



## Public Facilities Committee Report

### City of Newton In City Council

Wednesday, July 21, 2021

Present: Councilors Leary (Chair), Norton, Laredo, Kelley, Kalis, and Crossley

Absent: Councilors Gentile and Danberg

Also Present: Councilor Humphrey

City Staff Present: Chief of Staff for DPW Shawna Sullivan, and Director of Transportation Jason Sobel

**#290-21 Request for public way improvements at Pettee Square**

HER HONOR THE MAYOR requesting approval of the public way improvements at Pettee Square at the intersection of Chestnut Street and Oak Street as part of the Pettee Square streetscape enhancements in accordance with City Ordinance 26-51. Intersection improvements include pedestrian, bicycle and vehicular safety in keeping with the city's complete streets initiative.

**Action:** Public Facilities Approved 6-0

**Note:** Shawna Sullivan, Chief of Staff for DPW and Jason Sobel, Director of Transportation presented the request for public way improvements at Pettee Square. Ms. Sullivan explained that this is a request for the raise intersection at Oak Street and Chestnut as part of the Pettee Square improvement project. Mr. Sobel's presentation is attached.

Councilors asked the following questions:

Q: What input has the City received on this project?

A: Mr. Sobel explained that they have received a lot of input regarding the streetscape and the materials that are being used for the sidewalk. The department is proposing a stamp concrete sidewalk and stamp asphalt intersection. There was also a discussion on the parking areas.

Q: Are 9 accidents average in this type of intersection?

A: Mr. Sobel explained that this is not above MassDOT's average crash rate. The goal is to have a safer intersection for all users. The department is also anticipating the increase in traffic with the upcoming development in the area.

Q: Is the grant for this project only for this location?

A: Mr. Sobel explained that the grant for this project can only be used at this location. The MassDOT grant for design had another component that deals with extending the greenway but this is still be worked on. The construction grant that the City is applying for will also only pertain to this intersection.

Q: Could this project wait until the development is in place?

A: Mr. Sobel explained that the grant does have a time limit. The initial design grant was for one-year which ended at the end of June but it was extended due to delays on the other portion of the grant. There was also still the need to go through the public meeting. The goal is for this to go construction next summer. It was noted that it is important that the village center is revitalized independent of the Northland development.

Q: Has Marc Welch, Superintendent of Urban Forestry been consulted?

A: Mr. Sobel explained that he has been consulted regarding the tree selection along with other Parks, Recreation and Culture staff.

Q: Did the Fire Department have any concerns with the design?

A: Mr. Sobel explained that they have worked with Fire Chief Gino Lucchetti on the appropriate length for the transition up to raised tables intersections. There will be 10 ft transitions which will be effective for traffic calming and should not affect the emergency vehicles.

Councilors made the following comments:

Councilors expressed their support for this project to help with safety issues in the existing intersection.

It is important to create more greenspace in the area through this project.

Mr. Sobel noted that they would be able to come back to share more about the design of the intersection as it is developed.

Councilor Crossley motioned to approve which passed unanimously.

**Referred to Public Facilities and Finance Committees**

**#282-21** **Appropriate \$325,900 for the purchase of one new Volvo yard front end loader**  
**HER HONOR THE MAYOR** requesting authorization to appropriate and expend the sum of three hundred twenty-five thousand nine hundred dollars (\$325,900) and authorize a general obligation borrowing of an equal amount for the purchase of one new Volvo L120H Volvo 4.50 yard front end loader.

**Action:** **Public Facilities Approved 6-0**

**Note:** Shawna Sullivan, Chief of Staff for DPW presented the request to appropriate and expend the sum of \$325,900 and authorize a general obligation borrowing of an equal amount for the purchase of one new Volvo L120H Volvo 4.50 yard front end loader. Ms. Sullivan explained that this equipment will be used at the Rumford Ave recycling center and is replacing a front-end loader that is at the end of its useful life. The department has applied for a grant which could cover up to 35% of the costs. The new loader will also meet all of the current emissions requirements and the estimate life on the loader is 12 years.

Councilors asked the following questions:

Q: How will this front-end loader effect the diesel emissions?

A: Ms. Sullivan provided the attached response after the conclusion of the meeting.

Q: Is the grant reflected in the amount being requested?

A: Ms. Sullivan explained that the grant would reduce the amount being requested. They are asking for the full amount to be able to order the equipment now.

Councilor Laredo motioned to approve which passed unanimously.

**Referred to Public Facilities and Finance Committees**

**#283-21** **Appropriate \$725,000 for the purchase of two 10-wheel swap loader trucks**  
HER HONOR THE MAYOR requesting authorization to appropriate and expend the sum of seven hundred twenty-five thousand dollars (\$725,000) and authorize a general obligation borrowing of an equal amount for the purchase of two 10-wheel swap loader trucks.

**Action:** **Public Facilities Approved 5-0 (Councilor Norton not voting)**

**Note:** Shawna Sullivan, Chief of Staff for DPW presented the request to appropriate and expend the sum of \$725,000 and authorize a general obligation borrowing of an equal amount for the purchase of two 10-wheel swap loader trucks. Ms. Sullivan explained that this is to replace two street division trucks that are over 15 years old, in poor condition and do not meet the emission requirements. She further explained that the swap loader trucks allow the department to use different attachments so it can be used for a number of jobs. The estimated life on the new equipment is 12 years.

It was questioned if this equipment is the most efficient on the market. Ms. Sullivan explained that they are for DPW's operations. She also explained that they have been looking at electric options but the technology is not proven yet.

Councilors noted that it is important to receive an update on the vehicle replacement program.

Councilor Crossley motioned to approve which passed 5-0 with Councilor Norton not voting.

**Referred to Public Facilities and Finance Committees**

**#284-21**

**Authorization to borrow up to \$20,837,000 from the MWRA**

HER HONOR THE MAYOR requesting authorization to borrow up to twenty million eight hundred thirty-seven thousand dollars (\$20,837,000) from the Massachusetts Water Resources Authority (MWRA) Local Water System Assistance Program Phase 3 as an interest free ten-year loan to be paid in equal, annual installments.

**Action: Public Facilities Approved 5-0 (Councilor Norton not voting)**

**Note:** Shawna Sullivan, Chief of Staff for DPW, presented the request for authorization to borrow up to \$20,837,000 from the Massachusetts Water Resources Authority (MWRA) Local Water System Assistance Program Phase 3 as an interest free ten-year loan to be paid in equal, annual installments. Ms. Sullivan explained that the City will be receiving \$2,083,700 per year. The City has participated in the MWRA's water pipeline assistance program since 1998 and has received approximately \$39.5 million dollars in interest free loans in this time. The current round of funding will be used to fund a portion of the water main improvements as outlined in the CIP. At this point the City has lined approximately 184 miles out of the 319 miles of water mains.

Councilor Kalis motioned to approve which passed 5-0 which passed 5-0 with Councilor Norton not voting.

The Committee adjourned at 7:37 p.m.

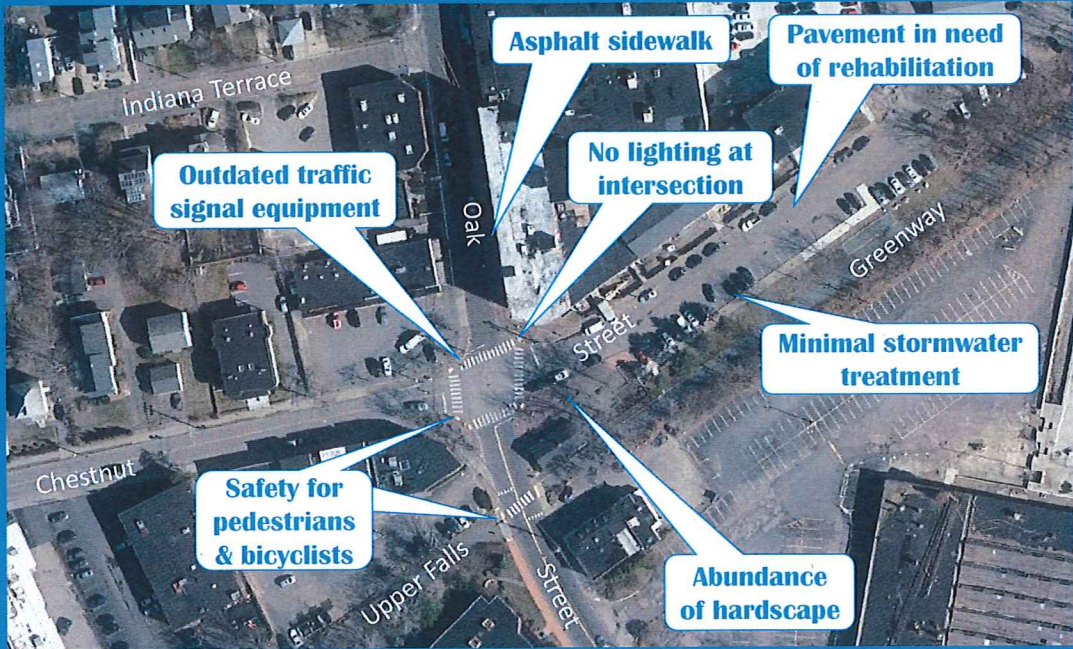
**Respectfully Submitted,**

**Alison Leary, Chair**



**Public Facilities Committee**  
**Pettee Square – Chestnut St / Oak St Intersection**  
**July 21, 2021**

**Existing Conditions**



## Project Goals

- Introduce streetscape and beautification opportunities
- Maintain historic character of area
- Create an attractive, functional space for residents, local businesses, and Greenway users
- Improve safety and accessibility for all users
- Enhance traffic operations
- Implement traffic calming measures
- Install stormwater improvements where feasible

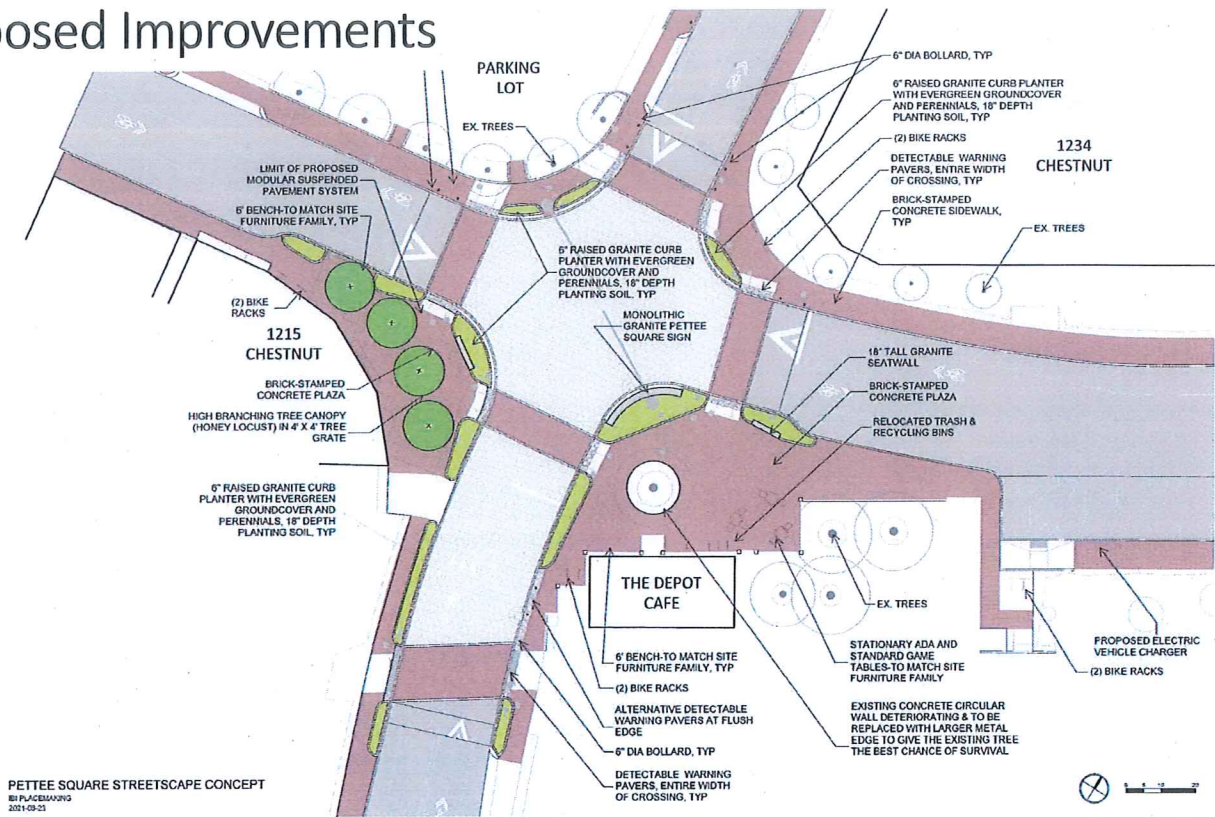
## Project Process

- Spring 2020 – MassWorks grant for design funding
- September 2020 – Held Public Information & comment meeting
- November 2020 – Upper Falls Historic District Commission
- January 2021 – Upper Falls Area Council
- June & July 2021 – Upper Falls Historic District Commission
- July 2021 – Public Facilities Committee

Collaborative effort, including:

- DPW
- Planning
- Parks & Rec
- Newton ADA/504 Coordinator
- Newton Fire Dept
- Engineering design consultant, TEC

## Proposed Improvements



## Pettee Square Traffic Data

- 9 vehicle crashes in the past 5 years
- 2017 pedestrian volume count peak hours:
  - 18 in the morning (7am-9am), 22 in the evening (4pm-6pm)
- With Northland pedestrian projection
  - 66 in the morning (7am-9am), 121 in the evening (4pm-6pm) without shuttle service
- 85<sup>th</sup> percentile speed along Oak Street westbound toward Chestnut Street recorded as 34 mph
- Speed limit is 25 mph on all intersection approaches

## Raised Intersection Benefits

- Create a safe, slow-speed pedestrian crossing
- Reinforce slow vehicle speeds
  - One of the most predictable traffic calming methods in reducing vehicle speeds
- Encourage motorists to yield to pedestrians
- Create a public space comfortable for pedestrians
  - Strong visual cue to be aware of non-motorized users
  - Proactive measure (not reactive) to accommodate anticipated increase in pedestrians
- Appropriate for emergency vehicle routes
- Consistent with City of Newton and MassDOT best practices including VisionZero and Complete Street Initiatives

## Next Steps

- Complete Final Design
- Pursue MassWorks grant for construction funding
- Prepare Bid Documents & advertise for construction





Here is the info on the emissions reduction for the new loader:

The main measured emissions in a modern diesel engine are as follows:

CO - carbon monoxide

PM - particulate matter (unburned/partially burned particles leftover from the combustion process)

NOx - oxides of nitrogen (compound of oxygen and nitrogen formed under a high pressure and temperature environment)

All measured in g/kw-hr - grams per kilowatt-hour

Replacement vehicle compared as the same model size:

2021 Volvo L90H

The engine is "Tier4 final" compliant

CO 3.5 g/kw-hr

PM .015 g/kw-hr

NOx .4 g/kw-hr

For this example vehicle:

30 % in CO reduction

95 % in PM reduction

94 % in NOx reduction

CITY OF NEWTON

IN CITY COUNCIL

August 9, 2021

ORDERED:

That, in accordance with the recommendation of the Public Facilities Committee, through its Chair Alison Leary, the following item be and is hereby approved:

**#290-21 Request for public way improvements at Pettee Square**

HER HONOR THE MAYOR requesting approval of the public way improvements at Pettee Square at the intersection of Chestnut Street and Oak Street as part of the Pettee Square streetscape enhancements, as detailed in the plans prepared by in accordance with City Ordinance 26-51. Intersection improvements include pedestrian, bicycle and vehicular safety in keeping with the city's complete streets initiative. The improvements include:

- A raised intersection
- Stamped sidewalks
- ADA pedestrian curb ramps

Under Suspension of Rules  
Readings Waived and Item Approved  
22 Yeas 0 Nays 2 Absent (Councilors Noel and Greenberg)



(SGD) NADIA H KHAN  
Acting City Clerk



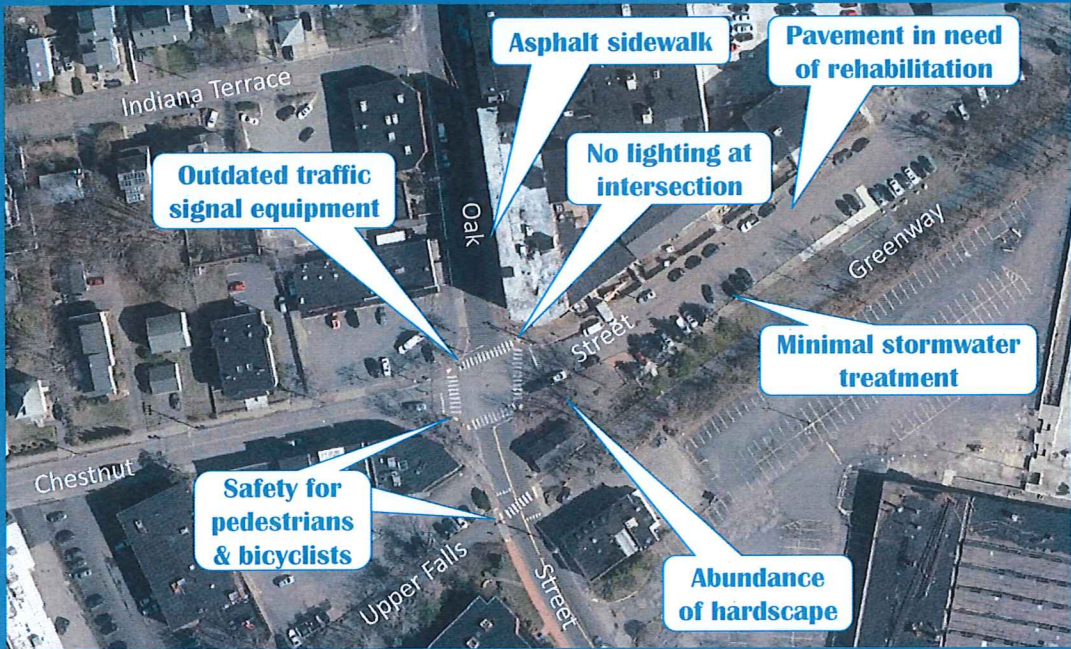
(SGD) RUTHANNE FULLER  
Mayor

8/20/2021



**Public Facilities Committee**  
**Pettee Square – Chestnut St / Oak St Intersection**  
**July 21, 2021**

**Existing Conditions**



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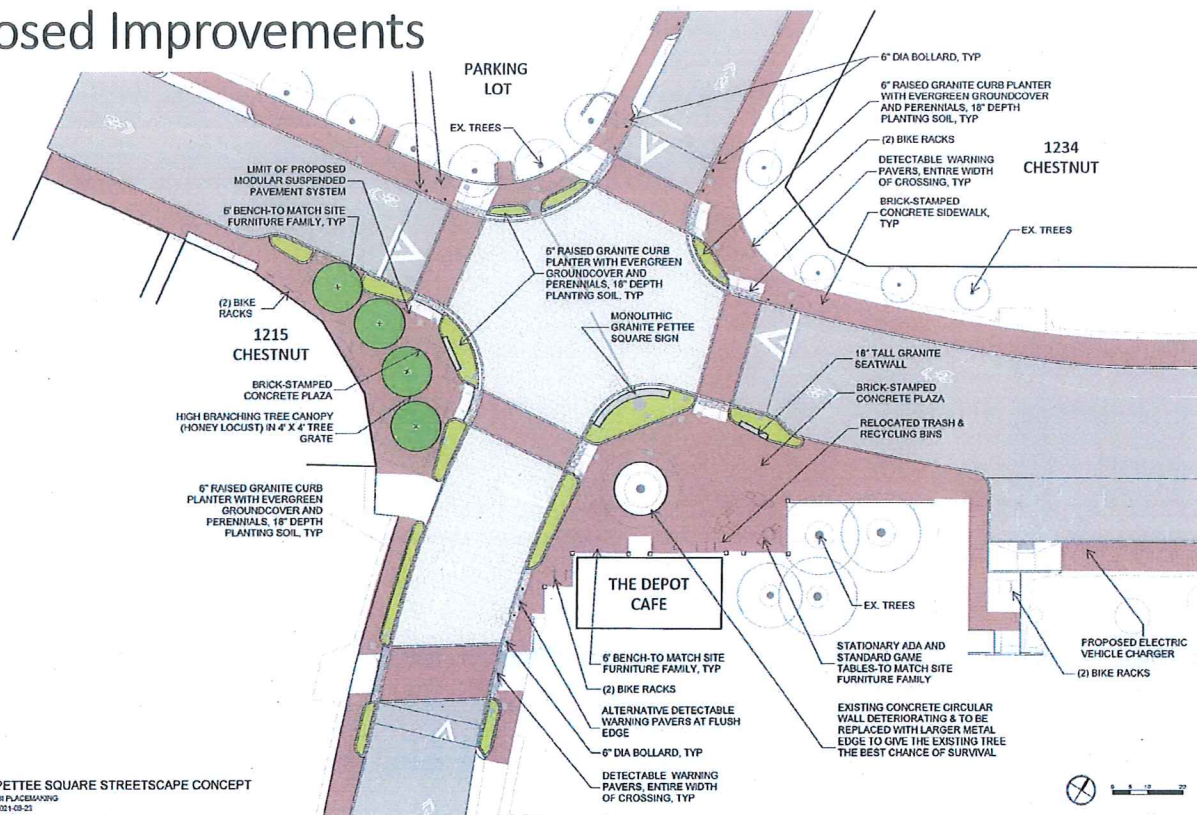
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- **Engineering design consultant, TEC**

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**Shawna Sullivan**

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**From:** Jason Sobel  
**Sent:** Tuesday, January 3, 2023 10:02 AM  
**To:** Shawna Sullivan  
**Subject:** RE: Pettee Square Report, Council Order  
**Attachments:** OAK & CHESTNUT STREET FINAL.pdf

Thanks Shawna.

There have been no substantial changes to the plans since the July 21, 2021 presentation to PF. The "100% plans" were completed in October 2021, and TEC is now working to put together the bid docs and stamp the plans.

If you'd like to look at the final plans, they are attached to this email.

Thanks,  
Jason

Jason S. Sobel, P.E., PTOE  
Director of Transportation Operations  
Department of Public Works  
City of Newton  
Office: 617-796-1476

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**From:** Shawna Sullivan <[ssullivan@newtonma.gov](mailto:ssullivan@newtonma.gov)>  
**Sent:** Tuesday, January 3, 2023 9:54 AM  
**To:** Jason Sobel <[jsobel@newtonma.gov](mailto:jsobel@newtonma.gov)>  
**Subject:** FW: Pettee Square Report, Council Order

**Shawna Sullivan**  
Deputy Commissioner of Public Works  
City of Newton  
**Phone:** 617-796-1049  
**Email:** [ssullivan@newtonma.gov](mailto:ssullivan@newtonma.gov)

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**From:** Thomas Skehill <[tskehill@newtonma.gov](mailto:tskehill@newtonma.gov)>  
**Sent:** Tuesday, January 3, 2023 9:48 AM  
**To:** Shawna Sullivan <[ssullivan@newtonma.gov](mailto:ssullivan@newtonma.gov)>  
**Subject:** Pettee Square Report, Council Order

Hi Shawna,

Attached is the report from 7-21-21 and signed council order for item #290-21. I also threw in the presentation from that night as well.

Please let me know if there's anything else I can track down.

Thanks,

**Tom Skehill**

**Council Clerk – Finance and Public Facilities**

**City of Newton**

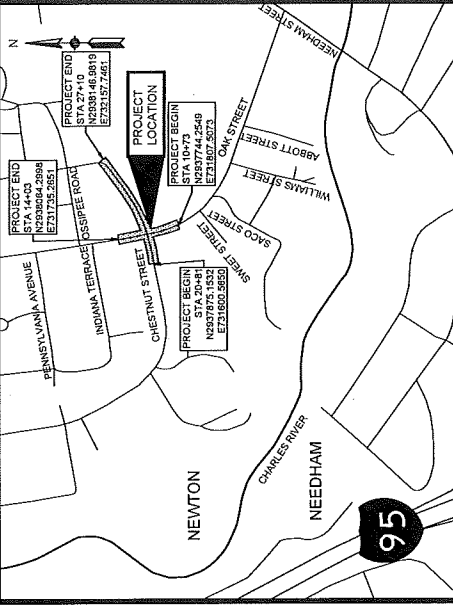
**Phone: 1 (617) 796 - 1218**

# TRANSPORTATION IMPROVEMENT PROJECT

INTERSECTION IMPROVEMENTS AT  
**PETTEE SQUARE**  
**OAK STREET & CHESTNUT STREET**

IN THE CITY OF  
**NEWTON**  
 MIDDLESEX COUNTY  
 COMMONWEALTH OF MASSACHUSETTS

## FINAL DESIGN SUBMITTAL



SHEET NO.	DESCRIPTION
1	TITLE SHEET & INDEX
2	LEGEND & ABBREVIATIONS
3	CONSTRUCTION NOTES
4	KEY PLAN
5-7	TYPICAL SECTIONS & PAVEMENT NOTES
8-9	CONSTRUCTION BASELINE TIE PLANS
10-11	CONSTRUCTION PLANS
12	PROFILES
13-14	CURB TIE PLANS
15	LANDSCAPE CURB TIE PLAN
16-17	GRADING PLANS
18-19	DRAINAGE & UTILITY PLANS
20-21	TRAFFIC SIGN & PAVEMENT MARKING PLANS
22	TRAFFIC SIGN SUMMARY
23-24	TRAFFIC SIGNAL PLANS
25-28	TEMPORARY TRAFFIC CONTROL PLANS
29-30	LANDSCAPE & LIGHTING PLANS
31	LANDSCAPE ENLARGEMENT PLAN
32-33	CONSTRUCTION DETAILS
34-35	LANDSCAPE & LIGHTING DETAILS
36	WHEELCHAIR RAMP & DRIVEWAY DETAILS
37-45	CROSS SECTIONS

**DESIGN DESIGNATION**

DESIGNATION	VALUE
DESIGN SPEED	30 MPH
ADT (2019)	9,003
ADT (2027)	10,189
K	8.3%
D	52%
T (PEAK HOUR)	1.0%
T (AVERAGE DAY)	2.0%
DDV	815
DDHV	426
FUNCTIONAL CLASSIFICATION	MAJOR COLLECTOR

THESE PLANS ARE SUBMITTED BY THE LATEST CITY OF NEWTON GENERAL CONSTRUCTION DETAILS, THE MASSDOT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, AS AMENDED BY THE SUPPLEMENTAL SPECIFICATION DATED JUNE 30, 2021, THE OCTOBER 2017 CONSTRUCTION STANDARD DETAILS, THE 2015 OVERHEAD SIGNAL STRUCTURE AND FOUNDATION CONSTRUCTION STANDARD DETAILS, THE 2015 UNDERHEAD SIGNAL STRUCTURE AND FOUNDATION CONSTRUCTION STANDARD DETAILS, THE 2015 OVERHEAD AND UNDERHEAD SIGNALS, THE 1990 STANDARD DRAWINGS FOR SIGNS AND SUPPORTS, THE 1985 STANDARD DRAWINGS FOR SIGNALS AND HIGHWAY LIGHTING, AND THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK.

DATE	DESCRIPTION	REV #
10/22/2021	FINAL DESIGN SUBMITTAL	2
1/15/2020	50% SUBMITTAL	1

**#18-23**

CITY OF NEWTON  
 MASSACHUSETTS  
 TITLE SHEET & INDEX  
 IMPROVEMENTS  
 AT  
 PETTEE SQUARE  
 OAK STREET AT CHESTNUT STREET

PREPARED BY:  
**TEC**  
 The Engineering Corp.

146 Duxcomb Road | 311 Main Street  
 Needham, MA 01949 | Needham, MA 01949  
 781-455-7474 | 781-455-7474

www.TheEngineeringCorp.com



LENGTH OF PROJECT = 999 FEET = 0.182 MILES



CITY OF NEWTON  
MASSACHUSETTS  
CONSTRUCTION NOTES  
FOR THE  
IMPROVEMENTS  
AT  
PETTEE SQUARE  
OAK STREET AT CHESTNUT STREET

SHEET 3 OF 45

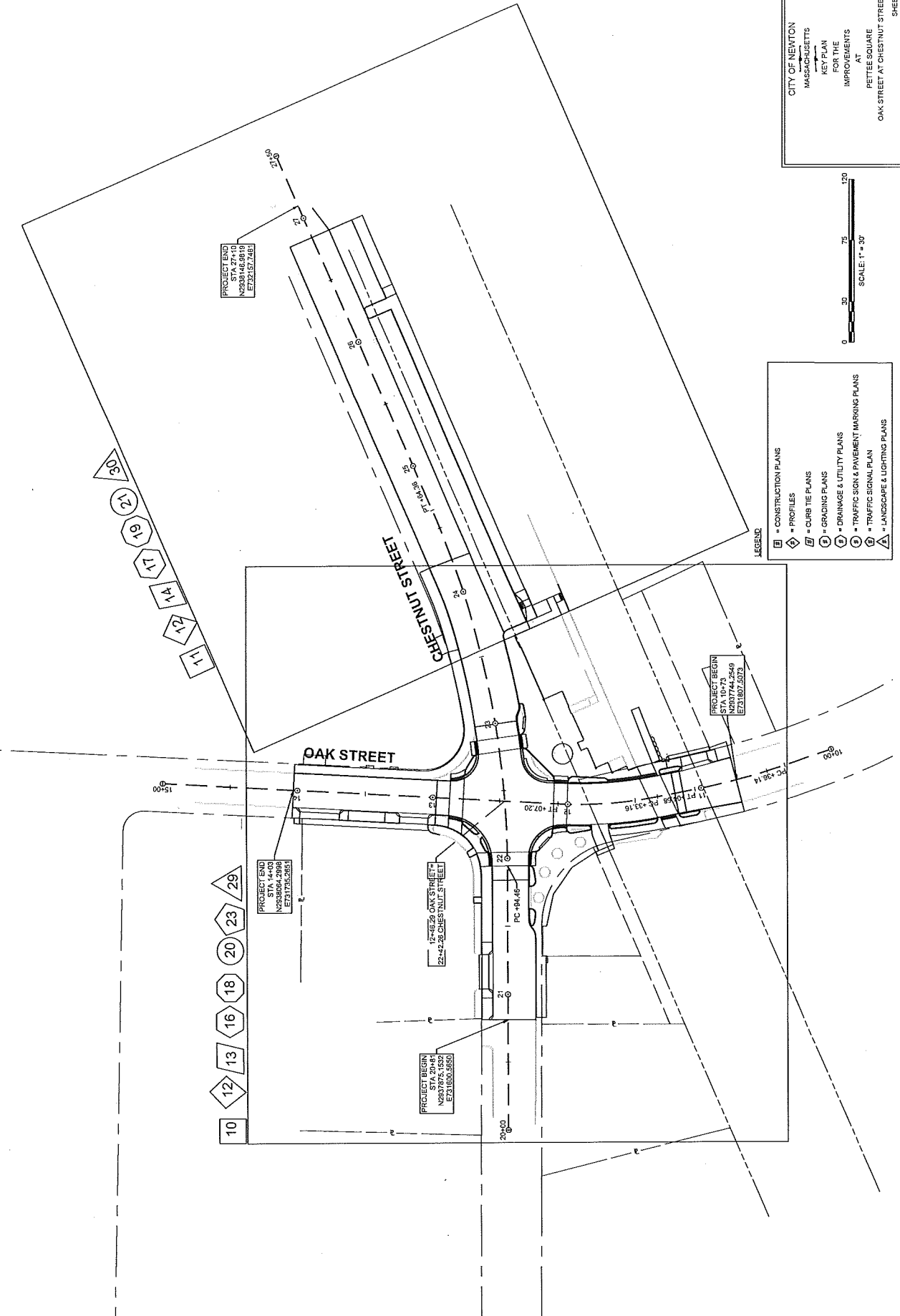
CONSTRUCTION NOTES:

1. EXISTING CONDITIONS INFORMATION COMPILED FROM SURVEY BY HANCOCK SURVEY ASSOCIATES, BOSTON, MA PERFORMED IN JULY, 2020.  
HORIZONTAL DATUM = NAD83 MASSACHUSETTS STATE PLANE COORDINATES  
VERTICAL DATUM = NAVD83
2. ALL EXISTING STATE, COUNTY, AND CITY LOCATION LINES HAVE BEEN ESTABLISHED FROM AN ACTUAL ON-THE-GROUND SURVEY. ALL PRIVATE PROPERTY LINES HAVE BEEN ESTABLISHED FROM AVAILABLE INFORMATION AND THEIR EXACT LOCATION ARE NOT GUARANTEED.
3. THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL CONTACT DIGSAFE (1-888-686SAFE) A MINIMUM OF 72 HOURS PRIOR TO ANY CONSTRUCTION TO VERIFY THE LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
4. 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 RESOLUTION OF THE CONFLICT.
5. ALL MUNICIPALLY OWNED UTILITY STRUCTURES (CATCH BASINS, DRAIN MANHOLES, WATER GATES, ETC.) SHALL BE ADJUSTED BY THE CONTRACTOR TO FINISHED GRADE UNLESS DIRECTED OTHERWISE. THE CONTRACTOR SHALL COORDINATE WITH PRIVATE UTILITY COMPANIES FOR THE ADJUSTMENT AND REPAIR, AS NECESSARY.
6. ALL PRIVATELY OWNED UTILITY STRUCTURES (GAS GATES, ELECTRIC TELEPHONE MANHOLES, ETC.) SHALL BE ADJUSTED TO FINISHED GRADE BY THE PRIVATE UTILITY COMPANY, UNLESS DIRECTED OTHERWISE. THE CONTRACTOR SHALL COORDINATE WITH PRIVATE UTILITY COMPANIES FOR THE ADJUSTMENT AND REPAIR, AS NECESSARY.
7. PROPOSED LATERAL DRAIN PIPES SHALL BE INSTALLED WITH A PITCH OF 1.0% (TYP) / 0.5% (MINIMUM) UNLESS OTHERWISE NOTED.
8. 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.
9. ALL DISTURBED AREAS OUTSIDE THE CURBLINE SHALL BE STABILIZED WITH 4" LOAM AND SEED, UNLESS OTHERWISE NOTED.
10. THE TERM "PROPOSED" (PROP) MEANS WORK TO BE CONSTRUCTED USING NEW MATERIALS OR, WHERE APPLICABLE, RE-USING EXISTING MATERIALS IDENTIFIED AS "REMOVE AND RESET" (RAR), AS APPROVED BY THE ENGINEER.
11. THE TERM "MEET EXIST" MEANS TO MEET BOTH THE EXISTING ALIGNMENT AND ELEVATION.
12. AN UNOBSTRUCTED PATH OF TRAVEL WITH A MINIMUM WIDTH OF 3'-0" (EXCLUDING THE WIDTH OF CURB) SHALL BE MAINTAINED PAST ALL OBSTRUCTIONS (UTILITY POLES, LIGHT POLES, SIGNS, MAILBOXES, ALONG DRIVEWAY OPENINGS, ETC.)
13. DETECTABLE WARNING PANELS ARE REQUIRED ON ALL PROPOSED WHEELCHAIR RAMPS AND SHALL BE INSTALLED IN ACCORDANCE WITH MASSDOT AND CITY OF NEWTON CONSTRUCTION STANDARDS.
14. IN INSTANCES WHERE AN EXISTING MANHOLE, HANDHOLE, OR OTHER "SURFACE" TYPE STRUCTURE THAT CANNOT BE REMOVED OR RESET IS WITHIN THE PROPOSED OR EXISTING (IF RECIPROCAL OR WITHIN PROJECT LIMITS) CURB RAMP, THE STRUCTURE SHALL BE CAREFULLY ADJUSTED SUCH THAT THE TOPMOST SURFACES OR THE STRUCTURE COVER SHALL BE FLUSH WITH THE CURB RAMP SURFACES.



CITY OF NEWTON  
MASSACHUSETTS

DESIGNED BY: RLC  
CHECKED BY: LSA  
APPROVED BY: LSA



- LEGEND**
- ▭ = CONSTRUCTION PLANS
  - ◊ = PROFILES
  - ◻ = CURB TIE PLANS
  - ▭ = GRADING PLANS
  - ② = DRAINAGE & UTILITY PLANS
  - ③ = TRAFFIC SIGN & PAVEMENT MARKING PLANS
  - ④ = TRAFFIC SIGNAL PLAN
  - △ = LANDSCAPE & LIGHTING PLANS



**PAVEMENT NOTES**

PROPOSED HMA MILL & OVERLAY

SURFACE: 1 1/2" SUPERPAVE SURFACE COURSE - 12.5 (SSC - 12.5) OVER VARIABLE DEPTH (COMPACTED IN 2" MAX LIFTS) SUPERPAVE LEVELING COURSE - 3.5 (SLC - 4.5) (AS REQUIRED TO MEET PROPOSED LINES AND GRADES)  
 VARIABLE DEPTH (MIN 1 1/2") PAVEMENT MICROMILLING (SEE NOTE 6 BELOW)  
 VARIABLE DUAL DEPTH PAVEMENT

PROPOSED 4" SUPERPAVE SURFACE COURSE - 12.5 (SSC - 12.5) OVER 2" SUPERPAVE INTERMEDIATE COURSE - 12.5 (SLC - 12.5) OVER 4" SUPERPAVE INTERMEDIATE COURSE - 19.0 (SLC - 19.0) OVER SUBBASE: 4" DENSE GRADED CRUSHED STONE OVER 8" GRAVEL BORROW, TYPE B

PROPOSED CEMENT CONCRETE PEDESTRIAN CURB RAMP LEVEL LANDINGS  
 SURFACE: 8" CEMENT CONCRETE WITH LAPLACK 2 LB OF ENLARGED 7% AIR ENTRAINED, 4000 PSI, 3", 3/16" PER MASSDOT STD SPEC MA 02.00  
 BASE: 8" GRAVEL BORROW, TYPE B

PROPOSED STAMPED CEMENT CONCRETE WALKWAYS/SIDEWALKS  
 SURFACE: 4" CEMENT CONCRETE (AIR ENTRAINED, 4000 PSI, 3", 610)  
 BASE: 8" GRAVEL BORROW, TYPE B

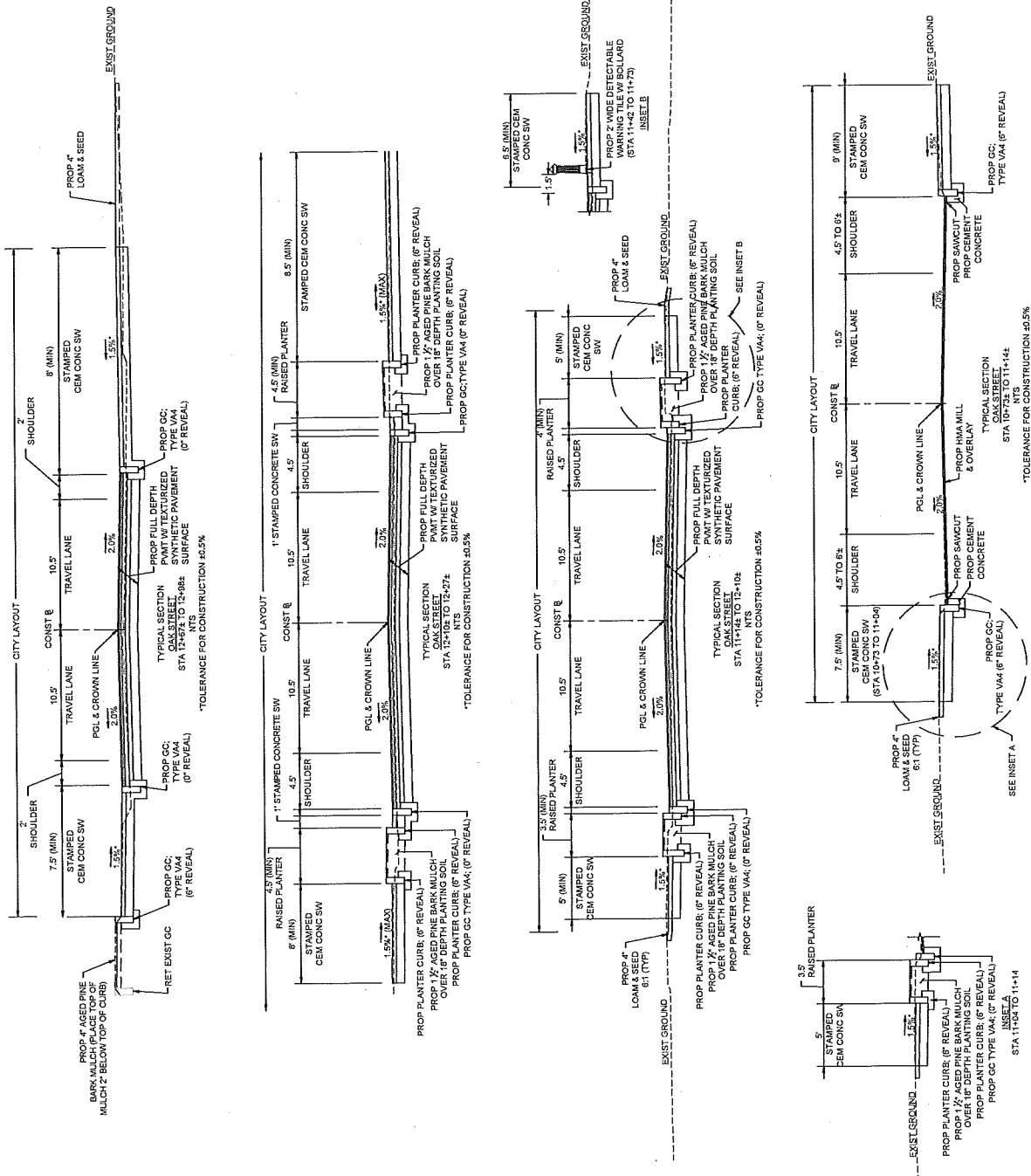
PROPOSED CEMENT CONCRETE SIDEWALK THROUGH DRIVEWAY/STAMPED CEMENT CONCRETE SIDEWALK THROUGH DRIVEWAY  
 SURFACE: 8" CEMENT CONCRETE (AIR ENTRAINED, 4000 PSI, 3", 610)  
 BASE: 8" GRAVEL BORROW, TYPE B

PROPOSED HMA DRIVEWAY (TO MATCH EXISTING)  
 SURFACE: 1 1/2" HMA SURFACE COURSE OVER 2" HMA INTERMEDIATE COURSE OVER 8" SUITABLE EXISTING GRAVEL, ADD GRAVEL BORROW, TYPE B AS REQUIRED  
 PROPOSED POROUS PAVEMENT  
 SEE DETAIL ON SHEET 33

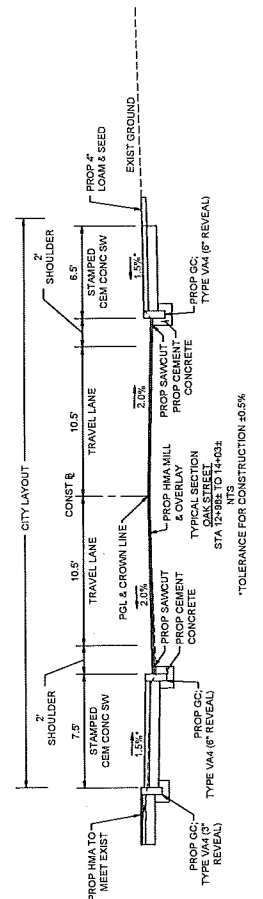
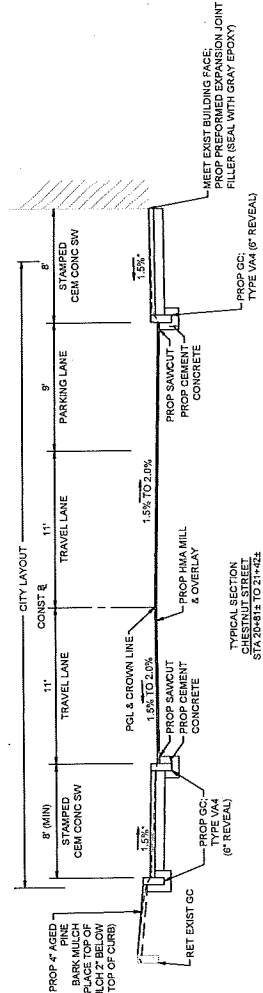
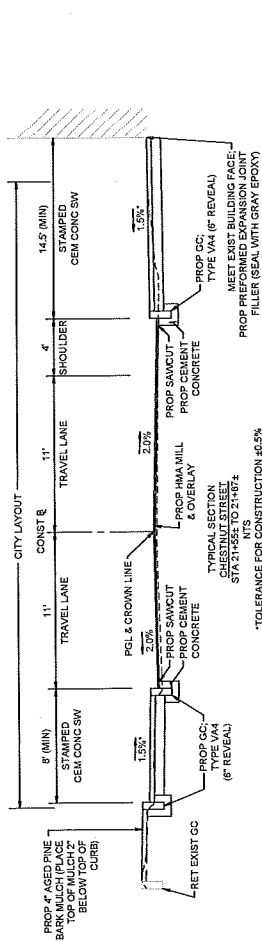
**GENERAL PAVEMENT NOTES:**

1. ASPHALT EMULSION FOR TACK COAT SHALL BE APPLIED BETWEEN ALL ASPHALT SURFACES AND SAWCUT JOINTS BEFORE PAVING. HMA JOINT SEALANT SHALL BE APPLIED TO ALL COLD JOINTS (LONGITUDINAL AND TRANSVERSE) BEFORE PAVING SURFACE COURSE. ASPHALT EMULSION FOR TACK COAT SHALL BE APPLIED IN SPACES BETWEEN SURFACES. SURFACES SHALL BE CLEAN OF ALL ORGANICS, DEBRIS, AND SAND PRIOR TO PAVING.
2. ALL HMA SHOULD BE IN ACCORDANCE WITH SECTION 450.
3. ASPHALT EMULSION FOR TACK COAT SHALL BE RS-1H TO RESIST TRACKING OF TACK BY HAUL VEHICLES.
4. HMA FOR WALKS AND DRIVEWAYS SHALL BE IN ACCORDANCE WITH SECTION 720.
5. ALL GRAVEL BORROW MEETING SPECIFICATIONS SHALL BE RETAINED IN PLACE, COMPACTED, AND LEVELED AS REQUIRED.
6. VARIABLE DEPTH MILLING (1/2" MIN) AS REQUIRED TO MEET PROPOSED LINES AND GRADES WITH RESURFACING OVERLAY.

