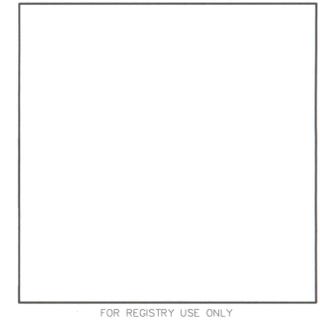


DEFINITIVE SUBDIVISION

PROPOSED 12 LOT RESIDENTIAL SUBDIVISION

135 GREAT PLAIN AVENUE
 LOT 68-1
 WELLESLEY, MASSACHUSETTS



No.	Submit / Revision	Appd	By	Date
0	DEFINITIVE SUBDIVISION SUBMITTAL	GRC	HD	07/01/15



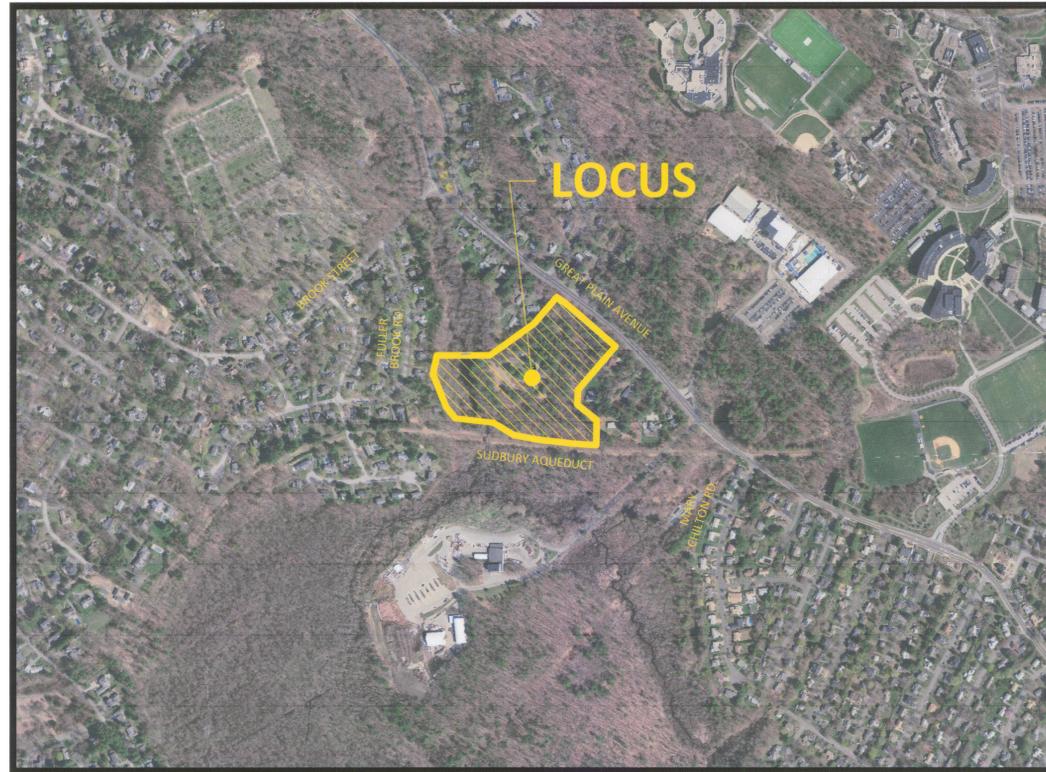
OWNER/APPLICANT:

WELLESLEY RESIDENTIAL, LLC
 c/o NORTHLAND RESIDENTIAL CORPORATION
 20 MALL ROAD, SUITE 220
 BURLINGTON, MASSACHUSETTS 01803

**SURVEYOR/ENGINEER/LANDSCAPE
 ARCHITECT/PERMITTING:**



CHA COMPANIES, LLC.
 101 ACCORD PARK DRIVE
 NORWELL, MA 02061
 781-982-5400



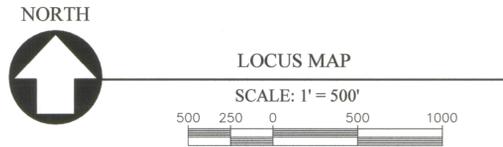
DRAWING INDEX:

- C-001 COVER SHEET
- V-001 EXISTING CONDITIONS PLAN (sheet 1)
- V-002 EXISTING CONDITIONS PLAN (sheet 2)
- V-101 LOT LAYOUT PLAN (sheet 1)
- V-102 LOT LAYOUT PLAN (sheet 2)
- C-002 LEGEND & GENERAL NOTES
- C-003 SOIL EROSION / DEMOLITION PLAN
- C-101 SITE LAYOUT PLAN
- C-201 GRADING & DRAINAGE PLAN
- C-301 ROADWAY PLAN & PROFILE
- C-302 TYPICAL ROADWAY & UTILITY SECTION
- C-401 UTILITY PLAN & PROFILE
- C-501 LANDSCAPE PLAN
- C-601 DETAIL SHEET
- C-602 DETAIL SHEET
- C-603 DETAIL SHEET
- C-604 DETAIL SHEET
- C-605 DETAIL SHEET



CHA COMPANIES, LLC.
 101 Accord Park Drive
 Norwell, MA 02061
 Mail: (781) 982-5400 · www.chacompanies.com

Designed: CHA Drawn: JPM Checked: SK



I, _____ CLERK OF THE TOWN OF WELLESLEY HEREBY CERTIFY THAT THE NOTICE OF APPROVAL OF THIS PLAN BY THE ZONING BOARD OF APPEALS HAS BEEN RECEIVED AND RECORDED AT THIS OFFICE AND NO NOTICE OF APPEAL WAS RECEIVED DURING THE TWENTY DAYS NEXT AFTER SUCH RECEIPT AND RECORDING OF SAID NOTICE.

WELLESLEY TOWN CLERK

DATE:

I CERTIFY THAT THIS PLAN CONFORMS TO THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS.

[Signature] DATE: *July 1, 2015*

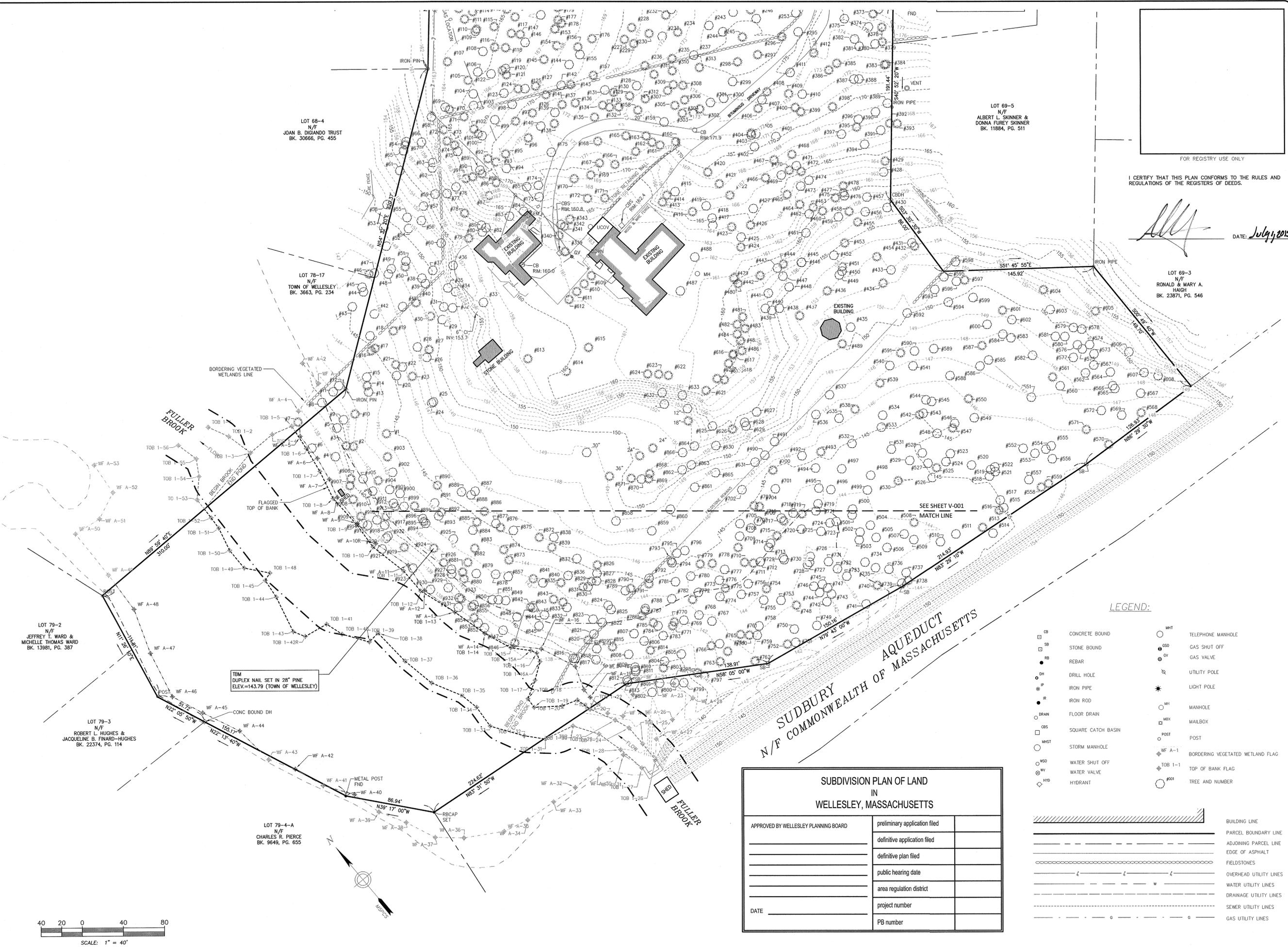
SUBDIVISION PLAN OF LAND IN WELLESLEY, MASSACHUSETTS	
APPROVED BY WELLESLEY PLANNING BOARD	preliminary application filed
	definitive application filed
	definitive plan filed
	public hearing date
	area regulation district
DATE	project number
	PB number

135 GREAT PLAIN AVENUE
 WELLESLEY, MASSACHUSETTS

COVER SHEET

Issue Date: 07/01/15 Project No.: 29219 Scale: AS NOTED

File: V:\PROJECTS\17478\PROJ\2019\CADD\SURVEY\17478-V-001-29219-EC.DWG
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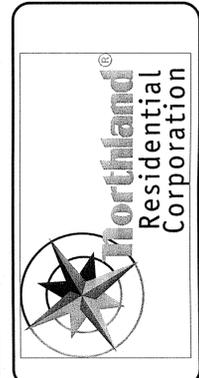


FOR REGISTRY USE ONLY

I CERTIFY THAT THIS PLAN CONFORMS TO THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS.

Ally DATE: July 1, 2015

Date	07/01/15
By	MVC
Appd	NIL
Submission / Revision	DEFINITIVE SUBDIVISION SUBMITTAL
No.	0



UNAUTHORIZED ALTERATION OR REPRODUCTION OF THIS PLAN IS A VIOLATION OF APPLICABLE STATE AND LOCAL LAWS



135 GREAT PLAIN AVENUE
 WELLESLEY, MASSACHUSETTS
 EXISTING CONDITIONS PLAN
 (SHEET 2)

Project No.: 29219 Scale: 1"=40'

Issue Date: 07/01/15

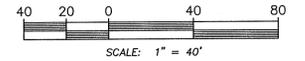
V-002
 SHEET 3 OF 18 SHEETS

SUBDIVISION PLAN OF LAND IN WELLESLEY, MASSACHUSETTS	
APPROVED BY WELLESLEY PLANNING BOARD	preliminary application filed
	definitive application filed
	definitive plan filed
	public hearing date
	area regulation district
	project number
	PB number
DATE	

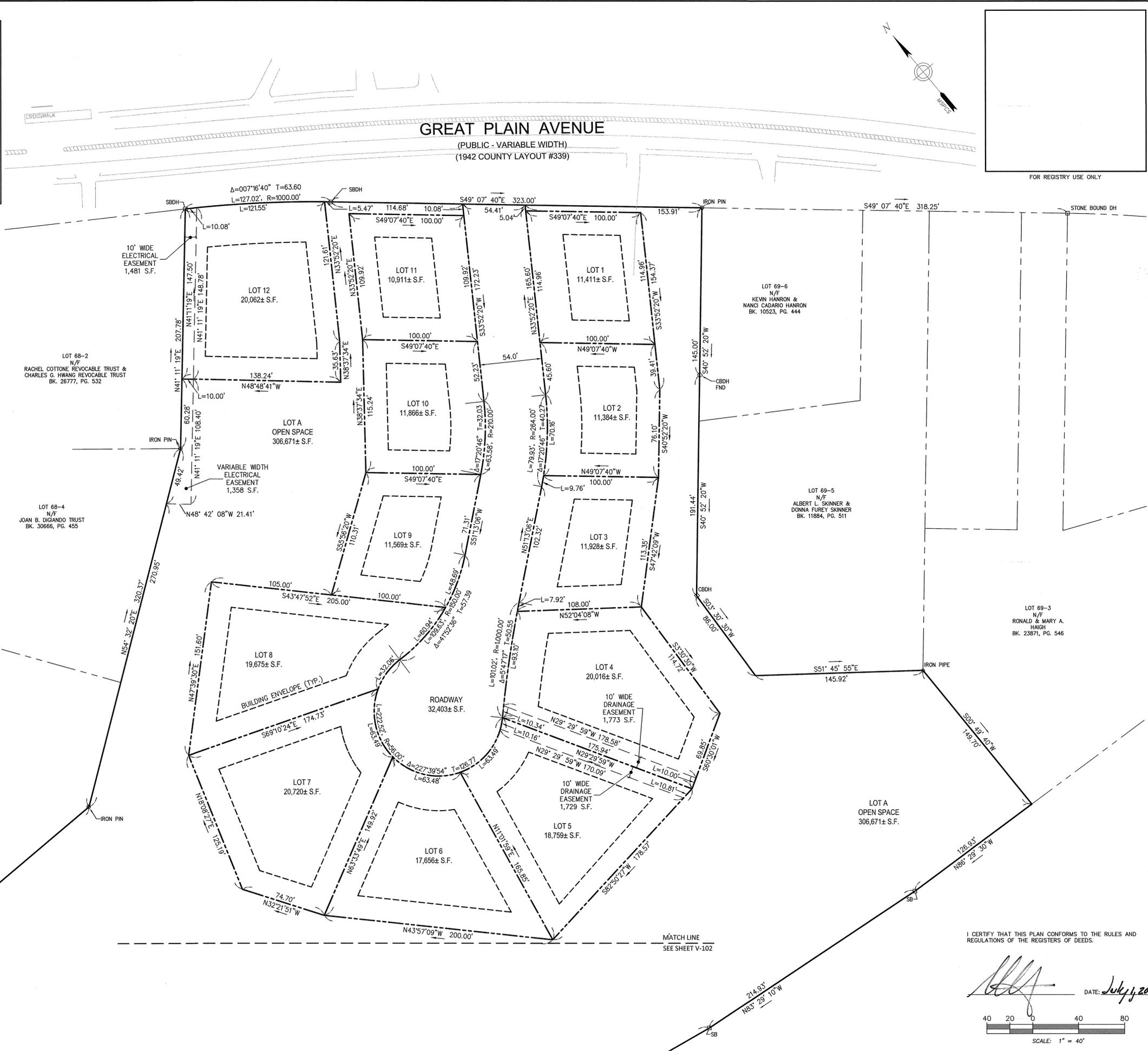
LEGEND:

CB	CONCRETE BOUND	MHT	TELEPHONE MANHOLE
SB	STONE BOUND	GSO	GAS SHUT OFF
RB	REBAR	GV	GAS VALVE
DH	DRILL HOLE	UP	UTILITY POLE
IP	IRON PIPE	LP	LIGHT POLE
IR	IRON ROD	MH	MANHOLE
FD	FLOOR DRAIN	MB	MAILBOX
CBS	SQUARE CATCH BASIN	POST	POST
MST	STORM MANHOLE	WF A-1	BORDERING VEGETATED WETLAND FLAG
WVO	WATER SHUT OFF	TOB 1-1	TOP OF BANK FLAG
WV	WATER VALVE	#001	TREE AND NUMBER
HYD	HYDRANT		

	BUILDING LINE
	PARCEL BOUNDARY LINE
	ADJOINING PARCEL LINE
	EDGE OF ASPHALT
	FIELDSTONES
	OVERHEAD UTILITY LINES
	WATER UTILITY LINES
	DRAINAGE UTILITY LINES
	SEWER UTILITY LINES
	GAS UTILITY LINES



SUBDIVISION PLAN OF LAND IN WELLESLEY, MASSACHUSETTS	
APPROVED BY WELLESLEY PLANNING BOARD	preliminary application filed
	definitive application filed
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	public hearing date
	area regulation district
DATE	project number
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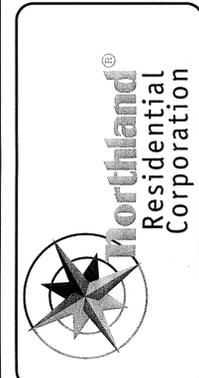
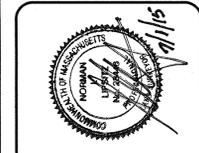


GENERAL NOTES:

- LOCUS OWNER OF RECORD:
WELLESLEY RESIDENTIAL, LLC
DEED BOOK 32778, PAGE 376.
ASSESSOR'S LOT 68-1
- THE LOCUS PARCEL IS LOCATED IN THE TOWN OF WELLESLEY SINGLE RESIDENCE DISTRICT (SRD20) AS DEFINED BY THE TOWN OF WELLESLEY GIS MAPPING. MINIMUM SETBACK REQUIREMENTS ARE AS SHOWN ON TABLE 1 ARE:
FRONT SETBACK:.....30' SIDE SETBACK:.....20'
REAR SETBACK:.....20'
- FOR REMAINING GENERAL NOTES SEE SHEET 2 OF 18.

