

AGENDA



VALLEJO PLANNING COMMISSION REGULAR MEETING – 7:00 P.M. COUNCIL CHAMBERS

555 Santa Clara Street, Vallejo, California

Peggy Cohen-Thompson,
Chair
Jamar Stamps, Vice Chair
Melissa Bowman
Donald Douglass
Eric Blind

February 6, 2023

NOTICE: Members of the public will be able to participate in-person or remotely via Zoom. City Hall and the Council Chambers will be open to members of the public 30 minutes prior to the start of the meeting.

VIEW THE MEETING:

There are four different ways you can view this public meeting:

- In Person
- Watch Vallejo local channel 28
- Stream from the City website: www.cityofvallejo.net/Streaming
- Join the Zoom webinar: <https://ZoomRegular.Cityofvallejo.net>

IMPORTANT NOTICE

This AGENDA contains a brief general description of each item to be considered. The posting of the recommended actions does not indicate what action may be taken. If comments come to the Planning Commission without prior notice for an item not listed on the AGENDA, no specific answers or responses should be expected at this meeting per State law.

Pursuant to Government Code Section 54954.3 of the Brown Act, members of the public shall be afforded the opportunity to speak on any agenda item of interest to them after being recognized by the presiding officer. Members of the public wishing to be so recognized are requested to submit a completed speaker card to the Secretary of the Planning Commission prior to the consideration of the item or raise their hand via ZOOM: (<https://ZoomRegular.Cityofvallejo.net>) or by phone: Dial (669) 900-6833. Enter Meeting ID: 914 0075 0676#. Press * 9 to digitally raise your hand from the phone. For additional instructions on how to speak remotely during public comment, please visit www.cityofvallejo.net/publiccomment. In person speakers will be recognized first.

This AGENDA contains a brief general description of each item to be considered. The posting of the recommended actions does not indicate what action may be taken. If comments come to the Planning Commission without prior notice and are not listed on the AGENDA, no specific answers or response should be expected at this meeting per State law.

Notice of Availability of Public Records: All public records relating to an open session item, which are not exempt from disclosure pursuant to the Public Records Act, that are distributed to a majority of the Planning Commission will be available on the City of Vallejo website at www.cityofvallejo.net subject to staff's ability to post the documents prior to the meeting.

Disclosure Requirements: Government Code Section 84308 (d) sets forth disclosure requirements which apply to persons who actively support or oppose projects in which they have a "financial interest", as that term is defined by the Political Reform Act of 1974. If you fall within that category, and if you (or your agent) have made a contribution of \$250 or more to any commissioner within the last twelve months to be used in a federal, state or local election, you must disclose the fact of that contribution in a statement to the Commission.

Appeal Rights: The applicant or any party adversely affected by the decision of the Planning Commission may, within ten days after the rendition of the decision of the Planning Commission, by filing a written appeal with the Director of Planning and Development Services. Such written appeal shall state the reason or reasons for the appeal and why the applicant believes he or she is adversely affected by the decision of the Planning Commission. Such appeal shall not be timely filed unless it is actually received by Director of Planning and Development Services or designee no later than the close of business on the tenth calendar day after the rendition of the decision of the Planning Commission. If such date falls on a weekend or City holiday, then the deadline shall be extended until the next regular business day.



The Council Chambers in City Hall is ADA compliant. Devices for the hearing impaired are available from the City Clerk. Requests for disability related modifications or accommodations, aids or services may be made by a person with a disability to the City Clerk's office no less than 72 hours prior to the meeting as required by Section 202 of the Americans with Disabilities Act of 1990 and the federal rules and regulations adopted in implementation thereof.

If you have any questions regarding any of the following agenda items, please call the assigned planner or project manager at (707) 648-4326.

1. CALL TO ORDER

2. PLEDGE OF ALLEGIANCE

3. ROLL CALL

4. CONSENT CALENDAR AND APPROVAL OF AGENDA

Upon motion of any Commissioner, all items placed upon the consent calendar may be acted upon collectively, and each shall be deemed to have received the action recommended by the Secretary or City Attorney; except that if any Commissioner objects to the placement of an item on the consent calendar, or if any member of the public wishes to address the Commission on any such item, the item shall be removed from the consent calendar and shall be heard and acted upon in its proper place on the agenda as designated by the Presiding Officer.

After making changes in the agenda, if any, as permitted under these rules of order and procedure, the Commission shall approve the agenda which shall constitute the agenda of business to be considered at the meeting. The motion offered to approve the agenda shall include the adoption of the consent calendar.

A. APPROVAL OF AGENDA

B. APPROVAL OF MINUTES – December 5, 2022 Regular Meeting Minutes

C. OTHER CONSENT ITEMS - None

5. REPORT OF THE CITY COUNCIL LIAISON

The City Council Liaison may, from time to time, wish to make announcements and report on items of activity that may be of interest to the Commission and the general public.

6. COMMUNITY FORUM

The Presiding Officer shall announce that members of the public have the opportunity to directly address the Commission on items of interest to the public that are within the subject matter jurisdiction of the Commission and not on the current agenda. Up to fifteen (15) minutes shall be set aside for the community forum and each speaker shall be allocated up to three (3) minutes, unless time is extended by the Presiding Officer with the Commission's consent. Items of business listed on the agenda shall not be further discussed under the community forum. Anyone desiring to address the Commission may indicate such interest in one of the two ways listed below:

1. Any interested members of the public desiring to communicate with the Planning Commission for this item may approach the podium to speak when the Presiding Officer opens the Community Forum and indicate that they would like to do so.

*2. Any interested members of the public desiring to communicate with the Planning Commission for this item may do so via ZOOM:(<https://ZoomRegular.Cityofvallejo.net>), or by phone: Dial (669) 900-6833. Enter Meeting ID: 914 0075 0676#. Press * 9 to digitally raise your hand from the phone. For additional instructions on how to speak remotely during public comment, please visit, www.cityofvallejo.net/publiccomment. Please know that in-person speakers will be recognized first.*

7. PUBLIC HEARING

A. PROJECT ADDRESS/APN: 1598 Fairgrounds Drive / APN: 0068-171-160

APPLICATIONS #: Major Use Permit (UP22-0006)

Development Review (DVR22-0016)
Design Review (DR22-0016)
Landscape Review (LR22-0005)
Zoning Compliance (ZC22-0035)

PROJECT APPLICANT: Dutch Bros, LLC/ Russ Orsi

PROPERTY OWNER: Letap Real Estate 2, LLC/ Victor Chiang

PROJECT DESCRIPTION:

The project consists of a Major Use Permit, Design Review, Development Review, Exception, Landscape Review, and a Zoning Compliance to demolish the existing vacant 3,683 square-foot commercial building and construct a new 950-square-foot restaurant with dual drive-through lanes for Dutch Bros. The project includes site improvements for a two-lane drive-through, new surface parking, a trash enclosure and new landscaping. Hours of operation are proposed as 5 a.m. to 11 p.m.

PROPOSED ENVIRONMENTAL
DETERMINATION:

The project is exempt pursuant to California Environmental Quality Act (CEQA) Guidelines, Section 15061 (B)(3) "Common Sense Exemption" because it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment and further, pursuant to Guidelines, Section 15302 (Class 2: "Replacement or Reconstruction" because the project consists of replacing an existing commercial structure with a smaller commercial structure designated for the same purpose and therefore, no further environmental review is required.

STAFF
RECOMMENDATION:

Staff recommends that the Planning Commission adopt Resolution No. PC 23-XX to APPROVE UP22-0006, DVR22-0016, DR22-0016, LR22-0005, and ZC22-0035.

PROJECT PLANNER: Cesar Orozco, Principal Planner
cesar.orozco@cityofvallejo.net

8. ACTION ITEMS – None

9. WRITTEN COMMUNICATIONS

Written communications from the public will be received and filed. Written communications regarding items on the agenda will be noted at the time the item is considered.

10. REGULAR REPORTS

A. SECRETARY'S REPORT

The Secretary may, from time to time, report on items that may be of interest to the Commission and general public.

B. CITY ATTORNEY'S REPORT

The City Attorney may, from time to time, report on items that may be of interest to the Commission and general public.

C. REPORT OF THE PRESIDING OFFICER AND MEMBERS OF THE PLANNING COMMISSION

The Presiding Officer and any Commissioner may, from time to time, wish to make certain announcements, request information from staff, and to report on items of activity that may be of interest to the Commission and the general public.

D. REPORT OF THE SUBCOMMITTEES

11. OTHER AGENDA ITEMS

A. Discussion of Future Agenda Items

- a. Phase 2 Zoning Code Updates
- b. Housing, Safety and Environmental Justice Elements
- c. Overview of new State housing laws

12. ADJOURNMENT

I, Jasmine Thibeaux, Planning & Development Services Executive Secretary, do hereby certify that I have caused a true copy of the above notice and agenda to be delivered to each of the members of the Vallejo Planning Commission, at the time and in the manner prescribed by law and that this agenda was posted at City Hall, 555 Santa Clara Street, CA at 5:00 p.m. Tuesday, January 31, 2023.

Jasmine Thibeaux

Dated January 31, 2023

Jasmine Thibeaux

**CITY OF VALLEJO PLANNING COMMISSION
REGULAR MEETING MINUTES
COUNCIL CHAMBERS
December 5, 2022**

1. CALL TO ORDER

The meeting was called to order by Chairman Cohen-Thompson at 7:02 p.m.

2. PLEDGE OF ALLEGIANCE

3. ROLL CALL

Present: Chair Cohen-Thompson, Vice-Chair Stamps, Commissioners Matulac, Blind, Douglass, Bowman

Absent: Palmares

Staff present: Planning Manager Kavanaugh-Lynch, Director Christina Ratcliffe, Laura Zagaroli

4. CONSENT CALENDAR AND APPROVAL OF AGENDA

Action: Moved by Commissioner Bowman, second by Vice-Chair Stamps, the Commission approved the consent calendar and agenda with the following vote:

VOTE:

AYES: Chair Cohen-Thompson, Vice-Chair Stamps, Commissioners Matulac, Bowman, Douglass, Blind

NOES: None

ABSENT: Palmares

ABSTAIN: None

A. APPROVAL OF MINUTES– September 19, 2022 Regular Meeting Minutes

B. OTHER CONSENT ITEMS - None

5. REPORT OF THE CITY COUNCIL LIASION - None

6. COMMUNITY FORUM – No Speakers

7. PUBLIC HEARING - None

8. ACTION ITEMS - None

9. WRITTEN COMMUNICATIONS - None

10. REGULAR REPORTS

A. SECRETARY'S REPORT – None

B. CITY ATTORNEY'S REPORT - None

C. REPORT OF THE PRESIDING OFFICER AND MEMBERS OF THE PLANNING COMMISSION

1. Chair Cohen-Thompson presented an Acknowledgement of Commissioners Bowman, Matulac and Palmares for their City Council races and public service.
2. Chair Cohen-Thompson presented a Certificate Appreciation for Commissioner Matulac for his service to the City of Vallejo Planning Commission.
3. Commissioner Matulac thanked current and former Commissioners, Staff for supporting his 7.5 year tenure. He recommended that community members that want to become active should join one of the City's Commissions or Boards.

D. REPORT OF THE SUBCOMMITTEES – None

11. OTHER AGENDA ITEMS – None

- A. Presentation of Parking and Transportation Demand Management (PTDM) Plan and In-lieu Fee Program related to Potential Future Funding of City Infrastructure Projects to Reduce Vehicle Miles Travelled (VMT) and Contribute to Safety and Multimodal Accessibility

Planning Manager Kavanaugh-Lynch provided a brief background on the topic and introduced Ellen Polling of Fehr & Peers.

Ellen Polling presented an informational Power Point presentation and answered questions of the Planning Commissioners.

12. INFORMATIONAL ITEMS – None

13. ADJOURNMENT

Action: Moved by Vice-Chair Stamps, second by Commissioner Bowman, the Commission adjourned the meeting with the following vote:

VOTE:

AYES: Chair Cohen-Thompson, Vice-Chair Stamps, Commissioners Matulac, Bowman, Douglass and Blind

NOES: None

ABSENT: Palmares

ABSTAIN: None

Chair Cohen-Thompson adjourned the meeting at 8:12 p.m.

Peggy Cohen-Thompson, CHAIRPERSON

ATTEST:

Manager Kavanaugh-Lynch
SECRETARY

DRAFT



**STAFF REPORT
CITY OF VALLEJO
PLANNING COMMISSION**

I. PROJECT INFORMATION

Item No. 7.A

DATE OF MEETING:

February 6, 2023

PROJECT NUMBER:

Major Use Permit (UP22-0006)
Development Review (DVR22-0016)
Design Review (DR22-0016)
Landscape Review (LR22-0005)
Zoning Compliance (ZC22-0035)

PREPARED BY:

Cesar Orozco, Principal Planner

PROJECT LOCATION:

1598 Fairgrounds Drive / APN: 0068-171-160

**APPLICABLE ZONING
CODE SECTION(S):**

Major Use Permit (Vallejo Municipal Code (VMC)
Chapter 16.606)
Development Review (VMC Chapter 16.605)
Design Review (VMC Chapter 16.604)
Landscape Review (VMC Chapter 16.504)
Zoning Compliance (VMC Chapter 16.603)

PROJECT SUMMARY:

The project consists of a Major Use Permit, Design Review, Development Review, Exception, Landscape Review, and a Zoning Compliance for a new 950 square-foot restaurant with a drive-through for Dutch Bros. The project includes site improvements for a two-lane drive through, new surface parking, a trash enclosure and new landscaping. Hours of operation are proposed as 5 a.m. to 11 p.m.

CEQA DETERMINATION:

The project is exempt pursuant to California Environmental Quality Act (CEQA) Guidelines, Section 15061 (B)(3) ("Common Sense Exemption) because it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment and further, pursuant to Guidelines, Section 15302 (Class 2: "Replacement or Reconstruction") because the project consists of replacing an existing commercial structure with a smaller commercial structure of the purpose and therefore, no further environmental review is required.

RECOMMENDATION:

Staff recommends that the Planning Commission adopt Resolution No. PC 23-XX to **APPROVE** UP22-0006, DVR22-0016, DR22-0016, LR22-0005, and ZC22-0035.

PROJECT DATA SUMMARY**APPLICANT:**

Dutch Bros, LLC
ATTN: Russ Orsi
110 SW 4th Street
Grant Pass, OR 97526

PROPERTY OWNER:

Letap Real Estate 2, LLC
ATTN: Victor Chiang
4302 Redwood Highway #200
San Rafael, CA 94903

GENERAL PLAN DESIGNATION:

Retail/Entertainment (RE)

ZONING DISTRICT:

Regional Commercial (RC)

EXISTING LAND USE:

Vacant Quick Serve Restaurant

SURROUNDING LAND USE:

North – Gateway Drive/ Auto/Vehicle Service Station
South – Parking Lot/ Hotel
East – Single-family residential
West – Fairgrounds Drive / North Vallejo Park

LOT AREA:

31,799 square feet (0.73 Acers)

TOTAL FLOOR AREA:

950 square feet for convenience store

**PARKING REQUIREMENTS/
PROVIDED:**

Two spaces / 26 spaces

II. PROJECT DESCRIPTION**A. Background**

The applicant applied for a Major Use Permit, Design Review, Development Review, Exception, Landscape Review and Zoning Compliance for a new 950 square-foot restaurant with a drive-through for Dutch Bros. The project includes site improvements for a two-lane drive through, new surface parking, a trash enclosure and new landscaping at 1598 Fairgrounds Drive.

Location and Land Use Context

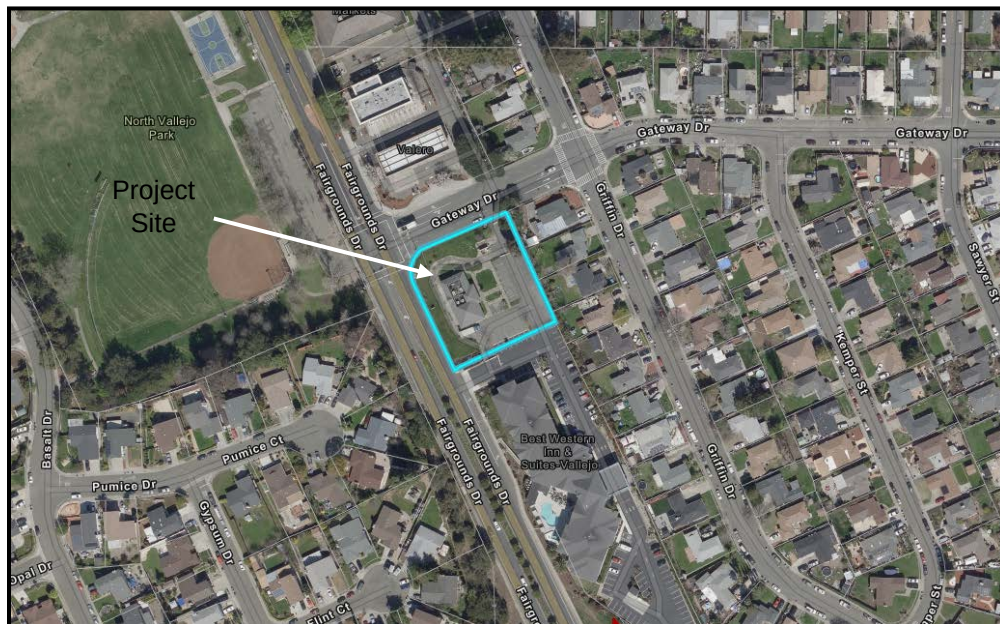
The project site is located on a corner lot of Fairgrounds Drive and Gateway Drive. The site is currently surrounded by existing commercial and residential uses:

Table 4 – Surrounding Uses	
Direction	Land Uses
North	Gateway Drive Auto Service Station Commercial Shopping Center
East	Single-Family Residential
South	Hotel Highway 37
West	Fairgrounds Drive North Vallejo Park Single-Family Residential

Interstate 80 is located approximately one mile to the east, Highway 37 is approximately 0.2 miles to the south and Six Flags Discovery Kingdom is 0.5 miles to the south. The immediate vicinity of the project site is characterized by existing commercial, residential, and open space land uses. The site's General Plan 2040 Land Use Designation is Retail/Entertainment (RE) with a Zoning District of Regional Commercial (RC). VMC Table 16.201-A: Zoning District and General Plan Land Use Designation states, the Zoning District of RC is consistent and implements the General Plan Land Use Designation of RE.

The subject site currently has a vacant 3,683 square-foot commercial building. According to the City's Building Permit system, the original commercial building was constructed and finished in May 1989. The vacant building is oriented primarily towards Fairgrounds Drive with access off Fairgrounds Drive and Gateway Drive and has a total of 40 off-street parking spaces (see Figure 1).

Figure 1 – Vicinity Map



B. Project Description

The proposed project consists of a Major Use Permit, Design Review, Development Review, an Exception, Landscape Review, and a Zoning Compliance to demolish the existing vacant 3,683 square-foot commercial building and construct a new 950 square-foot restaurant with dual drive-through lanes for Dutch Bros. The new building will have an overall height of 24 feet and will be oriented towards Gateway Drive.

The exterior is proposed to incorporate horizontal and vertical metal, painted Dutch Bros (DB) blue, DB dark gray and DB light gray that will be installed on all four elevations. Charcoal colored concrete masonry unit (CMU) stacked stone will be incorporated to the base of the building on the north, south and west elevation. On the south and west elevation awnings, painted DB dark gray will be provided over the drive-through window and drive-through lane and over the employee entrance.

Signage proposed consists of a total of two wall signs on the north and west elevations; and two menu signs on the north and south elevations. Two menu boards are placed on each side of the drive-through lanes. Directional signs are placed at the entrance of the site off Gateway Drive and on the exit of the drive-through lanes.

Customers will be able to order from either a walk-up window or from their vehicle in the drive-through. The north elevation will include a 300 square-foot covered walk-up window for customers to order drinks. Customers choosing to order through the drive-through, will order from an employee with a tablet or at the drive-through service window. The interior is proposed to have a new production area, walk-in cooler, mechanical room, and a unisex restroom.

Site and frontage improvements are being proposed throughout the site, including 8,872 square feet of new landscaping, a new trash enclosure, new lighting throughout the site, American Disabilities Act (ADA) paths from the parking lot, two short-term bicycle parking racks and a total of 26 off-street parking spaces. The new trash enclosure will have a total area of 240 square feet with an overall height of 10 feet and two inches. The trash enclosure will be constructed with CMU block, a metal roof and corrugated metal gates, painted a dark gray. The applicant is proposing to operate from 5 a.m. to 11 p.m. (see Figure 3).

Figure 2 – Proposed Elevations



Figure 3 – Proposed Site Plan



III. STAFF ANALYSIS

Required Permits

The project requires the following approval under the Vallejo Municipal Code (VMC):

Permit Type	Description	VMC Chapter	Review Authority
Major Use Permit	- Restaurant with Drive-Through - Late Night business operation between 12 a.m. and 6 a.m.	16.606	Planning Commission
Development Review	New Construction of Restaurant with Drive-Through	16.605	Planning and Development Services Director
Design Review	New Non-Residential Project	16.604	Planning and Development Services Director

Landscape Review	Installation of new landscaping exceeding 500 square feet	16.504	Planning and Development Services Director
Zoning Compliance	Installation of new signage	16.509	Planning and Development Services Director

VMC Section 16.605.02 (A.1) states, *when a development project requires a use permit, variance, or any other discretionary approval, the development review application shall be submitted to the planning division as part of the application for the use permit, variance, or other discretionary approval development review decisions shall be made by the review authority for the use permit, variance, or any other discretionary permit.* Additionally, VMC Section 16.602.15, transfer of authority states, *Whenever the director finds that the decision on any application is beyond his or her purview of authority, the application shall be forwarded to the planning commission, design review board, architectural heritage and landmarks commission or city council for determination depending on the highest level of review authority.*

As the Major Use Permit is the purview of the Planning Commission; the Director has made the determination to forward the entire set of entitlements to the Planning Commission for action. In addition to this entitlement, this project will also require a building permit(s) from the City of Vallejo.

General Plan Consistency

The General Plan 2040 Land Use Designation for the subject property is Retail/Entertainment (RE). The General Plan characterizes this designation as follows:

The RE designation provides for general retail, services, and entertainment for local residents as well as consumers and visitors from the wider region. Permitted land uses include shopping centers, auto sales, amusement parks, hotels, restaurants, service stations, marine-related operations, offices, general retail, personal and business services, and similar commercial uses. The maximum permitted FAR in the RE designation is 1.5.

The project is consistent with the RE land use designation in that it includes construction of a new restaurant with a drive-through for local residents as well as consumers and visitors from a wider region. Additionally, the project is also consistent with applicable General Plan 2040 policies and actions. Key policies and actions relevant to the project are shown in **bold**, followed by staff's analysis in *italic*:

Table 5 - General Plan 2040 Policies and Actions	
Policies and Actions	Staff's Analysis
Policy NBE-1.8: Urban Forest. Encourage planting of street trees and landscaping to beautify the city, encourage walking and biking and create a stronger sense of identity.	<i>A total of 8,872 square feet of landscaping is proposed, including 17 trees (including 12 street trees), shrubs and ground cover, which will beautify an underutilized site and help create a sense of identity.</i>

Policy NBE-2.3: Inviting, Compatible Design. Promote attractive development that is compatible with surrounding uses.	<i>The new development will create an inviting and compatible design on an underutilized site. The proposed horizontal and vertical metal siding stacked CMU on the base of the building and new landscaping will fit with the overall surrounding neighborhood and adjacent commercial structures.</i>
Policy NBE-2.5: Regional Retail and Entertainment. Support thriving mix of regional retail and entertainment uses near Interstate 80.	<i>The development of a new restaurant with a drive-through supports the thriving mix of regional retail and entertainment in the immediate area, for example Six Flags Discovery Kingdom, and the recent remodeled hotel and service station.</i>
Policy NBE-2.8: Infill Development. Promote infill development targets vacant and underutilized sites for community-desired and enhancing uses that is compatible with surrounding uses.	<i>The project will demolish a long vacant and unsightly building with a new 950 square-foot restaurant and drive-through, enhancing the underutilized site.</i>

Vallejo Municipal Code Compliance

The project site is zoned Regional Commercial (RC). The Zoning Code provides the following description for the RC Zoning District:

The RC Zoning District is intended to create and establish regulations for sites that provide general retail, services, and commercial recreation and entertainment for local residents as well as consumers and visitors from the region. Design and development standards will accommodate auto-oriented uses and require buffering and transitions to adjacent residential neighborhoods.

VMC Table 16.102-A: Zoning Districts states, the RC Zoning District implements the RE General Plan Land Use Designation. VMC Table 16.301 – A: Land Use Regulations states, a “Restaurant with a Drive-Through” uses are permitted after obtaining a Major Use Permit.

The existing vacant Restaurant with a Drive-Through is legal non-conforming use, originally approved with a Site Development Permit in 1987. Any non-conforming use that was lawfully established prior to the effective date of the Zoning Code or of any subsequent amendments to its text or to the zoning map may only be continued and maintained provided there is no alteration, enlargement, or addition to any use, building or structure.

VMC Section 16.105.07, Non-conforming use states, *if a non-conforming use ceases activity for a continuous period of twelve months, it shall be considered abandoned. Thereafter, the structure in which the non-conforming use was located shall be used only in accordance with the standards for the zoning district in which it is located.* Since the site has been vacant for over a year, and significant changes are included, the proposed use is treated as a new use and evaluated under the requirements of the current code.

The project is consistent with the applicable standards in the RC zoning district as demonstrated in the Table, below:

Table 6 – Regional Commercial Development Standards (VMC Chapter 16.204)			
Code Section	Development Standard	Proposal	Compliant
Table 16.204-A: Maximum Non-Residential Floor Area Ratio	1.5	0.03	Yes
Table 16.204-A: Setbacks, Commercial Development	Street Frontages: 0 – 10 where abutting R District Interior Side: 5/10 ft, where abutting R District Rear: 5/10 ft, where abutting R District	Street Frontage: 20.6 ft. from Gateway Drive and 68.5 ft. from Fairgrounds Drive Interior Side: 132 ft. Rear: 64.5 ft	Yes
Table 16.204-A: Building Maximum Height (Stories)	8	1	Yes
Table 16.204-A: Building Minimum Height (ft.)	N/A	24 ft.	Yes
Table 16.204-A: Ground Floor non-residential Use	N/A	24 ft.	Yes
Table 16.204-A: Ground Floor Ceiling Height, Non-Residential Uses	N/A	10 ft.	Yes
Table 16.204-A: Street Trees (ft. frontage)	1 per 30 ft. of frontage. Minimum of 12 street trees per 346.86 of frontage	12 street trees	Yes
VMC Section 16.204.02 (G) – Landscaped Buffer Required.	Minimum four feet of landscaping shall be planted along the residential zoning district.	7 ft.	Yes
VMC Section 16.204.03 (C.1) – Pedestrian Entrances	Non-residential uses at street level shall provide one entrance from public right-of-way	One pedestrian order window accessible from Gateway Drive	Yes

VMC Section 16.204.02 (E) - Street Preservation	Existing public right-of-way shall be preserved.	Frontage improvements proposed	Yes
VMC Section 16.204.02 (F) – Frontage Improvements	New Development shall provide street frontage improvements	Sidewalks will be maintained and repaired, trash receptable, bench and bike rack proposed, new streetlight on Gateway Drive, 12 street trees and improved landscaping	Yes
VMC Section 16.204.02 (G) – Building Orientation and Entrances	Buildings shall be oriented to face public streets; building shall be generally parallel to streets	Building is oriented to face public street and is parallel to Gateway Drive	Yes
VMC Section 16.204.02 (H) – Building Transparency	Exterior walls facing and within twenty feet of a front or street side property line shall include windows, glass doors, or other openings for at least sixty percent of the building wall area located between 2.5 and seven feet above the level of the sidewalk.	Building is setback 20.6 ft. and enhanced landscaping will create visual interest at the pedestrian level.	Yes

The project as proposed and with the conditions of approval included in this report, follows the applicable development standards of the RC District.

Discussion

The following comments provide a summary of the staff analysis of the project. They are separated by subject theme to facilitate the review by the Planning Commission. The information provided is referenced in IV, the Findings section at the end of the report.

Architecture

The proposed building is visually interesting and will be constructed with a variety of high-quality building materials and painted with simple, bold colors. Vertical and horizontal façade breaks, building massing, and modulation have all been incorporated into the design of the building. Canopy awnings are provided over all entrances and service doors, including a large 300-square-foot canopy over the customer walk-up service window providing weather protection. The building features modulation with a tower element, building wall articulation, and building materials that are aesthetically pleasing and compatible with other newer developments in the surrounding area.

Landscaping

A total of 8,872 square feet of new landscaping will be installed throughout the site. Along the north and west property line, a total of 12 street trees, as well as shrubs and ground cover will be planted to enhance the public realm. Additionally, a total of four trees, shrubs and ground cover will be planted around the proposed trash enclosure and off-street parking spaces to screen the parking lot from the public right of way. A seven-foot-wide landscape buffer will be planted along the east property line that is adjacent to the residential district. The new landscaping will beautify the site and create a sense of place on an underutilized site.

Lighting

New exterior lighting will be proposed on the building and throughout the site. On the building, one square surface wall-mounted light will be installed at 10 feet from the finished grade, providing a downward beam of light. The light will be installed above the employee entrance.

Under the proposed covered pedestrian order area, a total of eight lights will be provided. The lights will be installed adjacent to the walk-up service window. Additionally, a total of four light poles, with an overall height of 20 feet, will be provided within the interior of the site. Two of the four light poles will have two lights and the other two will only have one light. As proposed, the lighting fixtures are consistent with VMC Chapter 16.506, including their overall height and installation that will direct light downward and prevent glare from spilling on to adjacent properties.

Off-Street Parking

The existing site currently has a total of 26 off-street parking spaces. VMC Table 16.508-B: Off Street Parking, requires restaurants with limited service and drive through to provide two off-street parking spaces for the first 2,500 square feet of floor area. With a building of 950 square feet, only two off-street parking spaces are required. A total of 14 existing off-street parking spaces will continue to be located along the east property line. 12 of the existing off-street parking spaces, including one ADA space, will be reconfigured and relocated within the interior of the site. The proposed off-street parking spaces exceed the required two off-street parking spaces.

VMC Table 16.508-C: Parking Dimensions states, parking stalls at 90 degrees shall be nine feet wide by 18 feet in length and maintain a 25-foot drive aisle. As proposed, 11 out of the 12 new off-street parking spaces measure nine feet wide and 18 feet in length with one compact space at nine feet wide and 16 feet in length, meeting the minimum dimensions for a compact off-street parking space. Two out of the 12 off-street parking spaces will be equipped for future electric vehicle (EV) charging stations, exceeding the number required by VMC Section 16.508.09.

Hours of Operation

The proposed hours of operation for the restaurant with dual drive-through lanes is 5 a.m. to 11 p.m., seven days per week. VMC Section 16.323.02, late night business operation states, *"All late-night business operations (Between the hours of 12 a.m. to 6 a.m.), located within three hundred feet of a residential zoning district, and commenced on or after the effective date of the Zoning Code, shall require a major use permit, as prescribed in Chapter 16.606, Minor and Major Use Permits."* The subject property is adjacent to residential uses and Residential Low Density (RLD) (see Figure 3). Because the restaurant will open at 5 am, the granting of a Major Use Permit is required.

Figure 3 – Adjacent to Residential Use



In the immediate area, there are two additional uses that operate with a 24-hour services, Seven-11 to the north and Hampton-Inn to the south. Additionally, approximately 1,500 feet to the south Starbucks operates from 5 a.m. to 8 p.m. with a 24-hour service Chevron fuel station.

The entrance to the Dutch Bros drive-through is located approximately 120 feet from the closest single-family residence. No amplified speakers are being proposed. Customers will be able to order from the walk-up service window or from an employee in the drive-through through a tablet or from the drive-through service window. Staff believes the proposed 5 a.m. to 11 p.m. service will not have a substantial adverse impact on the residential area.

Signage

A total of 50.8 square feet of new signage will be installed throughout the site. The signs will be distributed between business name, company logo, poster boards and a monument sign.

Wall Signs

VMC Table 16.509-B: Sign Standards for Mixed-Use, Commercial & Industrial Zoning Districts states the maximum sign area per business/tenant of 1 sf. for each linear foot of store frontage, plus 0.5 square foot for each foot of secondary footage, with at least 10 sf. and no more than 100 sf. allowed. The proposed building has a building frontage of 49 feet and a secondary frontage of 24.5 feet; resulting in a total of 61.25 square feet for the total site. As proposed, the total area of signage does not exceed 100 square feet, meeting the code requirement.

Monument Sign

VMC Table 16.509-B: Sign Standards for Mixed-Use, Commercial & Industrial Zoning Districts states, one monument sign is allowed per street entrance with an overall height of seven and half feet located

a minimum of five feet behind the sidewalk or property line, whichever is greater. As proposed, one monument sign with the business name is proposed along Fairgrounds Drive with an overall height of seven and half feet setback five feet from the property line and has a sign area of 15.1 square feet (included in the total area); complying with the monument signs standards.

Directional Signs

Additionally, there are two 2.97 square foot directional signs that will be installed at the entrance of the site and at the exit of the drive through. VMC Section 16.509.03 (K), Signs and sign changes permitted without a sign permit states, *Private Directional Signs: Directional or informational signs not exceeding five square feet in area, bearing no advertising message, and located wholly on the site to which the sign pertains are permitted when such signs do not impede vehicular and/or pedestrian visibility in any way.* As proposed, the directional signs do not exceed five square feet, have no advertising messages, and do not impede vehicular and/or pedestrian visibility in any way. No Zoning Compliance permit is required for the directional signs.

Review of Potential Traffic Impacts

During the review process, planning staff had initial concerns regarding potential traffic impacts. The project is expected to generate about 1,600 daily trips, with 141 trips occurring in the a.m. peak hour. The City Traffic Engineer reviewed the site plan and project description. In order to evaluate the circulation and potential impacts, staff requested that the applicant provide a Traffic Impact Study (TIS). The TIS was provided by the applicant and reviewed by the City's Traffic Engineer. The TIS is included as Attachment 3.

The TIS study areas discussed traffic conditions at the local intersection, Fairgrounds Drive at Gateway Drive as well as the two existing driveways providing access to the site. The initial traffic counts were completed in July 2022 while school was not in session. Based on direction from City staff, the counts were adjusted to reflect volumes found when schools are in operation. In addition, 2019 pre-Covid traffic count information was compared to 2022 data at the same locations and other modeling was completed to provide an accurate understanding of the potential traffic impacts of the proposed project.

The Traffic Engineer determined that as designed, all intersections will continue to operate at the same Level of Service (LOS) as today, LOS C or better during peak periods. LOS measures the quality of traffic flow and is represented by letter designations from A to F, with a grade of A referring to the best conditions, and F representing the worst conditions. LOS C is considered to have light congestion with occasional backups.

It is noted that the worst case scenario queue along the westbound left turn lane of the Fairgrounds Drive /Gateway Drive intersection could lengthen to about 90 feet in the a.m. peak hour while the eastbound left turn queue could be about 25 feet. The westbound queue will extend into the transition area between the left turn lane and the two-way-left-turn-lane (TWLTL). The TWLTL should allow both turning movements to queue in their lanes without blocking through-lanes.

Finally, during a special event such as the grand opening period or at any other time when there is unusually high traffic flow, the project has been conditioned to include improvement measures, such as increased staffing levels during peak hours and coordinating of the traffic queue with the management of the adjacent Hampton Inn Hotel.

Given the information from the TIS, the design of the drive-throughs and the conditions attached to this permit, staff believes there will be no significant impact to traffic.

Additional Standards for Drive-In and Drive-Through Facilities

VMC Section 16.316.02 provides requirements for drive-in and drive-through facilities. The appropriate permit issuing authority shall certify that the use meets the following requirements and criteria (the standards are in **bold**, and staff's determination follows in *italics*):

- A. Circulation.** Drive-through facilities shall provide safe, unimpeded movement of vehicles at street access points, in travel aisles, and parking areas. A site plan showing directional movements for interior traffic circulation shall be provided for review by the Public Works Director.

Access to the subject site will continue to be from Fairgrounds Drive and Gateway Drive, maintaining a safe, unimpeded movement of vehicles at street access points, travel areas and parking area. A site plan was provided to the Public Works Department and no comments or concerns were raised regarding the interior circulation of the project.

- B. Pedestrian Walkways.** Vehicle aisles shall not intersect with interior pedestrian walkways, unless no alternative exists. In such cases, pedestrian walkways shall have clear visibility, emphasized by enhanced paving or markings.

An undisturbed pedestrian walkway will be provided from the public right-of-way to the building. The pedestrian walkway continues along the building, crosses the drive-through aisle to the off-street parking spaces. The portion of the pedestrian walkway that crosses the drive-through is clearly visible with continental crosswalk markings (high visibility stripes) to ensure it is clearly visible.

- C. Queuing.** Vehicular queuing areas shall be provided to ensure that vehicles waiting for service will not interfere with public rights-of-way, private streets, or with on- or off-site parking and circulation. The queuing area size and location shall be reviewed and approved by the Public Works Director. Automobile stacking shall comply with Section 16.508.10, **Stack-up spaces for Drive-in and Drive-Through Facilities.**

The location of the vehicle queuing areas has been provided to ensure that the vehicles waiting for service will not interfere with the public right-of-way or on-site parking and circulation. VMC Section 16.508.10 states, a drive-up window for restaurants and banks requires a minimum of eight stack up spaces, measuring 22 feet in length, per service window. A total of 21 stack up spaces, measuring 22 feet, have been provided for the one drive-up window.

A site plan with the queuing area was provided to Public Works Department and a Traffic Impact Study was requested. As determined in the TIS, the 21 vehicles accommodated by the project indicates that the proposed layout has the capacity to handle peak activity.

- D. Screening.** Each drive-through aisle shall be screened with a combination of decorative walls and landscape to a height of 36 inches to prevent headlight glare and direct visibility of vehicles from adjacent streets and parking lots.

The dual drive-through lines will be screened with a combination of a decorative wall and landscaping at the height of 35-inches to prevent headlight glare onto Fairgrounds Drive, Gateway Drive, and adjacent properties.

- E. Site Design.**

- 1. Drive-through elements shall be placed to the side or rear of the building. Drive-through windows shall be oriented away from the street frontage and provide adequate screening measures through landscaping and design to minimize visibility of the drive-through.**

The drive-through window has been placed on the south facing elevation facing the interior of the site. The dual drive-through lanes have been designed to start at the south property line, along the west property line and then the side of the building. The dual drive-through lines will be screened with a combination of decorative wall and landscaping to minimize the visibility of the drive-through.

- 2. The design of freestanding drive-through facilities shall be compatible with the principal building, in terms of building color, materials, and form.**

The trash enclosure, menu boards and freestanding signs are compatible with the principal building, carrying materials and color scheme throughout.

- F. Site Maintenance.** The site shall be maintained free of litter and graffiti at all times. The owner or operator shall provide for daily removal of trash, litter, and debris from premises and on all abutting sidewalks within 100 feet of the premises. One permanent, non-flammable trash receptacle shall be installed near to the entrance/exit of the building and near the drive-through lane.

As conditioned, the operator shall provide daily removal of trash, litter, and debris from premises and on all abutting sidewalks within 100 feet of the premises. One permanent, trash receptacle shall be installed near to the entrance/exit of the building and near the drive-through lane.

- G. Solid waste, Recycling, and Organic Waste.** Solid waste and recycling containers shall be provided in locations suitably enclosed and screened from a public right-of-way.

Solid waste, recycling and organic waste containers will be stored in the new trash enclosure ensuring the containers are enclosed and screened from the public right-of-way. The new trash enclosure will have a total area of 240 square feet with an overall building height of 10 feet and two inches. The trash enclosure will be constructed with CMU block, a metal roof and corrugated metal gates, painted a dark gray.

IV. FINDINGS

Major Use Permit Findings

VMC Section 16.606.03, requires the review authority to make the following findings prior to granting a Major Use Permit (the findings are in bold, and staff's determination follows in italics):

- A. The proposed use is conditionally allowed within the applicable zoning district and complies with all other applicable provisions of the Zoning Code and all other titles of the Vallejo Municipal Code.**

The proposed project is located on a property zoned Regional Commercial (RC). Vallejo Municipal Code Table 16.301-A: Land Use Regulations, requires a Major Use Permit for a restaurant with a drive-through. The project is consistent with the applicable development standards outlined in Title 16 of the Vallejo Municipal Code (VMC), as proposed and conditioned.

- B. The proposed use is consistent with the general plan and any applicable specific plan or planned development and any other applicable plans.**

The project site is designated as Retail/Entertainment (RE) on the General Plan Land Use Map. The General Plan 2040 RE designation provides for general retail, services, and entertainment for local residents as well as consumers and visitors from the wider region. As proposed, the project is consistent with the RE General Plan land use designation in that the proposed project is the

establishment of a restaurant with a dual drive-through lanes with site improvements on underutilized site that will serve local residents, as well as consumers and visitors from the wider region. The project is also consistent with applicable General Plan 2040 policies as noted in the report.

C. The subject parcel is physically suitable for the type of land use being proposed.

The proposed project will demolish an existing vacant building and construct a new restaurant with a dual drive-through lanes with site improvements on underutilized site. The subject parcel is physically suitable for the re-establishment of a restaurant with a drive-through, in that it allows ample room for the structures, required parking and landscaping. Further the TIS has demonstrated that the location of the site and layout of the drive-through in relation to the street will not create negative impacts on the surrounding properties.

D. The proposed use is compatible with existing and permissible land uses within the zoning district and the general area in which the proposed use is to be located which may include but not be limited to size, intensity, hours of operation, number of employees, or the nature of the operation.

The proposed project is compatible with existing and permissible land uses within the zoning district because it will reactive an underutilized site with a restaurant with a dual drive-through lanes with site improvements. The proposed use plans on operating between the hours of 5 a.m. to 11 p.m., seven days a week. Conditions of approval have been added to address vehicle queuing during special events and possible noise impacts on adjacent residential uses.

E. The physical location or placement of the use on the site is compatible with and will not adversely affect the livability or appropriate development of abutting properties and the surrounding neighborhood.

The physical location of the proposed project on an underutilized site will not adversely affect the livability or appropriate development of abutting properties and the surrounding neighborhood. Conditions of approval have been added to address vehicle queuing during special events and possible noise impacts on adjacent residential uses.

F. The proposed use and related project features will not create any nuisances arising from the emission of odor, dust, gas, noise, vibration, smoke, heat or glare at a level exceeding ambient conditions and would not otherwise be detrimental to the public interest, health, safety, or general welfare.

As proposed, the restaurant with dual drive-throughs will incorporate landscaping at a height of 36-inches to prevent headlight glare and direct visibility of vehicles from adjacent streets and parking lots. The proposed drive-through lanes are placed along the south property lane, then along the west property line and next to the building will ensure vehicles waiting for service will not interfere with the public right-of-way or the circulation of the site. Conditions of approval have been added to address vehicle queuing during special events and possible noise impacts on adjacent residential uses. As proposed and conditioned, the use will not be detrimental to the public interest, health, safety, or general welfare.

G. The project has been reviewed in compliance with the California Environmental Quality Act, if applicable, and the requirements of this chapter.

Following a review of the project, staff has determined that it is exempt from the requirements of the California Environmental Quality Act (CEQA). Under CEQA, the State has identified classes of projects which have been determined to not have a significant impact on the environment and are therefore exempt from the requirements of CEQA.

The project is exempt pursuant to California Environmental Quality Act (CEQA) Guidelines, Section 15061 (B)(3) ("Common Sense Exemption) because it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment and further, pursuant to Guidelines, Section 15302 (Class 2: "Replacement or Reconstruction") because the project consists of replacing an existing commercial structure with a smaller commercial structure of the purpose and therefore, no further environmental review is required.

Development Review Findings

VMC Section 16.605.03, requires the review authority make the following findings prior to granting a Development Review (the findings are in bold, and staff's determination follows in italics):

A. Complies with all applicable specific standards and criteria of this Zoning Code.

The proposed project is located on a property zoned Regional Commercial (RC). The project is the construction of a new restaurant with dual drive-through lanes with site improvements on underutilized site that will provide restaurant services for residents as well as consumers and visitors from the region. The project, as proposed and conditioned, is consistent with the applicable development standards outlined in Title 16 of the Vallejo Municipal Code as noted in the report.

B. Is consistent with the general plan and any applicable approved specific plan or planned development.

The project site is designated as Retail/Entertainment (RE) on the General Plan Land Use Map. The General Plan 2040 RE designation provides for general retail, services, and entertainment for local residents as well as consumers and visitors from the wider region. As proposed, the project is consistent with the RE General Plan land use designation in that the proposed project is the establishment of a restaurant with a dual drive-through lanes with site improvements on underutilized site that will serve local residents, as well as consumers and visitors from the wider region. The project is also consistent with applicable General Plan 2040 policies as noted in the report.

C. Complies with any design conditions, standards, or requirements imposed by a discretionary approval including but not limited to a major or minor use permit, variance, specific plan, planned development, or tentative map applicable to the project or the location where it is proposed.

The existing non-conforming use has ceased activity for a continuous period of over twelve months and is therefore considered to be abandoned. The new development shall comply with the approved design and conditions of approval imposed by the attached Resolution.

D. Is in substantial compliance with any applicable adopted design guidelines.

The Project is not subject to any applicable adopted design guidelines, other than the general design guidelines, below..

E. Will serve to achieve groupings of structures that are well related one to another and which, taken together, will result in a well-composed urban design, with consideration given to site, height, arrangement, texture, material, color and appurtenances, the relation of these factors to other structures in the immediate area, and the relation of the development to the total setting as seen from key points in the surrounding area; only elements of design which have some significant relationship to outside appearance shall be considered.

The proposed project consists of the establishment of a restaurant with dual drive-through lanes and site improvements, such as new landscaping, new trash enclosure and a mixture of metal

siding and stacked CMU, will result in a well-composed urban design. The overall building height and massing is consistent with buildings in the immediate area. The new development will activate an underutilized site and will complement the existing uses in the immediate area.

- F. Will be of a quality and demonstrates thoughtful site planning that will serve to protect the value of private and public investments in the area.**

The proposed project demonstrates thoughtful site planning in that it meets all the development standards required in the subject location and will serve to protect the value of the private and public investments.

- G. That the project has been reviewed in compliance with the California Environmental Quality Act, if applicable, and the requirements of this chapter.**

As noted above, the project is exempt pursuant to California Environmental Quality Act (CEQA) Guidelines, Section 15061 (B)(3) ("Common Sense Exemption) because it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment and further, pursuant to Guidelines, Section 15302 (Class 2: "Replacement or Reconstruction") because the project consists of replacing an existing commercial structure with a smaller commercial structure of the purpose and therefore, no further environmental review is required.

Design Review Findings

VMC Section 16.604.03 (B), requires the Director to make a recommendation to the Planning Commission for final design review approval (the findings are in bold, and staff's determination follows in italics):

- A. Is consistent with the purposes of this chapter, the design policies of the general plan and any applicable specific plan, any adopted applicable design guidelines.**

Purposes of the Chapter

- 1. Establish regulations for an objective process that applies urban design principles to ensure that new construction supports the best of the city's architectural traditions.**

As proposed, the project meets the objective design standards called out in VMC Chapter 16.204 – Commercial Districts, as discussed in detail below.

- 2. Encourage new structures that show creativity and imagination, add distinction, interest, and variety to the community, and are environmentally sustainable.**

The proposed project will create new interest to local residents and consumers and visitors from the wider region and will reactivate an underutilized site. The proposed building is visually interesting and will be constructed with a variety of high-quality building materials and painted with simple, bold colors. Vertical and horizontal façade breaks, building massing, and modulation have all been incorporated into the design of the building will create distinction in the established neighborhood.

- 3. Promote architectural and design excellence in new construction and discourage poor quality development.**

The proposed building will be comprised of vertical and horizontal metal siding with stacked CMU stone on the north, south and west elevations. The metal siding will be painted a blue color (DB Blue), dark gray (DB Gray Dark) and light Gray (DB Gray Light) and charcoal color

for the stacked CMU stone. The proposed trash enclosure will be visually consistent with the main building, such as charcoal CMU block, dark gray (DB Grey Dark) for the gates and blue (DB Blue) for the roof, gate frames and posts. Overall, the project uses high-quality, long-lasting material resulting in a quality development.

4. **Ensure that future development should:**
 - a. **Reflect the values of the community.**
 - b. **Enhance the surrounding environment.**
 - c. **Visually harmonize with its surroundings and not unnecessarily obstruct scenic views; and**
 - d. **Avoid nostalgic misrepresentations that may confuse the relationships among structures over time.**

The project reflects the promotion of infill development that targets vacant and underutilized sites, which is a policy identified in the General Plan. The new project will enhance the surround environment by reactivating an underutilized site. Due to its location, the project will not obstruct scenic views and due to its nature and design, nor will it confuse the relationships among structures over time.

5. **Ensure that decisions on housing development projects are based on objective design standards as required by the State Housing Accountability Act (Government Code Section 65589.5).**

Not applicable; proposed project is not a housing project.

6. **Provide for new landscaping to create a visually pleasing setting for structures on the site.**

A total of 8,872 square feet of new landscaping will be installed throughout the site. Along the north and west property line, a total of 12 street trees, shrubs and ground cover will be planted to enhance the public realm. Additionally, a total of four trees, shrubs and ground cover will be planted around the proposed trash enclosure and off-street parking spaces to screen the parking lot from the public right of way. A seven-foot-wide landscape buffer will be planted along the east property line that is adjacent to the residential zoned district. The new landscaping will create a visually pleasing settling for structures on the site.

7. **Promote the protection and retention of landmark, native, and specimen trees and if feasible mature canopy trees and other significant landscaping of aesthetic and environmental value.**

Not applicable; existing mature tree will be integrated with the proposed new landscaping.

8. **Ensure that the design, quality, and location of signs are consistent with the character and scale of the structures to which they are attached and are visually harmonious with surrounding development.**

New signage proposed as part of the project is integrated and consistent with the character and scale of the structures. New signage installed throughout the site is visually harmonious with the proposed development.

9. **Promote the conservation, enhancement, preservation, and protection of historic resources.**

Not applicable; there are no historic resources near this project's location.

Design policies of the General Plan

The project site is designated as Retail/Entertainment (RE) on the General Plan Land Use Map. The General Plan 2040 RE designation provides for general retail, services, and entertainment for local residents as well as consumers and visitors from the wider region. As proposed, the project is consistent with the RE General Plan land use designation in that the proposed project is the establishment of a restaurant with a dual drive-through lanes with site improvements on underutilized site that will serve local residents, as well as consumers and visitors from the wider region. The project is also consistent with applicable General Plan 2040 policies.

Adopted applicable design guidelines.

The subject site is not within an adopted specific plan and design guidelines have not been adopted for this location.

B. Is consistent with any planning or zoning approvals by the director or the planning commission.

Staff finds that the project is consistent with the RC zoning district in that it is a proposal of a new restaurant with dual drive-through lanes that as conditioned and proposed meets all appropriate development standards of the Vallejo Municipal Code. The final authority of this action is the Planning Commission.

C. Complies with any other relevant city policies or regulations.

The project as proposed complies with VMC Chapter 16.316 – Drive-in and Drive-Through Facilities, as the project has been designed to meet the requirements and beautify an underutilized site.

D. Meets the following criteria:

- a. The aesthetic design, including its exterior design and landscaping, is appropriate to the function of the project and will provide an attractive and comfortable environment for occupants, visitors, and the general community.**

The overall design and landscaping of the project is appropriate to the function of the project and will provide an attractive and comfortable environment for visitors and the general community. The proposed project will activate and beautify an underutilized site with a new project and landscaping.

- b. Project details, colors, materials, and landscaping are fully integrated with one another and used in a manner that is visually consistent with the proposed architectural design.**

The proposed building will be comprised of vertical and horizontal metal siding with stacked CMU stone on the north, south and west elevations. The metal siding will be painted a blue color (DB Blue), dark gray (DB Gray Dark) and light Gray (DB Gray Light) and charcoal color for the stacked CMU stone. The proposed trash enclosure will be visually consistent with the main building, such as charcoal CMU block, dark gray (DB Grey Dark) for the gates and blue (DB Blue) for the roof, gate frames and posts. The project details, colors, materials, and landscaping are integrated with one and another that create a visually consistent proposal.

- c. The project has been designed with consideration of neighboring development.**

The project has been designed with consideration of existing neighboring development in that the building has been placed 64.5 feet from the adjacent residential uses to the east;

bringing the building closer to Fairgrounds Drive and Gateway Drive. An existing six-foot wall is located between the adjacent residential uses and the parking lot of the proposed project, as well as a 7-foot landscape buffer. Additionally, all lighting on the site will be properly screened and will be directed to point to the ground. Finally, conditions of approval have been added to address vehicle queuing during special events and possible noise impacts on adjacent residential uses.

- d. The project contributes to the creation of an attractive and visually interesting built environment that includes well-articulated structures that present varied building facades, rooflines, and building heights and encourages increased pedestrian activity and transit use.**

The proposed building is visually interesting and will be constructed with a variety of high-quality building materials and painted with simple, bold colors. Vertical and horizontal façade breaks, building massing, and modulation have all been incorporated into the design of the building. Canopy awnings are provided over all entrances and service doors, including a large 300-square-foot canopy over the customer walk-up service window providing weather protection. The building features modulation with a tower element, wall articulation, and materials that are aesthetically pleasing and compatible with other newer developments in the community. Colorful and visually interesting wall signs depicting the Dutch Bros Coffee logos will be installed on all sides of the building.

- e. Street frontages are attractive and interesting for pedestrians, address the street and provide for greater safety by allowing for surveillance of the street by people inside buildings and elsewhere.**

The proposed project of a new restaurant with dual drive-through lanes with frontage and site improvements on an underutilized site will create an attractive street presence for pedestrians and passing motorists. The glazing provided along the north and west elevations will allow a view of the street by the people inside the building.

- f. The proposed design is compatible with the historical or visual character of any area recognized by the city as having such character.**

Not applicable; subject site is not within the Saint Vincent's Historic District or the Architectural Heritage District.

- g. The aesthetic design preserves significant public views and vistas from public streets and open spaces and enhances them by providing areas for pedestrian activity.**

The project has been designed to preserve the public views from the public streets and will enhance them by providing areas for pedestrian activity such as the 300 square-foot covered outdoor seating area.

- h. The proposed landscaping plan is suitable for the type of project and will improve the appearance of the community by enhancing the building, minimizing hardscape, and softening walls; and the landscape plan incorporates plant materials that are drought-tolerant, will minimize water usage, and are compatible with Vallejo's climate.**

- i. The proposed landscaping includes trees, shrubs and ground covering has been designed to improve the appearance of an underutilized site and minimize hardscape. The landscaping incorporates plant materials that are drought-tolerant, will minimize water usage, and are compatible with City of Vallejo's climate.**

- j. **The project has been designed to be energy efficient including, but not limited to, landscape design and green or eco-friendly design and materials.**

As required by the California Building Code, the project has been designed to be energy efficient, for example LED lighting that is properly shield will be installed throughout the site and providing EV charging stations. The proposed landscaping has been designed to incorporate plant materials that are drought tolerant consistent with the California Water Efficient Landscaping Standards.

- k. **The project design protects and integrates natural features including creeks, open space, significant vegetation, and geologic features.**

Not applicable; no natural features including creeks, open space, significant vegetation, and geologic features are on the subject site.

Zoning Compliance Findings

VMC Section 16.509.02 (D), requires the review authority to make the following findings prior to granting a Zoning Compliance (the findings are in bold, and staff's determination follows in italics):

- A. **The proposed signs do not exceed the standards of this chapter and are of the minimum size and height necessary to enable motorists and pedestrians to readily identify the facility or site from a sufficient distance to safely and conveniently access the facility or site.**

The proposed signage is consistent with the Sign Standards located in VMC Table 16.509-B. The Standards allow for maximum sign area per business/tenant of 1 sf. for each linear foot of store frontage, plus 0.5 square foot for each foot of secondary footage, with at least 10 sf. and no more than 100 sf. allowed. The new building has a frontage of 49 linear feet and secondary frontage of 24.5 linear feet, resulting in a total area of 61.5 square feet. As proposed, a total of 50.8 square feet of new signage will be installed throughout the site. The signs will be distributed between business name, company logo, poster boards and a monument sign. The proposed signage is necessary to enable motorist and pedestrian to readily identify the facility from the front of the building.

- B. **The size, location, and design of the signs are visually complementary and compatible with the scale and architectural style of the primary structures on the site, any prominent natural features on the site, and structures and prominent natural features on adjacent properties on the same street.**

With the overall sign area of 50.8 square feet of new signage will be installed throughout the site and by placing these above the store frontage and as a free-standing monument, the signs are visually complementary and compatible with the scale and architectural style of the primary structures on the site.

- C. **The proposed signs are in substantial conformance with the design criteria in the any adopted city design guidelines.**

Not applicable; the city does not have adopted design guidelines.

V. ENVIRONMENTAL REVIEW

Following a review of the project, staff has determined that it is exempt from the requirements of the California Environmental Quality Act (CEQA). Under CEQA, the State has identified classes of projects

which have been determined to not have a significant impact on the environment and are therefore exempt from the requirements of CEQA.

The project is exempt pursuant to California Environmental Quality Act (CEQA) Guidelines, Section 15061 (B)(3) ("Common Sense Exemption) because it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment and further, pursuant to Guidelines, Section 15302 (Class 2: "Replacement or Reconstruction") because the project consists of replacing an existing commercial structure with a smaller commercial structure of the purpose and therefore, no further environmental review is required.

VI. NOTICING AND PUBLIC COMMENTS

On January 23, 2023, pursuant to VMC Section 16.602.08 – Noticing. A notice of this hearing was published in the Times Herald, mailed to all active neighborhood groups, all property owners within 500 feet of the subject property, and any other local agency expected to provide water, wastewater treatment, or other essential facilities or services to the project, as well as to members of the Planning Commission, the applicant and property owner.

Staff has not received any comments or questions from the public on the application as of writing this staff report.

VII. CONCLUSION / STAFF RECOMMENDATION

Based on the analysis contained in this staff report and the project's consistency with General Plan 2040 and the Vallejo Municipal Code, staff recommends that the Planning Commission **APPROVE** Major Use Permit (UP22-0006), Development Review (DVR22-0016), Design Review (DR22-0016), Landscape Review (LR22-0005), and Zoning Compliance (ZC22-0035) based on the findings and provided in the attached Resolution and subject to the Conditions of Approval provided as Exhibit A to the Resolution.

VIII. EXPIRATION

Pursuant to VMC Section 16.602.12 (A.2), approval of the Major Use Permit, Development Review, Design Review, Landscape Review shall automatically expire two years after approval, unless authorized construction has commenced prior to the expiration date (February 6, 2025; if approved at this meeting and not appealed).

Pursuant to VMC Section 16.509.02 (E), approval of the Zoning Compliance shall automatically expire 12 months of approval, unless a later expiration date is stated in the conditions at the time of approval (February 6, 2024; if approved at this meeting and not appealed). In this case, staff requests that if the Planning commission approves this project, that they extend the expiration date to February 6, 2025, to align this date with the rest of the expiration dates. This has been included as a Condition of Approval.

IX. APPEAL PROCEDURE

VMC Section 16.602.14, Appeals, the applicant, or any party adversely affected by the decision of the Planning Commission may, within ten days after the rendering of the decision of the Planning Commission appeal in writing to the City Council by filing a written appeal with a fee of \$1,408 dollars with the City Clerk. Such written appeal shall state the reason or reasons for the appeal and why the applicant believes he or she is adversely affected by the decision of the Planning Commission. Such appeal shall not be timely filed unless it is actually received by the City Clerk or designee no later than the close of business on the tenth calendar day after the rendition of the decision of the Planning Commission. If such date falls on a weekend or City holiday, then the deadline shall be extended until the next regular business day.

Notice of the appeal, including the date and time of the City Council's consideration of the appeal, shall be sent by the City Clerk to all property owners within five hundred feet of the project boundary. The Council may affirm, reverse, or modify any decision of the Planning Commission that is appealed.

X. ATTACHMENTS

1. Resolution No. PC 23-xx
 - a. Exhibit A – Conditions of Approval
2. Project Plans
3. Traffic Impact Study

CITY OF VALLEJO PLANNING COMMISSION

RESOLUTION NO. PC 23-01

A RESOLUTION APPROVING MAJOR USE PERMIT (UP22-0006), DEVELOPMENT REVIEW (DVR22-0016), DESIGN REVIEW (DR22-0016), LANDSCAPE REVIEW (LR22-0005), AND ZONING COMPLIANCE (ZC22-0035) FOR A NEW 950 SQUARE-FOOT RESTAURANT WITH A DUAL DRIVE-THROUGH AT 1598 FAIRGROUNDS DRIVE (APN:0068-171-160)

I. GENERAL FINDINGS

WHEREAS, on August 29, 2017, the City Council adopted General Plan 2040; and

WHEREAS, the property has a General Plan 2040 land use designation of Retail/Entertainment; and

WHEREAS, on July 22, 2021, the City Council adopted Zoning Code and Zoning Map; and

WHEREAS, the property is located in the Regional Commercial Zoning District; and

WHEREAS, on May 2, 2022, Russ Orsi submitted an application seeking a Major Use Permit, Development Review, Design Review, Landscape Review, and Zoning Compliance for new 950 square-foot restaurant with a drive-through ("Project") located at 1598 Fairgrounds Drive; and

WHEREAS, on April 19, 2022, the application was determined to be complete for processing; and

WHEREAS, on February 6, 2023, the City of Vallejo Planning Commission, after giving all public notices required by State law and the City of Vallejo Municipal Code, conducted a duly noticed public hearing; and

WHEREAS, the Planning Commission considered testimony and evidence, both written and oral, provided at the public hearing, as well as other documents contained in the record of proceedings relating to the Project, which are maintained in the offices of the City of Vallejo Planning Division; and

WHEREAS, based on evidence received in the staff report and at the public hearing, the Planning Commission makes the following factual findings:

II. CALIFORNIA ENVIRONMENTAL QUALITY ACT FINDING

Following a review of the project, staff has determined that it is exempt from the requirements of the California Environmental Quality Act (CEQA). Under CEQA, the State has identified classes of projects which have been determined to not have a significant impact on the environment and are therefore exempt from the requirements of CEQA.

The project is exempt pursuant to California Environmental Quality Act (CEQA) Guidelines, Section 15061 (B)(3) ("Common Sense Exemption) because it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment and further, pursuant to Guidelines, Section 15302 (Class 2: "Replacement or Reconstruction") because the project consists of replacing an existing commercial structure with a smaller commercial structure of the purpose and therefore, no further environmental review is required.

III. FINDINGS RELEVANT TO THE APPROVAL OF THE MAJOR USE PERMIT (VMC Section 16.606.03)

- A. The proposed use is conditionally allowed within the applicable zoning district and complies with all other applicable provisions of the Zoning Code and all other titles of the Vallejo Municipal Code.**

The proposed project is located on a property zoned Regional Commercial (RC). Vallejo Municipal Code Table 16.301-A: Land Use Regulations, requires a Major Use Permit for a restaurant with a drive-through. The project is consistent with the applicable development standards outlined in Title 16 of the Vallejo Municipal Code (VMC), as proposed and conditioned.

- B. The proposed use is consistent with the general plan and any applicable specific plan or planned development and any other applicable plans.**

The project site is designated as Retail/Entertainment (RE) on the General Plan Land Use Map. The General Plan 2040 RE designation provides for general retail, services, and entertainment for local residents as well as consumers and visitors from the wider region. As proposed, the project is consistent with the RE General Plan land use designation in that the proposed project is the establishment of a restaurant with a dual drive-through lanes with site improvements on underutilized site that will serve local residents, as well as consumers and visitors from the wider region. The project is also consistent with applicable General Plan 2040 policies as noted in the report.

- C. The subject parcel is physically suitable for the type of land use being proposed.**

The proposed project will demolish an existing vacant building and construct a new restaurant with a dual drive-through lanes with site improvements on underutilized site. The subject parcel is physically suitable for the re-establishment of a restaurant with a drive-through, in that it allows ample room for the structures, required parking and landscaping. Further the TIS has demonstrated that the location of the site and layout of the drive-through in relation to the street will not create negative impacts on the surrounding properties.

- D. The proposed use is compatible with existing and permissible land uses within the zoning district and the general area in which the proposed use is to be located which may include but not be limited to size, intensity, hours of operation, number of employees, or the nature of the operation.**

The proposed project is compatible with existing and permissible land uses within the zoning district because it will reactive an underutilized site with a restaurant with a dual drive-through lanes with site improvements. The proposed use plans on operating between the hours of 5 a.m. to 11 p.m., seven days a week. Conditions of approval have been added to address vehicle queuing during special events and possible noise impacts on adjacent residential uses.

- E. The physical location or placement of the use on the site is compatible with and will not adversely affect the livability or appropriate development of abutting properties and the surrounding neighborhood.**

The physical location of the proposed project on an underutilized site will not adversely affect the livability or appropriate development of abutting properties and the surrounding neighborhood. Conditions of approval have been added to address vehicle queuing during special events and possible noise impacts on adjacent residential uses.

- F. The proposed use and related project features will not create any nuisances arising from the emission of odor, dust, gas, noise, vibration, smoke, heat or glare at a level exceeding ambient conditions and would not otherwise be detrimental to the public interest, health, safety, or general welfare.**

As proposed, the restaurant with dual drive-throughs will incorporate landscaping at a height of 36-inches to prevent headlight glare and direct visibility of vehicles from adjacent streets and parking lots. The proposed drive-through lanes are placed along the south property lane, then along the west property line and next to the building will ensure vehicles waiting for service will not interfere with the public right-of-way or the circulation of the site. Conditions of approval have been added to address vehicle queuing during special events and possible noise impacts on adjacent residential uses. As proposed and conditioned, the use will not be detrimental to the public interest, health, safety, or general welfare.

- G. The project has been reviewed in compliance with the California Environmental Quality Act, if applicable, and the requirements of this chapter.**

Following a review of the project, staff has determined that it is exempt from the requirements of the California Environmental Quality Act (CEQA). Under CEQA, the State has identified classes of projects which have been determined to not have a significant impact on the environment and are therefore exempt from the requirements of CEQA. The project is exempt pursuant to California Environmental Quality Act (CEQA) Guidelines, Section 15061 (B)(3) ("Common Sense Exemption) because it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment and further, pursuant to Guidelines, Section 15302 (Class 2: "Replacement or Reconstruction") because the project consists of replacing an existing commercial structure with a smaller commercial structure of the purpose and therefore, no further environmental review is required.

IV. FINDINGS RELEVANT TO THE APPROVAL OF THE DESIGN REVIEW (VMC Section 16.604.03 (B))

- A. Is consistent with the purposes of this chapter, the design policies of the general plan and any applicable specific plan, any adopted applicable design guidelines.**

Purposes of the Chapter

- 1. Establish regulations for an objective process that applies urban design principles to ensure that new construction supports the best of the city's architectural traditions.**

As proposed, the project meets the objective design standards called out in VMC Chapter 16.204 – Commercial Districts, as discussed in detail below.

- 2. Encourage new structures that show creativity and imagination, add distinction, interest, and variety to the community, and are environmentally sustainable.**

The proposed project will create new interest to local residents and consumers and visitors from the wider region and will reactivate an underutilized site. The proposed building is visually interesting and will be constructed with a variety of high-quality building materials and painted with simple, bold colors. Vertical and horizontal façade breaks, building massing, and modulation have all been incorporated into the design of the building will create distinction in the established neighborhood.

- 3. Promote architectural and design excellence in new construction and discourage poor quality development.**

The proposed building will be comprised of vertical and horizontal metal siding with stacked CMU stone on the north, south and west elevations. The metal siding will be painted a blue color (DB Blue), dark gray (DB Gray Dark) and light Gray (DB Gray Light) and charcoal color for the stacked CMU stone. The proposed trash enclosure will be visually consistent with the main building, such as charcoal CMU block, dark gray (DB Grey Dark) for the gates and blue (DB Blue) for the roof, gate frames and posts. Overall, the project uses high-quality, long-lasting material resulting in a quality development.

- 4. Ensure that future development should:**
 - a. Reflect the values of the community.**
 - b. Enhance the surrounding environment.**
 - c. Visually harmonize with its surroundings and not unnecessarily obstruct scenic views; and**
 - d. Avoid nostalgic misrepresentations that may confuse the relationships among structures over time.**

The project reflects the promotion of infill development that targets vacant and underutilized sites, which is a policy identified in the General Plan. The new project will enhance the surround environment by reactivating an underutilized site. Due to its location, the project will not obstruct scenic views and due to its nature and design, nor will it confuse the relationships among structures over time.

- 5. Ensure that decisions on housing development projects are based on objective design standards as required by the State Housing Accountability Act (Government Code Section 65589.5).**

Not applicable; proposed project is not a housing project.

- 6. Provide for new landscaping to create a visually pleasing setting for structures on the site.**

A total of 8,872 square feet of new landscaping will be installed throughout the site. Along the north and west property line, a total of 12 street trees, shrubs and ground cover will be planted to enhance the public realm. Additionally, a total of four trees, shrubs and ground cover will be planted around the proposed trash enclosure and off-street parking spaces to screen the parking lot from the public right of way. A seven-foot-wide landscape buffer will be planted along the east property line that is adjacent to the residential zoned district. The new landscaping will create a visually pleasing settling for structures on the site.

7. **Promote the protection and retention of landmark, native, and specimen trees and if feasible mature canopy trees and other significant landscaping of aesthetic and environmental value.**

Not applicable; existing mature tree will be integrated with the proposed new landscaping.

8. **Ensure that the design, quality, and location of signs are consistent with the character and scale of the structures to which they are attached and are visually harmonious with surrounding development.**

New signage proposed as part of the project is integrated and consistent with the character and scale of the structures. New signage installed throughout the site is visually harmonious with the proposed development.

9. **Promote the conservation, enhancement, preservation, and protection of historic resources.**

Not applicable; there are no historic resources near this project's location.

Design policies of the General Plan

The project site is designated as Retail/Entertainment (RE) on the General Plan Land Use Map. The General Plan 2040 RE designation provides for general retail, services, and entertainment for local residents as well as consumers and visitors from the wider region. As proposed, the project is consistent with the RE General Plan land use designation in that the proposed project is the establishment of a restaurant with a dual drive-through lanes with site improvements on underutilized site that will serve local residents, as well as consumers and visitors from the wider region. The project is also consistent with applicable General Plan 2040 policies.

Adopted applicable design guidelines

The subject site is not within an adopted specific plan and design guidelines have not been adopted for this location.

- B. **Is consistent with any planning or zoning approvals by the director or the planning commission.**

Staff finds that the project is consistent with the RC zoning district in that it is a proposal of a new restaurant with dual drive-through lanes that as conditioned and proposed meets all appropriate development standards of the Vallejo Municipal Code. The final authority of this action is the Planning Commission.

- C. **Complies with any other relevant city policies or regulations.**

The project as proposed complies with VMC Chapter 16.316 – Drive-in and Drive-Through Facilities, as the project has been designed to meet the requirements and beautify an underutilized site.

- D. **Meets the following criteria:**

- a. **The aesthetic design, including its exterior design and landscaping, is appropriate to the function of the project and will provide an attractive and comfortable environment for occupants, visitors, and the general community.**

The overall design and landscaping of the project is appropriate to the function of the project and will provide an attractive and comfortable environment for visitors and the general community. The proposed project will activate and beautify an underutilized site with a new project and landscaping.

- b. Project details, colors, materials, and landscaping are fully integrated with one another and used in a manner that is visually consistent with the proposed architectural design.**

The proposed building will be comprised of vertical and horizontal metal siding with stacked CMU stone on the north, south and west elevations. The metal siding will be painted a blue color (DB Blue), dark gray (DB Gray Dark) and light Gray (DB Gray Light) and charcoal color for the stacked CMU stone. The proposed trash enclosure will be visually consistent with the main building, such as charcoal CMU block, dark gray (DB Grey Dark) for the gates and blue (DB Blue) for the roof, gate frames and posts. The project details, colors, materials, and landscaping are integrated with one and another that create a visually consistent proposal.

- c. The project has been designed with consideration of neighboring development.**

The project has been designed with consideration of existing neighboring development in that the building has been placed 64.5 feet from the adjacent residential uses to the east; bringing the building closer to Fairgrounds Drive and Gateway Drive. An existing six-foot wall is located between the adjacent residential uses and the parking lot of the proposed project, as well as a 7-foot landscape buffer. Additionally, all lighting on the site will be properly screened and will be directed to point to the ground. Finally, conditions of approval have been added to address vehicle queuing during special events and possible noise impacts on adjacent residential uses.

- d. The project contributes to the creation of an attractive and visually interesting built environment that includes well-articulated structures that present varied building facades, rooflines, and building heights and encourages increased pedestrian activity and transit use.**

The proposed building is visually interesting and will be constructed with a variety of high-quality building materials and painted with simple, bold colors. Vertical and horizontal façade breaks, building massing, and modulation have all been incorporated into the design of the building. Canopy awnings are provided over all entrances and service doors, including a large 300-square-foot canopy over the customer walk-up service window providing weather protection. The building features modulation with a tower element, wall articulation, and materials that are aesthetically pleasing and compatible with other newer developments in the community. Colorful and visually interesting wall signs depicting the Dutch Bros Coffee logos will be installed on all sides of the building.

- e. Street frontages are attractive and interesting for pedestrians, address the street and provide for greater safety by allowing for surveillance of the street by people inside buildings and elsewhere.**

The proposed project of a new restaurant with dual drive-through lanes with frontage and site improvements on an underutilized site will create an attractive street presence for pedestrians and passing motorists. The glazing provided along

the north and west elevations will allow a view of the street by the people inside the building.

- f. The proposed design is compatible with the historical or visual character of any area recognized by the city as having such character.**

Not applicable; subject site is not within the Saint Vincent's Historic District or the Architectural Heritage District.

- g. The aesthetic design preserves significant public views and vistas from public streets and open spaces and enhances them by providing areas for pedestrian activity.**

The project has been designed to preserve the public views from the public streets and will enhance them by providing areas for pedestrian activity such as the 300 square-foot covered outdoor seating area.

- h. The proposed landscaping plan is suitable for the type of project and will improve the appearance of the community by enhancing the building, minimizing hardscape, and softening walls; and the landscape plan incorporates plant materials that are drought-tolerant, will minimize water usage, and are compatible with Vallejo's climate.**

- i. *The proposed landscaping includes trees, shrubs and ground covering has been designed to improve the appearance of an underutilized site and minimize hardscape. The landscaping incorporates plant materials that are drought-tolerant, will minimize water usage, and are compatible with City of Vallejo's climate.***

- j. The project has been designed to be energy efficient including, but not limited to, landscape design and green or eco-friendly design and materials.**

As required by the California Building Code, the project has been designed to be energy efficient, for example LED lighting that is properly shield will be installed throughout the site and providing EV charging stations. The proposed landscaping has been designed to incorporate plant materials that are drought tolerant consistent with the California Water Efficient Landscaping Standards.

- k. The project design protects and integrates natural features including creeks, open space, significant vegetation, and geologic features.**

Not applicable; no natural features including creeks, open space, significant vegetation, and geologic features are on the subject site.

V. FINDINGS RELEVANT TO THE APPROVAL OF THE DEVELOPMENT REVIEW (VMC Section 16.605.03)

- A. Complies with all applicable specific standards and criteria of this Zoning Code.**

The proposed project is located on a property zoned Regional Commercial (RC). The project is the construction of a new restaurant with dual drive-through lanes with site improvements on underutilized site that will provide restaurant services for residents as well as consumers and visitors from the region. The project, as proposed and conditioned, is consistent with the applicable development standards outlined in Title 16 of the Vallejo Municipal Code as noted in the report.

B. Is consistent with the general plan and any applicable approved specific plan or planned development.

The project site is designated as Retail/Entertainment (RE) on the General Plan Land Use Map. The General Plan 2040 RE designation provides for general retail, services, and entertainment for local residents as well as consumers and visitors from the wider region. As proposed, the project is consistent with the RE General Plan land use designation in that the proposed project is the establishment of a restaurant with a dual drive-through lanes with site improvements on underutilized site that will serve local residents, as well as consumers and visitors from the wider region. The project is also consistent with applicable General Plan 2040 policies as noted in the report.

C. Complies with any design conditions, standards, or requirements imposed by a discretionary approval including but not limited to a major or minor use permit, variance, specific plan, planned development, or tentative map applicable to the project or the location where it is proposed.

The existing non-conforming use has ceased activity for a continuous period of over twelve months and is therefore considered to be abandoned. The new development shall comply with the approved design and conditions of approval imposed by the attached Resolution.

D. Is in substantial compliance with any applicable adopted design guidelines.

The Project is not subject to any applicable adopted design guidelines, other than the general design guidelines, below..

E. Will serve to achieve groupings of structures that are well related one to another and which, taken together, will result in a well-composed urban design, with consideration given to site, height, arrangement, texture, material, color and appurtenances, the relation of these factors to other structures in the immediate area, and the relation of the development to the total setting as seen from key points in the surrounding area; only elements of design which have some significant relationship to outside appearance shall be considered.

The proposed project consists of the establishment of a restaurant with dual drive-through lanes and site improvements, such as new landscaping, new trash enclosure and a mixture of metal siding and stacked CMU, will result in a well-composed urban design. The overall building height and massing is consistent with buildings in the immediate area. The new development will activate an underutilized site and will complement the existing uses in the immediate area.

F. Will be of a quality and demonstrates thoughtful site planning that will serve to protect the value of private and public investments in the area.

The proposed project demonstrates thoughtful site planning in that it meets all the development standards required in the subject location and will serve to protect the value of the private and public investments.

G. That the project has been reviewed in compliance with the California Environmental Quality Act, if applicable, and the requirements of this chapter.

As noted above, the project is exempt pursuant to California Environmental Quality Act (CEQA) Guidelines, Section 15061 (B)(3) ("Common Sense Exemption) because it can be

seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment and further, pursuant to Guidelines, Section 15302 (Class 2: "Replacement or Reconstruction") because the project consists of replacing an existing commercial structure with a smaller commercial structure of the purpose and therefore, no further environmental review is required.

VI. FINDINGS RELEVANT TO THE APPROVAL OF THE ZONING COMPLIANCE (VMC Section 16.509.02(D))

- A. The proposed signs do not exceed the standards of this chapter and are of the minimum size and height necessary to enable motorists and pedestrians to readily identify the facility or site from a sufficient distance to safely and conveniently access the facility or site.**

The proposed signage is consistent with the Sign Standards located in VMC Table 16.509-B. The Standards allow for maximum sign area per business/tenant of 1 sf. for each linear foot of store frontage, plus 0.5 square foot for each foot of secondary footage, with at least 10 sf. and no more than 100 sf. allowed. The new building has a frontage of 49 linear feet and secondary frontage of 24.5 linear feet, resulting in a total area of 61.5 square feet. As proposed, a total of 50.8 square feet of new signage will be installed throughout the site. The signs will be distributed between business name, company logo, poster boards and a monument sign. The proposed signage is necessary to enable motorist and pedestrian to readily identify the facility from the front of the building.

- B. The size, location, and design of the signs are visually complementary and compatible with the scale and architectural style of the primary structures on the site, any prominent natural features on the site, and structures and prominent natural features on adjacent properties on the same street.**

With the overall sign area of 50.8 square feet of new signage will be installed throughout the site and by placing these above the store frontage and as a free-standing monument, the signs are visually complementary and compatible with the scale and architectural style of the primary structures on the site.

- C. The proposed signs are in substantial conformance with the design criteria in the any adopted city design guidelines.**

Not applicable; the city does not have adopted design guidelines.

VII. RESOLUTION APPROVING THE PROJECT AT 1598 FAIRGROUNDS

NOW, THEREFORE, LET IT BE RESOLVED that the Planning Commission hereby **APPROVES** Major Use Permit (UP22-0006), Development Review (DVR22-0016), Design Review (DR22-0016), Landscape Review (LR22-0005), And Zoning Compliance (ZC22-0035) on the above findings and subject to the Conditions of Approval attached to this Resolution.

VIII. VOTE

PASSED AND ADOPTED at a regular meeting of the Planning Commission of the City of Vallejo, State of California, on the 6th day of February, 2023 by the following vote to-wit:

AYES:

NOES:

ABSENT:

ABSTAIN:

PEGGY COHEN_THOMPSON, CHAIRPERSON
City of Vallejo Planning Commission

Attest:

MARGARET KAVANAUGH-LYNCH, SECRETARY
City of Vallejo Planning Commission

Attachment 1: Conditions of Approval

CONDITIONS OF APPROVAL

**MAJOR USE PERMIT (UP22-0006)
DEVELOPMENT REVIEW (DVR22-0016
LANDSCAPE REVIEW (LR22-0005)
ZONING COMPLIANCE (ZC22-0035)
1598 FAIRGROUNDS DRIVE, VALLEJO CA, 94589
APN # 0072-021-350**

PERMIT DESCRIPTION: The project consists of the demolition of a 3,000 square-foot vacant building and constructing a new 950 square-foot restaurant with a drive-through for “Dutch Bros”. The building will have an overall building height of 24 feet and will have one drive-through window and one pedestrian accessed window off Gateway Avenue. The new building will be constructed with grey stone veneer at the base of the building, light grey vertical metal siding and a blue horizontal metal horizontal siding. Additionally, site improvements will be conducted to accommodate a two-lane drive through, a new surface parking, a trash enclosure and total of 8,872 square feet of new landscaping. The applicant is proposing to operate from 5 a.m. to 11 p.m.

A. PLANNING DIVISION

Cesar Orozco | cesar.orozco@cityofvallejo.net | (707) 648-5436

Pre-Building Permit

1. Prior to building permit issuance, submit a numbered list to the Planning Division with a written response on how each condition of approval (COA) contained in this report will be satisfied. The list should be submitted to the project planner who will coordinate development of the project. The approved COA will be included in the permit set after the cover sheet with each condition listed and how the applicant will address each condition in writing.
2. Prior to building permit issuance, obtain an Administrative Permit from the Planning Division for any temporary office or construction trailer.
3. Prior to building permit issuance, the **Planning Division** shall confirm that the building permit drawings and subsequent construction substantially conform with the approved Planning application drawings.
4. Prior to the issuance of a building permit, the director may require the applicant to submit such information as proposed machinery, processes, products, or environmental impacts as may be necessary to demonstrate the ability of the proposed uses to comply with applicable performance standards. Such required information may include reports by expert consultants. Whenever an environmental impact report has been submitted and determined to be adequate under state and city guidelines, no further information shall be required. (VMC Section 16.505.02 (B))

During Construction

1. Construction activities shall be managed in compliance with the following requirements:
 - a. Site Watering. During the construction of a project, all portions of the site shall be watered as necessary to reduce emissions of dust and other particulate matter, and all stockpiles shall be covered.
 - b. Maintenance. Streets and sidewalks shall be made dirt free at the completion of construction.
 - c. Noise. All construction and transport equipment shall be muffled in accordance with state and federal laws.

- d. Emissions. Construction and transport equipment shall be operated so as to minimize exhaust emissions. During construction, trucks and equipment should be running only when necessary.
 - e. Hours of Operation. Grading and pile driving operations within ¼ mile of residential units shall be limited to between 8:00 am and 5:00 p.m. on weekdays to ensure compliance with the requirements for construction activity in Subsection 16.502.12.D.1., Maximum Noise Level for Temporary Construction Activity, or as otherwise restricted as part of an approval.
 - f. Water Run-off. All water run-off from construction sites shall be controlled. During construction, trucks and equipment should be running only when necessary, and shall comply with Chapter 12.41 of the Vallejo Municipal Code.
2. No person shall make, or cause to suffer, or permit to be made upon any public property, public right-of-way or private property, any excessive noise, annoying noise, amplified sound or vibrations that are physically annoying to reasonable persons of normal sensitivity or that are so harsh or so prolonged or unnatural or unusual in their use, time or place as to cause or contribute to the unnecessary and unreasonable discomfort of any persons of normal sensitivity located at the lot line of the property from which these noises emanate or that interfere with the peace and comfort of residents or their guests, or the operators or customers in places of business in the vicinity, or that may detrimentally or adversely affect such residences or places of business. (VMC Section 16.502.09 (C))
 3. Construction, demolition, and related loading/unloading activities that may generate noise shall be limited to the following: 7 a.m. and 6 p.m. in Monday- Friday, Saturday 9 am- 6 pm and Sundays and holidays not allowed. (VMC Section 16.502.09 (D))
 4. The fencing for construction sites shall not be installed until a building permit or grading permit has been issued and shall be removed prior to final inspection. In the event that the building permits expire before the construction is completed, the director may issue a temporary use permit pursuant to Chapter 16.339, Temporary Uses, to allow the fencing to remain for a longer period of time. (VMC Section 16.505.08 (B))

Pre-Operation

1. Prior to operation/final building inspection, the landscape architect shall provide a complete Certificate of Completion and Certificate of Installation According to the Landscape Documentation in accordance with VMC Chapter 16.71: Water Efficient Landscape Requirements. The documentation shall include the following:
 - a. Irrigation Scheduling (VMC Section 16.71.050)
 - b. Schedule of Landscape and Irrigation Maintenance (VMC Section 16.71.051)
 - c. Landscape Irrigation Audit Report (VMC Section 16.71.052)
 - d. Soil Management Report (VMC Section 16.71.045)
2. Prior to occupancy/final building inspection, the applicant shall install landscaping and irrigation per approved plans. The landscape architect shall verify in writing that the landscaping and irrigation have been installed in accordance with the approved landscape plans with respect to size, health, number and species of plants, and the overall design concept.
3. Prior to operation/final building inspection, new American Disabilities Act (ADA) improvements shall be installed including a new ADA compliant access path from the public right-of-way to the convenience store, as well as an ADA compliant restroom and a new ADA compliant parking stall.

Operation

1. During a special event, such as the grand opening period or at any other time when there is unusually high traffic flow, improvement measures shall be put in place. Applicant shall increase staffing levels to assist in queueing and expedite food/drink delivery. Applicant shall also coordinate these high-traffic events with the management of the adjacent Hampton Inn Hotel.
2. Hours of operation shall be between 5 a.m. to 11 p.m., Monday through Sunday. Changes to hours of operation shall be reviewed by the City of Vallejo Planning Division. All late-night business operations (before 6 a.m. and after 12 a.m.), located within three hundred feet of a residential zoning district, and commenced on or after the effective date of the Zoning Code, shall require a Major Use Permit, as prescribed in VMC Chapter 16.606. (VMC Section 16.323.02).
3. The site shall be maintained free of litter and graffiti at all times. The owner or operator shall provide for daily removal of trash, litter, and debris from premises and on all abutting sidewalks within 100 feet of the premises. One permanent, non-flammable trash receptacle shall be installed near to the entrance/exit of the building and near the drive-through lane. (VMC Section 16.316.02 (F))

Landscaping

1. Maintenance Required. All landscaping shall be permanently maintained in a healthy and thriving condition at all times, in compliance with the approved landscape plan. Irrigation systems and their components shall be maintained in a fully functional manner consistent with the original approved design or upgraded to reflect current best practices for water efficiency. Regular maintenance shall include:
 - a. Adjusting, checking, and repairing irrigation equipment; resetting automatic controllers; aerating and de-thatching turf areas; adding/replenishing fertilizer, mulch, soil amendments; insect control; the replacement of dead or diseased plants; pruning; watering; and weeding all landscaped areas.
 - b. The trimming of vegetation as necessary to maintain the effective functioning of solar energy facilities and passive solar design features installed both on site and on adjacent properties.
 - c. The trimming of vegetation as necessary to keep pedestrian and bicycle paths clear. (VMC Section 16.504.08 (A))
2. Litter shall be removed from all landscaped areas in a timely fashion. (VMC Section 16.504.08 (B))
3. Turf areas shall be mowed on a regular basis and be kept green. Accumulation of leaves, twigs, bark, and other similar materials shall be removed on a regular basis. Planting areas shall be kept free of weeds at all times. (VMC Section 16.504.08 (C))
4. Landscaping maintenance shall include:
 - a. Pruning, cultivating, weeding, fertilizing, replacement of plants, and watering on a regular basis.
 - b. Pruning or removal of overgrown vegetation, cultivated or uncultivated, that may harbor rats, vermin, or other nuisances, or otherwise be detrimental to neighboring properties.
 - c. The removal of dead, decayed, diseased, or hazardous trees, weeds and debris that create an unsightly appearance and may be dangerous to public safety and welfare or detrimental to neighboring properties or property values. Compliance shall be by removal, replacement, or maintenance.

- d. Landscaping (trees, shrubs, ground cover, turf, etc.) which, due to accident, damage, disease, lack of maintenance, or other cause, fails to show a healthy appearance and growth, shall be replaced. Replacement plants shall conform to all standards that govern the original planting installation, approved landscaping plan, or as approved by the director. (VMC Section 16.504.08 (D))

Fences, Walls, and Screening

1. Maintenance. Fencing and walls shall be continuously maintained with no sign of rust or disrepair. Graffiti shall be removed within forty-eight hours. (VMC Section 16.505.02 (B)).
2. General Requirements. All exterior mechanical equipment, whether on a roof, on the side of a structure, or located on the ground, shall be screened from public view. Exterior mechanical equipment to be screened includes, without limitation, heating, ventilation, air conditioning, refrigeration equipment, plumbing lines, ductwork, transformers, smoke exhaust fans, water meters, backflow preventers, service entry section, back-up and emergency generators, and similar utility devices.
 - a. Screening shall be architecturally integrated into the main structure with regard to materials, color, shape, and size to appear as an integral part of the building or structure.
 - b. Equipment shall be screened on all sides, and screening materials shall be opaque.
 - c. When screening with plants, evergreen types of vegetation shall be planted and maintained. Plant material sizes and types shall be selected and installed so that, at the time of building occupancy, such plants effectively screen their respective equipment.
 - d. The use of wood expanded metal lath, and chain link for the purpose of screening is prohibited. (VMC Section 16.505.10)

Lighting

1. Lighting shall be designed, located, and installed to be directed downward or toward structures, be shielded or fully shielded, and shall be well-maintained in order to prevent glare, light trespass (unwanted light on adjacent lots and public rights-of-way), and light pollution to the maximum extent feasible. No permanently installed lighting shall blink, flash, or be of unusually high intensity or brightness, as determined by the director. (VMC Section 16.506.04 (B))
2. Timing. All outdoor lighting in non-residential zoning districts shall be turned off during daylight hours and during any hours when the building is not in use and the lighting is not required for security. Time clocks or photo-sensor systems may be required as a condition of approval of a discretionary permit. (VMC Section 16.506.04 (D))

Parking

1. In parking facilities containing twenty or more spaces serving multi-unit residential, mixed-use, commercial and hotels and motels, at least three percent of parking spaces shall be electric vehicle (EV) charging stations. Such spaces may be counted towards the parking requirements of this Zoning Code.
 - a. Size. Electric vehicle charging stations shall be the same size as other spaces, and electric vehicle charging equipment shall not reduce the size of the space.
 - b. Signage. Each electrical vehicle charging station shall be clearly marked with a sign reading "Electrical Vehicle Charging Station" and the associated California Vehicle Code restrictions, and only a vehicle that is connected for electric charging shall be allowed to park in the stalls or spaces so designated.

- c. Equipment. Electrical vehicle charging stations shall be equipped with electrical outlets, and may also be equipped with card readers, controls, connector devices and other equipment, as necessary for public use. (VMC Section 16.508.09)

Signs

1. All signs shall be installed as shown on approved project plans. Any changes to the proposed signage shall receive approval by City of Vallejo Planning Division.
2. Temporary Signs Within Commercial Zoning Districts. Temporary signs are allowed within commercial zoning districts without a sign permit for a maximum of sixty days after the opening of a new business, provided that the area of the temporary signs shall not exceed fifty percent of the total sign area allowed on the site by Section 16.509.04, General Requirements for All Signs. (VMC Section 16.509.03 (P)).
3. Moving, Flashing, Electronic/Digital and Windblown Signs. No moving, rotating, flashing, or changing of color intensity or signs with electronic/digitally created content (i.e., electronic reader board signs), and no windblown signs, such as posters, pennants, streamers, or strings of light bulbs, balloons, or other inflated objects are permitted. The only exceptions to these requirements are time and temperature devices and signs installed by a governmental agency in carrying out its responsibility to protect public health, safety, and general welfare. (VMC Section 16.509.07 (C))
4. Portable Signs. An "A" frame sign or other sign attached to a device used to allow the sign to be rolled or moved around is prohibited. Included in this category are signs larger than three square feet affixed to a vehicle intended for the purpose of business identification, directional to a business, or advertisement of a business. (VMC Section 16.509.07 (D))

General Requirements

1. A final decision on an application for any discretionary approval subject to appeal shall become effective after the expiration of ten calendar days following the date of action unless an appeal is filed. No building permit or business license shall be issued until the 11th day following the date of the action. If a different termination date is fixed at the time of granting, or if actual construction or alteration has begun under valid building permits, the ten-day, period may be waived. (VMC Section 16.602.11)
2. The review authority, in the granting of any permit, may specify a time, consistent with the purposes of the use and necessary to safeguard the public safety, health and welfare, within which the proposed use must be undertaken and actively and continuously pursued. If no time period is specified, any permit granted under the Zoning Code shall automatically expire within two years of the effective date (February 6, 2025; if approved) (VMC Section 16.602.12 (A)). All Planning permits associated with this approval shall expire on February 6, 2025 unless exercised or extended.
3. If a permit is granted in conjunction with approval of new construction, issuance of a building permit shall constitute exercise of rights; provided, however, that, unless otherwise specified as a condition of project approval, the permit shall expire if:
 - i. The Building Permit expires.
 - ii. Final inspection is not completed, or certificate of occupancy issued within the time specified as a condition of project approval.
 - iii. The rights granted under the permit are not exercised within one year following the earliest to occur of the following: issuance of a certificate of occupancy; or if no certificate of occupancy is required, the last required final inspection for the new construction. (VMC Section 16.602.11 (B))

4. The Director may approve a one-year extension of any permit or approval granted for a residential or non-residential project under the Zoning Code upon receipt of a written application and fees received fifteen calendar days (January 22, 2025) before the expiration date with the required fee prior to expiration of the permit. (VMC Section 16.602.11 (C.1))
5. No change in the use or structure for which a permit or other approval has been issued is permitted unless the permit is modified as provided for in the Zoning Code. For the purpose of this chapter, the modification of a permit may include minor modification of a development review approval that is in substantial compliance as determined by the director. (VMC Section 16.602.11 (D))
6. Applications for changes to an approved permit must be filed and processed in compliance with the requirements in Section 16.602.02, Application Forms and Fees, and shall be subject to a fee established by the Master Fee Schedule.
 - a. Minor Modifications. The director may approve minor changes to approved plans that are consistent with the original findings and conditions approved by the hearing body and would not intensify any potentially detrimental effects of the project.
 - b. Major Modifications. A request for changes in conditions of approval of a discretionary permit or a change in an approved site plan or building plan that would affect the findings adopted as a basis for project approval shall be treated as a new application, except that the director may approve changes that he or she determines to be minor. (VMC Section 16.602.11 (E))
7. A request for major changes to an approved site plan or building plan that will not affect the findings adopted as a basis for project approval, but are still considered substantial, shall be forwarded to the original review authority for the discretionary permit for review and approval. Any changes to the proposed colors shall require approval by the Planning and Development Services Director. (VMC Section 16.602.11 (F))
8. For new developments, utilities including, but not limited to, all electrical, telephone, cable television, fiber-optic cable, gas, water, sewer, irrigation/recycled water, and similar distribution lines providing direct service to a project shall be installed underground within the site. This requirement may be waived by the director upon determining that underground installation is infeasible, or the electrical line is otherwise exempt from an under-grounding requirement. (VMC Section 16.501.10)
9. Within five business days after project approval, the applicant/operator shall pay the Notice of Exemption filing fee (the latest fees in effect at the time of payment) for County Clerk processing, made payable to Solano County and submitted to the City of Vallejo Planning Division. If an in-person filing is required, such filing shall be completed by the applicant, unless directed otherwise by the Planning Division. NOTE: If the fees are not paid and the Notice of Exemption is not filed within five working days after approval of the project, it will extend time frames for California Environmental Quality Act (CEQA) legal challenges.
10. Obtain an inspection from the Planning Division prior to occupancy/final building inspection. All inspections require a minimum 24-hour notice. Occupancy permits shall not be granted until all construction and landscaping are completed and finalized in accordance with the approved plans and required conditions of approval or a bond has been posted to cover all costs of the unfinished work as agreed to by the Planning and Development Services Director.
11. Applicant shall indemnify, hold harmless, and defend City, its officers, officials, directors, employees, agents, volunteers and affiliates and each of them from any and all claims, demands, causes of action, damages, costs, expenses, actual attorney's fees, applicant's fees, expert fees, losses or liability, in law or in equity, of every kind and nature whatsoever arising out of or in connection with Applicant's operations, or any subcontractor's operations, to be performed under this agreement for Applicant's or subcontractor's tort negligence including active or passive, or strict negligence, including but not limited to personal injury including, but not limited to bodily injury,

emotional injury, sickness or disease, or death to persons and/or damage to property of anyone, including loss of use thereof, caused or alleged to be caused by any act or omission of Applicant, or any subcontractor, or anyone directly or indirectly employed by any of them or anyone for the full period of time allowed by the law, regardless to any limitation by insurance, with the exception of the sole negligence or willful misconduct of the City. No modification of the project, any application, permit, certification, condition, environmental determination, other approval, change in applicable laws and regulations, or change in processing methods shall alter the Applicant's indemnity obligation.