CITY OF NEWTON  
 MASSACHUSETTS  
 TYPICAL SECTIONS & PAVEMENT NOTES - 1 OF 3  
 FOR THE  
 IMPROVEMENTS  
 AT  
 PETTEE SQUARE  
 OAK STREET AT CHESTNUT STREET  
 SHEET 5 OF 45



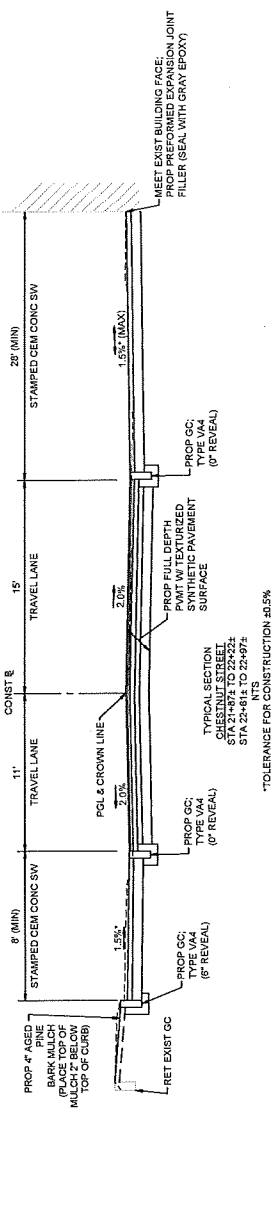
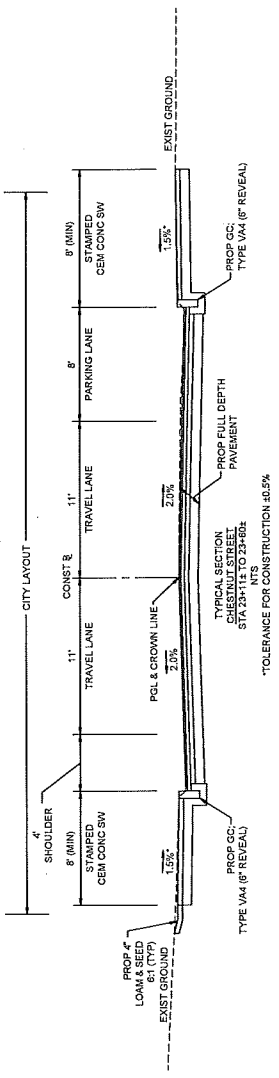
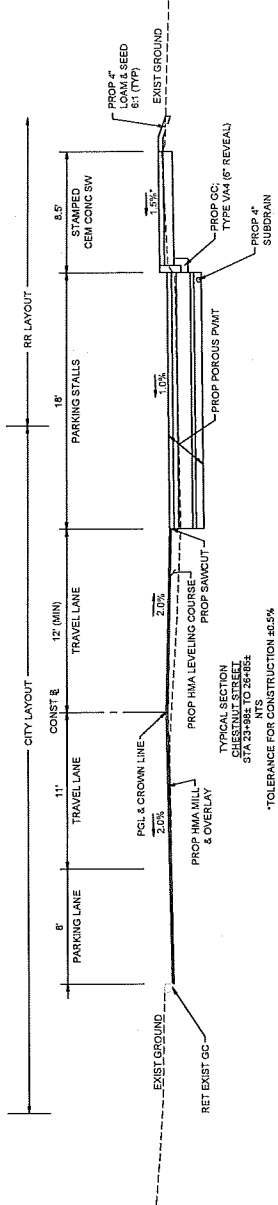
CITY OF NEWTON  
MASSACHUSETTS  
FOR THE  
IMPROVEMENTS  
AT  
PETTEE SQUARE  
OAK STREET AT CHESTNUT STREET  
SHEET 6 OF 45



17019.MXD(TYPICAL SECTIONS) DWG P034649 25-Oct-2011 2:39 PM



CITY OF NEWTON  
 MASSACHUSETTS  
 TYPICAL SECTIONS & PAVEMENT NOTES - 3 OF 3  
 FOR THE  
 IMPROVEMENTS  
 AT  
 PETTEE SQUARE  
 OAK STREET AT CHESTNUT STREET  
 SHEET 7 OF 45



11010.HDR(TYPICAL SECTIONS) DWG PLOT# 44 25-04-2017 2:33 PM

CITY OF NEWTON  
 MASSACHUSETTS  
 CONSTRUCTION BASELINE TIE PLANS - 1 OF 2  
 IMPROVEMENTS  
 AT  
 PETTEE SQUARE  
 OAK STREET AT CHESTNUT STREET  
 SHEET 9 OF 45

17101 HGS\CONSTRUCTION\BASELINE TIE PLANS.DWG  
 Project: 25-01-2017 2.34 PM

**OAK STREET CONSTRUCTION BASELINE DATA**

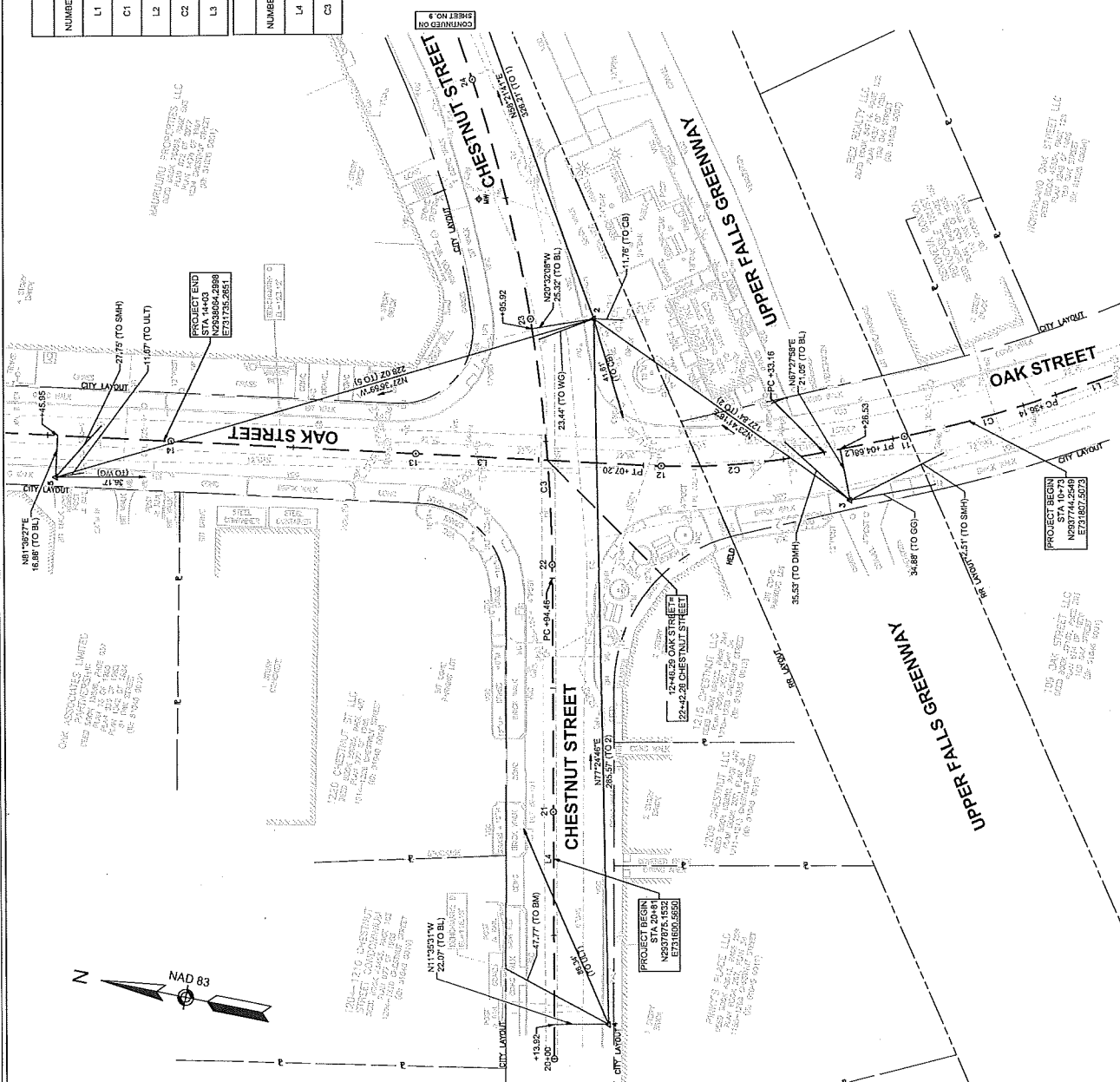
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L1	10+00.00	293786.0253	731843.2460		N80°23'51"W 38.14'	10+36.14	293771.8625	731824.9635
C1	10+36.14	293771.8625	731824.9635	R=500.00' L=88.54' T=54.32'	Δ=7°51'14"	11+04.68	293773.1120	731794.4481
L2	11+04.68	293773.1120	731794.4481		N22°33'27"W 28.48'	11+35.16	293796.4187	731783.8334
C2	11+35.16	293796.4187	731783.8334	R=300.00' L=74.04' T=57.23'	Δ=1°09'29"	12+07.20	293780.6013	731763.8420
L3	12+07.20	293780.6013	731763.8420		N6°29'14"W 432.26'	15+00.00	293816.0211	731721.1077

**CHESTNUT STREET CONSTRUCTION BASELINE DATA**

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L4	20+00.00	293785.8770	731521.2171		N78°24'29"E 184.48'	21+84.48	293787.9519	731711.7112
C3	21+84.48	293787.9519	731711.7112	R=650.00' L=208.88' T=136.62'	Δ=2°47'29"	24+64.36	293804.7458	731957.4707

**Survey Traverse Point Table**

Point #	Northing	Easting	Elevation	Raw Description
2	293789.2291	731817.592	120.034	MTRV MMAG
3	293785.222	731786.631	118.108	MTRV MCHL
4	293784.057	731536.284	117.574	MTRV MCHL
5	293810.4328	731712.296	123.089	MTRV MCHL



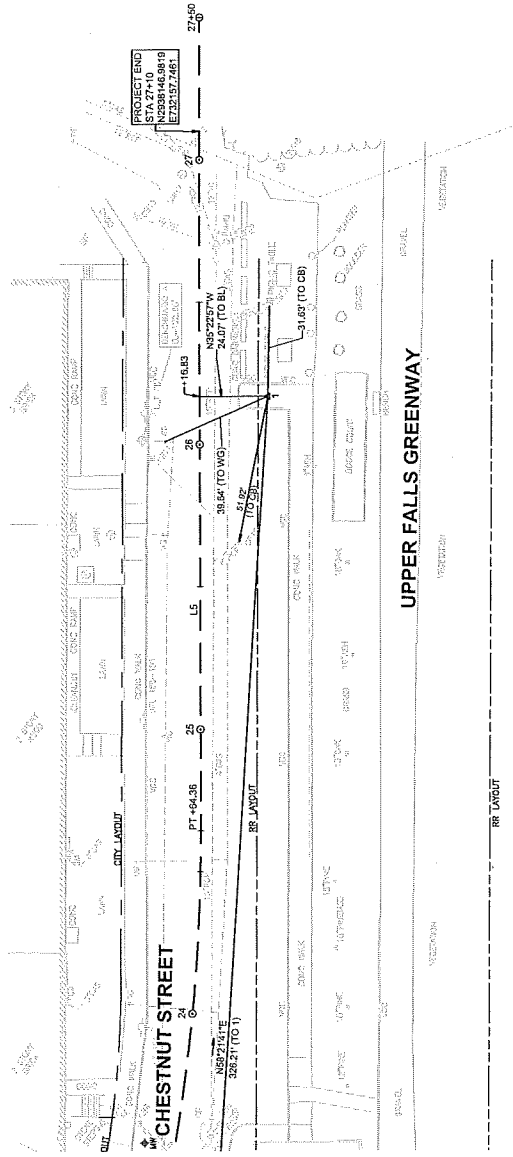
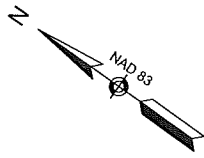
CITY OF NEWTON  
 MASSACHUSETTS  
 CONSTRUCTION BASELINE PLANS - 2 OF 2  
 FOR THE  
 IMPROVEMENTS  
 AT  
 PETTEE SQUARE  
 OAK STREET AT CHESTNUT STREET  
 SHEET 9 OF 45

CHESTNUT STREET CONSTRUCTION BASELINE DATA

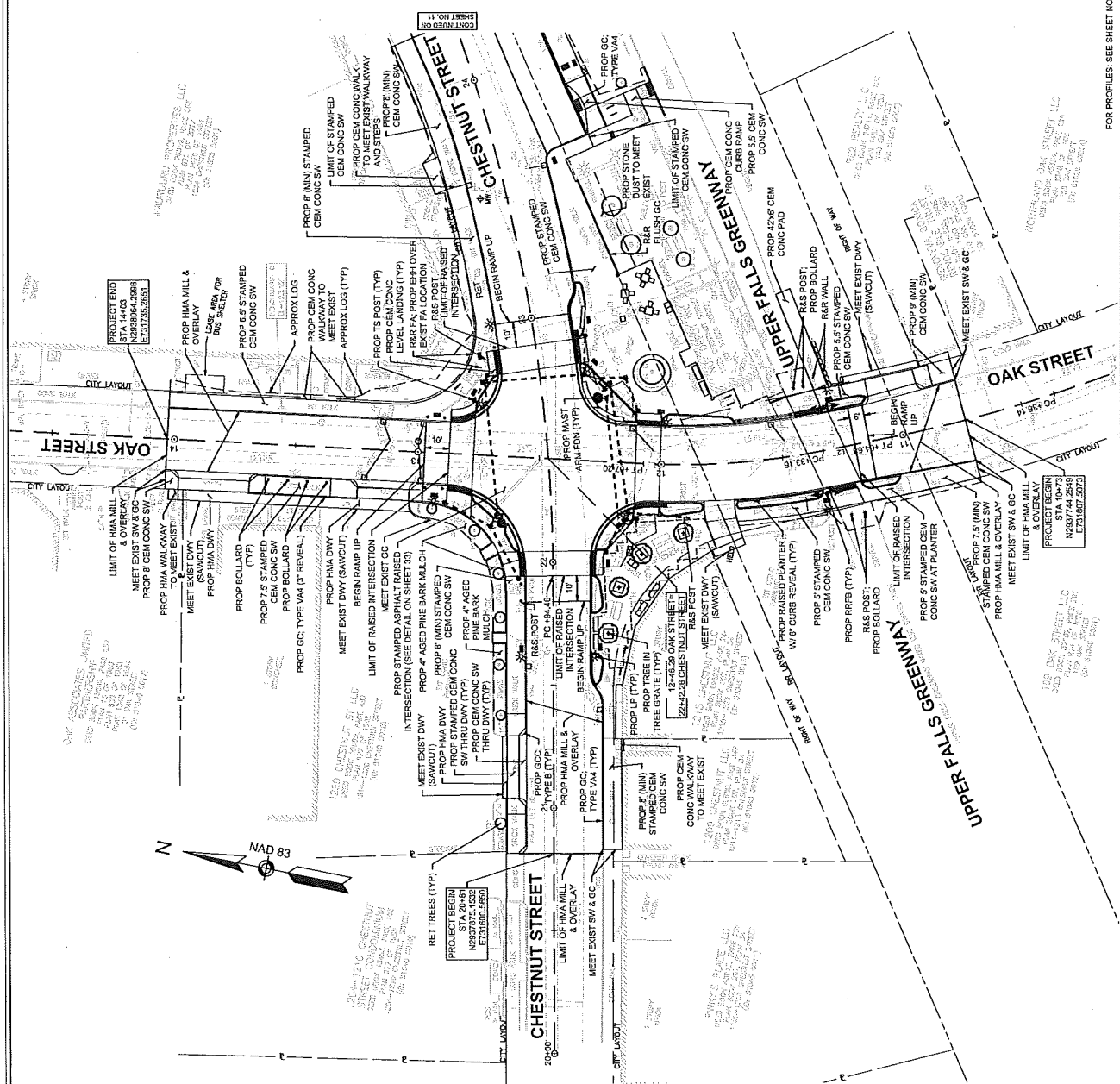
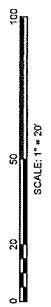
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
CS	21+64.48	2937697.8519	731711.7172	R=650.00' Δ=23°47'20" L=269.88' T=138.52'		24+64.36	2938004.7458	731957.4707
LS	24+64.36	2938004.7458	731957.4707		N65°37'03"E 285.64'	27+50.00	2938770.1431	732190.3893

Survey Traverse Point Table

Point #	Northing	Easting	Elevation	Row Description
1	2938073.408	732095.718	120.135	MTRV MCHL



CITY OF NEWTON  
MASSACHUSETTS  
CONSTRUCTION PLANS - 1 OF 2  
IMPROVEMENTS  
AT  
PETTEE SQUARE  
OAK STREET AT CHESTNUT STREET  
SHEET 10 OF 15

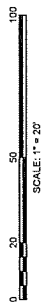


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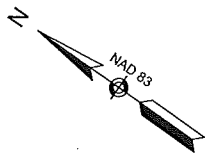
FOR PROFILES - SEE SHEET NO. 12

DESIGNED BY: RLC	CITY OF NEWTON
CHECKED BY: RLC	MASSACHUSETTS
APPROVED BY: LSA	
LSA	

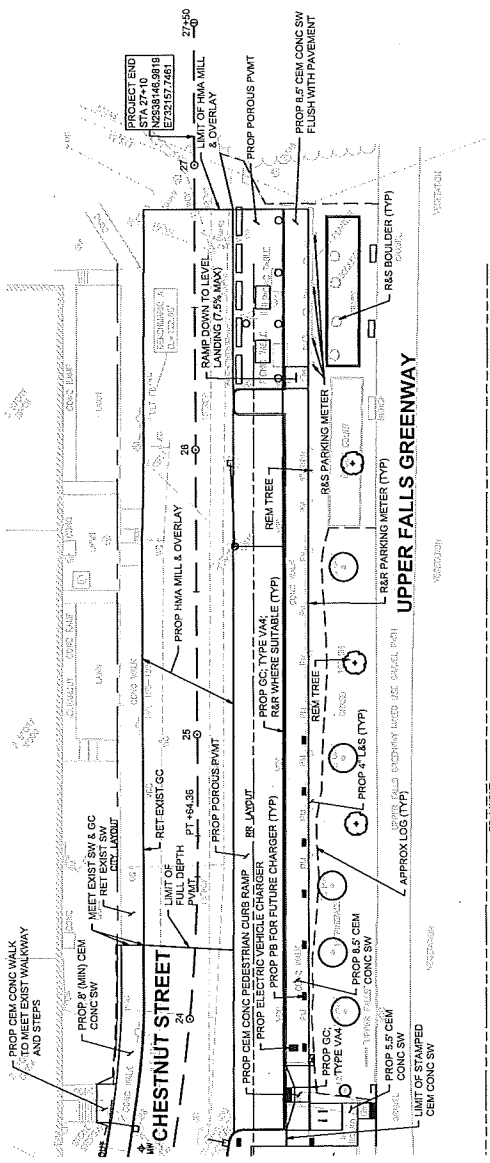
CITY OF NEWTON  
 MASSACHUSETTS  
 CONSTRUCTION PLANS - 1 OF 2  
 FOR THE  
 IMPROVEMENTS  
 AT  
 PETTEE SQUARE  
 OAK STREET AT CHESTNUT STREET  
 SHEET 11 OF 45



FOR PROFILE SEE SHEET NO. 12



1010 J:\PROJECTS\18-23\18-23-11.dwg P:\SHEET\18-23-11.dwg 2/24/2011 2:34 PM



CONTINUED ON SHEET NO. 10

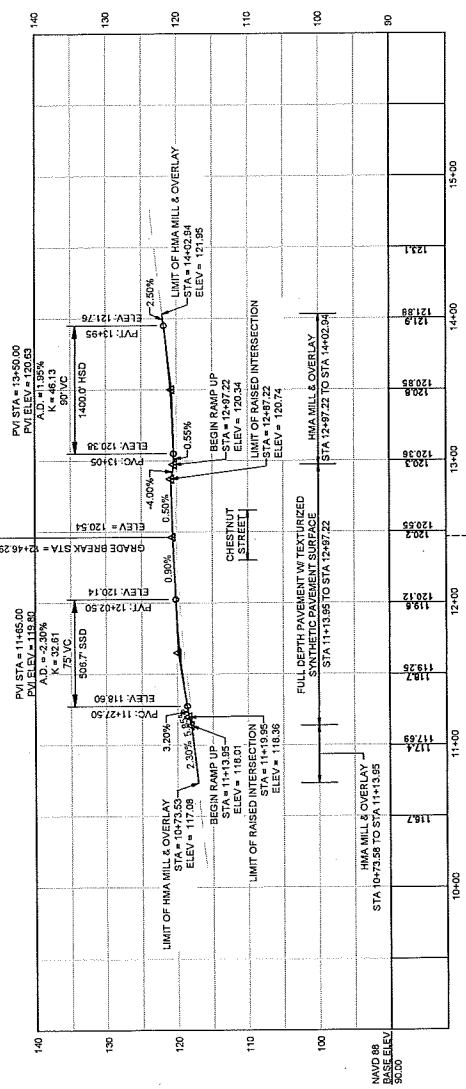
MASSACHUSETTS REGISTERED PROFESSIONAL ENGINEER  
 No. 10214  
 JOHN J. HAYES, P.E.  
 100 CENTRE STREET, SUITE 200  
 NEWTON, MA 02459  
 TEL: 781.552.1000  
 FAX: 781.552.1001  
 WWW.JJHAYES.COM

DESIGNED BY: BJC  
 CHECKED BY: LSA  
 APPROVED BY: LSA

CITY OF NEWTON  
 MASSACHUSETTS

CITY OF NEWTON  
 MASSACHUSETTS  
 PROFILES  
 FOR THE  
 IMPROVEMENTS  
 AT  
 PETTEE SQUARE  
 OAK STREET AT CHESTNUT STREET  
 SHEET 12 OF 45

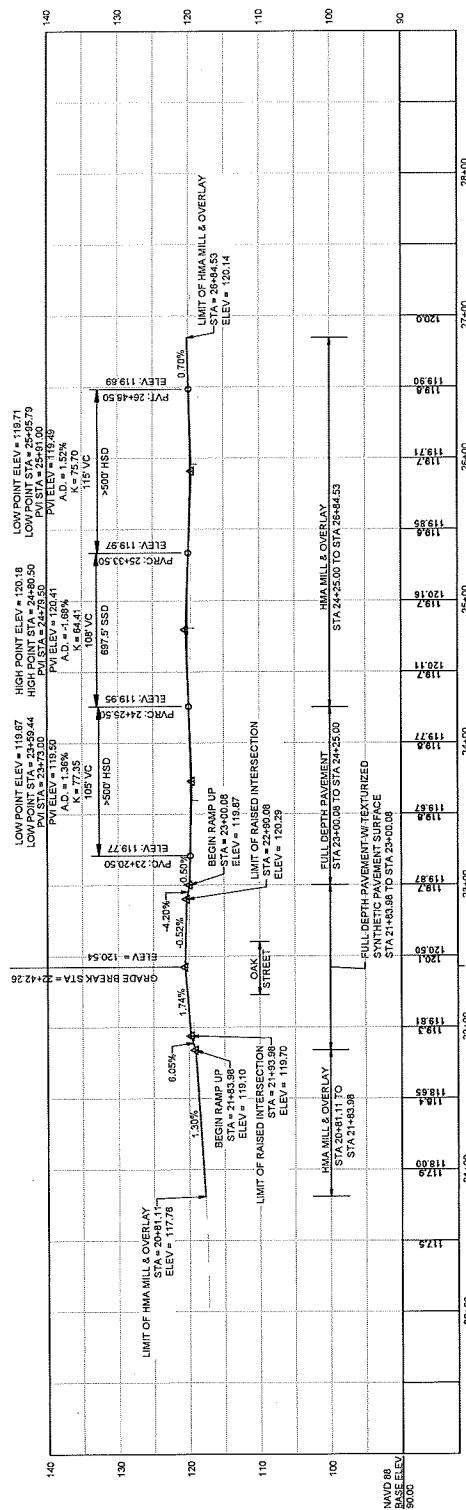
**OAK STREET**



FOR CONSTRUCTION PLAN:  
 SEE SHEET NO. 10

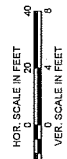
[ STA 12+46.29 OAK ST @  
 STA 12+46.29 CHESTNUT ST ]

**CHESTNUT STREET**



FOR CONSTRUCTION PLANS:  
 SEE SHEET NOS. 10-11

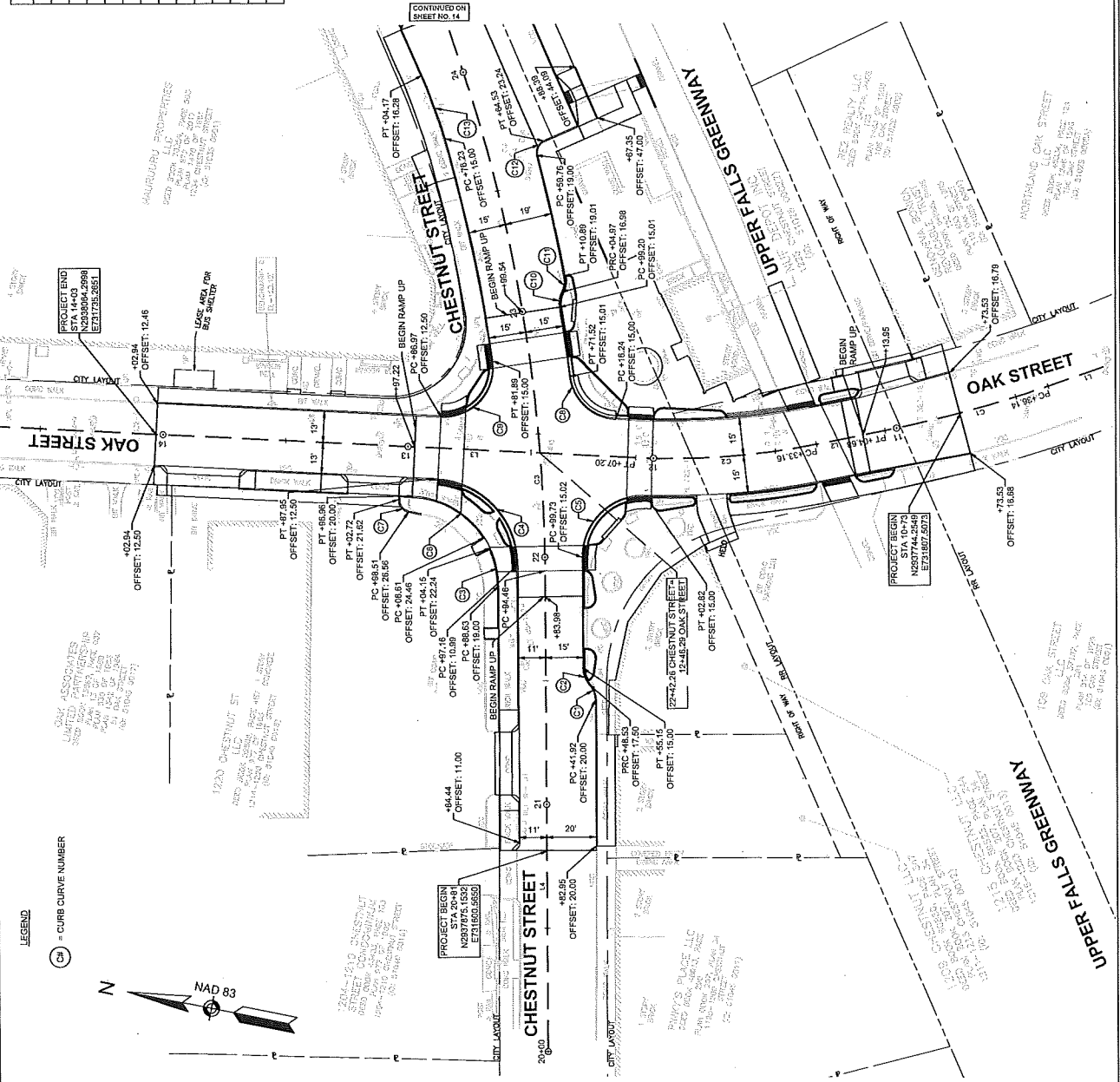
[ STA 22+12.28 OAK ST @  
 STA 22+12.28 CHESTNUT ST ]



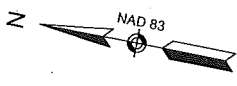
CITY OF NEWTON  
 MASSACHUSETTS  
 CURB TIE PLANS - 1 OF 2  
 IMPROVEMENTS  
 AT  
 PETTEE SQUARE  
 OAK STREET AT CHESTNUT STREET

CURVE TABLE

CURVE #	DELTA	RADIUS	LENGTH	TANGENT
C1	41°24'35"	10.00	7.23	3.78
C2	41°24'35"	10.00	7.23	3.78
C3	24°35'05"	38.50	15.66	7.35
C4	60°48'02"	35.00	19.02	13.10
C5	52°21'13"	25.00	40.00	26.05
C6	54°38'20"	38.50	34.70	18.84
C7	60°52'05"	5.00	7.06	4.28
C8	50°00'21"	38.50	27.93	15.76
C9	100°54'22"	20.00	35.22	24.22
C10	35°21'27"	10.00	6.35	3.28
C11	57°23'16"	10.00	6.53	3.38
C12	81°02'38"	5.00	7.07	4.27
C13	7°49'57"	200.00	27.34	13.69



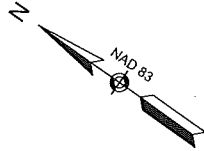
LEGEND  
 (C#) = CURB CURVE NUMBER



CITY OF NEWTON  
 MASSACHUSETTS  
 CURB TIE PANS - 1 OF 2  
 FOR THE  
 IMPROVEMENTS  
 AT  
 PETTEE SQUARE  
 OAK STREET AT CHESTNUT STREET  
 SHEET 14 OF 15

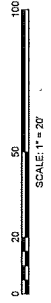
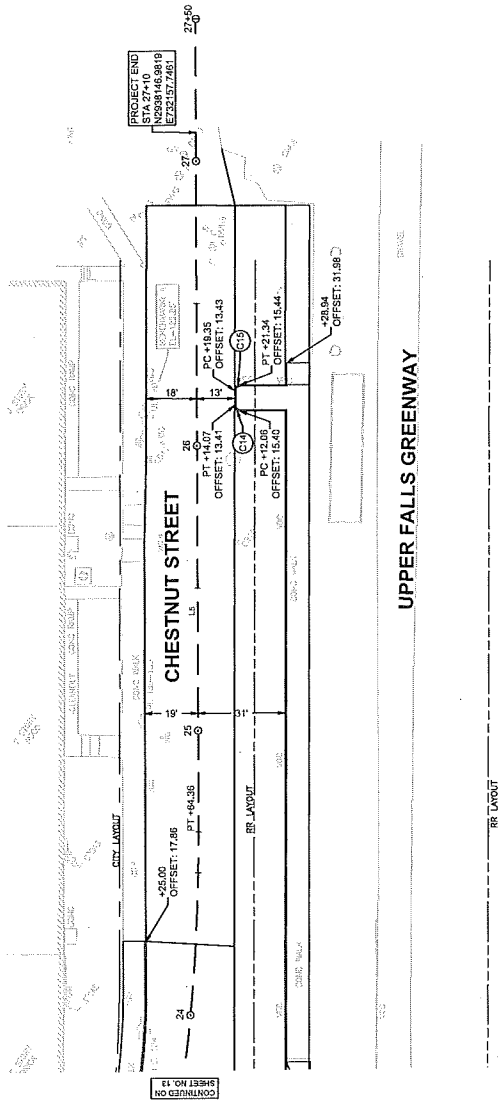
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CURVE TABLE			
CURVE #	DELTA	RADIUS	TANGENT
C14	90° 00' 00"	2.00	3.14
C15	90° 00' 00"	2.00	3.14



LEGEND  
 (C) = CURB CURVE NUMBER

MASSACHUSETTS PROFESSIONAL ENGINEERING BOARD  
 REG. NO. 10000  
 10000  
 10000  
 10000



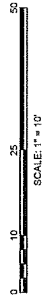
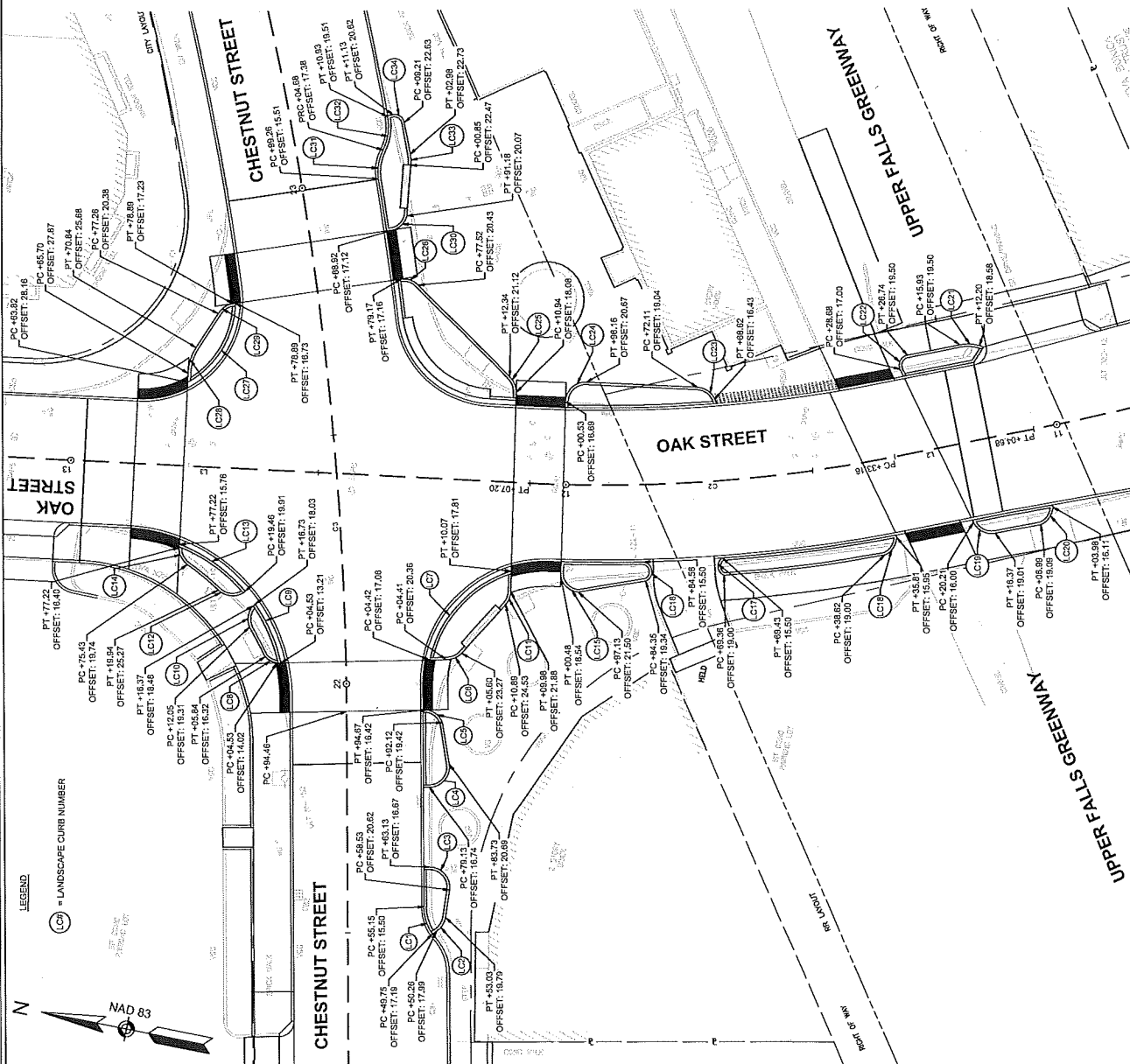


CITY OF NEWTON  
 MASSACHUSETTS  
 LANDSCAPE CURBSIDE PLANS - 1 OF 1  
 FOR THE  
 IMPROVEMENTS  
 AT  
 PETTEE SQUARE  
 OAK STREET AT CHESTNUT STREET  
 SHEET 15 OF 45

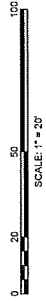
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LANDSCAPE CURVE TABLE				
CURVE #	DELTA	RADIUS	LENGTH	TANGENT
LC21	27°49'25"	6.00	3.88	1.50
LC22	104°23'37"	2.00	3.64	2.58
LC23	60°15'20"	4.00	4.42	2.48
LC24	91°08'02"	4.00	6.36	4.08
LC25	48°43'05"	4.00	3.47	1.85
LC26	54°44'40"	4.00	3.82	2.07
LC27	50°11'35"	18.50	19.38	10.68
LC28	31°16'38"	10.00	5.46	2.80
LC29	52°12'45"	4.00	3.65	1.98
LC30	56°04'44"	4.00	3.91	2.13
LC31	39°00'59"	9.49	5.86	3.08
LC32	37°23'18"	10.50	8.85	3.55
LC33	15°54'10"	8.00	2.22	1.12
LC34	89°50'06"	2.00	3.14	1.69

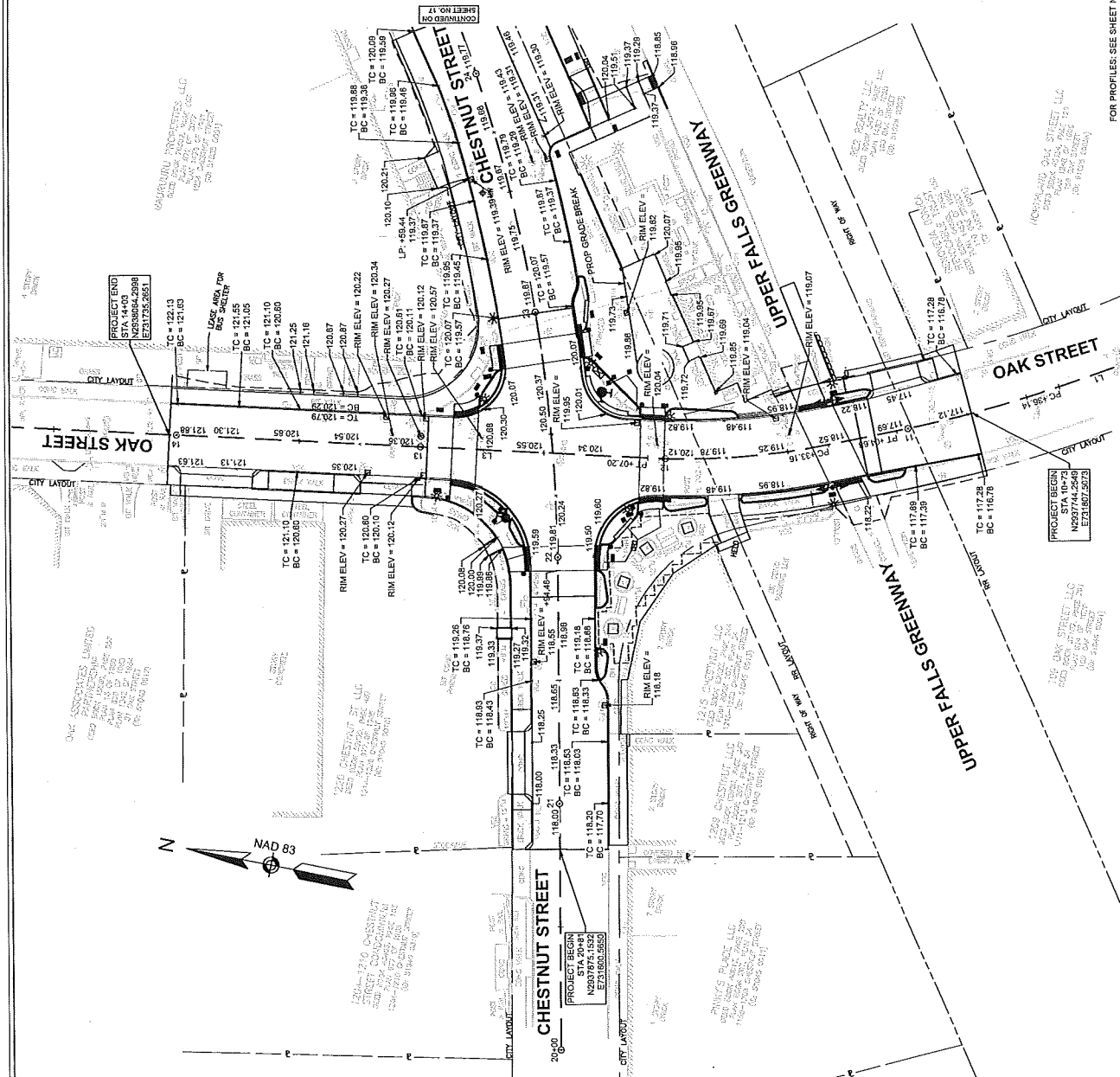
LANDSCAPE CURVE TABLE				
CURVE #	DELTA	RADIUS	LENGTH	TANGENT
LC1	34°29'14"	5.00	5.75	2.98
LC2	45°49'39"	4.00	3.41	1.82
LC3	88°38'08"	4.00	6.69	4.55
LC4	58°38'08"	4.00	6.69	4.55
LC5	58°38'38"	4.00	4.12	2.26
LC6	46°38'48"	4.00	3.24	1.72
LC7	61°51'57"	23.50	25.37	14.68
LC8	38°22'21"	4.00	2.68	1.39
LC9	22°06'49"	33.50	12.83	6.55
LC10	63°43'51"	4.00	4.45	2.49
LC11	41°01'08"	4.00	2.88	1.50
LC12	85°25'08"	4.00	5.86	3.69
LC13	28°02'40"	33.50	16.40	8.37
LC14	58°31'04"	4.00	3.95	2.15
LC15	70°50'31"	4.00	4.95	2.84
LC16	122°06'37"	2.00	4.26	3.62
LC17	149°07'35"	2.00	5.20	7.21
LC18	54°21'10"	4.00	4.49	2.52
LC19	75°07'28"	4.00	5.24	3.68
LC20	54°03'20"	4.00	4.47	2.50



CITY OF NEWTON  
MASSACHUSETTS  
GRADING PLANS - 1 OF 2  
FOR THE  
IMPROVEMENTS  
AT  
PETTEE SQUARE  
OAK STREET AT CHESTNUT STREET  
SHEET 16 OF 45



11010JMD1210(18)A(0-10)DWG Project# 18-01-2011 2:39 PM



FOR PROFILES, SEE SHEET NO. 12

PROJECT END  
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E1237682581

PROJECT BEGIN  
STA. 16+73  
N29377467.2499  
E1237682581

CHESTNUT STREET  
20+00

CITY OF NEWTON  
MASSACHUSETTS

DESIGNED BY: B.C.  
CHECKED BY: L.S.A.  
APPROVED BY: L.S.A.

CITY OF NEWTON  
 MASSACHUSETTS  
 GRADING PLANS - 1 OF 2  
 FOR THE  
 IMPROVEMENTS  
 AT  
 PETTEE SQUARE  
 OAK STREET AT CHESTNUT STREET

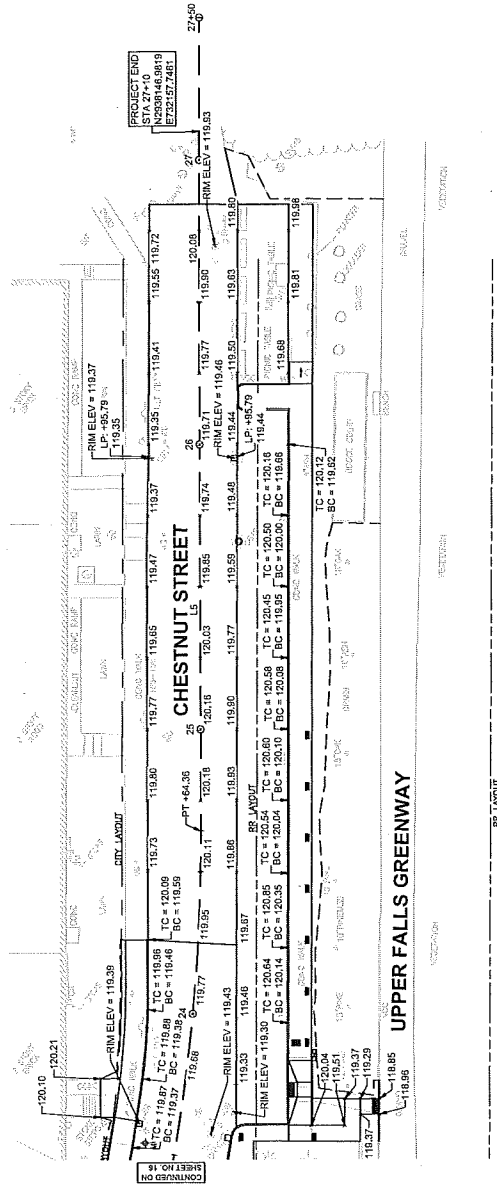
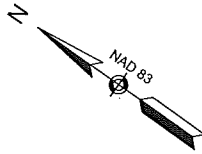
SHEET 17 OF 45



FOR PROFILE: SEE SHEET NO. 12

MAINTENANCE SUPERVISOR  
 480 S. WEST STREET, SUITE 100  
 NEWTON, MASSACHUSETTS 01946  
 TEL: 781.552.3333  
 FAX: 781.552.3334

1109.H(12)(04.03) DWG PLS(EN 10-03-2017 2:39 PM)



DESIGNED BY R.C.  
 CHECKED BY: R.M.  
 DESIGN DRAWN BY: R.M.  
 CHECKED BY: L.S.A.  
 APPROVED BY: L.S.A.