FOR REGISTRY USE ONLY	
No.	0
Submittal / Revision	DEFINITIVE SUBDIVISION SUBMITTAL
Appd. By	NIL
Date	07/01/15

No.	0
Submittal / Revision	DEFINITIVE SUBDIVISION SUBMITTAL
Appd. By	NIL
Date	07/01/15



UNAUTHORIZED ALTERATION OR ADDITION
OF ANY KIND IS PROHIBITED AND IS
APPLICABLE STATE AND FEDERAL LAWS.

CHA
101 Acacia Park Drive
Norwell, MA 02061
Main: (781) 962-5400 • www.chacompanies.com

Designed: JPM
Checked: NIL

135 GREAT PLAIN AVENUE
WELLESLEY, MASSACHUSETTS

LOT LAYOUT PLAN (SHEET 1)

Issue Date: 07/01/15 Project No.: 28219 Scale: 1"=40'

File: V:\PROJECTS\NMA78\PROJ\28219\CADD\SURVEY\CADD\Y-101-28219-LAY.DWG
Saved: 7/1/2015 12:16:52 PM Plotted: 7/1/2015 12:31:01 PM User: Cole, Michael LastSavedBy: 5031

I CERTIFY THAT THIS PLAN CONFORMS TO THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS.

[Signature] DATE: July 1, 2015

40 20 0 40 80
SCALE: 1" = 40'

I CERTIFY THAT THIS PLAN CONFORMS TO THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS.



DATE: July, 2015

FOR REGISTRY USE ONLY

No.	0
Submittal / Revision	DEFINITIVE SUBDIVISION SUBMITTAL
App'd	NIL
By	MWC
Date	07/01/15



UNAUTHORIZED ALTERATION OR ADDITION
APPLICABLE TO STATE AND/OR LOCAL LAWS

CHA
115 Acacia Park Circle
North Attleboro, MA 02061
Main: (781) 982-5400 • www.chacompanies.com

Design: MWC
Drawn: MWC
Checked: NIL

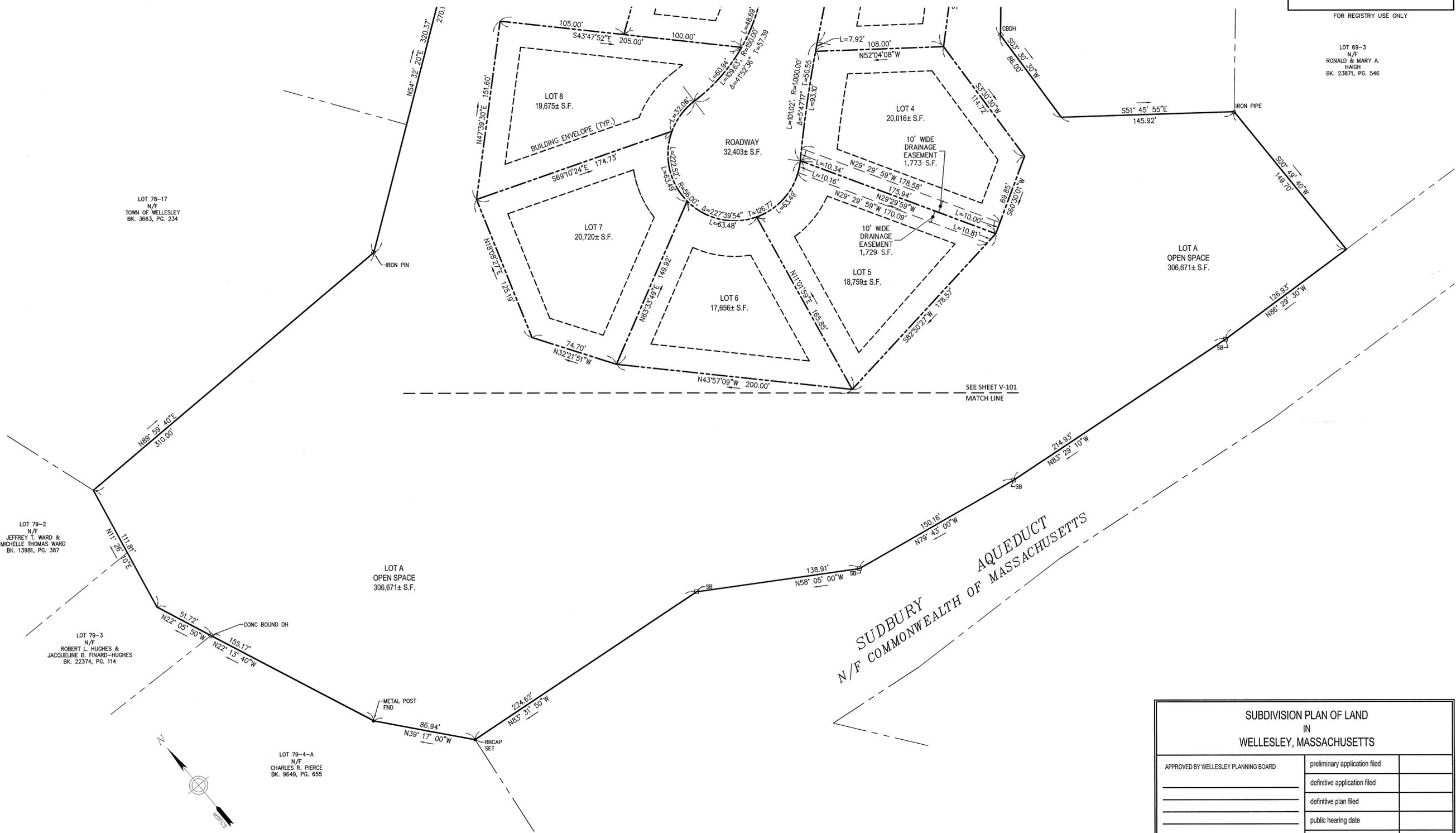
135 GREAT PLAIN AVENUE
WELLESLEY, MASSACHUSETTS

LOT LAYOUT PLAN (SHEET 2)

Issue Date: 07/01/15 | Project No.: 29219 | Scale: 1"=40'

V-102
SHEET 5 OF 18 SHEETS

File: V:\PROJECTS\NMA18\PROJ\29219\CADD\SURVEY\CADD\V-101-29219-LAY.DWG
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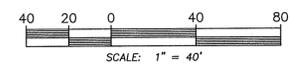


LOT 78-17
N/F
TOWN OF WELLESLEY
BK. 3663, PG. 234

LOT 79-2
N/F
JEFFREY T. WARD &
MICHELLE THOMAS WARD
BK. 13981, PG. 387

LOT 79-3
N/F
ROBERT L. HUGHES &
JACQUELINE B. FINARD-HUGHES
BK. 22374, PG. 114

LOT 79-4-A
N/F
CHARLES R. PIERCE
BK. 9649, PG. 655



SUBDIVISION PLAN OF LAND IN WELLESLEY, MASSACHUSETTS		
APPROVED BY WELLESLEY PLANNING BOARD	preliminary application filed	
	definitive application filed	
	definitive plan filed	
	public hearing date	
	area regulation district	
DATE	project number	
	PB number	

GENERAL

- PROTECTIONS**
 - PROVIDE PROTECTION NECESSARY TO PREVENT DAMAGE TO EXISTING IMPROVEMENTS, TREES OR VEGETATION.
 - PROTECT IMPROVEMENTS ON ADJOINING PROPERTIES AND ON OWNERS PROPERTY.
 - RESTORE DAMAGED IMPROVEMENTS TO ORIGINAL CONDITION AS ACCEPTABLE TO PARTIES HAVING JURISDICTION.
 - CONDUCT OPERATIONS TO ENSURE MINIMUM INTERFERENCE WITH OPERATIONS, STREETS, WALKS, AND OTHER ADJACENT FACILITIES. DO NOT CLOSE OR OBSTRUCT STREETS, WALKS, OR OTHER OCCUPIED OR USED FACILITIES WITHOUT PERMISSION FROM AUTHORITIES HAVING JURISDICTION. STREETS AND ROADWAYS SHALL BE THOROUGHLY CLEANED AND/OR SWEEPED ON A DAILY BASIS OR MORE FREQUENTLY AS REQUIRED BY THE GOVERNING AUTHORITY.
- UNLESS SPECIFIED OTHERWISE ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE MASSACHUSETTS DOT SPECIFICATIONS FOR HIGHWAYS AND BRIDGES AND/OR THE APPROPRIATE LOCAL AUTHORITIES.
- ALL SLOPES, UNLESS OTHERWISE SPECIFIED, SHALL BE LOAMED AND SEEDED FOR STABILIZATION AS SOON AS POSSIBLE TO PREVENT EROSION INTO WETLAND RESOURCE AREAS, ABUTTING PROPERTIES, OR PUBLIC WAYS. EROSION CONTROL BLANKETS ARE REQUIRED FOR ALL 2H:1V SLOPES. SLOPES MAY NOT EXCEED 2H:1V.
- ANY DEVIATIONS, I.E. "FIELD CHANGES" FROM THE DESIGN PLANS(S) MUST BE APPROVED BY THE DESIGN ENGINEER IN WRITING. CONTRACTOR SHOULD BE AWARE THAT LOCAL AND STATE AUTHORITIES HAVE JURISDICTION AND APPROVALS MUST BE OBTAINED FROM THE APPROPRIATE AUTHORITY PRIOR TO THE IMPLEMENTATION OF THE "FIELD CHANGE." CHA, INC. ASSUMES NO LIABILITY OR RESPONSIBILITY FOR WORK ASSOCIATED WITH FIELD CHANGES COMPLETED WITHOUT REGARD TO THE "FIELD CHANGE" PROCEDURE.
- RELOCATION OF ANY UTILITIES SHALL BE PERFORMED IN ACCORDANCE WITH THE PROVISIONS OF THE APPROPRIATE UTILITY COMPANY AND/OR REGULATORY AGENCY.
- *** DIG SAFE NOTE *** IN ACCORDANCE WITH MGL CH. 82, SEC. 40 INCLUDING AMENDMENTS, ALL CONTRACTORS SHALL NOTIFY UTILITY COMPANIES AND GOVERNMENT AGENCIES, IN WRITING, OF THE INTENT TO EXCAVATE, BLAST, DEMOLISH, BORE, OR PERFORM OTHER EARTH MOVING OPERATIONS NO LESS THAN 72 HOURS AND NO MORE THAN 30 DAYS PRIOR TO THE COMMENCEMENT OF SUCH WORK (EXCLUSIVE OF SATURDAYS, SUNDAYS, AND LEGAL HOLIDAYS) OR CALL "DIG SAFE" AT 1-888-DIG-SAFE.
- EXISTING UTILITY LOCATIONS AND ELEVATIONS SHOWN SHALL BE VERIFIED BY CONTRACTOR PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL INFORM THE DESIGN ENGINEER OF ANY DISCREPANCIES PRIOR TO THE START OF ANY CONSTRUCTION.
- ADDITIONAL BENCHMARKS TO BE SET BY CONTRACTOR PRIOR TO CONSTRUCTION TO ENSURE QUALITY WORKMANSHIP.
- ANY STILLING AND/OR DETENTION BASINS SHOULD RECEIVE PERIODIC MAINTENANCE DURING CONSTRUCTION TO REMOVE DEPOSITED SILTS AND DEBRIS TO ENSURE PROPER DRAINAGE AND SETTLING OF PARTICULATE MATTER.
- ALL MANHOLE COVERS FOR CROSS-COUNTRY LOCATIONS OR IN PUBLIC GATHERING LOCATIONS SHALL BE FITTED WITH BOLT LOCKS OR EQUIVALENT.
- UNLESS OTHERWISE LABELED, ALL REINFORCED CONCRETE PIPE, RCP, SHALL BE CLASS III; ALL DUCTILE IRON PIPE SHALL BE CEMENT LINED CLASS 52; ALL PVC SEWER SHALL BE SDR 35.

SITE WORK

- CAUTION - NOTICE TO CONTRACTOR**
THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON DESIGN PLANS AND LIMITED AS-BUILT INFORMATION. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS (EXCLUSIVE OF SATURDAYS, SUNDAYS, AND LEGAL HOLIDAYS) PRIOR TO ANY EXCAVATION, BLOWING, BORING, OR OTHER EARTH MOVING OPERATIONS TO REQUEST EXACT FIELD LOCATIONS OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS AT NO ADDITIONAL EXPENSE TO OWNER.
- FILL MATERIAL**
 - ENSURE THAT AREAS TO BE FILLED ARE FREE OF STANDING WATER, FROST, FROZEN MATERIAL, TRASH, AND DEBRIS PRIOR TO FILL PLACEMENT.
 - PLACE APPROPRIATE FILL MATERIAL AS DESIGNATED BY THE GEOTECHNICAL ENGINEER IN HORIZONTAL LAYERS NOT EXCEEDING EIGHT INCHES (8") IN LOOSE DEPTH AND COMPACT EACH LAYER AT OPTIMUM MOISTURE CONTENT TO THE GREATER OF:
 - ADJACENT UNDISTURBED SOIL, OR
 - 95% OF THE MAXIMUM DRY DENSITY OF THE EMBANKMENT MATERIAL AS DETERMINED BY AASHTO STANDARD METHOD T99, METHOD C.
- FINISH GRADING**
 - GRADE ALL AREAS WHERE FINISH GRADE ELEVATIONS ARE INDICATED ON DRAWINGS, OTHER THAN PAVED AREAS AND BUILDINGS, INCLUDING EXCAVATED AREAS, FILLED AND TRANSITION AREAS, AND LANDSCAPED AREAS. GRADED AREAS SHALL BE UNIFORM AND SMOOTH, FREE FROM DEBRIS, OR IRREGULAR SURFACE CHANGES. FINISHED SUBGRADE SURFACE SHALL NOT BE MORE THAN 0.10 FEET ABOVE OR BELOW ESTABLISHED SUBGRADE ELEVATIONS, AND ALL GROUND SURFACES SHALL VARY UNIFORMLY BETWEEN INDICATED ELEVATIONS. FINISH DITCHES SHALL BE GRADED TO ALLOW FOR PROPER DRAINAGE WITHOUT PONDING AND IN A MANNER THAT WILL MINIMIZE EROSION POTENTIAL.
 - GRADE SURFACE TO MATCH ADJACENT GRADES AND TO PROVIDE FLOW TO SURFACE DRAINAGE STRUCTURES, OR GRADE AS DESIGNATED ON THE PLANS AFTER FILL PLACEMENT AND COMPACTION.
- THE CONTRACTOR IS RESPONSIBLE FOR GENERAL CLEANUP OF THE PROJECT ON A DAILY BASIS AND AT THE COMPLETION OF THE PROJECT. OPEN TRENCHES, DITCHES, EXCAVATIONS, ETC. SHALL NOT BE PERMITTED TO BE LEFT OPEN OVERNIGHT. CONTRACTOR WILL BACKFILL OR UTILIZE SUITABLE STEEL PLATES FOR THE SECURING OF THE PROJECT SITE PRIOR TO CEASING WORK EACH DAY.
- APPROPRIATE TRAFFIC CONTROL, I.E. SIGNAGE, BARRICADES, AND OTHER MEANS, WILL BE SUPPLIED BY THE CONTRACTOR IN ACCORDANCE WITH ALL FEDERAL, STATE AND LOCAL AGENCIES.
- UNDER NO CIRCUMSTANCES MAY ANY UTILITY, STRUCTURE, AND/OR REPAIR BE BACKFILLED UNLESS INSPECTED AND APPROVED BY THE TOWN OFFICIALS AND/OR REPRESENTATIVE. RECEIPT OF APPROVAL TO BACKFILL WILL NOT RELEASE THE CONTRACTOR FROM ANY RESPONSIBILITY OR LIABILITY FOR PERFORMANCE TESTS REQUIRED AS PART OF THIS PROJECT.
- PROPER SHORING AND TRENCH BOXES SHALL BE UTILIZED AS REQUIRED BY LOCAL, STATE, AND FEDERAL REGULATORY AGENCIES TO PROVIDE A SAFE WORKING ENVIRONMENT. SHORING SHALL BE DESIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF MASSACHUSETTS WITH EXPERIENCE IN SHORING DESIGN.
- ALL UTILITIES DISTURBED DURING CONSTRUCTION SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
- WATER**
 - ALL WATER PIPING, VALVES, HYDRANTS, AND FITTINGS ETC. TO CONFORM TO LOCAL GUIDELINES OR AS DIRECTED BY THE WELLESLEY WATER DEPARTMENT. CONSTRUCTION OF WATER LINE TO CONFORM TO ALL LOCAL AND STATE AGENCIES HAVING JURISDICTION.
 - ALL WATER PIPE SHALL BE THICKNESS CLASS 52 DUCTILE IRON. ALL PIPES AND FITTINGS SHALL HAVE A CEMENT LINING TWICE THE THICKNESS SPECIFIED IN AWWA C104 AND SHALL HAVE A BITUMINOUS SEAL COAT APPLIED INSIDE AND OUTSIDE CONFORMING TO AWWA C104. "TYTON" OR MECHANICAL JOINTS ARE PERMITTED UNLESS OTHERWISE DIRECTED.

