### NEEDHAM PLANNING BOARD

### Tuesday November 16, 2021 7:00 p.m.

### **Virtual Meeting using Zoom**

Meeting ID: 826-5899-3198 (Instructions for accessing below)

To view and participate in this virtual meeting on your phone, download the "Zoom Cloud Meetings" app in any app store or at <a href="www.zoom.us">www.zoom.us</a>. At the above date and time, click on "Join a Meeting" and enter the following Meeting ID: 826-5899-3198

To view and participate in this virtual meeting on your computer, at the above date and time, go to <a href="https://www.zoom.us">www.zoom.us</a> click "Join a Meeting" and enter the following ID: 826-5899-3198

Or to Listen by Telephone: Dial (for higher quality, dial a number based on your current location): US: +1 312 626 6799 or +1 646 558 8656 or +1 301 715 8592 or +1 346 248 7799 or +1 669 900 9128 or +1 253 215 8782 Then enter ID: 826-5899-3198

Direct Link to meeting: https://us02web.zoom.us/s/82658993198

### 1. Appointment:

7:00 p.m. David Feldman: discussion of proposed repurpose of Wingate skilled nursing to

assisted/independent living.

8:00 p.m. George Giunta, Jr.: Discussion of possible redevelopment at 888 Great Plain Avenue.

### 2. Public Hearing:

7:20 p.m. Amendment to Major Project Site Plan Special Permit No. 2009-06: Town of Needham, 1471

Highland Avenue, Needham, Massachusetts, Petitioner. (Property located at 1471 Highland Avenue, Needham, Massachusetts). Regarding proposed Town Common renovation. Please note: this hearing was continued from the November 2, 2021 meeting of the Planning Board.

8:30 p.m. Major Project Site Plan: Needham Enterprises, LLC, 105 Chestnut Street, Suite 28, Needham,

MA, Petitioner. (Property located at 1688 Central Avenue, Needham, MA). Regarding proposal to construct a new child care facility of 9,966 square feet and 30 parking spaces, that would house an existing Needham child-care business, Needham Children's Center (NCC). Please note: this hearing was continued from the June 14, 2021, July 20, 2021, August 17, 2021, September 8, 2021, October 5, 2021, October 19, 2021 and November 2, 2021 meetings of the Planning Pound

of the Planning Board.

- 3. Planning Board Response to Open Meeting Law Complaint filed by Joe Abruzese on November 2, 2021.
- 4. Minutes.
- 5. Correspondence.
- 6. Report from Planning Director and Board members.

(Items for which a specific time has not been assigned may be taken out of order.)



Wingate Healthcare One Charles River Place 63 Kendrick Street Needham, MA 02494

781.707.9000 TEL 781.707.9099 FAX Ms. Lee Newman
Director of Planning and Community Development
Town Of Needham
500 Dedham Avenue
Public Services Administration Building
Suite 118
Needham, MA 02492

Dear Ms. Newman:

On behalf of Wingate Healthcare I would like to make an informal presentation at the next available Planning Board meeting and seek feedback from the board on our proposed plan to reposition the existing Wingate at Needham Skilled Nursing Facility. Our plan is to create a more affordable Independent living facility that will promote an active connected lifestyle that will enhance our campus. I look forward to discussing this exciting development with both you and the Planning Board.

Sincerely,

David Feldman

Senior Vice President of Real Estate & Development

Wingate Healthcre

CC Ms. Alexandra Clee Assistant Town Planner

Ms. Alexandra Schuster President Wingate Healthcare



50 Commandant's Way at Admiral's Hill

Consultant:	
Revision:	
Architect of Record:	

Drawn:	RP
Checked:	AS
Scale:	3/32" = 1'-0"
Key Plan:	



Consultant:	
Davidatan	
Revision:	
Architect of Record:	

### GEORGE GIUNTA, JR.

# ATTORNEY AT LAW\* 281 CHESTNUT STREET NEEDHAM, MASSACHUSETTS 02492 \*Also admitted in Maryland

TELEPHONE (781) 449-4520

FAX (781) 465-6059

November 10, 2021

Lee Newman Planning Director Town of Needham 1471 Highland Avenue Needham, MA 02492

Re: J. Derenzo Properties, LLC

888 Great Plain Avenue Proposed Zoning Change

Dear Lee,

As you know, I represent J. Derenzo Properties, LLC (hereinafter "Derenzo") relative to the property at 888 Great Plain Avenue. That property is located immediately adjacent to the Center Business District and is between the Closet Exchange and the First Church of Christ Scientist. It contains approximately 23,111 square feet of land and was used and occupied for nearly 40 years by Hillcrest Gardens, a commercial landscape nursery, offering annuals, perennials, shrubs, and trees. Because the property is situated in the Single Residence B District and contains less than two and one-half acres of land, the nursery constituted a lawful, pre-existing, non-conforming use. Derenzo has continued the use but would prefer to redevelop the property for mixed use purposes, as that is more in keeping with the adjacent properties and surrounding area.

Because of its location between a commercial block and two large, church buildings, across from another commercial block, a recreational field and the YMCA complex, and in front of a commercial parking lot, the property is better suited to a mixed-use building than a single-family residential house. Moreover, because the property is over twice the minimum area required for a single-family residential house, the size also makes it more suitable for a mixed-use building than for a single-family residential house. Considering the surrounding uses and properties, it seems a bit odd that this parcel is zoned single-family.

Therefore, Derenzo asks that the parcel be rezoned, from Single Residence B to Center Business District, and that the Center Business Overlay also be extended to cover this parcel. This would extend the Center Business District to a more natural end; namely, the two large church buildings, and would be more consistent with the overall area than the current zoning. He also

<sup>&</sup>lt;sup>1</sup> At the time the nursery began to operate, it was allowed as of right. But the Zoning By-Law was subsequently amended to require a minimum of two and one-half acres for such use, making the use lawful, pre-existing, non-conforming.

<sup>&</sup>lt;sup>2</sup> See Exhibit A and Exhibit B, excerpts from the Needham GIS and Assessor's Map.

asks that the side-yard setback applicable to commercial uses and buildings adjacent to residential district be amended, to allow for a setback of ten (10) feet, either by right or by special permit.

To help the Board visualize what a mixed-use building could look like, with a ten foot side yard setback, and to show what Derenzo has in mind, provided herewith please find a conceptual design set by Design Resource Team, LLC, dated August 27, 2021. Note that this design features a three-story building with underground parking, commercial and residential uses on the first floor (there are two residential units in the back) and residential use on the second and third floors. This design complies with the Center Business Overlay requirements, taking into account the special permit provisions, except with respect to the ten foot side yard setback.

Given the nature of the requested zoning change, how it fits into the downtown, and the need to address the side yard setback requirement, Derenzo would prefer if the Board would sponsor the necessary warrant article(s) if the memers agree that this rezoning makes sense and would be beneficial to the Town. To that end, we would like to discuss the request with the Board at the next available meeting.

Sincerely,

George Giunta, Jr

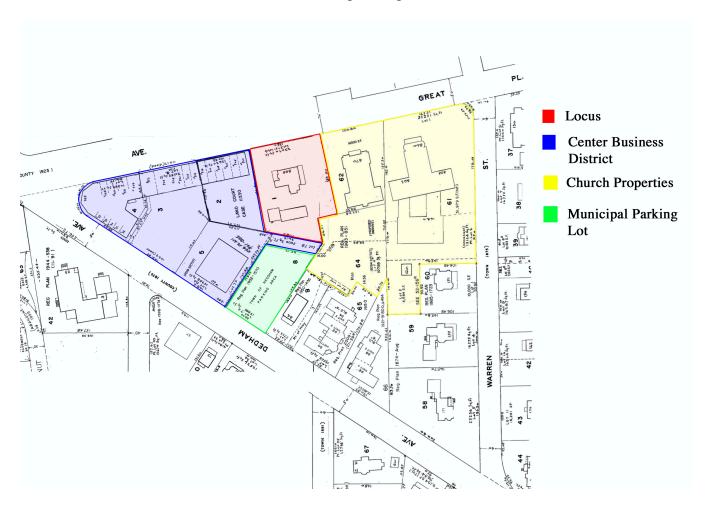
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## EXHIBIT A GIS Excerpt



- Locus 888 Great Plain Avenue
- Outline of Adjacent Center Business District
- C Commercial Building / Use
- I Church / Religious Building / Use
- M Mixed Commercial / Residential Building / Use
- Y YMCA

EXHIBIT B Assessor's Map Excerpt



# 888 GREAT PLAIN AVE

Needham, MA 02492

CONCEPTUAL DESING 08.27.2021

Client
J. Derenzo Properties
J. Derenzo Properties
St. Needham Heights, MA 02494
www.jderenzoproperties.com

beign Resource Team, LLC 546 East Broadway Boston, MA 02127 617,804,6117 info@d+stoo www.d+stoo







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ALL SUBCONTRACTORS SHALL INSPECT THE SITE AND CONVEY ANY QUESTONS REGARDING DESIGNINTENT AND SCOPE OF WORK TO GENERAL CONTRACTOR WHO WILL CONVEY THESE TO THE ARCHITECT PRIOR TO SUBMITTING A BID AND PRIOR TO COMMENCING WOM

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CONTRACTOR SHALL NOTIFY ARCHITECT IMMEDIATELY DELIVERY DATES.

ALL WORK SHALL BE IN COMPLANCE WITH ALL APPLICABLE LOCALS BUILDING CODES AND REGULATIONS. CONTRACTOR SHALL BE RESPONSIBLE FOR PERMITS APPLICABLE TO SPECIFIC TRADES OR SUBCONTRACTORS.

WHEN SPECIFIC FEATURES OF CONSTRUCTION ARE NOT FULLY SHOWN ON THE DRAWINGS OR CALLED FOR IN THE GENERAL NOTES CONSTRUCTION SHALL BE OF THE SAME CHARACTER AS SMILAR CONDITIONS. THE ER NOTES ARE TO APRY TO ALL DRAWINGS AND GOVERN UNLESS MORE SPECIFIC REQUIREMENTS ARE INDICATED THAT ARE PROMPHILALED IN THE MAN TO THE WORK. SEE SPECIFICATIONS AND GENERAL NOTES IN THE INDIVIDUAL SUBSECTIONS COMPREAT DOCUMENTS OF ADDITIONAL REPORTATION.

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CAULK AND SEAL OPENINGS IN BUILDING EXTERIOR TO A THICKNESS OF 1/8" OR GR

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IF ERRORS OR OMISSIONS ARE FOUND IN THE CONTRACT DOCUMENTS, THEY SHALL BE BROUGHT TO THE ATTENTION OF THE ARG BEFORE PROCEEDING WITH THE WORK. ALL CONSTRUCTION MATERALS AND SUPPLIES ARE TO BE STORED, HANDLED, AND INSTALLED ACCORDING TO MANUFACTURER RECOMMENDATIONS.

COTNOTES 1'0 TABLE 1.1 - "MAXOF 32 LINEAR FEET OF THE BUILDING MAY BE BUILT AT MINIMUM SETBACK. THE REMAINDER MAI'S TE A'I LEAST 2 ADDITONAL FEET. 5 \*\*\* - E/N - Existing Nonconforming

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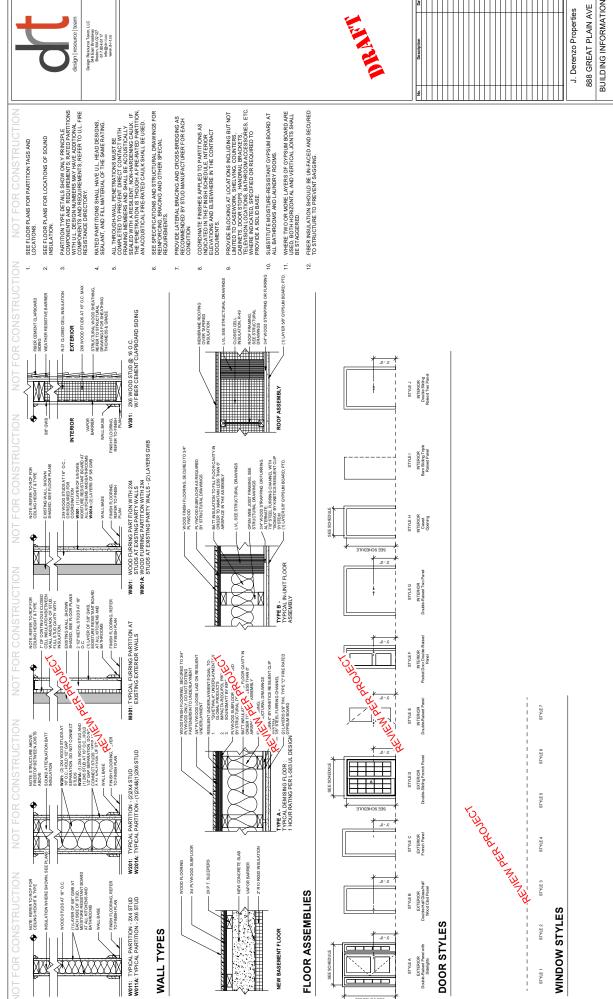
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REAR YARD DEPTH (FEET - NORTH SIDE)	20		20	z
# OF PARKING SPACES REQ'D	30 RETAIL 33 RESIDENTIAL	N/A	38	<b>&gt;</b>

J. Derenzo Properties	
888 GREAT PLAIN AVE	
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Project number 22	22105
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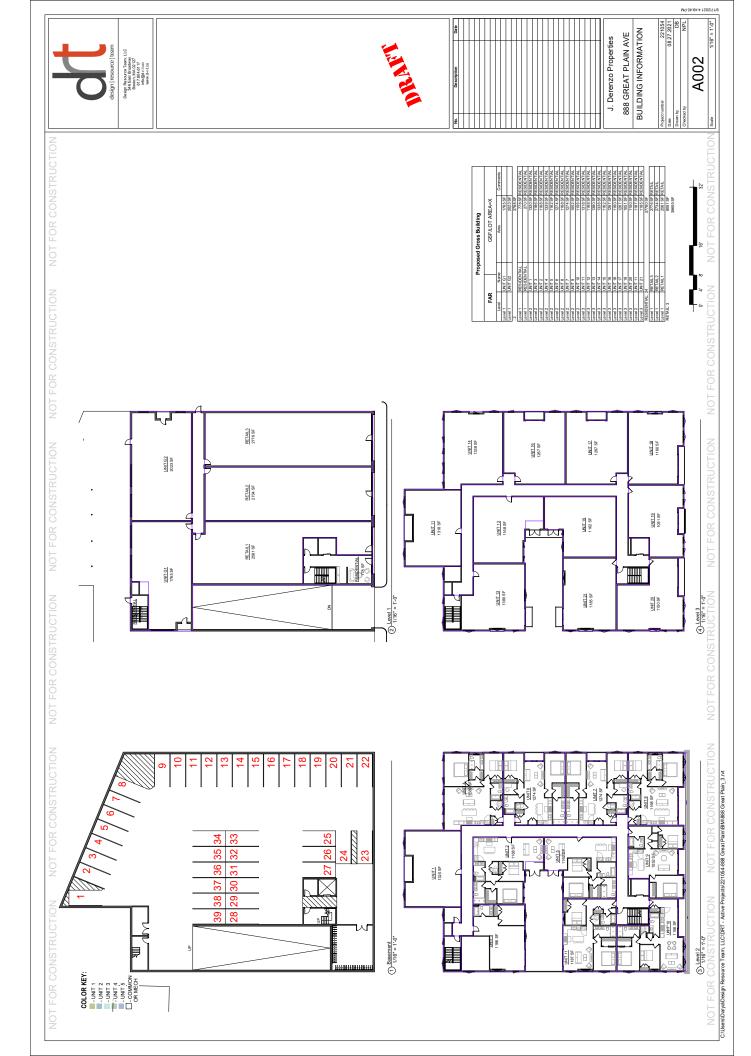
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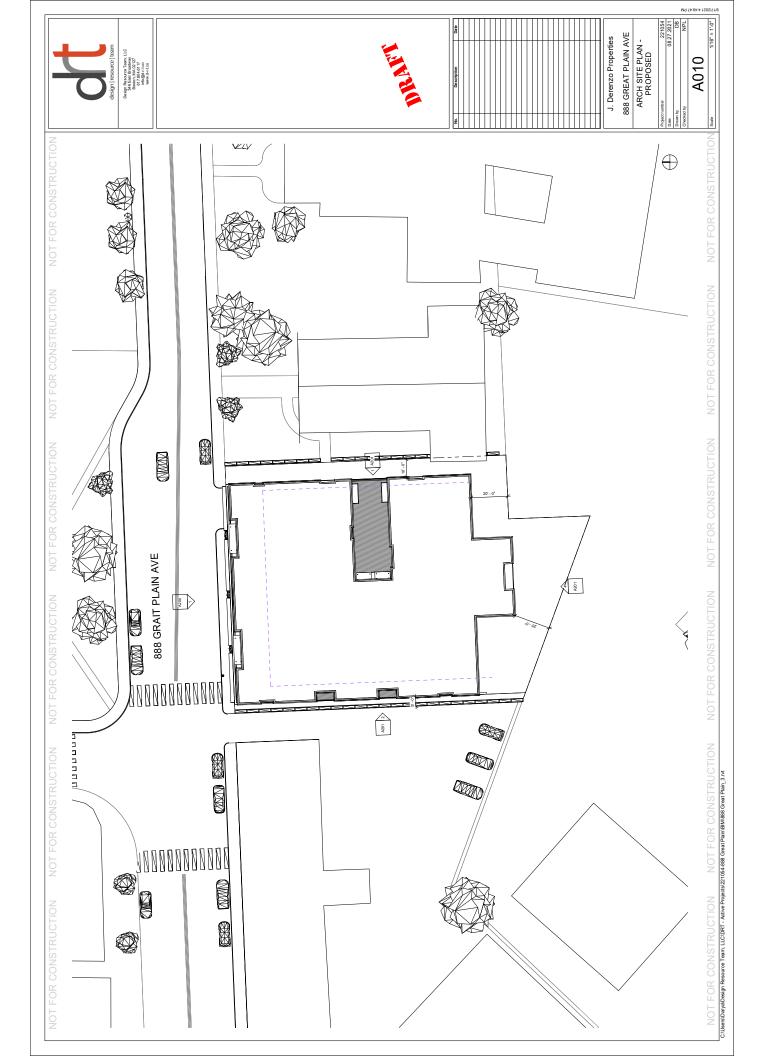
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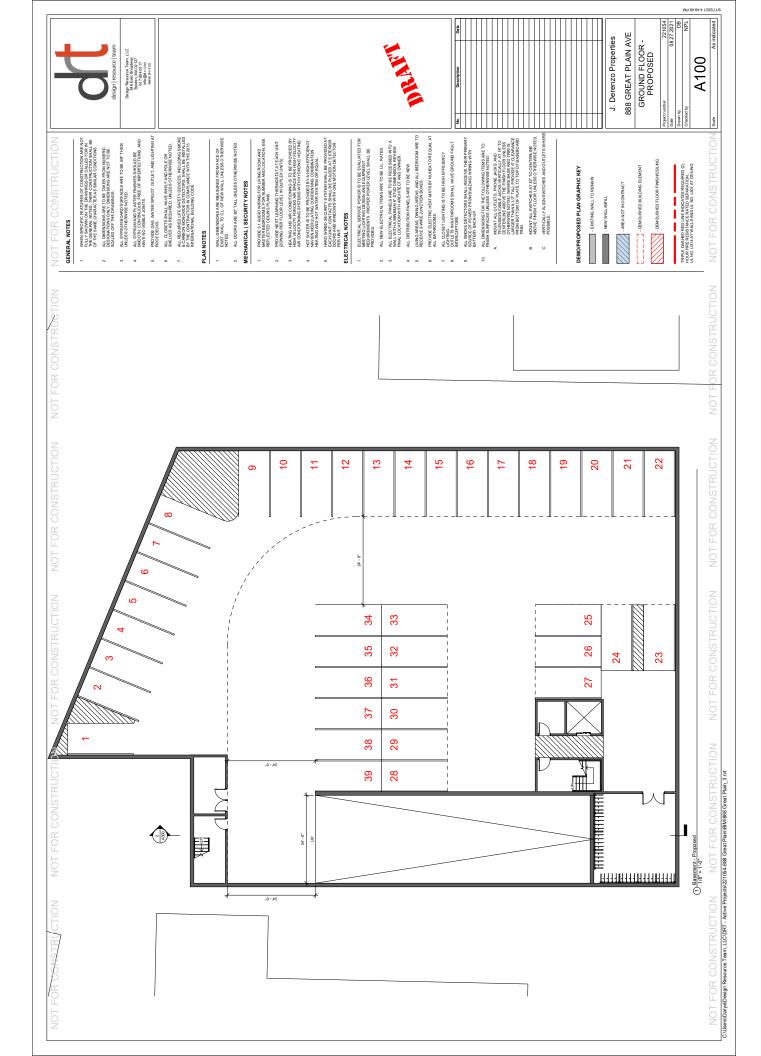
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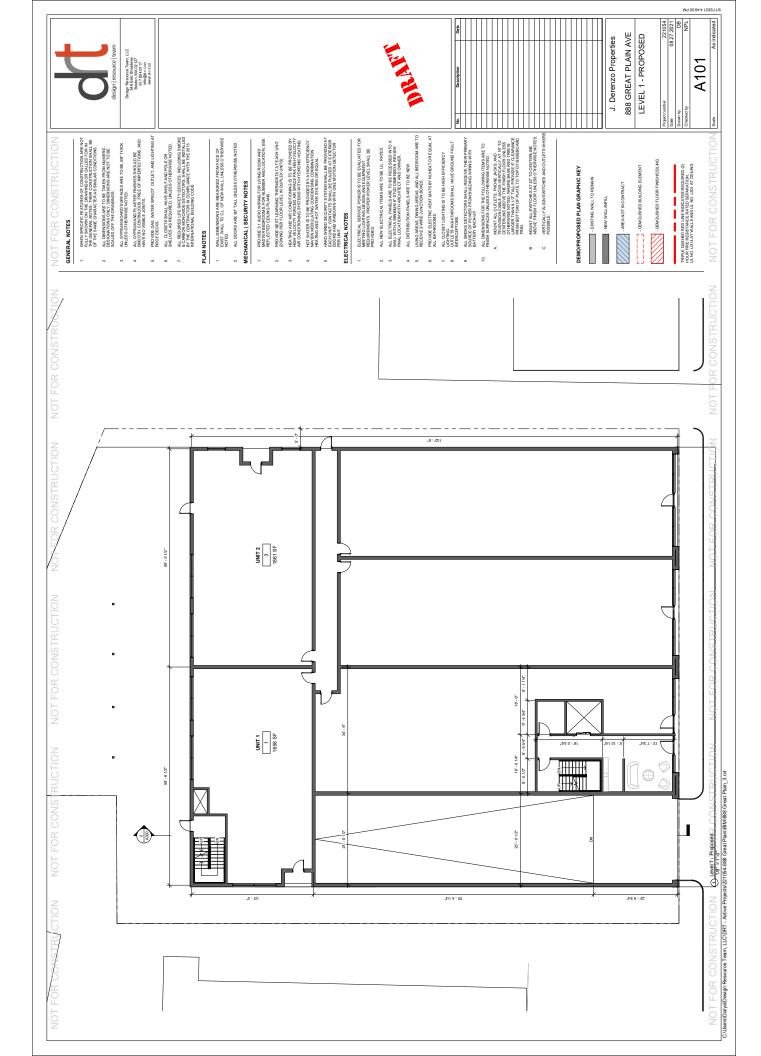
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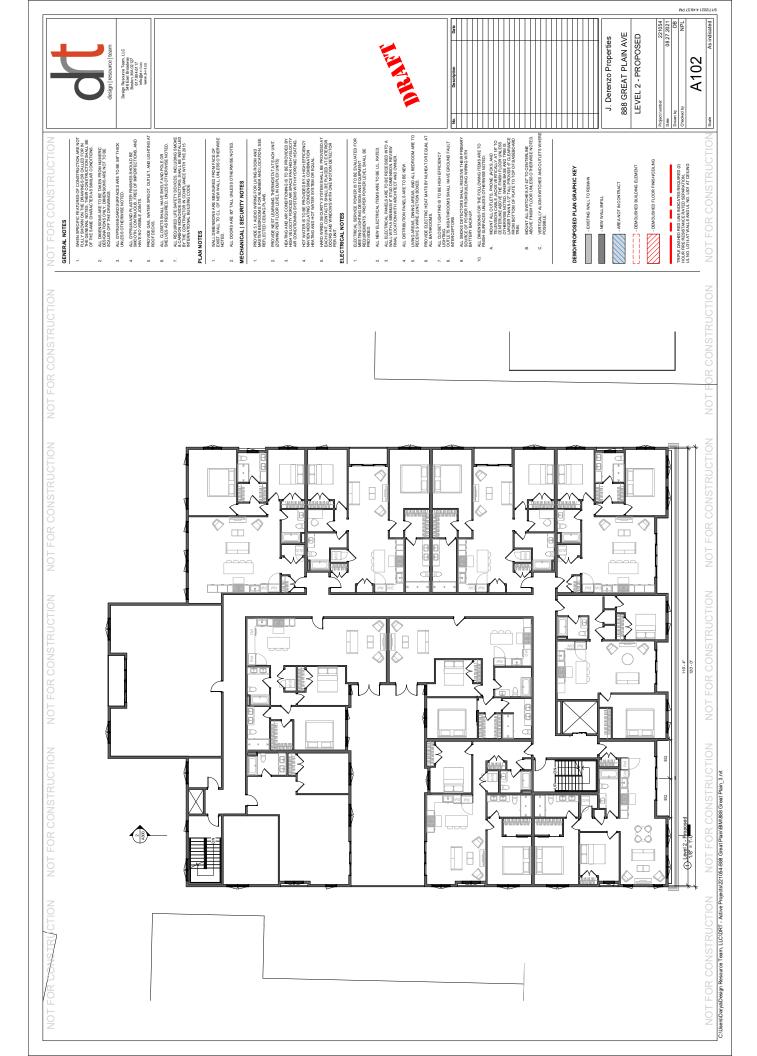
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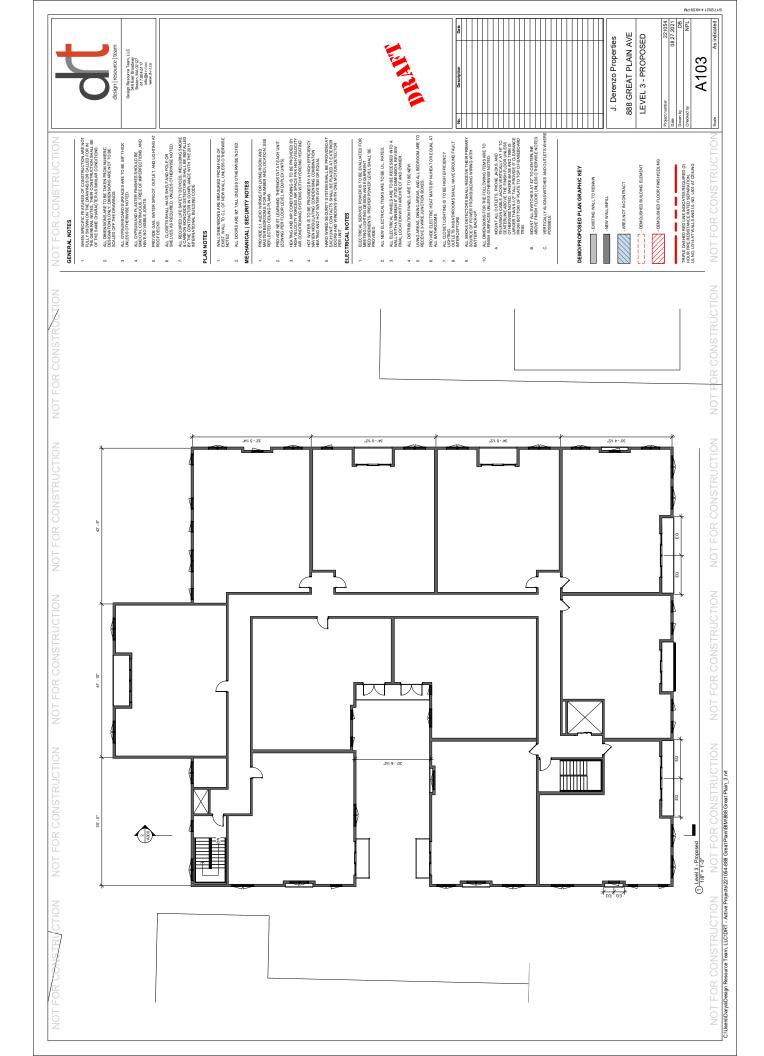


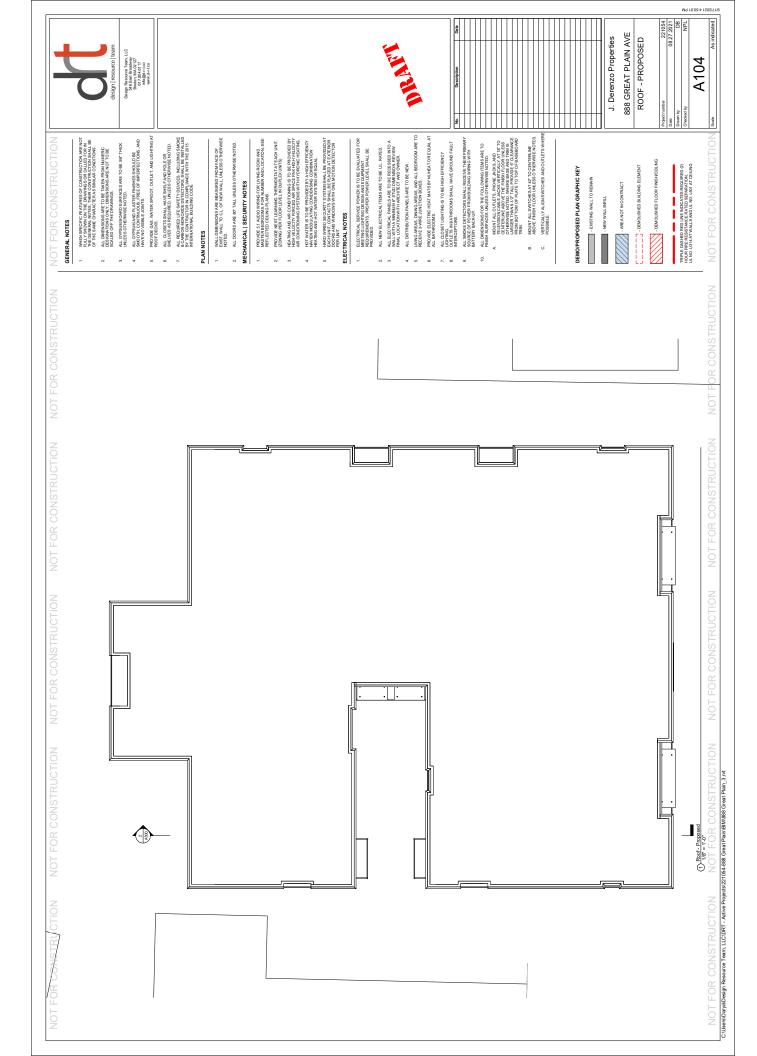














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3 South Elevation - Proposed



Design Resource Team, LLC 546 East Broadway Boston, MA 02127 617 8046117 info@d+s.t.co www.d+st.co

No.	Description Date	
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	J. Derenzo Properties	
	888 GREAT PLAIN AVE	
<u> </u>	ELEVATIONS - PROPOSED	

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M9 62:03:4 1202/71/6 1/8" = 1"-0"

NOT FOR CONSTRUCTION NOT FOR CONSTRUCTION CUbers/Days/Design Resource Team, LLCDRT - Active Project/20154-386 Great Plain IBIN 689 Great Plain 3 Art

ELEVATIONS - PROPOSED 888 GREAT PLAIN AVE J. Derenzo Properties S46 East Broadway Boston MA 02127 617,2046117 info@d+1co www.d++tco A201 Basement -8 -8 Top of Parapet ⊕ 35 - 0" ⊕ Roof ⊕ 32 - 0" ⊕ Level 2 12' - 0" = LGrade Level 2 17 - 0" Sasement -8.-8. Roof 32' - 0" MMMMMMMMIMM MW MM  $\square$ M (4) North Elevation- Proposed 1/8" = 1'-0"  $\square$ MMМИ (1) West Elevation - Proposed 1/8" = 1'-0" (2) East Elevation - Proposed 1/8" = 1'-0" NOT FOR CONSTRUCTION NOT FOR CONSTRUC
CUbers/Darya/Design Resource Team, LLC/DRT - Active Projects/22/1054-488 Great Plain/BIM888 Great Plain/3.74

Top of Parapet 35'-0" Second 32'-0" 32'-0" - Top of Parapet 35' - 0" Roof 32' - 0" Level 2 12' - 0" Grade 0 8asement -8'-8" 22' - 0" Level 2 12" - 0" Grade 0 മ Á R-49 12 INCH INSULATION IN RAFTER CAVITY -(1) Section 1 1/8" = 1'-0'

S46 East Broadway Boston, MA 02 127 617 204.6117 info@d-stoo www.d-stoo



2. MINIMUM WINDOW PERFORMANCE: U-0.30 OR BETTER

3. MINIMUM SKYLIGHT PERFORMANCE: U-0.55 OR BETTER

CRAWL SPACE (c) WALL R-VALUE

SLAB (d) R-VALUE & DEPTH 10, 2 ft

BASEMENT (c) WALL R-VALUE 15/19

> FLOOR R-VALUE 30(g)

MASS WALL R-VALUE (I)

WOOD FRAME WALL R-VALUE 20 or 13+5(h)

FENESTRATIO SKYLIGHT(b) FENESTRATION U-FACTOR (b) U-FACTOR (b) ENESTRATION R-VALUE

13/17

49

Ä

0.55

0.30

5 and Marine 4 CLIMATE

IR - Not Required; For SI: 1 foot = 304.8 mm

TABLE R402.1.2 INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT (a) ENERGY CODE REQUIREMENTS (IECC 2018 EDITION)

2 Section 2 1/8" = 1"-0

15/19

4. ROOF AND CEILING INSULATION: PERFORMANCE R-49 OR BETTER. EXTEND FULL DEPTH INSULATION TO EXTERIOR WALL SHEATHING TO ELIMINATE COLD CORNERS AND PREVENTICE DAM FORMATIONS.

WOOD FRAME EXTERIOR WALLS: HICH PERFORMANCE R-21 WALL INSULATION IN 2-6 WD STUD WALLS OR FLASH AND BATT WITH SPRAY FOAM AND FIBERGLAS ATT INSULATION TO METIMINIMAIN REQUIREMENT IN TABLE 4/22.11

6. MASS WALLS R-17 MINIMUM PERFORMANCE IF INSTALLED INSIDE OF WALL CENTERLINE, R-13 MINIMUM IF INSTALLED ON THE OUTSIDE AS MEASURED FROM THE WALL CENTERLINE 7. FLOOR INSULATION: R-30 INSULATION BETWEEN JOSTS, INSULATION MUST BE INSTALLED FOR PERMANENT DIRECT CONTACT BETWEEN SUB-FLOOR AND INSULATION INSTALLATIONS THAT ALLOW FUTURE SAGGING OF INSULATION AMAY FROM FLOOR DECK NOT PERMITTED

8. FOUNDATION AND SLAB INSULATION AT BASEMENT: R-30 INSULATION UNDER SLAB

The fensitation Ustactor column excluses skylights. The SHGC column applies to all glazed fenestration. Exception: Skylights may be excluded from glazed fenestrator SHGC yuternents in climate zones it through 3 where the SHGC for such skylights does not exceed 0.30. E. "ISTY means R-15 continuous insulation on the interior or oxterior of the horne or R-19 cavity insulation at the interior of the busenment wall. "15Ty" shall be permitted to be made in the continuous insulation or the interior or exterior of the forms. "10Ty means R-10 confinuous insulation with interior or exterior or solder or the interior of the forms." 10Ty means R-10 confinuous insulation with interior or exterior or solder or other or any insulation at the interior of the basenment wall.

T. R-S sail be added to the required salp edge R-values for head salbs. Insulation days shall be the depth of the bottle or 2 best, whichever is less in Climate Zones I through 3 for header sales.

R-values are minimums. Utactors and SHGC are maximums. When insulation is nistalled in a cavity which is less than the label or design thickness of the insulation, the stalled R-value specified in the table.

888 GREAT PLAIN AVE SECTIONS

J. Derenzo Properties

221054 A300

The second R-value applies when more than half the insulation is on the interior of the mass wall.

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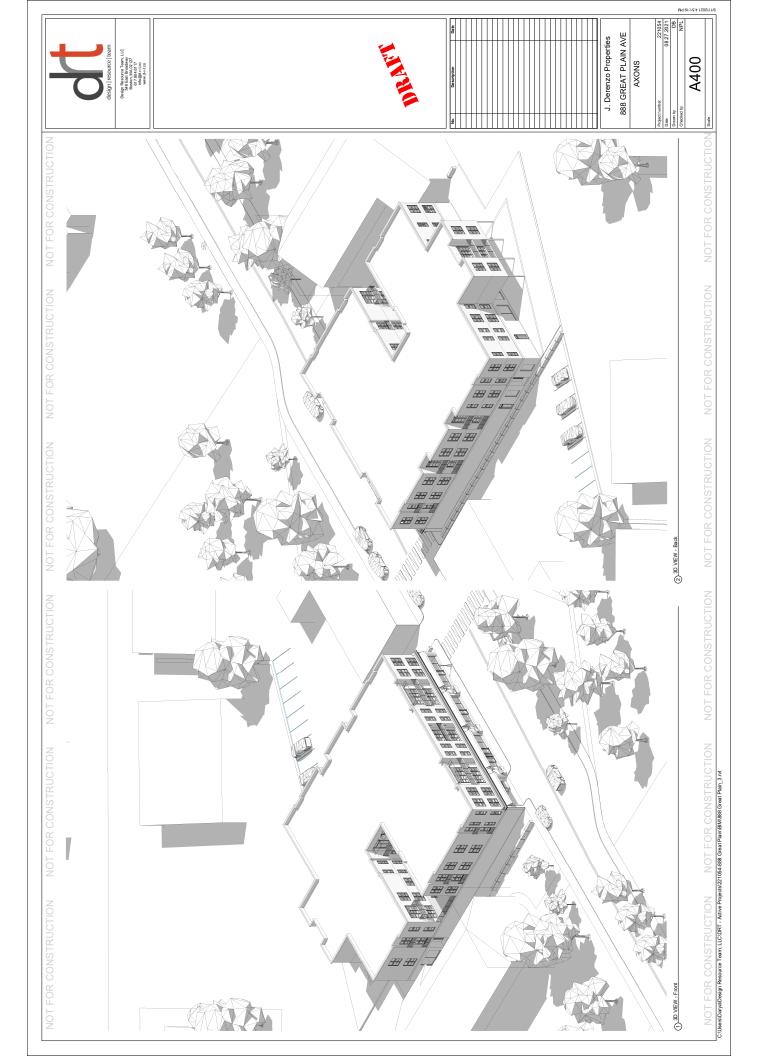
The first value is cavity insulation, the second value is continuous insulation, so "13+5" means R-13 cavity insulation plus R-5 continuous insulation.

Basement wall insulation is not required in warm-humid locations as defined by Figure R301.1 and Table R301.

There are no SHGC requirements in the Marine Zone.

Or insulation sufficient to fill the framing cavity, R-19 minimum.

1/8" = 1'-0"













(4) 3D View 4

3 3D View 3

221054 A500

888 GREAT PLAIN AVE J. Derenzo Properties

PERSPECTIVES

9/17/2021 4:51:40 PM

NOT FOR CONSTRUCTION NOT FOR CONSTRUCTION CUbers/Days/Design Resource Team, LLCDRT - Active Project/20154-386 Great Plain IBIN 689 Great Plain 3 Art

From: <u>Andrew McCollum</u>

To: <u>Planning</u>

Cc:Lee Newman; Alexandra CleeSubject:888 Great Plain Avenue

**Date:** Monday, November 15, 2021 11:52:09 AM

### Dear Planning Board:

As a neighbor of 888 Great Plain Avenue, I'm writing to express that I do not support the proposed re-zoning of the property from residential to mixed use.

There is no benefit to the town of expanding the commercial district beyond its current boundaries. There has been a surplus of commercial property in our downtown (empty store fronts) for many years. Therefore, it is hard to understand the argument for adding more commercial zoning.

We should also consider the aesthetics of the area. The proposed design would remove trees and add yet another three-story cement building. This would have a negative visual impact on Greene's field and the surrounding neighborhood.

Regards, Andrew McCollum 843 Great Plain Avenue 617-712-5799 From

noreply@civicplus.com Alexandra Clee; Lee Newman; Elisa Litchman To: Subject: Date: Online Form Submittal: Contact Planning Board Monday, November 15, 2021 1:27:30 PM

The following form was submitted via your website: Contact Planning Board

Full Name:: Samuel B Graves Email Address:: graves@bc.edu

Address:: 94 Warren St City/Town:: Needham

State:: MA

Zip Code:: 02492

Telephone Number:: 7818645902

Comments / Questions: To the Needham Planning Board:

We are very concerned about the potential rezoning of 888 Great Plain Avenue. We are nearby neighbors and feel this would have a negative impact on our neighborhood.

Please advise as to how we can voice our concerns about this proposal.

Sam and Florence Graves 94 Warren St

Additional Information:

Form submitted on: 11/15/2021 1:27:25 PM Submitted from IP Address: 136.167.117.185

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From: noreply@civicplus.com

To: Alexandra Clee; Lee Newman; Elisa Litchman

Subject: Online Form Submittal: Contact Planning Board

Date: Monday, November 15, 2021 6:20:51 PM

The following form was submitted via your website: Contact Planning Board

Full Name:: Barbara Ridge

Email Address:: barbararidge@gmail.com

Address:: 83 Fair Oaks Park

City/Town:: Needham

State:: MA

Zip Code:: 02492

Telephone Number:: 7812236990

Comments / Questions: As a neighbor, I am concerned about the proposal to rezone 888 Great Plain Avenue from residential to mixed use building. This part of town will undergo significant change over the next few years with the closing of The First Baptist Church. Neighbors must be involved in any decisions regarding any actions taken on these properties.

I would appreciate knowing how we can become involved in the discussion. Thank you,

Additional Information:

Form submitted on: 11/15/2021 6:20:46 PM

Submitted from IP Address: 108.7.207.212

Referrer Page: No Referrer - Direct Link

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# The Commonwealth of Massachusetts Office of the Attorney General One Ashburton Place

Boston, Massachusetts 02108

### **OPEN MEETING LAW COMPLAINT FORM**

### Instructions for completing the Open Meeting Law Complaint Form

The Attorney General's Division of Open Government interprets and enforces the Open Meeting Law, Chapter 30A of the Massachusetts General Laws, Sections 18-25. Below is the procedure for filing and responding to an Open Meeting Law complaint.

### Instructions for filing a complaint:

- o Fill out the attached two-page form completely. Sign and date the second page. File the complaint with the public body within 30 days of the alleged violation. If the violation was not reasonably discoverable at the time it occurred, you must file the complaint within 30 days of the date the violation was reasonably discoverable. A violation that occurs during an open session of a meeting is reasonably discoverable on the date of the meeting.
- o To file the complaint:
  - o For a local or municipal public body, you must submit a copy of the complaint to the <u>chair of the public body</u> **AND** to the <u>municipal clerk</u>.
  - o For all other public bodies, you must submit a copy of the complaint to the chair of the public body.
  - o Complaints may be filed by mail, by email, or by hand. Please retain a copy for your records.
- o If the public body does not respond within 14 business days and does not request an extension to respond, contact the Division for further assistance.

### Instructions for a public body that receives a complaint:

- o The chair must disseminate the complaint to the members of the public body.
- o The public body must meet to review the complaint within 14 business days (usually 20-22 calendar days).
- o After review, but within 14 business days, the public body must respond to the complaint in writing and must send the complainant a response and a description of any action the public body has taken to address the allegations in the complaint. At the same time, the body must send the Attorney General a copy of the complaint and a copy of the response. The public body may delegate this responsibility to an individual member of the public body, its counsel, or a staff member, but only after the public body has met to review the complaint.
- o If a public body requires more time to review the complaint and respond, it may request an extension of time for good cause by contacting the Division of Open Government.

### Once the public body has responded to the complaint:

- o If you are not satisfied with the public body's response to your complaint, you may file a copy of the complaint with the Division by mail, by email, or by hand, but only once you have waited for 30 days after filing the complaint with the public body. Mail may be sent to: The Division of Open Government, Office of the Attorney General, One Ashburton Place 20<sup>th</sup> Floor, Boston, MA 02108. Emails may be sent to: openmeeting@state.ma.us.
- o When you file your complaint with the Division, please include the complaint form and all documentation relevant to the alleged violation. You may wish to attach a cover letter explaining why the public body's response does not adequately address your complaint.
- The Division will not review complaints filed with us more than 90 days after the violation, unless we granted an extension to the public body or you can demonstrate good cause for the delay.

If you have questions concerning the Open Meeting Law complaint process, we encourage you to contact the Division of Open Government by phone at (617) 963-2540 or by email at <a href="mailto:openmeeting@state.ma.us">openmeeting@state.ma.us</a>.



### **OPEN MEETING LAW COMPLAINT FORM**

Office of the Attorney General One Ashburton Place Boston, MA 02108

Please note that all fields are required unless otherwise noted.

Your Contact Information:  First Name: Joe  Last Name: Abruzese
Address: 30 Bridle Trail Road
City: Needham State: MA Zip Code: 02492
Phone Number: 617-871-9150 Ext.
Email: jabruzese@yahoo.com
Organization or Media Affiliation (if any):
Are you filing the complaint in your capacity as an individual, representative of an organization, or media?  (For statistical purposes only)
Individual Organization Media
Public Body that is the subject of this complaint:
City/Town County Regional/District State
Name of Public Body (including city/town, county or region, if applicable):  Needham Planning Board, Needham MA
Specific person(s), if any, you allege committed the violation:  Paul Alpert, Adam Block, Martin Jacobs, Jeanne McKnight, Natasha Espada
Date of alleged violation:  October 19, 2021

### **Description of alleged violation:**

Describe the alleged violation that this complaint is about. If you believe the alleged violation was intentional, please say so and include the reasons supporting your belief.

Note: This text field has a maximum of 3000 characters.

On October 19, 2021, the entire Needham Planning Board, the attorney for the developer of 1688 Central Avenue, the developer's client, and town counsel all met electronically via Zoom. At this meeting, they discussed matters in conjunction with the application of the developer LLC (wholly owned and operated by the chair of the Needham Select Board) to build a daycare at 1688 Central Avenue where an application is pending before the Planning Board. The Planning Board kept the Zoom closed to the public during this entire discussion in violation of

The Planning Board meeting of October 19, 2021 was noticed for an electronic meeting via Zoom to begin at 7:15 p.m. A public hearing on the matter of 1688 Central Avenue with applicant Needham Enterprises, LLC was noticed for 7:45 p.m.

I and other members of the public logged into the Zoom as attendees at 7:15 p.m. The public Zoom indicated "waiting" and the public attendees did not have access to any information, pending the public meeting starting. At 7:31 p.m., I and the other members of the public were let into the Zoom and the Chair began the formal meeting without indicating that official matters had been discussed by the panelists prior to the public portion of the meeting and without identifying who was on the Zoom as a panelist. The attendees could only see the active speaker and had no way of knowing who else was participating as a panelist in the meeting.

Panelists were able to log into the Zoom at or before 7:15 p.m. Panelists included Chair Paul Alpert, Vice Chair Adam Block, Martin Jacobs, Jeanne McKnight, and Natasha Espada - all five planning board members. Members of the planning department Alex Clee and Lee Newman also were present and able to participate as panelists at or before 7:15 p.m. Town Counsel, Christopher Heep, who was the attorney presenting for the applicant Town of Needham in an unrelated matter scheduled to be heard as one of the last items on the agenda, was also present and able to participate as a panelist at or before 7:15 p.m. Representatives of the developer of proposed daycare at 1688 Central Avenue including Attorney Evans Huber were present and able to participate as a panelist at or before 7:15 p.m., even though the meeting had not been called to order, had not been opened to the public, and the developer's hearing was not until 7:45 p.m. The developer's client, Patricia Day of the Needham Children's Center, was also present and able to participate as a panelist at or before 7:15 p.m. before the meeting was opened to the public.

The aforementioned panelists discussed the matter of 1688 Central Avenue, including but not limited to discussing documents from the meeting packet, discussing the merits and context of a conflict of interest complaint made against Chair Paul Alpert as a trustee of a different daycare in Needham, opining about the legal and practical ramifications of the alleged conflict of interest and about how the Board would handle the complaint. The public was not admitted to the Panelists-Only Zoom at the time of this discussion. Town Counsel was present for and

Apart from being completely inappropriate to discuss a matter within planning board jurisdiction which is of significant public interest outside of a public meeting, it is completely inappropriate for the Planning Board to give special access and privileges to developers and applicants where the same access and privileges are not available to the general public. This is true always, but it is particularly egregious in this case where the developer is the Chair of the Needham Select Board and the architect is the Chair of the Needham Design Review Board since the public already has a heightened concern about the Selectman and the Design Review Board Chair being afforded special privileges, courtesies, and access due to their positions in town. Being a panelist in a Zoom meeting gives a person the ability to speak at will and interject into the conversation. Attendees do not have the same ability to interject or vocally request permission to speak at will during a meeting and they do not have the ability to enter the Zoom meeting prior to the start of the public meeting. Attendees can only use the "raise a hand" function which does not interrupt or give notice to the public of the request to speak. Attendees cannot speak unless and until they are given that ability individually by the person controlling the Zoom meeting. Panelists that join Zoom meetings prior to the public attendees can discuss matters informally at will out of view of the public yet within hearing of all the other panelists. Furthermore, panelists can control their view settings and gamer information about the meeting that is not available to the public Zoom attendees.

What action do you want the public body to take in response to your complaint?

Note: This text field has a maximum of 500 characters.

- 1. A copy of the video recording or any other recording of the Panelists-Only Zoom that took place prior to the start of the public Zoom should be made available to the public.

  2. In the event the Panelist-Only Zoom was not recorded, the Planning Board should fully explain that omission publicly.

  3. In the event the Panelist-Only Zoom was not recorded, the Planning Board publicly should recount as closely as possible exactly what was said and by whom at the Panelists-Only Zoom.

  4. The Planning Board should acknowledge that when three or more members are present and a matter within the planning board's jurisdiction is talked about prior to opening the Zoom to the public, that is a violation of Open Meeting Law. The Planning Board should discontinue this practice.

  5. Members of the public should be admitted to Zoom prior to the formal start of the Planning Board meeting, just as they would enter a room early should the meeting be in person. The public should be admitted to Zoom as a panelists are permitted to tog on.

  6. Attendees should be given the same ability to understand the gathering as they are given in a public meeting. Namely, the attendee view of the meeting should be set to gallery view of all panelists and the stander with should be set with any other features available that would more closely.
- 6. Attendees smooth of given in earnier ability to understand the garactering as they are given in a public meeting. Narriety, the attendee view should include the participant count which shows how many panelists and attendees riew should include the participant count which shows how many panelists and attendees are present in Zoom. The attendee view should be set with any other features available that would more closely mimic the information an attendee could garner from a public meeting, such as the names of all those attending and the names of those raising hands.
  7. Developers, applicants and their representatives should not be given any greater privileges than the public at a Zoom meeting. In all future Planning Board meetings on all matters, only members of the Planning Board and the Planning Board meetings on all matters, only members of the Planning Board meetings on a matter should be permitted to join Zoom from the start as panelists. Those presenting for a developer on a matter should be required to join Zoom as attendees and should not be promoted to panelist until their matter is called at the meeting. All presenters should be demoted to attendees after their matter is heard.

### Review, sign, and submit your complaint

### I. Disclosure of Your Complaint.

Public Record. Under most circumstances, your complaint, and any documents submitted with your complaint, is considered a public record and will be available to any member of the public upon request.

Publication to Website. As part of the Open Data Initiative, the AGO will publish to its website certain information regarding your complaint, including your name and the name of the public body. The AGO will not publish your contact information.

### II. Consulting With a Private Attorney.

The AGO cannot give you legal advice and is not able to be your private attorney, but represents the public interest. If you have any questions concerning your individual legal rights or responsibilities you should contact a private attorney.

### III. Submit Your Complaint to the Public Body.

The complaint must be filed first with the public body. If you have any questions, please contact the Division of Open Government by calling (617) 963-2540 or by email to openmeeting@state.ma.us.

By signing below, I acknowledge that I have read and understood the provisions above and certify that the information I have provided is true and correct to the best of my knowledge.

Signed: Joe Abruzese DN: cn=Joe Abruzese, o, ou, email=jabruzese@yahoo.com, c=US

Digitally signed by Joe Abruzese Date: 2021.11.02 12:53:49 -04'00'

Date: November 2, 2021

For Use By Public Body Date Received by Public Body: For Use By AGO Date Received by AGO:



J. Raymond Miyares Thomas J. Harrington Christopher H. Heep Donna M. Brewer Jennie M. Merrill Bryan Bertram Ivria Glass Fried Alexandra B. Rubin Ethan B. Dively Maurica D. Miller Rian Rossetti

November 16, 2021

### BY EMAIL (jabruzese@yahoo.com)

Joe Abruzese 30 Bridle Trail Road Needham, MA 02492

Re: Response to Open Meeting Law Complaint

Dear Mr. Abruzese:

This office represents the Needham Planning Board, which received your *Open Meeting Law* Complaint on November 2, 2021. The Planning Board met on November 8, 2021 to discuss your Complaint, and its response is discussed in detail below.

The subject of your OML Complaint is the Planning Board's October 19, 2021 meeting. In the Complaint, you allege that the Planning Board engaged in improper discussion before the meeting became viewable over Zoom by the general public. Although the Planning Board did not violate the OML, as you allege, the Board below discloses all comments made during the time discussed in the Complaint, and has agreed to amend its meeting practice in order to foster greater public transparency and demonstrate its ongoing commitment to open governance.

### **FACTS**

In accordance with Planning Board practice during the COVID-19 pandemic, all Planning Board members, Planning Board staff, and all those expected to present on various agenda items during the course of the meeting were admitted to the Zoom prior to the commencement of the October 19, 2021 meeting. The following people were present on the Zoom at or about 7:15 p.m.: Planning Board members Paul Alpert, Adam Block, Natasha Espada, Martin Jacobs and Jeanne McKnight; Director of Planning and Community Development Lee Newman; Assistant Town Planner Alexandra Clee; and the following panelists for the items on the meeting agenda Reg Foster, Margaret Moran, Nathalie Janson, Carys Lustig, Town Counsel Christopher Heep, George Giunta, Jr., Michael Tedoldi, Evans Huber, Pat Day, Susanne [unknown last name], John Glossa, John Gillon and John Diaz. As noted in your OML Complaint, members of the public did not have the ability to view the Zoom at this time as the meeting had not yet been called to order.

Joe Abruzese November 16, 2021 Page 2 of 6

Beginning at approximately 7:15 p.m., Chairman Paul Alpert stated that the Planning Department had received an email that same afternoon from Mike Connelly. In this email, Mr. Connelly stated that Mr. Alpert had a conflict of interest pursuant to Chapter 268A, the *State Ethics Law*, with respect to the pending application concerning property located at 1688 Central Avenue. The public hearing on the application concerning 1688 Central Avenue was on the Planning Board's agenda for 7:45 p.m. that evening. Mr. Alpert stated that he intended to recuse himself from the matter of 1688 Central Avenue that evening, and to postpone the public hearing on that matter until the Planning Board's next scheduled meeting, to allow time for him to obtain an opinion from the State Ethics Commission as to whether any conflict of interest affected his ability to participate in the matter further.

Planning Board member Martin Jacobs asked Town Counsel Christopher H. Heep what would happen in the event Mr. Alpert was found to have a conflict of interest with respect to the 1688 Central Avenue application. Mr. Jacobs' question was prompted by the prior recusal of Planning Board member Natasha Espada from participation on the 1688 Central Avenue application, which meant that a recusal by Mr. Alpert would result in only three (3) Planning Board members being able to vote on the application, fewer than the four (4) required by law to grant the requested zoning relief.

Mr. Heep stated he did not believe it likely that the State Ethics Commission would find Mr. Alpert to have a conflict of interest, but that in any event everyone would need to wait and see what guidance the State Ethics Commission would ultimately provide.

Evans Huber, counsel to the applicant for 1688 Central Avenue (Needham Enterprises, LLC), stated that in the event Mr. Alpert was found to possess a conflict of interest, he believed that Town Counsel would need to determine if another board within Town, such as the Zoning Board of Appeals, had the ability to hear the application in place of the Planning Board. Mr. Huber offered the opinion that if no other board was able to hear the application, the Planning Board might invoke the so-called "rule of necessity."

Mr. Heep responded to Mr. Huber that he did not believe it possible for one permitting board to be substituted for another in response to a conflict of interest. Mr. Heep stated that the "rule of necessity" might be applicable, subject to consideration at a later date as to whether it might be properly invoked, in the event of a conflict of interest.

Mr. Huber asked whether the public hearing on 1688 Central Avenue could proceed as scheduled that evening with only three (3) of the five (5) Planning Board members participating. Mr. Heep stated that it could not: Because four (4) affirmative votes are needed to grant the requested zoning relief, a quorum of the Planning Board for purposes of the public hearing on the application is four (4) board members. Given Mr. Alpert's recusal that evening, the Planning Board did not possess a quorum for purposes of the application for 1688 Central Avenue.

Joe Abruzese November 16, 2021 Page 3 of 6

Pat Day, representative of Needham Children's Center, stated her disappointment with the delay of the public hearing on the 1688 Central Avenue application, and with the overall length of the public hearing to date. Ms. Day stated that she had not played any part relative to Mr. Connelly sending the email accusing Mr. Alpert of having a conflict of interest.

Planning Board members Adam Block, Natasha Espada, and Jeanne McKnight did not comment. There was no further comment from anyone else present.

At approximately 7:31 p.m., members of the general public were admitted to the Zoom and the recording of the meeting began.

### **ANALYSIS**

The comments made between approximately 7:15 p.m. and 7:31 p.m. did not violate the Open Meeting Law. The Open Meeting Law provides that a quorum of the Planning Board may not deliberate outside of a public meeting. "Deliberation" is defined as "an oral or written communication through any medium, including electronic mail, between or among a quorum of a public body on any public business within its jurisdiction; provided, however, that 'deliberation' shall not include the distribution of a meeting agenda, scheduling information or distribution of other procedural meeting [sic] or the distribution of reports or documents that may be discussed at a meeting, provided that no opinion of a member is expressed." M.G.L. c.30A, §18 (emphasis added). Communications regarding scheduling are explicitly excluded from the definition of deliberation. OML 2018-6; OML 2017-28; OML 2017-85; OML 2013-145. "The exemption to deliberation refers to discussions among a quorum of the Board regarding scheduling of its own meetings." OML 2013-153. "As scheduling is excluded from the definition of deliberation, a quorum of the Commission [is] free to discuss scheduling via any medium of their choosing without noticing a meeting." OML 2013-44. Further, communications are not considered deliberations when administrative in nature, and where members do not express an opinion. OML 2021-12.

As recounted above, Chairman Paul Alpert stated, as a matter of fact, that the application for 1688 Central Avenue would not proceed as scheduled that evening, and the public hearing would instead be continued to the next meeting. His statements concerned the scheduling of the meeting and contained no opinion on the merits of the application itself. Therefore this portion of the discussion is not a deliberation within the meaning of the *Open Meeting Law*.

Board member Alpert noted that the postponing of the hearing was necessary due to a potential issue that had arisen that day under the *State Ethics Law*, and member Martin Jacobs asked a question about what would happen in the event that the State Ethics Commission determined that Mr. Alpert possessed a conflict of interest. A particular individual's compliance with the State Ethics Law is not a matter within the Planning Board's jurisdiction and, thus, does not constitute a deliberation.

Joe Abruzese November 16, 2021 Page 4 of 6

At no point did any Board member engage in any deliberation on the merits of the application. Nor did any member express an opinion on Mr. Alpert's compliance with the *State Ethics Law*. Accordingly, none of the comments made before opening the meeting to the public at 7:31 p.m. amount to deliberation of the Planning Board.

Nonetheless, in the interests of transparency and candor, the Planning Board has fully recounted all of the comments made on October 19, 2021 before the meeting was viewable on Zoom by the general public. In addition to including the narrative in this response to your OML Complaint, the Planning Board will include the narrative in the minutes of the October 19, 2021 meeting, and disclose them in open session at the next upcoming Planning Board meeting on November 16, 2021.

On your Open Meeting Law Complaint Form, you requested that the Planning Board take seven (7) actions (or combination of actions) in response to your complaint. Your requests are recited below in italics, with each followed by the Planning Board's response.

1. A copy of the video recording or any other recording of the Panelists-Only Zoom that took place prior to the start of the public Zoom should be made available to the public.

There is no recording of the comments made prior to 7:31 p.m. on October 19, 2021. In lieu of a recording, all comments have been fully recounted above. These comments will also be included in the minutes of the October 19, 2021 meeting, and will be disclosed during open session at the next Planning Board meeting on November 16, 2021.

2. In the event the Panelist Only Zoom was not recorded, the Planning Board should fully explain that omission publicly.

The comments recounted above were made before the Planning Board's October 19, 2021 meeting was officially called to order. The practice of the Planning Board during COVID has been to admit the public to the meeting immediately before the meeting is called to order.

3. In the event the Panelist-Only Zoom was not recorded, the Planning Board publicly should recount as closely as possible exactly what was said and by whom at the Panelists-Only Zoom.

All comments have been fully recounted in this letter. In addition, the comments made will be included in the minutes of the October 19, 2021 meeting, and will be disclosed in open session at the Planning Board's next meeting on November 16, 2021.

Joe Abruzese November 16, 2021 Page 5 of 6

4. The Planning Board should acknowledge that when three or more members are present and a matter within the Planning Board's jurisdiction is talked about prior to opening the Zoom to the public, that is a violation of the Open Meeting Law. The Planning Board should discontinue this practice.

The Planning Board does not have a "practice" of discussing matters within its jurisdiction prior to opening its Zoom meetings to the public.

5. Members of the public should be admitted to Zoom prior to the formal start of the Planning Board meeting, just as they would enter a room early should the meeting be in person. The public should be admitted to Zoom as soon as panelists are permitted to log on.

Going forward, the Planning Board will implement the following practice: (a) All Planning Board members will log on to Zoom immediately before the appointed start time noted on the posted agenda, and (b) everyone other than Planning Board members and staff (i.e. all attendees and presenters) will be allowed access to the Zoom simultaneously. Presenters will then be promoted from "attendee" to "panelist" as their particular matter on the agenda is called.

6. Attendees should be given the same ability to understand the gathering as they are given in a public meeting. Namely, the attendee view of the meeting should be set to gallery view of all panelists and the attendee view should include the participant count which shows how many panelists and attendees are present in Zoom. The attendee view should be set with any other features available that would more closely mimic the information an attendee could garner from a public meeting, such as the names of those attending and the names of those raising hands.

Planning Board meetings conducted over Zoom have previously been presented to the public as "speaker view," whereby the screen is occupied by the person speaking at any particular time. Going forward, the Planning Board will switch the publicly viewable Zoom to "gallery view", which will allow all Planning Board members, staff, and panelists to be viewed on the screen simultaneously.

7. Developers, applicants and their representatives should not be given greater privileges than the public at a Zoom meeting. In all future Planning Board meetings on all matters, only members of the Planning Board and the Planning Department should be permitted to join Zoom from the start as panelists. Those presenting for a developer on a matter should be required to join Zoom as attendees and should not be promoted to panelist until their matter is called at the meeting. All presenters should be demoted to attendees after their matter is heard.

For its prior meetings conducted over Zoom, the Planning Board's practice has been to admit all panelists (i.e. applicants, their attorneys, engineers, etc., and any other presenters) to the Zoom at

Joe Abruzese November 16, 2021 Page 6 of 6

the same time, before the meeting is officially called to order and the public is admitted to the meeting. This practice has had the benefit of allowing a smooth transition from one agenda item to the next, as all panelists are "present" without the need to admit or promote them in groups while the meeting is underway. Nonetheless, going forward the Planning Board intends to discontinue this practice, and will instead promote presenters from "attendee" to "panelist" as their particular matter on the agenda is called. It is expected that most panelists will depart the Zoom at the conclusion of their particular matter, but the Planning Board will also demote those who do not from "panelist" to "attendee."

Sincerely,

Christopher H. Heep

cc: Attorney General's Division of Open Government (with a copy of the complaint)
Kate Fitzpatrick, Town Manager
Planning Board



# LEGAL NOTICE Planning Board TOWN OF NEEDHAM NOTICE OF HEARING

In accordance with the provisions of M.G.L., Chapter 40A, S.11; the Needham Zoning By-Law, Section 7.4 and Special Permit No. 2009-06, Section 4.2, the Needham Planning Board will hold a public hearing on Tuesday, November 2, 2021 at 7:20 p.m. by Zoom Web ID Number 826-5899-3198 (further instructions for accessing are below), regarding the application of the Needham Select Board, 1471 Highland Avenue, Needham, MA, for a Special Permit under Site Plan Review, Section 7.4 of the Needham Zoning By-Law.

The subject property is located at 1471 Highland Avenue, Needham, Massachusetts, shown on Assessor's Map No. 51 as Parcel 1 containing 1.36 acres and is located in the Center Business Zoning District. The requested Major Project Site Plan Review Special Permit Amendment would, if granted, permit the comprehensive redesign and renovation of the Town Common at 1471 Highland Avenue. The complete redesign includes replacement of the lawn, landscaping, pedestrian pathways, seating areas, lighting, and other amenities as discussed in the application materials and shown on the submitted plans.

In accordance with the Zoning By-Law, Section 7.4, a Major Project Site Plan Review Special Permit Amendment is required. In accordance with Special Permit No. 2009-06, Section 4.2, further site plan approval is required.

To view and participate in this virtual meeting on your phone, download the "Zoom Cloud Meetings" app in any app store or at <a href="www.zoom.us">www.zoom.us</a>. At the above date and time, click on "Join a Meeting" and enter the following Meeting ID: 826-5899-3198

To view and participate in this virtual meeting on your computer, at the above date and time, go to <a href="https://www.zoom.us">www.zoom.us</a> click "Join a Meeting" and enter the following ID: 826-5899-3198

Or to Listen by Telephone: Dial (for higher quality, dial a number based on your current location):

US: +1 312 626 6799 or +1 646 558 8656 or +1 301 715 8592 or +1 346 248 7799 or +1 669 900 9128 or +1 253 215 8782 Then enter ID: 826-5899-3198

Direct Link to meeting: https://us02web.zoom.us/s/82658993198

The application may be viewed at this link:

<u>https://www.needhamma.gov/Archive.aspx?AMID=146&Type=&ADID=</u>
. Interested persons are encouraged to attend the public hearing and make their views known to the Planning Board. This legal notice is also posted on the Massachusetts Newspaper Publishers Association's (MNPA) website at (<a href="http://masspublicnotices.org/">http://masspublicnotices.org/</a>).

NEEDHAM PLANNING BOARD

# TOWN OF NEEDHAM MASSACHUSETTS

2021 OCT -5 PH 4:47



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 Name of Applicant Applicant's Address Phone Number  1471 Highland Avenue 1471 Highland Avenue 1471 Highland Avenue (781) 455-7500
Applicant is: Owner Tenant Agent/Attorney X Purchaser
Property Owner's Name Property Owner's Address Telephone Number Town of Needham 1471 Highland Avenue (781) 455-7500
Characteristics of Property: Lot Area 1.36 acres Map #51 Parcel #1 Present Use Town Common Zoning District Center Business
Description of Project for Site Plan Review under Section 7.4 of the Zoning By-Law:  The Town of Needham Select Board seeks an amendment of Major Project Site Plan Special Permit No. 2009-06 to authorize the redesign and renovation of the Town Common located at 1471 Highland Avenue.
Signature of Applicant (or representative)  Address if not applicant: 40 Grove Street Suite 190, Wellesley MA 02482  Telephone # (617) 804-2422  Owner's permission if other than applicant
SUMMARY OF PLANNING BOARD ACTION  Received by Planning Board Date Date Date
Denied Fee Paid Fee Waived Withdrawn

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

#### **TOWN OF NEEDHAM**

MASSACHUSETTS



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

PLANNING BOARD	DDI ICATIO	N POD CITE	DI AN DI	N/IPW	
Δ	PPLICATIO	N FOR SITE	PLAN RE	VIEW	
Project Determination: (cir	cle one)	Major Project		Minor Project	
This application must be chis representative in accordas a Special Permit Grantin	dance with the	Planning Boa	d's Rules	as adopted under its jurisdi	
Name of Applicant To Applicant's Address 14	71 Highland A wn of Needham S 171 Highlan 81) 455-7500	Select Board			
Applicant is: OwnerAgent/Atto		Tenan Purch	t	-	
Property Owner's Name Property Owner's Address Telephone Number		f Needham ghland Avenue 55-7500	e		
Characteristics of Property		a 1.36 acres 1 Parcel #1		Jse Town Common District Center Business	
	am Select Boa 2009-06 to aut	ard seeks an am horize the rede	endment o	he Zoning By-Law: of Major Project Site Plan enovation of the Town Con	mmon
Signature of Applicant (or a Address if not applicant: 40 Telephone # (617) 804-242 Owner's permission if othe	Grove Street	Suite 190, We	ellesley M	02482	
SUMMARY OF PLANN	NC ROADN	ACTION			
Received by Planning Boar			Data		
Hearing Date	Parties c	of Interest Noti	fied of Put	olic Hearing	
Decision Required by Granted					
Denied		Fee Paid	3	Fee Waived	
Withdrawn					

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



J. Raymond Miyares Thomas J. Harrington Christopher H. Heep Donna M. Brewer Jennie M. Merrill Bryan Bertram Ivria Glass Fried Alexandra B. Rubin Ethan B. Dively Maurica D. Miller Rian Rossetti

September 30, 2021

#### BY EMAIL (Inewman@needhamma.gov)

Planning Board Town of Needham Public Services Administration Building 500 Dedham Avenue Needham, MA 02492

Re: Request to Amend Major Project Site Plan Special Permit No. 2009-06
Town Common Renovation

Dear Planning Board members:

I am pleased to submit this application for an amendment of Major Project Site Plan Special Permit No. 2009-06 on behalf of the Town of Needham Select Board (the "Applicant") to authorize the comprehensive redesign and renovation of the Town Common at 1471 Highland Avenue. The new Common is shown on the site plans submitted herewith, and includes a complete redesign and replacement of the lawn, landscaping, pedestrian pathways, seating areas, lighting, and other amenities discussed in more detail below.

The Major Project Site Plan Special Permit applicable to this property is dated November 17, 2009 (the "Decision"), and has previously been amended several times. The Decision covers the property located at 1471 Highland Avenue, which is shown on Needham Town Assessors' Plan No. 51 as Parcel No. 1 and contains a total of 1.36 acres. The Decision authorized the expansion and renovation of the Town Hall; it did not authorize any particular work to the Common (none was proposed at the time). Accordingly, this application now seeks an amendment of the Decision to authorize the renovation of the Town Common as shown on the site plans. This application does not propose any new buildings, does not involve any structural changes to Town Hall, and does not alter the established vehicular circulation or parking spaces that the Planning Board has previously approved.

<sup>&</sup>lt;sup>1</sup> These previous amendments are dated March 2, 2010, November 16, 2010, June 21, 2011, May 1, 2012, April 25, 2017, May 1, 2018 and May 20, 2020.

#### **The Project**

The proposed redesign of the Common is shown on the plan set "Town of Needham, Massachusetts Department of Public Works—Needham Town Common Renovation (August 2021)", which is being submitted along with this application. The key features of the new Common include the following:

- Based on the health and longterm viability of the trees and accumulated wear and tear
  on the existing Common, all existing trees, except the new 'Blue Tree' and lawn areas
  will be removed. Existing topsoil will be excavated and stockpiled onsite for reuse.
  Landscaping installed as part of the Phase 1 Streetscape project will be retained. A
  planting plan for the new Common is included in the plan set as Sheet 7.
- The Common will feature a large, oval-shaped lawn area within the center of the site. Within this center lawn area, nearer to the Town Hall side, there will be a circular area constructed of pavers. This area will be covered by a tent seasonally, with in-ground tent supports built in to allow for ready installation and removal. This tent area was regarded as a key feature of the new Town Common during the Applicant's design work, based on the popularity of the temporary tent that the Town installed at the beginning of the COVID-19 pandemic to encourage outdoor dining and patronage of surrounding restaurants.
- The site will feature wood and metal shade structures with picnic tables and bench swings along both Highland Avenue and Chapel Street. There will also be additional picnic tables installed near the southeast and southwest corners of the Common along Great Plan Avenue. Details of these structures and improvements are shown on Sheet 9 of the attached plan set.
- The site will feature a new walkway across from the front entrance of Town Hall into the Common, and a new masonry wall, similar in style to those along Great Plain Avenue at this location that will double as a seating area.
- The existing MBTA bus stop on Chapel Street will be replaced with a new one, which will be located in the same spot as the existing. Details of the new bus stop are shown on Sheet 9 of the attached plan set.
- The existing Circle of Peace sculpture featuring dancing children and the sculpture of the children on the bench will be preserved and relocated slightly, as shown on the plans. The existing dedication plaque will similarly be preserved and moved within the Common.

Planning Board September 30, 2021 Page 3 of 6

• The project will include upgrading the existing globe-top lights to LED and painting, installing flush-mounted uplighting within the main pedestrian pathway, and providing temporary festoon poles to allow for decorative lights to be strung over the central lawn area. Power and connections for public address system will also be provided at the shade structures and at the masonry wall. Additionally, exterior lighting of the Town Hall is being designed for construction by others.

#### Compliance with Site Plan Review Criteria

The proposed renovation of the Town Common is consistent with all of the approval criteria for a Major Project Site Plan Special Permit under Section 7.4.6 of the Zoning Bylaw. Each critieria is discussed below.

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

The redesigned Town Common will have no detrimental impacts on adjoining premises. The site is already in use as the Town Common, and the redesign of the site does not create any detrimental impacts on the surrounding area. The Planning Board previously found, with respect to the renovation of Town Hall, that no sound and light buffers are required (see Decision at p. 5, Finding 1.15), and in terms of the views, light and air that will be offered, the site had been designed to enhance this property's role as the cornerstone of the vibrant downtown Needham Center.

(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.

Convenience and safety of vehicular and pedestrian movement within the site has been adequately provided for. There will be no vehicular movement within the Town Common, and there will be no new driveway openings or changes to established traffic circulation on the streets surrounding the site. Garrity's Way will be used as material laydown area during construction and the existing curb will be reset, but the existing traffic flow will not be altered in any way and the existing parking spaces contained within Garrity's Way will remain in their current, previously-approved configuration. The Planning Board has previously found that "the design of the proposed driveways and location and design of the parking areas are adequate, safe and convenient for vehicular movement." See Decision at p.6, Finding 1.18.

Planning Board September 30, 2021 Page 4 of 6

In addition, the pedestrian movement within the Town Common has been redesigned in a manner that will encourage its use. The new design features pedestrian entries at the northeast, southeast, southwest and northwest corners of the Common and will allow for pedestrians to travel safely and conveniently throughout the site.

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

Parking spaces have been arranged adequately, pursuant to prior the prior approvals of the Planning Board. As noted above, the use of the Property is not being changed, and no new parking spaces are required as a result of the proposed renovation of the Common. Accordingly, the Applicant is not proposing any changes to the existing parking spaces associated with the Town Hall, which have previously been reviewed and approved by the Planning Board in the original Decision. As noted above, the Planning Board has previously found that "the design of the proposed driveways and location and design of the parking areas are adequate, safe and convenient for vehicular movement." See Decision at p.6, Finding 1.18.

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

Disposal of refuse and other waste will be adequately provided for. The site plans include solar powered waste and recycling receptacles spaced throughout the Common. The volume of refuse generated is not anticipated to increase relative to the current use of the Common. The proposed receptacles will provide for sufficient disposal for the users of the Common, and the Department of Public Works will continue to be attend to the receptacles, as it has historically done in the ordinary course of operation.

## (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.

The Town Common was redesigned with careful consideration of existing structures and open space. In particular, the new common features an improved relationship with the Town Hall, incuding: A wider pedestrian entrance into the Common directly accessible from Garrity's Way, and a decorative masonry wall that also serves as a seating area directly in front of that entrance to Town Hall. The open space within the Common has been redesigned to encourage use by those who visit the common, with a large oval-shaped lawn area in the center of the Common and picnic tables and benches placed throughout the entire site.

Planning Board September 30, 2021 Page 5 of 6

(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, limitation, and safeguards necessary to assure the project meets the criteria of a through f.

The project will have no adverse impacts on the Town's resources. The site is already in use as the Town Common, and the interior redesign and renovation of the space will not create any new impacts on the Town's water supply and distribution system, sewer, fire protection or streets. The project includes a new drainage system that will connect to existing catch basins installed in the southern portion of the Common area under the Phase 1 Streetscape project, and as noted above does not involve any change relative to vehicular access to and from the abutting streets.

Based on the foregoing, the proposed development complies with all standards and criteria set forth in the provisions of the Zoning By-Law, and the requested amendment is in harmony with the purposes and intent of the By-Law and will have minimal adverse impacts on the surrounding area.

#### **Application Materials**

This application is includes the following plan set:

Town of Needham, Massachusetts Department of Public Works—Needham Town Common Improvements (August 2021)

Sheet 1—Title Sheet & Index

Sheet 2—General Notes

Sheet 3—Existing Conditions & Site Preparation Plan

Sheet 4—Layout & Materials Plan

Sheet 5—Grading & Drainage Plan

Sheet 6—Electrical Plan

Sheet 7—Planting Plan

Sheets 8-16—Details

Pursuant to Section 7.4.4, the Applicant requests that the Planning Board waive the submission of any of the required information that is not submitted herewith. The Applicant also requests a waiver of the Planning Board's application fee on the ground that this is a Town project.

Planning Board September 30, 2021 Page 6 of 6

In addition, pursuant to Section 7.4.4 the Applicant hereby certifies that the project can be constructed and the proposed use commenced without need for the issuance of any variance from any provision of the By-Law by the Zoning Board of Appeals.

Thank you very much for your consideration of this application, and please let me know if I can provide any additional information prior to the Board's meeting on this request for an amendment of Major Project Site Plan Special Permit No. 2009-06.

Sincerely,

Christopher H. Heep

cc: K. Fitzpatrick

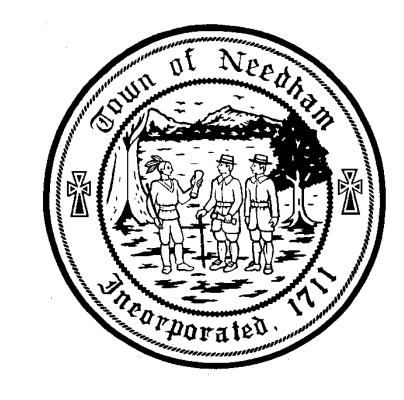
C. Lustig

E. Olson

S. Ridder

# TOWN OF NEEDHAM, MASSACHUSETTS DEPARTMENT OF PUBLIC WORKS

# NEEDHAM TOWN COMMON RENOVATION AUGUST 2021



#### SELECT BOARD

MATTHEW BORRELLI, CHAIRMAN
MARIANNE COOLEY, VICE CHAIRMAN
LAKSHMI BALACHANDRA, CLERK
DANIEL P. MATTHEWS, MEMBER
MARCUS NELSON, MEMBER

TOWN MANAGER

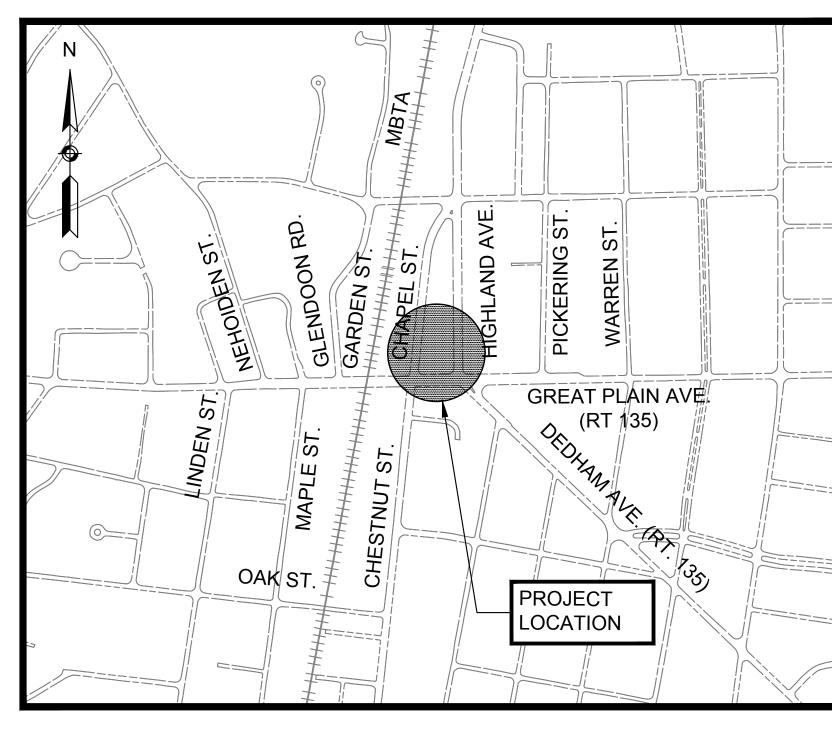
KATHLEEN P. FITZPATRICK

DEPARTMENT OF PUBLIC WORKS

CARYS LUSTIG, DIRECTOR

ROBERT A. LEWIS, ASSISTANT DIRECTOR

EDWARD OLSEN, SUPERINTENDENT PARKS & FORESTRY





LOCATION MAP

#### **PLAN INDEX**

SHEET NO.	<b>DESCRIPTION</b>
1	TITLE SHEET & INDEX
2	GENERAL NOTES
3	EXISTING CONDITIONS & SITE PREPARATION PLAN
4	LAYOUT & MATERIALS PLAN
5	GRADING & DRAINAGE PLAN
6	ELECTRICAL PLAN
7	PLANTING PLAN
8	DETAILS
9	DETAILS
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14	ELECTRICAL DETAILS
15	DETAILS
16	DETAILS

PERMIT SET

PREPARED BY:





#### **GENERAL NOTES:**

- 1. THE LOCATION OF SUBSURFACE UTILITIES SHOWN IS APPROXIMATE AND NOT GUARANTEED TO BE COMPLETE OR ACCURATE. THE CONTRACTOR SHALL VERIFY THE LOCATIONS AND ELEVATIONS OF EXISTING UTILITY LINES AND STRUCTURES PRIOR TO COMMENCEMENT OF WORK. THE CONTRACTOR MUST NOTIFY DIG SAFE PRIOR TO ANY EXCAVATION, DEMOLITION OR EXPLOSION WORK IN PUBLIC OR PRIVATE WAYS OR UTILITY COMPANY RIGHT-OF-WAY OR EASEMENT.
- 2. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED TO THE ENGINEER FOR THE RESOLUTION OF THE CONFLICT.
- 3. THE CONTRACTOR SHALL ALTER THE MASONRY OF THE TOP SECTION OF ALL EXISTING DRAINAGE AND SANITARY STRUCTURES AS NECESSARY FOR THE CHANGES IN GRADE, AND RESET ALL WATER AND DRAINAGE FRAMES, GRATES AND BOXES TO THE PROPOSED FINISH SURFACE GRADE. REQUIRED NEW MASONRY SHALL BE CLAY BRICK CONFORMING TO M4.05.2.
- 4. THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS FOR THE ALTERATION AND ADJUSTMENT OF GAS, ELECTRIC, TELEPHONE, CABLE TV, FIRE ALARM AND ANY OTHER PRIVATE UTILITIES BY THE UTILITY COMPANIES. ALL UTILITY CASTING AND FIRE ALARM BOXES SHALL BE ADJUSTED TO FINISH GRADE BY THEIR RESPECTIVE OWNERS.
- 5. AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE.
- 6. THE TERM "PROPOSED" (PROP.) MEANS WORK TO BE CONSTRUCTED USING NEW MATERIALS OR, WHERE APPLICABLE, RE-USING EXISTING MATERIALS IDENTIFIED AS "REMOVE AND RESET" (R&R).
- 7. ALL DRAINAGE STRUCTURES SHALL BE RETAINED UNLESS NOTED OTHERWISE.
- 8. ALL FRAMES AND GRATES FOR PROPOSED DRAINAGE STRUCTURES SHALL BE MUNICIPAL STANDARD.
- 9. UNLESS OTHERWISE NOTED EXISTING DRAINAGE LINES TO BE REPLACED SHALL BE ABANDONED IN PLACE. IF THEY CONFLICT WITH THE PROPOSED DRAINAGE LINES THEY SHALL BE REMOVED AS DIRECTED BY THE ENGINEER.
- 10. WHERE DRAINAGE PIPES OR STRUCTURES ARE ABANDONED IN PLACE THE CONTRACTOR SHALL MAKE SURE THAT ALL CONNECTING PIPES, INLETS AND OUTLETS ARE PLUGGED. ALL LIVE CONNECTIONS SHALL BE CONNECTED TO THE NEW SYSTEM.
- 11. ALL CURB TIE DIMENSIONS ARE TO THE FACE OF THE CURB.
- 12. PROPOSED SIDEWALKS AND WHEELCHAIR RAMPS SHALL BE CONSTRUCTED TO THE NEAREST SCORE LINE OR EXPANSION JOINT IN THE EXISTING ADJACENT WALK SURFACE AS DIRECTED BY THE ENGINEER.
- 13. PROPOSED SIDEWALK AT SIGNS, POLES AND OTHER FEATURES SHALL BE BOXED AND PROVIDED FLEXIBLE JOINT FILLER.
- 14. THE PROPOSED SIDEWALK GRADE SHALL MEET THE EXISTING GRADE AT ALL ADJOINING PAVEMENT ELEVATIONS UNLESS OTHERWISE NOTED ON THE PLAN.
- 15. PROPOSED SIDEWALK AND WHEELCHAIR RAMPS SCORE LINES AND EXPANSION JOINTS ARE SHOWN ON THE PLANS. THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER DURING CONSTRUCTION.
- 16. WHEN WORKING NEXT TO EXISTING PAVEMENT, WALLS, BERMS, AND OTHER STRUCTURES, CONTRACTOR SHALL EXERCISE EXTREME CAUTION NOT TO DISTURB THE EXISTING STRUCTURES. ANY DAMAGE TO THE EXISTING STRUCTURES SHALL BE REPAIRED BY THE CONTRACTOR AT HIS OWN EXPENSE.
- 17. ORNAMENTAL STREET LIGHTING LAYOUTS ARE SHOWN ON ELECTRICAL PLANS. THE DETAILS ARE SHOWN ON DETAIL SHEETS.
- 18. DUE TO THE PROJECT IN DOWNTOWN AREA, CONTRACTOR SHALL EXERCISE EXTREME CAUTION NOT TO DISTURB EXISTING SIDEWALK. THE CONTRACTOR SHALL MEET ALL EXISTING GRADES AT THESE LOCATIONS UNLESS OTHERWISE SHOWN ON THE PLAN.
- 19. SAFETY CONTROLS FOR CONSTRUCTION OPERATIONS SHALL BE IN ACCORDANCE WITH MASSDOT REQUIREMENTS AND THE LATEST VERSION OF THE MUTCD.
- 20. SURVEY BASE PLAN BY CHAPPELL ENGINEERING ASSOCIATES, LLC ON OCTOBER 2018.
- 21. THE SURVEY BASE PLAN ARE IN U.S. SURVEY FEET IN THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM REFERENCED TO THE NORTH AMERICAN DATUM OF 1983.
- 22. ELEVATIONS, IN U.S. SURVEY FEET, ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
- 23. PROPOSED TREE LOCATIONS ARE APPROXIMATE. THE CONTRACTOR SHALL STAKE TREES IN THE FIELD PRIOR TO INSTALLATION FOR APPROVAL BY THE ENGINEER.
- 24. LOCATION OF PROPOSED SHRUB PLANTINGS ARE APPROXIMATE. THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER PRIOR TO INSTALLATION.
- 25. THE CONTRACTOR SHALL BE REQUIRED TO MAINTAIN A MINIMUM LEVEL OF GENERAL STREET LIGHTING EQUIVANENT TO THE EXISTING CONDITION OVER THE COURSE OF THE PROJECT EITHER BY TEMPORARILY RETAINING SOME OF THE EXISTING LIGHTS AND/OR ACTIVATING PORTIONS OF THE NEW LIGHTING SYSTEMS. THE CONTRACTOR SHALL BE REQUIRED TO IDENTIFY HIS APPROACH IN HIS POST BID SCHEDULE.

#### WHEELCHAIR RAMP NOTES:

- 1. ALL WHEELCHAIR RAMPS SHALL CONFORM TO THE REQUIREMENTS OF THE ARCHITECTURAL ACCESS BOARD (A.A.B.) AND THE AMERICANS WITH DISABILITIES ACT (A.D.A.). AND THE TOWN OF NEEDHAM STANDARDS.
- 2. THE LOCATION OF PROPOSED WHEELCHAIR RAMP ARE SHOWN ON LAYOUT PLAN AND THE DETAILS, EXACT LOCATION MAY BE ADJUSTED, IF NECESSARY, BY THE ENGINEER IN THE FIELD.
- 3. PROPOSED WHEELCHAIR RAMPS SHALL HAVE DETECTABLE WARNING PANELS INSTALLED IN ACCORDANCE WITH AAB AND ADA STANDARDS. THE PANEL SHALL BE VARIED TO MEET OPENINGS OF THE RAMP AS SHOWN. THE PANEL SHALL BE GRANITE AND COLORED CALEDONIA.
- 4. IN INSTANCES WHERE AN EXISTING MANHOLE, HANDHOLE OR OTHER "SURFACE" TYPE STRUCTURE THAT CANNOT BE REMOVED OR RESET, IS WITHIN THE ACTUAL WHEELCHAIR RAMP PATH, THE STRUCTURE SHALL BE CAREFULLY ADJUSTED SUCH THAT THE TOPMOST SURFACES OF THE STRUCTURE COVER SHALL BE FLUSH WITH THE RAMP SURFACE AND SHALL MATCH THE SLOPE OF THE NEW WHEELCHAIR RAMP AS DIRECTED BY THE ENGINEER.

#### **PAVEMENT NOTES:**

#### PAVEMENT MILLING AND OVERLAY

SURFACE COURSE: 1 ½" CLASS I BITUMINOUS CONCRETE TOP COURSE

PAVEMENT MILLING: 1 ½" PAVEMENT MILLING

NOTE: 1.5" MAX LIFT BINDER COURSE FOR LEVELING IN AREAS NOT ABLE TO BE SHAPED WITH MILLING.

#### CONCRETE SIDEWALK, WHEELCHAIR RAMPS, AND DRIVEWAYS

SURFACE COURSE: 5" CEMENT CONCRETE

SUB BASE: 8" GRAVEL BORROW TYPE C (MIN.) OR

COMBINATION OF EXISTING SUITABLE SUB BASE AS

APPROVED BY THE ENGINEER.