B. BUILDING DIVISION

Steve Arnold | steve.arnold@cityofvallejo.net | (707) 648-4387

1. Plans and permits required for Building, mechanical, plumbing, and electrical work per California Code of Regulations, Title 24, and applicable City Ordinance in effect at the time of completed Building Permit application date and required fees paid at time of application.
2. Soils report will be required for foundation design plan review.

C. PUBLIC WORKS

James Paluck, PE | james.paluck@cityofvallejo.net | (707) 554-5902

Adherence to City of Vallejo Design Standards:

1. All public improvements shall be designed and constructed to current City of Vallejo Design Standards.
2. Existing public facilities damaged during the course of construction shall be repaired by the developer, at his sole expense, to the satisfaction of the City Engineer.

Demolition Plan:

3. The developer's Civil Engineer shall prepare a demolition plan for the project, which shall be submitted concurrent with the improvement plan package. The demolition plan shall address the following:
 - a. Demolition of onsite improvements, including buildings, parking lots, parking lot lights and planter islands.
 - b. Parking lot landscaping and irrigation
 - c. Tree and overgrown shrub removals
 - d. Fencing to be removed and fencing to remain
 - e. Any items to be saved in place and or protected, such as trees water meters, sewer cleanouts, drainage inlets or backflow prevention devices.

Geotechnical Investigation:

4. The developer shall retain a registered Geotechnical Engineer to conduct a Geotechnical Investigation of the project area. Two copies of the project Geotechnical Report shall be submitted to the Public Works Department prior to submittal of Construction Plans. The Geotechnical Report shall include details and recommendations regarding the following:
 - a. Geologic Hazards
 - b. Grading Limitations and Requirements
 - c. Foundation Design
 - d. Settlement
 - e. Retaining Wall Design as Required
 - f. Parking Lot Pavement Sections

Grading:

5. A grading plan shall be prepared by the developer's Civil Engineer and approved by the City Engineer. The following information shall be shown on the Grading Plan:
 - a. Existing contours, landscaping, fences, buildings, or other improvements
 - b. Existing trees to be saved in place or removed
 - c. Furnish all necessary details to clearly convey recommendations outlined in the project geotechnical investigation
 - d. Cut/Fill interfaces and limits of grading
 - e. Limits of existing geologic hazards as identified by the Geotech. Engineer
 - f. Lot boundaries and road rights-of-way
 - g. Proposed pad elevations, finished contours and lot grading details
 - h. Top of curb elevations
 - i. Perimeter cross-sections along all sides of the project to show the proposed project's interface with abutting properties and streets
 - j. Plan view of proposed drainage facilities including storm drains, catch basins, manholes and underdrains
 - k. Parking lot surface drainage, pavement grades, ridge lines, etc.
6. Grading and drainage shall be designed so that surplus drainage (above and beyond that of the 15-year storm) not collected in site catch basins, is directed overland so as not to jeopardize existing or proposed buildings with flooding.
7. The Project Engineer shall coordinate grading design closely with the project Geotechnical Engineer. Specifically, the Geotechnical Engineer shall be consulted to evaluate and address issues related to:
 - a. Geologic Hazards
 - b. Retaining Wall Design Parameters
 - c. Parking Lot Pavement Sections
8. Slope grading shall comply with the Geotechnical Report. Slopes steeper than 3H:1V shall not be allowed in the public right-of-way. Slopes steeper than 2H:1V shall not be allowed on-site.
9. Retaining walls over 18 inches tall shall be concrete or masonry. Retaining walls over 4 feet tall shall be designed by a Civil or Structural Engineer.

Stormwater Quality:

10. The project shall comply with the requirements of the most current National Pollutant Discharge Elimination System (NPDES) permit issued to the City of Vallejo, which incorporates Low Impact Development (LID) Best Management Practices in the overall design to address the issue of ongoing post-construction stormwater quality for the project site. Examples of LID treatment measures include bio-retention, harvesting and reuse, infiltration, and evapo-transpiration.
11. The developer shall prepare a Storm Water Control Plan and Report for the project, consistent with the City of Vallejo requirements. Please refer to the Stormwater C.3 Guidebook prepared by the Contra Costa Clean Water Program.
12. All stormwater treatment measures shall be adequately operated and maintained. To ensure operation and maintenance of stormwater treatment measures, the property owner shall enter into a Stormwater Treatment Measures Maintenance Agreement with the City. This agreement shall be signed by the property owner and submitted to the Department of Public Works prior to the issuance of the building permit. It is included in the document entitled "Storm Water Requirements for Development Projects- Packet for Project Applicants."

Erosion Control:

13. An erosion and sedimentation control plan shall be included and prepared by the developer's Civil Engineer. The erosion control plan shall include protection measures such as: sedimentation basins, check dams, straw wattles and hydroseeding details.
14. The applicant shall obtain all necessary permits for storm water discharges, including but not limited to the State Water Resources Control Board Construction General Permit. Applicants whose projects disturb one or more acres of soil or whose projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, shall obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity (State Water Resources Control Board Construction General Permit, 99-08-DWQ). Construction activity subject to this permit includes clearing, grading and disturbances to the ground such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility.
15. The applicant shall be responsible for developing and implementing a Storm Water Pollution Prevention Plan which shall be reviewed and approved by the City of Vallejo.

Trash Enclosure and Recycling:

16. The location of trash enclosures shall be shown on the improvement plans. Drive aisle pavement sections between driveways and trash enclosures shall be designed to accommodate garbage truck traffic. There shall be a concrete slab that extends 10 feet from the front of the enclosure and shall be a minimum of 6" of reinforced concrete over 6" of Class II aggregate base compacted to 95%.

Landscaping:

17. The project architect and engineer shall coordinate design closely with the project landscape designer. Specifically, they shall consult the landscape designer to evaluate and address issues related to:
 - a. Fencing/wall layout and details
 - b. Locations and sizes for irrigation services
 - c. Sight distance constraints for fencing and landscaping
 - d. Depth of cover and tree setbacks over water, sewer and storm drain lines in landscape areas
18. Landscaping plans shall be prepared by a registered Landscape Architect and City- maintained landscaping shall be designed per City standards. Landscaping and irrigation plans shall be designed to comply with the City's Water Efficient Landscaping Ordinance. Use of turf and other water intensive landscaping shall be minimized.

D. Water

Kent Carothers | kent.carothers@cityofvallejo.net | (707) 648-4309

1. CODE REQUIREMENTS. All code requirements as stated in Title 11 of the Vallejo Municipal Code (VMC) and Vallejo Standard Specifications and Standard Drawings adopted in 2011 (VSSSD) that apply to this project shall be conformed to. The project is being made aware of codes that require extra attention by the following items.
 - a. WATER SYSTEM PLANS (VSSSD Section 4.1). All water system improvements shall be consistent with the latest Vallejo Water System Master Plan, prepared by Kennedy/Jenks Engineers. Prior to Improvement plan approval and building permit issuance, water system improvement plans shall be submitted to the Water Department for review and approval, and shall contain at least:
 - i. Location and size of fire sprinkler service connection(s).
 - ii. Location and size of existing and proposed domestic service connection(s).
 - iii. Location and size of irrigation service connection(s), if any.

- iv. Location of fire hydrants.
 - v. Location of structures with respect to existing public water system improvements, such as mains, meters, etc.
 - vi. Location and size of any new water mains.
 - vii. Location and size of backflow prevention devices (required on water service connections to irrigation systems, certain commercial water users, and to commercial fire sprinkler systems, per City Ordinance 922 N.C. (2d).
- b. FIRE FLOW REQUIREMENTS (VSSSD Section 4.1). Fire flow requirements of the Fire department shall be complied with. Fire flow at no less than 25 psi residual pressure shall be available within 1,000 feet of any structure. One half of the fire flow shall be available within 300 feet of any structure.
- i. For single family residential units, the fire flow is 1,500 gpm.
 - ii. For other developments, see the Vallejo Water System Master Plan, 2015, prepared by Kennedy Jenks.
- c. HYDRAULIC CALCULATIONS (VSSSD Section 4.1). Prior to Improvement Plan and building permit issuance, hydraulic calculations shall be submitted to the Water Director demonstrating that the fire flow requirements are complied with.
- d. FIRE PROTECTION SYSTEMS (VSSSD Section 4.1). Fire hydrant placement and fire sprinkler system installation, if any, shall meet the requirements of the Fire Department. For combined water and fire services, the requirements of both the Fire Department and the Vallejo Water System Master Plan, with latest revisions, shall be satisfied.
- e. WATER EASEMENTS (VSSSD Section 4.1). Easements shall be granted for all water system improvements installed outside the public right-of-way in the City's Standard Form for Grant of Water Line Easement with the following widths:
- i. 15 ft. wide (minimum) for water mains.
 - ii. 10 ft. wide (minimum) for fire hydrants, water meters, backflow preventers, double detector check valves, etc.
 - iii. Other facilities will be reviewed by the Water Department.
- f. WATER METERS (VMC 11.04.110 and 11.16.090). Each parcel shall be metered separately and shall have a separate fire sprinkler service connection.
- g. WATER SERVICE BONDS AND FEES (VMC Sections 11.16, 11.18, 11.20 and 11.24). Water service shall be provided by the City of Vallejo following completion of the required water system improvements and payment of applicable fees. Performance and payment bonds shall be provided to the City of Vallejo prior to construction of water system improvements. Fees include those fees specified in the Vallejo Municipal Code including connection and elevated storage fees, etc., and fees for tapping, tie-ins, inspections, disinfection, construction water, and other services provided by the city with respect to the water system improvements. The Water Department may be contacted for a description of applicable fees. These fees must be paid prior to issuance of the building permit.

2. CONDITIONS OF APPROVAL

- a. Apply and pay for Fire Flow Test with the Water Department to determine operation of sprinkler system and final service size.
- b. Provide water meter and service sizing calculations per most recent California Plumbing Code, include a water fixture count table.

- c. As of January 1, 2011, all new residential construction will require fire sprinklers to be installed per the 2010 California Residential Code. Therefore, a NFPA 13 D automatic fire sprinkler system with a minimum 1" Tap and Meter Set is required.
- d. As of January 1, 2018, all units in multi-family, commercial, or combination thereof, buildings shall be individually metered (if existing plumbing allows or is re-configured) by the City, additional meters at the owner/applicant's expense; or, master metered by the City, and sub-metered by the property owner, with approved/certified meters. Per California Senate Bill 7 (SB7).
- e. A reduced pressure backflow device at the water meter is not required for a Residential Multipurpose Piping Sprinkler System unless one of the following is present: swimming pool, spa, hot tub, gray water irrigation system, sewage ejector pump, solar water heating system, ethylene, or propylene glycol system, well or any other cross- connections.
- f. WATER SYSTEM INSTALLATION. Prior to occupancy or final building inspection, install water system improvements as required. Backflow device/s where required shall be installed in areas hidden from public view and/or shall be mitigated by landscaping.
- g. ESTIMATE OF FEES: Until Building Plans, Water Meter Data Card and Fire Flow Test results are submitted.

E. Fire Prevention

Vincent Sproete | vincent.sproete@cityofvallejo.net | (707) 648 – 4566

- 1. Approved address numbers shall be placed on all new and existing buildings in such a position as to be plainly visible and legible from the street or road fronting the property. Said numbers shall clearly contrast with their background. The characters shall be a minimum of 4" high with a 1/2" stroke. The size of the building and distance or location of the address numbers from the roadway may necessitate larger number
- 2. The contractor shall be responsible for clearing vegetation around fire hydrants.
- 3. If the Tenant Improvements require modification of an automatic fire sprinkler system, a permit is required from the Fire Department prior to any such work being completed.
- 4. If applicable, modifications to the Fire Alarm system require a permit from the Fire Department prior to the work being completed.
- 5. All compressed gas cylinders shall be adequately secured to prevent falling or being knocked over. Fasteners used to secure cylinders shall be of non-combustible material.
- 6. Rooms or areas containing controls for HVAC systems, electrical panels, automatic fire extinguishing systems, fire alarm equipment or other detection, suppression or control elements shall be identified with appropriate signs.
- 7. The minimum fire-extinguisher requirement shall be one 2A-10BC rated portable unit in such locations so that maximum floor-travel distance does not exceed 75' to the nearest extinguisher from any portion of the building with a maximum of 3,000 square feet of floor area surveyed. Plan submittal shall include the proposed location of extinguishers. Final location shall be approved in the field by the Fire Department.
- 8. All fire extinguishers shall be mounted in a conspicuous and readily accessible location either on a bracket or within an approved storage cabinet. Fire extinguishers shall be mounted so the top of the unit is 3 feet to 5 feet off the finished floor. If the extinguisher is not readily visible, a sign shall

be located directly above the extinguisher. The sign shall be legible and of a contrasting color with its background.

9. All buildings shall comply with the California Building Code, Chapter 10 Means of Egress requirements. Including but not limited to; exit signs, exit doors, exit hardware and exit illumination.
10. Locking devices on exit doors shall conform to the California Building Code. Only one lock or latch requiring one motion/operation to open/unlock is required. No double keyed dead-bolts are permitted on exit doors.
11. Maintain the width of the exit system; tables, chairs, merchandise storage systems and other devices shall not obstruct the means of egress along the path of exit travel based on the cumulative occupant load served. Maintain clear access to all exits.
12. A final inspection from the Fire Prevention Division is required.

F. VALLEJO FLOOD AND WASTEWATER DISTRICT

Gus Silva | gussilva@vallejowastewater.org | (707) 644-8949 ext. 1306

1. Need a utility site plan showing location of sewer lateral, a District Cleanout near the public-right-of-way, and a two-way cleanout near the building.
2. Trash enclosure to have a cover per City standards. If trash enclosure area has a hose bib and a drain, grease interceptor shall be installed.
3. Applicant to submit a pretreatment questionnaire. Applicant may need to get sewer encroachment permit and shall pay applicable fees.

"The name DUTCH BROS. and all associated logos, distinctive designs, content, information, and other materials featured, displayed, contained herein, and made available by Dutch Bros., including but not limited to, the "look and feel" of the establishments and products, all text, images, colors, configurations, graphics, designs, illustrations, photographs, and pictures (collectively, the "Materials") are owned by and/or licensed by DB Franchising USA, LLC and are protected by copyright, trademark, trade dress, patent, and/or other intellectual property rights and unfair competition laws under the United States and foreign laws."

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AUBURN, WA 98002
TEL: (415) 314-1133
CONTACT: VICTOR CHIANG
EMAIL: VICTOR@LETAPGROUP.COM

DEVELOPER

DUTCH BROS COFFEE
110 SW 4TH STREET
GRANTS PASS, OR 97526
TEL: (916) 765-7270
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ENGINEER

BARGHAUSEN CONSULTING ENGINEERS, INC.
18215 72ND AVE. SOUTH
KENT, WA 98032
TEL: (425) 251-6222
CONTACT: HAL P. GRUBB
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BUILDING ARCHITECT

GNICH ARCHITECTURE STUDIO
1001 SE SANDY BOULEVARD, SUITE 100
PORTLAND, OR 97214
TEL: (503) 552-9079
CONTACT: DUSTIN HENION
EMAIL: DUSTIN@GNICHARCH.COM

CONTRACTOR

TBA

LEGEND:

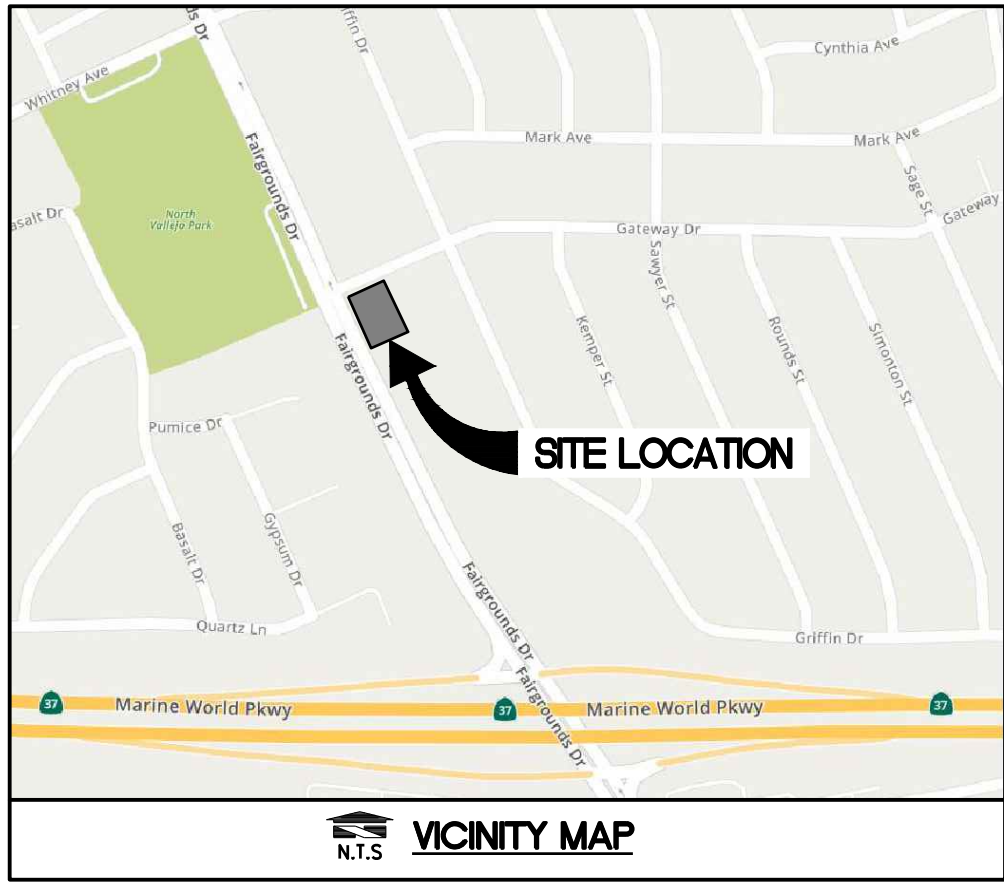
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BARRIER CURB	PAINT STRIPE
CONCRETE	CONTOUR
ASPHALT	WATER
SAWCUT	SANITARY
CONTOUR	STORM
WATER	COMMUNICATIONS
WATER METER	ELECTRICAL
STORM	GAS
SANITARY	CORRUGATED PLASTIC PIPE RISER
GAS	DRAIN INLET
POWER	SEWER CLEANOUT
PAINT STRIPE	SEWER MANHOLE
TYPE 1 CATCH BASIN	COMMUNICATIONS BOX
LOT LIGHT	COMMUNICATIONS VAULT
BICYCLE PARKING	ELECTRIC BOX
	GAS VALVE
	GAS METER
	GAS BOX
	PVC RISER
	LIGHT POLE
	SIGN POST
	ELECTRIC VAULT
	UTILITY VAULT
	TRAFFIC SIGNAL BOX
	WATER VALVE
	WATER VAULT
	BACKFLOW PREVENTER
	FIRE HYDRANT
	HANDICAP ACCESSIBLE PARKING SPACE
FUTURE	
CURB	
PAINT STRIPE	
STORM	
FIRE	
WATER	
LOW POINT	
HIGH POINT	
GRADE BREAK	
SLOPE ARROW	
ELEVATION LABEL	
DRAIN INLET	
LIGHT	

DUTCH BROS. COFFEE - CA0105, VALLEJO, CA

APN: 0068-171-160

DSP COVER SHEET

1598 FAIRGROUNDS DRIVE, VALLEJO, CA 94589



PROJECT DATA

NAME: DUTCH BROS COFFEE - CA0105 - VALLEJO, CA
ADDRESS: 1598 FAIRGROUNDS DRIVE, VALLEJO, CA 94589

APN: 0068-171-160

PROPOSED USE: DRIVE-THRU COFFEE STAND

ADJACENT LAND USE:
EAST: RESIDENTIAL LOW DENSITY
NORTH: REGIONAL COMMERCIAL
WEST: RESIDENTIAL LOW DENSITY
SOUTH: REGIONAL COMMERCIAL

LOT AREA: PARCEL AREA: 31,970 SF (0.73 ACRES)
GROSS PROJECT AREA: 24,939 SF (0.57 ACRES)

ZONING: REGIONAL COMMERCIAL (RC)

FLOOD PLAIN: ZONE "X"

EXISTING BUILDING: BUILDING AREA: 3,000± SQ. FT.

PROPOSED BUILDING: BUILDING AREA: 950 SQ. FT.
BUILDING HEIGHT: 24'-0"
FIRE SPRINKLERS: NOT REQUIRED

CA CODE YEAR: 2019

DEVELOPMENT STANDARDS PURSUANT TO VALLEJO MUNICIPAL CODE
CALTRANS
CALIFORNIA STORMWATER QUALITY ASSOCIATION
CONTRA COSTA CLEAN WATER PROGRAM C.3 GUIDEBOOK

PROPOSED REGULAR PARKING = 5
PROPOSED COMPACT PARKING = 1
PROPOSED ADA PARKING = 1

GREEN CODE REQUIREMENTS
EV CHARGING PARKING = 2
CLEAN AIR/VAN POOL/EV = 3

TOTAL PROPOSED PARKING = 12

TOTAL EXISTING SHARED PARKING = 13

QUEUING = 22

PROPOSED GROUND COVER SUMMARY:			
BUILDINGS (INCLUDES TRASH ENCLOSURE):	1,190 SF	(4.8%)	
PARKING AND MANEUVERING:	12,156 SF	(48.7%)	
WALKWAYS:	2,721 SF	(10.9%)	
LANDSCAPE:	8,872 SF	(35.6%)	
	24,939 SF	(100.0%)	

FLOOD ZONE

PER FIRM 06095C0440F, MAP REVISED JUNE 9, 2014, THE SUBJECT SITE FALLS IN ZONE "X", AREAS OUTSIDE THE SPECIAL FLOOD HAZARD AREA AND HIGHER THAN THE ELEVATION OF THE 0.2% ANNUAL CHANCE FLOODPLAIN.

SHEET INDEX

Sheet Number	Sheet Title
1 OF 2	DSP COVER SHEET
2 OF 2	SITE PLAN
A1	BUILDING ELEVATIONS
A2	FLOOR PLAN
A3	FLOOR PLAN
A4	TRASH ENCLOSURE
A5	MATERIAL BOARD
A6	LIGHT FIXTURES
A7	LIGHT FIXTURES
A8	PHOTOMETRIC PLAN

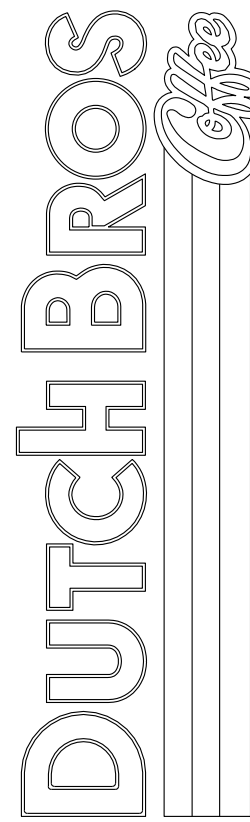
PROJECT DESCRIPTION

THIS PROJECT PROPOSES TO REDEVELOP THE EXISTING PARCEL INTO A DRIVE-THRU COFFEE STAND/RESTAURANT. THIS PROJECT PLANS TO DISTURB APPROXIMATELY 0.57 ACRES, AND WILL INCLUDE NEW LANDSCAPING, STORMWATER RETENTION AREAS, AND ASSOCIATED STORMWATER INFRASTRUCTURE.

PRELIMINARY NOT FOR CONSTRUCTION

DSP COVER SHEET
1598 FAIRGROUNDS DRIVE
VALLEJO, CA 94589

Title:



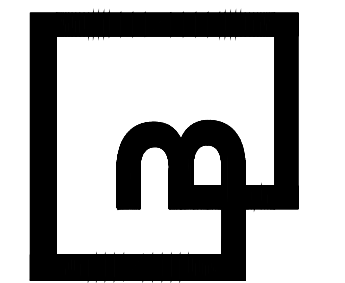
For:



Scale: Horizontal 1" = 20' Vertical N/A

Designed: STT Drawn: STT Checked: JAH Approved: HPG Date: 10/07/22

Barghausen Consulting Engineers, Inc.
18215 72nd Avenue South
Kent, WA 98032
425.251.6222
barghausen.com



Job Number: 22138
Sheet: 1 OF 2
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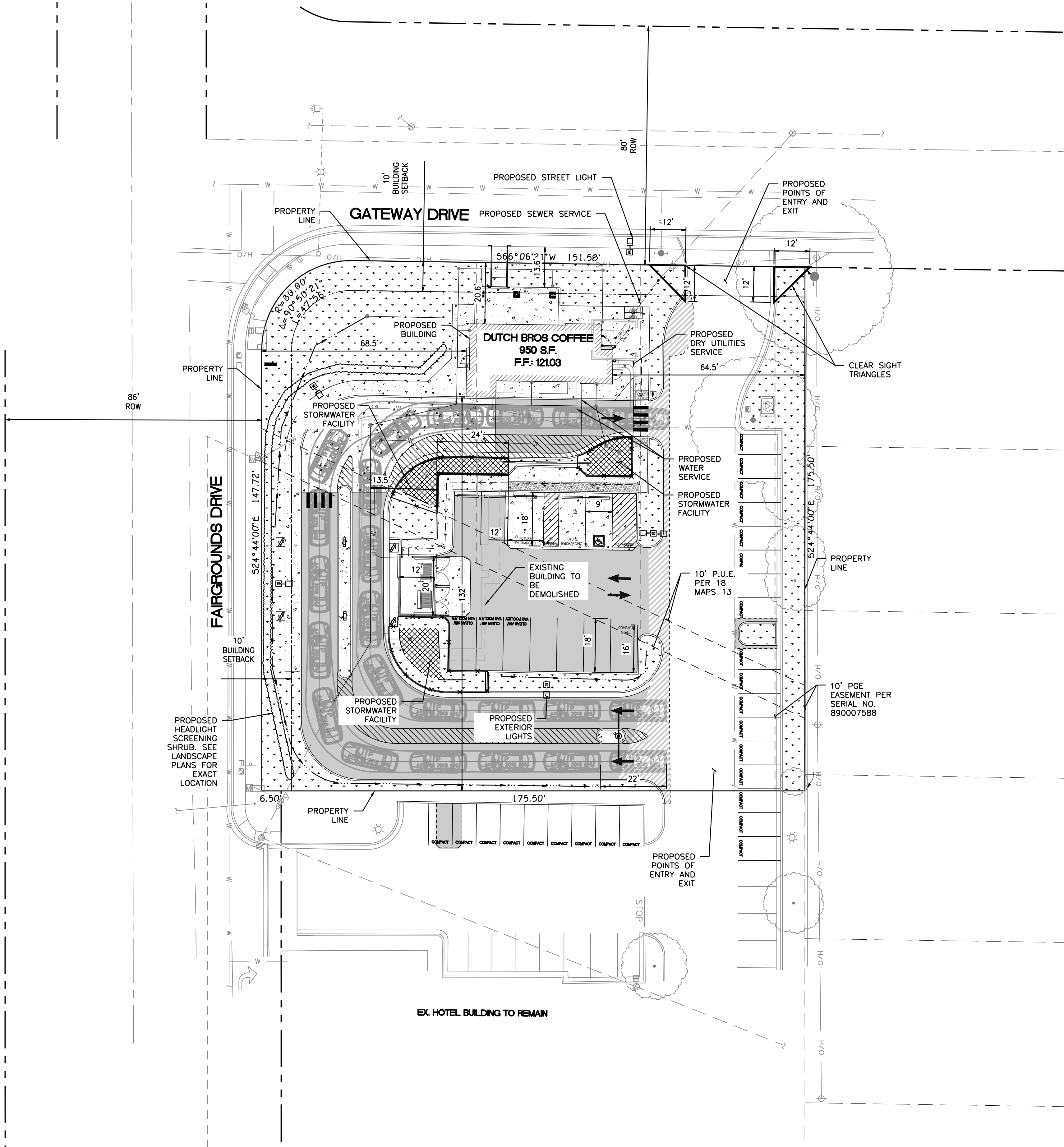
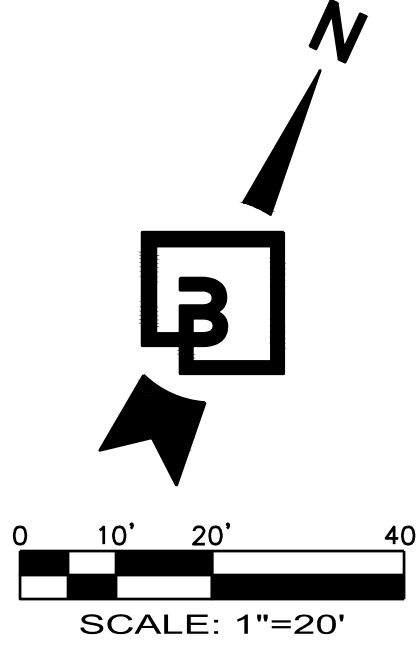
"The name DUTCH BROS. and all associated logos, distinctive designs, content, information, and other materials featured, displayed, contained herein, and made available by Dutch Bros., including but not limited to, the "look and feel" of the establishments and products, all text, images, colors, configurations, graphics, designs, illustrations, photographs, and pictures (collectively, the "Materials") are owned by and/or licensed by DB Franchising USA, LLC and are protected by copyright, trademark, trade dress, patent, and/or other intellectual property rights and unfair competition laws under the United States and foreign laws."

DUTCH BROS. COFFEE - CA0105, VALLEJO, CA

APN: 0068-171-160

SITE PLAN

1598 FAIRGROUNDS DRIVE, VALLEJO, CA 94589



PROJECT DATA

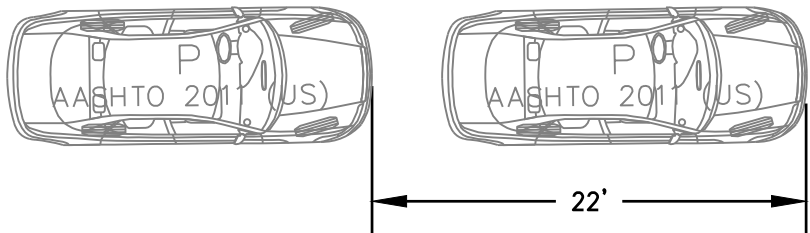
NAME: DUTCH BROS COFFEE - CA0105 - VALLEJO, CA
ADDRESS: 1598 FAIRGROUNDS DRIVE, VALLEJO, CA 94589

APN: 0068-171-160

LOT AREA: PARCEL AREA: 31,970 SF (0.73 ACRES)
GROSS PROJECT AREA: 24,939 SF (0.57 ACRES)

TYPICAL VEHICLE STACKING KEY:

NOT TO SCALE



LEGEND

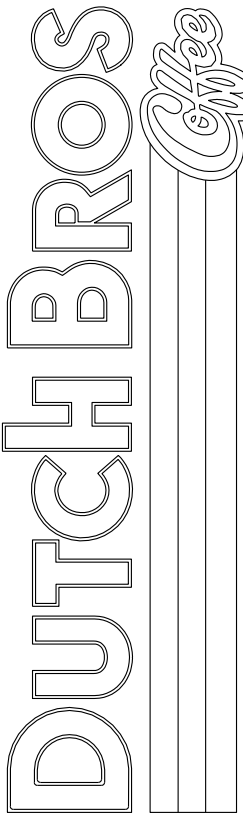
BUILDING LINE	
EXISTING CURB TO REMAIN	
PROPOSED CURB	
PROPOSED LANDSCAPING	
EXISTING LANDSCAPING	
PROPOSED ASPHALT	
PROPOSED CONCRETE	
PROPOSED STORM DRAINAGE BOTTOM	
PROPOSED STORM DRAINAGE BOTTOM	

PRELIMINARY NOT FOR CONSTRUCTION

SITE PLAN

1598 FAIRGROUNDS DRIVE
VALLEJO, CA 94589

Title:



For:

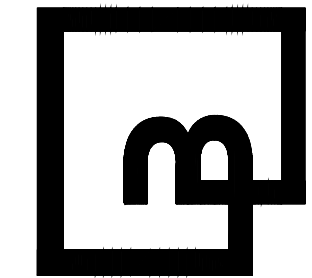


Scale: Horizontal 1" = 20' Vertical N/A

Designed: STT Drawn: STT Checked: JAH Approved: HPG Date: 10/07/22

Barghausen Consulting Engineers, Inc.
18215 72nd Avenue South
Kent, WA 98032
425.251.6222

barghausen.com



Job Number
22138

Sheet
2 OF 2
2019 DB
Franchising USA, LLC

SUMMARY
DRAWING

SUMMARY - BUILDING AWNINGS

DRAWING #:
33761

CLIENT:
DUTCH BROS - CA0105
1598 FAIRGROUNDS DR.
VALLEJO, CA 94589

DATE OF SHOP DRAWING:
1/18/22

SHOP REVISIONS:

SALES:

CONCEPT DESIGN:

PROD. DESIGN:

PAGE NO:

NJ

CH

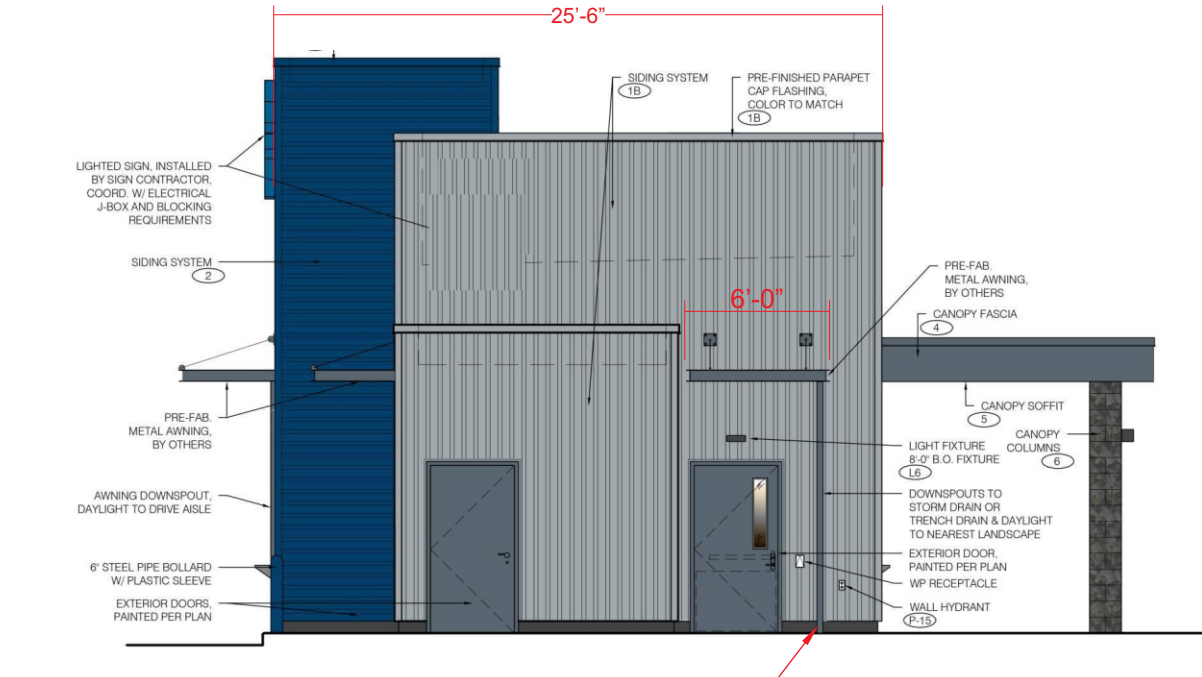
CH

I of I

ES&A SIGN & AWNING
89975 PRAIRIE RD. | EUGENE, OR 97402
P 541.485.5546 | F 541.485.5813

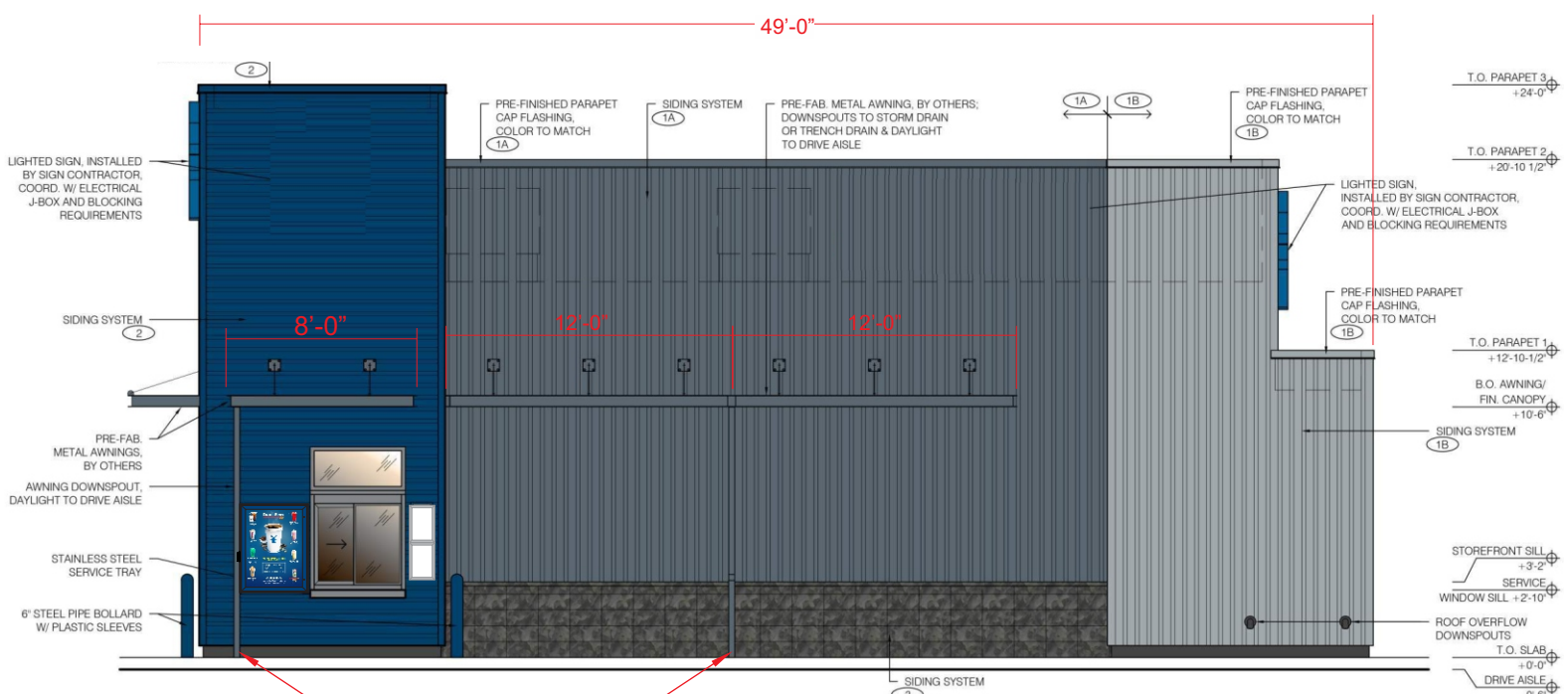


NORTH ELEVATION
SCALE: 1/8"=1'-0"



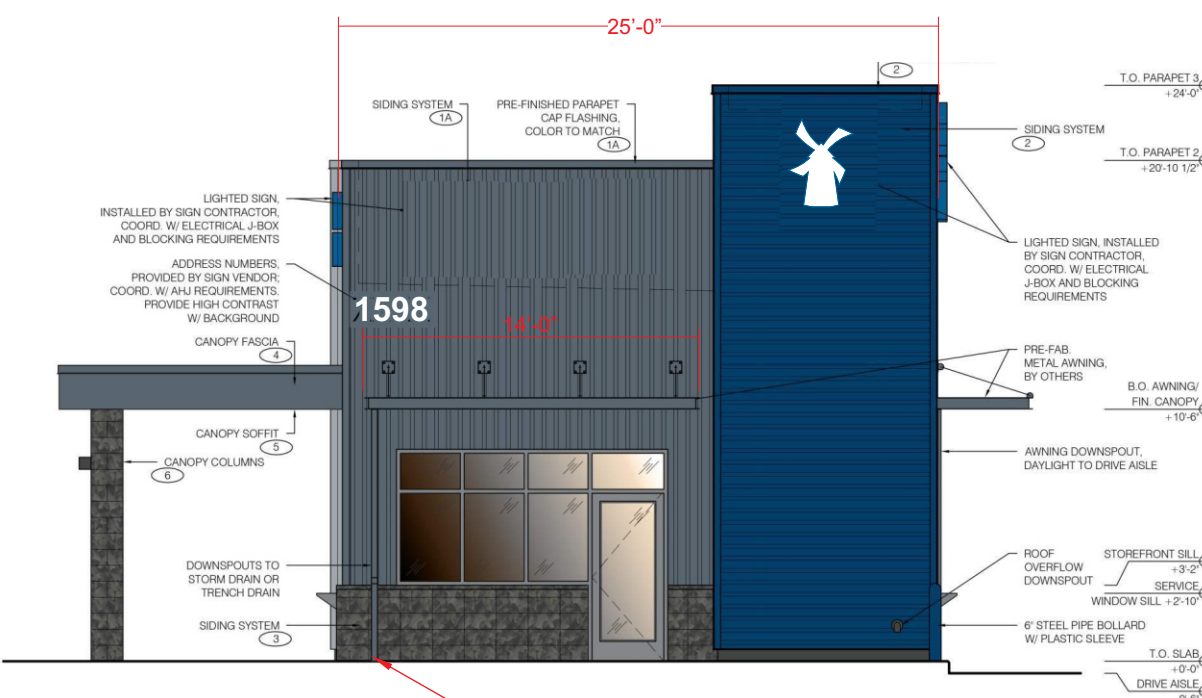
EAST ELEVATION
SCALE: 1/8"=1'-0"

DOWN SPOUT



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

DOWN SPOUTS



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

DOWN SPOUT

FACTORY
DRAWING

SCOPE OF WORK: MANUFACTURE & INSTALL (1) METAL AWNING



SHOP DRAWING #:
33761A

CLIENT:
DUTCH BROS - CA0105
1598 FAIRGROUNDS DR.
VALLEJO, CA 94589

DATE OF SHOP DRAWING:
1/18/22

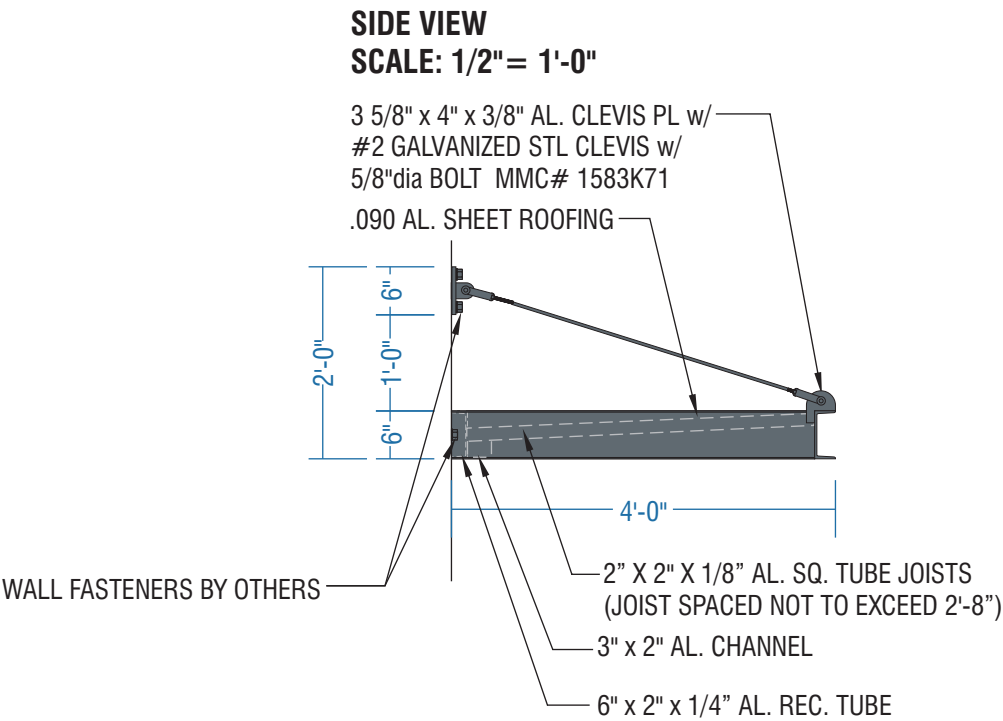
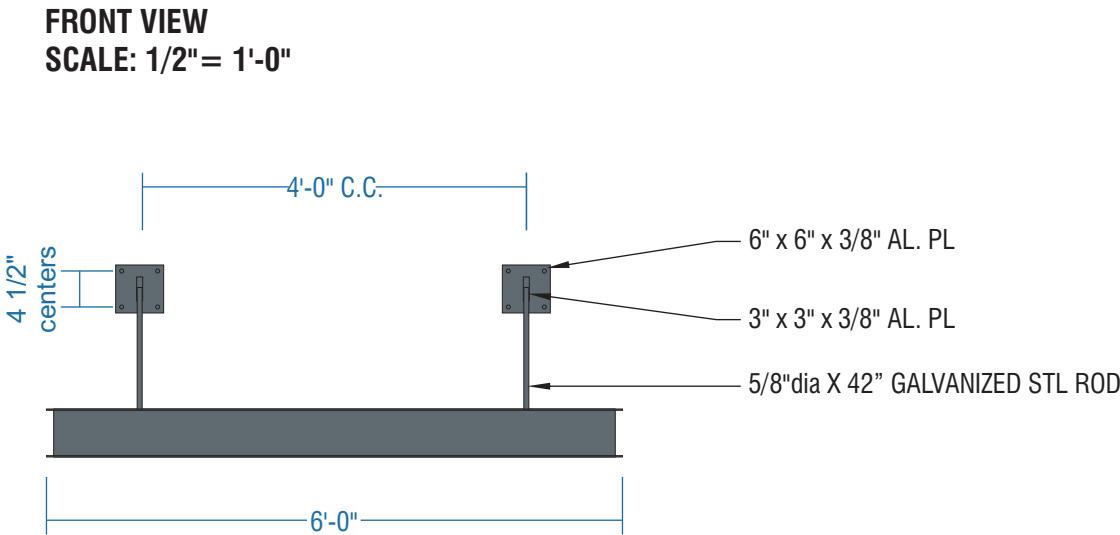
SHOP REVISIONS:

SALES:	CONCEPT DESIGN:	PROD. DESIGN:	PAGE NO:
NJ	CH	CH	I of I

ES&A SIGN & AWNING
89975 PRAIRIE RD. | EUGENE, OR 97402
P 541.485.5546 | F 541.485.5813

COLOR CODE

 DB DARK GREY (PMS 431)



6" ALUMINUM C-CHANNEL FRONT & SIDES, WITH FLANGE POINTING OUT. (C6 x 2.83)

.090 ALUMINUM SHEET ROOFING MOUNTED INSIDE C-CHANNEL & DRAINAGE GUTTER CHANNEL SLOPED TOWARDS BUILDING.

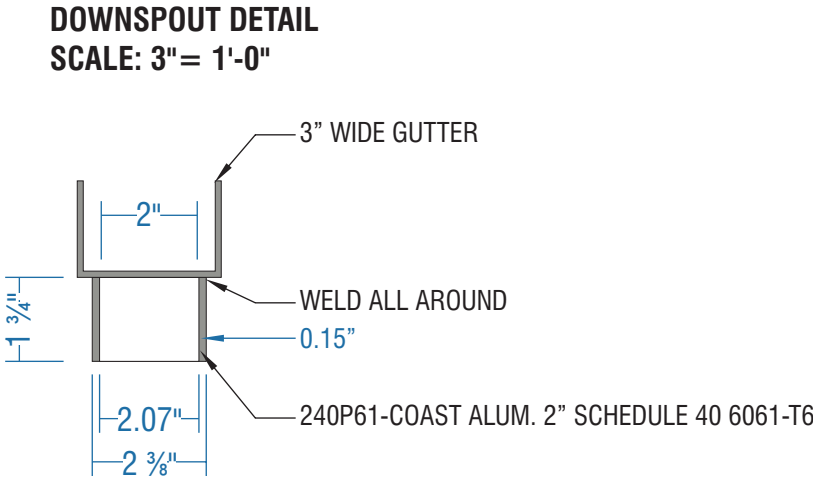
TURNBUCKLES, 5/8" GALVANIZED STEEL ROD SUPPORTS WITH #2 GALVANIZED STEEL CLEVIS & PIN

ATTACHED TO 6" X 6" X 3/8" ALUMINUM PLATE/BRACKET AT WALL.

PAINT ENTIRE CANOPY, BRACKETS, SUPPORTS DB CUSTOM DARK GREY.

INSTALLATION BY G.C.

ES&A WILL ORGANIZE SHIPPING TO THE GC'S PREFERRED LOCATION ON DUTCH BROS SHIPPING ACCOUNT.



FACTORY
DRAWING

SCOPE OF WORK: MANUFACTURE (1) METAL AWNING



SHOP DRAWING #:

33761B

CLIENT:

DUTCH BROS - CA0105
1598 FAIRGROUNDS DR.
VALLEJO, CA 94589

DATE OF SHOP DRAWING:

1/18/22

SHOP REVISIONS:

SALES:	CONCEPT DESIGN:	PROD. DESIGN:	PAGE NO:
NJ	CH	CH	I of I

ES&A SIGN & AWNING

89975 PRAIRIE RD. | EUGENE, OR 97402

P 541.485.5546 | F 541.485.5813

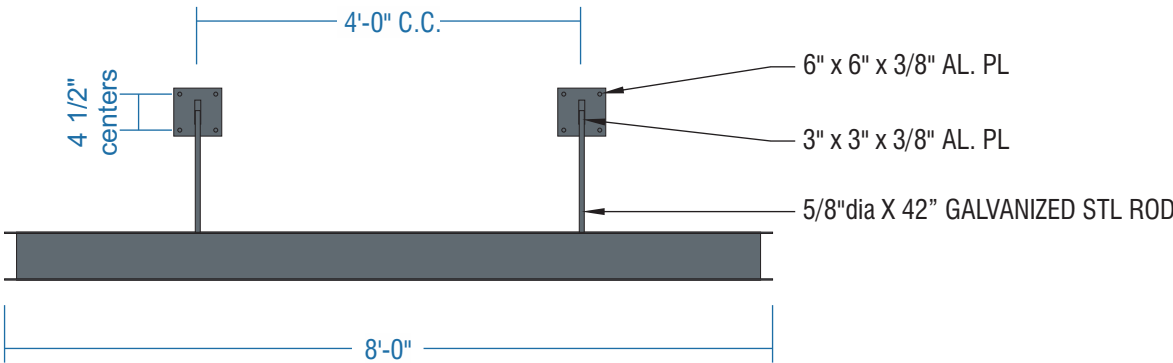
COLOR CODE



DB DARK GREY (PMS 431)

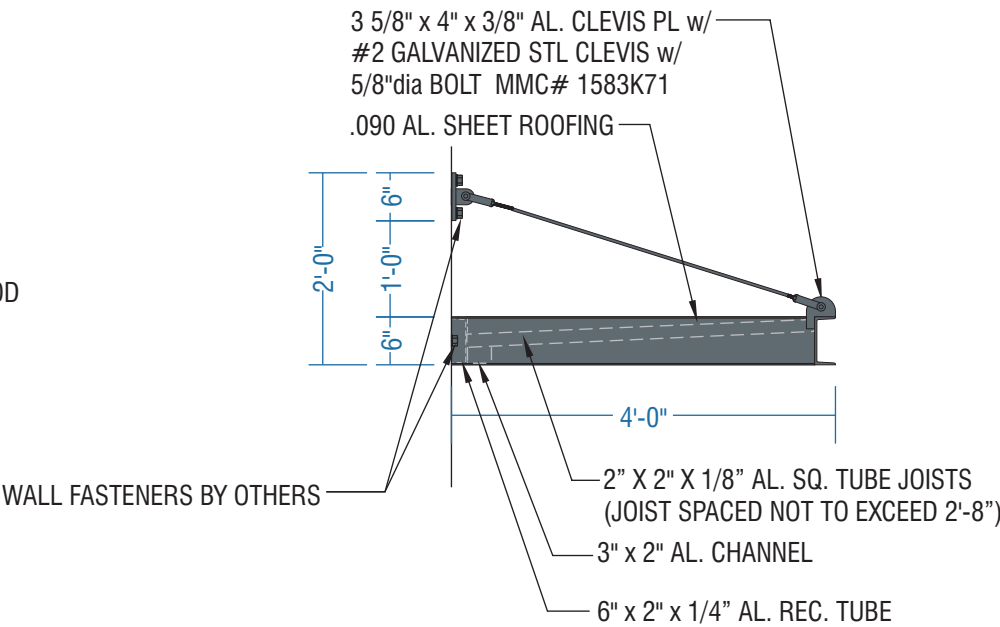
FRONT VIEW

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



SIDE VIEW

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



6" ALUMINUM C-CHANNEL FRONT & SIDES, WITH FLANGE POINTING OUT. (C6 x 2.83)

.090 ALUMINUM SHEET ROOFING MOUNTED INSIDE C-CHANNEL & DRAINAGE GUTTER CHANNEL SLOPED TOWARDS BUILDING.

TURNBUCKLES, 5/8" GALVANIZED STEEL ROD SUPPORTS WITH #2 GALVANIZED STEEL CLEVIS & PIN

ATTACHED TO 6" X 6" X 3/8" ALUMINUM PLATE/BACKET AT WALL.

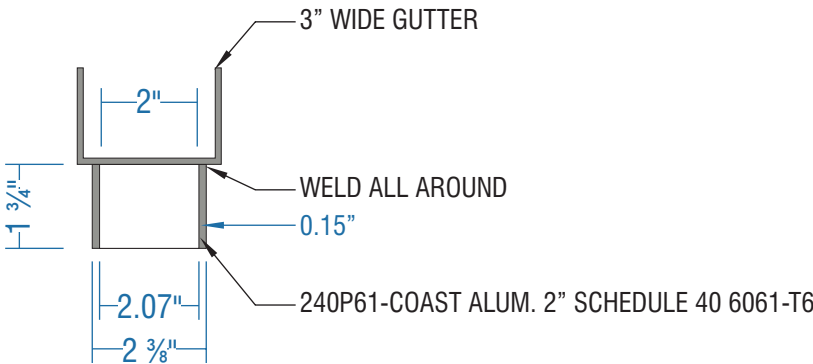
PAINT ENTIRE CANOPY, BRACKETS, SUPPORTS DB CUSTOM DARK GREY.

INSTALLATION BY G.C.

ES&A WILL ORGANIZE SHIPPING TO THE GC'S PREFERRED LOCATION ON DUTCH BROS SHIPPING ACCOUNT.

DOWNSPOUT DETAIL

SCALE: 3" = 1'-0"



FACTORY
DRAWING

SCOPE OF WORK: MANUFACTURE & INSTALL (2) METAL AWNINGS



SHOP DRAWING #:
33761C

CLIENT:
DUTCH BROS - CA0105
1598 FAIRGROUNDS DR.
VALLEJO, CA 94589

DATE OF SHOP DRAWING:
1/18/22

SHOP REVISIONS:

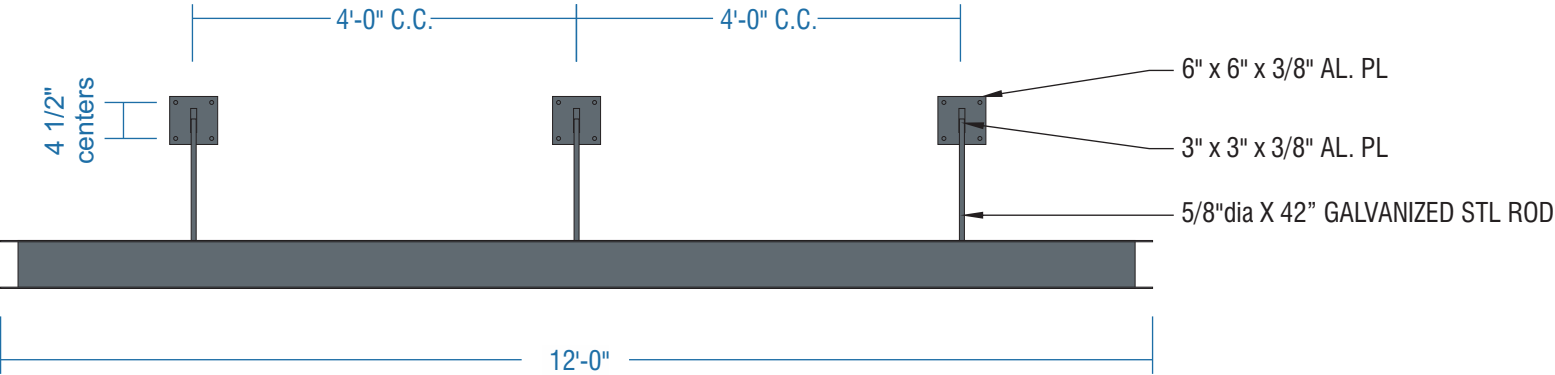
SALES:	CONCEPT. DESIGN:	PROD. DESIGN:	PAGE NO:
NJ	CH	CH	I of I

ES&A SIGN & AWNING
89975 PRAIRIE RD. | EUGENE, OR 97402
P 541.485.5546 | F 541.485.5813

COLOR CODE

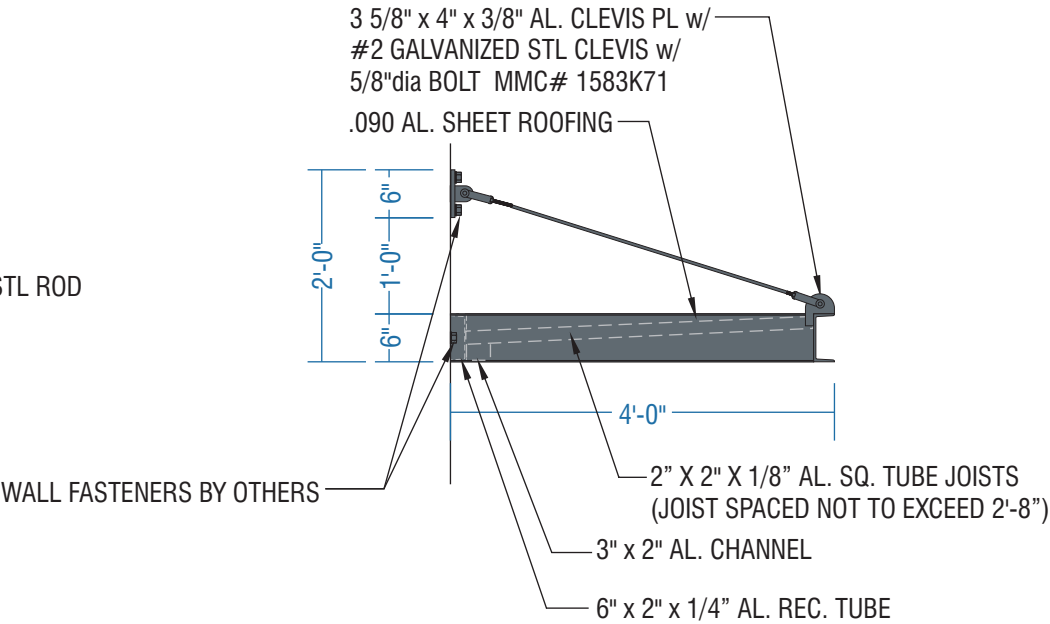
DB DARK GREY (PMS 431)

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

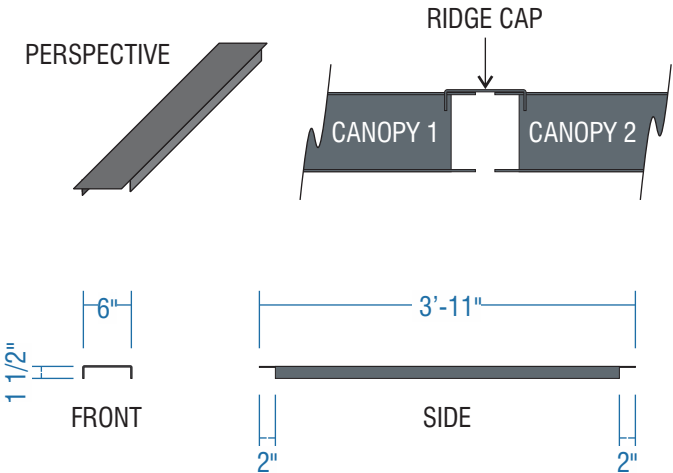


6" ALUMINUM C-CHANNEL FRONT & SIDES, WITH FLANGE POINTING OUT. (C6 x 2.83)
.090 ALUMINUM SHEET ROOFING MOUNTED INSIDE C-CHANNEL & DRAINAGE GUTTER CHANNEL SLOPED TOWARDS BUILDING.
TURNBUCKLES, 5/8" GALVANIZED STEEL ROD SUPPORTS WITH #2 GALVANIZED STEEL CLEVIS & PIN
ATTACHED TO 6" X 6" X 3/8" ALUMINUM PLATE/BACKET AT WALL.
FABRICATED ALUMINUM .063 BREAK-FORMED RIDGE CAP FLASHING TO MOUNT WITH VHB & SILICONE OVER THE GAP BETWEEN CANOPIES.
PAINT ENTIRE CANOPY, BRACKETS, SUPPORTS DB CUSTOM DARK GREY.
INSTALLATION BY G.C.
ES&A WILL ORGANIZE SHIPPING TO THE GC'S PREFERRED LOCATION ON DUTCH BROS SHIPPING ACCOUNT.

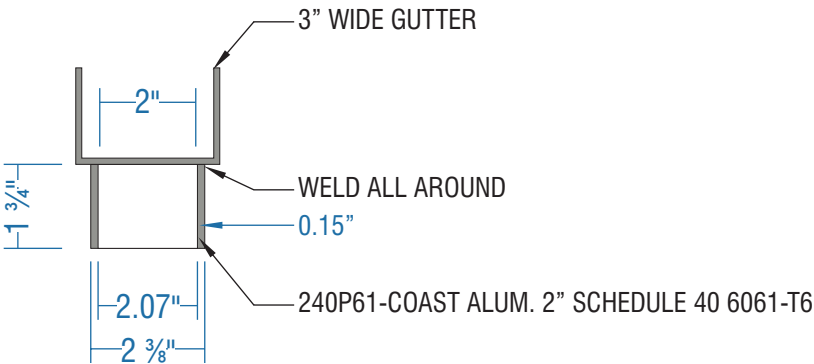
SIDE VIEW
SCALE: 1/2" = 1'-0"



RIDGE CAP (QTY. 1)
SCALE: 1/2" = 1'-0"



DOWNSPOUT DETAIL
SCALE: 3" = 1'-0"



FACTORY
DRAWING

SCOPE OF WORK: MANUFACTURE & SHIP (1) METAL AWNING



SHOP DRAWING #:
33761D

CLIENT:
DUTCH BROS - CA0105
1598 FAIRGROUNDS DR.
VALLEJO, CA 94589

DATE OF SHOP DRAWING:
3/4/21

SHOP REVISIONS:

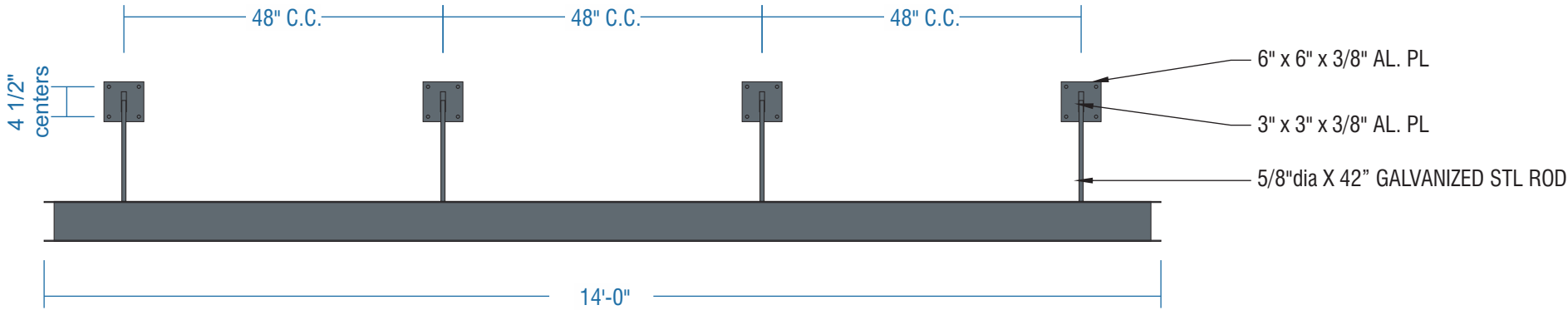
SALES:	CONCEPT DESIGN:	PROD. DESIGN:	PAGE NO:
NJ	CH	CH	I of I

ES&A SIGN & AWNING
89975 PRAIRIE RD. | EUGENE, OR 97402
P 541.485.5546 | F 541.485.5813

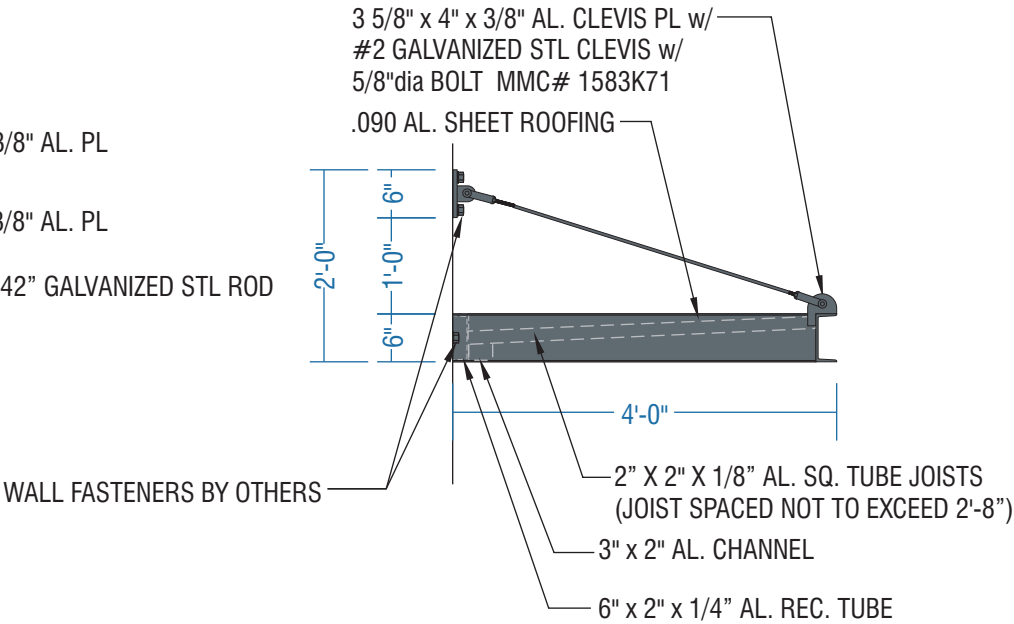
COLOR CODE

DB DARK GREY (PMS 431)

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

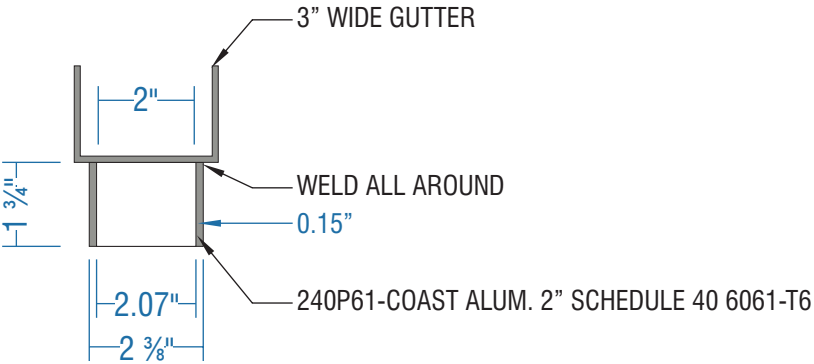


SIDE VIEW
SCALE: 1/2" = 1'-0"



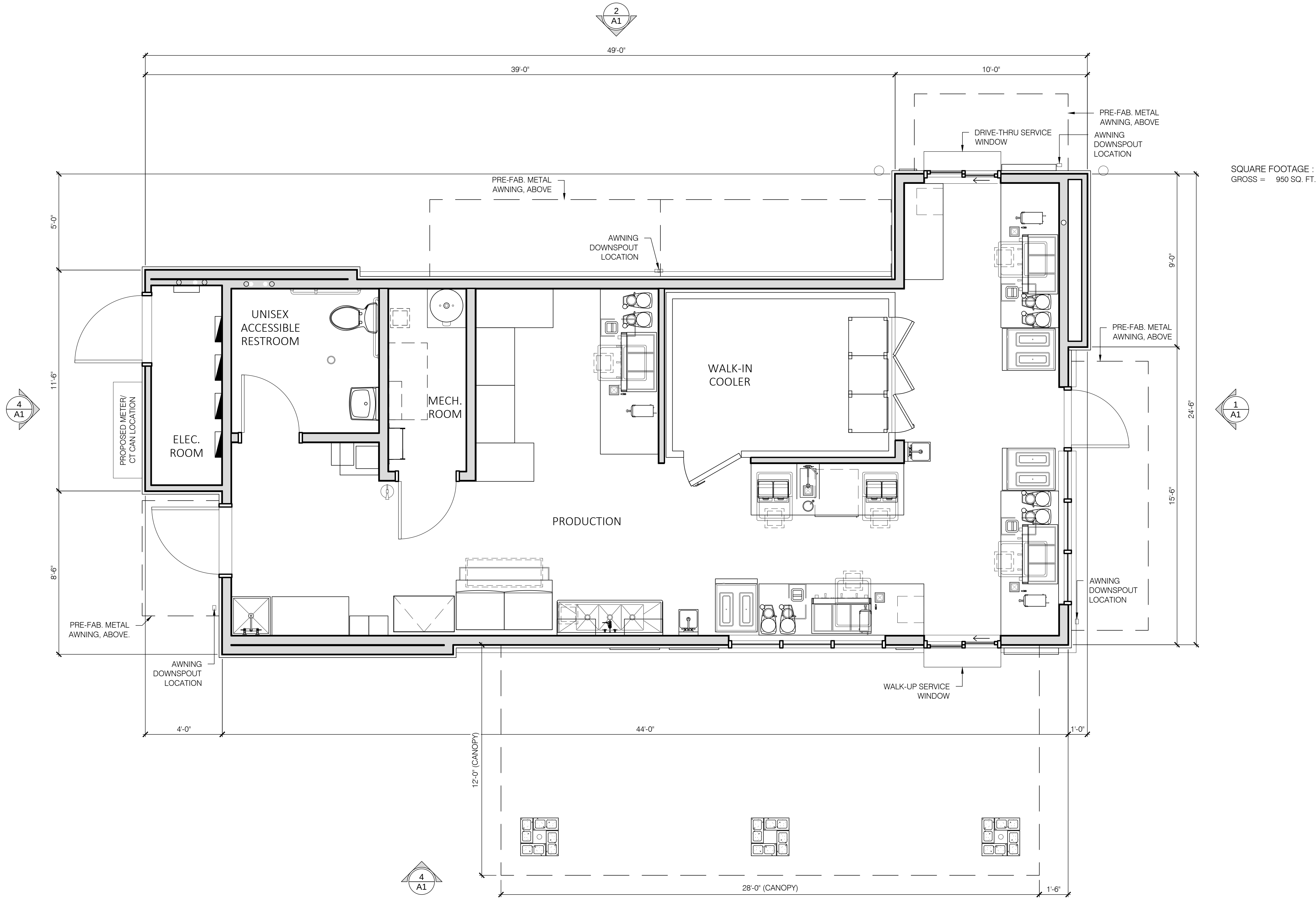
6" ALUMINUM C-CHANNEL FRONT & SIDES, WITH FLANGE POINTING OUT. (C6 x 2.83)
.090 ALUMINUM SHEET ROOFING MOUNTED INSIDE C-CHANNEL & DRAINAGE GUTTER CHANNEL SLOPED TOWARDS BUILDING.
TURNBUCKLES, 5/8" ZINC PLATED STEEL ROD SUPPORTS WITH #2 ZINC PLATED STEEL CLEVIS & PIN
ATTACHED TO 6" X 6" X 3/8" ALUMINUM PLATE/BRACKET AT WALL.
PAINT ENTIRE CANOPY, BRACKETS, SUPPORTS DB CUSTOM DARK GREY.
INSTALLATION BY G.C.
ES&A WILL ORGANIZE SHIPPING TO THE GC'S PREFERRED LOCATION ON DUTCH BROS SHIPPING ACCOUNT.

DOWNSPOUT DETAIL
SCALE: 3" = 1'-0"



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DUTCH BROS. COFFEE - CA0105, VALLEJO, CA
APN: 0068-171-160



PRELIMINARY NOT FOR CONSTRUCTION

Job Number
22138

Sheet
A2

2019 DB
Franchising USA, LLC

Barghausen Consulting Engineers, Inc.
18215 72nd Avenue South
Kent, WA 98032
425.251.6222 **barghausen.com**

Designed COX
Drawn COX
Checked JMH
Approved HFG
Date 04-18-22

Scale:
Horizontal
Vertical

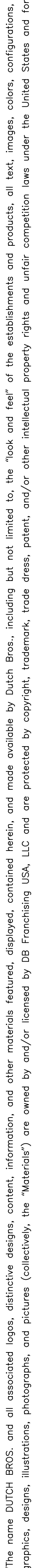
For:

DUTCH BROS
Coffee

Title:

FLOOR PLAN
**1598 FAIRGROUNDS DRIVE
VALLEJO, CA 94589**

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The name DUTCO

The nam
graphics,

416

name DUTCH
hics, design:

name DUTCH
hics, design:

and logos, distinctive designs, content, information and pictures (collectively, the "Materials") are

OS, and all associated illustrations, photographs

and other materials featured
owned by and/or licensed by

and macro-
are pro-

available by Dutch Bros., including but not limited to, the "look-alike" design of the Dutch Bros. logo, which is protected by copyright, trademark, trade dress, patent, and/or other

of the
al prope

nts and products, all text, images, colors, configurations and other indicia, and all other elements of the design, are the property of the United States of America and are hereby reserved to the United States of America.

\\29_Dutch Bros\2021 PROJECTS\2021 Fairgrounds (Vallejo, CA_1598 Drawings\CA0105_211220.dwg 4/7/2022 11:40 AM #####

4/7/2022 11:40 AM

I5_211220.dwg

001 SE SANDY BLVD, SUITE 100
PORTLAND, OR 97214
V. 503.552.9079
F. 503.241.7055
WWW.GNICHARCH.COM

Project No: CA0105
Dutch Bros Coffee - New Freestanding Store
1598 Fairgrounds Dr.
Vallejo, CA 94589
For: Dutch Bros Coffee
110 SW 4th Street
Grants Pass, OR 97526
DB255

ISSUED FOR PRE-APP:
2.03.2021

REV:	DATE:	DESCRIPTION:
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SHEET NAME:

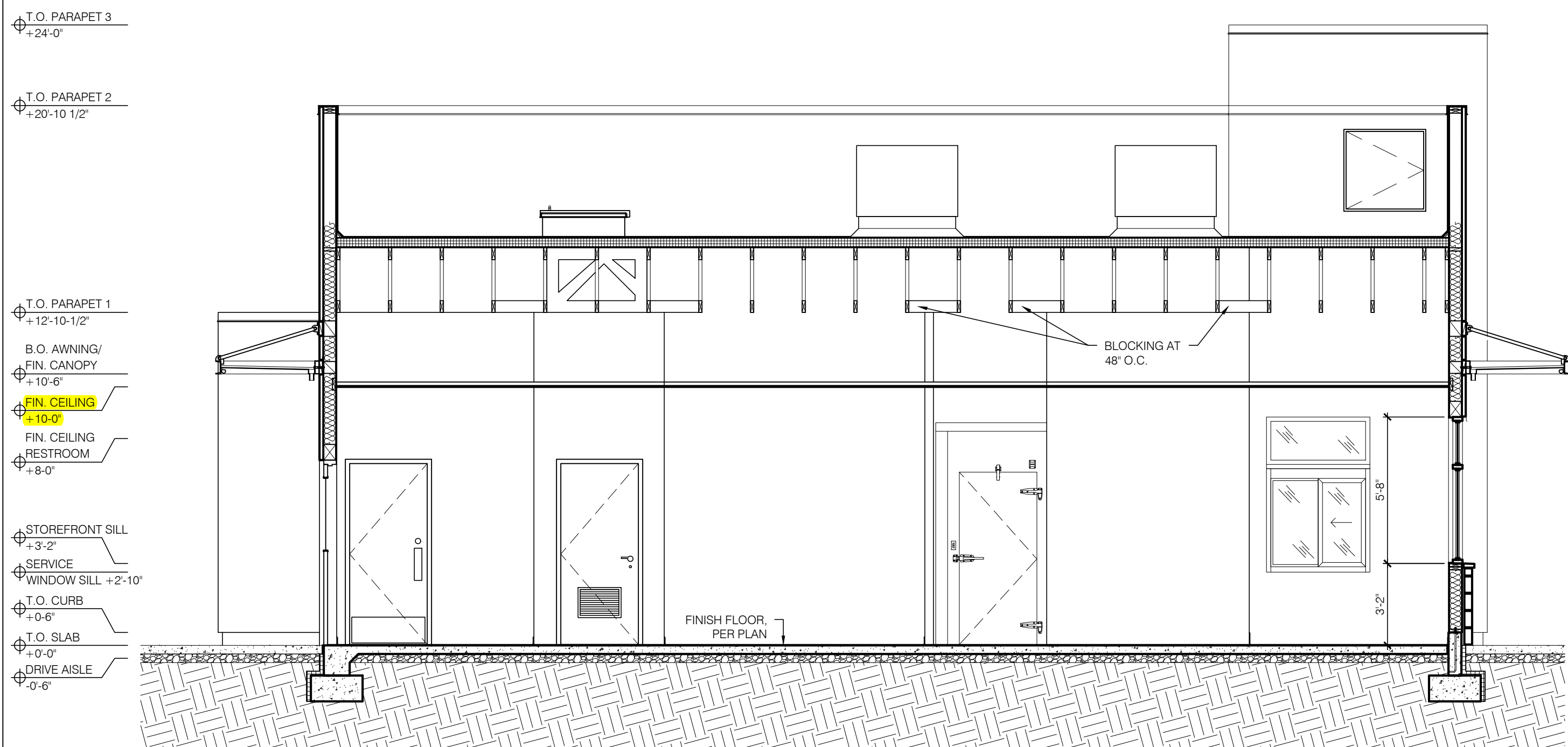
BUILDING SECTIONS

SHEET NUMBER: _____

A7.0

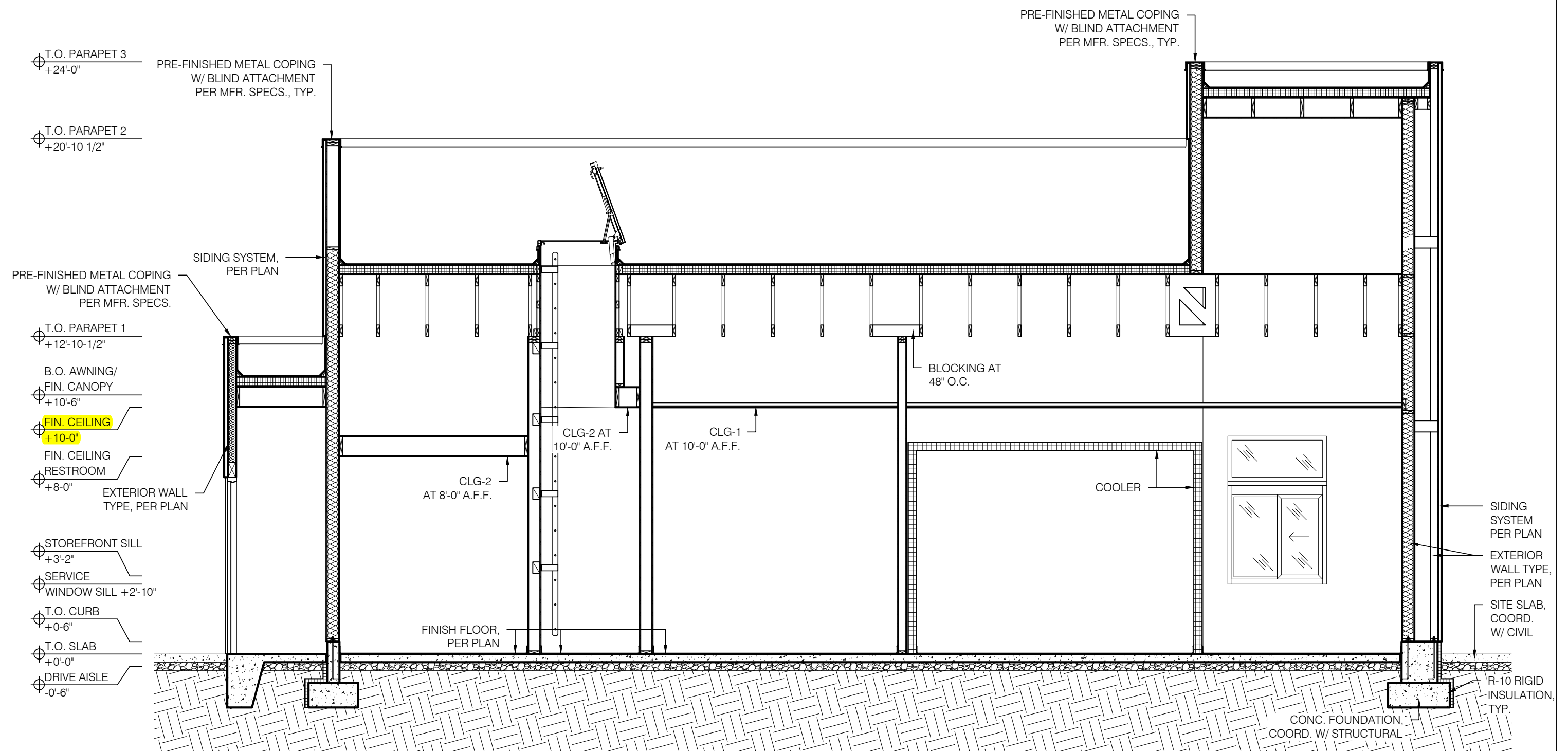
2021 DB Franchising USA, LLC

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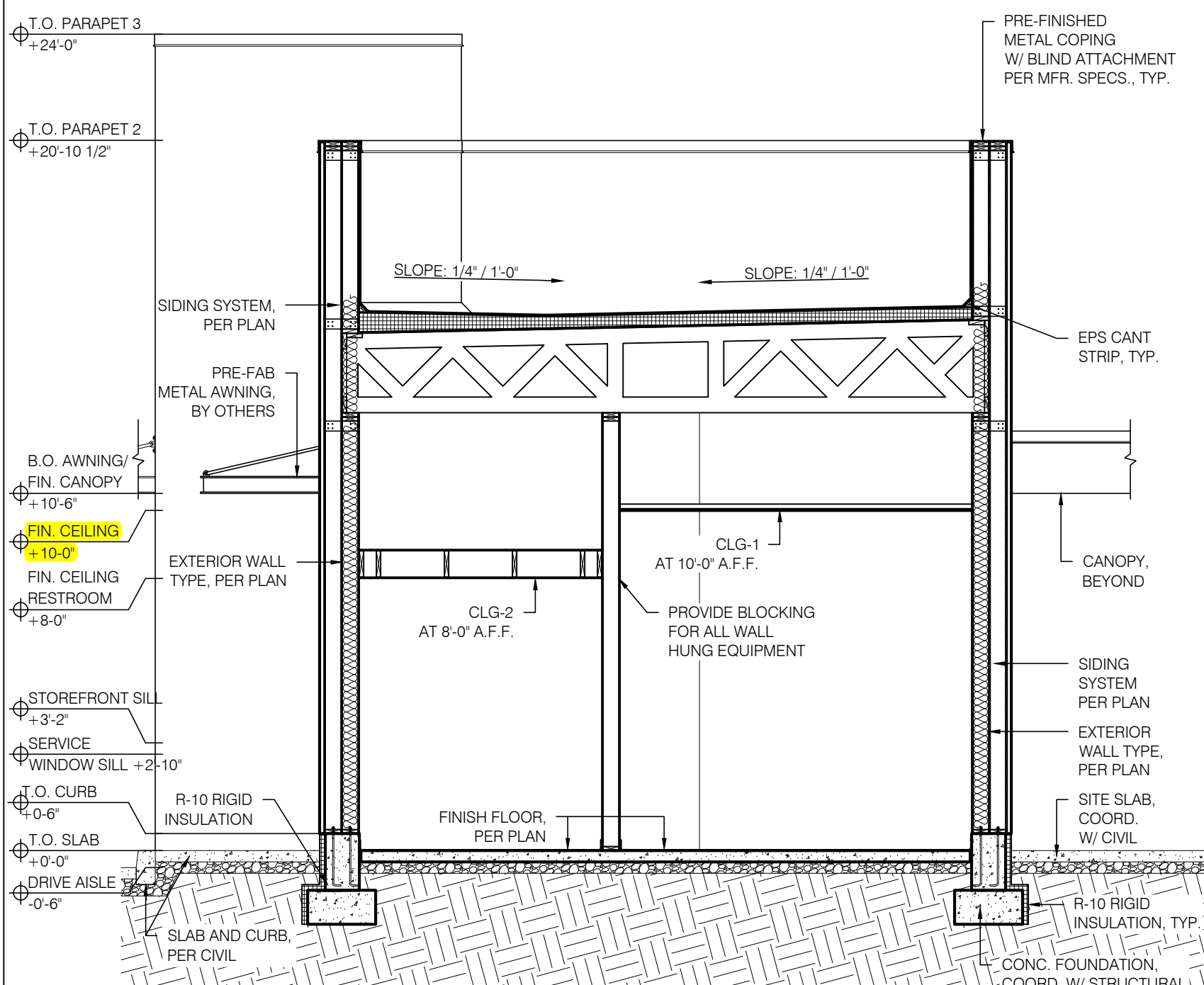
5 BUILDING SECTION

SCALE: 1/4" = 1'-0"



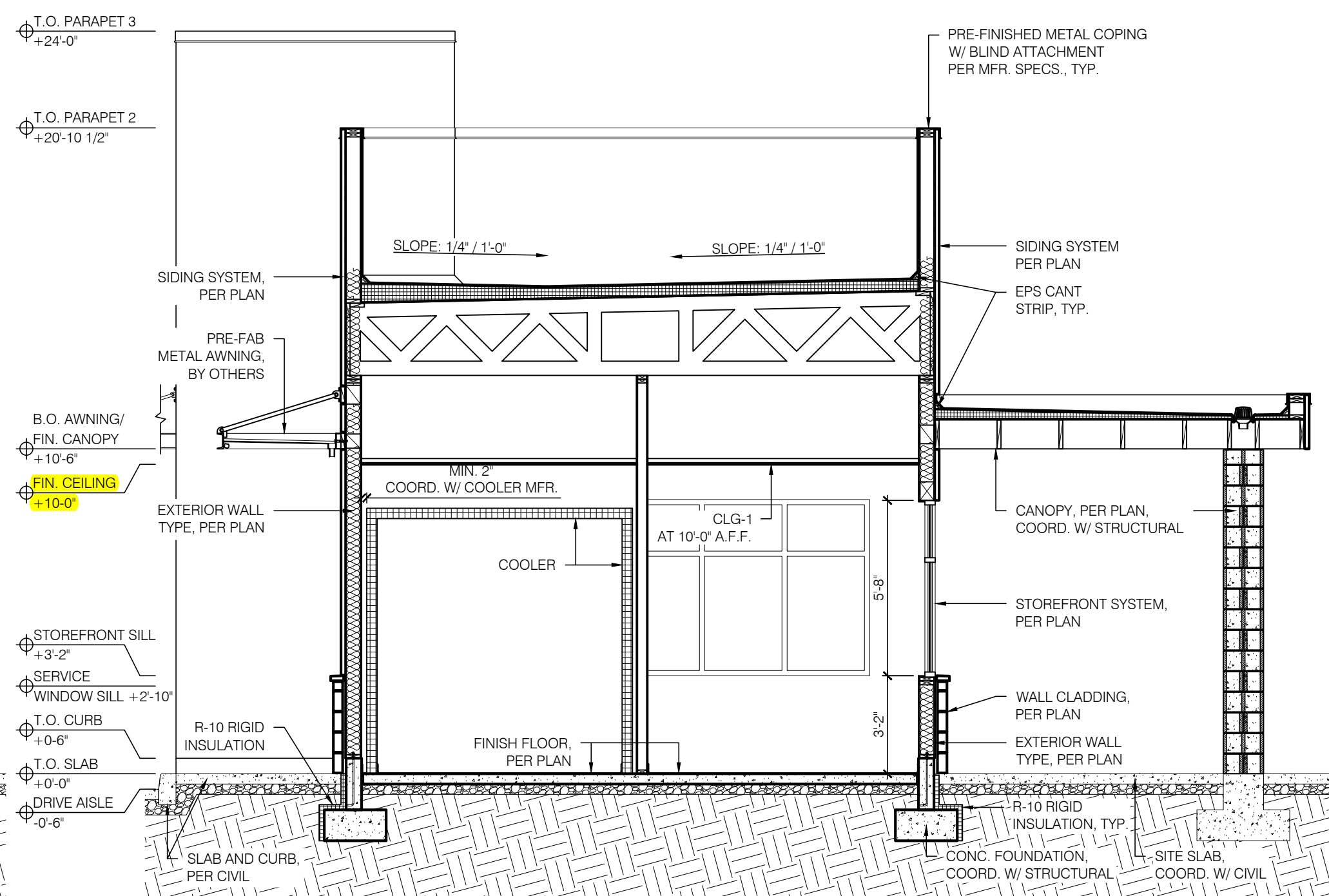
4 BUILDING SECTION

SCALE: 1/4" = 1'-0"



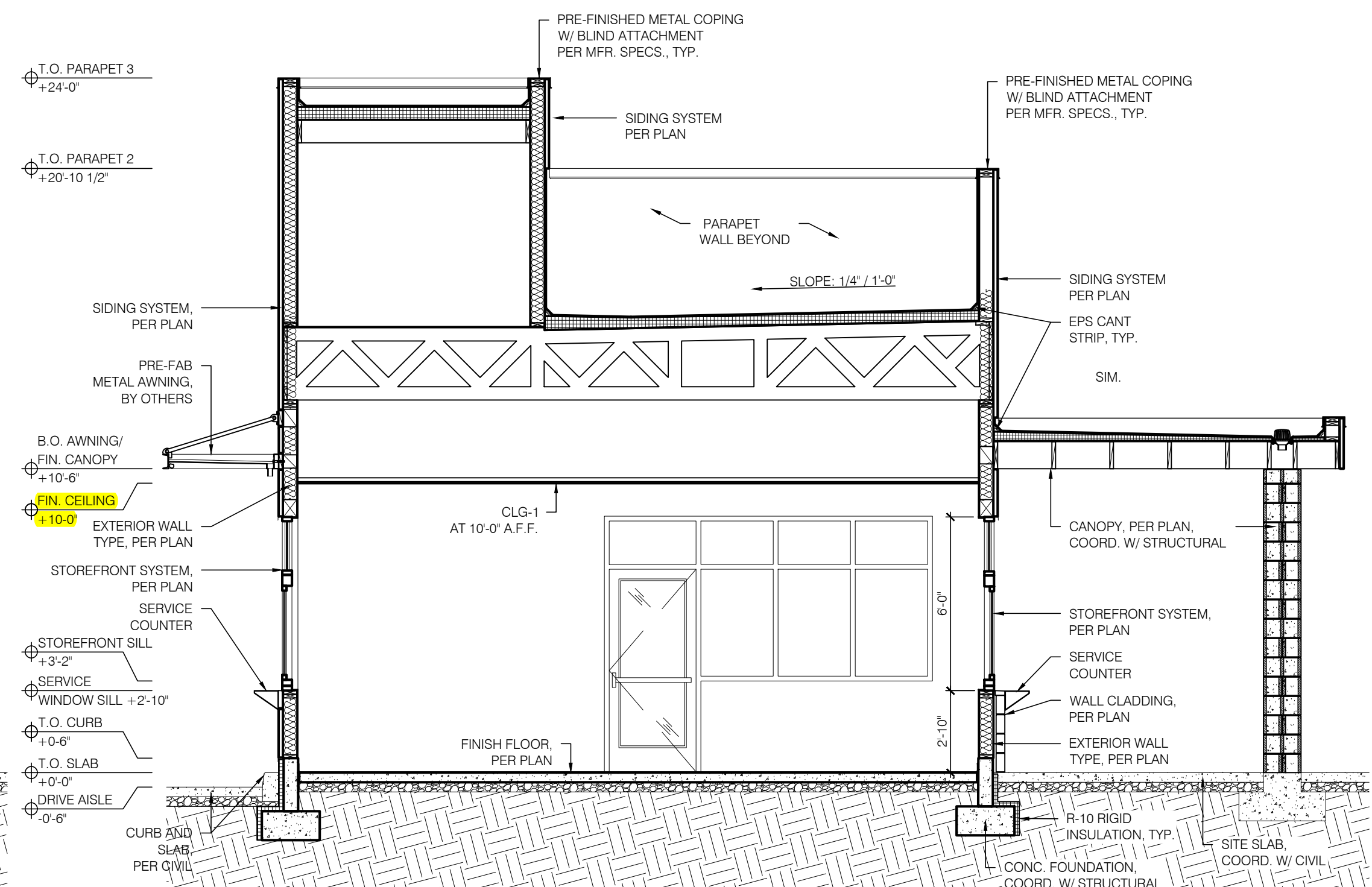
3 BUILDING SECTION

SCALE: 1/4" = 1'-0"



BUILDING SECTION

SCALE: 1/4" = 1'-0"

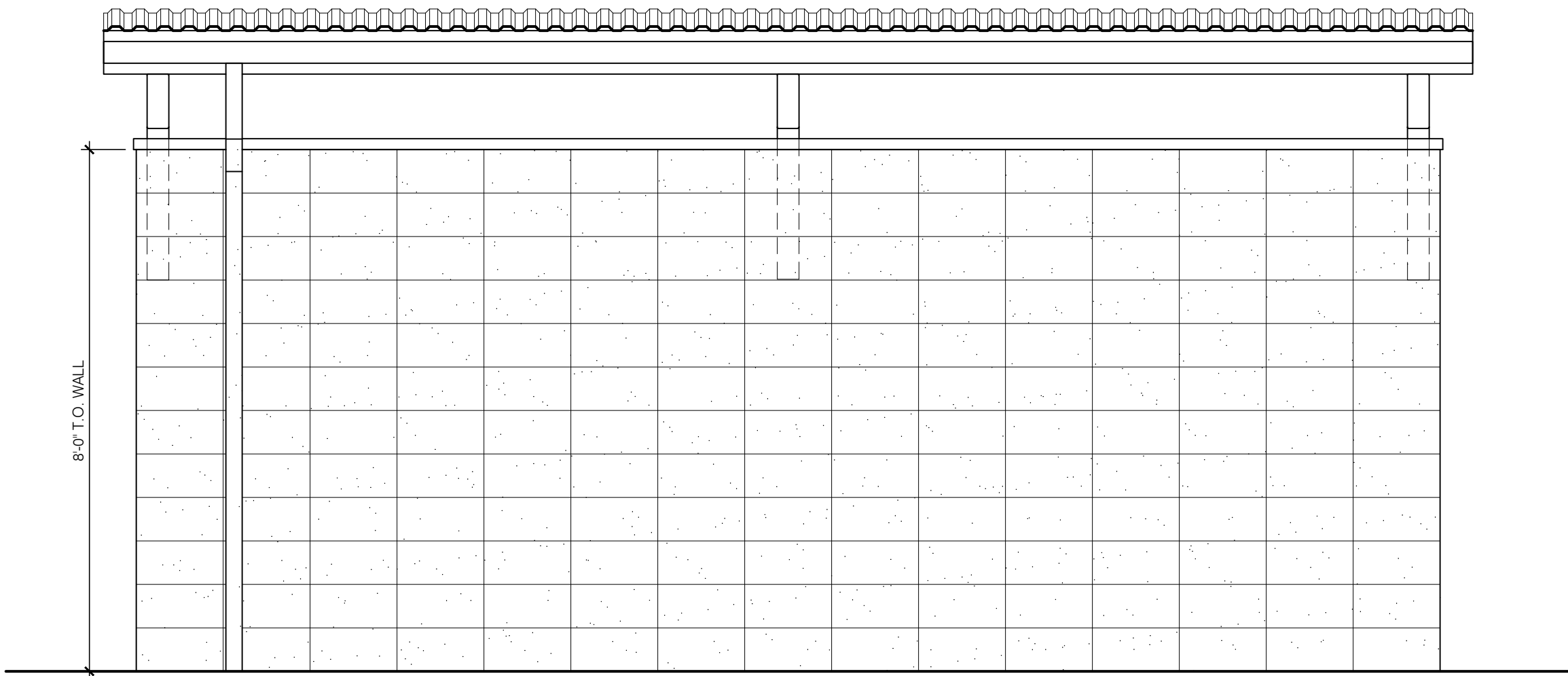


1 BUILDING SECTION

SCALE: 1/4" = 1'-0"

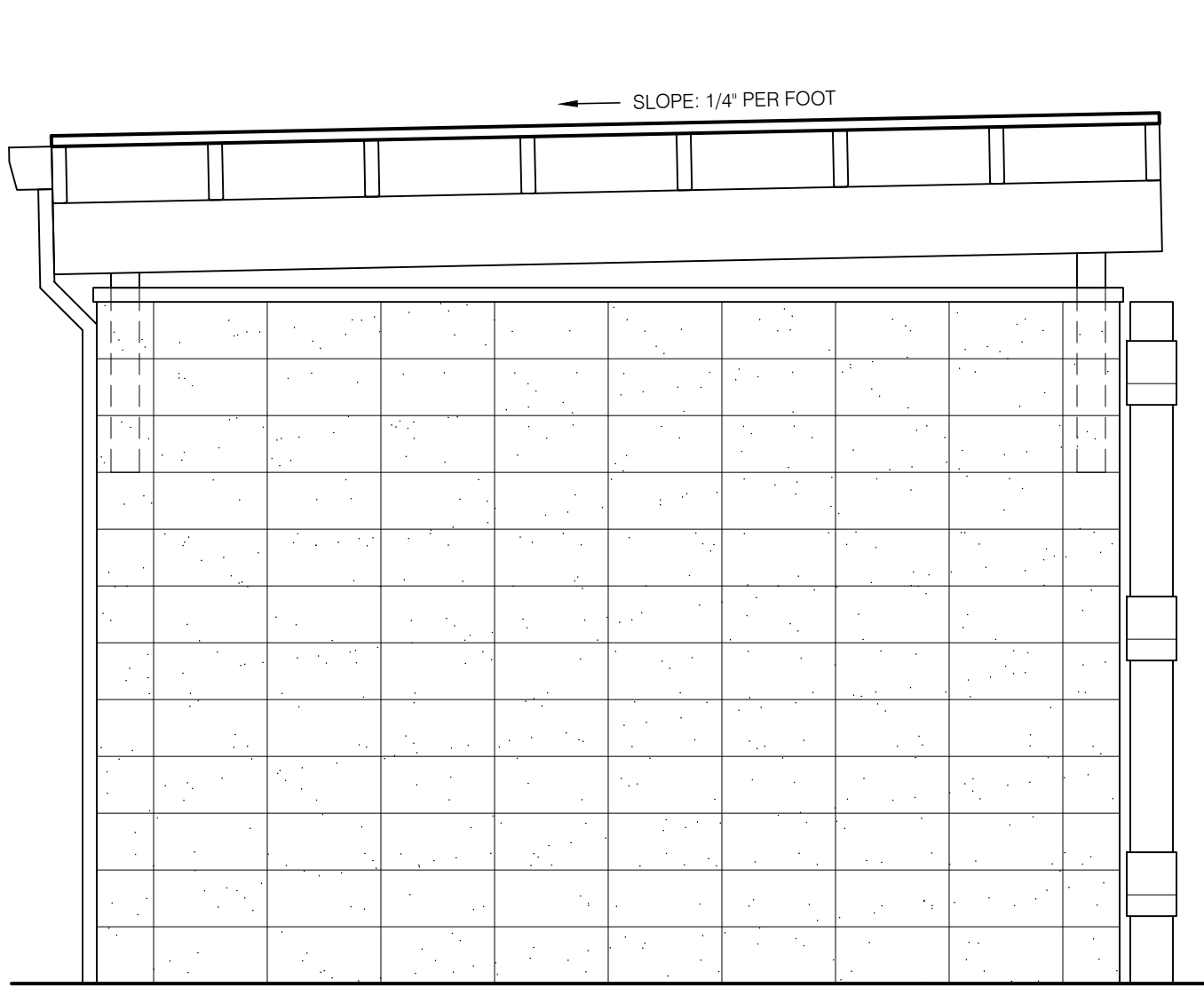
"The name DUTCH BROS. and all associated logos, distinctive designs, content, information, and other materials featured, displayed, contained herein, and made available by Dutch Bros., including but not limited to, the "look and feel" of the establishments and products, all text, images, colors, configurations, graphics, designs, illustrations, photographs, and pictures (collectively, the "Materials") are owned by and/or licensed to DB Franchising USA, LLC and are protected by copyright, trademark, trade dress, patent, and/or other intellectual property rights and unfair competition laws under the United States and foreign laws."

