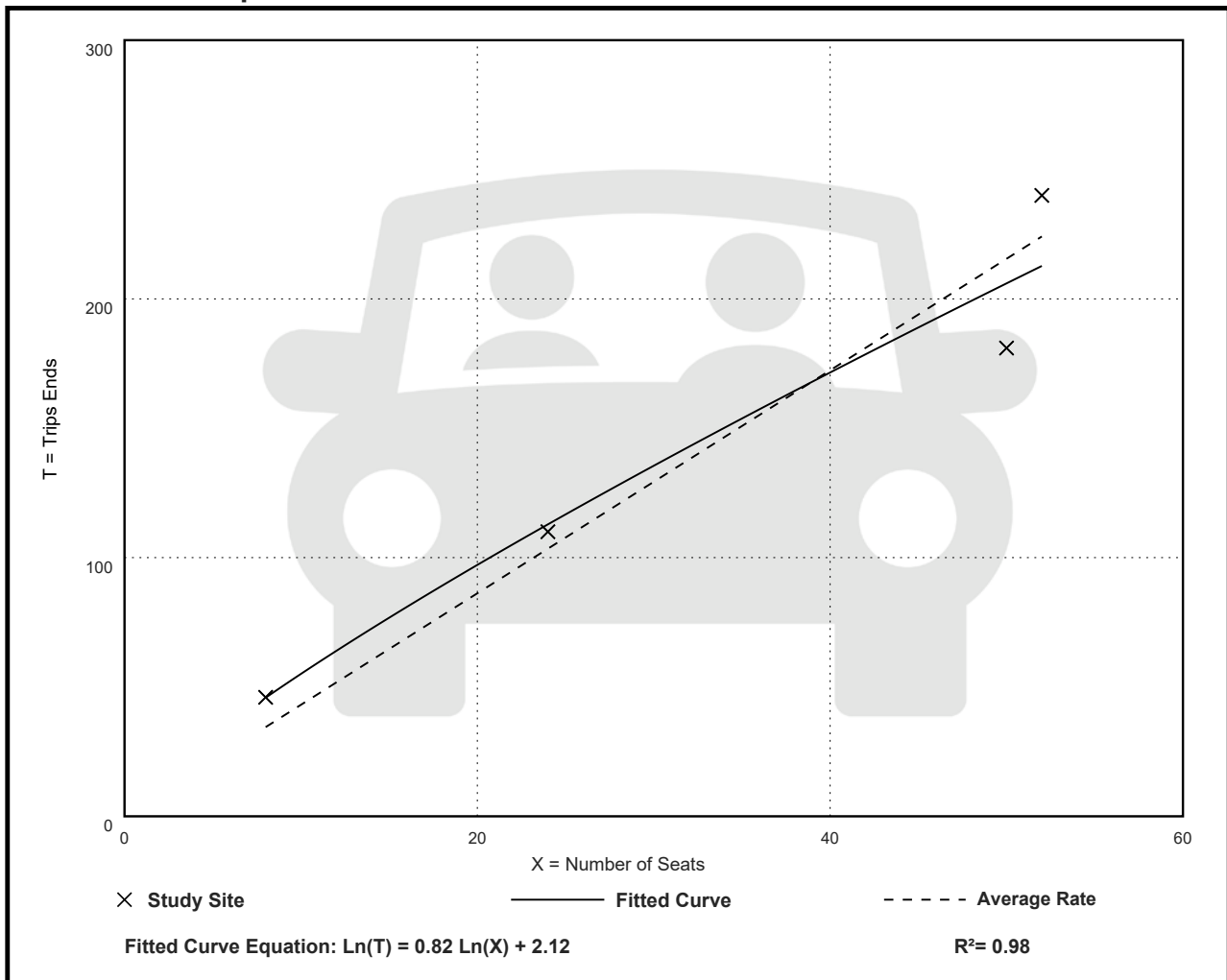
Avg. Num. of Seats: 34

Directional Distribution: 52% entering, 48% exiting

Vehicle Trip Generation per Seat

Average Rate	Range of Rates	Standard Deviation
4.31	3.62 - 5.75	0.68

Data Plot and Equation



Coffee/Donut Shop with Drive-Through Window (937)

Vehicle Trip Ends vs: Seats

On a: Weekday,

PM Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 1

Avg. Num. of Seats: 24

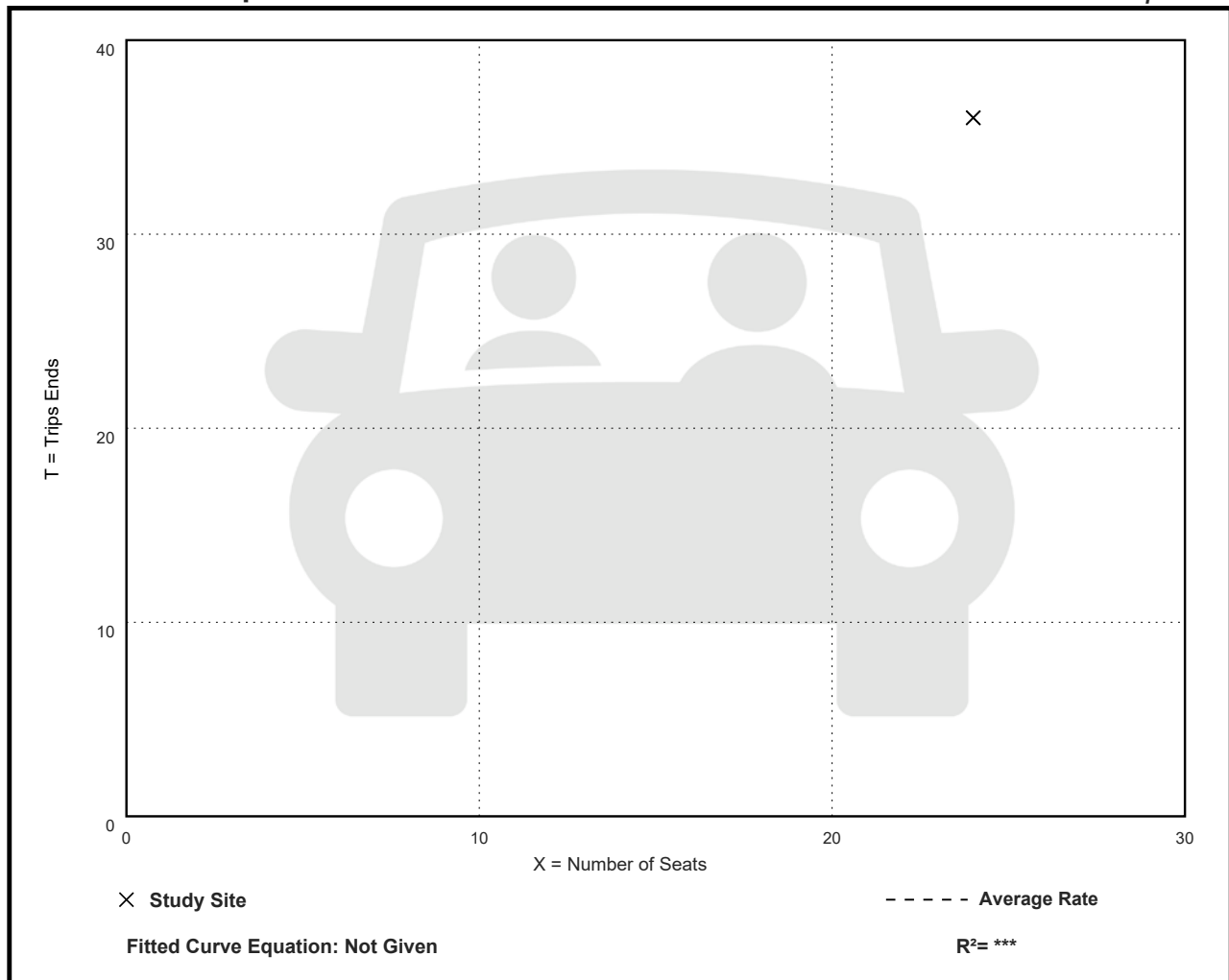
Directional Distribution: 45% entering, 55% exiting

Vehicle Trip Generation per Seat

Average Rate	Range of Rates	Standard Deviation
1.50	1.50 - 1.50	***

Data Plot and Equation

Caution – Small Sample Size



Coffee/Donut Shop with Drive-Through Window (937)

Vehicle Trip Ends vs: AM Peak Hour Traffic on Adj. St.

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban

Number of Studies: 10

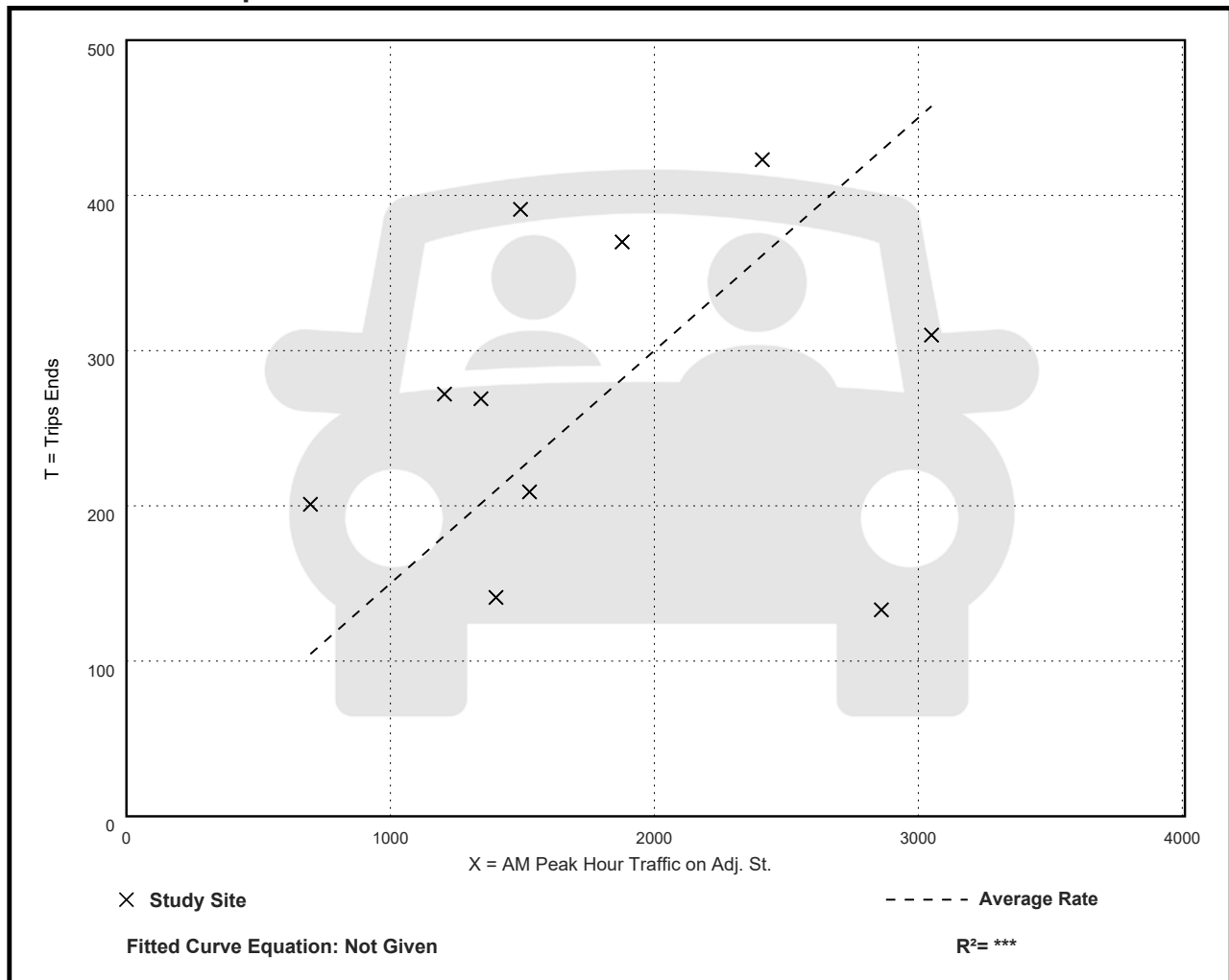
Avg. AM Peak Hour Traffic on Adj. St.: 1786

Directional Distribution: 51% entering, 49% exiting

Vehicle Trip Generation per AM Peak Hour Traffic on Adj. St.

Average Rate	Range of Rates	Standard Deviation
0.15	0.05 - 0.29	0.07

Data Plot and Equation



Coffee/Donut Shop with Drive-Through Window (937)

Vehicle Trip Ends vs: AM Peak Hour Traffic on Adj. St.

On a: Weekday,

AM Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 9

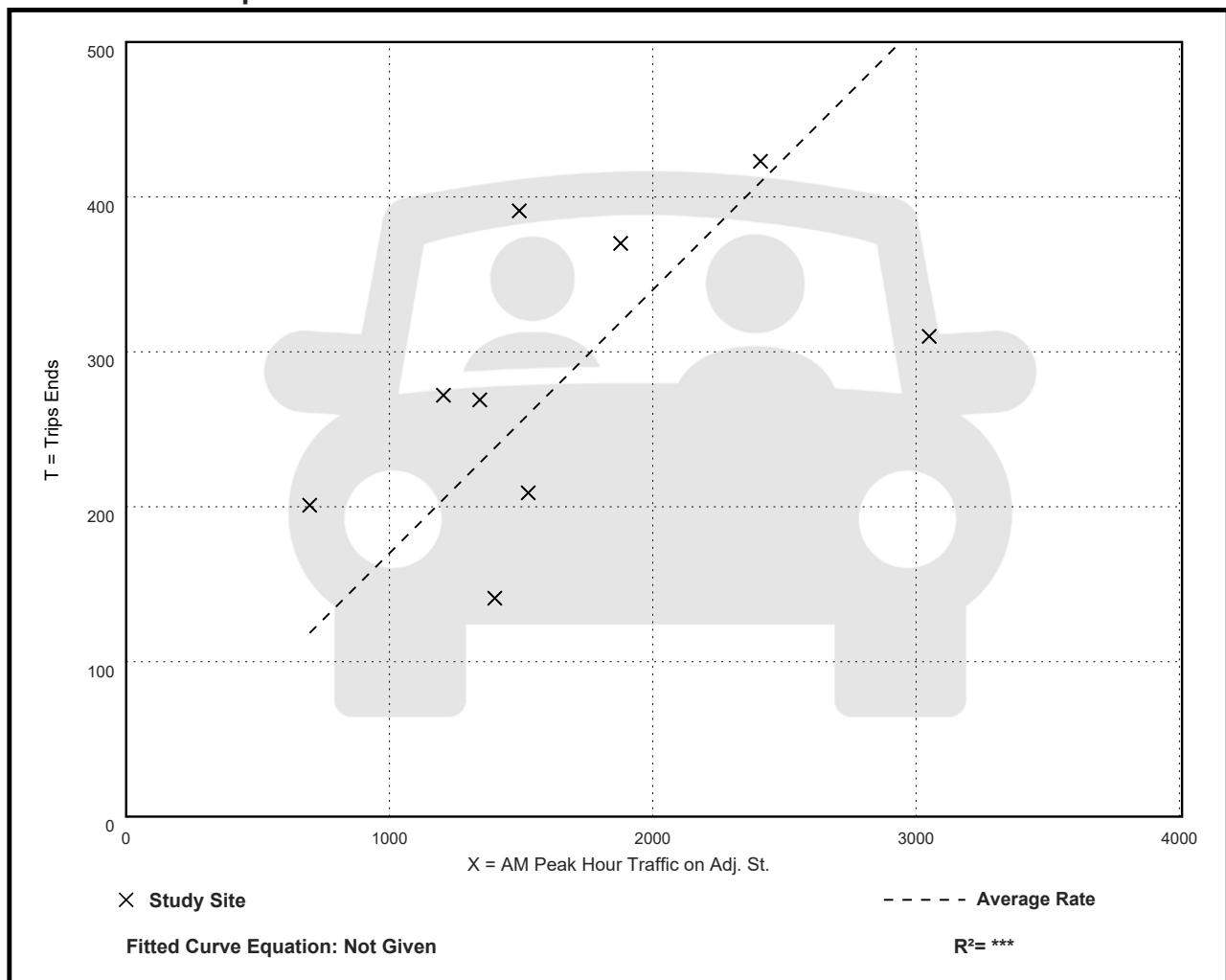
Avg. AM Peak Hour Traffic on Adj. St.: 1667

Directional Distribution: 52% entering, 48% exiting

Vehicle Trip Generation per AM Peak Hour Traffic on Adj. St.

Average Rate	Range of Rates	Standard Deviation
0.17	0.10 - 0.29	0.06

Data Plot and Equation



Coffee/Donut Shop with Drive-Through Window (937)

Vehicle Trip Ends vs: PM Peak Hour Traffic on Adj. St.

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban

Number of Studies: 8

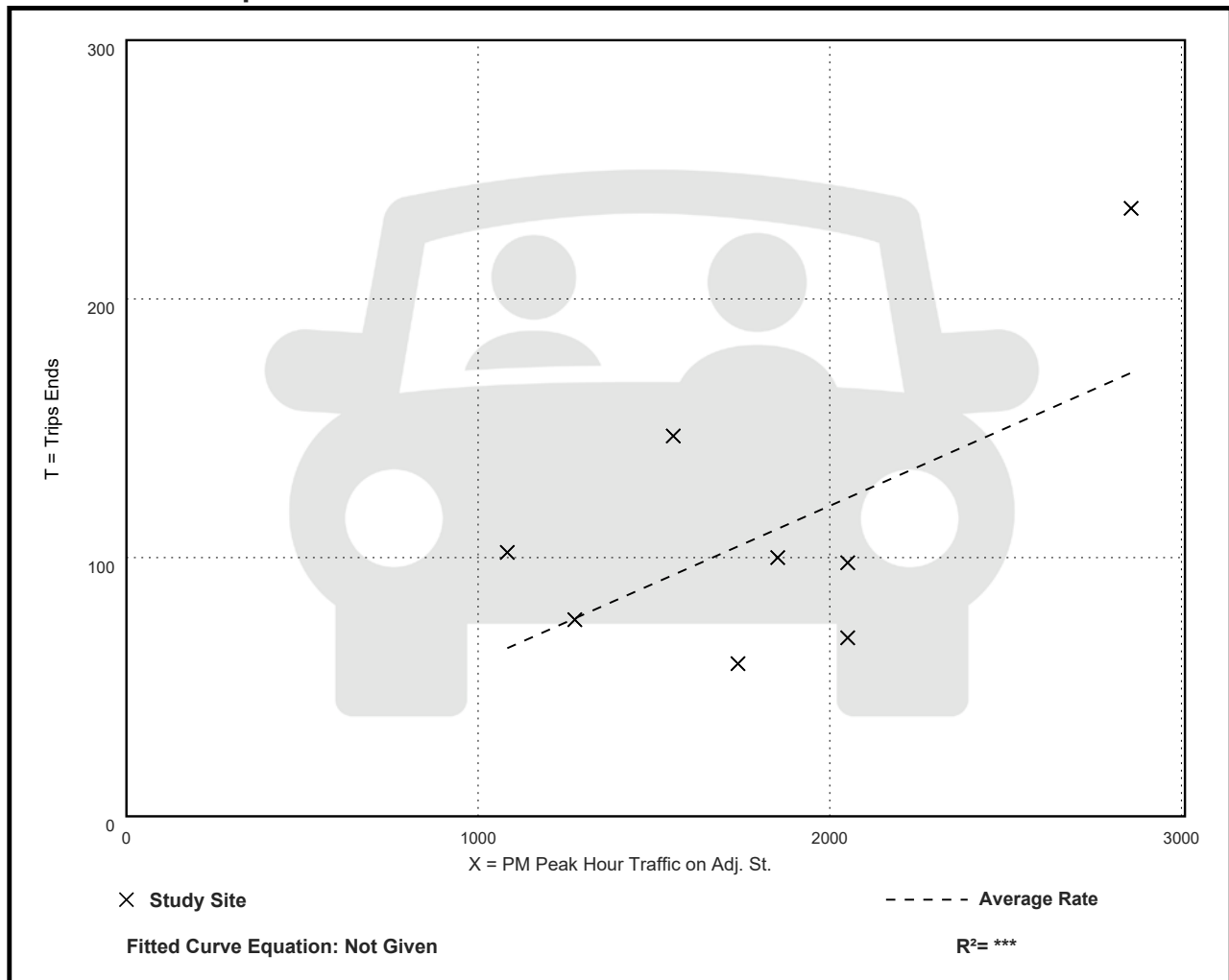
Avg. PM Peak Hour Traffic on Adj. St.: 1808

Directional Distribution: 51% entering, 49% exiting

Vehicle Trip Generation per PM Peak Hour Traffic on Adj. St.

Average Rate	Range of Rates	Standard Deviation
0.06	0.03 - 0.09	0.02

Data Plot and Equation



Coffee/Donut Shop with Drive-Through Window (937)

Vehicle Trip Ends vs: PM Peak Hour Traffic on Adj. St.

On a: Weekday,

PM Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 8

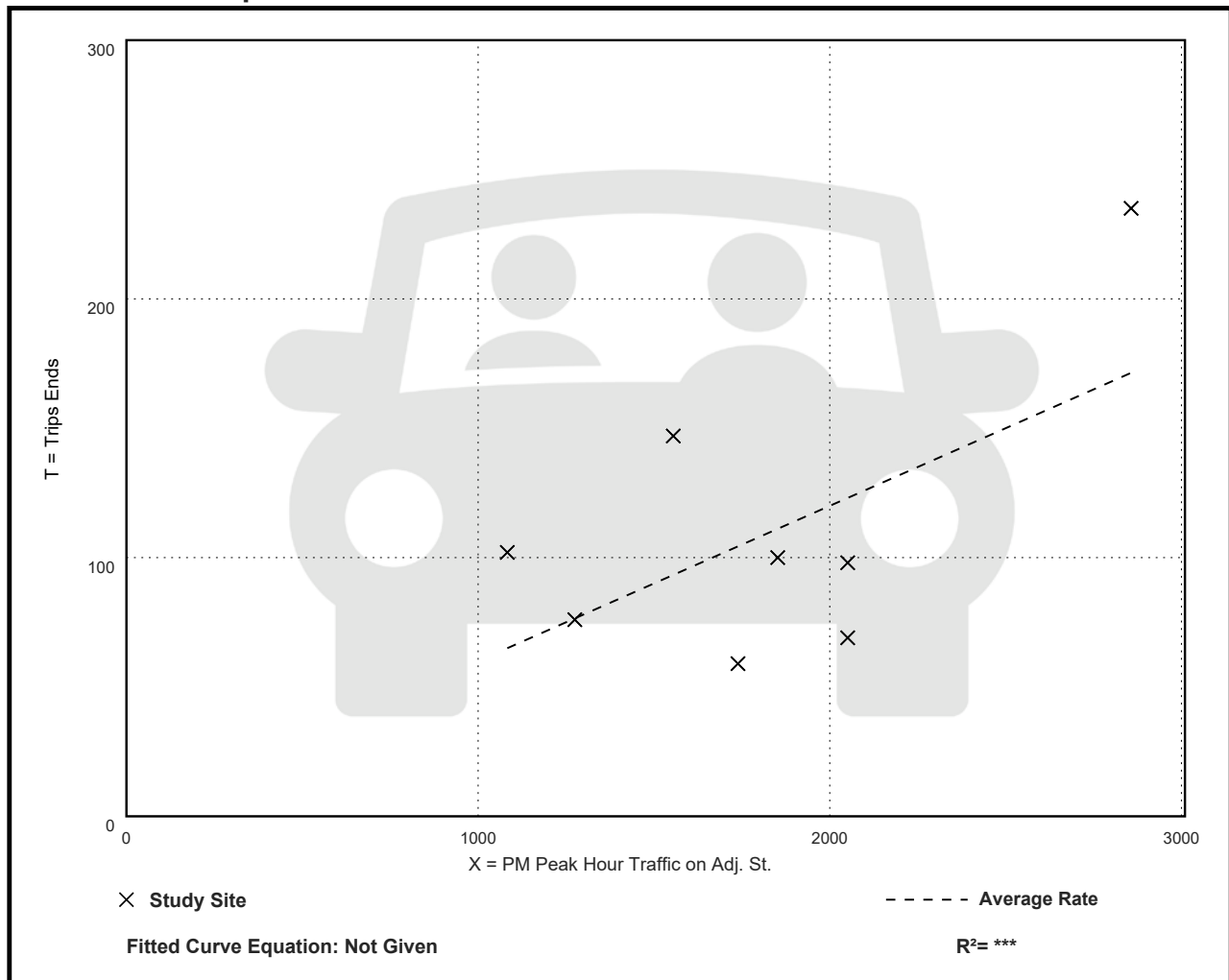
Avg. PM Peak Hour Traffic on Adj. St.: 1808

Directional Distribution: 51% entering, 49% exiting

Vehicle Trip Generation per PM Peak Hour Traffic on Adj. St.

Average Rate	Range of Rates	Standard Deviation
0.06	0.03 - 0.09	0.02

Data Plot and Equation



Coffee/Donut Shop with Drive-Through Window (937)

Walk+Bike+Transit Trip Ends vs: 1000 Sq. Ft. GFA

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban

Number of Studies: 1

Avg. 1000 Sq. Ft. GFA: 4

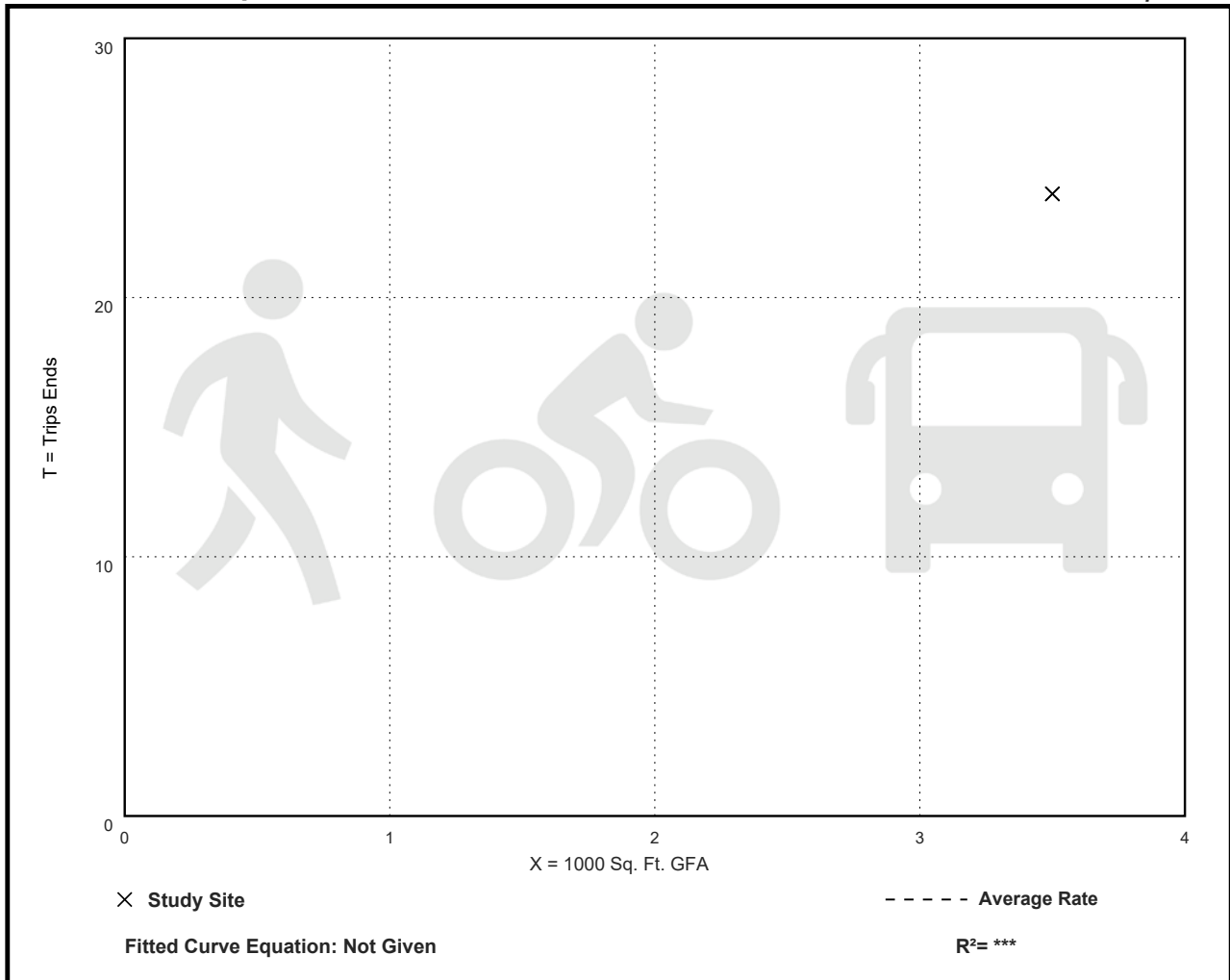
Directional Distribution: Not Available

Walk+Bike+Transit Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
6.86	6.86 - 6.86	***

Data Plot and Equation

Caution – Small Sample Size



Coffee/Donut Shop with Drive-Through Window (937)

Walk+Bike+Transit Trip Ends vs: 1000 Sq. Ft. GFA

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban

Number of Studies: 1

Avg. 1000 Sq. Ft. GFA: 4

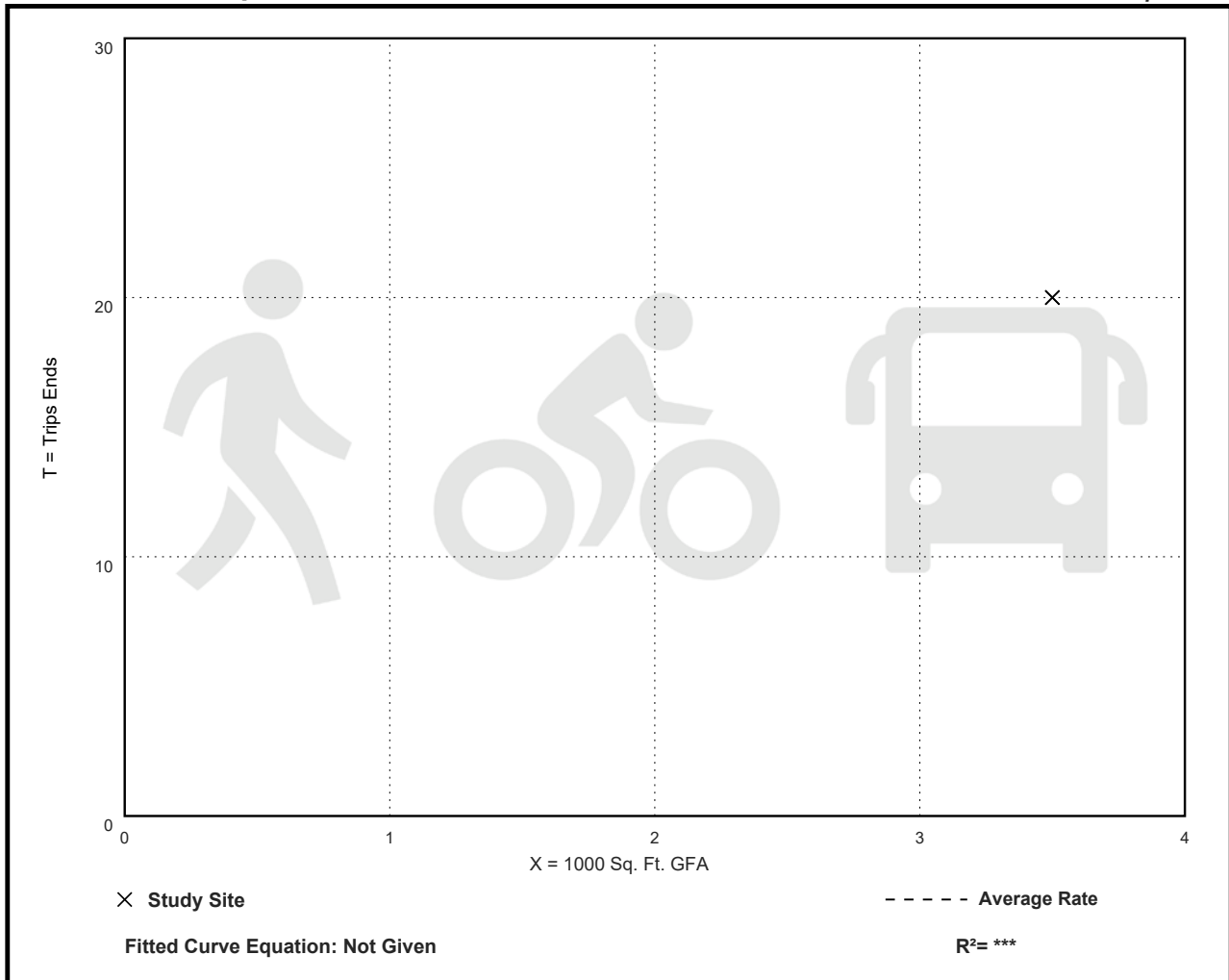
Directional Distribution: Not Available

Walk+Bike+Transit Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
5.71	5.71 - 5.71	***

Data Plot and Equation

Caution – Small Sample Size



**Table E.33 Pass-By and Non-Pass-By Trips Weekday
Land Use Code 938—Coffee/Donut Shop with Drive-Through Window
and No Indoor Seating (Coffee/Espresso Stand)**

SIZE (1,000 SQ. FT. GFA)	LOCATION	WEEKDAY SURVEY DATE	NO. OF INTERVIEWS	TIME PERIOD	PASS-BY TRIP (%)	NON-PASS-BY TRIPS (%)			SOURCE
						PRIMARY	DIVERTED	TOTAL	
0.1	Vancouver, WA	Nov. 1997	69	6:00 a.m.–6:00 p.m.	83	—	—	17	Kittelson & Associates Inc.