I CERTIFY THAT THIS PLAN CONFORMS TO THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS.

DATE: _____

SUBDIVISION PLAN OF LAND IN WELLESLEY, MASSACHUSETTS	
APPROVED BY WELLESLEY PLANNING BOARD	preliminary application filed
_____	definitive application filed
_____	definitive plan filed
_____	public hearing date
_____	area regulation district
DATE _____	project number
_____	PB number

SEWER NOTES

- THESE NOTES ARE INTENDED TO SUPPLEMENT THE LOCAL REQUIREMENTS FOR MATERIALS AND WORKMANSHIP.
- WATER AND SEWER MAINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST LOCAL AND STATE CODES INCLUDING THE RECOMMENDATIONS OF THE AMERICAN WATER WORKS ASSOCIATION AND THE NEW ENGLAND INTERSTATE WATER POLLUTION CONTROL COMMISSION TECHNICAL REPORT 16. CONSTRUCTION SHALL PROCEED IN A WORKMANLIKE MANNER WITH STATE-OF-THE-ART CONSTRUCTION TECHNIQUES.
- THE CONTRACTOR SHALL INSULATE WATER AND SEWER MAINS AS INDICATED ON THE PLANS OR WHEN DESIGN OR CONSTRUCTION ENCUMBRANCES DICTATE ALIGNMENT TO OCCUR ABOVE THE FROST LINE. PROCUREMENT AND INSTALLATION OF PIPE INSULATION SHALL CONFORM TO THE REQUIREMENTS LISTED IN THE LATEST MASS. DOT STANDARD SPECIFICATIONS FOR SECTION 301.60P AND MATERIAL SPECIFICATION M8.11.1. THE PIPE INSULATION SHALL BE PRE-MOLDED TYPE CELLULAR GLASS INSULATION WITH ALUMINUM JACKET CONFORMING TO THE LATEST REQUIREMENTS OF ASTM-622 OR APPROVED EQUAL.
- THE CONTRACTOR SHALL FOLLOW ALTERNATE CONSTRUCTION PROCEDURES WHEN DESIGN OR CONSTRUCTION ENCUMBRANCES PREVENT HORIZONTAL SEPARATION OF 10 FEET OR THE ALTERNATE OF 18 INCHES OF VERTICAL SEPARATION BETWEEN WATER AND SEWER MAINS. IN AREAS WHERE THE ABOVE OFFSETS CANNOT BE MAINTAINED, THE WATER MAIN SHALL BE CONSTRUCTED WITH MEGA-LUG MECHANICAL TYPE FITTINGS OR APPROVED EQUAL FOR A DISTANCE OF 10-FEET ON EITHER SIDE OF THE CROSSING OR LATERAL ENCRoACHMENT AND SHALL STRADDLE A FULL LENGTH OF CLASS 52 CEMENTED LINED DUCTILE IRON WATER PIPE.
- THE DEFLECTION IN ALL GRAVITY SEWER PIPE SHALL BE TESTED USING A GO, NO-GO MANDREL TEST TO ENSURE THAT PROPER INSTALLATION HAS OCCURED. TEST SHALL CONFORM WITH PIPE MANUFACTURERS RECOMMENDATIONS AND SHALL NOT INDICATE MORE THAN 7.5% DEFLECTION, U.O.N.
- ALL TESTING SHALL CONFORM TO TOWN OF WELLESLEY REQUIREMENTS.
- EACH SEGMENT OF THE SEWER MAIN INCLUDING MANHOLES SHALL BE LEAK TESTED AND OBSERVED BY A REPRESENTATIVE OF THE TOWN AND/OR ENGINEER IN ACCORDANCE WITH THE FOLLOWING PROCEDURES:

EXFILTRATION TEST: (NEW SEWER MANHOLES ONLY. CANNOT BE PERFORMED ON THE DOG-HOUSE MANHOLE.)

- PREPARATION OF TEST. AFTER THE MANHOLE HAS BEEN ASSEMBLED IN PLACE, ALL LIFTING HOLES AND THOSE EXTERIOR JOINTS WITHIN SIX FEET OF THE GROUND SURFACE SHALL BE FILLED AND POINTED WITH AN APPROVED NON-SHRINKING MORTAR. THE TEST SHALL BE MADE PRIOR TO PLACING THE SHELF AND INVERT AND BEFORE FILLING AND POINTING THE HORIZONTAL JOINTS BELOW THE 6- FOOT DEPTH LINE. IF THE GROUNDWATER TABLE HAS BEEN ALLOWED TO RISE ABOVE THE BOTTOM OF THE MANHOLE, IT SHALL BE LOWERED FOR THE DURATION OF THE TEST. ALL PIPES AND OTHER OPENINGS INTO THE MANHOLE SHALL BE SUITABLE PLUGGED AND PLUGS BRACED TO PREVENT BLOW OUT.
- TEST PROCEDURE. THE MANHOLE SHALL THEN BE FILLED WITH WATER TO THE TOP OF THE CONE SECTION. IF THE EXCAVATION HAS NOT BEEN BACKFILLED AND OBSERVATION INDICATED NO VISIBLE LEAKAGE, THAT IS, NO WATER VISIBLY MOVING DOWN THE SURFACE OF THE MANHOLE, THE MANHOLE MAY BE CONSIDERED TO BE SATISFACTORILY WATERTIGHT. IF THE TEST AS DESCRIBED ABOVE IS UNSATISFACTORY AS DETERMINED BY THE ENGINEER OR IF THE MANHOLE EXCAVATION HAS BEEN BACKFILLED THE TEST SHALL BE CONTINUED. A PERIOD OF TIME MAY BE PERMITTED, IF THE CONTRACTOR WISHES, TO ALLOW FOR ABSORPTION.
- AT THE END OF THIS PERIOD, THE MANHOLE SHALL BE REFILLED TO THE TOP OF THE CONE, IF NECESSARY, AND THE MEASURING TIME OF AT LEAST EIGHT HOURS BEGUN. AT THE END OF THE TEST PERIOD, THE MANHOLE SHALL BE REFILLED TO THE TOP OF THE CONE, MEASURING THE VOLUME OF WATER ADDED. THIS AMOUNT SHALL BE EXTRAPOLATED TO A 24-HOUR RATE AND THE LEAKAGE DETERMINED ON THE BASIS OF DEPTH. THE LEAKAGE FOR EACH MANHOLE SHALL NOT EXCEED ONE GALLON PER VERTICAL FOOT FOR A 24-HOUR PERIOD. IF THE TEST FAILS THIS REQUIREMENTS, BY THE LEAKAGE DOES NOT EXCEED THREE GALLONS PER VERTICAL FOOT PER DAY, REPAIRS BY APPROVED METHODS MAY BE MADE AS DIRECTED BY THE ENGINEER TO BRING THE LEAKAGE WITHIN THE ALLOWABLE RATE ON ONE GALLON PER VERTICAL FOOT PER DAY. LEAKAGE DUE TO A DEFECTIVE SECTION OR JOINT OF EXCEEDING THE THREE-GALLON PER VERTICAL FOOT PER DAY RATE, SHALL BE CAUSE FOR THE REJECTION OF THE MANHOLE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO UNCOVER, DISASSEMBLE, RECONSTRUCT OR REPLACE THE MANHOLE AS DIRECTED BY THE ENGINEER. THE MANHOLE SHALL THEN BE RE-TESTED AND, IF SATISFACTORY, INTERIOR JOINTS SHALL BE FILLED AND POINTED.
- BACKFILLING. THE TEST MAY BE CONDUCTED EITHER BEFORE OR AFTER BACKFILLING AROUND THE MANHOLE. HOWEVER, IF THE CONTRACTOR ELECTS TO BACKFILL PRIOR TO TESTING, IT SHALL BE AT HIS OWN RISK AND IT SHALL BE INCUMBENT UPON THE CONTRACTOR TO DETERMINE THE REASON FOR ANY FAILURE OF THE TEST. NO ADJUSTMENT IN THE LEAKAGE ALLOWANCE WILL BE MADE FOR UNKNOWN CAUSES SUCH AS LEAKING PLUGS, ABSORPTION, ETC., I.E. IT WILL BE ASSUMED THAT ALL LOSS OF WATER DURING THE TEST IS A RESULT OF LEAKS THROUGH THE JOINTS OF THROUGH THE CONCRETE. FURTHERMORE, THE CONTRACTOR SHALL TAKE ANY STEPS NECESSARY TO ASSURE THE ENGINEER THAT THE WATER TABLE IS BELOW THE BOTTOM OF THE MANHOLE THROUGHOUT THE TEST. B.

VACUUM TEST: (GRAVITY MANHOLES ONLY. CANNOT BE PERFORMED ON THE DOG-HOUSE MANHOLE.)

- THE VACUUM TESTING SYSTEM SHALL BE SUPPLIED BY NPC SYSTEMS, INC. OR EQUIVALENT AS APPROVED BY THE ENGINEER. THE TESTING SHALL BE DONE IMMEDIATELY AFTER ASSEMBLY OF THE MANHOLE AND BEFORE BACKFILLING. A 90° LEFT-TORQUE WRENCH SHALL BE USED TO TIGHTEN EXTERNAL CLAMPS THAT SECURE THE TEST COVER TO THE TOP OF THE MANHOLE. ALL LIFT HOLES SHALL BE PLUGGED WITH A NON-SHRINKING MORTAR. THE CONTRACTOR SHALL PLUG THE PIPE OPENINGS, TAKING CARE TO SECURELY BRACE THE PLUGS AND THE PIPE TO PREVENT THE PLUGS FROM BEING DRAWN INTO THE MANHOLE.
- A VACUUM OF 10 INCHES OF MERCURY, HG (4.9 PSI), SHALL BE DRAWN AND THE VACUUM PUMP SHUT OFF. THE MANHOLE PASSES THE TEST IF THE VACUUM REMAINS GREATER THAN OR EQUAL TO 9 INCHES HG (4.4 PSI) FOR A PERIOD GREATER THAN ONE MINUTE FOR MANHOLES UP TO 10 FEET DEEP; ONE MINUTE FIFTEEN SECONDS FOR MANHOLES 10-15 FEET DEEP; AND ONE MINUTE THIRTY SECONDS FOR MANHOLES 15-25 FEET DEEP.
- IF THE MANHOLE FAILS THE INITIAL TEST, THE CONTRACTOR SHALL LOCATE THE LEAKS AND MAKE PROPER REPAIRS. LEAKS MAY BE FILLED WITH A WET SLURRY OF ACCEPTED QUICK SETTING MATERIAL. IF THE MANHOLE FAILS THE VACUUM TEST AGAIN, ADDITIONAL REPAIRS MUST BE MADE, AND THE MANHOLE MUST BE TESTED BY EXFILTRATION AS OUTLINED IN PARAGRAPH 3.03 (A), FIELD QUALITY CONTROL.

LEAKAGE TEST:

- THE PIPELINES SHALL BE MADE AS NEARLY WATERTIGHT AS PRACTICABLE, AND LEAKAGE TESTS AND MEASUREMENTS SHALL BE MADE AFTER THE PIPELINE HAS BEEN BACKFILLED
 - WHERE THE GROUNDWATER LEVEL IS MORE THAN 1 FT ABOVE THE TOP OF THE PIPE AT ITS UPPER END, THE CONTRACTOR SHALL CONDUCT EITHER INFILTRATION TESTS OR LOW PRESSURE AIR TESTS.
 - WHERE THE GROUNDWATER LEVEL IS LESS THAN 1 FT. ABOVE THE TOP OF THE PIPE AT ITS UPPER END, THE CONTRACTOR SHALL CONDUCT EITHER EXFILTRATION TESTS OR LOW PRESSURE AIR TESTS.
 - AT THE TIME OF THE TEST, THE CONTRACTOR SHALL DETERMINE THE GROUNDWATER ELEVATION FROM OBSERVATION WELLS, EXCAVATIONS OR OTHER MEANS, ALL SUBJECT TO REVIEW BY THE ENGINEER.
 - FOR MAKING THE LOW PRESSURE AIR TESTS, THE CONTRACTOR SHALL USE EQUIPMENT SPECIFICALLY DESIGNED AND MANUFACTURED FOR THE PURPOSE OF TESTING SEWER PIPELINES USING LOW PRESSURE AIR. THE EQUIPMENT SHALL BE PROVIDED WITH AN AIR REGULATORY VALVE OR AIR SAFETY SO SET THAT THE INTERNAL AIR PRESSURE IN THE PIPELINE CANNOT EXCEED 8 PSIG.
 - THE LEAKAGE TEST USING LOW PRESSURE AIR SHALL BE MADE ON EACH MANHOLE-TO-MANHOLE SECTION OF PIPELINE AFTER PLACEMENT OF THE BACKFILL.
 - PNEUMATIC PLUGS SHALL HAVE A SEALING LENGTH EQUAL TO OR GREATER THAN THE DIAMETER OF THE PIPE TO BE TESTED. PNEUMATIC PLUGS SHALL RESIST INTERNAL TEST PRESSURES WITHOUT REQUIRING EXTERNAL BRACING OR BLOCKING.
 - ALL AIR USED SHALL PASS THROUGH A SINGLE CONTROL PANEL.
 - LOW PRESSURE AIR SHALL BE INTRODUCED INTO THE SEALED LINE UNTIL THE INTERNAL AIR PRESSURE REACHES 4 PSIG. GREATER THAN THE MAXIMUM PRESSURE EXERTED BY THE GROUNDWATER THAT MAY BE ABOVE THE INVERT OF THE PIPE AT THE TIME OF THE TEST. HOWEVER, THE INTERNAL AIR PRESSURE IN THE SEALED LINE SHALL NOT BE ALLOWED TO EXCEED 8 PSIG. WHEN THE MAXIMUM PRESSURE EXERTED BY THE GROUNDWATER IS GREATER THAN 4 PSIG., THE CONTRACTOR SHALL CONDUCT ONLY AN INFILTRATION TEST.
 - AT LEAST TWO MINUTES SHALL BE ALLOWED FOR THE AIR PRESSURE TO STABILIZE IN THE SECTION UNDER TEST. AFTER THE STABILIZATION PERIOD, THE LOW PRESSURE AIR SUPPLY HOSE SHALL BE QUICKLY DISCONNECTED FROM THE CONTROL PANEL. THE TIME REQUIRED IN MINUTES FOR THE PRESSURE IN THE SECTION UNDER TEST TO DECREASE FROM 3.5 TO 2.5 PSIG GREATER THAN THE MAXIMUM PRESSURE EXERTED BY GROUNDWATER THAT MAY BE ABOVE THE INVERT OF THE PIPE) SHALL NOT BE LESS THAN THAT SHOWN IN THE FOLLOWING TABLE.
- | PIPE DIAMETER IN INCHES VS. MINUTES |
|-------------------------------------|
| 6" 5.0 MIN. 40 SEC. |
| 8" 7.0 MIN. 34 SEC. |
| 10" 9.0 MIN. 28 SEC. |
| 12" 11.0 MIN. 20 SEC. |
| 15" 14.0 MIN. 10 SEC. |
| 18" 17.0 MIN. 0 SEC. |
| 21" 19.0 MIN. 50 SEC. |
| 24" 22.0 MIN. 40 SEC. |
| 27" 25.0 MIN. 30 SEC. |
- FOR MAKING THE INFILTRATION AND EXFILTRATION TESTS, THE CONTRACTOR SHALL FURNISH SUITABLE TEST PLUGS, WATER PUMPS, AND APPURTENANCES, AND ALL LABOR REQUIRED TO PROPERLY CONDUCT THE TESTS ON SECTIONS OF ACCEPTABLE LENGTH.
 - FOR MAKING THE INFILTRATION TESTS, UNDERDRAINS, IF USED, SHALL BE PLUGGED AND OTHER GROUNDWATER DRAINAGE SHALL BE STOPPED TO PERMIT THE GROUNDWATER TO RETURN TO ITS NORMAL LEVEL INSOFAR AS PRACTICABLE.
 - UPON COMPLETION OF A SECTION OF THE SEWER, THE CONTRACTOR SHALL DEWATER IT AND CONDUCT AN EXFILTRATION TEST TO MEASURE THE INFILTRATION FOR AT LEAST 24 HOURS. THE AMOUNT OF INFILTRATION, INCLUDING MANHOLES, TEES, AND CONNECTIONS, SHALL NOT EXCEED 200 GAL. PER INCH DIAMETER PER MILE OF SEWER PER 24 HOURS.
 - FOR MAKING THE EXFILTRATION TESTS, THE SEWERS SHALL BE SUBJECTED TO AN INTERNAL PRESSURE BY PLUGGING THE PIPE AT THE LOWER END AND THEN FILLING THE PIPELINES AND MANHOLES WITH CLEAN WATER TO A HEIGHT OF 2 FT. ABOVE THE TOP OF THE SEWER AT ITS UPPER END, WHERE CONDITIONS BETWEEN MANHOLES, MAY RESULT IN TEST PRESSURES WHICH WOULD CAUSE LEAKAGE AT THE STOPPERS IN BRANCHES. PROVISIONS SHALL BE MADE BY SUITABLE TIES, BRACES, AND WEDGES TO SECURE THE STOPPERS AGAINST LEAKAGE RESULTING FROM THE TEST PRESSURE.
 - THE RATE OF LEAKAGE FROM THE SEWERS SHALL BE DETERMINED BY MEASURING THE AMOUNT OF WATER REQUIRED TO MAINTAIN THE LEVEL 2 FT. ABOVE THE TOP OF THE PIPE.
 - LEAKAGE FROM THE SEWERS UNDER TEST SHALL NOT EXCEED THE REQUIREMENTS FOR LEAKAGE INTO SEWERS AS HEREIN BEFORE SPECIFIED.
 - THE SEWERS SHALL BE TESTED BEFORE ANY CONNECTIONS ARE MADE TO BUILDINGS.
 - THE CONTRACTOR SHALL CONSTRUCT WEIRS OR OTHER MEANS OF MEASUREMENTS AS MAY BE REQUIRED.
 - SUITABLE BULKHEADS SHALL BE INSTALLED, AS REQUIRED, TO PERMIT THE TEST OF THE SEWER.
 - SHOULD THE SECTIONS UNDER TEST FAIL TO MEET THE REQUIREMENTS, THE CONTRACTOR SHALL DO ALL WORK OF LOCATING AND REPAIRING LEAKS AND RETESTING AS THE ENGINEER MAY REQUIRE WITHOUT ADDITIONAL COMPENSATION.
 - IF, IN THE JUDGMENT OF THE ENGINEER, IT IS IMPRACTICABLE TO FOLLOW THE FOREGOING PROCEDURES FOR ANY REASON, ACCEPTABLE MODIFICATIONS IN THE PROCEDURES SHALL BE MADE AS REQUIRED, BUT IN ANY EVENT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ULTIMATE TIGHTNESS OF THE LINE WITHIN THE ABOVE TEST REQUIREMENTS.

WATER TESTING

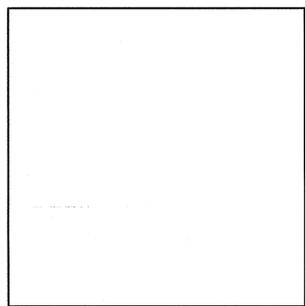
- REQUIRED TESTS FOR WATERLINES AND FORCE MAINS:
 - PERFORM THE FOLLOWING AFTER THE PIPE HAS BEEN INSTALLED AND PRIOR TO FINAL ACCEPTANCE:
 - PRESSURE TEST.
 - LEAKAGE TEST.
- PRESUMPTIVE HYDROSTATIC TESTS MAY BE PERFORMED WHEN THE SYSTEM IS PARTIALLY BACKFILLED TO "CHECK" THE WORK, BUT FINAL ACCEPTANCE SHALL BE BASED ON HYDROSTATIC TESTS PERFORMED ON THE FINISHED SYSTEM AFTER IT IS COMPLETELY BACKFILLED.
- PRESSURE TEST:**
 - TEST PIPING TO 1.5 TIMES THE PIPE WORKING PRESSURE, OR 150 PSI, WHICHEVER IS GREATER. MEASURE TEST PRESSURES AT THE LOWEST POINT IN THE PIPE SECTION AND CORRECT TO THE ELEVATION OF THE GAUGE.
 - RELIEVE TRAPPED AIR AT THE SECTION HIGH POINTS THROUGH HYDRANTS, OR TAPS INSTALLED FOR THIS PURPOSE, PROVIDED TEMPORARY INSTALLATIONS ARE REMOVED AND PLUGGED AFTER ACCEPTANCE.
 - MAINTAIN THE TEST PRESSURE FOR A PERIOD OF TWO (2) HOURS. AT THE END OF THE TEST PERIOD, IF THE TEST PRESSURE REMAINS CONSTANT, THE PIPE SECTION SHALL HAVE PASSED THE TEST. IF THE PRESSURE HAS DROPPED, IT SHALL BE BROUGHT BACK TO THE TEST PRESSURE BY PUMPING A KNOWN VOLUME OF WATER (BY PUMPING FROM A GRADUATED CONTAINER OR BY METERING) BACK INTO THE PIPE. THE VOLUME OF WATER THUS USED, REPRESENTING LEAKAGE FROM THE PIPE, SHALL BE RECORDED. IF THE LEAKAGE IS LESS THAN THE ALLOWABLE LEAKAGE SPECIFIED BELOW, THE PIPE SHALL HAVE PASSED THE TEST. IF THE LEAKAGE EXCEEDS THE ALLOWABLE LEAKAGE SPECIFIED, THE CONTRACTOR SHALL LOCATE THE LEAK, PERMANENTLY REPAIR THE SECTION OF PIPE WHERE THE LEAK IS OCCURRING TO THE SATISFACTION OF THE ENGINEER, AND RETEST THE PIPE AS SPECIFIED ABOVE.
- LEAKAGE TEST:**
 - CONDUCT THE LEAKAGE TEST CONCURRENTLY WITH THE PRESSURE TEST.
 - THE MAXIMUM ALLOWED LEAKAGE IS DETERMINED BY THE FOLLOWING FORMULA:
$$L = \frac{N \times D \times P \times \pi}{7400}$$

WHERE L = ALLOWABLE LEAKAGE, IN GPH
WHERE N = NO. OF JOINTS IN TEST SECTION
WHERE D = NOMINAL PIPE DIAMETER, IN INCHES
WHERE P = AVERAGE TEST PRESSURE, IN PSIG

- ACCEPTANCE SHALL BE DETERMINED ON THE BASIS OF ALLOWABLE LEAKAGE. IF ANY PIPE SECTION DISCLOSES LEAKAGE GREATER THAN THAT SPECIFIED, LOCATE, REPAIR AND RETEST UNTIL THE LEAKAGE IS WITHIN THE LIMITS SPECIFIED.
- MAKE ALL VISIBLE LEAKS TIGHT REGARDLESS OF THE AMOUNT OF LEAKAGE, AND IF THE LINES DO NOT MEET THE ABOVE LEAKAGE TEST, REPAIR AND RETEST AS NECESSARY UNTIL THE LEAKAGE REQUIREMENT IS MET. REPAIR OR REPLACE ALL DEFECTIVE WORK.
 - DISINFECTION OF POTABLE WATER MAINS
- DISINFECT ALL POTABLE WATER MAINS IN ACCORDANCE WITH THE LATEST VERSION OF AWWA C651, EXCEPT THAT THE PLACEMENT OF CHLORINE POWDER OR TABLETS INSIDE THE PIPE DURING INSTALLATION SHALL NOT BE ALLOWED. DISINFECT WATER MAINS AFTER THE PIPING HAS PASSED THE PRESSURE AND LEAKAGE TESTING.
 - FLUSH THE PIPE WITH WATER AT A MINIMUM VELOCITY OF 2.5 FEET PER SECOND (FPS) TO CLEAR ALL FOREIGN MATERIAL FROM THE PIPE.
 - APPLY A CHLORINE SOLUTION WITH A CONCENTRATION BETWEEN 50 PARTS PER MILLION (PPM) AND 100 PPM. THE CHLORINE SOLUTION SHALL REMAIN IN THE PIPING FOR A MINIMUM OF 24 HOURS. THE CONCENTRATION AT THE END OF THIS PERIOD SHALL BE AT LEAST 25 PPM IN ALL SECTIONS OF THE MAIN. REPEAT THE ENTIRE PROCEDURE IF THE RESIDUAL IS LESS THAN 25 PPM.
 - WHILE THE CHLORINATED WATER IS BEING ADDED, ALL APPURTENANCES (VALVES, HYDRANTS, ETC.) SHALL BE OPERATED SO AS TO COMPLETELY DISINFECT THE NEW WORK.
 - POSITION VALVES SO THAT THE CHLORINE SOLUTION IN THE SECTION BEING DISINFECTED WILL NOT FLOW INTO WATER MAINS IN ACTIVE SERVICE.
 - CHLORINE RESIDUAL SAMPLES SHALL BE TAKEN AS DIRECTED BY THE ENGINEER.
 - AFTER THE TWENTY FOUR (24) HOUR RETENTION PERIOD, FLUSH THE MAIN UNTIL RESIDUAL TESTING INDICATES THAT THE CHLORINE CONCENTRATION IS APPROXIMATELY THAT OF THE NEIGHBORING SERVICE AREA.
 - DISPOSE OF HEAVILY CHLORINATED WATER INTO SANITARY SEWER OR TANK TRUCK.
 - THE OWNER AND THE OWNER OF THE SANITARY SEWER SYSTEM SHALL BE NOTIFIED A MINIMUM OF TWENTY-FOUR (24) HOURS PRIOR TO THE DISCHARGE OF ANY WATER TO THE SANITARY SEWER. CONTRACTOR SHALL SUBMIT TO THE ENGINEER WRITTEN CONFIRMATION THAT THE OWNER OF SANITARY SEWER SYSTEM HAS APPROVED THE DISCHARGE OF WATER TO ITS SANITARY SEWER.
 - UNDER NO CIRCUMSTANCES WILL THE EMPTYING OF WATER ONTO ROADWAYS, OR INTO DITCHES, CULVERTS, STREAMS OR WETLANDS BE ALLOWED.
 - AFTER DISINFECTION AND FINAL FLUSHING, AND PRIOR TO PLACING THE LINES IN SERVICE, THE CONTRACTOR SHALL COLLECT BACTERIOLOGICAL SAMPLES (BOTH COLIFORM AND HETEROTROPHIC PLATE COUNT) AND SUBMIT SAMPLES TO AN APPROVED TESTING LABORATORY. TWO CONSECUTIVE SETS OF SAMPLES SHALL BE TAKEN AT LEAST 24 HOURS APART IN ACCORDANCE WITH AWWA C651. THE COLLECTION POINTS SHALL BE AS DIRECTED BY THE ENGINEER AND LOCAL AUTHORITY HAVING JURISDICTION.
 - THE TESTING LABORATORY PERFORMING THE BACTERIOLOGICAL ANALYSIS SHALL BE ACCEPTABLE TO THE ENGINEER.
 - SUBMIT THREE (3) COPIES OF THE LABORATORY ANALYSIS TO THE ENGINEER.
 - SHOULD SAFE RESULTS NOT OCCUR AFTER LABORATORY TESTS, THE CONTRACTOR SHALL, AT HIS EXPENSE, REPEAT THE DISINFECTION PROCEDURE UNTIL SAFE RESULTS ARE OBTAINED. THIS INCLUDES A POSITIVE RESULT FOR COLIFORM OR A MEASURED HETEROTROPHIC PLATE COUNT OF GREATER THAN 500 COLONY-FORMING UNITS PER ML.
 - CONTRACTOR SHALL PAY FOR ALL TESTING REQUIRED.
 - ALL PRECAUTION SHALL BE TAKEN TO MAINTAIN DRY AND SANITARY CONDITIONS AND PREVENT CONTAMINATION OF ANY PIPING. IF, IN THE OPINION OF THE ENGINEER, CONTAMINATION HAS OCCURRED, THE CONTRACTOR SHALL REPEAT THE DISINFECTION PROCEDURE AND TESTING AT HIS COST AND EXPENSE.
 - ALL TESTING SHALL CONFORM TO SRA AND TOWN OF WEYMOUTH REQUIREMENTS.

LEGEND

EXISTING	PROPOSED
-----565-----	-----585-----
MAJOR CONTOUR	MAJOR CONTOUR
-----588-----	-----586-----
MINOR CONTOUR	MINOR CONTOUR
-----W-----	-----W-----
DOMESTIC WATER	DOMESTIC WATER
-----DB-----	-----DB-----
UNDERGROUND ELECTRIC	DUCT BANK (ELECTRIC/CABLE/TELEPHONE)
-----EOT-----	-----EOT-----
SANITARY SEWER	ELECTRIC/CABLE/TELEPHONE
-----UE-----	-----UE-----
STORM SEWER	UNDERGROUND ELECTRIC
-----S-----	-----S-----
OVERHEAD WIRE	SANITARY SEWER
-----FM-----	-----FM-----
NATURAL GAS	FORCEMAIN SEWER
-----G45-----	-----G45-----
CHAINLINK FENCE	NATURAL GAS
-----FS-----	-----FS-----
STORM SEWER STRUCTURE	DRAIN
⊙	⊙
SANITARY SEWER MANHOLE	FILTER SILT SOCK
⊙	⊙
ELECTRIC STRUCTURE	SINGLE GRATE CATCH BASIN
⊙	⊙
UTILITY POLE	DOUBLE GRATE CATCH BASIN
⊙	⊙
HYDRANT	DRAIN MANHOLE
⊙	⊙
LIGHT POLE	HYDRANT ASSEMBLY
⊙	⊙
WATER VALVE	LINE VALVE
⊙	⊙
	SANITARY MANHOLE
	ELECTRIC MANHOLE
	LIGHT POLE
	LOW PRESSURE PUMP SYSTEM

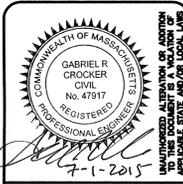
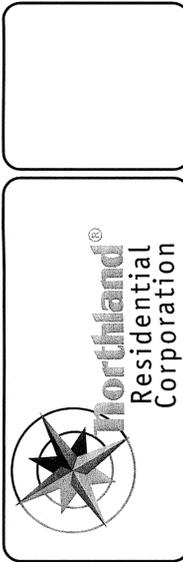


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Date	By	App'd	HD
07/01/15			

Submittal / Revision	DEFINITIVE SUBMISSION

No.	0



CHA
101 Accord Park Drive
Wellesley, MA 02481
Main: (781) 862-5400 • www.chaincorporation.com

Design: CHA Drawn: JPM Checked: SK

135 GREAT PLAIN AVENUE
WELLESLEY, MASSACHUSETTS

LEGEND & GENERAL NOTES

Issue Date: 07/01/15 Project No.: 29219 Scale: AS NOTED

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ZONING DISTRICT: SINGLE RESIDENCE 20	
NATURAL RESOURCE PROTECTION DEVELOPMENT (NRPD)	
MINIMUM LOT SIZE	10,000 SQUARE FEET @ / 20,000 S.F. @
MINIMUM FRONTAGE	75 FEET @ * / 110 FEET @
MINIMUM FRONT YARD WIDTH	75 FEET @ * / 110 FEET @
MINIMUM FRONT YARD SETBACK	30 FEET @ / 35 FEET @
MINIMUM SIDE YARD SETBACK	20 FEET @
MINIMUM REAR YARD SETBACK	20 FEET @
MAXIMUM BUILDING HEIGHT	45 FEET / 3 STORIES @
MINIMUM OPEN SPACE	50 PERCENT @