#### HMA SIDEWALK

SURFACE COURSE: 3" HOT MIX ASPHALT (HMA) PAVEMENT PLACED IN TWO LAYERS, 1" TOP

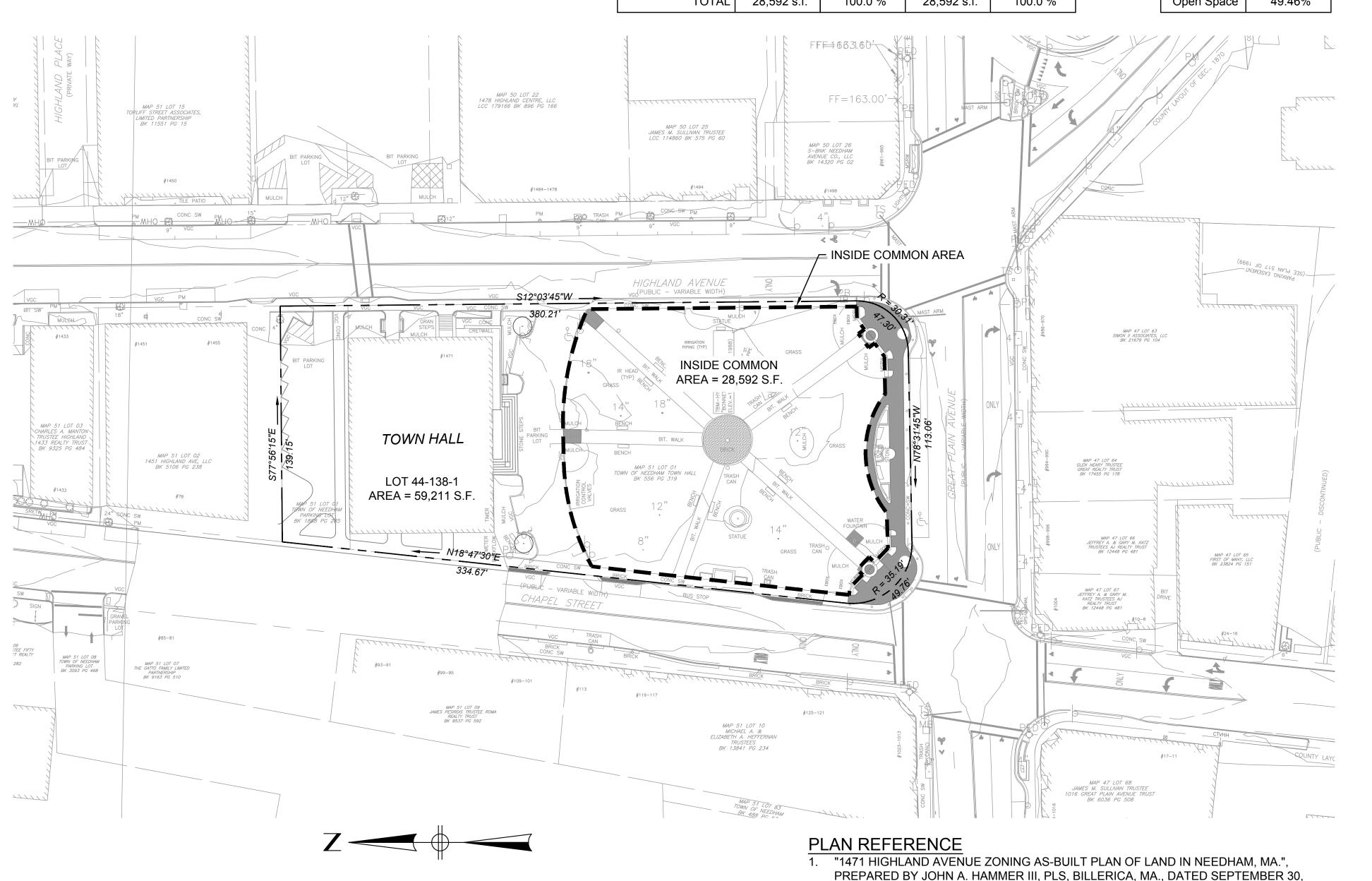
COURSE MATERIAL OVER 2" BINDER COURSE MATERIAL

BASE COURSE: 8" GRAVEL BORROW TYPE C (MIN.)

#### **INSIDE COMMON AREA**

COMMON AREA	Existing	Area %	PROPOSED	Area %
Paths and Walkways	4,121 s.f.	14.5 %	8,239 s.f.	28.8 %
Planted Areas	617 s.f.	2.1 %	1586 s.f.	5.5 %
Lawn Area	23,844 s.f.	83.4 %	18,767 s.f.	65.7 %
TOTAL	28.592 s.f.	100.0 %	28.592 s.f.	100.0 %

<b>ENTIRE LOT</b>						
LOT AREA %	EXISTING					
Building	16.54%					
Paved Areas	34.0%					
Onen Space	49 46%					

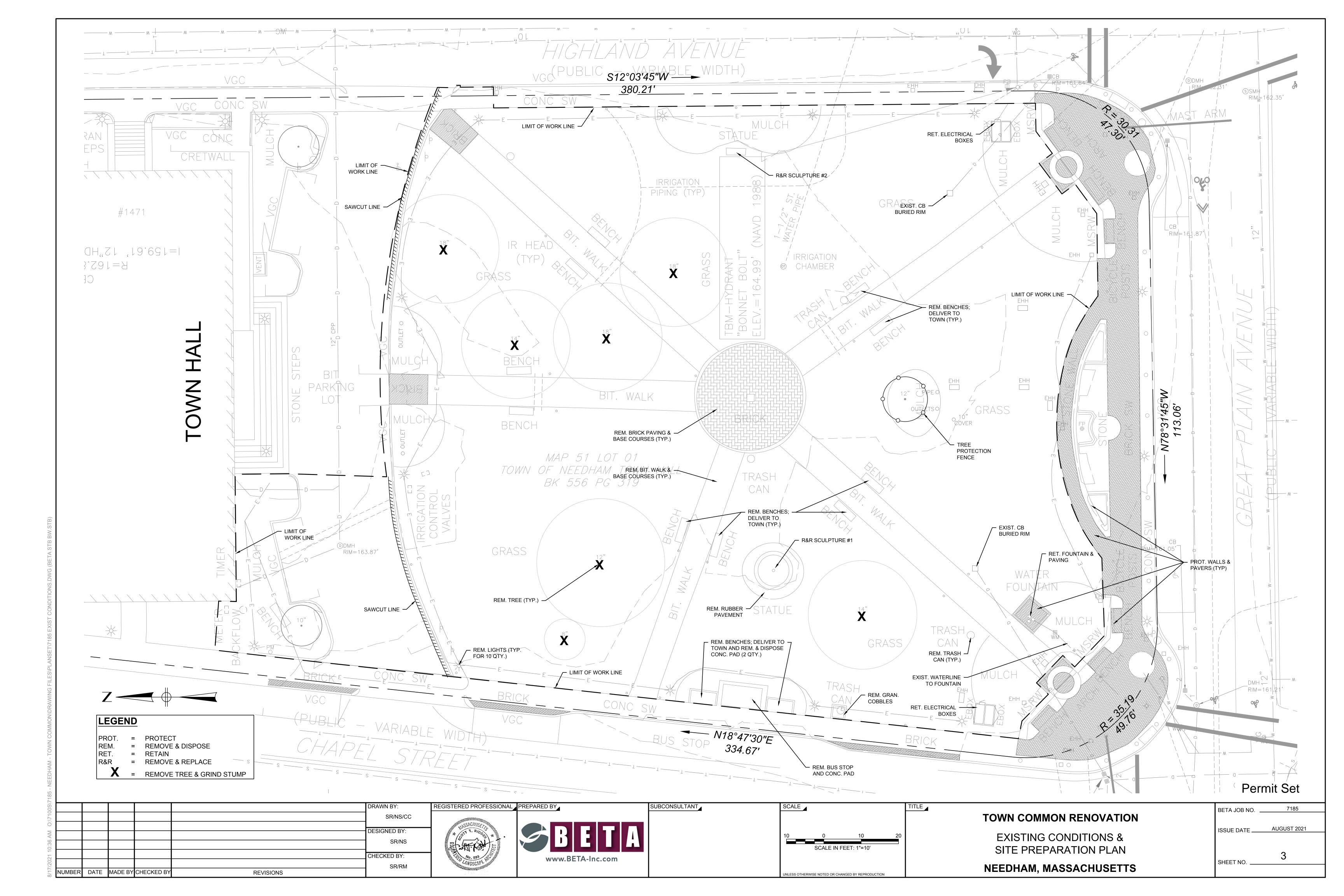


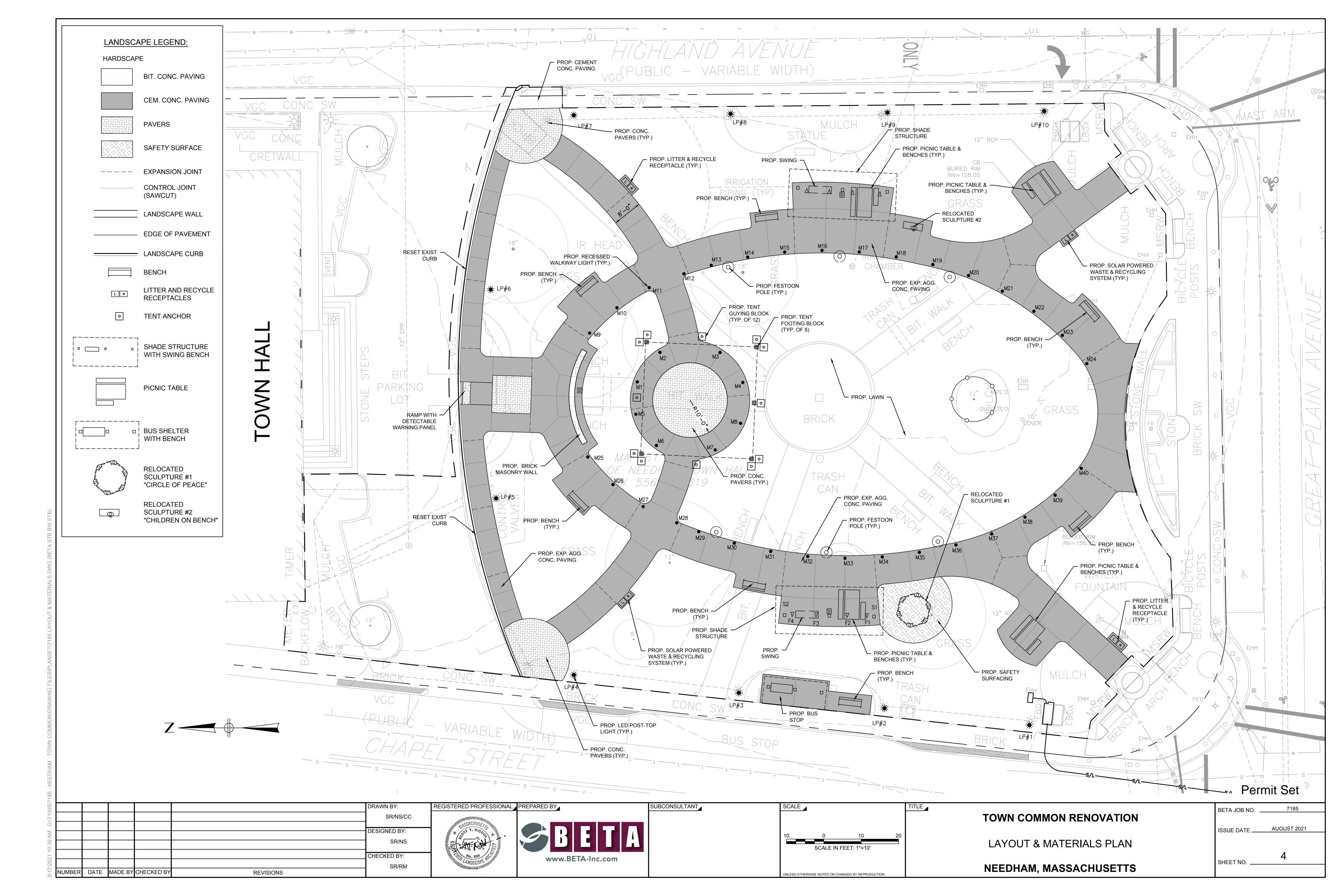
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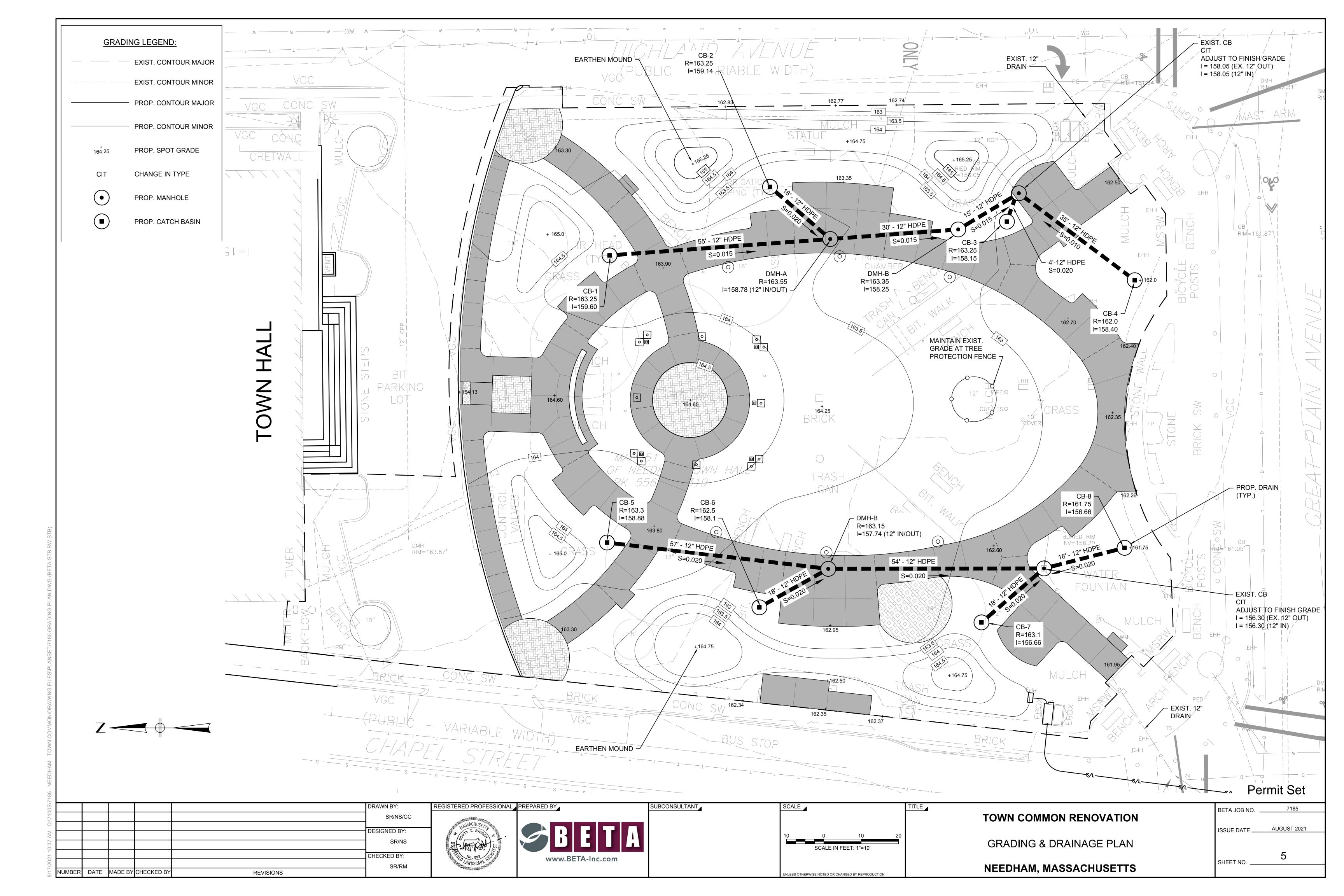
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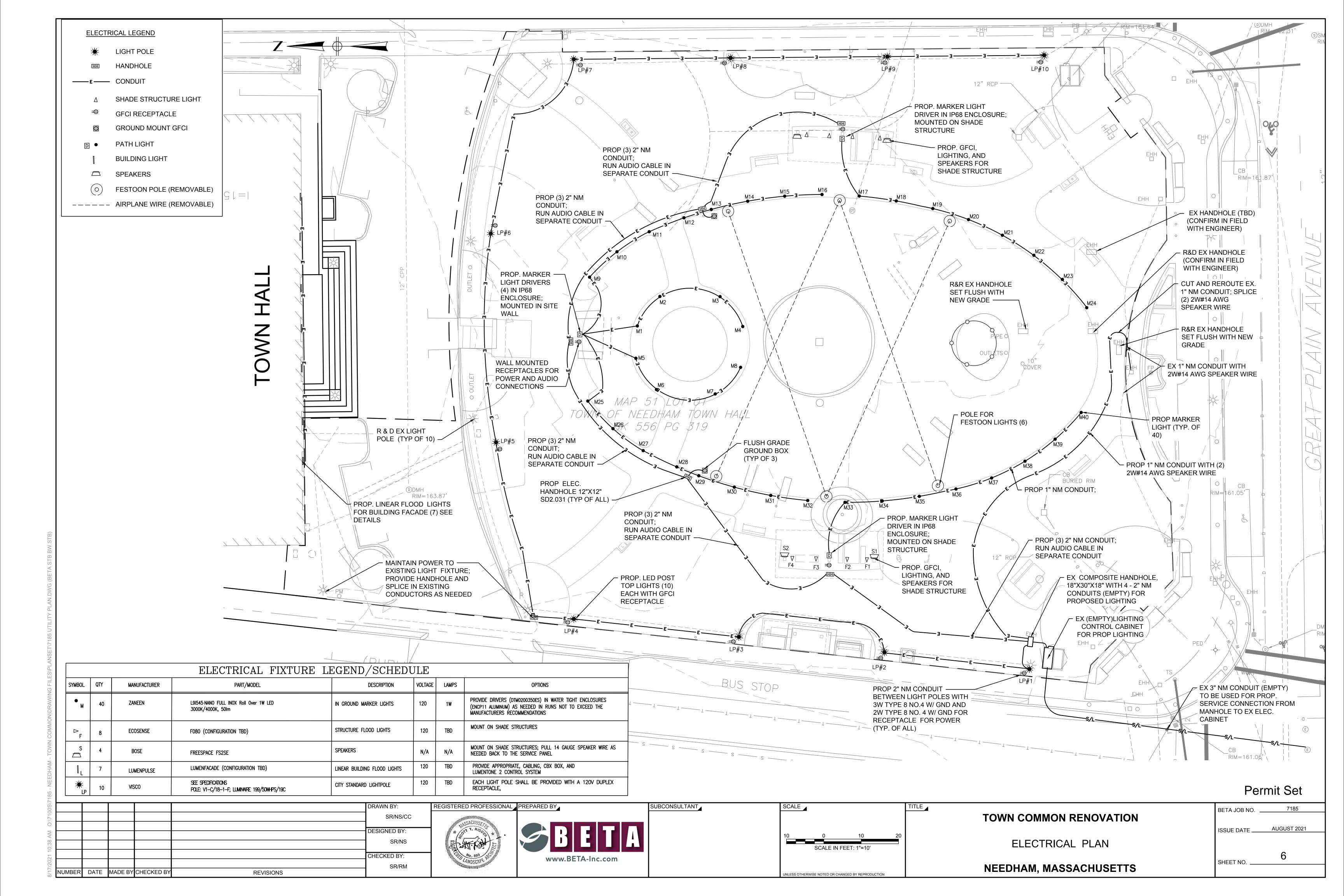
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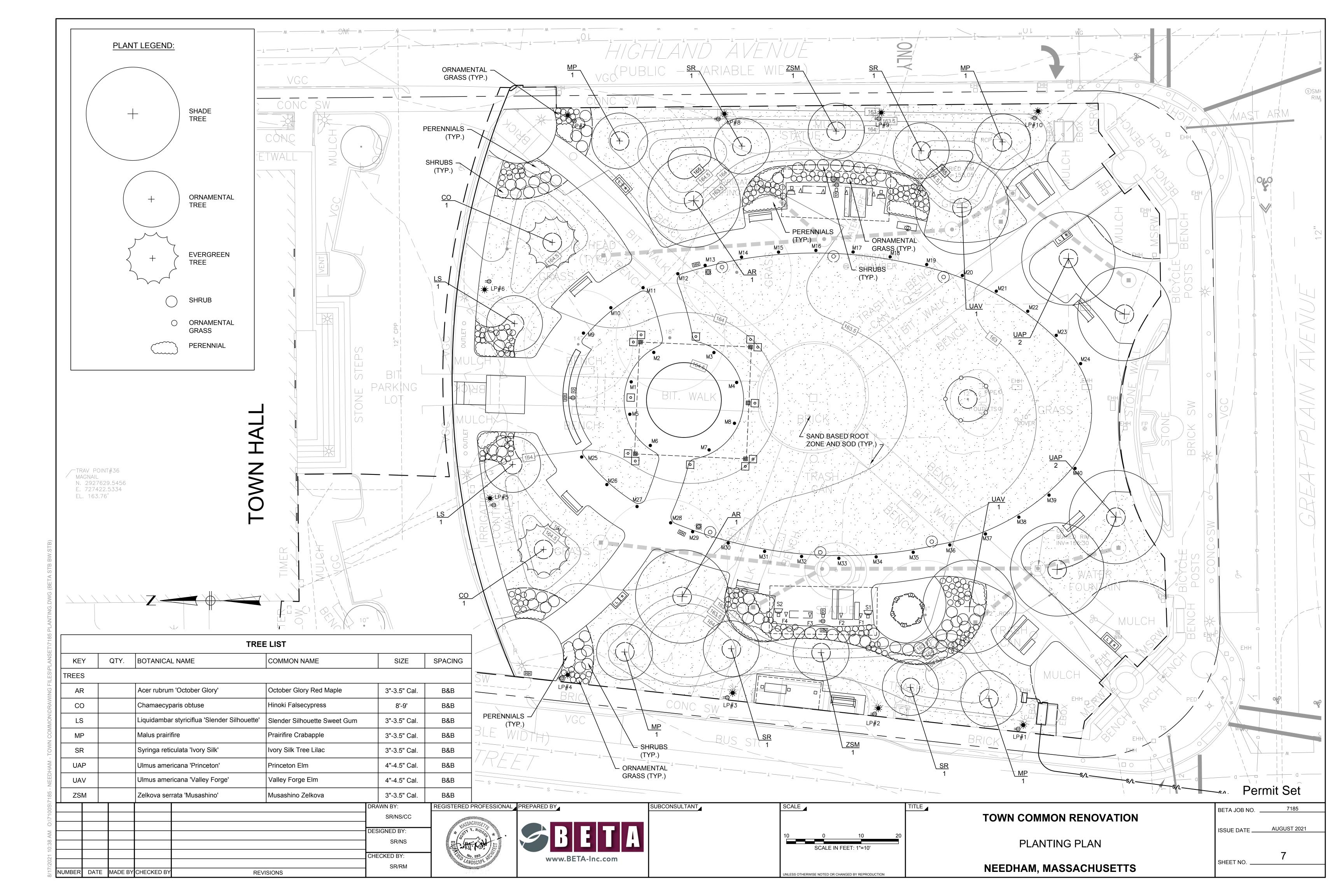
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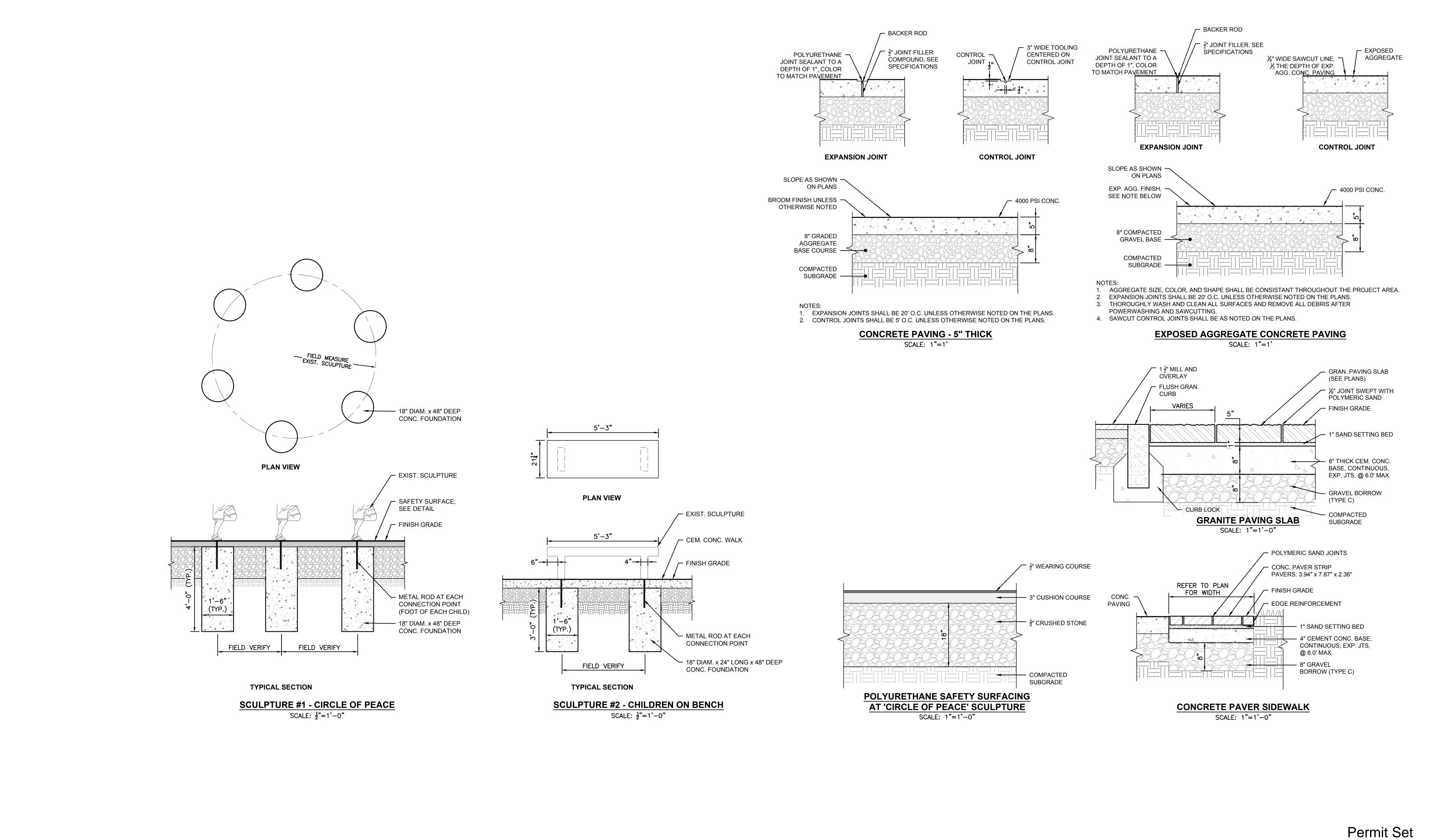






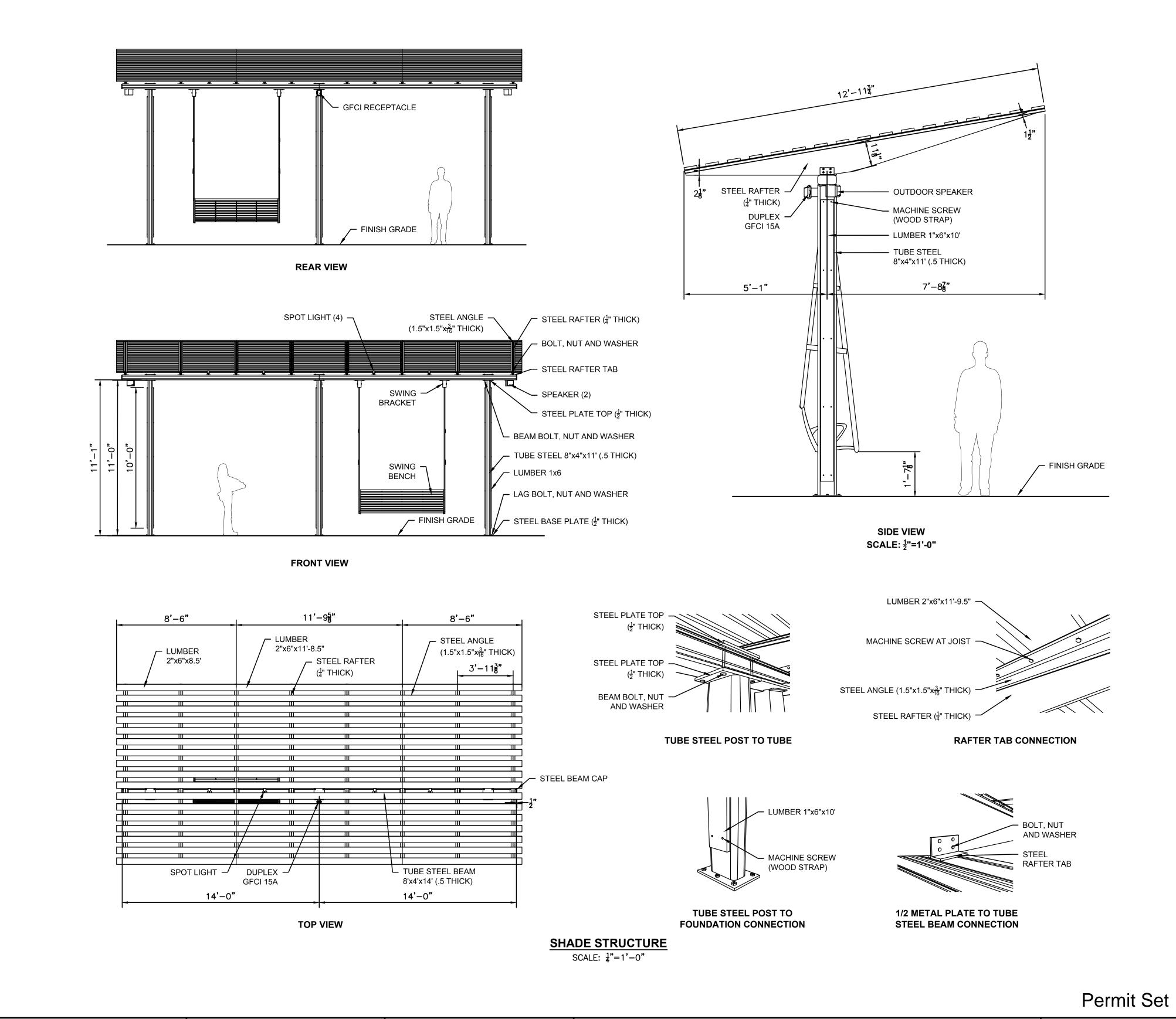


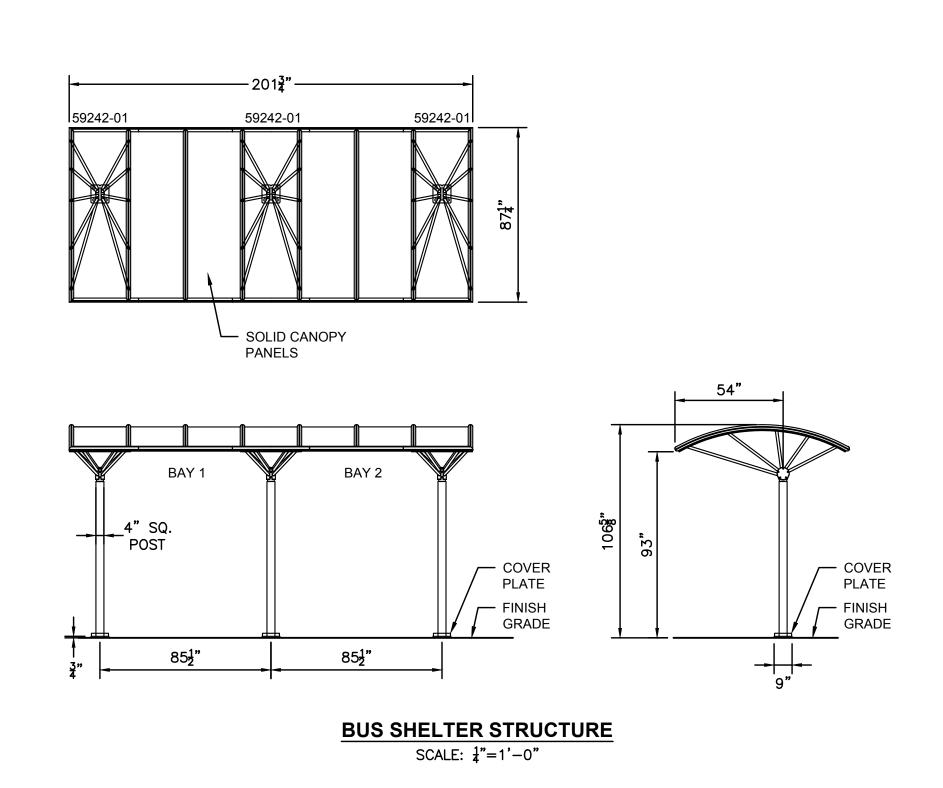




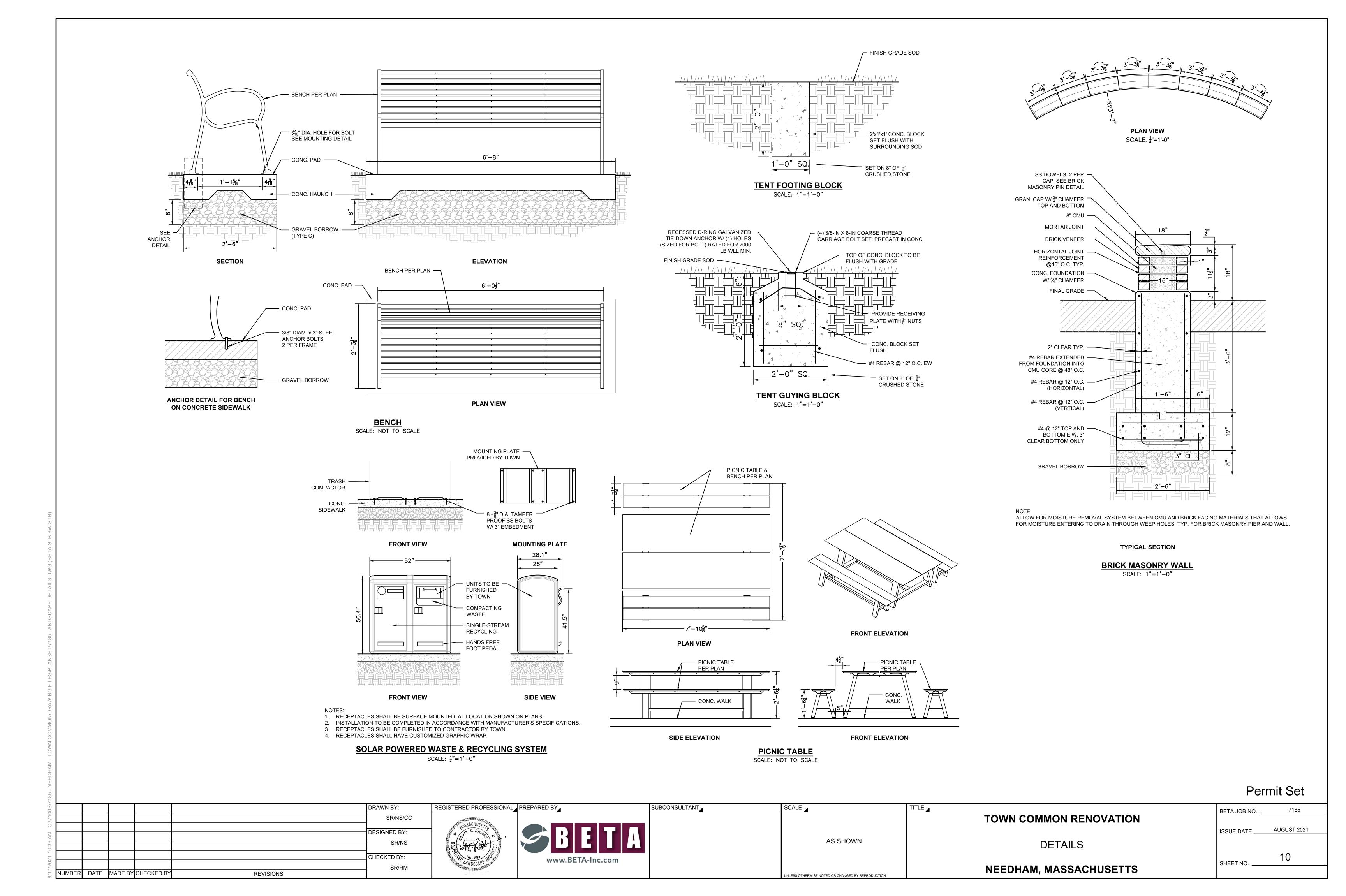
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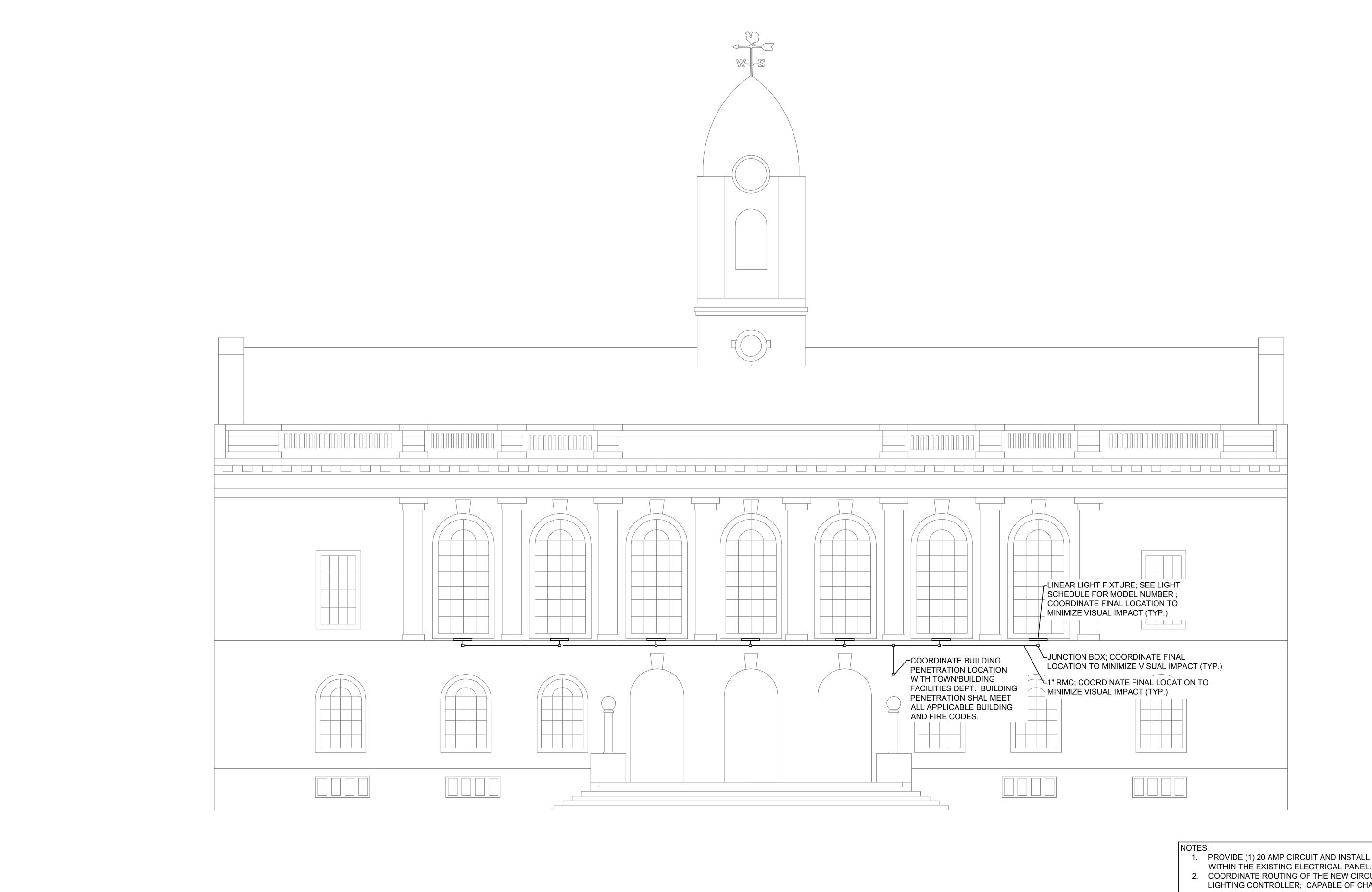
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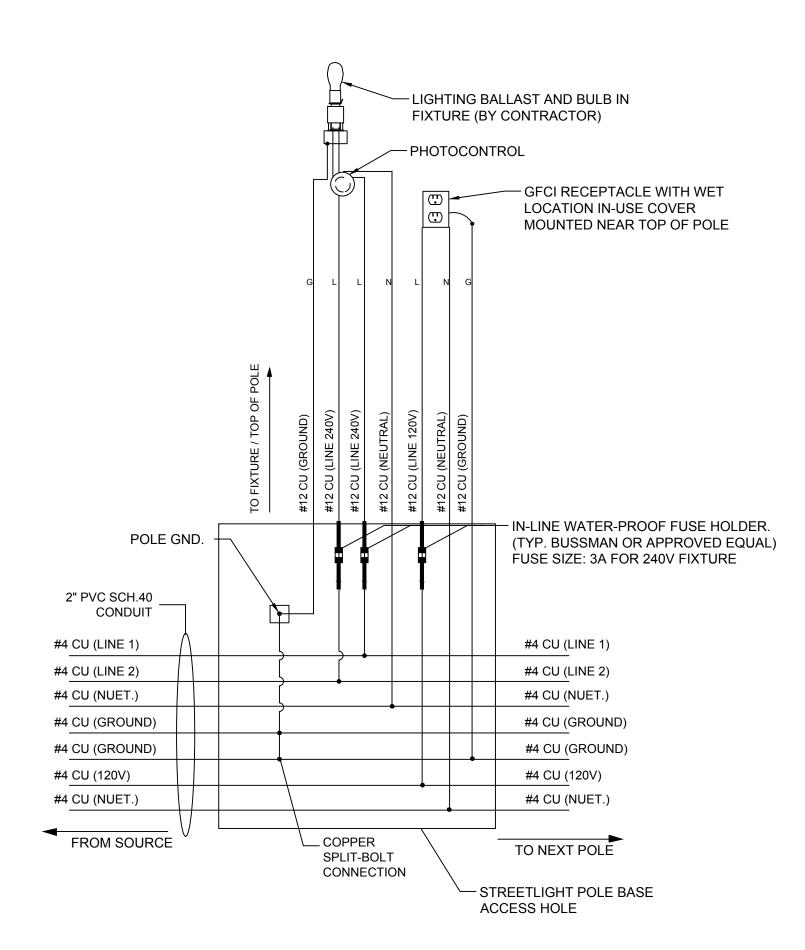
- 1. PROVIDE (1) 20 AMP CIRCUIT AND INSTALL A NEW BREAKER
- 2. COORDINATE ROUTING OF THE NEW CIRCUIT TO A TOUCH LED
- LIGHTING CONTROLLER; CAPABLE OF CHANGING COLORS, CREATING ZONES, DIMMING AND TIMER FUNCTIONS.

### Permit Set

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#### ELECTRICAL NOTES:

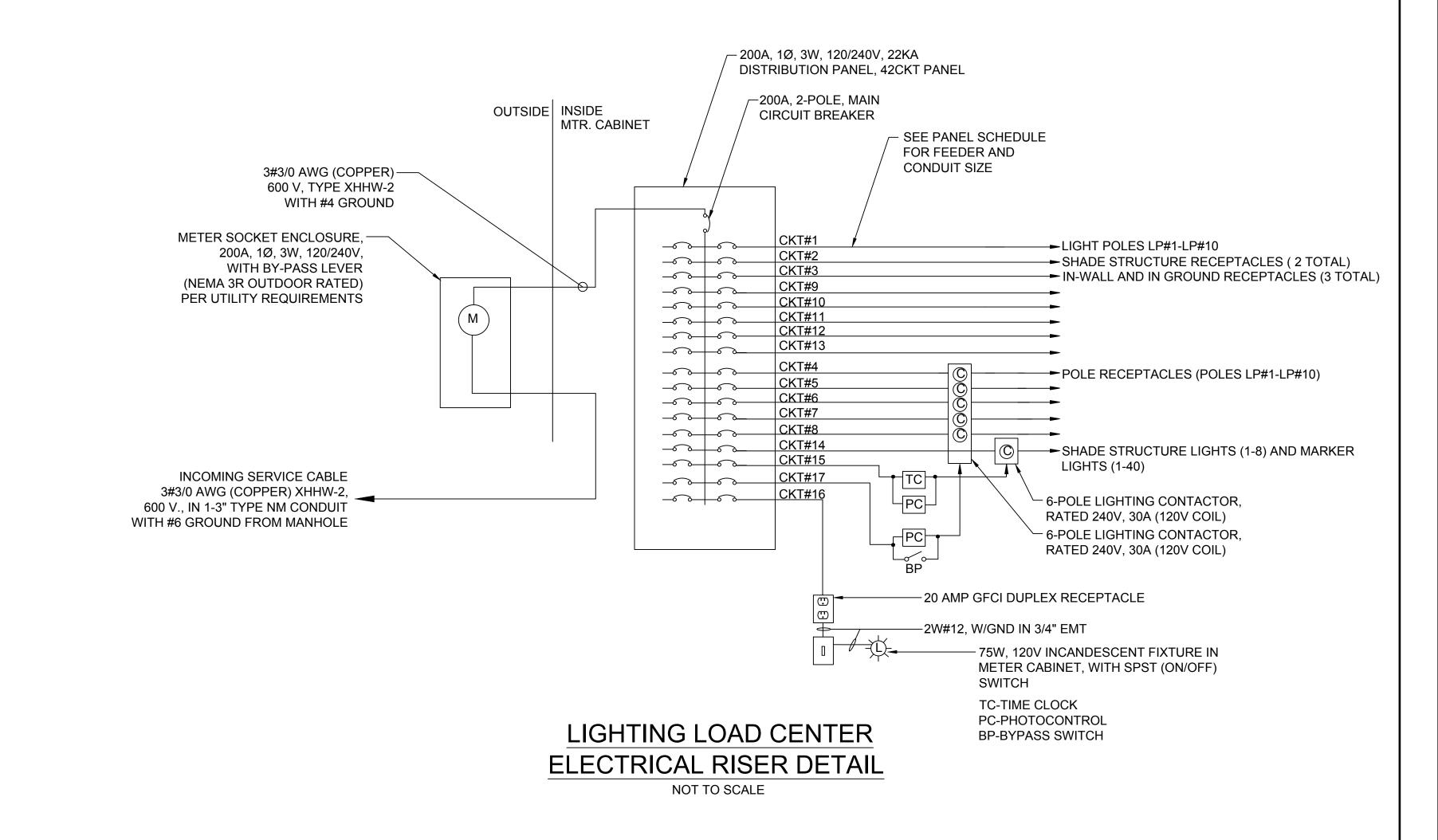
- 1. ALL WORK TO BE COMPLETED IN ACCORDANCE WITH THE LATEST APPLICABLE STANDARDS OF ANSI, NEMA, UL, NFPA-70, AND THE NATIONAL ELECTRICAL CODE WITH REGARDS TO MATERIAL, DESIGN, AND CONSTRUCTION.
- 2. THIS DRAWING IS FOR INFORMATION ONLY. THE CONTRACTOR SHALL VERIFY ALL LOCATIONS, DEVICES, MATERIALS, AND EQUIPMENT, PRIOR TO THE START OF ANY WORK.
- 3. CONTRACTOR SHALL NOTIFY DIG SAFE AT 1-888-DIG-SAFE, AT LEAST 72 HOURS PRIOR TO BEGINNING ANY EXCAVATION.
- 4. PVC CONDUIT AND FITTINGS SHALL CONFORM TO ANSI/NEMA SPECIFICATIONS, TC-2, TC-3 AND UL-651.
- 5. CONTRACTOR SHALL OBTAIN ALL NECESSARY INSPECTIONS AND COORDINATE ALL WORK WITH THE OWNER AND THE TOWN OF NEEDHAM. TRENCHES SHALL BE INSPECTED PRIOR TO BACKFILLING.
- 6. LOCATIONS OF ALL UTILITIES ARE APPROXIMATE AND ARE PROVIDED FOR INFORMATION ONLY.
- 7. CONTRACTOR TO BALANCE THE NUMBER OF LIGHTING FIXTURES ON EACH CIRCUIT
- 8. CONTRACTOR TO LOCATE ALL ELECTRICAL EQUIPMENT AS DIRECTED BY THE OWNER, ARCHITECT & ENGINEER.



# TYPICAL STREETLIGHT WIRING DETAIL NOT TO SCALE

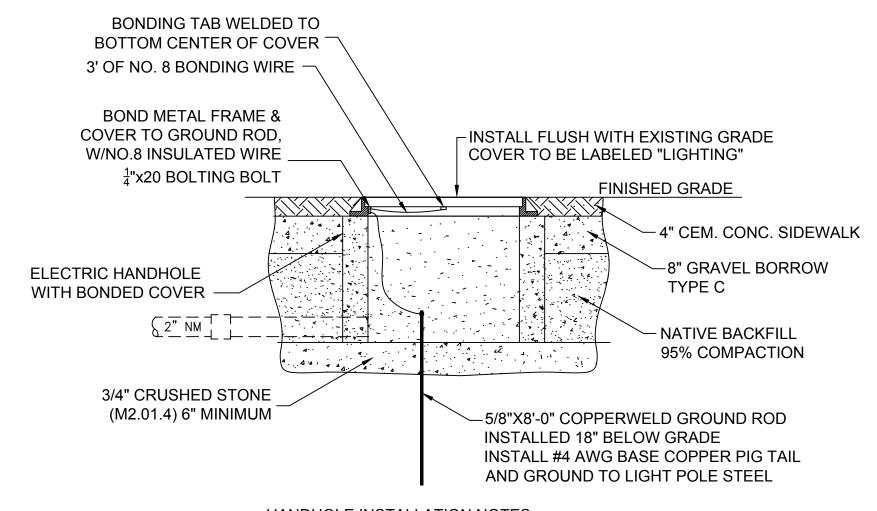
#### NEW DISTRIBUTION PANEL SCHEDULE - P1

		PHASE: 1		WIRES: 3 VOLTAGE: 120/240V	MAINS: 200A. MAIN C.B.	42 CIRCUIT	
CUIT	BREAKER			DESCRIPTION OF LOAD	CABLE	CONDUIT REMAR	oke
CIRC	FRAME	POLES(N-NEUTRAL)	TRIP	DESCRIPTION OF LOAD	CABLE	CONDUIT	VV.
М	200	2P	200	MAIN CIRCUIT BREAKER	3W#3/0AWG & #6AWG GND	1-3"NM SCH80	
1	30	2P	30	LIGHTING CIRCUIT #1 (POLES LP#1-LP#10, )	3W#4AWG & #4 GND	1-2"NM SCH80 CONTROLLED BY PHOTOC	ELL IN EACH POLE
2	30	2P	30	SHADE STRUCTURE RECEPTACLES (2 TOTAL)	2W#8AWG & #10 GND	1-2"NM SCH80 CONTROLLED BY BREAKE	R (ALWAYS ON)
3	30	2P	30	IN WALL AND IN GROUND RECEPTACLES (3 TOTAL)	2W#8AWG & #10 GND	1-2"NM SCH80 CONTROLLED BY BREAKE	R (ALWAYS ON)
4	30	2P	30	POLE RECEPTACLES (POLES LP#11-LP#21)	2W#4AWG & #4 GND	1-2"NM SCH80 CONTROLLED BY PHOTOC	ELL W/BYPASS IN CABINET
5	30	2P	30				
6	30	1P	30				
7	30	1P	30				
8	30	1P	30				
9	20	1P	20				
10	20	1P	20				
11	20	1P	20				
12	20	1P	20				
13	30	2P	30				
14	20	1P	20	FLAG AND ARCH UPLIGHTS (6 LIGHTS)	2W#8AWG & #10 GND		OCK & PHOTOCELL IN CABINET
15	20	1P	20	TIME CLOCK POWER	2W#12AWG & #12 GND	1-1"NM SCH80	
16	20	1P	20	RECEPTACLE IN CABINET	2W#12AWG & #12 GND	1-1"NM SCH80	
17	20	1P	20	PHOTOCONTROL CONTACTOR POWER	2W#12AWG & #12 GND	1-1"NM SCH80	



#### Permit Set

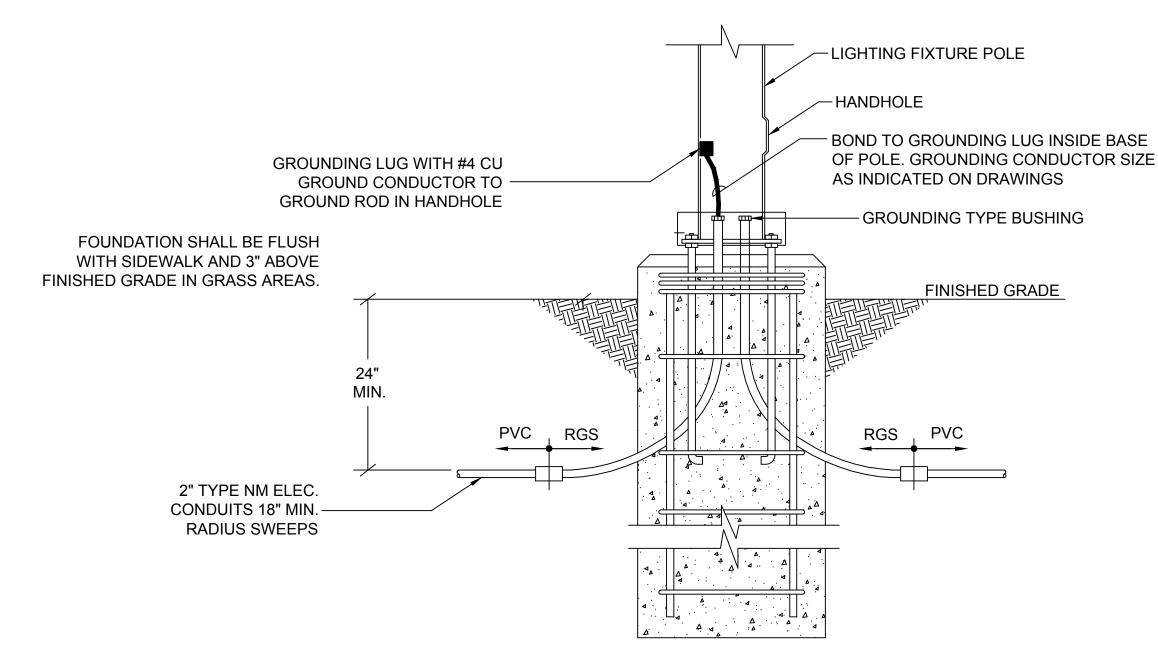
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#### HANDHOLE INSTALLATION NOTES:

- 1. HANDHOLE ORIENTATION TO BE SUCH THAT ALL SUPPLY DUCTS ENTER ON SAME SHORT SIDE.
- 2. SIZE AND NUMBER OF CONDUITS AS REQUIRED.
- 3. CONDUIT LOCATIONS SHOWN ARE TYPICAL.

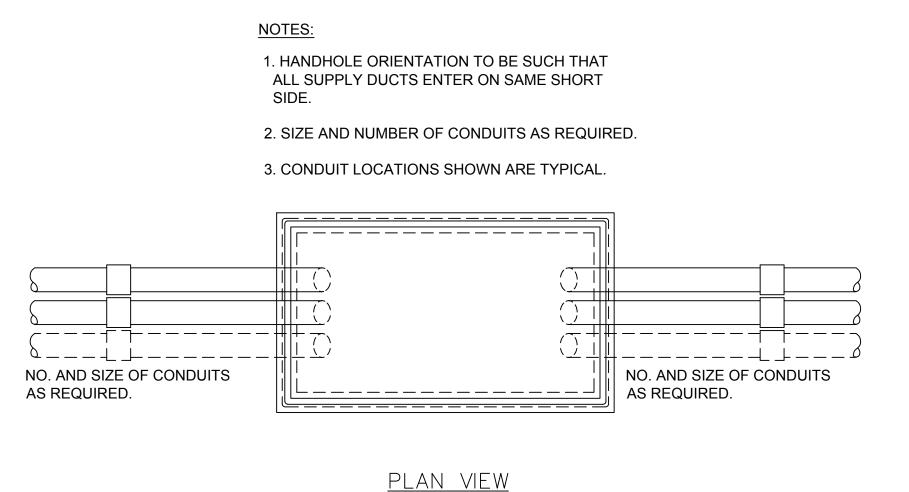
# INSTALLATION DETAIL PRECAST ELECTRIC HANDHOLE NOT TO SCALE

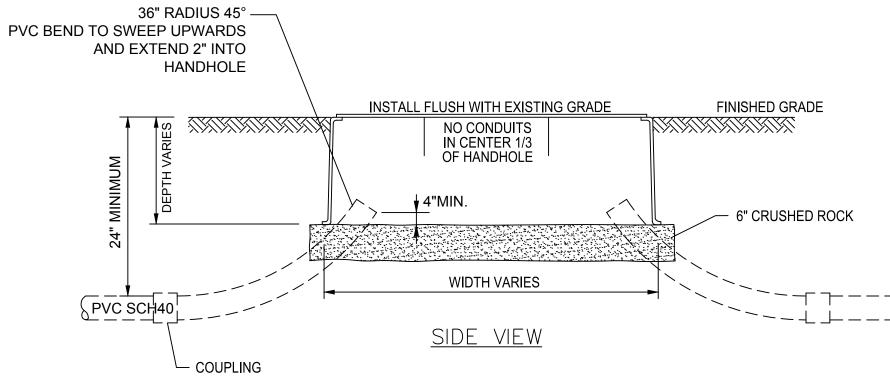


#### LIGHT POLE FOUNDATION NOTES:

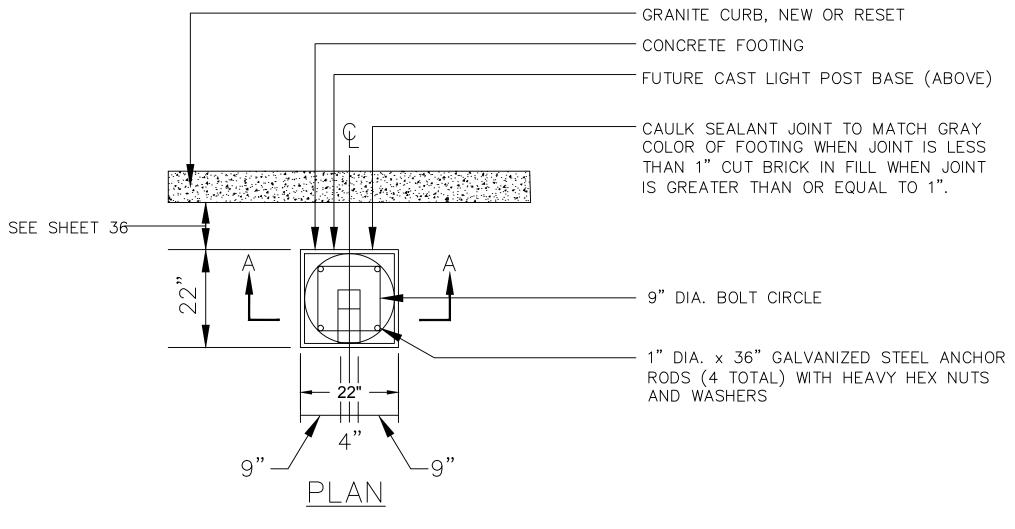
- 1. BOLT PATTERN SHOWN IS TYPICAL AND NOT FOR CONSTRUCTION CONTRACTOR TO PROVIDE BOLT PATTERN DETAILS BASED ON SELECTED MANUFACTURER.
- 2. PROVIDE REBAR DETAIL FROM PRECAST CONCRETE VENDOR FOR APPROVAL.
- 3. CONDUIT LOCATIONS SHOWN ARE TYPICAL.

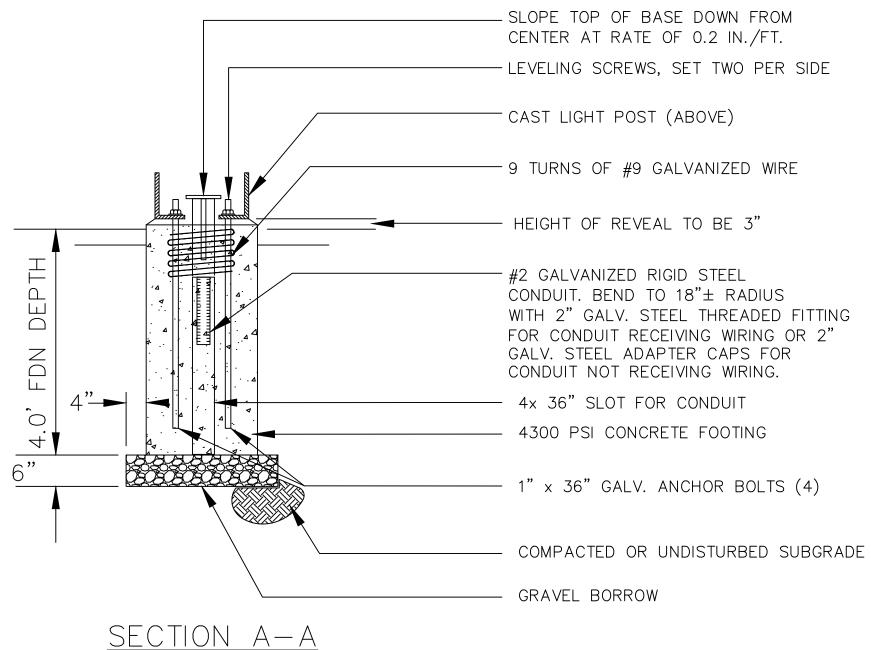
## LIGHT POLE FOUNDATION CONDUIT DETAIL NOT TO SCALE

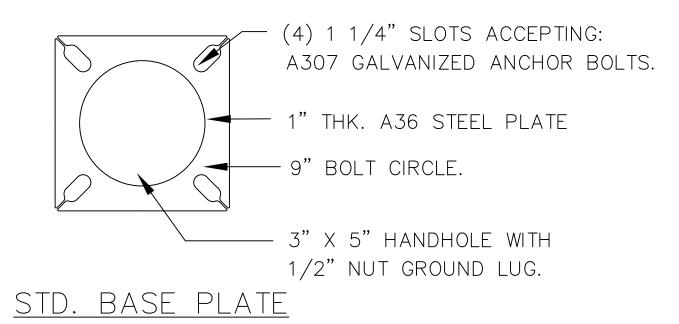




# INSTALLATION DETAIL COMPOSITE ELECTRIC HANDHOLE NOT TO SCALE





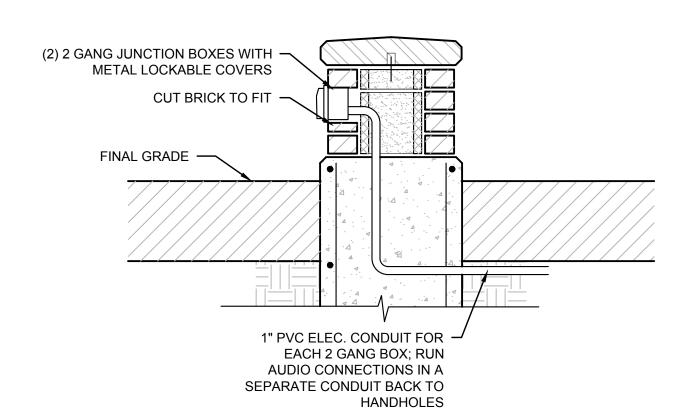


LIGHT POLE FOUNDATION DETAIL

NOT TO SCALE

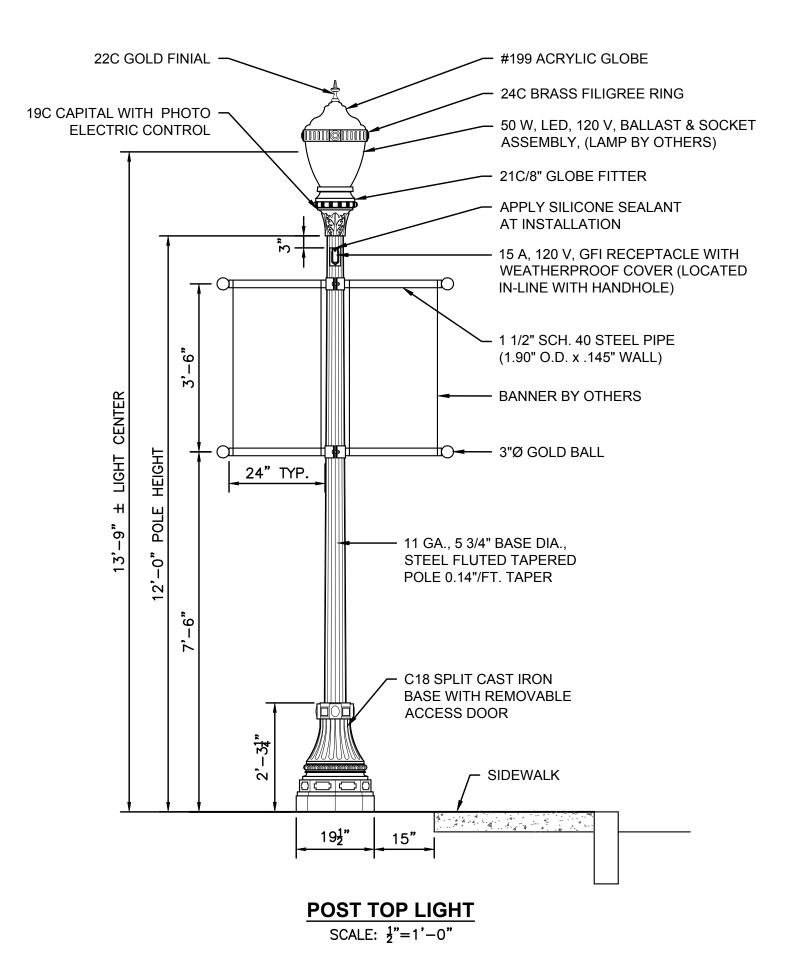
### Permit Set

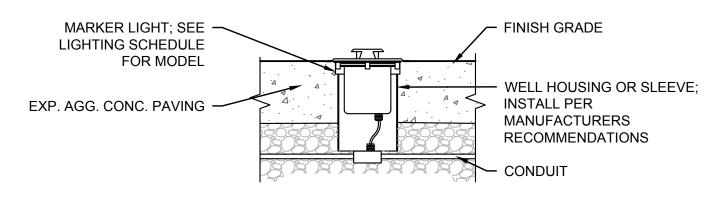
SUBCONSULTANT SCALE DRAWN BY: REGISTERED PROFESSIONAL PREPARED BY A TITLE 7185 BETA JOB NO. **TOWN COMMON RENOVATION** SR/NS/CC AUGUST 2021 ISSUE DATE \_ DESIGNED BY **AS SHOWN ELECTRICAL DETAILS** CHECKED BY: www.BETA-Inc.com SHEET NO. NEEDHAM, MASSACHUSETTS SR/RM DATE MADE BY CHECKED BY REVISIONS ILESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION



#### **TYPICAL SECTION**

### WALL MOUNTED AUDIO AND GFCI RECEPTACLES SCALE: 1"=1'-0"



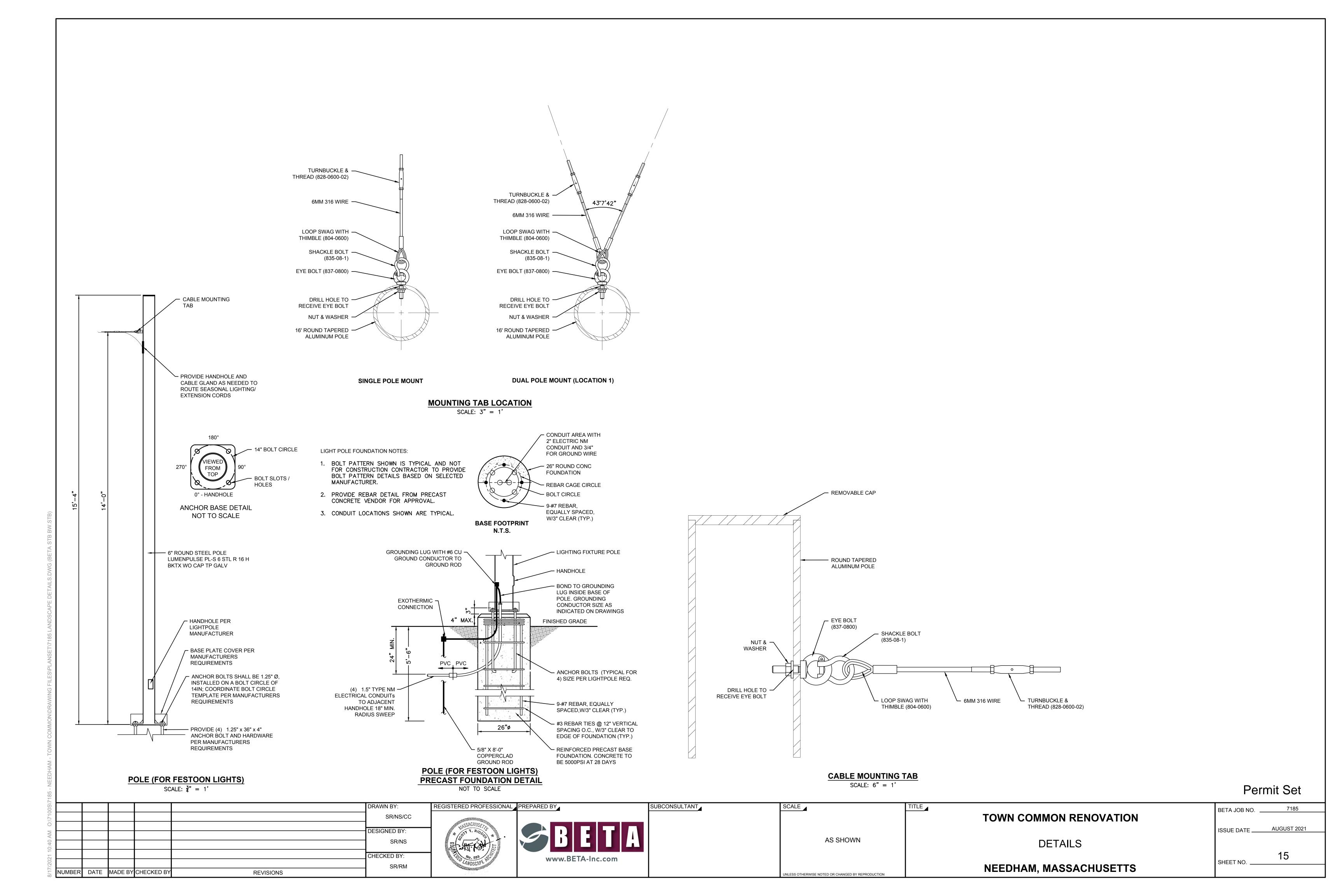


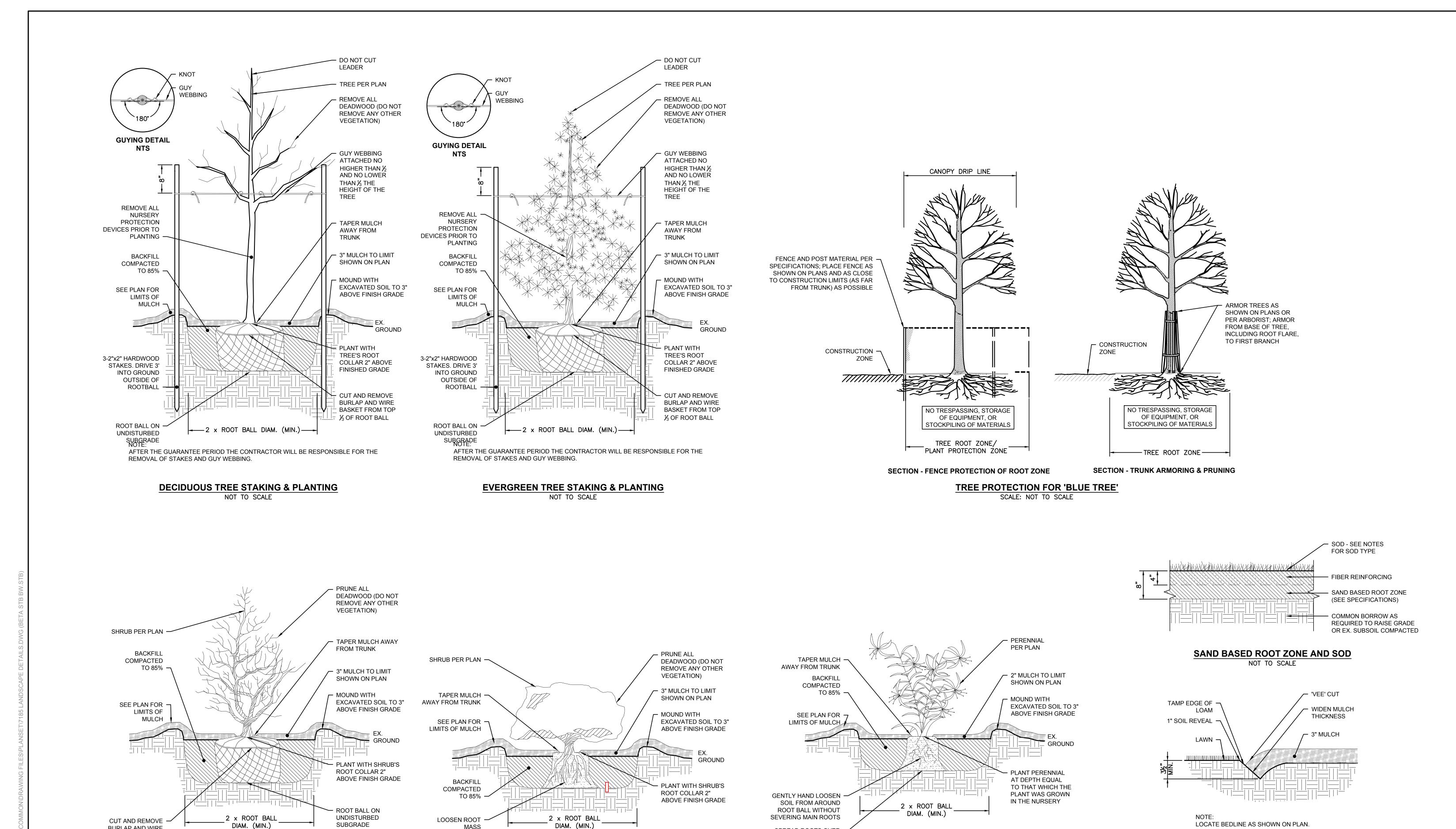
TYPICAL SECTION

RECESSED WALKWAY LIGHT
SCALE: NTS

Permit Set

- 242-						Permit Set
	DRAWN BY:	REGISTERED PROFESSIONAL PREPARED BY	SUBCONSULTANT	SCALE	TITLE	BETA JOB NO7185
7::	SR/NS/CC	SACHUS C			TOWN COMMON RENOVATION	
	DESIGNED BY:	* OT T. RIDON #	TIA			ISSUE DATEAUGUST 2021
4 04:	SR/NS			AS SHOWN	ELECTRICAL DETAILS	
7 7 7	CHECKED BY:	No. 893				14
7,502	SR/RM	WWW.BETA-Inc	c.com		NEEDHAM, MASSACHUSETTS	SHEET NO.
NUMBER DATE MADE BY CHECKED BY REVI	/ISIONS	- danger		UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION	NEEDHAW, WASSACHUSETTS	





#### DRAWN BY: SCALE TITLE REGISTERED PROFESSIONAL PREPARED BY SUBCONSULTANT\_ 7185 BETA JOB NO. **TOWN COMMON RENOVATION** SR/NS/CC AUGUST 2021 ISSUE DATE \_ DESIGNED BY **AS SHOWN DETAILS** SR/NS CHECKED BY: www.BETA-Inc.com SHEET NO. NEEDHAM, MASSACHUSETTS SR/RM

**CONTAINER GROWN TREE & SHRUB PLANTING** 

NOT TO SCALE

SPREAD ROOTS OVER

UNDISTURBED

SUBGRADE PERENNIALS & GRASSES PLANTING

NOT TO SCALE

NLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

**BEDLINE EDGE** 

NOT TO SCALE

Permit Set

**BURLAP AND WIRE** 

SHRUB PLANTING

NOT TO SCALE

REVISIONS

BASKET FROM TOP 1/3

OF ROOT BALL. FOLD UNDER, SO AS NOT TO

EXPOSE ABOVE GRADE

DATE MADE BY CHECKED BY



J. Raymond Miyares Thomas J. Harrington Christopher H. Heep Donna M. Brewer Jennie M. Merrill Bryan Bertram Ivria Glass Fried Alexandra B. Rubin Ethan B. Dively Maurica D. Miller Rian Rossetti

November 5, 2021

#### BY EMAIL (lnewman@needhamma.gov)

Planning Board Town of Needham 500 Dedham Avenue Needham, MA 02492

Re: Request to Amend Major Project Site Plan Special Permit No. 2009-06
Town Common Renovation—Revised Plans

Dear Planning Board members:

Enclosed for filing is a revised plan set for the Town Common renovation project:

Town of Needham, Massachusetts Department of Public Works—Needham Town Common Improvements October 2021, Rev. November 2021 (Sheets 1-18).

The significant changes to this plan set, as compared to the plan set that was originally submitted with this application, are as follows:

- The brick masonry seat wall at the north end of the site has been redesigned to include brick pillars on each end of the wall. The new pillars have been designed to be similar in appearance to the existing pillars at the end of the walls along Great Plain Avenue. One of the new pillars will be constructed to house PA outlets, wiring, etc. for use during events on the Common. The PA equipment itself will be stored inside Town Hall when not in active use during events. Renderings of the redesigned wall are included as figure (a) below, and on Sheet 12 (Details) of the revised plan set.
- The six (6) temporary festoon poles shown on the original plans have been removed, although the temporary festoon lighting will remain. In place of the free-standing poles, the proposed shade structures located on the east and west sides of the lawn will now include fixtures upon which cables and festoon lights can be affixed. This is illustrated on figure (b) below, and on Sheet 6 (Electrical Plan) of the revised plan set.

Figure (a): Redesigned wall.





Figure (b): Shade structure with festoon lighting.



Thank you very much for your review of these revised plans for the new Town Common. I look forward to discussing this application with the Board at the upcoming public hearing.

Sincerely,

Christopher H. Heep

Encl.

cc: K. Fitzpatrick

C. Lustig

E. Olson

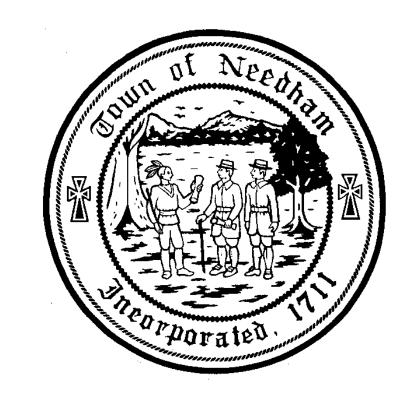
S. Ridder

# TOWN OF NEEDHAM, MASSACHUSETTS DEPARTMENT OF PUBLIC WORKS

# NEEDHAM TOWN COMMON RENOVATION

OCTOBER 2021

REV. NOVEMBER, 2021



#### SELECT BOARD

MATTHEW BORRELLI, CHAIRMAN
MARIANNE COOLEY, VICE CHAIRMAN
DANIEL P. MATTHEWS, MEMBER
MARCUS NELSON, MEMBER

TOWN MANAGER

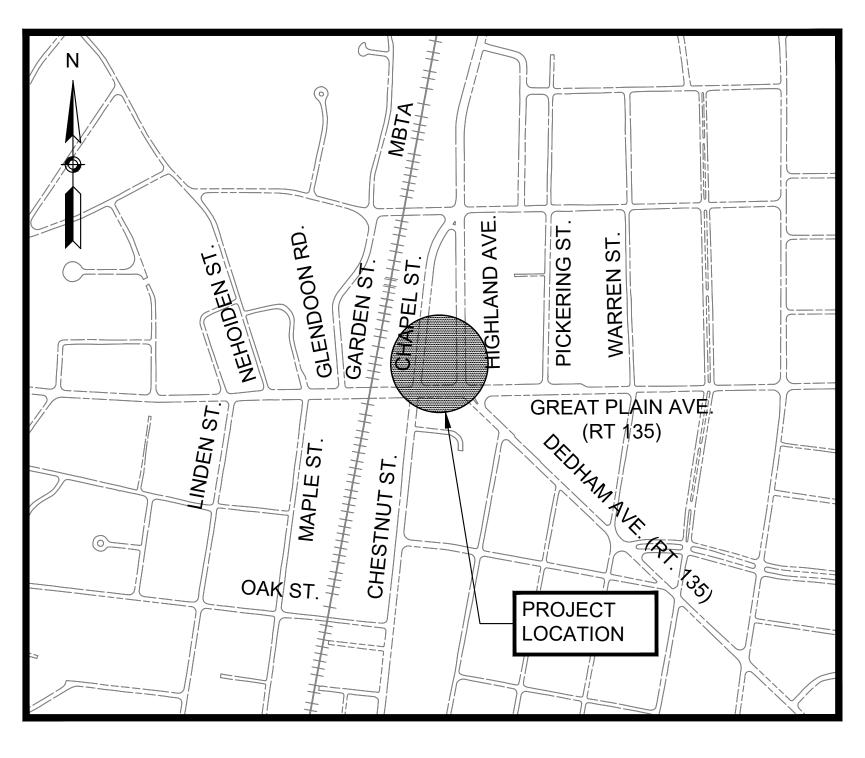
KATHLEEN P. FITZPATRICK

DEPARTMENT OF PUBLIC WORKS

CARYS LUSTIG, DIRECTOR

ROBERT A. LEWIS, ASSISTANT DIRECTOR

EDWARD OLSEN, SUPERINTENDENT PARKS & FORESTRY



PROJECT LOCATION

LOCATION MAP

1"=500'

#### **PLAN INDEX**

SHEET NO.	<b>DESCRIPTION</b>			
1	TITLE SHEET & INDEX			
2	GENERAL NOTES			
3	EXISTING CONDITIONS & SITE PREPARATION PLAN			
4	LAYOUT & MATERIALS PLAN			
5	GRADING & DRAINAGE PLAN			
6	ELECTRICAL PLAN			
7	IRRIGATION PLAN			
8	IRRIGATION DETAIL			
9	PLANTING PLAN			
10	DETAILS			
11	DETAILS			
12	DETAILS			
13	ELECTRICAL DETAILS			
14	ELECTRICAL DETAILS			
15	ELECTRICAL DETAILS			
16	ELECTRICAL DETAILS			
17	DETAILS			
18	DETAILS			

PERMIT SET

PREPARED BY:







cott Ridder

der Bob Mackie 11-4-2021

REGISTERED PROFESSIONAL

#### **GENERAL NOTES:**

- 1. THE LOCATION OF SUBSURFACE UTILITIES SHOWN IS APPROXIMATE AND NOT GUARANTEED TO BE COMPLETE OR ACCURATE. THE CONTRACTOR SHALL VERIFY THE LOCATIONS AND ELEVATIONS OF EXISTING UTILITY LINES AND STRUCTURES PRIOR TO COMMENCEMENT OF WORK. THE CONTRACTOR MUST NOTIFY DIG SAFE PRIOR TO ANY EXCAVATION, DEMOLITION OR EXPLOSION WORK IN PUBLIC OR PRIVATE WAYS OR UTILITY COMPANY RIGHT-OF-WAY OR EASEMENT.
- 2. WHERE AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED WORK, THE LOCATION, ELEVATION AND SIZE OF THE UTILITY SHALL BE ACCURATELY DETERMINED WITHOUT DELAY BY THE CONTRACTOR, AND THE INFORMATION FURNISHED TO THE ENGINEER FOR THE RESOLUTION OF THE CONFLICT.
- 3. THE CONTRACTOR SHALL ALTER THE MASONRY OF THE TOP SECTION OF ALL EXISTING DRAINAGE AND SANITARY STRUCTURES AS NECESSARY FOR THE CHANGES IN GRADE, AND RESET ALL WATER AND DRAINAGE FRAMES, GRATES AND BOXES TO THE PROPOSED FINISH SURFACE GRADE. REQUIRED NEW MASONRY SHALL BE CLAY BRICK CONFORMING TO M4.05.2.
- 4. THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS FOR THE ALTERATION AND ADJUSTMENT OF GAS, ELECTRIC, TELEPHONE, CABLE TV, FIRE ALARM AND ANY OTHER PRIVATE UTILITIES BY THE UTILITY COMPANIES. ALL UTILITY CASTING AND FIRE ALARM BOXES SHALL BE ADJUSTED TO FINISH GRADE BY THEIR RESPECTIVE OWNERS.
- 5. AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED BY THE CONTRACTOR TO THEIR ORIGINAL CONDITION AT THE CONTRACTOR'S EXPENSE.
- 6. THE TERM "PROPOSED" (PROP.) MEANS WORK TO BE CONSTRUCTED USING NEW MATERIALS OR, WHERE APPLICABLE, RE-USING EXISTING MATERIALS IDENTIFIED AS "REMOVE AND RESET" (R&R).
- 7. ALL DRAINAGE STRUCTURES SHALL BE RETAINED UNLESS NOTED OTHERWISE.
- 8. ALL FRAMES AND GRATES FOR PROPOSED DRAINAGE STRUCTURES SHALL BE MUNICIPAL STANDARD.
- 9. UNLESS OTHERWISE NOTED EXISTING DRAINAGE LINES TO BE REPLACED SHALL BE ABANDONED IN PLACE. IF THEY CONFLICT WITH THE PROPOSED DRAINAGE LINES THEY SHALL BE REMOVED AS DIRECTED BY THE ENGINEER.
- 10. WHERE DRAINAGE PIPES OR STRUCTURES ARE ABANDONED IN PLACE THE CONTRACTOR SHALL MAKE SURE THAT ALL CONNECTING PIPES, INLETS AND OUTLETS ARE PLUGGED. ALL LIVE CONNECTIONS SHALL BE CONNECTED TO THE NEW SYSTEM.
- 11. ALL CURB TIE DIMENSIONS ARE TO THE FACE OF THE CURB.
- 12. PROPOSED SIDEWALKS AND WHEELCHAIR RAMPS SHALL BE CONSTRUCTED TO THE NEAREST SCORE LINE OR EXPANSION JOINT IN THE EXISTING ADJACENT WALK SURFACE AS DIRECTED BY THE ENGINEER.
- 13. PROPOSED SIDEWALK AT SIGNS, POLES AND OTHER FEATURES SHALL BE BOXED AND PROVIDED FLEXIBLE JOINT FILLER.
- 14. THE PROPOSED SIDEWALK GRADE SHALL MEET THE EXISTING GRADE AT ALL ADJOINING PAVEMENT ELEVATIONS UNLESS OTHERWISE NOTED ON THE PLAN.
- 15. PROPOSED SIDEWALK AND WHEELCHAIR RAMPS SCORE LINES AND EXPANSION JOINTS ARE SHOWN ON THE PLANS. THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER DURING CONSTRUCTION.
- 16. WHEN WORKING NEXT TO EXISTING PAVEMENT, WALLS, BERMS, AND OTHER STRUCTURES, CONTRACTOR SHALL EXERCISE EXTREME CAUTION NOT TO DISTURB THE EXISTING STRUCTURES. ANY DAMAGE TO THE EXISTING STRUCTURES SHALL BE REPAIRED BY THE CONTRACTOR AT HIS OWN EXPENSE.
- 17. ORNAMENTAL STREET LIGHTING LAYOUTS ARE SHOWN ON ELECTRICAL PLANS. THE DETAILS ARE SHOWN ON DETAIL SHEETS.
- 18. DUE TO THE PROJECT IN DOWNTOWN AREA, CONTRACTOR SHALL EXERCISE EXTREME CAUTION NOT TO DISTURB EXISTING SIDEWALK. THE CONTRACTOR SHALL MEET ALL EXISTING GRADES AT THESE LOCATIONS UNLESS OTHERWISE SHOWN ON THE PLAN.
- 19. SAFETY CONTROLS FOR CONSTRUCTION OPERATIONS SHALL BE IN ACCORDANCE WITH MASSDOT REQUIREMENTS AND THE LATEST VERSION OF THE MUTCD.
- 20. SURVEY BASE PLAN BY CHAPPELL ENGINEERING ASSOCIATES, LLC ON OCTOBER 2018.
- 21. THE SURVEY BASE PLAN ARE IN U.S. SURVEY FEET IN THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM REFERENCED TO THE NORTH AMERICAN DATUM OF 1983.
- 22. ELEVATIONS, IN U.S. SURVEY FEET, ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
- 23. PROPOSED TREE LOCATIONS ARE APPROXIMATE. THE CONTRACTOR SHALL STAKE TREES IN THE FIELD PRIOR TO INSTALLATION FOR APPROVAL BY THE ENGINEER.
- 24. LOCATION OF PROPOSED SHRUB PLANTINGS ARE APPROXIMATE. THE CONTRACTOR SHALL COORDINATE WITH THE ENGINEER PRIOR TO INSTALLATION.
- 25. THE CONTRACTOR SHALL BE REQUIRED TO MAINTAIN A MINIMUM LEVEL OF GENERAL STREET LIGHTING EQUIVANENT TO THE EXISTING CONDITION OVER THE COURSE OF THE PROJECT EITHER BY TEMPORARILY RETAINING SOME OF THE EXISTING LIGHTS AND/OR ACTIVATING PORTIONS OF THE NEW LIGHTING SYSTEMS. THE CONTRACTOR SHALL BE REQUIRED TO IDENTIFY HIS APPROACH IN HIS POST BID SCHEDULE.

#### WHEELCHAIR RAMP NOTES:

- 1. ALL WHEELCHAIR RAMPS SHALL CONFORM TO THE REQUIREMENTS OF THE ARCHITECTURAL ACCESS BOARD (A.A.B.) AND THE AMERICANS WITH DISABILITIES ACT (A.D.A.). AND THE TOWN OF NEEDHAM STANDARDS.
- 2. THE LOCATION OF PROPOSED WHEELCHAIR RAMP ARE SHOWN ON LAYOUT PLAN AND THE DETAILS, EXACT LOCATION MAY BE ADJUSTED, IF NECESSARY, BY THE ENGINEER IN THE FIELD.
- 3. PROPOSED WHEELCHAIR RAMPS SHALL HAVE DETECTABLE WARNING PANELS INSTALLED IN ACCORDANCE WITH AAB AND ADA STANDARDS. THE PANEL SHALL BE VARIED TO MEET OPENINGS OF THE RAMP AS SHOWN. THE PANEL SHALL BE GRANITE AND COLORED CALEDONIA.
- 4. IN INSTANCES WHERE AN EXISTING MANHOLE, HANDHOLE OR OTHER "SURFACE" TYPE STRUCTURE THAT CANNOT BE REMOVED OR RESET, IS WITHIN THE ACTUAL WHEELCHAIR RAMP PATH, THE STRUCTURE SHALL BE CAREFULLY ADJUSTED SUCH THAT THE TOPMOST SURFACES OF THE STRUCTURE COVER SHALL BE FLUSH WITH THE RAMP SURFACE AND SHALL MATCH THE SLOPE OF THE NEW WHEELCHAIR RAMP AS DIRECTED BY THE ENGINEER.