DUTCH BROS. COFFEE - CA0105, VALLEJO, CA
APN: 0068-171-160



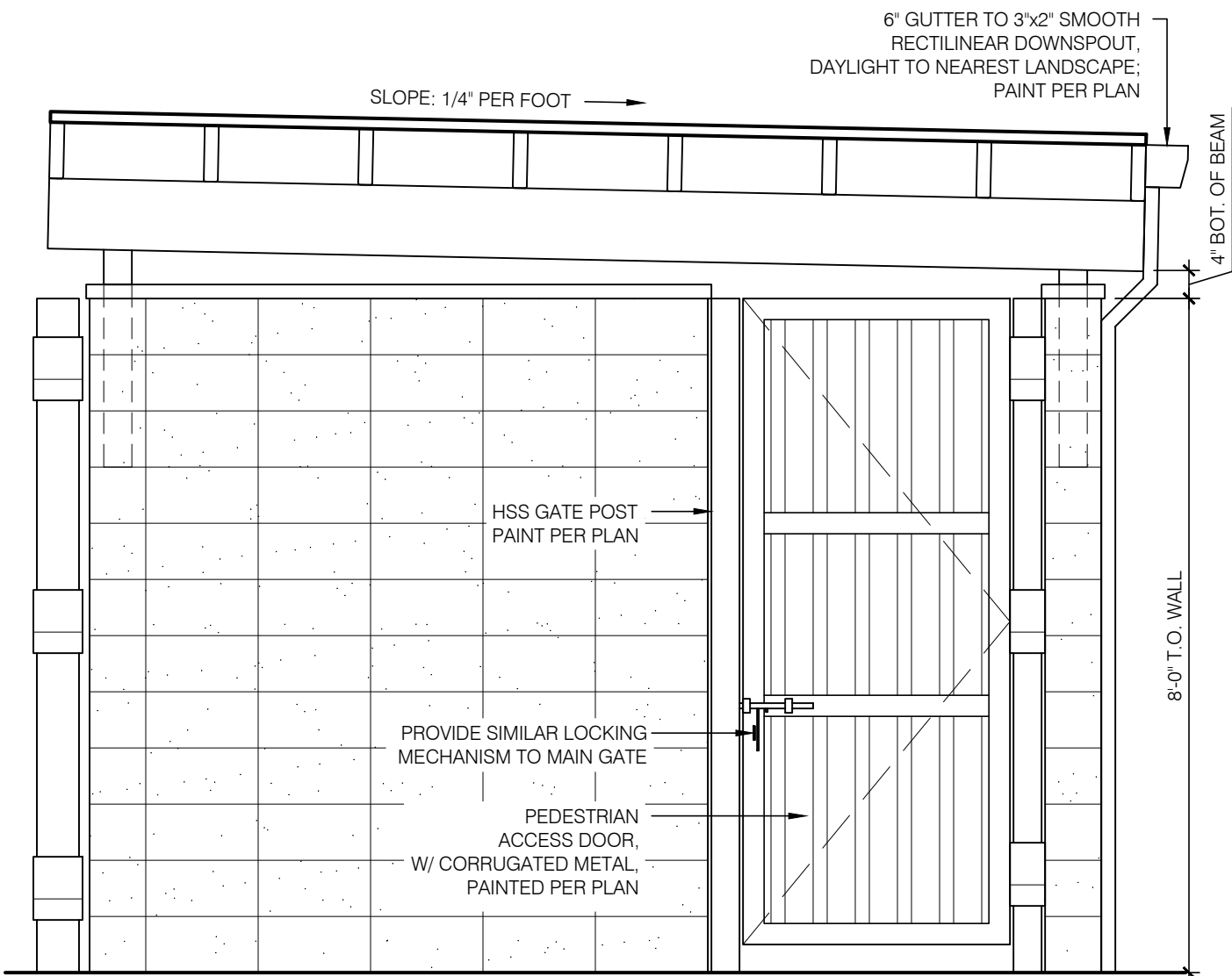
5 TRASH ENCLOSURE SIDE ELEVATION

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



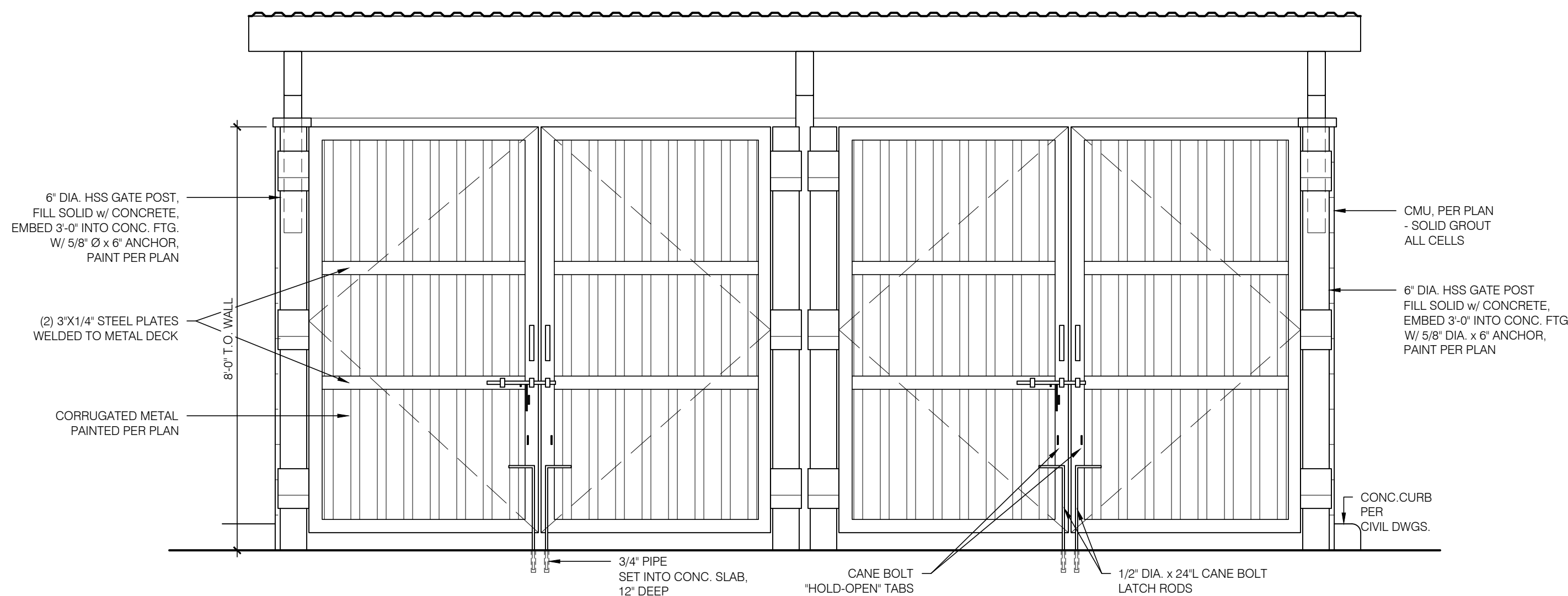
4 TRASH ENCLOSURE SIDE ELEVATION

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



3 TRASH ENCLOSURE SIDE ELEVATION

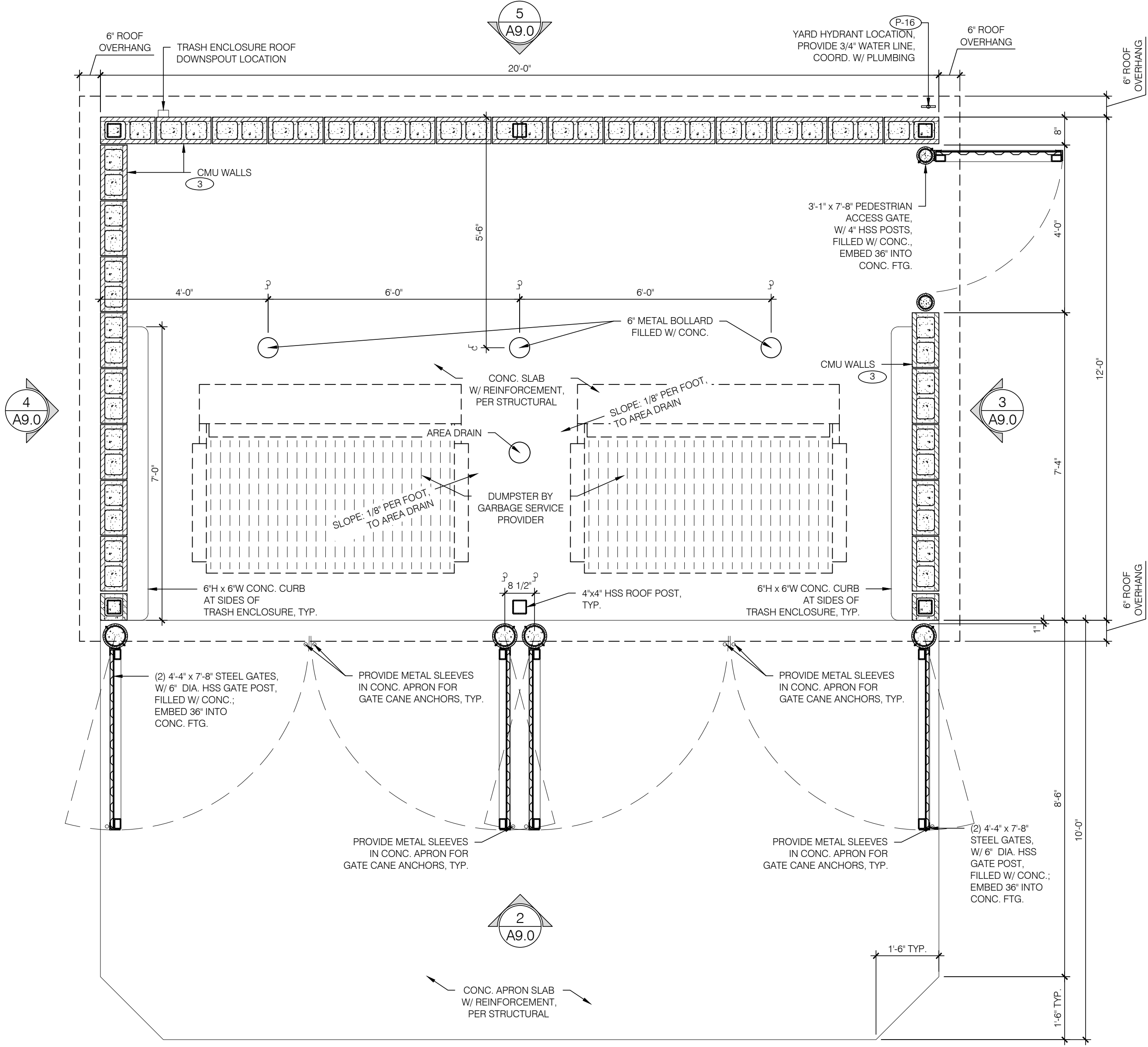
SCALE: 1/2" = 1'-0"



2 TRASH ENCLOSURE FRONT ELEVATION

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

TRASH ENCLOSURE MATERIALS				
ID	MATERIAL	MANUFACTURER	COLOR	NOTES
3	CMU BLOCK	WILLAMETTE-GRAYSTONE	CHARCOAL	SPLIT FACE, 8x16w8, 8x8x8 AS NECESSARY
	CMU CAP	WILLAMETTE-GRAYSTONE	CHARCOAL	12x16x2
PT-2	PAINT	SHERWIN-WILLIAMS	-	BLDG DB DARK GRAY, GATES BODY
PT-3	PAINT	SHERWIN-WILLIAMS	-	BLDG DB BLUE, GATE FRAMES, POSTS AND ROOF



1 TRASH ENCLOSURE PLAN

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

PRELIMINARY NOT FOR CONSTRUCTION

TRASH ENCLOSURE
1598 FAIRGROUNDS DRIVE
VALLEJO, CA 94589

Title

DUTCH BROS.
Coffee

For

Scale:

Horizontal

Vertical

Barghausen
Consulting Engineers, Inc.

18215 72nd Avenue South
Kent, WA 98032
425.251.6222
barghausen.com

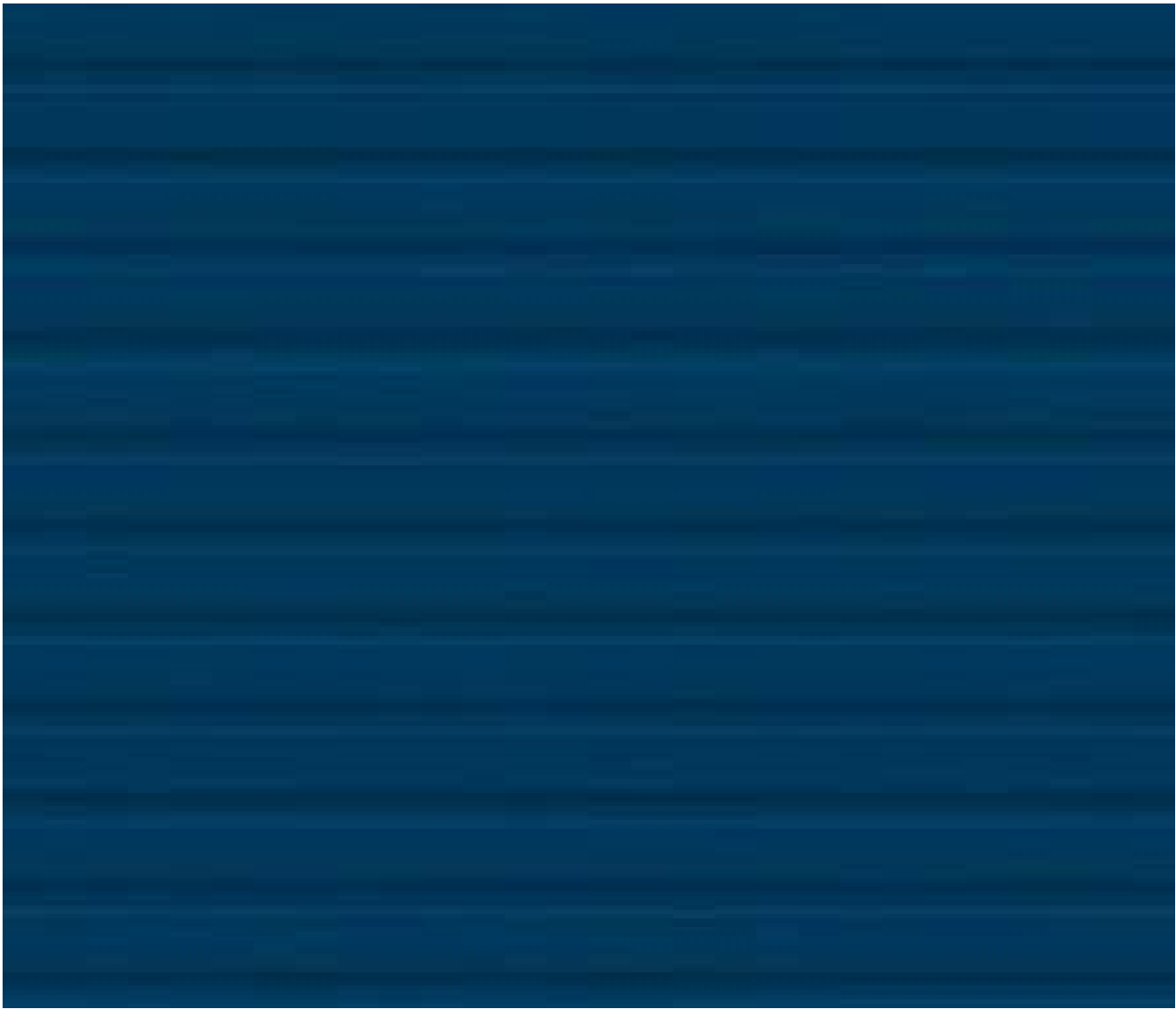


Job Number
22138

Sheet
A4
2019 DB
Franchising USA, LLC

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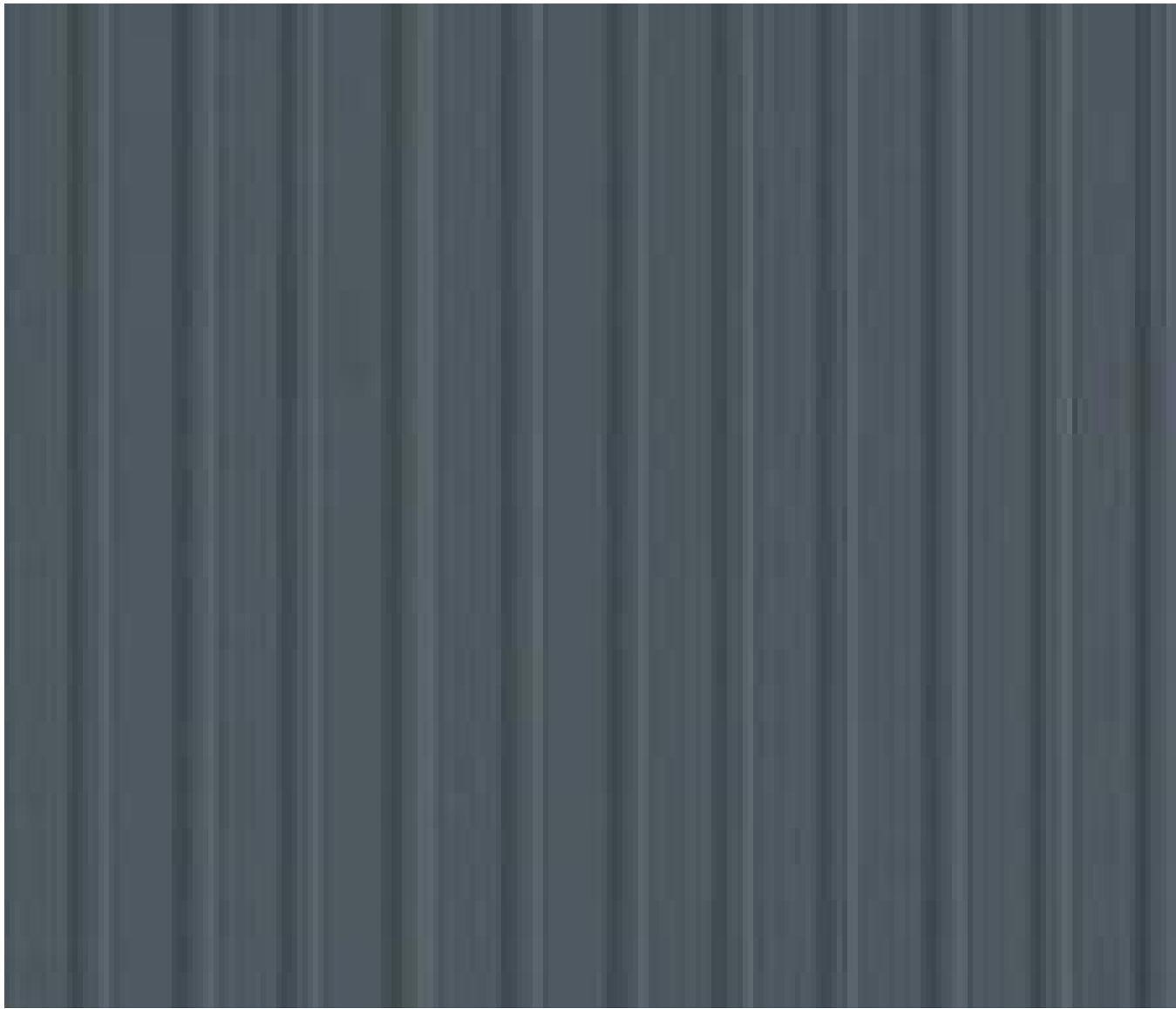
DUTCH BROS. COFFEE - CA0105, VALLEJO, CA
APN: 0068-171-160



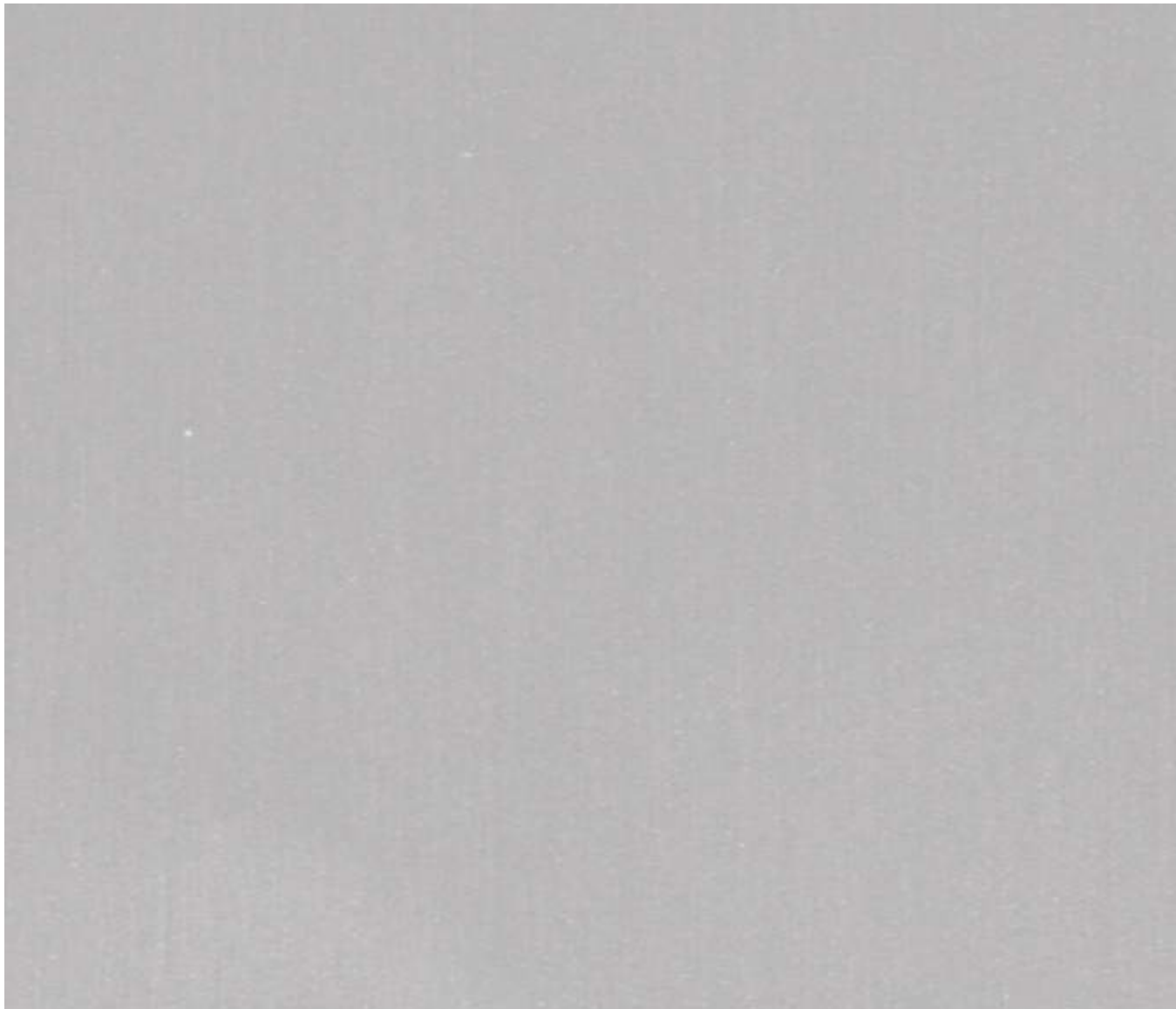
METAL SIDING
MANUFACTURER: WESTERN STATES
METAL ROOFING
PROFILE: WESTERN WAVE - HORIZONTAL
COLOR: BLDG DB BLUE



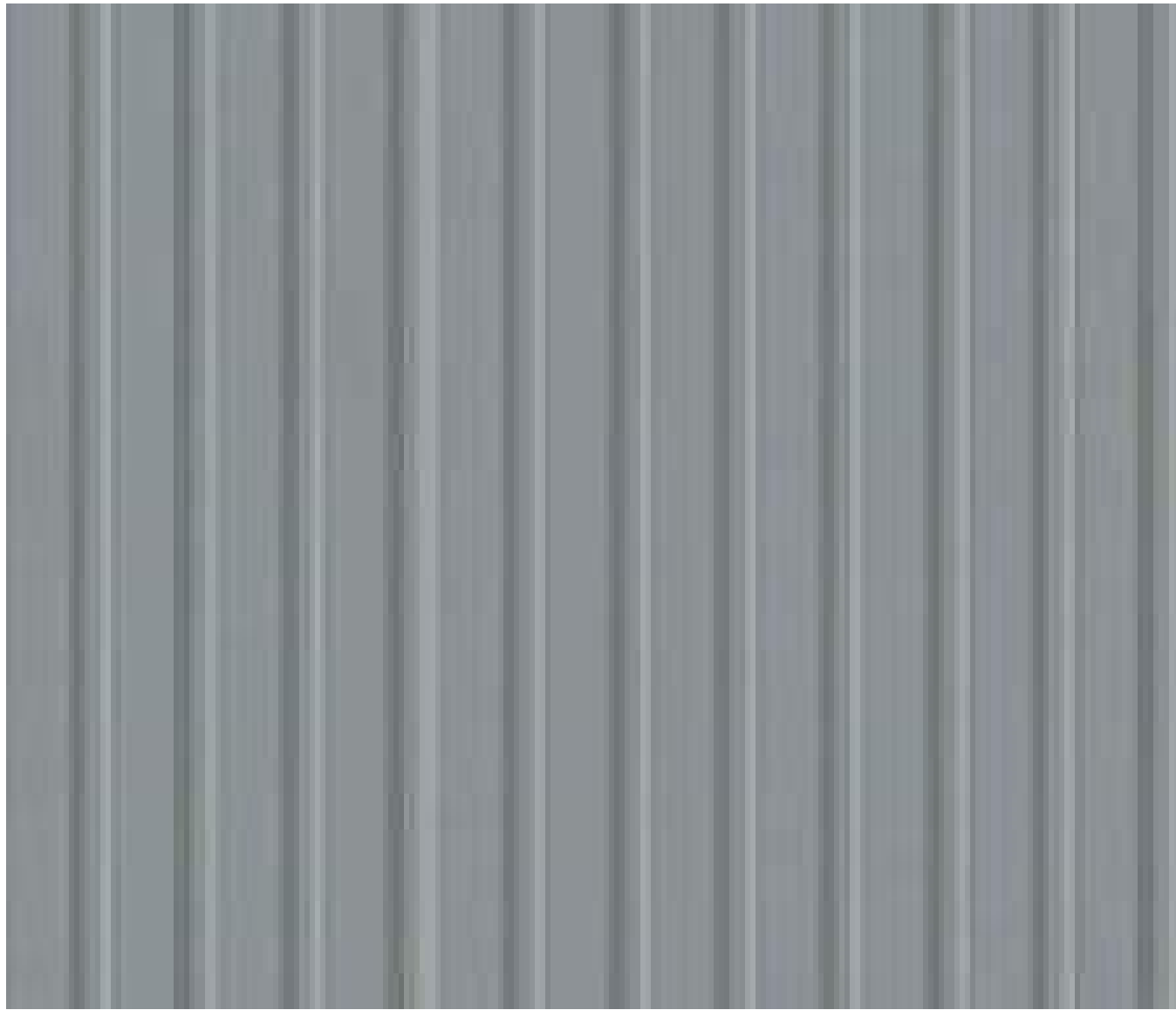
CANOPY SOFFIT
MANUFACTURER: HEWN
PROFILE: NW SPRUCE
NATURAL & SEALED
COLOR: PER MFR.



METAL SIDING
MANUFACTURER: WESTERN STATES
METAL ROOFING
PROFILE: WESTERN WAVE - VERTICAL
COLOR: BLDG DB GRAY DARK



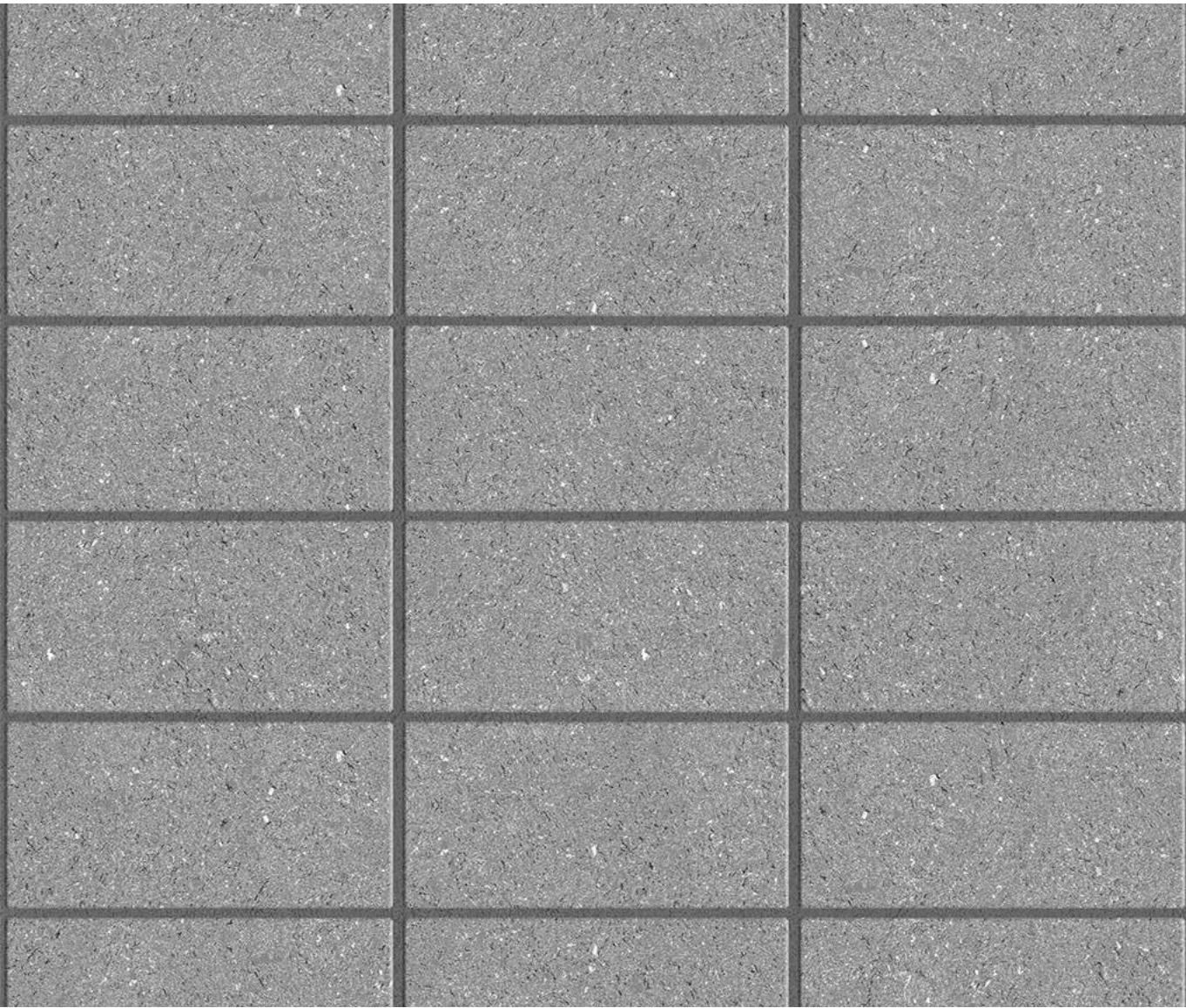
WINDOW SYSTEM
MANUFACTURER: KAWNEER OR SIMILAR
PROFILE: CLEAR ANODIZED ALUMINUM
FINISH: CLEAR NO 14 / 17



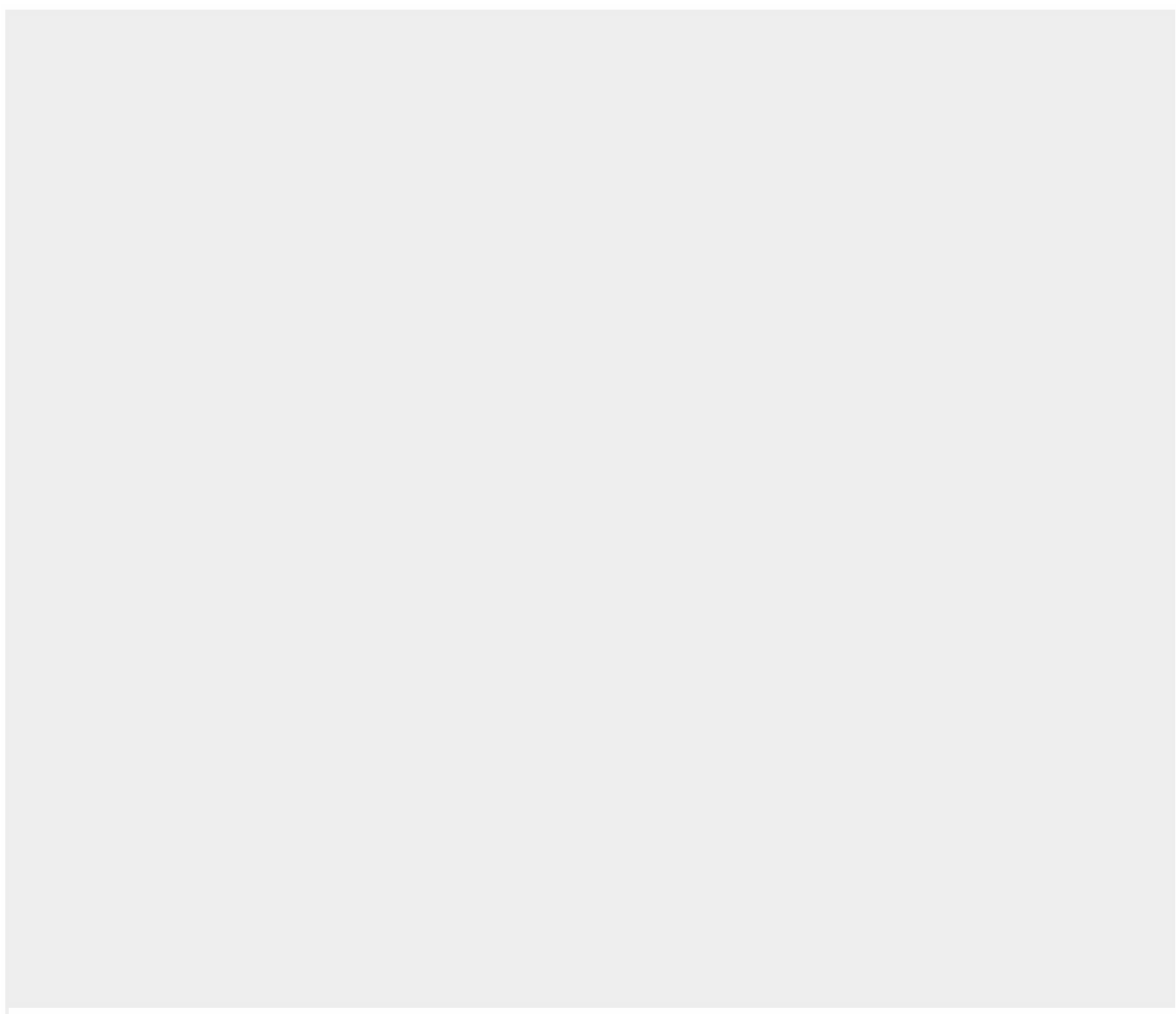
METAL SIDING
MANUFACTURER: WESTERN STATES
METAL ROOFING
PROFILE: WESTERN WAVE - VERTICAL
COLOR: BLDG DB GRAY LIGHT



AWNINGS & DOORS - PAINT
MANUFACTURER: SHERWIN-WILLIAMS
COLOR: BLDG DB GRAY DARK



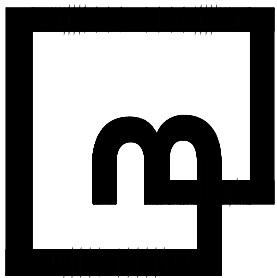
CMU
MANUFACTURER: WILLAMETTE-GRAYSTONE
PROFILE: SLIT FACE
COLOR: CHARCOAL, OR SIM.



ROOFING MATERIAL
MANUFACTURER: DURO-LAST
DL-60 - 60 MIL
COLOR: WHITE

Job Number
22138

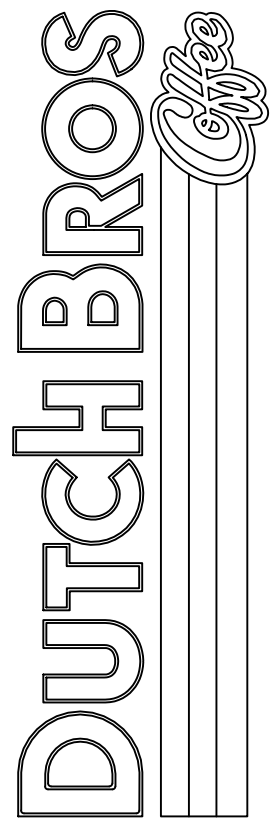
Sheet
A5
2019 DB
Franchising USA, LLC

**Barghausen
Consulting Engineers, Inc.**
18215 72nd Avenue South
Kent, WA 98032
425.251.6222 barghausen.com

Designed <u>COX</u>	Drawn <u>COX</u>	Checked <u>JMH</u>	Approved <u>HPS</u>	Date <u>04-18-22</u>
---------------------	------------------	--------------------	---------------------	----------------------

Scale:	Horizontal	Vertical
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For:



Title:

MATERIAL BOARD
**1598 FAIRGROUNDS DRIVE
VALLEJO, CA 94589**

"The name DUTCH BROS. and all associated logos, distinctive designs, content, information, and other materials featured, displayed, contained herein, and made available by Dutch Bros., including but not limited to, the "look and feel" of the establishments and products, all text, images, colors, configurations, graphics, designs, illustrations, photographs, and pictures (collectively, the "Materials") are owned by DB Franchising USA, LLC and are protected by copyright, trademark, trade dress, patent, and/or other intellectual property rights and unfair competition laws under the United States and foreign laws."



L7

Job: Dutch Brothers Coffee

Descr: Canopy 6' light

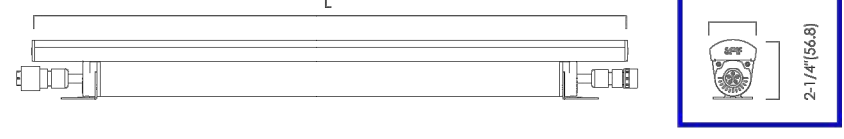
Outdoor Cove Lighting
CROWN



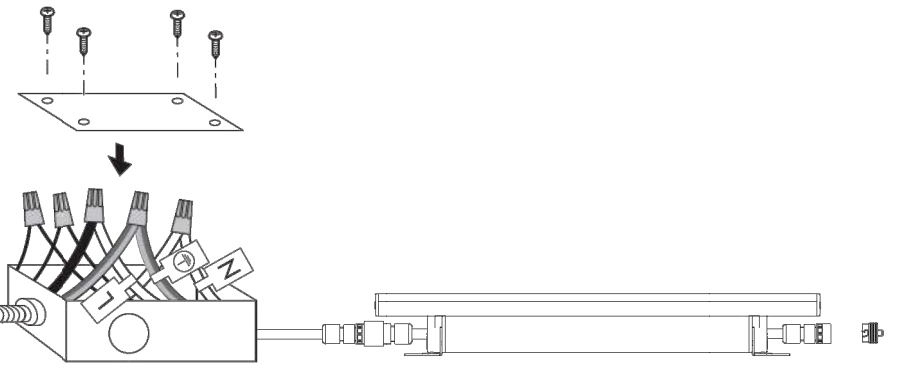
IP66

- Quick connection
- Dimmable, 1-10V dimming to 10%-100%
- Unikable, max. inkable length: 72" @ 120VAC, 156" @ 277VAC
- IP rating: IP66 (For wet locations)
- Lockable, precision dimming adjustment: 282.5° vertical rotation
- Lifetime: 50,000hrs (L70>95%, 35°C)
- Tc: -13°F ~ 122°F (-23°C ~ 50°C)
- Material: Aluminum alloy
- 10W/ft, 1050lm/ft

Dimensions: (inches/mm)



Wiring Diagram



AC connection:

Black: " L "

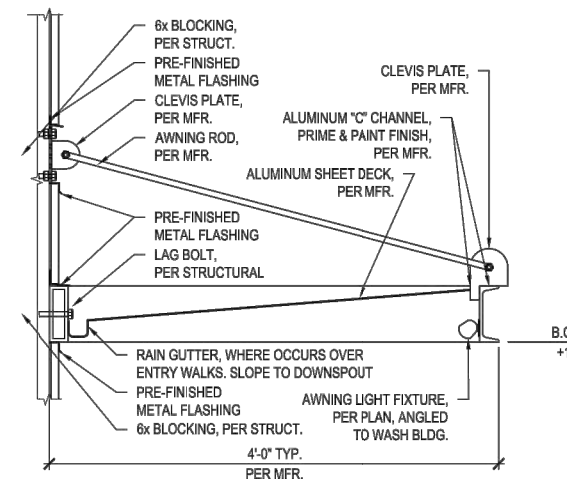
White: " N "

Yellow/green: " G "

Dimming connection:

Violet: " + "

Gray: " - "



4 AWNING FIXTURE



L6

Job: Dutch Brothers Coffee Prototype

Descr: Exterior Wallpack

WPLED26Y/E



26 Watt LED wallpack with emergency backup battery that will last for 90 minutes during power interruption. Patent Pending thermal management system, 100,000 hour L70 lifespan, 5 Year Warranty

Color: Bronze

Weight: 14.0 lbs

Technical Specifications

Battery Backup:
Minimum starting temperature is 0°C/32°F.

Patents:
The WPLED design is protected by U.S. Patent D634878 and Patents pending in the U.S., Canada, China, Taiwan and Mexico.

Equivalency:
Equivalent to 170W Metal Halide.

FTC Country of Origin:
This product was assembled in the USA by RAB using imported components.

Buy American Act Compliance:
This product complies with the Buy American Act.

Listings:
This product is on the Design Lights Consortium (DLC) Qualified Products List and is eligible for rebates from DLC-Member Utilities.

DLC Product Code: P00001750

UL Listing:
Suitable for Wet Locations as downlight. Wall Mount Only. Battery Backup UL 924 Listed Emergency Lighting Power Supply.

LED Characteristics

Lifespan:
100,000-hour LED lifespan based on IES LM-80 results and TM-21 calculations.

LED:
Two (2) 13W high-output, long-life LEDs.

Color Consistency:
3-step MacAdam Ellipse binning to achieve consistent future-to-future color.

Color Stability:
LED color temperature is warranted to shift no more than 200K in CCT over a 5 year period.

Color Uniformity:
RAB's range of CCT (Correlated Color Temperature) follows the guidelines of the American National Standard for Specifications for the Chromaticity of Solid State Lighting (SSL) Products, ANSI C78-377:2017.

Battery Mode:
Light output use LED at 70 to simulate light output during battery mode operation.

Driver:
Constant Current, Class 2, 50/60 Hz, 120 - 277VAC 0.4 Amps.

Battery Backup

Backup Battery:
Two field-replaceable, high-temperature, maintenance-free, nickel-cadmium batteries.

Construction

Ambient Temperature:
Suitable for use in 35°C (95°F) ambient temperatures.

Gaskets:
High temperature silicone.

Housing:
Precision die-cast aluminum housing, lens frame and mounting arm.

Finish:
Formulated for high-durability and long lasting color.

Green Technology:
Mercury and UV free. RoHS compliant components. Polyester powder coat finish formulated without the use of VOC or toxic heavy metals.

Optical

Bug Rating:
B1 US G0

Outdoor Cove Lighting
CROWN

How to order using our catalog numbers:
Example: CROWN-1230K10SS

Series	Length	Color Temp	Beam Angle	Finish	Installation
CROWN	12 - 11.8"(300mm) 42 - 47"(1200mm) 70 - 72"(1775mm)	30K - 3000K 40K - 4000K	110 - 110°	S - Silver	S - Screw Mounting

Catalog No.	Model	Rated Input	Ra	Wattage	Luminous flux [TM-24-000K]	Included
CROWN-1230K10SS	CROWN-L24-277V	120-277VAC	85	10W	1050 lm	
CROWN-1240K10SS	CROWN-L24-277V	120-277VAC	85	10W	1050 lm	
CROWN-4730K10SS	CROWN-L90-277V	120-277VAC	85	40W	4200 lm	1 pc LED fixture 3pcs Screws 1pc End cap
CROWN-4740K10SS	CROWN-L90-277V	120-277VAC	85	40W	4200 lm	
CROWN-7030K10SS	CROWN-L144-277V	120-277VAC	85	60W	6300 lm	
CROWN-7040K10SS	CROWN-L144-277V	120-277VAC	85	60W	6300 lm	

How to choose your driver & cables:

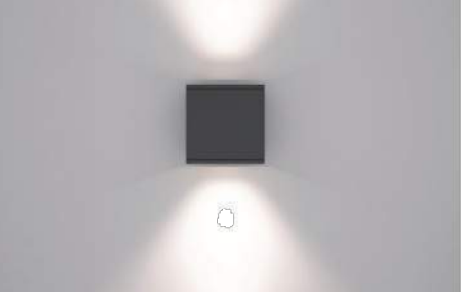
Catalog No.	Description	Photo
IC-CROWN-59	Input cable 59"	

Optional:

Catalog No.	Description	Photo
SC-CROWN-12	Soft connector 12"	
TK-CROWN-79	Track 79", including 3pcs screws	

UMT-31416-DBNA
Matrix 3 Surface

L4

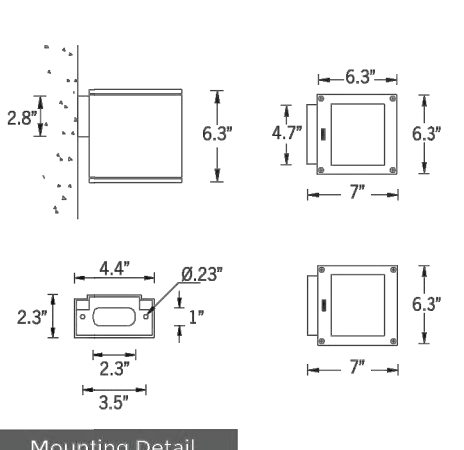


Length - 7" | Height - 6.3" | Weight 4.8 lbs

IP65 • Suitable for Wet Locations

IK04 • Impact Resistant (Vandal Resistant)

Mounting Detail



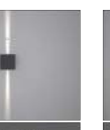
Matrix Product Family



UMT-31416-DBNA



UMT-31416-DBNA



UMT-31416-DBNA



UMT-31416-DBNA



UMT-31416-DBNA



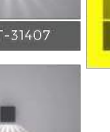
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UMT-31416-DBNA



UMT-31416-DBNA



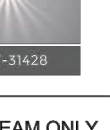
UMT-31416-DBNA



UMT-31416-DBNA



UMT-31416-DBNA



UMT-31416-DBNA

PROVIDE DOWN BEAM ONLY

Ligman Lighting L4 reserves the right to change specifications without prior written notice. See the technical specifications for more information. Due to the technical improvements in LED technology and components, we reserve the right to change without notice.

3 SCONCE FIXTURE AT CANOPY COLUMNS



P

Job: Dutch Bros

Descr: Pole Head - Prototype Selection Dec. 2019

FORM AND FUNCTION

- Sleek, low profile housing
- Spec grade performance
- Engineered for optimum thermal management
- Low depreciation rate
- Reduces energy consumption and costs up to 65%
- Exceeds IES foot candle levels utilizing the least number of poles and features per project
- Optical system designed for:
 - Parking Lots
 - Auto Dealerships
 - General Area Lighting

CONSTRUCTION

- Die Cast Aluminum
- External cooling fins, Finite Element Analysis (FEA) designed
- Corrosion resistant external hardware
- One-piece silicone gasket ensures IP-65 seal for electronics compartment
- One-piece Optics Plate mounting silicone Micro Optics
- Two-piece silicone Micro Optic system ensures IP-67 level seal around each PCB
- Grade 2 Clear Anodized Optics Plate standard

FINISH

- 3.5 mils electrostatic powder coat.
- NLS standard high-quality finishes prevent corrosion protects against and extreme environmental conditions

WARRANTY

Five-year limited warranty for drivers and LEDs.

AREA LIGHTING



LISTINGS

- Certified to UL 1698
- UL 8750
- CSA C22.2 No. 250.0
- DesignLights Consortium® (DLC)
- DesignLights Consortium Premium® (DLCP)
- IP65/ IP67 Rated
- 30 Vibration Rated per ANSI C136.31-2010

LED WATTAGE CHART

	144	224	444	644
350 milliwatts	16w	25w	50w	64w
530 milliwatts	22w	34w	68w	86w
700 milliwatts	28w	43w	86w	108w
1050 milliwatts	42w	64w	128w	162w

Project Name:

Type:

Cat #	Light Dist	No. of LEDs	Milliwatts	Kelvin	Volts	Mounting	Color	Options
NV 1 (N1)	Type 2 (T2)	16 (144)	350	3000K (30K)	120-277V (0-10V)	Architectural Sweep Arm (ASA)	Bronze (BRZ)	Bird Deterrent (BD) Marine Grade Finish (MGF) Optic Plate Pattern to Match Fixture (OPP) Nema 7-Pin Receptacle (PE7) PhotoCell + Receptacle (PCR) Receptacle + Shorting Cap (PCR) Surge Protector (SPR) (10K)
	Type 3 (T3)	48 (48L)	530	4000K (40K)	347-480 (0-10V)		White (WHT) Silver (SLV) Graphite (GRP) Nema 2 24" Narrow Beam (NB2)	Round Pole Adapter 3" 4" Pole (RPA4) Round Pole Adapter 8" 4" Pole (RPA8) Rotated Optic Left (ROL) Rotated Optic Right (ROK) Rotated House Side Shield (RHS) Rotated Optic Shield (ROS)
	Type 4 (T4)	64 (64L)	700	5000K (50K)	120-277V (0-10V)		Graphite (GRP) Nema 3 30" Narrow Beam (NB3)	Round Pole Adapter 3" 4" Pole (RPA4) Round Pole Adapter 8" 4" Pole (RPA8) Rotated Optic Left (ROL) Rotated Optic Right (ROK) Rotated House Side Shield (RHS) Rotated Optic Shield (ROS)

In California or where Motion Step-Dim is required under 24'

If Site Lighting Plan indicates to use

UMT-31416-DBNA
Matrix 3 Surface

L4

PROJECT

DATE

QUANTITY

TYPE

NOTE

ORDERING EXAMPLE || UMT - 31416 - 14/14w - W30 - 02 - 120/277v - Options

LAMP	BEAM	LED COLOR	FINISH COLOR	VOLTAGE
14/14w CCB 1028 Lumens Down 1028 Lumens Up	L - Narrow 20° M - Medium 25° W - Wide 36° VW - Very Wide 74°	W30 - 3000K W35 - 3500K W40 - 4000K	01 - BLACK BAL 9011 02 - DARK GREY BAL 1043 03 - WHITE BAL 9003 04 - METALLIC SILVER BAL 9006 05 - MATT SILVER BAL 9006 06 - LIGMAN BRONZE 07 - CUSTOM RAL	120-277v Other - Specify

ADDITIONAL OPTIONS

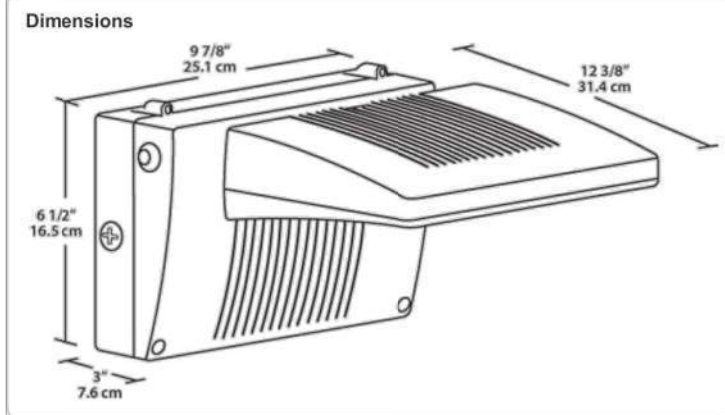
NAT - Nataratorium Rated
F - Frosted Lens
42 - Mounting Plate for 4" Junction Box
DIM - 0-10v Dimming

COLORED DICHROIC FILTERS

RD - Red Lens
BL - Blue Lens
GR - Green Lens
AM - Amber Lens
(Specify Other Color)

Ligman Lighting L4 reserves the right to change specifications without prior written notice. See the technical specifications for more information. Due to the technical improvements in LED technology and components, we reserve the right to change without notice.

WPLED26Y/E



Dimensions

9 3/8" 25.1 cm
13 3/8" 34.4 cm
6 1/2" 16.5 cm
7.6 cm

Features

Backup battery UL 924 listed
UL listed for wet locations
90 minutes illumination time during power interruption
Includes test switch and charge indicator light
Universal input voltage
5-year warranty

Ordering Matrix

Family	Wattage	Color Temp	Finish	Battery Backup	Photocell
WPLED	26 = 26W	Blank = 5000K (Cool) Y = 3000K (Warm) N = 4000K (Neutral)	Blank = Bronze W = White	IE = Battery Backup IEC = Cold Start Battery Backup	Blank = No Photocell IPC = 120V Switch IPC2 = 120V Switch IPC2 = 277V Switch

WPLED26Y/E



Dimensions

9 3/8" 25.1 cm
13 3/8" 34.4 cm
6 1/2" 16.5 cm
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ELECTRICAL

- 120-277 Volts (UNV) or 347-480 Volts (HV)
- 0-10V dimming driver by Philips Advance
- Driver power factor at maximum load is > .95, THD maximum load is 15%
- All internal wiring UL certified for 600 VAC and 105°C
- All drivers, controls, and sensors housed in enclosed IP-65 compartment
- Lumileds Luxeon MA LEDs
- CRI >70
- Color temperatures: 3000K, 4000K, 5000K

OPTIONS

- BIRD DETERRENT (BD)**—offers effective and humane deterrent for larger bird species and provides cost-effective long-term solution to nuisance bird infestations and protect your property.
- MARINE GRADE FINISH (MGF)**—A multi-step process creating protective finishing coat against harsh environments.
 - Chemically washed in a 5 stage cleaning system.
 - Pre-baked
 - Powder coated 3-5 mils of Zinc Rich Super Durable Polyester Primer.
 - 1-2 feet inside pole coverage top and bottom.
 - Oven Baked.
 - Finished Powder Coating of Super Durable Polyester Powder Coat 3-5 mil thickness.
- SHIELDS (HSS, AHS)**—House Side Shield (HSS) is designed for full property line cut-off. Automotive House Side Shield (AHS) is a single-sided shield allowing partial cut-off on either side or front of luminaire.
- ROUND POLE ADAPTER (RPA)**—When using round poles, specify Round Pole Adapter (RPA). Specify RPA4 when installing on 3" 4" round poles, and RPA8 when installing on 5" 4" round poles.

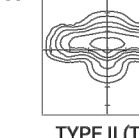
CONTROLS

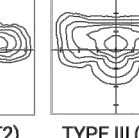
- FSP-211 (FSP-X)**—Passive Infrared (PIR) sensor providing multi-level control based on motion/daylight contribution.
 - All control parameters adjustable via wireless configuration remote storing and transmitting sensor profiles.
 - FSP-20 mounting heights 9-20 feet
 - FSP-40 mounting heights 21-40 feet.
 - Includes 5 dimming event cycles, 0-10V dimming with motion sensing, reprogrammable in the field.
- NEMA 7-PIN RECEPTACLE (PE7)**—An ANSI C136.41-2013 receptacle provides electrical and mechanical interconnection between photo cell and luminaire. Dimming receptacle available two or four dimming contacts supports 0-10 VDC dimming methods or Digital Addressable Lighting Interface (DALI), providing reliable power interconnect.

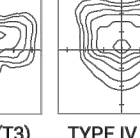
OPTICS

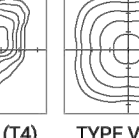
Silicone optics high photothermal stability and light output provides higher powered LEDs with minimized lumen depreciation LED life. UV and thermal stability with scratch resistance increases exterior application durability.

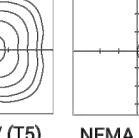
- IES Types

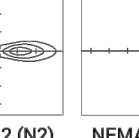












2 WALL PACK FIXTURE AT REAR DOOR

PRELIMINARY NOT FOR CONSTRUCTION

1 POLE MOUNTED SITE/ PARKING FIXTURE

LIGHT FIXTURES
1598 FAIRGROUNDS DRIVE
VALLEJO, CA 94589

DUTCH BROS.
Coffee

For:

Scale:

Horizontal

Vertical

Designed:

Drawn:

Checked:

Approved:

Date:

Barghausen
Consulting Engineers, Inc.
18215 72nd Avenue South
Kent, WA 98032
425-251-6222
barghausen.com

2019 DB
Franchising
USA, LLC

Job Number:

22138

Sheet:

A6

2019 DB
Franchising
USA, LLC

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DUTCH BROS. COFFEE - CA0105, VALLEJO, CA
APN: 0068-171-160

GETTING STARTED L5

Following these few simple steps will ensure a successful installation each time. Remember: No more than 48 boards per power supply.
1. Read ALL instructions, before starting installation.
2. Inspect the boxes for damage and check the parts against the supplied parts list.
NOTE: Report damaged parts or shortages immediately to prevent job slowdown/stoppage to 1-800-634-4059 ext. 0
3. Refer to attached provided print and confirm job measurements.
4. Layout your job on paper, making note of power supply placement.
Power supplies can be placed at the end of runs or side by side to power allowable linear footage in each direction.
NOTE: If job measurements do not correspond to provided drawing, call Lektron immediately at 1-800-634-4059.

CONTENTS

Getting Started, Component Identification & Required Tools

SECTION	PAGE
1. 48 Board Track Mounting Bracket Layout.....	2
2. Installing Track into Mounting Brackets.....	3
3. Custom Cut to Fit End of Runs & Corners.....	4
4. Mounting Track on an Incline.....	5
5. Frame Border Installation.....	6
6. Connecting Power Supplies.....	7
7. Testing Each Section.....	8

SEC. 1 48 BOARD TRACK MOUNTING BRACKET LAYOUT

1. Using a chalk line, gauge, laser level, or other means to be certain run is straight, marking locations for brackets.

2. Border / perimeter of sign cabinets should always have orientation of Laser/Leon housing raised lip outboard on vertical or diagonal. Orient brackets so that the drain holes will be on the bottom side of the horizontal runs.

3. Install mounting brackets, 6 per 8' section including shared brackets. Use pre-drilled wire hole mounting brackets at power supply locations.

NOTE: This is correct Bracket orientation

NOTE: Track sections share a bracket at the ends to keep ends together and straight there MUST BE A SPACE left between 8 inch plastic track sections (NOT LEDS) of 3/16 inch

DETAILS

Input.....	120-277 VAC
Output.....	24 VDC (Philips Advance)
Max. Load Footage.....	64 Linear Ft. 20L
Watts per Foot.....	1.50 (if 20L)
Dimming Capable.....	Yes
Bending Parameters.....	Factory bends available
Limited Warranty Terms.....	7 Years
Materials.....	PVC, UV and impact resistant
Dimensions.....	Laser 1.70 x 1.70, Leon 2.00 x 1.70
Certification.....	cULus E174914

LED SPECIFICATIONS

12" LED boards pull close to the same voltage as shorter break-apart boards. Maximum of 3-3" Boards per circuit. No more than 48 boards on a circuit. Do not connect more than one power supply per circuit.

LEON

LASER

ACCESSORIES:

185-0154 J BOX	185-0030 STRAIN RELIEF	185-0049 1/4" x 1/4" PAN HEAD SCREW	185-9005 LASER HANDSHIELD COUPLER	185-5533 ANGLE BRACKET (1/2" x 1/2")
185-0007 PVC CABLE	185-5009 4" x 1/2" x 1/4" TEK SCREW	185-0055 LEON HANDSHIELD COUPLER	185-0062 LEON END CAP	185-0058 MOUNTING BRACKET
185-1976 Philips Advance 100W 24V LOW VOLTAGE POWER SUPPLY	3.00" 6L BREAK-APART BOARD	185-5023 BLUE WIRE NET	185-0048 WIRE HOLE BRACKET	185-0059 LASER END CAP

REQUIRED TOOLS:

- 25' Measuring Tape
- 100' Measuring Tape
- Framing Square
- Square - (1')
- Portable Rechargeable Drill
- 5/16" Hexbit and unibit
- Masonry bits (if brick wall)
- Extension Cord
- Sawzall or Compound Saw
- Carpenter Pencil
- Caulk Gun
- Box Knife
- Wire Strippers
- Wire Snips
- Laser Tool or Chalk Line
- Substitute Fasteners for the Application if Applicable

dmf L9

DRD5S

Surface Mount LED Downlight

Retrofit Junction Box

MODULE

DRD5S
Surface Mount LED Module
DRD5S

SUMMARY

LED: Optimized LED array
SHAPE: 4" Round, 4" Square
MODULE LUMENS: 750 lm (9.0W), 1000 lm (12.0W)
COLOR QUALITY: 90+ CRI, less than 3-step SDGM
CCT: 2700K, 3000K, 3500K
INPUT VOLTAGE: 120/277V
DIMMING: Down to less than 5% for TRIAC/ELV at 120V, 1% for 0-10V at 120/277V
MAX INPUT CURRENT (120V): 0.075 amps, 0.1047 amps
MAX INPUT CURRENT (277V): 0.034 amps, 0.047 amps
POWER FACTOR: Greater than 0.9
TOTAL HARMONIC DISTORTION: Less than 20%
AMBIENT OPERATING TEMPERATURE: -20°C to 40°C
PHOTOMETRIC TESTING: Tested in accordance to IESNA LM-79-2008
TRIM: Edgeless die-cast aluminum
LISTINGS: ENERGY STAR® qualified, California Title 24 2016 JA8 compliant, UL Listed for Wet Location, cULus Listed
LIFETIME: 50,000 hours at 70% lumen maintenance
WARRANTY: 5 year limited warranty

6 PARAPET 2 STRIP LIGHT FIXTURE

PRELIMINARY NOT FOR CONSTRUCTION

5 CANOPY SOFFIT FIXTURE

Job Number
22138

Sheet
A7
2019 DB
Franchising USA, LLC

Barghausen Consulting Engineers, Inc.
18215 72nd Avenue South
Kent, WA 98032
425.251.6222 **barghausen.com**

Scale:	Horizontal	Vertical
Designed	COX	COX
Drawn	COX	COX
Checked	JMH	JMH
Approved	HFC	HFC
Date	04-18-22	04-18-22

For:

DUTCH BROS
COFFEE

Title:

LIGHT FIXTURES
1598 FAIRGROUNDS DRIVE
VALLEJO, CA 94589

DMF LIGHTING 1118 E. 223rd St. Carson, CA 90745 800.441.4422 dmflighting.com

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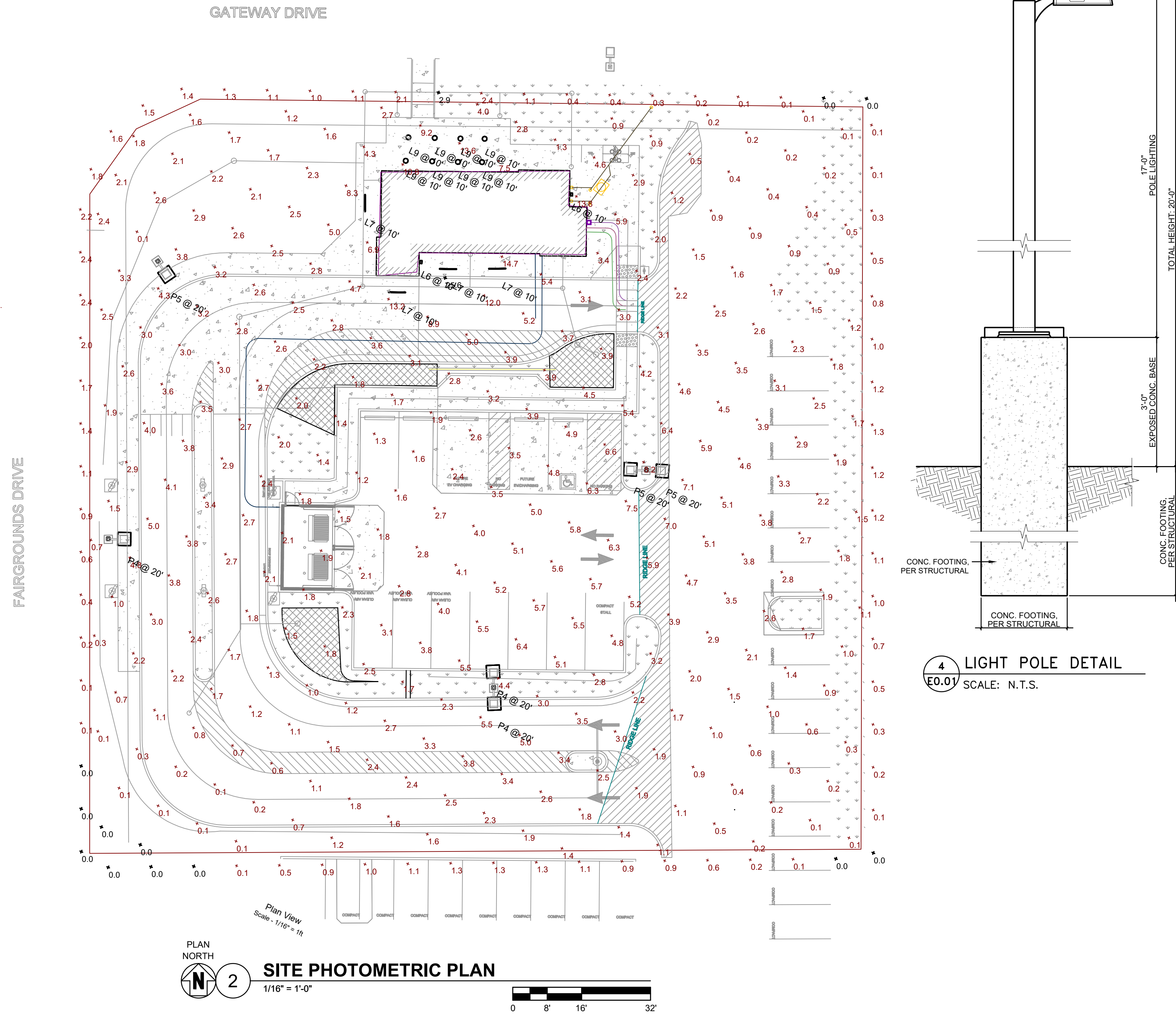
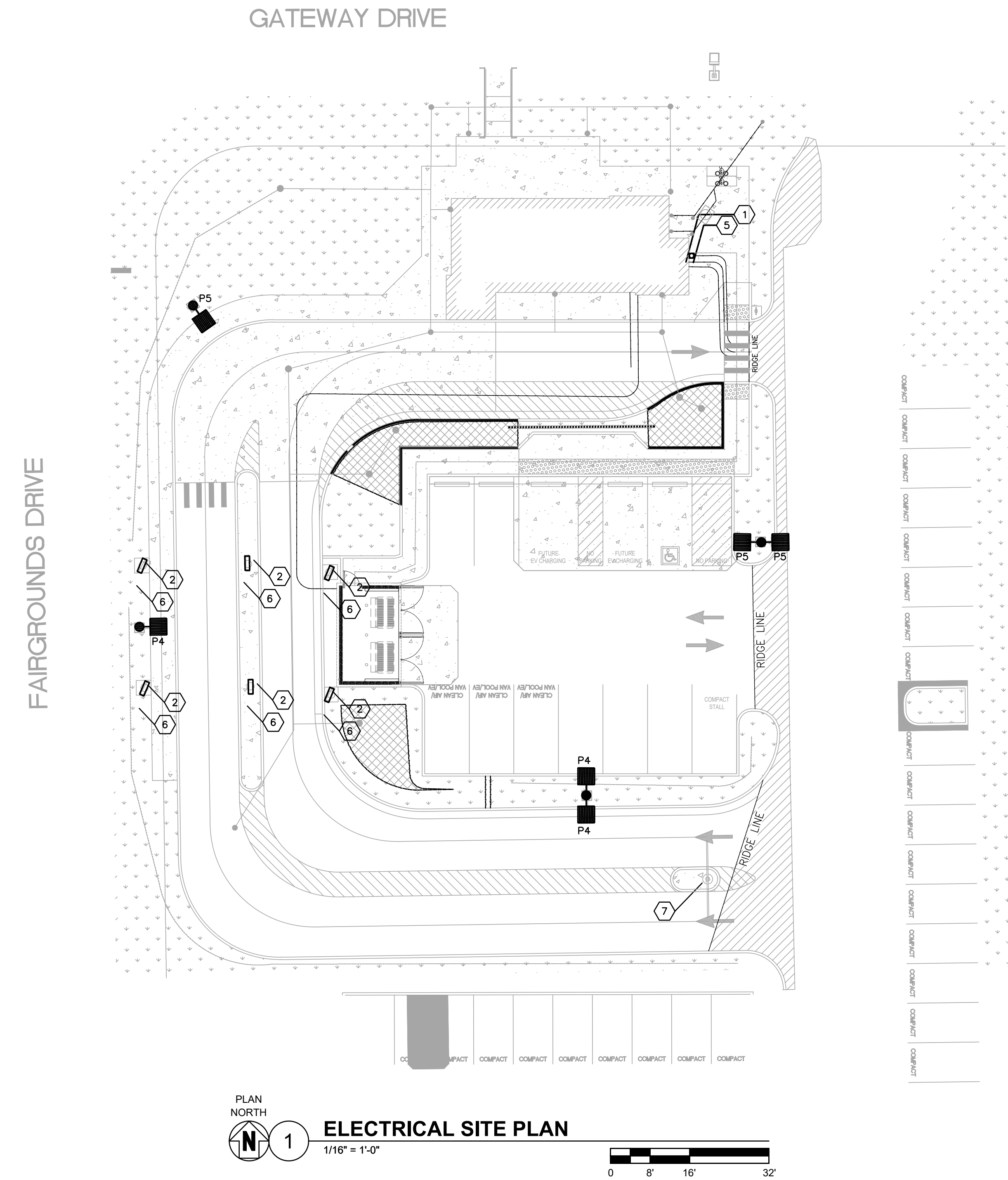
Page 3 of 6

Page 1

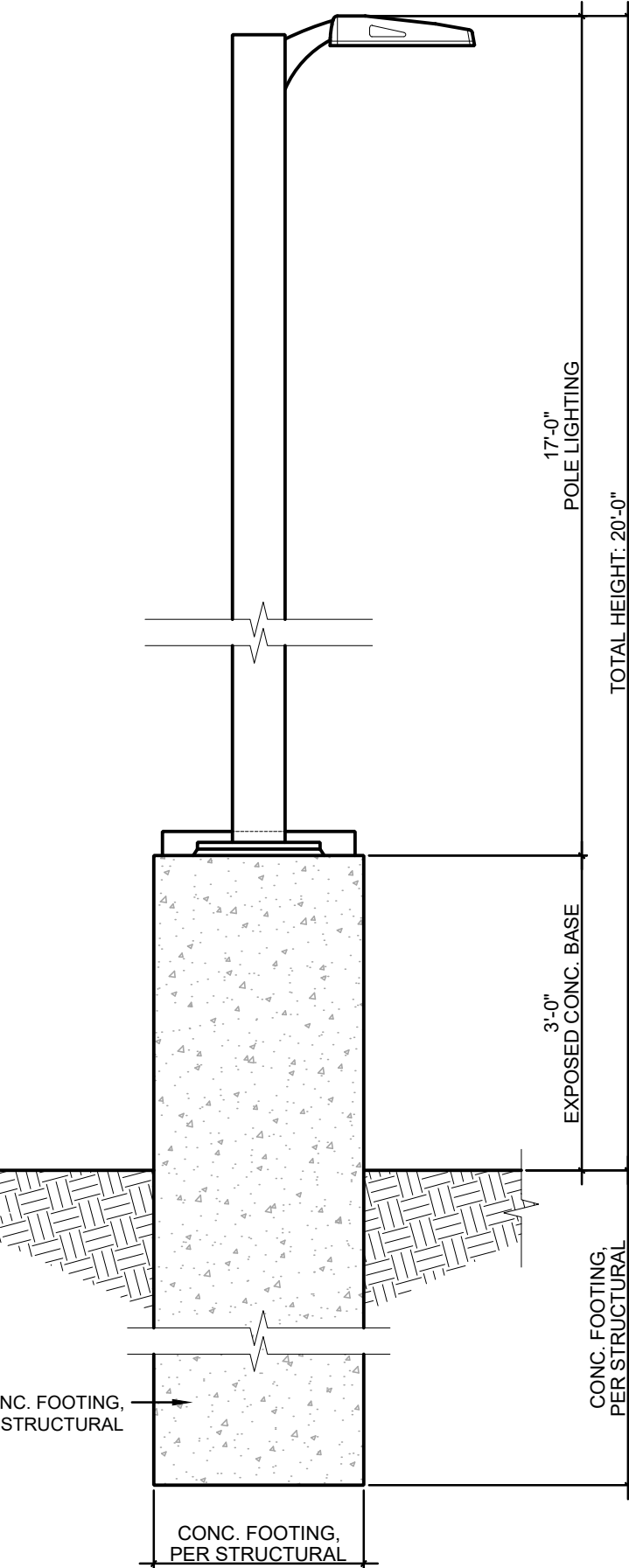
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4 LIGHT POLE DETAIL
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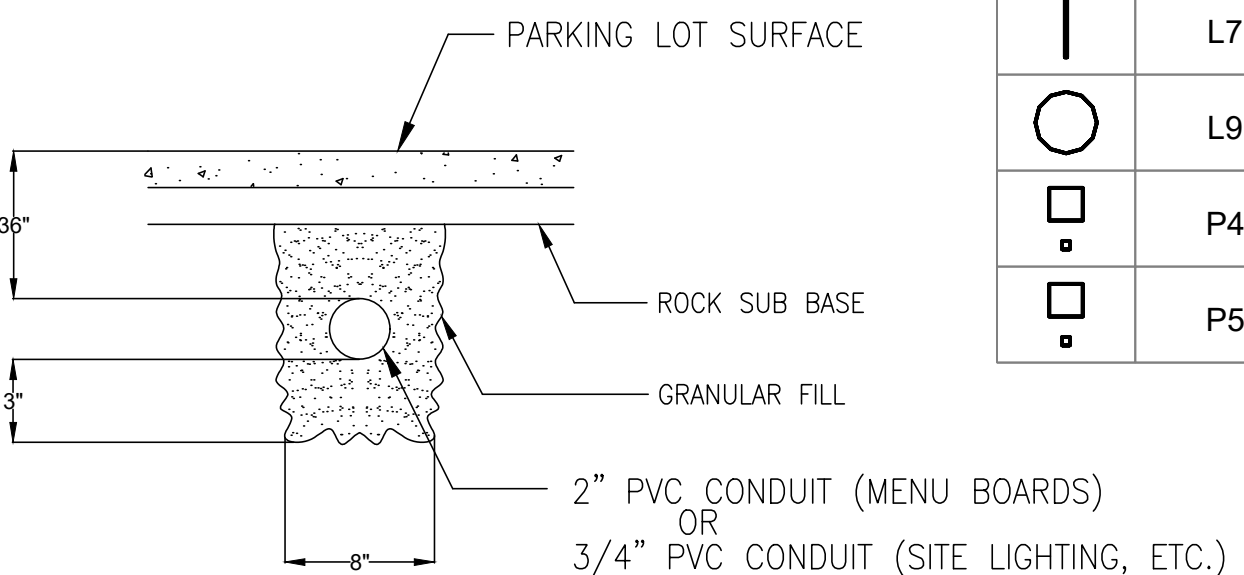


- KEYED NOTES**
- LOCATION OF UTILITY METER DISCONNECT SWITCH AND CT CABINET. REFER TO "RISER DIAGRAM" ON SHEET E3.01.
 - PROVIDE 120V ELECTRICAL CONNECTION WITH (2)#8 & (1)#6G. IN 2" PVC ROUTED BELOW GRADE FOR DRIVE-THRU BACKLIT MENU BOARD PER MANUFACTURER'S INSTRUCTIONS. CONDUIT SHALL COME UP IN CENTER OF POST. SIGN COMPANY REPRESENTATIVE TO GIVE EXACT LOCATIONS/DIMENSIONS FOR GC TO MATCH. CONTRACTOR SHALL REPAIR EXISTING PARKING SURFACES FROM TRENCHING TO MATCH PREVIOUS CONDITIONS.
 - PROVIDE 120V ELECTRICAL CONNECTION WITH (2)#8 & (1)#6G. IN 2" PVC ROUTED BELOW GRADE FOR NEW MONUMENT SIGN PER REPRESENTATIVE. PRIOR TO ROUGH-IN, CONTRACTOR SHALL REPAIR EXISTING PARKING SURFACES FROM TRENCHING TO MATCH PREVIOUS CONDITIONS.
 - PARKING LOT FIXTURES TO DIM TO 40% WHILE NOT OCCUPIED AND SET TO FULL BRIGHTNESS WHILE IN USE.
 - LOCATION OF CABLE INTERNET DEMARC
 - PROVIDE 2" CONDUIT W/ PULL STRING 24" BEHIND MENU BOARD TO CHRISTY BOX FOR FUTURE DIGITAL MENU BOARD UPGRADE. COORDINATE W/ SIGN MANUFACTURER.
 - PROVIDE 2" CONDUIT W/ PULL STRING TO CHRISTY BOX BETWEEN "CHOOSE LANE" DIRECTIONAL SIGNAGE AND CLEARANCE BAR FOR FUTURE DRIVE THRU SENSORS.

- GENERAL NOTES**
- FOR UTILITY TRANSFORMER, TELEPHONE SERVICE, GAS, WATER, AND SANITARY SEWER LOCATIONS; SEE CIVIL SITE PLAN.
 - THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR COORDINATION AND COMPLIANCE WITH ALL UTILITY COMPANIES REQUIREMENTS. INCOMING POWER AND TELEPHONE SERVICES IS EXISTING TO REMAIN. VERIFY REQUIREMENTS WITH UTILITIES PRIOR TO INSTALLATION.

- SITE NOTES**
- WATER LINES, CONDUITS FOR ELECTRICAL, OR OTHER UTILITIES SHALL BE LOCATED SO AS TO NOT CONFLICT WITH REQUIRED TREE LOCATIONS FOR STREETS AND PARKING LOTS.

Statistics						
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Perimeter	+	0.8 fc	2.9 fc	0.0 fc	N/A	N/A
Site	+	3.0 fc	25.6 fc	0.0 fc	N/A	N/A



3 TRENCHING DETAIL
SCALE: N.T.S.

Schedule									
Symbol	Label	Quantity	Manufacturer	Catalog Number	Description	Number Lamps	Lumens Per Lamp	Light Loss Factor	Wattage
	L6	2	RAB LIGHTING INC.	WPLED26-WPLED26/D10 (WALLPACK) - ALED26-ALED26/D10 (AREA LIGHTER)	CAST FINNED METAL HOUSING, MACHINED METAL HEAT SINK, 1 CIRCUIT BOARD WITH 1 LED, MOLDED PLASTIC REFLECTOR WITH SEMI-SPECULAR FINISH, CLEAR FLAT GLASS LENS IN CAST BROWN PAINTED METAL FRAME.	1	3474	0.93	30
	L7	4	Self	WPLED26-WPLED26/D10 (WALLPACK) - ALED26-ALED26/D10 (AREA LIGHTER)	CROWN-L90-277V 830_BA110	1	4200	0.93	40
	L9	8	DMF LIGHTING	DRDS8-4R-10930	DRDS8-4R-10930	1	1015	0.93	11.8
	P4	3	NLS Lighting	NV-1-T4-48L-1-40K-UNV-HSS	T4 OPTICS WITH BLACK HSS	1	9674	0.93	156
	P5	3	NLS Lighting, LLC	NV-1-T5-48L-1-40K	T5 silicone optics	1	19335	0.93	156

CASE
Engineering Inc.

796 Merus Court
St. Louis, MO 63106

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PORTLAND, OR 97214
V. 503.552.9079
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WWW.GNICHARCH.COM

02.18.2022

REV. DATE: DESCRIPTION:

SHEET NAME:

ELECTRICAL
SITE & PHOTOMETRIC
PLAN

SHEET NUMBER:

E0.01

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[illegible]

LANDSCAPE CALCULATIONS

- ## IRRIGATION CONCEPT

- ## PROJECT TEAM

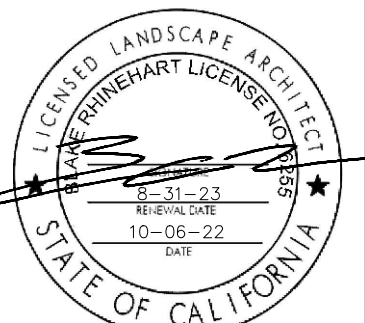
LANDSCAPE ARCHITECT:

EVERGREEN DESIGN GROUP
11801 PIERCE STREET, SUITE 200
RIVERSIDE, CA 92505
800-680-6630
WWW.EVERGREENDESIGNGROUP.COM
CONTACT: BLAKE RHINEHART, PLA
EMAIL: BLAKE@EVERGREENDESIGNGROUP.COM

LANDSCAPE PLANTING PLAN

Title:

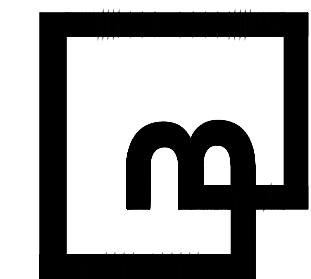
For:



Scale:

Designed BR

Barghausen
Consulting Engineers, Inc.
18215 72nd Avenue South
Kent, WA 98032
425.251.6222 **barghausen.com**



Job Number
22138

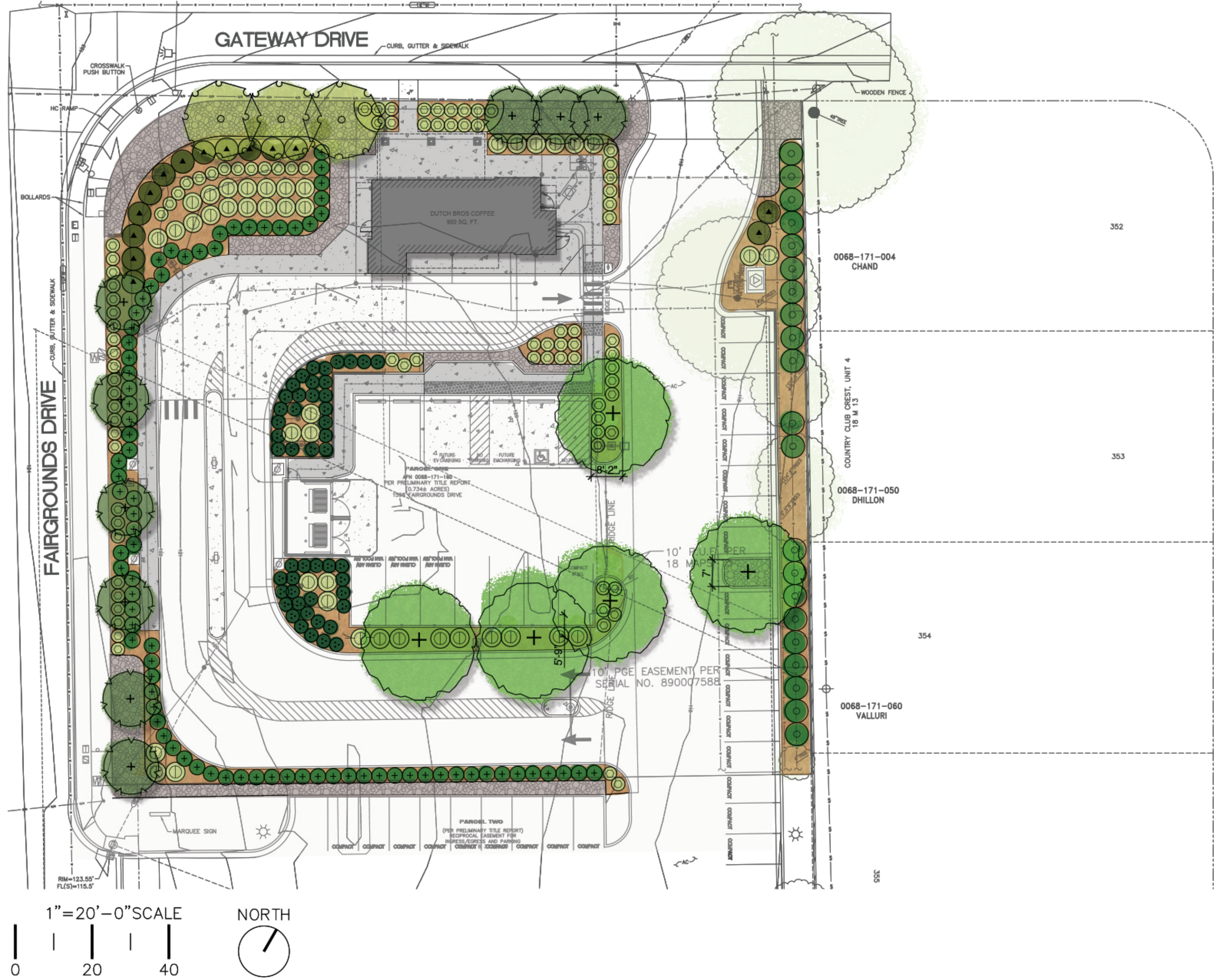
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LP-1
2019 DB
Franchising USA, LLC

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DUTCH BROS. COFFEE - CA0105, VALLEJO, CA
APN: 0068-171-160



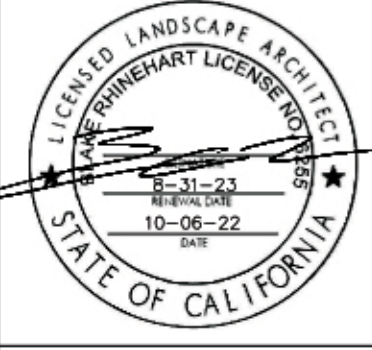
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Sheet
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2019 DB
Franchising USA, LLC

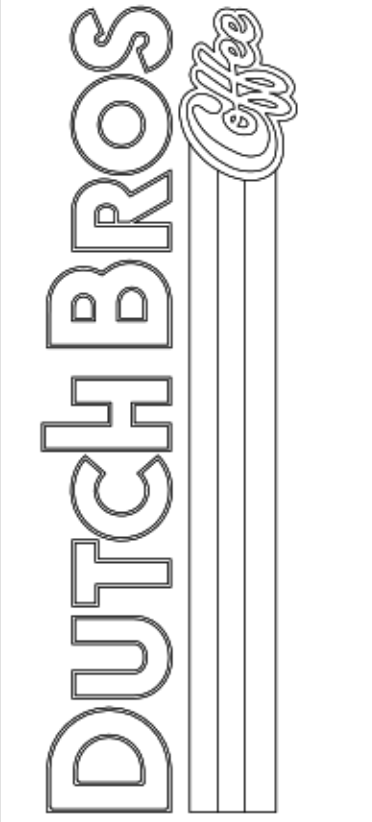
Barghausen Consulting Engineers, Inc.
18215 72nd Avenue South
Kent, WA 98032
425.251.6222 barghausen.com

Designed BR
Drawn BR
Checked BR/RM
Approved RM
Date 10-09-22

Scale:
Horizontal
Vertical



For:



Title:

LANDSCAPE PLANTING PLAN
1598 FAIRGROUNDS DRIVE
VALLEJO, CA 94589

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PLANTING SPECIFICATIONS

GENERAL

- A. QUALIFICATIONS OF LANDSCAPE CONTRACTOR
1. ALL LANDSCAPE WORK SHOWN ON THESE PLANS SHALL BE PERFORMED BY A SINGLE FIRM SPECIALIZING IN LANDSCAPE PLANTING.
 2. A LIST OF SUCCESSFULLY COMPLETED PROJECTS OF THIS TYPE, SIZE AND NATURE MAY BE REQUESTED BY THE OWNER FOR FURTHER QUALIFICATION MEASURES.
- B. SCOPE OF WORK
1. WORK COVERED BY THESE SECTIONS INCLUDES THE FURNISHING AND PAYMENT OF ALL MATERIALS, LABOR, SERVICES, EQUIPMENT, LICENSES, TAXES AND ANY OTHER ITEMS THAT ARE NECESSARY FOR THE EXECUTION, INSTALLATION AND COMPLETION OF ALL WORK, SPECIFIED HEREIN AND /OR SHOWN ON THE LANDSCAPE PLANS, NOTES, AND DETAILS.
 2. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE LAWS, CODES AND REGULATIONS REQUIRED BY AUTHORITIES HAVING JURISDICTION OVER SUCH WORK, INCLUDING ALL INSPECTIONS AND PERMITS REQUIRED BY FEDERAL, STATE AND LOCAL AUTHORITIES IN SUPPLY, TRANSPORTATION AND INSTALLATION OF MATERIALS.
 3. THE LANDSCAPE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UNDERGROUND UTILITY LINES (WATER, SEWER, ELECTRICAL, TELEPHONE, GAS, CABLE, TELEVISION, ETC.) PRIOR TO THE START OF ANY WORK.