“—” means no data were provided

**Table E.34 Pass-By and Non-Pass-By Trips Weekday
Land Use Code 938—Coffee/Donut Shop with Drive-Through Window
and No Indoor Seating (Coffee/Espresso Stand)**

EMPLOYEES	LOCATION	WEEKDAY SURVEY DATE	NO. OF INTERVIEWS	TIME PERIOD	PASS-BY TRIP (%)	NON-PASS-BY TRIPS (%)			SOURCE
						PRIMARY	DIVERTED	TOTAL	
1	Vancouver, WA	Nov. 1997	70	6:00 a.m.–6:00 p.m.	83	—	—	17	Kittelson & Associates Inc.
1	Woodburn, OR	Feb. 1998	109	6:00 a.m.–6:00 p.m.	95	—	—	5	Kittelson & Associates Inc.
1	Vancouver, WA	Feb. 1998	83	6:00 a.m.–1:00 p.m.	89	—	—	11	Kittelson & Associates Inc.

Average Pass-By Trip Percentage: 89

“—” means no data were provided

**Table E.35 Pass-By and Non-Pass-By Trips Weekday, AM Peak Period
Land Use Code 944—Gasoline/Service Station**

SIZE (1,000 SQ. FT. GFA)	VEHICLE FUELING POSITIONS	LOCATION	WEEKDAY SURVEY DATE	NO. OF INTERVIEWS	TIME PERIOD	PASS-BY TRIP (%)	NON-PASS-BY TRIPS (%)			ADJ. STREET PEAK HOUR VOLUME	SOURCE
							PRIMARY	DIVERTED	TOTAL		
2.3	6	Gaithersburg, MD	1992	37	7:00–9:00 a.m.	32	41	27	68	2,080	RBA
2.1	6	Bethesda, MD	1992	26	7:00–9:00 a.m.	58	23	19	42	2,080	RBA
1.7	6	Wheaton, MD	1992	21	7:00–9:00 a.m.	67	14	19	33	900	RBA
2.0	8	Gaithersburg, MD	1992	46	7:00–9:00 a.m.	87	13	0	13	2,235	RBA
1.2	6	Damascus, MD	1992	21	7:00–9:00 a.m.	43	28	29	57	870	RBA
0.3	12	Wheaton, MD	1992	36	7:00–9:00 a.m.	61	8	31	39	3,480	RBA

Average Pass-By Trip Percentage: 58

“—” means no data were provided



February 2023

Ziggi's Drive Thru-Severance – Legal Description
Project No. 1076.0005

Lot 1 of the Red Willow Subdivision EXCEPT for the 20' of public road Right-of-Way described in the Deed recorded January 30, 2020, at Reception No. 4562490, located west of the intersection of Weld County Road 21 and the Weld County Road 74, in Section 34, Township 07 North, Range 67 West of the 6th P.M. Severance, CO.

Containing 32217.42 square foot or 0.74 acres.

748 Whalers Way
Suite 200
Fort Collins, CO 80525
970.226.0557 main
970.226.0204 fax

ideas@tstinc.com
www.tstinc.com

From: [Jim Gerdeman](#)
To: [Abdul Barzak](#)
Subject: RE: Ziggis Site Plan Internal Staff Review - 1st Submittal
Date: Wednesday, September 14, 2022 1:41:56 PM
Attachments: [image001.png](#)

No issue from PD.

Jim

From: [Chrys Hinze](#)
To: [Abdul Barzak](#)
Cc: [Cali Gunter](#); [Tad Moen](#)
Subject: RE: Ziggis Severance Site Plan Revised (Town of Severance Planning Referral)
Date: Wednesday, December 21, 2022 4:09:50 PM
Attachments: [image003.png](#)

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Thank you, Abdul.

At this time the North Poudre Irrigation Company has no comment concerning this project.

Chrysten Hinze, Esq.
Lind, Ottenhoff & Root, LLP
355 Eastman Park Dr. #200
Windsor, CO 80550

Email: chrys@lorlegal.com
Tel. 970.674-9888
Fax 970.674-9535

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From: [Michael McCullar](#)
To: [Abdul Barzak](#)
Subject: Re: Ziggis Severance Site Plan Revised (Town of Severance Planning Referral)
Date: Monday, December 19, 2022 8:37:37 AM
Attachments: [image001.png](#)

Caution: This is an external email and may have a suspicious subject or content. Please take care when clicking links or opening attachments. When in doubt, contact your OnixIT at support@onixit.com or (970) 223-0300.

no comment

Michael McCullar, Chief Operating Officer
Weld RE4 School District
970-686-8015
180 North 8th Street
Windsor, CO 80550
www.weldre4.org

From: [Christine Lutz](#)
To: [Abdul Barzak](#)
Cc: [Scott Ballstadt](#); [Kimberly Lambrecht](#); [Mark Price](#)
Subject: RE: Ziggis Severance Site Plan Revised (Town of Severance Planning Referral)
Date: Friday, December 16, 2022 3:48:30 PM
Attachments: [image001.png](#)

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Hello Abdul,

The Town of Windsor has reviewed the application materials provided for the Ziggi's project. The subject property is outside the Town's Growth Management and Community Influence areas, therefore we have no comment.

Thank you for the opportunity to review the project.

Have a wonderful weekend,

Chrissy

Christine Lutz

Planning Technician

Windsor Town Hall | Community Development Dept.
301 Walnut St. | Windsor, CO 80550

Dir: 970-674-2439 | www.windsorgov.com
planningtechs@windsorgov.com

Your patience is appreciated while we are experiencing a high volume of incoming work being processed. You may find some of your answers by going to the website and referring to the [Planning](#) page and [FAQ's](#) or the [Municipal Code](#).

The Town of Windsor offices will be closed in observance of Christmas and New Year's Day the following:

The afternoon of Friday, December 23rd; Monday, December 26th; The afternoon of Friday, December 30th; Monday, January 2nd.

From: [Heather S Alderman](#)
To: [Abdul Barzak](#)
Subject: RE: Ziggis Severance Site Plan Revised (Town of Severance Planning Referral)
Date: Friday, December 16, 2022 12:38:34 PM
Attachments: [image004.png](#)

Caution: This is an external email and may have a suspicious subject or content. Please take care when clicking links or opening attachments. When in doubt, contact your OnixIT at support@onixit.com or (970) 223-0300.

We do not have comments.

Thanks,
Heather

Heather S. Alderman
Project Hydrologist
Paragon Consulting Group, Inc.
1103 Oak Park Drive, Suite 110
Fort Collins, Colorado 80525
Office 970-377-1600
Mobile 303-901-1701
Fax 970-377-1880



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From: [Sandi Friedrichsen](#)
To: [Abdul Barzak](#)
Subject: RE: Ziggis Severance Site Plan Revised (Town of Severance Planning Referral)
Date: Tuesday, December 27, 2022 3:56:39 PM
Attachments: [image001.png](#)

Caution: This is an external email and may have a suspicious subject or content. Please take care when clicking links or opening attachments. When in doubt, contact your OnixIT at support@onixit.com or (970) 223-0300.

No occupant load information was given on these plans. Dependent on what the occupant load is for this building, a fire sprinkler system may be required (over 100 people in an A-2 occupancy based on occupant load, this is for the building).

2. With this building being 4,000 sf with no fire sprinkler system, assuming it is Type V-B construction, 1 hydrant will be required to have a fire flow of 1750 gpm for 2 hours at 20 psi. That hydrant must be within 150 ft of the building.

Sandra Friedrichsen
Fire Marshal
Windsor Severance Fire Rescue
100 7th Street - Windsor, CO 80550
Office Hours Monday - Thursday 0700-1700
Main - (970) 686-2626
Email – firemarshal@wsfr.us
www.wsfr.us

From: [Sandi Friedrichsen](#)
To: [Abdul Barzak](#)
Subject: RE: Ziggis Severance Site Plan Revised (Town of Severance Planning Referral)
Date: Monday, January 30, 2023 2:29:29 PM
Attachments: [image002.png](#)

Caution: This is an external email and may have a suspicious subject or content. Please take care when clicking links or opening attachments. When in doubt, contact your OnixIT at support@onixit.com or (970) 223-0300.

With the static at 89 psi, the residual at 51 psi, and the flow at 1580gpm..the GPM at 20 psi is 2180gpm out of this hydrant. As long as this is within 150 ft of the building on the same side of the street and not blocked by anything...it will work for the building that was submitted. Please let me know if you have any other questions. Thank you.

Sandra Friedrichsen
Fire Marshal
Windsor Severance Fire Rescue
100 7th Street - Windsor, CO 80550
Office Hours Monday - Thursday 0700-1700
Main - (970) 686-2626
Email – firemarshal@wsfr.us
www.wsfr.us

From: Abdul Barzak <abarzak@townofseverance.org>
Sent: Friday, January 27, 2023 1:40 PM
To: Sandi Friedrichsen <sfriedrichsen@wsfr.us>
Subject: RE: Ziggis Severance Site Plan Revised (Town of Severance Planning Referral)

Sandi,

Please see attached Hydrant flow test for a winter scenario. This is the hydrant located in front of 9845 E. Harmony Road. Can you please let me know if this meets the minimum requirement?

I appreciate your help, thank you!

From: [Brandon Griffin](#)
To: [Abdul Barzak](#)
Subject: Ziggy's commercial development
Date: Tuesday, March 14, 2023 1:44:10 PM
Attachments: [Ziggi's Petition.pdf](#)



IRONSCALES couldn't recognize this email as this is the first time you received an email from this sender brandonreidgriffin@gmail.com

Caution: This is an external email and may have a suspicious subject or content. Please take care when clicking links or opening attachments. When in doubt, contact your OnixIT at support@onixit.com or (970) 223-0300.

Town of Severance,

Please update your public records to reflect public opposition to the Ziggis commercial development. See the attached document. It is a working document and as more signatures come in I can send you updated documentation.

Please allow me an opportunity to speak for approximately 10 min at the meeting tomorrow.

Regards,

Brandon Griffin DDS, MBA

Dear Town of Severance,

We the citizens of Severance have signed this petition to protect our quality of life and personal property. When commercial property adjoins residential property guidelines must exist so that each plot can reach its intended purpose without over-reaching the other. These suggestions and demands for compliance have been initiated by the Ziggis Severance Site Plan, that was recently disseminated. Our concerns are not limited to the new development. We want Severance to be safe and beautiful. We want all property owners to be respected. So that our complaints are clear, and each complaint is addressed, this will be presented in bullet point and in 3 succinct topics. We anticipate a response to each.

Commercial property for the Dollar General:

- Commercial property should hide rooftop HVAC units. The three sided roof top wall needs a fourth side on the west. Residents have to listen to the noise and it is unsightly. This disrupts our quality of life and lowers our property value.
- Commercial property needs to project parking lot lighting downward. Today's halogen and LED lights are much brighter than in the past and the front parking lot light needs to be lowered and a skirt needs to be placed around it so it lights up just the commercial parking lot and not residential property. The light automatically turns off at 10:00 PM, which should continue, but we would like to sleep prior to 10:00 PM.
- There needs to be a certain percentage of green space per lot size and this needs to be maintained, the city should enforce it.

Commercial property for the proposed Ziggis:

- No through road at the back of the commercial property. Having a road which invites patrons to drive only feet away from the residential fence line will absolutely lower residential property value and infringe on our quality of life. A concrete pan while not overcome this. We flat-out reject this development plan. Others have already left the neighborhood because E. Harmony Road has become busy, which is unavoidable. We will not support through traffic next to residential property. We suggest that the property owner revise their plans to match the precedent which has already been established by the neighboring Dollar General and develop a clean non-through road in the rear of the commercial property.
- 3 parking Lot lightings are purposed at the rear of the building. This should be limited to over-the-door lighting, if any at all, and no tall street lamps or building mounted lights should exist. Also, front parking lot lighting on poles or the building should be pointed downwards and have screens around them so that it lights up the commercial property only and does not light-up residential property. All parking lot lighting should turn off at 10:00 PM and not be turned on until 8:30AM.
- "Can I take your order please?" Is not something residential property owners are prepared to hear all day or at any part of the day! We spend time outside enjoying beautiful Colorado and enjoying sunrises and sunsets. This is the purpose of our

property. No outside ordering speakers should exist. This would cause noise pollution.
The new purposed road near the fence would also add to this noise pollution.

General City Improvements on Harmony road:

- Three large subdivisions exist on Harmony Road near the Dollar General. Children are crossing the road in places without cross walks, and walking in the weeds to get to it. The new purposed commercial development will only increase foot and car traffic on Harmony Road in this area. It is time for the city to put in sidewalks in front of Severance Shores, Fox Ridge, and Hunters Crossing neighborhoods in order to facility safe cross walks and traffic lights. Harmony has had 2 recent fatalities on Harmony road near this area and the police constantly monitor near the Dollar General. Sidewalk development would match the commercial development and make it safer for our children. It would be tragic if an avoidable auto-pedestrian accident occurred because of lack of sidewalk development from residential to commercial property.

Thank you for taking seriously our petition and hearing our complaints. Government exists to serve the people and help solve issues just like these. We thank you for service and we look forward to hearing your reply to each of our concerns.

The citizens of Severance

W. B. B. 1450 Red Fox Cir
JK B. 1450 Red Fox Cir.

Dr. Brandon Griffin 1406 Red Fox Cir.

Griffin 1406 Red Fox Cir.

Tanya V. Metieri 1451 Red Fox Cir

Steve Mark Stahl 1413 Red Fox Cir David V. Metieri 1451 Red Fox Cir

Mary A. Stock S 1403 Red Fox Cir.

W. B. B. 1415 Red Fox circle

J. J. Middle 1415 Red Fox Circle

Chris Alva Workman 1409 Red Fox Circle
Dotie Workman 1409 Red Fox Circle

Rob & Tamara Etal 1412 Red Fox Cir.

Hape Lead
Name 1, Lead
Km 2-1

1408 Red Fox Cir.
1408 Red Fox Cir.
1408 Red Fox Cir.

Dan Ayer

1404 Fox Ridge Parkway

Judy Burns 1405 Fox Ridge Pkwy.

Larry A Burns 1405 FOX RIDGE PKWY.

John J. - 1407 FOX RIDGE PKWY
JASON R. SMITH

Kevan C Camery 1455 RED FOX CIR. 970-214-8168
KEVAN C. CAMERON SEVERANCE, CO 80550

Scott Pagham 1452 Red Fox Cir 80558

Todd Loveless 1402 FOX RIDGE PKWY 709-312-8177
TODD LOVELESS

Edna Hume 1449 RED FOX CIR. 770-556-8464

Jim Pate 1444 RED FOX CIR 503-432-7347
HED PATE 1411 Red Fox Cir 80550
Jim Salady 1411 RED FOX CIR 80550
C.M. Shum 1411 Red Fox Circle 80550 720-273-6699



2.28.2023

RE: Ziggis Severance Site Plan

Dear Resident/Property Owner:

The Town of Severance would like to invite you to public hearings to discuss the Ziggis Severance Site Plan & Variance Request that may affect your property. The Planning Commission for the site plan will be held **March 15, 2023**. The Town Council meeting for both the site plan and the variance request will be held on **April 25, 2023 both at 6:00 P.M. at Severance Town Hall located at 3 S. Timber Ridge Parkway, Severance, Colorado**, and virtually. Please visit <https://www.townofseverance.org/> for virtual meeting link.

The Town of Severance considers your interest and input in this matter, as well as your neighbor's input, an important part of the Town's consideration of this proposal. If you are unable to attend the meeting, but would like to provide input, written comments are welcome. You may contact Abdul Barzak at planning@townofseverance.org or by phone at 970-686-1218.

The list of affected property owners for this public notice is derived from official records of the Weld County Assessor. Because of the lag time between occupancy and record keeping, or because of rental situations, a few affected property owners may have been missed. Please feel free to notify your neighbor of these pending meetings so all neighbors may have the opportunity to attend.

Cordially,
TOWN OF SEVERANCE

A handwritten signature in blue ink, appearing to read "Abdul Barzak", is written over a horizontal line.

Abdul Barzak
Title: Town Planner

SEVERANCE PLANNING COMMISSION

RESOLUTION NO. PC-2023-02R

**A RESOLUTION OF THE SEVERANCE PLANNING COMMISSION
RECOMMENDING APPROVAL OF SITE DEVELOPMENT PLAN FOR
CERTAIN REAL PROPERTY LOCATED WITHIN THE RED WILLOW
SUBDIVISION**

WHEREAS, American Eagle Properties, (“Applicant”), as owner of certain real property legally described as Lot 1, Red Willow Subdivision, Town of Severance (“Property”), has submitted an application for site plan approval to develop and construct a single 4,000 s.f. building that will house a retail coffee shop and two future 1,250 s.f. tenant spaces on the Property (the “Application”); and

WHEREAS, the Severance Planning Commission has conducted a public hearing on the Application, and has considered all the evidence presented at the public hearing, the relevant site plan standards and review criteria set forth in the Severance Municipal Code (“Code”); and

WHEREAS, the Severance Planning Commission wishes to make a recommendation to the Town Council regarding the Application.

NOW, THEREFORE, BE IT RESOLVED BY THE SEVERANCE PLANNING COMMISSION:

1. That the Severance Planning Commission recommends approval of the Application, including the site plan and development agreement, with the following conditions:

- a. All remaining technical corrections to the Site Plan and Construction Drawings requested by Town staff shall be made to the Town staff’s satisfaction.
- b. Final Construction Documents shall be approved by the Town Engineer prior to the start of construction activities.
- c. The Town and the Applicant shall execute a development agreement, in a form to be approved by the Town Attorney.

PASSED AND ADOPTED this ____ day of _____, 2023.

Chairperson

ATTEST:

Leah Vanarsdall, MMC, Town Clerk



AGENDA ITEM SUMMARY

AGENDA ITEM	SUBMITTED BY	PRESENTED BY
PUBLIC HEARING Pg PC Resolution 2023-03R: A Resolution of The Severance Planning Commission, approving an application to amend The Town of Severance Comprehensive Plan to revise the Future Land Use Map pertaining to various areas within The Town and to incorporate an updated Parks and Trails Map	Abdul Barzak, Town Planner	Abdul Barzak, Town Planner
ACTION REQUESTED		
Community & Economic Development and Town Management ask that the Planning Commission review, discuss, and take action on Resolution PC-2023-03R and forward a recommendation to the Town Council on the Comprehensive Plan Amendment. Actions that may be taken: 1. Approve Resolution PC-2023-03R for the Comprehensive Plan Amendment. 2. Take No Action.		<u>Attorney Approved</u> <u>Action Requested</u> <u>Resolution</u>
BRIEF SUMMARY		
In November of 2022 the Planning Commission approved and the Town Council ratified a Comprehensive Plan Amendment to remove the Severance Greenway Corridor from the Future Land Use Map. At that time, Town Staff was directed to incorporate the Severance Greenway Corridor into an updated Parks & Trails Map and update into the Town's Comprehensive Plan. Tonight before you is the updated Parks & Trails Map that now includes the Severance Greenway Corridor, updated parks, and trails.		
PUBLIC SUPPORT/CONCERN		
None at this time.		
ANALYSIS AND RECOMMENDATION		
Town staff is asking for the Planning Commission to review, discuss, and approve Resolution PC-2023-03R for the proposed Comprehensive Plan Amendment.		
MATERIALS SUBMITTED		
The following materials were submitted and included in this packet: 1. Resolution PC-2023-03R Comp Plan Amendment Adoption - Parks Trails Map and Future Land Use Map		

SEVERANCE PLANNING COMMISSION

RESOLUTION NO. PC-2023-03R

A RESOLUTION OF THE SEVERANCE PLANNING COMMISSION, APPROVING AN APPLICATION TO AMEND THE TOWN OF SEVERANCE COMPREHENSIVE PLAN TO REVISE THE FUTURE LAND USE MAP PERTAINING TO VARIOUS AREAS WITHIN THE TOWN AND TO INCORPORATE AN UPDATED PARKS AND TRAILS MAP

WHEREAS, the Town of Severance (“Town”), acting through its Planning Commission, is empowered pursuant to C.R.S. §§ 31-23-201, *et seq.*, to adopt a master or comprehensive plan and amendments thereto to guide current and future growth and development of the municipality; and

WHEREAS, Town Staff, on behalf of the Town of Severance, has submitted an application to amend the Town’s Comprehensive Plan, by revising the future land use plan designation for a certain areas of the Town to correct a minor, technical error in mapping the proposed boundaries of transition areas between zoning districts (the “Application”), which would result in a revised Land Use Plan map for the Comprehensive Plan, and to incorporate an updated Parks and Trails Map (collectively, the “Comprehensive Plan Amendment”), attached hereto as **Exhibit A** and incorporated herein by this reference; and

WHEREAS, in accordance with C.R.S. § 31-23-208, the Severance Planning Commission, at its meeting held on April 19, 2023, conducted a public hearing on the Application, following the publication of notice as required by law; and

WHEREAS, the Severance Planning Commission, after considering all the evidence presented at the public hearing, together with the relevant standards and criteria for comprehensive plan amendments, makes the following findings with respect to the Application:

- (a) The amendment addresses an obvious technical mistake in mapping transition areas and an identified deficiency in attempting to identify the general areas where transitions between land uses are anticipated.
- (b) It is consistent with the overall intent of the Comprehensive Plan, including the Community Vision for the Town’s overall parks network and trail systems.

NOW, THEREFORE, BE IT RESOLVED BY THE SEVERANCE PLANNING COMMISSION:

Section 1. The Planning Commission hereby approves the Comprehensive Plan Amendment, which includes the revised Future Land Use Plan map and an updated Parks and Trails Map, attached hereto as **Exhibit A**. Copies of the revised Comprehensive Plan Amendment have been and will be made available for public inspection at the Severance Town Hall, located at 3 S. Timber Ridge Parkway, Severance, Colorado 80550, during regular business hours.

Section 2. In accordance with C.R.S. § 31-23-208, this Resolution, when attached to the Future Land Use Plan, shall serve to document the Comprehensive Plan Amendment's approval by the Planning Commission.

Section 3. Following ratification and approval of the Comprehensive Plan Amendment by the Town Council as required by C.R.S. § 31-23-206(1), the Town Manager shall cause to be sent a certified and attested copy of the Comprehensive Plan Amendment to the Board of County Commissioners of Weld County. Attachment by the Town Manager of a certified copy of this Resolution and a copy of the Town Council resolution ratifying the Comprehensive Plan Amendment shall constitute certification and attestation of the Comprehensive Plan Amendment.

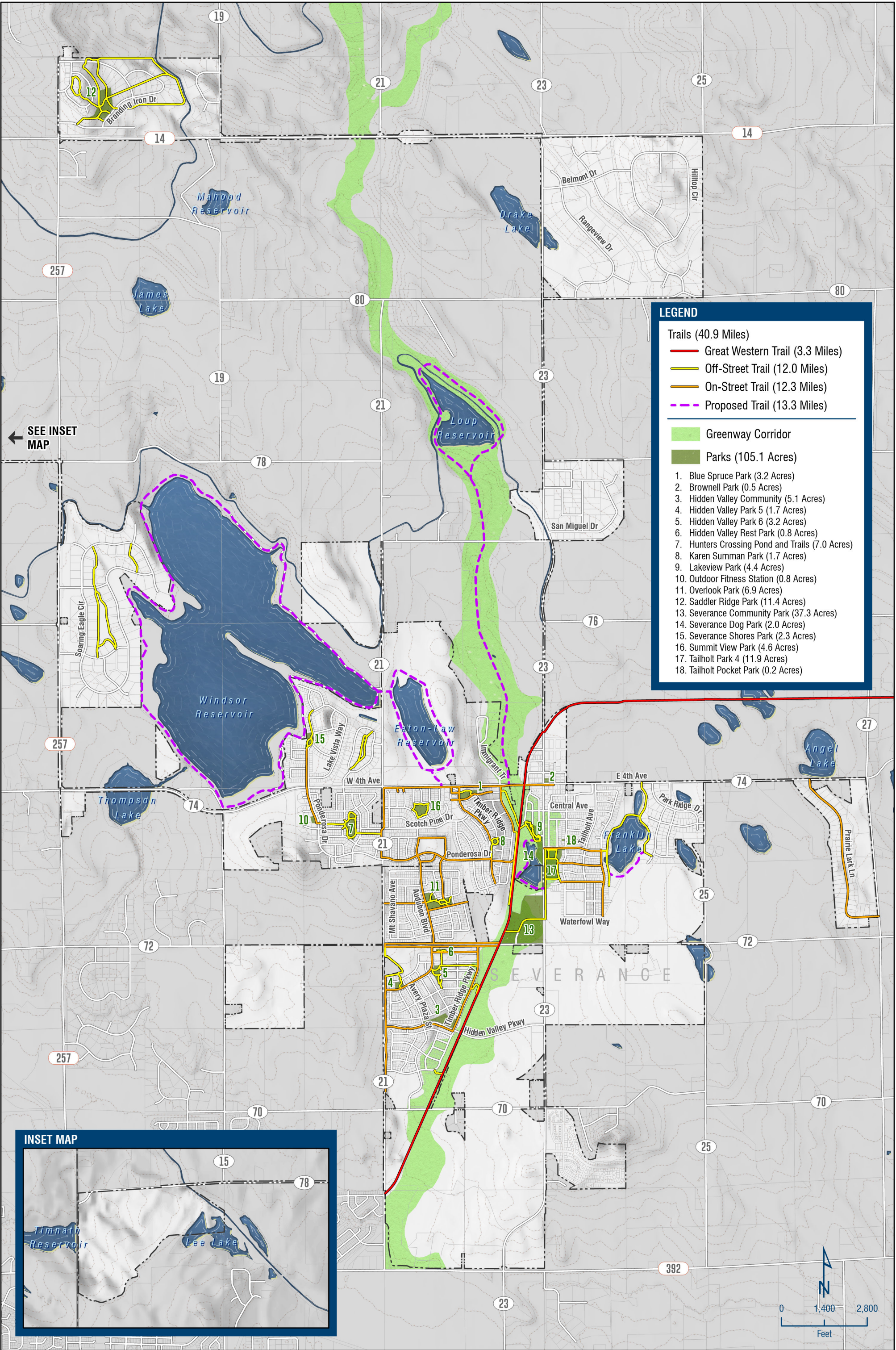
PASSED AND ADOPTED this 19th day of April, 2023.