#### **PAVEMENT NOTES:**

#### PAVEMENT MILLING AND OVERLAY

SURFACE COURSE: 1 ½" CLASS I BITUMINOUS CONCRETE TOP COURSE

PAVEMENT MILLING: 1 ½" PAVEMENT MILLING

NOTE: 1.5" MAX LIFT BINDER COURSE FOR LEVELING IN AREAS NOT ABLE TO BE SHAPED WITH MILLING.

#### CONCRETE SIDEWALK, WHEELCHAIR RAMPS, AND DRIVEWAYS

SURFACE COURSE: 5" CEMENT CONCRETE

SUB BASE: 8" GRAVEL BORROW TYPE C (MIN.) OR

COMBINATION OF EXISTING SUITABLE SUB BASE AS

APPROVED BY THE ENGINEER.

#### HMA SIDEWALK

SURFACE COURSE: 3" HOT MIX ASPHALT (HMA) PAVEMENT PLACED IN TWO LAYERS, 1" TOP

CALE

**AS SHOWN** 

ESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

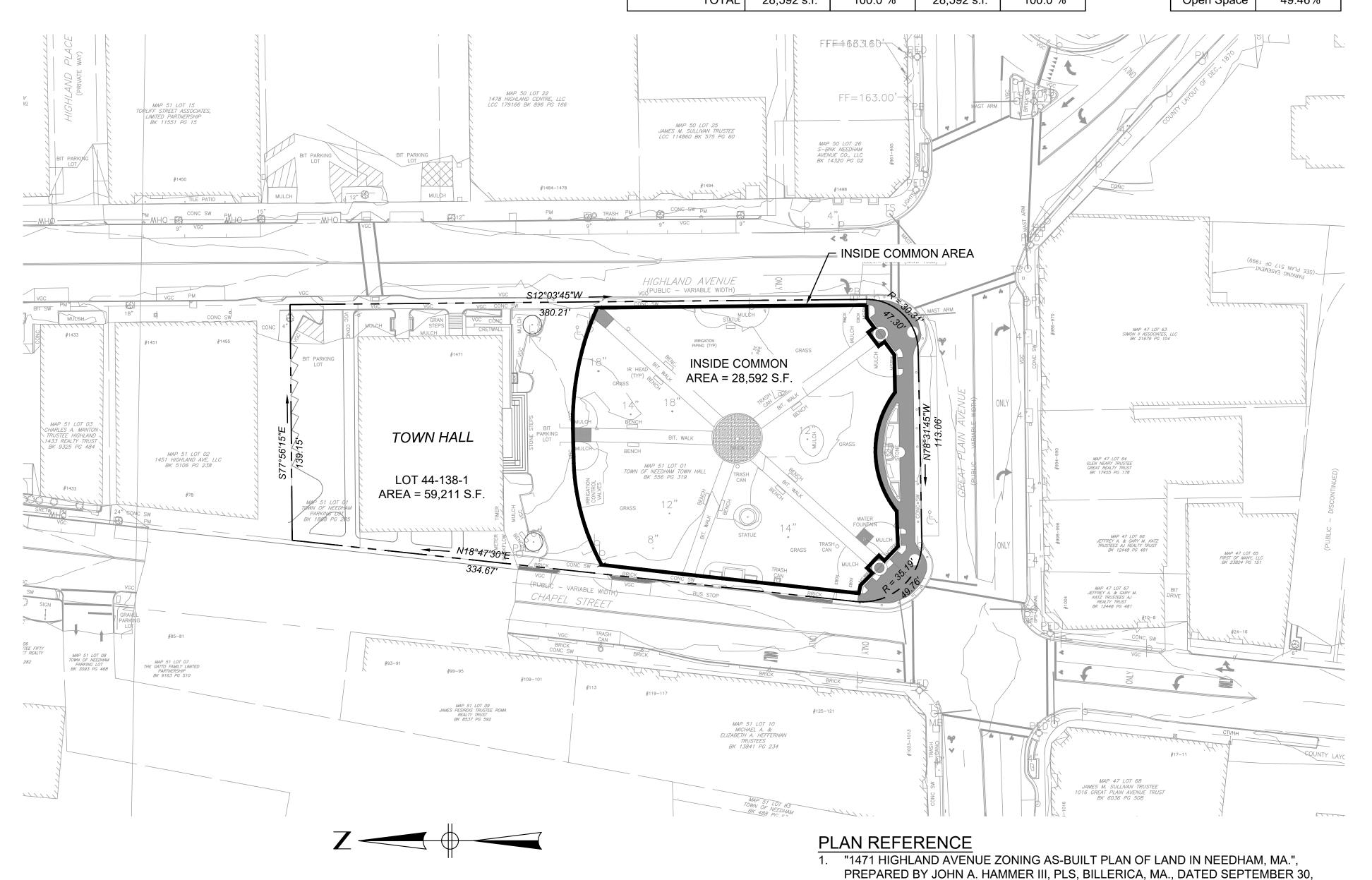
COURSE MATERIAL OVER 2" BINDER COURSE MATERIAL

BASE COURSE: 8" GRAVEL BORROW TYPE C (MIN.)

#### **INSIDE COMMON AREA**

COMMON AREA	Existing	Area %	PROPOSED	Area %
Paths and Walkways	4,121 s.f.	14.5 %	8,239 s.f.	28.8 %
Planted Areas	617 s.f.	2.1 %	1586 s.f.	5.5 %
Lawn Area	23,844 s.f.	83.4 %	18,767 s.f.	65.7 %
TOTAL	28.592 s.f.	100.0 %	28.592 s.f.	100.0 %

ENTIRE LOT	
LOT AREA %	EXISTING
Building	16.54%
Paved Areas	34.0%
Open Space	49.46%



PROPERTY INFORMATION
SCALE: 1" = 40'

TITLE \_

DRAWN BY:
SR/NS/CC
DESIGNED BY:
SR/NS
CHECKED BY:
SR/RM

CHECKED BY:
SR/RM

NUMBER DATE MADE BY CHECKED BY REVISIONS

DRAWN BY:
SR/NS/CC

CHECKED BY:
SR/RM

REGISTERED PROFESSIONAL PREPARED BY

SUBCONSULTANT

TOWN COMMON RENOVATION

2011, SHEETS 1 AND 2. NOTED AS BUILDING PERMIT No. B120100159.

GENERAL NOTES

NEEDHAM, MASSACHUSETTS

SHEET NO. \_\_\_\_\_2

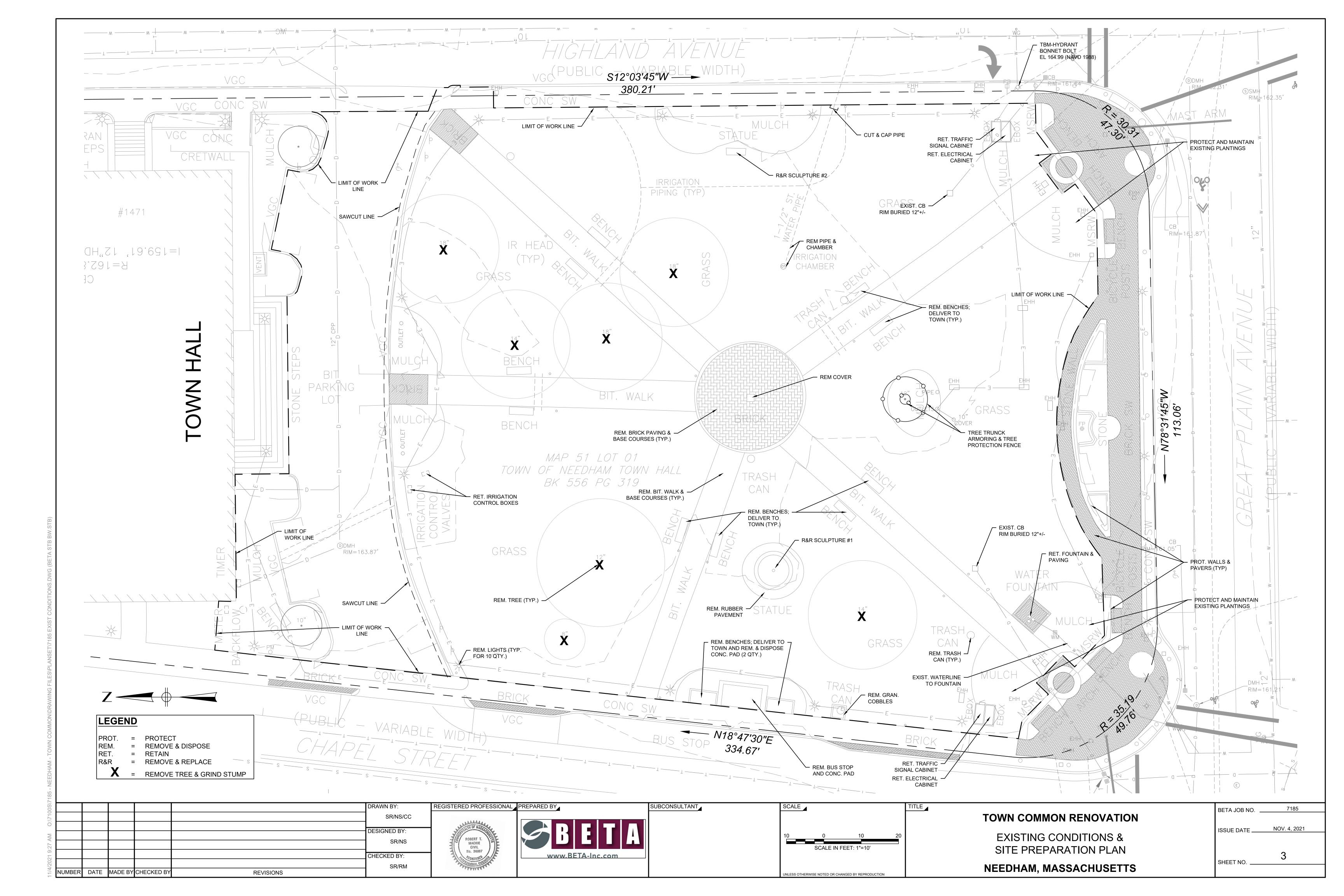
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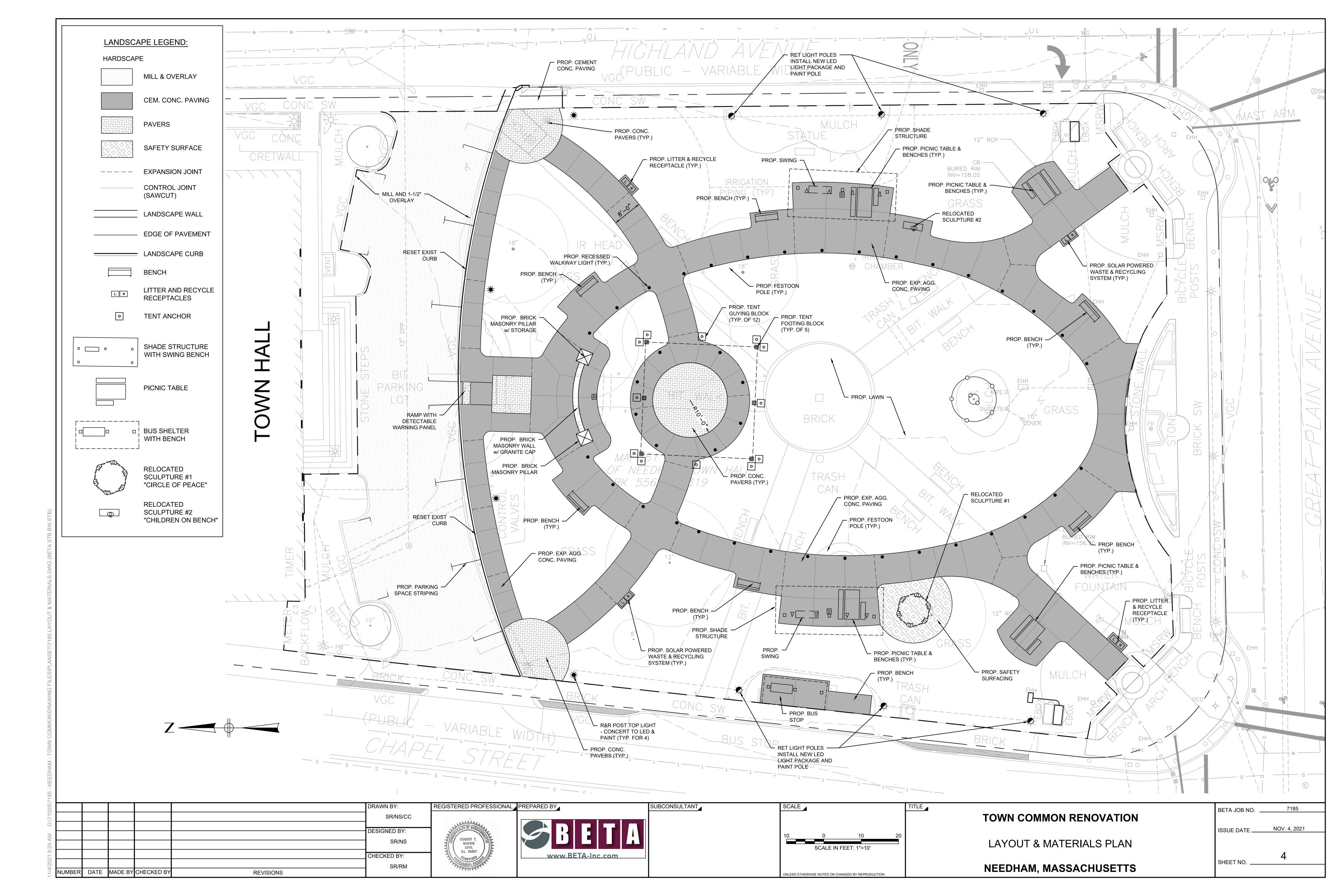
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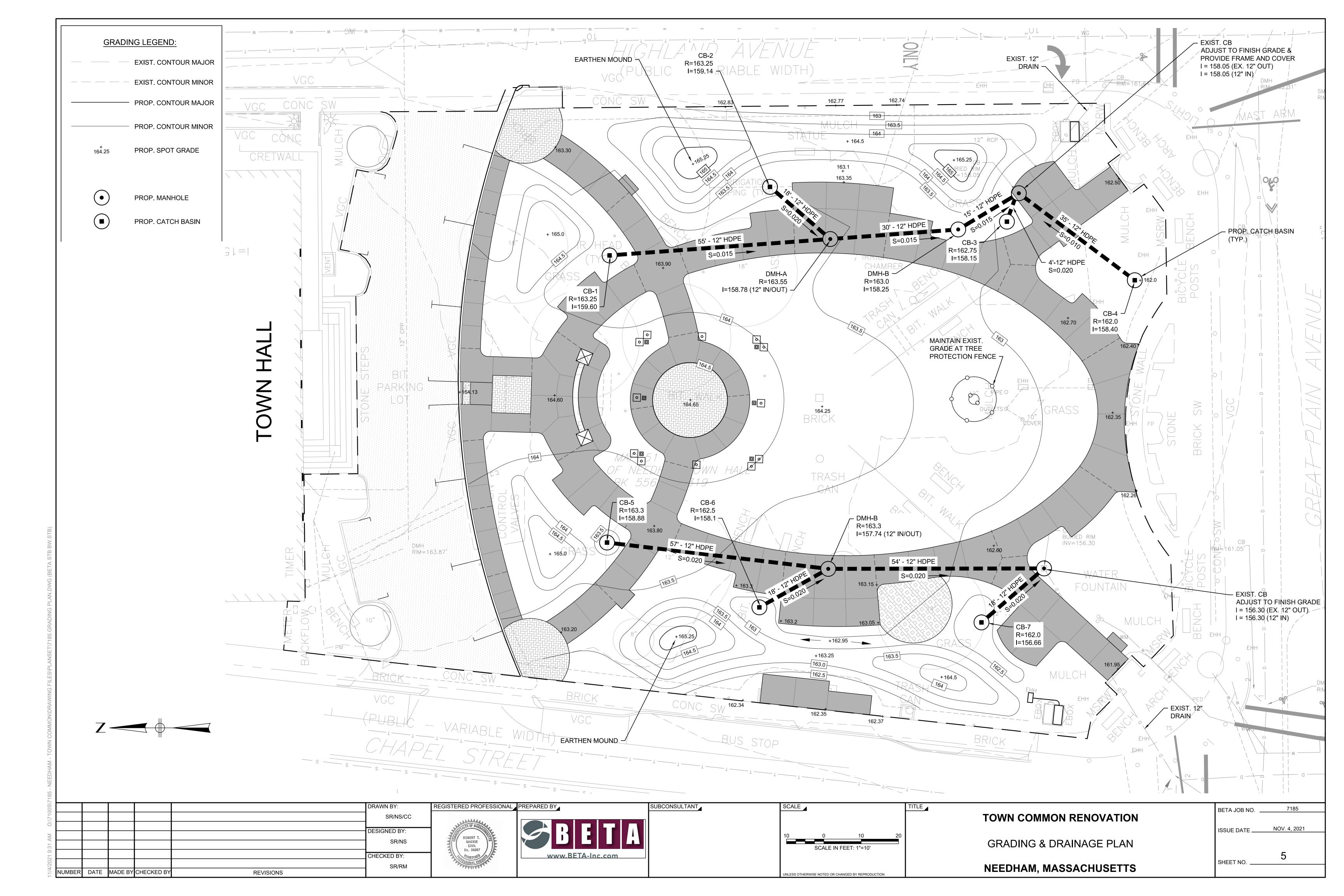
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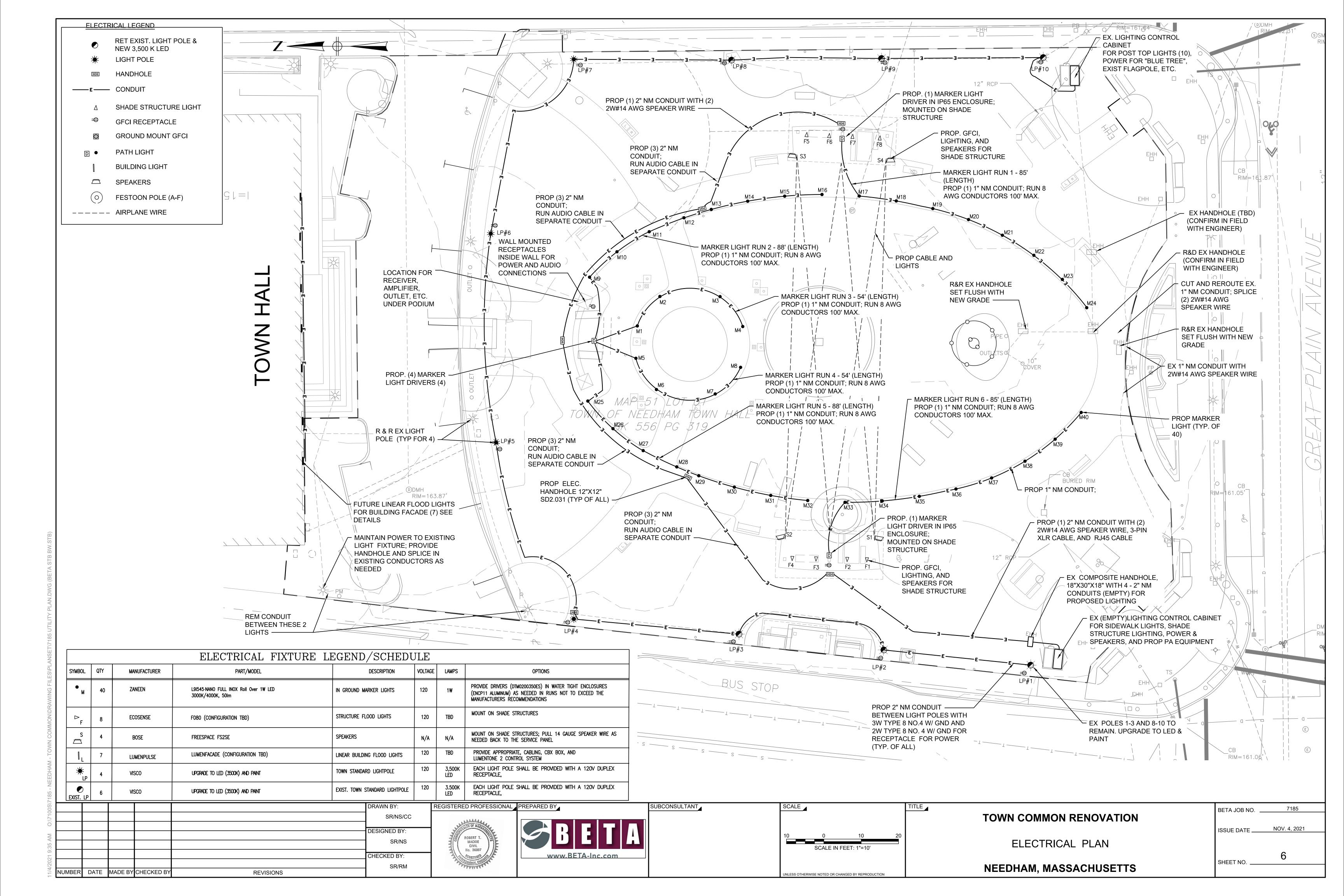
NOV. 4, 2021

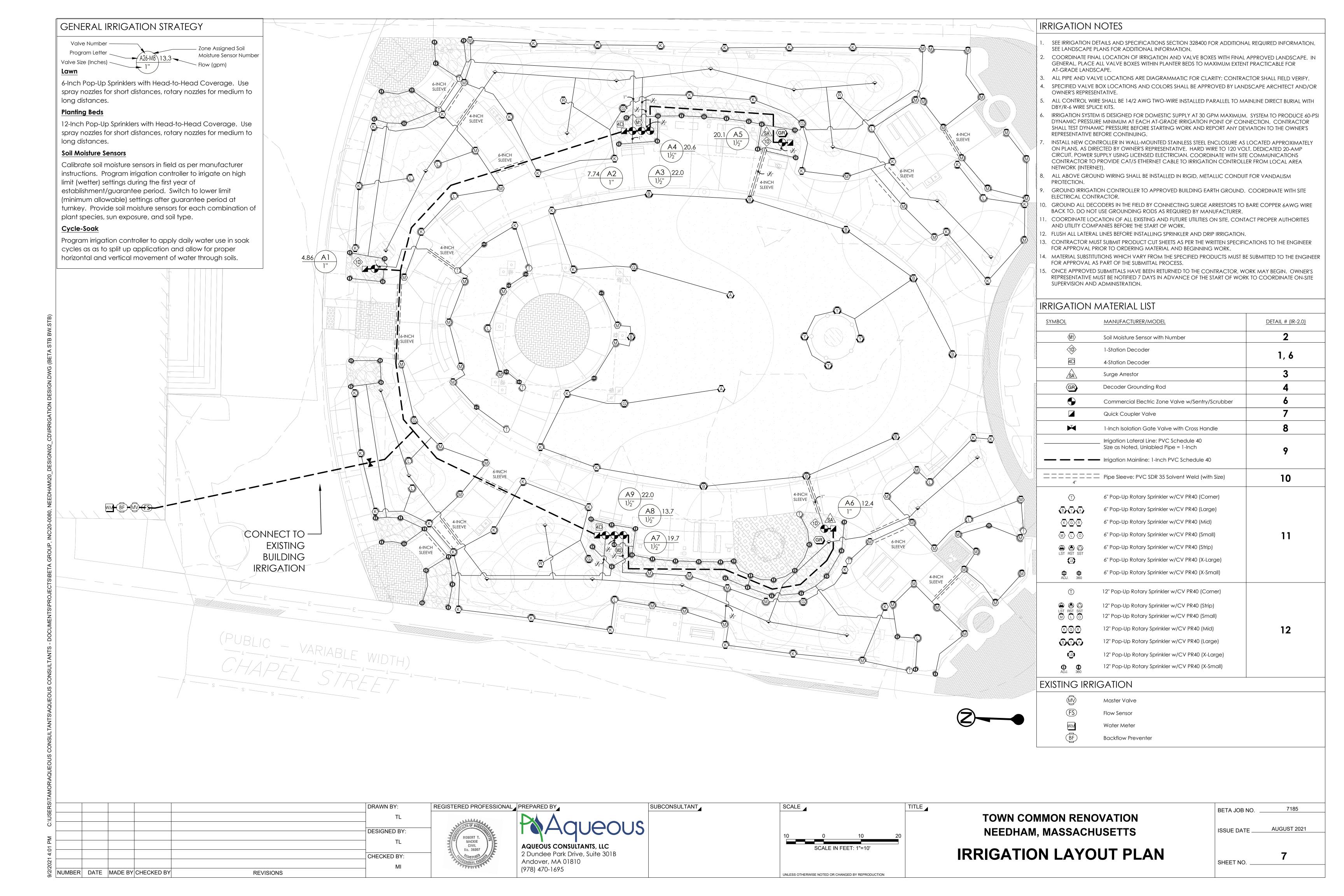
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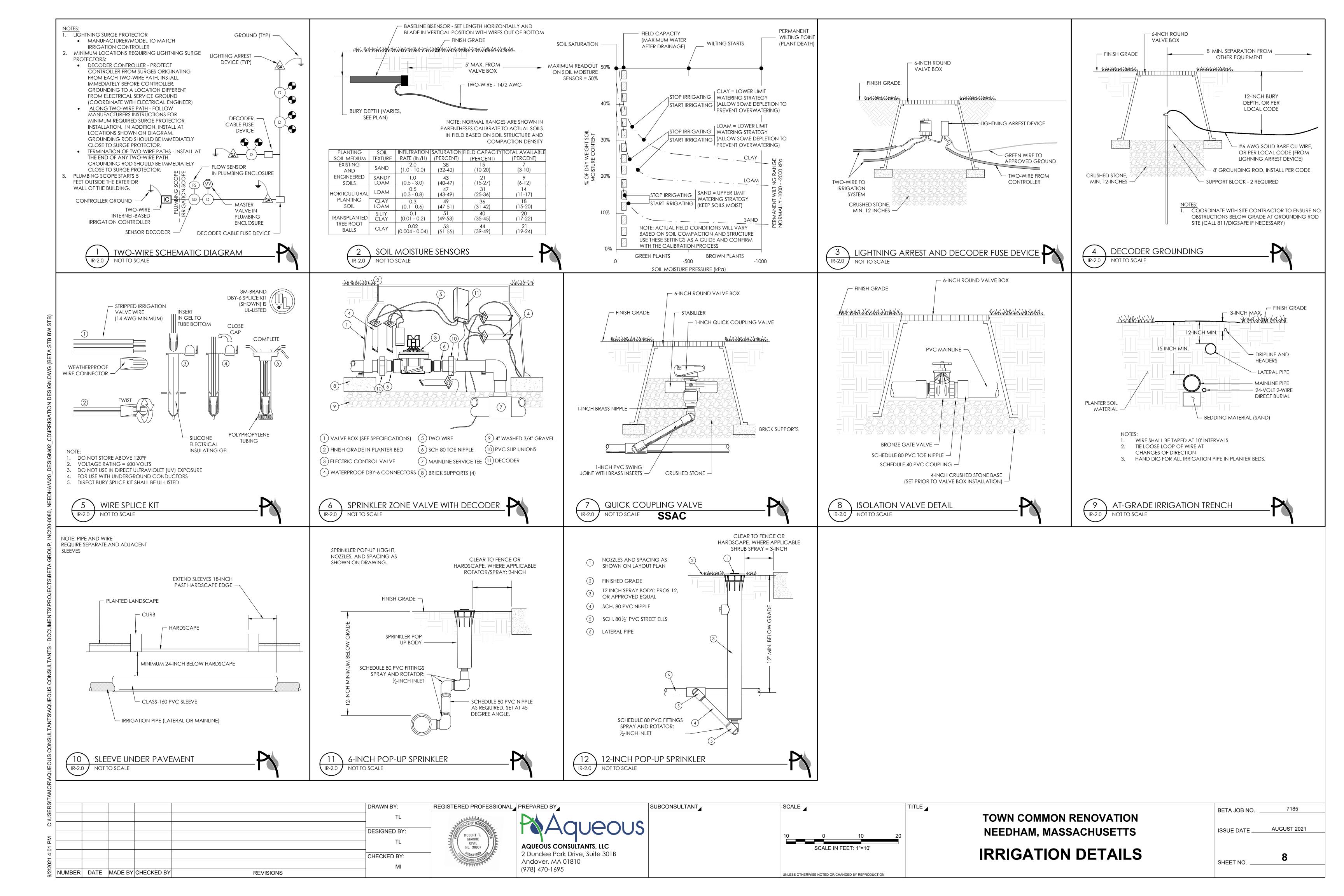


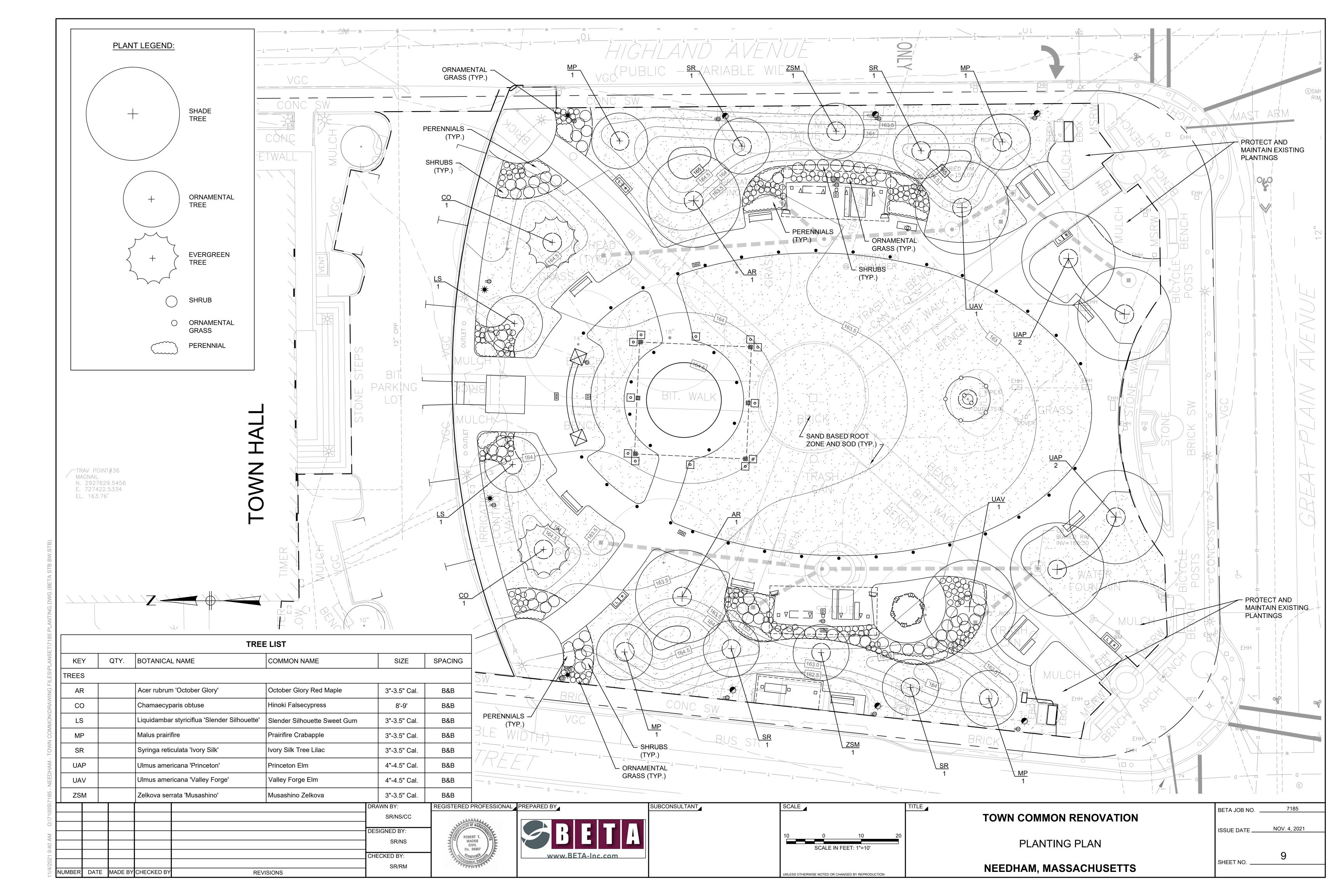


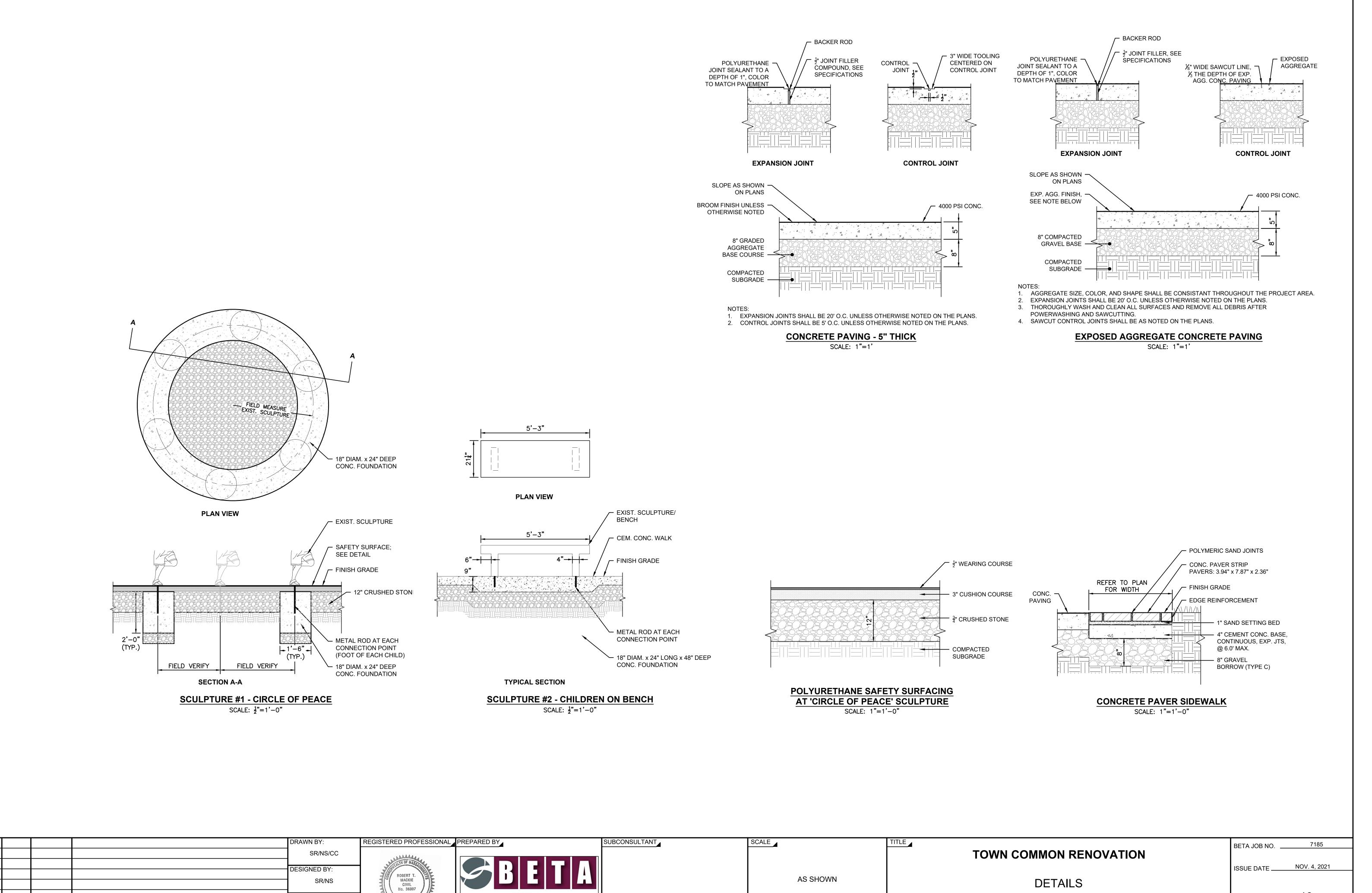












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REVISIONS

SR/RM

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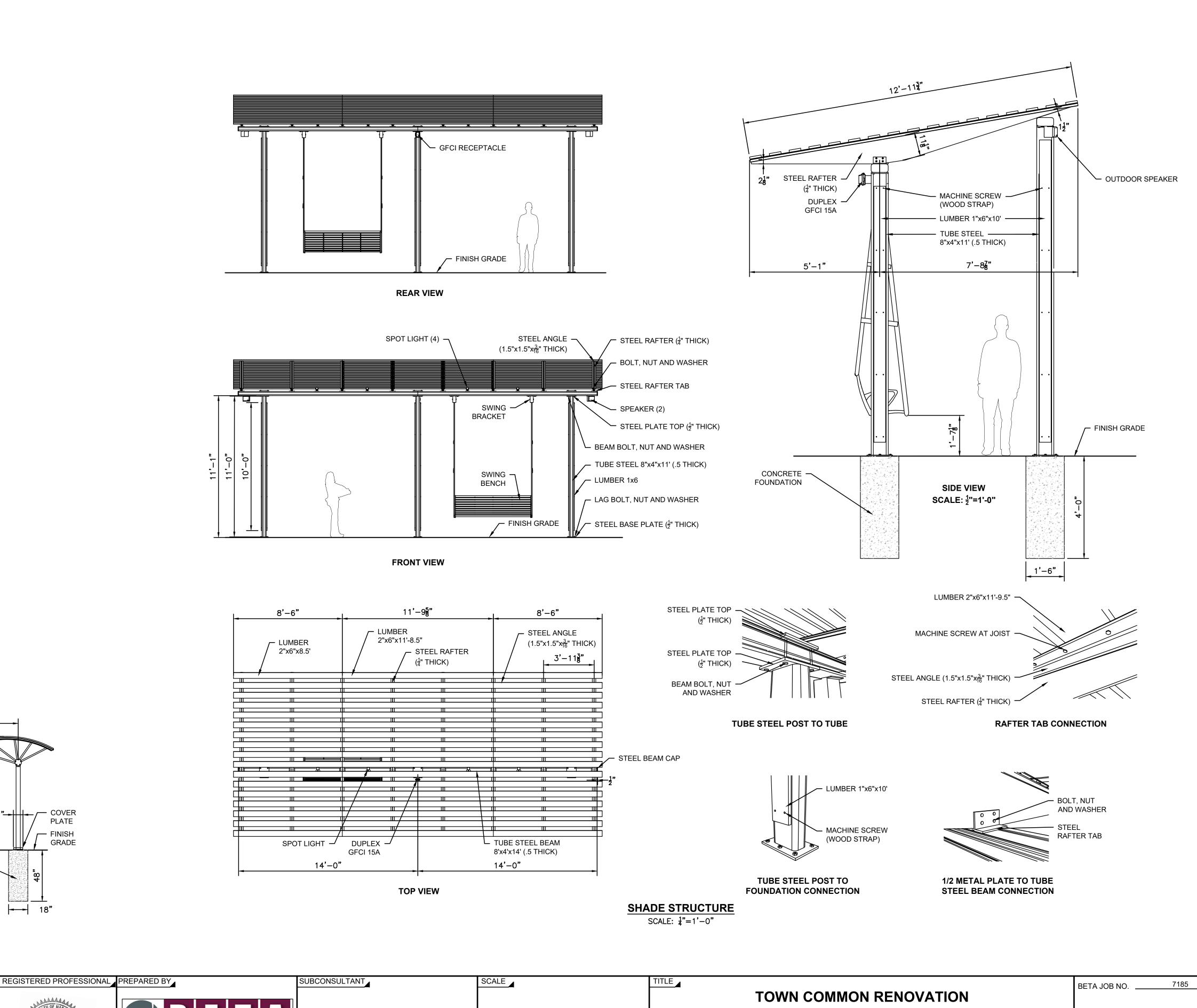
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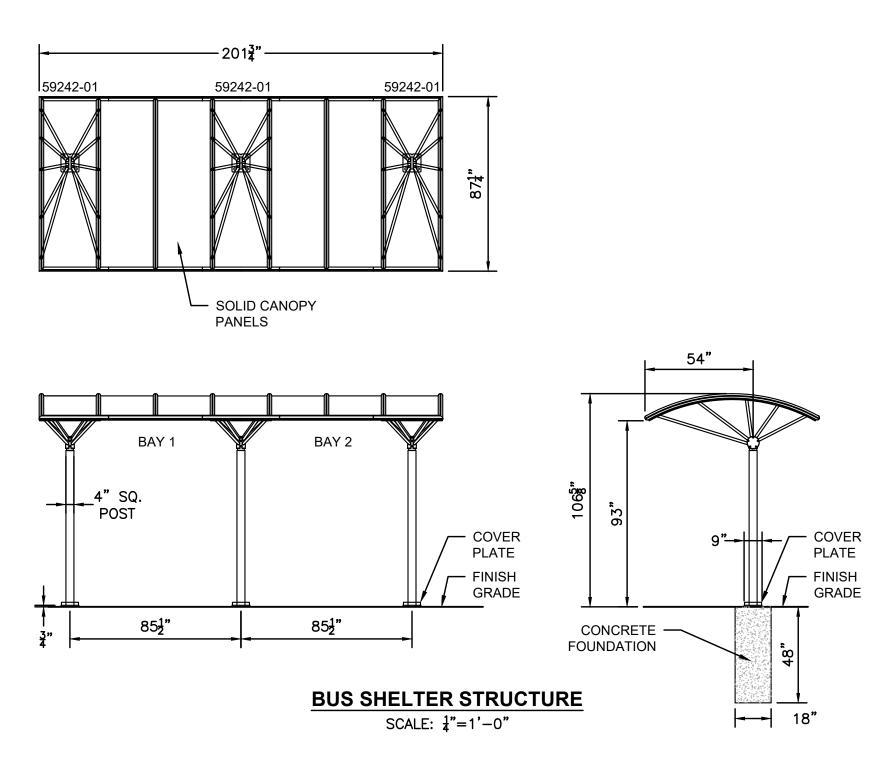
**DETAILS** 

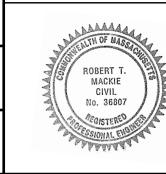
**NEEDHAM, MASSACHUSETTS** 

SHEET NO.

DATE MADE BY CHECKED BY









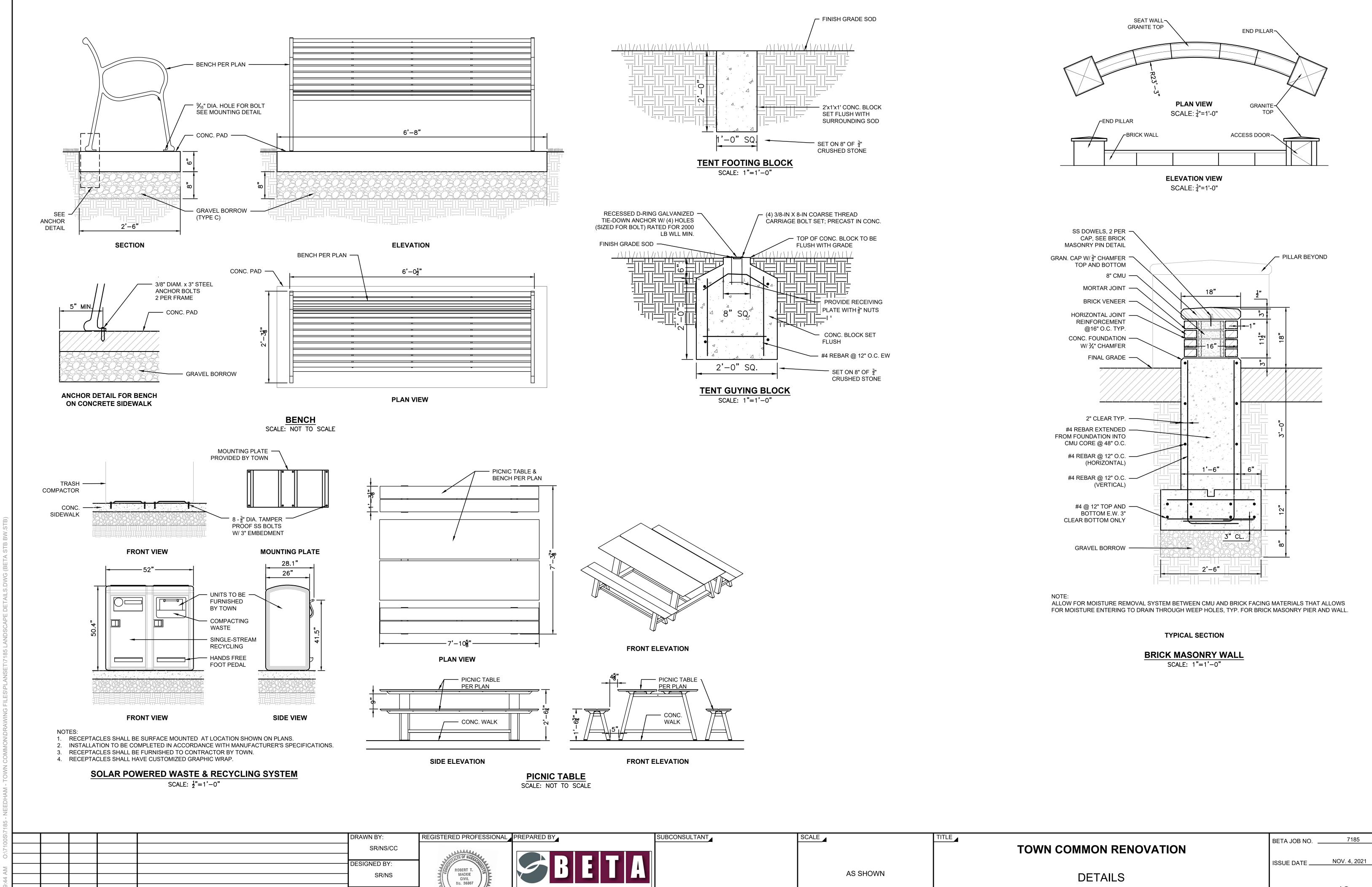
SCALE		
	AS SHOWN	

UNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

TOWN COMMON RENOVATION

DETAILS

NEEDHAM, MASSACHUSETTS



SHEET NO.

**NEEDHAM, MASSACHUSETTS** 

NLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

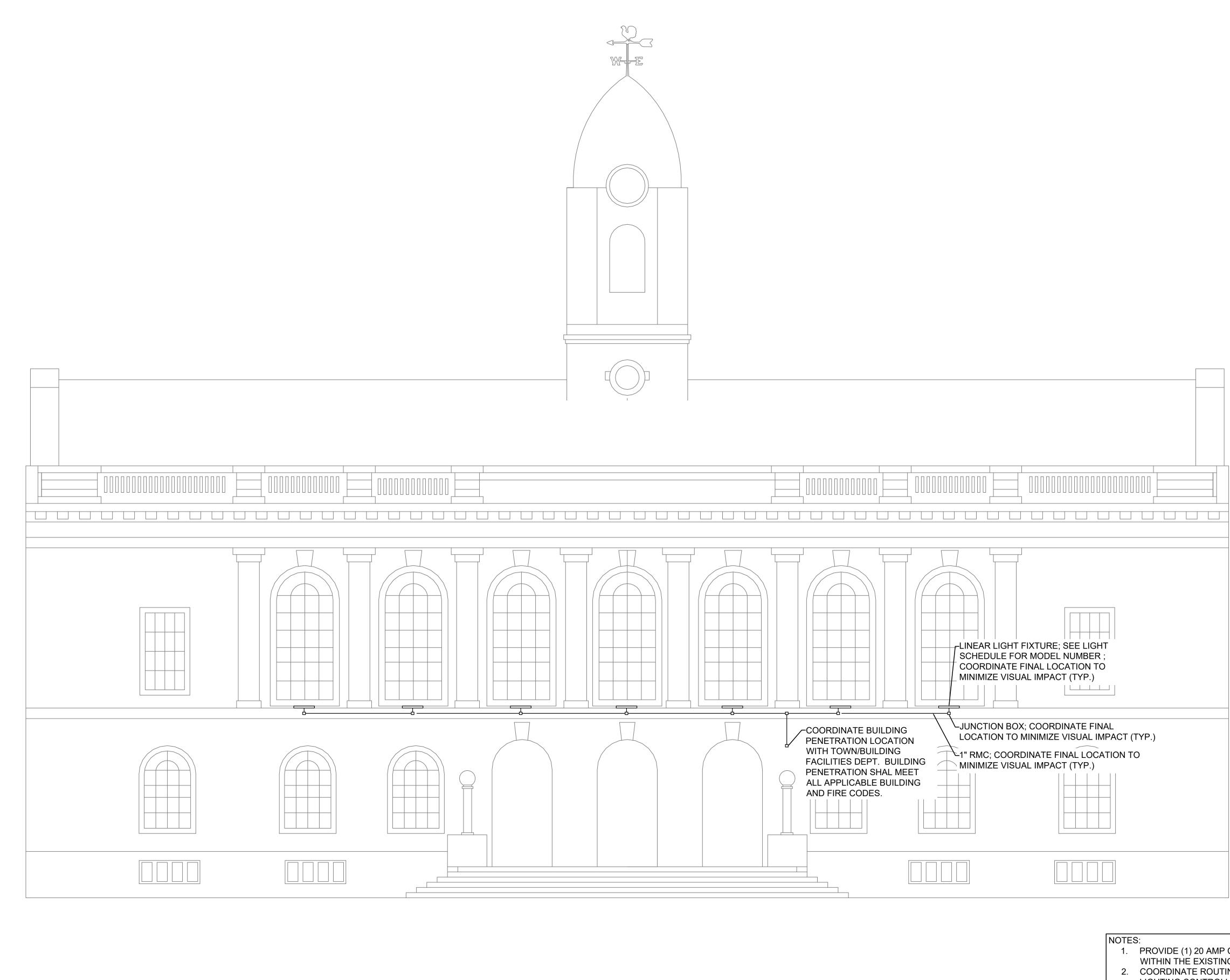
www.BETA-Inc.com

CHECKED BY:

REVISIONS

SR/RM

DATE MADE BY CHECKED BY



- PROVIDE (1) 20 AMP CIRCUIT AND INSTALL A NEW BREAKER WITHIN THE EXISTING ELECTRICAL PANEL.
- 2. COORDINATE ROUTING OF THE NEW CIRCUIT TO A TOUCH LED LIGHTING CONTROLLER; CAPABLE OF CHANGING COLORS, CREATING ZONES, DIMMING AND TIMER FUNCTIONS.

						DRAWN BY:	REGISTERED PROFESSIONAL PREPARED BY	SUBCONSULTANT	SCALE	TITLE
						SR/NS/CC	THE			TOWN COMMON RENOVATION
>	+					DESIGNED BY:	ROBERT T.			
ī	$\top$					SR/NS	MACKIE CIVIL No. 36807		AS SHOWN	ELECTRICAL DETAILS
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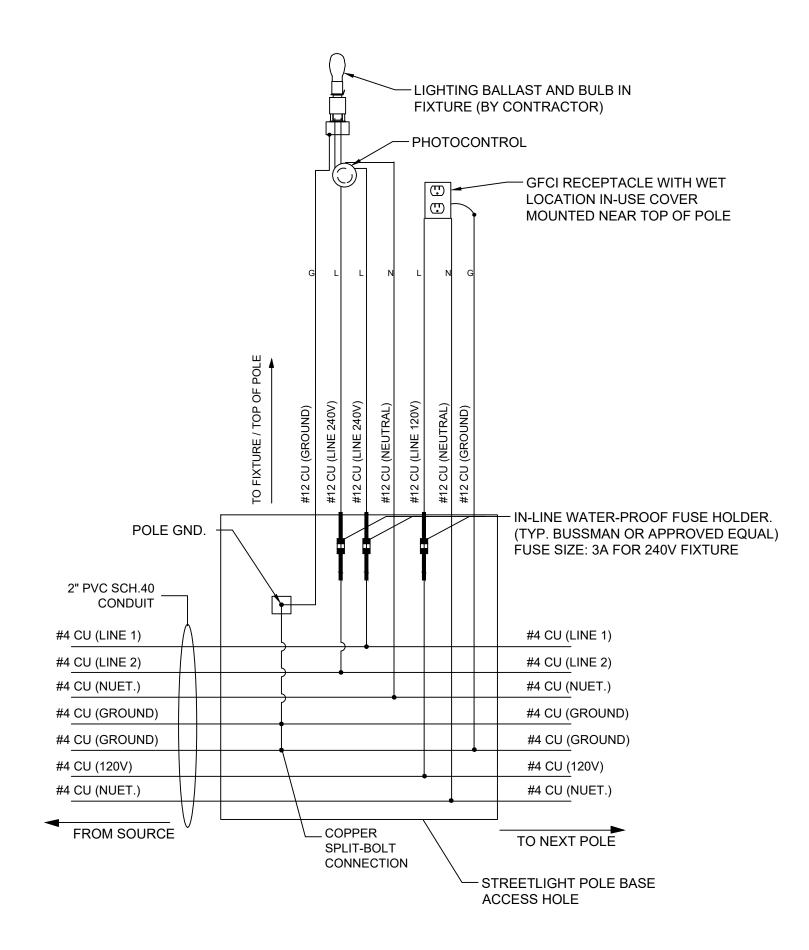
BETA JOB NO. 7185

ISSUE DATE NOV. 4, 2021

SHEET NO. \_\_\_\_\_

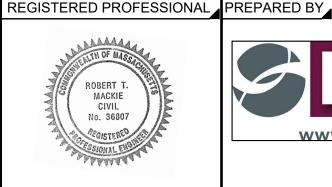
## ELECTRICAL NOTES:

- 1. ALL WORK TO BE COMPLETED IN ACCORDANCE WITH THE LATEST APPLICABLE STANDARDS OF ANSI, NEMA, UL, NFPA-70, AND THE NATIONAL ELECTRICAL CODE WITH REGARDS TO MATERIAL, DESIGN, AND CONSTRUCTION.
- 2. THIS DRAWING IS FOR INFORMATION ONLY. THE CONTRACTOR SHALL VERIFY ALL LOCATIONS, DEVICES, MATERIALS, AND EQUIPMENT, PRIOR TO THE START OF ANY WORK.
- 3. CONTRACTOR SHALL NOTIFY DIG SAFE AT 1-888-DIG-SAFE, AT LEAST 72 HOURS PRIOR TO BEGINNING ANY EXCAVATION.
- 4. PVC CONDUIT AND FITTINGS SHALL CONFORM TO ANSI/NEMA SPECIFICATIONS, TC-2, TC-3 AND UL-651.
- 5. CONTRACTOR SHALL OBTAIN ALL NECESSARY INSPECTIONS AND COORDINATE ALL WORK WITH THE OWNER AND THE TOWN OF NEEDHAM. TRENCHES SHALL BE INSPECTED PRIOR TO BACKFILLING.
- 6. LOCATIONS OF ALL UTILITIES ARE APPROXIMATE AND ARE PROVIDED FOR INFORMATION ONLY.
- 7. CONTRACTOR TO BALANCE THE NUMBER OF LIGHTING FIXTURES ON EACH CIRCUIT
- 8. CONTRACTOR TO LOCATE ALL ELECTRICAL EQUIPMENT AS DIRECTED BY THE OWNER, ARCHITECT & ENGINEER.



## TYPICAL STREETLIGHT WIRING DETAIL NOT TO SCALE

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5						DRAWN BY:
-						SR/NS/CC
)						DEGIONED DV
						DESIGNED BY:
L D						SR/NS
						011501755 577
7						CHECKED BY:
7						SR/RM
	NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS	





SUBCONSULTANT

SCALE **AS SHOWN** 

**TOWN COMMON RENOVATION** ELECTRICAL DETAILS

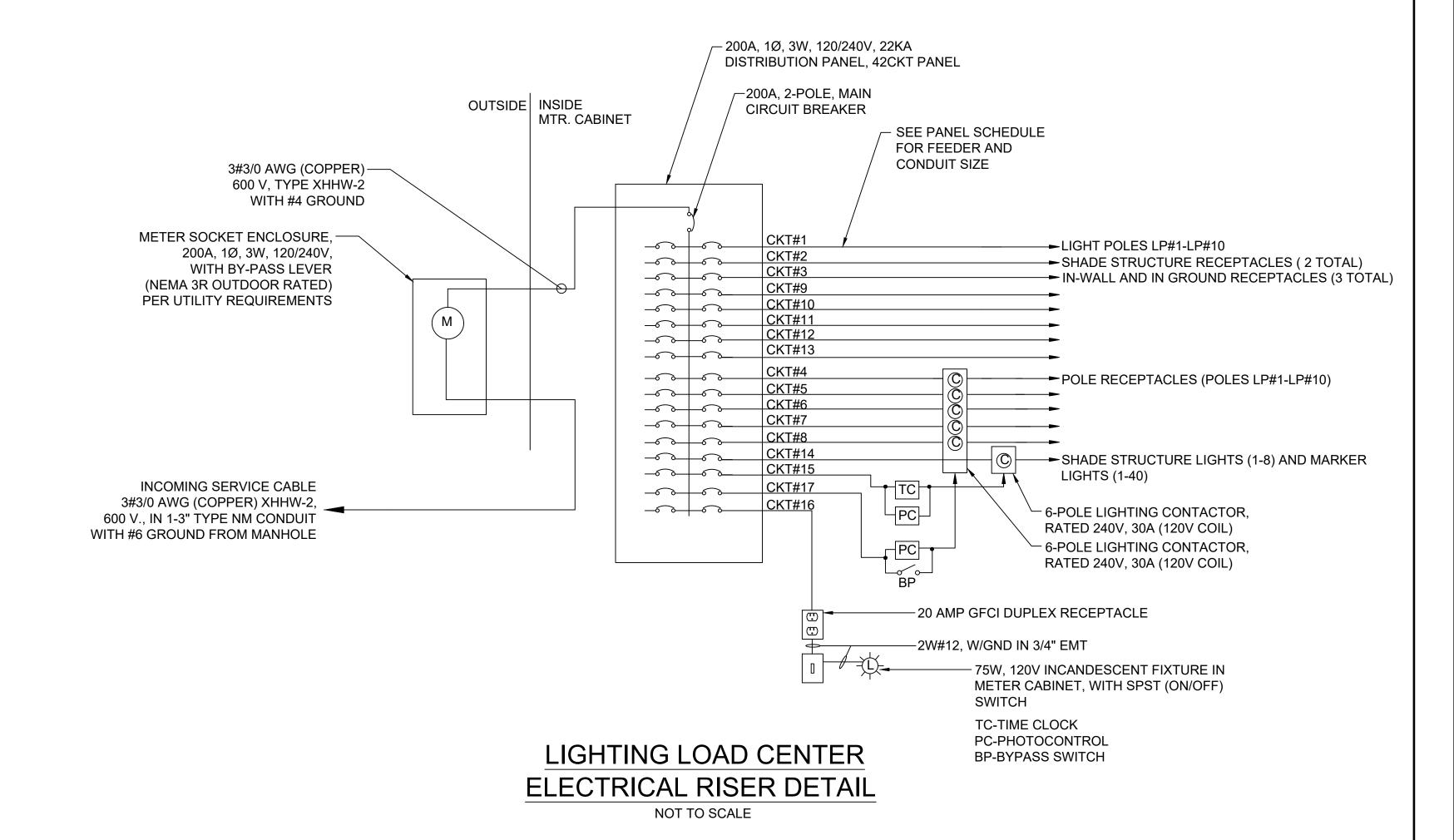
NEEDHAM, MASSACHUSETTS

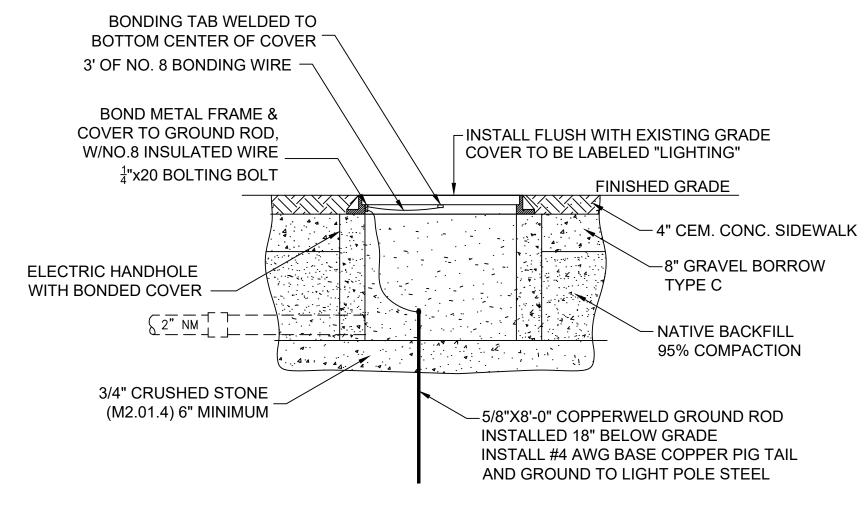
7185 BETA JOB NO. NOV. 4, 2021 ISSUE DATE \_\_\_

SHEET NO.

## NEW DISTRIBUTION PANEL SCHEDULE - P1

	PHASE: 1			WIRES: 3 VOLTAGE: 120/240V	MAINS: 200A. MAIN C.B.	42 CIRCUIT	
CIRCUIT	BREAKER		DESCRIPTION OF LOAD		CABLE	COMPUT	REMARKS
CIRC	FRAME	POLES(N-NEUTRAL)	TRIP	DESCRIPTION OF LOAD	CABLE	CONDUIT	REMARKS
М	200	2P	200	MAIN CIRCUIT BREAKER	3W#3/0AWG & #6AWG GND	1-3"NM SCH80	
1	30	2P	30	LIGHTING CIRCUIT #1 (POLES LP#1-LP#10, )	3W#4AWG & #4 GND	1-2"NM SCH80	CONTROLLED BY PHOTOCELL IN EACH POLE
2	30	2P	30	SHADE STRUCTURE RECEPTACLES (2 TOTAL)	2W#8AWG & #10 GND	1-2"NM SCH80	CONTROLLED BY BREAKER (ALWAYS ON)
3	30	2P	30	IN WALL AND IN GROUND RECEPTACLES (3 TOTAL)	2W#8AWG & #10 GND	1-2"NM SCH80	CONTROLLED BY BREAKER (ALWAYS ON)
4	30	2P	30	POLE RECEPTACLES (POLES LP#11-LP#21)	2W#4AWG & #4 GND	1-2"NM SCH80	CONTROLLED BY PHOTOCELL W/BYPASS IN CABINET
5	30	2P	30				
6	30	1P	30				
7	30	1P	30				
8	30	1P	30				
9	20	1P	20				
10	20	1P	20				
11	20	1P	20				
12	20	1P	20				
13	30	2P	30				
14	20	1P	20	FLAG AND ARCH UPLIGHTS (6 LIGHTS)	2W#8AWG & #10 GND	1-2"NM SCH80	CONTROLLED BY TIMECLOCK & PHOTOCELL IN CABINET
15	20	1P	20	TIME CLOCK POWER	2W#12AWG & #12 GND	1-1"NM SCH80	
16	20	1P	20	RECEPTACLE IN CABINET	2W#12AWG & #12 GND	1-1"NM SCH80	
17	20	1P	20	PHOTOCONTROL CONTACTOR POWER	2W#12AWG & #12 GND	1-1"NM SCH80	

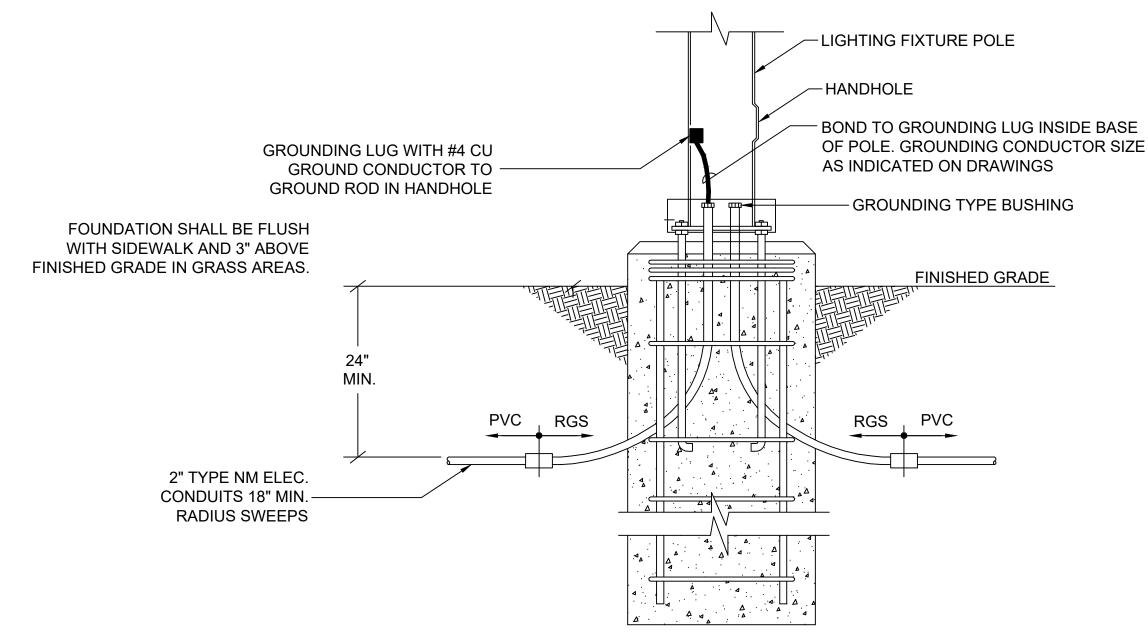




### **HANDHOLE INSTALLATION NOTES:**

- 1. HANDHOLE ORIENTATION TO BE SUCH THAT ALL SUPPLY DUCTS ENTER ON SAME SHORT SIDE.
- 2. SIZE AND NUMBER OF CONDUITS AS REQUIRED.
- 3. CONDUIT LOCATIONS SHOWN ARE TYPICAL

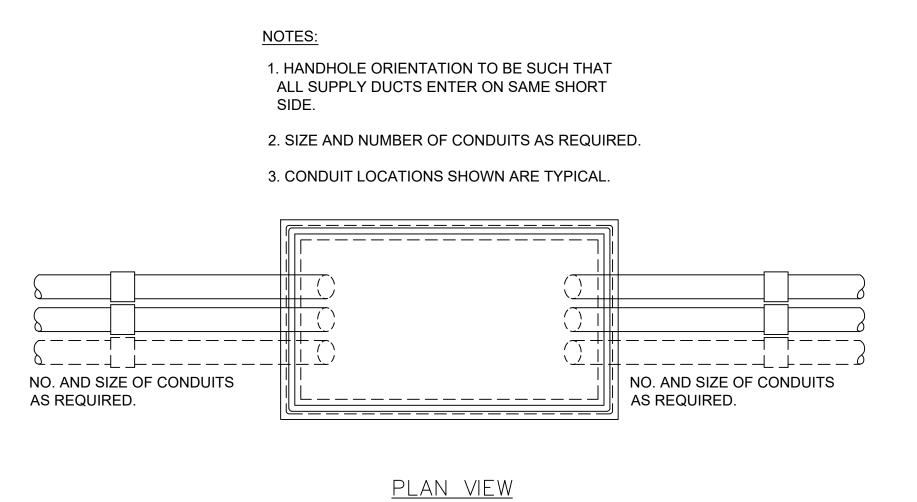
## INSTALLATION DETAIL PRECAST ELECTRIC HANDHOLE NOT TO SCALE

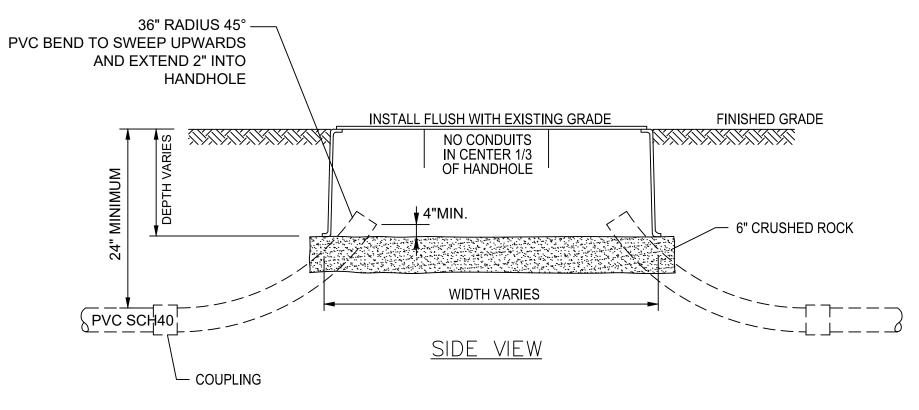


### LIGHT POLE FOUNDATION NOTES:

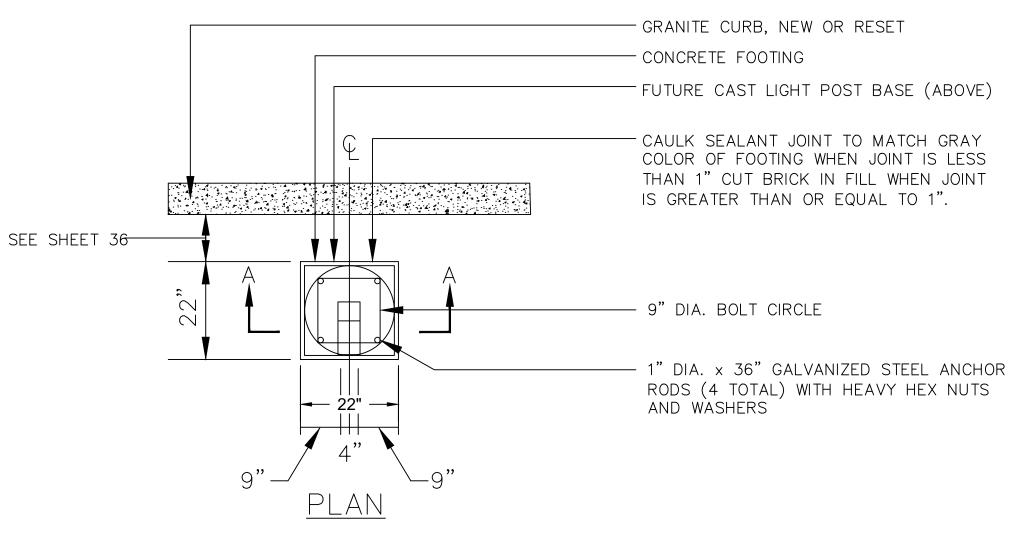
- 1. BOLT PATTERN SHOWN IS TYPICAL AND NOT FOR CONSTRUCTION CONTRACTOR TO PROVIDE BOLT PATTERN DETAILS BASED ON SELECTED MANUFACTURER.
- 2. PROVIDE REBAR DETAIL FROM PRECAST CONCRETE VENDOR FOR APPROVAL.
- 3. CONDUIT LOCATIONS SHOWN ARE TYPICAL.

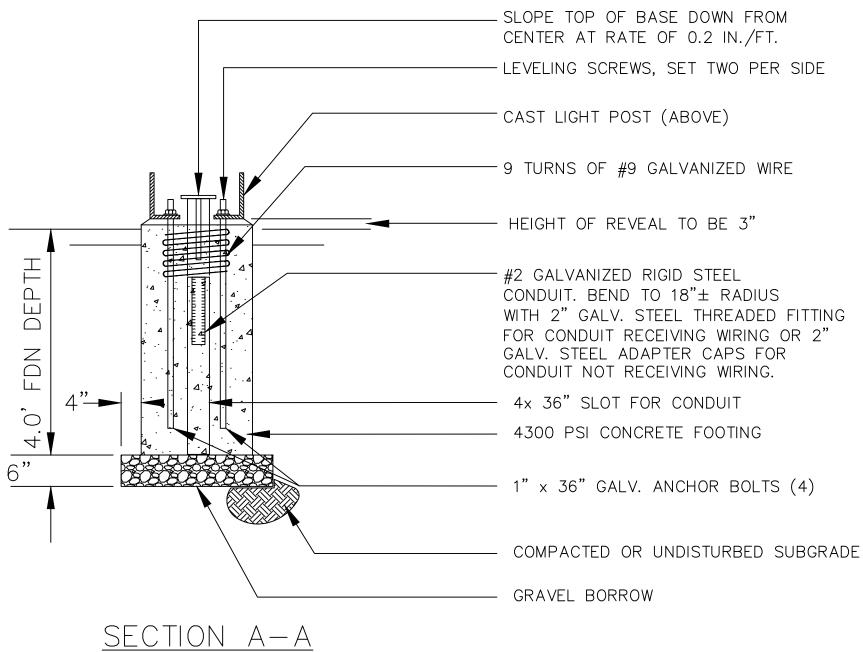
## LIGHT POLE FOUNDATION CONDUIT DETAIL

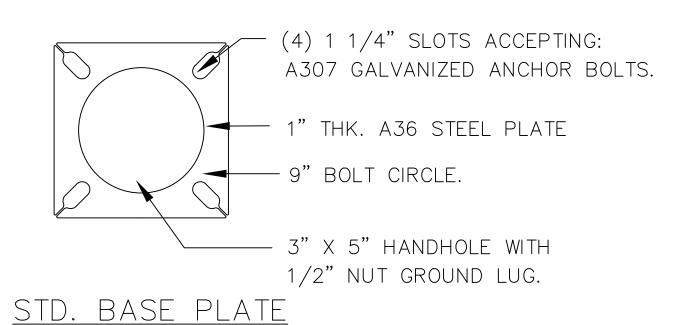




## **INSTALLATION DETAIL** COMPOSITE ELECTRIC HANDHOLE NOT TO SCALE

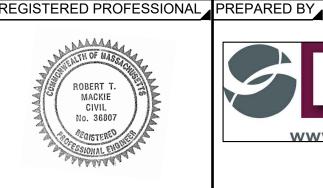






## LIGHT POLE FOUNDATION DETAIL NOT TO SCALE

					DRAWN BY:
					SR/NS/CC
					DESIGNED BY:
					SR/NS
					CHECKED BY:
NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS	SR/RM
		-	-		





SCALE **AS SHOWN** 

ILESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

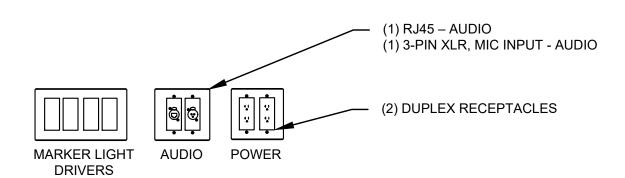
TITLE

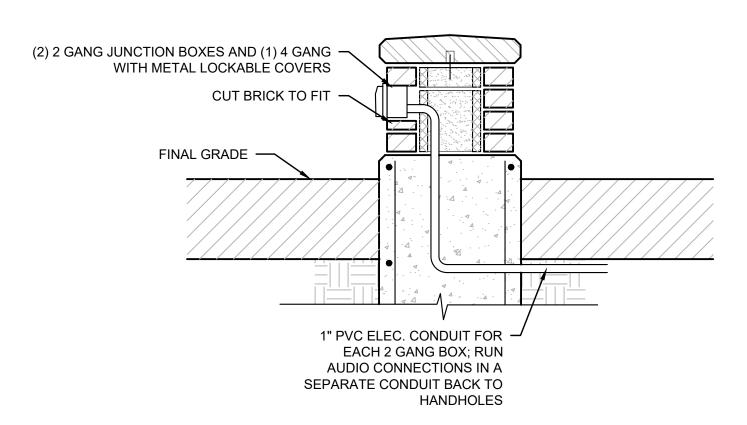
**TOWN COMMON RENOVATION ELECTRICAL DETAILS** 

NEEDHAM, MASSACHUSETTS

7185 BETA JOB NO. NOV. 4, 2021 ISSUE DATE . 15 SHEET NO.

NOT TO SCALE

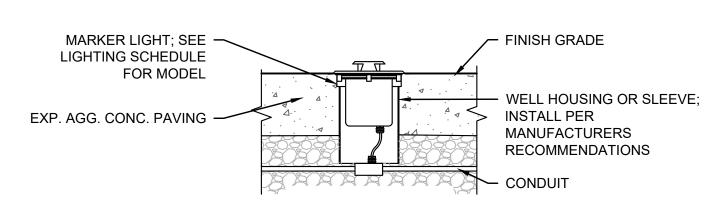




TYPICAL SECTION

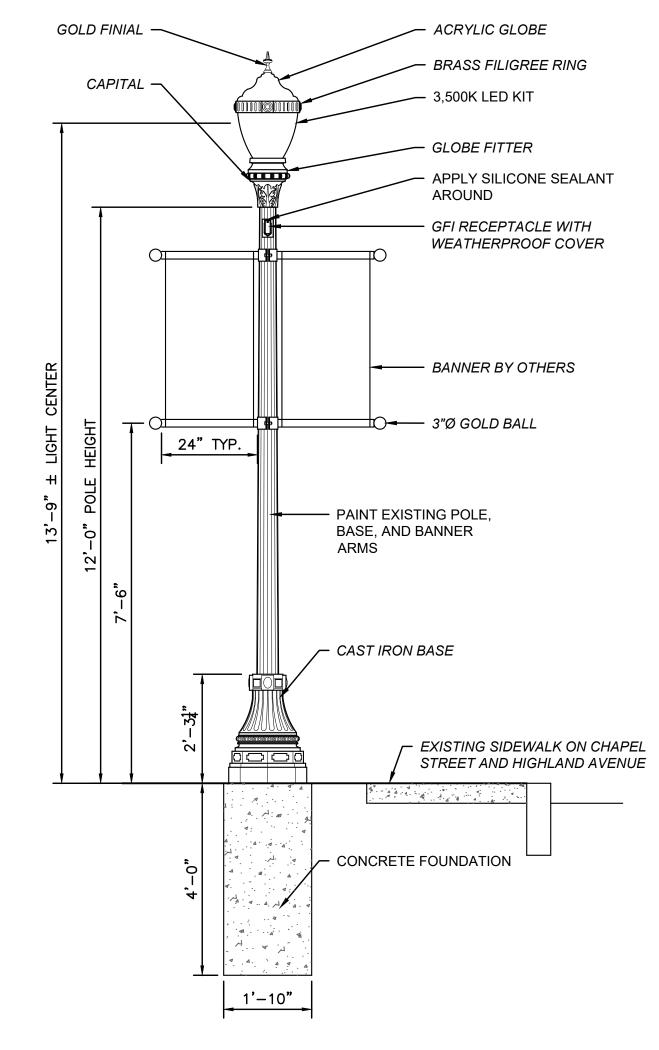
## WALL MOUNTED DRIVERS, AUDIO AND GFCI RECEPTACLES

SCALE: 1"=1'-0"

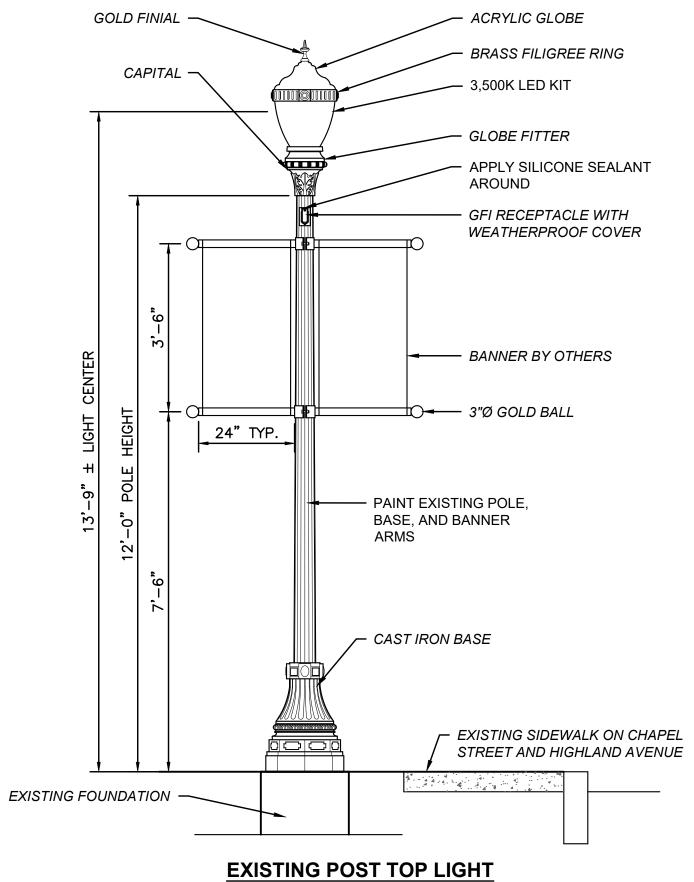


TYPICAL SECTION

## RECESSED WALKWAY LIGHT SCALE: NTS

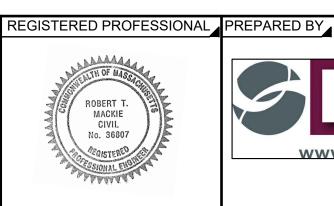


EXISTING POST TOP LIGHT ON NEW FOUNDATION SCALE:  $\frac{1}{2}$ "=1'-0"



SCALE: ½"=1'-0"

<u>.</u>		÷			-
					DRAWN BY:
					SR/NS/CC
					DESIGNED BY:
					SR/NS
					CHECKED BY:
					SR/RM
NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS	





SCALE \_\_ AS SHOWN

NLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

TOWN COMMON RENOVATION

ELECTRICAL DETAILS

NEEDHAM, MASSACHUSETTS

BETA JOB NO. 7185

ISSUE DATE NOV. 4, 2021

SHEET NO. 16

TURNBUCKLE &
THREAD (828-9600-02)

6MM 316 WIRE

LOOP SWAG WITH
THIMBLE (804-0600)

SHACKLE BOLT (835-08-1)

EYE BOLT (837-0800)

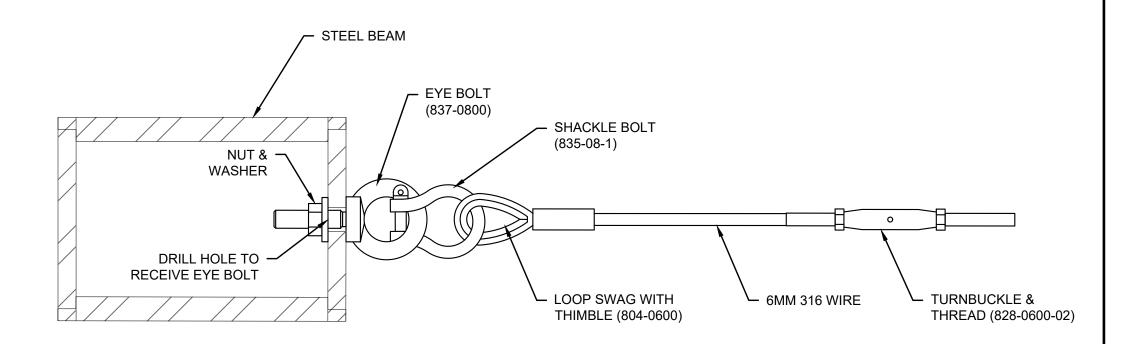
DRILL HOLE TO
RECEIVE EYE BOLT
NUT & WASHER

STEEL BEAM

SINGLE POLE MOUNT

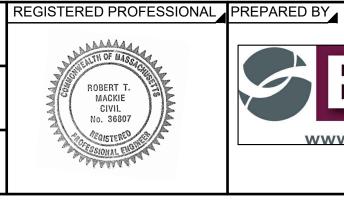
DUAL POLE MOUNT (LOCATION 1)

# MOUNTING TAB LOCATION SCALE: 3" = 1'



# CABLE MOUNTING TAB SCALE: 6" = 1'

					DRAWN BY:
					SR/NS/CC
					DECICNED BY:
					DESIGNED BY:
					SR/NS
					CHECKED BY:
					SR/RM
NUMBER	DATE	MADE BY	CHECKED BY	REVISIONS	





SCALE		
	AS SHOWN	

JNLESS OTHERWISE NOTED OR CHANGED BY REPRODUCTION

TOWN COMMON RENOVATION

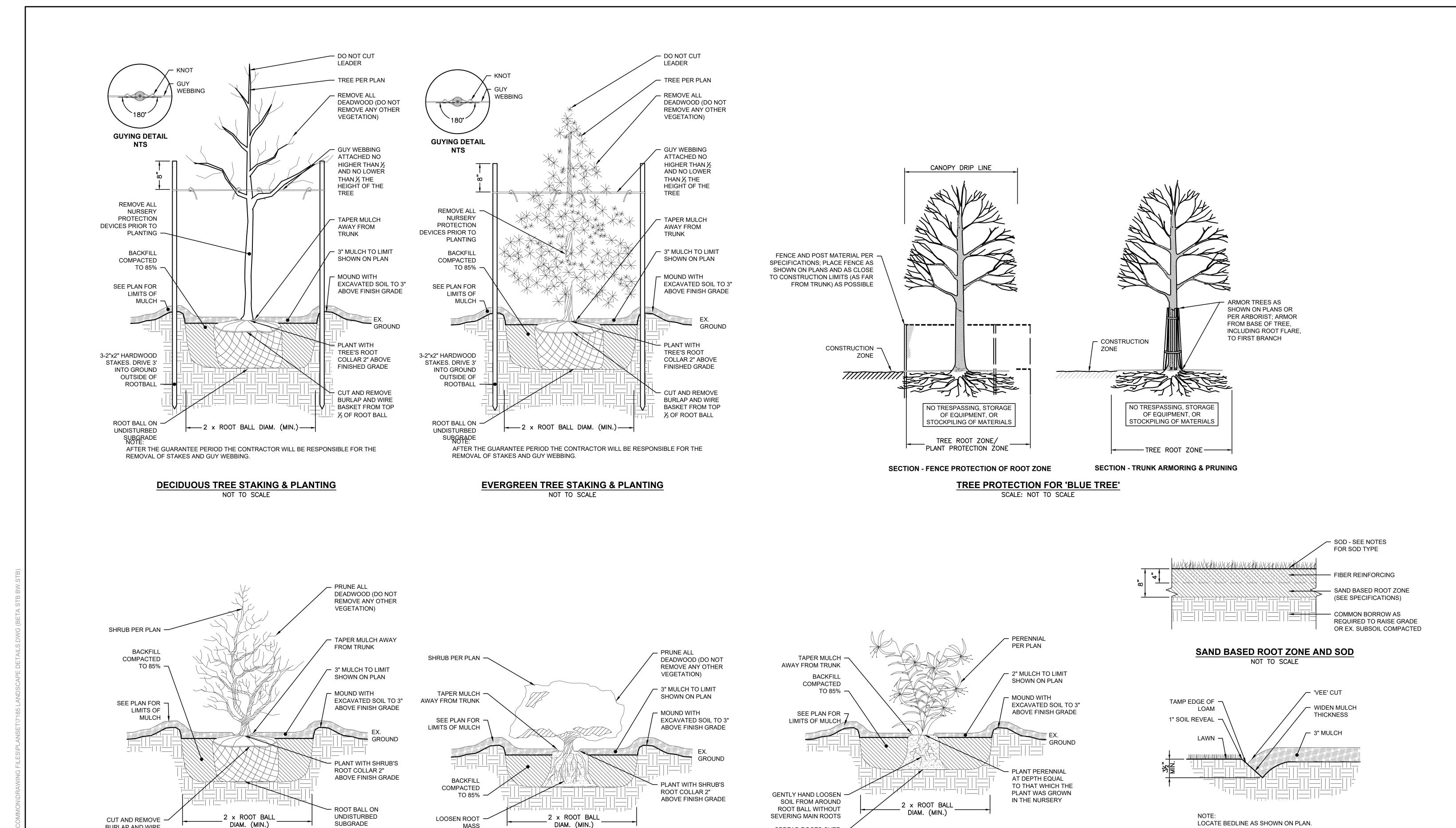
DETAILS

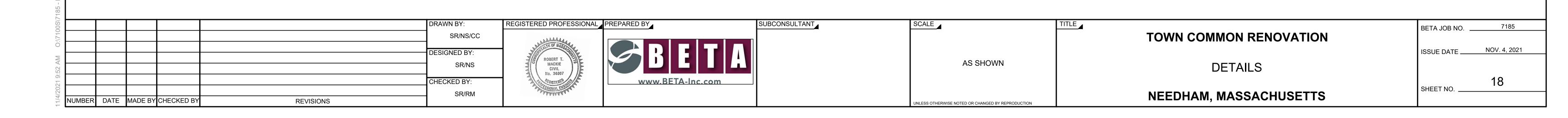
NEEDHAM, MASSACHUSETTS

BETA JOB NO. 7185

ISSUE DATE NOV. 4, 2021

SHEET NO. 17





**CONTAINER GROWN TREE & SHRUB PLANTING** 

NOT TO SCALE

SPREAD ROOTS OVER

UNDISTURBED

SUBGRADE PERENNIALS & GRASSES PLANTING

NOT TO SCALE

**BEDLINE EDGE** 

NOT TO SCALE

**BURLAP AND WIRE** 

SHRUB PLANTING

NOT TO SCALE

BASKET FROM TOP 1/3

OF ROOT BALL. FOLD UNDER, SO AS NOT TO

**EXPOSE ABOVE GRADE** 

From: John Schlittler
To: Alexandra Clee

Cc: <a href="mailto:cheep@miyares-harrington.com">cheep@miyares-harrington.com</a>

Subject: RE: Request for comment - Town Common reno
Date: Thursday, October 7, 2021 10:45:00 AM

#### Alex.

I just would like a little more clarification on parking, laydown space. It seems that Garrity Way will be used for laydown space and that traffic and parking will not be impacted? Where will construction trucks, DPW trucks etc. park while on site? The only reason I ask is we all know that parking in that area is a hot topic. Thanks, I'm sure there was some info on this before but don't recall the specifics. Thanks, other than that no issues.

From: Alexandra Clee <aclee@needhamma.gov>

Sent: Thursday, October 7, 2021 10:30 AM

**To:** David Roche <droche@needhamma.gov>; Anthony DelGaizo <ADelgaizo@needhamma.gov>; John Schlittler@needhamma.gov>; Dennis Condon <DCondon@needhamma.gov>; Tara Gurge <TGurge@needhamma.gov>; Carys Lustig <clustig@needhamma.gov>; Timothy McDonald <tmcdonald@needhamma.gov>

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Thank you, alex.

Alexandra Clee Assistant Town Planner Needham, MA www.needhamma.gov

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**Sent:** Friday, May 7, 2021 12:01 PM

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**Cc:** Lee Newman < <u>LNewman@needhamma.gov</u>>; Elisa Litchman < <u>elitchman@needhamma.gov</u>>;

Thomas Ryder < tryder@needhamma.gov >; Tara Gurge < TGurge@needhamma.gov >

Subject: RE: Request for comment - 1688 Central Avenue - revised plans

Dear all,

We have received a memo from the attorney for this project detailing the changes that were made between the original plans and the revised plans (the revised plans as sent to you by email dated April 27, 2021). I am sending it in case it assists you. We also did receive a newly revised Landscape Plan, which I have attached.

If you have already submitted updated comments (and the attached info does not change those), or do not wish to submit additional comments, totally fine. If you wish to submit any additional comments, please do so by Wed May 12 if you can.

Thanks!

