



Wayzata Planning Commission

Meeting Agenda

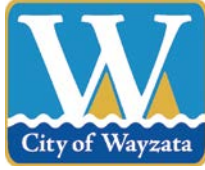
Monday, May 15, 2017

Community Room
600 Rice Street East
Wayzata, Minnesota 55391

- 7:00 p.m.**
- 1. Call to Order & Roll Call**
 - 2. Approval of Agenda**
 - 3. Approval of Minutes**
 - a. None
 - 4. Public Hearing Items:**
 - a. Nolan Properties – 1330 Wayzata Blvd E
Design review, conditional use permits, variances
 - 5. Old Business Items:**
 - a. None
 - 6. Other Items:**
 - a. Review of development activities
 - b. Next meeting is June 5, 2017
 - 7. Adjournment**

NOTES:

¹ Members of the Planning Commission and some staff may gather at the Wayzata Bar and Grill immediately after the meeting for a purely social event. All members of the public are welcome.



**Staff Report
May 15, 2017**

Project Name: 1330 Wayzata Blvd E
Applicant Nolan Properties Group, LLC
Addresses of Request: 1330 Wayzata Blvd E
Prepared by: Jeff Thomson, Director of Planning and Building
“60 Day” Deadline: June 13, 2017

Development Application

Introduction

The applicant, Nolan Properties Group, LLC, has submitted a development application for the property at 1330 Wayzata Blvd E. The property currently contains a 2,300 square foot fast food building that is occupied by Kentucky Fried Chicken and was constructed in 1961. The proposal includes demolition of the existing building, parking lot, and other site improvements. The new development would consist of a 4,500 square foot commercial building and 47 on-site parking stalls. In addition, a new 9-foot public sidewalk would be constructed adjacent to Wayzata Boulevard.

Property Information

The property identification number and owner of the property are as follows:

Address	PID	Owner
1330 Wayzata Blvd E	05-117-22-31-0008	Delarias Kitchen, Inc.

The current zoning and comprehensive plan land use designation for the property are as follows:

Current zoning:	C-3/Service District
Comp Plan designation:	Mixed Use Commercial
Overlay districts:	None

Project Location

The property is on Wayzata Blvd E, west of the Bushaway Rd intersection:

Map 1: Project Location



Adjacent Land Uses.

The following table outlines the uses, zoning, and Comprehensive Plan land use designations for adjacent properties:

Direction	Adjacent Use	Zoning	Comp Plan Land Use Designation
North	Wayzata Blvd E	N/A	N/A
	Holiday gas station	C-3/Service District	Mixed Use Commercial
	Gerring Car Wash	C-3/Service District	Mixed Use Commercial
East	McDonald's	C-3/Service District	Mixed Use Commercial
South	Single-family homes	R-2A/Single Family Residential District	Low Density Single Family
West	Commercial building	C-3/Service District	Mixed Use Commercial

Application Requests

As part of the submitted development application, the applicant is requesting approval of the following items:

- Design review: Construction of a new commercial building requires design review. (City Code Section 801.09.1.5)
- Conditional use permit for drive-in facilities: Within the C-3 zoning district, drive-in facilities for banks or savings and loans associations are a conditional use. (City Code Section 801.77.5.C)

- Conditional use permit for restaurant: Within the C-3 zoning district, restaurants are a conditional use. (City Code Section 801.77.5.F)
- Conditional use permit for convenience food restaurant: Within the C-3 zoning district, convenience food restaurants are a conditional use. (City Code Section 801.77.5.G)
- Variance from the minimum parking lot setback requirement: The zoning ordinance requires a minimum parking lot setback of 10 feet from all property lines. The proposed plans include a 5-foot setback from the west and east property lines, which requires a variance. (City Code Section 801.20.5.D)
- Variance from the minimum landscaping area requirements: The C-3 zoning district requires a minimum of 20 percent of the lot to be landscaped and maintained. The proposed plans include 16.4 percent of the lot area as landscaping, which requires a variance. (City Code Section 801.77.6.F)
- Variance from the minimum parking requirements: The applicant is proposing a tenant mix within the building that would include a coffee shop and restaurant/convenience food restaurant which would require 58 parking stalls, and only 47 parking stalls would be provided on-site, which requires a variance. (801.20.11 and 801.20.13.B)

Public Hearing Notice

The public hearing notice was published in the *Lakeshore Weekly News* on May 4, 2017. The public hearing notice was also mailed to all property owners located within 350 feet of the subject property on May 5, 2017.

Analysis of Application

City staff has reviewed the pertinent information and City Code requirements for the development application, and provides the following analysis and information:

Comprehensive Plan

The Comprehensive Plan land use designation for the subject property is Mixed Use Commercial. The Comprehensive Plan includes the following discussion for the Mixed Use Commercial district:

The Mixed Use Commercial land use category was created to reflect the reality that many traditional service commercial uses along the Wayzata Blvd. and Central Avenue corridors, in addition to smaller commercial parcels within the Bluff neighborhood, may wish to evolve over time to include a mixture of commercial, limited office, and residential uses. This Mixed Use Commercial category provides flexibility to property owners who wish to incorporate a residential component with retail or other commercial uses on their site.

Zoning

The following table outlines the zoning standards for the C-3/Service District:

	C-3 Zoning District	Proposed
Height (max.)	2 stories and 30 ft., whichever is less	1 story, 25 ft.
Floor area ratio (max.)	1.0	0.14
Lot coverage (max.)	50%	14.1%
Landscaped area (min.)	20%	16.4%**
Building setbacks (min.)		
Front (north)	10 ft.	48 ft.
Side (east)	10 ft.	15 ft.
Side (west)	10 ft.	68 ft.
Rear (south)	50 ft.	93 ft.
Lot area (min.)	15,000 sq. ft.	31,928 sq. ft.
Parking setbacks (min.)		
Front (north)	10 ft.	35 ft.
Side (east)	10 ft.	5 ft.**
Side (west)	10 ft.	5 ft.**
Rear (south)	10 ft.	11 ft.

**variance requested

Proposed Uses

The proposed building would be 4,500 square feet in size, and the applicant has indicated that the building would be occupied by up to two commercial tenants. The applicant does not know at this time the specific tenants that would occupy the building. They have indicated that the tenants could include a bank, restaurant, convenience food restaurant, retailer, or coffee shop. All of these prospective tenants are either permitted or conditional uses in the C-3 zoning district:

Proposed Use	C-3 Zoning District
Bank	Permitted use
Retail	Permitted use
Coffee shop	Permitted use
Drive-in facilities for bank	Conditional use
Restaurant	Conditional use
Convenience food restaurant	Conditional use

Although restaurants, coffee shops, and convenience food restaurants are similar uses, they are classified as separate uses in the zoning ordinance according to the following definitions:

- **Coffee Shop:** A business establishment providing services limited to the sale and production of coffee products and foods associated with the drinking of coffee, as

distinguished from a full service restaurant or convenience (fast) food establishment.

- Convenience Food Restaurant: An establishment which serves food in or on disposable or edible containers in individual servings for consumption on or off the premises.
- Restaurant: An establishment which serves food in or on non-disposable dishes to be consumed primarily while seated at tables or booths within the building.

To allow flexibility for near term and long term tenants of the building, the applicant has applied for conditional use permits for the proposed uses that are conditional uses in the zoning district, which includes: (1) drive-in facility for a bank; (2) restaurant; and (3) convenience food restaurant.

Parking

The proposed plans include 47 off-street parking stalls on the site. The City's zoning ordinance establishes minimum parking requirements for individual commercial uses. The following table is a summary of the City's parking requirements for the proposed uses:

Retail	3 stalls / 1,000 nsf*
Drive-in convenience food restaurant	1 stall / 60 nsf* (average)
Restaurant	15.2 stalls / 1,000 nsf*
Coffee shop	No specific standard provided
Bank	1 stall / 350 nsf

*net square feet (90% of gross square feet)

The City's zoning ordinance does not provide a specific parking standard for coffee shops. For uses that are not specifically listed in the ordinance, the City may determine the minimum parking requirement based on the most similar use provided in the ordinance. The applicant has submitted a report from a transportation consultant that provides the Institute of Transportation Engineers (ITE) standards, which are industry parking standards that have been previously utilized by the City. The ITE standards indicate that coffee shops require a minimum of 10.5 stalls per 1,000 gross sq. ft. or floor area.

The minimum parking requirements for the project would be based on the tenants that actually occupy the building. Based on the zoning ordinance requirements and ITE standards for coffee shops, the following is a summary of the uses that could occupy the building as the sole tenant and meet the City's parking requirements with the 47 stalls provided on the site:

- 4,500 sq. ft. retail
- 4,500 sq. ft. coffee shop
- 4,500 sq. ft. bank

If the building were to be occupied by two different tenants, the following mix of tenants would meet the City's parking requirements with the 47 stalls provided on the site:

- 2,250 sq. ft. retail / 2,250 sq. ft. bank
- 2,250 sq. ft. retail / 2,250 sq. ft. convenience food or restaurant or coffee shop
- 2,250 sq. ft. bank / 2,250 sq. ft. convenience food or restaurant or coffee shop

If the City Council approves the project, City staff would recommend a condition of approval that the tenant mix of the building must comply with the City's minimum parking requirements with the 47 stalls available on the site.

Parking Variance

The applicant has applied for a variance to allow an additional tenant mix that would not meet the strict requirements of the ordinance. The applicant's request is to allow for a coffee shop and a restaurant/convenience food restaurant. In this case, the property would be required to have up to 58 stalls and only 47 stalls would be provided.

The applicant has provided a transportation report and narrative to outline their justification for the variance. The applicant's request notes that a coffee shop and a restaurant/convenience food restaurant would have off-setting peak hour demands, and therefore the 47 stalls would meet the anticipated demand of the tenants. When the City updated the parking ordinance in 2016, additional flexibility was added to the ordinance to accommodate shared parking scenarios. However, the City's shared parking standards only account for a mix of general uses, not for individual types of commercial uses. Therefore, the applicant's proposal requires a variance.

The City's parking ordinance states that the City may reduce the number of required off-street parking spaces and/or loading spaces when the applicant can demonstrate in documented form a need which is less than required. In such situations, the City may require land to be reserved for parking development should use or needs change.

Tree Preservation

The City's tree preservation ordinance states that for projects that require design review, up to 10 percent of the inches of significant trees may be removed for the project. Removal beyond 10 percent requires inch for inch mitigation. For heritage trees, all possible measures must be taken to preserve heritage trees, and heritage trees can be removed only when there is not a practical alternative. Any heritage tree removal requires two inches of tree replacement for every one inch of tree removed.

There are a total of seven trees on the property, one heritage tree and six significant trees. The proposed tree preservation plan includes the removal of two trees, one heritage tree and one significant tree. Based on the tree removal, 64 inches of tree replacement would be required. However, the tree preservation plan indicates that the heritage tree, a 26-inch green ash, is in poor health. If the City Forester confirms the ash tree meets the City's definition of a dead, diseased, dying, or hazard tree, it would not be required to be replaced. In that case, 10 inches of tree replacement would be

required, and the applicant is proposing to plant 56 inches of new trees as part of the landscaping plan.

Design Review

The project is subject to the design standards for the Wayzata Blvd design district. A complete design review critique of the proposal is included as an attachment. The following summarizes the design standards in which the applicant is requesting design deviations:

- Exterior building materials: The design standards state that the primary building materials must consist of brick, stone, cast stone, wood, and/or stucco. In addition, the parapets must consist of copper, brick, stone, cast stone, or premium grade wood. The applicant is proposing to use zinc metal panels as a primary building material, and for use along the parapet of one of the corners of the building. The proposed zinc material requires a design deviation.
- Type of brick: When brick is used as a building material, the design standards require full course modular, Roman, Norman, or other standard size brick. The applicant is proposing to use mortar-less brick “shingles”, which requires a design deviation.

Action Steps

After considering the items outlined in this report and the public hearing held at the meeting, the Planning Commission should direct staff to prepare a *Planning Commission Report and Recommendation*, with appropriate findings, reflecting a recommendation on the application for review and adoption at the next Planning Commission meeting.

Attachments

- Applicant's Narrative
- Proposed Plans
- Traffic Memo
- Design Review Critique

Applicable Code Provisions for Review

Comprehensive Plan

The Comprehensive Plan land use designation for the subject property is Mixed Use Commercial. The objective of the Mixed Use Commercial land use category is to maintain and enhance these areas for primarily general retail and other commercial uses, while allowing the integration of a residential component. The Comprehensive Plan includes the follow “1st Tier” priorities for the Mixed Use Commercial and Mixed Use Residential land use categories:

- Allow for a broad range commercial and residential uses that provide daily goods and services, as well as a variety of housing opportunities.
- Increase the walkability of eastern Wayzata Blvd. where possible, through improvements in the public and private realm.
- Plan development of parking so that it is not a focal point, but rather placed behind buildings with appropriate buffers and landscaping.
- Give particular attention in commercial and services areas to building design and scale, street trees, and extensive use of landscaping to minimize the effects of buildings, parking areas and driveways.
- Consolidate access to streets wherever possible.
- Develop and enforce ordinances to eliminate the visual pollution created by signs and "franchise" architecture.
- Adequately screen or buffer all service and commercial uses from any adjacent residential neighborhoods.
- Create safe and convenient pedestrian movement within all service and commercial districts.
- Strictly regulate and enforce outdoor commercial storage and environmental quality maintenance.
- Enact and enforce a commercial maintenance code to help ensure that commercial development continues to maintain community character.
- Identify ecological and water quality impacts on the lake and other water bodies caused by proposed land use developments, for example stormwater runoff, and work to mitigate these impacts.

Design Standards City Code Section 801.09: The design standards set forth in Section 9 of the Wayzata City Zoning Ordinance are referred to collectively as the “Design Standards” or the “Standards”. The purpose of the Design Standards is to shape the City’s physical form and to promote the quality, character and compatibility of new development in the City. The Standards function to:

- A. To guide the expansion and renovation of existing structures and the construction of new buildings and parking, within the commercial districts of the City;
- B. To assist the City in reviewing development proposals;
- C. To improve the City’s public spaces including its streets, sidewalks, walkways, streetscape, and landscape treatments.

With the exception of Section 7 of the Design Standards, a deviation from any section of the Design Standards shall require a finding by the City Council (after considering the Planning Commission’s recommendation) that the negative impact of such deviation is outweighed by one or more of the following factors:

- 1. The extent to which the project advances specific policies and provisions of the City’s Comprehensive Plan.
- 2. The extent to which the deviation permits greater conformity with other Standards, policies behind the Standards, or with other Zoning Ordinance standards.
- 3. The positive effect of the project on the area in which the project is proposed.
- 4. The alleviation of an undue burden, taking into account current leasing, housing and commercial conditions.
- 5. The accommodation of future possible uses contemplated by the Design Standards, the Zoning Ordinance or the Comprehensive Plan.
- 6. A national, state or local historic designation.
- 7. The project is the remodeling of an existing building which largely otherwise conforms to the Design Standards.

Variance Standards: Section 801.05.1.C provides the criteria for reviewing variances from the Zoning Ordinance. The Variance requested in the Application is a Setback Variance. The variance review criteria are as follows:

- A. Variances shall only be permitted when they are:
 - (i) in harmony with the general purposes and intent of this Ordinance; and

- (ii) consistent with the Comprehensive Plan.
- B. Variances may be granted when the Applicant for the variance establishes that there are practical difficulties in complying with this Ordinance.
- C. "Practical difficulties," as used in connection with the granting of a variance, means that:
 - (i) the property owner's proposal for the property is reasonable but not permitted by this Ordinance;
 - (ii) the plight of the landowner is due to circumstances unique to the property, and not created by the landowner; and
 - (iii) the variance, if granted, will not alter the essential character of the locality.
- D. Economic considerations alone do not constitute practical difficulties. Practical difficulties include, but are not limited to, inadequate access to direct sunlight for solar energy systems.
- E. Variances shall be granted for earth sheltered construction as defined in Minnesota Statutes, section 216C.06, subdivision 14, when in harmony with this Ordinance.
- F. The City Council shall not permit as a variance any use that is not allowed under this Ordinance for property in the zoning district where the affected person's land is located, except the City Council may permit as a variance the temporary use of a one family dwelling as a two family dwelling.
- G. The City Council may impose conditions in the granting of variances. A condition must be directly related to and must bear a rough proportionality to the impact created by the variance.
- H. An application for a variance shall set forth reasons that the variance is justified under the criteria of this section in order to make reasonable use of the land, structure or building.

Conditional Use Permits: City Code Section 801.04.2.F. states that the Planning Commission and City Council shall consider possible adverse effects of the proposed conditional use. Their judgment shall be based upon (but not limited to) the following factors:

- A. The proposed action in relation to the specific policies and provisions of the official City Comprehensive Plan.
- B. The proposed use's compatibility with present and future uses of the area.
- C. The proposed use's conformity with all performance standards contained herein (i.e., parking, loading, noise, etc.).

- D. The proposed use's effect on the area in which it is proposed.
- E. The proposed use's impact upon property values in the area in which it is developed.
- F. Traffic generated by the proposed use is in relation to capabilities of streets serving the property.
- G. The proposed use's impact upon existing public services and facilities including parks, schools, streets and utilities, and the City's service capacity.

CUP – Drive-in Facilities: Section 801.77.5.C provides the following conditional use permit standards for drive-in facilities for banks, or savings and loan associations:

1. Compatibility. The architectural appearance, scale, construction materials, and functional plan of the building and site shall not be dissimilar to the existing nearby commercial and residential buildings, and shall not cause impairment in property values, or constitute a blighting influence within a reasonable distance of the site.
2. Vehicle Access. Vehicular access points shall be limited, shall create a minimum of conflict with through traffic movements.
3. Surfacing. The entire area other than that portion occupied by buildings or structures or plantings shall be surfaced with a material which will control dust and drainage and which is subject to the approval of the City.
4. Drive-through Windows. Service windows shall be allowed if the following additional criteria are satisfied:
 - a. Stacking. Not less than one hundred eighty (180) feet of segregated automobile stacking lane(s) must be provided for the service window.
 - b. Traffic Control. The stacking lane and its access must be designed to control traffic in a manner to protect the pedestrians, buildings and green area on the site.
 - c. Use of Street. No part of the public street or boulevard may be used for stacking of automobiles.
 - d. Noise. The stacking lane, service intercom, and service window shall be designed and located in such a manner as to minimize automobile and communication noises, emissions, and headlight glare upon adjacent premises, particularly residential premises, and to maximize maneuverability of vehicles on the site. Levels of noise, light, and air

quality shall occur and be measured at property lines and shall satisfy established state regulations.

- e. Hours. Hours of operation shall be limited as necessary to minimize the effect of nuisance factors such as traffic, noise and glare upon any existing neighboring residential uses.
- f. Green Strip. At any common boundary shared with a residential district, a strip of not less than five (5) feet shall be landscaped and screened so as to create an effective visual and sound buffer and separation of uses.
- g. The provisions of Section 801.04.2.F of this Ordinance are considered and satisfactorily met.

CUP – Restaurant: Section 801.77.5.F provides the following conditional use permit standards for restaurants, excluding drive-ins or convenience food operations:

- 1. The use obtains all local, state and federal food and beverage handling licenses and/or permits.
- 2. There shall be no excessive noise or odors emitted from the use.
- 3. There shall be no outdoor storage and/or display.
- 4. The hours of operation shall be limited as necessary to minimize the effect of nuisance factors such as traffic, noise and glare upon any existing neighboring residential uses.
- 5. The use must be landscaped and screened in accordance with Section 801.18 of this Ordinance.
- 6. The provisions of Section 801.04.2.F of this Ordinance are considered and satisfactorily met.

CUP – Convenience Food Restaurant: Section 801.77.5.G provides the following conditional use permit standards for convenience food restaurants:

- 1. Compatibility. The architectural appearance, scale, construction materials, and functional plan of the building and site shall not be dissimilar to the existing nearby commercial buildings, and shall not cause impairment in property values, or constitute a blighting influence within a reasonable distance of the site.
- 2. Green Strip. At any common boundary shared with a residential district, a strip of not less than five (5) feet shall be landscaped and screened so as to create an effective visual and sound buffer and separation of uses.

3. Lighting. Each light standard base island and all islands in the parking lot landscaped or covered. The light source is hooded to prevent glare onto adjoining property and the public right-of-way.
4. Curbing. Parking areas and driveways shall be curbed with continuous concrete curbs not less than six (6) inches high above the parking lot or driveway grade.
5. Vehicle Access. Vehicular access points shall be limited and shall create a minimum of conflict with through traffic movements.
6. Drainage. The entire area shall have a drainage system which is subject to the approval of the City Engineer.
7. Surfacing. The entire area other than that portion occupied by buildings or structures or plantings shall be surfaced with a material which will control dust and drainage and which is subject to the approval of the City.

1330 Wayzata Redevelopment

1330 WAYZATA BOULEVARD, WAYZATA, MN

Nolan Properties Group is pleased to present its proposed redevelopment of 1330 Wayzata Boulevard, a 4,500 square foot retail building in Wayzata, Minnesota. Enclosed is a summary of the project.



SUMMARY PROPERTY DATA

Address:	1330 Wayzata Boulevard E, Wayzata, MN 55391
PID:	05-117-22-31-0008
Existing Property:	A 2,300 square foot fast-food building built in 1961.
Proposed Project:	A new 4,500 square foot retail building with drive-thru, ample parking, and site improvements.
Developer:	Nolan Properties Group, a Wayzata-based real estate development company.
Current Property Owner:	Delaria's Kitchen, Inc. – owner & operator of existing KFC
Zoning:	C-3 Service District
Site Size:	.73 acres or 31,928 square feet

PROJECT NARRATIVE

Nolan Properties Group proposes the redevelopment of an existing fast food restaurant located at 1330 Wayzata Boulevard into an urban, pedestrian friendly project that positively contributes to the life and activity on Wayzata Boulevard. The site, located between a retail strip center to the west, and McDonald's to the east, on the heavily trafficked county road has served as fast food restaurant for over 40 years. The existing 2,300 square foot decrepit structure sits on an inefficient site with a significant grade drop making one third of the site unusable. Portions of the site are in disrepair and unappealing to the community and neighbors alike.

The redevelopment of the site includes a newly constructed approximately 4,500 square foot building, reconfiguration of the site layout, and ample parking. The visually clean, sophisticated urban design with significant windows and warm, high quality materials accomplishes the objective of a strongly defined street presence bringing life to the site. The boulevard features a new sidewalk and new bike racks. Attractive landscaping will accompany the patio area in front of the building. Tables and seating create a pedestrian friendly experience to draw guests and neighbors to gather and interact.

The urban site contains the maximum amount of parking stalls the site can accommodate. Landscaping is planted where able, especially around the building and the west and south property lines, providing a buffer to adjacent properties. The grade will be raised in the back of the site so the entire site can be utilized. As a result of the grade changes, the building and parking layout significantly improves vehicular circulation on the site. The conditional use of a drive through is important for the site layout. The urban design of this site is such that vehicles will be appropriately accommodated but pedestrian accessibility and activity will be promoted.

There is currently no storm water management on this site. This proposal significantly improves and appropriately addresses storm water runoff by incorporating a below grade infiltration system and installing three new catch basins on site. The building's internal roof drains will be directly connected to one of the catch basins. These improvements and redirection of existing rain water runoff areas will significantly reduce storm water runoff rates, specifically a 26% reduction during a two year storm event, while immensely improving the amount of storm water runoff to the residential properties to the south.

The sophisticated design of this redevelopment will draw attention to the project and contribute to activity on the street while creating a sense of place on Wayzata Boulevard. Building features such as significant windows, outdoor seating and landscaping, and inviting design will transform the site and area to a place where neighbors, pedestrians and cyclists feel compelled to visit, interact, and spend time. As such, it is our expectation that this proposal will complement the neighborhood character and be an asset to the community for years to come.

PROFESSIONAL CONSULTANTS

Architect	Studio 55 Architects, Jack Amdal, jack@studio55architects.com
Civil Engineer	BKBM Engineers, Keith Matte, kmatte@bkbm.com
Landscape Architect	CALYX Design Group, Ben Hartburg, ben@calyxdesigngroup.com
Traffic Engineer	Spack Consulting, Mike Spack, mspack@spackconsulting.com

CITY ENTITLEMENT APPLICATION OVERVIEW

Subject to City Planner review

Conditional Use Permits

- Restaurant, convenience food with drive-in
- Drive-in facility for bank
- Joint Parking for two food uses if one is a primary morning use (i.e. coffee, bagels, breakfast), and the other is primarily lunch and dinner (not open before 10:30am).

Variances

- Landscaping
- West property line parking set back
- Southeast property line parking set back

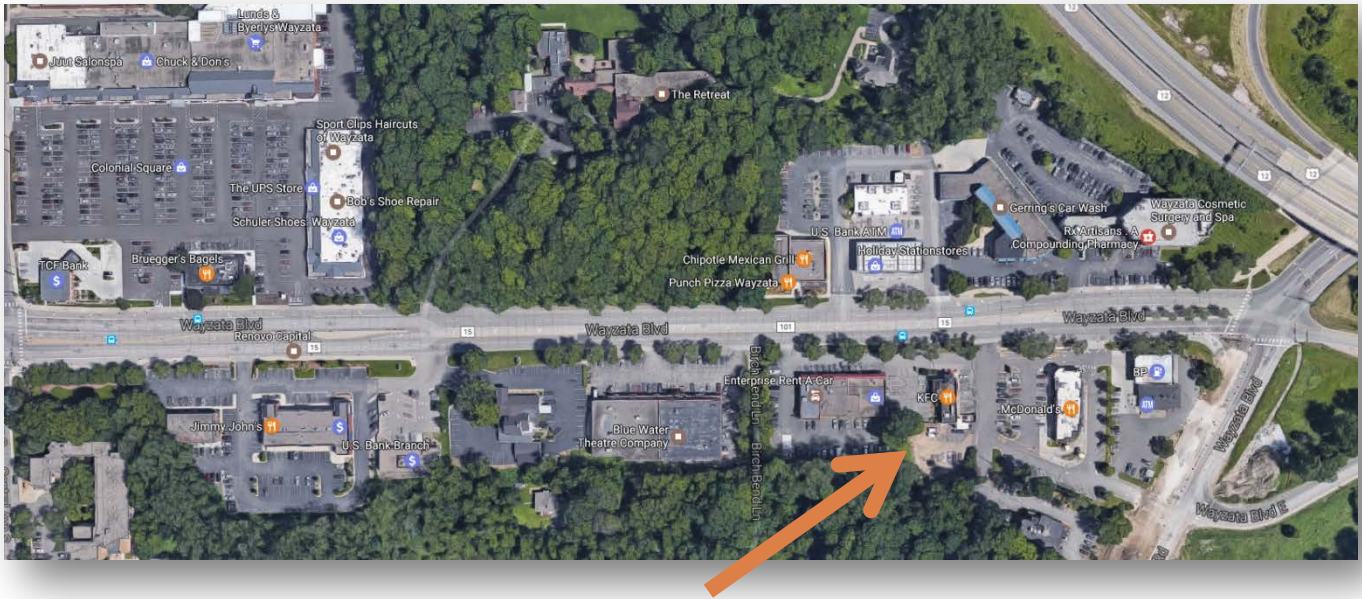
Design Review

- Subject to Design Review Standards, Section 801.09 of City of Wayzata Zoning Ordinance

ATTACHMENTS

- Development Application
- Plans & Drawings
 - As-is Survey
 - Architectural
 - Civil
 - Landscaping
 - Photometric Lighting
- Traffic Study

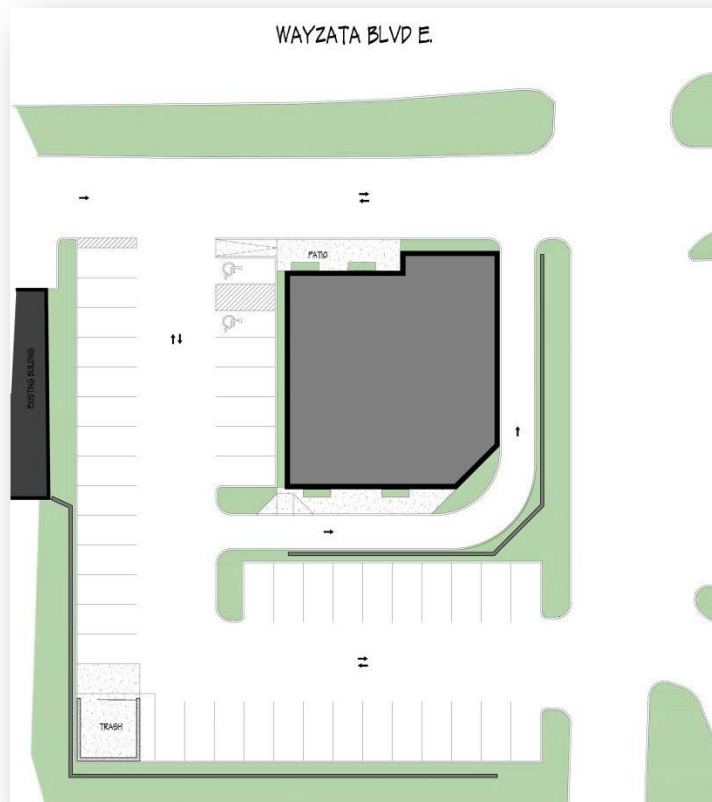
AERIAL PHOTOS



PRELIMINARY RENDERING



PRELIMINARY SITE PLAN



EXTERIOR MATERIALS

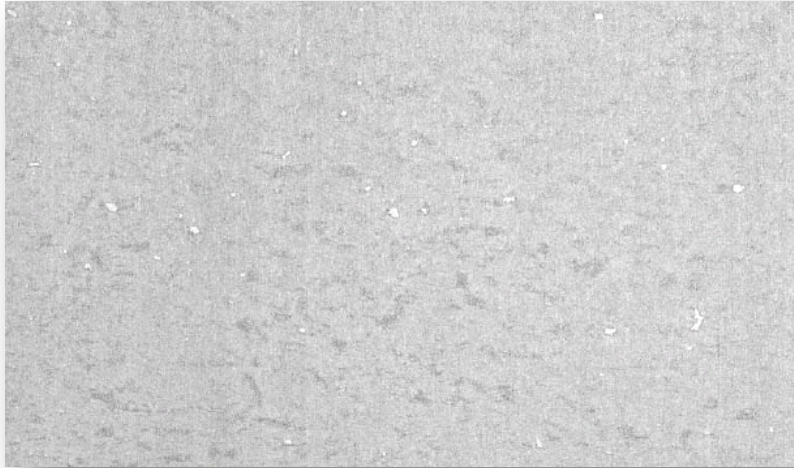
BRICK

- Petersen Cover Brick is a brick shingle that will wrap all four facades of the new building.
- Petersen Cover is a handmade brick product from Denmark which adds a distinctive and modern look while maintaining all the known advantages of brick.
- Below is a detail photo which shows the color and application of the selected brick.



ZINC PANEL

- VM Zinc's AZENGAR illuminating zinc will accent the northeast corner of the building providing an attractive, warm contrast to the brick shingle and immense glass.
- This eco-designed high-quality, all natural zinc is an expressive, vibrant complement to Wayzata Boulevard.



WOOD ACCENT

- A warm, attractive wood, species yet to be selected, will provide a horizontal pergola over the tenant entrances and windows.
- The below photo is for reference only, not exact selection or construction.



1330 Wayzata Boulevard Development Application

Written Statement on Design Standard Deviations

Section 801.09.21 provides the criteria for deviations from the Design Standards in the Zoning Ordinance. The Deviations requested are (1) exterior building materials, (2) parapet material requirements, and (3) type of brick. An explanation of the deviations and the corresponding review criteria responses are as follows:

1. **Exterior Building Materials**

- a. Section 801.09.11.1.A of the Design Standard requires, other than the accent materials listed in 801.09.11.G, ninety percent (90%) of the non-glass surfaces of each elevation of the exterior building façade shall be composed of one or more of the following materials: brick stone, cast stone, factory finished and certified wood, including, but not limited to: wood shingles (cedar shingles six (6) inch maximum exposure), lap-siding (six (6) inch maximum width) or stucco.
- b. The proposed zinc requires a deviation from the design standards for primary opaque surfaces requirements of 801.09.11.1.A.
- c. A deviation from any section of the Design Standards shall require a finding by the City Council (after considering the Planning Commission's recommendation) that the negative impact of such deviation is outweighed by one or more of the following factors:
 - i. The extent to which the project advances specific policies and provisions of the City's Comprehensive Plan.
 1. Response: The proposed zinc material is of superior quality found only in high design projects and provides a rich architectural element to the primary building corner. This expressive material is eco-designed using a brand new industrial process which limits negative effects on the environment. This award winning product stands out with its textured surface, which catches natural light and gives projects a timeless appearance. The selected zinc advances the Comprehensive Plan's statement that the "selection of the highest quality of building materials is encouraged" because zinc is one of the heaviest metals, therefore more durable and more costly than a standard metal. Additionally, this zinc is designed to imitate nature's unpredictability which is achieved by a surface treatment of natural zinc. The zinc will be installed with interlocking joints in a staggered horizontal pattern resulting in clean, simple visual lines.
 2. Section I.9 of the Comprehensive Plan states a Broad Objective to "Strengthen and reinforce community gateways - Provide announcement and a sense of place to areas of the community at key entry points through architectural, landscape and urban design element." The design objective of this proposal is to create a visual oasis among all the existing visual noise on Wayzata Blvd. with a clean, simple understated elegance. This is achieved by significant storefront glazing, a limited number of high quality building materials, a mix of modern architecture and old world materials, appropriate landscape buffers to adjacent neighbors, and charming landscaping bordering the patio area in front of the building which

accommodates tables and seating creating a soft, welcoming pedestrian friendly experience drawing guests and neighbors to gather and interact. The visually clean design brings life to the site and creates a strongly defined street presence on Wayzata Blvd.

- ii. The positive effect of the project on the area in which the project is proposed.
 - 1. Response: Due to the high amount of glass, 19% of the overall facade, the calculation of the non-glass surfaces results in high accent material percentages. The selected zinc material makes up 15% of the total building non-glass surfaces providing an attractive feature element to the primary building corner. The high quality material is similar to copper in that it is a natural material with a rich finish that may patina over time. The other non-glass surface material is 82% brick shingle and the remaining amount is a subtle warm wood accent. The sophisticated design of this redevelopment will draw attention to the project and contribute to activity on the street while creating a sense of place on Wayzata Boulevard. Building features such as significant windows, outdoor seating and landscaping, and inviting design elements will transform the site from a fairly harsh fast food restaurant to a place where people will want to visit, interact, and spend time. The proposed project complements the neighborhood character and will be an asset to the community for years to come.

2. **Parapet Material Requirements**

- a. Section 801.09.11.1.A.H of the Design Standards requires one the following materials to be used for parapets, flashing, and coping: copper (untreated), brick, stone, cast stone, premium grade wood.
- b. The proposed zinc requires a deviation from the design standards for parapet requirements of 801.09.11.1.A.H.
- c. A deviation from any section of the Design Standards shall require a finding by the City Council (after considering the Planning Commission's recommendation) that the negative impact of such deviation is outweighed by one or more of the following factors:
 - i. The extent to which the project advances specific policies and provisions of the City's Comprehensive Plan.
 - 1. Response: In the Land Use Chapter of the Comprehensive Plan, the commercial use section states "Develop and enforce ordinances to eliminate the visual pollution created by signs and "franchise" architecture," as a first tier priority. Utilizing the zinc for the parapet material results in a clean, simple building design with high quality materials resulting in an understated elegance that does not relate to franchise architecture.
 - ii. The positive effect of the project on the area in which the project is proposed.
 - 1. Response: The simple clean design is accomplished by building massing that creates a presence on Wayzata Blvd, by what it's not – loud and busy. The building's significant amount of storefront glazing results in a space that opens itself to the street, creating a warm and inviting pedestrian sense of place. The parapet on all facades is either brick shingle or zinc, there is no additional material used in the parapet.

3. Type of Brick

- a. Section 801.09.11.1.C of the Design Standards state that where brick is used, full course modular, Roman, Norman or other standard size brick must be used.
- b. The proposed mortar-less brick shingle is a unique type of brick unlike those described in the design standards section 801.09.11.1.C. While the brick shingle is not specifically anticipated in the Design Standards, it certainly fits within the spirit of the intent.
- c. A deviation from any section of the Design Standards shall require a finding by the City Council (after considering the Planning Commission's recommendation) that the negative impact of such deviation is outweighed by one or more of the following factors:
 - i. The extent to which the project advances specific policies and provisions of the City's Comprehensive Plan.

- 1. Response: The brick shingle material, created and produced in Denmark by a centuries old manufacturer which has been in business since in 1791, adds a distinctive look to the building while maintaining the rich textures and all known advantages of brick. The structure of the hand formed bricks leaves the building façade with a beautiful layered shingle often associated with water oriented structures. The building will read as a modern, clean design with attractive traditional materials.

Section I.9 of the Comprehensive Plan states the Broad Objective to "Strengthen and reinforce community gateways- Provide announcement and a sense of place to areas of the community at key entry points through architectural, landscape and urban design element." The project positively contributes to the Comprehensive Plan objectives by creating a sense of place through architectural, landscape, and urban design elements that capture the spirit of where the city wants to go. Specifically, the material selections are of superior quality. This includes the selected brick shingle material. The mortar-less brick shingles are applied to the building in a lap application on a rain screen, they measure 7.5" exposure (height) and 22.5" in length. The rain screen is an exterior wall detail where the siding (wall cladding) stands off from the moisture-resistant surface of an air barrier applied to the sheathing (sheeting) to create a capillary break and to allow drainage and evaporation.

- ii. The positive effect of the project on the area in which the project is proposed.
 - 1. Response: The sophisticated design of this redevelopment will draw attention to the project and contribute to activity on the street while creating a sense of place on Wayzata Boulevard. The old world brick shingles and inviting design elements transform the site and reinforce this community gateway by providing a sense of place to this key entry point to the City.

1330 Wayzata Boulevard Development Application

Written Statement on Variances

Due primarily to the narrow configuration of the lot and its steep drop in elevation from front to back, meeting the city's objectives for this district and corridor is challenging without relief from some dimensional requirements in the Zoning Ordinance. Notwithstanding this need for some relief, the applicant feels the proposal successfully meets the city's objectives while providing some additional benefits, such as significant site improvements from existing conditions, including but not limited to improved circulation, increased landscape buffers around the site, and significant storm water management improvements. The Variances requested are (1) a parking setback variance, (2) a landscaping area variance, and (3) a parking variance. An explanation of the variances and the corresponding review criteria responses are as follows.

A. Parking Setback Variance:

1. Section 801.20.5.D requires front, side and rear parking setbacks of at least ten (10) feet from property lines shall be maintained.
2. The proposal meets the front and rear parking setbacks, and provides a 5.5 foot setback in certain areas of the western and eastern side yards.
3. Variances shall only be permitted when they are:
 - (i) in harmony with the general purposes and intent of this Ordinance; and
 - (ii) consistent with the Comprehensive Plan.

Response: The Parking Setback Variance requested is

- (i) in harmony with the general purposes and intent of the Zoning Ordinance in that the applicant seeks to better conform with the C-3 Service District's intent, as described in the Ordinance Section 801.77.1, "to provide an area of service facilities to the motoring public." With the C-3 Service District dependent on vehicle oriented uses, sufficient parking must be provided in order to successfully serve a vibrant and healthy business climate. Additionally, in the Land Use Chapter of the Comprehensive Plan, it states "redevelopment should also....avoid the suburban approach of long expanses of parking lots and buildings," and the proposal eliminates the existing expanses of asphalt around the entire site and provides appropriate landscape buffers breaking up the site. The proposal achieves the city and zoning objectives by providing the optimal balance of building, parking, circulation, and landscaping on the site.
- (ii) consistent with the Chapter 3, Section 3.4 of the Comprehensive Plan's objective to "give particular attention to...building design and scale...and use of landscaping to minimize the effects of buildings, parking areas and driveways." The proposal provides an appropriate building size with a balance of parking and landscaping which delivers green expression from the front of the property and buffering the adjacent buildings, parking lot, and back of the site, all while significantly replacing the constrained circulation and unkempt conditions of the

existing site. The patio area creates an inviting focal point and pedestrian friendly sense of place which is supplemented by seasonal flowers and planter boxes in front of the building.

4. Variances may be granted when the Applicant for the variance establishes that there are practical difficulties in complying with this Ordinance.

Response: Due to the site configuration, topography, and small lot size, there are practical difficulties in complying with the strict standards of the Zoning Ordinance as they relate to the parking setback requirement.

- (i) "Practical difficulties," as used in connection with the granting of a variance, means that:
- (ii) the property owner's proposal for the property is reasonable but not permitted by this Ordinance;
- (iii) the plight of the landowner is due to circumstances unique to the property, and not created by the landowner; and the variance, if granted, will not alter the essential character of the locality.

Response: A finding of "Practical difficulties" is supported by the following:

- (i) The proposal for the Property is necessary in that it reflects the practical needs of providing a sufficient amount of parking to successfully serve the businesses and their customers, while providing better vehicle circulation eliminating vehicle conflict which cause congestion or interference with other traffic consistent with Section 801.20.5.E. of the Ordinance;
 - (ii) The plight of the Applicant is due to the unique characteristics of the Property's shape, whereby the very narrow and dramatic topography create constraints along the east and west boundaries;
 - (iii) The Parking Setback Variance would not alter the essential character of the locality but will instead greatly improve the overall existing conditions of the site and allow greater conformity through landscaping, improved circulation, and increased parking, which is not possible without the variance.
5. Economic considerations alone do not constitute practical difficulties. Practical difficulties include, but are not limited to, inadequate access to direct sunlight for solar energy systems.

Response: The practical difficulties requiring the Parking Setback Variance result from creating improved circulation and eliminating the existing vehicle conflicts thereby advancing objectives of Section 801.20.5.E of the Zoning Code and promoting a vibrant and healthy business climate for successful commercial businesses.

6. Variances shall be granted for earth sheltered construction as defined in Minnesota Statutes, section 216C.06, subdivision 14, when in harmony with this Ordinance.

Response: Not applicable.

7. The City Council shall not permit as a variance any use that is not allowed under this Ordinance for property in the zoning district where the affected person's land is located, except the City Council may permit as a variance the temporary use of a one family dwelling as a two family dwelling.

Response: The proposed uses for the Property are permitted within the C-3 Service District.

8. The City Council may impose conditions in the granting of variances. A condition must be directly related to and must bear a rough proportionality to the impact created by the variance.

Response: Not applicable.

9. An application for a variance shall set forth reasons that the variance is justified under the criteria of this section in order to make reasonable use of the land, structure or building.

Response: The Applicant has provided (in the above responses) the reasons that justify the Parking Setback Variance under applicable criteria in order to make reasonable use of the land, structures, and buildings on the Property that meet the objectives of the corridor, city, and Comprehensive Plan.

B. Landscaping Area Variance:

1. Section 801.77.6.F requires a minimum of twenty (20) percent of the total lot shall be landscaped.
2. The proposed project provides 16.4% landscaping coverage.
3. Variances shall only be permitted when they are:
 - (i) in harmony with the general purposes and intent of this Ordinance; and
 - (ii) consistent with the Comprehensive Plan.

Response: The Landscaping Area Variance requested is

- (i) in harmony with the general purposes and intent of the Zoning Ordinance in that it better conforms with the C-3 Service District's intent as described in the Ordinance Section 801.77.1, "to provide and area of service facilities to the motoring public,"
 - (ii) consistent with the Comprehensive Plan, Land Use Chapter 3, Section 3.2 which states the priority to "Increase the walkability of eastern Wayzata Blvd. where possible, through improvements in the public and private realm." The applicant is adding a five (5) foot sidewalk along the boulevard (which decreases the landscaping by 2.5%). Additionally, Section 3.4 of the Comprehensive Plan notes to "...use landscaping to minimize the effects of buildings, parking areas and driveways." The applicant uses landscaping to minimize the effects of buildings and parking areas by not only providing landscaped buffers to the west, south, and east properties but also a warm, inviting landscaped patio space in front of the building to soften the entrance for pedestrians to enjoy.
4. Variances may be granted when the Applicant for the variance establishes that there are practical difficulties in complying with this Ordinance.

Response: There are practical difficulties in complying with the strict standards of the Zoning Ordinance as they relate to the landscaping area requirement.

5. "Practical difficulties," as used in connection with the granting of a variance, means that:
 - (i) the property owner's proposal for the property is reasonable but not permitted by this Ordinance;
 - (ii) the plight of the landowner is due to circumstances unique to the property, and not created by the landowner; and

(iii) the variance, if granted, will not alter the essential character of the locality.

Response: A finding of “Practical difficulties” is supported by the following:

- (i) The proposal for the Property is reasonable in that it reflects the character and layout of the surrounding commercial corridor by providing greatly improved and controlled traffic circulation to eliminate conflicts causing congestion or interference with other traffic consistent with Section 801.20.5. of the Ordinance, which impacts the required Landscaping Area Variance. Additionally, there is currently no storm water management on this site. This proposal significantly improves and appropriately addresses storm water runoff by incorporating a below grade infiltration system and installing three new catch basins on site. The building’s internal roof drains will be directly connected to one of the catch basins. These improvements and redirection of existing rain water runoff areas will significantly reduce storm water runoff rates, specifically a 26% reduction during a 2 year storm event, while immensely improving the amount of storm water runoff to the residential properties to the south, and addressing a malfunctioning drain on the adjacent property to the west.
 - (ii) The plight of the Applicant is due to the unique characteristics of the Property’s significant elevation change. The site currently drops approximately 8 feet from front to back (north to south) and in order to improve circulation, the grade of the site requires two new retaining walls in areas that would otherwise be landscaped.
 - (iii) The Landscaping Area Variance would not alter the essential character of the locality but will instead improve and allow greater conformity to such character than without the variance.
6. Economic considerations alone do not constitute practical difficulties. Practical difficulties include, but are not limited to, inadequate access to direct sunlight for solar energy systems.

