Drawing Reference

This plan based on the drawing provided by S47|a Architects and the survey performed by Rober Survey, Professional Land Surveyors.
City of Newton Bench Marks Used:

All utility design shall be installed in accordance with the requirements of the City of Newton Department of Public Works.

Owner Address
23 Johnson Place
Newton, MA 02466
Contact Person - Michael Lohin
(617) 721-8533

Owner of Record
23 Johnson Place Realty Trust
Book 30756, Page 545

Map ID
038SW
Property ID
410070014

Project Information

Construction of Two Residential Dwellings containing Four Units total
3 Bedrooms per unit - 12 Bedrooms Total

1. Anticipated Daily Sewage Flow = 1320 gpd
2. (P) 6" SDR35 Sanitary Sewer Connection
3. (E) 1-1/2" Domestic Water Service with a 1" Master Meter.
4. Building Drainage: Rain leaders connected to 4" PVC subsurface piping that is directed into a drainage system consisting of five (5) 8" ADS N-12 perforated piping embedded in a 12' x 12' x 2' field of 1-1/2" crushed, washed stone located at the front of the property.
5. Driveway Drainage: A 48" dia. Concrete Catch Basin located at the driveway entrance will directs stormwater flows into a drainage system consisting of 8" perforated ADS N-12 piping embedded in a 12' x 12' x 2' field of 1-1/2" crushed, washed stone located at the left side of the property under the proposed driveway.

General Notes

1. The new building sewer shall be constructed in conformance with current City of Newton standards and specifications, the Uniform State Plumbing Code, 248 CMR 2.00 and any other governing agency with authority in this area.

2. The installing contractor shall call Digsafe at 1-888-DIG-SAFE at least 72 hours, Saturdays, Sundays and Holidays Excluded, prior to excavating at any location. A copy of the Digsafe Project Reference Number(s) shall be maintained on site.

3. The City of Newton Engineering Division shall have the right to inspect the installation of the building utility installation at any reasonable time while such construction is underway.

4. Utility work performed within a Public Street that has been paved or reconstructed within the past five (5) years will require the contractor to mill a minimum of 1-1/2" off the existing surface 2 ft on both sides of the trench(es) from curb line to curb line and paved with Type I-1 Bituminous Concrete.

5. The contractor is responsible for contacting the Engineering Division and scheduling an appointment 48 hours prior to the date when the utilities will be made available for an inspection of water services, sewer service, and drainage system installation. The utility is question shall be fully exposed for the inspector to view; backfilling shall only take place when the City's Inspector has given their approval.

6. The applicant will have to apply for a Street opening, Sidewalk Crossing, Utility Connecting permits with the City of Newton Department of Public Works prior to any construction.

7. The applicant will have to apply for a Building permits with the Department of Inspectional Services prior to any construction.

8. Prior to an Occupancy permit being issued, an As-Built Plan should be submitted to the Engineering Division in both digital format and in hard copy. The plan should show all utilities and drainage (utilizing swing ties) any easements and final grading.

9. If a Certificate of Occupancy is requested prior to all site work being completed, the applicant will be required to post a Certified Bank Check in the amount to cover the remaining work. The City Engineer shall determine the value of the uncompleted work.

10. No work is allowed within the City of Newton right-of-way between November 15th and April 15th. If an emergency exists or there are extenuating circumstances, Applicant may seek permission for such work from the City DPW Commissioner via the City Engineer. If permission is granted, special construction standards will be applied. Applicant of Applicant's representative must contact the City of Newton Engineering Department prior to start of work for clarification.

11. As of January 1, 2009, all trench excavation contractors shall comply with Massachusetts General Law Chapter 82A, Trench Excavation Safety Requirements, to protect the general public from unauthorized access to unattended trenches. Trench Excavation Permit is required. This applies to all trenches on public or private property.

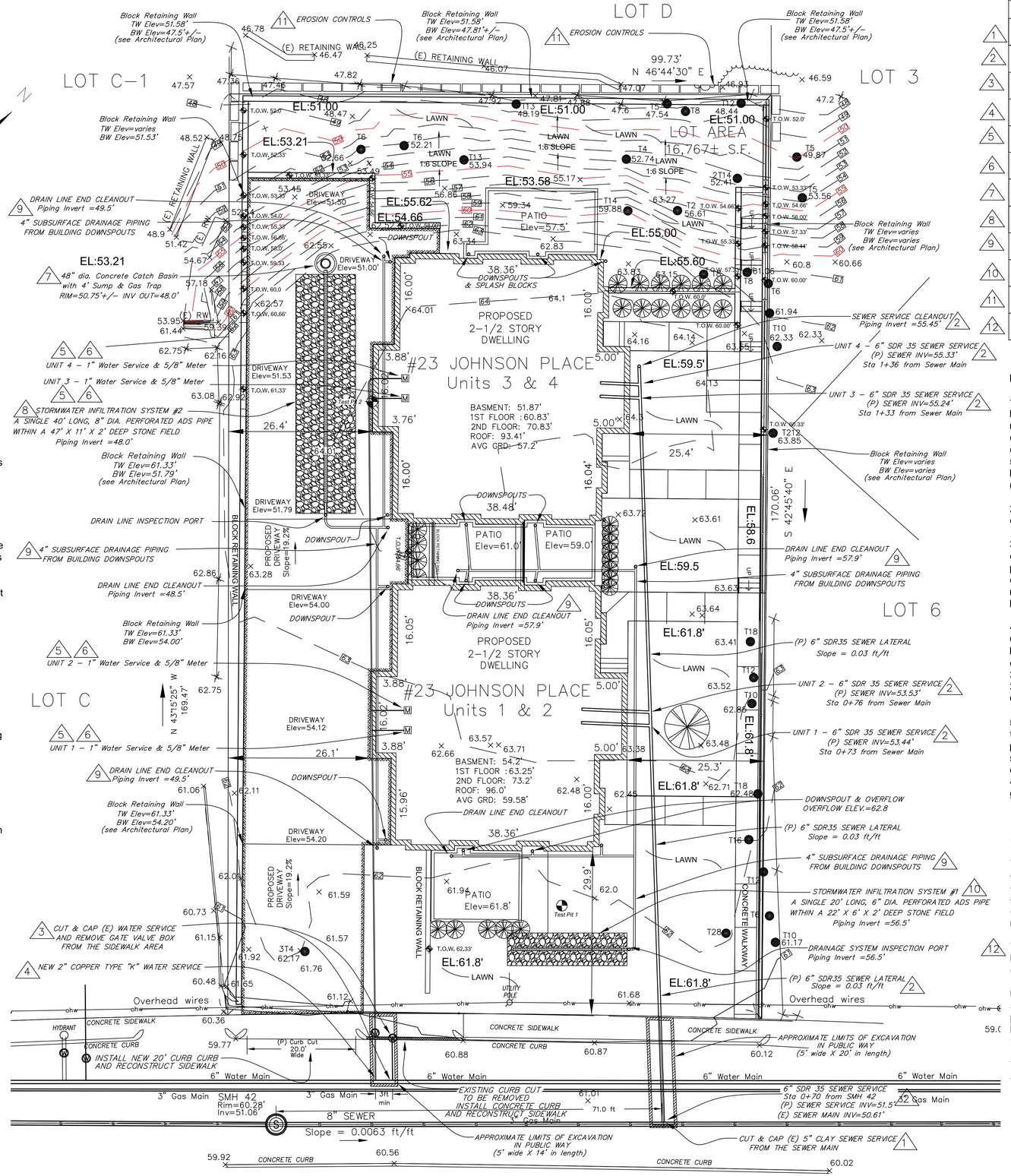
12. With the exception of gas services, all utility trenches within the City of Newton right-of-way will be backfilled with Type IE (excavatable) controlled density fill, as specified by the City of Newton Engineering Specifications.

