

2021 MAY 20 PH 2:18

TOWN OF NEEDHAM
MASSACHUSETTS



500 Dedham Avenue
Needham, MA 02492
781-455-7550

PLANNING BOARD

APPLICATION FOR SITE PLAN REVIEW

Project Determination: (circle one)

Major Project

Minor Project

This application must be completed, signed, and submitted with the filing fee by the applicant or his representative in accordance with the Planning Board's Rules as adopted under its jurisdiction as a Special Permit Granting Authority. Section 7.4 of the By-Laws.

Location of Property 1688 Central Avenue, Needham, MA 02492
Name of Applicant Needham Enterprises, LLC
Applicant's Address 105 Chestnut Street, Suite 28, Needham, MA 02492
Phone Number 781-444-8060

Applicant is: Owner X Tenant _____
Agent/Attorney _____ Purchaser _____

Property Owner's Name Needham Enterprises, LLC
Property Owner's Address 105 Chestnut Street, Suite 28, Needham, MA 02492
Telephone Number 781-444-8060

Characteristics of Property: Lot Area 3.352 Present Use Vacant Building
Map # 199 Parcel # 213 Zoning District SRA

Description of Project

The proposed project is to demolish the existing house and garage at the property, but to leave the existing barn. A new building of 9,966 square feet of gross floor area will be constructed, to house a child care facility. A new parking area that includes 30 parking spaces will also be constructed.

All of the foregoing is more particularly shown on the plans previously filed with the Town.

Signature of Applicant (or representative)

Address if not applicant Frieze Cramer, et al. 60 Walnut St., Wellesley, MA 02481

Telephone # 781-943-4030

Owner's permission if other than applicant N/A

SUMMARY OF PLANNING BOARD ACTION

Received by Planning Board [Signature] Date 5/20/21

Hearing Date _____ Parties of Interest Notified of Public Hearing _____

Decision Required by _____ Decision/Notices of Decision sent _____

Granted _____

Denied _____

Fee Paid _____

Fee Waived _____

Withdrawn _____

NOTE: Reports on Minor Projects must be issued within 35 days of filing date.

FRIEZE CRAMER ROSEN & HUBER LLP
C O U N S E L L O R S A T L A W

60 WALNUT STREET, WELLESLEY, MASSACHUSETTS 02481
781-943-4000 • FAX 781-943-4040

EVANS HUBER
781-943-4043
EH@I28LAW.COM

May 14, 2021

Via Electronic Mail
Members of the
Needham Planning Board

And

Lee Newman
Director of Planning and Community Development
Public Services Administration Building
500 Dedham Ave
Needham, MA 02492

Re: 1688 Central Avenue, Needham

Dear Planning Board Members and Ms. Newman:

I am writing on behalf of Needham Enterprises LLC. Following discussions with Ms. Newman and Town counsel, Christopher Heep, Needham Enterprises hereby withdraws, without prejudice, the pending Application for Minor Project Site Plan Review for the Project at 1688 Central Avenue, currently scheduled for hearing on May 18, 2021.

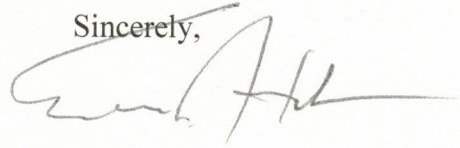
Needham Enterprises is doing so based on the following express understandings with the Town:

1. Needham Enterprises will be submitting electronically, by May 20, an application for major project site plan review. However, it is expressly understood and agreed that no special permit pursuant to Section 7.4 of the Bylaw will be required for this project, nor will the review criteria normally applicable to major project site plan review be applicable in this case. Instead, the Board's jurisdiction and authority will be limited to the criteria enumerated in M.G. L. c. 40A, Section 3.
2. The matter will be scheduled for hearing on June 15, 2021.
3. There will be no need to re-file with the Town the materials relating to the project previously filed on behalf of the applicant.

Needham Planning Board
May 14, 2021
Page 2

If you have any questions, please do not hesitate to contact me.

Sincerely,

A handwritten signature in dark ink, appearing to read 'Evans Huber', with a long horizontal flourish extending to the right.

Evans Huber

**TOWN OF NEEDHAM
MASSACHUSETTS**

500 Dedham Ave
Needham, MA 02192
781-455-7550
March 11, 2021

PLANNING BOARD

APPLICATION FOR SITE PLAN REVIEW

Project Determination: ☐ Major Project
 ☒ Minor Project

This application must be completed, signed, and submitted with the filing fee by the applicant or his representative in accordance with the Planning Board's Rules as adopted under its jurisdiction as a Special Permit Granting Authority pursuant to Section 7.4 of the By-laws.

Location of Property: 1688 Central Avenue, Needham, MA 02492

Name of Applicant: Needham Enterprises, LLC

Address: 105 Chestnut Street, Suite 28, Needham, MA 02492 Tel.#: (781) 444-8060

Applicant is Owner ☒ Tenant ☐

Property Owner's Name: Needham Enterprises, LLC

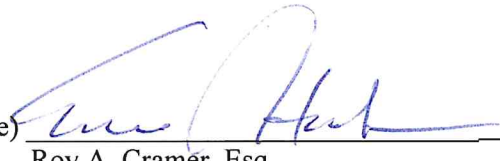
Address: 105 Chestnut Street, Suite 28, Needham, MA 02492 Tel.#: (781) 444-8060

Characteristics of Property: Lot Area: 3.352 acres Present Use: Vacant Building

Map #: 199 Parcel #: 213 Zoning District: SRA

Description of Project for Site Plan Review under Section 7.4. of the Zoning By-law:

See Exhibit A attached hereto.

Signature of Applicant (or his representative) 
Roy A. Cramer, Esq.
Evans Huber, Esq.

Address if not Applicant Frieze Cramer Rosen & Huber LLP
 60 Walnut Street, Wellesley, MA 02481
Tel. # 781 943 4030

Owner's permission if other than applicant N/A

By: _____

SUMMARY OF PLANNING BOARD ACTION

Received by Planning Board _____ Date _____

Hearing Date _____

Decision Required by _____ (date) Parties in Interest Notified
(90 days after hearing for special permit) of Public Hearing _____ (date)

Granted _____ (date) Decision and Notices of the
Decision sent _____ (date)

Denied _____ (date)

Fee Paid _____

Withdrawn _____ (date) Fee Waived _____

NOTE: Reports on Minor Projects must be issued within 35 days of filing date.

Exhibit A
Application for Minor Project Site Plan Review
Needham Enterprises LLC
Property at 1688 Central Avenue, Needham, MA

Description of Project for Minor Project Site Plan Review Under Section 7.4 of the Zoning By-Law

The proposed project is to demolish the existing house and garage at the property, but to leave the existing barn. A new building of 9,966 square feet of gross floor area will be constructed, to house a child care facility. A new parking area that includes 24 parking spaces will also be constructed.

All of the foregoing is more particularly shown on the plans filed herewith.

FRIEZE CRAMER ROSEN & HUBER LLP
C O U N S E L L O R S A T L A W

60 WALNUT STREET, WELLESLEY, MASSACHUSETTS 02481
781-943-4000 • FAX 781-943-4040

EVANS HUBER

781-943-4043
EH@128LAW.COM

March 11, 2021

Members of the
Needham Planning Board

And

Lee Newman
Director of Planning and Community Development
Public Services Administration Building
500 Dedham Ave
Needham, MA 02492

Re: 1688 Central Ave, Needham

Dear Planning Board Members and Ms. Newman:

Pursuant to Needham Zoning ByLaw Section 7.4, I hereby submit, on behalf of Needham Enterprises, LLC (the "Applicant"), the accompanying application and supporting documents for Minor Project Site Plan Review of the proposed project at 1688 Central Avenue, located in an SRA district, for the construction of a child care facility. Pursuant to Section 7.4.2 of the Bylaw, this project qualifies as a "Minor Project" because it involves the construction of more than 5,000 but less than 10,000 square feet of gross floor area, and because it involves the creation of fewer than 25 new off-street parking spaces. Pursuant to Needham Zoning Bylaw Section 3.2.1, the proposed use as a child care facility is allowed by right in this district, meaning that no Special Permit is required for this use. Therefore, Minor Project Site Plan Review is appropriate.

1688 Central Avenue is a 3.352 Acre Parcel located adjacent to Temple Aliyah. Prior to the purchase of 1688 Central Avenue by the Applicant, the property was used as an active contractor's yard for stockpiling and delivering materials as well as for the storage of mechanical equipment. The existing house and garage will be demolished, and the large barn will be kept as will most of the existing trees on the lot. The proposed plan is to create a new child care facility that will house an existing Needham child-care business, Needham Children's Center (NCC). This will allow them to expand and have the necessary room for children post COVID-19.

Needham Planning Board Members
Lee Newman
March 11, 2021
Page 2

The Applicant certifies pursuant to the Zoning By-Law, Section 7.4 that the project can be constructed and that the proposed uses thereof can be commenced without need for the issuance of any variance from any provisions of the Zoning By-Law by the Zoning Board of Appeals. As noted above, no Special Permit is required for this use. The proposed construction and parking area comply with all Bylaw requirements.

This Application for Minor Project Site Plan Review includes the following documents:

1. Stormwater Management Report, prepared by Glossa Engineering, Inc., 46 East Street, East Walpole, MA 02032, dated June 22, 2020 and stamped on January 26, 2021.
2. Site Development Plans, prepared by Glossa Engineering, Inc., 46 East Street, East Walpole, MA 02032, dated June 22, 2020 and stamped on January 26, 2021, including:
 - a. Zoning and Parking Design Tables
 - b. Existing Conditions Plan
 - c. Site Plan including proposed parking layout
 - d. Grading and Utilities Plan
 - e. Landscape Plan
 - f. Sewer Plan and profile
 - g. Construction Period Plan
3. Traffic Impact Assessment, prepared by Gillon Associates, 111 River Street, Weymouth, MA 02191.
4. Architectural Plans and elevations, prepared by Mark Gleusing Architect, 48 Mackintosh Avenue, Needham, MA 02492, dated March 8, 2021.
5. Photometric/Lighting plan prepared by Glossa Engineering, Inc., 46 East Street, East Walpole, MA 02032, dated June 22, 2020 and stamped on January 26, 2021, and related documents.
6. Letter from this office dated March 12, 2021, discussing compliance with the criteria for Minor Site Plan Review.
7. Filing fee to the Town of Needham in the amount of \$ 100.00.

The Applicant hereby requests, pursuant to Zoning By-Law Section 7.4.4, that the Planning Board waive the submission by Applicant of any of the required information not submitted herewith.

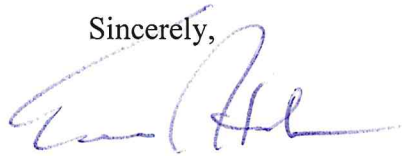
Needham Planning Board Members
Lee Newman
March 11, 2021
Page 3

Pursuant to the Board's Covid-19 procedures, these documents are being submitted electronically; additionally two (2) hard copies of the application (1 with original signatures) and all supporting materials, including wet-stamped plans, are being delivered to the Planning Department along with the application fee; and, lastly, one hard copy of (a) the Application for Minor Site Plan Review, (b) this letter, and the other letter from this office referred to in item 6, above, (c) the Glossa Engineering Stormwater Management Report, (d) the Gillon Associates Traffic Impact Assessment, and (e) all the plans and elevations (no smaller than 11 x 17), is being mailed to each Board member, and to Lee Newman.

The Applicant will also be submitting a copy of these plans and elevations to the Design Review Board ("DRB") in time to meet with the Design Review Board on March 22, 2021.

I would appreciate your scheduling this matter for review at the Board's April 6, 2021 meeting. Thank you for your cooperation.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Evans Huber', is written over a faint, larger signature that appears to be 'Lee Newman'.

Evans Huber

FRIEZE CRAMER ROSEN & HUBER LLP
C O U N S E L L O R S A T L A W

60 WALNUT STREET, WELLESLEY, MASSACHUSETTS 02481
781-943-4000 • FAX 781-943-4040

EVANS HUBER
781-943-4043
EH@I28LAW.COM

March 12, 2021

Members of the
Needham Planning Board

And

Lee Newman
Director of Planning and Community Development
Public Services Administration Building
500 Dedham Ave
Needham, MA 02492

Re: 1688 Central Avenue, Needham

Dear Planning Board Members and Ms. Newman:

I am writing on behalf of Needham Enterprises LLC, with respect to the Application for Minor Project Site Plan Review for the Project at 1688 Central Avenue. The purpose of this letter is to provide the Planning Board with additional information in connection with this Project and, in particular, to discuss how the project will conform to the Review Criteria for Site Plan Review, as set forth in Section 7.4.6 of the Zoning By-Law.

The following are the criteria for the Planning Board to consider during the site plan review process pursuant to Section 7.4.6 of the Zoning By-Law, and the description of how the Project meets those criteria.

(a) Protection of adjoining premises against seriously detrimental uses by provision for surface water drainage, sound and sight buffers and preservation of views, light, and air;

The proposed project has been designed to protect adjoining premises from detrimental impacts by provision for surface water drainage, sound and sight buffers, and preservation of views, light and air, as follows:

As noted in the stormwater management report prepared by Glossa Engineering, the drainage plan will capture all of the runoff from the building rooftops and most of the runoff from the paved areas, and direct the runoff into an underground infiltration basin. The design and analysis of the system is based on MA DEP stormwater management regulations.

Needham Planning Board
March 12, 2021
Page 2

A landscape plan has been developed for screening and enhancing the existing site.

The lighting system for the project parking areas has been designed to comply with the Town of Needham lighting requirements. The parking area is on the side of the property adjacent to Temple Aliyah, and is not close to the residential properties abutting the southern boundary of the property. No light “spillage” onto neighboring residential properties is anticipated.

(b) Convenience and safety of vehicular and pedestrian movement within the site and on adjacent streets, the location of driveway openings in relation to traffic or to adjacent streets and, when necessary, compliance with other regulations for the handicapped, minors and the elderly;

As shown on the plans filed with this application, the project has been designed to ensure that there will be safe vehicular and pedestrian circulation on site. The parking area has been designed with an “island” that vehicles can circulate around so that vehicles dropping off and picking up children can continuously move forward upon entry, following dropoff and pickup, and when exiting the site.

The access to and egress from the property will be via the existing driveway opening onto Central Avenue, where there are adequate sight lines up and down Central Avenue.

(c) Adequacy of the arrangement of parking and loading spaces in relation to the proposed uses of the premises;

Adequacy of the arrangement of parking and loading spaces in relation to the proposed uses of the premises has been achieved. The proposed parking area complies with the Town of Needham Bylaw requirements for number of spaces, illumination, loading, parking space size, location, design and number of handicap spaces, width of maneuvering aisles, setbacks, and landscaping.

The parking area includes 24 spaces, which is the required number of spaces for the proposed use and the anticipated number of children and staff members. The required parking calculation is based on a formula the Town uses for this type of use, which is 8 spaces, plus 1 space for each 40 children, plus one space per staff member. Applying this formula leads to a calculated parking requirement of 24 spaces.

Please see the Layout and Zoning Plan for additional details of the parking layout.

(d) Adequacy of the methods of disposal of refuse and other wastes resulting from the uses permitted on the site;

The site has been designed such that adequate methods of disposal of refuse resulting from the proposed use has been assured. A dumpster will be located at the far (eastern) end of

Needham Planning Board
March 12, 2021
Page 3

the parking area and will be enclosed with fencing. Refuse will be removed from the site by a licensed hauler.

(e) Relationship of structures and open spaces to the natural landscape, existing buildings and other community assets in the area and compliance with other requirements of this By-Law; and

The matters to be considered by this Board in connection with relationship of structures and open spaces to the natural landscape, existing buildings, and other community assets in the area, have been addressed, and the project complies with all other requirements of the Town Bylaw.

The proposed building was designed to fit into the existing surroundings with a façade that measures 84' 6", which is comparable to large homes in the surrounding neighborhood and streets. The building is also designed to architecturally blend in with the surroundings by including design elements to look like a single-family home. There is no proposed signage for the building and there will be no light trespass.

The gross floor area of the building is 9966 square feet on one floor, which, even including the barn that will remain, is far smaller than what would be allowed by the applicable maximum lot coverage (15%) and the applicable FAR (.30) for this Zoning District. In addition, this building is considerably smaller than the abutting Temple Aliyah. Further, the parking will be in the rear of the building, and the Applicant is open to allowing, by agreement, overflow parking for the benefit of Temple Aliyah at certain times that will not conflict with the requirements of NCC.

(f) Mitigation of adverse impacts on the Town's resources including the effect on the Town's water supply and distribution system, sewer collection and treatment, fire protection, and streets; and may require when acting as the Special Permit Granting Authority or recommend in the case of minor projects, when the Board of Appeals is acting as the Special Permit Granting Authority, such appropriate conditions, limitations, and safeguards necessary to assure the project meets the criteria of a through f.

The project has been designed to limit adverse impacts to the Town resources as follows:

The Applicant will connect to the Town's sewer system by running, at the Applicant's expense, a sewer main from its current closest point on Country Way, up Central Avenue to the site. Neighboring properties will have the option of connecting, at their expense, to this sewer line. The Applicant has met with Sean Harrington, the Superintendent of Water, Sewer, and Drains, who is in favor of and has approved the plans to do this. The project will connect to the Town's water supply.

The Applicant has engaged a traffic engineer to study this site. As set forth in the

Needham Planning Board
March 12, 2021
Page 4

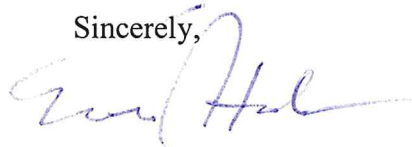
Traffic Impact Assessment, drop-off and pick-up will continue to be staggered, as is NCC's current practice. The facility will be closed on Federal holidays, Patriots Day, the day after Thanksgiving, the week between Christmas and New Years and a week before Needham Public Schools open. There will be no buses to the site. Additionally, the drop-off and pick-up numbers include siblings, meaning that there will be fewer cars than the number of children being dropped off and picked up.

As shown in the Traffic Impact Assessment submitted with this Application, all through traffic on Central Avenue in each direction will continue to enjoy an "A" level of service with little or no delay during the weekday morning commuting peak hour. The Central Avenue southbound left-turn lane utilized for left turns into the site will operate at an "A" level resulting in no turbulence on Central Avenue during the morning peak hour. The site driveway itself will have an acceptable "C" level of service, with average delays, during the morning peak hour.

Based on the projected arrivals and departures, the evening peak hour is expected to generate fewer vehicle trips than the morning peak hour.

If you have any questions, please do not hesitate to contact me.

Sincerely,



Evans Huber

FRIEZE CRAMER ROSEN & HUBER LLP
C O U N S E L L O R S A T L A W

60 WALNUT STREET, WELLESLEY, MASSACHUSETTS 02481
781-943-4000 • FAX 781-943-4040

EVANS HUBER
781-943-4043
EH@I28LAW.COM

March 16, 2021

Members of the
Needham Planning Board

And

Lee Newman
Director of Planning and Community Development
Public Services Administration Building
500 Dedham Ave
Needham, MA 02492

Re: 1688 Central Ave, Needham; Minor Project Site Plan Review

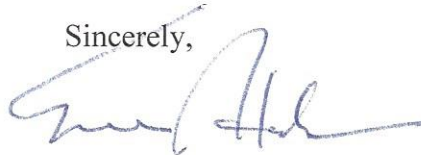
Dear Planning Board Members and Ms. Newman:

As requested by the Planning Department, this letter is submitted as a supplement to my prior letters dated March 11 and 12 in support of the application for Minor Project Site Plan Review for the proposed project at this address.

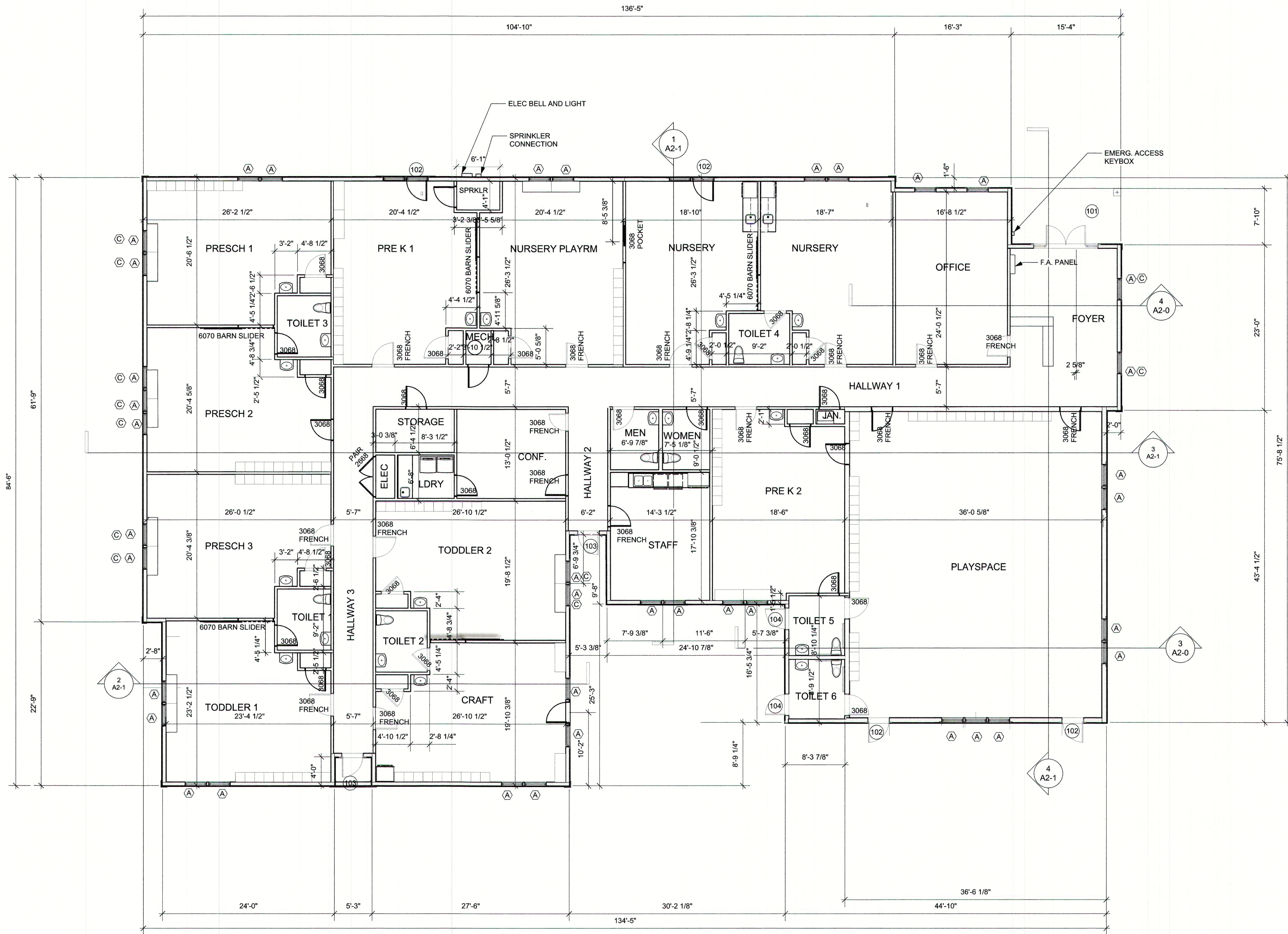
The anticipated maximum number of children at the site is 100, and the anticipated maximum number of staff is 13. This information can also be found on Sheet A 1-0 of the Architectural Plans and elevations, prepared by Mark Gleusing Architect, 48 Mackintosh Avenue, Needham, MA 02492, dated March 8, 2021, which were submitted with the application.

Please let me know if you need anything else.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Evans Huber', with a stylized flourish at the end.