Response: The practical difficulties requiring the Landscaping Area Variance are not economic in nature but rather are driven by a desire to better advance the corridor objectives, address the needs of pedestrians/general public, and to promote vibrant and healthy business climate successful commercial businesses. The proposal’s balance between parking, landscaping, and patio areas to serve customers are significant factors in the practical difficulty with meeting the Zoning Ordinance requirements.

7. Variances shall be granted for earth sheltered construction as defined in Minnesota Statutes, section 216C.06, subdivision 14, when in harmony with this Ordinance.

Response: The existing site has no storm water management practices. The proposal incorporates best practices for storm water management which significantly improves not only the subject site but adjacent sites as well.

8. The City Council shall not permit as a variance any use that is not allowed under this Ordinance for property in the zoning district where the affected person’s land is located, except the City Council may permit as a variance the temporary use of a one family dwelling as a two family dwelling.

Response: The proposed uses for the Property are permitted within the C-3 Service District.

9. The City Council may impose conditions in the granting of variances. A condition must be directly related to and must bear a rough proportionality to the impact created by the variance.

Response: Not applicable.

10. An application for a variance shall set forth reasons that the variance is justified under the criteria of this section in order to make reasonable use of the land, structure or building.

Response: The Applicant has provided (in the above responses) the reasons that the Landscaping Area Variance is justified under applicable criteria in order to make reasonable use of the land, structures, and buildings on the Property.

C. **Parking Variance:**

1. Section 801.20.11.B provides the minimum off-street parking requirements for various uses of the site.
2. The proposed project provides a total of 47 stalls, or 11.6 stalls per square foot of floor area. While the parking provided meets the requirements of the Zoning Ordinance for many various use scenarios for the property, one likely combination of uses that does not meet the strict requirements of the Ordinance is that of a Coffee Shop and Convenience Food or Restaurant use. Under the Zoning Ordinance, the total parking required for this scenario is 65 stalls. A parking variance is required for this scenario based on Section 801.20.13.B of the Ordinance; however, because of the compatibility of the uses offering different peak demand times, the overall parking count is sufficient to successfully serve both businesses as demonstrated by the off-setting peak demands of such uses. The traffic study from Spack Consulting, on page 4, confirms the site provides enough parking for a Coffee Shop and Convenience Food or Restaurant even if both of their peak demand times were the same (i.e. 23 stalls each during their peak demand times, $23 + 23 = 46$ required stalls, where the site provides 47).
3. Variances shall only be permitted when they are:
 - (i) in harmony with the general purposes and intent of this Ordinance; and
 - (ii) consistent with the Comprehensive Plan.

Response: The Parking Variance requested is

- (i) in harmony with the general purposes and intent of the Zoning Ordinance in that the parking provided at the site meets the parking requirements of Section 801.20.11.B when considering the peak time-of-day demands of each use. Given the uses compliment one another, as corroborated by the traffic study provided by the applicant, the coffee shop and fast-casual restaurants peak parking demands will be met by the provided amount of parking provided on the site.
 - (ii) consistent with the Chapter 1 Section I.3. of the Comprehensive Plan's objective to foster "a vibrant and healthy business climate and to preserve and enhance the business structure for commercial areas" the proposal, again, provides a sufficient amount of parking for the compatible uses without creating an expansive asphalt parking lot.
4. Variances may be granted when the Applicant for the variance establishes that there are practical difficulties in complying with this Ordinance.

Response: There are practical difficulties in complying with the strict standards of the Zoning Ordinance as they relate to the parking requirement for a combination of Coffee Shop and Drive-In Convenience Food and Restaurant uses.

5. "Practical difficulties," as used in connection with the granting of a variance, means that:
 - (i) the property owner's proposal for the property is reasonable but not permitted by this Ordinance;
 - (ii) the plight of the landowner is due to circumstances unique to the property, and not created by the landowner; and
 - (iii) the variance, if granted, will not alter the essential character of the locality.

Response: A finding of "Practical difficulties" is supported by the following:

- (i) The proposal for the Property is reasonable in that it reflects the practical needs of providing a sufficient amount of parking to serve vibrant and healthy businesses and their customers, while providing better traffic circulation to eliminate congestion or interference with other traffic consistent with Section 801.20.5.E. of the Ordinance.
 - (ii) The plight of the Applicant is due to the unique characteristics of the site's configuration and size, balancing an appropriate building size with the appropriate amount of parking to meet both the C-3 Service District's intent, as described in the Ordinance Section 801.77.1, "to provide an area of service facilities to the motoring public", while also meeting the Land Use Chapter of the Comprehensive Plan's objective to "avoid the suburban approach of long expanses of parking lots and buildings."
 - (iii) The Parking Variance would not alter the essential character of the locality but will instead improve and allow greater advancement of city objectives.
6. Economic considerations alone do not constitute practical difficulties. Practical difficulties include, but are not limited to, inadequate access to direct sunlight for solar energy systems.

Response: This relief is from the number of spaces required when the combination of tenants are a Coffee Shop and Convenience Food or Restaurant use. The practical difficulties requiring the Parking Variance result from the supply required by the Zoning Ordinance verses the practical parking need given the offsetting nature of peak parking demand times for the various businesses. A coffee use's peak hours of demand are in the morning, while midday and evening hours are peak demand times for the convenience food or restaurant uses. The Institute of Transportation Engineers (ITE), referenced in the traffic study provided by the applicant, confirms the compatible uses of a coffee shop and fast-casual restaurants peak parking demands are met by the amount of parking provided in the proposal. In fact, according to ITE, the proposed number of spaces would even accommodate the peak demand for coffee and fast casual restaurant if the peaks were at the same time, which they are not. ITE notes the peak morning parking requirements for a 2,200 square foot coffee shop is 23 parking spaces. The peak parking generation of a 2,300 square feet fast casual restaurant at midday is 23 parking spaces. If the peaks are summed, the peak parking demand for the entire building would be 46 spaces. The total spaces provided on the site are 47 stalls.

7. Variances shall be granted for earth sheltered construction as defined in Minnesota Statutes, section 216C.06, subdivision 14, when in harmony with this Ordinance.

Response: Not applicable.

8. The City Council shall not permit as a variance any use that is not allowed under this Ordinance for property in the zoning district where the affected person's land is located, except the City Council may permit as a variance the temporary use of a one family dwelling as a two family dwelling.

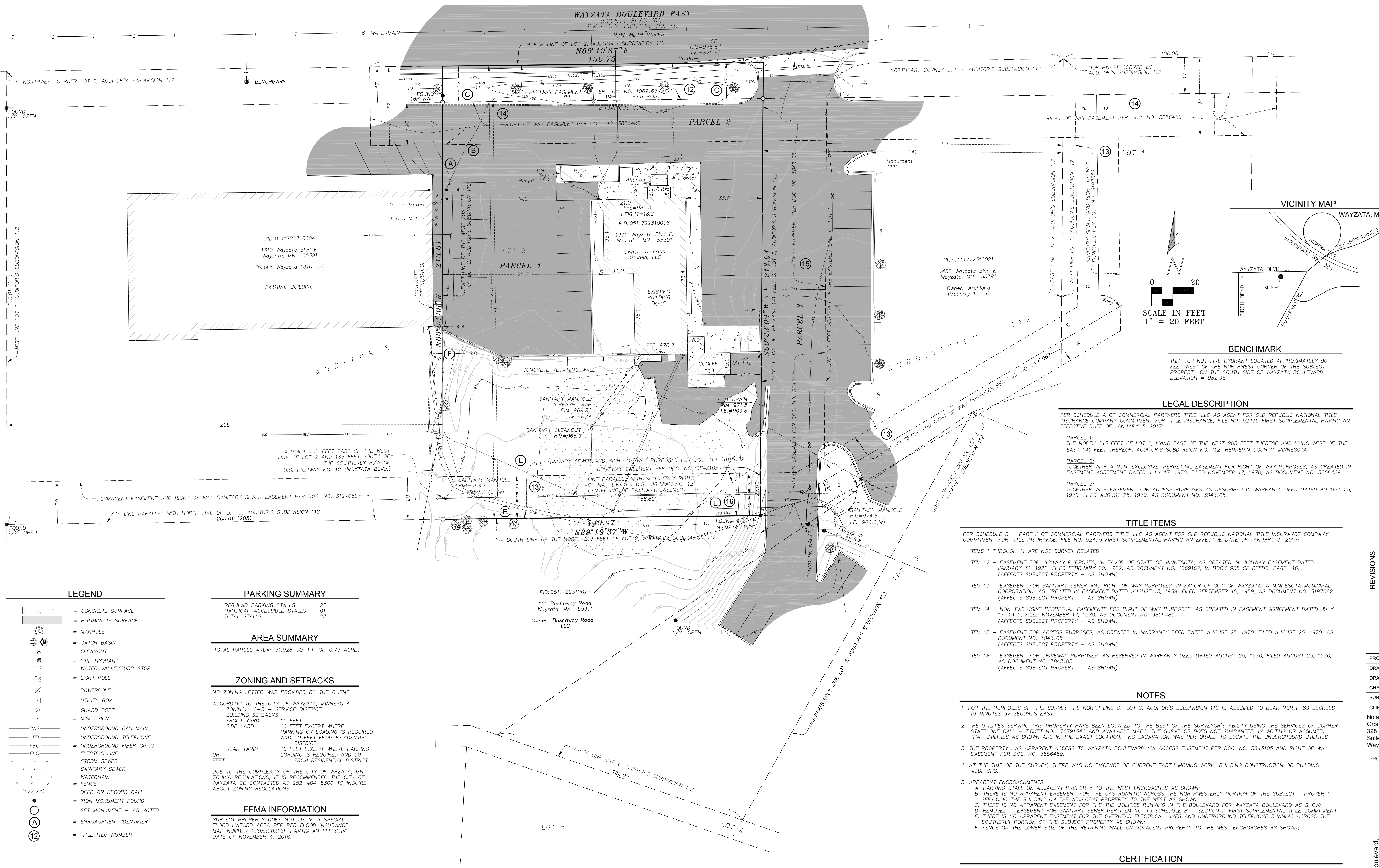
Response: The proposed uses for the Property are permitted within the C-3 Service District.

9. The City Council may impose conditions in the granting of variances. A condition must be directly related to and must bear a rough proportionality to the impact created by the variance.

Response: Not applicable

10. An application for a variance shall set forth reasons that the variance is justified under the criteria of this section in order to make reasonable use of the land, structure or building.

Response: The Applicant has provided (in the above responses) the reasons that the Parking Variance is justified under applicable criteria in order to make reasonable use of the land, structures, and buildings on the Property.



- LEGEND**
- CONCRETE SURFACE
 - BITUMINOUS SURFACE
 - MANHOLE
 - CATCH BASIN
 - CLEANOUT
 - FIRE HYDRANT
 - WATER VALVE/CURB STOP
 - LIGHT POLE
 - POWERPOLE
 - UTILITY BOX
 - GUARD POST
 - MISC. SIGN
 - UNDERGROUND GAS MAIN
 - UNDERGROUND TELEPHONE
 - UNDERGROUND FIBER OPTIC
 - ELECTRIC LINE
 - STORM SEWER
 - SANITARY SEWER
 - WATERMAIN
 - FENCE
 - DEED OR RECORD CALL
 - IRON MONUMENT FOUND
 - SET MONUMENT - AS NOTED
 - ENCROACHMENT IDENTIFIER
 - TITLE ITEM NUMBER

PARKING SUMMARY

REGULAR PARKING STALLS	22
HANDICAP ACCESSIBLE STALLS	01
TOTAL STALLS	23

AREA SUMMARY

TOTAL PARCEL AREA: 31,928 SQ. FT. OR 0.73 ACRES

ZONING AND SETBACKS

NO ZONING LETTER WAS PROVIDED BY THE CLIENT

ACCORDING TO THE CITY OF WAYZATA, MINNESOTA

ZONING: C-3 - SERVICE DISTRICT

BUILDING SETBACKS:

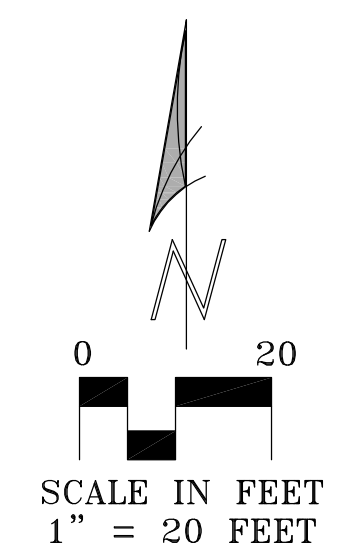
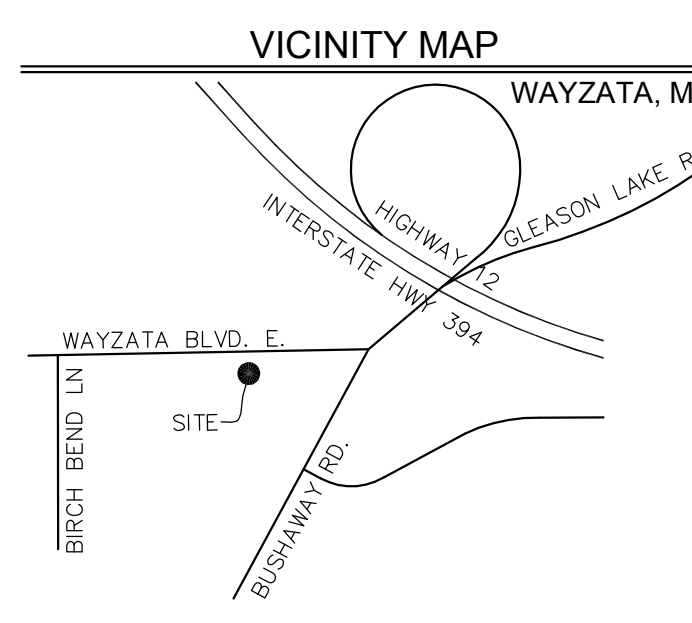
FRONT YARD: 10 FEET

SIDE YARD: 10 FEET EXCEPT WHERE PARKING OR LOADING IS REQUIRED AND 50 FEET FROM RESIDENTIAL DISTRICT

REAR YARD: 10 FEET EXCEPT WHERE PARKING OR LOADING IS REQUIRED AND 50 FEET FROM RESIDENTIAL DISTRICT

FEMA INFORMATION

SUBJECT PROPERTY DOES NOT LIE IN A SPECIAL FLOOD HAZARD AREA PER PER FLOOD INSURANCE MAP NUMBER 27053C0326F HAVING AN EFFECTIVE DATE OF NOVEMBER 4, 2016.



BENCHMARK

TNH-TOP NUT FIRE HYDRANT LOCATED APPROXIMATELY 90 FEET WEST OF THE NORTHWEST CORNER OF THE SUBJECT PROPERTY ON THE SOUTH SIDE OF WAYZATA BOULEVARD. ELEVATION = 982.95

LEGAL DESCRIPTION

PER SCHEDULE A OF COMMERCIAL PARTNERS TITLE, LLC AS AGENT FOR OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY COMMITMENT FOR TITLE INSURANCE, FILE NO. 52435 FIRST SUPPLEMENTAL HAVING AN EFFECTIVE DATE OF JANUARY 3, 2017:

PARCEL 1: THE NORTH 213 FEET OF LOT 2, LYING EAST OF THE WEST 205 FEET THEREOF AND LYING WEST OF THE EAST 141 FEET THEREOF, AUDITOR'S SUBDIVISION NO. 112. HENNEPIN COUNTY, MINNESOTA

PARCEL 2: TOGETHER WITH A NON-EXCLUSIVE, PERPETUAL EASEMENT FOR RIGHT OF WAY PURPOSES, AS CREATED IN EASEMENT AGREEMENT DATED JULY 17, 1970, FILED NOVEMBER 17, 1970, AS DOCUMENT NO. 3856489.

PARCEL 3: TOGETHER WITH EASEMENT FOR ACCESS PURPOSES AS DESCRIBED IN WARRANTY DEED DATED AUGUST 25, 1970, FILED AUGUST 25, 1970, AS DOCUMENT NO. 3843105.

TITLE ITEMS

PER SCHEDULE B - PART II OF COMMERCIAL PARTNERS TITLE, LLC AS AGENT FOR OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY COMMITMENT FOR TITLE INSURANCE, FILE NO. 52435 FIRST SUPPLEMENTAL HAVING AN EFFECTIVE DATE OF JANUARY 3, 2017:

ITEMS 1 THROUGH 11 ARE NOT SURVEY RELATED

ITEM 12 - EASEMENT FOR HIGHWAY PURPOSES, IN FAVOR OF STATE OF MINNESOTA, AS CREATED IN HIGHWAY EASEMENT DATED JANUARY 31, 1922, FILED FEBRUARY 20, 1922, AS DOCUMENT NO. 1069167, IN BOOK 938 OF DEEDS, PAGE 116. (AFFECTS SUBJECT PROPERTY - AS SHOWN)

ITEM 13 - EASEMENT FOR SANITARY SEWER AND RIGHT OF WAY PURPOSES, IN FAVOR OF CITY OF WAYZATA, A MINNESOTA MUNICIPAL CORPORATION, AS CREATED IN EASEMENT DATED AUGUST 13, 1959, FILED SEPTEMBER 15, 1959, AS DOCUMENT NO. 3197082. (AFFECTS SUBJECT PROPERTY - AS SHOWN)

ITEM 14 - NON-EXCLUSIVE PERPETUAL EASEMENTS FOR RIGHT OF WAY PURPOSES, AS CREATED IN EASEMENT AGREEMENT DATED JULY 17, 1970, FILED NOVEMBER 17, 1970, AS DOCUMENT NO. 3856489. (AFFECTS SUBJECT PROPERTY - AS SHOWN)

ITEM 15 - EASEMENT FOR ACCESS PURPOSES, AS CREATED IN WARRANTY DEED DATED AUGUST 25, 1970, FILED AUGUST 25, 1970, AS DOCUMENT NO. 3843105. (AFFECTS SUBJECT PROPERTY - AS SHOWN)

ITEM 16 - EASEMENT FOR DRIVEWAY PURPOSES, AS RESERVED IN WARRANTY DEED DATED AUGUST 25, 1970, FILED AUGUST 25, 1970, AS DOCUMENT NO. 3843105. (AFFECTS SUBJECT PROPERTY - AS SHOWN)

- NOTES**
- FOR THE PURPOSES OF THIS SURVEY THE NORTH LINE OF LOT 2, AUDITOR'S SUBDIVISION 112 IS ASSUMED TO BEAR NORTH 89 DEGREES 19 MINUTES 37 SECONDS EAST.
 - THE UTILITIES SERVING THIS PROPERTY HAVE BEEN LOCATED TO THE BEST OF THE SURVEYOR'S ABILITY USING THE SERVICES OF GOPHER STATE ONE CALL - TICKET NO. 170791342 AND AVAILABLE MAPS. THE SURVEYOR DOES NOT GUARANTEE, IN WRITING OR ASSUMED, THAT UTILITIES AS SHOWN ARE IN THE EXACT LOCATION. NO EXCAVATION WAS PERFORMED TO LOCATE THE UNDERGROUND UTILITIES.
 - THE PROPERTY HAS APPARENT ACCESS TO WAYZATA BOULEVARD VIA ACCESS EASEMENT PER DOC. NO. 3843105 AND RIGHT OF WAY EASEMENT PER DOC. NO. 3856489.
 - AT THE TIME OF THE SURVEY, THERE WAS NO EVIDENCE OF CURRENT EARTH MOVING WORK, BUILDING CONSTRUCTION OR BUILDING ADDITIONS.
 - APPARENT ENCROACHMENTS:
 - A. PARKING STALL ON ADJACENT PROPERTY TO THE WEST ENCLOSED AS SHOWN;
 - B. THERE IS NO APPARENT EASEMENT FOR THE GAS RUNNING ACROSS THE NORTH-WESTERLY PORTION OF THE SUBJECT PROPERTY SERVING THE BUILDING ON THE ADJACENT PROPERTY TO THE WEST AS SHOWN;
 - C. THERE IS NO APPARENT EASEMENT FOR THE TIE UTILITIES RUNNING IN THE BOULEVARD FOR WAYZATA BOULEVARD AS SHOWN;
 - D. REMOVED - EASEMENT FOR SANITARY SEWER PER ITEM NO. 13 SCHEDULE B - SECTION II-FIRST SUPPLEMENTAL TITLE COMMITMENT.
 - E. THERE IS NO APPARENT EASEMENT FOR THE OVERHEAD ELECTRICAL LINES AND UNDERGROUND TELEPHONE RUNNING ACROSS THE SOUTHERLY PORTION OF THE SUBJECT PROPERTY AS SHOWN;
 - F. FENCE ON THE LOWER SIDE OF THE RETAINING WALL ON ADJACENT PROPERTY TO THE WEST ENCLOSED AS SHOWN;

CERTIFICATION

TO NOLAN PROPERTIES GROUP, LLC, A MINNESOTA LIMITED LIABILITY COMPANY, 1330 WAYZATA, LLC AND TO COMMERCIAL PARTNERS TITLE, LLC AS AGENT FOR OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY:

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2016 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 1, 2, 3, 4, 5, 6(b), 7(c), 7(b), 7(c), 8, 9, 11 AND 13 OF TABLE A THEREOF. THE FIELDWORK WAS COMPLETED ON MARCH 21, 2017.

DATE OF SURVEY: MARCH 24, 2017, REVISED APRIL 4, 2017 AND APRIL 6, 2017

SCOTT C. TROSEN
MINNESOTA LAND SURVEYOR LICENSE NO. 47465

TROSEN
LAND SURVEYING

TROSEN LAND SURVEYING, LLC
236 LEWIS STREET SOUTH
SHAKOPEE, MN 55379
PH: 612-990-1182
WWW.TROSENLANDSURVEYING.COM

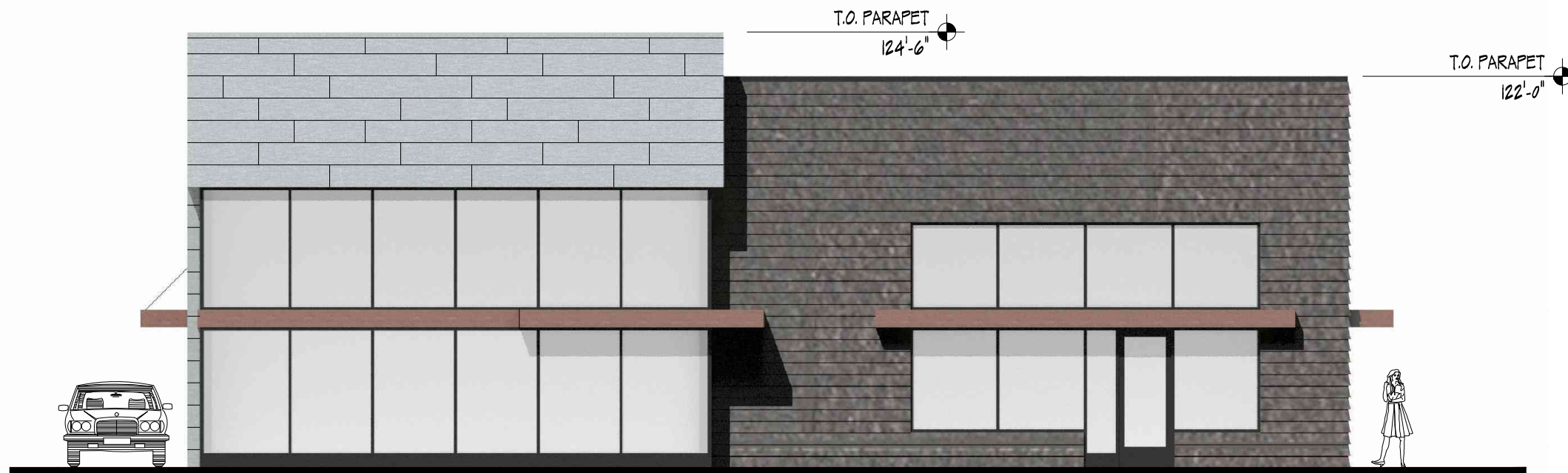
ALTA/NSPS
Land Title Survey

SHEET 1 OF 1

REVISIONS		REVISIONS DESCRIPTION	
REV. NO.	DATE	CLIENT COMMENTS, ENCROACHMENTS, GRAPHICS	FIRST SUPPLEMENTAL TITLE COMMITMENT
1	3/30/17	4/04/17	
2	4/06/17		
PROJECT: TLS1710			
DRAWING: 01a-TLS1710.dwg			
DRAWN BY: SCT			
CHECKED BY: SCT			
SUBMITTED: 03.24.17			
CLIENT:			
Nolan Properties Group, LLC 328 Barry Ave. S. Suite 300 Wayzata, MN 55391			
PROJECT:			
1330 Wayzata Boulevard, Wayzata, MN 55391 Being p/o Lot 2, Auditor's Subdivision 112, Hennepin County, Minnesota			



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



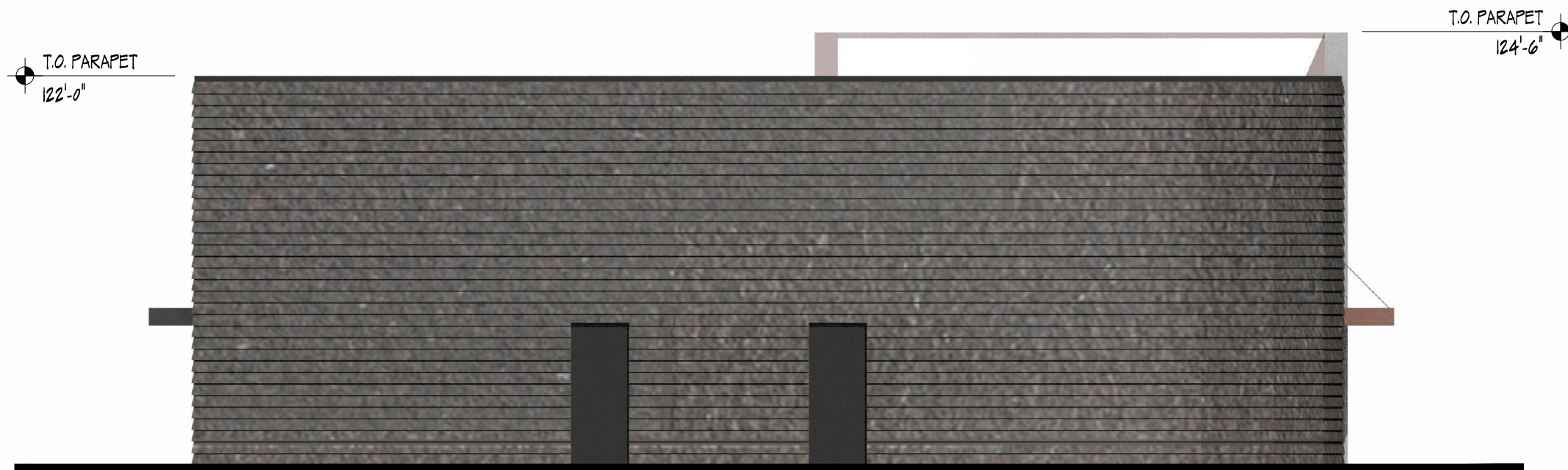
NORTH ELEVATION
1/8" = 1'-0"

1330 Wayzata Blvd
Redevelopment
4/24/2017

STUDIO **55** ARCHITECTS
Studio 55 Architects, LLP
10700 Highway 55, suite 275
Plymouth, MN 55441
763.544.8370
studio55architects.com



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

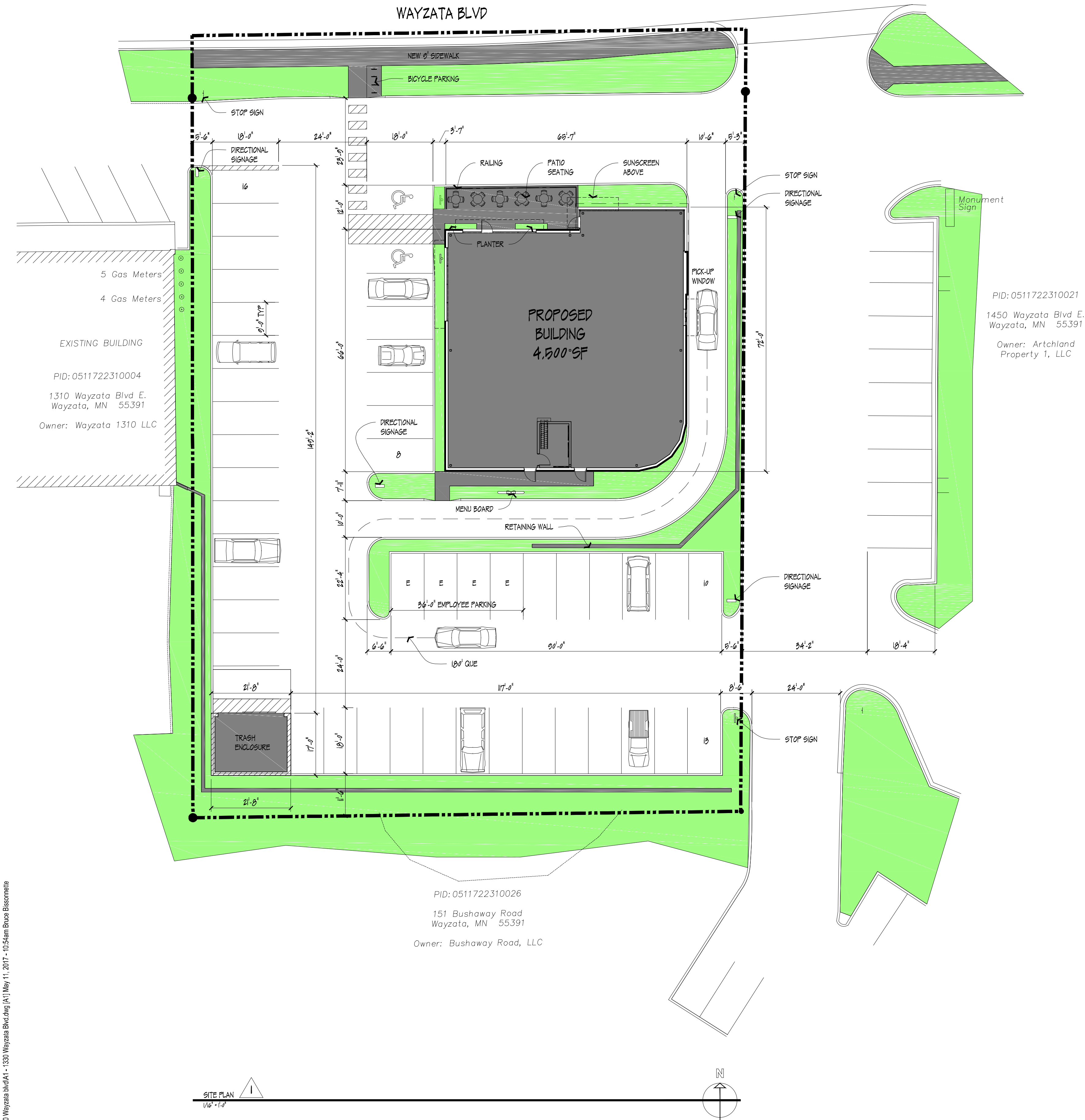


SOUTH ELEVATION
1/8" = 1'-0"

1330 Wayzata Blvd
Redevelopment
4/24/2017

STUDIO **55** ARCHITECTS
Studio 55 Architects, LLP
10700 Highway 55, suite 275
Plymouth, MN 55441
763.544.8370
studio55architects.com

X:\1330 Wayzata Blvd\A1 - 1330 Wayzata Blvd.dwg [A1] May 11, 2017 - 10:54am Bruce Bissonette



1330 WAYZATA REDEVELOPMENT

1330 WAYZATA BLVD E.

CLIENT

1330 WAYZATA, LLC
328 BARRY AVE. S.
SUITE 300
WAYZATA, MN 55391

ARCHITECT

STUDIO 55 ARCHITECTS
10700 HWY 55, SUITE 275
PLYMOUTH, MN 55441
763-544-8370

CIVIL ENGINEER

BKBM ENGINEERING
5030 BROOKLYN BLVD
MINNEAPOLIS, MN 55420
763-843-0421

DEVELOPER

NOLAN PROPERTIES GROUP, LLC
328 BARRY AVE. S.
SUITE 300
WAYZATA, MN 55391

LANDSCAPE ARCHITECT

CALYX DESIGN GROUP
370 SHELBY AVE, SUITE 301
ST. PAUL, MN 55102
651-788-0018

TRAFFIC ENGINEER

SPACK CONSULTING
5708 W 36TH ST.
ST. LOUIS PARK, MN
888-232-5512

ZONING DATA

- ZONING DISTRICT: C3
- BUILDING SETBACK:
 - FRONT: 10'
 - SIDE: 10' (50' ABUTTING RESIDENTAL)
 - REAR: 10' (50' ABUTTING RESIDENTAL)
- PARKING SETBACK:
 - FRONT: 10'
 - SIDE: 10'
 - REAR: 10'

AREA SUMMARY

- LOT AREA: .73 AC (31,928 S.F.)
- EXISTING:
 - IMPERVIOUS: .54 AC (INCL: EXISTING BLDG)
 - PERVIOUS: .19 AC
- PROPOSED:
 - IMPERVIOUS: .61 AC (INCL: PROPOSED 4,500 S.F. BLDG)
 - PERVIOUS: .12 AC

PARKING SUMMARY

- REQUIRED PARKING:
 - REFER TO SPACK CONSULTING TRAFFIC STUDY
- PROVIDED PARKING:
 - STANDARD STALLS: 45
 - ACCESSABLE STALLS: 2
- TOTAL: 47 STALLS
- REQUIRED / PROVIDED BICYCLE PARKING:
 - TOTAL: 4 STALLS



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Nolan Properties Group
328 Barry Avenue S. #300
Wayzata, Minnesota 55391

Commercial Site
1330 Wayzata Blvd E.
Wayzata, Minnesota 55391

No.	Date	Revision
	04/14/2017	CITY SUBMITTAL
1	05/09/2017	CITY RESUBMITTAL

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision, and that I am a duly Licensed Architect under the laws of the State of Minnesota.

Printed Name: _____

Signature: _____

Date: _____ License #: _____

SITE PLAN

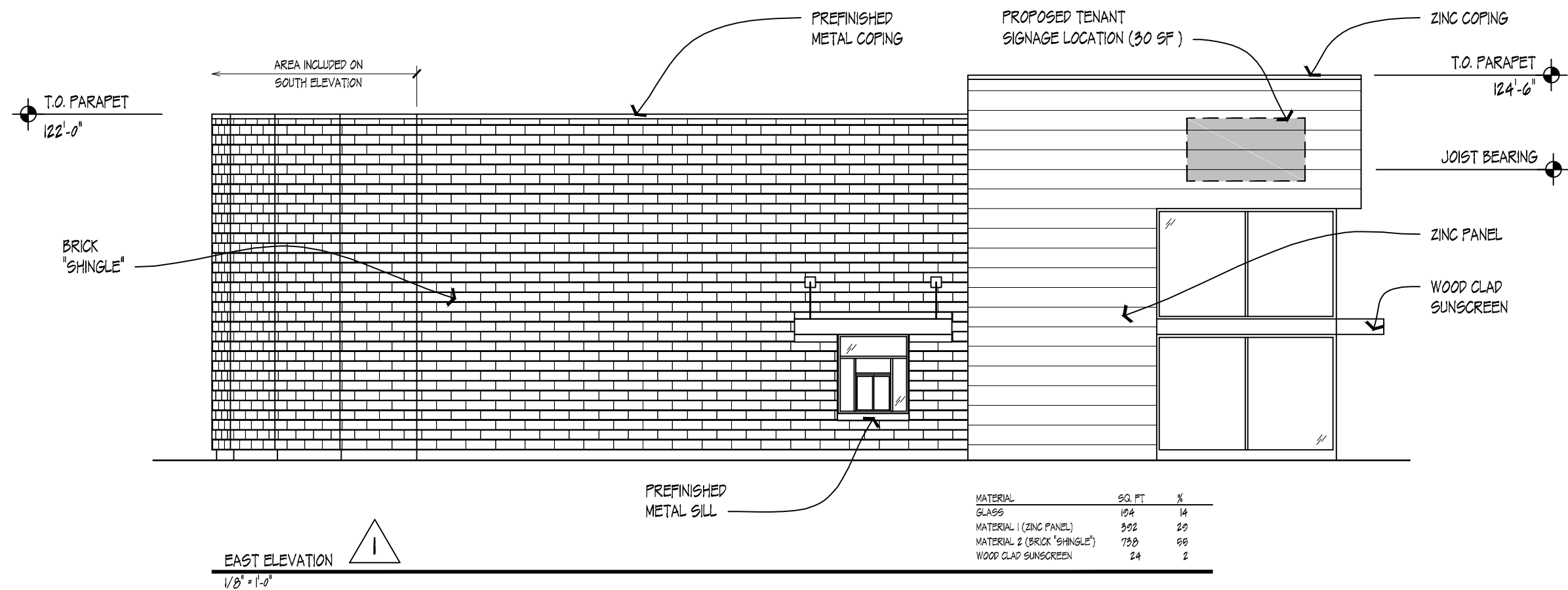
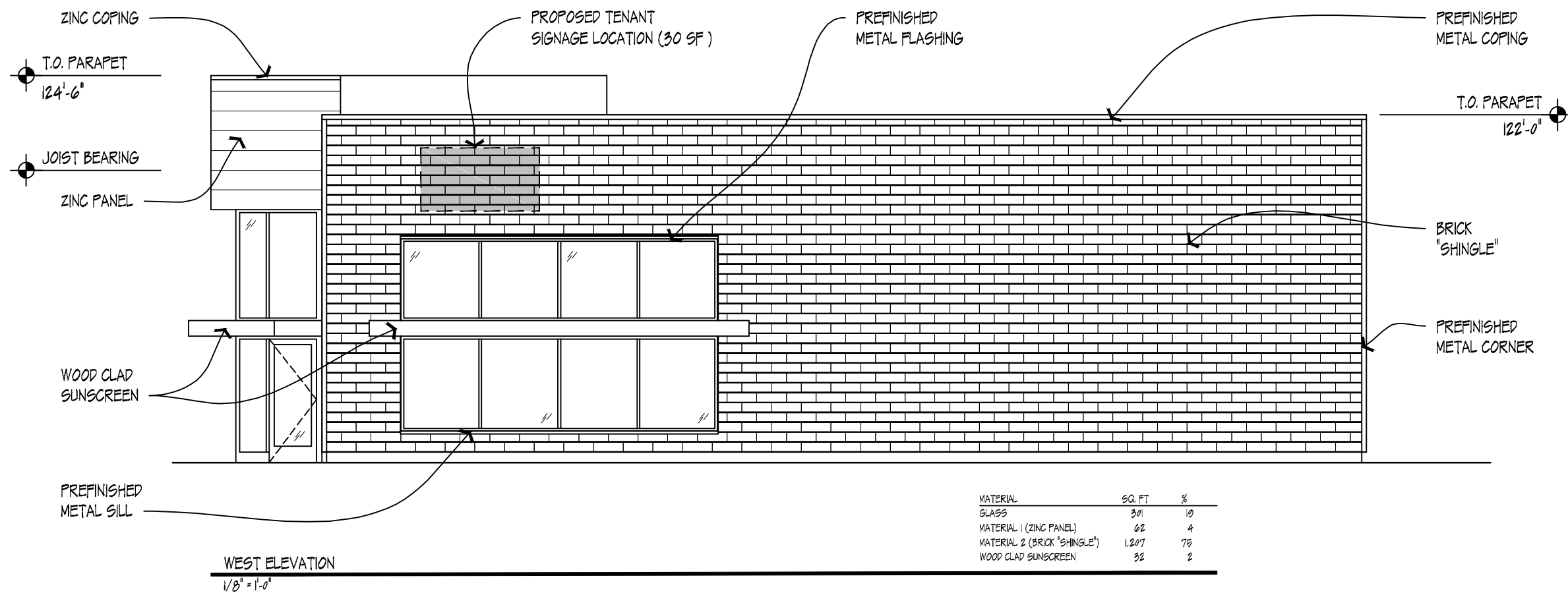
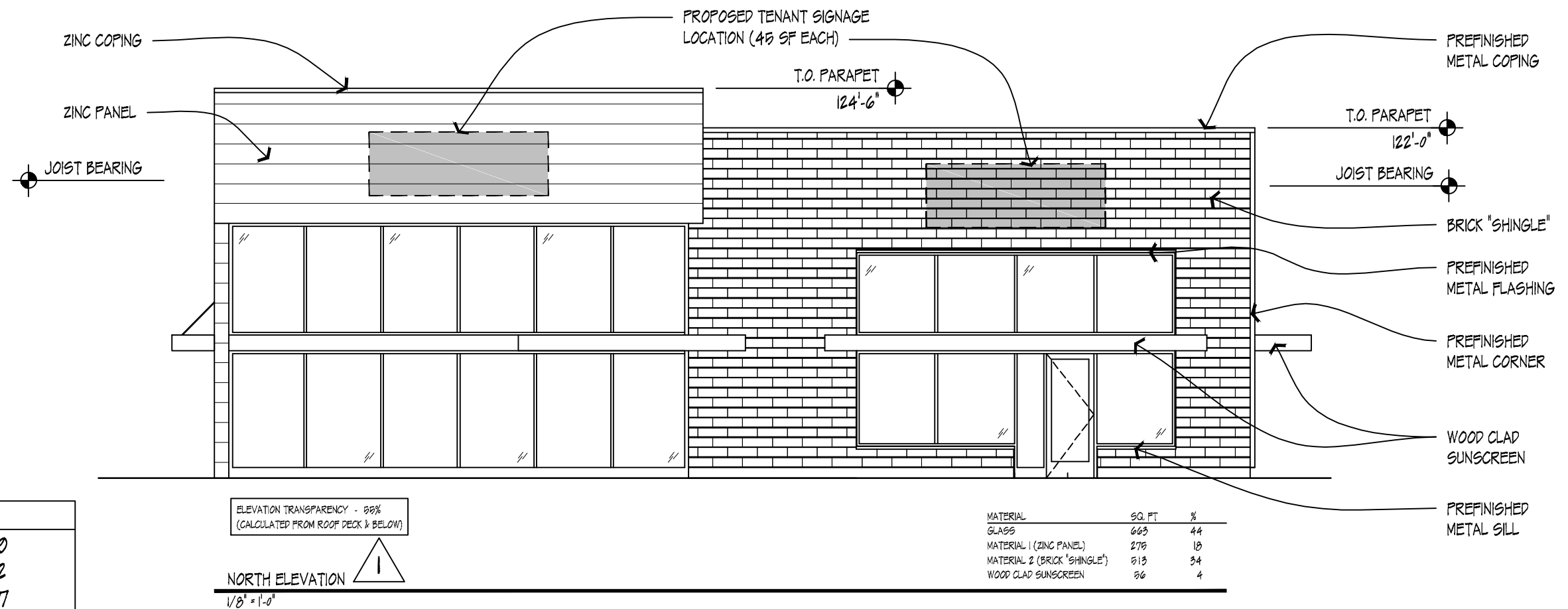
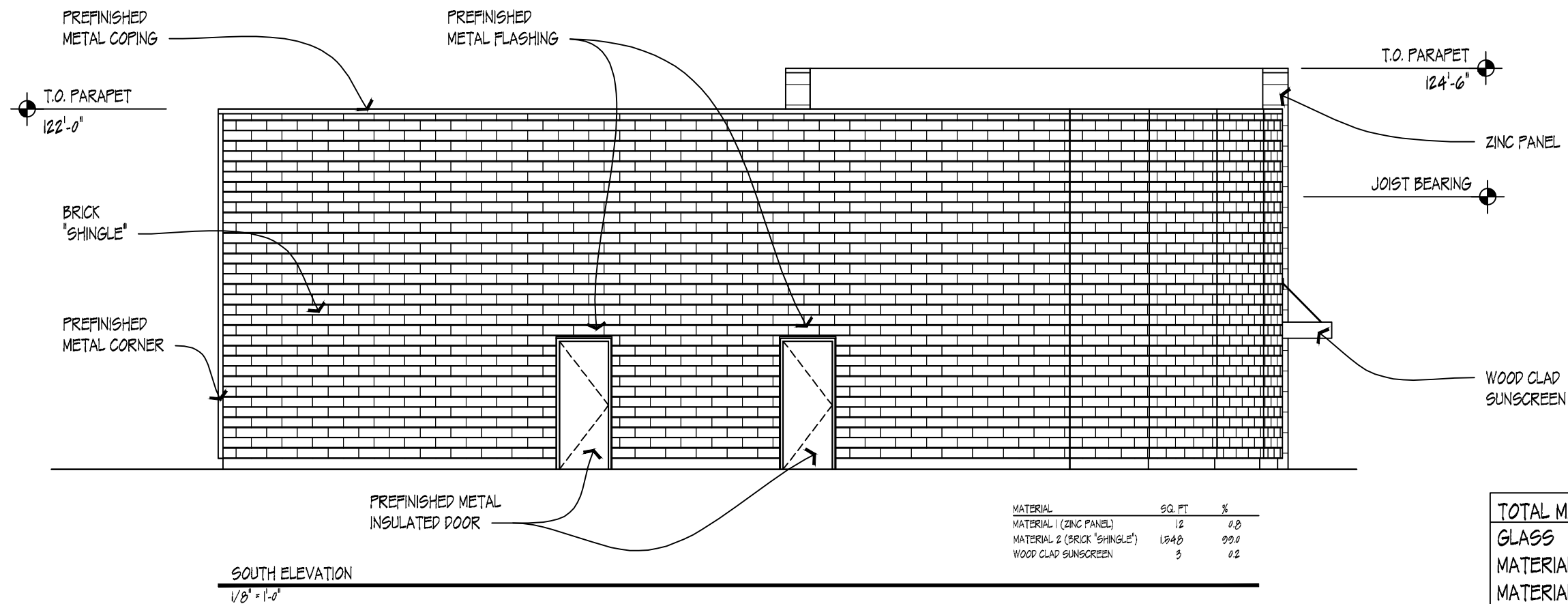
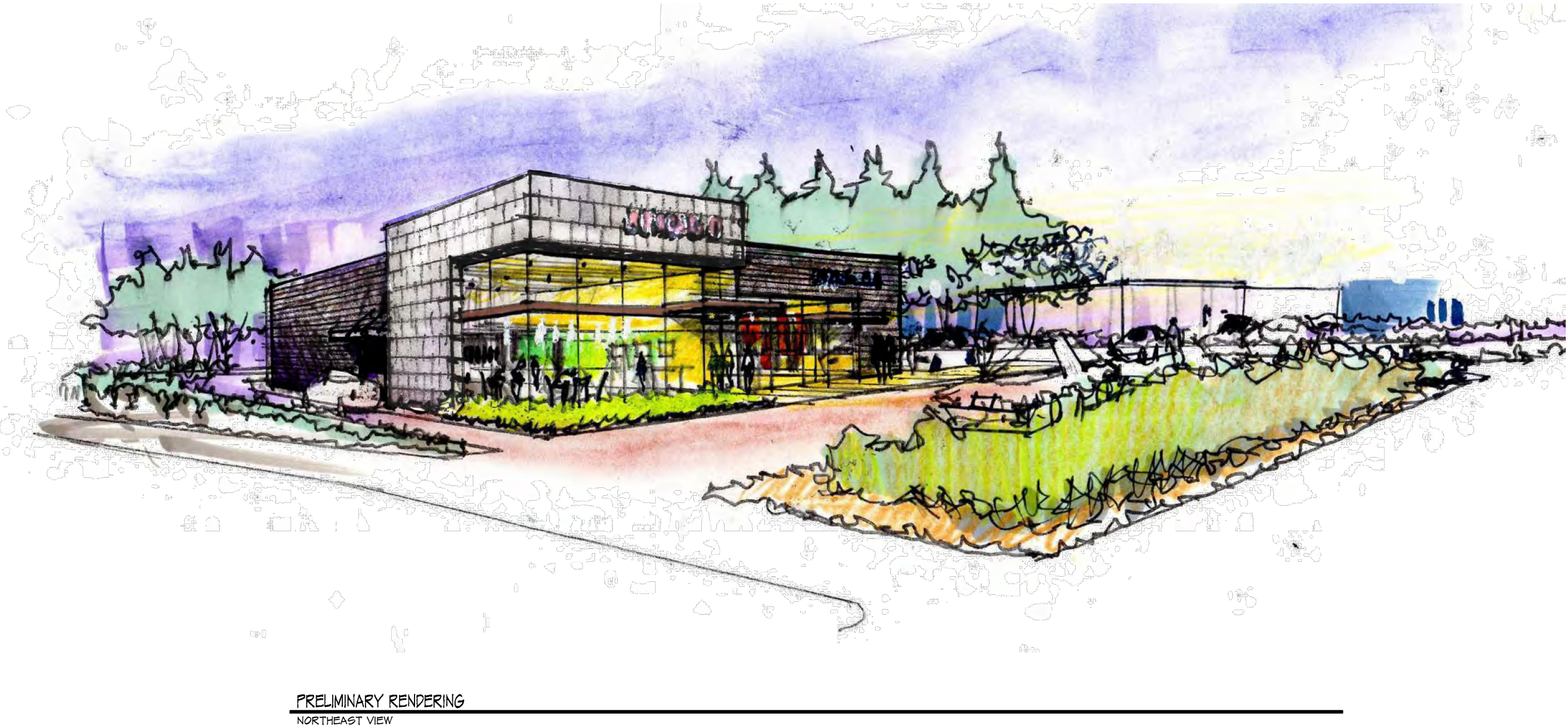
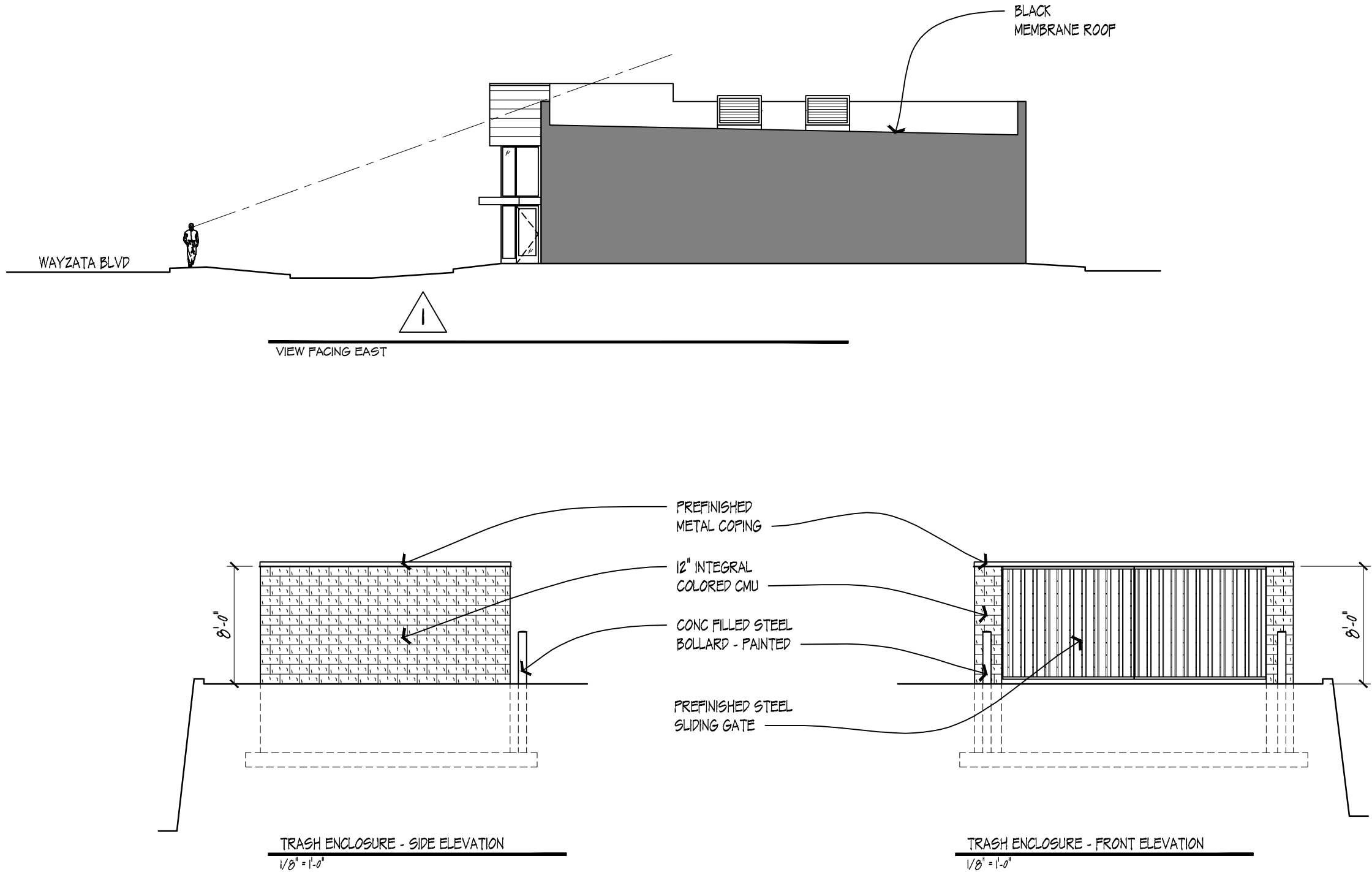
Project: _____
Date: _____
Drawn by: _____
Checked by: _____
Drawing Number: _____