Chairperson

ATTEST:

Town Clerk

EXHIBIT A
Comprehensive Plan Amendment
(See next Page)



LEGEND

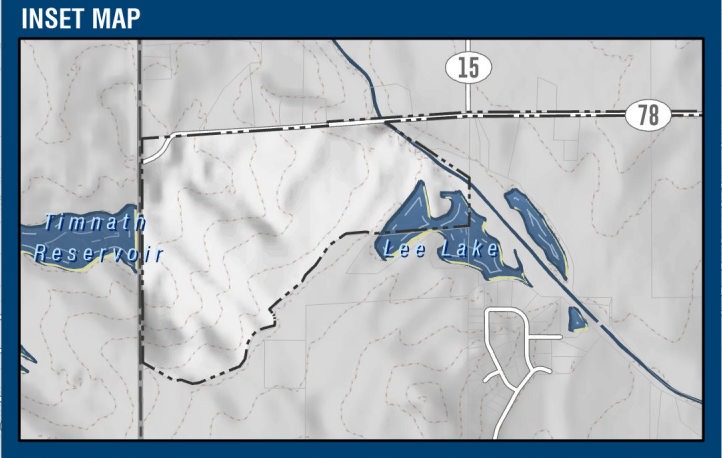
Trails (40.9 Miles)

- Great Western Trail (3.3 Miles)
- Off-Street Trail (12.0 Miles)
- On-Street Trail (12.3 Miles)
- Proposed Trail (13.3 Miles)

Greenway Corridor

Parks (105.1 Acres)

- Blue Spruce Park (3.2 Acres)
- Brownell Park (0.5 Acres)
- Hidden Valley Community (5.1 Acres)
- Hidden Valley Park 5 (1.7 Acres)
- Hidden Valley Park 6 (3.2 Acres)
- Hidden Valley Rest Park (0.8 Acres)
- Hunters Crossing Pond and Trails (7.0 Acres)
- Karen Summan Park (1.7 Acres)
- Lakeview Park (4.4 Acres)
- Outdoor Fitness Station (0.8 Acres)
- Overlook Park (6.9 Acres)
- Saddler Ridge Park (11.4 Acres)
- Severance Community Park (37.3 Acres)
- Severance Dog Park (2.0 Acres)
- Severance Shores Park (2.3 Acres)
- Summit View Park (4.6 Acres)
- Tailholt Park 4 (11.9 Acres)
- Tailholt Pocket Park (0.2 Acres)





AGENDA ITEM SUMMARY

AGENDA ITEM	SUBMITTED BY	PRESENTED BY
PUBLIC HEARING Pg Resolution PC- 2023-04R: A Resolution of The Severance Planning Commission recommending approval of Site Development Plan for certain real property located within The Town of Severance	Abdul Barzak, Town Planner	Abdul Barzak, Town Planner
ACTION REQUESTED		
Community & Economic Development and Town Management ask that the Severance Planning Commission review, discuss, and take action on Resolution PC-2023-04R and forward a recommendation to the Town Council on the Clearview Library Site Plan. Actions that may be taken: 1. Approve PC-2023-04R and forward a recommendation of approval to the Town Council for the Clearview Library Site Plan subject to the conditions listed therein. 2. Take No Action.		<u>Resolution</u> <u>Attorney Approved</u> <u>Action Requested</u>
BRIEF SUMMARY		
The Clearview Library District has submitted a site plan to construct a new 9,735 square foot branch library on the proposed site located at 7 Timber Ridge Parkway.		
PUBLIC SUPPORT/CONCERN		
Residents have provided support for this project.		
ANALYSIS AND RECOMMENDATION		
Town staff is asking for the Planning Commission to review, discuss, and approve Resolution PC-2023-04R and forward a recommendation of approval to Town Council for the Clearview Library Site Plan project.		
MATERIALS SUBMITTED		
The following materials were submitted and included in this packet: 1. Town Review Form (Generated by Town Staff) 2. Engineering Memo (Staff Generated) 3. Letter of Intent (Applicant Submitted) 4. Site Plan (Applicant Submitted, Staff Reviewed) 5. Traffic Impact Study (Applicant Submitted, Staff Reviewed) 6. Legal Description (Submitted By Applicant, reviewed by Town Staff) 7. Combined Referral Comments 8. Resolution PC-2023-04R Clearview Site Plan		



Town of Severance Review Comments

Date: 9.15.22 Resubmitted 12.19.22, 2.27.2023, 4.7.2023

Project Name/Contact: Clearview Library Site Plan & Replat/Ann Kling

Project Address: 5 Timber Ridge Parkway

Customer/Project Number: 275 – Clearview Library District

Review Number: 4th Submittal

Project Coordinator: Abdul Barzak, Town Planner

Recipients:

- ☒ MANAGEMENT
- ☒ PLANNING
- ☒ ENGINEERING
- ☒ TRAFFIC
- ☒ TOWN ATTORNEY
- ☒ PUBLIC WORKS
- ☒ POLICE
- ☒ BUILDING
- ☐ OTHER

The following comments must be addressed in order to proceed with the development process. All subsequent submittals should be submitted electronically.

Please submit a revised document addressing all comments along with a comment response letter to the project coordinator. Large plan sets should be submitted through Dropbox and a link provided.

With the project resubmittal, please indicate whether or not the change was made and provide a response as applicable. Please contact me if you have any questions.

Project Coordinator – Abdul Barzak, Town Planner, Town of Severance

Item 1	Applicant to address Staff Redlines and Comments	Resolved?
Notes	Applicant to address all Staff comments and redlines - Civil - Legal	☐ YES ☒ NO ☐ SEE ATTACHED
Applicant Response	Adressed. See redline markups for details.	
Item 2	Development Agreement	Resolved?
Notes	Prior to scheduling of public meetings, the applicant will need to finalize a Development Agreement with Town Staff.	☐ YES ☒ NO ☒ SEE ATTACHED
Applicant Response	Submitted under separate response.	

Item 4	Lot Line Adjustment	Resolved? ☐ YES ☒ NO ☒ SEE ATTACHED
Notes	Please make adjustments to this LLA per Town Civil and Town Legal Comments as soon as possible and return to Town Staff to finalize. As this has administrative authority this must be completed prior to public hearings for the site plan.	
Applicant Response	Completed per email confirmation 3-31-23.	
Notes		
Item 5	Reciprocal Access Easement	Resolved? ☐ YES ☒ NO ☒ SEE ATTACHED
Notes	There is an existing 45' wide Utility, Drainage, & Access Easement for the Private Drive east of the Library Lot. This easement needs to be extended to the south property line for the Library Lot and Lot 3 of Summit View Subdivision Fifth Filing. This proposed easement can be dedicated by separate document. See Engineering Item #5. Town Attorneys office has provided a Reciprocal Access Easement template. Applicant will be responsible for preparing a metes and bounds legal description and exhibit for the proposed easement. Please make adjustments to the legal descriptions per civil comments and provide a redline version of the Reciprocal Access Easement	
Applicant Response	LEGAL DESCRIPTION ADJUSTMENTS ADDRESSED AND COMPLETED PER EMAIL CONFIRMATION 3-31-23. RECIPROCAL ACCESS AGREEMENT REDLINES ADDRESSED DIRECTLY BETWEEN TOWN LEGAL AND CLEARVIEW LEGAL TEAMS.	
Notes		
Item 6	Striping Plan	Resolved? ☒ YES ☐ NO ☐ SEE ATTACHED
Notes	Striping Plan is needed see Traffic Engineering Item #1 below.	
Applicant Response	Striping Plan has been added.	
Notes	No further comments	
Item 7	Referral Comments	Resolved? ☒ YES ☐ NO ☐ SEE ATTACHED
Notes	Applicant to provide response to all received referral/stakeholder comments	
Applicant Response	ALL RESPONSES CAPTURED WITHIN THIS DOCUMENT.	
Notes	No further comments.	

Town Management – Nick Wharton & Lindsay Radcliff-Coombes, Town Management , Town of Severance

Item 1	No Comment	Resolved? ☒ YES ☐ NO ☐ SEE ATTACHED
Notes	No comments at this time	
Applicant Response		
Notes		

Planning – Josh Olhava & Logan Graves, Community Planner , Ayres Associates

Item 1	Landscaping	Resolved?
Notes	Deciduous tree “Quercus bicolor” is a chlorotic species. Please replace with a recommended deciduous tree from the Town of Severance's Tree List.	☒ YES ☐ NO ☐ SEE ATTACHED
Applicant Response	UNDERSTOOD. SEE REVISED LANDSCAPE PLAN.	
Notes	No further comments.	
Item 2	Landscaping	Resolved?
Notes	Please replace tree species ‘Picea engelmannii’ with a more readily available spruce from the recommended tree list.	☒ YES ☐ NO ☐ SEE ATTACHED
Applicant Response	UNDERSTOOD. SEE REVISED LANDSCAPE PLAN.	
Notes	No further comments.	
Item 3	Landscaping	Resolved?
Notes	If a fence is not planned for the western property line abutting the residential lots, additional landscaping may be necessary to properly shield the residential lots from potential impacts. Incorporate year-round landscaping in this area that includes shrubs.	☒ YES ☐ NO ☐ SEE ATTACHED
Applicant Response	UNDERSTOOD. SEE REVISED LANDSCAPE PLAN.	
Notes	No further comments.	
Item 4	Open Space	Resolved?
Notes	Please include a narrative of the proposed outdoor spaces. What amenities and features will be incorporated into the open spaces? Specify how these areas can be used and who the spaces will be designed for? These areas should be designed to engage all residents (young and old) and should be tied back to the development theme. Are there ways to incorporate musical features, art features, and educational/learning features into the open space areas? This includes any balconies, patios, play areas, seating areas, or large areas of empty turf.	☒ YES ☐ NO ☐ SEE ATTACHED

Applicant Response	Overall landscape character/ theming The development theme for the project matches the agrarian architecture and culture of the area with emphasis on informal xeric landscape, pollinator plantings and low water use landscapes. Outdoor spaces incorporate agrarian style elements such as flagstone pavement, wood rail fencing and natural landscape features. Irrigated bluegrass is limited to the childrens play area and within the tree lawn along the private drive. Irrigated short grass native grasses mixed with wildflowers and forbes are planned within the large open turf areas. Rock mulch is used within the landscape beds. Reading Patio North of the building an outdoor reading patio is planned. The patio will incorporate flagstone paving, 2 harvest bench style tables and a concrete seatwall for informal gathering and to act as a buffer from the road. The space acts as an extension to the interior programming of the library.	
Notes	No further comments.	
Item 5	Open Space	Resolved?
Notes	Use xeriscape elements with low water use plants for passive open space areas.	☒ YES ☐ NO ☐ SEE ATTACHED
Applicant Response	UNDERSTOOD. SEE REVISED LANDSCAPE PLAN.	
Notes	No further comments.	
Item 6	Open Space	Resolved?
Notes	Could the area south of the children's play area be further enhanced by adding an amenity or programming the space?	☒ YES ☐ NO ☐ SEE ATTACHED

Applicant Response	Childrens Outdoor Play Garden South of the building a children's play garden has been planned. This space is intended for informal play and exploration in a safe environment. This space is contained by a three rail wood fence and gate to separate use from the parking and rests of the site. Log clusters, log borders and boulders are utilized throughout as landscape features with play value. A small turf area is planned for kids to run around and play games. Tables and benches are located within a flagstone patio and along a crusher fines walk for educational opportunities and for seating for residents of all ages. Landscape is designed to provide year round interest, color and to support pollinator species. Landscape themes are focused on the agrarian character. We are providing future opportunity within this space for sculptures, musical instruments, and educational features as the community grows into the library. The area south of the children's play area is identified as natural restoration utilizing short grass native species mixed with wildflowers and forbes. Additional amenities and programming is not currently planned and can be provided as the community grows into the library and as needs dictate further development. Currently additional amenities are not within budget.	
Notes	No further comments.	
Item 7	Site Features	Resolved?
Notes	Because this particular use will act as a civic space and a community destination for residents, there should be a site element unique to Severance. This may include outdoor art, sculptures, a unique gathering space, a mural, etc. Please describe the unique feature in the narrative or as part of the site plan. The Riverside Library in Evans, Colorado is a good example of how to incorporate public art.	☒ YES ☐ NO ☐ SEE ATTACHED
Applicant Response	Understanding that this particular use will act as a civic space and a community destination for residents, a site element unique to Severance will be developed as part of a future project as the community grows into the library. Potential elements that have been discussed may include outdoor art, sculptures, a unique gathering space, a mural, etc.	
Notes	No further comments.	
Item 8	Landscape Plan	Resolved?
Notes	Please show sight distance triangles on the landscaping plan.	☒ YES ☐ NO ☐ SEE ATTACHED
Applicant Response	SIGHT DISTANCE TRIANGLES ADDED.	
Notes	No further comments.	
Item 9	Bike amenities	

Notes	Add bike racks to the site. These must be easily accessible considering commonly used transportation networks.	Resolved? ☒ YES ☐ NO ☐ SEE ATTACHED
Applicant Response	BIKE RACKS ADDED.	
Notes	No further comments.	
Item 10	Parallel Parking	Resolved? ☒ YES ☐ NO ☐ SEE ATTACHED
Notes	Please clarify the use of the three parallel parking spaces on the eastern side of the building. Are these traditional parking spots, short-term spots, or pick-up/drop-off spots?	
Applicant Response	THESE ARE TRADITIONAL PARKING SPACES.	
Notes	No further comments.	Resolved? ☒ YES ☐ NO ☐ SEE ATTACHED
Item 11	Parking	
Notes	Provide information on how you determined the minimum parking spaces needed. Label the number of parking spaces on the site plan.	
Applicant Response	GREELY STANDARDS WERE USED PER ABDUL'S DIRECTION. PARKING COUNTS ADDED TO SITE PLAN SHEET. 1/300SF FOR LIBRARIES. 33 SPACES REQUIRED AND 33 SPACES ARE PROVIDED.	
Notes	Section 16.9.40 of the SMC does not have a specific parking requirement for libraries, the applicant is requesting of Town Council to utilize 1/300 sf for the library. Town staff feels comfortable with this request as the City of Greeley (Weld County) has a 1/300 sf requirement for libraries. The Town of Timnath (Larimer/Weld) has a 2.5/1000 sf requirement for libraries. This is NOT a variance as the SMC states, "For uses not included in the above list, the review process shall determine the appropriate parking requirements." In the review process staff looked at neighboring communities and asked the applicant to design to the stricter standard. 33 Spaces have been provided. $(9,717\text{SF} / 300 = 33)$	Resolved? ☒ YES ☐ NO ☐ SEE ATTACHED
Item 12	Hard Surface Materials	
Notes	Please include hard surface materials in a key on the site plan.	
Applicant Response	HARD SURFACE MATERIAL KEY ADDED TO SITE PLAN.	
Notes	No further comments.	Resolved? ☒ YES ☐ NO ☐ SEE ATTACHED
Item 13	Ped Amenities	
Notes	Will there be a crossing treatment/ variation in material that connects the sidewalk running along the ADA parking stalls to the public sidewalk?	
Applicant Response	PEDESTRIAN CROSSWALK SHOWN	Resolved? ☒ YES ☐ NO ☐ SEE ATTACHED
Notes	No further comments.	
Item 14	Fencing	Resolved? ☒ YES ☐ NO
Notes	Will there be fencing anywhere along the perimeter of the site?	

Applicant Response	THERE WILL NOT BE PERIMETER FENCING.	☐ SEE ATTACHED
Notes	No further comments.	
Item 15	Elevations	Resolved?
Notes	Please include an exhibit that shows the elevations in color.	☒ YES ☐ NO ☐ SEE ATTACHED
Applicant Response	SEE INCLUDED COLORED ELEVATIONS.	
Notes	No further comments.	
Item 16	Elevations	Resolved?
Notes	The building should incorporate 4-sided design, so no matter what view you have of the building, the design is perceived as a coordinated part of a unified whole. Specifically, all sides need to exhibit the same quality, continuity, and durability of design including the same primary and secondary materials. Please revisit.	☒ YES ☐ NO ☐ SEE ATTACHED
Applicant Response	ALL ELEVATIONS HAVE BEEN DESIGNED EQUALLY WITH CONTINUITY OF MATERIAL, DETAIL, AND ARTICULATION. ACCENT MOMENTS HAVE BEEN INCORPORATED TO EMPHASIZE THE MAIN ENTRY AND COMMUNITY LIVING ROOM FROM THE EXTERIOR.	
Notes	No further comments.	
Item 17	Architectural Details	Resolved?
Notes	Incorporate awnings where appropriate to create more visual interest.	☒ YES ☐ NO ☐ SEE ATTACHED
Applicant Response	SOUTH ELEVATION INTEREST IS DRIVEN BY THE LARGE COMMUNITY PORCH AND STRUCTURAL COLUMN DETAIL. NORTH ELEVATION INTEREST IS DRIVEN BY THE VARIATION IN ROOF HEIGHT AND RED METAL MASSING. EAST AND WEST ELEVATION INTEREST IS DRIVEN BY CAREFUL STUDY OF ROOF SLOPES TO CREATE ASYMMETRICAL BUILDING MASSING INFLUENCED BY THE REGIONAL AGRARIAN ARCHITECTURAL STYLE. ALL ELEVATIONS CREATE INTEREST THROUGH VARIATION IN METAL SIDING COLOR AND METAL PANEL PROFILE ARTICULATION. NOTE THAT METAL PANEL PROFILE ARTICULATION IS NOT DEPICTED WITHIN THE ELEVATIONS DUE TO LEVEL OF DETAIL.	
Notes	No further comments.	
Item 18	Architectural Details	Resolved?
Notes	Please add additional architectural features to all elevations such as offsets, insets, bays, etc. to add a variety of depths to the wall planes.	☒ YES ☐ NO ☐ SEE ATTACHED
Applicant Response	SEE PREVIOUS COMMENT IN ITEM 17. ROOF EAVE HEIGHT VARIES ACROSS ELEVATIONS. MATERIALITY TRANSITIONS BREAK	

	DOWN THE BUILDING MASSING. STRUCTURAL COLUMNS AND COMMUNITY PORCH ADD UNIQUE TEXTURE TO THE SOUTH ELEVATION. EACH SIDE OF THE BUILDING BRINGS A DIFFERENT FEEL TO THE ARCHITECTURE WHILE RELATING TO THE OVERALL AGRARIAN DESIGN INSPIRATION TO MAKE THE PROJECT FEEL COHESIVE.	
Notes	No further comments.	
Item 19	Theme	Resolved?
Notes	Please provide a narrative that describes how the building evokes a sense of agrarian tradition and complements the Town's character.	☒ YES ☐ NO ☐ SEE ATTACHED
Applicant Response	THE DESIGN OF THE LIBRARY IS DEEPLY INSPIRED BY THE LOCAL AGRARIAN THEMES. THE DESIGN INTENT WAS TO BE INSPIRED BY TRADITIONAL AGRARIAN MASSING AND MATERIALS AND UTILIZE A REFINED DETAILING AND LEVEL OF QUALITY TO CLEARLY DISTINGUISH THIS BUILDING AS A SPECIAL COMMUNITY MOMENT. METAL SIDING TRADITIONALLY USED ON AGRARIAN BUILDINGS IS UTILIZED ACROSS ALL ELEVATIONS WITH THE REFINEMENT BEING CAREFULLY PROPORTIONED COLORED BANDS WITH HIGHLY ARTICULATED PROFILE VARIATION. THE BUILDING FORM DRAWS UPON TRADITIONAL POLE BARN FORMS WITH AN ASYMMETRICAL MODIFICATION TO CREATE INTEREST. OVERHANDING ROOF EAVES FURTHER ADD SHADOW INTEREST AND ARCHITECTURAL DETAIL.	
Notes	No further comments.	
Item 20	Roof Forms	Resolved?
Notes	Steep pitched roofs are encouraged, and the roof forms should be better articulated with changes in plane and elevations.	☒ YES ☐ NO ☐ SEE ATTACHED
Applicant Response	THE NORTH AND SOUTH ELEVATIONS HAVE ROOF STEPS AND TRANSITIONS TO BREAK UP THE MASSING. THE EAST AND WEST ELEVATIONS HAVE ASYMMETRICAL ROOF SLOPES AS WELL AS ROOF EAVE OVERHANGS TO CREATE VARIATION AND INTEREST. THE ROOF SLOPES SHOWN WERE INSPIRED BY LOCAL AGRARIAN ARCHITECTURAL EXAMPLES.	
Notes	No further comments.	
Item 21	Building Materials	Resolved?
Notes	The metal panels cannot be the primary building material. Please provide percentages of building materials being used on exterior of building.	☒ YES ☐ NO ☐ SEE ATTACHED
Applicant Response	DISCUSSIONS WITH THE TOWN, LIBRARY STAFF, AND COMMUNITY LED THE LIBRARY DESIGN'S EXTERIOR MATERIAL INFLUENCE AND SELECTION. THE DESIGN INTENT THESE GROUPS WANTED TO ACHIEVE WAS TO BE DEEPLY INSPIRED BY	

	FUNCTIONAL AGRARIAN ARCHITECTURAL BUILDINGS SUCH AS SILOS AND POLE BARN. THE GENERAL RURAL INDUSTRIAL FEEL THESE BUILDINGS CREATE HAS A RICH HISTORY WITHIN THE AREA IN ADDITION TO CREATING A LONG LASTING MAINTENANCE FREE CONDITION THAT IS BENEFICIAL TO BOTH THOSE WORKING THE LAND AND THOSE MAINTAINING A LIBRARY. WE ARE CELEBRATING THE METAL PANEL MATERIALITY OF THE REGION THROUGH CAREFUL STUDY AND USE OF THE VARIOUS PROFILED AND COLORED METAL PANELS TO CREATE A REFINED AND DISTINGUISHED EXTERIOR FEEL. NO PORTION OF THE BUILDING WILL FEEL LIKE A BLANK CONTINUOUS WALL. INTEREST WILL BE CREATED AT EACH MATERIAL TRANSITION AND MASSING CHANGE. MOMENTS OF NATURAL STONE ACCENT HAVE BEEN ADDED TO THE MAIN ENTRY AND NORTH PATIO AREAS. THESE ARE LOCATIONS THAT PATRONS WILL FREQUENTLY EXPERIENCE THIS MATERIAL AND CREATE A UNIQUE MOMENT. 13% OF THE EXTERIOR IS NATURAL STONE WITH THE REMAINDER BEING VARIOUS COLORS AND PROFILES OF METAL PANEL.	
Notes	No further comments. Per email from town planner 1/27/2023 this comment is considered resolved.	
Item 22	Replat	Resolved?
Notes	Please see engineering and legal comments/ redlines.	☒ YES ☐ NO ☐ SEE ATTACHED
Applicant Response	UNDERSTOOD. SEE UPDATED DRAWING REFLECTING COMMENTS.	
Notes	No further comments.	

Civil Engineering – Chris Messersmith & Amber Messersmith , P.E , Colorado Civil Group, Inc.

Item 1	Please see attached Memo and Redlines	Resolved?
Notes	Engineering Comment Memo and all Redlines are included in the dropbox link: https://www.dropbox.com/scl/fo/7mxh6sm64hjq7e1v3cv4/h?dl=0&rlkey=6ksalem59i1gkitblofzxwa9e	☐ YES ☒ NO ☒ SEE ATTACHED
Applicant Response	Redlines and notes in memo addressed in attached submittal.	
Notes		
Item 2	Potable Water	Resolved?
Notes	The potable water for this project will be provided by the Town of Severance. This anticipated demand ranges from 1,346 gallons per day (GPD) (average day demand, ADD) to	☐ YES ☒ NO ☐ SEE ATTACHED

	4,622 GPD (max day demand, MDD) based on data provided by the applicant and the Clearview Library District Windsor location water usage trends. The anticipated annual usage is 491,349 gallons per year, based on data provided by the applicant. This usage aligns with a 1" water meter which requires 2.5 ERU's and yields an allotment of 512,500 gallons per year. Town staff understands at 2.0 ERU's are currently available for this development. Town staff will provide additional water system capacity information at the Planning Commission and Town Council meetings.	
Applicant Response	UNDERSTOOD. LIBRARY HAS REQUESTED A WAIVER FOR ADDITIONAL ERU REQUIREMENTS.	
Notes		
Item 3	Sanitary Sewer	Resolved? ☐ YES ☒ NO ☐ SEE ATTACHED
Notes	The wastewater from this project will be directed to the Town of Severance Wastewater Treatment Facility (WWTF). This project is expected to contribute 151 gallons per day (GPD) of wastewater, based on data provided by the applicant. In January 2023, the WWTF operated at maximum of 94.3% of the permitted capacity. The WWTF remaining capacity is 8,796± GPD, which can accommodate this project.	
Applicant Response	NOTED.	
Notes		

Traffic Engineering – Eli Farney, P.E, PTOE, JR Engineering, LLC

Item 1	Striping Plan	Resolved? ☒ YES ☐ NO ☐ SEE ATTACHED
Notes	The library will add trips to the eastbound left (EBL) turn movement at Timber Ridge Parkway and the Town Hall driveway. The library shall be responsible for modifying the existing double yellow striping in Timber Ridge Parkway. The striping within the intersection should be pulled back to make it more conducive to the EBL turn movement. The applicant shall provide a striping plan for the Town to review.	
Applicant Response	The striping in this location has been coordinated with the Traffic Engineer and the Town and has been modified accordingly. A striping plan for this intersection is included in the resubmittal.	
Notes	No further comments	

Town Attorney – Keith Martin, Attorney, Hayashi & Macsalka, LLC

Item 1	Plat and Site Plan	Resolved?
Notes	See annotated plat and site plan set for comments. The reciprocal easement legal exhibit also references Lot 4, when it should be Lot 1A per the plat.	☐ YES ☒ NO ☐ SEE ATTACHED
Applicant Response	Completed per email confirmation 3-31-23.	
Notes		
Item 2	Water Dedication	Resolved?
Notes	ERU value for development is 2.5 or 491,349 gal/yr. Applicant has been given a credit for 2 C-BT units. C—BT quota yield is .5 AF/unit, which means that 2 C-BT shares only equates to approx. 391,021.2 gal of water (using yield of 0.6 AF/unit). Based on TAO calculation, Applicant is at the very least 100,328 gal short on raw water dedication. Staff should confirm precise shortfall and condition approval of both plat and SDP on dedication of 1 C-BT share or whatever amount equates to shortfall.	☐ YES ☒ NO ☐ SEE ATTACHED
Applicant Response	UNDERSTOOD. LIBRARY HAS REQUESTED A WAIVER FOR ADDITIONAL ERU REQUIREMENTS.	
Notes		
Item 3	Reservation	Resolved?
Notes	Town Attorney's Office reserves the right to make new or additional comments after re-submittal or based upon other referral agency comments.	☐ YES ☒ NO ☐ SEE ATTACHED
Applicant Response	UNDERSTOOD	
Notes		

Public Works – John Zacklene, Public Works Director, Town of Severance

Item 1	Road Base	Resolved?
Notes	A minimum of 8 inches of road base under all the asphalt due to the extensive clay	☒ YES ☐ NO ☐ SEE ATTACHED
Applicant Response	UNDERSTOOD.	
Notes	No further comments.	
Item 2	Landscaping	Resolved?
Notes	Keep trees more than 6 ft from the walkways, ADA, and play areas.	☒ YES ☐ NO ☐ SEE ATTACHED
Applicant Response	UNDERSTOOD.	
Notes	No further comments.	

Police – Chief Gerdeman, Chief of Police, Severance Police

Item 1	No comments	Resolved?
Notes	No comments at this time	☒ YES ☐ NO ☐ SEE ATTACHED
Applicant Response	NO ACTION.	

Building Department– Russ Weber, Chief Building Official, SAFEbuilt

Item 1	No Comments at this time	Resolved?
Notes	No comments on the site plans at this time	☒ YES ☐ NO ☐ SEE ATTACHED
Applicant Response	NO ACTION.	

Please revise the plans accordingly and respond to all of the above action items in the **Applicant Response** boxes provided at your earliest convenience.

Once the project is resubmitted it will be referred out as necessary and any outstanding issues will be addressed with a comment response.

If you should have any questions, please contact me at 970-692-1556, or email.

Thank you,



Abdul Barzak

Town Planner

abarzak@townofseverance.org

Town of Severance

3 South Timber Ridge Parkway

PO BOX 339

Severance, CO 80546

970-692-1556

TO: Mr. Nick Wharton, Severance Town Manager
Ms. Lindsay Radcliff-Coombes, Severance Deputy Town Manager
Mr. Bill Cornelius, Severance Community Development Director
Mr. Abdul Barzak, Severance Town Planner

FROM: Chris Messersmith, Colorado Civil Group, Inc.
Amber Messersmith, Colorado Civil Group, Inc.

