

Special Permit &
Site Plan Approval Application

Prepared for

474 Pittsfield Road, LLC

For

Motor Vehicle Sales Lot

Located At

474 Pittsfield Road
Lenox, Massachusetts

Prepared by:

SK DESIGN GROUP, INC.



November, 2022

November 11, 2022

Zoning Board of Appeals
Town Hall – 6 Walker Street
Lenox, MA 01240

**RE: Special Permit/ Site Plan Review
Application, 474 Pittsfield Road
LLC, Lenox, MA**

Dear Board Members;

Enclosed for your review please find seven (7) copies of a Special Permit & Site Plan Review Application prepared for 474 Pittsfield Road LLC for property located at 474 Pittsfield Road in Lenox, MA.

The property is currently the site of the Knight's Inn motel.

This *proposed* project includes the demolition of the existing motel and construction of a new 14,500 square foot automobile dealership.

Please see the attached application, narrative and plans for a detailed explanation of the project. If you should have any questions or concerns, or require additional information, please don't hesitate to contact the office.

Sincerely,
SK DESIGN GROUP, INC.



Robert G. Fournier,
Project Manager

Enclosures

Cc: 474 Pittsfield Road LLC
Attorney Thomas Hamel

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474 Pittsfield Road
Lenox, MA

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SPECIAL PERMIT PETITION

**The Commonwealth of Massachusetts
TOWN OF LENOX**

Filing fee is due with the petition. If hearing expenses exceed this amount the Zoning Board of Appeals will bill the petitioner.

The undersigned hereby petitions the Town of Lenox Zoning Board of Appeals for:

A Special Permit for exception under the provisions of Section 5.2F17 of the Town of Lenox Zoning By-Law.

A Variance from the following provisions of Section _____ of the Town of Lenox Zoning By-Law.

To permit the following use or activity (describe proposed use or activity):

Demolition of existing hotel and construction of new motor vehicle sales building (with outdoor sales).

For premises:

Owner of Record	Shyamji Inc.
Address	474 Pittsfield Rd.
Map and Parcel	50-09-0
Zoned as	C1-A
Deed Reference Book	1691
	Page 77

(This information is available from the Assessor's Office or townoflenox.com in the Property Assessments-Online Database section.)

Petitioner **474 Pittsfield Road LLC**
(Your signature here also acknowledges that you agree to pay all hearing expenses relative to this petition.)

Address (Mailing Address) **C/o Courtney, Lee and Hamel PC, 31 Wendell Ave., Pittsfield, MA 01201**

Telephone Number **413-443-4445**

Email address **TJH@clhlawyers.com**

Date _____

SITE PLAN REVIEW PETITION

The Commonwealth of Massachusetts

TOWN OF LENOX

Filing fee is due with the petition. If hearing expenses exceed this amount the Zoning Board of Appeals will bill the petitioner.

The undersigned hereby petitions the Town of Lenox Zoning Board of Appeals for:

A Site Plan Review under the provisions of Section 3.5 of the Town of Lenox Zoning By-Law.

A Variance from the following provisions of Section _____ of the Town of Lenox Zoning By-Law.

To permit the following use or activity (describe proposed use or activity):

Demolition of existing hotel and construction of new motor vehicle sales building (with outdoor sales).

For premises:

Owner of Record Shyamji Inc.

Address 462 Pittsfield Road, Lenox, MA 01240

Map and Parcel 50-09-0

Zoned as C-1A

Deed Reference Book 1691 Page 77

(This information is available from the Assessor's Office or townoflenox.com in the Property Assessments-Online Database section.)

Petitioner **474 Pittsfield Road LLC**

(Your signature here also acknowledges that you agree to pay all hearing expenses relative to this petition.)

Address (Mailing Address) C/o Courtney, Lee and Hamel PC, 31 Wendell Ave., Pittsfield, MA 01201

Telephone Number 413-443-4445

Email address TJH@clhlawyers.com

Date _____

SITE PLAN REVIEW NARRATIVE

SITE PLAN REVIEW NARRATIVE

474 Pittsfield Road LLC
474 Pittsfield Road
Lenox, Massachusetts

1.0 PROJECT DESCRIPTION

Project Name: Berkshire Mazda

Location: 474 Pittsfield Road, Lenox

Proponent: 474 Pittsfield Road LLC
C/o Courtney, Lee, and Hamel PC
31 Wendell Avenue
Pittsfield, MA 01201

Existing Conditions

The property is located at 474 Pittsfield Road in Lenox, on the east side of Route 7 & 20 between the Howard Johnson & Wagon Wheel Inns. The property currently contains the Knights Inn, a 16-room motel and a small owner's house situated toward the rear (east) of the site.

The property is approximately 1.4 acres in size and contains approximately 210 ft of frontage on Pittsfield Road (aka Route 7). The property is located in a C-1A Commercial Zoning District. It is bordered to the north and south by a motel; to the east by residential properties; and to the west by Route 7.

There are two driveways off Route 7 that provide access to the property. There is parking on-site for 16-17 vehicles. The property is serviced by all the usual utilities including town sewer and water, electric, and natural gas. There are no known drainage structures located anywhere on the site.

Proposed Project

The proposed project includes demolition of the existing buildings and construction of a new $14,500\pm$ square foot car dealership and related site improvements, including parking, landscaping, and lighting.

In order for the building and parking areas to best fit the land, the Applicant has an agreement to obtain an *additional* $17,000\pm$ square feet of land from its southerly abutter (Howard Johnson), subject to receipt of all permits required to construct the new project. This exchange will affect the zoning permit that was issued for Howard Johnson. Thus, an amendment will be requested simultaneous with *this* application. No other changes are proposed to the Howard Johnson, other than the size of its property.

New paved parking for the facility will be constructed as shown on the enclosed site plan. A total of 113 spaces will be provided (see breakdown on page 7).

Access to the site will be over the existing *northerly* driveway. The southerly driveway and curb cut will be eliminated. The site will be cleared and re-graded to a relatively flat grade. New pre-cast concrete block retaining walls will be constructed where required. Screening and landscaping will be provided as illustrated. All new underground utilities will be brought into the site, including sewer, water, electric and gas services. Drainage will be controlled on-site and will include various catchments, rain gardens, and underground storage, with discharge to the existing drainage system in Route 7.

Erosion controls will be established prior to any earth work activities at the property. There are wetlands located to the east of the property. These will not be impacted. A separate application will be made to the Lenox Conservation Commission.

Building Appearance

The new building will be approximately 14,500 square feet in size, 1-story, with a flat roof. It will be located toward the northerly end of the lot. The front portion of the building will be dedicated to sales and the rear portion to service.

The front and right sides of the building will contain substantial glass. The height of the building will not exceed 26 feet. The overall appearance the building (inside and out) will conform to strict standards of Mazda Corporation. Preliminary building drawings have been included in this application (Attachment A).

2.0 ZONING REGULATIONS

The following section describes the project in regard to several specific sections of the Zoning Bylaw. The site is located within a C-1A zone.

SPECIAL PERMIT (section 3.4)

The project will contain both indoor and outdoor motor vehicle sales. Indoor sales are a by-right use; outdoor sales require a Special Permit through the Board of Appeals. The appropriate application form (and fee) has been filed herewith.

SITE PLAN APPROVAL IN THE C-1A AND C-3A ZONES (section 3.5)

Projects Requiring Site Plan Review

In addition to the Special Permit requirement, any "change of use" requires a Site Plan Approval by the Zoning Board of Appeals (ZBA) per section 3.5 of the Lenox Zoning Bylaw. The appropriate application form (and fee) has been filed herewith.

Contents of Site Plan

Included with this submission are various plans supporting the information required per this section of the zoning by-laws. The plans include:

- Architectural Building Plans
- Civil Site Plans

DIMENSIONAL REQUIREMENTS (section 6.0)

Table of Dimensional Requirements

There are several minimum dimensions required for a lot (and a structure) in C-1A Commercial zone. The requirements, existing dimensions, and proposed dimensions are as follows:

Table 6.1.1 – Table of Dimensional Requirements

Description	Requirement	Existing	Proposed
1. Minimum lot size	1 acre	1.4 acres	1.8± acres
2. Minimum lot frontage	200'	210'±	275'±
3. Minimum lot width at building setback line	200'	210'±	275'±
4. Minimum setbacks:			
A. Building or structure			
- Street Line	50'	60'±	80'±
- Lot Line	30'	7'±	60'±
- District boundary Line	50'	0'±	55'±
B. Sign Setback	35'	10'±	35'± (TBD)
C. Parking Area Setback	30'	85'±	13'±
5. Maximum Building or structure			
Height stories	2	2	1
Height feet	35'	20'±	26'±
6. Maximum building coverage	30%	11%±	18.5%±

3.0 OFF-STREET PARKING AND LOADING REQUIREMENTS

Required Number of Spaces (section 7.1.5)

The principal use for the project is *warehouse and other commercial or industrial buildings*. Under zoning requirements, such use requires 1 space for each 1,000 square feet of gross floor area. Therefore, the required number of spaces = [14,500 square feet ÷ 1,000] = 15 spaces.

A total of 113 spaces will be provided as follows:

• Customers:	17
• Employees and service dept.:	20
• New vehicle display:	<u>76</u>
TOTAL:	113

Parking Space Dimensions (section 7.1.3)

The proposed parking spaces will be a minimum of 8 ½' x 19' and the total parking facility will meet the required area per car.

Multiple Uses (section 7.1.4)

The proposed project does not include multiple uses as they relate to parking requirements.

Shared Parking (section 7.1.6)

There is no shared parking proposed.

Reduction of Parking Requirements (section 7.1.7)

There is no request for a reduction in parking.

Parking Design Standards (section 7.1.8)

The proposed parking layout includes 86 spaces (76%) to the rear or side of the building. This falls short of the 80% requirement. A waiver is hereby requested. This is

justified because nearly all of the parking in front of the building is for display of new vehicles.

The front setback in this zone is 30 feet. Several of the proposed spaces will be located in this setback. A waiver is hereby requested. Again, these spaces are for display of new vehicles.

The parking areas will be paved. All spaces will meet the minimum size standards and have adequate room for maneuvering.

Curb cuts will meet the requirements under section 7.1.8.

Driveways (section 7.1.9)

The proposed facility will continue to use the existing paved driveway at the north end of the property. The other driveway will be discontinued. The travelled width of the new driveway will be 30 feet and will not be located within 25 feet of an intersection nor within 15 feet of a crosswalk. This meets zoning requirements.

Layout of Off-Street Parking (section 7.1.10)

The proposed parking layout will meet all requirements for layout except setback to side or rear property line. Due to the limited size of the property, and the nature of the business (outdoor vehicle sales), it is not practical to site parking spaces at least 30 feet from any property line. A waiver is hereby requested from this provision.

Drainage, Surfacing and Maintenance (section 7.1.11)

Currently there are no stormwater controls anywhere on the site. Runoff simply flows into the drainage system along Route 7. The new facility will include stormwater control features that will manage stormwater on-site.

Snow Storage (section 7.1.13)

There is adequate room for snow storage at the property around the perimeter of the parking areas and along the edge of the driveway. During excessive snow falls, snow will be trucked off-site.

Lighting (section 7.1.14)

A proposed lighting plan has been included with this application and can be found in Attachment D - Site Plans. The lighting has been designed as to not reflect or cause glare on abutting properties and will not affect the operation of vehicles on nearby streets. All parking lot lighting, except for those along Rt. 7, will be set on timers to turn off at approximately 7:00 P.M. each evening. Security lighting will be installed on the building and will be motion-activated.

Screening (section 7.1.15)

The proposed facility will contain more than 35 spaces and thus new screening will be provided from abutting streets and lots (see Attachment D – Site Plans). The Applicant has met with the residential neighbors to the east and agreed to provide year-round screening along the common property line. These are illustrated on the plan, along with other landscaping.

Landscaping (section 7.1.16)

A proposed landscaping plan has been prepared and can be found in Attachment D – Site Plans.

Bicycles (section 7.1.17)

A bicycle rack will be provided outside the building (exact location to be determined).

Loading Space (section 7.1.18)

A designated loading space is illustrated on the Site Plan. This is for off-loading new vehicles.

Loading Standards (section 7.1.19)

There is adequate off-street loading area on site which will not require backing onto public ways or parking on public ways. The delivery of new cars will be made during off-hours and will take place either in the main driveway or behind the building.

Commercial "C" Zoning District Exemptions (section 7.1.20)

The project is not in a "C" zone. Therefore, this section does not apply.

Summary of parking waivers requested

Parking waivers are requested as part of the re-development project. These are due to the goal of displaying vehicles rather than storing/ parking them. Mazda has certain prototype layout that, in part, has established the need for waivers.

Waivers requested:

1. Waiver from 80% (required) to 75% (actual) of spaces to the side and rear;
2. Waiver from setback requirements in order to permit display vehicles to be more visible to consumers and to fit on the property. To the south, an easement will be obtained over the parking cells that will encroach onto the adjoining property.

4.0 TRAFFIC

Comprehensive Traffic Analysis has been completed for this project (see Attachment C). The following conclusion was taken from the Analysis:

Conclusion

The results of this impact statement indicate that the proposed Mazda dealership redevelopment at 474 Pittsfield-Lenox Road (Route 7/20) will not have a significant impact on the roadway network adjacent to the project site. VHB forecasts that the project would increase traffic on the roadway by approximately 34 vehicle trips during the weekday evening peak hour and 31 trips during the Saturday midday peak hour (approximately one vehicle every two minutes). These minimal additional trips have a negligible impact on the level of service and delay on the surrounding roadway. The proposed site driveway is expected to operate at LOS E during the weekday afternoon peak traffic period. However, the delays experienced at the driveway will not impact the surrounding roadway network. Furthermore, the proposed driveway is expected to operate at acceptable levels of service with minimal delays at all other times of the day.

The proposed site driveway, internal circulation and the off-site roadways will readily accommodate the proposed development without impacts to traffic operations.

5.0 SIGNS

The project includes new signs, both on the building and on a new pedestal in the front of the property. A detailed sign package has been included in this submission (see Attachment B). This will be submitted to the Building Commissioner for a separate permit.

6.0 LIGHTING

Sign Lighting

Any sign lighting will follow the appropriate requirements of the Lenox Bylaw.

Outdoor Lighting

Outdoor lighting is discussed previously (page #9).

7.0 DRAINAGE AND EROSION CONTROL

Applicability

The proposed project includes more than 20,000 s.f. of impervious area (roof top and parking). Thus, this section applies.

Submittals

This application includes a detailed set of Civil Site Plans (Attachment D) which show existing and proposed conditions at the site, including property lines, vegetation, existing and proposed grades, and existing and proposed drainage structures. There are no wetlands, streams, or water bodies on the property.

The Site Plans also include a specific Erosion Control Plan which outlines a variety of best management practices, such as:

- A stabilized construction entrance will be installed prior to excavation;
- A sedimentation barrier consisting of a silt fence and straw wattles will be installed along the perimeter of the site;
- The catch basins will be equipped with sediment traps to reduce sediment load into the drainage system;
- All collected sediment will be disposed of off-site at a proper facility.

A comprehensive Stormwater Management Report is also included in this application (Attachment E). It has a host of information pertaining to water quality, water quantity, operation, and maintenance, etc.

The overall construction process is expected to take 1 year to complete. In general, the schedule of operations would be as follows:

1. Install erosion control measures.
2. Demolish and remove all existing structures from the property.
3. Perform rough-grading as needed. Construct retaining walls at this time.
4. Construct new building (simultaneous with other work).
5. Install new utilities as needed, including water, sewer, etc.;
6. Construct final driveway and parking areas, including retaining walls.
7. Install finished landscaping.

Standards

In general, all stormwater runoff from the property will be collected, treated, stored, and discharged to the existing stormwater system in Route 7, where runoff currently flows. Connection to the state highway drains will require a tie-in permit from Mass DOT, which establishes strict rules for such connections.

8.0 SEWER AND WATER

Sewer flows from the proposed development were calculated based upon Massachusetts Title V regulations (310 CMR 15.00). They are compared to the existing 16-room motel that currently occupies the site. The project will not generate any additional sewer or water flows above that which currently exists (see calculations below).

Existing flows (per Title 5):

Motel: 16 rooms @ 110 gls/ bdrm/day = 1,760 GPD

House: 2 bedrooms @ 110 gls/room/day = 220 GPD

Total existing = 1,980 GPD

Proposed flows (per “Title 5”):

“Retail store”: 14,500 S.F. @ 50 gls/ 1,000 S.F./day = 725 GPD

Total proposed = 725 GPD

Net = (1,255 GPD) Less

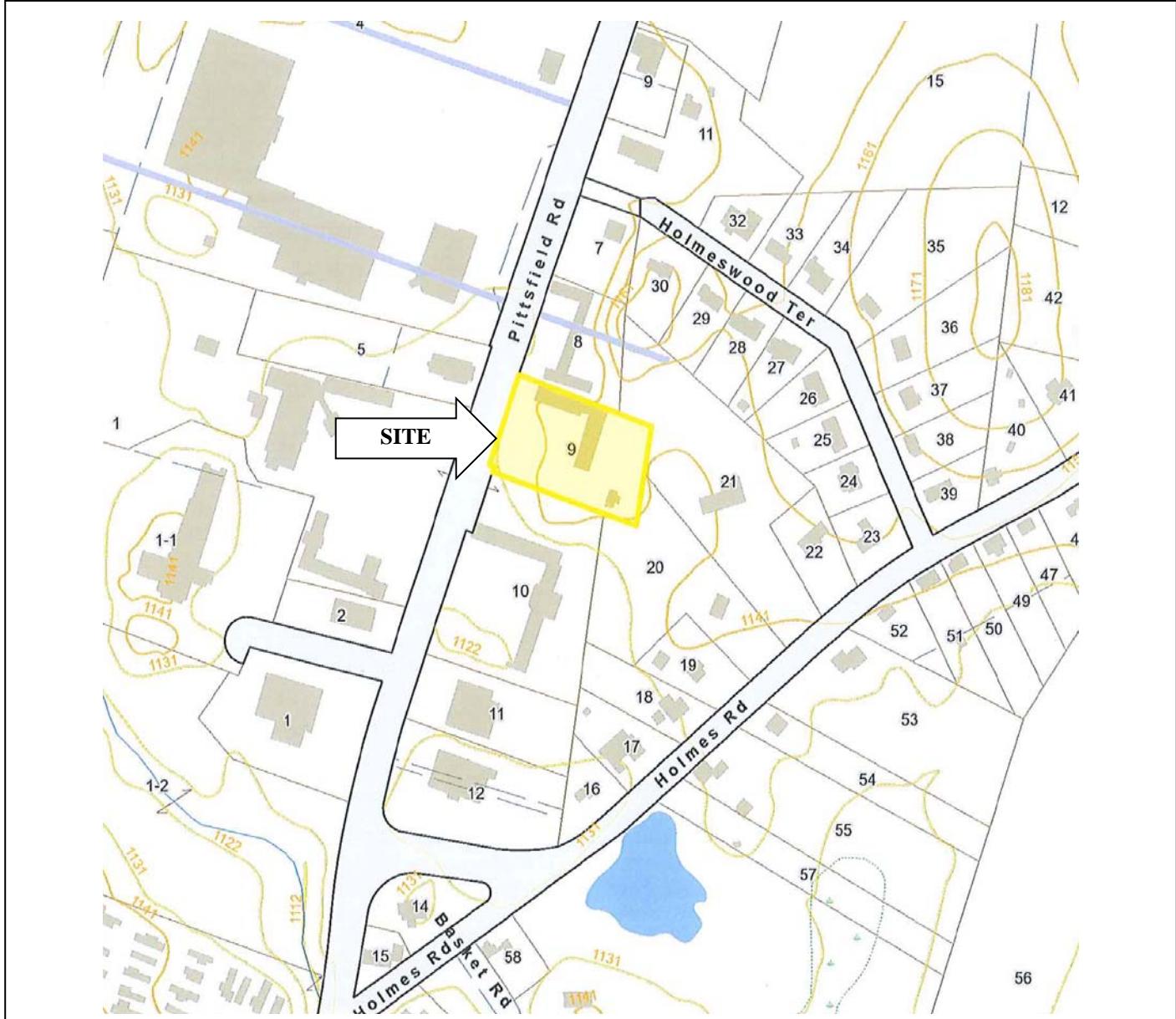
For purposes of this application, the proposed **water** usage shall be equal to the proposed sewer flows (1,255 GPD decrease). Water from the proposed development will be supplied through a new water service pipe that will replace an existing water pipe. A new water meter will also be provided (per town specifications). The development does not include an exterior irrigation system at this time.

Sewer and water tie-in fees will be paid by the Applicant in accordance with the town's regulations pertaining to sewer and water use.

9.0 CONCLUSION

The proposed project meets the requirements of the Lenox Zoning By-Laws (except where noted). The project will replace an antiquated hotel with a new state-of-the-art car dealership. This Proposal will result in an improvement to the property and will not be a burden on town infrastructure.

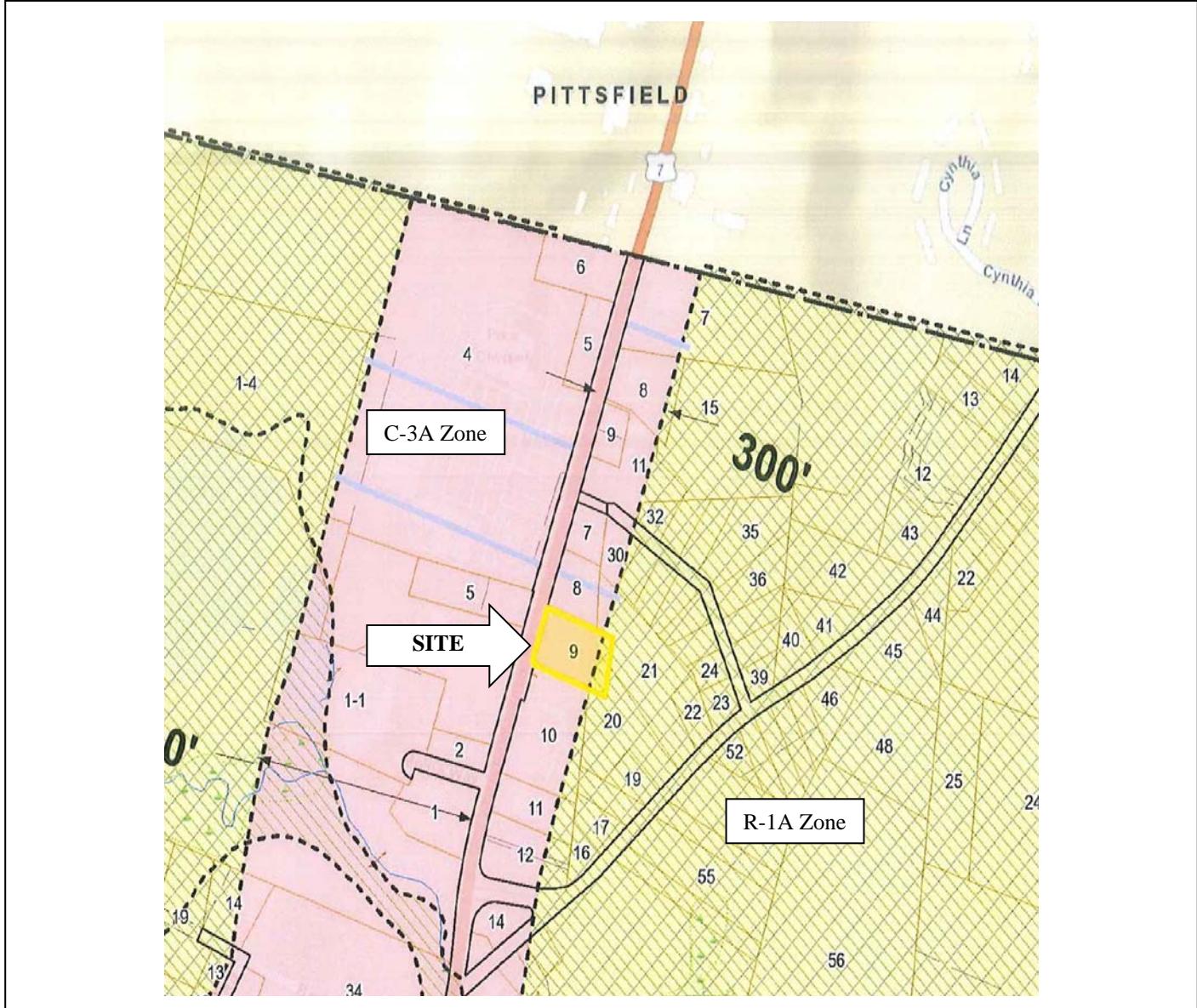
Figures



Source: Lenox AxisGIS

FIGURE #1

Locus Map
474 Pittsfield Road
Lenox, Massachusetts



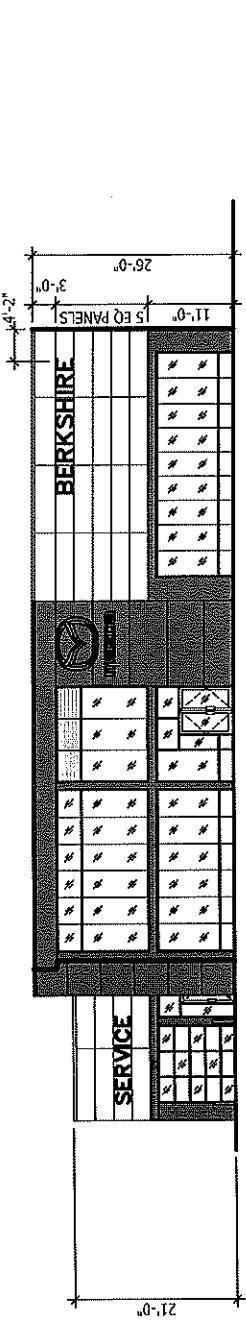
Source: Lenox AxisGIS

FIGURE #2

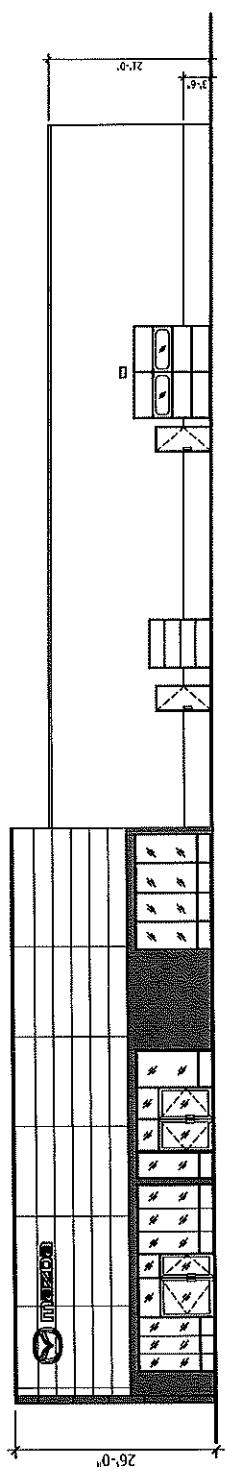
Zoning Map
474 Pittsfield Road
Lenox, Massachusetts

Attachment A

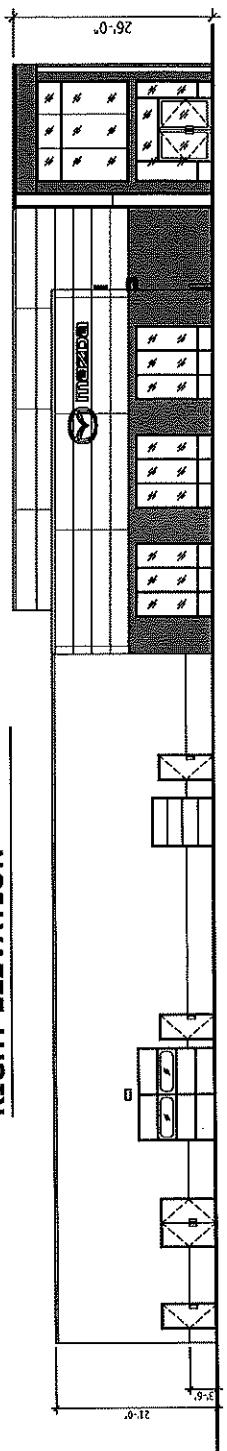
Preliminary Architectural Plans



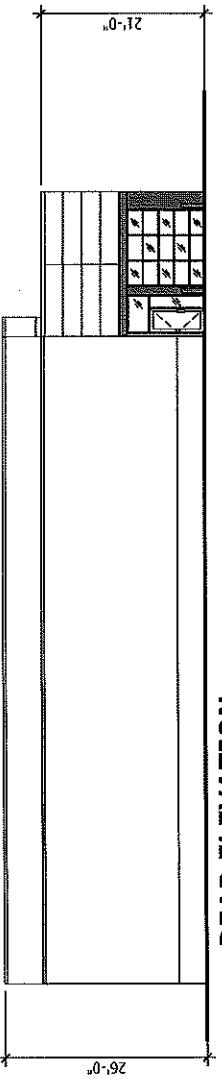
FRONT ELEVATION



RIGHT ELEVATION



LEFT ELEVATION

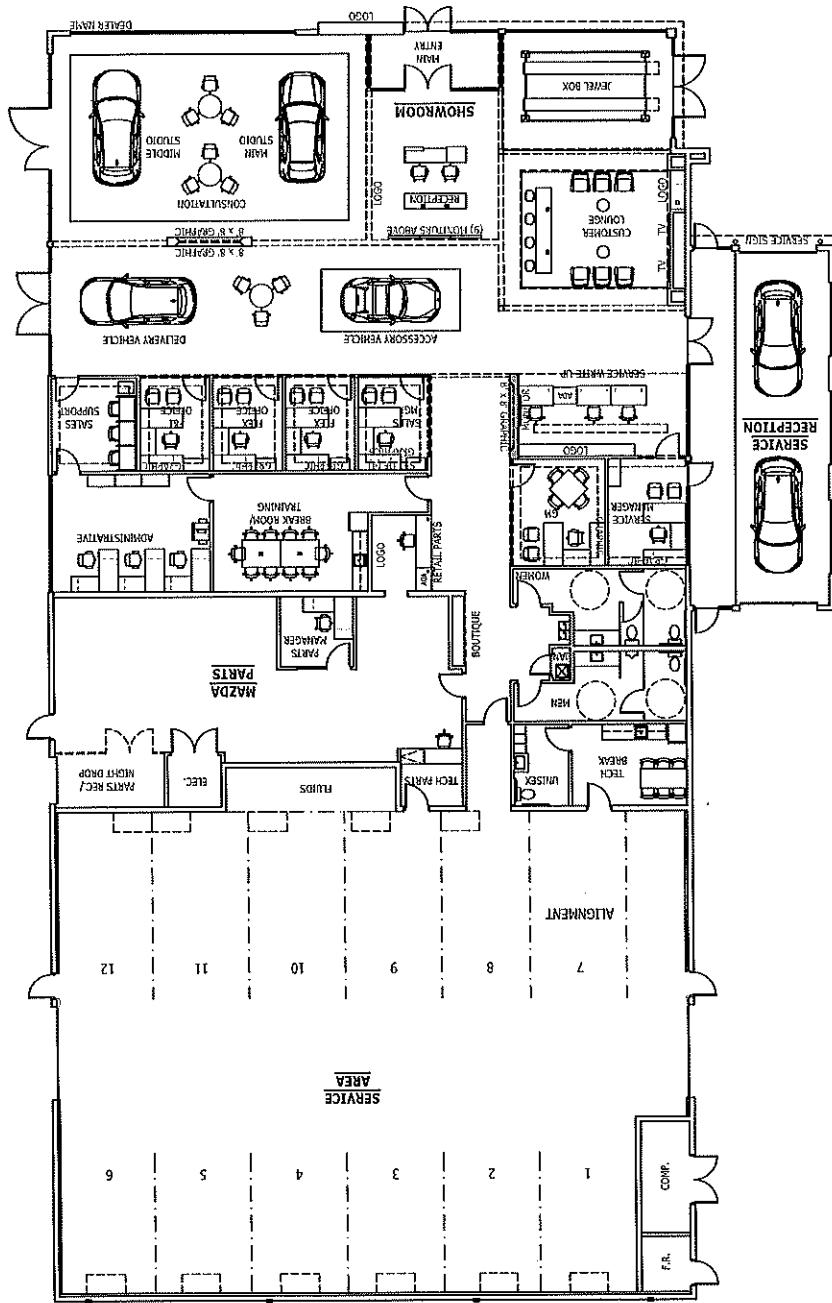


REAR ELEVATION

PROJECT NO. MAZDA10	CHECKED CU	DATE JUN '22	REVISED	SCALE 1/16"=1'-0"	ChangeUp	2056 Burns Rd. Dayton, OH 45342 Phone: 844-804-7700	DRAWING TITLE PROPOSED ELEVATIONS	DWG NO. -
<small>The drawings are for communication of design intent only. These drawings are to satisfy size, shape, color, features and proportions, and are not to be used as fabrication drawings.</small>								



BERKSHIRE MAZDA
LENOX, MA.



PROJECT NO.	CHECKED	DATE	REVISED	SCALE	ChangeUp	DRAWING TITLE	DWG NO.
MAZDA10	CU	JUN '22		1/16"=1'-0"		2036 Byers Rd. Dayton, Oh 45442 Phone: 844-804-7700	
BERKSHIRE MAZDA LENOX, MA.						These drawings are for communication of design intent only. These drawings are to specify site, shape, color, features and proportions, and are not to be used as fabrication drawings.	



Attachment B

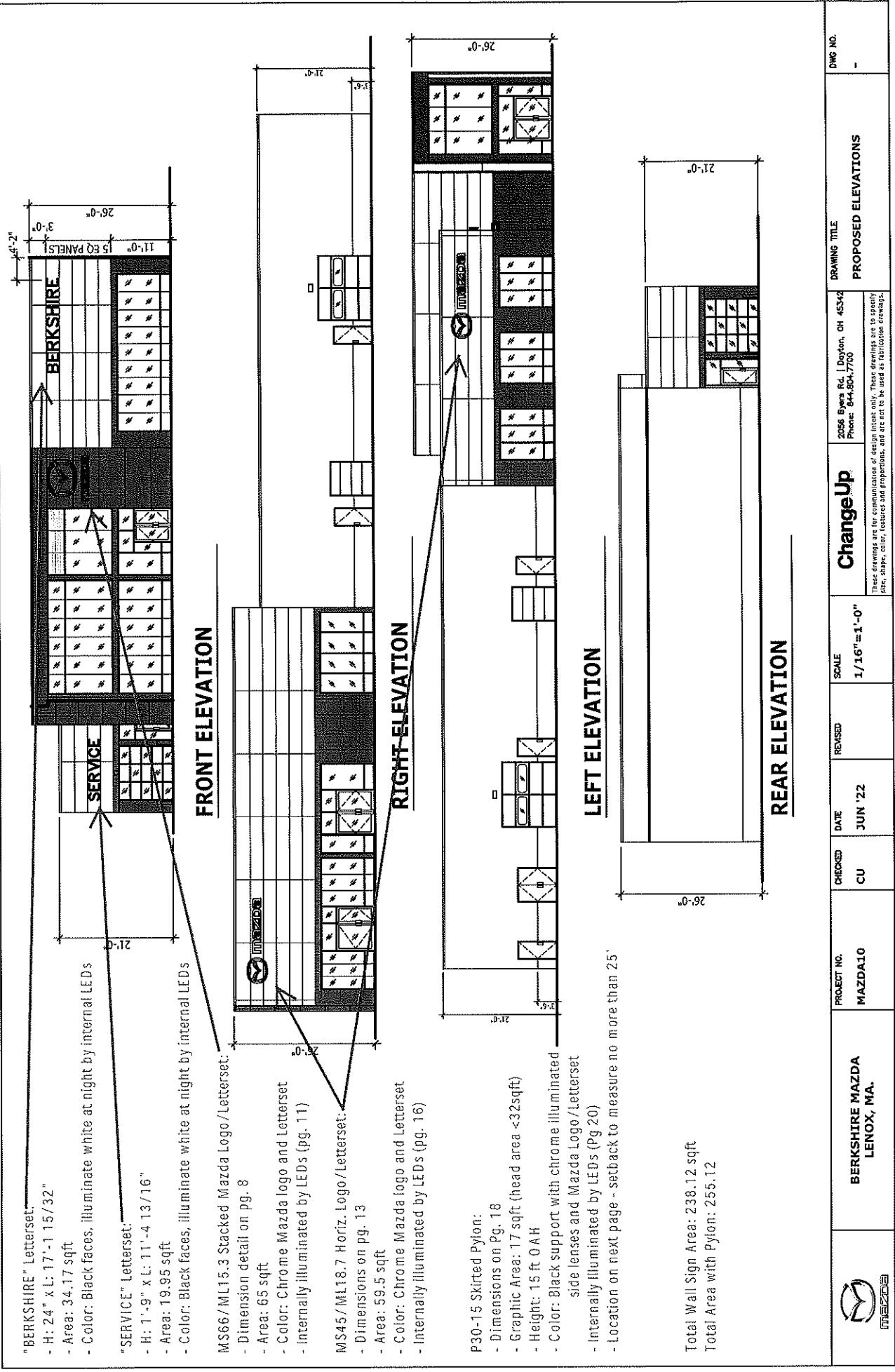
Sign Information Package

Berkshire Mazda Sign Information

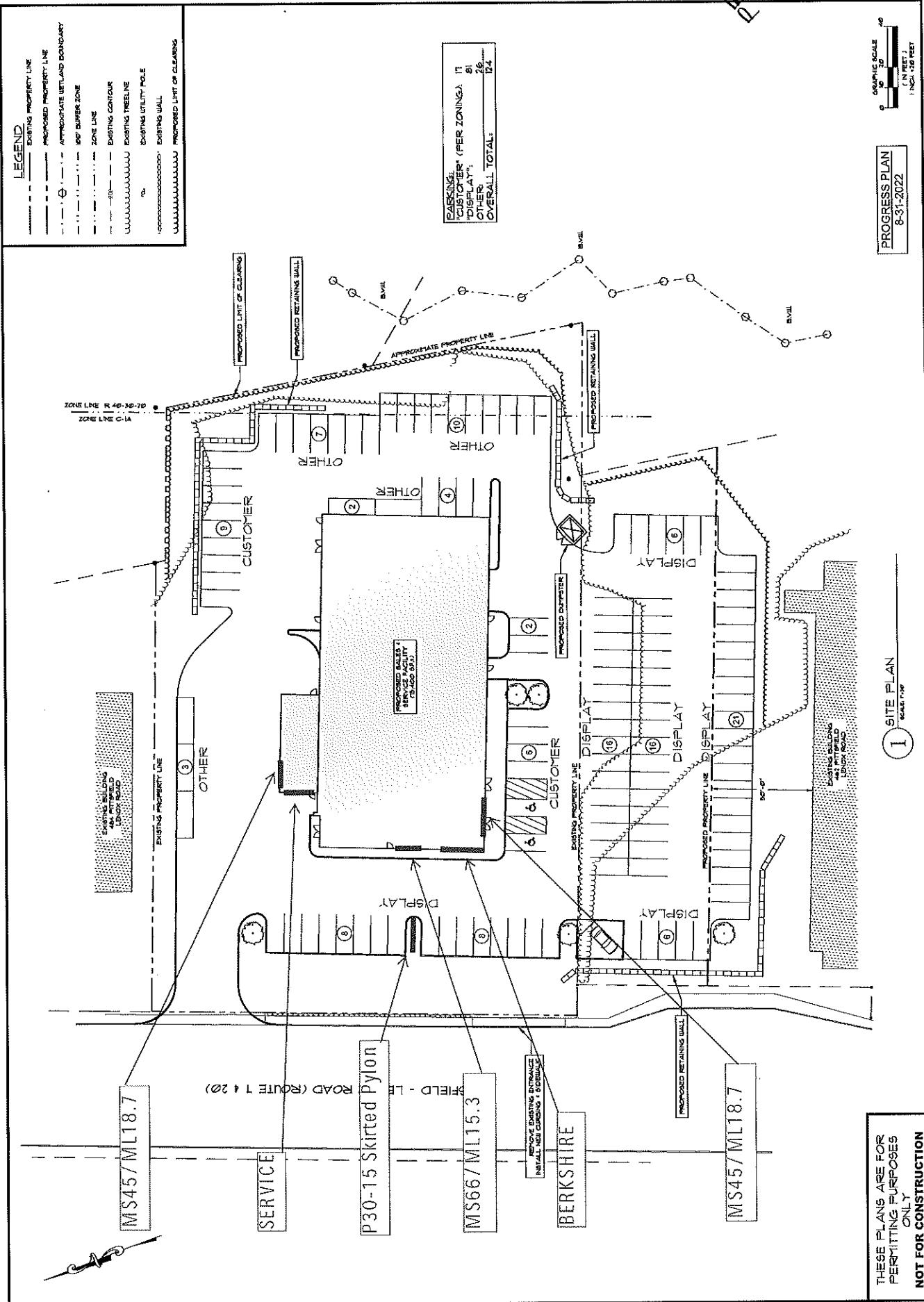
Table of contents

- Pg 1-2 _____ Sign Locations, dimensions and site plan
- Pg 3 _____ Dealer Name Dimensions with visual
- Pg 4 _____ SERVICE letterset engineering
- Pg 8 _____ MS66 / ML15.3 engineering
- Pg 13 _____ MS45 / 18.7 engineering
- Pg 18 _____ Pylon dimensions and LED information

THESE DRAWINGS ARE CONCEPTUAL AND SUBJECT TO REVIEW AND APPROVAL OF MNAO AND CHANGEUP



LENOX, MASSACHUSETTS	
474 Pittsfield-Lenox Road	
Locality At:	
PLANs TO ACCOMPANY PERMIT APPLICATION	
PREPARED FOR:	
Design Group, Inc.	
Site Plan	
MASSACHUSETTS	
The following plan is submitted for review and decision by the Board of Appeals, Zoning Board of Appeals, or other appropriate authority.	
RECEIVED BY:	
XX	



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

BERKSHIRE
SERVICE

17'11 15/32"

11'4 13/16"

11'-9 1/2"

2'-0" E.P."

1'-9 1/2" E.P.

BERKSHIRE
SERVICE



AGI

MAZDA

Project Title

Date 07/26/20

AGI EcR N. CARRELL
Lead Drafter NJC
Drawn By HWBJ
Project Mgr. J. MERRICK

General Sign Specifications

- Interior Exterior
- Single Faced Double Faced
- Non-Illuminated Illuminated
- 120 Volts 0.9 Amps(+/-)

Location 115 NPH IBC 2012

Windload 115 MPH

Drawing Revisions

Change

Date 7/26/20

Drawn by JJC

Approved OUT AS PER 421320

Comments

11'-4 1/8"

S E R V I C E

#2447 TRANSLUCENT WHITE ACRYLIC
FACE W/ FIRST SURFACE APPLIED
SHINESS-222 DUAL BLACK VINYL
• COPY STYLE IS MAZDA TYPE REGULAR
W/ 40% CHARACTER SPACING

FRONT ELEVATION

1

3 1/4"

= 1' - 0"

5'

1

3 1/4"

= 1' - 0"

EXISTING WALL
1" BLACK JEWELITE TRIM CAP
FABRICATED ALUM. CHANNEL LETTER RETURNS
-FINISHED BLACK

SIDE VIEW

2

3 1/4"

= 1' - 0"

1

3 1/4"

= 1' - 0"

Code	Type	P.O. #
34373	C	1

2455 International Plaza
Virginia Beach, VA 23452
RE-DIN-21-SRV-125



AGI

Project Title

MAZDA

MOUNTING HARDWARE	CHART
METAL	MATERIAL
WOOD	● ●
1/4" ZINC PLATED STEEL	● ●
THREADED RD THRU WALL	● ●
1/4" LAG BOLTS WITH SHIELDS	● ●
1/4" LAG BOLTS	● ●
1/4" TOGGLE BOLTS	● ●

Date 07-28-20

AGI E&R N. CARRELL

Lead Printer NAC

Drawn By RWB

Project Mgr. J. MERRICK

General Sign Specifications

Exterior

Single Sided

Double Sided

Non-Illuminated

Illuminated

120 Volts

0.9 Ampere(s)

Location 115 MPH IBC 2012

Windload

Drawing Revision

Change Date 12-10-21

Added Call Out AS PER #816520

NOTES:

- 1) VERIFY MOUNTING CONDITION.
- 2) OWNER SUPPLIED POWER TO BE WITHIN 51'-0" OF AGI TRANSFORMER BOXES.
- 3.) SILICONE SEAL ALL PENETRATIONS.