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Printed Name: _____

Signature: _____

Date: _____ License #: _____

EXTERIOR ELEVATIONS

Project —

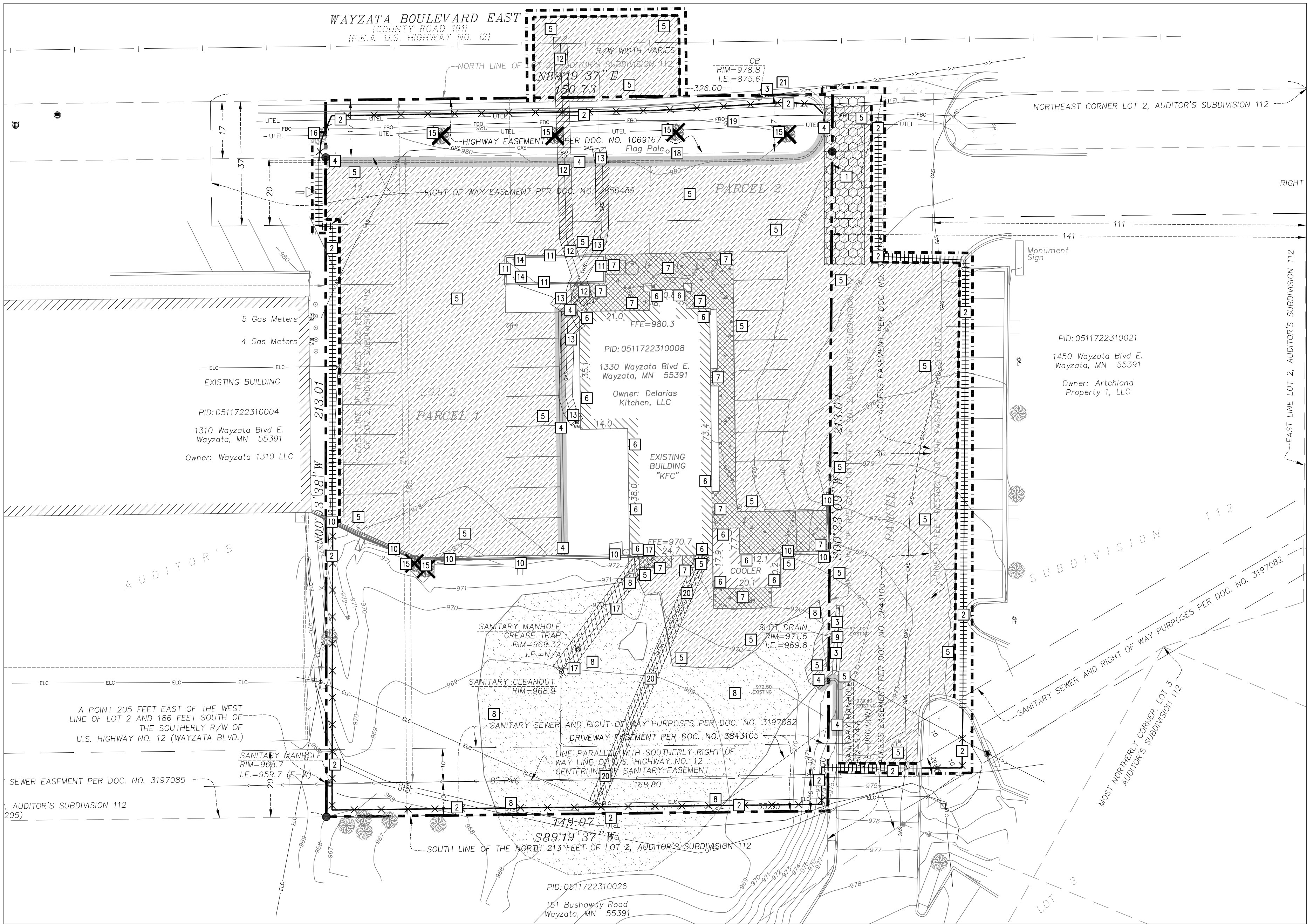
Date —

Drawn by

Checked by

Drawing Number

A-2



1 DEMOLITION AND EROSION CONTROL PLAN
C100 1" = 20'

PROPOSED PLAN SYMBOLS

CONSTRUCTION LIMITS: - - - - -

PERIMETER SEDIMENT CONTROL (SILT FENCE): X X

PERIMETER SEDIMENT CONTROL (BIO ROLL): =====

PROPERTY LINE: - - - - -

SAWCUT LINE (APPROX.): - - - - -

ROCK CONSTRUCTION ENTRANCE: [Pattern]

BITUMINOUS REMOVAL: [Pattern]

CONCRETE REMOVAL: [Pattern]

UTILITY REMOVAL: [Pattern]

CURB REMOVAL: [Pattern]

TREE REMOVAL: [Symbol]

ABBREVIATIONS

BLDG Building

BM Bench Mark

CB Catch Basin

CONC Concrete

DIP Ductile Iron Pipe

ELEV Elevation

EX Existing

FFE Finished Floor Elevation

INV Invert

MAX Maximum

MH Manhole

MIN Minimum

PVC Polyvinyl Chloride

RCP Reinforced Concrete Pipe

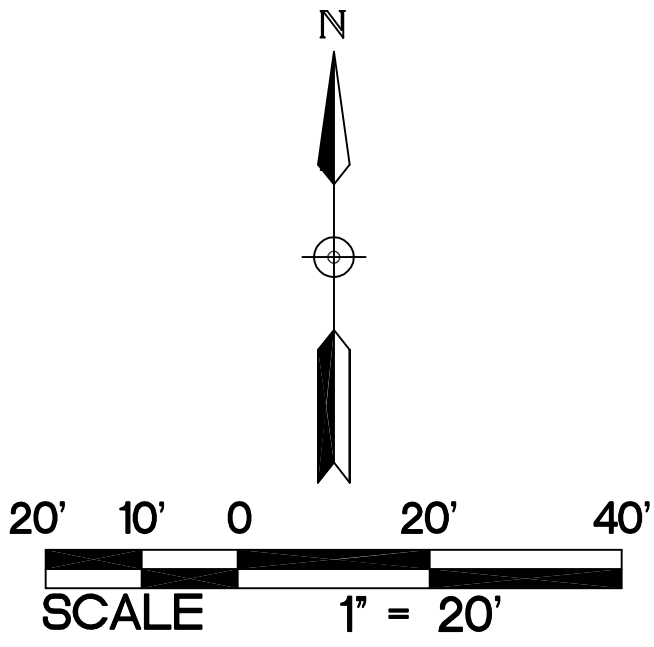
NOTE:

STORM SEWER INLETS NOT SHOWN ON PLAN MAY RECEIVE RUNOFF FROM CONSTRUCTION ACTIVITIES. INSTALL INLET SEDIMENT PROTECTION PER DETAIL 4/C500 ON ALL STORM INLETS THAT MAY RECEIVE RUNOFF.

- KEYED NOTES ARE DENOTED BY [Symbol] ON PLAN.
- INSTALL ROCK CONSTRUCTION ENTRANCE. REFER TO DETAIL 1/C500.
 - INSTALL PERIMETER SEDIMENT CONTROL. REFER TO DETAILS 2 & 3/C500.
 - INSTALL INLET SEDIMENT PROTECTION. REFER TO DETAIL 4/C500.
 - REMOVE CURB AND GUTTER IN ITS ENTIRETY TO THE EXTENT SHOWN. SAWCUT AND REMOVE AT NEAREST JOINT.
 - SAWCUT AND REMOVE BITUMINOUS PAVEMENT IN ITS ENTIRETY TO THE EXTENTS SHOWN.
 - REMOVE BUILDING IN ITS ENTIRETY, INCLUDING EXTERIOR STAIRS, OVERHANGS, FOOTINGS, AND SMALL UTILITIES. COORDINATE REMOVAL OF SMALL UTILITIES WITH LOCAL UTILITY COMPANIES.
 - REMOVE CONCRETE PAVEMENT IN ITS ENTIRETY TO THE EXTENTS SHOWN.
 - REMOVE GRAVEL SURFACE IN ITS ENTIRETY TO THE EXTENTS SHOWN.
 - REMOVE STORM SEWER SLOT DRAIN IN ITS ENTIRETY TO THE EXTENTS SHOWN. FOLLOW ALL CITY OF WAYZATA STANDARDS AND SPECIFICATIONS.
 - REMOVE RETAINING WALL IN ITS ENTIRETY. REMOVE FENCE/GATES ASSOCIATED WITH RETAINING WALL IN ITS ENTIRETY TO THE EXTENTS SHOWN.
 - REMOVE EXISTING WOOD PLANTER.
 - REMOVE WATER MAIN, HYDRANTS, AND VALVES IN THEIR ENTIRETY TO THE EXTENTS SHOWN. FOLLOW ALL CITY OF WAYZATA STANDARDS AND SPECIFICATIONS.
 - REMOVE GAS MAIN AND METER TO THE EXTENTS SHOWN. COORDINATE WITH LOCAL GAS COMPANY.
 - REMOVE SIGN IN ITS ENTIRETY.
 - REMOVE TREE IN ITS ENTIRETY INCLUDING STUMP.
 - EXISTING TREE TO REMAIN. PROTECT AT ALL TIMES.
 - REMOVE SANITARY SEWER AND MANHOLE TO THE EXTENTS SHOWN. CONTRACTOR SHALL REMOVE EXISTING GREASE TRAP. CONTACT OWNER FOR POSSIBLE SALVAGE AND REUSE.
 - REMOVE EXISTING FLAG POLE IN ITS ENTIRETY, INCLUDING BELOW GRADE FOUNDATIONS.
 - CONTRACTOR SHALL PROVIDE MEANS TO PROTECT EXISTING UTILITIES FROM DAMAGE DURING EXCAVATION FOR STORM SEWER INSTALLATION. IF CONTRACTOR DOES NOT ANTICIPATE UTILITIES CAN BE PROTECTED, CONTRACTOR SHALL INCLUDE REMOVAL AND REPLACEMENT OF UTILITIES IN BASE BID. NO ADDITIONAL COMPENSATION WILL BE PROVIDED FOR PROTECTION/REPLACEMENT OF UTILITIES. COORDINATE UTILITY WORK WITH UTILITY OWNER PRIOR TO START OF CONSTRUCTION. AT THE BEGINNING OF THE PROJECT CONTRACTOR SHALL POT-HOLE TO DETERMINE DEPTH OF EXISTING SMALL UTILITIES, INCLUDING FIBER OPTIC. CONTACT CIVIL ENGINEER IMMEDIATELY WITH FINDINGS.
 - REMOVE ELECTRICAL AND TELEPHONE LINE TO THE EXTENTS SHOWN. COORDINATE WITH UTILITY OWNER PRIOR TO START OF CONSTRUCTION.
 - CONTRACTOR SHALL PROVIDE PAVEMENT AND CURB REMOVALS AS NEEDED FOR PROPOSED STORM SEWER CONNECTION. REFER TO UTILITY PLANS.

- DEMOLITION AND REMOVAL NOTES:
- PRIOR TO START OF DEMOLITION, ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE INSTALLED BY THE CONTRACTOR AND INSPECTED BY THE CITY OF WAYZATA. ALL SILT FENCES SHALL BE INSTALLED AND INSPECTED PRIOR TO ANY CONSTRUCTION ACTIVITY. SILT FENCES SHALL BE INSTALLED ALONG THE CONTOUR.
 - IT IS THE CONTRACTOR'S RESPONSIBILITY TO ASCERTAIN THE LOCATION OF ALL EXISTING UTILITIES. THE CONTRACTOR SHALL VERIFY THE LOCATION, ELEVATION AND MARK ALL EXISTING UTILITIES 48 HOURS BEFORE CONSTRUCTION STARTS. THE ENGINEER, ARCHITECT OR OWNER DOES NOT GUARANTEE THAT ALL THE UTILITIES ARE MAPPED, OR IF MAPPED, ARE SHOWN CORRECTLY. CONTACT GOPHER STATE ONE CALL AT 651-454-0002 FOR FIELD LOCATING EXISTING UTILITIES. CONTACT UTILITY OWNER IF DAMAGE OCCURS DUE TO CONSTRUCTION.
 - THERE MAY BE MISCELLANEOUS ITEMS TO BE REMOVED THAT ARE NOT IDENTIFIED ON THESE PLANS. THE CONTRACTOR SHALL VISIT THE SITE AND REVIEW THE DOCUMENTS TO OBTAIN A CLEAR UNDERSTANDING OF THE INTENDED SCOPE OF WORK.
 - PRIOR TO START OF CONSTRUCTION, DISCONNECT ALL GAS AND ELECTRIC SERVICES. COORDINATE DISCONNECTION OF EACH UTILITY WITH THE UTILITY OWNER. REMOVE ALL GAS AND ELECTRIC LINES UNDER PROPOSED BUILDING FOOTPRINT.
 - ANY UTILITIES NOT INDICATED FOR REMOVAL OR ABANDONMENT, ARE TO BE PROTECTED AT ALL TIMES.
 - ALL EXISTING CURB AND GUTTER IS TO BE REMOVED WITHIN THE SCOPE OF THE PROJECT FROM THE SAW CUT LINES TO THE NEAREST JOINT.
 - THE BACKGROUND INFORMATION WAS PREPARED BY TROSEN LAND SURVEYING. (612) 990-1182.
 - ALL WORK IN THE PUBLIC RIGHT OF WAY IS TO BE COORDINATED WITH THE CITY OF WAYZATA. ROADWAY REPAIRS, BOULEVARD REPAIRS, AND TRAFFIC CONTROL ARE TO BE PER CITY OF WAYZATA STANDARDS AND SPECIFICATIONS.

- GENERAL NOTES:
- CONCRETE CURB AND GUTTER REMOVAL, PAVEMENT REMOVAL, AND UTILITY REMOVAL LIMITS ARE TO BE COORDINATED THE CITY OF WAYZATA AND UTILITY OWNER. REFER TO ALL CONSTRUCTION DOCUMENTS.
 - THE CONTRACTOR SHALL DEVELOP AND IMPLEMENT A TRAFFIC CONTROL PLAN WHILE WORKING WITHIN THE RIGHT-OF-WAY. THE TRAFFIC CONTROL PLAN SHALL BE APPROVED BY THE CITY ENGINEERING DEPARTMENT PRIOR TO STREET ENCROACHMENT.
 - CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING AND REVIEW ALL CONSTRUCTION DOCUMENTS AND GEOTECHNICAL REPORTS. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR ITEMS THAT SHOULD HAVE BEEN ANTICIPATED BY PERFORMING THE ABOVE.
 - THE ROCK CONSTRUCTION ENTRANCE INDICATED ON THE PLAN IS SHOWN IN AN APPROXIMATE LOCATION. PRIOR TO START OF CONSTRUCTION, THE CONTRACTOR IS TO COORDINATE WITH THE CITY OF WAYZATA FOR THE EXACT ROCK CONSTRUCTION ENTRANCE LOCATION.



NOLAN
Properties Group

Nolan Properties Group
328 Barry Ave S
#300
Wayzata, Minnesota
55391
(952) 767-2500

BKBM
ENGINEERS

5930 Brooklyn Boulevard
Minneapolis, MN 55429-2518
Phone: (763) 843-0420
Fax: (763) 843-0421
www.bkbm.com

Commercial Site
1330 Wayzata Blvd E
Wayzata, Minnesota
55391

NOT FOR CONSTRUCTION

No.	Date	Revision
-	-	-

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the state of Minnesota.

Signature: _____
Printed Name: **Keith A. Matte**

Date: **4/14/2017** License #: **46674**

No.	Revisions	
	Description	Date

Project #: **17232**
Date: **4/14/2017**
Drawn by: **SJH, BAM**
Checked by: **KAB**
Drawing Number

C100

Demolition and Erosion Control Plan



BKBM
ENGINEERS

**Commercial
Site**
1330 Wayzata Blvd E
Wayzata, Minnesota
55391

**NOT FOR
CONSTRUCTION**

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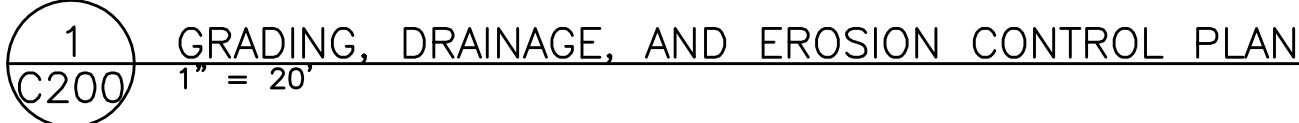
Date: 4/14/2017 License #: 46674

Project #:	17232
Date:	4/14/2017
Drawn by:	SJH, BAM
Checked by:	KAB
Drawing Number	

Drawing Number

C200

Grading, Drainage and Erosion Control Plan



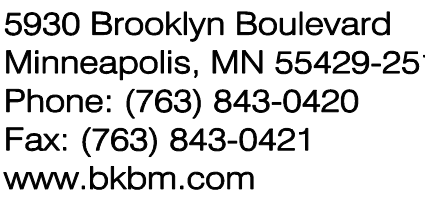
1. THE CONTRACTOR SHALL VISIT THE SITE, REVIEW ALL CONSTRUCTION DOCUMENTS AND FIELD VERIFY THE EXISTING CONDITIONS PRIOR TO BIDDING. NO ADDITIONAL COMPENSATION WILL BE GIVEN FOR WORK THAT COULD HAVE BEEN IDENTIFIED BY A SITE VISIT OR CONSTRUCTION DOCUMENT REVIEW.
2. THE BACKGROUND INFORMATION WAS PREPARED BY TROSEN LAND SURVEYING. CONTACT AT (612) 990-1182.
3. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ASCERTAIN THE LOCATION OF ALL EXISTING UTILITIES. THE CONTRACTOR SHALL VERIFY THE LOCATION, ELEVATION AND MARK ALL EXISTING UTILITIES 48 HOURS BEFORE CONSTRUCTION STARTS. THE ENGINEER, ARCHITECT OR OWNER DOES NOT GUARANTEE THAT ALL THE UTILITIES ARE MAPPED, OR IF MAPPED, ARE SHOWN CORRECTLY. CONTACT GOPHER ONE AT 651-454-0002 FOR FIELD LOCATING EXISTING UTILITIES. CONTACT UTILITY OWNER IF DAMAGE OCCURS DUE TO CONSTRUCTION.
4. PROTECT ALL EXISTING STRUCTURES AND UTILITIES WHICH ARE NOT SCHEDULED FOR REMOVAL.
5. NOTIFY CITY BUILDING INSPECTOR BEFORE TRENCHING AND EXCAVATION WORK COMMENCES. THE CONTRACTOR SHALL OBTAIN ALL APPLICABLE PERMITS PRIOR TO START OF CONSTRUCTION.
6. ALL SPOT ELEVATIONS SHOWN AS 95.20 FOR EXAMPLE, ARE TO BE UNDERSTOOD TO MEAN 995.20.
7. ALL SPOT ELEVATIONS ALONG THE CURB-LINE INDICATE THE ELEVATION OF THE GUTTER, UNLESS NOTED OTHERWISE.
8. NO LANDSCAPED SLOPES ARE TO EXCEED 3:1 (3 FEET HORIZONTAL TO 1 FOOT VERTICAL) UNLESS NOTED OTHERWISE.
9. ACCESSIBLE PARKING AREAS SHALL NOT HAVE SLOPES IN ANY DIRECTION THAT EXCEED 2%.
10. PROVIDE POSITIVE DRAINAGE FROM BUILDINGS AT ALL TIMES.
11. UPON COMPLETION OF THE GRADING AND UTILITY WORK, THE CONTRACTOR SHALL CERTIFY THAT ALL GRADING AND UTILITY WORK WAS PERFORMED IN ACCORDANCE WITH THE APPROVED GRADING AND UTILITY PERMITS. AN AS-BUILT GRADING AND UTILITY PLAN SHALL BE SUBMITTED TO THE CITY FOR REVIEW AND DISTRIBUTION.
12. PRIOR TO ISSUANCE OF BUILDING PERMITS, ALL NECESSARY EROSION CONTROL DEVICES MUST BE IN PLACE AND FUNCTIONING. THE CITY (AND WATERSHED) WILL INSPECT THE SITE TO DETERMINE ITS SUITABILITY FOR BUILDING ACTIVITIES. IF THE PUBLIC UTILITIES HAVE NOT BEEN INSTALLED AT THIS POINT, IT MAY BE NECESSARY TO WITHHOLD BUILDING PERMITS FOR VARIOUS LOTS TO ALLOW THE CONTRACTOR ADEQUATE SPACE TO PERFORM THIS WORK.
13. ALL DEBRIS CREATED IN THE PROCESS OF CLEARING AND GRADING THE SITE SHALL BE REMOVED FROM THE SITE. THIS INCLUDES TREES AND SHRUBS. UNDER NO CIRCUMSTANCES SHALL THIS TYPE OF MATERIAL BE BURIED OR BURNED ON THE SITE.
14. THE INTENT IS TO STRIP AND SALVAGED TOPSOIL FOR POTENTIAL RE-SPREADING ON THE SITE, IF APPROVED BY THE LANDSCAPE ARCHITECT AND/OR SPECIFICATIONS. PRIOR TO FINAL STABILIZATION, SIX INCHES OF TOPSOIL OR ORGANIC MATERIAL IS TO BE SPREAD AND INCORPORATED IN THE UNDERLYING SOILS. SIX INCHES OF TOPSOIL - AFTER COMPACTION - SHALL BE RE-SPREAD PRIOR TO SEEDING AND MULCHING. EXCESS TOPSOIL MAY BE REMOVED FROM THE SITE PROVIDING THERE IS ADEQUATE TOPSOIL REMAINING TO PROPERLY FINISH THE SITE AS NOTED ABOVE. THE TOPSOIL STRIPPING, STOCKPILING AND RE-SPREADING SHALL BE DONE IN ACCORDANCE TO, AND NOTED ON, THE APPROVED GRADING PLAN AND SPECIFICATIONS. THE CONTRACTOR SHALL REFER TO THE LANDSCAPE DRAWINGS AND SPECIFICATIONS FOR ANY SPECIAL TOPSOIL OR PLANTING REQUIREMENTS.
15. ALL GRADING OPERATIONS SHALL BE CONDUCTED IN A MANNER TO MINIMIZE THE POTENTIAL FOR SITE EROSION. EROSION CONTROL MEASURES SHALL BE INSTALLED TO PREVENT SEDIMENT FROM RUNNING OFF ONTO ADJACENT PROPERTIES. ANY DAMAGE TO ADJACENT PROPERTIES MUST BE CORRECTED AND RESTORED AS SOON AS PERMISSION IS GRANTED FROM THE ADJACENT PROPERTY OWNER(S).
16. IF CONSTRUCTION OF THE SITE WORK PROCEEDS THROUGH THE WINTER MONTHS, ANY DISTURBED AREAS OUTSIDE THE BUILDING FOOTPRINTS ARE TO BE MINIMALLY STABILIZED PRIOR TO MARCH 1, AS FOLLOWS: AREAS PLANNED TO RECEIVE PAVEMENTS ARE TO HAVE CLASS 5 BASE INSTALLED; ALL OTHER DISTURBED AREAS ARE TO BE SEED, STRAW MULCH PLACED, AND DISC-ANCHORED.
17. WINTER MULCHING:
 - 17.A. SNOW MULCHING SHALL BE DEFINED AS MULCH MATERIAL SPREAD OVER THE TOP OF SNOW SO THAT THE MULCH MELTS THROUGH THE SNOW AND STICKS TO THE EXPOSED SOILS.
 - 17.B. FROZEN GROUND MULCHING SHALL BE DEFINED AS MULCH MATERIAL SPREAD OVER FROZEN GROUND. MULCH MATERIALS THAT DO NOT REQUIRE DISC-ANCHORING INTO THE SOIL MAY BE PLACED WITHOUT MODIFICATION. MULCH MATERIALS THAT REQUIRE DISC-ANCHORING MAYBE ANCHORED WITH HYDRAULIC SOIL STABILIZERS OR MAY BE FROZEN TO THE SOIL BY APPLYING WATER, AT A RATE OF 2000 GALLONS PER ACRE, OVER THE MULCH AS A SUBSTITUTION FOR DISC-ANCHORING.
18. RETAINING WALLS AND APPROPRIATE SAFETY FENCING ALONG THE TOP OF WALLS ARE TO BE DESIGNED AND CERTIFIED BY A REGISTERED PROFESSIONAL ENGINEER. SUBMIT RETAINING WALL SHOP DRAWINGS TO PROJECT TEAM PRIOR TO CONSTRUCTION.
19. THE CONTRACTOR SHALL LIMIT THE DISTURBED AREA AS MUCH AS POSSIBLE.

NOTE:
STORM SEWER INLETS NOT SHOWN ON PLAN MAY
RECEIVE RUNOFF FROM CONSTRUCTION ACTIVITIES.
INSTALL INLET SEDIMENT PROTECTION PER DETAIL
4/C500 ON ALL STORM INLETS THAT MAY RECEIVE
RUNOFF.

APPROXIMATE DISTURBED AREA IS
0.79 ACRES

1. ALL TOP AND BOTTOM ELEVATIONS CORRESPOND TO THE RESPECTIVE GRADE ELEVATIONS ON EACH SIDE OF THE WALL.
2. THE BOTTOM ELEVATION IS THE ELEVATION OF THE LOW-GRADE SIDE OF THE WALL, NOT THE TOP ELEVATION OF THE BURIED BLOCK COURSE.
3. ALL RETAINING WALLS SHALL HAVE PROTECTIVE FENCING AT THE TOP WHERE THE VERTICAL HEIGHT EXCEEDS 30 INCHES. REFER TO ARCHITECTURAL AND LANDSCAPE PLANS AND SPECIFICATIONS.
4. MODULAR BLOCK RETAINING WALL SHALL BE DESIGNED AND CERCIED BY A LICENSED PROFESSIONAL CIVIL ENGINEER. DESIGN CALCULATIONS AND SHOP DRAWINGS SHALL BE SUBMITTED TO THE OWNER AND ARCHITECT PRIOR TO CONSTRUCTION OF WALL.

1. ALL EROSION CONTROL FACILITIES SHALL BE INSTALLED PRIOR TO ANY SITE GRADING OPERATIONS. THE CITY ENGINEERING DEPARTMENT AND WATERSHED DISTRICT MUST BE NOTIFIED UPON COMPLETION OF THE INSTALLATION OF THE REQUIRED EROSION CONTROL FACILITIES AND PRIOR TO ANY GRADING OPERATION BEING COMMENCED. THE CONTRACTOR IS RESPONSIBLE TO SCHEDULE A PRE-CONSTRUCTION GRADING MEETING ON-SITE WITH THE CITY AND WATERSHED DISTRICT. IF DAMAGED OR REMOVED DURING CONSTRUCTION, ALL EROSION CONTROL FACILITIES SHALL BE RESTORED AND IN PLACE AT THE END OF EACH DAY.
2. ANY EROSION CONTROL FACILITIES DEEMED NECESSARY BY THE CITY OR WATERSHED; BEFORE, DURING OR AFTER THE GRADING ACTIVITIES, SHALL BE INSTALLED AT THEIR REQUEST.
3. NO DEVIATIONS SHALL BE MADE FROM THE ELEVATIONS SHOWN ON THE APPROVED GRADING PLAN, WITHOUT PRIOR APPROVAL FROM THE CITY.
4. FOR SITES GREATER THAN 1.0 ACRE, AS REQUIRED BY THE MPCA PERMIT REQUIREMENTS, THE PERMIT APPLICANT MUST KEEP AN EROSION CONTROL INSPECTION LOG. INSPECTION MUST BE MADE ONCE EVERY SEVEN DAYS AND WITHIN 24 HOURS AFTER EVERY RAIN EVENT. THE INSPECTION RECORD MUST BE MADE AVAILABLE TO THE CITY AND WATERSHED WITHIN 24 HOURS OF REQUEST.
5. FLOWS FROM DIVERSION CHANNELS OR PIPES (TEMPORARY OR PERMANENT) SHALL BE ROUTED TO SEDIMENTATION BASINS OR APPROPRIATE ENERGY DISSIPATORS TO PREVENT TRANSPORT OF SEDIMENT TO OUTFLOW TO LATERAL CONVEYORS AND TO PREVENT EROSION AND SEDIMENTATION WHEN RUNOFF FLOWS INTO THESE CONVEYORS.
6. SITE ACCESS ROADS SHALL BE GRADED OR OTHERWISE PROTECTED WITH SILT FENCES, DIVERSION CHANNELS, OR DIKES AND PIPES TO PREVENT SEDIMENT FROM EXITING THE SITE VIA THE ACCESS ROADS. SITE-ACCESS ROADS/DRIVEWAYS SHALL BE SURFACED WITH CRUSHED ROCK WHERE THEY ADJOIN EXISTING PAVED ROADWAYS.
7. SOILS TRACKED FROM THE SITE BY MOTOR VEHICLES OR EQUIPMENT SHALL BE CLEANED DAILY FROM PAVED ROADWAY SURFACES, OR MORE FREQUENTLY IF REQUESTED BY CITY OR WATERSHED, THROUGHOUT THE DURATION OF CONSTRUCTION.
8. DUST CONTROL MEASURES SHALL BE PERFORMED PERIODICALLY WHEN CONDITIONS REQUIRE AND/OR AS DIRECTED BY THE CITY OR WATERSHED.
9. ALL EROSION CONTROL MEASURES SHALL BE USED AND MAINTAINED FOR THE DURATION OF SITE CONSTRUCTION. IF CONSTRUCTION OPERATIONS OR NATURAL EVENTS DAMAGE OR INTERFERE WITH THESE EROSION CONTROL MEASURES, THEY SHALL BE RESTORED TO SERVE THEIR INTENDED FUNCTION AT THE END OF EACH DAY OR AS SOON AS FIELD CONDITIONS ALLOW ACCESS.
10. ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE RESTORED AS SOON AS POSSIBLE. ANY AREAS WHICH HAVE BEEN FINISHED GRADED OR AREAS THAT HAVE BEEN DISTURBED AND FOR WHICH GRADING OR SITE BUILDING CONSTRUCTION OPERATIONS ARE NOT ACTIVELY UNDERWAY SHALL BE SEEDED AND MULCHED AS SET FORTH IN THE FOLLOWING PARAGRAPHS WITHIN 7 DAYS:
 - A. ALL SEEDED AREAS SHALL BE EITHER MULCHED AND DISC-ANCHORED OR COVERED BY FIBROUS BLANKETS TO PROTECT SEEDS AND LIMIT EROSION. TEMPORARY STRAW MULCH SHALL BE DISC-ANCHORED AND APPLIED AT A UNIFORM RATE OF NOT LESS THAN TWO TONS PER ACRE AND NOT LESS THAN 80% COVERAGE.
 - B. IF THE GRADED AREA IS ANTICIPATED TO BE RE-DISTURBED/DEVELOPED WITHIN SIX MONTHS, PROVIDE A TEMPORARY VEGETATIVE COVER CONSISTING OF MINNESOTA DEPARTMENT OF TRANSPORTATION (MNDOT) SEED MIXTURE 21-111 (OATS), OR 21-112 (WINTER WHEAT), AT A RATE OF 100 POUNDS PER ACRE.
 - C. IF GRADED AREA WILL NOT BE DEVELOPED FOR A PERIOD GREATER THAN SIX MONTHS, PROVIDE A SEMI-PERMANENT VEGETATIVE COVER OF SEED MIXTURE MNDOT 22-112 AT A RATE OF 40 POUNDS PER ACRE.
 - D. GRADING BONDS OR THE EQUIVALENT SECURITIES SHALL BE RETAINED UNTIL TURF HAS GERMINATED AND SURVIVED A 60-DAY GROWING PERIOD.
 - E. ALL AREAS THAT WILL NOT BE MOWED OR MAINTAINED AS PART OF THE ULTIMATE DESIGN WILL BE PERMANENTLY RESTORED USING SEED MIXTURE MNDOT 25-141 AT A RATE OF 59 POUNDS PER ACRE.
 - F. UNLESS SPECIFIED ELSEWHERE WITHIN THE CONSTRUCTION DOCUMENTS (I.E. ARCHITECTURAL SITE PLAN OR LANDSCAPE PLAN), PERMANENT TURF RESTORATION SHALL CONSIST OF MN/DOT SEED MIXTURE 25-131 (COMMERCIAL TURF GRASS) AT A RATE OF 220 POUNDS PER ACRE.
 - G. WHENEVER OTHER EROSION AND SEDIMENT CONTROL PRACTICES ARE INADEQUATE, TEMPORARY ON-SITE SEDIMENT BASINS THAT CONFORM TO THE CRITERIA FOR ON-SITE DETENTION BASINS SHALL BE PROVIDED.
 - H. MULCH, HYDROMULCH, AND TACKIFIERS MAY NOT BE USED FOR STABILIZATION IN SWALES OR DRAINAGE DITCHES.
11. RUNOFF SHALL BE PREVENTED FROM ENTERING ALL STORM SEWER CATCH BASINS PROVIDING THEY ARE NOT NEEDED DURING CONSTRUCTION. WHERE STORM SEWER CATCH BASINS ARE NECESSARY FOR SITE DRAINAGE DURING CONSTRUCTION, A SILT FENCE OR SEDIMENT PROTECTION DEVICES AS DETAILED SHALL BE INSTALLED AND MAINTAINED AROUND ALL CATCH BASINS UNTIL THE TRIBUTARY AREA TO THE CATCH BASIN IS RESTORED.
12. GRADING ACTIVITIES PROPOSED TO BEGIN AFTER OCTOBER 15 WILL REQUIRE AN APPROVED PHASING SCHEDULE. THE AREA OF LAND THAT THE CITY WILL ALLOW TO BE DISTURBED AT THIS TIME OF YEAR WILL BE SEVERELY LIMITED. THE CITY WILL ALSO REQUIRE ADDITIONAL EROSION CONTROL DEVICES, I.E., TEMPORARY SEDIMENT BASINS, DORMANT SEEDING AND HIGH RATES OF APPLICATION OF BOTH SEED AND MULCH.
13. TO MINIMIZE EROSION, ALL 3:1 SLOPES SHALL BE COVERED WITH A MN/DOT 3885 CATEGORY 2 STRAW EROSION CONTROL BLANKETS OR STAKED SOD.
14. ACCUMULATION OF ALL SEDIMENT OCCURRING IN STORM SEWERS AND DITCHES SHALL BE REMOVED PRIOR TO, DURING AND AFTER COMPLETION OF GRADING ACTIVITIES.
15. EROSION CONTROL ITEMS AND DEVICES SHALL BE REMOVED ONLY AFTER THE AREA HAS RECEIVED FINAL STABILIZATION OR AS DIRECTED BY THE CITY AND/OR WATERSHED.



1330 Wayzata Blvd
Wayzata, Minnesota
55391

No.	Date	Revision
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[illegible]

I hereby certify that this plan,
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report was prepared by me or under
direct supervision and that I am a c
Licensed Professional Engineer un
the laws of the state of Minnesota.

Signature: _____

Printed Name: Keith A. Matte

Date: 4/14/2017 License #: 46

[illegible]

Project #: 17232

Date: 4/14/2017

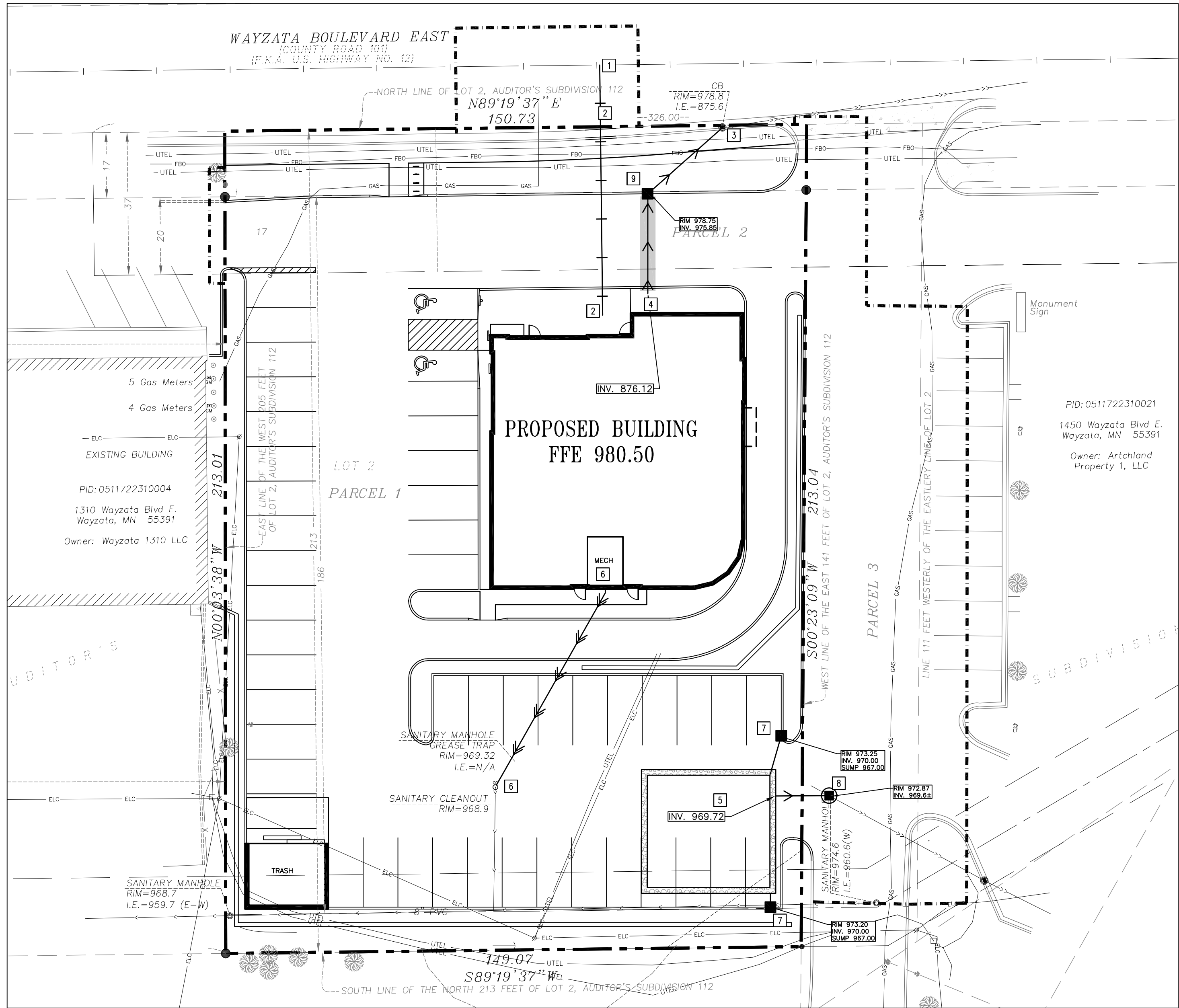
Drawn by: SJH, BAM

Checked by: KAB

Drawing Number

C300

Utility Plan



1
C300

UTILITY PLAN
1" = 20'

PROPOSED PLAN SYMBOLS	
CONSTRUCTION LIMITS	
PROPERTY LINE	
SAWCUT LINE (APPROX.)	
SANITARY SEWER	
WATER PIPE	
DRAIN TILE	
STORM SEWER	
RETAINING WALL	
GATE VALVE	
CATCH BASIN	
MANHOLE	
PIPE INSULATION	
SEWER INVERT ELEVATION	

<u>ABBREVIATIONS</u>	
BLDG	Building
BM	Bench Mark
CB	Catch Basin
CONC	Concrete
DIP	Ductile Iron Pipe
ELEV	Elevation
EX	Existing
FFE	Finished Floor Elevation
HDFPE	High Density Polyethylene
INV	Invert
MAX	Maximum
MH	Manhole
MIN	Minimum
PVC	Polyvinyl Chloride
RPC	Reinforced Concrete Pipe
RCD	Roof Drain

KEYED NOTES

KEYED NOTES ARE DENOTED BY NO ON PLAN.