Alexandra Clee Assistant Town Planner Needham, MA www.needhamma.gov

From: Alexandra Clee

**Sent:** Tuesday, April 27, 2021 9:31 AM

**To:** David Roche < <a href="mailto:droche@needhamma.gov">droche@needhamma.gov</a>; Anthony DelGaizo < <a href="mailto:ADelgaizo@needhamma.gov">ADelgaizo@needhamma.gov</a>; John Schlittler < <a href="mailto:JSchlittler@needhamma.gov">JSchlittler@needhamma.gov</a>; Dennis Condon < <a href="mailto:DCondon@needhamma.gov">DCondon@needhamma.gov</a>; Carys Lustig < <a href="mailto:clustig@needhamma.gov">clustig@needhamma.gov</a>>

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**Subject:** Request for comment - 1688 Central Avenue - revised plans

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Sent: Monday, March 22, 2021 2:50 PM

**To:** David Roche <<u>droche@needhamma.gov</u>>; Anthony DelGaizo <<u>ADelgaizo@needhamma.gov</u>>; Timothy McDonald <<u>tmcdonald@needhamma.gov</u>>; John Schlittler <<u>JSchlittler@needhamma.gov</u>>; Dennis Condon <<u>DCondon@needhamma.gov</u>>; Carys Lustig <<u>clustig@needhamma.gov</u>> **Cc:** Lee Newman <<u>LNewman@needhamma.gov</u>>; Elisa Litchman <<u>elitchman@needhamma.gov</u>>;

Thomas Ryder <<u>tryder@needhamma.gov</u>>; Tara Gurge <<u>TGurge@needhamma.gov</u>>

**Subject:** Request for comment - 1688 Central Avenue

Dear all,

The Planning Board will be hearing about a proposal for a new daycare at 1688 Central Avenue on April 6, 2021. More information is included in the submitted documents, detailed below, which can be attached to this email (with the exception of the Stormwater Report) and can also be found at this location <a href="K:\Planning Board Applications\Planning\_1688 Central Avenue\_2021">K:\Planning Board Applications\Planning\_1688 Central Avenue\_2021</a>. Some of the application documents are attached, as noted, but not all, as the files were too large to include all. (some of you will receive a hard copy in the inter-office mail as well).

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- 2. Letter from Evans Huber Attorney, dated March 11, 2021. Attached

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- 7. Traffic Impact Study, dated March, 2021. Attached
- 8. Stormwater Report, dated June 22, 2020.

I also have attached a letter from Abutters that we received today that I am sharing in case you wish to note the neighborhood concerns while you conduct your review.

The meeting where this topic will be presented to the Planning Board is April 6, 2021. If you wish to comment, please submit your comment by Wednesday March 31, 2021, so that the Petitioner has time to address any concerns or questions in advance of the hearing.

Thanks, alex.

Alexandra Clee Assistant Town Planner Town of Needham 500 Dedham Avenue Needham, MA 02492 781-455-7550 Ext 271 Needhamma.gov

From: <u>Christopher Heep</u>

To: <u>John Schlittler</u>; <u>Alexandra Clee</u>

Subject: Re: Request for comment - Town Common reno Date: Tuesday, November 16, 2021 11:48:30 AM

Hello Chief Schlittler. In response to your question, I want to confirm that Garrity Way will be used exclusively by the General Contractor during construction of the Town Common. This area will be used to lay down materials, take in deliveries, and serve as a pass through for construction vehicles that need access to the work site. DPW and contractors working on site will be required to find public parking nearby. In addition, at the conclusion of the project, Garrity Way will be repaved, the curb re-set, and the parking spaces will be restriped in their current location.

Thanks, and please let me know if I can provide any additional information. Chris

#### Christopher H. Heep

MiyaresHarrington - Local options at work

#### Miyares and Harrington LLP

40 Grove Street • Suite 190

Wellesley, MA 02482

Direct: 617.804.2422 | Main: 617.489.1600

www.miyares-harrington.com

**From:** John Schlittler < JSchlittler@needhamma.gov>

**Date:** Thursday, October 7, 2021 at 10:45 AM **To:** Alexandra Clee <aclee@needhamma.gov>

**Cc:** Christopher Heep <cheep@miyares-harrington.com> **Subject:** RE: Request for comment - Town Common reno

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Thanks, alex.

Alexandra Clee Assistant Town Planner Town of Needham 500 Dedham Avenue Needham, MA 02492 781-455-7550 Ext 271 Needhamma.gov From: **Dennis Condon** To: Alexandra Clee

Subject: RE: Request for comment - Town Common reno

Date: Friday, October 8, 2021 10:20:46 AM

Attachments: image001.png

image002.png

Hi Alex.

The Fire Department has no issues with these changes.

Thanks. Dennis

Dennis Condon Chief of Department Needham Fire Department Town of Needham (W) 781-455-7580 (C) 508-813-5107

Dcondon@needhamma.gov



Follow on Twitter: Chief Condon@NeedhamFire



#### Watch Needham Fire Related Videos on YouTube @ Chief Condon



From: Alexandra Clee <aclee@needhamma.gov>

Sent: Thursday, October 7, 2021 10:30 AM

To: David Roche <droche@needhamma.gov>; Anthony DelGaizo <ADelgaizo@needhamma.gov>; John Schlittler <JSchlittler@needhamma.gov>; Dennis Condon <DCondon@needhamma.gov>; Tara Gurge <TGurge@needhamma.gov>; Carys Lustig <clustig@needhamma.gov>; Timothy McDonald <tmcdonald@needhamma.gov>

Cc: Lee Newman <LNewman@needhamma.gov>; Elisa Litchman <elitchman@needhamma.gov>; Thomas Ryder <tryder@needhamma.gov>

Subject: Request for comment - Town Common reno

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Thank you, alex.

Alexandra Clee Assistant Town Planner Needham, MA www.needhamma.gov

From: Alexandra Clee

**Sent:** Friday, May 7, 2021 12:01 PM

**To:** David Roche < <a href="mailto:droche@needhamma.gov">droche@needhamma.gov</a>; Anthony DelGaizo < <a href="mailto:ADelgaizo@needhamma.gov">ADelgaizo@needhamma.gov</a>; Timothy McDonald < <a href="mailto:tmcdonald@needhamma.gov">tmcdonald@needhamma.gov</a>; John Schlittler < <a href="mailto:JSchlittler@needhamma.gov">JSchlittler@needhamma.gov</a>; Dennis Condon@needhamma.gov</a>; Carys Lustig < <a href="mailto:clustig@needhamma.gov">clustig@needhamma.gov</a>>

**Cc:** Lee Newman < LNewman@needhamma.gov>; Elisa Litchman < elitchman@needhamma.gov>; Thomas Ryder < tryder@needhamma.gov>

**Subject:** RE: Request for comment - 1688 Central Avenue - revised plans

Dear all,

We have received a memo from the attorney for this project detailing the changes that were made between the original plans and the revised plans (the revised plans as sent to you by email dated April 27, 2021). I am sending it in case it assists you. We also did receive a newly revised Landscape

Plan, which I have attached.

If you have already submitted updated comments (and the attached info does not change those), or do not wish to submit additional comments, totally fine. If you wish to submit any additional comments, please do so by Wed May 12 if you can.

Thanks!

Alexandra Clee Assistant Town Planner Needham, MA www.needhamma.gov

From: Alexandra Clee

**Sent:** Tuesday, April 27, 2021 9:31 AM

**To:** David Roche <<u>droche@needhamma.gov</u>>; Anthony DelGaizo <<u>ADelgaizo@needhamma.gov</u>>; Timothy McDonald <<u>tmcdonald@needhamma.gov</u>>; John Schlittler<u>@needhamma.gov</u>>; Dennis Condon <<u>DCondon@needhamma.gov</u>>; Carys Lustig <<u>clustig@needhamma.gov</u>>

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**Sent:** Monday, March 22, 2021 2:50 PM

**To:** David Roche < <a href="mailto:droche@needhamma.gov">droche@needhamma.gov</a>; Anthony DelGaizo < <a href="mailto:ADelgaizo@needhamma.gov">ADelgaizo@needhamma.gov</a>; John Schlittler < <a href="mailto:JSchlittler@needhamma.gov">JSchlittler@needhamma.gov</a>; Dennis Condon < <a href="mailto:DCondon@needhamma.gov">DCondon@needhamma.gov</a>; Carys Lustig < <a href="mailto:clustig@needhamma.gov">clustig@needhamma.gov</a>>

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**Subject:** Request for comment - 1688 Central Avenue

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Thanks, alex.

Alexandra Clee Assistant Town Planner Town of Needham 500 Dedham Avenue Needham, MA 02492 781-455-7550 Ext 271 Needhamma.gov From: Tara Gurge
To: Alexandra Clee
Cc: Lee Newman

Subject: RE: Public Health Division reply to your Request for comment - Town Common reno

**Date:** Tuesday, October 26, 2021 2:03:37 PM

Attachments: <u>image002.png</u>

image003.png

Alex –

The Public Health Division conducted a review of the Planning Board Major Project site plans for the proposed renovations to be conducted at the Needham Town Common. We have no comments on this proposed project at this time.

Thanks,

TARA E. GURGE, R.S., C.E.H.T., M.S. (she/her/hers)

ASSISTANT PUBLIC HEALTH DIRECTOR

**Needham Public Health Division** 

Health and Human Services Department

178 Rosemary Street Needham, MA 02494

Ph- (781) 455-7940; Ext. 211/Fax- (781) 455-7922

Mobile- (781) 883-0127

Email - tgurge@needhamma.gov Web- www.needhamma.gov/health



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Follow Needham Public Health on Twitter!

From: Alexandra Clee <aclee@needhamma.gov>

Sent: Tuesday, October 26, 2021 1:18 PM

**To:** Anthony DelGaizo <ADelgaizo@needhamma.gov>; Thomas Ryder <tryder@needhamma.gov>;

Tara Gurge < TGurge@needhamma.gov>

Cc: Lee Newman < LNewman@needhamma.gov>

**Subject:** FW: Request for comment - Town Common reno

Reminder re: comments on this project; I will be sending out packets tomorrow afternoon.

#### Thanks!

Alexandra Clee Assistant Town Planner Needham, MA 781-455-7550 ext. 271 www.needhamma.gov

From: Alexandra Clee

Sent: Thursday, October 7, 2021 10:30 AM

**To:** David Roche <<u>droche@needhamma.gov</u>>; Anthony DelGaizo <<u>ADelgaizo@needhamma.gov</u>>; John Schlittler <<u>JSchlittler@needhamma.gov</u>>; Dennis Condon <<u>DCondon@needhamma.gov</u>>; Tara Gurge <<u>TGurge@needhamma.gov</u>>; Carys Lustig <<u>clustig@needhamma.gov</u>>; Timothy McDonald <<u>tmcdonald@needhamma.gov</u>>

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Alexandra Clee Assistant Town Planner Town of Needham 500 Dedham Avenue Needham, MA 02492 781-455-7550 Ext 271 Needhamma.gov



# TOWN OF NEEDHAM, MASSACHUSETTS PUBLIC WORKS DEPARTMENT 500 Dedham Avenue, Needham, MA 02492 Telephone (781) 455-7550 FAX (781) 449-9023

November 9, 2021

Needham Planning Board Needham Public Service Administration Building Needham, MA 02492

RE: Town Common Renovations Amendment to Major Project Special Permit No. 2009-06 1471 Highland Avenue-Town Common

Dear Members of the Board,

The Department of Public Works has completed its review of the above referenced request to amendment to a Special Permit. The submitted documents include improvements to the town common along the town hall including reshaping the walkways and providing landscape and hard scape features.

The review was conducted in accordance with the Planning Board's regulations and standard engineering practice. The documents submitted for review are as follows:

- 1. Application for the Amendment to 2009-06 to allow the renovation of the Town Common, dated October 5, 2021.
- 2. Memorandum from Attorney Christopher Heep, dated September 30, 2021 and November 5, 2021.
- 3. Plan set entitled "Town of Needham, Massachusetts, Department of Public Works, Needham Town Common Renovation, August 2021" prepared by BETA-inc., consisting of 16 sheets: Sheet 1, Cover Sheet, dated November 4, 2021; Sheet 2, entitled "General notes," dated November 4, 2021; Sheet 3, entitled "Existing Conditions & Site Preparation Plan," dated November 4, 2021; Sheet 4, entitled "Layout and Materials Plan," dated November 4, 2021; Sheet 5, entitled "Grading and Drainage Plan," dated November 4, 2021; Sheet 6, entitled "Electrical Plan," dated November 4, 2021; Sheet 7, entitled "Irrigation Layout Plan," dated August, 2021; Sheet 8, entitled "Irrigation Details," dated August, 2021; Sheet 9, entitled "Planting Plan," dated November 4, 2021; Sheet 10, entitled "Details," dated November 4, 2021; Sheet 11, entitled "Details," dated November 4, 2021; Sheet 12, entitled "Details," dated November 4, 2021; Sheet 13, entitled "Electrical Details," dated November 4, 2021; Sheet 15, entitled "Electrical Details," dated November 4, 2021; Sheet 15, entitled "Electrical Details," November 4, 2021; Sheet 17, entitled "Details," dated November 4, 2021; Sheet 18, entitled "De

Our comments and recommendations are as follows:

• We have no comment or objection to the proposed plans

If you have any questions regarding the above, please contact our office at 781-455-7538.

Truly yours,

Thomas Ryder Assistant Town Engineer From: Michael Ruddy
To: Planning
Cc: Selectboard

Subject: Comments on the Needham Town Common Renovation

Date: Saturday, November 13, 2021 9:44:23 PM

Dear Ms. Newman and Members of the Planning Board,

I have four concerns regarding the proposed amendment to Major Project Site Plan Special Permit No. 2009-06, Improvements to the Needham Town Common.

- 1) The elimination of the 50-year-old diagonal paths across the common, especially the one from Harvey's to Walgreens, is problematic for pedestrians. People with disabilities will have to travel farther to get from point a to point b, and the non-disabled are just going to wear a desire path into the ellipse anyway [https://en.wikipedia.org/wiki/Desire\_path]. A greater effort should be made to preserve the path, perhaps with an ADA-compliant material other than asphalt that would be complementary to the lawn.
- 2) My family is an avid user of the 8 porch swings that were installed in the Rose Kennedy Greenway near its intersection with Hanover Street in the North End in 2015. On days with nice weather, vacancies on the swings are rare. Obviously the Needham Common has only a very small fraction of the patronage that the Greenway has, but nevertheless I believe that if there are only two swings, they will often be unavailable to users who might want to sit on them. Given the incremental costs relative to the project budget, would it be possible to please consider having four porch swings instead of two.
- 3) The Circle of Peace statue contains explicit religious symbolism (a "Choose the Right" ring from the Church of Jesus Christ of Latter-day Saints on one of the children) which is inappropriate for town property and removal of the symbol should be considered during the statue's relocation.
- 4) The proposed removal of six of the few remaining mature trees in the downtown area is unnecessary and should be avoided for obvious environmental and aesthetic reasons.

Sincerely, Michael Ruddy 69 Melrose Ave. Needham

#### **Exhibits received for 1688 Central Avenue**

All testimony received between March 1, 2021 and November 16, 2021

#### Applicant submittals. Application, Memos, Plans, Traffic Studies, Drainage. Etc.

- 1. Properly executed Application for Site Plan Review for: (1) A Major Project Site Plan under Section 7.4 of the Needham By-Law, dated May 20, 2021.
- 2. Letter from Matt Borrelli, Manager, Needham Enterprises, LLC, dated March 16, 2021.
- 3. Letter from Attorney Evans Huber, dated March 11, 2021.
- 4. Letter from Attorney Evans Huber, dated March 12, 2021.
- 5. Letter from Attorney Evans Huber, dated March 16, 2021.
- 6. Architectural plans entitled "Needham Enterprises, Daycare Center, 1688 central Avenue," prepared by Mark Gluesing Architect, 48 Mackintosh Avenue, Needham, MA, consisting of 4 sheets: Sheet 1, Sheet A1-0, entitled "1st Floor Plan, dated Mach 8, 2021; Sheet 2, Sheet A1-1, entitled "Roof Plan," dated March 8, 2021; Sheet 3, Sheet A2-1 showing "Longitudinal Section," "Nursery/Staff Room Section," "Toddler 1/ Craft Section at Dormer," and "Playspace/Lobby Section," dated March 8, 2021; and Sheet 4, Sheet A3-0, showing "North Elevation," "West Elevation," "East Elevation," and "South Elevation," dated March 8, 2021.
- 7. Plans entitled "Site Development Plans, Daycare, 1688 Central Avenue, Needham, MA," consisting of 10 sheets, prepared by Glossa Engineering, Inc., 46 East Street, East Walpole, MA, 02032, Sheet 1, Cover Sheet, dated June 22, 2020; Sheet 2, entitled "Existing Conditions Plan of Land in Needham, MA," dated June 22, 2020; Sheet 3, entitled "Site Plan," dated June 22, 2020; Sheet 4, entitled "Grading and Utilities Plan of Land," dated June 22, 2020; Sheet 5, entitled "Landscaping Plan," dated June 22, 2020; Sheet 6, entitled "Construction Details," dated June 22, 2020; Sheet 7, entitled "Construction Details," dated June 22, 2020; Sheet 8, entitled "Sewer Extension Plan and Profile," dated November 19, 2020; Sheet 9, entitled "Construction Period Plan," dated June 22, 2020; Sheet 10, entitled "Appendix, Photometric and Site Lighting," dated June 22, 2021, all plans stamped January 21, 2021.
- 8. Traffic Impact Assessment, prepared by Gillon Associates, Traffic and Parking Specialists, dated March 2021.
- 9. Stormwater Report prepared by Glossa Engineering, Inc., 46 East Street, East Walpole, MA, 02032, dated June 22, 2020, stamped January 26, 2021.
- 10. Traffic Impact Assessment, prepared by Gillon Associates, Traffic and Parking Specialists, revised March 2021.
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- 13. Letter from Attorney Evans Huber, dated April 21, 2021.
- 14. Memorandum from Attorney Evans Huber, dated May 5, 2021.
- 15. Plans entitled "Site Development Plans, Daycare, 1688 Central Avenue, Needham, MA," consisting of 9 sheets, prepared by Glossa Engineering, Inc., 46 East Street, East Walpole, MA, 02032, Sheet 1, Cover Sheet, dated June 22, 2020, revised April 15, 2021 and June 2, 2021; Sheet 2, entitled "Existing Conditions Plan of Land in Needham, MA," dated June 22, 2020, revised April 15, 2021 and June 2, 2021; Sheet 3, entitled "Site Plan," dated June 22, 2020, revised April 15, 2021 and June 2, 2021; Sheet 4, entitled "Grading and Utilities Plan of Land," dated June 22, 2020, revised April 15, 2021 and June 2, 2021; Sheet 5, entitled "Landscaping Plan," dated June 22, 2020, revised April 15, 2021 and June 2, 2021; Sheet 6, entitled "Construction Details," dated June 22, 2020, revised April 15, 2021 and June 2, 2021; Sheet 7, entitled "Construction Details," dated June 22, 2020, revised April 15, 2021 and June 2, 2021; Sheet 8, entitled "Sewer Extension Plan and Profile," dated November 19, 2020, revised April 15, 2021 and June 2, 2021; Sheet 9, entitled "Construction Period Plan," dated June 22, 2020, revised April 15, 2021 and June 2, 2021, all plans stamped June 2, 2021.
- 16. Architectural plans entitled "Needham Enterprises, Daycare Canter, 1688 central Avenue," prepared by Mark Gluesing Architect, 48 Mackintosh Avenue, Needham, MA, consisting of 2 sheets: Sheet 1, Sheet A1-0, entitled "1st Floor Plan, dated March 8, 2021, revised March 30, 2021 and May 30, 2021; Sheet 2, Sheet A3-0, showing "North Elevation," "West Elevation," "East Elevation," and "South Elevation," dated March 8, 2021, revised March 30, 2021 and May 30, 2021.
- 17. Traffic Impact Assessment, prepared by Gillon Associates, Traffic and Parking Specialists, revised June 2021.
- 18. Letter from Attorney Evans Huber, dated June 14, 2021.
- 19. Presentation shown at the July 20, 2021 hearing.
- 20. Memorandum from Attorney Evans Huber, dated August 4, 2021.
- 21. Plans entitled "Site Development Plans, Daycare, 1688 Central Avenue, Needham, MA," consisting of 9 sheets, prepared by Glossa Engineering, Inc., 46 East Street, East Walpole, MA,

- 02032, Sheet 1, Cover Sheet, dated June 22, 2020, revised April 15, 2021, June 2, 2021 and July 28, 2021; Sheet 2, entitled "Existing Conditions Plan of Land in Needham, MA," dated June 22, 2020, revised April 15, 2021, June 2, 2021 and July 28, 2021; Sheet 3, entitled "Site Plan," dated June 22, 2020, revised April 15, 2021, June 2, 2021 and July 28, 2021; Sheet 4, entitled "Grading and Utilities Plan of Land," dated June 22, 2020, revised April 15, 2021, June 2, 2021 and July 28, 2021; Sheet 5, entitled "Construction Details," dated June 22, 2020, revised April 15, 2021 and June 2, 2021; Sheet 6, entitled "Construction Details," dated June 22, 2020, revised April 15, 2021, June 2, 2021 and July 28, 2021; Sheet 7, entitled "Sewer Extension Plan and Profile," dated November 19, 2020, revised April 15, 2021, June 2, 2021 and July 28, 2021; Sheet 8, entitled "Construction Period Plan," dated June 22, 2020, revised April 15, 2021, June 2, 2021 and July 28, 2021; Sheet 9, entitled "Landscaping Plan," dated June 22, 2020, revised April 15, 2021, June 2, 2021 and July 28, 2021, all plans stamped July 28, 2021.
- 22. Traffic Impact Assessment, prepared by Gillon Associates, Traffic and Parking Specialists, dated August 11, 2021.
- 23. Technical Memorandum, from John Gillon, prepared by Gillon Associates, Traffic and Parking Specialists, dated September 2, 2021.
- 24. Letter from Attorney Evans Huber, dated September 30, 2021.
- 25. Plans entitled "Site Development Plans, Daycare, 1688 Central Avenue, Needham, MA," consisting of 9 sheets, prepared by Glossa Engineering, Inc., 46 East Street, East Walpole, MA, 02032, Sheet 1, Cover Sheet, dated June 22, 2020, revised April 15, 2021, June 2, 2021, July 28, 2021 and September 28, 2021; Sheet 2, entitled "Existing Conditions Plan of Land in Needham, MA," dated June 22, 2020, revised April 15, 2021, June 2, 2021, July 28, 2021 and September 28, 2021; Sheet 3, entitled "Site Plan," dated June 22, 2020, revised April 15, 2021, June 2, 2021, July 28, 2021 and September 28, 2021; Sheet 4, entitled "Grading and Utilities Plan of Land," dated June 22, 2020, revised April 15, 2021, June 2, 2021, July 28, 2021 and September 28, 2021; Sheet 5, entitled "Construction Details," dated June 22, 2020, revised April 15, 2021, June 2, 2021, July 28, 2021 and September 28, 2021; Sheet 6, entitled "Construction Details," dated June 22, 2020, revised April 15, 2021, June 2, 2021, July 28, 2021 and September 28, 2021; Sheet 7, entitled "Sewer Extension Plan and Profile," dated November 19, 2020, revised April 15, 2021, June 2, 2021, July 28, 2021 and September 28, 2021; Sheet 8, entitled "Construction Period Plan," dated June 22, 2020, revised April 15, 2021, June 2, 2021, July 28, 2021 and September 28, 2021; Sheet 9, entitled "Landscaping Plan," dated June 22, 2020, revised April 15, 2021, June 2, 2021, July 28, 2021 and September 28, 2021, all plans stamped September 29, 2021.
- 26. Plan entitled "Appendix, Photometric and Site Lighting Plan, 1688 Central Ave in Needham," dated June 22, 2020, revised April 15, 2021, June 2, 2021, July 28, 2021 and September 28, 2021.
- 27. Memorandum from Attorney Evans Huber, dated October 13, 2021.
- 28. Email from Evans Huber, dated October 14, 2021 with two attachments: Vehicle Count for September 2019 and Vehicle Count for February 2020.
- 29. Memorandum from Attorney Evans Huber, dated October 28, 2021.
- 30. Plans entitled "Site Development Plans, Daycare, 1688 Central Avenue, Needham, MA," consisting of 9 sheets, prepared by Glossa Engineering, Inc., 46 East Street, East Walpole, MA,

02032, Sheet 1, Cover Sheet, dated June 22, 2020, revised April 15, 2021, June 2, 2021, July 28, 2021, September 28, 2021 and October 28, 2021; Sheet 2, entitled "Existing Conditions Plan of Land in Needham, MA," dated June 22, 2020, revised April 15, 2021, June 2, 2021, July 28, September 28, 2021 and October 28, 2021; Sheet 3, entitled "Site Plan," dated June 22, 2020, revised April 15, 2021, June 2, 2021, July 28, 2021, September 28, 2021 and October 28, 2021; Sheet 4, entitled "Grading and Utilities Plan of Land," dated June 22, 2020, revised April 15, 2021, June 2, 2021, July 28, 2021, September 28, 2021 and October 28, 2021; Sheet 5, entitled "Construction Details," dated June 22, 2020, revised April 15, 2021, June 2, 2021, July 28, 2021, September 28, 2021 and October 28, 2021; Sheet 6, entitled "Construction Details," dated June 22, 2020, revised April 15, 2021, June 2, 2021, July 28, 2021, September 28, 2021 and October 28, 2021; Sheet 7, entitled "Sewer Extension Plan and Profile," dated November 19, 2020, revised April 15, 2021, June 2, 2021, July 28, 2021, September 28, 2021 and October 28, 2021; Sheet 8, entitled "Construction Period Plan," dated June 22, 2020, revised April 15, 2021, June 2, 2021, July 28, 2021, September 28, 2021 and October 28, 2021; Sheet 9, entitled "Landscaping Plan," dated June 22, 2020, revised April 15, 2021, June 2, 2021, July 28, 2021, September 28, 2021 and October 28, 2021, all plans stamped October 28, 2021.

- 31. Plan entitled "Appendix, Photometric and Site Lighting Plan, 1688 Central Ave in Needham," dated June 22, 2020, revised April 15, 2021, June 2, 2021, July 28, 2021, September 28, 2021 and October 28, 2021.
- 32. Technical Memorandum, from John Gillon, prepared by Gillon Associates, Traffic and Parking Specialists, dated October 27, 2021.
- 33. Email from Evans Huber, dated November 8, 2021, regarding "1688 Central Ave request for additional peer review fees."
- 34. Memorandum from Attorney Evans Huber, dated November 10, 2021.
- 35. Plans entitled "Site Development Plans, Daycare, 1688 Central Avenue, Needham, MA," consisting of 9 sheets, prepared by Glossa Engineering, Inc., 46 East Street, East Walpole, MA, 02032, Sheet 1, Cover Sheet, dated June 22, 2020, revised April 15, 2021, June 2, 2021, July 28, 2021, September 28, 2021, October 28, 2021 and November 8, 2021; Sheet 2, entitled "Existing Conditions Plan of Land in Needham, MA," dated June 22, 2020, revised April 15, 2021, June 2, 2021, July 28, , September 28, 2021, October 28, 2021 and November 8, 2021; Sheet 3, entitled "Site Plan," dated June 22, 2020, revised April 15, 2021, June 2, 2021, July 28, 2021, September 28, 2021, October 28, 2021 and November 8, 2021; Sheet 4, entitled "Grading and Utilities Plan of Land," dated June 22, 2020, revised April 15, 2021, June 2, 2021, July 28, 2021, September 28, 2021, October 28, 2021 and November 8, 2021; Sheet 5, entitled "Landscaping Plan," dated June 22, 2020, revised April 15, 2021, June 2, 2021, July 28, 2021, September 28, 2021, October 28, 2021 and November 8, 2021; Sheet 6, entitled "Construction Details," dated June 22, 2020, revised April 15, 2021, June 2, 2021, July 28, 2021, September 28, 2021, October 28, 2021 and November 8, 2021; Sheet 7, entitled "Construction Details," dated June 22, 2020, revised April 15, 2021, June 2, 2021, July 28, 2021, September 28, 2021, October 28, 2021 and November 8, 2021; Sheet 8, entitled "Sewer Extension Plan and Profile," dated November 19, 2020, revised April 15, 2021, June 2, 2021, July 28, 2021, September 28, 2021, October 28, 2021 and November 8, 2021; Sheet 9, entitled "Construction Period Plan," dated June 22, 2020, revised April 15, 2021, June 2, 2021, July 28, 2021, September 28, 2021, October 28, 2021 and November 8, 2021; Sheet 10, entitled "Appendix, Photometric and Site Lighting Plan, 1688 Central Ave in Needham," dated June 22,

- 2020, revised April 15, 2021, June 2, 2021, July 28, 2021, September 28, 2021, October 28, 2021 and November 8, 2021, all plans stamped November 8, 2021.
- 36. Plan entitled "1688 Central Turning Radius," consisting of 3 sheets, prepared by Glossa Engineering, Inc., 46 East Street, East Walpole, MA, 02032: sheet 1, showing "20' Delivery Van," dated October 6, 2021; Sheet 2, showing "30' Trash Truck," dated October 6, 2021; sheet 3, showing "30' Trash Truck," dated October 6, 2021.
- 37. Email from Evans Huber, dated November 11, 2021, regarding "Traffic Peer Review: 1688 Central Avenue."

#### **Peer Review on Traffic**

- 38. Letter from John W. Diaz, Greenman-Pedersen, Inc., dated July 15, 2021, regarding traffic impact peer review.
- 39. Memo prepared by John T. Gillon, Gillon Associates, Traffic and Parking Specialists, dated August 21, 2021, transmitting Response to Greenman-Pedersen, Inc. peer review.
- 40. Letter from John W. Diaz, Greenman-Pedersen, Inc., dated August 26, 2021, regarding traffic impact peer review.
- 41. Letter from John W. Diaz, Greenman-Pedersen, Inc., dated October 18, 2021, regarding traffic impact peer review.
- 42. Email thread between John Glossa and John Diaz, most recent email dated October 28, 2021.
- 43. Letter from John W. Diaz, Greenman-Pedersen, Inc., dated November 1, 2021, regarding traffic impact peer review, with accompanying marked up site plans from October 28, 2021.
- 44. Email from John Diaz, dated November 16, 2021.
- 45. Letter from John W. Diaz, Greenman-Pedersen, Inc., dated November 16, 2021, regarding traffic impact peer review.

#### **Staff/Board Comments.**

- 46. Memorandum from the Design Review Board, dated March 22, 2021.
- 47. Memorandum from the Design Review Board, dated May 14, 2021.
- 48. Memorandum from the Design Review Board, dated August 13, 2021.
- 49. Interdepartmental Communication (IDC) to the Board from Tara Gurge, Health Department, dated March 24, 2021, April 27, 2021, August 9, 2021 and August 16, 2021 (with attachment "Environmental Risk Management Review," prepared by PVC Services, LLC dated March 17, 2021)

- 50. IDC to the Board from David Roche, Building Commissioner, dated March 22, 2021.
- 51. IDC to the Board from Chief Dennis Condon, Fire Department, dated March 29, 2021, April 27, 2021 and August 9, 2021
- 52. IDC to the Board from Chief John J. Schlittler, Police Department, dated May 6, 2021.
- 53. IDC to the Board from Thomas Ryder, Assistant Town Engineer, dated March 31, 2021, May 12, 2021, August 12, 2021, September 3, 2021 and November 16, 2021.

### **Abutter Comments.**

- 54. Neighborhood Petition Regarding Development of 1688 Central Avenue in Needham, submitted by email from Holly Clarke, dated March 22, 2021, with excel spreadsheet of signatories.
- 55. Email from Robert J. Onofrey, 49 Pine Street, Needham, MA, dated March 26, 2021.
- 56. Email from Norman MacLeod, Pine Street, dated March 31, 2021.
- 57. Letter from Holly Clarke, 1652 Central Avenue, Needham, MA, dated April 3, 2021, transmitting "Comments of Neighbors of 1688 Central Avenue for Consideration During the Planning Board's Site Review Process for that Location," with 3 attachments.
- 58. Email from Meredith Fried, dated Sunday April 4, 2021.
- 59. Letter from Michaela A. Fanning, 853 Great Plain Avenue, Needham, MA, dated April 5, 2021.
- 60. Email from Maggie Abruzese, dated April 5, 2021.
- 61. Letter from Sharon Cohen Gold and Evan Gold, dated April 5, 2021.
- 62. Email from Matthew Heidman, dated May 10, 2021.
- 63. Email from Matthew Heidman, dated May 11, 2021 with attachment Letter directed to members of the Design Review Board, from Members of the Neighborhood of 1688 Central Avenue, undated.
- 64. Email from Rob DiMase, sated May 12, 2021.
- 65. Email from Eileen Sullivan, dated May 12, 2021.
- 66. Two emails from Eric Sockol, dated May 11 and May 12.
- 67. Email from Rob DiMase, sated May 13, 2021.
- 68. Email from Sally McKechnie, dated May 13, 2021.
- 69. Letter from Holly Clarke, dated May 13, 2021, transmitting "Response of Abutters and Neighbors of 1688 Central Avenue Project to the Proponent's Letter of April 16, 2021," with Attachment 1.

- 70. Email from Joseph and Margaret Abruzese dated May 17, 2021 transmitting the following:
  - Letter from Joseph and Margaret Abruzese, titled "Objection to Any Purported Agreement to Waive Major Project Review and/or Special Permit requirements with Regard to Proposed Construction at 1688 Central Avenue," undated.
- 71. Letter directed to Kate Fitzpatrick, Town Manager, from Joseph and Margaret Abruzese, dated April 5, 2021.
- 72. Email from Lee Newman, Director of Planning and Community Development, dated May 17, 2021, replying to email from Sharon Cohen Gold, dated May 15, 2021.
- 73. Email from Meredith Fried, dated May 18, 2021.
- 74. Email from Lori Shaer, Bridle Trail Road, dated May 18, 2021.
- 75. Email from Sandra Jordan, 219 Stratford Road, dated May 18, 2021.
- 76. Email from Khristy J. Thompson, 50 Windsor Road, dated May 18, 2021.
- 77. Email from Henry Ragin, dated May 18, 2021.
- 78. Email from David G. Lazarus, 115 Oxbow Road, dated May 18, 2021.
- 79. Email from John McCusker, 248 Charles River Street, dated May 18, 2021.
- 80. Email from Laurie and Steve Spitz, dated May 18, 2021.
- 81. Email from Randy Hammer, dated May 18, 2021.
- 82. Letter from Holly Clarke, dated May 24, 2021, transmitting comments concerning the Planning Board meeting of May 18, 2021.
- 83. Email from Robert Onofrey, 49 Pine Street, dated May 25, 2021, with attachment (and follow up email May 26, 2021).
- 84. Email from Maggie and Joe Abruzese, 30 Bridle Trail Road, dated June 8, 2021, transmitting document entitled "Needham Enterprise, LLC Application for Major Site Review Must be Rejected Because the Supporting Architectural Drawings are Filed in Violation of the State Ethics Code," with Exhibit A.
- 85. Email from Barbara Turk, 312 Country Way, dated April 3, 2021, forwarded from Holly Clarke on June 14, 2021.
- 86. Email from Patricia Falacao, 19 Pine Street, dated April 4, 2021, forwarded from Holly Clarke on June 14, 2021.
- 87. Email from Leon Shaigorodsky, Bridle Trail Road, dated April 4, 2021, forwarded from Holly Clarke on June 14, 2021.

- 88. Letter from Peter F. Durning, Mackie, Shae, Durning, Counselors at Law, dated June 11, 2021.
- 89. Revised list of signatories to earlier submitted petition, received on June 11, 2021.
- 90. Email from Maggie and Joe Abruzese, 30 Bridle Trail Road, dated June 11, 2021.
- 91. Email from Karen and Alan Langsner, Windsor Road, dated June 13, 2021.
- 92. Email from Stanley Keller, 325 Country Way, dated June 13, 2021. Email from Sean and Marina Morris, 48 Scott Road, dated June 14, 2021.
- 93. Letter from Holly Clarke, dated June 14, 2021, transmitting "Comments of Neighbors of 1688 Central Avenue for Consideration During the Planning Board's Site Review Process for that Location Concerning the Traffic Impact Assessment Reports."
- 94. Email from Pete Lyons, 1689 Central Avenue, dated June 14, 2021.
- 95. Email from Maggie and Joe Abruzese, 30 Bridle Trail Road, dated June 14, 2021.
- 96. Email from Ian Michelow, Charles River Street, dated June 13, 2021.
- 97. Email from Nikki and Greg Cavanagh, dated June 14, 2021.
- 98. Email from Patricia Falacao, 19 Pine Street, dated June 14, 2021.
- 99. Email from Maggie and Joe Abruzese, 30 Bridle Trail Road, dated July 6, 2021.
- 100. Email from David Lazarus, Oxbow Road, dated July 12, 2021.
- 101. Email from Maggie Abruzese, dated July 12, 2021.
- 102. Letter directed to Marianne Cooley, Select Board, and Attorney Christopher Heep, from Maggie and Joe Abruzese, 30 Bridle Trail Road, dated July 12, 2021.
- 103. Email from Barbara and Peter Hauschka, 105 Walker Lane, dated July 13, 2021.
- 104. Email from Rob DiMase, dated July 14, 2021.
- 105. Email from Lee Newman, Director of Planning and Community Development, dated July 14, 2021, replying to email from Maggie Abruzese, dated July 14, 2021.
- 106. Email from Leon Shaigorodsky, dated July 17, 2021.
- 107. Letter directed to Members of the Planning Board, from Maggie and Joe Abruzese, 30 Bridle Trail Road, dated July 28, 2021, regarding "Suspending Hearings Pending a Resolution of the Ethics Questions."
- 108. Letter directed to Members of the Planning Board, from Maggie and Joe Abruzese, 30 Bridle Trail Road, dated July 28, 2021, regarding "Objection to the Hearing of July 20, 2021."

- 109. Letter from Holly Clarke, dated August 12, 2021, transmitting "The Planning Board Must Deny the Application as the Needham Zoning Bylaws Prohibit More than One Non-Residential Use or Building On a Lot in Single Residence A."
- 110. Email directed to the Planning Board from Maggie and Joe Abruzese, 30 Bridle Trail Road, dated August 12, 2021, transmitting "The Authority of the Planning Board to Address Ethical Issues in the 1688 Central Matter."
- 111. Email directed to the Select Board from Maggie and Joe Abruzese, 30 Bridle Trail Road, dated August 13, 2021, transmitting "The Power and Duty of the Select Board to Address Ethical Issues in the 1688 Central Matter."
- 112. Letter from Holly Clarke, dated August 13, 2021, transmitting "The Planning Board's Authority to Regulate the Proposed Development of 1688 Central Avenue Includes the Authority to Reject the Plan."
- 113. Letter from Patricia Falcao, dated August 30, 2021.
- 114. Email directed to the Planning Board from Maggie and Joe Abruzese, 30 Bridle Trail Road, dated August 25, 2021, with attachment regarding Special Municipal Employee status.
- 115. Email from Patricia Falcao, dated August 30, 2021.
- 116. Email from Daniel Gilmartin, 111 Walker Lane, dated August 30, 2021.
- 117. Email from Dave S., dated September 4, 2021.
- 118. Letter from Holly Clarke, dated September 7, 2021, transmitting "Neighbors' Comments on the Traffic Impact Analysis," with 2 attachments.
- 119. Email from Elizabeth Bourguignon, 287 Warren Street, dated September 5, 2021.
- 120. Letter from Amy and Leonard Bard, 116 Tudor Road, dated September 5, 2021.
- 121. Email from Mary Brassard, 267 Hillcrest Road, dated September 28, 2021.
- 122. Email from Christopher K. Currier, 11 Fairlawn Street, dated September 28, 2021.
- 123. Email from Stephen Caruso, 120 Lexington Avenue, dated September 28, 2021.
- 124. Email from Emily Pugach, 42 Gayland Road, dated September 29, 2021.
- 125. Email from Robin L. Sherwood, dated September 29, 2021.
- 126. Email from Sarah Solomon, 21 Otis Street, dated September 29, 2021.
- 127. Email from Lee Ownbey, 27 Powderhouse Circle, dated September 29, 2021.
- 128. Email from Emily Tow, dated September 29, 2021.

- 129. Email from Leah Caruso, dated September 29, 2021.
- 130. Email from Jennifer Woodman, dated September 29, 2021.
- 131. Email from Nancy and Chet Yablonski, dated September 29, 2021.
- 132. Email from Pamela and Andrew Freedman, 17 Wilshire Park, dated September 29, 2021.
- 133. Email from Dr. Jennifer Lucarelli, 58 Avalon Rd, dated September 29, 2021.
- 134. Email from Maija Tiplady, dated September 30, 2021.
- 135. Email from Ashley Schell, dated September 30, 2021.
- 136. Email from Kristin Kearney, 11 Paul Revere Rd, dated September 30, 2021.
- 137. Email from Dave Renninger, dated September 30, 2021.
- 138. Letter from Brad and Rebecca Lacouture, dated September 30, 2021.
- 139. Email from Kerry Cervas, 259 Hillcrest Road, dated September 30, 2021.
- 140. Letter from Holly Clarke, dated October 1, 2021, transmitting "The Past Use of the Property for Automobile Repairs and Other Non-Residential Purposes Merit Environmental Precautions to Insure the Safe Development and Use of the Property."
- 141. Email from Carolyn Walsh, 202 Greendale Avenue, dated September 30, 2021.
- 142. Email from Robert DiMase, 1681 Central Avenue, dated October 6, 2021.
- 143. Email from Elyse Park, dated October 6, 2021.
- 144. Email from R.M. Connelly, dated October 6, 2021.
- 145. Email from Eric Sockol, 324 Country Way, undated, received October 6, 2021.
- 146. Email from R.M. Connelly, dated October 9, 2021.
- 147. Email from Robert James Onofrey, 49 Pine Street, dated October 12, 2021 with attachment.
- 148. Letter from Holly Clarke, dated October 16, 2021, transmitting "Neighbor's Comments on the Application of Needham Zoning By-Law 3.2.1."
- 149. Email from R.M. Connelly, dated October 18, 2021.
- 150. Email from David Lazarus, Oxbow Road, dated October 19, 2021.
- 151. Email directed to the Planning Board from Maggie and Joe Abruzese, 30 Bridle Trail Road, dated

- October 27, 2021, transmitting "Objection to Use of Architectural Plans and Testimony 1688 Central Avenue."
- 152. Email directed to the Planning Board from Maggie and Joe Abruzese, 30 Bridle Trail Road, dated November 1, 2021, transmitting "The Applicant Cannot Keep both the Barn and the New Building."
- 153. Letter to the Planning Board from Denise Linden, undated, received November 10, 2021.
- 154. Email to the Planning Board from Khristy J. Thompson, Ph.D., dated November 10, 2021 with the following attachments discussing the impact of lead and other metals on the neurodevelopment of young children.
- 155. Letter from Holly Clarke, dated November 13, 2021, transmitting "The Proponent's October 27,2021 Report Again Changes the Data Used to Assess the Impact of the Project on Central Avenue."
- 156. Letter from Holly Clarke, dated November 14, 2021, transmitting "Photographs and Video of Traffic on Central Avenue"
- 157. Letter from Holly Clarke, dated November 14, 2021, transmitting "Commercial Child Care Facilities Do Not Customarily Have Accessory Buildings"
- 158. Email from Joseph and Margaret Abruzese dated November 15, 2021 accompanying the following attachment:
  - Town of Canton, Massachusetts, Zoning Board of Appeals Decision, dated August 13, 2020, with Exhibits A, B, C and D.
- 159. Letter from Sharon Cohen Gold and Evan Gold, dated November 16, 2021.

### Misc.

- 160. Email from Attorney Christopher H. Heep, dated June 9, 2021.
- 161. Two Emails from Attorney Christopher Heep, dated July 16, 2021.
- 162. Letter from Attorney Christopher H. Heep, dated September 2, 2021.
- 163. Letter from Attorney Christopher H. Heep, dated September 8, 2021.
- 164. Letter from Stephen J. Buchbinder, Schlesinger and Buchbinder, LLP, dated October 1, 2021.
- 165. Letter from Eve Slattery, General Counsel, Commonwealth of Massachusetts, State Ethics Commission, dated September 30, 2021.
- 166. Email from Evans Huber, dated October 7, 2021.

- 167. Email from Lee Newman directed to Evans Huber, dated October 8, 2021.
- 168. Letter from Eve Slattery, General Counsel, Commonwealth of Massachusetts, State Ethics Commission, dated October 4, 2021.
- 169. Email from Lee Newman directed to and replying to R.M. Connelly, dated October 19, 2021.
- 170. Letter from Brian R. Falk, Mirick O'Connell, Attorneys at Law, dated October 27, 2021.
- 171. Letter from Attorney Christopher H. Heep, dated November 2, 2021.
- 172. Letter directed to Evans Huber from Lee Newman, Director, Planning and Community Development, dated November 10, 2021.

### MEMORANDUM

To: Needham Planning Department

From: Evans Huber, Esq. Date: November 10, 2021

Subject: Summary of Changes to Site Plans Submitted Herewith

The following is a summary of the changes to the project reflected in the Site Plans signed and stamped on November 8, 2021, as compared to the prior most recent set of plans. The prior most recent set of Site Plans was submitted on or about October 28, 2021. This memo supplements, but does not repeat, the changes to the project described in my memos of August 4, 2021, October 13, 2021, and October 28, 2021 to the Planning Board.

The differences between this set and the last set are as follows:

- 1) The zoning table has been revised per Section 4.2.4 of the Bylaw to show the dimensional requirements for public, semi-public, and institutional uses in the Single Residence A district.
- 2) A correction was made to the spot grades at the proposed curb cut.
- 3) A note was added to the effect that the curb cut construction shall meet ADA requirements.

In addition, we are submitting herewith a set of three drawings signed and stamped on October 6, 2021 by Mr. Glossa, showing that the design and layout of the driveways can accommodate the turning radii for a 20-foot delivery van and a 30-foot trash truck.

The November 8, 2021 site plans and the turning plans have been submitted to the Town's sharefile and emailed to the Planning Department, although the size of the file has made emailing difficult and may result in difficulty receiving the plans via email. Additionally, 11 x 17 hard copies will be delivered to each Planning Board member sitting on the panel for this matter, as well as Ms. Newman.

ZONING LEDGEND: SINGLE RESIDENCE A, PROPOSED	PUBLIC SEMI PUBLIC OR INSTITU	TIONAL USF		
SINGLE RESIDENCE A, TROPOSED	REQUIRED/ALLOWED		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	35'	*105.0' **211.2' ***276.3'	64.0'	YES
MIN. SETBACK SIDE	25'	*67.5' **65.0' ***54.2'	52.3'	YES
MIN. SETBACK REAR	25'	*864.9' **763.4' ***677.0'	811.0'	YES
MAXIMUM STORIES	2-1/2	*2 **1 ***2	1	YES
MAXIMUM HEIGHT	35'	*30.7' **15.3' ***31.2'	24.7'	YES
LOT COVERAGE	15%	NR	9.0%	YES
FLOOR AREA RATIO	.30	NR	.09	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	*207.5	YES
-SIDE	4'	N/A	26.9'	YES
-REAR	4'	N/A	609.6	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

REVISION

REV. BUILDING LOCATION

REV. BUILDING LOCATION

REV. CATCH BASIN AT ACCESS

PER PEER REVIEW COMMENTS

REV. ACCESS DRIVE

PER TOWN COMMENTS

\* TO LOADING AREA

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

DATE

4-15-21

6-2-21

7-28-21

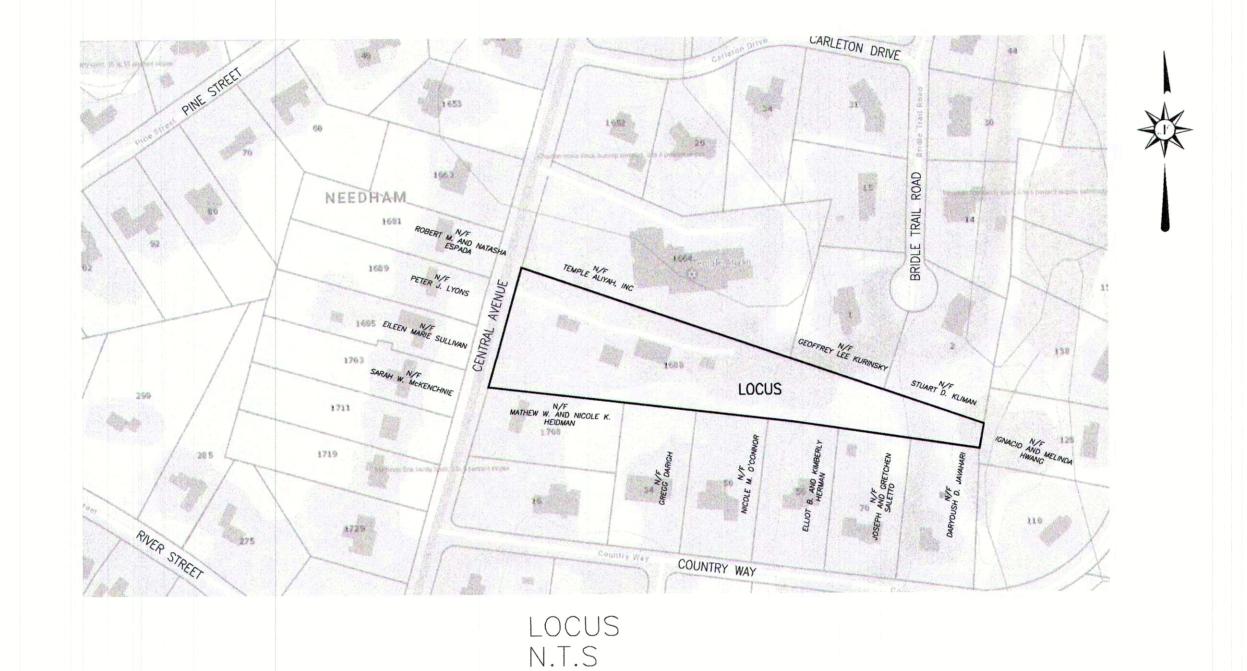
9-28-21

10-28-21

11-8-21

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. 860 S.F. PROVIDED WITHIN PARKING AREA

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



# PLAN INDEX

SHEET SHEET SHEET SHEET SHEET SHEET SHEET	1: 2: 3: 4: 5: 6 & 7 8:	COVER SHEET EXISTING CONDITIONS PLAN SITE PLAN GRADING AND UTILITIES PLAN LANDSCAPE PLAN DETAILS SEWER PLAN AND PROFILE
SHEET APPENDIX	9:	CONSTRUCTION PERIOD PLAN PHOTOMETRIC AND SITE LIGHTING PLAN
SHEET	0.	CONSTRUCTION PERIOD 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

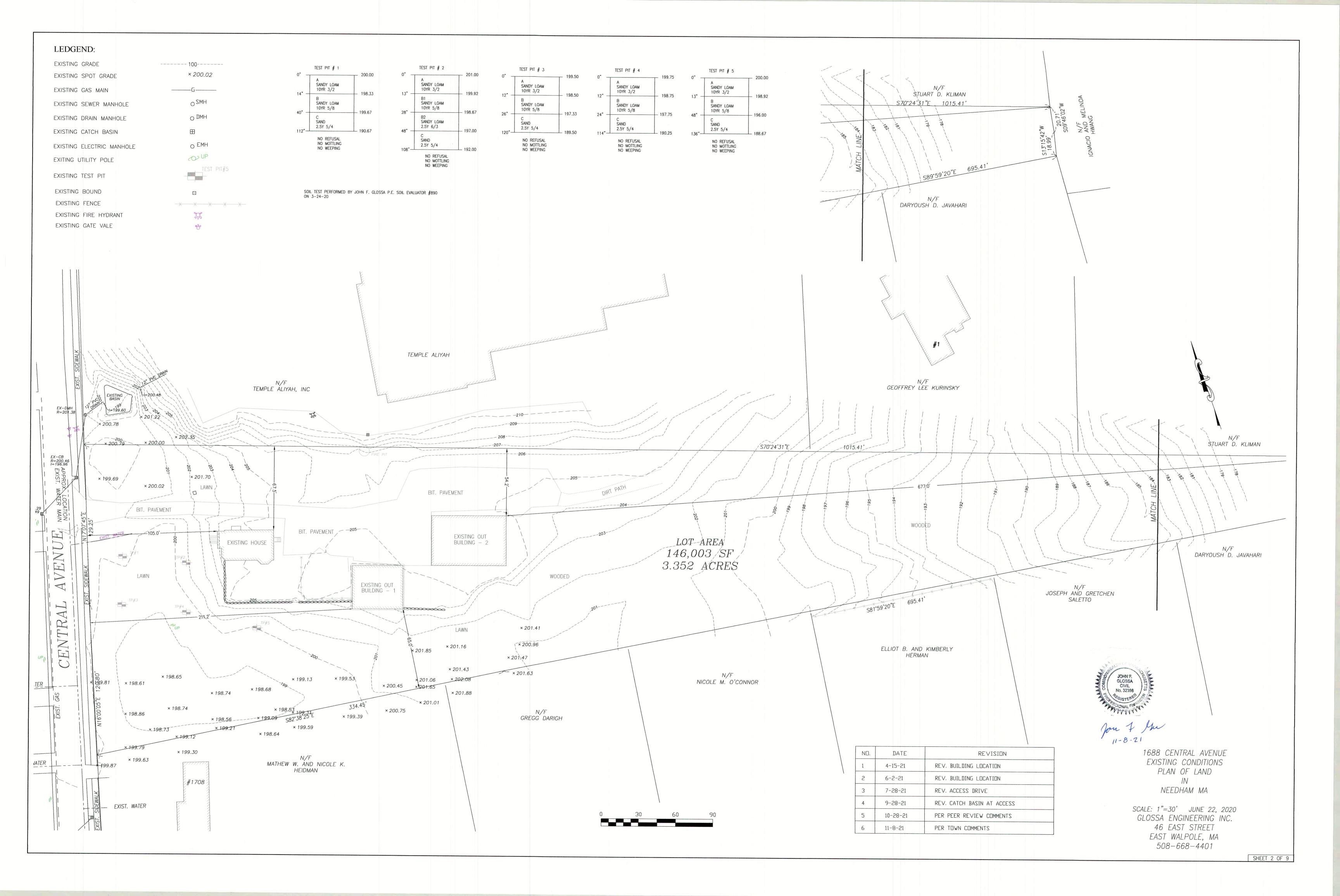
# PLAN REFERENCE:

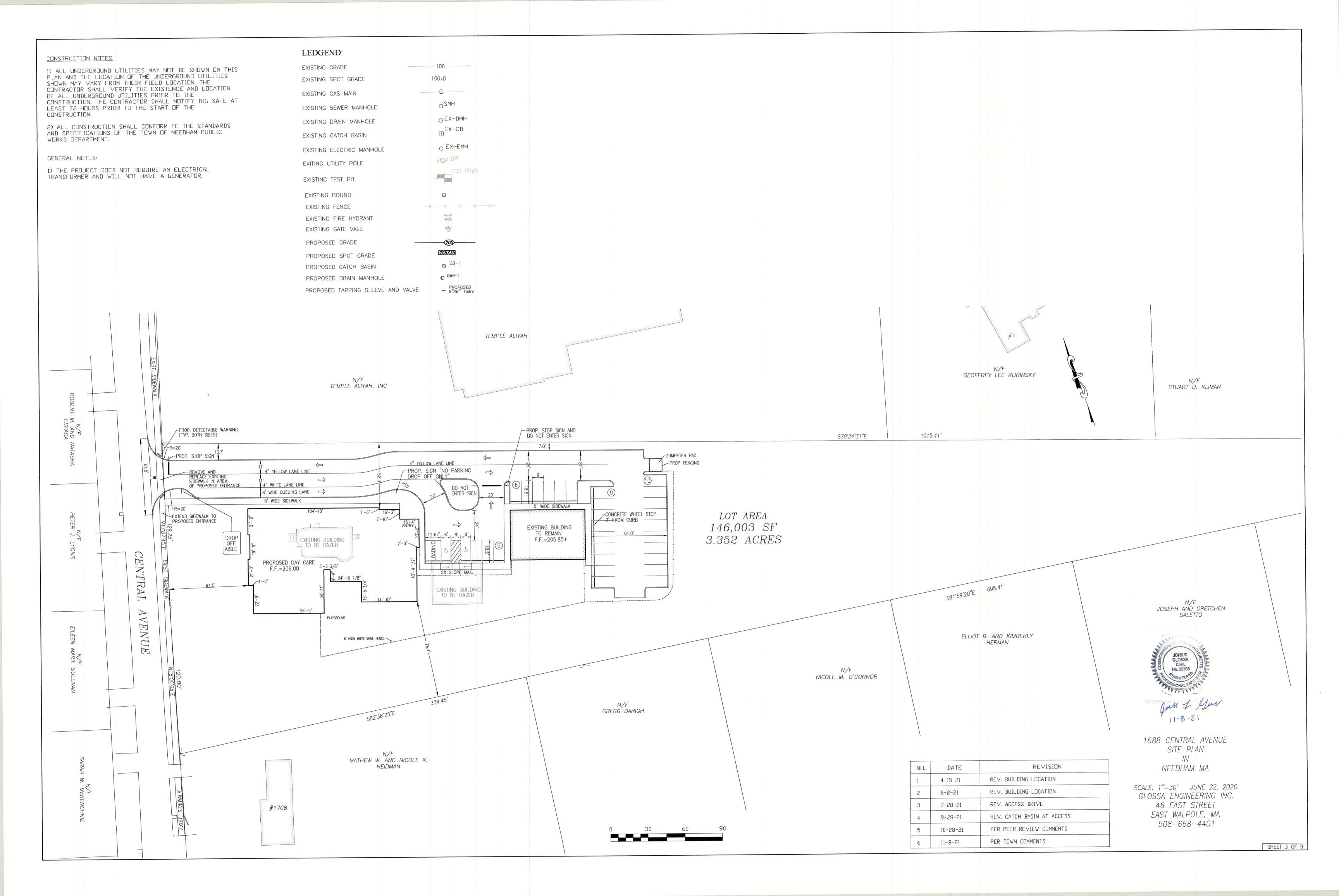
PLAN OF LAND DATED SEPTEMBER 28, 1933 BY P.D.G. HAMILTON, CIVIL ENGINEER

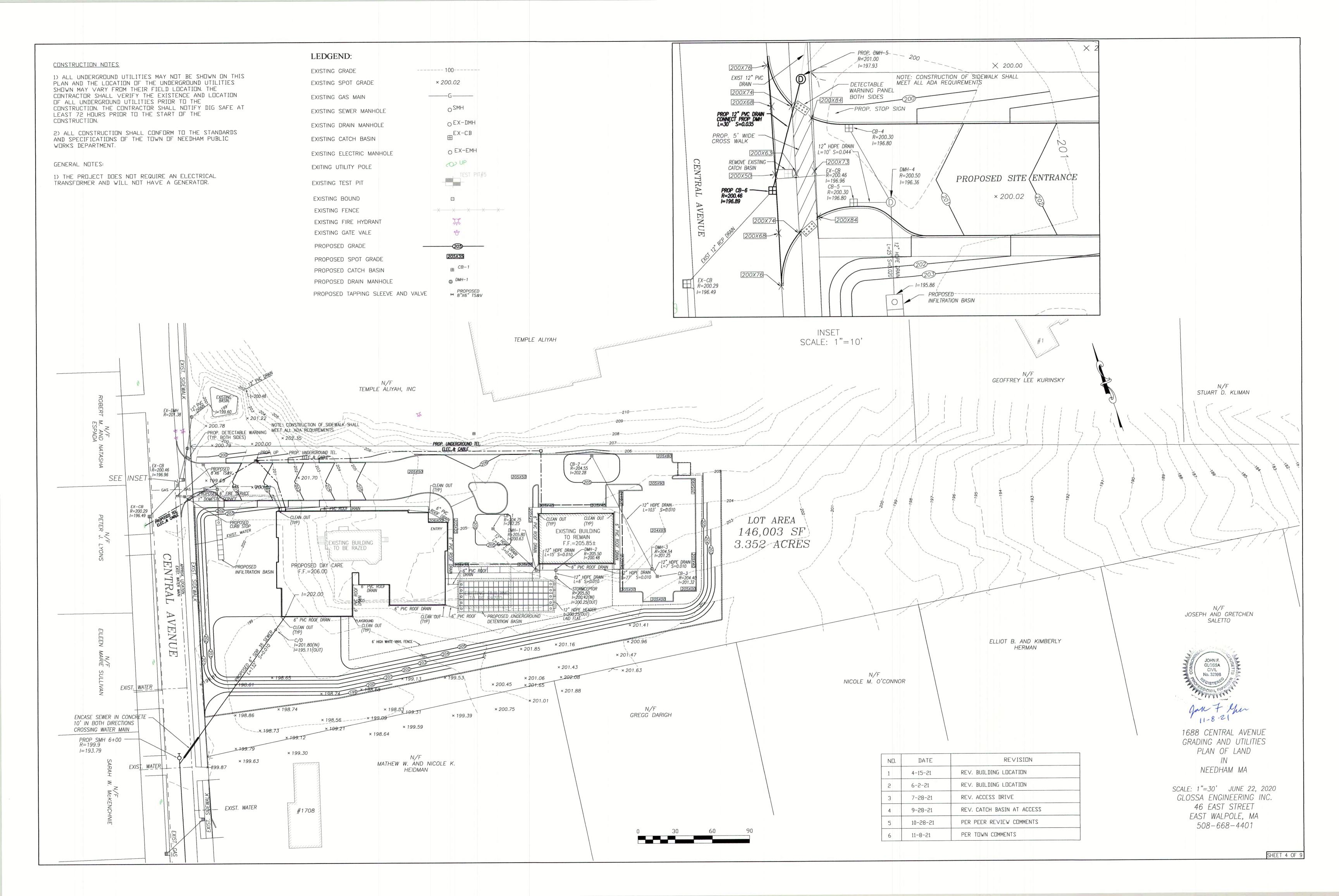


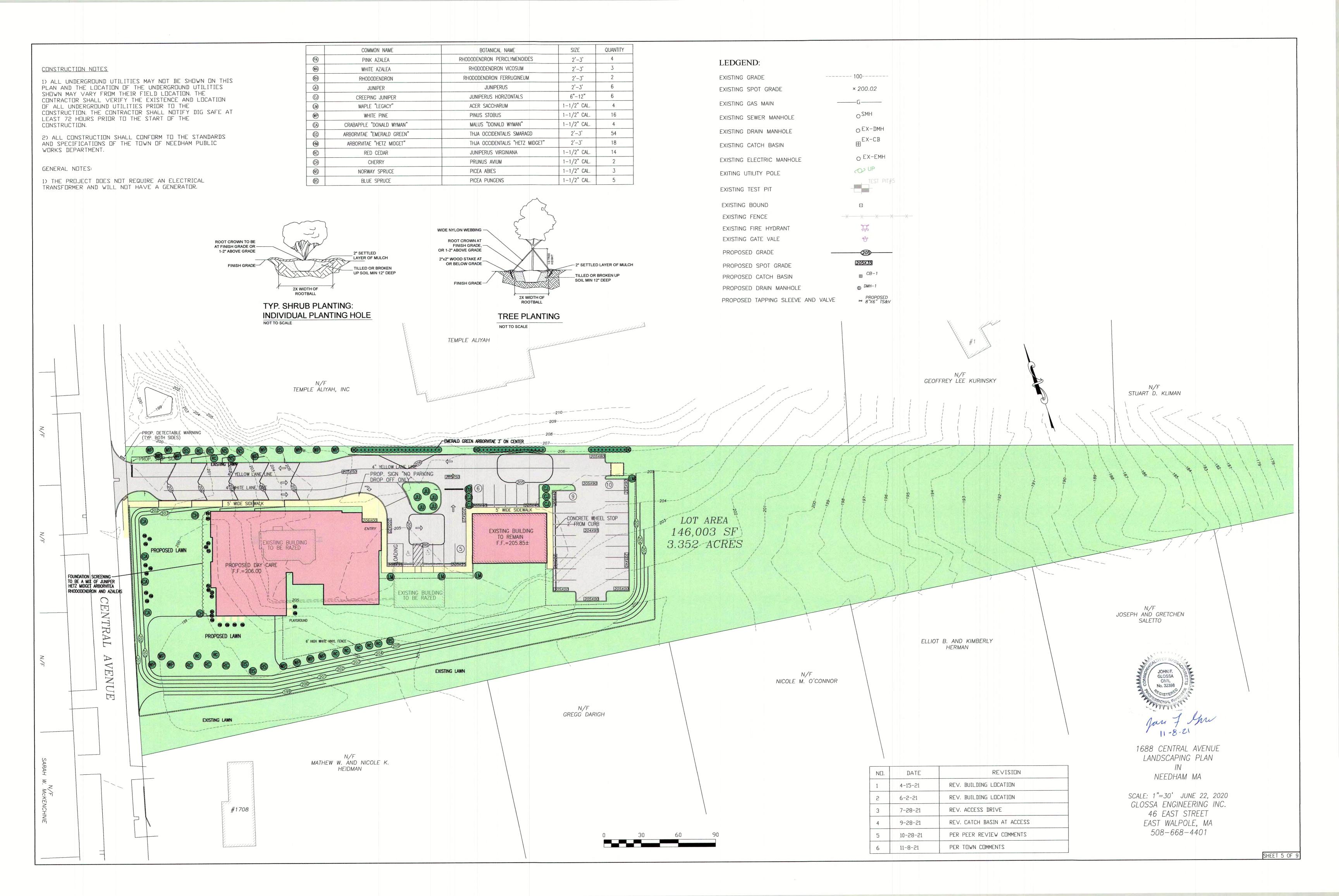
PREPARED BY
GLOSSA ENGINEERING, INC.
46 EAST ST
EAST WALPOLE, MA 02032
(508) 668-4401

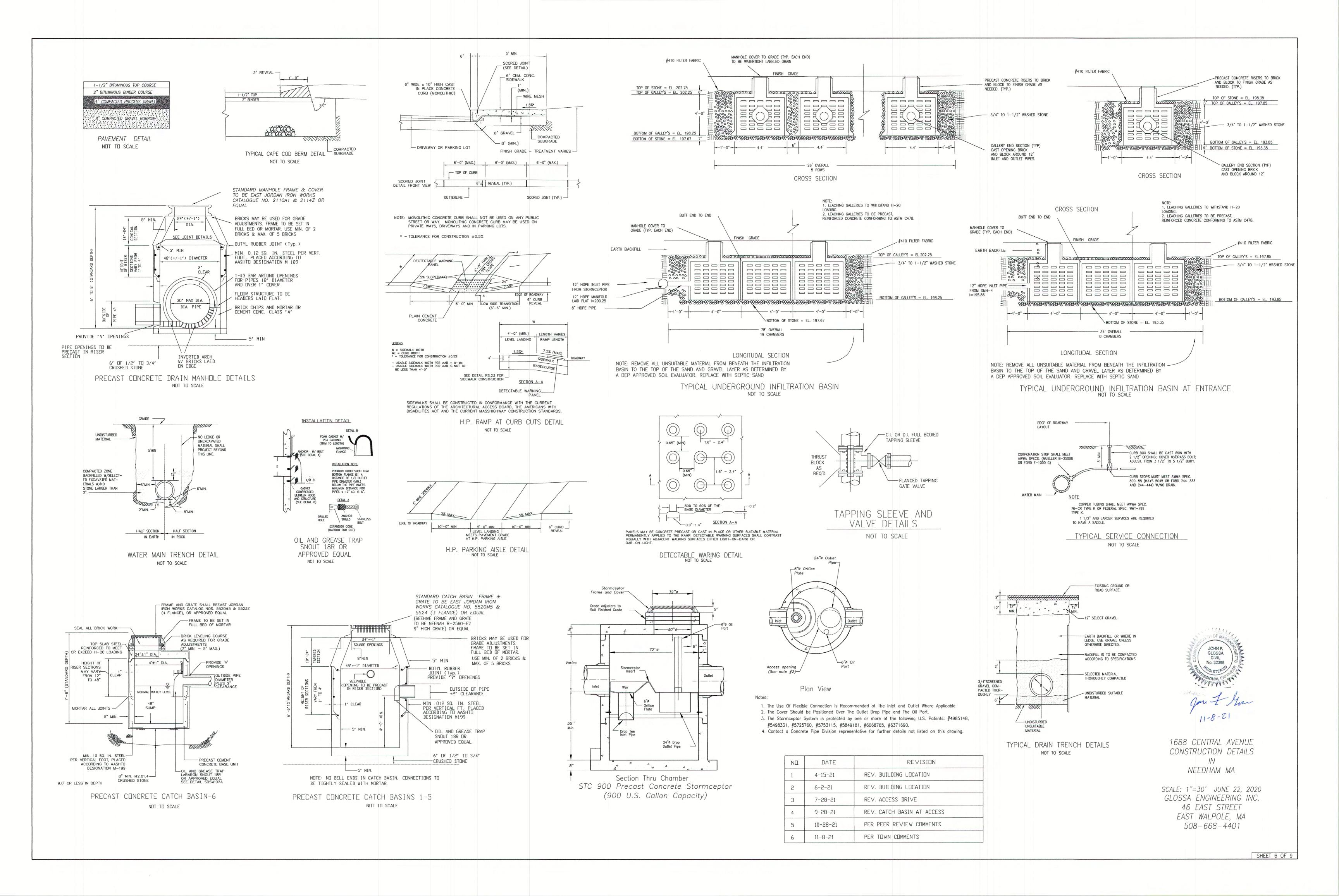
SHEET 1 OF 9

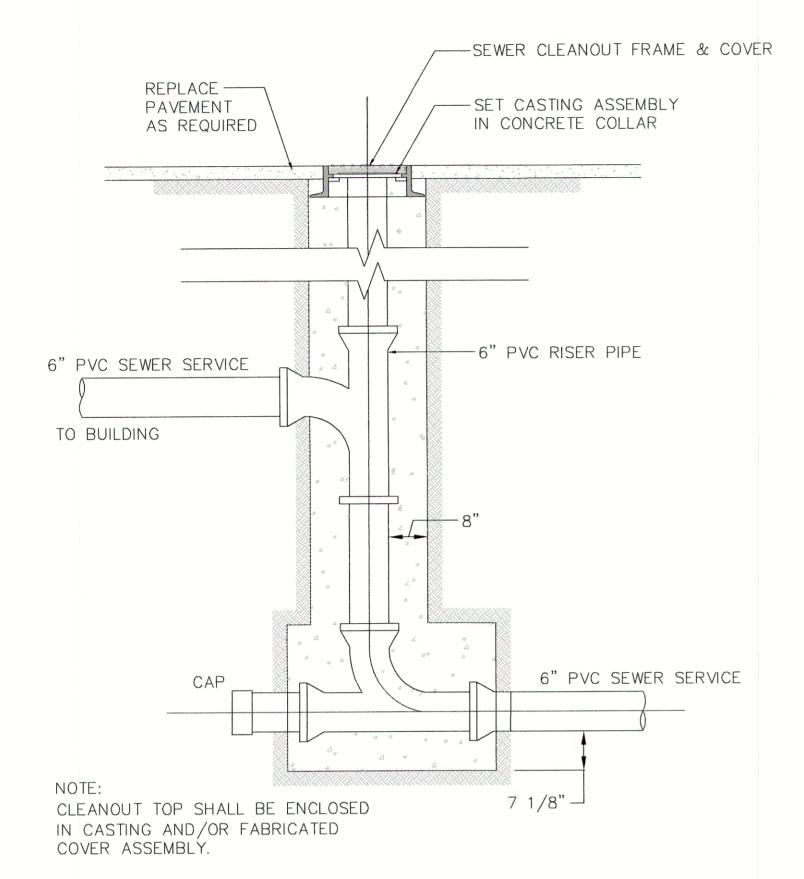






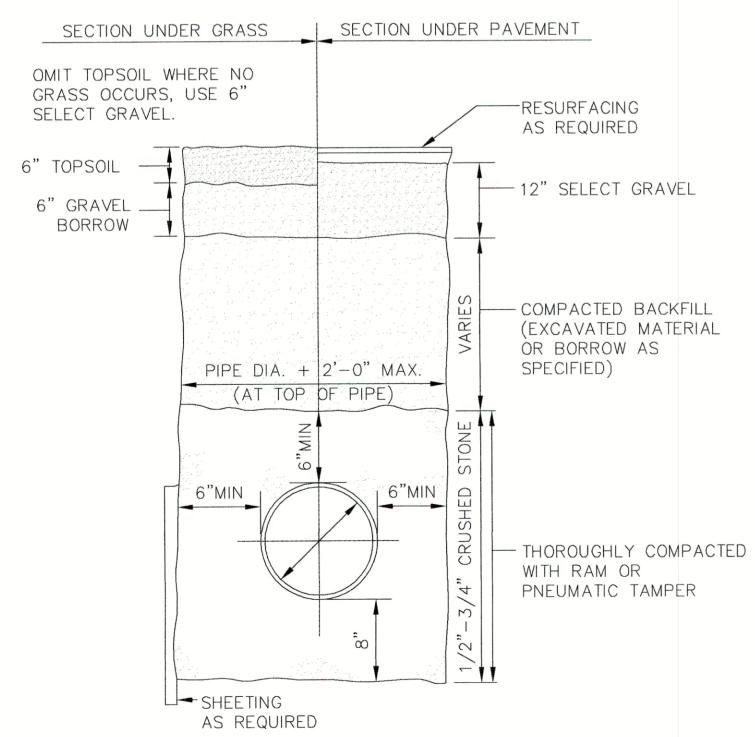






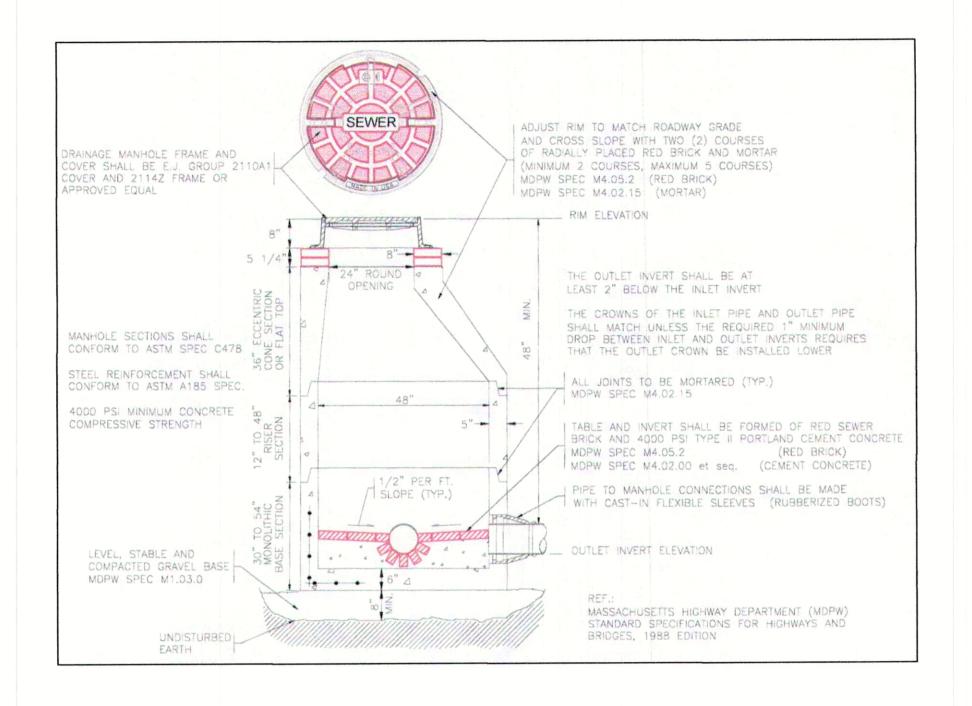
SEWER CLEANOUT DETAIL (C/O)

NOT TO SCALE

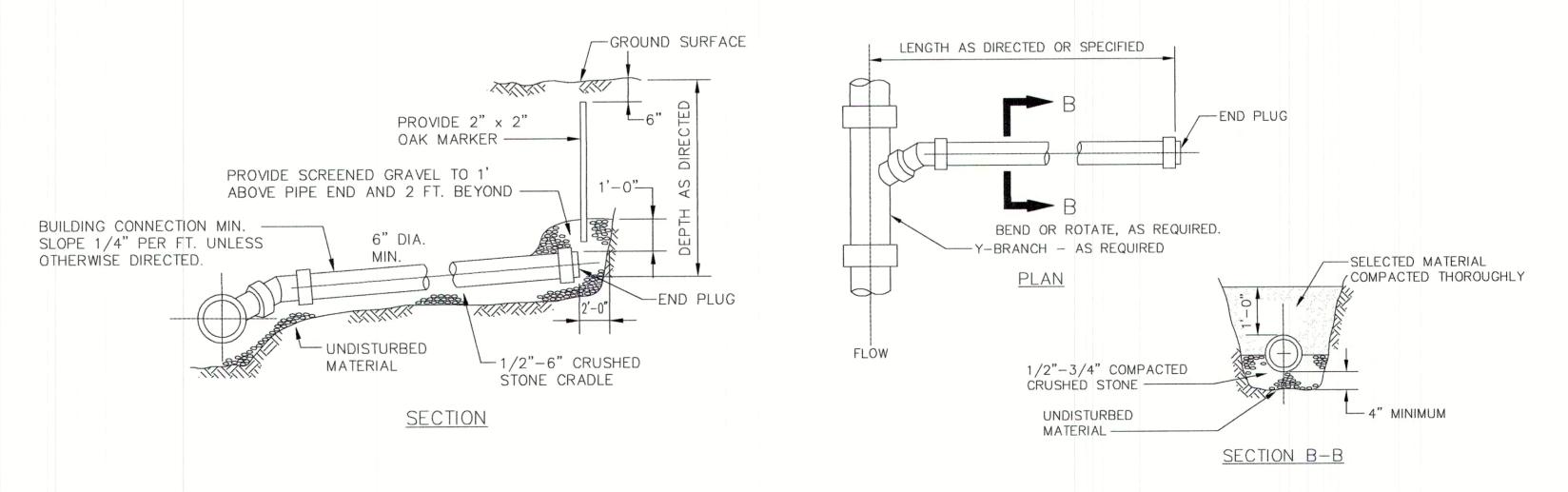


TYPICAL SEWER TRENCH DETAIL

NOT TO SCALE

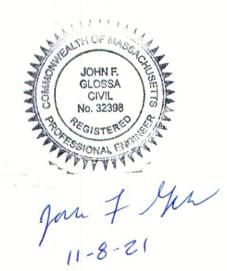


TYPICAL SEWER MANHOLE DETAIL NOT TO SCALE



TYPICAL BUILDING CONNECTION NOT TO SCALE

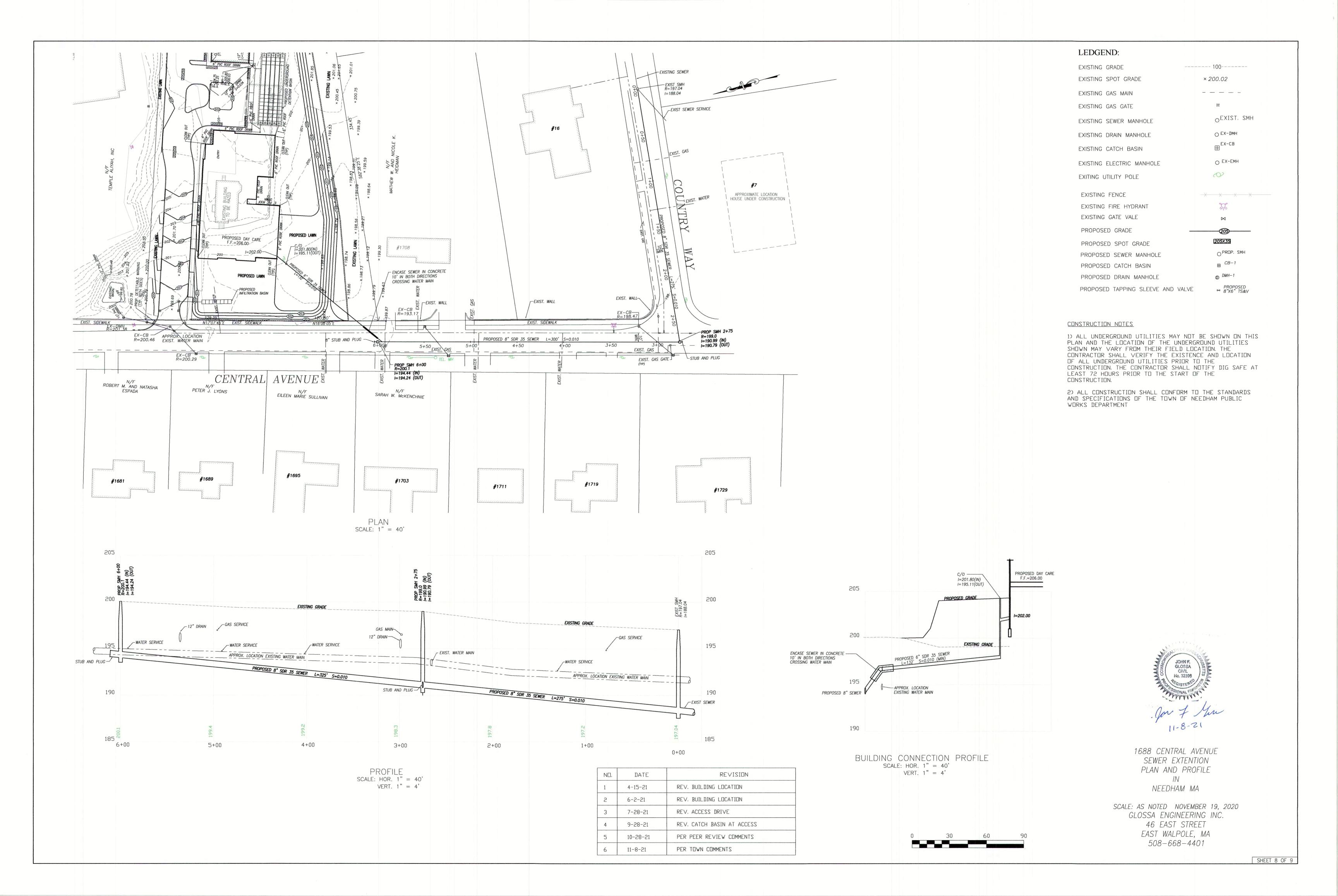
NO.	DATE	REVISION
1	4-15-21	REV. BUILDING LOCATION
2	6-2-21	REV. BUILDING LOCATION
3	7-28-21	REV. ACCESS DRIVE
4	9-28-21	REV. CATCH BASIN AT ACCESS
5	10-28-21	PER PEER REVIEW COMMENTS

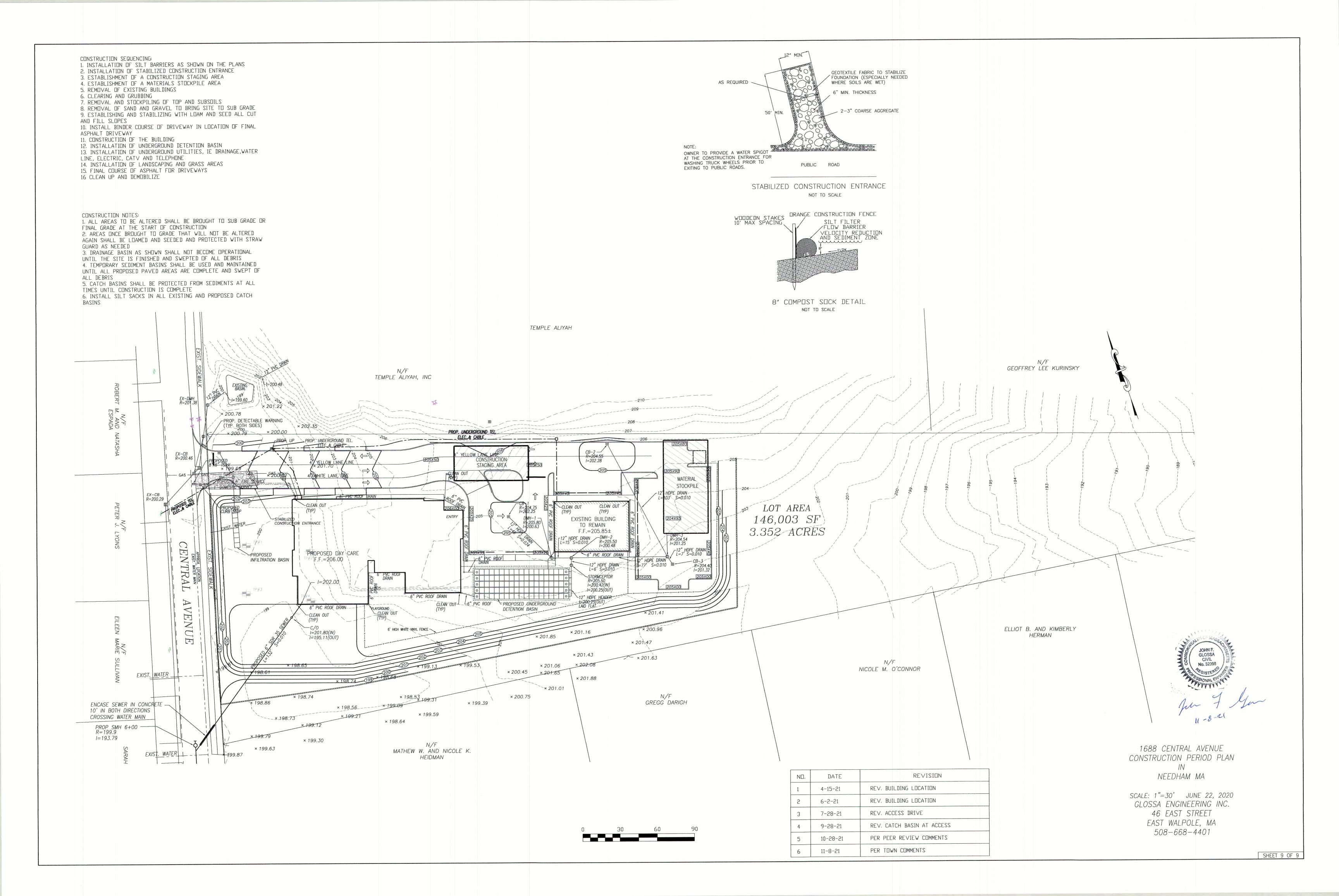


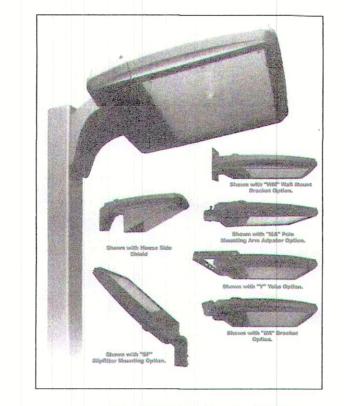
1688 CENTRAL AVENUE CONSTRUCTION DETAILS IN NEEDHAM MA

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

SHEET 7 OF 9







WALL PACK

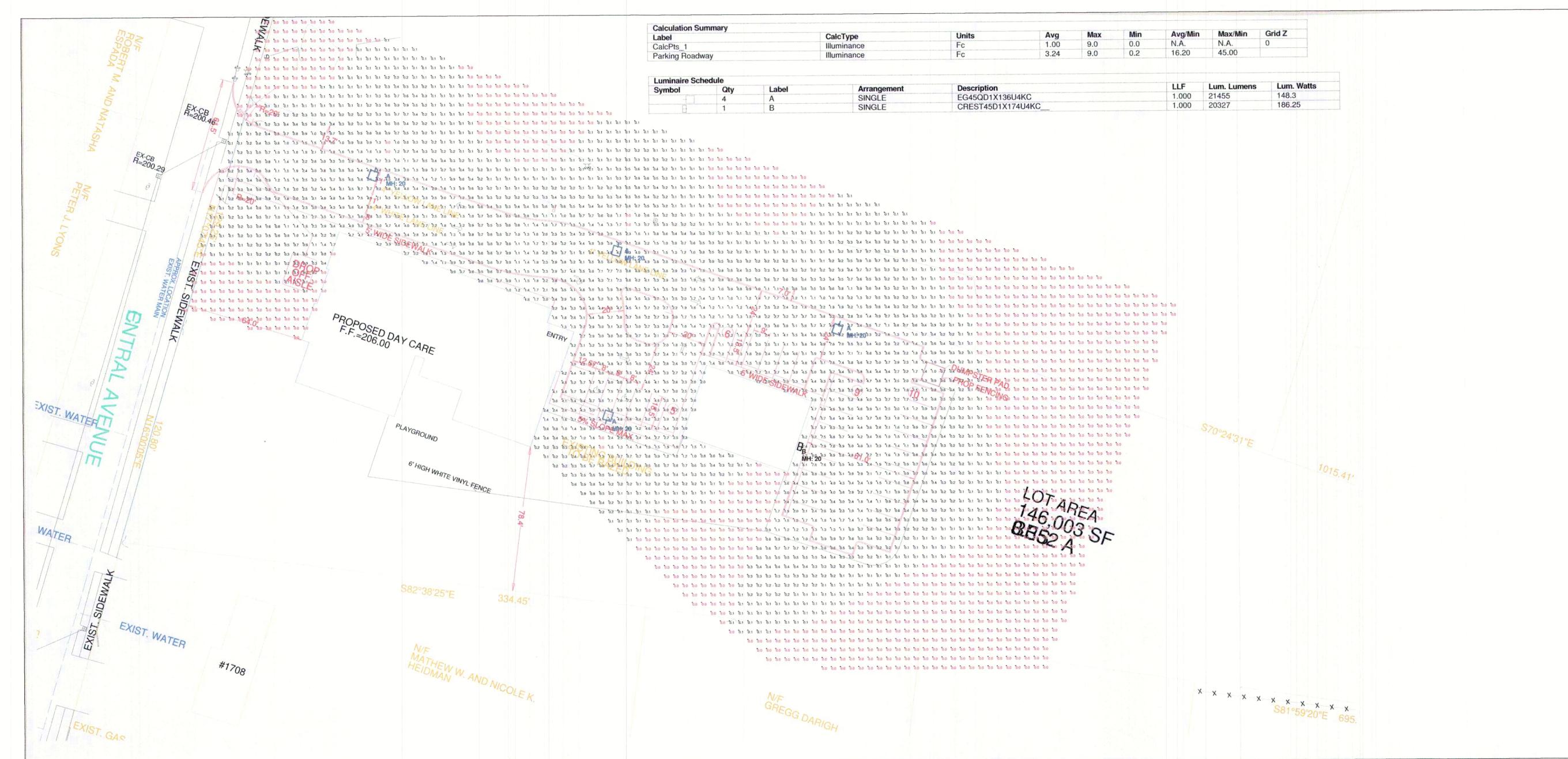


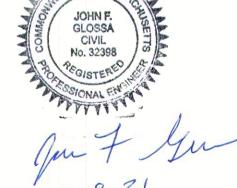
LIGHT FIXURE MODEL NUMBER
CREST45D1X174UU4KC
AS MANUFACTURED BY PEMCO LIGHTING PRODUCTS

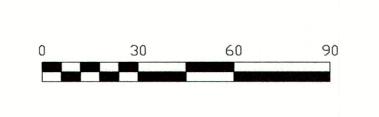
NOTE: LIGHT POLES ARE 20' HIGH

LIGHT FIXURE MODEL NUMBER
EG45QD1X136U4KC
AS MANUFACTURED BY PEMCO LIGHTING PRODUCTS

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

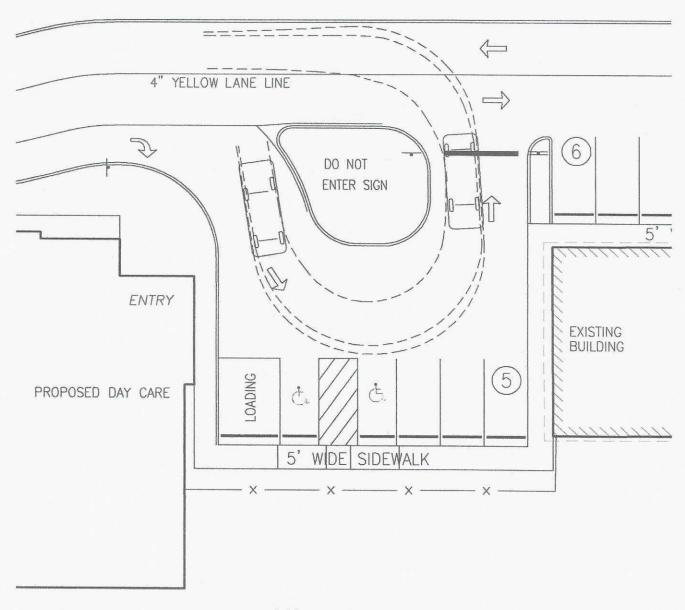






N□.	DATE	REVISION
1	4-15-21	REV. BUILDING LOCATION
2	6-2-21	REV. BUILDING LOCATION
3	7-28-21	REV. ACCESS DRIVE
4	9-28-21	REV. CATCH BASIN AT ACCESS
5	10-28-21	PER PEER REVIEW COMMENTS
6	11-8-21	PER TOWN COMMENTS

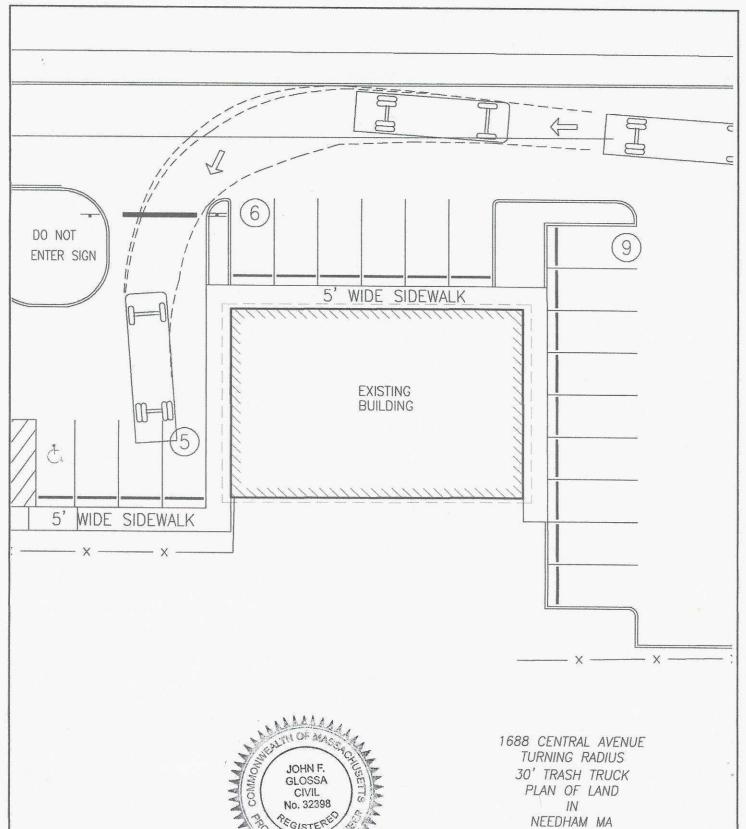
APPENDIX
PHOTOMETRIC AND SITE LIGHTING
PLAN
1688 CENTRAL AVENUE
IN
NEEDHAM MA
SCALE 1"=30' JUNE 22, 2020



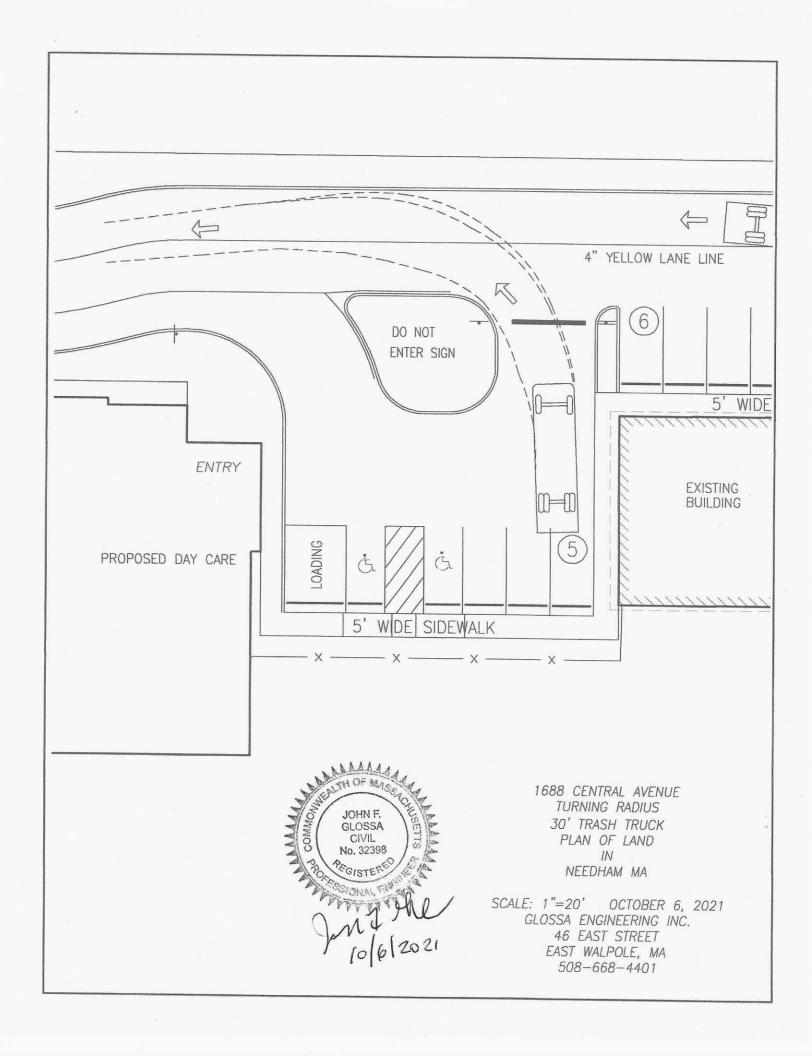


1688 CENTRAL AVENUE TURNING RADIUS 20' DELIVERY VAN PLAN OF LAND IN NEEDHAM MA

SCALE: 1"=20' OCTOBER 6, 2021 GLOSSA ENGINEERING INC. 46 EAST STREET EAST WALPOLE, MA 508-668-4401



SCALE: 1"=20' OCTOBER 6, 2021 GLOSSA ENGINEERING INC. 46 EAST STREET EAST WALPOLE, MA 508-668-4401





111 River Street Weymouth, MA 02191-2104 Telephone: (781) 589-7339 e-mail: jt.gillon@comcast.net

### TECHNICAL MEMORANDUM

To: John Glossa, P.E., Glossa Engineering

Date: October 27, 2021 From: John T. Gillon, P.E.