NOTE:
 1) THREADED RD WILL BE PROVIDED STANDRD BY THE INSTALLER AS REQ.
 2) DESIGN INTENDED FOR NOT GREATER THAN 3RD STORY MOUNTING - HIGHER ELEVATIONS REQUIRE REVIEW

JEWELITE TRIM

MECHANICALLY FASTENED TO CHANNEL LETTER W/ #6 X 1/2" LONG S.S.PH. SHEET METAL SCREWS @ 15° O.C. MIN 4 PER LETTER

.040" ALUM. RETURN

STAPLED TO BACK

AGILIGHT ULTRA 450 500K WATT LEDS- REF LED LAYOUT PAGE FOR EXACT SPECS

TRANSFORMER BOX TO HOUSE LED POWER SUPPLY

2" X 3 1/2" SPACER BLOCK ADHERED TO TRANSFORMER BOX W/ VHB TAPE & MOUNTED TO WALL AS REQ'D. (REF. MOUNTING CHART)
 DISCONNECT SWITCH

1/2" X 5' LONG FLEXIBLE LIQUID TITE CONDUIT WHIP TO OWNER PROVIDED POWER SUPPLY

AGILIGHT 60W LED POWER SUPPLY
 9/16" GAUGE ELECTRIC WALL BUSTER - FOR LOW VOLTAGE WIRE PASS-THRU

3MM ACM BACKER
 PRE-FINISHED WHITE

WOOD BLOCKING AS REQ'D.
 BY INSTALLER
 1/4" X 2" ZINC COATED STEEL RIVET NUT
 MOUNTING HARDWARE AS REQ'D. (SEE CHART)

ALUM. TUBE SPACER AS REQ'D PER EXISTING WALL CONDITIONS
 - PROVIDED BY INSTALLER

1/4" WEEP HOLES
 W/ LIGHT SHIELD

SIDE SECTION

$\frac{1}{2}$ "
 $\frac{1}{4}$ " = 1"

Code 34373 Type C
 Sign Type RE-DIN-21-SRV-125 P.O. F. 2
 2055 International Plaza
 Virginia Beach, VA 23452



AGI

MAZDA

Project Title

Date 07/23/20

AGI E&R N. CARRELL

Last Drafter NJC

Drawn By HWEJ

Project Mgr. J. MERRICK

General Sign Specifications

 Interior Exterior Single Faced Double Faced Non-Illuminated Illuminated

120 Volts

0.9 Amp(s)/c

Location 115 80TH IBC 2012

Wt/Load 115 lbs

Drawing Revisions

Change

Date

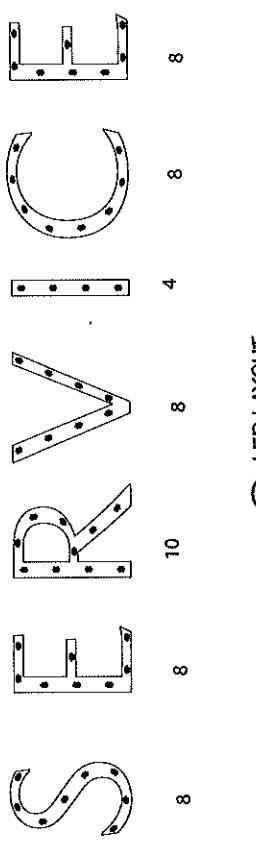
Drawn By

JGC

12-10-21

ADDED CALL OUT AS PER ST1820

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1 LED LAYOUT
N.T.S.
1 3

NOTE:
1.) EACH GOW POWER SUPPLY WILL RUN A MAXIMUM OF 115 MODULES

Type	Code	Sign Type	Po #
C	34373	RE-DIN-21-SRV-125	3

2425 International Plaza
Virginia Beach, VA 23452



AGI

Project Title

MAZDA

Date 02-23-16

AGI E&R M. ALAN FELDIN

Lead Designer NIC

Drawn By NIC/DDS

Project Rep. A. ISBELL

General Sign Specifications

- Interior Exterior
- Single Faced Double Faced
- Non-Illuminated Illuminated
- Windshield 120/277 Volt 1.5 Amp(s)e)

Location _____

Windspeed _____

Drawing Revision Notes _____

Drawing By DTS Change _____

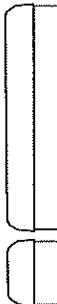
Drawing Rev. No. _____

Drawing Date _____

Drawing Number _____

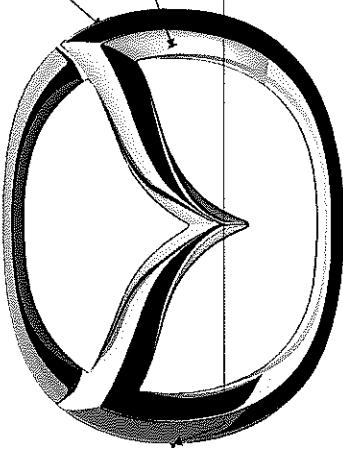
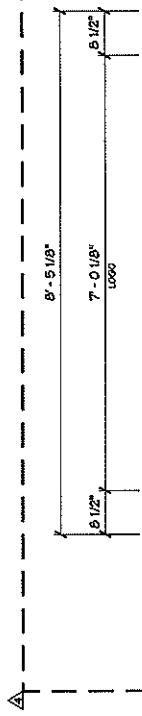
Drawing Revision _____

TRIM & INSTALL FACES
SO THE OVERALL
WORDMARK IS POKED



MAZDA LETTERS PLAN VIEW

1 1/2" = 1'-0"

**Mazda**

FRONT ELEVATION

1 1/2" = 1'-0"

SIDE VIEW

1 1/2" = 1'-0"

2005 International Pavement
Virginia Beach, VA 23452

Signs Type	MS66/ML15-3
Post	1

Code	15340
Type	C



AGI

Project Title
MAZDA

Date 03-23-16

AGI E&R M. ALANFIELDIN
Last Drafter NAC
Drawn By NAC/ODDS
Project Mgr. A. ISBELL

General Sign Specifications

- Interior
- Double-faced
- Single-faced
- Non-illuminated
- Illuminated
- 120/277 Volts
- 1.5 Amps(+/-)
- Location Windshield

MOUNTING HARDWARE CHART

MATERIAL
WOOD

MATERIAL
MASONRY

WOOD

MASONRY

STEEL

ALUMINUM

PLASTIC

STAINLESS STEEL

BRASS

BRONZE

LEAD

IRON

COPPER

NICKEL

ZINC

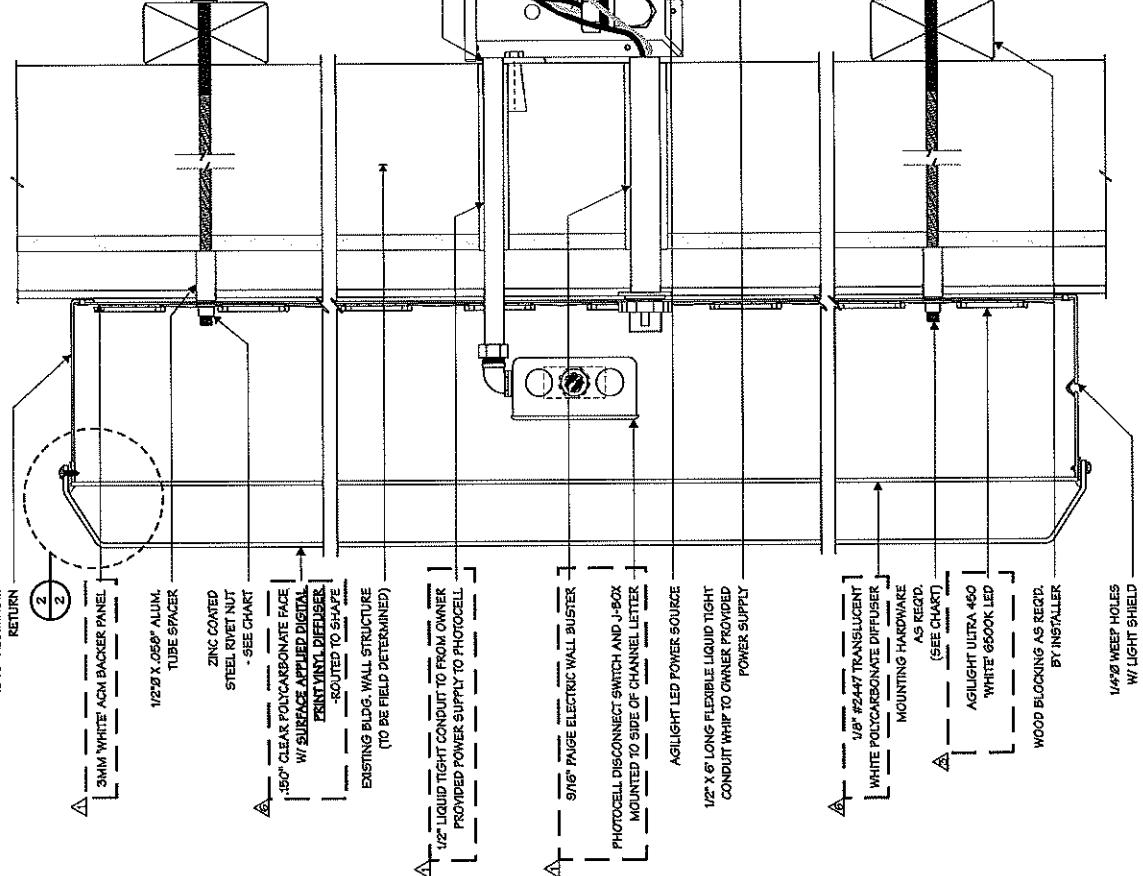
PHOSPHORUS

CHROMIUM

PHOSPHATE

PHOSPHOROUS

NOTES:
1) VERIFY MOUNTING CONDITION.
2) SILICONE SEAL ALL PENETRATIONS.



2 BLOW-UP DETAIL
1 SIDE SECTION - LOGO

Code	15340	Type	C
Sign Type	MS66/ML15.3	Po. F.	2

2656 International Park

Va., 24582



AGI

Project Title
MAZDA

MOUNTING HARDWARE CHART	MATERIAL	WOOD	METAL
1/4" ZINC PLATED STEEL THREADED ROD THRU WALL	●	●	●
1/4" LAGS WITH SHIELDS	●	●	●
1/4" LAG BOATS	●	●	●
1/4" TOGGLE BOLTS	●	●	●

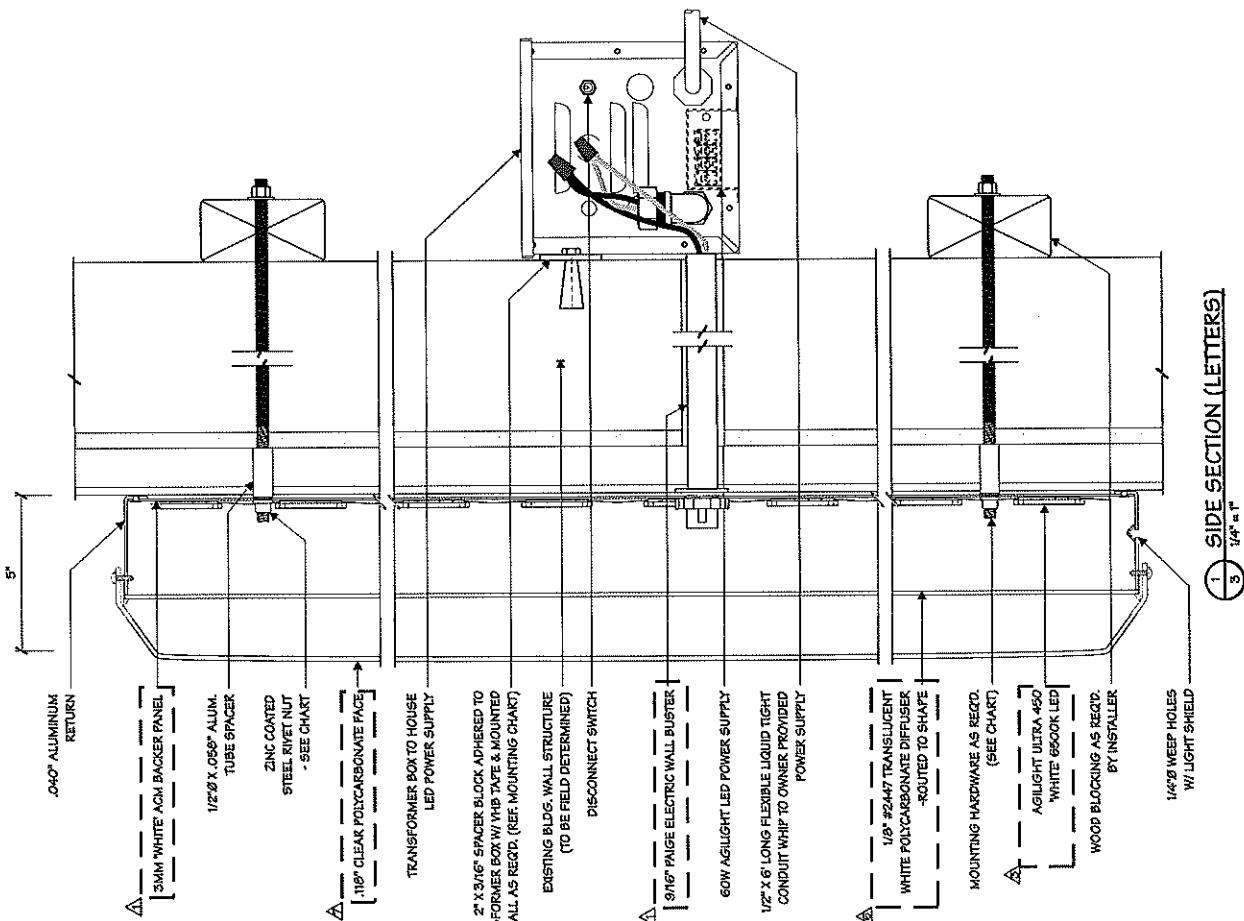
NOTE:

- 1) THREADED ROD WILL BE PROVIDED BY ALL OTHER HARDWARE IS TO BE PROVIDED BY THE INSTALLER AS REQ.
- 2) DESIGN INTENDED FOR NOT GREATER THAN 3RD STORY MOUNTING - HIGHER ELEVATIONS REQUIRE REVIEW

LETTERS 24" & SMALLER

NOTES:

- 1) VERIFY MOUNTING CONDITION,
- 2.) SILICONE SEAL ALL PENETRATIONS.



1 SIDE SECTION (LETTERS)

3

Code 15340 Type C

Sign Type MS66/ML15.3 Po # 3

265 International Partners

Virginia Beach, Va. 23452



AGI

Project Title

MAZDA

Date 03-23-16

AGI Eng M. ALAMELDIN

Last Drafter NAC

Drawn By NJC/ODDS

Project Mgr. A. ISBELL

General Sign Specifications

- Interior Exterior
 Double-faced Single-faced
 Non-illuminated Illuminated
 120/277 Volts 1.5 Amperes
 Location Windshield

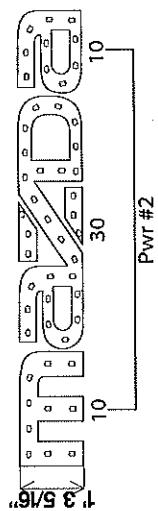
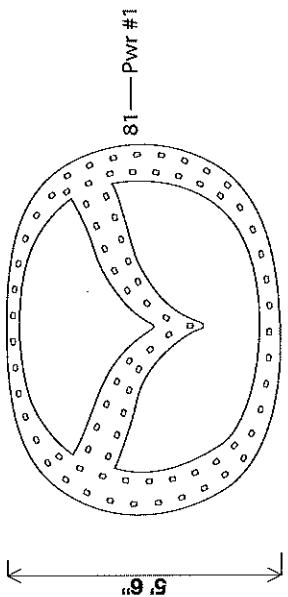
△ HBL	05-16-23	CHANGED LETTERS AND CHANGES IN NEW APPROXIMATION
△ HBL	02-13-20	CHANGED LETTERS ON NEW APPROXIMATION
△ HBL	02-13-20	CHANGED LETTERS ON NEW APPROXIMATION
△ HBL	02-13-20	CHANGED LETTERS ON NEW APPROXIMATION
△ HBL	02-13-20	CHANGED LETTERS ON NEW APPROXIMATION

Drawing Relations

Drawing By Date Charge

N/A

- 1) UNLESS OTHERWISE SPECIFIED: All layouts are for a single face sign or a single set of letters and the depth of the application considered for the layout is 5 inches.
 2) LED module placement is approximate. Agilight® recommends the sign manufacturer verify the LED placement and brightness expectations are achieved.
 3) Estimations are based off the quality of art work and information provided by the customer; this includes: font style, letter height, depth, face material, and any special instructions. Missing information may cause delays in the delivery of estimates, as well as effect product selection, accurate quantities and brightness.
 4) For installation instructions of Agilight® LED systems please refer to www.agilight.com under the TOOLS & DOWNLOADS section or contact an Agilight® Inside Sales Representative at +1.866.432.0203



Note:
 Letters based off a 5" depth & Logo based off a 6" depth from face.
 Rows spaced on 3 1/2" to 5" centers.

66 feet LS-U1450-65K-B150-A - 131 Modules
 2 - PS12-60W5L-100-277V

AGILIGHT [®] Light It Up	
15.31" Mazda	ID/V
Face Lit	
April 04, 2019	

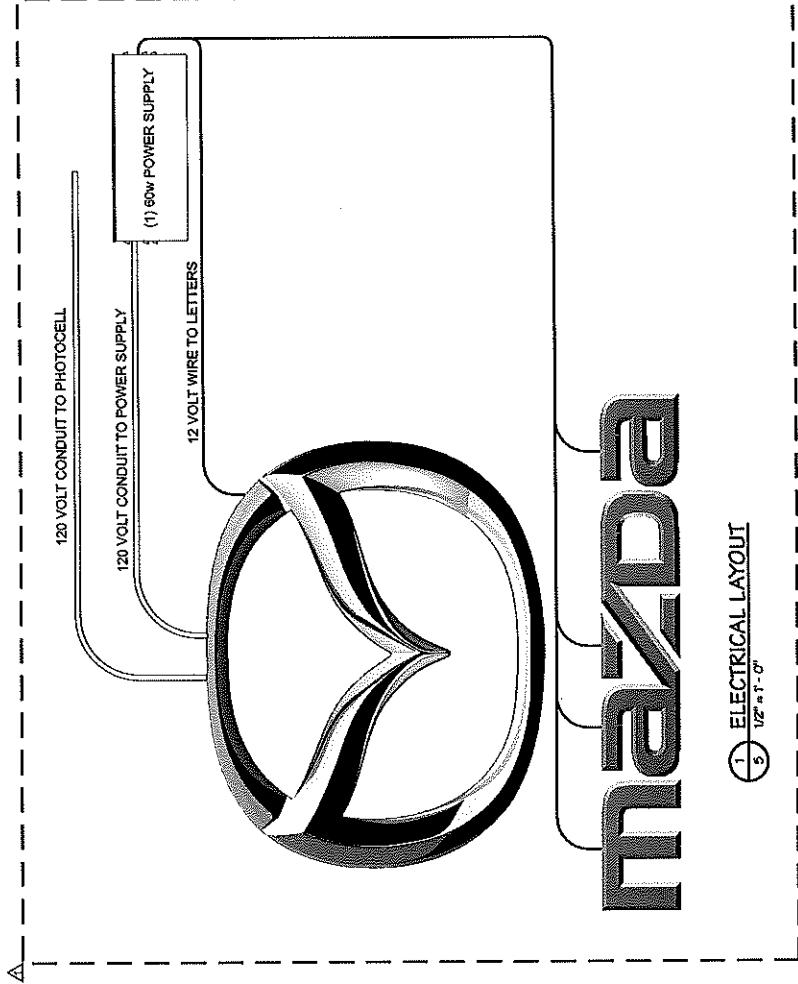


2025 International Pavilions
 Virginia Beach, VA 23452

Sign Type: C
 Project #: MS66/ML15-3
 Type: 4



Project Title	MAZDA		
Date	03/23/16		
AGI ECR	M. ALAMELDIN	Lead Drafter	NJC
Drawn By	NJC/DDS	Project Mgr.	A. ISBELL
General Sign Specifications			
<input type="checkbox"/> Interior	<input checked="" type="checkbox"/> Exterior		
<input type="checkbox"/> Single Faced	<input type="checkbox"/> Double Faced		
<input type="checkbox"/> Non-Illuminated	<input checked="" type="checkbox"/> Illuminated		
120/277 Volts	1.8 Amps(A)		
Location			
Wheelbase			
Drawing Revolutions	Date	Change	
△ N3G	10/16/16	REMOVED LINE DRAWAL OUTLINE TO UTMRA 255 6300H	
△ N3G	09/19/16	CHANGED MINESISSIONS P/N 3651	
△ TWL	09/16/16	UPGRADED LINE DRAWAL OUTLINE TO UTMRA 255 6300H	
△ WMSJ	09/19/16	UPGRADED MINESISSIONS P/N 3651	
△ NMM	09/16/16	UPGRADED LOGO LETTERS ON NEW PARROTCTION	
△ TWS	02/13/16	UPGRADED MINESISSIONS P/N 3651	
△ WMSJ	09/19/16	UPGRADED MINESISSIONS P/N 3651	
△ LGE	12/10/12	ADDEG CALL OUTS AS P/N 36520	
△ NMM	09/16/16	UPGRADED LOGO LETTERS ON NEW PARROTCTION	
△ TWS	02/13/16	UPGRADED MINESISSIONS P/N 3651	
△ WMSJ	09/19/16	UPGRADED MINESISSIONS P/N 3651	
△ NMM	09/19/16	UPGRADED LOGO LETTERS ON NEW PARROTCTION	
△ TWS	02/13/16	UPGRADED MINESISSIONS P/N 3651	
△ WMSJ	09/19/16	UPGRADED MINESISSIONS P/N 3651	
△ LGE	12/10/12	ADDEG CALL OUTS AS P/N 36520	



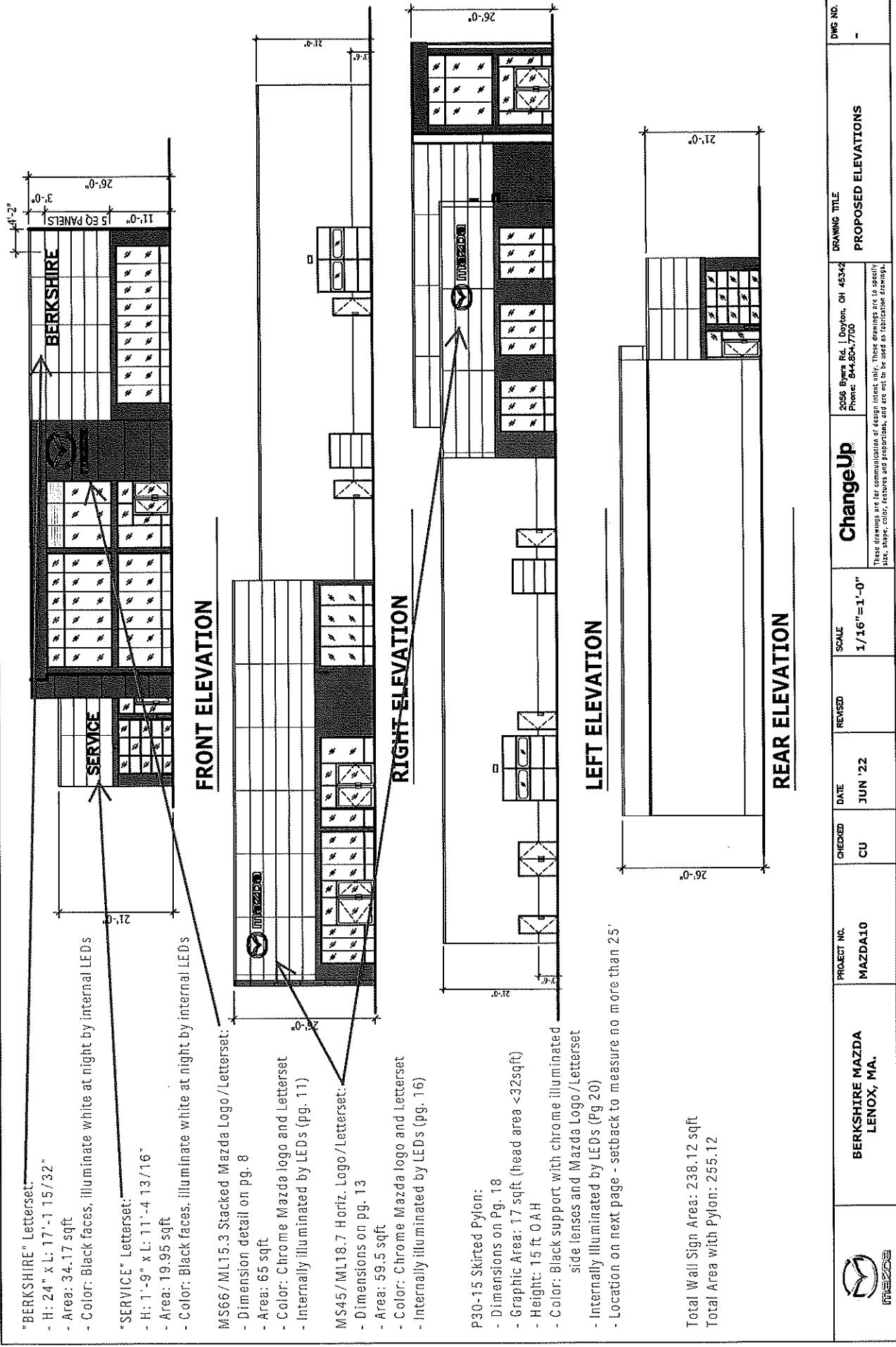
1 ELECTRICAL LAYOUT
1 1/2" x 1' - 0"

265 International, Portion
Virginia Beach, Va. 23452

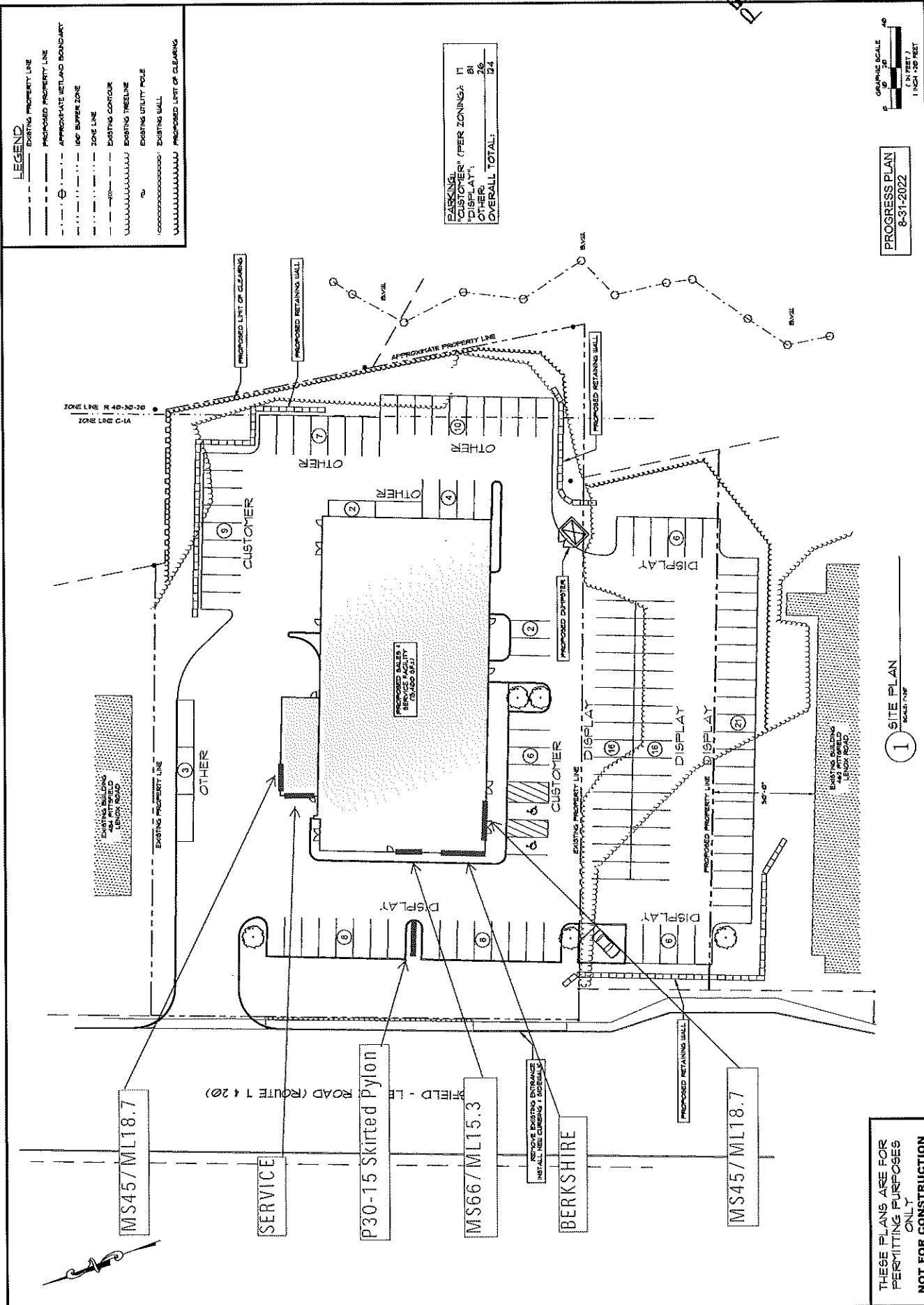
Code	Sign Type	Type
15340	MS66/ML15.3	C

Po. #:	5
--------	---

THESE DRAWINGS ARE CONCEPTUAL AND SUBJECT TO REVIEW AND APPROVAL OF MNAO AND CHANGEUP



PLANS TO ACCOMPANY PERMIT APPLICATION	PREPARED FOR:	SITE PLAN
474 PITTSFIELD-LENOX ROAD LENOX, MASSACHUSETTS	Design Group, Inc.	MASSACHUSETTS Division of Environmental Management Permitting and Inspections 100 Morrissey Boulevard Boston, MA 02139 www.dem.state.ma.us
DOCUMENT #:	DATE:	XX/XX/XX



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

BERKSHIRE

17'-1 15/32"

2'-0"

SERVICE

11'-4 13/16"

1'-9"

BERKSHIRE
SERVICE

Project Title
MAZDA

Date 07-22-20

Agi Eng N. CARRELL
Lead Drafter: NJC

Drawn By FHWBJ

Project Mgr: J. MERRICK

General Sign Specifications

- Exterior
- Interior
- Single Faced
- Double Faced
- Non-Illuminated
- Illuminated
- 120 Volts 0.9 Amps(+/-)

Location

Windload 115 MPH IBC-2012

11'-4 1/2" Hgt

S E R V I C E

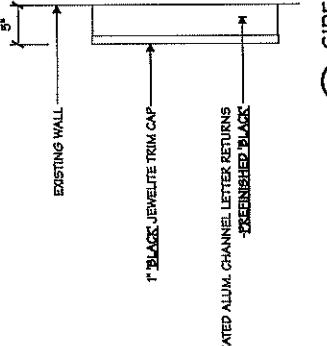
#2447 TRANSLUCENT WHITE ACRYLIC

FACE W/ FIRST SURFACE APPLIED

SM. #2658-222 DIAL BLACK INTL.

- COPY STYLE IS MAZDA TYPE REGULAR
W/ 49% CHARACTER SPACING

FRONT ELEVATION



SIDE VIEW

1 1/2"

Code	Type	Sign Type	PQ #:
34373	C	RE-DN-21-SRV-125	1

2035 International Pkwy.
Virginia Beach, VA 23452



AGI

MAZDA

Project Title

MOUNTING HARDWARE CHART	
MATERIAL	MASONRY
WOOD	● ●
1/4" ZINC PLATED STEEL THREADED ROD THRU WALL	● ●
1/4" LAG BOLTS WITH SHIELDS	● ●
1/4" LAG BOLTS	● ●
1/4" TOGGLE BOLTS	● ●

Data 07-28-20

AG E&I N. CARRELL

Lead Drafter NAC

Drawn By HWB

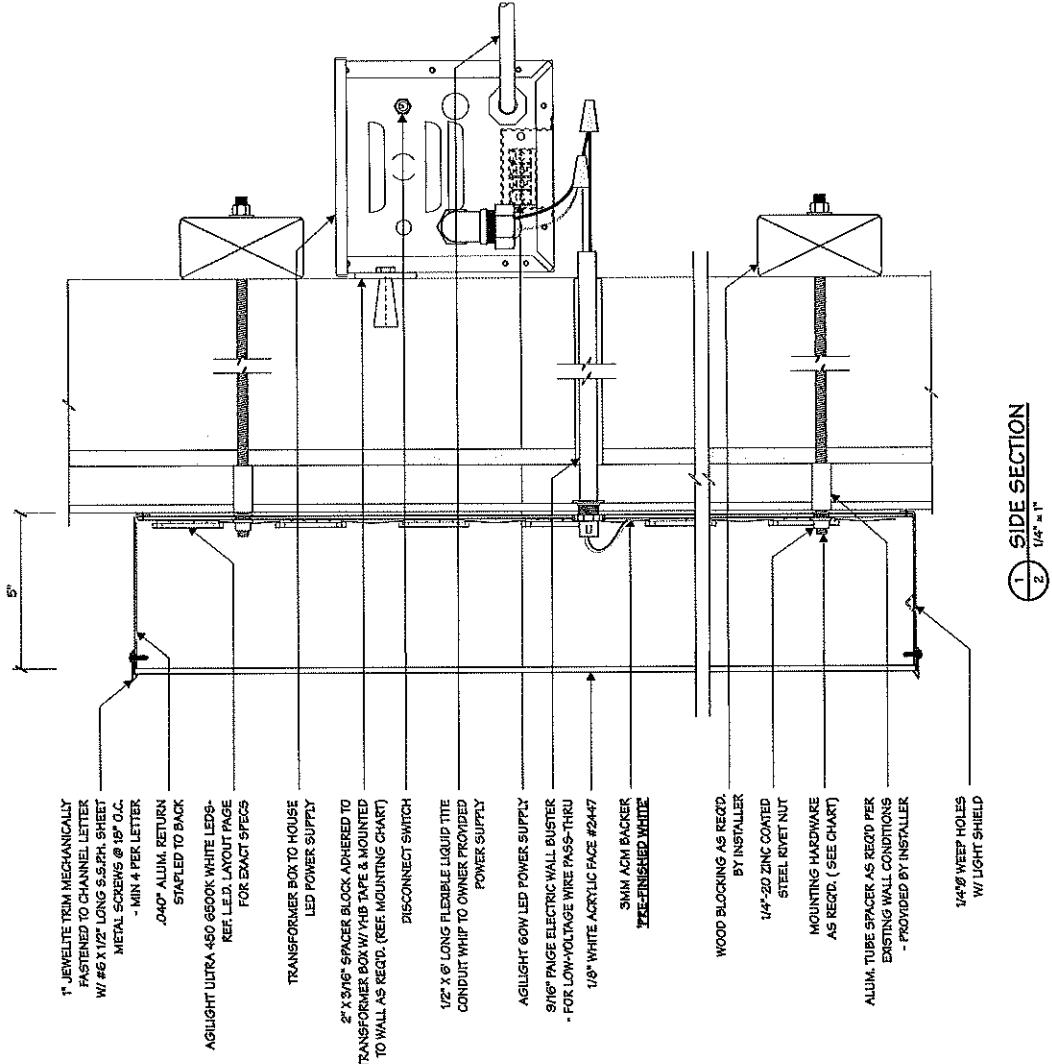
Project Mgr. J. MERRICK

General Sign Specifications

- Exterior**
 Single Faced
 Double Faced
 Non-Illuminated
 Illuminated
 120 Volts _____
 Amps(+) _____
 Location: 115 MPH IBC 2012
 Windload:

NOTE:
 1) VERIFY MOUNTING CONDITION.
 2) OWNER SUPPLIED POWER TO BE WITHIN
 5' - OF AGI TRANSFORMER BOXES.
 3.) SILICONE SEAL ALL PENETRATIONS.

NOTE:
 1) THREADED ROD WILL BE PROVIDED BY
 THE INSTALLER AS REQ.
 2) DESIGN INTENDED FOR NOT GREATER THAN
 3RD STORY MOUNTING - HIGHER ELEVATIONS
 REQUIRE REVIEW



Drain By Date	Charge	JGC	12-10-21 ADDENDA DOLL DOT AS PER 591620	General
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Code: 34373 Type: C
 Sign Type: RE-DIN-21-SRV-125 P.O.: 2
 2025 International Phony
 Virginia Beach, VA 23452



AGI

MAZDA

Project Title

Date 07-28-20

AGI E&R N. CARRELL

Lead Drafter NAC

Drawn By FME/J

Project No. J. MERRICK

General Sign Specifications

 Interior Exterior Single Sided Double Sided Non-Illuminated Illuminated Windshield

120 Volts

0.5 Amps(r/c)

Location 715 MPH IGC 2012

Drawing Revision	Date	Drawn By	Charge	Comments
1	7-28-20	JGE	12-10-21	ADDED CALL OUT AS PER 861520

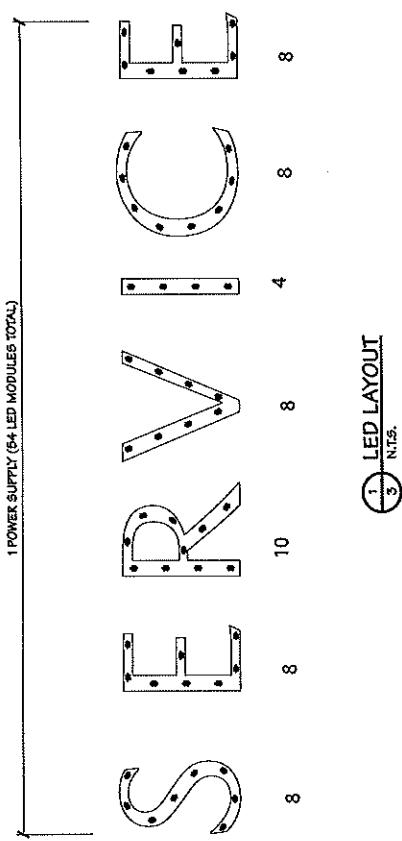
This specification is the sole property of AGI, and is to be used only for the manufacture of signs for the customer named above. It is to be treated as a confidential trade secret. No unauthorized persons, except those specifically authorized by AGI, are to have access to this specification. This specification must not be copied or reproduced in whole or in part, or given to anyone else. It is the property of AGI, and is to be returned to AGI upon request. Any unauthorized disclosure of this specification to other entities or individuals will result in legal action being taken against the individual or entity responsible for this disclosure.

Code	Sign Type	Type
34373	C	3

2655 International Plaza
Virginia Beach, VA 23452
RE-DIN-21-SRV-125

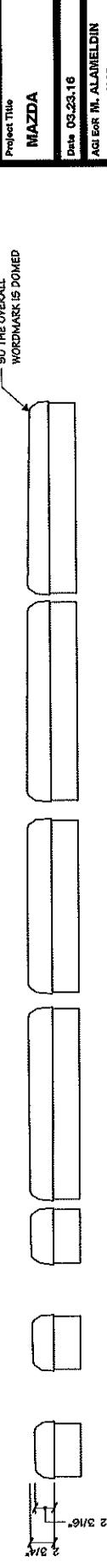
PO #
3

NOTE:
1.) EACH GOW POWER SUPPLY WILL RUN A MAXIMUM OF 115 MODULES

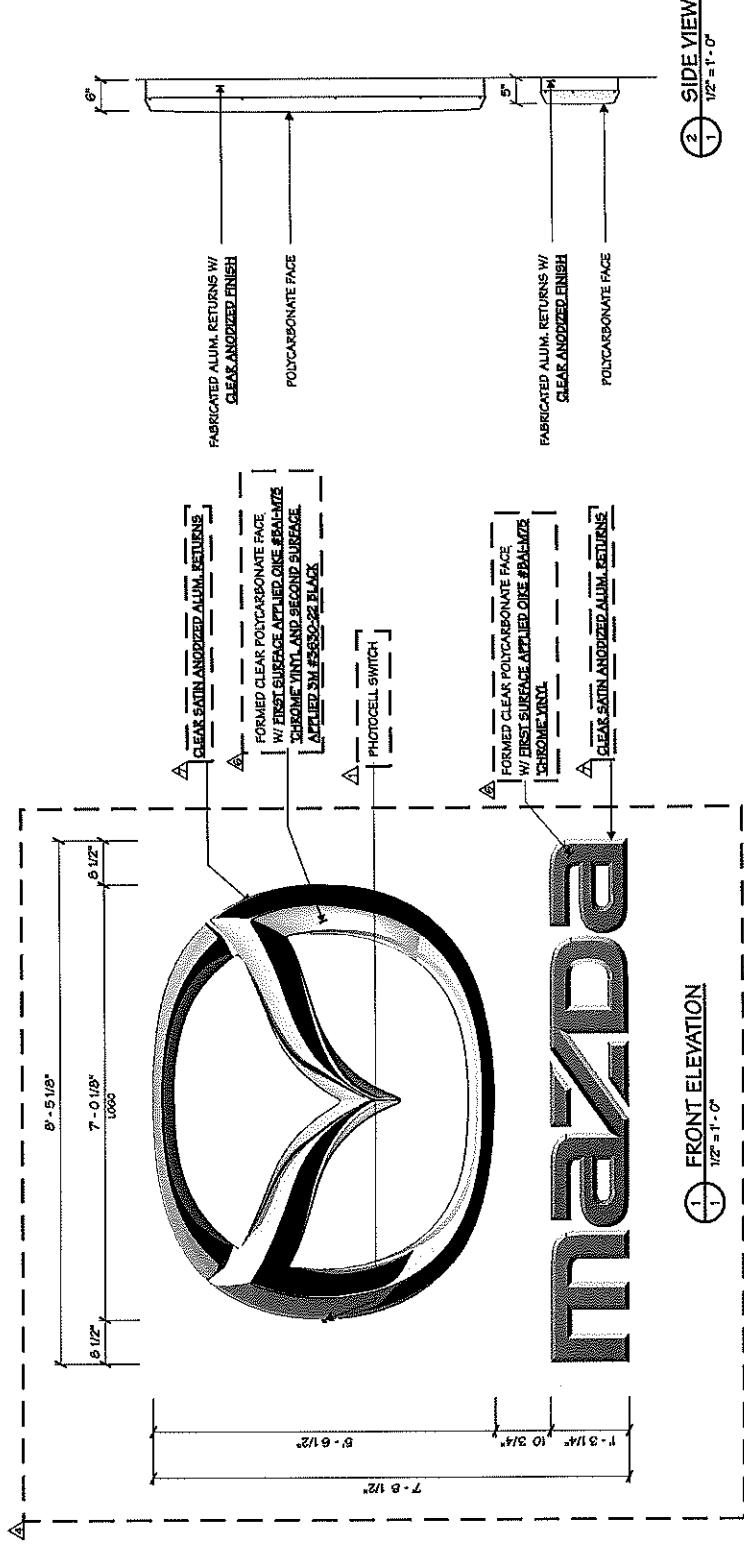
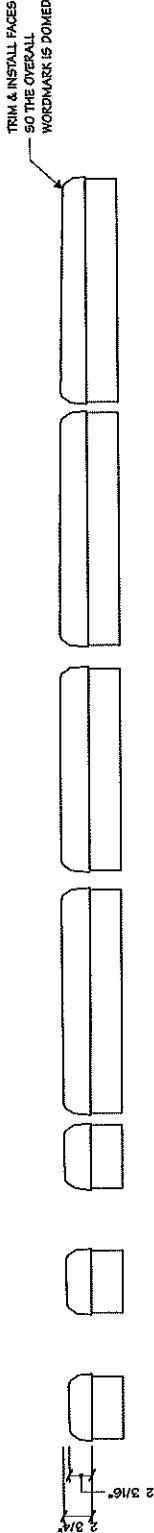




AGI



① MAZDA LETTERS PLAN VIEW



Code	Sign Type	Type
15340	MS66/ML15-3	C

2005 International Parkway
Virginia Beach, VA 23452

Code	Sign Type	Type
15340	MS66/ML15-3	C

Code	Sign Type	Type
15340	MS66/ML15-3	C



AGI

Project Title

MAZDA

Date 03-23-16

AG B&R M. ALAMEDIN

Lead Drafter N.J.C.