@ TAKEN FROM SECTION XVIF OF WELLESLEY ZONING BY-LAW (NRPD)
 @ TAKEN FROM SECTION XIX OF WELLESLEY ZONING BY-LAW (SINGLE RESIDENCE 20)
 * SEE SECTION XIX, PAGE 151 OF WELLESLEY ZONING BY-LAW

EXISTING LOT 68-1 AREA = 525,031 S.F. (12.05 ACRES)
 PROPOSED ROADWAY = 32,400± S.F. (0.74 ACRES)
 PROPOSED SUBDIVISION = 185,900± S.F. (4.27 ACRES)
 PROPOSED UPLAND OPEN SPACE = 220,700± S.F. (5.07 ACRES)
 TOTAL PROPOSED OPEN SPACE = 306,700± S.F. (7.04 ACRES)

BUILD FACTOR CALCULATION:

Build Factor - A ratio of lot perimeter to lot area which limits the degree to which a lot may have an irregular shape according to the following formula:

$$\frac{\text{Lot Perimeter Squared}}{\text{Actual Lot Area}} \div \frac{\text{Actual Lot Area}}{\text{Required Lot Area}}$$

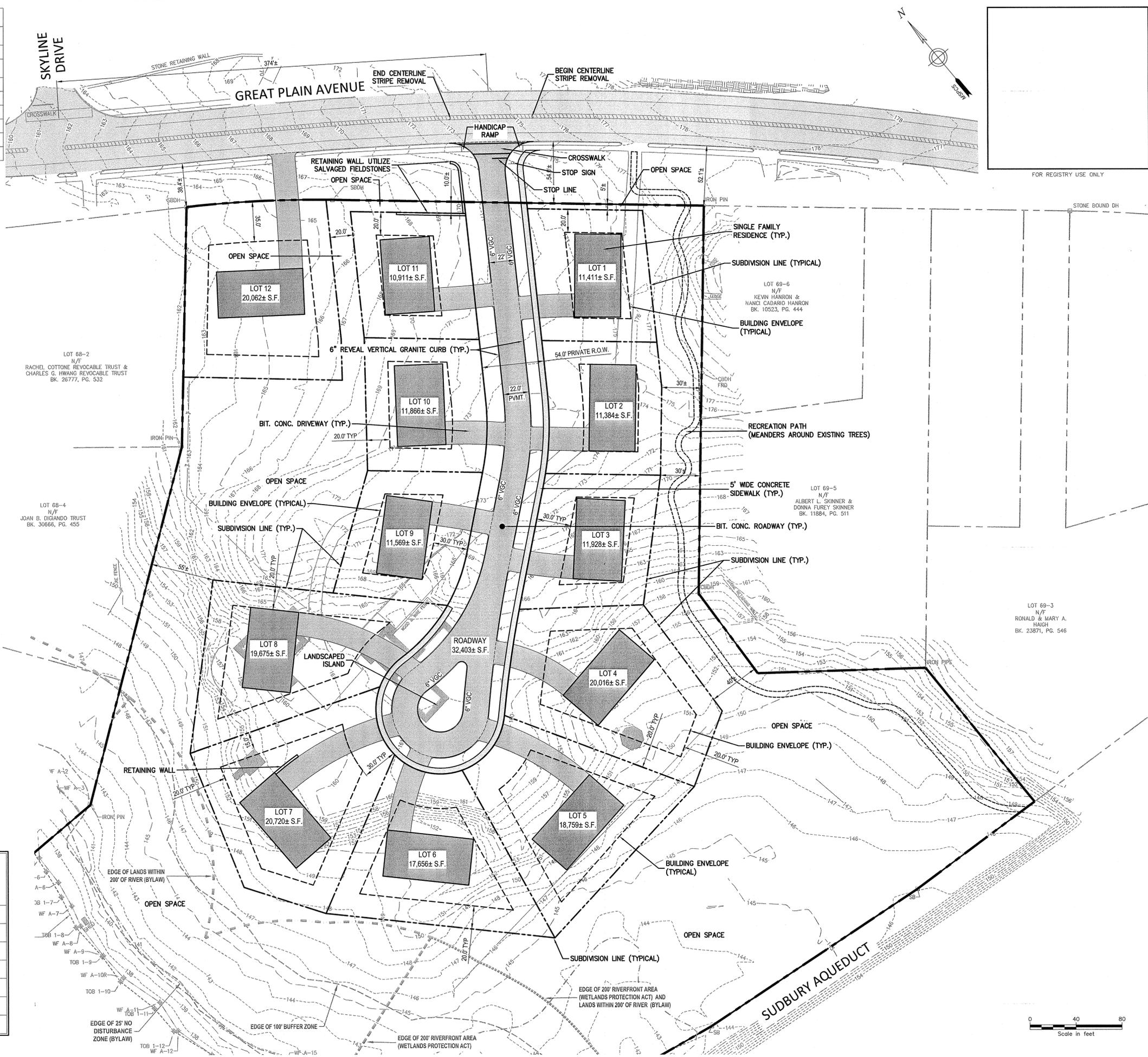
135 Great Plain Avenue, Wellesley, Massachusetts			
Lot Number	Lot Perimeter	Lot Area	Build Factor
Lot 1	429.93	11,411	14.20
Lot 2	431.27	11,384	14.35
Lot 3	441.34	11,928	13.69
Lot 4	561.61	20,016	7.87
Lot 5	583.85	18,759	9.69
Lot 6	579.26	17,656	10.76
Lot 7	588.02	20,720	8.05
Lot 8	624.33	19,675	10.07
Lot 9	430.31	11,569	13.83
Lot 10	431.05	11,866	13.20
Lot 11	419.85	10,911	14.81
Lot 12 (SRD20)	564.53	20,062	15.84
Required Lot Area for NRPD	10,000.00		
Required Lot Area for SRD20	20,000.00		

-  ASPHALT PAVEMENT
-  CONCRETE PAVEMENT
-  ROOF AREAS

I CERTIFY THAT THIS PLAN CONFORMS TO THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS.

DATE: _____

SUBDIVISION PLAN OF LAND IN WELLESLEY, MASSACHUSETTS	
APPROVED BY WELLESLEY PLANNING BOARD	preliminary application filed
	definitive application filed
	definitive plan filed
	public hearing date
	area regulation district
	project number
DATE	PB number



No.	Submittal / Revision	App'd By	Date
0	DEFINITIVE SUBDIVISION SUBMITTAL	GRC	07/01/15

Northland Residential Corporation



COMMONWEALTH OF MASSACHUSETTS
 GABRIEL R. CROCKER
 CIVIL No. 47417
 REGISTERED PROFESSIONAL ENGINEER
 7-1-2015

DESIGNED BY: CHA
 DRAWN BY: JPM
 CHECKED BY: SK

135 GREAT PLAIN AVENUE
 WELLESLEY, MASSACHUSETTS

SITE LAYOUT PLAN

Issue Date: 07/01/15 Project No.: 29219 Scale: 1"=40'

C-101
 SHEET 8 OF 18 SHEETS

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TBM
X-OUT IN BONNET BOLT OF HYDRANT
AT THE "L" IN MILLER
ELEV.=172.27 (TOWN OF WELLESLEY)

DRAIN MANHOLES / OUTLET CONTROL STRUCTURE					
STRUCTURE	RIM ELEV	INV IN (A)	INV IN (B)	INV IN (C)	INVERT OUT
DMH1	173.61	166.97	---	---	166.97
DMH2	170.72	166.55	166.75	166.56	162.24
DMH3	164.57	159.60	160.30	160.36	159.60
DMH4	160.78	156.37	---	---	156.37
OCS1	160.50	156.13	---	---	155.50
DMH5	161.56	155.45	---	---	150.45
DMH6	163.38	148.87	---	---	146.77
DMH7	152.00	145.07	---	---	145.07
DMH8	149.15	144.15	---	---	144.15

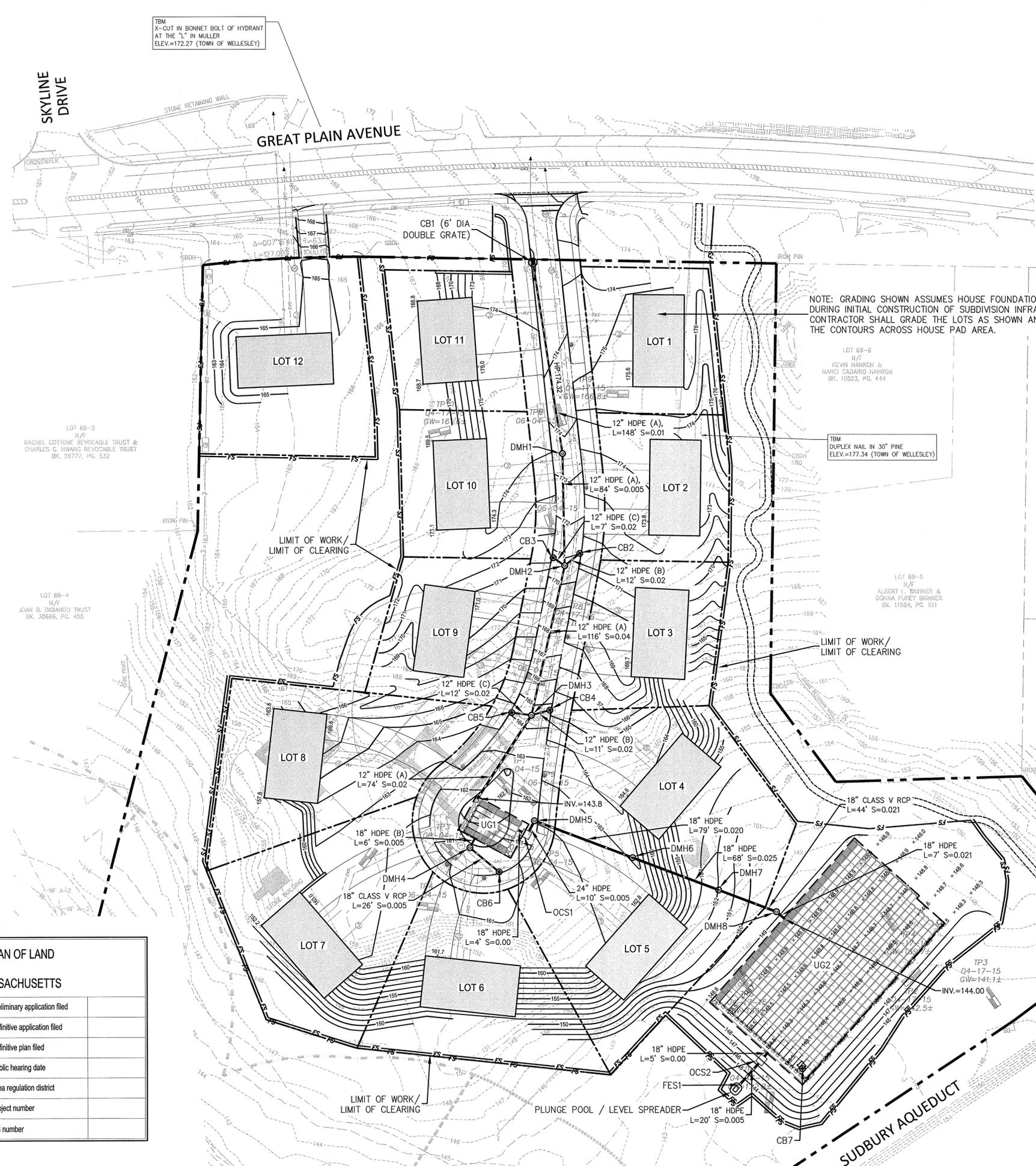
CATCH BASINS		
STRUCTURE	RIM ELEV	INVERT OUT
CB1	172.95	168.45
CB2	170.99	166.99
CB3	170.70	166.70
CB4	164.72	160.52
CB5	164.10	160.60
CB6	160.00	156.50
CB7	147.95	**

** CATCH BASIN #7 CONNECTS DIRECTLY INTO UNDERGROUND DETENTION SYSTEM (UG).

APPROXIMATE BUILDING ELEVATIONS			
LOT NUMBER	FIRST FLOOR	GARAGE SLAB	BASEMENT
LOT 1	176.6	175.6	166.6
LOT 2	174.8	173.8	164.8
LOT 3	171.2	169.7	161.2
LOT 4	165.6	164.6	153.6
LOT 5	163.8	162.8	152.8
LOT 6	162.7	161.7	152.7
LOT 7	164.0	163.0	153.5
LOT 8	167.6	166.6	157.6
LOT 9	172.5	171.0	162.5
LOT 10	175.8	174.3	165.8
LOT 11	176.0	175.0	166.0
LOT 12	167.0	166.0	157.0

NOTE: GRADING SHOWN ASSUMES HOUSE FOUNDATIONS ARE IN PLACE. DURING INITIAL CONSTRUCTION OF SUBDIVISION INFRASTRUCTURE, CONTRACTOR SHALL GRADE THE LOTS AS SHOWN AND SIMPLY EXTEND THE CONTOURS ACROSS HOUSE PAD AREA.

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UG1
32' X 40' (STONE)
6 ROWS OF 5 CHAMBERS
STONE ELEVATION = 155.50
STONE DEPTH = 3.75'
PIPE INVERT = 156.0

UG2
96.5' X 159' (STONE)
20 ROWS OF 22 CHAMBERS
STONE ELEVATION = 143.30
STONE DEPTH = 3.5'
PIPE INVERT = 143.8
* WITH IMPERVIOUS LINER

I CERTIFY THAT THIS PLAN CONFORMS TO THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS.

DATE: _____

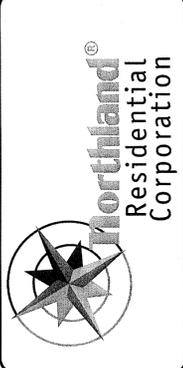
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0 40 80

SUBDIVISION PLAN OF LAND IN WELLESLEY, MASSACHUSETTS	
APPROVED BY WELLESLEY PLANNING BOARD	preliminary application filed
	definitive application filed
	definitive plan filed
	public hearing date
	area regulation district
DATE	project number
	PB number

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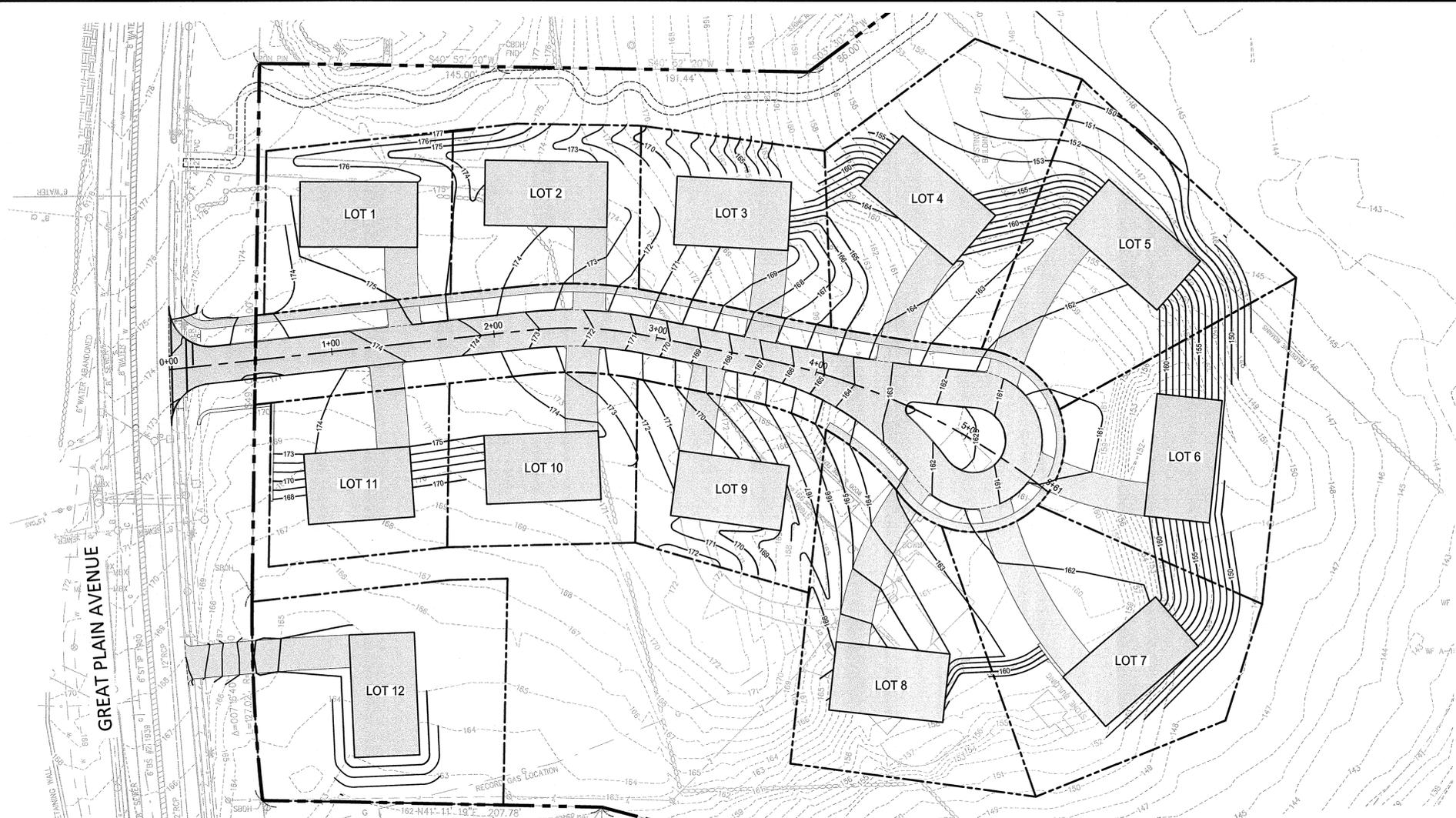
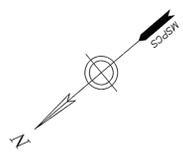
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0	07/01/15		