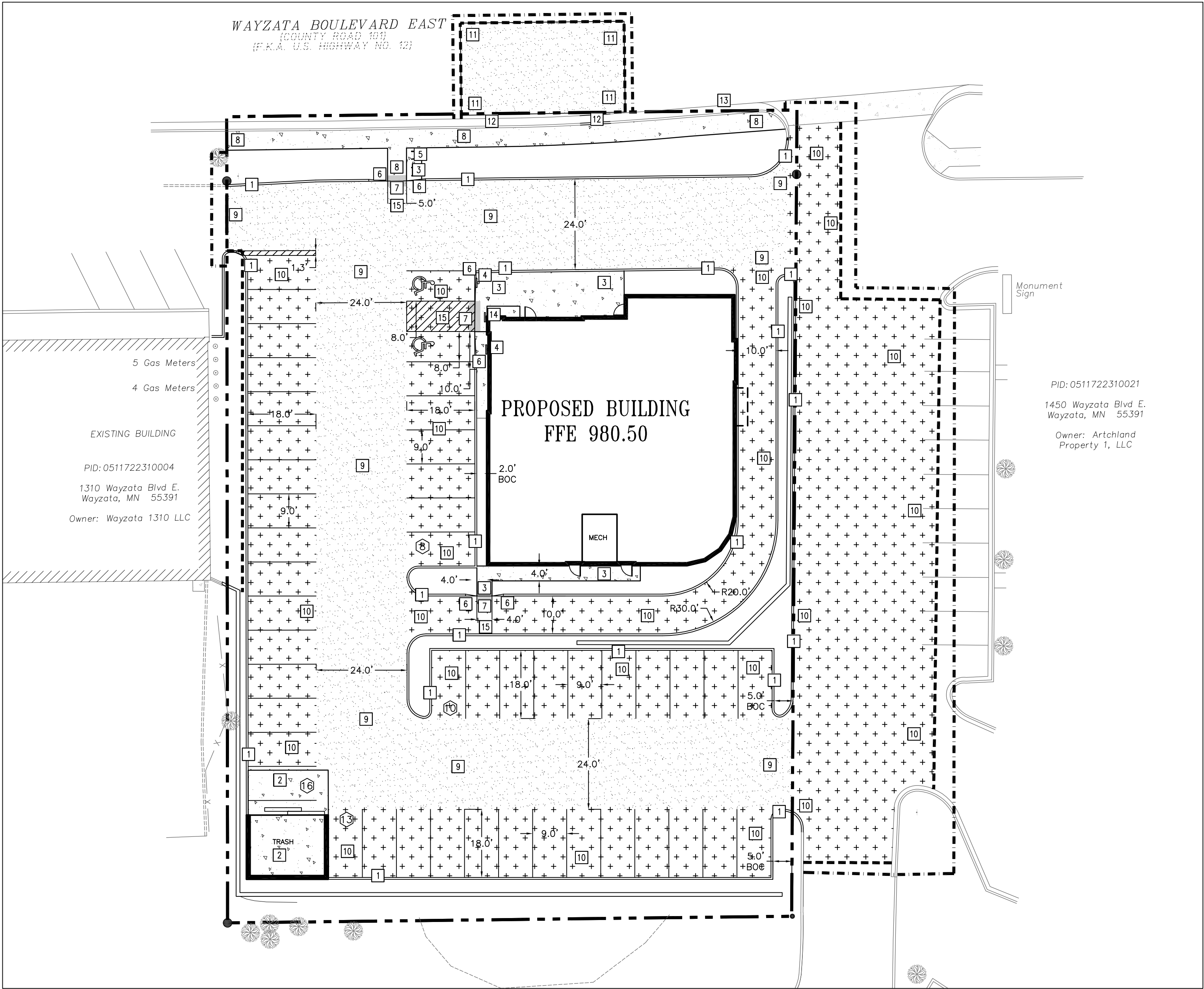
1. INSTALL 6-INCH WET TAP. REFER TO DETAIL 1/C501. FOLLOW ALL CITY OF WAYZATA STANDARDS AND SPECIFICATIONS.
2. STUB 6-INCH COMBINED DOMESTIC WATER AND FIRE SERVICE TO WITHIN 5- FEET OF PROPOSED BUILDING. FOLLOW ALL CITY OF WAYZATA STANDARDS AND SPECIFICATIONS.
3. CORE DRILL EXISTING CATCH BASIN AT INVERT 873.60 FOR NEW 12-INCH PVC PIPE CONNECTION.
4. INSTALL 12-INCH PVC ROOF DRAIN TO WITHIN 5- FEET OF BUILDING AT INVERT ELEVATION 976.25. INSULATE PIPE PER DETAIL 6/C501. COORDINATE LOCATION AND INVERT WITH MECHANICAL ENGINEER PRIOR TO CONSTRUCTION.
5. INSTALL UNDERGROUND INFILTRATION SYSTEM PER DETAIL 5/C501. SYSTEM SHALL HAVE A TOTAL VOLUME OF 2,515 CUBIC FEET. THE ROCK INVERT OF THE SYSTEM SHALL BE 967.92.
6. INSTALL 58- FEET OF 4-INCH SCH 40 PIPE AT 2.0% TO INVERT OF 973.50. STUB TO WITHIN 5- FEET OF PROPOSED BUILDING. CONTRACTOR SHALL DETERMINE SIZE AND INVERT OF EXISTING CLEANOUT. COORDINATE LOCATION AND INVERT OF EXISTING CLEANOUT WITH MECHANICAL CONTRACTOR PRIOR TO THE START OF CONSTRUCTION.
7. INSTALL SUMP MANHOLE/CATCH BASIN PER DETAIL 3/C501.
8. CONSTRUCT NEW CATCH BASIN OVER EXISTING STORM SEWER. SEWER INVERT IS APPROXIMATE. EXISTING STORM SEWER MATERIAL AND SIZE IS UNKNOWN AT THIS TIME. REFER TO DETAIL 2/C502.
9. INSTALL CATCH BASIN. REFER TO DETAIL 2/C502.

UTILITY NOTES FOR WORK IN PUBLIC RIGHT-OF-WAY:

1. FOLLOW ALL CITY OF WAYZATA AND HENNEPIN COUNTY STANDARDS AND SPECIFICATIONS.
2. PRIOR TO CONSTRUCTION, CONTRACTORS ARE TO COORDINATE ALL WORK WITHIN RIGHT OF WAY AND OBTAIN ALL APPLICABLE PERMITS.

UTILITY NOTES:

1. COORDINATE SERVICE CONNECTION LOCATIONS AT THE BUILDING WITH THE MECHANICAL CONTRACTOR PRIOR TO CONSTRUCTION. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR UNCOORDINATED WORK.
2. COORDINATE UTILITY INSTALLATION WITH STRUCTURAL PRIOR TO START OF CONSTRUCTION. UTILITIES SHALL NOT BE INSTALLED WITHIN THE ZONE OF INFLUENCE OF ANY STRUCTURAL ELEMENTS. NO ADDITIONAL COMPENSATION WILL BE PROVIDED FOR UNCOORDINATED WORK.
3. ALL SEWER SERVICE CONNECTIONS WITH LESS THEN 5 FEET OF COVER OVER THE TOP OF PIPE SHALL BE INSULATED. INSULATION SHALL BE INSTALLED FROM THE CONNECTION OF THE SERVICE AT THE BUILDING TO THE POINT WHICH THE SERVICE ATTAINS 5 FEET OF COVER. CONTRACTOR SHALL OBTAIN WRITTEN PERMISSION FROM ARCHITECT OR ENGINEER PRIOR TO INSTALLATION OF INSULATION.
4. PROTECT ALL EXISTING STRUCTURES AND UTILITIES WHICH ARE NOT SCHEDULED TO BE REMOVED.
5. ALL SEWER AND WATER CROSSINGS SHALL HAVE A MINIMUM VERTICAL SEPARATION OF 1.5 FEET AND HORIZONTAL SEPARATION OF 10 FEET. FOLLOW ALL HEALTH DEPARTMENT AND CITY OF WAYZATA AND HENNEPIN COUNTY STANDARDS.
6. ALL WATER MAINS SHALL BE DUCTILE IRON PIPE, CLASS 52, UNLESS NOTED OTHERWISE.
7. ALL WATER MAIN SHALL HAVE A MINIMUM DEPTH OF COVER OF 7.5 FEET OVER TOP OF WATER MAIN.
8. PROVIDE THRUST BLOCKING ON ALL WATER MAIN PER CITY OF WAYZATA. PROVIDE MECHANICAL JOINT RESTRAINTS ON ALL BENDS, VALVES, TEES, PLUGS AND HYDRANT LEADS.
9. SANITARY SEWER PIPING SHALL BE SDR 35 PVC UNLESS NOTED OTHERWISE.
10. SEWER SUMP PIPING SHALL BE SDR 26 POLY VINYL CHLORIDE (PVC), UNLESS NOTED OTHERWISE. ALL STORM SEWER PIPE THAT IS EXTENDED TO THE BUILDING FOR ROOF DRAIN SERVICES IS TO BE SCHEDULE 40 PVC. PVC PIPE AND FITTINGS SHALL CONFORM TO THE REQUIREMENTS OF ASTM D3034 (ASTM D2665 FOR SCHEDULE 40).
11. CONTRACTORS SHALL COORDINATE ALL WORK WITH GAS, ELECTRIC, TELEVISION AND TELEPHONE COMPANIES PRIOR TO START OF CONSTRUCTION.
12. ALL PORTIONS OF THE STORM SEWER SYSTEM LOCATED WITHIN 10'-FEET OF THE BUILDING OR WATER SERVICE LINE SHALL BE TESTED IN ACCORDANCE WITH MN PLUMBING CODE.
13. ALL JOINTS AND CONNECTIONS IN THE STORM SEWER SYSTEM SHALL BE GAS TIGHT OR WATER TIGHT IN ACCORDANCE TO MN PLUMBING CODE. APPROVED RESILIENT RUBBER JOINTS MUST BE USED TO MAKE WATER TIGHT CONNECTIONS TO MANHOLES, CATCH BASINS, AND OTHER STRUCTURES. GROUT RINGS ARE AN ACCEPTABLE ALTERNATIVE. CEMENT MORTAR JOINTS ARE PERMITTED ONLY FOR REPAIRS AND CONNECTIONS OF EXISTING LINES CONSTRUCTED WITH SUCH JOINTS.



1
C400

PAVING AND GEOMETRIC PLAN

1" = 20'

PROPOSED PLAN SYMBOLS	
CONSTRUCTION LIMITS	---
PROPERTY LINE	----
SAWCUT LINE (APPROX.)	- - - -
HEAVY-DUTY BITUMINOUS PAVEMENT	+++++
LIGHT-DUTY BITUMINOUS PAVEMENT	++ ++
CONCRETE PAVEMENT/SIDEWALK	----
FLAT CURB AND GUTTER	=====
ACCESSIBLE PARKING SYMBOL	♿
SIGN	Ⓢ
PARKING STALL COUNT	Ⓢ

ABBREVIATIONS	
BLDG	Building
BM	Bench Mark
BOC	Back of Curb
CONC	Concrete
ELEV	Elevation
EX	Existing
FFE	Finished Floor Elevation
LFE	Lower Floor Elevation
MAX	Maximum
MIN	Minimum
R	Radius
TYP.	Typical
MN MUTCD	Minnesota Manual on Uniform Traffic Control Devices

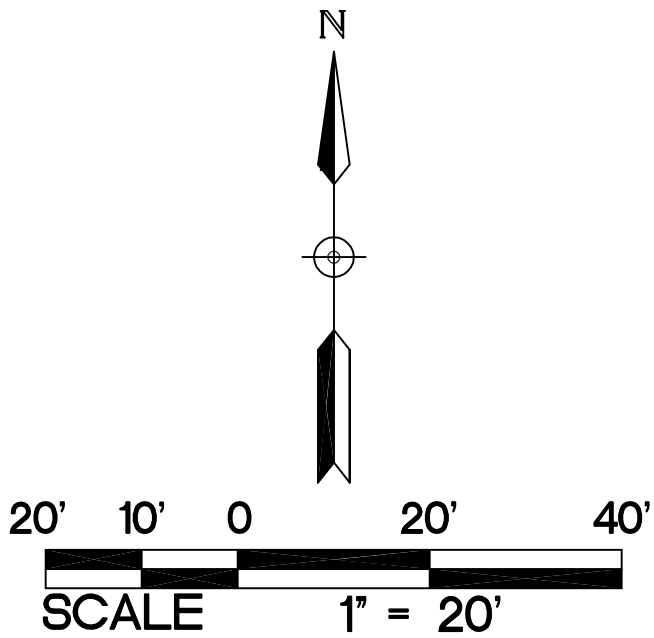
KEYED NOTES

KEYED NOTES ARE DENOTED BY [NO] ON PLAN.

1. INSTALL B612 CONCRETE CURB AND GUTTER. REFER TO DETAIL 7/C500.
2. INSTALL CONCRETE DUMPSTER PAD. REFER TO DETAIL 9/C500.
3. INSTALL CONCRETE WALK. REFER TO DETAIL 6/C500. REFER TO LANDSCAPE PLANS FOR CONCRETE FINISH AND JOINTING.
4. INSTALL ACCESSIBLE PARKING SIGN. REFER TO DETAIL 10/C500.
5. INSTALL BIKE RACK. REFER TO ARCHITECTURAL/LANDSCAPE PLANS.
6. INSTALL NOSEDOWN CURB SECTION. REFER TO DETAIL 11/C500.
7. INSTALL FLAT CURB SECTION. REFER TO DETAIL 12/C500.
8. INSTALL PUBLIC WALK. FOLLOW ALL CITY OF WAYZATA AND/OR HENNEPIN COUNTY STANDARDS AND SPECIFICATIONS.
9. INSTALL HEAVY-DUTY BITUMINOUS PAVEMENT. REFER TO DETAIL 13/C500.
10. INSTALL LIGHT-DUTY BITUMINOUS PAVEMENT. REFER TO DETAIL 8/C500.
11. INSTALL BITUMINOUS PAVEMENT. MATCH EXISTING PAVEMENT SECTION IN STREET AND FOLLOW CITY OF WAYZATA STANDARDS AND SPECIFICATIONS.
12. INSTALL CONCRETE CURB AND GUTTER. MATCH EXISTING CURB AND GUTTER AND FOLLOW CITY OF WAYZATA STANDARDS AND SPECIFICATIONS.
13. REPLACE EXISTING CURB AND GUTTER AND PAVEMENT THAT WAS REMOVED FOR STORM SEWER INSTALLATION.
14. INSTALL "NO PARKING" SIGN PER DETAIL 10/C500.
15. INSTALL TRUNCATED DOME PER DETAIL 1/502.

PAVING NOTES:

1. ALL DIMENSIONS ARE TO FACE OF CURB UNLESS NOTED OTHERWISE.
2. ALL CURB AND GUTTER IS TO BE B612 CONCRETE CURB AND GUTTER UNLESS NOTED OTHERWISE.
3. NO SIDEWALK IS TO HAVE MORE THAN A 2% CROSS SLOPE OR MORE THAN A 5% LONGITUDINAL SLOPE.
4. REFER TO ARCHITECTURAL PLANS FOR PROPOSED BUILDING LAYOUT.
5. FOLLOW ALL CITY OF WAYZATA AND HENNEPIN COUNTY RULES, REGULATIONS AND SPECIFICATIONS WHEN WORKING IN PUBLIC RIGHT OF WAY.
6. ALL PARKING STALLS, EXCEPT ACCESSIBLE STALLS, ARE TO BE 9 FEET WIDE BY 18 FEET LONG.
7. ACCESSIBLE AISLES SHALL BE STRIPED PER MN CODE (SECTION 502). WHERE "NO PARKING" SIGNAGE WOULD OBSTRUCT A CURB RAMP OR ACCESSIBLE ROUTE, "NO PARKING" SHALL BE PRINTED ON THE SURFACE OF THE ACCESS AISLE.
8. THE CONTRACTOR IS TO CONTACT THE CITY OF WAYZATA FIRE MARSHALL FOR THE EXACT PLACEMENT OF FIRE LANES, YELLOW-PAINTED CURBING AND NO PARKING AREAS FOR FIRE PROTECTION PURPOSES.
9. REFER TO STRUCTURAL PLANS FOR STOOP DETAILS. ALL WALKS ARE TO BE CENTERED ON THE DOORS.
10. INSTALL APPROPRIATE EXPANSION MATERIAL WHERE CONCRETE IS ADJACENT TO BUILDING FACE.
11. MATCH NEW PAVEMENT INTO EXISTING PAVEMENT. NO ABRUPT GRADE TRANSITIONS OR PONDING OF WATER WILL BE ALLOWED.
12. MATCH NEW CONCRETE CURB AND GUTTER INTO EXISTING. NO ABRUPT GRADE TRANSITIONS OR PONDING OF WATER WILL BE ALLOWED.
13. MATCH NEW SIDEWALK INTO EXISTING SIDEWALK. NO ABRUPT GRADE TRANSITIONS OR PONDING OF WATER WILL BE ALLOWED.
14. SAWCUT EXISTING PAVEMENT, SIDEWALK, AND CURB AND GUTTER TO NEAREST JOINT. COORDINATE REMOVAL LIMITS WITH SITE DEMOLITION CONTRACTOR AND CONSTRUCTION MANAGER.
15. INSTALL DRIVE ENTRANCE PER CITY OF WAYZATA STANDARDS AND SPECIFICATIONS. FOLLOW ALL CITY OF WAYZATA AND HENNEPIN COUNTY REQUIREMENTS FOR TRAFFIC CONTROL.
16. REFER TO SPECIFICATIONS FOR GRADE VERIFICATION SURVEY REQUIREMENTS PRIOR TO PLACEMENT OF SUB-BASE MATERIAL, BASE MATERIAL, AND PAVEMENTS/SIDEWALKS.



NOLAN
Properties Group

Nolan Properties Group
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ENGINEERS

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Minneapolis, MN 55429-2518
Phone: (763) 843-0420
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www.bkbm.com

Commercial Site
1330 Wayzata Blvd E
Wayzata, Minnesota
55391

NOT FOR CONSTRUCTION

No.	Date	Revision
-	-	-

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the state of Minnesota.

Signature: _____
Printed Name: **Keith A. Matte**
Date: **4/14/2017** License #: **46674**

Revisions		
No.	Description	Date

Project #: **17232**
Date: **4/14/2017**
Drawn by: **SJH, BAM**
Checked by: **KAB**
Drawing Number

C400

Paving and Geometric Plan



1330 Wayzata Blvd
Wayzata, Minnesota
55391

No.	Date	Revision
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Project #: 17232

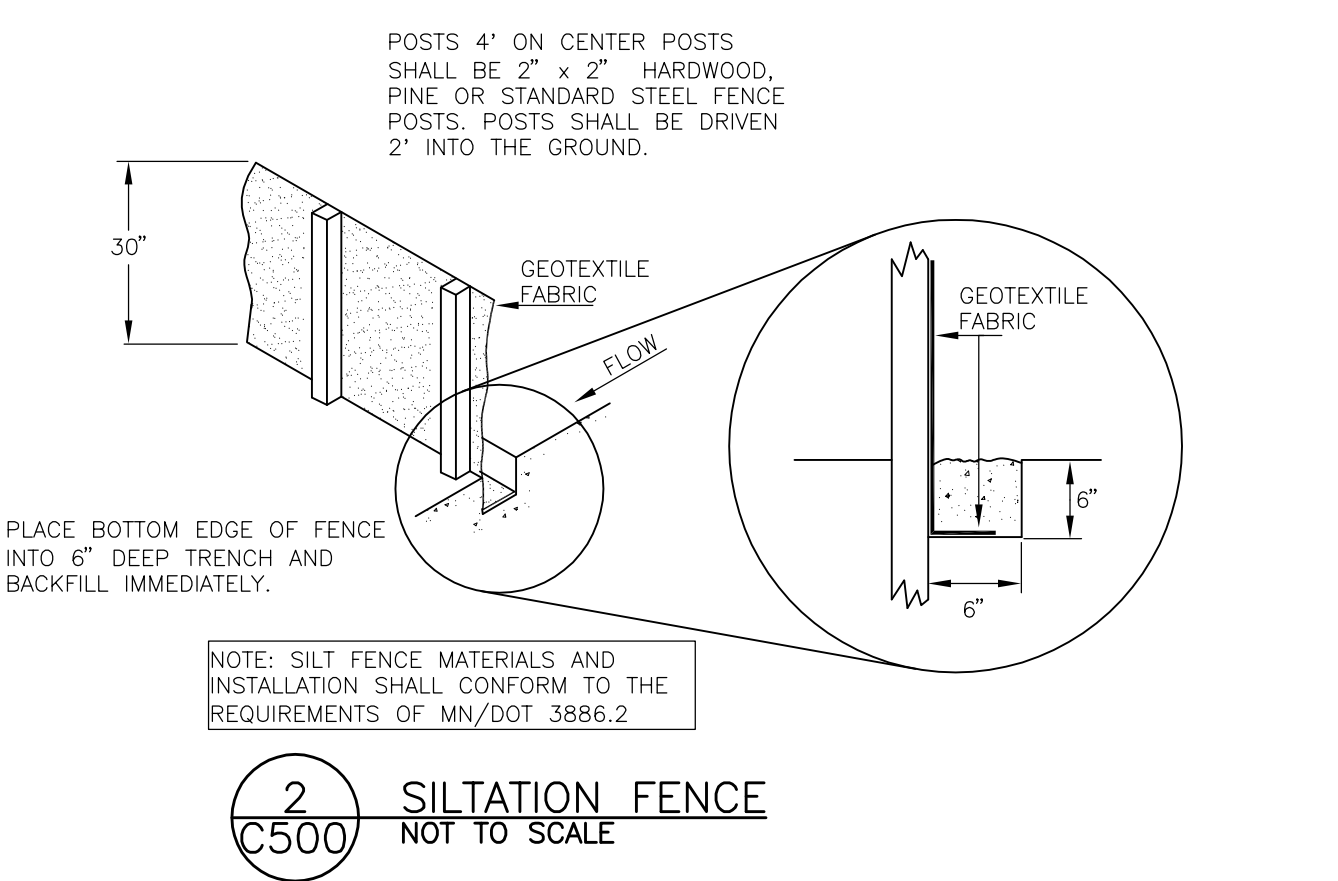
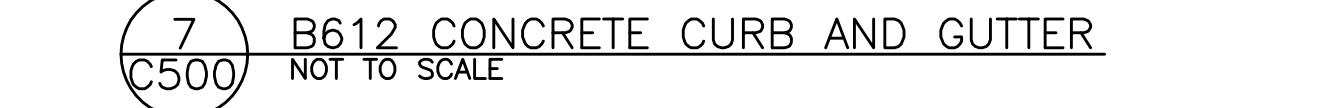
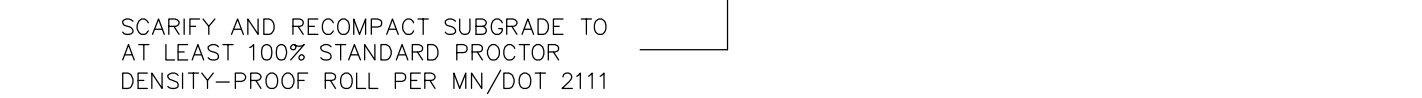
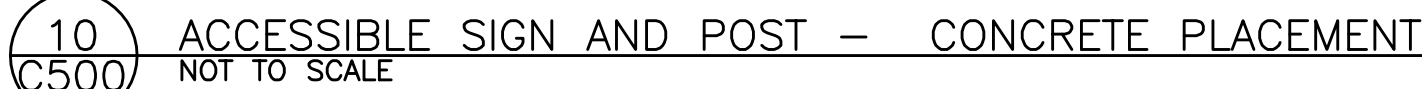
Drawn by: SIH. BAM

Drawing Number:

C500

C300

Civil Details Sheet



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Date: 4/14/2017 License #: 46674

No.	Revisions Description	Date

Project #: 17232

Date: 4/14/2017

Drawn by: SJH, BAM

Checked by: KAB

Drawing Number

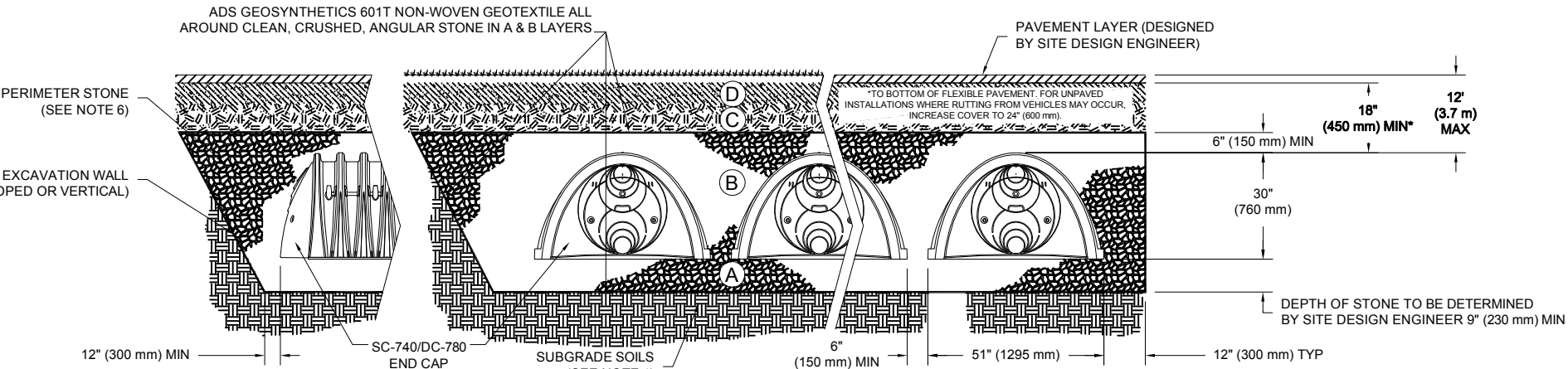
C501

ACCEPTABLE FILL MATERIALS: STORMTECH DC-780 CHAMBER SYSTEMS

MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D FINAL FILL	FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A
C INITIAL FILL	FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 18" (450 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <3% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 98% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN).
B EMBEDMENT STONE	FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE	NO COMPACTION REQUIRED.
A FOUNDATION STONE	FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. 1"

PLEASE NOTE:

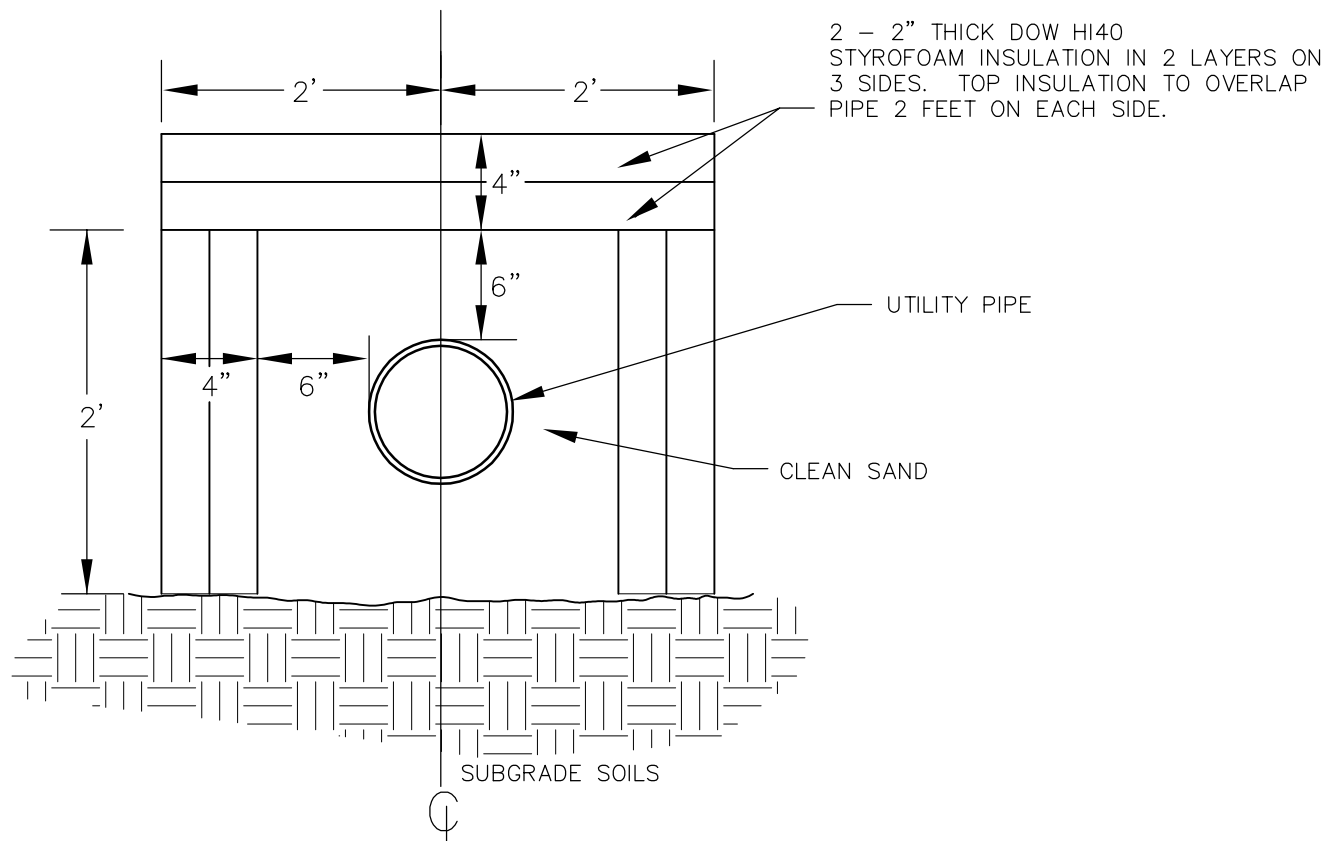
- THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR, FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
- STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (230 mm) [MAX] LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
- WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.



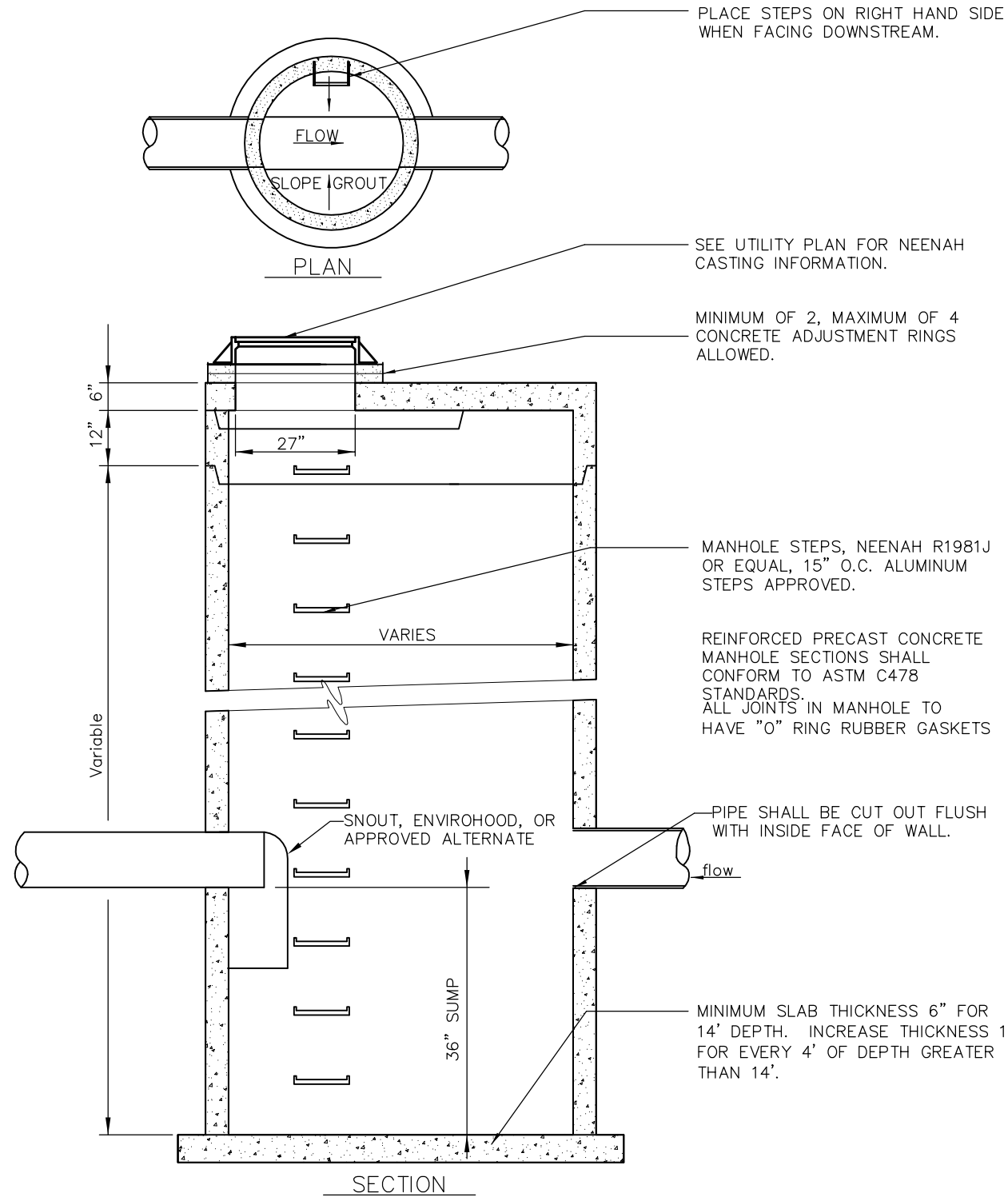
NOTES:

- DC-780 CHAMBERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F2418 "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- DC-780 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- "ACCEPTABLE FILL MATERIALS" TABLE ABOVE PROVIDES MATERIAL LOCATIONS, DESCRIPTIONS, GRADATIONS, AND COMPACTION REQUIREMENTS FOR FOUNDATION, EMBEDMENT, AND FILL MATERIALS.
- THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
- PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
- ONCE LAYER 'C' IS PLACED, ANY SOIL MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.

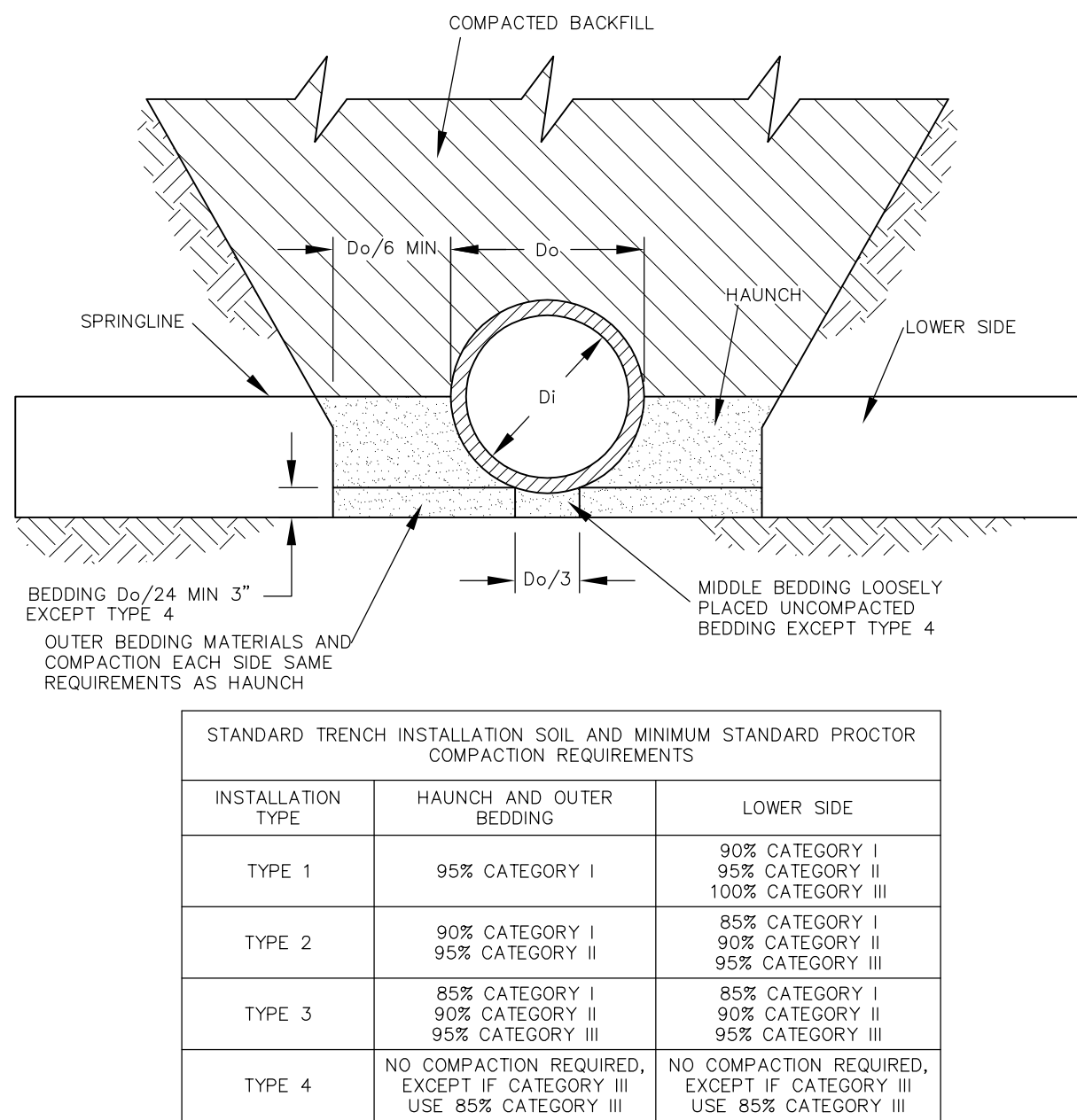
5 ADS 780 INFILTRATION SYSTEM
C501 NOT TO SCALE



6 PIPE INSULATION
C501 NOT TO SCALE



3 SUMP CATCH BASIN MANHOLE
C501 NOT TO SCALE



EQUIVALENT SOIL CLASSIFICATIONS FOR SOIL DESIGNATIONS		
SOIL	UNIFIED SOIL CLASSIFICATION SYSTEM (USCS)	MN/DOT SPECIFICATION
CATEGORY I	CLEAN COURSE GRAINED SOILS: SW, SP, GW, GP, OR ANY SOIL BEGINNING WITH ONE OF THESE SYMBOLS WITH 12% OR LESS PASSING A #200 SIEVE	COARSE FILTER AGGREGATE MN/DOT 3149.2H
CATEGORY II	COURSE GRAINED SOILS WITH FINES: GM, GC, SM, SC, OR ANY SOIL BEGINNING WITH ONE OF THESE SYMBOLS CONTAINING MORE THAN 12% PASSING A #200 SIEVE	AGGREGATE BEDDING MN/DOT 3149.2G
CATEGORY III	FINE GRAINED SOILS: CL, ML, (OR CL-ML, CL-ML, ML/CL) WITH LESS THAN 30% RETAINED ON A #200 SIEVE	NOT APPLICABLE

NOTES:

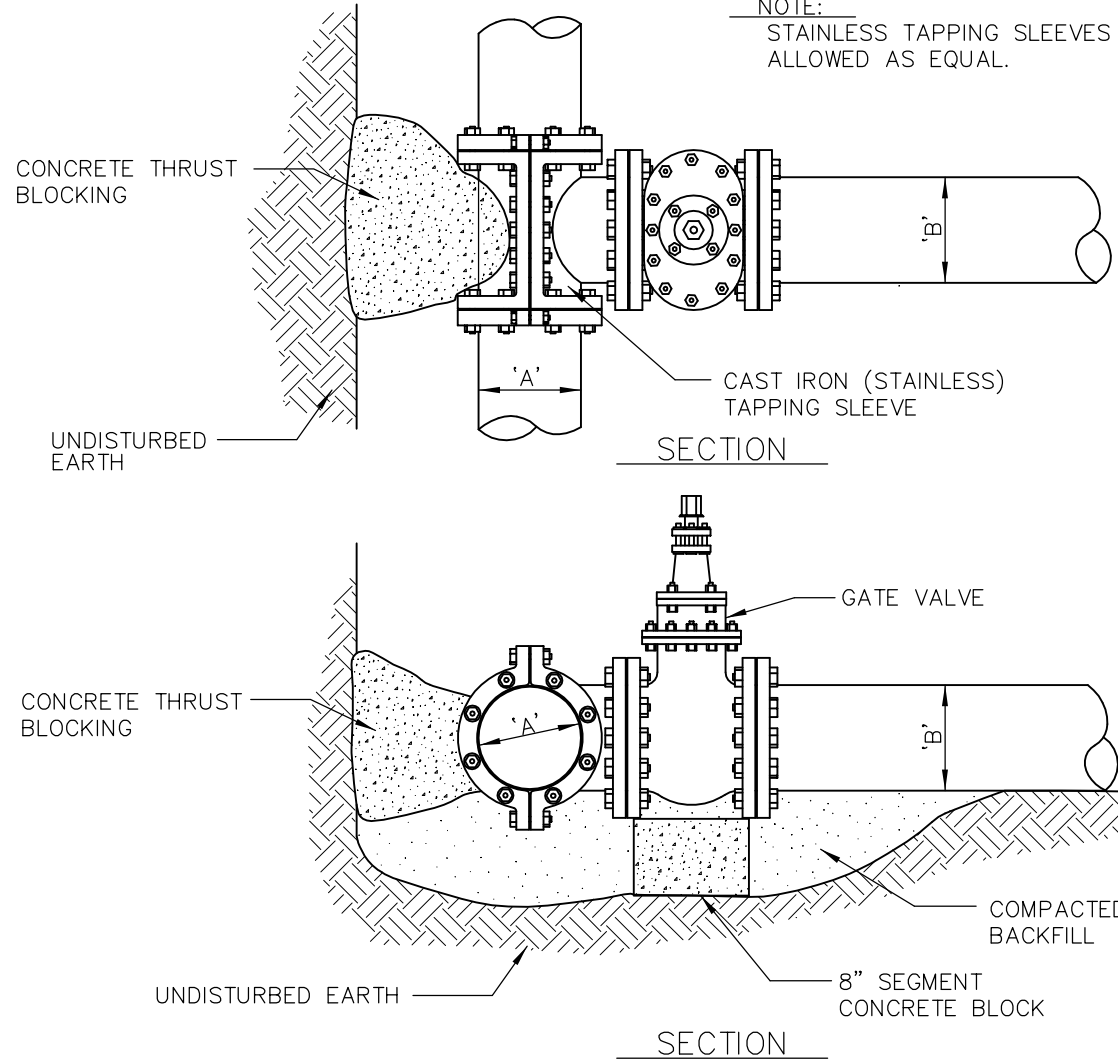
- COMPACTION AND SOIL SYMBOLS—I.E. "95% CATEGORY I" REFERS TO CATEGORY I SOIL MATERIAL WITH MINIMUM STANDARD PROCTOR COMPACTION OF 95%.
- SOIL IN BEDDING AND HAUNCH ZONES SHALL BE COMPACTED TO AT LEAST THE SAME COMPACTION AS SPECIFIED FOR THE MAJORITY OF SOIL IN THE BACKFILL ZONE.
- THE TRENCH WIDTH SHALL BE WIDER THAN SHOWN IF REQUIRED FOR ADEQUATE SPACE TO ATTAIN SPECIFIED COMPACTION IN THE HAUNCH AND BEDDING ZONES.
- FOR TRENCH WALLS WITH GREATER THAN 10 DEGREE SLOPES THAT CONSIST OF EMBANKMENT, THE LOWER SIDE SHALL BE COMPACTED TO AT LEAST THE SAME COMPACTION AS SPECIFIED FOR THE SOIL IN THE BACKFILL ZONE.
- NO BEDDING IS REQUIRED FOR TYPE 4 STANDARD INSTALLATION.
- REFER TO ASTM C1479-07 FOR DETAILS.
- TYPE III BEDDING SHALL BE USED UNLESS NOTED OTHERWISE.