13. On-site erosion controls shall be provided as needed, to the satisfaction of the City of Nerwton Inspector.

14. A copy of the approved plans and a parmit shall be kept at the construction site at all times.

15. The new sewer service and/or structures shall be pressure tested or videotaped after final installation is complete. Method of final inspection shall be determined solely by the construction inspector from the City Engineering Division. The sewer service will NOT be accepted until one of the two methods stated above is complete. A Certificate of Occupancy will not be recommended until this test is completed and the City Engineer receives a written report.

GRAPHIC SCALE
10 0 5 10 20 40
(IN FEET)
1 inch = 10 ft.



INSPECTION CHECKLIST	
1	CUT & CAP (E) 5" CLAY SEWER SERVICE AT MAIN DATE: _____ INSPECTOR: _____
2	INSTALL (P) 6" SDR35 SEWER SERVICE TO MAIN DATE: _____ INSPECTOR: _____
3	CUT & CAP (E) DOMESTIC WATER SERVICE AT MAIN DATE: _____ INSPECTOR: _____
4	INSTALL 1–1/2" CU DOMESTIC SERVICE DATE: _____ INSPECTOR: _____
5	INSTALL 1" WATER SERVICE TO EACH UNIT (4 total) DATE: _____ INSPECTOR: _____
6	INSTALL 5/8" WATER METER IN EACH UNIT (4 total) DATE: _____ INSPECTOR: _____
7	INSTALL CATCH BASIN FOR DRIVEWAY DRAINAGE SYSTEM DATE: _____ INSPECTOR: _____
8	INSTALL STORMWATER INFILTRATION SYSTEM 1 DATE: _____ INSPECTOR: _____
9	INSTALL SUBSURFACE PIPING FROM RAIN LEADERS DATE: _____ INSPECTOR: _____
10	INSTALL STORMWATER INFILTRATION SYSTEM 2 DATE: _____
11	INSTALL & MAINTAIN ON SITE EROSION CONTROLS DATE: _____ INSPECTOR: _____
12	SUBMIT AS-BUILT DRAWINGS OF COMPLETED WORK DATE: _____

Material Specifications

1. The following size and type of pipe shall be used for all building sewer and building storm drain connections. The minimum size is 6-inches. The material shall be Polyvinyl-chloride pipe for the building sewer connections. Polyvinyl chloride pipe and fittings shall conform to ASTM standard specifications D3034 for pipes 6-inches to 15 inches. The PVC pipe shall have pipe diameter to wall thickness ratio (SDR) of a maximum of 35.

2. All water services up to and including 2-inch shall be copper Type K.

3. The subsurface drainage piping from the building's downspouts shall consist of ADS 3000 Triple Wall HDPE pipe and fittings. The Stormwater Infiltration Systems shall consist of ADS N-12 HDPE perforated piping as manufactured by Advanced Drainage Systems, Inc. of Hilliard OH or approved equal.

4. The Catch Basin shall consist of a 48" diameter Concrete Catch Basin as manufactured by Shea Concrete Products of Amesbury, MA with a Snout Structure composite hood devise as manufactured by Nyloplast of 3130 Verona Avenue, Buford, Georgia (see details sheet # 3) as distributed by ADS of 4640 Trueman Blvd, Hilliard, OH. or approved equal.

5. Drain Cleanout / Inspection Ports shall be installed for the subsurface piping at the entrance of the 8" perforated piping as indicated on the plans. The inspection ports shall consist of 4" ADS 3000 Triple Wall HDPE pipe extended up from the invert of the drainage piping to within 4" of grade and topped with a cleanout cap. A frame and grate shall be provided in paved areas.

Special Conditions

Test Pits must be performed at the location and elevation of the proposed Stormwater Infiltration System #1 in the driveway in order to confirm soil conditions and groundwater elevations. This work to be performed upon completion of the site excavation and installation of the retaining wall along the western property line.

The onsite drainage system must be inspected by the Engineer of Record - Hayes & Associates during construction in order to certify system installation.

Upon completion of the work the Developer shall prepare and submit a complete set of "As-Built" drawings prepared by a Massachusetts Registered Professional Engineer. The "As-Built" plans must be submitted before the water service is activated.

The location of the proposed Retaining Walls as shown are approximate and are to be designed by others.