Evans Huber



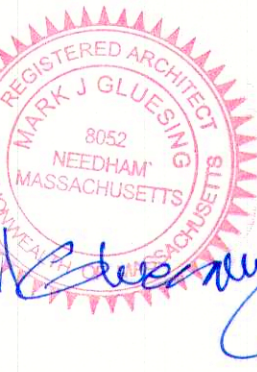
1 1st Floor Plan
Scale: 1/8" = 1'-0"

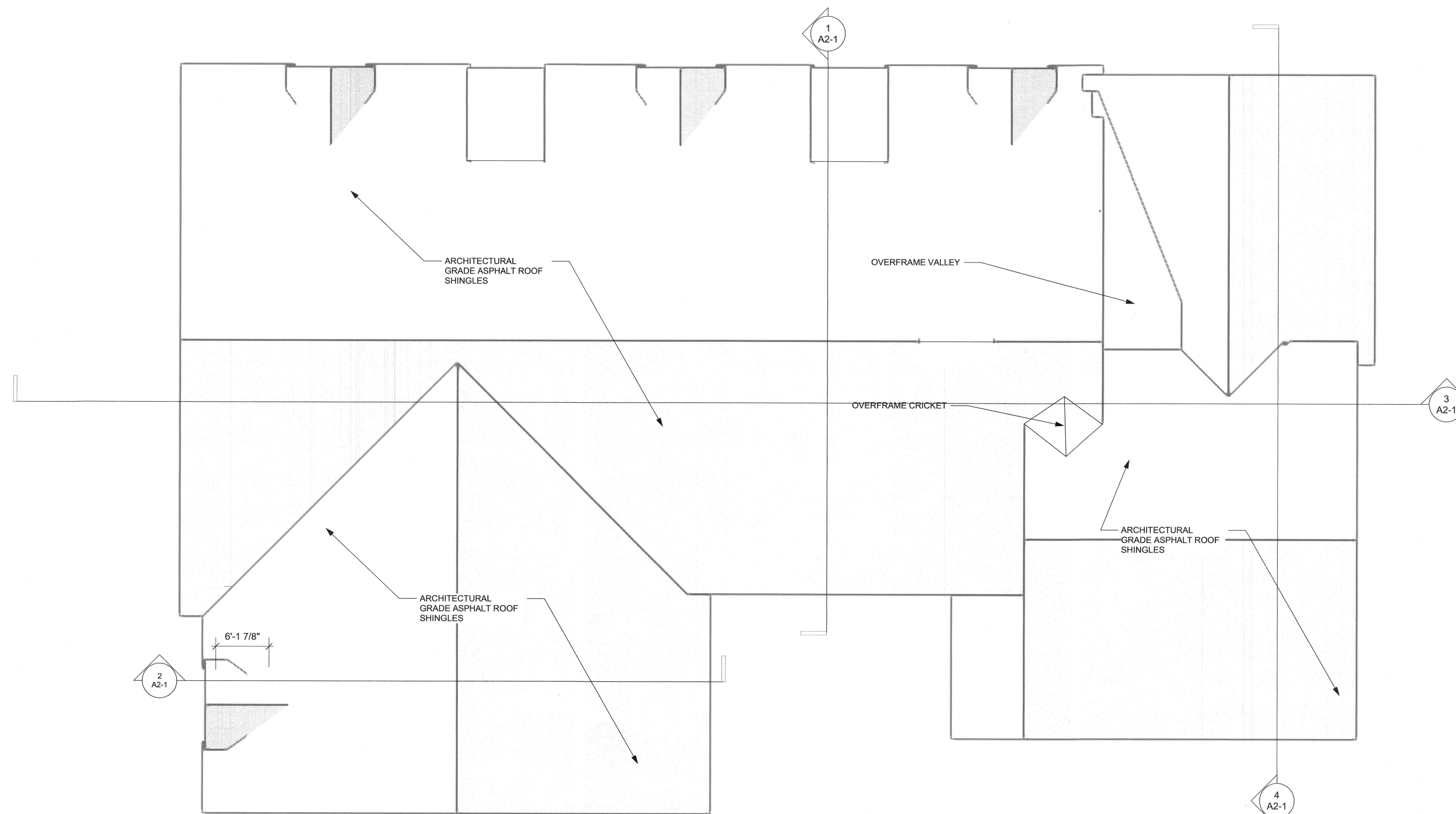
BUILDING DATA

LOT SIZE	146,003 SF
NEW BUILDING SIZE	9,966 SF
PARKING SPACES:	
OPERATIONAL OCCUPANCY	
100 CHILDREN: 8 SPACES+1/40 (3)=	11
13 STAFF	13
TOTAL	24

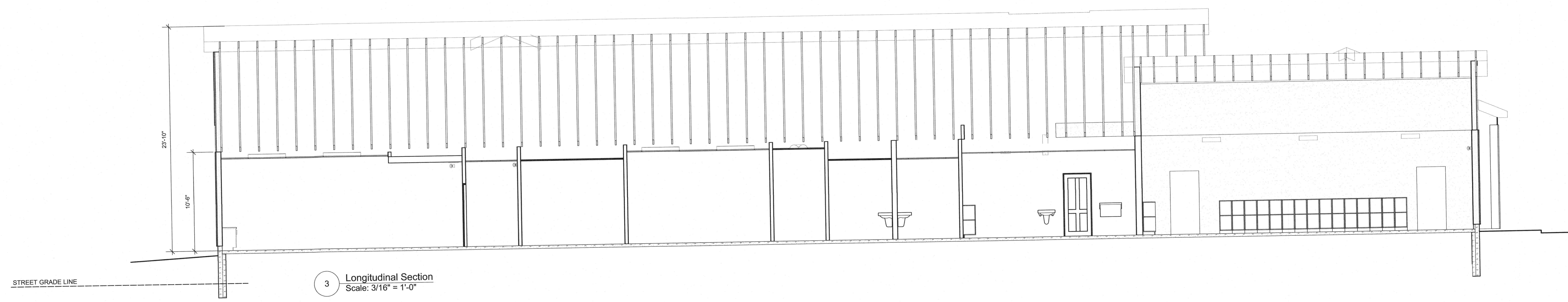
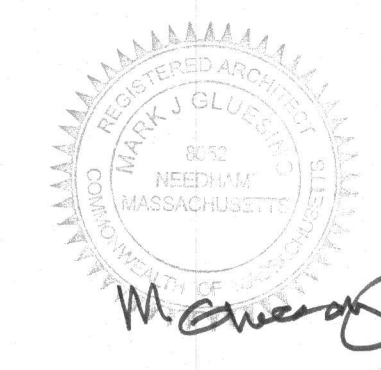
NEEDHAM ENTERPRISES
DAYCARE CENTER
1688 Central Avenue
Needham, Massachusetts

SITE PLAN REV.
3.8.21

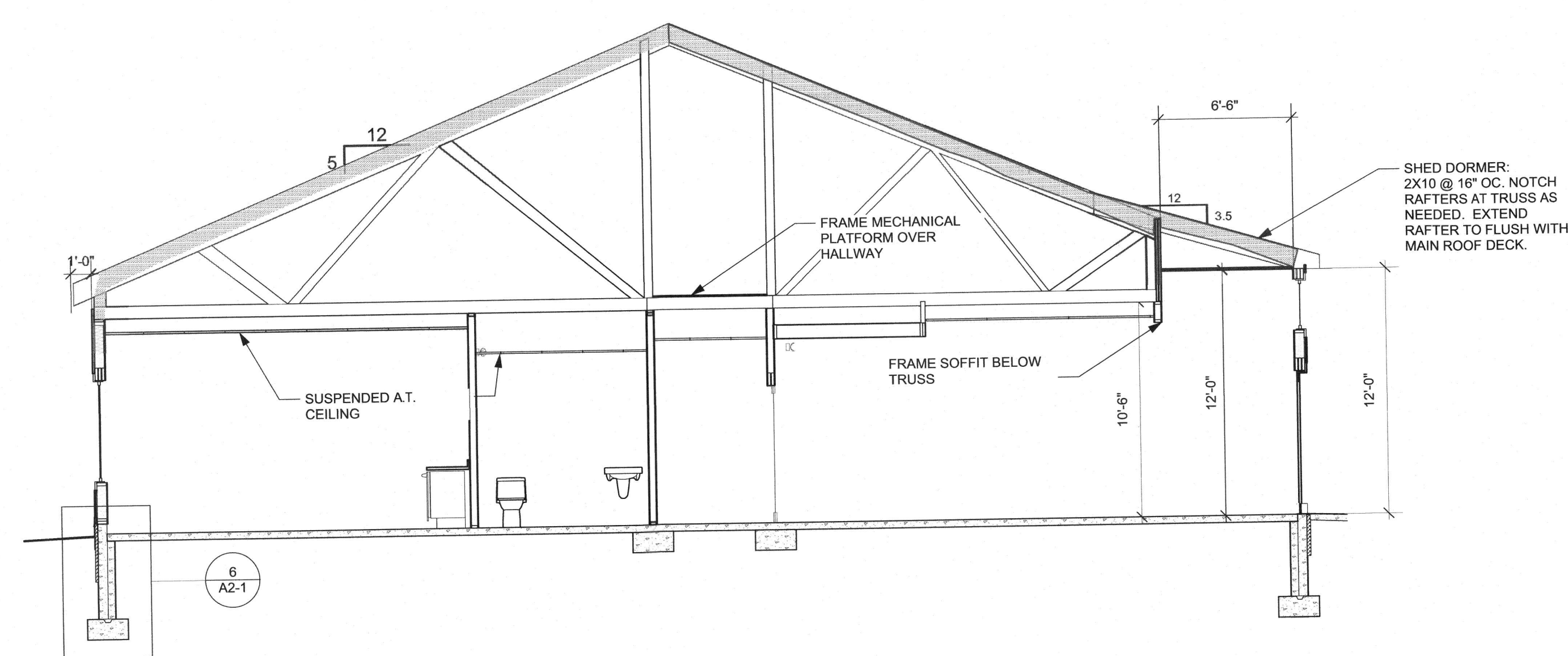




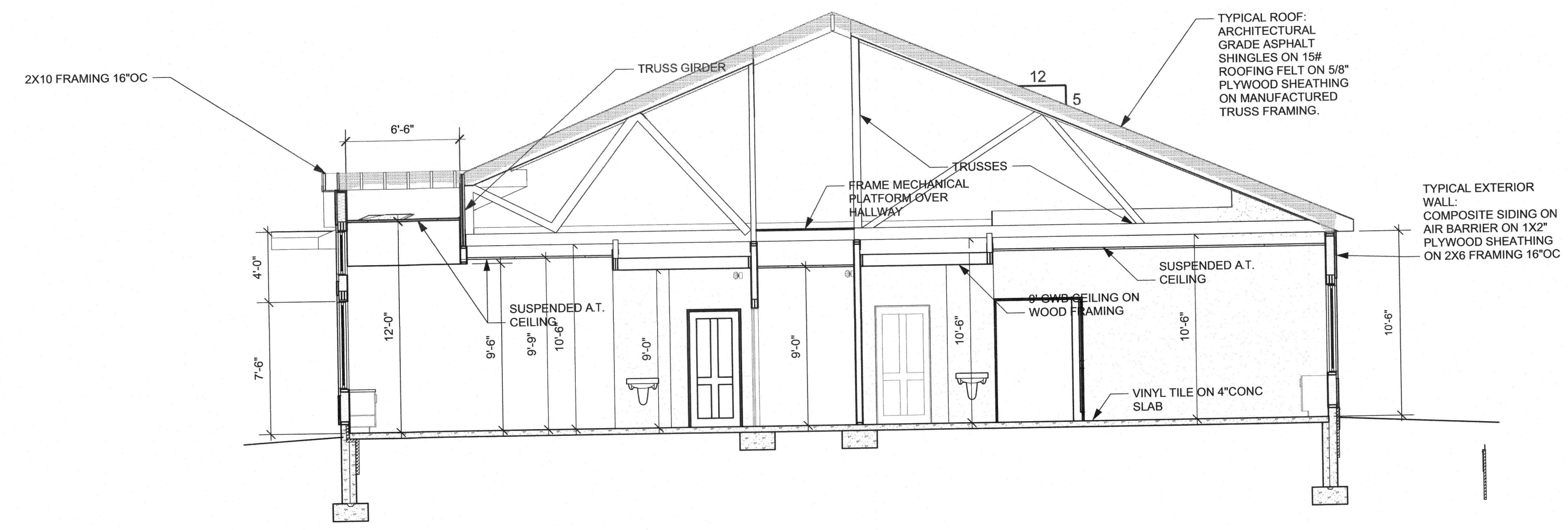
1 Roof Plan
Scale: 1/8" = 1'-0"



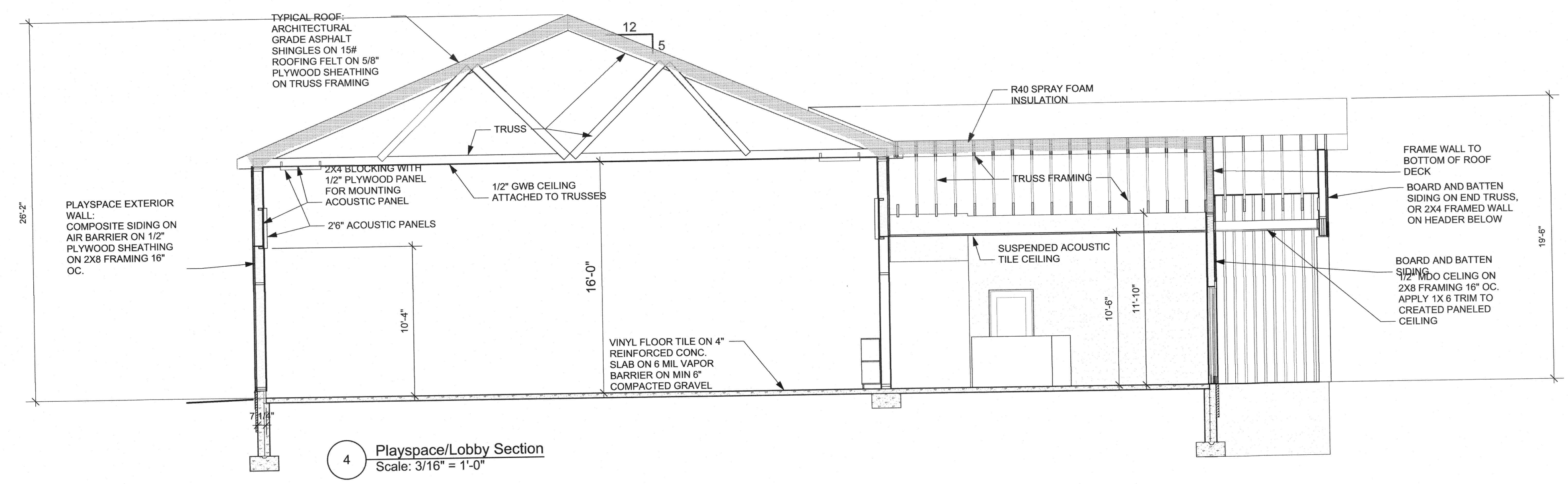
3 Longitudinal Section
Scale: 3/16" = 1'-0"



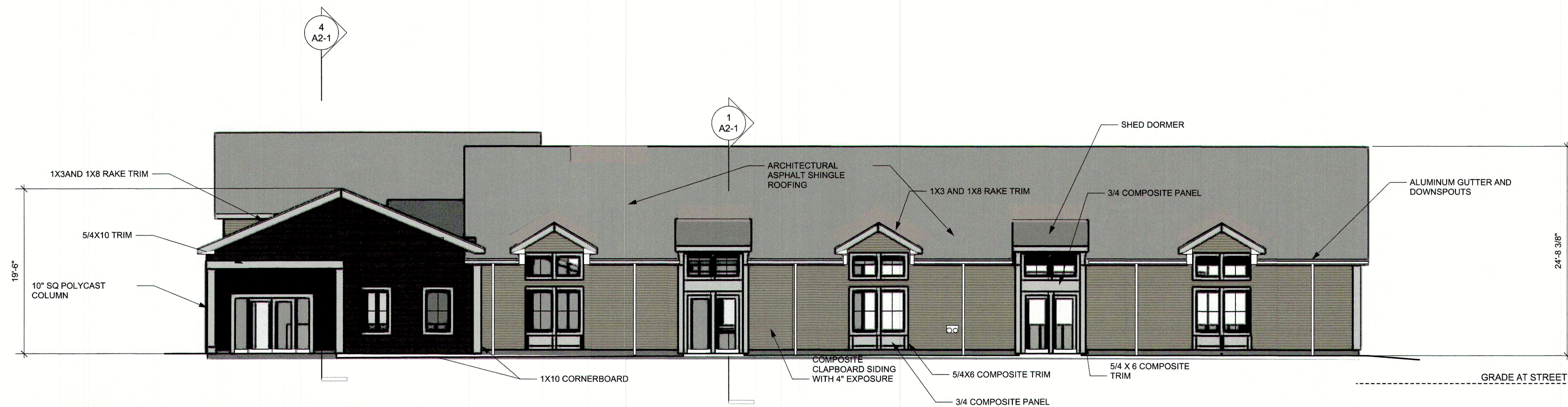
1 Nursery/Staffroom Section
Scale: 3/16" = 1'-0"



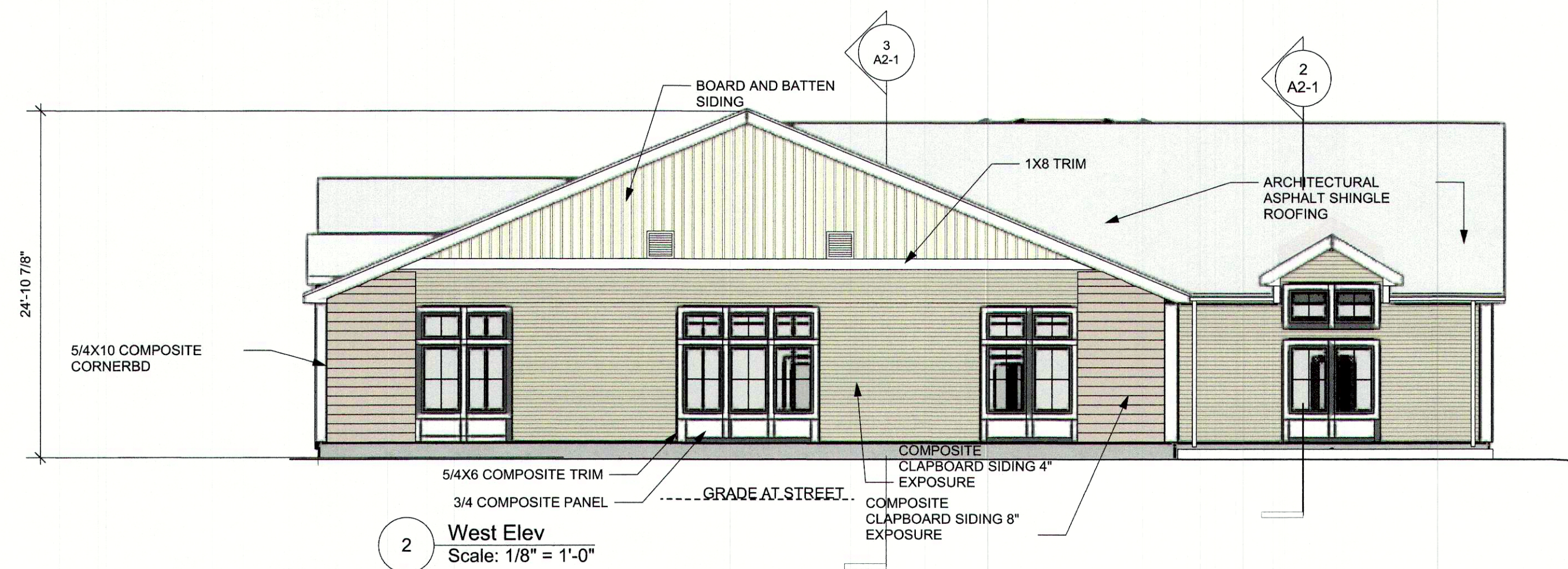
2 Toddler 1/ Craft Section at Dormer
Scale: 3/16" = 1'-0"



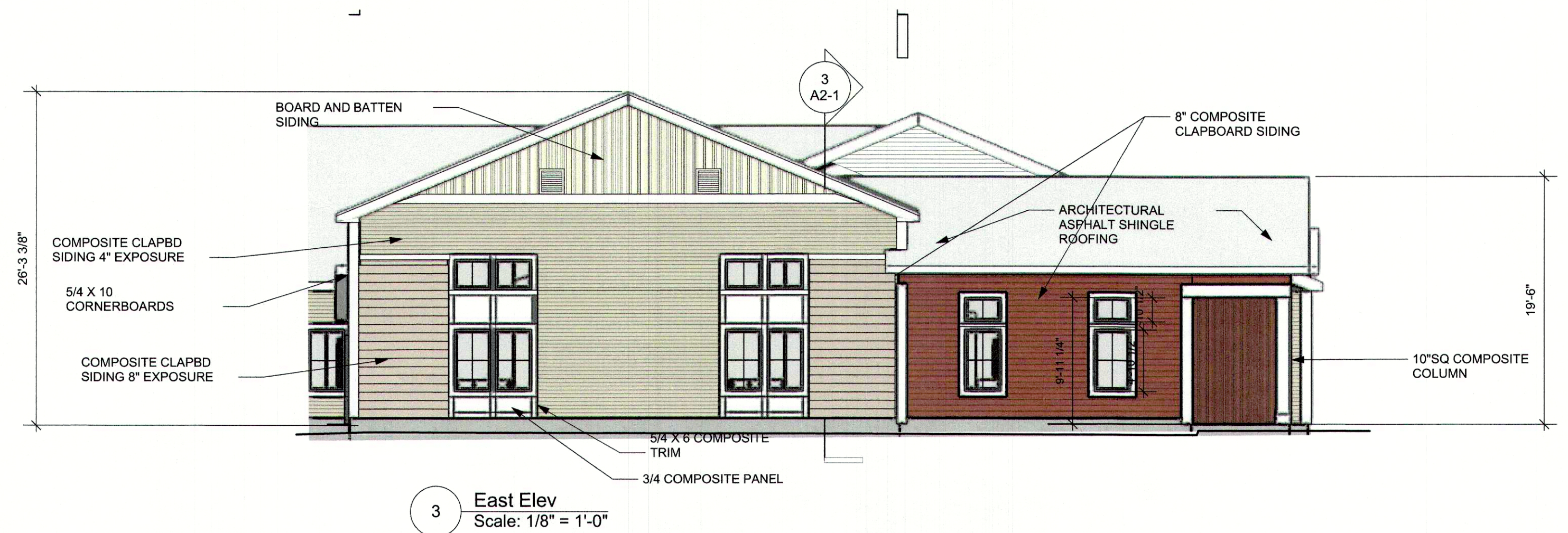
4 Playspace/Lobby Section
Scale: 3/16" = 1'-0"



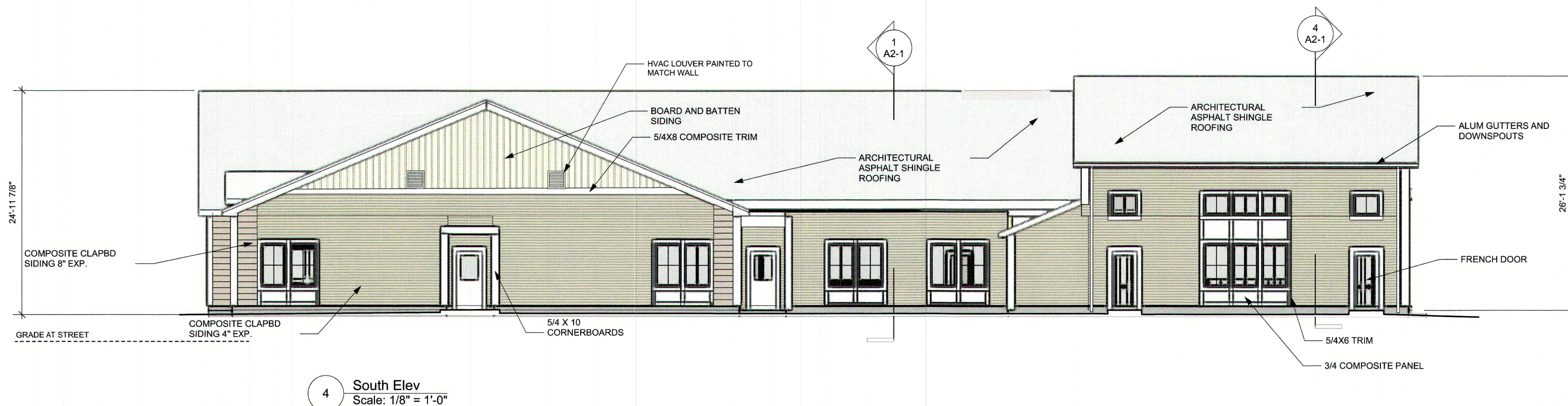
1 North Elev
Scale: 1/8" = 1'-0"



2 West Elev
Scale: 1/8" = 1'-0"

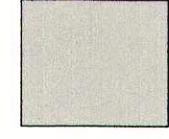


3 East Elev
Scale: 1/8" = 1'-0"



4 South Elev
Scale: 1/8" = 1'-0"

COLOR CHART

SIDING		BENJ MOORE AC-28
TRIM		BENJ MOORE OC-85
BOARD/BATTEN AT GABLES		BENJ MOORE OC-85
SIDING AT ENTRANCE		BENJ MOORE HC-181

ZONING LEDGEND:				
SINGLE RESIDENCE A	REQUIRED/ALLOWED	EXISTING	PROPOSED	COMPLIANCE
MIN. AREA	43,560 S.F.	146,003 S.F.	146,003 S.F.	YES
MIN. FRONTAGE	150'	250.05'	250.05'	YES
MIN. SETBACK FRONT	30'	*105.0' **211.2' ***30'	40.6'	YES
MIN. SETBACK SIDE	25'	*67.5' **65.0' ***54.2'	52.4'	YES
MIN. SETBACK REAR	15'	*864.9' **763.4' ***677.0'	835.9'	YES
MAXIMUM STORIES	2-1/2	*2 **1 ***2	1	YES
MAXIMUM HEIGHT	35'	*30.7' **15.3' ***31.2'	20'	YES
BUILDING COVERAGE	NR	NR	NR	YES
FLOOR AREA RATIO	NR	NR	NR	YES
DRIVEWAY OPENINGS	18' - 25'	19'	24'	YES

*EXISTING HOUSE (TO BE DEMOLISHED)
**OUT BUILDING -1 (TO BE DEMOLISHED)
***OUT BUILDING -2 (TO REMAIN)