PRODUCTS

- A. ALL MANUFACTURED PRODUCTS SHALL BE NEW.
- B. CONTAINER AND BALLED-AND-BURLAPPED PLANTS:
1. FURNISH NURSERY-GROWN PLANTS COMPLYING WITH THE AMERICAN STANDARD FOR NURSERY STOCK (ANSI Z60.1-2014). PROVIDE WELL-SHAPED, FULLY BRANCHED, HEALTHY, VIGOROUS STOCK FREE OF DISEASE, INSECTS, EGGS, LARVAE, AND DEFECTS SUCH AS KNOTS, SUN SCALD, INJURIES, ABRASIONS, AND DISFIGUREMENT. ALL PLANTS WITHIN A SPECIES SHALL HAVE SIMILAR SIZE AND SHALL BE OF A FORM TYPICAL FOR THE SPECIES. ALL TREES SHALL BE OBTAINED FROM SOURCES WITHIN 200 MILES OF THE PROJECT SITE, AND WITH SIMILAR CLIMATIC CONDITIONS.
 2. ROOT SYSTEMS SHALL BE HEALTHY, DENSELY BRANCHED ROOT SYSTEMS, NON-POT-BOUND, FREE FROM ENCIRCLING AND/OR GIRDLING ROOTS, AND FREE FROM ANY OTHER ROOT DEFECTS (SUCH AS J-SHAPED ROOTS).
 3. TREES MAY BE PLANTED FROM CONTAINERS OR BALLED-AND-BURLAPPED (B&B), UNLESS SPECIFIED ON THE PLANTING LEGEND. BARE-ROOT TREES ARE NOT ACCEPTABLE.
 4. ANY PLANT DEEMED UNACCEPTABLE BY THE OWNER OR OWNER'S REPRESENTATIVE SHALL BE IMMEDIATELY REMOVED FROM THE SITE AND SHALL BE REPLACED WITH AN ACCEPTABLE PLANT OF LIKE TYPE AND SIZE AT THE CONTRACTOR'S OWN EXPENSE. ANY PLANTS APPEARING TO BE UNHEALTHY, EVEN IF DETERMINED TO STILL BE ALIVE, SHALL NOT BE ACCEPTED. THE OWNER OR OWNER'S REPRESENTATIVE SHALL BE THE SOLE JUDGES AS TO THE ACCEPTABILITY OF PLANT MATERIAL.
 5. ALL TREES SHALL BE STANDARD IN FORM, UNLESS OTHERWISE SPECIFIED. TREES WITH CENTRAL LEADERS WILL NOT BE ACCEPTED IF LEADER IS DAMAGED OR REMOVED. PRUNE ALL DAMAGED TWIGS AFTER PLANTING.
 6. CALIPER MEASUREMENTS FOR STANDARD (SINGLE TRUNK) TREES SHALL BE AS FOLLOWS: SIX INCHES ABOVE THE ROOT FLARE FOR TREES UP TO AND INCLUDING FOUR INCHES IN CALIPER, AND TWELVE INCHES ABOVE THE ROOT FLARE FOR TREES EXCEEDING FOUR INCHES IN CALIPER.
 7. MULTI-TRUNK TREES SHALL BE MEASURED BY THEIR OVERALL HEIGHT, MEASURED FROM THE TOP OF THE ROOT BALL, WHERE CALIPER MEASUREMENTS ARE USED, THE CALIPER SHALL BE CALCULATED AS ONE-HALF OF THE SUM OF THE CALIPER OF THE THREE LARGEST TRUNKS.
 8. ANY TREE OR SHRUB SHOWN TO HAVE EXCESS SOIL PLACED ON TOP OF THE ROOT BALL, SO THAT THE ROOT FLARE HAS BEEN COMPLETELY COVERED, SHALL BE REJECTED.
- C. TOPSOIL: SANDY TO CLAY LOAM TOPSOIL, FREE OF STONES LARGER THAN ½ INCH, FOREIGN MATTER, PLANTS, ROOTS, AND SEEDS.
- D. COMPOST: WELL-COMPOSTED, STABLE, AND WEED-FREE ORGANIC MATTER, pH RANGE OF 5.5 TO 8; MOISTURE CONTENT 35 TO 55 PERCENT BY WEIGHT; 100 PERCENT PASSING THROUGH 3/4-INCH SIEVE; SOLUBLE SALT CONTENT OF 5 TO 10 DECISIEMENS/M; NOT EXCEEDING 0.5 PERCENT INERT CONTAMINANTS AND FREE OF SUBSTANCES TOXIC TO PLANTINGS. NO MANURE OR ANIMAL-BASED PRODUCTS SHALL BE USED.
- E. FERTILIZER: GRANULAR FERTILIZER CONSISTING OF NITROGEN, PHOSPHORUS, POTASSIUM, AND OTHER NUTRIENTS IN PROPORTIONS, AMOUNTS, AND RELEASE RATES RECOMMENDED IN A SOIL REPORT FROM A QUALIFIED SOIL-TESTING AGENCY (SEE BELOW).
- F. MULCH: SIZE AND TYPE AS INDICATED ON PLANS, FREE FROM DELETERIOUS MATERIALS AND SUITABLE AS A TOP DRESSING OF TREES AND SHRUBS.
- G. TREE STAKING AND GUYING
1. STAKES: 6" LONG GREEN METAL T-POSTS.
 2. GUY AND TIE WIRE: ASTM A 641, CLASS 1, GALVANIZED STEEL WIRE, 2-STRAND, TWISTED, 0.106 INCH DIAMETER.
 3. STRAP CHAFING GUARD: REINFORCED NYLON OR CANVAS AT LEAST 1-1/2 INCH WIDE, WITH GROMMETS TO PROTECT TREE TRUNKS FROM DAMAGE.
- I. PRE-EMERGENT HERBICIDES: ANY GRANULAR, NON-STAINING, PRE-EMERGENT HERBICIDE THAT IS LABELED FOR THE SPECIFIC ORNAMENTALS OR TURF ON WHICH IT WILL BE UTILIZED. PRE-EMERGENT HERBICIDES SHALL BE APPLIED PER THE MANUFACTURER'S LABELED RATES.

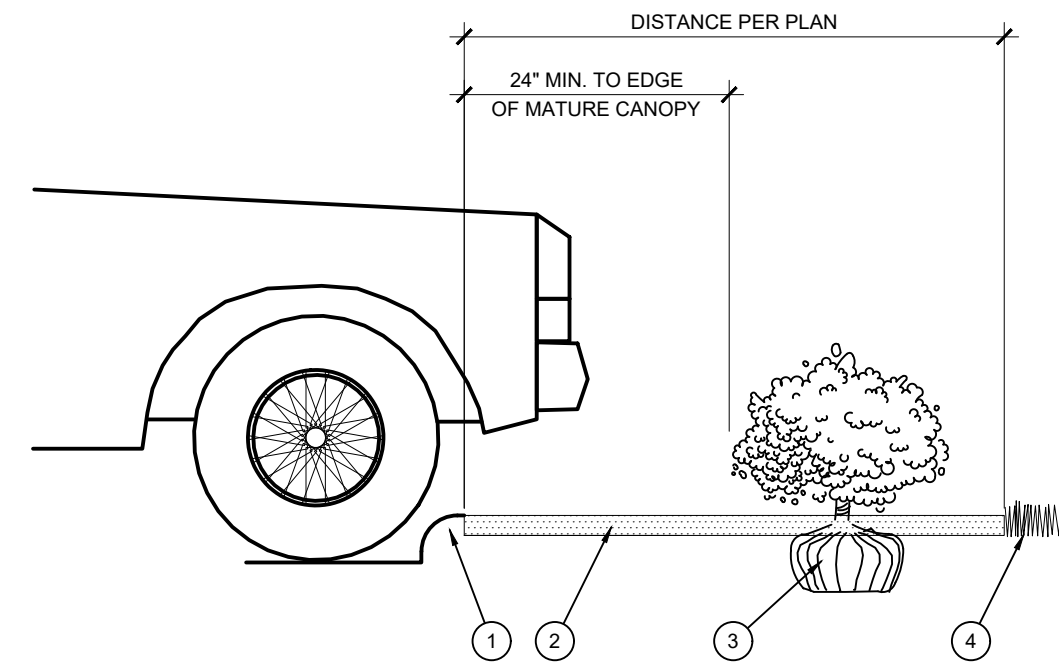
METHODS

- A. SOIL PREPARATION
1. BEFORE STARTING WORK, THE LANDSCAPE CONTRACTOR SHALL VERIFY THAT THE GRADE OF ALL LANDSCAPE AREAS ARE WITHIN +0.1" OF FINISH GRADE. THE CONTRACTOR SHALL NOTIFY THE OWNER IMMEDIATELY SHOULD ANY DISCREPANCIES EXIST.
 2. SOIL TESTING:
 - a. AFTER FINISH GRADES HAVE BEEN ESTABLISHED, CONTRACTOR SHALL HAVE SOIL SAMPLES FROM THE PROJECT'S LANDSCAPE AREAS TESTED BY AN ESTABLISHED SOIL TESTING LABORATORY. EACH SAMPLE SUBMITTED TO THE LAB SHALL CONTAIN NO LESS THAN ONE QUART OF SOIL TAKEN FROM BETWEEN THE SOIL SURFACE AND 6" DEPTH. IF NO SAMPLE LOCATIONS ARE INDICATED ON THE PLANS, THE CONTRACTOR SHALL TAKE A MINIMUM OF THREE SAMPLES FROM VARIOUS REPRESENTATIVE LOCATIONS FOR TESTING.
 - b. THE CONTRACTOR SHALL HAVE THE SOIL TESTING LABORATORY PROVIDE RESULTS FOR THE FOLLOWING: SOIL TEXTURAL CLASS, GENERAL SOIL FERTILITY, pH, ORGANIC MATTER CONTENT, SALT (CEC), LIME, SODIUM ADSORPTION RATIO (SAR) AND BORON CONTENT.
 - c. THE CONTRACTOR SHALL ALSO SUBMIT THE PROJECT'S PLANT LIST TO THE LABORATORY ALONG WITH THE SOIL SAMPLES.
 - d. THE SOIL REPORT PRODUCED BY THE LABORATORY SHALL CONTAIN RECOMMENDATIONS FOR THE FOLLOWING (AS APPROPRIATE): SEPARATE SOIL PREPARATION AND BACKFILL MIX RECOMMENDATIONS FOR GENERAL ORNAMENTAL PLANTS, XERIC PLANTS, TURF, AND NATIVE SEED, AS WELL AS PRE-PLANT FERTILIZER APPLICATIONS AND RELATIONS FOR ANY OTHER SOIL RELATED ISSUES. THE REPORT SHALL ALSO PROVIDE A FERTILIZER PROGRAM FOR THE ESTABLISHMENT PERIOD AND FOR LONG-TERM MAINTENANCE.
 3. THE CONTRACTOR SHALL INSTALL SOIL AMENDMENTS AND FERTILIZERS PER THE SOILS REPORT RECOMMENDATIONS. ANY CHANGE IN COST DUE TO THE SOIL REPORT RECOMMENDATIONS, EITHER INCREASE OR DECREASE, SHALL BE SUBMITTED TO THE OWNER WITH THE REPORT.
 4. FOR BIDDING PURPOSES ONLY, THE SOIL PREPARATION SHALL CONSIST OF THE FOLLOWING:
 - a. TURF: INCORPORATE THE FOLLOWING AMENDMENTS INTO THE TOP 8" OF SOIL BY MEANS OF ROTOTILLING AFTER CROSS-RIPPING:
 - i. NITROGEN STABILIZED ORGANIC AMENDMENT - 4 CU. YDS. PER 1,000 S.F.
 - ii. PREPLANT TURF FERTILIZER (10-20-10 OR SIMILAR, SLOW RELEASE, ORGANIC) - 15 LBS PER 1,000 S.F.
 - iii. "CLAY BUSTER" OR EQUAL - USE MANUFACTURER'S RECOMMENDED RATE
 - b. TREES, SHRUBS, AND PERENNIALS: INCORPORATE THE FOLLOWING AMENDMENTS INTO THE TOP 8" OF SOIL BY MEANS OF ROTOTILLING AFTER CROSS-RIPPING:
 - i. NITROGEN STABILIZED ORGANIC AMENDMENT - 4 CU. YDS. PER 1,000 S.F.
 - ii. 12-12-12 FERTILIZER (OR SIMILAR, ORGANIC, SLOW RELEASE) - 10 LBS. PER CU. YD.
 - iii. "CLAY BUSTER" OR EQUAL - USE MANUFACTURER'S RECOMMENDED RATE
 - iv. IRON SULPHATE - 2 LBS. PER CU. YD.
 5. IN THE CONTEXT OF THESE PLANS, NOTES, AND SPECIFICATIONS, "FINISH GRADE" REFERS TO THE FINAL ELEVATION OF THE SOIL SURFACE (NOT TOP OF MULCH) AS INDICATED ON THE GRADING PLANS.
 - a. BEFORE STARTING WORK, THE LANDSCAPE CONTRACTOR SHALL VERIFY THAT THE ROUGH GRADES OF ALL LANDSCAPE AREAS ARE WITHIN +0.1" OF FINISH GRADE. SEE SPECIFICATIONS FOR MORE DETAILED INSTRUCTION ON TURF AREA AND PLANTING PREPARATION.
 - b. CONSTRUCT AND MAINTAIN FINISH GRADES AS SHOWN ON GRADING PLANS, AND CONSTRUCT AND MAINTAIN SLOPES AS RECOMMENDED BY THE GEOTECHNICAL REPORT. ALL LANDSCAPE AREAS SHALL HAVE POSITIVE DRAINAGE AWAY FROM STRUCTURES AT THE MINIMUM SOLE SPECIFIED IN THE REPORT AND ON THE GRADING PLANS, AND AREAS OF POTENTIAL PONDING SHALL BE REGRADED TO BLEND IN WITH THE SURROUNDING GRADES AND ELIMINATE PONDING POTENTIAL.
 - c. THE LANDSCAPE CONTRACTOR SHALL DETERMINE WHETHER OR NOT THE EXPORT OF ANY SOIL WILL BE NEEDED, TAKING INTO ACCOUNT THE ROUGH GRADE PROVIDED, THE AMOUNT OF SOIL AMENDMENTS TO BE ADDED (BASED ON A SOIL TEST, PER SPECIFICATIONS), AND THE FINISH GRADES TO BE ESTABLISHED.
 - d. ENSURE THAT THE FINISH GRADE IN SHRUB AREAS IMMEDIATELY ADJACENT TO WALKS AND OTHER WALKING SURFACES, AFTER INSTALLING SOIL AMENDMENTS, IS 3" BELOW THE ADJACENT FINISH SURFACE, IN ORDER TO ALLOW FOR PROPER MULCH DEPTH. TAPER THE SOIL SURFACE TO MEET FINISH GRADE, AS SPECIFIED ON THE GRADING PLANS, AT APPROXIMATELY 18" AWAY FROM THE WALKS.
 - e. ENSURE THAT THE FINISH GRADE IN TURF AREAS IMMEDIATELY ADJACENT TO WALKS AND OTHER WALKING SURFACES, AFTER INSTALLING SOIL AMENDMENTS, IS 1" BELOW THE FINISH SURFACE OF THE WALKS. TAPER THE SOIL SURFACE TO MEET FINISH GRADE, AS SPECIFIED ON THE GRADING PLANS, AT APPROXIMATELY 18" AWAY FROM THE WALKS.
 - f. SHOULD ANY CONFLICTS AND/OR DISCREPANCIES ARISE BETWEEN THE GRADING PLANS, GEOTECHNICAL REPORT, THESE NOTES AND PLANS, AND ACTUAL CONDITIONS, THE CONTRACTOR SHALL IMMEDIATELY BRING SUCH ITEMS TO THE ATTENTION OF THE GENERAL CONTRACTOR, OWNER, OR OWNER'S REPRESENTATIVE.
 6. ONCE SOIL PREPARATION IS COMPLETE, THE LANDSCAPE CONTRACTOR SHALL ENSURE THAT THERE ARE NO DEBRIS, TRASH, OR STONES LARGER THAN 1" REMAINING IN THE TOP 6" OF SOIL.
- B. SUBMITTALS
1. THE CONTRACTOR SHALL PROVIDE SUBMITTALS AND SAMPLES, IF REQUIRED, TO THE OWNER OR OWNER'S REPRESENTATIVE, AND RECEIVE APPROVAL IN WRITING FOR SUCH SUBMITTALS BEFORE WORK COMMENCES.
 2. SUBMITTALS SHALL INCLUDE PHOTOS OF PLANTS WITH A RULER OR MEASURING STICK FOR SCALE, PHOTOS OR SAMPLES OF ANY REQUIRED MULCHES, AND SOIL TEST RESULTS AND PREPARATION RECOMMENDATIONS FROM THE TESTING LAB (INCLUDING COMPOST AND FERTILIZER RATES AND TYPES, AND OTHER AMENDMENTS FOR TREES/SHRUB, TURF, AND SEED AREAS AS MAY BE APPROPRIATE).
 3. SUBMITTALS SHALL ALSO INCLUDE MANUFACTURER CUT SHEETS FOR PLANTING ACCESSORIES SUCH AS TREE STAKES AND TIES, EDGING, AND LANDSCAPE FABRICS (IF ANY).
 4. WHERE MULTIPLE ITEMS ARE SHOWN ON A PAGE, THE CONTRACTOR SHALL CLEARLY INDICATE THE ITEM BEING CONSIDERED.
- C. GENERAL PLANTING

1. REMOVE ALL NURSERY TAGS AND STAKES FROM PLANTS.
 2. EXCEPT IN AREAS TO BE PLANTED WITH ORNAMENTAL GRASSES, APPLY PRE-EMERGENT HERBICIDES AT THE MANUFACTURER'S RECOMMENDED RATE.
 3. POSITION THE TREES AND SHRUBS IN THEIR INTENDED LOCATION AS PER THE PLAN, NOTIFY THE OWNER'S REPRESENTATIVE FOR INSPECTION AND APPROVAL OF ALL POSITIONING OF PLANT MATERIALS.
 4. TRENCHING NEAR EXISTING TREES:
 - a. CONTRACTOR SHALL NOT DISTURB ROOTS 1-1/2" AND LARGER IN DIAMETER WITHIN THE CRITICAL ROOT ZONE (CRZ) OF EXISTING TREES, AND SHALL EXERCISE ALL POSSIBLE CARE AND PRECAUTIONS TO AVOID INJURY TO TREE ROOTS, TRUNKS, AND BRANCHES. THE CRZ IS DEFINED AS A CIRCULAR AREA EXTENDING OUTWARD FROM THE TREE TRUNK, WITH A RADIUS EQUAL TO 1" FOR EVERY 1" OF TRUNK DIAMETER-AT-BREAST-HEIGHT (4.5 ABOVE THE AVERAGE GRADE AT THE TRUNK).
 - b. ALL EXCAVATION WITHIN THE CRZ SHALL BE PERFORMED USING HAND TOOLS. NO MACHINE EXCAVATION OR TRENCHING OF ANY KIND SHALL BE ALLOWED WITHIN THE CRZ.
 - c. ALTER ALIGNMENT OF PIPE TO AVOID TREE ROOTS 1-1/2" AND LARGER IN DIAMETER, WHERE TREE ROOTS 1-1/2" AND LARGER IN DIAMETER ARE ENCOUNTERED IN THE FIELD, TUNNEL UNDER SUCH ROOTS. WRAP EXPOSED ROOTS WITH SEVERAL LAYERS OF BURLAP AND KEEP MOIST. CLOSE ALL TRENCHES WITHIN THE CANOPY DRIP LINES WITHIN 24 HOURS.
 - d. ALL SEVERED ROOTS SHALL BE HAND PRUNED WITH SHARP TOOLS AND ALLOWED TO AIR-DRY. DO NOT USE ANY SORT OF SEALERS OR WOUND PAINTS.
- D. TREE PLANTING
1. TREE PLANTING HOLES SHALL BE EXCAVATED TO MINIMUM WIDTH OF TWO TIMES THE WIDTH OF THE ROOTBALL, AND TO A DEPTH EQUAL TO THE DEPTH OF THE ROOTBALL LESS TWO TO FOUR INCHES.
 2. SCARIFY THE SIDES AND BOTTOM OF THE PLANTING HOLE PRIOR TO THE PLACEMENT OF THE TREE. REMOVE ANY GLAZING THAT MAY HAVE BEEN CAUSED DURING THE EXCAVATION OF THE HOLE.
 3. FOR CONTAINER AND BOX TREES, TO REMOVE ANY POTENTIALLY GIRDLING ROOTS AND OTHER ROOT DEFECTS, THE CONTRACTOR SHALL SHAVE A 1" LAYER OFF OF THE SIDES AND BOTTOM OF THE ROOTBALL OF ALL TREES JUST BEFORE PLACING INTO THE PLANTING PIT. DO NOT "TEASE" ROOTS OUT FROM THE ROOTBALL.
 4. INSTALL THE TREE ON UNDISTURBED SUBGRADE SO THAT THE TOP OF THE ROOTBALL IS TWO TO FOUR INCHES ABOVE THE SURROUNDING GRADE.
 5. BACKFILL THE TREE HOLE UTILIZING THE EXISTING TOPSOIL FROM ON-SITE. ROCKS LARGER THAN 1" DIA. AND ALL OTHER DEBRIS SHALL BE REMOVED FROM THE SOIL PRIOR TO THE BACKFILL. SHOULD ADDITIONAL SOIL BE REQUIRED TO ACCOMPLISH THIS TASK, USE STORED TOPSOIL FROM ON-SITE OR IMPORT ADDITIONAL TOPSOIL FROM OFF-SITE AT NO ADDITIONAL COST TO THE OWNER. IMPORTED TOPSOIL SHALL BE OF SIMILAR TEXTURAL CLASS AND COMPOSITION IN THE ON-SITE SOIL.
 6. TREES SHALL NOT BE STAKED UNLESS THE JURISDICTION OR LOCAL CONDITIONS (SUCH AS HEAVY WINDS OR SLOPES) REQUIRE STAKES TO KEEP TREES UPRIGHT. SHOULD STAKING BE REQUIRED, THE TOTAL NUMBER OF TREE STAKES (BEYOND THE MINIMUMS LISTED BELOW) WILL BE LEFT TO THE LANDSCAPE CONTRACTOR'S DISCRETION. SHOULD ANY TREES FALL OR LEAN, THE LANDSCAPE CONTRACTOR SHALL STRAIGHTEN THE TREE, OR REPLACE IT SHOULD IT BECOME DAMAGED. TREE STAKING SHALL ADHERE TO THE FOLLOWING GUIDELINES:
 - a. 1"-2" TREES (OR #15 GAL - 24" BOX): TWO STAKES PER TREE
 - b. 2"-12" 4" TREES (OR #16" - 48" BOX): THREE STAKES PER TREE
 - c. TREES OVER 4" CALIPER (OR >48" BOX): GUY AS NEEDED
 - d. MULTI-TRUNK TREES: THREE STAKES PER TREE MINIMUM, QUANTITY AND POSITIONS AS NEEDED TO STABILIZE THE TREE
 7. UPON COMPLETION OF PLANTING, CONSTRUCT AN EARTH WATERING BASIN AROUND THE TREE. COVER THE INTERIOR OF THE TREE RING WITH MULCH (TYPE AND DEPTH PER PLANS).
 8. FOR TREES IN TURF AREAS, DO NOT PLANT GRASS ALL THE WAY TO THE TRUNK OF THE TREE. LEAVE THE AREA OVER THE ROOT BALL AND INSTALL MULCH WITH AT LEAST 2" OF SPECIFIED MULCH. SEE MULCH SPECIFICATION FOR ADDITIONAL INFORMATION.
- E. SHRUB, PERENNIAL, AND GROUND COVER PLANTING
4. DIG THE PLANTING HOLES TWICE AS WIDE AND 2" LESS DEEP THAN EACH PLANT'S ROOTBALL. INSTALL THE PLANT IN THE HOLE. BACKFILL AROUND THE PLANT WITH SOIL AMENDED PER SOIL TEST RECOMMENDATIONS.
 5. INSTALL THE WEED BARRIER CLOTH, OVERLAPPING IT AT THE ENDS. UTILIZE STEEL STAPLES TO KEEP THE WEED BARRIER CLOTH IN PLACE.
 6. WHEN PLANTING IS COMPLETE, INSTALL MULCH (TYPE AND DEPTH PER PLANS) OVER ALL PLANTING BEDS, COVERING THE ENTIRE PLANTING AREA.
- I. MULCH
6. INSTALL MULCH TOPDRESSING, TYPE AND DEPTH PER MULCH NOTE, IN ALL PLANTING AREAS AND TREE RINGS.
 7. DO NOT INSTALL MULCH WITHIN 6" OF TREE ROOT FLARE. MULCH AT THE BASE OF SHRUBS SHALL BE A MAXIMUM 1" DEPTH OVER ROOT BALL.
 8. MULCH COVER WITHIN 6" OF CONCRETE WALKS AND CURBS SHALL NOT PROTRUDE ABOVE THE FINISH SURFACE OF THE WALKS AND CURBS. FINISH GRADE OF MULCH AT CURBS AND SIDEWALKS SHALL BE 1" LOWER THAN THE ADJACENT CURB OR SIDEWALK. MULCH COVER WITHIN 12" OF WALLS SHALL BE AT LEAST 3" LOWER THAN THE TOP OF WALL.
- J. CLEAN UP
1. DURING LANDSCAPE PREPARATION AND PLANTING, KEEP ALL PAVEMENT CLEAN AND ALL WORK AREAS IN A NEAT, ORDERLY CONDITION.
 2. DISPOSED LEGALLY OF ALL EXCAVATED MATERIALS OFF THE PROJECT SITE.
- K. INSPECTION AND ACCEPTANCE
1. UPON COMPLETION OF THE WORK, THE LANDSCAPE CONTRACTOR SHALL PROVIDE THE SITE CLEAN, FREE OF DEBRIS AND TRASH, AND SUITABLE FOR USE AS INTENDED. THE LANDSCAPE CONTRACTOR SHALL THEN REQUEST AN INSPECTION BY THE OWNER TO DETERMINE FINAL ACCEPTABILITY.
 2. WHEN THE INSPECTED PLANTING WORK DOES NOT COMPLY WITH THE CONTRACT DOCUMENTS, THE LANDSCAPE CONTRACTOR SHALL REPLACE AND/OR REPAIR THE REJECTED WORK TO THE OWNER'S SATISFACTION WITHIN 24 HOURS.
 3. THE LANDSCAPE MAINTENANCE PERIOD WILL NOT COMMENCE UNTIL THE LANDSCAPE WORK HAS BEEN RE-INSPECTED BY THE OWNER AND FOUND TO BE ACCEPTABLE. AT THAT TIME, A WRITTEN NOTICE OF FINAL ACCEPTANCE WILL BE ISSUED BY THE OWNER, AND THE MAINTENANCE AND GUARANTEE PERIODS WILL COMMENCE.
- L. LANDSCAPE MAINTENANCE
1. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF ALL WORK SHOWN ON THESE PLANS FOR 90 DAYS BEYOND FINAL ACCEPTANCE OF ALL LANDSCAPE WORK BY THE OWNER. LANDSCAPE MAINTENANCE SHALL INCLUDE WEEKLY SITE VISITS FOR THE FOLLOWING ACTIONS (AS APPROPRIATE): PROPER PRUNING, RESTAKING OF TREES, RESETTling OF PLANTS THAT HAVE SETTLED, MOWING AND AERATION OF LAWNS, WEEDING, TREATING FOR INSECTS AND DISEASES, REPLACEMENT OF MULCH, REMOVAL OF LITTER, REPAIRS TO THE IRRIGATION SYSTEM DUE TO FAULTY PARTS AND/OR WORKMANSHIP, AND THE APPROPRIATE WATERING OF ALL PLANTINGS. THE LANDSCAPE CONTRACTOR SHALL MAINTAIN THE IRRIGATION SYSTEM IN PROPER WORKING ORDER, WITH SCHEDULING ADJUSTMENTS BY SEASON TO MAXIMIZE WATER CONSERVATION.
 2. SHOULD SEEDING AND/OR SODDED AREAS NOT BE COVERED BY AN AUTOMATIC IRRIGATION SYSTEM, THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR WATERING THESE AREAS AND OBTAINING A FULL, HEALTHY STAND OF PLANTS AT NO ADDITIONAL COST TO THE OWNER.
 3. TO ACHIEVE FINAL ACCEPTANCE AT THE END OF THE MAINTENANCE PERIOD, ALL OF THE FOLLOWING CONDITIONS MUST OCCUR:
 - i. THE LANDSCAPE SHALL SHOW ACTIVE, HEALTHY GROWTH (WITH EXCEPTIONS MADE FOR SEASONAL DORMANCY). ALL PLANTS NOT MEETING THIS CONDITION SHALL BE REJECTED AND REPLACED BY HEALTHY PLANT MATERIAL PRIOR TO FINAL ACCEPTANCE.
 - j. ALL HARDSCAPE SHALL BE CLEANED PRIOR TO FINAL ACCEPTANCE.
 - k. SODDED AREAS MUST BE ACTIVELY GROWING AND MUST REACH A MINIMUM HEIGHT OF 1 1/2 INCHES BEFORE FIRST MOWING. BARE AREAS LARGER THAN TWELVE SQUARE INCHES MUST BE RESODDED (AS APPROPRIATE) PRIOR TO FINAL ACCEPTANCE. ALL SODDED TURF SHALL BE NEATLY MOWED.
- M. WARRANTY PERIOD, PLANT GUARANTEE AND REPLACEMENTS
1. THE LANDSCAPE CONTRACTOR SHALL GUARANTEE ALL TREES, SHRUBS, PERENNIALS, SOD, AND IRRIGATION SYSTEMS FOR A PERIOD OF ONE YEAR FROM THE DATE OF THE OWNER'S FINAL ACCEPTANCE (90 DAYS FOR ANNUAL PLANTS). THE CONTRACTOR SHALL REPLACE, AT HIS OWN EXPENSE AND TO THE SATISFACTION OF THE OWNER, ANY PLANTS WHICH DIE IN THAT TIME, OR REPAIR ANY PORTIONS OF THE IRRIGATION SYSTEM WHICH OPERATE IMPROPERLY.
 2. AFTER THE INITIAL MAINTENANCE PERIOD AND DURING THE GUARANTEE PERIOD, THE LANDSCAPE CONTRACTOR SHALL ONLY BE RESPONSIBLE FOR REPLACEMENT OF PLANTS WHEN PLANT DEATH CANNOT BE ATTRIBUTED DIRECTLY TO OVERWATERING OR OTHER DAMAGE BY HUMAN ACTIONS.
- N. PROVIDE A MINIMUM OF (2) COPIES OF RECORD DRAWINGS TO THE OWNER UPON COMPLETION OF WORK. A RECORD DRAWING IS A RECORD OF ALL CHANGES THAT OCCURRED IN THE FIELD AND THAT ARE DOCUMENTED THROUGH CHANGE ORDERS, ADDENDA, OR CONTRACTOR/CONSULTANT DRAWING MARKUPS.
- O. WARRANTY PERIOD, PLANT GUARANTEE AND REPLACEMENTS
1. THE LANDSCAPE CONTRACTOR SHALL GUARANTEE ALL TREES, SHRUBS, PERENNIALS, SOD, AND IRRIGATION SYSTEMS FOR A PERIOD OF ONE YEAR FROM THE DATE OF THE OWNER'S FINAL ACCEPTANCE (90 DAYS FOR ANNUAL PLANTS). THE CONTRACTOR SHALL REPLACE, AT HIS OWN EXPENSE AND TO THE SATISFACTION OF THE OWNER, ANY PLANTS WHICH DIE IN THAT TIME, OR REPAIR ANY PORTIONS OF THE IRRIGATION SYSTEM WHICH OPERATE IMPROPERLY.
 2. AFTER THE INITIAL MAINTENANCE PERIOD AND DURING THE GUARANTEE PERIOD, THE LANDSCAPE CONTRACTOR SHALL ONLY BE RESPONSIBLE FOR REPLACEMENT OF PLANTS WHEN PLANT DEATH CANNOT BE ATTRIBUTED DIRECTLY TO OVERWATERING OR OTHER DAMAGE BY HUMAN ACTIONS.
- P. PROVIDE A MINIMUM OF (2) COPIES OF RECORD DRAWINGS TO THE OWNER UPON COMPLETION OF WORK. A RECORD DRAWING IS A RECORD OF ALL CHANGES THAT OCCURRED IN THE FIELD AND THAT ARE DOCUMENTED THROUGH CHANGE ORDERS, ADDENDA, OR CONTRACTOR/CONSULTANT DRAWING MARKUPS.

D STEEL EDGING

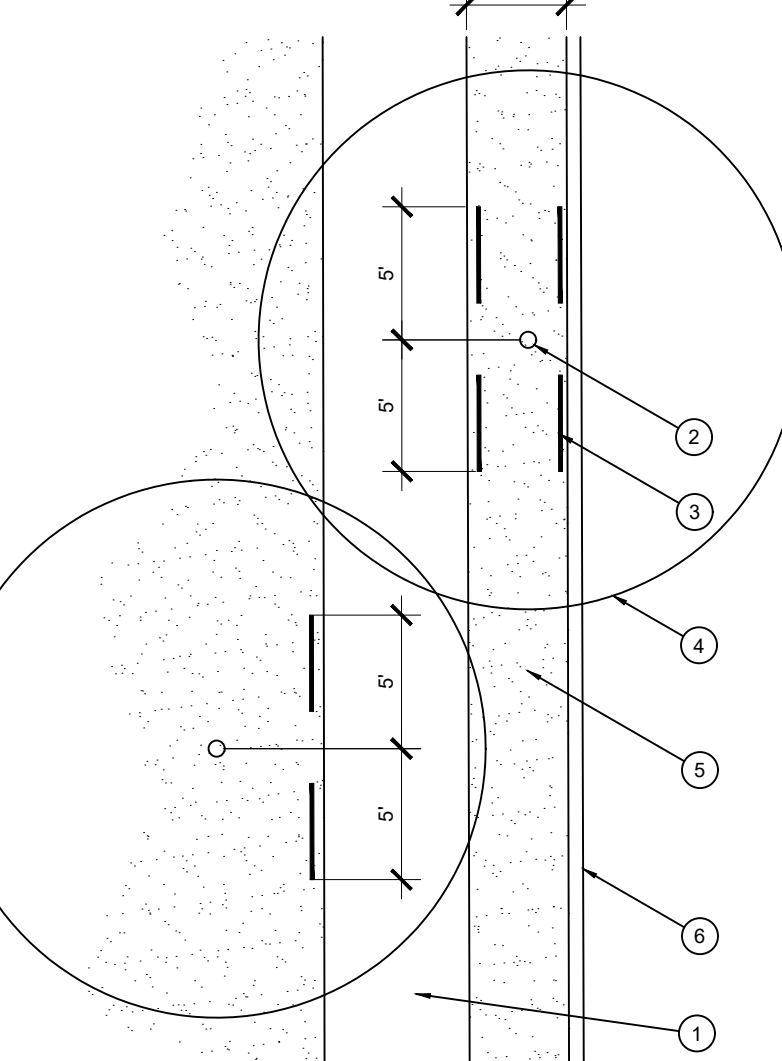
SCALE: NOT TO SCALE



E PLANTING AT PARKING AREA

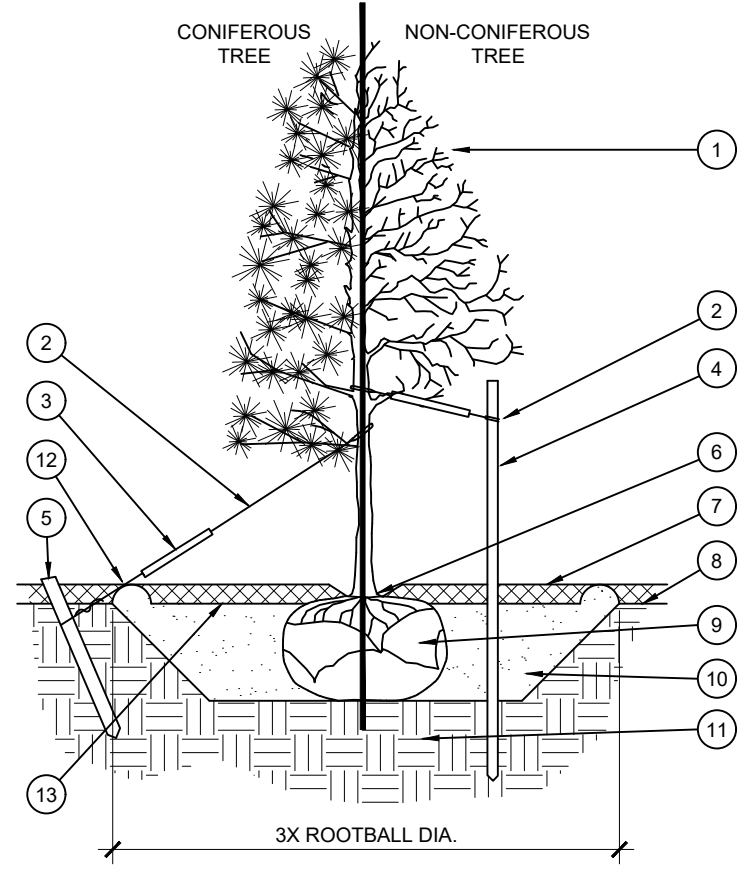
SCALE: NOT TO SCALE

OPEN LANDSCAPE

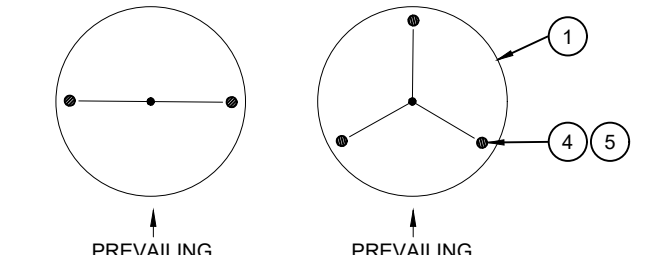


F ROOT BARRIER - PLAN VIEW

SCALE: NOT TO SCALE

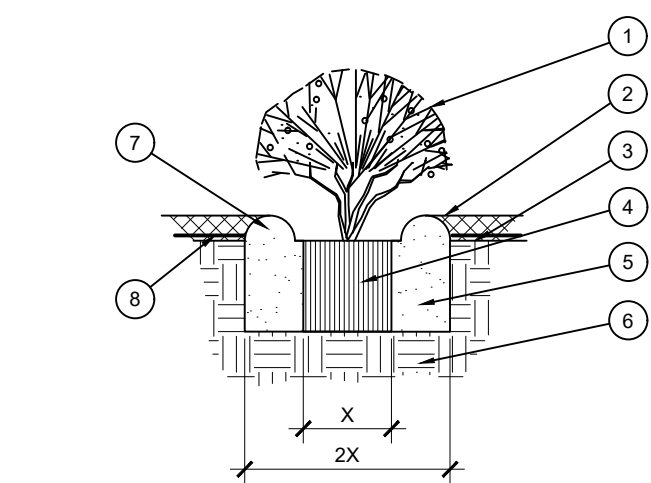


STAKING EXAMPLES (PLAN VIEW)



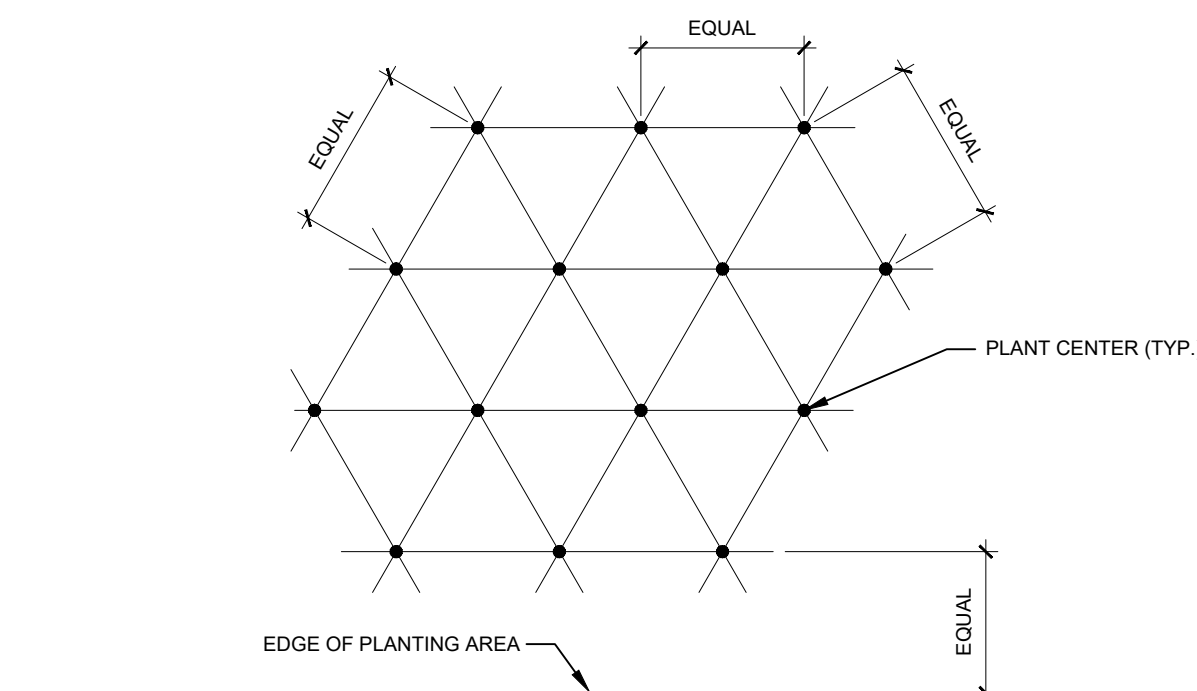
A TREE PLANTING

SCALE: NOT TO SCALE



B SHRUB AND GROUND COVER PLANTING

SCALE: NTS



NOTE: ALL PLANTS SHALL BE PLANTED AT EQUAL TRIANGULAR SPACING (EXCEPT WHERE SHOWN ON PLANS AS INFORMAL GROUPINGS). REFER TO PLANT LEGEND FOR SPACING DISTANCE BETWEEN PLANTS.

1) STEP 1: DETERMINE TOTAL PLANTS FOR THE AREA WITH THE FOLLOWING FORMULA:
TOTAL AREA / AREA DIVIDER = TOTAL PLANTS

PLANT SPACING	AREA DIVIDER	PLANT SPACING	AREA DIVIDER
6"	0.22	18"	1.95
8"	0.39	24"	3.46
10"	0.60	30"	5.44
12"	0.87	36"	7.79
15"	1.35		

2) STEP 2: SUBTRACT THE ROW (S) OF PLANTS THAT WOULD OCCUR AT THE EDGE OF THE PLANTED AREA WITH THE FOLLOWING FORMULA: TOTAL PERIMETER LENGTH / PLANT SPACING = TOTAL PLANT SUBTRACTION

EXAMPLE: PLANTS AT 18" O.C. IN 100 SF PLANTING AREA, 40 LF PERIMETER
STEP 1: 100 SF / 1.95 = 51 PLANTS
STEP 2: 51 PLANTS - (40 LF / 1.95 = 21 PLANTS) = 30 PLANTS TOTAL

C PLANT SPACING

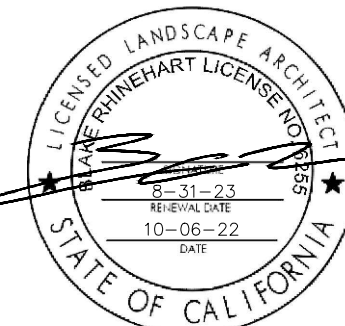
SCALE: NTS

- NOTES:
1. INSTALL ROOT BARRIERS NEAR ALL NEWLY-PLANTED TREES THAT ARE LOCATED WITHIN FIVE (5) FEET OF PAVING OR CURBS.
 2. BARRIERS SHALL BE LOCATED IMMEDIATELY ADJACENT TO HARDSCAPE. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR USE ROOT BARRIERS OF A TYPE THAT COMPLETELY ENGIRLE THE ROOTBALL.

Title: LANDSCAPE PLANTING SPECIFICATIONS & DETAILS

DUTCH BROS. COFFEE

For:



Scale:

Designed BR

Drawn BR

Checked BR/RM

Approved RM

Date 10-09-22

Barghausen Consulting Engineers, Inc.

18215 72nd Avenue South
Kent, WA 98032
425.251.6222
barghausen.com

Job Number
22138

Sheet
LP-2

2019 DB
Franchising USA, LLC

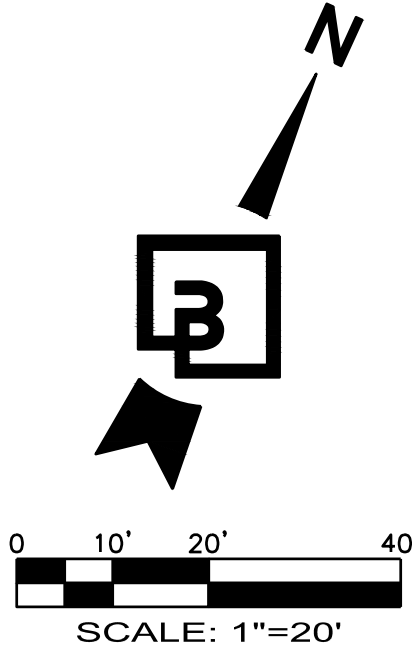
PRELIMINARY NOT FOR CONSTRUCTION

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DUTCH BROS. COFFEE - CA0105, VALLEJO, CA

APN: 0068-171-160

COVER SHEET



OWNER

LETAP REAL ESTATE 2, LLC
1833 AUBURN WAY N STE T
AUBURN, WA 98002
TEL: (415) 314-1133
CONTACT: VICTOR CHIANG
EMAIL: VICTOR@LETAPGROUP.COM

DEVELOPER

DUTCH BROS COFFEE
110 SW 4TH STREET
GRANTS PASS, OR 97526
TEL: (916) 765-7270
CONTACT: RUSS ORSI
EMAIL: RUSS.ORSI@DUTCHBROS.COM

ENGINEER

BARGHAUSEN CONSULTING ENGINEERS, INC.
18215 72ND AVE. SOUTH
KENT, WA 98032
TEL: (425) 251-6222
CONTACT: HAL P. GRUBB
EMAIL: HGRUBB@BARGHAUSEN.COM

BUILDING ARCHITECT

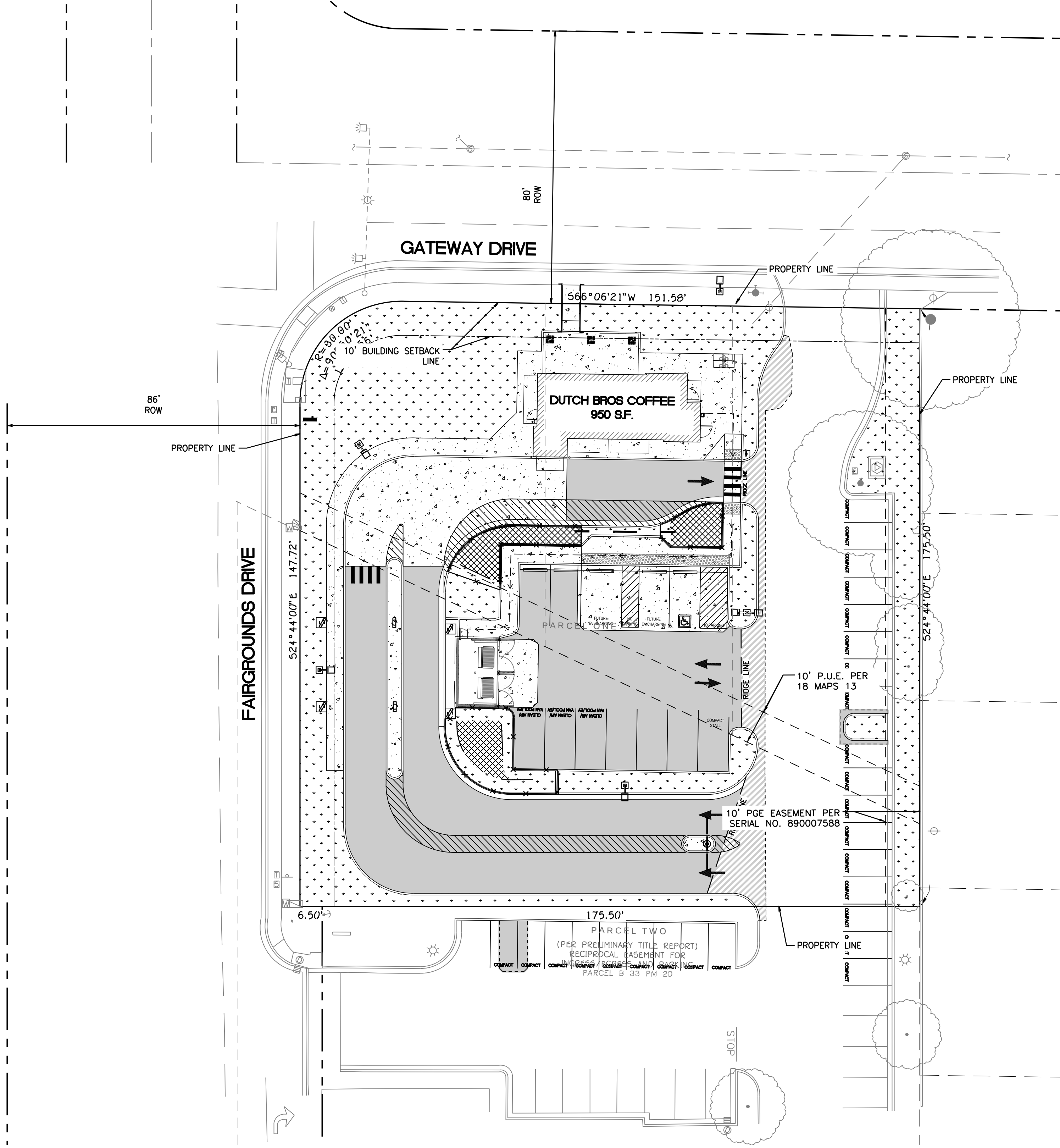
GNICH ARCHITECTURE STUDIO
1001 SE SANDY BOULEVARD, SUITE 100
PORTLAND, OR 97214
TEL: (503) 552-9079
CONTACT: DUSTIN HENION
EMAIL: DUSTINH@GNICHARCH.COM

CONTRACTOR

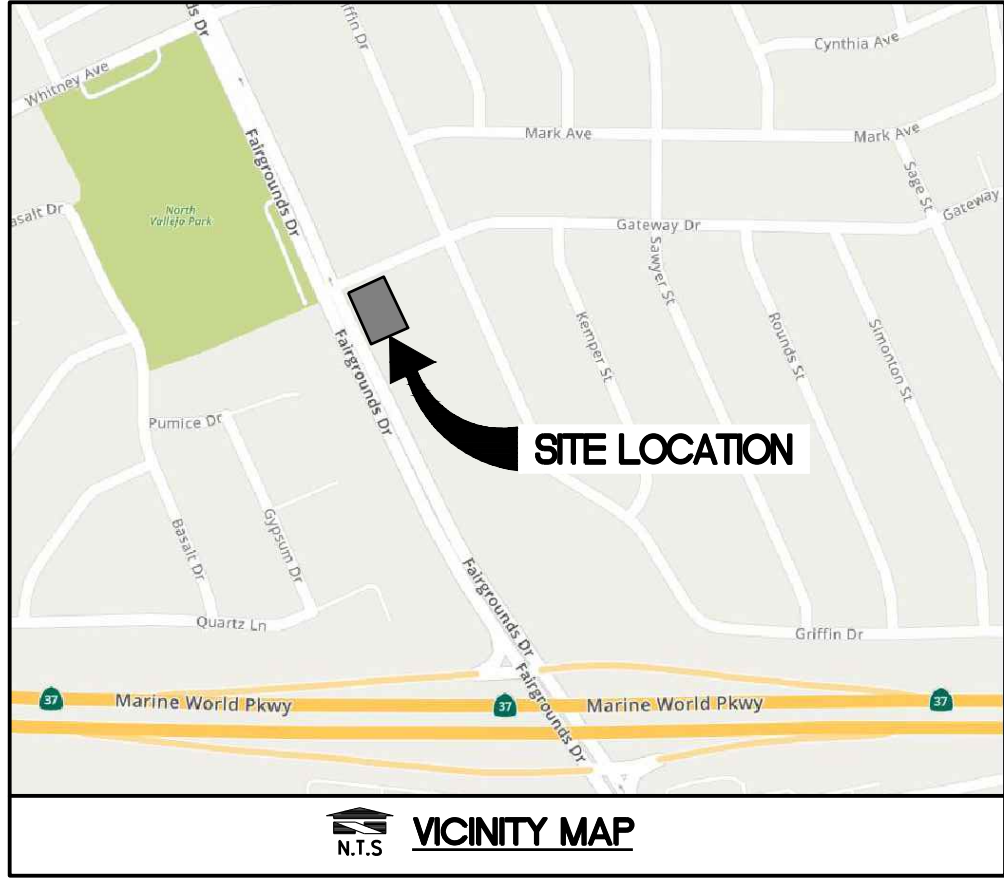
TBA

LEGEND:

PROPOSED	EXISTING
CURB AND GUTTER	CURB
BARRIER CURB	PAINT STRIPE
CONCRETE	CONTOUR
ASPHALT	WATER
SAWCUT	SANITARY
CONTOUR	STORM
WATER	COMMUNICATIONS
WATER METER	ELECTRICAL
STORM	GAS
SANITARY	CORRUGATED PLASTIC PIPE RISER
POWER	DRAIN INLET
PAINT STRIPE	SEWER CLEANOUT
TYPE 1 CATCH BASIN	SEWER MANHOLE
LOT LIGHT	COMMUNICATIONS BOX
BICYCLE PARKING	COMMUNICATIONS VAULT
	ELECTRIC BOX
	GAS VALVE
	GAS METER
	GAS BOX
	PVC RISER
	LIGHT POLE
	SIGN POST
	ELECTRIC VAULT
	UTILITY VAULT
	TRAFFIC SIGNAL BOX
	WATER VALVE
	WATER VAULT
	BACKFLOW PREVENTER
	FIRE HYDRANT
	HANDICAP ACCESSIBLE PARKING SPACE
FUTURE	
CURB	
PAINT STRIPE	
STORM	
FIRE	
WATER	
LOW POINT	
HIGH POINT	
GRADE BREAK	
SLOPE ARROW	
ELEVATION LABEL	
DRAIN INLET	
LIGHT	



PRELIMINARY NOT FOR CONSTRUCTION



PROJECT DATA

NAME: DUTCH BROS COFFEE - CA0105 - VALLEJO, CA
ADDRESS: 1598 FAIRGROUNDS DRIVE, VALLEJO, CA 94589

APN: 0068-171-160

PROPOSED USE: DRIVE-THRU COFFEE STAND

ADJACENT LAND USE: COMMERCIAL AND RESIDENTIAL DEVELOPMENT

LOT AREA: PARCEL AREA: 31,970 SF (0.73 ACRES)
GROSS PROJECT AREA: 24,939 SF (0.57 ACRES)

ZONING: REGIONAL COMMERCIAL (RC)

FLOOD PLAIN: ZONE "X"

EXISTING BUILDING: BUILDING AREA: 3,000± SQ. FT.

PROPOSED BUILDING: BUILDING AREA: 950 SQ. FT.
BUILDING HEIGHT: 24'-0"
FIRE SPRINKLERS: NOT REQUIRED

CA CODE YEAR: 2019

DEVELOPMENT STANDARDS PURSUANT TO VALLEJO MUNICIPAL CODE
CALTRANS
CALIFORNIA STORMWATER QUALITY ASSOCIATION
CONTRA COSTA COUNTY C.3 STORMWATER GUIDEBOOK

PROPOSED REGULAR PARKING = 5
PROPOSED COMPACT PARKING = 1
PROPOSED ADA PARKING = 1

GREEN CODE REQUIREMENTS
EV CHARGING PARKING = 2
CLEAN AIR/VAN POOL/EV = 3

TOTAL PROPOSED PARKING = 12

TOTAL EXISTING SHARED PARKING = 13

QUEUING = 22

PROPOSED GROUND COVER SUMMARY:

BUILDINGS (INCLUDES TRASH ENCLOSURE):	1,190 SF	(4.8%)
PARKING AND MANEUVERING:	12,156 SF	(48.7%)
WALKWAYS:	2,721 SF	(10.9%)
LANDSCAPE:	8,872 SF	(35.6%)
	24,939 SF	(100.0%)

FLOOD ZONE

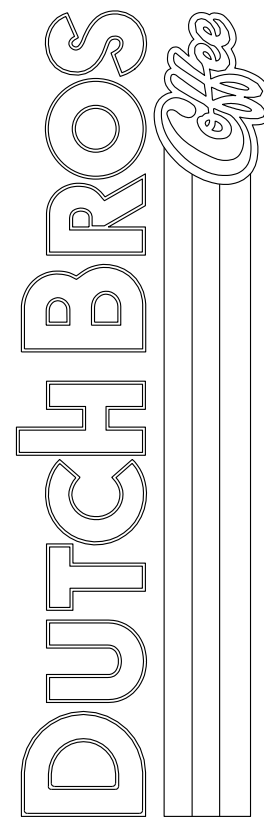
PER FIRM 06095C0440F, MAP REVISED JUNE 9, 2014. THE SUBJECT SITE FALLS IN ZONE "X", AREAS OUTSIDE THE SPECIAL FLOOD HAZARD AREA AND HIGHER THAN THE ELEVATION OF THE 0.2% ANNUAL CHANCE FLOODPLAIN.

SHEET INDEX

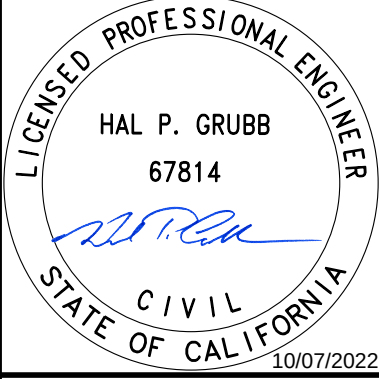
SHEET NUMBER	SHEET INDEX
C1.0	COVER SHEET
1 OF 2	ALTA SURVEY
2 OF 2	ALTA SURVEY
C2.0	PRELIMINARY DEMOLITION PLAN
C2.1	EROSION CONTROL SHEET
C2.2	EROSION AND SEDIMENT CONTROL DETAILS
C3.0	PRELIMINARY SITE PLAN
C3.1	FIRE & REFUSE TRUCK TURNING TEMPLATE
C4.0	PRELIMINARY DRAINAGE PLAN
C5.0	PRELIMINARY GRADING PLAN
C5.1	SECTION DETAILS
C6.0	PRELIMINARY UTILITY PLAN

COVER SHEET
1598 FAIRGROUNDS DRIVE
VALLEJO, CA 94589

Title:



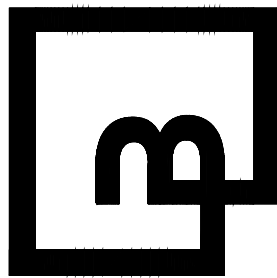
For:



Scale: Horizontal 1" = 20' Vertical N/A

Designed: STT Draw: STT Checked: JAH Approved: HPG Date: 10/07/22

Barghausen Consulting Engineers, Inc.
18215 72nd Avenue South
Kent, WA 98032
425.251.6222 barghausen.com



Job Number
22138

Sheet
C1.0
2019 DB
Franchising USA, LLC

THE SURVEY, EASEMENTS, LEGAL DESCRIPTIONS, AND OTHER RIGHTS AND
LIABILITIES SHOWN HEREON ARE BASED UPON A PRELIMINARY TITLE REPORT
PREPARED BY OLD REPUBLIC TITLE COMPANY ORDER NO. 2121040930-TR
DATED SEPTEMBER 24, 2021.

 THE LOCATION OF THIS TITLE REPORT EXCEPTION IS SHOWN ON THIS MAP.

- ## **TITLE REPORT EASEMENT EXCEPTIONS**

- ILLEGIBLE DOCUMENT, ALSO SEE NOTE PER 33 PM 21

- 7 AN EASEMENT AFFECTING THAT PORTION OF SAID LAND AND FOR THE PURPOSES STATED HEREIN AND INCIDENTAL PURPOSES AS SHOWN ON THE MAP FILED ON APRIL 29, 1950 IN BOOK 10 OF MAPS, AT PAGE 13
FOR : PUBLIC UTILITIES
AFFECTS : AS SHOWN THEREON
FOR : BUILDING SET-BACK
AFFECTS : AS SHOWN THEREON

- 3 AN EASEMENT AFFECTING THAT PORTION OF SAID LAND AND FOR THE PURPOSES STATED HEREIN AND INCIDENTAL PURPOSES AS PROVIDED IN THE FOLLOWING:
GRANTED TO: PACIFIC GAS AND ELECTRIC COMPANY, A CALIFORNIA CORPORATION
FOR: GAS PIPES AND ASSOCIATED APPURTENANCES
RECORDED: FEBRUARY 5 1989 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 890007502
AFFECTS: AS DESCRIBED THEREIN

- 11) AN EASEMENT AFFECTING THAT PORTION OF SAID LAND AND FOR THE PURPOSES STATED HEREIN AND INCIDENTAL PURPOSES AS PROVIDED IN THE FOLLOWING
 GRANTED TO: PACIFIC GAS AND ELECTRIC COMPANY, A CALIFORNIA CORPORATION AND PACIFIC BELL, A CALIFORNIA CORPORATION
 FOR: UTILITIES, INCLUDING ANY NECESSARY APPURTENANCES
 RECORDED: MARCH 13, 1969 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 090014710
 AFFECTS: AS DESCRIBED THEREIN

- * 13. AN EASEMENT AFFECTING THAT PORTION OF SAID LAND AND FOR THE PURPOSES STATED HEREIN AND INCIDENTAL PURPOSES AS PROVIDED IN THE ABOVE MENTIONED INSTRUMENT,
FOR : INGRESS, EGRESS, PARKING AND UTILITIES
AFFECTS : AS DESCRIBED THEREIN

- * 16. AN IMPLIED EASEMENT AFFECTING THAT PORTION OF SAND LAND AND FOR THE PURPOSES STATED HEREIN AND INCIDENTAL PURPOSES ARISING FROM INSTRUMENT : GRANT OF RIGHT OF ENTRY CLAIMED BY : VALLEJO SANITATION AND FLOOD CONTROL DISTRICT FOR : UPPER LATERAL TESTING AND REPAIR TO FACILITATE THE ISSUANCE OF SANITARY SEWER SERVICE CONNECTION PERMITS RECORDED : OCTOBER 4, 1996 IN OFFICIAL RECORDS UNDER RECORDER'S SERIAL NUMBER 1996-00067557

THE LAND REFERRED TO IN THIS REPORT IS SITUATED IN THE COUNTY OF SOLANO, CITY OF VALLEJO, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

PARCEL A, AS SHOWN ON THAT CERTAIN MAP ENTITLED "PARCEL MAP BEING A RESUBDIVISION OF A PORTION OF COUNTRY CLUB CREST UNIT NO. 4, AND A PORTION OF THE LAND DESCRIBED IN THE DEED TO FRANK E. COLLINS (37 OR 491), FILED SEPTEMBER 28, 1988 IN BOOK 33 OF PARCEL MAPS AT PAGE 20, SOLANO COUNTY RECORDS.

A NON-EXCLUSIVE EASEMENT FOR VEHICULAR INGRESS AND EGRESS AND THE PASSAGE AND PARKING OF MOTOR VEHICLES ON, OVER AND ACROSS ALL PARKING AREAS, DRIVEWAYS AND SERVICE AREAS; FOR INGRESS AND EGRESS AND PASSAGE FOR PEDESTRIANS ON, OVER AND ACROSS THE COMMON AREA; AND FOR THE INSTALLATION AND MAINTENANCE OF PUBLIC UTILITIES ON, OVER AND ACROSS THE COMMON AREA. ALL AS SET FORTH IN THE DECLARATION OF RESTRICTIONS, GRANT OF RECIPROCAL ACCESS, UTILITY SERVICE AND PARKING EASEMENTS AND COMMON AREA MAINTENANCE AGREEMENT, RECORDED NOVEMBER 14, 1989, INSTRUMENT NO. 890080960, OFFICIAL RECORDS OF SOLANO COUNTY.

APN: 0068-171-160

THE FLOOD ZONE DESIGNATION FOR THE SUBJECT PROPERTY IS FLOOD
ZONE X WHICH IS DESCRIBED TO BE AREA OF MINIMAL FLOOD HAZARD
PER FLOOD INSURANCE RATE MAP COMMUNITY PANEL NUMBER
06095C0440F, DATED 06/09/2014.

HANDICAPPED SPACES	<u>2</u>
FULL SIZE SPACES	<u>28</u>
TOTAL SPACES	<u>30</u>

DIMENSION POINT ☐

FOUND MONUMENT AS NOTED ☒

1. THE SURVEY INFORMATION SHOWN HEREON IS BASED UPON A FIELD SURVEY PERFORMED ON 12/07/2021
2. THE LAND AREA OF PARCEL ONE AS SHOWN HEREON IS 0.734 ACRES AND IS BASED UPON OUR MEASURED BOUNDARY.
3. THE BUILDING HEIGHTS SHOWN HEREON ARE BASED ON ELEVATIONS MEASURED FROM FINISHED FLOOR TO HIGHEST POINT OF ROOF.
4. THERE IS NO OBSERVABLE EVIDENCE OF EARTHMOVING WORK, BUILDING CONSTRUCTION OR BUILDING ADDITIONS WITHIN RECENT MONTHS
5. THERE ARE NO CHANGES IN STREET RIGHT OF WAY LINES EITHER COMPLETED OR PROPOSED, AND AVAILABLE FROM THE CONTROLLING JURISDICTION. THERE IS NO OBSERVABLE EVIDENCE OF RECENT STREET OR SIDEWALK CONSTRUCTION OR REPAIRS.
6. THERE IS NO OBSERVABLE EVIDENCE OF SITE USE AS A SOLID WASTE DUMP, SUMP, OR SANITARY LANDFILL
7. PARCEL ONE DOES HAVE DIRECT ACCESS TO GATEWAY DRIVE AND FAIRGROUNDS DRIVE, BOTH PUBLIC ROADS.

THE LOCATION OF ANY UNDERGROUND FACILITIES SHOWN HEREON ARE BASED UPON A FIELD SURVEY AND INFORMATION PROVIDED BY OTHERS. ALL EXISTING UTILITIES THAT MAY AFFECT THE PROPERTY MAY NOT BE SHOWN ON THIS MAP, THOUGH DILIGENT EFFORT HAS BEEN MADE TO OBTAIN UTILITY INFORMATION AT THE TIME OF PREPARING THIS MAP. THE EXACT LOCATION AND DEPTH OF THE FACILITIES SHOWN HEREON WOULD HAVE TO BE DETERMINED BY EACH UTILITY COMPANY AND MUST BE FIELD VERIFIED DURING CONSTRUCTION.

ELEVATIONS ARE BASED ON BM# 9619 SHOWN ON THE MAP ENTITLED "GPS GEODETIC CONTROL SURVEY FOR VALLEJO SANITATION & FLOOD DISTRICT & THE CITY OF VALLEJO" FILED IN BOOK 22 OF SURVEYS AT PAGE 23.

ELEVATION = 116.32' (NAVD '88)

SANITARY SEWER 6" S

STORM DRAIN 12" D

WATER MAIN 8" W

CENTERLINE

ELECTRICAL LINE E

OVERHEAD ELECTRICAL O/H

GAS LINE G

CATV LINE T

WALL

SEWER MANHOLE

STORM DRAIN MANHOLE

DRAIN INLET

CLEANOUT

FIRE HYDRANT

WATER VALVE

WATER METER

YARD LIGHT

TRAFFIC LIGHT

TRAFFIC SIGNAL PULLBOX

TRANSFORMER

ELECTRIC PULLBOX

UTILITY PULLBOX

COMMUNICATION PULLBOX

SIGN

SIDEWALK, CURB

AND GUTTER

SPOT ELEVATION X 266.5

TREE

AC	ASPHALT CONCRETE
APN	ASSESSOR PARCEL NUMBER
B	BOLLARD
BNDY	BOUNDARY
C&G	CURB & GUTTER
C.L.	CENTERLINE
CONC	CONCRETE
D.I.	DRAIN INLET
DMH	DRAIN MANHOLE
EPB	ELECTRICAL PULLBOX
ESMT	EASEMENT
FF	FINISHED FLOOR
FH	FIRE HYDRANT
GR	GRATE
GV	GV VALVE
HQ	HANDICAP
MH	MANHOLE
N.T.S.	NOT TO SCALE
O.R.	OFFICIAL RECORDS
P.M.	PARCEL MAPS
P.U.E	PUBLIC UTILITY EASEMENT
R	RADIUS
R/W	RIGHT-OF-WAY
SMH	SEWER MANHOLE
SLPB	STREET LIGHT PULLBOX
TE	TRASH ENCLOSURE
TPB	TELEPHONE PULLBOX
TSPB	TRAFFIC SIGNAL PULLBOX
WM	WATER METER
WV	WATER VALVE

THE BASIS OF BEARINGS OF THIS SURVEY IS THE MONUMENTED CENTERLINE OF GRIFFIN DRIVE, AS SHOWN ON THE PARCEL MAP RECORDED IN BOOK 33 OF MAPS AT PAGE 21, SOLANO COUNTY RECORDS. THE BEARING BETWEEN SAID MONUMENTS IS NORTH 23°53'39" WEST.

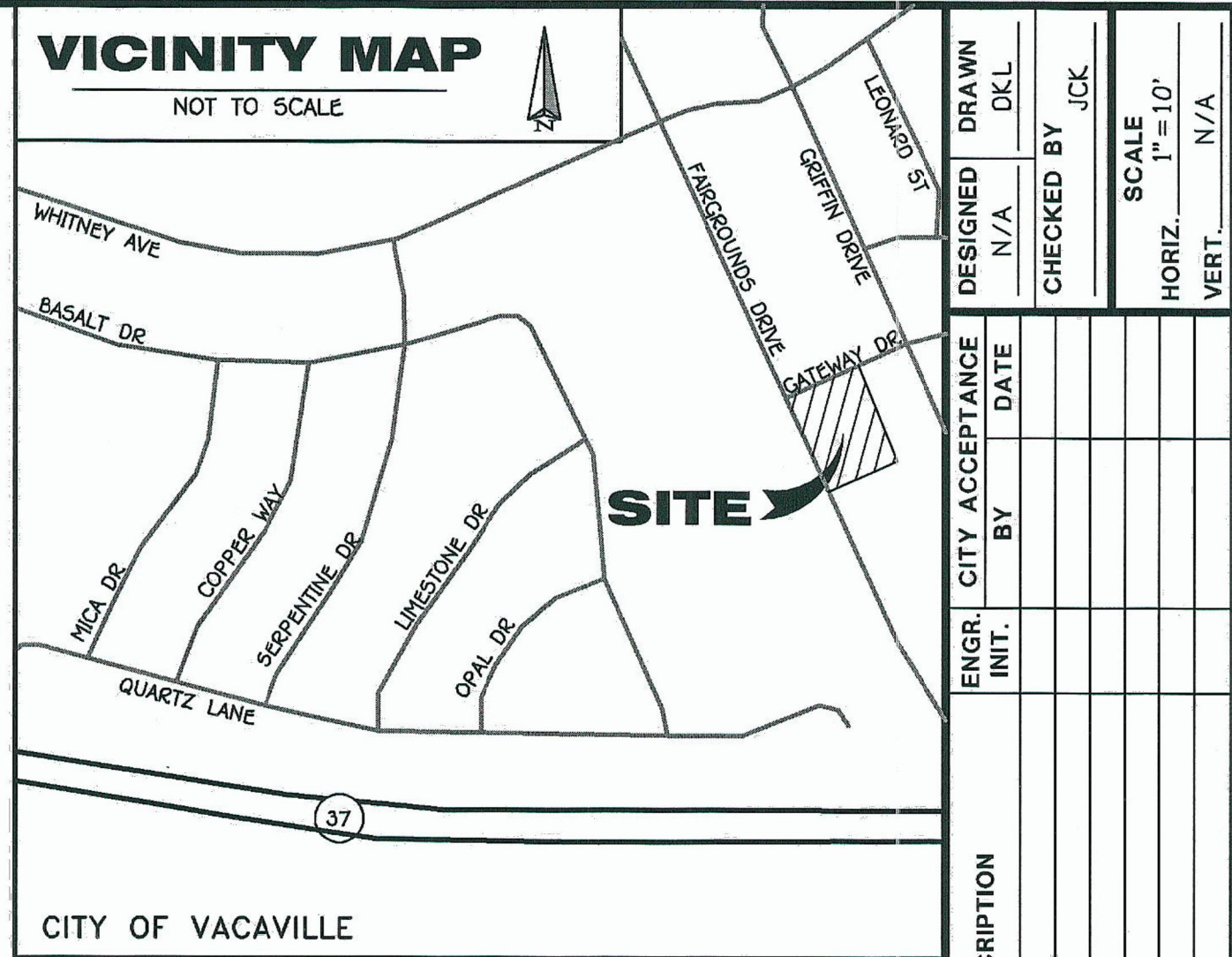
TO OLD REPUBLIC TITLE COMPANY; LETAP REAL ESTATE 2, LLC, A
DELAWARE LIMITED LIABILITY COMPANY; BB HOLDINGS CA, LLC, AN
OREGON LIMITED LIABILITY COMPANY; DB FRANCHISING USA, LLC, AN
OREGON LIMITED LIABILITY COMPANY; DUTCH BROS., LLC AN OREGON
LIMITED LIABILITY COMPANY; DUTCH MAFIA, A DELAWARE LIMITED
LIABILITY COMPANY; BOERSMA BROS. LLC, AN OREGON LIMITED LIABILITY
COMPANY;

THIS IS TO CERTIFY* THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2021 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 2, 3, 4, 5, 7A1, 7C, 8, 9, 11A, 11B, 13, 16, 17 & 18, OF TABLE A THEREOF. THE FIELD WORK WAS COMPLETED ON 12/06/2021.

*USE OF THE WORD "CERTIFY" OR "CERTIFICATION" IS IN ACCORDANCE WITH THE DEFINITION IN SECTION 8770.6 OF THE BUSINESS AND PROFESSIONS CODE OF THE STATE OF CALIFORNIA (PROFESSIONAL LAND SURVEYORS' ACT).

Dirk J. de Valk
DIRK J. DE VALK PLS 8139

12/16/21
DATE



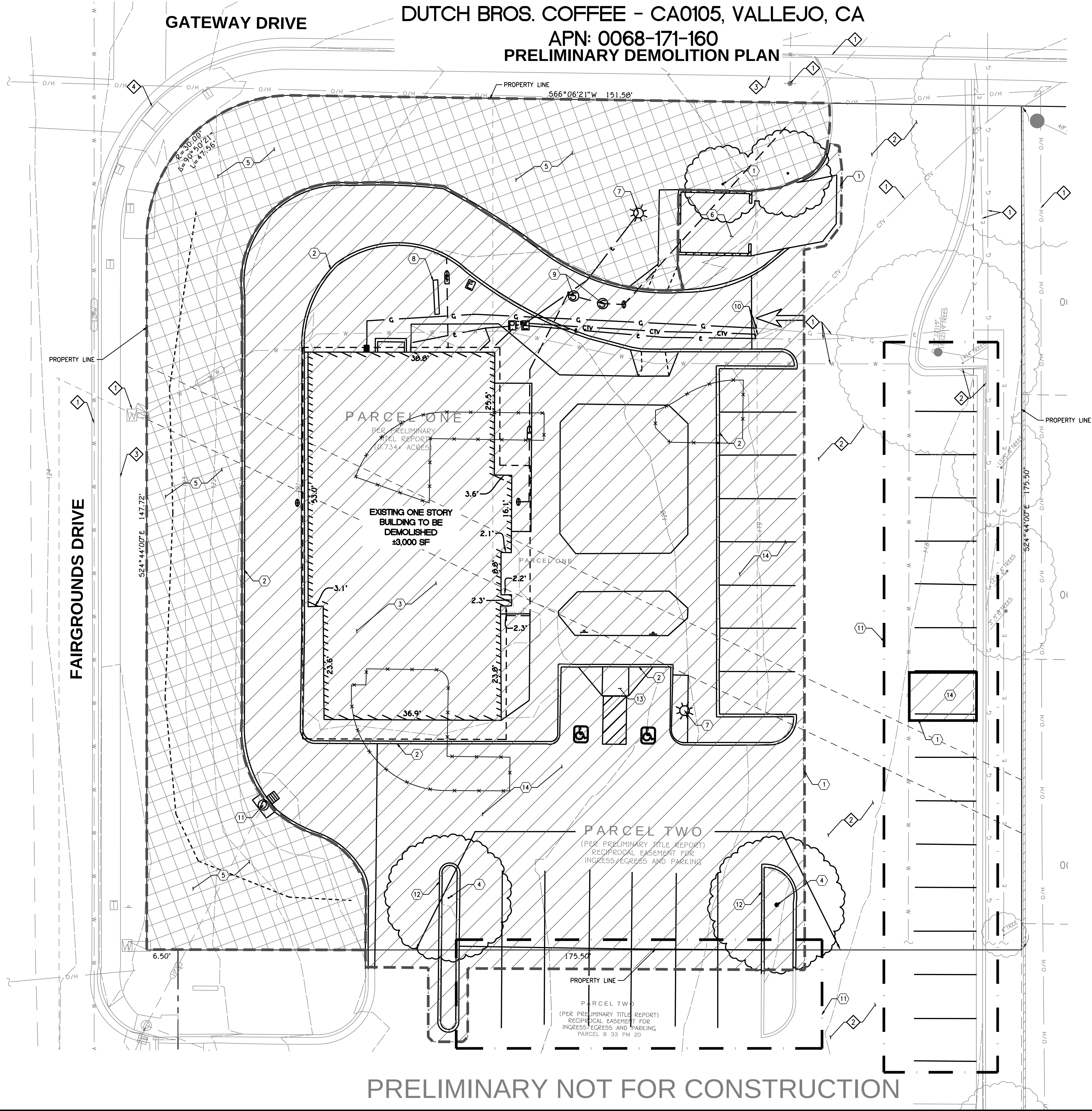
ALTA/NSPS LAND TITLE SURVEY		SHEET 1 OF N SHEETS		COUNTY OF SOLANO		CALIFORNIA	
DUTCH BROS - VALLEJO				1598 FAIRGROUNDS DRIVE			
APN 0068-171-160							
 BURRELL CONSULTING GROUP, INC.				1001 Enterprise Way, Suite 100, Roseville, CA 95678 (916) 783-8998			
JOB NO. 2503-00-1360		REVISIONS		REVISIONS		REVISIONS	
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FOR REFERENCE ONLY
NOT TO SCALE

JOB NO. 2503-00-1385

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GENERAL CLEARING NOTES:

- SCHEDULE AND LIMIT REMOVAL OF EXISTING VEGETATION AND GROUND COVER TO THE MAXIMUM EXTENT FEASIBLE WITHIN ACTIVE WORK AREA.
- ALL TOPSOIL (WHEN ENCOUNTERED) SHALL REMAIN ON-SITE AND BE UTILIZED FOR SITE RESTORATION FOLLOWING COMPLETION OF GRADING ACTIVITIES.
- GEOTECHNICAL ENGINEER SHALL BE ON-SITE DURING ALL STRIPPING AND GRUBBING OPERATIONS TO VERIFY CONDITION OF SUBGRADE AND REMOVAL OF ALL ORGANIC MATERIAL, STUMPS, UNCONTROLLED FILL, ETC.
- GEOTECHNICAL ENGINEER SHALL OBSERVE AND TEST FILL MATERIAL AS REQUIRED TO CERTIFY THE COMPLETED FILLS.
- ITEMS FOR DEMOLITION ARE DEPICTED PER DESIGN DRAWINGS. CONTRACTOR TO VERIFY AND LOCATE ALL ITEMS FOR DEMOLITION PRIOR TO START OF CONSTRUCTION AND NOTIFY BARGHAUSEN CONSULTING ENGINEERS, INC. IMMEDIATELY OF ANY DISCREPANCIES.
- CONTRACTOR TO REVIEW AS-BUILT DRAWINGS IN PROJECT AREA AND REMOVE AND/OR RELOCATE ANY SITE APPURTENANCES IN PROJECT AREA THAT IMPACT THE PROJECT.
- CONCRETE SIDEWALK REPLACEMENT, CONTRACTOR SHALL REMOVE AND REPLACE TO THE NEAREST JOINT.

GENERAL PROTECTIONS NOTES:

- ALL EXISTING UTILITY BOXES, VAULTS, MANHOLES AND PEDESTALS LOCATED WITHIN THE CONSTRUCTION SITE LIMITS SHALL BE PROTECTED FROM DAMAGE DURING CONSTRUCTION, TYPICAL.
- ALL EXISTING CURBING NOT SHOWN FOR DEMOLITION, LOCATED WITHIN THE CONSTRUCTION SITE LIMITS SHALL BE PROTECTED IN PLACE DURING ALL PHASES OF CONSTRUCTION, TYPICAL.
- ALL EXISTING POWER POLE(S), LIGHT POLE(S) AND SIGNAL POLE(S) LOCATED WITHIN THE CONSTRUCTION SITE LIMITS SHALL BE PROTECTED, IN-PLACE DURING ALL PHASES OF CONSTRUCTION, TYPICAL.
- ALL EXISTING TREE(S) TO REMAIN THAT ARE LOCATED WITHIN THE CONSTRUCTION SITE LIMITS SHALL BE PROTECTED, TYPICAL.

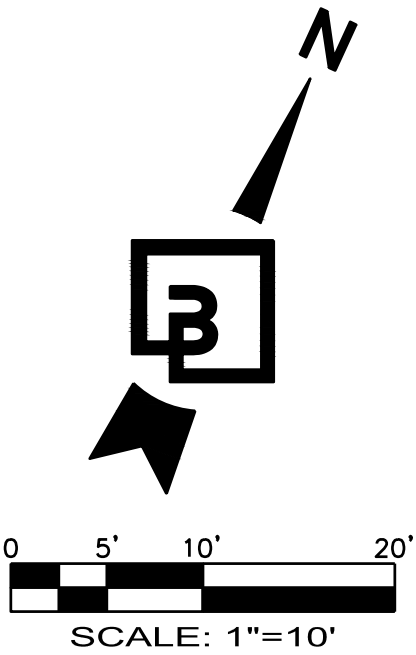
DEMOLITION CONTROL NOTES:

- APPROXIMATE SAWCUT LIMITS, TYPICAL.
- DEMOLISH AND REMOVE EXISTING CURB, GUTTER, AND SIDEWALK.
- DEMOLISH AND REMOVE EXISTING BUILDING.
- REMOVE EXISTING TREE.
- CLEAR AND GRUB AS REQUIRED FOR NEW LANDSCAPE PLANS.
- DEMOLISH AND REMOVE EXISTING TRASH ENCLOSURE.
- REMOVE EXISTING SITE LIGHT.
- EXISTING SIGN TO BE REMOVED.
- EXISTING GREASE INTERCEPTOR TO BE REMOVED.
- EXISTING DRY UTILITIES TO STUBBED AND REROUTED TO THE BUILDING.
- CONTRACTOR TO REMOVE EXISTING PAINT STRIP USING APPROVED REMOVAL METHODS AS SPECIFIED IN CHAPTER M OF THE MOST RECENT CALTRANS STANDARDS AND SPECIFICATIONS. SEE PLAN VIEW FOR LIMITS.
- DEMOLISH AND REMOVE EXISTING LANDSCAPE ISLAND.
- DEMOLISH AND REMOVE EXISTING ADA RAMP.
- REMOVE EXISTING PAVEMENT WITHIN DEMOLITION LIMITS AS SHOWN.

- ALL ABOVE DEMOLITION/REMOVAL ITEMS TO BE DISPOSED OF OFFSITE, CONTRACTOR TO ENSURE DISPOSAL COMPLIES WITH CITY STANDARDS AND REGULATIONS FOR OFFSITE DISPOSAL/RECYCLING.

◆ SPECIAL PROTECTION NOTES:

- PROTECT EXISTING UTILITY BOXES, MANHOLES, CLEANOUTS, PEDESTALS, AND ASSOCIATED UNDERGROUND UTILITY LINES FROM DAMAGE DURING CONSTRUCTION, TYPICAL.
- PROTECT EXISTING ROADWAY, CURB AND GUTTER FROM DAMAGE DURING CONSTRUCTION.
- EXISTING SIDEWALK TO REMAIN. PROTECT DURING CONSTRUCTION, TYPICAL.
- EXISTING PEDESTRIAN RAMP TO REMAIN. PROTECT DURING CONSTRUCTION.

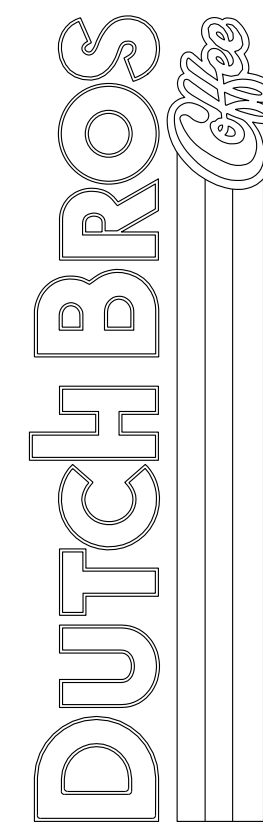


DEMOLITION LEGEND:

DEMOLITION LIMITS	
SAWCUT LINE	- - - - -
PAVEMENT(S)/HARDSCAPE REMOVAL	
CLEAR AND GRUB (SOILS EXCAVATION)	

PRELIMINARY DEMOLITION PLAN
1598 FAIRGROUNDS DRIVE
VALLEJO, CA 94589

Title:

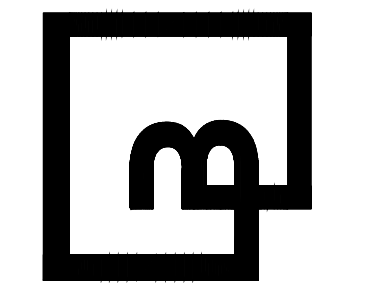


For:



Scale:	Horizontal 1" = 10'	Vertical N/A
Designed	STL	STL
Drawn	JAH	JAH
Checked	HFG	HFG
Approved	HFG	HFG
Date	10/07/22	

Barghausen
Consulting Engineers, Inc.
18215 72nd Avenue South
Kent, WA 98032
425-251-6222
barghausen.com



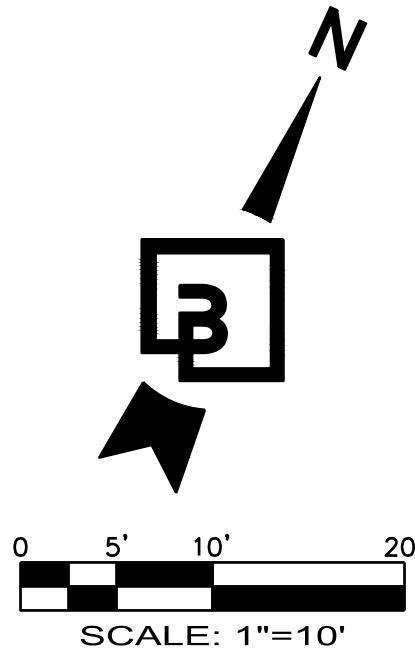
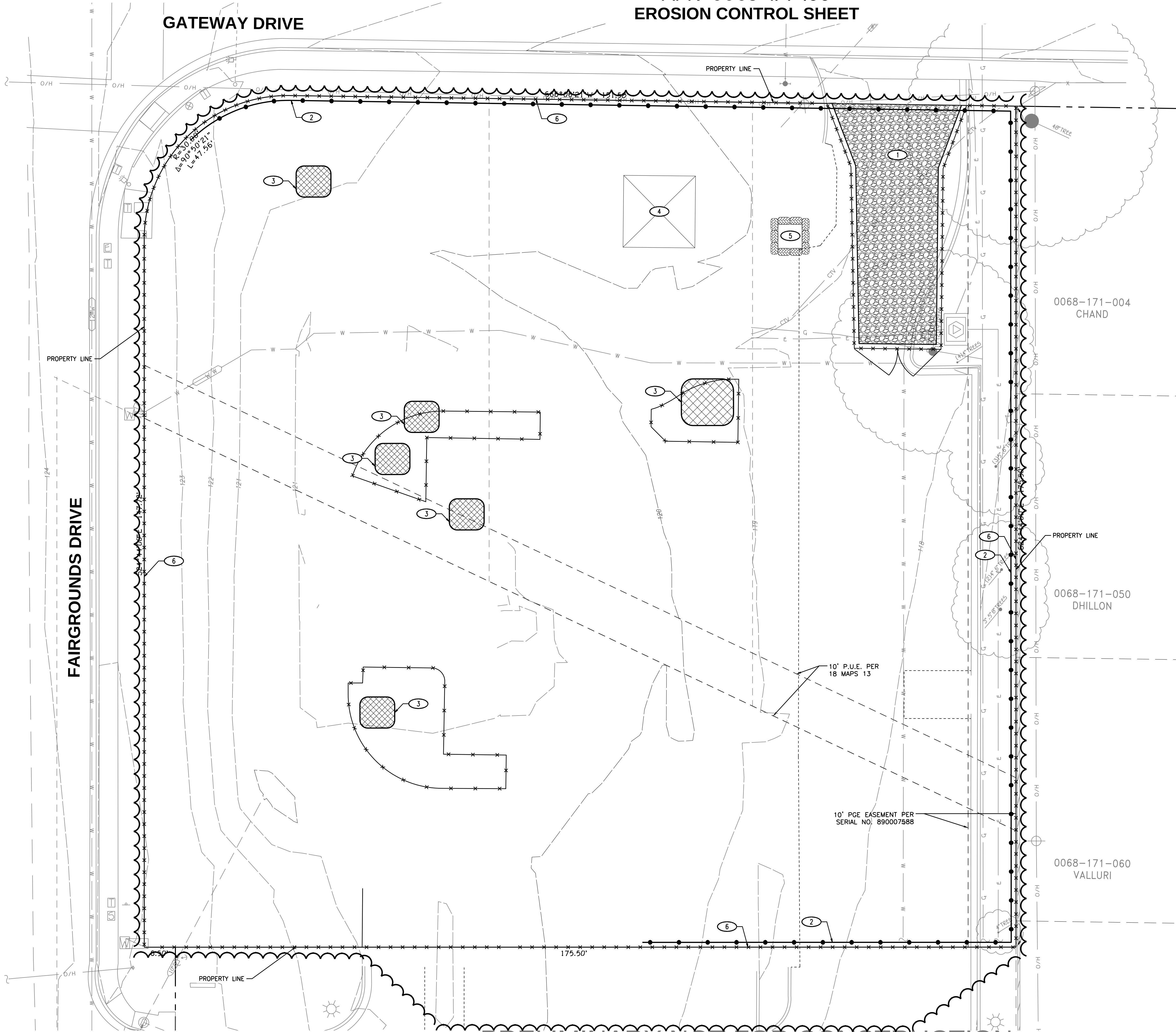
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DUTCH BROS. COFFEE - CA0105, VALLEJO, CA

APN: 0068-171-160

EROSION CONTROL SHEET



TESC LEGEND:	
	INLET PROTECTION
	STAGING AREA
	SILT FENCE / FIBER ROLL
	LIMITS OF DISTURBANCE
	CONSTRUCTION FENCE

EROSION AND SEDIMENT CONTROL NOTES:

- ALL EROSION AND SEDIMENT CONTROL DEVICES SHALL BE INSTALLED IN ACCORDANCE WITH THE CURRENT EDITION OF THE CALIFORNIA STORMWATER QUALITY ASSOCIATION BEST MANAGEMENT PRACTICES AND THE CITY OF VALLEJO. A NOTICE OF INTENT LETTER SHALL BE POSTED IN THE JOB TRAILER AT ALL TIMES. THIS SITE SHALL BE PROTECTED BY MEANS DESCRIBED IN THE ACCOMPANYING PLANS. IF THERE ARE ANY QUESTIONS REGARDING EROSION CONTROL MEASURES, THE CIVIL ENGINEER OF RECORD MUST BE CONTACTED. A COPY OF THIS SHEET AND THE EROSION CONTROL PLANS MUST BE KEPT ON-SITE THROUGH THE DURATION OF CONSTRUCTION ACTIVITY. ANY CHANGES MADE TO THIS PLAN MUST BE NOTED, DATED, AND INITIALED BY THE GENERAL CONTRACTOR.
- EROSION CONTROL BEST MANAGEMENT PRACTICES (BMPs) SHALL BE INSTALLED AND MAINTAINED FOR THE DURATION OF THE PROJECT. SEDIMENT CONTROL BMPs SHALL BE INSTALLED AND MAINTAINED YEAR ROUND.
- ALL DRAINAGE INLETS IMMEDIATELY DOWNSTREAM OF THE WORK AREAS AND WITHIN THE WORK AREAS SHALL BE PROTECTED WITH SEDIMENT CONTROL AND INLET FILTER BAGS YEAR ROUND. INLET FILTER BAGS SHALL BE REMOVED FROM THE DRAINAGE INLETS UPON COMPLETION OF CONSTRUCTION.
- ALL STABILIZED CONSTRUCTION ACCESS LOCATIONS SHALL BE CONSTRUCTED PER THE CALIFORNIA STORMWATER QUALITY ASSOCIATION BEST MANAGEMENT PRACTICES AND THE CITY OF VALLEJO WHERE CONSTRUCTION TRAFFIC ENTERS OR LEAVES PAVED AREAS. THE STABILIZED ACCESS SHALL BE MAINTAINED ON A YEAR ROUND BASIS UNTIL THE COMPLETION OF CONSTRUCTION.
- ALL AREAS DISTURBED DURING CONSTRUCTION BY GRADING, TRENCHING, OR OTHER ACTIVITIES, SHALL BE PROTECTED FROM EROSION DURING THE WET SEASON (OCTOBER 1 THROUGH APRIL 30). HYDROSEED, IF UTILIZED, MUST BE PLACED BY SEPTEMBER 15. HYDROSEED PLACED DURING THE WET SEASON SHALL USE A SECONDARY EROSION PROTECTION METHOD.
- SENSITIVE AREAS AND AREAS WHERE EXISTING VEGETATION IS BEING PRESERVED SHALL BE PROTECTED WITH CONSTRUCTION FENCING. SEDIMENT CONTROL BMPs SHALL BE INSTALLED WHERE ACTIVE CONSTRUCTION AREAS DRAIN INTO SENSITIVE OR PRESERVED VEGETATION AREAS.
- SEDIMENT CONTROL BMPs SHALL BE PLACED ALONG THE PROJECT PERIMETER WHERE DRAINAGE LEAVES THE PROJECT. SEDIMENT CONTROL BMPs SHALL BE MAINTAINED YEAR ROUND UNTIL THE CONSTRUCTION IS COMPLETED OR THE DRAINAGE PATTERN HAS BEEN CHANGED AND NO LONGER LEAVES THE SITE.
- EFFECTIVE EROSION CONTROL BMPs SHALL BE IN PLACE PRIOR TO ANY STORM EVENTS.
- CONTRACTOR SHALL INSTALL AN EFFECTIVE COMBINATION OF EROSION AND SEDIMENTATION CONTROL BMPs.

EROSION CONTROL CALLOUTS:

- INSTALL TEMPORARY STABILIZED CONSTRUCTION ENTRANCE PER CASQA BMP DETAIL TC-1 SHEET C2.2, TYPICAL; ADJUST AS NECESSARY DURING CONSTRUCTION.
- INSTALL TEMPORARY SILT FENCE PER CASQA BMP DETAIL SE-1 SHEET C2.2 AND MANUFACTURERS RECOMMENDATIONS AROUND PERIMETER OF SITE AS REQUIRED TO PREVENT SILT-LADEN RUNOFF FROM LEAVING SITE. INSTALL AS DIRECTED BY AGENCY INSPECTOR.
- CONTRACTOR TO INSTALL INLET PROTECTION TO ALL PROPOSED STORM STRUCTURES IMMEDIATELY AFTER INSTALLED, TO NOT ALLOW SEDIMENT INTO THE STORM INFRASTRUCTURE.
- APPROXIMATE LOCATION OF CONTRACTOR STAGING AREA THAT IS TO BE USED FOR MATERIAL/EQUIPMENT STORAGE, VEHICLE AND EQUIPMENT FUELING/MAINTENANCE, AND TEMPORARY SANITARY FACILITIES.
- CONTRACTOR TO INSTALL CONCRETE WASHOUT STATION PER CASQA BMP DETAIL WM-8 SHEET C2.2 AND PER THE CITY OF VALLEJO CONSTRUCTION SPECIFICATIONS AND STANDARDS. ADJUST AS NECESSARY DURING CONSTRUCTION.
- INSTALL TEMPORARY CONSTRUCTION FENCE (6' HIGH CHAIN LINK, MINIMUM) AROUND PERIMETER OF CONSTRUCTION SITE WITH SITE ACCESS GATE (6' HIGH-CHAIN LINK WITH LOCKING DEVICE) AT TEMPORARY CONSTRUCTION ENTRANCES. FIELD VERIFY AND CONFIRM EXACT LOCATION WITH ARCHITECT/OWNER.

UTILITY COORDINATION NOTE:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL UTILITY COMPANIES PRIOR TO PERFORMING ANY DEMOLITION ACTIVITIES TO ENSURE PROPER PROTECTION AND DISCONNECTION PROCEDURES ARE IN PLACE

UTILITY COORDINATION NOTE:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL UTILITY COMPANIES PRIOR TO PERFORMING ANY DEMOLITION ACTIVITIES TO ENSURE PROPER PROTECTION AND DISCONNECTION PROCEDURES ARE IN PLACE

UTILITY CONFLICT NOTE:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION, DIMENSION, AND DEPTH OF ALL EXISTING UTILITIES WHETHER SHOWN ON THESE PLANS OR NOT BY POT-HOLING THE UTILITIES AND SURVEYING THE HORIZONTAL AND VERTICAL LOCATION PRIOR TO CONSTRUCTION. THIS SHALL INCLUDE CALLING UTILITY LOCATE AT 811 AND THEN POT-HOLING ALL OF THE EXISTING UTILITIES AT LOCATIONS OF NEW UTILITY CROSSINGS TO PHYSICALLY VERIFY WHETHER OR NOT CONFLICTS EXIST. LOCATIONS OF SAID UTILITIES AS SHOWN ON THESE PLANS ARE BASED UPON THE UNVERIFIED PUBLIC INFORMATION AND ARE SUBJECT TO VARIATION. IF CONFLICTS SHOULD OCCUR, THE CONTRACTOR SHALL NOTIFY BARGHAUSEN CONSULTING ENGINEERS, INC. TO RESOLVE ALL PROBLEMS PRIOR TO PROCEEDING WITH CONSTRUCTION.