4 TYPICAL PIPE BEDDING FOR RCP AND DIP
C501 NOT TO SCALE

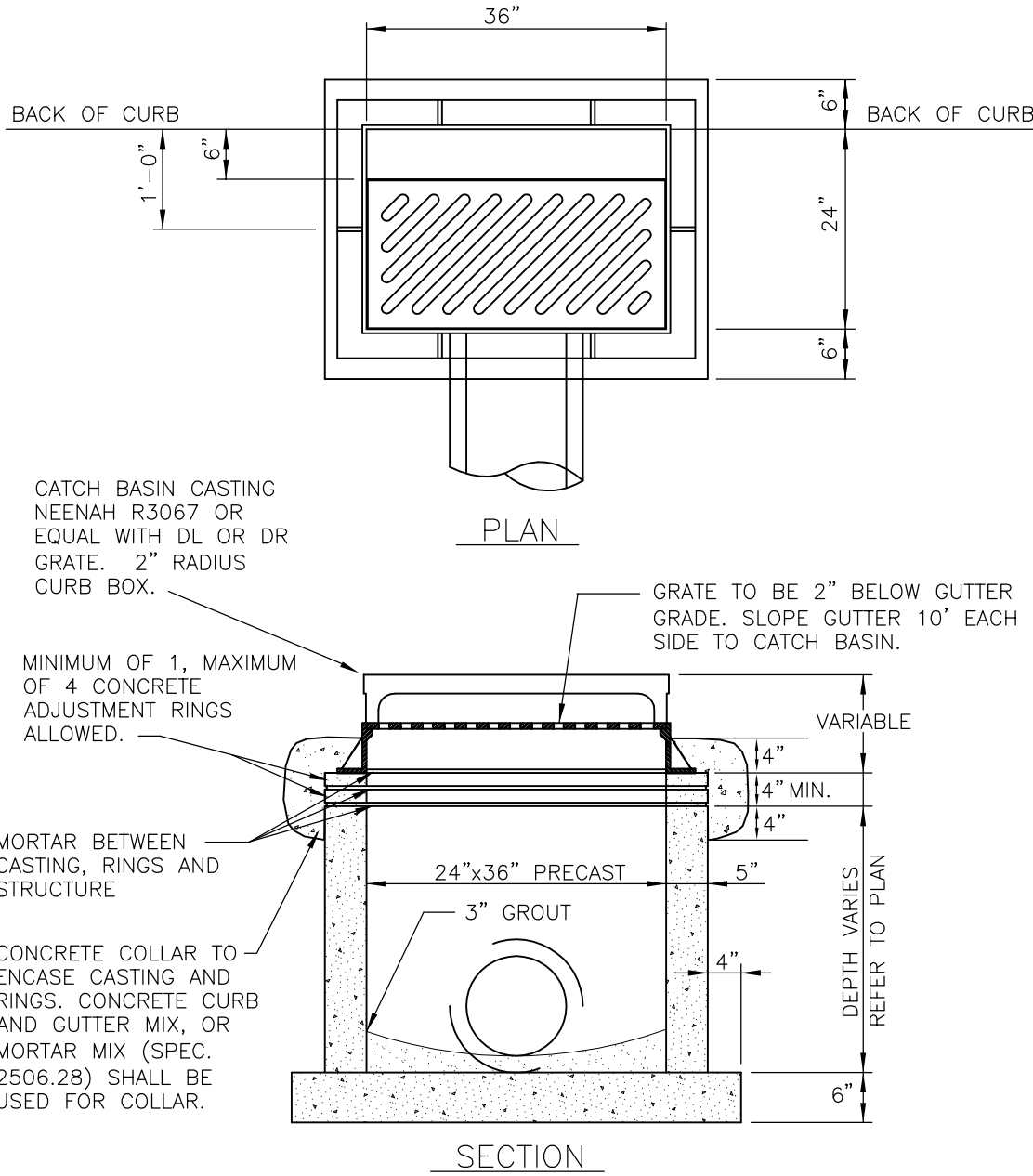
EXISTING PIPE 'A'		18"	16"	14"	12"	10"	8"	6"
BRANCH PIPE 'B'	12"	C	D	C	D	C	C	
	10"	C	D	C	D	C	C	
	8"	C	D	C	D	C	C	
	6"	C	D	C	D	C	C	
	4"	C	D	C	D	C	C	

C - CLOW F-5205, TC1W A212A OR EQUAL.
FULL CAST IRON TAPPING SLEEVE.
D - KENNEDY SQUARESEAL OR EQUAL.
CAST IRON TAPPING SLEEVE.

NOTE:
STAINLESS TAPPING SLEEVES ALLOWED AS EQUAL.



1 WATERMAIN WET TAP
C501 NOT TO SCALE



NOTES:

- RIGHT HAND GRATE SHOWN IN PLAN VIEW.
- REINFORCED PRECAST CONCRETE CATCH BASIN SECTIONS SHALL CONFORM TO ASTM C478 STANDARDS.

2 24" X 36" PRECAST CATCH BASIN
C501 NOT TO SCALE

No.	Date	Revision
-	-	-

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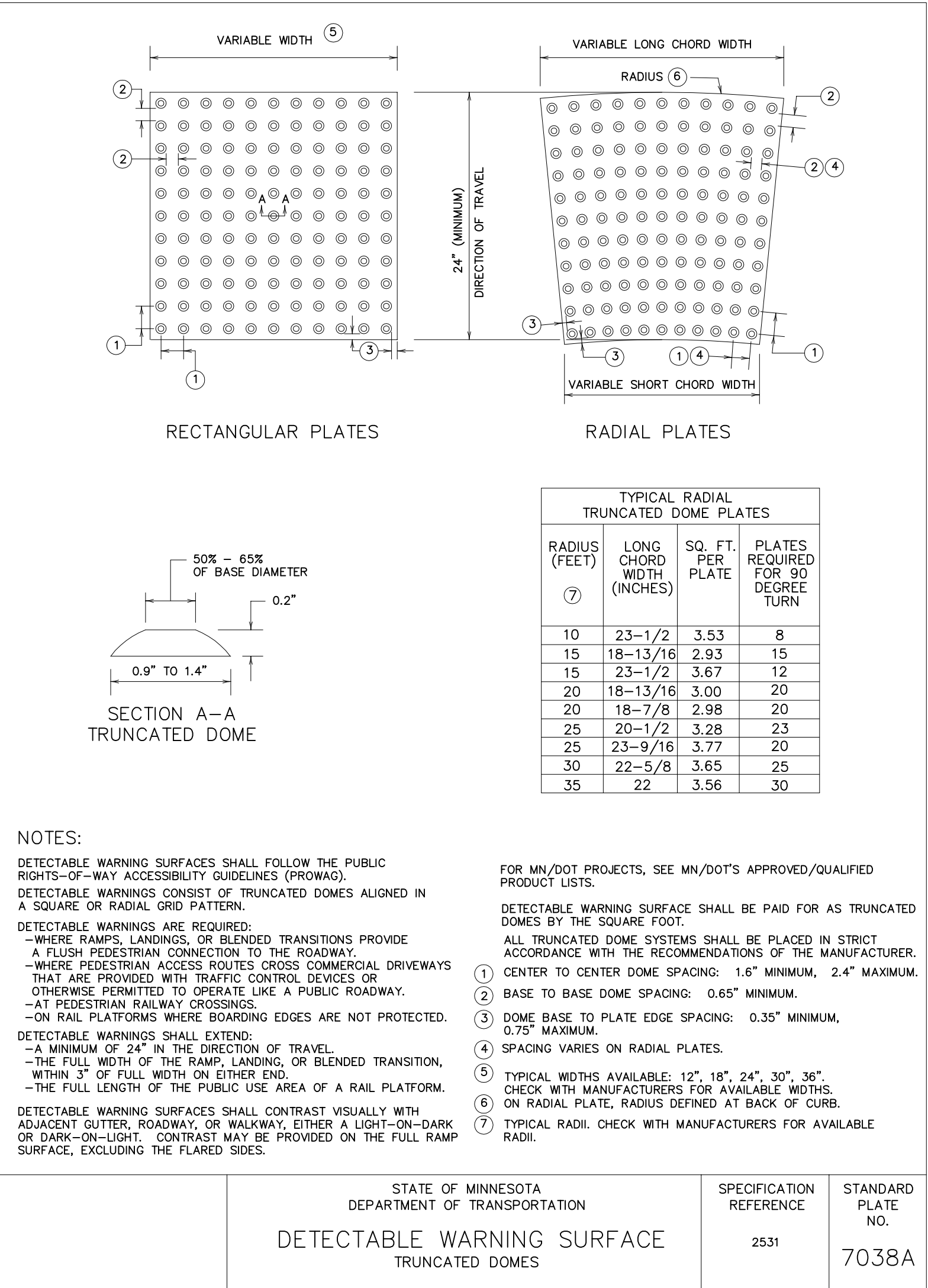
Date: 4/14/2017

Drawn by: SJH, BAM

Checked by: KAB

Drawing Number

C502



NOTE:
FOR ADA COMPLIANT PEDESTRIAN RAMPS, REFER TO MN/DOT STANDARD PLAN 5-297.250 PEDESTRIAN CURB RAMP DETAILS AT THE FOLLOWING WEB ADDRESS:
[HTTP://STANDARDPLATES.DOT.STATE.MN.US/STDPLATE.ASPX](http://STANDARDPLATES.DOT.STATE.MN.US/STDPLATE.ASPX)

CONTRACTOR SHALL COORDINATE FINAL CURB RAMP LOCATION AND PEDESTRIAN CURB RAMP DETAIL WITH THE CITY AND OWNER PRIOR TO INSTALLATION.

No.	Date	Revision
-	-	-

I hereby certify that this plan,
specification or
report was prepared by me or under my
direct supervision and that I am a duly
Licensed Professional Engineer under
the laws of the state of Minnesota.

Signature:
Printed Name: **Keith A. Matte**

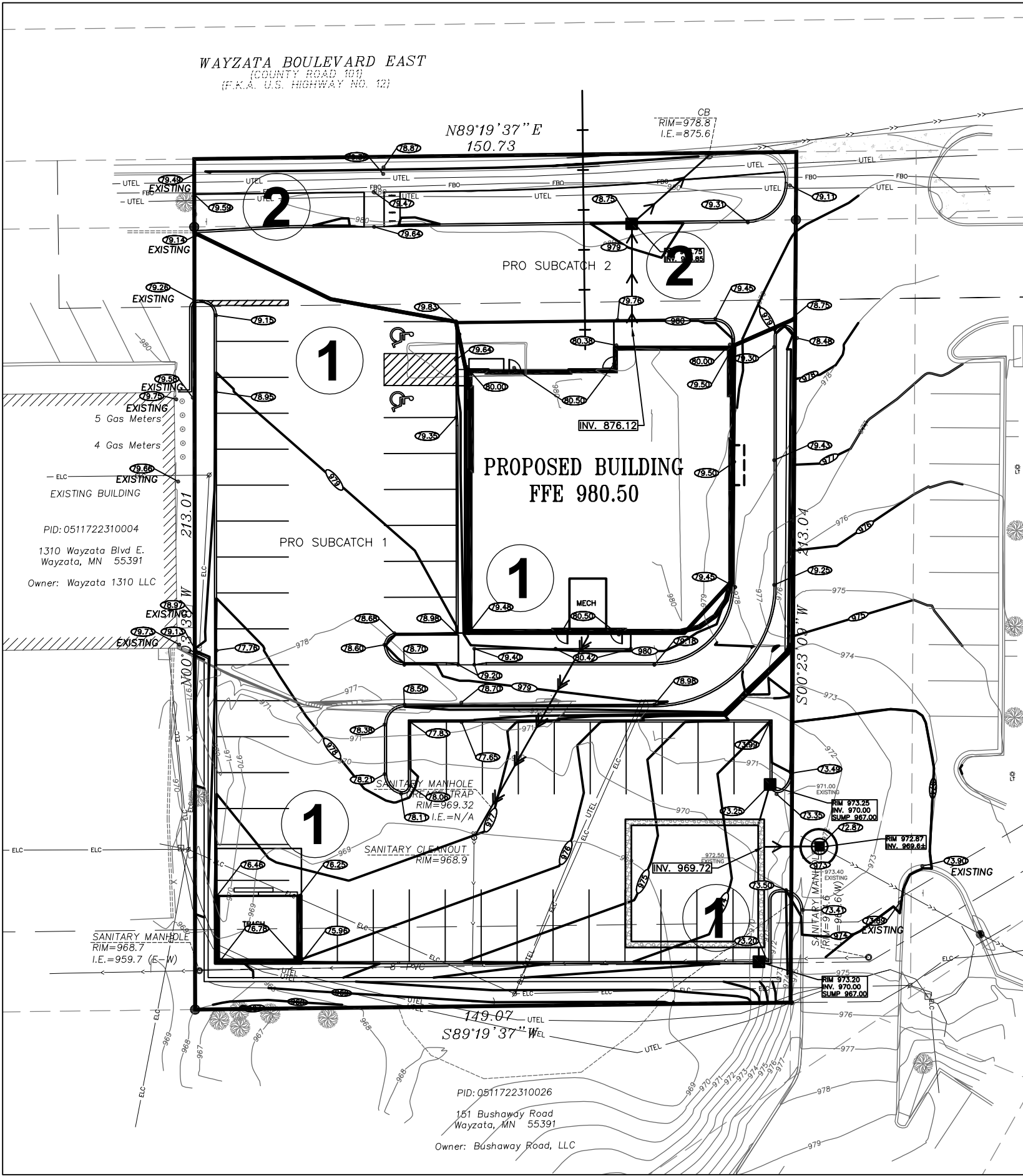
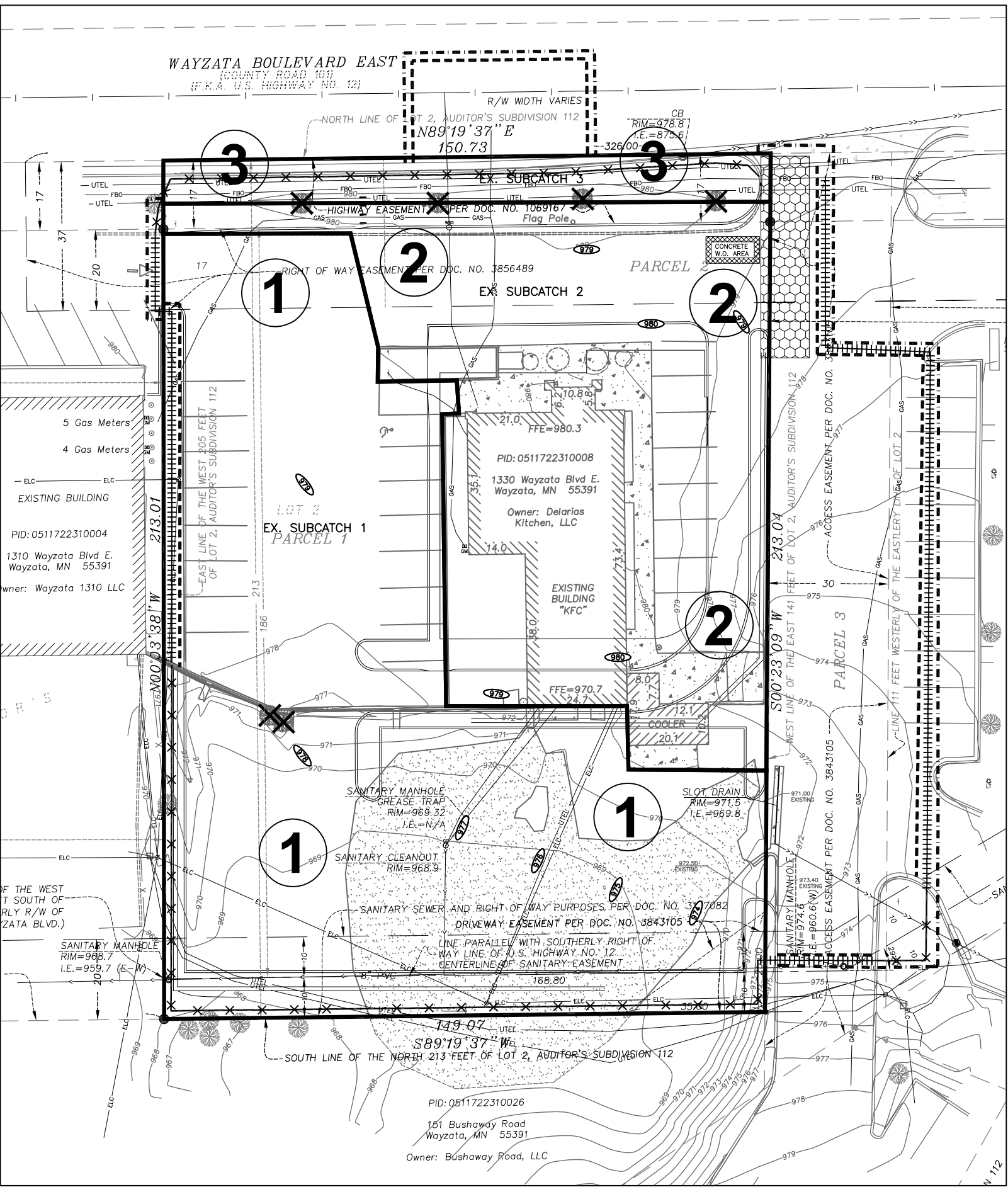
Date: 4/14/2017 License #: 46674

Revisions		
No.	Description	Date

Project #: 17232
Date: 4/14/2017
Drawn by: SJH, BAM
Checked by: KAB
Drawing Number

C600

Watershed
Plan



ABBREVIATIONS	
BLDG	Building
BMP	Best Management Practice
BW	Bottom of Wall
CB	Catch Basin
CONC	Concrete
ELEV	Elevation
EX	Existing
FFE	Finished Floor Elevation
HWL	High Water Level
INV	Invert
MAX	Maximum
MH	Manhole
MIN	Minimum
MPCA	Minnesota Pollution Control Agency
NPDES	National Pollutant Discharge Elimination System
NWL	Normal Water Level
PVC	Polyvinyl Chloride
RCP	Reinforced Concrete Pipe
TW	Top of Wall
W.O.	Washout

AGENCY CONTACTS	
CITY OF WAYZATA ENGINEERING DEPARTMENT PHONE: (952) 404-5300	
MINNESOTA POLLUTION CONTROL AGENCY PHONE: (651) 296-6300	
MINNEHAHA CREEK WATERSHED DISTRICT PHONE: (952) 471-0590	
NOLAN PROPERTIES GROUP 328 BARRY AVE S #300 WAYZATA, MN 55391 PHONE: (952) 767-2500	

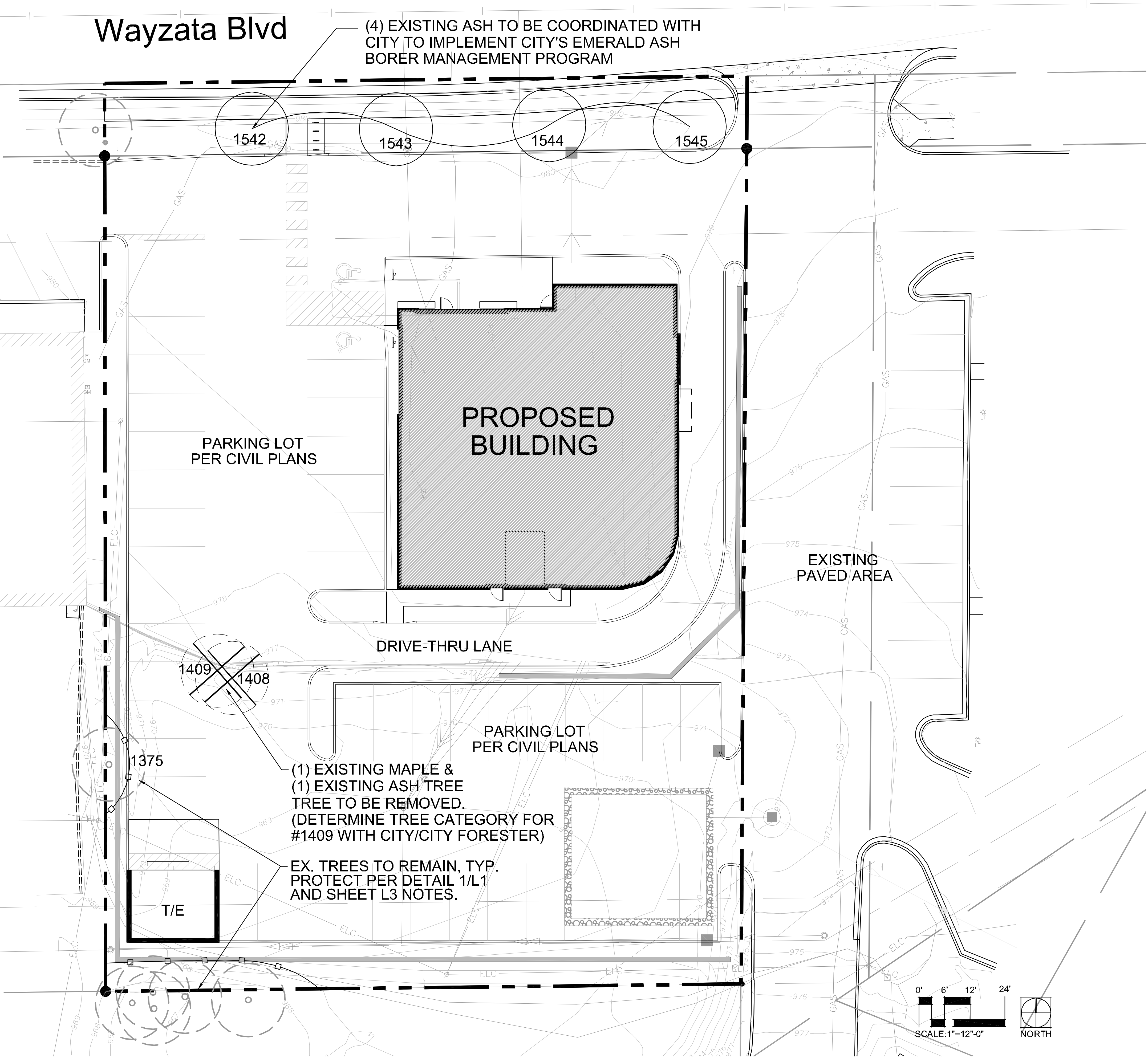
PROJECT NARRATIVE
THE PROPERTY IS APPROXIMATELY 0.68 ACRES AND HAS AN EXISTING BUILDING AND PARKING LOT THAT IS CURRENTLY USED AS A RETAIL RESTAURANT. THERE IS AN EXISTING STORM SEWER SYSTEM IN PLACE THAT TAKES STORMWATER FROM THE SITE AND DRAINS TO A LOCAL SYSTEM. THE PROPOSED SITE IMPROVEMENTS INCLUDE RAZING THE EXISTING BUILDING AND PARKING LOT TO ALLOW FOR A NEW BUILDING AND PARKING LOT.
NEW IMPERVIOUS SURFACES, STORM WATER CONVEYANCES, METHODS OF TREATMENT IN GENERAL

EXISTING DRAINAGE AREAS							
DRAINAGE AREA	IMPERVIOUS AREA (ACRES)	PERVIOUS AREA (ACRES)	TOTAL AREA (ACRES)	Q OUT (CFS) STORM EVENT			ROUTING
				2-YEAR (2.88")	10-YEAR (4.28")	100-YEAR (7.37")	
1	0.31	0.11	0.42	1.44	2.30	3.98	
2	0.22	0.05	0.27	0.97	1.54	2.61	
3	0.01	0.03	0.04	0.08	0.16	0.32	
TOTAL	0.54	0.19	0.73	2.49	4.00	6.91	

PROPOSED DRAINAGE AREAS							
DRAINAGE AREA	IMPERVIOUS AREA (ACRES)	PERVIOUS AREA (ACRES)	TOTAL AREA (ACRES)	Q OUT (CFS) STORM EVENT			ROUTING
				2-YEAR (2.88")	10-YEAR (4.28")	100-YEAR (7.37")	
1	0.39	0.10	0.49	0.80	2.15	3.89	INFILTRATION SYSTEM
2	0.22	0.03	0.25	1.04	1.62	2.69	
TOTAL	0.61	0.13	0.73	1.84	3.77	6.58	

STORMWATER RUNOFF SUMMARY			
	2-YR STORM (2.88") RUNOFF (CFS)	10-YR STORM (4.28") RUNOFF (CFS)	100-YR STORM (7.37") RUNOFF (CFS)
EXISTING SITE	2.49	4.00	6.91
PROPOSED SITE	1.84	3.77	6.58

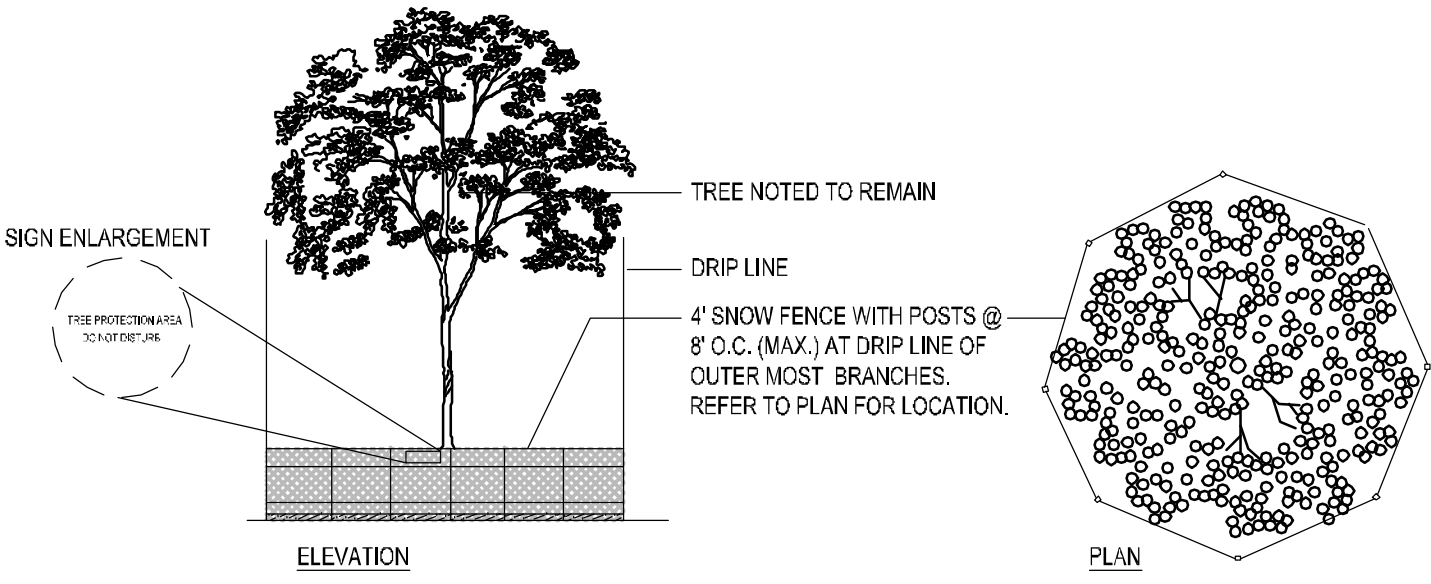
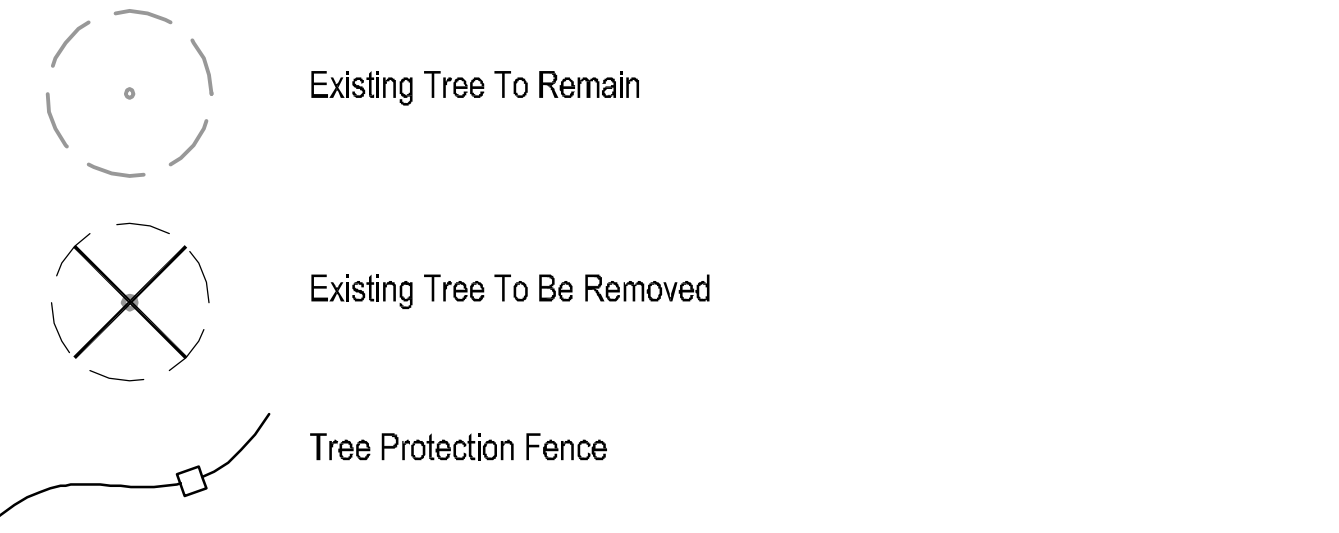




General Notes:

- 1. Refer to Sheet L3 for Plant Schedule, Details, Notes, and Requirements.
- 2. See Civil Engineer's plans for grading layout and requirements
- 3. Contractor to coordinate all work in the right-of-way with City of Wayzata Public Works Department and Hennepin County.
- 4. See Architect's plans for additional requirements regarding the site plan layout.
- 5. Sod all disturbed areas except plant beds and mulch beds.
- 6. Place a minimum of 6" topsoil or slope dressing on all areas disturbed by construction, including right-of-way boulevards, unless specified otherwise.
- 7. Install tree mulch ring on new trees planted in turf areas.

Symbols Legend:



NOTE: TREE PROTECTION SHALL BE PROVIDED BY CONTRACTOR AS REQUIRED TO AIDE IN SURVIVABILITY OF EXISTING TREES TO REMAIN. DO NOT STORE MATERIALS OR DRIVE EQUIPMENT SHALL WITHIN THE TREE DRIP LINE AS DESIGNATED ABOVE. MAINTAIN THE FENCE INTEGRITY AT ALL TIMES THROUGHOUT CONSTRUCTION.

INSTALL TREE PROTECTION ZONE SIGNS EVERY 25'-4"X16" EXTERIOR GRADE SIGNS. ZIP-TIE TO FENCE.

1 TYPICAL TREE PROTECTION DETAIL
L1 NOT TO SCALE

Existing Tree Summary:

ID	Common Name	Caliper	Significant?	Remove?	Notes:
1542	Green Ash	12	Y	Y	Coordinate with City to implement City's emerald ash borer management program
1543	Green Ash	12	Y	Y	
1544	Green Ash	14	Y	Y	
1545	Green Ash	14	Y	Y	
**1409	Green Ash	26	Y	Y	EAB Infected - No Penalty
1408	Elm	18	Y	Y	Y
1375	Maple	10	Y	N	N
		Caliper Inches	# of Trees		
Total Existing Significant Trees		106	7		
Significant Inches Applicable:		28	2	Ash Trees Not Applicable	
10% Permittal Removal		3	Varies		
Proposed Removal		18	6		
Trees Inches Preserved		10	1		
Replacement Inches Required*		15	Varies		

*Replacement inches are calculated by taking the amount of removed tree inches above allowed and multiplying by 1 (replacement ratio 1:1).

** Tree 1409 due to tree caliper is categorized as a heritage tree, although it does not meet overall size, health, and location as valued by a licensed landscape architect.

Nolan Properties Group
328 Barry Ave S
#300
Wayzata, Minnesota
55391
(952) 767-2500

cdg
CALYX DESIGN GROUP
Landscape Architecture + Planning
370 Selby Avenue | Suite 301
St. Paul, MN 55102
telephone: 651.788.9018
internet: www.calyxdesigngroup.com

Commercial Site
1330 Wayzata Blvd E
Wayzata, Minnesota
55391

NOT FOR CONSTRUCTION

No.	Date	Revision
-	-	-

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Landscape Architect under the laws of the state of MINNESOTA.

Signature:
Printed Name: Benjamin Hartberg
Date: License #: 48084

Revisions		
No.	Description	Date

Project #: 17125
Date: 4/14/2017
Drawn by: MF
Checked by: BH
Drawing Number
Tree Inventory & Preservation



NOT FOR CONSTRUCTION

No.	Date	Revision

I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Landscape Architect under the laws of the state of MINNESOTA.

Signature:
Printed Name: **Benjamin Hartberg**
Date: License #: **48084**

No.	Revisions	Date
Description		

Project #: **17125**
Date: **4/14/2017**
Drawn by: **MF**
Checked by: **BH**
Drawing Number

Landscape Plan

General Notes:

1. Refer to Sheet L3 for Plant Schedule, Details, Notes, and Requirements.
2. See Civil Engineer's plans for grading layout and requirements
3. Contractor to coordinate all work in the right-of-way with City of Wayzata Public Works Department and Hennepin County.
4. See Architect's plans for additional requirements regarding the site plan layout.
5. Sod all disturbed areas except plant beds and mulch beds.
6. Place a minimum of 6" topsoil or slope dressing on all areas disturbed by construction, including right-of-way boulevards, unless specified otherwise.
7. Install tree mulch ring on new trees planted in turf areas.

Landscape Symbols Legend:

- Proposed Deciduous Tree
- Proposed Ornamental Deciduous Tree
- Existing Tree To Remain
- Existing Tree To Be Removed
- Proposed Large Deciduous Shrub
- Proposed Large Coniferous Shrub
- Proposed Medium Deciduous Shrub
- Proposed Perennial Plant
- Rock Mulch
- New Turf Sod
- 2" - 4" River Rock

Landscape Basis:

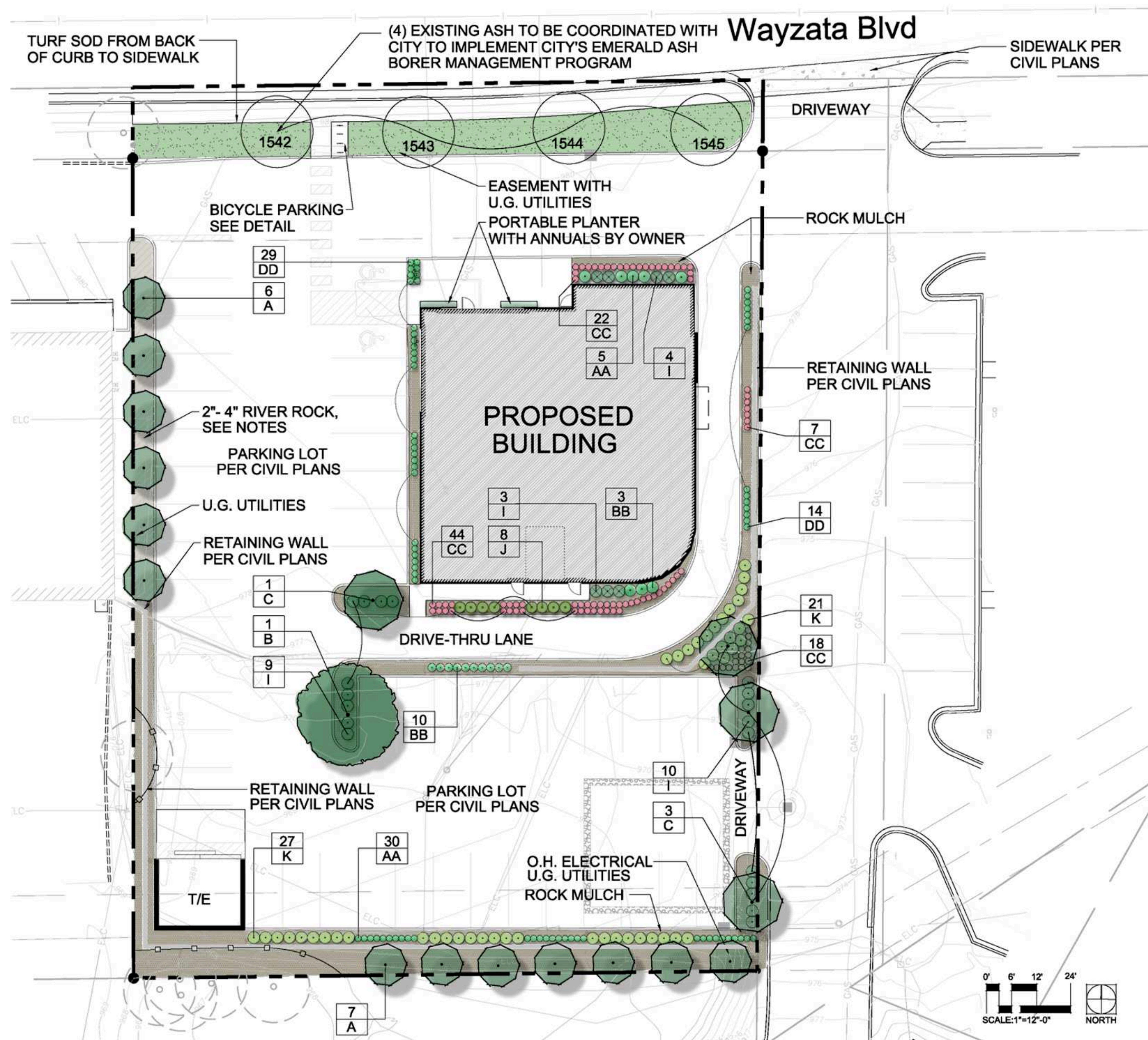
(1) Tree per 1,000 SF of Landscape Area:
6,255SF / 1,000 = 6 Trees

Total New Trees Required: 6

Mitigation Inches Required: 54

Mitigation Inches Shown: 56

Total New Trees Shown: 18





Planting Palette:

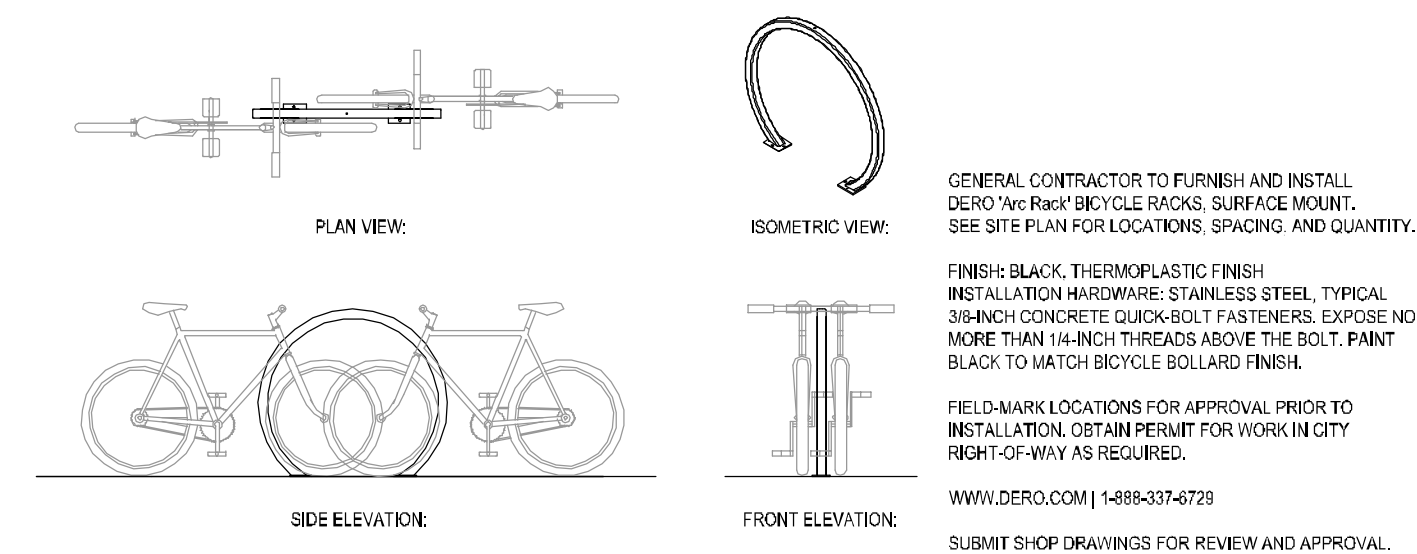
Planting Palette:				DECIDUOUS TREES:		
Qty.	Key	Scientific Name	Common Name	Size	Root	Notes
13	A	Populus tremula 'Erecta'	Columnar Swedish Aspen	3" Cal.	B&B	
1	B	Populus tremuloides	Quaking Aspen	3" Cal.	POT	Single Stem
4	C	Syringa reticulata 'Ivory Silk'	Japanese Tree Lilac	3.5" Cal.	B&B	Single Stem

SHRUBS:

Qty.	Key	Scientific Name	Common Name	Size	Root	Notes
26	L	Buxus 'Glennae'	Chicagoland Green Ilexwood	#3/18" Spr.	POT	
8	J	Thuja occidentalis 'Hetz Midge'	Hetz Midge Arborvitae	#5/24" Hgt.	POT	
48	K	Cornus alba 'Reginam'	Red Gnome Dogwood	#2/24" Spr.	POT	

PERENNIALS:

Qty.	Key	Scientific Name	Common Name	Size	Root	Notes
35	AA	Schizachyrium scoparium 'Blue Heaven'	Blue Heaven Little Blue Stem	#2/12" Hgt.	POT	
13	BB	Calamagrostis x acutiflora 'Karl Foerster'	Feather Reed Grass	#2/12" Hgt.	POT	
91	CC	Hemerocallis x 'Ruby Returns'	Ruby Returns Daylily	#1/8" Hgt.	POT	
43	DD	Deschampsia cespitosa	Tufted Hair Grass	#1/8" Hgt.	POT	



5 BICYCLE BOLLARD DETAIL
L3 NOT TO SCALE

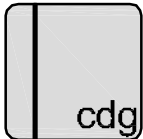
TREE PRESERVATION & REMOVAL NOTES:

Existing boundary, location, topographic, and utility information shown on this plan is from the field survey. The contractor is to field verify existing conditions to their satisfaction.

- Do not begin tree clearing work until tree protection measures are in place and to the approval of the City of Wayzata and the civil engineer.
- Critical Root Zone:
Install high density polyethylene safety fence, 4 ft. high, international orange, at the Drip Line or at The Critical Root Zone whichever is greater, of trees to be preserved per detail, prior to commencement of earthwork activity. Field-staking of the fence location(s) subject to City of Wayzata Forestry approval.
- Where silt fence and proposed tree protection fence overlap, place the tree protection fence on the outside of the silt fence, double-staked at the break-point.
- Refer to Tree Protection Detail for root zone and drip-line protection requirements.
- The contractor shall prune the canopy of existing trees to remain where the canopy is in jeopardy of damage due to the new improvements shown. It is recommended that the contractor hire a certified arborist to perform the pruning. Any branches broken during construction shall be immediately trimmed and wounds painted to prevent further damage.
- Perform work in accordance with the laws, ordinances, rules, regulations, and orders of public authority having jurisdiction. Secure and pay for permits, governmental fees and licenses necessary for the proper execution of the demolition work.
- Prior to the start of construction, contact the City of Wayzata at (952) 404-5340. Obtain permits as required by law.
- Provide protective coverings and enclosures as necessary to prevent damage to existing work that is to remain. Existing work to remain may include items such as trees, shrubs, lawns, sidewalks, drives, curbs, utilities, buildings and/or other structures on or adjacent to the demolition site. Provide temporary fences and barricades as required for the safe and proper execution of the work and the protection of persons and property.
- Remove debris, waste, and rubbish promptly from the site. On-site burial of debris is not permitted. Burn no debris on the site. Salvage material not otherwise indicated to be reused shall become the Contractor's property and is to be removed promptly from the site and disposed of in strict accordance with all applicable laws, regulations, and/or statutes.
- Buildings, features, surfaces, and other descriptive references shown on this drawing are for informational purposes only. Field verify all information relevant to the project prior to proceeding with the work. Visit the site and determine all site conditions and hazards.
- This plan is a guide as to the anticipated amount of disturbance expected due to proposed improvements. The contractor is expected to take all necessary precautions to ensure trees noted to remain are not damaged during construction. Do not store material or drive within the drip line of existing trees to remain. Be aware of overhead branches for clearance of material and equipment.
- This plan is not a guarantee that existing trees will survive during/post construction, but rather a guide to help assure their protection and greatest chances of survival at the surface level. Further protection measures outside this scope could involve ecologists, foresters and arborists.
- Notify the Owner's Representative and Engineer when tree protection fencing is taken down to perform work in conjunction with the new improvements noted in this plan set. The contractor is responsible for re-erecting the tree protection fence immediately after the work is complete, when ever possible
- Trees shown as damaged to remain (be preserved) that are damaged / killed as a result of construction activities are subject to replacement per the City of Wayzata's Tree Replacement penalty. Replacement trees are to be paid for at no additional expense to the Owner.
- The Owner (City Permit Applicant) shall protect the preserved woodlands and individual tree's critical root zones through placement required tree protective measures (i.e. orange colored silt fence or 4 foot polyethylene laminate safety 'snow' netting, to be installed at the drip line or at the perimeter of the critical root zone, whichever is greater, of the trees on-site to be preserved.
- Tree Trimming: Trim branches of existing trees to remain with branches overhanging the work zone to a height of no less than 15' above grade. General contractor shall hire a state certified arborist to trim trees and shall not trim *Quercus* sp. during prime oak leaf season, per city code. Do not disturb Oaks between April-June.