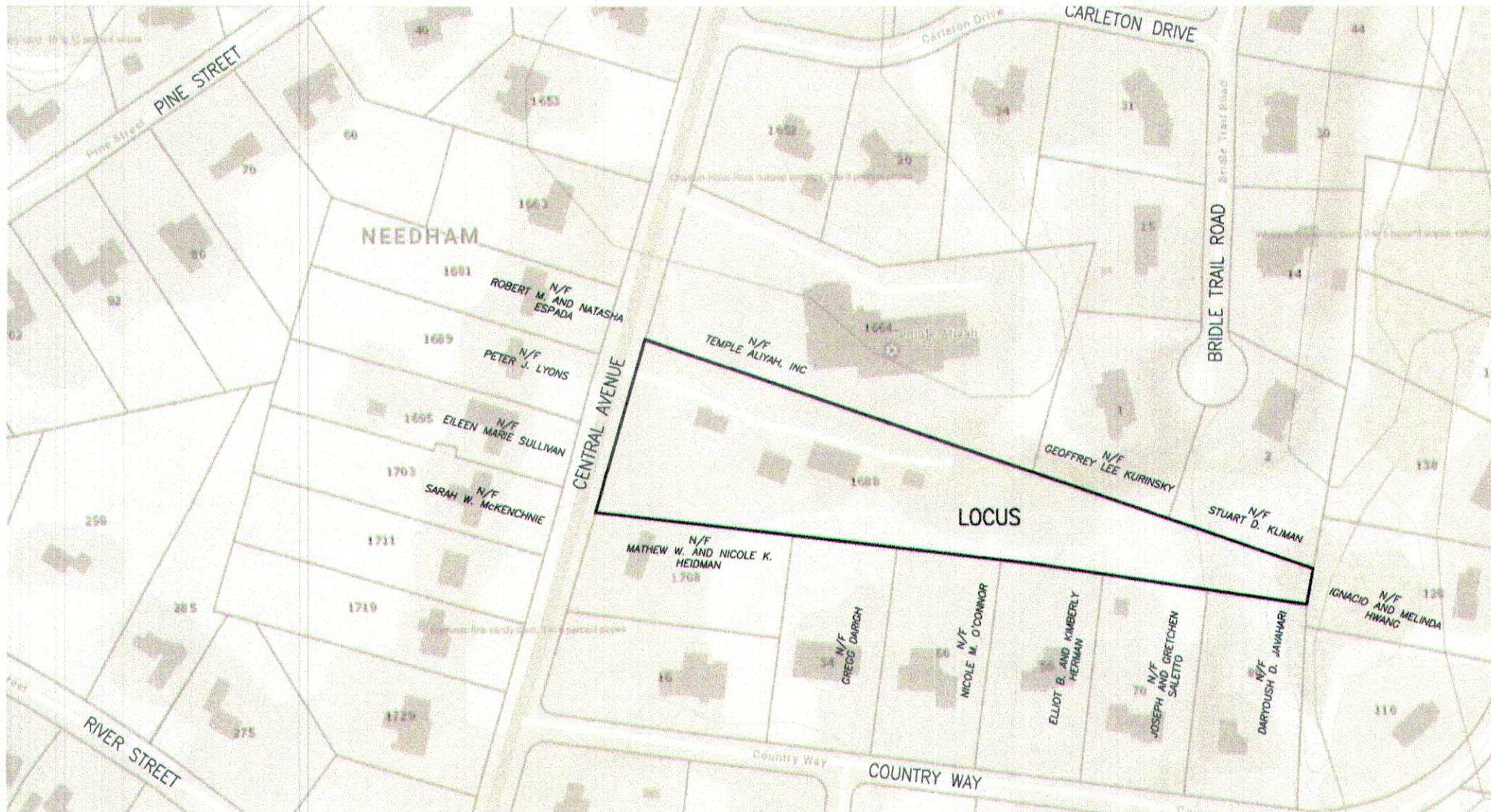
ZONING BYLAW 6.1.3 PARKING PLAN AND DESIGN REQUIREMENTS

	REQUIRED/ALLOWED	EXISTING	PROPOSED	COMPLIANCE
A) PARKING ILLUMINATION	AVG. 1 FOOT CANDLE	N/A	AVG. 1 FOOT CANDLE	YES
B) LOADING REQUIREMENTS	N/A	N/A	N/A	YES
C) HANDICAPPED REQUIREMENTS	2	N/A	2	YES
D) DRIVEWAY OPENINGS	1	1	1	YES
E) COMPACT CARS	50% (8'X16')	N/A	N/A	YES
F) PARKING SPACE SIZE	9'X18.5'	N/A	9'X18.5'	YES
G) BUMPER OVERHANG	1' OVERHANG	N/A	NONE REQUIRED	YES
H) PARKING SPACE LAYOUT	N/A	N/A	N/A	YES
I) WIDTH OF MANEUVERING AISLE	24' (90" STALL)	N/A	24' (90" STALL)	YES
J) PARKING SETBACK				
-FRONT	10'	N/A	181.2'	YES
-SIDE	4'	N/A	42.5'	YES
-REAR	4'	N/A	625.1'	YES
-BUILDING	5'	N/A	5'	YES
K) LANDSCAPE AREA	10%	N/A	10%	YES
L) TREES	1 PER 10 SPACES (3)	N/A	3	YES
M) LOCATION	WITHIN LOT	N/A	WITHIN LOT	YES
N) BICYCLE RACKS	NONE REQUIRED	N/A	NONE REQUIRED	YES

REQUIRED PARKING TO BE DETERMINED BY BUILDING INSPECTOR
PARKING PROVIDED SPACES INCLUDING 2 HANDICAP SPACES

LANDSCAPE AREA REQUIREMENT IS 10% OF REQUIRED SET BACK AREA. SET BACK AREA IS 3,939 S.F.
10% OF 3,939 IS 394 S.F. OF MAINTAINED LANDSCAPE AREA REQUIRED 25% OF THAT OR 98 S.F. TO
BE LOCATED WITHIN THE INTERIOR OF THE PARKING AREA. 365 S.F. PROVIDED WITHIN PARKING AREA

SITE DEVELOPMENT PLANS
DAYCARE
1688 CENTRAL AVENUE
NEEDHAM, MA
JUNE 22, 2020



LOCUS
N.T.S

PLAN INDEX

SHEET	1:	COVER SHEET
SHEET	2:	EXISTING CONDITIONS PLAN
SHEET	3:	SITE PLAN
SHEET	4:	GRADING AND UTILITIES PLAN
SHEET	5:	LANDSCAPE PLAN
SHEET	6 & 7:	DETAILS
SHEET	8:	SEWER PLAN AND PROFILE
SHEET	9:	CONSTRUCTION PERIOD PLAN
APPENDIX		PHOTOMETRIC AND SITE LIGHTING PLAN

OWNER:

NEEDHAM ENTERPRISES LLC
105 CHESTNUT STREET SUITE 28
NEEDHAM, MA 02492

APPLICANT:

NEEDHAM ENTERPRISES LLC
105 CHESTNUT STREET SUITE 28
NEEDHAM, MA 02492

ASSESSORS PARCELS:

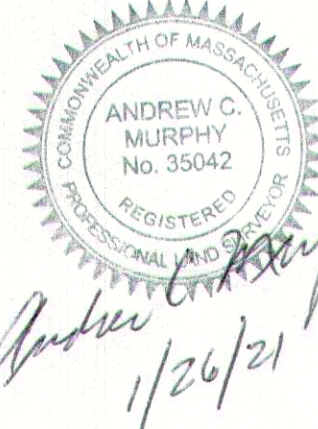
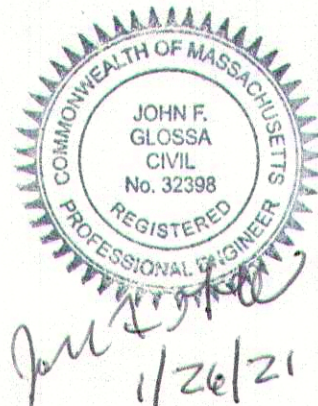
MAP 199, LOT 213

DEED REFERENCE:

BOOK 37770 PAGE 308

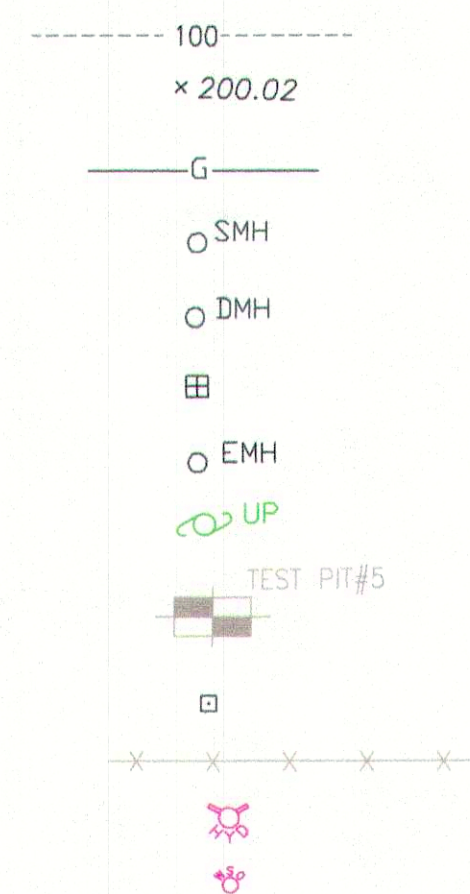
PLAN REFERENCE:

PLAN OF LAND DATED SEPTEMBER 28, 1933
BY P.D.G. HAMILTON, CIVIL ENGINEER



PREPARED BY
GLOSSA ENGINEERING, INC.
46 EAST ST
EAST WALPOLE, MA 02032
(508) 668-4401

EXISTING GRADE
EXISTING SPOT GRADE
EXISTING GAS MAIN
EXISTING SEWER MANHOLE
EXISTING DRAIN MANHOLE
EXISTING CATCH BASIN
EXISTING ELECTRIC MANHOLE
EXISTING UTILITY POLE
EXISTING TEST PIT
EXISTING BOUND
EXISTING FENCE
EXISTING FIRE HYDRANT
EXISTING GATE VALE



TEST PIT # 1		
0"		200.00
14"	A SANDY LOAM 10YR 3/2	198.33
40"	B SANDY LOAM 10YR 5/8	199.67
112"	C SAND 2.5Y 5/4	190.67
NO REFUSAL NO MOTTLING NO WEEPING		

TEST PIT # 2		
0"	A SANDY LOAM 10YR 3/2	201.00
13"	B1 SANDY LOAM 10YR 5/8	199.92
28"	B2 SANDY LOAM 2.5Y 6/3	198.67
48"	C SAND 2.5Y 5/4	197.00
108"		192.00

NO REFUSAL
NO MOTTLING
NO WEAVING

TEST PIT # 3

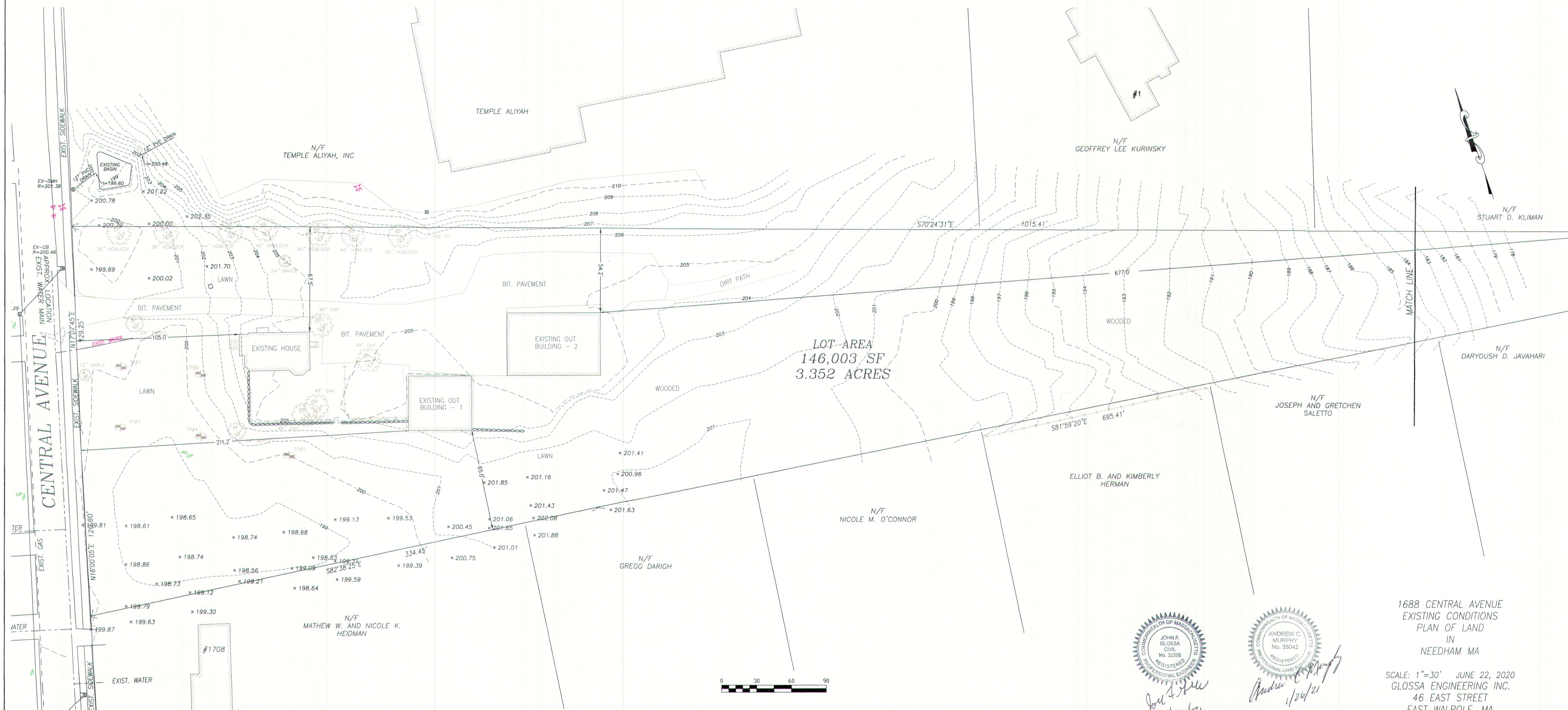
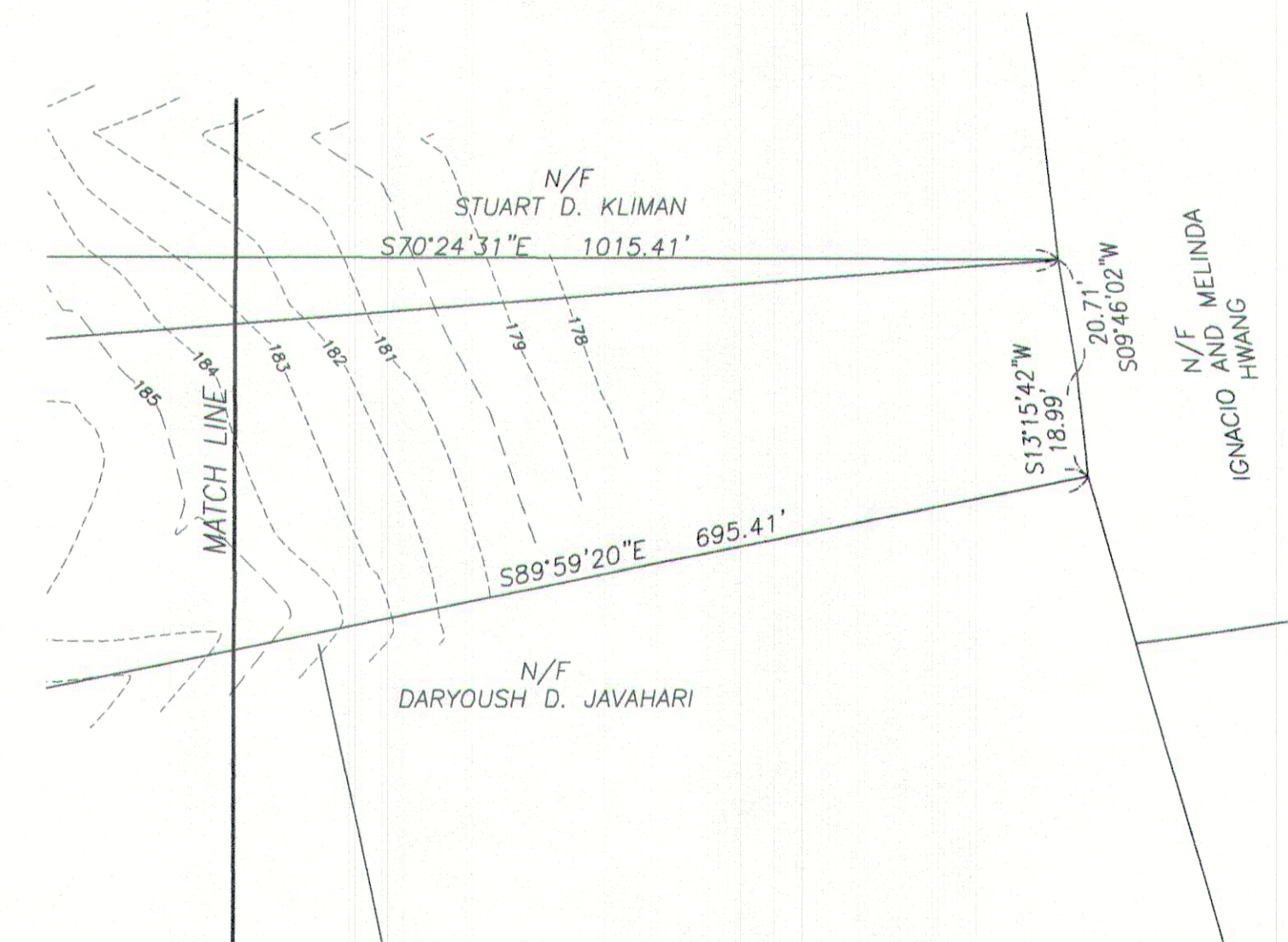
0"	A SANDY LOAM 10YR 3/2	199.50
12"	B SANDY LOAM 10YR 5/8	198.50
26"	C SAND 2.5Y 5/4	197.33
120"		189.50

NO REFUSAL
NO MOTTLING
NO WEEPING

TEST PIT # 4		
0"		199.75
12"	A SANDY LOAM 10YR 3/2	198.75
24"	B SANDY LOAM 10YR 5/8	197.75
114"	C SAND 2.5Y 5/4	190.25
NO REFUSAL NO MOTTLING NO WEEPING		

TEST PIT # 5		
0"	A SANDY LOAM 10YR 3/2	200.00
13"	B SANDY LOAM 10YR 5/8	198.92
48"	C SAND 2.5Y 5/4	196.00
136"		188.67
NO REFUSAL NO MOTTLING NO WEPPING		

SOIL TEST PERFORMED BY JOHN F. GLOSSA P.E. SOIL EVALUATOR #890
ON 3-24-20



LOT AREA
146,003 SF
3.352 ACRES

ELLIOT B. AND KIMBERLY
HERMAN

N/F
NICOLE M. O'CONNOR

N/F
JOSEPH AND GRETCHEN
SALETO

1688 CENTRAL AVENUE
EXISTING CONDITIONS
PLAN OF LAND
IN
NEEDHAM MA

SCALE: 1"=30' JUNE 22, 2020
GLOSSA ENGINEERING INC.
46 EAST STREET
EAST WALPOLE, MA
508-668-4401

COMMONWEALTH OF MASSACHUSETTS
JOHN F. GLOSSA
CIVIL
No. 32398
REGISTERED
PROFESSIONAL ENGINEER

John F. Glossa
1/26/12

COMMONWEALTH OF MASSACHUSETTS
ANDREW C. MURPHY
No. 35042
REGISTERED
PROFESSIONAL LAND SURVEYOR

Andrew C. Murphy
1/26/21

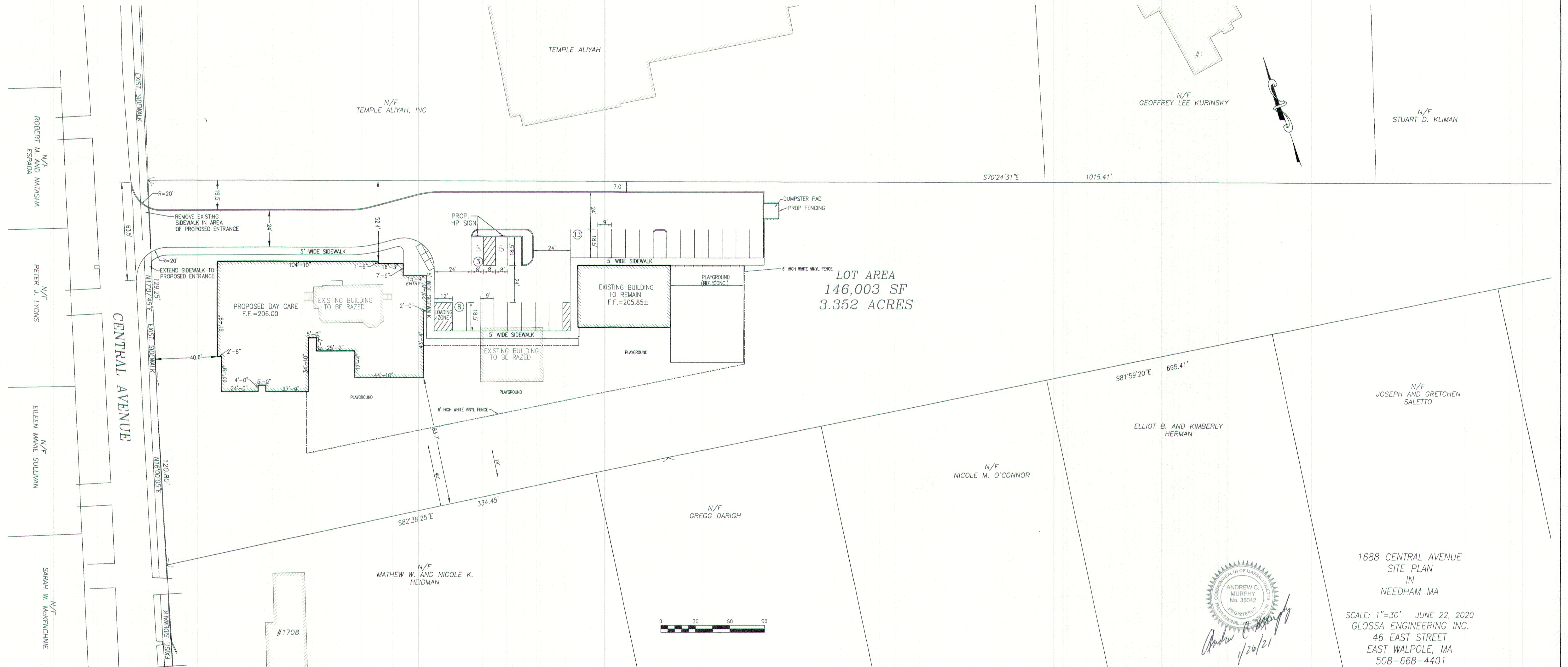
CONSTRUCTION NOTES

1) ALL UNDERGROUND UTILITIES MAY NOT BE SHOWN ON THIS PLAN AND THE LOCATION OF THE UNDERGROUND UTILITIES SHOWN MAY VARY FROM THEIR FIELD LOCATION. THE CONTRACTOR SHALL VERIFY THE EXISTENCE AND LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO THE CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY DIG SAFE AT LEAST 72 HOURS PRIOR TO THE START OF THE CONSTRUCTION.

2) ALL CONSTRUCTION SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE TOWN OF NEEDHAM PUBLIC WORKS DEPARTMENT.

LEDGEND:

EXISTING GRADE	----- 100-----
EXISTING SPOT GRADE	100x0
EXISTING GAS MAIN	—G—
EXISTING SEWER MANHOLE	○ SMH
EXISTING DRAIN MANHOLE	○ EX-DMH
EXISTING CATCH BASIN	▢ EX-CB
EXISTING ELECTRIC MANHOLE	○ EX-EMH
EXISTING UTILITY POLE	○ UP
EXISTING TEST PIT	TEST PIT#5
EXISTING BOUND	□
EXISTING FENCE	—X—X—X—X—X—
EXISTING FIRE HYDRANT	⊕
EXISTING GATE VALE	⊕
PROPOSED GRADE	----- 205-----
PROPOSED SPOT GRADE	205x25
PROPOSED CATCH BASIN	▢ CB-1
PROPOSED DRAIN MANHOLE	⊕ DMH-1
PROPOSED TAPPING SLEEVE AND VALVE	PROPOSED 8"x6" TS&V



1688 CENTRAL AVENUE
SITE PLAN
IN
NEEDHAM MA
SCALE: 1"=30' JUNE 22, 2020
GLOSSA ENGINEERING INC.
46 EAST STREET
EAST WALPOLE, MA
508-668-4401

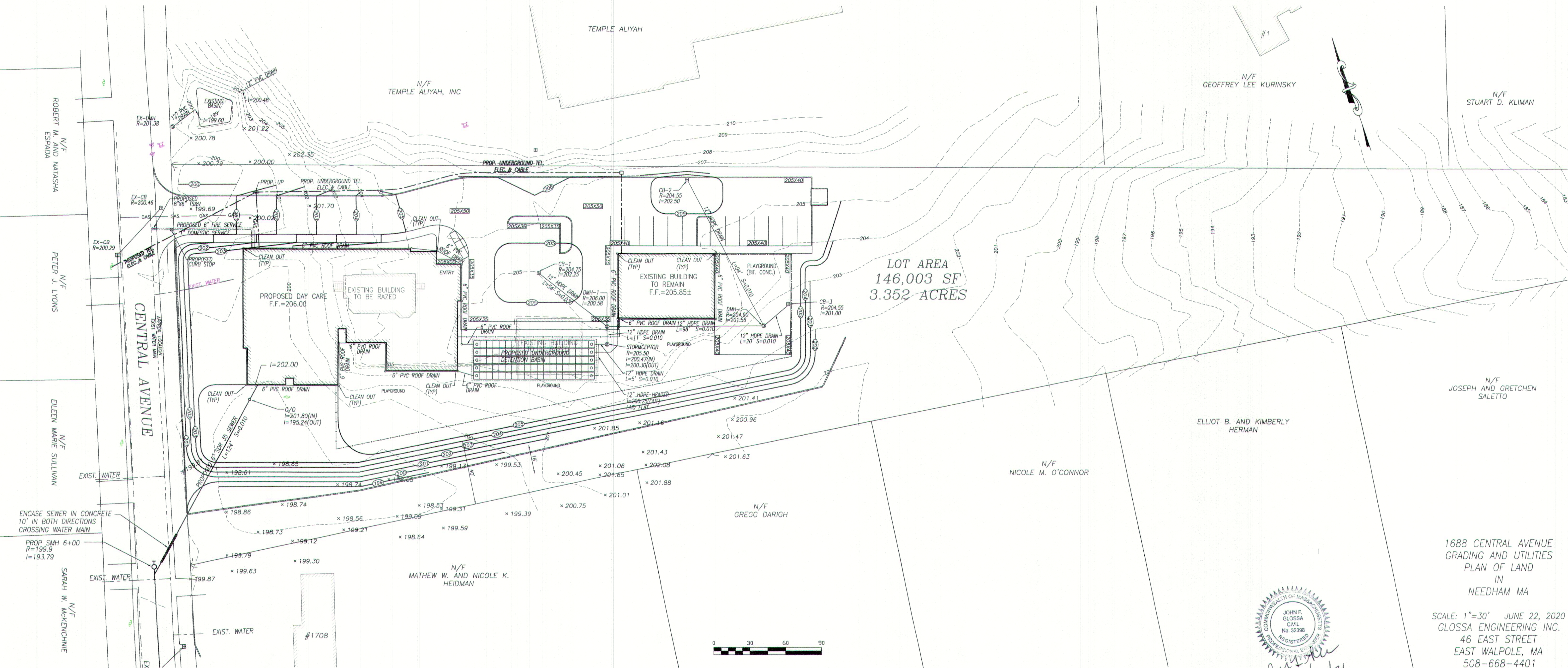
CONSTRUCTION NOTES:

1) ALL UNDERGROUND UTILITIES MAY NOT BE SHOWN ON THIS PLAN AND THE LOCATION OF THE UNDERGROUND UTILITIES SHOWN MAY VARY FROM THEIR FIELD LOCATION. THE CONTRACTOR SHALL VERIFY THE EXISTENCE AND LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO THE CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY DIG SAFE AT LEAST 72 HOURS PRIOR TO THE START OF THE CONSTRUCTION.