CITY OF NEWTON  
 MASSACHUSETTS

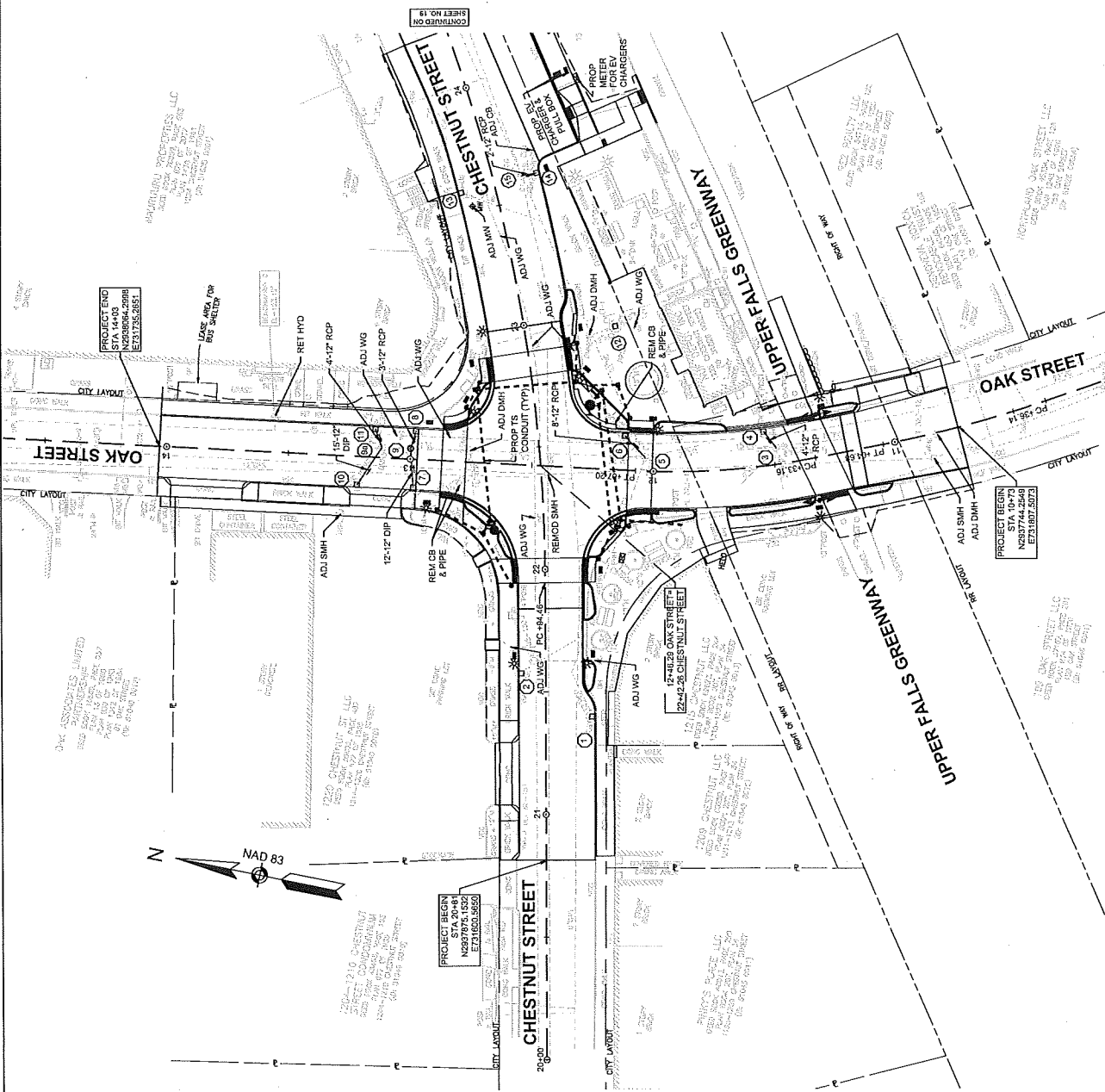


CONTINUED ON SHEET NO. 18

CITY OF NEWTON  
 MASSACHUSETTS  
 DRAINAGE & UTILITY PLANS - 1 OF 2  
 FOR THE  
 IMPROVEMENTS  
 AT  
 PETTEE SQUARE  
 OAK STREET AT CHESTNUT STREET

PROPOSED DRAINAGE STRUCTURE DATA					
NO.	TYPE	STATION	RIM ELEV.	INV. ELEV. IN / INV. ELEV. OUT	REMARKS
1	PROP CBCI	21+98.0, 19.0' RT	118.18	114.7 (EX)	4" SUMP REM EXIST CB
2	PROP CBCI	21+57.6, 10.0' LT	118.55	115.6 (EX)	4" SUMP REM EXIST CB
3	EXIST DMH	11+48.5, 8.7' RT	119.07	109.9 (EX) 110.6 (EX) 110.4 (EX) 115.4 (FROM 4)	EXIST DMH 2; SHALLOW 4" SUMP CORE HOLE IN EXIST
4	PROP CB	11+53.0, 14.0' RT	119.04	115.54	4" SUMP
5	EXIST DMH	12+03.6, 5.7' RT	120.04	114.5 (FROM 6) 116.8 (EX) 110.6 (EX)	EXIST DMH 1; ADJUST
6	PROP CB	12+12.4, 14.0' RT	119.95	115.95	4" SUMP
7	PROP SPECIAL CB	12+98.2, 11.5' LT	120.12	117.12	SHALLOW 4" SUMP
8	PROP CB	12+98.2, 11.5' RT	120.12	116.82	OFFSET TOP 4" SUMP
9	PROP DMH	13+00.1, 4.2' RT	120.27	117.28 (FROM 7) 116.92 (FROM 6) 111.63	MATCH EXIST CONSTRUCT OVER EXIST PIPE
9a	EXIST DMH	13+00.1, 4.2' RT	120.34	117.17 (FROM 10) 116.82 (FROM 11) 111.84	MATCH EXIST ADJUST
10	PROP SPECIAL CB	13+21.2, 11.5' LT	120.27	117.27	SHALLOW 4" SUMP; REM EXIST CB
11	PROP CBCI	13+14.7, 11.5' RT	120.22	117.5 (EX)	4" SUMP REM EXIST CB
12	PROP CB	22+437.37, 0' RT	119.64	117.0 (EX)	4" SUMP REM EXIST CB
13	PROP CBCI	23+58.0, 14.0' LT	119.36	117.1 (EX)	4" SUMP REM EXIST CB
14	PROP CB	23+54.5, 18.0' RT	119.28	115.78	4" SUMP
15	EXIST DMH	23+89.4, 11.8' RT	119.40	111.4 (EX) 114.4 (EX) 115.08 (FROM 14)	EXIST DMH 7; ADJUST; CORE HOLE IN EXIST

DATE: 08/11/2014  
 TIME: 10:00 AM  
 DRAWN BY: [Name]  
 CHECKED BY: [Name]  
 PROJECT NO: [Number]  
 SHEET NO: [Number]

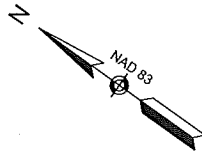


CITY OF NEWTON  
MASSACHUSETTS  
DRAINAGE & UTILITY PLANS - 2 OF 2  
IMPROVEMENTS  
AT  
PETTEE SQUARE  
OAK STREET AT CHESTNUT STREET  
SHEET 19 OF 45

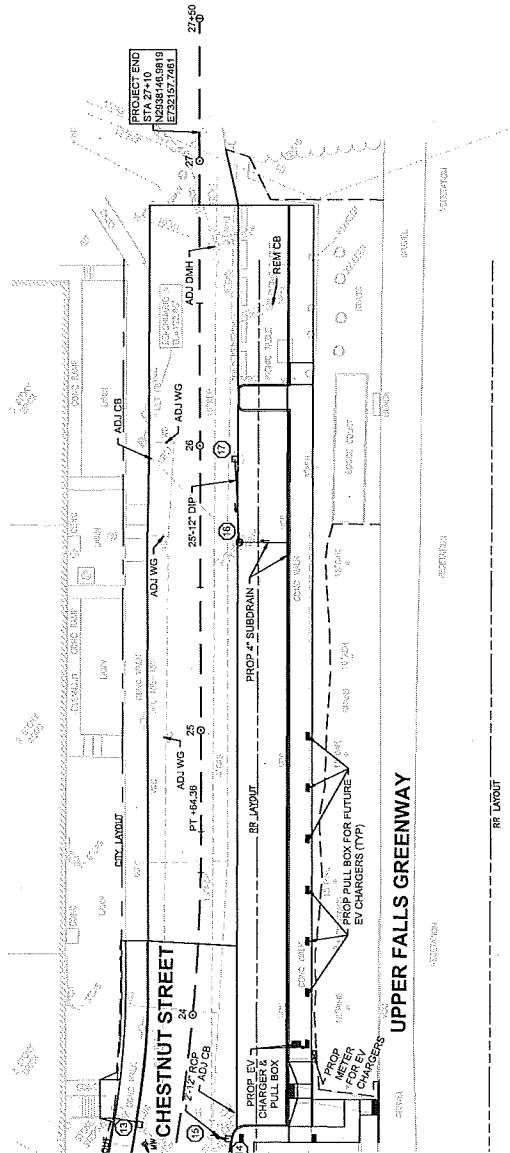


NO.	TYPE	PROPOSED DRAINAGE STRUCTURE DATA				REMARKS
		STATION	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	
13	PROP CBCI	23+59.0, 14.0' LT	119.26	117.1 (EX)	114.8 (EX)	4' SUMP, REM EXIST CB
14	PROP CB	23+54.5, 18.0' RT	119.26	-	115.78	4' SUMP
15	EXIST DMH	23+59.4, 11.8' RT	119.40	111.4 (EX) 115.88 (FROM 14)	111.4 (EX)	EXIST DMH 7, ADJUST CORE HOLE IN EXIST
18	CIT TO DMH	25+65.9, 13.9' RT	119.92	116.30 (FROM 17) 116.30 (SUBDRAIN)	116.3 (EX)	
17	PROP SPECIAL CB	29+95.2, 12.3' RT	119.47	-	116.47	SHALLOW OFFSET TOP, 4' SUMP

EXCESSIVE DRAINAGE SHALL BE  
 1. 1/4" DIA. 1/4" DEPT. HOLES  
 2. 1/4" DIA. 1/4" DEPT. HOLES  
 3. 1/4" DIA. 1/4" DEPT. HOLES  
 4. 1/4" DIA. 1/4" DEPT. HOLES  
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WATSON PROPERTY LLC  
 100 STATE STREET, SUITE 200  
 NEWTON, MA 02459  
 TEL: 781.552.8888  
 FAX: 781.552.8889  
 WWW.WATSONPROPERTY.COM



CONTINUED ON SHEET NO. 18

# TRANSPORTATION IMPROVEMENT PROJECT

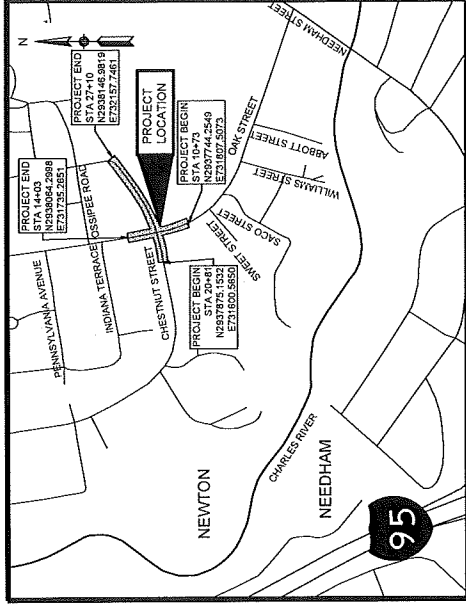
INTERSECTION IMPROVEMENTS AT  
**PETTEE SQUARE**  
**OAK STREET & CHESTNUT STREET**

IN THE CITY OF  
**NEWTON**

MIDDLESEX COUNTY  
 COMMONWEALTH OF MASSACHUSETTS

## FINAL DESIGN SUBMITTAL

SHEET NO.	INDEX DESCRIPTION
1	TITLE SHEET & INDEX
2	LEGEND & ABBREVIATIONS
3	CONSTRUCTION NOTES
4	KEY PLAN
5-7	TYPICAL SECTIONS & PAVEMENT NOTES
8-9	CONSTRUCTION BASELINE TIE PLANS
10-11	CONSTRUCTION PLANS
12	PROFILES
13-14	CURB TIE PLANS
15	LANDSCAPE CURB TIE PLAN
16-17	GRADING PLANS
18-19	DRAINAGE & UTILITY PLANS
20-21	TRAFFIC SIGN & PAVEMENT MARKING PLANS
22	TRAFFIC SIGN SUMMARY
23-24	TRAFFIC SIGNAL PLANS
25-28	TEMPORARY TRAFFIC CONTROL PLANS
29-30	LANDSCAPE & LIGHTING PLANS
31	LANDSCAPE ENLARGEMENT PLAN
32-33	CONSTRUCTION DETAILS
34-35	LANDSCAPE & LIGHTING DETAILS
36	WHEELCHAIR RAMP & DRIVEWAY DETAILS
37-45	CROSS SECTIONS

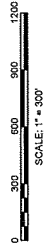


**DESIGN DESIGNATION**

OAK STREET

DESIGN SPEED	30 MPH
ADT (2019)	9,803
ADT (2027)	10,199
K	8.3%
D	52%
T (PEAK HOUR)	1.0%
T (AVERAGE DAY)	2.0%
DHV	815
DDHV	428
FUNCTIONAL CLASSIFICATION	MAJOR COLLECTOR

THESE PLANS ARE SUPPLEMENTED BY THE LATEST CITY OF NEWTON GENERAL CONSTRUCTION SPECIFICATIONS, THE LATEST MASSACHUSETTS GENERAL CONSTRUCTION SPECIFICATIONS, AS AMENDED BY THE SUPPLEMENTAL SPECIFICATION DATED JUNE 30, 2021, THE OCTOBER 2017 CONSTRUCTION STANDARD DETAILS, THE 2015 OVERHEAD SIGNAL STRUCTURE AND FOUNDATION STANDARD DRAWINGS, MASSDOT TRAFFIC MANAGEMENT PLANS AND DETAIL DRAWINGS, THE 1990 STANDARD SPECIFICATIONS FOR HIGHWAY MATERIALS, THE LATEST EDITIONS OF THE MUTCD SIGNALS AND HIGHWAY LIGHTING, AND THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK.



LENGTH OF PROJECT = 959 FEET = 0.182 MILES

DATE	DESCRIPTION	REV #
11/02/2021	FINAL DESIGN SUBMITTAL	2
11/02/2021	CON SUBMITTAL	1

**#18-23**

PREPARED BY:  
  
 146 Dismore Road | 311 Main Street | 169 Ocean Blvd, Unit 3  
 Needham, MA 02462 | Needham, MA 02462 | Needham, MA 02462  
 781-794-1752 | 781-794-1752 | 781-794-1752

CITY OF NEWTON  
 MASSACHUSETTS  
 FOR THE  
 IMPROVEMENTS  
 AT  
 PETTEE SQUARE  
 OAK STREET AT CHESTNUT STREET

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GENERAL SYMBOLS		TRAFFIC SYMBOLS		ABBREVIATIONS		ABBREVIATIONS (cont.)	
EXISTING	PROPOSED	EXISTING	PROPOSED	GENERAL	GENERAL	GENERAL	GENERAL
				ADOT	ANNUAL AVERAGE DAILY TRAFFIC	ADOT	ANNUAL AVERAGE DAILY TRAFFIC
				ADJ	ADJUST	ADJ	ADJUST
				APPROX	APPROXIMATE	APPROX	APPROXIMATE
				A.C.	ASPHALT CONCRETE	A.C.	ASPHALT CONCRETE
				ACCM	ACCM PIPE	ACCM	ACCM PIPE
				BIT	BITUMINOUS	BIT	BITUMINOUS
				BL	BOTTOM OF CURB	BL	BOTTOM OF CURB
				BLOG	BASELINE	BLOG	BASELINE
				BM	BUILDING	BM	BUILDING
				BY	BY OTHERS	BY	BY OTHERS
				BOB	BOTTOM OF SLOPE	BOB	BOTTOM OF SLOPE
				BR	BRIDGE	BR	BRIDGE
				BRB	BRIDGE BASIN	BRB	BRIDGE BASIN
				BRF	BRIDGE BASIN WITH CURB INLET	BRF	BRIDGE BASIN WITH CURB INLET
				BRG	BRIDGE GRAB	BRG	BRIDGE GRAB
				BRM	BENCHMARK	BRM	BENCHMARK
				BS	BY OTHERS	BS	BY OTHERS
				BSB	STONE BOUND	BSB	STONE BOUND
				BSH	STONE BOX	BSH	STONE BOX
				BSI	SHOULDER	BSI	SHOULDER
				BSM	SEWER MANHOLE	BSM	SEWER MANHOLE
				BSN	STONE	BSN	STONE
				BSO	STREET	BSO	STREET
				BSR	STATION	BSR	STATION
				BSU	STATE HIGHWAY LAYOUT LINE	BSU	STATE HIGHWAY LAYOUT LINE
				BSV	STOPPING SIGHT DISTANCE	BSV	STOPPING SIGHT DISTANCE
				BSW	TANGENT	BSW	TANGENT
				BSX	TANGENT DISTANCE OF CURVE/TRUCK %	BSX	TANGENT DISTANCE OF CURVE/TRUCK %
				BT	POINT OF VAGENCY	BT	POINT OF VAGENCY
				BU	POINT OF VERTICAL INTERSECTION	BU	POINT OF VERTICAL INTERSECTION
				BVC	POINT OF VERTICAL TANGENCY	BVC	POINT OF VERTICAL TANGENCY
				BVM	RADIUS OF CURVATURE	BVM	RADIUS OF CURVATURE
				BVP	REMOVE AND DISPOSE	BVP	REMOVE AND DISPOSE
				BVR	REMOVE AND DISPOSE	BVR	REMOVE AND DISPOSE
				BVS	REMOVE AND DISPOSE	BVS	REMOVE AND DISPOSE
				BVT	REMOVE AND DISPOSE	BVT	REMOVE AND DISPOSE
				BVU	REMOVE AND DISPOSE	BVU	REMOVE AND DISPOSE
				BVW	REMOVE AND DISPOSE	BVW	REMOVE AND DISPOSE
				BVX	REMOVE AND DISPOSE	BVX	REMOVE AND DISPOSE
				BVY	REMOVE AND DISPOSE	BVY	REMOVE AND DISPOSE
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				BWP	REMOVE AND DISPOSE	BWP	REMOVE AND DISPOSE
				BWQ	REMOVE AND DISPOSE	BWQ	REMOVE AND DISPOSE

CITY OF NEWTON  
 MASSACHUSETTS  
 DESIGNED BY: BRT, INC.  
 CHECKED BY: LSA  
 APPROVED BY: LSA

CITY OF NEWTON  
 MASSACHUSETTS  
 LEGEND & ABBREVIATIONS  
 FOR THE  
 IMPROVEMENTS  
 AT  
 PETTEE SQUARE  
 OAK STREET AT CHESTNUT STREET

CABINET  
 CLOSED CIRCUIT VIDEO EQUIPMENT  
 DW STEADY DON'T WALK  
 FDW FLASHING DON'T WALK  
 FR FLASHING RED  
 FRR FLASHING RED RIGHT ARROW  
 FRY FLASHING RED RIGHT ARROW  
 FYL FLASHING YELLOW LEFT ARROW  
 FYR FLASHING YELLOW RIGHT ARROW  
 G STEADY GREEN  
 GSR STEADY GREEN SLASH RIGHT ARROW  
 GSV STEADY GREEN SLASH LEFT ARROW  
 GVL STEADY GREEN LEFT ARROW  
 GVR STEADY GREEN RIGHT ARROW  
 GVS STEADY GREEN VERTICAL ARROW  
 OL OVERLAP  
 PRED PREDICTION  
 RZ ZOOM  
 RL STEADY RED  
 RR STEADY RED RIGHT ARROW  
 TR SIG TRAFFIC SIGNAL  
 TSC TRAFFIC SIGNAL CONDUIT  
 Y STEADY YELLOW  
 YL STEADY YELLOW LEFT ARROW

CITY OF NEWTON  
MASSACHUSETTS  
CONSTRUCTION NOTES  
FOR THE  
IMPROVEMENTS  
AT  
PETTEE SQUARE  
OAK STREET AT CHESTNUT STREET  
SHEET 3 OF 45

CONSTRUCTION NOTES:

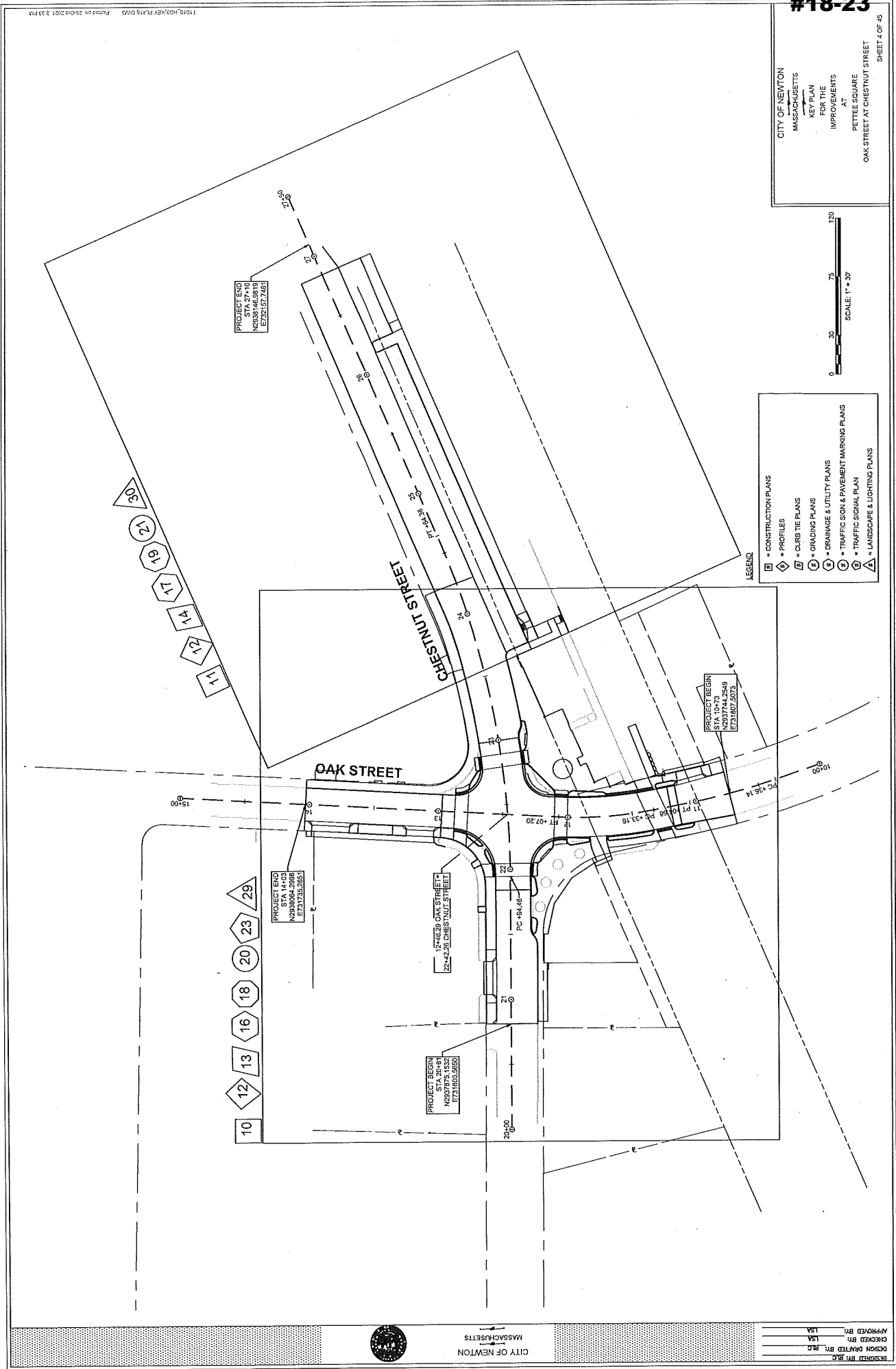
- EXISTING CONDITIONS INFORMATION COMPILED FROM SURVEY BY HANCOCK SURVEY ASSOCIATES, BOSTON, MA PERFORMED IN JULY, 2020.  
HORIZONTAL DATUM = NAD83 (MASSACHUSETTS STATE PLANE COORDINATES)  
VERTICAL DATUM = NAVD83
- ALL EXISTING STATE, COUNTY, AND CITY UTILITY LINES HAVE BEEN ESTABLISHED FROM AN ACTUAL ON-THE-GROUND SURVEY. ALL PRIVATE PROPERTY LINES HAVE BEEN ESTABLISHED FROM AVAILABLE INFORMATION AND THEIR EXACT LOCATION ARE NOT GUARANTEED.
- THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL CONTACT ALL UTILITIES CONCERNED PRIOR TO COMMENCING WORK, AND SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
- 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 RESOLUTION OF THE CONFLICT.
- ALL MUNICIPALLY OWNED UTILITY STRUCTURES (CATCH BASINS, DRAIN MANHOLES, WATER GATES, ETC.) SHALL BE ADJUSTED BY THE CONTRACTOR TO FINISHED GRADE UNLESS DIRECTED OTHERWISE.
- ALL PRIVATELY OWNED UTILITY STRUCTURES (GAS GATES, ELECTRIC TELEPHONE MANHOLES, ETC.) SHALL BE ADJUSTED TO FINISHED GRADE BY THE PRIVATE UTILITY COMPANY, UNLESS DIRECTED OTHERWISE. THE CONTRACTOR SHALL COORDINATE WITH PRIVATE UTILITY COMPANIES FOR THE ALTERATION AND ADJUSTMENT, AS NECESSARY.
- PROPOSED LATERAL DRAIN PIPES SHALL BE INSTALLED WITH A PITCH OF 1.0% (TYP) / 0.5% (MINIMUM), UNLESS OTHERWISE NOTED.
- 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.
- ALL DISTURBED AREAS OUTSIDE THE CURBLINE SHALL BE STABILIZED WITH #1 LOAM AND SEED, UNLESS OTHERWISE NOTED.
- THE TERM "PROPOSED" (PROP) MEANS WORK TO BE CONSTRUCTED USING NEW MATERIALS OR, WHERE APPLICABLE, RE-USING EXISTING MATERIALS IDENTIFIED AS "REMOVE AND RESET" (RAR), AS APPROVED BY THE ENGINEER.
- THE TERM "MEET EXIST" MEANS TO MEET BOTH THE EXISTING ALIGNMENT AND ELEVATION.
- AN UNOBSTRUCTED PATH OF TRAVEL WITH A MINIMUM WIDTH OF 3'-0" (EXCLUDING THE WIDTH OF CURB) SHALL BE MAINTAINED PAST ALL OBSTRUCTIONS (UTILITY POLES, LIGHT POLES, SIGNS, MAILBOXES, ALONG DRIVEWAY OPENINGS, ETC.).
- DETECTABLE WARNING PANELS ARE REQUIRED ON ALL PROPOSED WHEELCHAIR RAMPS AND SHALL BE INSTALLED IN ACCORDANCE WITH MASSDOT AND CITY OF NEWTON CONSTRUCTION STANDARDS.
- IN INSTANCES WHERE AN EXISTING MANHOLE, HANDHOLE, OR OTHER "SURFACE" TYPE STRUCTURE THAT CANNOT BE REMOVED OR RESET IS WITHIN THE PROPOSED OR EXISTING (IF RECIPROCAL OR EXISTING (IF RECIPROCAL OR WITHIN PROJECT LIMITS) CURB RAMP, THE STRUCTURE SHALL BE CAREFULLY ADJUSTED SUCH THAT THE TOPMOST SURFACES ON THE STRUCTURE COVER SHALL BE FLUSH WITH THE CURB RAMP SURFACES.



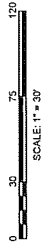
CITY OF NEWTON  
MASSACHUSETTS

DESIGNED BY: B.C.  
CHECKED BY: B.C.  
APPROVED BY: LSA





CITY OF NEWTON  
 MASSACHUSETTS  
 KEY PLAN  
 FOR THE  
 IMPROVEMENTS  
 AT  
 PETTEE SQUARE  
 OAK STREET AT CHESTNUT STREET



- LEGEND
- ▭ \* CONSTRUCTION PLANS
  - ◊ \* PROFILES
  - ▭ \* CURB TIE PLANS
  - ⊙ \* GRADING PLANS
  - ⊕ \* DRAINAGE & UTILITY PLANS
  - ⊗ \* TRAFFIC SIGN & PAVEMENT MARKING PLANS
  - ⊙ \* TRAFFIC SIGNAL PLAN
  - ⊕ \* LANDSCAPE & LIGHTING PLANS

PAVEMENT NOTES

PROPOSED HMA MILL & OVERLAY

SURFACE: 1/2" SUPERPAVE SURFACE COURSE - 12.5 (SSC - 12.5) OVER VARIABLE DEPTH COMPACTED IN 2" MAX LIFTS SUPERPAVE LEVELING COURSE - 8.5 (SLC - 8.5) AS REQUIRED TO MEET PROPOSED LINES AND GRADES OVER EXISTING PAVEMENT

PROPOSED FULL DEPTH PAVEMENT

SURFACE: 1/2" SUPERPAVE SURFACE COURSE - 12.5 (SSC - 12.5) OVER

SUBBASE: 4" SUPERPAVE INTERMEDIATE COURSE - 19.0 (SIC - 19.0) OVER

SUBBASE: 8" GRAVEL BORROW, TYPE b

PROPOSED CEMENT CONCRETE PEDESTRIAN CURB RAMPS / LEVEL LANDINGS

SURFACE: 8" CEMENT CONCRETE WITH LAMPBLACK ZLBC EMULSIFIED

BASE: 8" GRAVEL BORROW, TYPE b

PROPOSED STAMPED CEMENT CONCRETE WALKS / SIDEWALKS

SURFACE: 4" CEMENT CONCRETE (AIR ENTRAINED, 4000 PSI, 3'; 6" 10)

BASE: 8" GRAVEL BORROW, TYPE b

PROPOSED CEMENT CONCRETE SIDEWALK THROUGH DRIVEWAY / STAMPED CEMENT CONCRETE SIDEWALK THROUGH DRIVEWAY

SURFACE: 8" CEMENT CONCRETE (AIR ENTRAINED, 4000 PSI, 3'; 6" 10)

BASE: 8" GRAVEL BORROW, TYPE b

PROPOSED HMA DRIVEWAY (TO MATCH EXISTING)

SURFACE: 1/2" HMA SURFACE COURSE OVER

BASE: 8" SUITABLE EXISTING GRAVEL

ADD GRAVEL BORROW, TYPE b AS REQUIRED

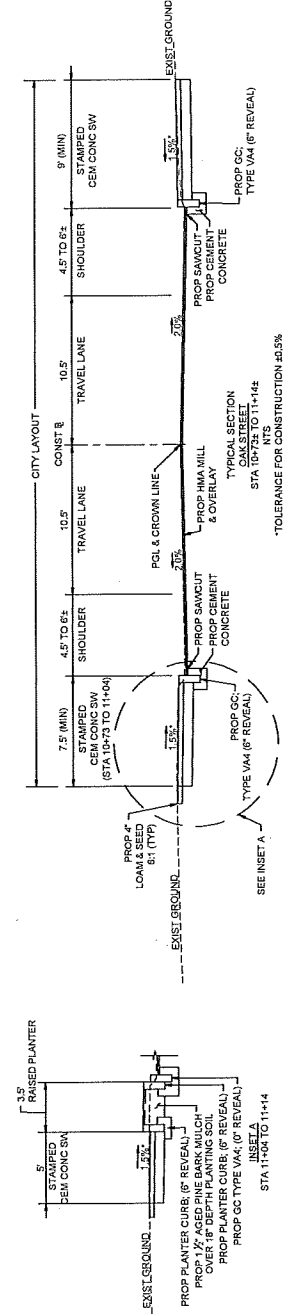
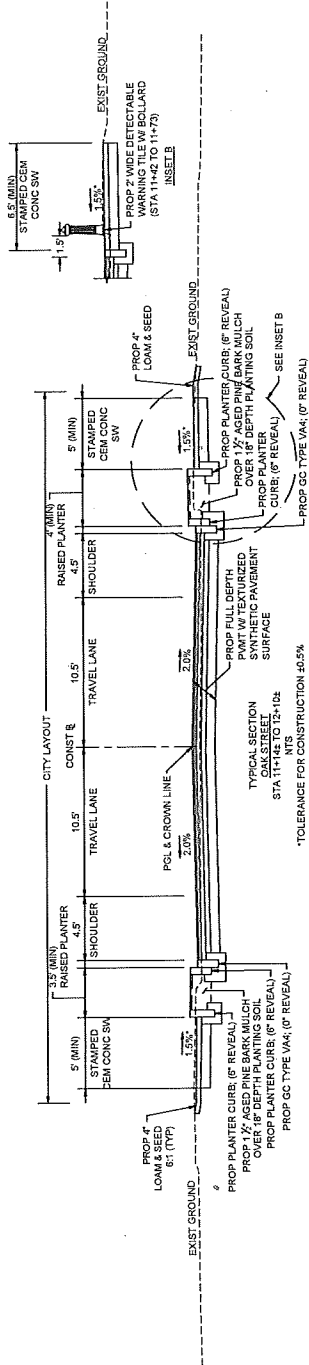
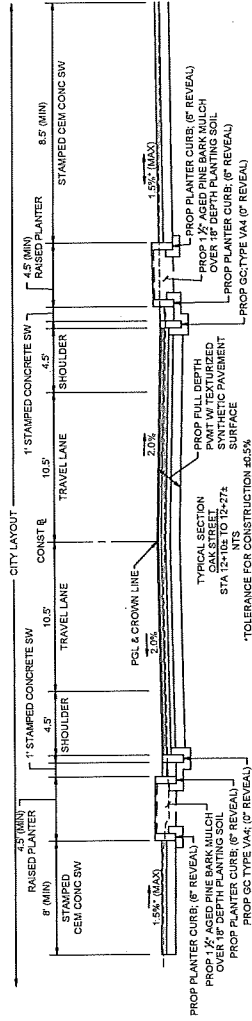
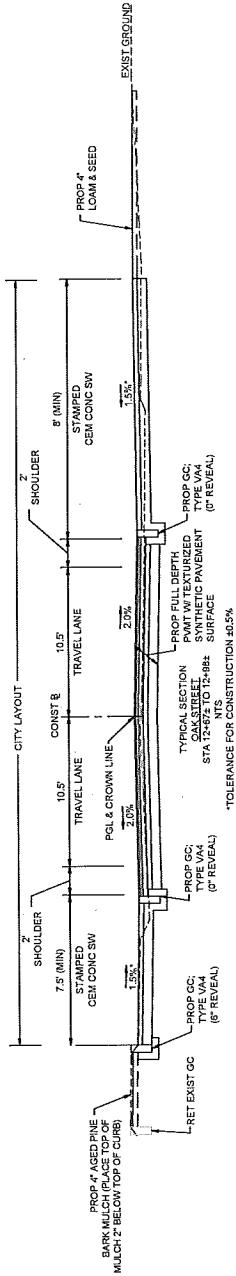
PROPOSED POROUS PAVEMENT

SEE DETAIL ON SHEET 33

GENERAL PAVEMENT NOTES

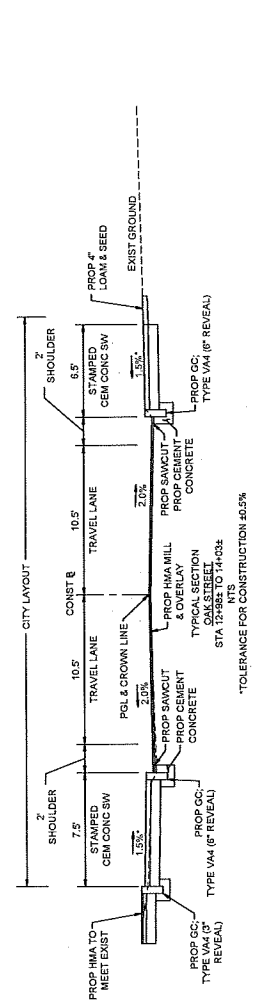
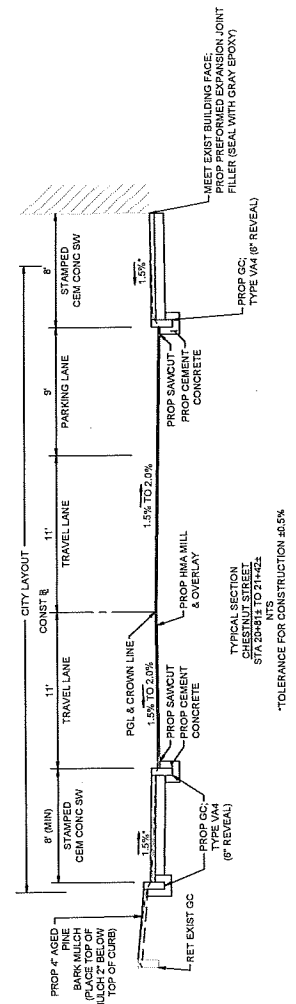
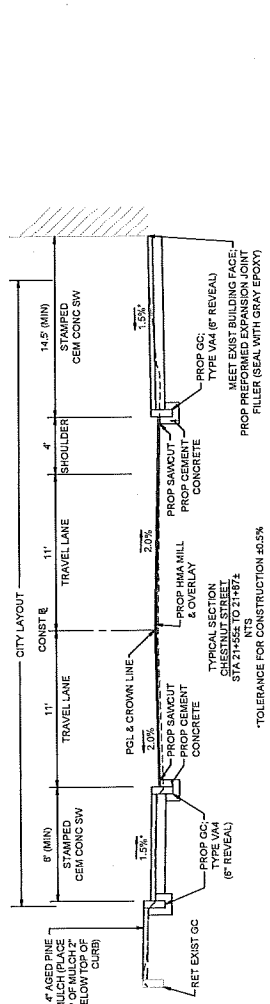
- 1. ASPHALT EMULSION FOR TACK COAT SHALL BE APPLIED BETWEEN ALL ASPHALT SURFACES AND SAWCUT JOINTS BEFORE PAVING. HMA TACK SEALANT SHALL BE APPLIED TO ALL COLD JOINTS (LONGITUDINAL AND TRANSVERSE) BEFORE PAVING SURFACE COURSE. ASPHALT EMULSION FOR TACK COAT SHALL BE APPLIED IN THE ORDER OF: ASPHALT EMULSION, SAND, AND SAND PRICK TO PAVING. ORGANICS, DEBRIS, AND SAND PRICK TO PAVING.
2. ALL HMA SHOULD BE IN ACCORDANCE WITH SECTION 450.
3. ASPHALT EMULSION FOR TACK COAT SHALL BE RS-1H TO RESIST TRACKING OF TACK BY HAUL VEHICLES.
4. HMA FOR WALKS AND DRIVEWAYS SHALL BE IN ACCORDANCE WITH SECTION 700.
5. ALL GRAVEL BORROW MEETING SPECIFICATIONS SHALL BE RETAINED IN PLACE, COMPACTED, AND LEVELED AS REQUIRED.
6. VARIABLE DEPTH MILLING (1/2" MIN) AS REQUIRED TO MEET PROPOSED LINES AND GRADES WITH RESURFACING OVERLAY.

CITY OF NEWTON MASSACHUSETTS TYPICAL SECTIONS & PAVEMENT NOTES - 1 OF 3 IMPROVEMENTS AT PETTEE SQUARE OAK STREET AT CHESTNUT STREET SHEET 5 OF 45

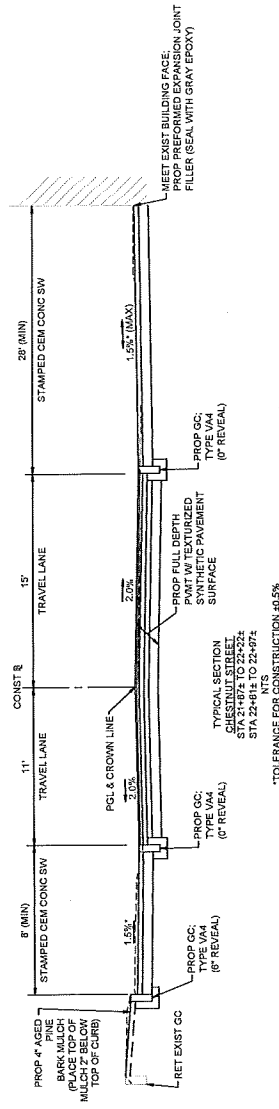
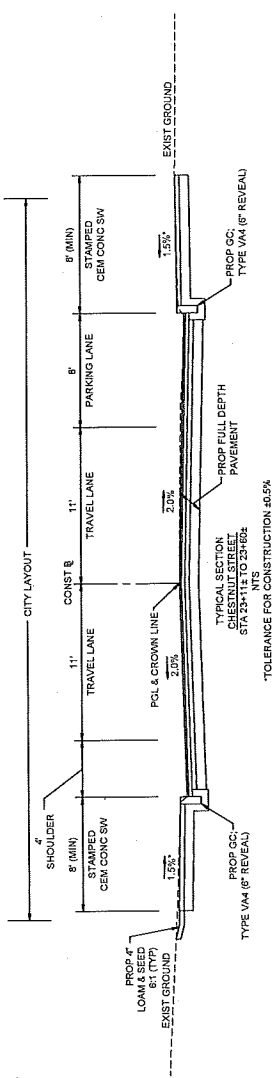
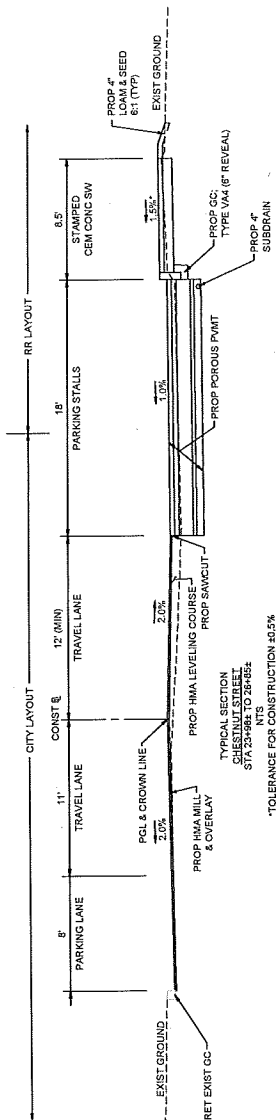


CITY OF NEWTON  
 MASSACHUSETTS  
 TYPICAL SECTIONS & PAVEMENT NOTES - 2 OF 3  
 FOR THE  
 IMPROVEMENTS  
 AT  
 PETTEE SQUARE  
 OAK STREET AT CHESTNUT STREET  
 SHEET 6 OF 45

11013-MD-TYPICAL SECTIONS (04/19/2018) P:\214\214-01\DWG



CITY OF NEWTON  
MASSACHUSETTS  
TYPICAL SECTIONS & PAVEMENT NOTES - 3 OF 3  
FOR THE  
IMPROVEMENTS  
AT  
PETTEE SQUARE  
OAK STREET AT CHESTNUT STREET  
SHEET 1 OF 45



18101.HDR.FRICAL SECTIONS.DWG Project 18-01-2011 2:33 PM



CITY OF NEWTON  
MASSACHUSETTS

DESIGNED BY: M.S.
CHECKED BY: R.C.
APPROVED BY: L.S.A.

CITY OF NEWTON  
 MASSACHUSETTS  
 CONSTRUCTION BASELINE TIE PLANS - 1 OF 2  
 FOR THE  
 IMPROVEMENTS  
 AT  
 PETTEE SQUARE  
 OAK STREET AT CHESTNUT STREET  
 SHEET 9 OF 45

1:00,000 CONSTRUCTION BASELINE TIE PLANS DWG  
 PLOTTED ON 25-08-2023 2:34 PM

**OAK STREET CONSTRUCTION BASELINE DATA**

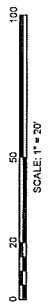
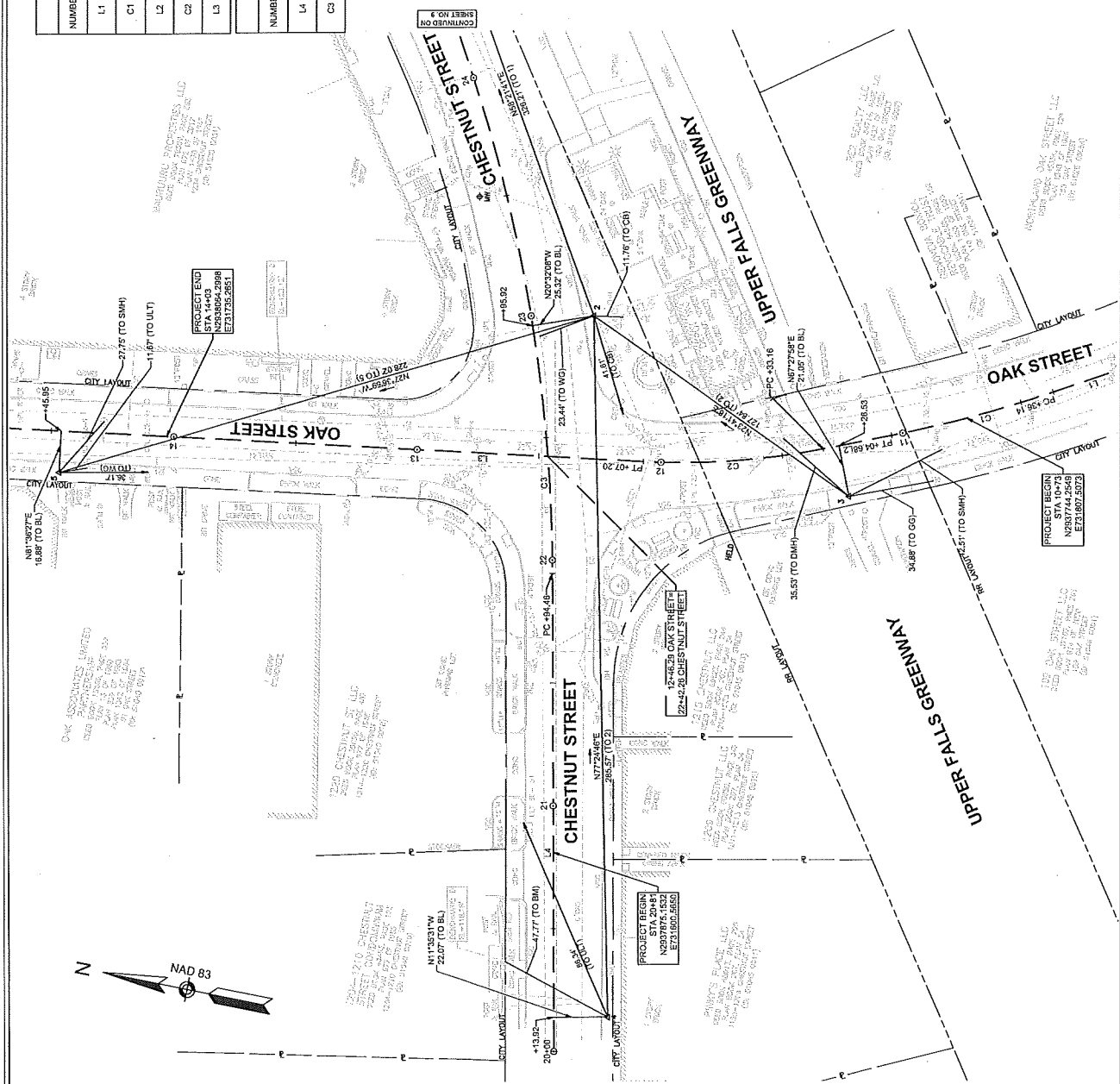
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L1	10+00.00	2937680.653	731843.2460		N307231°5'W 38.14'	10+36.14	2937711.8025	731824.5025
C1	10+36.14	2937711.8025	731824.5025	R=503.00' L=68.54' T=34.32'	Δ=7°51'14"	11+04.68	2937773.1120	731794.4481
L2	11+04.68	2937773.1120	731794.4481		N222°30'2"W 28.48'	11+33.16	2937759.4187	731783.5324
C2	11+33.16	2937759.4187	731793.5334	R=300.00' L=74.04' T=37.21'	Δ=14°09'29"	12+07.20	2937970.6013	731763.8420
L3	12+07.20	2937970.6013	731763.8420		N72°32'3"W 232.30'	15+00.00	2938160.2811	731721.1077

**CHESTNUT STREET CONSTRUCTION BASELINE DATA**

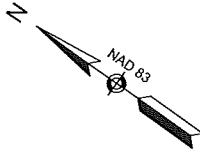
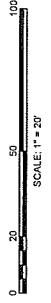
NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L4	20+00.00	2937688.8770	731921.2171		N77°22'29"E 39.46'	21+84.48	2937867.5519	731711.7112
C3	21+84.48	2937867.5519	731711.7112	R=850.00' L=239.28' T=163.92'	Δ=29°17'29"	24+64.36	2938004.7458	731957.4707

**Survey Traverse Point Table**

Point #	Northing	Easting	Elevation	Row Description
2	2937902.291	731817.592	120.084	MTRV MMAG
3	2937765.222	731766.831	118.108	MTRV MDHL
4	2937840.057	731936.284	117.574	MTRV MDHL
5	2938104.329	731712.286	120.089	MTRV MDHL



CITY OF NEWTON  
 MASSACHUSETTS  
 CONSTRUCTION BASELINE TIE PLANS - 2 OF 2  
 IMPROVEMENTS  
 AT  
 PETTEE SQUARE  
 OAK STREET AT CHESTNUT STREET  
 SHEET 9 OF 45

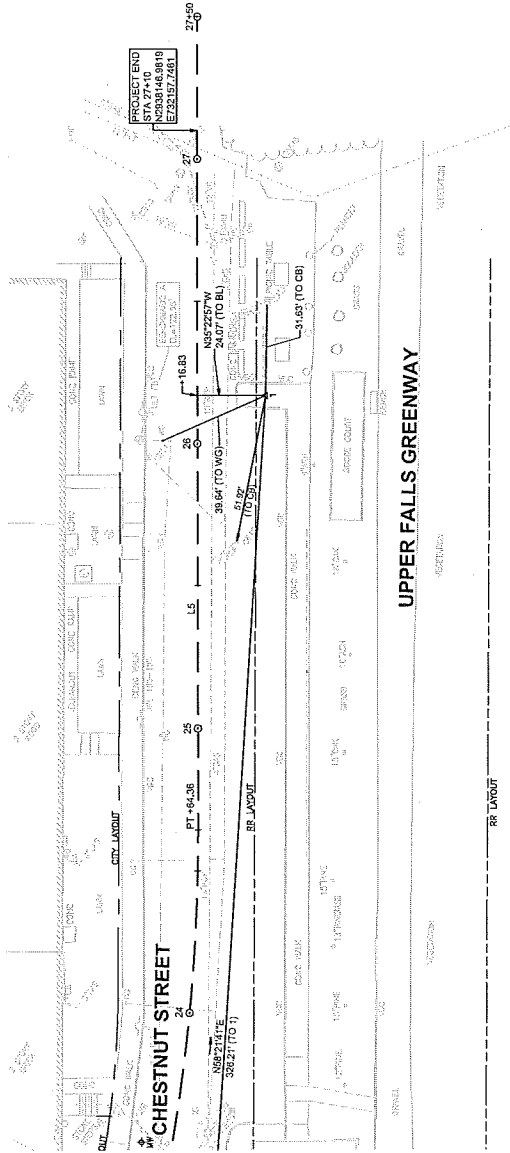


**CHESTNUT STREET CONSTRUCTION BASELINE DATA**

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
CS	21+64.46	2307687.5519	731711.7112	R = 850.00' L = 989.89' Δ = 23°17'26"		24+64.36	2338004.7468	731957.4707
LS	24+64.36	2338004.7468	731957.4707		N64°37'03"E 285.64'	27+50.00	2338170.1431	732190.3583