DATE: March 14, 2023

SUBJECT: Clearview Library District Site Plan & Plat (Lot Line Adjustment)

CCG PROJECT NO: 0042.0022.00

TOWN CUSTOMER ID: 275

We have completed our review of the Clearview Library District Site Plan and Plat (Lot Line Adjustment) 3rd submittal package that was received on February 28, 2023. The following items were included with the re-submittal package (typically reviewed by engineering):

- Drainage Compliance Letter & Drainage Plan
- Utility Report
- Final Plat (Lot Line Adjustment)
- Site Plan Set
- Metes and Bounds Legal Description for Easement (Lot 3)
- Metes and Bounds Legal Description for Easement (Lot 4)
- Response to Comment Memo
- Response to Redlines

We offer the following engineering comments:

General:

1. The property is located west of Town Hall on commercial Lots 1 & 4 of Summit View Subdivision Fifth Filing. A Lot Line Adjustment will change Lots 1 & 4 to a single lot with this application.
2. The letter of intent states that the library building will be 1-story with approximately 10,000 square feet. The TIS mentions a future building expansion of 15,000 square feet. This expansion is not shown in the Site Plan set and would require a new (future) Site Plan Application.
3. Potable Water – The potable water for this project will be provided by the Town of Severance. This anticipated demand ranges from 1,346 gallons per day (GPD) (average day demand, ADD) to 4,622 GPD (max day demand, MDD) based on data provided by the applicant and the Clearview Library District Windsor location water usage trends. The

anticipated annual usage is 491,349 gallons per year, based on data provided by the applicant. This usage aligns with a 1" water meter which requires 2.5 ERU's and yields an allotment of 512,500 gallons per year. Town staff understands at 2.0 ERU's are currently available for this development. Town staff will provide additional water system capacity information at the Planning Commission and Town Council meetings.

4. Sanitary Sewer – The wastewater from this project will be directed to the Town of Severance Wastewater Treatment Facility (WWTF). This project is expected to contribute 151 gallons per day (GPD) of wastewater, based on data provided by the applicant. In January 2023, the WWTF operated at maximum of 94.3% of the permitted capacity. The WWTF remaining capacity is 8,796± GPD, which can accommodate this project.
5. Drainage – An existing off-site detention pond is located on the south edge of the property and is intended to serve this project.
6. Easements – There is an existing 45' wide Utility, Drainage, & Access Easement for the Private Drive east of the Library Lot. This easement needs to be extended to the south property line for the Library Lot 1A and Lot 3 of Summit View Subdivision Fifth Filing. These proposed easements can be dedicated by separate document. The Town will prepare the Easement Agreement for the Applicant's review. *The metes and bounds legal descriptions and exhibits were submitted for the proposed easements. Per the Town Attorney Comments, the Plat will be recorded before the Easement Agreements; therefore, the reference to Lot 4, Summit View Subdivision Fifth Filing needs to be changed to Lot 1A, Clearview Library Replat "A" (refer to legal description redlines).*

Title Commitment:

7. A Property Binder with Policy No. PIB25200705.22952718 prepared by Old Republic National Title Insurance Company was provided with a date of September 6, 2022 and indicates the vested owners as:

CLEARVIEW LIBRARY DISTRICT, A GOVERNMENTAL TAXING DISTRICT UNDER THE STATE OF COLORADO

Oil & Gas:

8. According to COGCC website, there are no oil/gas wells or setbacks located on this property.

Drainage Report:

9. A Drainage Compliance Letter titled "CLD Severance Library – Drainage Compliance Letter" prepared by Elevation Consulting Group dated November 30, 2022 was submitted and previously reviewed. We have no further comments.

Utility Report:

10. A Utility Report Memo dated February 13, 2023 prepared by The Ballard Group, Inc. was provided, reviewed, and approved.

Traffic Study:

11. The Traffic Impact Study (TIS) titled "Severance Library Transportation Impact Study" prepared by Delich Associates dated December 16, 2022 was provided. JR Engineering, LLC will review the TIS, and provide comments.
12. A westbound left-turn lane is required at the E Harmony Road/Timber Ridge Parkway intersection. This left turn lane will be added when the property to the north of E Harmony Road is developed and the road is widened to meet the Severance Transportation Masterplan.

Geotechnical Report:

13. A Geotechnical Report titled "Geotechnical Engineering Study and Pavement Thickness Design Proposed Clearview Library Near the Southwest Corner of 4th Avenue and Timber Ridge Parkway Severance, Colorado" prepared by Kumar & Associates, Inc. dated June 24, 2022 was submittal and reviewed.

Final Plat (Lot Line Adjustment)

14. See Plat for minor redlines.

Site Development Plan:

15. Sheet SDP-A1 (Cover) – The Cover Sheet for minor redlines.
16. Due to the size of the project, the Applicant will need to prepare a SWMP report and obtain a CDPHE permit prior to construction. *Per the response to comments a SWMP has been prepared.*
17. Sheet C-200 (Utility Plan) – Refer to redlines for minor comments.
18. Sheets C500-503 (Details) – Replace COG Sanitary Service Detail No. SS-4 with the Town of Severance Sanitary the water details as redlined with the Town of Severance Sanitary Sewer Service Connection Detail SS-A (included in dropbox link). Detail W-B needs to be readable. The City of Greeley has updated their Water and Sewer Design Criteria and Construction Specifications as of January 2023. The Town of Severance needs to review the updated 2023 City of Greeley details and determine which details are appropriate for this project.
19. Refer to the Site Plan Set redlines for any additional comments.

Additional comments can be found on the document redlines, which are listed below and included in the dropbox link below:

<https://www.dropbox.com/scl/fo/7mxh6sm64hjq7e1v3cv4/h?dl=0&rlkey=6ksalem59i1gkitblofzxwa9e>

- 0042.0022.00 FP-LLA Redlines_(2023.03.14).pdf
- 0042.0022.00 SP REDLINES_(2023.03.14).pdf
- 0042.0022.00 LOT 3 EA-LEGAL Redlines_(2023.03.14).pdf
- 0042.0022.00 LOT 4 EA-LEGAL Redlines_(2023.03.14).pdf
- Sanitary Detail SS-A.pdf

Please let us know if you have any questions or comments regarding this memo.

LETTER OF INTENT

Date 2022-08-18

Abdul Barzak
Town Planner
Address
3 South Timber Ridge Parkway
Severance, CO 80546

Re: Clearview Library District – Branch Library

Dear Abdul:

Please be advised that the Clearview Library District intends to construct a new branch Library on the proposed site located at 7 Timber Ridge Parkway. The structure is designed to be 1 story with approximately 10,000sf of area. In addition to this, the Harmony Road design guidelines have been followed regarding setbacks, materiality, and architectural style.

Prior to the start of construction, the project will go through the planning process as well as the building department review.

Sincerely,

Eric Grebliunas

ARCHITECT
RATIO
 1655 Grant Street
 Denver, Colorado 80203
 303-607-0040

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LARSEN STRUCTURAL DESIGN
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 303-913-3543

LANDSCAPE ARCHITECT
DHM DESIGN
900 SOUTH BROADWAY
DENVER, COLORADO 80209
720-763-3966

SHEET ISSUE

[illegible]RATIO

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SHEET TITLE
SITE PLAN

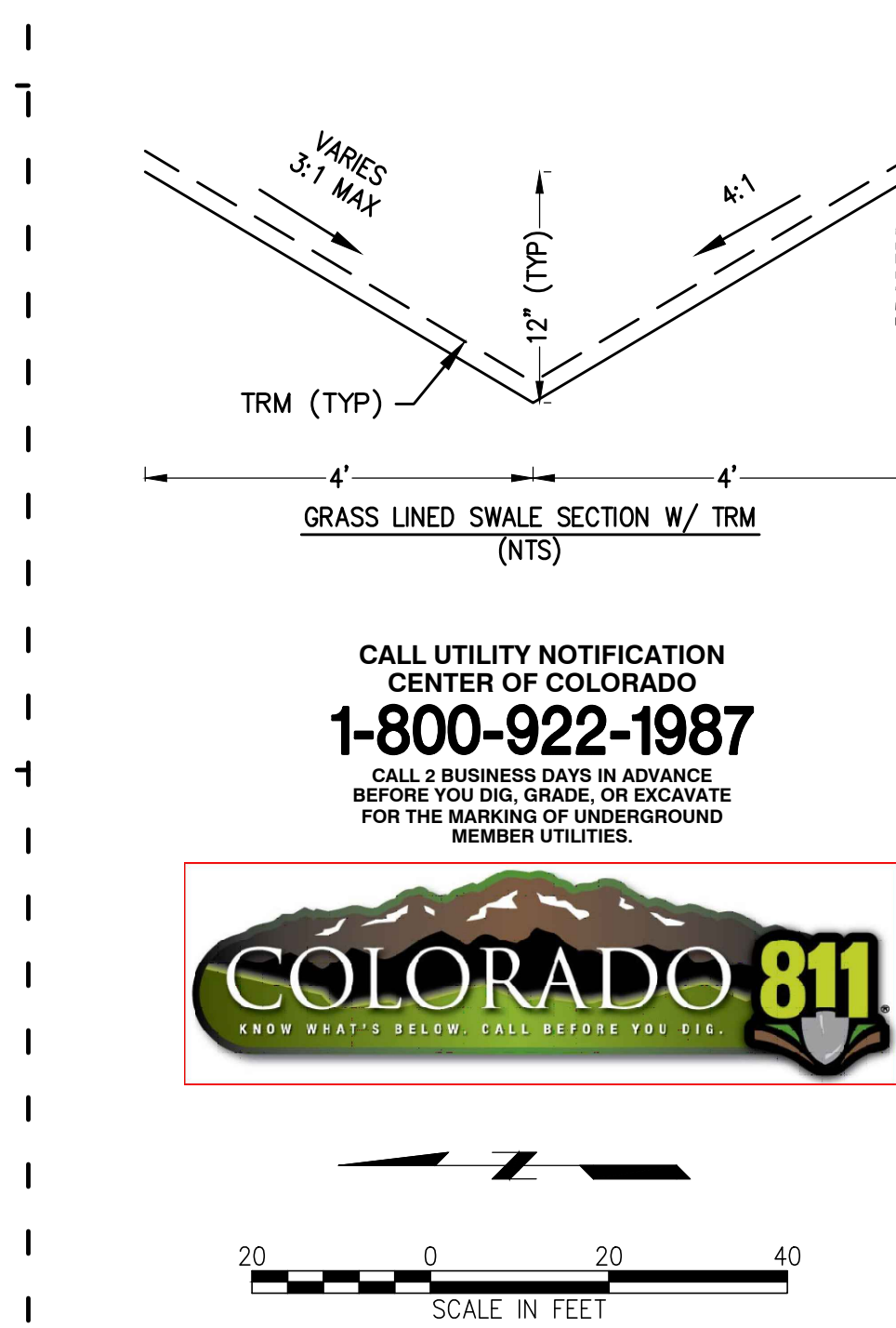
SDP-A2



 ASPHALT (NEW)
 CONCRETE (NEW)
 EXISTING PAVING

<u>BUILDING DATA</u>	
LOT #	LOT # 1A CLEARVIEW LIBRARY REPLAT "A"
USE	PUBLIC LIBRARY
SITE AREA (SF)	___74,920___ (SF) (INCLUDING SHARED DRIVE AISLE)
BUILDING FOOTPRINT (SF)	9735 (SF)
LANDSCAPE / SOFTSCAPE (SF)	___36,030___ (SF)
PAVED / HARDSCAPE (SF)	___29,155___ (SF) (INCLUDING SHARED DRIVE AISLE)
LOT COVERAGE	(MAX ALLOWABLE) / PROPOSED (N/A) / 13%
STORIES	(MAX ALLOWABLE) / PROPOSED (2) / 1
HEIGHT	(MAX ALLOWABLE) / PROPOSED (NA) / < 24'
SETBACKS	(REQUIRED) / PROPOSED
FRONT	(20') / 85' - 2"
REAR	(15') / 134' - 5"
SIDE	(7.5') / 21' - 2" , 55' - 3"
STREET SIDE	(15') / NA
PARKING	(REQUIRED) / PROPOSED
TOTAL SPACES	(33) / 33
STANDARD	(31) / 31
ADA	(2) / 2
BICYCLE	(NOT IDENTIFIED IN CODE - 15% RECOMMENDED PER GREELY DEVELOPMENT CODE) / 5
E.V	NOT PROVIDED

NOT FOR CONSTRUCTION



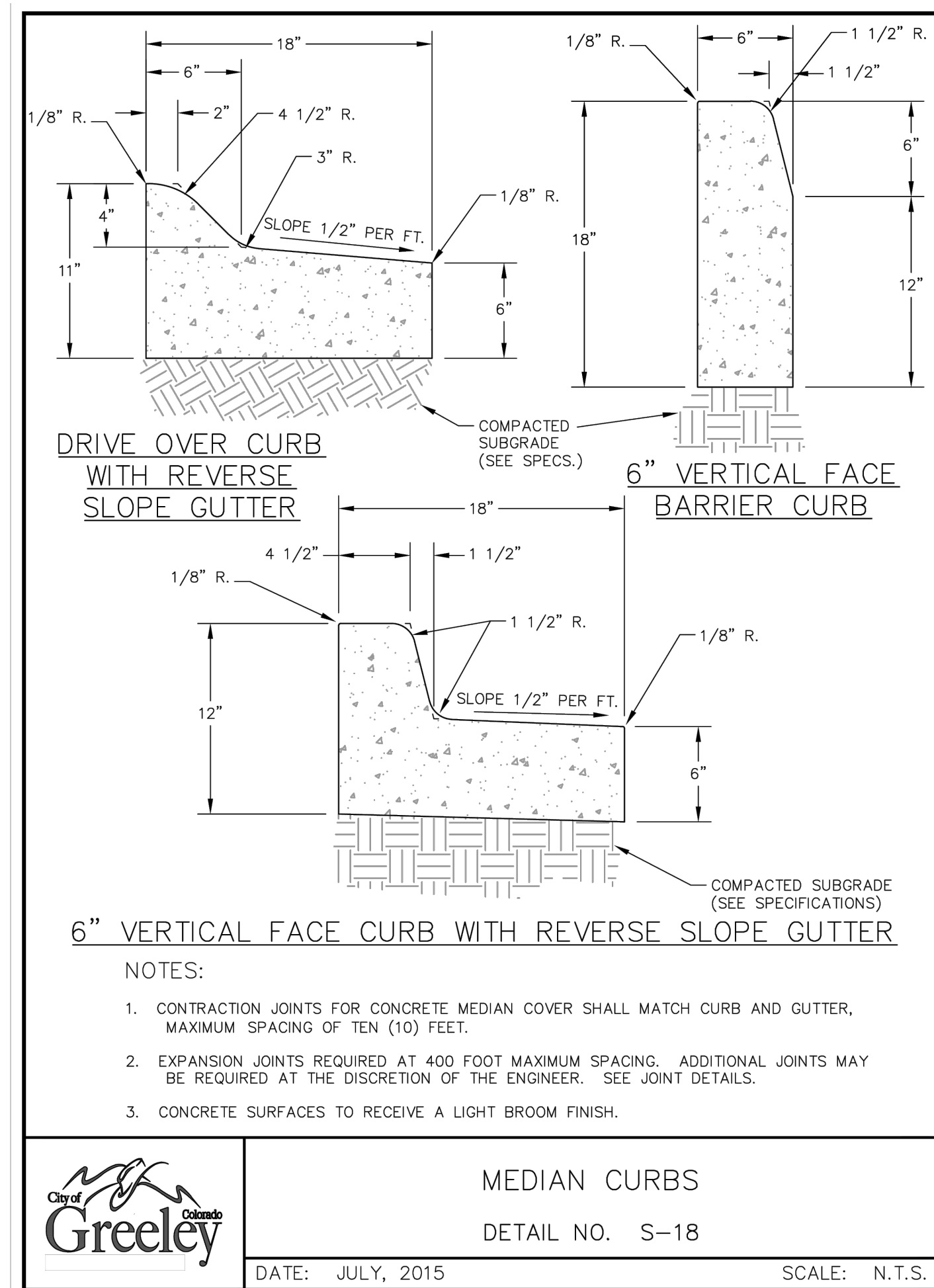
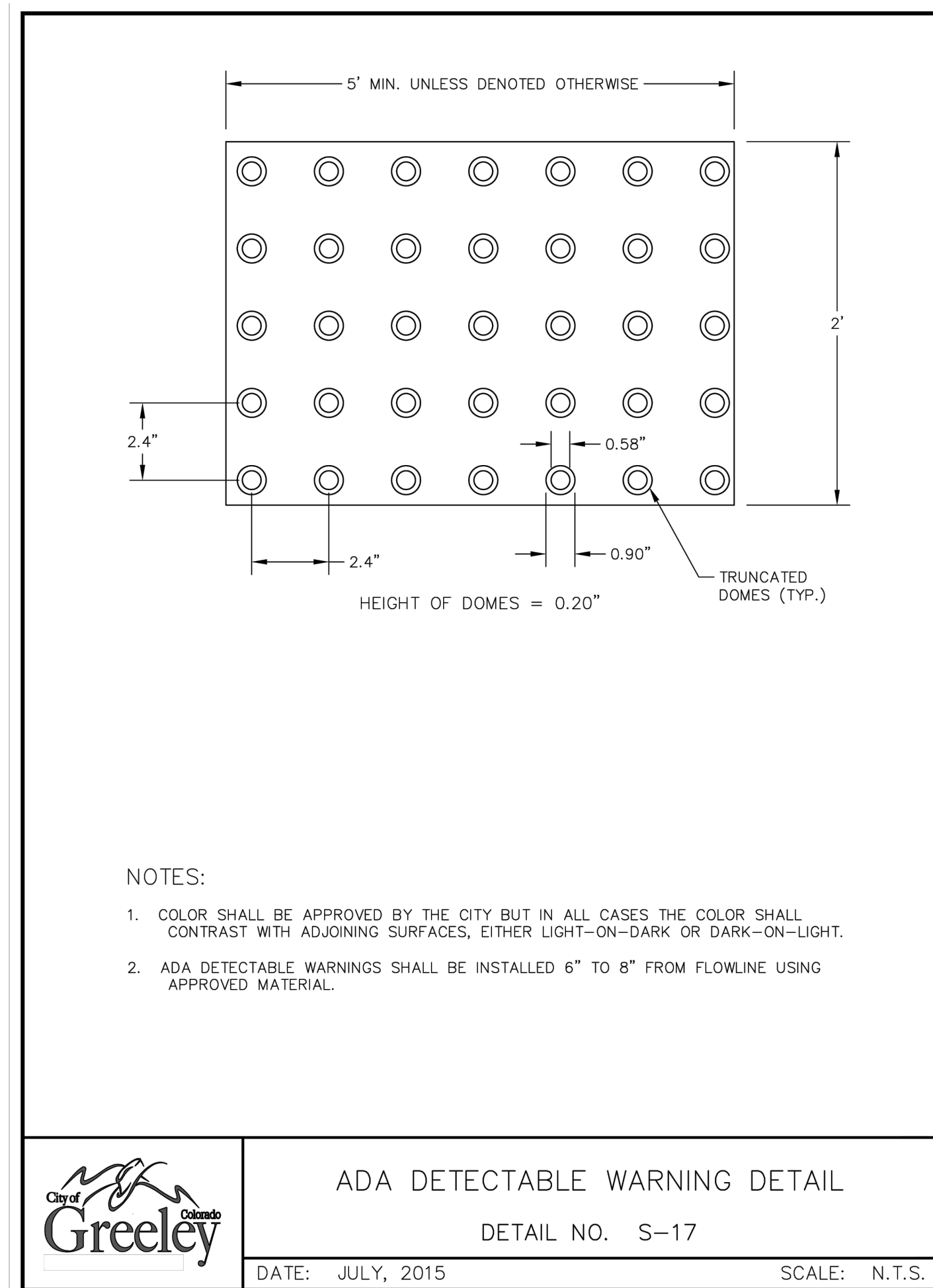
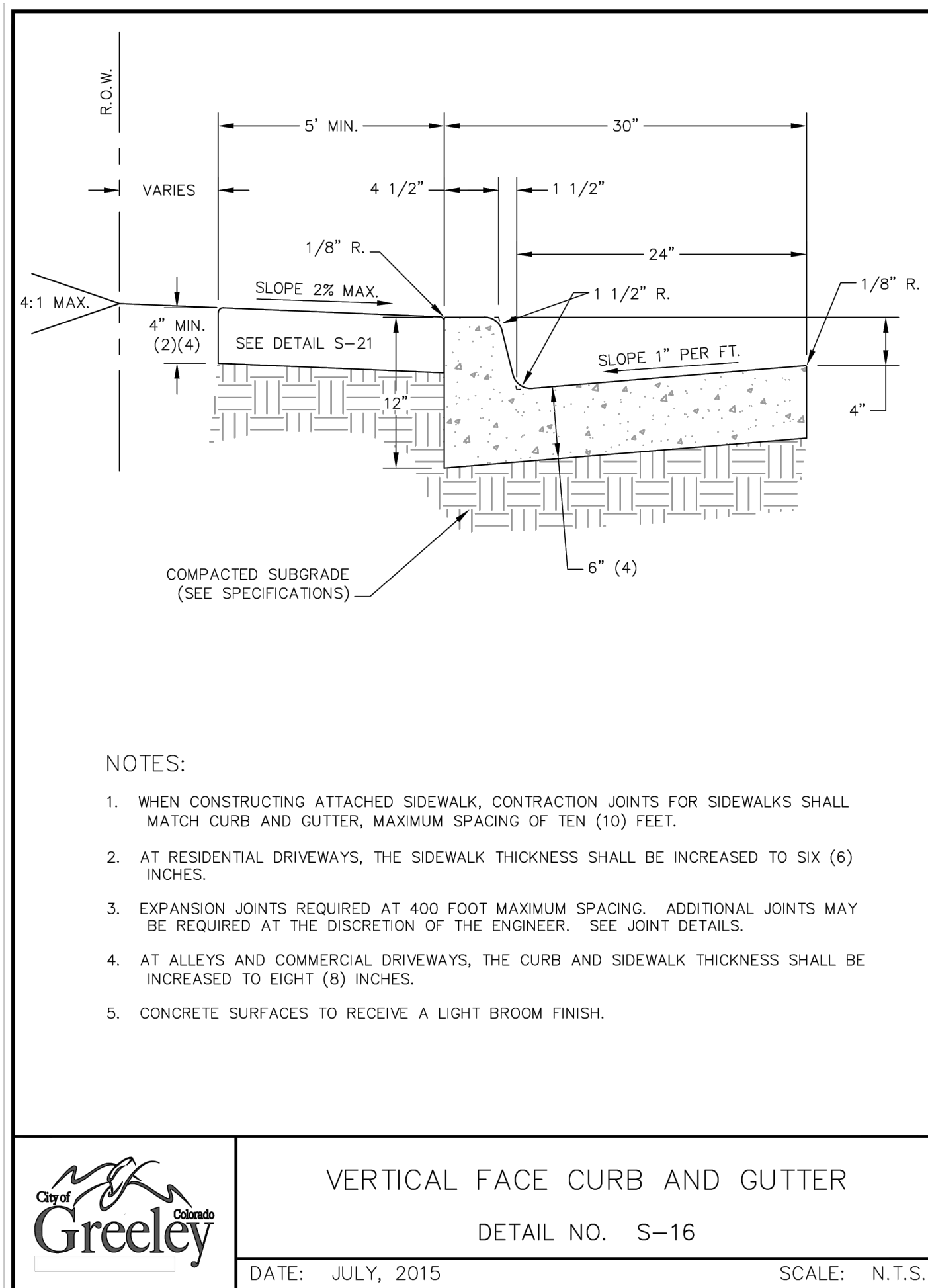
NOT FOR CONSTRUCTION

C-100

C-300

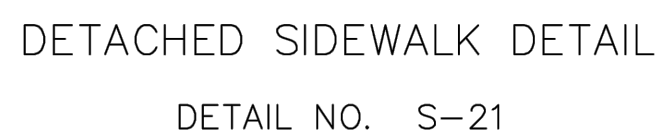
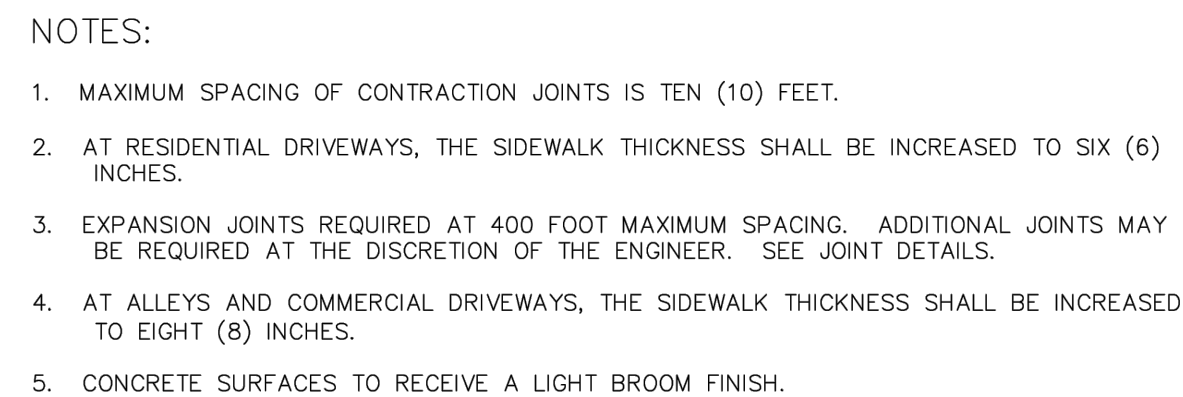
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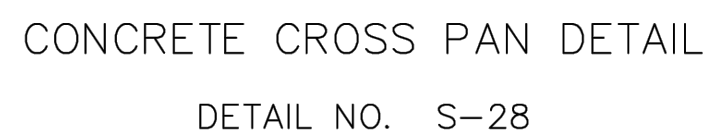
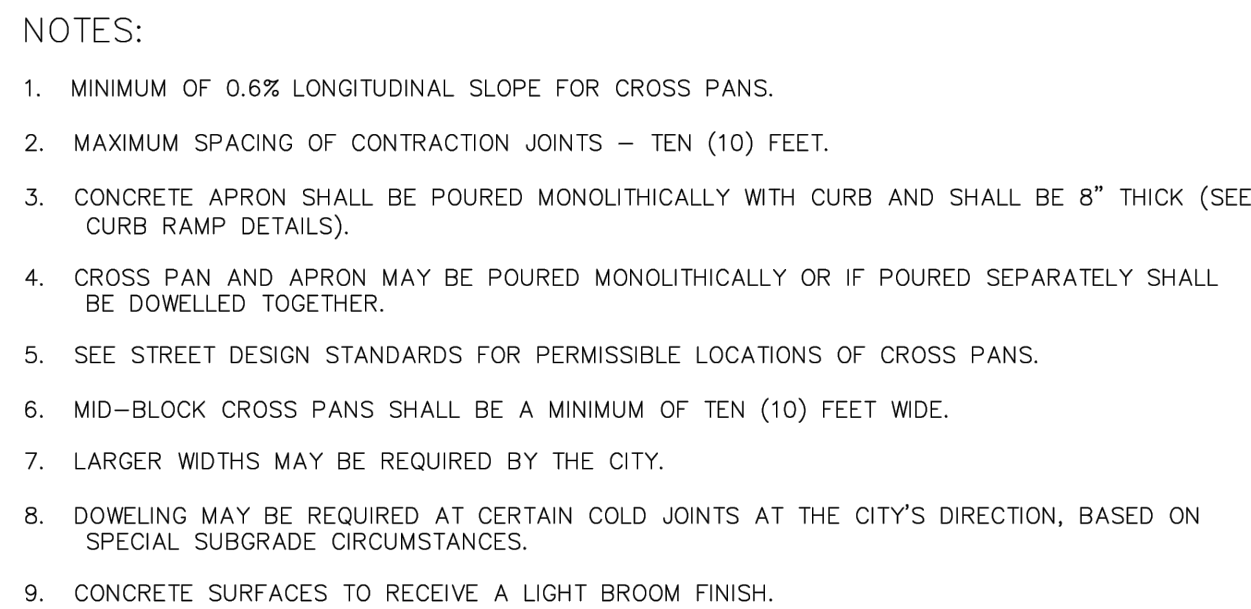


C-501

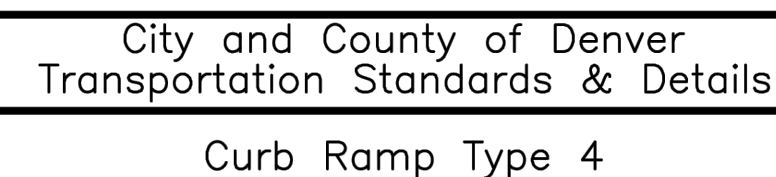
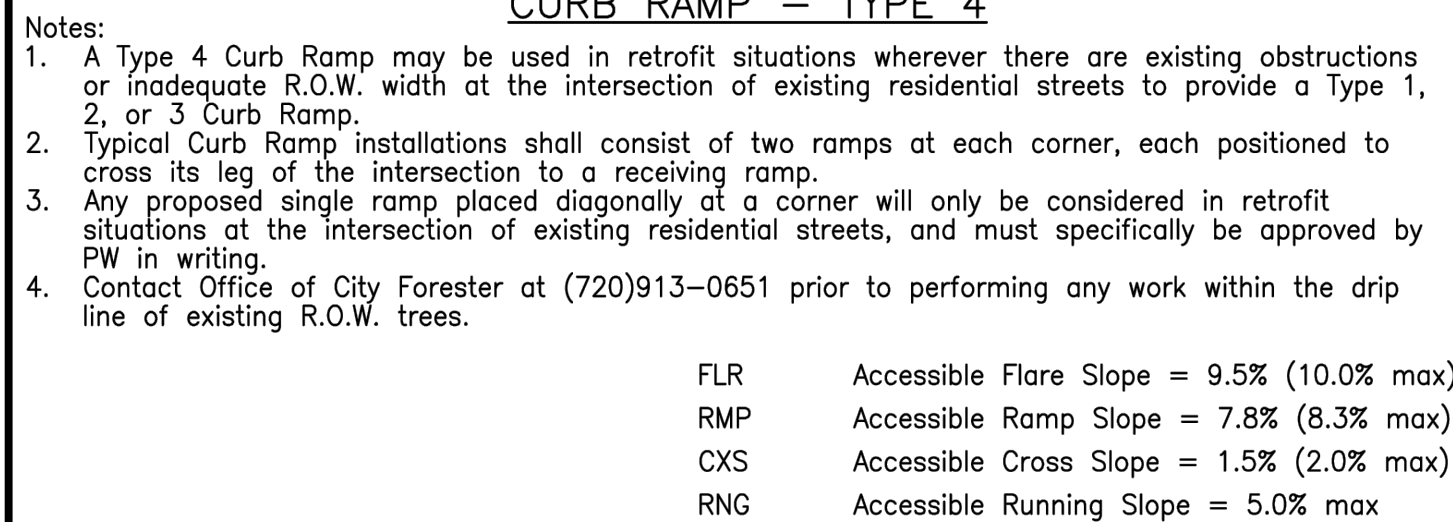
NOT FOR CONSTRUCTION



DATE: JULY, 2015 SCALE: N.T.S.