Drawn by N.J.C./D.D.S.

Project Mgr. A. ISBELL.

General Sign Specifications

 Interior Double Faced Single Faced Non-Illuminated Illuminated Windshield

1.8 Ampere/s

120/277 Volt

Location

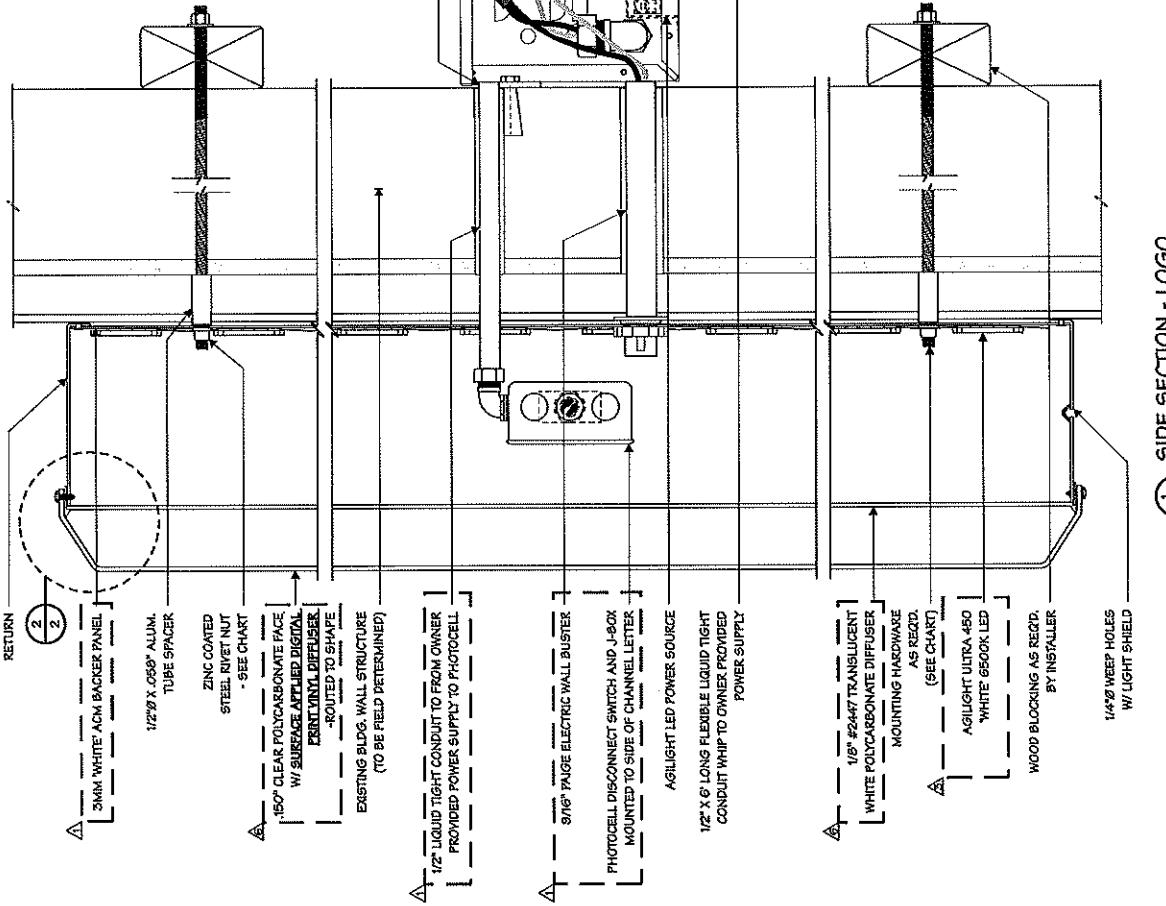
Windshield

MATERIAL	MANUFACTURER
WOOD	METAL
3/8" ZINC PLATED STEEL	
THREADED ROD THRU WALL	
3/8" LAG BOLTS WITH SHIELDS	
3/8" LAG BOLTS	
3/8" TOGGLE BOLTS	

NOTE:

- 1.) VERIFY MOUNTING CONDITION.
2.) SILICONE SEAL ALL PENETRATIONS.

A



Code	15340	Type	C
Sign Type	MS66/ML15-3	PG #:	2

265 International Park
Virginia Beach, VA 23452



AGI

Project Title

MAZDA

Date 02/23/16

AGI Eng. M. ALAMELDIN
Lead Drafter NJC
Drawn By NJC/DDS
Project Mgr. A. ISBELL

General Sign Specifications

Non-Illuminated

120/277 Volts

1.8 Amps(+/-)

Windload

MOUNTING HARDWARE CHART

MATERIAL	WOOD	METAL
1/4" ZINC PLATED STEEL THREADED ROD THRU WALL	●	●
1/4" LAGS WITH SHIELDS	●	●
1/4" LAG BOLTS	●	●
1/4" TOGGLE BOLTS	●	●

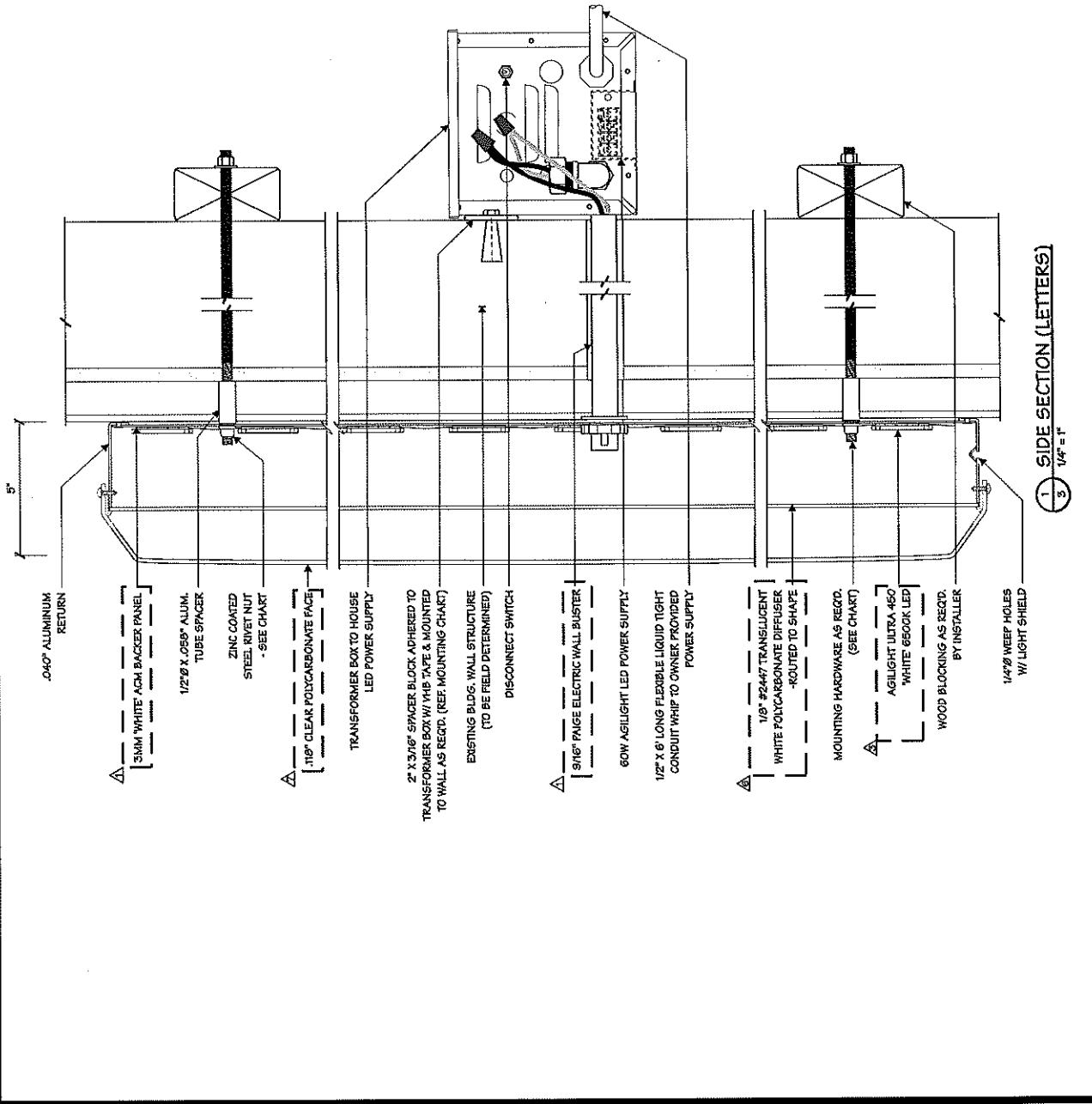
NOTE:

- 1) THREADED ROD WILL BE PROVIDED STANDARD
- ALL OTHER HARDWARE IS TO BE PROVIDED BY THE INSTALLER AS REQ.
- 2) DESIGN INTENDED FOR NOT GREATER THAN 3RD STORY MOUNTING - HIGHER ELEVATIONS REQUIRE REVIEW

LETTERS 24" & SMALLER

NOTES:

- 1.) VERIFY MOUNTING CONDITION.
- 2.) SILICONE SEAL ALL PENETRATIONS.





AGI

Project Title

MAZDA

Date 03-23-16

Agi Eng M. ALAMELDIN

Last Drawn: NAC

Drawn By NJC/ODDS

Project Mgr. A. ISBELL

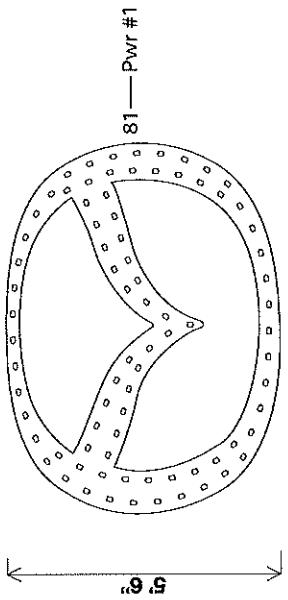
General Sign Specifications

- Interior Exterior
 Single Face Double Face
 Non-Illuminated
 Illuminated LED Module Updates
 Location Windload

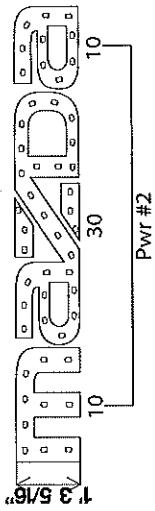
WHTG	02-10-21	ADDOES QLL OUTLS AS PER DR #47630
HWTG	03-14-20	CHANGED DIMENSIONS PER DR DR #47635
TW	02-19-20	CHANGED LETTERS OF NEW PARROTATION
TW	02-19-20	PREPARE LOGO/LETTERS OF NEW PARROTATION
NMG	01-16-16	REMOVED BLK OUTLINE ON LETTERS
NMG	01-20-15	CHANGED DIMENSIONS PER DR DR #47631
NMG	01-16-16	REMOVED BLK OUTLINE TO LETTERS 550 560

Code	Sign Type	PC#
15340	C	MS66/ML15.3

- 1) UNLESS OTHERWISE SPECIFIED: All layouts are for a single face sign or a single set of letters and the depth of the application considered for the layout is 5 inches.
 2) LED module placement is approximate. Agilight® recommends the sign manufacturer verify the LED placement and quantity to ensure even illumination and brightness expectations are achieved.
 3) Estimates are based off the quality of art work and information provided by the customer. This includes: font style, letter height, depth, face material, and any special instructions. Missing information may cause delays in the delivery of estimates, as well as effect product selection, accurate quantities, and brightness.
 4) For installation instructions of Agilight® LED systems please refer to www.Agilight.com under the TOOLS & DOWNLOADS section or contact an Agilight® Inside Sales Representative at +1.866.432.0203



81 — Pwr #1

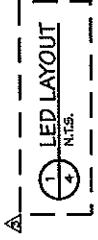


PVT #2

Notes:
 Letters based off a 5" depth & Logo based off a 6" depth from face.
 Rows spaced on 3 5/16" to 5" centers.

66 feet LS-U450-65K-B150-A - 131 Modules
 2 - PS12-60WSL-100-277V

15.31" Mazda		AGILIGHT [®] Light Up
Face Lit	ID/V	1074 Action Circle Suite 116, San Antonio, TX 78216 Ph: +(1)(866) 482-0203 - Fax: +(1)(210) 350-1454 www.AgiLight.com
April 04, 2019		



285 International Park
Virginia Beach, VA 23452



AGI

Project Title
MAZDA

Date 03-23-16

AGI EOR M. ALAMELDIN
Lead Drafter NAC
Drawn By NJC/DDS
Project Mgr. A. ISBELL

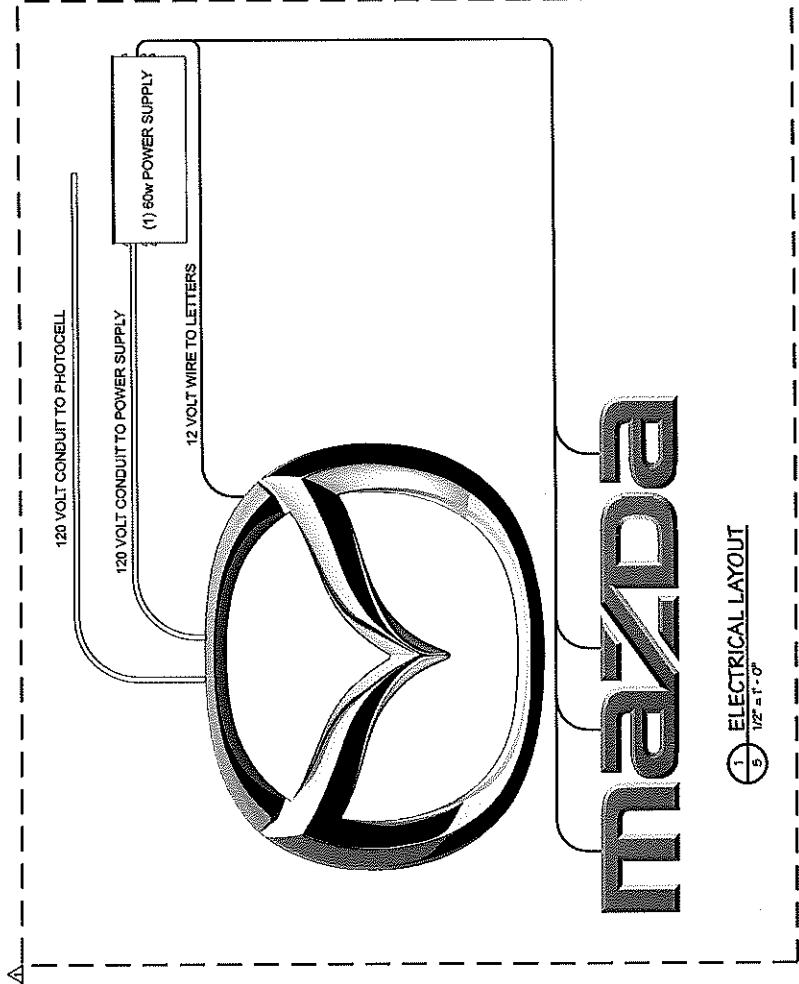
General Sign Specifications
 Interior Exterior
 Single Face Double Face
 Non-Illuminated Illuminated
120/277 Volts 1.5 Amps/ $\sqrt{3}$
Location Windload

△ JDC	12,10,71	ADDOE CALL OUTS AS PER DR #6520
△ HWD	05-14-12	CLIENT PREFERENCES AND CHANGES FOR DR #4762
△ NMM	03-16-20	REVERSE LOGO/LETTERS OF NEW PARABOLIC
△ TLM	02-19-20	REVERSE LOGO/LETTERS
△ TWA	04-06-13	PREPARED LINE DRAWING ON LETTERS
△ WBG	06-19-19	CHANGED DIMENSIONS FOR DR #6501
△ NFG	10-16-18	REMOVED LINE DRAWING ON LETTERS
△ NHC	10-16-18	ADDOE PHOTOCELL SWITCH IN ALL MAZDA CHANNEL LETTERS

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Code 15340 Type C
Sign Type MS66/ML15.3 Po #: 5

2655 International Parkway
Virginia Beach, VA 23452





Project Title

MAZDA

Date 05-08-16

AGI EOR M. ALAMELDIN

Lead Drafter NJC

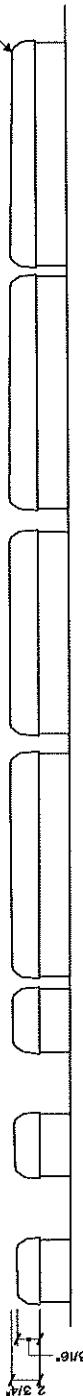
Drawn By NJC/DDS

Project Mgr. A. ISBELL

General Sign Specifications

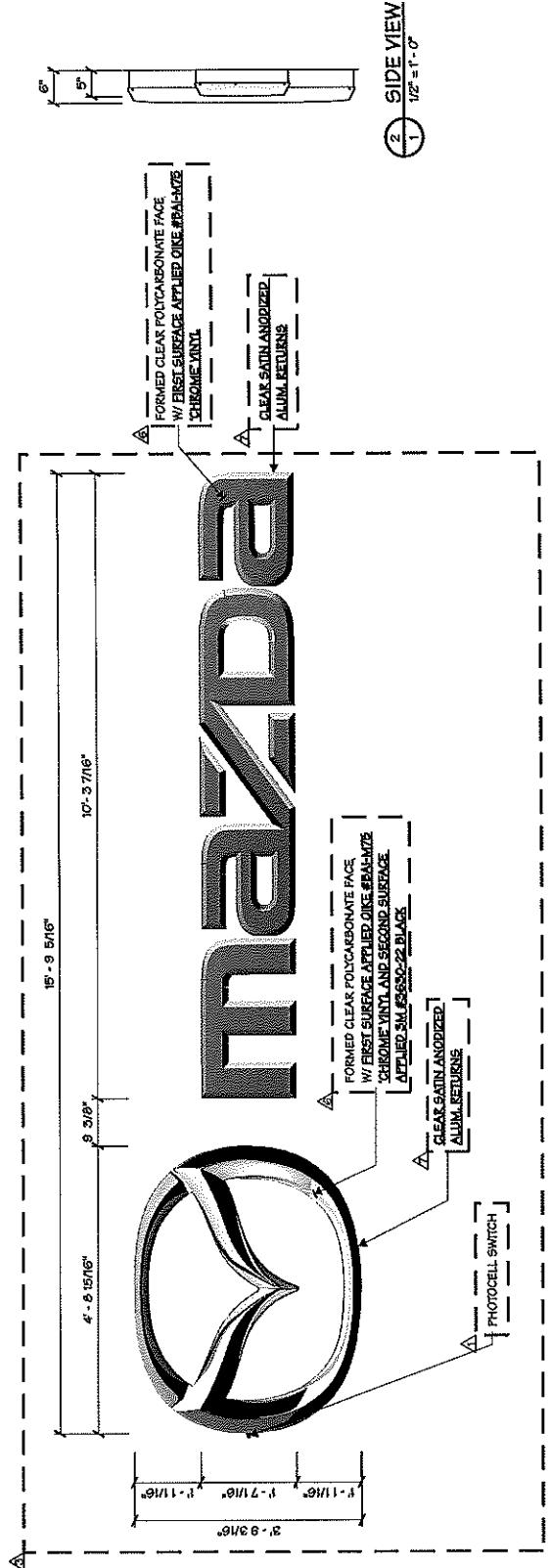
- Indoor Exterior
 Single Faced Double Faced
 Non-Illuminated Illuminated
Location _____ Volts _____ Amps(+/-) _____

TRIM & INSTALL FACES
SO THE OVERALL
WORDMARK IS DOMED



(3) **MAZDA LETTERS PLAN VIEW**

1' = 1'-0"



SIDE VIEW

6"
1/2" = 1'-0"

FRONT ELEVATION

1/2" = 1'-0"

2015 International Perform
Virginia Beach, VA 23452

Code	Sign Type	Type
15340	MS45/ML18.7	PG F 1



AGI

Project Title
MAZDA

Date 03.06.16

AGI Eng. M. ALAMELDIN
Lead Drafter NAC
Drawn By NAC/DDBS

Project Mgr. A. ISBELL

General Sign Specifications
 Interior Exterior
 Single Faced Double Faced
 Non-Illuminated Illuminated
 Volts _____
 Amps _____

Location _____

WiseCode _____

MOUNTING HARDWARE CHART	
MATERIAL	MATERIAL
ZINC PLATED STEEL	WOOD
THREADED ROD THRU WALL	●
3/8" LACES WITH SHIELDS	●
3/8" LAG BOLTS	●
3/8" TOGGLE BOLTS	●

NOTE:

- 1) THREADED ROD WILL BE PROVIDED STANDARD BY THE INSTALLER AS REQ.
- 2) DESIGN INTENDED FOR NOT GREATER THAN 3RD STORY MOUNTING - HIGHER ELEVATIONS REQUIRE REVIEW

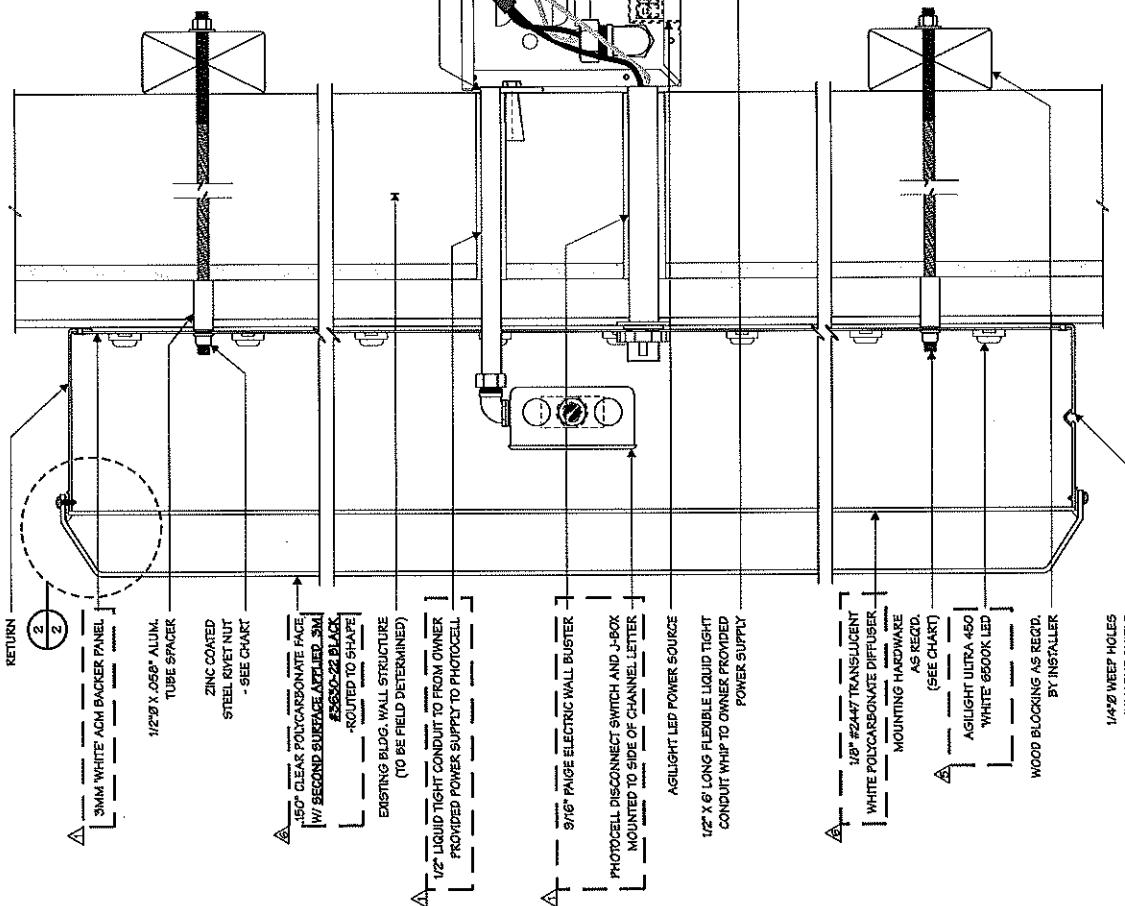
NOTES:
 1) VERIFY MOUNTING CONDITION.
 2) SILICONE SEAL ALL PENETRATIONS.

Date 03.06.16	AGI Eng. M. ALAMELDIN
Lead Drafter NAC	Drawn By NAC/DDBS
Project Mgr. A. ISBELL	
General Sign Specifications	
<input type="checkbox"/> Interior	<input checked="" type="checkbox"/> Exterior
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<input type="checkbox"/> Non-Illuminated	<input checked="" type="checkbox"/> Illuminated
<input checked="" type="checkbox"/> Volts _____	
<input type="checkbox"/> Amps _____	
Location _____	
WiseCode _____	

CLIMATE CONTROLLED CHANNEL LETTER MODULES PER DR 847562	ADDOE CALIBRATOR AS PER DR 101630
CLIMATE CONTROLLED CHANNEL LETTER MODULES TO ULTRIA 360 MODULES PER DR 847561	CLIMATE CONTROLLED CHANNEL LETTER MODULES PER DR 847562
NON-ILLUMINATED LETTERS	NON-ILLUMINATED LETTERS
NON-ILLUMINATED LETTERS	NON-ILLUMINATED LETTERS
NON-ILLUMINATED LETTERS	NON-ILLUMINATED LETTERS

Code 153340	Type C
Sign Type MS45/ML18.7	Perf. 2

2055 International Perfor.
Virginia Beach, VA 23452





AGI

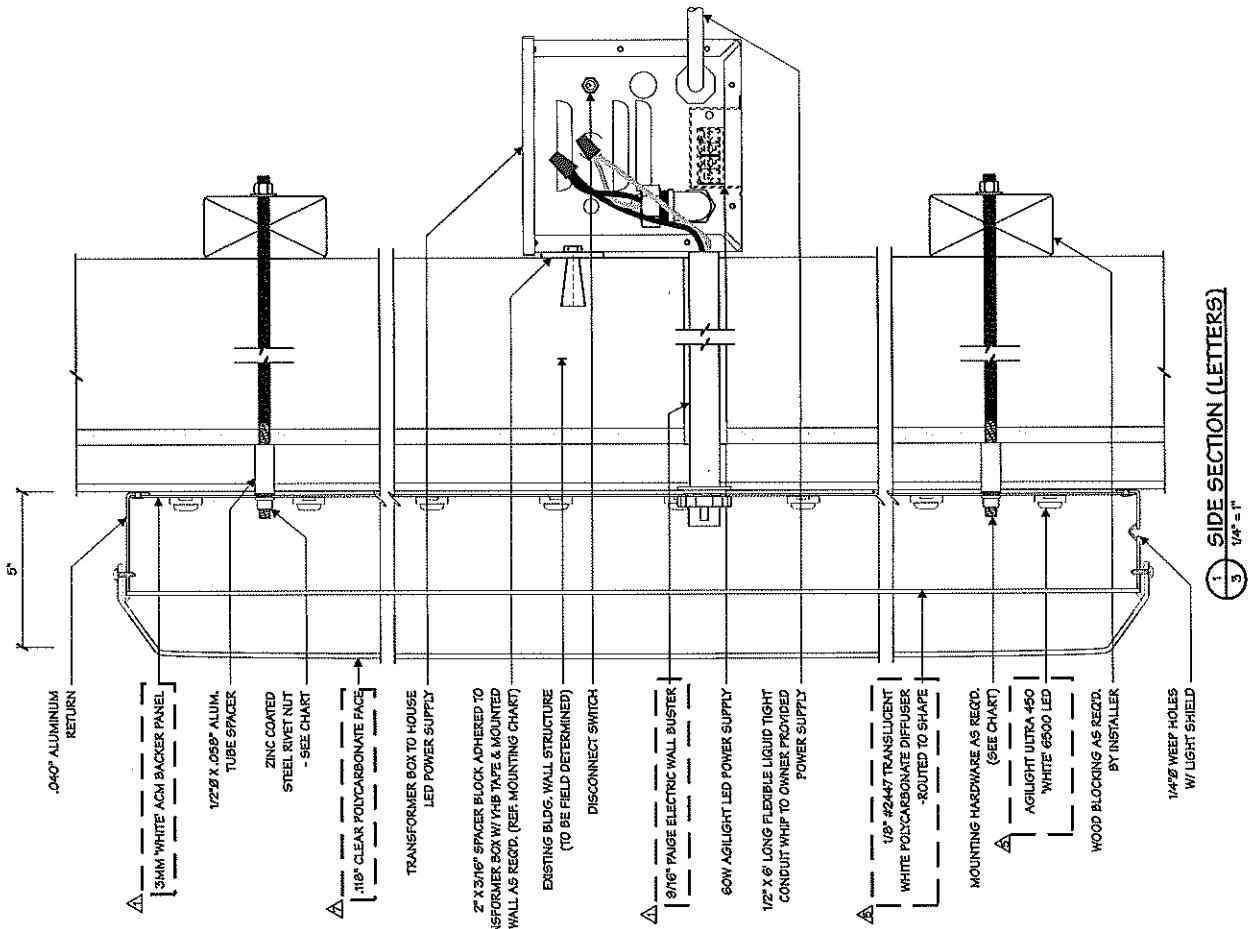
MOUNTING HARDWARE	CHART
WOOD	WOOD
3MM WHITE ACA BACKER PANEL	
.120" ZINC PLATED STEEL THREADED ROD THRU WALL	
.14" LAGS WITH SHIELDS	
.14" LAG BOLTS	
.14" TOGGLE BOLTS	

NOTE:

1) THREADED ROD WILL BE PROVIDED STANDARD
ALL OTHER HARDWARE IS TO BE PROVIDED BY
THE INSTALLER AS REQ.
2) DESIGN INTENDED FOR NOT GREATER THAN
3RD STORY MOUNTING - HIGHER ELEVATIONS
REQUIRE REVIEW

LETTERS 24" & SMALLER**NOTES:**

- 1.) VERIFY MOUNTING CONDITION.
- 2.) SILICONE SEAL ALL PENETRATIONS.

**SIDE SECTION (LETTERS)** $\frac{1}{4"} = 1'$

Code	Type	Page
15340	C	3

2055 International Parkway
Virginia Beach, VA 23452

Sign Type	Page
NIS45/ML18.7	3



AGI

MAZDA

Date 03.08.16

AGI EOR M. ALAMELDIN
Lead Designer NAC
Drawn By NAC/ODDS
Project Rep. A. ISBELL

General Sign Specifications

- Interior Exterior
- Single Faced Double Faced
- Non-Illuminated Illuminated
- Vertical Horizontal
- Attnps (+/-)

Location _____

Windload _____

Drawing By Date Charge Drawing Resolution
HMH 03.08.16 UPGRADE LOGO/LETTERS TO MATCH 360 MODULES PER DR 3661
TLL 02.13.20 UPGRADE LOGO/LETTERS BASED ON NEW 360 MODULES PER DR 3662
HMH 03.13.18 ENLARGED LOGO OVAL LINE OUTLINE TO CHANNEL LETTERS
NDC 10.26.16 ENLARGED LOGO OVAL LINE OUTLINE TO CHANNEL LETTERS
HMH 03.07.18 ADDED PHOTOCELL SWITCH TO CHANNEL LETTERS
TLL 02.13.20 UPGRADE LOGO/LETTERS BASED ON NEW 360 MODULES PER DR 3661
HMH 03.10.20 ADDED CHANGES PER DR 3662
POM 07.17.20 UPGRADE LOGO/LETTERS BASED ON NEW 360 MODULES PER DR 3662
TLL 02.13.20 UPGRADE LOGO/LETTERS BASED ON NEW 360 MODULES PER DR 3661
HMH 03.10.20 ADDED CHANGES PER DR 3662

Notes: Letters based off a 5" depth & Logo based off a 6" depth from face.

48 feet LS-U450-65K-B150-A - 96 Modules

1- PS12-60WSL-100-277V

18.68" Mazda

Face Lit

IDV

April 05, 2019

Code 15340

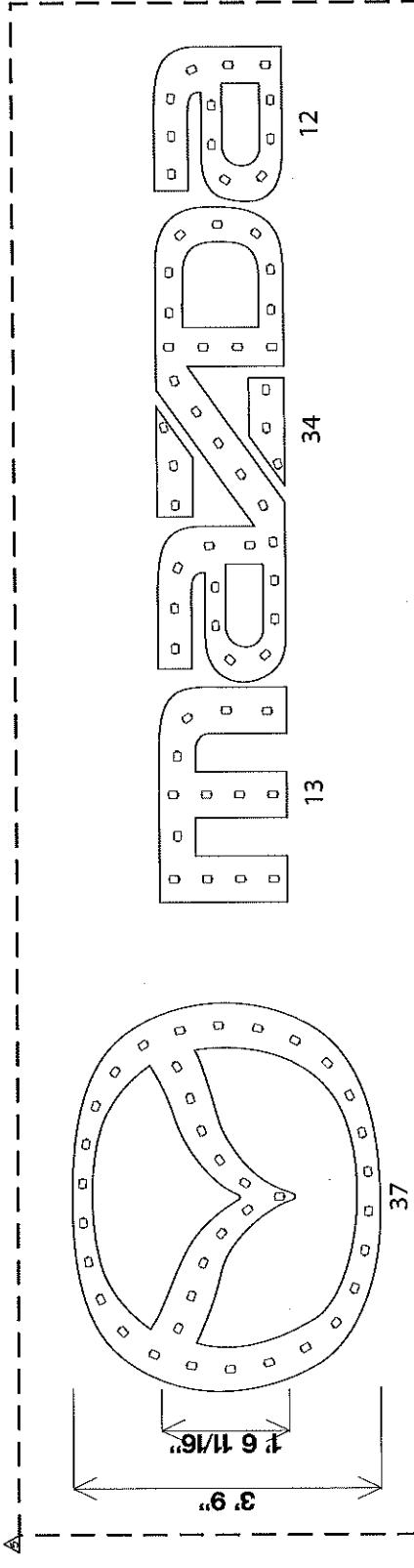
Sign Type MS45/ML18.7

Page 4

2025 International Patents

Virginia Beach, VA 23452

- 1) UNLESS OTHERWISE SPECIFIED: All layouts are for a single face sign or a single set of letters and the depth of the application considered for the layout is 5 inches.
- 2) LED module placement is approximate. AgiLight® recommends the sign manufacturer verify the LED placement and quantity to ensure even illumination and brightness expectations are achieved.
- 3) Estimations are based off the quality of art work and information provided by the customer; this includes: font style, letter height, depth, face material, and any special instructions. Missing information may cause delays in the delivery of estimates, as well as effect product selection, accurate quantities, and brightness.

4) For installation instructions of AgiLight® LED systems please refer to www.AgiLight.com under the TOOLS & DOWNLOADS section or contact an AgiLight® Inside Sales Representative at +1.866.482.0203

AGILIGHT
Light It Up

1074 Arion Circle Suite 116, San Antonio, TX 78216
PH: +1 (866) 482-0203 - Fax: +1 (210) 360-1454
www.AgiLight.com



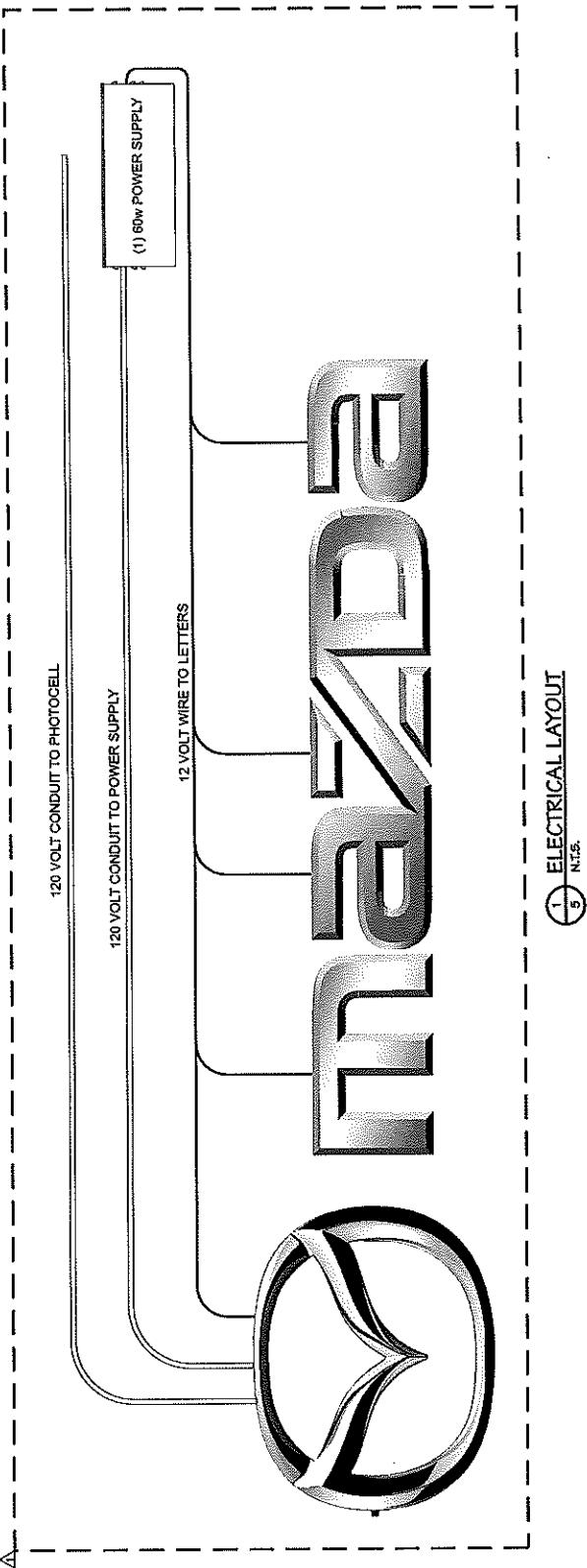
Project Title
MAZDA

Date 03.08.16
AGI E&R M. ALAMELDIN
Lead Drafter NAC
Drawn By NAC/DDS
Project Dir. A. ISBELL

General Sign Specifications

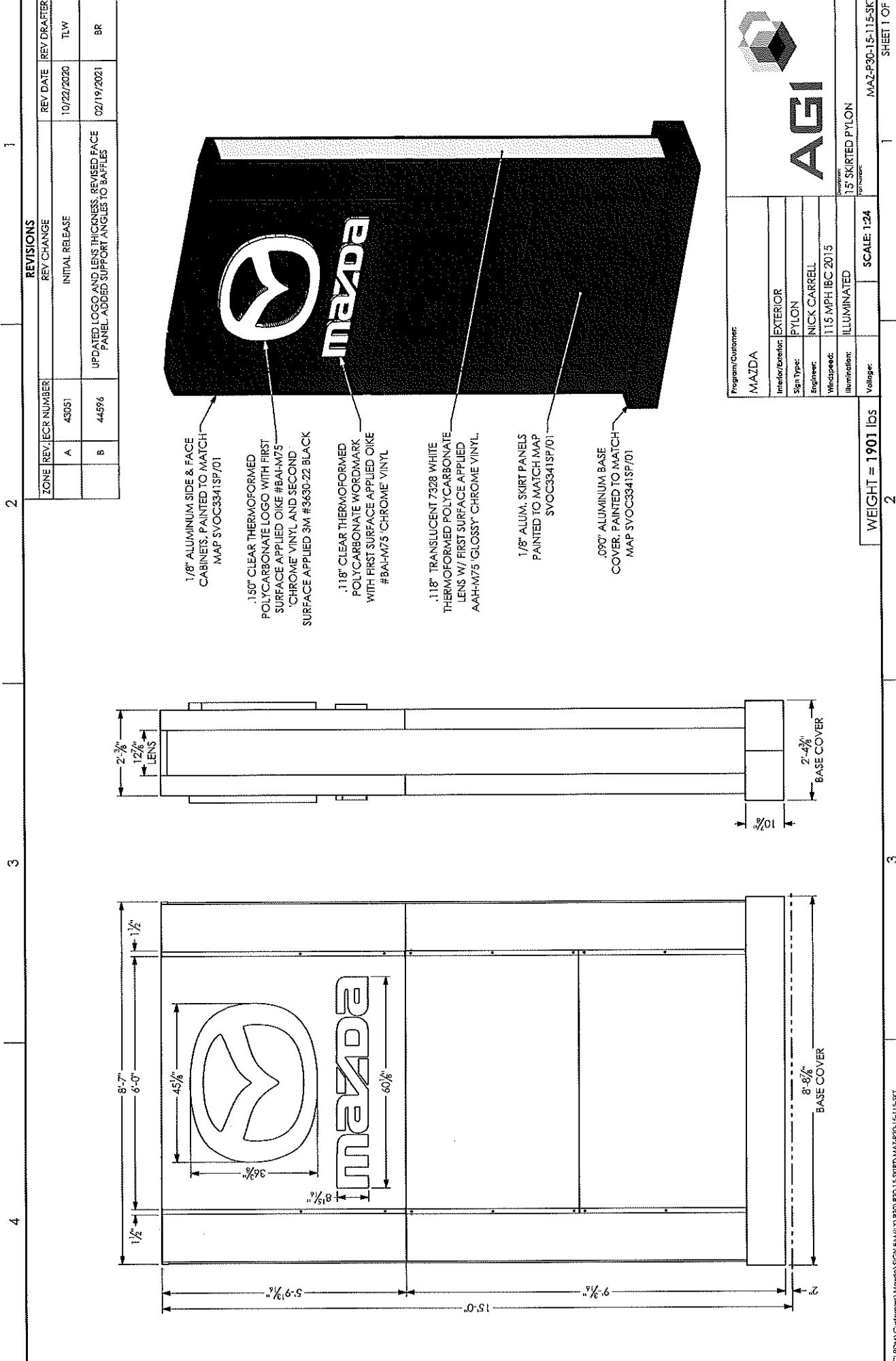
- Exterior Double Faced
 Interior Single Faced
 Non-Illuminated Illuminated
 Windload Amperage