**Nolan Properties
Group**

328 Barry Ave S
#300
Wayzata, Minnesota
55391
(952) 767-2500



CALYX DESIGN GROUP
Landscape Architecture + Planning

370 Selby Avenue | Suite 301
St. Paul, MN 55102

telephone: 651.788.9018
internet: www.calyxdesigngroup.com

Commercial Site

1330 Wayzata Blvd E
Wayzata, Minnesota
55391

**NOT FOR
CONSTRUCTION**

[illegible]

I hereby certify that this plan,
specification or report was prepared by
me or under my direct supervision and
that I am a duly Licensed Professional
Landscape Architect under the laws of
the state of MINNESOTA.

Signature:

Printed Name: Benjamin Hartberg

Date:

License #: 48084

[illegible]

Project #: 17125

Date: 4/14/2017

Drawn by: MF

Checked by: BH

Drawing Number

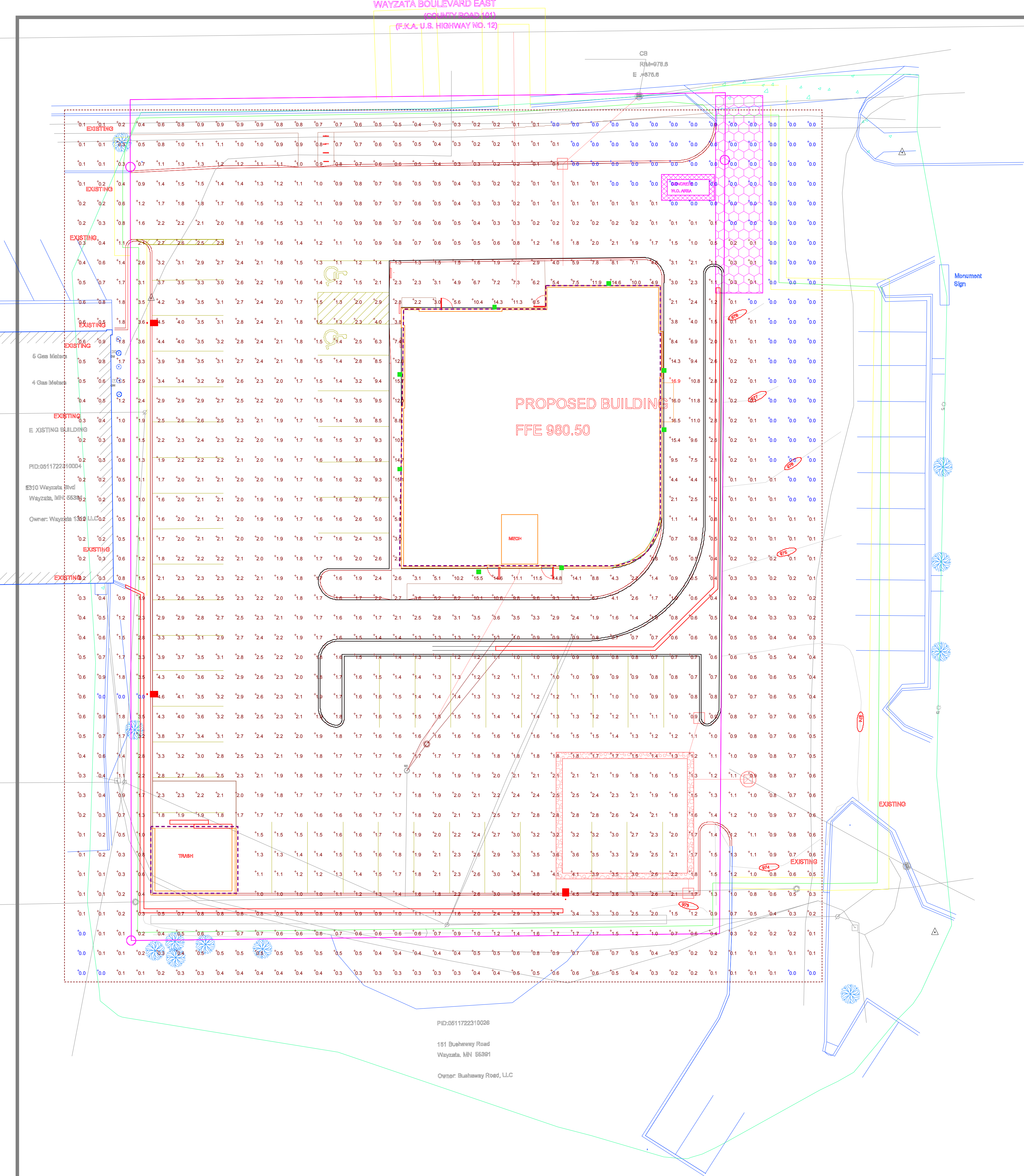
Landscape Details

L3



Know what's below.
Call before you dig.

REFER TO SHEET L2 FOR LANDSCAPE LAYOUT PLAN



Plan View
Scale - 1" = 14ft

Schedule											
Symbol	Label	Quantity	Manufacturer	Catalog Number	Description	Lamp	Number Lamps	Filename	Lumens Per Lamp	Light Loss Factor	Wattage
	B	3	PHILIPS GARDCO	ECF-S-48L-1.2A-NW-G2-4	EcoForm Area LED ECF - Small, 48 LEDs, 4000K, Type 4 Optics	(3) LEDGINE 3 SLD LIGHT ARRAY(S) OF 16 LEDs (LUXEON T) DRIVEN AT 1200mA	1	ECF-S-48L-1.2A-NW-G2-4.ies	18991	0.85	178
	C	0	PHILIPS GARDCO	101L-16L-1200-NW-G1-2	PHILIPS 100 LINE LED SCONCE	(1) LEDGINE 3.1 LIGHT ARRAYS OF 16 LEDs (LUXEON T) AT 65W	1	101L-16L-1200-NW-G1-2.ies	5742	0.85	65
	A	8	PHILIPS GARDCO	101L-16L-700-NW-G1-2	PHILIPS 100 LINE LED SCONCE	(1) LEDGINE 3.1 LIGHT ARRAYS OF 16 LEDs (LUXEON T) AT 37W	1	101L-16L-700-NW-G1-2.ies	3788	0.85	37

Luminaire Locations										
Location								Aim		
No.	Label	X	Y	Z	MH	Orientation	Tilt	X	Y	Z
1	A	470932.00	165572.00	9.00	9.00	90.00	0.00	470932.00	165572.00	0.00
2	A	470932.00	165557.00	9.00	9.00	90.00	0.00	470932.00	165557.00	0.00
3	A	470906.00	165522.00	9.00	9.00	180.00	0.00	470906.00	165522.00	0.00
4	A	470885.00	165521.00	9.00	9.00	180.00	0.00	470885.00	165521.00	0.00
5	A	470889.00	165588.00	9.00	9.00	0.00	0.00	470889.00	165588.00	0.00
6	A	470918.00	165594.00	9.00	9.00	0.00	0.00	470918.00	165594.00	0.00
7	A	470865.00	165571.00	9.00	9.00	270.00	0.00	470865.00	165571.00	0.00
8	A	470865.00	165547.00	9.00	9.00	270.00	0.00	470865.00	165547.00	0.00
1	B	470801.00	165490.00	25.00	25.00	90.00	0.00	470802.80	165490.00	0.00
2	B	470801.00	165584.00	25.00	25.00	90.00	0.00	470802.80	165584.00	0.00
3	B	470907.00	165438.00	25.00	25.00	0.00	0.00	470907.00	165439.80	0.00



⋮

Technical Memorandum

To: Katelyn Murray, Nolan Properties Group
From: Bryant Ficek, PE, PTOE
Max Moreland, PE
Date: April 21, 2017
Re: 1330 Wayzata Boulevard Redevelopment – Traffic and Parking Review

Nolan Properties Group has contracted with Spack Consulting to complete a review of the proposed redevelopment for the 1330 Wayzata Boulevard site in Wayzata, Minnesota. The purpose of this technical memorandum is to:

- Document traffic associated with the existing site.
- Determine the expected traffic for two redevelopment scenarios.
- Determine the expected peak parking demand for two redevelopment scenarios.
- Review the proposed concept site plan.

Conclusions

Based on the analysis and evaluation contained in this technical memorandum, the principle findings and recommendations are:

- The existing restaurant is generating approximately 452 daily trips, 81 mid-day peak hour trips, and 47 p.m. peak hour trips.
- The existing restaurant's traffic is well below the typical traffic expectations for a fast food restaurant.
- The proposed redevelopment of the site will increase traffic compared to the existing restaurant.
- Scenario 1 for this site, the morning breakfast user + fast casual lunch/dinner restaurant option, is forecast to generate more traffic than Scenario 2, the restaurant + retail option. Both sets of estimated traffic are higher than the existing restaurant. Although, only Scenario 1 is higher than what would normally be expected from a typical fast food restaurant.
- Summing the raw parking generation for each land use, the peak parking demands would be 45 spaces for Scenario 1 and 28 spaces for Scenario 2. The proposed redevelopment concept site plan shows 47 spaces, enough to cover the expected summed parking demand at peak hours.
- A marked crosswalk of the drive-thru should be considered to improve the pedestrian connection between the parking and building entrance.
- The proposed drive-thru has sufficient length to accommodate approximately seven vehicles, with an addition four spots within the proposed parking area. The maximum observed stacking is 11 vehicles for a morning breakfast user and about six vehicles for a casual food restaurant.
- Accessing the drive-thru from the southeast side of the site allows for vehicle entries and exits even in the event of a maximum drive through queue condition.

Existing Traffic Review

Video counts were conducted at the existing site over two weekdays in April 2017 to determine traffic associated with the existing KFC restaurant. These counts were from 9:00 a.m. to midnight and counted every vehicle that accessed the site. For reference, the store's hours of operation are 10:30 a.m. to 10:00 p.m. every day. Table 1 summarizes the count data with the full count data attached. The midday peak hour for both days was found to be 11:30 a.m. to 12:30 p.m. and the p.m. peak hour for both days was found to be 4:30 to 5:30 p.m.

Table 1 – Existing Weekday Vehicles Entering/Exiting Site

Date	Daily		Midday Peak Hour		PM Peak Hour	
	In	Out	In	Out	In	Out
Wednesday, April 5, 2017	217	217	41	41	21	23
Thursday, April 6, 2017	235	235	43	37	25	24
Average	226	226	42	39	23	24

From the trip generation counts, parking lot counts can also be determined. Adding the entering vehicles and subtracting the exiting vehicles, the number of vehicles remaining in the parking lot throughout the day can be determined. For April 5, the maximum number of vehicles in the lot at any one time was 16 vehicles. For April 6, the maximum number of vehicles in the lot at any one time was 22 vehicles.

Spack Consulting collects current average traffic volumes for various land uses in the Twin Cities regional area for use in our studies. Local data is considered more relevant than the national data as it is generally newer and accounts for our area's specific characteristics and driving habits. For comparison purposes, the expected trip generation of a general fast food restaurant was reviewed. Table 2 shows the expected trip generation of a fast food restaurant with the average trip generation for this specific site.

Table 2 – Trip Generation Comparison, Existing versus Expected

Date	Daily		Midday Peak Hour		PM Peak Hour	
	In	Out	In	Out	In	Out
Existing Store Average	226	226	42	39	23	24
Comparison Fast Food	703	703	89	87	45	44
Difference	(477)	(477)	(47)	(48)	(22)	(20)

As shown, the existing store is generating less traffic than would be expected at a comparable fast food restaurant. It can also be assumed that parking needs, if the site were fully generating the expected amount of traffic, would also increase.

Forecast Traffic Review

The attached preliminary site plan shows the proposed 4,500 square feet building with a drive-thru. Two potential scenarios are envisioned for this redeveloped building:

- Scenario 1: approximately 2,200 square foot primarily morning breakfast user (i.e. coffee, bagels, breakfast) with drive-thru and approximately 2,300 square foot fast casual restaurant.
- Scenario 2: approximately 2,300 square foot retail shop and approximately 2,200 square foot fast casual restaurant with a drive-thru.

A trip generation analysis was performed for the proposed site based on the methods and average rates published in the Institute of Transportation Engineers' (ITE) *Trip Generation Manual, 9th Edition* as well as trip generation data collected locally in the Twin Cities by Spack Consulting. The ITE Trip Generation Manual is a compilation of traffic data from existing developments throughout the United States. As mentioned, it is recommended to use local trip generation data where possible as it may more accurately depict traffic patterns than a national database.

For the fast casual restaurant land use, our local rates were used. However, these rates show no distinction between a fast-casual restaurant with a drive-thru and one without a drive-thru. For the retail and morning breakfast land uses, local data is not available. Instead, national data from ITE was consulted. For the midday rates, which is not provided in the national data, an average of the a.m. and p.m. peak hour rates was used. Table 3 shows a summary of the proposed redevelopment trip generation for each scenario. A detailed trip generation table is attached.

Table 3 – Forecast Trip Generation for Proposed Redevelopment Scenarios

Source	Development Description	Daily		AM Peak Hour		Midday Peak Hour		PM Peak Hour	
		In	Out	In	Out	In	Out	In	Out
ITE - 937	Coffee Shop w/Drive-Thru* (2,200 square feet)	900	900	113	108	80	78	47	47
Local – Fast Casual	Fast-Casual Restaurant (2,300 square feet)	353	353	9	6	52	47	34	31
Scenario 1 Total – Morning Breakfast & Restaurant		1,253	1,253	122	114	132	125	81	78
ITE - 826	Specialty Retail (2,300 square feet)	51	51	8	8	5	6	3	3
Local – Fast Casual	Fast-Casual Restaurant w/Drive-Thru (2,200 square feet)	338	338	9	6	49	45	33	29
Scenario 2 Total – Restaurant & Retail		389	389	17	14	54	51	36	32

* Morning breakfast user for development, ITE land use is called Coffee Shop with Drive-Thru.

As shown, Scenario 1 would expect to draw more trips than the existing land use or more than a typical fast food restaurant. Scenario 2 would expect more traffic than the existing land use, but less than a typical fast food restaurant. It should be noted that this trip generation represents total traffic to and from the site only. Not all of this traffic would be new to the transportation roadway system. Generally, traffic is sub-divided between three types of trips – new, pass-by, and internal. Pass-by trips are those vehicles already on the roads which will stop at the development site in the future. Internal trips are those vehicles within the site visiting both businesses. New trips represent traffic increasing the overall number of vehicles on the adjacent roadway.

Parking Generation

For each scenario, the expected parking was also examined. For the fast casual land use, the local data was again consulted. ITE provided parking data for a morning breakfast user and for a retail store. In this case, ITE makes no distinction between a specialty retail store, like the proposed development, and a shopping center. Table 4 presents the average parking generation for each land use type of each scenario.

Table 4 – Forecast Parking Generation for Proposed Redevelopment Scenarios

Source	Development Description	Peak Parking Generation	
		Weekday	Peak Period
Scenario 1 Total – Morning Breakfast User & Fast Casual Restaurant			
ITE - 937	Coffee Shop w/Drive-Thru* (2,200 square feet)	23	Morning
Local – Fast Casual	Fast-Casual Restaurant (2,300 square feet)	23	Mid-day
Scenario 2 Total – Restaurant & Retail			
ITE - 820	Shopping Center** (2,300 square feet)	6	Early Evening
Local – Fast Casual	Fast-Casual Restaurant w/Drive-Thru (2,200 square feet)	22	Mid-day

* Morning breakfast user for development, ITE land use is called Coffee Shop with Drive-Thru.

** Specialty retail user for development, ITE does not have a separate category apart from Shopping Center.

If the peaks are summed, the peak parking demands would be 46 spaces for Scenario 1 and 28 spaces for Scenario 2. As shown in the site plan, the proposed redevelopment would provide 47 spaces, enough to cover the expected summed parking demand. However, the peak parking periods of the individual land uses within each scenario are likely to occur at different times. Most importantly, the actual peak parking demand for the site under each redevelopment would be less than summed total. In addition, Scenario 2 has the potential for internal trips which would also reduce the peak parking. Based on this information, the proposed redevelopment would have sufficient parking to accommodate the expected peak demand for either scenario.

Site Plan Review

The proposed redevelopment site plan, attached, shows pedestrian accesses on the north and south side of the building. A marked crosswalk across the drive-thru entrance, connecting to the sidewalk curb cut, could be provided for pedestrians parked on the south side of the site.

Bicycle parking facilities are also shown on the north edge of the site. This area is also connected the sidewalk for the site. These elements are appropriate to potentially reduce the vehicle traffic to/from the site.

Assuming the drive-thru window is located at the north end of the building and approximately 20 feet per vehicle, about seven vehicles could be accommodated in the drive-thru lane. In 2012, Spack Consulting compiled a report looking at the drive-through lane usage at several land uses in Minnesota including coffee shops and fast food restaurants. At each of these land uses, six different locations were observed from between one to five days and the maximum queue lengths for each day at each location were noted. This study is attached.

The daily maximum queue length was determined to be 11 vehicles at a coffee shop and nine vehicles at a fast food restaurant. No data was obtained for a casual food restaurant. Assuming a similar ratio to that for the trip generation, a casual food restaurant might expect approximately six vehicles stack in the drive- thru lane.

Based on this review, the shown drive-thru lane likely has sufficient space to accommodate the expected queuing for a casual food restaurant. However, a morning breakfast user (i.e. coffee, bagels, breakfast) maximum drive-thru stacking could exceed the available designated queueing lane at peak times. In that case, the vehicles will spill out of the drive-thru lane into the parking area, but within the property boundaries. This parking area at this site allows for additional stacking of approximately four vehicles. Considering the drive-thru lane and the internal stacking in the parking lot, sufficient space is provided for a potential primary morning breakfast user (i.e. coffee, bagels, breakfast),

The second site access on the southeast side of the site allows for vehicle entries and exits in the event of a maximum drive-thru queue blocking the parking lot drive aisle to the northern access. The expected morning breakfast user could create parking lot conflicts between parking vehicles and drive-thru queues at times.

Attachments

- A. Existing Trip Generation Counts
- B. Forecast Trip Generation Table
- C. Site Plan
- D. Drive-Thru Queue Generation Report

Attachment A - Existing Trip Generation Counts

1350 Wayzata Blvd Trip Generation Counts

4/5/2017						4/6/2017							
Time	Enter	Exit	Hourly Total	Hourly Enter	Hourly Exit	In Parking Lot	Time	Enter	Exit	Hourly Total	Hourly Enter	Hourly Exit	In Parking Lot
09:00	1	1	4	3	1	0	09:00	0	0	5	3	2	0
09:15	1	0	2	2	0	1	09:15	1	1	6	4	2	0
09:30	1	0	1	1	0	2	09:30	2	1	4	3	1	1
09:45	0	0	1	1	0	2	09:45	0	0	3	3	0	1
10:00	0	0	5	4	1	2	10:00	1	0	7	6	1	2
10:15	0	0	15	10	5	2	10:15	0	0	18	14	4	2
10:30	1	0	30	20	10	3	10:30	2	0	28	19	9	4
10:45	3	1	48	28	20	5	10:45	3	1	48	29	19	6
11:00	6	4	65	38	27	7	11:00	9	3	58	33	25	12
11:15	10	5	75	40	35	12	11:15	5	5	68	39	29	12
11:30	9	10	82	41	41	11	11:30	12	10	80	43	37	14
11:45	13	8	79	39	40	16	11:45	7	7	75	40	35	14
12:00	8	12	71	33	38	12	12:00	15	7	72	37	35	22
12:15	11	11	67	32	35	12	12:15	9	13	63	28	35	18
12:30	7	9	61	29	32	10	12:30	9	8	48	23	25	19
12:45	7	6	55	27	28	11	12:45	4	7	41	19	22	16
13:00	7	9	50	22	28	9	13:00	6	7	41	19	22	15
13:15	8	8	41	19	22	9	13:15	4	3	39	19	20	16
13:30	5	5	29	12	17	9	13:30	5	5	41	20	21	16
13:45	2	6	28	11	17	5	13:45	4	7	39	17	22	13
14:00	4	3	26	11	15	6	14:00	6	5	37	18	19	14
14:15	1	3	21	9	12	4	14:15	5	4	36	17	19	15
14:30	4	5	21	10	11	3	14:30	2	6	37	17	20	11
14:45	2	4	20	9	11	1	14:45	5	4	33	15	18	12
15:00	2	0	21	10	11	3	15:00	5	5	26	11	15	12
15:15	2	2	27	12	15	3	15:15	5	5	24	12	12	12
15:30	3	5	29	14	15	1	15:30	0	4	23	12	11	8
15:45	3	4	29	15	14	0	15:45	1	1	32	19	13	8
16:00	4	4	34	19	15	0	16:00	6	2	40	21	19	12
16:15	4	2	43	23	20	2	16:15	5	4	40	20	20	13
16:30	4	4	44	21	23	2	16:30	7	6	49	25	24	14
16:45	7	5	41	20	21	4	16:45	3	7	47	23	24	10
17:00	8	9	39	18	21	3	17:00	5	3	45	23	22	12
17:15	2	5	34	19	15	0	17:15	10	8	50	29	21	14
17:30	3	2	36	19	17	1	17:30	5	6	51	25	26	13
17:45	5	5	37	18	19	1	17:45	3	5	60	29	31	11
18:00	9	3	41	20	21	7	18:00	11	2	60	29	31	20
18:15	2	7	39	16	23	2	18:15	6	13	59	22	37	13
18:30	2	4	36	17	19	0	18:30	9	11	42	17	25	11
18:45	7	7	38	19	19	0	18:45	3	5	30	13	17	9
19:00	5	5	33	17	16	0	19:00	4	8	29	14	15	5
19:15	3	3	34	18	16	0	19:15	1	1	29	15	14	5
19:30	4	4	36	18	18	0	19:30	5	3	35	17	18	7
19:45	5	4	32	16	16	1	19:45	4	3	32	15	17	8
20:00	6	5	27	13	14	2	20:00	5	7	31	13	18	6
20:15	3	5	24	11	13	0	20:15	3	5	27	13	14	4
20:30	2	2	18	9	9	0	20:30	3	2	25	12	13	5
20:45	2	2	18	9	9	0	20:45	2	4	21	9	12	3
21:00	4	4	16	8	8	0	21:00	5	3	17	8	9	5
21:15	1	1	8	4	4	0	21:15	2	4	9	3	6	3
21:30	2	2	6	3	3	0	21:30	0	1	5	1	4	2
21:45	1	1	2	1	1	0	21:45	1	1	4	1	3	2
22:00	0	0	0	0	0	0	22:00	0	0	2	0	2	2
22:15	0	0	0	0	0	0	22:15	0	2	2	0	2	0
22:30	0	0	0	0	0	0	22:30	0	0	0	0	0	0
22:45	0	0	1	1	0	0	22:45	0	0	0	0	0	0
23:00	0	0	2	1	1	0	23:00	0	0	0	0	0	0
23:15	0	0				0	23:15	0	0				0
23:30	1	0				1	23:30	0	0				0
23:45	0	1				0	23:45	0	0				0
TOTAL	217	217					TOTAL	235	235				

Attachment B - Forecast Trip Generation Table



Forecast Trip Generation

Daily Volumes

LAND USE	ITE CODE #	DEVELOPMENT UNITS	QUANTITY	DAILY RATE	ENTER PERCENT	EXIT PERCENT	INTERNAL PERCENT	INTERNAL TRIPS	PASSBY PERCENT	PASSBY TRIPS	NEW TRIPS	
											ENTER	EXIT
Coffee Shop w/Drive-Thru	937	1,000 GFA	2.2	818.58	50%	50%	0%	0	89%	1,603	99	99
Fast Casual Restaurant	Local	1,000 GFA	2.2	306.88	50%	50%	0%	0	49%	331	172	172
TOTALS (Coffee Shop & Restaurant)								0		1,934	271	271
Fast Casual Restaurant w/Drive-Thru	Local	1,000 GFA	2.2	306.88	50%	50%	7%	47	49%	331	149	149
Specialty Retail	826	1,000 GFA	2.2	44.32	50%	50%	7%	7	34%	33	29	29
TOTALS (Restaurant & Retail)								54		364	178	178

AM Peak Hour

LAND USE	ITE CODE #	DEVELOPMENT UNITS	QUANTITY	AM RATE	ENTER PERCENT	EXIT PERCENT	INTERNAL PERCENT	INTERNAL TRIPS	PASSBY PERCENT	PASSBY TRIPS	NEW TRIPS	
											ENTER	EXIT
Coffee Shop w/Drive-Thru	937	1,000 GFA	2.2	100.58	51%	49%	0%	0	89%	197	14	10
Fast Casual Restaurant	Local	1,000 GFA	2.2	6.88	59%	41%	0%	0	49%	7	5	2
TOTALS (Coffee Shop & Restaurant)								0		204	19	12
Fast Casual Restaurant w/Drive-Thru	Local	1,000 GFA	2.2	6.88	59%	41%	13%	2	49%	7	4	2
Specialty Retail	826	1,000 GFA	2.2	6.84	48%	52%	13%	2	34%	5	4	4
TOTALS (Restaurant & Retail)								4		13	8	6

Midday Peak Hour

LAND USE	ITE CODE #	DEVELOPMENT UNITS	QUANTITY	MIDDAY RATE	ENTER PERCENT	EXIT PERCENT	INTERNAL PERCENT	INTERNAL TRIPS	PASSBY PERCENT	PASSBY TRIPS	NEW TRIPS	
											ENTER	EXIT
Coffee Shop w/Drive-Thru	937	1,000 GFA	2.2	71.69	51%	49%	0%	0	89%	140	9	8
Fast Casual Restaurant	Local	1,000 GFA	2.2	42.71	53%	47%	0%	0	49%	46	26	21
TOTALS (Coffee Shop & Restaurant)								0		186	35	29
Fast Casual Restaurant w/Drive-Thru	Local	1,000 GFA	2.2	42.71	53%	47%	6%	6	49%	46	24	19
Specialty Retail	826	1,000 GFA	2.2	4.78	46%	54%	6%	1	34%	4	3	4
TOTALS (Restaurant & Retail)								6		50	27	23

PM Peak Hour

LAND USE	ITE CODE #	DEVELOPMENT UNITS	QUANTITY	PM RATE	ENTER PERCENT	EXIT PERCENT	INTERNAL PERCENT	INTERNAL TRIPS	PASSBY PERCENT	PASSBY TRIPS	NEW TRIPS	
											ENTER	EXIT
Coffee Shop w/Drive-Thru	937	1,000 GFA	2.2	42.80	50%	50%	0%	0	89%	84	5	5
Fast Casual Restaurant	Local	1,000 GFA	2.2	28.27	53%	47%	0%	0	50%	31	17	14
TOTALS (Coffee Shop & Restaurant)								0		115	22	19
Fast Casual Restaurant w/Drive-Thru	Local	1,000 GFA	2.2	28.27	53%	47%	9%	6	50%	31	15	11
Specialty Retail	826	1,000 GFA	2.2	2.71	44%	56%	9%	1	34%	2	1	2
TOTALS (Restaurant & Retail)								6		33	16	13

NOTES:

1. GFA = Gross Floor Area
2. Trip generation rates for Coffee Shop & Specialty Retail based on "Trip Generation", Institute of Transportation Engineers, 9th Edition.
3. Trip generation rates for Fast Casual Restaurant & Fast Casual Restaurant w/Drive-Thru based on locally collected data by Spack Consulting.
4. A.M. Trip Generation is for the peak hour of adjacent street traffic (one hour between 7 and 9 a.m.).
5. P.M. Trip Generation is for the peak hour of adjacent street traffic (one hour between 4 and 6 p.m.).
6. A.M. Trip Generation for Specialty Retail is for the peak hour of generator.
7. Midday Trip Generation for Coffee Shop and Specialty Retail based on average of AM & PM Peak Hour rates.
8. Reduction for internal and passby trips (Internal Percent) is based on "Trip Generation Handbook", Institute of Transportation Engineers, 3rd Edition.
9. The passby rate for ITE 826, Specialty Retail, is based on the similar ITE 820, Shopping Center.
10. The passby rate for Fast Casual Restaurant & Fast Casual Restaurant w/Drive-Thru is based on the similar ITE 934, Fast Food with Drive Thru.
11. The passby rate for ITE 937, Coffee Shop w/Drive-Thru, is based on the similar ITE 938, Coffee Shop w/Drive-Thru and No Indoor Seating.



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ZONING DATA

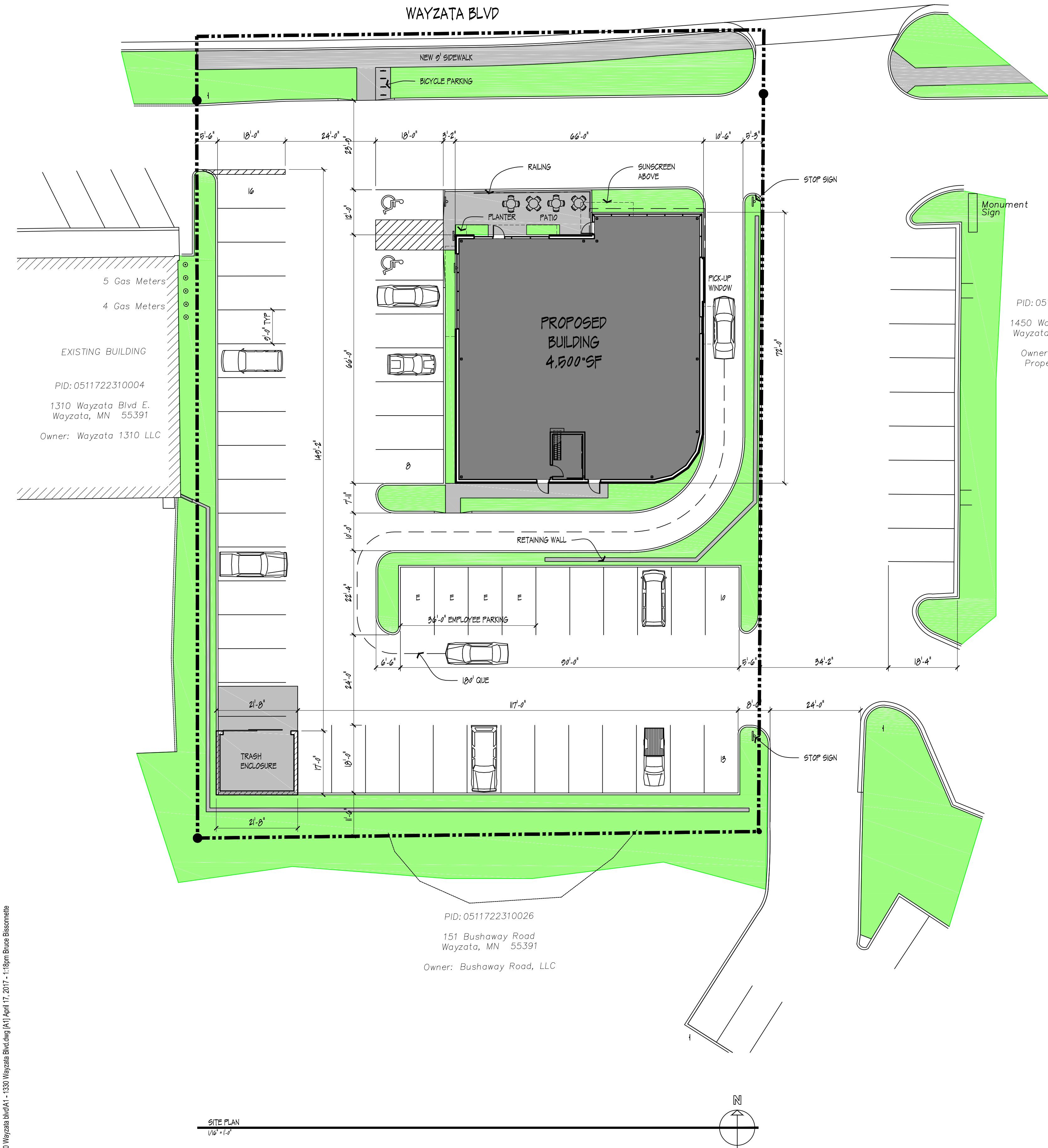
- ZONING DISTRICT: C3
- BUILDING SETBACK
 - FRONT: 10'
 - SIDE: 10' (50' ABUTTING RESIDENTAL)
 - REAR: 10' (50' ABUTTING RESIDENTAL)
- PARKING SETBACK
 - FRONT: 10'
 - SIDE: 10'
 - REAR: 10'

AREA SUMMARY

- LOT AREA: .73 AC (31,028 S.F.)
- EXISTING
 - IMPERVIOUS: .54 AC (INCL: EXISTING BLDG)
 - PERVIOUS: .19 AC
- PROPOSED
 - IMPERVIOUS: .61 AC (INCL: PROPOSED 4,500 S.F. BLDG)
 - PERVIOUS: .12 AC

PARKING SUMMARY

- REQUIRED PARKING:
REFER TO SPARK CONSULTING TRAFFIC STUDY
- PROVIDED PARKING:
 - STANDARD STALLS: 45
 - ACCESSABLE STALLS: 2
- TOTAL: 47 STALLS
- REQUIRED / PROVIDED BICYCLE PARKING:
 - TOTAL: 4 STALLS



No.	Date	Revision
	04/14/2017	CITY SUBMITTAL

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision, and that I am a duly Licensed Architect under the laws of the State of Minnesota.

Printed Name: _____

Signature: _____

Date: _____ License #: _____

FLOOR PLAN, EXTERIOR ELEVATIONS

Project —
Date —
Drawn by —
Checked by —
Drawing Number —



Drive-Through Queue Generation

Mike Spack, PE, PTOE, Max Moreland, EIT, Lindsay de Leeuw, Nate Hood

1.0 Introduction

This report provides queuing data for businesses with drive-through services. It is intended to be an aid for site designers and reviewers, similar to the Institute of Transportation Engineers' *Trip Generation* and *Parking Generation* reports. The data presentation is modeled on the *Parking Generation* report and data is provided based on at least six sites, similar to data sets marked as statistically significant in *Trip Generation*.

Businesses with drive-through lanes are very common in the United States and having data that gives usage information for drive-through lanes will assist designers as well as cities in determining the appropriate amount of storage needed for proposed drive-through businesses. Data for drive-through queues was published by the ITE Technical Council Committee 5D-10 in 1995 based on information collected between the late 1960's and the 1990's. A paper was also published in 2009 by Mark Stuecheli, PTP giving updated information for bank and coffee shop drive-through lanes. The results from the 2009 study are incorporated into this paper (thank you Mark for your assistance).

2.0 Data Collection

Data was collected using COUNTcam video recording systems at a total of 30 drive-through locations in Minneapolis, MN and several surrounding suburbs between 2010 and 2012 (26 of the 30 videos were recorded in February of 2012, which should represent peak usage in the cold Minnesota winter). Videos of drive-through lanes were collected at banks, car washes, coffee shops, fast food restaurants and pharmacies. A total of six locations were selected for each of the five different land uses. Each location was recorded for between one and five days where the majority of locations were recorded for two consecutive days. The days of the week that each video was recorded on varies.

The 24-hour videos were watched at high speeds with the PC-TAS counting software and maximum queues throughout the day were noted. Most of the COUNTcams were set up such that the entire queue lane could be seen, but at a few locations the drive-through lanes wrapped around the building in a way that the entire queue length would not be able to be seen. For these situations, the COUNTcams were set up so that the ordering window and back of the queue could be seen and it was noted how many vehicles could fit between the ordering window and the front of the queue. For drive-through locations with multiple lanes, the number of lanes was noted but the maximum queue is defined as the sum of the queues at each lane for any given point in time, not the queue per lane. This approach provides overall demand, which may assist designers in determining how many drive through lanes are appropriate in addition to determining how long they should be.



Once the maximum queue for each day at each location was determined, the data was compiled and statistics for each land use were calculated. The average maximum queue, standard deviation, coefficient of variation, range, 85th percentile and 33rd percentile were calculated for each land use.

Data for drive-through coffee shops and banks from the Kansas City, Kansas metropolitan area was published in the 2009 paper New Drive-Through Stacking Information for Banks and Coffee Shops by Mark Stuecheli. This data is included in the analysis.

3.0 Data Analysis

Based on the peak queue lengths, it is apparent that each land use will require a different minimum drive through stacking distance. The results for each land use can be found below. The peak queue lengths for each location, broken down by land use and day of the week, can be found in the Appendix.

3.1 Banks

Data collection was done at six banks with drive-through services (including one credit union) in August 2011 and February 2012. Twelve days of data were collected. The banks were located in the cities of Minneapolis, Robbinsdale and St. Louis Park, MN.

All of the locations had a lane with a drive-through ATM and at least two other lanes. Though service times may differ for ATM lanes compared to the regular lanes, the maximum queues were counted together. This is because based upon what was observed, vehicles would occasionally switch the lane they were in. For example, a vehicle waiting in the ATM line with a queue of three vehicles may move over to a regular line with a queue of only one vehicle. Much of what can be done at the bank's drive-through lane can also be accomplished at that bank's ATM and vice versa. Vehicles being served were counted as being in the queue.

Nine days of data from the Kansas City, Kansas area is also included. This data does not factor in vehicles in ATM lanes.

Table 3.1 – Drive-Through Bank Maximum Queue Statistics

	Minnesota Data	Minnesota + Kansas Data
Number of Data Points	12	21
Average Maximum Queue (Vehicles)	5.83	5.76
Standard Deviation (Vehicles)	1.85	2.21
Coefficient of Variation	32%	38%
Range (Vehicles)	3 to 8	1 to 10
85th Percentile (Vehicles)	8.00	8.00
33rd Percentile (Vehicles)	5.00	5.00

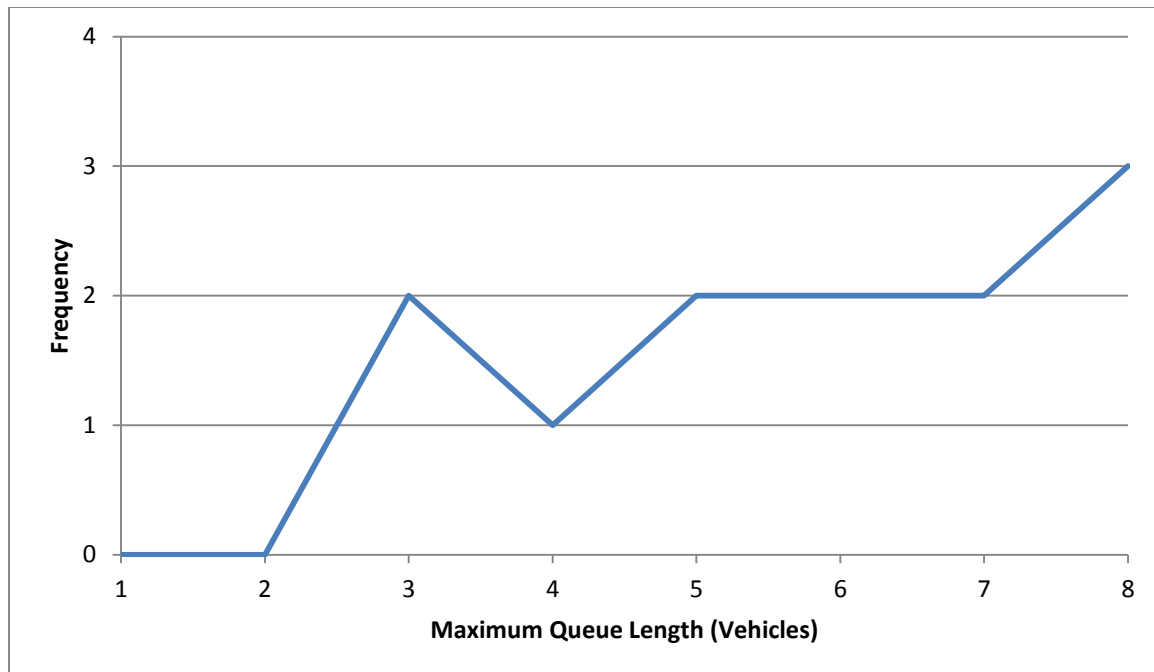


Figure 3.1.1 – Drive-Through Bank Maximum Queue Frequency – Minnesota Data



Figure 3.1.2 – Drive-Through Bank Maximum Queue Frequency – Minnesota + Kansas Data



The data for Kansas banks was collected between 4:30pm and 6:00pm. While many of the maximum queues for the data collected in Minnesota were between these times, maximum queues occurred between 8:30am and 5:30pm so it is possible that some of the Kansas data does not capture the actual maximum queues for the day.

The number of available lanes at banks, not including the ATM lane, ranged from two to seven lanes (though the most open at one time was five lanes). Even though plenty of lanes were available, cars often stacked at the lane closest to the building, thus additional lanes may not result in shorter queues. With an 85th percentile maximum queue of eight vehicles, the data suggests that banks with drive-through lanes should be able to accommodate 160 feet of vehicle stacking.

3.2 Car Washes

Data collection was done at six car washes with drive-through services (including one full-service car wash) in February 2012. Twelve days of data were collected. The car washes were located in the cities of Falcon Heights, Hopkins, Minneapolis, Roseville and St. Louis Park, MN. Five of the six car washes (excluding the full-service car wash) were located at gas stations. Only the vehicles waiting in line were counted; vehicles being washed were not added to the queue.

Table 3.2 – Drive-Through Car Wash Maximum Queue Statistics

Number of Data Points	12
Average Maximum Queue (Vehicles)	4.42
Standard Deviation (Vehicles)	2.31
Coefficient of Variation	52%
Range (Vehicles)	1 to 10
85th Percentile (Vehicles)	6.20
33rd Percentile (Vehicles)	3.00

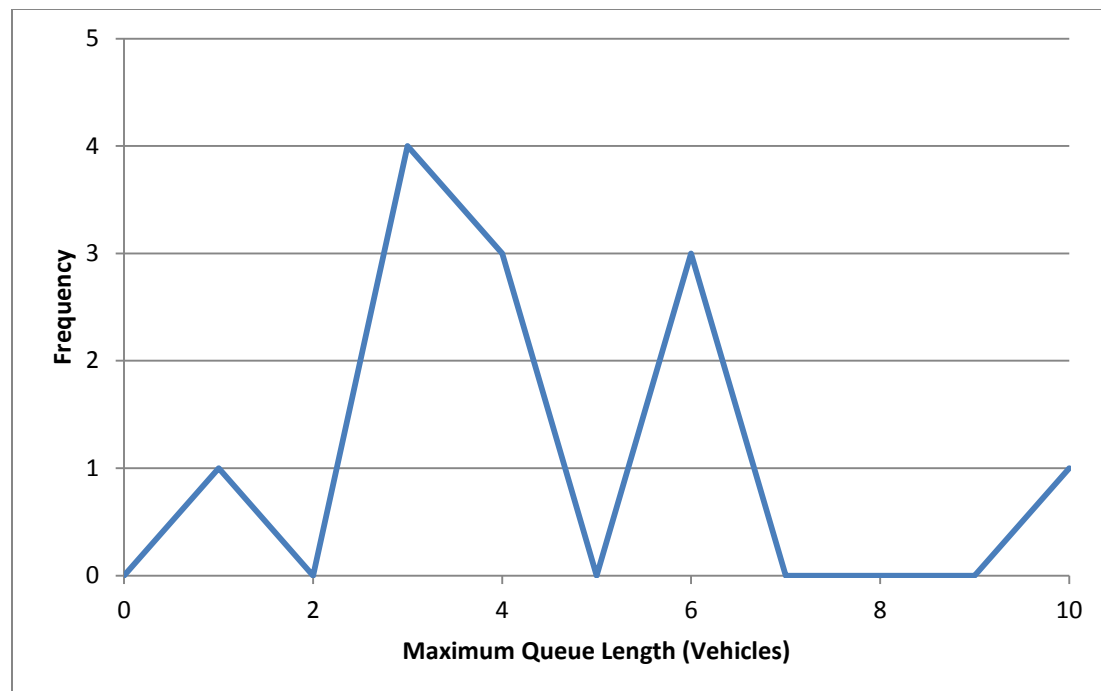


Figure 3.2 – Drive-Through Car Wash Maximum Queue Frequency

Two of the car washes had two lanes while the other four were one lane car washes. The full-service car wash had two lanes and also produced the highest maximum queue of 10 vehicles. The maximum queues for car washes were spread throughout the afternoon from 12:30pm to 8:30pm. With an 85th percentile maximum queue of more than six vehicles, the data suggests that car washes with drive-through lanes should be able to accommodate 140 feet of vehicle stacking throughout the day.

3.3 Coffee Shops

Data collection was done at six coffee shops with drive-through services in November 2010, August 2011 and February 2012. Fourteen days of data were collected. The coffee shops were located in the cities of Edina, Hopkins, Minneapolis, Roseville and St. Louis Park, MN. Vehicles being served were counted as being in the queue. Twelve days of data from the Kansas City, Kansas area is also included.