DATE: JULY, 2015 SCALE: N.T.S.



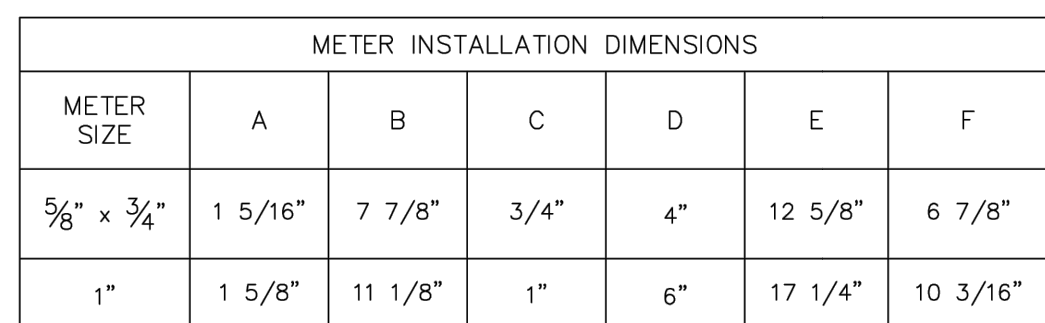
Date:
04/17

Std. Dwg.
7.4



SCALE: NOT TO SCALE
DATE: NOVEMBER 2021
BY: HAH

DRAWING
W-A



LEGEND:

- ① WATER METER PIT SHALL BE BINGHAM & TAYLOR MMP2430 (BASE) & MMPE2418 (TOP).
- ② WATER METER TOP LID SHALL BE CASTINGS, INC. CAST IRON W32 - RECESSED W32TLCDI WITH 2-INCH HOLE IN TOP LID. TOP LID TO READ "WATER METER". BODY SHALL BE CASTINGS, INC.. W32B2DCI.
- ③ WATER METER INNER FROST LID SHALL BE CASTINGS, INC. PLASTIC 3-INCH INLP3".
- ④ WATER METER YOKES SHALL BE MUELLER CO. B-2474-2N WITH CHECK VALVE.
- ⑤ YOKE SHALL BE CENTERED IN THE PIT WITH A PIECE OF ¾-INCH PVC STABILIZER PIPE ATTACHED WITH PLASTIC WIRE TIES TO YOKE BRACE.

NOTES:

1. NOT FOR INSTALLATION IN ROADWAYS, DRIVEWAYS, OR PARKING AREAS.
2. IF SURFACE IS NOT TO FINAL GRADE AT THE TIME OF INSTALLATION OF METER, OWNER MUST RAISE OR LOWER PIT WHEN SURFACE IS GRADED. LID SHALL BE 2-INCHES ABOVE GRADE.
3. METER YOE SHALL BE LOCATED NO HIGHER THAN 19-INCHES AND NO LOWER THAN 21-INCHES BELOW THE TOP LID. ALSO ¾-INCH COPPER PIPING MUST BE USED FROM THE WATER MAIN TO THE YOE AND THEN FROM THE YOE EXTENDED A MINIMUM OF 5-FEET BEYOND THE METER PIT. IN THE EVENT THE METER PIT IS ADJUSTED TO FINAL GRADE, OWNER SHALL INSURE THE YOE BE RAISED/LOWERED AS REQUIRED.
4. METER TO BE LOCATED 2-FEET FROM THE BACK OF SIDEWALK AND WITHIN THE UTILITY EASEMENT, UNLESS OTHERWISE APPROVED BY THE TOWN ADMINISTRATOR.
5. METER PIT SHALL BE PLACED IN FREE DRAINING GRAVEL BASE. CONCRETE NOT PERMITTED.
6. METER PIT SHALL BE 20-INCHES INSIDE DIAMETER AND 48-INCHES DEEP.
7. SPRINKLER SYSTEM CONNECTIONS SHALL BE LOCATED A MINIMUM OF 5-FEET DOWNSTREAM FROM THE METER PIT. UNDER NO CIRCUMSTANCES ARE SPRINKLER CONNECTIONS PERMITTED IN THE METER PIT.
8. NO STRUCTURES ARE TO BE LOCATED WITHIN 4-FEET OF METER PIT. LANDSCAPING IS PERMITTED, HOWEVER ACCESS TO THE METER PIT MUST BE ALWAYS MAINTAINED.
9. IF PRESSURE REDUCING VALVE IS REQUIRED BY THE PLUMBING CODE, IT SHALL BE INSTALLED INSIDE THE BUILDING IMMEDIATELY FOLLOWING THE MAINS SHUT OFF VALVE.
10. NO METER PITS OR PUBLIC WATER SERVICE LINES ARE PERMITTED TO BE LOCATED UNDER PRIVATE HARD SURFACES, TREES OR OTHER PERMANENT STRUCTURES.

OUTSIDE SETTING FOR 3/4" & 1" METER DETAIL



SCALE: NOT TO SCALE

DATE: JULY 26 2022

BY: AKM

DRAWING
W-B

GENERAL NOTE:

1. DESIGN REQUIRES MODIFICATIONS TO SOME OF THESE STANDARD DETAILS TO ACCOMMODATE SITE LAYOUT. STANDARD DETAILS PROVIDED FOR REFERENCE ONLY.

NOT FOR CONSTRUCTION

**Clearview Library
District - Branch
Library
5 Timber Ridge
Parkway
Severance, CO 80546**

OWNER

Clearview Libraries
 720 Third St.
 Windsor, CO 80550
 970-686-5603

ARCHITECT

RATIO
1655 Grant Street
Denver, Colorado 80203
303-607-0040

STRUCTURAL ENGINEER
LARSEN STRUCTURAL DESIGN
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 Ft. Collins, CO 80521
 970-568-3355

MECHANICAL / PLUMBING ENGINEER
THE BALLARD GROUP, INC.
 2525 South Wadsworth Blvd. Suite 200
 Lakewood, CO 80227
 303-988-4514

ELECTRICAL ENGINEER
INNOVATIVE ELECTRICAL SYSTEMS, INC.
8093 WEST ILIFF LANE
Lakewood, CO 80227
303-807-7181

CIVIL ENGINEER
.....
ELEVATION CONSULTING GROUP, LTD
8315 W 4th Avenue
PO Box 280869
Lakewood, CO 80226
303-913-3543

LANDSCAPE ARCHITECT
DHM DESIGN
900 SOUTH BROADWAY
DENVER, COLORADO 8020
720-763-3966

SEAL | DATE

SHEET ISSUE

[illegible]

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PROJECT NO.

SHEET TITLE

STANDARD DETAILS

SHEET NUMBER

C-502

NOT FOR CONSTRUCTION

OWNER
Clearview Libraries
 720 Third St.
 Windsor, CO 80550
 970-686-5603

ARCHITECT
RATIO
1655 Grant Street
Denver, Colorado 80203
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 Lakewood, CO 80226
 303-913-3543

LANDSCAPE ARCHITECT
DHM DESIGN
900 SOUTH BROADWAY
DENVER, COLORADO 80209
720-763-3966

SEAL | DATE

SHEET ISSUE

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PROJECT NO.

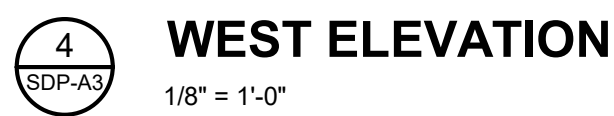
1732.000

SHEET TITLE

ELEVATIONS

SHEET NUMBER

SDP-A3



NOT FOR CONSTRUCTION

Owner
Clearview Libraries
730 Third St.
Windsor, CO 80550

Architect
RATIO
1655 Grant Street
Denver, CO 80203
303-607-0040

Structural Engineer
Larsen Structural Design
320 Maple Street, Suite 120
Ft. Collins, CO 80521
970-568-3355

Mechanical / Plumbing Engineer
The Ballard Group, Inc.
2525 South Wadsworth Blvd.
Suite 200
Lakewood, CO 80227
303-988-4514

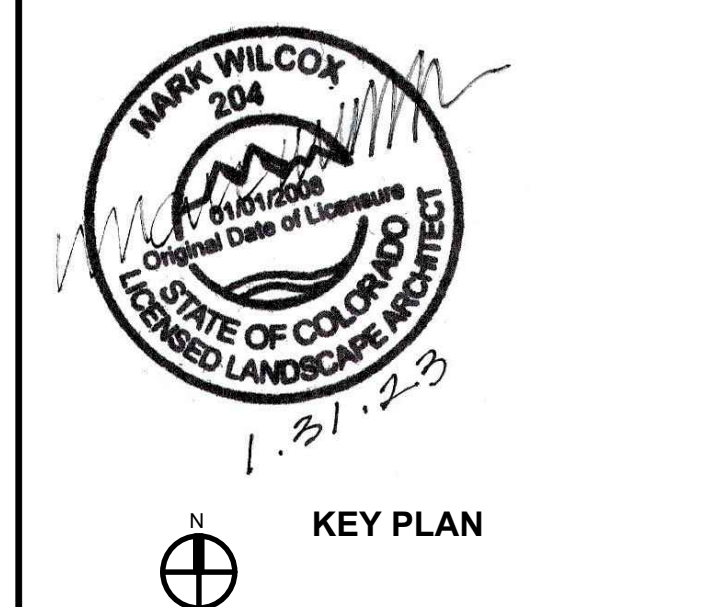
Electrical Engineer
Innovative Electrical Systems, Inc.
8093 West Iliff Lane
Lakewood, CO 80227
303-807-7181

Civil Engineer
Elevation Consulting Group, Ltd
8315 W. 4th Avenue
PO Box 280869
Lakewood, CO 80226
303-913-3543

Landscape Architect
DHM Design
900 South Broadway
Denver, CO 80209
720-763-3966

Acoustical Engineer
Engineering Dynamics, Inc.
3925 S. Kalamath St.
Englewood, CO 80110
303-716-4367

95% CONSTRUCTION DOCUMENTS	01-31-202
----------------------------	-----------



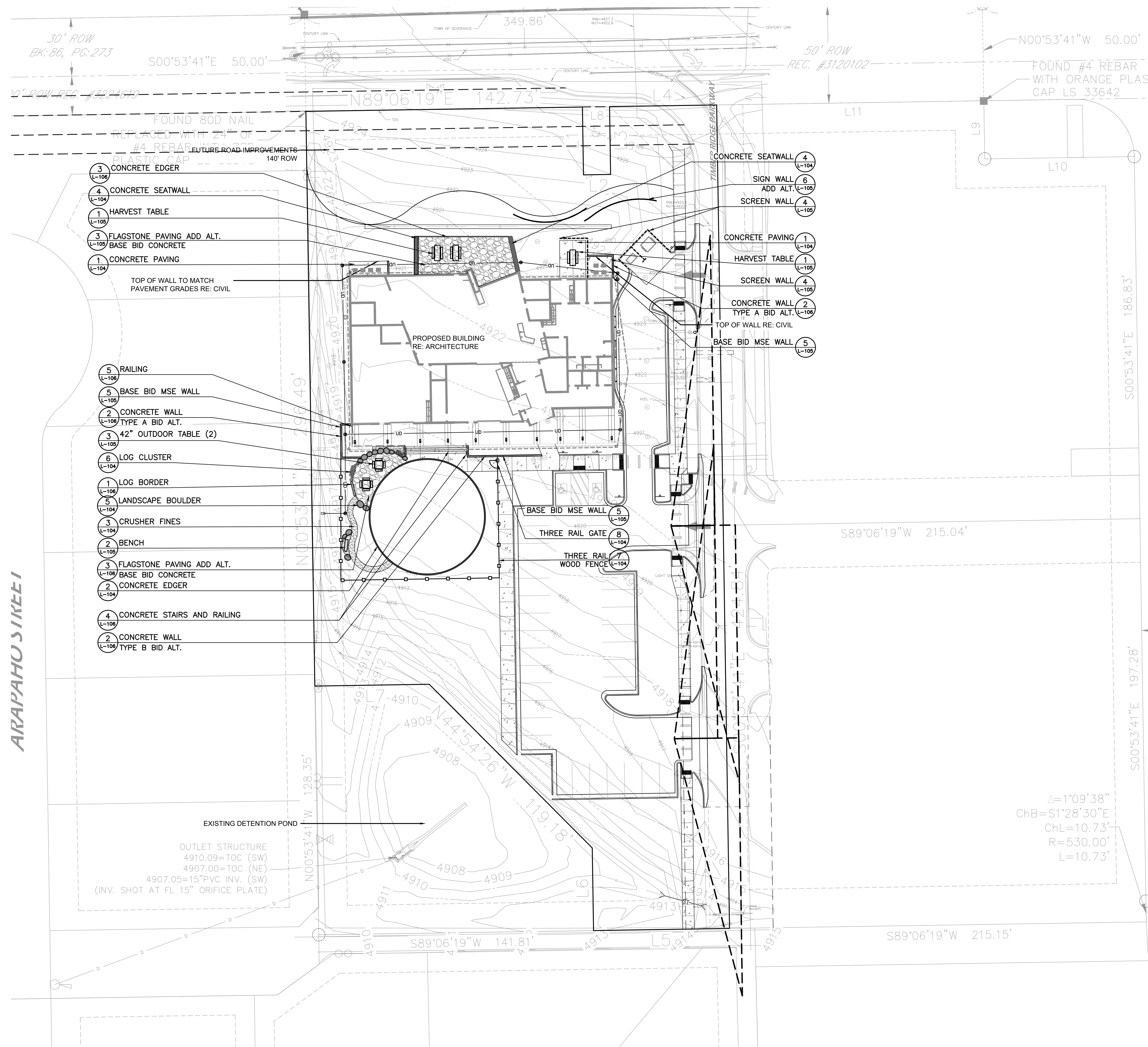
SEAL | DATE

[illegible]

RATIO

PROJECT NO.
SHEET TITLE
LAYOUT PLAN

SHEET NUMBER
L-101



NOT FOR CONSTRUCTION

Acoustical Engineer
Engineering Dynamics, Inc.
3925 S. Kalamath St.
Englewood, CO 80110
303-716-4367

KEY PLAN

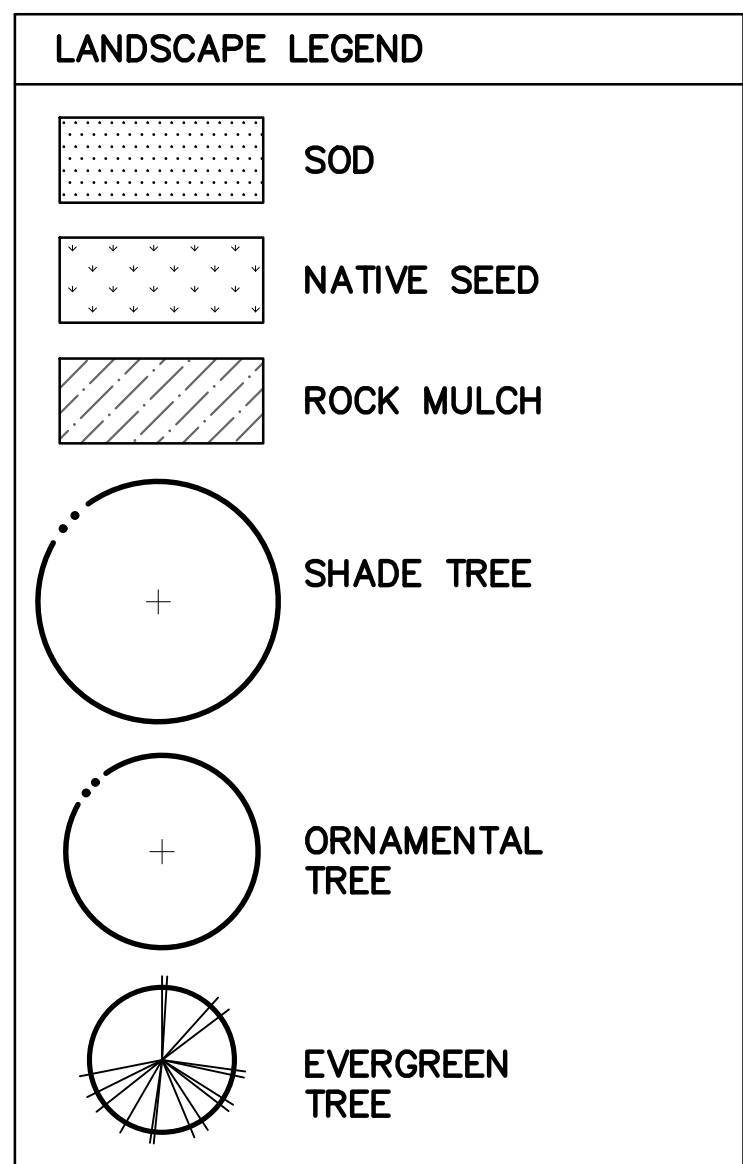
SHEET ISSUE

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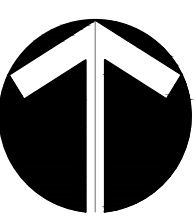
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L-102



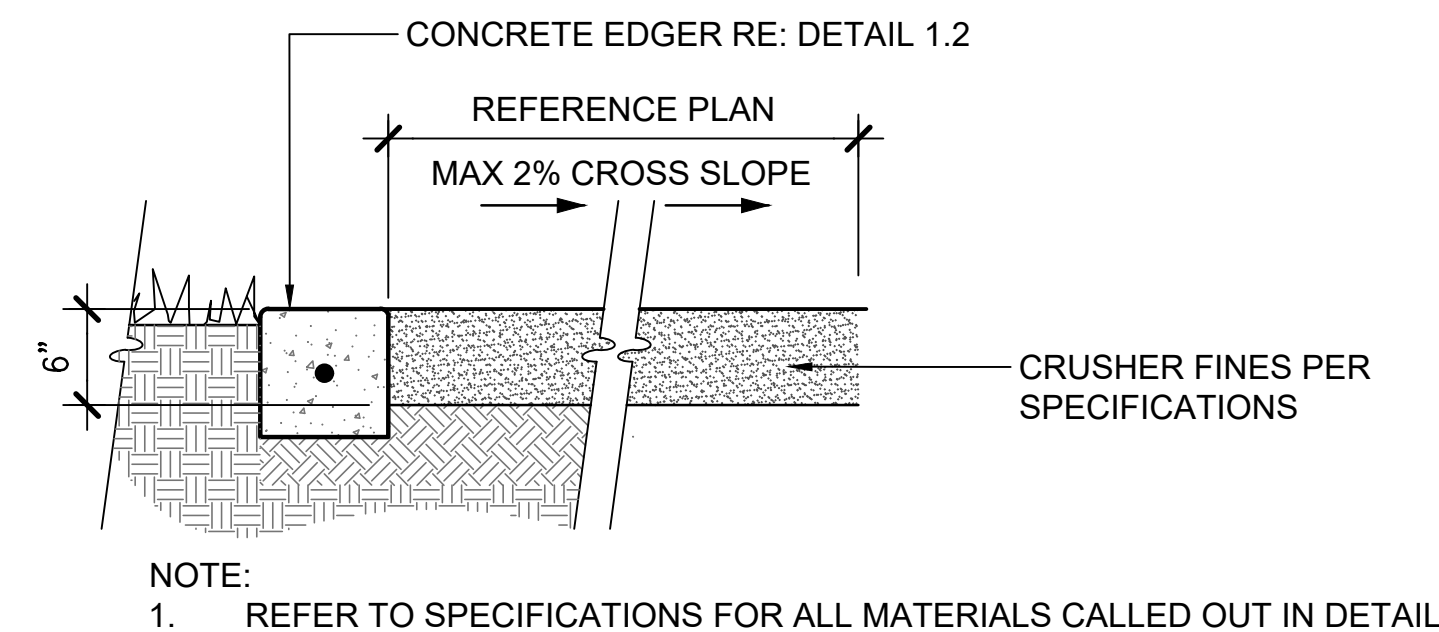
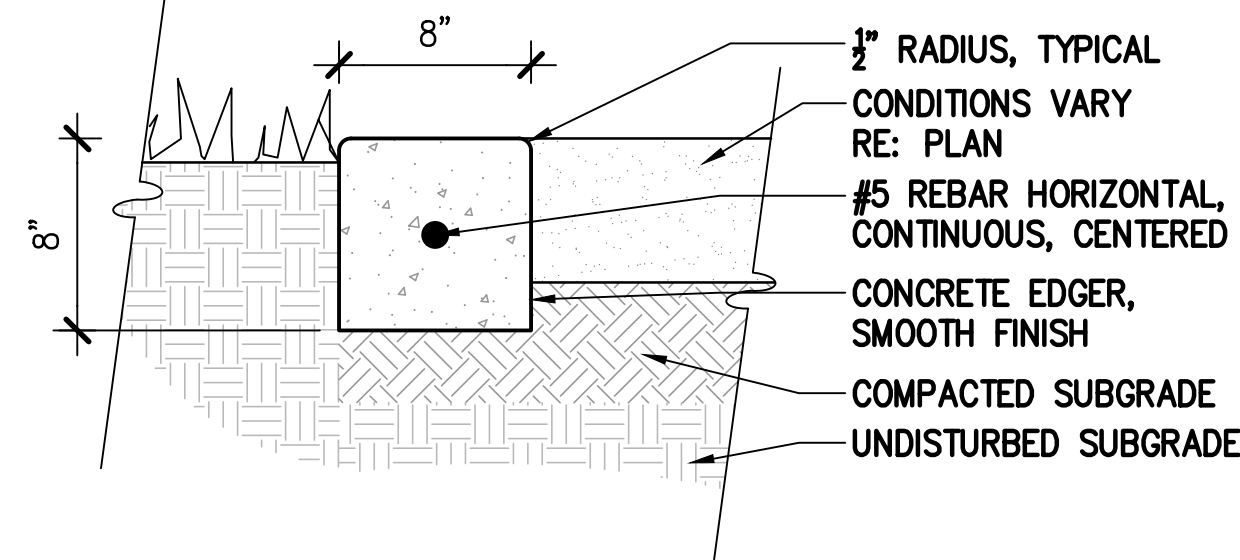
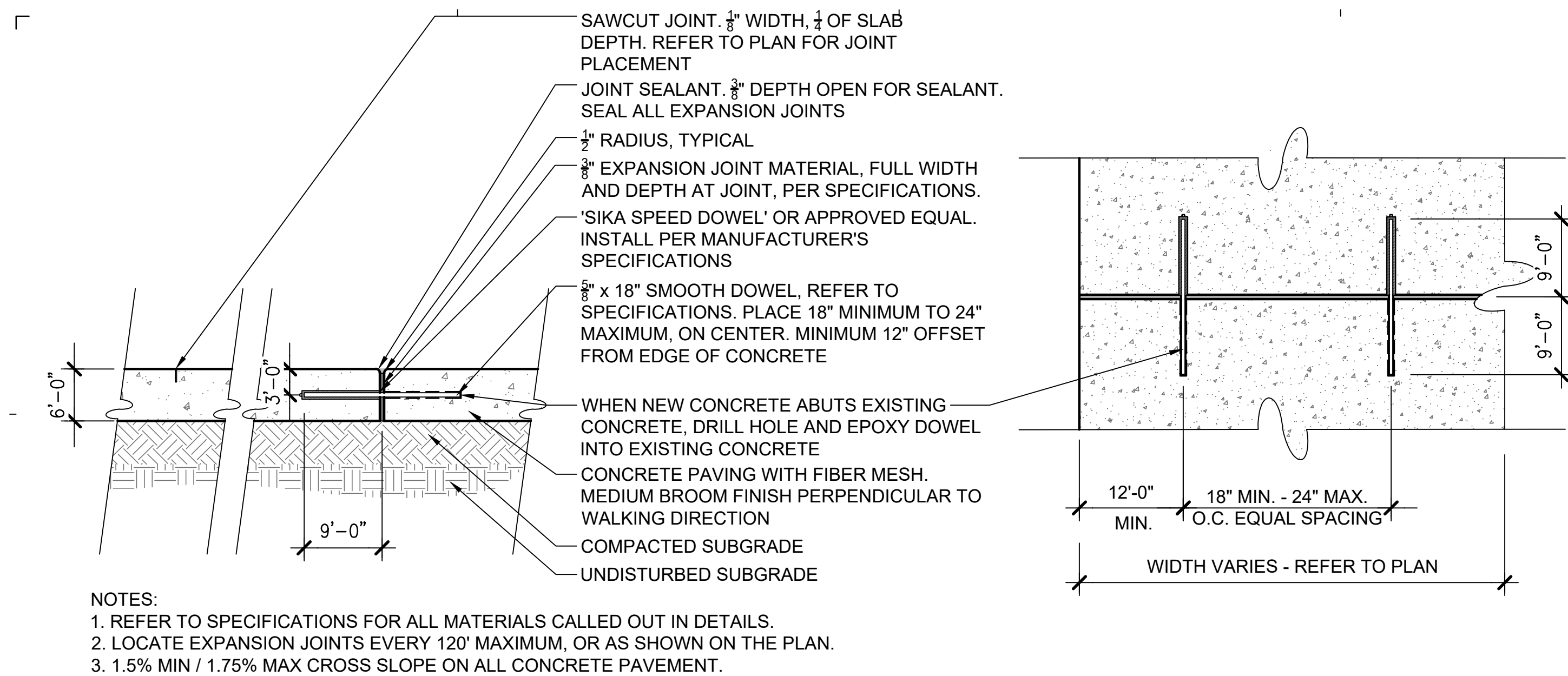
IRRIGATED AREA:	34,970 SQ. FT.	0.80 ACRES
WATER USE PER YEAR:	437,800 GALLONS	1.34 ACRE-FEET
AVERAGE WATER PER YEAR:	12.52 GALLONS / SQ. FT.	20.08 INCHES / SQ. FT.
PEAK SEASON MONTHLY WATER USE:	93,041 GALLONS	0.29 ACRE-FEET
AVERAGE PEAK SEASON FLOW	10 GPM	
REQUIRED TAP SIZE	3/4 INCHES	

PROJECTIONS ARE BASED ON A SIX DAY PER WEEK, SIX HOUR PER DAY, PEAK SEASON WATERING SCHEDULE.
PEAK SEASON APPLICATION FOR KENTUCKY BLUEGRASS IS 2.23" PER WEEK.