Location	Windload	Amperage	Type
			C
			5
			5
			5



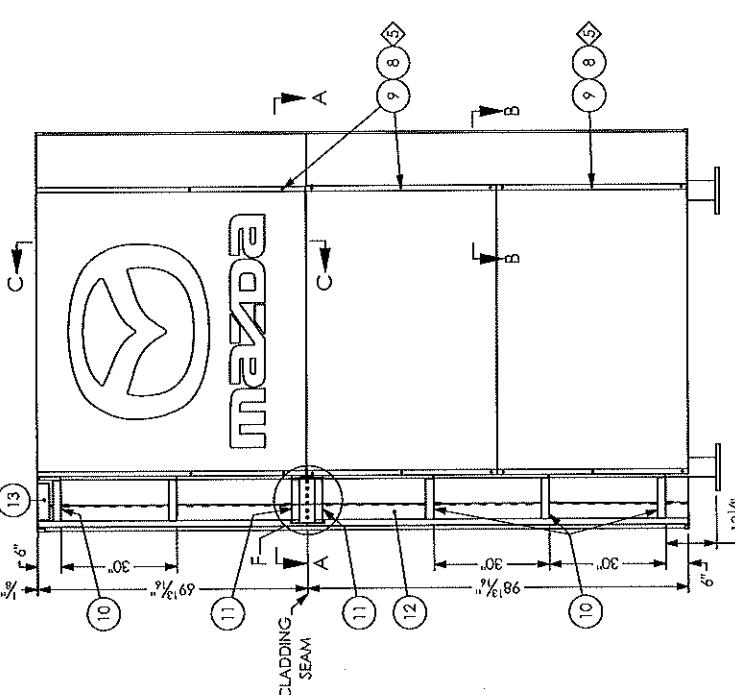
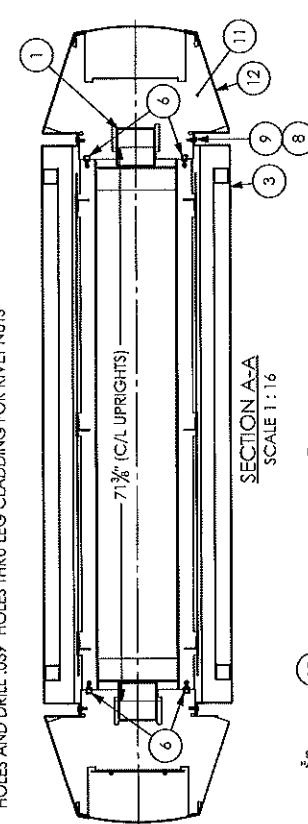
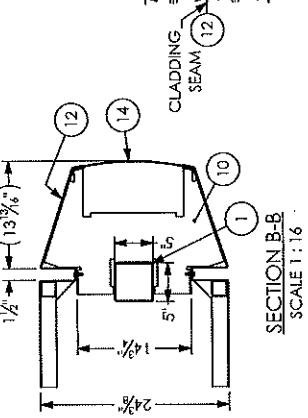
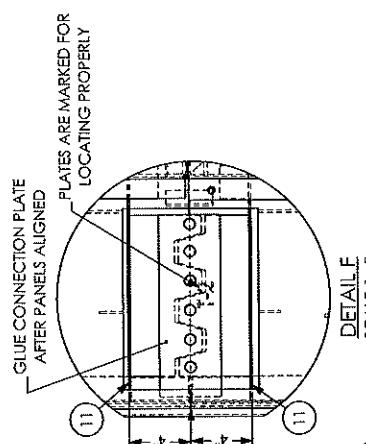
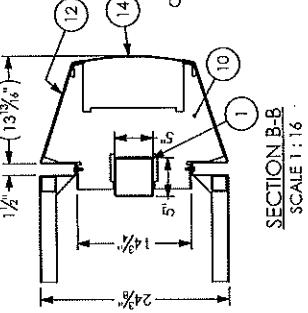
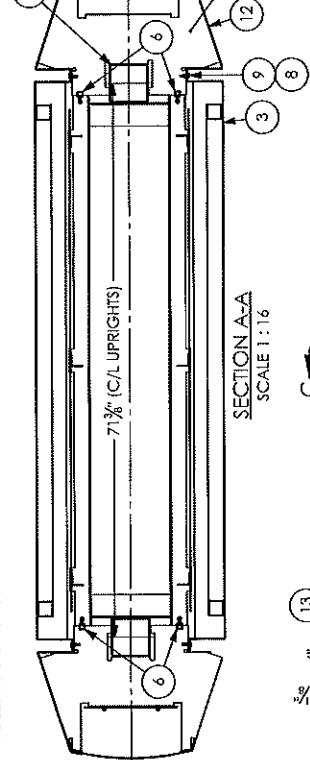
1 ELECTRICAL LAYOUT
N.T.S.
5

2655 International Park
Virginia Beach, VA 23452

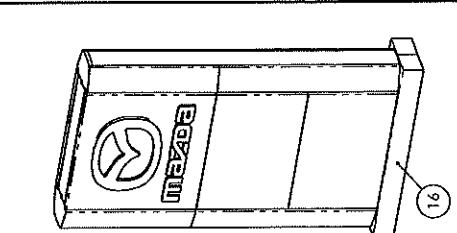


NOTES:

- ◆ ADDITIONAL NEEDED DATA SHALL BE OBTAINED FROM CAD MODEL.
- ◆ ALL EXTERNAL SURFACES TO BE PAINTED MAP SVOC-3341SP/O1.
- ◆ ALL PAINTED SURFACES MUST BE SANDED, PRIMED WITH 74-734SP MATHEWS PRETREATMENT SELF-ETCHING PRIMER AND THEN PRIMED WITH MATHEWS PAINT 6007SP/O1 'GRAY' EPOXY PRIMER.
- ◆ SEAM TO BE BODYWORKED SMOOTH AND FILLER.
- ◆ HEAD AND SKIRT PANEL FASTENING HARDWARE, LOCATE FROM FACE PLATE AND SKIRT PANEL HOLES AND DRILL .039" HOLES THRU LEG CLADDING FOR RIVET NUTS



REVISIONS	
ZONE REV	ECR NUMBER
A 43051	INITIAL RELEASE
B 44596	UPDATED LOGO AND LENS THICKNESS, REVISED FACE PANEL, ADDED SUPPORT ANGLES TO BAFFLES
	02/19/2021
	BR



ITEM	PART NUMBER	DESCRIPTION	QTY.
1	MAZ-P30-15-115-SKT-STL	PYLON STEEL	1
2	MCM-1575A65	2" ALUM. PIANO HINGE W/HOLES	2
3	MAZ-P30-F-CAB	FACE CABINET ASSEMBLY	2
4	MGLP-U-E	1/4" HUCK RIVET-SS	24
5	MCM#H7447/A050	3/16" ALUM. POP RIVET	36
6	MAZ-F-PR-52	4 1/4" PROPS ROD ASSEMBLY	4
7	MAZ-P30-L-CP	UPPER COVER PANEL	1
8	MCM#H95105A143	1/4" RIVET NUT-ZINC	32
9	MCM#F33190A542	1 1/4-20X1 GD6 FT BOLTS	32
10	MAZ-S-CAB-B-05-05-2	HEAD BAFFLE	9
11	MAZ-S-CAB-B-05-05-2A	HEAD BAFFLE WITH DOUBLERS	4
12	MAZ-P30-15-SKT-S-CAB-CLAD	SIDE CABINET CLADDING	2
13	MAZ-P30-15-SKT-S-CAB-MISC	SIDE CABINET MISCELLANEOUS	2
14	MAZ-P30-15-SKT-S-LENS	POLYCARBONATE LENS	2
15	MAZ-P30-SKT-49-375	FACE PANEL	4
16	MAZ-S-CAB-BC-SKT-1-P30	BASE COVER SET	1

Project/Client:	MAZDA
Interior/Exterior:	EXTERIOR
Sign Type:	PYLON
Engineer:	NICK CARREL
Wind Speed:	115 MPH IBC 2015
Illumination:	ILLUMINATED
Voltage:	120V
Scale:	1:32
	MAZ-P30-15-115-SKT

2014 AGI-2014-CH-WM-00000000000000000000000000000000

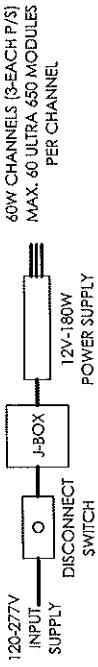
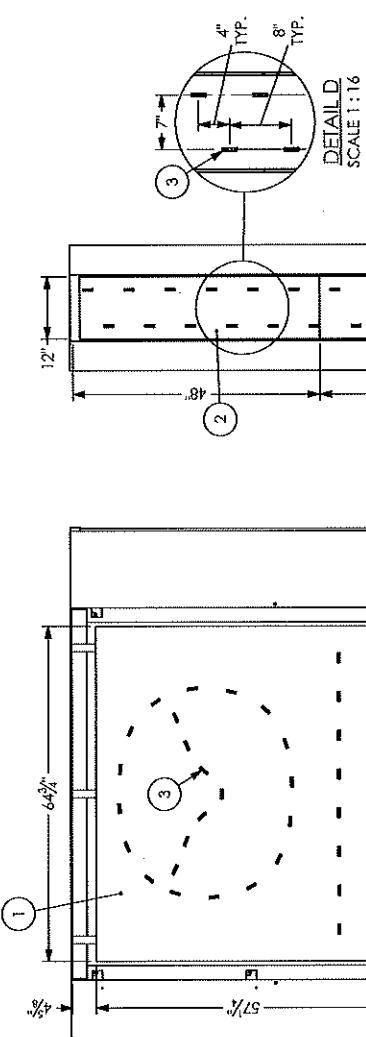
AGI Firm, Customers Worldwide Family Project P30-15-SKT/WMAZ-P30-15-115-SKT

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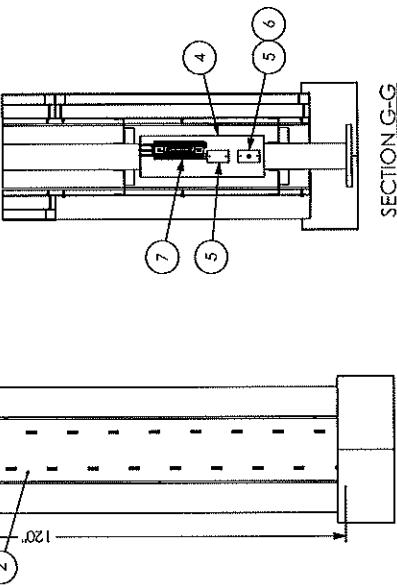
3

SHEET 2 OF 4

REVISIONS			
ZONE	REV.	ECR NUMBER	REV. CHANGE
A	43051		INITIAL RELEASE
B	44596		UPDATED LOGO AND LENS THICKNESS, REVISED FACE PANEL, ADDED SUPPORT ANGLES TO BAFFLES



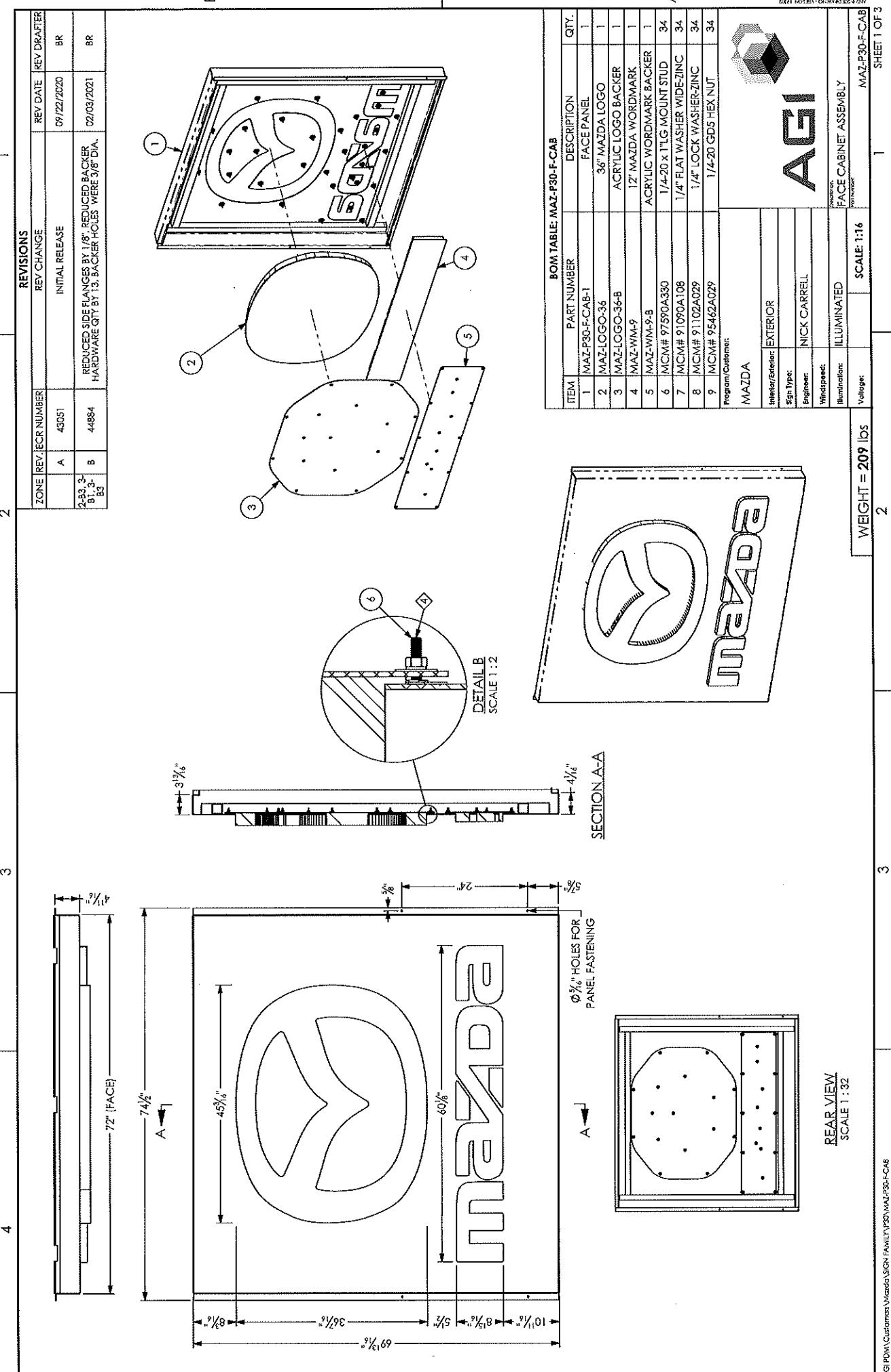
ELECTRICAL DETAIL



SECTION G-G

BOM TABLE: MAZ-P30-15-115-SKT			
ITEM	PART NUMBER	DESCRIPTION	QTY.
1	MAZ-P30-ELEC-LOGO-IP	LOGO LED PANEL	2
2	MAZ-P30-15-ELEC-SIDE-IP	SIDE LED PANEL	1
3	LS-U650-66K-B200-A	AGLIGHT LED	120
4	MAZ-P31-ELEC-PLATE	.063" ALUM. PLATE	1
5	ELEC-J-BOX-2X4	2"X4" OUTLET BOX	2
6	WESTRIM #39139	DISCONNECT SWITCH	1
7	PS 12-180W-120-277V	AGLIGHT POWER SUPPLY	1

AGI



Attachment C

Traffic Analysis



To: Berkshire Mazda

Date: August 5, 2022

Memorandum

Project #: 42976.00

From: John Furman, P.E.
Molly Pause, EIT

Re: Proposed Car Dealership Redevelopment
474 Pittsfield-Lenox Road
Lenox, MA

Overview

VHB has conducted a traffic evaluation for a proposed car dealership redevelopment at 474 Pittsfield-Lenox Road in Lenox, Massachusetts. As part of this evaluation, VHB has investigated existing conditions on the roadways adjacent to the site, the driveway access, and the anticipated traffic volumes generated by the redevelopment. This traffic evaluation is intended to support an application to the Town of Lenox Planning Board.

Project Description

The proposed project consists of the redevelopment of the existing Knights Inn motel located at 474 Pittsfield-Lenox Road into a 15,400 square foot Mazda dealership and service center. The existing Inn consists of approximately 14 rooms and is supported by approximately 17 parking spaces. Access into the existing site is provided by a horseshoe-shaped driveway. The proposed development would contain 15,400 square feet of sales, service center for patrons, and associated offices while increasing the parking capacity up to 110 parking spaces. Based on the current site plan, the existing driveways will be eliminated, and access to the dealership will be provided by a proposed full access driveway at the approximate location of the existing northern portion of the existing site driveway.

The site location map can be seen in Figure 1. The preliminary site plan is included in the Appendix.

Existing Traffic Conditions

Roadways

Pittsfield-Lenox Road (Route 7) is a five-lane roadway under MassDOT jurisdiction running in a north-south direction. This roadway is classified as a principal arterial. Route 7 connects the City of Pittsfield to the north with the Town of Lenox to the south. This roadway provides two travel lanes per direction and one two-way left-turn lane (TWLTL) separating the directional traffic. A sidewalk is provided along each edge of the roadway separated from vehicular traffic by a grassy buffer. The posted speed limit in the vicinity of the site is 40 mph.

Holmeswood Terrace is a short, two-lane roadway under local jurisdiction running in an east-west direction. This roadway is classified as a local roadway. Holmeswood Terrace connects Route 7 to Holmes Road. This roadway is residential and provides connection from the residential neighborhood to the signalized intersection with the Shopping Plaza.

Intersection

Pittsfield-Lenox Road is intersected from the east by *Holmeswood Terrace* and from the west by the *Center at Lenox Shopping Plaza* to form a four-legged signalized intersection. Northbound Route 7 consist of one left-turn lane, one through lane, and one shared through/right-turn lane. Southbound Route 7 contains one exclusive left-turn lane, two through lanes, and one exclusive right-turn lane. The *Holmeswood Terrace* approach maintains one multi-purpose lane. The *Shopping Plaza* approach maintains a shared left-turn/through lane and an exclusive right-turn lane. Crosswalks with pedestrian signal accommodations are provided on all approaches to the intersection with the exception of the southbound approach.

Pittsfield-Lenox Road is intersected from the east by the existing *Site Driveway* to form a three-legged unsignalized intersection. The existing *Site Driveway* approach is not signed but operates under assumed stop control. The northbound and southbound directions maintain the TWLTL, one through lane, and one shared through/right-turn lane. No crosswalks are provided at this location.

Traffic Volumes

VHB conducted turning movement and classification (TMC) counts at the study area intersections during a typical weekday evening and typical Saturday midday peak period. Included in these counts are passenger vehicles, heavy vehicles, buses, and pedestrians. These counts were conducted on July 21st, 2022 and July 23rd, 2022. The peak hours of the roadway intersection occurred from 4:00 PM to 5:00 PM during a typical weekday evening, and 12:30 PM to 1:30 PM during a typical Saturday midday peak hour.

The 2022 Existing conditions weekday evening and Saturday midday peak hour traffic volume networks are summarized in Figure 2.



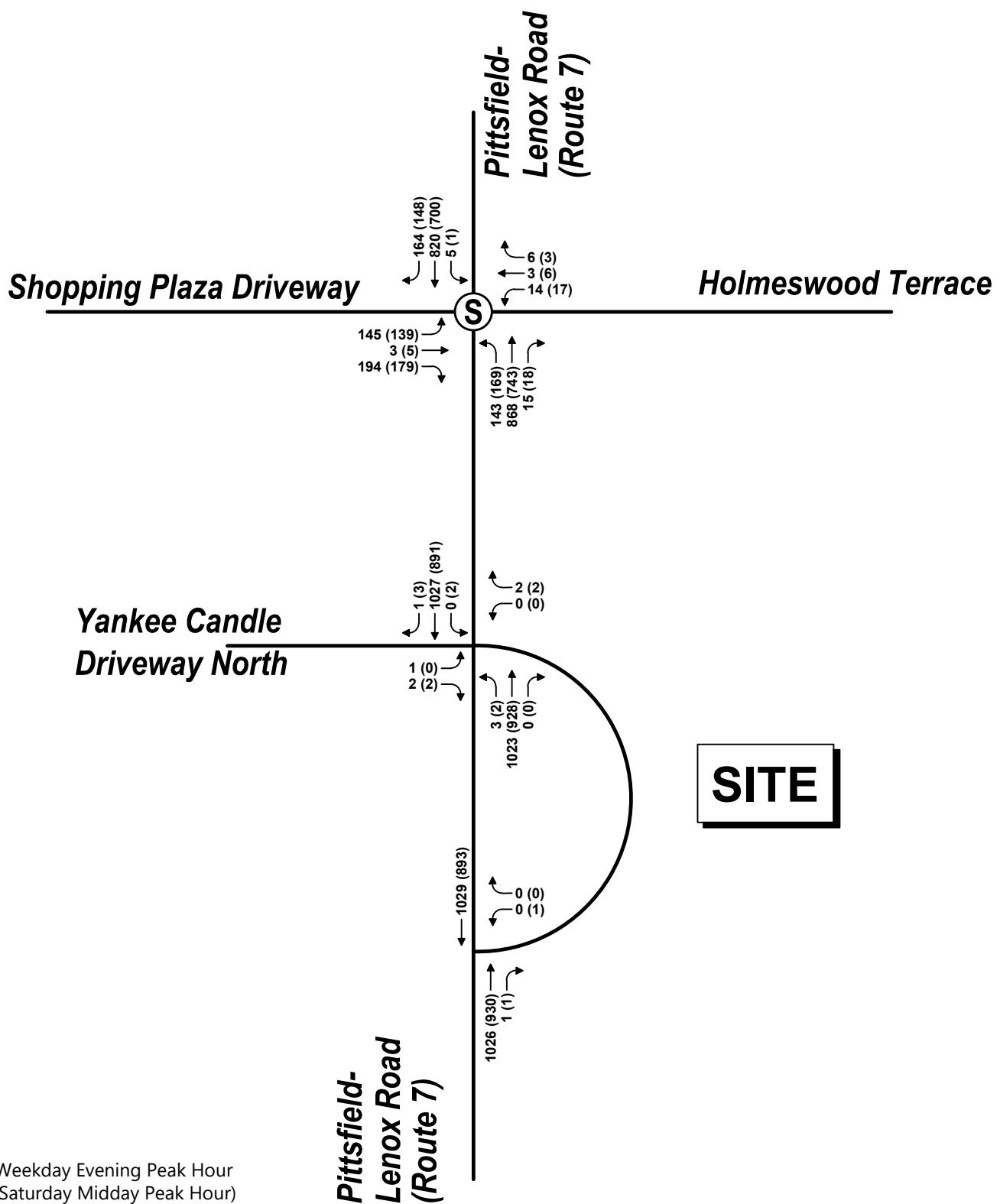
0 100 200 FEET



Study Location Map
Mazda Dealership

Lenox, MA

Figure 1



Not to Scale



2022 Existing Conditions
Peak Hour Traffic Volumes
Berkshire Mazda
Lenox, MA

Figure 2

Crash History

To identify crash trends and/or roadway deficiencies in the study area, crash data for the study intersection were obtained from MassDOT for the most recently available five-year period (2017-2021), and are summarized in Table 1. MassDOT reports vehicle crashes with damage greater than \$1,000 or personal injury occurrences, which can give a good indication of safety. As the roadway infrastructure has not changed significantly since these data were collected, this information should provide a fair representation of the current incident experience in this area.

The 2018 MassDOT average crash rates for signalized intersections for District 1 (the MassDOT district designation for Lenox) is 0.78. As seen in Table 1, the study intersection of Route 7 at the Shopping Plaza has a crash rate well below the District 1 average, and no crashes were recorded at the intersection of Route 7 at Site Driveway. No crashes involving a pedestrian were reported during the 2017 to 2021 time period which was evaluated in this study.

Table 1 Crash Analysis Summary

Route 7 at Shopping Plaza	
Crash Rate	0.20
Year	
2017	5
2018	0
2019	1
2020	2
<u>2021</u>	<u>3</u>
Total	11
Collision Type	
Angle	5
Rear-end	3
Head-on	0
Single vehicle crash	1
Sideswipe, same direction	2
<u>Unknown</u>	<u>0</u>
Total	11
Severity	
Fatal Injury	0
Non-Fatal Injury	3
Property Damage Only	8
<u>Not Reported/Unknown</u>	<u>0</u>
Total	11
Time of day	
Weekday, 7:00 AM - 9:00 AM	1
Weekday, 4:00 – 6:00 PM	2
Saturday, 11:00 AM – 2:00 PM	0
Weekday, other time	5
<u>Weekend, other time</u>	<u>3</u>
Total	11
Season	
Dec – Feb	3
Mar – May	0
June – Aug	6
<u>Sept – Nov</u>	<u>2</u>
Total	11
Pavement Conditions	
Dry	6
Wet	4
Snow	0
<u>Unknown</u>	<u>1</u>
Total	11
Light Conditions	
Daylight	9
Dawn/Dusk	0
Dark, Not Lighted	0
Dark, Lighted	2
<u>Unknown</u>	<u>0</u>
Total	11
Non-Motorist (Bike, Pedestrian)	0

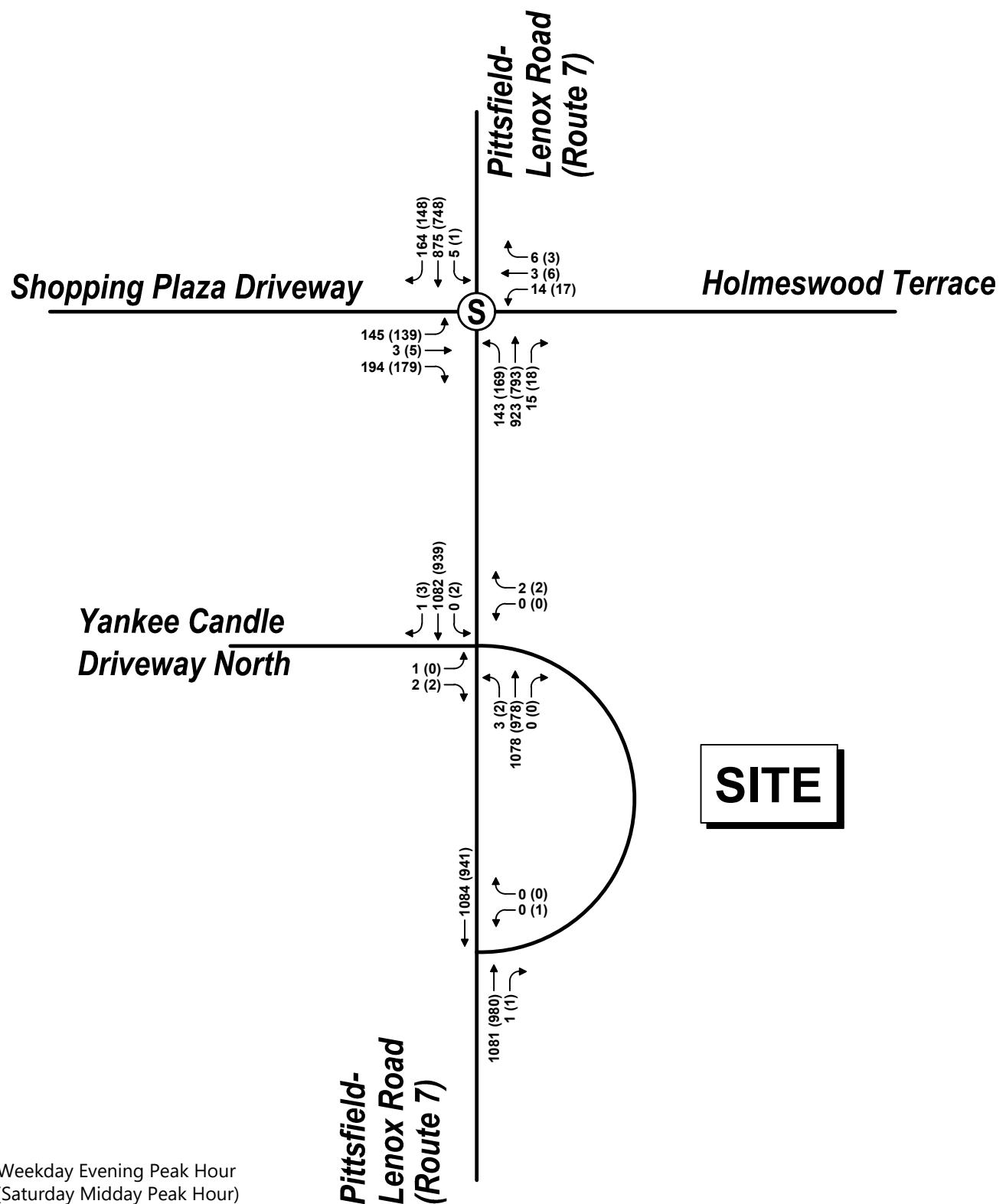
Source: MassDOT Crash Data Portal 2017-2021.

Future Traffic Conditions

A review of a local MassDOT continuous count station located on Route 7 in Lenox shows that traffic volumes have fluctuated approximately 0.5 percent over the most recent ten-year period. However, in order to account for any potential background developments that may be constructed in the vicinity of the study area, a conservative 0.75 percent per year growth rate was applied to the traffic volumes.

A 0.75-percent per year annual growth rate was applied to the 2022 Existing traffic volumes to develop the projected 2029 No-Build conditions for the weekday morning and weekday evening peak hour traffic volumes. The resulting future traffic volumes under No-Build Conditions are depicted on Figure 3.

No known planned developments in the vicinity of the site were identified that would impact traffic volumes on the roadway network.



Not to Scale



2029 No-Build Conditions
Peak Hour Traffic Volumes
Berkshire Mazda
Lenox, MA

Figure 3

Trip Generation

In order to estimate the trip-generating characteristics for the proposed project, traffic projections were derived from trip generation rates published by the Institute of Transportation Engineers (ITE) in their Trip Generation Manual, 11th Edition. ITE is the standard methodology used to project trips generated by this type of development, which is based on a number of observations at other, similar land uses throughout the United States. For the purpose of this study the following use was utilized to account for proposed trip generation conditions:

- LUC 840 "Automobile Sales (new)" was used to account for the proposed trips generated by the Mazda dealership and service center

Additionally, the traffic counts collected at the existing site driveways were used to determine the traffic volumes currently generated by the existing motel. These motel trips were deducted from the anticipated Mazda dealership traffic volumes to forecast the net increase in traffic associated with the proposed development.

The trip generation projections are presented in Table 2. As shown in this table, the proposed development is expected to generate approximately 34 (14 enter, 20 exit) vehicle trips during the weekday evening peak hour, and 31 (15 enter, 16 exit) during the Saturday midday peak hour.

Table 2 Site Generated Traffic Summary

Time Period	Existing Motel ¹ (14 Rooms)	Proposed Mazda Dealership ² (15,400 SF)	Net New Trips
Daily ^a	N/A	412	412
Weekday Evening Peak Hour ^b			
Enter	1	15	14
Exit	<u>2</u>	<u>22</u>	<u>20</u>
Total	3	37	34
Saturday Midday Peak Hour ^b			
Enter	3	18	15
Exit	<u>3</u>	<u>19</u>	<u>16</u>
Total	6	37	31

Trip Generation, 11th Edition; Institute of Transportation Engineers (ITE); Washington, D.C. (2021).

a Vehicles per day

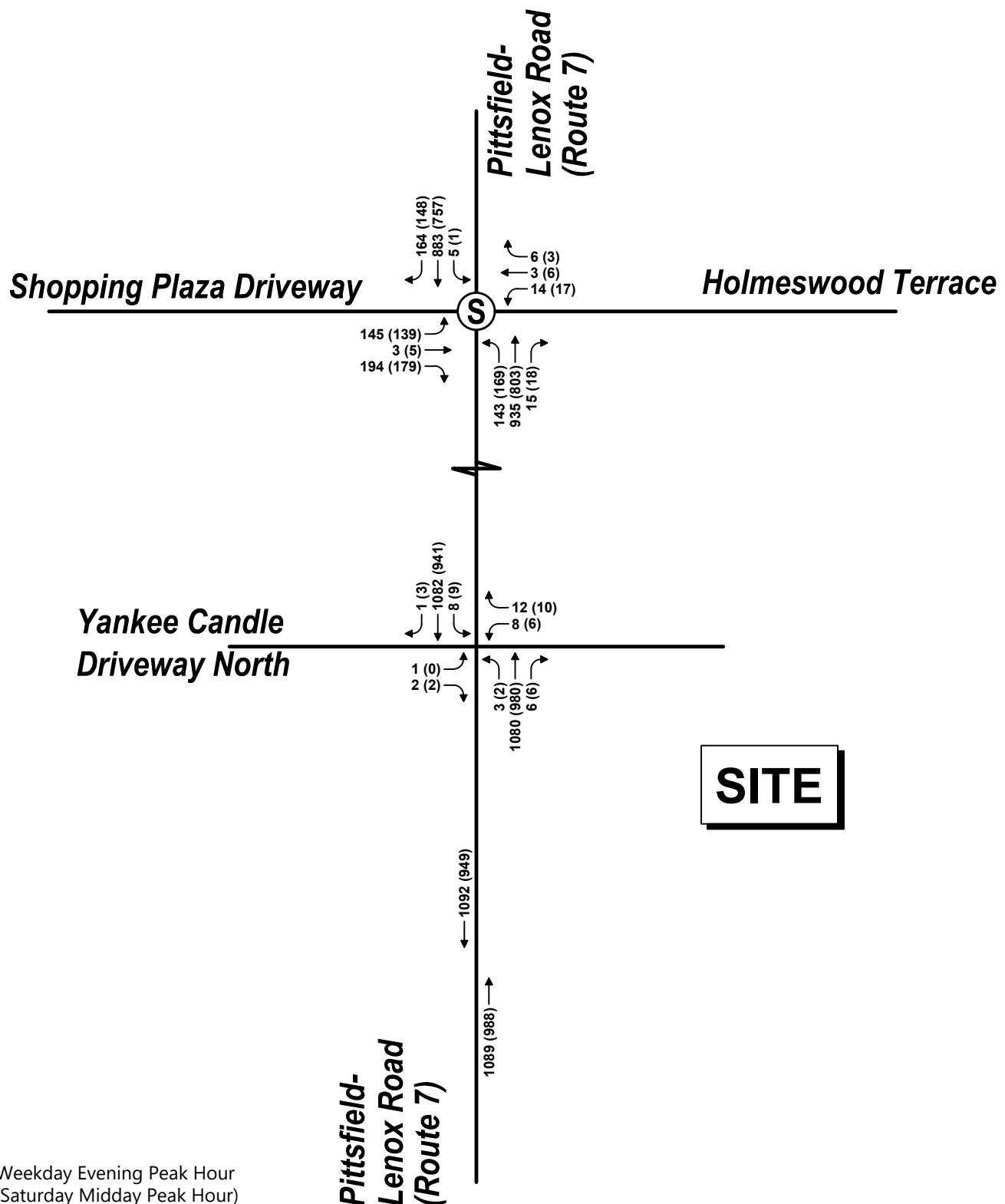
b Vehicles per hour

1 Existing trip generation based on driveway counts

2 Future trip generation based on LUC 840 Automobile Sales (new) for 15,400 SF

Trip Distribution

The trip distribution of site-generated traffic to/from the proposed development would be expected to reflect the vehicle patterns of existing volumes within the study area. With easy access to the City of Pittsfield to the north of the project site, and the MassPike connections to the south, it can be anticipated that the trip distribution would be fairly evenly split to/from each direction. Therefore, the site-generated traffic volumes were distributed onto the 2029 No-Build traffic volume networks based on a 50/50 directional distribution to develop the 2029 Build conditions traffic volume networks, shown in Figure 4.



Not to Scale



2029 Build Conditions
Peak Hour Traffic Volumes
Berkshire Mazda
Lenox, MA

Figure 4

Site Access and Circulation

Access to the site is provided via two existing full access driveways that form a horseshoe shape on site. Under proposed conditions, both existing driveways will be closed, and a new full access driveway will be constructed at the approximate location of the northern portion of the former horseshoe. This driveway will operate under stop control.

Parking on site is expected to total 110 spaces with additional spaces provided for vehicles waiting to be serviced. These parking spaces are inclusive of cars on the lot for sale.

Capacity Analysis

The evaluation criteria used to analyze area intersections in this traffic study are based on the Highway Capacity Manual 2000 Edition (HCM). The term 'Level of service' (LOS) is used to denote the different operating conditions that occur on a given roadway segment under various traffic volume loads. It is a qualitative measure that considers a number of factors including roadway geometry, speed, travel delay and freedom to maneuver. Level of service provides an index to the operational qualities of a roadway segment or an intersection. Level-of-service designations range from A to F, with LOS A representing the best operating conditions and LOS F representing the worst operating conditions.

In addition to LOS, two other measures of effectiveness (MOEs) are typically used to quantify the traffic operations at intersections; volume-to-capacity ratio (v/c) and delay (expressed in seconds per vehicle). For example, an existing v/c ratio of 0.9 for an intersection indicates that the intersection is operating at 90 percent of its available capacity. A delay of 15 seconds for a particular vehicular movement or approach indicates that vehicles on the movement or approach will experience an average additional travel time of 15 seconds. It should be noted that v/c and delay could have a range of values for a given LOS letter designation. Comparison of intersection capacity results therefore requires that, in addition to the LOS, the other MOEs should also be considered.

The level-of-service designations, which are based on delay, are reported differently for signalized and unsignalized intersections. For signalized intersections, the analysis considers the operation of all traffic entering the intersection and the LOS designation is for overall conditions at the intersection. For unsignalized intersections, however, the analysis assumes that traffic on the mainline is not affected by traffic on the side streets. Thus, the LOS designation is for the critical movement exiting the side street, which is generally the left turn out of the side street or site driveway. Table 3 shows the level of service criteria for both signalized intersections and unsignalized intersections.

It should be noted that the analytical methodologies typically used for the analysis of unsignalized intersections use conservative analysis parameters, such as long critical gaps. Actual field observations indicate that drivers on minor streets generally accept shorter gaps in traffic than those used in the analysis procedures and therefore experience less delay than reported by the analysis software. The analysis methodologies also

do not fully take into account the beneficial grouping effects caused by nearby signalized intersections. The net effect of these analysis procedures is the over-estimation of calculated delays at unsignalized intersections in the study area. Cautious judgment should therefore be exercised when interpreting the capacity analysis results at unsignalized intersections.

Table 3 Level of Service Criteria

Level of Service	Signalized Intersection	Unsignalized Intersection
A	0 to 10 seconds	0 to 10 seconds
B	10 to 20 seconds	10 to 15 seconds
C	20 to 35 seconds	15 to 25 seconds
D	35 to 55 seconds	25 to 35 seconds
E	55 to 80 seconds	35 to 50 seconds
F	Greater than 80 seconds	Greater than 50 seconds

Source: 2000 Highway Capacity Manual Exhibits 16-2 and 17-2

Signalized Intersection Capacity Analysis Results

Signalized intersection capacity analyses were conducted for the intersection of Route 7/20 at Shopping Plaza and Holmeswood Terrace under 2022 Existing conditions, 2029 No-Build Conditions (without the proposed development), and the 2029 Build condition (with the proposed development). The results of the analysis are shown in Table 4.

Under all conditions, the intersection functions with acceptable levels of service (LOS), delay, and queue length. The existing level of service at this intersection is overall LOS C with all approaches operating at LOS D or better. Under No-Build and Build conditions this continues with negligible increases in delay and queue length.

The Synchro analysis results are included in the Appendix.

Unsignalized Intersection Capacity Analysis Results

Intersection capacity analyses were conducted for the unsignalized intersections of Route 7/20 at The North Driveway of the Motel and Yankee Candle under 2022 Existing conditions, 2029 No-Build Conditions (without the proposed development), and the 2029 Build condition (with the proposed development). The results of the analysis are shown in Table 5.

Under Existing conditions, the intersections function with acceptable levels of service (LOS), delay, and queue length. The existing level of service at this intersection is LOS C or better for all approaches. Under No-Build Conditions the eastbound approach at the northern Yankee Candle driveway degrades from LOS C to LOS D with minor increases in delay during the evening peak hour. Under Build conditions, the proposed site driveway is expected to operate at LOS E during the evening condition and LOS C during the Saturday midday peak hour.

It should be noted that a LOS E or F along a minor approach to an unsignalized intersection is not uncommon and does not impact the traffic flow on the mainline street. A LOS E in this scenario indicates a longer wait time for vehicles wishing to exit the Mazda dealership onto Route 7/20. These vehicles must wait until an acceptable gap in the mainline traffic stream presents itself prior to making a safe maneuver. At unsignalized intersections located along commuter routes, this situation is not uncommon during the peak roadway hours.

The Synchro analysis results are included in the Appendix.

Table 4 Signalized Intersection Capacity Analysis Summary

Location	Period	Movement	2022 Existing					2029 No-Build					2029 Build				
			v/c ^a	Delay ^b	LOS ^c	50thQ ^d	95thQ ^e	v/c	Delay	LOS	50thQ	95thQ	v/c	Delay	LOS	50thQ	95thQ
Route 7/20 at Shopping Plaza and Holmeswood Terrace	PM	EB L/T	0.61	30.9	C	80	#196	0.61	30.9	C	80	#196	0.61	30.9	C	80	#196
		EB R	0.15	18.7	B	0	33	0.15	18.7	B	0	33	0.15	18.7	B	0	33
		WB L/T/R	0.33	39.2	D	11	27	0.33	39.2	D	11	27	0.33	39.2	D	11	27
		NB L	0.58	18.8	B	28	#112	0.58	19.1	B	28	#112	0.58	19.2	B	28	#112
		NB T/R	0.73	24.0	C	123	#497	0.77	25.4	C	134	#534	0.78	25.8	C	137	#542
		SB L	0.03	21.1	B	1	9	0.03	22.5	C	1	9	0.03	22.8	C	1	9
		SB T	0.81	32.2	C	150	#439	0.86	35.4	D	164	#474	0.87	35.9	D	165	#478
		SB R	0.11	20.5	C	0	51	0.11	20.5	C	0	51	0.11	20.5	C	0	51
		Overall	0.63	26.3	C	-	-	0.66	28.0	C	-	-	0.66	28.3	C	-	-
		EB L/T	0.69	36.9	D	70	#177	0.69	36.9	D	70	#177	0.69	36.9	D	70	#177
Route 7/20 at Shopping Plaza and Holmeswood Terrace	Sat	EB R	0.13	20.3	C	0	36	0.13	20.3	C	0	36	0.13	20.3	C	0	36
		WB L/T/R	0.49	37.3	D	17	29	0.49	37.3	D	17	29	0.49	37.3	D	17	29
		NB L	0.53	14.8	B	47	92	0.56	15.8	B	47	92	0.57	15.9	B	47	92
		NB T/R	0.54	18.6	B	135	#290	0.58	19.2	B	147	#321	0.59	19.3	B	150	#326
		SB L	0.00	14.7	B	0	3	0.00	15.4	B	0	3	0.00	15.6	B	0	3
		SB T	0.63	24.4	C	167	#257	0.68	25.3	C	181	#286	0.68	25.5	C	185	#291
		SB R	0.10	18.2	B	0	29	0.10	18.2	B	0	29	0.10	18.2	B	0	29
		Overall	0.58	22.0	C	-	-	0.60	22.5	C	-	-	0.61	22.7	C	-	-

^a volume-to-capacity ratio

^b delay, in seconds/vehicle

^c level of service

^d 50th percentile queue length, in feet

^e 95th percentile queue length, in feet

EB, WB, NB, SB, L, T, Reastbound, westbound, northbound, southbound, left turn, through, right turn

95th percentile volume exceeds capacity, queue may be longer

Table 5 Unsignalized Intersection Capacity Analysis Summary

Location	Period	Movement	2022 Existing				2029 No-Build				2029 Build			
			v/c ^a	Delay ^b	LOS ^c	95thQ ^d	v/c	Delay	LOS	95thQ	v/c	Delay	LOS	95thQ
Route 7/20 at Yankee Candle Drive North and Site Drive (Motel Drive North)	PM	EB L/T/R	0.04	24.2	C	3	0.05	27.1	D	4	0.05	28.6	D	4
		WB L/T/R	0.02	12.9	B	1	0.02	13.3	B	1	0.16	36.5	E	14
		NB L	0.45	9.7	A	0	0.47	9.8	A	0	0.48	9.8	A	0
		NB T/R	0.23	0.0	-	0	0.24	0.0	-	0	0.24	0.0	-	0
		SB L	0.44	0.0	-	0	0.46	0.0	-	0	0.46	11.4	B	1
		SB T/R	0.22	0.0	-	0	0.23	0.0	-	0	0.23	0.0	-	0
	Sat	EB L/T/R	0.00	9.0	A	0	0.00	9.1	A	0	0.00	9.1	A	0
		WB L/T/R	0.01	11.9	B	1	0.01	12.1	B	1	0.09	24.1	C	7
		NB L	0.38	9.3	A	0	0.40	9.4	A	0	0.40	9.4	A	0
		NB T/R	0.19	0.0	-	0	0.20	0.0	-	0	0.20	0.0	-	0
		SB L	0.38	0.0	-	0	0.40	10.3	B	0	0.40	10.4	B	1
		SB T/R	0.19	0.0	-	0	0.20	0.0	-	0	0.20	0.0	-	0

a volume-to-capacity ratio

b delay, in seconds/vehicle

c level of service

d 95th percentile queue length, in feet

EB, WB, NB, SB, L, T, Reastbound, westbound, northbound, southbound, left turn, through, right turn

95th percentile volume exceeds capacity, queue may be longer

Conclusion

The results of this impact statement indicate that the proposed Mazda dealership redevelopment at 474 Pittsfield-Lenox Road (Route 7/20) will not have a significant impact on the roadway network adjacent to the project site. VHB forecasts that the project would increase traffic on the roadway by approximately 34 vehicle trips during the weekday evening peak hour and 31 trips during the Saturday midday peak hour (approximately one vehicle every two minutes). These minimal additional trips have a negligible impact on the level of service and delay on the surrounding roadway. The proposed site driveway is expected to operate at LOS E during the weekday afternoon peak traffic period. However, the delays experienced at the driveway will not impact the surrounding roadway network. Furthermore, the proposed driveway is expected to operate at acceptable levels of service with minimal delays at all other times of the day.