**Survey Traverse Point Table**

Point #	Northing	Easting	Elevation	Row Description
1	2338072.408	732085.718	125.135	MTRY MICHIL



DESIGNED BY: BAC  
 CHECKED BY: LSA  
 APPROVED BY: LSA

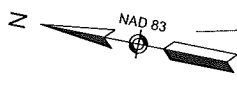
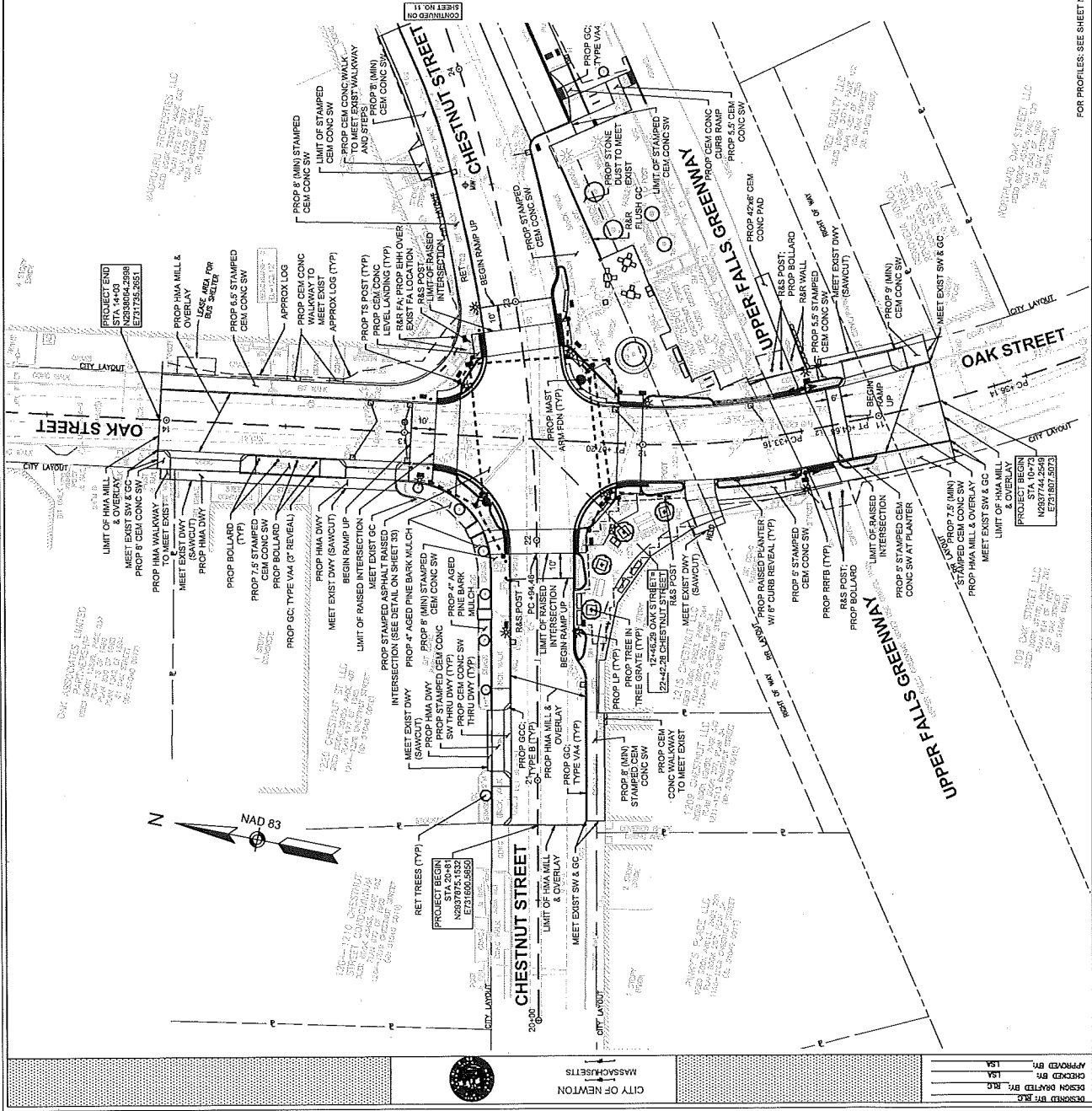


CITY OF NEWTON  
 MASSACHUSETTS

DESIGNED BY: BAC  
 CHECKED BY: LSA  
 APPROVED BY: LSA

CITY OF NEWTON  
MASSACHUSETTS  
CONSTRUCTION PLANS - 1 OF 2  
FOR THE  
IMPROVEMENTS  
AT  
PETTEE SQUARE  
OAK STREET AT CHESTNUT STREET

1:00 PM 10/20/2011 2:34 PM

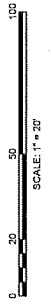


FOR PROFILES, SEE SHEET NO. 12

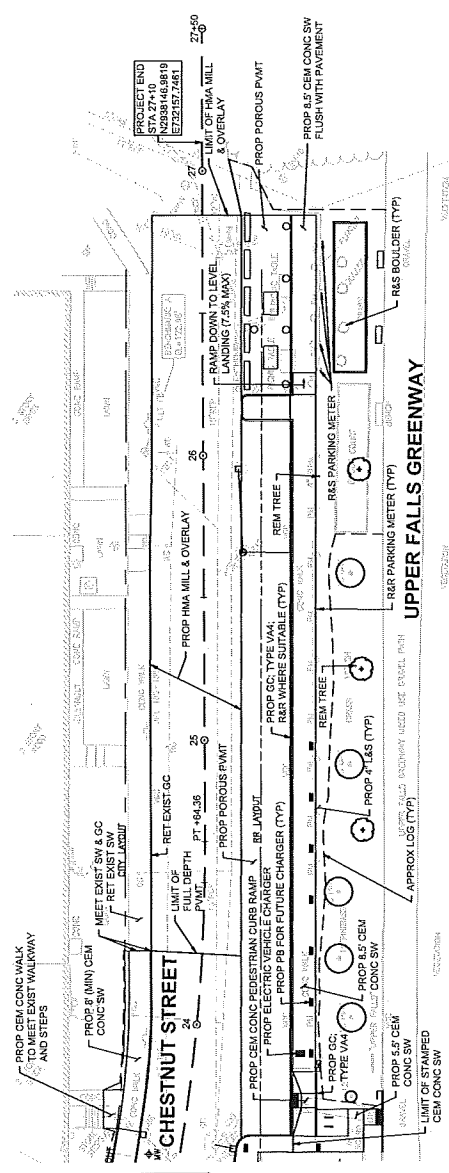
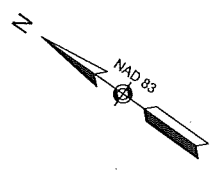
CITY OF NEWTON  
MASSACHUSETTS

DESIGNED BY: R.C.  
CHECKED BY: L.S.A.  
APPROVED BY: L.S.A.

CITY OF NEWTON  
MASSACHUSETTS  
CONSTRUCTION PLANS - 1 OF 2  
FOR THE  
IMPROVEMENTS  
AT  
PETTEE SQUARE  
OAK STREET AT CHESTNUT STREET  
SHEET 11 OF 45



FOR PROFILE: SEE SHEET NO. 12



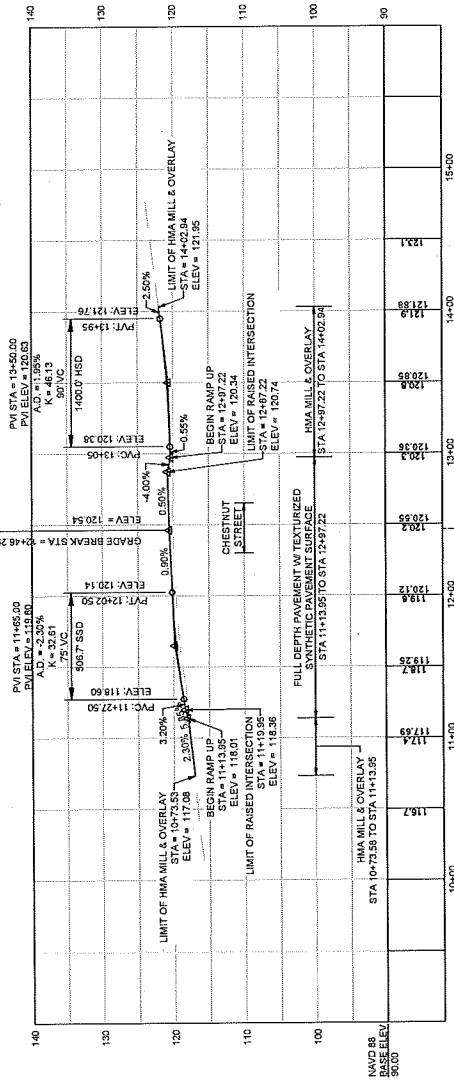
MASSACHUSETTS REGISTERED PROFESSIONAL ENGINEER  
NO. 10000  
DATE: 08/11/2011  
BY: [Signature]

CONTINUED ON SHEET NO. 10



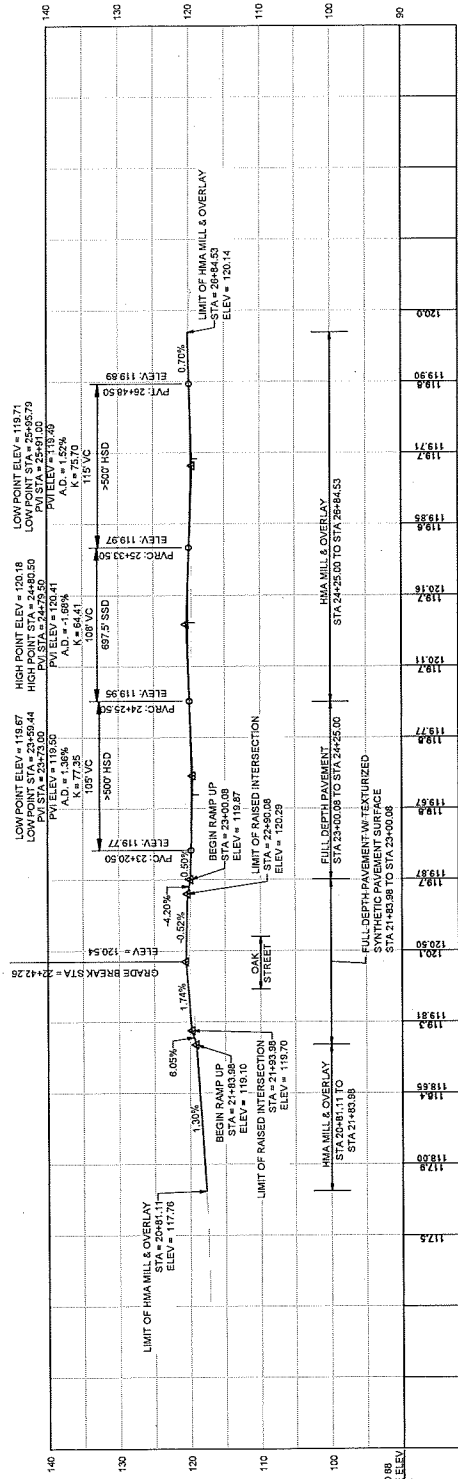
CITY OF NEWTON  
 MASSACHUSETTS  
 PROFILES  
 FOR THE  
 IMPROVEMENTS  
 AT  
 PETTE SQUARE  
 OAK STREET AT CHESTNUT STREET  
 SHEET 12 OF 45

**OAK STREET**

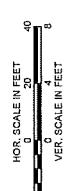


FOR CONSTRUCTION PLANS:  
 SEE SHEET NO. 10

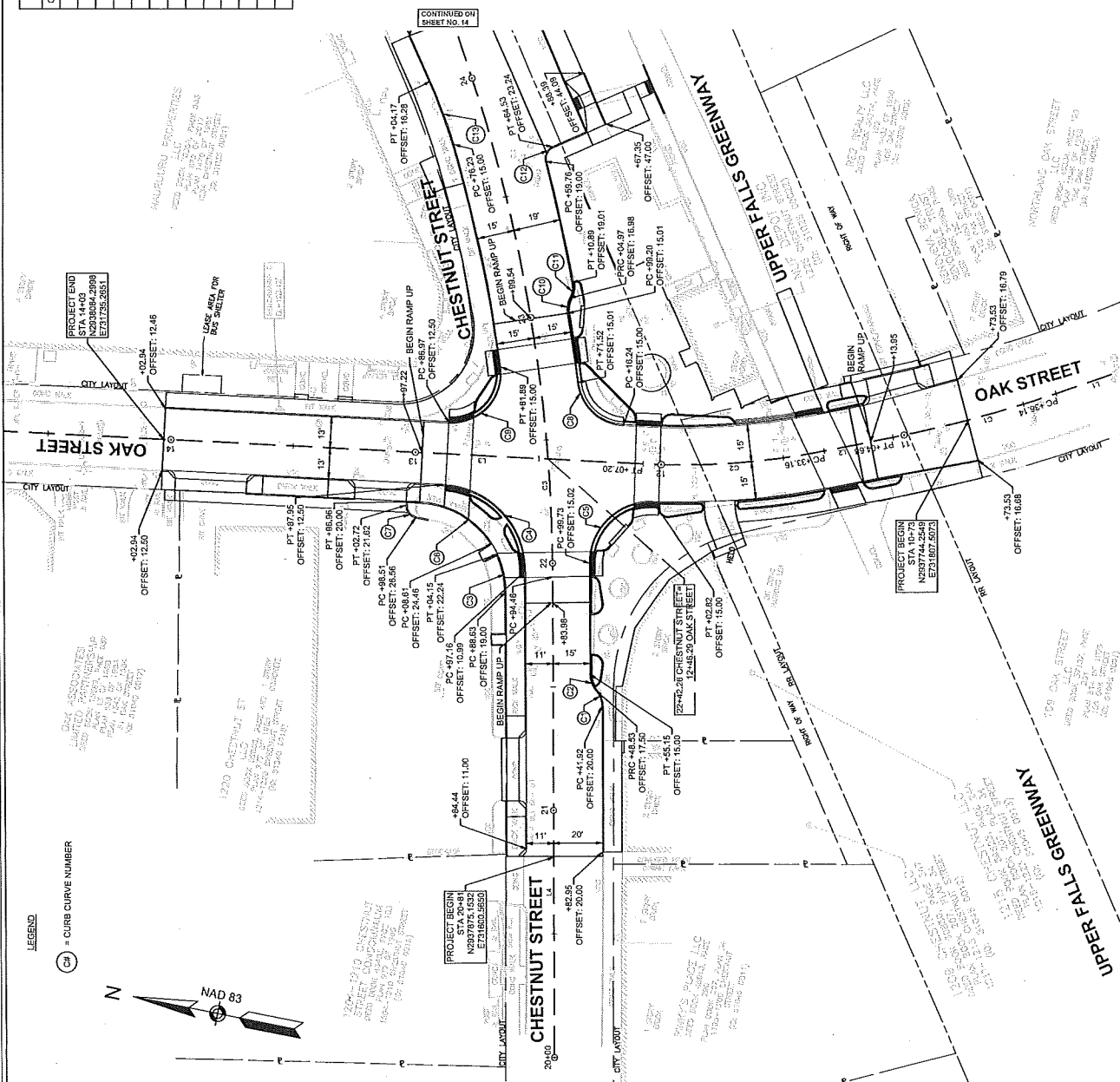
**CHESTNUT STREET**



FOR CONSTRUCTION PLANS:  
 SEE SHEET NOS. 10-11



CURVE TABLE			
CURVE #	DELTA	RADIUS	TANGENT
C1	41° 24' 35"	10.00	7.23
C2	41° 24' 35"	10.00	7.23
C3	24° 35' 05"	35.50	15.60
C4	89° 48' 02"	35.00	33.10
C5	92° 21' 43"	25.00	40.30
C6	54° 36' 29"	38.50	34.79
C7	80° 52' 05"	5.00	7.05
C8	80° 09' 21"	20.00	27.69
C9	100° 54' 22"	20.00	35.22
C10	36° 21' 27"	10.00	6.35
C11	37° 23' 18"	10.00	6.53
C12	81° 02' 38"	5.00	7.07
C13	7° 48' 57"	200.00	27.34



LEGEND  
C = CURVE NUMBER

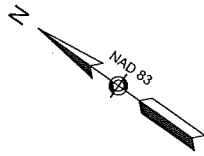


1710\1013\018\113.DWG Project: 25-01-2011 1:25 PM

DESIGNED BY: R.C. [Redacted]  
 CHECKED BY: LSA [Redacted]  
 APPROVED BY: LSA [Redacted]  
 CITY OF NEWTON  
 MASSACHUSETTS

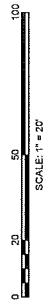
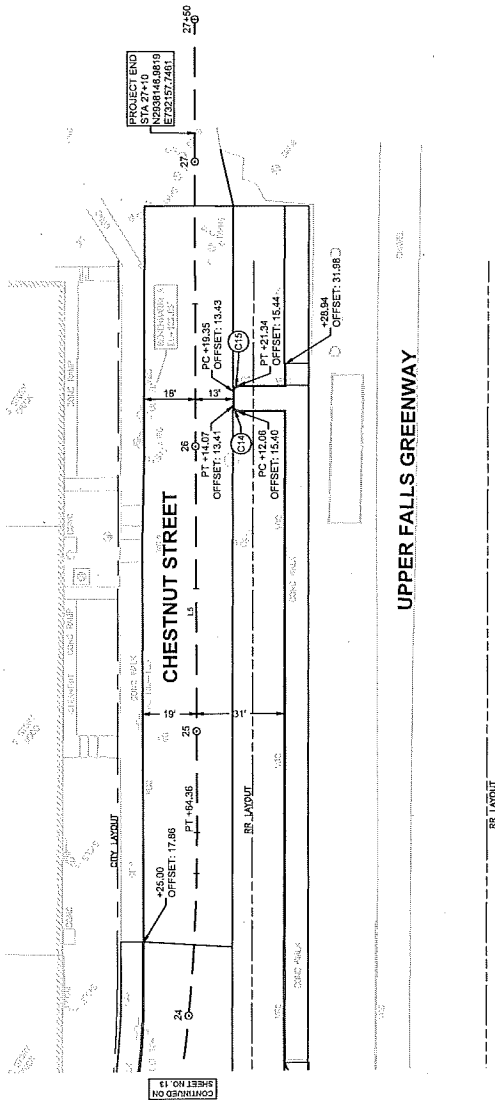
CITY OF NEWTON  
 MASSACHUSETTS  
 CURB THE PLANS - 1 OF 2  
 FOR THE  
 IMPROVEMENTS  
 AT  
 PETTEE SQUARE  
 OAK STREET AT CHESTNUT STREET

CURVE TABLE				
CURVE #	DELTA	RADIUS	LENGTH	TANGENT
C14	90° 00' 00"	2.00	3.14	2.00
C15	90° 00' 00"	2.00	3.14	2.00



LEGEND  
 (C1) = CURB CURVE NUMBER

MASSACHUSETTS REGISTERED PROFESSIONAL ENGINEER  
 No. 10000  
 10000  
 10000  
 10000

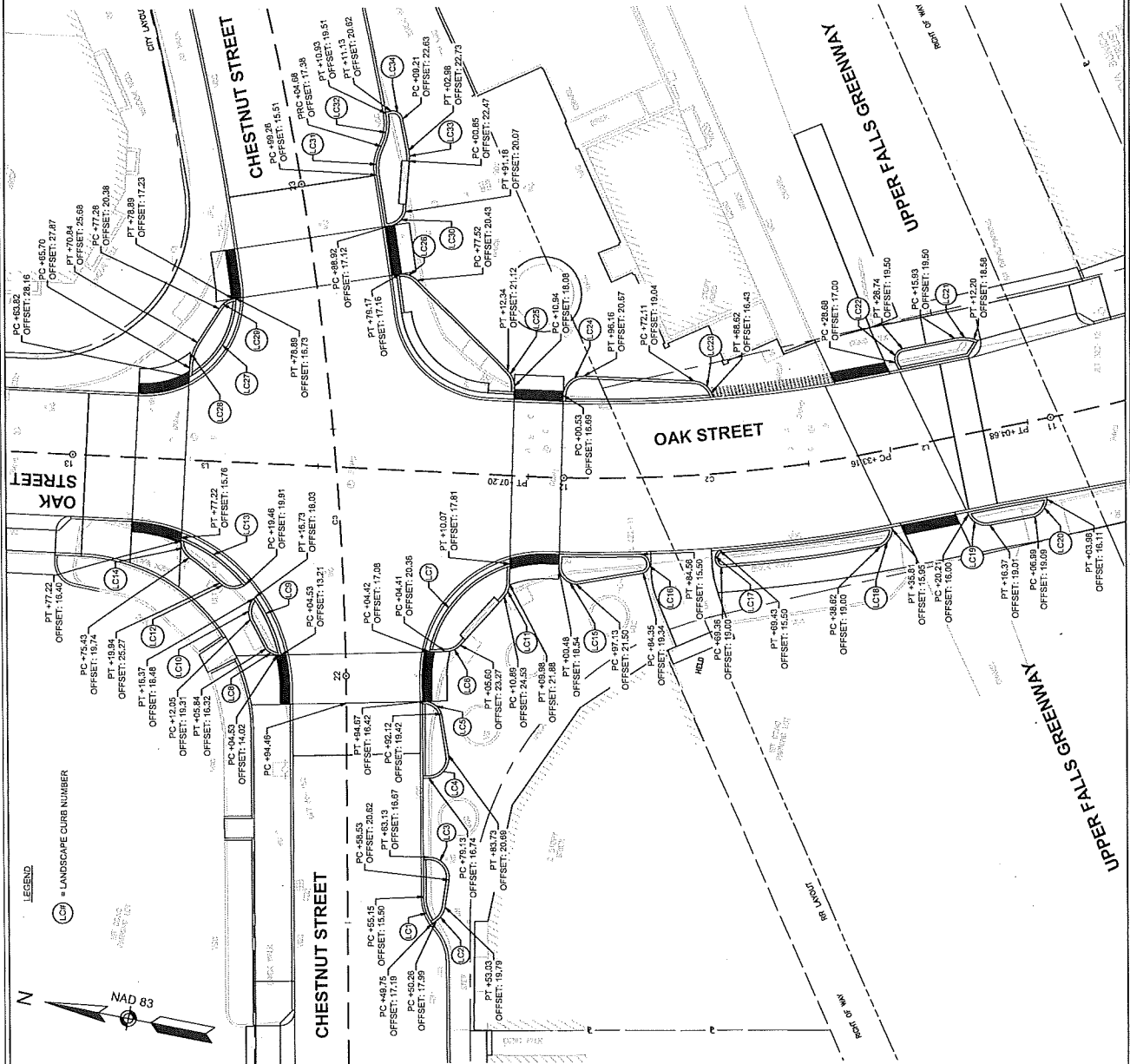


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CITY OF NEWTON  
 MASSACHUSETTS  
 LANDSCAPE CURB TIE PLANS - 1 OF 1  
 FOR THE  
 IMPROVEMENTS  
 AT  
 PETTEE SQUARE  
 OAK STREET AT CHESTNUT STREET  
 SHEET 15 OF 45

LANDSCAPE CURVE TABLE				
CURVE #	DELTA	RADIUS	LENGTH	TANGENT
LC21	27°49'25"	8.00	3.88	1.98
LC22	104°23'37"	2.00	3.64	2.58
LC23	63°15'23"	4.00	4.42	2.48
LC24	91°38'02"	4.00	8.36	4.08
LC25	49°43'05"	4.00	3.47	1.85
LC26	54°44'40"	4.00	3.92	2.07
LC27	69°01'35"	18.50	19.38	10.68
LC28	31°18'38"	10.00	5.46	2.90
LC29	32°12'45"	4.00	3.65	1.98
LC30	59°04'14"	4.00	3.91	2.13
LC31	365°00'29"	9.40	5.95	3.09
LC32	37°23'16"	10.50	6.85	3.55
LC33	15°54'10"	8.00	2.22	1.12
LC34	89°50'30"	2.00	3.14	1.59

LANDSCAPE CURVE TABLE				
CURVE #	DELTA	RADIUS	LENGTH	TANGENT
LC1	34°39'14"	9.00	5.75	2.98
LC2	48°48'39"	4.00	3.41	1.82
LC3	98°38'05"	4.00	8.89	4.65
LC4	98°38'05"	4.00	8.89	4.65
LC5	58°58'38"	4.00	4.12	2.26
LC6	46°28'48"	4.00	3.24	1.72
LC7	81°51'53"	23.50	23.37	14.68
LC8	38°22'21"	4.00	2.88	1.39
LC9	22°06'49"	33.50	12.83	6.55
LC10	63°43'51"	4.00	4.45	2.49
LC11	47°01'06"	4.00	2.88	1.50
LC12	85°29'09"	4.00	5.88	3.09
LC13	28°02'40"	33.50	16.40	8.37
LC14	55°31'04"	4.00	3.05	1.55
LC15	70°50'31"	4.00	4.95	2.84
LC16	149°00'30"	2.00	5.20	7.21
LC17	122°08'37"	2.00	4.26	3.82
LC18	84°21'07"	4.00	4.49	2.52
LC19	75°07'28"	4.00	5.24	3.08
LC20	84°03'20"	4.00	4.47	2.59



LEGEND

LC#1 = LANDSCAPE CURB NUMBER



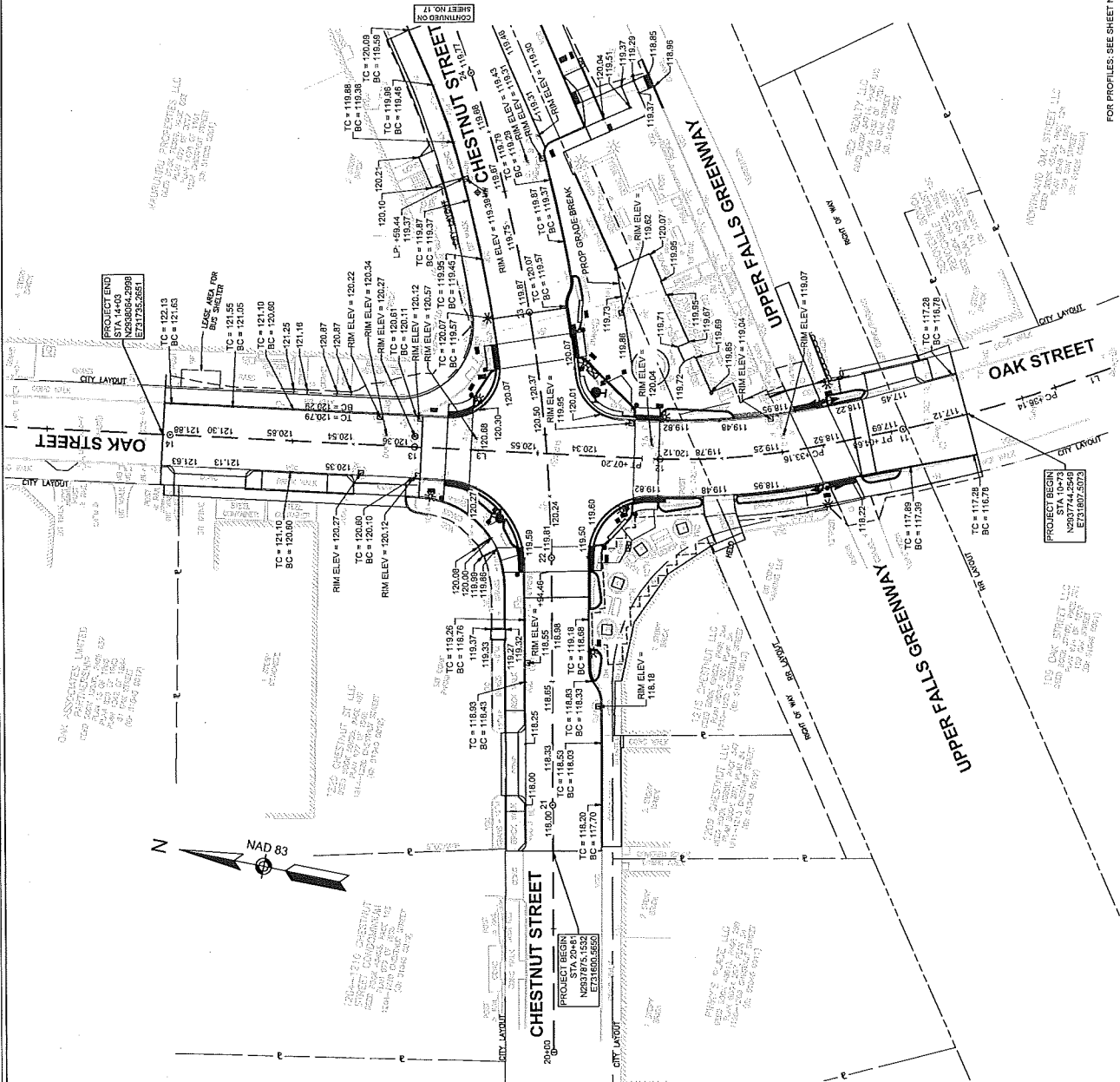
SCALE: 1" = 10'

CITY OF NEWTON  
MASSACHUSETTS  
GRADING PLANS - 1 OF 2  
FOR THE  
IMPROVEMENTS  
AT  
PETTEE SQUARE  
OAK STREET AT CHESTNUT STREET

SHEET 16 OF 45



11010.1012(2) (R.M.J.) DWG3 Picked on 25-Oct-2011 2:39 PM



DESIGNED BY: RJC	APPROVED BY: LSA
CHECKED BY: LSA	
DESIGNED BY: RJC	

CITY OF NEWTON  
MASSACHUSETTS

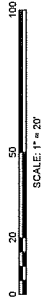
FOR PROFILES SEE SHEET NO. 12

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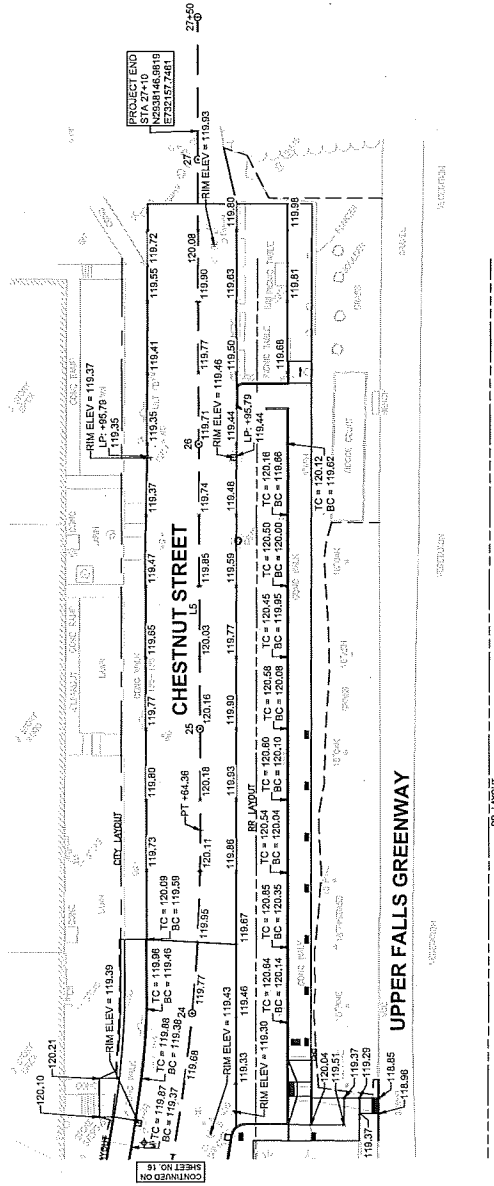
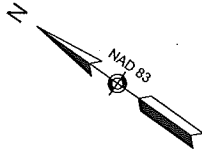
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CONTINUED ON  
SHEET NO. 17

CITY OF NEWTON  
MASSACHUSETTS  
GRADING PLANS - 1 OF 2  
FOR THE  
IMPROVEMENTS  
AT  
PETTEE SQUARE  
OAK STREET AT CHESTNUT STREET  
SHEET 17 OF 45



FOR PROFILE SEE SHEET NO. 12



MASSACHUSETTS REGISTERED PROFESSIONAL ENGINEER  
NO. 10456  
JAMES J. WATKINS, LLC  
100 STATE STREET, SUITE 200  
NEWTON, MASSACHUSETTS 02459



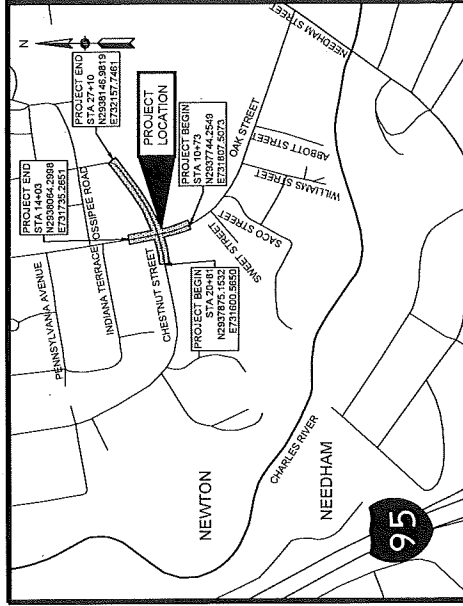
# TRANSPORTATION IMPROVEMENT PROJECT

INTERSECTION IMPROVEMENTS AT  
**PETTEE SQUARE**  
**OAK STREET & CHESTNUT STREET**

IN THE CITY OF  
**NEWTON**  
 MIDDLESEX COUNTY  
 COMMONWEALTH OF MASSACHUSETTS

## FINAL DESIGN SUBMITTAL

SHEET NO.	DESCRIPTION
1	TITLE SHEET & INDEX
2	LEGEND & ABBREVIATIONS
3	CONSTRUCTION NOTES
4	KEY PLAN
5-7	TYPICAL SECTIONS & PAVEMENT NOTES
8-9	CONSTRUCTION BASELINE TIE PLANS
10-11	CONSTRUCTION PLANS
12	PROFILES
13-14	CURB TIE PLANS
15	LANDSCAPE CURB TIE PLAN
16-17	GRADING PLANS
18-19	DRAINAGE & UTILITY PLANS
20-21	TRAFFIC SIGN & PAVEMENT MARKING PLANS
22	TRAFFIC SIGN SUMMARY
23-24	TRAFFIC SIGNAL PLANS
25-28	TEMPORARY TRAFFIC CONTROL PLANS
29-30	LANDSCAPE & LIGHTING PLANS
31	LANDSCAPE ENLARGEMENT PLAN
32-33	CONSTRUCTION DETAILS
34-35	LANDSCAPE & LIGHTING DETAILS
36	WHEELCHAIR RAMP & DRIVEWAY DETAILS
37-45	CROSS SECTIONS



### DESIGN DESIGNATION

DESIGN SPEED	30 MPH
ADT (2019)	9,603
ADT (2027)	10,199
K	8.3%
D	52%
T (PEAK HOUR)	1.0%
T (AVERAGE DAY)	2.0%
DDIV	815
DDIV	428
FUNCTIONAL CLASSIFICATION	MAJOR COLLECTOR

THESE PLANS ARE SUPERSEDED BY THE LATEST CITY OF NEWTON GENERAL CONSTRUCTION SPECIFICATIONS AND THE LATEST CITY OF NEWTON SPECIFICATIONS FOR CONSTRUCTION AS AMENDED BY THE SUPPLEMENTAL SPECIFICATION DATED JUNE 30, 2024, THE OCTOBER 2017 CONSTRUCTION STANDARD DETAILS, THE 2015 OVERHEAD SIGNAL STRUCTURE AND FOUNDATION STANDARD DETAILS, THE 2015 STANDARD DETAILS FOR TRAFFIC SIGNALS AND TRAFFIC SIGNALS AND HIGHWAY LIGHTING, AND THE LATEST EDITION OF THE AMERICAN STANDARD FOR TRAFFIC SIGNALS AND HIGHWAY LIGHTING, AND THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK.

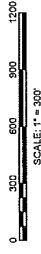
DATE	DESCRIPTION	REV #
11/02/2020	50% SUBMITTAL	1
10/22/2021	FINAL DESIGN SUBMITTAL	2

#18-23

PREPARED BY:  
**TEC**  
 146 Dismouth Road | 311 Main Street  
 Needham, MA 01959 | Needham, MA 01959  
 781-294-1752 | 508-955-5191 | www.TheEngineeringCorp.com

CITY OF NEWTON  
 MASSACHUSETTS  
 TITLE SHEET & INDEX  
 IMPROVEMENTS  
 AT  
 PETTEE SQUARE  
 OAK STREET AT CHESTNUT STREET

SHEET 1 OF 45



LENGTH OF PROJECT = 959 FEET = 0.182 MILES



CITY OF NEWTON  
 MASSACHUSETTS

DESIGNED BY: RJC
CHECKED BY: RJC
APPROVED BY: LSA





CITY OF NEWTON  
MASSACHUSETTS  
CONSTRUCTION NOTES  
FOR THE  
IMPROVEMENTS  
AT  
PETTEE SQUARE  
OAK STREET AT CHESTNUT STREET  
SHEET 3 OF 45

1010 JH2JL6B-D & ASSOCIATES INC  
PLOT 03 25-01-2021 2:33 PM

CONSTRUCTION NOTES:

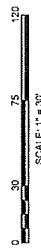
- EXISTING CONDITIONS INFORMATION COMPILED FROM SURVEY BY HANCOCK SURVEY ASSOCIATES, BOSTON, MA PERFORMED IN JULY, 2020.  
HORIZONTAL DATUM - NAD83 (MASSACHUSETTS STATE PLANE COORDINATES)  
VERTICAL DATUM - NAVD83
- ALL EXISTING STATE, COUNTY, AND CITY LOCATION LINES HAVE BEEN ESTABLISHED FROM AN ACTUAL ON-THE-GROUND SURVEY. ALL PRIVATE PROPERTY LINES HAVE BEEN ESTABLISHED FROM AVAILABLE INFORMATION AND THEIR EXACT LOCATION ARE NOT GUARANTEED.
- THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL CONTACT DISSAFE (1-888-DISSAFE) A MINIMUM OF 72 HOURS PRIOR TO ANY CONSTRUCTION TO VERIFY THE LOCATION OF EXISTING UTILITIES. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCURRED BY THE CONTRACTORS FAILURE TO LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.
- 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 RESOLUTION OF THE CONFLICT.
- ALL MUNICIPALLY OWNED UTILITY STRUCTURES (CATCH BASINS, DRAIN MANHOLES, WATER GATES, ETC.) SHALL BE ADJUSTED BY THE CONTRACTOR TO FINISHED GRADE UNLESS DIRECTED OTHERWISE. THE CONTRACTOR SHALL COORDINATE WITH PRIVATE UTILITY COMPANIES FOR THE ALTERATION AND ADJUSTMENT, AS NECESSARY.
- ALL PRIVATELY OWNED UTILITY STRUCTURES (GAS GATES, ELECTRIC TELEPHONE MANHOLES, ETC.) SHALL BE ADJUSTED TO FINISHED GRADE BY THE PRIVATE UTILITY COMPANY, UNLESS DIRECTED OTHERWISE. THE CONTRACTOR SHALL COORDINATE WITH PRIVATE UTILITY COMPANIES FOR THE ALTERATION AND ADJUSTMENT, AS NECESSARY.
- PROPOSED LATERAL DRAIN PIPES SHALL BE INSTALLED WITH A PITCH OF 1.0% (TYP) / 0.5% (MINIMUM) UNLESS OTHERWISE NOTED.
- AREAS OUTSIDE THE LIMITS OF PROPOSED WORK DISTURBED BY THE CONTRACTORS OPERATIONS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION AT THE CONTRACTORS EXPENSE.
- ALL DISTURBED AREAS OUTSIDE THE CURBLINE SHALL BE STABILIZED WITH 4" LOAM AND SEED, UNLESS OTHERWISE NOTED.
- 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), AS APPROVED BY THE ENGINEER.
- THE TERM "MEET EXIST" MEANS TO MEET BOTH THE EXISTING ALIGNMENT AND ELEVATION.
- AN UNOBSTRUCTED PATH OF TRAVEL WITH A MINIMUM WIDTH OF 3'-0" (EXCLUDING THE WIDTH OF CURB) SHALL BE MAINTAINED PAST ALL OBSTRUCTIONS (UTILITY POLES, LIGHT POLES, SIGNS, MAILBOXES, ALONG DRIVEWAY OPENINGS, ETC.)
- DETECTABLE WARNING PANELS ARE REQUIRED ON ALL PROPOSED WHEELCHAIR RAMPS AND SHALL BE INSTALLED IN ACCORDANCE WITH MASSDOT AND CITY OF NEWTON CONSTRUCTION STANDARDS.
- IN INSTANCES WHERE AN EXISTING MANHOLE, HANDHOLE, OR OTHER "SURFACE" TYPE STRUCTURE THAT CANNOT BE REMOVED OR RESET IS WITHIN THE PROPOSED OR EXISTING (IF RECIPROCAL OR WITHIN PROJECT LIMITS) CURB RAMP, THE STRUCTURE SHALL BE CAREFULLY ADJUSTED SUCH THAT THE TOPMOST SURFACES OF THE STRUCTURE COVER SHALL BE FLUSH WITH THE CURB MANIP SURFACES.