DRIVEWAY & SIDEWALK TEMPORARY CLOSURE

CONTRACTOR TO ENSURE ALL NECESSARY SIGNAGE, COORDINATION, AND NOTICE ARE GIVEN OR INSTALLED FOR ANY DISTURBANCE TO DRIVEWAY OR PEDESTRIAN ACCESS PRIOR TO CONSTRUCTION. CONTRACTOR TO COORDINATE WITH THE CITY OF VALLEJO AS REQUIRED.

TEMPORARY WORK EASEMENT NOTE:

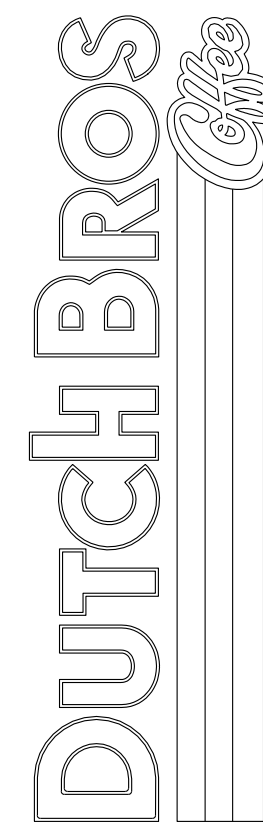
CLIENT TO OBTAIN TEMPORARY WORK EASEMENT AGREEMENT; COORDINATE WITH ADJACENT PROPERTY OWNER, PRIOR TO CONSTRUCTION OF ANY OFF-SITE WORK.

DAMAGE TO PUBLIC IMPROVEMENTS

ALL PUBLIC IMPROVEMENTS SHALL BE CONSTRUCTED IN A MANNER THAT DOES NOT DAMAGE EXISTING PUBLIC IMPROVEMENTS. ANY DAMAGE SHALL BE DETERMINED BY AND CORRECTED BY THE DEVELOPER TO THE SATISFACTION OF THE CITY ENGINEER.

EROSION CONTROL SHEET
1598 FAIRGROUNDS DRIVE
VALLEJO, CA 94589

Title:



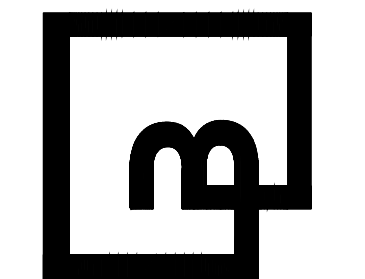
For:



Scale:
Horizontal
1" = 10'
Vertical
N/A

Designed	STL	STL	JAH	HFG	Date
Drawn					10/07/22
Checked					
Approved					

Barghausen
Consulting Engineers, Inc.
18215 72nd Avenue South
Kent, WA 98032
425.251.6222
barghausen.com



Job Number
22138
Sheet
C2.1
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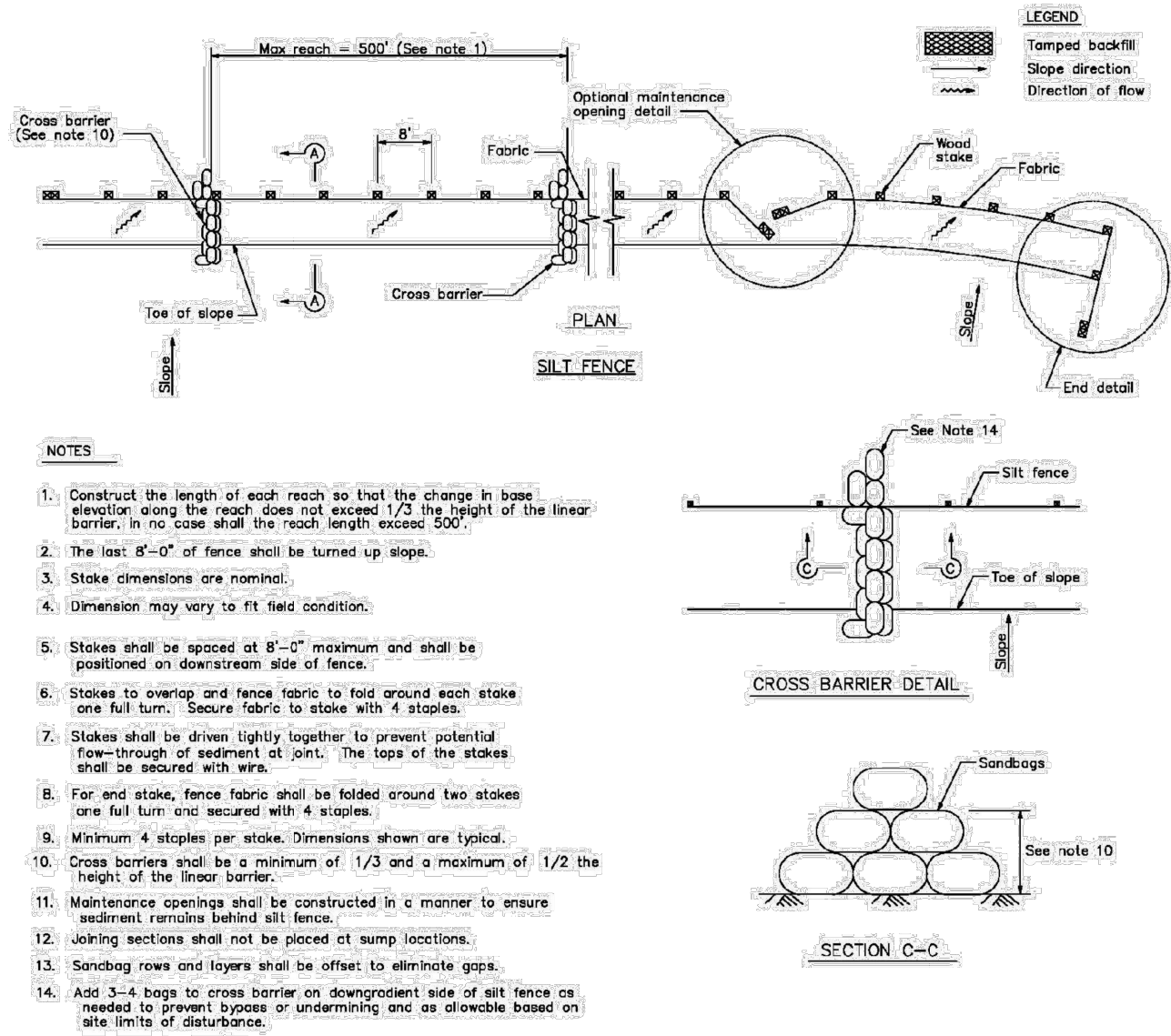
DUTCH BROS. COFFEE - CA0105, VALLEJO, CA

APN: 0068-171-160

EROSION AND SEDIMENT CONTROL DETAILS

Silt Fence

SE-1



Stabilized Construction Entrance/Exit TC-1

National Management Measures to Control Nonpoint Source Pollution from Urban Areas, USEPA Agency, 2002.

Proposed Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters, Work Group Working Paper, USEPA, April 1992.

Stormwater Quality Handbooks Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Stormwater Management of the Puget Sound Basin, Technical Manual, Publication #91-75, Washington State Department of Ecology, February 1992.

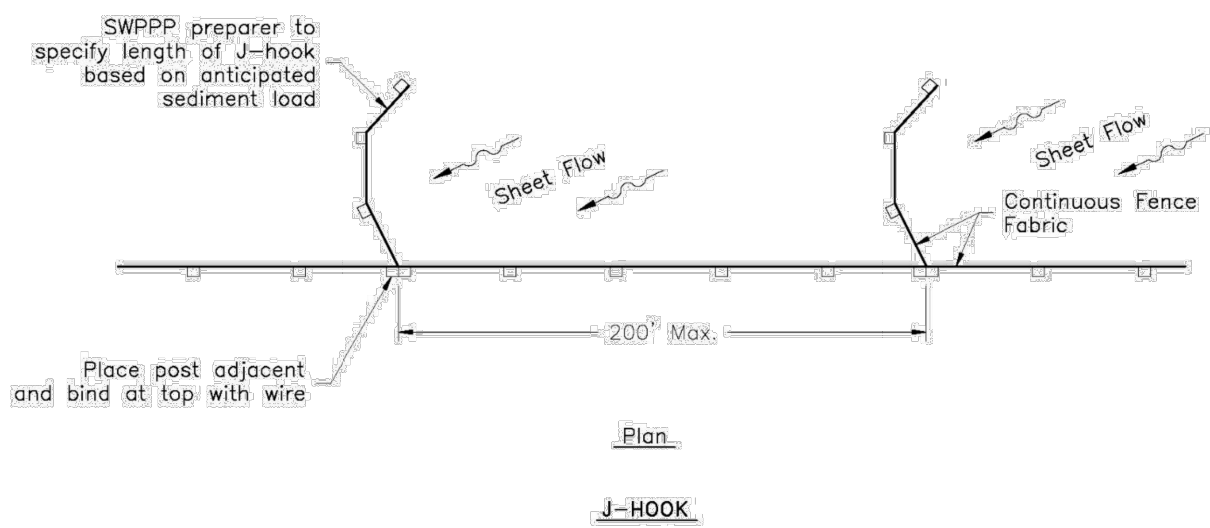
Virginia Erosion and Sedimentation Control Handbook, Virginia Department of Conservation and Recreation, Division of Soil and Water Conservation, 1991.

Guidance Specifying Management Measures for Nonpoint Pollution in Coastal Waters, EPA 840-B-9-002, USEPA, Office of Water, Washington, DC, 1993.

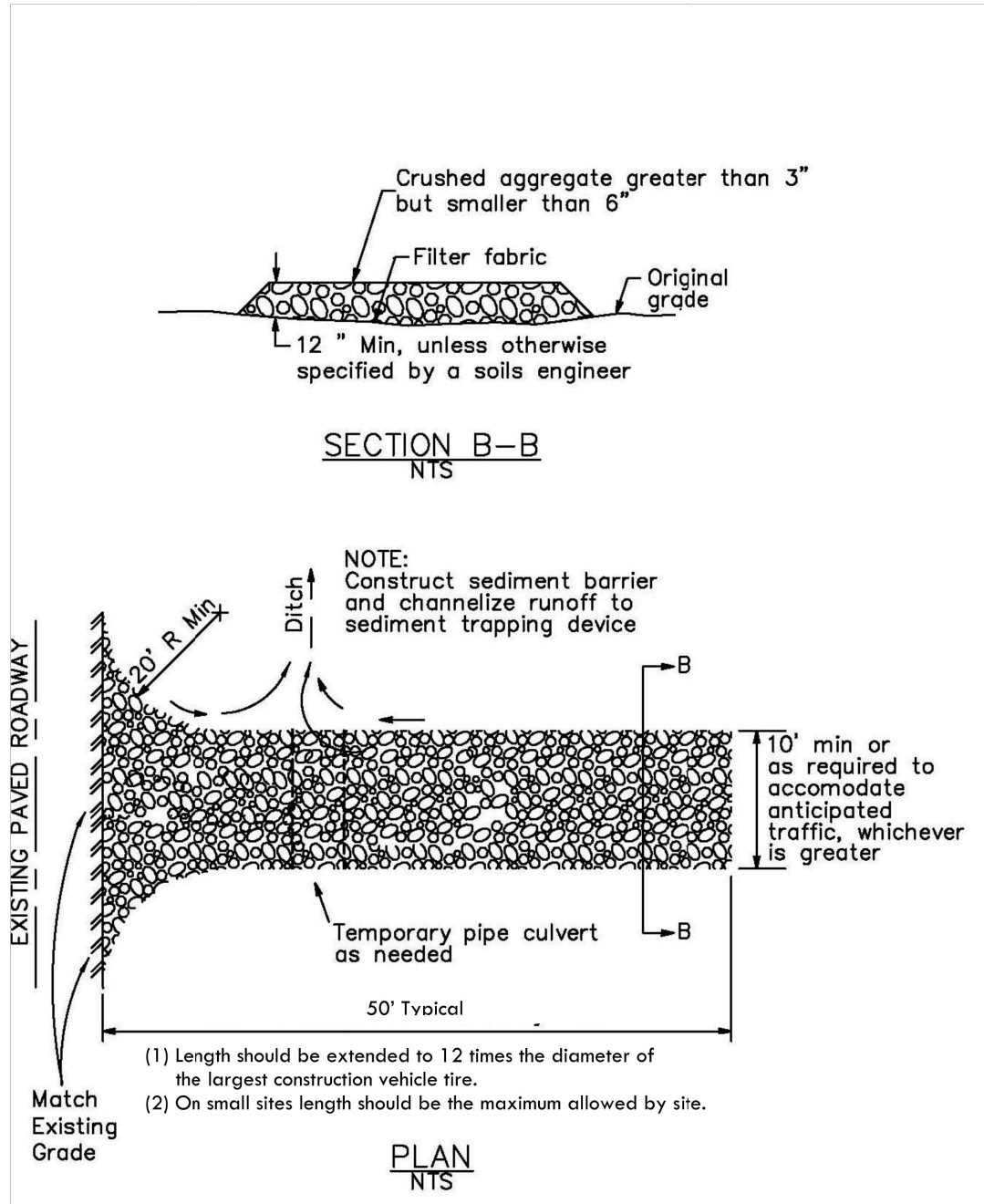
Water Quality Management Plan for the Lake Tahoe Region, Volume II, Handbook of Management Practices, Tahoe Regional Planning Agency, November 1988.

Silt Fence

SE-1



Stabilized Construction Entrance/Exit TC-1



Stabilized Construction Entrance/Exit TC-1

Select construction access stabilization (aggregate, asphaltic concrete, concrete) based on longevity, required performance, and site conditions. Do not use asphalt concrete (AC) grindings for stabilized construction access/roadway.

If aggregate is selected, place crushed aggregate over geotextile fabric to at least 12 in. depth, or place aggregate to a depth recommended by a geotechnical engineer. A crushed aggregate greater than 3 in. but smaller than 6 in. should be used.

Designate combination or single purpose entrances and exits to the construction site.

Require that all employees, subcontractors, and suppliers utilize the stabilized construction access.

Implement SE-7, Street Sweeping and Vacuuming, as needed.

All exit locations intended to be used for more than a two-week period should have stabilized construction entrance/exit BMPs.

Inspection and Maintenance

Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMPs are under way, inspect BMPs in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.

Inspect local roads adjacent to the site daily. Sweep or vacuum to remove visible accumulated sediment.

Remove aggregate, separate and dispose of sediment if construction entrance/exit is clogged with sediment.

Keep all temporary roadway ditches clear.

Check for damage and repair as needed.

Replace gravel material when surface voids are visible.

Remove all sediment deposited on paved roadways within 24 hours.

Remove gravel and filter fabric at completion of construction

Costs

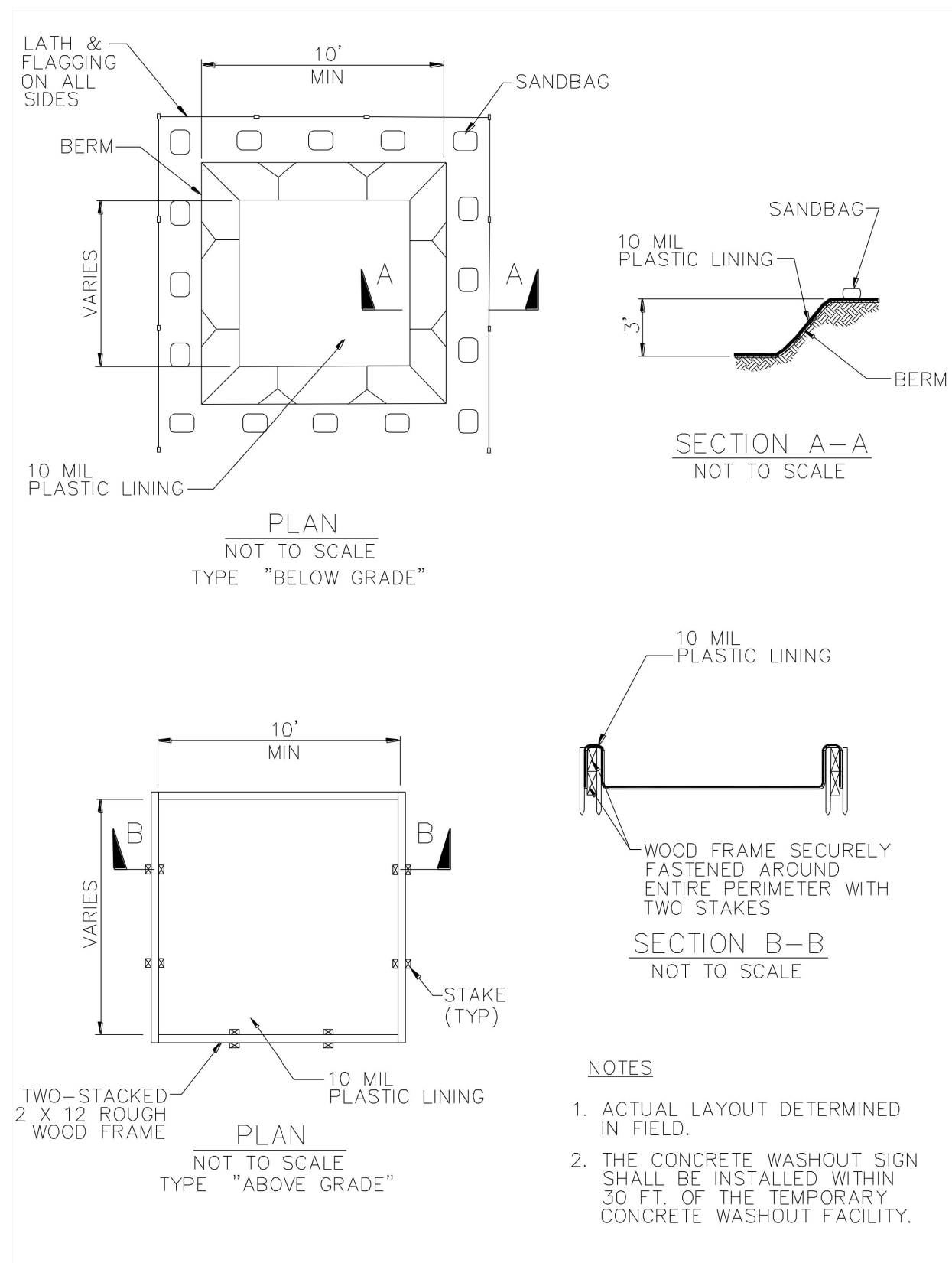
Average annual cost for installation and maintenance may vary from \$1,500 to \$6,100 each, averaging \$3,100 per entrance. Costs will increase with addition of washing rack and sediment trap. With wash rack, costs range from \$1,500 - \$7,700 each, averaging \$4,600 per entrance (All costs adjusted for inflation, 2016 dollars, by Tetra Tech Inc.

References

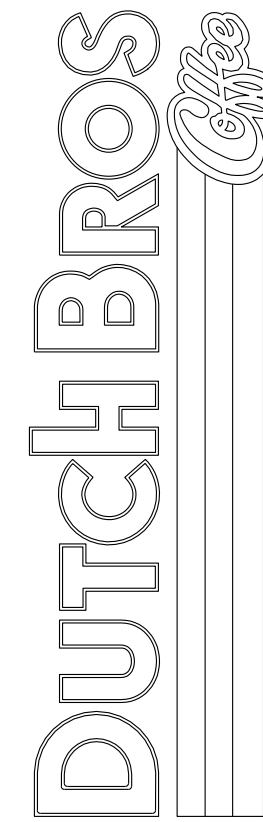
Manual of Standards of Erosion and Sediment Control Measures, Association of Bay Area Governments, May 1995.

Concrete Waste Management

WM-8



THE EROSION AND SEDIMENT CONTROL DETAILS
1598 FAIRGROUNDS DRIVE
VALLEJO, CA 94589



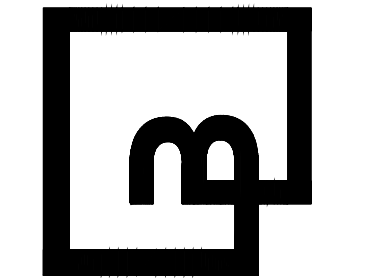
For:



Scale:
Horizontal N/A
Vertical N/A

Designed: STT
Drawn: STT
Checked: JAH
Approved: HPG
Date: 10/07/22

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Kent, WA 98032
425-251-6222
barghausen.com



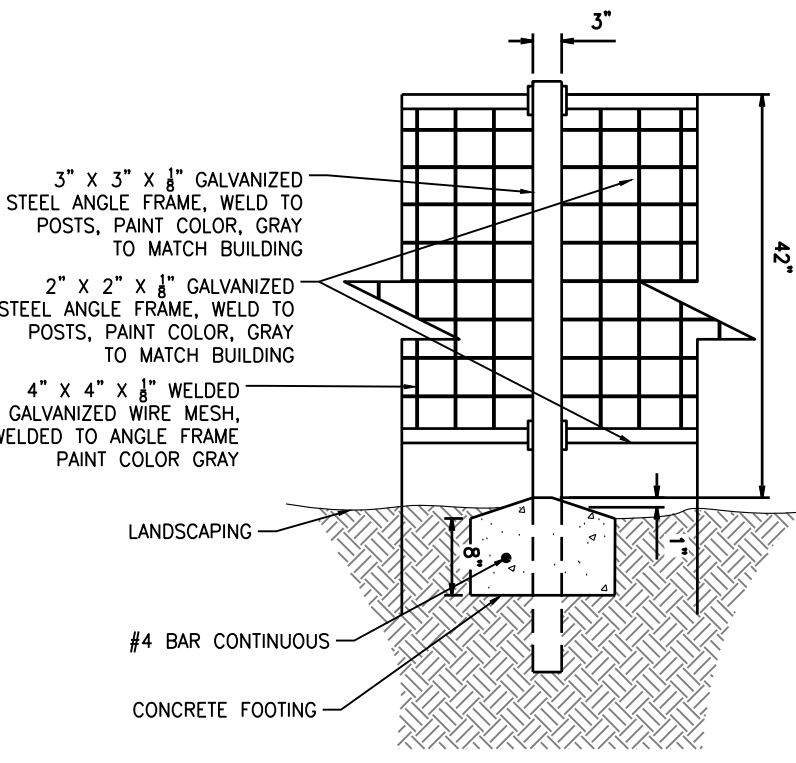
Job Number
22138
Sheet
C2.2
2019 DB
Franchising USA, LLC

PRELIMINARY NOT FOR CONSTRUCTION

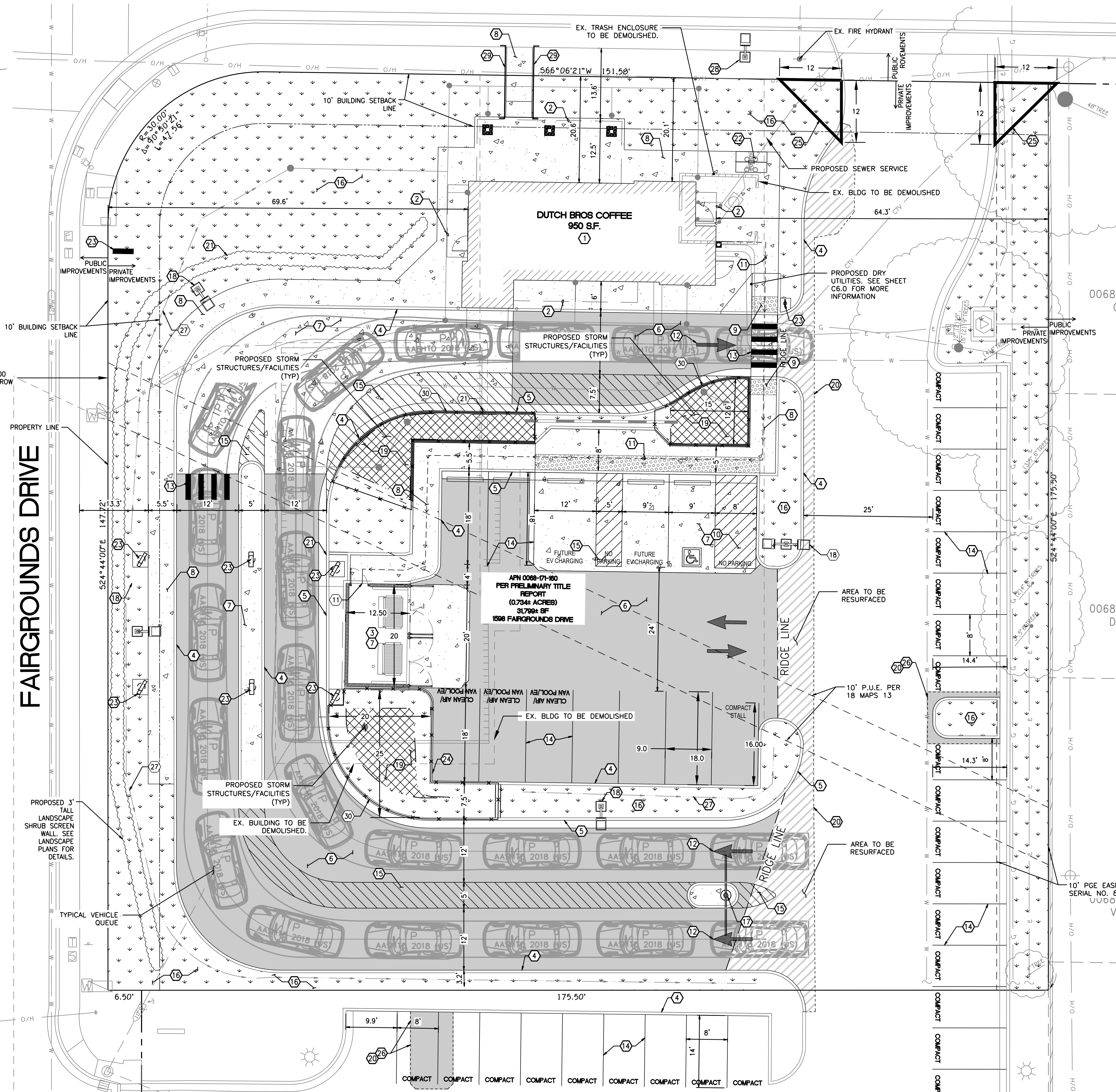
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DUTCH BROS. COFFEE - CA0105, VALLEJO, CA

APN: 0068-171-160
PRELIMINARY SITE PLAN



1 WIRE MESH FENCE
C3.0 NOT TO SCALE



CONSTRUCTION NOTES:

1. PROPOSED DUTCH BROS. COFFEE. SEE ARCHITECTURAL PLANS FOR DETAILS.
2. PROPOSED CANOPY. SEE ARCHITECTURAL PLANS FOR DETAILS.
3. PROPOSED 20'X12' TRASH ENCLOSURE WITH CONCRETE PAD. SEE ARCHITECTURAL PLANS FOR DETAILS.
4. PROPOSED CONCRETE BARRIER CURB, TYPICAL.
5. PROPOSED CURB AND GUTTER, TYPICAL.
6. PROPOSED ASPHALT PAVEMENT, TYPICAL.
7. PROPOSED ON-SITE CONCRETE PAVEMENT, TYPICAL.
8. PROPOSED ON-SITE CONCRETE SIDEWALK, TYPICAL.
9. PROPOSED ACCESSIBLE RAMP.
10. PROPOSED ACCESSIBLE PARKING SPACE AND AISLE WITH ALL REQUIRED SIGNAGE.
11. PROPOSED ADA PATH OF TRAVEL.
12. PROPOSED DIRECTIONAL PAVEMENT MARKINGS, TYPICAL.
13. PAINT CONTINENTAL TYPE PEDESTRIAN CROSSWALK STRIPING; 1 FOOT WIDE STRIPES SPACED 2 1/2' FEET ON CENTER.
14. PROPOSED 4" WIDE WHITE REFLECTIVE PAINT PARKING STALL STRIPES, TYPICAL.
15. PROPOSED PAVEMENT STRIPING, TYPICAL.
16. PROPOSED LANDSCAPE AREA, TYPICAL.
17. PROPOSED CLEARANCE BAR. REFER TO SIGNING PLANS BY OTHERS FOR ADDITIONAL INFORMATION, TYPICAL.
18. PROPOSED SITE LIGHTING. REFER TO PLANS BY OTHERS FOR ADDITIONAL INFORMATION, TYPICAL.
19. PROPOSED BIORETENTION POND.
20. APPROXIMATE SAWCUT LIMITS.
21. PROPOSED RETAINING/HEADLIGHT SCREEN WALL. HEIGHT VARIES. SEE GRADING PLAN.
22. PROPOSED BICYCLE RACK.
23. PROPOSED SIGN. REFER TO SIGNING PLANS BY OTHERS FOR ADDITIONAL INFORMATION, TYPICAL.
24. PROPOSED CURB CUT, TYPICAL.
25. PROPOSED CLEAR SIGHT TRIANGLE PER CITY OF VALLEJO. SEE PLAN FOR DIMENSIONS.
26. PROPOSED PAVEMENT TO MATCH EXISTING PAVEMENT SECTION.
27. GRADED SWALE FOR DRAINAGE.
28. PROPOSED OFFSITE STREET LIGHT.
29. PROPOSED HANDRAILS PER CITY OF VALLEJO AND ADA STANDARDS.
30. PROPOSED WIRE MESH FENCE, PER DETAIL/THIS SHEET, TYPICAL.

PROJECT DATA

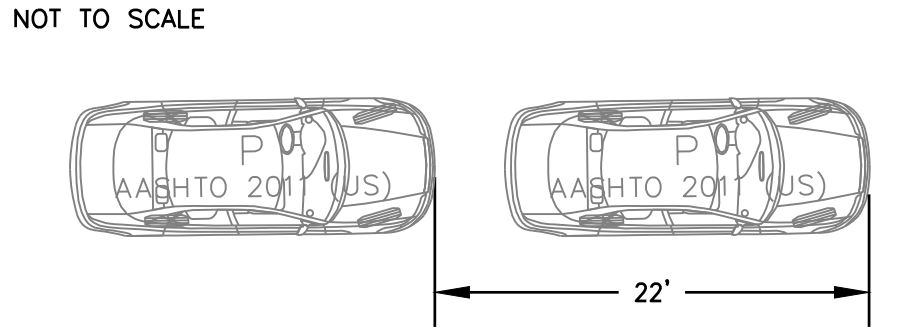
ADDRESS: 1598 FAIRGROUNDS DRIVE, VALLEJO, CA 94589
APN: 0068-171-160

LOT AREA: PARCEL AREA: 31,970 SF (0.73 ACRES)
GROSS PROJECT AREA: 24,939 SF (0.57 ACRES)

MAINTENANCE OF IMPROVEMENTS

ANY IMPROVEMENTS PROPOSED ON PRIVATE PROPERTY WILL BE MAINTAINED BY THE OWNER. ANY IMPROVEMENTS PROPOSED ON PUBLIC PROPERTY WILL BE MAINTAINED BY THE CITY.

TYPICAL VEHICLE STACKING KEY:

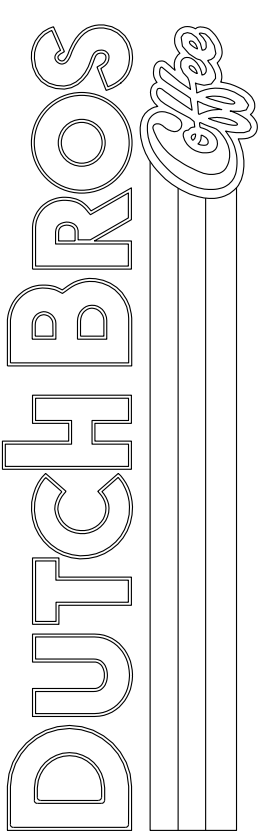


LEGEND

BUILDING LINE	
EXISTING CURB TO REMAIN	
PROPOSED CURB	
PROPOSED LANDSCAPING	
EXISTING LANDSCAPING	
PROPOSED ASPHALT	
PROPOSED CONCRETE	
PROPOSED STORM DRAINAGE BOTTOM	
ASPHALT AREA TO BE RESURFACED	

PRELIMINARY SITE PLAN
1598 FAIRGROUNDS DRIVE
VALLEJO, CA 94589

Title:



For:

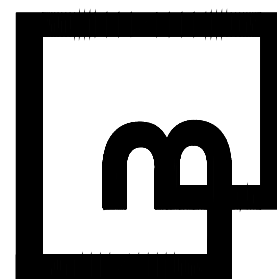


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Vertical N/A

Designed: STT
Drawn: STT
Checked: JAH
Approved: HPG
Date: 10/07/22

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Kent, WA 98032
425-251-6222



Job Number
22138

Sheet
C3.0
2019 DB
Franchising USA, LLC

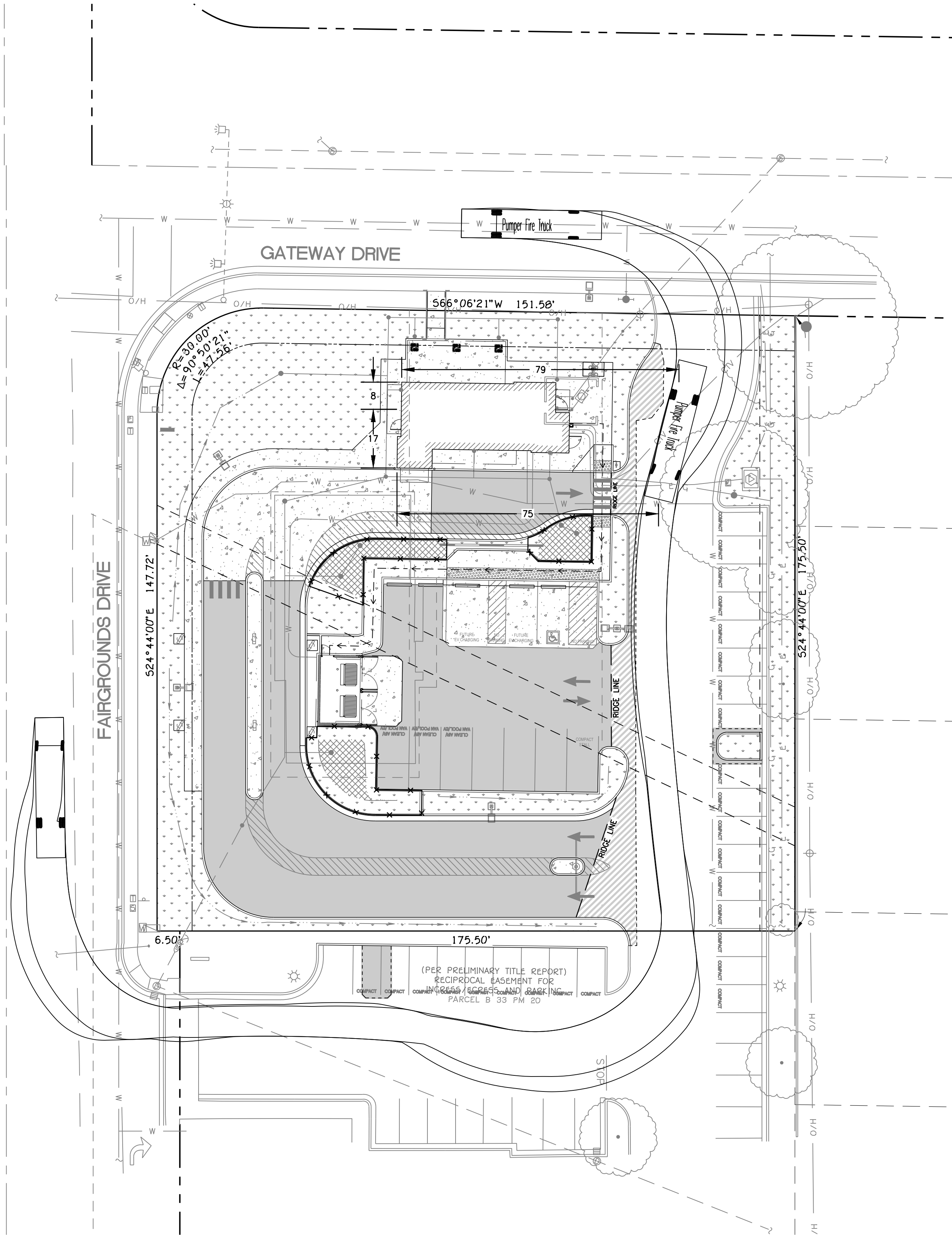
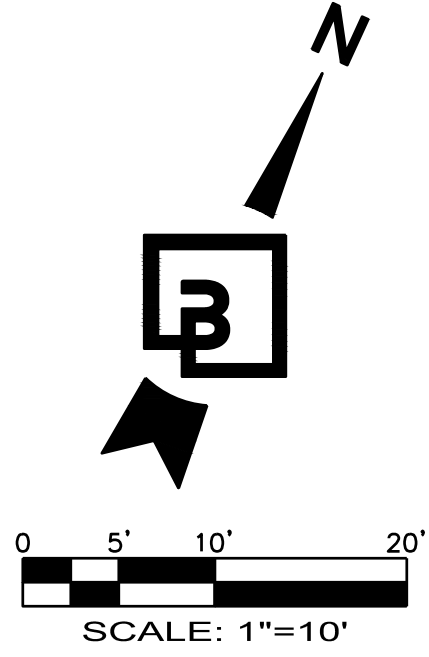
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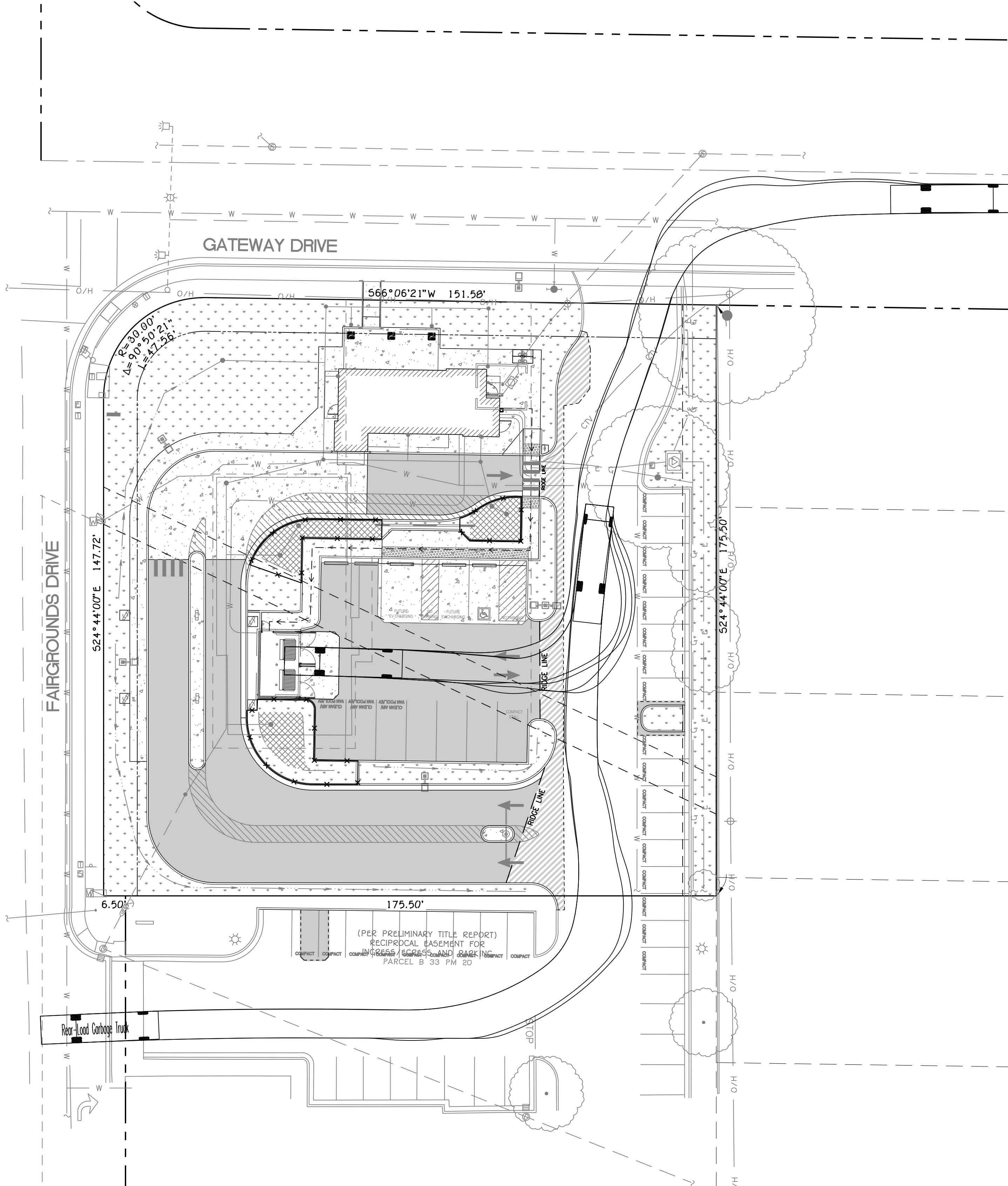
DUTCH BROS. COFFEE - CA0105, VALLEJO, CA

APN: 0068-171-160

FIRE & REFUSE TRUCK TURNING TEMPLATE



FIRE TRUCK TURNING TEMPLATE
SCALE: 1"=20'



REFUSE TRUCK TURNING TEMPLATE
SCALE: 1"=20'

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Job Number

22138

Sheet

C3.1

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Consulting Engineers, Inc.

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Kent, WA 98032
425.251.6222 barghausen.com

Designed

Drawn

Checked

Approved

Date

Scale:

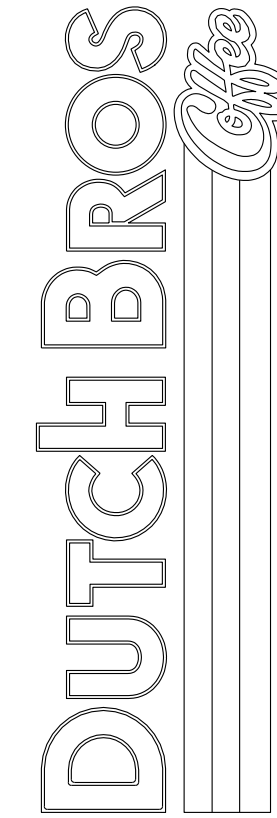
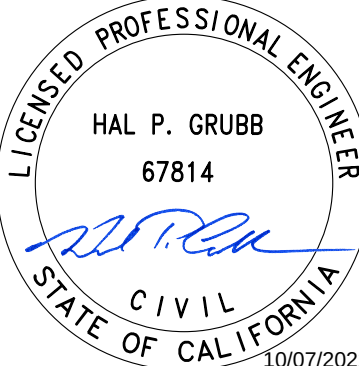
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Vertical

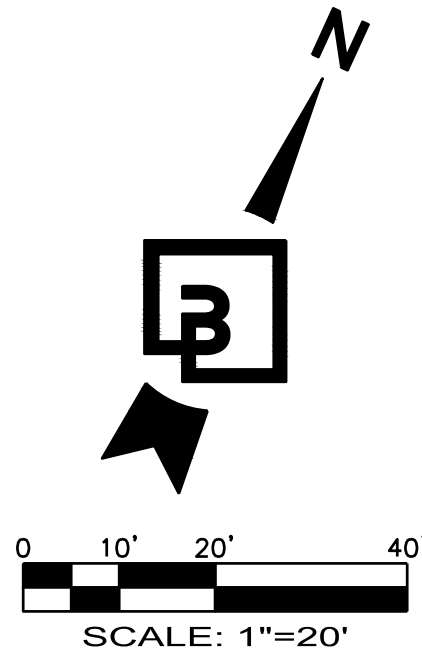
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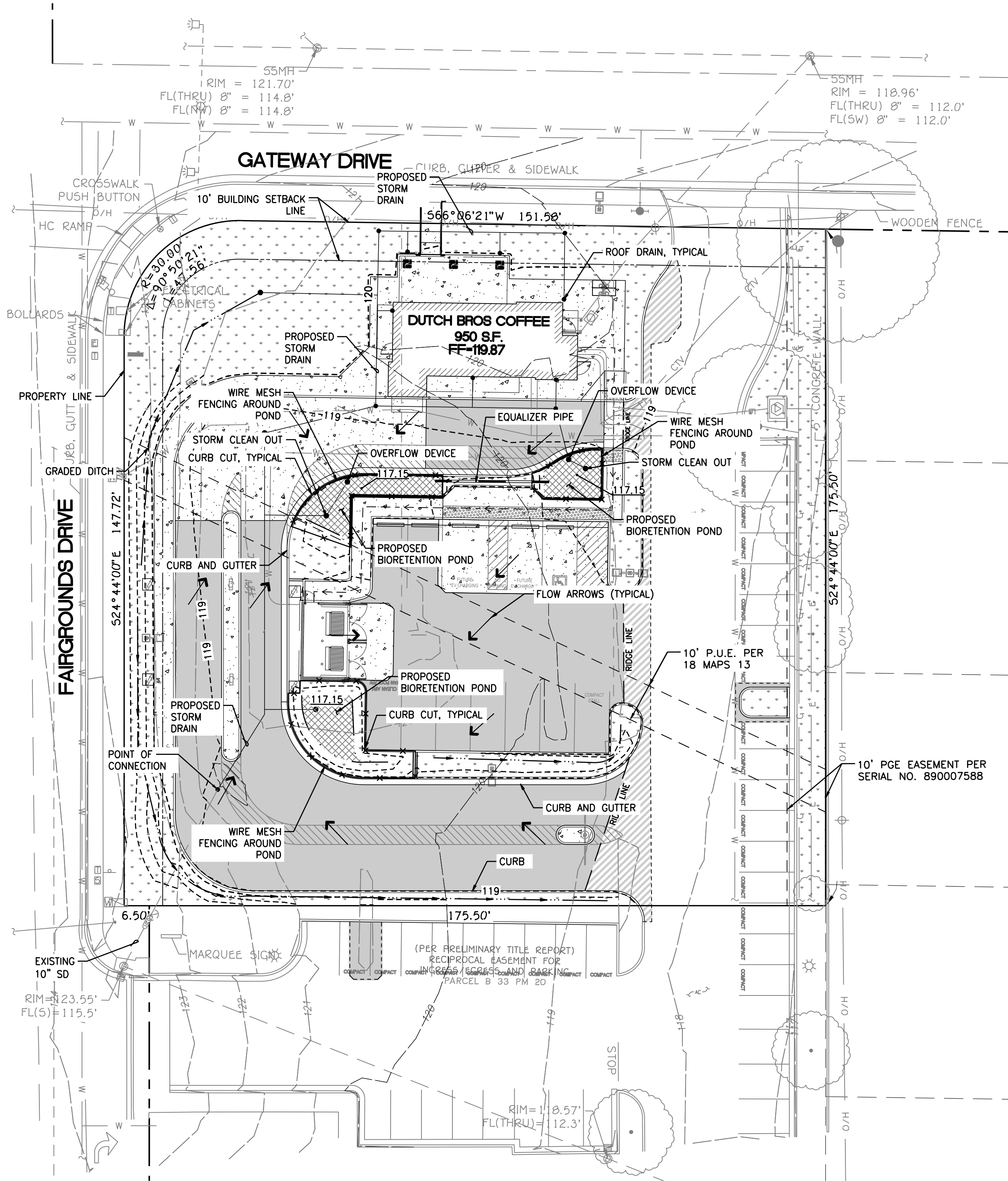
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FIRE & REFUSE TRUCK TURNING TEMPLATE
1598 FAIRGROUNDS DRIVE
VALLEJO, CA 94589

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DUTCH BROS. COFFEE - CA0105, VALLEJO, CA

APN: 0068-171-160
PRELIMINARY DRAINAGE PLAN

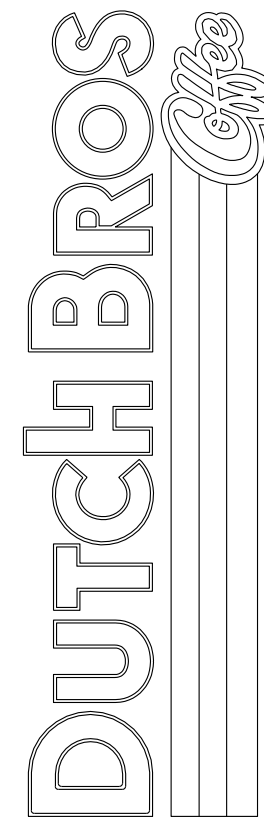


PRELIMINARY NOT FOR CONSTRUCTION

LEGEND	
BUILDING LINE	
EXISTING CURB TO REMAIN	
PROPOSED CURB	
PROPOSED LANDSCAPING	
EXISTING LANDSCAPING	
PROPOSED ASPHALT	
PROPOSED CONCRETE	
PROPOSED STORM DRAINAGE BOTTOM	
ASPHALT AREA TO BE RESURFACED	

PRELIMINARY DRAINAGE PLAN
1598 FAIRGROUNDS DRIVE
VALLEJO, CA 94589

Title:



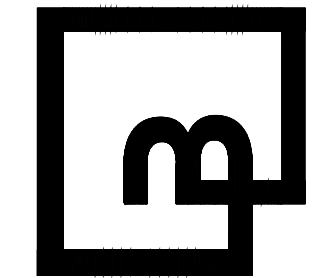
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Vertical
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Checked	JAH
Approved	HFG
Date	10/07/22

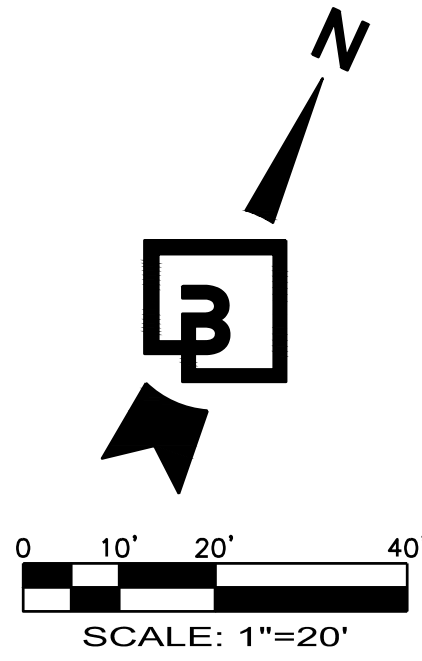
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Kent, WA 98032
425.251.6222 barghausen.com



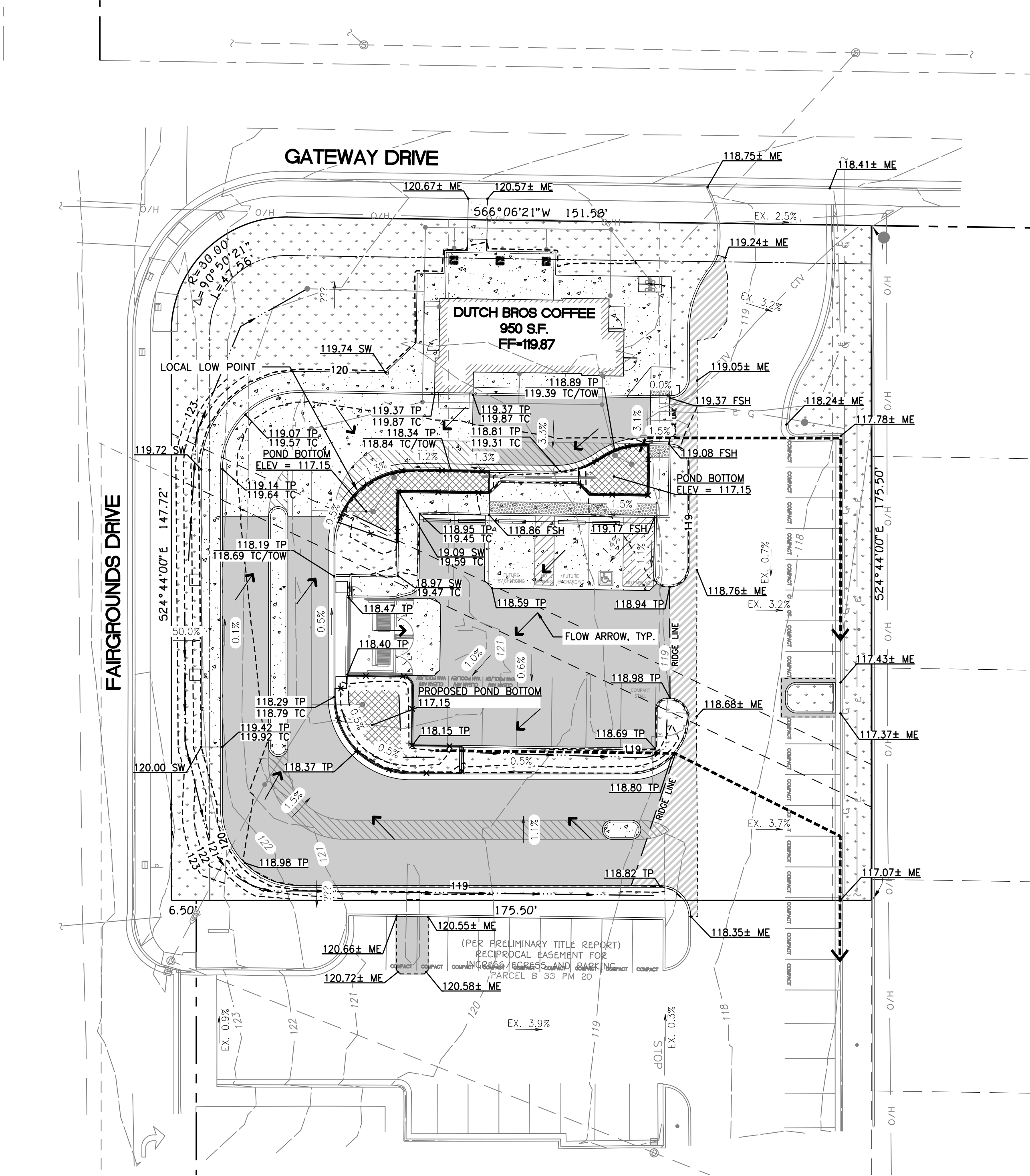
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APN: 0068-171-160
PRELIMINARY GRADING PLAN



GRADING QUANTITIES	
CUT	1,158 CY
FILL	1,216 CY
NET	58 CY <FILL>

NOTE:
FOR AREAS WHERE THERE IS A RETAINING WALL, BOTTOM OF WALL (BOW) IS EQUAL TO POND BOTTOM ELEVATIONS.

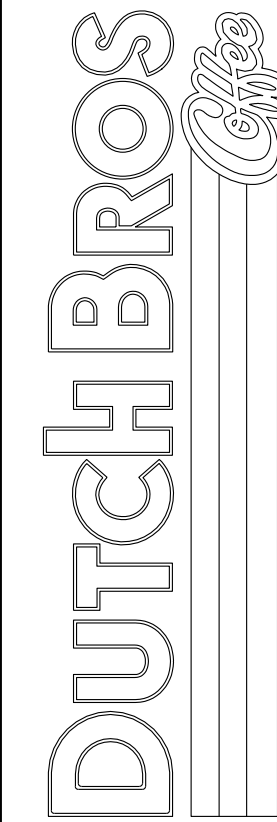
TOW - TOP OF WALL
BOW - BOTTOM OF WALL
FF - FINISHED FLOOR
FL - FLOWLINE
FSH - FLUSH
GB - GRADE BREAK
GRD - GROUND
MA - MATCH OFFSITE TIE IN ELEVATION
ME - MATCH EXISTING
TC - TOP OF CURB/SIDEWALK
TP - TOP OF PAVING
RIM - RIM/GRATE ELEVATION OF STRUCTURE

LEGEND	
BUILDING LINE	
EXISTING CURB TO REMAIN	
PROPOSED CURB	
PROPOSED LANDSCAPING	
EXISTING LANDSCAPING	
PROPOSED ASPHALT	
PROPOSED CONCRETE	
PROPOSED STORM DRAINAGE BOTTOM	
ASPHALT AREA TO BE RESURFACED	
OVERLAND RELEASE ROUTE	

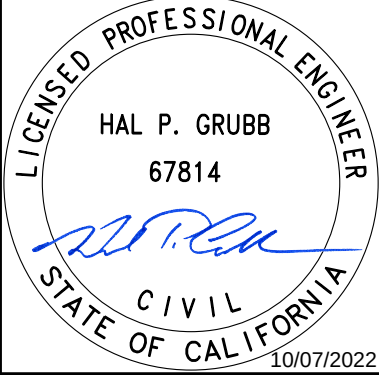
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PRELIMINARY GRADING PLAN
1598 FAIRGROUNDS DRIVE
VALLEJO, CA 94589

Title:



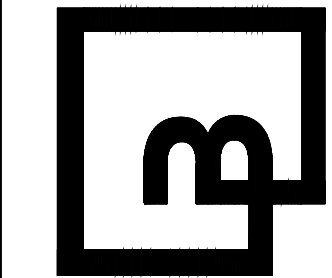
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Vertical
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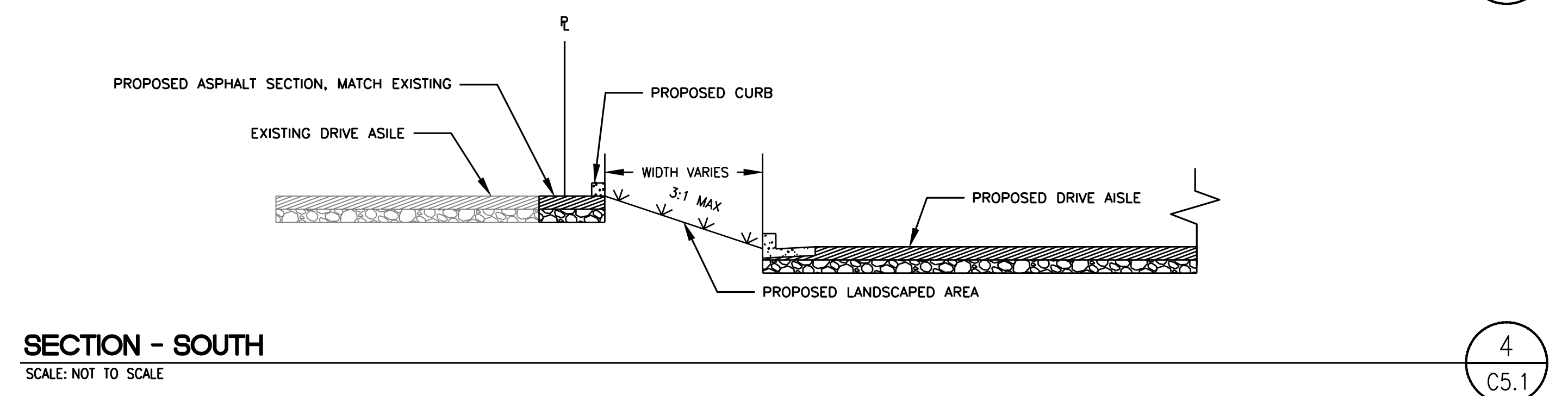
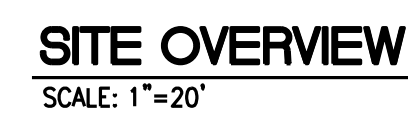
Designed	STL
Drawn	STL
Checked	JAH
Approved	HFG
Date	10/07/22

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Kent, WA 98032
425.251.6222 barghausen.com



Job Number
22138
Sheet
C50
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SECTION DETAILS



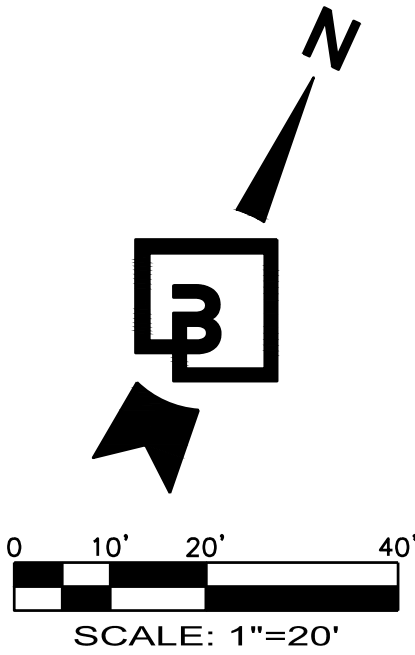
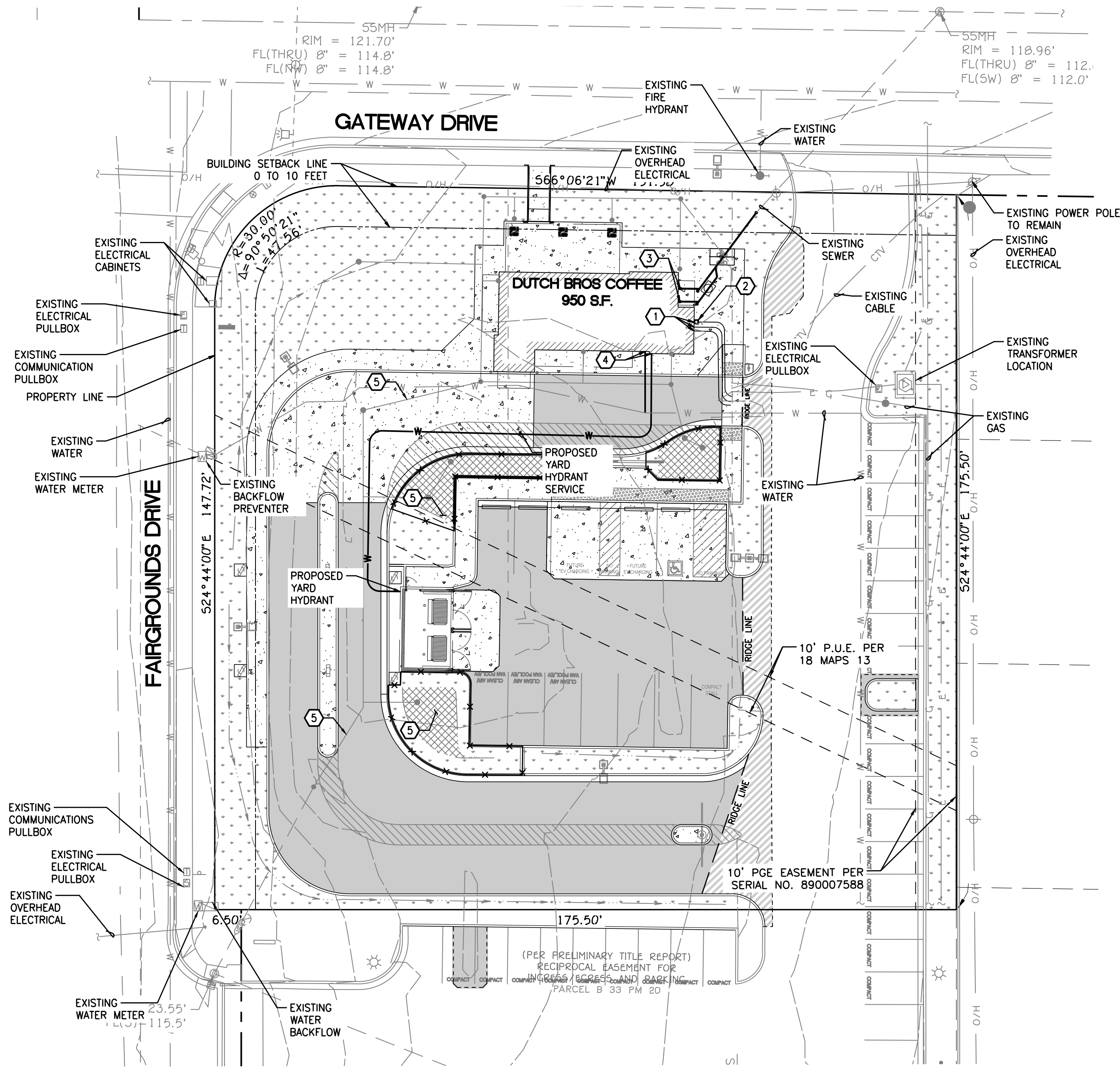
PRELIMINARY NOT FOR CONSTRUCTION

Sheet
C5.1
2019.09

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DUTCH BROS. COFFEE - CA0105, VALLEJO, CA
APN: 0068-171-160
PRELIMINARY UTILITY PLAN



CONSTRUCTION NOTES:

1. APPROXIMATE LOCATION OF POWER/COMMUNICATIONS CONNECTION TO BUILDING.
2. APPROXIMATE LOCATION OF GAS METER LOCATION.
3. APPROXIMATE LOCATION OF SEWER CONNECTION WITH GB50 GREASE INTERCEPTOR TO BUILDING.
4. APPROXIMATE LOCATION OF WATER CONNECTION TO BUILDING.
5. PROPOSED STORM PIPES, STRUCTURES, AND FACILITIES. SEE SHEET C4.0 FOR MORE INFORMATION.

NOTE:

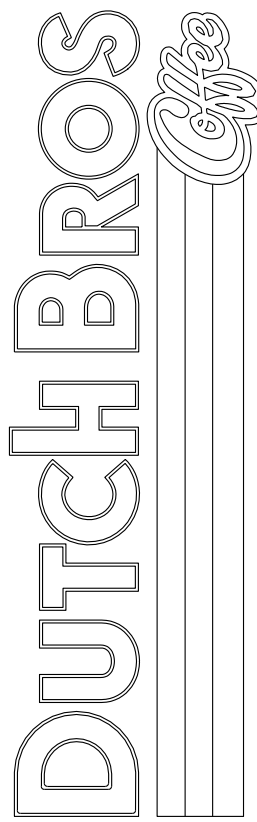
CONTRACTOR TO CAP UTILITIES AT EXISTING BUILDING AND RE-ROUTE UTILITIES TO NEW BUILDING LOCATION.

LEGEND

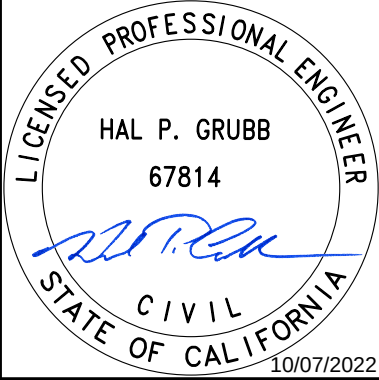
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EXISTING CURB TO REMAIN	
PROPOSED CURB	
PROPOSED LANDSCAPING	
EXISTING LANDSCAPING	
PROPOSED ASPHALT	
PROPOSED CONCRETE	
PROPOSED STORM DRAINAGE BOTTOM	
ASPHALT AREA TO BE RESURFACED	

PRELIMINARY UTILITY PLAN
1598 FAIRGROUNDS DRIVE
VALLEJO, CA 94589

Title:



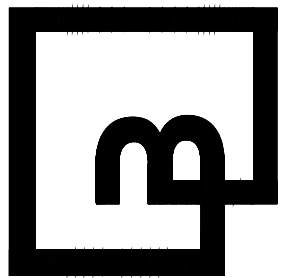
For:



Scale:
Horizontal
1" = 20'
Vertical
N/A

Designed: STT
Drawn: STT
Checked: JAH
Approved: HPG
Date: 10/07/22

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Job Number
22138

Sheet
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2019 DB
Franchising USA, LLC

PRELIMINARY NOT FOR CONSTRUCTION

SUMMARY
DRAWING

SUMMARY - BUILDING SIGNS & MENUS

DRAWING #:
33760

CLIENT:
DUTCH BROS - CA0105
1598 FAIRGROUNDS DR.
VALLEJO, CA 94589

DATE OF SHOP DRAWING:
1/18/22

SHOP REVISIONS:
1.31.22 MOVED ONE SET OF MENUS
CLOSER TO CB & ADDED A SF.
6.30.22 CHANGE DBCL10 TO DBCL8.
CHANGED DBW12 TO DBW10.
REMOVED 3 SF MENUS.
REMOVED DF MENUS.

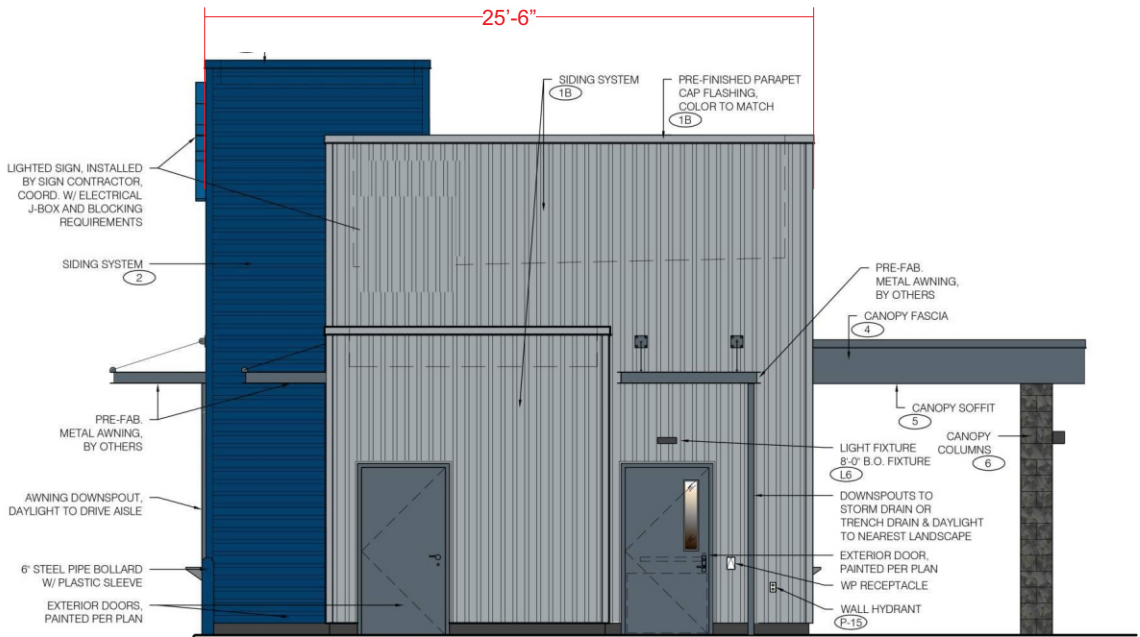
SALES:	CONCEPT DESIGN:	PROD. DESIGN:	PAGE NO:
NJ	CH	CH	1 of 2

ES&A SIGN & AWNING
89975 PRAIRIE RD. | EUGENE, OR 97402
P 541.485.5546 | F 541.485.5813

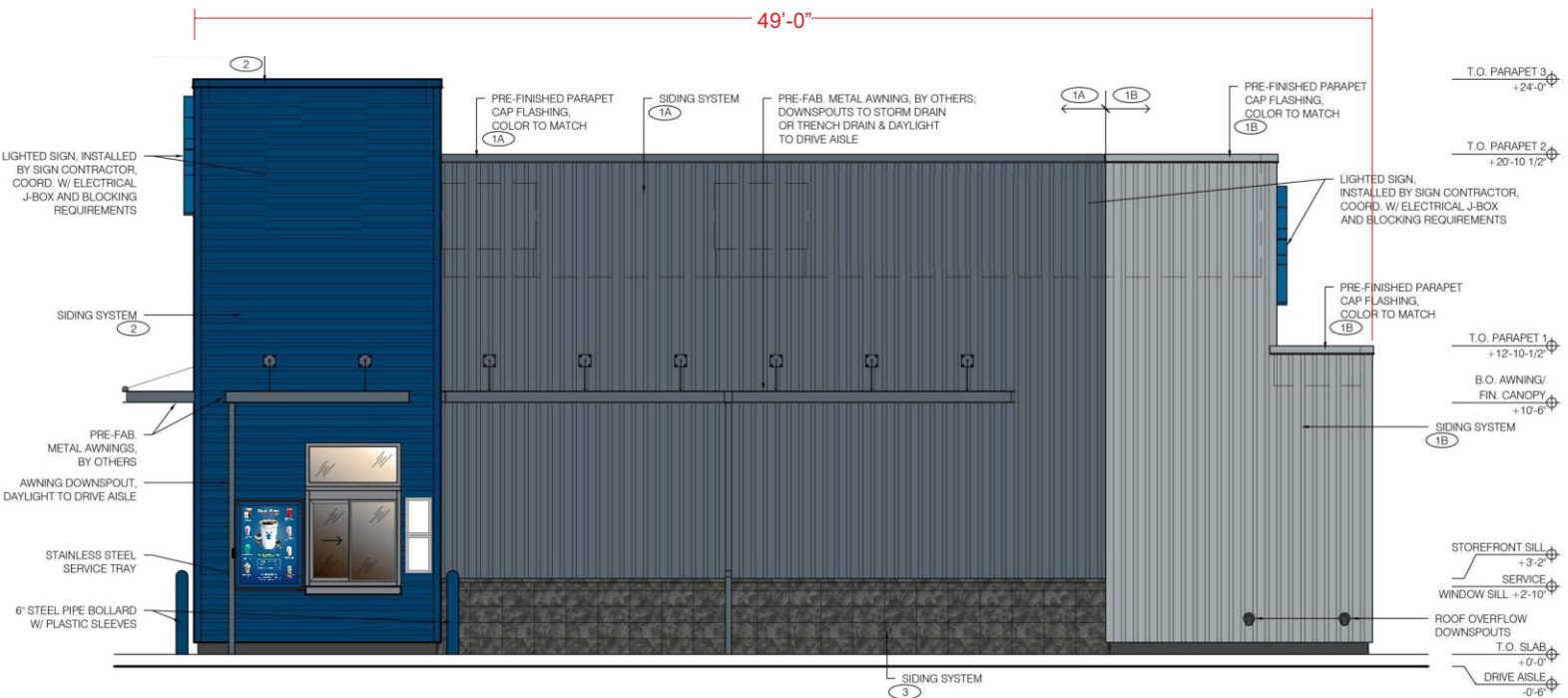


NORTH ELEVATION
SCALE: 1/8"=1'-0"

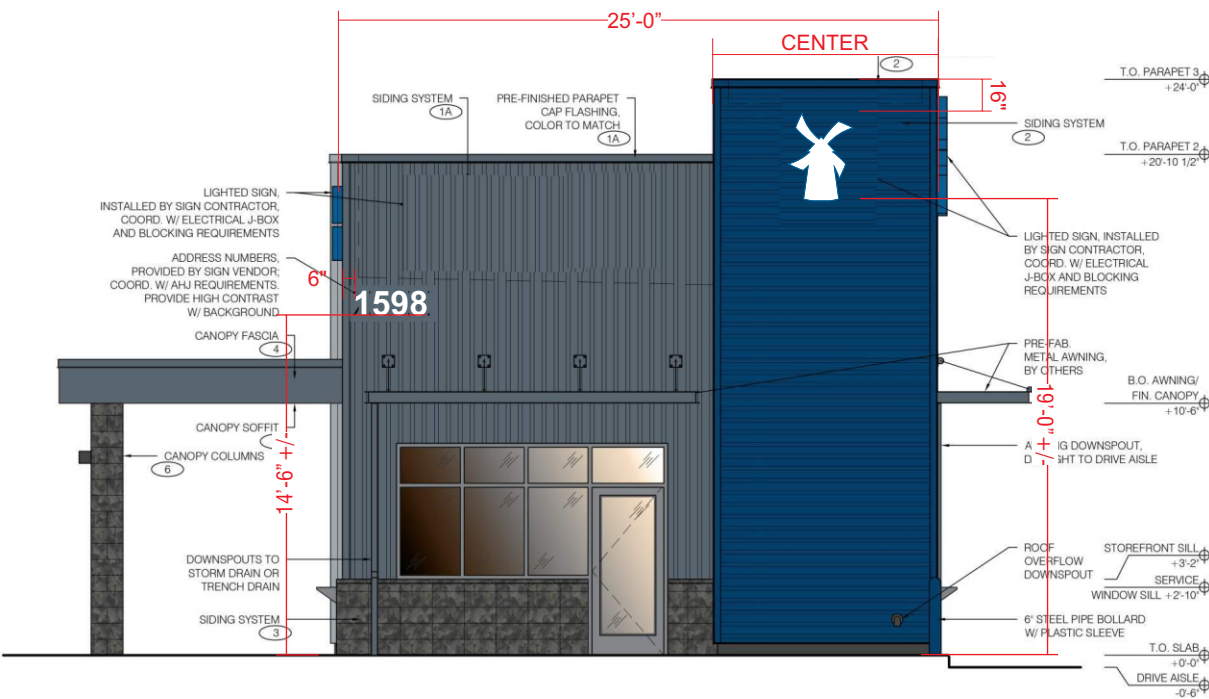
DBCL8 @ 20.2 SF



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



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



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

DBW10 @ 10.3 SF

SUMMARY DRAWING

SUMMARY - FREESTANDING SIGNS & MENUS

DRAWING #:

33760

CLIENT:

DUTCH BROS - CA0105
1598 FAIRGROUNDS DR.
VALLEJO, CA 94589

DATE OF SHOP DRAWING:

1/18/22

SHOP REVISIONS:

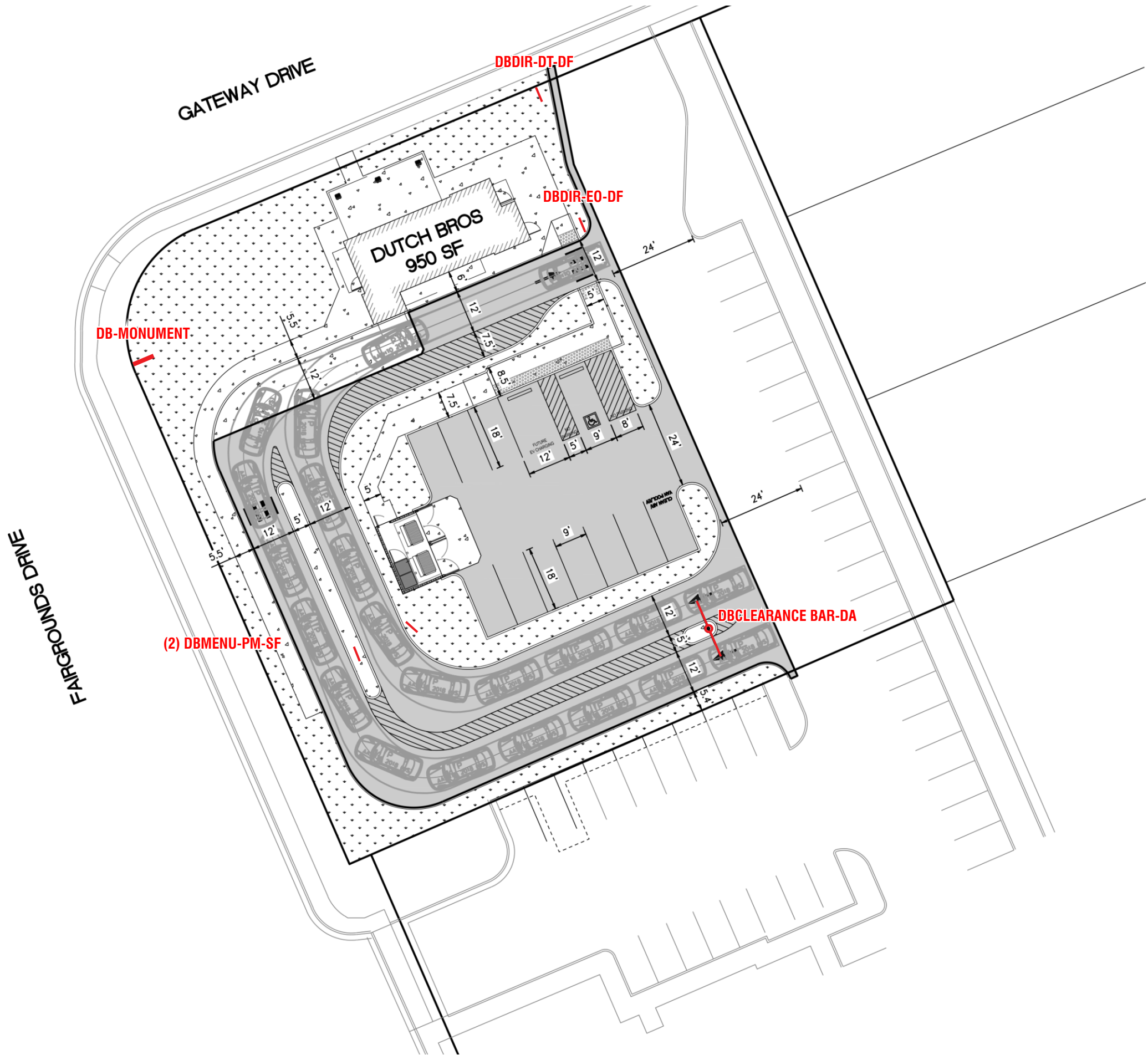
1.31.22 MOVED ONE SET OF MENUS
CLOSER TO CB & ADDED A SF.
6.30.22 CHANGE DBCL10 TO DBCL8.
CHANGED DBW12 TO DBW10.
REMOVED 3 SF MENUS.
REMOVED DF MENUS.

SALES:	CONCEPT DESIGN:	PROD. DESIGN:	PAGE NO:
NJ	CH	CH	2 of 2

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FACTORY
DRAWING

SCOPE OF WORK: MANUFACTURE & INSTALL (1) D/F ILLUMINATED MONUMENT SIGN



SHOP DRAWING #:

33760A

CLIENT:

DUTCH BROS - CA0105
1598 FAIRGROUNDS DR.
VALLEJO, CA 94589

DATE OF SHOP DRAWING:

1/18/22

SHOP REVISIONS:

4.26.22 INCREASED FOOTING BY 10'
& PIPE DIA. BY 1/2".

SALES:	CONCEPT. DESIGN:	PROD. DESIGN:	PAGE NO:
NJ	CH	CH	1 of 2

ES&A SIGN & AWNING

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COLOR CODE

	230-015 YELLOW PSV
	230-33 RED PSV
	230-127 INTENSE BLUE PSV
	WHITE
	DB LIGHT GREY (PMS 429)
	DB CUSTOM DARK BLUE



FABRICATED ALUMINUM CABINET PAINTED DB CUSTOM LIGHT GREY.
BACKED-UP WHITE ACRYLIC LETTERS.
1ST SURFACE 230-015 YELLOW, 230-33 RED, & 230-127 INTENSE BLUE PSV.
WHITE LED ILLUMINATION.
FABRICATED ALUMINUM SKIRT WITH REVEAL PAINTED DB CUSTOM DARK BLUE.
SKIRT TO HAVE MEDIUM TEXTURE COAT.

FACTORY
DRAWING

SHOP DRAWING #:

33760A

CLIENT:

DUTCH BROS - CA0105
1598 FAIRGROUNDS DR.
VALLEJO, CA 94589

DATE OF SHOP DRAWING:

1/18/22

SHOP REVISIONS:

4.26.22 INCREASED FOOTING BY 10’
& PIPE DIA. BY 1/2”.

SALES:	CONCEPT. DESIGN:	PROD. DESIGN:	PAGE NO:
NJ	CH	CH	2 of 2

ES&A SIGN & AWNING

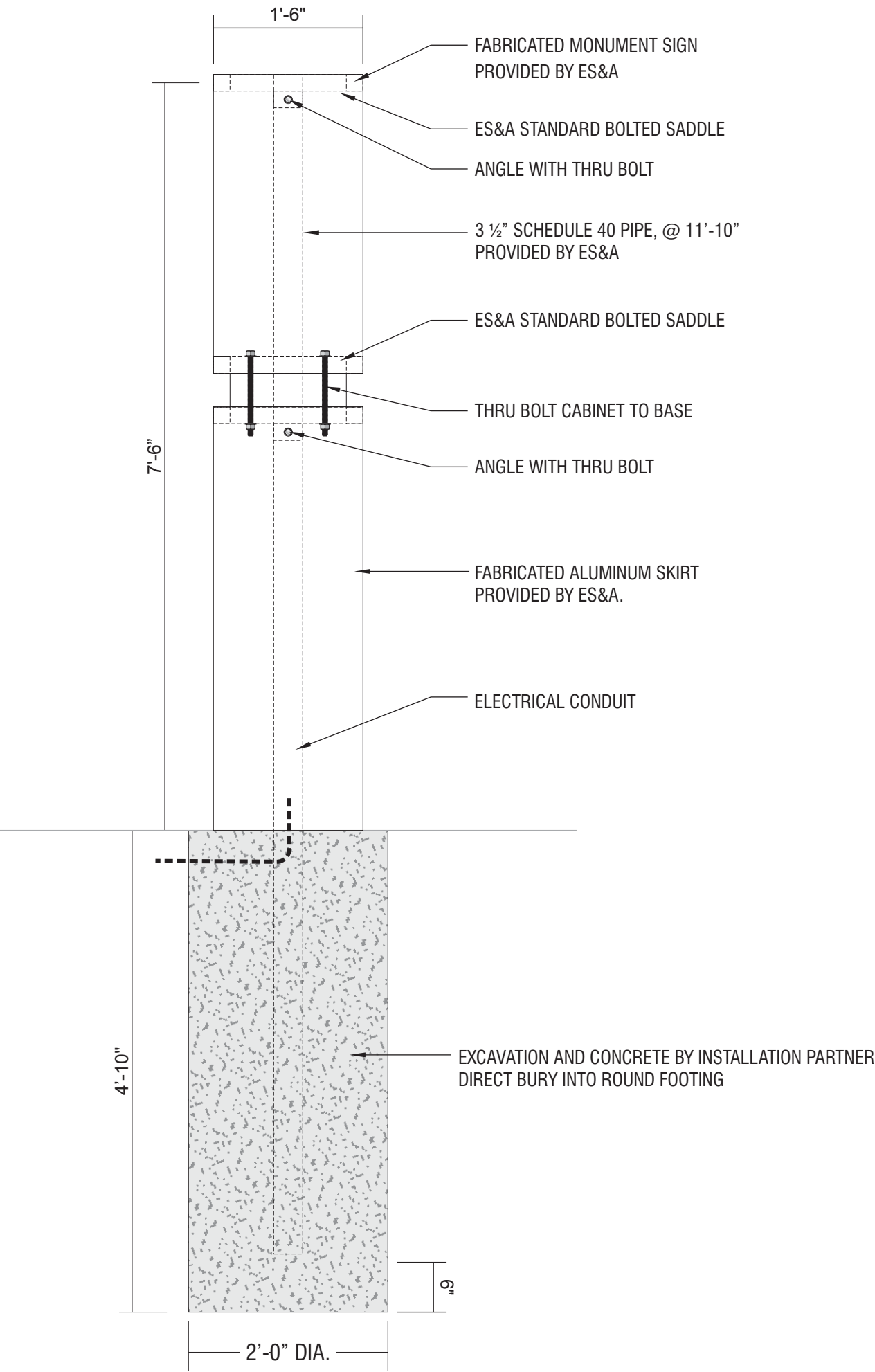
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ATTACHMENT DETAIL

SIDE VIEW

SCALE: 3/4"=1'-0"



FACTORY
DRAWING

SCOPE OF WORK: MANUFACTURE & INSTALL (1) SET OF ILLUMINATED CHANNEL LETTERS WITH REMOTE RACEWAY



SHOP DRAWING #:

33760B1

CLIENT:

DUTCH BROS - CA0105
1598 FAIRGROUNDS DR.
VALLEJO, CA 94589

DATE OF SHOP DRAWING:

1/18/22

SHOP REVISIONS:

6.30.22 REDUCED FROM DBCL10.

SALES:	CONCEPT DESIGN:	PROD. DESIGN:	PAGE NO:
NJ	CH	CH	I of I

ES&A SIGN & AWNING

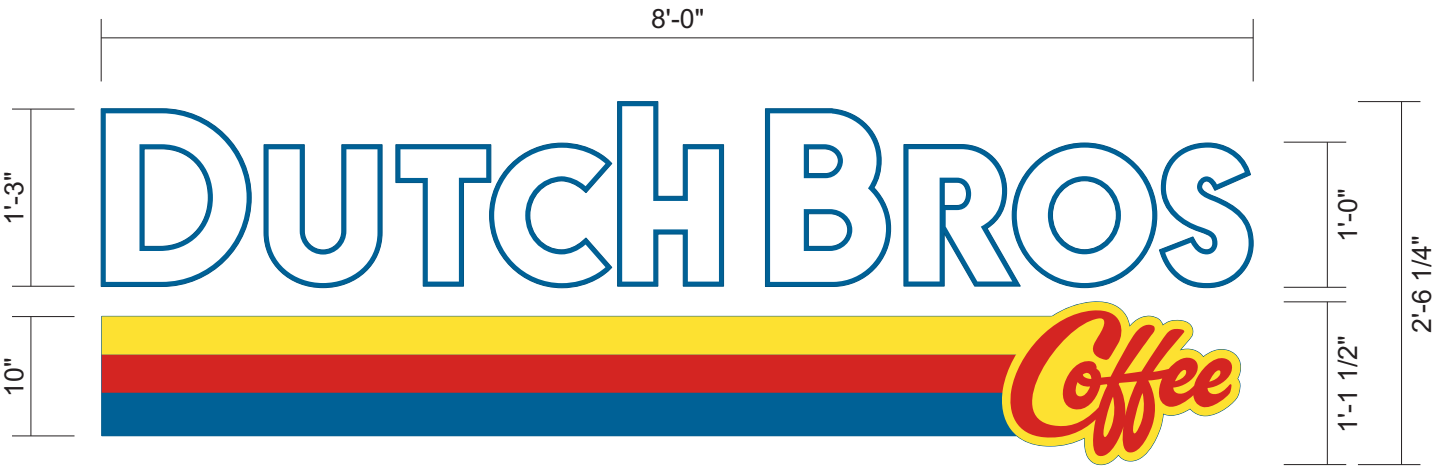
89975 PRAIRIE RD. | EUGENE, OR 97402

P 541.485.5546 | F 541.485.5813

COLOR CODE

	230-015 YELLOW PSV
	230-33 RED PSV
	230-127 INTENSE BLUE PSV
	WHITE

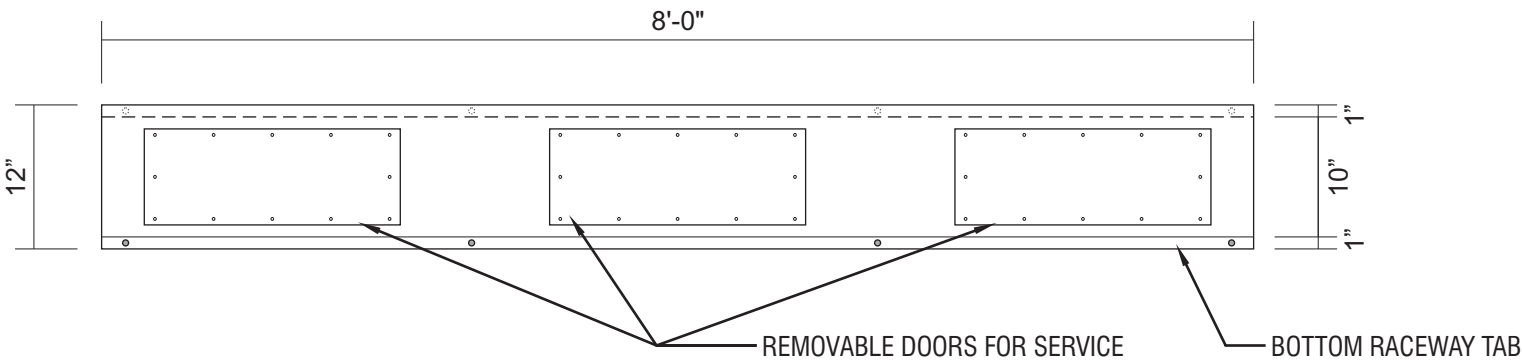
DBCL8-REMOTE-RW
SCALE: 3/4"=1'-0"



SIDE VIEW



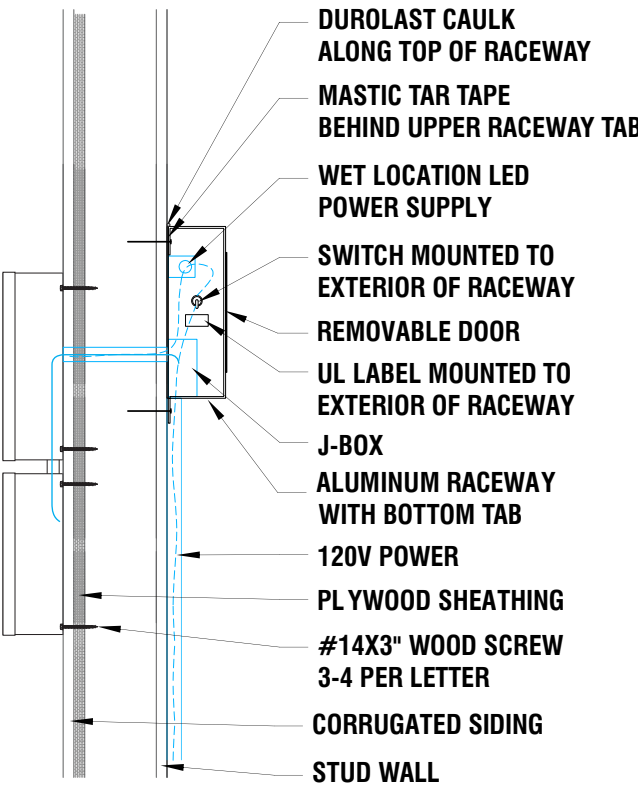
FABRICATED REMOTE RACEWAY
.040 PRE-COAT WHITE ALUMINUM



ATTACHMENT DETAIL

SCALE: 3/4"=1'-0"

CHANNEL LETTERS WITH REMOTE RACEWAY



INTERNALLY ILLUMINATED FACE-LIT FLUSH MOUNTED CHANNEL LETTERS
5" DEEP CHANNEL LETTERS.
RETURNS & TRIM CAP TO MATCH PANTONE 7691 C "INTENSE BLUE".
WHITE ACRYLIC FACES.
230-127 INTENSE BLUE PSV, 230-015 YELLOW PSV, 230-33 RED PSV.
LED ILLUMINATION.
FLUSH MOUNTED WITH REMOTE RACEWAY BEHIND PARAPET WALL.

FACTORY
DRAWING

SCOPE OF WORK: MANUFACTURE & INSTALL (1) ILLUMINATED WINDMILL LOGO



SHOP DRAWING #:
33760C1

CLIENT:
DUTCH BROS - CA0105
1598 FAIRGROUNDS DR.
VALLEJO, CA 94589

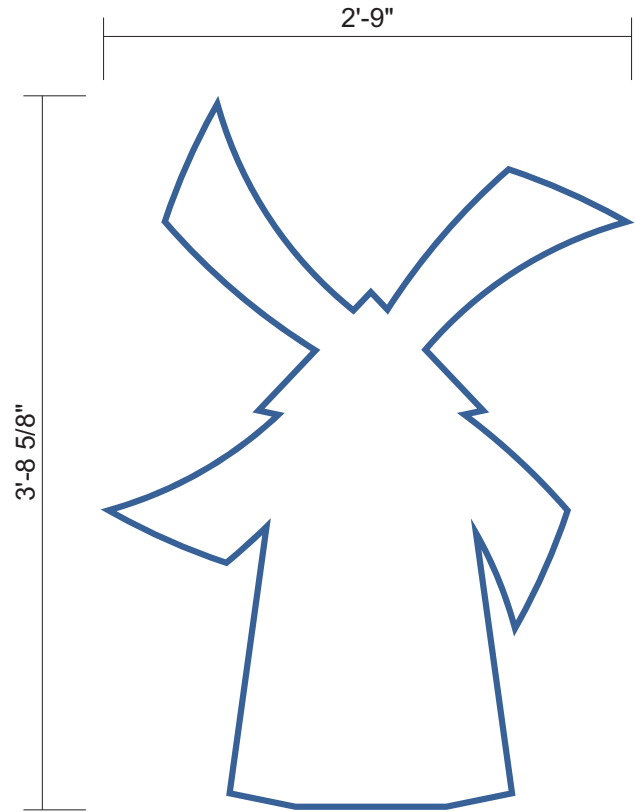
DATE OF SHOP DRAWING:
1/18/22

SHOP REVISIONS:
6.30.22 REDUCED FROM DBW12.