The proposed site driveway, internal circulation and the off-site roadways will readily accommodate the proposed development without impacts to traffic operations.



Appendix

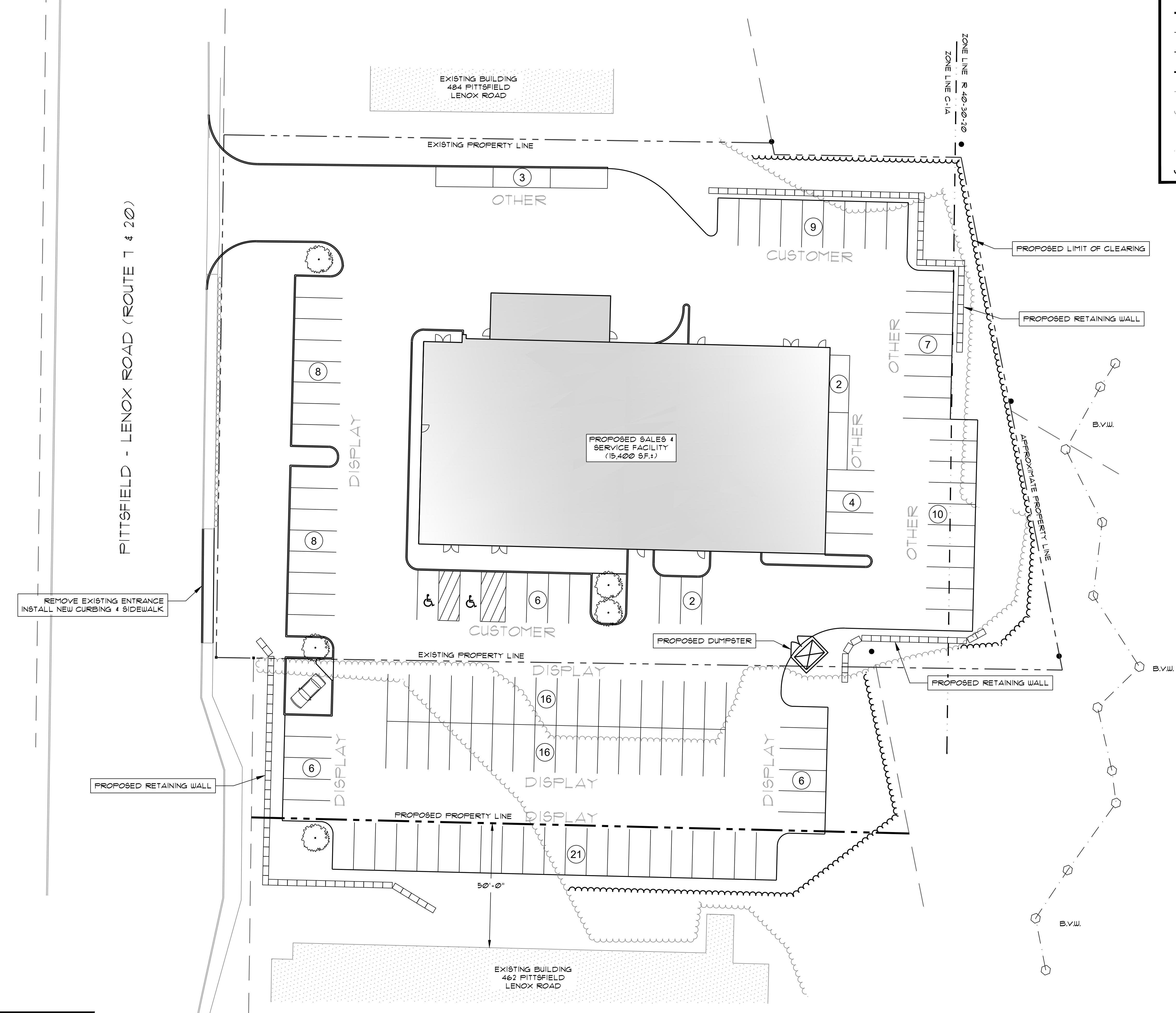
Appendix No. & Title

- Attachment A – Preliminary Site Plan
- Attachment B – Traffic Counts
- Attachment C – Crash Data
- Attachment D – ITE Trip Generation & Distribution
- Attachment E – Capacity Analyses

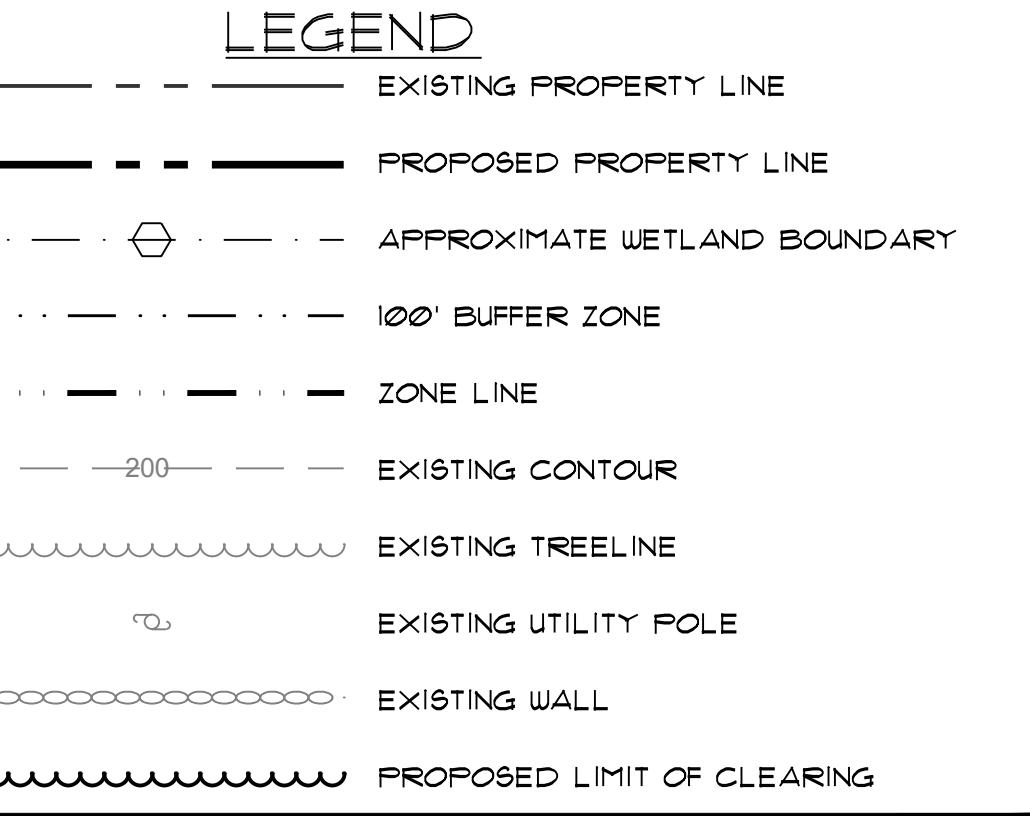


Attachment A – Preliminary Site Plan

PITTSFIELD - LENOX ROAD (ROUTE 1 & 20)



THESE PLANS ARE FOR
PERMITTING PURPOSES
ONLY
NOT FOR CONSTRUCTION



PLANS TO ACCOMPANY PERMIT APPLICATIONS

PREPARED FOR:

LOCATED AT:
474 PITTSFIELD-LENOX ROAD
LENOX, MASSACHUSETTS

Design Group, Inc.
Civil Engineers' Surveyors' Consultants
2 FERNWOOD DRIVE • PITTSFIELD, MASSACHUSETTS 01201 • (413) 443-3537

PLAN DESCRIPTION:

SITE PLAN

SK DESIGN GROUP PROJECT #: 220051

REVISION: _____
DRAWN BY: AML CHECKED BY: JMS II
ORIG. DATE: AUGUST 17, 2022 SHEET NO. _____
ISSUED FOR: PERMIT
SCALE: 1 INCH = 20 FEET
XX AS NOTED



Attachment B – Traffic Counts



Location Map: 228754 Lenox, MA

Precision Data Industries, LLC 157 Washington Street, Suite 2, Hudson, MA 01749 ph: 508-875-0100 email: datarequests@pdillc.com

(2) 4-6pm Sat 11am-2pm TMCs

(2) VCUs



Client:
VHB

Engineer:
M. Pause

Site Code:

Date:
Thurs 7/21 and Sat 7/23/2022

PDI Job #
228754

City, State:
Lenox, MA



Attachment C – Crash Data



INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Lenox, MA COUNT DATE : 7/21/2022

DISTRICT : 1 UNSIGNALIZED : SIGNALIZED :

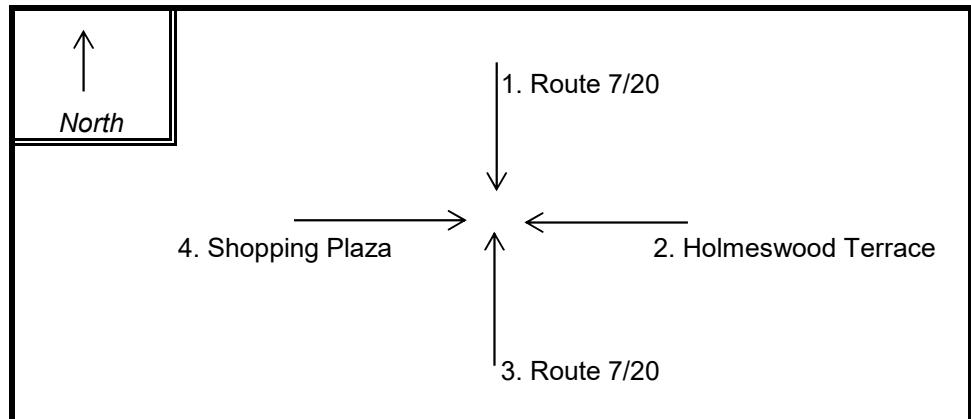
~ INTERSECTION DATA ~

MAJOR STREET : Route 7/20

MINOR STREET(S) : Shopping Plaza Driveway

Holmeswood Terrace

**INTERSECTION
DIAGRAM
(Label Approaches)**



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	SB	WB	NB	EB		
PEAK HOURLY VOLUMES (AM/PM) :	983	23	1023	342		2,371
"K" FACTOR :	0.080	INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME :				29,638
TOTAL # OF CRASHES :	11	# OF YEARS :	5	AVERAGE # OF CRASHES PER YEAR (A) :		2.20

CRASH RATE CALCULATION :

0.20

$$\text{RATE} = \frac{(A * 1,000,000)}{(V * 365)}$$

Comments : _____

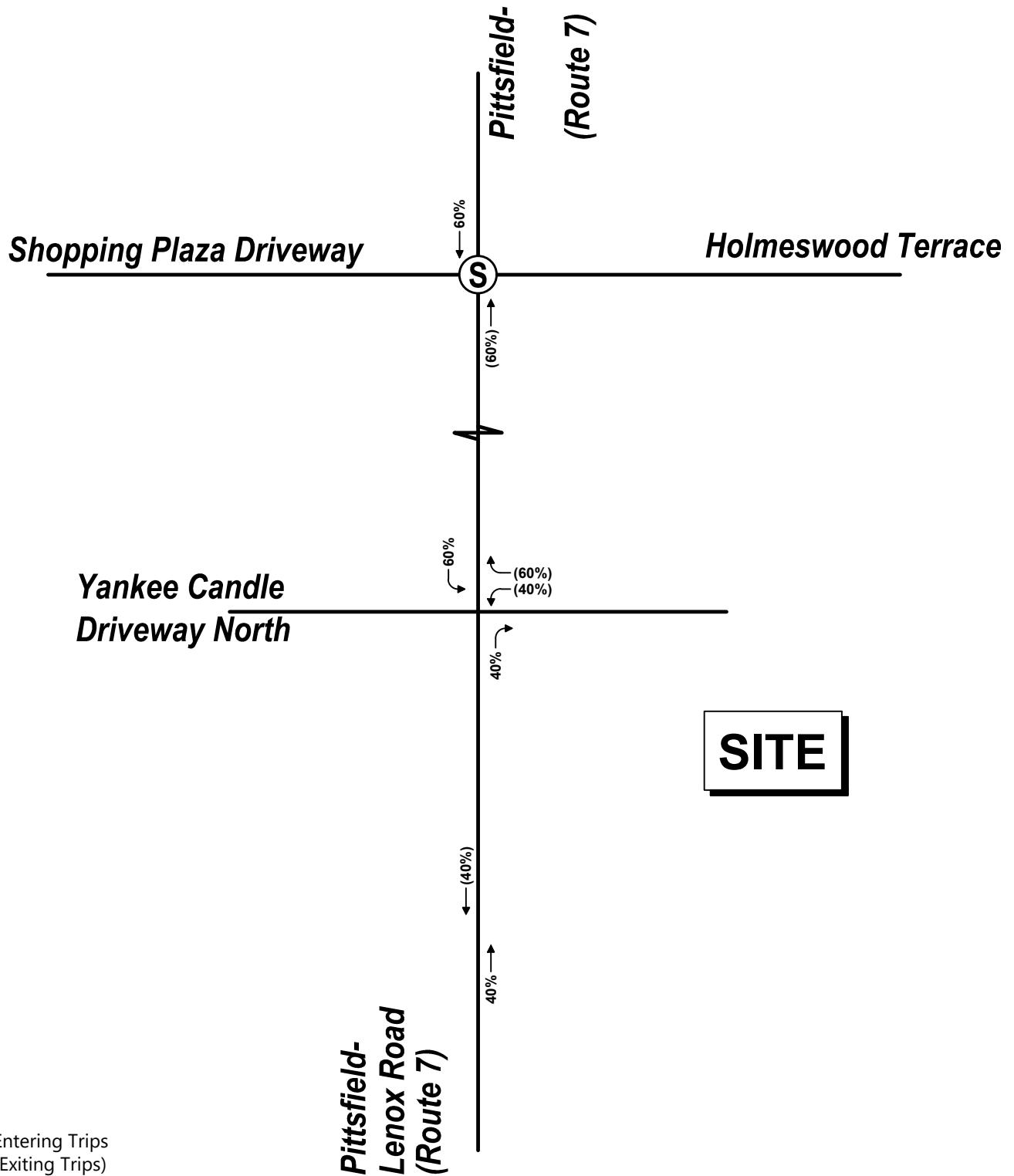
Project Title & Date: _____

2017-2021 Crash Data: Route 7/20 at Holmeswood Terrace and The Center at Lenox Shopping Plaza

City/Town Name	Crash Date	Crash Severity	Crash Time	Max Injury Severity Reported	Light Conditions	Manner of Collision	Road Surface Condition	Weather Conditions
LENOX	01/04/2017	Property damage only (none injured)	11:05 AM	No injury	Daylight	Rear-end	Wet	Cloudy
LENOX	06/22/2017	Property damage only (none injured)	5:42 PM	No injury	Daylight	Sideswipe, opposite direction	Dry	Clear
LENOX	06/26/2017	Non-fatal injury	1:20 PM	Non-fatal injury - Possible	Daylight	Angle	Dry	Clear
LENOX	08/19/2017	Property damage only (none injured)	10:59 PM	No injury	Dark - lighted roadway	Sideswipe, same direction	Wet	Rain
LENOX	10/24/2017	Property damage only (none injured)	2:00 PM	No injury	Daylight	Angle	Wet	Cloudy
LENOX	02/28/2019	Non-fatal injury	11:24 AM	Possible Injury (C)	Daylight	Angle	Dry	Clear
LENOX	07/18/2020	Property damage only (none injured)	9:09 AM	No Apparent Injury (O)	Daylight	Angle	Dry	Clear
LENOX	12/19/2020	Property damage only (none injured)	4:45 PM	No Apparent Injury (O)	Dark - lighted roadway	Rear-end	Wet	Clear
LENOX	08/06/2021	Non-fatal injury	8:51 AM	Possible Injury (C)	Daylight	Single vehicle crash	Other	Clear
LENOX	08/09/2021	Property damage only (none injured)	4:30 PM	No Apparent Injury (O)	Daylight	Rear-end	Dry	Clear
LENOX	11/18/2021	Property damage only (none injured)	9:11 AM	No Apparent Injury (O)	Daylight	Angle	Dry	Clear



Attachment D – ITE Trip Generation & Distribution



Not to Scale



Trip Distribution

Berkshire Mazda
Lenox, MA

Figure

Automobile Sales (New) (840)

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

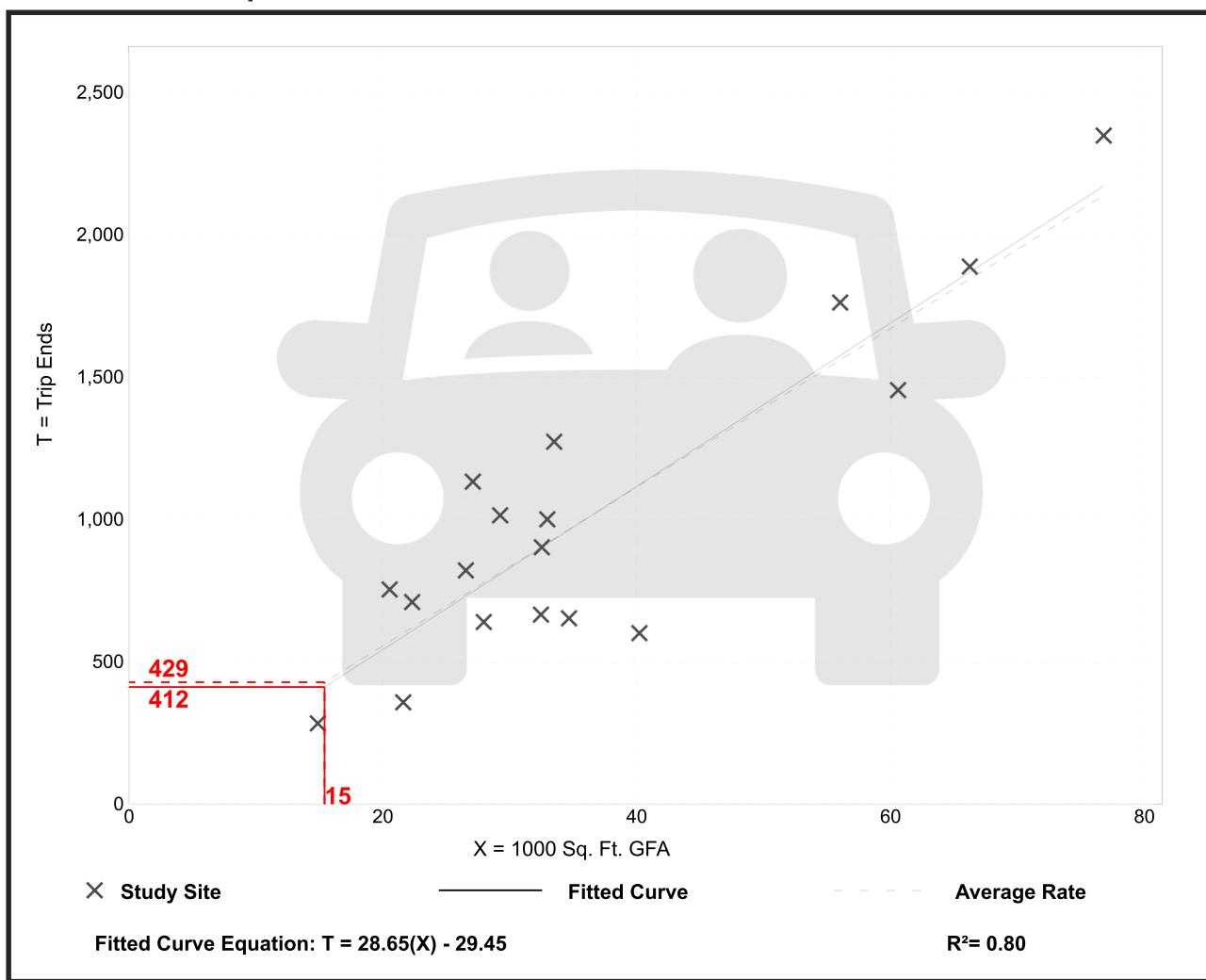
Setting/Location: General Urban/Suburban

Number of Studies: 18
Avg. 1000 Sq. Ft. GFA: 36
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
27.84	14.98 - 41.78	7.01

Data Plot and Equation



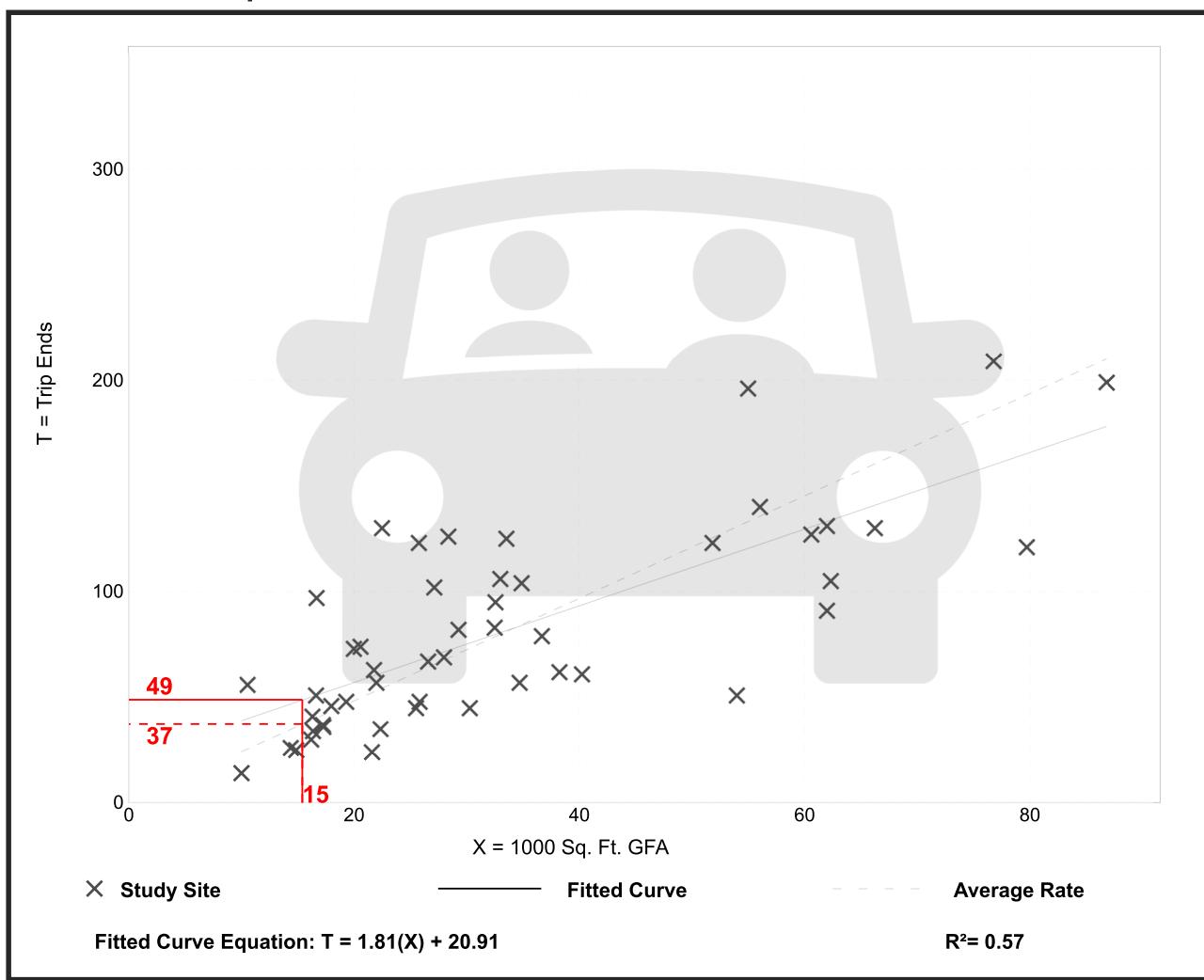
Automobile Sales (New) (840)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: General Urban/Suburban
 Number of Studies: 50
 Avg. 1000 Sq. Ft. GFA: 34
 Directional Distribution: 40% entering, 60% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
2.42	0.94 - 5.81	0.98

Data Plot and Equation



Automobile Sales (New) (840)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Saturday, Peak Hour of Generator

Setting/Location: General Urban/Suburban

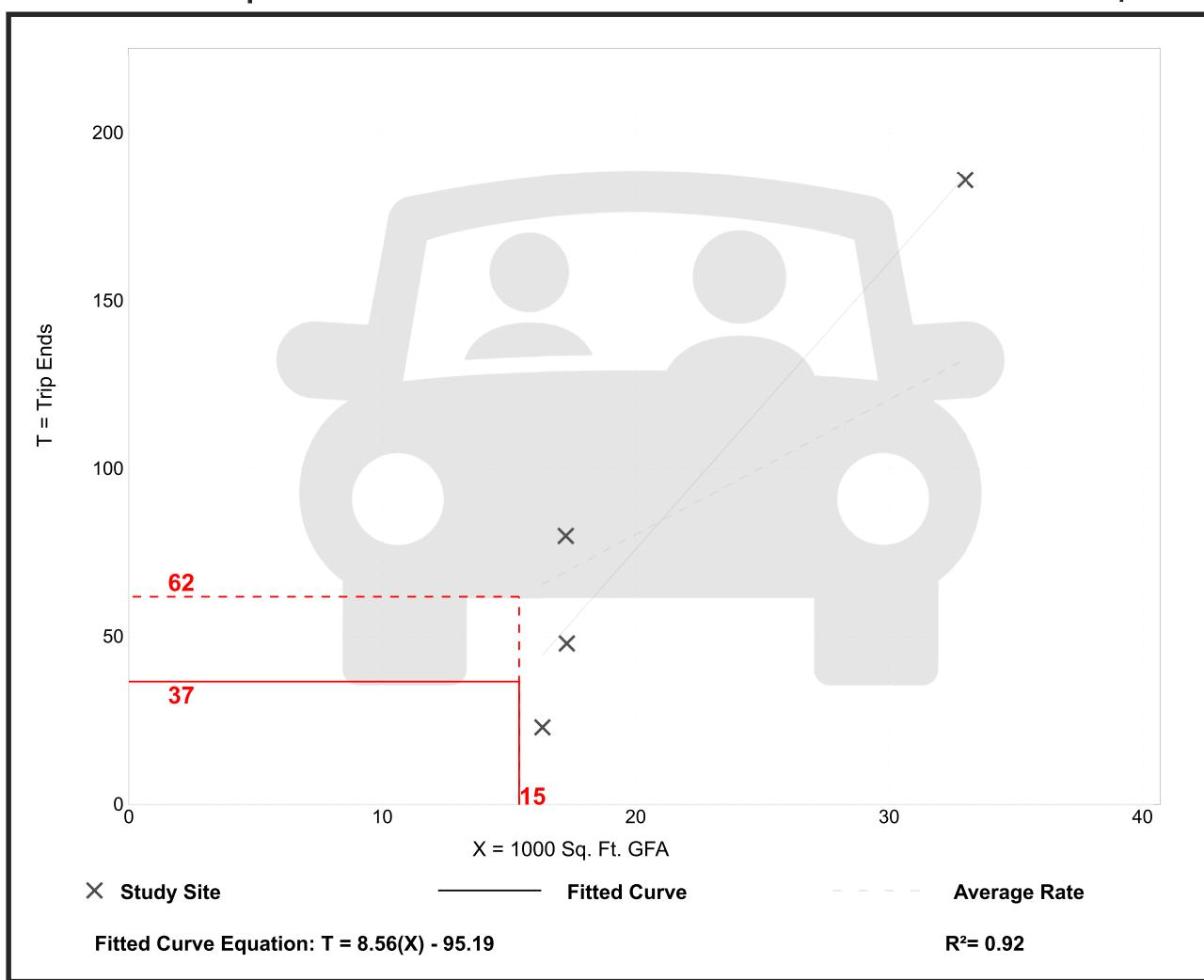
Number of Studies: 4
Avg. 1000 Sq. Ft. GFA: 21
Directional Distribution: 50% entering, 50% exiting

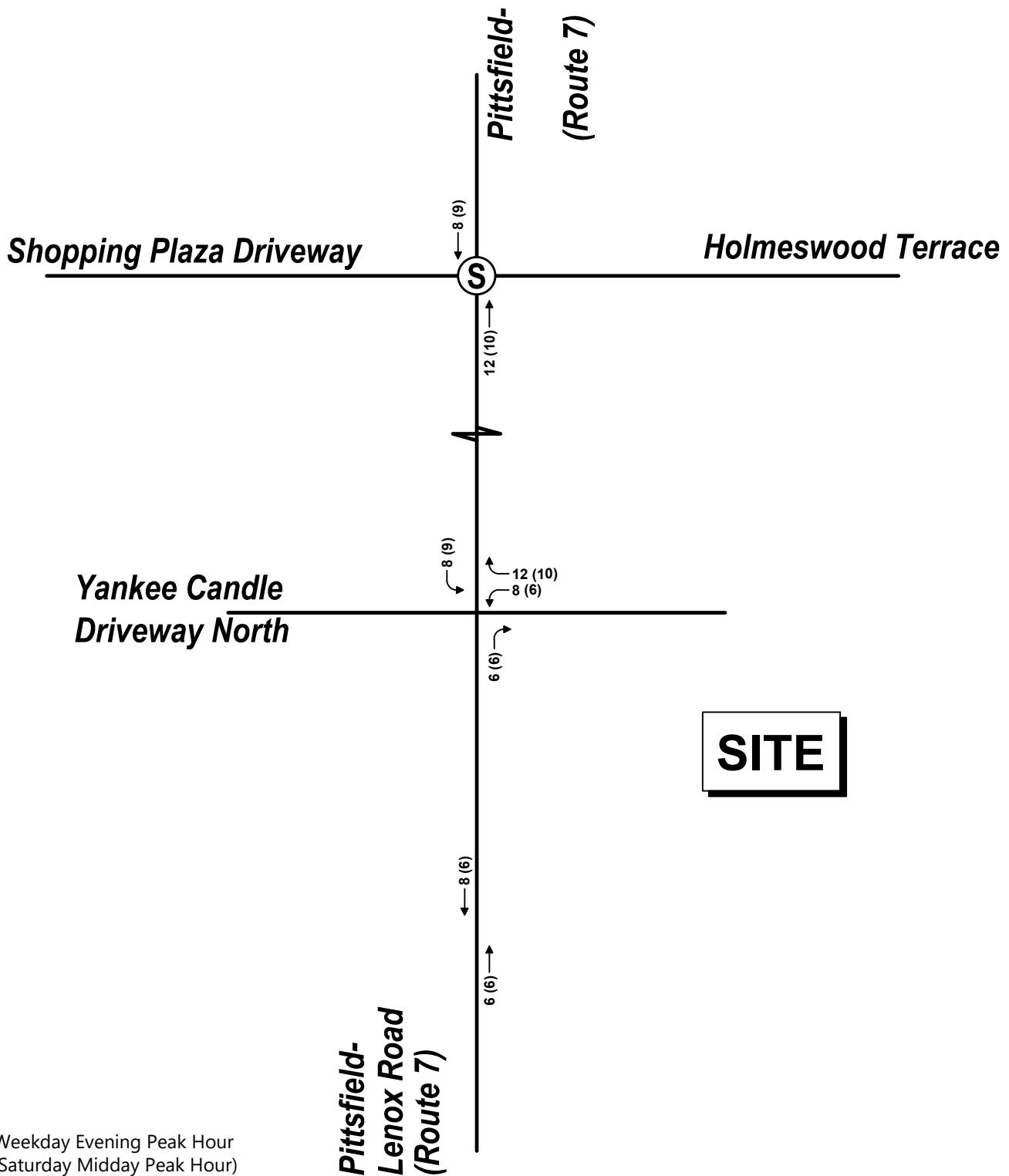
Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
4.02	1.41 - 5.64	1.92

Data Plot and Equation

Caution – Small Sample Size





Not to Scale



Site Generated Trips

Berkshire Mazda
Lenox, MA

Figure



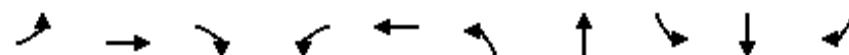
Attachment E – Capacity Analyses

Queues

3: Route 7/20 & Shopping Plaza/Holmeswood Terrace

2022 Existing Conditions

Weekday Evening Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR	Ø3
Lane Configurations											
Traffic Volume (vph)	145	3	194	14	3	143	868	5	820	164	
Future Volume (vph)	145	3	194	14	3	143	868	5	820	164	
Lane Group Flow (vph)	0	185	243	0	31	163	1003	5	872	174	
Turn Type	Perm	NA	pm+ov	Perm	NA	custom	NA	custom	NA	Perm	
Protected Phases		4	5		8	5	2	1	6		3
Permitted Phases	4		4	8		26		26		6	
Detector Phase	4	4	5	8	8	5	2	1	6	6	
Switch Phase											
Minimum Initial (s)	6.0	6.0	5.0	6.0	6.0	5.0	10.0	5.0	10.0	10.0	1.0
Minimum Split (s)	11.0	11.0	8.0	11.0	11.0	8.0	15.0	8.0	15.0	15.0	29.0
Total Split (s)	15.0	15.0	12.0	15.0	15.0	12.0	19.0	11.0	18.0	18.0	20.0
Total Split (%)	18.8%	18.8%	15.0%	18.8%	18.8%	15.0%	23.8%	13.8%	22.5%	22.5%	25%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	0.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		5.0	3.0		5.0	3.0	5.0	3.0	5.0	5.0	
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead	Lag	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	None	None	C-Min	None	C-Min	C-Min	None
v/c Ratio	0.61	0.31		0.21	0.53	0.58	0.02	0.66	0.25		
Control Delay	41.1	4.0		29.0	19.9	21.9	15.6	29.4	5.9		
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	41.1	4.0		29.0	19.9	21.9	15.6	29.4	5.9		
Queue Length 50th (ft)	80	0		11	28	123	1	150	0		
Queue Length 95th (ft)	#196	33		27	#112	#497	9	#439	51		
Internal Link Dist (ft)	137			144		423		222			
Turn Bay Length (ft)					155		145		135		
Base Capacity (vph)	305	795		183	324	1723	312	1314	699		
Starvation Cap Reductn	0	0		0	0	0	0	0	0		
Spillback Cap Reductn	0	0		0	0	0	0	0	0		
Storage Cap Reductn	0	0		0	0	0	0	0	0		
Reduced v/c Ratio	0.61	0.31		0.17	0.50	0.58	0.02	0.66	0.25		

Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 11 (14%), Referenced to phase 2:NBSB and 6:NBSB, Start of Green

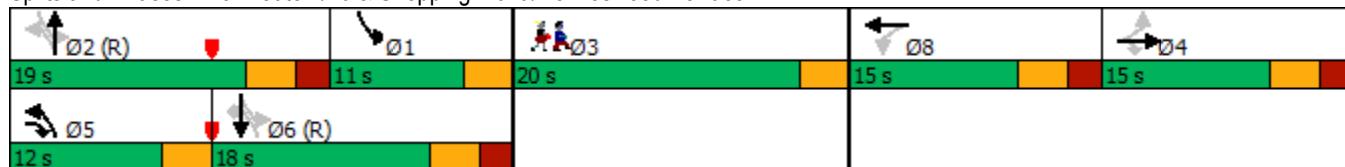
Natural Cycle: 100

Control Type: Actuated-Coordinated

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

Queue shown is maximum after two cycles.

Splits and Phases: 3: Route 7/20 & Shopping Plaza/Holmeswood Terrace



HCM Signalized Intersection Capacity Analysis
3: Route 7/20 & Shopping Plaza/Holmeswood Terrace

2022 Existing Conditions
Weekday Evening Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	145	3	194	14	3	6	143	868	15	5	820	164
Future Volume (vph)	145	3	194	14	3	6	143	868	15	5	820	164
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	3.0		5.0			3.0	5.0		3.0	5.0
Lane Util. Factor		1.00	1.00		1.00			1.00	0.95		1.00	0.95
Frt		1.00	0.85		0.97			1.00	1.00		1.00	1.00
Flt Protected		0.95	1.00		0.97			0.95	1.00		0.95	1.00
Satd. Flow (prot)		1776	1583		1744			1770	3530		1770	3539
Flt Permitted		0.71	1.00		0.77			0.15	1.00		0.16	1.00
Satd. Flow (perm)		1319	1583		1381			272	3530		307	3539
Peak-hour factor, PHF	0.80	0.80	0.80	0.72	0.72	0.72	0.88	0.88	0.88	0.94	0.94	0.94
Adj. Flow (vph)	181	4	242	19	4	8	162	986	17	5	872	174
RTOR Reduction (vph)	0	0	161	0	8	0	0	1	0	0	0	121
Lane Group Flow (vph)	0	185	82	0	23	0	163	1002	0	5	872	53
Turn Type	Perm	NA	pm+ov	Perm	NA		custom	NA		custom	NA	Perm
Protected Phases		4	5		8			5	2		1	6
Permitted Phases	4		4	8			2	6		2	6	6
Actuated Green, G (s)	18.5	27.0		4.2			35.9	31.3		37.5	24.4	24.4
Effective Green, g (s)	18.5	27.0		4.2			35.9	31.3		37.5	24.4	24.4
Actuated g/C Ratio	0.23	0.34		0.05			0.45	0.39		0.47	0.30	0.30
Clearance Time (s)	5.0	3.0		5.0			3.0	5.0		3.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0			3.0	4.0		3.0	4.0	4.0
Lane Grp Cap (vph)	305	534		72			281	1381		173	1079	482
v/s Ratio Prot		0.02					0.06	c0.28		c0.00	c0.25	
v/s Ratio Perm	c0.14	0.04		c0.02			0.20			0.01		0.03
v/c Ratio	0.61	0.15		0.33			0.58	0.73		0.03	0.81	0.11
Uniform Delay, d1	27.5	18.5		36.5			15.7	20.7		21.0	25.6	20.0
Progression Factor	1.00	1.00		1.00			1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	3.4	0.1		2.6			3.0	3.4		0.1	6.5	0.5
Delay (s)	30.9	18.7		39.2			18.8	24.0		21.1	32.2	20.5
Level of Service	C	B		D			B	C		C	C	C
Approach Delay (s)	23.9			39.2				23.3			30.2	
Approach LOS	C			D			C			C		
Intersection Summary												
HCM 2000 Control Delay		26.3					HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio		0.63										
Actuated Cycle Length (s)		80.0					Sum of lost time (s)			21.0		
Intersection Capacity Utilization		54.3%					ICU Level of Service			A		
Analysis Period (min)		15										

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
6: Route 7/20 & YC Drive N/Motel Drive N

2022 Existing Conditions
Weekday Evening Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	0	2	0	0	2	3	1023	0	0	1027	1
Future Volume (Veh/h)	1	0	2	0	0	2	3	1023	0	0	1027	1
Sign Control	Stop				Stop			Free			Free	
Grade	0%				0%			0%			0%	
Peak Hour Factor	0.38	0.38	0.38	0.25	0.25	0.25	0.89	0.89	0.89	0.92	0.92	0.92
Hourly flow rate (vph)	3	0	5	0	0	8	3	1149	0	0	1116	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											503	
pX, platoon unblocked	0.77	0.77	0.77	0.77	0.77	0.77	0.77					
vC, conflicting volume	1705	2272	558	1718	2272	574	1117				1149	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1326	2058	0	1343	2059	574	566				1149	
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1				4.1	
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2				2.2	
p0 queue free %	97	100	99	100	100	98	100				100	
cM capacity (veh/h)	86	42	839	85	42	461	775				604	
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3				
Volume Total	8	8	3	766	383	0	744	373				
Volume Left	3	0	3	0	0	0	0	0				
Volume Right	5	8	0	0	0	0	0	1				
cSH	196	461	775	1700	1700	1700	1700	1700				
Volume to Capacity	0.04	0.02	0.00	0.45	0.23	0.00	0.44	0.22				
Queue Length 95th (ft)	3	1	0	0	0	0	0	0				
Control Delay (s)	24.2	12.9	9.7	0.0	0.0	0.0	0.0	0.0				
Lane LOS	C	B	A									
Approach Delay (s)	24.2	12.9	0.0			0.0						
Approach LOS	C	B										
Intersection Summary												
Average Delay			0.1									
Intersection Capacity Utilization		38.4%				ICU Level of Service				A		
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
9: Route 7/20 & Motel Drive S

2022 Existing Conditions
Weekday Evening Peak Hour

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	1026	1	0	1029
Future Volume (Veh/h)	0	0	1026	1	0	1029
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.25	0.25	0.89	0.89	0.92	0.92
Hourly flow rate (vph)	0	0	1153	1	0	1118
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (ft)					745	
pX, platoon unblocked	0.78					
vC, conflicting volume	1712	577		1154		
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1342	577		1154		
tC, single (s)	6.8	6.9		4.1		
tC, 2 stage (s)						
tF (s)	3.5	3.3		2.2		
p0 queue free %	100	100		100		
cM capacity (veh/h)	111	460		601		
Direction, Lane #	NB 1	NB 2	SB 1	SB 2	SB 3	
Volume Total	769	385	0	559	559	
Volume Left	0	0	0	0	0	
Volume Right	0	1	0	0	0	
cSH	1700	1700	1700	1700	1700	
Volume to Capacity	0.45	0.23	0.00	0.33	0.33	
Queue Length 95th (ft)	0	0	0	0	0	
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	
Lane LOS						
Approach Delay (s)	0.0		0.0			
Approach LOS						
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization		31.8%		ICU Level of Service		A
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis
2: Route 7/20 & Motel Drive S

2022 Existing Conditions
Saturday Midday Peak Hour

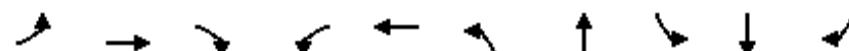
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	1	0	930	1	0	893
Future Volume (Veh/h)	1	0	930	1	0	893
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.25	0.25	0.96	0.96	0.92	0.92
Hourly flow rate (vph)	4	0	969	1	0	971
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)					745	
pX, platoon unblocked	0.83					
vC, conflicting volume	1455	485		970		
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1148	485		970		
tC, single (s)	6.8	6.9		4.1		
tC, 2 stage (s)						
tF (s)	3.5	3.3		2.2		
p0 queue free %	98	100		100		
cM capacity (veh/h)	160	528		706		
Direction, Lane #	NB 1	NB 2	SB 1	SB 2	SB 3	
Volume Total	646	324	0	486	486	
Volume Left	0	0	0	0	0	
Volume Right	0	1	0	0	0	
cSH	1700	1700	1700	1700	1700	
Volume to Capacity	0.38	0.19	0.00	0.29	0.29	
Queue Length 95th (ft)	0	0	0	0	0	
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	
Lane LOS						
Approach Delay (s)	0.0		0.0			
Approach LOS						
Intersection Summary						
Average Delay			Err			
Intersection Capacity Utilization			Err%		ICU Level of Service	H
Analysis Period (min)			15			

Queues

3: Route 7/20 & Shopping Plaza/Holmeswood Terrace

2022 Existing Conditions

Saturday Midday Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR	Ø3
Lane Configurations											
Traffic Volume (vph)	139	5	179	17	6	169	743	1	700	148	
Future Volume (vph)	139	5	179	17	6	169	743	1	700	148	
Lane Group Flow (vph)	0	164	203	0	44	174	785	1	729	154	
Turn Type	Perm	NA	pm+ov	Perm	NA	custom	NA	custom	NA	Perm	
Protected Phases		4	5		8		2	1	6		3
Permitted Phases	4		4	8		26		26		6	
Detector Phase	4	4	5	8	8	5	2	1	6	6	
Switch Phase											
Minimum Initial (s)	6.0	6.0	5.0	6.0	6.0	5.0	10.0	5.0	10.0	10.0	1.0
Minimum Split (s)	11.0	11.0	8.0	11.0	11.0	8.0	15.0	8.0	15.0	15.0	29.0
Total Split (s)	16.0	16.0	11.0	16.0	16.0	11.0	24.0	11.0	24.0	24.0	9.0
Total Split (%)	21.1%	21.1%	14.5%	21.1%	21.1%	14.5%	31.6%	14.5%	31.6%	31.6%	12%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	0.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		5.0	3.0		5.0	3.0	5.0	3.0	5.0	5.0	
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead	Lag	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	None	None	C-Min	None	C-Min	C-Min	None
v/c Ratio	0.69	0.29		0.38	0.48	0.45	0.00	0.54	0.21		
Control Delay	47.2	3.8		36.3	16.5	18.1	13.0	23.8	3.2		
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	47.2	3.8		36.3	16.5	18.1	13.0	23.8	3.2		
Queue Length 50th (ft)	70	0		17	47	135	0	167	0		
Queue Length 95th (ft)	#177	36		29	92	#290	3	#257	29		
Internal Link Dist (ft)	137			144		423		222			
Turn Bay Length (ft)					155		145		135		
Base Capacity (vph)	239	705		133	372	1754	412	1357	722		
Starvation Cap Reductn	0	0		0	0	0	0	0	0		
Spillback Cap Reductn	0	0		0	0	0	0	0	0		
Storage Cap Reductn	0	0		0	0	0	0	0	0		
Reduced v/c Ratio	0.69	0.29		0.33	0.47	0.45	0.00	0.54	0.21		

Intersection Summary

Cycle Length: 76

Actuated Cycle Length: 76

Offset: 15 (20%), Referenced to phase 2:NBSB and 6:NBSB, Start of Green

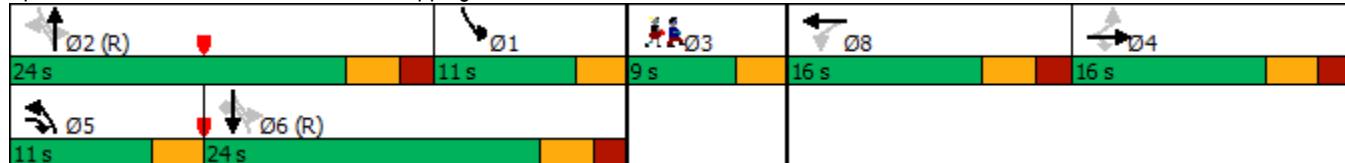
Natural Cycle: 90

Control Type: Actuated-Coordinated

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

Queue shown is maximum after two cycles.