HAYES & ASSOCIATES
Civil Engineers
40 Harrison Avenue, Woburn MA 01801
(781) 998-0246

COMMONWEALTH OF MASSACHUSETTS LAURANCE HAYES CIVIL No. 40015 REGISTERED PROFESSIONAL ENGINEER

REVISIONS
1 ISSUED FOR REVIEW 7-17-20
2 REVISED PER ENGINEERING REVIEW COMMENTS
3
4
5
6
7
8
9
10

SURVEY: RCS
DESIGN: LMH
CHECKED: KNH
SCALE: 1"=10'

PROPOSED CONSTRUCTION
23 JOHNSON PLACE
NEWTON, MA 02466
JULY 15, 2020

HA 20-563
SITEPLAN#

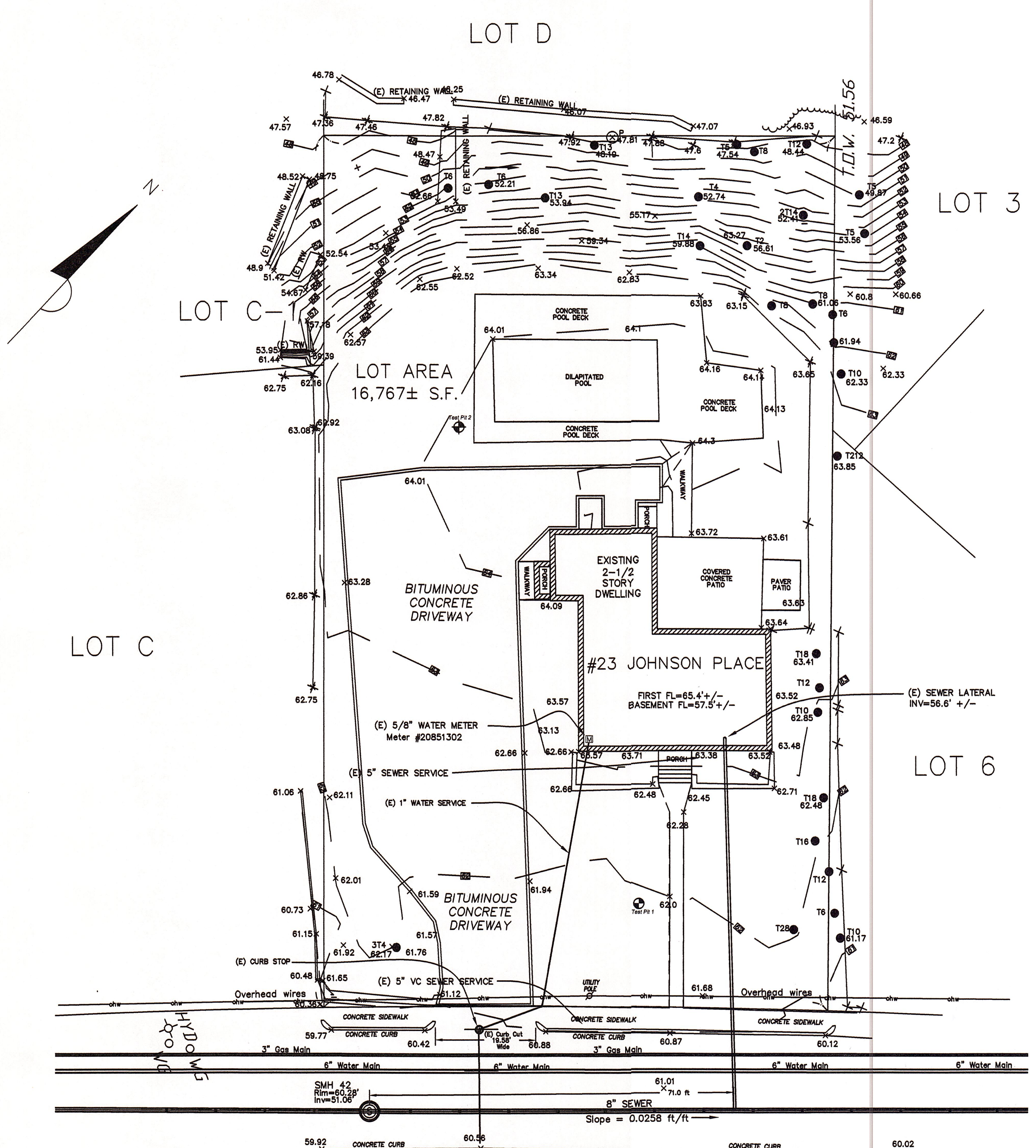
SHEETS
1 OF 4

Drawing Reference

This plan based on the drawing provided by S47|a Architects and the survey performed by Rober Survey, Professional Land Surveyors.
City of Newton Bench Marks Used:

All utility design shall be installed in accordance with the requirements of the City of Newton Department of Public Works.

Owner Address 23 Johnson Place Newton, MA 02466 Contact Person - Michael Lohin (617) 721-8533	**Owner of Record** 23 Johnson Place Realty Trust Book 30756, Page 545	**Map ID** 038SW **Property ID** 410070014