Table 3.3 – Drive-Through Coffee Shop Maximum Queue Statistics

	Minnesota Data	Minnesota + Kansas Data
Number of Data Points	14	26
Average Maximum Queue (Vehicles)	11.00	10.23
Standard Deviation (Vehicles)	2.25	2.76
Coefficient of Variation	20%	27%
Range (Vehicles)	7 to 16	3 to 16
85th Percentile (Vehicles)	13.50	13.00
33rd Percentile (Vehicles)	10.00	9.91



Figure 3.3.1 – Drive-Through Coffee Shop Maximum Queue Frequency – Minnesota Data

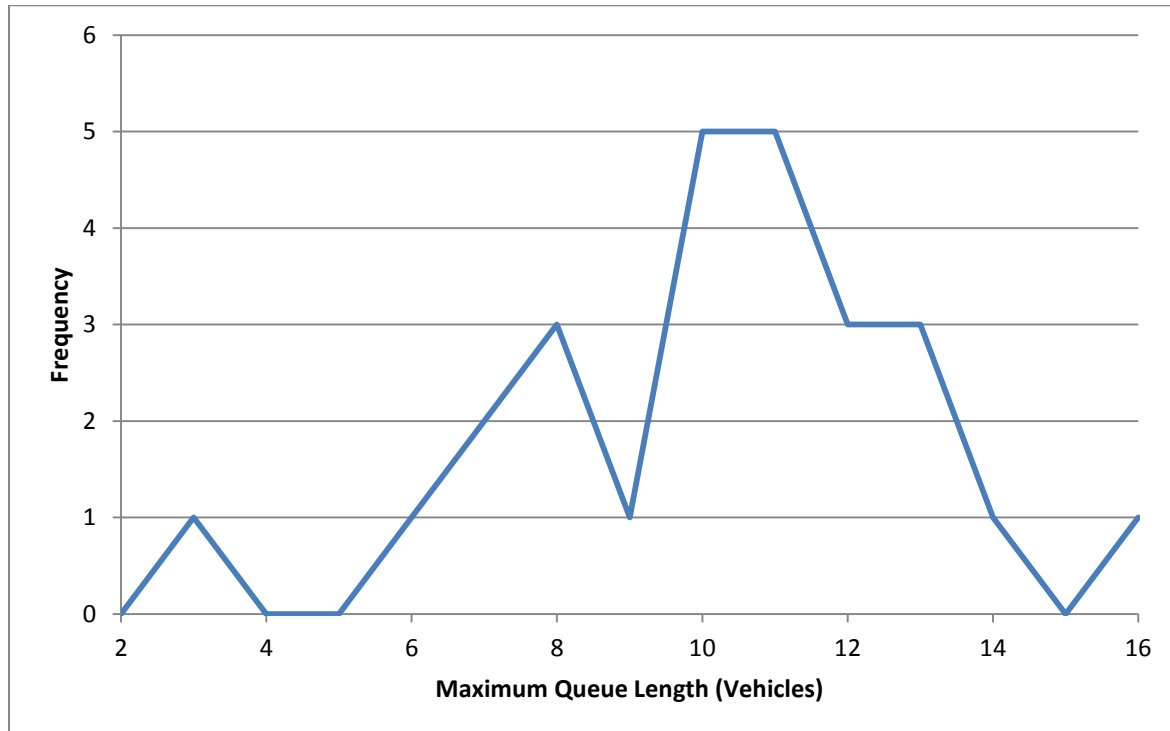


Figure 3.3.2 – Drive-Through Coffee Shop Maximum Queue Frequency – MN + KS Data



Coffee shops produced the longest maximum queues of any of the land uses in this study with all of the maximum queues occurring in the morning. In four of the six cases, the queues spilled out of the parking lot and into the street. These spillovers would typically only happen once or twice a day and last only a few minutes, however, one location had stacking into the street for about 15 minutes in addition to multiple periods of several minutes where cars would queue in the street.

With an 85th percentile maximum queue of 13 vehicles, the data suggests that coffee shops with drive-through lanes should be able to accommodate at least 260 feet of vehicle stacking during morning hours.

3.4 Fast Food Restaurants

Data collection was done at six fast food restaurants with drive-through services in August 2011 and February 2012. Fourteen days of data were collected. The restaurants were located in the cities of Golden Valley, Hopkins, Minneapolis and St. Louis Park, MN. Vehicles being served were counted as being in the queue.

Table 3.4 – Drive-Through Fast Food Restaurant Maximum Queue Statistics

Number of Data Points	14
Average Maximum Queue (Vehicles)	8.50
Standard Deviation (Vehicles)	2.68
Coefficient of Variation	32%
Range (Vehicles)	5-13
85th Percentile (Vehicles)	12.00
33rd Percentile (Vehicles)	7.90

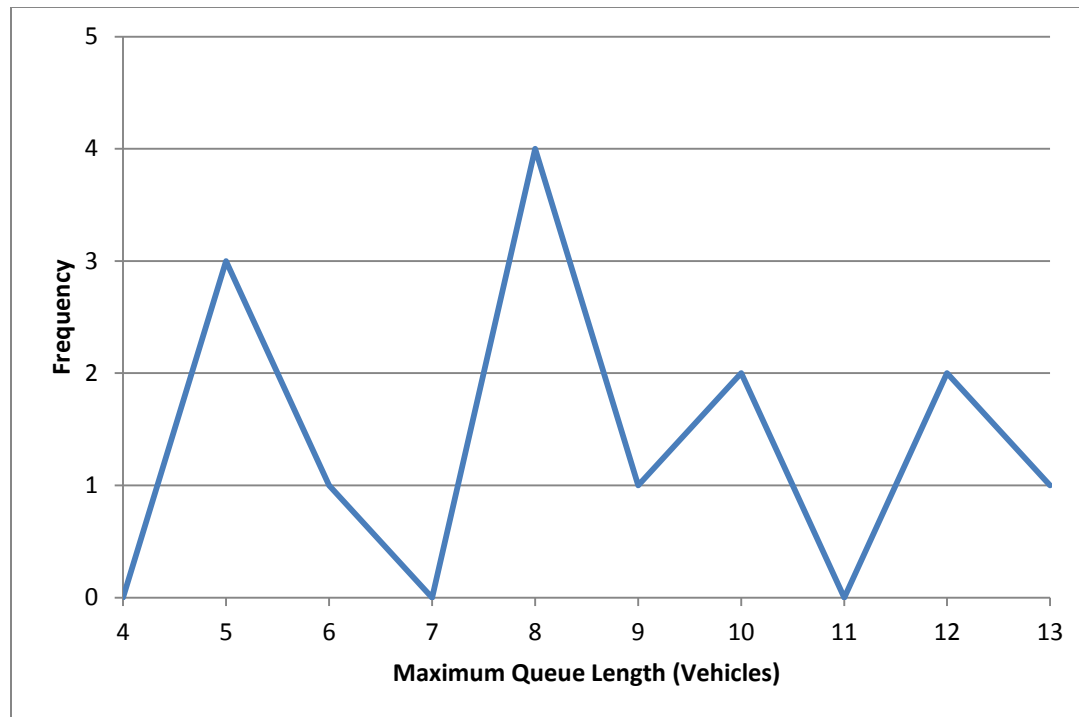


Figure 3.4 – Drive-Through Fast Food Restaurant Maximum Queue Frequency

The maximum queues for fast food restaurants were spread throughout the day from 8:00am to 10:00pm. With an 85th percentile maximum queue of 12 vehicles, the data suggests that fast food restaurants with drive-through lanes should be able to accommodate 240 feet of vehicle stacking throughout the day.

3.5 Pharmacies

Data collection was done at six pharmacies with drive-through services in February 2012. Twelve days of data were collected. The pharmacies were located in the cities of Hopkins, Minneapolis, New Hope and Robbinsdale, MN. Vehicles being served were counted as being in the queue.

Table 3.5 – Drive-Through Pharmacy Maximum Queue Statistics

Number of Data Points	12
Average Maximum Queue (Vehicles)	2.92
Standard Deviation (Vehicles)	1.16
Coefficient of Variation	40%
Range (Vehicles)	1-5
85th Percentile (Vehicles)	4.05
33rd Percentile (Vehicles)	2.00

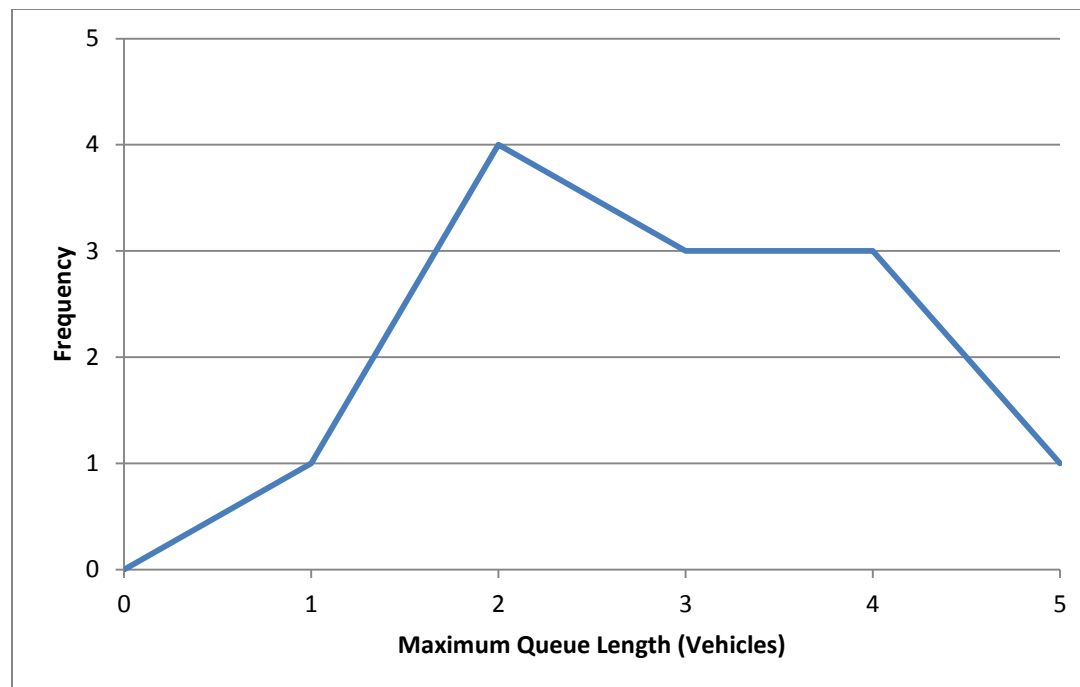


Figure 3.5 – Drive-Through Pharmacy Maximum Queue Frequency

The maximum queues for pharmacies were spread throughout the day from 8:00am to 10:00pm. With an 85th percentile maximum queue of more than 4 vehicles, the data suggests that pharmacies with drive-through lanes should be able to accommodate 100 feet of vehicle stacking throughout the day.

4.0 Conclusions

The 85th percentile maximum queue lengths for each land use are: 160 feet for banks (eight vehicles), 140 feet for car washes (seven vehicles), 260 feet for coffee shops (13 vehicles), 240 feet for fast food restaurants (12 vehicles) and 100 feet for pharmacies (five vehicles).

While some of the locations observed have an excess of space dedicated to drive-through lanes (i.e. some banks and pharmacies), others could occasionally use additional space for drive-through lanes (i.e. coffee shops in the morning).

Fast food restaurants and coffee shops have the longest maximum queues of the five land uses observed. Coffee shops have a tendency for the morning queues to build so long that they spill out onto the street, though, as is expected, their afternoon and evening queues are minimal. Fast food restaurants also have large queues, but they tended to have enough dedicated space that stacking did not go beyond the designated queuing area.



The data collected for this paper along with the data from the papers by Mark Stuecheli and the ITE Technical Committee 5D-10 (see Appendix for both of these) will hopefully provide useful data for traffic engineers and others trying to analyze drive-through queuing storage areas.

5.0 Labor Savings of the COUNTkit

Deploying people in the field to perform this data collection would not have been feasible. Using the COUNTcam video system made it possible to observe the drive through lanes 24 hours a day and the PC-TAS software made the data reduction practical. One location was recorded in November 2010 for 6 hours, three locations were recorded in August 2011 for a total of 202 hours and 26 locations were recorded in February 2012 for a total of 1012 hours. These 1220 hours of video were counted with a total of 120 hours of labor, meaning the videos were watched at approximately 10x speed. Installation of a COUNTcam takes approximately 10 minutes and retrieval takes approximately 5 minutes. This whole project was completed in approximately 3 weeks.

6.0 References

1. Stuecheli, M. (2009). New Drive-Through Stacking Information for Banks and Coffee Shops. *ITE 2009 Annual Meeting and Exhibit*. Print.
2. ITE Technical Committee 5D-10. "Queuing Areas for Drive-Thru Facilities." *ITE Journal* (May 1995): 38-42. Print.
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7.0 Appendix

- A – Day of Week Maximum Queues
- B – New Drive-Through Stacking Information for Banks and Coffee Shops
- C – ITE Technical Committee 5D-10: Queuing Areas for Drive-Thru Facilities
- D – Drive-Through Data Forms

Attachment D - Drive-Thru Queue Generation Report

Appendix A

Day of Week Maximum Queues

		Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Fast Food	Arby's				5	5		
	Burger King	6	12				10	8
	McDonald's				12	13		
	McDonald's				9	8		
	Taco Bell				10	8		
	White Castle				8	5		
Car Wash	BP				6	6		
	BP			1	3			
	BP			4	3			
	Holiday				3	4		
	Mister Car Wash				10	6		
	Mobil				4	3		
Coffee	Caribou				11	10		
	Caribou	7	10	12			12	8
	Starbucks				14	16		
	Starbucks				10	11		
	Starbucks			10	12			
	Starbucks				11			
Bank	Citizens Independent Bank			5	5			
	SharePoint Credit Union				3	3		
	TCF	4					8	8
	US Bank				7	7		
	Wells Fargo			8	6			
	Wells Fargo			6				
Pharmacy	CVS			1	2			
	CVS			4	4			
	CVS			2	2			
	Walgreens				4	5		
	Walgreens			3	3			
	Walgreens			3	2			

Appendix B

New Drive-Through Stacking Information for Banks and Coffee Shops

Mark Stuecheli, PTP

Abstract

This paper provides updated queuing information for drive-in banks and new queuing data for coffee shops with drive-through lanes. The data is presented in a format similar to that used in the report for **ITE Technical Council Committee 5D-10**, originally published in 1995.

Significant changes have occurred in the way that bank patrons conduct business with their banks. In recognition of those changes, ITE has adjusted the trip generation information included in the Eighth Edition of **Trip Generation, an ITE Informational Report** to include only data collected since 2000, and the revised trip generation totals are significantly lower than in previous editions. Clearly, the reduced trip generation figures indicate a reduction in bank drive-through business. This report summarizes queuing information included in counts taken in the Kansas City metropolitan area.

In the last few years coffee shops with drive-through lanes have become prevalent throughout the country. Because those businesses were uncommon when the 1995 report was prepared, no data was gathered for those operations. This paper contains information on counts taken at those establishments, once again in the Kansas City metropolitan area.

Based on the count data, recommendations are included for the minimum amount of stacking distance to require for the two types of drive-through businesses that were studied.

Background

ITE Technical Council Committee 5D-10 was formed in 1987 to produce a database of queuing information for various types of drive-through lanes. The report of the findings of the Committee, published in the May 1995 **ITE Journal**, included information on the characteristics of drive-through lane stacking for fast-food restaurants, drive-in banks, car washes, day care centers and dry cleaners. The counts that were included in the Committee report were conducted from the late 1960s through the late 1980s in a limited number of mid-western, southern and eastern states.

As a former member of that Committee, and having submitted drive-through counts for the effort, I am in a position to make some observations about the change in drive-through usage.

This paper analyzes two types of drive-through operations – one that is greatly modified and another that is new since the original report was published. First, significant changes have occurred in the ways that bank patrons conduct business with their financial institutions. On-line banking, direct deposit and the wide usage of ATMs have resulted in greatly reduced trip generation totals for drive-in banks. In recognition of that fact, ITE adjusted the trip generation information for drive-in banks in the Eighth Edition of **Trip Generation, an ITE Informational Report**, to include only data collected since 2000. The trip generation rates during the p.m. peak hour for the newer data are about 44% lower than rates in the Seventh Edition.

The amount of stacking provided for bank drive-through lanes often has a critical impact on the potential site design alternatives for proposed bank properties. If the information included in the 1995 Report were to be used as the basis for establishing stacking requirements, a large area would need to be allocated to the drive-through lanes. On tight sites, that limitation could preclude developing an acceptable layout.

Clearly, the major drop in trip generation rates indicates that fewer customers are using drive-through lanes. That reduction in drive-through usage has an impact on queue lengths and other operational characteristics observed at those facilities. This paper includes updated information on queuing in bank drive-through lanes based on counts taken in the City of Overland Park, Kansas, a suburban community of 171,000 residents in the Kansas City metropolitan area.

The second area of analysis in this paper pertains to observed queuing characteristics for coffee shops with drive-through lanes. In the last few years, drive-through coffee shops have become common throughout the country. Because those businesses were an insignificant factor when the report for **ITE Technical Council Committee 5D-10** was completed, no counts were conducted for that land use category. This paper contains data on queuing for coffee shops with drive-through lanes, based on counts conducted predominantly in the Kansas suburbs of the Kansas City metropolitan area.

As is the case for drive-in banks, the length of stacking required for a site has a major impact on potential site layouts. If a relatively short stacking distance is permitted, the lanes can be fit into very restricted sites or be more easily retrofitted to work with existing buildings. But if more queuing occurs than is provided for in a dedicated lane, the flow of traffic within a parking lot can be seriously restricted by that excess queue. In the worst case, if the drive-through stacking is located close to a public street and the excess queue extends into or near the street, the operation of the adjoining public street may be negatively impacted.

Drive-In Banks

Counts were conducted at ten suburban drive-in banks located throughout Overland Park in the fall of 2008 and the spring of 2009. Both established locations and sites that were relatively new were counted, although all banks had been open for business for at least one year. All but one location had drive-through ATMs. Based on the results of counts taken at a single bank location during a mid-week lunch hour, a mid-week p.m. peak hour, a Friday lunch hour, and a Friday p.m. peak hour; the maximum queue lengths occurred during the Friday p.m. peak hour. Therefore, all counts used in the study were conducted during the Friday p.m. peak hour time period.

The counting process involved noting the maximum per lane and total queues for the drive-through lanes at each location in fifteen minute increments, along with collecting information on the stacking of any drive-through ATM. In all cases the vehicles in the service positions were included in the counts. Where possible, the volumes of vehicles entering and exiting the parking lot also were tabulated. As a way to evaluate the frequency of various maximum queue lengths, the total queue lengths were noted at five minute intervals.

The queuing data was analyzed in ways similar to the methods used in the 1995 Report. Table 1 lists the observed frequency of maximum queue lengths per lane. Figure 1 plots the per lane maximum queue lengths using both the 2009 data and the data that was presented in 1995 (please note that the 1995 data involved fifteen counts, compared to the ten counts in the 2009 data). Figure 2 plots the probability that the queue lengths per lane will not exceed a given maximum queue length, once again presenting both 2009 and 1995 data.

Table 1 – Drive-In Bank 2009 Maximum Queue Length Per Lane

Queue Length	Frequency	Cumulative Frequency	P($q \leq N$)
0	0	0	0.00
1	1	1	.10
2	4	5	.50
3	4	9	.90
4	1	10	1.00

Note: P($q \leq N$) indicates probability, based on sample, of queue length of “q” not exceeding length “N”

Figure 1 – Drive-In Bank 1995 And 2009 Maximum Queue Length Per Lane Data Plot

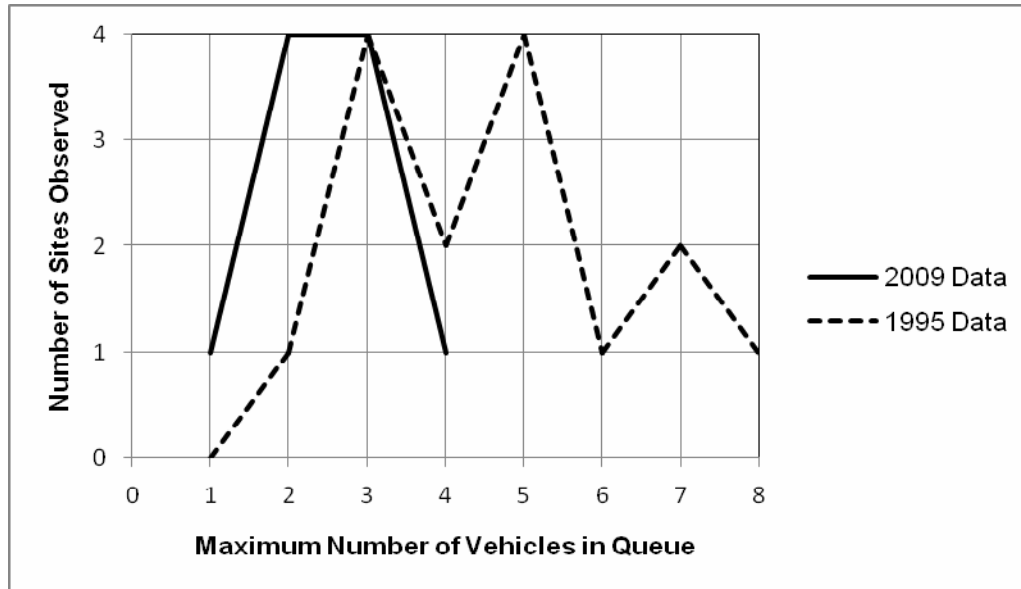
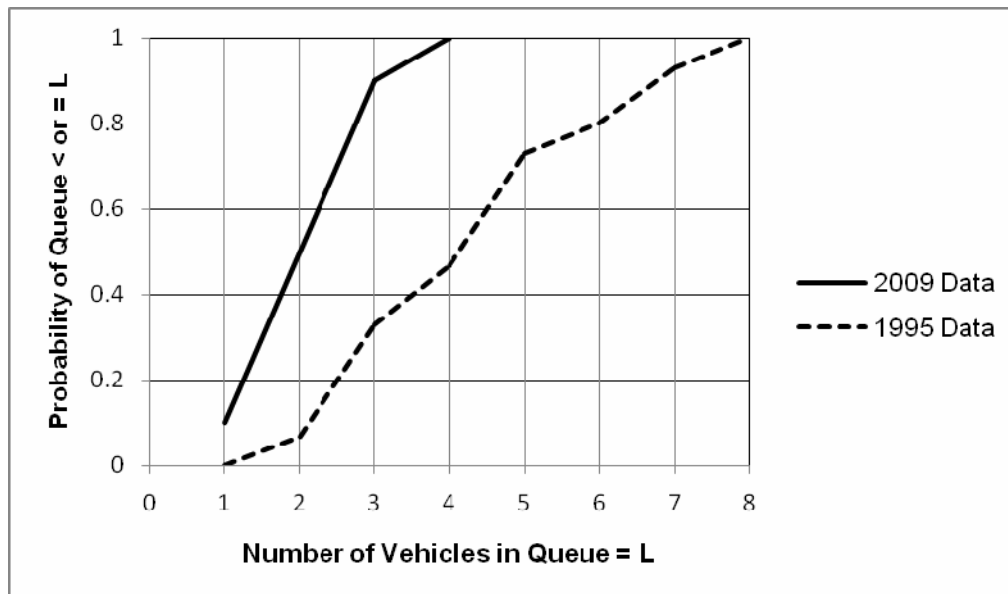


Figure 2 – Drive-In Bank 1995 And 2009 Cumulative Maximum Queue Length Per Lane Data Plot



The differences between the 1995 Report data (as noted earlier, actually based on counts conducted from the late 1960s to the late 1980s) and the 2009 counts are dramatic. The maximum per-lane queue lengths in the current counts were half what they were in the 1995 data.

An attempt was made to determine if such factors as adjoining major street traffic volumes or the size of the building could predict the queuing results, but no correlation was found.

Observations

Some banks, especially those that have been in operation for several years, have a surplus of drive-through lanes and stacking area. That is because those sites were designed to accommodate the much higher demands that existed many years ago. Consequently, they often open only a portion of the available lanes.

In one case, for a main office bank location where it was possible to make a direct comparison between a count conducted in 1988 and a new count in 2008 (actually taken almost precisely 20 years apart), the difference was dramatic. The p.m. peak hour drive-through volumes for the 2008 count were 65% lower than the 1988 count, a much greater drop than would have been indicated by the reduced ITE trip generation figures discussed earlier. The maximum total number of vehicles queued and the maximum queue lengths per lane were correspondingly lower, dropping from 29 to 8 and 7 to 3, respectively. The demographics and development characteristics of the surrounding area have changed little since 1988 and the bank has continued as a stable operation. Considering all of those factors, it is reasonable to assume that the differences are associated with changes in customers' banking habits.

The one incidence of a four car per lane maximum stack was a single occurrence that lasted for only a few minutes. Based on that information, it is reasonable to consider the practical maximum required queue length to be three vehicles.

The maximum queue lengths for ATMS ranged from two to five vehicles. Only one location experienced the longer queue lengths and only for a short time period. All other locations had maximum queue lengths of three vehicles or less.

Coffee Shops With Drive-Through Lanes

Counts were conducted in the fall of 2008 and the spring of 2009 at twelve coffee shops located in the Kansas suburbs of Merriam, Olathe and Overland Park in the Kansas City metropolitan area and also in suburban Kansas City, Missouri. All but two of the establishments were situated in free-standing buildings, and several were located within shopping centers. Three were drive-through-only operations and the remaining nine were full-service locations that included both drive-through lanes and inside seating facilities. Because this type of use is busiest in the morning peak hour, all counts were completed during that time period.

Similar to the process used for drive-in banks, the counting process involved noting the maximum number of vehicles queued in the drive-through lane at each location for fifteen minute increments. As was done for the drive-in bank counts, the vehicle in the

service position was included in the counts. Information on the number of vehicles entering and leaving the parking lot was collected for full-service operations (drive-through-only locations did not have any parking activity). The queuing information was tabulated for both the total length of queue and for the number of vehicles behind the menu board. The observed queue length was noted at five minute intervals as a way to evaluate the frequency of various queue lengths.

Once again, the queuing data was analyzed in ways similar to the methods used in the 1995 Report. Table 2 lists the observed frequency of maximum queue lengths. Figure 3 plots the per-lane maximum queue lengths and Figure 4 plots the probability that the queue will not exceed a given maximum queue length.

Table 2 – Coffee Shop With Drive-Through Maximum Queue Length

Queue Length	Frequency	Cumulative Frequency	P($q \leq N$)
0	0	0	0.00
1	0	0	0.00
2	0	0	0.00
3	1	1	.08
4	0	1	.08
5	0	1	.08
6	1	2	.17
7	1	3	.25
8	2	5	.42
9	1	6	.50
10	1	7	.58
11	2	9	.75
12	0	9	.75
13	3	12	1.00

Note: P($q \leq N$) indicates probability, based on sample, of queue length of “q” not exceeding length “N”

Figure 3 – Coffee Shop With Drive-Through Maximum Queue Length Data Plot

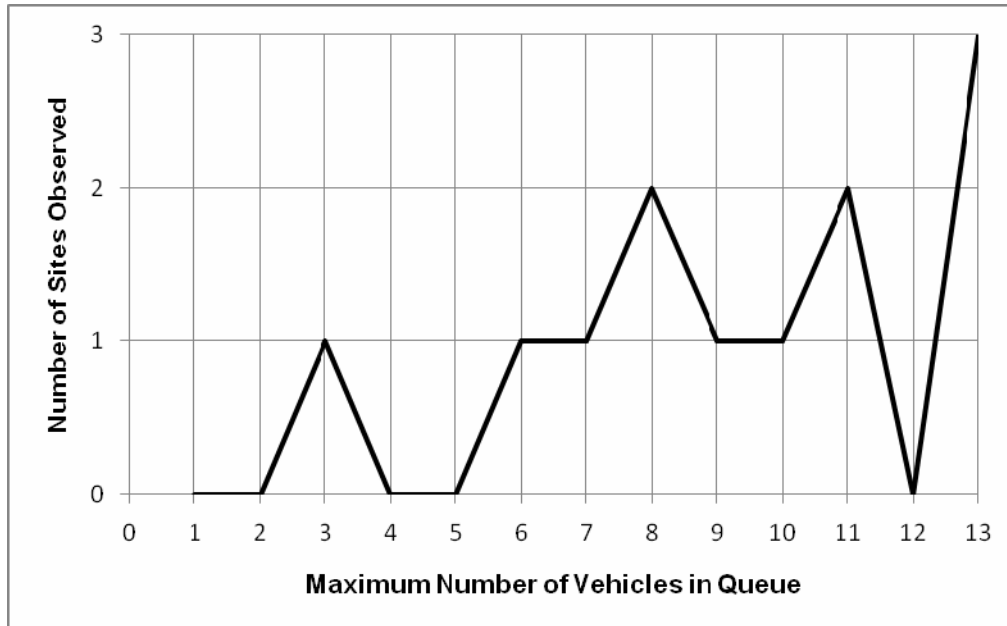
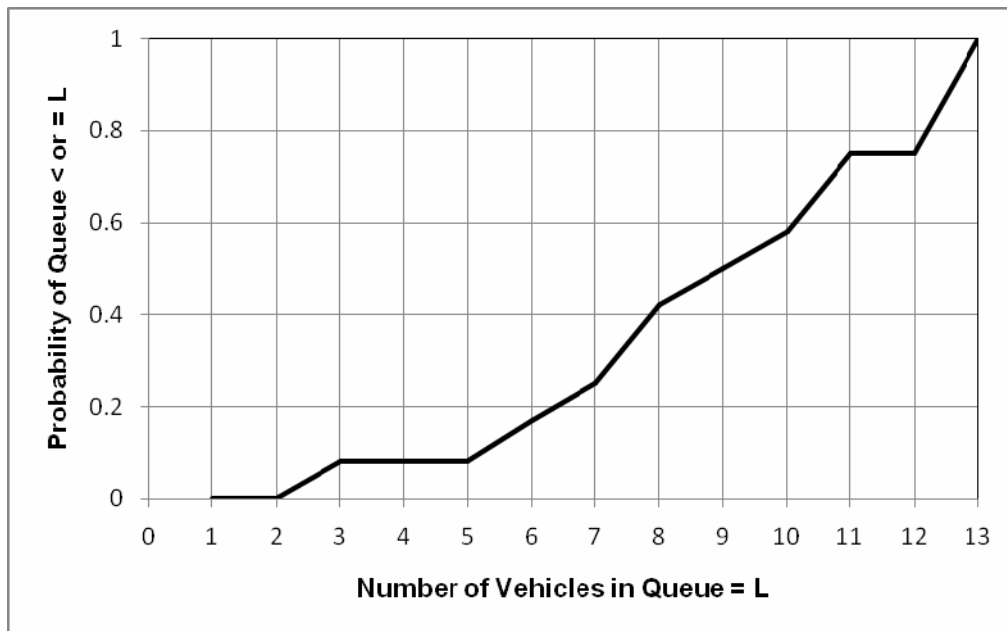


Figure 4 – Coffee Shop With Drive-Through Cumulative Maximum Queue Length Data Plot



The total trip generation figures were compared to the a.m. peak hour ITE rates for Land Use Code 937, Coffee/Donut Shop with Drive-Through Window, and Land Use Code 938, Coffee/Donut Shop with Drive-Through Window and No Indoor Seating. The observed counts generally fell within the range of counts included in those categories, although two of the rates for the No Indoor Seating category exceeded the published range. No correlation was found between the adjoining major street traffic volumes or the size of the building and either the queuing or the trip generation results.

Observations

Several of the drive-through lanes were under-designed for the usage that was observed and queues spilled-out into parking lot circulation areas. In most cases the excess stacking did not result in disruptions of the operations of surrounding uses, since most other businesses were not open in the early morning. But for those sites where the end of the drive-through lane extended into the coffee shop parking lot, the excess queue often disrupted the movements of drivers who were trying to enter or exit parking spaces or the site itself.

One interesting facet of the data is that the three lowest observed maximum queue lengths were for the drive-through-only locations. The highest observed queue length for those operations was seven vehicles, which occurred only once at one location and only for a very short period of time. A six vehicle maximum stack was a more common occurrence.

The data shows that the volume of drive-through traffic and, therefore, the required stacking distance, is higher for full-service coffee shops than for drive-through-only operations. When total trip generation (both drive-through business and customers who park and walk in) is factored in, the full-service coffee shops did, on average, about two and one-half times the business of drive-through-only facilities. Since all of the full-service operations were Starbucks locations, it may be possible to apply the results of those counts to other proposed suburban Starbucks locations elsewhere in the country.

Total vehicular stacking available for a drive-through lane is an important consideration, but the location of the menu board relative to the pick-up window also impacts the efficiency of a drive-through lane operation. If the spacing is too short, stacking behind the pick-up window will extend into the menu board area, delaying ordering for those farther back in the line. In the counts conducted for this study, the pick-up window to menu board available stacking distances ranged from two to five vehicles.

The operation with the two car stack between the pick-up window and menu board regularly resulted in delays for drivers waiting to order at the menu board. The location with a five car stack rarely experienced delays for those ordering. Based on field observations, if an unlimited amount of stacking were available at a proposed site, the five car spacing would be ideal. Realizing that space for stacking nearly always is limited, an acceptable alternative would be the four car spacing.

Conclusions

Drive-in bank usage has dropped dramatically, as illustrated in the data provided in this report. Consequently, a reduced amount of stacking is required. That reduced area for drive-through stacking can provide more flexibility in the design of bank sites, allowing for development on smaller sites or the provision of increased landscaped areas.

Based on the data that was gathered, the City of Overland Park has reduced its previous requirement for a minimum five car stack per lane to a three car stack (a distance of 60 feet per lane, assuming average vehicle spacing to be 20 feet). That design should be sufficient to accommodate virtually all situations. Vehicular stacking requirements for ATMs have been established, also at a minimum of three car lengths.

Coffee shop drive-through lanes are most heavily used during the morning peak period, and therefore it is important to design sites to accommodate that peak demand. The following recommended minimum stacking lengths should be appropriate in most cases. The only exceptions would be situations in which excess queuing could impact a nearby street or major drive, in which case a more conservative approach should be taken.

Based on the data that was gathered for drive-through-only operations, it appears reasonable to require that a dedicated drive-through lane be provided with a stack of 120 feet – enough to handle six vehicles. That should be sufficient to accommodate nearly all vehicles that are likely to arrive during the morning peak hour time period.

For full service establishments, a 220-foot long drive-through lane, providing eleven cars of total storage, should be adequate to handle the vast majority of the drive-through lane volumes that might be encountered. In those cases where more than eleven vehicles were counted, the duration of the extreme queue lasted for only a few minutes. For the most efficient operation, the distance between the pick-up window and menu board should be at least 80 feet to accommodate four vehicles.

References

1. Gattis, J. L., Chair of ITE Technical Council Committee 5D-10. “Queuing Areas for Drive-Thru Facilities, by ITE Technical Council Committee 5D-10.” *ITE Journal* (May 1995): 38-42.

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Queuing Areas For Drive-Thru Facilities

BY ITE TECHNICAL COUNCIL COMMITTEE 5D-10

ITE Technical Council Committee 5D-10 was formed to collect and analyze basic information that may be used to estimate and evaluate lengths of automobile queues at drive-thru facilities. In addition to fulfilling this objective, this Informational Report constitutes a starting point for compiling a database for drive-thru facility queue length information.

Introduction

When faced with the need to evaluate the future impacts of a planned development, the transportation engineer often employs some form of analogy, estimating the future impacts of as-yet unbuilt development by using the attributes of existing land uses having a similar nature. For instance, the engineer may refer to published trip generation rates, derived from observations made at existing developments, to obtain a figure by which to estimate volumes that will occur at the proposed development.



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Many types of businesses (such as fast-food restaurants, banks and cleaners) utilize drive-thru systems. A similar form of drive-thru operation can be found at sites where passenger pick-up

operations occur (such as parents picking up schoolchildren). These drive-thru systems are comprised of a server position (often at a service "window"), and vehicle queuing space in advance

QUEUING DATA SHEET

1. Type of Service Provided

2. Day(s) of Week

Sun Mon Tue Wed Thu Fri Sat

3. Time(s) of Day

4. Type of Area

CBD

Suburban

Rural

☐

☐

☐

5. Competition in Area
(For Same Services)

High

Medium

Low

☐

☐

☐

6. Service Rate Measured
(Per Window or Aisle or Lane)

Vehicles/Time

7. Arrival Rate Measured
(Per Window or Aisle or Lane)

Avg Max

Vehicles/Time

8. Uniformity Rating

(1 - 10)

9. Capacity of Queue Storage Area

(Vehicles)

10. Measured Average Queue

(Vehicles)

11. Measured Maximum Queue

(Vehicles)

12. Excess Demand Volume

(Vehicles)

13. Excess Demand Frequency

14. Size Sample or Length of Count Data

15. Narrative Description of Service

Figure 1. Data gathering form used in survey.

Appendix C

of the service position, for waiting in line as those ahead are served first.

When attempting to project lengths of automobile queues at proposed drive-thru facilities, the municipal or private consulting engineers may not find available data by which a projection can be made. While such data may be known by larger business chains that have drive-thru operations, the data do not seem to be generally available to the average traffic engineer trying to size or evaluate automobile queue storage area. True, some publications present results of queuing studies or equations for estimating queue lengths based on known system arrival and service rates.¹⁻⁹ But the proposed-site arrival and service rates may be unknown, and the proposed system may not possess attributes (such as negative exponential service time rates) needed for certain equations to properly predict queue lengths.

Drive-thru facilities are perceived as time-savers; as a convenience to the physically challenged, elderly and parents with young children; and as a way to avoid going out into inclement weather. Due to vehicle idling while in line, drive-thru facilities may also be viewed as causing unnecessary fuel consumption and air pollution. The popularity of drive-thru services creates a need to evaluate the queuing capacities of the varied drive-thru facilities. This report provides some basic drive-thru facility queue length information. It is hoped that the database will continue to grow, so that a comprehensive analytical tool may be available for the transportation professional.

Methods

The queue length data gathering form shown in Figure 1 was distributed to committee members in November 1987. The form was accompanied by specific user-instructions to ensure uniformity of procedures and compatibility of results.

Completed forms were returned to the committee chair and data were cataloged by land-use type. The maximum observed queue lengths and the maximum observed queue length frequencies were compiled. Cumulative frequencies and the probability that

Table 1. Ranges of Fast Food Queue Lengths by Food Type

Food Type	Maximum Queue Range (# in system)	Average Maximum Queue (# in system)	Studies
Donuts	4	4	2
Steak	4	4	2
Chicken	2-9	5	5
Fish	5	5	1
Sandwiches	5	5	1
Mexican	7	7	1
Roast Beef	6-8	7	2
Hamburgers	4-13	7	27

Table 2. Fast Food Queue Lengths

Maximum Queue Length (# in system)	Frequency	Cumulative Frequency	P(q≤N)
1	0	0	0.00
2	2	2	0.05
3	0	2	0.05
4	6	8	0.18
5	4	12	0.27
6	7	19	0.43
7	10	29	0.66
8	7	36	0.82
9	5	41	0.93
10	1	42	0.95
11	0	42	0.95
12	1	43	0.98
13	1	44	1.00

Note: P(q≤N) indicates probability, based on sample, of queue length "q" not exceeding length "N".

queues would not exceed an absolute maximum were calculated and shown graphically.

Findings

Within this report, data have been compiled for banks, car washes, day care facilities, dry cleaners and fast-food restaurants.

Fast Food

This category includes restaurants characterized by food being prepared in advance of, or shortly after, ordering; by high turnover for eat-in customers; and by long business hours. The ITE land-use codes (LUCs) for this use are LUC 834 (*Trip Generation*, 1991) and 836 (*Parking Generation*, 1987).

Forty-four fast-food restaurants were observed for this study. They ranged from those serving chicken to the hamburger chains. All sites were suburban locations. Queuing was observed mainly during the weekday mid-day peak from the 1970s through

the 1990s, at sites in Florida, Kansas, Illinois, Minnesota, Montana, New Jersey, Oklahoma, Pennsylvania and Texas. All fast-food facilities observed for this study had a single-window drive-thru system. The industry is changing, with double- and even triple-window systems being utilized. Further information will be needed on queuing characteristics of these facilities.

The average observed service rate was 54 vehicles per hour (vph); the maximum rate was 108 vph. The maximum observed queue lengths (number of vehicles in line, including vehicle at service position) ranged from two to 13 vehicles (see Table 1). Where there was a menu-order board followed by a service window, the combined total of vehicles in both sequential lines was reported.

The restaurants featuring hamburgers had maximum queues in the upper part of the range. Table 2 shows the frequencies of the observed maximum queue lengths, as well as a probability of a queue of less than a given number

Appendix C

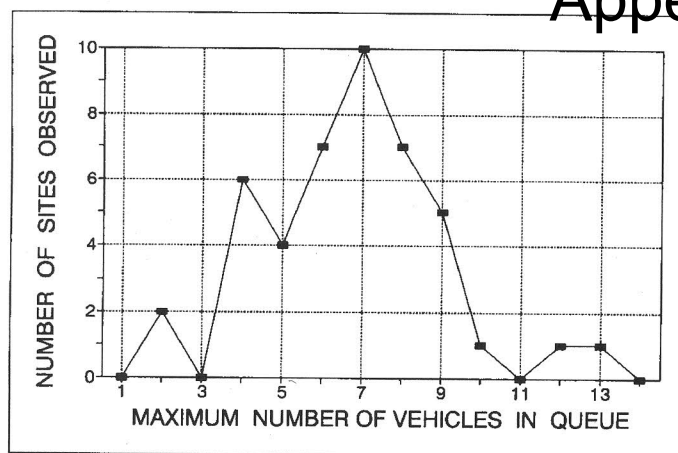


Figure 2. Maximum queue lengths at fast-food.

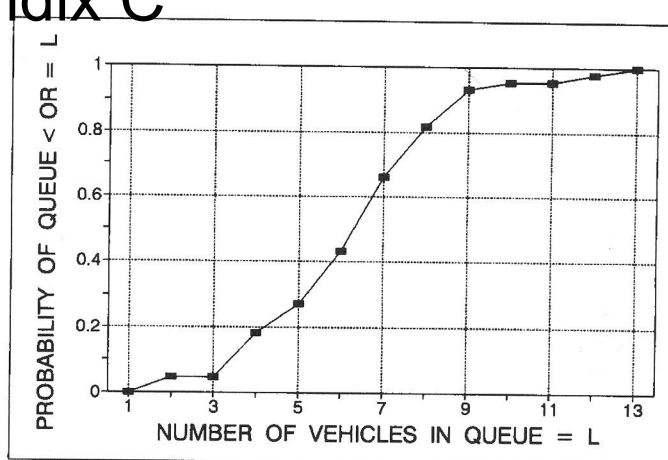


Figure 3. Maximum queue length probability at fast-food.

of vehicles. Figure 2 plots maximum queue length against the observed frequency of occurrence. Figure 3 depicts the probability that at any fast-food site, the queue will not exceed a given maximum queue length. From Table 2 or Figure 3, it can be seen that there was a 95 percent probability that the maximum queue at a site would be no more than 10 vehicles.

The maximum queues were evaluated against days of the week and were found to have no statistical relationship. Likewise, when evaluated against different levels of competition within the area and against service rates, there was no statistical relationship.

Bank

This category includes savings-and-loans with or without automatic teller machines (ATMs) and commercial banks with or without ATMs. Although there were historical differences between banks and savings-and-loans, they are now often indistinguishable to the public. The ITE land-use codes for this use are LUC 912 and 914 (*Trip Generation*, 1991) and LUC 912 (*Parking Generation*, 1987).

The studies analyzed were conducted from the late 1960s through the late 1980s; many were in Illinois, Minnesota, New Jersey and Texas. The size of the bank drive-thru facilities ranged from a minimum of one lane with one teller-window up to an institution with 10 lanes and four tellers.

Observed service rates for these institutions went up to a maximum of 35 vehicles per lane-hour. Maximum observed queues per lane ranged from two to eight vehicles. The maximum system queue lengths (all lanes com-

bined) ranged from five to 29 vehicles. At two sites, it was observed that a queue length exceeding eight vehicles per lane was not tolerated by customers. When the queue length became excessive, customers would park and use walk-in facilities rather than the drive-thru. Thus the collected data reflect a maximum queue per lane of eight vehicles.

Table 3 shows the observed frequency of occurrence of maximum queue lengths per lane. Figure 4 plots the maximum number of vehicles per lane

observed. On the basis of the studies received, there is a 100 percent probability that the queue length at a bank drive-thru facility will not exceed eight vehicles per lane, as Figure 5 shows.

Table 4 presents the maximum number of vehicles in an entire drive-thru system (all lanes combined) by ranges, along with the frequency of occurrence. This table shows that the most common maximum number-in-the-system at a bank drive-thru facility fell between six and 10 vehicles, as most observed facilities consisted of two lanes. Table 4 also

Table 3. Bank Queue Lengths

Queue Length	Maximum Queue Per Lane		$P(q \leq N)$
	Frequency	Cumulative Frequency	
0	0	0	0.00
1	0	0	0.00
2	1	1	0.07
3	4	5	0.33
4	2	7	0.47
5	4	11	0.73
6	1	12	0.80
7	2	14	0.93
8	1	15	1.00

Note: $P(q \leq N)$ indicates probability, based on sample, of queue length "q" not exceeding length "N".

Table 4. Maximum Number of Vehicles in Bank System (All Lanes)

# in system	Frequency	Cumulative Frequency	$P(q \leq N)$
0 - 5	2	2	0.13
6 - 10	6	8	0.53
11 - 15	3	11	0.73
16 - 20	2	13	0.87
21 - 25	1	14	0.93
26 - 30	1	15	1.00

Note: $P(q \leq N)$ indicates probability, based on sample, of queue length "q" not exceeding length "N".

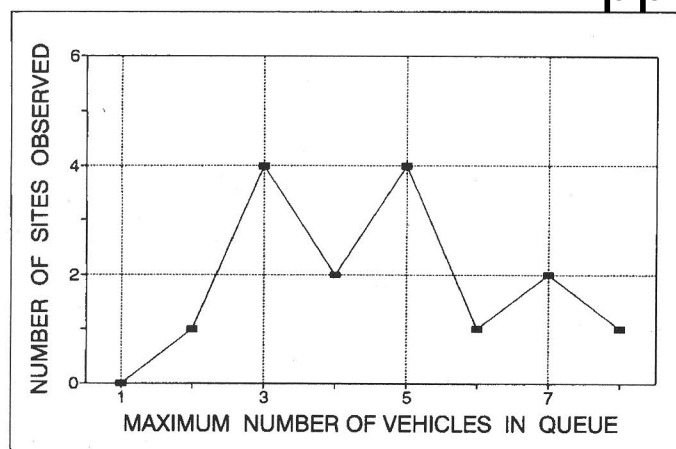


Figure 4. Maximum queue length per lane at bank.