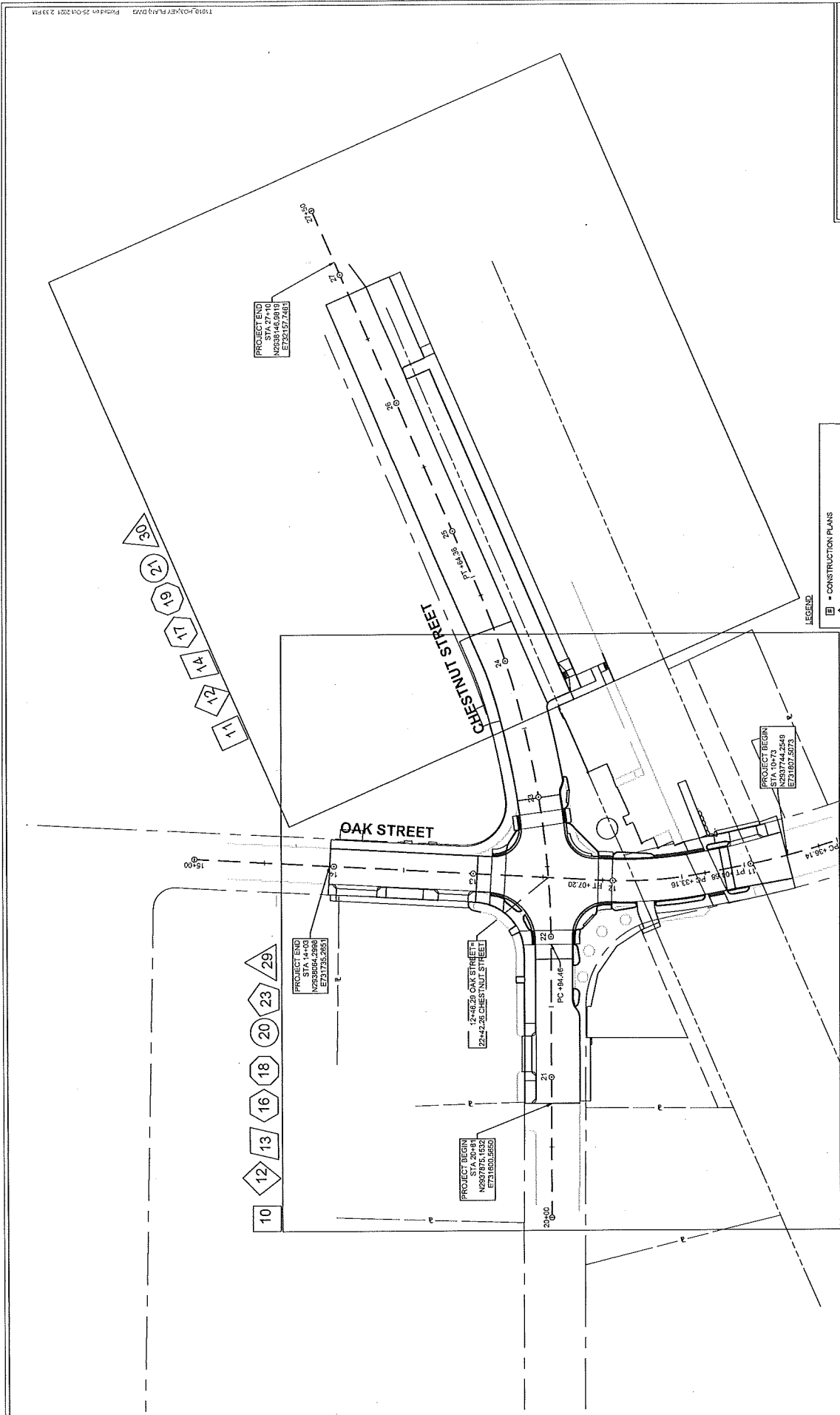
CITY OF NEWTON  
MASSACHUSETTS

DRAWN BY: RIG  
CHECKED BY: RIG  
DESIGN BY: RIG  
CHECKED BY: LSA  
APPROVED BY: LSA

CITY OF NEWTON  
MASSACHUSETTS  
KEY PLAN  
FOR THE  
IMPROVEMENTS  
AT  
PETTEE SQUARE  
OAK STREET AT CHESTNUT STREET



- LEGEND
- ▭ CONSTRUCTION PLANS
  - ◊ PROFILES
  - ◻ CURB TIE PLANS
  - GRADING PLANS
  - ⊕ DRAINAGE & UTILITY PLANS
  - ⊗ TRAFFIC SIGN & PAVEMENT MARKING PLANS
  - ⊙ TRAFFIC SIGNAL PLAN
  - △ LANDSCAPE & LIGHTING PLANS



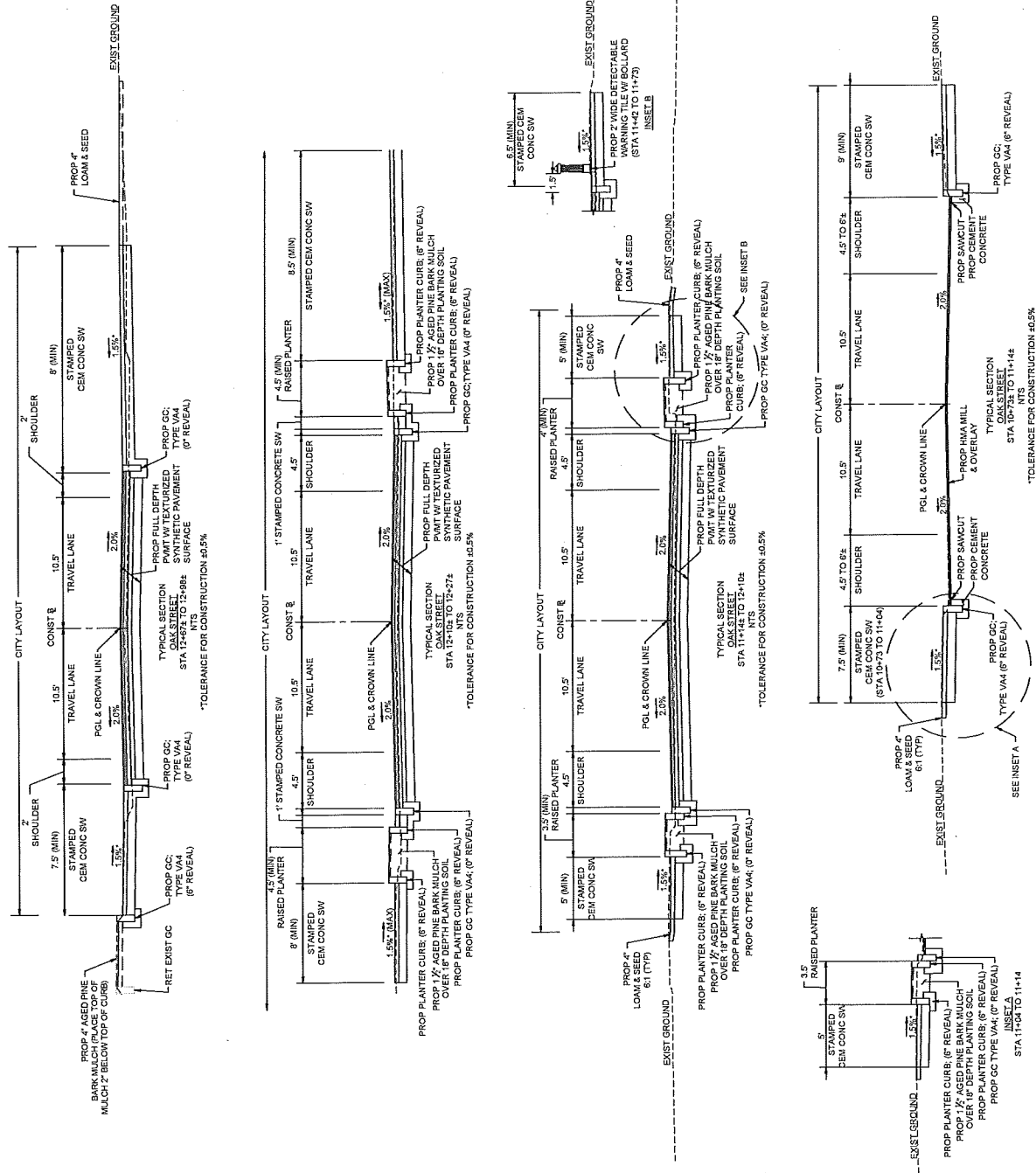
**PAVEMENT NOTES**

- PROPOSED HMA MILL & COVERLAY
- SURFACE: 1/2" SUPERPAVE SURFACE COURSE - 12.5 (SSC - 12.5) OVER VARIABLE DEPTH (COMPACTED IN 2" MAX LIFTS) SUPERPAVE LEVELING COURSE - 9.5 (BC - 9.5) AS REQUIRED TO MEET PROPOSED LINES AND GRADINGS
- VARIABLE DEPTH (MIN 1/2" SUPERPAVE INTERMEDIATE COURSE - 12.5 (SSC - 12.5) OVER 2" SUPERPAVE INTERMEDIATE COURSE - 19.0 (BC - 19.0) OVER 4" SUPERPAVE INTERMEDIATE COURSE - 19.0 (BC - 19.0) OVER 8" GRAVEL BORROW, TYPE B
- PROPOSED FULL DEPTH PAVEMENT
- SURFACE: 1/2" SUPERPAVE SURFACE COURSE - 12.5 (SSC - 12.5) OVER 2" SUPERPAVE INTERMEDIATE COURSE - 12.5 (SSC - 12.5) OVER 2" SUPERPAVE INTERMEDIATE COURSE - 19.0 (BC - 19.0) OVER 4" SUPERPAVE INTERMEDIATE COURSE - 19.0 (BC - 19.0) OVER 8" GRAVEL BORROW, TYPE B
- SURFACE: 4" DENSE GRADED CRUSHED STONE OVER 8" GRAVEL BORROW, TYPE B
- PROPOSED CEMENT CONCRETE PEDESTRIAN CURB RAMPS / LEVEL LANDINGS
- SURFACE: 8" CEMENT CONCRETE WITH LAMPBLACK 2LB/CFT EMULSIFIED 7% AIR ENTRAINED - 4000 PSI, 7'; 6" PER WACDOT STD SPEC 14.02.00
- BASE: 8" GRAVEL BORROW, TYPE B
- PROPOSED STAMPED CEMENT CONCRETE WALKWAY SIDEWALKS
- SURFACE: 4" CEMENT CONCRETE (AIR ENTRAINED - 4000 PSI, 7'; 6" 0")
- BASE: 8" GRAVEL BORROW, TYPE B
- PROPOSED CEMENT CONCRETE SIDEWALK THROUGH DRIVEWAY, STAMPED CEMENT CONCRETE SIDEWALK THROUGH DRIVEWAY
- SURFACE: 8" CEMENT CONCRETE (AIR ENTRAINED - 4000 PSI, 7'; 6" 0")
- BASE: 8" GRAVEL BORROW, TYPE B
- PROPOSED HMA DRIVEWAY (TO MATCH EXISTING)
- SURFACE: 1/2" HMA SURFACE COURSE OVER 2/2" HMA INTERMEDIATE COURSE OVER 8" SUITABLE EXISTING GRAVEL; ADD GRAVEL BORROW, TYPE B AS REQUIRED
- PROPOSED POROUS PAVEMENT
- SEE DETAIL ON SHEET 33

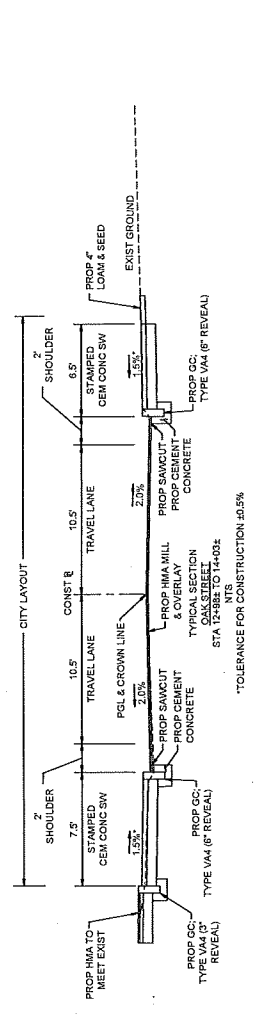
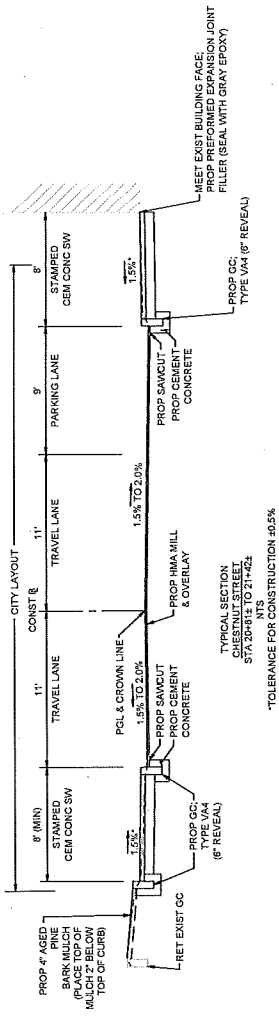
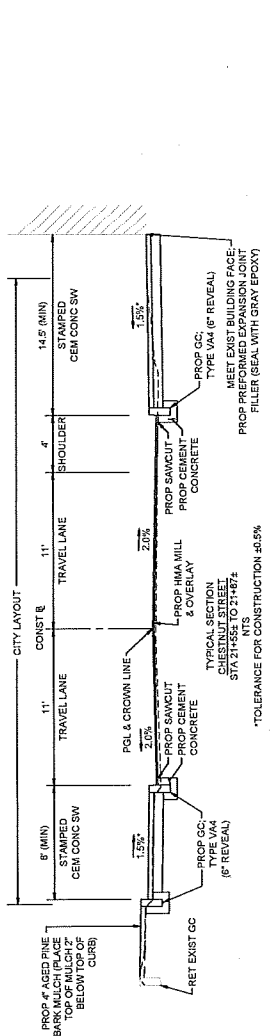
**GENERAL PAVEMENT NOTES**

- ASPHALT EMULSION FOR TACK COAT SHALL BE APPLIED BETWEEN ALL ASPHALT SURFACES AND SAWCUT JOINTS BEFORE PAVING. HMA JOINT SEALANT SHALL BE APPLIED TO ALL COLD JOINTS (LONGITUDINAL AND TRANSVERSE) BEFORE PAVING SURFACE COURSE. ASPHALT EMULSION FOR TACK COAT SHALL BE APPLIED IN ADEQUATE QUANTITIES TO ALL SURFACES WHICH SHALL BE CLEAN OF ALL ORGANICS, DEBRIS, AND SAND PRIOR TO PAVING.
- ALL HMA SHOULD BE IN ACCORDANCE WITH SECTION 450.
- ASPHALT EMULSION FOR TACK COAT SHALL BE RS-1H TO RESIST TRACKING OF TACK BY HAUL VEHICLES.
- HMA FOR WALKS AND DRIVEWAYS SHALL BE IN ACCORDANCE WITH SECTION 700.
- ALL GRAVEL BORROW MEETING SPECIFICATIONS SHALL BE RETAINED IN PLACE, COMPACTED, AND LEVELED AS REQUIRED.
- VARIABLE DEPTH MILLING (1/2" MIN) AS REQUIRED TO MEET PROPOSED LINES AND GRADINGS WITH RESURFACING OVERLAY.

CITY OF NEWTON  
 MASSACHUSETTS  
 TYPICAL SECTIONS & PAVEMENT NOTES - 1 OF 3  
 FOR THE  
 IMPROVEMENTS  
 AT  
 PETITE SQUARE  
 OAK STREET AT CHESTNUT STREET  
 SHEET 5 OF 45



CITY OF NEWTON  
 MASSACHUSETTS  
 TYPICAL SECTIONS & PAVEMENT NOTES - 2 OF 3  
 FOR THE  
 IMPROVEMENTS  
 AT  
 PETTEE SQUARE  
 OAK STREET AT CHESTNUT STREET  
 SHEET 6 OF 45



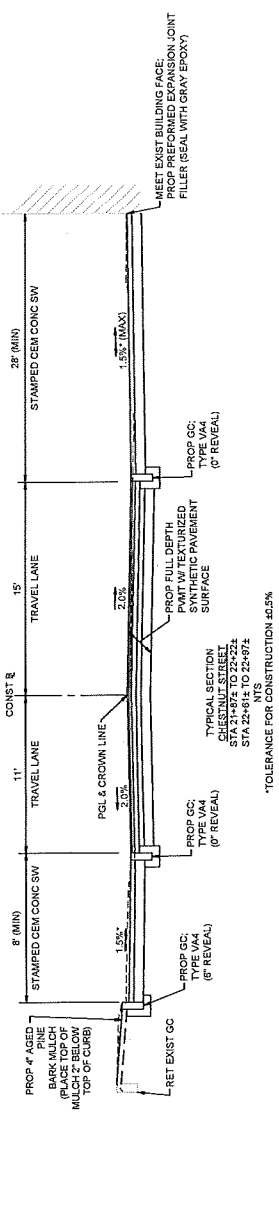
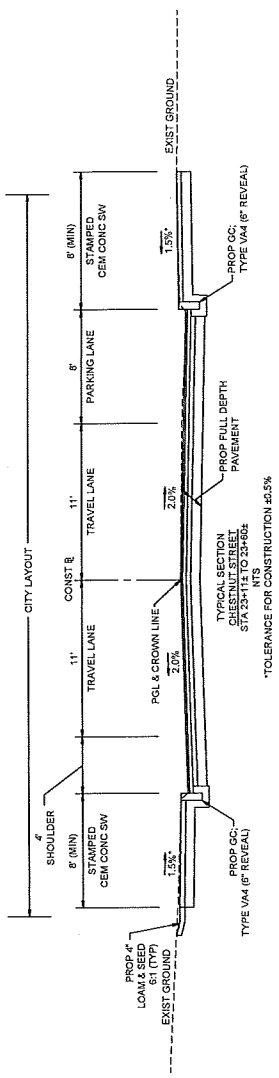
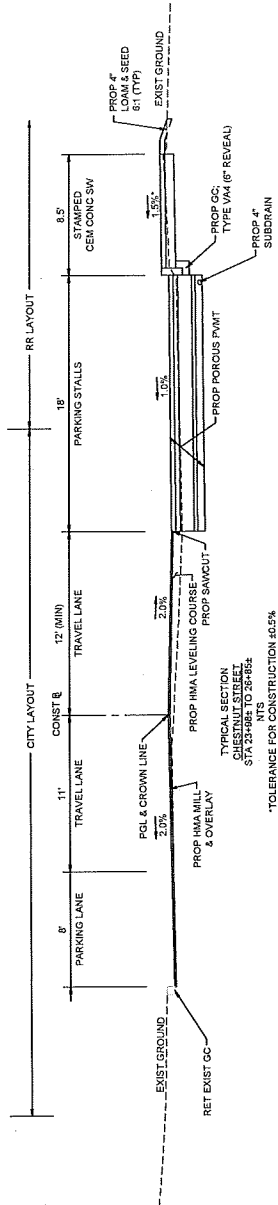
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CITY OF NEWTON  
 MASSACHUSETTS

DESIGNED BY: RAO  
 CHECKED BY: MLC  
 DESIGN DRAWN BY: MLC  
 APPROVED BY: LSA

CITY OF NEWTON  
 MASSACHUSETTS  
 TYPICAL SECTIONS & PAVEMENT NOTES - 3 OF 3  
 IMPROVEMENTS  
 AT  
 PETTEE SQUARE  
 OAK STREET AT CHESTNUT STREET  
 SHEET 7 OF 45



11010.HORIZONTAL SECTIONS.DWG PLOT 6/1 29/04/2021 2:35 PM

CITY OF NEWTON  
 MASSACHUSETTS  
 CONSTRUCTION BASELINE TIE PLANS - 1 OF 2  
 IMPROVEMENTS  
 AT  
 PETTEE SQUARE  
 OAK STREET AT CHESTNUT STREET  
 SHEET 8 OF 45

17100.MXD (CONSTRUCTION BASELINE TIE PLANS) DWG3  
 PLOTTED AT 25-04-2017 12:34 PM

**OAK STREET CONSTRUCTION BASELINE DATA**

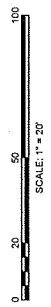
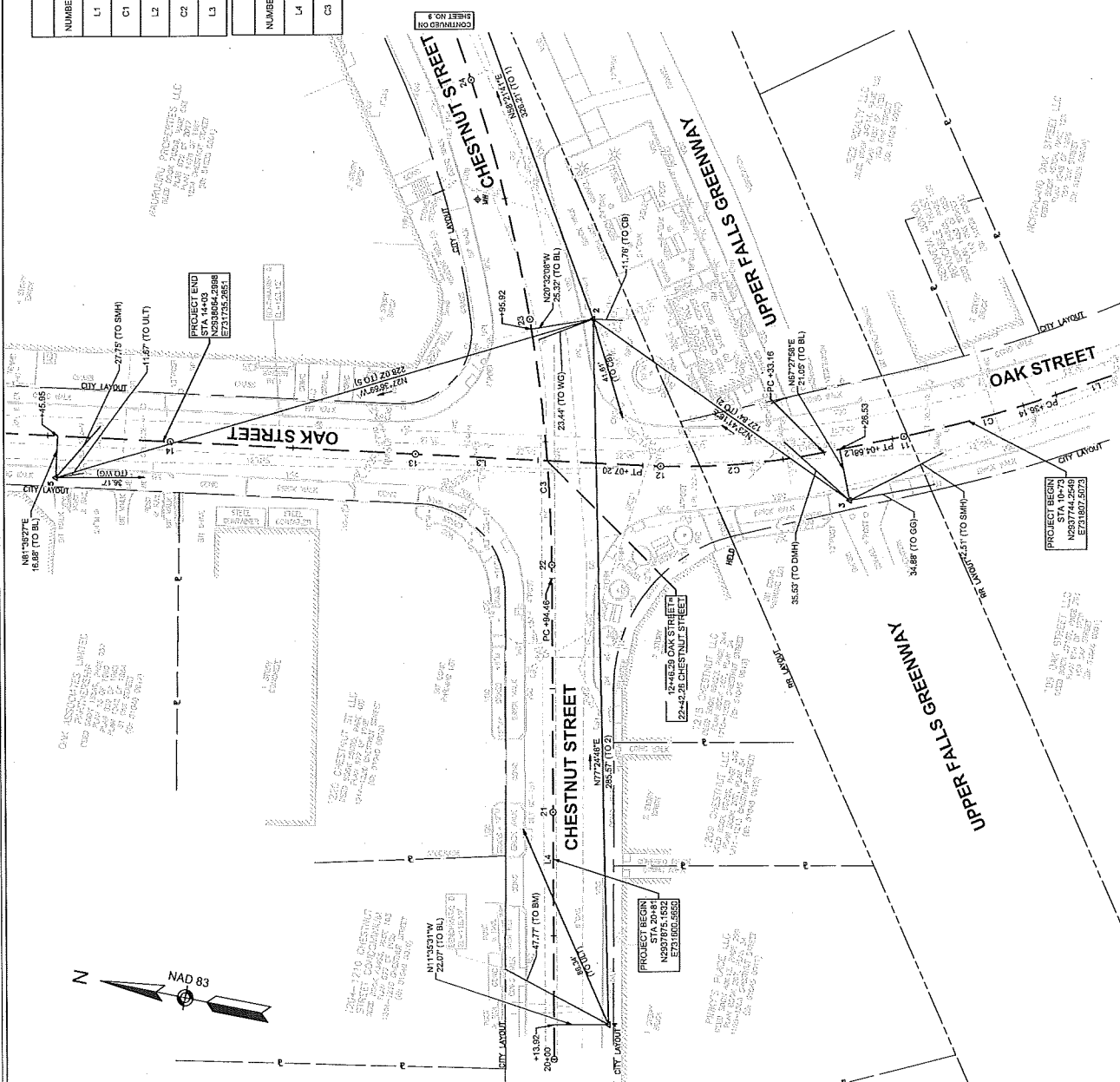
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L1	10+00.00	2927680.8253	731843.2460		N80°23'15"W 38.14'	10+38.14	2927711.8625	731854.9535
C1	10+38.14	2927711.8625	731824.9835	R=500.00' L=48.54' T=54.32'	Δ=7°31'14"	11+04.68	2927773.1120	731794.4481
L2	11+04.68	2927773.1120	731794.4481		N22°32'27"W 28.48'	11+35.18	2927798.4187	731783.8334
C2	11+35.18	2927798.4187	731783.8334	R=300.00' L=74.04' T=57.21'	Δ=14°08'29"	12+07.20	2927870.8613	731763.8420
L3	12+07.20	2927870.8613	731763.8420		N72°21'17"W 232.80'	15+00.00	2928160.2811	731721.1077

**CHESTNUT STREET CONSTRUCTION BASELINE DATA**

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
L4	20+00.00	2927858.8770	731521.2171		N78°24'29"E 184.46'	21+84.46	2927857.9519	731711.7112
C3	21+84.46	2927857.9519	731711.7112	R=650.00' L=288.89' T=186.92'	Δ=23°47'29"	24+64.38	2928004.7458	731957.4707

**Survey Traverse Point Table**

Point #	Northing	Easting	Elevation	Row Description
2	2927682.291	731817.992	120.034	MTRV MMAG
3	2927785.222	731786.831	118.108	MTRV MDHL
4	2927846.097	731539.284	117.574	MTRV MDHL
5	2928104.329	731712.296	120.089	MTRV MDHL



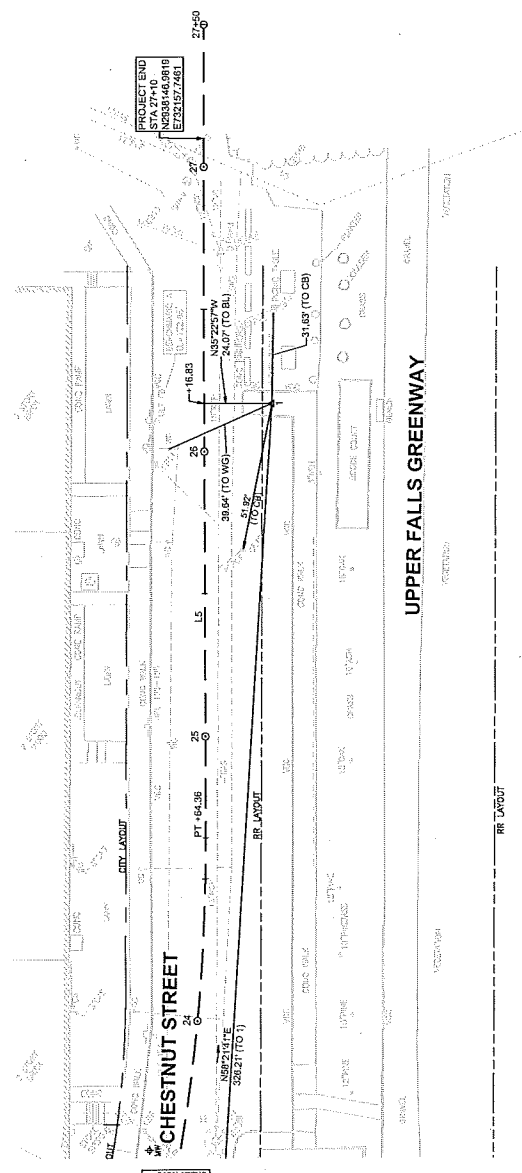
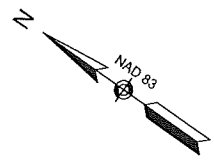
CITY OF NEWTON  
 MASSACHUSETTS  
 CONSTRUCTION BASELINE TIE PLANS - 2 OF 2  
 FOR THE  
 IMPROVEMENTS  
 AT  
 PETTEE SQUARE  
 OAK STREET AT CHESTNUT STREET  
 SHEET 9 OF 15

CHESTNUT STREET CONSTRUCTION BASELINE DATA

NUMBER	STARTING STATION	NORTHING	EASTING	CURVE DATA	LINE DATA	ENDING STATION	NORTHING	EASTING
C3	21+84.46	2927897.9519	731711.7112	R = 650.00' L = 289.89'	$\Delta = 234.7230'$ I = 138.92'	24+64.36	2988064.7456	731957.7077
L5	24+64.36	2938064.7458	731957.4707		N54°37'00"E 285.64'	27+50.00	2988176.1431	732190.3583

Survey Traverse Point Table

Point #	Northing	Easting	Elevation	Raw Description
1	2988075.408	732062.716	120.825	MTRV ADJHL



MASSACHUSETTS REGISTERED PROFESSIONAL ENGINEER  
 LICENSE NO. 10000  
 1000 STATE STREET, SUITE 200  
 NEWTON, MASSACHUSETTS 02459-1000  
 TEL: 617-552-3300  
 FAX: 617-552-3301  
 WWW.MASSPEA.COM

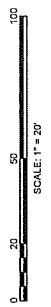


CITY OF NEWTON  
 MASSACHUSETTS

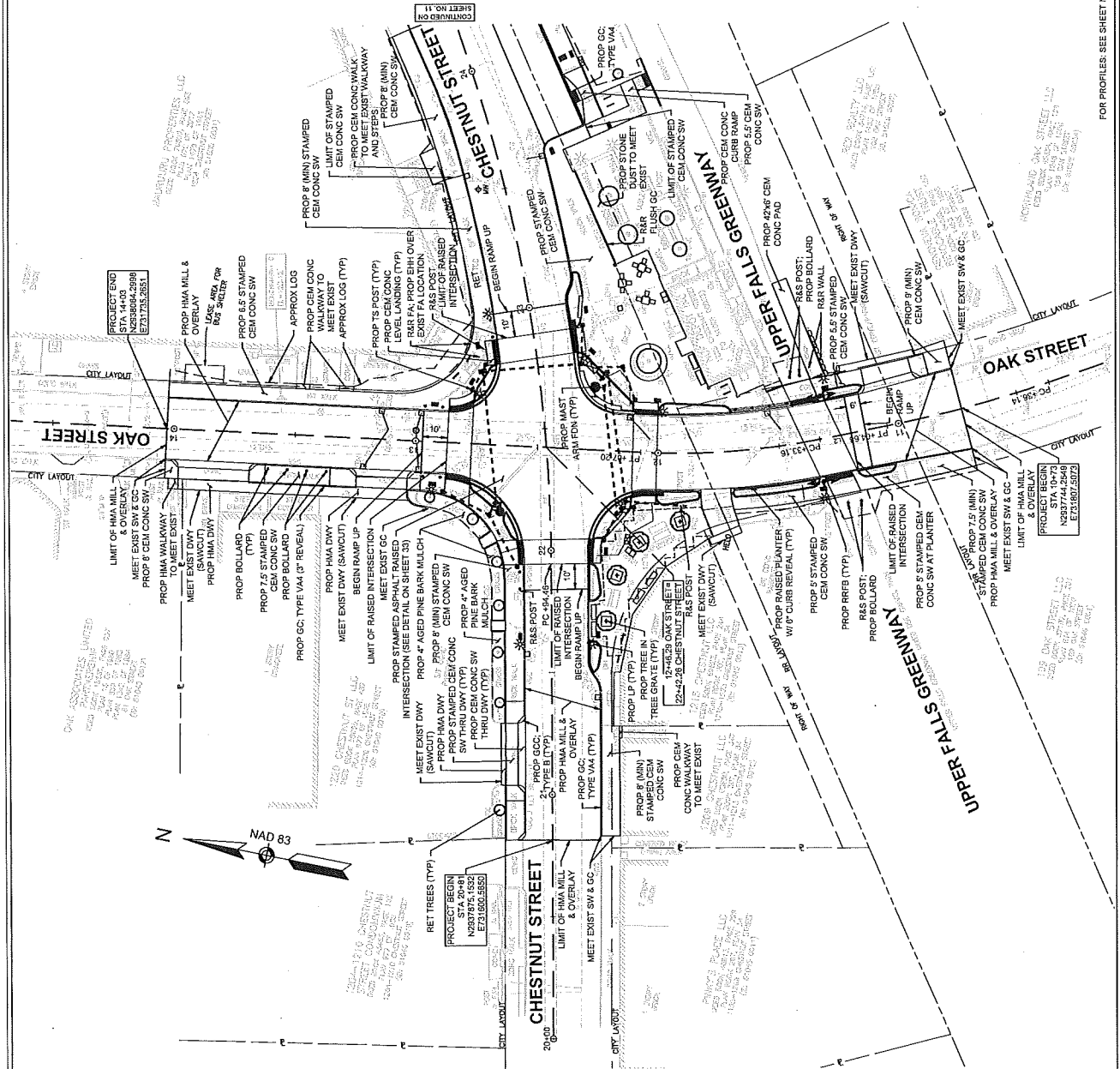
DESIGNED BY: BLS  
 CHECKED BY: LSA  
 APPROVED BY: LSA

CITY OF NEWTON  
 MASSACHUSETTS  
 CONSTRUCTION PLANS - 1 OF 2  
 FOR THE  
 IMPROVEMENTS  
 AT  
 PETTEE SQUARE  
 OAK STREET AT CHESTNUT STREET

SHEET 10 OF 45



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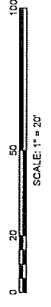


FOR PROFILES SEE SHEET NO. 12

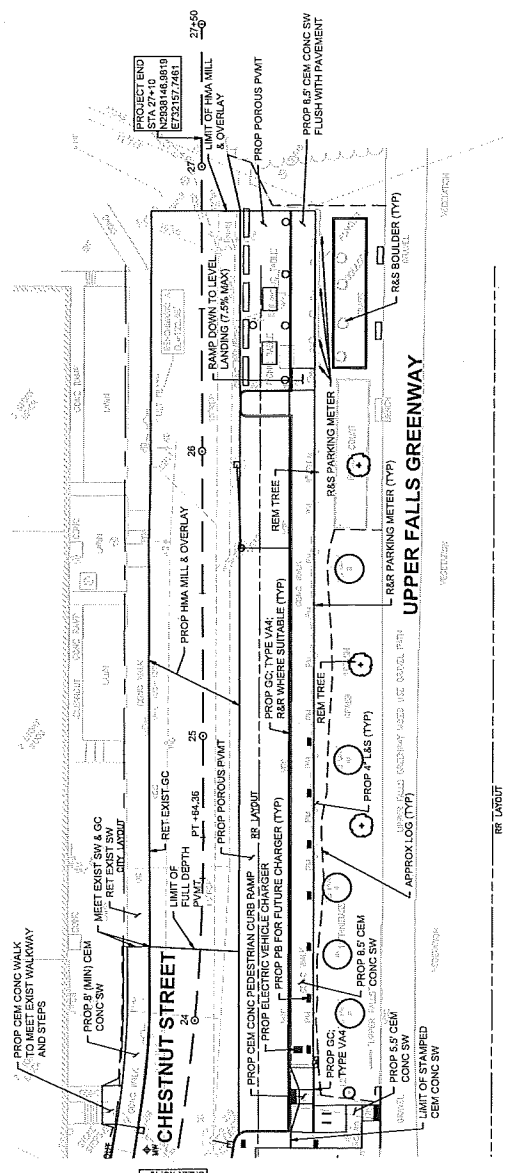
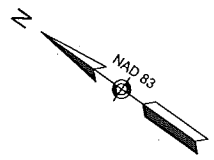
<p>CITY OF NEWTON          MASSACHUSETTS</p>	DESIGNED BY: RJC CHECKED BY: LSA APPROVED BY: LSA
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CITY OF NEWTON  
MASSACHUSETTS  
CONSTRUCTION PLANS - 1 OF 2  
FOR THE  
IMPROVEMENTS  
AT  
PETTEE SQUARE  
OAK STREET AT CHESTNUT STREET  
SHEET 11 OF 45



FOR PROFILE: SEE SHEET NO. 12



NOT TO SCALE  
FOR INFORMATION ONLY  
SEE SHEET NO. 12  
FOR PROFILE

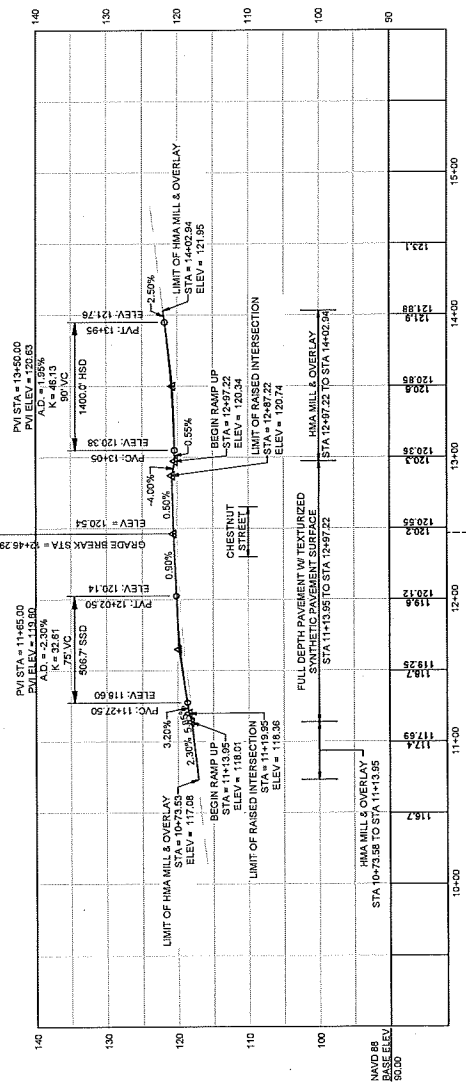
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CONTINUED ON

CITY OF NEWTON  
MASSACHUSETTS

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CHECKED BY: RLS  
APPROVED BY: LSA

CITY OF NEWTON  
 MASSACHUSETTS  
 PROFILES  
 FOR THE  
 IMPROVEMENTS  
 AT  
 PETEE SQUARE  
 OAK STREET AT CHESTNUT STREET  
 SHEET 12 OF 45

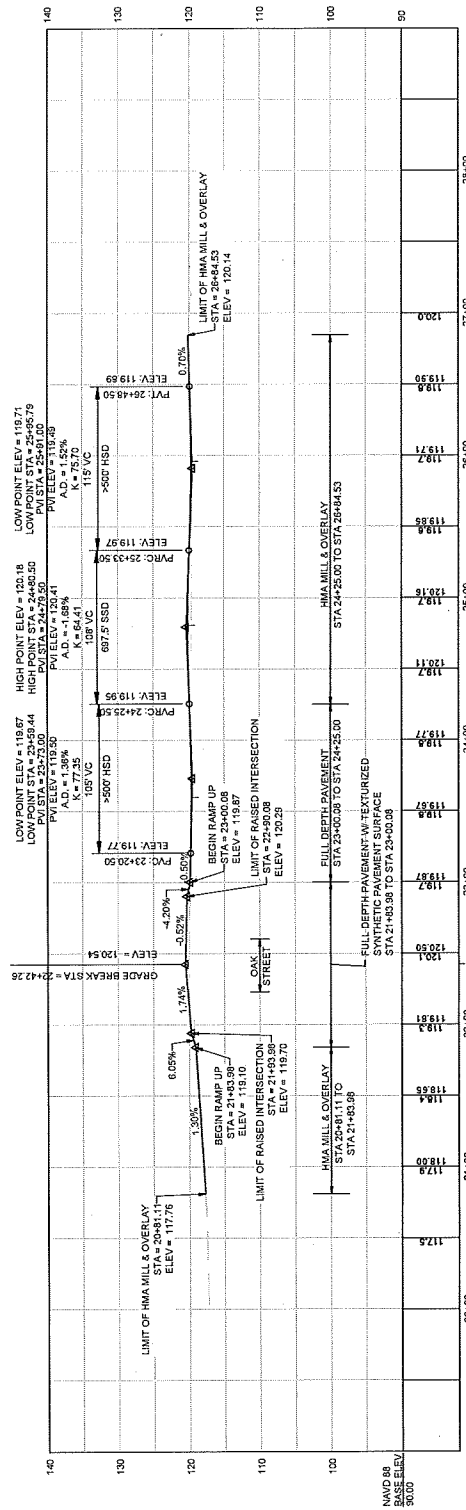
**OAK STREET**



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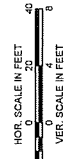
STA 12+45.29 TO STA 12+74  
 STA 22+42.00 TO CHESTNUT ST E

**CHESTNUT STREET**



FOR CONSTRUCTION PLAN:  
 SEE SHEET NOS. 10-11

STA 12+45.29 TO STA 12+74  
 STA 22+42.00 TO CHESTNUT ST E

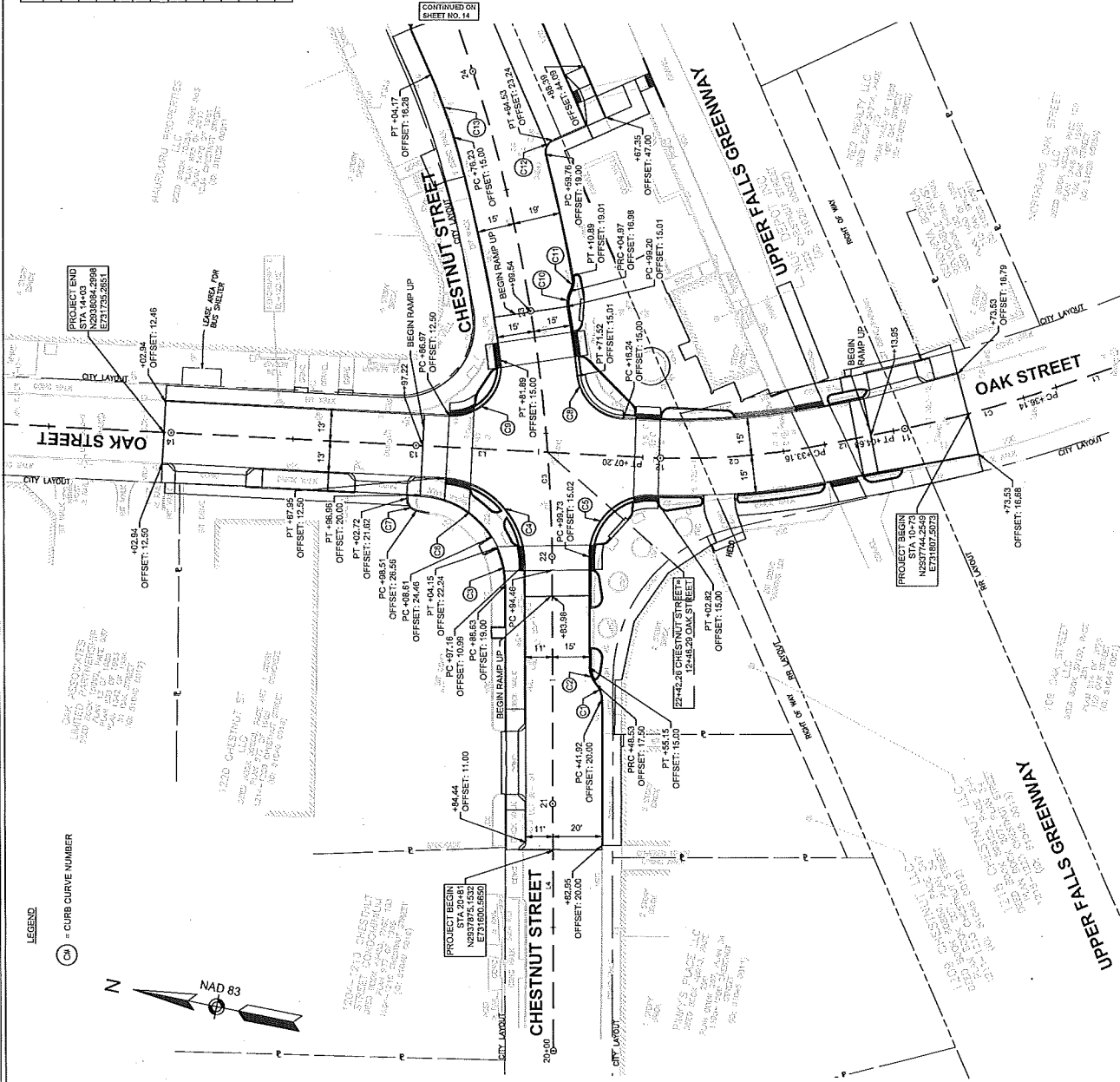


CITY OF NEWTON  
 MASSACHUSETTS

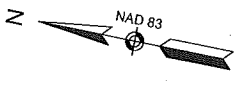
DESIGNED BY: R.A.  
 CHECKED BY: M.S.A.  
 APPROVED BY: M.S.A.

CITY OF NEWTON  
 MASSACHUSETTS  
 CURBIE PLANS - 1 OF 2  
 FOR THE  
 IMPROVEMENTS  
 TO  
 PETTEE SQUARE  
 OAK STREET AT CHESTNUT STREET  
 SHEET 13 OF 45

CURVE #	DELTA	RADIUS	LENGTH	TANGENT
C1	41°24'35"	10.00	7.23	3.78
C2	41°24'35"	10.00	7.23	3.78
C3	24°35'05"	34.50	15.68	7.95
C4	80°48'02"	34.50	53.02	33.10
C5	82°21'43"	25.00	40.30	28.05
C6	54°30'25"	34.50	34.79	18.84
C7	80°52'05"	5.00	7.05	4.25
C8	80°00'21"	20.00	27.63	16.78
C9	100°54'22"	20.00	35.22	24.22
C10	35°21'27"	10.00	6.35	3.28
C11	37°23'16"	10.00	6.53	3.38
C12	81°02'30"	5.00	7.07	4.27
C13	7°48'57"	200.00	27.34	13.69



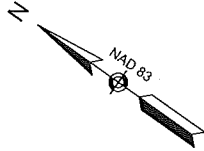
LEGEND  
 (C#) = CURB CURVE NUMBER



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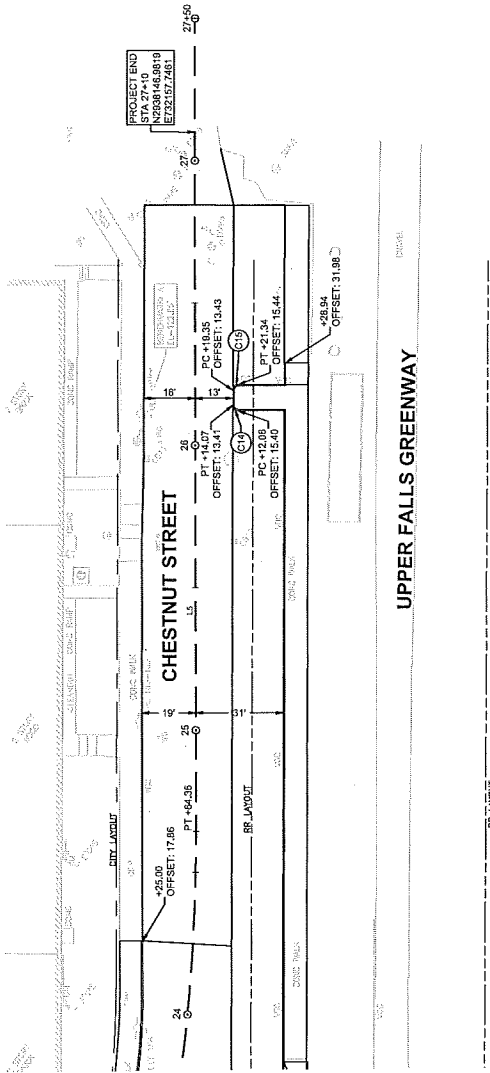
CITY OF NEWTON  
MASSACHUSETTS  
CURB THE PLAN IS - 2 OF 2  
FOR THE  
IMPROVEMENTS  
AT  
PETTEE SQUARE  
OAK STREET AT CHESTNUT STREET  
SHEET 14 OF 45

CURVE TABLE			
CURVE #	DELTA	RADIUS	TANGENT
C14	90° 00' 00"	2.00	3.14
C15	90° 00' 00"	2.00	3.14



LEGEND  
Ⓢ = CURB CURVE NUMBER

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WEB SITE: WWW.CITYOFNEWTON.MA.GOV  
100 CITY OF NEWTON  
100 CITY OF NEWTON  
100 CITY OF NEWTON

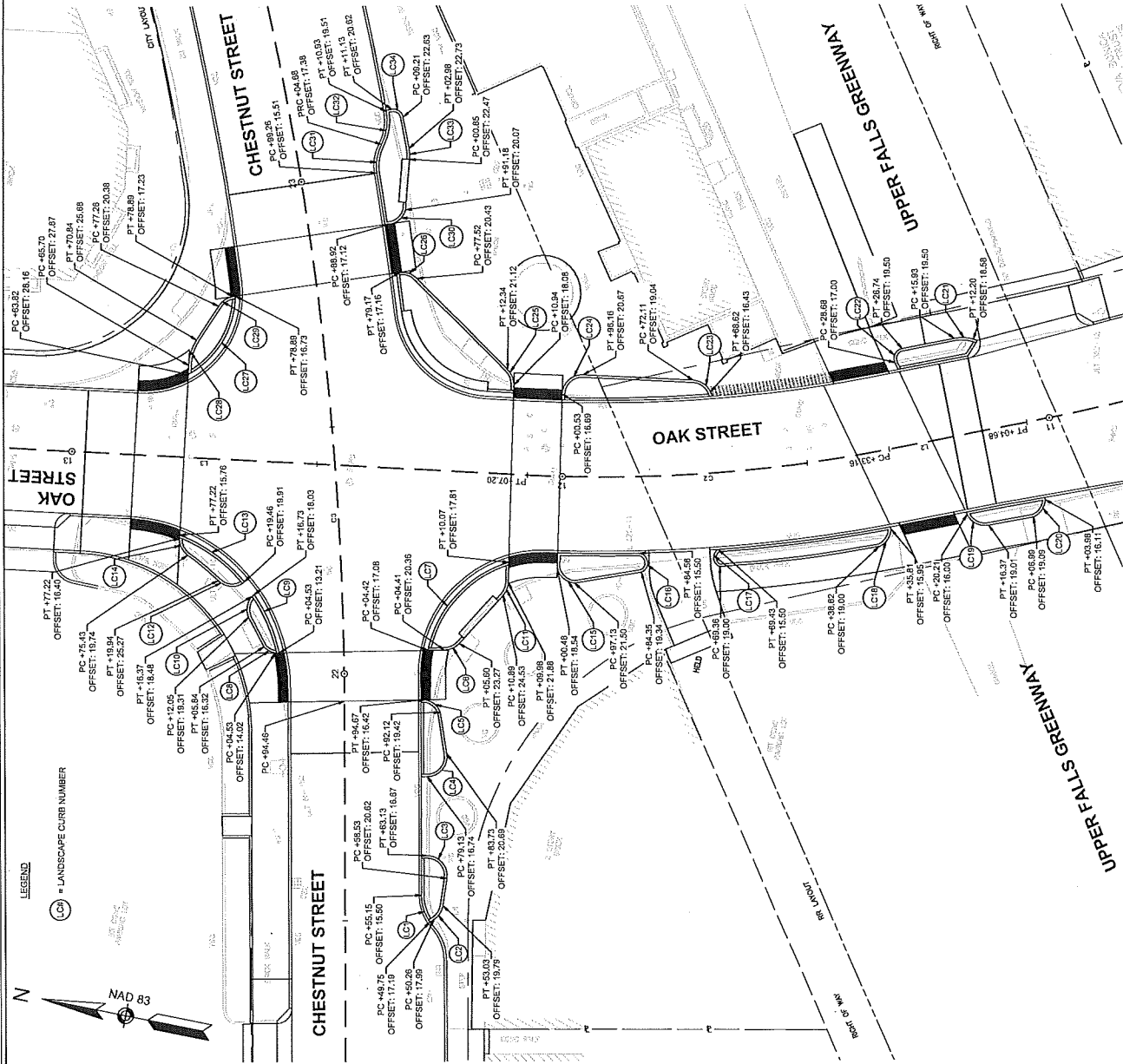


CITY OF NEWTON  
 MASSACHUSETTS  
 LANDSCAPE CURB TIE PLANS - 1 OF 1  
 IMPROVEMENTS  
 AT  
 PETTEE SQUARE  
 OAK STREET AT CHESTNUT STREET

SHEET 15 OF 45

CURVE #	DELTA	RADIUS	LENGTH	TANGENT
LC21	27°49'25"	8.00	3.88	1.58
LC22	104°23'37"	2.00	3.64	2.58
LC23	03°15'23"	4.00	4.42	2.46
LC24	91°08'02"	4.00	6.36	4.08
LC25	49°43'05"	4.00	3.47	1.85
LC26	54°44'40"	4.00	3.82	2.07
LC27	60°01'35"	18.50	19.38	10.89
LC28	31°16'38"	10.00	5.46	2.80
LC29	56°04'14"	4.00	3.91	2.13
LC30	36°00'29"	9.48	5.96	3.08
LC31	15°54'10"	8.00	2.22	1.12
LC34	89°56'06"	2.00	3.14	1.99

CURVE #	DELTA	RADIUS	LENGTH	TANGENT
LC1	34°39'14"	9.50	5.75	2.86
LC2	48°49'39"	4.00	3.41	1.62
LC3	89°30'08"	4.00	6.89	4.65
LC4	98°38'08"	4.00	8.89	4.65
LC5	58°58'38"	4.00	4.12	2.26
LC6	46°28'46"	4.00	3.24	1.72
LC7	81°51'55"	23.50	25.37	14.88
LC8	38°22'21"	4.00	2.68	1.36
LC9	83°43'51"	4.00	4.45	2.49
LC10	41°01'05"	4.00	2.88	1.50
LC11	80°25'09"	4.00	5.98	3.69
LC12	28°02'40"	33.50	16.40	8.37
LC13	55°31'04"	4.00	3.85	2.15
LC14	70°59'31"	4.00	4.05	2.84
LC15	149°09'38"	2.00	5.20	7.21
LC16	122°08'37"	2.00	4.26	3.62
LC17	84°21'08"	4.00	4.48	2.52
LC18	75°07'26"	4.00	5.24	3.08
LC19	84°03'20"	4.00	4.47	2.50