Existing Grading Conditions

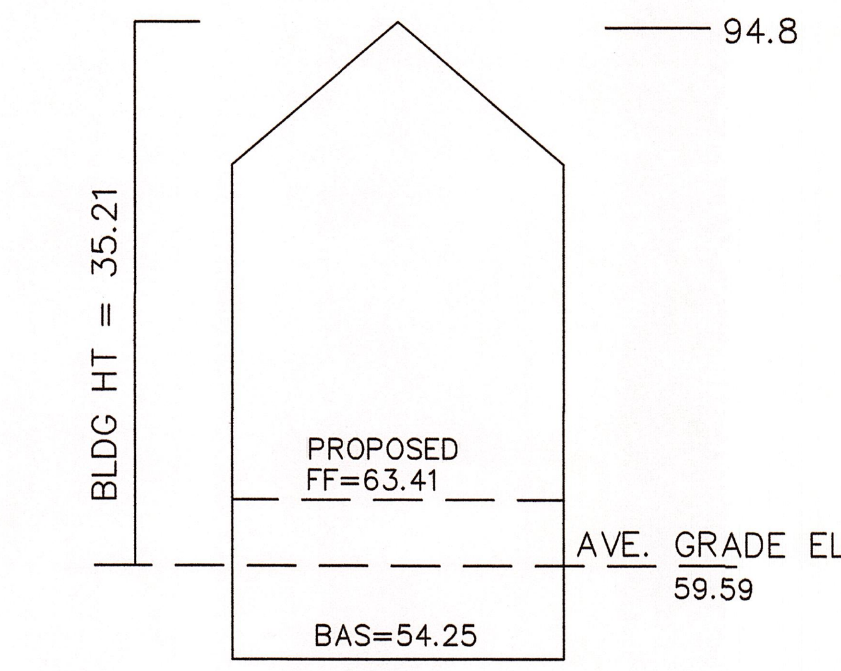
FLOOR AREA RATIO WORKSHEET

For Residential Single and Two Family Structures

Property address: 23 Johnson Place

Zoning District: MR1 Lot Size: 16,757

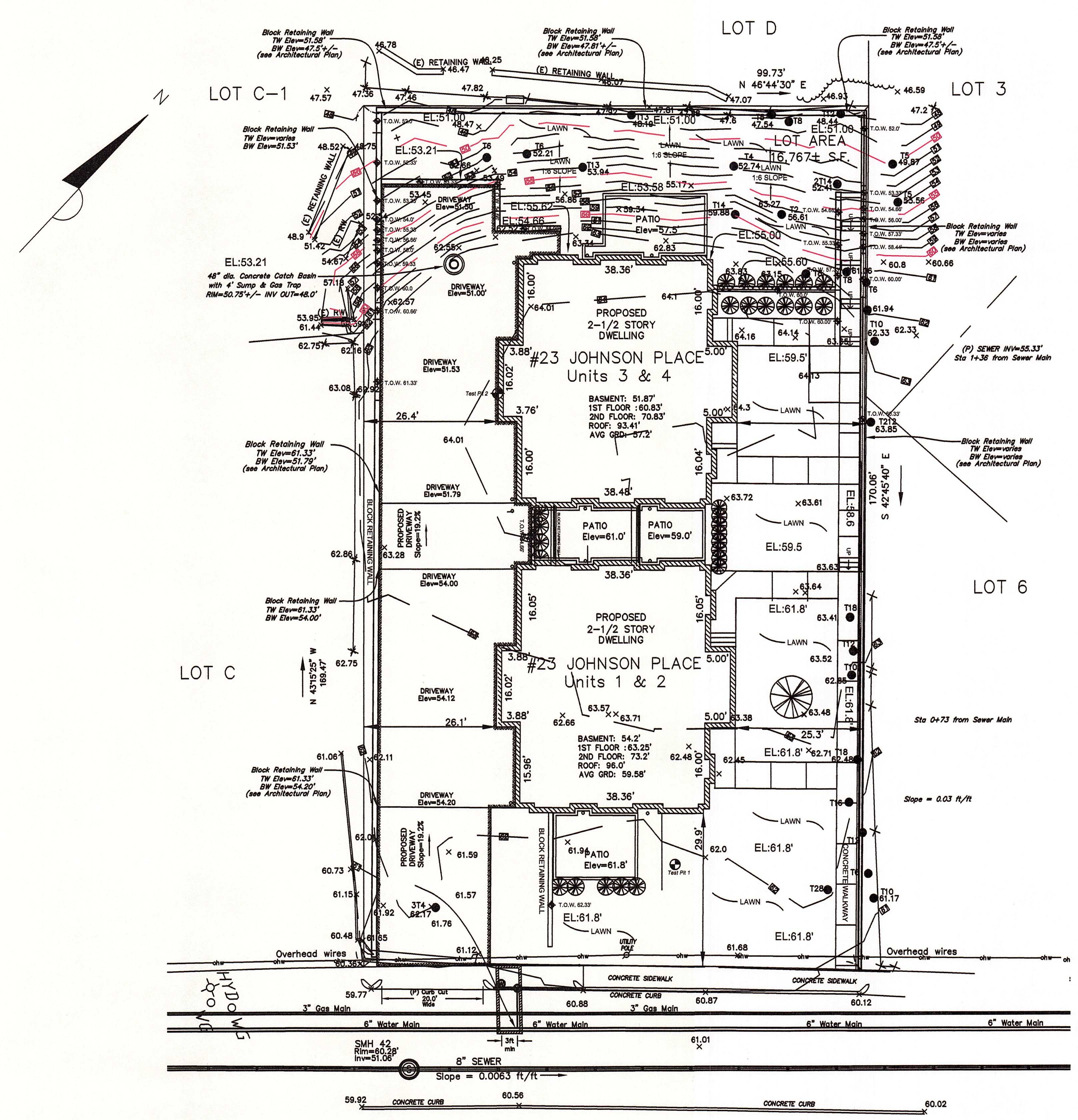
FAR Calculations for Regulations Effective As Of October 15, 2011	
Inputs (square feet)	
1. First story	4,000sf
2. Attached garage	NA
3. Second story	4,000sf
4. Atria, open walls, and other vertical spaces (if not counted in first/second story)	0sf
5. Certain floor area above the second story[1]	0sf
6. Enclosed porches[2]	0sf
7. Mass below first story[3]	716sf
8. Detached garage	NA
9. Area above detached garages with a ceiling height of 7' or greater	NA
10. Other detached accessory buildings (one detached building up to 120 sq. ft. is exempt)	NA
FAR of Proposed Structure(s)	
A. Total gross floor area (sum of rows 1-9 above)	8,716sf
B. Lot size	16,767sf
C. FAR = A/B	.51
Allowed FAR	
Allowable FAR	.48
Bonus of .02 if eligible[4]	.02
TOTAL Allowed FAR	.50



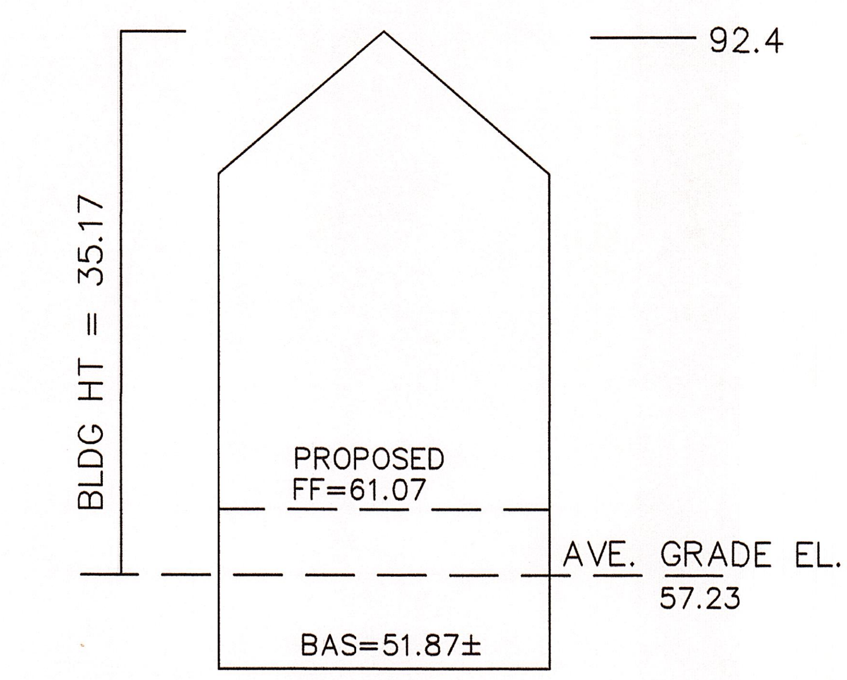
BUILDING HEIGHT
NOT TO SCALE
FRONT BUILDING