0 10 40
5 20
SCALE: 1"=20'-0"

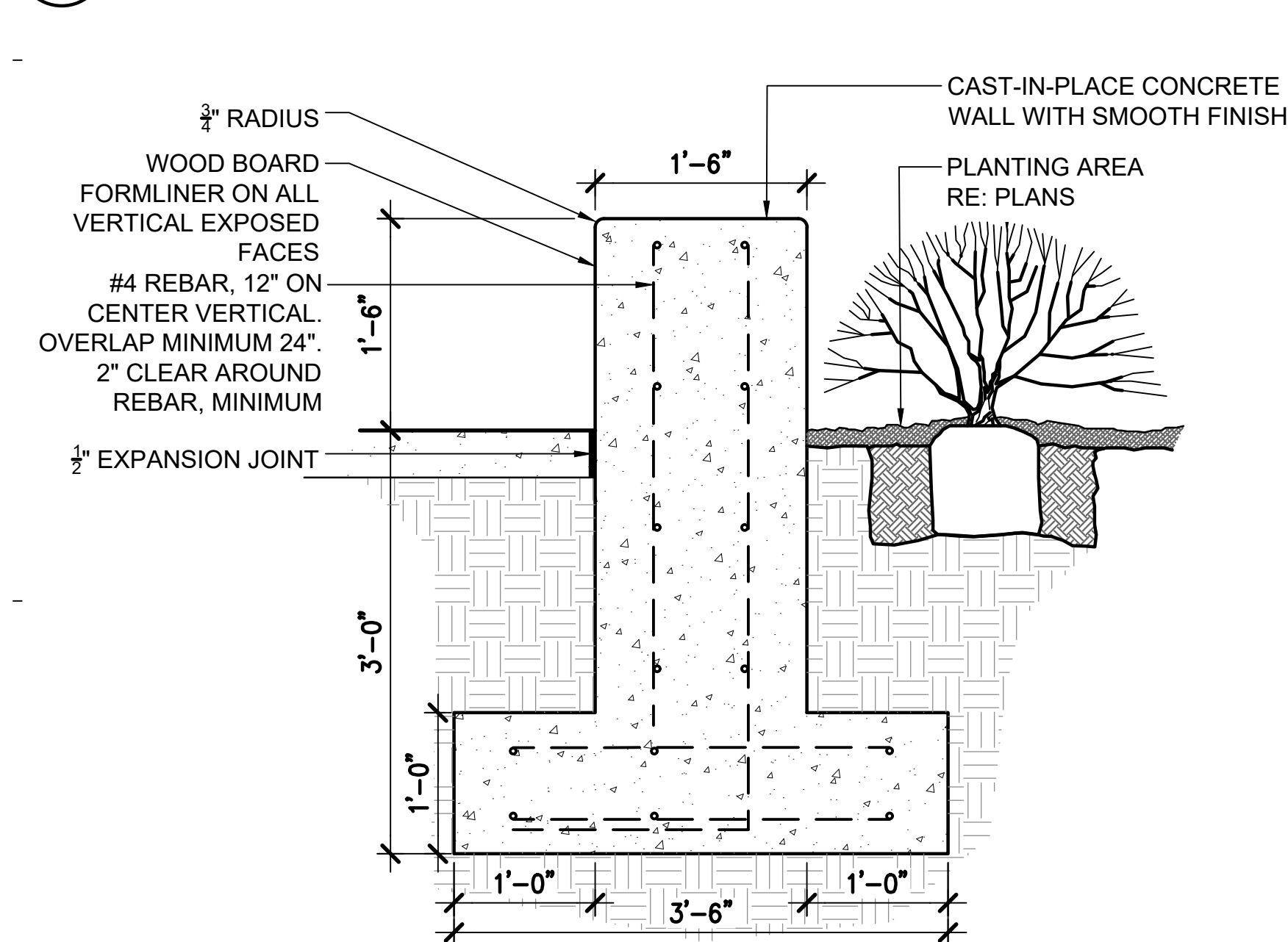
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CONCRETE PAVEMENT

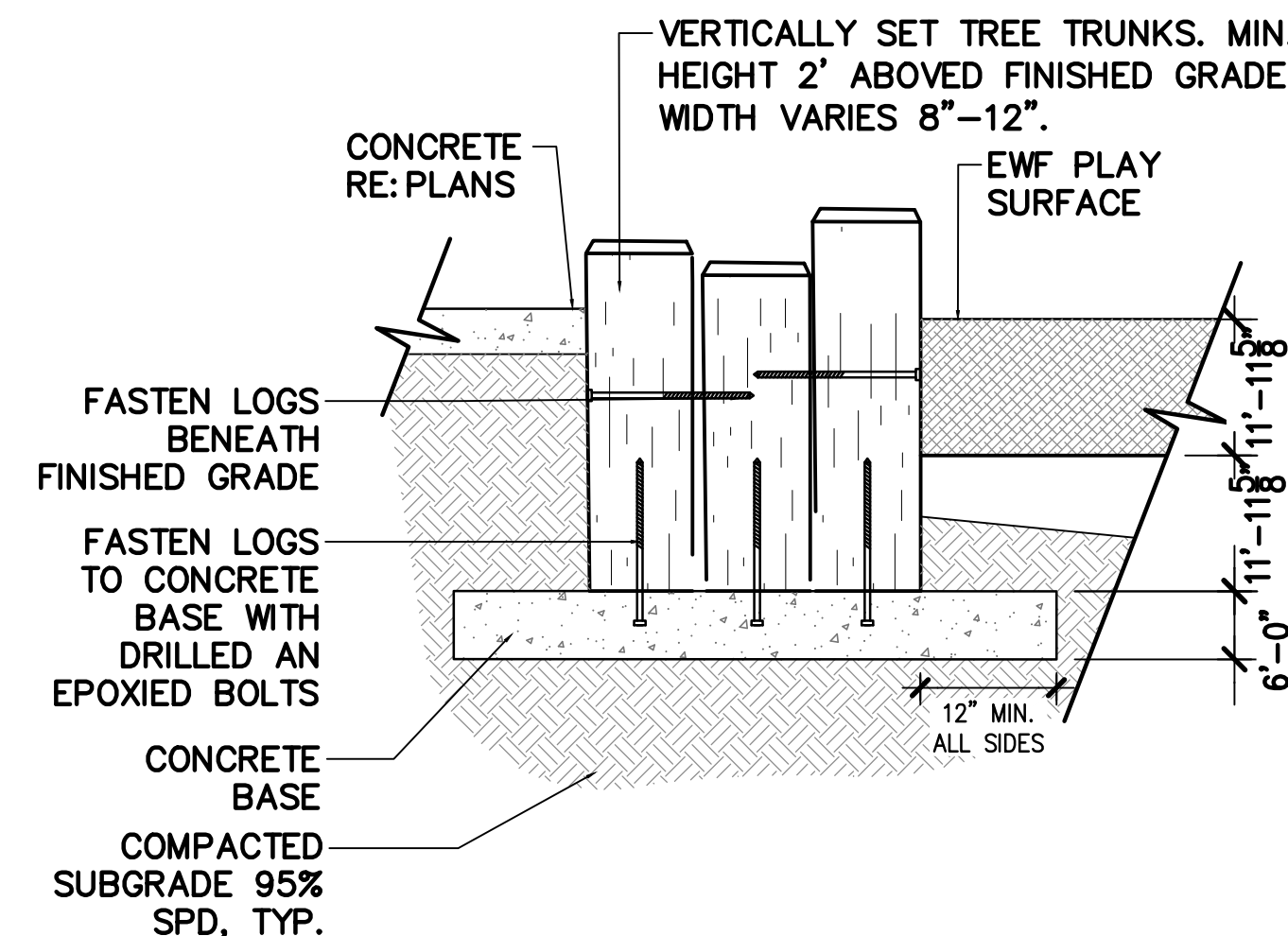
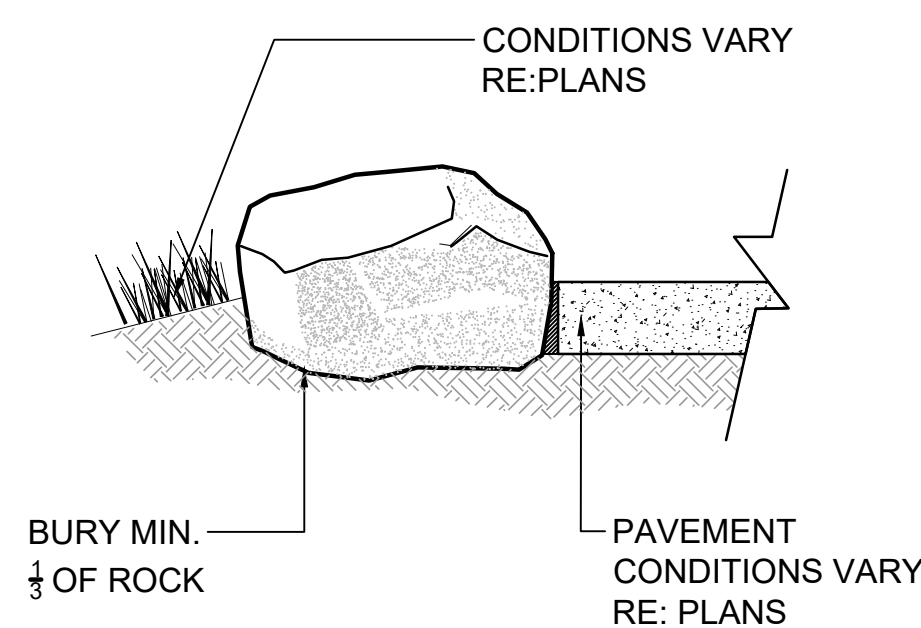
CONCRETE EDGER

CRUSHER FINES



- NOTES:**
1. ROCK TO BE GREY GRANITE WITH EXPOSED NATURAL WEATHERED FACES. REFER TO PLANS FOR BOULDER TYPES AND LOCATIONS. ROCK TO RANGE IN SIZE (UNLESS OTHERWISE NOTED OR DEPICTED) AS FOLLOWS:

GREY GRANITE:
WIDTH: 36" - 48"
HEIGHT: 36" - 48"
DEPTH: 36" - 48"
 2. CONTRACTOR TO SUBMIT ROCK SAMPLE FOR APPROVAL PRIOR TO DELIVERY OF ROCK TO SITE.
 3. PLACE ROCKS IN CONFIGURATIONS AND LOCATIONS AS SHOWN ON PLAN.
 4. BURY ROCK $\frac{1}{2}$ OF TOTAL DEPTH.
 5. WASH OFF ROCKS COMPLETELY AFTER PLACEMENT.
 6. ROCKS TO BE APPROVED BY THE OWNER'S REPRESENTATIVE PRIOR TO PLACEMENT.
 7. DO NOT FRACTURE ROCK DURING PLACEMENT, SUCH ACTION WILL BE CAUSE FOR REJECTION.
 8. CHOOSE AND PLACE ROCKS SO THAT A MINIMUM OF PROCESSING AND EXCAVATION SCARS ARE VISIBLE.
 9. FINAL BOULDER PLACEMENT TO BE APPROVED BY CITY AND LANDSCAPE ARCHITECT PRIOR TO ACCEPTANCE.



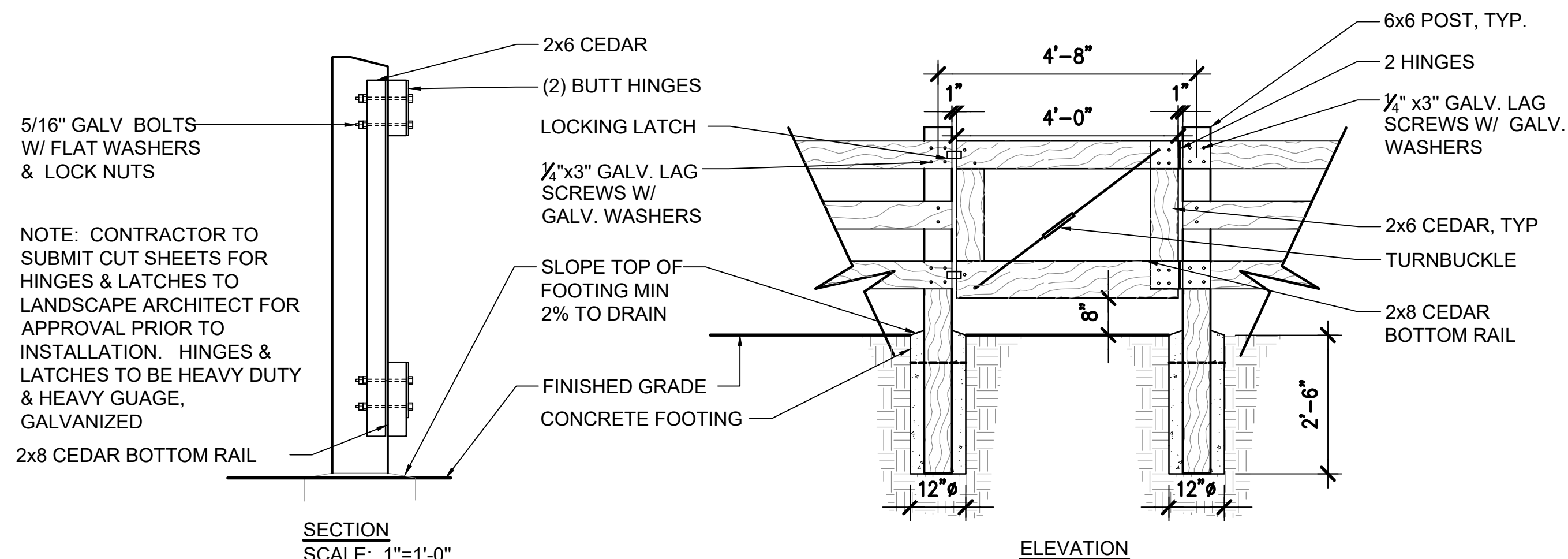
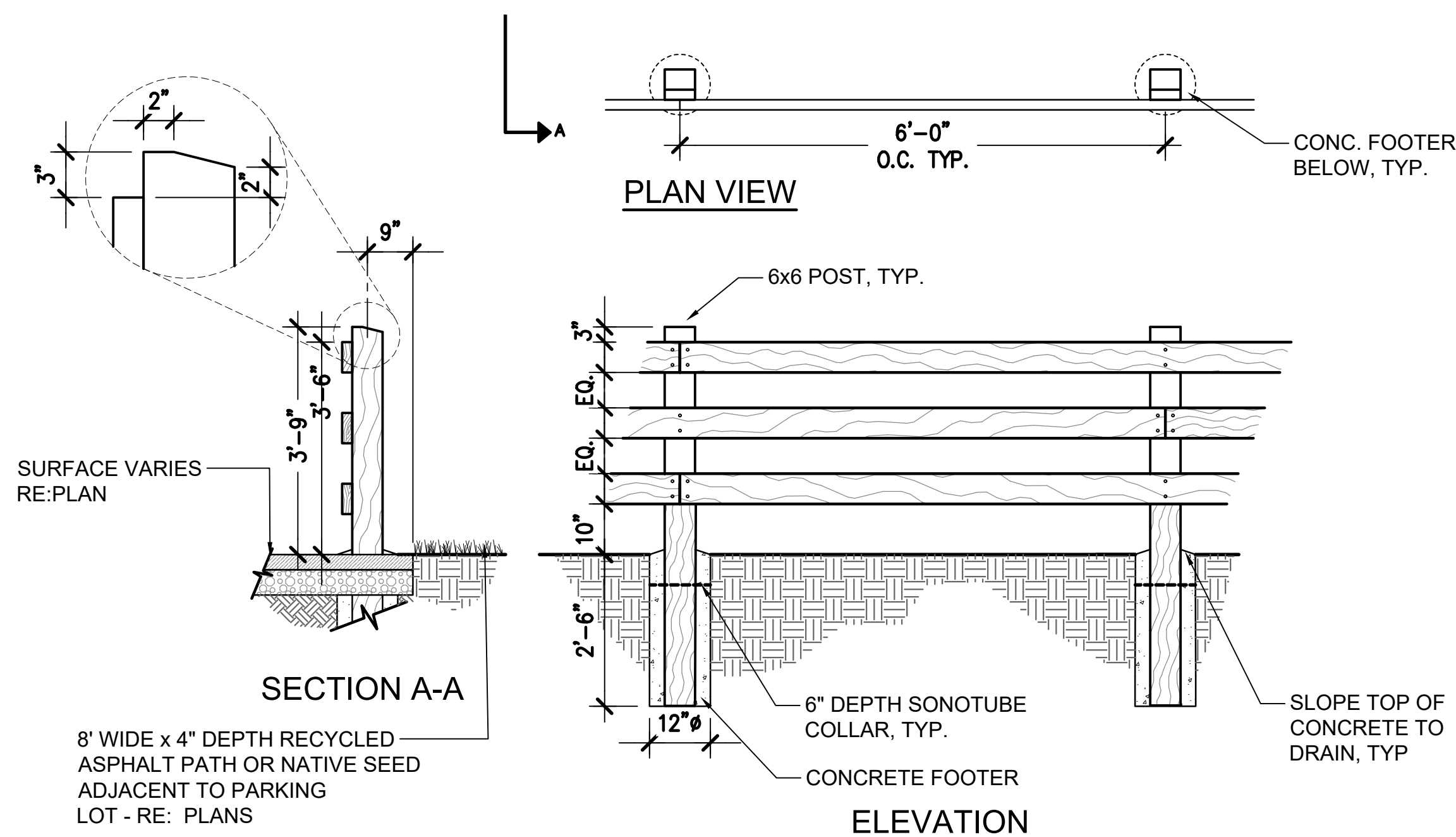
CONCRETE SEATWALL

LANDSCAPE BOULDER

LOG CLUSTER

- ## NOTES

1. POST AND RAILS ARE DIMENSIONAL CUT GRADE 1 CEDAR
2. RAILS ARE 2x6s, 16' IN LENGTH. ALTERNATE JOINTS AND CHAMFER ENDS AT CORNER AND ENDS.
3. POSTS ARE 6x6.
4. INSTALL RAILS WITH GALVANIZED $\frac{3}{4}$ " CARRIAGE BOLTS, 6" IN LENGTH. COUNTERSINK NUTS. SHEER BOLTS EVEN WITH POST AND FILE ENDS.
5. APPLY TWO COATS OF APPROVED EXTERIOR, SEMI-TRANSPARENT OIL STAIN TO WOOD DIAMOND VOGEL AG-SERIES GRAIN STAIN OR EQUAL.
6. TOP 6" OF CONCRETE SETTING FOR POST TO HAVE SONOTUBE COLLAR. COLLAR TO BE REMOVED AFTER CONCRETE SETS. TOP OF CONCRETE SETTING SHALL SLOPE TO DRAIN.
7. BID ALTERNATE #1: PERIMETER AND INTERIOR FENCING TO BE SIMILAR TO ADJACENT DETAIL, WITH THE EXCEPTION THAT 2"x4" GALVANIZED WELDED WIRE MESH 40" TALL IS ATTACHED TO FENCE BETWEEN THE RAILS AND THE POST.



THREE RAIL WOOD FENCE

THREE RAIL WOOD FENCE

NOT FOR CONSTRUCTION

**Clearview Library
District - Branch
Library
5 Timber Ridge
Parkway
Severance, CO 80546**

OWNER
Clearview Libraries
720 Third St.
Windsor, CO 80550
970-686-5603

ARCHITECT
.....
RATIO
1655 Grant Street
Denver, Colorado 80203
303-607-0040

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LARSEN STRUCTURAL DESIGN
320 Maple Street, Suite 120
Ft. Collins, CO 80521
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 303-988-4514

ELECTRICAL ENGINEER
INNOVATIVE ELECTRICAL SYSTEMS, INC.
 8093 WEST ILIFF LANE
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 303-807-7181

CIVIL ENGINEER
ELEVATION CONSULTING GROUP, LTD
8315 W 4th Avenue
PO Box 280869
Lakewood, CO 80226
303-913-3543

LANDSCAPE ARCHITECT
DHM DESIGN
900 SOUTH BROADWAY
DENVER, COLORADO 80209
720-763-3966

SEAL | DATE

SITE DEVELOPMENT PLAN

SHEET ISSUE

[illegible]

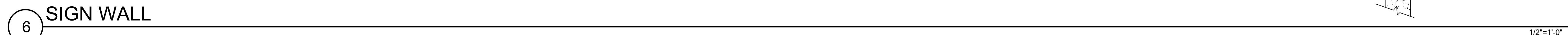
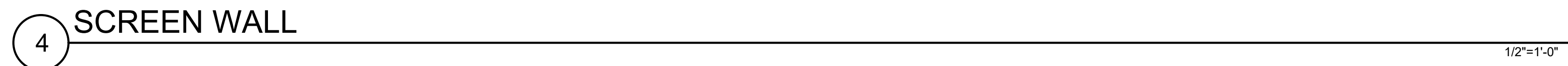
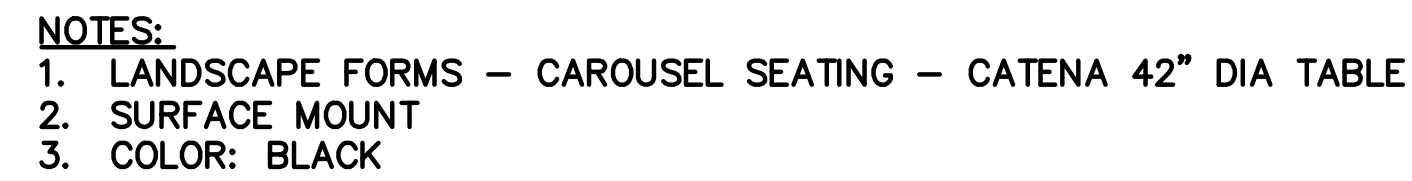
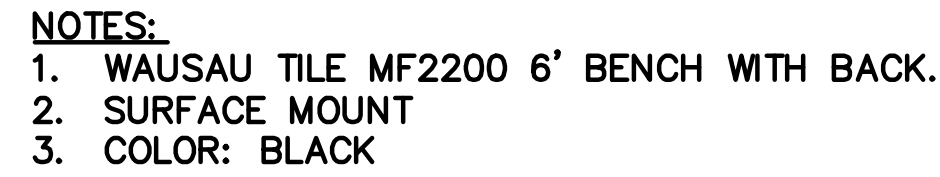
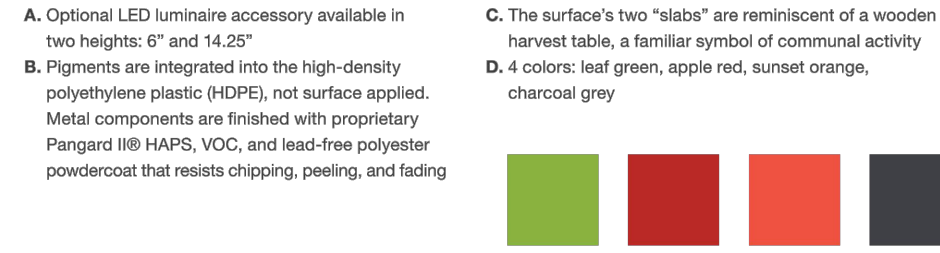
RATIO

PROJECT NO. 21732.000

SHEET TITLE
SITE DETAILS

SHEET NUMBER

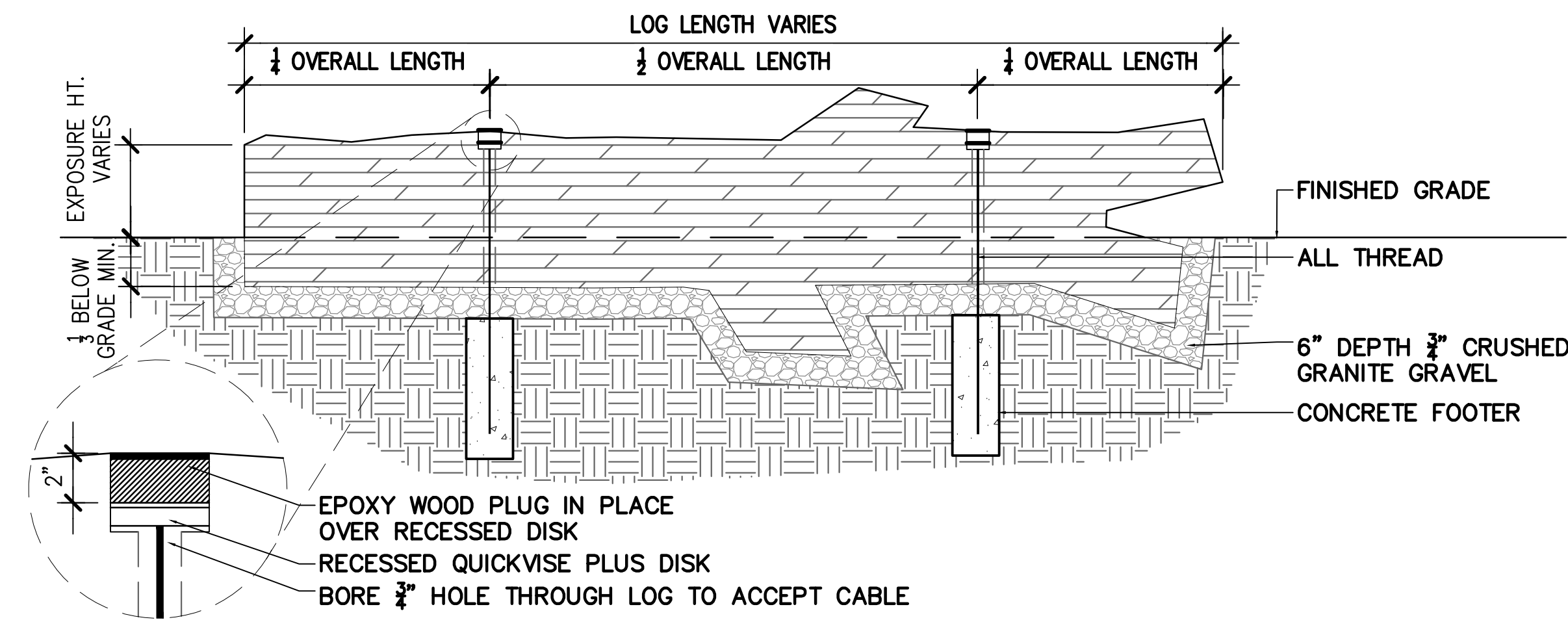
L-104



L-105

NOT FOR CONSTRUCTION

11/28/2022 11:12:30 AM



- NOTES:
- LOG SIZE AND SHAPE WILL VARY. CONTRACTOR TO USE TAGGED FOR PROJECT THAT ARE AT THE DENVER FORESTRY YARD.
 - CONTRACTOR TO ENSURE ALL LOG EDGES ARE SANDED AND FREE FROM SPLINTERS. REMOVE ALL BRANCHES WITH LESS THAN 6" DIAMETER AND TRIM BRANCHES TO NO LONGER THAN 18" IN LENGTH. CONFIRM EXISTING LOGS CONFORM TO THESE REQUIREMENTS.
 - CONTRACTOR TO PLACE LOGS SO THAT NO GAPS OR OPENINGS ARE PRESENT BETWEEN THE LOG AND FINISHED GRADE AND NO OPENINGS ARE PRESENT THAT COULD CAUSE DEBRIS TO BECOME ENTANGLED. CONTRACTOR TO COORDINATE WITH PROJECT MANAGER AND LANDSCAPE ARCHITECT PRIOR TO FINAL PLACEMENT.
 - LOG TO PLACED SO THAT A MINIMUM OF $\frac{1}{3}$ OF THE LOG IS BURIED BELOW GRADE.
 - LOG SHALL BE SECURED BY (2) - 4" STEEL EARTH ANCHOR(S) WITH $\frac{1}{8}$ " STEEL CABLE TO PREVENT BUOYANCY DURING FLOOD EVENTS. INSTALL PER MANUFACTURERS SPECIFICATION. SEE SPECIFICATIONS FOR PRODUCT INFORMATION.
 - CONTRACTOR TO PROVIDE SHOP DRAWINGS OF PROPOSED ANCHOR AND INSTALLATION SYSTEM FOR APPROVAL BY PROJECT MANAGER AND LANDSCAPE ARCHITECT, PRIOR TO INSTALLATION.

3/4"=1'-0"

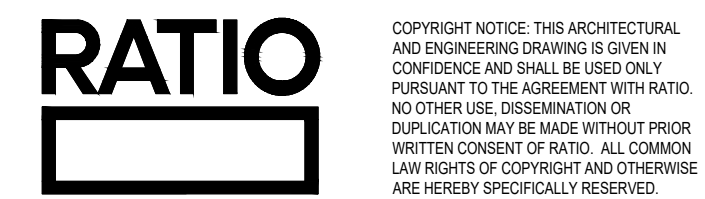
Clearview Library
District - Branch
Library
5 Timber Ridge
Parkway
Severance, CO 80546

OWNER
Clearview Libraries 720 Third St Windsor, CO 80550 970-686-5603
ARCHITECT
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STRUCTURAL ENGINEER
LARSEN STRUCTURAL DESIGN 320 Maple Street, Suite 120 Ft. Collins, CO 80521 970-568-3355
MECHANICAL / PLUMBING ENGINEER
THE BALLARD GROUP, INC. 2525 South Wadsworth Blvd. Suite 200 Lakewood, CO 80227 303-988-4514
ELECTRICAL ENGINEER
INNOVATIVE ELECTRICAL SYSTEMS, INC. 8093 WEST ILIFF LANE Lakewood, CO 80227 303-807-7181
CIVIL ENGINEER
ELEVATION CONSULTING GROUP, LTD 8315 W 4th Avenue PO Box 280669 Lakewood, CO 80226 303-913-3543
LANDSCAPE ARCHITECT
DHM DESIGN 900 SOUTH BROADWAY DENVER, COLORADO 80209 720-763-3966

SEAL | DATE

SITE DEVELOPMENT PLAN

SHEET ISSUE											



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PROJECT NO. 21732.000

SHEET TITLE
SITE DETAILS

SHEET NUMBER

L-106

NOT FOR CONSTRUCTION



E-100



FEATURES & SPECIFICATIONS

INTENDED USE — Typical applications include corridors, lobbies, conference rooms and private offices.
CONSTRUCTION — Galvanized steel mounting plate frame. Adjustable mounting plate for both down-angled access covers and spring latches. Reflectors are polished for louvered springs.
Vertically adjustable mounting brackets with convenient for hangers provide 3-3/4" total adjustment.
Two combinations (12" x 14" and/or 12" x 16") available for single through conduits. Capacity 1/4in. 4in. No. 10 AWG conductors, rated for 100°C.
Accommodates 12-3/4" post spacing.
Positive cooling thermal management for 25°C standard; high ambient 40°C options available. Light engine and drivers are available from above or below cooling.
Max cooling thickness 1-1/2".

OPTICS — LEDs are mounted to a 3-step 300K to 10,000K minimum. 90 CRI optional.
LED light source concealed with diffusing optical lens.
General illumination lighting with 1.8 S/M and 35° cutoff to source and source images.
Self-flanged and/or reflectors in specular, semi-specular, or matte diffuser finishes. Also available in white and black painted reflectors.
ELECTRICAL — Mates with 120-277V, 50/60Hz 0-10V dimming drivers mounted to junction box, 10V or 1% minimum dimming level available.
0-10V dimming feature requires two (2) additional low voltage wires to be pulled.
70% lumen maintenance at 60,000 hours.
LISTINGS — Certified to IES and Canadian safety standards. Wet location standard (covered ceiling). IP55 rated, ENERGY STAR® certified product.
BUY AMERICAN — Product with the BAA option is assembled in the USA and meets the Buy American(s) government procurement requirements under FAR, DAAS and DOT.
Please refer to www.lithonia.com for the complete list of additional information.