2) ALL CONSTRUCTION SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE TOWN OF NEEDHAM PUBLIC WORKS DEPARTMENT.

LEDGEND:

EXISTING GRADE	----- 100-----
EXISTING SPOT GRADE	x 200.02
EXISTING GAS MAIN	----- G -----
EXISTING SEWER MANHOLE	○ SMH
EXISTING DRAIN MANHOLE	○ EX-DMH
EXISTING CATCH BASIN	■ EX-CB
EXISTING ELECTRIC MANHOLE	○ EX-EMH
EXISTING UTILITY POLE	○ UP
EXISTING TEST PIT	■ TEST PIT#5
EXISTING BOUND	□
EXISTING FENCE	----- x x x x -----
EXISTING FIRE HYDRANT	★
EXISTING GATE VALE	★
PROPOSED GRADE	----- 205.55 -----
PROPOSED SPOT GRADE	x 205.55
PROPOSED CATCH BASIN	■ CB-1
PROPOSED DRAIN MANHOLE	○ DMH-1
PROPOSED TAPPING SLEEVE AND VALVE	--- 8" 6" 15&V ---



1/26/21

1688 CENTRAL AVENUE
GRADING AND UTILITIES
PLAN OF LAND
IN
NEEDHAM MA

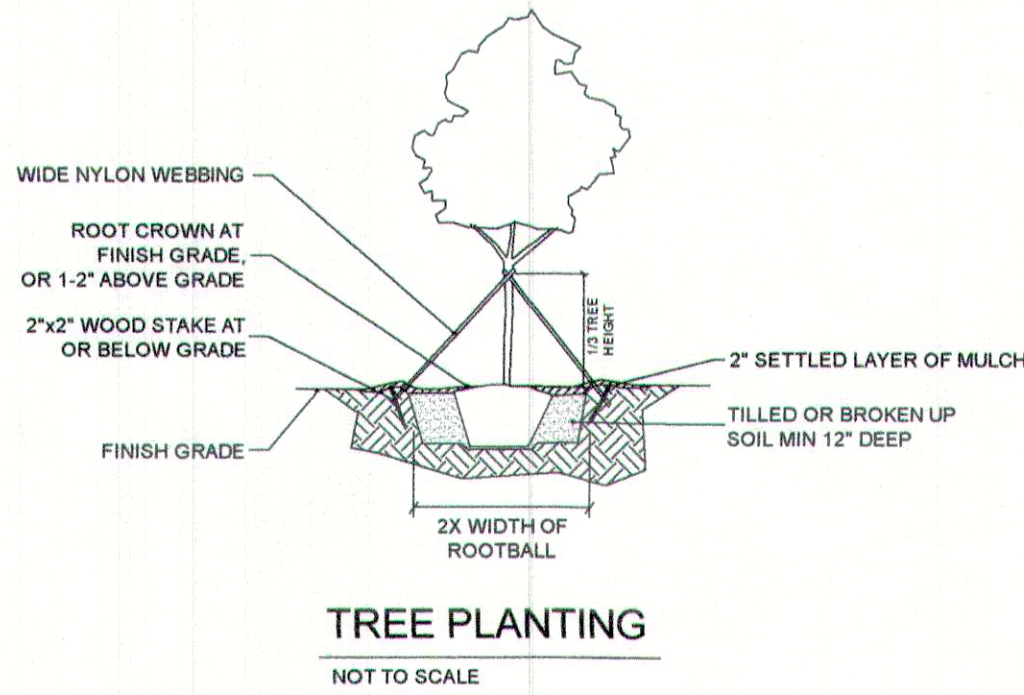
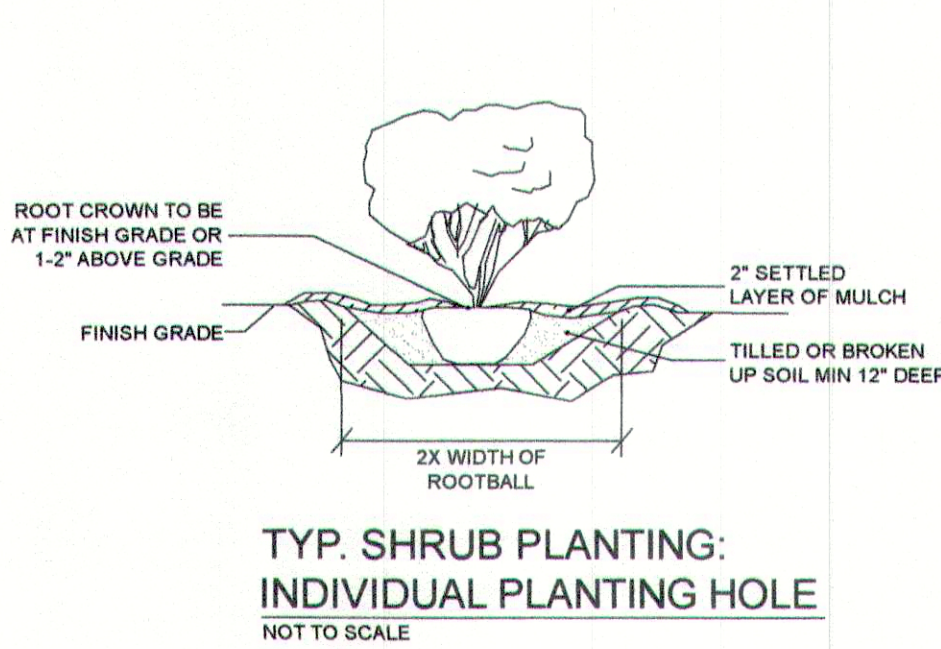
SCALE: 1"=30' JUNE 22, 2020
GLOSSA ENGINEERING INC.
46 EAST STREET
EAST WALPOLE, MA
508-668-4401

CONSTRUCTION NOTES

1) ALL UNDERGROUND UTILITIES MAY NOT BE SHOWN ON THIS PLAN AND THE LOCATION OF THE UNDERGROUND UTILITIES SHOWN MAY VARY FROM THEIR FIELD LOCATION. THE CONTRACTOR SHALL VERIFY THE EXISTENCE AND LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO THE CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY DIG SAFE AT LEAST 72 HOURS PRIOR TO THE START OF THE CONSTRUCTION.

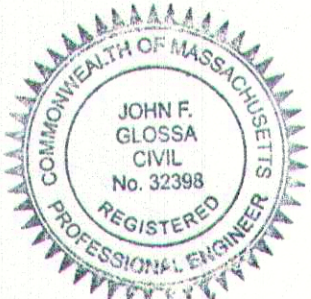
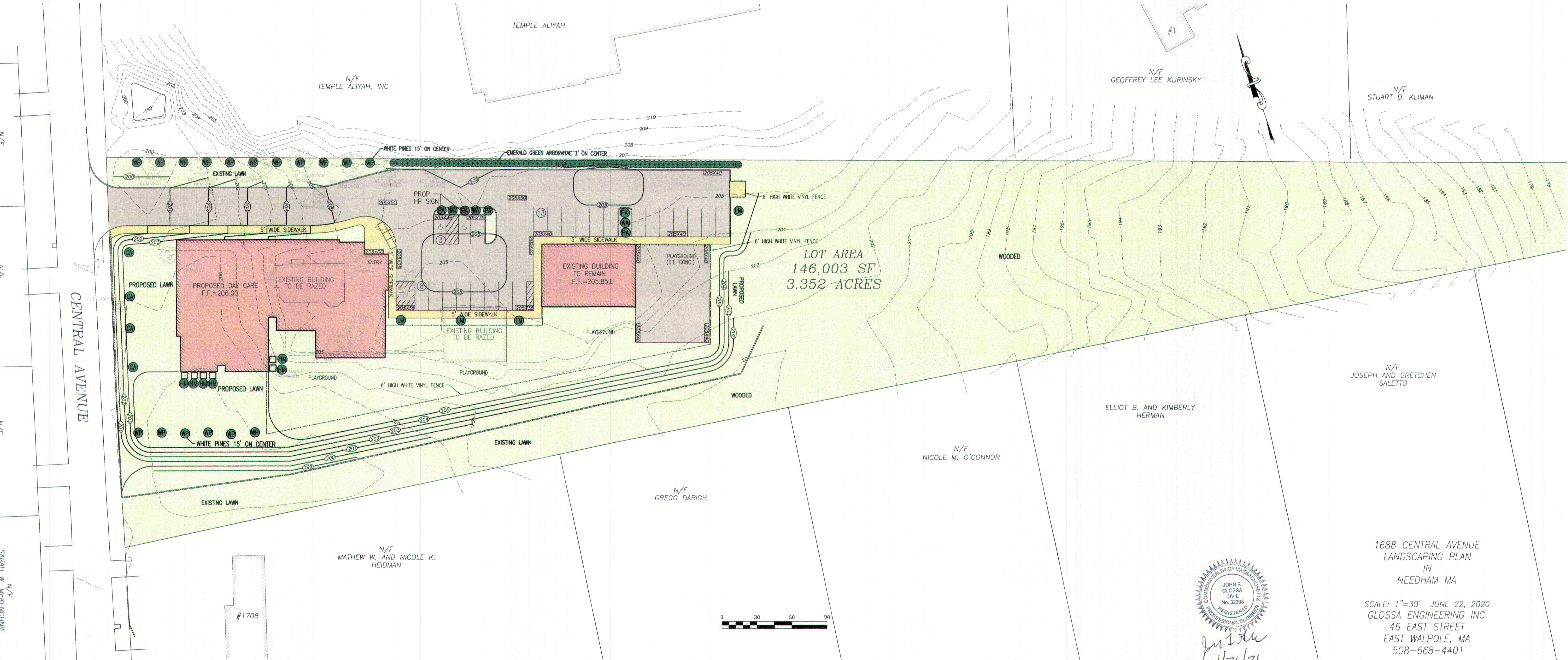
2) ALL CONSTRUCTION SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE TOWN OF NEEDHAM PUBLIC WORKS DEPARTMENT.

	COMMON NAME	BOTANICAL NAME	SIZE	QUANTITY
PA	PINK AZELEA	RHODODENDRON PERICLYMENOIDES	2'-3'	5
WA	WHITE AZELEA	RHODODENDRON VICOSUM	2'-3'	3
LM	MAPLE "LEGACY"	ACER SACCHARUM	1-1/2" CAL.	4
WP	WHITE PINE	PINUS STOBUS	1-1/2" CAL.	17
CA	CRABAPPLE "DONALD WYMAN"	MALUS "DONALD WYMAN"	1-1/2" CAL.	4
EG	ARBORVITAE "EMERALD GREEN"	THUA OCCIDENTALIS SMARAGD	2'-3'	75
HW	ARBORVITAE "HETZ MIDGET"	THUA OCCIDENTALIS "HETZ MIDGET"	2'-3'	6

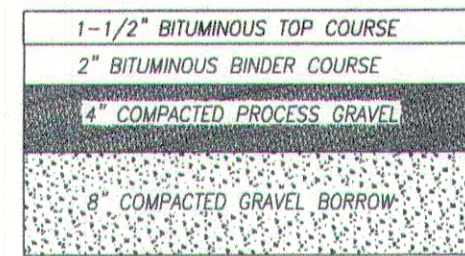


LEDGEND:

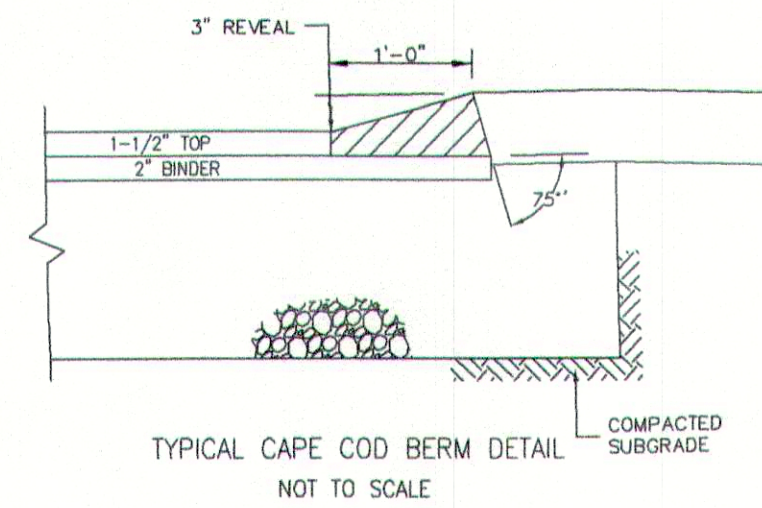
EXISTING GRADE	100
EXISTING SPOT GRADE	x 200.02
EXISTING GAS MAIN	G
EXISTING SEWER MANHOLE	SMH
EXISTING DRAIN MANHOLE	EX-DMH
EXISTING CATCH BASIN	EX-CB
EXISTING ELECTRIC MANHOLE	EX-EMH
EXISTING UTILITY POLE	UP
EXISTING TEST PIT	TEST PIT#5
EXISTING BOUND	
EXISTING FENCE	
EXISTING FIRE HYDRANT	
EXISTING GATE VALE	
PROPOSED GRADE	205
PROPOSED SPOT GRADE	205.5
PROPOSED CATCH BASIN	CB-1
PROPOSED DRAIN MANHOLE	DMH-1
PROPOSED TAPPING SLEEVE AND VALVE	PROPOSED 8"X6" TS&V



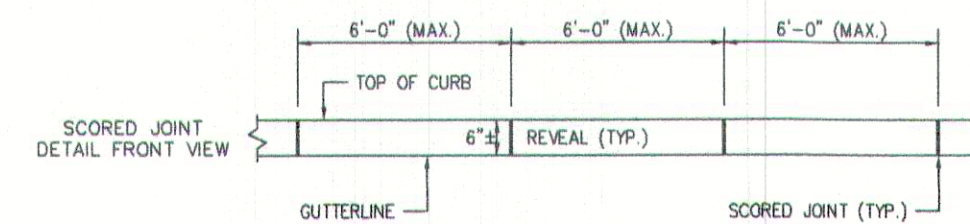
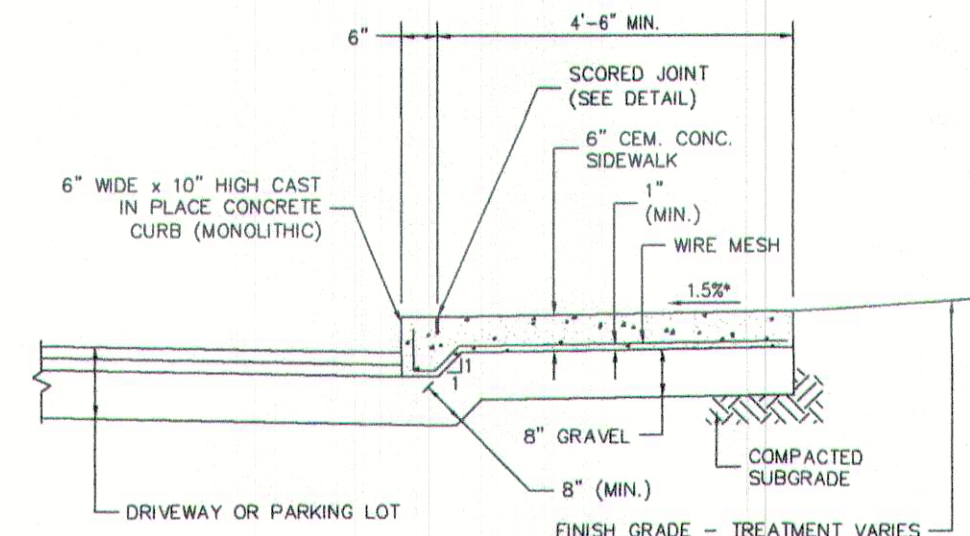
1688 CENTRAL AVENUE
LANDSCAPING PLAN
IN
NEEDHAM MA
SCALE: 1"=30' JUNE 22, 2020
GLOSSA ENGINEERING INC.
46 EAST STREET
EAST WALPOLE, MA
508-668-4401



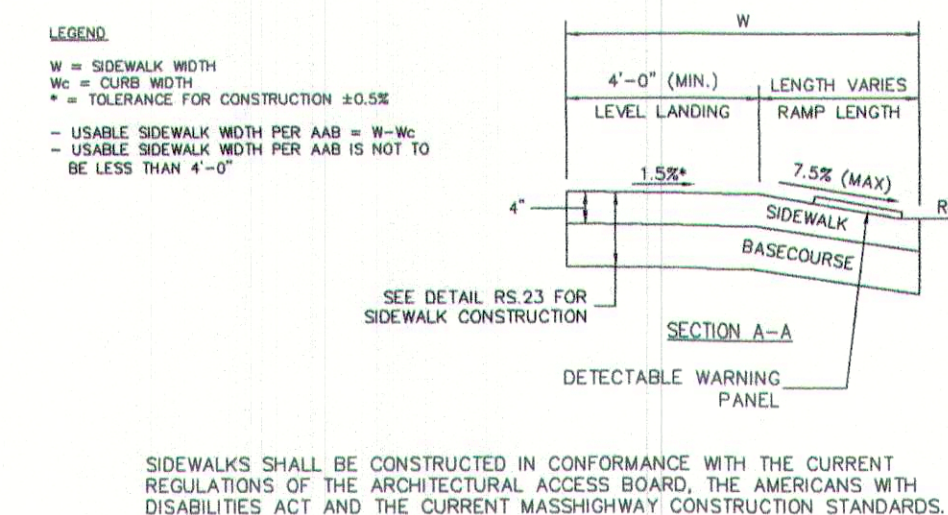
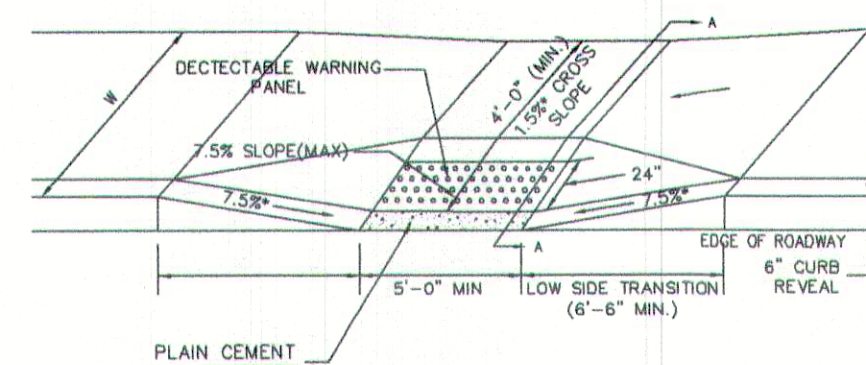
PAVEMENT DETAIL
NOT TO SCALE



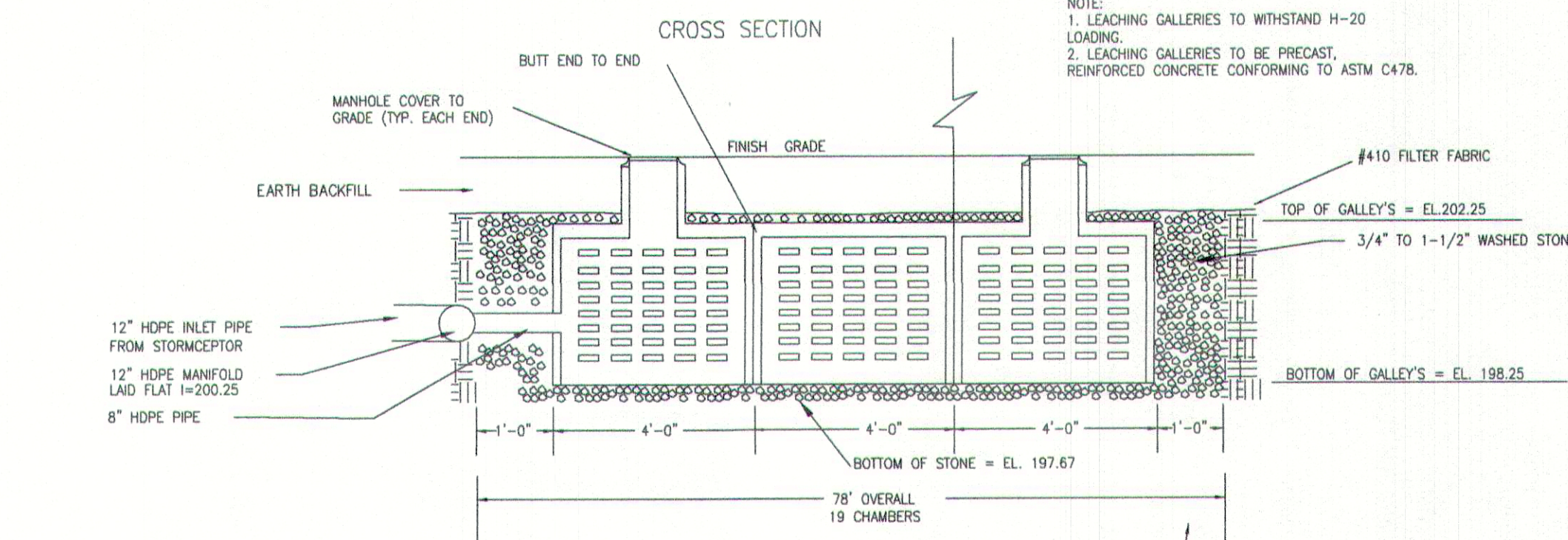
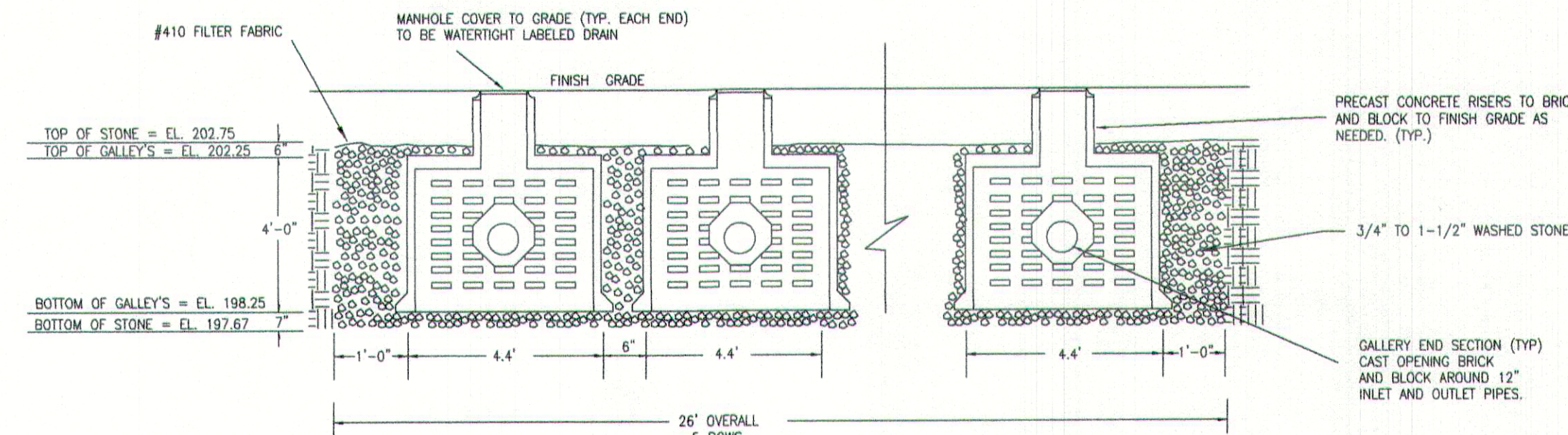
TYPICAL CAPE COD BERM DETAIL
NOT TO SCALE



NOTE: MONOLITHIC CONCRETE CURB SHALL NOT BE USED ON ANY PUBLIC STREET OR WAY. MONOLITHIC CONCRETE CURB MAY BE USED ON PRIVATE WAYS, DRIVEWAYS AND IN PARKING LOTS.
* - TOLERANCE FOR CONSTRUCTION $\pm 0.5\%$

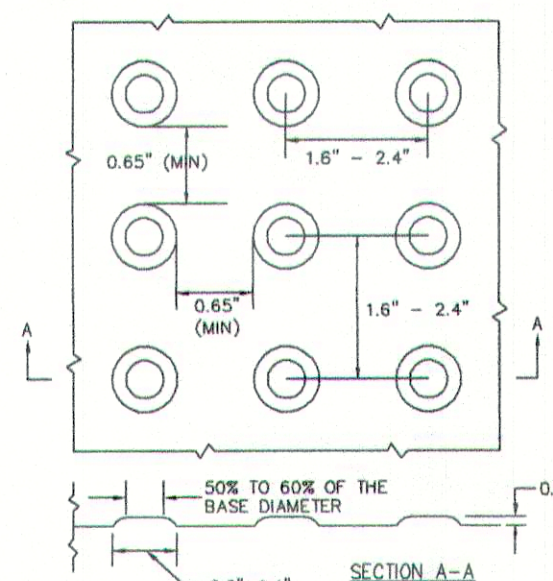


SIDEWALKS SHALL BE CONSTRUCTED IN CONFORMANCE WITH THE CURRENT REGULATIONS OF THE ARCHITECTURAL ACCESS BOARD, THE AMERICANS WITH DISABILITIES ACT AND THE CURRENT MASSHIGHWAY CONSTRUCTION STANDARDS.