Splits and Phases: 3: Route 7/20 & Shopping Plaza/Holmeswood Terrace



HCM Signalized Intersection Capacity Analysis
3: Route 7/20 & Shopping Plaza/Holmeswood Terrace

2022 Existing Conditions
Saturday Midday Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	139	5	179	17	6	3	169	743	18	1	700	148
Future Volume (vph)	139	5	179	17	6	3	169	743	18	1	700	148
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	3.0		5.0		3.0	5.0		3.0	5.0	5.0
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95		1.00	0.95	1.00
Frt		1.00	0.85		0.98		1.00	1.00		1.00	1.00	0.85
Flt Protected		0.95	1.00		0.97		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1777	1583		1776		1770	3526		1770	3539	1583
Flt Permitted		0.70	1.00		0.45		0.21	1.00		0.27	1.00	1.00
Satd. Flow (perm)		1307	1583		834		400	3526		505	3539	1583
Peak-hour factor, PHF	0.88	0.88	0.88	0.59	0.59	0.59	0.97	0.97	0.97	0.96	0.96	0.96
Adj. Flow (vph)	158	6	203	29	10	5	174	766	19	1	729	154
RTOR Reduction (vph)	0	0	145	0	5	0	0	2	0	0	0	104
Lane Group Flow (vph)	0	164	58	0	39	0	174	783	0	1	729	50
Turn Type	Perm	NA	pm+ov	Perm	NA		custom	NA		custom	NA	Perm
Protected Phases		4	5		8		5	2		1	6	
Permitted Phases	4		4	8			2	6		2	6	6
Actuated Green, G (s)	13.9	21.7		7.3		35.6	31.0		37.2	24.8	24.8	
Effective Green, g (s)	13.9	21.7		7.3		35.6	31.0		37.2	24.8	24.8	
Actuated g/C Ratio	0.18	0.29		0.10		0.47	0.41		0.49	0.33	0.33	
Clearance Time (s)	5.0	3.0		5.0		3.0	5.0		3.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0		3.0	4.0		3.0	4.0	4.0	
Lane Grp Cap (vph)	239	451		80		327	1438		273	1154	516	
v/s Ratio Prot		0.01				0.05	c0.22		c0.00	c0.21		
v/s Ratio Perm	c0.13	0.02		c0.05		0.19			0.00		0.03	
v/c Ratio	0.69	0.13		0.49		0.53	0.54		0.00	0.63	0.10	
Uniform Delay, d1	29.0	20.1		32.6		13.1	17.1		14.7	21.7	17.8	
Progression Factor	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00	
Incremental Delay, d2	7.9	0.1		4.7		1.7	1.5		0.0	2.6	0.4	
Delay (s)	36.9	20.3		37.3		14.8	18.6		14.7	24.4	18.2	
Level of Service	D	C		D		B	B		B	C	B	
Approach Delay (s)	27.7			37.3			17.9			23.3		
Approach LOS	C			D			B			C		
Intersection Summary												
HCM 2000 Control Delay	22.0				HCM 2000 Level of Service				C			
HCM 2000 Volume to Capacity ratio	0.58											
Actuated Cycle Length (s)	76.0				Sum of lost time (s)				21.0			
Intersection Capacity Utilization	51.3%				ICU Level of Service				A			
Analysis Period (min)	15											
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis
6: Route 7/20 & YC Drive N/Motel Drive N

2022 Existing Conditions
Saturday Midday Peak Hour

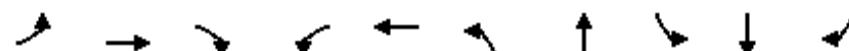
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	2	0	0	2	2	928	0	2	891	3
Future Volume (Veh/h)	0	0	2	0	0	2	2	928	0	2	891	3
Sign Control	Stop				Stop			Free			Free	
Grade		0%				0%			0%		0%	
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50	0.96	0.96	0.96	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	4	0	0	4	2	967	0	2	968	3
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											503	
pX, platoon unblocked	0.83	0.83	0.83	0.83	0.83		0.83					
vC, conflicting volume	1465	1944	486	1463	1946	484	971			967		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1147	1726	0	1145	1728	484	551			967		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	99	100			100		
cM capacity (veh/h)	126	72	898	127	72	529	841			708		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3				
Volume Total	4	4	2	645	322	2	645	326				
Volume Left	0	0	2	0	0	2	0	0				
Volume Right	4	4	0	0	0	0	0	0	3			
cSH	898	529	841	1700	1700	708	1700	1700				
Volume to Capacity	0.00	0.01	0.00	0.38	0.19	0.00	0.38	0.19				
Queue Length 95th (ft)	0	1	0	0	0	0	0	0				
Control Delay (s)	9.0	11.9	9.3	0.0	0.0	10.1	0.0	0.0				
Lane LOS	A	B	A			B						
Approach Delay (s)	9.0	11.9	0.0			0.0						
Approach LOS	A	B										
Intersection Summary												
Average Delay			0.1									
Intersection Capacity Utilization		35.7%										
Analysis Period (min)			15									
ICU Level of Service												
A												

Queues

3: Route 7/20 & Shopping Plaza/Holmeswood Terrace

2029 No-Build Conditions

Weekday Evening Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR	Ø3
Lane Configurations											
Traffic Volume (vph)	145	3	194	14	3	143	923	5	875	164	
Future Volume (vph)	145	3	194	14	3	143	923	5	875	164	
Lane Group Flow (vph)	0	185	243	0	31	163	1066	5	931	174	
Turn Type	Perm	NA	pm+ov	Perm	NA	custom	NA	custom	NA	Perm	
Protected Phases		4	5		8	5	2	1	6		3
Permitted Phases	4		4	8		26		26		6	
Detector Phase	4	4	5	8	8	5	2	1	6	6	
Switch Phase											
Minimum Initial (s)	6.0	6.0	5.0	6.0	6.0	5.0	10.0	5.0	10.0	10.0	1.0
Minimum Split (s)	11.0	11.0	8.0	11.0	11.0	8.0	15.0	8.0	15.0	15.0	29.0
Total Split (s)	15.0	15.0	12.0	15.0	15.0	12.0	19.0	11.0	18.0	18.0	20.0
Total Split (%)	18.8%	18.8%	15.0%	18.8%	18.8%	15.0%	23.8%	13.8%	22.5%	22.5%	25%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	0.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		5.0	3.0		5.0	3.0	5.0	3.0	5.0	5.0	
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead	Lag	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	None	None	C-Min	None	C-Min	C-Min	None
v/c Ratio	0.61	0.31		0.21	0.53	0.62	0.02	0.71	0.25		
Control Delay	41.1	4.0		29.0	19.9	22.4	15.8	30.6	5.9		
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	41.1	4.0		29.0	19.9	22.4	15.8	30.6	5.9		
Queue Length 50th (ft)	80	0		11	28	134	1	164	0		
Queue Length 95th (ft)	#196	33		27	#112	#534	9	#474	51		
Internal Link Dist (ft)	137			144		423		222			
Turn Bay Length (ft)					155		145		135		
Base Capacity (vph)	305	795		183	324	1724	292	1314	699		
Starvation Cap Reductn	0	0		0	0	0	0	0	0		
Spillback Cap Reductn	0	0		0	0	0	0	0	0		
Storage Cap Reductn	0	0		0	0	0	0	0	0		
Reduced v/c Ratio	0.61	0.31		0.17	0.50	0.62	0.02	0.71	0.25		

Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 11 (14%), Referenced to phase 2:NBSB and 6:NBSB, Start of Green

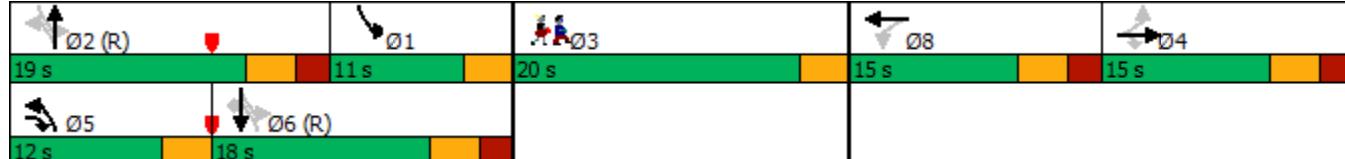
Natural Cycle: 100

Control Type: Actuated-Coordinated

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

Queue shown is maximum after two cycles.

Splits and Phases: 3: Route 7/20 & Shopping Plaza/Holmeswood Terrace



HCM Signalized Intersection Capacity Analysis
3: Route 7/20 & Shopping Plaza/Holmeswood Terrace

2029 No-Build Conditions
Weekday Evening Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	145	3	194	14	3	6	143	923	15	5	875	164
Future Volume (vph)	145	3	194	14	3	6	143	923	15	5	875	164
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	3.0		5.0			3.0	5.0		3.0	5.0
Lane Util. Factor		1.00	1.00		1.00			1.00	0.95		1.00	0.95
Frt		1.00	0.85		0.97			1.00	1.00		1.00	1.00
Flt Protected		0.95	1.00		0.97			0.95	1.00		0.95	1.00
Satd. Flow (prot)		1776	1583		1744			1770	3531		1770	3539
Flt Permitted		0.71	1.00		0.77			0.15	1.00		0.14	1.00
Satd. Flow (perm)		1319	1583		1381			272	3531		262	3539
Peak-hour factor, PHF	0.80	0.80	0.80	0.72	0.72	0.72	0.88	0.88	0.88	0.94	0.94	0.94
Adj. Flow (vph)	181	4	242	19	4	8	162	1049	17	5	931	174
RTOR Reduction (vph)	0	0	161	0	8	0	0	1	0	0	0	121
Lane Group Flow (vph)	0	185	82	0	23	0	163	1065	0	5	931	53
Turn Type	Perm	NA	pm+ov	Perm	NA		custom	NA		custom	NA	Perm
Protected Phases		4	5		8			5	2		1	6
Permitted Phases	4		4	8			2	6		2	6	6
Actuated Green, G (s)	18.5	27.0		4.2			35.9	31.3		37.5	24.4	24.4
Effective Green, g (s)	18.5	27.0		4.2			35.9	31.3		37.5	24.4	24.4
Actuated g/C Ratio	0.23	0.34		0.05			0.45	0.39		0.47	0.30	0.30
Clearance Time (s)	5.0	3.0		5.0			3.0	5.0		3.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0			3.0	4.0		3.0	4.0	4.0
Lane Grp Cap (vph)	305	534		72			281	1381		152	1079	482
v/s Ratio Prot		0.02					0.06	c0.30		c0.00	c0.26	
v/s Ratio Perm	c0.14	0.04		c0.02			0.20			0.01		0.03
v/c Ratio	0.61	0.15		0.33			0.58	0.77		0.03	0.86	0.11
Uniform Delay, d1	27.5	18.5		36.5			16.1	21.2		22.4	26.2	20.0
Progression Factor	1.00	1.00		1.00			1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	3.4	0.1		2.6			3.0	4.2		0.1	9.1	0.5
Delay (s)	30.9	18.7		39.2			19.1	25.4		22.5	35.4	20.5
Level of Service	C	B		D			B	C		C	D	C
Approach Delay (s)	23.9			39.2				24.6			33.0	
Approach LOS	C			D			C			C		
Intersection Summary												
HCM 2000 Control Delay	28.0				HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio	0.66											
Actuated Cycle Length (s)	80.0				Sum of lost time (s)			21.0				
Intersection Capacity Utilization	55.8%				ICU Level of Service			B				
Analysis Period (min)	15											
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis
6: Route 7/20 & YC Drive N/Motel Drive N

2029 No-Build Conditions
Weekday Evening Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	0	2	0	0	2	3	1078	0	0	1082	1
Future Volume (Veh/h)	1	0	2	0	0	2	3	1078	0	0	1082	1
Sign Control	Stop				Stop			Free			Free	
Grade	0%				0%			0%			0%	
Peak Hour Factor	0.38	0.38	0.38	0.25	0.25	0.25	0.89	0.89	0.89	0.92	0.92	0.92
Hourly flow rate (vph)	3	0	5	0	0	8	3	1211	0	0	1176	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											503	
pX, platoon unblocked	0.75	0.75	0.75	0.75	0.75	0.75	0.75					
vC, conflicting volume	1796	2394	588	1810	2394	606	1177				1211	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1397	2193	0	1416	2193	606	573				1211	
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1				4.1	
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2				2.2	
p0 queue free %	96	100	99	100	100	98	100				100	
cM capacity (veh/h)	74	33	815	72	33	440	748				572	
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3				
Volume Total	8	8	3	807	404	0	784	393				
Volume Left	3	0	3	0	0	0	0	0				
Volume Right	5	8	0	0	0	0	0	1				
cSH	171	440	748	1700	1700	1700	1700	1700				
Volume to Capacity	0.05	0.02	0.00	0.47	0.24	0.00	0.46	0.23				
Queue Length 95th (ft)	4	1	0	0	0	0	0	0				
Control Delay (s)	27.1	13.3	9.8	0.0	0.0	0.0	0.0	0.0				
Lane LOS	D	B	A									
Approach Delay (s)	27.1	13.3	0.0			0.0						
Approach LOS	D	B										
Intersection Summary												
Average Delay			0.1									
Intersection Capacity Utilization			39.9%				ICU Level of Service			A		
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis
9: Route 7/20 & Motel Drive S

2029 No-Build Conditions
Weekday Evening Peak Hour

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	1081	1	0	1084
Future Volume (Veh/h)	0	0	1081	1	0	1084
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.25	0.25	0.89	0.89	0.92	0.92
Hourly flow rate (vph)	0	0	1215	1	0	1178
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (ft)					745	
pX, platoon unblocked	0.75					
vC, conflicting volume	1804	608		1216		
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1412	608		1216		
tC, single (s)	6.8	6.9		4.1		
tC, 2 stage (s)						
tF (s)	3.5	3.3		2.2		
p0 queue free %	100	100		100		
cM capacity (veh/h)	97	439		569		
Direction, Lane #	NB 1	NB 2	SB 1	SB 2	SB 3	
Volume Total	810	406	0	589	589	
Volume Left	0	0	0	0	0	
Volume Right	0	1	0	0	0	
cSH	1700	1700	1700	1700	1700	
Volume to Capacity	0.48	0.24	0.00	0.35	0.35	
Queue Length 95th (ft)	0	0	0	0	0	
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	
Lane LOS						
Approach Delay (s)	0.0		0.0			
Approach LOS						
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization		33.3%		ICU Level of Service		A
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis
2: Route 7/20 & Motel Drive S

2029 No-Build Conditions
Saturday Midday Peak Hour

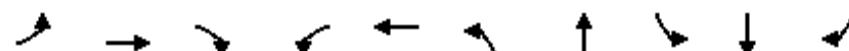
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	1	0	980	1	0	941
Future Volume (Veh/h)	1	0	980	1	0	941
Sign Control	Stop		Free		Free	
Grade	0%		0%		0%	
Peak Hour Factor	0.25	0.25	0.96	0.96	0.92	0.92
Hourly flow rate (vph)	4	0	1021	1	0	1023
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None		None	
Median storage veh)						
Upstream signal (ft)					745	
pX, platoon unblocked	0.82					
vC, conflicting volume	1533	511		1022		
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1204	511		1022		
tC, single (s)	6.8	6.9		4.1		
tC, 2 stage (s)						
tF (s)	3.5	3.3		2.2		
p0 queue free %	97	100		100		
cM capacity (veh/h)	144	508		675		
Direction, Lane #	NB 1	NB 2	SB 1	SB 2	SB 3	
Volume Total	681	341	0	512	512	
Volume Left	0	0	0	0	0	
Volume Right	0	1	0	0	0	
cSH	1700	1700	1700	1700	1700	
Volume to Capacity	0.40	0.20	0.00	0.30	0.30	
Queue Length 95th (ft)	0	0	0	0	0	
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	
Lane LOS						
Approach Delay (s)	0.0		0.0			
Approach LOS						
Intersection Summary						
Average Delay			Err			
Intersection Capacity Utilization			Err%		ICU Level of Service	H
Analysis Period (min)			15			

Queues

3: Route 7/20 & Shopping Plaza/Holmeswood Terrace

2029 No-Build Conditions

Saturday Midday Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR	Ø3
Lane Configurations											
Traffic Volume (vph)	139	5	179	17	6	169	793	1	748	148	
Future Volume (vph)	139	5	179	17	6	169	793	1	748	148	
Lane Group Flow (vph)	0	164	203	0	44	174	837	1	779	154	
Turn Type	Perm	NA	pm+ov	Perm	NA	custom	NA	custom	NA	Perm	
Protected Phases		4	5		8		2	1	6		3
Permitted Phases	4		4	8		26		26		6	
Detector Phase	4	4	5	8	8	5	2	1	6	6	
Switch Phase											
Minimum Initial (s)	6.0	6.0	5.0	6.0	6.0	5.0	10.0	5.0	10.0	10.0	1.0
Minimum Split (s)	11.0	11.0	8.0	11.0	11.0	8.0	15.0	8.0	15.0	15.0	29.0
Total Split (s)	16.0	16.0	11.0	16.0	16.0	11.0	24.0	11.0	24.0	24.0	9.0
Total Split (%)	21.1%	21.1%	14.5%	21.1%	21.1%	14.5%	31.6%	14.5%	31.6%	31.6%	12%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	0.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		5.0	3.0		5.0	3.0	5.0	3.0	5.0	5.0	
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead	Lag	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	None	None	C-Min	None	C-Min	C-Min	None
v/c Ratio	0.69	0.29		0.38	0.51	0.48	0.00	0.57	0.21		
Control Delay	47.2	3.8		36.3	17.4	18.6	13.0	24.7	3.2		
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	47.2	3.8		36.3	17.4	18.6	13.0	24.7	3.2		
Queue Length 50th (ft)	70	0		17	47	147	0	181	0		
Queue Length 95th (ft)	#177	36		29	92	#321	3	#286	29		
Internal Link Dist (ft)	137			144		423		222			
Turn Bay Length (ft)					155		145		135		
Base Capacity (vph)	239	705		133	350	1756	391	1357	722		
Starvation Cap Reductn	0	0		0	0	0	0	0	0		
Spillback Cap Reductn	0	0		0	0	0	0	0	0		
Storage Cap Reductn	0	0		0	0	0	0	0	0		
Reduced v/c Ratio	0.69	0.29		0.33	0.50	0.48	0.00	0.57	0.21		

Intersection Summary

Cycle Length: 76

Actuated Cycle Length: 76

Offset: 15 (20%), Referenced to phase 2:NBSB and 6:NBSB, Start of Green

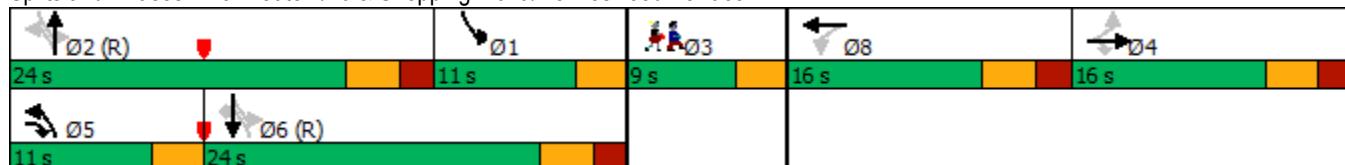
Natural Cycle: 90

Control Type: Actuated-Coordinated

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

Queue shown is maximum after two cycles.

Splits and Phases: 3: Route 7/20 & Shopping Plaza/Holmeswood Terrace



HCM Signalized Intersection Capacity Analysis
3: Route 7/20 & Shopping Plaza/Holmeswood Terrace

2029 No-Build Conditions
Saturday Midday Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	139	5	179	17	6	3	169	793	18	1	748	148
Future Volume (vph)	139	5	179	17	6	3	169	793	18	1	748	148
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	3.0		5.0		3.0	5.0		3.0	5.0	5.0
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95		1.00	0.95	1.00
Frt		1.00	0.85		0.98		1.00	1.00		1.00	1.00	0.85
Flt Protected		0.95	1.00		0.97		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1777	1583		1776		1770	3527		1770	3539	1583
Flt Permitted		0.70	1.00		0.45		0.19	1.00		0.25	1.00	1.00
Satd. Flow (perm)		1307	1583		834		351	3527		459	3539	1583
Peak-hour factor, PHF	0.88	0.88	0.88	0.59	0.59	0.59	0.97	0.97	0.97	0.96	0.96	0.96
Adj. Flow (vph)	158	6	203	29	10	5	174	818	19	1	779	154
RTOR Reduction (vph)	0	0	145	0	5	0	0	2	0	0	0	104
Lane Group Flow (vph)	0	164	58	0	39	0	174	835	0	1	779	50
Turn Type	Perm	NA	pm+ov	Perm	NA		custom	NA		custom	NA	Perm
Protected Phases		4	5		8		5	2		1	6	
Permitted Phases	4		4	8			2	6		2	6	6
Actuated Green, G (s)	13.9	21.7		7.3		35.6	31.0		37.2	24.8	24.8	
Effective Green, g (s)	13.9	21.7		7.3		35.6	31.0		37.2	24.8	24.8	
Actuated g/C Ratio	0.18	0.29		0.10		0.47	0.41		0.49	0.33	0.33	
Clearance Time (s)	5.0	3.0		5.0		3.0	5.0		3.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0		3.0	4.0		3.0	4.0	4.0	
Lane Grp Cap (vph)	239	451		80		310	1438		252	1154	516	
v/s Ratio Prot		0.01				0.06	c0.24		c0.00	c0.22		
v/s Ratio Perm	c0.13	0.02		c0.05		0.21			0.00		0.03	
v/c Ratio	0.69	0.13		0.49		0.56	0.58		0.00	0.68	0.10	
Uniform Delay, d1	29.0	20.1		32.6		13.4	17.5		15.4	22.1	17.8	
Progression Factor	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00	
Incremental Delay, d2	7.9	0.1		4.7		2.3	1.7		0.0	3.2	0.4	
Delay (s)	36.9	20.3		37.3		15.8	19.2		15.4	25.3	18.2	
Level of Service	D	C		D		B	B		B	C	B	
Approach Delay (s)	27.7			37.3			18.6			24.1		
Approach LOS	C			D			B			C		
Intersection Summary												
HCM 2000 Control Delay		22.5			HCM 2000 Level of Service				C			
HCM 2000 Volume to Capacity ratio		0.60										
Actuated Cycle Length (s)		76.0			Sum of lost time (s)				21.0			
Intersection Capacity Utilization		52.6%			ICU Level of Service				A			
Analysis Period (min)		15										
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis
6: Route 7/20 & YC Drive N/Motel Drive N

2029 No-Build Conditions
Saturday Midday Peak Hour

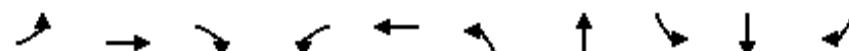
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	2	0	0	2	2	978	0	2	939	3
Future Volume (Veh/h)	0	0	2	0	0	2	2	978	0	2	939	3
Sign Control	Stop				Stop			Free			Free	
Grade		0%				0%			0%		0%	
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50	0.96	0.96	0.96	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	4	0	0	4	2	1019	0	2	1021	3
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											503	
pX, platoon unblocked	0.81	0.81	0.81	0.81	0.81		0.81					
vC, conflicting volume	1544	2050	512	1542	2051	510	1024			1019		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1206	1829	0	1203	1831	510	566			1019		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	100	100	99	100			100		
cM capacity (veh/h)	112	61	880	113	61	509	814			677		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3				
Volume Total	4	4	2	679	340	2	681	343				
Volume Left	0	0	2	0	0	2	0	0				
Volume Right	4	4	0	0	0	0	0	3				
cSH	880	509	814	1700	1700	677	1700	1700				
Volume to Capacity	0.00	0.01	0.00	0.40	0.20	0.00	0.40	0.20				
Queue Length 95th (ft)	0	1	0	0	0	0	0	0				
Control Delay (s)	9.1	12.1	9.4	0.0	0.0	10.3	0.0	0.0				
Lane LOS	A	B	A			B						
Approach Delay (s)	9.1	12.1	0.0			0.0						
Approach LOS	A	B										
Intersection Summary												
Average Delay			0.1									
Intersection Capacity Utilization		37.0%		ICU Level of Service					A			
Analysis Period (min)		15										

Queues

3: Route 7/20 & Shopping Plaza/Holmeswood Terrace

2029 Build Conditions

Weekday Evening Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR	Ø3
Lane Configurations											
Traffic Volume (vph)	145	3	194	14	3	143	935	5	883	164	
Future Volume (vph)	145	3	194	14	3	143	935	5	883	164	
Lane Group Flow (vph)	0	185	243	0	31	163	1080	5	939	174	
Turn Type	Perm	NA	pm+ov	Perm	NA	custom	NA	custom	NA	Perm	
Protected Phases		4	5		8	5	2	1	6		3
Permitted Phases	4		4	8		26		26		6	
Detector Phase	4	4	5	8	8	5	2	1	6	6	
Switch Phase											
Minimum Initial (s)	6.0	6.0	5.0	6.0	6.0	5.0	10.0	5.0	10.0	10.0	1.0
Minimum Split (s)	11.0	11.0	8.0	11.0	11.0	8.0	15.0	8.0	15.0	15.0	29.0
Total Split (s)	15.0	15.0	12.0	15.0	15.0	12.0	19.0	11.0	18.0	18.0	20.0
Total Split (%)	18.8%	18.8%	15.0%	18.8%	18.8%	15.0%	23.8%	13.8%	22.5%	22.5%	25%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	0.0
Lost Time Adjust (s)			0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)			5.0	3.0		5.0	3.0	5.0	3.0	5.0	5.0
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead	Lag	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	None	None	C-Min	None	C-Min	C-Min	None
v/c Ratio	0.61	0.31		0.21	0.53	0.63	0.02	0.71	0.25		
Control Delay	41.1	4.0		29.0	19.9	22.6	16.0	30.8	5.9		
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		
Total Delay	41.1	4.0		29.0	19.9	22.6	16.0	30.8	5.9		
Queue Length 50th (ft)	80	0		11	28	137	1	165	0		
Queue Length 95th (ft)	#196	33		27	#112	#542	9	#478	51		
Internal Link Dist (ft)	137			144		423		222			
Turn Bay Length (ft)					155		145		135		
Base Capacity (vph)	305	795		183	324	1724	288	1314	699		
Starvation Cap Reductn	0	0		0	0	0	0	0	0		
Spillback Cap Reductn	0	0		0	0	0	0	0	0		
Storage Cap Reductn	0	0		0	0	0	0	0	0		
Reduced v/c Ratio	0.61	0.31		0.17	0.50	0.63	0.02	0.71	0.25		

Intersection Summary

Cycle Length: 80

Actuated Cycle Length: 80

Offset: 11 (14%), Referenced to phase 2:NBSB and 6:NBSB, Start of Green

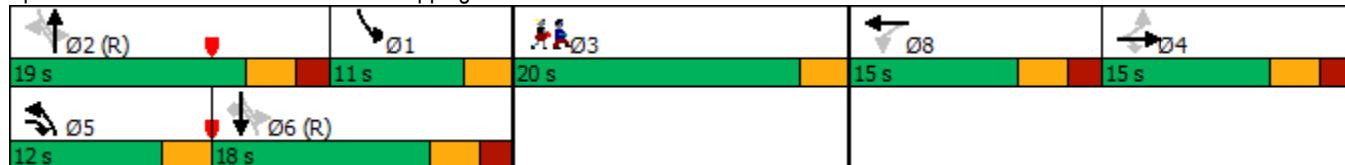
Natural Cycle: 100

Control Type: Actuated-Coordinated

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

Queue shown is maximum after two cycles.

Splits and Phases: 3: Route 7/20 & Shopping Plaza/Holmeswood Terrace



HCM Signalized Intersection Capacity Analysis
3: Route 7/20 & Shopping Plaza/Holmeswood Terrace

2029 Build Conditions
Weekday Evening Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	145	3	194	14	3	6	143	935	15	5	883	164
Future Volume (vph)	145	3	194	14	3	6	143	935	15	5	883	164
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	3.0		5.0			3.0	5.0		3.0	5.0
Lane Util. Factor		1.00	1.00		1.00			1.00	0.95		1.00	0.95
Frt		1.00	0.85		0.97			1.00	1.00		1.00	1.00
Flt Protected		0.95	1.00		0.97			0.95	1.00		0.95	1.00
Satd. Flow (prot)		1776	1583		1744			1770	3531		1770	3539
Flt Permitted		0.71	1.00		0.77			0.15	1.00		0.14	1.00
Satd. Flow (perm)		1319	1583		1381			272	3531		253	3539
Peak-hour factor, PHF	0.80	0.80	0.80	0.72	0.72	0.72	0.88	0.88	0.88	0.94	0.94	0.94
Adj. Flow (vph)	181	4	242	19	4	8	162	1062	17	5	939	174
RTOR Reduction (vph)	0	0	161	0	8	0	0	1	0	0	0	121
Lane Group Flow (vph)	0	185	82	0	23	0	163	1079	0	5	939	53
Turn Type	Perm	NA	pm+ov	Perm	NA		custom	NA		custom	NA	Perm
Protected Phases		4	5		8			5	2		1	6
Permitted Phases	4		4	8			2	6		2	6	6
Actuated Green, G (s)	18.5	27.0		4.2			35.9	31.3		37.5	24.4	24.4
Effective Green, g (s)	18.5	27.0		4.2			35.9	31.3		37.5	24.4	24.4
Actuated g/C Ratio	0.23	0.34		0.05			0.45	0.39		0.47	0.30	0.30
Clearance Time (s)	5.0	3.0		5.0			3.0	5.0		3.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0		3.0			3.0	4.0		3.0	4.0	4.0
Lane Grp Cap (vph)	305	534		72			281	1381		148	1079	482
v/s Ratio Prot		0.02					0.06	c0.31		c0.00	c0.27	
v/s Ratio Perm	c0.14	0.04		c0.02			0.20			0.02		0.03
v/c Ratio	0.61	0.15		0.33			0.58	0.78		0.03	0.87	0.11
Uniform Delay, d1	27.5	18.5		36.5			16.2	21.3		22.7	26.3	20.0
Progression Factor	1.00	1.00		1.00			1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	3.4	0.1		2.6			3.0	4.5		0.1	9.6	0.5
Delay (s)	30.9	18.7		39.2			19.2	25.8		22.8	35.9	20.5
Level of Service	C	B		D			B	C		C	D	C
Approach Delay (s)	23.9			39.2				24.9			33.4	
Approach LOS	C			D			C			C		
Intersection Summary												
HCM 2000 Control Delay	28.3				HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio	0.66											
Actuated Cycle Length (s)	80.0				Sum of lost time (s)			21.0				
Intersection Capacity Utilization	56.0%				ICU Level of Service			B				
Analysis Period (min)	15											
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis
6: Route 7/20 & YC Drive N/Site Drive

2029 Build Conditions
Weekday Evening Peak Hour

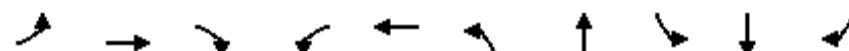
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	0	2	8	0	12	3	1080	6	8	1082	1
Future Volume (Veh/h)	1	0	2	8	0	12	3	1080	6	8	1082	1
Sign Control	Stop				Stop			Free			Free	
Grade	0%				0%			0%			0%	
Peak Hour Factor	0.38	0.38	0.38	0.92	0.92	0.92	0.89	0.89	0.89	0.92	0.92	0.92
Hourly flow rate (vph)	3	0	5	9	0	13	3	1213	7	9	1176	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											503	
pX, platoon unblocked	0.75	0.75	0.75	0.75	0.75	0.75	0.75					
vC, conflicting volume	1820	2420	588	1834	2418	610	1177				1220	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1425	2226	0	1443	2222	610	566				1220	
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1				4.1	
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2				2.2	
p0 queue free %	96	100	99	87	100	97	100				98	
cM capacity (veh/h)	69	31	812	68	31	437	750				567	
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3				
Volume Total	8	22	3	809	411	9	784	393				
Volume Left	3	9	3	0	0	9	0	0				
Volume Right	5	13	0	0	7	0	0	1				
cSH	160	136	750	1700	1700	567	1700	1700				
Volume to Capacity	0.05	0.16	0.00	0.48	0.24	0.02	0.46	0.23				
Queue Length 95th (ft)	4	14	0	0	0	1	0	0				
Control Delay (s)	28.6	36.5	9.8	0.0	0.0	11.4	0.0	0.0				
Lane LOS	D	E	A			B						
Approach Delay (s)	28.6	36.5	0.0			0.1						
Approach LOS	D	E										
Intersection Summary												
Average Delay			0.5									
Intersection Capacity Utilization		40.0%				ICU Level of Service					A	
Analysis Period (min)			15									

Queues

3: Route 7/20 & Shopping Plaza/Holmeswood Terrace

2029 Build Conditions

Saturday Midday Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR	Ø3
Lane Configurations											
Traffic Volume (vph)	139	5	179	17	6	169	803	1	757	148	
Future Volume (vph)	139	5	179	17	6	169	803	1	757	148	
Lane Group Flow (vph)	0	164	203	0	44	174	847	1	789	154	
Turn Type	Perm	NA	pm+ov	Perm	NA	custom	NA	custom	NA	Perm	
Protected Phases		4	5		8		2	1	6		3
Permitted Phases	4		4	8		26		26		6	
Detector Phase	4	4	5	8	8	5	2	1	6	6	
Switch Phase											
Minimum Initial (s)	6.0	6.0	5.0	6.0	6.0	5.0	10.0	5.0	10.0	10.0	1.0
Minimum Split (s)	11.0	11.0	8.0	11.0	11.0	8.0	15.0	8.0	15.0	15.0	29.0
Total Split (s)	16.0	16.0	11.0	16.0	16.0	11.0	24.0	11.0	24.0	24.0	9.0
Total Split (%)	21.1%	21.1%	14.5%	21.1%	21.1%	14.5%	31.6%	14.5%	31.6%	31.6%	12%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	2.0	2.0	0.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	0.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)		5.0	3.0		5.0	3.0	5.0	3.0	5.0	5.0	
Lead/Lag	Lag	Lag	Lead	Lead	Lead	Lead	Lead	Lag	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None	None	None	None	None	C-Min	None	C-Min	C-Min	None
v/c Ratio	0.69	0.29		0.38	0.52	0.48	0.00	0.58	0.21		
Control Delay	47.2	3.8		36.3	17.6	18.8	13.0	24.9	3.2		
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	47.2	3.8		36.3	17.6	18.8	13.0	24.9	3.2		
Queue Length 50th (ft)	70	0		17	47	150	0	185	0		
Queue Length 95th (ft)	#177	36		29	92	#326	3	#291	29		
Internal Link Dist (ft)	137			144		423		222			
Turn Bay Length (ft)					155		145		135		
Base Capacity (vph)	239	705		133	346	1756	388	1357	722		
Starvation Cap Reductn	0	0		0	0	0	0	0	0		
Spillback Cap Reductn	0	0		0	0	0	0	0	0		
Storage Cap Reductn	0	0		0	0	0	0	0	0		
Reduced v/c Ratio	0.69	0.29		0.33	0.50	0.48	0.00	0.58	0.21		

Intersection Summary

Cycle Length: 76

Actuated Cycle Length: 76

Offset: 15 (20%), Referenced to phase 2:NBSB and 6:NBSB, Start of Green

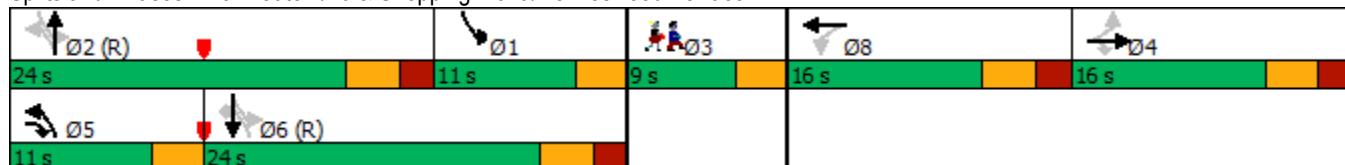
Natural Cycle: 90

Control Type: Actuated-Coordinated

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

Queue shown is maximum after two cycles.