Segment	Segment From New Grade	Segment To New Grade	Segment Length	Avg Existing	Avg New
A	61.8	61.8	38.36	#REF!	2370.648
B	61.8	61.8	16	#REF!	988.8
C	61.8	61.8	5	#REF!	309
D	61.8	61.8	15.98	#REF!	987.564
E	61.8	61.8	5	#REF!	309
F	61.8	61.8	16.05	#REF!	991.89
G	61.8	61.8	38.36	#REF!	2370.648
H	54.25	54.25	16.05	#REF!	870.7125
I	54.25	54.25	3.88	#REF!	210.49
J	54.25	54.25	16.02	#REF!	869.085
K	54.25	54.25	3.88	#REF!	210.49
L	54.25	54.25	15.98	#REF!	866.83
			190.84	#REF!	11334.16

Ceiling Height:	8
Basement Floor Elevation	54.25
Ceiling Elevation	62.25
Perimeter Total Length	190.84
Total Perimeter Square Foot	1524.32
Average Existing Grade	#REF!
New Average Grade	59.39
Difference in Grade in feet	#REF!
% Covered using Avg Grade	56.74%



Proposed Grading Conditions

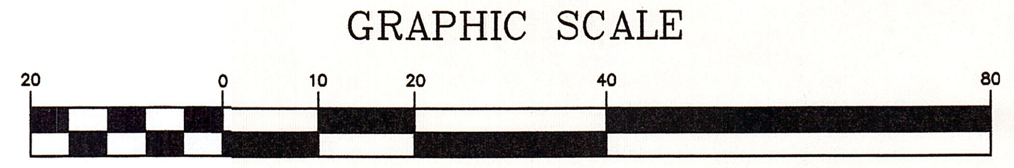


BUILDING HEIGHT
NOT TO SCALE
REAR BUILDING

Segment	Segment From New Grade	Segment To New Grade	Segment Length	Avg New
M	61.8	59.5	38.45	2333.812
N	59.5	59.5	16.04	954.38
O	59.5	59.5	5	297.5
P	59.5	59.5	16.02	953.19
Q	59.5	59.5	5	297.5
R	59.5	57.2	38.36	2238.306
S	57.2	56.28	16	907.84
T	52.53	52.53	16.05	843.1065
U	52.53	52.53	3.88	203.8164
V	52.53	52.53	16.03	841.8306
W	52.53	52.53	3.88	203.8164
X	52.53	52.53	15.96	838.3788
			190.69	10913.18

Ceiling Height:	8
Basement Floor Elevation	51.87
Ceiling Elevation	59.87
Perimeter Total Length	190.69
Total Perimeter Square Foot	1525.52
Average Existing Grade	#REF!
New Average Grade	57.23
Difference in Grade in feet	#REF!
% Covered using Avg Grade	67.00%

GRAPHIC SCALE



(IN FEET)
1 inch = 20 ft.

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REVISIONS
1 ISSUED FOR REVIEW 7-20-20
2 REVISED PER ENGINEER'S COMMENTS
3
4
5
6
7
8
9
10

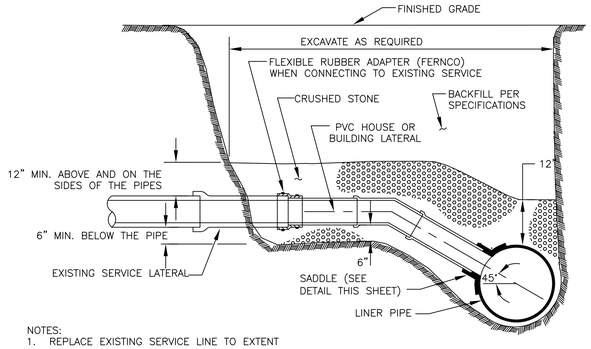
SURVEY: RS
DRAWN: LMH
CHECKED: KNH

SCALE
1"=20'

EXISTING & PROPOSED GRADING
23 JOHNSON PLACE
NEWTON, MA 02466
JULY 15, 2020

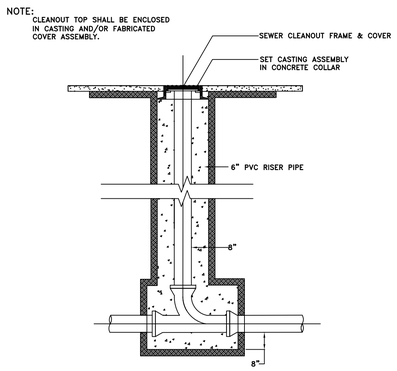
HA 20-563
SITEPLAN

SHEETS
2 OF 4

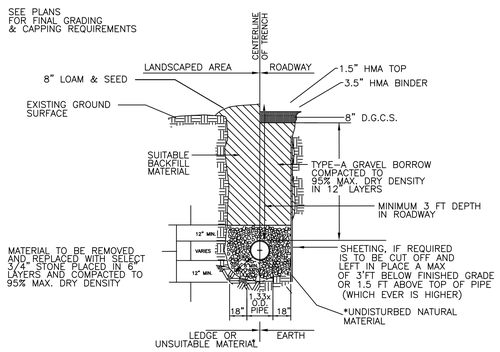


NOTES:
1. REPLACE EXISTING SERVICE LINE TO EXTENT SHOWN ON PLAN/PROFILES AND AS SPECIFIED.