Submittal / Revision
DEFINITIVE SUBDIVISION SUBMITTAL

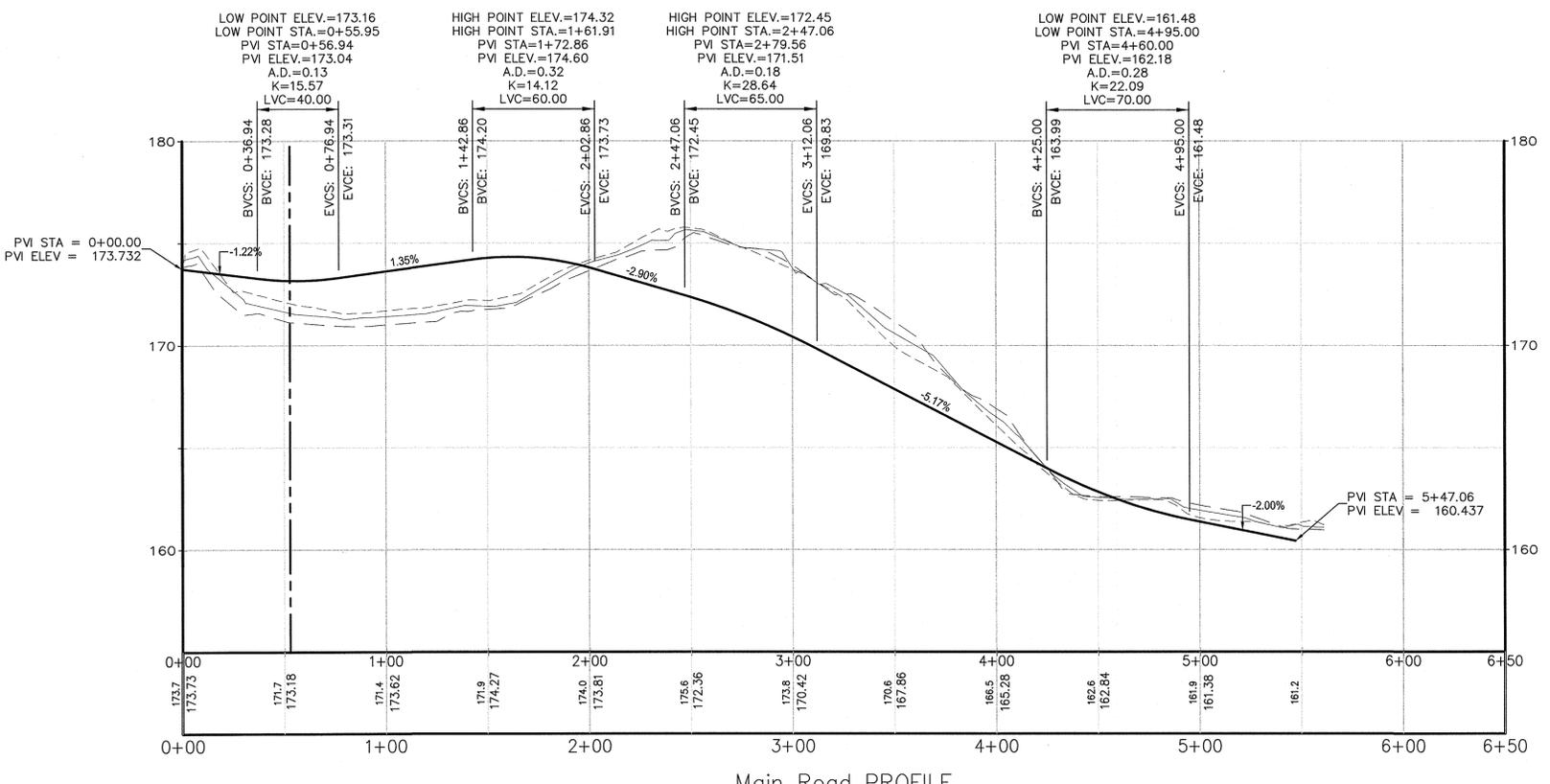


135 GREAT PLAIN AVENUE
WELLESLEY, MASSACHUSETTS
GRADING & DRAINAGE PLAN
Issue Date: 07/01/15 Project No.: 29219 Scale: 1"=40'

C-201
SHEET 9 OF 18 SHEETS



FOR REGISTRY USE ONLY



HORIZONTAL SCALE: 1" = 40'
VERTICAL SCALE 1" = 10'

Proposed Roadway Volume

Base Surface	Existing Conditions
Comparison Surface	Proposed Road Surface
Cut Factor	1.200
Fill Factor	1.200
Minimum elevation	-3.95'
Maximum elevation	3.64'
Mean elevation	-0.10'
Cut volume (unadjusted)	1065.42 Cu. Yd.
Fill volume (unadjusted)	938.57 Cu. Yd.
Net volume (unadjusted)	126.85 Cu. Yd. <Cut>
Cut volume (adjusted)	1278.51 Cu. Yd.
Fill volume (adjusted)	1126.28 Cu. Yd.
Net volume (adjusted)	152.22 Cu. Yd. <Cut>

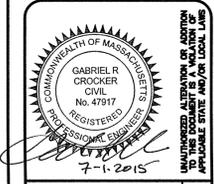
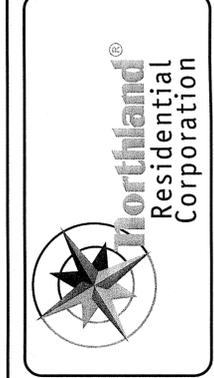
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SUBDIVISION PLAN OF LAND IN WELLESLEY, MASSACHUSETTS	
APPROVED BY WELLESLEY PLANNING BOARD	preliminary application filed
	definitive application filed
	definitive plan filed
	public hearing date
	area regulation district
	project number
	PB number
DATE	

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0	GRC	07/01/15

Submittal / Revision
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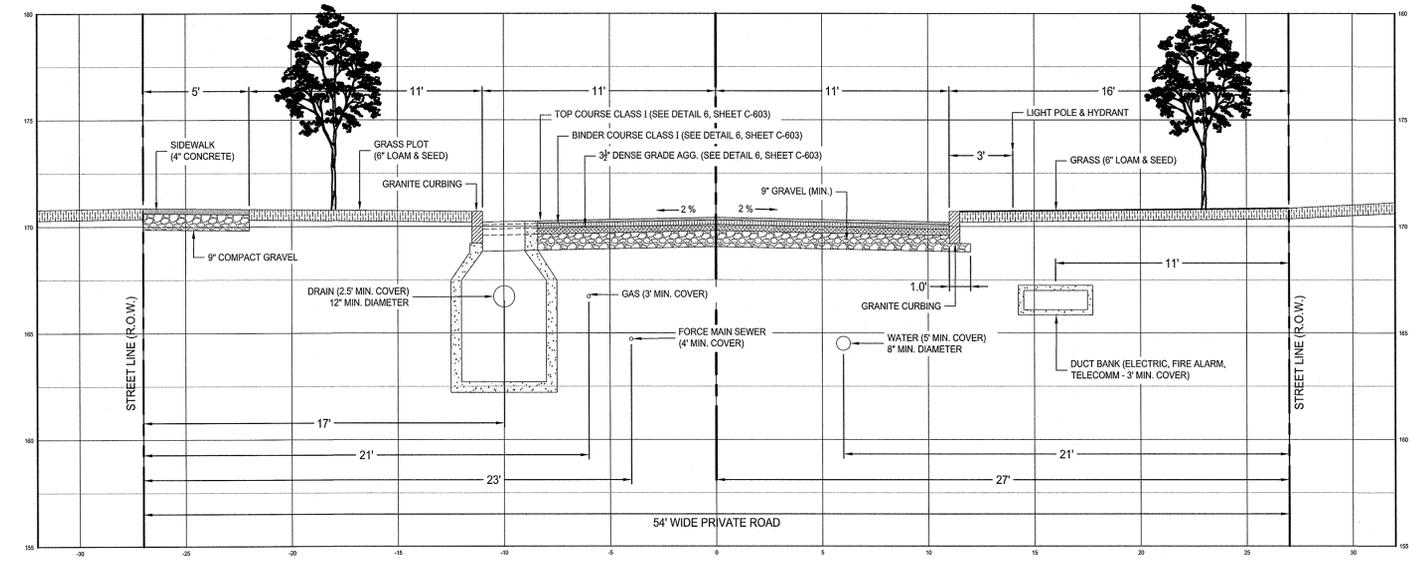
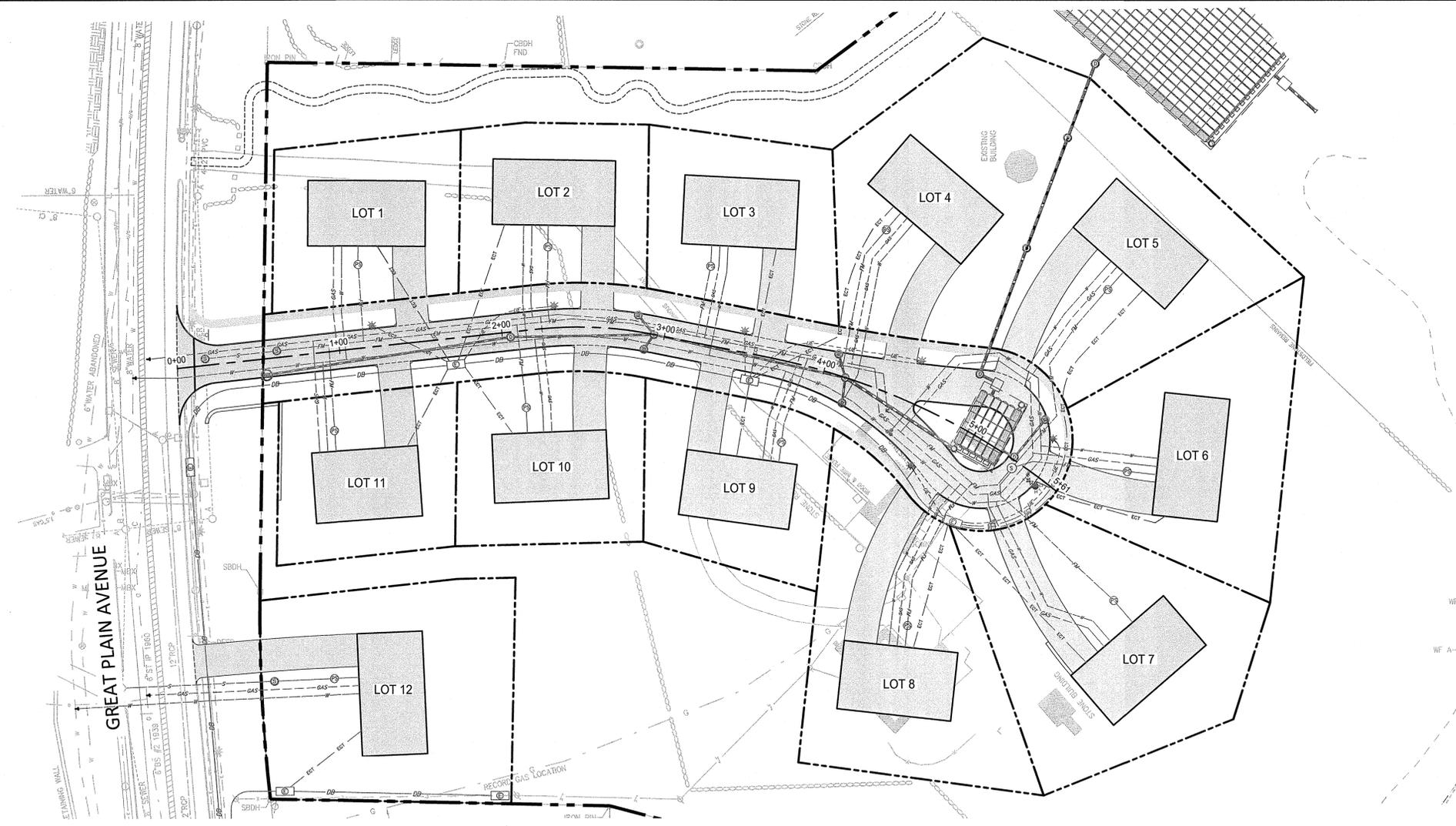
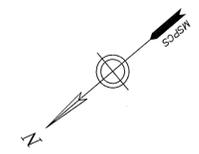


CHA
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Norwell, MA 02061
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Designed: CHA | Drawn: JPM | Checked: SK

135 GREAT PLAIN AVENUE WELLESLEY, MASSACHUSETTS	
Issue Date: 07/01/15	Project No.: 28219
Scale: AS NOTED	
ROADWAY PLAN AND PROFILE	

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SUBDIVISION PLAN OF LAND IN WELLESLEY, MASSACHUSETTS	
APPROVED BY WELLESLEY PLANNING BOARD	preliminary application filed
_____	definitive application filed
_____	definitive plan filed
_____	public hearing date
_____	area regulation district
DATE _____	project number
	PB number

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No.	Submittal / Revision	App'd	By	Date
0	DEFINITIVE SUBDIVISION SUBMITTAL	GRC	HD	07/01/15