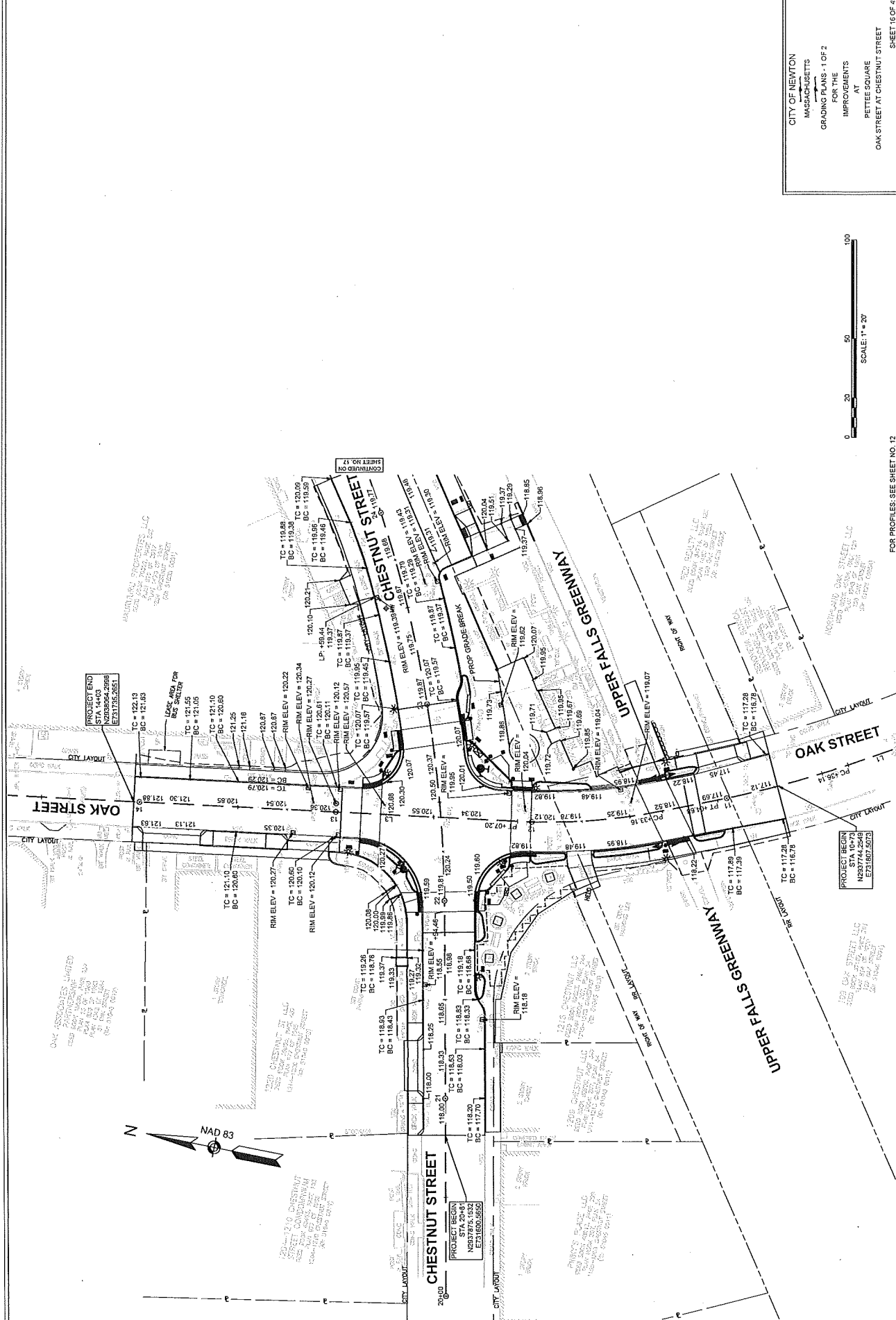
LEGEND

(LC#) = LANDSCAPE CURB NUMBER



CITY OF NEWTON  
MASSACHUSETTS  
FOR THE  
IMPROVEMENTS  
AT  
PETTEE SQUARE  
OAK STREET AT CHESTNUT STREET  
SHEET 16 OF 45

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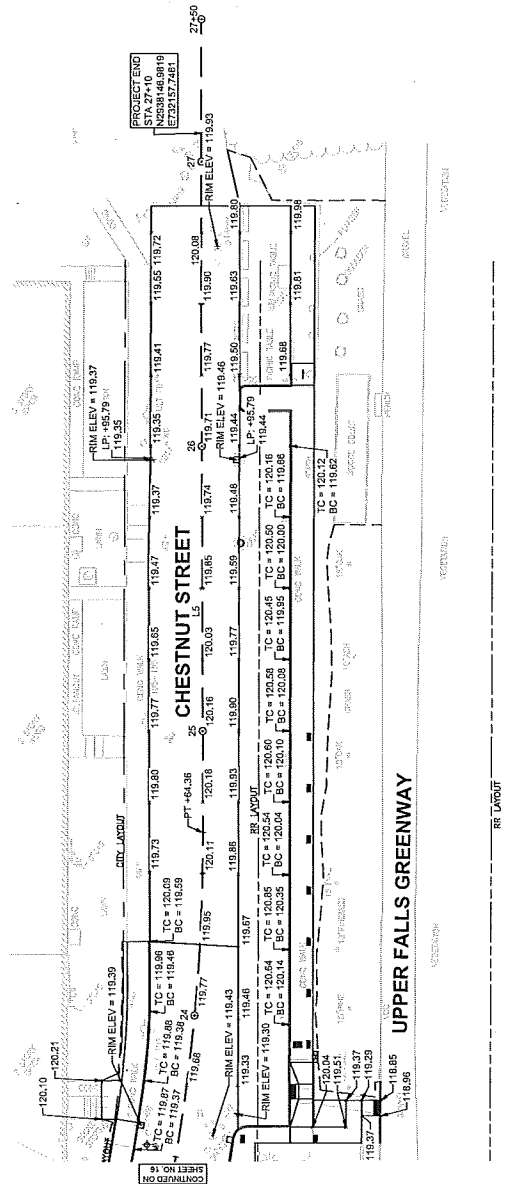
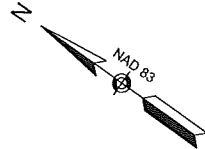
FOR PROFILES SEE SHEET NO. 12

DESIGNED BY: RAC  
 CHECKED BY: LSA  
 APPROVED BY: LSA  
 CITY OF NEWTON  
 MASSACHUSETTS

CITY OF NEWTON  
 MASSACHUSETTS  
 GRADING PLANS - 1 OF 2  
 IMPROVEMENTS  
 AT  
 PETTEE SQUARE  
 OAK STREET AT CHESTNUT STREET



FOR PROFILE, SEE SHEET NO. 12



WATKINS ENGINEERING, INC.  
 100 STATE STREET, SUITE 200  
 NEWTON, MASSACHUSETTS 02459  
 TEL: 617-552-1100  
 FAX: 617-552-1101  
 WWW.WATKINS-INC.COM

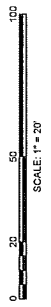
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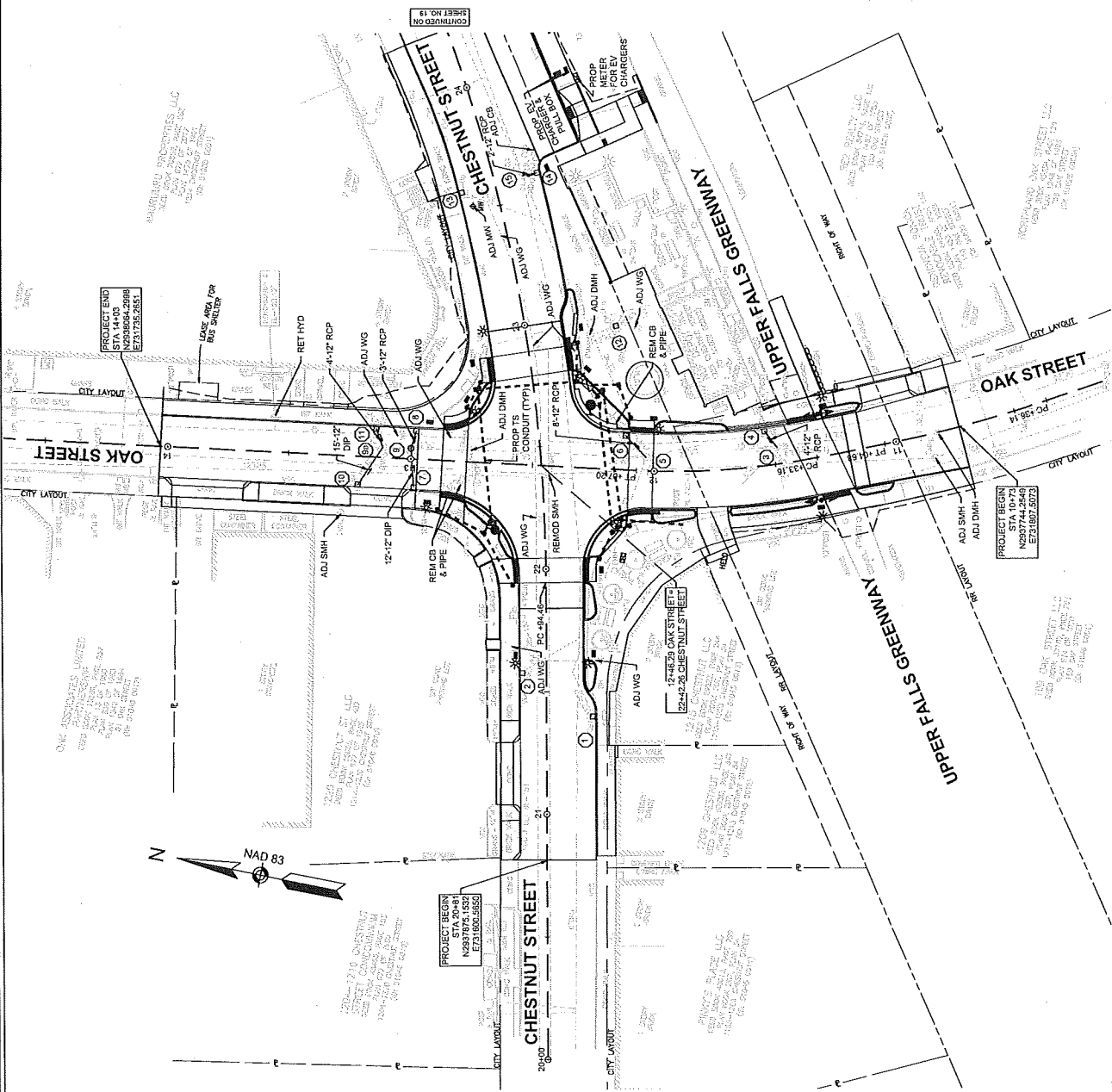
CITY OF NEWTON  
 MASSACHUSETTS

DESIGNED BY: BAC  
 CHECKED BY: LSA  
 APPROVED BY: LSA

CITY OF NEWTON  
 MASSACHUSETTS  
 DRAINAGE & UTILITY PLANS - 1 OF 2  
 IMPROVEMENTS  
 AT  
 PETTEE SQUARE  
 OAK STREET AT CHESTNUT STREET



PROPOSED DRAINAGE STRUCTURE DATA						
NO.	TYPE	STATION	RIM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
1	PROP CSCI	21+38.0, 19.0 RT	118.18	-	114.7 (EX)	4" SUMP, REM EXIST CB
2	PROP CSCI	21+57.6, 10.0 LT	118.55	-	115.6 (EX)	4" SUMP, REM EXIST CB
3	EXIST DMH	11+48.5, 6.7 RT	119.07	110.0 (EX) 110.6 (EX) 110.4 (EX) 115.44 (FROM 4)	109.8 (EX)	EXIST DMH 2; CORE HOLE IN EXIST
4	PROP CB	11+53.0, 14.0 RT	119.04	-	115.54	4" SUMP
5	EXIST DMH	12+00.6, 5.7 RT	120.04	110.5 (EX) 110.5 (EX)	110.5 (EX)	EXIST DMH 1; ADJUST
6	PROP CB	12+12.4, 14.0 RT	118.85	-	115.85	4" SUMP
7	SPECIAL CB	12+82.2, 11.5 LT	120.12	-	117.12	SHALLOW 4" SUMP
8	PROP CB	12+98.2, 11.5 RT	120.12	-	116.82	OFFSET TOP, 4" SUMP
9	PROP DMH	13+00.1, 4.2 RT	120.27	117.0 (FROM 7) 116.52 (FROM 8)	116.82	MATCH EXIST (111.68)
9a	EXIST DMH	13+00.1, 4.2 RT	120.34	117.7 (FROM 9) 116.62 (FROM 11)	116.62	MATCH EXIST (111.84)
10	PROP SPECIAL CB	13+21.2, 11.5 LT	120.27	-	117.27	SHALLOW 4" SUMP, REM EXIST CB
11	PROP CSCI	13+14.7, 11.5 RT	120.22	-	116.72	OFFSET TOP, 4" SUMP, REM EXIST CB
12	PROP CB	22+437.3, 7.0 RT	119.64	117.0 (EX)	114.8 (EX)	4" SUMP, REM EXIST CB
13	PROP CSCI	23+49.0, 14.0 LT	119.36	117.1 (EX)	114.8 (EX)	4" SUMP, REM EXIST CB
14	PROP CB	23+44.5, 16.0 RT	119.28	-	115.78	4" SUMP
15	EXIST DMH	23+48.4, 11.8 RT	119.40	111.4 (EX) 114.4 (EX) 115.08 (FROM 14)	111.4 (EX)	EXIST DMH 7; ADJUST; CORE HOLE IN EXIST



DESIGNED BY: B.C. [Signature]

CHECKED BY: [Signature]

APPROVED BY: [Signature]

CITY OF NEWTON, MASSACHUSETTS

PROJECT BEGIN: STA 14+00, N2539864-2998, E731725-2551

PROJECT END: STA 14+00, N2539864-2998, E731725-2551

PROJECT BEGIN: STA 10+73, N2537741-2548, E732602-2573

PROJECT END: STA 10+73, N2537741-2548, E732602-2573

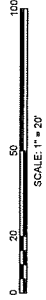
PROJECT BEGIN: STA 14+00, N2539864-2998, E731725-2551

PROJECT END: STA 14+00, N2539864-2998, E731725-2551

1710\H0110\REVISED.DWG Project on 25-04-2023 2:35 PM

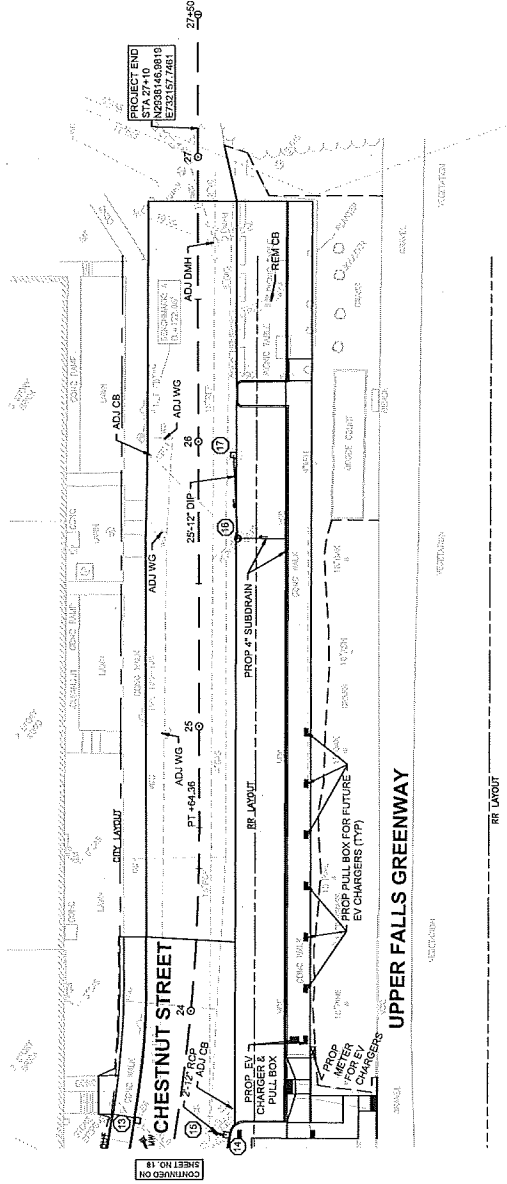
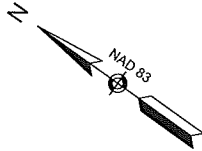


CITY OF NEWTON  
 MASSACHUSETTS  
 DRAINAGE & UTILITY PLANS - 2 OF 2  
 FOR THE  
 IMPROVEMENTS  
 AT  
 PETTEE SQUARE  
 OAK STREET AT CHESTNUT STREET  
 SHEET 19 OF 45



PROPOSED DRAINAGE STRUCTURE DATA						
NO.	TYPE	STATION	RM ELEV.	INV. ELEV. IN	INV. ELEV. OUT	REMARKS
13	PROP CB	23+58.0, 14.0' LT	119.36	117.1 (EX)	114.8 (EX)	4 SUMP REM EXIST CB
14	PROP CB	23+54.5, 18.0' RT	119.28	-	115.78	4 SUMP
15	EXIST DMH	23+59.4, 11.8' RT	119.40	111.4 (EX) 115.68 (FROM 14)	111.4 (EX)	EXIST DMH 7' ADJUST CORE POLE IN EXIST
16	CIT TO DMH	25+85.9, 13.8' RT	119.52	116.30 (FROM 17) 116.25 (SUBGRAN)	116.3 (EX)	
17	PROP SPECIAL CB	29+56.2, 12.3' RT	119.47	-	116.47	SHALLOW OFFSET TOP 4' SUMP

DATE: 11/11/2014  
 TIME: 10:53:37  
 USER: JAC  
 PROJECT: 11-11-14  
 DRAWING: 11-11-14  
 SHEET: 18-23  
 SCALE: 1"=20'  
 PROJECT: 11-11-14  
 TIME: 10:53:37  
 USER: JAC  
 PROJECT: 11-11-14  
 DRAWING: 11-11-14  
 SHEET: 18-23  
 SCALE: 1"=20'



MAINTENANCE CONTRACT NO. 11-11-14  
 11-11-14  
 11-11-14  
 11-11-14

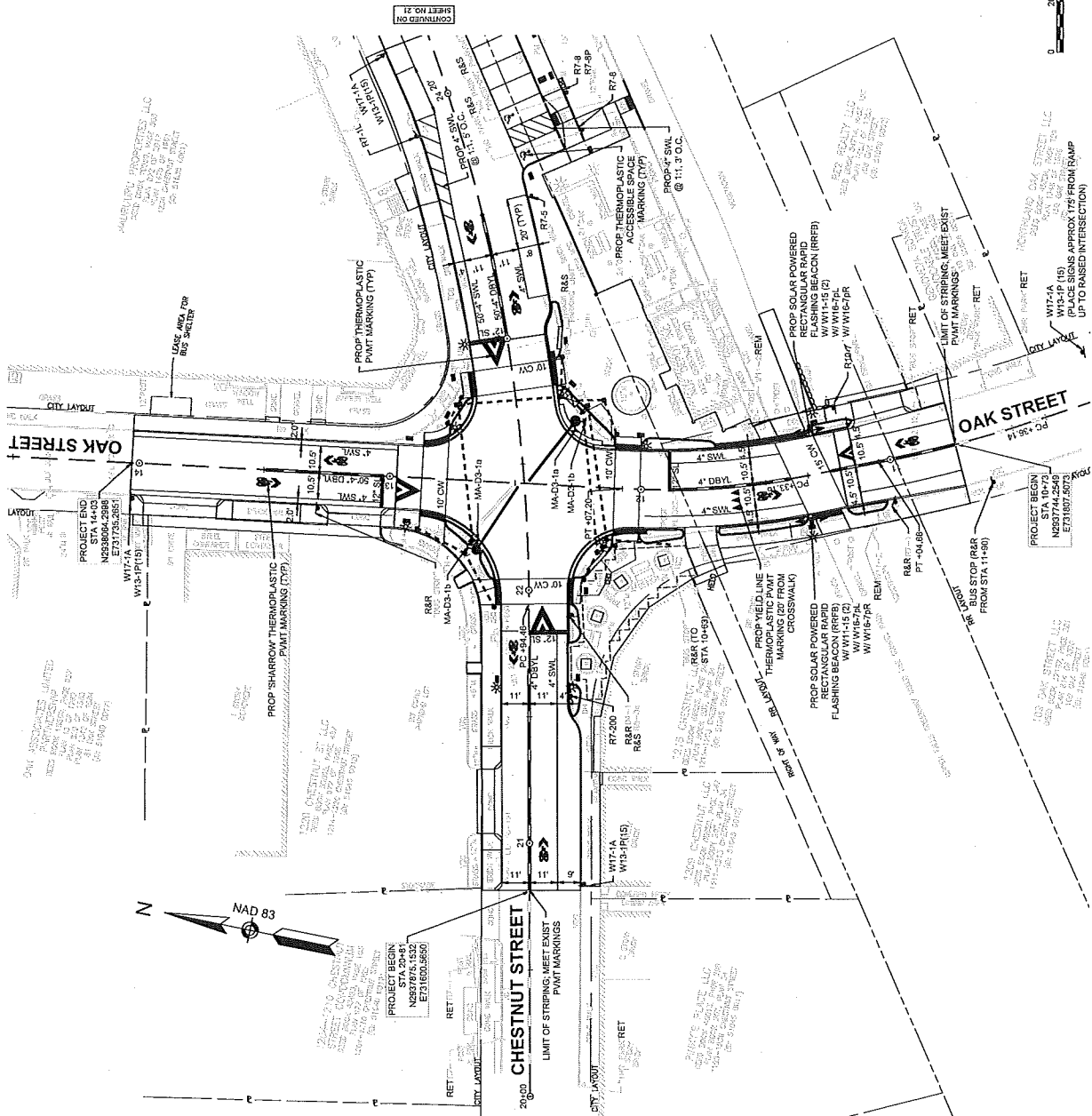
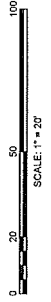
SHEET NO. 18

CITY OF NEWTON  
 MASSACHUSETTS  
 TRAFFIC SIGN & PAVEMENT MARKING PLANS - 1 OF  
 IMPROVEMENTS  
 FOR THE  
 AT  
 PETTEE SQUARE  
 OAK STREET AT CHESTNUT STREET  
 SHEET 20 OF 45

NOTES:

1. ALL EXISTING SIGNS WITHIN THE PROJECT LIMITS SHALL BE RETAINED UNLESS INDICATED OTHERWISE ON THE DRAWINGS.
2. ALL PAVEMENT MARKINGS WITHIN THE LIMITS OF WORK SHALL BE THERMOPLASTIC MATERIALS.
3. IN AREAS WHERE THE EXISTING PAVEMENT IS BEING RETAINED, ALL EXISTING PAVEMENT MARKINGS SHALL BE REMOVED BY APPROVED METHODS.
4. A MINIMUM OF 3'-0" PATH OF TRAVEL CLEARANCE, EXCLUDING CURB, IS REQUIRED WHEN PLACING SIGNS.
5. THE MINIMUM MOUNTING HEIGHT OF POST MOUNTED SIGNS, MEASURED VERTICALLY FROM THE TOP OF THE SIGN TO THE TOP OF THE SIGN, SHALL BE 6'-0" FOR SIGNS WITHIN 10 FEET OF THE SHARED USE PATH, SHALL BE 8'-0" FOR SIGNS WITHIN 10 FEET OF THE SHARED USE PATH, SHALL BE 10'-0" MINIMUM VERTICAL CLEARANCE.

FOR SIGN SUMMARY, SEE SHEET 22



CITY OF NEWTON  
MASSACHUSETTS

FOR THE  
TRAFFIC SIGN & PAVEMENT MARKING PLANS - 2 OF 2

AT  
PETTEE SQUARE  
IMPROVEMENTS

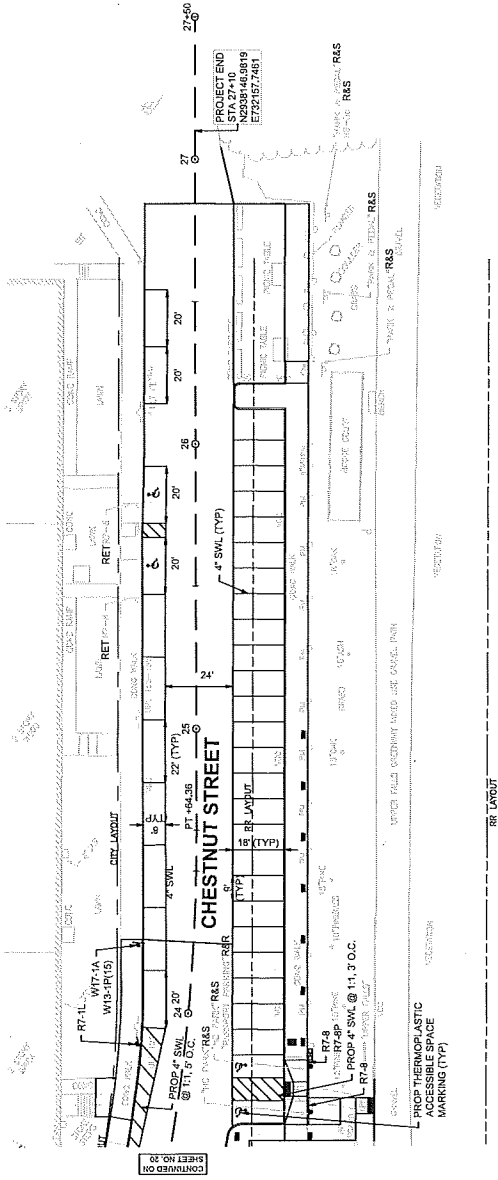
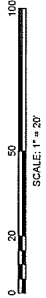
OAK STREET AT CHESTNUT STREET

SHEET 21 OF 45

NOTES:

1. ALL EXISTING SIGNS WITHIN THE PROJECT LIMITS SHALL BE RETAINED UNLESS INDICATED OTHERWISE ON THE DRAWINGS.
2. ALL PAVEMENT MARKINGS WITHIN THE LIMITS OF WORK SHALL BE THERMOPLASTIC MATERIALS.
3. IN AREAS WHERE THE EXISTING PAVEMENT IS BEING RETAINED, ALL EXISTING PAVEMENT MARKINGS IN CONFLICT WITH PROPOSED PAVEMENT MARKINGS SHALL BE REMOVED BY APPROVED METHODS.
4. A MINIMUM OF 3'0" PATH OF TRAVEL CLEARANCE, EXCLUDING CURB, IS REQUIRED WHEN PLACING SIGNS.
5. THE MINIMUM MOUNTING HEIGHT OF POST MOUNTED SIGNS, MEASURED VERTICALLY FROM THE BOTTOM OF THE SIGN TO THE TOP OF THE CURB OR SIDEWALK SHALL BE 7 FEET. SIGNS WITHIN 3 FEET OF THE SHARED USE PATH SHALL BE MOUNTED WITH 8 FOOT MINIMUM VERTICAL CLEARANCE.

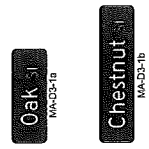
FOR SIGN SUMMARY: SEE SHEET 22



CONTINUED ON  
SHEET NO. 20



CITY OF NEWTON  
 MASSACHUSETTS  
 TRAFFIC SIGN SUMMARY  
 FOR THE  
 IMPROVEMENTS  
 AT  
 PETTEE SQUARE  
 OAK STREET AT CHESTNUT STREET  
 SHEET 22 OF 45

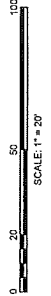


TEMPORARY TRAFFIC SIGN SUMMARY

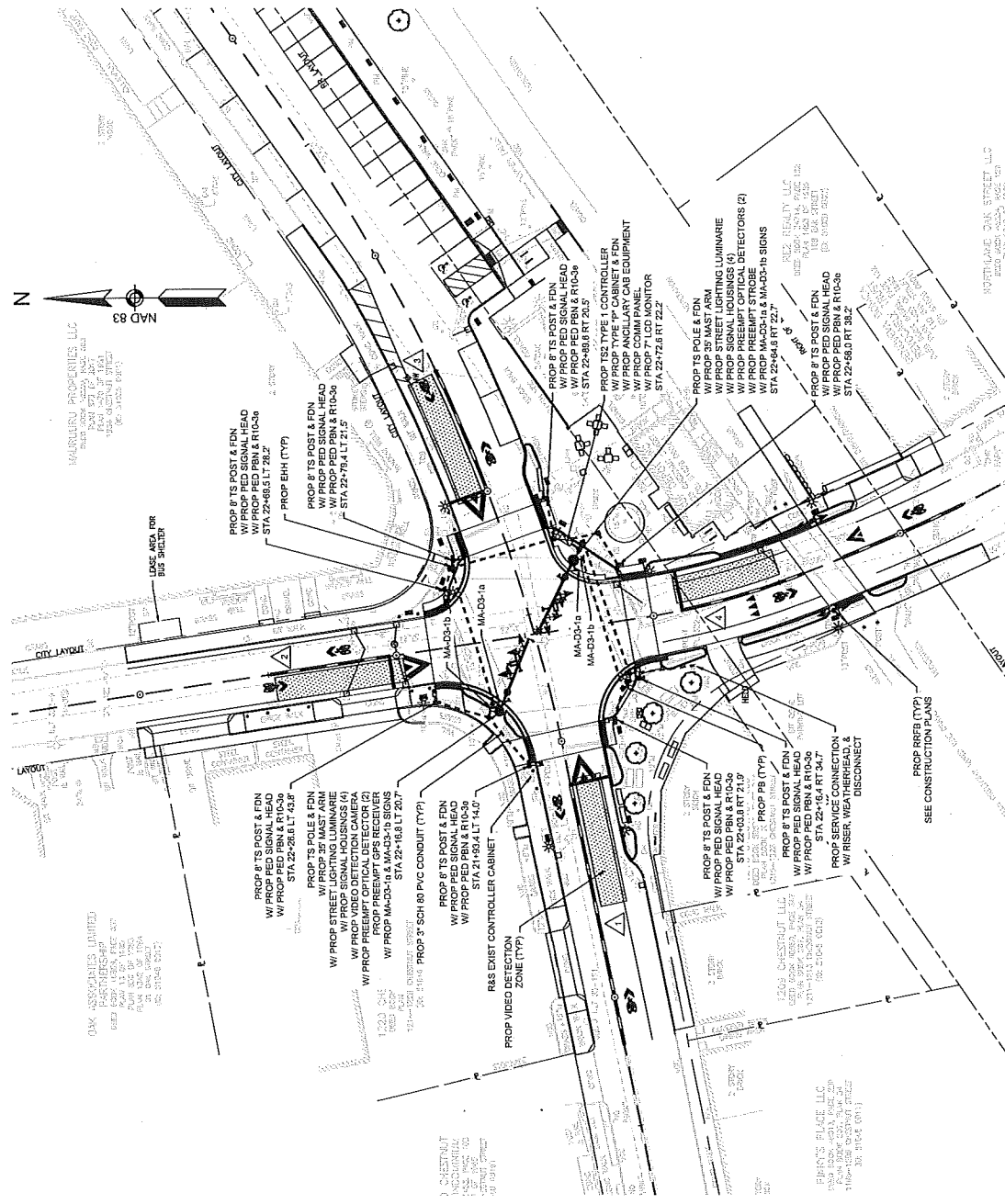
IDENTIFICATION NUMBER	SIZE OF SIGN (in)		LEGEND	TEXT DIMENSIONS (in)			NUMBER OF SIGNS REQUIRED	COLOR		SIZE AND NUMBER OF POSTS REQUIRED	UNIT AREA (SF)	TOTAL AREA (SF)
	WIDTH	HEIGHT		LETTER HEIGHT	VERTICAL SPACING	ARROW W/ MARK		BACK-GROUND	BORDER			
MA-D3-1b	33	12	SEE RIGHT	60 / 40	3	N/A	2	GREEN	WHITE	MOUNT ON IMPACT SIGN POLE	PAID FOR UNDER ITEM 824	
MA-D3-1b	48	12	SEE RIGHT	60 / 40	3	N/A	2	GREEN	WHITE	MOUNT ON IMPACT SIGN POLE	PAID FOR UNDER ITEM 824	
R7-1L	12	18					1	WHITE	RED	P5 1	1.50	1.50
R7-5	12	18					1	WHITE	GREEN	P5 1	1.50	1.50
R7-8	12	18					2	WHITE / BLUE	GREEN / WHITE	P5 2	1.50	3.00
R7-8P	18	9					1	WHITE	GREEN	MOUNT W/ R7-8	1.13	1.13
R7-200	24	18					1	WHITE	RED / GREEN	P5 1	3.00	3.00
R10-3b	9	15					8	WHITE	BLACK	MOUNT ON TS POSTS	PAID FOR UNDER ITEM 815.01	
R10-7	24	30					1	WHITE	BLACK	P5 1	5.00	5.00
W11-15	30	30					4	FL YELLOW-GREEN	BLACK	MOUNT ON RRFB	PAID FOR UNDER ITEM 824.221	
W15-1P(15)	18	18					4	YELLOW	BLACK	MOUNT W/ W17-1A	2.25	9.00
W15-7/L	24	12					2	FL YELLOW-GREEN	BLACK	MOUNT ON RRFB	PAID FOR UNDER ITEM 824.221	
W15-7/R	24	12					2	FL YELLOW-GREEN	BLACK	MOUNT ON RRFB	PAID FOR UNDER ITEM 824.221	
W17-1A	30	30		3C	2	N/A	4	YELLOW	BLACK	P5 4	6.25	25.00

NOTES:  
 1 SEE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS FOR TEXT AND LEGEND DIMENSIONS.

CITY OF NEWTON  
 MASSACHUSETTS  
 TRAFFIC SIGNAL PLAN  
 FOR THE  
 IMPROVEMENTS  
 AT  
 PETTEE SQUARE  
 OAK STREET AT CHESTNUT STREET  
 SHEET 23 OF 45



- NOTES:**
- CONTRACTOR SHALL REMOVE ALL EXISTING TRAFFIC SIGNAL PULL BOXES AND CONDUIT WITHIN AREAS OF NEWLY CONSTRUCTED SIDEWALKS.
  - CONTRACTOR SHALL CUT EXISTING CONDUIT AT CURB LINE AND ABANDON AND PLUG ALL EXISTING CONDUIT BELOW PAVEMENT SURFACE.
  - CONTRACTOR SHALL MAINTAIN EXISTING TRAFFIC SIGNAL OPERATIONS UNTIL NEW TRAFFIC SIGNAL OR EQUIPMENT SIGNAL COMPONENT IS FULLY OPERATIONAL. ALL EXISTING TRAFFIC SIGNAL INFRASTRUCTURE SHALL BE RELOCATED AND STRUCK AS NOTED.
  - PEDESTRIAN PUSH BUTTONS SHALL BE PERPENDICULAR TO THE CROSSWALK PATH OF TRAVEL AND BE PROVIDED ON THE PUSH BUTTON PARALLEL TO THE CROSSWALK PATH OF TRAVEL.
  - WHERE TWO WPS PEDESTRIAN PUSH BUTTONS ARE NOT SEPARATED BY MORE THAN 10 FEET, THE DOUBLE WALK INDICATION SHALL BE A SPEEDWALK MESSAGE.
  - VIDEO DETECTION ZONES SHALL BE ADJUSTED IN THE FIELD IN PRESENCE OF ENGINEER.
  - CROSSWALKS NOT SHOWN FOR VISUAL CLARITY OF TRAFFIC SIGNAL EQUIPMENT.
  - POST ARM POLES AND FOUNDATIONS WILL NEED TO BE INSTALLED WITH LOW-PROFILE FOUNDATIONS TO MAINTAIN EXISTING TRAFFIC SIGNAL OPERATIONS. WITH EXISTING OVERHEAD PRIMARY POWER LINES THAT CANNOT BE DE-ENERGIZED, CONTRACTORS SHALL COORDINATE WITH UTILITY COMPANY FOR THE SUEING AND INSULATION OF TRAFFIC SIGNAL EQUIPMENT AND OVERHEAD WIRES (AS NECESSARY).



**HAURURU PROPERTIES LLC**  
 2000 STATE STREET, SUITE 200  
 NEWTON, MA 02459  
 TEL: 617.552.1100  
 FAX: 617.552.1101  
 WWW.HAURURU.COM

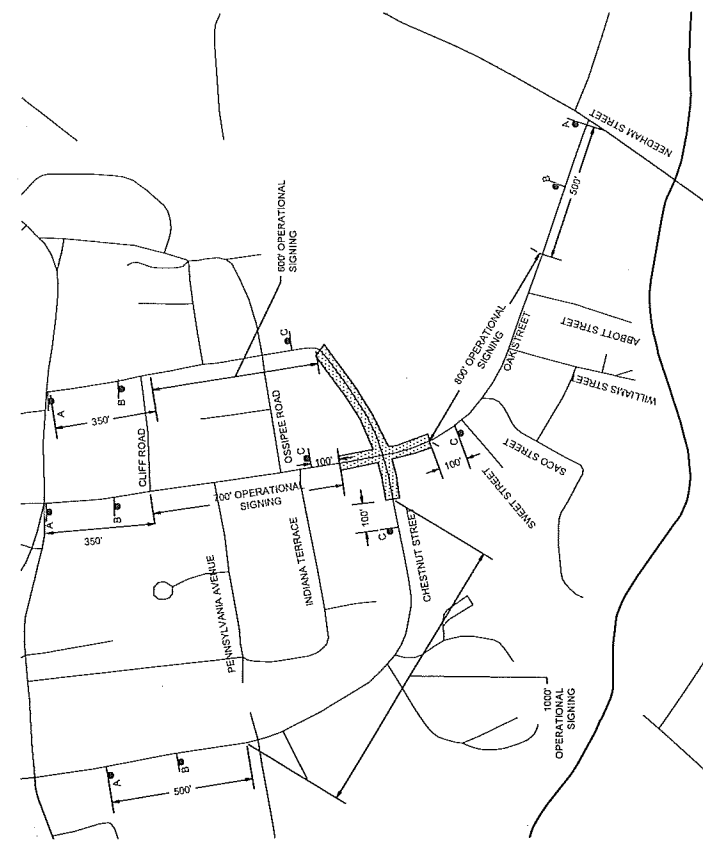
**OAK ASSOCIATES, LIMITED**  
 1000 STATE STREET, SUITE 200  
 NEWTON, MA 02459  
 TEL: 617.552.1100  
 FAX: 617.552.1101  
 WWW.OAKASSOCIATES.COM

**PHRY'S PLACE LLC**  
 1000 STATE STREET, SUITE 200  
 NEWTON, MA 02459  
 TEL: 617.552.1100  
 FAX: 617.552.1101  
 WWW.PHRYSPLACE.COM



IDENTIFICATION NUMBER	SIZE OF SIGN (in)		TEXT DIMENSIONS (in)			COLOR		NUMBER OF SIGNS REQUIRED	UNIT AREA (SF)	TOTAL AREA (SF)
	WIDTH	HEIGHT	LETTER HEIGHT	VERTICAL SPACING	ANSI/MSWPA LETTER MARKS	LEGEND	BORDER			
MA-R2-10a	48	36	MASSDOT STANDARD SIGN		ORANGE WHITE	BLACK BLACK	BLACK BLACK	4	12.00	48.00
MA-R2-10b	36	48	SEE 2008 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS		ORANGE WHITE	BLACK BLACK	BLACK BLACK	4	12.00	48.00
MA-9	24	12	SEE 2008 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS		FL ORANGE	BLACK	BLACK	12	2.00	24.00
MA-10L	48	18			FL ORANGE	BLACK	BLACK	3	6.00	18.00
MA-10R	48	18			FL ORANGE	BLACK	BLACK	1	6.00	6.00
MS-1L	21	15			WHITE	BLACK	BLACK	5	2.19	10.94
MS-1R	21	15			WHITE	BLACK	BLACK	2	2.19	4.38
MS-2R	21	15			WHITE	BLACK	BLACK	2	2.19	4.38
MS-3	21	15			WHITE	BLACK	BLACK	3	2.19	6.56
RA-7	24	30			WHITE	BLACK	BLACK	4	5.00	20.00
RS-9	24	12			WHITE	BLACK	BLACK	2	2.00	4.00
RS-11L	24	12			WHITE	BLACK	BLACK	1	2.00	2.00
RS-11R	24	12			WHITE	BLACK	BLACK	1	2.00	2.00
R11-2	48	30			WHITE	BLACK	BLACK	4	10.00	40.00
R11-3a (1000)	60	30			WHITE	BLACK	BLACK	2	12.00	24.00
R11-3a (1200)	60	30			WHITE	BLACK	BLACK	1	12.00	12.00
R11-3a (2000)	60	30			WHITE	BLACK	BLACK	1	12.00	12.00
W1-4L	36	36			FL ORANGE	BLACK	BLACK	2	9.00	18.00
W1-4R	36	36			FL ORANGE	BLACK	BLACK	2	9.00	18.00
W5-1	36	36			FL ORANGE	BLACK	BLACK	4	9.00	36.00
W11-2	30	30			FL YELLOW-GREEN	BLACK	BLACK	4	6.25	25.00
W16-7a	24	12			FL YELLOW-GREEN	BLACK	BLACK	4	2.00	8.00
W20-1	36	36			FL ORANGE	BLACK	BLACK	4	9.00	36.00

W20-2	36	36	SEE 2008 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS	FL ORANGE	BLACK	BLACK	2	9.00	18.00
W20-4	36	36		FL ORANGE	BLACK	BLACK	4	9.00	36.00
MA-W20-7b	36	36	MASSDOT STANDARD SIGN	FL ORANGE	BLACK	BLACK	4	9.00	36.00
W21-5aR	36	36	SEE 2008 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS	FL ORANGE	BLACK	BLACK	1	9.00	9.00
MA-W20-8R	36	36	MASSDOT STANDARD SIGN	FL ORANGE	BLACK	BLACK	2	9.00	18.00
DS-1a	33	12	6D/4D	N/A	FL ORANGE	BLACK	14	2.75	36.50

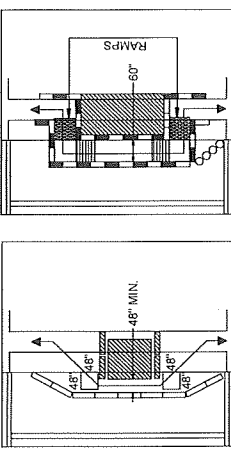


ADVANCED SIGNING SCHEMATIC  
N.T.S.

LEGEND:

- A: W20-1
- B: MA-R2-10a
- C: MA-R2-10b

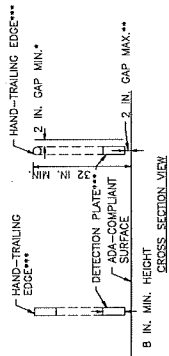
CITY OF NEWTON  
MASSACHUSETTS  
TEMPORARY TRAFFIC CONTROL PLANS - 1 OF 4  
IMPROVEMENTS FOR THE  
PETTEE SQUARE  
AT  
OAK STREET AT CHESTNUT STREET  
SHEET 25 OF 45



- WHEN EXISTING PEDESTRIAN FACILITIES ARE DISRUPTED, CLOSED, OR RELOCATED IN A T/C ZONE, TEMPORARY FACILITIES SHALL BE PROVIDED AND THEY SHALL BE DETECTABLE AND INCLUDE ACCESSIBILITY FEATURES CONSISTENT WITH THE PROVISIONS OF THE ADA.
- A PEDESTRIAN CHANNELIZING DEVICE THAT IS DETECTABLE BY A PERSON WITH A VISUAL DISABILITY TRAVELING WITH THE AID OF A LONG CANE SHALL BE PLACED ACROSS THE FULL WIDTH OF THE CLOSED SIDEWALK.
- WHEN USED, TEMPORARY RAMPS SHALL COMPLY WITH AMERICANS WITH DISABILITIES ACT (SEE FIGURES PED-1 & PED-2).
- THE ALTERNATE PATHWAY SHOULD HAVE A SMOOTH CONTINUOUS HARD SURFACE.
- THE PROTECTIVE REQUIREMENTS OF A T/C SITUATION HAVE PRIORITY IN DETERMINING THE NEED FOR TEMPORARY TRAFFIC BARRIERS AND THEIR USE IN THIS SITUATION SHOULD BE BASED ON ENGINEERING JUDGMENT. TEMPORARY TRAFFIC BARRIERS SHALL BE CONCRETE JERSEY BARRIERS.
- AUDIBLE INFORMATION DEVICES SHOULD BE CONSIDERED WHERE MIDBLOCK CLOSINGS AND CHANGED CROSSWALK AREAS CAUSE INADEQUATE COMMUNICATION TO BE PROVIDED TO PEDESTRIANS WHO HAVE VISUAL DISABILITIES.

**AUDIBLE DEVICES**

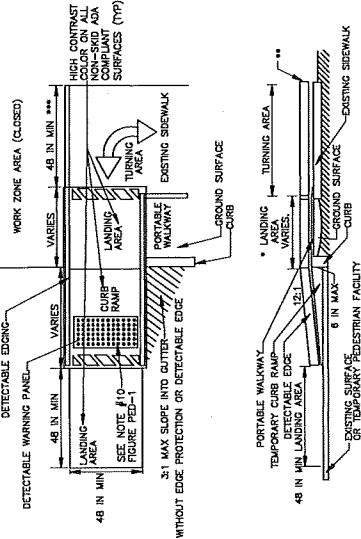
FOR LONG TERM SIDEWALK CLOSURES (AT A MINIMUM OVERNIGHT) A FORM OF SPECIAL INFORMATION DEVICES SUCH AS DETECTABLE BARRIERS OR BARRICADES AND OTHER PASSIVE PEDESTRIAN ACTIVATION (MOTION ACTIVATED) DEVICES SHOULD BE CONSIDERED FOR THESE CASES. THESE AUDIBLE DEVICES CAN BE MOUNTABLE OR STAND ALONE.



**PEDESTRIAN CHANNELIZING DEVICE**

**NOTES:**

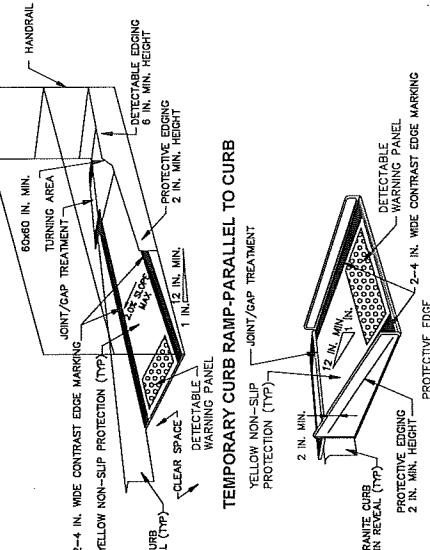
- THERE SHALL BE A 2 INCH GAP BETWEEN THE HAND-TRAILING EDGE AND ITS SUPPORT.
- A MAXIMUM 2 INCH GAP BETWEEN THE DETECTION PLATE AND THE SURFACE MAY BE USED TO PROVIDE DRAINAGE.
- THE HAND-TRAILING EDGE AND DETECTION PLATE SHALL BE MOUNTED AT THE LENGTH OF THE PATH SUCH THAT A PEDESTRIAN USER WITH A LONG CANE CAN FOLLOW IT.