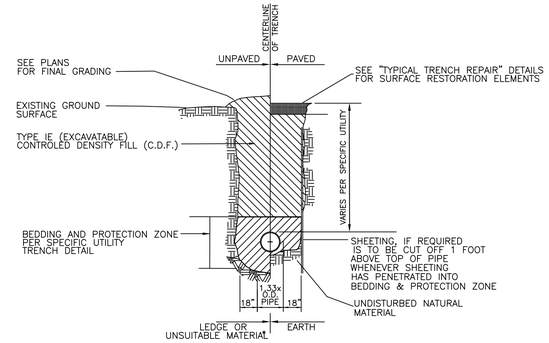
Sewer Service Connection to (E) Sewer Manhole



In-line Sewer Cleanout

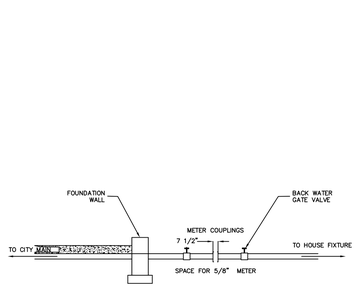


Typical Sewer Trench Detail

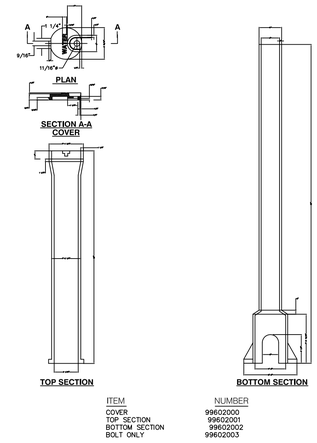


* SUITABILITY OF MATERIAL IS TO BE DETERMINED BY THE CITY OF NEWTON.

Typical C.D.F. Trench Detail (Installed in Public Way)

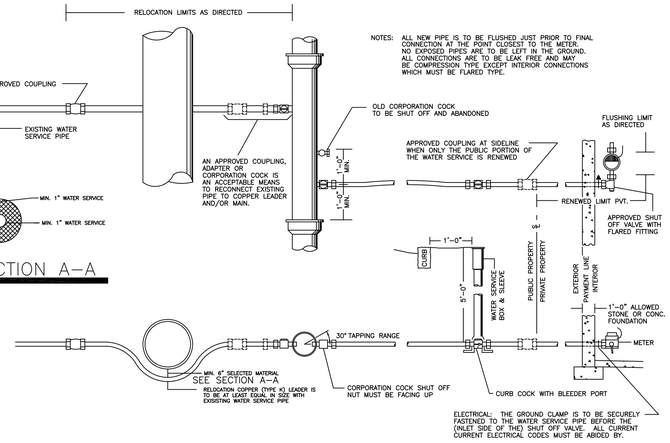


Water Meter Plumbing Details

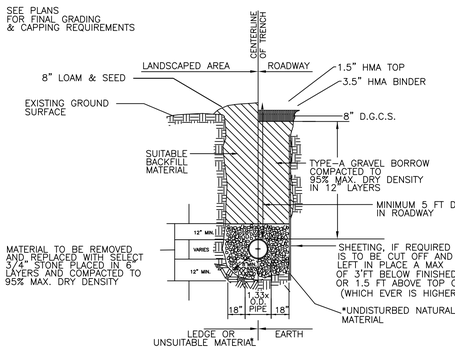


ITEM	NUMBER
COVER	99602000
TOP SECTION	99602001
BOTTOM SECTION	99602002
BOLT ONLY	99602003

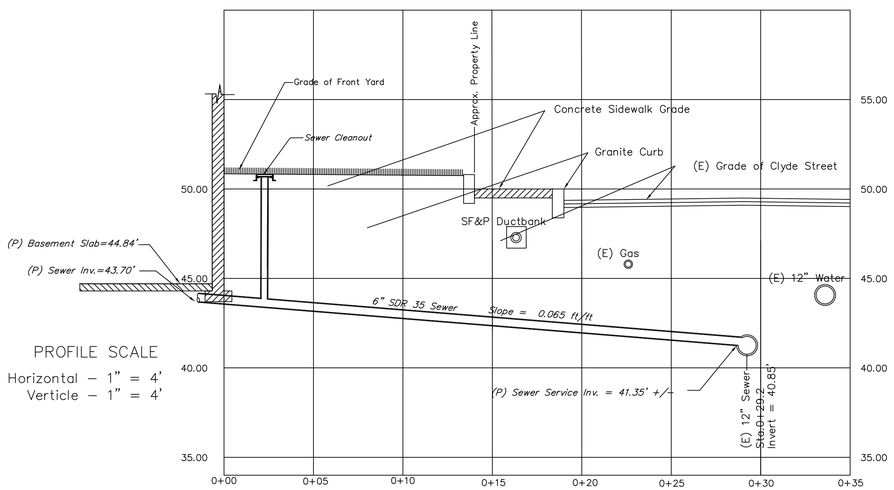
Curb Box Details



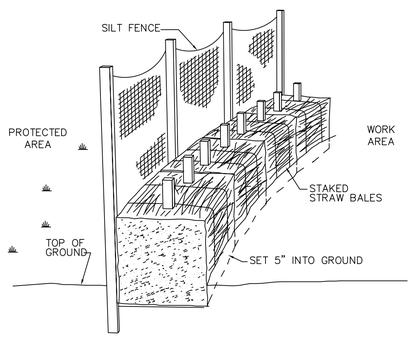
Typical Water Service Configuration



Typical Water Trench Detail



Sewer Service Connections to Main



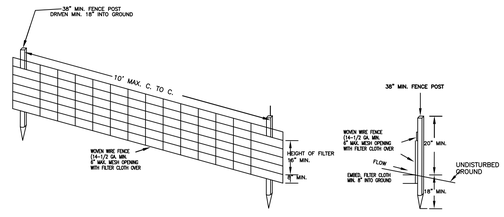
Erosion Control Notes

The Site Contractor shall be responsible for Erosion and Sedimentation Control measures during construction, as outlined in the Erosion Control Plan and as requested by the City of Newton.

Erosion controls shall be inspected and repaired as necessary on a monthly basis and before and after major storm events.

Seeding of disturbed areas should be performed as work activities and weather conditions permit in order to minimize the erosion of soils on site.