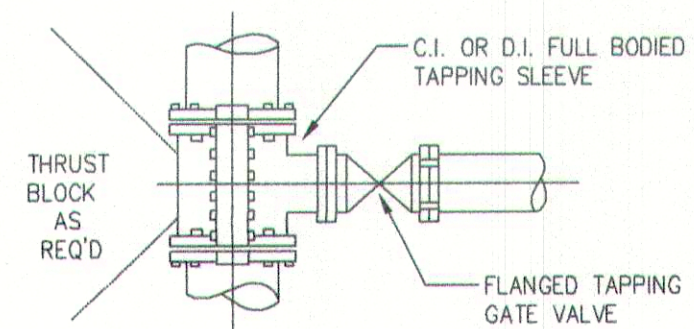


NOTE: REMOVE ALL UNSUITABLE MATERIAL FROM BENEATH THE INFILTRATION BASIN TO THE TOP OF THE SAND AND GRAVEL LAYER AS DETERMINED BY A DEP APPROVED SOIL EVALUATOR. REPLACE WITH SEPTIC SAND

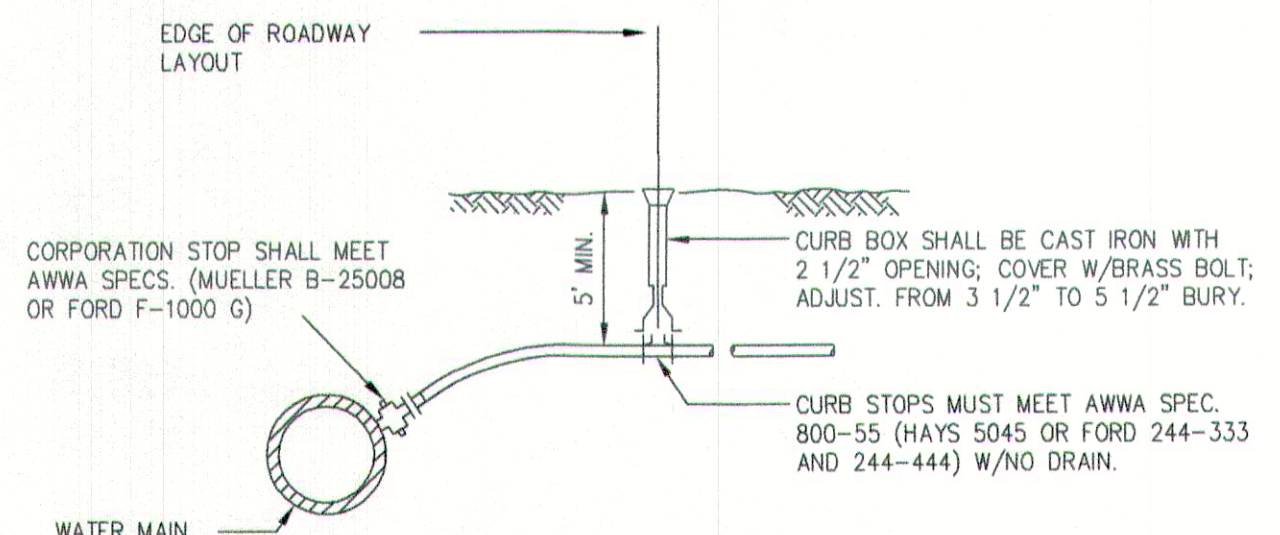
TYPICAL UNDERGROUND INFILTRATION BASIN
NOT TO SCALE



PANELS MAY BE CONCRETE PRECAST OR CAST IN PLACE OR OTHER SUITABLE MATERIAL PERMANENTLY APPLIED TO THE RAMP. DETECTABLE WARNING SURFACES SHALL CONTRAST VISUALLY WITH ADJACENT WALKING SURFACES EITHER LIGHT-ON-DARK OR DARK-ON-LIGHT

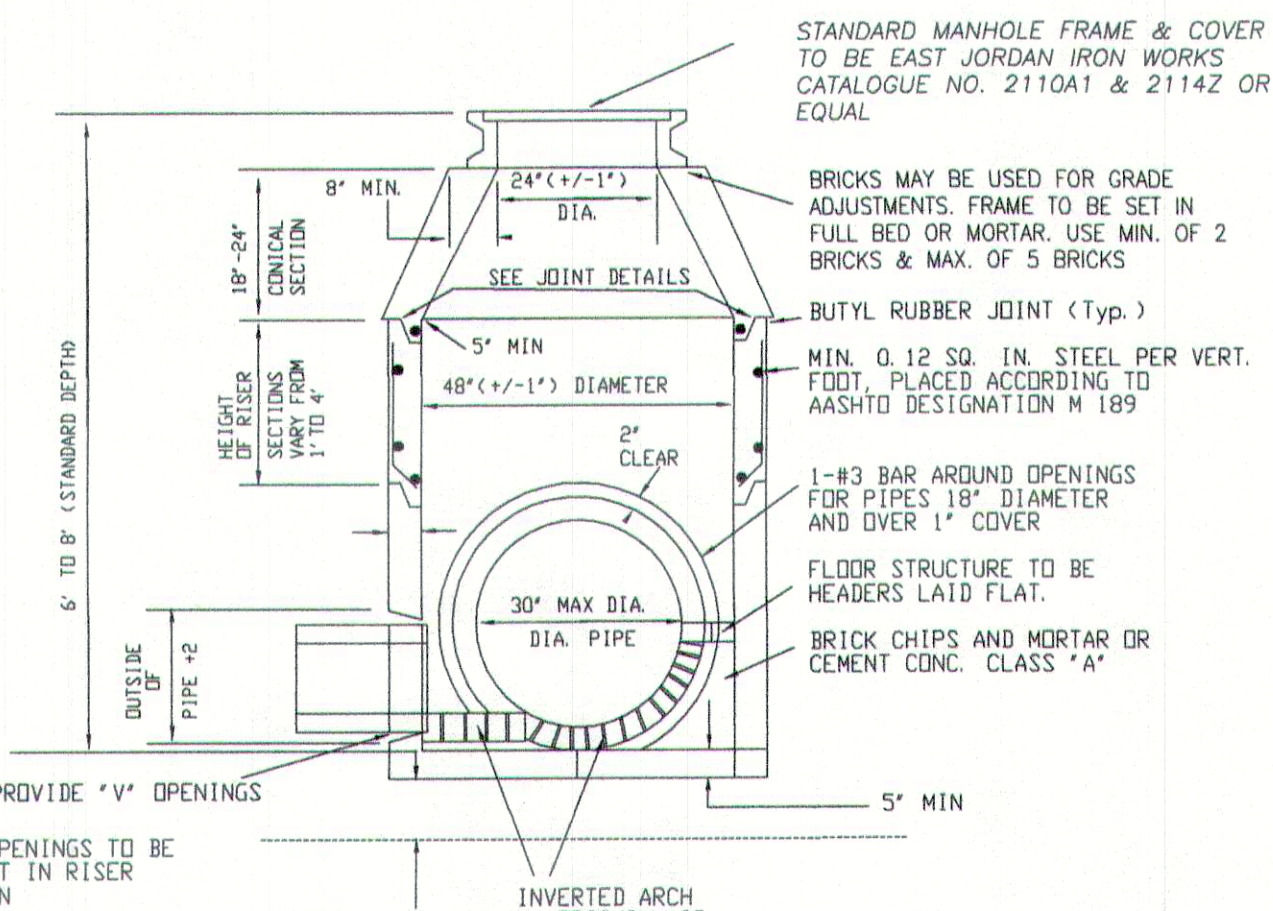


TAPPING SLEEVE AND VALVE DETAILS
NOT TO SCALE

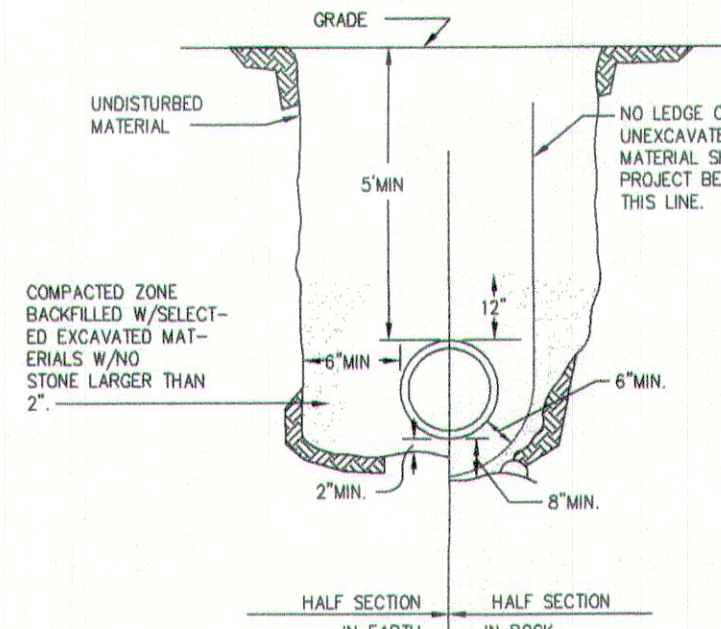


NOTE: COPPER TUBING SHALL MEET AWWA SPEC. 76-OR TYPE K OR FEDERAL SPEC. WWT-799 TYPE K. 1 1/2 inch AND LARGER SERVICES ARE REQUIRED TO HAVE A SADDLE.

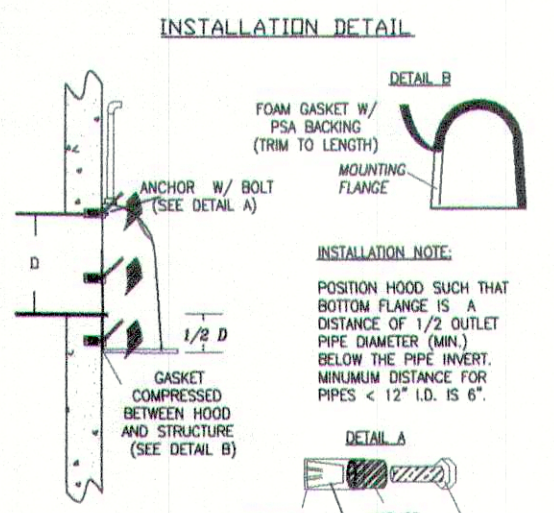
TYPICAL SERVICE CONNECTION
NOT TO SCALE



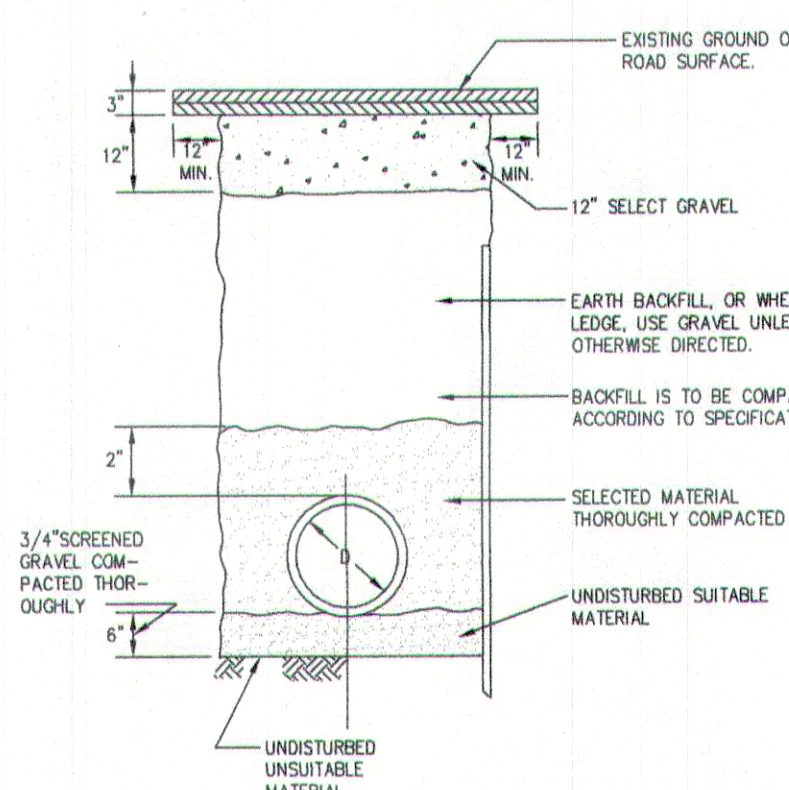
PRECAST CONCRETE DRAIN MANHOLE DETAILS
NOT TO SCALE



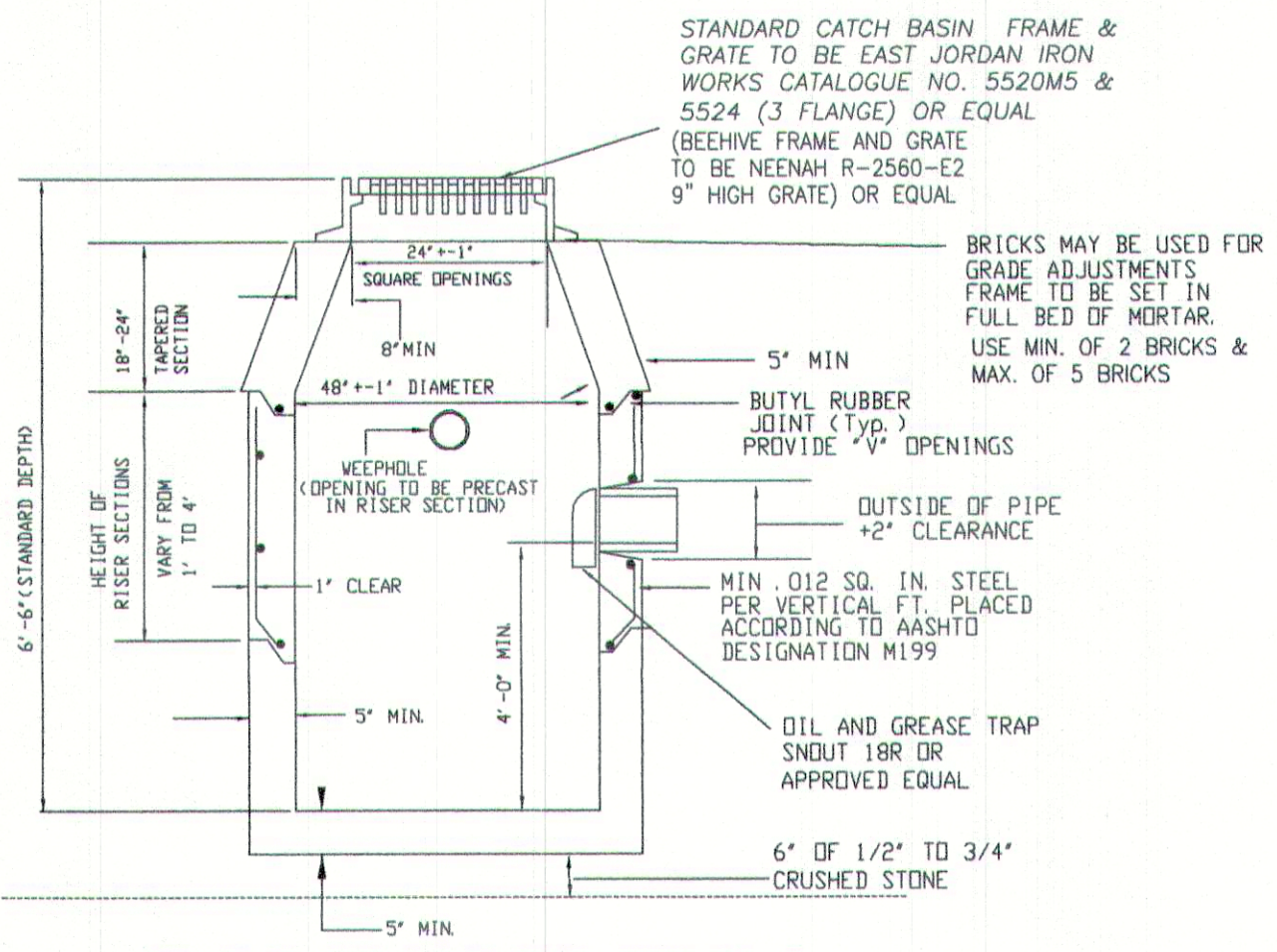
WATER MAIN TRENCH DETAIL
NOT TO SCALE



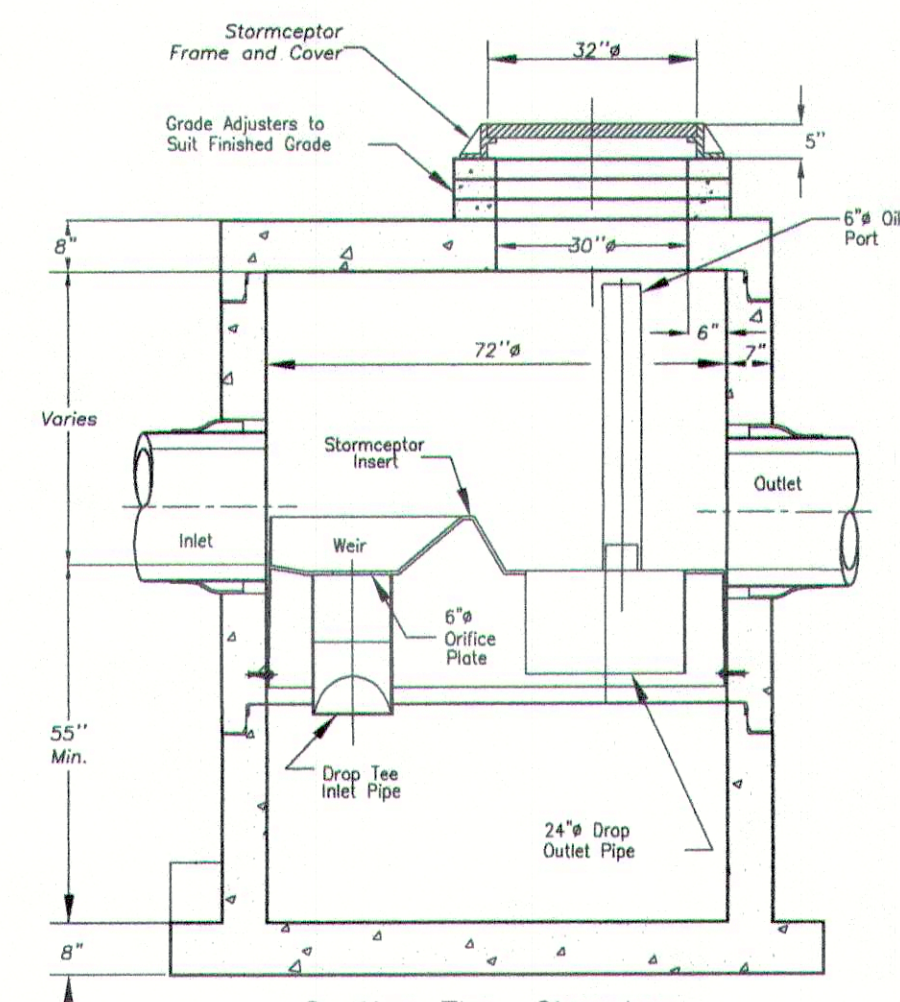
OIL AND GREASE TRAP
SNOUT 18R OR APPROVED EQUAL
NOT TO SCALE



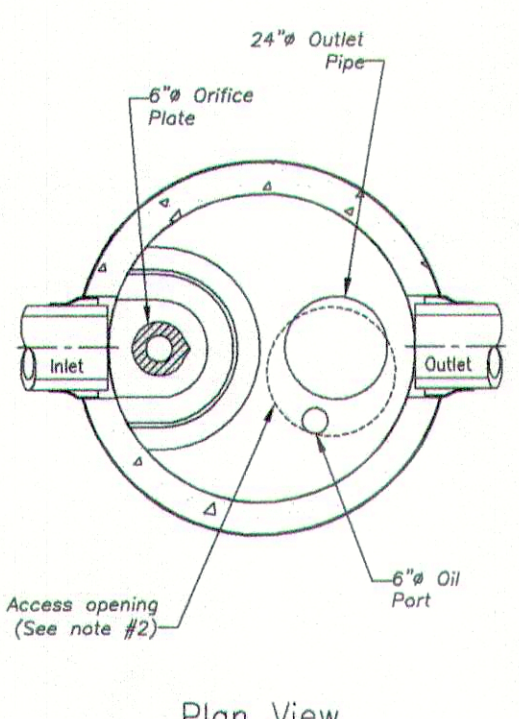
TYPICAL DRAIN TRENCH DETAILS
NOT TO SCALE



PRECAST CONCRETE CATCH BASIN DETAILS
NOT TO SCALE



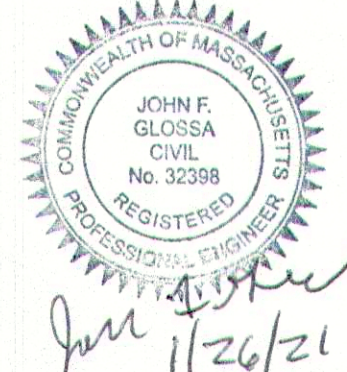
Section Thru Chamber
STC 900 Precast Concrete Stormceptor
(900 U.S. Gallon Capacity)

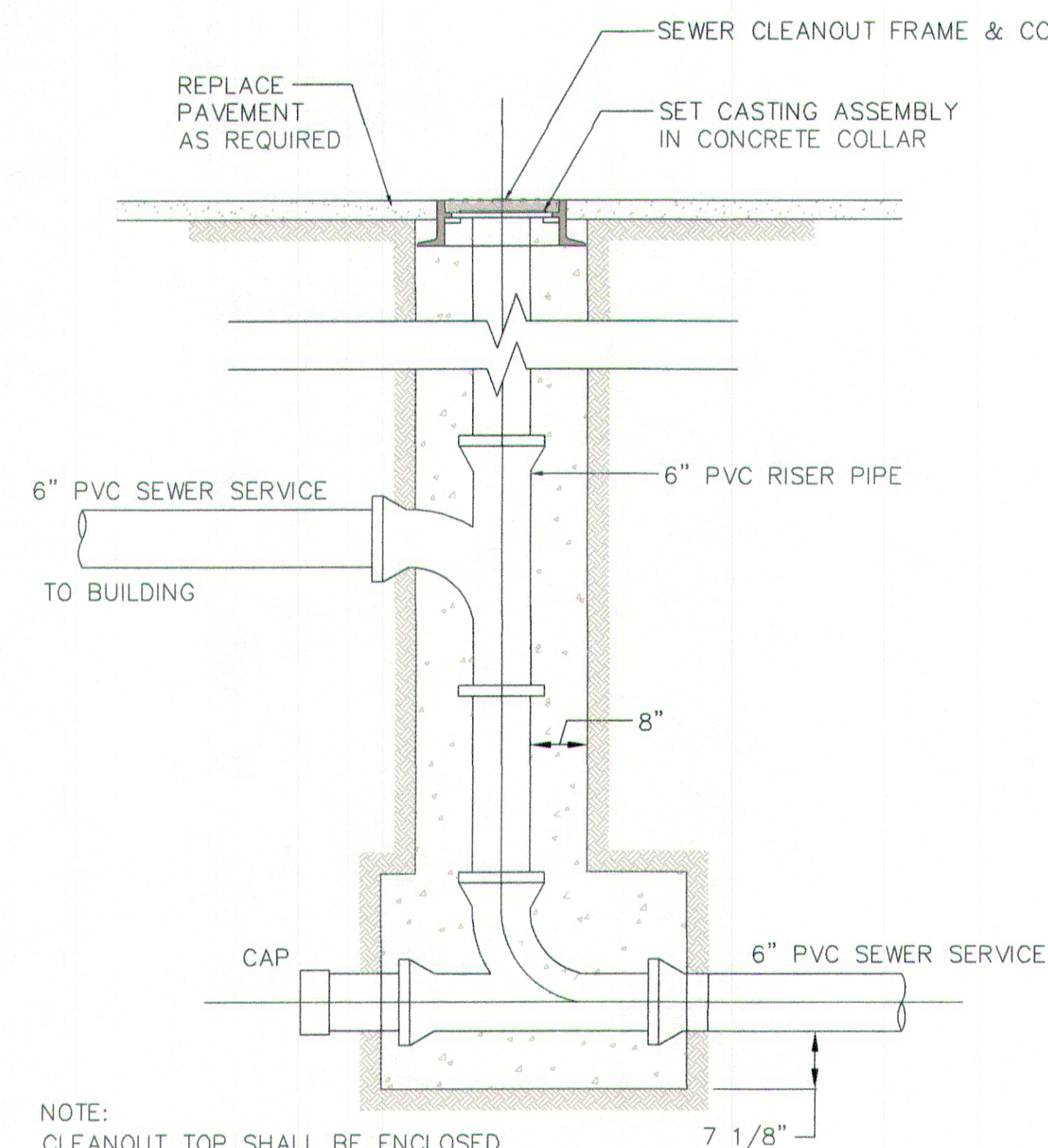


Notes:
1. The Use Of Flexible Connection is Recommended at The Inlet and Outlet Where Applicable.
2. The Cover Should be Positioned Over The Outlet Drop Pipe and The Oil Port.
3. The Stormceptor System is protected by one or more of the following U.S. Patents: #4985148, #5498331, #5725760, #5753115, #5849181, #6088765, #6371690.
4. Contact a Concrete Pipe Division representative for further details not listed on this drawing.