WARRANTY — 5-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at: www.lithonia.com under the "Warranty" tab.
Note: Actual performance may differ as a result of end use environment and application.
All values are design or typical values, measured under laboratory conditions at 25°C.
Specifications subject to change without notice.



ORDERING INFORMATION Lead time will vary depending on options selected. Consult with your sales representative. Example: LDN4 35/15 LD4AR LSS MVOLT E21

Series	Color temperature	Lumens	Aperture/Trim Color	Finish	Voltage
LDN4	27° 2700K 30° 3000K 35° 3500K 40° 4000K 50° 5000K	500 lumens 750 lumens 1000 lumens 1500 lumens 2000 lumens	LD4 Downlight LD4 Wallwash LD4 Clear LD4 White LD4 Black	LD4 Semi-specular LD4 Matte diffuse LD4 Specular	MVOLT Multi-volt 120 120V 277 277V 347 347V

Driver	Options	
G210 0-10V driver dims to 10%	SP Single-face	ALIGHT Light Compensation
G21 0-10V driver with 1% dimming	TRM White painted flange	ASD ASD
G210 0-10V driver with smooth and flicker-free deep dimming performance down to 10%	TRM Black painted flange	ASD ASD
G210 0-10V driver with smooth and flicker-free deep dimming performance down to 10%	EL Emergency battery pack with integral test switch, 10W Constant Power, Not Certified in CA Title 20 MAZD85	ASD ASD
G210 0-10V driver with smooth and flicker-free deep dimming performance down to 10%	ELSP Emergency battery pack with remote test switch, 10W Constant Power, Not Certified in CA Title 20 MAZD85	ASD ASD
G210 0-10V driver with smooth and flicker-free deep dimming performance down to 10%	ELSP Emergency battery pack with self-diagnostics, 10W Constant Power, integral test switch, Not Certified in CA Title 20 MAZD85	ASD ASD
G210 0-10V driver with smooth and flicker-free deep dimming performance down to 10%	ELSP Emergency battery pack with self-diagnostics, 10W Constant Power, remote test switch, Not Certified in CA Title 20 MAZD85	ASD ASD
D10 Minimum-dimming 10% driver for use with 10V	ELSP Emergency battery pack, 10W Constant Power with integral test switch, Certified in CA Title 20 MAZD85	ASD ASD
D1 Minimum-dimming 1% driver for use with 10V	ELSP Emergency battery pack, 10W Constant Power with remote test switch, Certified in CA Title 20 MAZD85	ASD ASD
ES48 48W/54W/60W/66W/72W/78W/84W/90W/96W/102W/108W/114W/120W/126W/132W/138W/144W/150W/156W/162W/168W/174W/180W/186W/192W/198W/204W/210W/216W/222W/228W/234W/240W/246W/252W/258W/264W/270W/276W/282W/288W/294W/300W/306W/312W/318W/324W/330W/336W/342W/348W/354W/360W/366W/372W/378W/384W/390W/396W/402W/408W/414W/420W/426W/432W/438W/444W/450W/456W/462W/468W/474W/480W/486W/492W/498W/504W/510W/516W/522W/528W/534W/540W/546W/552W/558W/564W/570W/576W/582W/588W/594W/600W/606W/612W/618W/624W/630W/636W/642W/648W/654W/660W/666W/672W/678W/684W/690W/696W/702W/708W/714W/720W/726W/732W/738W/744W/750W/756W/762W/768W/774W/780W/786W/792W/798W/804W/810W/816W/822W/828W/834W/840W/846W/852W/858W/864W/870W/876W/882W/888W/894W/900W/906W/912W/918W/924W/930W/936W/942W/948W/954W/960W/966W/972W/978W/984W/990W/996W/1002W/1008W/1014W/1020W/1026W/1032W/1038W/1044W/1050W/1056W/1062W/1068W/1074W/1080W/1086W/1092W/1098W/1104W/1110W/1116W/1122W/1128W/1134W/1140W/1146W/1152W/1158W/1164W/1170W/1176W/1182W/1188W/1194W/1200W/1206W/1212W/1218W/1224W/1230W/1236W/1242W/1248W/1254W/1260W/1266W/1272W/1278W/1284W/1290W/1296W/1302W/1308W/1314W/1320W/1326W/1332W/1338W/1344W/1350W/1356W/1362W/1368W/1374W/1380W/1386W/1392W/1398W/1404W/1410W/1416W/1422W/1428W/1434W/1440W/1446W/1452W/1458W/1464W/1470W/1476W/1482W/1488W/1494W/1500W/1506W/1512W/1518W/1524W/1530W/1536W/1542W/1548W/1554W/1560W/1566W/1572W/1578W/1584W/1590W/1596W/1602W/1608W/1614W/1620W/1626W/1632W/1638W/1644W/1650W/1656W/1662W/1668W/1674W/1680W/1686W/1692W/1698W/1704W/1710W/1716W/1722W/1728W/1734W/1740W/1746W/1752W/1758W/1764W/1770W/1776W/1782W/1788W/1794W/1800W/1806W/1812W/1818W/1824W/1830W/1836W/1842W/1848W/1854W/1860W/1866W/1872W/1878W/1884W/1890W/1896W/1902W/1908W/1914W/1920W/1926W/1932W/1938W/1944W/1950W/1956W/1962W/1968W/1974W/1980W/1986W/1992W/1998W/2004W/2010W/2016W/2022W/2028W/2034W/2040W/2046W/2052W/2058W/2064W/2070W/2076W/2082W/2088W/2094W/2100W/2106W/2112W/2118W/2124W/2130W/2136W/2142W/2148W/2154W/2160W/2166W/2172W/2178W/2184W/2190W/2196W/2202W/2208W/2214W/2220W/2226W/2232W/2238W/2244W/2250W/2256W/2262W/2268W/2274W/2280W/2286W/2292W/2298W/2304W/2310W/2316W/2322W/2328W/2334W/2340W/2346W/2352W/2358W/2364W/2370W/2376W/2382W/2388W/2394W/2400W/2406W/2412W/2418W/2424W/2430W/2436W/2442W/2448W/2454W/2460W/2466W/2472W/2478W/2484W/2490W/2496W/2502W/2508W/2514W/2520W/2526W/2532W/2538W/2544W/2550W/2556W/2562W/2568W/2574W/2580W/2586W/2592W/2598W/2604W/2610W/2616W/2622W/2628W/2634W/2640W/2646W/2652W/2658W/2664W/2670W/2676W/2682W/2688W/2694W/2700W/2706W/2712W/2718W/2724W/2730W/2736W/2742W/2748W/2754W/2760W/2766W/2772W/2778W/2784W/2790W/2796W/2802W/2808W/2814W/2820W/2826W/2832W/2838W/2844W/2850W/2856W/2862W/2868W/2874W/2880W/2886W/2892W/2898W/2904W/2910W/2916W/2922W/2928W/2934W/2940W/2946W/2952W/2958W/2964W/2970W/2976W/2982W/2988W/2994W/3000W/3006W/3012W/3018W/3024W/3030W/3036W/3042W/3048W/3054W/3060W/3066W/3072W/3078W/3084W/3090W/3096W/3102W/3108W/3114W/3120W/3126W/3132W/3138W/3144W/3150W/3156W/3162W/3168W/3174W/3180W/3186W/3192W/3198W/3204W/3210W/3216W/3222W/3228W/3234W/3240W/3246W/3252W/3258W/3264W/3270W/3276W/3282W/3288W/3294W/3300W/3306W/3312W/3318W/3324W/3330W/3336W/3342W/3348W/3354W/3360W/3366W/3372W/3378W/3384W/3390W/3396W/3402W/3408W/3414W/3420W/3426W/3432W/3438W/3444W/3450W/3456W/3462W/3468W/3474W/3480W/3486W/3492W/3498W/3504W/3510W/3516W/3522W/3528W/3534W/3540W/3546W/3552W/3558W/3564W/3570W/3576W/3582W/3588W/3594W/3600W/3606W/3612W/3618W/3624W/3630W/3636W/3642W/3648W/3654W/3660W/3666W/3672W/3678W/3684W/3690W/3696W/3702W/3708W/3714W/3720W/3726W/3732W/3738W/3744W/3750W/3756W/3762W/3768W/3774W/3780W/3786W/3792W/3798W/3804W/3810W/3816W/3822W/3828W/3834W/3840W/3846W/3852W/3858W/3864W/3870W/3876W/3882W/3888W/3894W/3900W/3906W/3912W/3918W/3924W/3930W/3936W/3942W/3948W/3954W/3960W/3966W/3972W/3978W/3984W/3990W/3996W/4002W/4008W/4014W/4020W/4026W/4032W/4038W/4044W/4050W/4056W/4062W/4068W/4074W/4080W/4086W/4092W/4098W/4104W/4110W/4116W/4122W/4128W/4134W/4140W/4146W/4152W/4158W/4164W/4170W/4176W/4182W/4188W/4194W/4200W/4206W/4212W/4218W/4224W/4230W/4236W/4242W/4248W/4254W/4260W/4266W/4272W/4278W/4284W/4290W/4296W/4302W/4308W/4314W/4320W/4326W/4332W/4338W/4344W/4350W/4356W/4362W/4368W/4374W/4380W/4386W/4392W/4398W/4404W/4410W/4416W/4422W/4428W/4434W/4440W/4446W/4452W/4458W/4464W/4470W/4476W/4482W/4488W/4494W/4500W/4506W/4512W/4518W/4524W/4530W/4536W/4542W/4548W/4554W/4560W/4566W/4572W/4578W/4584W/4590W/4596W/4602W/4608W/4614W/4620W/4626W/4632W/4638W/4644W/4650W/4656W/4662W/4668W/4674W/4680W/4686W/4692W/4698W/4704W/4710W/4716W/4722W/4728W/4734W/4740W/4746W/4752W/4758W/4764W/4770W/4776W/4782W/4788W/4794W/4800W/4806W/4812W/4818W/4824W/4830W/4836W/4842W/4848W/4854W/4860W/4866W/4872W/4878W/4884W/4890W/4896W/4902W/4908W/4914W/4920W/4926W/4932W/4938W/4944W/4950W/4956W/4962W/4968W/4974W/4980W/4986W/4992W/4998W/5004W/5010W/5016W/5022W/5028W/5034W/5040W/5046W/5052W/5058W/5064W/5070W/5076W/5082W/5088W/5094W/5100W/5106W/5112W/5118W/5124W/5130W/5136W/5142W/5148W/5154W/5160W/5166W/5172W/5178W/5184W/5190W/5196W/5202W/5208W/52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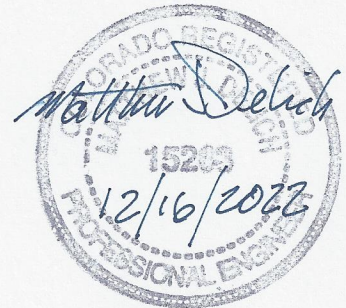
MEMORANDUM

TO: Ann Kling, Clearview Library District
Dan Spykstra, Wember
Abdul Barzak, Severance Town Planner

FROM: Matt/Michael Delich

DATE: December 16, 2022

SUBJECT: Severance Library Transportation Impact Study (TIS)
(File: 2229ME02)



This memorandum is a TIS for the Severance Library building proposed west of (adjacent to) Severance Town Hall and south of (adjacent to) East Harmony Road (Weld County Road 74) in Severance. Figure 1 shows the Severance Library site location. The scope of this study was discussed with Abdul Barzak, Severance Town Planner. An email outlining the criteria for this TIS is provided in the Appendix. This is a revision of the **Severance Library Transportation Impact Study**, dated May 12, 2022. It addresses Severance traffic consultant comments.

The Severance Library site plan is provided in Figure 2. The Severance Library is proposed as a 10,000 square foot building with a future expansion to 15,000 square feet. As shown on the site plan, access to/from the Severance Library will be via the existing private driveway west of the Town Hall. From that driveway, there are three driveways to the Severance Library site itself. The first driveway south of East Harmony Road utilizes the existing curb return across from the driveway to the Town Hall parking lot. This driveway is primarily for the book drop-off and to serve as drop-off/pick-up of patrons at the front door. The other two driveways serve the parking lot, one being lined up with the existing Town Hall Driveway. The Town Hall Driveway provides primary access to the Severance Library. It intersects with Timber Ridge Parkway on the east side of the Town Hall.

Figure 3 shows an aerial photograph of the existing intersection and roadway geometry. East Harmony Road is classified as a Major Arterial Street on the Severance Roadway Plan. The posted speed on East Harmony Road is 40 mph west of Timber Ridge Parkway and 35 mph east of Timber Ridge Parkway. At the East Harmony Road/Timber Ridge Parkway intersection, East Harmony Road has one through lane in each direction, an eastbound right-turn lane, and bicycle lanes on the south side of the street. The eastbound right-turn lane is approximately 540 feet, including bay taper. The East Harmony Road/Timber Ridge Parkway intersection has stop sign control on Timber Ridge Parkway. As a Major Arterial Street, East Harmony Road should have a center lane for left-turn deceleration/storage. To the west at the East Harmony Road/Summit View Road

intersection, East Harmony Road has a wider cross section with a westbound left-turn lane. To the east at the East Harmony Road/Mahogany Way intersection, East Harmony Road has a wider cross section with left-turn lanes. It is not known why East Harmony Road was not widened in the subject segment when other developments (including the Town Hall) were approved and built. Since the north side of East Harmony Road is substandard for a Major Arterial Street, it is likely that the north half of the street will be widened and constructed with development proposals for the properties north of East Harmony Road.

At the East Harmony Road/RT-in Access intersection, East Harmony Road has one through lane in each direction and a short (approximately 30 feet long) eastbound right-turn lane adjacent to the eastbound right-turn lane approaching Timber Ridge Parkway. The combination of the “short” right-turn lane and the beginning of the aforementioned eastbound right-turn lane is approximately 300 feet, including bay taper.

Timber Ridge Parkway is classified as a Collector/Local Street on the Severance Roadway Plan. At the East Harmony Road/Timber Ridge Parkway intersection, Timber Ridge Parkway has separate northbound left-turn and right-turn lanes. The posted speed on Timber Ridge Parkway is 25 mph in this area. The Town of Severance may want to modify the existing striping on Timber Ridge Parkway (Figure 3) to the south of the Town Hall Driveway. A continuous two-way left-turn lane would remove any left-turning vehicles from the through lanes on Timber Ridge Parkway. This type of striping can continue as far south as the Town deems to be appropriate.

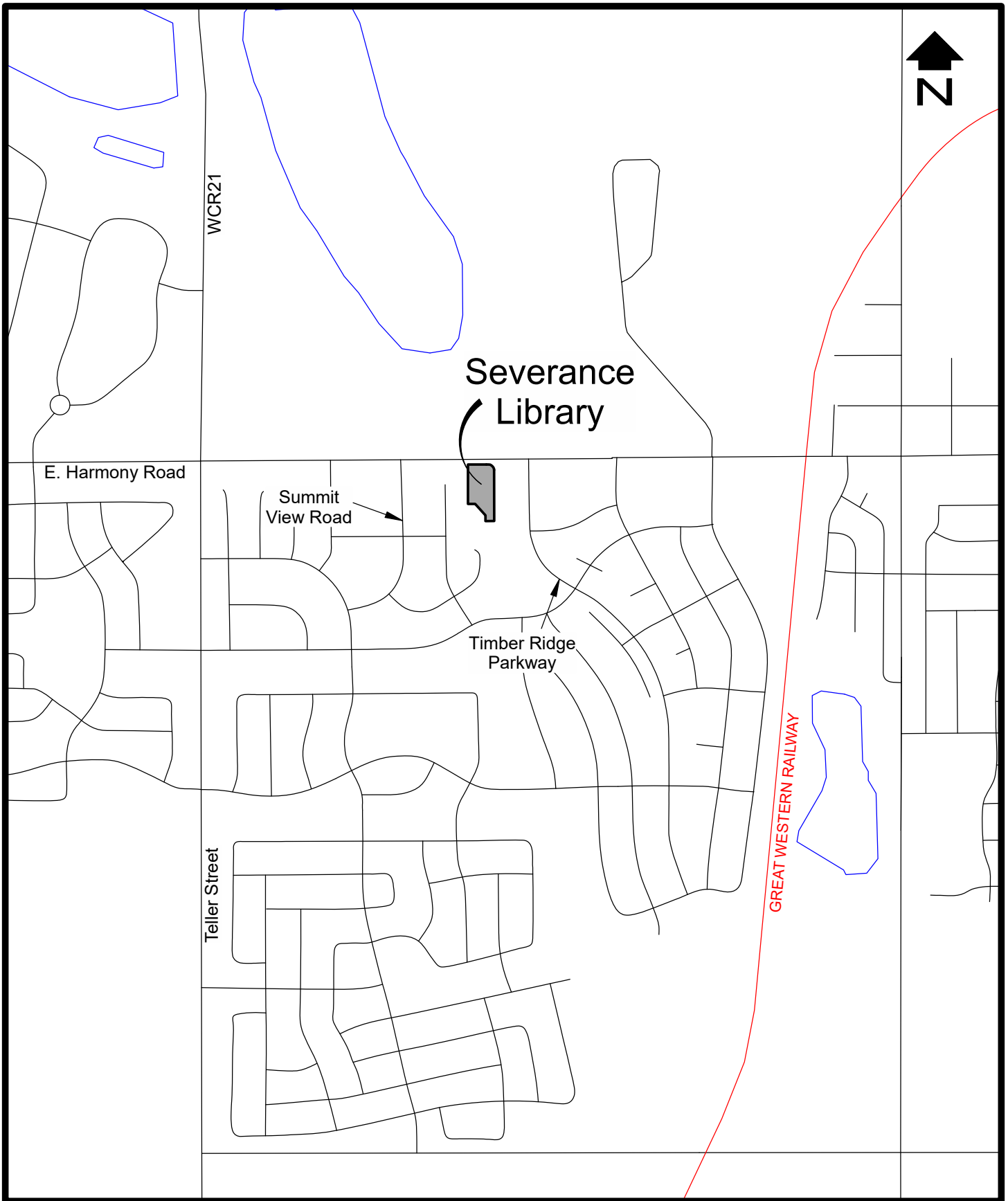
A compilation of trip generation information contained in Trip Generation, 11th Edition, ITE was used to estimate trips that would be generated by the proposed Severance Library site. A trip is defined as a one-way vehicle movement from origin to destination. Library (Code 590) was used as the land use. Table 1 shows the expected trip generation on a daily and peak hour basis. The initial 10,000 square foot building will generate approximately 706 daily trip ends, 3 morning peak hour trip ends, and 76 afternoon peak hour trip ends. With the future expansion, full development of the Severance Library will generate approximately 1,054 daily trip ends, 12 morning peak hour trip ends, and 123 afternoon peak hour trip ends.

Figure 4 shows the trip distribution and site generated peak hour traffic for the Severance Library. As stated earlier, as a Major Arterial Street, East Harmony Road should have a center lane for left-turn deceleration/storage. There are bicycle lanes and sidewalks on the south side of East Harmony Road. It is likely that the north side of East Harmony Road will be constructed to Severance Town Standards with development proposals for the land north of East Harmony Road.

At the East Harmony Road/Timber Ridge Parkway intersection, the required intersection sight distance (AASHTO) is 385 feet to the west (right turn with approach at 40 mph) and 390 feet to the east (left turn with approach at 35 mph). To the west, the actual sight distance is over 1000 feet. To the east, the actual sight distance is approximately 500 feet. At the Timber Ridge Parkway/Town Hall Driveway intersection,

the required intersection sight distance (AASHTO) is 240 feet to the north (right turn with approach at 25 mph) and 280 feet to the south (left turn with approach at 25 mph). The actual sight distances are greater than these. It is acknowledged that the minimum sight distance at driveways and intersections on Major Arterial Streets (East Harmony Road) is 665 feet and on Collector Streets (Timber Ridge Parkway) is 445 feet, per Table 3 in the **Severance Transportation Plan**.

It is concluded that the north side of West 4th Street needs to be constructed to Major Arterial Street Standards with a development proposal for the adjacent land. As a Major Arterial Street, East Harmony Road has a design speed of 55 mph. A westbound left-turn lane is required at the East Harmony Road/Timber Ridge Parkway intersection. This left-turn lane should provide 680 feet for deceleration, which includes bay taper, plus storage (likely 50 feet). The south side of East Harmony Road, with the bicycle lanes and sidewalks, is adequate. Sidewalks will be installed along the Severance Library frontage with appropriate connections to the existing sidewalks in the area. Do not hesitate to contact us if you have questions or desire additional information.



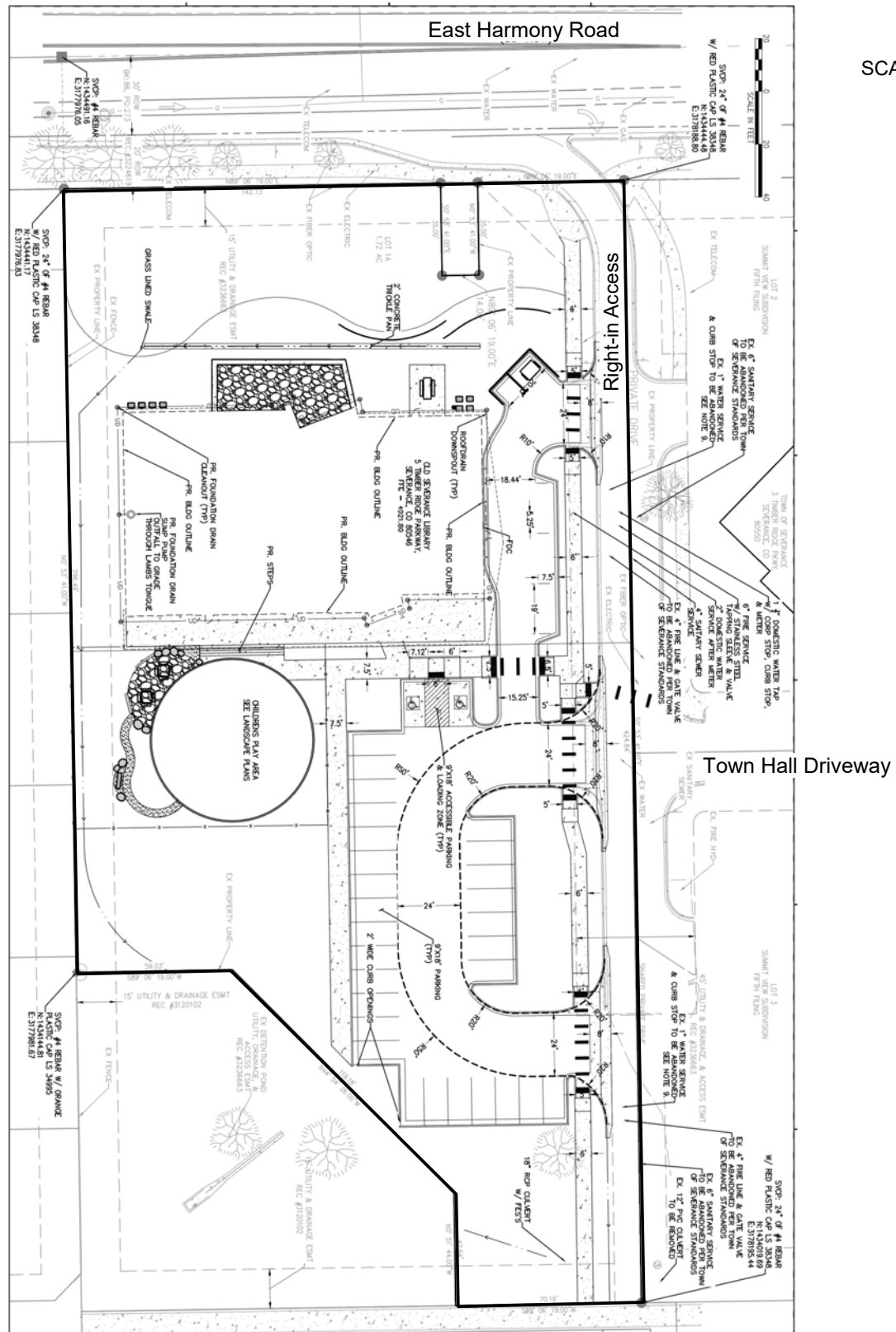
SCALE: 1"=1000'

SITE LOCATION

Figure 1



SCALE: 1"=60'



SITE PLAN

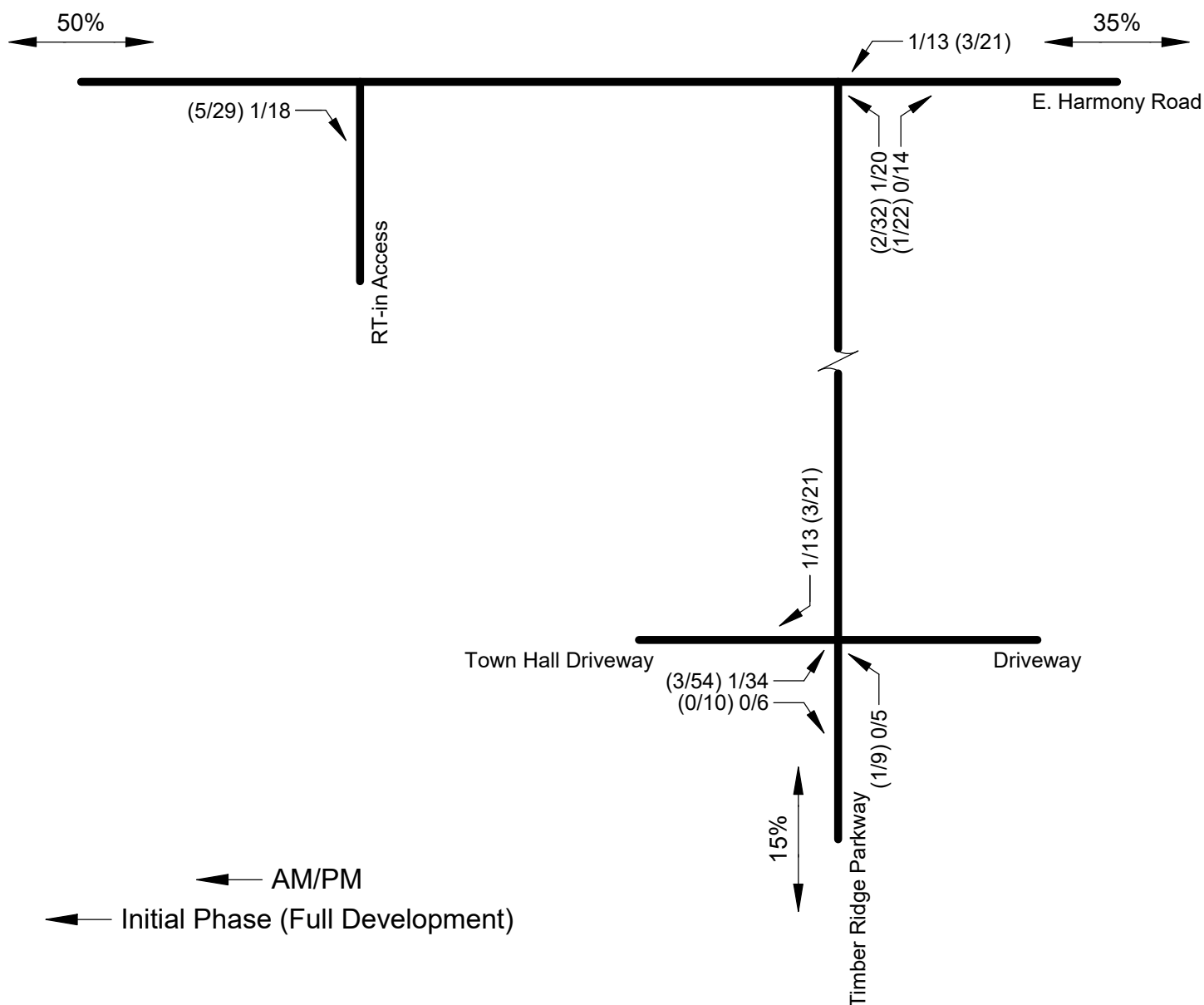
Figure 2



EXISTING INTERSECTION GEOMETRY

Figure 3

TABLE 1 Trip Generation												
Code	Use	Size	AWDTE		AM Peak Hour				PM Peak Hour			
			Rate	Trips	Rate	In	Rate	Out	Rate	In	Rate	Out
Initial Building												
590	Library	10.0 KSF	EQ	706	EQ	2	EQ	1	EQ	36	EQ	40
Building with Expansion												
590	Library	15.0 KSF	EQ	1054	EQ	9	EQ	3	EQ	59	EQ	64



TRIP DISTRIBUTION & SITE GENERATED PEAK HOUR TRAFFIC

Figure 4

APPENDIX

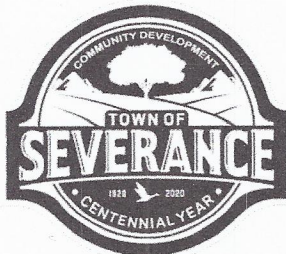
Subject: Severance Library
From: Abdul Barzak <abarzak@townofseverance.org>
Date: 4/22/2022, 8:28 AM
To: Matt Delich <matt@delichassoc.com>

Matt,

After speaking with JR Engineering, please see the list of required items to be included in the Traffic Memo.

- Trip Generation;
- Appropriateness of access locations;
- Location and requirements for turn lanes or acceleration/deceleration lanes at the access, including recommendations for taper lengths, storage length, acceleration/deceleration lengths, and other geometric design requirements per Town or CDOT requirements;
- Sight distance evaluations and recommendations (intersection, stopping, passing);
- Continuity and adequacy of pedestrian, transit and bike facilities within the study area;
- Appropriateness of the existing roadway signing and striping;
- Neighborhood and public input issues; and (None at this time)
- Figure for Trip Assignment

Thank you,



Abdul Barzak
Town Planner
Direct Line: 970-222-0584
Office: 970-686-1218

*Confidentiality Notice: This electronic transmissi
and may contain information that is privileged, c
immediately notify sender by return e-mail and c
of this communication or any attachments by ar,*

TOWN PRIDE through Leadership, Service and Collaboration.