Typical Erosion Control Detail



CONSTRUCTION NOTES FOR FABRICATED SILT FENCE

1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
2. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID-SECTION.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY 6" AND FOLDED.
4. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

POSTS: STEEL EITHER T OR U TYPE OR 2" HARDWOOD
FENCE: WOVEN WIRE, 14-1/2 GA. 6" MAX. MESH OPENING.
FILTER CLOTH: FILTER X, MIRAFI 100X, STABLINKA T140N OR APPROVED EQUAL.
PREFABICATED UNIT: GEOFAB, ENVIROFENCE, OR APPROVED EQUAL.

SILT FENCE DETAIL
TO BE PLACED ALONG PERIMETER OF PROPERTY
N.T.S.

HAYES & ASSOCIATES
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40 Harrison Avenue, Woburn MA 01801
(781) 998-0246

COMMONWEALTH OF MASSACHUSETTS
LAWRENCE M. HAYES
CIVIL
No. 40015
REGISTERED PROFESSIONAL ENGINEER

REVISIONS
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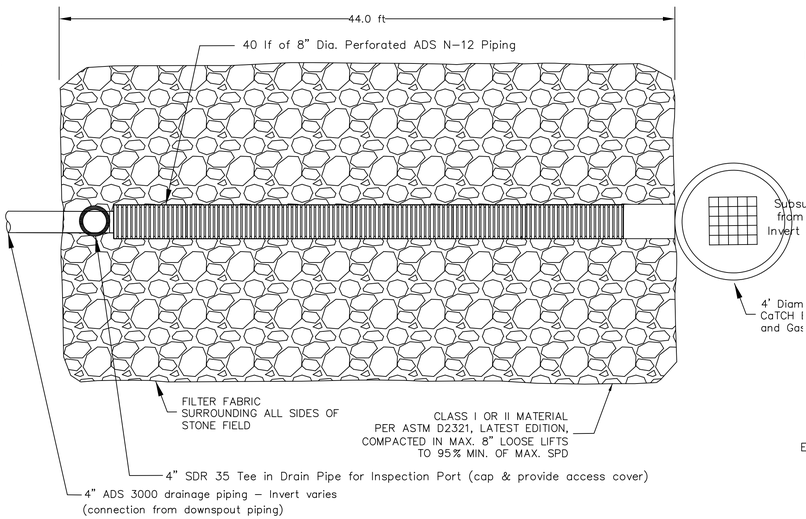
2 REVISED PER ENGINEER'S COMMENTS
3
4
5
6
7
8
9
10

SURVEY RS
DESIGN LMH
CHECKED KNH
SCALE NTS

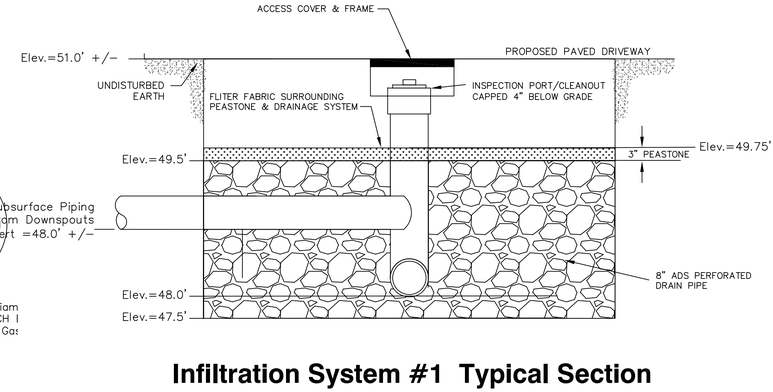
PROPOSED CONSTRUCTION
23 JOSEPH PLACE
NEWTON, MA 02466
JULY 15, 2020

HA 20-563
SITEPLAN#

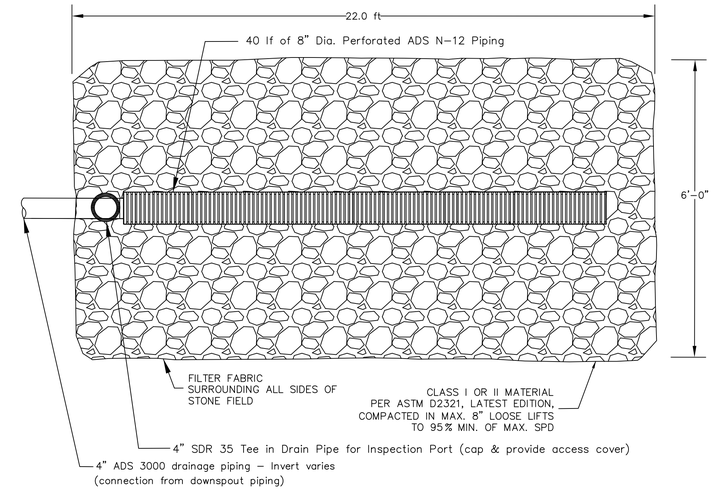
SHEETS
3 OF 4



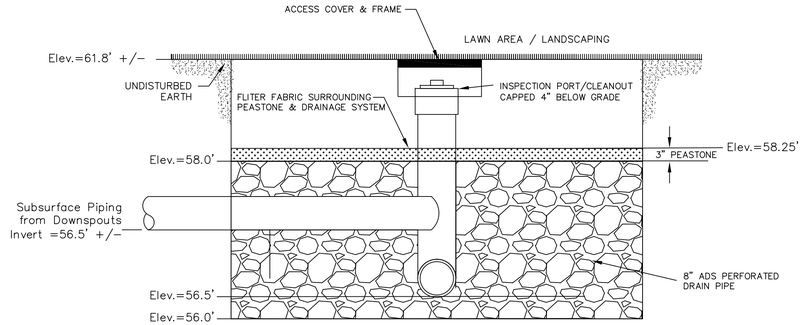
Stormwater Infiltration System #1 Plan View