Northland
Residential
Corporation

COMMONWEALTH OF MASSACHUSETTS
 GABRIEL E. CROCKER
 CIVIL
 No. 47817
 REGISTERED
 PROFESSIONAL ENGINEER

7-1-2015

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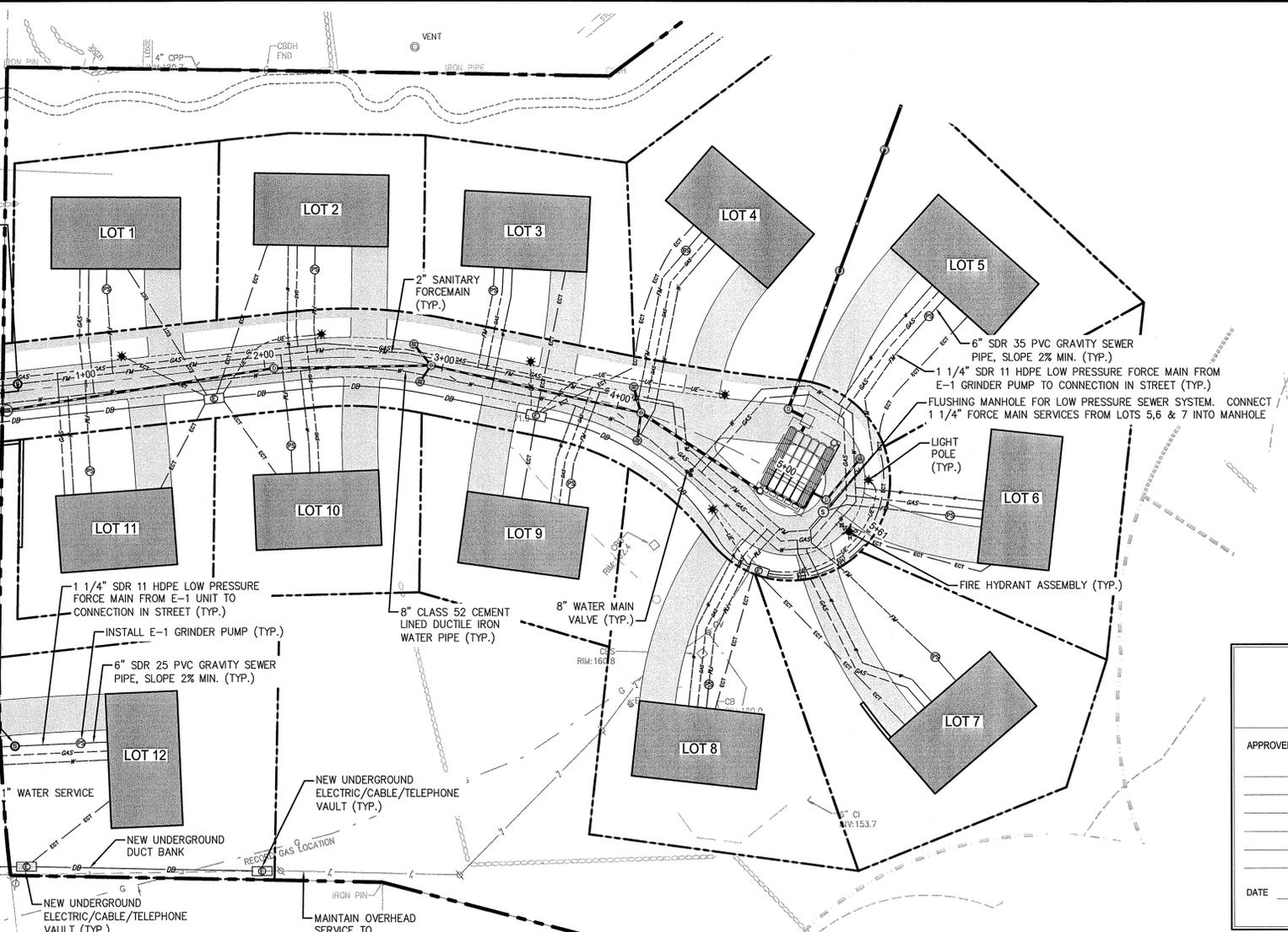
135 GREAT PLAIN AVENUE
 WELLESLEY, MASSACHUSETTS

TYPICAL ROADWAY & UTILITY
 SECTION PLAN

Issue Date: 07/01/15 | Project No.: 28219 | Scale: AS NOTED

GREAT PLAIN AVENUE

SKYLINE DRIVE



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SUBDIVISION PLAN OF LAND IN WELLESLEY, MASSACHUSETTS

Table with columns for utility status (e.g., approved by planning board, preliminary application filed) and project details (e.g., date, project number).

- UTILITY NOTES: 1. SEE OTHER SHEETS FOR APPLICABLE NOTES. 2. UTILITY INFORMATION SHOWN HEREON WAS COMPILED USING AVAILABLE PLANS OF PUBLIC RECORD... 3. ALL MATERIALS AND CONSTRUCTION METHODS SHALL CONFORM TO THE CONSTRUCTION STANDARDS AND SPECIFICATIONS OF THE TOWN OF WELLESLEY...

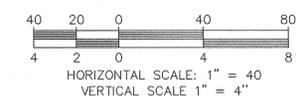
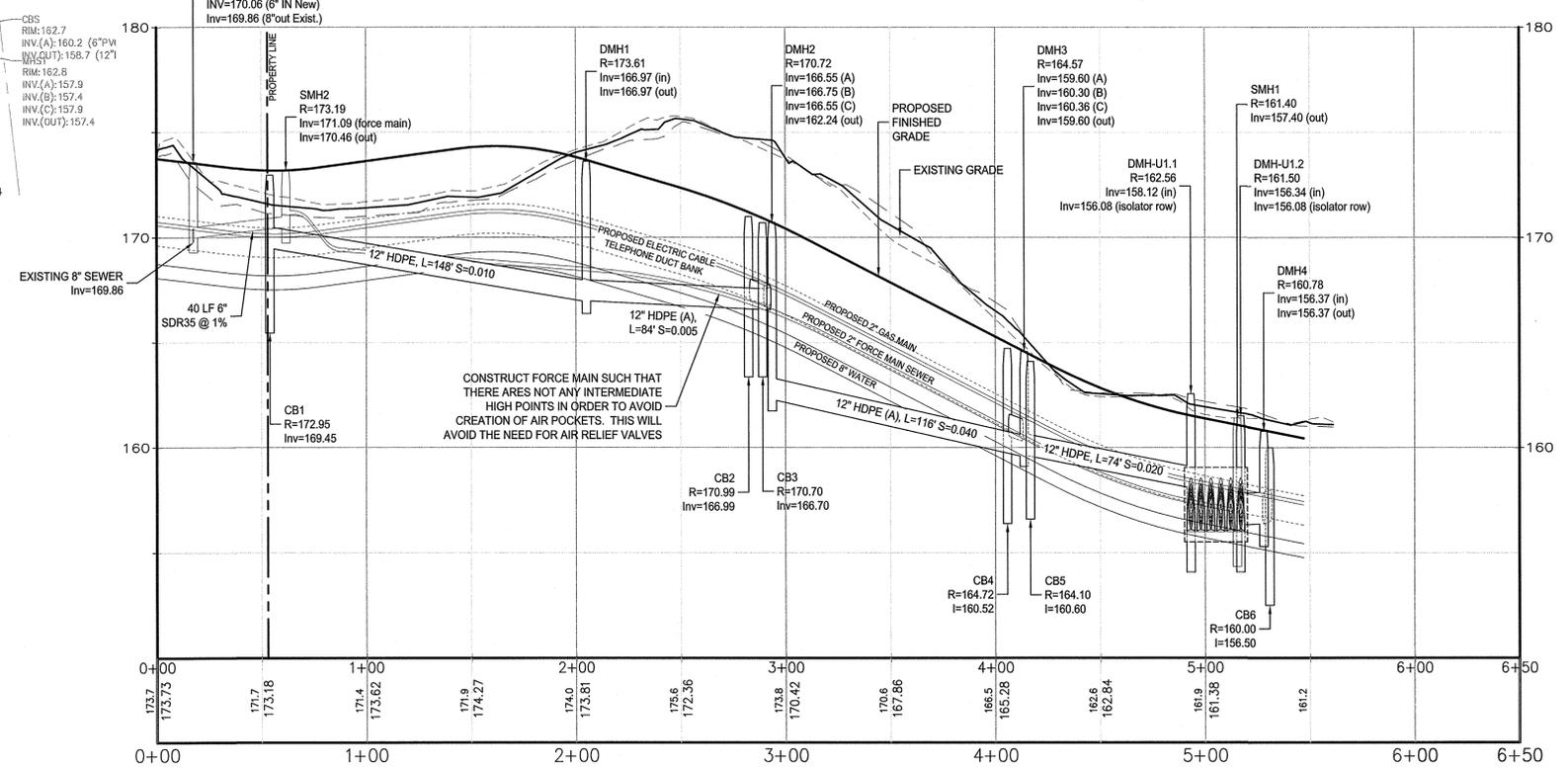
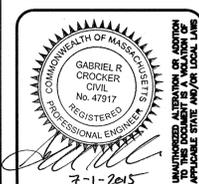
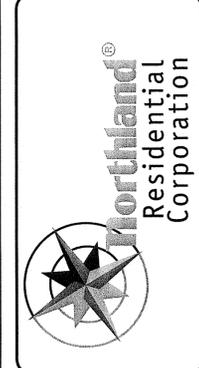
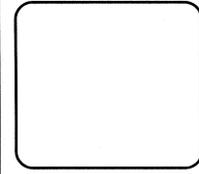
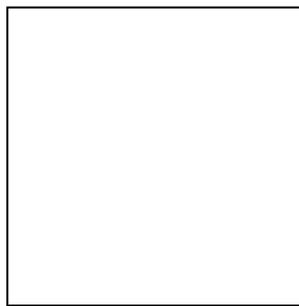


Table for project tracking with columns for Date, App'd, and Submittal/Revision.

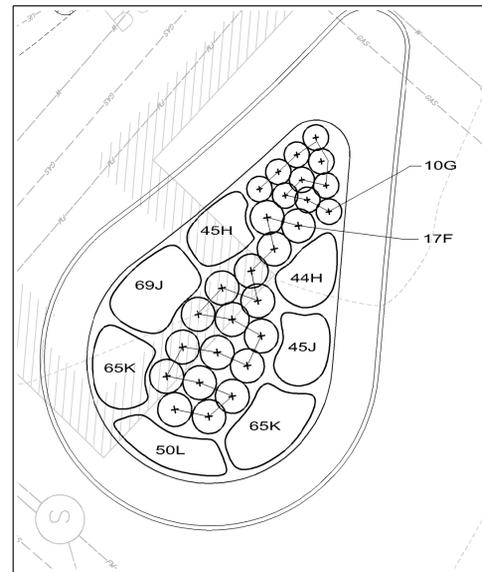


135 GREAT PLAIN AVENUE WELLESLEY, MASSACHUSETTS UTILITY PLAN AND PROFILE

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**CUL-DE-SAC ISLAND
PLANTING DETAIL**

SCALE: 1"=10'

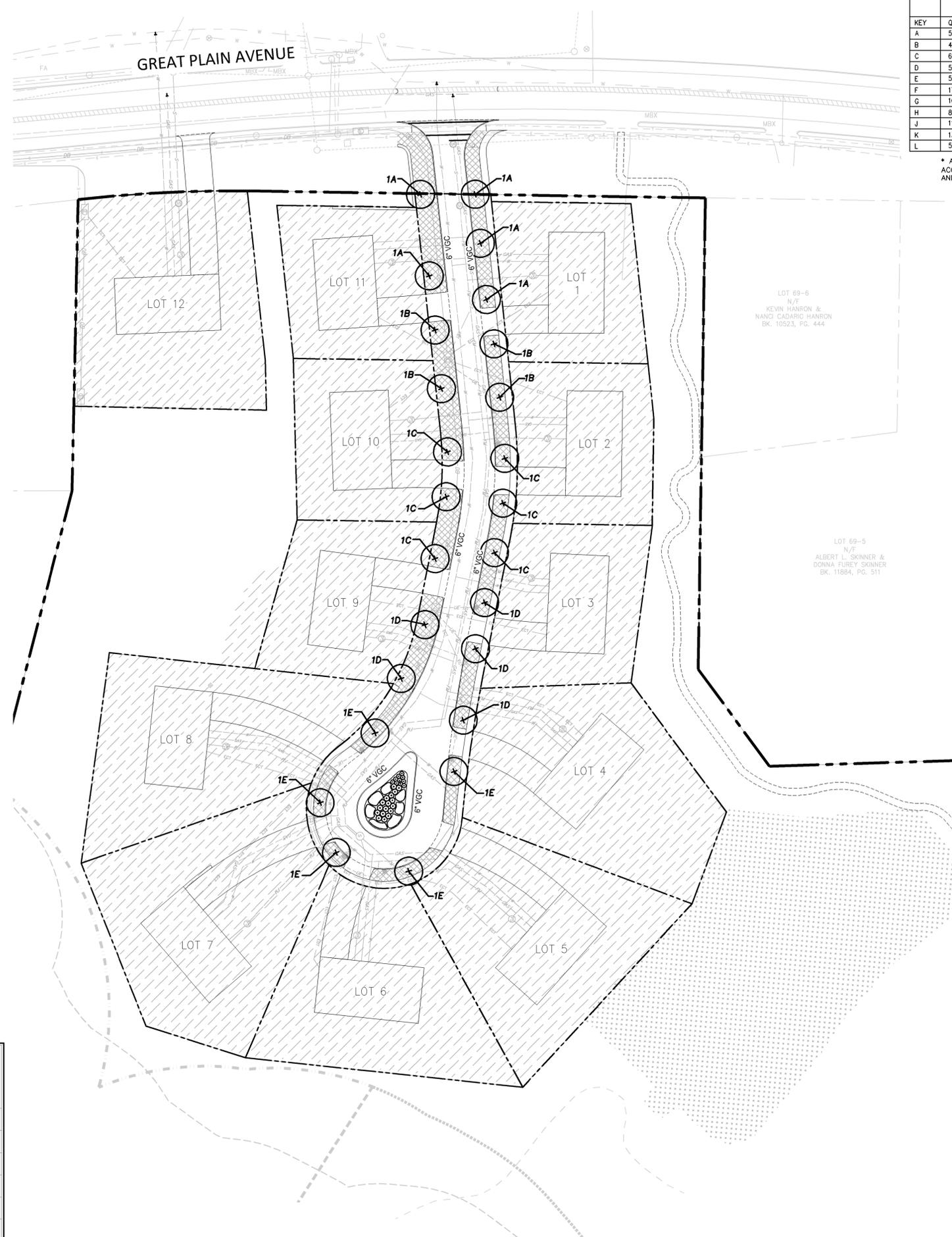
- TEMPORARY STABILIZATION AREA
- MEADOW MIX AREA
- TURF GRASS LAWN AREA

I CERTIFY THAT THIS PLAN CONFORMS TO THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS.

DATE: _____

**SUBDIVISION PLAN OF LAND
IN
WELLESLEY, MASSACHUSETTS**

APPROVED BY WELLESLEY PLANNING BOARD	preliminary application filed
	definitive application filed
	definitive plan filed
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	area regulation district
	project number
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Plant List*					
KEY	QTY	LATIN	COMMON	SIZE	COMMENTS
A	5	<i>Acer rubrum</i> 'October Glory'	October Glory Red Maple	2.5"-3" cal., B&B	8' min. branching ht.
B	4	<i>Platanus occidentalis</i>	American Sycamore	2.5"-3" cal., B&B	8' min. branching ht.
C	6	<i>Quercus rubra</i>	Red Oak	2.5"-3" cal., B&B	8' min. branching ht.
D	5	<i>Liriodendron tulipifera</i>	Tulip Tree	2.5"-3" cal., B&B	8' min. branching ht.
E	5	<i>Nyssa sylvatica</i>	Tupelo	2.5"-3" cal., B&B	8' min. branching ht.
F	17	<i>Juniperus horizontalis</i> 'Bar Harbor'	Bar Harbor Juniper	18"-24", #5 cont.	4' o.c.
G	10	<i>Arctostaphylos uva-ursi</i> 'Massachusetts'	Bearberry	#1 cont.	3' o.c.
H	89	<i>Festuca ovina glauca</i>	Blue Fescue	#1 cont.	12" o.c.
J	114	<i>Aurinia saxatilis</i> 'Compacta'	Basket-of-Gold	#1 cont.	12" o.c.
K	130	<i>Iberis sempervirens</i>	Candytuft	#1 cont.	12" o.c.
L	50	<i>Vinca minor</i> 'Bowles Variety'	Vinca	#1 cont.	12" o.c.

* A MINIMUM OF 25 STREET TREES SHALL BE INSTALLED. SPACING MAY VARY DURING FINAL PLANTING TO ACCOMMODATE DRIVEWAY LOCATIONS, HOWEVER SPACING GREATER THAN 60' BETWEEN TREES SHALL BE MINIMIZED AND EQUIVALENT SPACING SHALL BE USED TO THE EXTENT PRACTICAL.

TEMPORARY STABILIZATION NOTES

CONTRACTOR SHALL TEMPORARILY STABILIZE AREAS INDICATED BY INSTALLING LOAM AND SEEDING WITH ANNUAL RYE GRASS OR WOODCHIP STABILIZATION.

ANNUAL RYE GRASS, IF USED, SHALL BE MAINTAINED AND RE-ESTABLISHED AS NEEDED TO ENSURE NECESSARY STABILIZATION COVER.

WOOD CHIPS, IF USED, SHALL BE SPREAD FROM TREES CHIPPED ON SITE TO THE EXTENT PRACTICAL.

FINAL PLANTING AND FINAL STABILIZATION NOTES

ALL PLANT MATERIAL SHALL CONFORM TO THE MINIMUM GUIDELINES ESTABLISHED BY THE AMERICAN STANDARD FOR NURSERY STOCK PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN, INC.

ALL PLANTING BEDS TO BE MULCHED WITH AGED HARDWOOD BARK MULCH TO A DEPTH OF THREE (3) INCHES. PROVIDE FIVE (5) FOOT DIAMETER MULCH CIRCLE AROUND ALL INDIVIDUAL TREE PLANTINGS.