Re: New Day Care Facility at 1688 Central Avenue Response 3

At your request, I have re-visited the Central Avenue corridor by obtaining new morning and evening peak hour counts at the Central Avenue / Charles River Street intersection. As can be seen on Figure 1, although that intersection is approximately 925 feet from the site access driveway, the southbound Central Avenue STOP LINE is only about 885 feet away. The new peak hour turning movements are provided separately but are provided on Figure 2 of this Memorandum. As detailed on Figure 3, those counts were increased by 30.4% as evidenced by MassDOT Station ID #6161 to identify 2021 roadway network volumes had Covid-19 not occurred. The adjusted 2021 morning and evening peak hour turning movement volumes are shown on Figure 4. These volumes were further inflated by one percent per year over seven years for a total of seven percent to account for normal growth which may occur between 2021 and 2028, our Base analysis year as provided on Figure 5. The site generation traffic volumes based on ITE projections for a 10,034 square-foot facility are provided on Figure 6. The projected peak hour traffic volumes comprised of the 2028 Base-year volumes and the projected site generated traffic volumes are shown on Figure 7.

We have utilized the following signal timing for existing, base and build conditions:

 $\emptyset$ 2 = 50 sec split  $\emptyset$ 5 = 20 sec split

 $\emptyset$ 6 = 30 sec split

 $\emptyset 4 \& \emptyset 8 = 40 \text{ sec split}$ 

All Yellow = 3.0 sec, All Red = 2.0 sec.

Synchro 11 software was utilized and the roadway link length between the site and Charles River Street was identified as 885 feet. Both of these nodes were analyzed on the same roadway network. The electronic files will be made available to the Town and their consultant.

### **Levels of Service**

As can be seen on Figure 8, (first two columns) the Central Avenue / Charles River Street intersection currently operates at overall levels of service of "E" during the morning peak hour (7:15 a.m. to 8:15 a.m.) and "D" during the evening peak hour (5:00 p.m. to 6:00 p.m.), assuming roadway network volumes adjusted upwards as described above.

The third and fourth columns in Figure 8 (Base 2028 AM and PM) show level of service projections for this intersection, that are anticipated for 2028 with no development at 1688 Central. These columns project that overall levels of service will worsen somewhat compared to current non-Covid conditions, again, assuming that there is no development at 1688 Central Avenue

The fifth and sixth columns in Figure 8 (entitled Projected Exist. Splits AM and PM) show the projected levels of service in 2028 at this intersection assuming that 1688 Central Ave is developed as Child Care Facility as proposed by the Applicant, but also assuming that no change in the timing of the signalization at the intersection is implemented.

Even if no change in the signal timing is implemented, these columns show that the development of this site as proposed will have essentially no impact on the projected levels of service on Charles River street during peak hours, and will have only a modest impact on Central Avenue Northbound levels of service during those hours. The only significant impact from the development of this site is projected to be on Central Avenue Southbound during the evening peak hour. Again, however, this assumes that no change to the intersection signal timing is made.

The last two columns on Figure 8 show the projected levels of service at this intersection in 2028 if this site is developed as proposed, and if the timing of the signals is optimized from the perspective of the intersection as a whole. As shown in these two columns, if the changed timing used for these calculations were to be implemented, the overall levels of service (and delays) on Central Ave during peak hours would become significantly better, while the delays and levels of service on Charles River Street would become worse.

However, it is not necessary to use this particular timing change in order to meaningfully mitigate the impact of traffic to and from this site on the overall level of service on Central Ave during peak hours. Less significant changes to the timing could be made which would improve traffic flow (and queueing) on Central Ave, without such a substantial impact on Charles River Street. The exact signal timing change decided upon should be based on a combination of traffic engineering and policy decisions as to how to best improve traffic at this intersection in all four directions.

### **Queueing at the Central Ave/Charles River Street Intersection**

The sixth row of data on Figure 8 shows that the 95<sup>th</sup> percentile queue on Central Avenue southbound during the evening peak hour will increase from 830 feet today (with non-Covid traffic volumes) to 907 feet in 2028 without the proposed development of 1688 Central and 950 feet with the proposed development. Thus, comparing 2028 "build" to "no build" conditions projects an increase in the length of the queue during the evening peak hour of about 43 feet (approximately 2-3 vehicles) if this project is developed as proposed.

However since the length of the queue in 2028 is projected to extend past the site driveway under either "build" or "no build" conditions, a change to the timing of the signals at the intersection is called for. As shown on Figure 8 (last row, last column) if traffic signal timing is optimized for the entire intersection, the southbound queue could shorten from 830 feet today to only 670 feet, which is more than 200 feet south of the site driveway. These distances are summarized below:

Central Ave Evening Peak Hour Queueing from Central Ave/Charles River Intersection on Central Ave Southbound

Projected 2028

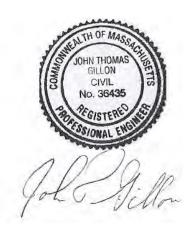
Existing Base 2028 (no build) Existing Timing Improved Timing

830 Feet 907 Feet 950 Feet 670 Feet

As noted above, it is not necessary to implement this particular timing change in order to significantly improve the queueing on Central Ave southbound, such that the queue from the intersection will not back up as far as the site driveway. It is clear that even a less substantial change to the signal timing can provide significant mitigation of the queueing from the intersection back towards the site.

Thank you for the opportunity to provide this additional information.

John T. Gillon, P.E.





N: Central Avenue S: Central Avenue Location:

E: Charles River Street W: Charles River Street

City, State: Needham, MA Client: Gillon/J. Gillon

TBA Site Code:

Class:

Count Date: Wednesday, October 13, 2021

7:00 AM Start Time: End Time: 9:00 AM



157 Washington Street, Suite 2 Hudson, MA 01749 Office: 508-875-0100 Fax: 508-875-0118

### **Cars and Heavy Vehicles (Combined)**

		Cen	tral Ave	enue			Charle	s River	Street			Cen	tral Ave	nue			Charle	s River	Street		
		fro	om Nor	th			fı	rom Eas	st			fr	om Sou	ıth			fr	om We	st		
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:00 AM	3	19	1	0	23	4	14	1	0	19	1	172	10	0	183	5	25	50	0	80	305
7:15 AM	2	31	2	0	35	6	20	2	0	28	1	158	12	0	171	5	35	68	0	108	342
7:30 AM	3	29	6	0	38	3	27	2	0	32	1	162	15	0	178	9	58	51	0	118	366
7:45 AM	3	51	1	0	55	4	33	3	0	40	0	150	25	0	175	9	44	70	0	123	393
Total	11	130	10	0	151	17	94	8	0	119	3	642	62	0	707	28	162	239	0	429	1406
8:00 AM	3	39	2	0	44	4	30	1	0	35	2	139	16	0	157	17	32	64	0	113	349
8:15 AM	4	31	1	0	36	8	34	3	0	45	0	115	20	0	135	8	34	64	0	106	322
8:30 AM	5	47	4	0	56	7	23	4	0	34	1	125	15	0	141	19	27	39	0	85	316
8:45 AM	6	41	5	0	52	5	22	1	0	28	2	106	9	0	117	5	31	46	0	82	279
Total	18	158	12	0	188	24	109	9	0	142	5	485	60	0	550	49	124	213	0	386	1266
Grand Total	29	288	22	0	339	41	203	17	0	261	8	1127	122	0	1257	77	286	452	0	815	2672
Approach %	8.6	85.0	6.5	0.0		15.7	77.8	6.5	0.0		0.6	89.7	9.7	0.0		9.4	35.1	55.5	0.0		l
Total %	1.1	10.8	0.8	0.0	12.7	1.5	7.6	0.6	0.0	9.8	0.3	42.2	4.6	0.0	47.0	2.9	10.7	16.9	0.0	30.5	
Exiting Leg Total					1620					316					382					354	2672
Cars	25	276	21	0	322	37	194	16	0	247	8	1079	118	0	1205	74	276	434	0	784	2558
% Cars	86.2	95.8	95.5	0.0	95.0	90.2	95.6	94.1	0.0	94.6	100.0	95.7	96.7	0.0	95.9	96.1	96.5	96.0	0.0	96.2	95.7
Exiting Leg Total					1550					305					366					337	2558
Heavy Vehicles	4	12	1	0	17	4	9	1	0	14	0	48	4	0	52	3	10	18	0	31	114
% Heavy Vehicles	13.8	4.2	4.5	0.0	5.0	9.8	4.4	5.9	0.0	5.4	0.0	4.3	3.3	0.0	4.1	3.9	3.5	4.0	0.0	3.8	4.3
Exiting Leg Total					70					11					16					17	114

7:15 AM		Cent	ral Ave	nue			Charle	s River	Street			Cen	tral Ave	nue			Charle	s River	Street		
		fro	m Nor	th			fr	om Eas	it			fr	om Sou	th			fr	om We	st		
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:15 AM	2	31	2	0	35	6	20	2	0	28	1	158	12	0	171	5	35	68	0	108	342
7:30 AM	3	29	6	0	38	3	27	2	0	32	1	162	15	0	178	9	58	51	0	118	366
7:45 AM	3	51	1	0	55	4	33	3	0	40	0	150	25	0	175	9	44	70	0	123	393
8:00 AM	3	39	2	0	44	4	30	1	0	35	2	139	16	0	157	17	32	64	0	113	349
Total Volume	11	150	11	0	172	17	110	8	0	135	4	609	68	0	681	40	169	253	0	462	1450
% Approach Total	6.4	87.2	6.4	0.0		12.6	81.5	5.9	0.0		0.6	89.4	10.0	0.0		8.7	36.6	54.8	0.0		
PHF	0.917	0.735	0.458	0.000	0.782	0.708	0.833	0.667	0.000	0.844	0.500	0.940	0.680	0.000	0.956	0.588	0.728	0.904	0.000	0.939	0.922
Cars	1 10	142	10	0	162	1.0	105	0	0	120	4	F01	68	0	cral	40	165	244	0	446	1201
Cars %	10	143	10	0	163	16	105	100.0	0	129	100.0	581 95.4		0.0	653	40	165 97.6	241	0.0	446	1391
Heavy Vehicles	90.9	95.3 7	90.9	0.0	94.8	94.1	95.5 5	100.0	0.0	95.6	100.0		100.0		95.9	100.0		95.3		96.5	95.9
Heavy Vehicles %	9.1	4.7	9.1	0.0	5.2	5.9	4.5	0.0	0.0	4.4	0.0	28 4.6	0.0	0.0	28 4.1	0.0	4 2.4	12 4.7	0.0	16 3.5	59 4.1
neavy venicles /6	9.1	4.7	9.1	0.0	5.2	5.9	4.5	0.0	0.0	4.4	0.0	4.0	0.0	0.0	4.1	0.0	2.4	4.7	0.0	3.5	4.1
Cars Enter Leg	10	143	10	0	163	16	105	8	0	129	4	581	68	0	653	40	165	241	0	446	1391
Heavy Enter Leg	1	7	1	0	9	1	5	0	0	6	0	28	0	0	28	0	4	12	0	16	59
Total Entering Leg	11	150	11	0	172	17	110	8	0	135	4	609	68	0	681	40	169	253	0	462	1450
Cars Exiting Leg					838					179					191					183	1391
Heavy Exiting Leg					41					5					7					6	59
Total Exiting Leg					879					184					198					189	1450

Location: N: Central Avenue S: Central Avenue

E: Charles River Street W: Charles River Street Location:

City, State: Needham, MA Gillon/J. Gillon Client:

TBA Site Code:

Count Date: Wednesday, October 13, 2021

7:00 AM Start Time: End Time: 9:00 AM



157 Washington Street, Suite 2 Hudson, MA 01749 Office: 508-875-0100 Fax: 508-875-0118

Class:										Ca	ırs										
		Cent	ral Ave	nue			Charle	s River	Street			Cen	tral Ave	enue			Charle	s River	Street		
		fro	m Nor	th			fr	om Eas	t			fr	om Sou	ıth			fr	om We	st		
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:00 AM	2	18	1	0	21	2	11	1	0	14	1	168	9	0	178	4	25	48	0	77	290
7:15 AM	1	29	2	0	32	6	18	2	0	26	1	154	12	0	167	5	35	60	0	100	325
7:30 AM	3	28	6	0	37	2	27	2	0	31	1	150	15	0	166	9	58	50	0	117	351
7:45 AM	3	50	0	0	53	4	32	3	0	39	0	143	25	0	168	9	42	68	0	119	379
Total	9	125	9	0	143	14	88	8	0	110	3	615	61	0	679	27	160	226	0	413	1345
8:00 AM	3	36	2	0	41	4	28	1	0	33	2	134	16	0	152	17	30	63	0	110	336
8:15 AM	4	30	1	0	35	7	33	2	0	42	0	113	18	0	131	6	32	63	0	101	309
8:30 AM	5	47	4	0	56	7	23	4	0	34	1	118	15	0	134	19	26	36	0	81	305
8:45 AM	4	38	5	0	47	5	22	1	0	28	2	99	8	0	109	5	28	46	0	79	263
Total	16	151	12	0	179	23	106	8	0	137	5	464	57	0	526	47	116	208	0	371	1213
Grand Total	25	276	21	0	322	37	194	16	0	247	8	1079	118	0	1205	74	276	434	0	784	2558
Approach %	7.8	85.7	6.5	0.0		15.0	78.5	6.5	0.0		0.7	89.5	9.8	0.0		9.4	35.2	55.4	0.0		
Total %	1.0	10.8	0.8	0.0	12.6	1.4	7.6	0.6	0.0	9.7	0.3	42.2	4.6	0.0	47.1	2.9	10.8	17.0	0.0	30.6	
Exiting Leg Total			·	·	1550		·			305				·	366				·	337	2558

					-0 -																
7:15 AM		Cent	ral Ave	nue			Charle	s River	Street			Cen	tral Ave	nue			Charle	s River	Street		Ì
		fro	m Nort	th			fr	om Eas	t			fr	om Sou	th			fr	om We	st		
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:15 AM	1	29	2	0	32	6	18	2	0	26	1	154	12	0	167	5	35	60	0	100	325
7:30 AM	3	28	6	0	37	2	27	2	0	31	1	150	15	0	166	9	58	50	0	117	351
7:45 AM	3	50	0	0	53	4	32	3	0	39	0	143	25	0	168	9	42	68	0	119	379
8:00 AM	3	36	2	0	41	4	28	1	0	33	2	134	16	0	152	17	30	63	0	110	336
Total Volume	10	143	10	0	163	16	105	8	0	129	4	581	68	0	653	40	165	241	0	446	1391
% Approach Total	6.1	87.7	6.1	0.0		12.4	81.4	6.2	0.0		0.6	89.0	10.4	0.0		9.0	37.0	54.0	0.0		Ì
PHF	0.833	0.715	0.417	0.000	0.769	0.667	0.820	0.667	0.000	0.827	0.500	0.943	0.680	0.000	0.972	0.588	0.711	0.886	0.000	0.937	0.918
Entering Leg	10	143	10	0	163	16	105	8	0	129	4	581	68	0	653	40	165	241	0	446	1391
Exiting Leg					838					179					191					183	1391
Total					1001					308					844					629	2782

N: Central Avenue S: Central Avenue Location:

E: Charles River Street W: Charles River Street

City, State: Needham, MA Gillon/J. Gillon Client:

TBA Site Code:

Class:

Count Date: Wednesday, October 13, 2021

Start Time: 7:00 AM End Time: 9:00 AM



157 Washington Street, Suite 2 Hudson, MA 01749 Office: 508-875-0100 Fax: 508-875-0118

### Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)

		Cen	tral Ave	enue			Charle	s River	Street			Cen	tral Av	enue			Charle	es River	Street		ī
		fr	om Noi	th			fı	om Eas	st			fr	om So	uth			fr	om We	est		
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:00 AM	1	1	0	0	2	2	3	0	0	5	0	4	1	0	5	1	0	2	0	3	15
7:15 AM	1	2	0	0	3	0	2	0	0	2	0	4	0	0	4	0	0	8	0	8	17
7:30 AM	0	1	0	0	1	1	0	0	0	1	0	12	0	0	12	0	0	1	0	1	15
7:45 AM	0	1	1	0	2	0	1	0	0	1	0	7	0	0	7	0	2	2	0	4	14
Total	2	5	1	0	8	3	6	0	0	9	0	27	1	0	28	1	2	13	0	16	61
8:00 AM	0	3	0	0	3	0	2	0	0	2	0	5	0	0	5	0	2	1	0	3	13
8:15 AM	0	1	0	0	1	1	1	1	0	3	0	2	2	0	4	2	2	1	0	5	13
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	7	0	0	7	0	1	3	0	4	11
8:45 AM	2	3	0	0	5	0	0	0	0	0	0	7	1	0	8	0	3	0	0	3	16
Total	2	7	0	0	9	1	3	1	0	5	0	21	3	0	24	2	8	5	0	15	53
Grand Total	4	12	1	0	17	4	9	1	0	14	0	48	4	0	52	3	10	18	0	31	114
Approach %	23.5	70.6	5.9	0.0		28.6	64.3	7.1	0.0		0.0	92.3	7.7	0.0		9.7	32.3	58.1	0.0		ì
Total %	3.5	10.5	0.9	0.0	14.9	3.5	7.9	0.9	0.0	12.3	0.0	42.1	3.5	0.0	45.6	2.6	8.8	15.8	0.0	27.2	ì
Exiting Leg Total					70					11					16					17	114
Buses	0	2	0	0	2	3	0	1	0	4	0	2	0	0	2	2	0	4	0	6	14
% Buses	0.0	16.7	0.0	0.0	11.8	75.0	0.0	100.0	0.0	28.6	0.0	4.2	0.0	0.0	3.8	66.7	0.0	22.2	0.0	19.4	12.3
Exiting Leg Total					9					0					5					0	14
Single-Unit Trucks	2	9	1	0	12	1	8	0	0	9	0	43	3	0	46	1	8	10	0	19	86
% Single-Unit	50.0	75.0	100.0	0.0	70.6	25.0	88.9	0.0	0.0	64.3	0.0	89.6	75.0	0.0	88.5	33.3	80.0	55.6	0.0	61.3	75.4
Exiting Leg Total					54					9					10					13	86
Articulated Trucks	2	1	0	0	3	0	1	0	0	1	0	3	1	0	4	0	2	4	0	6	14
% Articulated	50.0	8.3	0.0	0.0	17.6	0.0	11.1	0.0	0.0	7.1	0.0	6.3	25.0	0.0	7.7	0.0	20.0	22.2	0.0	19.4	12.3
Exiting Leg Total					7					2					1					4	14

7:00 AM		Cent	ral Ave	nue			Charle	s River	Street			Cent	tral Ave	nue			Charle	s River	Street		
		fro	m Nor	th			fr	om Eas	t			fr	om Sou	ıth			fr	om We	st		
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:00 AM	1	1	0	0	2	2	3	0	0	5	0	4	1	0	5	1	0	2	0	3	15
7:15 AM	1	2	0	0	3	0	2	0	0	2	0	4	0	0	4	0	0	8	0	8	17
7:30 AM	0	1	0	0	1	1	0	0	0	1	0	12	0	0	12	0	0	1	0	1	15
7:45 AM	0	1	1	0	2	0	1	0	0	1	0	7	0	0	7	0	2	2	0	4	14
Total Volume	2	5	1	0	8	3	6	0	0	9	0	27	1	0	28	1	2	13	0	16	61
% Approach Total	25.0	62.5	12.5	0.0		33.3	66.7	0.0	0.0		0.0	96.4	3.6	0.0		6.3	12.5	81.3	0.0		ł
PHF	0.500	0.625	0.250	0.000	0.667	0.375	0.500	0.000	0.000	0.450	0.000	0.563	0.250	0.000	0.583	0.250	0.250	0.406	0.000	0.500	0.897
				_			_	_	_	_1		_	_	_	-1		_	_	_	- r	1 _
Buses	0	1	0	0	1	2	0	0	0	2	0	0	0	0	0	1	0	3	0	4	7
Buses %	0.0	20.0	0.0	0.0	12.5	66.7	0.0	0.0	0.0	22.2	0.0	0.0	0.0	0.0	0.0	100.0	0.0	23.1	0.0	25.0	
Single-Unit Trucks	1	3	1	0	5	1	6	0	0	7	0	25	1	0	26	0	2	8	0	10	_
Single-Unit %	50.0	60.0	100.0	0.0	62.5	33.3	100.0	0.0	0.0	77.8	0.0	92.6	100.0	0.0	92.9	0.0	100.0	61.5	0.0	62.5	
Articulated Trucks	1	1	0	0	2	0	0	0	0	0	0	2	0	0	2	0	0	2	0	2	6
Articulated %	50.0	20.0	0.0	0.0	25.0	0.0	0.0	0.0	0.0	0.0	0.0	7.4	0.0	0.0	7.1	0.0	0.0	15.4	0.0	12.5	9.8
Buses	0	1	0	0	1	2	0	0	0	2	0	0	0	0	0	1	0	3	0	4	7
Single-Unit Trucks	1	3	1	0	5	1	6	0	0	7	0	25	1	0	26	0	2	8	0	10	48
Articulated Trucks	1	1	0	0	2	0	0	0	0	0	0	2	0	0	2	0	0	2	0	2	6
Total Entering Leg	2	5	1	0	8	3	6	0	0	9	0	27	1	0	28	1	2	13	0	16	61
Buses	1				5					0					2					0	7
Single-Unit Trucks					34					3					3					8	48
Articulated Trucks					4					0					1					1	6
Total Exiting Leg					43					3					6					9	61

N: Central Avenue S: Central Avenue Location:

E: Charles River Street W: Charles River Street Location:

City, State: Needham, MA Gillon/J. Gillon Client:

TBA Site Code:

Count Date: Wednesday, October 13, 2021

7:00 AM Start Time: End Time: 9:00 AM



157 Washington Street, Suite 2 Hudson, MA 01749 Office: 508-875-0100 Fax: 508-875-0118

Class:										Bu	ses										
		Cent	ral Ave	nue			Charle	s River	Street			Cen	tral Ave	nue			Charle	s River	Street		
		fro	m Nor	th			f	rom Eas	st			fr	om Sou	th			fr	om We	st		)
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:00 AM	0	1	0	0	1	2	0	0	0	2	0	0	0	0	0	1	0	1	0	2	5
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
Total	0	1	0	0	1	2	0	0	0	2	0	0	0	0	0	1	0	3	0	4	7
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	1	0	1	0	2	0	1	0	0	1	1	0	0	0	1	4
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	2
8:45 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	1	0	0	1	1	0	1	0	2	0	2	0	0	2	1	0	1	0	2	7
Grand Total	0	2	0	0	2	3	0	1	0	4	0	2	0	0	2	2	0	4	0	6	14
Approach %	0.0	100.0	0.0	0.0		75.0	0.0	25.0	0.0		0.0	100.0	0.0	0.0		33.3	0.0	66.7	0.0		
Total %	0.0	14.3	0.0	0.0	14.3	21.4	0.0	7.1	0.0	28.6	0.0	14.3	0.0	0.0	14.3	14.3	0.0	28.6	0.0	42.9	
Exiting Leg Total			•	•	9				•	0		•		•	5		•	•		0	14

reak Hour Allalysis	11011107	.UU AIVI	10 05.0	JU AIVI L	egiiis a	ι.															
7:00 AM		Cent	tral Ave	nue			Charle	s River	Street			Cent	ral Ave	nue			Charle	s River	Street		İ
		fro	om Nor	th			fr	om Eas	t			fr	om Sou	th			fr	om Wes	st		
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:00 AM	0	1	0	0	1	2	0	0	0	2	0	0	0	0	0	1	0	1	0	2	5
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
Total Volume	0	1	0	0	1	2	0	0	0	2	0	0	0	0	0	1	0	3	0	4	7
% Approach Total	0.0	100.0	0.0	0.0		100.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		25.0	0.0	75.0	0.0		
PHF	0.000	0.250	0.000	0.000	0.250	0.250	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.750	0.000	0.500	0.350
Entering Leg	0	1	0	0	1	2	0	0	0	2	0	0	0	0	0	1	0	3	0	4	7
Exiting Leg					5					0					2					0	7
Total					6					2					2					4	14

N: Central Avenue S: Central Avenue Location:

E: Charles River Street W: Charles River Street Location:

City, State: Needham, MA Gillon/J. Gillon Client:

TBA Site Code:

Count Date: Wednesday, October 13, 2021

7:00 AM Start Time: End Time: 9:00 AM



157 Washington Street, Suite 2 Hudson, MA 01749 Office: 508-875-0100 Fax: 508-875-0118

Class:

### **Single-Unit Trucks**

									_	J											
		Cent	tral Ave	nue			Charle	s River	Street			Cen	tral Ave	enue			Charle	s River	Street		
		fro	om Nor	th			f	rom Eas	st			fr	om Sou	ıth			fr	om We	st		)
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:00 AM	0	0	0	0	0	0	3	0	0	3	0	4	1	0	5	0	0	1	0	1	9
7:15 AM	1	1	0	0	2	0	2	0	0	2	0	3	0	0	3	0	0	5	0	5	12
7:30 AM	0	1	0	0	1	1	0	0	0	1	0	11	0	0	11	0	0	1	0	1	14
7:45 AM	0	1	1	0	2	0	1	0	0	1	0	7	0	0	7	0	2	1	0	3	13
Total	1	3	1	0	5	1	6	0	0	7	0	25	1	0	26	0	2	8	0	10	48
8:00 AM	0	3	0	0	3	0	2	0	0	2	0	5	0	0	5	0	0	1	0	1	11
8:15 AM	0	1	0	0	1	0	0	0	0	0	0	1	1	0	2	1	2	0	0	3	6
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	5	0	0	5	0	1	1	0	2	7
8:45 AM	1	2	0	0	3	0	0	0	0	0	0	7	1	0	8	0	3	0	0	3	14
Total	1	6	0	0	7	0	2	0	0	2	0	18	2	0	20	1	6	2	0	9	38
	1 _	_			1	l .	_		_	_1	1 _		_			l .			_		1
Grand Total	2	9	1	0	12	1	8	0	0	9	0	43	3	0	46	1	8	10	0	19	86
Approach %	16.7	75.0	8.3	0.0		11.1	88.9	0.0	0.0		0.0	93.5	6.5	0.0		5.3	42.1	52.6	0.0		
Total %	2.3	10.5	1.2	0.0	14.0	1.2	9.3	0.0	0.0	10.5	0.0	50.0	3.5	0.0	53.5	1.2	9.3	11.6	0.0	22.1	
Exiting Leg Total					54					9					10					13	86

Teak Hour Analysis	11011107	.00 AIVI	10 05.0	O AIVI D	egiiis a	ι.															
7:15 AM		Cent	ral Ave	nue			Charle	s River	Street			Cen	tral Ave	nue			Charle	es River	Street		
		fro	m Nor	th			fr	om Eas	t			fr	om Sou	ıth			fr	om We	st		
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:15 AM	1	1	0	0	2	0	2	0	0	2	0	3	0	0	3	0	0	5	0	5	12
7:30 AM	0	1	0	0	1	1	0	0	0	1	0	11	0	0	11	0	0	1	0	1	14
7:45 AM	0	1	1	0	2	0	1	0	0	1	0	7	0	0	7	0	2	1	0	3	13
8:00 AM	0	3	0	0	3	0	2	0	0	2	0	5	0	0	5	0	0	1	0	1	11
Total Volume	1	6	1	0	8	1	5	0	0	6	0	26	0	0	26	0	2	8	0	10	50
% Approach Total	12.5	75.0	12.5	0.0		16.7	83.3	0.0	0.0		0.0	100.0	0.0	0.0		0.0	20.0	80.0	0.0		
PHF	0.250	0.500	0.250	0.000	0.667	0.250	0.625	0.000	0.000	0.750	0.000	0.591	0.000	0.000	0.591	0.000	0.250	0.400	0.000	0.500	0.893
Entering Leg	1	6	1	0	8	1	5	0	0	6	0	26	0	0	26	0	2	8	0	10	50
Exiting Leg					35					3					6					6	50
Total					43					9					32					16	100

N: Central Avenue S: Central Avenue Location:

E: Charles River Street W: Charles River Street Location:

City, State: Needham, MA Gillon/J. Gillon Client:

TBA Site Code:

Count Date: Wednesday, October 13, 2021

7:00 AM Start Time: End Time: 9:00 AM



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### **Articulated Trucks**

Class:									Arti	iculat	ed Tru	cks									
		Cent	ral Ave	nue			Charle	s River	Street			Cen	tral Ave	enue			Charle	s River	Street		
		fro	m Nor	th			fr	om Eas	t			fr	om Sou	ıth			fr	om We	st		·
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:00 AM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:15 AM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	2	0	2	4
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	1	0	0	2	0	0	0	0	0	0	2	0	0	2	0	0	2	0	2	6
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
8:15 AM	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	0	0	1	0	1	3
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	2
8:45 AM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	1	0	0	0	1	0	1	0	0	1	0	1	1	0	2	0	2	2	0	4	8
	ī					Ì				1	Ì				ı	Ì				1	
Grand Total	2	1	0	0	3	0	1	0	0	1	0	3	1	0	4	0	2	4	0	6	14
Approach %	66.7	33.3	0.0	0.0		0.0	100.0	0.0	0.0		0.0	75.0	25.0	0.0		0.0	33.3	66.7	0.0		
Total %	14.3	7.1	0.0	0.0	21.4	0.0	7.1	0.0	0.0	7.1	0.0	21.4	7.1	0.0	28.6	0.0	14.3	28.6	0.0	42.9	
Exiting Leg Total					7					2					1					4	14

Teak Hour Analysis	11011107	.00 AIVI	10 05.0	O AIVI D	egiiis a	ι.															
8:00 AM		Cent	ral Ave	nue			Charle	s River :	Street			Cent	ral Ave	nue			Charle	s River	Street		
		fro	m Nort	th			fr	om Eas	t			fr	om Sou	th			fr	om We	st		
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	2
8:15 AM	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	0	0	1	0	1	3
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	2
8:45 AM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	1	0	0	0	1	0	1	0	0	1	0	1	1	0	2	0	2	2	0	4	8
% Approach Total	100.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	50.0	50.0	0.0		0.0	50.0	50.0	0.0		
PHF	0.250	0.000	0.000	0.000	0.250	0.000	0.250	0.000	0.000	0.250	0.000	0.250	0.250	0.000	0.500	0.000	0.250	0.500	0.000	0.500	0.667
Entering Leg	1	0	0	0	1	0	1	0	0	1	0	1	1	0	2	0	2	2	0	4	8
Exiting Leg					3					2					0					3	8
Total					4	<u> </u>	<u> </u>		<u> </u>	3		<u> </u>	<u> </u>	<u> </u>	2					7	16

Location: N: Central Avenue S: Central Avenue

E: Charles River Street W: Charles River Street Location:

City, State: Needham, MA Gillon/J. Gillon Client:

TBA Site Code:

Count Date: Wednesday, October 13, 2021

7:00 AM Start Time: End Time: 9:00 AM



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### **Bicycles (on Roadway and Crosswalks)**

Class:										Bicy	cles	(on	Roa	ıdw	ay ar	nd C	ross	walk	s)										
			Centr	al Ave	enue				Ch	arles	River	Stree	et			(	Centra	al Ave	nue				Cł	arles	River	Stre	et		
			fror	n Nor	th					fro	m Ea	st					fron	n Sou	th					froi	n We	est			
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn (	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1
7:15 AM	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	3
7:30 AM	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
7:45 AM	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	3	7
8:00 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:15 AM	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:30 AM	0	0	1	0	0	0	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	1	3
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
Total	0	1	1	0	0	0	2	0	1	1	0	0	0	2	0	0	0	0	0	0	0	0	2	0	0	0	0	2	6
Grand Total	0	5	1	0	0	0	6	0	1	1	0	0	0	2	0	0	0	0	0	0	0	1	4	0	0	0	0	5	13
Approach %	0.0	83.3	16.7	0.0	0.0	0.0		0.0	50.0	50.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		20.0	80.0	0.0	0.0	0.0	0.0		
Total %	0.0	38.5	7.7	0.0	0.0	0.0	46.2	0.0	7.7	7.7	0.0	0.0	0.0	15.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.7	30.8	0.0	0.0	0.0	0.0	38.5	
Exiting Leg Total							0							5							7							1	13

•																													
7:00 AM			Centi	ral Av	enue	!			Cł	narles	Rive	r Stre	et				Centi	ral Av	enue				Cł	arles	Rive	Stre	et		
			fro	m No	rth					fro	om Ea	ist					fro	m So	uth					fro	m We	est			
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1
7:15 AM	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	3
7:30 AM	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
7:45 AM	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	3	7
% Approach Total	0.0	100.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		33.3	66.7	0.0	0.0	0.0	0.0		
PHF	0.000	0.500	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.250	0.000	0.000	0.000	0.000	0.375	0.583
	i							i							i							i							
Entering Leg	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	3	7
Exiting Leg							0							2							5							0	7
Total							4							2							5							3	14

Location: N: Central Avenue S: Central Avenue

E: Charles River Street W: Charles River Street Location:

City, State: Needham, MA Gillon/J. Gillon Client:

Site Code: TBA

Count Date: Wednesday, October 13, 2021

7:00 AM Start Time: End Time: 9:00 AM



157 Washington Street, Suite 2 Hudson, MA 01749 Office: 508-875-0100 Fax: 508-875-0118

### **Pedestrians**

Class:													Pe	des	triar	าร													
			Centr	al Ave	nue				Cł	arles	River	Stre	et				Centr	al Ave	enue				Cł	arles	River	Stre	et		
			fror	n Nor	th					fro	om Eas	st					fror	n Sou	th					fror	n We	st			
	Right	Thru	Left	U-Turn (	:W-EB C	W-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn (	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn (	CW-NB	CW-SB	Total	Total
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
Approach %	0	0	0	0	0	0		0	0	0	0	0	100		0	0	0	0	0	0		0	0	0	0	0	100		
Total %	0	0	0	0	0	0	0	0	0	0	0	0	50	50	0	0	0	0	0	0	0	0	0	0	0	0	50	50	
Exiting Leg Total							0							1							0							1	2

	,			•				8																						
7:00 A	AΜ			Cent	ral Av	enue/	:			Cł	narles	Rive	r Stre	et				Centi	ral Av	enue				Ch	arles	Rive	r Stre	et		
	Ī			fro	m No	rth					fro	m Ea	ist					fro	m Soı	uth					fro	m W	est			
		Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
7:00 A	AΜ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
7:15 A	AΜ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 A	AΜ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 <i>F</i>	AΜ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volu	ume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
% Approach T	Γotal	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	100.0		
	PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.250	0.250
	. 1	_	_	_	_	_	_	اء		_		_	_	_	_		_	_	_	_	_	اء		_	_	_	_		1	
Entering	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
Exiting	Leg							0							0							0							1	1
T	otal							0							0							0							2	2

Location: N: Central Avenue S: Central Avenue

Location: E: Charles River Street W: Charles River Street

Client: Needham, MA
Client: Gillon/J. Gillon

Site Code: TBA

Count Date: Wednesday, October 13, 2021

Start Time: 4:00 PM End Time: 6:00 PM PRECISION
D A T A
INDUSTRIES, LLC

157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Concond

### Class:

### **Cars and Heavy Vehicles (Combined)**

		Cent	ral Ave	enue			Charle	s River	Street			Cen	tral Ave	nue			Charle	s River	Street		
		fro	m Nor	th			fr	om Eas	st			fr	om Sou	ıth			fr	om We	st		ĺ
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
4:00 PM	5	164	4	0	173	1	38	2	0	41	0	44	5	0	49	15	36	22	0	73	336
4:15 PM	4	134	6	0	144	8	47	3	0	58	4	46	15	0	65	18	38	22	0	78	345
4:30 PM	5	133	19	0	157	2	37	3	0	42	1	57	13	0	71	9	29	22	0	60	330
4:45 PM	10	145	5	0	160	7	32	3	0	42	1	41	16	0	58	9	32	28	0	69	329
Total	24	576	34	0	634	18	154	11	0	183	6	188	49	0	243	51	135	94	0	280	1340
5:00 PM	8	148	5	0	161	2	20	5	0	27	0	50	4	0	54	12	36	22	0	70	312
5:15 PM	4	158	3	0	165	2	41	0	0	43	1	57	5	0	63	14	40	24	0	78	349
5:30 PM	6	141	6	0	153	10	45	7	0	62	1	55	11	0	67	13	26	33	0	72	354
5:45 PM	7	151	5	0	163	13	35	1	0	49	0	55	13	0	68	14	34	25	0	73	353
Total	25	598	19	0	642	27	141	13	0	181	2	217	33	0	252	53	136	104	0	293	1368
Grand Total	49	1174	53	0	1276	45	295	24	0	364	8	405	82	0	495	104	271	198	0	573	2708
Approach %	3.8	92.0	4.2	0.0		12.4	81.0	6.6	0.0		1.6	81.8	16.6	0.0		18.2	47.3	34.6	0.0		ĺ
Total %	1.8	43.4	2.0	0.0	47.1	1.7	10.9	0.9	0.0	13.4	0.3	15.0	3.0	0.0	18.3	3.8	10.0	7.3	0.0	21.2	
Exiting Leg Total	l				648					332					1302					426	2708
Cars	48	1154	52	0	1254	43	287	23	0	353	8	396	81	0	485	99	266	196	0	561	2653
% Cars	98.0	98.3	98.1	0.0	98.3	95.6	97.3	95.8	0.0	97.0	100.0	97.8	98.8	0.0	98.0	95.2	98.2	99.0	0.0	97.9	98.0
Exiting Leg Total					635					326					1276					416	2653
Heavy Vehicles	1	20	1	0	22	2	8	1	0	11	0	9	1	0	10	5	5	2	0	12	55
% Heavy Vehicles	2.0	1.7	1.9	0.0	1.7	4.4	2.7	4.2	0.0	3.0	0.0	2.2	1.2	0.0	2.0	4.8	1.8	1.0	0.0	2.1	2.0
Exiting Leg Total					13					6					26					10	55

5:00 PM		Cent	ral Ave	nue			Charle	s River	Street			Cen	tral Ave	nue			Charle	s River	Street		
		fro	m Nor	th			fr	om Eas	t			fr	om Sou	th			fr	om We	st		
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
5:00 PM	8	148	5	0	161	2	20	5	0	27	0	50	4	0	54	12	36	22	0	70	312
5:15 PM	4	158	3	0	165	2	41	0	0	43	1	57	5	0	63	14	40	24	0	78	349
5:30 PM	6	141	6	0	153	10	45	7	0	62	1	55	11	0	67	13	26	33	0	72	354
5:45 PM	7	151	5	0	163	13	35	1	0	49	0	55	13	0	68	14	34	25	0	73	353
Total Volume	25	598	19	0	642	27	141	13	0	181	2	217	33	0	252	53	136	104	0	293	1368
% Approach Total	3.9	93.1	3.0	0.0		14.9	77.9	7.2	0.0		0.8	86.1	13.1	0.0		18.1	46.4	35.5	0.0		
PHF	0.781	0.946	0.792	0.000	0.973	0.519	0.783	0.464	0.000	0.730	0.500	0.952	0.635	0.000	0.926	0.946	0.850	0.788	0.000	0.939	0.966
Cars	۱ ۵۰	504	40		625		420	42		470		246	22	•	250		424	404		200	4252
Cars %	25 100.0	591 98.8	19 100.0	0.0	635 98.9	27 100.0	138 97.9	13	0.0	178 98.3	100.0	216 99.5	32 97.0	0.0	250 99.2	52 98.1	134	104 100.0	0.0	290 99.0	1353 98.9
Heavy Vehicles	100.0	96.6	100.0	0.0	96.9	100.0	37.9	100.0	0.0	96.5	100.0	99.5	97.0	0.0	99.2	96.1	98.5	100.0	0.0	99.0	98.9
Heavy Vehicles %	0.0	1.2	0.0	0.0	1.1	0.0	2.1	0.0	0.0	1.7	0.0	0.5	3.0	0.0	0.8	1.9	1.5	0.0	0.0	1.0	1.1
•																					
Cars Enter Leg	25	591	19	0	635	27	138	13	0	178	2	216	32	0	250	52	134	104	0	290	1353
Heavy Enter Leg	0	- /	0	0	642	0	3	0	0	3	0	247	1	0	252	- 1	126	0	0	300	15
Total Entering Leg	25	598	19	0	642	27	141	13	0	181	2	217	33	0	252	53	136	104	0	293	1368
Cars Exiting Leg					347					155					656					195	1353
Heavy Exiting Leg					1					2					8					4	15
Total Exiting Leg					348					157					664					199	1368

Location: N: Central Avenue S: Central Avenue

E: Charles River Street W: Charles River Street Location:

City, State: Needham, MA Gillon/J. Gillon Client:

Site Code: TBA

Count Date: Wednesday, October 13, 2021

4:00 PM Start Time: End Time: 6:00 PM



157 Washington Street, Suite 2 Hudson, MA 01749 Office: 508-875-0100 Fax: 508-875-0118

Class:										Ca	ırs										
		Cent	ral Ave	nue			Charle	s River S	Street			Cen	tral Ave	nue			Charle	s River	Street		
		fro	m Nort	:h			fr	om Eas	t			fr	om Sou	ith			fr	om We	st		
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
4:00 PM	5	159	4	0	168	1	35	2	0	38	0	42	5	0	47	15	35	22	0	72	325
4:15 PM	4	131	6	0	141	6	47	3	0	56	4	43	15	0	62	17	37	22	0	76	335
4:30 PM	4	129	18	0	151	2	35	3	0	40	1	54	13	0	68	9	29	22	0	60	319
4:45 PM	10	144	5	0	159	7	32	2	0	41	1	41	16	0	58	6	31	26	0	63	321
Total	23	563	33	0	619	16	149	10	0	175	6	180	49	0	235	47	132	92	0	271	1300
5:00 PM	8	145	5	0	158	2	20	5	0	27	0	50	3	0	53	12	35	22	0	69	307
5:15 PM	4	157	3	0	164	2	40	0	0	42	1	56	5	0	62	14	39	24	0	77	345
5:30 PM	6	139	6	0	151	10	43	7	0	60	1	55	11	0	67	12	26	33	0	71	349
5:45 PM	7	150	5	0	162	13	35	1	0	49	0	55	13	0	68	14	34	25	0	73	352
Total	25	591	19	0	635	27	138	13	0	178	2	216	32	0	250	52	134	104	0	290	1353
Grand Total	48	1154	52	0	1254	43	287	23	0	353	8	396	81	0	485	99	266	196	0	561	2653
Approach %	3.8	92.0	4.1	0.0		12.2	81.3	6.5	0.0		1.6	81.6	16.7	0.0		17.6	47.4	34.9	0.0		
Total %	1.8	43.5	2.0	0.0	47.3	1.6	10.8	0.9	0.0	13.3	0.3	14.9	3.1	0.0	18.3	3.7	10.0	7.4	0.0	21.1	
Exiting Leg Total					635					326					1276					416	2653

	, , , , , , ,					-0																
5:00 PM Central Avenue						Charles River Street						Cent	ral Ave	nue								
				from East						fr	om Sou	th			•							
		Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
	5:00 PM	8	145	5	0	158	2	20	5	0	27	0	50	3	0	53	12	35	22	0	69	307
	5:15 PM	4	157	3	0	164	2	40	0	0	42	1	56	5	0	62	14	39	24	0	77	345
	5:30 PM	6	139	6	0	151	10	43	7	0	60	1	55	11	0	67	12	26	33	0	71	349
_	5:45 PM	7	150	5	0	162	13	35	1	0	49	0	55	13	0	68	14	34	25	0	73	352
	Total Volume	25	591	19	0	635	27	138	13	0	178	2	216	32	0	250	52	134	104	0	290	1353
_	% Approach Total	3.9	93.1	3.0	0.0		15.2	77.5	7.3	0.0		0.8	86.4	12.8	0.0		17.9	46.2	35.9	0.0		
	PHF	0.781	0.941	0.792	0.000	0.968	0.519	0.802	0.464	0.000	0.742	0.500	0.964	0.615	0.000	0.919	0.929	0.859	0.788	0.000	0.942	0.961
	Entering Leg	25	591	19	0	635	27	138	13	0	178	2	216	32	0	250	52	134	104	0	290	1353
_	Exiting Leg					347					155					656					195	1353
	Total					982					333					906					485	2706

N: Central Avenue S: Central Avenue Location:

E: Charles River Street W: Charles River Street Location:

City, State: Needham, MA Gillon/J. Gillon Client:

Site Code:

Class:

Wednesday, October 13, 2021 Count Date:

Start Time: 4:00 PM End Time: 6:00 PM



157 Washington Street, Suite 2 Hudson, MA 01749 Office: 508-875-0100 Fax: 508-875-0118

### Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)

		Cent	ral Ave	enue	_	Charles River Street						Cen	tral Av	enue							
		th	from East						fr	om Sou	uth			· 							
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
4:00 PM	0	5	0	0	5	0	3	0	0	3	0	2	0	0	2	0	1	0	0	1	11
4:15 PM	0	3	0	0	3	2	0	0	0	2	0	3	0	0	3	1	1	0	0	2	10
4:30 PM	1	4	1	0	6	0	2	0	0	2	0	3	0	0	3	0	0	0	0	0	11
4:45 PM	0	1	0	0	1	0	0	1	0	1	0	0	0	0	0	3	1	2	0	6	8
Total	1	13	1	0	15	2	5	1	0	8	0	8	0	0	8	4	3	2	0	9	40
5:00 PM	0	3	0	0	3	0	0	0	0	0	0	0	1	0	1	0	1	0	0	1	5
5:15 PM	0	1	0	0	1	0	1	0	0	1	0	1	0	0	1	0	1	0	0	1	4
5:30 PM	0	2	0	0	2	0	2	0	0	2	0	0	0	0	0	1	0	0	0	1	5
5:45 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	7	0	0	7	0	3	0	0	3	0	1	1	0	2	1	2	0	0	3	15
Grand Total	1	20	1	0	22	2	8	1	0	11	0	9	1	0	10	5	5	2	0	12	55
Approach %	4.5	90.9	4.5	0.0		18.2	72.7	9.1	0.0		0.0	90.0	10.0	0.0		41.7	41.7	16.7	0.0		
Total %	1.8	36.4	1.8	0.0	40.0	3.6	14.5	1.8	0.0	20.0	0.0	16.4	1.8	0.0	18.2	9.1	9.1	3.6	0.0	21.8	
Exiting Leg Total					13					6					26					10	55
Buses	1	2	0	0	3	0	2	0	0	2	0	1	0	0	1	0	1	0	0	1	7
% Buses	100.0	10.0	0.0	0.0	13.6	0.0	25.0	0.0	0.0	18.2	0.0	11.1	0.0	0.0	10.0	0.0	20.0	0.0	0.0	8.3	12.7
Exiting Leg Total					1					1					2					3	7
Single-Unit Trucks	0	17	1	0	18	2	4	1	0	7	0	6	1	0	7	5	4	2	0	11	43
% Single-Unit	0.0	85.0	100.0	0.0	81.8	100.0	50.0	100.0	0.0	63.6	0.0	66.7	100.0	0.0	70.0	100.0	80.0	100.0	0.0	91.7	78.2
Exiting Leg Total					10					5					23					5	43
Articulated Trucks	0	1	0	0	1	0	2	0	0	2	0	2	0	0	2	0	0	0	0	0	5
% Articulated	0.0	5.0	0.0	0.0	4.5	0.0	25.0	0.0	0.0	18.2	0.0	22.2	0.0	0.0	20.0	0.0	0.0	0.0	0.0	0.0	9.1
Exiting Leg Total					2					0					1					2	5

4:00 PM		Cent	tral Ave	enue		Charles River Street						Cen	tral Ave	enue							
	from North						from East						om Sou	ıth							
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
4:00 PM	0	5	0	0	5	0	3	0	0	3	0	2	0	0	2	0	1	0	0	1	11
4:15 PM	0	3	0	0	3	2	0	0	0	2	0	3	0	0	3	1	1	0	0	2	10
4:30 PM	1	4	1	0	6	0	2	0	0	2	0	3	0	0	3	0	0	0	0	0	11
4:45 PM	0	1	0	0	1	0	0	1	0	1	0	0	0	0	0	3	1	2	0	6	8
Total Volume	1	13	1	0	15	2	5	1	0	8	0	8	0	0	8	4	3	2	0	9	40
% Approach Total	6.7	86.7	6.7	0.0		25.0	62.5	12.5	0.0		0.0	100.0	0.0	0.0		44.4	33.3	22.2	0.0		
PHF	0.250	0.650	0.250	0.000	0.625	0.250	0.417	0.250	0.000	0.667	0.000	0.667	0.000	0.000	0.667	0.333	0.750	0.250	0.000	0.375	0.909
_			_	_	_ [				_					_	. 1		_	_	_	- 1	
Buses	1	1	0	0	2	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	4
Buses %	100.0	7.7	0.0	0.0	13.3		20.0	0.0	0.0	12.5	0.0	12.5	0.0		12.5	0.0	0.0	0.0	0.0	0.0	10.0
Single-Unit Trucks Single-Unit %	0	11	100.0	0	12	2	3	1	0	7F 0	0	5	0	0	5	100.0	100.0	2	0	9	32
Articulated Trucks	0.0	84.6	100.0	0.0	80.0	100.0	60.0	100.0	0.0	75.0	0.0	62.5	0.0		62.5	100.0	100.0	100.0	0.0	100.0 0	80.0 4
Articulated %	0.0	1 7.7	0.0	0.0	6.7	0.0	20.0	0.0	0.0	12.5	0.0	25.0	0.0	0.0	25.0	-	0.0	0.0	0.0	0.0	10.0
	0.0	7.7	0.0	0.0	0.7	0.0	20.0	0.0	0.0	12.5	0.0	23.0	0.0	0.0	25.0	0.0	0.0	0.0	0.0	0.0	10.0
Buses	1	1	0	0	2	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	4
Single-Unit Trucks	0	11	1	0	12	2	3	1	0	6	0	5	0	0	5	4	3	2	0	9	32
Articulated Trucks	0	1	0	0	1	0	1	0	0	1	0	2	0		2	0	0	0	0	0	4
Total Entering Leg	1	13	1	0	15	2	5	1	0	8	0	8	0	0	8	4	3	2	0	9	40
Buses					1					0					1					2	4
Single-Unit Trucks					9					4					16					3	32
Articulated Trucks					2					0					1					1	4
Total Exiting Leg					12					4					18					6	40

N: Central Avenue S: Central Avenue Location:

E: Charles River Street W: Charles River Street Location:

City, State: Needham, MA Gillon/J. Gillon Client:

TBA Site Code:

Count Date: Wednesday, October 13, 2021

4:00 PM Start Time: End Time: 6:00 PM



157 Washington Street, Suite 2 Hudson, MA 01749 Office: 508-875-0100 Fax: 508-875-0118

Class:										Bu	ses										_
		Cent	ral Ave	nue			Charle	s River	Street			Cen	itral Ave	enue			Charle	s River	Street		
		fro	m Nor	th			fr	om Eas	t			fr	rom Sou	ıth			fr	om We	st		
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	1	1	0	0	2	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	4
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	1	0	0	2	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	4
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	3
	_				_						_										_
Grand Total	1	2	0	0	3	0	2	0	0	2	0	1	0	0	1	0	1	0	0	1	7
Approach %	33.3	66.7	0.0	0.0		0.0	100.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	100.0	0.0	0.0		
Total %	14.3	28.6	0.0	0.0	42.9	0.0	28.6	0.0	0.0	28.6	0.0	14.3	0.0	0.0	14.3	0.0	14.3	0.0	0.0	14.3	
Exiting Leg Total					1					1					2					3	7

reak Hour Analysis	11011104	.UU FIVI	10 00.0	O FIVI D	egiiis a	ι.															
4:30 PM		Cent	ral Ave	nue			Charle	s River	Street			Cent	tral Ave	nue			Charle	s River	Street		ì
		fro	om Nor	th			fr	om Eas	t			fr	om Sou	th			fr	om Wes	st		
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
4:30 PM	1	1	0	0	2	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	4
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
Total Volume	1	1	0	0	2	0	2	0	0	2	0	1	0	0	1	0	1	0	0	1	6
% Approach Total	50.0	50.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	100.0	0.0	0.0		
PHF	0.250	0.250	0.000	0.000	0.250	0.000	0.500	0.000	0.000	0.500	0.000	0.250	0.000	0.000	0.250	0.000	0.250	0.000	0.000	0.250	0.375
Entering Leg	1	1	0	0	2	0	2	0	0	2	0	1	0	0	1	0	1	0	0	1	6
Exiting Leg					1					1					1					3	6
Total					3					3					2					4	12

N: Central Avenue S: Central Avenue Location:

E: Charles River Street W: Charles River Street Location:

City, State: Needham, MA Gillon/J. Gillon Client:

TBA Site Code:

Count Date: Wednesday, October 13, 2021

4:00 PM Start Time: End Time: 6:00 PM



157 Washington Street, Suite 2 Hudson, MA 01749 Office: 508-875-0100 Fax: 508-875-0118

Class:

## **Single-Unit Trucks**

										<b>,</b>											
		Cen	tral Ave	enue			Charle	s River	Street			Cen	tral Ave	enue			Charle	s River	Street		
		fro	om Nor	th			f	rom Eas	st			fr	om Sou	ıth			fr	om We	st		
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
4:00 PM	0	4	0	0	4	0	2	0	0	2	0	1	0	0	1	0	1	0	0	1	8
4:15 PM	0	3	0	0	3	2	0	0	0	2	0	3	0	0	3	1	1	0	0	2	10
4:30 PM	0	3	1	0	4	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	6
4:45 PM	0	1	0	0	1	0	0	1	0	1	0	0	0	0	0	3	1	2	0	6	8
Total	0	11	1	0	12	2	3	1	0	6	0	5	0	0	5	4	3	2	0	9	32
5:00 PM	0	3	0	0	3	0	0	0	0	0	0	0	1	0	1	0	1	0	0	1	5
5:15 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
5:30 PM	0	2	0	0	2	0	1	0	0	1	0	0	0	0	0	1	0	0	0	1	4
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	6	0	0	6	0	1	0	0	1	0	1	1	0	2	1	1	0	0	2	11
Grand Total	0	17	1	0	18	2	4	1	0	7	0	6	1	0	7	5	4	2	0	11	43
Approach %	0.0	94.4	5.6	0.0		28.6	57.1	14.3	0.0		0.0	85.7	14.3	0.0		45.5	36.4	18.2	0.0		
Total %	0.0	39.5	2.3	0.0	41.9	4.7	9.3	2.3	0.0	16.3	0.0	14.0	2.3	0.0	16.3	11.6	9.3	4.7	0.0	25.6	
Exiting Leg Total			•	•	10				•	5				•	23		•	•		5	43

Peak Hour Arialysis	11011104	.UU PIVI	10 00.0	JU PIVI D	egiiis a	ι.															
4:00 PM		Cent	tral Ave	nue			Charle	s River	Street			Cent	ral Ave	nue			Charle	s River	Street		
		fro	om Nor	th			fr	om Eas	t			fr	om Sou	th			fr	om Wes	st		
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
4:00 PM	0	4	0	0	4	0	2	0	0	2	0	1	0	0	1	0	1	0	0	1	8
4:15 PM	0	3	0	0	3	2	0	0	0	2	0	3	0	0	3	1	1	0	0	2	10
4:30 PM	0	3	1	0	4	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	6
4:45 PM	0	1	0	0	1	0	0	1	0	1	0	0	0	0	0	3	1	2	0	6	8
Total Volume	0	11	1	0	12	2	3	1	0	6	0	5	0	0	5	4	3	2	0	9	32
% Approach Total	0.0	91.7	8.3	0.0		33.3	50.0	16.7	0.0		0.0	100.0	0.0	0.0		44.4	33.3	22.2	0.0		
PHF	0.000	0.688	0.250	0.000	0.750	0.250	0.375	0.250	0.000	0.750	0.000	0.417	0.000	0.000	0.417	0.333	0.750	0.250	0.000	0.375	0.800
Entoring Log				•	4.5		2			۰		-		•	-1		2	2		اء	22
Entering Leg	0	11	1	0	12	2	3	1	0	6	0	5	0	0	5	4	3	2	0	9	32
Exiting Leg					9					4					16					3	32
Total					21					10					21					12	64

Location: N: Central Avenue S: Central Avenue

E: Charles River Street W: Charles River Street Location:

City, State: Needham, MA Gillon/J. Gillon Client:

Site Code: TBA

Count Date: Wednesday, October 13, 2021

4:00 PM Start Time: End Time: 6:00 PM



157 Washington Street, Suite 2 Hudson, MA 01749 Office: 508-875-0100 Fax: 508-875-0118

#### **Articulated Trucks**

Class:									Arti	iculat	ed Tru	cks									_
		Cent	ral Ave	nue			Charle	s River	Street			Cen	tral Ave	enue			Charle	s River	Street		
		fro	m Nor	th			fr	om Eas	t			fr	om Sou	ıth			fr	om We	st		
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
4:00 PM	0	1	0	0	1	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	3
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	1	0	1	0	0	1	0	2	0	0	2	0	0	0	0	0	4
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Grand Total	0	1	0	0	1	0	2	0	0	2	0	2	0	0	2	0	0	0	0	0	5
Approach %	0.0	100.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		
Total %	0.0	20.0	0.0	0.0	20.0	0.0	40.0	0.0	0.0	40.0	0.0	40.0	0.0	0.0	40.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total					2					0					1					2	5

																					_
4:00 PM		Cent	ral Ave	nue			Charle	s River	Street			Cen	ral Ave	nue			Charle	s River	Street		
		fro	m Nort	th			fr	om Eas	t			fr	om Sou	th			fro	om Wes	st		
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
4:00 PM	0	1	0	0	1	0	1	0	0	1	0	1	0	0	1	0	0	0	0	0	3
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	1	0	0	1	0	1	0	0	1	0	2	0	0	2	0	0	0	0	0	4
% Approach Total	0.0	100.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		
PHF	0.000	0.250	0.000	0.000	0.250	0.000	0.250	0.000	0.000	0.250	0.000	0.500	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.333
			_	_	. 1				_	. 1		_	_	_	_1		_		_	_	
Entering Leg	0	1	0	0	1	0	1	0	0	1	0	2	0	0	2	0	0	0	0	0	4
 Exiting Leg					2					0					1					1	4
Total					3					1					3					1	8

Location: N: Central Avenue S: Central Avenue

E: Charles River Street W: Charles River Street Location:

City, State: Needham, MA Client: Gillon/J. Gillon

Site Code: TBA

Class:

Count Date: Wednesday, October 13, 2021

4:00 PM Start Time: End Time: 6:00 PM



157 Washington Street, Suite 2 Hudson, MA 01749 Office: 508-875-0100 Fax: 508-875-0118

## **Bicycles (on Roadway and Crosswalks)**

												, -		_	- , -			_	-,										
		(	Centra	al Ave	enue				Ch	arles	River	Stree	et			(	Centra	al Ave	nue				Ch	arles	River	Stree	t		
			fror	n Nor	th					fro	m Eas	st					fron	n Sou	th					fror	n We	st			
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn (	CW-WB	CW-EB	otal	Right	Thru	Left	J-Turn (	W-NB	CW-SB	Total	Total
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
4:15 PM	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	3	0	0	0	5	9
4:30 PM	0	0	0	0	0	0	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
4:45 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0	2
Total	0	4	0	0	0	0	4	0	4	0	0	0	0	4	0	1	0	0	0	0	1	2	0	4	0	0	0	6	15
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	4	0	0	0	0	0	0	0	4
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2	0	0	0	0	0	2	0	0	2	0	0	0	2	6
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
5:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	0	0	0	0	1	0	2	0	0	0	0	2	4
Total	0	0	0	0	0	0	0	0	0	1	0	0	2	3	2	5	0	0	0	0	7	0	2	3	0	0	0	5	15
Grand Total	0	4	0	0	0	0	4	0	4	1	0	0	2	7	2	6	0	0	0	0	8	2	2	7	0	0	0	11	30
Approach %	0.0	100.0	0.0	0.0	0.0	0.0		0.0	57.1	14.3	0.0	0.0	28.6		25.0	75.0	0.0	0.0	0.0	0.0		18.2	18.2	63.6	0.0	0.0	0.0		
Total %	0.0	13.3	0.0	0.0	0.0	0.0	13.3	0.0	13.3	3.3	0.0	0.0	6.7	23.3	6.7	20.0	0.0	0.0	0.0	0.0	26.7	6.7	6.7	23.3	0.0	0.0	0.0	36.7	
Exiting Leg Total							13							6							7							4	30

•																													
4:15 PM			Centi	ral Av	enue	!			Ch	narles	Rive	r Stre	et				Centi	ral Av	enue				Cł	narles	Rive	r Stre	et		
			fro	m No	rth					fro	om Ea	st					fro	m So	uth					fro	m We	est			
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
4:15 PM	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	3	0	0	0	5	9
4:30 PM	0	0	0	0	0	0	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
4:45 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0	2
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	4	0	0	0	0	0	0	0	4
Total Volume	0	4	0	0	0	0	4	0	4	0	0	0	0	4	0	5	0	0	0	0	5	2	0	3	0	0	0	5	18
% Approach Total	0.0	100.0	0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0	0.0	0.0		40.0	0.0	60.0	0.0	0.0	0.0		
PHF	0.000	0.250	0.000	0.000	0.000	0.000	0.250	0.000	0.333	0.000	0.000	0.000	0.000	0.333	0.000	0.313	0.000	0.000	0.000	0.000	0.313	0.250	0.000	0.250	0.000	0.000	0.000	0.250	0.500
- · · ·	١ .		_	_		_				_	_	_	_			_	_	_		_	_1		_	_	_	_	_	-1	
Entering Leg	0	4	0	0	0	0	4	0	4	0	0	0	0	4	0	5	0	0	0	0	5	2	0	3	0	0	0	5	18
Exiting Leg							8							0							6							4	18
Total							12							4							11							9	36

N: Central Avenue S: Central Avenue Location:

E: Charles River Street W: Charles River Street Location:

City, State: Needham, MA Gillon/J. Gillon Client:

Site Code: TBA

Count Date: Wednesday, October 13, 2021

4:00 PM Start Time: End Time: 6:00 PM



157 Washington Street, Suite 2 Hudson, MA 01749 Office: 508-875-0100 Fax: 508-875-0118

# **Pedestrians**

Class:													Pe	des	triar	าร													
			Centi	ral Ave	enue				Ch	arles I	River	Stre	et				Centr	al Av	enue				Cl	narles	Rive	r Stre	et		
			fro	m Nor	th					fro	m Ea	st					froi	n Soı	uth					fro	m W	est			
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left (	J-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	2	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Ī																												
Grand Total	0	0	0	0	0	0	0	0	0	0	0	2	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Approach %	0	0	0	0	0	0		0	0	0	0	66.7	33.3		0	0	0	0	0	0		0	0	0	0	0	0		
Total %	0	0	0	0	0	0	0	0	0	0	0	66.7	33.3	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Exiting Leg Total							0							3							0							0	3

	. ,							0																						
	4:00 PM			Cent	ral Av	enue	:			Cł	harles	Rive	r Stre	et				Centi	ral Av	enue				Ch	arles	Rive	r Stre	et		
				fro	m No	rth					fro	om Ea	st					fro	m Sou	uth					fro	m W	est			
		Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
	4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
	4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total Volume	0	0	0	0	0	0	0	0	0	0	0	2	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
%	Approach Total	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	66.7	33.3		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		
	PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.250	0.375	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.375
	Entering Leg	0	0	0	0	0	0	О	0	0	0	0	2	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	О	3
	Exiting Leg							0							3							0							0	3
	Total							0							6							0							0	6

	*	-	*	1	+	*	1	1	-	1	1	1
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	1>			4			4			4	
Traffic Volume (vph)	330	220	52	10	143	22	88	794	5	14	195	14
Future Volume (vph)	330	220	52	10	143	22	88	794	5	14	195	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			-3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.971			0.983			0.999			0.991	
Flt Protected	0.950				0.997			0.995			0.997	
Satd. Flow (prot)	1652	1845	0	0	1857	0	0	1855	0	0	1873	0
FIt Permitted	0.329				0.968			0.936			0.938	
Satd. Flow (perm)	572	1845	0	0	1803	0	0	1745	0	0	1762	0
Right Turn on Red			No			Yes			No			Yes
Satd. Flow (RTOR)					8						4	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		787			760			563			885	
Travel Time (s)		17.9			17.3			12.8			20.1	
Peak Hour Factor	0.94	0.94	0.94	0.85	0.85	0.85	0.96	0.96	0.96	0.80	0.80	0.80
Heavy Vehicles (%)	2%	0%	0%	0%	0%	2%	0%	2%	0%	0%	2%	0%
Adj. Flow (vph)	351	234	55	12	168	26	92	827	5	18	244	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	351	289	0	0	206	0	0	924	0	0	280	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10	3		10			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.98	0.98	0.98
Turning Speed (mph)	15	1.00	9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel	OITEX	OI · LX		J			4000					
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
The state of the s	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	94		0.0	94		0.0	94			94	
Detector 2 Position(ft)		6			6			6			6	
Detector 2 Size(ft)		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Type		OLEX			OI. LA			O1 =/(				
Detector 2 Channel		0.0			0.0			0.0			0.0	
Detector 2 Extend (s)	nm int	NA		Perm	NA		Perm	NA		Perm	NA	
Turn Type	pm+pt			Femi	6		1 01111	4		, 51111	8	
Protected Phases	5	2		G	0		4	7		8		
Permitted Phases	2	6		6			4			0		

	1	-	*	1	-	*	1	1	1	1	+	1
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	10.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	50.0		30.0	30.0		40.0	40.0		40.0	40.0	
Total Split (%)	22.2%	55.6%		33.3%	33.3%		44.4%	44.4%		44.4%	44.4%	
Maximum Green (s)	15.0	45.0		25.0	25.0		35.0	35.0		35.0	35.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	
Total Lost Time (s)	5.0	5.0			5.0			5.0			5.0	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		Min	Min		None	None		None	None	
Act Effct Green (s)	33.6	33.6			13.8			35.1			35.1	
Actuated g/C Ratio	0.43	0.43			0.18			0.45			0.45	
v/c Ratio	0.79	0.37			0.64			1.19			0.36	
Control Delay	30.8	16.7			38.4			121.5			16.7	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay	30.8	16.7			38.4			121.5			16.7	
LOS	C	В			D			F			В	
Approach Delay		24.4			38.4			121.5			16.7	
Approach LOS		С			D			F			В	
Queue Length 50th (ft)	121	93			91			~558			86	
Queue Length 95th (ft)	#202	149			147			#856			139	
Internal Link Dist (ft)		707			680			483			805	
Turn Bay Length (ft)												
Base Capacity (vph)	450	1058			579			778			788	
Starvation Cap Reductn	0	0			0			0			0	
Spillback Cap Reductn	0	0			0			0			0	
Storage Cap Reductn	0	0			0			0			0	
Reduced v/c Ratio	0.78	0.27			0.36			1.19			0.36	
Intersection Cummary	- V-						100					

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 78.7

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.19

Intersection Signal Delay: 68.5

Intersection Capacity Utilization 111.5%

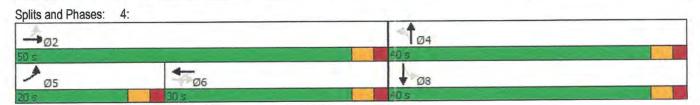
Intersection LOS: E
ICU Level of Service H

Analysis Period (min) 15

Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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



	*	<b>→</b>	*	1	-	*	1	†	1	1	1	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	M	B			4			4			4	
Traffic Volume (vph)	135	176	69	16	183	35	43	282	3	24	779	32
Future Volume (vph)	135	176	69	16	183	35	43	282	3	24	779	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	12	12	12	12	12	12	12	12	12
Grade (%)	SETTING.	0%			0%			0%			-3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	23.41	0.958			0.980			0.999			0.995	
FIt Protected	0.950				0.997			0.994			0.999	
Satd. Flow (prot)	1652	1820	0	0	1851	0	0	1855	0	0	1882	0
Flt Permitted	0.284				0.964			0.810			0.984	
Satd. Flow (perm)	494	1820	0	0	1790	0	0	1511	0	0	1854	0
Right Turn on Red	101	1020	No			Yes			No			Yes
Satd. Flow (RTOR)			110		10	100					3	
Link Speed (mph)		30			30			30			30	
and the state of the property of the state o		787			760			563			885	
Link Distance (ft)		17.9			17.3			12.8			20.1	
Travel Time (s)	0.94	0.94	0.94	0.80	0.80	0.80	0.93	0.93	0.93	0.97	0.97	0.97
Peak Hour Factor	2%	0.94	0.94	0.00	0.80	2%	0%	2%	0%	0%	2%	0%
Heavy Vehicles (%)		187	73	20	229	44	46	303	3	25	803	33
Adj. Flow (vph)	144	107	13	20	225	77	40	500		20	000	
Shared Lane Traffic (%)	411	000	0	0	293	0	0	352	0	0	861	0
Lane Group Flow (vph)	144	260				No						
Enter Blocked Intersection	No	No	No	No	No		Left	Left	Right	Left	Left	Right
Lane Alignment	Left	Left	Right	Left	Left	Right	Leit	0	Night	Lon	0	rugin
Median Width(ft)		10			10			0			0	
Link Offset(ft)		0			0			16			16	
Crosswalk Width(ft)		16			16			10			10	
Two way Left Turn Lane				4.00	4.00	4.00	4.00	4.00	1.00	0.98	0.98	0.98
Headway Factor	1.09	1.00	1.00	1.00	1.00	1.00	1.00	1.00		15	0.50	0.30
Turning Speed (mph)	15		9	15		9	15	^	9	10	2	
Number of Detectors	1	2		1	2		1	2		Left	Thru	
Detector Template	Left	Thru		Left	Thru		Left	Thru			100	
Leading Detector (ft)	20	100		20	100		20	100		20	0	
Trailing Detector (ft)	0	0		0	0		0	0		0		
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20		
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel										0.0	0.0	
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			4			8	
Permitted Phases	2	6		6			4			8		

Gillon Associates JTG

	1	-	7	1	-	*	1	1	1	1	1	1
_ane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	10.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	50.0		30.0	30.0		40.0	40.0		40.0	40.0	
Total Split (%)	22.2%	55.6%		33.3%	33.3%		44.4%	44.4%		44.4%	44.4%	
Maximum Green (s)	15.0	45.0		25.0	25.0		35.0	35.0		35.0	35.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	
Total Lost Time (s)	5.0	5.0			5.0			5.0			5.0	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		Min	Min		None	None		None	None	
Act Effct Green (s)	33.6	33.6			17.2			35.3			35.3	
Actuated g/C Ratio	0.43	0.43			0.22			0.45			0.45	
v/c Ratio	0.38	0.34			0.74			0.52			1.04	
Control Delay	16.7	16.0			39.7			21.2			66.5	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay	16.7	16.0			39.7			21.2			66.5	
LOS	В	В			D			С			E	
Approach Delay		16.2			39.7			21.2			66.5	
Approach LOS		В			D			С			E	
Queue Length 50th (ft)	43	82			130			121			~466	
Queue Length 95th (ft)	77	132			190			248			#830	
Internal Link Dist (ft)		707			680			483			805	
Turn Bay Length (ft)											024	
Base Capacity (vph)	432	1047			578			676			831	
Starvation Cap Reductn	0	0			0			0			0	
Spillback Cap Reductn	0	0			0			0			0	
Storage Cap Reductn	0	0			0			0			0	
Reduced v/c Ratio	0.33	0.25			0.51	- 4		0.52			1.04	
Intersection Summary	in the second				3							
Area Type:	Other											
Cycle Length: 90												

Cycle Length: 90
Actuated Cycle Length: 79

Natural Cycle: 70

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.04 Intersection Signal Delay: 43.4 Intersection Capacity Utilization 91.5%

Intersection LOS: D
ICU Level of Service F

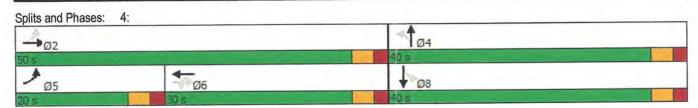
Analysis Period (min) 15

Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Evening Peak Hour



	*	-	*	1	-	*	1	†	1	1	+	1
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	1>			4			4			4	
Traffic Volume (vph)	353	235	55	11	153	23	94	849	5	15	208	15
Future Volume (vph)	353	235	55	11	153	23	94	849	5	15	208	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			-3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.971			0.983			0.999			0.991	
Flt Protected	0.950				0.997			0.995			0.997	
Satd. Flow (prot)	1652	1845	0	0	1858	0	0	1855	0	0	1873	0
FIt Permitted	0.317				0.966			0.932			0.929	
Satd. Flow (perm)	551	1845	0	0	1800	0	0	1738	0	0	1745	0
Right Turn on Red			No			Yes			No			Yes
Satd. Flow (RTOR)					8						4	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		787			760			563			885	
Travel Time (s)		17.9			17.3			12.8			20.1	
Peak Hour Factor	0.94	0.94	0.94	0.85	0.85	0.85	0.96	0.96	0.96	0.80	0.80	0.80
Heavy Vehicles (%)	2%	0%	0%	0%	0%	2%	0%	2%	0%	0%	2%	0%
Adj. Flow (vph)	376	250	59	13	180	27	98	884	5	19	260	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	376	309	0	0	220	0	0	987	0	0	298	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	770	10	3		10			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.98	0.98	0.98
Turning Speed (mph)	15	1100	9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel	01.24			CONTRACT.								
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	0.0	94		0.0	94		<b>ESFI</b>	94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel		OI LX			O. LA							
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1 01111	6		. 51111	4			8	
Permitted Phases	2	6		6	V		4			8		

Lane Group  Detector Phase Switch Phase Minimum Initial (s) Minimum Split (s) Total Split (s) Total Split (%) Maximum Green (s) Yellow Time (s) All-Red Time (s)	1	-	-	1	-	*	1	†	1	1	+	1
Detector Phase Switch Phase Minimum Initial (s) Minimum Split (s) Total Split (s) Total Split (%) Maximum Green (s) Yellow Time (s) All-Red Time (s)	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Initial (s) Minimum Split (s) Total Split (s) Total Split (%) Maximum Green (s) Yellow Time (s) All-Red Time (s)	5	2		6	6		4	4		8	8	
Minimum Initial (s) Minimum Split (s) Total Split (s) Total Split (%) Maximum Green (s) Yellow Time (s) All-Red Time (s)												
Minimum Split (s) Total Split (s) Total Split (%) Maximum Green (s) Yellow Time (s) All-Red Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Total Split (s) Total Split (%) Maximum Green (s) Yellow Time (s) All-Red Time (s)	10.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (%) Maximum Green (s) Yellow Time (s) All-Red Time (s)	20.0	50.0		30.0	30.0		40.0	40.0		40.0	40.0	
Maximum Green (s) Yellow Time (s) All-Red Time (s)	22.2%	55.6%		33.3%	33.3%		44.4%	44.4%		44.4%	44.4%	
Yellow Time (s) All-Red Time (s)	15.0	45.0		25.0	25.0		35.0	35.0		35.0	35.0	
All-Red Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	
Total Lost Time (s)	5.0	5.0			5.0			5.0			5.0	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		Min	Min		None	None		None	None	
Act Effct Green (s)	34.5	34.5			14.5			35.1			35.1	
Actuated g/C Ratio	0.43	0.43			0.18			0.44			0.44	
v/c Ratio	0.84	0.39			0.66			1.29			0.39	
Control Delay	36.0	16.8			39.0			164.2			17.5	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay	36.0	16.8			39.0			164.2			17.5	
LOS	D	В			D			F			В	
Approach Delay		27.3			39.0			164.2	30.5		17.5	
Approach LOS		С			D			F			В	
Queue Length 50th (ft)	132	101			99			~633			94	
Queue Length 95th (ft)	#239	159			156			#948			152	
Internal Link Dist (ft)		707			680			483			805	
Turn Bay Length (ft)											2000	
Base Capacity (vph)	446	1045			572			765			771	
Starvation Cap Reductn	0	0			0			0			0	
Spillback Cap Reductn	0	0			0			0			0	
Storage Cap Reductn	- 0		e ton treams — 1	TE TOURSE	0			0			0	
Reduced v/c Ratio	0.84				0.38			1.29			0.39	
Intersection Summary	0.04	0.30			0.50							
Area Type: Cycle Length: 90	Other	0.30			0.30							

Cycle Length: 90

Actuated Cycle Length: 79.6

Natural Cycle: 100

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.29

Intersection Signal Delay: 88.9

Intersection Capacity Utilization 117.5%

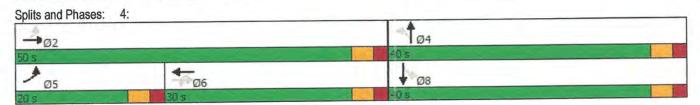
Intersection LOS: F
ICU Level of Service H

Analysis Period (min) 15

Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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



	1	<b>→</b>	7	-	<b>←</b>	*	1	†	-	1	1	1
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	79	1			4			4			4	
Traffic Volume (vph)	144	188	73	17	195	37	46	301	3	25	833	34
Future Volume (vph)	144	188	73	17	195	37	46	301	3	25	833	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			-3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	- 1100	0.958			0.980			0.999			0.995	
Flt Protected	0.950	0.000			0.997			0.994			0.999	
Satd. Flow (prot)	1652	1820	0	0	1851	0	0	1855	0	0	1882	0
Flt Permitted	0.274	1020			0.963			0.773			0.983	
Satd. Flow (perm)	476	1820	0	0	1788	0	0	1442	0	0	1852	0
Right Turn on Red	410	1020	No			Yes			No			Yes
			110		10	100					3	
Satd. Flow (RTOR)		30			30			30			30	
Link Speed (mph)		787			760			563			885	
Link Distance (ft)		17.9			17.3			12.8			20.1	
Travel Time (s)	0.94	0.94	0.94	0.80	0.80	0.80	0.93	0.93	0.93	0.97	0.97	0.97
Peak Hour Factor	TO P TO THE	0.94	0.34	0.00	0%	2%	0%	2%	0%	0%	2%	0%
Heavy Vehicles (%)	2%	200	78	21	244	46	49	324	3	26	859	35
Adj. Flow (vph)	153	200	10	21	244	40	40	02-1				
Shared Lane Traffic (%)	450	070	0	0	311	0	0	376	0	0	920	0
Lane Group Flow (vph)	153	278	No	No	No	No	No	No	No	No	No	No
Enter Blocked Intersection	No	No		Left	Left	Right	Left	Left	Right	Left	Left	Right
Lane Alignment	Left	Left	Right	Leit	10	Rigitt	Leit	0	ragin	Lon	0	
Median Width(ft)		10			0			0			0	
Link Offset(ft)		0			16			16			16	
Crosswalk Width(ft)		16			10			10				
Two way Left Turn Lane	4.00	4.00	4.00	4.00	1.00	1.00	1.00	1.00	1.00	0.98	0.98	0.98
Headway Factor	1.09	1.00	1.00	1.00	1.00	9	1.00	1.00	9	15	0.00	9
Turning Speed (mph)	15		9	15	2	9	1	2	J	1	2	
Number of Detectors	1	2		1			Left	Thru		Left	Thru	
Detector Template	Left	Thru		Left	Thru			100		20	100	
Leading Detector (ft)	20	100		20	100		20			0	0	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0 20	6		20	6	
Detector 1 Size(ft)	20	6		20	6			CI+Ex		CI+Ex	CI+Ex	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CITEX		CITEX	CITEX	
Detector 1 Channel					0.0		0.0	0.0		0.0	0.0	
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0			0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	94	
Detector 2 Position(ft)		94			94			94			6	
Detector 2 Size(ft)		6			6			6				
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel											0.0	
Detector 2 Extend (s)		0.0			0.0		11-2-23	0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6		100	4			8	
Permitted Phases	2	6		6			4			8		

	*	-	-	1	-	1	1	†	-	1	+	1
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	10.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	50.0		30.0	30.0		40.0	40.0		40.0	40.0	
Total Split (%)	22.2%	55.6%		33.3%	33.3%		44.4%	44.4%		44.4%	44.4%	
Maximum Green (s)	15.0	45.0		25.0	25.0		35.0	35.0		35.0	35.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	
Total Lost Time (s)	5.0	5.0			5.0			5.0			5.0	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		Min	Min		None	None		None	None	
Act Effct Green (s)	34.6	34.6			17.9			35.3			35.3	
Actuated g/C Ratio	0.43	0.43			0.22			0.44			0.44	
v/c Ratio	0.41	0.35			0.76			0.59			1.12	
Control Delay	16.9	16.1			41.3			23.6			96.6	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay	16.9	16.1			41.3			23.6			96.6	
LOS	В	В			D			С			F	
Approach Delay		16.4			41.3			23.6			96.6	
Approach LOS		В			D			С		Complete Complete	F	mer see
Queue Length 50th (ft)	46	89			141			139			~548	
Queue Length 95th (ft)	81	142			202			277			#907	
Internal Link Dist (ft)		707			680			483			805	
Turn Bay Length (ft)											040	
Base Capacity (vph)	428	1033			570			636			819	
Starvation Cap Reductn	0	0			0			0			0	
Spillback Cap Reductn	0	0			0			0			0	
Storage Cap Reductn	0	0			0			0			0	
Reduced v/c Ratio	0.36	0.27			0.55			0.59			1.12	
Intersection Summary	for S											
Area Type:	Other											
Ouala Lanath, OO												

Cycle Length: 90

Actuated Cycle Length: 80

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.12

Intersection Signal Delay: 57.7

Intersection Capacity Utilization 96.3%

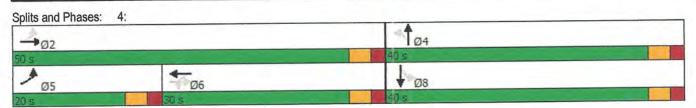
Intersection LOS: E
ICU Level of Service F

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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



	*	<b>→</b>	*	1	-	*	1	1	1	1	+	1
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	1>			4			4			4	
Traffic Volume (vph)	357	235	55	11	153	23	94	857	5	15	215	18
Future Volume (vph)	357	235	55	11	153	23	94	857	5	15	215	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	12	12	12	12	12	12	12	12	12
Grade (%)	Dell'Art	0%			0%			0%			-3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.971			0.983			0.999			0.990	
Fit Protected	0.950				0.997			0.995			0.997	
Satd. Flow (prot)	1652	1845	0	0	1858	0	0	1855	0	0	1871	0
Flt Permitted	0.317				0.966			0.930			0.930	
Satd. Flow (perm)	551	1845	0	0	1800	0	0	1734	0	0	1745	0
Right Turn on Red	001		No			Yes			No			Yes
Satd. Flow (RTOR)					8						5	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		787			760			563			885	
Travel Time (s)		17.9			17.3			12.8			20.1	
Peak Hour Factor	0.94	0.94	0.94	0.85	0.85	0.85	0.96	0.96	0.96	0.80	0.80	0.80
Heavy Vehicles (%)	2%	0%	0%	0%	0%	2%	0%	2%	0%	0%	2%	0%
Adj. Flow (vph)	380	250	59	13	180	27	98	893	5	19	269	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	380	309	0	0	220	0	0	996	0	0	311	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	Lon	10	9		10			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.98	0.98	0.98
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel	OI. LX	OI LX			THE REAL PROPERTY.							
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	0.0	94		0.0	94			94			94	
		6			6			6			6	
Detector 2 Size(ft)		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Type Detector 2 Channel		OITEX			OI. LX							
		0.0			0.0			0.0			0.0	
Detector 2 Extend (s)	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Turn Type Protected Phases	5	2		7 01111	6			4			8	
Permitted Phases	2	6		6			4			8		

	1	-	*	1	-	*	1	<b>†</b>	1	1	+	4
_ane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBF
Detector Phase	5	2	4	6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	10.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	50.0		30.0	30.0		40.0	40.0		40.0	40.0	
Total Split (%)	22.2%	55.6%		33.3%	33.3%		44.4%	44.4%		44.4%	44.4%	
Maximum Green (s)	15.0	45.0		25.0	25.0		35.0	35.0		35.0	35.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	
Total Lost Time (s)	5.0	5.0			5.0			5.0			5.0	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		Min	Min		None	None		None	None	
Act Effct Green (s)	34.5	34.5			14.5			35.1			35.1	
Actuated g/C Ratio	0.43	0.43			0.18			0.44			0.44	
v/c Ratio	0.85	0.39			0.66			1.30			0.40	
Control Delay	36.9	16.8			39.0			170.4			17.7	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay	36.9	16.8			39.0			170.4			17.7	
LOS	D	В			D			F			В	
Approach Delay		27.9			39.0			170.4			17.7	
Approach LOS		С			D			F			В	
Queue Length 50th (ft)	134	101			99			~643			99	
Queue Length 95th (ft)	#244	159			156			#959			159	
Internal Link Dist (ft)		707			680			483			805	
Turn Bay Length (ft)												
Base Capacity (vph)	446	1044			572			764			771	
Starvation Cap Reductn	0	0			0			0			0	
Spillback Cap Reductn	0	0			0			0			0	
Storage Cap Reductn	0	0			0			0			0	
Reduced v/c Ratio	0.85	0.30			0.38			1.30			0.40	