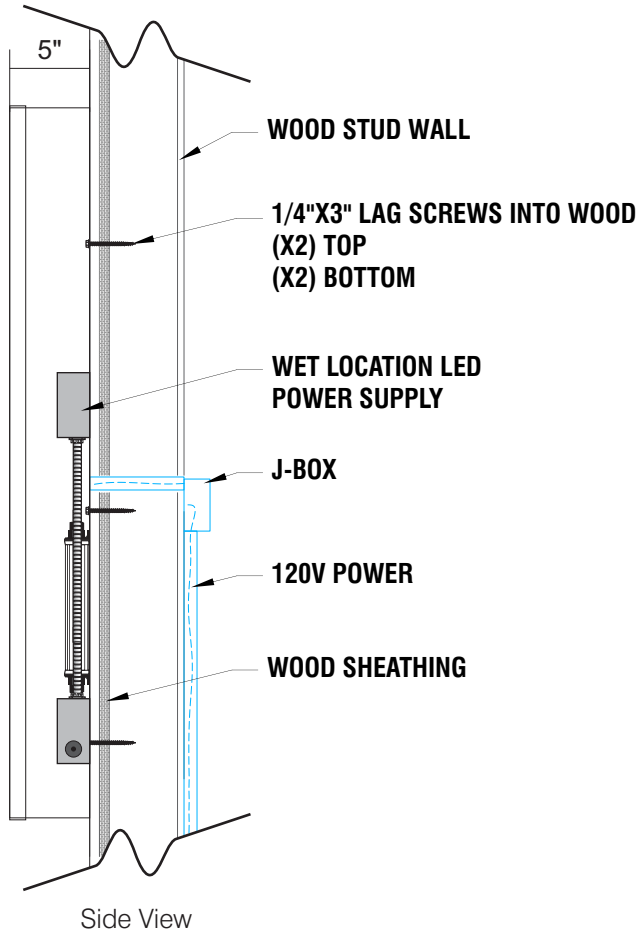
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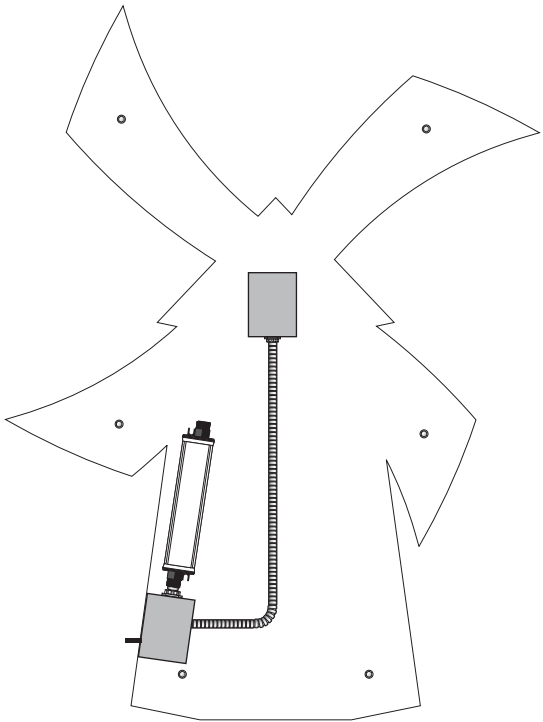
DBW10
SCALE: 1"=1'-0"



ATTACHMENT DETAIL
SELF CONTAINED CHANNEL LOGO



ATTACHMENT DETAIL
SELF CONTAINED CHANNEL LOGO



INTERNALLY ILLUMINATED FACE-LIT FLUSH MOUNTED CHANNEL WRAP LOGO
5" DEEP CHANNEL WRAP.
RETURNS & TRIM CAP PAINTED TO MATCH PANTONE 7691 C "INTENSE BLUE".
WHITE ACRYLIC FACE.
230-127 INTENSE BLUE PSV OUTLINE.
LED ILLUMINATION.
FLUSH MOUNTED SELF CONTAINED INSTALLATION.

COLOR CODE

	230-127 INTENSE BLUE PSV
	WHITE

FACTORY
DRAWING

SCOPE OF WORK: MANUFACTURE & INSTALL (4) SNAP FRAMES



SHOP DRAWING #:
33760D

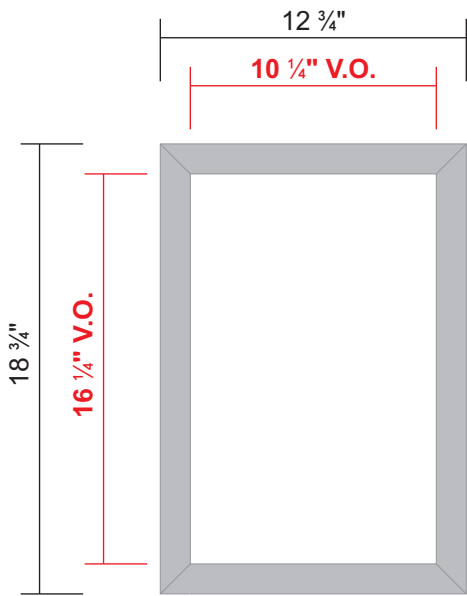
CLIENT:
DUTCH BROS - CA0105
1598 FAIRGROUNDS DR.
VALLEJO, CA 94589

DATE OF SHOP DRAWING:
1/18/22

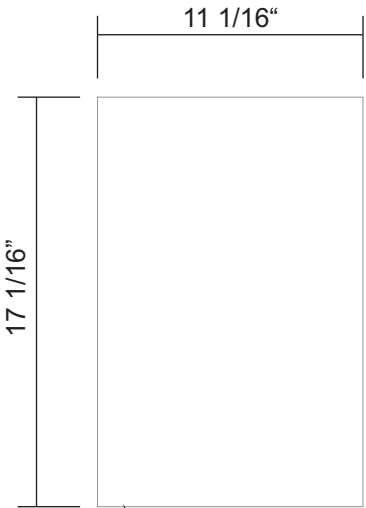
SHOP REVISIONS:

SALES:	CONCEPT DESIGN:	PROD. DESIGN:	PAGE NO:
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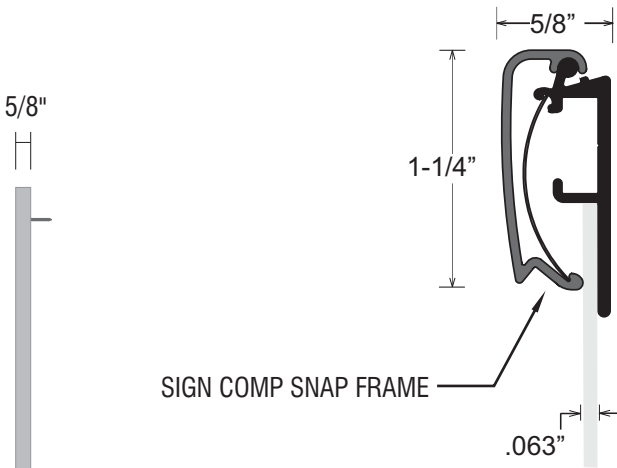
ES&A SIGN & AWNING
89975 PRAIRIE RD. | EUGENE, OR 97402
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SIGN COMP CLEAR ANODIZED ALUMINUM
SNAP FRAME FOR A 11" X 17" POSTER



.063 PRE-COAT WHITE ALUMINUM INSERT/BACK



DETAIL:
FULL SCALE

SCREW TO EXTERIOR WALL OF BUILDING

COLOR CODE

CLEAR ANODIZED ALUMINUM

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

FACTORY
DRAWING

SCOPE OF WORK: MANUFACTURE & INSTALL (2) SNAP FRAMES



SHOP DRAWING #:
33760E

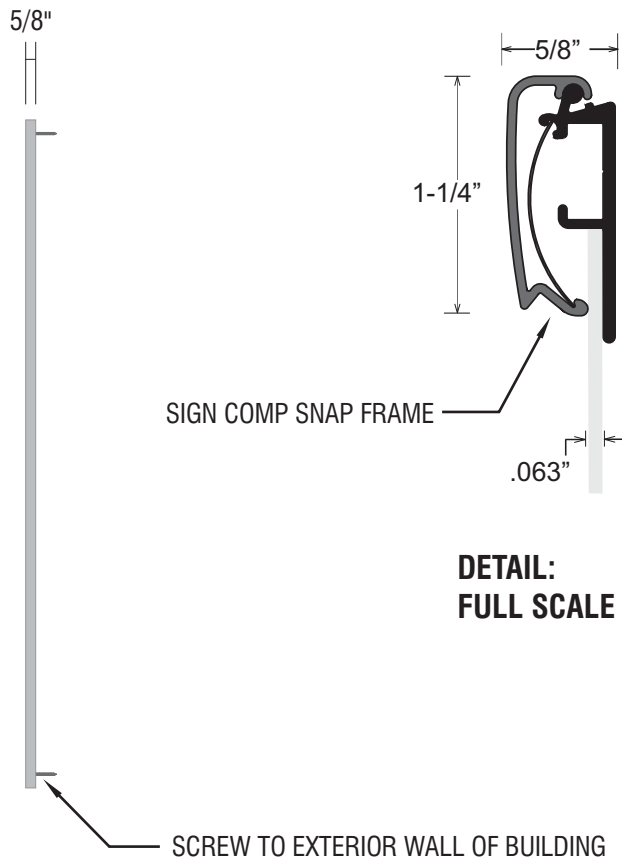
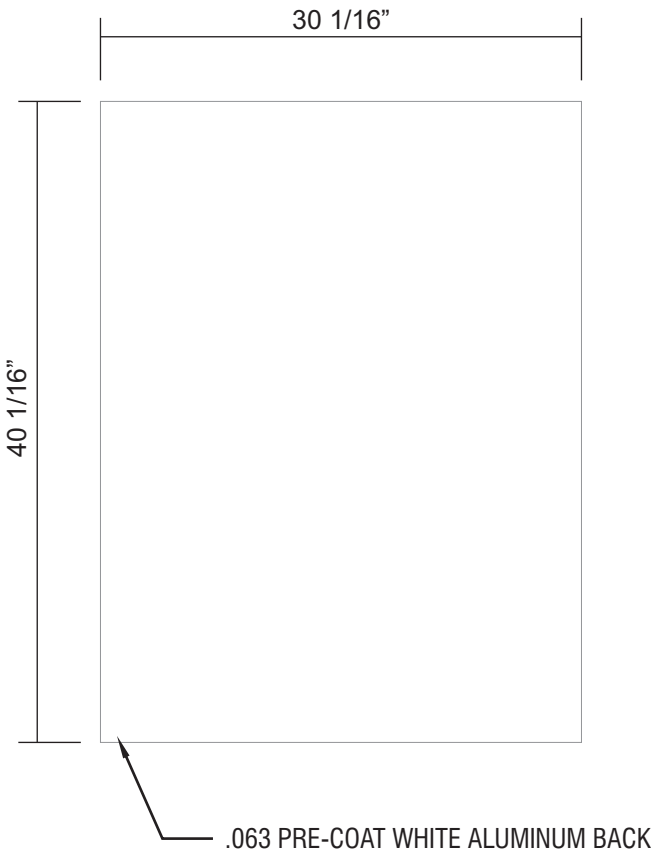
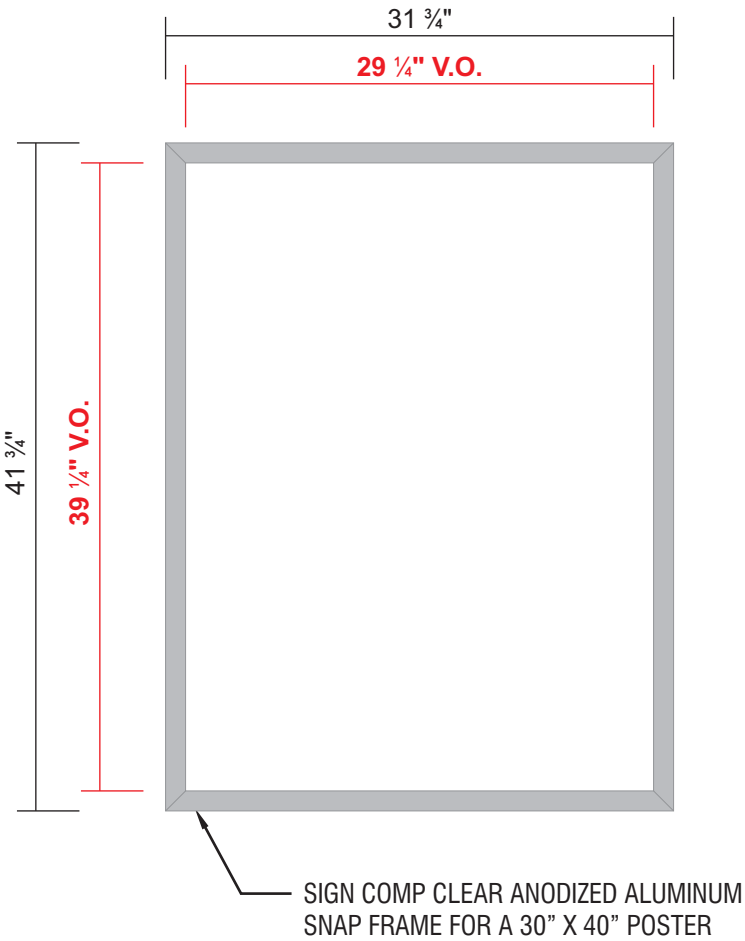
CLIENT:
DUTCH BROS - CA0105
1598 FAIRGROUNDS DR.
VALLEJO, CA 94589

DATE OF SHOP DRAWING:
1/18/22

SHOP REVISIONS:

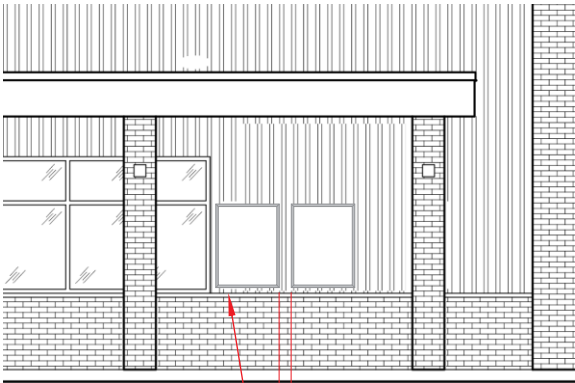
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DETAIL:
FULL SCALE

SCALE: 1"=1'-0"



ELEVATION:
WALK-UP WINDOW
SCALE: 1/8"=1'-0"

COLOR CODE

CLEAR ANODIZED ALUMINUM

FACTORY
DRAWING

SCOPE OF WORK: PROVIDE (2) ILLUMINATED MENU SIGNS V5 - WALL-MOUNTED



SHOP DRAWING #:
33760F

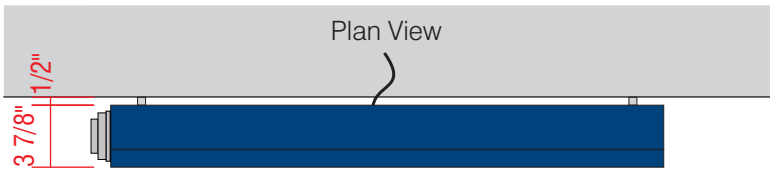
CLIENT:
DUTCH BROS - CA0105
1598 FAIRGROUNDS DR.
VALLEJO, CA 94589

DATE OF SHOP DRAWING:
1/18/22

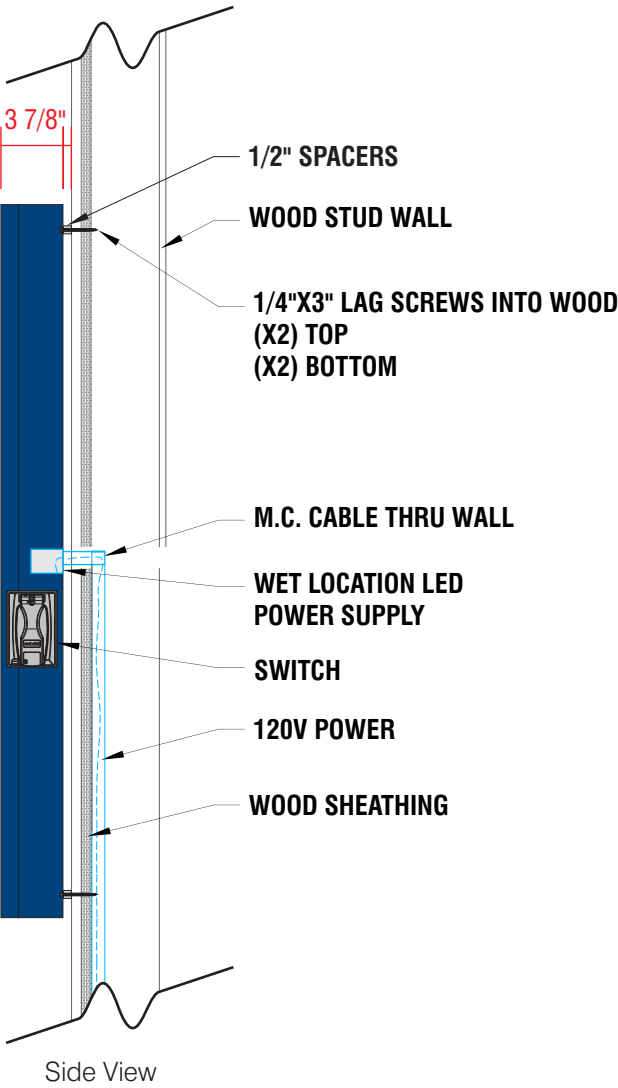
SHOP REVISIONS:

SALES:	CONCEPT DESIGN:	PROD. DESIGN:	PAGE NO:
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ES&A SIGN & AWNING
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ATTACHMENT DETAIL
ILLUMINATED WALL MOUNTED MENU



- A WALL-MOUNTED, BACKLIT MENU SIGN**
- PRINTED MENU PANEL NOT INCLUDED
 - LED OUTDOOR LIGHT BOX
 - LOCKABLE HINGED DOOR
 - ALUMINUM CONSTRUCTION
- B PRINTED LIGHT GUIDE PANEL**
- AS SEPARATE ORDER

COLOR CODE

- DIGITAL PRINT
- POWDER COATED
DB CUSTOM DARK BLUE

SCALE: 1"=1'-0"

FACTORY
DRAWING

SCOPE OF WORK: PROVIDE (2) S/F ILLUMINATED MENU SIGNS V5 - PLATE-MOUNTED



SHOP DRAWING #:
33760G2

CLIENT:
DUTCH BROS - CA0105
1598 FAIRGROUNDS DR.
VALLEJO, CA 94589

DATE OF SHOP DRAWING:
1/18/22

SHOP REVISIONS:
1.31.22 ADDED ONE MORE SF.
6.30.22 REMOVED 3.

SALES:

CONCEPT DESIGN:

PROD. DESIGN:

PAGE NO:

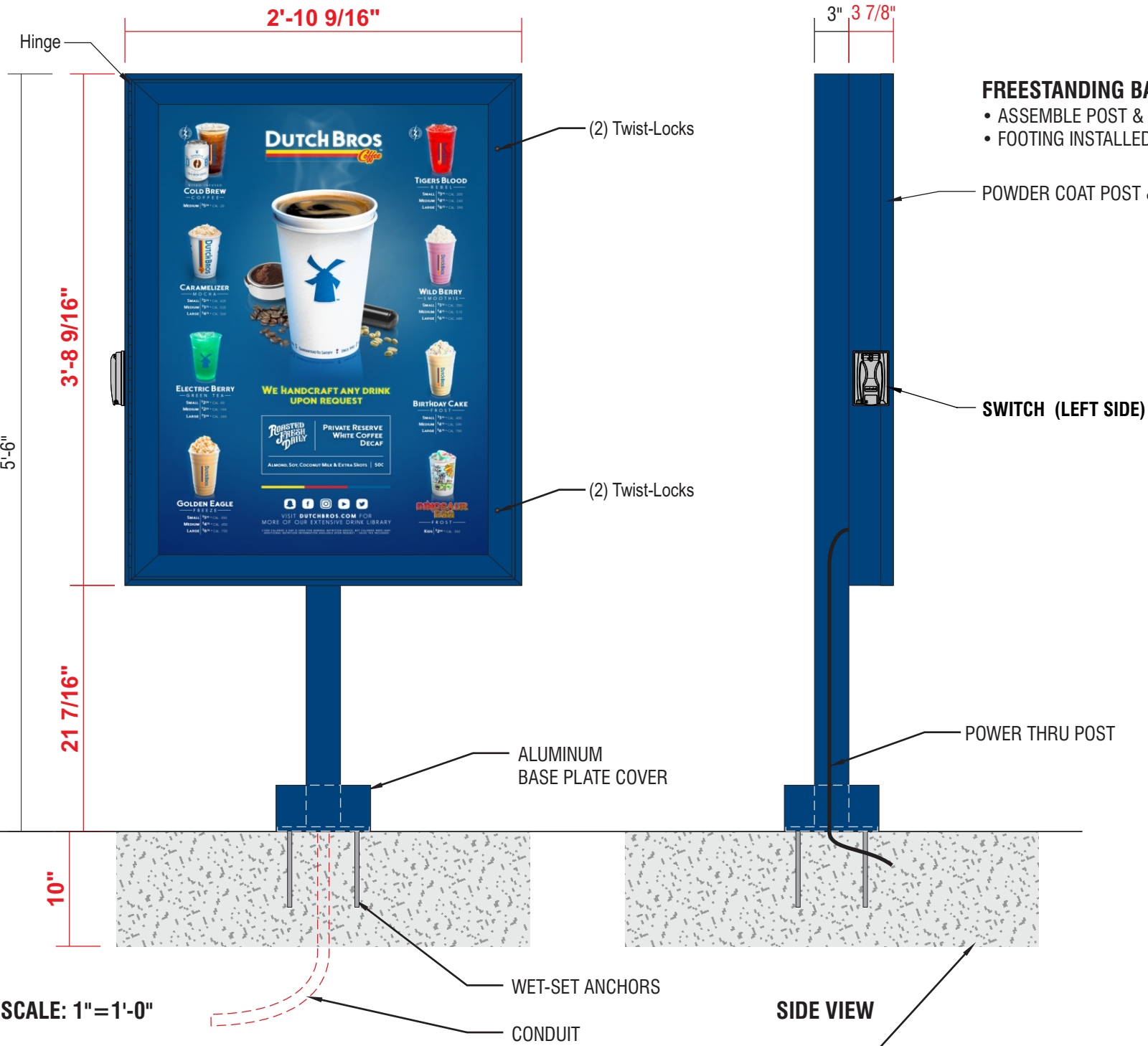
NJ

CH

CH

I of I

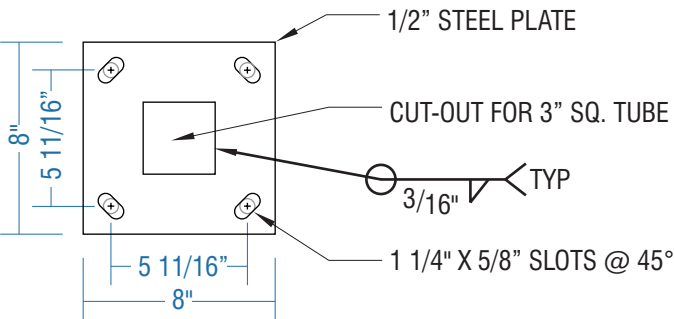
ES&A SIGN & AWNING
89975 PRAIRIE RD. | EUGENE, OR 97402
P 541.485.5546 | F 541.485.5813



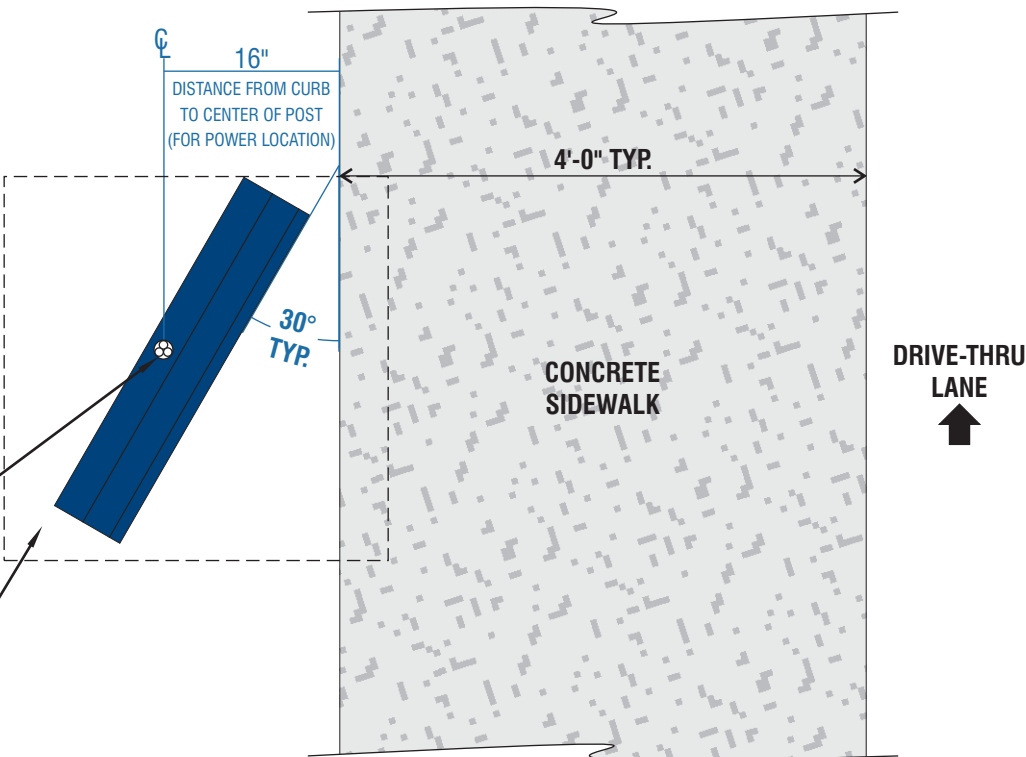
FREESTANDING BACKLIT MENU SIGN

- ASSEMBLE POST & MENU
- FOOTING INSTALLED BY G.C.

MOUNTING PLATE DETAIL
SCALE: 1 1/2"=1'-0"



INSTALLATION ORIENTATION DETAIL
NOT TO SCALE



COLOR CODE

- DIGITAL PRINT
- POWDER COATED DB CUSTOM DARK BLUE

FACTORY
DRAWING

SCOPE OF WORK: MANUFACTURE & INSTALL (1) D/F NON-ILLUMINATED ‘DRIVE THRU’ SIGN



SHOP DRAWING #:
337601

CLIENT:
DUTCH BROS - CA0105
1598 FAIRGROUNDS DR.
VALLEJO, CA 94589

DATE OF SHOP DRAWING:
1/18/22

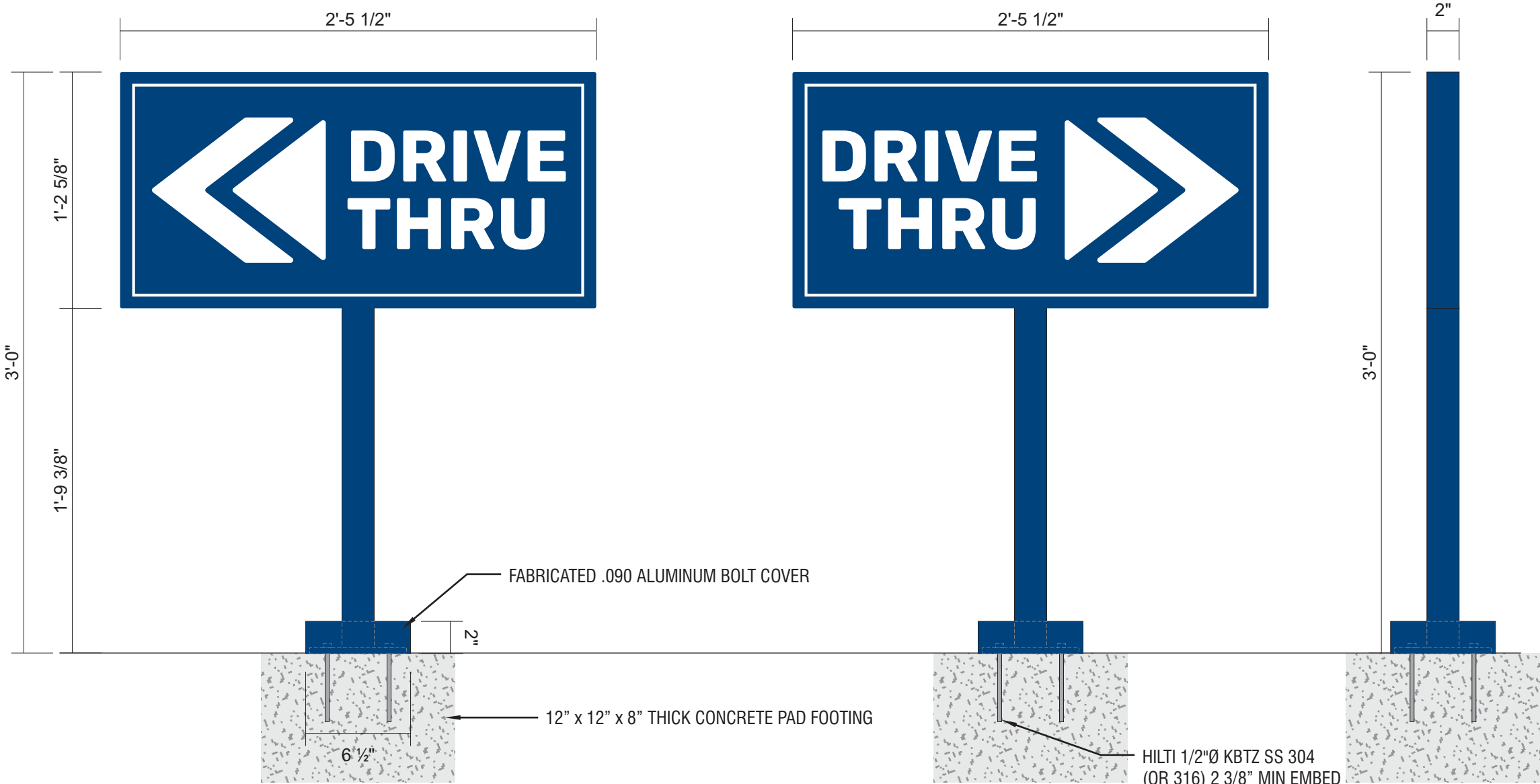
SHOP REVISIONS:

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ES&A SIGN & AWNING
89975 PRAIRIE RD. | EUGENE, OR 97402
P 541.485.5546 | F 541.485.5813

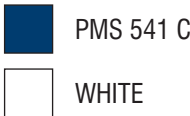
LAYOUT
SCALE: 1 1/2"=1'-0"

SIDE VIEW



DIAMOND GRADE REFLECTIVE WHITE VINYL WITH DIGITALLY PRINTED PMS 541 C BLUE BACKGROUND
2" X 2" SQUARE TUBE ALUMINUM FRAME & POST WITH ALUMINUM FACES & 3/8" X 6" X 6" PLATE
FABRICATED .090 ALUMINUM BOLT COVER
PAINT PMS 541 C
INSTALL PLATE-MOUNT SIGN WITH HILTI KWIK BOLTS
PAD FOOTING INSTALLED BY GC

COLOR CODE



FACTORY
DRAWING

SCOPE OF WORK: MANUFACTURE & INSTALL (1) D/F NON-ILLUMINATED DIRECTIONAL SIGN



SHOP DRAWING #:
33760J

CLIENT:
DUTCH BROS - CA0105
1598 FAIRGROUNDS DR.
VALLEJO, CA 94589

DATE OF SHOP DRAWING:
1/18/22

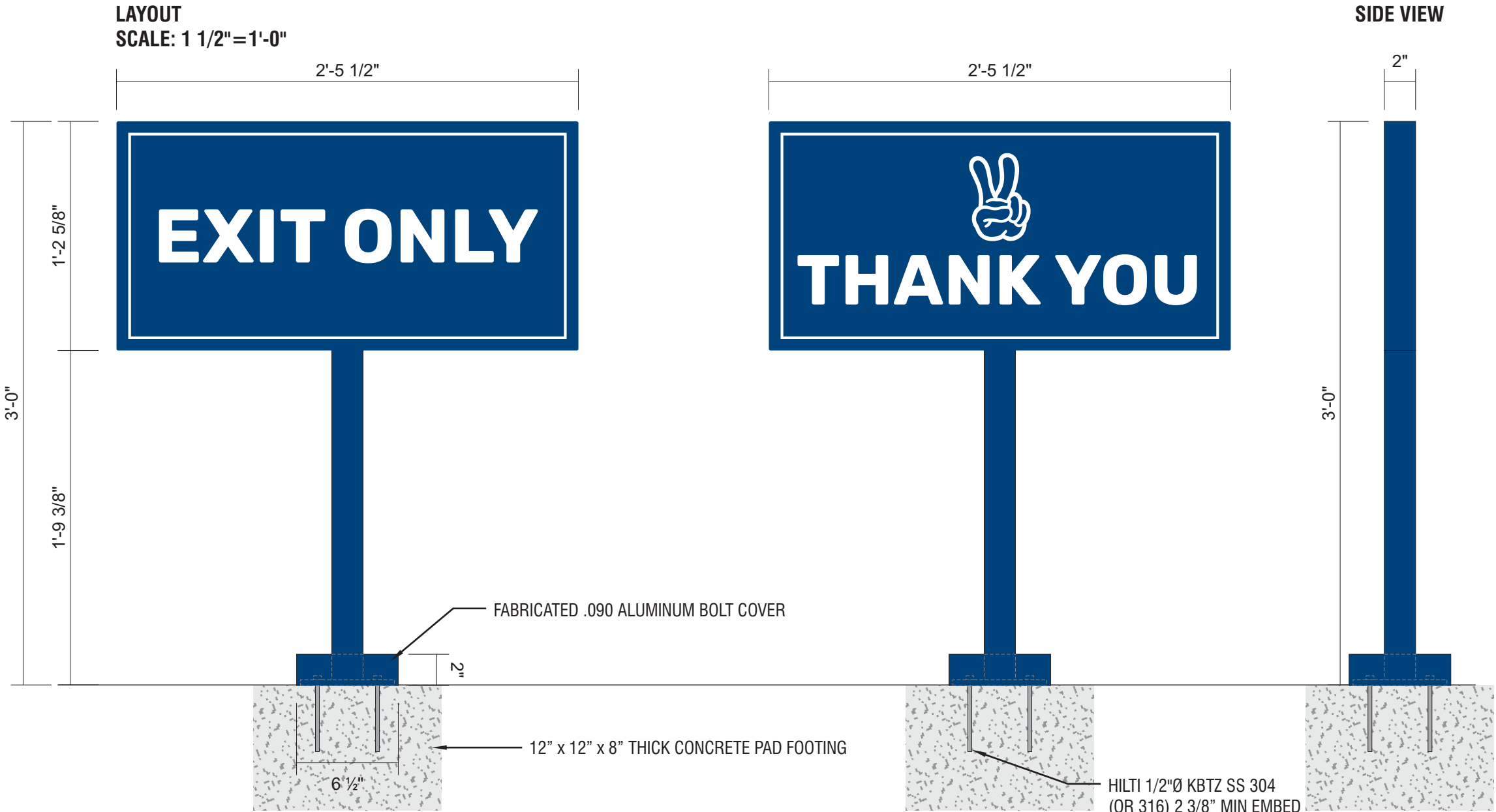
SHOP REVISIONS:

SALES:	CONCEPT DESIGN:	PROD. DESIGN:	PAGE NO:
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ES&A SIGN & AWNING
89975 PRAIRIE RD. | EUGENE, OR 97402
P 541.485.5546 | F 541.485.5813

COLOR CODE

	PMS 541 C
	WHITE



DIAMOND GRADE REFLECTIVE WHITE VINYL WITH DIGITALLY PRINTED PMS 541 C BLUE BACKGROUND
2" X 2" SQUARE TUBE ALUMINUM FRAME & POST WITH ALUMINUM FACES & 3/8" X 6" X 6" PLATE
FABRICATED .090 ALUMINUM BOLT COVER
PAINT PMS 541 C
INSTALL PLATE-MOUNT SIGN WITH HILTI KWIK BOLTS
PAD FOOTING INSTALLED BY GC

FACTORY
DRAWING

SCOPE OF WORK: MANUFACTURE & INSTALL (1) S/F POST MOUNTED DOUBLE ARM CLEARANCE BAR WITH PIVOTING ARMS



SHOP DRAWING #:
33760K

CLIENT:
DUTCH BROS - CA0105
1598 FAIRGROUNDS DR.
VALLEJO, CA 94589

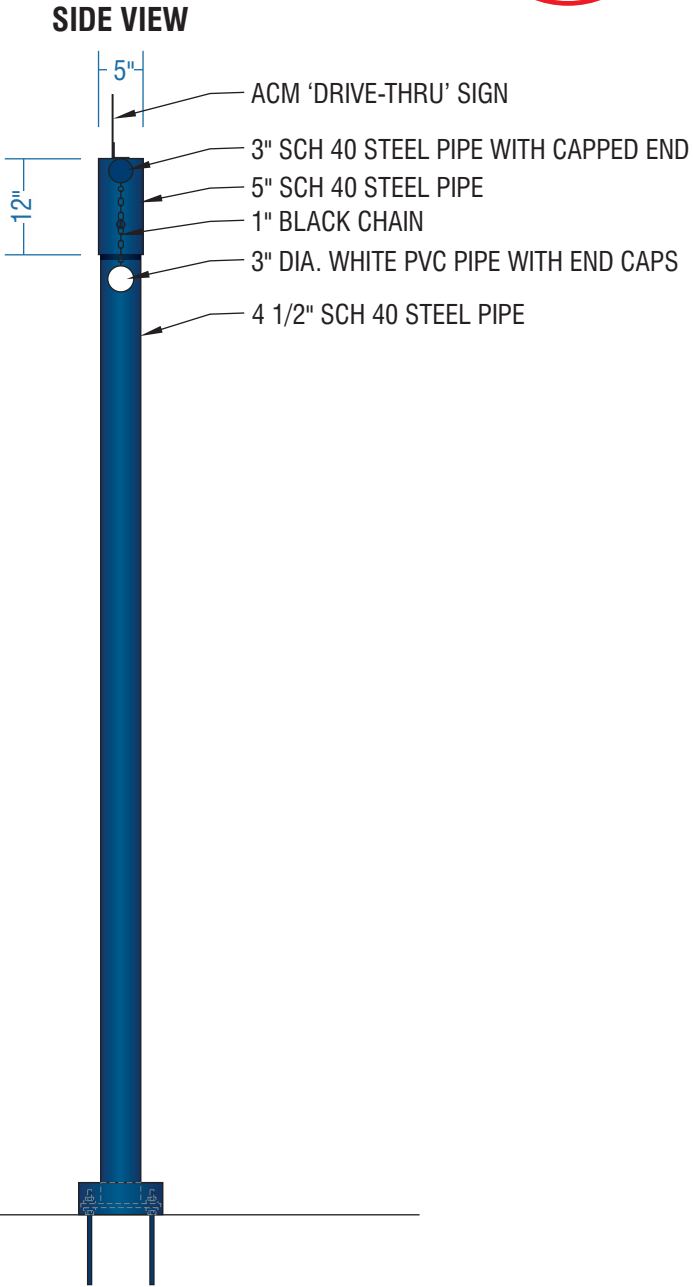
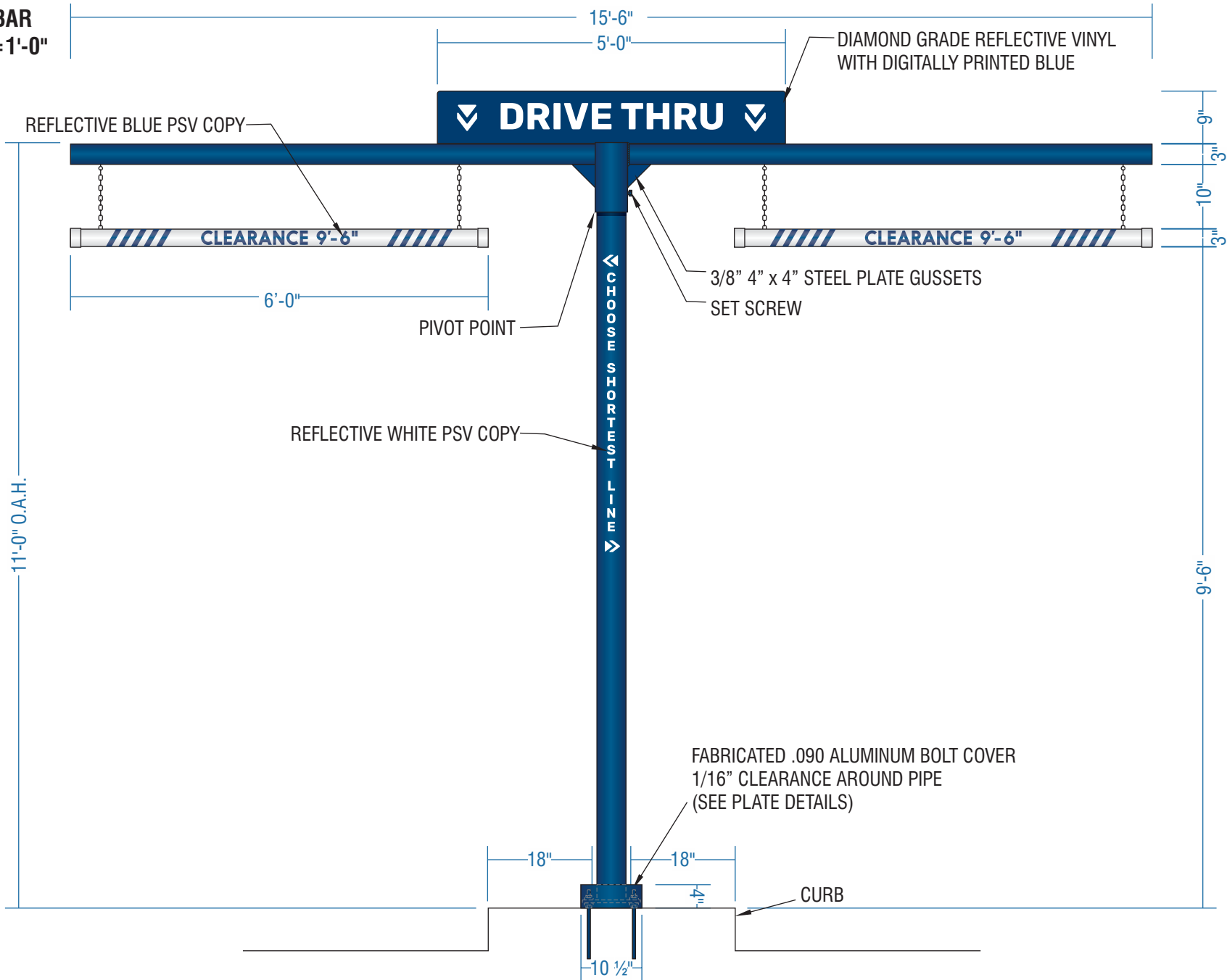
DATE OF SHOP DRAWING:
1/18/22

SHOP REVISIONS:

SALES:	CONCEPT DESIGN:	PROD. DESIGN:	PAGE NO:
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ES&A SIGN & AWNING
89975 PRAIRIE RD. | EUGENE, OR 97402
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CLEARANCE BAR
SCALE: 1/2"=1'-0"



STEEL POLE SUPPORT STRUCTURE WITH FABRICATED .090 ALUMINUM BOLT COVER. PAINT DB CUSTOM DARK BLUE.
REFLECTIVE WHITE PSV COPY APPLIED TO VERTICAL POLE.
3" DIA. WHITE PVC CLEARANCE BAR WITH END CAPS AND 280-75 REFLECTIVE BLUE PSV TEXT & STRIPES.
HANG WITH BLACK CHAIN SECURED TO BOTTOM OF POLE STRUCTURE.
INCLUDE ONE SHEET REFLECTIVE VINYL NUMBERS MASKED FOR FIELD INSTALLATION.
CLEARANCE NUMBERS TO BE FIELD MEASURED AND APPLIED. MEASURE FROM ASPHALT TO BOTTOM OF OVERHANG MINUS 6".
ACM 'DRIVE-THRU' SIGN WITH DIAMOND GRADE REFLECTIVE VINYL WITH DIGITALLY PRINTED BLUE.
DIAMOND GRADE REFLECTIVE WHITE VINYL WITH DIGITALLY PRINTED PMS 541 C BLUE BACKGROUND.
INSTALL STEEL POLE PLATE-MOUNTED WITH LEVELING NUTS ONTO G.C. PROVIDED FOOTING.

COLOR CODE

- WHITE
- 280-75 REFLECTIVE BLUE PSV
- DB CUSTOM DARK BLUE

FACTORY
DRAWING

ENGINEERING DETAILS

SHOP DRAWING #:

33760K

CLIENT:

DUTCH BROS - CA0105
1598 FAIRGROUNDS DR.
VALLEJO, CA 94589

DATE OF SHOP DRAWING:

1/18/22

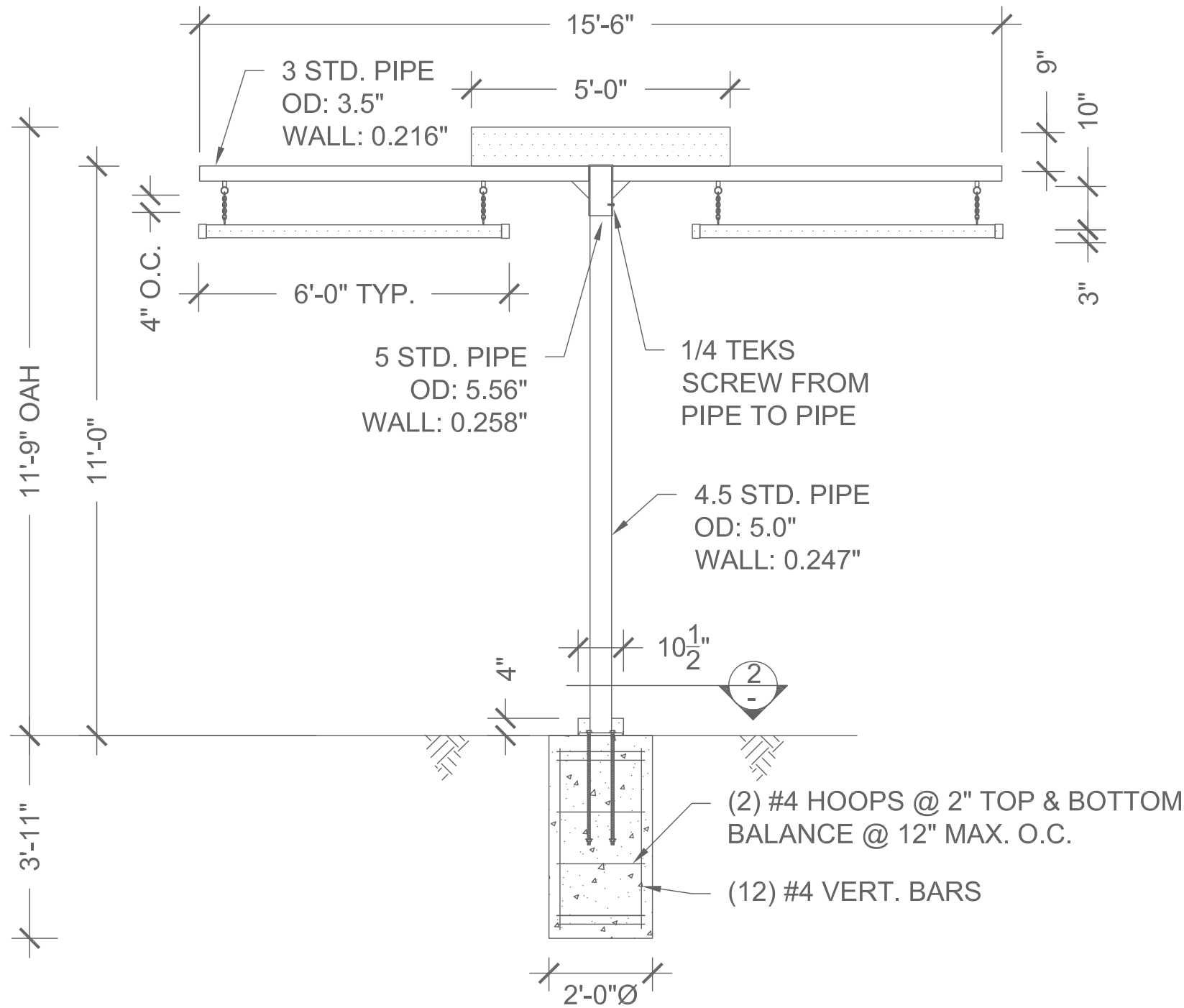
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SALES:	CONCEPT. DESIGN:	PROD. DESIGN:	PAGE NO:
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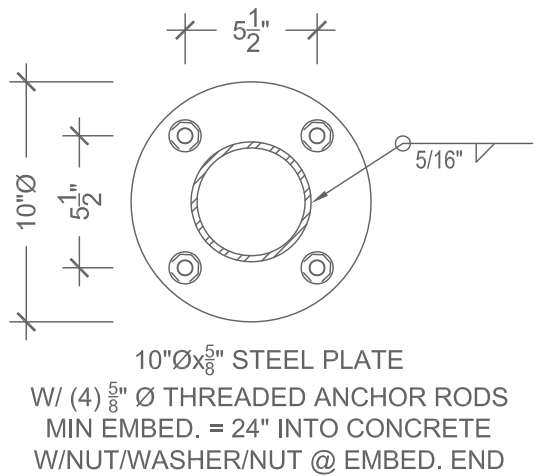
ES&A SIGN & AWNING

89975 PRAIRIE RD. | EUGENE, OR 97402

P 541.485.5546 | F 541.485.5813



ELEVATION
SCALE: 3/8"=1'-0"



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

FACTORY
DRAWING

SCOPE OF WORK: MANUFACTURE & INSTALL (1) SET OF BUILDING ADDRESS NUMBERS



SHOP DRAWING #:

33760L

CLIENT:

DUTCH BROS - CA0105
1598 FAIRGROUNDS DR.
VALLEJO, CA 94589

DATE OF SHOP DRAWING:

1/18/22

SHOP REVISIONS:

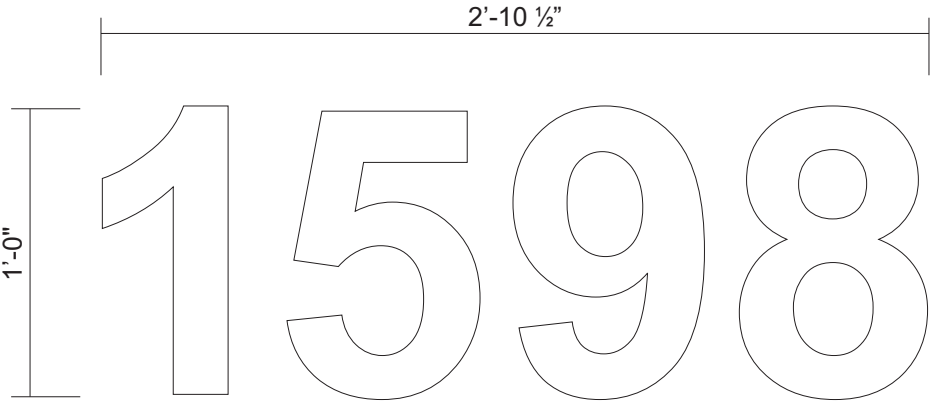
SALES:	CONCEPT. DESIGN:	PROD. DESIGN:	PAGE NO:
NJ	CH	CH	I of I

ES&A SIGN & AWNING

89975 PRAIRIE RD. | EUGENE, OR 97402

P 541.485.5546 | F 541.485.5813

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



ADDRESS NUMBERS:

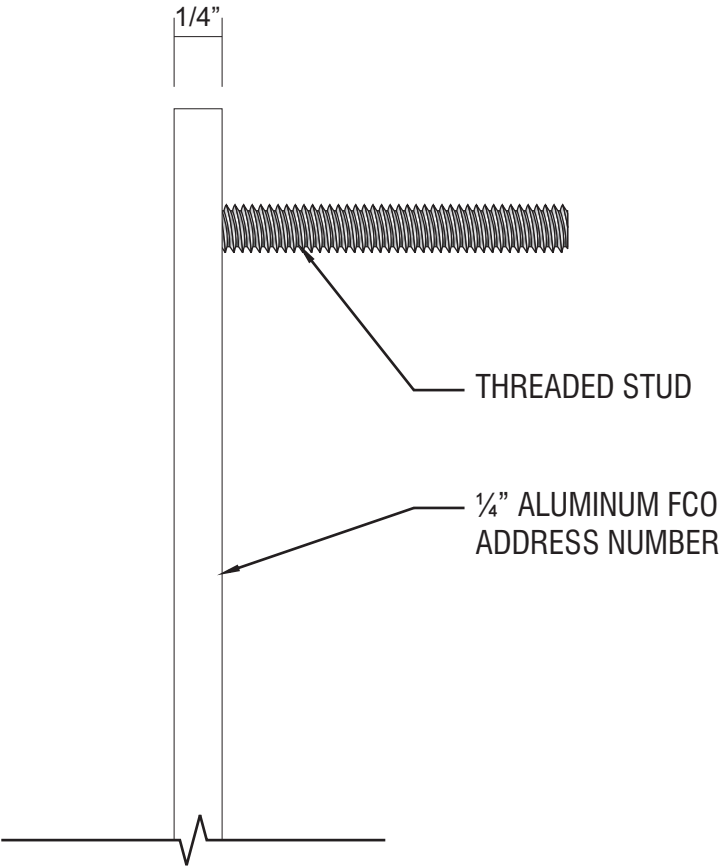
FONT: ARIAL BOLD

MATERIAL: 1/4" THICK ALUMINUM

COLOR: PAINTED SATIN WHITE

INSTALLATION: STUD MOUNTED FLUSH TO BUILDING

SIDE DETAIL
FULL SCALE



COLOR CODE



SATIN WHITE PAINT

TRAFFIC IMPACT STUDY
FOR
0105 DUTCH BROS COFFEE RESTAURANT
1598 FAIRGROUNDS DRIVE
Vallejo, CA

Prepared For:

DUTCH BROS.
110 SW 4th Street
Grants Pass, OR 97526

Prepared By:

KD Anderson & Associates
3853 Taylor Road, Suite G
Loomis, California 95650
(916) 660-1555

November 21, 2022

2526-05

Fairgrounds Dutch Bros Vallejo.doc

KD Anderson & Associates, Inc.

Transportation Engineers

CERTIFICATION PAGE

THIS STUDY HAS BEEN PREPARED UNDER THE SUPERVISION OF
JONATHAN FLECKER, RCE, RTE



KDA

**DUTCH BROS COFFEE RESTAURANT
1598 FAIRGROUNDS DRIVE
TRAFFIC IMPACT STUDY**

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**TRAFFIC IMPACT STUDY
DUTCH BROS COFFEE RESTAURANT
1598 FAIRGROUNDS DRIVE**

EXECUTIVE SUMMARY

- **Project Description.** The Dutch Bros project is located in the northeast quadrant of the Fairgrounds Drive / Gateway Drive intersection. The site will repurpose a former fast food restaurant with drive-through lane to a 950 square foot Dutch Bros coffee restaurant with drive-through lane. The project is expected to generate about 1,600 daily trips, with 141 trips occurring in the a.m. peak hour. Of these trips 70 are projected to be pass-by trips, 35 are projected to be diverted-link trips while 36 are projected to be new trips. During the p.m. peak hour, 115 trips are projected with 57 pass-by trips, 29 diverted-link trips and 29 new trips. Two driveways are provided, a right-in, right-out driveway along Fairgrounds Drive and a full access driveway along Gateway Drive.
- **Existing Setting.** The study areas addressed traffic conditions at the local intersection, Fairgrounds Drive at Gateway Drive as well as the existing driveways providing access to the site. Traffic counts were completed in July 2022 while school was not in session. Based on direction from City staff, the counts were adjusted to reflect volumes during school. Traffic data from *StreetLight Data* was used to proportion traffic volumes based on mid-year and July traffic comparisons. *StreetLight Data* uses “Big-Data” derived travel pattern analytics against publicly available traffic movement ratios derived from traffic counts to project roadway counts and ITM’s. 2019 pre-Covid traffic count information was compared to 2022 data at the same locations. ITM’s were then proportionally adjusted to 2019 pre-Covid 19 conditions.

Intersection Level of Service calculations were made using the Highway Capacity Manual 7th Edition. Queueing was also reviewed with the intersections simulated using *Synchro/SimTraffic* software due to the close intersection spacing.

All intersections are currently operating at LOS C or better. The v/c ratios at the signalized intersection are 0.558 in the a.m. peak hour and 0.446 in the p.m. peak hour. The worst queue in the westbound left turn along Gateway Drive is about 72 feet and occurs in the a.m. peak hour. The westbound left turn queue in the adjacent TWLTL is about 25 feet. The TWLTL should perform as intended, allowing turning movements to queue in each direction and not block through traffic.

- **Near-Term (Opening Day) No Project.** All intersections will continue to operate at LOS C or better. The v/c ratios at the signalized intersection are 0.560 in the a.m. peak hour and 0.447 in the p.m. peak hour. The worst queue along the westbound left turn lane of the Fairgrounds Drive / Gateway Drive intersection will decline to about 66 feet in the a.m. peak hour, and the TWLTL should continue to perform as intended.

- **Near-Term plus Approved Projects (Opening Day) No Project.** All study intersections will operate at LOS C or better during the a.m. and p.m. peak hours. The Fairgrounds Drive / Gateway Drive intersection will have a v/c ratio of 0.560 in the a.m. peak hour and 0.447 in the p.m. peak hour. The worst queue along the westbound left turn lane of the Fairgrounds Drive / Gateway Drive intersection will lengthen to about 76 feet in the a.m. peak hour while the eastbound left turn queue will be about 25 feet. The TWLTL should allow turning movements to queue in their lanes without blocking through lane traffic.
- **Near-Term plus Approved Projects Plus Project.** All intersections will operate at LOS C or better during both peak periods. The Fairgrounds Drive / Gateway Drive will have a v/c ratio of 0.588 in the a.m. peak hour and 0.471 in the p.m. peak hour. The difference in v/c ratios compared to the No Project scenarios are within City standards and are not considered significant. The worst queue along the westbound left turn lane of the Fairgrounds Drive / Gateway Drive intersection will lengthen to about 90 feet in the a.m. peak hour while the eastbound left turn queue will be about 25 feet. The westbound queue will extend into the transition area between the left turn lane and the TWLTL. The TWLTL should allow both turning movements to queue in their lanes without blocking through lanes.

Dutch Bros managers actively manage on-site traffic flow especially during periods of high volume such as when the store first opens. Dutch Bros site managers actively manage on-site traffic flow and can take steps to direct traffic during periods of unusually high demand. In this case, were queues to extend beyond the drive-thru aisles Dutch Bros may work with Hampton Inn to route traffic around the site to minimize impacts to on-site intersections and the public streets.

Potential improvement measures during special event / grand opening periods could include the following:

- Increase staffing levels during peak hours to increase the speed of orders and delivery.
- Use staff to specifically control traffic into and through the site.
- Conduct full shop and shift meetings to discuss proposed traffic patterns.
- Prepare a queuing plan to route traffic off the public streets and onto and through the site.
- Create signage and routing plan for the event; install temporary sandwich board signs to assist in traffic control.
- Coordinate special events with the adjacent Hampton Inn Hotel.
- Hire a third party traffic control company if deemed necessary by site manager.

No additional improvements to the traffic network beyond special event consideration are identified.

The project applicant should pay applicable TIM fees.

- **Cumulative (2040) Conditions.** All intersections will operate at LOS C or better during both peak periods. The Fairgrounds Drive / Gateway Drive will have a v/c ratio of 0.583 in the a.m. peak hour and 0.479 in the p.m. peak hour. The worst queue along the westbound left turn lane of the Fairgrounds Drive / Gateway Drive intersection is projected to be about 84 feet in the a.m. peak hour while the eastbound left turn queue will be about 25 feet. The westbound queue will extend into the transition area between the left turn lane and the TWLTL. The TWLTL should allow both turning movements to queue in their lanes without blocking through lanes.
- **Cumulative (2040) + Project Mitigations.** All intersections will continue to operate at LOS C or better during both peak periods. The Fairgrounds Drive / Gateway Drive will have a v/c ratio of 0.610 in the a.m. peak hour and 0.501 in the p.m. peak hour. The difference in v/c ratios compared to the No Project scenarios are within City standards and are not considered significant. The queue along the westbound left turn lane of the Fairgrounds Drive / Gateway Drive intersection is projected to lengthen to about 92 feet in the a.m. peak hour while the eastbound left turn queue will be about 25 feet. The westbound queue will extend into the transition area between the left turn lane and the TWLTL. The TWLTL should allow both turning movements to queue in their lanes without blocking through lanes.

No additional improvements to the traffic network are identified.

**TRAFFIC IMPACT STUDY
DUTCH BROS COFFEE RESTAURANT
1598 FAIRGROUNDS DRIVE**

INTRODUCTION

Study Purpose and Project Description

This traffic impact study presents an evaluation of the traffic-related effects of the proposed Dutch Bros Coffee Restaurant to be located in the southeast quadrant of the Fairgrounds Drive / Gateway Drive intersection in the City of Vallejo. The project includes a 950 square foot coffee restaurant with a dual lane storage drive-thru configuration. Access to the site will be via two existing driveways, a full access driveway along Gateway Drive and a right-in, right-out driveway shared by the existing Hampton Inn, directly south of the project. Figure 1 presents a vicinity map of the area and the project's location while Figure 2 presents the proposed site plan.

Overall Analysis Approach

This traffic impact study presents an analysis of traffic operations under the following six scenarios:

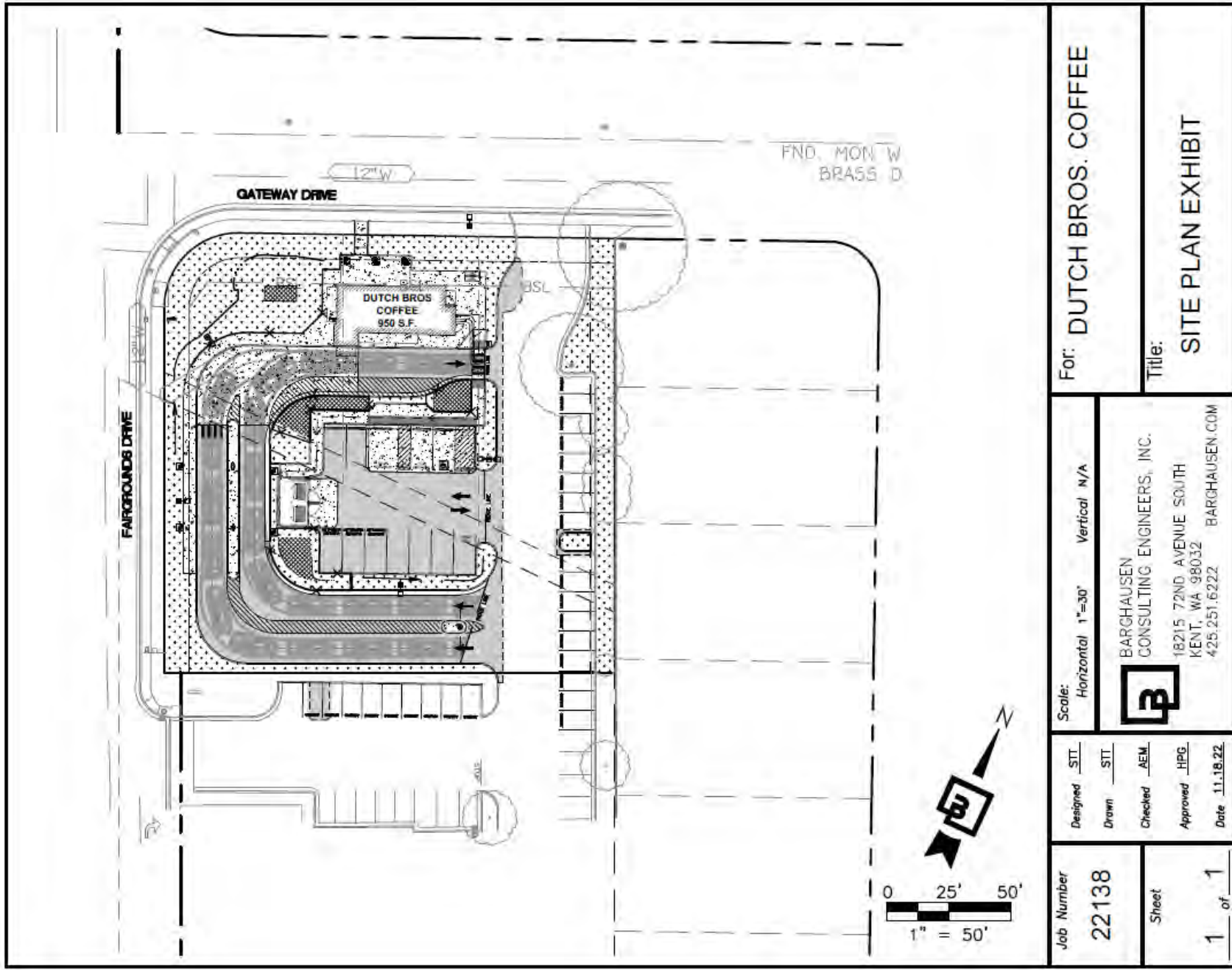
- Existing Conditions,
- Project Opening Near-Term (NT),
- Project Opening Near-Term plus Approved Projects (NTPAP),
- Project Opening Near-Term plus Approved Projects plus Project (NTPAPPP),
- Cumulative No Project, and
- Cumulative plus Project.

The Project Opening Near-Term conditions are intended to analyze the traffic conditions in the year the project is slated to open (2023). Cumulative conditions are a long-term background condition which includes future year forecasts of traffic volumes in 2040.

The analysis of NT plus Project and Cumulative plus Project conditions assumes completion of the proposed project. The near-term impacts of the proposed project are identified by comparing traffic operations under NT plus Project conditions to baseline NT No Project conditions. The long-term impacts of the proposed project are identified by comparing traffic operations under Cumulative plus Project conditions to baseline Cumulative No Project conditions.



VICINITY MAP



EXISTING SETTING

Study Area

This traffic impact study presents analyses of traffic operating conditions at the existing Fairgrounds Drive / Gateway Drive intersection and the two access driveways in the study area. The quality of traffic flow is often governed by the operation of the local intersections. To quantitatively evaluate traffic conditions and to provide a basis for comparison of operating conditions with and without traffic generated by the proposed project, traffic operations at the following study area intersection and driveways were determined for the five analysis scenarios:

The **Fairgrounds Drive / Gateway Drive intersection** is an access intersection for motorists traveling through north Vallejo. Fairgrounds Drive is aligned north-south with a posted speed of 35 miles per hour (mph) while Gateway Drive is aligned east-west with a posted speed of 25 mph. The intersection is a four-way signalized intersection and provides direct access to SR 37; the west leg is a driveway access to parking for Dick Bass Field. Both approaches along Fairgrounds Drive include a left turn lane, a through lane and a shared through-right lane. The westbound Gateway Drive approach includes a left turn lane, a shared left-through lane and a right turn lane while the eastbound approach from the parking lot is a single lane. The intersection is signalized and includes protected left turns along Fairgrounds Drive and split phasing along Gateway Drive and Dick Bass Field. The intersection is signed to prohibit U-turns on all approaches. Sidewalk is present throughout the intersection and crosswalks are present along the north, south and east approaches; the west approach includes sidewalk across the driveway; thus a crosswalk is not present.

The **Fairgrounds Drive / Project driveway intersection** provides right-in, right-out access to the existing Hampton Inn hotel; this driveway also provides access to the former Burger King site where the proposed Dutch Bros. project will be located. The northbound approach includes two through lanes and a right turn lane to enter the site. The roadway is separated by a raised landscaped median, prohibiting inbound and outbound left turns at the driveway. The driveway is stop controlled.

The **Gateway Drive / Project driveway intersection** is a full access tee intersection. The eastbound approach includes a through lane and a shared through-right lane while the westbound approach includes a shared left-through lane and a right turn lane; a two-way-left-turn-lane (TWLTL) is present at the driveway which turns into the left turn lane at the Fairgrounds Drive intersection. The intersection is stop controlled at the driveway.

Level of Service Analysis Procedures

Level of service (LOS) analysis provides a basis for describing existing traffic conditions, and for evaluating the significance of project-related traffic impacts. Level of service measures the quality of traffic flow and is represented by letter designations from A to F, with a grade of A referring to the best conditions, and F representing the worst conditions. The following describes the LOS analysis procedures applied for this traffic impact study.

Intersections. The *Highway Capacity Manual 7th Edition (HCM 7)* was the basis for operational delay calculations for signalized and unsignalized intersections. The characteristics associated with the various LOS for unsignalized intersections (i.e., those controlled by stop signs) and signalized intersections are presented in Table 1. The City of Vallejo identifies LOS D or better as acceptable operation at an intersection. A traffic impact at an intersection is considered significant when any of the changes in volume to capacity (v/c) ratios, shown in Table 2, occur between the ‘no project’ and ‘plus project’ conditions.

Traffic Signal Warrants. The extent to which existing or projected traffic volumes may justify signalization at un-signalized intersections has been determined based on consideration of traffic signal warrant presented in the *Manual of Uniform Traffic Control Devices, 2014 through Revision 6*. For this analysis the volume thresholds associated with Warrant 3 (Peak Hour Volume) were assessed for all unsignalized intersections other than right-in, right-out only.

TABLE 1 LEVEL OF SERVICE DEFINITIONS (INTERSECTIONS)			
Level of Service	Signalized Intersection	Unsignalized Intersection	Roadway (Daily)
"A"	Uncongested operations, all queues clear in a single-signal cycle. Delay ≤ 10.0 sec	Little or no delay. Delay ≤ 10 sec/veh	Completely free flow.
"B"	Uncongested operations, all queues clear in a single cycle. Delay > 10.0 sec and ≤ 20.0 sec	Short traffic delays. Delay > 10 sec/veh and ≤ 15 sec/veh	Free flow, presence of other vehicles noticeable.
"C"	Light congestion, occasional backups on critical approaches. Delay > 20.0 sec and ≤ 35.0 sec	Average traffic delays. Delay > 15 sec/veh and ≤ 25 sec/veh	Ability to maneuver and select operating speed affected.
"D"	Significant congestion of critical approaches but intersection functional. Cars required to wait through more than one cycle during short peaks. No long queues formed. Delay > 35.0 sec and ≤ 55.0 sec	Long traffic delays. Delay > 25 sec/veh and ≤ 35 sec/veh	Unstable flow, speeds and ability to maneuver restricted.
"E"	Severe congestion with some long standing queues on critical approaches. Blockage of intersection may occur if traffic signal does not provide for protected turning movements. Traffic queue may block nearby intersection(s) upstream of critical approach(es). Delay > 55.0 sec and ≤ 80.0 sec	Very long traffic delays, failure, extreme congestion. Delay > 35 sec/veh and ≤ 50 sec/veh	At or near capacity, flow quite unstable.
"F"	Total breakdown, stop-and-go operation. Delay > 80.0 sec	Intersection blocked by external causes. Delay > 50 sec/veh	Forced flow, breakdown.
Sources: <u>Highway Capacity Manual</u> , 7 th Edition, 2022.			

TABLE 2 VOLUME TO CAPACITY (V/C) THRESHOLDS FOR PROJECT IMPACTS	
LOS without project	Increase in V/C with project
C	>0.04
D	>0.02
E or F	>0.01

Intersection Queues. Intersection queues were evaluated at study intersections at the 95th percentile length. The 95th percentile queue length represents a condition where the queue during the peak period will be at or less than the queue length determined by the analysis 95 percent of the time, i.e. the queue will exceed the calculated queue 5 percent of the time. Queues extending beyond the available storage can block through traffic in adjacent travel lanes.

Queuing at each of the study locations was analyzed using *Synchro-SimTraffic* software to simulate anticipated queues between the Fairgrounds Drive / Gateway Drive intersection and the adjacent project driveways. The software is a stochastic model, i.e., randomness is present when running the simulations. The results will vary within each scenario and between scenarios and it is possible that some queues may decrease under plus project conditions. The simulation results contained herein reflect the average of the mean 10 one-hour simulation runs selected from a 20-run sample. Each run employed a 5-minute seeding period. *Synchro-SimTraffic* was not used for LOS calculations as the results do not provide a v/c ratio.

Public Transit

The Solano County Transit Authority (SolTrans) offers local fixed route, regional commuter route and para-transit services. Two local fixed routes pass the site. The Number 2 Crest route provides service between north Vallejo and the Vallejo Transit Center (VTC) in downtown while the Number 5 Six Flags route provides service across the City beginning at the VTC and terminating at the Fairgrounds Drive / Gateway Drive intersection.

Route 2

The route from the VTC to north Vallejo generally uses Sonoma Blvd (SR 29) across SR 37 and then heads east along Mini Drive and Whitney Avenue where it passes the site as it heads east on Gateway Drive; Gateway Drive at Fairgrounds Drive is the termination point separating the northbound route from the southbound route. The route then heads north to Corcoran Avenue and west to Mini Drive where it then reconnects with Sonoma Blvd and retraces the route back to the VTC.

The first northbound Route 2 bus departs the VTC at 7:00 a.m. Monday through Friday with the route termination 29 minutes later. Buses run every hour with the last bus departing to the Gateway Drive / Fairgrounds Drive intersection at 8:00 p.m. The southbound route departs the Gateway Drive / Fairgrounds Drive intersection beginning at 7:30 a.m. and continues through 8:30 p.m. on an hourly basis with a 26-minute run time.

Route 2 also operates on Saturday with the first northbound departure at 9:00 a.m. and the last bus departing at 6:00 p.m. The route operates at one-hour headways with a 29-minute running time. Southbound, the first bus departs Gateway Drive at Fairgrounds Drive at 9:30 a.m. and the last bus departs at 6:30 p.m. with 26-minute running times to the VTC.

Route 5

The route from the VTC operates along the west side of Vallejo via Mare Island Way – Wilson Avenue heading eventually east along Redwood Street and Sereno Drive to Fairgrounds Drive at I-80. The route then heads north to Gateway Drive where it loops south onto Sage Street back to Fairgrounds Drive and retraces the route to the VTC.

The first northbound Route 5 bus departs from the Sereno Transit Center at 6:44 a.m., arriving at the Fairgrounds Drive / Gateway Drive intersection at 6:57 a.m. The remaining runs depart from the VTC beginning at 7:30 a.m. and depart hourly until 7:30 p.m. All outbound runs arrive at the Fairgrounds Drive / Gateway Drive intersection at 57 minutes after the hour. The inbound runs depart the Fairgrounds Drive / Gateway Drive intersection hourly beginning at 7:00 a.m. with the last run departing at 8:00 p.m. The bus arrives at VTC at 24 minutes after the hour.

Route 5 also operates on Saturday with the first northbound departure from the VTC at 8:30 a.m. and the last bus departing at 5:30 p.m. The route operates at one-hour headways with a 27-minute running time. Southbound, the first bus departs Gateway Drive at Fairgrounds Drive at 9:00 a.m. and the last bus departs at 6:00 p.m. with 24-minute running times to the VTC.

Bicycle and Pedestrian Facilities

Fairgrounds Drive is identified as a Class 3 bike route north of SR 37. A widened shoulder is present along both directions of Fairgrounds Drive for about 500 feet north of the SR 37 interchange which allows a bicyclist to ride outside of the vehicle travel lane. While the shoulder stripe is still present for about 200 feet further north the shoulder narrows to less than four feet in width and bicyclists have to ride in the vehicle travel lane.

Sidewalk is present throughout the area with sidewalk along both sides of Fairgrounds Drive and Gateway Drive.

Existing Traffic Conditions and Levels of Service

Traffic Volume Counts. This analysis makes use of peak hour and daily traffic volume counts conducted during July 2022. Since school was not in session *StreetLight Data* was used to adjust

the volumes to school year volumes. Mid-week *StreetLight Data* count information from July 2019 (pre-Covid) were compared to the counts conducted in July. Turning movements were then adjusted to reflect the proportional rates to reach adjusted midweek volumes. The counts and adjustment calculations are included in the Appendix, and the adjusted intersection turning movements and daily volumes are presented in Figure 3.

Intersection Levels of Service. Table 3 summarizes current operating Levels of Service at the study area intersections. All study intersections currently operate at Levels of Service (LOS) C or better during the a.m. and p.m. peak hours. The Fairgrounds Drive / Gateway Drive intersection will have a v/c ratio of 0.558 in the a.m. peak hour and 0.446 in the p.m. peak hour.

Intersection Queues. *Synchro/SimTraffic* software was used to simulate queuing conditions due to the close spacing of study locations. The software is a stochastic model, i.e., randomness is present when running the simulations. The results will vary within each scenario and between scenarios, which is indicative of real-world traffic conditions. This may result in some approach lanes at intersections having queues that are larger or smaller in the 'Plus Project' scenarios than in the 'No Project' scenarios. This is a normal occurrence for stochastic models, and it is not unexpected that queues could decrease at one location in the 'Plus Project' condition while increasing at another location. The changes typically should be reasonable; a substantial reduction in queuing should not be anticipated. The network was seeded for a 5-minute period to allow the network to fill and travel the corridor, followed by a 60-minute run. The simulation results reflect the average of the mean of 10 simulation runs selected from 20-run samples.

Table 4 presents information regarding current peak period queuing in turn lanes at the signalized intersection, in the two-way-left-turn-lane (TWLTL) along Gateway Drive, the right turn lane along Fairgrounds Drive and along the project driveways. The available storage is presented along with the 95th percentile queue length. The storage length along the driveways represents the distance from the back of sidewalk to the first driveway. In the westbound left turn lane at the Fairgrounds Drive / Gateway Drive intersection the queue extends into the transition between the left turn lane and the TWLTL at the project driveway. The eastbound left turn queue length into the gas station on the north side of the street is less than 25 feet; thus, the TWLTL should perform as intended, to allow vehicles in both directions to utilize the center lane as needed. The queue results indicate that a gap will remain between both directions of queued vehicles. The queue along the gas station driveway is 56 feet. The area between the driveway and the closest fueling position is about 60 feet; however, the fueling positions are oriented north-south, and outbound vehicles would likely queue parallel to Gateway Drive, lengthening the available queue area.

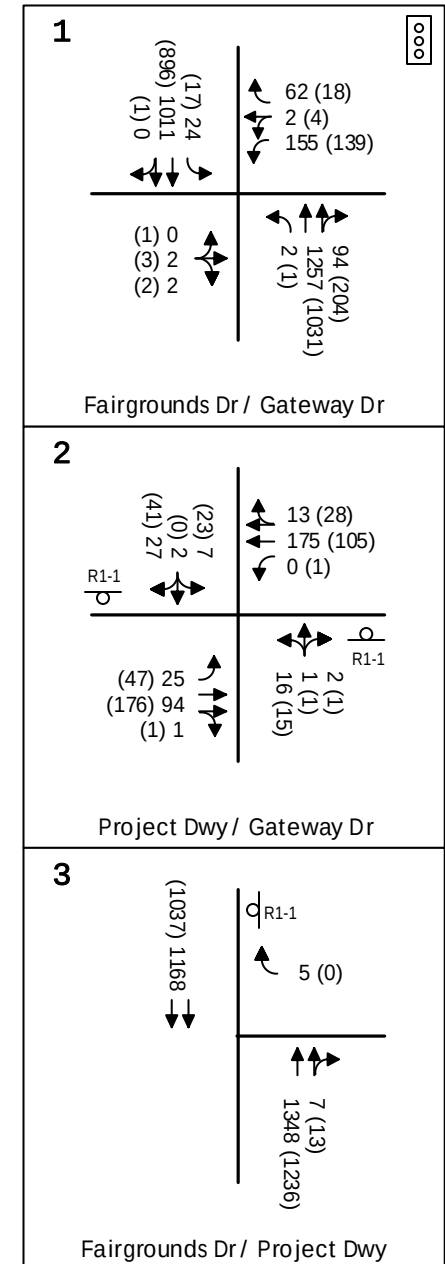


TABLE 3 EXISTING PEAK HOUR LEVELS OF SERVICE AT INTERSECTIONS									
Location	Control	AM Peak Hour			PM Peak Hour			Traffic Signal Warranted?	
		LOS	Average Delay	v/c ratio	LOS	Average Delay	v/c ratio		
1. Fairgrounds Dr / Gateway Dr	Signal	B	15.4	0.558	B	12.6	0.446	N/A	
2. Gateway Dr / Proj driveway	NB/SB Stop	NB	B	10.5	N/A	B	11.4	N/A	No
SB		A	9.6	A	9.8				
EB Left		A	7.7	A	7.6				
WB Left		---	---	A	7.6				
3. Gateway Dr / Proj driveway WB Right	WB Stop	C	16.0	N/A	---	---	N/A	No	

TABLE 4 EXISTING PEAK HOUR QUEUES AT SIGNALIZED INTERSECTIONS			
Location	Capacity (feet)	AM Peak Hour Queue (feet)	PM Peak Hour Queue (feet)
1. Fairgrounds Dr / Gateway Dr			
NB left turn	85	<25	<25
SB left turn	140	51	41
WB left-through lane†	---	117	112
WB left turn	70	72	59
2. Gateway Dr / Project driveway			
NB	50	39	39
SB	60	48	56
EB left turn	60*	<25	<25
WB left turn	70*	<25	<25
3. Fairgrounds Dr / Project driveway			
NB right turn	130	<25	<25
WB right turn	100	<25	<25
† lane is second through lane to Griffin Dr			
* Two-way-left-turn lane			

NEAR-TERM (PROJECT OPENING) - NO PROJECT CONDITIONS

Background Traffic Volume Forecasts

Near-Term (NT) conditions were studied based on a projected opening in 2023. The NT conditions analyzed the study intersections so that a base line condition could be established to evaluate project impacts. The NT volumes were developed through the interpolation of existing and cumulative traffic volumes at the study intersections. The City guidelines note that in the absence of traffic model information, the future build-out year base traffic volumes shall be estimated using an annual growth factor of 3 percent per year. However, the Solano Transportation Authority (STA) model was used and near-term volumes were projected based on interpolation of model information. Figure 4 presents the interpolated Near-Term traffic volumes based on the projected traffic changes discussed in the Cumulative (2040) Conditions section and provided in the appendix.

Intersection Levels of Service

Table 5 summarizes current operating Levels of Service at the study area intersections. All study intersections will operate at LOS C or better during the a.m. and p.m. peak hours. The Fairgrounds Drive / Gateway Drive intersection will have a v/c ratio of 0.560 in the a.m. peak hour and 0.447 in the p.m. peak hour.

Intersection Queues

Table 6 presents information regarding NT peak period queuing in the turn lanes and project driveways. In this scenario the westbound left turn lane at the Fairgrounds Drive / Gateway Drive intersection will decrease slightly to 66 feet, within the storage lane of the intersection. The eastbound left turn queue length into the gas station on the north side of the street is less than 25 feet; thus, the TWLTL should perform as intended and a gap will remain between both directions of queued vehicles.

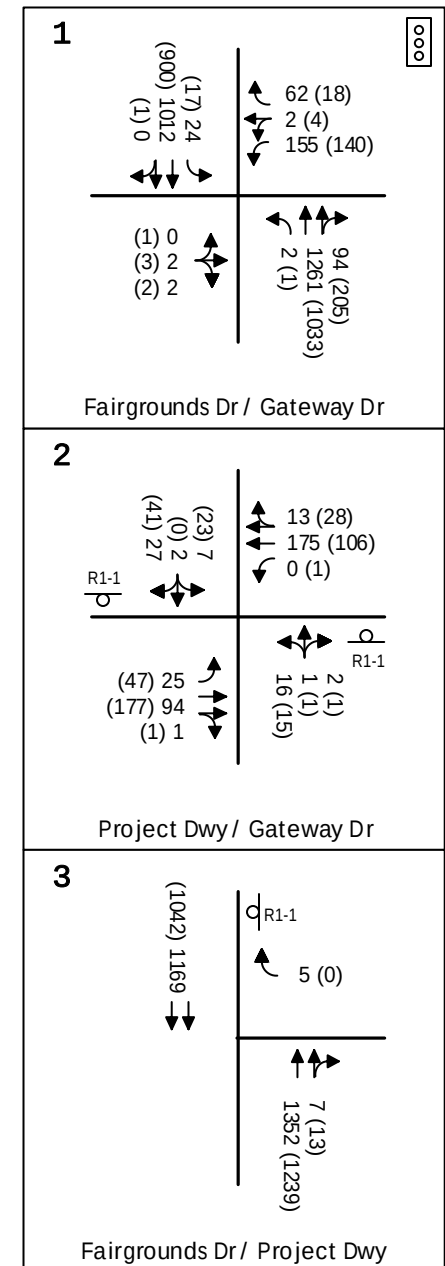


TABLE 5 NEAR-TERM (NT) INTERSECTION LEVEL OF SERVICE								
Location	Control	AM Peak Hour			PM Peak Hour			Traffic Signal Warranted?
		LOS	Average Delay	v/c ratio	LOS	Average Delay	v/c ratio	
1. Fairgrounds Dr / Gateway Dr	Signal	B	15.5	0.560	B	12.6	0.447	N/A
2. Gateway Dr / Proj driveway	NB/SB Stop	B	10.5	N/A	B	11.4	N/A	No
NB		A	9.6		A	9.9		
SB		A	7.7		A	7.6		
EB Left		---	---		A	7.6		
WB Left								
3. Gateway Dr / Proj driveway	WB Stop	C	16.1	N/A	---	---	N/A	No
WB Right								

TABLE 6 NEAR-TERM (NT) QUEUES			
Location	Capacity (feet)	AM Peak Hour Queue (feet)	PM Peak Hour Queue (feet)
1. Fairgrounds Dr / Gateway Dr			
NB left turn	85	<25	<25
SB left turn	140	45	41
WB left-through lane†	---	117	112
WB left turn	70	66	59
2. Gateway Dr / Project driveway			
NB	50	41	39
SB	60	50	56
EB left turn	60*	<25	<25
WB left turn	70*	<25	<25
3. Fairgrounds Dr / Project driveway			
NB right turn	130	<25	<25
WB right turn	100	<25	<25
† lane is second through lane to Griffin Dr * Two-way-left-turn lane			

NEAR-TERM PLUS APPROVED PROJECTS - NO PROJECT CONDITIONS

Background Traffic Volume Forecasts

Near-Term plus Approved Projects (NTPAP) conditions were studied based on a projected opening in 2023 and the addition of local approved projects. Two projects were identified by City staff. These include a mini-storage project and a multi-family project, both on Fairgrounds Drive south of SR 37. An estimate of trips from these projects were added to the NT conditions and the NTPAP trips are illustrated in Figure 5.

Intersection Levels of Service

Table 7 summarizes current operating Levels of Service at the study area intersections. All study intersections will operate at LOS C or better during the a.m. and p.m. peak hours. The Fairgrounds Drive / Gateway Drive intersection will have a v/c ratio of 0.560 in the a.m. peak hour and 0.449 in the p.m. peak hour.

Intersection Queues

Table 8 presents information regarding NTPAP peak period queuing in turn lanes at the Fairgrounds Drive / Gateway Drive intersection and the project driveways. In the westbound left turn lane at the Fairgrounds Drive / Gateway Drive intersection the 76-foot queue will extend into the transition area between the westbound left turn lane and the TWLTL. The project driveway is approximately 140 feet from the crosswalk at Fairgrounds Drive. The eastbound left turn queue length into the gas station on the north side of the street is less than 25 feet. The TWLTL should perform as intended. It is expected that these vehicles will not block eastbound through traffic.

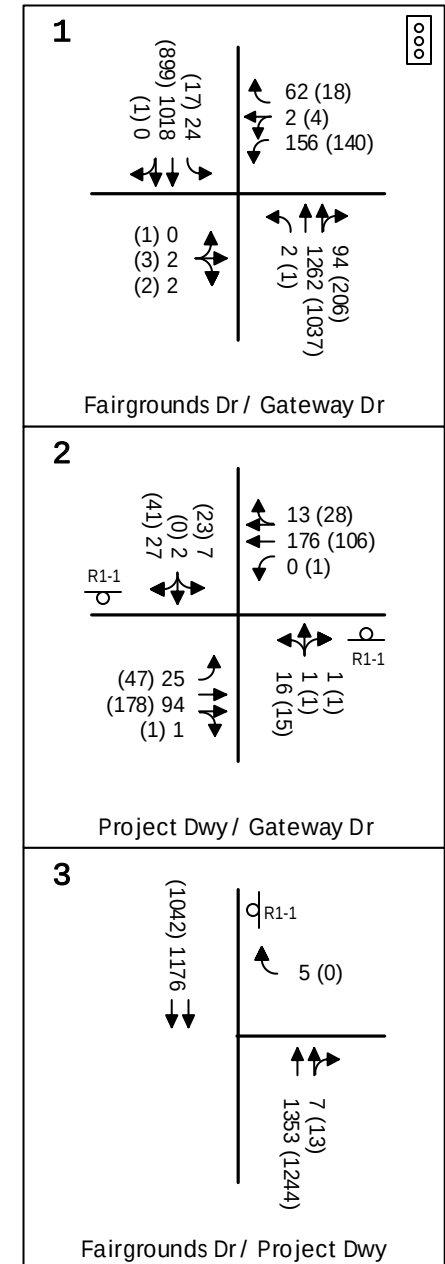


TABLE 7 NEAR-TERM PLUS APPROVED PROJECTS (NTPAP) INTERSECTION LEVEL OF SERVICE								
Location	Control	AM Peak Hour			PM Peak Hour			Traffic Signal Warranted?
		LOS	Average Delay	v/c ratio	LOS	Average Delay	v/c ratio	
1. Fairgrounds Dr / Gateway Dr	Signal	B	15.5	0.560	B	12.6	0.449	N/A
2. Gateway Dr / Proj driveway	NB/SB Stop	B	10.5	N/A	B	11.4	N/A	No
NB		A	9.6		A	9.9		
SB		A	7.7		A	7.6		
EB Left		---	---		A	7.6		
WB Left								
3. Gateway Dr / Proj driveway	WB Stop	C	16.1	N/A	---	---	N/A	No
WB Right								

TABLE 8 NEAR-TERM PLUS APPROVED PROJECTS (NTPAP) QUEUES			
Location	Capacity (feet)	AM Peak Hour Queue (feet)	PM Peak Hour Queue (feet)
1. Fairgrounds Dr / Gateway Dr			
NB left turn	85	<25	<25
SB left turn	140	44	34
WB left-through lane†	---	122	104
WB left turn	70	76	61
2. Gateway Dr / Project driveway			
NB	50	41	39
SB	60	47	56
EB left turn	60*	<25	<25
WB left turn	70*	<25	<25
3. Fairgrounds Dr / Project driveway			
NB right turn	130	<25	<25
WB right turn	100	<25	<25
† lane is second through lane to Griffin Dr * Two-way-left-turn lane			

NTPAP PLUS PROJECT IMPACTS

The development of the Dutch Bros coffee restaurant would attract new traffic to the local area site. The amount of additional traffic on a particular section of the street network depends on two factors:

- Trip Generation, the number of new trips generated by the project, and
- Trip Distribution and Assignment, the specific routes that the new traffic uses.

Project Trip Generation

Institute of Transportation Engineers (ITE) Rates. The amount of vehicular traffic associated with the Dutch Bros project has been estimated on a peak hour basis from two perspectives. First, trip generation rates for coffee related uses that are presented in the Institute of Transportation Engineers (ITE) publication, *Trip Generation Manual, 10th Edition and 11th Edition* were identified and reviewed to determine whether this data is applicable to the proposed Dutch Bros project. As indicated in Table 9, rates are available for two coffee related uses with drive-thru lanes. Code 938 is a ***Coffee / Donut Shop with Drive-Thru and No Indoor Seating***. While that description does match Dutch Bros, the data in the *10th Edition* was collected at very small kiosks (100 sf) that generated 10 to 60 peak hour trips. Because these kiosks were so small their “per ksf” trip generation rates would greatly exaggerate a forecast for the larger Dutch Bros building. Additional data was collected for the rates in the *11th Edition*, but that data reports trip generation rates on a “per drive-thru aisle” basis without regard for the size of the building.

Alternatively, Code 937 is a ***Coffee / Donut Shop with Drive-Thru*** at sites where indoor seating is available. In this case the ITE data was collected at sites that ranged from 1,000 to 2,500 sf. While the Dutch Bros project does not offer indoor seating the forecasts from these “per ksf” trip rates may be somewhat helpful in understanding the trip generation characteristic of the Dutch Bros project.

Dutch Bros Data. As an alternative method, available trip generation information was assembled that is specific to the current prototype Dutch Bros operation (i.e., 900 to 950 sf with dual drive-thru aisles) and determined a.m. and p.m. peak hour trip generation forecasts from that perspective. As noted in Table 9, a 2019 report prepared by Crane Transportation Group included a survey of a similar Dutch Bros in Stockton, California. KDA surveyed three Dutch Bros sites in Northern California between 2020 and 2021. Average a.m. and p.m. peak hour trip generation rates were created from that data. These results generally fall between the rates identified by Code 938 (10th Edition) and Code 937 in the morning peak hour but are higher than either rate in the evening peak hour.

Vallejo Dutch Bros Peak Hour Trip Generation Forecasts. Based on the available data the trip generation associated with the Vallejo site would be most similar to that observed at Dutch Bros’ standard coffee restaurant. As indicated in Table 9, the Dutch Bros coffee restaurant could generate 141 trips in the a.m. peak hour and 115 trips in the evening peak hour.

Daily Trip Generation. Data specific to the Dutch Bros restaurant is not available on a daily basis, and the business's daily trip generation was based on the characteristics of other coffee related uses. The sum of a.m. and p.m. peak hour trip generation rates was compared to the available daily trip generation rates to suggest a factor that can be applied to the available Dutch Bros peak hour data. For Code 938, 10th Edition (small kiosks) the sum of peak hour rates represents 21.3% of the daily rate. Using 11th Edition data the two peak periods are 30.6% of the daily rate. For Code 937 (Coffee Shop with seating), the sum equals 23.4% of the daily traffic, while for Code 934 (Fast-Food with Drive-Thru), the sum is equal to 16.6 % of the daily trip generation. The lower the peak period percentage, the more traffic was generated during non-peak hours. Based on these relationships it was conservatively estimated that the sum of Dutch Bros a.m. and p.m. peak hour trip generation forecasts would be 16% of its daily traffic. It is estimated that Dutch Bros could generate 1,600 daily trips (i.e., $(141+115) / 0.16 = 1,600$).

Pass-by / Diverted Linked Trips. A share of the trips generated by retail and service-related uses is often drawn from the stream of traffic already passing the business. These "pass-by" trips would be made by customers who simply turn into and out of Dutch Bros as a part of another trip. Diverted linked trips, however, are those trips where vehicles travel out of direction to an intermediate location on their way to a final destination. The *ITE Trip Generation Handbook, 3rd Edition* presents pass-by / diverted linked trip rates based on interviews with patrons at various businesses, and this data was reviewed. Pass-by rates for two land use categories may be applicable. Pass-by rates are presented for Code 938, 10th Edition, where pass-by trips comprised 89% of the p.m. peak hour trips made at the small coffee kiosks included in that study. Similarly, pass-by trip rates for Code 934 Fast-Food Restaurant with Drive-Thru represent 49% of the a.m. and 50% of the p.m. trips for that use.

Recognizing that the pass-by trip characteristics of Dutch Bros likely fall somewhere between these two published rates, it was estimated that 50% of the trips generated by the Dutch Bros restaurant will be pass-by trips along Fairgrounds Drive and Gateway Drive while diverted linked trips drawn from the SR 37 / Fairgrounds Drive intersection account for 25% of the trips. Thus, for a 950 sf Dutch Bros kiosk at this location 70 a.m. peak hour and 57 p.m. peak hour trips would be pass-by while 35 a.m. peak hour and 29 p.m. peak hour trips would be diverted. The remaining 36 a.m. and 29 p.m. peak hour trips would be made by customers for the primary purpose of visiting Dutch Bros.