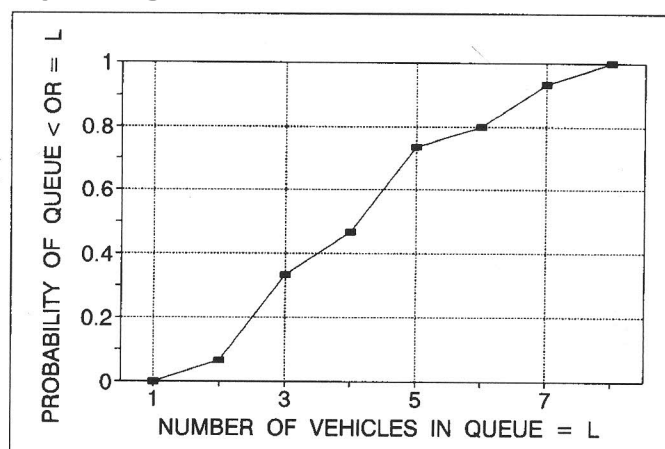


Figure 5. Maximum per lane queue length probability at bank.

gives the probability, based on the studies received, that the number of vehicles in the system will not exceed a certain range.

It should be noted that queuing lengths may be affected by time-of-day banking habits. There may be differences between the central city and a suburb. An area with a large proportion of retired persons may experience unique banking-time behaviors. In addition, the effects of banks incorporating ATMs into drive-thru aisles may also need to be investigated in future queuing studies.

Car Wash

This category includes full-service car washes (offering vacuuming and towel-drying services), exterior tunnel operation (vacuuming and towel drying not a part of the "in-line" operation, but may be offered at separate stations to the side), and self-service car washes (where customers pull into a wash bay, insert coins into a box, and proceed to wash). The ITE land-use code for these uses is LUC 847 (*Trip Generation*, 1991). This land use was not included in the 1987 *Parking Generation* report.

The studies analyzed were conducted from the late 1960s through the late 1980s in Kansas, Illinois, Montana, New Jersey and Texas. They included seven full service car washes, two exterior tunnel car washes, and nine self-service car washes. The number of self-service bays ranged from six to 14 per site. The self-service car washes typically had one or more parallel wash bays; the full-service car wash operations tended to have a single tunnel to serve customers.

Studies at the full-service car washes were made during winter or early spring months. Both full-service car washes consisted of a single tunnel. Observed service rates were 35 vph (maximum queue of nine vehicles) and 27 vph (maximum queue of 26 vehicles). At the site with a 26-vehicle queue, the queue extended off the site and onto an adjacent private street with light traffic volumes.

The self-service car wash studies were conducted on Saturday and Thursday, during late spring and/or summer months. Service rates at self-service car washes ranged from 4.1 vehicles per bay-hour to 5.4 vehicles per bay-hour. The average service rate was 4.77 vehicles per bay-hour. The maximum queue observed at two study sites was three vehicles, and at a third study site the maximum observed was one vehicle. No distinction was made as to whether these were maximum

queues per bay or total maximum queues (per entire operation).

Day Care

This category includes facilities that provide a place for children during the day, often while parents are at work. After-school care may also be provided. The ITE land-use code is LUC 565 (*Trip Generation*, 1991). This land use was not included in the 1987 *Parking Generation* report.

Data were submitted for one day-care facility in Texas, during the evening peak hour. The facility had 99 children enrolled and 94 present the day the study was conducted. The day-care facility handled children age 2 through first grade. The facility was operated in a manner that required the parents to park their cars and go inside to get their children.

The hour service rate was 46 vehicles. A maximum of eight vehicles in

This is an Informational Report of the Institute of Transportation Engineers prepared by Technical Council Committee 5D-10. The information in this report has been obtained from experiences of transportation engineering professionals and research. ITE Informational Reports are prepared for informational purposes only and do not include Institute recommendations on which is the best course of action or the preferred application of the data.

Members of Technical Council Committee 5D-10 were J. L. Gattis, P.E. (M), Chair; Grant A. Bacchus, P. Eng. (F); Benedict G. Barkan (F); Robert R. Marvin, P.E. (M); Dale B. McKinney, P.E. (F); Robert A. Nelson, P.E. (F); Seyed M. Safavian (M); James M. Schoen (A); David K. Sorenson, P.E. (A); Mark J. Stuecheli (M); and Jack Wierzenski (A).

Members of the Technical Council Department 5 Standing Committee at the time of approval of this report were Dennis O'Malley (F), Chair; Carol H. Walters, P.E. (M), Assistant Chair; Robert D. McMillen, P.E. (FL); Wamahdri W. Williams (A); and Donald J. Galloway, P.E. (F). Brian S. Bochner, P.E. (F), was the Chair of Technical Council, and John M. Mason, P.E. (F), was the Assistant Chair.

Appendix C

Table 5. Summary of Observed Queue Distances at Drive-Thru Facilities

	Near-maximum number of queued vehicles observed in system (does not include vehicle at service position)	Lane Length needed to store near-maximum queue (does not include vehicle at service position)
Fast-Food (Hamburger)	10 - 1 = 9	60 m (198 feet)
Bank	8 - 1 = 7	47 m (154 feet)
Car Wash (self-service)	3 - 1 = 2	13 m (44 feet)
Day Care	10 - 1 = 9	can store in parallel
Dry Cleaner	3 - 1 = 2	13 m (44 feet)

5 minutes (if sustained, equivalent to 96 vph) were observed; a 20-minute period had 28 vehicles (84 per hour). The maximum number of waiting vehicles was 10 vehicles.

VanWinkle and Kinton reported the results of 29 field studies at day-care establishments in Tennessee. Their findings are in the July 1994 *ITE Journal*.⁸

Dry Cleaners

This category includes facilities that clean clothing and other fabrics that should not be laundered. Often a walk-up window is present. No information is provide for this land use in either the ITE 1991 *Trip Generation* report or the ITE 1987 *Parking Generation* report.

One study was conducted at a dry cleaner with drive-thru facilities in Montana during a weekday p.m. peak period. An average service rate of 41 vph was measured at the single window. The observed maximum queue was three vehicles long. Forty-five percent of the customers used the drive-thru facility.

Conclusions

Table 5 summarizes the observed maximum or near-maximum observed queue lengths, and also lists the stacking distance needed to accommodate these observed queues, based on a front bumper-to-front bumper space occupied length of 22 feet (ft) per vehicle. This 22 ft may not be the exact space that vehicles occupy, but a value ranging from 20 ft to 25 ft seems appropriate for many situations. Because only one day-care facility was observed, and because parents picking up children may park in parallel or in a lot instead of in a single-file line, no stacking length was calculated for this land use.

Due to a change of committee personnel during the course of the data-gathering effort, some of the original forms submitted by committee members are not available. There are some apparent errors in the tables. For instance, the number of studies tallied in Table 1 is 41, while the number in Table 2 is 44. It is not known whether three studies were not included in Table 1, or whether there was double counting in Table 2. The unavailability of the original data forms makes it impossible to recheck the numbers.

The size of this drive-thru facility queuing characteristic database was limited. There is a need to accumulate and analyze more drive-thru queuing system data, so transportation engineers and site planners can be better informed. Additional observations of service rates are also needed in order to determine relationships between service rates and queue lengths, and to evaluate long-term trends in service rates. Finally, investigations of the amount of space occupied per vehicle within a queue are needed so that engineers will have the ability to project not only the number of vehicles that will be in the maximum queue for a given site, but also the queue storage length required for a site.

When collecting queuing data, the recorder should clearly indicate whether the number of vehicles recorded includes or excludes the vehicle(s) in the service position (that is, at the window). The data record must indicate which numbers are for a single queuing line and which totals are for the entire system of multiple queuing lines. An observer should also note instances of arriving vehicles balking or refusing to enter a queue due to excessive length, and how many vehicles were in the queue when the next arrival balked.

Other types of drive-thru operations

that could be studied include those at credit unions, funeral homes, gas stations (either gas only, full-service, self-service, or a combination with convenience stores or car washes), libraries, liquor stores, movie theater ticket booths, parking lots and garages (either pick-up ticket or pay, or key, tag, or card), post offices, pre-schools, baby-sitting or school combinations, lower grade schools, stadium ticket sales machines, truck stops and places of worship.

References

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9. Woods, Donald L. and Carroll J. Messer. "Design Criteria for Drive-In Banking Facilities." *Traffic Engineering* (December 1970): 30-37.

Attachment D - Drive-Thru Queue Generation Report

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:

Land Use/Building Type*:

Name of Business:

Address:

City:

State:

Zip Code:

Date(s):

Weather Conditions:

Location Within Area (select one):

CBD	
Urban (non-CBD)	
Suburban (non-CBD)	<input checked="" type="text" value="X"/>
Suburban CBD	
Rural	
Not Given	

Competition Within Area (select one):

High	
Medium	<input checked="" type="text" value="X"/>
Low	

Drive-Through Description

4 Lanes + 1 ATM Lane

Gross Floor Area (estimated):

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday	5	3:36pm
Wednesday	5	2:37pm
Thursday		
Friday		
Saturday		

Attachment D - Drive-Thru Queue Generation Report

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:

Land Use/Building Type:

Name of Business:

Address:

City:

State:

Zip Code:

Date(s)

Weather Conditions

Location Within Area (select one):

CBD	
Urban (non-CBD)	
Suburban (non-CBD)	<input checked="" type="text" value="X"/>
Suburban CBD	
Rural	
Not Given	

Competition Within Area (select one):

High	
Medium	<input checked="" type="text" value="X"/>
Low	

Drive-Through Description :

2 Lanes + 1 ATM Lane

Gross Floor Area (estimated)

7,850 sq. ft

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday		
Wednesday	3	3:28pm
Thursday	3	8:51am, 10:37am
Friday		
Saturday		

Attachment D - Drive-Thru Queue Generation Report

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:

Land Use/Building Type:

Name of Business:

Address:

City:

State:

Zip Code:

Date(s):

Weather Conditions:

Location Within Area (select one):

CBD	
Urban (non-CBD)	
Suburban (non-CBD)	<input checked="" type="text" value="X"/>
Suburban CBD	
Rural	
Not Given	

Competition Within Area (select one):

High	
Medium	<input checked="" type="text" value="X"/>
Low	

Drive-Through Description :

5 Lanes + 1 ATM Lane

Gross Floor Area (estimated)

6,000 sq. ft

	Maximum Queue	Time Max Queue Occurred
Sunday	4	5:18pm
Monday		
Tuesday		
Wednesday		
Thursday		
Friday	8	12:20pm, 2:20pm
Saturday	8	11:40am

Attachment D - Drive-Thru Queue Generation Report

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:

Land Use/Building Type:

Name of Business:

Address:

City:

State:

Zip Code:

Date(s):

Weather Conditions:

Location Within Area (select one):

CBD	
Urban (non-CBD)	
Suburban (non-CBD)	<input checked="" type="text" value="X"/>
Suburban CBD	
Rural	
Not Given	

Competition Within Area (select one):

High	
Medium	<input checked="" type="text" value="X"/>
Low	

Drive-Through Description :

3 Lanes + 1 ATM Lane

Gross Floor Area (estimated)

21,550 sq. ft.

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday	7	4:47pm, 5:04pm
Wednesday	7	3:00pm, 5:26pm
Thursday		
Friday		
Saturday		

Attachment D - Drive-Thru Queue Generation Report

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:

Land Use/Building Type:

Name of Business:

Address:

City:

State:

Zip Code:

Date(s):

Weather Conditions:

Location Within Area (select one):

CBD	
Urban (non-CBD)	<input checked="" type="text" value="X"/>
Suburban (non-CBD)	
Suburban CBD	
Rural	
Not Given	

Competition Within Area (select one):

High	
Medium	<input checked="" type="text" value="X"/>
Low	

Drive-Through Description :

4 Lanes + 1 ATM Lane

Gross Floor Area (estimated)

12,000 sq. ft.

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday	6	1:18pm
Wednesday		
Thursday		
Friday		
Saturday		

Attachment D - Drive-Thru Queue Generation Report

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:

Land Use/Building Type:

Name of Business:

Address:

City:

State:

Zip Code:

Date(s):

Weather Conditions:

Location Within Area (select one):

CBD	
Urban (non-CBD)	<input checked="" type="text" value="X"/>
Suburban (non-CBD)	
Suburban CBD	
Rural	
Not Given	

Competition Within Area (select one):

High	
Medium	<input checked="" type="text" value="X"/>
Low	

Drive-Through Description :

Gross Floor Area (estimated)

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday	8	4:41pm
Wednesday	6	11:27am, 1:48pm, 2:23pm, 4:32pm, 5:25pm
Thursday		
Friday		
Saturday		

Attachment D - Drive-Thru Queue Generation Report

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:

Land Use/Building Type:

Name of Business:

Address:

City:

State:

Zip Code:

Date(s)

Weather Conditions

Location Within Area (select one):

CBD	
Urban (non-CBD)	☒
Suburban (non-CBD)	☐
Suburban CBD	☐
Rural	☐
Not Given	☐

Competition Within Area (select one):

High	☐
Medium	☐
Low	☒

Drive-Through Description :

1 Lane. Only counted the vehicles waiting in line, not the vehicles currently being washed.

Gross Floor Area (estimated)

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday		
Wednesday	6	3:08pm
Thursday	6	3:07pm
Friday		
Saturday		

Attachment D - Drive-Thru Queue Generation Report

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:

Land Use/Building Type:

Name of Business:

Address:

City:

State:

Zip Code:

Date(s)

Weather Conditions

Location Within Area (select one):

CBD	
Urban (non-CBD)	
Suburban (non-CBD)	<input checked="" type="text" value="X"/>
Suburban CBD	
Rural	
Not Given	

Competition Within Area (select one):

High	
Medium	
Low	<input checked="" type="text" value="X"/>

Drive-Through Description :

1 Lane. Only counted the vehicles waiting in line, not the vehicles currently being washed.

Gross Floor Area (estimated)

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday	1	12:58pm
Wednesday	3	2:53pm
Thursday		
Friday		
Saturday		

Attachment D - Drive-Thru Queue Generation Report

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:

Land Use/Building Type:

Name of Business:

Address:

City:

State:

Zip Code:

Date(s)

Weather Conditions

Location Within Area (select one):

CBD	
Urban (non-CBD)	
Suburban (non-CBD)	<input checked="" type="text" value="X"/>
Suburban CBD	
Rural	
Not Given	

Competition Within Area (select one):

High	
Medium	
Low	<input checked="" type="text" value="X"/>

Drive-Through Description :

1 Lane. Only counted the vehicles waiting in line, not the vehicles currently being washed.

Gross Floor Area (estimated)

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday	4	1:48pm
Wednesday	3	4:29pm
Thursday		
Friday		
Saturday		

Attachment D - Drive-Thru Queue Generation Report

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:

Land Use/Building Type:

Name of Business:

Address:

City:

State:

Zip Code:

Date(s)

Weather Conditions

Location Within Area (select one):

CBD	
Urban (non-CBD)	
Suburban (non-CBD)	<input checked="" type="text" value="X"/>
Suburban CBD	
Rural	
Not Given	

Competition Within Area (select one):

High	
Medium	
Low	<input checked="" type="text" value="X"/>

Drive-Through Description :

1 Lane. Only counted the vehicles waiting in line, not the vehicles currently being washed.

Gross Floor Area (estimated)

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday		
Wednesday	3	12:37pm, 1:50pm, 3:43pm, 4:41pm, 5:10pm, 7:04pm, 7:30pm
Thursday	4	2:38pm, 4:20pm
Friday		
Saturday		

Attachment D - Drive-Thru Queue Generation Report

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:

Land Use/Building Type:

Name of Business:

Address:

City:

State:

Zip Code:

Date(s)

Weather Conditions

Location Within Area (select one):

CBD	
Urban (non-CBD)	
Suburban (non-CBD)	<input checked="" type="text" value="X"/>
Suburban CBD	
Rural	
Not Given	

Competition Within Area (select one):

High	
Medium	
Low	<input checked="" type="text" value="X"/>

Drive-Through Description :

2 Lanes, Full Service Wash, only vehicles in line were counted, not the vehicles being washed.

Gross Floor Area (estimated)

8,250 sq. ft

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday		
Wednesday	10	1:03pm
Thursday	6	4:02pm
Friday		
Saturday		

Attachment D - Drive-Thru Queue Generation Report

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:

Land Use/Building Type:

Name of Business:

Address:

City:

State:

Zip Code:

Date(s):

Weather Conditions:

Location Within Area (select one):

CBD	
Urban (non-CBD)	
Suburban (non-CBD)	<input checked="" type="text" value="X"/>
Suburban CBD	
Rural	
Not Given	

Competition Within Area (select one):

High	
Medium	
Low	<input checked="" type="text" value="X"/>

Drive-Through Description :

2 lanes. Only vehicles in line were counted, not vehicles being washed.

Gross Floor Area (estimated):

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday		
Wednesday	4	6:03pm
Thursday	3	4:37pm, 6:28pm, 7:39pm, 7:51pm, 8:04pm, 8:23pm
Friday		
Saturday		

Attachment D - Drive-Thru Queue Generation Report

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:

Land Use/Building Type:

Name of Business:

Address:

City:

State:

Zip Code:

Date(s)

Weather Conditions

Location Within Area (select one):

CBD	
Urban (non-CBD)	<input checked="" type="text" value="X"/>
Suburban (non-CBD)	
Suburban CBD	
Rural	
Not Given	

Competition Within Area (select one):

High	
Medium	<input checked="" type="text" value="X"/>
Low	

Drive-Through Description :

1 Lane

Gross Floor Area (estimated)

1,950 sq. ft.

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday		
Wednesday	11	8:50am
Thursday	10	7:57am
Friday		
Saturday		

Attachment D - Drive-Thru Queue Generation Report

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:

Land Use/Building Type:

Name of Business:

Address:

City:

State:

Zip Code:

Date(s)

Weather Conditions

Location Within Area (select one):

CBD	
Urban (non-CBD)	
Suburban (non-CBD)	<input checked="" type="text" value="X"/>
Suburban CBD	
Rural	
Not Given	

Competition Within Area (select one):

High	
Medium	<input checked="" type="text" value="X"/>
Low	

Drive-Through Description :

1 Lane

Gross Floor Area (estimated)

3,600 sq. ft

	Maximum Queue	Time Max Queue Occurred
Sunday	7	9:39am, 9:41am
Monday	10	8:39am
Tuesday	12	9:26am
Wednesday		
Thursday		
Friday	12	8:12am
Saturday	8	8:52am, 10:24am

Attachment D - Drive-Thru Queue Generation Report

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:

Land Use/Building Type:

Name of Business:

Address:

City:

State:

Zip Code:

Date(s)

Weather Conditions

Location Within Area (select one):

CBD	
Urban (non-CBD)	
Suburban (non-CBD)	<input checked="" type="text" value="X"/>
Suburban CBD	
Rural	
Not Given	

Competition Within Area (select one):

High	
Medium	
Low	<input checked="" type="text" value="X"/>

Drive-Through Description :

1 Lane

Gross Floor Area (estimated)

3,000 sq. ft

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday		
Wednesday	14	7:22am, 7:49am
Thursday	16	8:56am
Friday		
Saturday		

Attachment D - Drive-Thru Queue Generation Report

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:

Land Use/Building Type:

Name of Business:

Address:

City:

State:

Zip Code:

Date(s)

Weather Conditions

Location Within Area (select one):

CBD	
Urban (non-CBD)	
Suburban (non-CBD)	<input checked="" type="text" value="X"/>
Suburban CBD	
Rural	
Not Given	

Competition Within Area (select one):

High	
Medium	<input checked="" type="text" value="X"/>
Low	

Drive-Through Description :

1 Lane, Queuing Went Out Onto the Street

Gross Floor Area (estimated)

1,800 sq. ft

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday		
Wednesday	10	7:42am, 8:41am, 8:59am
Thursday	11	7:33am
Friday		
Saturday		

Attachment D - Drive-Thru Queue Generation Report

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:

Land Use/Building Type:

Name of Business:

Address:

City:

State:

Zip Code:

Date(s):

Weather Conditions:

Location Within Area (select one):

CBD	
Urban (non-CBD)	
Suburban (non-CBD)	<input checked="" type="text" value="X"/>
Suburban CBD	
Rural	
Not Given	

Competition Within Area (select one):

High	
Medium	<input checked="" type="text" value="X"/>
Low	

Drive-Through Description :

1 Lane, Queue Lengths Recorded at 5 min Intervals

Gross Floor Area (estimated)

2,550 sq. ft.

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday		
Wednesday	11	8:45am
Thursday		
Friday		
Saturday		

Attachment D - Drive-Thru Queue Generation Report

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:

Land Use/Building Type:

Name of Business:

Address:

City:

State:

Zip Code:

Date(s)

Weather Conditions

Location Within Area (select one):

CBD	
Urban (non-CBD)	
Suburban (non-CBD)	<input checked="" type="text" value="X"/>
Suburban CBD	
Rural	
Not Given	

Competition Within Area (select one):

High	
Medium	<input checked="" type="text" value="X"/>
Low	

Drive-Through Description :

1 Lane

Gross Floor Area (estimated)

1,500 sq. ft

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday	10	8:09am
Wednesday	12	7:57am
Thursday		
Friday		
Saturday		

Attachment D - Drive-Thru Queue Generation Report

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:

Land Use/Building Type:

Name of Business:

Address:

City:

State:

Zip Code:

Date(s)

Weather Conditions

Location Within Area (select one):

CBD	
Urban (non-CBD)	<input checked="" type="text" value="X"/>
Suburban (non-CBD)	
Suburban CBD	
Rural	
Not Given	

Competition Within Area (select one):

High	
Medium	<input checked="" type="text" value="X"/>
Low	

Drive-Through Description :

1 Lane

Gross Floor Area (estimated)

3,000 sq. ft

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday		
Wednesday	5	6:04pm
Thursday	5	6:55pm
Friday		
Saturday		

Attachment D - Drive-Thru Queue Generation Report

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:

Land Use/Building Type:

Name of Business:

Address:

City:

State:

Zip Code:

Date(s):

Weather Conditions:

Location Within Area (select one):

CBD	
Urban (non-CBD)	
Suburban (non-CBD)	<input checked="" type="text" value="X"/>
Suburban CBD	
Rural	
Not Given	

Competition Within Area (select one):

High	
Medium	<input checked="" type="text" value="X"/>
Low	

Drive-Through Description :

1 Lane

Gross Floor Area (estimated)

3,300 sq. ft

	Maximum Queue	Time Max Queue Occurred
Sunday	6	4:30pm
Monday	12	12:10pm
Tuesday		
Wednesday		
Thursday		
Friday	10	12:12pm
Saturday	8	9:38pm

Attachment D - Drive-Thru Queue Generation Report

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:

Land Use/Building Type:

Name of Business:

Address:

City:

State:

Zip Code:

Date(s)

Weather Conditions

Location Within Area (select one):

CBD	
Urban (non-CBD)	
Suburban (non-CBD)	<input checked="" type="text" value="X"/>
Suburban CBD	
Rural	
Not Given	

Competition Within Area (select one):

High	
Medium	<input checked="" type="text" value="X"/>
Low	

Drive-Through Description :

2 Order Stations

Gross Floor Area (estimated)

3,600 sq. ft

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday		
Wednesday	12	11:46am
Thursday	13	12:23pm
Friday		
Saturday		

Attachment D - Drive-Thru Queue Generation Report

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:

Land Use/Building Type:

Name of Business:

Address:

City:

State:

Zip Code:

Date(s)

Weather Conditions

Location Within Area (select one):

CBD	
Urban (non-CBD)	<input checked="" type="text" value="X"/>
Suburban (non-CBD)	
Suburban CBD	
Rural	
Not Given	

Competition Within Area (select one):

High	
Medium	<input checked="" type="text" value="X"/>
Low	

Drive-Through Description :

1 Lane

Gross Floor Area (estimated)

3,825 sq. ft.

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday		
Wednesday	9	8:48am
Thursday	8	8:54am
Friday		
Saturday		

Attachment D - Drive-Thru Queue Generation Report

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:

Land Use/Building Type:

Name of Business:

Address:

City:

State:

Zip Code:

Date(s)

Weather Conditions

Location Within Area (select one):

CBD	
Urban (non-CBD)	
Suburban (non-CBD)	<input checked="" type="text" value="X"/>
Suburban CBD	
Rural	
Not Given	

Competition Within Area (select one):

High	
Medium	<input checked="" type="text" value="X"/>
Low	

Drive-Through Description :

1 Lane

Gross Floor Area (estimated)

2,500 sq. ft

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday		
Wednesday	10	12:26pm
Thursday	8	12:17pm, 6:57pm
Friday		
Saturday		

Attachment D - Drive-Thru Queue Generation Report

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:

Land Use/Building Type:

Name of Business:

Address:

City:

State:

Zip Code:

Date(s):

Weather Conditions:

Location Within Area (select one):

CBD	
Urban (non-CBD)	
Suburban (non-CBD)	<input checked="" type="text" value="X"/>
Suburban CBD	
Rural	
Not Given	

Competition Within Area (select one):

High	
Medium	<input checked="" type="text" value="X"/>
Low	

Drive-Through Description :

1 Lane

Gross Floor Area (estimated):

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday		
Wednesday	8	5:26pm
Thursday	5	8:13am, 12:10pm, 1:25pm, 3:22pm, 8:54pm
Friday		
Saturday		

Attachment D - Drive-Thru Queue Generation Report

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:

Land Use/Building Type:

Name of Business:

Address:

City:

State:

Zip Code:

Date(s)

Weather Conditions

Location Within Area (select one):

CBD	
Urban (non-CBD)	
Suburban (non-CBD)	<input checked="" type="text" value="X"/>
Suburban CBD	
Rural	
Not Given	

Competition Within Area (select one):

High	<input checked="" type="text" value="X"/>
Medium	
Low	

Drive-Through Description :

2 Lanes

Gross Floor Area (estimated)

18, 700 sq. ft.

	Maximum Queue	Time Max Queue Occurred
Sunday		
Monday		
Tuesday	1	13 times
Wednesday	2	5:55pm
Thursday		
Friday		
Saturday		

Attachment D - Drive-Thru Queue Generation Report

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:

Land Use/Building Type:

Name of Business:

Address:

City:

State:

Zip Code:

Date(s)

Weather Conditions

Location Within Area (select one):

CBD	
Urban (non-CBD)	
Suburban (non-CBD)	<input checked="" type="text" value="X"/>
Suburban CBD	
Rural	
Not Given	

Competition Within Area (select one):

High	
Medium	<input checked="" type="text" value="X"/>
Low	

Drive-Through Description :

2 Lanes

Gross Floor Area (estimated)

	Maximum Queue	Time(s) Max Queue Occurred
Sunday		
Monday		
Tuesday	4	5:28pm
Wednesday	4	6:38pm
Thursday		
Friday		
Saturday		

Attachment D - Drive-Thru Queue Generation Report

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:

Land Use/Building Type:

Name of Business:

Address:

City:

State:

Zip Code:

Date(s)

Weather Conditions

Location Within Area (select one):

CBD	
Urban (non-CBD)	<input checked="" type="text" value="X"/>
Suburban (non-CBD)	
Suburban CBD	
Rural	
Not Given	

Competition Within Area (select one):

High	
Medium	<input checked="" type="text" value="X"/>
Low	

Drive-Through Description :

2 Lanes

Gross Floor Area (estimated)

	Maximum Queue	Time(s) Max Queue Occurred
Sunday		
Monday		
Tuesday	2	1:57pm, 3:35pm, 5:48pm, 6:07pm, 7:10pm
Wednesday	2	3:03pm, 3:52pm, 4:07pm, 4:46pm, 5:12pm, 5:20pm, 6:43pm
Thursday		
Friday		
Saturday		

Attachment D - Drive-Thru Queue Generation Report

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:

Land Use/Building Type:

Name of Business:

Address:

City:

State:

Zip Code:

Date(s)

Weather Conditions

Location Within Area (select one):

CBD	
Urban (non-CBD)	
Suburban (non-CBD)	<input checked="" type="text" value="X"/>
Suburban CBD	
Rural	
Not Given	

Competition Within Area (select one):

High	
Medium	<input checked="" type="text" value="X"/>
Low	

Drive-Through Description :

2 Lanes

Gross Floor Area (estimated)

	Maximum Queue	Time(s) Max Queue Occurred
Sunday		
Monday		
Tuesday		
Wednesday	4	2:33pm, 3:31pm, 4:46pm, 4:57pm, 5:28pm, 6:26pm, 6:38pm, 8:20pm, 9:20pm
Thursday	5	4:30pm, 4:52pm, 5:56pm, 6:00pm
Friday		
Saturday		

Attachment D - Drive-Thru Queue Generation Report

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:

Land Use/Building Type:

Name of Business:

Address:

City:

State:

Zip Code:

Date(s)

Weather Conditions

Location Within Area (select one):

CBD	
Urban (non-CBD)	
Suburban (non-CBD)	<input checked="" type="text" value="X"/>
Suburban CBD	
Rural	
Not Given	

Competition Within Area (select one):

High	<input checked="" type="text" value="X"/>
Medium	
Low	

Drive-Through Description :

2 Lanes

Gross Floor Area (estimated)

	Maximum Queue	Time(s) Max Queue Occurred
Sunday		
Monday		
Tuesday	3	4:03pm
Wednesday	3	8:34am, 4:04pm, 4:51pm
Thursday		
Friday		
Saturday		

Attachment D - Drive-Thru Queue Generation Report

Appendix D

Drive-Through Queuing Data Form

ITE Land Use Code:

Land Use/Building Type:

Name of Business:

Address:

City:

State:

Zip Code:

Date(s)

Weather Conditions

Location Within Area (select one):

CBD	
Urban (non-CBD)	
Suburban (non-CBD)	<input checked="" type="text" value="X"/>
Suburban CBD	
Rural	
Not Given	

Competition Within Area (select one):

High	<input checked="" type="text" value="X"/>
Medium	
Low	

Drive-Through Description :

1 Lane

Gross Floor Area (estimated)

	Maximum Queue	Time(s) Max Queue Occurred
Sunday		
Monday		
Tuesday	3	4:49pm
Wednesday	2	12:49pm
Thursday		
Friday		
Saturday		

1330 Wayzata Blvd E. – Nolan Properties**Design Review Critique (Based on architectural plans dated May 9, 2017, civil plans dated April 14, 2017, and tree preservation and landscape plans dated April 14, 2017)****May 11, 2017**

	Comments	Compliance
Building Recesses		
<u>801.09.3.1.A – All Districts</u> Building facades shall be articulated through the use of pilasters and/or recesses that create visible shadow lines and dimensions especially on the street level	The proposed building is 66 feet in total width and includes a 5-foot building recession along the west side of the front of the building.	Yes
<u>801.09.3.1.B</u> Street level landscaped courtyards, outdoor seating areas and gathering areas shall be incorporated into building and site plan design.	The proposed plans include a patio, planters, and landscaping along the front of the building.	Yes
Building Width		
<u>801.09.4.1 All Districts – New Buildings</u> In order to reduce the scale of longer façades and to eliminate the long horizontal expressions of buildings, divisions or breaks in materials shall be included and at least three of the following design strategies shall be incorporated into the design: 1. Window bays 2. Special treatment at entrances 3. Variations in roof lines or parapet detailing 4. Awnings 5. Building setbacks or articulation of the facade 6. Rhythm of elements	The proposed project incorporates the following items: 1. Variations in roof lines 2. Building setbacks and articulation of the façade 3. Rhythm of elements	Yes

Upper Story Setbacks			
801.09.5.1.A – All Districts – New Buildings Building height shall conform to the height of the applicable zoning district. Where three (3) story buildings are permitted, the third (3 rd) story must be recessed from all façades fronting public right of ways at least a distance equal to the vertical distance of the 3 rd story height from the second (2 nd) floor footprint, or an average of ten (10) feet across the facade, but no portion of the 3 rd story structure shall be closer than six (6) feet to the 2 nd story façade. The 3 rd story façade shall be designed with railings, pillars, dimensional windows, building recesses or other similar design techniques to break up the 3 rd story façade.		This section is not applicable as the proposed building is one story in height.	Not Applicable
801.09.5.1.B – All Districts – New Buildings The façades fronting public right-of-ways of every two and three story building, longer than sixty (60) feet, must have a recessed second story of approximately twenty-five percent (25%) of the façade's length, setting back a minimum of six (6) feet from the face of the first floor façade. The required third floor setback must follow the frontal plane of the second story setback.		This section is not applicable as the proposed building is one story in height.	Not applicable
801.09.5.1.C – All Districts – New Buildings Wintertime sun orientation, solar access, and views of Lake Minnetonka are significant issues within the Design Districts. Building height should not negatively and significantly impact neighboring properties.		The building height of the building is 25 ft to the top of the parapet, and the proposed building meets all building height and setback requirements.	Yes

Roof Design			
801.09.6.1 – All Districts “Green” roofs, roof garden terraces, arbors and other similar structures are encouraged on roofs of building.		The project does not include a green roof.	Not Applicable

<u>801.09.6.2.A – All Districts – Roof Materials</u> The roof material for all sloped roofs in all districts shall be slate, untreated copper, pre-finished metal, cedar shake or asphalt shingle in dark colors. <u>801.09.6.2.B – All Districts – Roof Materials</u> The roof material for all flat roofs in all districts shall be treated synthetic membrane or other similar material in dark colors.	The proposed material for the flat roof would be a black membrane.	Yes
Screening of Rooftop Equipment <u>801.09.7.2 – Wayzata Blvd District</u> All mechanical equipment shall be completely screened behind a parapet wall, so as not to be visible from adjacent properties and pedestrian view vantage points from adjacent sidewalks. No enclosure shall be larger than 25% of the roof area.	The mechanical equipment would be located on the roof deck and screened on all sides by the parapet wall.	Yes

	Comments	Compliance
Facade Transparency		
<u>801.09.8.4 – Wayzata Blvd District</u> No less than fifty percent (50%) of ground level façades for buildings containing commercial or office uses fronting Wayzata Blvd shall be transparent glass.	The front of the proposed building consists of 55% transparent glass.	Yes
Ground Level Expression		
<u>801.09.9.1 – All Districts</u> In multi-story buildings, the ground floor shall be distinguished from the floors above by the use of at least three of the following elements: 1. An intermediate cornice line 2. A difference in building materials or detailing 3. An offset in the façade 4. An awning, trellis, or loggia 5. Arcade 6. Special window lintels 7. Brick/stone corbels	This section is not applicable as the proposed building is one story in height.	Yes
Entries		
<u>801.09.10.1 – All Districts</u> The front facade of all buildings shall be landscaped with window boxes or planters with seasonally appropriate plantings. The main entries shall face the primary street at sidewalk grade.	The proposed plans include planters and landscaping along the front of the building, and the main entrances to the building are located along the street frontage of the building.	Yes

<u>801.09.11.1.A – Primary Opaque Surfaces – All Districts</u> Other than the accent materials listed in 801.09.11.G, ninety percent (90%) of the non-glass surfaces of each elevation of the exterior building façade shall be composed of one or more of the following materials: 1. Brick 2. Stone 3. Cast stone 4. Factory finished and certified wood, including, but not limited to: a. Wood shingles (cedar shingles six (6) inch maximum exposure) b. Lap-siding (six (6) inch maximum width) 5. Stucco	The exterior building materials consist of glass, brick, zinc, and wood with the following percentages: <u>Front (north) elevation:</u> Glass: 44% Brick “shingle”: 34% Zinc metal panel: 18% Wood sunscreen: 4% <u>Side (east) elevation:</u> Glass: 14% Brick “shingle”: 55% Zinc metal panel: 29% Wood sunscreen: 2% <u>Side (west) elevation:</u> Glass: 19% Brick “shingle”: 75% Zinc metal panel: 4% Wood sunscreen: 2% <u>Rear (south) elevation:</u> Glass: 0% Brick “shingle”: 99% Zinc metal panel: 0.8% Wood sunscreen: 0.2%	No. The applicant is requesting a design deviation.
<u>801.09.11.1.B – Façade Coverage – All Districts</u> The primary opaque surface materials of all free standing buildings must be the same on all facades of the building.	The same materials are used on all four sides of the building.	Yes
<u>801.09.11.1.C – Type of Brick – All Districts</u> On all facades of a free-standing building where brick is used, full course modular, Roman, Norman or other standard size brick must be used.	The proposed brick is a mortar-less brick shingle.	No. The applicant is requesting a design deviation.

<u>801.09.11.1.D – Façade Detail – All Districts</u> 1. Brick and/or stone façades shall be well detailed and dimensionally designed in order to avoid fractional cuts and odd pieces. All outside brick corners must be full bricks (custom if necessary), with no mitering, forming continuous vertical joints. 2. The narrow face of an exposed stone butt joint, at corners, must be a minimum dimension of two (2) inches. Mitered and quirked stone corners are also acceptable.	The proposed brick meets this design standard.	Yes
<u>801.09.11.1.E – Brick Joints – All Districts</u> 1. The mortar for brick must be dark grey or in the color range of the brick. All joints must be concave or 'v' joint. No mortar may be used beyond the face of the brick. 2. All brick walls must be built to avoid efflorescence	The proposed brick is a mortar-less brick shingle.	Not Applicable
<u>801.09.11.1.F – Stone Joints – All Districts</u> Stone joints shall be no larger than one-fourth (1/4) inch.	The exterior of the proposed building does not include any stone.	Not Applicable

<u>801.09.11.1.G – Accent Materials – All Districts</u> Only the following materials may be used for lintels, sills, cornices, bases, and decorative accent trims, and must be no more than 10 percent (10%) of the non-glass surfaces of each elevation of the exterior building façade: 1. Stone 2. Cast stone 3. Copper (untreated) 4. Rock faced stone 5. Aluminum or painted steel structural shapes 6. Fiber cement board 7. Premium grade wood trim with mitered outside corners. Examples of premium grade wood are cedar, redwood, and fir. 8. EIFS	The proposed building does not include lintels, sills, or cornices.	Not Applicable
<u>801.09.11.1.H - Parapets, Flashing, Coping – All Districts</u> 1. Only the following materials may be used for parapets, flashing and coping: a. copper (untreated) b. brick c. stone d. cast stone e. premium grade wood. 2. Pre-finished, painted .032 aluminum may only be used as a standard parapet coping with a maximum exposed edge of five (5) inches.	The proposed building includes pre-finished metal coping, and the parapets would consist of brick and zinc metal panels.	No. The applicant is requesting a design deviation.

<u>801.09.11.1.I – Awnings – All Districts</u> 1. Only the following types of awnings may be used: a. Fabric awnings of a heavy canvas in dark solid colors or other colors that are approved as part of the design review process b. Highly detailed, ornate metal in dark colors c. Glass awnings 2. Backlit awnings are prohibited. 3. Awnings with text or graphic material may be permitted but require approval via the sign permit process of the Zoning Ordinance.	The proposed building does not include awnings.	Not Applicable
<u>801.09.11.1.J – Balconies – All Districts</u> Balconies shall be accessible and useable by persons. Fake or unusable balconies are prohibited. All balconies shall remain within the property line. Metal railings with members painted dark, or glass panels are permitted.	The proposed building does not include balconies.	Not Applicable
<u>801.09.11.1.K – Glass – All Districts</u> Glass shall not be mirrored, reflective or darkened. Slight green, bronze and grey tints are acceptable. Spandrel glass shall not be counted as transparent glass for the purposes of calculations under the transparency requirements of Section 801.09.8 of the Standards, but may be used for detailing purposes. Environmentally appropriate glass, such as Low-emissivity glass, shall be used in all projects	The proposed glass would not be mirrored, reflective or darkened.	Yes
<u>801.09.11.1.L – Doors – All Districts</u> Unless there are building security concerns, main entry doors shall be primarily glass. If, for security reasons, a main entry door is not possible or practical, a main entry door must be well detailed. Appropriately designed wood doors may be utilized for retail and office buildings.	The proposed entry doors would be glass.	Yes

	Comments	Compliance
Franchise Architecture		
801.09.12.1		
A. Typical or standardized franchise architecture (including building design that is the trade dress of, or identified with a particular chain, franchise or business and is repetitive in nature) is prohibited. B. Large, bold or bright signage, trade dress or logos must be altered and scaled down to meet the purpose of these standards as articulated herein, and must not be repeated on the facades of the principal structure more than once. All new, altered and/or proposed signage for buildings must be submitted for review under Section 801.09.18 by the Planning Commission at the time of Design Standards Review application	The building will not be a franchise.	Not Applicable
Walkways		
801.09.13.2 – Bluff District A. Continuous sidewalks at least five (5) feet in width shall be provided along all public street frontages. The sidewalk street grid shall be maintained and extended wherever possible. B. Where the sidewalk street grid is interrupted by steep slopes or other topographic variations, walkways or stairways shall be built to maintain pedestrian continuity.	The proposed plans include the construction of a 9-foot sidewalk along Wayzata Blvd.	Yes

	Comments	Compliance
Landscaping		
<u>801.09.14.1 – All Districts</u> A. Seasonal landscaping shall be used in all Design Districts, including use of window boxes, hanging flowers baskets, vines and/or other similar seasonal landscaping. If feasible, garden areas and ornamental trees shall be used at the street level. B. Window boxes, hanging baskets and planters with seasonally appropriate plantings shall be used around entries to buildings. C. Vines shall be used to cover walls with more than one hundred (100) square feet of uninterrupted surface area. D. Streetscaping shall include all of the following: 1. Boulevard species trees, with at least three (3) caliper inches. 2. Exposed aggregate sidewalks with brick accents 3. Street lights 4. Benches (if building length is 50 feet or greater), which utilize existing city bench designs. 5. Flowers	The proposed plans include landscape planters along the front of the building. There are existing boulevard trees located within the Wayzata Blvd boulevard.	Yes
<u>801.09.14.3 – Bluff and Wayzata Blvd Districts</u> Trees with a minimum of three (3) caliper inches shall be planted no more than twenty-six (26) feet apart within a landscaped boulevard.	There are existing boulevard trees located within the Wayzata Blvd boulevard.	Not Applicable

	Comments	Compliance
Parking Lot Landscaping		
<u>801.09.15.1 – All Districts</u> A landscaped buffer strip at least five (5) feet wide shall be provided between all parking areas and the sidewalk or street. The buffer strip shall consist of shade trees appropriately spaced for the particular Design District, and a decorative metal fence, masonry wall or hedge. A solid wall or dense hedge shall be no less than three (3) feet and no more than four (4) feet in height.	There are existing boulevard trees located within the Wayzata Blvd boulevard which are between the parking area and the street.	Yes
Surface Parking		
<u>801.09.16.1 – All Districts</u> A. Off-street parking shall be located to the rear of buildings. When parking must be located in a side yard adjacent to the street, a landscaped buffer shall be provided in accordance with the Design Standards. The street frontage occupied by parking shall not exceed sixty (60) feet per property. B. Side-by-side parking lots creating a parking area frontage longer than sixty (60) feet are prohibited, except where a heavily landscaped buffer of at least twenty (20) feet wide completely separates both lots. C. Side yard parking shall not extend beyond the front yard setback of the primary building on the property. D. Front yard parking is prohibited. E. There shall be no corner parking.	The proposed parking area is in the interior (rear) and side of the site, away from the public facades on Wayzata Blvd. The side yard parking is less than 60 feet in width, and the parking stalls do not extend in front of the building.	Yes

		Comments	Compliance
<u>801.09.16.2 – All Districts – Bicycle Parking</u> Commercial developments requiring more than twenty (20) parking spaces shall provide at least four (4) bicycle parking spaces in a convenient, visible, preferably sheltered location.		The proposed plans include 4 bicycle parking spaces along Wayzata Blvd.	Yes
Parking Structures			
<u>801.09.17.1 – All Districts</u> Parking structures shall meet the following standards, along with all other applicable building code standards: A. The ground floor façade abutting any public street or walkway shall be architecturally compatible with surrounding commercial or office buildings. B. The parking structure shall be designed in such a way that sloped floors do not dominate the appearance of the façade. C. Windows or openings shall be similar to those of surrounding buildings. D. Vines and other significant landscaping shall be used to minimize the visual impact of the parking structure.		The proposed plans do not include a parking ramp.	Not Applicable

	Comments	Compliance
Signs		
<u>801.09.18.1 – All Districts</u> A. Compatibility - Signs shall be architecturally compatible with the style, composition, materials, colors and details of the building, and with other signs on nearby buildings. Signs shall be an integral part of the building and site design. - A sign plan shall be developed for buildings which house more than one (1) business. Signs need not match, but shall be compatible with one another. Franchise or national chains must comply with these Sign Standards to create signs compatible with their context. - When illuminated signs are proposed, only the text and/or logo portion of the sign may be illuminated. Illuminated signs must be compatible with the location. Illumination of the sign to highlight architectural details is permitted. Fixtures shall be small, shielded, and directed towards the sign rather than toward the street, so as to minimize glare for pedestrians and adjacent properties. - Sign plans must be submitted for review as part of an Applicant for Design Approval. Proposed signs must also conform to the requirements of Section 801.27 of the Wayzata Zoning Ordinance.	The building proposes two tenant signs on the north elevation which would each be 45 sq. ft., which complies with the City's sign ordinance.	Yes

	Comments	Compliance
Parking Lot and Building Lighting		
<u>801.09.19.1 – All Districts</u> A. Parking lot lighting shall be designed in such a way as to be in scale with its surroundings, and reduce glare. B. Cutoff fixtures shall be located below the mature height of trees located in parking lot islands so as to minimize ambient glow and light pollution. C. Pedestrian-scale lighting, not exceeding thirteen (13) feet in height, shall be located on walkways and adjacent to store entrances. All sidewalk lighting must be projected downwards. City light standard shall be followed for all public streets. D. Light posts shall be of a dark color. E. Lighting fixtures shall be compatible with the architecture of the building. F. Lights attached to buildings shall be screened by the building's architectural features to eliminate glare to adjacent properties. All façade lighting must be projected downwards. G. All lighting fixtures shall comply with City Code Section 801.16.6 as it relates to glare.	All lighting fixtures attached to the building and within the parking lot are designed with downcast fixtures, and the illumination levels comply with the standards in City Code Section 801.16.6	Yes