Splits and Phases: 3: Route 7/20 & Shopping Plaza/Holmeswood Terrace



HCM Signalized Intersection Capacity Analysis
3: Route 7/20 & Shopping Plaza/Holmeswood Terrace

2029 Build Conditions
Saturday Midday Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	139	5	179	17	6	3	169	803	18	1	757	148
Future Volume (vph)	139	5	179	17	6	3	169	803	18	1	757	148
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0	3.0		5.0		3.0	5.0		3.0	5.0	5.0
Lane Util. Factor		1.00	1.00		1.00		1.00	0.95		1.00	0.95	1.00
Frt		1.00	0.85		0.98		1.00	1.00		1.00	1.00	0.85
Flt Protected		0.95	1.00		0.97		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1777	1583		1776		1770	3527		1770	3539	1583
Flt Permitted		0.70	1.00		0.45		0.18	1.00		0.24	1.00	1.00
Satd. Flow (perm)		1307	1583		834		342	3527		450	3539	1583
Peak-hour factor, PHF	0.88	0.88	0.88	0.59	0.59	0.59	0.97	0.97	0.97	0.96	0.96	0.96
Adj. Flow (vph)	158	6	203	29	10	5	174	828	19	1	789	154
RTOR Reduction (vph)	0	0	145	0	5	0	0	2	0	0	0	104
Lane Group Flow (vph)	0	164	58	0	39	0	174	845	0	1	789	50
Turn Type	Perm	NA	pm+ov	Perm	NA		custom	NA		custom	NA	Perm
Protected Phases		4	5		8		5	2		1	6	
Permitted Phases	4		4	8			2	6		2	6	6
Actuated Green, G (s)	13.9	21.7		7.3		35.6	31.0		37.2	24.8	24.8	
Effective Green, g (s)	13.9	21.7		7.3		35.6	31.0		37.2	24.8	24.8	
Actuated g/C Ratio	0.18	0.29		0.10		0.47	0.41		0.49	0.33	0.33	
Clearance Time (s)	5.0	3.0		5.0		3.0	5.0		3.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0		3.0	4.0		3.0	4.0	4.0	
Lane Grp Cap (vph)	239	451		80		306	1438		248	1154	516	
v/s Ratio Prot		0.01				0.06	c0.24		c0.00	c0.22		
v/s Ratio Perm	c0.13	0.02		c0.05		0.21			0.00		0.03	
v/c Ratio	0.69	0.13		0.49		0.57	0.59		0.00	0.68	0.10	
Uniform Delay, d1	29.0	20.1		32.6		13.5	17.5		15.6	22.2	17.8	
Progression Factor	1.00	1.00		1.00		1.00	1.00		1.00	1.00	1.00	
Incremental Delay, d2	7.9	0.1		4.7		2.4	1.8		0.0	3.3	0.4	
Delay (s)	36.9	20.3		37.3		15.9	19.3		15.6	25.5	18.2	
Level of Service	D	C		D		B	B		B	C	B	
Approach Delay (s)	27.7			37.3			18.7			24.3		
Approach LOS	C			D			B			C		
Intersection Summary												
HCM 2000 Control Delay		22.7			HCM 2000 Level of Service				C			
HCM 2000 Volume to Capacity ratio		0.61										
Actuated Cycle Length (s)		76.0			Sum of lost time (s)				21.0			
Intersection Capacity Utilization		52.8%			ICU Level of Service				A			
Analysis Period (min)		15										
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis
6: Route 7/20 & YC Drive N/Site Drive

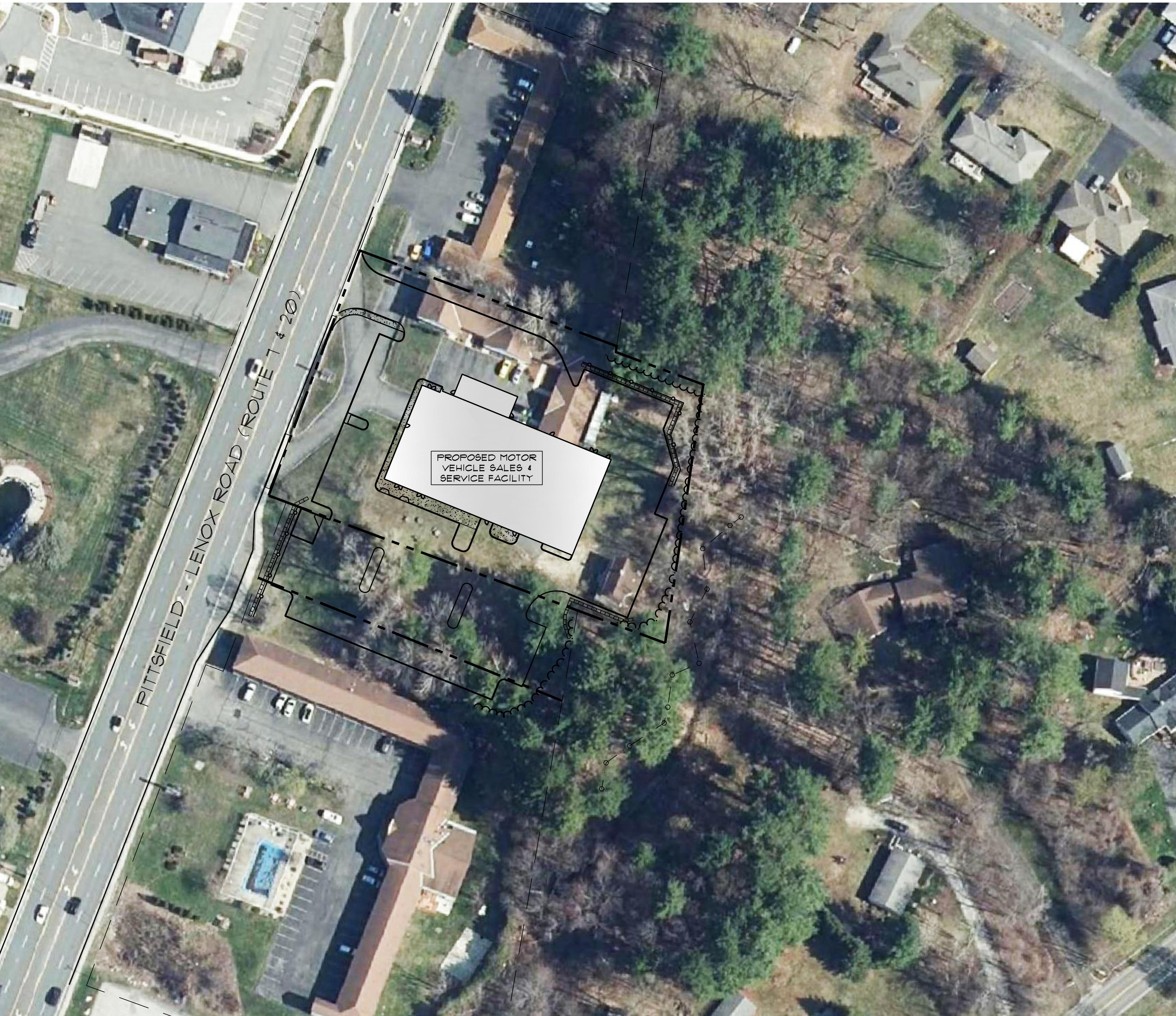
2029 Build Conditions
Saturday Midday Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	2	6	0	10	2	980	6	9	941	3
Future Volume (Veh/h)	0	0	2	6	0	10	2	980	6	9	941	3
Sign Control	Stop				Stop			Free			Free	
Grade		0%				0%			0%		0%	
Peak Hour Factor	0.50	0.50	0.50	0.92	0.92	0.92	0.96	0.96	0.96	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	4	7	0	11	2	1021	6	10	1023	3
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											503	
pX, platoon unblocked	0.81	0.81	0.81	0.81	0.81	0.81	0.81					
vC, conflicting volume	1570	2076	513	1564	2074	514	1026				1027	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1233	1858	0	1225	1856	514	561				1027	
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1				4.1	
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2				2.2	
p0 queue free %	100	100	100	93	100	98	100				99	
cM capacity (veh/h)	104	58	878	107	58	506	814				672	
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3				
Volume Total	4	18	2	681	346	10	682	344				
Volume Left	0	7	2	0	0	10	0	0				
Volume Right	4	11	0	0	6	0	0	3				
cSH	878	207	814	1700	1700	672	1700	1700				
Volume to Capacity	0.00	0.09	0.00	0.40	0.20	0.01	0.40	0.20				
Queue Length 95th (ft)	0	7	0	0	0	1	0	0				
Control Delay (s)	9.1	24.1	9.4	0.0	0.0	10.4	0.0	0.0				
Lane LOS	A	C	A			B						
Approach Delay (s)	9.1	24.1	0.0			0.1						
Approach LOS	A	C										
Intersection Summary												
Average Delay			0.3									
Intersection Capacity Utilization		40.4%				ICU Level of Service					A	
Analysis Period (min)			15									

Attachment D

Site Plans

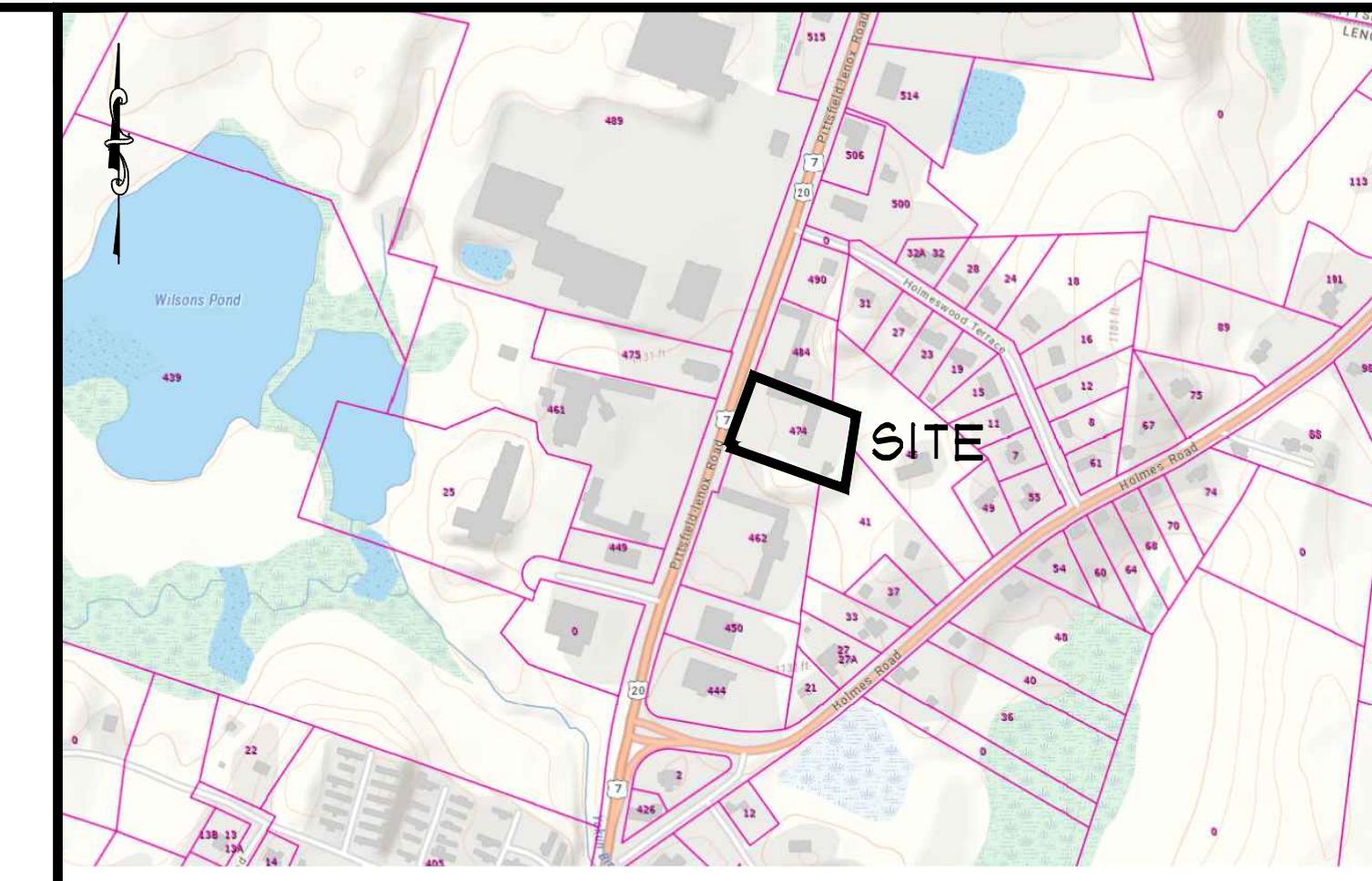
PLANS TO ACCOMPANY
PERMIT APPLICATIONS
PREPARED FOR
474 PITTSFIELD ROAD LLC
LOCATED AT
474 PITTSFIELD ROAD
LENOX, MASSACHUSETTS



1 SITE PLAN
SCALE: 1" = 50'

NOTES:
1. EXISTING CONDITIONS SURVEY WAS PERFORMED BY SK DESIGN GROUP, INC. ON AUGUST 31, 2022 & VARIOUS DATES IN 2002.

THESE PLANS ARE FOR
PERMITTING PURPOSES
ONLY
NOT FOR CONSTRUCTION



2 LOCUS PLAN
SCALE: N.T.S.

LIST OF DRAWINGS:

1. COVER PAGE
2. EXISTING CONDITIONS PLAN
3. SITE PLAN
4. GRADING & DRAINAGE PLAN
5. UTILITY PLAN
6. LIGHTING PLAN
7. LANDSCAPING PLAN
8. LEDGE PLAN & PROFILES
9. EROSION CONTROL PLAN & DETAILS
10. DETAILS

RECORD OWNER:
SHYAMJI, INC.
474 PITTSFIELD ROAD
LENOX, MASSACHUSETTS

APPLICANT:
SHEEHAN CAPITAL INVESTMENTS, LLC.
% COURNEY, LEE & HAMEL PC
31 WENDELL AVENUE
PITTSFIELD, MASSACHUSETTS

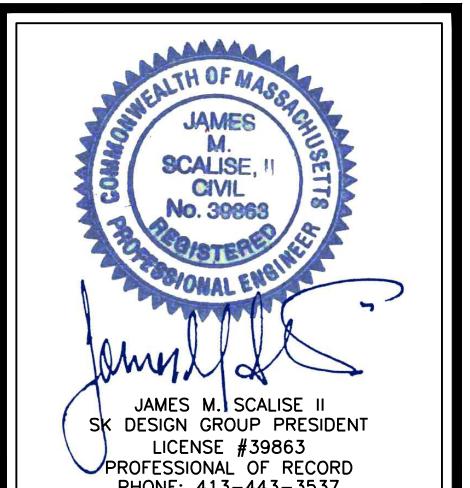
ENGINEER:
SK DESIGN GROUP, INC.
2 FEDERICO DRIVE
PITTSFIELD, MA 01201
413-443-3537

Design Group, Inc.
Civil Engineers' Surveyors' Consultants

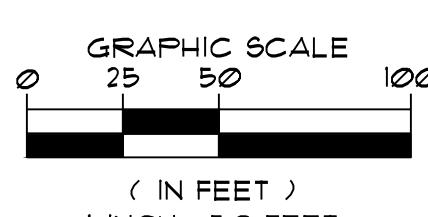
2 FEDERICO DRIVE • PITTSFIELD, MASSACHUSETTS 01201 • (413) 443-3537

PLAN DESCRIPTION:
COVER PAGE & KEY MAP

SK DESIGN GROUP PROJECT #: 220051



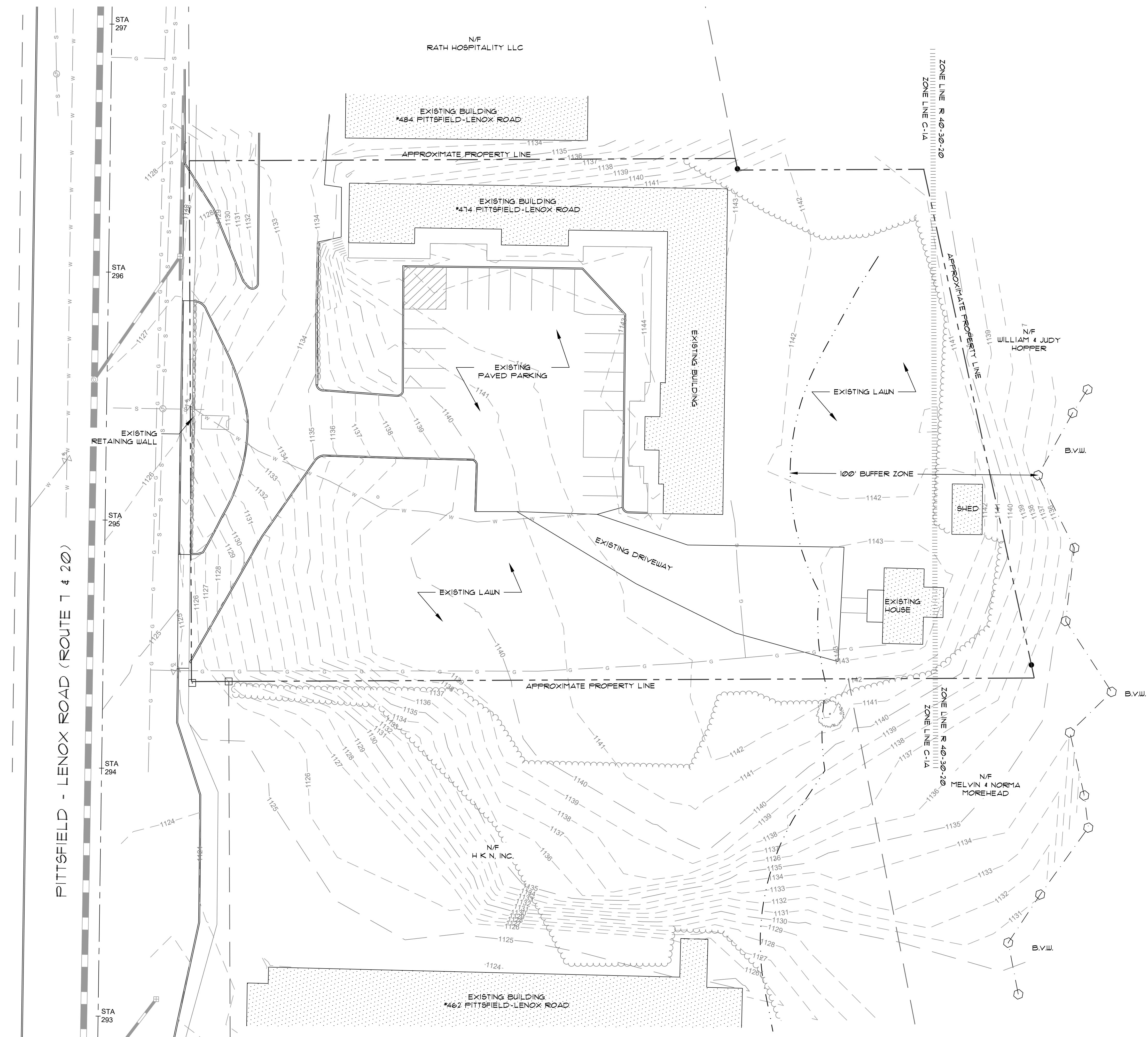
REVISION:



(IN FEET)

1 INCH = 50 FEET

DRAWN BY:	CHECKED BY:
AML	JMS II
ORIG. DATE:	SHEET NO.
NOVEMBER 10, 2022	1
ISSUED FOR:	OF
PERMIT	10
SCALE:	AS NOTED

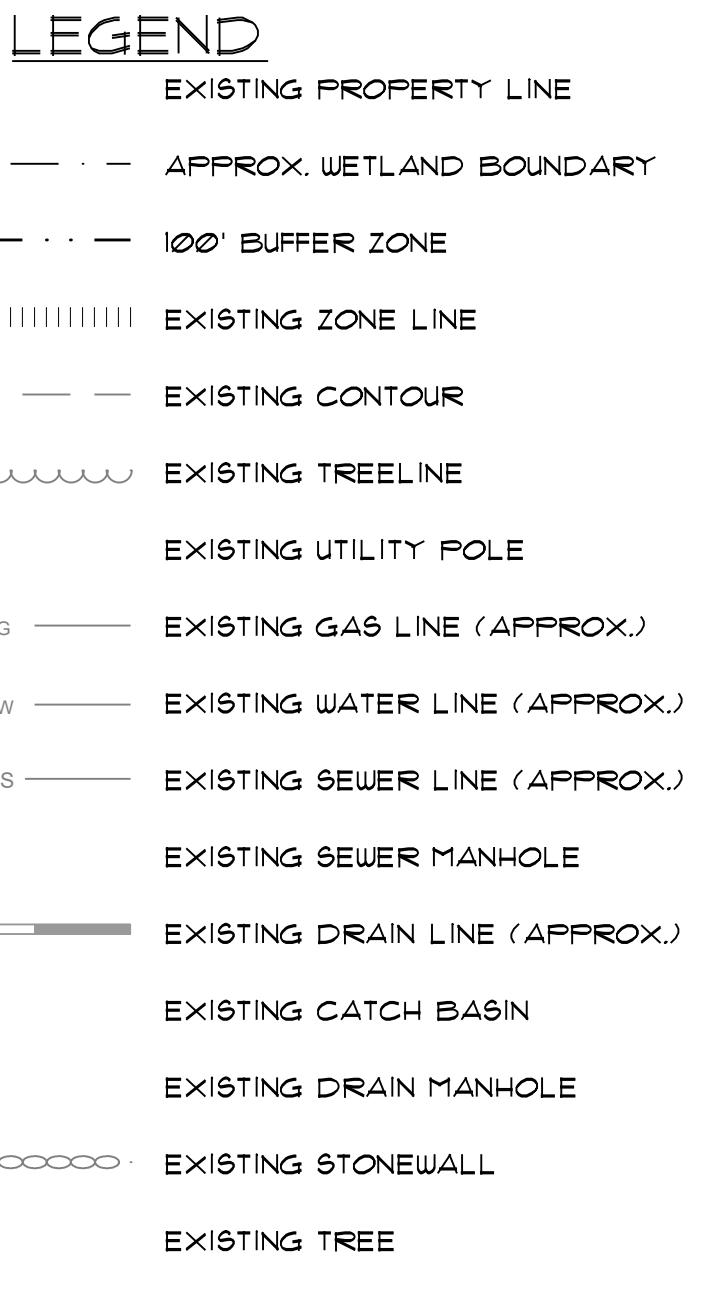


1 SITE PLAN

SCALE: 1"=20'

GRAPHIC SCALE
(IN FEET)
1 INCH = 20 FEET

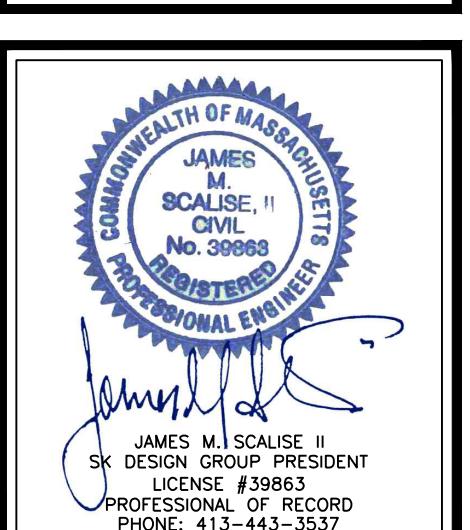
THESE PLANS ARE FOR
PERMITTING PURPOSES
ONLY
NOT FOR CONSTRUCTION



PLANS TO ACCOMPANY PERMIT APPLICATIONS
PREPARED FOR:
474 PITTSFIELD ROAD LLC
LOCATED AT:
474 PITTSFIELD-LENOX ROAD
LENOX, MASSACHUSETTS

Design Group, Inc.
Civil Engineers' Surveyors' Consultants
2 FENNER DRIVE • PITTSFIELD, MASSACHUSETTS 01201 • (413) 443-3537

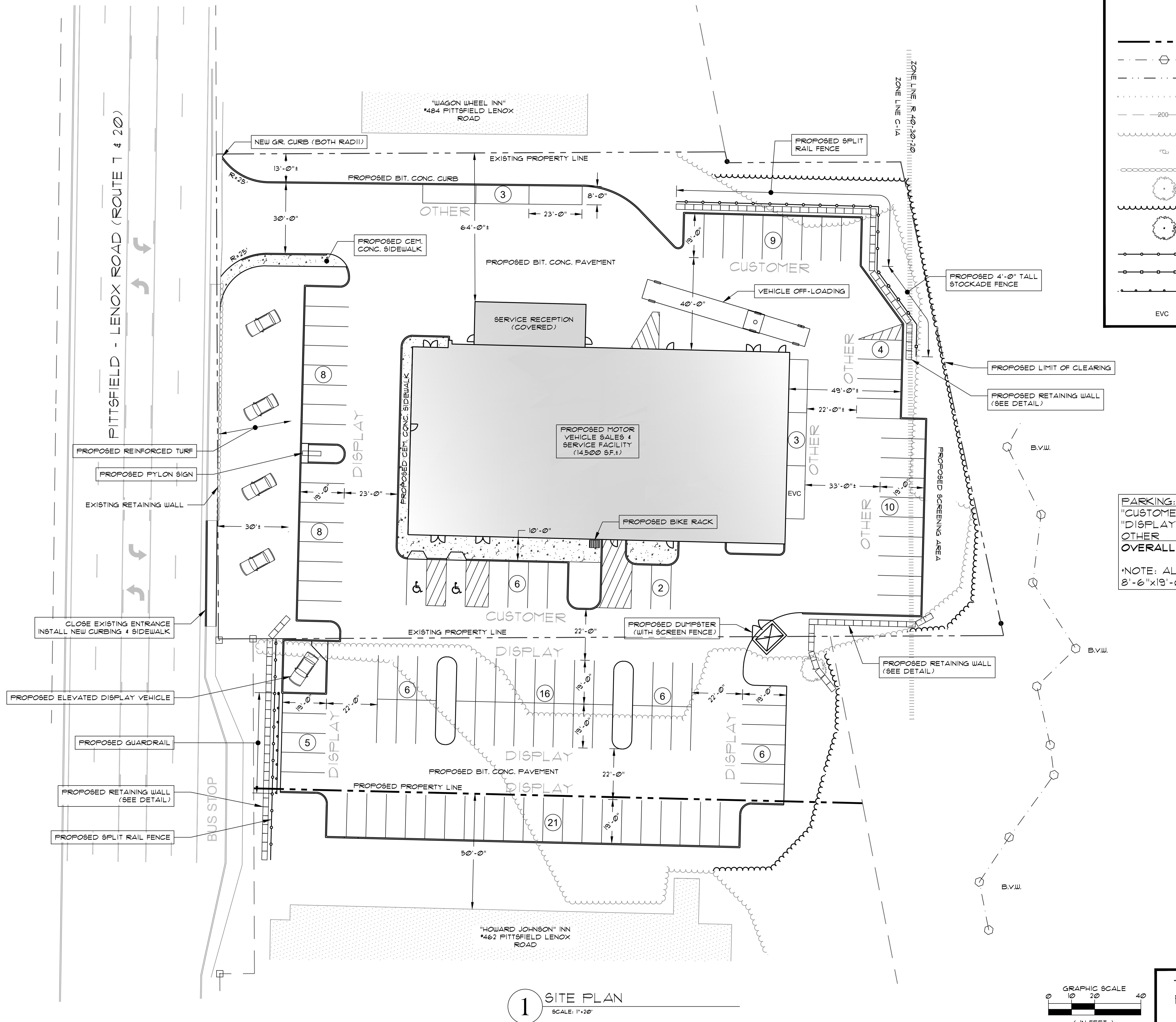
PLAN DESCRIPTION:
EXISTING CONDITIONS PLAN



REVISION:

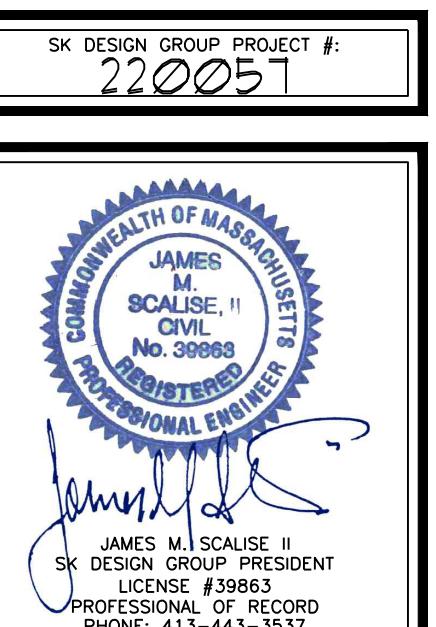
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ORIG. DATE: NOVEMBER 10, 2022	SHEET NO. 2
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SCALE: AS NOTED	1 INCH = 20 FEET

PLANS TO ACCOMPANY PERMIT APPLICATIONS
PREPARED FOR:
474 PITTSFIELD-LENOX ROAD
LOCATED AT:
474 PITTSFIELD ROAD
LENOX, MASSACHUSETTS

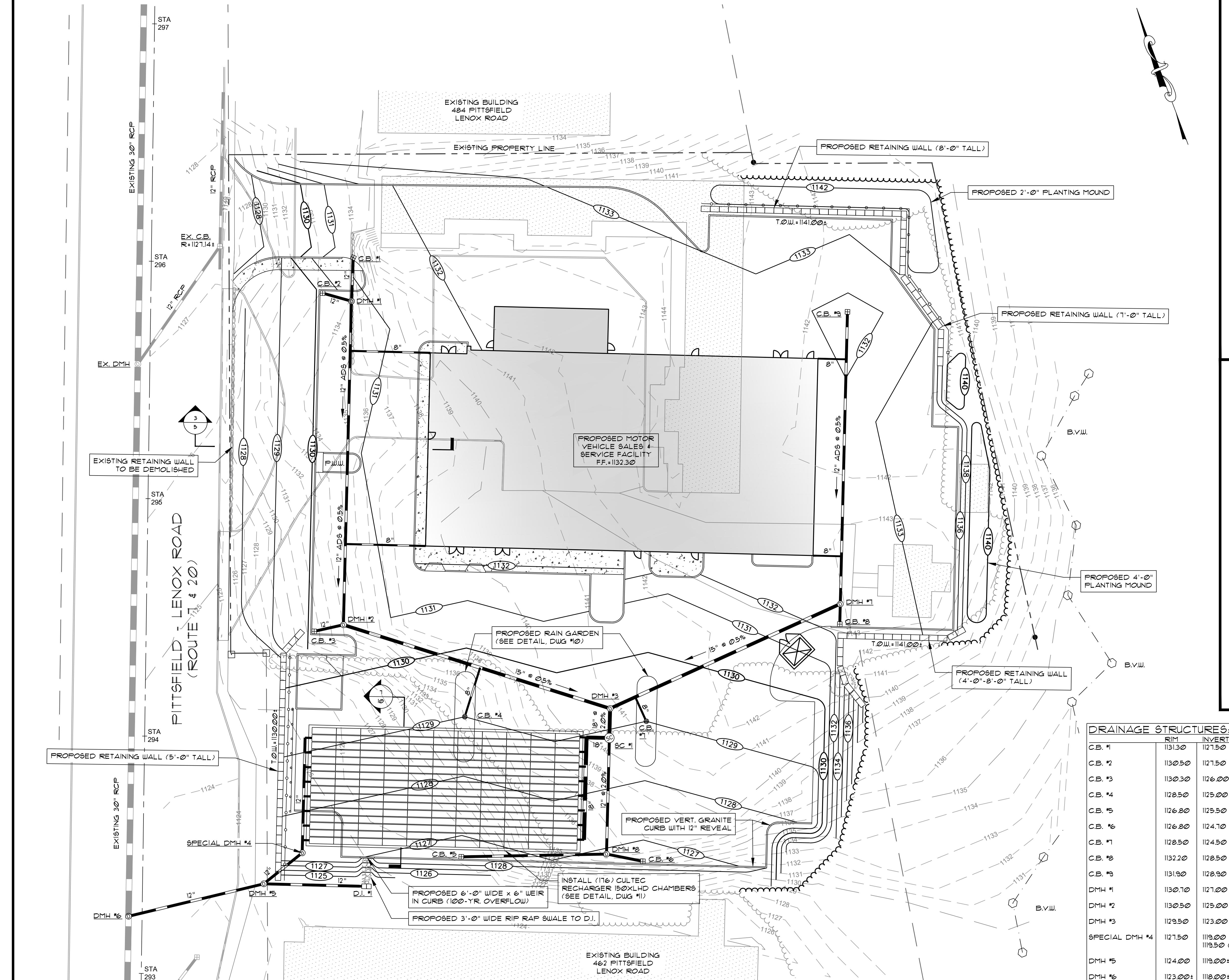


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Civil Engineers Surveyors Consultants
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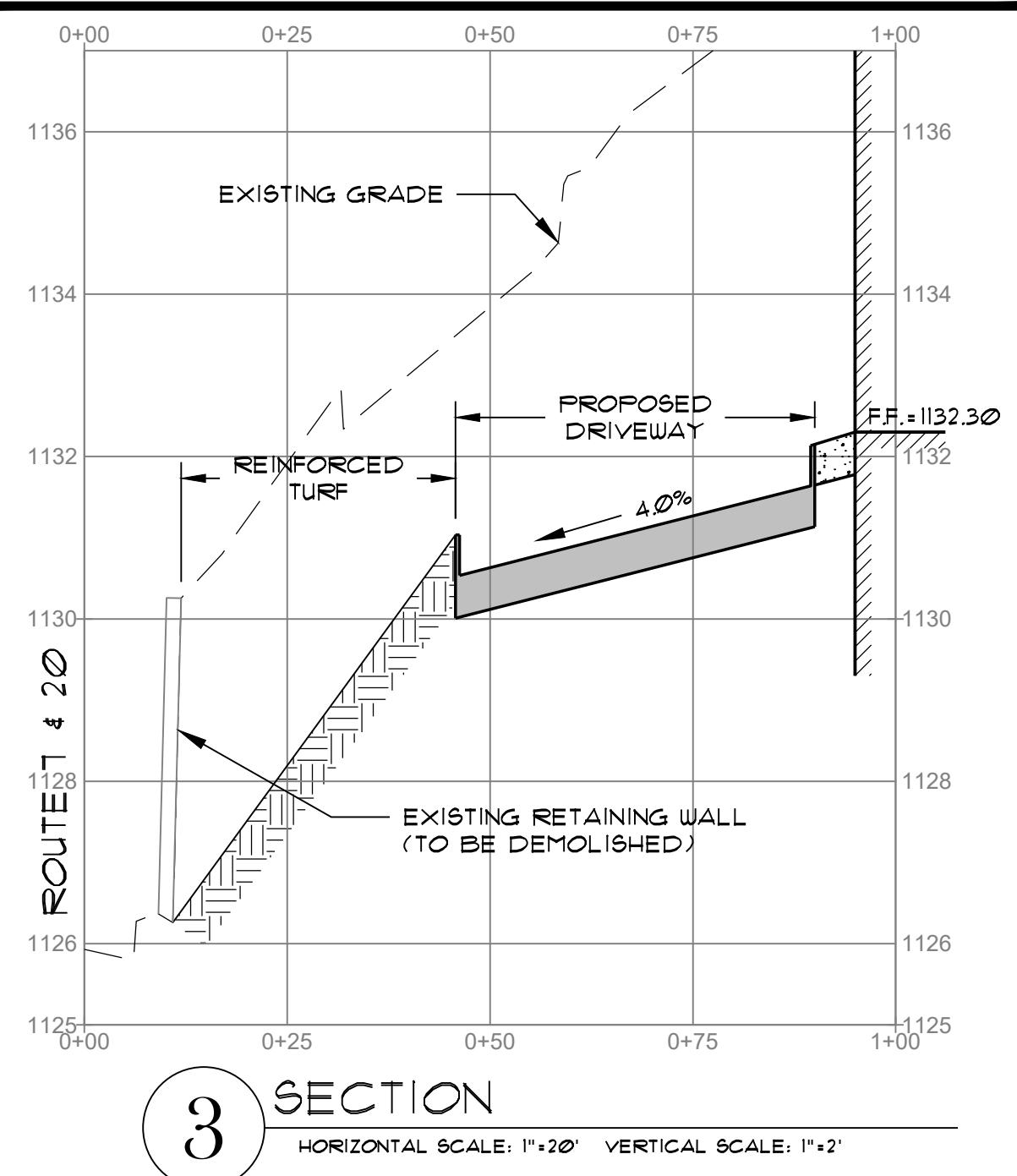
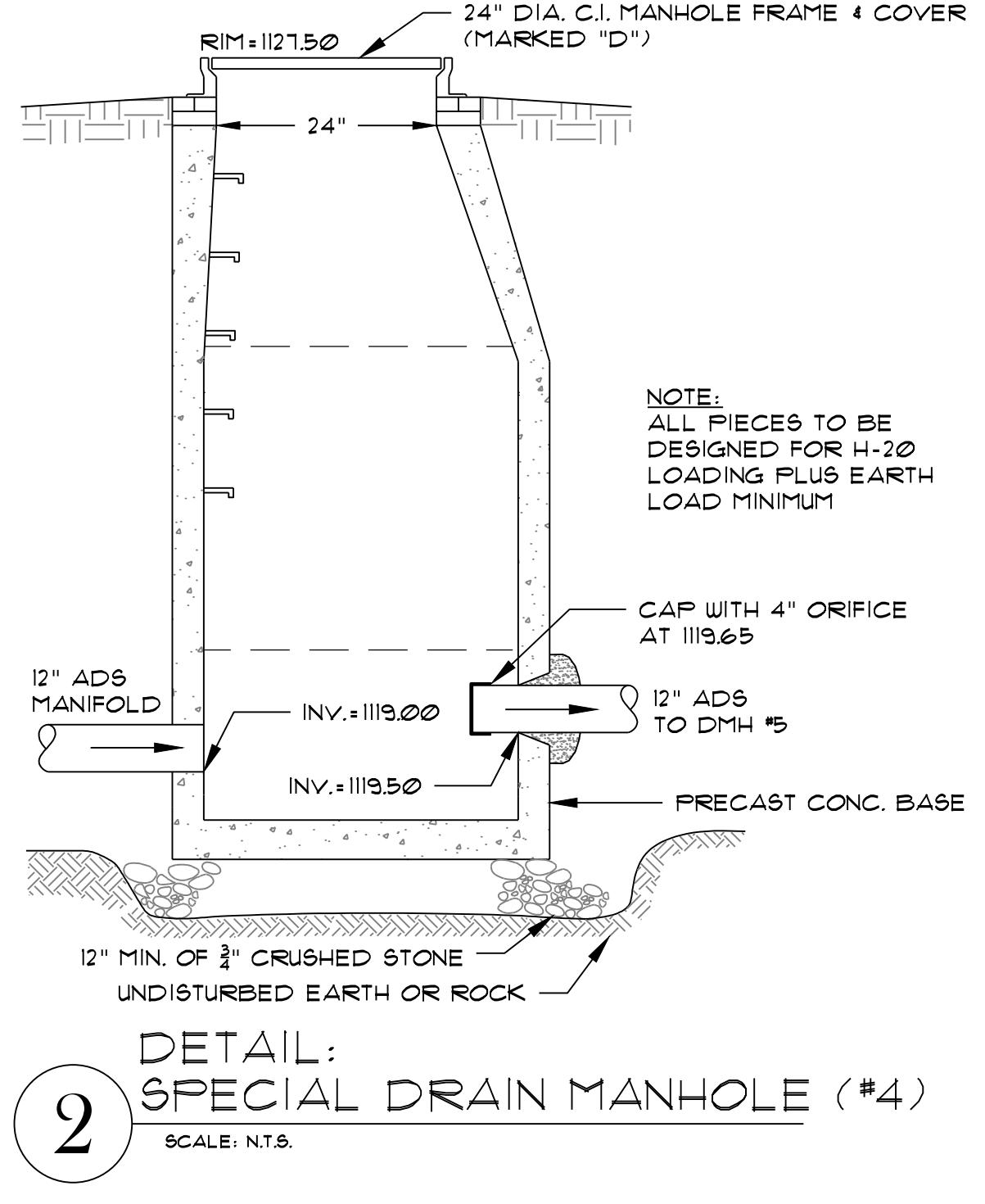
PLAN DESCRIPTION:
SITE PLAN



REVISION:			
DRAWN BY:	AML	CHECKED BY:	JMS II
ORIG. DATE:	NOVEMBER 10, 2022		
ISSUED FOR:	PERMIT		
SCALE:	1 INCH = 20 FEET		
AS NOTED			
3	OF	10	



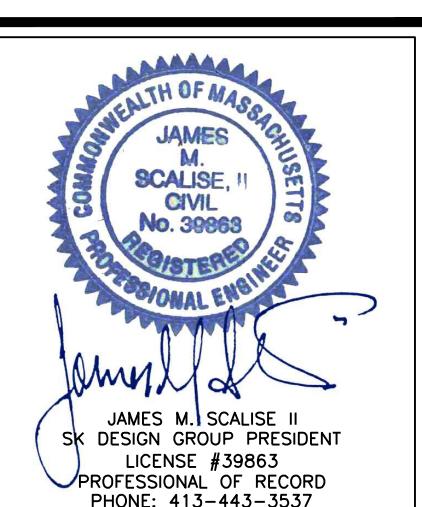
NOTE: ALL CONNECTIONS TO UTILITIES IN ROUTE 7 ARE SUBJECT TO MASSDOT APPROVAL.