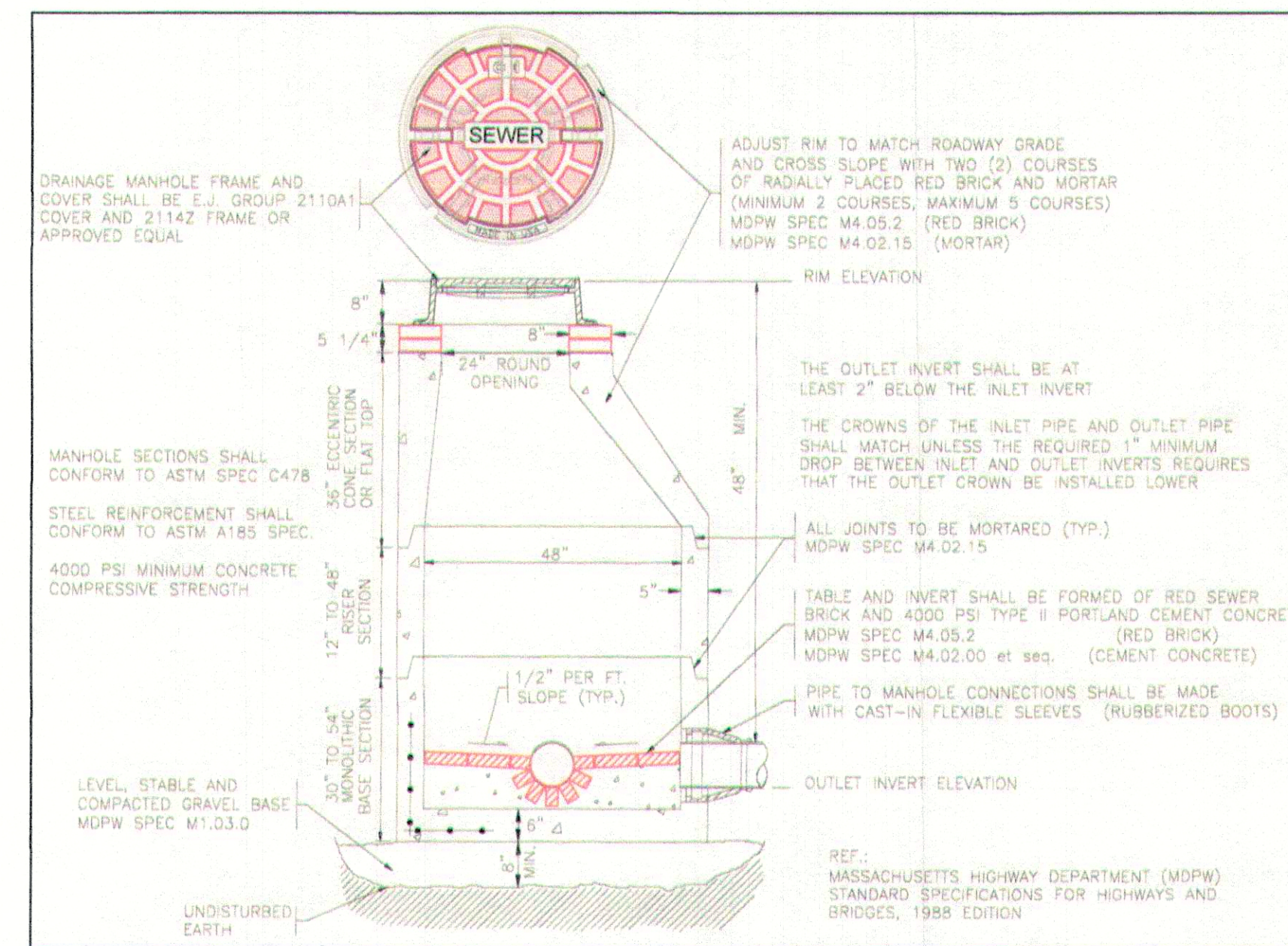
1688 CENTRAL AVENUE
CONSTRUCTION DETAILS
IN
NEEDHAM MA

SCALE: 1"=30' JUNE 22, 2020
GLOSSA ENGINEERING INC.
46 EAST STREET
EAST WALPOLE, MA
508-668-4401

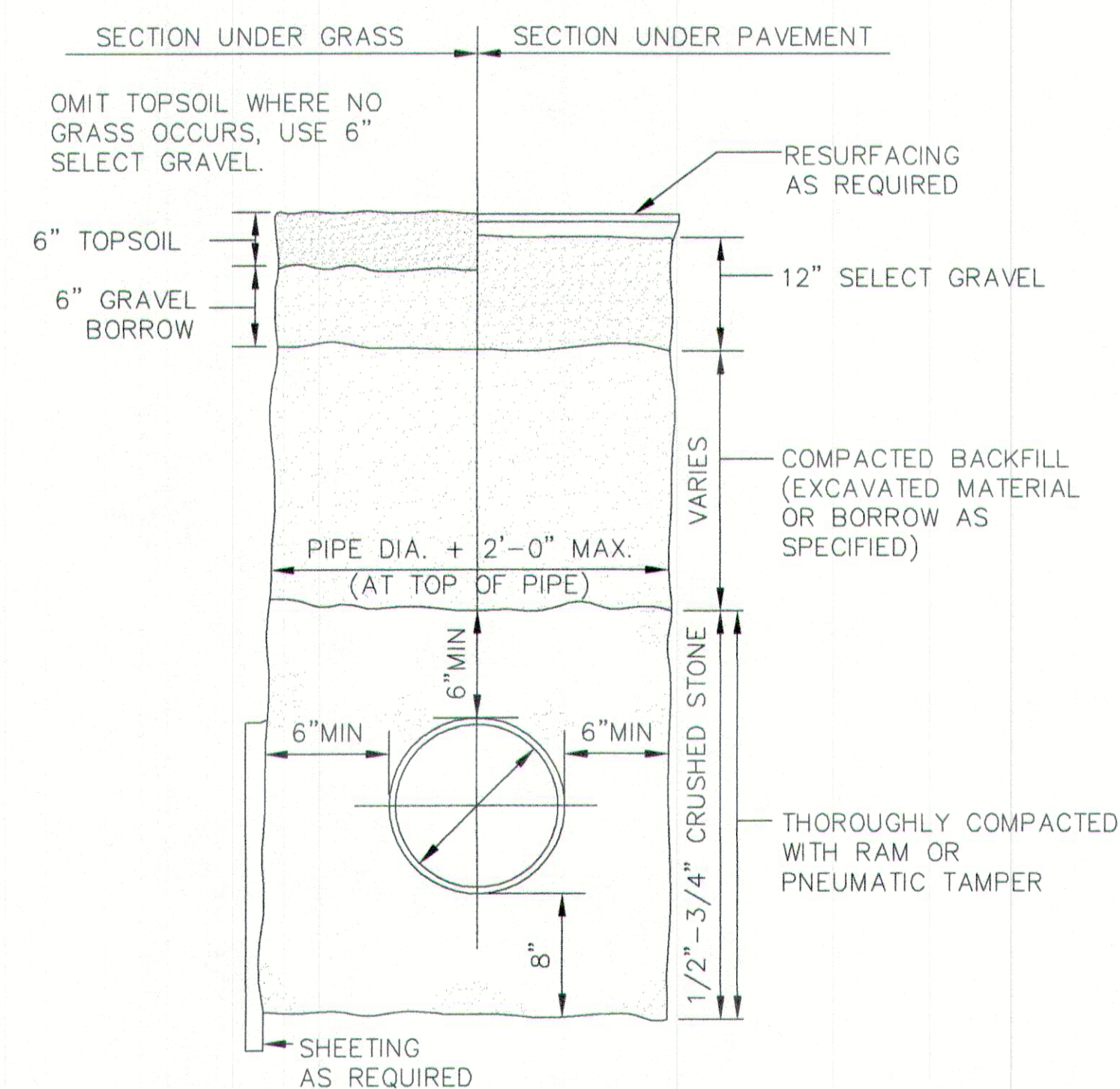




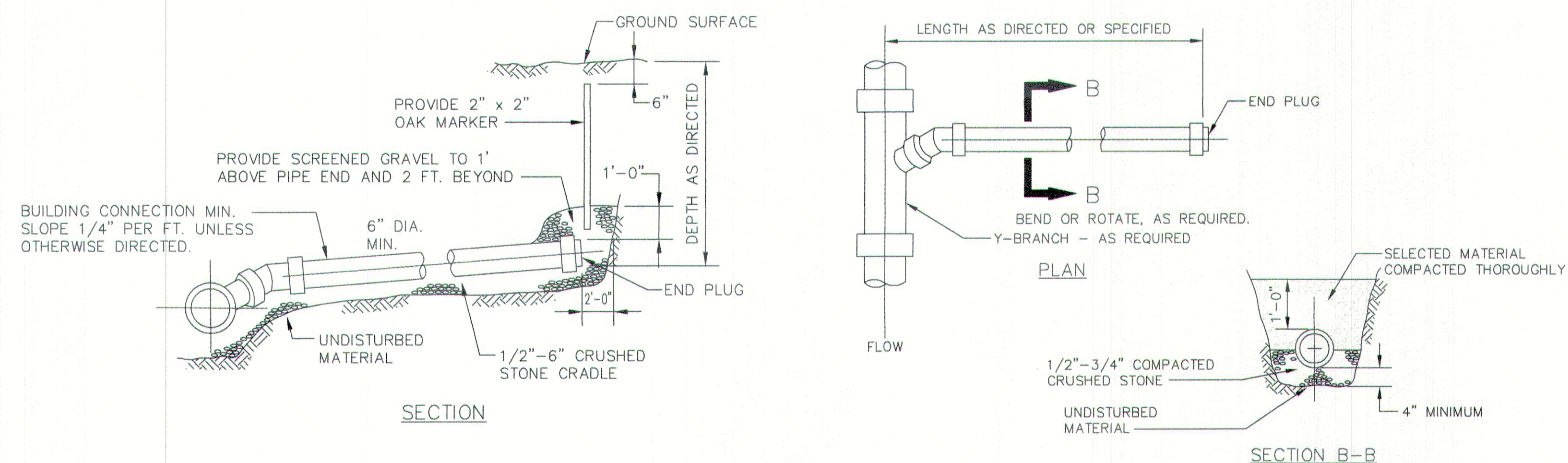
SEWER CLEANOUT DETAIL (C/O)
NOT TO SCALE



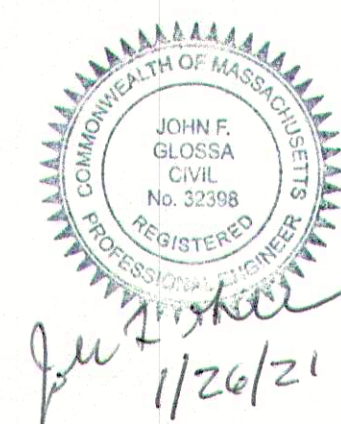
TYPICAL SEWER MANHOLE DETAIL
NOT TO SCALE



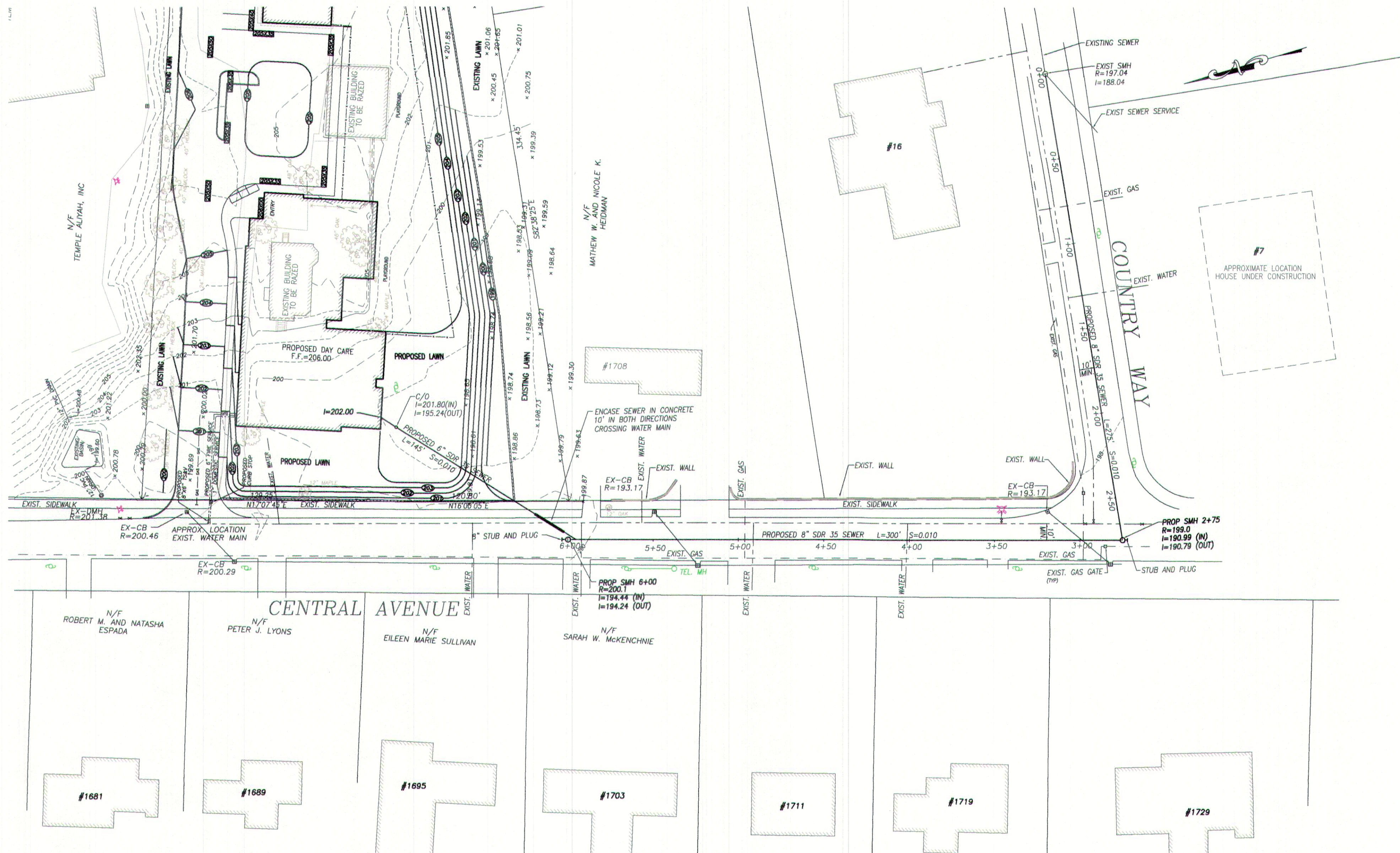
TYPICAL SEWER TRENCH DETAIL
NOT TO SCALE



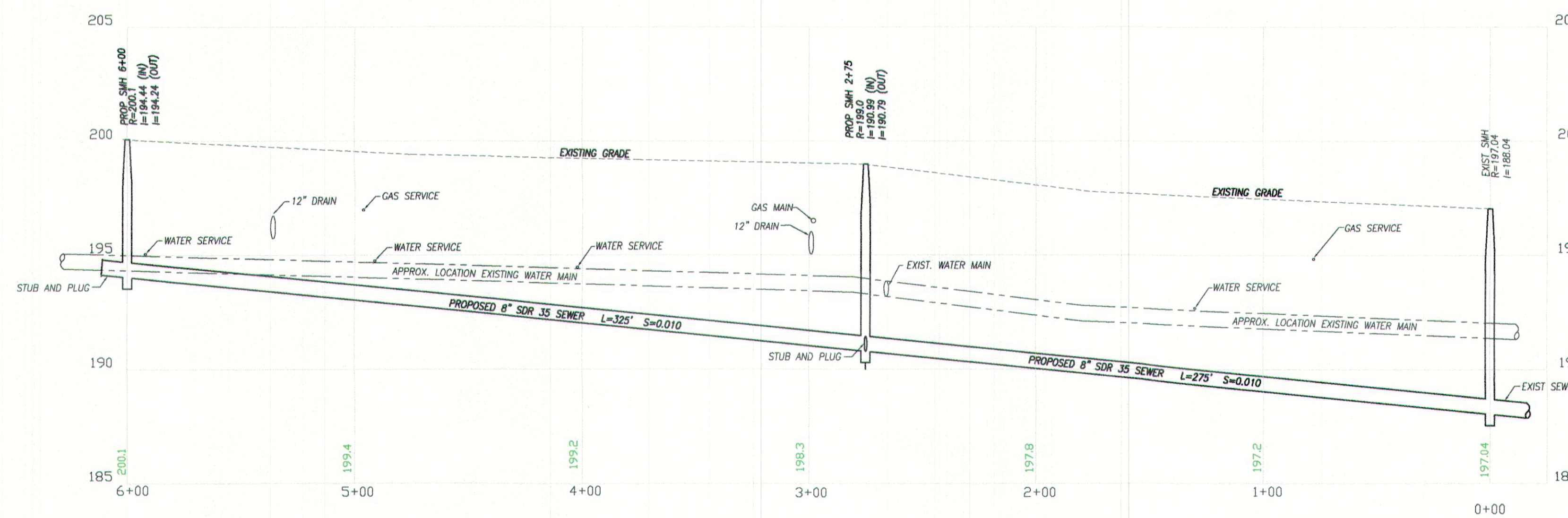
TYPICAL BUILDING CONNECTION
NOT TO SCALE



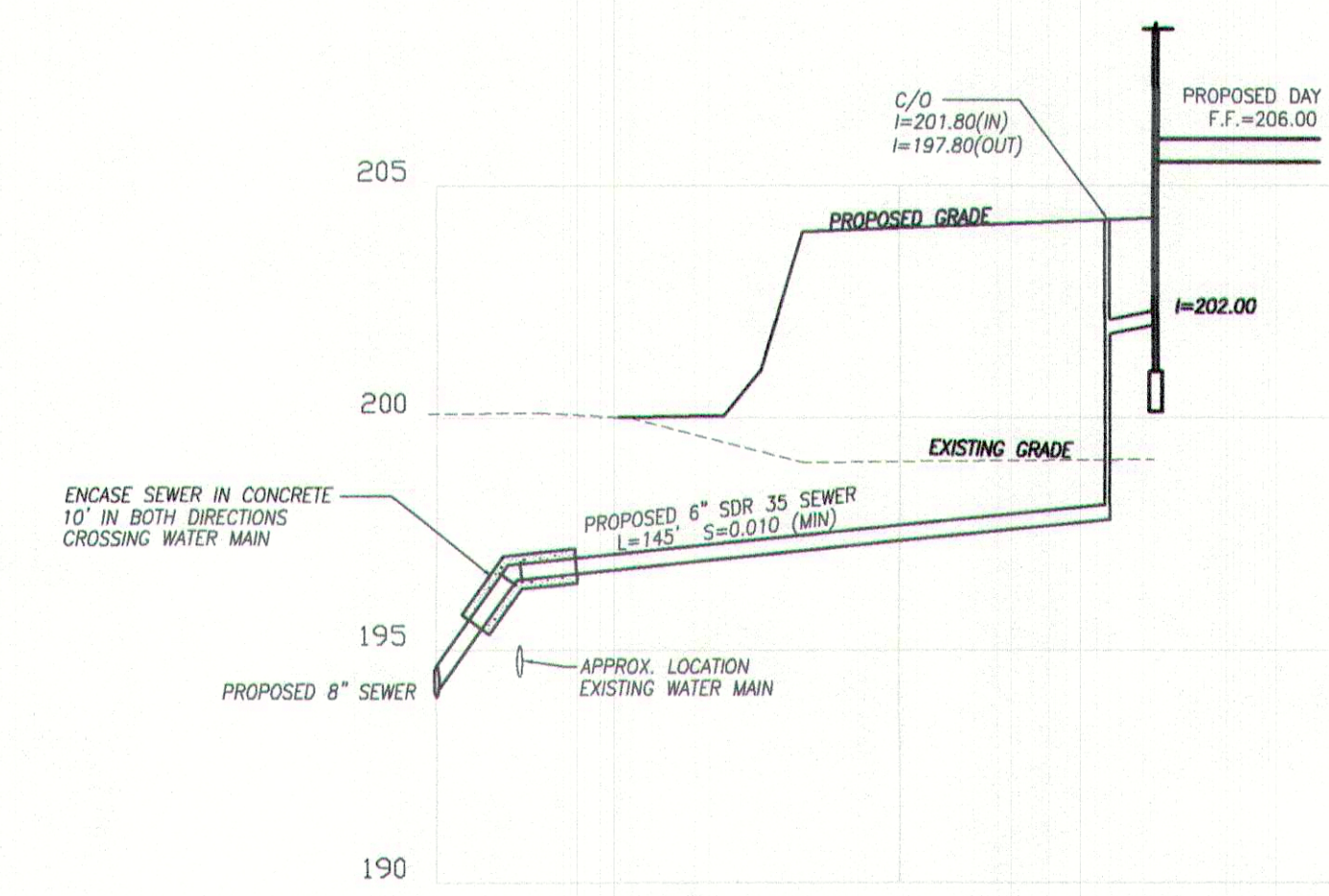
1688 CENTRAL AVENUE
CONSTRUCTION DETAILS
IN
NEEDHAM MA
SCALE: 1"=30' JUNE 22, 2020
GLOSSA ENGINEERING INC.
46 EAST STREET
EAST WALPOLE, MA
508-668-4401



PLAN
SCALE: 1" = 40'



PROFILE
SCALE: HOR. 1" = 40'
VERT. 1" = 4'



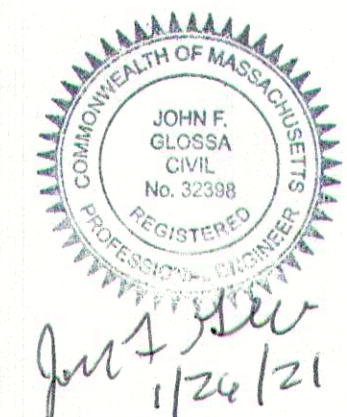
BUILDING CONNECTION PROFILE
SCALE: HOR. 1" = 40'
VERT. 1" = 4'

LEDGEND:

EXISTING GRADE	----- 100-----
EXISTING SPOT GRADE	x 200.02
EXISTING GAS MAIN	- - - - -
EXISTING GAS GATE	⌘
EXISTING SEWER MANHOLE	○ EXIST. SMH
EXISTING DRAIN MANHOLE	○ EX-DMH
EXISTING CATCH BASIN	⊞ EX-CB
EXISTING ELECTRIC MANHOLE	○ EX-EMH
EXISTING UTILITY POLE	⊙
EXISTING FENCE	-----x-----
EXISTING FIRE HYDRANT	⊕
EXISTING GATE VALE	⌘
PROPOSED GRADE	----- 200-----
PROPOSED SPOT GRADE	⊕ 205.35
PROPOSED SEWER MANHOLE	○ PRDP. SMH
PROPOSED CATCH BASIN	⊞ CB-1
PROPOSED DRAIN MANHOLE	○ DMH-1
PROPOSED TAPPING SLEEVE AND VALVE	⊕ PROPOSED 8"x6" TS&V

CONSTRUCTION NOTES

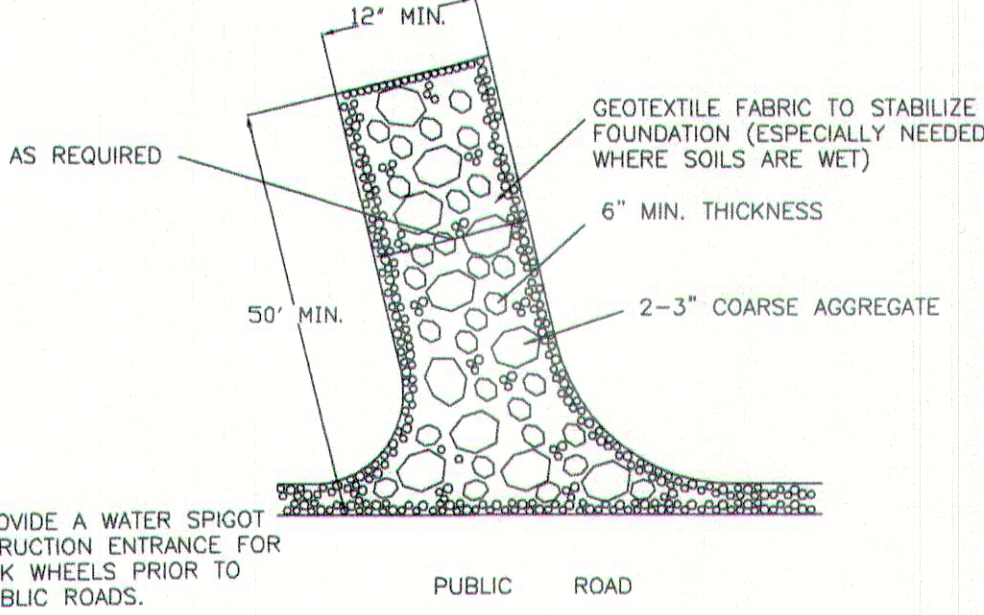
- 1) ALL UNDERGROUND UTILITIES MAY NOT BE SHOWN ON THIS PLAN AND THE LOCATION OF THE UNDERGROUND UTILITIES SHOWN MAY VARY FROM THEIR FIELD LOCATION. THE CONTRACTOR SHALL VERIFY THE EXISTENCE AND LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO THE CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY DIG SAFE AT LEAST 72 HOURS PRIOR TO THE START OF THE CONSTRUCTION.
- 2) ALL CONSTRUCTION SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE TOWN OF NEEDHAM PUBLIC WORKS DEPARTMENT