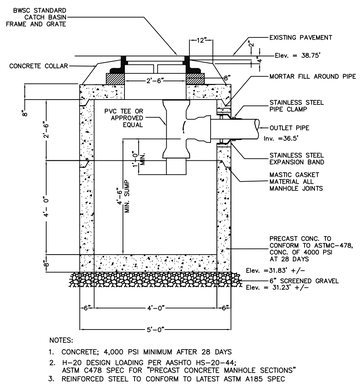
Infiltration System #1 Typical Section



Stormwater Infiltration System #2 Plan View

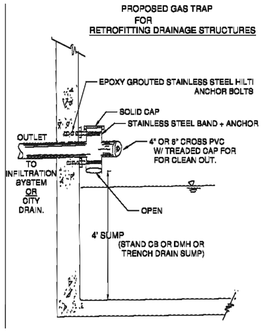


Infiltration System #2 Typical Section

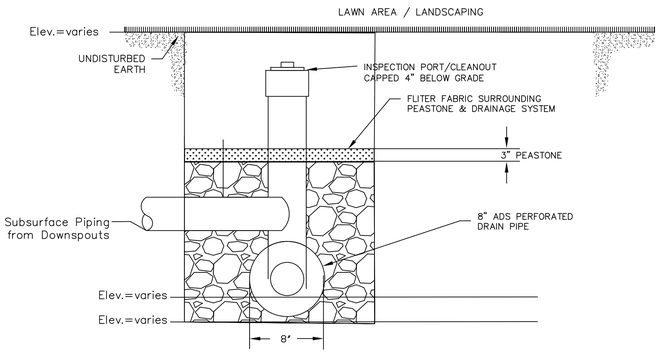


NOTES:
1. CONCRETE; 4,000 PSI MINIMUM AFTER 28 DAYS
2. H-20 DESIGN LOADING PER AASHTO HS-20-44; ASTM C478 SPEC FOR "PRECAST CONCRETE MANHOLE SECTIONS"
3. REINFORCED STEEL TO CONFORM TO LATEST ASTM A185 SPEC

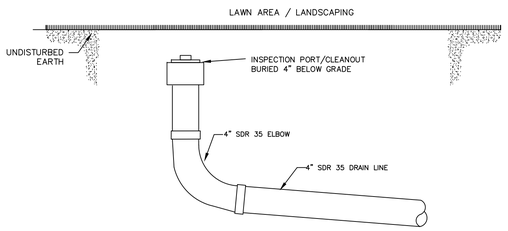
Type 5 Catch Basin w/ Oil Trap



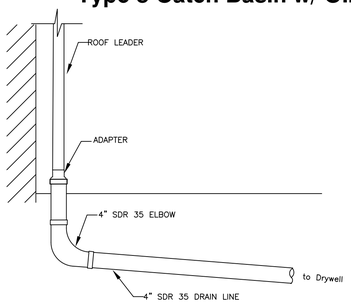
Gas Trap Detail



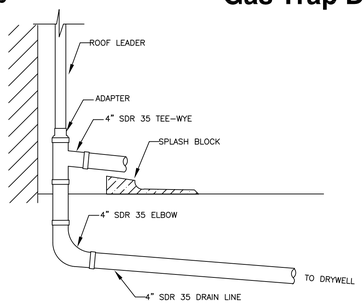
Stormwater Infiltration System Inspection Port



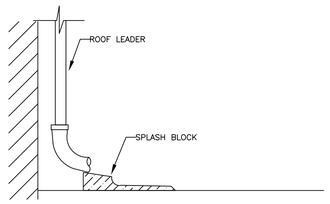
Drainage Piping End of Line Cleanout



Downspout Connection



Downspout & Overflow



Downspout & Splash Block

Soil Log Address - 23 Johnson Place, Newton, MA

Date: 5/13/2020 **Weather:** Clear, 70's **Witnessed By:** Laurance Hayes - SE 2957

Soil Class/Ration per NRCS 626B - Merrimac-Urban Land Complex, 0 to 8 percent slopes

Test Pit # 1

Depth (in)	Soil Horizon /	Soil Matrix Color- Moist	Redoximorphic Features Depth (in)	Color	Percent	Soil Texture	Coarse Fragments % by Gravel	Cobbles & Stones	Soil Structure	Soil Consistence
0-8	Ab	10 YR 2/2				FSL	0%	0%	granular	friable
8-40	Bw1	10 YR 4/6				Sand	0%	0%	granular	friable
40-120	Cd	10 YR 6/4				Sand	30%	0%	granular	friable

Notes: No redoximorphic features observed in test pit
No weeping or standing groundwater was observed in test pit

Perc Test
Depth Time
prescak 11:13
12 11:28
11 11:30
10 11:33
9 11:35
8 11:38
7 11:40
6 11:43

Average Percolation Rate = 2.50 mpi

Use a Conservative Rate of 60 in/hr per NRCS soil classification

Soil Log Address - 23 Johnson Place, Newton, MA

Date: 5/13/2020 **Weather:** Clear, 70's **Witnessed By:** Laurance Hayes - SE 2957

Soil Class/Ration per NRCS 626B - Merrimac-Urban Land Complex, 0 to 8 percent slopes

Test Pit # 2

Depth (in)	Soil Horizon /	Soil Matrix Color- Moist	Redoximorphic Features Depth (in)	Color	Percent	Soil Texture	Coarse Fragments % by Gravel	Cobbles & Stones	Soil Structure	Soil Consistence
0-8	Ab	10 YR 2/2				FSL	0%	0%	granular	friable
8-36	Bw1	10 YR 4/6				Sand	0%	0%	granular	friable
36-120	Cd	10 YR 6/4				Sand	30%	0%	granular	friable

Notes: No redoximorphic features observed in test pit
No weeping or standing groundwater was observed in test pit

Test Pit #2 was performed at Elevation 63', which is 12' higher than the Proposed Finish Grade. Once the site is excavated, another Test Pit must be performed to confirm soil conditions at the actual depth of the proposed infiltration system at this location

HAYES & ASSOCIATES
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COMMONWEALTH OF MASSACHUSETTS LAURANCE N. HAYES CIVIL No. 40015 REGISTERED PROFESSIONAL ENGINEER

REVISIONS
1 ISSUED FOR REVIEW 7-20-20
2 REVISED PER ENGINEER'S COMMENTS
3
4
5
6
7
8
9
10

SURVEY SHA
DRAWN LMH
CHECKED KNH
SCALE NTS

PROPOSED CONSTRUCTION
23 JOHNSON PLACE
NEWTON, MA 02466
JULY 15, 2020

HA 19-536
SITEPLAN#

SHEETS
4 OF 4