Intersection Summary

Area Type: Other

Cycle Length: 90

Actuated Cycle Length: 79.6

Natural Cycle: 120

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.30

Intersection Signal Delay: 91.6

Intersection Capacity Utilization 118.7%

Intersection LOS: F
ICU Level of Service H

Analysis Period (min) 15

Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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



	*	-	7	1	-	*	1	†	1	1	1	1
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	7>			4			4			4	
Traffic Volume (vph)	147	188	73	17	195	37	46	309	3	25	842	57
Future Volume (vph)	147	188	73	17	195	37	46	309	3	25	842	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			-3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	11.00	0.958			0.980			0.999			0.992	
Flt Protected	0.950	-,			0.997			0.994			0.999	
Satd. Flow (prot)	1652	1820	0	0	1851	0	0	1855	0	0	1877	0
Flt Permitted	0.271				0.963			0.764			0.983	
Satd. Flow (perm)	471	1820	0	0	1788	0	0	1425	0	0	1847	0
Right Turn on Red		1020	No			Yes			No			Yes
Satd. Flow (RTOR)					10						4	
Link Speed (mph)		30			30			30			30	
Link Opeca (mph) Link Distance (ft)		787			760			563			(885)	
Travel Time (s)		17.9			17.3			12.8			20.1	
Peak Hour Factor	0.94	0.94	0.94	0.80	0.80	0.80	0.93	0.93	0.93	0.97	0.97	0.97
Heavy Vehicles (%)	2%	0%	0%	0%	0%	2%	0%	2%	0%	0%	2%	0%
Adj. Flow (vph)	156	200	78	21	244	46	49	332	3	26	868	59
Shared Lane Traffic (%)	100	200										
Lane Group Flow (vph)	156	278	0	0	311	0	0	384	0	0	953	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)	Lon	10			10	0		0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.98	0.98	0.98
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel	OITEX	OI LX										
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	0.0	94			94			94			94	
ALCOHOLOGICAL PROPERTY OF THE PARTY OF THE P		6			6			6			6	
Detector 2 Size(ft)		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Type		OLILA			OI. LA							
Detector 2 Channel		0.0			0.0			0.0			0.0	
Detector 2 Extend (s)	nm±n4	NA		Perm	NA		Perm	NA		Perm	NA	
Turn Type	pm+pt	2		1 CIIII	6		, 01111	4			8	
Protected Phases Permitted Phases	5 2	6		6	U		4			8		

	*	-	*	1	-	*	1	†	1	1	1	1
_ane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	10.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	50.0		30.0	30.0		40.0	40.0		40.0	40.0	
Total Split (%)	22.2%	55.6%		33.3%	33.3%		44.4%	44.4%		44.4%	44.4%	
Maximum Green (s)	15.0	45.0		25.0	25.0		35.0	35.0		35.0	35.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	
Total Lost Time (s)	5.0	5.0			5.0			5.0			5.0	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		Min	Min		None	None		None	None	
Act Effct Green (s)	34.8	34.8			17.9			35.3			35.3	
Actuated g/C Ratio	0.43	0.43			0.22			0.44			0.44	
v/c Ratio	0.41	0.35			0.76			0.61			1.17	
Control Delay	17.0	16.0			41.4			24.4			113.9	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay	17.0	16.0			41.4			24.4			113.9	
LOS	В	В			D			С			F	
Approach Delay		16.4			41.4			24.4			113.9	
Approach LOS		В			D			С			FOO	1
Queue Length 50th (ft)	47	89			142			144			~588	)
Queue Length 95th (ft)	82	142			202			286			#950	/
Internal Link Dist (ft)		707			680			483			805	
Turn Bay Length (ft)											040	
Base Capacity (vph)	427	1031			569			627			816	
Starvation Cap Reductn	0	0			0			0			0	
Spillback Cap Reductn	0	0			0			0			0	
Storage Cap Reductn	0	0			0			0			0	
Reduced v/c Ratio	0.37	0.27			0.55			0.61			1.17	
Intersection Summary			(10) E									
Area Type:	Other					18 3						
Cycle Length: 90												
Actuated Cycle Length: 80	.2											
Natural Cycle: 90												

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.17

Intersection Signal Delay: 66.2

Intersection Capacity Utilization 98.2%

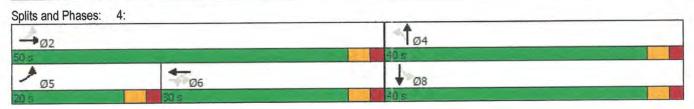
Intersection LOS: E ICU Level of Service F

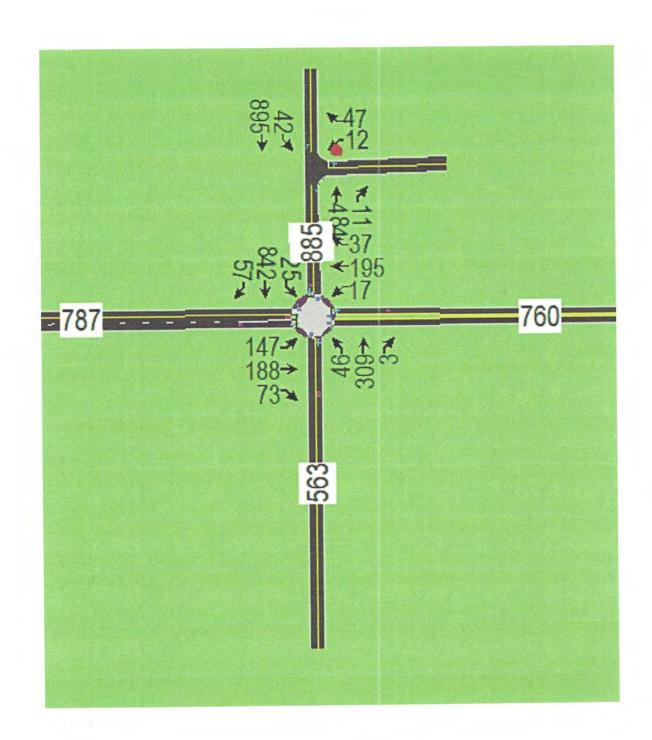
Analysis Period (min) 15

Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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





ntersection						1.	
nt Delay, s/veh	1.6						
Movement	WBL	WBR	NBT	NBR	SBL	SBT	
ane Configurations	W		B			4	
raffic Vol, veh/h	10	42	1226	12	46	239	
future Vol, veh/h	10	42	1226	12	46	239	
Conflicting Peds, #/hr	0	0	0	0	0	0	
Sign Control	Stop	Stop	Free	Free	Free	Free	
RT Channelized	Ctop	None	-			None	
Storage Length	0	-		-		-	
/eh in Median Storage		100	0		-	0	
Grade, %	0	-	0	-		-3	
Peak Hour Factor	96	96	95	95	80	80	
Heavy Vehicles, %	2	0	2	0	0	0	
Mymt Flow	10	44	1291	13	58	299	
WIVIIIET IOW	10		1201				
Major/Minor N	Winor1	N	Major1	Λ	/lajor2		
Conflicting Flow All	1713	1298	0	0	1304	0	
Stage 1	1298	-	SITE	NEW P		I THE	
Stage 2	415		_	-	-	-	
Critical Hdwy	6.42	6.2		_	4.1		
Critical Hdwy Stg 1	5.42	-	-	-	-	_	
Critical Hdwy Stg 2	5.42	1000	1	1 11 5	-	1	
Follow-up Hdwy	3.518	3.3	-	-	2.2	-	
Pot Cap-1 Maneuver	99	200		- 11/2	538	-	
Stage 1	256	-	-	-	-	_	
Stage 2	666	_	- 2		14	We Day	
Platoon blocked, %			-	-		-	
Mov Cap-1 Maneuver	86	200	-	-	538	-	
Mov Cap-2 Maneuver	86	-	-	-	-		
Stage 1	256	-		-		-	
Stage 2	580	-	-	-	-	-	
Olago 2							
Approach	WB		NB		SB		
HCM Control Delay, s	38.9		0		2		
HCM LOS	E						
Minor Lane/Major Mvn	nt	NBT	NBR	WBLn1	SBL	SBT	
Capacity (veh/h)		1		159	538		
HCM Lane V/C Ratio			-	0.341			
HCM Control Delay (s	)			38.9	12.5		
HCM Lane LOS		-			В		
HCM 95th %tile Q(veh	1)	-	15.1	1.4	0.4		

Intersection						
Int Delay, s/veh	1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
	WAL	VVDIN	1	NON	ODL	र्व
Lane Configurations	12	47	484	11	42	895
Traffic Vol, veh/h	12	47	484	11	42	895
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr			Free	Free	Free	Free
Sign Control	Stop	Stop	riee -	REAL PROPERTY.		None
RT Channelized	-	THE PERSON NAMED IN	5	None -	0.750	NONE -
Storage Length	0	an even	0			0
Veh in Median Storage		*	0			-3
Grade, %	0	-	0	-	-	
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	49	509	12	44	942
Major/Minor	Minor1	N	Major1	1	Major2	41 A 22
Conflicting Flow All	1545	515	0	0	521	0
	515	313	-	-	021	_
Stage 1	1030	- C		-	Wayne Co.	_
Stage 2	6.42	6.22			4.12	
Critical Hdwy		No. of Concession, Name of Street, or other Designation, Name of Street, or other Designation, Name of Street,			4.12	
Critical Hdwy Stg 1	5.42		-	_		
Critical Hdwy Stg 2	5.42		•		0.040	
Follow-up Hdwy		3.318	-	-	2.218	
Pot Cap-1 Maneuver	126	560	•	-	1045	
Stage 1	600	-	-	-	-	SECTION .
Stage 2	344				•	
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver		560	-	3.21.2	1045	-
Mov Cap-2 Maneuver	115	-	-	-	-	-
Stage 1	600		-		-	*
Stage 2	314	-	-	-	19	-
Anneach	WB		NB		SB	
Approach	10.0		0		0.4	
HCM Control Delay, s			U		0.4	
HCM LOS	С					
Minor Lane/Major Mv	mt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)				313	1045	
HCM Lane V/C Ratio		-			0.042	
HCM Control Delay (s			ATT.	19.3		
	9)			^		
HCM Lane LOS	hl			- 0.7		
HCM 95th %tile Q(ve	11)	-	-	0.7	0.1	-

	*	-	*	1	<b>←</b>	*	4	1	-	1	1	1
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	7	1			4			4			4	
Traffic Volume (vph)	357	235	55	11	153	23	94	857	5	15	215	18
Future Volume (vph)	357	235	55	11	153	23	94	857	5	15	215	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			-3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.971			0.983			0.999			0.990	
Fit Protected	0.950				0.997			0.995			0.997	
Satd. Flow (prot)	1652	1845	0	0	1858	0	0	1855	0	0	1871	(
FIt Permitted	0.200				0.963			0.928			0.922	
Satd. Flow (perm)	348	1845	0	0	1794	0	0	1730	0	0	1730	- (
Right Turn on Red			No			Yes			No			Yes
Satd. Flow (RTOR)					5						6	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		787			760			563			885	
Travel Time (s)		17.9			17.3			12.8			20.1	
Peak Hour Factor	0.94	0.94	0.94	0.85	0.85	0.85	0.96	0.96	0.96	0.80	0.80	0.80
Heavy Vehicles (%)	2%	0%	0%	0%	0%	2%	0%	2%	0%	0%	2%	0%
Adj. Flow (vph)	380	250	59	13	180	27	98	893	5	19	269	23
Shared Lane Traffic (%)		-										
Lane Group Flow (vph)	380	309	0	0	220	0	0	996	0	0	311	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Righ
Median Width(ft)		10			10			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.98	0.98	0.9
Turning Speed (mph)	15		9	15		9	15		9	15		
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel	OI - EX	01 - 11										
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	0.0	94		0.0	94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Type  Detector 2 Channel		OIILX			OI, LX							
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		. 01111	6			4			8	
Permitted Phases	2	6		6			4			8		

Gillon AAssociates JTG

Synchro 11 Report 1688 Central Avenue

	1	-	1	1	-	*	1	1	1	1	+	1
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	10.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	27.0	47.0		20.0	20.0		73.0	73.0		73.0	73.0	
Total Split (%)	22.5%	39.2%		16.7%	16.7%		60.8%	60.8%		60.8%	60.8%	
Maximum Green (s)	22.0	42.0		15.0	15.0		68.0	68.0		68.0	68.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	
Total Lost Time (s)	5.0	5.0			5.0			5.0			5.0	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		Min	Min		None	None		None	None	
Act Effct Green (s)	42.0	42.0			15.0			68.0			68.0	
Actuated g/C Ratio	0.35	0.35			0.12			0.57			0.57	
v/c Ratio	1.06	0.48			0.96			1.02			0.32	
Control Delay	96.9	33.5			102.7			59.6			14.5	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay	96.9	33.5			102.7			59.6			14.5	
LOS	F	С			F			E			В	
Approach Delay		68.4			102.7			59.6			14.5	
Approach LOS		E			F			E			В	
Queue Length 50th (ft)	~274	186			168			~780			118	
Queue Length 95th (ft)	#471	272			#299			#1067			151	
Internal Link Dist (ft)		707			680			483			805	
Turn Bay Length (ft)												
Base Capacity (vph)	360	645			228			980			982	
Starvation Cap Reductn	0	0			0			0			0	
Spillback Cap Reductn	0	0			0			0			0	
Storage Cap Reductn	0	0			0			0			0	
Reduced v/c Ratio	1.06	0.48			0.96		- 4	1.02			0.32	
Intersection Summary												
Area Tuno:	Other											

Area Type: Other

Cycle Length: 120 Actuated Cycle Length: 120

Natural Cycle: 120

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.06 Intersection Signal Delay: 60.3

Intersection Capacity Utilization 118.7%

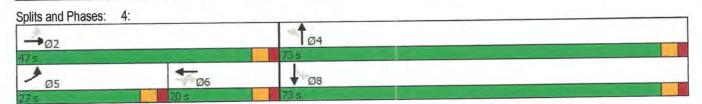
Intersection LOS: E
ICU Level of Service H

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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



	1	-	*	1	-	*	1	1	1	1	+	1
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	ሻ	1			4			4			4	
Traffic Volume (vph)	147	188	73	17	195	37	46	309	3	25	842	37
Future Volume (vph)	147	188	73	17	195	37	46	309	3	25	842	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			-3%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.958			0.980			0.999			0.994	
Flt Protected	0.950				0.997			0.994			0.999	
Satd. Flow (prot)	1652	1820	0	0	1851	0	0	1855	0	0	1880	0
Flt Permitted	0.232				0.961			0.842			0.984	
Satd. Flow (perm)	403	1820	0	0	1784	0	0	1571	0	0	1852	0
Right Turn on Red			No			Yes			No			Yes
Satd. Flow (RTOR)					10						4	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		787			760			563			885	
Travel Time (s)		17.9			17.3			12.8			20.1	
Peak Hour Factor	0.94	0.94	0.94	0.80	0.80	0.80	0.93	0.93	0.93	0.97	0.97	0.97
Heavy Vehicles (%)	2%	0%	0%	0%	0%	2%	0%	2%	0%	0%	2%	0%
Adj. Flow (vph)	156	200	78	21	244	46	49	332	3	26	868	38
Shared Lane Traffic (%)												
Lane Group Flow (vph)	156	278	0	0	311	0	0	384	0	0	932	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		10			10			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.09	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.98	0.98	0.98
Turning Speed (mph)	15		9	15		9	15		9	15		5
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)	0.0	94		0.3	94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel		OI - LA			700							
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		. 01111	6			4			8	
Permitted Phases	2	6		6			4			8		

Gillon ssociates JTG

	*	-	7	1	-	*	1	1	1	1	1	1
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	3/16/2	6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	10.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	10.0	31.0		21.0	21.0		49.0	49.0		49.0	49.0	
Total Split (%)	12.5%	38.8%		26.3%	26.3%		61.3%	61.3%		61.3%	61.3%	
Maximum Green (s)	5.0	26.0		16.0	16.0		44.0	44.0		44.0	44.0	*
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	
Total Lost Time (s)	5.0	5.0			5.0			5.0			5.0	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes		1					
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min		Min	Min		None	None		None	None	
Act Effct Green (s)	25.3	25.3			15.3			41.5			41.5	
Actuated g/C Ratio	0.33	0.33			0.20			0.54			0.54	
v/c Ratio	0.73	0.46			0.86			0.45			0.93	
Control Delay	43.3	24.2			54.1			12.9			34.1	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay	43.3	24.2			54.1			12.9			34.1	
LOS	D	C			D			В			C	
Approach Delay		31.1			54.1			12.9			34.1	
Approach LOS		С			D			В			C	
Queue Length 50th (ft)	57	109			146			106			390	
Queue Length 95th (ft)	#138	180			#232			172			#670	
Internal Link Dist (ft)		707			680			483			805	
Turn Bay Length (ft)											4000	
Base Capacity (vph)	215	620			381			906			1069	
Starvation Cap Reductn	0	0			0			0			0	
Spillback Cap Reductn	0	0			0			0			0	
Storage Cap Reductn	0	0			0			0			0	
Reduced v/c Ratio	0.73	0.45	-31		0.82	The's		0.42			0.87	
Intersection Summary					12 7,44							

Other Area Type:

Cycle Length: 80

Actuated Cycle Length: 76.9

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

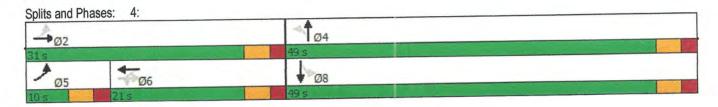
Maximum v/c Ratio: 0.93 Intersection Signal Delay: 32.5

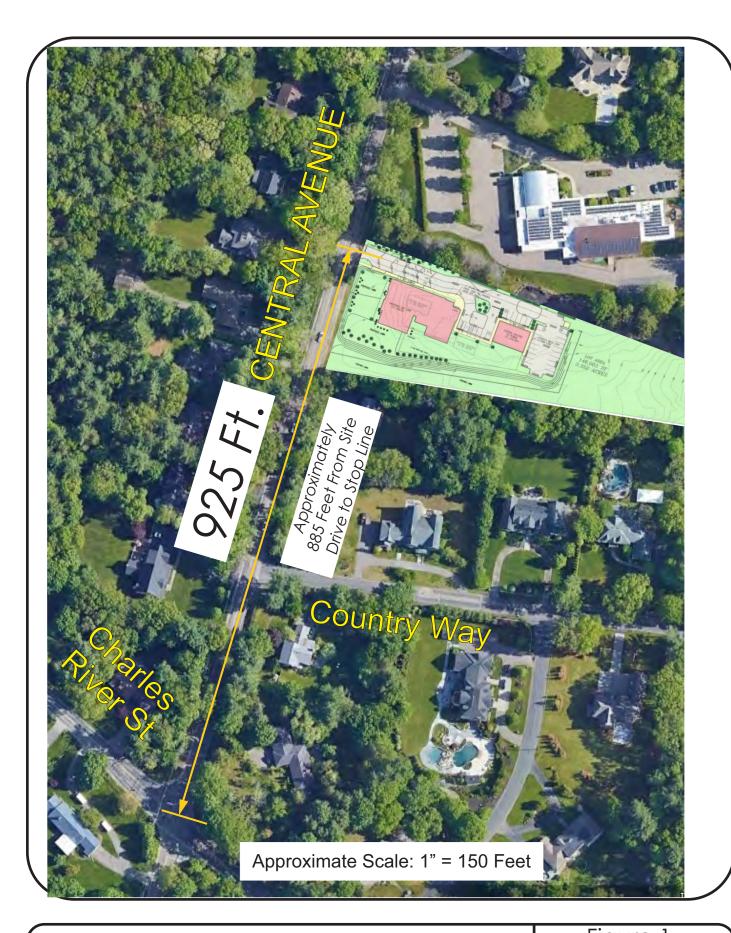
Intersection Capacity Utilization 97.0%

Analysis Period (min) 15

Intersection LOS: C ICU Level of Service F

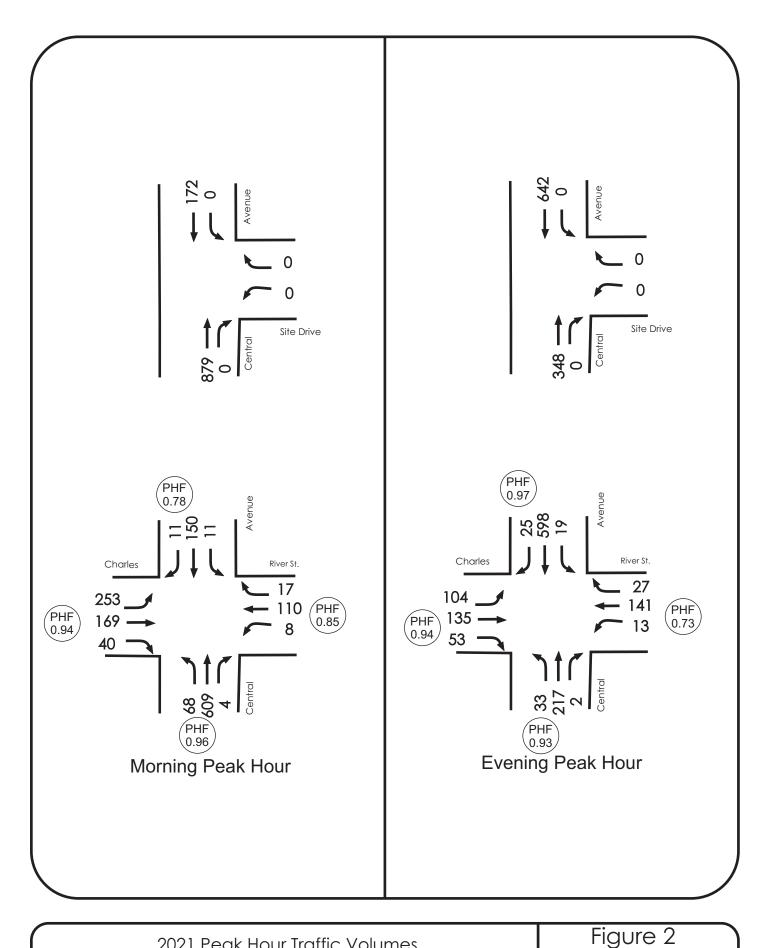
# 95th percentile volume exceeds capacity, queue may be longer.





Locus Map

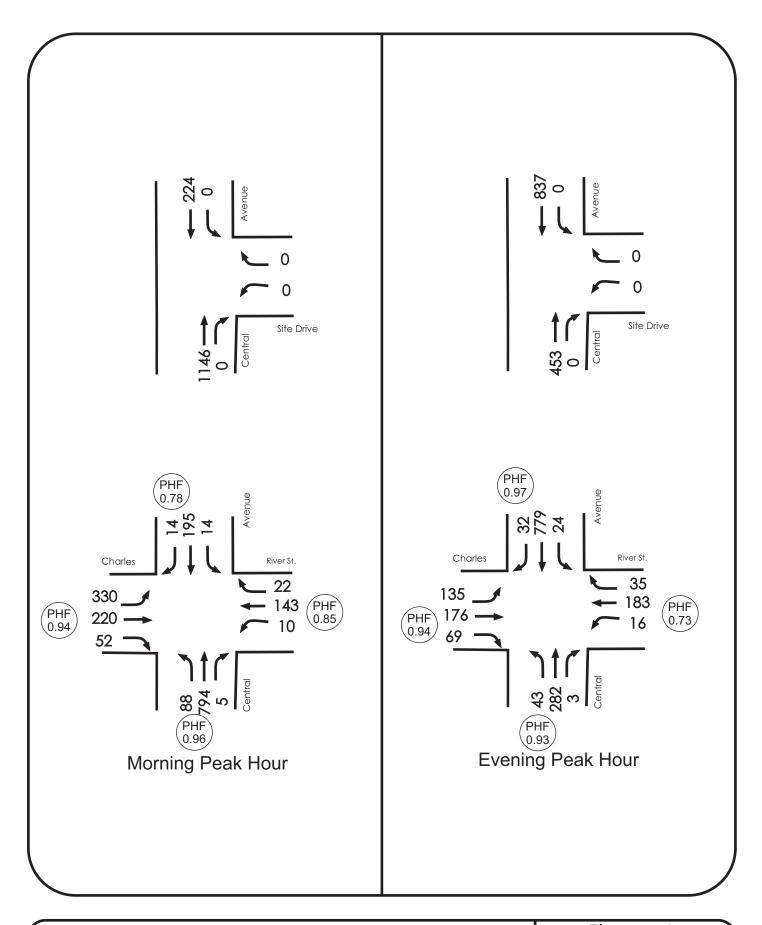




2021 Peak Hour Traffic Volumes From New PDI Counts (October 2021)

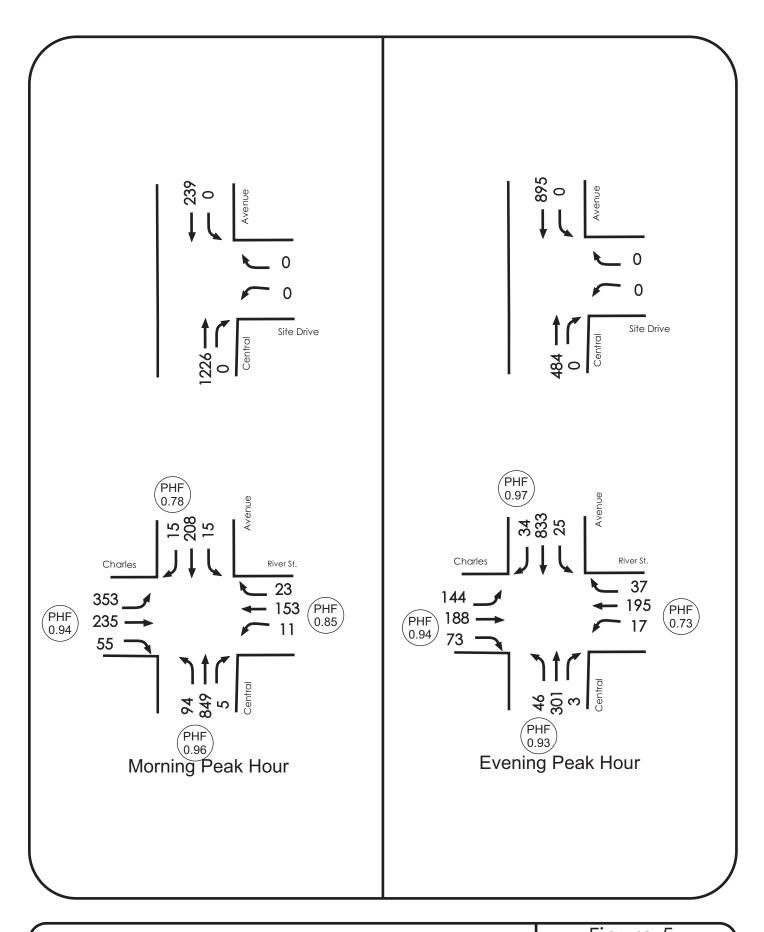


	COMPARISON OF BASELINE APPROACH TRAFFIC VOLUMES									
	Central Avenue					Charles	River St			
	N. Bd.		S. Bd.		E. Bd.		W. Bd.			
	AM	PM	AM	PM	AM	PM	AM	PM		
Existing October 2021	681	252	172	642	462	292	135	181		
Correct for Covid (+130.3%)	888	329	224	837	602	381	176	236		
Increase by 1% per yr. Growth Factor to 202:	950	352	240	896	645	407	188	253		
Current Assessment	950	352	240	896	645	407	188	253		
Previous Assessment*	-	412	-	1084	-	327	-	232		
An actual turning movement count was incre	eased b	y 139% t	o reach	an ADT o	ount pr	ovided b	y Needh	am Eng	ineering for	2016.
The 2016 counts were increased by 5% to es	timate 2	2021 cou	nts. The	2021 co	unts we	re incre	ased by	7% to es	taablish no l	build in 2028.
MassDOT Station #6161 shows a two-way co	unt in 2	020 of 14	41,295 w	hich was	184,21	3 in 2019	, a 30.4%	differe	nce	
To account for Covid-19, the Existing Octobe	r 2021 d	ounts w	er incre	ased by	130.4%					
To identify 2028 Baseline volumes, Covid-A	djusted	Counts	were in	creased	by 7% o	ver 7 yea	ırs.			

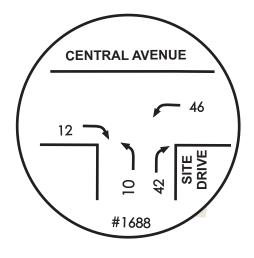


2021 Covid-Adjusted Peak Hour Traffic Volumes (130.4%) From New PDI Counts & MassDOT Station # 6161





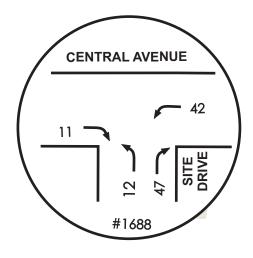




2028 MORNING PEAK HOUR IN OUT TOTAL 58 52 110

BASED ON ITE 10, 034 Sq. Ft.

.....

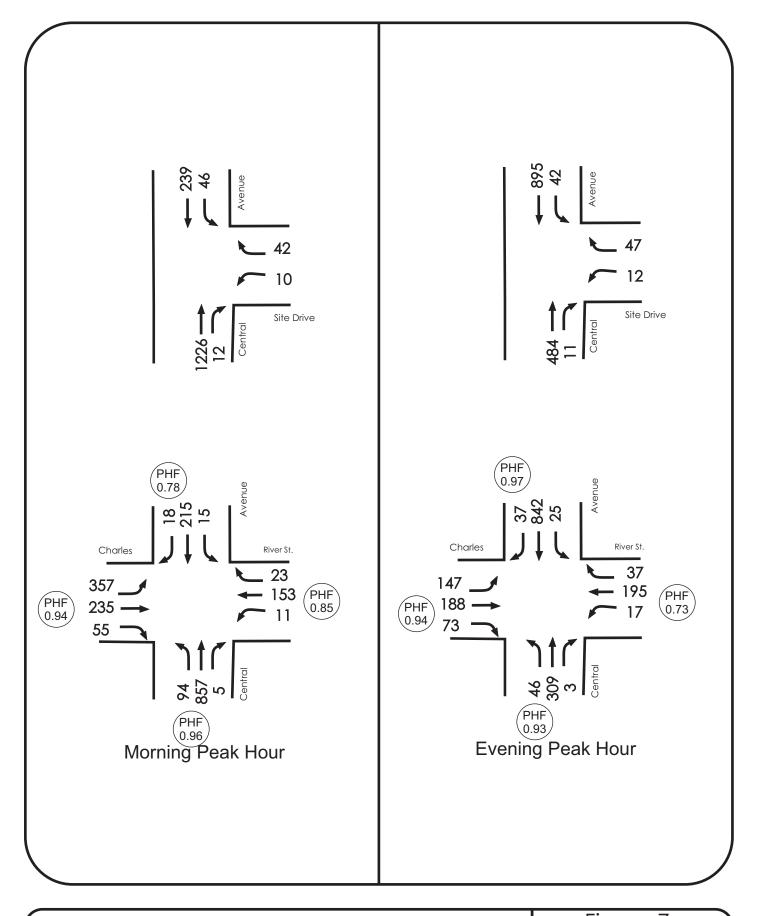


2028 EVENING PEAK HOUR IN OUT TOTAL 53 59 112

BASED ON ITE 10, 034 Sq. Ft.

Projected Site Generated Peak Hour Traffic Volumes Central Avenue at Site Drive



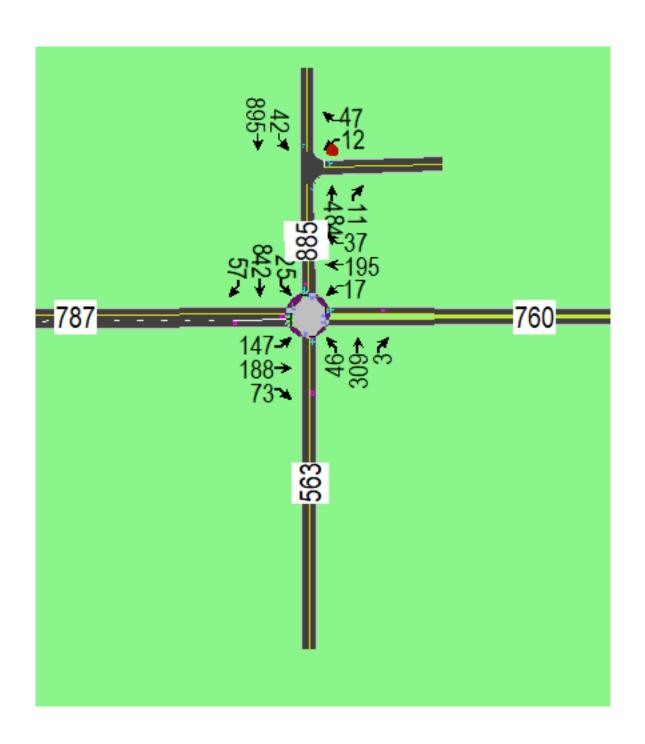


	Existing Base Covid-Adjusted							
	20	•		2028		Splits	Opti	mum
	AM	PM	AM	PM	AM	PM	AM	PM
Central Ave at Charles River St								
Traffic Control Signal								
Overall Level of Service	Е	D	F	Е	F	F	Е	С
Overall Delay (Seconds)	68.5	43.4	88.9	57.7	91.6	66.2	60.3	32.5
Charles River St East Bd.	С	В	С	В	С	В	Е	С
(Overall Delay (Seconds)	24.4	16.2	27.3	16.4	27.9	16.4	68.4	31.1
Avg./95th % Queue Length (ft)	93/149	82/132	101/159	89/142	101/159	89/142 1	86/272	109/180
Charles River St West Bd.	D	D	D	D	D	D	F	D
(Overall Delay (Seconds)	38.4	39.7	39.0	41.3	39.0	41.4	102.7	54.1
Avg./95th % Queue Length (ft)	91/147 1	30/190	99/156 1	41/202 9	99/156 14	12/202 16	58/299 1	46/232
Central Ave. North Bd.	F	С	F	С	F	С	Е	В
(Overall Delay (Seconds)	121.5	21.2	164.2	23.6	170	24.4	59.6	12.9
Avg./95th % Queue Length (ft)	558/856	121/248	633/948	139/277	643/959 1	44/28678	80/1067 1	06/172
Central Ave. South Bd.	В	Е	В	F	В	F	В	С
(Overall Delay (Seconds)	16.7	66.5	17.5	96.6	17.7	113.9	14.5	34.1
Avg./95th % Queue Length (ft)	86/139	466/830	94/152	548/90	7 99/15	9 588/950	118/15	1 390/670

Distance Between STOP LINE and Driveway ≈ 885 Feet

Central Avenue at Site Driveway	Projec <u>AM</u>	eted LOS <u>PM</u>
Stop Sign Controlled		
Central Ave. Northbound (All Moves)	A	A
Central Ave. Southbound Through Movement Left-Turn Movement	A B	A A
Site Drive West Bound (All Moves)	Е	С





**APPENDIX** 

## Signalized Intersections

LOS	Control Delay per Vehicle (s./veh)
- A	≤ 10
В	> 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
В	> 10-15
C	> 15-25
D	> 25-35
E	> 35-50
F	> 50

draft

November 1, 2021

NEX-2021238.00

Town of Needham Planning Board Town Hall 1471 Highland Avenue Needham, MA 02492

SUBJECT: 1688 Central Avenue

Proposed Child Care Facility - Peer Review 3

Dear Ms. Newman:

The following items were submitted by the proponent on October 28, 2021.

- Site Plans dated June 22, 2020 rev. 10-28-2021
- Technical Memorandum from John Gillon to John Glossa dated 10-27-2021
- Memorandum from Evans Huber, Esq. to Needham Planning Department dated 10-28-21

In addition, GPI and Glossa Engineering conversed via emails on 10-25-21, 10-27-21 and 10-28-21.

The above materials have been reviewed against typical engineering practices, standards, and industry guidelines. We offer the following comments. (Note: Comments highlighted in yellow are from GPI's August 26, 2021 review letter. Responses in **Bold Italic** are based on the revised site plans dated 10-28-21.)

#### SITE PLANS

The following highlights GPI's original comments from the July 15, 2021 Peer Review letter and our responses based on the revised site plan.

 What is the purpose of the 12.67' loading zone? What size vehicle is expected to need access to the loading area. Truck turning templates should be provided showing access and egress from the loading area as well as the dumpster pad.

GPI Response – No information has been provided regarding the size of vehicle and no templates showing truck maneuvers have been provided.

GPI - 10-18-21

We would like to see turning templates of the vehicles accessing the loading zone and trash bins to verify they do not encroach on parking spaces while maneuvering within the site.

#### GPI-11-1-21

### This comment has not been addressed.

2. The proponent should construct fully compliant ADA sidewalks along the property frontage and tie into existing sidewalks at the property limits.

GPI Response – This comment does not appear to have been addressed.

### GPI - 10-18-21

The existing sidewalks in the vicinity of the project are in poor condition and likely do not conform to current ADA standards. We' request that sidewalks along the frontage of the site be reconstructed to current ADA standards. This includes construction of the driveway apron, detectable warning panels, etc.

See image of existing conditions below.



### GPI 11-1-21

The proponent has indicated that they do not wish to rebuild the sidewalks.

GPI has confirmed with the Engineering Department that this portion of sidewalk is considered a bridal trail in this area. However, with the grade of the trail below that of the roadway, it is recommended that to improve safety and accessibility, that ADA compliant sidewalks be constructed along the property frontage. Sidewalks should be at least 6'wide, abut the property line and be at least 6" above the roadway gutter line. Furthermore, the new sidewalks will be more aesthetic with the new development and will preserve any landscaping on site, should the town rebuild the sidewalks in the future.

3. The proponent should ensure that the construction of the site drive does not impact the drainage, particularly with the existing catch basin on the NW corner of the existing driveway.

It appears the existing CB will be in the center of the driveway on the gutter line. With the introduction of two wheelchair ramps the construction plans should consider relocating or providing additional drainage to ensure ponding in the vicinity of the wheelchair ramps does not occur.

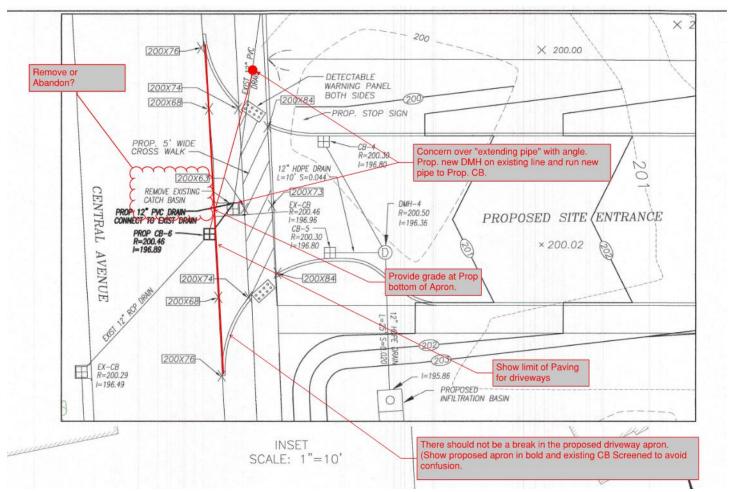
GPI Response – We appreciate and recognize that the revised drainage plan provides additional catch basins at the base of the driveway to capture site water flow before entering Central Ave. However, the existing catch basin on Central Ave is proposed to be retained in the center of the driveway. The driveway has been redesigned to provide a typical driveway apron that provides a slope up to the level of the sidewalk. This is beneficial by maintaining the sidewalk grade across the driveway. However, it appears the catch basin is proposed to be "cut into" the apron. Given the location, this will likely result in vehicles tracking over this "cut" or hole in the apron. The existing catch basin should be relocated out of the apron as the driveway apron should be a consistent slope and width for the entire length.

### GPI - 10-18-21

We offer the following comments on the proposed driveway apron/drainage modifications:

- a) Is the existing CB proposed to be removed or abandoned?
- b) The limit of paving/construction should be indicated on the plans?
- c) The proposed driveway apron line where it meets the street gutter line should be a solid line, as there should be no break in the apron (where the existing CB is).
- d) <u>Provide a spot elevation at the bottom of the apron in the vicinity of the existing CB to be removed.</u>
- e) We're concerned about being able to successfully cut and install an angle connection in the existing drainage pipe. Recommend installing a DMH over the existing drainage pipe in the sidewalk and installing a new pipe between the Prop. CB and new DMH.

### See notes on plan below



GPI - 11-1-21

<u>The proponent has modified the drainage as requested above. However, we still have comments as noted on the plans:</u>

a) Sheet 4 - Proposed grades of the centerline of the driveway apron do not make sense. It appears to slope DOWN from the edge of road to the front of crosswalk by more than 2% and then slope up to the back of the crosswalk by more than 4%

- b) <u>Sheet 4 The spot grades 200x68 and 200x74 indicate the apron slope of about 1% UP at the sidewalk openings and a 1.8%-2.0% slope across the sidewalk/crosswalk, the apron portion should be sloped greater than the crosswalk portion.</u>
- c) <u>Provide grades on sidewalk approaching driveway. It is unclear if the sidewalk slopes to</u> the driveway or is level with the crossing.
- d) Sheet 4 Limit of work on the sidewalks should be indicated (also relates to Comment 2)
- e) Sheet 6 Detail should be provided for the proposed driveway apron.
- f) Sheet 8 & 9 Proposed CBs should be labeled and Existing CB to be removed should be labeled
- g) Sheet 10 Either delete labels on CBs (not relevant for lighting) or correctly label the Existing CB to be Removed

### TRAFFIC ANALYSIS

Gillon Associates has completed the additional analysis and data collection that was discussed with GPI on October 15, 2021 and summarized the analysis in the October 27, 2021 Technical Memorandum. The comments below pertain to the new Technical Memorandum.

 New traffic counts were collected at the intersection of Central Avenue and Charles River Street on October 13, 2021. To adjust for the impacts of Covid 19, MassDOT's permanent count station on I95 north of Highland Avenue was reviewed by the proponent and showed a decrease of 30.4% between 2019 and 2020 volumes. GPI verified similar trends at other count stations in Needham. Similar results were seen at station 6204 (Webster St south of Dedham) – 25%, and 6739 (Chapel St north of Great Plain Ave) --23%.

Therefore, while traffic levels are returning to normal, the October 2021 traffic counts were conservatively factored by 130.4% to account for Covid 19 trends.

- 2. As requested, the proponent has rerun the morning and afternoon peak hour analysis as a network, inclusive of the Charles River Street signal and the proposed site drive.
- 3. To assess the impacts of the project on the corridor, independent of normal background traffic growth, three scenarios were examined.
  - a. EXISTING Existing conditions (2021 Covid adjusted volumes) without the project in place
  - b. FUTURE NO BUILD 2028 projected traffic volumes (increased 1% annually) without the project in place
  - c. FUTURE BUILD 2028 projected traffic volumes with proposed site traffic added

Under the 2028 No Build PM Peak period, the SB queue at the Charles River signal is expected to be beyond the proposed site drive. Based on the updated analysis, it is anticipated that the site traffic will add approximately 2-3 vehicles to the SB Central Avenue approach to Charles River Street.

- 4. The proponent has also provided an analysis based on adjusting or optimizing the traffic signal times.
  - a. Based on the optimization of the signal times, the SB 95% queue under 2028 Build conditions can be reduced by about 14 vehicles to about 670 feet,
  - b. While the proposed optimized times improve the overall evening operations, the morning optimized times significantly impact Charles River Road.
  - c. The proponent mentions that less substantial changes to the signal time can be made and still improve operations. The proponent should clearly identify the best overall signal times for the morning and evening peak hours and provide a summary of those times in tabular format. It is noted that the timing plan for the morning and evening peak hours can be different.

5. Overall, by optimizing the signal operations, the queues along the Central Avenue SB approach to Charles River Road, can be reduced to not extend beyond the proposed site drive.

Based on the updated Traffic Memo and previous discussions, the following traffic mitigation is recommended:

- 1. The proponent should commit to a follow up traffic study after the site is open and operational to at least 80% of the student capacity.
- 2. The proponent should commit to provide police details during the peak morning and afternoon hours of arrivals and dismissals. The detail should remain in place, until the Police Chief believes the site is operating without significantly impacting operations along Central Ave.
- 3. The proponent should provide detailed traffic signal timing plans for optimized operations during the weekday morning and evening peak hours. The proponent should coordinate with Needham DPW on how to implement the revised signal times

Should you have any questions, or require additional information, please do not hesitate to contact me at (978) 570-2953 or via email at <u>idiaz@gpinet.com</u>.

Sincerely,

**GREENMAN-PEDERSEN. INC.** 

John W. Diaz, PE, PTOE Vice President/Director of Innovation

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' ***276.3'	64.0'	YES
MIN. SETBACK SIDE	25'	*67.5' **65.0' ***54.2'	52.3'	YES
MIN. SETBACK REAR	15'	*864.9' **763.4' ***677.0'	811.0'	YES
MAXIMUM STORIES	2-1/2	*2 **1 ***2	1	YES
MAXIMUM HEIGHT	35'	*30.7' **15.3' ***31.2'	24.7'	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 -2 (TO REMAIN)

### ZONING BYLAW 6.1.3 PARKING PLAN AND DESIGN REQUIREMENTS

		REQUIRED/ALLOWED	EXISTING	PROPOSED	COMPLIANCE
A) PARKING ILLUMINATION	1	AVG. 1 FOOT CANDLE	N/A	AVG. 1 FOOT CANDLE	YES
B) LOADING REQUIREMEN	TS	N/A	N/A	N/A	YES
C) HANDICAPPED REQUIR	EMENTS	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 LAYO	UT	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	*207.5'	YES
	-SIDE	4'	N/A	26.9'	YES
	-REAR	4'	N/A	609.6	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

<sup>\*</sup> TO LOADING AREA

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

4-15-21

6-2-21

7-28-21

9-28-21

10-28-21

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. 860 S.F. PROVIDED WITHIN PARKING AREA

REVISION

REV. BUILDING LOCATION

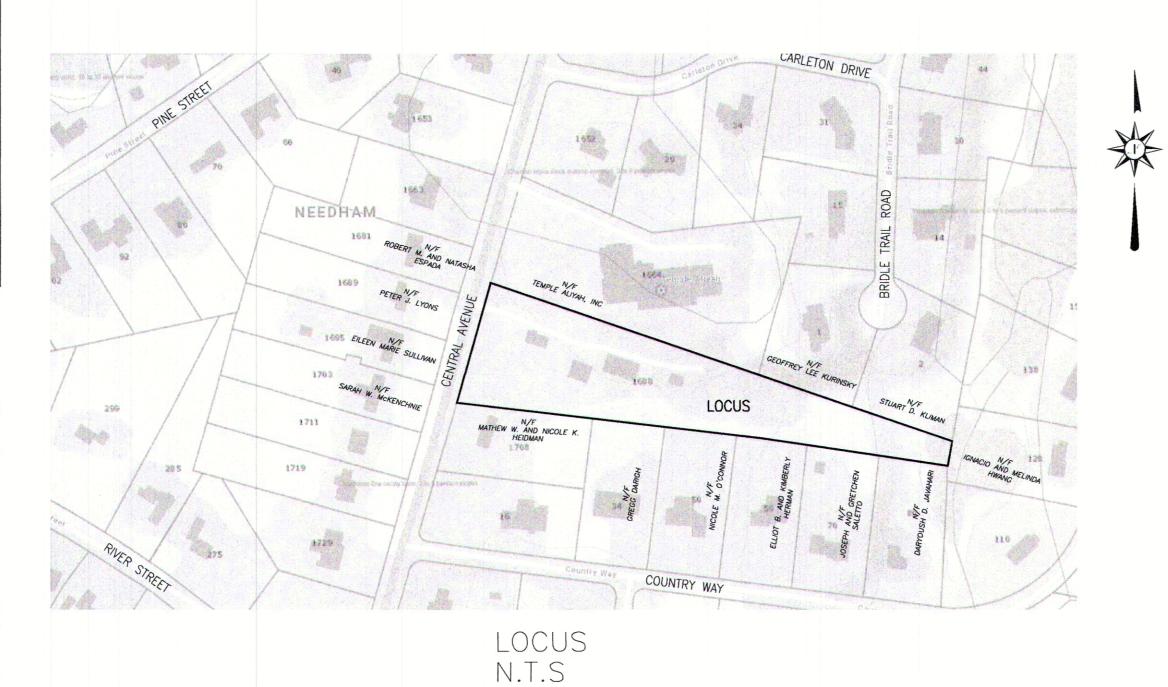
REV. BUILDING LOCATION

REV. CATCH BASIN AT ACCESS

PER PEER REVIEW COMMENTS

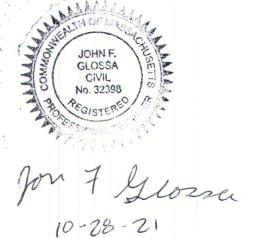
REV. ACCESS DRIVE

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



# PLAN INDEX

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



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

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

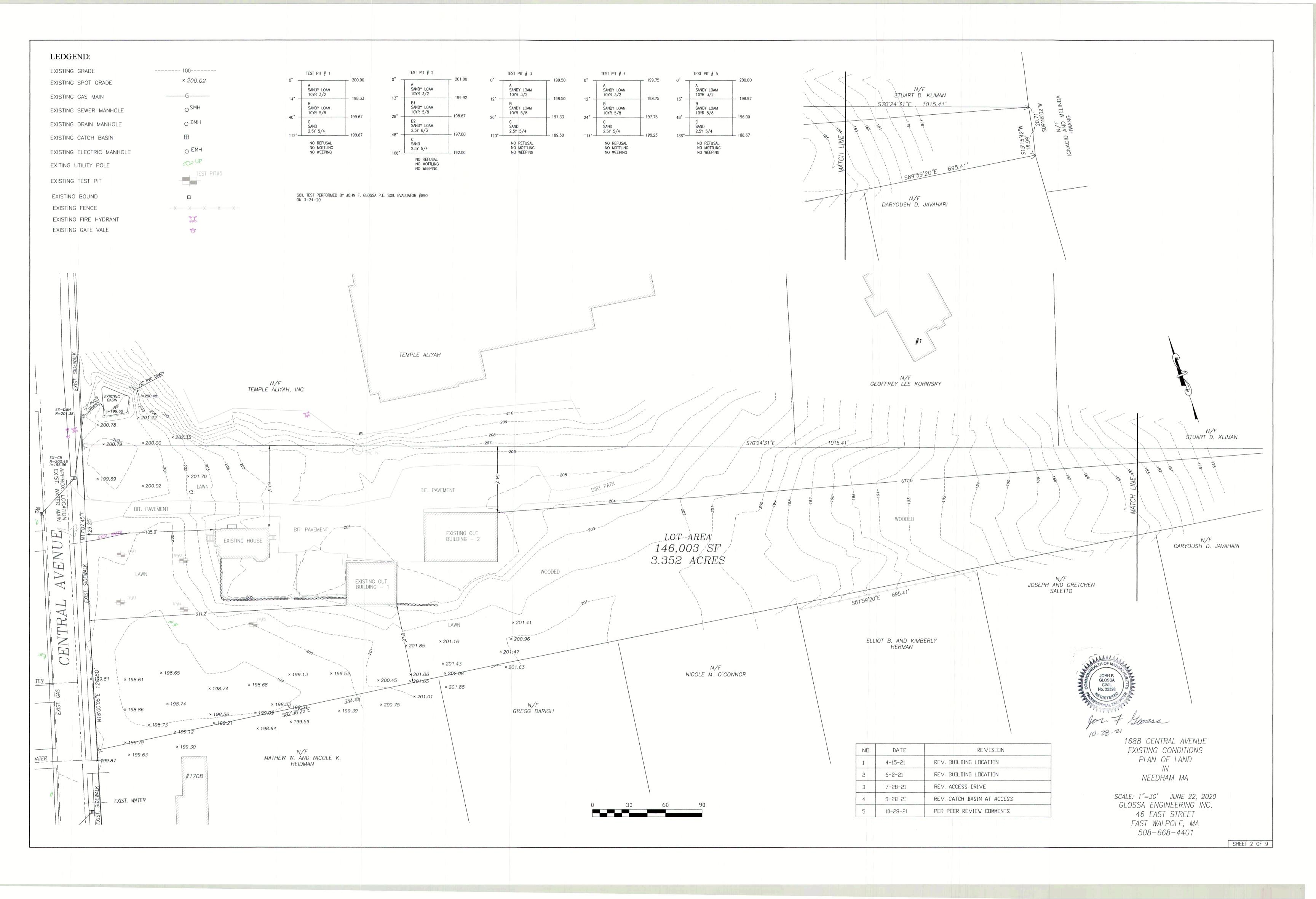
## **DEED REFERENCE:**

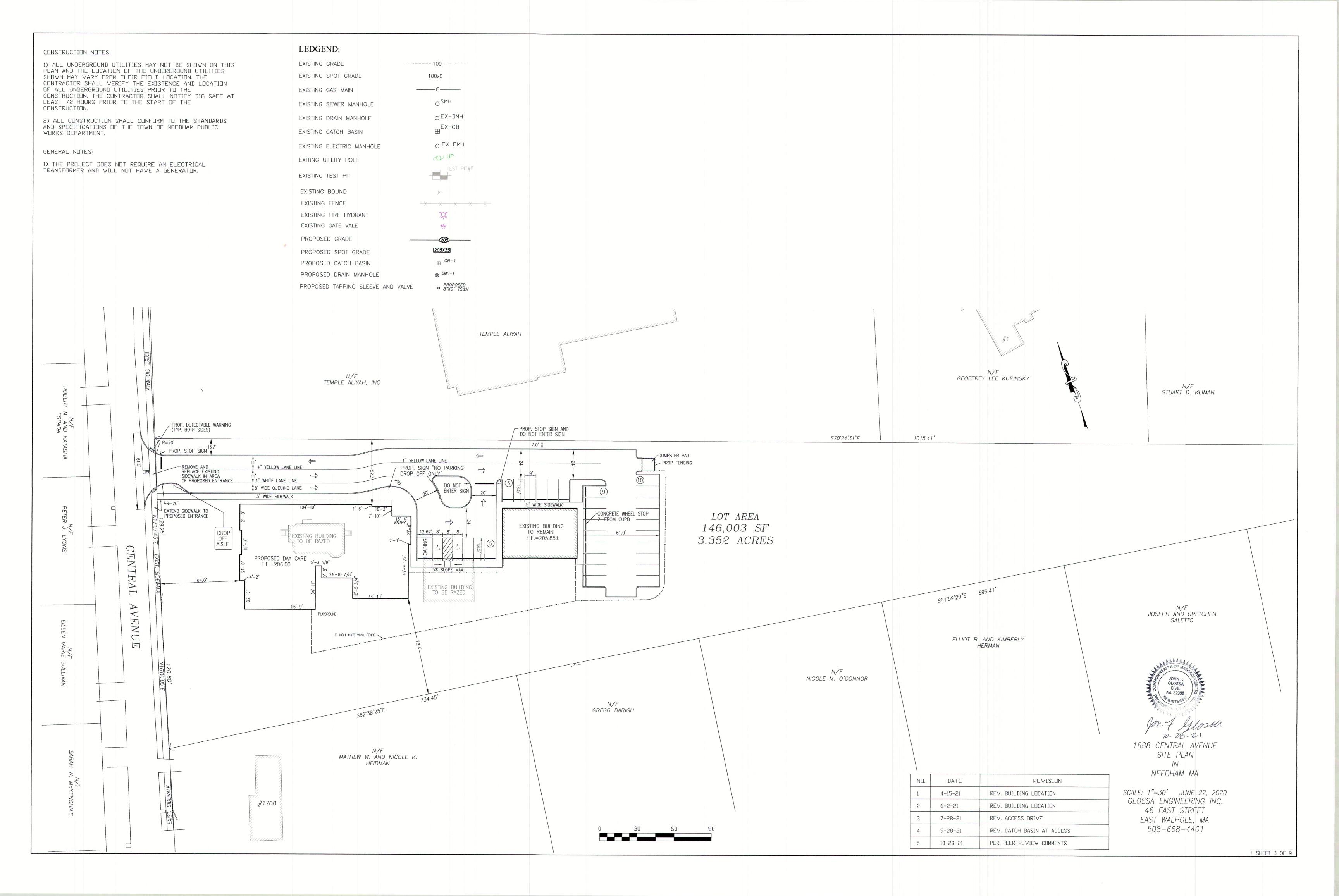
BOOK 37770 PAGE 308

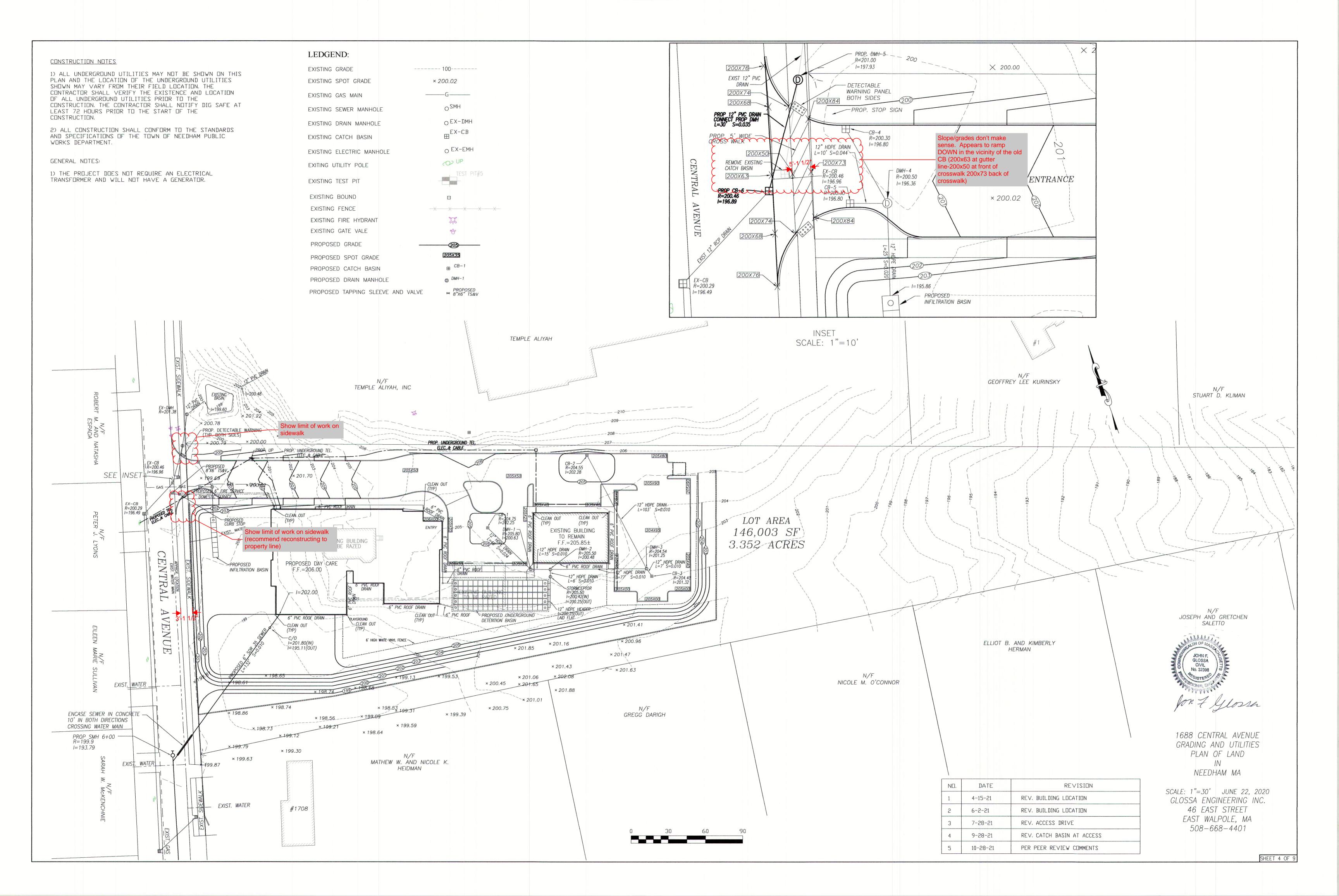
# PLAN REFERENCE:

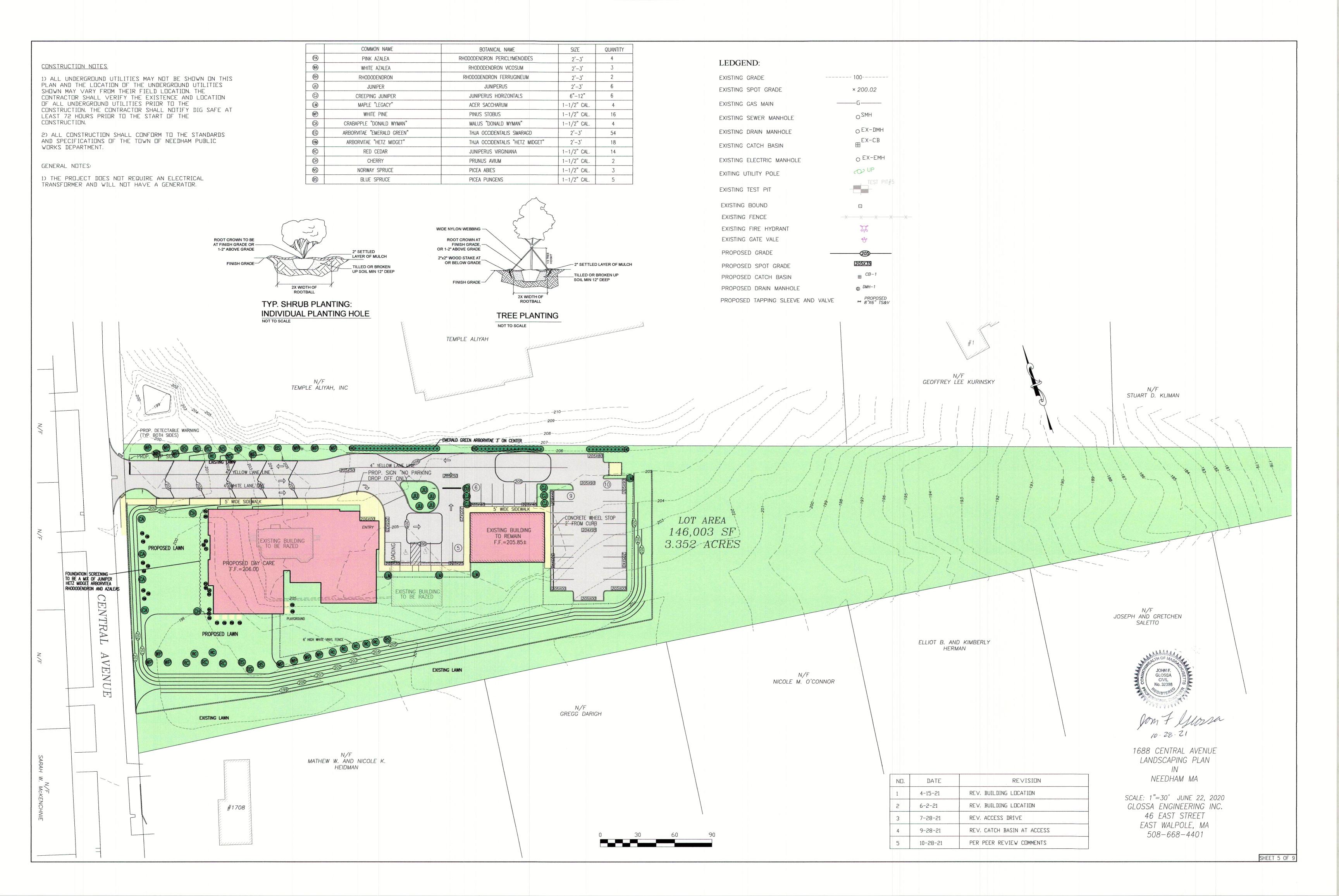
PLAN OF LAND DATED SEPTEMBER 28, 1933 BY P.D.G. HAMILTON, CIVIL ENGINEER

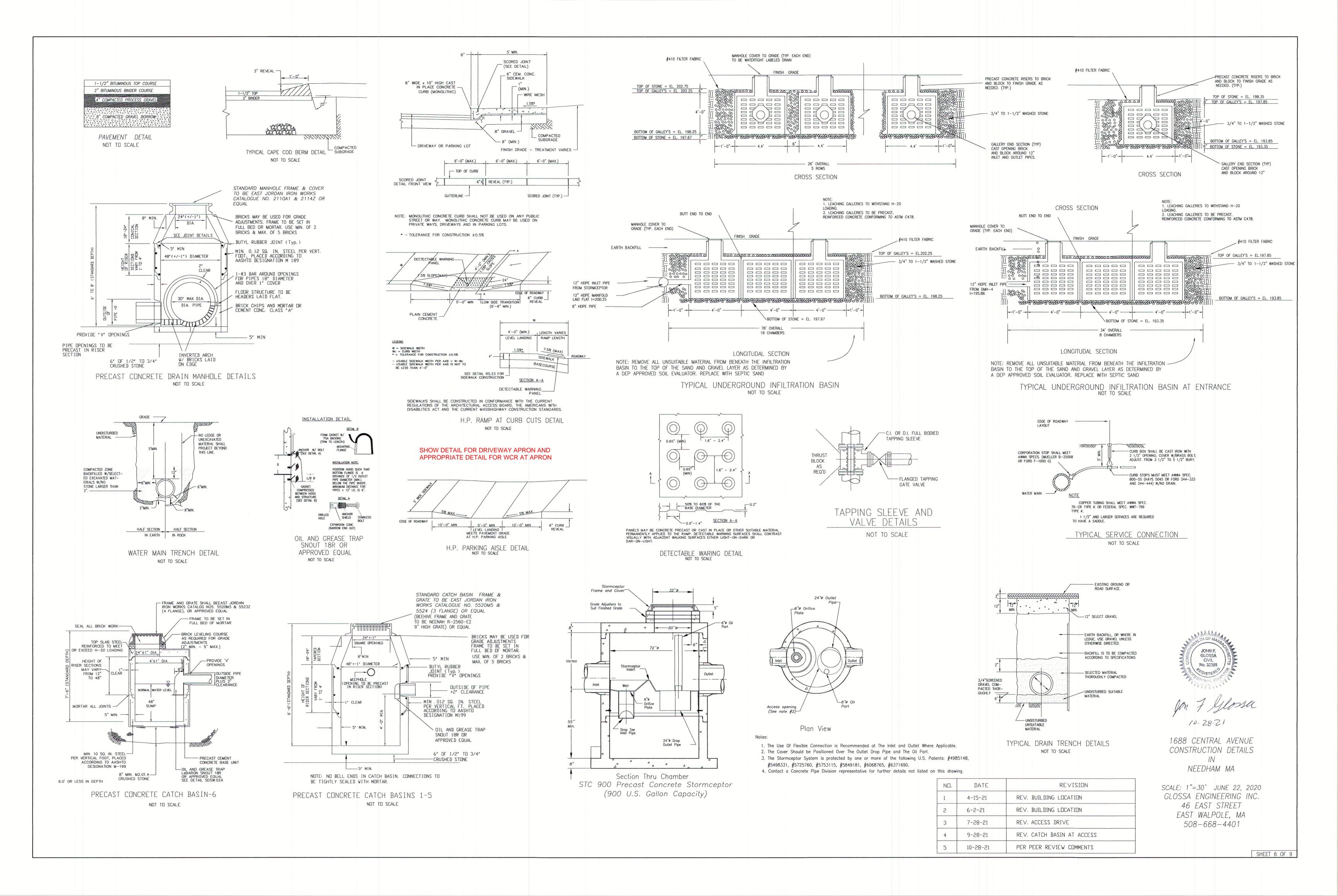
SHEET 1 OF 9

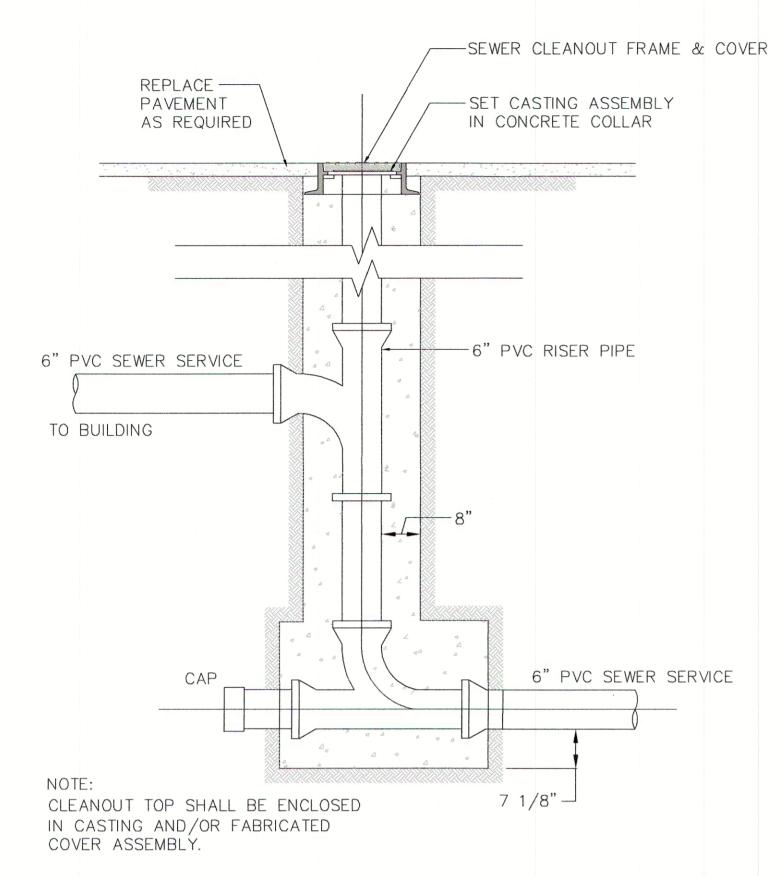






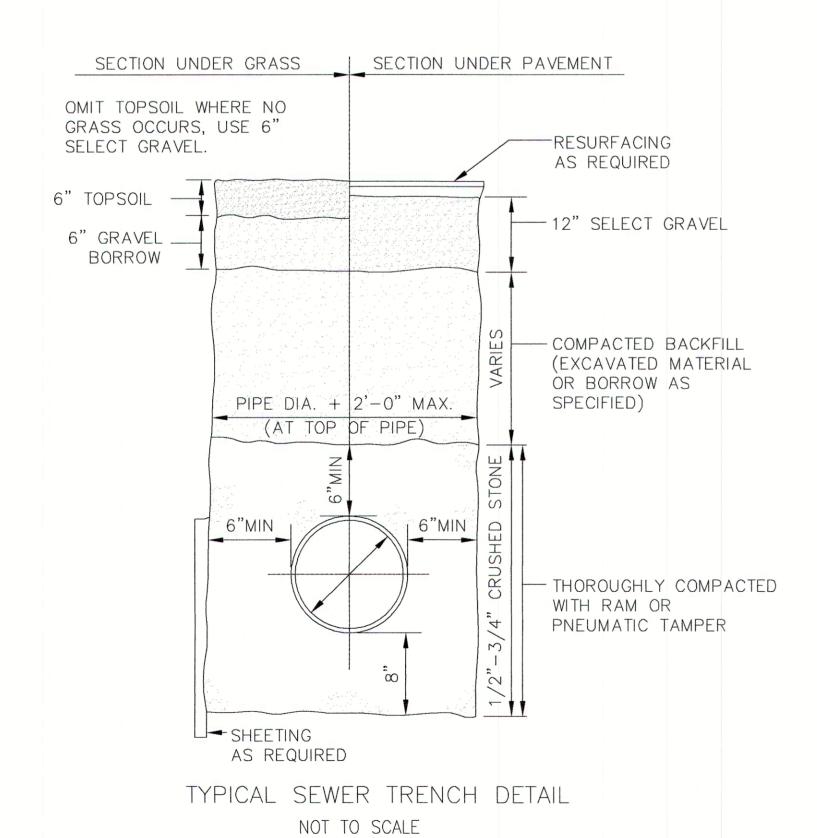


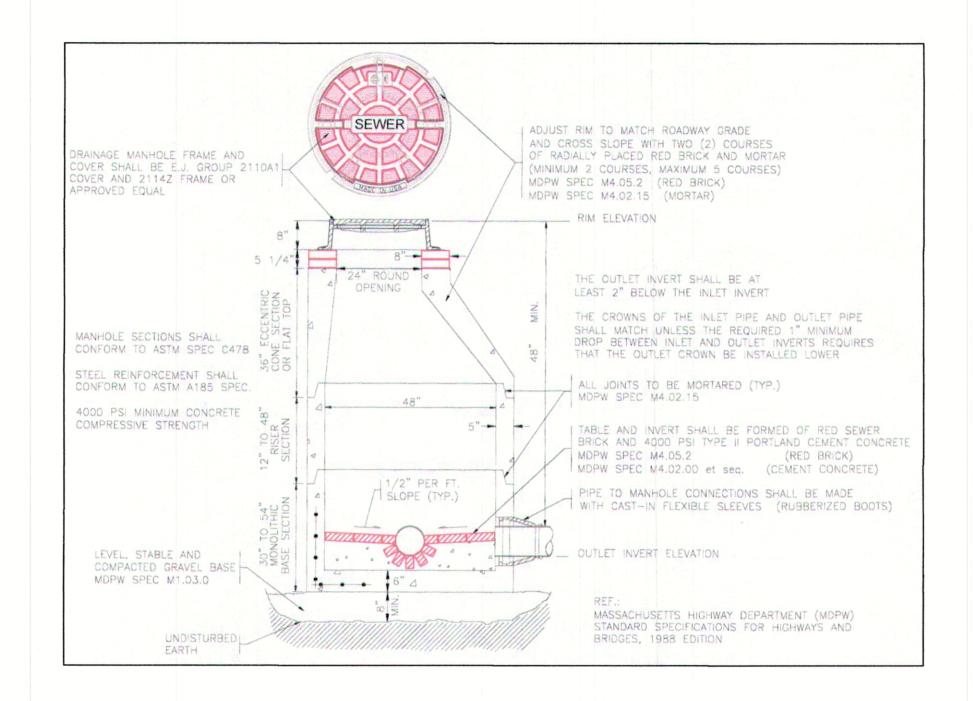




SEWER CLEANOUT DETAIL (C/O)

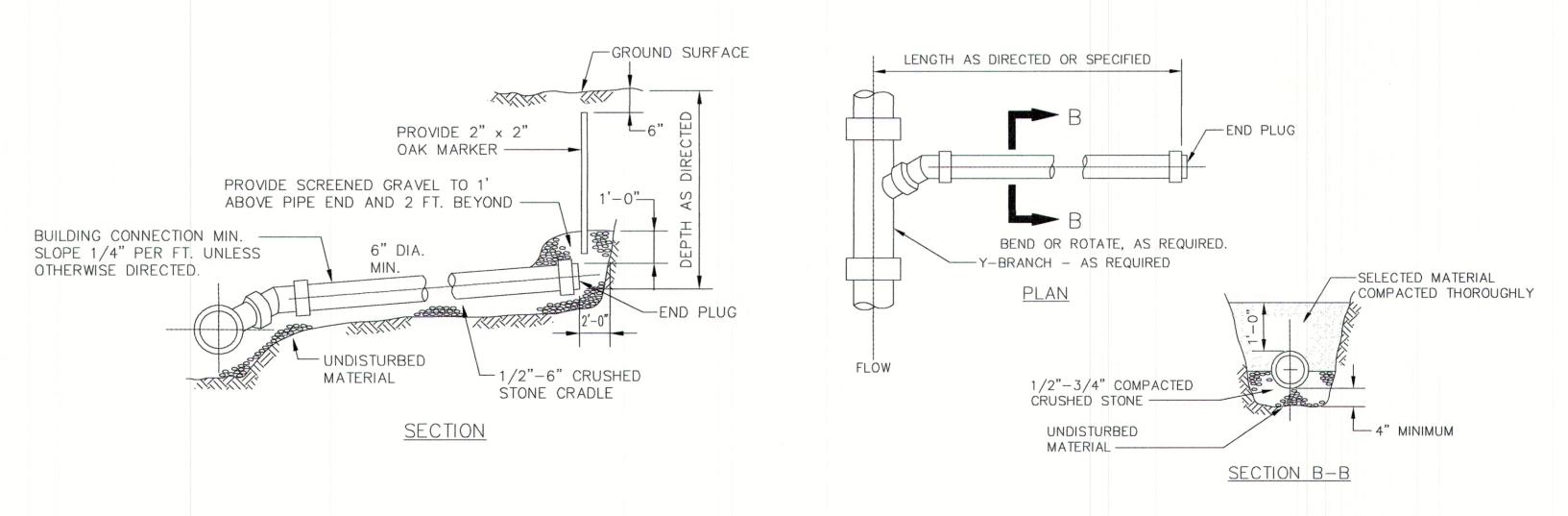
NOT TO SCALE





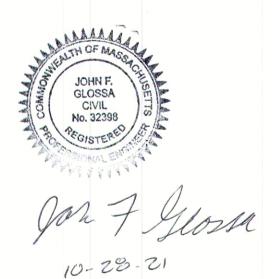
TYPICAL SEWER MANHOLE DETAIL

NOT TO SCALE



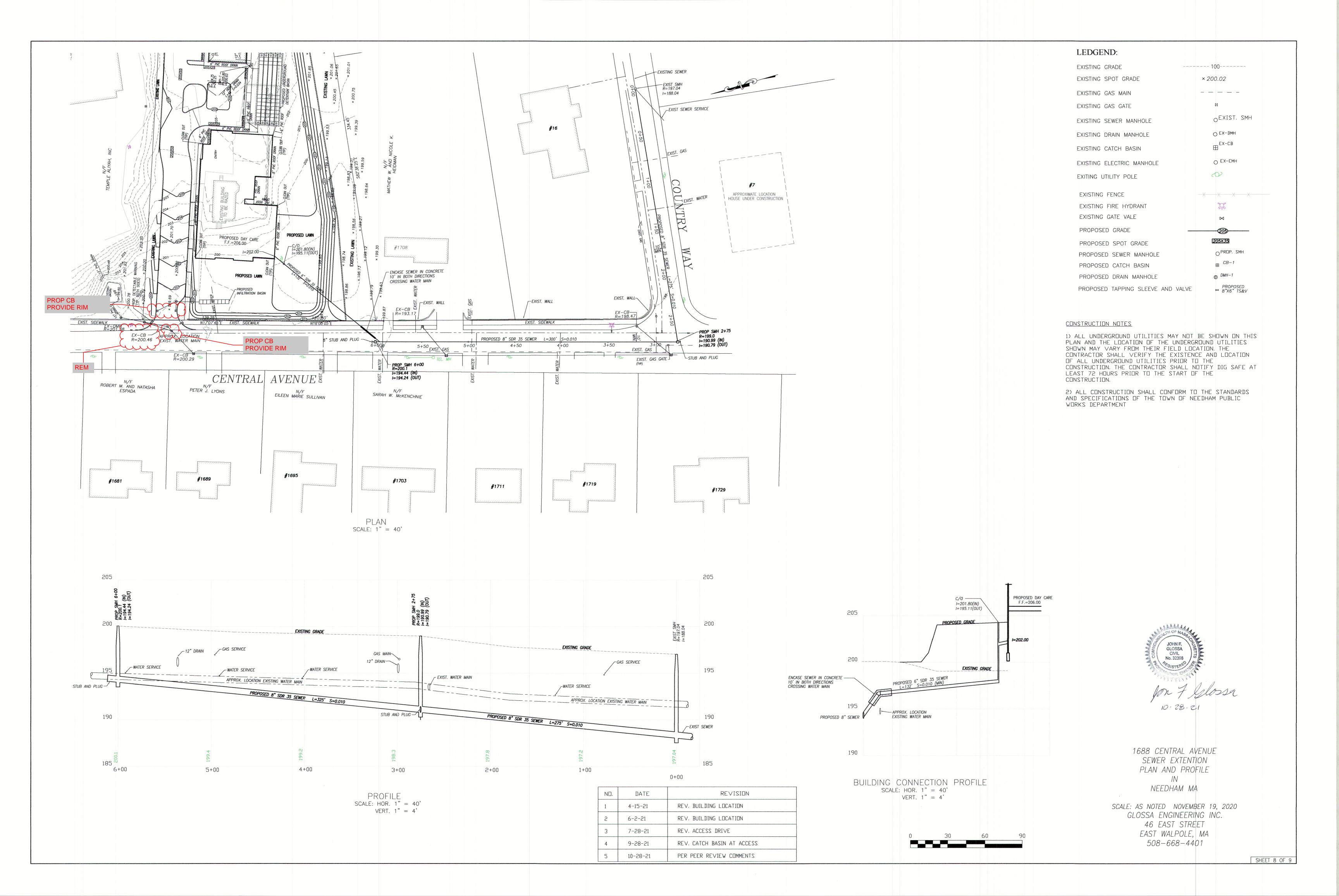
TYPICAL BUILDING CONNECTION NOT TO SCALE

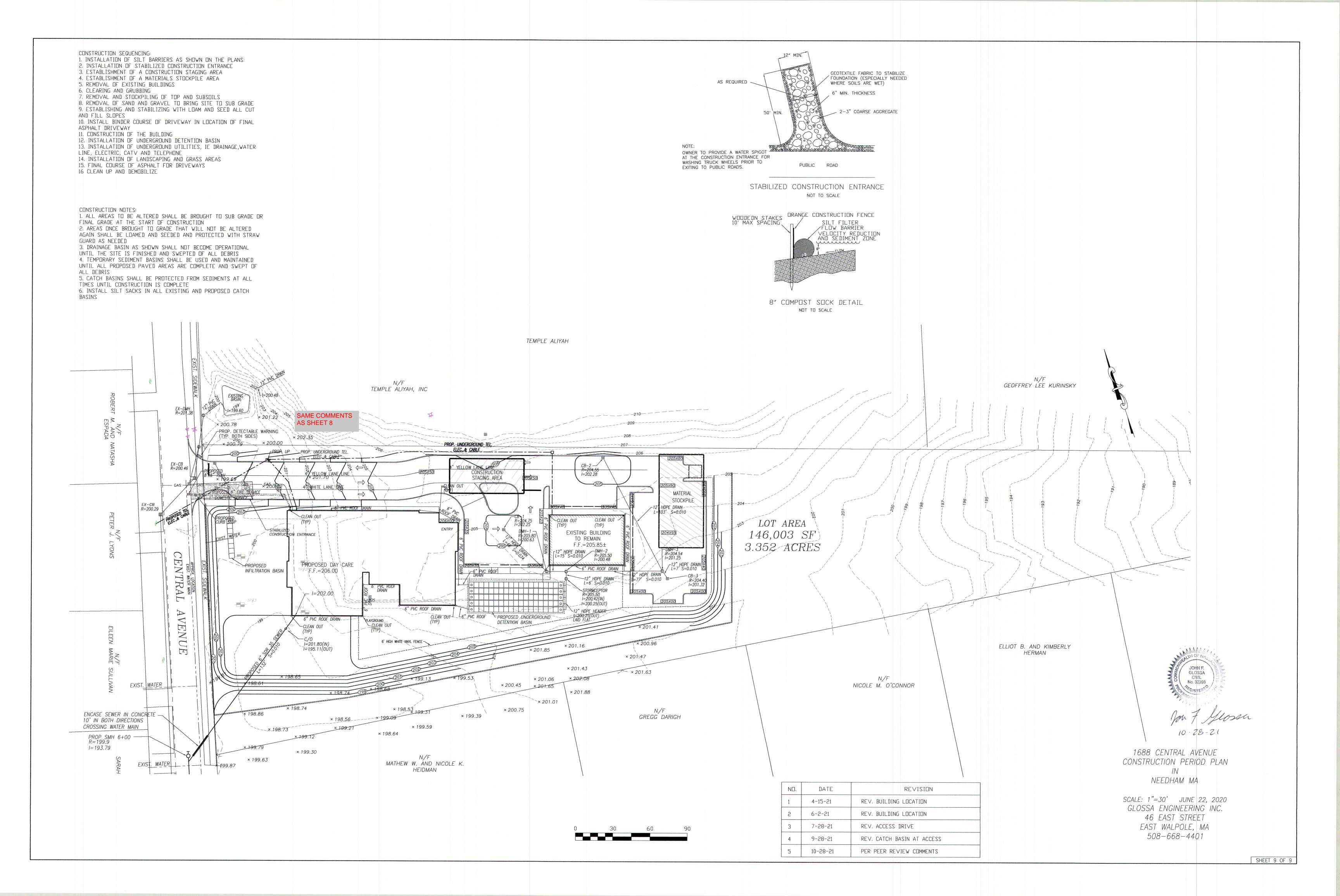
DATE	REVISION
4-15-21	REV. BUILDING LOCATION
6-2-21	REV. BUILDING LOCATION
7-28-21	REV. ACCESS DRIVE
9-28-21	REV. CATCH BASIN AT ACCESS
10-28-21	PER PEER REVIEW COMMENTS
	4-15-21 6-2-21 7-28-21 9-28-21



1688 CENTRAL AVENUE CONSTRUCTION DETAILS IN NEEDHAM MA

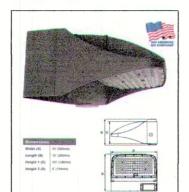
SCALE: 1"=30' JUNE 22, 2020 GLOSSA ENGINEERING INC. 46 EAST STREET EAST WALPOLE, MA 508-668-4401





NOTE: LIGHT POLES ARE 20' HIGH

WALL PACK



LIGHT FIXURE MODEL NUMBER CREST45D1X174UU4KC AS MANUFACTURED BY PEMCO LIGHTING PRODUCTS

LIGHT FIXURE MODEL NUMBER EG45QD1X136U4KC AS MANUFACTURED BY PEMCO LIGHTING PRODUCTS

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

	bo		Calculation Summary							
DELETE NOTES-	20 00 00 00 00 00 00 00 00 00 00 00 00 0		Label	CalcType	The state of the s	Avg Max	Min	Avg/Min	Max/Min	Grid Z
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N□.	DATE	REVISION
1	4-15-21	REV. BUILDING LOCATION
2	6-2-21	REV. BUILDING LOCATION
3	7-28-21	REV. ACCESS DRIVE
4	9-28-21	REV. CATCH BASIN AT ACCESS
5	10-28-21	PER PEER REVIEW COMMENTS

APPENDIX PHOTOMETRIC AND SITE LIGHTING PLAN 1688 CENTRAL AVENUE IN

NEEDHAM MA

SCALE 1"=30' JUNE 22, 2020 
 From:
 Lee Newman

 To:
 Alexandra Clee

 Subject:
 FW: 1688 Central Ave

**Date:** Monday, November 1, 2021 12:43:42 PM

Attachments: image013.png image017.png image001.png image002.png image003.png image004.png

image001.png image002.png image003.png image004.png image005.png image006.png image007.png

From: glossaeng@aol.com <glossaeng@aol.com> Sent: Thursday, October 28, 2021 6:46 AM

To: jdiaz@gpinet.com

Cc: Lee Newman <LNewman@needhamma.gov>; Anthony DelGaizo <ADelgaizo@needhamma.gov>

Subject: Re: 1688 Central Ave

John

OK,

I see what you want on the drain. We will take care of that this morning and submit the plans to the Planning Board. As far as the sidewalk, I guess that the Planning Board can make that a condition of their approval.

Thanks,

John

-----Original Message-----

From: John Diaz < idiaz@gpinet.com>

To: glossaeng@aol.com <glossaeng@aol.com>

Cc: Lee Newman <<u>LNewman@needhamma.gov</u>>; Anthony DelGaizo (<u>ADelgaizo@needhamma.gov</u>) <a href="mailto:<a href="mailto:adelgaizo@needhamma.gov">adelgaizo@needhamma.gov</a>>

Sent: Wed, Oct 27, 2021 7:12 pm Subject: RE: 1688 Central Ave

John

The DMH I proposed is in the sidewalk so it should be in the public right of way and not require work on the Temple property. Also it appears to be south of the property line where you are proposing modifying the contours. (See plan below)

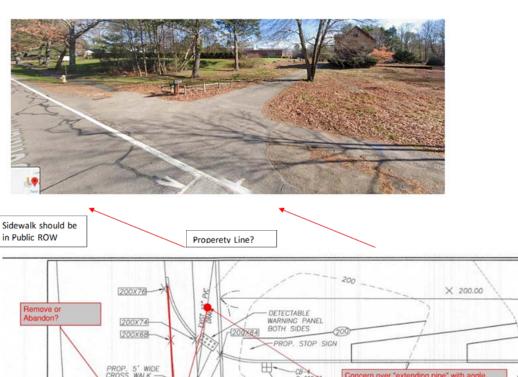
Converting the CB to a manhole still leaves the structure in the sloped part of the driveway apron which doesn't work.

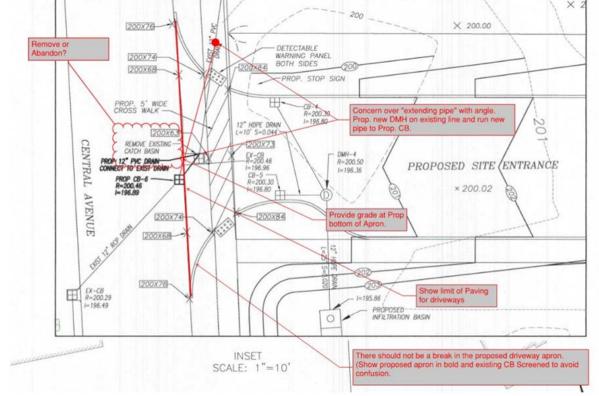
In terms of the sidewalk reconstruction, you have to reconstruction the wcr, install the panels, etc. The plans don't show a detail for the driveway apron and the wcr details provided don't seem to match the condition proposed. The included detail is for a perpendicular ramp on a straight curbline that would normally be installed at a midblock crosswalk. From the design plans shown it is unclear if the sidewalk elevation will need to be modified to work with the driveway apron. Additional elevations should be provided along the sidewalk and the limit of work needs to be shown.

As for reconstructing the remaining portion of the sidewalk, it's only about 200' of sidewalk and would seem to benefit the site to not only improve aesthetics, but to prevent damage to any potential landscaping if the town upgrades the sidewalks in the future. It's not my decision or position to formally request this, but it is my recommendation.

As for the definition of how the town classifies the sidewalks I am copying the Engineering Department for further clarification.

Tony – Are the sidewalks along this section considered sidewalks or a trail as noted in John's email below?







From: glossaeng@aol.com <glossaeng@aol.com>
Sent: Wednesday, October 27, 2021 5:10 PM
To: John Diaz <<u>idiaz@gpinet.com</u>>

Subject: Re: 1688 Central Ave

### John,

I sent an email on Monday regarding the catch basin. Did you see it. I have been told that I need to get revised plans into Planning Board by tomorrow.

Can you let me know. I cannot show work on private property so if my plan showing the 22 degree bent in the pipe from the Temple is not acceptable, I can revise the plan to show the existing catch basin converted to a drain manhole.

Another issue is the repaving or reconstructing the sidewalk along the entire frontage, the applicant does not want to do that. I don't see how it could be deemed to be mitigation as the children coming and going from the Daycare will travel there in cars. Furthermore, I believe that the Town DPW views this sidewalk as a trail and not as a formal sidewalk, I believe that has something to do with the use and maintenance of the sidewalk.