- -LANDING AREA USED TO OVERLAP NON-ADA COMPLIANT SURFACES.
- -DETECTABLE EDGE REMOVED IF A CONTINUOUS SIDEWALK.
- -80 IN. IF AN OBSTRUCTION IS AT BACK OF SIDEWALK.

**TEMPORARY CURB RAMP-TYPE 2 PEDESTRIAN TYPICAL DETAILS**

1. CURB RAMPS SHALL BE 60 IN. MINIMUM WIDTH WITH A FIRM, STABLE AND NON-SLIP SURFACE.
2. PROTECTIVE EDGING WITH A 2 IN. MINIMUM HEIGHT SHALL BE INSTALLED ABOVE AND BELOW THE CURB RAMP.
3. WATER FLOW IN THE GUTTER SYSTEM SHALL HAVE A LATERAL FLOW OR CAPS BETWEEN SURFACES SHALL BE LESS THAN 0.5 IN. WIDTH.
4. CHANGES BETWEEN SURFACE HEIGHTS SHOULD NOT EXCEED 0.5 IN. HEIGHT.
5. CURB RAMP OR LANDING PLATFORMS HAVE A VERTICAL DETECTABLE EDGING WITH 6 IN. MINIMUM HEIGHT AND CONTRASTING COLOR SHALL BE INSTALLED ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION (TURNS).
6. CURB RAMP WALKWAY AND LANDING AREA SURFACE SHALL BE A SMOOTH CONTINUOUS CONTRASTING COLOR ABUTTING UP TO THE EXISTING SIDEWALK.
7. CURB RAMPS AND LANDINGS SHOULD HAVE A 1:50 (2%) MAX CROSS-SLOPE.
8. CLEAR SPACE OF 48X48 IN. MINIMUM SHALL BE PROVIDED ABOVE AND BELOW THE CURB RAMP.
9. LATERAL FLOW OR CAPS BETWEEN SURFACES SHALL BE LESS THAN 0.5 IN. WIDTH.
10. IF A TEMPORARY PEDESTRIAN RAMP LEADS TO A CROSSWALK, THEN A DETECTABLE WARNING PAD MUST BE INSTALLED TO PROTECT PEDESTRIAN TRAFFIC THAT DOES NOT CONFLICT WITH VEHICULAR TRAFFIC. THEN A PAD SHALL NOT BE INSTALLED ON THE RAMP.



**TEMPORARY CURB RAMP-PARALLEL TO CURB**

**TEMPORARY CURB RAMP-PERPENDICULAR TO CURB**

**LEGEND:**

- REFLECTORIZED PLASTIC DRUM ON 30\"/>

**SUGGESTED WORK ZONE WARNING SIGN SPACING**

ROAD TYPE	DISTANCE BETWEEN SIGNS (FEET)		
	A	B	C
LOCAL OR LOW VOLUME ROADWAYS	350	350	300
MOST OTHER ROADWAYS	500	500	500
FREeways AND EXPRESSWAYS	1,000	1,500	2,540

• ROAD TYPE TO BE DETERMINED BY MAJOR OFFICE OF TRANSPORTATION PLANNING.

• DISTANCES ARE SHOWN IN FEET. THE COLUMN HEADINGS A, B, AND C ARE THE DIMENSIONS FROM THE POINT OF BEGINNING TO THE POINT OF ENDING OF THE SIGN. THE B DIMENSION IS THE DISTANCE BETWEEN THE FIRST AND SECOND SIGN. THE C DIMENSION IS THE DISTANCE BETWEEN THE FIRST AND THIRD SIGN. THE FIRST SIGN IS TYPICALLY SUGGESTED BY A DRIVER APPROACHING A TEMPORARY TRAFFIC CONTROL (TTC) ZONE.

• THE THIRD SIGN ABOVE IS TYPICALLY REFERRED TO AS AN "ADVANCE WARNING" SIGN ON THE TTP SETUPS. THESE "ADVANCE WARNING" SIGNS ARE LOCATED PRIOR TO THE PROJECT LIMITS ON ALL APPROACHES (I.E. THE APPROACHES TO THE TTP SETUPS). THE "ADVANCE WARNING" SIGNS ARE TYPICALLY LOCATED AT THE APPROACHES TO THE TTP SETUPS. ADDITIONAL SIGNS (I.E. "LEFT LANE CLOSED 1 MILE" AND "LEFT LANE CLOSED 1/2 MILE") HAVE BEEN SHOWN IN SOME FIGURES AS EXAMPLES OF REINFORCED SIGN PLACEMENT BUT ARE NOT REQUIRED.

• THE FIRST AND SECOND WARNING SIGNS ABOVE ARE REFERRED TO AS THE OPERATIONAL (DAY-TO-DAY) WORK ZONE SIGNS AND MAY BE WORKED DEPENDING ON WHERE THE SPECIFIC ROADWAY WORK FOR THAT DAY IS LOCATED.

• R2-10a, R2-10b, AND W2-1 SERIES SIGNS ARE TO BE INCLUDED ON ALL DETAILS/PHYSICAL SETUPS.

**TAPER LENGTH CRITERIA FOR TEMPORARY TRAFFIC CONTROL ZONES**

TYPE OF TAPER	TAPER LENGTH (L)
MERCING TAPER	AT LEAST 1 L
SHOULDER TAPER	AT LEAST 0.5L
ONE-LANE, TWO-WAY TRAFFIC TAPER	50 FT MIN. 100 FT MAX. PER LANE
DOWNSTREAM TAPER	50 FT MIN. 100 FT MAX. PER LANE

**FORMULAS FOR DETERMINING TAPER LENGTHS**

SPEED LIMIT (S)	TAPER LENGTH (L)
40 MPH OR LESS	L = 5S
45 MPH OR MORE	L = 7S

WHERE:  
 L = TAPER LENGTH IN FEET  
 S = POSTED SPEED LIMIT OR OFF-PEAK SPEED LIMIT  
 WORK STARTING AT THE ANTICIPATED OPENING SPEED IN MPH

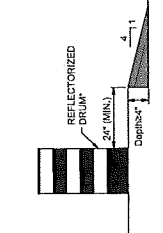
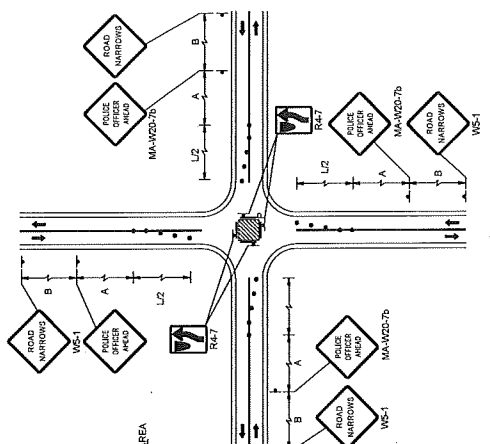
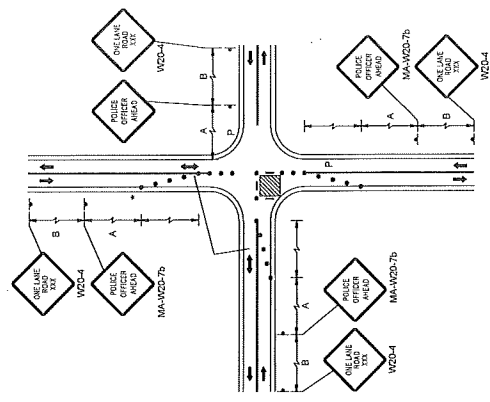
**NOTES:**

1. ALL TEMPORARY TRAFFIC CONTROL WORK SHALL CONFORM TO THE LATEST EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) AND ALL REVISIONS, UNLESS SUPERSEDED BY THESE PLANS.
2. ALL SIGN LEADS, BARRIERS, AND MOUNTING SHALL BE IN ACCORDANCE WITH THE MUTCD.
3. TEMPORARY CONSTRUCTION SIGNING, BARRICADES, AND ALL OTHER NECESSARY WORK ZONE TRAFFIC CONTROL DEVICES SHALL BE REMOVED FROM THE HIGHWAY OR COVERED WHEN THEY ARE NOT REQUIRED FOR CONTROL OF TRAFFIC.
4. SIGNS AND SIGN SUPPORTS LOCATED ON OR NEAR THE TRAVELED WAY, CHANNELIZING DEVICES, BARRIERS, AND CRASH ATTENUATORS MUST PASS THE CRITERIA SET FORTH IN THE "MANUAL FOR ASSESSING SAFETY HARDWARE" (MSH).
5. CONTRACTORS SHALL NOTIFY EACH ABUTTER AT LEAST 74 HOURS IN ADVANCE OF THE START OF ANY WORK THAT WILL REQUIRE THE TEMPORARY TRAFFIC CONTROL DEVICES, SUCH AS CONDUIT INSTALLATION, EXISTING FACILITY DEMOLITION, TEMPORARY DRIVEWAY PLACEMENT, AND SIGNAL OPERATIONS.
6. THE ADVISORY SPEED LIMIT, IF REQUIRED, SHALL BE DETERMINED BY THE ENGINEER.
7. DISTANCES ARE A GUIDE AND MAY BE ADJUSTED IN THE FIELD BY THE ENGINEER.
8. MINIMUM SPACING OF TRAFFIC DEVICES IN A TAPER (DRUMS OR CONES) IS EQUAL IN FEET TO THE SPEED LIMIT IN MPH.
9. MINIMUM LANE WIDTH IS TO BE 11 FEET UNLESS OTHERWISE SHOWN. MINIMUM LANE WIDTH TO BE MEASURED FROM THE EDGE OF DRUMS OR MEDIAN BARRIER.
10. ALL SIGNS SHALL BE MOUNTED ON THEIR OWN STANDARD SIGN SUPPORTS.
11. NO WORK THAT IMPACTS THE TRAVELED WAY SHALL BE PERMITTED DURING PEAK HOUR TRAFFIC. PEAK HOUR IS DEFINED AS WEDNESDAYS FROM 7-9 AM & 4-6 PM.

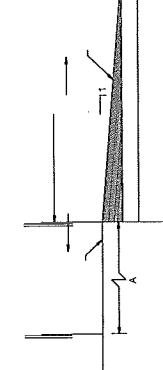
CITY OF NEWTON  
 MASSACHUSETTS  
 FOR THE  
 IMPROVEMENTS  
 RETEEC SQUARE  
 OAK STREET AT CHESTNUT STREET  
 SHEET 26 OF 45



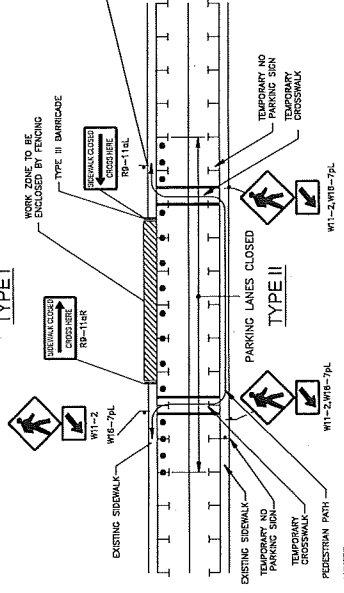
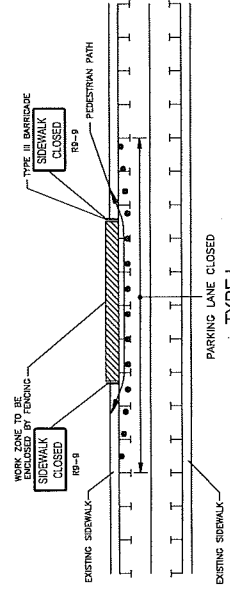
CITY OF NEWTON  
 MASSACHUSETTS  
 TEMPORARY TRAFFIC CONTROL PLANS - 3 OF 4  
 IMPROVEMENTS  
 AT  
 PETTEE SQUARE  
 OAK STREET AT CHESTNUT STREET  
 SHEET 27 OF 45



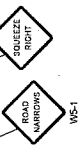
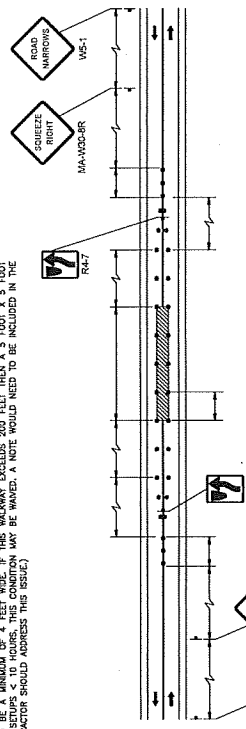
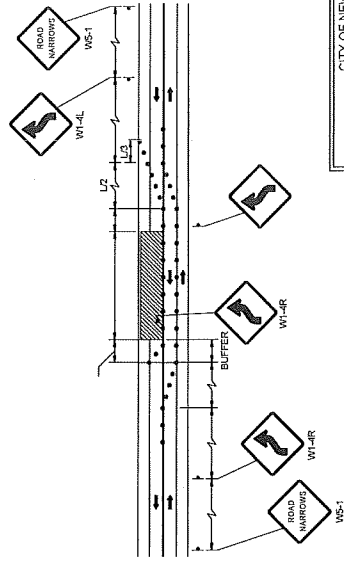
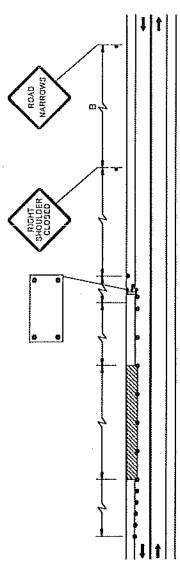
LATERAL DROP-OFF DETAIL  
 NOT TO SCALE



LONGITUDINAL DROP-OFF DETAIL  
 NOT TO SCALE

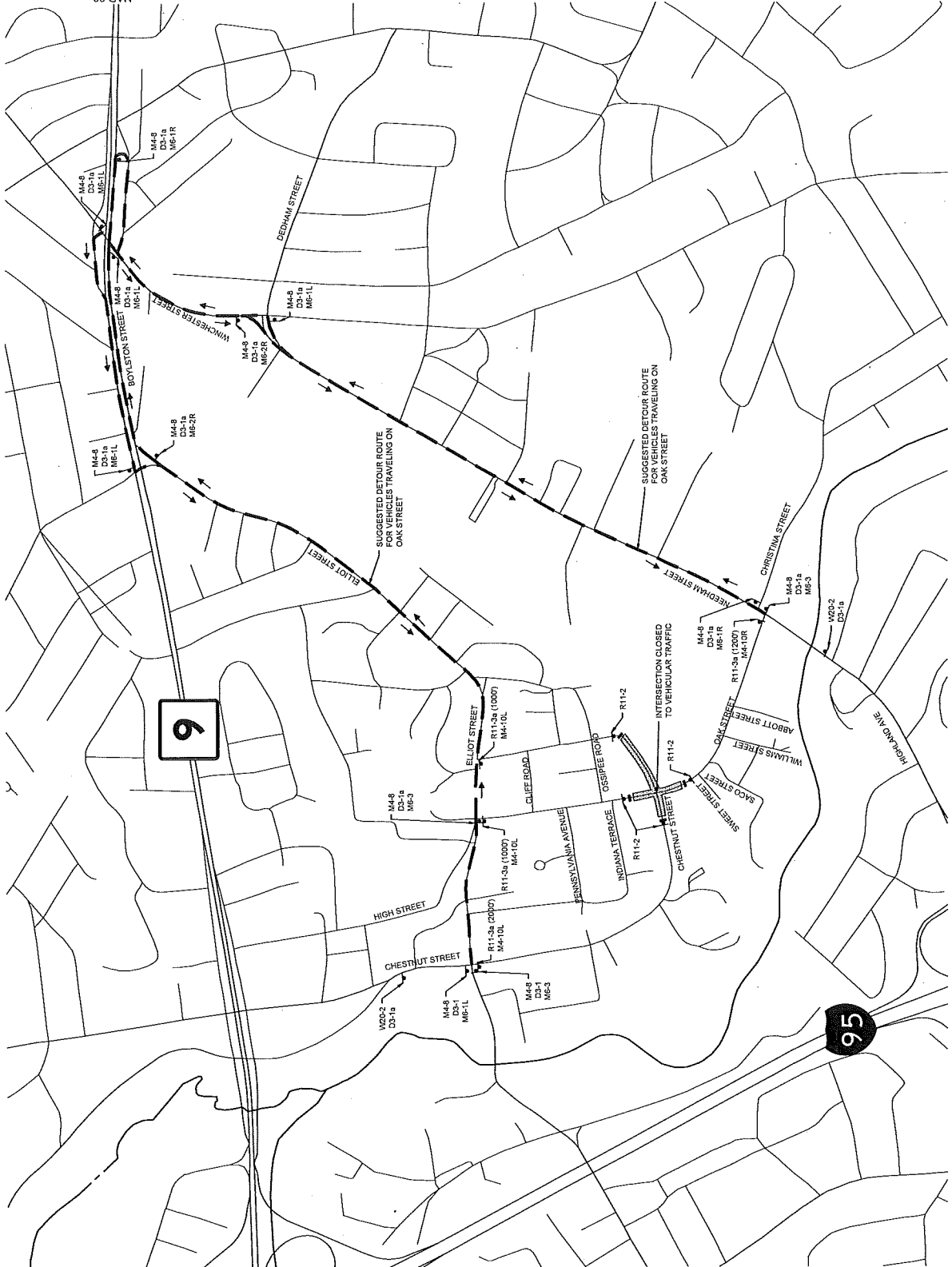
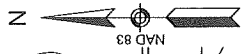


- NOTES
1. ADDITIONAL ADVANCE WARNING MAY BE NECESSARY.
  2. CONTROL ONLY FOR THE WORK ZONE. WORK ZONE SHOULD BE HANDLED AS SHOWN ELSEWHERE.
  3. CONTROL ONLY FOR THE WORK ZONE. WORK ZONE SHOULD BE HANDLED AS SHOWN ELSEWHERE.
  4. IF THE WORK ZONE DOES NOT PERMIT PEDESTRIANS TO TRAVEL ADJACENT TO IT AS SHOWN IN PEDESTRIAN BYPASS TYPE I, TEMPORARY PEDESTRIAN BYPASS TYPE II, AND AS DIRECTED BY THE ENGINEER, TEMPORARY CURB RUMPS WILL BE REQUIRED AT ALL TEMPORARY BYPASSES TO BE USED IN CONJUNCTION WITH THE PROPOSED LANE CLOSURE DETAILS AND DURING CONSTRUCTION STAGING, AS DIRECTED BY THE ENGINEER.
  5. PEDESTRIAN BYPASS SHOULD BE A MINIMUM OF 4 FEET WIDE. IF THE WALKWAY EXCEEDS 200 FEET THEN A 3 FOOT X 3 FOOT PAVING ZONE (FOR SHORT TERM SETUPS < 10 HOURS, THIS CONDITION MAY BE WAIVED, A NOTE WOULD NEED TO BE INCLUDED IN THE TOP THAT STATES HOW THE CONTRACTOR SHOULD ADDRESS THIS ISSUE).
  6. PAVING ZONE (FOR SHORT TERM SETUPS < 10 HOURS, THIS CONDITION MAY BE WAIVED, A NOTE WOULD NEED TO BE INCLUDED IN THE TOP THAT STATES HOW THE CONTRACTOR SHOULD ADDRESS THIS ISSUE).



CITY OF NEWTON  
 MASSACHUSETTS  
 TEMPORARY TRAFFIC CONTROL PLANS - 4 OF 4  
 FOR THE  
 IMPROVEMENTS  
 AT  
 PETTEE SQUARE  
 OAK STREET AT CHESTNUT STREET  
 SHEET 28 OF 45

- DETOUR NOTICES:**
1. ALL WORK ZONES AND DISTANCES ARE ESTABLISHED FOR 24-HOURS A DAY. TEMPORARY CONSTRUCTION SIGNING, BARRICADES, AND ALL OTHER NECESSARY WORK ZONE TRAFFIC CONTROL DEVICES SHALL BE REMOVED FROM THE WORK ZONE AT THE END OF EACH DAY. SIGNING IS NOT REQUIRED FOR CONTROL OF TRAFFIC.
  2. ALL TEMPORARY TRAFFIC CONTROL WORK SHALL BE SUPERSEDED BY THESE PLANS. ALL TEMPORARY TRAFFIC CONTROL (M.U.T.C.D.) AND ALL REVISIONS, UNLESS SUPERSEDED BY THESE PLANS.
  3. ALL SIGN LEGENDS, BORDERS, AND MOUNTING SHALL BE IN ACCORDANCE WITH THE M.U.T.C.D.
  4. TEMPORARY CONSTRUCTION SIGNING AND ALL OTHER TRAFFIC CONTROL DEVICES SHALL BE IN PLACE PRIOR TO THE START OF ANY WORK.
  5. SIGNS AND SIGN SUPPORTS LOCATED ON OR NEAR THE TRAVELLED SIDE MUST PASS THE CHECKS OF THE NCHRP REPORT 350, "RECOMMENDED PROCEDURES FOR THE SAFETY PERFORMANCE EVALUATION OF HIGHWAY HARDWARE" (M45B).
  6. DISTANCES ARE A GUIDE AND MAY BE ADJUSTED IN THE FIELD BY THE ENGINEER.
  7. ALL SIGNS SHALL BE MOUNTED ON THEIR OWN STANDARD SIGN SUPPORTS AT THE DISCRETION OF THE CONTRACTOR.
  8. ALL DRUMS AND/OR CONES SHALL BE SET @ 20' O.C. MAX. UNLESS OTHERWISE NOTED OR ADJUSTED BY THE ENGINEER.



OAK STREET AT CHESTNUT STREET SUGGESTED DETOUR ROUTE  
 N.T.S.

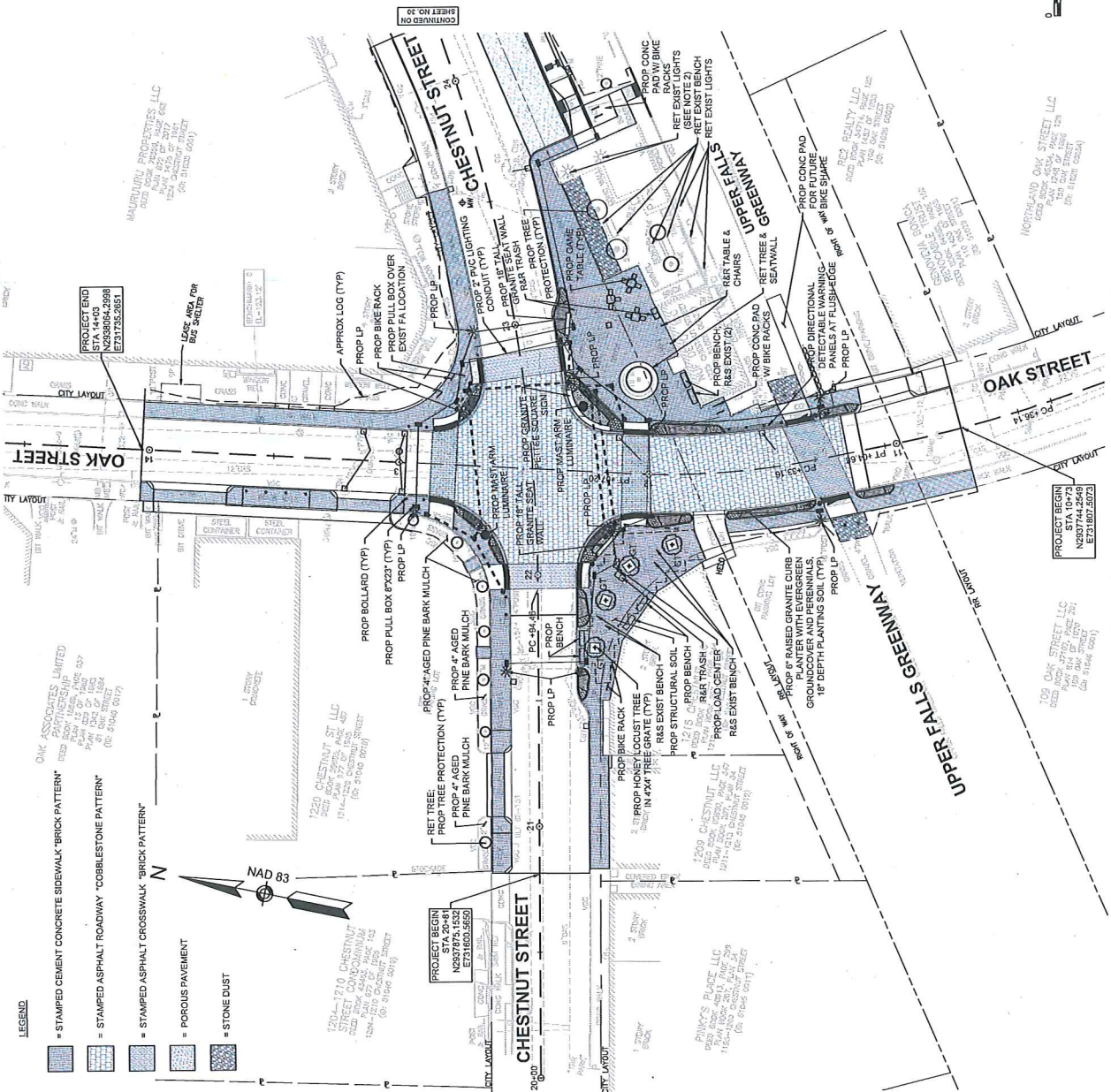
CITY OF NEWTON  
 MASSACHUSETTS  
 LANDSCAPE & LIGHTING PLANS - 1 OF 2  
 IMPROVEMENTS  
 AT  
 PETTEE SQUARE  
 OAK STREET AT CHESTNUT STREET  
 SHEET 29 OF 45

NOTES:  
 1. SEE LANDSCAPE & LIGHTING DETAILS FOR LIGHT POLE DETAILS AND BENCH OPTIONS

PROPOSED PLANTING TABLE				
KEY	QTY	BOTANICAL NAME	COMMON NAME	COMMENTS
GT	4	OLEA FRAXINOSA FRAXINOSA	HONEY LOCUST	3.5 INCH CALIPER B&B

PROPOSED PLANTING TABLE				
LEGEND	QTY	BOTANICAL NAME	COMMON NAME	COMMENTS
CA	15	KARL FORSTER FEUILLANT GRASS	1 POT	24" O.C.
JH	15	WILTON BLUE FRUG JUNIPER	1 POT	24" O.C.
PV	15	SHENONDAH SMITHGRASS	1 POT	24" O.C.
JC	15	JUNIPERUS EMERALD SEA SEVERAL SEA	1 POT	24" O.C.
HS	15	HEMEROCALLIS STELLA D'ORO	1 POT	18" O.C.

PLANTING NOTES:  
 1. CONTRACTOR SHALL HAVE ALL SUBSURFACE UTILITIES MARKED PRIOR TO THE START OF WORK.  
 2. FINAL LOCATION OF ALL PLANT MATERIAL SHALL BE REVIEWED AND BE APPROVED BY THE CITY.  
 3. ALL PLANT MATERIAL SHALL HAVE TAGS INDICATING COMMON NAME, BOTANICAL NAME & SIZE.  
 4. ALL PLANT MATERIAL SHALL BE MULCHED PER THE PLANTING SPECIFICATIONS AND DETAILS.  
 5. ALL DISTURBED AREAS SHALL BE LOAMED AND SEEDED UNLESS NOTED OTHERWISE.



LEGEND

- [Symbol] = STAMPED CEMENT CONCRETE SIDEWALK 'BRICK PATTERN'
- [Symbol] = STAMPED ASPHALT ROADWAY 'COBBLESTONE PATTERN'
- [Symbol] = STAMPED ASPHALT CROSSWALK 'BRICK PATTERN'
- [Symbol] = POROUS PAVEMENT
- [Symbol] = STONE DUST

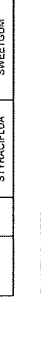


#18-23

PROPOSED PLANTING TABLE

TREE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	COMMENTS
LS	3	LICUDAMBAR STRYACIFLUA	AMERICAN SWEETGUM	3 INCH CALIPER	BIB

PLANTING NOTES:  
 1. CONTRACTOR SHALL HAVE ALL SUBSURFACE UTILITIES MARKED PRIOR TO THE START OF WORK.  
 2. THE LOCATION OF ALL PLANT MATERIAL SHALL BE REVIEWED AND BE APPROVED BY THE CITY ENGINEER.  
 3. ALL PLANT MATERIAL SHALL HAVE TAGS INDICATING COMMON NAME, BOTANICAL NAME & SIZE.  
 4. TAGS SHALL BE MULCHED PER THE PLANTING SPECIFICATIONS AND DETAILS.  
 5. ALL DISTURBED AREAS SHALL BE LOANED AND SEEDED UNLESS NOTED OTHERWISE.



LEGEND  
 ■ STAMPED CEMENT CONCRETE SIDEWALK 'BRICK PATTERN'  
 ■ POROUS PAVEMENT

PROJ. NO. 23  
 CHECKED BY: BLS  
 DESIGN DRAWN BY: BLS  
 CITY OF NEWTON  
 MASSACHUSETTS



PROJ. NO. 23  
 STA 27+10  
 6723257.481  
 62938146.8819

CONTRACTOR SHALL HAVE ALL SUBSURFACE UTILITIES MARKED PRIOR TO THE START OF WORK.

THE LOCATION OF ALL PLANT MATERIAL SHALL BE REVIEWED AND BE APPROVED BY THE CITY ENGINEER.

ALL PLANT MATERIAL SHALL HAVE TAGS INDICATING COMMON NAME, BOTANICAL NAME & SIZE.

TAGS SHALL BE MULCHED PER THE PLANTING SPECIFICATIONS AND DETAILS.

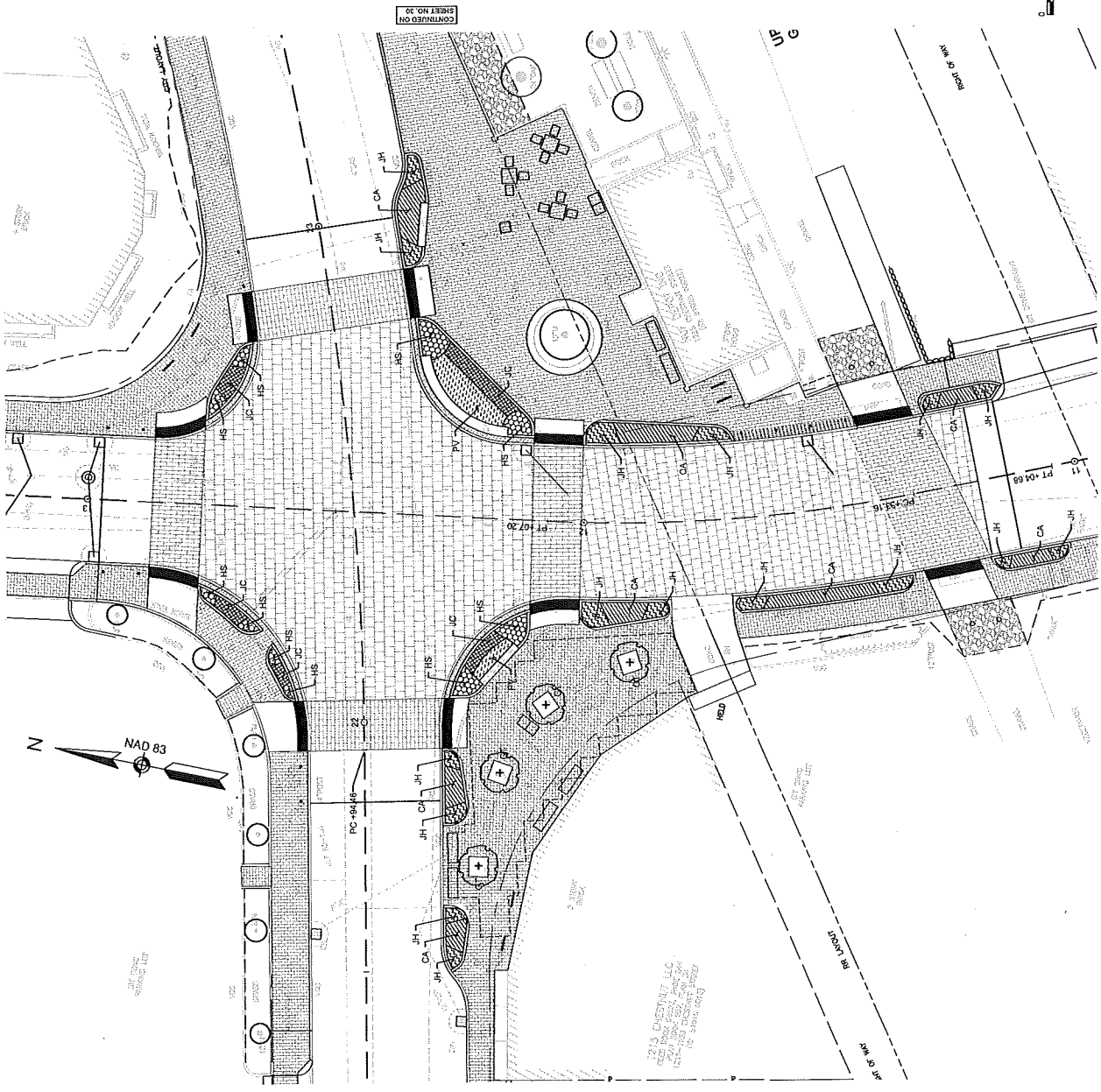
ALL DISTURBED AREAS SHALL BE LOANED AND SEEDED UNLESS NOTED OTHERWISE.

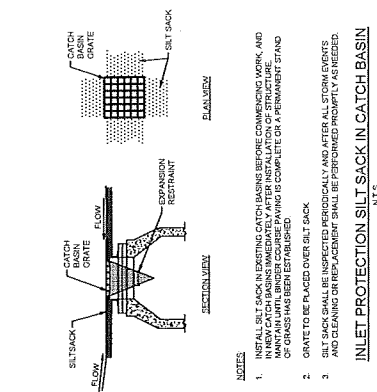
NOTES:  
 1. LIGHTING AND TRAFFIC SIGNAL EQUIPMENT NOT SHOWN FOR CLARITY

PROPOSED PLANTING TABLE			
KEY	BOTANICAL NAME	COMMON NAME	COMMENTS
GT	GLEDTISIA TRICANTIDIS	HONEY LOCUST	3.5 INCH CALIPER 883

PROPOSED PLANTING TABLE			
LEGEND	BOTANICAL NAME	COMMON NAME	COMMENTS
CA	CALAMAGROSTIS ACUTIFLORA	KARL FÖRSTER FEATHER REED GRASS	1 POT 24" O.C.
JH	JUNIPERUS HORIZONTALIS "WILTONII"	WILTON BLUE RUG JUNIPER	1 POT 24" O.C.
PV	PANICUM VIRGATUM	SHENKDOAH SWITCHGRASS	1 POT 24" O.C.
JC	JUNIPERUS HORIZONTALIS "EMERALD SEA"	EMERALD SEA SHORE JUNIPER	1 POT 24" O.C.
HS	HELMICALLIS STELLA D'ORO	STELLA D'ORO DAYLILY	1 POT 18" O.C.

PLANTING NOTES:  
 1. WORKER SHALL HAVE ALL SUBSURFACE UTILITIES MARKED PRIOR TO THE START OF WORK.  
 2. FINAL LOCATION OF ALL PLANT MATERIAL SHALL BE REVIEWED AND BE APPROVED BY THE CITY ENGINEER.  
 3. ALL PLANT MATERIAL SHALL HAVE TAGS INDICATING COMMON NAME, BOTANICAL NAME & SIZE.  
 4. ALL PLANTS SHALL BE MULCHED PER THE PLANTING SPECIFICATIONS AND DETAILS.  
 5. ALL DISTURBED AREAS SHALL BE COMBED AND SEEDED UNLESS NOTED OTHERWISE.



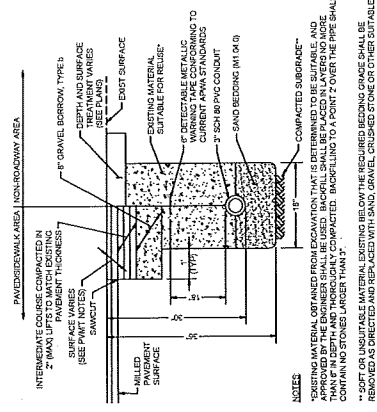


1. INSTALL SILT SACK IN EXISTING CATCH BASIN BEFORE COMMENCING WORK, AND MAINTAIN UNTIL BEST COURSE PAVING IS COMPLETE OR A PERMANENT STAND OF GRASS HAS BEEN ESTABLISHED.

2. GRATE TO BE PLACED OVER SILT SACK.

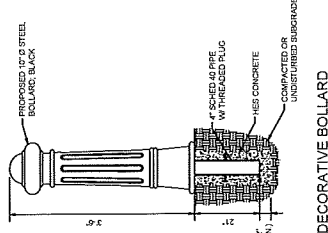
3. SILT SACK SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS AND CLEANING OR REPLACEMENT SHALL BE PERFORMED PROMPTLY AS NEEDED.

**INLET PROTECTION SILT SACK IN CATCH BASIN**

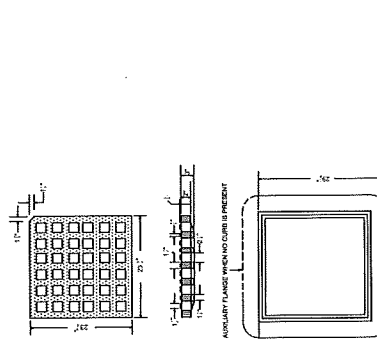


NOTES:  
 \*WORKING MATERIAL OBTAINED FROM EXCAVATION THAT IS DETERMINED TO BE SUITABLE, AND APPROVED BY THE ENGINEER, SHALL BE USED. BACKFILL SHALL BE PLACED IN LAYERS NO MORE THAN 18\"/>

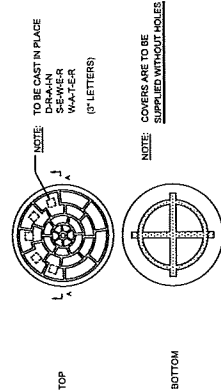
**CONDUIT TRENCH**



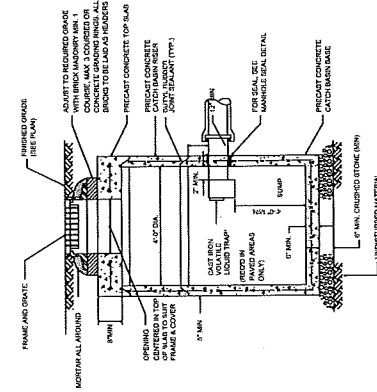
**DECORATIVE BOLLARD**



**CATCH BASIN FRAME & GRATE**

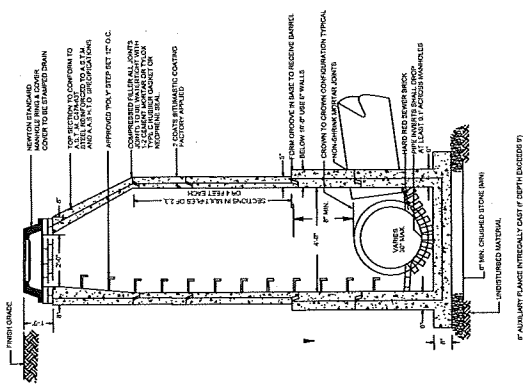


**MANHOLE FRAME & COVER**



NOTE:  
 \*AS TRAP SHALL BE CAST IRON WITH APPROVED EQUAL.

**DEEP SUMP CATCH BASIN**

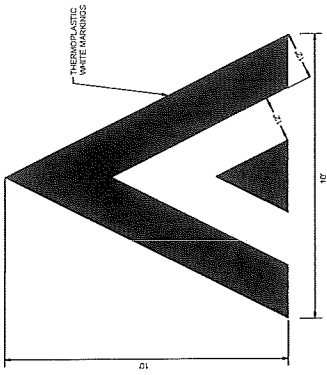


**DRAIN MANHOLE**

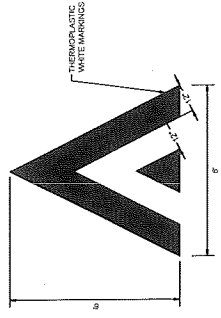
DESIGNED BY: B.C. CHENEY INC.  
 CHECKED BY: LISA  
 APPROVED BY: LISA

CITY OF NEWTON  
 MASSACHUSETTS

11010.H000.CONSTRUCTION DETAILS.DWG P1823 25-04-2021 2:39 PM

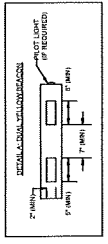


RAISED INTERSECTION PAVEMENT MARKING  
N.T.S.

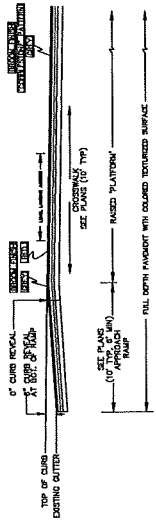
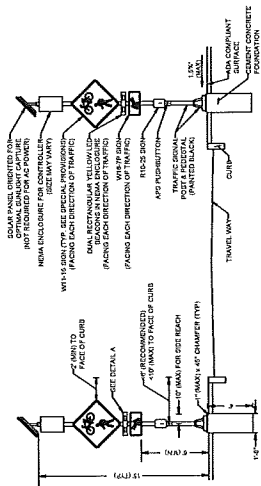


RAISED INTERSECTION PAVEMENT MARKING  
N.T.S.

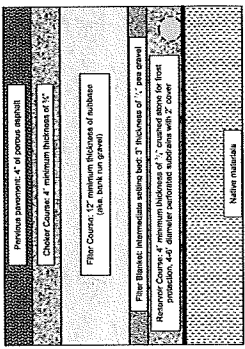
- NOTES:
1. CURBSIDE AND ADA-COMPLIANT RAMP NOT SHOWN. SEE DETAIL 18-01 FOR CURBSIDE AND ADA-COMPLIANT RAMP CONSTRUCTION. REFER TO THE SPECIAL PROVISIONS FOR SIGN DIMENSIONS AND MATERIALS. ALL SIGN DIMENSIONS ARE IN FEET AND INCHES UNLESS OTHERWISE NOTED. SIGN DIMENSIONS SHALL BE IN ACCORDANCE WITH THE SIGNAGE REGULATIONS REQUIRED FOR ALL COMPONENTS. ALL SIGN DIMENSIONS SHALL BE IN ACCORDANCE WITH THE SIGNAGE REGULATIONS REQUIRED FOR ALL COMPONENTS. ALL SIGN DIMENSIONS SHALL BE IN ACCORDANCE WITH THE SIGNAGE REGULATIONS REQUIRED FOR ALL COMPONENTS.
  2. REFER TO THE SPECIAL PROVISIONS FOR SIGN DIMENSIONS AND MATERIALS. ALL SIGN DIMENSIONS ARE IN FEET AND INCHES UNLESS OTHERWISE NOTED. SIGN DIMENSIONS SHALL BE IN ACCORDANCE WITH THE SIGNAGE REGULATIONS REQUIRED FOR ALL COMPONENTS. ALL SIGN DIMENSIONS SHALL BE IN ACCORDANCE WITH THE SIGNAGE REGULATIONS REQUIRED FOR ALL COMPONENTS.
  3. EQUIPMENT SHALL BE PROVIDED FOR ALL COMPONENTS. ALL SIGN DIMENSIONS SHALL BE IN ACCORDANCE WITH THE SIGNAGE REGULATIONS REQUIRED FOR ALL COMPONENTS. ALL SIGN DIMENSIONS SHALL BE IN ACCORDANCE WITH THE SIGNAGE REGULATIONS REQUIRED FOR ALL COMPONENTS.
  4. ACCESS TO ALL RESTRANCTED CONTROLS SHALL BE MAINTAINED AT ALL TIMES. ALL SIGN DIMENSIONS SHALL BE IN ACCORDANCE WITH THE SIGNAGE REGULATIONS REQUIRED FOR ALL COMPONENTS. ALL SIGN DIMENSIONS SHALL BE IN ACCORDANCE WITH THE SIGNAGE REGULATIONS REQUIRED FOR ALL COMPONENTS.
  5. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE SIGNAGE REGULATIONS REQUIRED FOR ALL COMPONENTS. ALL SIGN DIMENSIONS SHALL BE IN ACCORDANCE WITH THE SIGNAGE REGULATIONS REQUIRED FOR ALL COMPONENTS.
- MAXIMUM SIGN SIZE:
1. 60" x 60" SIGN
  2. 60" x 60" SIGN
  3. 60" x 60" SIGN
  4. 60" x 60" SIGN
  5. 60" x 60" SIGN
  6. 60" x 60" SIGN
  7. 60" x 60" SIGN
  8. 60" x 60" SIGN
  9. 60" x 60" SIGN
  10. 60" x 60" SIGN
  11. 60" x 60" SIGN
  12. 60" x 60" SIGN
  13. 60" x 60" SIGN
  14. 60" x 60" SIGN
  15. 60" x 60" SIGN
  16. 60" x 60" SIGN
  17. 60" x 60" SIGN
  18. 60" x 60" SIGN
  19. 60" x 60" SIGN
  20. 60" x 60" SIGN
- PLUS ALL MOUNTING AND SUPPORTING HARDWARE AND WIRING NECESSARY TO COMPLETE A WORKING SYSTEM.



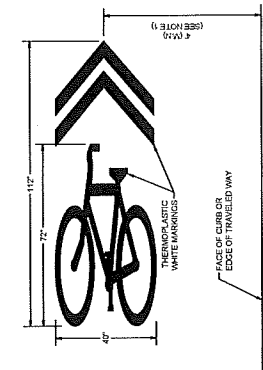
RECTANGULAR RAPID FLASHING BEACON (RRFB)  
N.T.S.



RAISED INTERSECTION  
N.T.S.

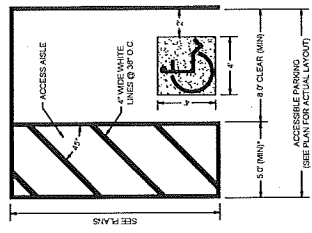


POROUS PAVEMENT  
N.T.S.



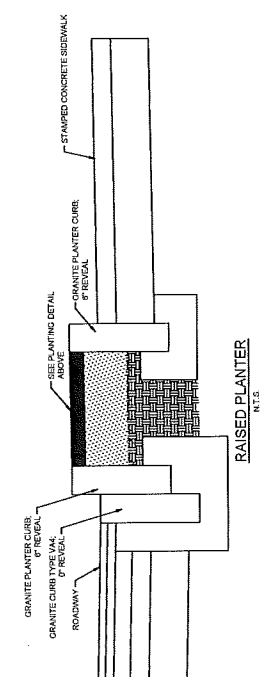
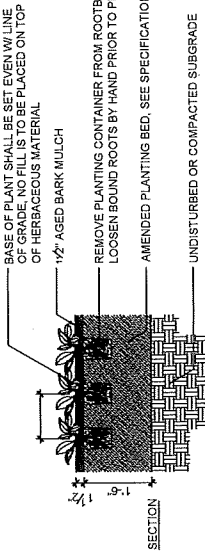
- NOTES:
1. CENTER IN LANES 14' WIDE OR LESS.
  2. PAVED LANE MARKINGS SHALL BE IN ACCORDANCE WITH THE SIGNAGE REGULATIONS REQUIRED FOR ALL COMPONENTS. ALL SIGN DIMENSIONS SHALL BE IN ACCORDANCE WITH THE SIGNAGE REGULATIONS REQUIRED FOR ALL COMPONENTS.
  3. PAVED LANE MARKINGS SHALL BE IN ACCORDANCE WITH THE SIGNAGE REGULATIONS REQUIRED FOR ALL COMPONENTS. ALL SIGN DIMENSIONS SHALL BE IN ACCORDANCE WITH THE SIGNAGE REGULATIONS REQUIRED FOR ALL COMPONENTS.
  4. PAVED LANE MARKINGS SHALL BE IN ACCORDANCE WITH THE SIGNAGE REGULATIONS REQUIRED FOR ALL COMPONENTS. ALL SIGN DIMENSIONS SHALL BE IN ACCORDANCE WITH THE SIGNAGE REGULATIONS REQUIRED FOR ALL COMPONENTS.