**TABLE 9
DUTCH BROS TRIP GENERATION RATES / FORECASTS**

Location	Size (sf)	Daily	AM Peak Hour					PM Peak Hour				
			Inbound	Outbound	Trips	Rate per ksf	Pass-by Rate	Inbound	Outbound	Trips	Rate per ksf	Pass-by Rate
Dutch Bros Data Specific to 800+ sf model with dual drive-thru												
Stockton, CA ¹	810		53%	47%	120	148.10		44%	56%	70	86.42	
Sacramento, CA ²	865		48%	52%	120	138.72		47%	53%	112	129.48	
Roseville, CA ³	865		52%	48%	114	131.79		50%	50%	66	76.30	
Turlock, CA ⁴	835		52%	48%	145	173.65		50%	50%	162	194.01	
Average			51%	49%	125	148.07		48%	52%	103	121.55	
Trip Generation Projections for Vallejo Dutch Bros Coffee												
Dutch Bros	950	1,600	72	69	141	148.07		55	60	115	121.55	75% ⁹
	Pass-by		36	34	70		75% ⁷	27	30	57		
	Diverted		18	17	35			14	15	29		
	Primary		18	18	36			14	15	29		
Dutch Bros Project Trip Generation based on ITE rates, 11 th Edition												
ITE 937	0.95	507	42	40	82	85.80		19	172	37	38.99	
ITE 938	2 lanes	358	40	40	80	39.81		15	15	30	15.03	
ITE Data												
ITE Code 938 ⁵		2,000.00	50%	50%	10 to 60	337.04		50%	50%		83.33	89%
ITE Code 938 ⁶		179.00	50%	50%	50 to 150	39.81		50%	50%	5 to 110	15.03	
ITE Code 937 ⁷		533.57	51%	49%	50 to 400	85.80		50%	50%	30 to 150	38.99	
ITE Code 934 ⁸		467.48	51%	49%	20 to 500	44.61	49%	52%	48%	20 to 400	33.03	50%
ITE Code 933		450.49	58%	42%	50 to 160	43.18		50%	50%	20 to 130	33.21	
¹ Crane Transportation Group, survey of Stockton CA site 10/3/2019. ² 4250 El Camino Avenue, Sacramento, CA 11/3/2020. ³ 2348 Sunrise Blvd, Roseville, CA 11/3/2020 ⁴ 1201 W. Monte Vista Ave, Turlock, CA. ⁵ Coffee / Donut Shop with Drive-Thru and No Indoor Dining. 10 th Edition All samples are Kiosks of 100 sf ⁶ Coffee / Donut Shop with Drive-Thru and No Indoor Dining. 11 th Edition. ⁷ Coffee / Donut Shop with Drive-Thru. Samples ranged from 1,00 to 2,500 sf ⁸ Fast-Food Restaurant with Drive-Thru. ⁹ assumed average of rates for Code 938 and Code 934 values												

Trip Distribution / Assignment

The distribution of trips generated by the Dutch Bros coffee restaurant will reflect factors that affect the three categories of project trips:

- **Primary Trips:** Trips made solely for the purpose of visiting Dutch Bros are influenced by the distance customers are typically willing to drive for specialty coffee, as well as the locations of other competing coffee restaurants and existing Dutch Bros.
- **Diverted-Linked Trips:** Trips made by customers who are already traveling on a roadway in the vicinity of but not adjoining the Dutch Bros are influenced by the volume of traffic on roadways in the vicinity of the project.
- **Pass-By Trips:** Trips drawn from the stream of traffic already passing by the project site are influenced by the volume and directionality of the traffic stream on those streets.

Primary Trips. Convenience retail / services users generally draw primary trips from within a one to two mile radius because there are many competing businesses offering similar goods and services within that area. Today there are no other Dutch Bros coffee restaurants in Vallejo. Other national coffee chains are available in eastern Vallejo but not along the Fairgrounds Drive corridor. Local coffee shops exist on Fairgrounds Drive. Based on the location of competition, primary trips are expected to be split 60% to the north and 40% to the south, as shown in Table 10.

Diverted – Linked Trips. These trips are expected to form the volume of traffic already on SR 37 (about 1/4 mile to the south) or from motorists already getting off of SR 37 at the Fairgrounds Drive interchange and going south.

Pass-by Trips. Motorists already on Fairgrounds Drive will simply turn into and out of the site as part of a trip.

Table 10 presents the allocation of primary, diverted linked and pass-by trips, as well as the resulting number of peak hour trips involved based on the Dutch Bros trip generation estimate. Figure 6 presents the trip distribution by total trips as well as the trip distribution for inbound and outbound trips at the project driveways. Figure 7 presents the trips generated by the project.

TABLE 10 TRIP DISTRIBUTION				
Direction	Route	Percentage	Peak Hour Trips	
			AM	PM
Primary Trips				
Northbound	Fairgrounds Drive	14%	20	16
Eastbound	Gateway Drive	1%	2	1
	SR 37	5%	7	6
Westbound	SR 37	5%	7	6
Total		25%	36	29
Diverted Linked Trips				
Eastbound	SR 37	10%	14	11
Westbound	SR 37	10%	14	11
Southbound	Fairgrounds Drive from SR 37	5%	7	6
Total		25%	35	28
Pass-By Trips				
Northbound	Fairgrounds Drive	30%	42	35
Southbound	Fairgrounds Drive	20%	28	23
Total		50%	70	58
Grand Total			141	115

Level of Service Analysis

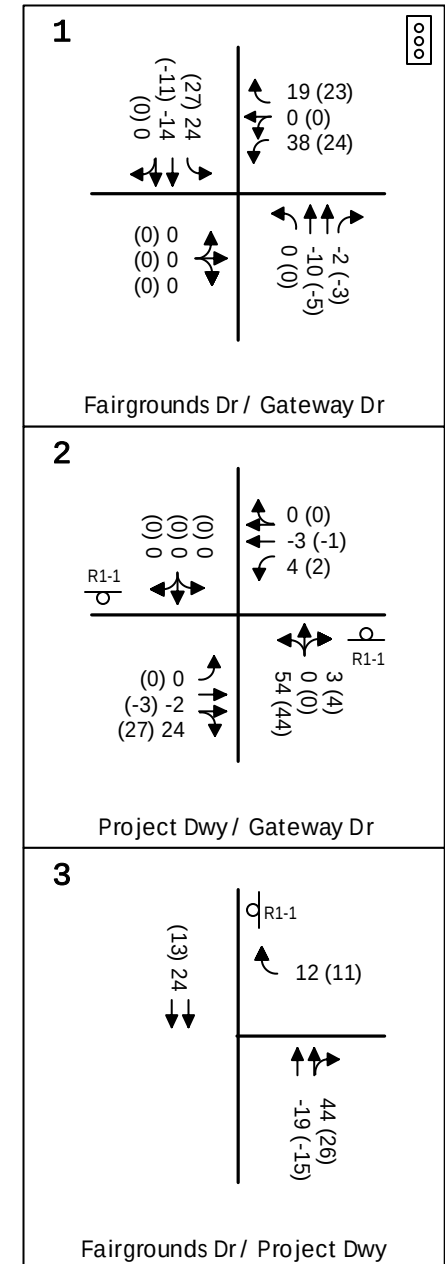
Project-related traffic was added to NTPAP background volumes to calculate NTPAP plus Project (NTPAPPP) conditions traffic volumes. Figure 8 displays the resulting NTPAPPP traffic volumes projected for each study intersection in the a.m. and p.m. peak hours. Table 11 compares the a.m. and p.m. peak hour LOS at each study intersection under NTPAP and NTPAPPP conditions. Under this scenario all intersections will continue to operate at LOS C or better during the a.m. and p.m. peak hours. The Fairgrounds Drive / Gateway Drive intersection will have a v/c ratio of 0.588 in the a.m. peak hour and 0.471 in the p.m. peak hour. The difference in v/c ratios compared to the No Project scenario is within the city's guidelines and is not considered significant.

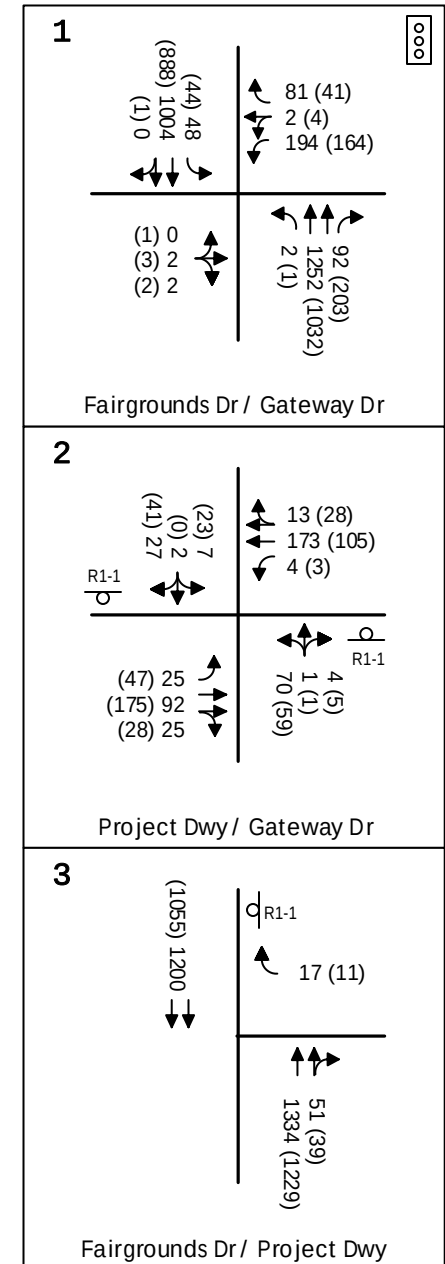
Intersection Queues

Table 12 presents comparative queuing information at the Fairgrounds Drive / Gateway Drive intersection, the TWLTL along Gateway Drive and the project driveways. In the westbound left turn lane at the Fairgrounds Drive / Gateway Drive intersection the queue is projected to lengthen to 90 feet during the a.m. peak hour. The eastbound left turn queue at the project driveway will remain at 25 feet. The westbound queue will extend into the transition area between the westbound left turn lane and the TWLTL. Eastbound left turning vehicles will be able to enter the TWLTL and should perform as expected, without blocking the eastbound through lanes.



PROJECT TRIP DISTRIBUTION PERCENTAGES





**TABLE 11
NTPAP PLUS PROJECT
INTERSECTION LEVEL OF SERVICE**

Location	Control	NTPAP AM			NTPAP plus Project AM			Net v/c change	NTPAP PM			NTPAP plus Project PM			Net v/c change
		LOS	Delay (sec)	v/c ratio	LOS	Delay (sec)	v/c ratio		LOS	Delay (sec)	v/c ratio	LOS	Delay (sec)	v/c ratio	
1. Fairgrounds Dr / Gateway Dr	Signal	B	15.5	0.560	B	17.5	0.588	0.028	B	12.6	0.449	B	13.6	0.471	0.022
2. Gateway Dr / Proj driveway	NB/SB Stop	B	10.5	N/A	B	11.4	N/A	N/A	B	11.4	N/A	B	12.1	N/A	N/A
NB		A	9.6		A	9.6			A	9.9		A	9.9		
SB		A	7.7		A	7.7			A	7.6		A	7.6		
EB Left		---	---		A	7.5			A	7.6		A	7.7		
WB Left															
3. Gateway Dr / Proj driveway	WB Stop	C	16.1	N/A	C	16.3	N/A	N/A	---	---	N/A	B	13.4	N/A	N/A
WB Right															

**TABLE 12
NTPAP PLUS PROJECT
QUEUES**

Location	Capacity (feet)	NTPAP		NTPAP plus Project	
		AM Peak Hour Queue (feet)	PM Peak Hour Queue (feet)	AM Peak Hour Queue (feet)	PM Peak Hour Queue (feet)
1. Fairgrounds Dr / Gateway Dr					
NB left turn	85	<25	<25	<25	<25
SB left turn	140	44	34	66	57
WB left-through lane†	---	122	104	129	114
WB left turn	70	76	61	90	72
2. Gateway Dr / Project driveway					
NB	50	41	39	58	58
SB	60	47	56	52	51
EB left turn	60*	<25	<25	<25	<25
WB left turn	70*	<25	<25	<25	<25
3. Fairgrounds Dr / Project driveway					
NB right turn	130	<25	<25	<25	<25
WB right turn	100	<25	<25	29	<25
† lane is second through lane to Griffin Dr					
* Two-way-left-turn lane					

CUMULATIVE (2040) CONDITIONS

Background Traffic Volume Forecasts

Year 2040 traffic forecasts were based on the most recent Countywide traffic model provided by the Solano Transportation Authority (STA). The method used to develop forecasts of future year peak hour intersection turning movement traffic volumes was based on the increase or decrease of traffic model generated growth factors using the difference method. Peak hour traffic volumes from the travel model were used to generate growth factors. These growth factors were applied to existing peak hour intersection turning movement traffic volumes. The model indicates that traffic volumes growth will increase by up to about 16% through 2040 depending on the approach. This equates to less than a 1% annual growth rate and is shown in the appendix. The development of future year intersection turning movement traffic volumes requires that the turning movements at each intersection “balance”. To achieve the balance, inbound traffic volumes must equal the outbound traffic volumes, and the volumes must be distributed among the various left-turn, through, and right-turn movements at each intersection. The “balancing” of future year intersection turning movement traffic volumes was conducted using methods described in the Transportation Research Board’s (TRB’s) National Cooperative Highway Research Program (NCHRP) Report 255, *Highway Traffic Data for Urbanized Area Project Planning and Design*. The NCHRP 255 method applies the desired peak hour directional volumes to the intersection turning movement volumes, using an iterative process to balance and adjust the resulting forecasts to match the desired peak hour directional volumes. Year 2040 forecasted intersection turning movements are presented in Figure 9.

Background Roadway Improvements

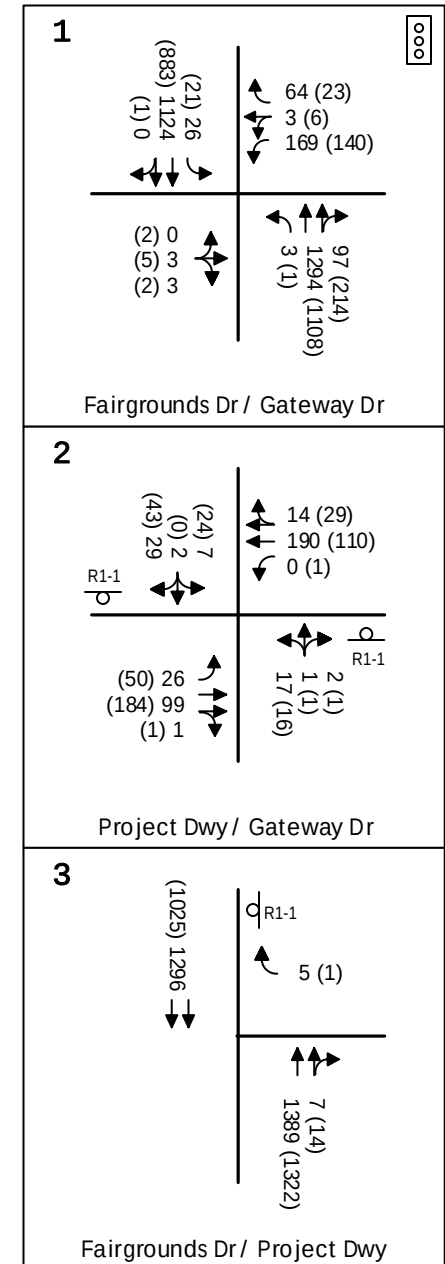
The City’s General Plan and the STA’s Countywide Plans and Projects website ([Plans - Solano Transportation Authority \(ca.gov\)](http://Plans - Solano Transportation Authority (ca.gov))) were reviewed to identify any improvements to the transportation network in the project vicinity. Two projects were identified in the vicinity. One project is the SR 37 / Fairgrounds Drive interchange which will modify the interchange to a diverging diamond configuration and enhance mobility for motor vehicles, bicyclists and pedestrians. The second project will install a Class IV separated bikeway from Sage Street to Whitney Avenue. Roadway conditions in the 2040 model are generally projected to remain with their current lane configurations.

Intersection Levels of Service

Table 13 summarizes operating Levels of Service at the study area intersections under Cumulative conditions. All intersections will operate at LOS C or better. The Fairgrounds Drive / Gateway Drive intersection will have a v/c ratio of 0.583 in the a.m. peak hour and 0.479 in the p.m. peak hour.

Intersection Queues

Table 14 presents queuing information at the Fairgrounds Drive / Gateway Drive intersection, the TWLTL along Gateway Drive and the project driveways. In the westbound left turn lane at the Fairgrounds Drive / Gateway Drive intersection the queue is projected to be 92 feet during the a.m. peak hour and 77 feet in the p.m. peak hour. The eastbound left turn queue at the project driveway is projected to be 25 feet in the a.m. peak hour and 28 feet in the p.m. peak hour. The westbound queue will extend into the transition area between the westbound left turn lane and the TWLTL. Eastbound left turning vehicles will be able to enter the TWLTL and should perform as expected, without blocking the eastbound through lanes.



**TABLE 13
INTERSECTION LEVEL OF SERVICE
2040 PLUS PROJECT CONDITIONS**

Location	Control	2040 AM			2040 plus Project AM			Net v/c change	2040 PM			2040 plus Project PM			Net v/c change
		LOS	Delay (sec)	v/c ratio	LOS	Delay (sec)	v/c ratio		LOS	Delay (sec)	v/c ratio	LOS	Delay (sec)	v/c ratio	
1. Fairgrounds Dr / Gateway Dr	Signal	B	16.9	0.583	B	19.2	0.610	0.027	B	13.0	0.479	B	14.2	0.501	0.022
2. Gateway Dr / Proj D/W	NB/SB Stop	NB	B	10.6	B	11.4	N/A	N/A	B	11.6	N/A	B	12.3	N/A	N/A
SB		A	9.7	N/A	A	9.7			A	9.9		A	9.9		
EB Left		A	7.8		A	7.8			A	7.6		A	7.6		
WB Left		---	---		A	7.5			A	7.6		A	7.7		
3. Gateway Dr / Proj D/W WB Right	WB Stop	C	16.4	N/A	C	16.7	N/A	N/A	B	14.2	N/A	B	14.4	N/A	N/A

**TABLE 14
2040 PEAK HOUR
QUEUES**

Location	Capacity (feet)	2040		2040 plus Project	
		AM Peak Hour Queue (feet)	PM Peak Hour Queue (feet)	AM Peak Hour Queue (feet)	PM Peak Hour Queue (feet)
1. Fairgrounds Dr / Gateway Dr					
NB left turn	85	<25	<25	<25	<5
SB left turn	140	57	38	73	75
WB left-through lane†	---	127	114	132	116
WB left turn	70	84	69	92	77
2. Gateway Dr / Project driveway					
NB	50	41	40	60	55
SB	60	50	54	48	52
EB left turn	60*	<25	26	<25	28
WB left turn	70*	<25	<25	<25	<25
3. Fairgrounds Dr / Project driveway					
NB right turn	130	<25	<25	34	<25
WB right turn	100	<25	<25	28	<25
† lane is second through lane to Griffin Dr Two-way-left-turn lane					

CUMULATIVE (2040) PLUS PROJECT IMPACTS

The development of the Dutch Bros coffee will attract additional traffic to the project vicinity, and the project will add traffic to the long-term 2040 background conditions.

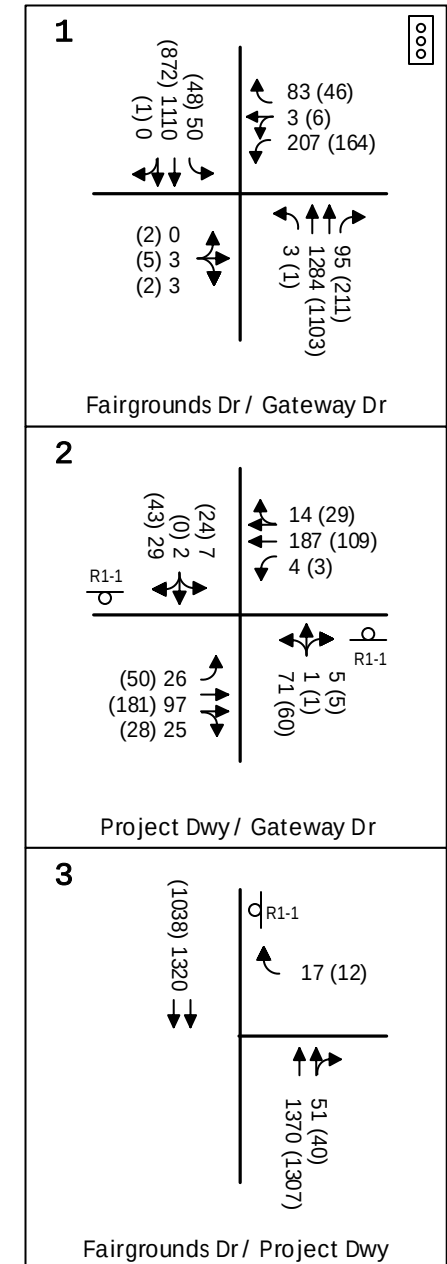
Level of Service Analysis

Project-related traffic was added to 2040 background volumes to develop 2040 plus Project traffic volumes. Figure 10 displays the resulting 2040 plus Project traffic volumes anticipated for each study intersection in the a.m. and p.m. peak hours.

Table 13 compares the a.m. and p.m. peak hour LOS at each study intersection under 2040 and 2040 plus Project conditions. All intersections will operate at LOS C or better during each time period. The Fairgrounds Drive / Gateway Drive intersection will have a v/c ratio of 0.610 in the a.m. peak hour and 0.501 in the p.m. peak hour. The difference in v/c ratios compared to the No Project scenario is within the city's guidelines and is not considered significant.

Intersection Queues

Table 14 presents comparative queuing information at the Fairgrounds Drive / Gateway Drive intersection, the TWLTL along Gateway Drive and the project driveways. In the westbound left turn lane at the Fairgrounds Drive / Gateway Drive intersection the queue is projected to lengthen to 98 feet during the a.m. peak hour and 72 feet in the p.m. peak hour. The eastbound left turn queue at the project driveway is projected to be 25 feet in the a.m. peak hour and 27 feet in the p.m. peak hour. The westbound Fairgrounds Drive / Gateway Drive left turn lane queue will extend into the transition area between westbound left turn lane and the TWLTL. Eastbound left turning vehicles will be able to enter the TWLTL and should perform as expected, without blocking the eastbound through lanes.



SITE ASSESSMENT

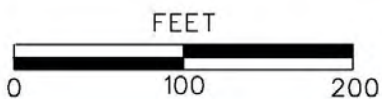
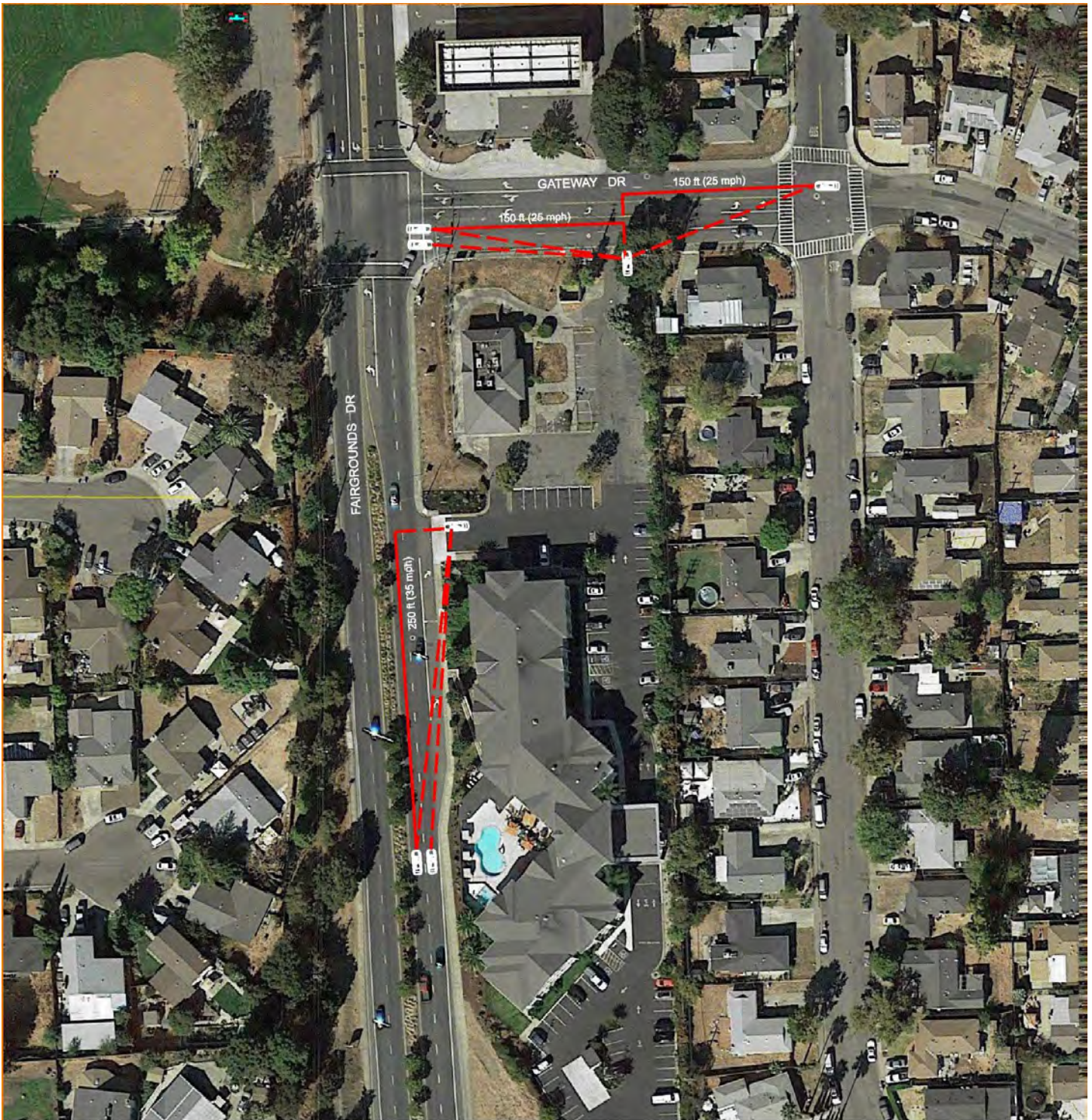
Site Plan Review

Layout. The project occupies a former Burger King site in the southeast quadrant of the Fairgrounds Drive / Gateway Drive intersection. The site is north of a Hampton Inn hotel. Two existing driveways provide access for the site, a right-in, right-out driveway along Fairgrounds Drive located between the Hampton Inn and the project, and a full access driveway located on the east side of the project along Gateway Drive; both driveways provide access to both uses. The Fairgrounds Drive driveway is about 200 feet south of the Fairgrounds Drive / Gateway Drive intersection while the Gateway Drive driveway is about 150 feet east of the intersection.

The Dutch Bros' drive-thru entrance and exit are located along the north-south drive aisle that originates at the Gateway Drive driveway and continues to the Hampton Inn. The drive-thru entrance is located about 45 feet north of the drive aisle extending from the Fairgrounds Drive driveway and about 150 feet south of the Gateway Drive driveway. Customers from the south will use the Fairgrounds Drive driveway and make a left turn to enter the drive-thru while traffic from the north and east will enter from Gateway Drive and turn right into the drive-thru lanes. As customers depart the pick-up window the nearest driveway is at Gateway Drive, and it is expected most customers will use this exit. Depending on the ease to queue at Gateway Drive and the familiarity of the roadways some customers may exit via Fairgrounds Drive.

As illustrated in the site plan, Figure 2, the drive-thru is a dual lane system that provides roughly 450 feet of combined queuing area in its two lanes measured from the pick-up window around the site to the drive-thru window. The proposed layout accommodates storage for 21 vehicles inside the designated queueing areas. An exit pass-thru lane is also provided at the pick-up window that will allow customers who have been serviced while in line the opportunity to proceed around a time-consuming-order at the pick-up window. The drive-thru aisle also provides about 50 feet from the pick-up window to the drive aisle, which would accommodate two more vehicles.

Sight Distance. Although both driveways are existing the available sight distance was evaluated. City standards default to current Caltrans standards. For unsignalized urban driveways the sight distance standards in Table 201.1, Sight Distance Standards, are applicable. For a 35 mph speed 250 feet is required while for 25 mph 150 feet is the required stopping distance. Figure 11 illustrates the sight distance for both driveways. Along Fairgrounds Drive the required sight distance from the driveway is available looking south. The sight distance criterion is met prior to the vertical curve along Fairgrounds Drive dropping towards SR 37. Additionally, the sight distance along Fairgrounds Drive to the driveway is available. Sight distance along Gateway Drive is unimpeded looking west from the driveway. Looking east, a fence exists between the project and adjacent parcel. The fence obstructs the line of sight to the east. It is likely that customers departing the site will creep across the sidewalk to have an unobstructed view of westbound traffic. The sight lines along Gateway Drive from the east and west approaches provide adequate sight distance to the driveway. Google street views are provided in the appendix.



SIGHT DISTANCE

Drive-thru Queueing. Queuing characteristics of Dutch Bros restaurants with dual drive-thru aisles was assembled to confirm the adequacy of the proposed plan. Table 15 presents site data of observed queues at five Dutch Bros coffee restaurants. Each location includes and provides: the dual entry lane model, peak period in-line service to reduce headways, an exit pass-thru lane that allows customers who have been serviced in line to exit. During peak periods Dutch Bros managers regularly position 2-3 staff with ordering tablets in-line to expedite service and deliver orders. The proposed site plan includes sidewalk along the drive-thru lanes and a raised median between queue lanes to facilitate this activity. Table 15 identifies the maximum queue observed behind the ordering board in each lane at four locations and the maximum number of total vehicles observed queueing at one time. As shown, the largest number of concurrent vehicles at four sites was in a range of 13 to 15 vehicles, and the 21 vehicles accommodated by the proposed project indicates that this layout has the capacity to handle the peak activity observed at those locations.

An in-depth queue survey was conducted in 2022 for a new Dutch Bros in Sacramento. That work addressed queuing throughout a typical weekday and a Saturday. The data was collected at 5-minute intervals and both the maximum observed queue and the 95th percentile queue were identified within each of six time periods, a.m., noon and p.m. of a weekday and a Saturday. The 95th percentile queue during all six time periods was 20 vehicles or less, while the maximum observed queue reached 23 vehicles.

The adequacy of the proposed Fairgrounds Drive Dutch Bros layout has been assessed within the context of the available information. The proposed drive-thru can accommodate 21 vehicles between the pick-up window and the north-south drive aisle. This capacity exceeds the maximum queue lengths observed at other Dutch Bros sites. This drive-thru lane capacity accommodates the 95th percentile queues recently observed at the Howe Avenue Sacramento site. The maximum observed queues at the Sacramento site did exceed the anticipated capacity, which suggests that occasionally the queue from the drive-thru lanes could spill into the adjoining drive aisle.

Dutch Bros site managers actively manage on-site traffic flow and can take steps to direct traffic during periods of unusually high demand. This is sometimes the case during the initial “honeymoon” period after the Dutch Bros opens. Were queues to extend beyond the drive-thru aisles the Fairgrounds Drive site plan can accommodate additional vehicles in the adjacent drive aisles without creating a queue that would reach either of the adjoining streets. During peak periods it would be beneficial to use temporary traffic controls with Dutch Bros staff directing traffic into each of the drive-thru lanes. Staff can also direct traffic at the exit lane to guide customers to either the Fairgrounds Drive or Gateway Drive driveways.

Parking. The adequacy of the site parking supply for Dutch Bros operation has also been assessed based on observed parking demands at another site. Not all Dutch Bros customers use the drive-thru lanes, as some drive to the site and walk up to the service window. Other customers may walk or bicycle to the service window from the Hampton Inn, the local businesses, the adjacent park and the surrounding neighborhood. Dutch Bros employees will also park at the site, although, some are likely to use alternative transportation modes or ride-share.

Table 15 also notes the results of parking utilization surveys conducted over two days at the Sacramento Dutch Bros site. The parking demands vary greatly hour to hour. The differences resulted from variation in the number of employees at the site at any one time and from the random nature of customers who parked. A maximum of 17 parked vehicles was observed. The proposed site provides 12 parking spaces. Additional parking spaces are available along the east side of the Gateway Drive drive aisle, where existing parking striping will be refreshed as part of the project. This will provide an additional 17 parking spaces. The project intends to modify the north side of the Fairgrounds Drive drive aisle and install 10 additional parking spaces; these spaces would appear to be part of a reciprocal easement for parking and access. A total of 39 parking spaces will be provided within about 160 feet of the building, and this would satisfy the potential parking demand.

TABLE 15 DUTCH BROS DRIVE-THRU QUEUES AND PARKING WITH DUAL DRIVE-THRU					
Observed Drive-Thru Queues					
Location	Peak Hour Time Period	From Pick Up Window to Entry Aisle	Entry Aisle		Total Vehicles
			Lane #1	Lane #2	
Sacramento, CA	AM	3	5	5	13
	PM	3	7	5	15
Roseville, CA	AM	2	6	5	13
	PM	2	3	2	7
Stockton, CA	AM	-	6	9	15
	PM	-	7	6	13
Turlock, CA	AM	7	3	2	12
	PM	7	4	5	16
				95 th % queue	Max queue
1234 Howe Ave Sacramento, CA	Weekday AM		19		21
	Weekday Noon		14		17
	Weekday PM		18		18
	Saturday AM		20		23
	Saturday Noon		18		20
	Saturday PM		14		16
Dutch Bros Parking Utilization					
1234 Howe Ave Sacramento, CA			Time	Parked Vehicles	
				Weekday	Saturday
			7:00 a.m.	7	-
			8:00	7	-
			9:00	13	9
			10:00	7	12
			11:00	8	13
			Noon	10	13
			1:00 p.m.	9	15
			2:00	10	17
			3:00	11	14
			4:00	13	13
			5:00	11	12
			6:00	11	10

FINDINGS / RECOMMENDATIONS / MITIGATIONS

The preceding analysis has identified project impacts that may occur without mitigation. The text that follows identifies a strategy for mitigating the impacts of the proposed project. Recommendations are identified for facilities that have deficiencies in the roadway network without the project. If the project causes a significant impact, mitigations are identified for the facility.

Existing Conditions

All intersections are currently operating at LOS C or better. The v/c ratios at the signalized intersection are 0.558 in the a.m. peak hour and 0.446 in the p.m. peak hour. The worst queue in the westbound left turn along Gateway Drive is about 72 feet and occurs in the a.m. peak hour. The westbound left turn queue in the adjacent TWLTL is about 25 feet. The TWLTL should perform as intended, allowing turning movements to queue in each direction and not block through traffic.

Near-Term (Opening Day) No Project

All intersections will continue to operate at LOS C or better. The v/c ratios at the signalized intersection are 0.560 in the a.m. peak hour and 0.447 in the p.m. peak hour. The worst queue along the westbound left turn lane of the Fairgrounds Drive / Gateway Drive intersection will decline to about 66 feet in the a.m. peak hour, and the TWLTL should continue to perform as intended.

Near-Term plus Approved Projects (Opening Day) No Project

All study intersections will operate at LOS C or better during the a.m. and p.m. peak hours. The Fairgrounds Drive / Gateway Drive intersection will have a v/c ratio of 0.560 in the a.m. peak hour and 0.447 in the p.m. peak hour. The worst queue along the westbound left turn lane of the Fairgrounds Drive / Gateway Drive intersection will lengthen to about 76 feet in the a.m. peak hour while the eastbound left turn queue will be about 25 feet. The TWLTL should allow turning movements to queue in their lanes without blocking through lane traffic.

Near-Term plus Approved Projects Plus Project

All intersections will operate at LOS C or better during both peak periods. The Fairgrounds Drive / Gateway Drive will have a v/c ratio of 0.588 in the a.m. peak hour and 0.471 in the p.m. peak hour. The difference in v/c ratios compared to the No Project scenarios are within City standards and are not considered significant. The worst queue along the westbound left turn lane of the Fairgrounds Drive / Gateway Drive intersection will lengthen to about 90 feet in the a.m. peak hour while the eastbound left turn queue will be about 25 feet. The westbound queue will extend into the transition area between the left turn lane and the TWLTL. The TWLTL should allow both turning movements to queue in their lanes without blocking through lanes.

As noted, Dutch Bros managers actively manage on-site traffic flow especially during periods of high volume such as when the store first opens. Dutch Bros site managers actively manages on-site traffic flow and can take steps to direct traffic during periods of unusually high demand. In this case, were queues to extend beyond the drive-thru aisles Dutch Bros may work with Hampton Inn to route traffic around the site to minimize impacts to on-site intersections and the public streets.

Potential improvement measures during special event / grand opening periods could include the following:

- Increase staffing levels during peak hours to increase the speed of orders and delivery;
- Use staff to specifically control traffic into and through site;
- Conduct full shop and shift meeting to discuss proposed traffic patterns;
- Prepare queuing plan to route traffic off public streets and onto site;
- Create signage and routing plan for event; install temporary sandwich board signs to assist in traffic control.
- Coordinate special events with adjacent Hampton Inn hotel;
- Hire third party traffic control company if deemed necessary by site manager;

No additional improvements to the traffic network beyond special event consideration are identified.

The project applicant should pay applicable TIM fees.

Cumulative (2040) Conditions

All intersections will operate at LOS C or better during both peak periods. The Fairgrounds Drive / Gateway Drive will have a v/c ratio of 0.583 in the a.m. peak hour and 0.479 in the p.m. peak hour. The worst queue along the westbound left turn lane of the Fairgrounds Drive / Gateway Drive intersection is projected to be about 84 feet in the a.m. peak hour while the eastbound left turn queue will be about 25 feet. The westbound queue will extend into the transition area between the left turn lane and the TWLTL. The TWLTL should allow both turning movements to queue in their lanes without blocking through lanes.

Cumulative (2040) + Project Mitigations

All intersections will continue to operate at LOS C or better during both peak periods. The Fairgrounds Drive / Gateway Drive will have a v/c ratio of 0.610 in the a.m. peak hour and 0.501 in the p.m. peak hour. The difference in v/c ratios compared to the No Project scenarios are within City standards and are not considered significant. The queue along the westbound left turn lane of the Fairgrounds Drive / Gateway Drive intersection is projected to lengthen to about 92 feet in the a.m. peak hour while the eastbound left turn queue will be about 25 feet. The westbound queue will extend into the transition area between the left turn lane and the TWLTL. The TWLTL should allow both turning movements to queue in their lanes without blocking through lanes.

No improvements are identified.

REFERENCES

1. *Highway Capacity Manual*, 7th Edition
2. Institute of Transportation Engineers. 2021. *Trip Generation*, 11th Edition. Washington, D.C.
3. Institute of Transportation Engineers. 2017. *Trip Generation Handbook*, 3rd Edition. Washington, D.C.
4. City of Vallejo *General Plan*, August 2017
5. *Travel Demand Model*, Solano Transportation Authority, 2021
6. *Solano County Active Transportation Plan*, Solano County Transportation Authority, 2020

APPENDIX





National Data & Surveying ServicesIntersection Turning Movement Count

Location: Fairgrounds Dr & Gateway Dr
City: Vallejo
Control: Signalized

Project ID: 22-080210-001
Date: 7/21/2022

Data - Totals

NS/EW Streets:	Fairgrounds Dr				Fairgrounds Dr				Gateway Dr				Gateway Dr				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
7:00 AM	0	126	10	0	6	114	0	0	0	0	0	0	24	0	2	0	282
7:15 AM	0	110	8	0	4	132	0	0	0	0	0	0	23	0	9	0	286
7:30 AM	0	127	14	0	3	131	0	0	0	0	0	0	24	0	5	0	304
7:45 AM	0	113	15	0	3	153	0	0	0	1	1	0	20	0	3	0	309
8:00 AM	0	108	15	0	3	135	0	0	0	0	0	0	26	0	3	0	290
8:15 AM	1	146	18	0	6	152	0	0	0	0	1	0	33	1	7	0	365
8:30 AM	0	133	17	0	4	145	0	0	0	1	0	0	23	0	5	0	328
8:45 AM	0	102	24	0	5	142	0	0	1	0	0	0	29	0	2	0	305
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	1	965	121	0	34	1104	0	0	1	2	2	0	202	1	36	0	2469
	0.09%	88.78%	11.13%	0.00%	2.99%	97.01%	0.00%	0.00%	20.00%	40.00%	40.00%	0.00%	84.52%	0.42%	15.06%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	1	500	65	0	16	585	0	0	0	2	2	0	102	1	18	0	1292
PEAK HR FACTOR :	0.250	0.856	0.903	0.000	0.667	0.956	0.000	0.000	0.000	0.500	0.500	0.000	0.773	0.250	0.643	0.000	0.885
	0.858				0.951				0.500				0.738				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
4:00 PM	1	210	46	0	5	195	0	0	0	1	0	0	25	0	2	0	485
4:15 PM	0	221	48	0	9	192	0	0	0	0	1	0	37	1	9	0	518
4:30 PM	2	233	49	0	11	207	0	0	0	0	1	0	24	0	6	0	533
4:45 PM	1	242	47	0	6	221	1	0	1	0	1	0	38	1	5	0	564
5:00 PM	0	265	65	0	10	218	0	0	0	0	0	0	23	2	5	0	588
5:15 PM	0	243	43	0	1	250	0	0	0	0	0	0	40	1	7	0	585
5:30 PM	0	245	56	0	6	223	0	0	0	3	1	0	27	0	5	0	566
5:45 PM	0	230	38	0	7	222	0	0	2	0	0	0	35	0	9	0	543
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	4	1889	392	0	55	1728	1	0	3	4	4	0	249	5	48	0	4382
	0.18%	82.67%	17.16%	0.00%	3.08%	96.86%	0.06%	0.00%	27.27%	36.36%	36.36%	0.00%	82.45%	1.66%	15.89%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	1	995	211	0	23	912	1	0	1	3	2	0	128	4	22	0	2303
PEAK HR FACTOR :	0.250	0.939	0.812	0.000	0.575	0.912	0.250	0.000	0.250	0.250	0.500	0.000	0.800	0.500	0.786	0.000	0.979
	0.914				0.932				0.375				0.802				

National Data & Surveying ServicesIntersection Turning Movement Count

Location: Fairgrounds Dr & Gateway Dr
City: Vallejo
Control: Signalized

Project ID: 22-080210-001
Date: 7/21/2022

Data - Bikes

[illegible]

Movement Count

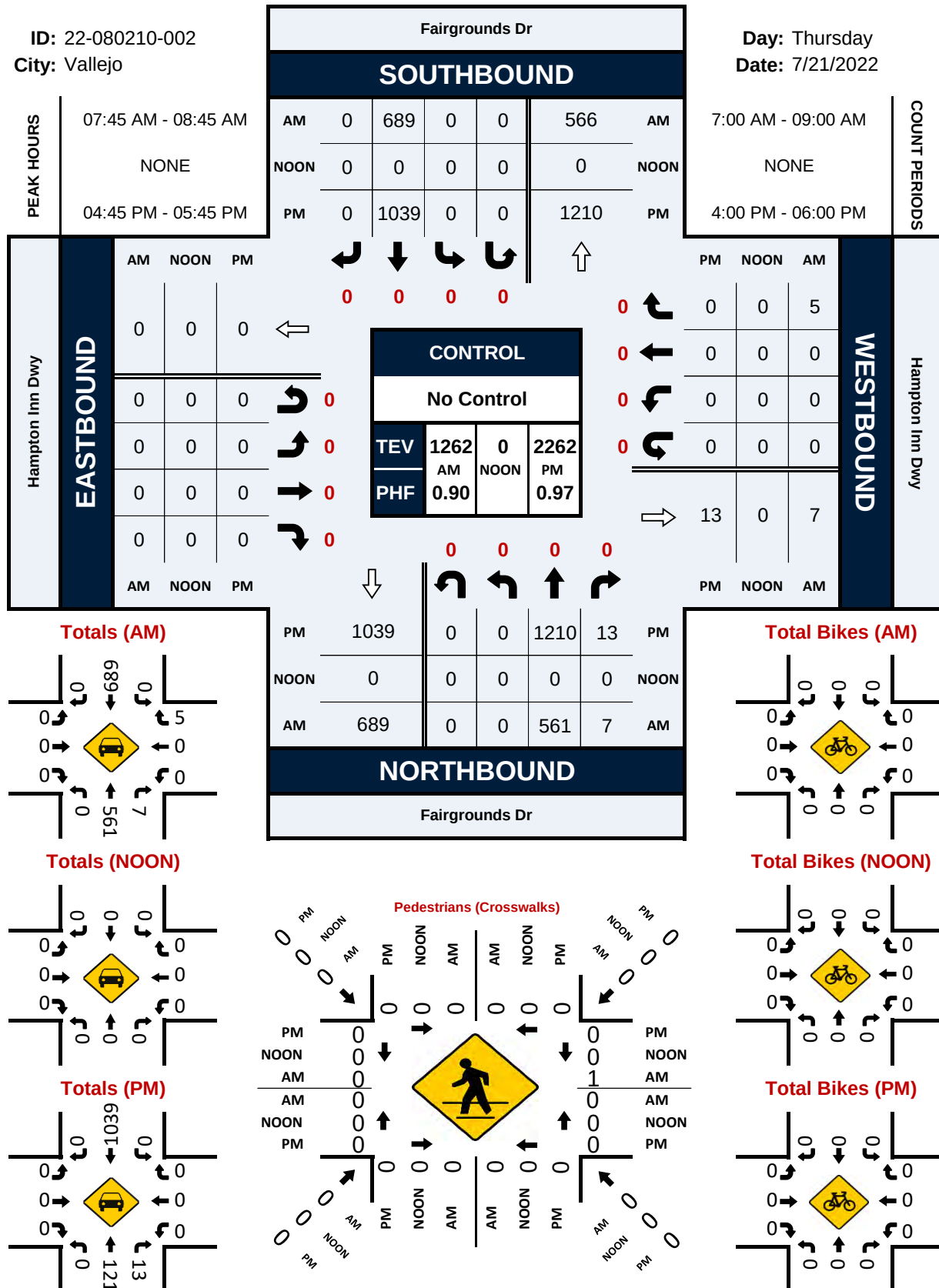
Project ID: 22-080210-001
Date: 7/21/2022

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Fairgrounds Dr		Fairgrounds Dr		Gateway Dr		Gateway Dr		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
7:00 AM	0	0	0	0	0	0	0	2	2
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	1	0	0	1
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
APPROACH %'s :	0	0	0	0	0	1	0	2	3
PEAK HR :	07:45 AM - 08:45 AM								TOTAL
PEAK HR VOL :	0	0	0	0	0	1	0	0	1
PEAK HR FACTOR :					0.250				0.250

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
4:00 PM	0	1	0	0	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	1	1	0	0	0	0	0	0	2
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	1	0	1	0	2
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :	EB 1	WB 2	EB 0	WB 0	NB 1	SB 0	NB 1	SB 0	TOTAL 5
APPROACH %'s :	33.33%	66.67%			100.00%	0.00%	100.00%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM								TOTAL
PEAK HR VOL :	0	0	0	0	1 0.250	0	1 0.250	0	2
PEAK HR FACTOR :					0.250		0.250		0.250

Day: Thursday
Date: 7/21/2022



National Data & Surveying ServicesIntersection Turning Movement Count

Location: Fairgrounds Dr & Hampton Inn Dwy
City: Vallejo
Control: No Control

Project ID: 22-080210-002
Date: 7/21/2022

Data - Totals

NS/EW Streets:	Fairgrounds Dr				Fairgrounds Dr				Hampton Inn Dwy				Hampton Inn Dwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
7:00 AM	0	134	2	0	0	138	0	0	0	0	0	0	0	0	1	0	275
7:15 AM	0	118	0	0	0	155	0	0	0	0	0	0	0	0	0	0	273
7:30 AM	0	143	2	0	0	155	0	0	0	0	0	0	0	0	0	0	300
7:45 AM	0	124	2	0	0	174	0	0	0	0	0	0	0	0	2	0	302
8:00 AM	0	125	2	0	0	160	0	0	0	0	0	0	0	0	1	0	288
8:15 AM	0	161	1	0	0	187	0	0	0	0	0	0	0	0	1	0	350
8:30 AM	0	151	2	0	0	168	0	0	0	0	0	0	0	0	1	0	322
8:45 AM	0	123	4	0	0	169	0	0	0	0	0	0	0	0	1	0	297
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	0	1079	15	0	0	1306	0	0	0	0	0	0	0	0	7	0	2407
	0.00%	98.63%	1.37%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	
PEAK HR :	07:45 AM - 08:45 AM																TOTAL
PEAK HR VOL :	0	561	7	0	0	689	0	0	0	0	0	0	0	0	5	0	1262
PEAK HR FACTOR :	0.000	0.871	0.875	0.000	0.000	0.921	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.625	0.000	0.901
	0.877				0.921								0.625				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
4:00 PM	0	254	3	0	0	215	0	0	0	0	0	0	0	0	0	0	472
4:15 PM	0	269	3	0	0	234	0	0	0	0	0	0	0	0	0	0	506
4:30 PM	0	283	4	0	0	233	0	0	0	0	0	0	0	0	1	0	521
4:45 PM	0	292	3	0	0	252	0	0	0	0	0	0	0	0	0	0	547
5:00 PM	0	328	4	0	0	245	0	0	0	0	0	0	0	0	0	0	577
5:15 PM	0	286	3	0	0	293	0	0	0	0	0	0	0	0	0	0	582
5:30 PM	0	304	3	0	0	249	0	0	0	0	0	0	0	0	0	0	556
5:45 PM	0	266	4	0	0	260	0	0	0	0	0	0	0	0	0	0	530
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	0	2282	27	0	0	1981	0	0	0	0	0	0	0	0	1	0	4291
	0.00%	98.83%	1.17%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	0	1210	13	0	0	1039	0	0	0	0	0	0	0	0	0	0	2262
PEAK HR FACTOR :	0.000	0.922	0.813	0.000	0.000	0.887	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.972
	0.921				0.887												

National Data & Surveying ServicesIntersection Turning Movement Count

Location: Fairgrounds Dr & Hampton Inn Dwy
City: Vallejo
Control: No Control

Project ID: 22-080210-002
Date: 7/21/2022

Data - Bikes

NS/EW Streets:	Fairgrounds Dr				Fairgrounds Dr				Hampton Inn Dwy				Hampton Inn Dwy			
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND			
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU
APPROACH %'s :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR :	07:45 AM - 08:45 AM															
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TOTAL	0				0				0				0			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND			
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU
APPROACH %'s :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR :	04:45 PM - 05:45 PM															
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
TOTAL	0				0				0				0			

Movement Count

Project ID: 22-080210-002
Date: 7/21/2022

Data - Pedestrians (Crosswalks)

NS/EW Streets:		Fairgrounds Dr		Fairgrounds Dr		Hampton Inn Dwy		Hampton Inn Dwy		
AM		NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
		EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
	7:00 AM	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0
	7:30 AM	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	1	0	0	1
	8:00 AM	0	0	0	0	0	0	0	0	0
	8:15 AM	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	0	0	0	0	0
	8:45 AM	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :		EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
APPROACH %'s :		0	0	0	0	0	1	0	0	1
		0.00%		100.00%						
PEAK HR :		07:45 AM - 08:45 AM								TOTAL
PEAK HR VOL :		0	0	0	0	0	1	0	0	1
PEAK HR FACTOR :						0.250				0.250

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
APPROACH %'s :	0	0	0	0	0	0	0	0	0
PEAK HR :	04:45 PM - 05:45 PM								TOTAL
PEAK HR VOL :	0	0	0		0	0	0	0	0
PEAK HR FACTOR :									

National Data & Surveying ServicesIntersection Turning Movement Count

Location: Hampton Inn Dwy & Gateway Dr
City: Vallejo
Control: No Control

Project ID: 22-080210-003
Date: 7/21/2022

Data - Totals

NS/EW Streets:	Hampton Inn Dwy				Hampton Inn Dwy				Gateway Dr				Gateway Dr				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
7:00 AM	5	1	0	0	0	0	9	0	7	10	0	0	0	11	3	0	46
7:15 AM	3	0	0	0	1	0	6	0	3	8	1	0	0	24	4	0	50
7:30 AM	3	1	0	0	1	0	7	0	7	9	0	0	0	18	4	0	50
7:45 AM	2	0	0	0	1	0	6	0	7	12	1	0	0	16	5	0	50
8:00 AM	3	0	0	0	1	0	7	0	5	13	0	0	0	21	1	0	51
8:15 AM	3	1	0	0	3	0	6	0	7	16	0	0	0	29	2	0	67
8:30 AM	5	0	0	0	1	2	5	0	3	18	1	1	0	19	7	0	62
8:45 AM	5	0	2	0	2	0	9	0	9	19	0	0	0	15	3	0	64
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	29	3	2	0	10	2	55	0	48	105	3	1	0	153	29	0	440
PEAK HR :	85.29%	8.82%	5.88%	0.00%	14.93%	2.99%	82.09%	0.00%	30.57%	66.88%	1.91%	0.64%	0.00%	84.07%	15.93%	0.00%	
PEAK HR VOL :	16	1	2	0	7	2	27	0	24	66	1	1	0	84	13	0	244
PEAK HR FACTOR :	0.800	0.250	0.250	0.000	0.583	0.250	0.750	0.000	0.667	0.868	0.250	0.250	0.000	0.724	0.464	0.000	0.910
	0.679				0.818				0.821				0.782				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
4:00 PM	0	0	1	0	4	0	7	0	14	37	1	0	0	20	4	0	88
4:15 PM	4	0	0	0	1	0	15	0	11	44	0	0	0	29	8	0	112
4:30 PM	3	0	1	0	6	0	11	0	11	49	2	0	0	19	3	0	105
4:45 PM	2	0	1	0	4	0	11	0	9	41	0	0	0	27	2	0	97
5:00 PM	2	0	1	0	6	0	9	0	22	56	0	0	1	20	2	0	119
5:15 PM	5	0	0	0	7	0	11	0	7	36	0	0	0	31	8	0	105
5:30 PM	3	0	0	0	8	0	6	0	13	53	0	0	0	23	11	0	117
5:45 PM	5	1	0	0	2	0	15	0	5	39	1	0	0	24	7	0	99
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	24	1	4	0	38	0	85	0	92	355	4	0	1	193	45	0	842
PEAK HR :	82.76%	3.45%	13.79%	0.00%	30.89%	0.00%	69.11%	0.00%	20.40%	78.71%	0.89%	0.00%	0.42%	80.75%	18.83%	0.00%	
PEAK HR VOL :	15	1	1	0	23	0	41	0	47	184	1	0	1	98	28	0	440
PEAK HR FACTOR :	0.750	0.250	0.250	0.000	0.719	0.000	0.683	0.000	0.534	0.821	0.250	0.000	0.250	0.790	0.636	0.000	0.924
	0.708				0.889				0.744				0.814				

National Data & Surveying ServicesIntersection Turning Movement Count

Location: Hampton Inn Dwy & Gateway Dr
City: Vallejo
Control: No Control

Project ID: 22-080210-003
Date: 7/21/2022

Data - Bikes

NS/EW Streets:		Hampton Inn Dwy				Hampton Inn Dwy				Gateway Dr				Gateway Dr				
AM		NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
		NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
7:00 AM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
8:15 AM		0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
8:30 AM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM		0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	2
TOTAL VOLUMES:		NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s:		0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	0	4
PEAK HR:		08:00 AM - 09:00 AM				100.00%	0.00%	0.00%	0.00%					0.00%	0.00%	100.00%	0.00%	
PEAK HR VOL:		0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	0	4
PEAK HR FACTOR:		0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.500
						0.500								0.500				

PM		NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
		NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
4:00 PM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM		0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	2
TOTAL VOLUMES:		NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s:		0.00%	0.00%	100.00%	0.00%	0	0	0	0	100.00%	0.00%	0.00%	0.00%	0	0	0	0	2
PEAK HR:		05:00 PM - 06:00 PM								100.00%	0.00%	0.00%	0.00%					
PEAK HR VOL:		0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	2
PEAK HR FACTOR:		0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250
		0.250								0.250								

National Data & Surveying Services Intersection Turning Movement Count

Location: Hampton Inn Dwy & Gateway Dr
City: Vallejo

Project ID: 22-080210-003
Date: 7/21/2022

Data - Pedestrians (Crosswalks)

NS/EW Streets:	Hampton Inn Dwy		Hampton Inn Dwy		Gateway Dr		Gateway Dr		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
	7:00 AM	0	0	0	0	1	0	0	1
	7:15 AM	0	0	0	0	1	0	0	2
	7:30 AM	0	0	0	0	0	0	0	0
	7:45 AM	0	1	0	0	1	0	0	2
	8:00 AM	0	0	0	0	1	0	0	1
	8:15 AM	0	2	0	0	1	0	0	3
	8:30 AM	0	0	0	0	0	0	0	0
	8:45 AM	0	1	0	0	0	0	0	1
TOTAL VOLUMES :	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
APPROACH %'s :	0	4	0	0	2	4	0	0	10
	0.00%	100.00%			33.33%	66.67%			
PEAK HR :	08:00 AM - 09:00 AM								TOTAL
PEAK HR VOL :	0	3	0	0	0	2	0	0	5
PEAK HR FACTOR :		0.375				0.500			0.417
	0.375				0.500				

PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		
	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
	4:00 PM	0	1	0	0	1	0	0	2
	4:15 PM	1	0	0	0	0	0	0	1
	4:30 PM	1	1	0	0	0	0	0	2
	4:45 PM	2	0	0	0	2	0	0	4
	5:00 PM	0	1	0	1	0	0	0	2
	5:15 PM	1	0	0	0	1	0	0	2
	5:30 PM	1	0	0	0	0	0	0	1
	5:45 PM	0	0	0	0	0	0	1	1
TOTAL VOLUMES :	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
APPROACH %'s :	6	3	0	1	0	4	0	1	15
	66.67%	33.33%	0.00%	100.00%	0.00%	100.00%	0.00%	100.00%	
PEAK HR :	05:00 PM - 06:00 PM								TOTAL
PEAK HR VOL :	2	1	0	1	0	1	0	1	6
PEAK HR FACTOR :	0.500	0.250		0.250		0.250		0.250	0.750
	0.750		0.250		0.250		0.250		

VOLUME

Fairgrounds Dr Bet. SR 37 & Hampton Inn Dwy

Day: Thursday
Date: 7/21/2022City: Vallejo
Project #: CA22_080211_001

DAILY TOTALS					NB	SB						EB	WB						Total
					13,996	13,297						0	0						27,293
AM Period	NB	SB	EB	WB	TOTAL		PM Period	NB	SB	EB	WB	TOTAL							TOTAL
00:00	45	29			74		12:00	191	195			386							386
00:15	51	24			75		12:15	186	190			376							376
00:30	38	23			61		12:30	203	222			425							425
00:45	21	155	19	95	40	250	12:45	226	806	170	777	396	1583						
01:00	28	7			35		13:00	208	225			433							433
01:15	16	9			25		13:15	180	191			371							371
01:30	24	20			44		13:30	179	181			360							360
01:45	15	83	11	47	26	130	13:45	221	788	189	786	410	1574						
02:00	16	10			26		14:00	221	177			398							398
02:15	10	16			26		14:15	207	212			419							419
02:30	13	16			29		14:30	214	206			420							420
02:45	14	53	21	63	35	116	14:45	227	869	205	800	432	1669						
03:00	25	17			42		15:00	226	252			478							478
03:15	18	25			43		15:15	231	222			453							453
03:30	24	27			51		15:30	237	217			454							454
03:45	16	83	31	100	47	183	15:45	253	947	242	933	495	1880						
04:00	15	40			55		16:00	256	213			469							469
04:15	27	48			75		16:15	274	235			509							509
04:30	32	75			107		16:30	285	234			519							519
04:45	34	108	83	246	117	354	16:45	292	1107	251	933	543	2040						
05:00	45	93			138		17:00	335	243			578							578
05:15	60	107			167		17:15	291	295			586							586
05:30	93	110			203		17:30	305	247			552							552
05:45	75	273	134	444	209	717	17:45	269	1200	264	1049	533	2249						
06:00	102	145			247		18:00	261	280			541							541
06:15	120	137			257		18:15	261	281			542							542
06:30	120	167			287		18:30	294	204			498							498
06:45	132	474	172	621	304	1095	18:45	241	1057	196	961	437	2018						
07:00	135	152			287		19:00	228	185			413							413
07:15	118	155			273		19:15	235	183			418							418
07:30	144	161			305		19:30	214	157			371							371
07:45	125	522	177	645	302	1167	19:45	265	942	158	683	423	1625						
08:00	128	154			282		20:00	208	175			383							383
08:15	163	177			340		20:15	208	156			364							364
08:30	151	168			319		20:30	224	144			368							368
08:45	130	572	169	668	299	1240	20:45	181	821	109	584	290	1405						
09:00	130	147			277		21:00	179	101			280							280
09:15	119	166			285		21:15	168	105			273							273
09:30	165	180			345		21:30	160	92			252							252
09:45	151	565	185	678	336	1243	21:45	129	636	69	367	198	1003						
10:00	150	154			304		22:00	112	75			187							187
10:15	168	148			316		22:15	95	77			172							172
10:30	160	177			337		22:30	75	78			153							153
10:45	162	640	178	657	340	1297	22:45	89	371	55	285	144	656						
11:00	164	160			324		23:00	77	54			131							131
11:15	170	167			337		23:15	61	54			115							115
11:30	167	196			363		23:30	65	39			104							104
11:45	171	672	173	696	344	1368	23:45	49	252	32	179	81	431						
TOTALS	4200	4960			9160		TOTALS	9796	8337			18133							
SPLIT %	45.9%	54.1%			33.6%		SPLIT %	54.0%	46.0%			66.4%							

DAILY TOTALS					NB	SB						EB	WB						Total
					13,996	13,297						0	0						27,293
AM Peak Hour	11:45	11:45			11:45		PM Peak Hour	16:45	17:15			16:45							
AM Pk Volume	751	780			1531		PM Pk Volume	1223	1086			2259							
Pk Hr Factor	0.925	0.878			0.901		Pk Hr Factor	0.913	0.920			0.964							
7 - 9 Volume	1094	1313	0	0	2407		4 - 6 Volume	2307	1982	0	0	4289							
7 - 9 Peak Hour	08:00	07:45			07:45		4 - 6 Peak Hour	16:45	17:00			16:45							
7 - 9 Pk Volume	572	676	0	0	1243		4 - 6 Pk Volume	1223	1049	0	0	2259							
Pk Hr Factor	0.877	0.955	0.000	0.000	0.914		Pk Hr Factor	0.913	0.889	0.000	0.000	0.964							

VOLUME

Gateway Dr E/O Fairgrounds Dr

Day: Thursday
Date: 7/21/2022City: Vallejo
Project #: CA22_080211_002

DAILY TOTALS					NB	SB						EB	WB	Total	
					0	0						2,147	2,125	4,272	
AM Period	NB	SB	EB	WB	TOTAL		PM Period	NB	SB	EB	WB	TOTAL			
00:00			10	9	19		12:00			35	30	65			
00:15			13	5	18		12:15			31	28	59			
00:30			4	5	9		12:30			27	40	67			
00:45			5	32	11	30	12:45			37	130	34	132	71	262
01:00			6	3	9		13:00			26	28	54			
01:15			4	5	9		13:15			24	29	53			
01:30			5	4	9		13:30			32	40	72			
01:45			4	19	4	16	13:45			32	114	24	121	56	235
02:00			6	4	10		14:00			28	34	62			
02:15			2	7	9		14:15			29	38	67			
02:30			3	7	10		14:30			33	28	61			
02:45			4	15	5	23	14:45			28	118	25	125	53	243
03:00			4	2	6		15:00			30	36	66			
03:15			2	4	6		15:15			29	34	63			
03:30			3	6	9		15:30			41	35	76			
03:45			3	12	5	17	15:45			47	147	25	130	72	277
04:00			3	8	11		16:00			42	28	70			
04:15			1	6	7		16:15			45	37	82			
04:30			3	13	16		16:30			56	23	79			
04:45			3	10	16	43	16:45			46	189	32	120	78	309
05:00			2	20	22		17:00			63	22	85			
05:15			4	22	26		17:15			43	41	84			
05:30			4	21	25		17:30			61	40	101			
05:45			4	14	23	86	17:45			41	208	31	134	72	342
06:00			8	24	32		18:00			57	33	90			
06:15			6	17	23		18:15			41	50	91			
06:30			7	34	41		18:30			52	23	75			
06:45			4	25	31	106	18:45			35	185	35	141	70	326
07:00			10	15	25		19:00			34	35	69			
07:15			9	29	38		19:15			40	21	61			
07:30			10	23	33		19:30			28	30	58			
07:45			13	42	20	87	19:45			50	152	33	119	83	271
08:00			14	21	35		20:00			42	34	76			
08:15			19	32	51		20:15			41	41	82			
08:30			19	25	44		20:30			40	21	61			
08:45			23	75	20	98	20:45			33	156	25	121	58	277
09:00			18	27	45		21:00			26	22	48			
09:15			12	24	36		21:15			35	32	67			
09:30			18	26	44		21:30			35	18	53			
09:45			18	66	30	107	21:45			27	123	16	88	43	211
10:00			25	17	42		22:00			25	16	41			
10:15			18	27	45		22:15			18	21	39			
10:30			24	20	44		22:30			17	18	35			
10:45			23	90	24	88	22:45			27	87	6	61	33	148
11:00			17	20	37		23:00			19	10	29			
11:15			19	22	41		23:15			11	15	26			
11:30			19	24	43		23:30			13	9	22			
11:45			32	87	26	92	23:45			8	51	6	40	14	91
TOTALS			487	793	1280		TOTALS			1660	1332	2992			
SPLIT %			38.0%	62.0%	30.0%		SPLIT %			55.5%	44.5%	70.0%			

DAILY TOTALS					NB	SB						EB	WB	Total	
					0	0						2,147	2,125	4,272	
AM Peak Hour			11:45	11:45	11:45		PM Peak Hour			16:45	17:30	17:30			
AM Pk Volume			125	124	249		PM Pk Volume			213	154	354			
Pk Hr Factor			0.893	0.775	0.929		Pk Hr Factor			0.845	0.770	0.876			
7 - 9 Volume	0	0	117	185	302		4 - 6 Volume	0	0	397	254	651			
7 - 9 Peak Hour			08:00	07:45	08:00		4 - 6 Peak Hour			16:45	16:45	16:45			
7 - 9 Pk Volume	0	0	75	98	173		4 - 6 Pk Volume	0	0	213	135	348			
Pk Hr Factor	0.000	0.000	0.815	0.766	0.848		Pk Hr Factor	0.000	0.000	0.845	0.823	0.861			

Vistro File: M:\...\01_AM Fairgrounds and Gateway
vistro.vistro

Scenario 1 AM Existing

Report File: M:\...\01_AM EXISTING.pdf

11/15/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	New Intersection	Signalized	HCM 6th Edition	NB Left	0.558	15.4	B
2	New Intersection	Two-way stop	HCM 7th Edition	NB Thru	0.002	11.5	B
3	New Intersection	Two-way stop	HCM 7th Edition	WB Right	0.015	16.0	C

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: New Intersection

Control Type:	Signalized	Delay (sec / veh):	15.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.558

Intersection Setup

Name	Fairgrounds Dr			Fairgrounds Dr			Dick Bass Field			Gateway Dr		
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	0	0	0	1	0	1
Entry Pocket Length [ft]	90.00	100.00	100.00	140.00	100.00	100.00	100.00	100.00	100.00	75.00	100.00	275.00
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]	35.00			35.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	Fairgrounds Dr			Fairgrounds Dr			Dick Bass Field			Gateway Dr		
Base Volume Input [veh/h]	2	1257	94	24	1011	0	0	2	2	155	2	62
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
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	1257	94	24	1011	0	0	2	2	155	2	62
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	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	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	370	28	7	297	0	0	1	1	46	1	18
Total Analysis Volume [veh/h]	2	1479	111	28	1189	0	0	2	2	182	2	73
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 in	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	Yes
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	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal Group	5	2	0	1	6	0	0	4	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	4	8	0	5	8	0	0	4	0	0	6	0
Maximum Green [s]	9	41	0	10	42	0	0	9	0	0	11	0
Amber [s]	3.6	4.1	0.0	3.7	4.1	0.0	0.0	3.6	0.0	0.0	3.7	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Extension [s]	2.0	3.9	0.0	3.0	3.9	0.0	0.0	2.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	21	0	0	22	0	0	0	0	0	23	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	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.6	3.1	0.0	2.7	3.1	0.0	0.0	2.6	0.0	0.0	2.7	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	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	0.0	0.0	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	C	L	C	C	C	L	C	R
C, Cycle Length [s]	61	61	61	61	61	61	61	61	61	61
L, Total Lost Time per Cycle [s]	4.60	5.10	5.10	4.70	5.10	5.10	4.60	4.70	4.70	4.70
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]	2.60	3.10	3.10	2.70	3.10	3.10	2.60	2.70	2.70	2.70
g_i, Effective Green Time [s]	0	34	34	2	36	36	0	6	6	6
g / C, Green / Cycle	0.00	0.56	0.56	0.03	0.59	0.59	0.00	0.10	0.10	0.10
(v / s)_i Volume / Saturation Flow Rate	0.00	0.48	0.48	0.02	0.35	0.35	0.00	0.06	0.06	0.05
s, saturation flow rate [veh/h]	1603	1683	1642	1603	1683	1683	1547	1603	1605	1431
c, Capacity [veh/h]	4	936	913	50	987	987	7	155	155	138
d1, Uniform Delay [s]	30.54	11.53	11.63	29.27	8.10	8.10	30.45	26.52	26.52	26.34
k, delay calibration	0.04	0.26	0.27	0.11	0.15	0.15	0.04	0.11	0.11	0.11
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]	40.15	5.52	6.10	9.42	0.82	0.82	26.40	3.58	3.57	3.09
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	0.55	0.86	0.86	0.56	0.60	0.60	0.59	0.59	0.59	0.53
d, Delay for Lane Group [s/veh]	70.68	17.05	17.73	38.69	8.92	8.92	56.85	30.09	30.09	29.42
Lane Group LOS	E	B	B	D	A	A	E	C	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.07	8.23	8.30	0.51	3.83	3.83	0.11	1.39	1.39	1.10
50th-Percentile Queue Length [ft/ln]	1.71	205.66	207.47	12.79	95.83	95.83	2.68	34.82	34.84	27.39
95th-Percentile Queue Length [veh/ln]	0.12	12.93	13.02	0.92	6.90	6.90	0.19	2.51	2.51	1.97
95th-Percentile Queue Length [ft/ln]	3.08	323.25	325.59	23.03	172.49	172.49	4.82	62.68	62.72	49.29

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	70.68	17.37	17.73	38.69	8.92	8.92	56.85	56.85	56.85	30.09	30.09	29.42
Movement LOS	E	B	B	D	A	A	E	E	E	C	C	C
d_A, Approach Delay [s/veh]	17.46			9.61			56.85			29.90		
Approach LOS	B			A			E			C		
d_I, Intersection Delay [s/veh]	15.44											
Intersection LOS	B											
Intersection V/C	0.558											

Other Modes

g_Walk,mi, Effective Walk Time [s]	-4.6	11.0	0.0	11.0
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]	35.38	20.59	0.00	20.59
I_p,int, Pedestrian LOS Score for Intersection	2.975	2.908	0.000	2.343
Crosswalk LOS	C	C	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1340	1372	294	359
d_b, Bicycle Delay [s]	3.34	3.01	22.26	20.59
I_b,int, Bicycle LOS Score for Intersection	2.873	2.564	1.566	1.984
Bicycle LOS	C	B	A	A

Sequence

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



Intersection Level Of Service Report

Intersection 2: New Intersection

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

Delay (sec / veh): 11.5
 Level Of Service: B
 Volume to Capacity (v/c): 0.002

Intersection Setup

Name	Project Dwy			Gas Station			Gateway Dr					
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	0	0	0	0	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	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	100.00	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	Yes			Yes			Yes			Yes		

Volumes

Name	Project Dwy			Gas Station			Gateway Dr					
Base Volume Input [veh/h]	16	1	2	7	2	27	25	94	1	0	175	13
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]	16	1	2	7	2	27	25	94	1	0	175	13
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.8500	0.9200	0.9200	0.8500	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]	4	0	1	2	1	7	7	28	0	0	51	4
Total Analysis Volume [veh/h]	17	1	2	8	2	29	27	111	1	0	206	14
Pedestrian Volume [ped/h]	0			0			0			0		

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	Yes	Yes		
Number of Storage Spaces in Median	1	1	0	0

[illegible]

Intersection Level Of Service Report

Intersection 3: New Intersection

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

Delay (sec / veh): 16.0
 Level Of Service: C
 Volume to Capacity (v/c): 0.015

Intersection Setup

Name	Fairgrounds Dr		Fairgrounds Dr		Project Dwy	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	0	0	0
Entry Pocket Length [ft]	100.00	150.00	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]	35.00		35.00		20.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Fairgrounds Dr		Fairgrounds Dr		Project Dwy	
Base Volume Input [veh/h]	1348	7	0	1168	0	5
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]	1348	7	0	1168	0	5
Peak Hour Factor	0.8500	0.9200	1.0000	0.8500	1.0000	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	396	2	0	344	0	1
Total Analysis Volume [veh/h]	1586	8	0	1374	0	5
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
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	0.02	0.00	0.00	0.01	0.00	0.02
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	16.03
Movement LOS	A	A		A		C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.05
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	1.15
d_A, Approach Delay [s/veh]	0.00		0.00		16.03	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.03					
Intersection LOS	C					

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Scenario 1 AM Existing

Report File: M:\...\01_AM EXISTING.pdf

11/15/2022

Turning Movement Volume: Summary

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	New Intersection	2	1257	94	24	1011	0	0	2	2	155	2	62	2611

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
2	New Intersection	16	1	2	7	2	27	25	94	1	0	175	13	363

ID	Intersection Name	Northbound		Southbound	Westbound	Total Volume
		Thru	Right	Thru	Right	
3	New Intersection	1348	7	1168	5	2528

Study Intersections



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Scenario 2 PM Existing

Report File: M:\...\02_PM EXISTING.pdf

11/15/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	New Intersection	Signalized	HCM 6th Edition	NB Left	0.446	12.6	B
2	New Intersection	Two-way stop	HCM 7th Edition	NB Thru	0.002	12.0	B
3	New Intersection	Two-way stop	HCM 7th Edition	NB Thru	0.013	0.0	A

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: New Intersection

Control Type:	Signalized	Delay (sec / veh):	12.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.446

Intersection Setup

Name	Fairgrounds Dr			Fairgrounds Dr			Dick Bass Field			Gateway Dr		
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	0	0	0	1	0	1
Entry Pocket Length [ft]	90.00	100.00	100.00	140.00	100.00	100.00	100.00	100.00	100.00	75.00	100.00	275.00
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]	35.00			35.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	Fairgrounds Dr			Fairgrounds Dr			Dick Bass Field			Gateway Dr		
Base Volume Input [veh/h]	1	1031	204	17	896	1	1	3	2	139	4	18
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
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	1031	204	17	896	1	1	3	2	139	4	18
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	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]	0	263	52	4	229	0	0	1	1	35	1	5
Total Analysis Volume [veh/h]	1	1052	208	17	914	1	1	3	2	142	4	18
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 in	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	Yes
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	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal Group	5	2	0	1	6	0	0	4	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	4	8	0	5	8	0	0	4	0	0	6	0
Maximum Green [s]	9	41	0	10	42	0	0	9	0	0	11	0
Amber [s]	3.6	4.1	0.0	3.7	4.1	0.0	0.0	3.6	0.0	0.0	3.7	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Extension [s]	2.0	3.9	0.0	3.0	3.9	0.0	0.0	2.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	21	0	0	22	0	0	0	0	0	23	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	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.6	3.1	0.0	2.7	3.1	0.0	0.0	2.6	0.0	0.0	2.7	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	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	0.0	0.0	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	C	L	C	C	C	L	C	R
C, Cycle Length [s]	50	50	50	50	50	50	50	50	50	50
L, Total Lost Time per Cycle [s]	4.60	5.10	5.10	4.70	5.10	5.10	4.60	4.70	4.70	4.70
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]	2.60	3.10	3.10	2.70	3.10	3.10	2.60	2.70	2.70	2.70
g_i, Effective Green Time [s]	0	25	25	1	26	26	0	5	5	5
g / C, Green / Cycle	0.00	0.49	0.49	0.02	0.51	0.51	0.01	0.11	0.11	0.11
(v / s)_i Volume / Saturation Flow Rate	0.00	0.38	0.39	0.01	0.27	0.27	0.00	0.05	0.05	0.01
s, saturation flow rate [veh/h]	1603	1683	1588	1603	1683	1682	1577	1603	1607	1431
c, Capacity [veh/h]	2	820	773	34	857	857	10	172	172	153
d1, Uniform Delay [s]	25.23	10.80	10.83	24.47	8.36	8.36	25.04	21.11	21.11	20.41
k, delay calibration	0.04	0.15	0.15	0.11	0.15	0.15	0.04	0.11	0.11	0.11
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]	62.41	2.38	2.58	10.73	0.71	0.71	17.63	1.66	1.65	0.34
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	0.52	0.79	0.79	0.50	0.53	0.53	0.58	0.42	0.42	0.12
d, Delay for Lane Group [s/veh]	87.64	13.18	13.41	35.20	9.08	9.08	42.67	22.77	22.76	20.74
Lane Group LOS	F	B	B	D	A	A	D	C	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.04	4.83	4.64	0.28	2.54	2.54	0.12	0.83	0.83	0.19
50th-Percentile Queue Length [ft/ln]	1.11	120.86	115.92	7.11	63.59	63.57	2.96	20.81	20.84	4.85
95th-Percentile Queue Length [veh/ln]	0.08	8.44	8.17	0.51	4.58	4.58	0.21	1.50	1.50	0.35
95th-Percentile Queue Length [ft/ln]	2.00	211.01	204.20	12.79	114.47	114.42	5.33	37.47	37.51	8.73

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	87.64	13.27	13.41	35.20	9.08	9.08	42.67	42.67	42.67	22.76	22.76	20.74
Movement LOS	F	B	B	D	A	A	D	D	D	C	C	C
d_A, Approach Delay [s/veh]	13.35			9.55			42.67			22.54		
Approach LOS	B			A			D			C		
d_I, Intersection Delay [s/veh]	12.57											
Intersection LOS	B											
Intersection V/C	0.446											

Other Modes

g_Walk,mi, Effective Walk Time [s]	-4.6			11.0			0.0			11.0		
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]	30.04			15.43			0.00			15.43		
I_p,int, Pedestrian LOS Score for Intersection	2.821			2.723			0.000			2.331		
Crosswalk LOS	C			B			F			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	1625			1664			357			436		
d_b, Bicycle Delay [s]	0.89			0.71			17.04			15.43		
I_b,int, Bicycle LOS Score for Intersection	2.600			2.329			1.570			1.830		
Bicycle LOS	B			B			A			A		

Sequence

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



Intersection Level Of Service Report

Intersection 2: New Intersection

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

Delay (sec / veh): 12.0
 Level Of Service: B
 Volume to Capacity (v/c): 0.002

Intersection Setup

Name	Project Dwy			Gas Station			Gateway Dr					
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	0	0	0	0	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	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	100.00	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	Yes			Yes			Yes			Yes		

Volumes

Name	Project Dwy			Gas Station			Gateway Dr					
Base Volume Input [veh/h]	15	1	1	23	0	41	47	176	1	1	105	28
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]	15	1	1	23	0	41	47	176	1	1	105	28
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]	4	0	0	6	0	11	13	48	0	0	29	8
Total Analysis Volume [veh/h]	16	1	1	25	0	45	51	191	1	1	114	30
Pedestrian Volume [ped/h]	0			0			0			0		

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	Yes	Yes		
Number of Storage Spaces in Median	1	1	0	0

[illegible]

Intersection Level Of Service Report

Intersection 3: New Intersection

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

Delay (sec / veh): 0.0
 Level Of Service: A
 Volume to Capacity (v/c): 0.013

Intersection Setup

Name	Fairgrounds Dr		Fairgrounds Dr		Project Dwy	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	0	0	0
Entry Pocket Length [ft]	100.00	150.00	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]	35.00		35.00		20.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Fairgrounds Dr		Fairgrounds Dr		Project Dwy	
Base Volume Input [veh/h]	1236	13	0	1037	0	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]	1236	13	0	1037	0	0
Peak Hour Factor	0.9700	0.9700	1.0000	0.9700	1.0000	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	319	3	0	267	0	0
Total Analysis Volume [veh/h]	1274	13	0	1069	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
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	0.01	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	13.57
Movement LOS	A	A		A		B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		13.57	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	A					

Vistro File: M:\...\01_AM Fairgrounds and Gateway
vistro.vistro

Scenario 2 PM Existing

Report File: M:\...\02_PM EXISTING.pdf

11/15/2022

Turning Movement Volume: Summary

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	New Intersection	1	1031	204	17	896	1	1	3	2	139	4	18	2317

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
2	New Intersection	15	1	1	23	0	41	47	176	1	1	105	28	439

ID	Intersection Name	Northbound		Southbound	Westbound	Total Volume
		Thru	Right	Thru	Right	
3	New Intersection	1236	13	1037	0	2286

Study Intersections



Vistro File: M:\...\01_AM Fairgrounds and Gateway
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Scenario 3 AM Near Term

Report File: M:\...\03_AM NEARTERM.pdf

11/15/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	New Intersection	Signalized	HCM 6th Edition	NB Left	0.560	15.5	B
2	New Intersection	Two-way stop	HCM 7th Edition	NB Thru	0.002	11.5	B
3	New Intersection	Two-way stop	HCM 7th Edition	WB Right	0.015	16.1	C

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: New Intersection

Control Type:	Signalized	Delay (sec / veh):	15.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.560

Intersection Setup

Name	Fairgrounds Dr			Fairgrounds Dr			Dick Bass Field			Gateway Dr		
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	0	0	0	1	0	1
Entry Pocket Length [ft]	90.00	100.00	100.00	140.00	100.00	100.00	100.00	100.00	100.00	75.00	100.00	275.00
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]	35.00			35.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	Fairgrounds Dr			Fairgrounds Dr			Dick Bass Field			Gateway Dr		
Base Volume Input [veh/h]	2	1261	94	24	1012	0	0	2	2	155	2	62
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
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	1261	94	24	1012	0	0	2	2	155	2	62
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	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	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	371	28	7	298	0	0	1	1	46	1	18
Total Analysis Volume [veh/h]	2	1484	111	28	1191	0	0	2	2	182	2	73
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 in	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	Yes
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	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal Group	5	2	0	1	6	0	0	4	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	4	8	0	5	8	0	0	4	0	0	6	0
Maximum Green [s]	9	41	0	10	42	0	0	9	0	0	11	0
Amber [s]	3.6	4.1	0.0	3.7	4.1	0.0	0.0	3.6	0.0	0.0	3.7	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Extension [s]	2.0	3.9	0.0	3.0	3.9	0.0	0.0	2.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	21	0	0	22	0	0	0	0	0	23	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	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.6	3.1	0.0	2.7	3.1	0.0	0.0	2.6	0.0	0.0	2.7	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	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	0.0	0.0	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	C	L	C	C	C	L	C	R
C, Cycle Length [s]	61	61	61	61	61	61	61	61	61	61
L, Total Lost Time per Cycle [s]	4.60	5.10	5.10	4.70	5.10	5.10	4.60	4.70	4.70	4.70
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]	2.60	3.10	3.10	2.70	3.10	3.10	2.60	2.70	2.70	2.70
g_i, Effective Green Time [s]	0	34	34	2	36	36	0	6	6	6
g / C, Green / Cycle	0.00	0.56	0.56	0.03	0.59	0.59	0.00	0.10	0.10	0.10
(v / s)_i Volume / Saturation Flow Rate	0.00	0.48	0.48	0.02	0.35	0.35	0.00	0.06	0.06	0.05
s, saturation flow rate [veh/h]	1603	1683	1642	1603	1683	1683	1547	1603	1605	1431
c, Capacity [veh/h]	4	937	915	50	989	989	7	155	155	138
d1, Uniform Delay [s]	30.61	11.54	11.65	29.34	8.09	8.09	30.52	26.59	26.59	26.41
k, delay calibration	0.04	0.26	0.27	0.11	0.15	0.15	0.04	0.11	0.11	0.11
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]	40.16	5.61	6.20	9.44	0.82	0.82	26.42	3.60	3.60	3.11
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	0.55	0.86	0.87	0.56	0.60	0.60	0.59	0.59	0.59	0.53
d, Delay for Lane Group [s/veh]	70.77	17.15	17.84	38.78	8.91	8.91	56.94	30.19	30.19	29.52
Lane Group LOS	E	B	B	D	A	A	E	C	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.07	8.29	8.37	0.51	3.84	3.84	0.11	1.40	1.40	1.10
50th-Percentile Queue Length [ft/ln]	1.71	207.30	209.27	12.83	96.07	96.07	2.68	34.94	34.96	27.48
95th-Percentile Queue Length [veh/ln]	0.12	13.01	13.12	0.92	6.92	6.92	0.19	2.52	2.52	1.98
95th-Percentile Queue Length [ft/ln]	3.08	325.37	327.90	23.09	172.93	172.93	4.83	62.89	62.93	49.46

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	70.77	17.47	17.84	38.78	8.91	8.91	56.94	56.94	56.94	30.19	30.19	29.52
Movement LOS	E	B	B	D	A	A	E	E	E	C	C	C
d_A, Approach Delay [s/veh]	17.56			9.59			56.94			30.00		
Approach LOS	B			A			E			C		
d_I, Intersection Delay [s/veh]	15.49											
Intersection LOS	B											
Intersection V/C	0.560											

Other Modes

g_Walk,mi, Effective Walk Time [s]	-4.6	11.0	0.0	11.0
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]	35.45	20.66	0.00	20.66
I_p,int, Pedestrian LOS Score for Intersection	2.976	2.910	0.000	2.343
Crosswalk LOS	C	C	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1337	1369	293	359
d_b, Bicycle Delay [s]	3.38	3.05	22.34	20.66
I_b,int, Bicycle LOS Score for Intersection	2.877	2.565	1.566	1.984
Bicycle LOS	C	B	A	A

Sequence

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



Intersection Level Of Service Report

Intersection 2: New Intersection

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

Delay (sec / veh): 11.5
 Level Of Service: B
 Volume to Capacity (v/c): 0.002

Intersection Setup

Name	Project Dwy			Gas Station			Gateway Dr					
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	0	0	0	0	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	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	100.00	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	Yes			Yes			Yes			Yes		

Volumes

Name	Project Dwy			Gas Station			Gateway Dr					
Base Volume Input [veh/h]	16	1	2	7	2	27	25	94	1	0	175	13
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]	16	1	2	7	2	27	25	94	1	0	175	13
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.8500	0.9200	0.9200	0.8500	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]	4	0	1	2	1	7	7	28	0	0	51	4
Total Analysis Volume [veh/h]	17	1	2	8	2	29	27	111	1	0	206	14
Pedestrian Volume [ped/h]	0			0			0			0		

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	Yes	Yes		
Number of Storage Spaces in Median	1	1	0	0

[illegible]

Intersection Level Of Service Report

Intersection 3: New Intersection

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

Delay (sec / veh): 16.1
 Level Of Service: C
 Volume to Capacity (v/c): 0.015

Intersection Setup

Name	Fairgrounds Dr		Fairgrounds Dr		Project Dwy	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	0	0	0
Entry Pocket Length [ft]	100.00	150.00	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]	35.00		35.00		20.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Fairgrounds Dr		Fairgrounds Dr		Project Dwy	
Base Volume Input [veh/h]	1352	7	0	1169	0	5
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]	1352	7	0	1169	0	5
Peak Hour Factor	0.8500	0.9200	1.0000	0.8500	1.0000	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	398	2	0	344	0	1
Total Analysis Volume [veh/h]	1591	8	0	1375	0	5
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
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	0.02	0.00	0.00	0.01	0.00	0.02
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	16.07
Movement LOS	A	A		A		C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.05
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	1.15
d_A, Approach Delay [s/veh]	0.00		0.00		16.07	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.03					
Intersection LOS	C					

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Scenario 3 AM Near Term

Report File: M:\...\03_AM NEAR TERM.pdf

11/15/2022

Turning Movement Volume: Summary

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	New Intersection	2	1261	94	24	1012	0	0	2	2	155	2	62	2616

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
2	New Intersection	16	1	2	7	2	27	25	94	1	0	175	13	363

ID	Intersection Name	Northbound		Southbound	Westbound	Total Volume
		Thru	Right	Thru	Right	
3	New Intersection	1352	7	1169	5	2533

Study Intersections



Vistro File: M:\...\01_AM Fairgrounds and Gateway
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Scenario 4 PM Near Term

Report File: M:\...\04_PM NEARTERM.pdf

11/15/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	New Intersection	Signalized	HCM 6th Edition	NB Left	0.447	12.6	B
2	New Intersection	Two-way stop	HCM 7th Edition	NB Thru	0.002	12.0	B
3	New Intersection	Two-way stop	HCM 7th Edition	NB Thru	0.013	0.0	A

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: New Intersection

Control Type:	Signalized	Delay (sec / veh):	12.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.447

Intersection Setup

Name	Fairgrounds Dr			Fairgrounds Dr			Dick Bass Field			Gateway Dr		
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	0	0	0	1	0	1
Entry Pocket Length [ft]	90.00	100.00	100.00	140.00	100.00	100.00	100.00	100.00	100.00	75.00	100.00	275.00
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]	35.00			35.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	Fairgrounds Dr			Fairgrounds Dr			Dick Bass Field			Gateway Dr		
Base Volume Input [veh/h]	1	1033	205	17	900	1	1	3	2	140	4	18
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
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	1033	205	17	900	1	1	3	2	140	4	18
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	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]	0	264	52	4	230	0	0	1	1	36	1	5
Total Analysis Volume [veh/h]	1	1054	209	17	918	1	1	3	2	143	4	18
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 in	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	Yes
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	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal Group	5	2	0	1	6	0	0	4	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	4	8	0	5	8	0	0	4	0	0	6	0
Maximum Green [s]	9	41	0	10	42	0	0	9	0	0	11	0
Amber [s]	3.6	4.1	0.0	3.7	4.1	0.0	0.0	3.6	0.0	0.0	3.7	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Extension [s]	2.0	3.9	0.0	3.0	3.9	0.0	0.0	2.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	21	0	0	22	0	0	0	0	0	23	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	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.6	3.1	0.0	2.7	3.1	0.0	0.0	2.6	0.0	0.0	2.7	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	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	0.0	0.0	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	C	L	C	C	C	L	C	R
C, Cycle Length [s]	51	51	51	51	51	51	51	51	51	51
L, Total Lost Time per Cycle [s]	4.60	5.10	5.10	4.70	5.10	5.10	4.60	4.70	4.70	4.70
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]	2.60	3.10	3.10	2.70	3.10	3.10	2.60	2.70	2.70	2.70
g_i, Effective Green Time [s]	0	25	25	1	26	26	0	5	5	5
g / C, Green / Cycle	0.00	0.49	0.49	0.02	0.51	0.51	0.01	0.11	0.11	0.11
(v / s)_i Volume / Saturation Flow Rate	0.00	0.39	0.39	0.01	0.27	0.27	0.00	0.05	0.05	0.01
s, saturation flow rate [veh/h]	1603	1683	1588	1603	1683	1682	1577	1603	1607	1431
c, Capacity [veh/h]	2	821	775	34	858	858	10	172	172	153
d1, Uniform Delay [s]	25.29	10.81	10.84	24.52	8.37	8.37	25.09	21.16	21.16	20.45
k, delay calibration	0.04	0.15	0.15	0.11	0.15	0.15	0.04	0.11	0.11	0.11
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]	62.44	2.39	2.59	10.74	0.72	0.72	17.64	1.68	1.67	0.34
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	0.52	0.79	0.79	0.50	0.54	0.54	0.58	0.43	0.43	0.12
d, Delay for Lane Group [s/veh]	87.72	13.19	13.43	35.26	9.08	9.08	42.73	22.84	22.83	20.78
Lane Group LOS	F	B	B	D	A	A	D	C	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.04	4.86	4.66	0.28	2.56	2.56	0.12	0.84	0.84	0.19
50th-Percentile Queue Length [ft/ln]	1.11	121.43	116.47	7.12	64.03	64.00	2.97	21.02	21.05	4.86
95th-Percentile Queue Length [veh/ln]	0.08	8.47	8.20	0.51	4.61	4.61	0.21	1.51	1.52	0.35
95th-Percentile Queue Length [ft/ln]	2.00	211.79	204.97	12.82	115.25	115.21	5.34	37.84	37.89	8.75

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	87.72	13.28	13.43	35.26	9.08	9.08	42.73	42.73	42.73	22.83	22.83	20.78
Movement LOS	F	B	B	D	A	A	D	D	D	C	C	C
d_A, Approach Delay [s/veh]	13.37			9.56			42.73			22.61		
Approach LOS	B			A			D			C		
d_I, Intersection Delay [s/veh]	12.58											
Intersection LOS	B											
Intersection V/C	0.447											

Other Modes

g_Walk,mi, Effective Walk Time [s]	-4.6	11.0	0.0	11.0
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]	30.10	15.48	0.00	15.48
I_p,int, Pedestrian LOS Score for Intersection	2.823	2.724	0.000	2.331
Crosswalk LOS	C	B	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1621	1661	356	435
d_b, Bicycle Delay [s]	0.91	0.73	17.09	15.48
I_b,int, Bicycle LOS Score for Intersection	2.602	2.332	1.570	1.832
Bicycle LOS	B	B	A	A

Sequence

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



Intersection Level Of Service Report

Intersection 2: New Intersection

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

Delay (sec / veh): 12.0
 Level Of Service: B
 Volume to Capacity (v/c): 0.002

Intersection Setup

Name	Project Dwy			Gas Station			Gateway Dr					
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	0	0	0	0	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	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	100.00	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	Yes			Yes			Yes			Yes		

Volumes

Name	Project Dwy			Gas Station			Gateway Dr					
Base Volume Input [veh/h]	15	1	1	23	0	41	47	177	1	1	106	28
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]	15	1	1	23	0	41	47	177	1	1	106	28
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]	4	0	0	6	0	11	13	48	0	0	29	8
Total Analysis Volume [veh/h]	16	1	1	25	0	45	51	192	1	1	115	30
Pedestrian Volume [ped/h]	0			0			0			0		

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	Yes	Yes		
Number of Storage Spaces in Median	1	1	0	0

V/C, Movement V/C Ratio	0.03	0.00	0.00	0.04	0.00	0.05	0.04	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	11.51	11.96	9.02	11.18	12.05	9.11	7.60	0.00	0.00	7.62	0.00	0.00
Movement LOS	B	B	A	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.10	0.10	0.10	0.28	0.28	0.28	0.11	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	2.40	2.40	2.40	7.05	7.05	7.05	2.76	0.00	0.00	0.05	0.00	0.00
d_A, Approach Delay [s/veh]	11.40			9.85			1.59			0.05		
Approach LOS	B			A			A			A		
d_I, Intersection Delay [s/veh]	2.70											
Intersection LOS	B											

Intersection Level Of Service Report

Intersection 3: New Intersection

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

Delay (sec / veh): 0.0
 Level Of Service: A
 Volume to Capacity (v/c): 0.013

Intersection Setup

Name	Fairgrounds Dr		Fairgrounds Dr		Project Dwy	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	0	0	0
Entry Pocket Length [ft]	100.00	150.00	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]	35.00		35.00		20.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Fairgrounds Dr		Fairgrounds Dr		Project Dwy	
Base Volume Input [veh/h]	1239	13	0	1042	0	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]	1239	13	0	1042	0	0
Peak Hour Factor	0.9700	0.9700	1.0000	0.9700	1.0000	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	319	3	0	269	0	0
Total Analysis Volume [veh/h]	1277	13	0	1074	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
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	0.01	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	13.59
Movement LOS	A	A		A		B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		13.59	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	A					

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Scenario 4 PM Near Term

Report File: M:\...\04_PM NEAR TERM.pdf

11/15/2022

Turning Movement Volume: Summary

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	New Intersection	1	1033	205	17	900	1	1	3	2	140	4	18	2325

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
2	New Intersection	15	1	1	23	0	41	47	177	1	1	106	28	441

ID	Intersection Name	Northbound		Southbound	Westbound	Total Volume
		Thru	Right	Thru	Right	
3	New Intersection	1239	13	1042	0	2294

Study Intersections



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Scenario 5 AM Near Term and Approved Proj

Report File: M:\...\05_AM NTPAP.pdf

11/15/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	New Intersection	Signalized	HCM 6th Edition	NB Left	0.560	15.5	B
2	New Intersection	Two-way stop	HCM 7th Edition	NB Thru	0.002	11.5	B
3	New Intersection	Two-way stop	HCM 7th Edition	WB Right	0.015	16.1	C

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: New Intersection

Control Type:	Signalized	Delay (sec / veh):	15.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.560