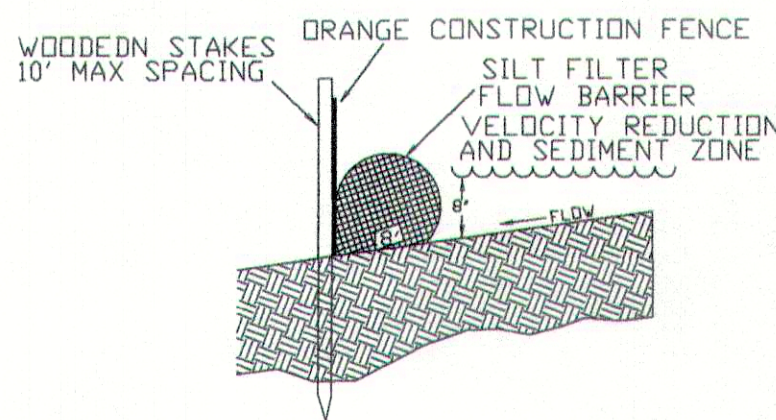
1688 CENTRAL AVENUE
SEWER EXTENSION
PLAN AND PROFILE
IN
NEEDHAM MA
SCALE: AS NOTED NOVEMBER 19, 2020
GLOSSA ENGINEERING INC.
46 EAST STREET
EAST WALPOLE, MA
508-668-4401

- CONSTRUCTION SEQUENCING:
1. INSTALLATION OF SILT BARRIERS AS SHOWN ON THE PLANS
 2. INSTALLATION OF STABILIZED CONSTRUCTION ENTRANCE
 3. ESTABLISHMENT OF A CONSTRUCTION STAGING AREA
 4. ESTABLISHMENT OF A MATERIALS STOCKPILE AREA
 5. REMOVAL OF EXISTING BUILDINGS
 6. CLEARING AND GRUBBING
 7. REMOVAL AND STOCKPILING OF TOP AND SUBSOILS
 8. REMOVAL OF SAND AND GRAVEL TO BRING SITE TO SUB GRADE
 9. ESTABLISHING AND STABILIZING WITH LOAM AND SEED ALL CUT AND FILL SLOPES
 10. INSTALL BINDER COURSE OF DRIVEWAY IN LOCATION OF FINAL ASPHALT DRIVEWAY
 11. CONSTRUCTION OF THE BUILDING
 12. INSTALLATION OF UNDERGROUND DETENTION BASIN
 13. INSTALLATION OF UNDERGROUND UTILITIES, IE DRAINAGE, WATER LINE, ELECTRIC, CATV AND TELEPHONE
 14. INSTALLATION OF LANDSCAPING AND GRASS AREAS
 15. FINAL COURSE OF ASPHALT FOR DRIVEWAYS
 16. CLEAN UP AND DEMOBILIZE

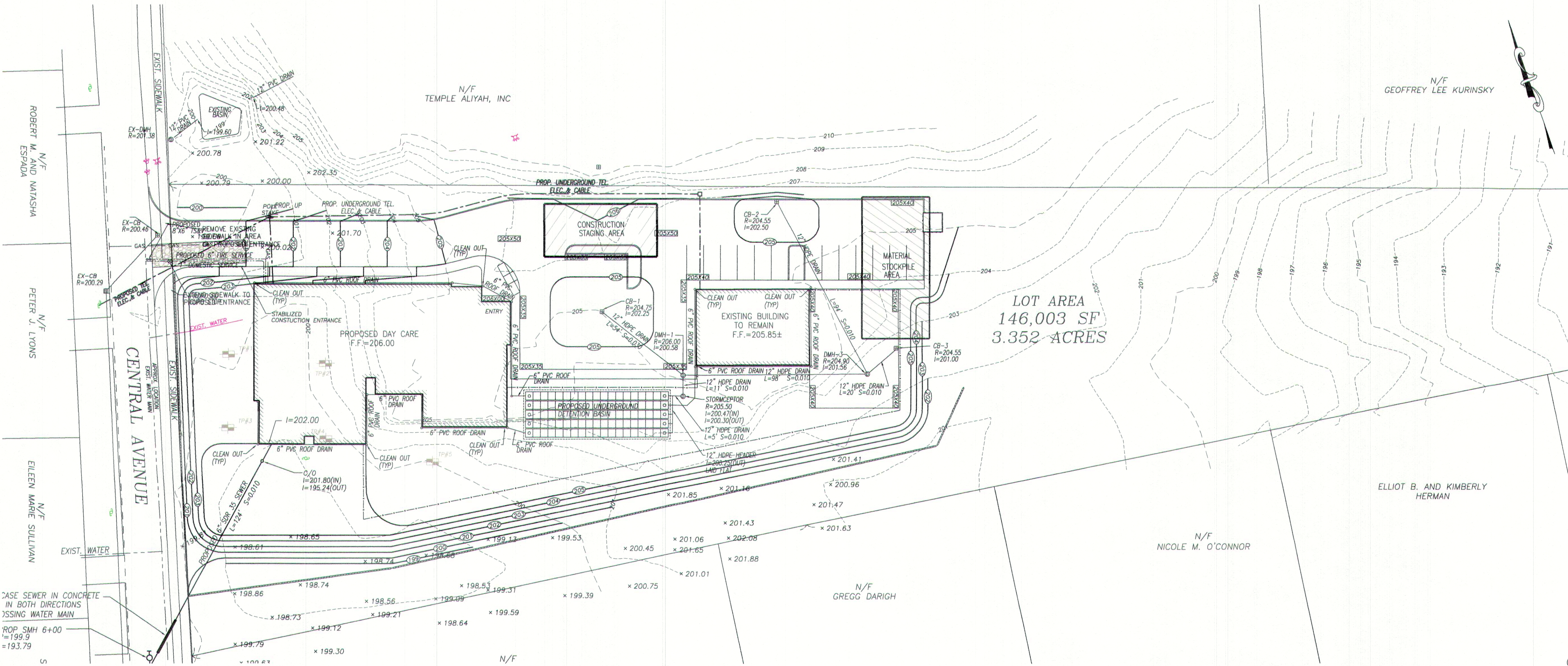
- CONSTRUCTION NOTES:
1. ALL AREAS TO BE ALTERED SHALL BE BROUGHT TO SUB GRADE OR FINAL GRADE AT THE START OF CONSTRUCTION
 2. AREAS ONCE BROUGHT TO GRADE THAT WILL NOT BE ALTERED AGAIN SHALL BE LOAMED AND SEEDED AND PROTECTED WITH STRAW GUARD AS NEEDED
 3. DRAINAGE BASIN AS SHOWN SHALL NOT BECOME OPERATIONAL UNTIL THE SITE IS FINISHED AND SWEEPED OF ALL DEBRIS
 4. TEMPORARY SEDIMENT BASINS SHALL BE USED AND MAINTAINED UNTIL ALL PROPOSED PAVED AREAS ARE COMPLETE AND SWEEPED OF ALL DEBRIS
 5. CATCH BASINS SHALL BE PROTECTED FROM SEDIMENTS AT ALL TIMES UNTIL CONSTRUCTION IS COMPLETE
 6. INSTALL SILT SACKS IN ALL EXISTING AND PROPOSED CATCH BASINS



STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE



8\"/>



1688 CENTRAL AVENUE
CONSTRUCTION PERIOD PLAN
IN
NEEDHAM MA

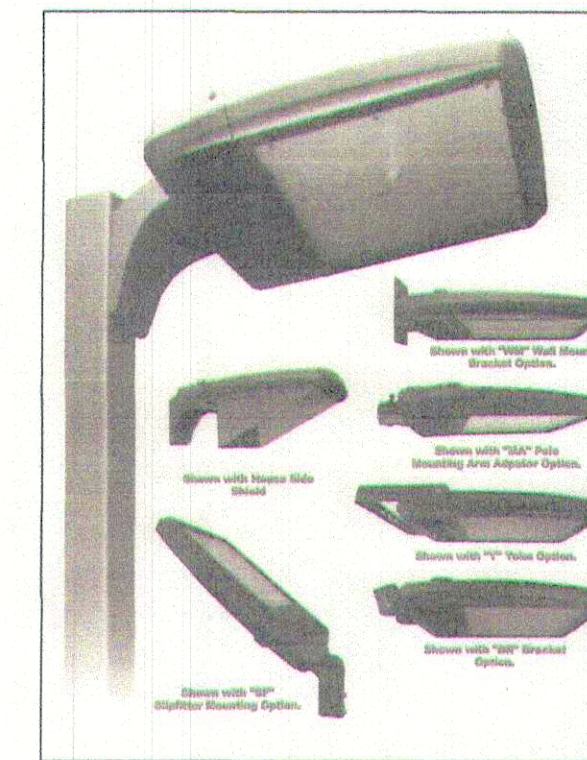
SCALE: 1"=30' JUNE 22, 2020
GLOSSA ENGINEERING INC.
46 EAST STREET
EAST WALPOLE, MA
508-668-4401



Calculation Summary								
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min	Grid Z
CalcPts_1	Illuminance	Fc	1.10	7.8	0.0	N.A.	N.A.	0
Parking - Roadway Calcs	Illuminance	Fc	3.16	7.8	0.5	6.32	15.60	

Luminaire Schedule							
Symbol	Qty	Label	Arrangement	Description	LLF	Lum. Lumens	Lum. Watts
	4	A	SINGLE	EG45QD1X136U4KC	1.000	21455	148.3

NOTE: LIGHT POLES ARE 20' HIGH



LIGHT FIXTURE MODEL NUMBER
EG45QD1X136U4KC
AS MANUFACTURED BY PEMCO LIGHTING PRODUCTS

20' POLE HEIGHT
BY WJM, SERIES SS NON TAPERED STEEL POLE

S70°24'31"E

LOT AREA
146,003 SF

CENTRAL AVENUE

EXIST. SIDEWALK

EXIST. SIDEWALK

EXIST. SIDEWALK

5' WIDE SIDEWALK

ENTRY

PROP. HP SIGN

5' WIDE SIDEWALK

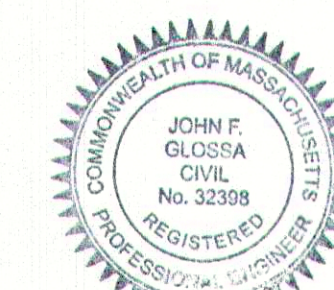
EXISTING BUILDING

5' WIDE SIDEWALK

N/F
MATHEW W. AND NICOLE K.
HEIDMAN

N/F
NICOLE M. O'CONNOR

ELLIOT B. AND KIMBERLY
HERMAN



John F. Glossa
1/26/21

APPENDIX
PHOTOMETRIC AND SITE LIGHTING
PLAN
1688 CENTRAL AVENUE
IN
NEEDHAM MA
SCALE 1"=30' JUNE 22, 2020

Traffic Impact Assessment

For:

Child Care Facility

On:

Central Avenue

In:

Needham, Massachusetts

Prepared For:

Glossa Engineering, Inc.
Walpole, Mass.

Prepared By:



March 2021

Child Care Facility

*1688 Central Avenue
Needham, Massachusetts*



J. T. Gillon
2/11/21

Gillon Associates Co.
111 River Street, Weymouth, MA 02191-2104
Telephone (781) 762-8856
E-mail: jt.gillon@comcast.net

TABLE OF CONTENTS

Executive Summary
Introduction
Project Description
Existing Traffic Conditions
Existing Traffic Volumes
Future Traffic Conditions
Trip Generation and Distribution
Traffic Operational Analysis
Analysis Methodology and Findings
Central Avenue at Site Driveway
Site Distance Evaluation

LIST OF FIGURES

<u>Title</u>	<u>Figure Number</u>
General Location Map	1
Locus Map	2
Existing Peak Hour Traffic Volume	3
Trip Generation Summary	4
Directional Distribution	5
Projected Peak Hour Traffic Volumes	6
Intersection Levels of Service	7
Central Avenue Speed Characteristics	8
Central Avenue Stopping Sight Distance	9

EXECUTIVE SUMMARY

- **Central Avenue carries approximately 9,000 vehicles per day in the vicinity of the site. About nine percent of this daily volume occurs during the morning peak hour.**
- **Based on the proponent's projected arrivals and departures, the morning peak hour will have more site generated trips than the evening peak hour. This project is expected to generate approximately 104 new morning peak hour trips with 55 inbound and 49 outbound.**

The proponent will have staff assist children both arriving and leaving the day care to ensure the drop-off/pick-up circulation line of vehicles keep moving and do not stack back down the 200-foot long driveway.

- **All through traffic on Central Avenue in each direction will continue to enjoy an "A" level of service with little or no delay during the weekday morning commuting peak hour. The Central Avenue southbound left-turn through lane utilized into the Site Driveway, will continue to operate at an "A" level resulting in no turbulence on Central Avenue during the morning peak hour. The Site Driveway itself will have an acceptable "C" level with average delay during the morning peak hour.**
- **The required stopping sight distance at the Central Avenue / Site Driveway intersection is provided.**

INTRODUCTION

Gillon Associates has evaluated the anticipated traffic impacts resulting from the proposed development of a Child Care Facility. The site is located on Central Avenue, just north of Charles River Street in Needham, Massachusetts (Figure 1).

The purpose of this report is to evaluate potential traffic impacts, which may be created by the expected addition of vehicular traffic either originating from or destined to the site. Specifically, this report assesses traffic operational characteristics of the Central Avenue intersection at the site access roadway due to any additional traffic. Based on the proponent's projected arrivals and departures, the morning peak hour will have more site generated trips than the evening peak hour and, thus, was chosen for analysis purposes.

This report provides an identification of the expected traffic generated by the project along with an assessment of projected traffic operating characteristics. Existing traffic volumes were obtained by manually observing and recording Central Avenue traffic volumes in fifteen-minute increments during the morning peak hour.

PROJECT DESCRIPTION

The project site area is 146,003 square feet or just over three acres and includes constructing a 9,941 square-foot child care facility building. An out-building currently used as a barn will be retained for storage and ancillary purposes. The project will have a total of approximately 24 off-street surface parking spaces. The access to this school at #1688 Central Avenue uses a 200 foot-long, 24-foot wide access drive to Central Avenue (Figure 2).

EXISTING TRAFFIC CONDITIONS

Regional Roadway Network

Central Avenue will continue to serve the site and provide access to both local and regional roadway facilities. To the south, Central Avenue provides linkage between the site and Charles River Street and Dover as well as other points to the south. Central Avenue also provides access to the north with linkage to Route 135 and easterly to Needham Center.

Traffic Setting

The project is situated on the easterly side of Central Avenue. This roadway is a two-lane roadway with one lane in each direction. Central Avenue has a roadway pavement width of approximately 25 feet with a bituminous concrete sidewalk on the easterly side of the roadway.

Existing Traffic Volumes

Existing traffic volumes were obtained by manually observing and recording Central Avenue traffic volumes in fifteen-minute increments during the morning peak hour. Morning peak hour traffic volumes on Central Avenue at the site driveway are provided on Figure 3.

FUTURE TRAFFIC CONDITIONS

Trip Generation and Distribution

It is expected that the proposed child care facility will exhibit the same general trip generating characteristics as in other urban and suburban residential communities. In addition to local rates observed and compiled by this firm, the Institute of Transportation Engineers (ITE) provides data on a variety of land uses and there is a considerable amount of empirical data available. In addition, the proponent has found by assigning pick-up and drop-off windows for parents, there is less congestion within the site and they will employ that technique at this site as well. Figure 4 provides a trip generation summary listing the ITE equations along with the resulting trip generation values for the school.

Based on the proponent's projected arrivals and departures, the morning peak hour will have more site generated trips than the evening peak hour. This project is expected to generate approximately 104 new morning peak hour trips with 55 inbound and 49 outbound. This project is also expected to generate approximately 94 new evening peak hour trips with 44 inbound and 50 outbound.

Moreover, the Proponent has researched various Child Care locations to gain a higher level of confidence in our projected drop-off/pick-up vehicle trips. Over time, this location could accommodate between 80 and 100 students although 120 children appears to be allowed.

Observations at the Goddard School Day Care Facility in Medfield revealed 59 students arrived during the weekday morning peak hour.

Goddard School - Medfield MA

Morning Arrival time 3-20-18

Time	Arrive
7:00-7:15	11
7:15-7:30	10
7:30-7:45	11
7:45-8:00	15
8:00-8:15	15
8:15-8:30	18
8:30-8:45	6
8:45-9:00	10

In September 0f 2019, at a day care with 87 children there was a total of 51 vehicles during the morning peak hour. At the same location this winter there were 60 children in 30 cars on Monday and Friday and 76 children in 45 to 48 cars between Tuesdays and Thursdays.

In essence, all of these observations indicate there will be about 55 vehicles entering the site during the morning peak hour based on 80 children. This data also suggests this child care facility could quite easily accommodate over 100 children without creating on-site grid lock providing staff is available to assist children into the building where other staff members get that child settled and the initial staff member return to bring in the next vehicle's child.

If a parent insists on entering the facility they will be directed to park in an un-occupied parking stall or enter the site all the way to the end by the playground to block a staff member's car who is parked for the day. This operation will keep the drop-off / pick-up line circulating without disruption.

Directional distribution reflects the existing Central Avenue directional split as adjusted to account for residential local attributes during the morning and peak hour as shown on Figure 5. Site generated traffic volumes at the Central Avenue / Site Driveway intersection during the morning peak commuting hour is provided on Figure 6.

TRAFFIC OPERATIONAL ANALYSIS

This section of the report provides a quantitative analysis of anticipated traffic operational characteristics for the build scenarios. These series of capacity analyses were conducted for the weekday morning peak hour to determine the potential impact of the proposed day care facility project.

Analysis Methodology and Findings

The analysis is based on the "Highway Capacity Manual" for non-signalized intersections. This manual has been published by the Transportation Board of the National Research Council and approved by the National Academy of Sciences, National Academy of Engineering, and the Institute of Medicine. The most recent Synchro Software version 10.1 was utilized in the assessment.

At un-signalized intersections and driveways the manual assumes that the through and right-turn movements along any main street will operate unrestricted but conflicting movements will be subjected to various periods of delay depending primarily on the frequency of adequate safe gaps to complete these movements. These periods of delay are generally categorized in "Levels of Service" (LOS) ranging from "A" for very short or no delays through "F" for extensive delays. The Massachusetts Highway Design Manual indicates that a "D" Level of Service is acceptable on roadways such as those in the study area. A table comparing levels of service and seconds of delay is provided in the Appendix of this report.

As can be seen on Figure 7, all through traffic on Central Avenue in each direction will continue to enjoy an "A" level of service with little or no delay during the weekday commuting peak hour. As can be seen in the capacity calculations included in the Appendix of this report, the Central Avenue southbound left-turn through-lane utilized into the Site Driveway will also operate at an "A" level resulting in no turbulence on Central Avenue during this peak hour. The Site Driveway itself will have an acceptable "C" level with average delay during the morning peak hour.

SIGHT DISTANCE EVALUATION

The approaching vehicle on Central Avenue must be able to stop in time to avoid making contact with a vehicle emerging from the reconfigured site driveway. The required stopping sight distance from either a minor street or driveway is obtained from "A Policy on Geometric Design of Highways and Streets" as published by the American Association of State Highway and Transportation Officials (AASHTO) 6th Edition published in 2011.

Unlike the minimum safe stopping distance (MSSD) along a section of roadway, stopping sight distance at a driveway is not measured along either the center line or gutter line of a roadway. On page 9-29 of the American Association of State Highway and Transportation Officials (AASHTO) manual, it is stated "If the available sight distance for an entering or crossing vehicle (at an intersection corner) is at least equal to the appropriate stopping sight distance for the major road, then drivers have sufficient sight distance to anticipate and avoid collisions."

The motorist leaving the minor roadway or driveway has an eye height of 3.5 feet and he must be able to see another object (approaching vehicle) with a height of 3.5 feet from a point 14.5 feet back from the travel way. This dimension is based on most motorists stopping 6.5 feet or less from the intersecting roadway plus the eighty-fifth percentile distance of 8.0 feet from a front bumper of a vehicle to the motorist eye, thus, totaling 14.5 feet. The required stopping distance for each minor roadway is based on the formula on the following page:

$$d = 1.47 Vt + 1.075 \frac{V^2}{a}$$

Where: V = Speed (mph)

t = perception & Reaction time (2.5 seconds)

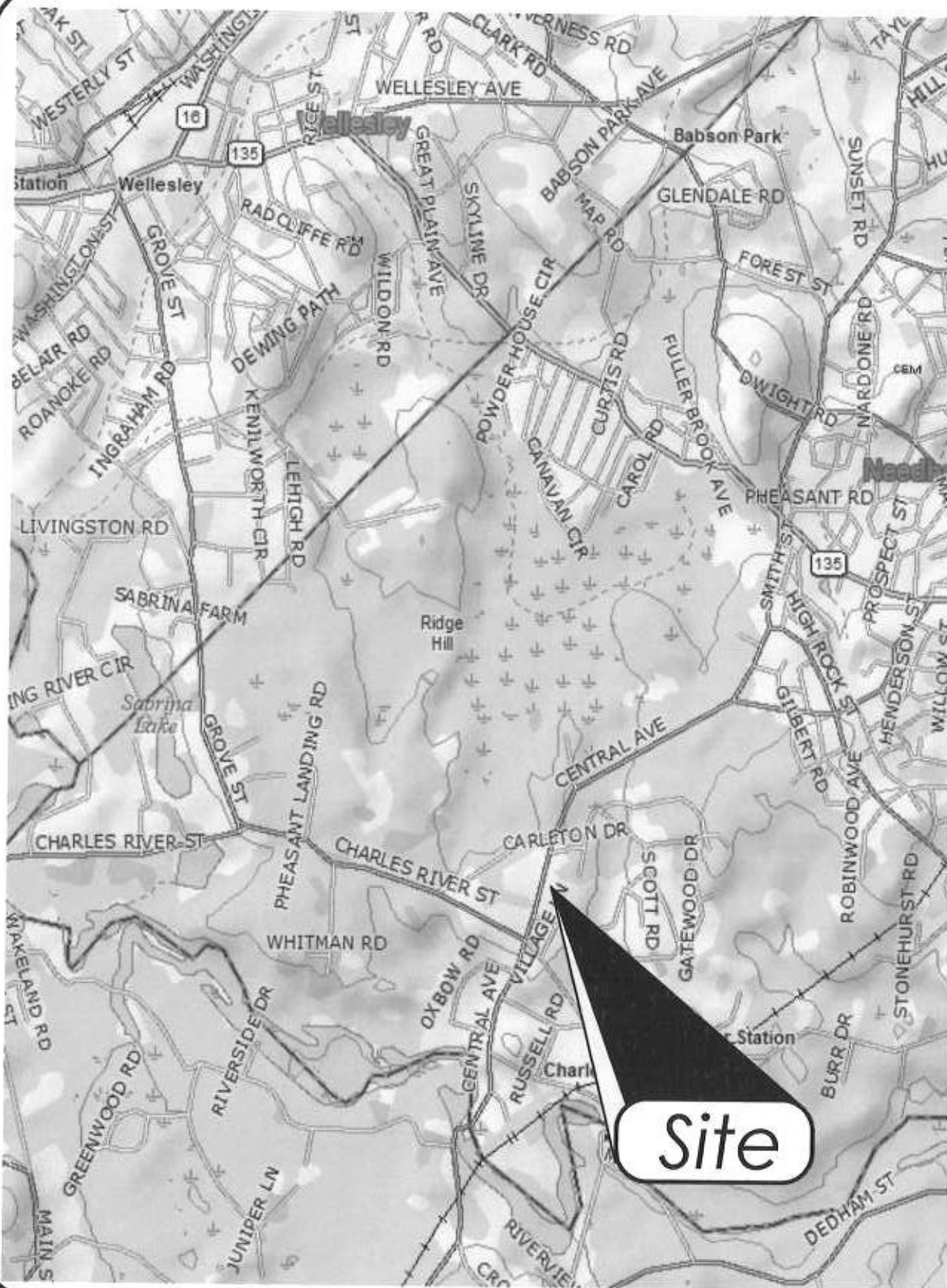
a = deceleration of vehicle (11.2 ft/sec.2)

A speed survey revealed the 85th percentile speed on Central Avenue was 39 mph southbound and 37 mph northbound at the site driveway (Figure 8). Therefore, the required stopping sight distance for Central Avenue at the driveway is computed as shown below:

$$d = 1.47 * 39 * 2.5 + 1.075 * \frac{(39)^2}{11.2}$$

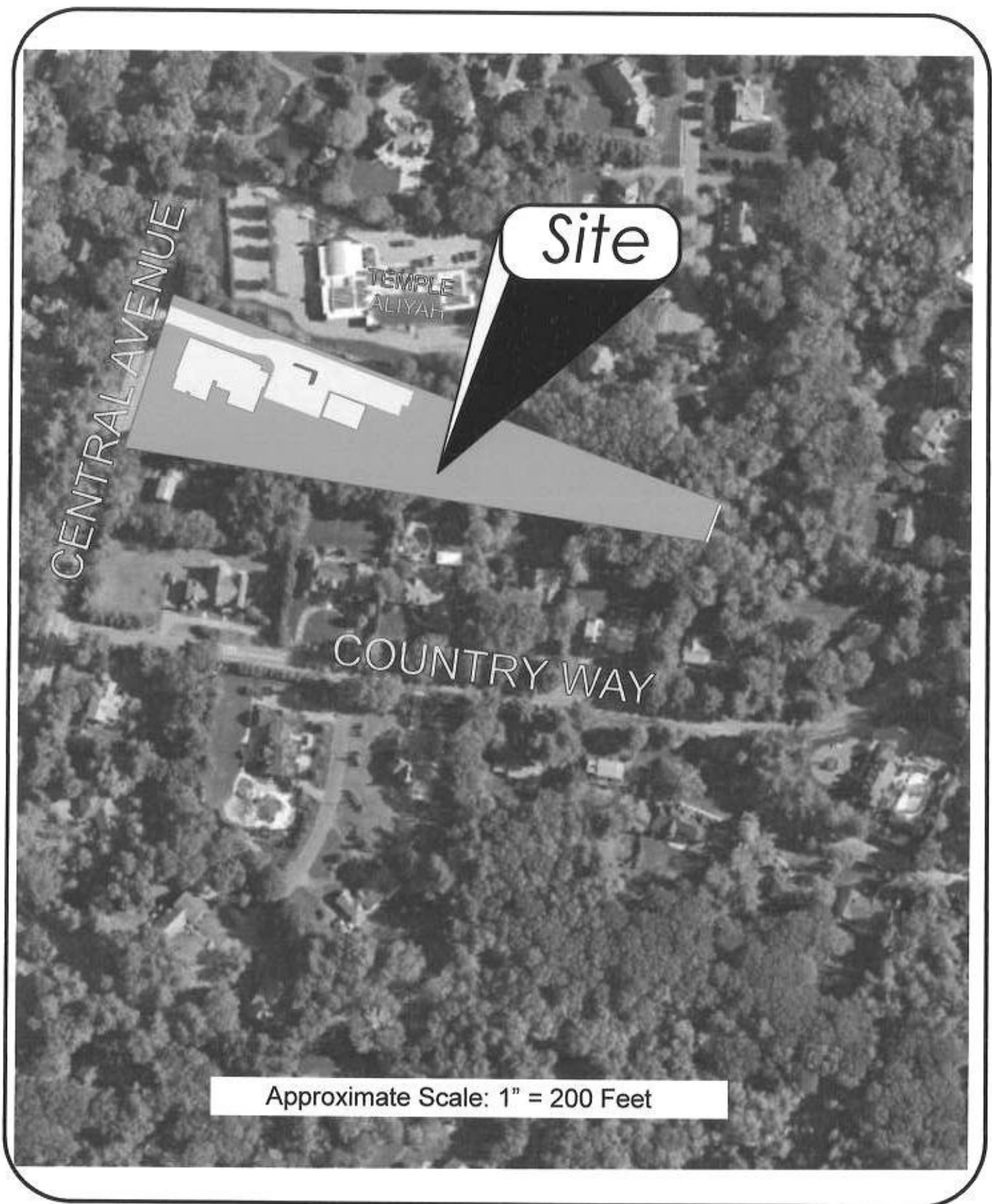
$$d = 143 + 146 = 289 \text{ feet}$$

A field review showed that this section of Central Avenue is both straight and flat. As can be seen on Figure 9, there is well over 350 feet of stopping sight distance in both directions on Central Avenue and the stopping sight distance and is safe.