SHARED LANE PAVEMENT MARKING  
N.T.S.



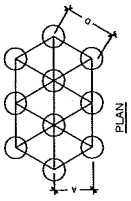
- NOTES:
1. DIMENSIONS TO BE TO FACE OF MARKING STRIPS.
  2. ALL STRIPS SHALL BE 4" WIDE SOLID WHITE PAVEMENT MARKINGS. PAVED LANE MARKINGS SHALL BE IN ACCORDANCE WITH THE SIGNAGE REGULATIONS REQUIRED FOR ALL COMPONENTS.
  3. CLEAR WIDTH REFERS TO CLEAR WIDTH OF PAVED MARKINGS.
  4. SYMBOL SHALL BE CENTERED WITHIN PARKING STALL.

ACCESSIBLE PARKING SPACE  
N.T.S.



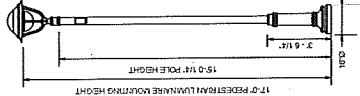
**RAISED PLANTER**  
N.T.S.

PLANT SPACING	"D"	"A"
6" O.C.	7"	5"
8" O.C.	9"	7"
10" O.C.	11"	9"
12" O.C.	13"	11"
14" O.C.	15"	13"
16" O.C.	17"	15"
18" O.C.	19"	17"
20" O.C.	21"	19"
22" O.C.	23"	21"
24" O.C.	25"	23"
26" O.C.	27"	25"
28" O.C.	29"	27"
30" O.C.	31"	29"



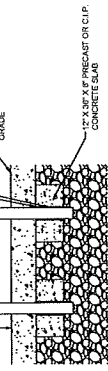
**NOTE:**  
1. INSTALL PLANTS WITH TRIANGULAR SPACING UNLESS OTHERWISE NOTED  
2. REFER TO PLANTING TABLE FOR PLANT SPACING

**LUMINAIRE SPECIFICATIONS**  
MANUFACTURER: CHASMEISTER  
LED SOURCE: 100 SMALL  
LED: 100  
WARRANTY: 5 YEAR  
VOLTAGE: 120/277V  
CUT-OFF: CLASS BLACK  
OPTIONS:  
• TONDA DRIVER  
• TENOR ADAPTOR (MS-5102P)  
• JAN 25 OF ATY-LED-700-24-3000

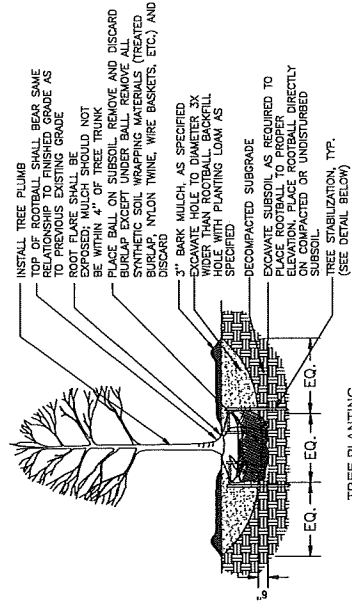


**POLE SPECIFICATIONS**  
MANUFACTURER: PARK TUBULAR PRODUCTS  
STYLE: ROUND NON-LAPPERED ALUMINUM  
HEIGHT: 17'-0"  
BASE DIA: 4" DIA  
TOP DIA: 4" DIA  
FINISH: POLYURETHANE  
COLOR: GLOSS BLACK  
TDC POWDERCOAT - GLOSS BLACK  
ANCHOR BOLTS: 3/4" x 1 1/4" x 3" HOOK  
BOLT CIRCLE: 12" DIA  
INSTALLATION TENDRY SIZE: 3/4" x 4"  
OPTIONS:  
• GFIC (VENTION 400 W/RES) VIA MEAN HER PROOF W/RESIN COVER (HUBBELL TAYMAC PHOTOGRAPHER)  
• RESALTY/TYPE

**LIGHT POLE**  
N.T.S.

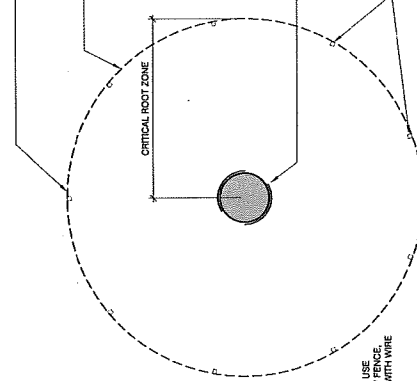


**BIKE RACK - HOOP**  
N.T.S.



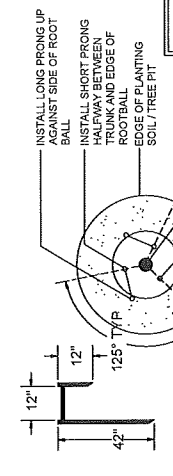
**TREE PLANTING**  
N.T.S.

TREE PROTECTION FENCE MAY BE USED TO PROTECT THE TRUNK AND ROOTBALL OF THE TREE UPON ARBORIST'S REVIEW AND APPROVAL  
TREE PROTECTION FENCE USE STANDARD ORANGE SNOW FENCE. 48\"/>



**NOTE:**  
1. WHERE SPACES IS AVAILABLE TREE PROTECTION FENCE TO BE PLACED AT MINIMUM OF 10" FROM BASE OF TREE PLUS AN ADDITIONAL 1' FOR EACH LAYER OF SNOW FENCE.  
2. ALL WORK DONE WITHIN TREE PROTECTION FENCE IS TO BE DONE BY HAND AND LIGHT EQUIPMENT.  
3. ROOTS EXPOSED DURING EXCAVATION SHALL BE NEATLY CUT AND COVERED WITH SOIL IMMEDIATELY.  
4. TREE PROTECTION FENCE SHALL BE MAINTAINED THROUGHOUT THE ENTIRE AREA. SEE PLAN FOR LOCATIONS.  
5. MAINTAIN FENCE PROTECTION IN SOUND CONDITION UNTIL FENCE COMPLETION.  
6. A CERTIFIED ARBORIST SHALL DELINEATE LIMIT OF TREE PROTECTION FENCE AS THEY RELATE TO THE LIMITS OF THE CRITICAL ROOT ZONE.

**TREE PROTECTION**  
N.T.S.

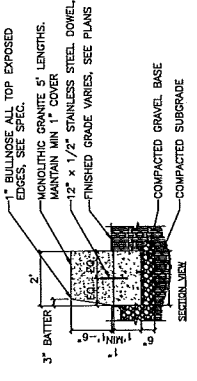
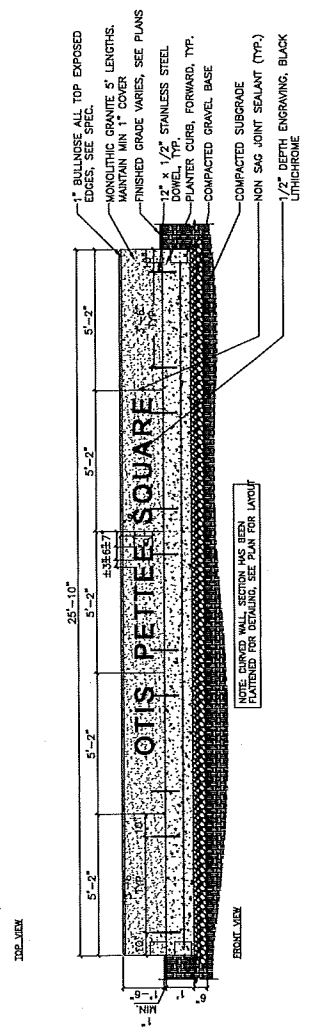
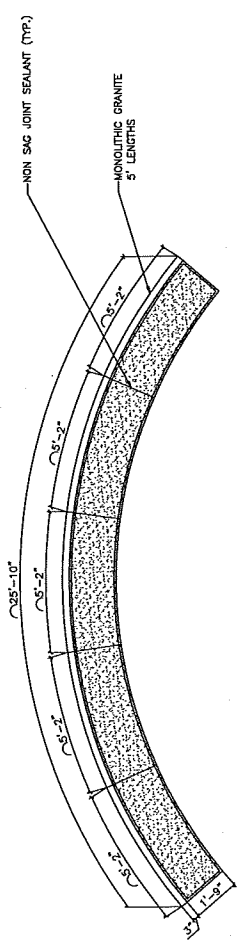


**TREE STABILIZATION**  
N.T.S.

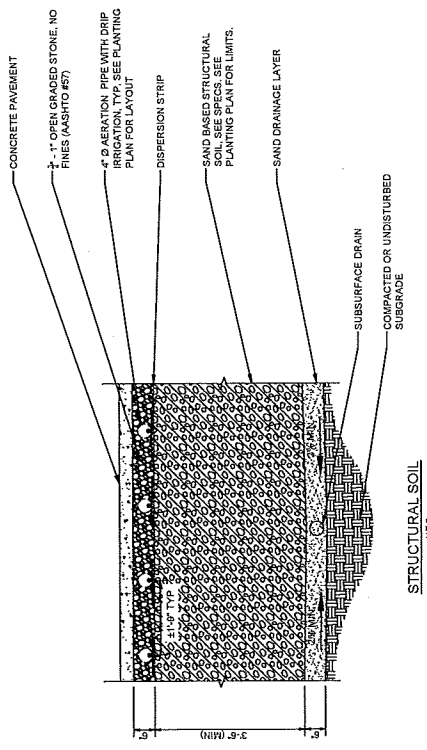
CITY OF NEWTON  
MASSACHUSETTS  
LANDSCAPE & LIGHTING DETAILS  
FOR THE  
IMPROVEMENTS  
AT  
PETTEE SQUARE  
OAK STREET AT CHESTNUT STREET



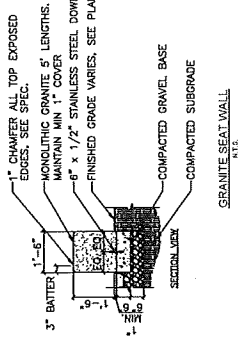
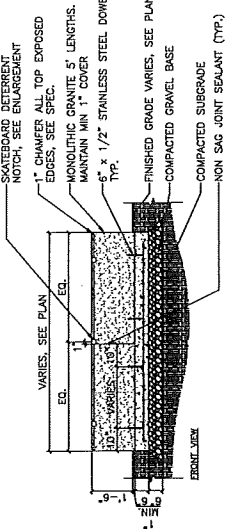
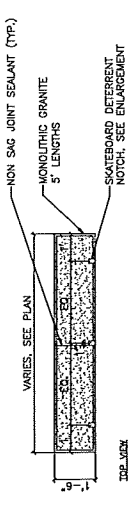
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 MASSACHUSETTS  
 LANDSCAPE & LIGHTING DETAILS  
 FOR THE  
 IMPROVEMENTS  
 AT  
 PETTEE SQUARE  
 OAK STREET AT CHESTNUT STREET  
 SHEET 35 OF 45



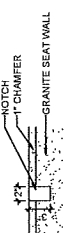
GRANITE SIGN  
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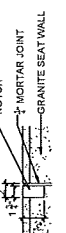
STRUCTURAL SOIL  
 N.T.S.



GRANITE SEAT WALL  
 N.T.S.



ELEVATION - NON JOINT



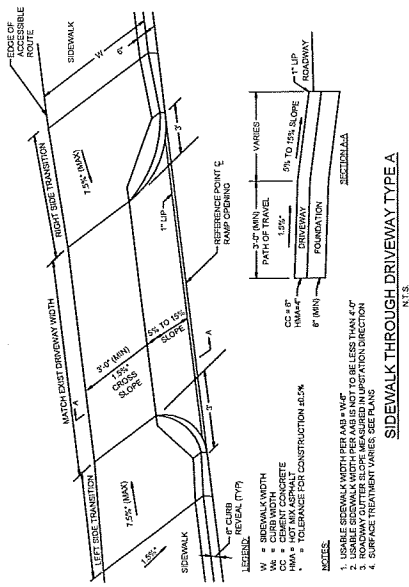
ELEVATION - AT JOINT



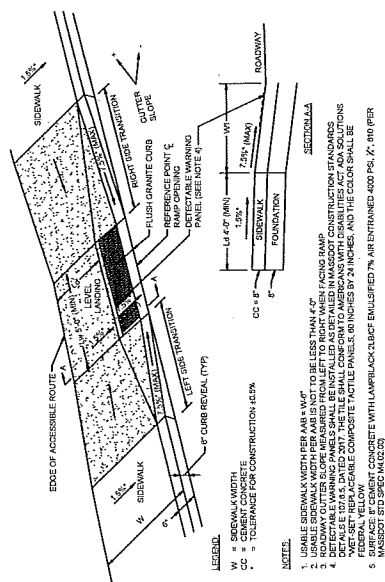
ELEVATION - AT JOINT (BEYOND)

SKATEBOARD DETERRENT NOTCH - ENLARGEMENT

NOTE: SKATEBOARD DETERRENTS SHALL BE INSTALLED AT ALL CORNERS AND CORNERS OF SEAT WALL. PROVIDE 1/4\"/>



SIDEWALK THROUGH DRIVEWAY TYPE A  
 N.T.S.



WHEELCHAIR RAMP TYPE A  
 N.T.S.

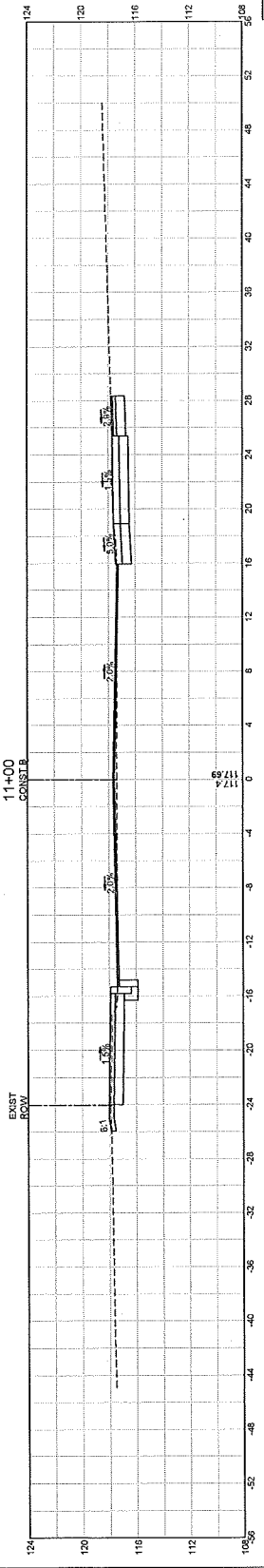
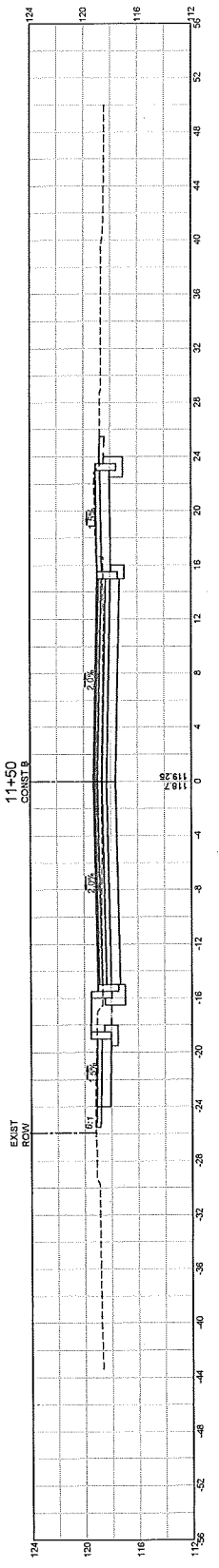
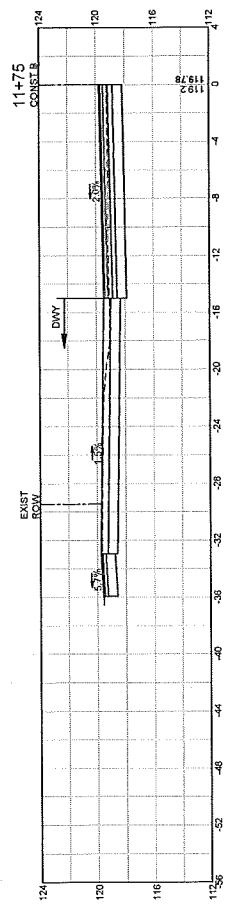
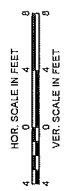
- LEGEND:
- W = SIDEWALK WIDTH
  - CC = CEMENT CONCRETE
  - 1.5% = TOLERANCE FOR CONSTRUCTION ±0.5%
  - 1.5% = TOLERANCE FOR CONSTRUCTION ±0.5%

- NOTES:
1. USABLE SIDEWALK WIDTH PER ADA 4.06
  2. USABLE SIDEWALK WIDTH PER ADA 4.06
  3. ROADWAY OUTER SLOPE MEASURED FROM LEFT TO RIGHT WHEN FACING RAMP
  4. DETAIL SHALL BE IN ACCORDANCE WITH CONSTRUCTION STANDARDS
  5. DETAIL SHALL BE IN ACCORDANCE WITH CONSTRUCTION STANDARDS
  6. DETAIL SHALL BE IN ACCORDANCE WITH CONSTRUCTION STANDARDS
  7. DETAIL SHALL BE IN ACCORDANCE WITH CONSTRUCTION STANDARDS
  8. SEE E 10.2.1 FOR ALL OTHER DETAILS

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  - 1.5% = TOLERANCE FOR CONSTRUCTION ±0.5%
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  7. DETAIL SHALL BE IN ACCORDANCE WITH CONSTRUCTION STANDARDS
  8. SEE E 10.2.1 FOR ALL OTHER DETAILS

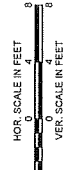
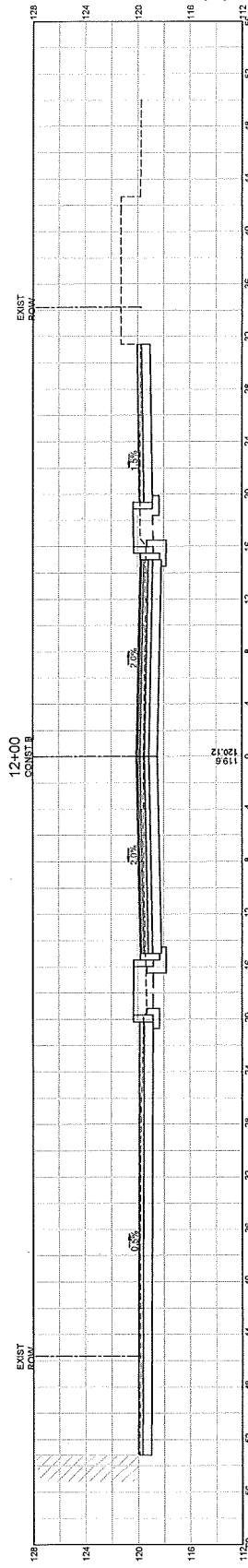
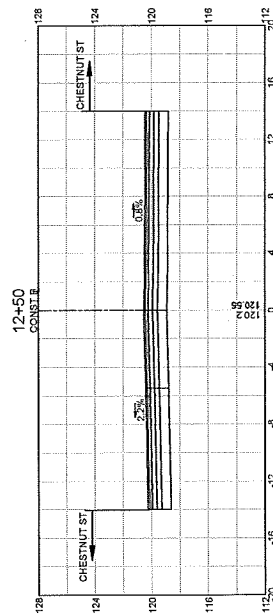
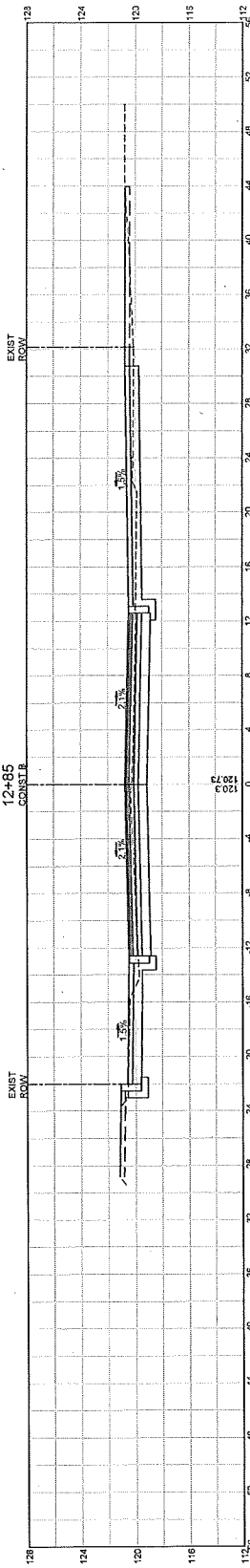
CITY OF NEWTON  
 MASSACHUSETTS  
 FOR THE  
 IMPROVEMENTS  
 AT  
 PETITE SQUARE  
 OAK STREET AT CHESTNUT STREET



CITY OF NEWTON  
 MASSACHUSETTS

DESIGNED BY: R.R.  
 CHECKED BY: LSA  
 APPROVED BY: LSA  
 SHEET 37 OF 45

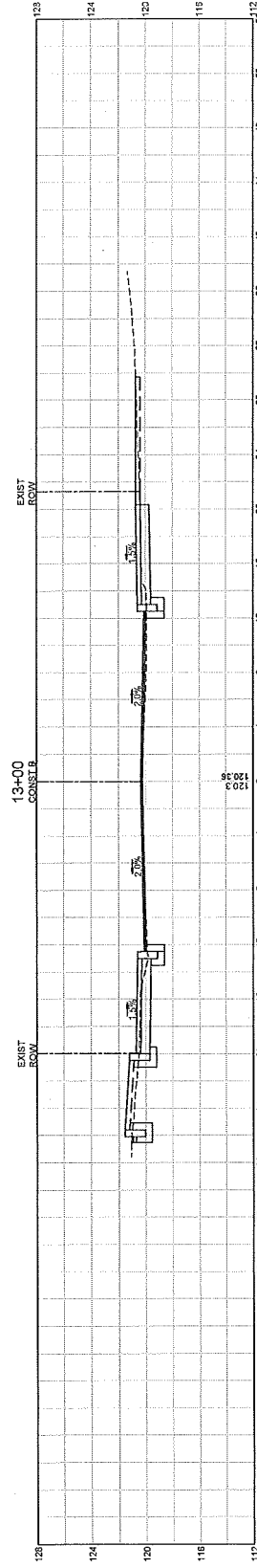
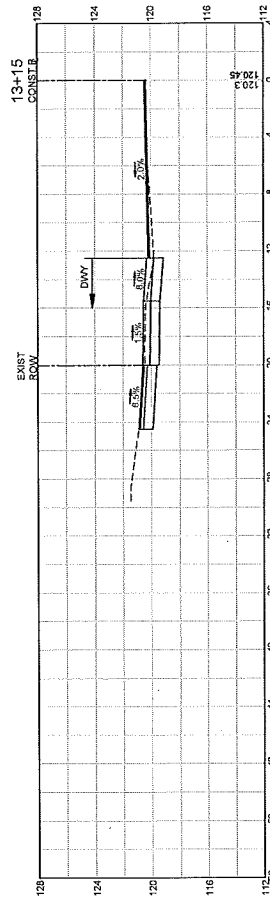
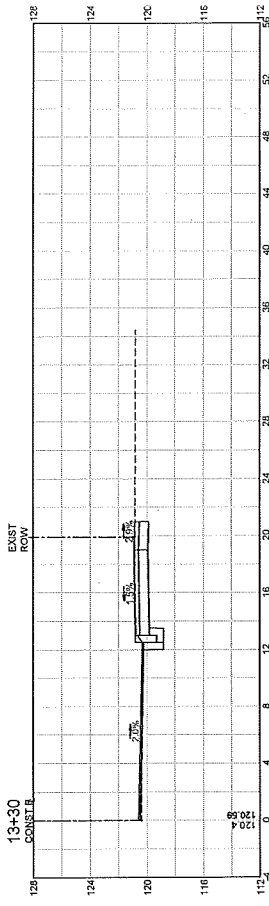
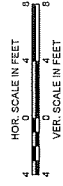
CITY OF NEWTON  
 MASSACHUSETTS  
 CROSS SECTIONS - 2 OF 9  
 FOR THE  
 IMPROVEMENTS  
 AT  
 FETTEE SQUARE  
 OAK STREET AT CHESTNUT STREET  
 SHEET 38 OF 45



CITY OF NEWTON  
 MASSACHUSETTS

DESIGNED BY: R.L.  
 CHECKED BY: L.S.A.  
 APPROVED BY: L.S.A.

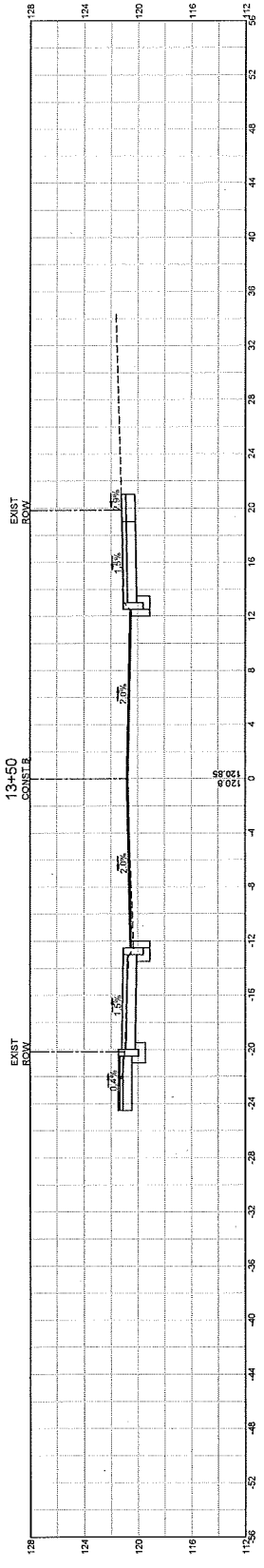
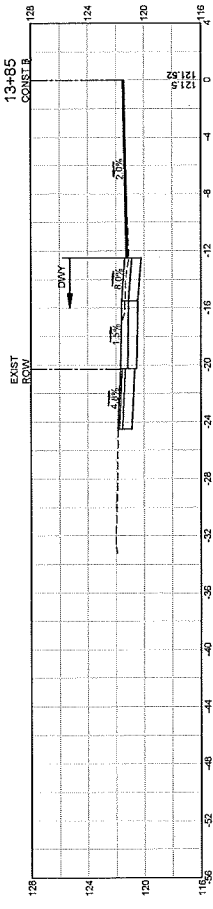
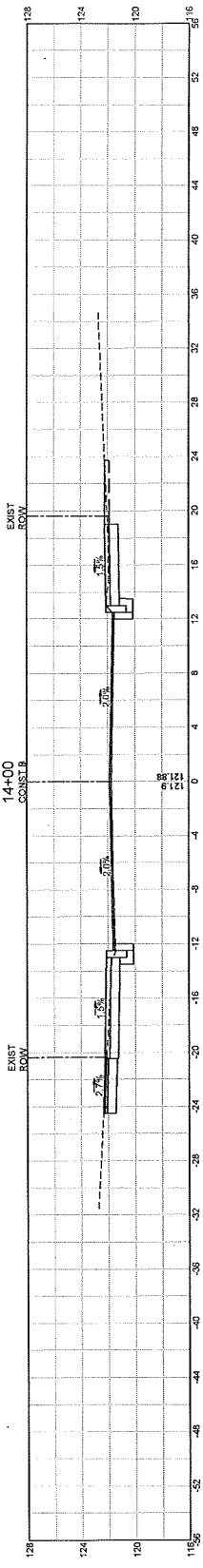
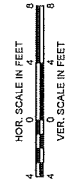
CITY OF NEWTON  
MASSACHUSETTS  
CROSS SECTIONS - 3 OF 9  
FOR THE  
IMPROVEMENTS  
AT  
PETTEE SQUARE  
OAK STREET AT CHESTNUT STREET  
SHEET 39 OF 45



CITY OF NEWTON  
MASSACHUSETTS

DESIGNED BY: RLC  
CHECKED BY: LSA  
APPROVED BY: LSA

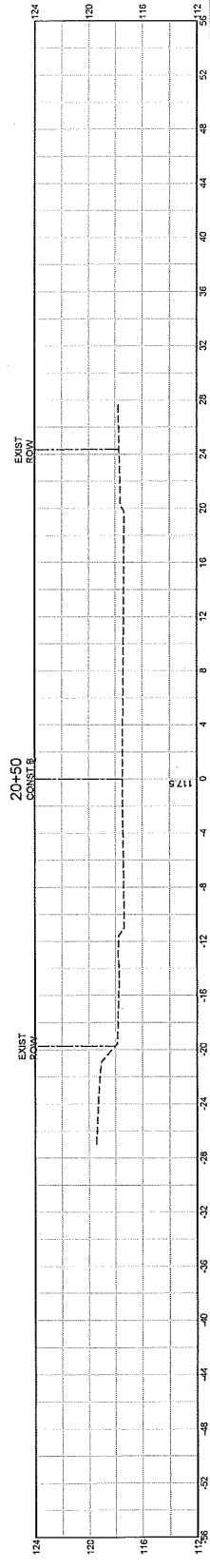
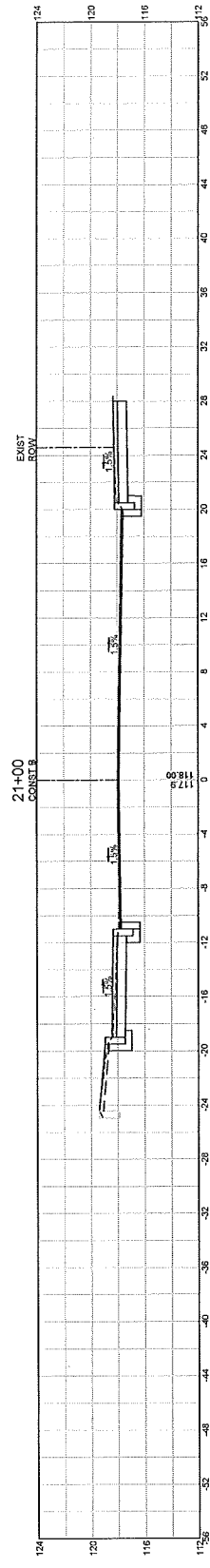
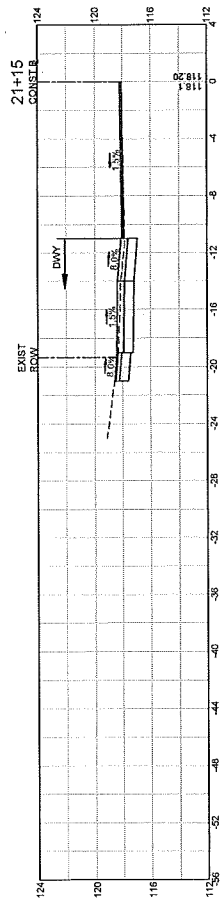
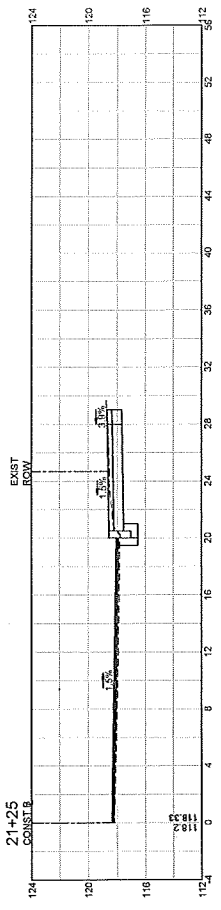
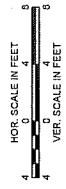
CITY OF NEWTON  
MASSACHUSETTS  
FOR THE  
IMPROVEMENTS  
AT  
PETTEE SQUARE  
ON STREET AT CHESTNUT STREET  
SHEET 40 OF 45



CITY OF NEWTON  
MASSACHUSETTS

DESIGNED BY: BJC  
CHECKED BY: LSA  
APPROVED BY: LSA

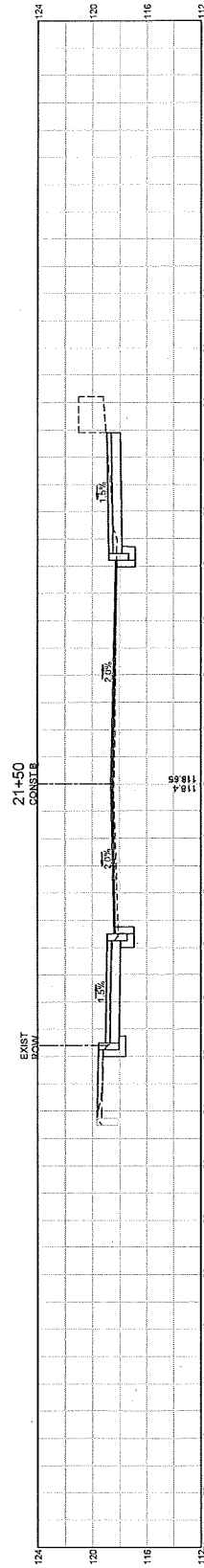
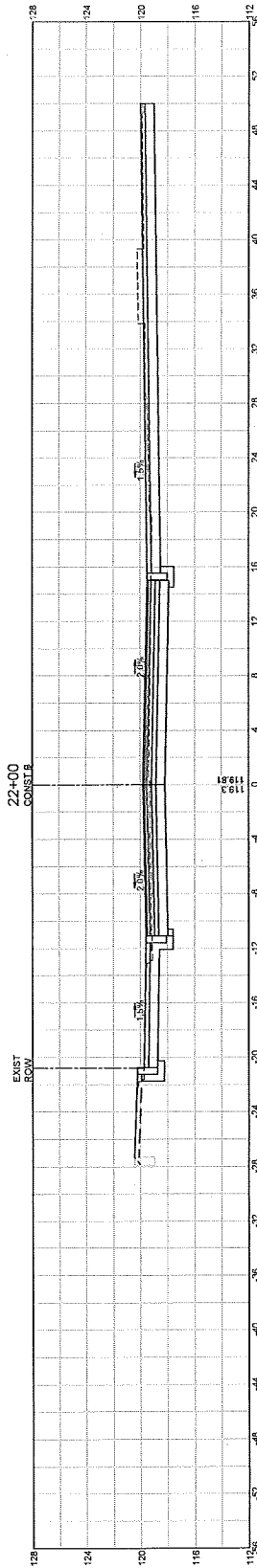
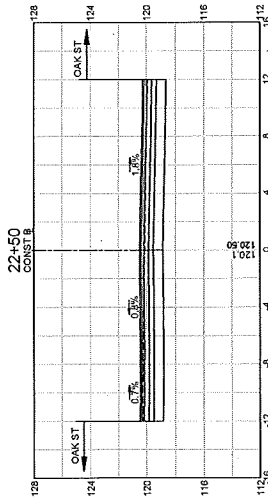
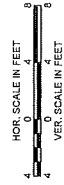
CITY OF NEWTON  
 MASSACHUSETTS  
 FOR THE  
 IMPROVEMENTS  
 AT  
 PETTEE SQUARE  
 OAK STREET AT CHESTNUT STREET  
 SHEET 41 OF 45



CITY OF NEWTON  
 MASSACHUSETTS

DESIGNED BY: RLC  
 CHECKED BY: LSA  
 APPROVED BY: LSA

CITY OF NEWTON  
 MASSACHUSETTS  
 CROSS SECTIONS - 6 OF 9  
 FOR THE  
 IMPROVEMENTS  
 AT  
 PETTEE SQUARE  
 OAK STREET AT CHESTNUT STREET  
 SHEET 42 OF 45

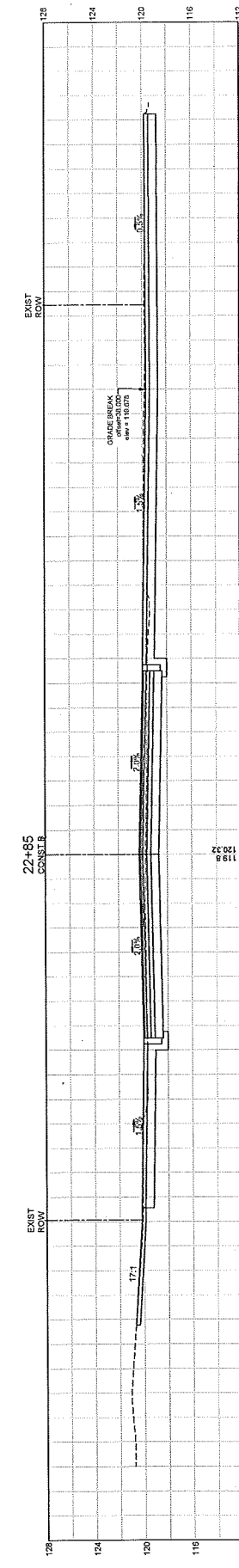
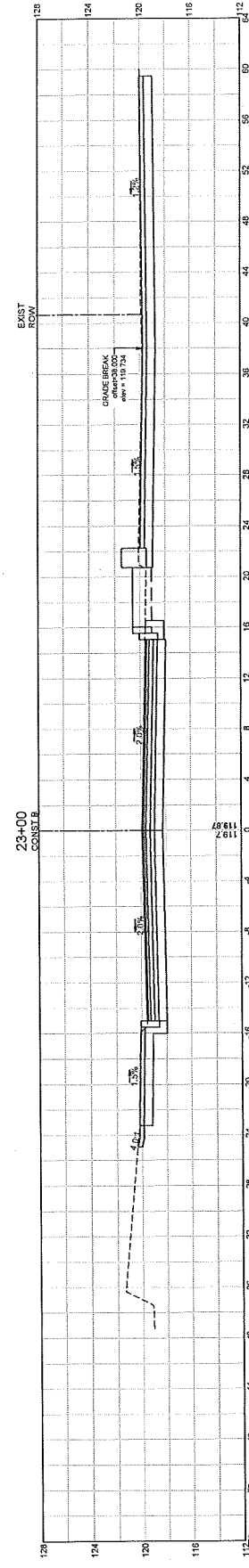
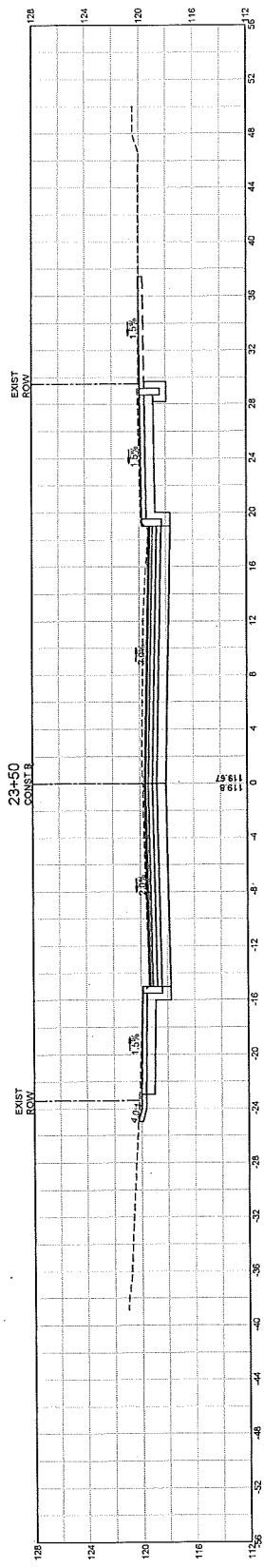


CITY OF NEWTON  
 MASSACHUSETTS

DESIGN BY: RAC  
 CHECKED BY: USA  
 APPROVED BY: USA

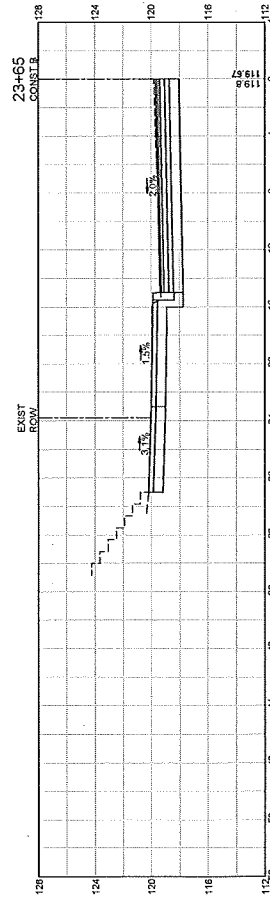
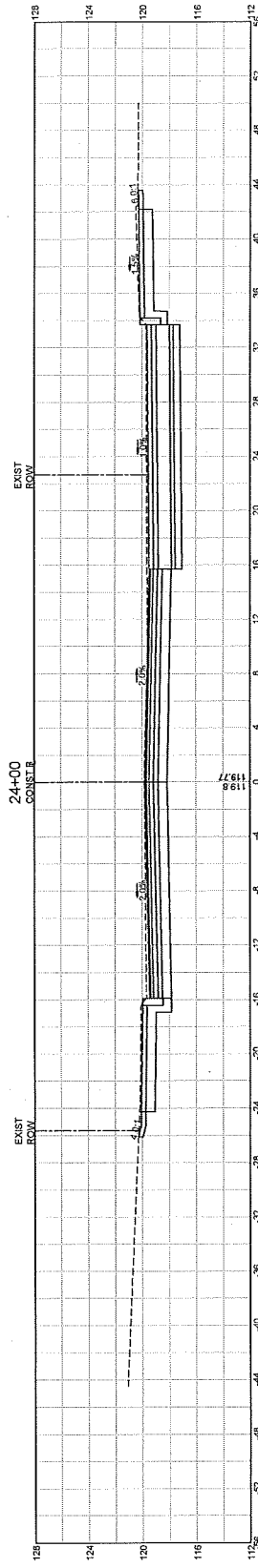
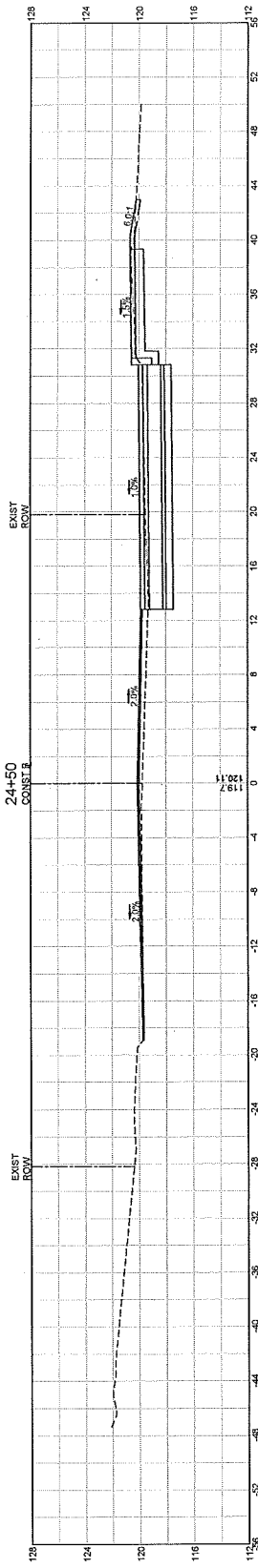
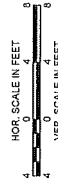


CITY OF NEWTON  
 MASSACHUSETTS  
 CROSS SECTIONS - 7 OF 9  
 FOR THE  
 IMPROVEMENTS  
 AT  
 PETTEE SQUARE  
 OAK STREET AT CHESTNUT STREET  
 SHEET 43 OF 45

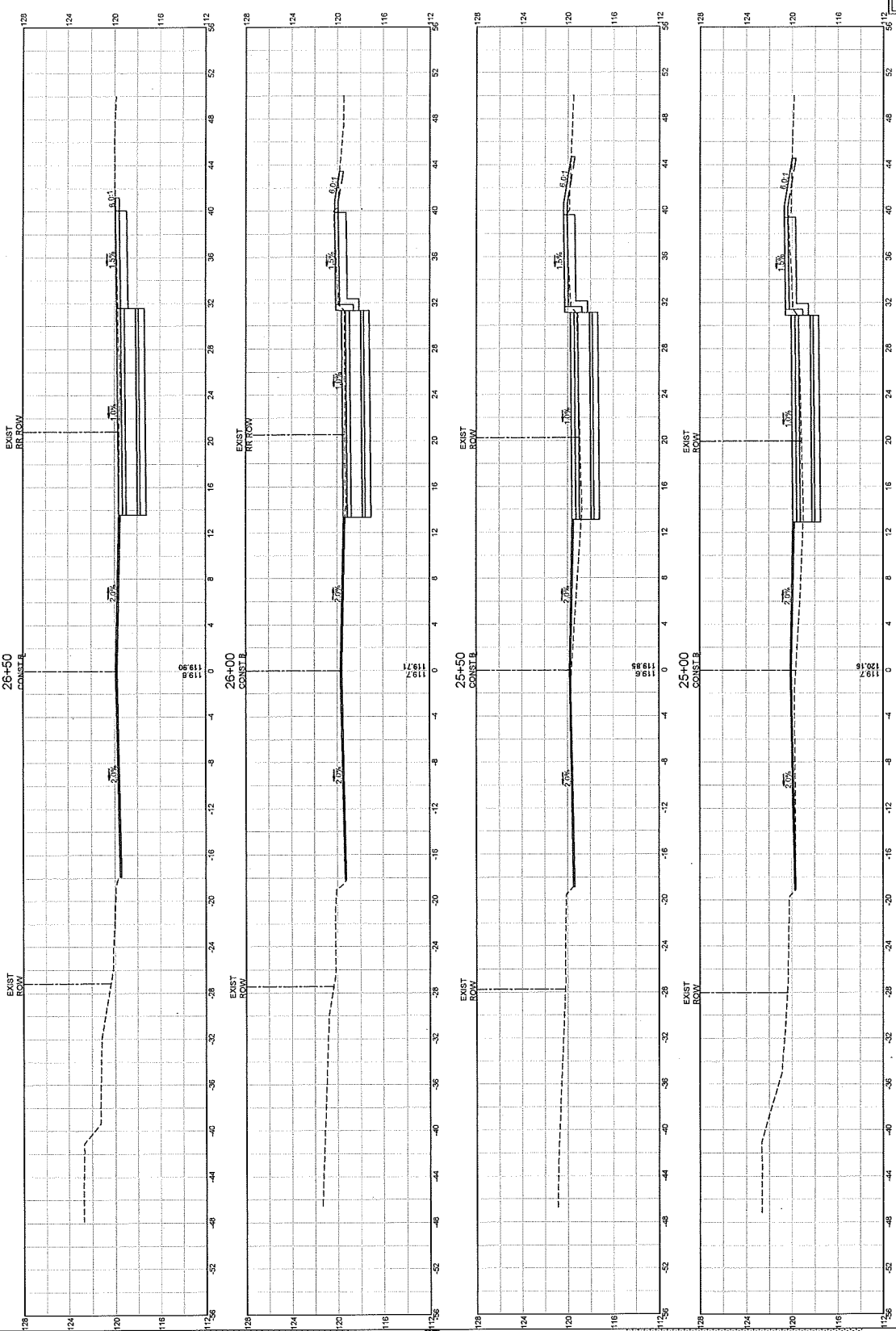
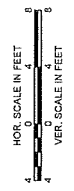


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CITY OF NEWTON  
 MASSACHUSETTS  
 FOR THE  
 IMPROVEMENTS  
 AT  
 PETTEE SQUARE  
 OAK STREET AT CHESTNUT STREET  
 SHEET 46 OF 45



DESIGNED BY: R.A. ...  
 CHECKED BY: ...  
 APPROVED BY: ...  
 CITY OF NEWTON  
 MASSACHUSETTS