Intersection Setup

Name	Fairgrounds Dr			Fairgrounds Dr			Dick Bass Field			Gateway Dr		
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	0	0	0	1	0	1
Entry Pocket Length [ft]	90.00	100.00	100.00	140.00	100.00	100.00	100.00	100.00	100.00	75.00	100.00	275.00
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]	35.00			35.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	Fairgrounds Dr			Fairgrounds Dr			Dick Bass Field			Gateway Dr		
Base Volume Input [veh/h]	2	1262	94	24	1018	0	0	2	2	156	2	62
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
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	1262	94	24	1018	0	0	2	2	156	2	62
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	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	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	371	28	7	299	0	0	1	1	46	1	18
Total Analysis Volume [veh/h]	2	1485	111	28	1198	0	0	2	2	184	2	73
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 in	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	Yes
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	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal Group	5	2	0	1	6	0	0	4	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	4	8	0	5	8	0	0	4	0	0	6	0
Maximum Green [s]	9	41	0	10	42	0	0	9	0	0	11	0
Amber [s]	3.6	4.1	0.0	3.7	4.1	0.0	0.0	3.6	0.0	0.0	3.7	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Extension [s]	2.0	3.9	0.0	3.0	3.9	0.0	0.0	2.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	21	0	0	22	0	0	0	0	0	23	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	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.6	3.1	0.0	2.7	3.1	0.0	0.0	2.6	0.0	0.0	2.7	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	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	0.0	0.0	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	C	L	C	C	C	L	C	R
C, Cycle Length [s]	61	61	61	61	61	61	61	61	61	61
L, Total Lost Time per Cycle [s]	4.60	5.10	5.10	4.70	5.10	5.10	4.60	4.70	4.70	4.70
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]	2.60	3.10	3.10	2.70	3.10	3.10	2.60	2.70	2.70	2.70
g_i, Effective Green Time [s]	0	34	34	2	36	36	0	6	6	6
g / C, Green / Cycle	0.00	0.56	0.56	0.03	0.59	0.59	0.00	0.10	0.10	0.10
(v / s)_i Volume / Saturation Flow Rate	0.00	0.48	0.48	0.02	0.36	0.36	0.00	0.06	0.06	0.05
s, saturation flow rate [veh/h]	1603	1683	1642	1603	1683	1683	1547	1603	1604	1431
c, Capacity [veh/h]	4	937	915	50	989	989	7	155	155	138
d1, Uniform Delay [s]	30.63	11.54	11.65	29.36	8.11	8.11	30.54	26.62	26.62	26.43
k, delay calibration	0.04	0.27	0.27	0.11	0.15	0.15	0.04	0.11	0.11	0.11
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]	40.15	5.63	6.22	9.44	0.83	0.83	26.41	3.70	3.69	3.11
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	0.55	0.86	0.87	0.56	0.61	0.61	0.59	0.60	0.60	0.53
d, Delay for Lane Group [s/veh]	70.78	17.17	17.87	38.80	8.94	8.94	56.95	30.32	30.32	29.54
Lane Group LOS	E	B	B	D	A	A	E	C	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.07	8.31	8.39	0.51	3.88	3.88	0.11	1.42	1.42	1.10
50th-Percentile Queue Length [ft/ln]	1.71	207.68	209.68	12.83	97.00	97.00	2.68	35.42	35.45	27.49
95th-Percentile Queue Length [veh/ln]	0.12	13.03	13.14	0.92	6.98	6.98	0.19	2.55	2.55	1.98
95th-Percentile Queue Length [ft/ln]	3.08	325.85	328.41	23.10	174.60	174.60	4.83	63.76	63.80	49.49

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	70.78	17.49	17.87	38.80	8.94	8.94	56.95	56.95	56.95	30.32	30.32	29.54
Movement LOS	E	B	B	D	A	A	E	E	E	C	C	C
d_A, Approach Delay [s/veh]	17.58			9.63			56.95			30.10		
Approach LOS	B			A			E			C		
d_I, Intersection Delay [s/veh]	15.52											
Intersection LOS	B											
Intersection V/C	0.560											

Other Modes

g_Walk,mi, Effective Walk Time [s]	-4.6			11.0			0.0			11.0		
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]	35.47			20.68			0.00			20.68		
I_p,int, Pedestrian LOS Score for Intersection	2.979			2.912			0.000			2.344		
Crosswalk LOS	C			C			F			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	1336			1368			293			358		
d_b, Bicycle Delay [s]	3.39			3.06			22.35			20.68		
I_b,int, Bicycle LOS Score for Intersection	2.878			2.571			1.566			1.987		
Bicycle LOS	C			B			A			A		

Sequence

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



Intersection Level Of Service Report

Intersection 2: New Intersection

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

Delay (sec / veh): 11.5
 Level Of Service: B
 Volume to Capacity (v/c): 0.002

Intersection Setup

Name	Project Dwy			Gas Station			Gateway Dr					
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	0	0	0	0	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	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	100.00	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	Yes			Yes			Yes			Yes		

Volumes

Name	Project Dwy			Gas Station			Gateway Dr					
Base Volume Input [veh/h]	16	1	2	7	2	27	25	94	1	0	176	13
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]	16	1	2	7	2	27	25	94	1	0	176	13
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.8500	0.9200	0.9200	0.8500	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]	4	0	1	2	1	7	7	28	0	0	52	4
Total Analysis Volume [veh/h]	17	1	2	8	2	29	27	111	1	0	207	14
Pedestrian Volume [ped/h]	0			0			0			0		

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	Yes	Yes		
Number of Storage Spaces in Median	1	1	0	0

[illegible]

Intersection Level Of Service Report

Intersection 3: New Intersection

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

Delay (sec / veh): 16.1
 Level Of Service: C
 Volume to Capacity (v/c): 0.015

Intersection Setup

Name	Fairgrounds Dr		Fairgrounds Dr		Project Dwy	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	0	0	0
Entry Pocket Length [ft]	100.00	150.00	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]	35.00		35.00		20.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Fairgrounds Dr		Fairgrounds Dr		Project Dwy	
Base Volume Input [veh/h]	1353	7	0	1176	0	5
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]	1353	7	0	1176	0	5
Peak Hour Factor	0.8500	0.9200	1.0000	0.8500	1.0000	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	398	2	0	346	0	1
Total Analysis Volume [veh/h]	1592	8	0	1384	0	5
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
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	0.02	0.00	0.00	0.01	0.00	0.02
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	16.08
Movement LOS	A	A		A		C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.05
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	1.15
d_A, Approach Delay [s/veh]	0.00		0.00		16.08	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.03					
Intersection LOS	C					

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Scenario 5 AM Near Term and Approved Proj

Report File: M:\...\05_AM NTPAP.pdf

11/15/2022

Turning Movement Volume: Summary

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	New Intersection	2	1262	94	24	1018	0	0	2	2	156	2	62	2624

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
2	New Intersection	16	1	2	7	2	27	25	94	1	0	176	13	364

ID	Intersection Name	Northbound		Southbound	Westbound	Total Volume
		Thru	Right	Thru	Right	
3	New Intersection	1353	7	1176	5	2541

Study Intersections



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Scenario 6 PM Near Term and Approved Proj

Report File: M:\...\06_PM NTPAP.pdf

11/15/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	New Intersection	Signalized	HCM 6th Edition	NB Left	0.449	12.6	B
2	New Intersection	Two-way stop	HCM 7th Edition	NB Thru	0.002	12.0	B
3	New Intersection	Two-way stop	HCM 7th Edition	NB Thru	0.013	0.0	A

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: New Intersection

Control Type:	Signalized	Delay (sec / veh):	12.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.449

Intersection Setup

Name	Fairgrounds Dr			Fairgrounds Dr			Dick Bass Field			Gateway Dr		
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	0	0	0	1	0	1
Entry Pocket Length [ft]	90.00	100.00	100.00	140.00	100.00	100.00	100.00	100.00	100.00	75.00	100.00	275.00
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]	35.00			35.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	Fairgrounds Dr			Fairgrounds Dr			Dick Bass Field			Gateway Dr		
Base Volume Input [veh/h]	1	1037	206	17	899	1	1	3	2	140	4	18
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
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	1037	206	17	899	1	1	3	2	140	4	18
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	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]	0	265	53	4	229	0	0	1	1	36	1	5
Total Analysis Volume [veh/h]	1	1058	210	17	917	1	1	3	2	143	4	18
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 in	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	Yes
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	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal Group	5	2	0	1	6	0	0	4	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	4	8	0	5	8	0	0	4	0	0	6	0
Maximum Green [s]	9	41	0	10	42	0	0	9	0	0	11	0
Amber [s]	3.6	4.1	0.0	3.7	4.1	0.0	0.0	3.6	0.0	0.0	3.7	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Extension [s]	2.0	3.9	0.0	3.0	3.9	0.0	0.0	2.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	21	0	0	22	0	0	0	0	0	23	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	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.6	3.1	0.0	2.7	3.1	0.0	0.0	2.6	0.0	0.0	2.7	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	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	0.0	0.0	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	C	L	C	C	C	L	C	R
C, Cycle Length [s]	51	51	51	51	51	51	51	51	51	51
L, Total Lost Time per Cycle [s]	4.60	5.10	5.10	4.70	5.10	5.10	4.60	4.70	4.70	4.70
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]	2.60	3.10	3.10	2.70	3.10	3.10	2.60	2.70	2.70	2.70
g_i, Effective Green Time [s]	0	25	25	1	26	26	0	5	5	5
g / C, Green / Cycle	0.00	0.49	0.49	0.02	0.51	0.51	0.01	0.11	0.11	0.11
(v / s)_i Volume / Saturation Flow Rate	0.00	0.39	0.39	0.01	0.27	0.27	0.00	0.05	0.05	0.01
s, saturation flow rate [veh/h]	1603	1683	1588	1603	1683	1682	1577	1603	1607	1431
c, Capacity [veh/h]	2	823	777	34	861	860	10	171	172	153
d1, Uniform Delay [s]	25.36	10.81	10.84	24.59	8.34	8.34	25.17	21.23	21.23	20.52
k, delay calibration	0.04	0.15	0.15	0.11	0.15	0.15	0.04	0.11	0.11	0.11
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]	62.48	2.39	2.60	10.75	0.71	0.71	17.65	1.69	1.68	0.34
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	0.52	0.79	0.79	0.50	0.53	0.53	0.58	0.43	0.43	0.12
d, Delay for Lane Group [s/veh]	87.84	13.20	13.44	35.34	9.05	9.05	42.82	22.92	22.91	20.86
Lane Group LOS	F	B	B	D	A	A	D	C	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.04	4.89	4.69	0.29	2.56	2.56	0.12	0.84	0.85	0.20
50th-Percentile Queue Length [ft/ln]	1.11	122.24	117.29	7.14	63.93	63.90	2.98	21.11	21.13	4.88
95th-Percentile Queue Length [veh/ln]	0.08	8.52	8.24	0.51	4.60	4.60	0.21	1.52	1.52	0.35
95th-Percentile Queue Length [ft/ln]	2.00	212.90	206.09	12.85	115.07	115.02	5.36	37.99	38.04	8.79

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	87.84	13.29	13.44	35.34	9.05	9.05	42.82	42.82	42.82	22.92	22.91	20.86
Movement LOS	F	B	B	D	A	A	D	D	D	C	C	C
d_A, Approach Delay [s/veh]	13.37			9.53			42.82			22.69		
Approach LOS	B			A			D			C		
d_I, Intersection Delay [s/veh]	12.58											
Intersection LOS	B											
Intersection V/C	0.449											

Other Modes

g_Walk,mi, Effective Walk Time [s]	-4.6			11.0			0.0			11.0		
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]	30.17			15.55			0.00			15.55		
I_p,int, Pedestrian LOS Score for Intersection	2.824			2.725			0.000			2.331		
Crosswalk LOS	C			B			F			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	1617			1656			355			434		
d_b, Bicycle Delay [s]	0.93			0.75			17.16			15.55		
I_b,int, Bicycle LOS Score for Intersection	2.607			2.331			1.570			1.832		
Bicycle LOS	B			B			A			A		

Sequence

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



Intersection Level Of Service Report

Intersection 2: New Intersection

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

Delay (sec / veh): 12.0
 Level Of Service: B
 Volume to Capacity (v/c): 0.002

Intersection Setup

Name	Project Dwy			Gas Station			Gateway Dr					
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	0	0	0	0	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	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	100.00	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	Yes			Yes			Yes			Yes		

Volumes

Name	Project Dwy			Gas Station			Gateway Dr					
Base Volume Input [veh/h]	15	1	1	23	0	41	47	178	1	1	106	28
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]	15	1	1	23	0	41	47	178	1	1	106	28
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]	4	0	0	6	0	11	13	48	0	0	29	8
Total Analysis Volume [veh/h]	16	1	1	25	0	45	51	193	1	1	115	30
Pedestrian Volume [ped/h]	0			0			0			0		

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	Yes	Yes		
Number of Storage Spaces in Median	1	1	0	0

[illegible]

Intersection Level Of Service Report

Intersection 3: New Intersection

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

Delay (sec / veh): 0.0
 Level Of Service: A
 Volume to Capacity (v/c): 0.013

Intersection Setup

Name	Fairgrounds Dr		Fairgrounds Dr		Project Dwy	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	0	0	0
Entry Pocket Length [ft]	100.00	150.00	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]	35.00		35.00		20.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Fairgrounds Dr		Fairgrounds Dr		Project Dwy	
Base Volume Input [veh/h]	1244	13	0	1042	0	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]	1244	13	0	1042	0	0
Peak Hour Factor	0.9700	0.9700	1.0000	0.9700	1.0000	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	321	3	0	269	0	0
Total Analysis Volume [veh/h]	1282	13	0	1074	0	0
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
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	0.01	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	13.62
Movement LOS	A	A		A		B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00		0.00		13.62	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.00					
Intersection LOS	A					

Vistro File: M:\...\01_AM Fairgrounds and Gateway
vistro.vistro

Scenario 6 PM Near Term and Approved Proj

Report File: M:\...\06_PM NTPAP.pdf

11/15/2022

Turning Movement Volume: Summary

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	New Intersection	1	1037	206	17	899	1	1	3	2	140	4	18	2329

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
2	New Intersection	15	1	1	23	0	41	47	178	1	1	106	28	442

ID	Intersection Name	Northbound		Southbound	Westbound	Total Volume
		Thru	Right	Thru	Right	
3	New Intersection	1244	13	1042	0	2299

Study Intersections



Vistro File: M:\...\01_Fairgrounds and Gateway vistro.vistro

Scenario 7 AM NTPAP Plus Project

Report File: M:\...\07_AM NTPAP PL PROJ.pdf

11/15/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	New Intersection	Signalized	HCM 6th Edition	NB Left	0.588	17.5	B
2	New Intersection	Two-way stop	HCM 7th Edition	NB Thru	0.002	12.2	B
3	New Intersection	Two-way stop	HCM 7th Edition	WB Right	0.054	16.3	C

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: New Intersection

Control Type:	Signalized	Delay (sec / veh):	17.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.588

Intersection Setup

Name	Fairgrounds Dr			Fairgrounds Dr			Dick Bass Field			Gateway Dr		
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	0	0	0	1	0	1
Entry Pocket Length [ft]	90.00	100.00	100.00	140.00	100.00	100.00	100.00	100.00	100.00	75.00	100.00	275.00
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]	35.00			35.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	Fairgrounds Dr			Fairgrounds Dr			Dick Bass Field			Gateway Dr		
Base Volume Input [veh/h]	2	1252	94	48	1004	0	0	2	2	194	2	81
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
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	1252	94	48	1004	0	0	2	2	194	2	81
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	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	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	368	28	14	295	0	0	1	1	57	1	24
Total Analysis Volume [veh/h]	2	1473	111	56	1181	0	0	2	2	228	2	95
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 in	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	Yes
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	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal Group	5	2	0	1	6	0	0	4	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	4	8	0	5	8	0	0	4	0	0	6	0
Maximum Green [s]	9	41	0	10	42	0	0	9	0	0	11	0
Amber [s]	3.6	4.1	0.0	3.7	4.1	0.0	0.0	3.6	0.0	0.0	3.7	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Extension [s]	2.0	3.9	0.0	3.0	3.9	0.0	0.0	2.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	21	0	0	22	0	0	0	0	0	23	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	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.6	3.1	0.0	2.7	3.1	0.0	0.0	2.6	0.0	0.0	2.7	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	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	0.0	0.0	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	C	L	C	C	C	L	C	R
C, Cycle Length [s]	65	65	65	65	65	65	65	65	65	65
L, Total Lost Time per Cycle [s]	4.60	5.10	5.10	4.70	5.10	5.10	4.60	4.70	4.70	4.70
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]	2.60	3.10	3.10	2.70	3.10	3.10	2.60	2.70	2.70	2.70
g_i, Effective Green Time [s]	0	35	35	3	38	38	0	7	7	7
g / C, Green / Cycle	0.00	0.55	0.55	0.05	0.59	0.59	0.00	0.11	0.11	0.11
(v / s)_i Volume / Saturation Flow Rate	0.00	0.47	0.48	0.03	0.35	0.35	0.00	0.07	0.07	0.07
s, saturation flow rate [veh/h]	1603	1683	1642	1603	1683	1683	1547	1603	1604	1431
c, Capacity [veh/h]	4	918	896	79	1000	1000	7	170	170	151
d1, Uniform Delay [s]	32.29	12.71	12.83	30.34	8.21	8.21	32.19	27.91	27.91	27.75
k, delay calibration	0.04	0.29	0.29	0.11	0.15	0.15	0.04	0.11	0.11	0.11
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]	40.38	6.69	7.39	11.02	0.78	0.78	26.58	4.68	4.68	4.23
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	0.55	0.87	0.88	0.71	0.59	0.59	0.59	0.68	0.68	0.63
d, Delay for Lane Group [s/veh]	72.67	19.40	20.21	41.35	9.00	9.00	58.78	32.59	32.58	31.98
Lane Group LOS	E	B	C	D	A	A	E	C	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.07	9.38	9.46	1.05	4.02	4.02	0.11	1.88	1.88	1.54
50th-Percentile Queue Length [ft/ln]	1.76	234.42	236.56	26.32	100.57	100.57	2.78	47.03	47.06	38.56
95th-Percentile Queue Length [veh/ln]	0.13	14.40	14.51	1.89	7.24	7.24	0.20	3.39	3.39	2.78
95th-Percentile Queue Length [ft/ln]	3.17	359.96	362.68	47.37	181.03	181.03	5.01	84.66	84.71	69.41

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	72.67	19.77	20.21	41.35	9.00	9.00	58.78	58.78	58.78	32.58	32.58	31.98
Movement LOS	E	B	C	D	A	A	E	E	E	C	C	C
d_A, Approach Delay [s/veh]	19.87			10.46			58.78			32.41		
Approach LOS	B			B			E			C		
d_I, Intersection Delay [s/veh]	17.52											
Intersection LOS	B											
Intersection V/C	0.588											

Other Modes

g_Walk,mi, Effective Walk Time [s]	-4.6	11.0	0.0	11.0
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]	37.11	22.28	0.00	22.28
I_p,int, Pedestrian LOS Score for Intersection	2.984	2.920	0.000	2.362
Crosswalk LOS	C	C	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1268	1299	278	340
d_b, Bicycle Delay [s]	4.34	3.98	23.97	22.28
I_b,int, Bicycle LOS Score for Intersection	2.868	2.580	1.566	2.096
Bicycle LOS	C	B	A	B

Sequence

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



Intersection Level Of Service Report

Intersection 2: New Intersection

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

Delay (sec / veh): 12.2
 Level Of Service: B
 Volume to Capacity (v/c): 0.002

Intersection Setup

Name	Project Dwy			Gas Station			Gateway Dr					
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	0	0	0	0	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	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	100.00	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	Yes			Yes			Yes			Yes		

Volumes

Name	Project Dwy			Gas Station			Gateway Dr					
Base Volume Input [veh/h]	70	1	4	7	2	27	25	92	25	4	173	13
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]	70	1	4	7	2	27	25	92	25	4	173	13
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.8500	0.9200	0.9200	0.8500	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]	19	0	1	2	1	7	7	27	7	1	51	4
Total Analysis Volume [veh/h]	76	1	4	8	2	29	27	108	27	4	204	14
Pedestrian Volume [ped/h]	0			0			0			0		

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	Yes	Yes		
Number of Storage Spaces in Median	1	1	0	0

[illegible]

Intersection Level Of Service Report

Intersection 3: New Intersection

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

Delay (sec / veh): 16.3
 Level Of Service: C
 Volume to Capacity (v/c): 0.054

Intersection Setup

Name	Fairgrounds Dr		Fairgrounds Dr		Project Dwy	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	0	0	0
Entry Pocket Length [ft]	100.00	150.00	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]	35.00		35.00		20.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Fairgrounds Dr		Fairgrounds Dr		Project Dwy	
Base Volume Input [veh/h]	1334	51	0	1200	0	17
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]	1334	51	0	1200	0	17
Peak Hour Factor	0.8500	0.9200	1.0000	0.8500	1.0000	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	392	14	0	353	0	5
Total Analysis Volume [veh/h]	1569	55	0	1412	0	18
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
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	0.02	0.00	0.00	0.01	0.00	0.05
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	16.33
Movement LOS	A	A		A		C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.17
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	4.23
d_A, Approach Delay [s/veh]	0.00		0.00		16.33	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.10					
Intersection LOS	C					

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Scenario 7 AM NTPAP Plus Project
11/15/2022

Turning Movement Volume: Summary

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	New Intersection	2	1252	94	48	1004	0	0	2	2	194	2	81	2681

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
2	New Intersection	70	1	4	7	2	27	25	92	25	4	173	13	443

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Thru		Right		
3	New Intersection	1334	51	1200		17		2602

Study Intersections



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Scenario 8 PM NTPAP Plus Project

Report File: M:\...\08_PM NTPAP PL PROJ.pdf

11/15/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	New Intersection	Signalized	HCM 6th Edition	NB Left	0.471	13.6	B
2	New Intersection	Two-way stop	HCM 7th Edition	NB Thru	0.002	12.7	B
3	New Intersection	Two-way stop	HCM 7th Edition	WB Right	0.028	13.8	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: New Intersection

Control Type:	Signalized	Delay (sec / veh):	13.6
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.471

Intersection Setup

Name	Fairgrounds Dr			Fairgrounds Dr			Dick Bass Field			Gateway Dr		
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	0	0	0	1	0	1
Entry Pocket Length [ft]	90.00	100.00	100.00	140.00	100.00	100.00	100.00	100.00	100.00	75.00	100.00	275.00
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]	35.00			35.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	Fairgrounds Dr			Fairgrounds Dr			Dick Bass Field			Gateway Dr		
Base Volume Input [veh/h]	1	1032	203	44	888	1	1	3	2	164	4	41
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
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	1032	203	44	888	1	1	3	2	164	4	41
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	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]	0	263	52	11	227	0	0	1	1	42	1	10
Total Analysis Volume [veh/h]	1	1053	207	45	906	1	1	3	2	167	4	42
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 in	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	Yes
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	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal Group	5	2	0	1	6	0	0	4	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	4	8	0	5	8	0	0	4	0	0	6	0
Maximum Green [s]	9	41	0	10	42	0	0	9	0	0	11	0
Amber [s]	3.6	4.1	0.0	3.7	4.1	0.0	0.0	3.6	0.0	0.0	3.7	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Extension [s]	2.0	3.9	0.0	3.0	3.9	0.0	0.0	2.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	21	0	0	22	0	0	0	0	0	23	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	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.6	3.1	0.0	2.7	3.1	0.0	0.0	2.6	0.0	0.0	2.7	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	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	0.0	0.0	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	C	L	C	C	C	L	C	R
C, Cycle Length [s]	53	53	53	53	53	53	53	53	53	53
L, Total Lost Time per Cycle [s]	4.60	5.10	5.10	4.70	5.10	5.10	4.60	4.70	4.70	4.70
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]	2.60	3.10	3.10	2.70	3.10	3.10	2.60	2.70	2.70	2.70
g_i, Effective Green Time [s]	0	26	26	2	28	28	0	6	6	6
g / C, Green / Cycle	0.00	0.48	0.48	0.05	0.53	0.53	0.01	0.11	0.11	0.11
(v / s)_i Volume / Saturation Flow Rate	0.00	0.38	0.39	0.03	0.27	0.27	0.00	0.05	0.05	0.03
s, saturation flow rate [veh/h]	1603	1683	1588	1603	1683	1682	1577	1603	1606	1431
c, Capacity [veh/h]	2	809	764	74	888	888	10	173	174	155
d1, Uniform Delay [s]	26.59	11.66	11.70	24.94	8.14	8.14	26.39	22.39	22.39	21.83
k, delay calibration	0.04	0.15	0.15	0.11	0.15	0.15	0.04	0.11	0.11	0.11
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]	63.14	2.56	2.77	7.85	0.63	0.63	17.84	2.17	2.16	0.94
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	0.52	0.80	0.80	0.61	0.51	0.51	0.58	0.49	0.49	0.27
d, Delay for Lane Group [s/veh]	89.73	14.22	14.47	32.79	8.77	8.77	44.23	24.55	24.54	22.77
Lane Group LOS	F	B	B	C	A	A	D	C	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.05	5.37	5.15	0.67	2.56	2.56	0.12	1.05	1.05	0.50
50th-Percentile Queue Length [ft/ln]	1.13	134.28	128.77	16.75	64.06	64.03	3.09	26.34	26.37	12.39
95th-Percentile Queue Length [veh/ln]	0.08	9.17	8.87	1.21	4.61	4.61	0.22	1.90	1.90	0.89
95th-Percentile Queue Length [ft/ln]	2.04	229.30	221.82	30.14	115.30	115.26	5.56	47.41	47.47	22.29

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	89.73	14.32	14.47	32.79	8.77	8.77	44.23	44.23	44.23	24.55	24.54	22.77
Movement LOS	F	B	B	C	A	A	D	D	D	C	C	C
d_A, Approach Delay [s/veh]	14.40			9.90			44.23			24.20		
Approach LOS	B			A			D			C		
d_I, Intersection Delay [s/veh]	13.57											
Intersection LOS	B											
Intersection V/C	0.471											

Other Modes

g_Walk,mi, Effective Walk Time [s]	-4.6			11.0			0.0			11.0		
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]	31.39			16.73			0.00			16.73		
I_p,int, Pedestrian LOS Score for Intersection	2.827			2.736			0.000			2.346		
Crosswalk LOS	C			B			F			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	1542			1579			338			414		
d_b, Bicycle Delay [s]	1.40			1.18			18.36			16.73		
I_b,int, Bicycle LOS Score for Intersection	2.600			2.345			1.570			1.911		
Bicycle LOS	B			B			A			A		

Sequence

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



Intersection Level Of Service Report

Intersection 2: New Intersection

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

Delay (sec / veh): 12.7
 Level Of Service: B
 Volume to Capacity (v/c): 0.002

Intersection Setup

Name	Project Dwy			Gas Station			Gateway Dr					
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	0	0	0	0	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	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	100.00	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	Yes			Yes			Yes			Yes		

Volumes

Name	Project Dwy			Gas Station			Gateway Dr					
Base Volume Input [veh/h]	59	1	5	23	0	41	47	175	28	3	105	28
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]	59	1	5	23	0	41	47	175	28	3	105	28
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]	16	0	1	6	0	11	13	48	8	1	29	8
Total Analysis Volume [veh/h]	64	1	5	25	0	45	51	190	30	3	114	30
Pedestrian Volume [ped/h]	0			0			0			0		

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	Yes	Yes		
Number of Storage Spaces in Median	1	1	0	0

[illegible]

Intersection Level Of Service Report

Intersection 3: New Intersection

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

Delay (sec / veh): 13.8
 Level Of Service: B
 Volume to Capacity (v/c): 0.028

Intersection Setup

Name	Fairgrounds Dr		Fairgrounds Dr		Project Dwy	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	0	0	0
Entry Pocket Length [ft]	100.00	150.00	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]	35.00		35.00		20.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Fairgrounds Dr		Fairgrounds Dr		Project Dwy	
Base Volume Input [veh/h]	1229	39	0	1055	0	11
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]	1229	39	0	1055	0	11
Peak Hour Factor	0.9700	0.9700	1.0000	0.9700	1.0000	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	317	10	0	272	0	3
Total Analysis Volume [veh/h]	1267	40	0	1088	0	12
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
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	0.01	0.00	0.00	0.01	0.00	0.03
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	13.78
Movement LOS	A	A		A		B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.09
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	2.19
d_A, Approach Delay [s/veh]	0.00		0.00		13.78	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.07					
Intersection LOS	B					

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Scenario 8 PM NTPAP Plus Project

Report File: M:\...\08_PM NTPAP PL PROJ.pdf

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Turning Movement Volume: Summary

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	New Intersection	1	1032	203	44	888	1	1	3	2	164	4	41	2384

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
2	New Intersection	59	1	5	23	0	41	47	175	28	3	105	28	515

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Thru		Right		
3	New Intersection	1229	39	1055		11		2334

Study Intersections



Vistro File: M:\...\01_Fairgrounds and Gateway vistro.vistro

Scenario 9 AM 2040 No Project

Report File: M:\...\09_AM 2040.pdf

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Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	New Intersection	Signalized	HCM 6th Edition	NB Left	0.583	16.9	B
2	New Intersection	Two-way stop	HCM 7th Edition	NB Thru	0.002	11.6	B
3	New Intersection	Two-way stop	HCM 7th Edition	WB Right	0.016	16.4	C

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: New Intersection

Control Type:	Signalized	Delay (sec / veh):	16.9
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.583

Intersection Setup

Name	Fairgrounds Dr			Fairgrounds Dr			Dick Bass Field			Gateway Dr		
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	0	0	0	1	0	1
Entry Pocket Length [ft]	90.00	100.00	100.00	140.00	100.00	100.00	100.00	100.00	100.00	75.00	100.00	275.00
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]	35.00			35.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	Fairgrounds Dr			Fairgrounds Dr			Dick Bass Field			Gateway Dr		
Base Volume Input [veh/h]	3	1294	97	26	1124	0	0	3	3	169	3	64
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
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	1294	97	26	1124	0	0	3	3	169	3	64
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	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	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	381	29	8	331	0	0	1	1	50	1	19
Total Analysis Volume [veh/h]	4	1522	114	31	1322	0	0	4	4	199	4	75
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 in	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	Yes
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	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal Group	5	2	0	1	6	0	0	4	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	4	8	0	5	8	0	0	4	0	0	6	0
Maximum Green [s]	9	41	0	10	42	0	0	9	0	0	11	0
Amber [s]	3.6	4.1	0.0	3.7	4.1	0.0	0.0	3.6	0.0	0.0	3.7	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Extension [s]	2.0	3.9	0.0	3.0	3.9	0.0	0.0	2.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	21	0	0	22	0	0	0	0	0	23	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	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.6	3.1	0.0	2.7	3.1	0.0	0.0	2.6	0.0	0.0	2.7	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	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	0.0	0.0	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	C	L	C	C	C	L	C	R
C, Cycle Length [s]	64	64	64	64	64	64	64	64	64	64
L, Total Lost Time per Cycle [s]	4.60	5.10	5.10	4.70	5.10	5.10	4.60	4.70	4.70	4.70
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]	2.60	3.10	3.10	2.70	3.10	3.10	2.60	2.70	2.70	2.70
g_i, Effective Green Time [s]	0	36	36	2	38	38	1	6	6	6
g / C, Green / Cycle	0.00	0.56	0.56	0.03	0.59	0.59	0.01	0.10	0.10	0.10
(v / s)_i Volume / Saturation Flow Rate	0.00	0.49	0.49	0.02	0.39	0.39	0.01	0.06	0.06	0.05
s, saturation flow rate [veh/h]	1603	1683	1642	1603	1683	1683	1547	1603	1606	1431
c, Capacity [veh/h]	7	945	922	54	997	997	13	156	156	139
d1, Uniform Delay [s]	31.70	12.00	12.13	30.39	8.73	8.73	31.53	27.76	27.76	27.45
k, delay calibration	0.04	0.29	0.30	0.11	0.19	0.19	0.04	0.11	0.11	0.11
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]	23.93	6.79	7.60	9.49	1.32	1.32	16.11	4.54	4.52	3.23
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	0.57	0.87	0.88	0.58	0.66	0.66	0.61	0.65	0.65	0.54
d, Delay for Lane Group [s/veh]	55.63	18.79	19.74	39.88	10.06	10.06	47.64	32.30	32.29	30.68
Lane Group LOS	E	B	B	D	B	B	D	C	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.11	9.28	9.43	0.58	4.84	4.84	0.18	1.64	1.64	1.18
50th-Percentile Queue Length [ft/ln]	2.63	231.90	235.69	14.59	120.98	120.98	4.45	40.96	41.01	29.48
95th-Percentile Queue Length [veh/ln]	0.19	14.27	14.46	1.05	8.45	8.45	0.32	2.95	2.95	2.12
95th-Percentile Queue Length [ft/ln]	4.73	356.78	361.57	26.26	211.17	211.17	8.01	73.73	73.82	53.06

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	55.63	19.22	19.74	39.88	10.06	10.06	47.64	47.64	47.64	32.29	32.29	30.68
Movement LOS	E	B	B	D	B	B	D	D	D	C	C	C
d_A, Approach Delay [s/veh]	19.35			10.74			47.64			31.86		
Approach LOS	B			B			D			C		
d_I, Intersection Delay [s/veh]	16.93											
Intersection LOS	B											
Intersection V/C	0.583											

Other Modes

g_Walk,mi, Effective Walk Time [s]	-4.6			11.0			0.0			11.0		
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]	36.62			21.80			0.00			21.80		
I_p,int, Pedestrian LOS Score for Intersection	3.022			2.952			0.000			2.350		
Crosswalk LOS	C			C			F			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	1287			1319			283			345		
d_b, Bicycle Delay [s]	4.05			3.70			23.49			21.80		
I_b,int, Bicycle LOS Score for Intersection	2.913			2.676			1.573			2.018		
Bicycle LOS	C			B			A			B		

Sequence

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



Intersection Level Of Service Report
Intersection 2: New Intersection

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

Delay (sec / veh): 11.6
 Level Of Service: B
 Volume to Capacity (v/c): 0.002

Intersection Setup

Name	Project Dwy			Gas Station			Gateway Dr					
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	0	0	0	0	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	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	100.00	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	Yes			Yes			Yes			Yes		

Volumes

Name	Project Dwy			Gas Station			Gateway Dr					
Base Volume Input [veh/h]	17	1	2	7	2	29	26	99	1	0	190	14
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]	17	1	2	7	2	29	26	99	1	0	190	14
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.8500	0.9200	0.9200	0.8500	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]	5	0	1	2	1	8	7	29	0	0	56	4
Total Analysis Volume [veh/h]	18	1	2	8	2	32	28	116	1	0	224	15
Pedestrian Volume [ped/h]	0			0			0			0		

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	Yes	Yes		
Number of Storage Spaces in Median	1	1	0	0

V/C, Movement V/C Ratio	0.03	0.00	0.00	0.01	0.00	0.04	0.02	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	10.76	11.64	8.80	11.04	11.57	9.20	7.78	0.00	0.00	7.45	0.00	0.00
Movement LOS	B	B	A	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/ln]	0.10	0.10	0.10	0.16	0.16	0.16	0.06	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	2.45	2.45	2.45	4.07	4.07	4.07	1.62	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	10.62			9.66			1.50			0.00		
Approach LOS	B			A			A			A		
d_I, Intersection Delay [s/veh]	1.89											
Intersection LOS	B											

Intersection Level Of Service Report
Intersection 3: New IntersectionControl Type: Two-way stop
Analysis Method: HCM 7th Edition
Analysis Period: 15 minutesDelay (sec / veh): 16.4
Level Of Service: C
Volume to Capacity (v/c): 0.016**Intersection Setup**

Name	Fairgrounds Dr		Fairgrounds Dr		Project Dwy	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	0	0	0
Entry Pocket Length [ft]	100.00	150.00	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]	35.00		35.00		20.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Fairgrounds Dr		Fairgrounds Dr		Project Dwy	
Base Volume Input [veh/h]	1389	7	0	1296	0	5
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]	1389	7	0	1296	0	5
Peak Hour Factor	0.8500	0.9200	1.0000	0.8500	1.0000	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	409	2	0	381	0	1
Total Analysis Volume [veh/h]	1634	8	0	1525	0	5
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
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	0.02	0.00	0.00	0.02	0.00	0.02
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	16.44
Movement LOS	A	A		A		C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.05
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	1.19
d_A, Approach Delay [s/veh]	0.00		0.00		16.44	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.03					
Intersection LOS	C					

Vistro File: M:\...\01_Fairgrounds and Gateway vistro.vistro

Scenario 9 AM 2040 No Project

Report File: M:\...\09_AM 2040.pdf

11/15/2022

Turning Movement Volume: Summary

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	New Intersection	3	1294	97	26	1124	0	0	3	3	169	3	64	2786

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
2	New Intersection	17	1	2	7	2	29	26	99	1	0	190	14	388

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Thru		Right		
3	New Intersection	1389	7	1296		5		2697

Study Intersections



Vistro File: M:\...\01_Fairgrounds and Gateway vistro.vistro

Scenario 10 PM 2040 No Project

Report File: M:\...\10_PM 2040.pdf

11/15/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	New Intersection	Signalized	HCM 6th Edition	NB Left	0.479	13.0	B
2	New Intersection	Two-way stop	HCM 7th Edition	NB Thru	0.002	12.1	B
3	New Intersection	Two-way stop	HCM 7th Edition	WB Right	0.003	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: New Intersection

Control Type:	Signalized	Delay (sec / veh):	13.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.479

Intersection Setup

Name	Fairgrounds Dr			Fairgrounds Dr			Dick Bass Field			Gateway Dr		
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	0	0	0	1	0	1
Entry Pocket Length [ft]	90.00	100.00	100.00	140.00	100.00	100.00	100.00	100.00	100.00	75.00	100.00	275.00
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]	35.00			35.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	Fairgrounds Dr			Fairgrounds Dr			Dick Bass Field			Gateway Dr		
Base Volume Input [veh/h]	1	1108	214	21	883	1	2	5	2	140	6	23
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
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	1108	214	21	883	1	2	5	2	140	6	23
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	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]	0	283	55	5	225	0	1	1	1	36	2	6
Total Analysis Volume [veh/h]	1	1131	218	21	901	1	2	5	2	143	6	23
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 in	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	Yes
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	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal Group	5	2	0	1	6	0	0	4	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	4	8	0	5	8	0	0	4	0	0	6	0
Maximum Green [s]	9	41	0	10	42	0	0	9	0	0	11	0
Amber [s]	3.6	4.1	0.0	3.7	4.1	0.0	0.0	3.6	0.0	0.0	3.7	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Extension [s]	2.0	3.9	0.0	3.0	3.9	0.0	0.0	2.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	21	0	0	22	0	0	0	0	0	23	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	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.6	3.1	0.0	2.7	3.1	0.0	0.0	2.6	0.0	0.0	2.7	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	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	0.0	0.0	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	C	L	C	C	C	L	C	R
C, Cycle Length [s]	54	54	54	54	54	54	54	54	54	54
L, Total Lost Time per Cycle [s]	4.60	5.10	5.10	4.70	5.10	5.10	4.60	4.70	4.70	4.70
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]	2.60	3.10	3.10	2.70	3.10	3.10	2.60	2.70	2.70	2.70
g_i, Effective Green Time [s]	0	27	27	1	29	29	1	6	6	6
g / C, Green / Cycle	0.00	0.51	0.51	0.03	0.53	0.53	0.01	0.10	0.10	0.10
(v / s)_i Volume / Saturation Flow Rate	0.00	0.41	0.41	0.01	0.27	0.27	0.01	0.05	0.05	0.02
s, saturation flow rate [veh/h]	1603	1683	1590	1603	1683	1682	1602	1603	1609	1431
c, Capacity [veh/h]	2	856	808	41	899	899	15	165	166	147
d1, Uniform Delay [s]	26.95	11.07	11.13	25.99	8.00	8.00	26.63	22.78	22.78	22.08
k, delay calibration	0.04	0.15	0.15	0.11	0.15	0.15	0.04	0.11	0.11	0.11
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]	63.31	2.58	2.90	9.79	0.60	0.60	12.67	1.92	1.91	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	0.52	0.81	0.81	0.52	0.50	0.50	0.59	0.45	0.45	0.16
d, Delay for Lane Group [s/veh]	90.26	13.65	14.03	35.77	8.59	8.59	39.30	24.70	24.68	22.56
Lane Group LOS	F	B	B	D	A	A	D	C	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.05	5.60	5.43	0.35	2.53	2.53	0.16	0.93	0.93	0.27
50th-Percentile Queue Length [ft/ln]	1.14	140.05	135.78	8.87	63.34	63.31	4.10	23.22	23.26	6.79
95th-Percentile Queue Length [veh/ln]	0.08	9.48	9.25	0.64	4.56	4.56	0.30	1.67	1.67	0.49
95th-Percentile Queue Length [ft/ln]	2.05	237.10	231.32	15.97	114.00	113.96	7.38	41.79	41.87	12.23

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	90.26	13.80	14.03	35.77	8.59	8.59	39.30	39.30	39.30	24.69	24.68	22.56
Movement LOS	F	B	B	D	A	A	D	D	D	C	C	C
d_A, Approach Delay [s/veh]	13.89			9.21			39.30			24.41		
Approach LOS	B			A			D			C		
d_I, Intersection Delay [s/veh]	12.96											
Intersection LOS	B											
Intersection V/C	0.479											

Other Modes

g_Walk,mi, Effective Walk Time [s]	-4.6			11.0			0.0			11.0		
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]	31.75			17.08			0.00			17.08		
I_p,int, Pedestrian LOS Score for Intersection	2.841			2.744			0.000			2.339		
Crosswalk LOS	C			B			F			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	1521			1558			334			408		
d_b, Bicycle Delay [s]	1.55			1.32			18.71			17.08		
I_b,int, Bicycle LOS Score for Intersection	2.673			2.321			1.574			1.843		
Bicycle LOS	B			B			A			A		

Sequence

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



Intersection Level Of Service Report

Intersection 2: New Intersection

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

Delay (sec / veh): 12.1
 Level Of Service: B
 Volume to Capacity (v/c): 0.002

Intersection Setup

Name	Project Dwy			Gas Station			Gateway Dr					
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	0	0	0	0	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	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	100.00	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	Yes			Yes			Yes			Yes		

Volumes

Name	Project Dwy			Gas Station			Gateway Dr					
Base Volume Input [veh/h]	16	1	1	24	0	43	50	184	1	1	110	29
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]	16	1	1	24	0	43	50	184	1	1	110	29
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]	4	0	0	7	0	12	14	50	0	0	30	8
Total Analysis Volume [veh/h]	17	1	1	26	0	47	54	200	1	1	120	32
Pedestrian Volume [ped/h]	0			0			0			0		

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	Yes	Yes		
Number of Storage Spaces in Median	1	1	0	0

[illegible]

Intersection Level Of Service Report

Intersection 3: New Intersection

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

Delay (sec / veh): 14.2
 Level Of Service: B
 Volume to Capacity (v/c): 0.003

Intersection Setup

Name	Fairgrounds Dr		Fairgrounds Dr		Project Dwy	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	0	0	0
Entry Pocket Length [ft]	100.00	150.00	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]	35.00		35.00		20.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Fairgrounds Dr		Fairgrounds Dr		Project Dwy	
Base Volume Input [veh/h]	1322	14	0	1025	0	1
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]	1322	14	0	1025	0	1
Peak Hour Factor	0.9700	0.9700	1.0000	0.9700	1.0000	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	341	4	0	264	0	0
Total Analysis Volume [veh/h]	1363	14	0	1057	0	1
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
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	0.01	0.00	0.00	0.01	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	14.19
Movement LOS	A	A		A		B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.01
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.19
d_A, Approach Delay [s/veh]	0.00		0.00		14.19	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.01					
Intersection LOS	B					

Vistro File: M:\...\01_Fairgrounds and Gateway vistro.vistro

Scenario 10 PM 2040 No Project

Report File: M:\...\10_PM 2040.pdf

11/15/2022

Turning Movement Volume: Summary

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	New Intersection	1	1108	214	21	883	1	2	5	2	140	6	23	2406

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
2	New Intersection	16	1	1	24	0	43	50	184	1	1	110	29	460

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Thru		Right		
3	New Intersection	1322	14	1025		1		2362

Study Intersections



Vistro File: M:\...\01_Fairgrounds and Gateway vistro.vistro

Scenario 11 AM 2040 Plus Project

Report File: M:\...\11_AM 2040 PL PROJ.pdf

11/15/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	New Intersection	Signalized	HCM 6th Edition	NB Left	0.610	19.2	B
2	New Intersection	Two-way stop	HCM 7th Edition	NB Thru	0.002	12.4	B
3	New Intersection	Two-way stop	HCM 7th Edition	WB Right	0.055	16.7	C

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: New Intersection

Control Type:	Signalized	Delay (sec / veh):	19.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.610

Intersection Setup

Name	Fairgrounds Dr			Fairgrounds Dr			Dick Bass Field			Gateway Dr		
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	0	0	0	1	0	1
Entry Pocket Length [ft]	90.00	100.00	100.00	140.00	100.00	100.00	100.00	100.00	100.00	75.00	100.00	275.00
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]	35.00			35.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	Fairgrounds Dr			Fairgrounds Dr			Dick Bass Field			Gateway Dr		
Base Volume Input [veh/h]	3	1284	95	50	1110	0	0	3	3	207	3	83
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
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3	1284	95	50	1110	0	0	3	3	207	3	83
Peak Hour Factor	0.8500	0.8500	0.8500	0.8500	0.8500	0.8500	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	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	378	28	15	326	0	0	1	1	61	1	24
Total Analysis Volume [veh/h]	4	1511	112	59	1306	0	0	4	4	244	4	98
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 in	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	Yes
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	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal Group	5	2	0	1	6	0	0	4	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	4	8	0	5	8	0	0	4	0	0	6	0
Maximum Green [s]	9	41	0	10	42	0	0	9	0	0	11	0
Amber [s]	3.6	4.1	0.0	3.7	4.1	0.0	0.0	3.6	0.0	0.0	3.7	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Extension [s]	2.0	3.9	0.0	3.0	3.9	0.0	0.0	2.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	21	0	0	22	0	0	0	0	0	23	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	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.6	3.1	0.0	2.7	3.1	0.0	0.0	2.6	0.0	0.0	2.7	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	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	0.0	0.0	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	C	L	C	C	C	L	C	R
C, Cycle Length [s]	67	67	67	67	67	67	67	67	67	67
L, Total Lost Time per Cycle [s]	4.60	5.10	5.10	4.70	5.10	5.10	4.60	4.70	4.70	4.70
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]	2.60	3.10	3.10	2.70	3.10	3.10	2.60	2.70	2.70	2.70
g_i, Effective Green Time [s]	0	37	37	3	40	40	1	7	7	7
g / C, Green / Cycle	0.00	0.55	0.55	0.05	0.60	0.60	0.01	0.11	0.11	0.11
(v / s)_i Volume / Saturation Flow Rate	0.00	0.49	0.49	0.04	0.39	0.39	0.01	0.08	0.08	0.07
s, saturation flow rate [veh/h]	1603	1683	1643	1603	1683	1683	1547	1603	1605	1431
c, Capacity [veh/h]	7	923	901	80	1002	1002	13	176	176	157
d1, Uniform Delay [s]	33.49	13.35	13.49	31.58	9.01	9.01	33.31	28.94	28.94	28.67
k, delay calibration	0.04	0.32	0.32	0.11	0.20	0.20	0.04	0.11	0.11	0.11
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]	24.23	8.24	9.21	12.40	1.36	1.36	16.41	5.06	5.05	4.01
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	0.57	0.88	0.89	0.74	0.65	0.65	0.62	0.70	0.70	0.62
d, Delay for Lane Group [s/veh]	57.71	21.59	22.70	43.98	10.37	10.37	49.72	34.00	33.99	32.67
Lane Group LOS	E	C	C	D	B	B	D	C	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.11	10.58	10.75	1.17	5.13	5.13	0.19	2.13	2.13	1.65
50th-Percentile Queue Length [ft/ln]	2.74	264.50	268.66	29.32	128.33	128.33	4.67	53.14	53.20	41.16
95th-Percentile Queue Length [veh/ln]	0.20	15.91	16.12	2.11	8.85	8.85	0.34	3.83	3.83	2.96
95th-Percentile Queue Length [ft/ln]	4.92	397.86	403.06	52.78	221.22	221.22	8.41	95.65	95.77	74.09

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	57.71	22.10	22.70	43.98	10.37	10.37	49.72	49.72	49.72	33.99	33.99	32.67
Movement LOS	E	C	C	D	B	B	D	D	D	C	C	C
d_A, Approach Delay [s/veh]	22.23			11.83			49.72			33.62		
Approach LOS	C			B			D			C		
d_I, Intersection Delay [s/veh]	19.23											
Intersection LOS	B											
Intersection V/C	0.610											

Other Modes

g_Walk,mi, Effective Walk Time [s]	-4.6	11.0	0.0	11.0
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]	38.41	23.55	0.00	23.55
I_p,int, Pedestrian LOS Score for Intersection	3.027	2.960	0.000	2.369
Crosswalk LOS	C	C	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1218	1248	267	327
d_b, Bicycle Delay [s]	5.14	4.76	25.25	23.55
I_b,int, Bicycle LOS Score for Intersection	2.902	2.686	1.573	2.131
Bicycle LOS	C	B	A	B

Sequence

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



Intersection Level Of Service Report

Intersection 2: New Intersection

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): 0.002

Intersection Setup

Name	Project Dwy			Gas Station			Gateway Dr					
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	0	0	0	0	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	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	100.00	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	Yes			Yes			Yes			Yes		

Volumes

Name	Project Dwy			Gas Station			Gateway Dr					
Base Volume Input [veh/h]	71	1	5	7	2	29	26	97	25	4	187	14
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]	71	1	5	7	2	29	26	97	25	4	187	14
Peak Hour Factor	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.9200	0.8500	0.9200	0.9200	0.8500	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]	19	0	1	2	1	8	7	29	7	1	55	4
Total Analysis Volume [veh/h]	77	1	5	8	2	32	28	114	27	4	220	15
Pedestrian Volume [ped/h]	0			0			0			0		

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	Yes	Yes		
Number of Storage Spaces in Median	1	1	0	0

V/C, Movement V/C Ratio	0.12	0.00	0.01	0.01	0.00	0.04	0.02	0.00	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	11.52	12.37	9.51	11.09	11.74	9.19	7.77	0.00	0.00	7.51	0.00	0.00
Movement LOS	B	B	A	B	B	A	A	A	A	A	A	A
95th-Percentile Queue Length [veh/l/n]	0.44	0.44	0.44	0.16	0.16	0.16	0.06	0.00	0.00	0.01	0.00	0.00
95th-Percentile Queue Length [ft/l/n]	11.02	11.02	11.02	4.08	4.08	4.08	1.61	0.00	0.00	0.21	0.00	0.00
d_A, Approach Delay [s/veh]	11.41			9.67			1.29			0.13		
Approach LOS	B			A			A			A		
d_I, Intersection Delay [s/veh]	3.00											
Intersection LOS	B											

Intersection Level Of Service Report

Intersection 3: New Intersection

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

Delay (sec / veh): 16.7
 Level Of Service: C
 Volume to Capacity (v/c): 0.055

Intersection Setup

Name	Fairgrounds Dr		Fairgrounds Dr		Project Dwy	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	0	0	0
Entry Pocket Length [ft]	100.00	150.00	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]	35.00		35.00		20.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Fairgrounds Dr		Fairgrounds Dr		Project Dwy	
Base Volume Input [veh/h]	1370	51	0	1320	0	17
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]	1370	51	0	1320	0	17
Peak Hour Factor	0.8500	0.9200	1.0000	0.8500	1.0000	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	403	14	0	388	0	5
Total Analysis Volume [veh/h]	1612	55	0	1553	0	18
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
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	0.02	0.00	0.00	0.02	0.00	0.06
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	16.73
Movement LOS	A	A		A		C
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.18
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	4.38
d_A, Approach Delay [s/veh]	0.00		0.00		16.73	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	0.09					
Intersection LOS	C					

Vistro File: M:\...\01_Fairgrounds and Gateway vistro.vistro

Scenario 11 AM 2040 Plus Project

Report File: M:\...\11_AM 2040 PL PROJ.pdf

11/15/2022

Turning Movement Volume: Summary

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	New Intersection	3	1284	95	50	1110	0	0	3	3	207	3	83	2841

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
2	New Intersection	71	1	5	7	2	29	26	97	25	4	187	14	468

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Thru		Right		
3	New Intersection	1370	51	1320		17		2758

Study Intersections



Vistro File: M:\...\01_Fairgrounds and Gateway vistro.vistro

Scenario 12 PM 2040 Plus Project

Report File: M:\...\12_PM 2040 PL PROJ.pdf

11/15/2022

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	New Intersection	Signalized	HCM 6th Edition	NB Left	0.501	14.2	B
2	New Intersection	Two-way stop	HCM 7th Edition	NB Thru	0.002	12.9	B
3	New Intersection	Two-way stop	HCM 7th Edition	WB Right	0.033	14.4	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: New Intersection

Control Type:	Signalized	Delay (sec / veh):	14.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.501

Intersection Setup

Name	Fairgrounds Dr			Fairgrounds Dr			Dick Bass Field			Gateway Dr		
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	0	0	0	1	0	1
Entry Pocket Length [ft]	90.00	100.00	100.00	140.00	100.00	100.00	100.00	100.00	100.00	75.00	100.00	275.00
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]	35.00			35.00			25.00			25.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name	Fairgrounds Dr			Fairgrounds Dr			Dick Bass Field			Gateway Dr		
Base Volume Input [veh/h]	1	1103	211	48	872	1	2	5	2	164	6	46
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
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	1103	211	48	872	1	2	5	2	164	6	46
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	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]	0	281	54	12	222	0	1	1	1	42	2	12
Total Analysis Volume [veh/h]	1	1126	215	49	890	1	2	5	2	167	6	47
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 in	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	Yes
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	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Split	Split	Split	Split	Split	Split
Signal Group	5	2	0	1	6	0	0	4	0	0	8	0
Auxiliary Signal Groups												
Lead / Lag	Lead	-	-	Lead	-	-	-	-	-	-	-	-
Minimum Green [s]	4	8	0	5	8	0	0	4	0	0	6	0
Maximum Green [s]	9	41	0	10	42	0	0	9	0	0	11	0
Amber [s]	3.6	4.1	0.0	3.7	4.1	0.0	0.0	3.6	0.0	0.0	3.7	0.0
All red [s]	1.0	1.0	0.0	1.0	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0
Split [s]	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Extension [s]	2.0	3.9	0.0	3.0	3.9	0.0	0.0	2.0	0.0	0.0	3.0	0.0
Walk [s]	0	7	0	0	7	0	0	0	0	0	7	0
Pedestrian Clearance [s]	0	21	0	0	22	0	0	0	0	0	23	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	0.0	2.0	0.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	2.6	3.1	0.0	2.7	3.1	0.0	0.0	2.6	0.0	0.0	2.7	0.0
Minimum Recall	No	No		No	No			No			No	
Maximum Recall	No	No		No	No			No			No	
Pedestrian Recall	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	0.0	0.0	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	C	L	C	C	C	L	C	R
C, Cycle Length [s]	56	56	56	56	56	56	56	56	56	56
L, Total Lost Time per Cycle [s]	4.60	5.10	5.10	4.70	5.10	5.10	4.60	4.70	4.70	4.70
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]	2.60	3.10	3.10	2.70	3.10	3.10	2.60	2.70	2.70	2.70
g_i, Effective Green Time [s]	0	28	28	3	31	31	1	6	6	6
g / C, Green / Cycle	0.00	0.50	0.50	0.05	0.55	0.55	0.01	0.10	0.10	0.10
(v / s)_i Volume / Saturation Flow Rate	0.00	0.41	0.41	0.03	0.26	0.26	0.01	0.05	0.05	0.03
s, saturation flow rate [veh/h]	1603	1683	1591	1603	1683	1682	1602	1603	1608	1431
c, Capacity [veh/h]	2	842	796	77	924	923	15	165	166	148
d1, Uniform Delay [s]	28.13	11.88	11.95	26.35	7.80	7.80	27.80	23.95	23.95	23.43
k, delay calibration	0.04	0.16	0.17	0.11	0.15	0.15	0.04	0.11	0.11	0.11
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]	63.90	2.99	3.34	8.47	0.54	0.54	12.83	2.54	2.52	1.22
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	0.52	0.82	0.82	0.64	0.48	0.48	0.59	0.52	0.52	0.32
d, Delay for Lane Group [s/veh]	92.03	14.87	15.29	34.82	8.34	8.34	40.63	26.49	26.47	24.65
Lane Group LOS	F	B	B	C	A	A	D	C	C	C
Critical Lane Group	No	No	Yes	Yes	No	No	Yes	Yes	No	No
50th-Percentile Queue Length [veh/ln]	0.05	6.16	5.97	0.78	2.53	2.53	0.17	1.15	1.16	0.60
50th-Percentile Queue Length [ft/ln]	1.16	153.91	149.18	19.40	63.26	63.24	4.26	28.85	28.90	15.05
95th-Percentile Queue Length [veh/ln]	0.08	10.23	9.97	1.40	4.56	4.55	0.31	2.08	2.08	1.08
95th-Percentile Queue Length [ft/ln]	2.09	255.65	249.33	34.91	113.88	113.83	7.66	51.92	52.02	27.10

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	92.03	15.03	15.29	34.82	8.34	8.34	40.63	40.63	40.63	26.48	26.47	24.65
Movement LOS	F	B	B	C	A	A	D	D	D	C	C	C
d_A, Approach Delay [s/veh]	15.13			9.72			40.63			26.09		
Approach LOS	B			A			D			C		
d_I, Intersection Delay [s/veh]	14.16											
Intersection LOS	B											
Intersection V/C	0.501											

Other Modes

g_Walk,mi, Effective Walk Time [s]	-4.6			11.0			0.0			11.0		
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]	32.92			18.21			0.00			18.21		
I_p,int, Pedestrian LOS Score for Intersection	2.844			2.755			0.000			2.353		
Crosswalk LOS	C			C			F			B		
s_b, Saturation Flow Rate of the bicycle lane	2000			2000			2000			2000		
c_b, Capacity of the bicycle lane [bicycles/h]	1457			1493			320			391		
d_b, Bicycle Delay [s]	2.07			1.81			19.86			18.21		
I_b,int, Bicycle LOS Score for Intersection	2.667			2.335			1.574			1.923		
Bicycle LOS	B			B			A			A		

Sequence

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



Intersection Level Of Service Report

Intersection 2: New Intersection

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): 0.002

Intersection Setup

Name	Project Dwy			Gas Station			Gateway Dr					
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	0	0	0	0	0	0	1	0	0	1	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	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	100.00	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	Yes			Yes			Yes			Yes		

Volumes

Name	Project Dwy			Gas Station			Gateway Dr					
Base Volume Input [veh/h]	60	1	5	24	0	43	50	181	28	3	109	29
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]	60	1	5	24	0	43	50	181	28	3	109	29
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]	16	0	1	7	0	12	14	49	8	1	30	8
Total Analysis Volume [veh/h]	65	1	5	26	0	47	54	197	30	3	118	32
Pedestrian Volume [ped/h]	0			0			0			0		

Priority Scheme	Stop	Stop	Free	Free
Flared Lane	No	No		
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	Yes	Yes		
Number of Storage Spaces in Median	1	1	0	0

[illegible]

Intersection Level Of Service Report

Intersection 3: New Intersection

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

Delay (sec / veh): 14.4
 Level Of Service: B
 Volume to Capacity (v/c): 0.033

Intersection Setup

Name	Fairgrounds Dr		Fairgrounds Dr		Project Dwy	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	0	0	0
Entry Pocket Length [ft]	100.00	150.00	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]	35.00		35.00		20.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Fairgrounds Dr		Fairgrounds Dr		Project Dwy	
Base Volume Input [veh/h]	1307	40	0	1038	0	12
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]	1307	40	0	1038	0	12
Peak Hour Factor	0.9700	0.9700	1.0000	0.9700	1.0000	0.9200
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	337	10	0	268	0	3
Total Analysis Volume [veh/h]	1347	41	0	1070	0	13
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
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	0.01	0.00	0.00	0.01	0.00	0.03
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	14.37
Movement LOS	A	A		A		B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.10
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	2.53
d_A, Approach Delay [s/veh]	0.00		0.00		14.37	
Approach LOS	A		A		B	
d_I, Intersection Delay [s/veh]	0.08					
Intersection LOS	B					

Vistro File: M:\...\01_Fairgrounds and Gateway vistro.vistro

Scenario 12 PM 2040 Plus Project

Report File: M:\...\12_PM 2040 PL PROJ.pdf

11/15/2022

Turning Movement Volume: Summary

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
1	New Intersection	1	1103	211	48	872	1	2	5	2	164	6	46	2461

ID	Intersection Name	Northbound			Southbound			Eastbound			Westbound			Total Volume
		Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
2	New Intersection	60	1	5	24	0	43	50	181	28	3	109	29	533

ID	Intersection Name	Northbound		Southbound		Westbound		Total Volume
		Thru	Right	Thru		Right		
3	New Intersection	1307	40	1038		12		2397

Study Intersections



Queuing and Blocking Report

Existing AM

08/03/2022

Intersection: 1: Fairgrounds Dr & Dick Bass Field/Gateway Dr

Movement	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	L	LT	R	L	T	TR	L	T	TR
Maximum Queue (ft)	33	94	130	64	17	179	176	74	219	206
Average Queue (ft)	4	23	70	28	1	108	89	18	73	43
95th Queue (ft)	21	72	117	57	9	184	170	51	151	115
Link Distance (ft)	173		128	128		163	163		818	818
Upstream Blk Time (%)			0			2	1			
Queuing Penalty (veh)			1			16	8			
Storage Bay Dist (ft)		75			90			140		
Storage Blk Time (%)		0	10			9			1	
Queuing Penalty (veh)		0	8			0			0	

Intersection: 2: Driveway/Gas & Gateway Dr

Movement	EB	EB	WB	NB	SB
Directions Served	L	T	T	LTR	LTR
Maximum Queue (ft)	29	33	14	31	61
Average Queue (ft)	4	4	1	15	21
95th Queue (ft)	21	22	11	39	48
Link Distance (ft)		128	570	135	110
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	1				
Storage Blk Time (%)	0		0		
Queuing Penalty (veh)	0		0		

Intersection: 3: Fairgrounds Dr & Driveway

Movement	WB	NB	NB
Directions Served	R	T	T
Maximum Queue (ft)	20	197	131
Average Queue (ft)	3	20	7
95th Queue (ft)	16	97	57
Link Distance (ft)	201	392	392
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			0
Queuing Penalty (veh)			0

Network Summary

Network wide Queuing Penalty: 34

Queuing and Blocking Report

Existing PM

08/03/2022

Intersection: 1: Fairgrounds Dr & Dick Bass Field/Gateway Dr

Movement	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	L	LT	R	L	T	TR	L	T	TR
Maximum Queue (ft)	38	95	134	32	8	180	174	58	198	172
Average Queue (ft)	6	18	64	11	0	96	82	13	70	36
95th Queue (ft)	26	59	112	34	5	168	159	41	142	103
Link Distance (ft)	173		128	128		163	163		818	818
Upstream Blk Time (%)			1			2	1			
Queuing Penalty (veh)			0			9	6			
Storage Bay Dist (ft)		75			90			140		
Storage Blk Time (%)		0	8			7			1	
Queuing Penalty (veh)		0	5			0			0	

Intersection: 2: Driveway/Gas & Gateway Dr

Movement	EB	EB	WB	WB	NB	SB
Directions Served	L	T	T	TR	LTR	LTR
Maximum Queue (ft)	30	33	11	5	36	67
Average Queue (ft)	5	5	0	0	14	30
95th Queue (ft)	24	24	6	4	39	56
Link Distance (ft)		128	570	570	135	110
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	1					
Storage Blk Time (%)	0		0			
Queuing Penalty (veh)	0		0			

Intersection: 3: Fairgrounds Dr & Driveway

Movement	NB	NB
Directions Served	T	T
Maximum Queue (ft)	130	104
Average Queue (ft)	11	7
95th Queue (ft)	66	50
Link Distance (ft)	392	392
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		0
Queuing Penalty (veh)		0

Network Summary

Network wide Queuing Penalty: 22

Queuing and Blocking Report

Opening Day AM

08/03/2022

Intersection: 1: Fairgrounds Dr & Dick Bass Field/Gateway Dr

Movement	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	L	LT	R	L	T	TR	L	T	TR
Maximum Queue (ft)	30	95	133	64	20	180	173	57	244	201
Average Queue (ft)	3	20	67	30	1	112	91	18	78	42
95th Queue (ft)	17	66	117	57	10	186	170	45	167	122
Link Distance (ft)	173		128	128		163	163		818	818
Upstream Blk Time (%)			1			3	1			
Queuing Penalty (veh)			1			18	8			
Storage Bay Dist (ft)		75			90			140		
Storage Blk Time (%)		0	9			9			1	
Queuing Penalty (veh)		0	7			0			0	

Intersection: 2: Driveway/Gas & Gateway Dr

Movement	EB	EB	WB	WB	NB	SB
Directions Served	L	T	T	TR	LTR	LTR
Maximum Queue (ft)	30	31	23	3	39	59
Average Queue (ft)	4	4	2	0	15	22
95th Queue (ft)	21	22	15	2	41	50
Link Distance (ft)		128	570	570	135	110
Upstream Blk Time (%)						0
Queuing Penalty (veh)						0
Storage Bay Dist (ft)	1					
Storage Blk Time (%)	0		0			
Queuing Penalty (veh)	0		0			

Intersection: 3: Fairgrounds Dr & Driveway

Movement	WB	NB	NB
Directions Served	R	T	T
Maximum Queue (ft)	20	184	163
Average Queue (ft)	3	23	10
95th Queue (ft)	15	105	74
Link Distance (ft)	201	392	392
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			0
Queuing Penalty (veh)			0

Network Summary

Network wide Queuing Penalty: 35

Queuing and Blocking Report

Opening Day PM

08/03/2022

Intersection: 1: Fairgrounds Dr & Dick Bass Field/Gateway Dr

Movement	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	L	LT	R	L	T	TR	L	T	TR
Maximum Queue (ft)	33	86	124	43	11	178	173	74	190	151
Average Queue (ft)	6	17	62	12	1	97	85	13	67	37
95th Queue (ft)	26	61	105	37	6	169	161	45	135	96
Link Distance (ft)	173		128	128		163	163		818	818
Upstream Blk Time (%)			1			2	1			
Queuing Penalty (veh)			1			9	5			
Storage Bay Dist (ft)		75			90			140		
Storage Blk Time (%)		0	7			6			1	
Queuing Penalty (veh)		0	5			0			0	

Intersection: 2: Driveway/Gas & Gateway Dr

Movement	EB	EB	WB	WB	NB	SB
Directions Served	L	T	T	TR	LTR	LTR
Maximum Queue (ft)	30	37	14	2	45	67
Average Queue (ft)	5	5	1	0	14	30
95th Queue (ft)	22	24	12	2	40	56
Link Distance (ft)		128	570	570	135	110
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	1					
Storage Blk Time (%)	0		0			
Queuing Penalty (veh)	0		0			

Intersection: 3: Fairgrounds Dr & Driveway

Movement	NB	NB
Directions Served	T	T
Maximum Queue (ft)	102	81
Average Queue (ft)	9	4
95th Queue (ft)	54	31
Link Distance (ft)	392	392
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		0
Queuing Penalty (veh)		0

Network Summary

Network wide Queuing Penalty: 21

Queuing and Blocking Report

Opening Day plus Approved Projects AM

08/03/2022

Intersection: 1: Fairgrounds Dr & Dick Bass Field/Gateway Dr

Movement	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	L	LT	R	L	T	TR	L	T	TR
Maximum Queue (ft)	33	97	134	69	14	180	175	56	217	185
Average Queue (ft)	5	24	71	27	1	113	93	16	76	43
95th Queue (ft)	23	76	122	59	7	190	170	44	156	118
Link Distance (ft)	173		128	128		163	163		818	818
Upstream Blk Time (%)			1			3	1			
Queuing Penalty (veh)			1			19	9			
Storage Bay Dist (ft)		75			90			140		
Storage Blk Time (%)		0	11			10			1	
Queuing Penalty (veh)		0	9			0			0	

Intersection: 2: Driveway/Gas & Gateway Dr

Movement	EB	EB	WB	WB	NB	SB
Directions Served	L	T	T	TR	LTR	LTR
Maximum Queue (ft)	30	31	23	3	34	52
Average Queue (ft)	4	4	1	0	16	22
95th Queue (ft)	21	22	12	3	41	47
Link Distance (ft)		128	570	570	135	110
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	1					
Storage Blk Time (%)	0		0			
Queuing Penalty (veh)	0		0			

Intersection: 3: Fairgrounds Dr & Driveway

Movement	WB	NB	NB	SB
Directions Served	R	T	T	T
Maximum Queue (ft)	20	211	141	6
Average Queue (ft)	3	24	8	0
95th Queue (ft)	15	116	63	5
Link Distance (ft)	201	392	392	163
Upstream Blk Time (%)		0		
Queuing Penalty (veh)		0		
Storage Bay Dist (ft)				
Storage Blk Time (%)			0	
Queuing Penalty (veh)			0	

Network Summary

Network wide Queuing Penalty: 38

Queuing and Blocking Report
Opening Day plus Approved Projects PM

08/03/2022

Intersection: 1: Fairgrounds Dr & Dick Bass Field/Gateway Dr

Movement	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	L	LT	R	L	T	TR	L	T	TR
Maximum Queue (ft)	35	95	121	45	11	175	173	43	196	146
Average Queue (ft)	5	18	61	12	0	94	82	12	67	33
95th Queue (ft)	24	61	104	37	5	168	157	34	141	93
Link Distance (ft)	173		128	128		163	163		818	818
Upstream Blk Time (%)			0			1	1			
Queuing Penalty (veh)			0			9	5			
Storage Bay Dist (ft)		75			90			140		
Storage Blk Time (%)		0	7			6			1	
Queuing Penalty (veh)		0	5			0			0	

Intersection: 2: Driveway/Gas & Gateway Dr

Movement	EB	EB	WB	NB	SB
Directions Served	L	T	TR	LTR	LTR
Maximum Queue (ft)	30	34	2	42	68
Average Queue (ft)	4	4	0	14	29
95th Queue (ft)	21	22	2	39	56
Link Distance (ft)		128	570	135	110
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	1				
Storage Blk Time (%)	0				
Queuing Penalty (veh)	0				

Intersection: 3: Fairgrounds Dr & Driveway

Movement	NB	NB
Directions Served	T	T
Maximum Queue (ft)	112	77
Average Queue (ft)	8	4
95th Queue (ft)	55	33
Link Distance (ft)	392	392
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		0
Queuing Penalty (veh)		0

Network Summary

Network wide Queuing Penalty: 19

Intersection: 1: Fairgrounds Dr & Dick Bass Field/Gateway Dr

Movement	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	L	LT	R	L	T	TR	L	T	TR
Maximum Queue (ft)	30	97	135	94	17	179	178	98	206	148
Average Queue (ft)	5	35	81	37	1	122	104	30	73	41
95th Queue (ft)	22	90	129	72	8	193	178	66	146	100
Link Distance (ft)	173		128	128		163	163		818	818
Upstream Blk Time (%)			2	0		3	1			
Queuing Penalty (veh)			3	0		20	10			
Storage Bay Dist (ft)		75			90			140		
Storage Blk Time (%)		1	16			11			1	
Queuing Penalty (veh)		1	16			0			0	

Intersection: 2: Driveway/Gas & Gateway Dr

Movement	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	T	L	T	TR	LTR	LTR
Maximum Queue (ft)	30	34	14	36	3	77	64
Average Queue (ft)	4	4	1	3	0	32	25
95th Queue (ft)	19	22	8	20	2	58	52
Link Distance (ft)		128		570	570	135	110
Upstream Blk Time (%)						0	
Queuing Penalty (veh)						0	
Storage Bay Dist (ft)	1		1				
Storage Blk Time (%)	0		0	1			
Queuing Penalty (veh)	0		0	0			

Intersection: 3: Fairgrounds Dr & Driveway

Movement	WB	NB	NB
Directions Served	R	T	T
Maximum Queue (ft)	36	174	139
Average Queue (ft)	10	24	12
95th Queue (ft)	29	102	72
Link Distance (ft)	201	392	392
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			0
Queuing Penalty (veh)			0

Network Summary

Network wide Queuing Penalty: 50

Intersection: 1: Fairgrounds Dr & Dick Bass Field/Gateway Dr

Movement	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	L	LT	R	L	T	TR	L	T	TR
Maximum Queue (ft)	36	94	126	57	28	177	179	67	195	156
Average Queue (ft)	6	24	71	21	1	110	94	28	67	36
95th Queue (ft)	26	72	114	48	15	177	168	57	139	99
Link Distance (ft)	173		128	128		163	163		818	818
Upstream Blk Time (%)			0			2	2			
Queuing Penalty (veh)			0			15	10			
Storage Bay Dist (ft)		75			90			140		
Storage Blk Time (%)		0	11			9			1	
Queuing Penalty (veh)		0	9			0			0	

Intersection: 2: Driveway/Gas & Gateway Dr

Movement	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	T	L	T	TR	LTR	LTR
Maximum Queue (ft)	32	37	18	23	3	70	60
Average Queue (ft)	4	5	1	1	0	30	30
95th Queue (ft)	22	24	9	11	2	58	51
Link Distance (ft)		128		570	570	135	110
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	1		1				
Storage Blk Time (%)	0		0	0			
Queuing Penalty (veh)	0		0	0			

Intersection: 3: Fairgrounds Dr & Driveway

Movement	WB	NB	NB
Directions Served	R	T	T
Maximum Queue (ft)	30	194	146
Average Queue (ft)	6	16	10
95th Queue (ft)	23	97	73
Link Distance (ft)	201	392	392
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			0
Queuing Penalty (veh)			0

Network Summary

Network wide Queuing Penalty: 35

Queuing and Blocking Report

Cumulative AM

08/03/2022

Intersection: 1: Fairgrounds Dr & Dick Bass Field/Gateway Dr

Movement	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	L	LT	R	L	T	TR	L	T	TR
Maximum Queue (ft)	33	100	138	76	25	180	178	80	257	212
Average Queue (ft)	6	28	76	29	3	122	100	19	92	58
95th Queue (ft)	25	84	127	58	15	198	181	57	193	150
Link Distance (ft)	173		128	128		163	163		818	818
Upstream Blk Time (%)			1			4	2			
Queuing Penalty (veh)			1			29	13			
Storage Bay Dist (ft)		75			90			140		
Storage Blk Time (%)		0	12			12			2	
Queuing Penalty (veh)		0	11			0			1	

Intersection: 2: Driveway/Gas & Gateway Dr

Movement	EB	EB	WB	WB	NB	SB
Directions Served	L	T	T	TR	LTR	LTR
Maximum Queue (ft)	33	34	17	3	42	60
Average Queue (ft)	5	6	1	0	15	24
95th Queue (ft)	24	25	9	2	41	50
Link Distance (ft)		128	570	570	135	110
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	1					
Storage Blk Time (%)	0		0			
Queuing Penalty (veh)	0		0			

Intersection: 3: Fairgrounds Dr & Driveway

Movement	WB	NB	NB
Directions Served	R	T	T
Maximum Queue (ft)	20	219	183
Average Queue (ft)	3	32	15
95th Queue (ft)	15	140	94
Link Distance (ft)	201	392	392
Upstream Blk Time (%)		0	
Queuing Penalty (veh)		0	
Storage Bay Dist (ft)			
Storage Blk Time (%)			0
Queuing Penalty (veh)			0

Network Summary

Network wide Queuing Penalty: 55

Queuing and Blocking Report

Cumulative PM

08/03/2022

Intersection: 1: Fairgrounds Dr & Dick Bass Field/Gateway Dr

Movement	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	L	LT	R	L	T	TR	L	T	TR
Maximum Queue (ft)	36	98	136	40	25	178	178	47	201	174
Average Queue (ft)	9	21	66	15	1	101	90	15	68	35
95th Queue (ft)	31	69	114	39	15	172	167	38	136	98
Link Distance (ft)	173		128	128		163	163		818	818
Upstream Blk Time (%)			0			2	1			
Queuing Penalty (veh)			0			12	9			
Storage Bay Dist (ft)		75			90			140		
Storage Blk Time (%)		0	9			7			1	
Queuing Penalty (veh)		0	6			0			0	

Intersection: 2: Driveway/Gas & Gateway Dr

Movement	EB	EB	WB	WB	NB	SB
Directions Served	L	T	L	T	LTR	LTR
Maximum Queue (ft)	30	37	4	22	41	67
Average Queue (ft)	6	7	0	1	14	31
95th Queue (ft)	26	28	3	12	40	54
Link Distance (ft)		128		570	135	110
Upstream Blk Time (%)						0
Queuing Penalty (veh)						0
Storage Bay Dist (ft)	1		1			
Storage Blk Time (%)	0			0		
Queuing Penalty (veh)	0			0		

Intersection: 3: Fairgrounds Dr & Driveway

Movement	WB	NB	NB
Directions Served	R	T	T
Maximum Queue (ft)	10	167	119
Average Queue (ft)	0	14	9
95th Queue (ft)	5	77	63
Link Distance (ft)	201	392	392
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			0
Queuing Penalty (veh)			0

Network Summary

Network wide Queuing Penalty: 28

Queuing and Blocking Report
Cumulative plus Project AM

08/08/2022

Intersection: 1: Fairgrounds Dr & Dick Bass Field/Gateway Dr

Movement	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	L	LT	R	L	T	TR	L	T	TR
Maximum Queue (ft)	33	100	138	92	54	180	186	117	266	226
Average Queue (ft)	5	34	80	37	3	141	122	32	97	62
95th Queue (ft)	24	92	132	70	24	206	196	73	188	150
Link Distance (ft)	173		128	128		163	163		818	818
Upstream Blk Time (%)			2	0		7	4			
Queuing Penalty (veh)			2	0		50	29			
Storage Bay Dist (ft)		75			90			140		
Storage Blk Time (%)		0	13			19			2	
Queuing Penalty (veh)		0	14			1			1	

Intersection: 2: Driveway/Gas & Gateway Dr

Movement	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	T	L	T	TR	LTR	LTR
Maximum Queue (ft)	32	36	17	44	3	72	52
Average Queue (ft)	4	4	1	3	0	34	22
95th Queue (ft)	21	22	7	20	3	60	48
Link Distance (ft)		128		570	570	135	110
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	1		1				
Storage Blk Time (%)	0		0	0			
Queuing Penalty (veh)	0		0	0			

Intersection: 3: Fairgrounds Dr & Driveway

Movement	WB	NB	NB	NB	SB
Directions Served	R	T	T	R	T
Maximum Queue (ft)	29	299	237	43	4
Average Queue (ft)	10	56	31	2	0
95th Queue (ft)	28	198	145	34	4
Link Distance (ft)	201	392	392		163
Upstream Blk Time (%)		0	0		
Queuing Penalty (veh)		0	0		
Storage Bay Dist (ft)				150	
Storage Blk Time (%)			1	0	
Queuing Penalty (veh)			0	0	

Network Summary

Network wide Queuing Penalty: 98

Intersection: 1: Fairgrounds Dr & Dick Bass Field/Gateway Dr

Movement	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	L	LT	R	L	T	TR	L	T	TR
Maximum Queue (ft)	41	96	129	62	13	184	178	111	182	143
Average Queue (ft)	9	27	69	23	0	121	107	34	72	36
95th Queue (ft)	33	77	116	50	5	192	179	75	146	95
Link Distance (ft)	173		128	128		163	163		818	818
Upstream Blk Time (%)			1			3	2			
Queuing Penalty (veh)			1			21	12			
Storage Bay Dist (ft)		75			90			140		
Storage Blk Time (%)		0	10			12			1	
Queuing Penalty (veh)		0	8			0			1	

Intersection: 2: Driveway/Gas & Gateway Dr

Movement	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	T	L	T	TR	LTR	LTR
Maximum Queue (ft)	38	43	18	23	6	60	65
Average Queue (ft)	6	7	1	1	0	30	30
95th Queue (ft)	28	31	8	11	3	55	52
Link Distance (ft)		128		570	570	135	110
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	1		1				
Storage Blk Time (%)	0		0	0			
Queuing Penalty (veh)	0		0	0			

Intersection: 3: Fairgrounds Dr & Driveway

Movement	WB	NB	NB	NB	SB
Directions Served	R	T	T	R	T
Maximum Queue (ft)	31	182	155	22	6
Average Queue (ft)	6	26	14	1	0
95th Queue (ft)	23	119	78	20	6
Link Distance (ft)	201	392	392		163
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)				150	
Storage Blk Time (%)			0		
Queuing Penalty (veh)			0		

Network Summary

Network wide Queuing Penalty: 43

OPENING DAY 2023 (BASED ON MODEL INTERPOLATION)

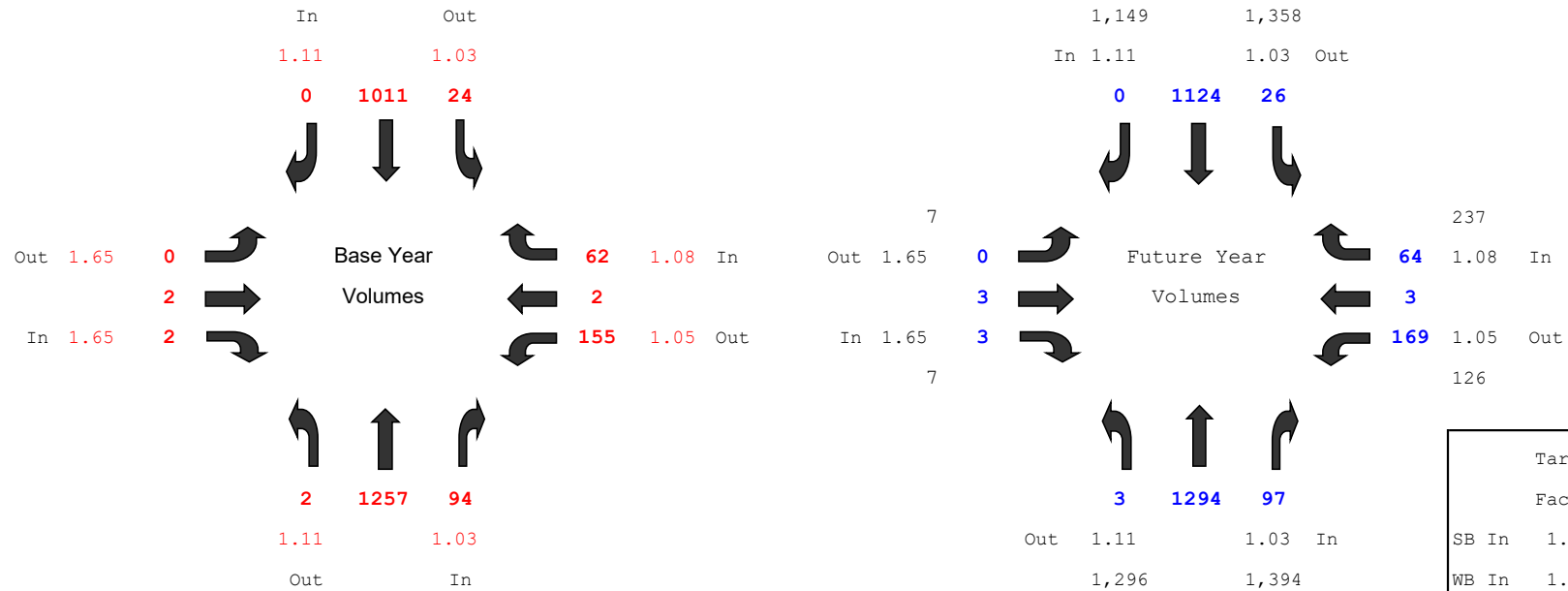
FAIRGROUNDS / GATEWAY								
		EXISTING				OPENING DAY 2023		
		AM		PM		AM	PM	
NORTHBOUND						NORTHBOUND		
	LT	2	1.001	1	1.004		2	1
	TH	1257		1031			1258	1035
	RT	94		204			94	205
SOUTHBOUND						SOUTHBOUND		
	LT	24	1.006	17	0.999		24	17
	TH	1011		896			1017	895
	RT	0		1			0	1
EASTBOUND						EASTBOUND		
	LT	0	1.03	1	1.021		0	1
	TH	2		3			2	3
	RT	2		2			2	2
WESTBOUND						WESTBOUND		
	LT	155	1.004	139	1.003		156	139
	TH	2		4			2	4
	RT	62		18			62	18
GATEWAY / DRIVEWAY								
		EXISTING				OPENING DAY 2023		
		AM		PM		AM	PM	
NORTHBOUND						NORTHBOUND		
	LT	16	1.004	15	1.003		16	15
	TH	1		1			1	1
	RT	2	1.003	1	1.004		2	1
SOUTHBOUND						SOUTHBOUND		
	LT	7	1.003	23	1.004		7	23
	TH	2		0			2	0
	RT	27	1.004	41	1.003		27	41
EASTBOUND						EASTBOUND		
	LT	25	1.003	47	1.004		25	47
	TH	94		176			94	177
	RT	1		1			1	1
WESTBOUND						WESTBOUND		
	LT	0	1.004	1	1.003		0	1
	TH	175		105			176	105
	RT	13		28			13	28
FAIRGROUNDS / DRIVEWAY								
		EXISTING				OPENING DAY 2023		
		AM		PM		AM	PM	
NORTHBOUND						NORTHBOUND		
	TH	1348	1.001	1236	1.004		1349	1241
	RT	7		13			7	13
SOUTHBOUND						SOUTHBOUND		
	TH	1168	1.006	1037	1.000		1175	1037
WESTBOUND						WESTBOUND		
	RT	5	1.006	0	1.006		5	0

[illegible]

[illegible]

FAIRGROUNDS / GATEWAY								
			EXISTING			OPENING DAY 2023		
			AM	PM		AM	PM	
NORTHBOUND						NORTHBOUND		
	LT	2	1.001	1	1.004		2	1
	TH	1257		1031			1258	1035
	RT	94		204			94	205
SOUTHBOUND						SOUTHBOUND		
	LT	24	1.006	17	0.999		24	17
	TH	1011		896			1017	895
	RT	0		1			0	1
EASTBOUND						EASTBOUND		
	LT	0	1.03	1	1.021		0	1
	TH	2		3			2	3
	RT	2		2			2	2
WESTBOUND						WESTBOUND		
	LT	155	1.004	139	1.003		156	139
	TH	2		4			2	4
	RT	62		18			62	18
GATEWAY / DRIVEWAY								
			EXISTING			OPENING DAY 2023		
			AM	PM		AM	PM	
NORTHBOUND						NORTHBOUND		
	LT	16	1.004	15	1.003		16	15
	TH	1		1			1	1
	RT	2	1.003	1	1.004		2	1
SOUTHBOUND						SOUTHBOUND		
	LT	7	1.003	23	1.004		7	23
	TH	2		0			2	0
	RT	27	1.004	41	1.003		27	41
EASTBOUND						EASTBOUND		
	LT	25	1.003	47	1.004		25	47
	TH	94		176			94	177
	RT	1		1			1	1
WESTBOUND						WESTBOUND		
	LT	0	1.004	1	1.003		0	1
	TH	175		105			176	105
	RT	13		28			13	28
FAIRGROUNDS / DRIVEWAY								
			EXISTING			OPENING DAY 2023		
			AM	PM		AM	PM	
NORTHBOUND						NORTHBOUND		
	TH	1348	1.001	1236	1.004		1349	1241
	RT	7		13			7	13
SOUTHBOUND						SOUTHBOUND		
	TH	1168	1.006	1037	1.000		1175	1037
WESTBOUND						WESTBOUND		
	RT	5	1.006	0	1.006		5	0

Intersection Turning Movement Projections per NCHRP 255 (Furness Method)



Project Dutch Bros Fairgrounds Dr Vallejo

N/S Road Fairgrounds Dr

E/W Road Gateway Dr

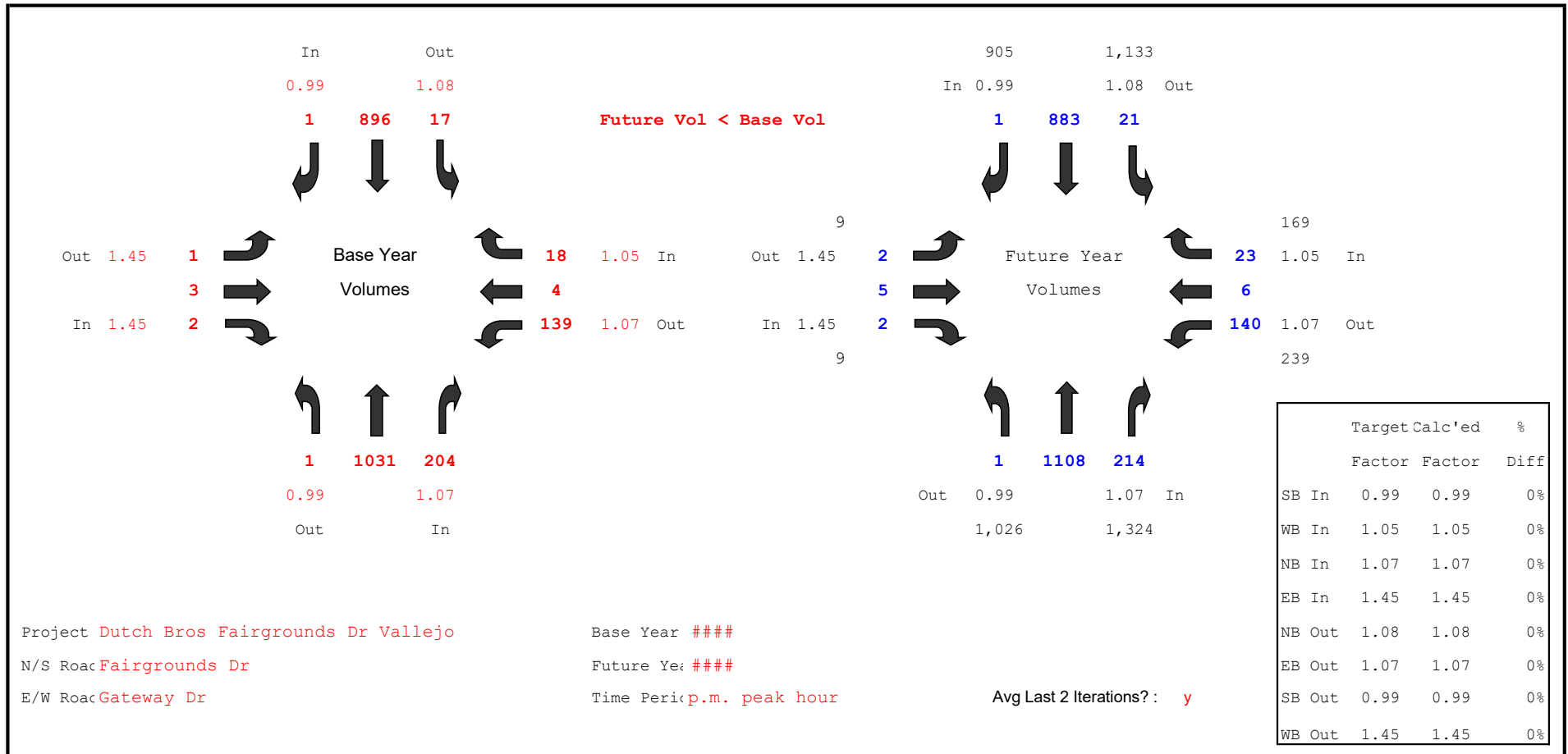
Base Year ####

Future Year ####

Time Period a.m. peak hour

Avg Last 2 Iterations?: y

Intersection Turning Movement Projections per NCHRP 255 (Furness Method)



ADJUSTED ITM's TO 2022 MASO															
AM															
	NB Left	NB Thru	NB Rt		SB Left	SB Thru	SB Rt		WB Left	WB Thru	WB Right		EB Left	EB Thru	EB Rt
				NB APPROACH				SB APPROACH				WB APPROACH			
NDS - July 2019	1	500	65	566	16	585	0	601	102	1	18	121	0	2	2
StreetLight - July 2019		627	40	667	20	809		829	85		23	108			
StreetLight MASO -2019		1576	58	1634	30	1398		1428	129		79	208			
Diff SL 2019 MASO:July		2.51	1.45	2.45	1.50	1.73		1.72	1.52		3.43	1.93			
Proportion NDS	2	1257	94		24	1011	0		155	2	62		0	2	2
													0	5	4
				NB DEPARTURE				SB DEPARTURE				EB DEPARTURE			
NDS - July 2019				518				687				81			
StreetLight - July 2019				650				894				60			
StreetLight MASO -2019				1655				1527				88			
StreetLight MASO -2019				2.55				1.71				1.47			
PM															
	NB Left	NB Thru	NB Rt		SB Left	SB Thru	SB Rt		WB Left	WB Thru	WB Right		EB Left	EB Thru	EB Rt
				NB APPROACH				SB APPROACH				WB APPROACH			
NDS - July 2019	1	995	211	1207	23	912	1	936	128	4	22	154	1	3	2
StreetLight - July 2019		1545	205	1750	45	1129		1174	101		36	137			
StreetLight MASO -2019		1601	198	1799	34	1109		1143	110		30	140			
Diff SL 2019 MASO:July		1.04	0.97	1.03	0.76	0.98		0.97	1.09		0.83	1.02			
Proportion NDS	1	1031	204		17	896	1		139	4	18		1	3	2
				NB DEPARTURE				SB DEPARTURE				EB DEPARTURE			
NDS - July 2019				1017				1040				234			
StreetLight - July 2019				1581				1230				250			
StreetLight MASO -2019				1631				1219				232			
StreetLight MASO -2019				1.03				0.99				0.93			

Streetlight

MASO 2019												
Weekday - 7am-9am												
	North			East			South					
	Fairground North Appr (Southbound)			Gateway East Appr (Westbound)			Fairground South Appr (Northbound)					
	Left	Thru	Total	Left	Right	Total	Thru	Right	Total	Total	Total %	
7:00am	3	199	202	14	9	23	241	9	250	475	0.0922	
7:15am	6	247	253	34	12	46	259	11	270	569	0.1104	
7:30am	8	324	332	33	16	49	355	13	368	749	0.1454	
7:45am	8	340	348	26	36	62	533	15	548	958	0.1859	2751
8:00am	6	412	418	34	19	53	394	15	409	880	0.1708	3156
8:15am	8	322	330	36	8	44	294	15	309	683	0.1326	3270
8:30am	7	215	222	20	3	23	200	17	217	462	0.0897	2983
8:45am	5	150	155	14	4	18	188	15	203	376	0.073	2401
Grand Total	51	2209	2260	211	107	318	2464	110	2574	5152	1	phf
	30	1398		129	79		1576	58		3270		3270 0.85
Weekday - 4pm-6pm												
	North			East			South					
	Fairground North Appr (Southbound)			Gateway East Appr (Westbound)			Fairground South Appr (Northbound)					
	Left	Thru	Total	Left	Right	Total	Thru	Right	Total	Total	Total %	
4:00pm	15	304	319	25	7	32	315	40	355	706	0.1223	
4:15pm	15	240	255	20	7	27	322	45	367	649	0.1124	
4:30pm	20	259	279	22	8	30	311	43	354	663	0.1149	
4:45pm	19	257	276	27	8	35	325	36	361	672	0.1164	2690
5:00pm	10	235	245	35	8	43	389	39	428	716	0.124	2700
5:15pm	7	291	298	25	7	32	414	49	463	793	0.1374	2844
5:30pm	8	284	292	28	7	35	411	47	458	785	0.136	2966
5:45pm	9	299	308	22	8	30	387	63	450	788	0.1365	3082
Grand Total	103	2169	2272	204	60	264	2874	362	3236	5772	1	phf
	34	1109		110	30		1601	198		3082		3082 0.97

Streetly lt

JULY 2019													
Weekday - 7am-9am													
	North			East			South						
	Fairground North Appr (Southbound)			Gateway East Appr (Westbound)			Fairground South Appr (Northbound)						
	Left	Thru	Total	Left	Right	Total	Thru	Right	Total	Total	Total %		
7:00am	3	210	213	16	9	25	114	1	115	353	0.1157		
7:15am	3	183	186	18	9	27	160	3	163	376	0.1232		
7:30am	4	175	179	15	4	19	142	4	146	344	0.1127		
7:45am	4	232	236	16	4	20	144	6	150	406	0.1331	1479	
8:00am	5	195	200	20	6	26	164	10	174	400	0.1311	1526	
8:15am	4	208	212	24	7	31	158	12	170	413	0.1354	1563	
8:30am	7	174	181	25	6	31	161	12	173	385	0.1262	1604	
8:45am	13	178	191	27	5	32	134	17	151	374	0.1226	1572	
Grand Total	43	1555	1598	161	50	211	1177	65	1242	3051	1		phf
												1604	0.97
	20	809		85	23		627	40		1604			
Weekday - 4pm-6pm													
	North			East			South						
	Fairground North Appr (Southbound)			Gateway East Appr (Westbound)			Fairground South Appr (Northbound)						
	Left	Thru	Total	Left	Right	Total	Thru	Right	Total	Total	Total %		
4:00pm	8	229	237	18	5	23	296	35	331	591	0.1057		
4:15pm	11	240	251	17	10	27	310	42	352	630	0.1126		
4:30pm	15	221	236	20	9	29	338	50	388	653	0.1168		
4:45pm	9	275	284	19	5	24	306	44	350	658	0.1176	2532	
5:00pm	9	231	240	19	5	24	335	39	374	638	0.1141	2579	
5:15pm	12	284	296	26	13	39	419	50	469	804	0.1438	2753	
5:30pm	12	300	312	30	11	41	366	57	423	776	0.1387	2876	
5:45pm	12	314	326	26	7	33	425	59	484	843	0.1507	3061	
Grand Total	88	2094	2182	175	65	240	2795	376	3171	5593	1		phf
												3061	0.91
	45	1129		101	36		1545	205		3061			