*which it is addressed
error, please
ncerning the contents*

LEGAL DESCRIPTION

Date 2022-08-18

Abdul Barzak
Town Planner
Address
3 South Timber Ridge Parkway
Severance, CO 80546

Re: Clearview Library District – Branch Library Site Legal Description

Dear Abdul:

Please see the below legal description provided by Majestic Surveying located at 111 Diamond Valley Drive #104, Windsor, CO 80550. (970)-833-5698

PROPERTY DESCRIPTION

A parcel of land situate in the Northwest Quarter of Section Two (2), Township Six North (T.6N.), Range Sixty-seven West (R.67W.) of the Sixth Principal Meridian (6th P.M.) being more particularly described as follows:

LOTS 1 AND 4, BLOCK 1, SUMMIT VIEW SUBDIVISION, FIFTH FILING, COUNTY OF WELD, STATE OF COLORADO.

Said parcel contains 74,920 Square Feet or 1.72 Acres more or less by this survey.

BASIS OF BEARINGS AND LINEAL UNIT DEFINITION

Assuming the North line of the Northeast Quarter of the Northwest Quarter of Section 2, Township 6 North, Range 67 West of the 6th P.M., monumented as shown on this drawing, as bearing North 89°06'19" East, being a Grid Bearing of the Colorado State Plane, North Zone, North American Datum 1983/2011, a distance of 1315.75 feet and with all other bearings contained herein relative thereto.

The lineal dimensions as contained herein are based upon the "U.S. Survey Foot".

Sincerely,

Eric Grebliunas

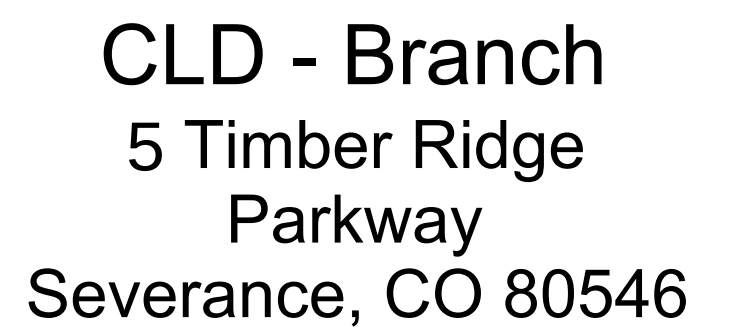
From: [Sandi Friedrichsen](#)
To: [Abdul Barzak](#)
Subject: RE: Clearview Library Site Plan & Replat (Town of Severance Planning Referral)
Date: Tuesday, September 27, 2022 3:47:51 PM
Attachments: [image003.png](#)
[image004.png](#)

1. A hydrant is required to be within 150 feet of the Fire Department Connection that comes out of the building with no obstructions
2. A Knox box is required for this building.
3. The riser room looks very small for a riser, water and electrical. The riser will take up a lot of space and having the electrical in the same room could be a problem because of the water
4. The riser room door must be labeled
5. Shelving can not be taller than 12 ft unless the sprinkler system is designed for that.

Sandra Friedrichsen
Fire Marshal
Windsor Severance Fire Rescue
100 7th Street - Windsor, CO 80550
Office Hours Monday - Thursday 0700-1700
Main - (970) 686-2626
Email – firemarshal@wsfr.us
www.wsfr.us



APPLICANT HAS MADE ALL ADJUSTMENTS



ACOUSTICAL ENGINEER
ENGINEERING DYNAMICS, INC
3925 S. Kalamath St.
Englewood, CO 80110
303-716-4367

L-102

Page 289 of 303

- Look at a native seed mix that has wildflowers and weed control.

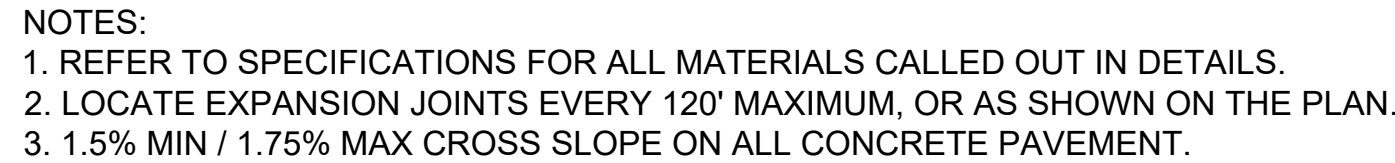
Specify Fruitless Variety

OWNER
Clearview Libraries
 720 Third St.
 Windsor, CO 80550
 970-686-5603

STRUCTURAL ENGINEER
LARSEN STRUCTURAL DESIGN
 320 Maple Street, Suite 120
 Ft. Collins, CO 80521
 970-568-3355

ELECTRICAL ENGINEER
INNOVATIVE ELECTRICAL SYSTEMS, INC.
 8093 WEST ILIFF LANE
 Lakewood, CO 80227
 303-807-7181

LANDSCAPE ARCHITECT
DHM DESIGN
900 SOUTH BROADWAY
DENVER, COLORADO 80209
720-763-3966



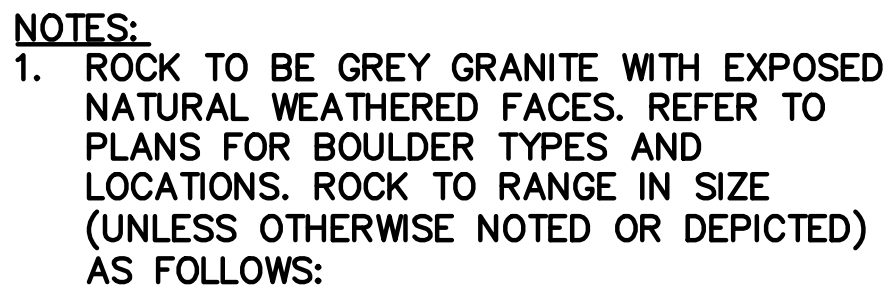
1



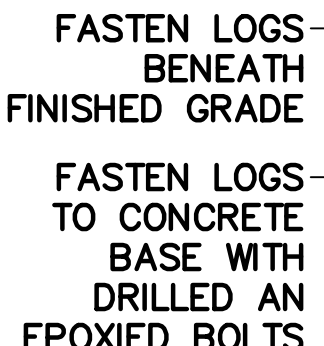
2



3



2. CONTRACTOR TO SUBMIT ROCK SAMPLE FOR APPROVAL PRIOR TO DELIVERY OF ROCK TO SITE.
3. PLACE ROCKS IN CONFIGURATIONS AND LOCATIONS AS SHOWN ON PLAN.
4. BURY ROCK $\frac{1}{3}$ OF TOTAL DEPTH.
5. WASH OFF ROCKS COMPLETELY AFTER PLACEMENT.
6. ROCKS TO BE APPROVED BY THE OWNER'S REPRESENTATIVE PRIOR TO PLACEMENT.
7. DO NOT FRACTURE ROCK DURING PLACEMENT, SUCH ACTION WILL BE CAUSE FOR REJECTION.
8. CHOOSE AND PLACE ROCKS SO THAT A MINIMUM OF PROCESSING AND EXCAVATION SCARS ARE VISIBLE.
9. FINAL BOULDER PLACEMENT TO BE APPROVED BY CITY AND LANDSCAPE ARCHITECT PRIOR TO ACCEPTANCE.



4

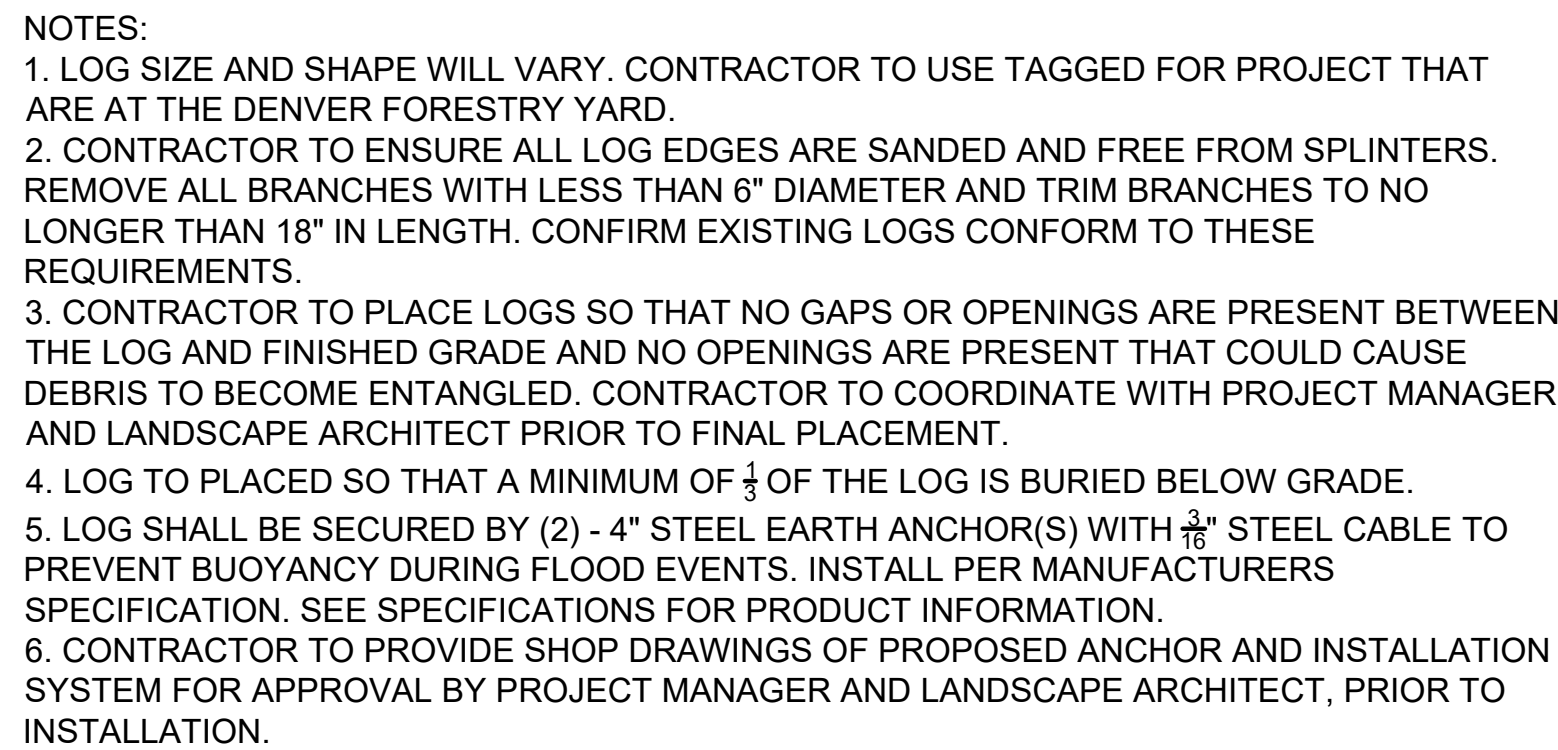
NOTES

-
- Technical drawing of a roof section. The top part shows a plan view of a roof with a 2:12 pitch. The bottom part shows a vertical section of the roof with a 9:12 pitch. A callout indicates "SURFACE VARIES RE: PLAN".

5



7



8

RATIO

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SHEET TITLE
SITE DETAILS

L-104

OWNER
Clearview Libraries
 720 Third St.
 Windsor, CO 80550
 970-686-5603

STRUCTURAL ENGINEER
LARSEN STRUCTURAL DESIGN
 320 Maple Street, Suite 120
 Ft. Collins, CO 80521
 970-568-3355

ELECTRICAL ENGINEER
INNOVATIVE ELECTRICAL SYSTEMS, INC.
 8093 WEST ILIFF LANE
 Lakewood, CO 80227
 303-807-7181

LANDSCAPE ARCHITECT
DHM DESIGN
900 SOUTH BROADWAY
DENVER, COLORADO 80209
720-763-3966

ACOUSTICAL ENGINEER
ENGINEERING DYNAMICS, INC
3925 S. Kalamath St.
Englewood, CO 80110
303-716-4367

SEAL | DATE 2022/08/18

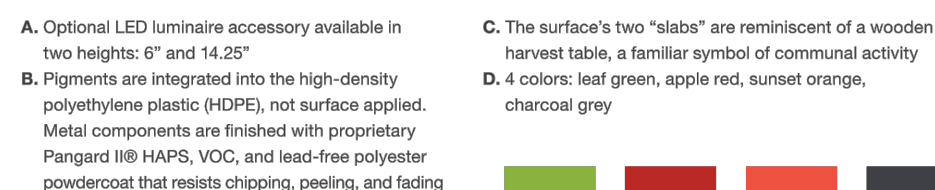
[illegible]

RATIO

PROJECT NO. 21732.000

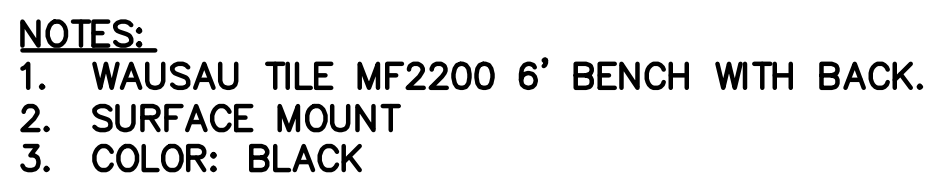
SHEET NUMBER _____

Page 292 of 303



BY LANDSCAPE FORM OR APPROVED EQUAL
SURFACE MOUNT. COLOR CHARCOAL GREY

NOT TO SCALE

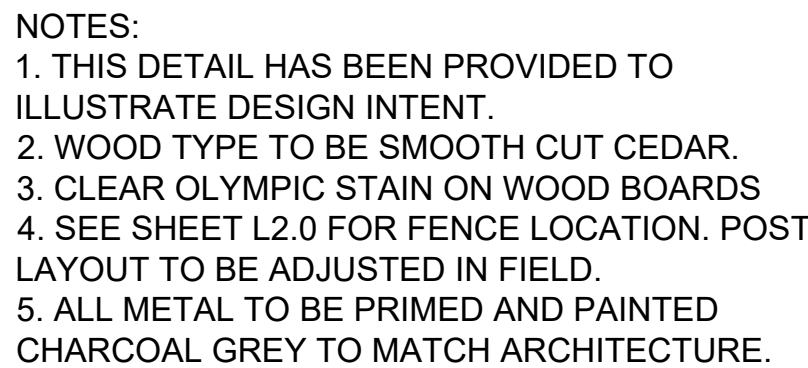


6' BENCH

NOT TO SCALE

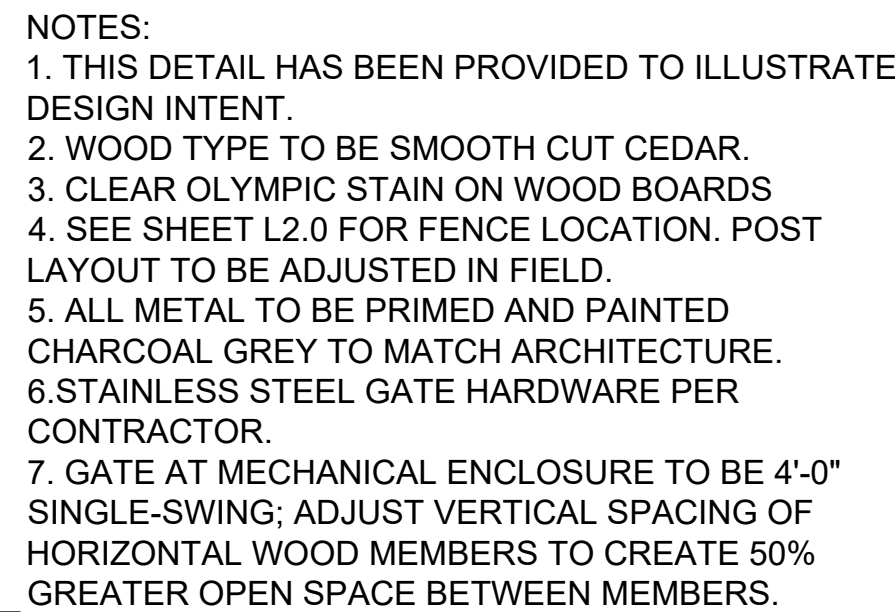


42" OUTDOOR TABLE

$$1'' = 1' - 0''$$


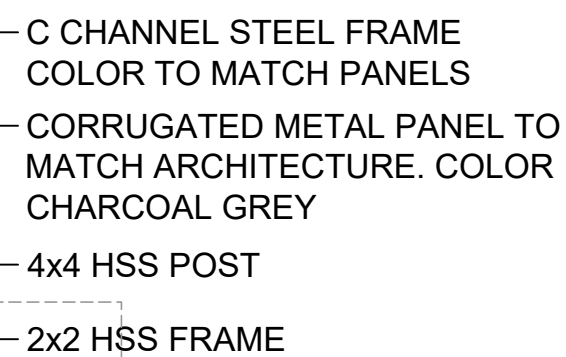
SCREEN WALL

1/2"=1'-0"



SCREEN WALL GATE

1/2"=1'-0"



SIGN WALL

1/2"=1'-0"

From: [Michael McCullar](#)
To: [Abdul Barzak](#)
Subject: Re: Clearview Library Site Plan & Replat (Town of Severance Planning Referral)
Date: Wednesday, September 28, 2022 8:05:02 AM
Attachments: [image001.png](#)

no comments

Michael McCullar, Chief Operating Officer
Weld RE4 School District
970-686-8015
180 North 8th Street
Windsor, CO 80550
www.weldre4.org

From: [Christine Lutz](#)
To: [Abdul Barzak](#)
Cc: [Scott Ballstadt](#); [planningtechs](#)
Subject: RE: REVISED Clearview Library Site Plan & Replat (Town of Severance Planning Referral)
Date: Wednesday, December 28, 2022 10:05:19 AM
Attachments: [image001.png](#)

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Hello Abdul,

The Town of Windsor has reviewed the application materials provided for the Clearview Library project. The subject property is outside the Town's Growth Management and Community Influence areas, therefore we have no comment.

Thank you for the opportunity to review the project.

Have a marvelous rest of your week,

Chrissy

Christine Lutz

Planning Technician

Windsor Town Hall | Community Development Dept.
301 Walnut St. | Windsor, CO 80550

Dir: 970-674-2439 | www.windsorgov.com
planningtechs@windsorgov.com

Your patience is appreciated while we are experiencing a high volume of incoming work being processed. You may find some of your answers by going to the website and referring to the [Planning](#) page and [FAQ's](#) or the [Municipal Code](#).

The Town of Windsor offices will be closed in observance of New Year's Day the following:

The afternoon of Friday, December 30th and Monday, January 2nd. Cheers!

From: [Davis - DNR, Jackson](#)
To: [Abdul Barzak](#)
Subject: Re: REVISED Clearview Library Site Plan & Replat (Town of Severance Planning Referral)
Date: Friday, January 6, 2023 4:33:25 PM
Attachments: [image003.png](#)
[NEWCOLOGO Livelifoutside - Transparent.png](#)

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Hi Abdul,

CPW has no comments or conflicts with this project.

Thanks,

Jackson

On Mon, Dec 19, 2022 at 4:49 PM Abdul Barzak <abarzak@townofseverance.org> wrote:

From: [Chrys Hinze](#)
To: [Abdul Barzak](#)
Cc: [Cali Gunter](#); [Tad Moen](#)
Subject: RE: REVISED Clearview Library Site Plan & Replat (Town of Severance Planning Referral)
Date: Wednesday, December 21, 2022 4:05:11 PM
Attachments: [image001.png](#)

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Thank You, Abdul. At this time, North Poudre Irrigation Company has no comment concerning this project.

Chrysten Hinze, Esq.
Lind, Ottenhoff & Root, LLP
355 Eastman Park Dr. #200
Windsor, CO 80550

Email: chrys@lorlegal.com
Tel. 970.674-9888
Fax 970.674-9535

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From: [Matt Organ](#)
To: [Abdul Barzak](#)
Subject: RE: REVISED Clearview Library Site Plan & Replat (Town of Severance Planning Referral)
Date: Monday, December 19, 2022 5:26:14 PM
Attachments: [image001.png](#)

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Abdul,

This is in Xcel's territory and will be served by them. PVREA has no conflict.

Thanks,

Matt Organ

Poudre Valley Rural Electric Association, Inc.

From: [Ethan Cozzens](#)
To: [Abdul Barzak](#)
Cc: [Dale Trowbridge](#)
Subject: RE: Clearview Library Site Plan & Replat (Town of Severance Planning Referral)
Date: Wednesday, September 28, 2022 3:41:25 PM
Attachments: [image001.png](#)

Hello Abdul,

No impact on our structures. No need for further review.

Thank you,

Ethan Cozzens

General Manager

The New Cache La Poudre Irrigating Company

33040 Railroad Ave.

P.O. Box 104

Lucerne, CO 80646

ecozzens@newcache.com

Office: 970-352-0222

From: [Heather S Alderman](#)
To: [Abdul Barzak](#)
Subject: RE: REVISED Clearview Library Site Plan & Replat (Town of Severance Planning Referral)
Date: Tuesday, December 20, 2022 7:14:46 AM
Attachments: [image003.png](#)

Caution: This is an external email and may have a suspicious subject or content. Please take care when clicking links or opening attachments. When in doubt, contact your OnixIT at support@onixit.com or (970) 223-0300.

We do not have comments.

Thanks,
Heather

Heather S. Alderman
Project Hydrologist
Paragon Consulting Group, Inc.
1103 Oak Park Drive, Suite 110
Fort Collins, Colorado 80525
Office 970-377-1600
Mobile 303-901-1701
Fax 970-377-1880



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SEVERANCE PLANNING COMMISSION

RESOLUTION NO. PC-2023-04R

**A RESOLUTION OF THE SEVERANCE PLANNING COMMISSION
RECOMMENDING APPROVAL OF SITE DEVELOPMENT PLAN FOR
CERTAIN REAL PROPERTY LOCATED WITHIN THE TOWN OF
SEVERANCE**

WHEREAS, Clearview Library District, (“Applicant”), as owner of certain real property legally described as Lot 1A, Clearview Library Replat A Subdivision, Town of Severance (“Property”), has submitted an application for site plan approval to develop and construct a single 8,735 s.f. public library on the Property (the “Application”); and

WHEREAS, the Severance Planning Commission has conducted a public hearing on the Application, and has considered all the evidence presented at the public hearing, the relevant site plan standards and review criteria set forth in the Severance Municipal Code (“Code”); and

WHEREAS, the Severance Planning Commission wishes to make a recommendation to the Town Council regarding the Application.

NOW, THEREFORE, BE IT RESOLVED BY THE SEVERANCE PLANNING COMMISSION:

1. That the Severance Planning Commission recommends approval of the Application, including the site plan, with the following conditions:
 - a. All remaining technical corrections to the Site Plan and Construction Drawings requested by Town staff shall be made to the Town staff’s satisfaction.
 - b. Final Construction Documents shall be approved by the Town Engineer prior to the start of construction activities.
 - c. The Town and the Applicant shall execute a development agreement, in a form to be approved by the Town Attorney.

PASSED AND ADOPTED this ____ day of _____, 2023.

Chairperson

ATTEST:

Leah Vanarsdall, MMC, Town Clerk

April Community and Economic Development Engineering Report



Bill Cornelius, PE, Community Development Director

Abdul Barzak, Town Planner

Chris Messersmith, PE - Colorado Civil Group, Inc. (CCG)

Shar Shadowen, PE - Colorado Civil Group, Inc. (CCG)

April 19, 2023

Capital Improvement Projects

SH 392 – WCR 23 Intersection Improvements

Work orders for the procurement of the traffic signal equipment (poles, mast arms, signal cabinet and controller) were sent to the vendors in mid-January to get the equipment ordered. The controller was received on March 10, 2023. The poles and mast arms are anticipated to be delivered near the end of May, and the cabinet delivery is estimated mid July. Town Council has awarded the construction contract to Coulson Excavating Company. Flesburg Holt & Ullevig will hand Construction Management and Inspection Services for the Town while Ground Engineering will provide Materials Testing Services. Construction is anticipated to begin in April 2023, with completion in August 2023, and project closeout in December 2023.

E Harmony Road – WCR 19 Intersection Improvements

Drexel, Barrell & Co. (DBC) submitted the 90% construction drawing package on January 18th. CCG is reviewing the submittal package with Town staff and will issue comments and coordinate with the referral agencies. The acquisition of the 800 square feet of additional right-of-way in the southeast quadrant of the intersection was approved by the Town Council on January 24, 2023, and possession will occur 90 days from this date (April 24, 2023). Town staff has been informed that the construction of this project may be fully paid for using BG allocation funding. This project will not be advertised for bid until a decision on the STBG allocation funding is finalized and all additional approvals and clearances, if required, have been obtained. Staff will continue to work NFRMPO on potential requirements and timeline for grant funds and will bring updates to Town Council as received.

CDOT TAP/MMOF Trail Project

Mountain Constructors, Inc. (MCI) re-mobilized on March 20th to begin wrapping up the construction of the trail and outstanding items. The poles for the flashing beacon signal crossings at First Street and Tinsman Avenue are still backordered and a delivery date has not been provided by the manufacturer. We are anticipating that the flashing beacons can be installed in April. Sprinkler repair and sod placement will occur once the irrigation system has been turned on in the park, anticipated this week (weather permitting). We anticipate construction will be completed by mid-May.

Community Park Phases 2 & 3

Water service for the CXT restroom is anticipated to be provided by The Town of Severance South Water Line Loop Capital Improvement Project and/or the Waterfowl Way Extension (Tailholt Subdivision Fourth Filing) when completed. Obtaining a water service from the NWCWD is not likely.

Secondary Water Connection/Supply

Town staff has completed a draft IGA document and plans to meet with City of Greeley staff to discuss operational parameters related to the water system secondary connection (i.e. emergency connection). CCG has prepared the secondary connection supporting (operation/sizing) calculations.

Water System Monitoring

CCG has been working with Town staff and the NWCWD staff on a weekly basis to monitor the Town's water distribution system and performance (pressure and flowrates) continuously since June 5, 2022. The Town's Maximum Day Demand (MDD) of 1.20 MGD was observed on July 17, 2022. CCG has been working with the Public Works Department and the NWCWD to make seasonal adjustments to Master Meters No. 1 and No. 2 to meet water quality requirements.

NWCWD Amended and Restated Water Service Agreement/Potable Water System Master Plan

CCG has completed the potable water system hydraulic modeling for the full build out of the Town of Severance's water service area. Data has been requested of Stantec/NWCWD at the Master Meter No. 1 location. Future upgrades to Master Meter No. 1 will allow the Town of Severance to serve the full build out of the water service area. On January 6, 2023, Stantec confirmed that they have all the information they need from the Town of Severance. Once a response is provided by Stantec/NWCWD, CCG will coordinate with Town Management on the final Potable Water System Master Plan since it is unknown, at this time, what additional capacity the NWCWD can provide to the Town of Severance. According to Town Management, Stantec/NWCWD will not respond until their water system master plan is complete.

1.5 MG Elevated Water Tank

The 1.5 MG Elevated Water Tank project was awarded to Landmark Structures I, LP by Town Council on February 28, 2023. Site work is anticipated to begin in April 2023 and continue through November 2024. The 1.5 MG Elevated Water Tank is anticipated to be commissioned by October 31, 2024.

Wastewater Projections

Town Management and CCG have reached out to the Town of Windsor (TOW) regarding future wastewater treatment capacity with their planned Wastewater Treatment Facility (WWTF) expansion. Additional wastewater capacity is dependent on three items; (1) Additional capacity at the TOW WWTF, (2) a new sanitary sewer interceptor from Severance South to the Town of Windsor WWTF, and (3) a Utility Plan Amendment that the Town will need to prepare and submit to the North Front Range Water Quality Planning Association for review and approval. CCG has completed the wastewater projections for the full buildout of the Town of Severance service area. CCG submitted the wastewater (building permit) projections over the next 20+ years to Town Management on for review on December 14, 2022.

DEVELOPMENT REVIEW UPDATES

The list below is all of the currently active submitted projects to the Town Council. If you have questions on these please contact me for more information.

- **Severance Storage** (Annexation/Zoning/Site Plan) – Applicant has submitted to annex, zone, and continue use on additional annexed property. Town staff is currently reviewing, and stakeholders have been notified. Staff will bring updates to Council as they become available.
- **Ziggi's Severance** (9843 E. Harmony Road) – Applicant has submitted a commercial project or site plan, however, the applicant has requested a continuance as they re-visit the layout. Once resubmitted Town staff will review, and notify per code. Staff will bring updates to Council as they become available.
- **Clearview Library** (5 S. Timber Ridge Parkway) – Applicant has submitted Site Plan, Town Staff is currently reviewing, stakeholders have been notified. Staff will bring updates to Council as they become available.
- **Moody Subdivision** (Preliminary Plat) – The Applicant has submitted a preliminary plat for the Moody project. The preliminary plat will contemplate the single-family residential only. The commercial frontage, school site, and multi-family approved with the concept plan will remain as tracts for future development with this submittal. Town staff is reviewing and will bring updates to Council as they become available.
- **Legacy Farm** (Concept Plan/Annexation) – An applicant has approached Town staff and is asking Town Council if the Town of Severance would like to pursue annexation at the March 28th meeting. Staff will provide additional information during the March 28th Work Session.