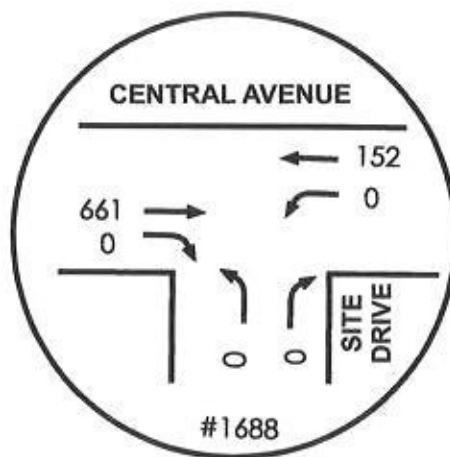
General Location Map

Figure 1



Locus Map

Figure 2



MORNING PEAK HOUR

Source of Data
 ITE Report (10th Edition)
 Land Use Code: 565
 Volume 2, Pages 224 - 245
 Day Care Center

Trips Based On Building Size	AM			PM		
	IN	OUT	TOTAL	IN	OUT	TOTAL
Peak Hour Trips						
Trips per Unit	T = 11.00 (x)			T = 11.12 (x)		
Directional Split	53% 47%			47% 53%		
Trips Based on 9,941 KGSF	58	51	109	52	58	110
Trips Based On Students	AM			PM		
	IN	OUT	TOTAL	IN	OUT	TOTAL
Peak Hour Trips						
Trips per Unit	T = 0.66 (x) + 8.42			Ln(T) = 0.87 Ln(x) + 0.29		
Directional Split	53% 47%			47% 53%		
Trips Based on 80 Students	32	29	61	28	32	60
AVERAGE	45	40	85	40	45	85

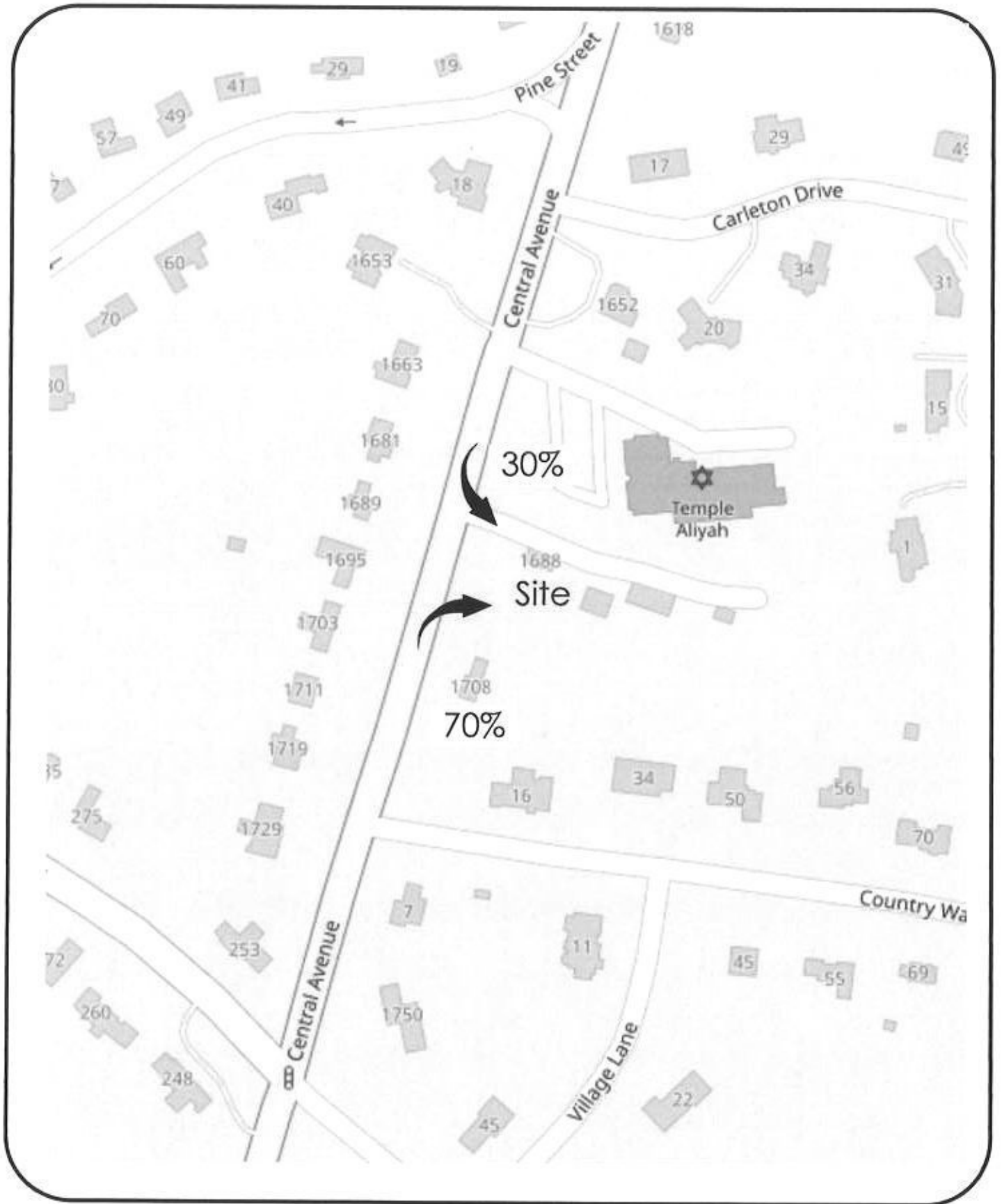
Trips per Weekday
 Trips per Student ITE
 $T = 47.62 (x)$ Trips Based on 9,941 KGSF = 473 Trips per Weekday
 $T = 4.09 (x)$ Trips Based on 80 Students = 327 Trips per Weekday
 Average = 400 Trips / Weekday (= 200 Inbound & 200 Outbound)

Based on Proponent's Student Drop-off & Pick-up Program

AM	7:30-8:00	16	PM	2:45-3:00	10
	8:00-8:15	9		4:00-4:30	10
	8:15-8:30	10		4:45-5:15	25
	8:30-8:45	16		5:15-5:45	25
	8:45-9:00	19		5:54 +	10
	9:00-9:15	10			

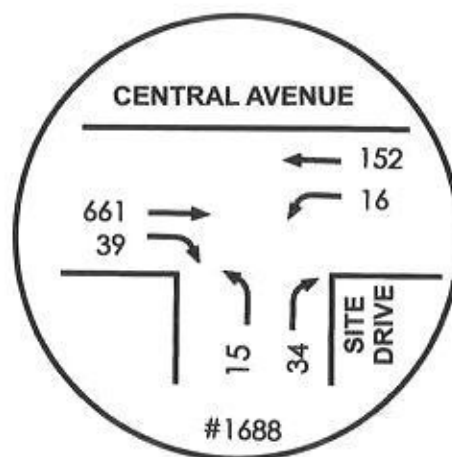
Peak Hr. = 50
 Peak Hr. = 55

Trips Based On Student Groups	AM			PM		
	IN	OUT	TOTAL	IN	OUT	TOTAL
Peak Hour Trips						
Directional Split	53% 47%			47% 53%		
Trips Based on 80 Students	55	49	104	44	50	94



Directional Distribution

Figure 5



MORNING PEAK HOUR

<u>Central Avenue at Site Driveway</u>	
Stop Sign Controlled	
Central Ave. Northbound (All Moves)	A
Central Ave. Southbound Through Movement	A
Left-Turn Movement	A
Site Drive West Bound (All Moves)	C

Projected LOS
AM

Speed Data							
	26-30	31-35	36-40	41-45	Total	Speed	Cum. %
						26-30	2.33
Northbound	1	16	8	0	25	31-35	58.14
Southbound	0	8	9	1	18	36-40	97.67
	1	24	17	1	43	41-45	100.00



Speed

SPEED	Percent	Cum %
31	4.73%	4.73%
33	5.03%	9.76%
34	5.18%	14.94%
35	5.34%	20.27%
35	5.34%	25.61%
35	5.34%	30.95%
35	5.34%	36.28%
35	5.34%	41.62%
36	5.49%	47.10%
36	5.49%	52.59%
37	5.64%	58.23%
37	5.64%	63.87%
38	5.79%	69.66%
39	5.95%	75.61%
39	5.95%	81.55%
39	5.95%	87.50%
40	6.10%	93.60%
42	6.40%	100.00%

Avg. =

85th % =	39 mph
----------	--------

Avg. =

34

85th % = 37 mph

Gillon Associates
Traffic & Parking Specialists



From Site Driveway Looking South (Left)



From Site Driveway Looking North (Right)

Central Avenue Stopping Sight Distance

Figure 9

Gillon Associates
Traffic & Parking Specialists

APPENDIX

Signalized Intersections

LGS	Control Delay per Vehicle (s/Veh)
A	≤ 10
B	> 10–20
C	> 20–35
D	> 35–55
E	> 55–80
F	> 80

Un-Signalized Intersections

Level of Service	Average Control Delay (s/Veh)
A	0–10
B	> 10–15
C	> 15–25
D	> 25–35
E	> 35–50
F	> 50

Intersection Levels of Service

Needham
Central Ave. at Site drive

Projected
Morning Peak Hour

Intersection						
Int Delay, s/veh	1.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	15	34	661	39	16	152
Future Vol, veh/h	15	34	661	39	16	152
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	0	0	2	0	0	2
Mvmt Flow	17	38	743	44	18	171

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	972	765	0	0	787
Stage 1	765	-	-	-	-
Stage 2	207	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	282	406	-	-	841
Stage 1	463	-	-	-	-
Stage 2	832	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	275	406	-	-	841
Mov Cap-2 Maneuver	275	-	-	-	-
Stage 1	463	-	-	-	-
Stage 2	812	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17	0	0.9
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	354	841
HCM Lane V/C Ratio	-	-	0.156	0.021
HCM Control Delay (s)	-	-	17	9.4
HCM Lane LOS	-	-	C	A
HCM 95th %ile Q(veh)	-	-	0.5	0.1

STORM WATER REPORT
PROPOSED DAYCARE BUILDING
1688 CENTRAL AVENUE
NEEDHAM, MA
JUNE 22, 2020



Jan 24/2021

OWNER/APPLICANT
NEEDHAM ENTERPRISES
105 CHESTNUT STREET SUITE 28
NEEDHAM, MA 02492

ENGINEER: GLOSSA ENGINEERING INC
46 EAST STREET
EAST WALPOLE, MA 02032

TABLE OF CONTENTS

NARRATIVE / SUMMARY	APPENDIX I
CONSTRUCTION PERIOD PLAN	APPENDIX II
OPERATION AND MAINTENANCE PLAN	APPENDIX II
LONG TERM POLLUTION PLAN	APPENDIX II
TSS REMOVAL WORKSHEETS	APPENDIX II
DRAINAGE WORKS INSPECTION FORM	APPENDIX II
RECHARGE CALCULATIONS	APPENDIX II
DRAWDOWN CALCULATIONS	APPENDIX II
EXISTING CONDITIONS HYDROCAD	APPENDIX III
PROPOSED CONDITIONS HYDROCAD	APPENDIX IV

NARRATIVE

APPENDIX I

NARRATIVE SUMMARY

GLOSSA ENGINEERING INC
46 EAST STREET
EAST WALPOLE, MA 02032
PHONE 508-668-4401
FAX 508-668-4406
EMAIL glossaeng@AOL.com

June 22, 2020

1688 Central Avenue
Nedham, MA

STORM WATER REPPORT NARRATIVE

The applicant would like to remove the existing buildings and replace those buildings with a Child Daycare center building at 1688 central Avenue in Needham, MA. One building will remain and will be used in conjunction with the Daycare operation. The existing and proposed conditions are shown on the attached plans.

Currently there is no formal storm water management system at the site. The storm water runs off onto abutting properties and to Central Avenue.

The proposal is to capture all of the runoff from the building rooftops and most of the runoff from the proposed paved area and direct the runoff to an underground infiltration basin. The design and analysis is patterned after the MA DEP Storm Water Management regulations. The design includes mitigation of the rates of runoff, TSS removal, recharge calculation, drawdown calculation, an O and M plan, a Construction Period plan, a Long Term Pollution plan and hydrocad analysis.

STANDARD #2 – PEAK RATE ATTENUATION:**EXISTING CONDITIONS:**

	Stormwater Runoff Summary			
Subarea	Storm Event			
Pre-development.	2-yr	10-yr	25-yr	100-yr
E1 (cfs)	0.14	0.66	1.03	1.78
E1 (ac-ft.)	0.020	0.055	0.081	0.133
E2 (cfs)	0.01	0.25	0.55	1.33
E2 (ac-ft.)	0.009	0.047	0.079	0.150
E3 (cfs)	0.0	0.0	0.01	0.04
E3 (ac-ft.)	0.0	0.0	0.004	0.027
Total Area 146,012 sf 3.352 ac				
Total to Central Ave (cfs)	0.0	0.0	0.0	0.22
Total to Central Ave (ac-ft)	0.0	0.0	0.0	0.010
Low Area Northwest				
Qout (cfs)	0.0	0.0	0.0	0.22
Vout (ac-ft.)	0.0	0.0	0.0	0.010
Qout infiltrated (cfs)	0.05	0.11	0.15	0.19
Vout infiltrated (ac-ft.)	0.020	0.055	0.081	0.123
Peak Elevation (ft.)	199.87	200.30	200.53	200.82
Low Area Southwest				
Qout (cfs)*	0.0	0.0	0.0	0.0
Vout (ac-ft.)*	0.0	0.0	0.0	0.0
Qout infiltrated (cfs)	0.01	0.15	0.26	0.44
Vout infiltrated (ac-ft.)	0.009	0.047	0.079	0.15
Peak Elevation (ft.)	198.62	198.75	198.84	199.01
* No discharge from low area southwest to Central Ave				

PROPOSED CONDITIONS:

Subarea	Stormwater Runoff Summary			
	Storm Event			
Post-development.	2-yr	10-yr	25-yr	100-yr
CB1 (cfs)	0.65	0.98	1.17	1.50
CB1 (ac-ft.)	0.050	0.077	0.093	0.121
CB2 (cfs)	0.33	0.65	0.84	1.19
CB2 (ac-ft.)	0.025	0.047	0.061	0.087
CB3 (cfs)	0.22	0.32	0.38	0.49
CB3 (ac-ft.)	0.018	0.027	0.032	0.041
Existing Building (cfs)	0.17	.25	0.29	0.37
Existing Building (ac-ft)	0.014	0.020	0.024	0.031
Proposed Building (cfs)	0.70	1.02	1.21	1.55
Proposed Building (ac-ft)	0.057	0.085	0.101	0.130
P1 (cfs)	0.16	0.48	0.70	1.12
P1 (ac-ft.)	0.015	0.037	0.052	0.082
P1A (cfs)	0.0	0.0	0.01	0.06
P1A (ac-ft.)	0.0	0.002	0.004	0.009
P2 (cfs)	0.0	0.01	0.05	0.26
P2 (ac-ft.)	0.0	0.007	0.018	0.047
P3 (cfs)	0.0	0.0	0.01	0.04
P3 (ac-ft.)	0.0	0.0	0.004	0.027
Total Area 156,483 sf, 3.592 ac				
Total to Central Ave (cfs)	0.0	0.0	0.01	0.11
Total to Central Ave (ac-ft)	0.0	0.002	0.004	0.011
Low Area Northwest				
Qout (cfs)	0.0	0.0	0.0	0.09
Vout (ac-ft.)	0.0	0.0	0.0	0.002
Qout infiltrated (cfs)	0.04	0.08	0.11	0.14
Vout infiltrated (ac-ft.)	0.015	0.037	0.052	0.080
Peak Elevation (ft.)	199.99	200.34	200.52	200.77
Subsurface System				
Qout infiltrated (cfs)*	0.49	0.57	0.62	0.74
Vout infiltrated (ac-ft.)*	0.164	0.256	0.311	0.410
Peak Elevation (ft.)	186.69	187.70	188.37	190.02
Low Area Southwest				
Qout infiltrated (cfs)*	0.0	0.01	0.04	0.14
Vout infiltrated (ac-ft.)*	0.0	0.007	0.018	0.047
Peak Elevation (ft.)	198.74	198.76	198.79	198.93
* No discharge from low area southwest to Central Ave or from Subsurface system				

APPENDIX II

**CONSTRUCTION PERIOD PLAN
OPERATION AND MAINTENANCE PLAN
TSS REMOVAL WORKSHEET
RECHARGE CALCULATION
DRAINAGE WORKS INSPECTION FORM**

CONSTRUCTION PERIOD POLLUTION PLAN

Given the proximity of a drainage catch basins and other drain inlets, care shall be taken to assure that eroded soil will not be deposited into the drain system.

The entity for the construction period pollution prevention and erosion and sedimentation control plan is Needham Enterprises, their successors and assigns, 105 Chestnut Street, Needham, MA 02492. Construction period pollution control measures shall include a siltation barrier (compost filled sock and orange colored construction fence). A designated materials stockpile area and a construction staging area has also been depicted on the plans. Construction sequencing shall be as follows:

- 1) Installation of silt barriers as shown on the plans
- 2) Installation of stabilized construction entrance
- 3) Establishment of a construction staging area
- 4) Establishment of a materials stockpile area
- 5) Clearing and grubbing
- 6) Removal and stockpiling of top and subsoils.
- 7) Removal of sand and gravel to bring the site to subgrade
- 8) Establishing and stabilizing with loam and seed all cut and fill side slopes
- 9) Install gravel driveway in the location of the final asphalt driveway
- 10) Construction of the building
- 11) Installation of underground detention basin
- 12) Installation of underground utilities, drainage, water, electric, CATV and telephone
- 13) Installation of sewer lines
- 14) Installation of binder course for driveway, landscaping and planting of grass areas
- 15) Final course of asphalt for driveways
- 16) Cleanup and demobilize

VEGETATION PLANNING

Vegetation shall be installed per the approved plans in accordance with the construction sequencing plan

EROSION AND SEDIMENTATION CONTROLS

The operation and maintenance of the erosion and sedimentation controls shall be the responsibility of the site contractor, who will report to Needham Enterprises their successors and assigns. The erosion and sedimentation controls shall be inspected daily by the site contractor. Repairs as needed shall be made immediately. The inspection of erosion and sedimentation controls shall also be done weekly and after every 1" or more rain event by an independent person trained in erosion control practices at construction sites. This independent person shall file weekly reports with Needham Enterprises, their successors and assigns. These reports shall be made available to the Needham Director of Public Works, Mass DEP and the EPA.

**PROPOSED DAYCARE BUILDING
1688 CENTRAL AVENUE
NEEDHAM, MA**

OPERATION AND MAINTENANCE PLAN

STORM WATER CONTROL AND MITIGATION SYSTEM

The entity responsible for the implementation of the operation and maintenance plan for the storm water management system is:

Needham Enterprises
Their successors and assigns
105 Chestnut Street, Suite 28
Needham, MA 02492

The storm water system is shown on an as built plan on file with the with the Needham Building Inspector. The system consists of the following components:

- 1) Drainage catch basins (3)
- 2) Drainage piping
- 3) Drainage manholes (2)
- 4) Stormceptor (1)
- 5) Below ground infiltration basin (1)
- 6) Rooftop drainage piping

INSPECTIONS

1) Storm water system components shall be inspected every three months during the first year of operation. Inspection reports shall be submitted to the Planning Board within 30 days of the inspection. These inspections shall be conducted Needham Enterprises, their successors and assigns.

2) The drainage infiltration basins shall be inspected twice per year by the property owner. Any repairs shall be made within 30 days of the inspection. The property owner shall consult with a Registered Professional Engineer regarding any anticipated repairs. The owner shall notify the Needham Director of Public Works prior to the undertaking of any repairs.

3) The drainage infiltration basins shall be inspected every five years by a Massachusetts Registered Professional Engineer. Inspection reports shall be submitted to the Needham Director of Public Works within 30 days of the inspection

4) Any repairs deemed to be critical shall be made immediately. Any other repairs shall be made within 30 days of the inspection.

5) Any proposed changes to the drainage system shall be approved in writing by the Needham Director of Public Works.

6) Needham Enterprises shall have on hand at all times \$1,000 (2020 dollar value) for inspections and emergency repairs.

MAINTENANCE

1) Driveways and parking areas shall be swept twice per year, once in the Spring and once in the Fall by Needham Enterprises, their successors and assigns.

2) Catch basins shall be cleaned by Needham Enterprises their successors and assigns once per year in the Spring.

3) Mowing of the grass and care of any planned shrubs within the site shall be routinely done by Needham Enterprises, their successors and assigns.

4) Needham Enterprises their successors and assigns shall have a revolving fund with money on hand at all times to perform their required tasks.

REPLACEMENT

1) Needham Enterprises their successors and assigns shall create and maintain a replacement fund for the infiltration basin and infiltration trenches. The amount of money needs to be \$8,000 (in 2020 value) within 50 years of the start of construction.

LONG TERM POLLUTION PLAN

The use of the property and the responsibility of the owners to implement and carry out a Long Term Pollution Prevention Plan will be subject to this document and shall include the following provisions:

1) Good housekeeping practices shall be implemented at all times.

2) Storage of materials shall be done in a manner that will prevent the migration of loose soil, silt or clay or other unwanted material, in order to prevent such material from entering the storm water management system. There shall be no outdoor storage of waste products at that site at any time.

3) Routine inspections and maintenance of Storm water best management practices shall be carried out in compliance with the Operation and Maintenance plan.

4) There may be heating oil deliveries to the site. Spill prevention and response plans shall be the responsibility of the delivery companies. Spill prevention and response plans for other hazardous materials shall be the responsibility of those individual handlers.

5) Lawns, gardens and other landscaped areas within the site shall be maintained by the owner at the expense of the owner.

6) There shall be no outdoor storage of fertilizers, herbicides, and/or pesticides at the site. Indoor storage of fertilizers, herbicides and/or pesticides shall be done in a safe and dry location. Any spill

of these materials shall be cleaned up immediately. The use of fertilizers, herbicides, and pesticides at the site shall be limited to amounts allowed by regulations issued by the Needham Director of Public Works and / or other governing bodies. Pet waste deposited at the site shall be immediately picked up and removed. Pet waste to be disposed of through solid waste containers.

8) There shall be no on site septic systems installed at the site unless allowed by other governing bodies.

9) Solid waste shall be stored in closed containers and removed by a licensed hauler at least once per week. Any solid waste not in closed containers found at that site shall be removed immediately by the owner.

10) Snow shall be plowed in to wind rows at the edge of the paved areas. Excess snow shall be removed from the site and deposited in approved snow farms.

11) Road salt and sand shall be used in accordance with rules, regulations and laws in force at that time. There shall be no storage of sand or salt at the site.

12) There shall be no illicit discharges to the storm water system.

13) The owners shall become familiar with the rules and regulations and restrictions of this document.

14) In case of an emergency, the owner shall notify the following organizations

- 1) Needham Fire Dept.
- 2) Needham Board of Health
- 3) Needham Conservation Commission
- 4) Needham Building Department
- 5) Needham Dept. Of Public Works
- 6) Massachusetts DEP