Thanks,

John

----Original Message----

From: John Diaz < idiaz@gpinet.com>

 $To: \underline{glossaeng@aol.com} < \underline{glossaeng@aol.com} >; \underline{jt.gillon@comcast.net} < \underline{jt.gillon@comcast.net} >; \underline{jt.g$ 

Sent: Wed. Jul 21, 2021 2:05 pm Subject: RE: 1688 Central Ave

That works for me. I'll reach out to Lee Newman and see if we can get a room for 10 AM if that works for both of you.



From: glossaeng@aol.com <glossaeng@aol.com>

Sent: Wednesday, July 21, 2021 2:05 PM

To: John Diaz < idiaz@gpinet.com>; mailto:jt.gillon@comcast.net

Subject: Re: 1688 Central Ave

John,

I think we could meet in the Needham office building where DPW is located. Is that 500 Dedham Ave.

Building Commissioner Dave Roche is a friend of mine, at a minimum we can use his conference room, or I think Deb Anderson has a room in Con Comm office.

Jack, can you get to Needham Friday morning?

John Glossa

----Original Message----

From: John Diaz < jdiaz@gpinet.com >

 $To: \underline{it.gillon@comcast.net} < \underline{it.gillon@comcast.net} >; \underline{glossaeng@aol.com} < \underline{glossaeng@aol.com} > \underline{gloss$ Sent: Wed Jul 21 2021 1:56 pm

Subject: RE: 1688 Central Ave

I live in Needham, work in Wilmington. What's the most central location to meet?



From: it.gillon@comcast.net <it.gillon@comcast.net> Sent: Wednesday, July 21, 2021 1:20 PM

To: glossaeng@aol.com; John Diaz <jdiaz@gpinet.com>

Subject: RE: 1688 Central Ave

Yes, Friday morning until noon

Jack

From: glossaeng@aol.com <glossaeng@aol.com>
Sent: Wednesday, July 21, 2021 1:16 PM
To: jdiaz@gpinet.com; mailto:jt.gillon@comcast.net

Subject: Re: 1688 Central Ave

John,

And if your last name did not begin with G, you could not be on the design team. (Gluesing, Glossa Gillon)

Anyway, I am tied up tomorrow morning. Might be able to do something in the afternoon.

I am available any time on Friday.

Jack Gillon, do you have time on Friday for a face to face meeting?

Thanks,

John Glossa

-----Original Message----From: John Diaz <a href="mailto:jdiaz@gpinet.com">jdiaz@gpinet.com</a>
To: <a href="mailto:jdiaz@gpinet.com">jt.gillon@comcast.net</a> <a href="mailto:jdiaz@gp

Too many Johns!!!

I think it makes a lot of sense for us to meet either in person or at least virtually. I'll be in the Wilmington office all day tomorrow. We could do something via teams then. Or possibly meet in person Friday.



From: glossaeng@aol.com <glossaeng@aol.com>

Sent: Wednesday, July 21, 2021 11:17 AM

To: John Diaz <jdiaz@gpinet.com>; mailto:jt.gillon@comcast.net

Subject: 1688 Central Ave

John,

This is John Glossa, the civil engineer for 1688 Central Ave., Needham.

I am copying Jack Gillon on this email as well.

Jack can speak to his portion of the review.

As far as the site plan, I believe that you made some valid points in your review and I would be happy to revise the plans with regard to some of your comments.

My preference would be to have a short face to face meeting where each comment can be discussed and a resolution can be preliminarily agreed to until draft revised plans are presented for your review.

Jack may wish to attend as well.

Barring that, we could make some revisions and pdf them along to you for review.

Your choice.

Can you let me know how you would like to proceed from here.

I know that the Planning Board will be looking for some type of written response to each of your comments which I would be happy to provide.

Thanks,

John

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# TOWN OF NEEDHAM, MASSACHUSETTS PUBLIC WORKS DEPARTMENT 500 Dedham Avenue, Needham, MA 02492 Telephone (781) 455-7550 FAX (781) 449-9023

November 16, 2021

Needham Planning Board Public Service Administration Building Needham, MA 02492

RE: Project Site Plan Follow up Review of revised submittals

Needham Enterprises Childcare Facility-1688 Central Avenue

Dear Members of the Board,

The Department of Public Works has completed a follow up review for the above referenced site Planning Board plan permit application. The applicant proposes to construct a new 9,966 square foot building as a childcare facility. The childcare facility will have a maximum of 100-children. The support staff will be 13-employees.

The DPW was asked to assess the existing and proposed sidewalk in front of the site and comment on GPI's peer review conclusions from their August 26, 2021 response letter.

Our comments and recommendations are as follows:

- We agree with GPI's conclusion that the sidewalks in front of the site should be reconstructed to ensure ADA compliance.
- The sidewalk reconstruction is legally required where construction interferes with
  the accessibility of the walkway. Included but not limited to: The areas where the
  driveway access is across the sidewalk, the construction of the utilities through the
  sidewalk, and any grading or damages from equipment to the sidewalk. The
  reconstruction areas will require accessible transitions to existing portions of the
  walkway.

If you have any questions regarding the above, please contact our office at 781-455-7538.

Truly yours,

Thomas Ryder Assistant Town Engineer From: <u>Lee Newman</u>
To: <u>Alexandra Clee</u>

Subject: FW: 1688 Central Traffic Observations

Date: Tuesday, November 16, 2021 12:30:12 PM

Attachments: image002.png

image003.png image004.png image005.png image006.png image008.png image009.png image011.png

2021-11-16-Review Status Letter.pdf

From: John Diaz <jdiaz@gpinet.com>

**Sent:** Tuesday, November 16, 2021 12:27 PM **To:** Lee Newman <LNewman@needhamma.gov>

Subject: 1688 Central Traffic Observations

After the November 2, 2021 meeting, I went out with a GOPRO in the car on Wednesday November 3, 2021 in the morning from about 7:45-8:00, in the afternoon around 3:30 and then again from about 4:45-5:15. I also talked with a police officer who was monitoring traffic at the Transfer Station driveway around 5 to get his sense on traffic levels returning to normal.

Over the course of the 3 periods I made left turns in and out of the driveway at least 7 or 8 times. The only time I saw any queue was at 5PM and while I crawled to the driveway, I don't think I waited more than 5 seconds to make the left into the site.

While making a left out took a bit longer, it was actually easier to do at 5 when the traffic was queued past the driveway. Since there was no one NB, SB vehicles gave a courtesy gap. By 5:15, the queue had dissipated.

One of the neighbors was also recording the queue at 5 PM.

Also attached is a review of the truck turning templates and revised site plans.

The videos are too large to email, but are uploading to a onedrive site at the following link. You should be able to access them and download them. It will take sometime for them to upload.

1688 Central Videos

181 Ballardvale Street, Suite 202, Wilmington, MA 01887 d 978.570.2953 | c 617.921.9606 jdiaz@gpinet.com | www.gpinet.com





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draft

November 16, 2021

NEX-2021238.00

Town of Needham Planning Board Town Hall 1471 Highland Avenue Needham, MA 02492

SUBJECT: 1688 Central Avenue

Proposed Child Care Facility - Peer Review 3

Dear Ms. Newman:

The following items were submitted by the proponent on November 10, 2021.

- Site Plans dated June 22, 2020 rev. 11-08-2021
- 168 8Central Turning Maneuver Supply Van and Trash Truck Templates

In addition, GPI conducted a site visit during the morning, afternoon and evening peak periods to observe traffic operations on November 3, 20121.

The above materials have been reviewed against typical engineering practices, standards, and industry guidelines. We offer the following comments. (

#### SITE PLANS

The following highlights GPI's original comments from the July 15, 2021 Peer Review letter and our responses based on the revised site plan.

 What is the purpose of the 12.67' loading zone? What size vehicle is expected to need access to the loading area. Truck turning templates should be provided showing access and egress from the loading area as well as the dumpster pad.

### Comment has been addressed

2. The proponent should construct fully compliant ADA sidewalks along the property frontage and tie into existing sidewalks at the property limits.

### **GPI 11-11-21 response**

### The proponent has not indicated any sidewalk work on the plans.

3. The proponent should ensure that the construction of the site drive does not impact the drainage, particularly with the existing catch basin on the NW corner of the existing driveway.

It appears the existing CB will be in the center of the driveway on the gutter line. With the introduction of two wheelchair ramps the construction plans should consider relocating or providing additional drainage to ensure ponding in the vicinity of the wheelchair ramps does not occur.

### **GPI – 11-1-21 response**

The proponent has modified the drainage as requested above. However, we still have comments as noted on the plans:

Needham Planning Board November 16, 2021 Page 2

- a) Sheet 4 Proposed grades of the centerline of the driveway apron do not make sense. It appears to slope DOWN from the edge of road to the front of crosswalk by more than 2% and then slope up to the back of the crosswalk by more than 4%
- b) <u>Sheet 4 The spot grades 200x68 and 200x74 indicate the apron slope of about 1% UP at the sidewalk openings and a 1.8%-2.0% slope across the sidewalk/crosswalk, the apron portion should be sloped greater than the crosswalk portion.</u>
- c) Provide grades on sidewalk approaching driveway. It is unclear if the sidewalk slopes to the driveway or is level with the crossing.
- d) Sheet 4 Limit of work on the sidewalks should be indicated (also relates to Comment 2)
- e) Sheet 6 Detail should be provided for the proposed driveway apron.
- Sheet 8 & 9 Proposed CBs should be labeled and Existing CB to be removed should be labeled
- g) Sheet 10 Either delete labels on CBs (not relevant for lighting) or correctly label the Existing CB to be Removed

### GPI - 11-11-21 response

The comments highlighted in green have not been addressed and there are still concerns over the grading. It appears that the cross slope of the crossing across the driveway exceeds 2% in some areas. The maximum slope should be 1.5% with a 0.5% +/- tolerance.

### **TRAFFIC ANALYSIS**

On November 3, 2021, I went out with a GOPRO in the car in the morning from about 7:45-8:00, in the afternoon around 3:30 and then again from about 4:45-5:15. I also talked with a police officer who was monitoring traffic at the Transfer Station driveway around 5 to get his sense on traffic levels returning to normal.

Over the course of the 3 periods, I made left turns in and out of the driveway at least 7 or 8 times. The only time I saw any queue was at 5PM and while I crawled to the driveway, I didn't wait more than 5 seconds to make the left into the site.

While making a left out took a bit longer, it was actually easier to do at 5 when the traffic was queued past the driveway. Since there was no one traveling NB, SB vehicles gave a courtesy gap. By 5:15, the queue had dissipated.

Based on the updated Traffic Memo and previous discussions, the following traffic mitigation is recommended:

- 1. The proponent should commit to a follow up traffic study after the site is open and operational to at least 80% of the student capacity.
- 2. The proponent should commit to provide police details during the peak morning and afternoon hours of arrivals and dismissals. The detail should remain in place, until the Police Chief believes the site is operating without significantly impacting operations along Central Ave.
- 3. The proponent should provide detailed traffic signal timing plans for optimized operations during the weekday morning and evening peak hours. The proponent should coordinate with Needham DPW on how to implement the revised signal times

Should you have any questions, or require additional information, please do not hesitate to contact me at (978) 570-2953 or via email at jdiaz@gpinet.com.

Sincerely,

**GREENMAN-PEDERSEN, INC.** 

John W. Diaz, PE, PTOE Vice President/Director of Innovation Dear Paul Alpert, Adam Block, Natasha Espada, Martin Jacobs and Jeanne McKnight:

I am writing to you today regarding the Site on Central Ave; the proposed ChildCare Center.

I am a long time Needham Resident, I grew up on Greendale Ave, moved to Dover to raise my children and currently live in Bristol, RI. I am an employee of Needham Children's Center and I have been for 9 years.

I have been listening to all the meetings pertaining to the proposed site and the root problem is traffic and neighbors not wanting a childcare center in their neighborhood. From what I also hear is some don't care for the builder very much, which is a personal debate, not business related.

Being a Needham resident for 30 years and living in Dover, I am fully aware of the traffic on Central Ave. I would take South Street just to avoid going down Central past the Newman school, or through Dover Center and around past Mill Street, if I was going into town, as I still did my shopping in Needham.

So I feel that the long time residents on Central know the different routes to take to avoid such traffic they speak of. Keeping in mind we are talking 1 or less hours in the morning and evening. So a small amount of time if you look at the big picture.

There hasn't been an issue that the developer or the architects haven't tried to fix. As you can see with the number of plans submitted. I do know that Needham Children's Center wants to be a GOOD neighbor. We have been at the location at 858 Great Plain Ave. With the church and the surrounding neighbors, we take into account what may be happening and adjust our day with the children accordingly. From services or events in the church to backyard celebrations, we are respectful of their space. This point should be taken and regarded highly.

All I hear is the negative from the neighbors and others involved. They say they understand the need for childcare and that their family has the same needs, but it's a safety problem. How? Those families will have the exact safety measures in

place regardless if our center is there or not. To come out and say it's a safety issue if the center is built doesn't seem fair. I grew up on a busy road of Greendale Ave and one or fifty one cars had the same impact.

As our economy has taken a hit during Covid, the need for childcare is bigger than ever. Not only does Needham Children's Center want to provide a state of the art new location, they want to give families the best possible conditions, space and environment they possibly can. That is why I write you today.

Let's look beyond the negative to the future and to the root reason there is a need to move our center. Rest assured, most of the issues being addressed will fade and guaranteed most will love the look and the joy it will bring to their neighborhood. What is better than laughing children outside on an afternoon?

Denise Linden

From: Khristy Thompson
To: Alexandra Clee

Subject: 1688 Central Ave - resident concern

Date: Wednesday, November 10, 2021 11:03:20 PM
Attachments: Update on Childhood Lead Poisoning 2017.pdf

Lead in Residential Soils Sources, Testing, and Reducing Exposure.pdf

lead-yard.pdf

spntl 5 soil lead 033120.pdf Resource005513 Rep7683.pdf

### Dear Ms. Clee,

I am resident in one of the neighborhoods near the proposed childcare center site at 1688 Central Avenue. I spoke at the last Planning Board Zoom meeting on 11/2/2021 regarding the lack of soil testing at the site and the potential metal contaminants that may be present. I was in the scientific research field for twenty years and worked primarily in metal neurotoxicity collaboratively with investigators at The Harvard School of Public Health and The Pennsylvania State University on the neurotoxicity of metals during key developmental stages. I continue to lecture on environmental neurotoxicants at UMASS and HSPH. We had our first home, which was purchased in Needham, tested for lead and did the requested lead abatement. There is nothing I take more seriously.

I have attached five documents than discuss the dangers of lead and other metals on the neurodevelopment of young children. These documents are from testing facilities and discuss the proper methods for testing, assessment, and abatement. Also provided is a paper regarding current medical care of children exposed to lead and recommendations. As you read these documents you will note that lead stays in the soil for nearly 2000 years. The half-life of lead in the human body is 20 years. Children under the age of six are at the greatest risk but I can tell you that our understanding of the acceptable levels of lead exposure and the timeframe of exposure are far from complete. The sources of lead are clear: lead paint from older homes, lead pipes, car exhaust, and car repair sites. The site at 1688 Central Avenue has had nearly all these sources of lead over its history. Other metals are also dangerous and typically where you find lead you also find other metals. As a parent I would want the soil tested so that the daycare can take the proper measures to protect my child from exposure from the soil as well as possible sources of lead from the existing barn. The harm from exposure is not only restricted to the site at 1688 Central Avenue but also to the abutters as the dust spreads through the air during construction at the site and settles on other properties and enters the ground and water.

Based on the public documents regarding this site is seems that the importance of assessing the soil has been lost over time. Soil testing is easy and relatively inexpensive compared to the cost of building (not to mention the value of each child). The risk of exposure can then be decreased with proven methods.

Lastly, I feel compelled to advocate for those neighbors closest to the site. This is their home, their place of peace, their sanctuary. If I lived closer to the site I would be devastated to know that this would be happening next to my family. I am speaking up because I cannot sit back and ignore this knowing what I know about lead and the cognitive deficits that exposure can bring. I hope that the members of the Needham Planning Board could ask the builders and the daycare owners to please have the soil tested prior to moving forward and have a plan in place to minimize risk of exposure.

Thank you for your time and consideration on this matter.

Respectfully,

Khristy J. Thompson, Ph.D.



### **HHS Public Access**

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### An Update on Childhood Lead Poisoning

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### **Abstract**

Childhood lead poisoning is a multi-faceted, complex condition, which affects not only the child's health and well-being, but also the family's housing security, economic status, job security, and stress level. This review updates the emergency department clinician on the management of childhood lead poisoning. Infants and children are at higher risk than adults for lead exposure due to their smaller size and proportionately larger dose of ingested toxins, their proximity to ground dirt and indoor dust, their energy and curiosity, their oral exploratory and pica behaviors, their proportionately larger daily water and milk intake, and dietary preferences that differ markedly from those of adults. Pediatric health care providers working in the emergency department can provide medical management, as well as preventive counseling and guidance, to parents of children presenting with evidence of acute or chronic lead poisoning.

### **Keywords**

lead; lead poisoning; plumbism; chelation; metals; heavy metals; environmental toxins

Children's exposure to sources of lead contamination continues to be an important public health concern. Lead has no biological role in the body, and any detectable lead level is abnormal. There is indisputable scientific evidence that blood lead levels (BLL) below 10 µg/dL are associated with adverse effects in infants and children.<sup>1–3</sup> In response, in 2012, the Centers for Disease Control and Prevention (CDC) lowered the reference value BLL to 5 µg/dL.<sup>4</sup> An estimated 3.6 million American homes with at least one child have significant lead paint hazards.<sup>5,6</sup> As many as 500,000 US children (2.5%) under 6 years have BLLs 5 µg/dL. Each lead-exposed child costs an estimated \$5600 in medical and special educational services.<sup>7</sup> Lead exposure-related cognitive impairments cost an estimated \$50.9 billion annually in lost US economic productivity.<sup>6</sup>

Nationally, US poison control centers (PCC) received 2241 single exposure calls about possible lead exposures in 2014. Lead exposure is the most frequent inquiry directed toward the professionals staffing the nation's Pediatric Environmental Health Specialty Units (PEHSUs). Childhood lead poisoning is also a concern for clinicians working in pediatric emergency departments. Using discharge data for lead poisoning from the Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project from 2006–2014, we found that an average 1558 US emergency department (ED) visits occurred annually for assessment of possible lead exposure; 10,11 55% of these ED visits involved patients less than 18 years of age and approximately 35% were admitted to the hospital. Although much of the management of children at risk of lead poisoning is nonclinical, clinicians working in EDs commonly find themselves directing the immediate care needs of lead-poisoned children. 2

#### ROUTES AND SOURCES OF EXPOSURE

Most children with elevated BLLs today are contaminated through exposure to lead laden dust and paint chips from deteriorating lead paint on interior surfaces. Their developmentally appropriate hand-to-mouth exploratory behaviors make them susceptible in an environment that is contaminated with lead dust, even without frank pica. <sup>13</sup> Contaminated soil from 'legacy' sources of lead (eg, leaded-gasoline, deteriorating lead-based exterior paint) can recontaminate remediated houses. <sup>14,15</sup> Residual lead in soil deposited there from airborne emissions during nearby industrial operations, such as around smelters, remains a hazard even decades after closure. <sup>16</sup> Children may also inhale lead fumes or respirable dust particles resulting from unsafe remediation practices such as sanding or heating old paint, burning lead-painted wood indoors, burning automobile batteries for heat, or melting lead for use in a hobby or craft.

Other sources of lead hazards to be considered are included in Table 1. Imported cookware, cosmetics, ethnic remedies, dietary supplements, contaminated tap water, and imported foodstuffs are among the diverse sources of potential lead exposure in a home environment. Some toy jewelry is made of lead; a child who ingested a lead charm died of lead poisoning in 2006. Antique toys were sometimes painted with lead-based paint, and some plastic toys and vinyl have lead added as a softener. Since 2008, the US Consumer Product Safety Commission (CPSC) has set requirements to reduce the number of non-complying products entering the market. Novel sources of exposure include foreign-purchased cosmetics; 22,23 Southeast Asian spices 4,25 and herbs; dietary supplements; religious powders; ayurvedic or ethnic remedies; 22,25 occupational take home exposures; and vocational exposures such as youth firearms marksmanship.

#### VULNERABLE POPULATIONS

Not only are young children more likely than older children, adolescents, and adults to have an elevated BLL secondary to differences in absorption from the gastrointestinal tract and exploration of one's environment, they are also more susceptible to toxic effects than are adults because of direct entry of lead into a developing nervous system. Studies of children

with higher BLLs have consistently demonstrated lower IQ scores, <sup>1,34,35</sup> more language difficulties, <sup>36</sup> learning disorders, attention problems, <sup>37</sup> and behavioral issues. <sup>38,39</sup>

While BLLs have decreased in all children over the past 30 years, disparities in who has elevated BLLs persist, disproportionately impacting vulnerable groups, such as immigrant children, low-income families, and young children from ethnic and racial minorities, based on age, socioeconomic, occupational, developmental and cultural risk factors. <sup>40–44</sup> Children living at or below the poverty line who live in older housing are at greatest risk of lead poisoning. <sup>7</sup> Additionally, children of low socioeconomic status are at increased risk of nutritional problems such as iron deficiency, which has been associated with a 4- to 5-fold increase in baseline risk of lead poisoning due to increased absorption of lead by the divalent metal transporter in the gastrointestinal tract. <sup>45,46</sup>

Children with developmental conditions such as autism spectrum disorder and other neurological syndromes, who have persistent pica behaviors and/ or poor cognitive discriminatory recognition, are at increased risk of lead contamination. <sup>47–52</sup> Their increased risk may persist into school age and adolescence, beyond when children are routinely screened for elevated BLLs. Another vulnerable group may be children living in foster care, <sup>53</sup> whose lead poisoning risk may be related to other neurodevelopmental comorbidities in this population as well as increased residential mobility (especially in regions with older housing stock).

'Take-home' lead from the job is a common problem. The National Institute for Occupational Safety and Health (NIOSH) found common jobs with lead exposure include but are not limited to: painting, building renovation, demolition, shooting range work, metal scrap cutting and recycling, plumbing, and other industrial fields. <sup>54</sup> Pediatric emergency physicians should ask about parents' occupations and hobbies that might involve lead during evaluation of lead poisoned children. <sup>47–49</sup>

#### **Clinical Diagnosis**

Symptomatic childhood lead toxicity should be treated as an emergency. Children who present to the emergency department with unexplained symptoms and signs, especially those who are sluggish or comatose, who have persistent gastrointestinal symptoms (such as constipation or obstipation, abdominal pain, vomiting, recent anorexia, weight loss), or who have unexplained neurological or behavioral changes (eg, headaches, withdrawn, confusion, fatigue, lethargy, irritability, hyperactivity) or whose skin has a distinct pallor from severe anemia, should be suspected of suffering from acute lead poisoning. The differential diagnosis can include other causes of poisoning such as opioid ingestion or carbon monoxide poisoning, iron deficiency, thalassemia, Wilson's Disease, acute intermittent porphyria, an acute surgical abdomen, encephalitis, and other causes of encephalopathy. Table 2 gives symptoms and signs of lead poisoning based on blood lead levels.

Keep in mind that children with significant underlying lead poisoning can be relatively asymptomatic. Table 2 links clinical findings with the BLL. Some children with BLLs >45 µg/dL may complain of headaches, abdominal pain, loss of appetite, or constipation or they may be completely asymptomatic. Children displaying clumsiness, agitation, or decreased

activity and somnolence are presenting with premonitory symptoms of central nervous system (CNS) involvement that may rapidly proceed to vomiting, stupor, and convulsions.<sup>55</sup> Clinicians must have a high index of suspicion for a child who presents with a recent history of symptoms and/or signs presented in Table 2. Significant lead exposure in early childhood has been linked to a numerous adverse health outcomes later in childhood, adolescence and adulthood, which are also listed in Table 2.

#### LABORATORY AND IMAGING STUDIES

The emergency department evaluation of a lead poisoned child often includes blood testing and radiographic studies (Table 3).

#### **Blood Lead Level (BLL)**

Measurement of a venous blood lead level (vBLL) is key to the diagnosis of lead poisoning. For screening, a finger-stick sample (fsBLL) can be used if care is taken to avoid contamination. An elevated fsBLL (  $5 \,\mu\text{g/dL}$ ) should be confirmed with a timely vBLL. <sup>12,56,57</sup> Hair or urine lead levels give little useful additional information. <sup>58</sup>

#### Zinc-Chelated Protoporphyrin (ZPP)

Lead interferes with heme synthesis beginning at BLLs of approximately  $25~\mu g/dL$  and after 50–70 days or more of exposure. <sup>59</sup> Both D-aminolevulinate dehydratase, an early-step enzyme, and ferrochelatase, which closes the heme ring, are inhibited. Ferrochelatase inhibition is the basis of a supplemental test for lead poisoning that measures in blood the quantity of zinc-chelated protoporphyrin (ZPP) and free erythrocyte protoporphyrin (FEP), the immediate heme precursor. These markers are insensitive to lower BLL and are not specific since they are also elevated in the presence of iron deficiency, a common comorbidity in children with elevated BLLs. ZPP or FEP can give insight into the chronicity of ongoing exposure and can be used during management, since an unexpected rise in these markers during patient monitoring over a period of weeks or months may indicate reexposure and the need to reassess the environment.

#### **Iron Status**

Many young children with elevated BLLs will have iron insufficiency or iron deficiency anemia. Since lead and iron both use the same GI tract transporter, located in the small intestine, lead absorption is enhanced in children with iron deficits. Thus iron deficiency is an important comorbidity of lead toxicity; pica behavior has sometimes been associated with iron-deficient status. Therefore, markers of iron deficiency such as low ferritin or serum iron levels, even in the absence of anemia, low mean corpuscular volume (MCV), or elevated red cell distribution width (RDW) or low reticulocyte hemoglobin should be treated with therapeutic doses of iron as indicated.

#### **Complete Blood Count**

In addition to screening for comorbid anemia or iron deficiency, a complete blood count (CBC) with differential should be obtained before starting chelation, since chelants can cause depression of any or all three cell lines. Basophilic stippling may be seen at higher

BLL. Basophilic stippling refers to small blue granules (ie, ribosomes) located inside of the cytoplasm when the smear is stained with Wright's stain.<sup>60</sup>

#### **Liver and Renal Function Tests**

Baseline liver and renal function tests, serum electrolytes, and glucose are also indicated in the child with suspected moderate—severe lead poisoning, since chelants commonly used in the medical management can have liver and/or renal toxicity or cause metabolic derangements. Periodic monitoring of the CBC, electrolytes, and liver and kidney function throughout the course of chelation therapy is recommended.

#### Radiographs

With lead-containing foreign body ingestions, BLLs rise rapidly (within hours to days) and can continue to rise during bowel transit of the object. Once the object has been excreted, the BLL falls to a new body equilibrium over the next month. In the emergency department, an abdominal radiograph to determine the presence of lead-containing substances may be indicated if a child's BLL is  $15~\mu g/dL$  or, regardless of the BLL, if a parent has witnessed or suspects that the child has recently ingested paint chips or a foreign body. <sup>12,56</sup> If the radiograph is positive for metal-density opacities in the stomach or small intestine, then hospitalization and gut decontamination with a polyethylene glycol solution ('whole bowel irrigation') may be beneficial. Radiographs of long bones to assess "lead lines" (ie, densemetaphyseal lines of growth arrest) are no longer necessary or recommended.

#### **TREATMENT**

Multipronged management should be provided to all children with BLLs above the CDC reference value, as of time of manuscript preparation BLL  $5~\mu g/dL$ .  $^{4,12,61}$  Tables 3 and 4 give details of diagnostic evaluation and management strategies to consider based on a child's BLL. Management includes finding and eliminating the source of the lead, instruction in proper hygienic measures (personal and household), optimizing the child's diet and nutritional status, and close follow-up. Many children with higher BLLs live in or visit regularly a home with deteriorating lead paint. Successful therapy depends on eliminating the child's exposure; case management should address and control environmental sources of lead. Families of children with elevated BLLs should be referred to local public health officials and/or a certified lead inspector for an inspection and assessment of the child's residence(s) for lead hazards. Clinicians as a first step often will start children identified as having an elevated BLL on supplemental iron therapy (3–6 mg/kg per day of free iron) to repair any iron deficiency.

#### Hospitalization

- **a.** Is the child symptomatic?
- **b.** Are there unabsorbed lead-containing foreign bodies in the stomach or small intestine?

**c.** Are there parental or other external factors making a safe discharge and timely follow-up difficult?

**d.** Is the home unsafe with respect to sources of lead contamination readily accessible to the child?

#### **Discharge Planning**

Although the main concern for the pediatric emergency physician regarding disposition is admission or discharge from the emergency department, the following hospital discharge criteria are important to consider when arranging a discharge plan. After inpatient management (eg. whole bowel irrigation, course of parenteral chelation), hospital discharge planning should determine:

- a. Sources of lead exposure hazard have been identified and remediated
- **b.** Parents or guardians understand dosing of oral chelants and there is a strong likelihood of adherence to medical instructions
- c. The BLL has dropped adequately during inpatient therapy

Discharge counseling should include referral to public health officials for environmental assessment, temporary abatement recommendations to minimize ongoing exposure (eg, taping up chipping interior paint using contact paper or duct/masking tape), frequent hand washing, frequent dusting/wet mopping of the home (several times per week), leaving shoes at the threshold, and dietary recommendations (Table 5).

#### **Chelation and Management of Elevated BLLs**

Chelants are chemicals whose structures include side-groups that can bind to lead and facilitate its excretion in urine. They are indicated emergently in cases of moderate–severe and life-threatening childhood lead poisoning. Chelation therapy for children with venous BLLs of 20 to 44 µg/dL can be expected to lower BLLs but has not been shown to reverse or diminish cognitive impairment or other behavioral or neuropsychological effects of lead. Each of lead. If the venous BLL is 45 µg/dL and the exposure has been identified and controlled, chelation treatment should always be considered. A pediatrician experienced in managing children with lead poisoning should be consulted—these can be found through the PEHSUs, FeCcs or through lead programs at state health departments. (See Appendix A) There are 4 chelants currently recognized as having efficacy in lead poisoning: dimercaprol (British Anti-Lewisite [BAL]), calcium disodium edetate (ethylenediaminetetraacetate; Versenate), dimercapto succinic acid (DMSA; Succimer; Chemet), and d-penicillamine (Cupramine, Depen). See Table 6 for educational purposes for details surrounding the administration of each. Treatment decisions are the responsibility of the treating clinician and should always be tailored to individual clinical circumstances.

*Dimercaprol* promotes the renal excretion through the formation of stable, nontoxic, soluble lead chelates. Dissolved in peanut oil for deep intramuscular injection, dimercaprol is associated with a high incidence of adverse effects, including fever, rashes, and pain at the injection site. It is contraindicated in persons with a peanut allergy or underlying hepatic insufficiency and may cause hemolysis in individuals who have glucose-6-phosphatase

deficiency. Iron therapy needs to be discontinued because dimercaprol and iron form a complex that causes vomiting. NOTE: adequate patient hydration and good urine flow during chelation therapy with dimercaprol are of paramount importance, given its risk of renal toxicity.

Calcium disodium ethylenediaminetetraacetate (CaNa<sub>2</sub>EDTA) increases the urinary excretion of lead 20- to 50-fold through the formation of nonionizing salts. CaNa<sub>2</sub>EDTA removes lead only extracellularly; it does not enter cells and thus does not cross the blood brain barrier. WARNING: Some hospitals still stock the incorrect disodium EDTA salt. It is crucial that the calcium disodium salt be used, because the disodium EDTA salt alone avidly binds calcium and can cause severe, life-threatening hypocalcemia. <sup>63,64</sup> CaNa<sub>2</sub>EDTA is given intravenously usually for 5 day cycles. Side effects include local reaction at the injection site, fever, calcium abnormalities, renal dysfunction, and excretion of essential minerals. NOTE: maintaining adequate patient hydration and good urine flow during CaNa<sub>2</sub>EDTA chelation therapy is important.

Meso-2,3-dimercaptosuccinic acid (DMSA) is a water-soluble analogue of dimercaprol that was approved for oral administration by the US Food and Drug Administration in 1991 for chelating children who have BLL  $45 \,\mu\text{g}/\text{dL}$ . DMSA is given orally, has less toxicity than CaNa2 EDTA, and causes less urinary loss of essential minerals. Side effects include abdominal distress, transient rash, elevated liver transaminase enzymes, and neutropenia. The 100-mg gelatin capsules have a strong sulfur ("rotten egg") odor.

D-Penicillamine is an oral chelating agent used to treat Wilson's disease (hepatolenticular degeneration). It has also been used by some clinicians for treating lead poisoning.<sup>75</sup> When used for chelation of lead in young children, low doses are recommended, with close monitoring of the CBC and renal function. Allergic rashes, marrow suppression, nephrotoxicity, and anaphylaxis are possible adverse effects.

#### Other Management

**Nutrition**—Treatment strategies in the pediatric emergency department setting include family counseling and education on dietary sources of iron, calcium, vitamins C and D, zinc and magnesium to attenuate increased absorption of lead in the setting of nutritional deficiencies.

**Educational Enrichment**—Another disposition recommended for young children discovered to have an elevated BLL is consideration of referral for neurodevelopmental evaluation and/or therapeutic services (eg, Early Intervention, Individualized Education Program (IEP) or other appropriate neurodevelopmental clinic or education enrichment program.<sup>65</sup>

#### PREVENTION OF EXPOSURE

The CDC and American Academy of Pediatrics (AAP) both emphasize that the best way to end childhood lead poisoning is to prevent, control and eliminate lead exposures. <sup>12</sup> The focus is shifting from the care of symptomatic children toward a primary prevention

approach targeting high-risk communities, as the most reliable and cost-effective strategy to protect children from lead toxicity. <sup>12,66</sup> Table 5 presents some recommendations for families to insure that their home is hazard-free with respect to lead contamination. It is critical that the individuals conducting residential abatement, or the removal, enclosure, or encapsulation of lead-based paint or lead-contaminated dust or soil receive appropriate training, and pregnant women, infants and children are out of the home environment during remediation and renovations in order to minimize further exposure to lead. <sup>15,67,68</sup> When done safely, paint stripping, covering over painted areas by sealing, encapsulation, or encasement, using high-efficiency particulate arrestance (HEPA) vacuums, HEPA air filters, and soil and dust removal, can be effective methods for lead abatement.

#### SUMMARY

Exposure of children to harmful lead-containing dust, paint, drinking water, and other sources in their environment continues to pose an enormous public health challenge, not only in the United States but around the world. Vulnerable groups include immigrant children, low-income families, children in transitional foster care, young children from ethnic and racial minorities and those with underlying autism or other developmental delays who have persistent pica behaviors. Clinicians working in the emergency department are advised to keep a high index of suspicion for lead poisoning among the possible diagnoses for children presenting with pallor and anemia, loss of appetite, irritability and behavioral changes, colicky abdominal pain, chronic constipation, or other symptoms and signs typical of lead poisoning. Management of children identified as having elevated blood lead levels is multi-faceted and includes attention to diet, mitigation of environmental lead hazards so as to decrease further exposure, referral to community-based agencies, and developmental specialists, and in severe cases, chelation therapy. Prevention of exposure, including the identification of community-based resources to assist families and landlords in lead-hazard abatement, is the most effective public health strategy, requiring the concerted efforts of health care providers, local, state and Federal public health officials, health policy makers, and relevant community-based services and advocacy groups.

#### **Acknowledgments**

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# APPENDIX A. RESOURCES-GOVERNMENTAL AND NONGOVERNMENTAL ORGANIZATIONS

 Alliance for Healthy Homes; www.afhh.org.htm; 202-543-1147; Provides additional information on residential lead contamination and how to safely remove it.

- American Association of Poison Control Centers www.aapcc.org;
   1-800-222-1212.
- Coalition to End Childhood Lead Poisoning; www.leadsafe.org.htm;
   800-370-5323; Provides information for parents regarding childhood lead poisoning and its treatment and prevention.
- Centers for Disease Control and Prevention (CDC); www.cdc.gov/nceh/lead/ grants/contacts/CLPPP%20Maphtm;

Provides state and local contacts for CDC funded childhood lead poisoning prevention programs.

- Department of Housing and Human Development (HUD); www.hud.gov/offices/lead.htm Office of Healthy Homes and Lead Hazard Control provides ability to track HUD's progress in the abatement of lead hazards in residences.
- Environmental Protection Agency; www.epa.gov/lead.htm;
   EPA Lead Awareness Program provides information on residential lead abatement. EPA Safe Drinking Water Hotline; 1-800-426-4791.
- National Lead Information Center Hotline (1-800-LEAD-FYI) and Clearinghouse (1-800-424-LEAD): established by four Federal agencies (the EPA, CDC, HUD, and DOD) to provide the public and professional audiences

with information in English or Spanish about lead poisoning and prevention.

National Lead Information Center.

1019 19th St, NW, Suite 401.

Washington, DC 20036.

- US Department of Housing and Urban Development (HUD): 800-RID-LEAD.
- National Lead Information Center www.epa.gov/lead; (800) 424-5323; 800-LEAD-FYI.
- Pediatric Environmental Health Subspecialty Units (PEHSU); www.pehsu.net
  (ATSDR and EPA-sponsored regional centers providing clinical evaluation and
  consultation regarding pediatric environmental health issues, including lead
  poisoning).

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#### TABLE 1

#### Sources of lead exposure.

Home Environment Sources	Other Sources
Interior or exterior paint, old putty, interior plaster, exterior decorative infrastructure (eg, 'faux pewter' fencing)	Folk remedies (examples include Ayurvedic medicines; Greta and Azarcon, Hispanic traditional medicines; Ghasard, an Indian folk medicine; 'pay-loo-ah'; 'litarigio'; 'bali bali'; 'Babaw-saw', a Chinese herbal remedy; reuda; liga; coral; alkohl)
Household lead-laden dust	Foodstuffs: Some garden plants grown in contaminated soil (eg, leafy or root vegetables)
Soil	Herbs and dietary supplements: imported herbal products; dietary supplements (eg, calcium); imported spices (eg, turmeric); candy from Mexico (the ingredient 'tamarind' may contain lead)
Drinking water; household lead plumbing, standpipes, water mains, faucets, lead-soldered pipes	Cosmetics and religious powders (eg, 'Swad' brand Sindoor, a cosmetic product used in Hinduism); 'Tiro' eye cosmetic from Nigeria; 'Kohl' or 'Surma' eye cosmetics from Africa, Middle East or Asia); lead acetate hair dyes
Parental occupations 'Take-Home' Lead (examples include construction, renovation, and demolition work, lead-paint abatement, pipe fitting and plumbing, battery manufacturing, mining, ship building or other marine work, e-scrap recycling)	Hobbies (examples include hobbies involving soldering such as stained glass, making fishing lures, jewelry making, pottery glazes, some artists' paints, fabricating bullets, lead solder, marksmanship at firing ranges, finishing sinkers)
Old ceramic, pewter, or antique cookware, old pots, pans, urns/ kettles, decorative pottery from Mexico; ceramics from China, or other imported cookware	Marine lead sources: marine paints, lead weights
Hazardous neighborhoods: homes located near lead-smelters, mining, nearby homes undergoing demolition, toxic waste sites, homes under bridges, homes near incinerators, battery recycling facilities	Moonshine alcoholic beverages
Secondary home environments: family daycare, grandparents' homes, homes of other family members where children spend substantial time	Fishing sinkers, curtain weights, automobile wheel balancing weights, ammunition (including pellets), lead tools
Home renovations	Novelty jewelry, charms, medallions
Burning painted wood indoors	Some imported toys, crayons, pewter figurines
Antique cribs or furniture	Aviation gasoline ('Avgas' for small piston engine planes)

 $Data\ from\ American\ Academy\ of\ Pediatrics\ Council\ of\ Environmental\ Health,\ Pediatric\ Environmental\ Health,\ 3rd\ Edition. \\ 76$ 

TABLE 2

Summary of children's health effects by blood lead level.

Blood Lead Level	Sufficient Evidence or Causal Determination of Children's Health Effects		
Below 5 μg/dL	dL Nervous System Effects:		
	Cognitive function: decreases in IQ, academic achievement, specific cognitive measures		
	Externalizing behaviors: Increased incidence of attention-related and problem behaviors		
$5{\text -}10~\mu\text{g/dL}$	Effects listed above plus		
	Nervous System Effects: decreased auditory function		
	Reproductive and Developmental Effects: reduced postnatal growth, delayed puberty for girls and boys		
10–44 µg/dL	Effects listed above plus		
	Nervous System Effects: slower nerve conduction		
	Hematologic Effects: decreased hemoglobin, anemia		
$4569~\mu\text{g/dL}$	Effects listed above plus		
	Gastrointestinal Effects: abdominal pain, constipation, colic, anorexia and vomiting		
Above 70 μg/dL	Effects listed above plus		
	Nervous System Effects: severe neural effects including convulsions, coma, loss of voluntary muscle control, and death		

Data from President's Task Force on Environmental Health Risks and Safety Risks to Children, Key Federal Programs to Reduce Childhood Lead Exposures and Eliminate Associated Health Impacts Report.  $^{21}$ 

Table 3

Diagnostic evaluation of elevated blood lead levels. <sup>56</sup>

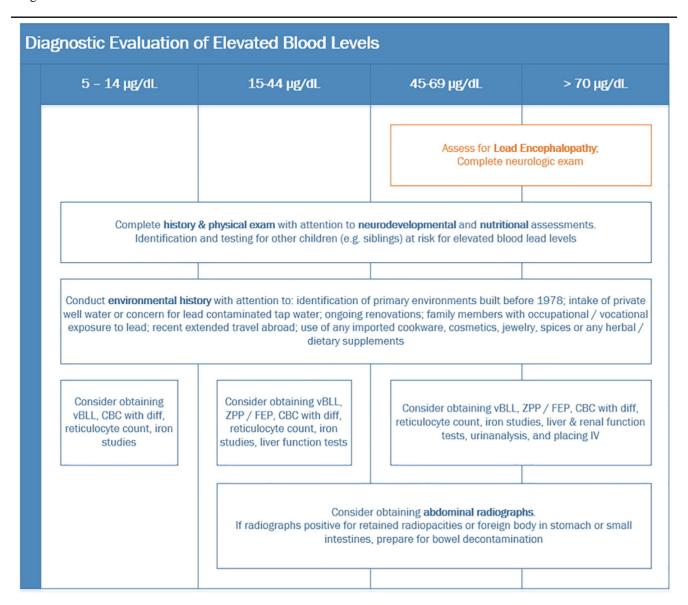
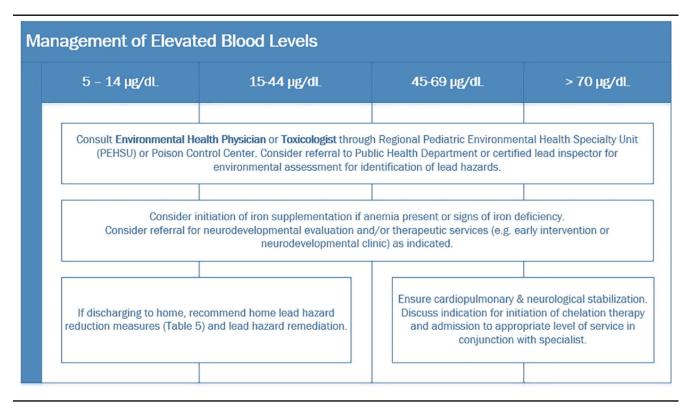


Table 4

Management of elevated blood lead levels. 56



#### **TABLE 5**

#### Home lead hazard reduction measures.

#### **Specific Recommendations**

#### Residential Sources of Lead Exposure

- Wash children's hands and toys frequently with soap and water and especially wash hands before sleeping or eating.

- Frequent wet mopping windows, play areas and floors to reduce lead-laden dust.
- We do not recommend starting home renovations in pre-1978 home until obtaining lead inspection.
- Keep windows closed if peeling or chipping paint.
- Place duct tape or contact paper over chipping peeling paint.
- Reduce take home occupational exposures by changing out of work clothes and shoes before going home.
- Eliminate alternative sources of lead from imported sources.
- Clean home ventilation grates, duct work, and air filters

#### Water sources

- If tap water has tested high in lead, consider installing an effective point-of-use filtering device.
- Run tap water to cold for 1-2 minutes.
- Clean out faucet aerators frequently
- Private well water should be tested for contaminants annually
- Replace interior lead plumbing and exterior lead standpipes, as indicated
- Alternatively, switch to bottled water for drinking and cooking, and especially for preparing infant formula.

#### Guidance for lead hazard remediation

- Have the home inspected for lead hazards by certified lead inspector or public health authority.
- Lead hazard remediation which includes as indicated window and door replacement, scraping of baseboards, and other lead abatement
  measures should be performed by licensed, certified lead abatement specialists or others undergoing low-moderate risk de-leading
  trainings.
- Family and children must vacate premises until abatement measures and clean-up have been completed, home is re-inspected, and home is deemed to be hazard-free. Use a HEPA vacuum

#### Outdoor exposures

- Cover bare dirt outdoor areas with grass, mulch, asphalt, or concrete
- Leave shoes at the threshold of the domicile
- Wipe paws of pet dogs and cats

 $Data\ from\ American\ Academy\ of\ Pediatrics\ Council\ of\ Environmental\ Health,\ Pediatric\ Environmental\ Health,\ 3rd\ Edition. \ 76$ 

**TABLE 6** 

Summary of common chelants used in lead poisoning.

Chelant	Notes
BAL (British Anti-Lewisite) [2,3-dimercapto propanol] [Dimercaprol]	Only given parenterally (deep intramuscular)-Use in life-threatening cases (eg, encephalopathy, coma, seizures or BLL >70 µg/dL) in intensive care settingsUsually given only for initial 12–24 hours of therapy-Dissolved in peanut oil-Contraindicated in children allergic to nuts-Contraindicated in children with glucose-6-phosphatase deficiency-Can cause nausea, emesis, fever, rashes, hypertension, prolonged PTT-Can cause pain at the injection site-Can cause kidney and/or liver dysfunction or zinc deficiency-For Dosing Guidance see Reference Material. <sup>69,70</sup>
CaNa2EDTA [Calcium disodium ethyleneaminetetraacetate] [Edetate disodium calcium, Versenate]	<ul> <li>Only given parenterally (intramuscular or, preferably, intravenous)-Give only in glucose/ electrolyte solutions – do not mix with other medications-Usually given as continuous infusion for 3–5 day course-Can cause kidney dysfunction and trace mineral (eg, zinc) depletion-For Dosing Guidance see Reference Material. 70,71</li> </ul>
DMSA (Dimercaptosuccinic acid) [Succimer] [Chemet]	- Comes as 100-mg gelatin oral capsules only-Contraindicated in children who have ongoing exposure to lead hazards-Can cause elevated liver enzymes or urticarial skin rash-Often causes mild upset stomach, nausea, emesis, or loose stools-Adherence to medication schedule is often problematic in children-Can cause neutropenia or other marrow dysfunction-Contraindicated in children who have hepatic insufficiency-Contraindicated in children who have ongoing exposure to lead hazards-Capsules should be aired out before contents are mixed with food-For Dosing Guidance see Reference Material. <sup>70,72</sup>
D-penicillamine (3-mercapto-D-valine) [Depen, Cupramine]	- Available as 250-mg capsule or tablet-Contraindicated in children who have ongoing exposure to lead hazards-Do not give with milk, milk products, calcium-containing foods, or iron supplements-Give in juice or jelly on an empty stomach-Often causes mild upset stomach, nausea, emesis, or loose stools-Adherence to medication schedule is often problematic in children-Can cause urticarial rash, trace mineral depletion, kidney dysfunction-Can cause neutropenia or other marrow dysfunction-Contraindicated in children who have renal insufficiency-Contraindicated in children who have ongoing exposure to lead hazards-Tablets should be aired out before contents are mixed with food-For Dosing Guidance see Reference Material. 70,73-75

 $Data\ from\ American\ Academy\ of\ Pediatrics\ Council\ of\ Environmental\ Health,\ Pediatric\ Environmental\ Health,\ 3rd\ Edition. \ 76$ 

HOME | LEAD IN RESIDENTIAL SOILS: SOURCES, TESTING, AND REDUCING EXPOSURE

## Lead in Residential Soils: Sources, Testing, and **Reducing Exposure**

This article provides some background information about how lead behaves in soil.



ARTICLES | UPDATED: SEPTEMBER 15, 2010



## Introduction

Lead occurs naturally in soils, typically at concentrations that range from 10 to 50 mg/kg (milligrams of lead per kilogram of soil, equivalent to parts of lead per million parts of soil, or ppm). Because of the widespread use of leaded paint before the mid-

1970s and leaded gasoline before the mid-1980s, as well as contamination from various industrial sources, urban soils often have lead concentrations much greater than normal background levels. These concentrations frequently range from 150 mg/kg to as high as 10,000 mg/kg at the base of a home painted with lead-based paint. Lead does not biodegrade, or disappear over time, but remains in soils for thousands of years.

Serious human health risks, particularly for children under 6 years of age, are associated with lead poisoning. It is estimated that between 5.9 and 11.7 million children nationwide potentially are exposed to lead in soil or dust. Low-level, chronic exposure to lead in contaminated residential soil can cause several developmental and behavioral problems in children. Among these are reduced IQ and attention span, hyperactivity, impaired growth, learning disabilities, hearing

loss, and insomnia. Once absorbed by the human body, lead is extremely difficult, if not impossible to remove. Therefore, not only is prevention of lead poisoning the best cure, but it may be the only cure.

This fact sheet provides some background information about how lead behaves in soil. It explains how soils become contaminated with lead and how people are exposed to lead in soils. Information also is provided about how to test soils for lead contamination and how to interpret the results of such testing. Finally, several measures are outlined that can reduce exposure to soil lead and prevent lead poisoning and its associated health risks.

### Lead in Soil

Soil lead is held tightly on the surfaces of very fine clay and organic matter particles. Therefore, when lead is added to the soil surface, it tends to accumulate in the upper 1 to 2 inches of soil unless the soil has been disturbed by activities such as excavation for building or tillage for landscaping and gardening. Added lead also will become most concentrated in very fine soil particles, which tend to stick to skin and clothing and form airborne soil dust.

Not all of the lead in soil is available to plants (or to the human body, should the soil be eaten). The availability of soil lead depends on how tightly it is held by soil particles and on its solubility (how much of it will dissolve in water). At low soil pH (pH<5, acidic conditions) lead is held less tightly and is more soluble. At near neutral or higher pH (pH>6.5, neutral to basic conditions) soil lead is held more strongly, and its solubility is very low. Lead is held very tightly by soil organic matter, so as organic matter increases, lead availability decreases.

Some lead added to soil may combine with other soil elements to form lead-containing minerals. One such mineral that has extremely low solubility is lead phosphate (pyromorphite). Formation of this mineral is favored by high soil pH and high levels of lead and phosphate, conditions that would occur with the application of ground agricultural limestone and large amounts of phosphate fertilizer to a lead-contaminated soil.

## Major Sources of Lead in Soils

Lead compounds were used as antiknock agents in gasoline until 1989. It is estimated that 4.5 to 5.5 million tons of lead used in gasoline remain in soil and

dust. Soils adjacent to heavy traffic volume areas in cities and busy roadways have the highest concentrations of lead. The other major source of lead in residential soils is leaded paint. It is estimated that leaded paint was used on about 75% of houses built before 1978, when it was banned. Chalking, leaching, flaking, weathering, scraping, and sandblasting of leaded paint result in lead deposits in the soil near the base of these houses, creating a "halo" of lead contamination. Although less widespread, airborne lead from industrial sources also may have contaminated some nearby residential soils.

## **Exposure to Soil Lead**

People are exposed to soil lead either from direct contact with contaminated soil or from contact with very fine soil particles carried into houses as airborne dust or on shoes, clothing, or pets. Lead is taken into the body by either ingestion (eating) or inhalation (breathing). Children 2-3 years of age are at high risk for ingesting lead because they are apt to mouth dirty items such as toys and pacifiers and to suck dirty fingers and hands. (It is estimated that young children consume around 200 mg of soil per day, about the volume of an aspirin tablet.) Some young children exhibit pica, the desire to eat soil, and consume much larger quantities. Exposure also may result from eating garden produce grown in or near contaminated soil. Lead can be taken up from the soil into plant tissues, or contaminated dust may settle on edible leaves and fruits.

## **Testing Residential Soil for Lead**

Soils can be tested to determine if they are contaminated with lead and, if so, what measures should be taken to reduce exposure to the lead. Soils around older houses or near roadways may be contaminated and should be tested. Several laboratories in Pennsylvania, including Penn State's Agricultural Analytical Services Laboratory, have the facilities to conduct these tests. Contact your county extension agent or look in the yellow pages under "Laboratories" to obtain information about testing laboratories that offer this service to your area.

Before collecting any soil samples, contact the laboratory for any specific instructions, sampling kits, or forms that might be required. The steps described below typically are followed when collecting soil samples for lead analysis.

- 1. Select sites--Take samples from areas you suspect may have lead contamination such as near roadways or the base of an older home. Also collect samples from high-exposure areas such as garden sites and play areas. It is a good idea to sample each area separately and to make a map showing where each sample was collected.
- 2. Collect sample--In undisturbed areas, collect soil from the upper 1-2 inches of the soil. In areas where the soil has been disturbed, and in flower beds and vegetable gardens, collect 6-inch-deep samples. If a soil auger or corer is not available, use a shovel to dig a 6-inch-deep hole such that one side exposes a smooth vertical area of soil. Shave a 1-inch-thick slice of soil from this face, keeping it on the shovel. Then collect a 1-inch-wide sample from the center of this slice that reaches from the soil surface to a depth of 6 inches. Take 8-12 samples from a given area, put them together in a clean plastic bucket, and mix well. Take a small subsample (about a cup) and allow it to air dry. Do not heat in an oven or over a register. Put the air-dried sample in a clean plastic bag and seal and label it.
- 3. Send sample--Send the sample to a soil testing lab. You should request analysis for total sorbed lead (using EPA method 3050 or 3051 or its equivalent). You also should request analysis of pH, lime requirement, and soil phosphorus. If you need assistance interpreting the report you receive from the testing lab, contact your local extension office.

## **Interpreting Soil Test Results**

Laboratory test results normally will report soil lead concentrations in terms of  $\mu g/g$  (micrograms per gram), mg/kg, or ppm (parts per million). These are all equivalent units of measurement. The table below indicates the degree of lead contamination indicated by various soil lead concentrations. The following section provides information on measures that should be taken to reduce exposure at each level of contamination.

Soil Lead Level (Total Sorbed Lead Test)	Level of Lead Contamination mg/kg or ppm
Less than 150	None to very low
From 150 to 400	Low
From 400 to 1,000	Medium
From 1,000 to 2,000	High

Soil Lead Level	Level of Lead Contamination	
(Total Sorbed Lead Test)	mg/kg or ppm	
Greater than 2,000	Very high	

## How to Reduce Exposure to Soil Lead

None to very low lead contamination (less than 150 mg/kg).

There is no need to be concerned about lead exposure from these soils. Recognize, however, that other possible sources of lead exposure exist such as home interiors or school or daycare playgrounds.

Low lead contamination (150 to 400 mg/kg).

#### Consider the following measures to reduce exposure to lead in these soils:

- Enforce a clean hands policy. Children should wash their hands when they come in from playing outside. Teach your children not to put their fingers in their mouths.
- Provide children with a covered sandbox, located away from areas where lead levels are highest. Discourage them from playing in areas of known or suspected lead contamination. Maintain a healthy grass sod on play areas, and cover bare soil with mulch. Place rubber mats or carpets over the soil in high wear areas such as under swings and at the bottoms of slides.
- Use the following gardening practices:
  - Locate vegetable gardens as far as possible from roads, driveways, and old painted structures. Lay out gardens to keep leafy green vegetables and other hard-to-wash vegetables far from areas of suspected or known lead contamination.
  - Incorporate one-third by volume organic material such as peat moss, compost, and manure into garden beds. For example, add three to four 4-cubic-foot bales of peat moss to 100 square feet of garden bed area.
  - Apply ground limestone (available at most lawn and garden stores) to the soil, as recommended by the soil test, to obtain a pH of 6.5 to 7.
  - Protect the garden area from airborne dust from contaminated soil areas (fine dust has the highest lead concentration). Erect a fence or plant a hedge between

the garden and known or suspected areas of contaminated soil. Lay down a mulch in the garden to cover bare soil.

• Wash all vegetables carefully with a 1% vinegar solution or soapy water. Rinse thoroughly after washing. Peel root crops and discard the outer and older leaves of leafy vegetables. Do not compost the peelings or leaves.

#### Medium lead contamination (400 to 1,000 mg/kg).

#### Take the following measures in addition to the practices described above:

- Apply 11 lb. of triple super phosphate or concentrated super phosphate fertilizer (available at most lawn and garden stores) per 100 square feet of soil, and mix thoroughly to a depth of 6 inches. Phosphate fertilizer may lower soil pH as it reacts with the soil. One year after adding the fertilizer, test the soil again for pH and lime requirement. Apply ground agricultural limestone, as recommended by the soil test, to achieve a pH of 6.5 to 7.
- Cover the areas with mulch and restrict access of children or pets to these soil areas by erecting a fence or planting a dense evergreen ground cover.
- By following the gardening practices and phosphate fertilizer addition described above, this soil may be used safely to grow fruiting vegetable crops (tomatoes, peppers, squash, cucumbers, peas, beans, corn).
- Do not grow leafy vegetables (lettuce, spinach, kale, cabbage) or root crops (carrots, radishes, turnips, beets) in this soil. Grow these crops in raised beds filled with noncontaminated soil and organic materials.

### High lead contamination (greater than 1,000 mg/kg).

Do not garden in this soil and do not allow children or pets to come into contact with it. Follow the steps described above to reduce lead availability and to keep the soil covered. If the highly contaminated soil is widespread and it is difficult to restrict access to the area, or if the soil lead concentration is greater than 2,000 mg/kg, contact your local health department, Penn State Extension office, or regional DEP office for specific advice on lead abatement measures that should be taken.

### **Further Information**

More information on this subject is available from the following agencies:

#### **Environmental Protection Agency (EPA)**

401 M Street, SW Washington, DC 20460-0003 800-424-LEAD

#### Centers for Disease Control (CDC)

Lead Poisoning Prevention Program 1600 Clifton Rd., NE Atlanta, GA 30333 800-232-4636

Alliance to End Childhood Lead Poisoning 227 Massachusetts Avenue, NE, Suite 200 Washington, DC 20002 202-543-1147

United States Dept. of Housing and Urban Development (HUD)

**Healthy Homes and Lead Hazard Control** 

451 7th Street, SW, Rm. B-133 Washington, DC 20410-0000 202-755-1805

#### **National Lead Information Center**

1019 19th Street, NW, Suite 401 Washington, DC 20036-5105 800-LEAD-FYI

Prepared by Richard Stehouwer, assistant professor of environmental soils, and Kirsten Macneal, research associate, Department of Agronomy

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#### **Lead Contamination in Your Yard**

#### Reducing the Risks: A Homeowner's Guide

Lead poisoning is one of the top environmental health threats to children. Over time, exposure to even low levels of lead can affect a child's growth, behavior, and learning ability. Children under six years of age are particularly vulnerable to lead poisoning.

In addition to the lead paint hazards that exist inside many homes - especially in older buildings - another significant threat can be found in the soil of some yards. Children can become exposed to lead when playing in the dirt or tracking it into the house on their shoes and clothing.

#### How can lead get into the soil in my yard?

There are two major sources. As exterior house paint ages, chips and dust that may contain lead fall to the ground and into the soil. This is a greater concern if you live in an older building: until 1978, lead was a primary ingredient in oil-based residential paints. Lead was also used in gasoline until the mid-1980s and may have settled into your yard from car exhaust.

#### How will I know if there is lead in my yard?

The only way to know for certain is to have your soil tested. To order a soil analysis, contact: University of Massachusetts Soil & Plant Tissue Testing Laboratory

If you do not want to test and you live in an older home, near a major roadway, or have neighbors who have found lead in the soil of their yards, there is a good chance you have lead in your yard. In that case, it may be best to play it safe and follow the advice below.

#### What can I do to protect my family from lead in my yard?

If you have lead in your yard, here are some things you can do:

- Discourage children from playing on bare soil provide a sandbox, if possible and make sure they wash their hands after playing outside, especially before eating.
- Wash toys before bringing them into the house or leave them outside.
- Keep your pets clean. Dogs and cats can bring dirt inside on their paws or fur.

- Clean up any dirt that is tracked into the house. Use a wet mop whenever you can, since sweeping or vacuuming can stir up dust in the air.
- Wash clothing that is heavily soiled with dirt from the yard separately from other laundry.
- Improve or replace the soil in areas of your yard that are used for gardening or use raised beds. Keep in mind that vegetables grown above ground (e.g., tomatoes and squash) are safer for eating than root vegetables (e.g., potatoes and carrots).
- During the summer months, when dust is a problem, clean window sills with a damp cloth or sponge once a week.
- Keep exterior house paint in good condition. Old paint can peel and flake off into the soil.

#### What else can I do to make my yard safer?

There are several steps that you can take - including simply planting grass or shrubs - to create an effective safety barrier:

- Play Areas can be made safer by properly locating them in the yard. Place swing sets and sand boxes away from areas where there is lead in soil. Use clean sand in the sand box. Children sometimes put toys and/or hands in their mouths, so make sure sandboxes are covered when not in use to prevent lead dust from getting into them.
- Walkways that are not paved create dust. Paving walkways with concrete or asphalt will limit dust and dirt that may be carried into the house. You may also use bricks, wood chips, or heavy gravel.
- Parking Areas should be confined to driveways or parking lots that are either paved or
  covered with gravel. Cars parked all over the yard can destroy grass and create dust that
  may contain lead.
- **The Drip Zone** is the narrow three foot strip around the foundation of your house. This is usually where the highest levels of lead are found. This is because over the years, paint chips containing lead have fallen to the ground and mixed with the top layer of soil. Cover this area with mulch, crushed stone, or a landscaping cloth.
- **Lawns** that are healthy will reduce exposure to lead in soil. Keeping your lawn healthy is the best and most practical solution for those who want to use their yards for playing and relaxing.

#### For More Information

- U.S. Environmental Protection Agency (EPA) <u>Lead Information Center</u>
- Massachusetts Department of Public Health (DPH)
   Childhood Lead Poisoning Prevention Program
- MassDEP Lead Information



#### **Soil and Plant Nutrient Testing Laboratory**

203 Paige Laboratory 161 Holdsworth Way University of Massachusetts Amherst, MA 01003

Phone: (413) 545-2311 Email: soiltest@umass.edu

## Soil Lead: Testing, Interpretation, & Recommendations

#### Soil Lead Contamination

Lead is naturally present in all soils. It generally occurs in the range of 15 to 40 parts lead per million parts of soil (ppm), or 15 to 40 milligrams lead per kilogram of soil (mg/kg). Pollution can increase soil lead levels to several thousand ppm. The major cause of soil lead contamination in populated areas is the weathering, chipping, scraping, sanding, and sand-blasting of structures bearing lead-based paint.

In the past, significant causes of soil contamination by lead included the use of tetraethyl lead as an anti-knock ingredient in gasoline and lead arsenate as an insecticide in fruit orchards. Automotive lead emissions have effectively ceased with the phasing out of leaded fuels. With the development of more effective pesticides and Integrated Pest Management (IPM), lead arsenate is no longer in use. Unfortunately, lead persists in soil for many hundreds of years, and past use of these products continues to present problems in some areas.

Due to the nature of the contamination process, lead in soil may be very unevenly distributed. The lead in paint removed from a structure will generally be concentrated near the source, but levels may vary greatly over small distances (e.g., one foot). Lead arsenate residues in old orchards closely reflect the locations of sprayed trees. Consider these facts carefully when sampling. If the purpose of testing is to establish the extent of play area contamination, combine several small, randomly spaced samples from the top 1- to 2-inches to create one sample for testing. If the concern is for lead uptake by garden vegetables, combine several vertical slices from the top 6- to 8-inches of soil to create a sample.

Soil lead becomes a health risk when directly ingested or inhaled as dust. Garden produce which has accumulated lead in its tissue or has soil particles adhering to it, can also be a hazard if eaten. Lead poisoning is a particular concern for young children (under the age of six) because their rapidly developing bodies are very sensitive to the effects of lead, and their play habits tend to increase exposure.

#### Soil Lead Levels, Methods of Measurement, and Results

The method used for lead screening included in the **Routine Soil Analysis** is the same one used for measurement of plant nutrients. This lead screening is meant only to identify areas where lead levels may be elevated. The Modified Morgan extracting solution is a mild acid which removes the reactive or "plant available" portion of the total soil lead present in soils. Unpublished UMass research indicates that in many New England soils, 22 ppm lead determined with this Modified Morgan method is approximately equivalent to **300 ppm total lead** using the more accurate Total Sorbed Metals test described below. Many variables, including soil pH and organic matter content, affect this correlation, and it is not a reliable predictor of actual lead content.

It is recommended that all soils that may be managed in a way that creates an exposure pathway for humans, and especially children, be tested for Total Sorbed Lead. This includes areas used for food production/gardening and play areas where children may be in direct contact with bare soil. The UMass Soil Lab offers a Total Sorbed Metals test that measures total lead and other heavy metals using the alternate EPA 3050B and EPA 6010 methods. Results given correspond to threshold levels set by the US EPA. Order forms for the Total Sorbed Metals test and other analyses may be found on our website (http://soiltest.umass.edu/ordering-information).

The **Total Sorbed Metals Test** reports "environmentally available" levels of lead, nickel, copper, chromium, cadmium, and zinc, and uses strong acids and heat to digest and dissolve elements in the sample that may become available over time. Elements that are bound in silicate structures are not normally dissolved by this procedure as they are not usually mobile in the environment.

The US EPA has set a safe soil lead threshold limit of **400 ppm total lead** using this method. The US EPA also recommends that soils used for gardening fall below **100 ppm total lead**. In Massachusetts, the regulatory safety threshold is **200 ppm total lead**. Requirements and recommendations vary by state, and consumers should seek current and local information as appropriate. To reduce your risk of lead poisoning, the following is advised:

#### Good Gardening Practices to Reduce Lead Exposure

- 1. Locate gardens away from old painted structures and heavily travelled roads.
- 2. Give planting preferences to fruiting crops (tomatoes, squash, peas, sunflowers, corn, etc.).
- 3. Incorporate organic materials such as high quality compost, humus, and peat moss.
- 4. Lime soil as recommended by soil test (a soil pH of 6.5 to 7.0 will minimize lead availability).
- 5. Wash hands immediately after gardening and prior to eating.
- 6. Discard outer leaves before eating leafy vegetables. Peel root crops. Wash all produce thoroughly.
- 7. Protect garden from airborne particulates using a fence or hedge. Fine dust has the highest lead concentration.
- 8. Keep dust in the garden to a minimum by maintaining a well-mulched, vegetated, and/or moist soil surface.

#### Recommendations (using results from the Totals Sorbed Metals Test)

#### Potential Risk – 100 - 400 ppm

• Follow the good gardening practices listed above. (Additional risk between 100 ppm and 400 ppm is based on the potential for ingestion of soil in the process of consuming produce grown in the garden.)

#### **Medium** – 400 to 999 ppm

- Follow the good gardening practices listed above.
- Restrict access of children to these soils by maintaining dense cover.
- Do not grow leafy green vegetables or root crops in this soil; instead, grow them in raised beds built with non-contaminated soil and organic amendments.

#### **High** -1,000 to 2000 ppm

- Follow the good gardening practices listed above.
- Do not grow food crops in this soil and do not allow children access to it.
- Keep soil covered and take steps described above to reduce lead availability.
- Grow food crops in containers filled with growing media or clean topsoil; or create lined, raised beds filled with non-contaminated soil and organic amendments.

#### **Very High** – Greater than 2,000 ppm

• Contact your local Health Department, Cooperative Extension, or the Department of Environmental Protection office for advice on lead abatement measures.

#### Additional Resources

- <u>Lead in Residential Soils: Sources, Testing, and Reducing Exposure</u>. 1999. Penn State University Cooperative Extension.
- <u>Lead Safe Yards: Developing and Implementing a Monitoring, Assessment, and Outreach Program for your Community.</u> Revised 2008. U.S. EPA Office of Research and Development. EPA/625/R-00/012.

This factsheet is a revision of a previous UMass Soil and Plant Nutrient Testing Laboratory document. Ref. No. SPTTL\_5 Revised March 2020

# Bringing information and education into the communities of the Granite State

# Soil Testing for Environmental Contaminants

## **Interpreting Your Heavy Metals Test Results**

Olivia Saunders and Thomas Buob

#### What Are Heavy Metals?

Heavy metals are a class of elements that include lead, copper, arsenic, and cadmium, and can be toxic to humans and plants if ingested in high enough quantities. Soils have often been the landing spot for heavy metals, chemicals, and wastes as byproducts of industrial and agricultural pollutants. Many of these metals are present in soils naturally, usually in small amounts, although the natural level may vary.

If you are concerned about heavy metals on your land, you should have the soil analyzed by a laboratory for heavy metal content before using it for a vegetable garden, farm site, or children's play area. Heavy metals are more of a concern in urban areas, especially when near sites historically used for industry. Certain contaminants, when present in high amounts, can cause detrimental effects on humans, animals, and plants. With proper care and treatment, contaminated soils can be remediated and used safely.

The UNH Cooperative Extension Soil Testing Program offers a series of analyses for certain heavy metals. Our "Environmental Package" includes analysis for total cadmium, chromium, copper, nickel, lead, and zinc. We also offer individual analyses for total arsenic, mercury, molybdenum, and selenium. These analyses are done using EPA methods.

Interactions between heavy metals and soil constituents (clay, organic matter, pH, etc.) are fairly complex; therefore we suggest that you also request the standard fertility analysis and organic matter if you are concerned about contamination. This will allow us to interpret the results and suggest some approaches to minimize the risk of plant uptake.

## Why Should I Be Concerned and Which Metals Are of Greatest Concern?

Very low concentrations of these metals are necessary for plant nutrition and human health, and are found in plant tissue and the human body. Testing positive for these metals is common in soil, it is only in high concentrations when precautionary measures should be taken. Unlike plant nutrients, heavy metals break down very slowly; without remediation they can exist in the environment for a very long time.

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## Did You Know?

Lead does not degrade and can remain in the soil for thousands of years. Lead accumulates on the top 1 to 2 inches of the soil as it binds tightly to soil particles and organic matter.



A single exposure to metals at a low concentration may not produce any lasting health effects, but repeated exposure over a long period of time can prove detrimental—especially for children who are more sensitive.

Lead poses the greatest concern because it is the most common contaminant and is most likely to exceed health based guidance values in the United States (McBride et al., 2014). Lead does not degrade and can remain in the soil for thousands of years. Lead accumulates on the top 1-2 inches of the soil as it binds tightly to soil particles and organic matter. Paint manufactured before 1978 is likely to be lead-based; therefore, vegetable gardens should be located away from these high risk areas. In addition to lead, cadmium and mercury are the most likely to pose the greatest health risk to humans.

Elevated levels of copper, nickel, and zinc can cause plant toxicity, while cadmium and arsenic can be of concern to human health. *Any metal testing positive in soils at a high rate should be of concern, but each case is unique based on characteristics of the site.* 

#### Where Did They Come From?

There are significant correlations between soil type and land use history and heavy metal contamination. Knowing the history of the site will help explain how the contamination arrived. For example, historical use of metal-containing pesticides, industrial pollution, or dumping could be the cause of contamination. Land surrounding old houses containing lead paints commonly test high in lead. Lead pipes and motor vehicle exhaust also produce soil lead contamination. Car repair sites or garages might also be high in heavy metals. In areas where coal was burned, certain pesticides were used, or old mining sites remain in place, soils could be high in arsenic. Treated lumber can also contain arsenic, although pressure treated lumber for residential use no longer contains arsenic in the United States. Metals may be more ubiquitous in urban areas where construction, transportation, manufacturing, and fossil fuel combustion are more common.

Today, we understand the danger of such products and have created federal regulations against dumping of heavy metals and pollutants into the environment. Many materials no longer contain these toxins, and systems have been implemented to properly dispose of toxic materials. As a result, much less heavy metal contamination occurs. As an example, biosolids (or sewage sludge) applied to land previously contained heavy metals. Today, steps are taken to remove those metals before land application. Standards created by the U.S. Environmental Protection Agency limit heavy metals in all biosolids applied to land. All material is now tested before being used.

Generally, all soils will test positive for heavy metals because metals are found naturally in the earth's crusts and soil parent materials.

#### **Routes of Exposure**

Gardeners, children, and animals can be exposed in a number of ways:

- √ Eating soil (including soil attached to fruits and vegetables)
- √ Absorbing contaminants through skin
- √ Breathing volatiles and dust particles
- $\checkmark$  Eating fruits and vegetables that have absorbed contaminates.

For these reasons, it is important to wash all your garden produce and reduce your direct exposure if your soils are contaminated. When working in the soil you can easily breathe in soil particles or accidentally ingest soil. If your soils test high, limit this type of activity and always wear gloves when working in the soil.

Plants can also suffer from heavy metal contamination, this is called phytotoxicity. Generally, plants are affected at a much lower level than what is considered toxic to humans.

#### **Interpreting Your Results**

Soil type, pH, and how a plant grows, can have a great influence on metal uptake by plants and humans. For example, uptake of lead is generally low when pH is high because metals are locked-up (immobilized) by soils. Keeping soil pH near neutral (pH of 7.0) will help reduce exposure risks. ("Soil Screening Guidance: User's Guide." July 1996. EPA Document Number: EPA540/R-96/018).

The U.S. Environmental Protection Agency as well as the New York Department of Environmental Conservation and New Hampshire Department of Environmental Safety have taken many background soil tests to establish limits on heavy metals. Due to the natural variability of soils and of heavy metals and the various uses of soils, these numbers do not always match. Different soils were screened for different purposes and the recommended levels therefore vary. The U.S. EPA established conservative soil screening levels. If your soil tests above these limits, further evaluation will be needed.

The U.S. EPA levels do not define "unacceptable" levels; additionally, many states have developed more stringent screening levels. Soils from N.H. were pulled from twenty different sites in urban and rural communities.

Use Table 1 as a guide to help aid in your decision making. Every soil has a unique history and the purpose or use of that soil may widely vary. If your soils test at or below the average level for New Hampshire soils there should be little cause for concern. It is best to discuss your results with your local Extension specialist or a soil scientist who can help you interpret your results.

Remember: A soil test offers but a single guideline to assist your decision making. Correlations between soil heavy metals and vegetable heavy metal concentration are very weak. Predicting exposure from consuming contaminated crops based on soil concentration is very difficult, and therefore your best judgment should be used as to the appropriate use of potentially contaminated soil.



## Did You Know?

Children have a much lower tolerance to heavy metals. They should always wash their hands after playing outside, even in low-contaminated soils.



#### Notes:

<sup>1</sup> Sanborn, Head & Associates, Inc (SHA). Background metals concentration study, New Hampshire soils, New Hampshire Department of Environmental Services, Concord, New Hampshire. 1998. File 1571. <sup>2</sup> Schacklette, H. T., and J. G. Boerngen. (1984) Element concentrations in soils and other surficial materials of the conterminous United States. U.S. Geological Survey Professional Paper 1270.

<sup>3</sup> Al-Wardy, M.M. 2002. Elemental Distribution in the surface and subsurface soils of central and western New York. *Doctoral Dissertation*, Cornell University, Ithaca, NY.

<sup>4</sup> US Environmental Protection Agency, Office of Solid Waste and Emergency Response. Soil Screening Guidance. Publication. www.epa.gov/superfund/health/ conmedia/soil/index.htm#fact July 1996.

## Did You Know?

Soil type, pH, and how a plant grows can have a great influence on metal uptake by plants and humans who consume the plants.



#### Notes

S-1, S-2, and S-3 represent the range of potential human exposure situations based on accessibility, frequency, and intensity of usage. The three categories of direct contact risk based soil concentrations are derived using USEPA guidelines.

<sup>1</sup> N.H. Department of Environmental Services, Direct Contact Risk Based Soil Concentrations. http://des.nh.gov/ organization/divisions/waste/hwrb/documents/rcmp.pdf . Feb 2013

Table 1: Background Heavy Metal Concentrations in Soils

Metal	Average level in soil around NH¹	Average level in soil around NY State³	Natural level in soils around U.S. <sup>2</sup>	US EPA Soil Screening Level <sup>4</sup>
	(ppm)			
Arsenic (As)	11	5.0	5.2	0.39
Cadmium (Cd)	2	0.5	0.2	70
Chromium (Cr)	33	13.5	37	230
Copper (Cu)	31	14.2	17	
Iron (Fe)			18000	
Lead (Pb)	51	18.7	16	400
Mercury	0.31		0.06	1
Molybdenum	3.5		0.6	39
Nickel (Ni)	23	17.1	13	1600
Selenium	5			39
Zinc (Zn)	98	65.2	180	23,000

#### **Interpreting Your Results Based Potential Use**

Whether or not the heavy metal levels in your soil are a cause for concern depends on how the area is being used. If children use the area, such as in a play yard or anywhere there will be direct soil to skin contact on a regular basis, this would be deemed as "sensitive use," and the amount of heavy metals in the soil should be relatively low. If an adult comes into contact with soil as part of their regular job or recreationally, then the "moderate exposure" risk designation applies. If you will come in heavy contact but only for a limited length of time, such as during excavation work, then "restricted access" exposure risk should be used. In this case it is assumed one would only be working in the soil for four months out of the year (the warmest months) and would not be exposed to this soil during the other eight months of the year. This also assumes exposure by adults, and not children, who are sensitive at lower levels. See Table 2.

Table 2: Heavy metal human exposure risks based on situations of accessibility and frequency of usage

Metal	Sensitive use NH S-1 (ppm)1	Moderate exposure NH S-2 (ppm) 1	Restricted access NH S-3 (ppm) 1
Arsenic (As)	11	11	47
Cadmium (Cd)	33	280	280
Chromium (Cr)	130	130	130
Copper (Cu)			
Iron (Fe)			
Lead (Pb)	400	400	400
Mercury	7	52	52
Molybdenum			
Nickel (Ni)	400	2,500	3,100
Selenium	180	1600	1600
Zinc (Zn)	1,000	2,500	5,000

#### What Can You Do to Minimize Risk?

- ✓ **Start with a Soil Test.** Include the standard fertility analysis and organic matter test along with your heavy metals results to help Extension give you our best recommendation.
  - If your soil has an elevated level of heavy metals, you can take several approaches that minimize your exposure risk.
- Adjusting your soil pH can have a direct effect on the availability of some metals to plant uptake. For example, at or near a pH of 7.0 lead binds tightly to soil particles, and its solubility is very low. Similar relationships exist for arsenic, chromium, and copper. The chemicals barium, cadmium, lead, and zinc have less plant uptake at high pH (>6.5). Periodic liming of soils can help reduce exposure risk.
- ✓ Add Organic Matter. Heavy metals bond more tightly to organic matter than soil particles. Incorporating any type of compost, peat moss, or mulch will bind the contaminants, helping to reduce your exposure.
- ✓ **Practice raised bed gardening.** If you are at all concerned, the safest bet for a vegetable garden is the use of a raised bed, with soil imported from off-site.
- ✓ **Maintain sod cover.** Keeping the soil covered with a crop like grass will limit dust from forming and reduce direct exposure to heavy metals.
- ✓ **Mulch walkways in garden.** Maintaining a cover will reduce dust and soil splash during rain events.
- Consider crop type. Avoid growing any root vegetables like beets, carrots, or potatoes as these have some of the highest risks when grown in contaminated soils. It is very difficult to remove all the soil particles and aerosols from root vegetables. Growing fruit or a vegetable that does not sit on the soil surface will also reduce your risk. Leafy greens should also be avoided as metals can readily accumulate.
- ✓ **Always wash produce.** Produce should always be washed before eating or storage, whether growing on the ground or above ground like a tomato or broccoli. During rainfall events soil can splash and contaminate produce.
- ✓ Wear protective clothing. Because heavy metals can be absorbed through the skin (dermally), it's best to wear gloves and long sleeves when working in contaminated soil. Make sure to wash hands thoroughly after working in the soil, especially before using the bathroom or preparing food.
- ✓ **Protect children.** Children have a much lower tolerance to heavy metals. They should always wash their hands after playing outside, even in low-contaminated soils.

#### **Minimizing Risk Checklist**

✓ Start with a Soil Test.

If your soil has an elevated level of heavy metals, consider taking one of these steps:

- ✓ Adjust your soil pH.
- **✓** Add Organic Matter.
- ✓ Practice raised bed gardening.
- ✓ Maintain sod cover.
- ✓ Mulch walkways in garden.
- ✓ Consider crop type.
- ✓ Always wash produce.
- **✓** Wear protective clothing.
- ✓ Protect children.
- ✓ Avoid perennial herbs.
- ✓ In severe cases, contact NHDES.



- ✓ **Avoid perennial herbs.** Due to the perennial nature of most herbs we recommend that you refrain from growing these in contaminated soils as the heavy metal concentration in the plant tissue might be high. Instead, try growing these in pots with clean soil.
- ✓ In severe cases the N.H. Department of Environmental Services (NHDES) can provide regulatory oversight in contaminated sites. In a case where the soil levels of one or more of these metals is very high, the soil should be excavated and replaced, and no gardening or crop production should occur. Ingestion of soil or dust particles could pose a health risk. Children should be kept out of this area. Keep the area covered, and contact the N.H. Department of Environmental Services.

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#### **About the Authors**

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#### **For More Information**

See the US EPA Soil Screening Guidance. Fact Sheet at: www.epa.gov/superfund/ health/conmedia/soil/pdfs/ fact\_sht.pdf.

#### **State Office**

Taylor Hall 59 College Rd. Durham, NH 03824 http://extension.unh.edu

## **Education Center and Information Line**

answers@unh.edu 1-877-EXT-GROW (1-877-398-4769) 9 am-2 pm M-F Search key words: "UNH Education Center" From: <u>Maggie Abruzese</u>

To: <u>Planning</u>; <u>Lee Newman</u>; <u>Alexandra Clee</u>

Cc: <u>"Joe Abruzese"</u>
Subject: 1688 Central Avenue

**Date:** Monday, November 15, 2021 11:46:27 AM

Attachments: Washington St 921 Considine Development Signed Formal Decision.pdf

# Dear Planning Board,

There has been a suggestion that Planning Board members are not permitted to vote "no" on this application because it is an application to build a child care center which is a protected use under the Dover Amendment. This is incorrect. Towns can and do say "no" to applications to build child care centers.

As an example, attached is the decision of the Canton Zoning Board of Appeals. The decision reflects that the favorable motion of the ZBA did not pass, one member voted no. Additionally, the decision notes that the Canton Planning Board also did not pass a favorable motion on the application. The Planning Board motion failed with two members voting no.

Under Needham's zoning bylaws, the Planning Board can say "no" to a major project where the record does not permit it to make the required findings for a special permit. Section 7.5.2 specifically holds: "An applicant is not entitled to a special permit and the [Planning Board, see 7.6.1], in its discretion, may decline to grant a special permit if it is unable to make a positive finding and determination as required in subparagraph 7.5.2.1."

Paragraph 7.5.2.1 is set forth below for your reference.

# 7.5.2.1 Finding and Determination

Prior to granting a special permit, the [Planning Board, see 7.6.1] shall make a finding and

determination that the proposed use, building, structure, off-street parking or loading, modification of dimensional standards, screening or landscaping, or other activity, which is the subject of the application for the special permit:

- (a) complies with such criteria or standards as may be set forth in the section of this By-Law which refers to the granting of the requested special permit;
- (b) is consistent with: 1) the general purposes of this By-Law as set forth in subparagraph
  - 1.1, and 2) the more specific objectives and purposes applicable to the requested special permit which may be set forth elsewhere in this By-Law, such as, but not limited to, those at the beginning of the various sections;
  - (c) is designed in a manner that is compatible with the existing natural features of the site and is compatible with the characteristics of the surrounding area.

Where the [Planning Board, see 7.6.1] determines that one or more of the following objectives are applicable to the particular application for a special permit, the [Planning Board, see 7.6.1] shall make a finding and determination that the objective will be met:

- (d) the circulation patterns for motor vehicles and pedestrians which would result from the use or structure which is the subject of the special permit will not result in conditions that unnecessarily add to traffic congestion or the potential for traffic accidents on the site or in the surrounding area; and
- (e) the proposed use, structure or activity will not constitute a demonstrable adverse impact on the surrounding area resulting from:
  - 1) excessive noise, level of illumination, glare, dust, smoke, or vibration which are higher than levels now experienced from uses permitted in the surrounding area,
- 2) emission or discharge of noxious or hazardous materials or substances, or
  - 3) pollution of water ways or ground water.

We beseech you to use all of your regulatory powers to protect the residents of Needham.

Sincerely,

Maggie and Joe Abruzese 30 Bridle Trail Rd

cc: Lee Newman Alex Clee



# Town of Canton, Massachusetts

ZONING BOARD OF APPEALS MEMORIAL HALL 801 WASHINGTON STREET CANTON, MA 02021

TEL: (781) 575-6589 FAX: (781) 575-6574

### COMMONWEALTH OF MASSACHUSETTS

# TOWN OF CANTON ZONING BOARD OF APPEALS

PETITION OF DTG, LLC, and Considine Development Company, LLC

NORFOLK, SS.

59-19-SPA-SP-V

# **DECISION**

# I. PETITION

On Petition of DTG, LLC, and Considine Development Company, LLC for Site Plan Approval, and if necessary, Special Permits for Use Reduced Access Drives, and Signs, and Variances are requested under the applicable provisions of the Canton Zoning By-laws, so that DTG, LLC can construct a 10,200 +/- sq. ft. building for child care in a Single Residence district located at 15, 25, 35, and 0 Ronayne Way, a.k.a. 921 Washington Street, Canton, Massachusetts (Map/Lot 027\_230, 027\_031, 027\_032, and 027\_033. The Application for said petition was received by the Board of Appeals on October 16, 2019.

# II. PUBLIC HEARING

A Public Hearing was held on this matter Thursday, November 21, 2019, at 6:00 p.m. in the Salah Hearing Room, Second Floor, Memorial Hall, 801 Washington Street, Canton, Massachusetts, pursuant to notice duly published in the Canton Citizen, which was also posted in the Town Hall on or before November 6, 2019, and mailed

to all "parties in interest" as indicated by an Assessor's Certificate, prepared by the Canton Board of Assessors.

The Applicant was represented by Attorney Paul A. Schneiders. Subsequent to its opening further hearing dates were January 9, 2020, February 13, 2020, February 27, 2020, March 12, 2020 and July 9, 2020. There were requests for continuances filed with the board in reference to the Petition. Requests for extension of time for filing decision were received from the attorney for the Applicant, Paul A. Schneiders on January 6, 2020, February 3, 2020, and February 25, 202, extending the continuance date to April 23, 2020 and the filing date to May 7, 2020. On April 6, 2020, under the provisions of Commonwealth of Massachusetts HR 4598, the Board of Appeals suspended all public hearings and continuations for the duration of the current State of Emergency regarding the outbreak of the 2019 novel coronavirus. After extensive review of methods to restart public hearings, virtual meetings restarted on July 9, 2020 at 6:00 PM, EDT, at which date and time this hearing was concluded.

Members of the Zoning Board of Appeals hearing the petition were Messrs. Gregory L. Pando, John R. McCourt and Charles J. Armando.

Appearing on behalf of the petitioner was Attorney Paul A. Schneiders of Canton, Digvijay Gurung who would like to purchase the property, Erin Witt, the Site Development Manager from Goddard Systems, and Mr. Brandan Carr, from Diprete Engineering.

# III. REPRESENTATIONS AT PUBLIC HEARING

On November 21, 2019, the Hearing was opened, and the Applicant presented an overview of the project and a Site Plan prepared by Diprete Engineering, Dedham MA, dated 11-15-2020, to the board, and copies were forwarded to the Canton Planning Board for its review. The Plan was for a single story "Day Care" Center for 150 students and approximately 30 staff.

Speaking on behalf of the Petitioner, Attorney Schneiders explained that he did not expect a vote on the first day of the hearing because the Applicant had not yet received any recommendations from the Planning Board, as required by the Zoning Bylaws. Attorney Schneiders also represented on behalf of the Petitioner that the Petitioner is meeting with both boards to give each of them an overview of the proposed development, and to allow the Planning Board's consultant, PSC, PC of Foxborough, MA, to review and comment on the technical aspects of the Site Plan. Attorney Schneiders stated that the Applicant is voluntarily presenting the plans for Site Plan approval and he indicated further that the Applicant would like the board to vote at a subsequent meeting so that it can have an opportunity to vote on the recommendations. Attorney Schneiders then read a detailed memorandum dated November 21, 2019 indicating that in his opinion the "childcare facility" is a permitted use pursuant to G.L. c. 40A, §3 and G.L. c. 15D, §1A.

At its meeting of November 21, 2019, the board expressed concerns regarding the site distance for entering and exiting traffic onto Washington Street from the proposed project as the proposed building location is situated on a sharp curve in the road, in a congested area and directly opposite the main entrance and exits for the Canton High School.

The board also expressed concerns regarding the size of the building on the proposed lot as it was too large for the parcel size. The board noted and was concerned about the massing of the proposed building in relation to residential abutters and its proximity to adjacent dwellings. The issue of possible screening was discussed.

In addition to size, building massing and location the board also expressed concerns that the number of parking spaces required and those provided were insufficient. The board requested that a traffic study be conducted, which the petitioner's Civil Engineer agreed to perform.

Several abutters and interested parties spoke in opposition to the petition.

Many of them voiced their concerns regarding the introduction of a large commercial enterprise in a residential area. They were also voiced their concerns regarding traffic,

safety and the impact of additional noise and drainage that the proposed development represented.

In specific reference to the proposed use the board informed the hearing participants that while a use may be deemed a "protected use", and thus may be a use "by right", that use is subject to reasonable regulation. Moreover, there are certain performance standards that must be met which address the aesthetics of the architecture, the hours of operation and environmental noise and light pollution, for example. The Board Chairman indicated that the board would hear from the Planning Board, and that in ensuing sessions of the hearing they should be able to work through the issues one by one.

The hearing was continued to February 27, 2020 at which time the Attorney for the Petitioner gave an overview of the issues indicating that the Applicant had met with the Planning Board and had the Site Plan reviewed by the Planning Board's Engineer, PSC, PC of Foxborough, MA. The Petitioners then represented that it had addressed the peer reviewer's questions and concerns. Attorney Schneiders further stated that the Applicant expected that the Planning Board would issue a recommendation to the board at its next meeting of March 4<sup>th</sup>, so that the Applicant was not ready for a vote "tonight". The Applicant's plans were also to be reviewed by the Canton Conservation Commission.

At the February 27, 2020 hearing session the Applicant did not present any written information from the Planning Board or from its peer reviewer. Nor had the Board of Appeals received any correspondence regarding this issue.

Then, Mr. Brendan Carr from DiPrete Engineering gave an overview of the Revised Site Plan and where the Proposed Goddard school building would be located. There was a site review by the Fire Department and access was improved. Correspondence was received from the Canton Fire Department, dated February 20, 2020, that listed its concerns which, according to the engineer, had been addressed and incorporated into the revised Site Plans. In addition to the changes actually

incorporated into the Revised Site Plans the Applicant was to construct a gated fire truck access road along the northern side of the building and a re-enforced turf access road surface to provide overflow parking for future events at the location, which could also be used as a snow storage area.