DRAINAGE STRUCTURES:		
	RIM	INVERT
C.B. #1	1131.30	1121.50
C.B. #2	1130.50	1121.50
C.B. #3	1130.30	1126.00
C.B. #4	1128.50	1125.00
C.B. #5	1126.80	1125.00
C.B. #6	1126.80	1124.10
C.B. #7	1128.50	1124.50
C.B. #8	1132.20	1128.50
C.B. #9	1131.90	1128.50
DMH #1	1130.70	1121.00
DMH #2	1130.50	1125.00
DMH #3	1129.50	1123.00
SPECIAL DMH #4	1127.50	1119.50 (IN) 1119.50 (OUT)
DMH #5	1124.00	1119.00±
DMH #6	1123.00±	1118.00±
DMH #7	1132.20	1127.50
DMH #8	1127.00	1124.50
SC #1	1128.80	1124.00 (IN) 1123.50 (OUT)
D.I. #1	1125.00	1121.00

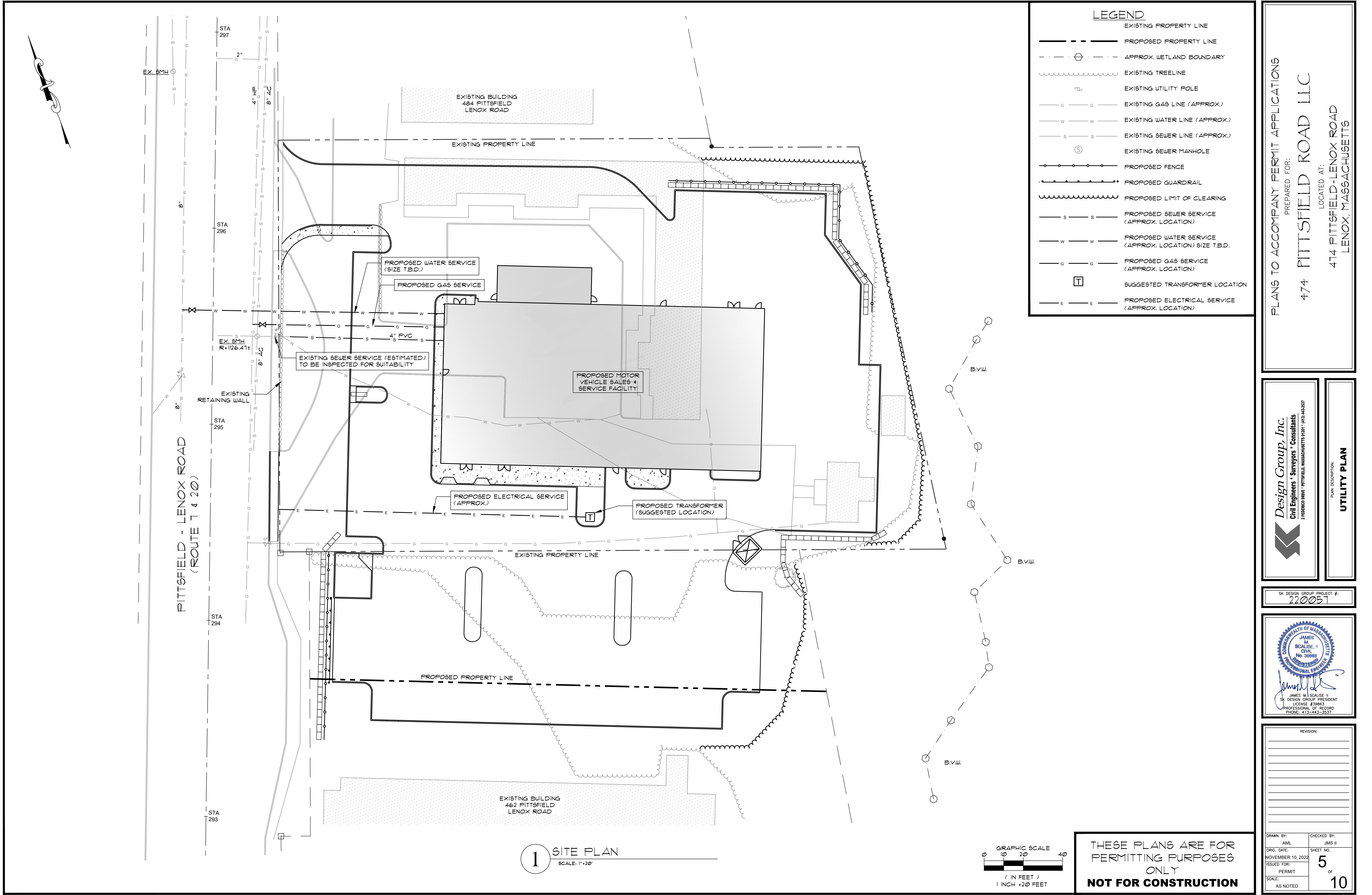
LEGEND	
EXISTING PROPERTY LINE	- - - - -
APPROX. WETLAND BOUNDARY	---
EXISTING CONTOUR	—
EXISTING TREELINE	~~~~~
EXISTING DRAIN LINE (APPROX.)	—
EXISTING CATCH BASIN	□
EXISTING DRAIN MANHOLE	○
PROPOSED FENCE	—○—○—○—
PROPOSED GUARDRAIL	—○—○—○—○—
PROPOSED LIMIT OF CLEARING	~~~~~
PROPOSED CONTOUR (MINOR)	—○—○—○—○—
PROPOSED CONTOUR (MAJOR)	—○—○—○—○—○—
PROPOSED DRAIN	—
PROPOSED CATCHBASIN	□
PROPOSED DROP INLET	□□
PROPOSED DRAIN MANHOLE	○○
PROPOSED STORMCEPTOR	○○○
PROPOSED SPOT GRADE	×

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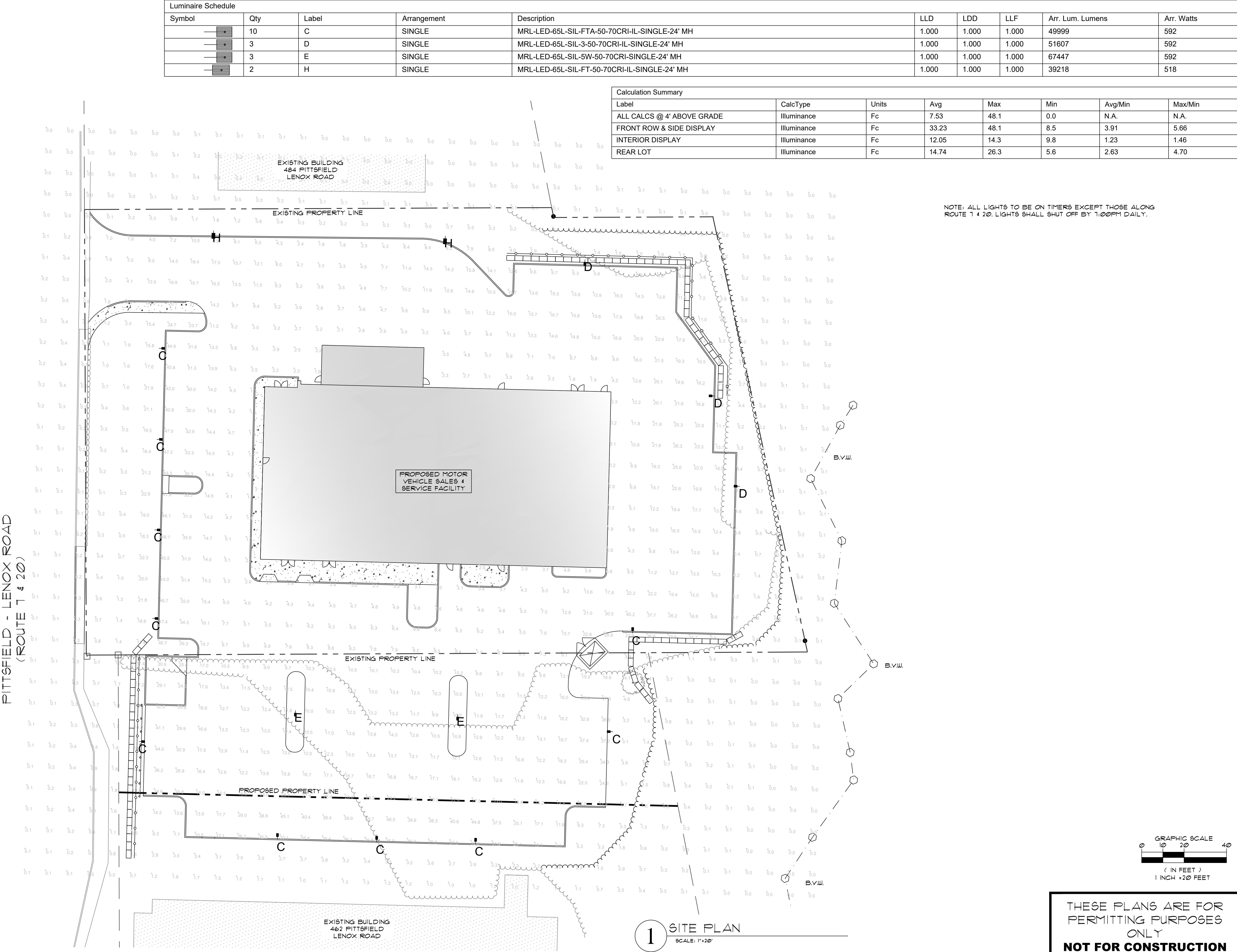
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DRAWN BY:	AML
CHECKED BY:	JMS II
ORIG. DATE:	NOVEMBER 10, 2022
ISSUED FOR:	PERMIT
SCALE:	1"=20'
AS NOTED	4 OF 10

PLANS TO ACCOMPANY PERMIT APPLICATIONS
PREPARED FOR:
474 PITTSFIELD-LENOX ROAD
LOCATED AT:
474 PITTSFIELD-LENOX ROAD
LENOX, MASSACHUSETTS



PITTSFIELD - LENOX ROAD

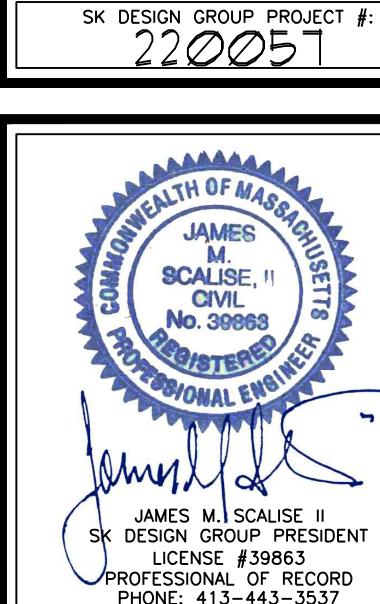
(ROUTE 7 & 20)



THESE PLANS ARE FOR
PERMITTING PURPOSES
ONLY
NOT FOR CONSTRUCTION

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PLAN DESCRIPTION:
LIGHTING PLAN

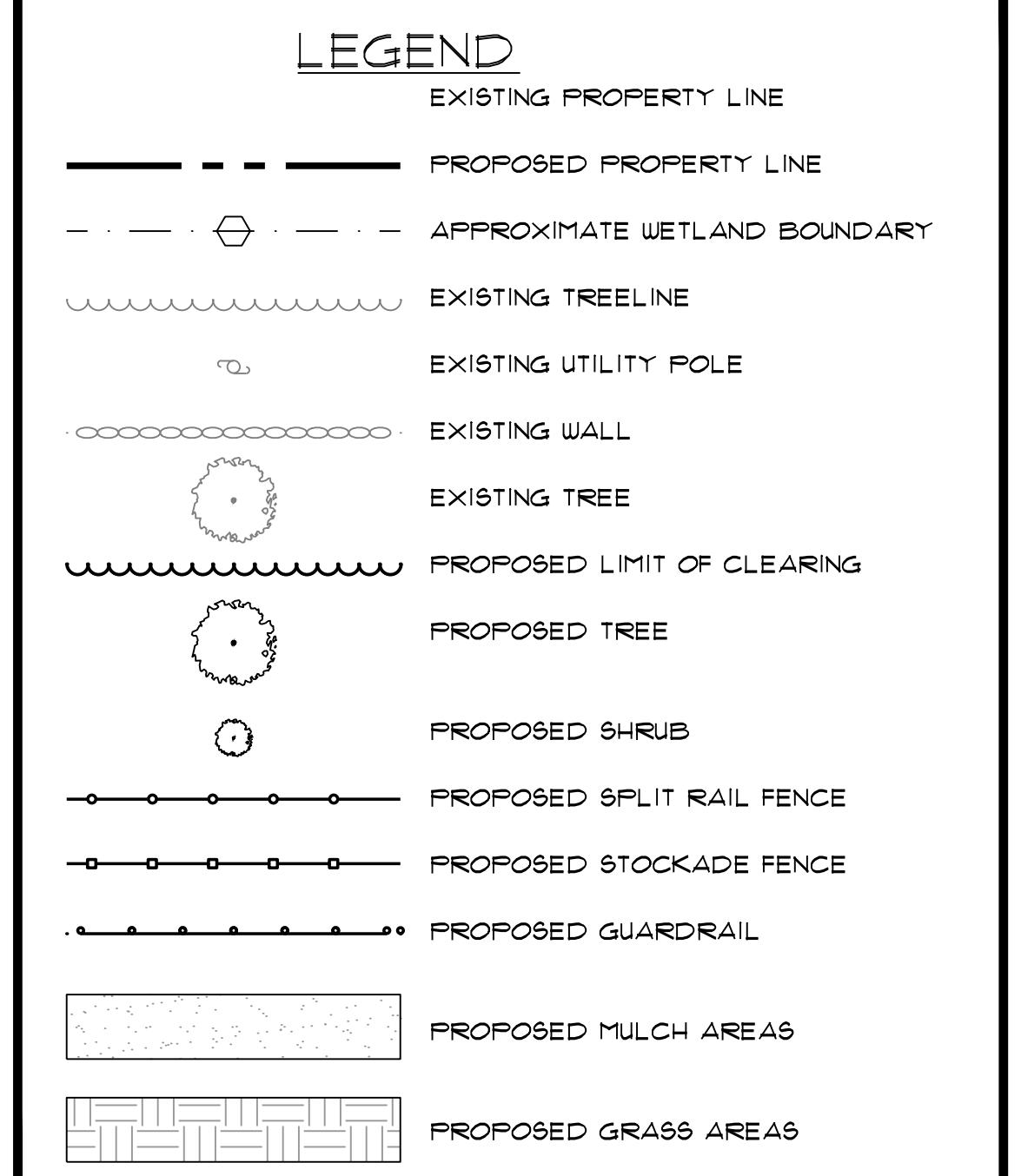
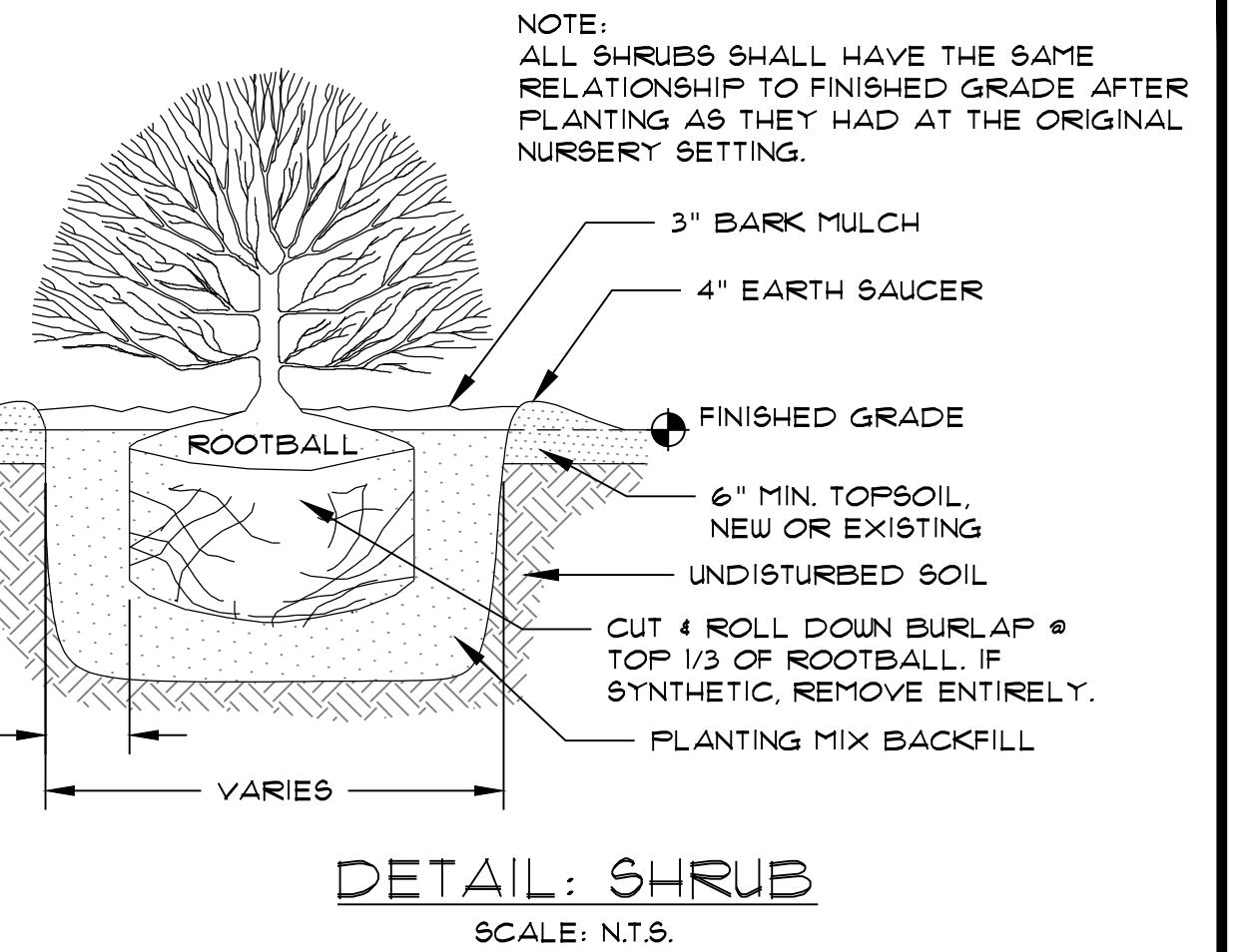
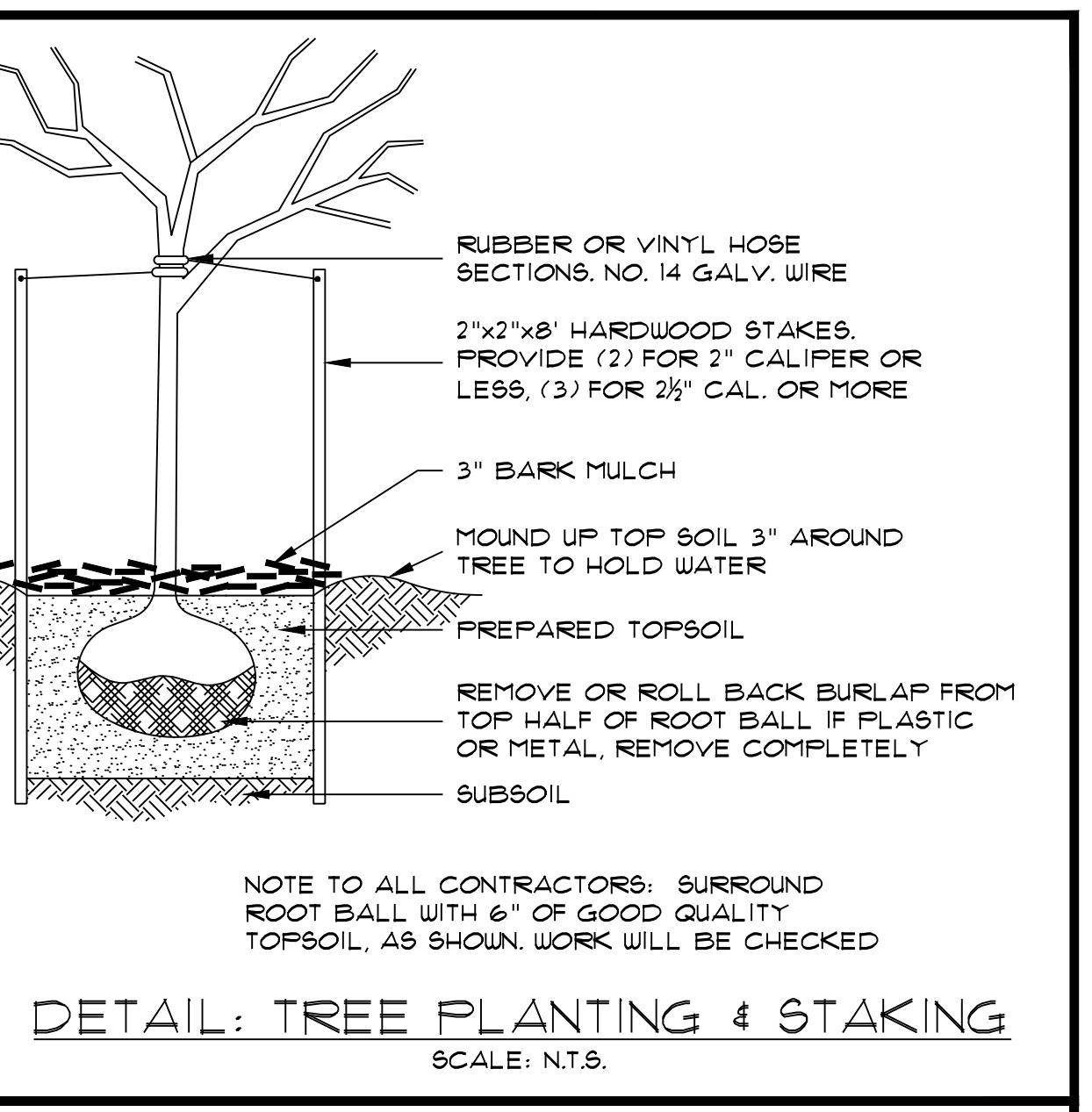
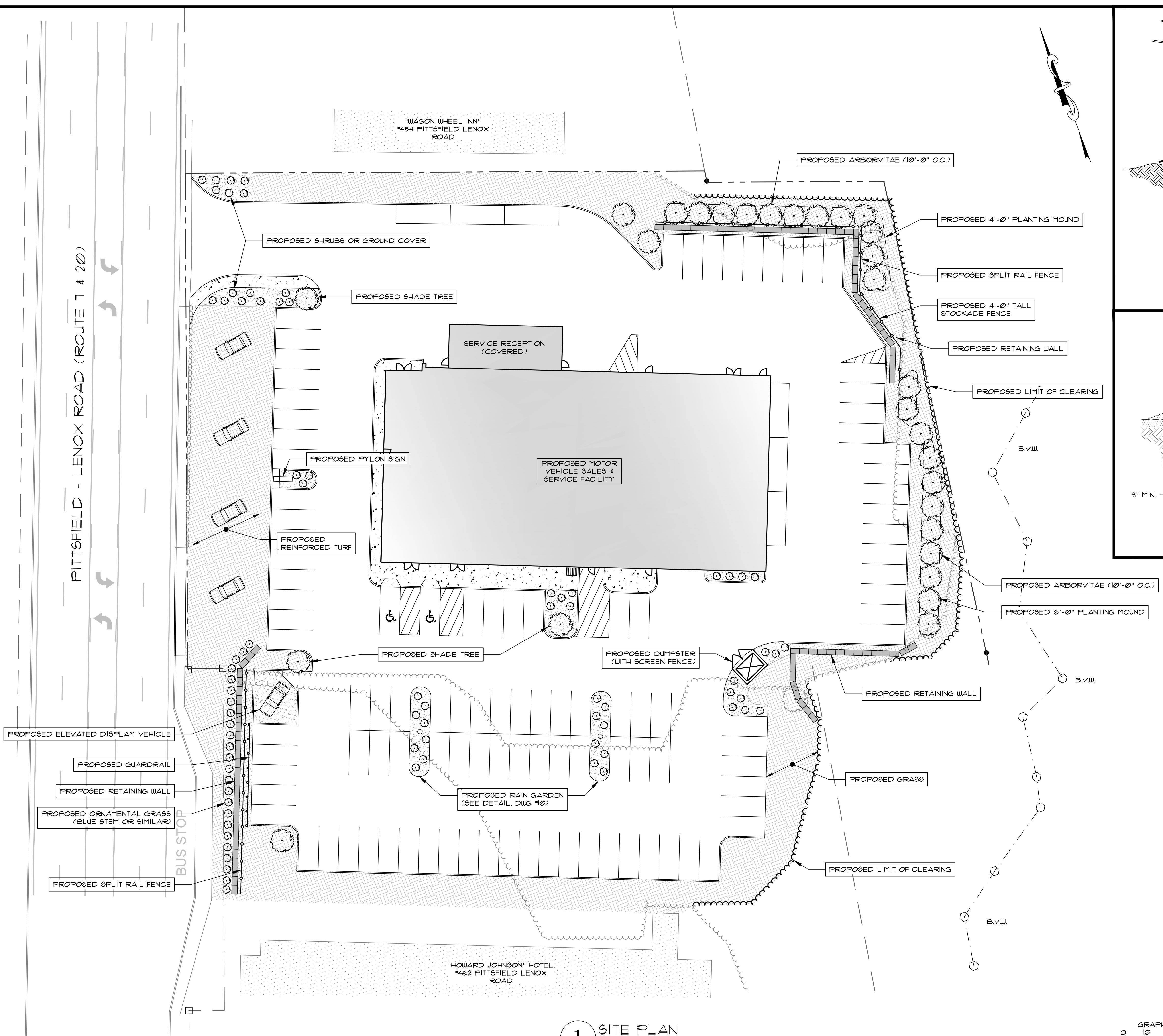


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ORIG. DATE: NOVEMBER 10, 2022
SHEET NO. 6 OF 10
ISSUED FOR: PERMIT
SCALE: AS NOTED

PLANS TO ACCOMPANY PERMIT APPLICATIONS

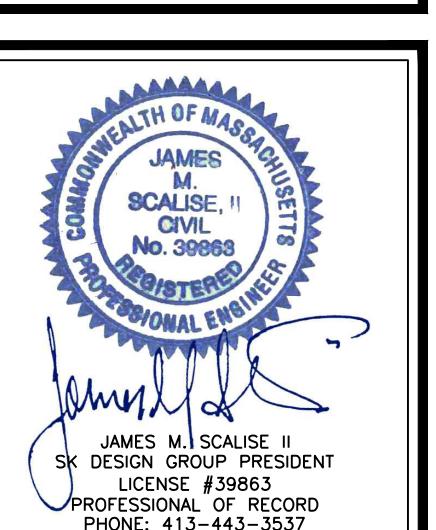
PREPARED FOR:

474 PITTSFIELD ROAD LLC
LOCATED AT:
474 PITTSFIELD-LENOX ROAD
LENOX, MASSACHUSETTS



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PLAN DESCRIPTION:
LANDSCAPING PLAN

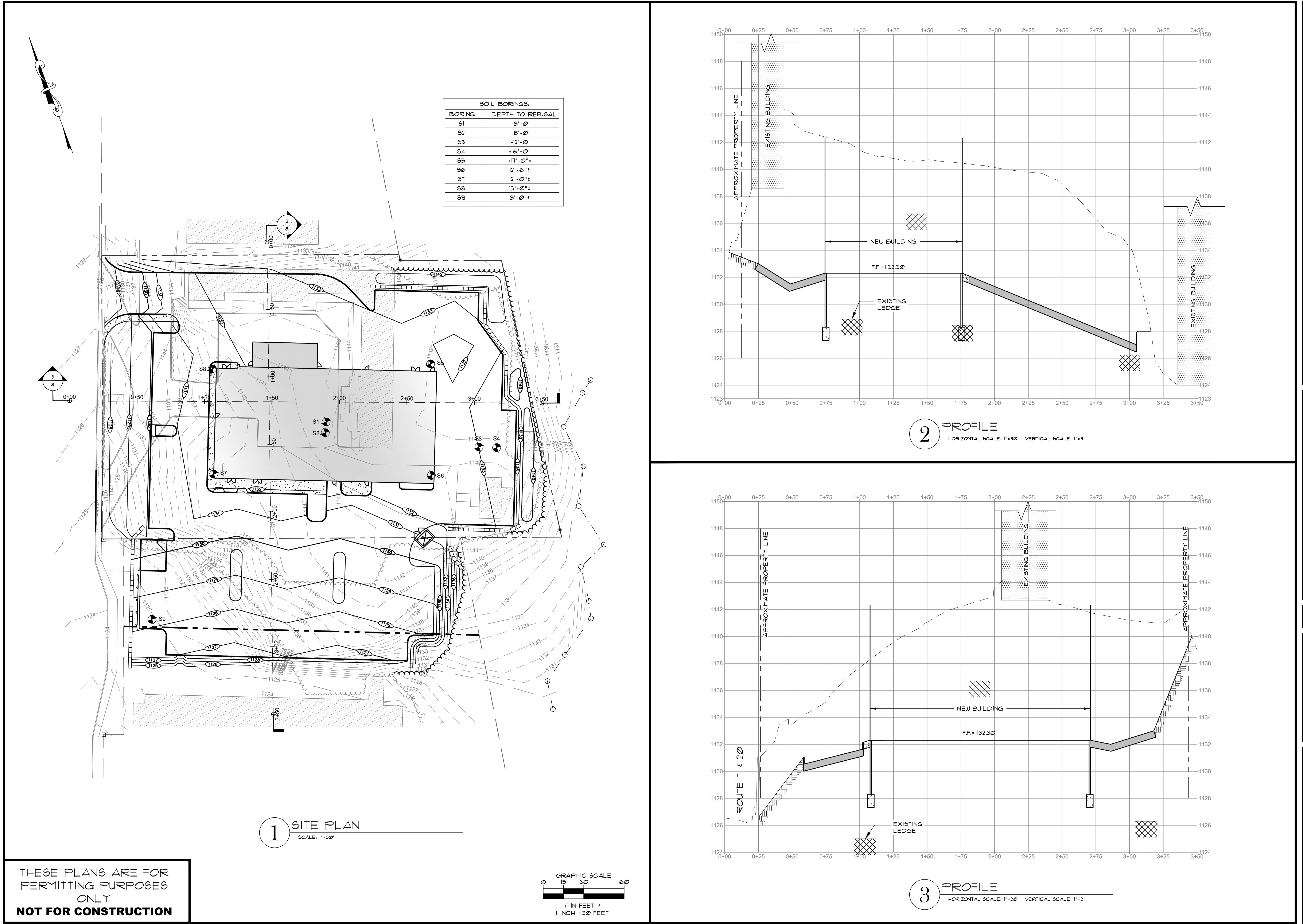


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7 OF 10

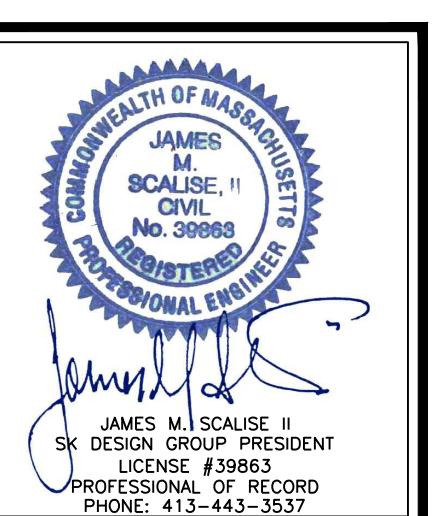
THESE PLANS ARE FOR PERMITTING PURPOSES ONLY NOT FOR CONSTRUCTION

PLANS TO ACCOMPANY PERMIT APPLICATIONS
PREPARED FOR:
LOCATED AT:
474 PITTSFIELD ROAD
LENOX, MASSACHUSETTS



PLANS TO ACCOMPANY PERMIT APPLICATIONS
PREPARED FOR:
LOCATED AT:
474 PITTSFIELD-LENOX ROAD
LENOX, MASSACHUSETTS

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PLAN DESCRIPTION:
SITE PLAN & PROFILES



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ORIG. DATE: NOVEMBER 10, 2022
SHEET NO. 8 OF 10
ISSUED FOR: PERMIT
SCALE: AS NOTED

EROSION CONTROL NOTES

1. ALL EROSION CONTROL FENCES ARE TO BE INSTALLED AND FULLY OPERATIONAL PRIOR TO ANY CLEARING AND ARE TO BE MAINTAINED THROUGHOUT CONSTRUCTION UNTIL PERMANENT GROUND COVER IS ESTABLISHED & APPROVED.

2. ALL SLOPES SHALL BE SODDED, HYDRO-SEEDED OR APPLIED WITH GROUND COVER SPECIFIED AS SOON AS CONSTRUCTION PHASES PERMIT.

3. CONTRACTOR IS RESPONSIBLE FOR DAILY INSPECTIONS AND MAINTENANCE OF THE EROSION CONTROLS THROUGH CONSTRUCTION AND UNTIL ESTABLISHMENT OF PERMANENT GROUND COVER. SEDIMENT SHALL BE REMOVED AS NECESSARY TO INSURE EFFICIENT OPERATION OF THE FACILITIES DURING AND AFTER CONSTRUCTION.

4. CONTRACTOR IS RESPONSIBLE FOR MONITORING DOWNSTREAM CONDITIONS THROUGHOUT THE CONSTRUCTION PERIOD AND CLEARING ANY DEBRIS AND SEDIMENT CAUSED BY THE CONSTRUCTION.

5. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED BY THE ENGINEER OR REGULATING AGENCIES.

6. THE SOIL EROSION SEDIMENT CONTROL PROCEDURES AND DETAILS AS SHOWN SHALL BE FOLLOWED AND INSTALLED IN A MANNER SO AS TO MINIMIZE EROSION OF THE DISTURBED AREAS AND PREVENT SEDIMENT FROM LEAVING THE SITE, OR ENTERING THE ADJACENT WETLANDS.

7. THE CONTRACTOR WILL BE REQUIRED TO INCORPORATE ALL TEMPORARY AND PERMANENT EROSION CONTROL MEASURES INTO THE PROJECT AT THE EARLIEST PRACTICABLE TIME DURING CONSTRUCTION. THE EROSION CONTROL MEASURES DETAILED HEREON SHALL BE CONTINUED UNTIL THE PERMANENT DRAINAGE FACILITIES HAVE BEEN CONSTRUCTED AND UNTIL THE GRASS OR SURFACE TREATMENT ON SHOULDERS AND SLOPES ARE SUFFICIENTLY ESTABLISHED TO BE AN EFFECTIVE EROSION DETERENT OR AS DIRECTED BY THE ENGINEER, THE SEDIMENT REMOVED FROM THE CONTROL STRUCTURES SHALL BE EVENLY DISTRIBUTED OUTSIDE CONSTRUCTION LIMITS AT A LOCATION ACCEPTABLE TO THE OWNER/ENGINEER.

8. ANY DISTURBED EARTH AREAS THAT SHALL BE IDLE FOR 30 DAYS OR LONGER, SHALL HAVE TEMPORARY GRASSING APPLIED.

9. PRIOR TO ANY OTHER CONSTRUCTION, A STABILIZED CONSTRUCTION ENTRANCE SHALL BE CONSTRUCTED AT THE ENTRY TO THE SITE

10. ALL LOAM STRIPPED FROM THE SITE SHALL BE STOCKPILED OFF SITE.

11. ADDITIONAL EROSION CONTROL DEVICES SHALL BE INSTALLED IMMEDIATELY AFTER GROUND DISTURBANCE OCCURS. THE LOCATION OF SOME OF THE EROSION CONTROL DEVICES MAY HAVE TO BE ALTERED FROM THAT SHOWN ON THE APPROVED PLANS IF DRAINAGE PATTERNS DURING CONSTRUCTION ARE DIFFERENT FROM THE FINAL PROPOSED DRAINAGE PATTERNS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ACCOMPLISH EROSION CONTROL FOR ALL DRAINAGE PATTERNS CREATED AT VARIOUS STAGES DURING CONSTRUCTION. ANY DIFFICULTY IN CONTROLLING EROSION DURING ANY PHASE OF CONSTRUCTION SHALL BE REPORTED TO THE ENGINEER & CON. COMM. IMMEDIATELY. IN NO CASE SHALL LESS EROSION CONTROLS THAN APPROVED BE PERMITTED.

12. ALL OPEN SWALES MUST BE STABILIZED W/ MULCH & SEED OR RIP-RAP IMMEDIATELY AFTER CONSTRUCTION.

13. AT THE TIME WHEN SITE PREPARATION FOR PERMANENT VEGETATIVE STABILIZATION IS TO BE ESTABLISHED, ANY SOIL THAT WILL NOT PROVIDE A SUITABLE ENVIRONMENT TO SUPPORT ADEQUATE VEGETATIVE GROUND COVER SHALL BE REMOVED OR TREATED IN SUCH A WAY THAT WILL PERMANENTLY ADJUST THE SOIL CONDITIONS AND RENDER IT SUITABLE FOR VEGETATIVE GROUND COVER.

14. IF THE REMOVAL OR TREATMENT OF THE SOIL WILL NOT PROVIDE SUITABLE CONDITIONS, ANOTHER MEANS OF PERMANENT GROUND STABILIZATION WILL HAVE TO BE EMPLOYED.

15. STRAW BALES SHALL BE REPLACED EVERY 3 MONTHS TO MAINTAIN THEIR EFFECTIVENESS.

16. CHEMICALS, FERTILIZERS, PESTICIDES, AND/OR HERBICIDES SHALL NOT BE USED ON SITE.

17. WATER SHALL BE USED TO MAINTAIN DUST CONTROL DURING CONSTRUCTION.

LEGEND

EXISTING PROPERTY LINE

PROPOSED PROPERTY LINE

APPROX. WETLAND BOUNDARY

EXISTING CONTOUR

EXISTING TREELINE

EXISTING UTILITY POLE

EXISTING GAS LINE (APPROX.)

EXISTING WATER LINE (APPROX.)

EXISTING SEWER LINE (APPROX.)

EXISTING SEWER MANHOLE

EXISTING DRAIN LINE (APPROX.)

EXISTING CATCH BASIN

EXISTING DRAIN MANHOLE

PROPOSED CONTOUR

PROPOSED DRAIN

PROPOSED CATCH BASIN

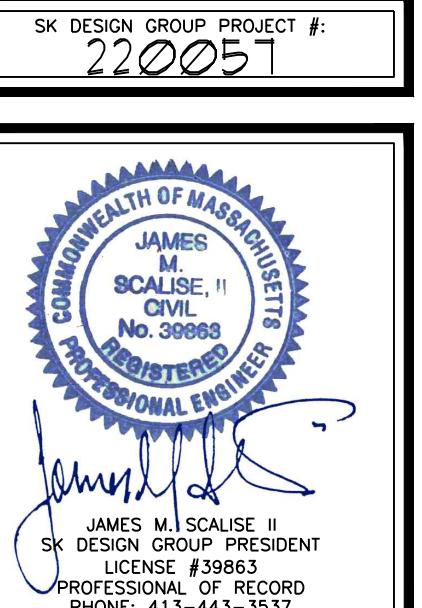
PROPOSED LIMIT OF CLEARING

PROPOSED SILT FENCE

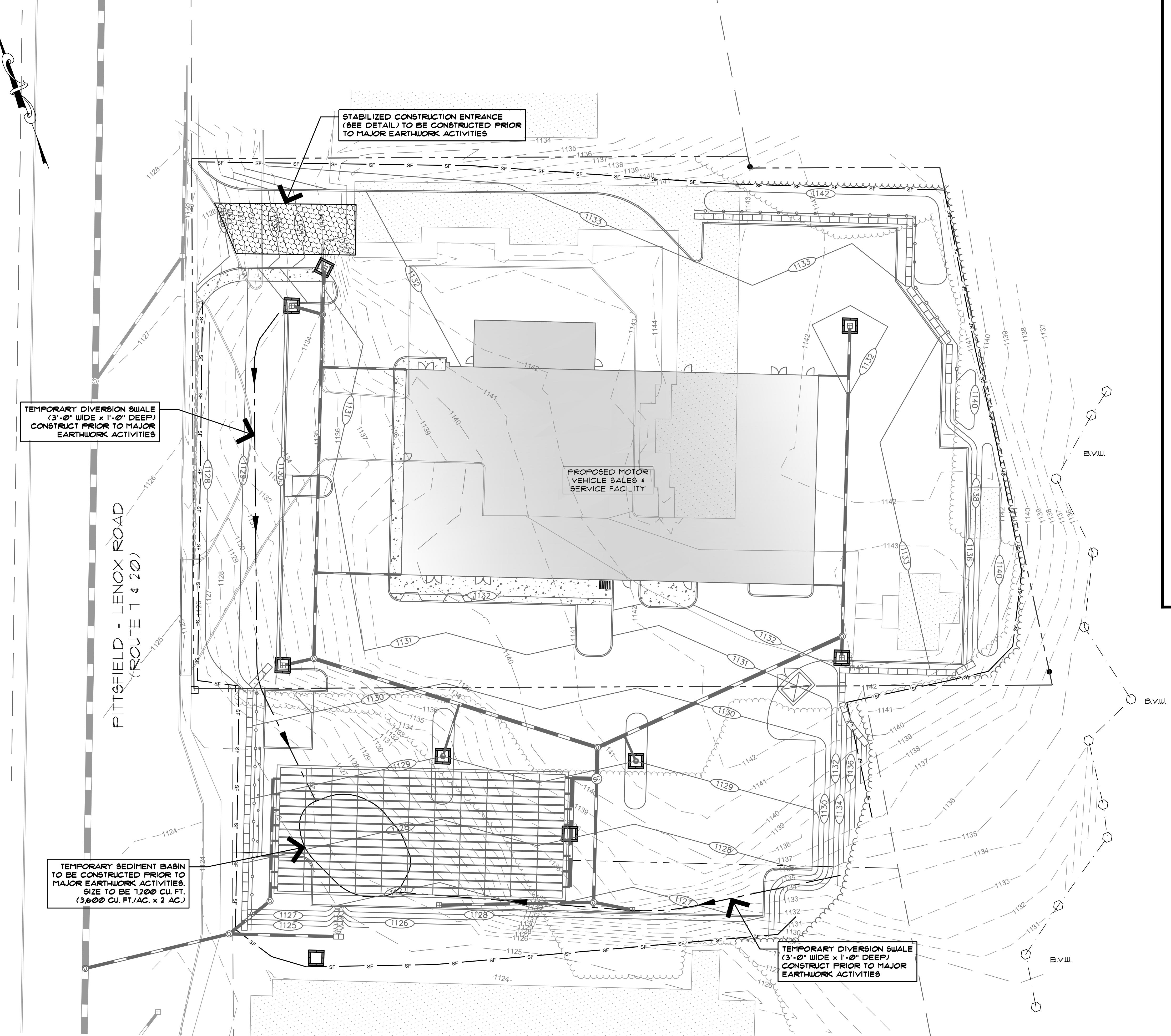
PROPOSED TEMPORARY DIVERSION SWALE
(UNTIL SITE IS STABILIZED)

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PLAN DESCRIPTION:



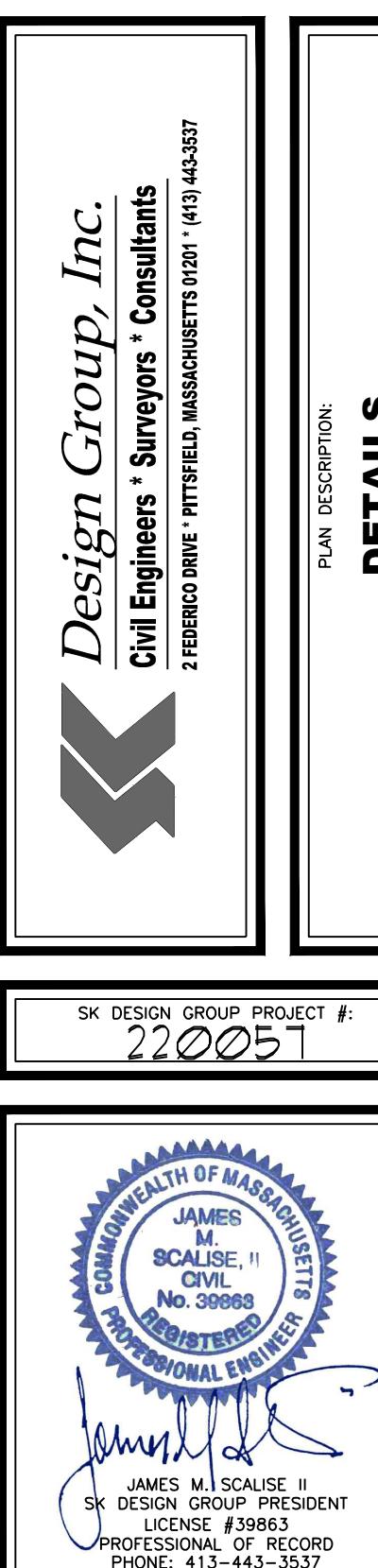
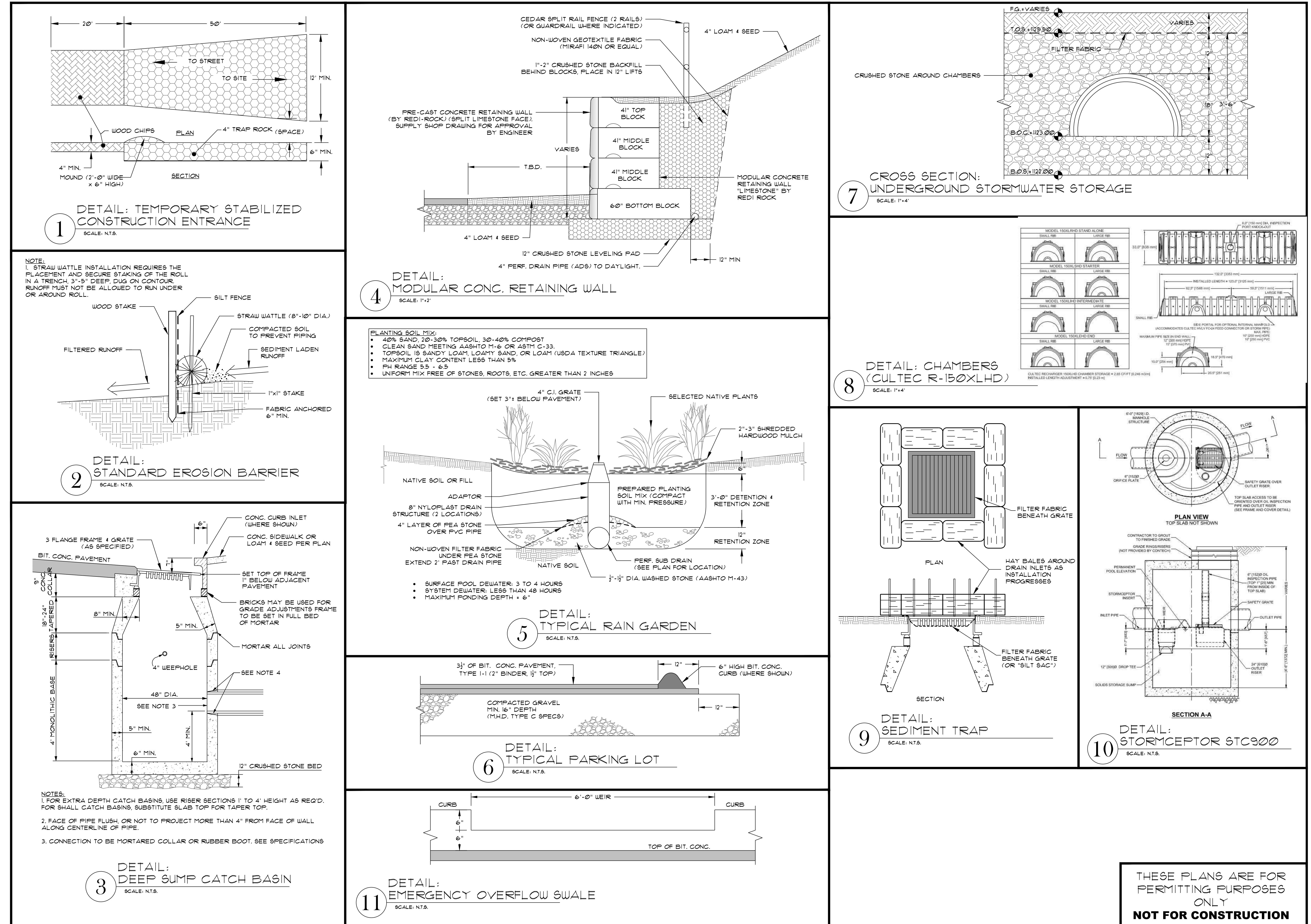
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SK DESIGN GROUP PROJECT #: 220051			
DRAWN BY: AML CHECKED BY: JMS II ORIG. DATE: NOVEMBER 10, 2022 SHEET NO. 9 OF 10 ISSUED FOR: PERMIT SCALE: AS NOTED			



GRAPHIC SCALE 0 10 20 40 (IN FEET) 1 INCH = 20 FEET
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PLANS TO ACCOMPANY PERMIT APPLICATIONS
PREPARED FOR:
474 PITTSFIELD ROAD LLC
LOCATED AT:
474 PITTSFIELD-LENOX ROAD
LENOX, MASSACHUSETTS

474 PITTSFIELD ROAD LLC
LOCATED AT:
474 PITTSFIELD-LENOX ROAD
LENOX, MASSACHUSETTS



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ORIG. DATE: NOVEMBER 10, 2022 SHEET NO. 10

ISSUED FOR: PERMIT

SCALE: AS NOTED

474 PITTSFIELD-LENOX ROAD
LENOX, MASSACHUSETTS

Attachment E

Stormwater Analysis (separate booklet)