Previously the Applicant proposed that a pond be designed and situated in that location; however, the Revised Site Plan shows an underground storm water management system. Mr. Carr also provided a brief overview at the traffic study. In that study another existing Goddard school location was used as a comparison in an effort to determine how much parking would be necessary. Drainage, utilities, and landscaping were also discussed as well as the proposed signage and the floor plan of the Goddard school along with the look and building materials. A rendering of the proposed building was presented.

Attorney Schneiders stated that at the previous meeting the Board had asked that a traffic study be done. The traffic analysis has been completed and was submitted on February 27, 2020 to the Zoning and Planning Boards. That study, entitled "Transportation Impact Assessment, Proposed Day Care, Canton, Massachusetts, by Vanasse and Associates, Andover, MA, dated October 2019" was presented. Mr. Shaun Kelly from Vanasse & Associates, Inc. stated that his company did the traffic study following state and industry guidelines. They focused mainly on morning and afternoon peak hours. They found the average speeds were 30 MPH. They looked at what the project will add to the existing traffic volume estimating that . one car would be entering the site every one and a half (1½) minutes, and one car leaving the site about every minute and a half.

Mr. Kelly also discussed the required sight distance and indicated that to the south of the location the sight distance does not meet the current standards due, in his opinion, to the presence of obscuring embankment. The Applicant therefore is now proposing to remove the embankment and the existing dwelling on-site in an effort to improve sight distance. In addition, as the street crossing signage near the existing

high school is lacking, the Applicant is looking to add additional off-site pedestrian accommodations with more crossing signs.

The hearing was continued to March 23, 2020. In the interim, due to the Covid-19 pandemic, the Commonwealth of Massachusetts suspended public gatherings and meetings. Subsequently, the time requirements for performance were indefinitely suspended under the provisions of HR 4598, signed into law. The Zoning Board of Appeals endeavored to find an acceptable, legal method for continuing hearings, and on July 9, 2020 resumed a schedule of continuations of previously opened applications.

This hearing on this Petition was re convened on July 9, 2020. In the intervening time the board received the following additional written information:

Correspondence from the Canton Planning Board Dated March 6, 2020, a copy of which is attached Hereto as "Exhibit A", reporting that the Planning Board took a vote on a favorable recommendation that was 1 (one) in favor, 2 (two), opposed. The Motion failed. Also in the letter, there was another vote that stated, "Although a favorable recommendation was not agreed to, the Board voted 3 to 0 to provide recommended 'conditions' should the Zoning Board of Appeals reach a favorable Decision on the project."

Correspondence from the Canton Fire Department dated March 10, 2020, a copy of which is attached hereto as "Exhibit B", in which the Fire Chief takes exception to the current Revised Site Plan and which lists the current deficiencies in fire department access.

Correspondence from the Museum of American Bird Art, a direct abutter to the proposed site, dated March 11, 2020, a copy of which is attached hereto as "Exhibit C" requesting that certain conditions be imposed on the project.

Correspondence from the Applicant's counsel, Attorney Schneiders, dated July 2, 2020, a copy of which is attached hereto as "Exhibit D" that included a draft copy of a Revised Site Plan dated March 16,2020.

At the July 9<sup>th</sup> session of the hearing board Chairman Pando presented a recap of the status of the hearing, then he proceeded to review the proposed Site Plan changes that had been submitted. After review the Chairman inquired whether the

Applicant could move the entire site development 10 feet further back from the Washington Street frontage, and the Applicant agreed to the location change. The Chairman also pointed out that the Applicant's proposed re-grading of the land which was required for a safe traffic site distance was to be undertaken not on the actual site bit instead upon an adjacent piece of property. The Chairman asked that the applicant secure a permanent no-build and maintenance easement over that area, that the easement be recorded at the Norfolk Registry of Deeds and that a copy be provided to the Board of Appeals. The applicant agreed to that request.

The Chairman then indicated that the proposed project was a compromise which resulted in his opinion to a good solution and a collaborative effort between the Board and the Applicant, as the initial submission by the Applicant was far too dense and had safety concerns. Chairman Pando further indicated his fear that if this petition were to be denied and appealed, the careful and well thought out work of all parties could be jeopardized by an approval of the original flawed petition. Upon further deliberation by the members of the board and additional comments from interested parties, Mr. Pando requested that a board member make a motion.

# IV. FINDINGS OF THE BOARD

The Board made the following findings of fact:

- 1. The applicant's use is subject to certain protections afforded under G.L. c. 40A, §3.
- 2. The Applicant has filed this petition seeking Site Plan approval.
- 3. The Board of Appeals has the right to require reasonable conditions that promote the general welfare of the Town of Canton and to protect the health and safety of its inhabitants in reference to all applications before it, including those seeking Site Plan approval.
- 4. The Board of Appeals and the Applicant have agreed upon modifications to the Proposed Site Plan as indicated by the Revised Site Plan contained within "Exhibit D", attached hereto.

5. In addition the Applicant has agreed to move the entire developed area of the locus 10 feet further away from the Washington Street Frontage, and to provide a permanent, recorded easement on the portion of the adjacent property that is being regraded to provide safe traffic site distance.

# V. DECISION

After due deliberations, the Zoning Board of Appeals, upon an affirmative motion by Mr. McCourt for site plan approval in accordance with the Draft Site Plan of 03-16-2020 (as set forth in "Exhibit D") which plan was amended by the 10 foot additional green space between the building site and its frontage on Washington Street agreed to by the Applicant, and that the Applicant secure, record and provide a copy of that recorded easement on the portion of the adjacent property that is being regraded to provide safe traffic site distance to the board, which Motion was Seconded by Mr. Pando, voted as follows:

Mr. McCourt: AYE; Mr. Pando: AYE. Mr. Armando: NAY The motion to approve failed.

The Board directs this decision be filed with the Town Clerk's office, Canton, Massachusetts.

At the expiration of the twenty (20) day appeal period, a copy of this Decision shall be recorded by the Petitioner at the Norfolk County Registry of Deeds.

Dated this 13<sup>th</sup> day of August 2020.

Gregory L. Pando

John R. McCourt

Charles J. Armando

Decision of DTG, LLC and Considine Development Company, LLC Case No. 59-19-SPA-SP-V Page 9 of 9

# Copies to:

Town Clerk Selectmen Building Commissioner Planning Board Petitioner File (2)

Any appeal from the foregoing Decision shall be filed in accordance with G.L. c. 40A, Section 17 within 20 days of the receipt of this Decision by the Canton Town Clerk.

Exhibit A

# Town of Canton, Massachusetts

OFFICE OF THE PLANNING BOARD

Town Hall 801 Washington Street Canton, Massachusetts 02021 781-821-5019 / F. 781-821-5043

March 6, 2020

Gregory L. Pando, Chairman Zoning Board of Appeals Town of Canton 801 Washington St. Canton, MA 02021

Re:

921 Washington Street - Site Plan Approval (ZBA No. 59-19-SPA-SP-V)

Dear Chairman Pando,

At its regularly scheduled meeting of March 4, 2020, new information having been provided with insufficient time for the Planning Board to evaluate this information and only three Planning Board members being in attendance, the Planning Board requested consent to allow this matter be continued to the next regularly scheduled Planning Board meeting. The Applicant did not agree to a continuance.

Thereafter, on a motion to send a favorable motion to the Zoning Board of Appeals, the Board voted one in favor, two opposed. A majority of the seated Board being three members and a majority of the seated Board being required, the motion failed. Although a favorable recommendation was not agreed to, the Board voted 3 to 0 to provide recommended "Conditions," should the Zoning Board of Appeals reach a favorable Decision on the project.

# RECOMMENDED CONDITION OF APPROVAL

- Applicant shall communicate with the Massachusetts Audubon Society and make good faith efforts to reach agreement regarding stormwater discharge onto the Massachusetts Audubon Society property.
- 2. Preparation of an Operations and Maintenance Plan in a form acceptable to the Conservation Commission shall be required prior to occupancy and the O&M Plan shall be implemented in perpetuity.
- 3. Any material changes in the site plan arising from Conservation Commission review shall be resubmitted to the Zoning Board of Appeals for approval within 30 days following issuance of the Order of Conditions.
- 4. If the Chief of Police so requires, a uniformed traffic officer shall be provided at the Owner's expense as follows:
  - During earthwork operations and during building construction until the building is weathertight.
  - During facility operating hours for 90 days following issuance of the Certificate of Occupancy.

- 5. A detailed project construction plan shall be provided to the Town's Building/Zoning Dept., the Planning Dept., and direct abutters. This shall include estimated time to complete the project, project phasing, and construction timeline. This shall be updated every month, or whenever changes are made.
- 6. The Owner shall notify abutters within 300 ft. of the site and the Town Building/Zoning Dept. at least 48 hours prior to major tree clearing, significant earthwork, and/or excavation of ledge using pneumatic impact devices such as a hoe ram or by blasting. Such notification may be given by telephone, hand delivered (such as a door tag or in mailbox), or if sent by first class mail, mailed no later than five calendar days prior to the initiation of the significant construction. Such notice must include the description of the activity, and if blasting, much describe the blasting signals to be utilized during the operation.
- 7. The Owner shall provide monies to the Town to engage the services of a structural engineer to provide services on behalf of the Town as follows:
  - Inspect off-site buildings within 300 ft. of the site prior to construction and following completion of earthwork.
  - Determine damage has occurred to structures or utilities.
  - In the instance of structural damage, review completed repairs and determine whether the repairs are satisfactorily completed.
- 8. Excavation of ledge using pneumatic impact devices such as a hoe ram or by blasting shall not be allowed unless the contractor demonstrates to the satisfaction of the Building Commissioner that excavation or ripping cannot remove ledge in specific locations.
- 9. If blasting is required, the Owner shall provide abutters within 300 ft. and the Town Building/Zoning Department with any blast analysis, blast design plan, preblast inspection surveys, permit to blast (Canton Fire Dept.) as required by Massachusetts regulations. Additionally, if blasting is required, the blaster must sound warnings when ready to fire a blast. The Owner shall provide abutters within 300 ft. and the Town Building/Zoning Department with the applicant's name, phone and email, the blasting contractor's name, phone, and email, and the general contractor's name, phone, and email.
- 10. Additionally, the Owner shall provide proof of liability insurance or a bond to the Town for surety against neighboring property damage due to blasting or significant earthwork, in an amount approved by the Town (e.g. Finance Department, Building and/or Public Works Department). The Owner shall notify the Town in writing as soon as practicable of any claim, demand or action arising out of the blasting or significant earthwork and to cooperate with the Town in the investigation and defense thereof.

- 11. Construction shall be restricted to 700 AM to 700 PM Monday through Saturday, and not on federal or state holidays. Ledge excavation using pneumatic impact devices or blasting shall further be restricted to exclude school hours for the High School.
- 12. A minimum 6 ft. high opaque fence shall be installed and maintained in perpetuity along the north and south outside edges of the parking aera to prevent headlight trespass onto adjacent properties.
- 13. The landscaping plan shall be revised showing additional plantings and screenings, maintained in perpetuity, along the north and south edges of the property between adjacent properties.
- 14. The landscaping plan shall also be revised showing additional plantings (maintained in perpetuity) in between the parking area and Washington Street.
- 15. The Owner shall come before the Planning Board for a Scenic Way application to modify or destroy the existing stone wall along Washington Street. The removal of any stone wall (or portion thereof) is not allowed without prior written consent of the Planning Board after a public hearing.
- 16. Dumpster serving shall be restricted to 900 AM to 700 PM Monday through Saturday.
- 17. Both playgrounds shall be surrounded by acoustical barriers designed by an Acoustical Engineer incorporating noise absorbing properties. Said barriers shall be maintained in perpetuity.
- 18. Following occupancy, an Acoustical Engineer shall monitor sound at the north and south property lines using microphone-based recording equipment for a period of at least 5 school days. The Acoustical Engineer shall submit a report to the Zoning Board of Appeals and the Building Commissioner quantifying whether the measured sound levels adhere to the Zoning Bylaw requirements that post occupancy sound do not exceed 10 dBA above ambient or exceed 65 Ldn total for residential receptors (§6.7.3 2).
- 19. If possible, an ADA compliant sidewalk to Washington Street shall be provided (§6.7.6, #2b and §6.7.6, #11).
- 20. The southerly retaining wall shall have a fieldstone veneer or comparable high-quality natural surface material. Planting shall be provided to soften the walls appearance when viewed from abutting properties.
- 21. Available sight distance to the south shall be verified in the field by Vanasse and Associates following completion of regrading and prior to occupancy and shall be determined to be sufficient for the 85th percentile speed. If insufficient, additional traffic control measures may be needed (see #24).
- 22. The revised parking and circulation plan shall be used, with employees required to use the overflow staff parking area. This revised plan shall be re-submitted to the Fire Chief

for approval. No overflow parking on Washington Street or at the High School shall be allowed.

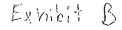
- 23. The Police Chief (or representative) shall be consulted on vehicle crash data for the last three years in the vicinity of the project, and for general comments on the project.
- 24. Subject to Board of Selectmen and Department of Public Works approval, install at the Owner's expense the school zone signage, pavement markings, and other traffic controls shown on the drawings. Additional traffic controls, such as speed radar signs or Rectangular Rapid Flashing Beacons may be required, at their recommendation.
- 25. Document the Goddard policy that mandates staggered pickup and drop-off and adhere to this policy during operations.
- 26. Document the Goddard anti-idling policy that mandates cars be shut off during pickup and drop-off and adhere to this policy during operations. Signage may also be required.
- 27. Parking lot lighting shall be shut off from 8pm until 6am.
- 28. CCTV security cameras shall be required to monitor the property at all times (with any necessary privacy filters and measures to protect the privacy of the abutters), and conspicuous signage posted onsite stating CCTV cameras are in use.
- 29. Submit for approval and adhere in perpetuity to a Traffic Management Plan which includes a Traffic Management Component (6.7.6.5.d). The Traffic Management Plan shall include both construction phase and long-term transportation demand management. This might include membership in the Neponset Valley Transportation Management Association.
  - Promote employee carpooling and provide preferential parking for employees who carpool.
  - Provide a "guaranteed ride home" for employees who carpool or use public transportation services in cases of unexpected situations.
  - Provide subsidized MBTA rail and bus fares
  - Adjusting working hours to accommodate MBTA schedules.

Please feel free to contact me with any questions or comments on this matter.

Sincerely

Robert Panico, (Acting) Chairman

Canton Planning Board





# Town of Canton, Massachusetts FIRE DEPARTMENT

99 REVERE STREET, CANTON, MA 02021 BUSINESS: 781-575-6654 FAX: 781-821-0956

# **EMERGENCY 911**

March 10, 2020

Zoning Board of Appeals 801 Washington Street Canton, MA 02021

# RE: Goddard School - 921 Washington Street

Dear Chairman Pando:

I have received a revised site plan dated March 3, 2020 for the above referenced address. This new plan includes additional parking alongside the fire department access lane on the northerly side of the building. I am concerned that overflow parking has the real potential to migrate on to the fire department access lane and obstruct emergency vehicles or restrict our ability to safely exit the site. I would strongly suggest an alternate plan to increase the parking capacity of the site without impacting emergency vehicle access/egress.

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

Sincerely,

Charles E. Doody

Charles E. Doody

Chief of Department

Cc: Edward Walsh, Building Commissioner Tom Scully, Zoning Board of Appeals Scott Johnson, Deputy Fire Chief Brandon Carr, DiPrete Engineering Paul Schneiders, Esq.

# Museum of American Bird Art

at Mass Audubon

March 11, 2020

Mr. Gregory L. Pando, Chairman Zoning Board of Appeals Memorial Hall 801 Washington St Canton, MA 02021

Dear Mr. Pando,

I am writing about the Goddard School development at 921 Washington Street, which abuts Mass Audubon's Museum of American Bird Art.

Mass Audubon has reviewed the project plans and offers the following comments, as an abutter. Careful construction management will be necessary to ensure that no erosion, sedimentation, or accidental encroachment affects Mass Audubon's abutting property. Proper installation and ongoing inspections and maintenance of the stormwater management facilities will be essential to ensure that they function as intended. Given that the outflow from the stormwater facilities will be directed toward Mass Audubon's property, this is especially important to us.

Mass Audubon will also follow with interest the Conservation Commission's response to the plans.

Specific comments:

# **Construction Period**

- We request that the Town do an inspection during the installation of the detention tanks, to confirm they are properly installed before backfilling
- We request that any blasting be done after 3:30pm, and that we be notified at least 24 hours beforehand, to minimize disruption to our children's programs

# Operations and Maintenance (O&M) Plan

The O&M plan provision requiring notification to MassDEP of transfer of ownership should also require notification to the Town. If the school will be hiring a third party to conduct O&M for them, there should be a requirement that if that information changes notification must also be made to the Town (p.2).

# Operations and Maintenance (O&M) Plan, continued

- There should be a requirement for the reports from the routine inspections to be filed with the Town. This can be annual, except that if deficiencies requiring corrective action are found on the more frequent inspections (some of the facilities require quarterly), notification should be made and the issue addressed promptly.
- p. 9 missing \$#: "Periodic inspections, if performed by an outside entity will cost approximately \$X/yr."
- p. 28 includes this requirement: "Repair or complete replacement to Underground System is required if system fails to fully empty within 48 hours." This is important not only because of the functionality for stormwater management but also because if accumulated water remains in the tanks they might become breeding areas for mosquitoes (if mosquitoes are able to enter).
- Appendix B –Sample Stormwater Facility Maintenance Agreement: This is a sample agreement between the facility owner and the town. The sample agreement requires filing with the Town of an annual report on inspections, as well as other important provisions such as the Town's right to enter to inspect, the right to order repairs, and the right for the Town to conduct repairs and charge the landowner if they are not timely completed, and to charge the landowner for those costs. The agreement is to be recorded as a covenant on the deed. These are all good provisions. Any permit for the project should require the agreement to be finalized and recorded before an Occupancy Permit is issued.

# Stormwater Pollution Prevention Plan (SWPPP)

 Appendix G and Appx I under Project Title – it appears to be an artifact of using this form for a different project previously:
 Millstone Medical, Fall River, MA

Thank you for considering these comments.

Sincerely,

4 1 0

Amy T. Montague

Amy T. Montague

Director

Exhibit D

# SCHNEIDERS LAW OFFICE

779 WASHINGTON STREET CANTON, MA 02021

PAUL A. SCHNEIDERS ATTORNEY AT LAW pas@schneiderslawoffice.com CELL: (781) 413-7368 TEL: (781) 828-5573 FAX: (781) 828-5723

July 2, 2020

Mr. Gregory Pando Chairman Zoning Board of Appeals 801 Washington St. Canton, MA 02021

Via e-mail

Dear Mr. Pando,

My client, DTG, LLC has listened very carefully to the concerns your Board and the abutters have regarding the proposed Goddard daycare facility proposed for 921 Washington Street (59-19-SPA).

Although DTG believes the plan submitted to your Board is excellent and needs no changes, petitioner is willing to agree to the changes outlined on the enclosed summary sheet.

We are also sending you a revised plan showing all these changes so your Board will have a chance to review them before your meeting on June 9.

We want to make it clear that if an appeal is necessary, we will be submitting the original plan submitted to your Board, not the revised one we're sending you now.

We are confident that the original plan will be approved by any Court based on M.G.L.c.40A, s.3 and the relevant case law.

Please let me know if you need any additional material prior to June 9.

Thank you for all the attention your Board has given this matter.

PAS:m

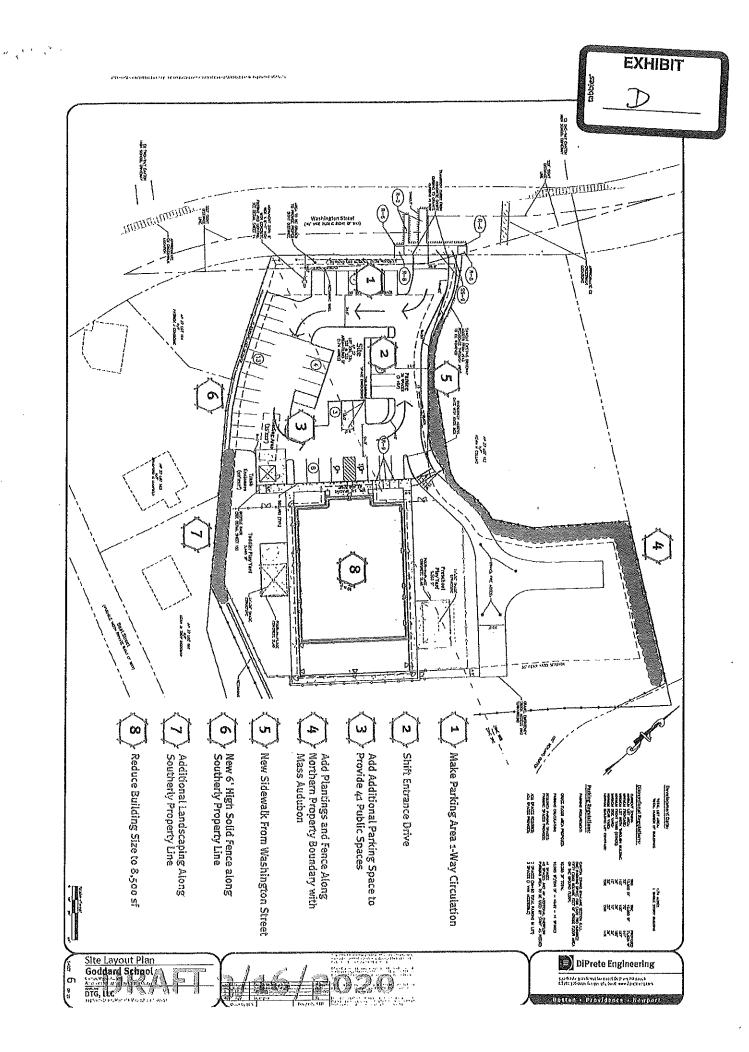
CC: John

John R. McCourt Charles Armando Client/Team



# List of site plan changes accommodated by DTG LLC - 921 Washington Street development

Building size         10,200 sqft         20,200 sqft	##	Project Changes	Original Plan	Comments	Revised plan #1	Comments	Kevised plan #2
Number of Children         152 - 155         152 - 155         B Peer review           Stormwater Management         Open detention         (4/1,000 sqft)         Underground         B Peer review           Fire Access on North side of site         NA         (4/1,000 sqft)         40 spots         (4/1,000 sqft)           Fire Access on North side of site         NA         Approved by peer reviewer         Vanesse study provided         Per fire chief site           Inaffic Light plan         NA         Existing town issue         Traffic light plan provided         Address town           Line of Sight         Grading plan for compliance         Approved by peer reviewer         Grading plan for compliance         Addritional Gn           Ingress/ Egress         Both sides         Approved by peer reviewer         Both sides         Additional Gn           Buffer Greenscaping (South)         Included         NA         Changed per request of PB/ZB         Additional Gn           Fending (South Abutters)         NA         NA         NA         NA         NA           Fending timing         Follow sunlight pattern         NA         No outside light after 8:00 pm         PB/ZB request by at	-	Ruilding size	10,200 saft		10,200 sqft		Reduce to 8,500 sqft
Stormwater Management Open detention (4/1,000 sqft) Underground Pb Peer reviewer Parking 40 spots (4/1,000 sqft) 40 spots (4/1,000 sqft)  Fire Access on North side of NA Induded in plan Per free chief is site  Traffic Safety Vanesse study provided Approved by peer reviewer Inaffic light plan provided Address town Insert Sight Plan NA Existing town issue Ingress/ Egress Buffer Greenscaping (North) Induded Approved by peer reviewer Both sides Approved by peer reviewer Changed per request of PB/ZB Additional Gn North Street NA NA No outside light after 8:00 pm Request by additional Gn No outside light after 8:00 pm Request by additional Gn No outside light after 8:00 pm Request by additional Gn North Street Na Na No outside light after 8:00 pm Request by additional Gn North Street Na Na No outside light after 8:00 pm Request by additional Gn North Street Na Na No outside light after 8:00 pm Request by additional Gn North Street Na	J	Number of Children	152 - 155		152 - 155		132-135
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November 14, 2021

Paul Alpert
Chair of Needham Planning Board,

Members of the Needham Planning Board,

Lee Newman
Director of Planning and Community Development
500 Dedham Avenue
Public Services Administration Building
Suite 118
Needham, MA 02492

RE: Site Review of Proposed Project at 1688 Central Avenue

Dear Chair Alpert and All Planning Board Members,

Attached please find a submission on behalf of neighbors of 1688 Central Avenue for consideration during the Planning Board's site review process of the proposed project at that location.

The Needham Zoning By-Laws prohibit more than one non-residential building or use on a single residential lot in this district. In addition, the By-Law does not permit accessory buildings, and the barn, in any event, does not qualify as an accessory building. This submission provides the Board with facts which make clear commercial child care facilities do not customarily have accessory buildings.

We ask you to give these comments careful consideration and enter them into the formal record of your meeting should there need to be further proceedings on the matter. Thank you for your consideration.

Yours truly,

Holly Clarke

# Commercial Child Care Facilities Do Not Customarily Have Accessory Buildings

Needham Zoning Bylaw 3.2.1, forbids two non-residential buildings or uses on one residential lot. The bylaw specifically excludes complimentary buildings (like accessory buildings). The bylaws' reference to accessory buildings in other sections makes clear that the town could have permitted accessory buildings, but deliberately chose not to do so.<sup>1</sup>

Even if the bylaw permitted accessory buildings, the barn still does not qualify as one. The Needham by-laws defines- and limits- "accessory building" and "accessory use" to uses "subordinate to and customarily incidental to the principal use." In this case, the primary use of the proposed 10,000 sf main building is as a commercial stand-alone child care facility. The two story barn has a footprint of approximately 2600 square feet and overall square footage of approximately 4800 sf. To qualify the barn as an accessory building, the proponent must establish that it is "customary,"-more than unique or rare- for a commercial child care facility to have an accessory building the size of the barn.

A review of twenty child care programs sited in Needham and nearby towns makes clear that it is not customary for these facilities to have accessory buildings. All of these programs operate in a single building. None have accessory buildings- much less one approaching the size of the barn. The twenty programs considered include the five Needham programs comparably sized to that of the proposed tenant, even if not sited in stand-alone commercial space, and fifteen child care programs located in nearby towns. Each of the facilities was located through online mapping services to determine the building arrangements. All of these programs operate in a single building. None have accessory buildings, much less one two stories high with a total of 4800 sf.

The suggestion that the proposed tenant currently has access to the garage built as an accessory to the parsonage at the Baptist Church does not overcome the plain meaning of the bylaw. As Mrs. Day pointed out, the lot occupied by the Baptist Church originally included the Church, a parsonage for the minister and a garage for that residence. Both the house and the garage were classified as residential uses. The property card for the church address currently reflects its designation as "charitable-residential- other." The house was built in 1920. Assuming the bylaw predated construction, the garage was permitted and in accordance with the requirements of this bylaw when it was built. Here, the proponent is applying to build a commercial child care facility on a residential lot. The bylaws require the plan to be limited to only one non-residential building, and the proponent must comply with the bylaws. The decision of the Baptist Church to make a pre-existing and much smaller garage available to its tenant, the Needham Children's Center, may be fortuitous for the Center, but it does not establish

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<sup>&</sup>lt;sup>1</sup> Bylaw 3.2.1 is discussed in the Neighbors' October 16, 2021 filing. The neighbors stand by that submission and will not repeat its contents here.

accessory buildings as a customary use for child care facilities. Indeed, the fact that the building was designed at the direction and with the input of the proposed tenant and the leasing arrangements did not even include the barn as part of the child care facility belies the claim that the bylaw impacts the child care facility at all, much less so dramatically that it should not be applied. The bylaw protects legitimate, well recognized municipal interests and should be enforced.

The proponent suggests the Board need only look to Temple Aliyah to see an example of two non-residential uses on a single residential lot. This is factually incorrect. The Temple is a single building with a single religious use on its lot. The Gan Aliyah preschool operated within its building is directly related to its primary mission and is permitted and protected as part of the building's religious use. Further, MGL ch. 40A s. 3 requires a separate and independent analysis of the facts of each proposed project to determine the applicability of any bylaw. In this case, Bylaw 3.2.1 would have no impact on the ability of the property to be used for a child care facility. There can be no doubt about that as the proponent repeatedly declared the barn was not part of the child care facility.

The bylaw is a reasonable regulation enacted by the town to protect legitimate, well recognized municipal interests in preserving the character of residential districts, and should be enforced.

# **Child Care Centers- Building Arrangements**

# Needham Comparably Sized Child Care Programs

Kindercare, 1000 Highland Ave

Club 1458, 1250 Great Plain Ave.

Carter Center for Children, 800 Highland Ave (Church)

Chestnut Children's Center, 167 Chestnut St

Knowledge Beginnings, 206 A St.

# **Goddard School Sites**

332 Concord Avenue, Lexington

2 North Avenue, Weston

26 Chestnut St, Watertown

367 Commonwealth Rd, Wayland

20 Carematiel Dr., Dedham

90 N. Meadows Rd., Medfield

335 West St., Braintree

10 Davis Street, Northborough

# **KinderCare Sites**

Wellesley Knowledge Beginnings, 204 Worcester Rd

Westwood Knowledge Beginnings, 200 Providence Highway

Walpole Kindercare, 29 Coney St

Cambridge Kindercare, 100 Cambridge Dr.\* (inside a shared building)

Kindercare at Cochuite, 200 Cochuite, Framingham

Ashland Kindercare, 367 Pond St.

# **Little Sprouts**

Little Sprouts, 260 Bridge St, Dedham

November 13, 2021

Paul Alpert
Chair of Needham Planning Board,

Members of the Needham Planning Board,

Lee Newman
Director of Planning and Community Development
500 Dedham Avenue
Public Services Administration Building
Suite 118
Needham, MA 02492

RE: Site Review of Proposed Project at 1688 Central Avenue

Dear Chair Alpert and All Planning Board Members,

Attached please find a submission on behalf of neighbors of 1688 Central Avenue for consideration during the Planning Board's site review process of the proposed project at that location.

This submission addresses the proponent's October 27 filing concerning traffic. The proponent lowers the number of vehicles used in its calculations from the numbers used in its August report. The proponent changes the method used to determine the amount of traffic for its calculations, and incorrectly adjusts the number of vehicles to assess the impact of the pandemic. The proponent minimizes both the amount of traffic on Central Avenue and the surrounding area and the impact of the proposed project.

We ask you to give these comments careful consideration and enter them into the formal record of your meeting should there need to be further proceedings on the matter. Thank you for your consideration.

Yours truly,

Holly Clarke

# The Proponent's October 27,2021 Report Again Changes the Data Used to Assess the Impact of the Project on Central Avenue

The Covid pandemic makes it impossible to visit the area near 1688 Central Avenue and personally observe in real time the delays which regularly impact the area in non-pandemic times. The pandemic also makes it more difficult to obtain the base numbers to be used in a traffic impact report intended to assess if and how the traffic consequences of a project can be mitigated. However, the pandemic is no reason to change the method used to calculate-and consequently reduce- the number of vehicles used from one report to the next when analyzing the traffic impact of this project.

The neighbors have consistently expressed the reality of traffic in this area and how it has increased over time - until the pandemic. This is the reality the town should plan for. Just as the neighbors have consistently raised concerns about traffic based on their lived experience, the proponent has consistently changed its methods and numbers to limit the impact of traffic at this location. Each of the five traffic impact reports submitted to the Board change the data and analysis of the project. Most recently, the proponent changes methods from its August to October reports, and chooses an incorrect mathematical approach which further reduces the number of vehicles included in its analysis.

In its August traffic impact report, the proponent analyzes the intersection of Central Avenue and Charles River Street using pre-Covid traffic counts taken at the intersection by the town. The proponent increases the counts proportionately and adds an average annual growth rate of 1% to reach its 2021 estimates of vehicle counts (August Report, Figure 12). The analysis establishes the intersection at a baseline operating level of "F" (August Report, p.3, Figure 12).

The proponent does not use the August data for the corridor analysis requested by the Planning Board. Instead, the proponent conducts a single day count of vehicles at the corner of Charles River Street/Central Avenue on October 13, 2021. He next compares Department of Transportation (DOT) traffic counts taken at site #6161 (near Highland Ave and Route 128) from 2021 to 2019, which shows the 2021 traffic count 30.4% lower than 2019. No explanation is given as to whether this location is comparable to the Central Avenue/Charles River Street intersection. Recognizing the lower number of vehicles indicates traffic remains reduced because of the pandemic, the proponent increases the observed October 13 traffic count 30.4% and uses this number for its analysis. As a neighbor pointed out in his comment to the Planning Board on November 2,THIS IS A MATHEMATICAL ERROR. The change in method significantly lowers the number of vehicles used to assess the problem of traffic at this site, changes the baseline operating assumptions from an "F" to a "D" level of service and falsely minimizes the traffic issues at the site (November Report, Figure 3).

The proponent's use of the DOT data incorrectly adjusts for Covid. The proponent simply increases the number of observed vehicles by 30.4% to obtain the adjusted number of vehicles to be evaluated as a baseline without Covid. However, a 30.4% decrease in traffic means the observed number of vehicles is 69.6% of a larger whole number of vehicles. This number is not reached by simply increasing the observed number by 30.4%. Here the proponent is taking the

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<sup>&</sup>lt;sup>1</sup> In its March, 2021 report, the proponent calculated a traffic growth for the site as 1.6%. In July, the analysis switched to using a 1% projected growth rate.

reduced number and increasing it by 30.4%. Instead, the proponent should be noting that the observed number of vehicles is only 69.6% of what traffic would be but for Covid. Using this proportion, rather than simply increasing the observed cars by 30.4%, increases the number of vehicles in every direction. This mistake incorrectly reduces the number of vehicles used to analyze the traffic impact of the project.

Table 1 displays the proponent's changes from its August report and the results of minimizing the DOT data. The first four rows are taken from Figure 8 of the proponent's October 27 submission. The table's first row shows the number of vehicles counted on October 13, 2021. The second and third rows, in red, show the number of vehicles used in the proponent's October 27 report as a baseline for traffic in October 2021 and 2028. The fourth row shows the number of vehicles projected for 2028 used in the proponent's August report. The fifth and sixth rows, in blue, show the number of vehicles which should have been considered analyzing the number of vehicles counted on October 13 as a percentage of what traffic would have been but for the pandemic.

These are not inconsequential changes. The number of vehicles included in the traffic analysis impacts the portrayal and understanding of the impact of the proposed project. The lower number of vehicles used in the October report falsely minimizes the traffic in the area, the impact of the increased traffic brought by the project and the problems which must be solved before the project should be approved. The reality is a larger number of vehicles on the street creates even longer delays and longer streams of stopped vehicles than the proponent acknowledges. A stopped line of vehicles blocks families from entering and exiting their driveways. In April, the neighbors provided the Board with the distances between the site driveway and that of the neighbors. For example, the driveway of 1689 overlaps with the driveway at 1688 Central Avenue, although the two are not directly opposite each other. The driveway at 16 driveway at 1681 is only two car lengths away. The addition of vehicles increases congestion on the street and directly impacts the homes surrounding the site.

Adding a destination stop such as the proposed child care facility will create a choke point in traffic on this arterial road. Vehicles waiting to turn left into 1688 Central Avenue, or stopped to allow a car to exit from that driveway, will cause the line of traffic to back up from 1688 Central Avenue and stretch further north on Central, blocking the intersections of Carleton Drive and Pine Street. Vehicles headed north stopping to allow entrance to the facility will cause traffic to back up in that direction. The delays add to driver frustration and increase the risk of accidents. This problem is especially acute for the neighbors living immediately near the site. How will the families that live at 1681 and 1689 Central Avenue be impacted in their ability to leave and return to their homes? And the families at 1663, 1653, 1652 and 1708 Central? And Temple Aliyah? While the increase in traffic impacts the lives of every person that uses this street in their daily lives, these neighbors are especially harmed by the project. The question is not how to minimize the delays for the child care facility; it is how to remedy the problems of congestion and safety created by this project for the next door neighbors, the residents of the area and the travelers who rely on Central Avenue and the surrounding roadways.

			TABLE 1							
	Compariso	n of Baseline Ap	proach - Traffic	Volumes in Octo	oer Report					
			7:30am	- 8:30am			4:45pm	- 5:45pm		
		Central Avenue Southbound	Central Avenue Northbound	Charles River Street Eastbound	Charles River Street Westbound	Central Avenue Southbound	Central Avenue Northbound	Charles River Street Eastbound	Charles River Street Westbound	
ata Ob	servations									
(a)	Town of Needham Traffic Count - 10/11/06 @ intersection	not observed	not observed	not observed	not observed	696	265	210	149	data not used in Proponent's analysi
(b)	Town of Needham Traffic Count - 5/9/16 @ RTS	273	1080	not observed	not observed	1028	402	not observed	not observed	data not used in Proponent's analysis
(c)	Proponent Traffic Count 10/15/21	172	681	462	135	642	252	292	181	Proponent's basis
OVID A	djustment to 2021 Observation (c)									
(d)	Correct adjustment to 2021 data due to 30.4% reduction from COVID: (c)/(1-30.4%)	247	978	664	194	922	362	420	260	
(e)	Proponent's adjustment to 2021 data due to 30.4% reduction from COVID	224	888	602	176	837	329	381	236	
(f)	Difference (e)-(d)	-23	-90	-62	-18	-85	-33	-39	-24	
028 Esti	imates using COVID-adjusted 2021 figures									
(g)	Correct 2028 counts assuming 1% growth per year: (d) at 1% compounded growth	265	1049	712	208	989	388	450	279	
(h)	Proponent's 2028 counts assuming 1% growth	240	950	645	188	896	352	407	253	
(i)	Difference (h)-(g)	-25	-99	-67	-20	-93	-36	-43	-26	
2016 T	own data (b) is used as a basis									
(j)	Correct 2028 counts assuming 1% growth per year: (b) at 1% compounded growth	308	1217			1158	453			
(k)	Proponent's 2028 counts assuming 1% growth	240	950			896	352			
(m)	Difference (k)-(j)	-68	-267			-262	-101			

November 14, 2021

Paul Alpert
Chair of Needham Planning Board,

Members of the Needham Planning Board,

Lee Newman
Director of Planning and Community Development
500 Dedham Avenue
Public Services Administration Building
Suite 118
Needham, MA 02492

RE: Site Review of Proposed Project at 1688 Central Avenue

Dear Chair Alpert and All Planning Board Members,

Attached please find a submission on behalf of neighbors of 1688 Central Avenue for consideration during the Planning Board's site review process of the proposed project at that location.

This submission provides the Board with photographs and videos of traffic on Central Avenue over the past three weeks, while traffic remains reduced because of the pandemic.

We ask you to give these comments careful consideration and enter them into the formal record of your meeting should there need to be further proceedings on the matter. Thank you for your consideration.

Yours truly,

Holly Clarke

# Photographs and Video of Traffic on Central Avenue

The following photographs and videos are submitted for the Planning Board's consideration. Each is labeled with the date, time and the place it was taken. These images depict the current traffic conditions, with travel still reduced because of Covid-19.

These short videos can also be seen on YouTube at the following links:

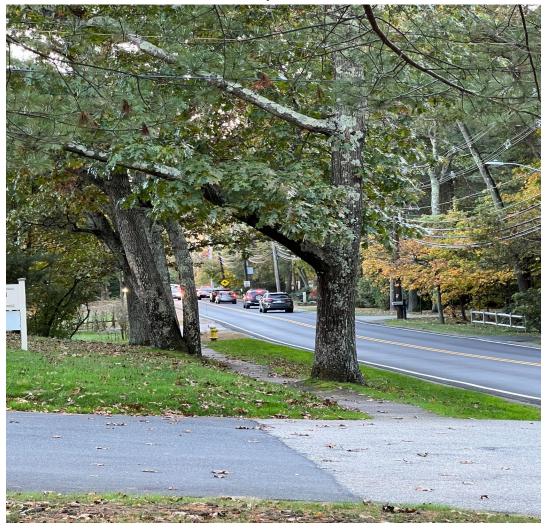
https://youtu.be/U7CV0wN1A4o

https://youtu.be/pFJW1cA1U1I

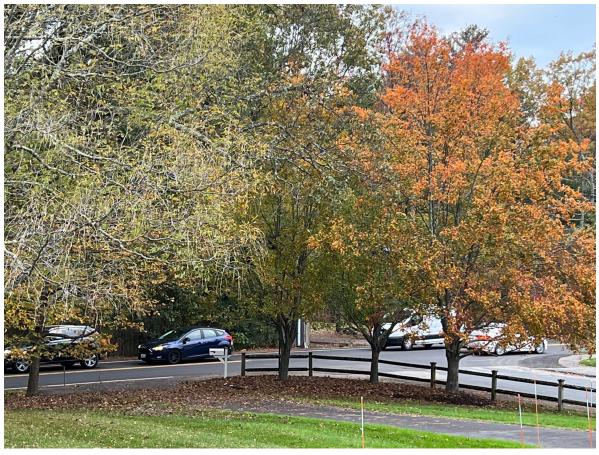
https://youtu.be/bGXtOjPAPe4

We note, again, that the proponent has not analyzed the timing and impact of the facility's pick up procedures. As the neighbors have repeatedly said, and as the photographs and videos show, the afternoon traffic begins with the release of school. Traffic is heavy throughout the afternoon. The data submitted by the proposed tenant reveals that the program's afternoon pick ups out-number the morning drop offs at the current location. As has been pointed out, picking up children requires more time than does drop off. A complete traffic impact study would provide the full analysis of the effect of adding a commercial 115+ child daycare facility on afternoon traffic, and would account for the addition of traffic to the existing conditions.

**October 22, 2021- 5:15 PM**- Photograph of Traffic on Central Avenue taken from front of Temple Aliyah driveway showing southbound traffic backup from Charles River St/Central Ave intersection to 1688 Central Ave driveway



**October 28, 2021- 5:13 PM-** Photograph of Traffic on Central Avenue taken from the corner of Central Ave and Carleton Drive showing southbound traffic backed up from the Charles River St/Central Ave intersection to beyond Carleton Drive



**October 29, 2021- 3:49 PM**- Photographs of Traffic on Central Avenue taken from Temple Aliyah driveway showing southbound traffic backed up from Charles River St/ Central Ave intersection beyond 1688 Central Avenue and approaching the Temple driveway, as well as northbound traffic on the left. (Five photographs taken in sequence).

1- Southbound traffic backed up from the Charles River St/Central Ave intersection to the Temple Aliyah driveway.



2- Southbound traffic backed up from the Charles River St/Central Ave intersection to the Temple Aliyah driveway. The car parked on the left hand side of the road is at 1688 Central Ave. The green traffic light at the Charles River St/Central Ave intersection is in the distance.



3- Northbound traffic stacked behind the school bus which stops at individual homes along Central Avenue.



4- The northbound traffic behind the school bus.



5- Northbound traffic behind the school bus, stretching from beyond Carleton Drive and Pine Street to Temple Aliyah and beyond.



**November 3, 2021- 4:54 PM-** Photograph of Traffic on Central Avenue taken from Temple Aliyah driveway showing southbound traffic backed up from Charles River St/ Central Ave intersection beyond 1688 Central Avenue to Temple driveway



**November 3 - 4:56 PM video**: showing southbound traffic from Charles River St/ Central Ave intersection backed up beyond 1652 Central Avenue, and showing the stops and backups caused by southbound vehicles making a left turn into Carleton Dr. This backup will happen at the site driveway when a car turns into the facility..

https://drive.google.com/file/d/1-iqV76muqmHwP-hNFth35CT2VY5-TVfi/view?usp=drivesdk

**November 3 - 5:00 PM video:** taken from Temple Aliyah driveway showing southbound traffic from Charles River St/ Central Ave intersection backed up beyond Carleton Drive and Pine Street

https://drive.google.com/file/d/16sXgQzthfuU9pjLS9sDMWJXI7AHhh6pi/view?usp=sharing

<u>November 4- 8:47 AM</u>- photographs taken from 1652 Central Avenue showing northbound traffic backed up on Central Avenue beyond Carleton Drive. (Two Photographs taken in sequence).

1- Carleton Drive is on the left.



2- Northbound traffic backed up with a car waiting to turn from Carleton Drive onto Central Avenue.



November 12, 2021- 3:29 PM- Video of Traffic taken from front of 1652 Central Avenue showing traffic back up along Central Avenue to Pine Street

https://drive.google.com/file/d/1yi3PmolfMELbOrq5jwZx5HLVY6Kq1j9C/view?usp=drivesdk

# 253 Charles River Street Needham, MA 02492

November 16, 2021

selectboard@needhamma.gov Needham Select Board

<u>planning@needhamma.gov</u> Needham Planning Board

Re: Revised Comments on Proposed 9,960 Square Foot Daycare Facility at 1688 Central Avenue

Based on the Planning Board Hearings that have been held so far, we would like to offer additional comments on this issue from the point of view of Charles River Street.

At the last Planning Board Hearing on November 2, 2021, it was stated that the way to divert congestion from Central Avenue would be to move it to Charles River Street. We would like to speak for the residents of Charles River Street and the streets which are located off of Charles River Street.

For residents of Charles River Street, there is little access to the area except via Central Avenue. We do not have other options if Central Avenue is over congested. This is not just for the residents of Charles River Street, but also many of the streets located off of Charles River Street which have little to no other access except via Charles River Street. Therefore, if Charles River Street is used to offload the congestion from Central Avenue, it will affect all of the residents of Charles River Street and the surrounding streets.

Safety is a real issue for Charles River Street residents. There is no crosswalk at the intersection of Central Avenue and Charles River Street, and our understanding from the Planning Board Hearings is that there is no plan by the town to install a crosswalk any time soon. Even with the traffic light, it is still dangerous to cross the street because so many cars turn on and off of Central Avenue. When the light is green so pedestrians can cross, cars make turns at the same time into the pedestrians crossing. This affects adults and children who walk and bike in the area. Cricket Field, the Rail Trail and Ridge Hill Reservation are all located off of Charles River Street, but there are no sidewalks. Therefore, to get to Cricket Field, the Rail Trail and Ridge Hill Reservation (or anywhere else), residents have to walk on Charles River Street.

As noted at the prior Planning Board Hearing, there is no real sidewalk on Central Avenue where the proposed Daycare Facility would be located. It was distressing to hear at the Planning Board Hearing that the developer of the proposed Daycare Facility did not want to construct a real sidewalk. A real sidewalk should be required with any construction. Any bit of real sidewalk would be of great help to the neighborhood since the bridle trail along Central Avenue is dangerous since it is so uneven.

As we noted previously in our comments, Pre-Covid, leaving the house around 7:30 to 8:00 am, it would take multiple cycles of the traffic light at the corner of Central Avenue and Charles River Street before there would be a break in traffic and we could exit our driveway on to Charles River Street. The problem was that cars were not able to make the left turn from Charles River Street on to Central Avenue because Central Avenue would be backed up to at least Temple Aliyah and sometimes to Charles River Street.

As congestion increases on Central Avenue, the blocking of driveways on Charles River Street will extend up and down the street. Easing traffic congestion on Central Avenue by moving it to Charles River Street will affect additional residents of Charles River Street and the surrounding streets because they won't be able to exit their driveways.

We want to emphasize that the issue of access to the neighborhood by the fire department, ambulances and police is a real issue and pushing more traffic onto Charles River Street will affect the safety of the neighborhood. In May 2020, we had a major fire at our house which caused substantial damage (we are still living out of our house as of November 2021). The fire occurred in the evening so the fire trucks, which came from many towns, could get to our house fairly quickly. The fire trucks all came via Central Avenue and Charles River Street. What would have happened if the fire had occurred during the day? How would the fire trucks have been able to get through the Central Avenue traffic to get to our house?

As discussed at the Planning Board Hearings, Central Avenue is too narrow to install a left turn lane for the proposed Daycare Facility. Since Central Avenue is so narrow, it makes it difficult for cars to pull aside so emergency vehicles can pass. This is a safety issue for the neighborhood.

We would be happy to discuss our experiences in further detail.

Sharon Cohen Gold 617.610.1020

Evan Gold 617.974.1219



# Greenman - Pedersen, Inc.

**Engineering and Construction Services** 

November 2, 2021

Ms Lee Newman
Director of Planning and Community Development
Needham Department of Public Works
500 Dedham Avenue
Needham, MA 02492

ATTN: Mr. Anthony DelGaizo, PE

Town Engineer
Ms. Lee Newman

**Director of Planning and Community Development** 

SUBJECT: 1688 Central Avenue Peer Review

Amendment 1

Dear Ms Newman:

*Greenman-Pedersen, Inc. (GPI)* would like to request an amendment for the peer review services associated with above referenced project. The original scope of work assumed two (2) meetings with the Planning Board. To date, there have been at least six (6) meetings, as well as meetings with board members. In addition, multiple design revisions and traffic studies have been submitted for review.

Therefore, we would respectively request an increase in the Task 1.0 – Peer Review of Traffic Memos and Task 7.0 – Meetings and Consultation as follows:

	Requested					
TASK	<b>Original Fee</b>	Amendment	<b>Revised Fee</b>			
1.0 - Peer Review of Traffic Memos	\$ 1,933.36	\$ 1,023.88	\$ 2,957.24			
2.0 - Site Visit/Assessment	\$ 1,041.04	\$ -	\$ 1,041.04			
4.0 - Mitigation Plan/Concepts	\$ 1,552.98	\$ -	\$ 1,552.98			
5.0 - Draft Report	\$ 3,034.46	\$ -	\$ 3,034.46			
6.0 - Final Report	\$ 1,993.42	\$ -	\$ 1,993.42			
7.0 - Meetings and Consulation	\$ 5,119.40	\$ 4,095.52	\$ 9,214.92			
TOTAL	\$ 14,674.66	\$ 5,119.40	\$19,794.06			
Expenses	\$ 300.00	\$ -	\$ 300.00			
TOTAL PROJECT DESIGN COST	\$ 14,974.66	\$ 5,119.40	\$20,094.06			

Should you have any questions, or concerns regarding this matter, please feel free to contact John W. Diaz at (978) 570-2953.

Very truly yours,

**GREENMAN - PEDERSEN, INC.** 

John W. Diaz, P.E.

Vice President/Director of Innovation

			AMENDMENT						
Contract ID# TBD Assignment #		Engineering S	ervices for Roadw	ay Design, Rehal	oilitation and/or Re	epair Related Pro	ograms and Projec	ts	
Description	1688 Central Av	venue Daycare - Pe	er Review						
		Gre	enman-Pedersen,	Inc. (GPI)					
	Project				Assistant				
TASK	Director	Senior Engineer	ROW Engineer	Engineer	Engineer	Survey Tech	Survey Eng	то	TAL HOURS
Direct Cost*	\$ 89.50	\$ 52.50	\$ 45.50	\$ 38.50	\$ 29.00	\$ 34.50	\$ 39.50		
1.0 -Peer Review of Traffic Memos	4								4
	1 7								
SUBTOTAL	4	0		0	0	0	0		4
2.0 - Site Visit/Assessment									
									0
CURTOTAL	0								
SUBTOTAL  3.0 - Site Plan Review	0	0	0	0	0	0	0		0
3.0 - Site Flati Neview	8								8
SUBTOTAL	8	0	0	0	0	0	0	1	8
4.0 - Mitigation Plan/Concepts			-	-	-				-
							0		0
212221			_	-	_			<del>                                     </del>	
SUBTOTAL	0	0	0	0	0	0	0		0
5.0 - Draft Report					0	0	0		0
					-				-
SUBTOTAL	0	0	0	0	0	0	0		0
6.0 - Final Report									
0.0 - Filiai Report									0
SUBTOTAL	0	0	0	0	0	0	0		0
7.0. Maratinary and Computation									
7.0 - Meetings and Consulation	16								16
	10								10
SUBTOTAL	16	0	0	0	0	0	0		16
TOTAL HOURS	20	0	0	0	0	0	0		20
LABOR COSTS									
DIRECT LABOR COSTS*	* Labor vary by	employee. Invoid	ing will be based	on actual Direct	Costs Plus Overh	ead and Fee			
Project Director		20		@			\$ 89.50	\$	1,790.00
Senior Engineer		0		@			\$ 52.50	\$	1,750.00
ROW Engineer		0		@			\$ 45.50	\$	-
Engineer		0		@			\$ 38.50	\$	-
Assistant Engineer		0		@			\$ 29.00	\$	-
Survey Tech		0		@			\$ 34.50	\$	-
Survey Eng		0		@			\$ 39.50	\$	-
Direct Labor Cost								\$	1,790.00
Indirect Labor Cost (Overhead)					\$ 1,790.00	x	160%	\$	2,864.00
Fixed Fee (10%)		10% x (	\$ 1,790.00	+	\$ 2,864.00	)		\$	465.40
TOTAL LABOR COST								\$	5,119.40
DIRECT COSTS (printing, mileage, equip, etc.)									
DATA COLLECTION (Sub-Consultant)									-
	+							<b>—</b>	
DIRECT EXPENSE SUBTOTAL								\$	-
TOTAL FEE								\$	5,119.40
IVINETE								7	3,113.40

From: Evans Huber
To: Lee Newman
Cc: Alexandra Clee

**Subject:** 1688 Central Ave request for additional peer review fees

**Date:** Monday, November 8, 2021 3:52:36 PM

Lee: please forward the following email to the members of the PB:

#### Members of the Planning Board:

I am writing on behalf of Needham Enterprises, LLC, in response to the request, received via voicemail today, for an additional \$5,000 from Needham Enterprises, for additional peer review fees to be paid to GPI. Needham Enterprises will not agree to pay this amount, for the following reasons:

- 1. Needham Enterprises ("NE") has already paid almost \$15,000 for the services of GPI to the Town. At the time this issue was first raised, NE objected to the scope of work that this fee was going to cover as being well beyond what NE should reasonably be expected to pay for. We were told that it was expected that the scope of review by GPI would be limited, and that NE might actually be refunded a portion of the fee. Based on this, NE paid the requested fee.
- 2. GPI has spent a lot of time and effort providing feedback on the site plan design and engineering, and discussing these issues both at meetings and between meetings with NE's engineer, John Glossa. This is entirely beyond the scope of the June 22 proposal from GPI, which says nothing about reviewing site plans for engineering and design issues. This is something NE was not asked to pay for; and did not agree to pay for. The Board should be relying on the Town engineering department for this type of review, and if the Board wants to pay an outside consultant to do engineering review, that is an issue between it and the Town.
- 3. This matter was originally scheduled to be heard on June 15. Since that time, there have been four substantive hearing dates on this matter. Of those four dates, at two of them a significant amount of time (particularly during the September 8 hearing) was spent on the issue of alleged ethical violations by Mr. Gluesing and Mr. Borrelli, even though the Chair had previously announced that the Board would not entertain discussion on that issue. The Board has now received the opinion of outside counsel, consistent with that previously expressed by Town Counsel, that the Board does not have the authority or discretion to consider allegations of ethical violations against an applicant; nor to delay the hearing while those allegations are addressed elsewhere. It is not appropriate or reasonable to expect the applicant to pay for GPI's time to sit at a hearing where matters are discussed that are beyond the scope of the Board's authority and jurisdiction.
- 4. Similarly, it is not appropriate or reasonable to expect the applicant to pay for GPI to appear at the October 19 hearing, where the only thing that occurred was that the Chair announced that the hearing was being continued in light of allegations of ethical violations made against the Chair.

5. IN NE's view, the need for GPI's involvement in providing feedback on traffic issues is essentially over. NE is not going to be making further changes to the design and layout of the site. The Board has the information it requested with respect to the impact of this site on traffic on Central Ave and on Charles River Street. Since, as noted above, there is no doubt whatsoever that the Town has spent a portion of the fees (that NE has already paid) having GPI provide review and feedback on engineering issues that should have been handled by the Town's engineering department, that portion of the already-paid fees should be more than enough to cover any additional GPI time on traffic issues that the Board chooses to utilize.

### Sincerely,

Evans Huber
Frieze Cramer Rosen & Huber, LLP
60 Walnut Street
Wellesley, MA 02481
781-943-4000 (main)
781-943-4043 (direct)
781-799-9272 (cell)
eh@128law.com
www.128law.com



November 10, 2021

Mr. Evans Huber Frieze Cramer Rosen & Huber, LLP 60 Walnut Street Wellesley, MA 02481

Re: Traffic Peer Review, 1688 Central Avenue, Needham, MA

Dear Mr. Huber:

I am writing this letter as a follow-up to our phone conversation of this morning for the property located at 1688 Central Avenue, Needham, MA, and in particular the Planning Board's request that additional traffic peer review fees in the amount of \$5.119.40 be deposited with the Town. The requested funds are detailed in the attached contract amendment request from GPI, dated November 2, 2021. The scope of the original GPI contract has been exhausted, and an amendment with additional funding is now needed to provide payment for GPI's attendance and participation at upcoming meetings. The request for these additionally funds was voted at the Planning Board's meeting of November 8, 2021. Please provide the required funding no later than Monday, November 15 at noon so that GPI's attendance at the continued public hearing scheduled for November 16 can be secured.

Both the Planning Board and Town Counsel believe that the Planning Board's project review fee regulations (Section 9, copy attached) provide ample support for a demand for <u>additional</u> peer review funds after the original deposit is exhausted (section (e)). Further those regulations expressly provide that failure to provide the additional funds may result in a denial of the application.

Thank you for your attention to this matter. Please feel free to contact me directly with any questions.

NEEDHAM PLANNING BOARD

Lee Newman

Lee Newman
Director of Planning and Community Development

cc: Planning Board

From: Evans Huber
To: Lee Newman
Cc: Alexandra Clee

Subject: RE: Traffic Peer Review: 1688 Central Avenue Date: Thursday, November 11, 2021 12:35:51 PM

Lee: please forward my response, below, to the members of the Board:

Members of the Planning Board:

As counsel for the applicant, Needham Enterprises ("NE"), I am in receipt of a letter from the Planning Department dated November 10, 2021, conveying the Board's demand that NE pay another \$5,119 for fees estimated to be incurred by the peer reviewer, GPI. The letter states, in part:

Both the Planning Board and Town Counsel believe that the Planning Board's project review fee regulations (Section 9, copy attached) provide ample support for a demand for additional peer review funds after the original deposit is exhausted (section (e)). Further those regulations expressly provide that failure to provide the additional funds may result in a denial of the application.

In my email of November 8 to the Board, I tried to enumerate some of the reasons why NE believes that the imposition of this additional fee is fundamentally unfair. Briefly, these include:

- 1. Some portion of the approximately \$15,000 fee that NE had previously paid has clearly been used for review of engineering and site design issues having nothing to do with traffic. NE was not asked to, and did not agree, to pay for peer review of engineering, drainage, and site design issues (other than to the extent they related to on-site circulation), and this portion of what GPI has been paid for could have been handled by the town's engineering department.
- 2. Mr. Diaz has attended meetings (and presumably charged the town for doing so) where considerable time was spent on an issue that it is clear the Board should not have been considering.
- 3. The postponement of the October 19 meeting, which Mr. Diaz also attended (and presumably charged the town for), was the result of an issue coming to light that was not raised by nor attributable to NE, and which, in NE's view, could and should have been raised *sua sponte* and resolved months ago.
- 4. The current cost estimate provided by GPI is based on 20 hours of Mr. Diaz's time. Given how extensively traffic issues have already been analyzed and discussed, this seems far higher than necessary.

For these reasons, NE wishes to make it clear that while it has, today, paid this additional amount, it is not "agreeing" to do so, but is doing so under a reservation of rights and only because of the clear implication that the application will be denied for this reason alone if NE does not pay this additional amount.

It had been my hope that during its meeting on November 8 the Board would take these points into account and either agree that NE should not be asked to pay any additional fees, or, at a minimum,

reduce the additional amount that NE would be required to pay. Although the Board nevertheless voted to require the full additional payment, I ask that the Board keep these points in mind in moving this hearing to a close as expeditiously as possible.

Sincerely,

Evans Huber
Frieze Cramer Rosen & Huber, LLP
60 Walnut Street
Wellesley, MA 02481
781-943-4000 (main)
781-943-4043 (direct)
781-799-9272 (cell)
eh@128law.com
www.128law.com

From: Lee Newman <LNewman@needhamma.gov>
Sent: Wednesday, November 10, 2021 4:08 PM

To: Evans Huber <eh@128law.com>

**Cc:** Alexandra Clee <aclee@needhamma.gov> **Subject:** Traffic Peer Review: 1688 Central Avenue

Evans,

I have attached the letter and supporting documents we discussed this morning regarding the Planning Board's request for additional traffic peer review fees in the amount of \$5.119.40.

Please let me know how your client plans to proceed.

Thanks,

Lee

Lee Newman
Director of Planning and Community Development
Town of Needham
500 Dedham Avenue
Needham, MA 02492
781-455-7550 ext. 270

https://www.needhamma.gov/

https://www.needhamma.gov/1114/Planning-Board

www.needhamma.gov/NeedhamYouTube

# TOWN OF NEEDHAM ADOPTED AMENDMENT TO THE SUBDIVISION REGULATIONS AND PROCEDURAL RULES OF THE PLANNING BOARD March 20, 2012

1. Amend the Subdivisions Regulations and Procedural Rules of the Planning Board, Section 4, "Planning Board Rules for Planned Residential Development Specials Permits, Residential Compound Special Permits, Flexible Development Special Permits, Site Plan Review Special Permits", Article II, "The Application", by inserting a new Section 9, entitled "Permit Review Fees" as follows and by renumbering the remaining sections accordingly:

#### "Section 9. Project Review Fees

Any applicant who submits an application pursuant to these Rules and Regulations may be required to submit a project review fee in accordance with the following provisions of this section:

- (a) When reviewing an application for approval, the Planning Board may determine that the assistance of outside consultants is warranted due to the size, scale or complexity of a proposed project or because of a project's potential impacts or because the Town lacks the necessary expertise to perform the review work related to the approval. The Planning Board may require that applicants pay a "project review fee" consisting of the reasonable costs incurred by the Planning Board for the employment of outside consultants engaged by the Planning Board to assist in the review of a proposed project.
- (b) In hiring outside consultants, the Planning Board may engage engineers, planners, traffic consultants, attorneys, architects, housing specialists, financial analysts, and/or other appropriate outside consultants who can assist the Planning Board in reviewing and analyzing the proposed project and to ensure compliance with all relevant laws, by-laws and regulations. The minimum qualifications shall consist either of an educational degree in, or related to, the field at issue, professional licensure or three or more years of practice in the field at issue or a related field.
- (c) Funds received by the Planning Board pursuant to this section shall be deposited with the Town Treasurer who shall establish a special account for this purpose in accordance with the provisions of Chapter 44, Section 53G of the General Laws. Expenditures from this special account may be made at the direction of the Planning Board without further appropriation. Expenditures from this special account shall be made only for services rendered in connection with a specific project or projects for which a project review fee has been collected from the applicant. Any accrued interest may also be spent for this purpose. At the completion of the Planning Board's review of a proposed project, any excess amount in the account, including interest, attributable to a specific project, shall be repaid to the applicant or the applicant's successor in interest. A final report of said account shall be made available to the applicant or the applicant's successor in interest. For the purpose of this section, any person or entity claiming to be an applicant's successor in interest shall provide the Planning Board with documentation establishing such succession in interest.
- (d) The Planning Board shall give written notice to the applicant of the selection of the outside consultant(s), which notice shall state the identity of the consultant(s), the amount of the fee to be charged to the applicant, and a request for payment of said fee in its entirety. Such notice shall be deemed to have been given on the date it is mailed or delivered. No such costs or expenses shall be incurred by the applicant if the application or request is withdrawn within five days of the date notice is given.
- (e) The fee must be received in its entirety prior to the institution of consulting services. The Planning Board may request additional consultant fees if the necessary review requires a larger expenditure than originally anticipated or new information requires additional consultant services. Failure by the applicant to pay the consultant fee specified by the Planning Board within ten (10) business days of the request for payment shall be cause for the Planning Board to deny the application.
- (f) Prior to paying the consultant fee, the applicant may appeal the selection of the outside consultant(s) to the

Board of Selectmen. The grounds for such an appeal shall be limited to claims that a selected consultant has a conflict of interest or that a selected consultant fails to possess the minimum required qualifications. The written appeal must be received by the Board of Selectmen within ten (10) days of the date consultant fees were requested by the Planning Board. A copy of the appeal shall be simultaneously provided to the Planning Board. The time limit for the Planning Board's action on the proposed project shall be extended by the duration of any administrative appeal to the Board of Selectmen. In the event that the Board of Selectmen makes no decision regarding the appeal within thirty days following the filing of such appeal, then the selection of the Planning Board shall stand."

2. Amend Section 3, Subdivisions, Sub-Section 3.2, Submission of Definitive Plans, Paragraph 3.2.2, by inserting a new second paragraph to read as follows:

"Any applicant who submits an application pursuant to these Rules and Regulations may be required to submit a project review fee in accordance with the regulations established for special permits pursuant to Section 4, "Planning Board Rules for Planned Residential Development Specials Permits, Residential Compound Special Permits, Flexible Development Special Permits, Site Plan Review Special Permits", Article II, "The Application", paragraphs (a) through (f)."

A True Copy

**ATTEST** 

Theodora K. Eaton, Needham Town Clerk

#### NEEDHAM PLANNING BOARD MINUTES

#### September 8, 2021

The Needham Planning Board Virtual Meeting using Zoom was remotely called to order by Paul Alpert, Chairman, on Wednesday, September 8, 2021, at 6:45 p.m. with Messrs. Jacobs and Block and Mmes. McKnight and Espada, as well as Planning Director, Ms. Newman and Assistant Planner, Ms. Clee.

Mr. Alpert took a roll call attendance of the Board members and staff. He noted this is an open meeting that is being held remotely because of Governor Baker's executive order on March 12, 2020 due to the COVID Virus. All attendees are present by video conference. He reviewed the rules of conduct for zoom meetings. He noted this meeting does include two public hearings so there will be public comment allowed. If any votes are taken at the meeting the vote will be conducted by roll call. All supporting materials are posted on the town's website.

Request for temporary occupancy permit and review of zoning compliance: Amendment to Major Project Site Plan Special Permit No. 2016-01: 57 Dedham Ave. LLC, 471 Hunnewell Street, Needham, MA, Petitioner (Property located at 15 & 17 Oak Street, Needham, MA).

George Giunta Jr., representative for the applicant, noted this is a request for an occupancy permit for the residential component of the building. He noted the Board authorized the Planning Director to authorize an occupancy permit upon receipt of documents such as the As-Builts. When doing the As-Builts it was discovered there was a survey error. The building is closer to Oak Street than thought. The setback site plan measured to the wall of the building and not the overhang. The overhang is set out 2 feet from the building so with these a revised plan/As-Built was done. It looked like there would be an issue with respect to zoning but the text of the By-Law does not actually say any front yard setback on the side streets is required. There is only a front yard setback required on Chestnut Street.

Mr. Giunta Jr. noted there is an error on the site plan that was approved at a certain <u>setback</u> distance. He noted the applicant is asking for 2 things – an occupancy permit for the residential compound based on the corrected current As-Built and a deminimus change for site plan approval. He noted they are only here tonight for the occupancy permit. Ms. Newman noted there will be certification needed for the revised As-Built that references the new setback. Building Inspector David Roche stated he felt the zoning was undefendable as written. The language needs to be added but it seems there is zero setback <u>requirement in our Zoning By-law</u> as of now. He would correct it and move forward. Mr. Alpert stated there is an agenda item tonight to correct the language.

A motion was made to recommend a temporary occupancy permit be issued for a period of 60 days conditioned upon receipt of the updated As-Built to correct the zoning table as relates to the required, proposed existing front yard setback, the receipt of updated certification from a land surveyor as relates to compliance with special permit conditions, DPW approval of the final As-Built plan and further receipt within 30 days to get, and file for deminimus change, an amendment with the Planning Board to reflect the revised setback, and elimination of the handicap ramp provided it is compliant with the Architects Access Board Standards. Mr. Block asked if the Building Inspector and Mr. Giunta Jr. are satisfied and capable of fulfilling the requirements. Mr. Giunta Jr. stated the conditions are easily met and should be quick.

Ms. McKnight asked what the final resolution to the handicap ramp is. Mr. Giunta Jr. stated the ramp is not needed out front as long as there is adequate signage directing people to the handicap entrance in back. Building Inspector Roche stated, as of now, the residential units are complete. The commercial section will be done in a couple of weeks. Michael Tedoldi, applicant, asked if the Building Inspector would be able to issue the building permit for the commercial space. Ms. Newman noted the Planning Board was fine with the building permit on the commercial portion.

Upon a motion made by Ms. McKnight, and seconded by Ms. Espada, it was by a roll call vote of four of the five members present (Mr. Jacobs abstained):

VOTED:

to recommend a temporary occupancy permit be issued for a period of 60 days conditioned upon receipt of the updated As-Built to correct the zoning table as relates to the required, proposed existing front yard setback, the receipt of updated certification from a land surveyor as relates to compliance with special permit conditions, DPW approval of the final As-Built plan and further receipt within 30 days to get, and file for deminimus change, an amendment with the Planning Board to reflect the revised setback elimination of the handicap ramp provided it is compliant with the Architects Access Board Standards.

# Review of Chestnut Street Business District front setback zooming modification and referral to Select Board.

Mr. Jacobs stated he received the revised amendment this afternoon. He would like to discuss Section 4.4.4 for front setback in the Business District. Ms. Newman stated she would have to research the history of that block. Ms. McKnight suggested this be submitted to the Select Board and by the time there is a hearing the research will be done. Mr. Alpert suggested changing "a business district" to "the business district" and submit to the Select Board. Ms. McKnight further suggested "The Business District" be capitalized. Mr. Jacobs asked what properties would bewere affected with this change. Ms. Newman clarified that any parcels sitting within the Chestnut Street Business District that do not front on Chestnut Street would be affected. She listed the streets in the District that are affected. She noted, historically, a setback has been applied. Mr. Jacobs asked if those residents have been notified. There will not be a personal noticenotice, but it will be in the local paper. This is a correction of a long-time policy. A discussion ensued.

Ms. Newman noted a 10-foot standard has applied since 1989. Mr. Jacobs commented this project got favorable treatment because the Board made a mistake. Mr. Alpert noted that the aAttorney Guinta did his job and found an error in the By-Law. Ms. McKnight stated the Chestnut Street Overlay District has a 5-foot setback. The Board could have gone that routeroute, but it would mean a whole new special permit process. She noted that The buildingsowners on the side streets would be prior non-conforming structures if they are closer to the front lot line than 10 feet. If they proceed under the Chestnut Street Overlay District they can have a 5-feetfoot setback. Mr. Jacobs noted 5 feet is not zero. Mr. Alpert clarified that he did not vote yes on this to help Mr. Tedoldi. He voted yes because of what the attorney foundfound, and the Building Inspector agreed. He read the By-Law and agreed with the interpretation. Ms. Newman stated this should be studied and applied in a comprehensive way. Mr. Jacobs agreed and noted that is why he disagrees with what was done tonight.

Mr. Jacobs feels all other properties situated in the same way should have a zero setback. Attorney George Giunta Jr. noted he understands and does not disagree with Mr. Jacobs. Mr. Jacobs is right that correcting the error works out to advantage one person. That is an unintended consequence. Building Inspector David Roche noted the building does not set at zero setback. He believes it is 7 feet. He feels a good compromise on the side streets may be 5 feet. He does not feel it is compromising people's rights. It may give more opportunity for them to expand their property. Mr. Giunta Jr. stated the setback is 8 feet to the building and 5 feet to the overhang. The other corner is 10 feet and 7 feet to the overhang. Mr. Jacobs stated he feels this is the type of discussion the Board needs. He wants consistency. Ms. Espada stated this opens an opportunity to look at this but agrees it should move forward for this project. This shows some inconsistency with the By-Law that needs to be repaired.

Ms. McKnight stated she would like to continue what is proposed under the Chestnut Street Overlay District with a 20-foot setback as a basic requirement and have a clear statement that side streets are 10-foot setbacks. Mr. Block wants to call this out specifically. He would like a specific notice by mail sent to the affected property owners. A motion was made to send the zoning amendment, with minor changes discussed, to the Select Board. Mr. Jacobs asked, if this comes back and needs some proposed amendments, is there a clear idea and understanding of what amendments could be adopted. Mr. Alpert stated it could not be more restrictive estrictive, but the Board could make it less.

Upon a motion made by Ms. McKnight, and seconded by Ms. Espada, it was by a roll call vote of the five members present unanimously:

VOTED: to send the zoning amendment with minor changes discussed to the Select Board.

#### Board of Appeals – September 23, 2021

# 299 Charles River Street - Andrew and Gia Jeas, applicants

Upon a motion made by Mr. Block, and seconded by Mr. Jacobs, it was by a roll call vote of the five members present unanimously:

VOTED: "No comment."

# **Public Hearing:**

# 7:30 p.m. – Article 1: Amend Zoning By-Law – Outdoor Seating.

Mr. Alpert noted this is a proposed By-Law amendment for a change to reflect changes made during Covid.

Upon a motion made by Mr. Block, and seconded by Mr. Jacobs, it was by a roll call vote of the five members present unanimously:

VOTED: to waive the reading of the public hearing notice.

Ms. Newman noted there is one issue with take-out facilities that have no seats. She does not want to include those entities in this. Abbotts is one example. Mr. Alpert stated the Board should close the hearing and discuss at the next meeting.

Upon a motion made by Mr. Block, and seconded by Mr. Jacobs, it was by a roll call vote of the five members present unanimously:

VOTED: to close the hearing.

7:45 p.m. – Major Project Site Plan: Needham Enterprises, LLC, 105 Chestnut Street, Suite 28, Needham, MA, Petitioner (Property located at 1688 Central Avenue, Needham, MA). Regarding proposal to construct a new child-care facility of 9,966 square feet and 30 parking spaces, that would house an existing Needham child-care business, Needham Children's Center (NCC). Please note: this hearing was continued from the June 14, 2021 and August 17, 2021 meetings of the Planning Board.

Ms. Espada recused herself from the hearing. Mr. Alpert noted this is an open, continued public hearing. He noted he would like a hard stop deadline of 10:30 p.m. He will let the attendees speak as issues come up and get their questions answered. He noted some additions to the record: added late today were Exhibits received dated 3/1/21 through 9/2/21 with a list of 99 items. This is available in the packet on the website. He also noted a letter from the DPW, dated 8/12/21, with comments and recommendations; another letter from the DPW with no additional comments; an email from Tara Gurge with no date, with comments including environmental testing and noting the applicant has satisfied that, so no further testing is needed; a memo from the Design Review Board, dated 8/13/21, with comments; minutes of the Design Review Board meeting and further comments; a memo from Attorney Evans Huber, dated 8/4/21, noting with additional changes to the project since the 7/22/21 meeting; an email from Fire Chief Dennis Condon, dated 8/9/21, noting no additional comments; additional comments from the neighborhood and additional traffic study information.

Mr. Alpert noted ethical violations have been alleged. Town Counsel sent a detailed letter to the State Ethics Commission requesting guidance regarding hearings. Town Counsel Christopher Heep's letter is in the packet. He asked the Board if they want to wait for a response or would they want to proceed. Mr. Block stated he is not convinced a legal violation has occurred occurred, but he is not an expert. People have a legitimate right to raise these concerns. He understands the appearance but does not know if a violation exists or what impact it may have. He does not want a decision rendered by default on the basis the Board does not know the outcome of these allegations. He proposes continuing the hearing tonight on the merits of the application and have an independent counsel who specializes in ethics law advise the Board with respect to this circumstance. If other members are satisfied, it may not be required. Ms. McKnight stated she is satisfied with the research done by Town Counsel Heep noting the Board may rescind the decision after action by the Ethics Commission. She wants to proceed with this hearing, close the hearing and take a vote. If a decision is made with a condition that may require further information, the Board can take action then on the basis of the further information.

Mr. Alpert pointed out, if the hearing is continued pursuant to the zoning statute, it may be the relief is automatically given if too much time passes. That would not allow the Board to put conditions on this property. He is inclined to go forward with the hearing. If the Board would like to ask for an independent <u>counsel\_counsel</u>, he would like that vote tonight. Mr. Jacobs agreed with Mr. Alpert and Ms. McKnight. He is not sure about the independent counsel now and feels that can wait. Attorney Evans Huber, representative for the applicant, stateding he is in favor of moving forward, noting that.—Town

Counsel Heep had already informed the Board on 7/16/21 he does not believe the hearing should be stopped:— Hhis view is he does not appreciate people continuing to insist on the validity of their positions:— They have received an opinion from a qualified counsel. Mr. Alpert does not feel it is necessary to get independent counsel nownow, but the Boardthey could later if necessary. Ms. McKnight is comfortable with that.

Davis Lazarus, of Oxbow Road, thanked the Board. This is clearly a complicated issue and he recognizes all are trying to do the right thing. He stated the indexthat the list of all testimony received to date is a great document?? He noted the ethics is an incredibly serious issue. Everyone has a right to make a living and run for office. They need to be prepared to do that within the law. The Chair of the Select Board is not allowed to represent anyone in front of this Board. Mark Gluesing appeared before the Planning Board about what the Design Review Board would or would not do. The overlap is ethically troubling. All the Board has to do is request approval for a specialist to come in and make a determination. Not doing this may be disastrous. The harm to continue without an expert opinion is very significant. The harm to the developer for waiting is not as significant. The delay is small to get an opinion. Town Counsel Heep has stated the Board has not delayed kept this project reviewgoing. It is the developer that keeps delaying it. This is public now and all the Board has to do is get an opinion to advise the town.

Mr. Alpert thanked Mr. Lazarus for his comments. He noted the delays were not always at the request of the developer. The August delay was at the Boards initiative as materials were sent too late. They have asked the State Ethics Commission for an opinion. They may or may not get one but may also need to get another opinion after that. Mr. Alpert noted Mr. Lazarus stated, by law, the Chair of the Select Board may not represent anyone in front of another Board. He asked what Mr. Huber's opinion is on that question of law. Mr. Huber stated that, clearly, the allegation that because Mr. Borrelli is the manager of Needham Enterprises LLC he cannot pursue any development in this town that requires a permit in front of another Board is absurd. The applicant is Needham Enterprises LLC, and not Mr. Borrelli. Another allegation made was that Mr. Borrelli, or the LLC, has been paid. He has not. There is no lease with the operator of Needham Children's Center (NCC). He wants NCC to be a tenanttenant, but they have no legal obligation to do this. Mr. Borrelli is not an agent for NCC. It is incorrect to say Mr. Borrelli has engaged in ethical violations. Mr. Block stated it seems the intended use is a daycare center. If that is not the case, would the Dover Amendment still apply? Mr. Huber stated the Dover Amendment absolutely does applywould. He feels the Board should be mindful Mr. Borrelli is doing this at his own risk without a lease in place, and his good faith.

Mr. Jacobs stated he does not think this hearing is about NCC. It is about this site and what is proposed at this site. Mr. Huber stated, when a special permit is approved, it will be for a childcare center. It is being designed and built for a childcare center. Maggie Abruzese, of 30 Bridle Trail, echoed Mr. Lazarus comments. She thanked all Board members for the many hours spent on this. She appreciates the time and effort. She noted this started more than a year ago. Selectman Borrelli wanted to know how he, as the developer, could get approval to build a childcare center for his client. Selectman Borrelli argues his client should prevail and not the town. She does not take this lightly. The Design Review Board (DRB) is responsible for reviewing the drawings. They have done that and expressed some concerns. Marc Gluesing stood before this Board and took a stand directly in conflict from what his Board recommended. He is pursuing the private interest of his client rather than the best interests of the town. Ethical laws were put into place to prevent this very thing.

Ms. Abruzese stated she recognizes the Planning Board members are is not specialists in ethics. She is not asking them to litigate or make a determination. She is asking they pause and seek legal counsel. She is not accusing Planning Board members of improprieties. The decision is only as good as the information given. She wants to make sure the legitimate ethical questions are resolved before moving forward. Mr. Borrelli and Mr. Gluesing could ask for an opinion themselves to resolve this. This would safeguard the integrity of the Board. Mr. Alpert stated he does not take Ms. Abruzese's comments lightly. They are well researched and persuasive. There may be a middle ground. The Board could work on the merits of the project while waiting for the ethics determination.

Mr. Block stated there is some validity in some of Ms. Abruzese's arguments but some of her comments are a distraction. The Board should have expert counsel advise of what is within the scope of the Planning Board purview. Mr. Block noted Ms. Abruzese has implied an impropriety here. Mr. Jacobs stated he hears less than what Mr. Block suggests. She is saying perception is important. He would like to hear Mr. Hubers' response. Mr. Huber stated he agrees with Mr. Block. He hears her strongly imply various town officials are skewing opinions because Mr. Borrelli is on the Select Board. This Board

should agree that is not happening but is going in the opposite direction. The DRB has reviewed this 3 times and made comments that are a lot of time not favorable to this applicant. The process is not tainted in his favor. He asks the Board to step back and look at the Conflict of Interest Law and why it was enacted.

Matt Heideman, of 1708 Central Avenue, stated his job is Business Development Manager to public sector of all federal government. To say holding positions on **Bb**oards does not give a leg up for commercial businesses is a façade. He does this every day. The implications here are 100% warranted by what Ms. Abruzese said. Shannon Buckley, of Harris Avenue, stated she is an NCC staff member. She has a business degree and an education degree. This is so tied up with the ethical dilemma they are forgetting all the other people tied up with this. Most watching tonight are the teachers. A lot of the staff members are long time Needham residents. The center has strong ties to Needham families. The ethical debate seems more like an attack on the developer and less about the location.

Mr. Block feels the Board should continue on substance. He feels there is no harm engaging a special counsel to advise on the scope of their authority. Ms. McKnight stated the only issue is to ask if the Board has to stop acting until a determination is made. She feels comfortable going forward and does not feel the need for advice. Mr. Jacobs feels the hearing should proceed and the Board should go ahead with engaging special counsel who has expertise in this area. They do not have guidance from the Ethics Commission. He would not limit the special counsel to any one question but ask advice. Mr. Alpert feels they should go forward, get the facts and hear everything. There is a remedy. If the State Ethics Commission makes a finding and finds any issue the Board can ask that the project be rescinded. The building may have to come down. He is leaning toward getting a determination from an expert.

Mr. Block suggested the Planning Board ask the Town Manager for financial approval to engage a special counsel in this law and to advise on the scope of the Planning Board authority and give a legal opinion on the extent they can continue and finalize their process given the risk if it is delayed for a certain amount of time that the relief sought by the applicant is automatically rendered. A motion was made to ask the Town Manager to approve to engage special independent counsel to advise on the scope of authority on this particular matter. A suggestion was made to amend the motion to advise on the best course of action for the Planning Board at this time. Mr. Huber stated the applicant's position is clear. This Board has already received an opinion by a qualified Town Counsel. The applicant does not consent to further delay. Mr. Alpert stated the Board would not be delaying but will be moving on.

Upon a motion made by Mr. Block, and seconded by Mr. Jacobs, it was by a roll call vote of the four members present unanimously:

VOTED:

to ask the Town Manager to approve to engage special counsel to advise on the best course of action for the Planning Board at this time.

Mr. Alpert asked the applicant to review the changes to the plan. Mr. Huber stated there have been some changes to the façade of the building that faces Central Avenue, which he will speak to. Another allegation was raised as to whetherif keeping the barn would create more than one use on a lot. Mr. Alpert asked to discuss the barn. Holly Clarke has raised an issue as to whetherif the barn would be an impermissible building. He reached out to the Building Inspector who agreed with Ms. Clarke. There cannot be 2 non-residential structures on one lot. If a daycare center is built the barn has to go. Mr. Huber stated, given this issue has been raised, it is pretty clear that the barn would need to be used solely by the child-care facility. There is a provision of the By-Law that says more than one non-residential structure on a lot would not be allowed. However, they are under 40A, Section 3, which says no By-Law shall prohibit use of land or structure for primary accessory or incidental use of operating a child-care center. He does not think it is clear that an accessory structure is subject to that restriction being discussed. Another provision says accessory structures are allowed as of right in the SRA District. A reasonable interpretation would be the prohibition does not apply to of an accessory structure-does not apply. Under the By-Law accessory uses are treated differently. Chapter 40A, Section 3 is not limited to a single structure. The barn is limited to accessory use to the child-care center.

Ms. McKnight asked for what purpose the barn is proposed to be used and was told. At the moment it would only be for storage. Mr. Block asked the square footage of the barn. John Glossa, of Glossa Engineering, stated the outside of the barn is 60 feet by 40 feet or 2,400 square feet. Mr. Block heard Needham Enterprise LLC would have primary use of the barn. 2,400 square feet is a big space and is not realistic as an accessory use to a daycare facility. He is satisfied this becomes a

second use and not really an accessory to the primary use and therefore has to go. The only way he would want to see the barn stay would be if he advocated for a substantial setback. The cost to take down the barn would be incremental. He feels the applicant should push the building back. The barn can only stay if it becomes included in the design of the structure. Incorporated as part of the facility it could be play space. That is the only way he would support keeping the barn.

Mr. Huber stated he would like to start talking about traffic and other issues. If the Board votes the barn has to come down it would be a violation of Chapter 40A, Section 3. A full debate should be later. He does not agree the Board has the authority to order the barn be taken down. Mr. Alpert feels they do have the authority per the By-Law. Pat Day, owner of NCC, stated the space they are in now has a lot of storage space. The building they are planningbuilding has a lot of kid space and not a lot of storage space. The children's center could fill 3 double garages as of now with bikes, buggies, outdoor equipment and such. She loves the idea of incorporating the barn. Mr. Alpert stated they will defer the discussion of the barn.

Mr. Heideman stated he is not a lawyer but everything about this project has been very unforthcoming, particularly the barn plans. He heard the barn is not needed then it is needed. He lives in a 1,700 square foot house. It is ridiculous they need 2,400 square feet for storage. The building should be pushed back and get rid of the barn. That would solve many issues in the neighborhood.

Holly Clarke, of 1652 Central Avenue, thinks Mr. Huber is misreading the By-Law. It-The By-Law is clear that 2 non-residential buildings on a lot or 2 non-residential uses on a residential lot will be upheld is not permitted? And this would be upheld under any analysis. If there is another change in the plan, and this would be part of the façadechildcare facility, what is actually being considered. She will hold back further discussion.

Stan Keller, of 325 Country Way, stated the discussion regarding the barn is surreal. He is a long-time resident. Nobody has asked why build a new multimillion dollar facility and keep an old barn. The Planning Board needs to look at the property as a whole. He urges the Board to ask the right questions. Ms. Buckley invited all to come see the center now. Having the barn would be amazing. The children talk about farming and havinge gardens growing. They could have so much going on there. Mr. Alpert suggested they talk about changes to the plans to date and traffic.

Mr. Glossa stated changes were made due to John Diaz' comments regarding traffic. Mr. Diaz asked, in comment 14, for directional arrows, center lines, travel lanes and such be shown for the proposed driveway. The curb is 6 inches and the pavement is 24 feet or 24 feet plus 8 feet with the new queuing lane. Mr. Glossa He feels it is adequately shown on the plan. Behind at the rear of the building is the loading area. That is where the school supplies and such would be dropped off. He described the trucks as an Amazon van or equivalent. In response to comment 17, they added curb stops at the ends of the parking spaces where they abut the sidewalk. These were added to the plan. Comment 19 was the shape of the island. The island was a circle which made some confusion. It is more tear-drop shaped now. Lines are painted so there is no confusion. Comment 20 suggested has a second driveway. This was considered but it would be more pavement and it would be difficult to make it work. There is less availability for parking unless it is closer to Country Way. The applicant wants the front door at the rear of the building. Ten cars can queue up in the queueing lane with the door in the back. Comment 22 regards ADA handicap sidewalks. The ones at the handicap spaces will be level with the pavement; then there will be a little ramp less than 5% slope to meet ADA requirements. Comment 23 is regarding drainage. The property slopes down from the door toward Central Avenue. A set of catch basins close to the stop line and on both sides of the drive have been put in. All slopes are from the back of the site to the catch basins. Existing catch basins are there now. He noted they will come back with revised plans.

Mr. Huber noted the most significant change was the addition of the queueing lane. On the original plan there was just one entrance and exit lane. The driveway is widened and can hold 20 cars. If the queueing lane is full others will be naturally be directed to the back to the parking area. The building did not have to be moved to add a queueing lane. The driveway was merely widened on the north side. Another feature is a curve has been added so if the queueing lane is full cars can go straight. Ms. McKnight noted the DPW comment regarding redoing the sidewalk along the frontage of the property. Frequently the Board asks for that, but she does not see anything here. Mr. Glossa noted, in comment 22, they intend to provide new sidewalks to tie into the existing sidewalks at the property limits. Mr. Alpert noted the expansion of the sidewalk to accommodate ADA sidewalks and asked if it would be just along this property or extend from Country Way to

the Temple driveway. This does not appear to be addressed in the comment. Ms. McKnight stated the comment was only along this property. She is not sure if the Board's authority allows beyond the property itself. Mr. Glossa stated there was no problem to show it.

Mr. Block noted the widening of the driveway and widening of the access point is an improvement. Sheet 8 regards the sewer extension plan. He had made a comment last time about the underground detention basin to capture all the runoff on the property between the barn and the proposed daycare center. The slope on the south side goes between 205 feet and 199 feet which is a drop of 6 feet. Water will move down the slope off this property. He sees another proposed infiltration system has been put in. He does not want water from this property going onto other properties. He thought the applicant would be adding a detention basin on the southwest corner to remove more of the surface water. There is still a lot of water on site.

Mr. Glossa stated the Heideman property is actually higher. There is a closed contour line. There is a little area that will naturally hold water. Soils are full of fine glacial outwash all the way down which means the water soaks into the ground. There will be no runoff from rainfalls. There are massive leaching galleys in back. He noted water flows from the Heideman property onto this site. Mr. Glossa noted the <u>building</u> site <u>building</u> is <u>at 205</u> feet <u>elevaton</u>, but it goes up from the low spot. This project has actually slowed the rate of run off and <u>overalloverall</u>, this is a better condition. Rainfall will soak into the ground.

Upon a motion made by Mr. Jacobs, and seconded by Ms. McKnight, it was by a roll call vote of the four members present unanimously:

VOTED: to continue the hearing to 10/5/21 at 7:45 p.m.

Mr. Block stated he wants more clarity on the gravity of the water. Ms. McKnight stated she would like revised plans at the next hearing.

# Report from Planning Director and Board members.

Ms. Espada came back to the meeting. Mr. Jacobs left the meeting. at 11:00 p.m. Ms. Newman stated Town Manager Kate Fitzpatrick is creating a committee for a Climate Action Plan. She would like one appointment from the Planning Board. She would also like 2 members on the Affordable Housing Study Committee. Additionally, She noted the Planning Board is interested in a study of the existing transportation committee. Currently this isthere are 2 committees focusing on transit—a transportation committee and a traffic safety committee—one focused more on traffic infrastructure, and one more on transit. There is a discussion if the 2 committees should be merged. Does the Planning Board want to participate in looking at this issue of whether to merge the groups and also to identify the key transportation issues that the Town will be focusing on over the next year. Ms. Espada asked if there was information on all the Committees the Planning Board participates in. Ms. Newman noted the Community Preservation Committee, the Affordable Housing Committee Committee, and the new Climate Action Plan Committee. There is also the Council of Economic Advisors and NUARI. She has received 15 applications for the 2 committees? Citizen At-Large positions on the Housing Plan Group. Ms. McKnight and Ms. Espada are interested in the Affordable Housing Committee and Ms. Espada will think about the Climate Action Plan Committee.

Upon a motion made by Mr. Block, and seconded by Ms. Espada, it was by a roll call vote of the four members present unanimously:

VOTED: to adjourn the meeting at 11:00 p.m.

Respectfully submitted, Donna J. Kalinowski, Notetaker

Adam Block, Vice-Chairman and Clerk