PLANT MATERIALS SHALL BEAR SAME RELATIONSHIP TO FINISH GRADE AS THEY BORE TO GRADE IN THE NURSERY.

SPACE PLANTS AT SCALED DISTANCES SHOWN ON DRAWINGS UNLESS OTHERWISE REQUIRED IN FIELD DUE TO UTILITY OR DRIVEWAY CONFLICTS. REVISED LOCATIONS SHALL BE APPROVED BY THE LANDSCAPE ARCHITECT.

ALL DECIDUOUS TREES SHALL BE FITTED WITH TREE-WATERING BAGS (TREEGATOR OR EQUAL) FOLLOWING COMPLETION OF PLANTING.

ANY PROPOSED SUBSTITUTION OF PLANT MATERIAL SHALL ONLY BE MADE AFTER PRIOR APPROVAL OF LANDSCAPE ARCHITECT OR OWNER'S REPRESENTATIVE.

ALL PLANT MATERIALS SHALL BE GUARANTEED FOR TWO YEARS FOLLOWING DATE OF FINAL WRITTEN ACCEPTANCE FROM THE OWNER OR HIS REPRESENTATIVE.

CONTRACTOR SHALL PROTECT ALL EXISTING VEGETATION AT THE SITE THAT IS NOT REQUIRED TO BE REMOVED TO MAKE WAY FOR NEW CONSTRUCTION.

SOIL NOTES

ALL AREAS DISTURBED BY CONSTRUCTION NOT DESIGNATED TO RECEIVE OTHER TREATMENT SHALL BE LOAMED A MINIMUM OF 6" AND SEEDED AS SPECIFIED BELOW. TOPSOIL FOR THIS PURPOSE SHALL BE TESTED BY AN APPROVED SOIL TESTING LABORATORY AND SHALL MEET THE FOLLOWING MINIMUM STANDARDS:

TEXTURE: FINE SANDY LOAM OR SANDY LOAM, AS DETERMINED BY MECHANICAL ANALYSIS AND BASED ON THE USDA STANDARD SOIL CLASSIFICATION SYSTEM.

ACIDITY: SOIL REACTION SHALL BE IN THE RANGE OF 5.5 TO 7.6, OR SHALL BE AMENDED TO MEET THIS RANGE.

ORGANIC MATTER: TOPSOIL SHALL HAVE A RANGE BETWEEN 5% AND 10% ORGANIC MATTER CONTENT BASED ON THE LOSS ON IGNITION OF OVEN-DRIED SAMPLES.

TREE/SHRUB PLANTING MIX: MIX THE SPECIFIED MATERIALS ON-SITE IN THE FOLLOWING PROPORTIONS:

3 PARTS TOPSOIL AS SPECIFIED ABOVE, 1 PART PEAT MOSS, 1 PART SAND. IF PLANTS ARE INSTALLED IN SPRING, ADD 5 POUNDS OF SUPERPHOSPHATE/CUBIC YARD OF MIXTURE. ALL AMENDMENTS SHALL BE THOROUGHLY INCORPORATED INTO MIXTURE TO ASSURE UNIFORM DISTRIBUTION. PLANTING MIX SHALL BE USED TO BACKFILL ALL TREE PLANTING HOLES, AS INDICATED IN THE PLANTING DETAIL.

PERMANENT SEED MIX NOTES

TURF GRASS AREAS: TURFSEED ALL TURFGRASS LAWN AREAS WITH A DROUGHT TOLERANT, HIGH-FESCUE TURFGRASS SEED MIX SUCH AS PEARL'S PREMIUM GRASS SEED BY PEARL'S PREMIUM, WATLAND, MA; ENVIROTURF BY BLUESTEM NURSERY, LAURIER, WA; ECO-LAWN BY WILDFLOWER FARM, COLDWATER, ONT. CAN; OR APPROVED EQUAL. APPLIED AT SEED PRODUCER'S RECOMMENDED RATE. SEEDING SHALL BE DONE EITHER BETWEEN APRIL 1 AND JUNE 15, OR BETWEEN AUGUST 15 AND SEPTEMBER 30.

MEADOW MIX AREA: SEED OVER STORMWATER DETENTION AREA WITH "NEW ENGLAND NATIVE WARM SEASON GRASS MIX" BY NEW ENGLAND WETLAND PLANTS, AMHERST, MA, OR APPROVED EQUAL, PER MANUFACTURER'S RECOMMENDATIONS. WARM SEASON SEEDING PROGRAM WILL LIKELY TAKE 2-3 GROWING SEASONS UNTIL GOOD GROWTH IS ESTABLISHED.

MULCH ALL SEEDED AREAS WITH 500-700 LBS. OF SALTMARSH HAY OR WEED-FREE STRAW PER ACRE. SPREAD EVENLY. ALL SLOPES OF 3:1 OR GREATER, AFTER BEING LOAMED, SEEDING, AND MULCHED, SHALL BE COVERED WITH JUTE OR BIODEGRADABLE TOBACCO NETTING SECURELY ANCHORED TO THE SLOPE. OVERLAP A NETTING JOINTS A MINIMUM OF 4" AND SECURE WITH A DOUBLE ROW OF STAPLES.*

MAINTENANCE OF SEED AREAS SHALL CONSIST OF WATERING, WEEDING, CURING, REPAIR OF ALL EROSION, AND RESEEDING AS NECESSARY TO ESTABLISH A UNIFORM STAND OF GRASS. LAWNS SHALL BE WATERED IN A SATISFACTORY MANNER DURING AND IMMEDIATELY AFTER PLANTING, AND NOT LESS THAN TWICE PER WEEK UNTIL FINAL ACCEPTANCE. ALL AREAS WHICH FAIL TO SHOW A UNIFORM STAND OF GRASS FOR ANY REASON SHALL BE RESEEDED REPEATEDLY UNTIL A UNIFORM STAND IS ATTAINED.

HYDROSEEDING IS AN ACCEPTABLE ALTERNATE METHOD OF SEEDING, IF UNDERTAKEN IN ACCORDANCE WITH THE FOLLOWING SPECIFICATIONS:

MATERIALS FOR HYDROSEEDING SHALL INCLUDE TACKIFIER, WOOD CELLULOSE FIBER MULCH, FERTILIZER, GROUND LIMESTONE AND WATER.

PROVIDE JUTE MATTING OR BIODEGRADABLE TOBACCO NETTING ON ALL SLOPES EQUAL TO OR GREATER THAN 3:1. JUTE MATTING SHALL BE C-JUTE BY CONTECH CONSTRUCTION PRODUCTS, INC. GEOTEX BY BELTON INDUSTRIES OR APPROVED EQUAL.*

IF PROJECT SCHEDULE REQUIRES SEEDING TO BE PERFORMED AFTER OCTOBER 15 UNTIL MARCH 31, THE FOLLOWING IS REQUIRED: AFTER HYDROSEEDING/SEEDING, THOSE VEGETATED AREAS WHICH HAVE A SLOPE EQUAL TO OR STEEPER THAN 4:1 SHALL BE COVERED WITH JUTE MATTING AND STAPLED IN PLACE PER MANUFACTURER'S REQUIREMENTS. PRECAUTIONS SHALL BE TAKEN TO MINIMIZE DISTURBANCE OF THE HYDROSEED/SEED WHEN INSTALLING THE JUTE.*

HYDROSEEDING/ SEEDING MIXTURE:

TACKIFIER:
APPLY AT A RATE OF 60 GALLONS PER ACRE.

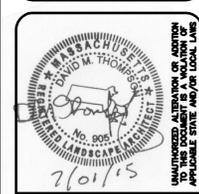
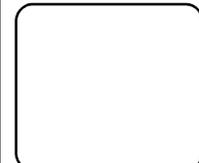
WOOD CELLULOSE FIBER MULCH:
APPLY AT A RATE OF 2,000 POUNDS PER ACRE.

APPLY FERTILIZER AND LIMESTONE AT RATES DETERMINED BY SOIL ANALYSIS

*STRAW MULCH AND NETTING ON SLOPES 3:1 OR GREATER IS NOT REQUIRED ON HYDROSEEDING OPERATIONS IF SLOPES ARE SPRAYED WITH A BONDED FIBER MATRIX MULCH, SUCH AS FLEXITERRA BY PROFILE PRODUCTS, LLC, OR HYDROSTRAW BFM BY HYDROSTATION, INC., INSTALLED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.



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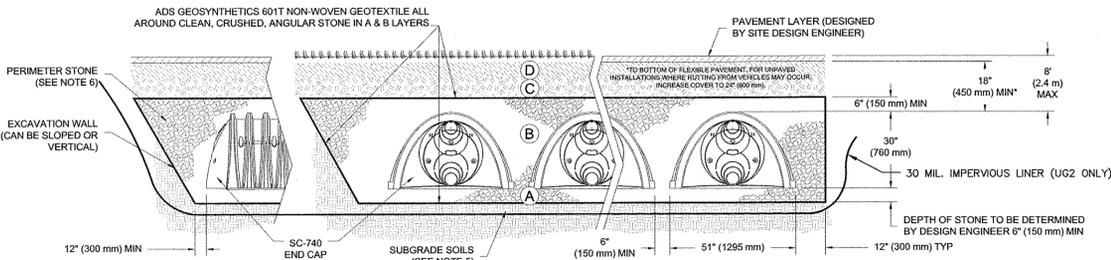
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135 GREAT PLAIN AVENUE
 WELLESLEY, MASSACHUSETTS
 LANDSCAPE PLAN
 Issue Date: 07/01/15
 Project No.: 29219
 Scale: AS NOTED

ACCEPTABLE FILL MATERIALS: STORMTECH SC-740 CHAMBER SYSTEMS

MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	FINAL FILL: FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	INITIAL FILL: FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 18" (450 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	AASHTO M145 ¹ A-1, A-2.4, A-3 OR AASHTO M43 ¹ 3, 357, 4, 467, 5, 56, 57, 4, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 12" (300 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" (150 mm) MAX LIFTS TO A MIN. 95% PROCTOR DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs (53 kN). DYNAMIC FORCE NOT TO EXCEED 20,000 lbs (89 kN).
B	EMBEDMENT STONE: FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	AASHTO M43 ¹ 3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
A	FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	AASHTO M43 ¹ 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE. ^{2,3}

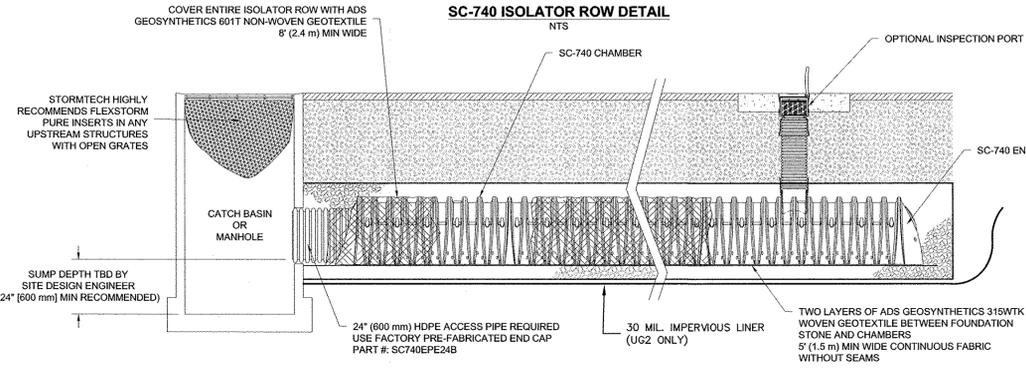
- PLEASE NOTE:
- THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE"
 - STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 mm) MAX LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
 - WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.



NOTES:

- SC-740 CHAMBERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F2418 "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS", OR ASTM F2922 "STANDARD SPECIFICATION FOR POLYETHYLENE (PE) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- SC-740 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
- "ACCEPTABLE FILL MATERIALS" TABLE ABOVE PROVIDES MATERIAL LOCATIONS, DESCRIPTIONS, GRADATIONS, AND COMPACTION REQUIREMENTS FOR FOUNDATION, EMBEDMENT, AND FILL MATERIALS.
- THE "SITE DESIGN ENGINEER" REFERS TO THE ENGINEER RESPONSIBLE FOR THE DESIGN AND LAYOUT OF THIS PROJECT.
- THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
- PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
- ONCE LAYER 'C' IS PLACED, ANY SOIL MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.

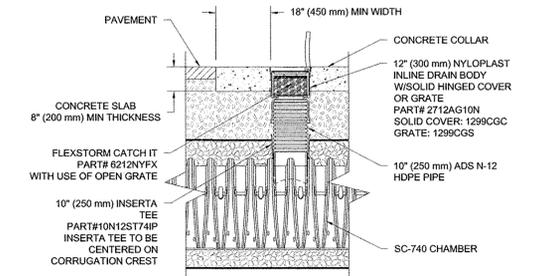
SC-740 ISOLATOR ROW DETAIL



INSPECTION & MAINTENANCE

- STEP 1) INSPECT ISOLATOR ROW FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
- REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
 - REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
 - USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
 - LOWER A CAMERA INTO ISOLATOR ROW FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
 - IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR ROWS
- REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW
 - USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW THROUGH OUTLET PIPE
 - MIRRORS OR POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
 - FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
 - IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- STEP 2) CLEAN OUT ISOLATOR ROW USING THE JETVAC PROCESS
- A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45° (1.1 m) OR MORE IS PREFERRED
 - APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
 - VACUUM STRUCTURE SUMP AS REQUIRED
- STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.
- STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

SC-740 INSPECTION PORT DETAIL



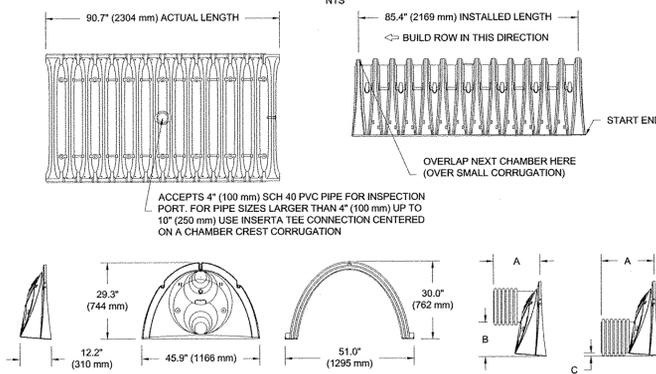
NOTES

- INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
- CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

1 STORMTECH SC-740 CHAMBER UNIT SYSTEM

SCALE: NO SCALE

SC-740 TECHNICAL SPECIFICATION



NOMINAL CHAMBER SPECIFICATIONS	51.0" X 30.0" X 85.4"	(1295 mm X 762 mm X 2169 mm)
SIZE (W X H X INSTALLED LENGTH)	45.9 CUBIC FEET (1.30 m ³)	
CHAMBER STORAGE	74.9 CUBIC FEET (2.12 m ³)	
MINIMUM INSTALLED STORAGE*	75.0 lbs. (33.6 kg)	
WEIGHT		

*ASSUMES 6" (152 mm) STONE ABOVE, BELOW, AND BETWEEN CHAMBERS

STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"

PART #	STUB	A	B	C
SC740EPE06T / SC740EPE06TPC	6" (150 mm)	10.9" (277 mm)	18.5" (470 mm)	---
SC740EPE08B / SC740EPE08BPC	8" (200 mm)	12.2" (310 mm)	16.5" (419 mm)	0.5" (13 mm)
SC740EPE08T / SC740EPE08TPC	8" (200 mm)	12.2" (310 mm)	14.5" (368 mm)	0.6" (15 mm)
SC740EPE10B / SC740EPE10BPC	10" (250 mm)	13.4" (340 mm)	12.5" (318 mm)	0.7" (18 mm)
SC740EPE10T / SC740EPE10TPC	10" (250 mm)	14.7" (373 mm)	12.5" (318 mm)	1.2" (30 mm)
SC740EPE12B / SC740EPE12BPC	12" (300 mm)	14.7" (373 mm)	9.0" (229 mm)	---
SC740EPE12T / SC740EPE12TPC	12" (300 mm)	14.7" (373 mm)	1.3" (33 mm)	---
SC740EPE15B / SC740EPE15BPC	15" (375 mm)	18.4" (467 mm)	5.0" (127 mm)	---
SC740EPE15T / SC740EPE15TPC	15" (375 mm)	18.4" (467 mm)	---	1.6" (41 mm)
SC740EPE18B / SC740EPE18BPC	18" (450 mm)	19.7" (500 mm)	---	0.1" (3 mm)
SC740EPE18T / SC740EPE18TPC	18" (450 mm)	19.7" (500 mm)	---	---
SC740EPE24B*	24" (600 mm)	18.5" (470 mm)	---	---

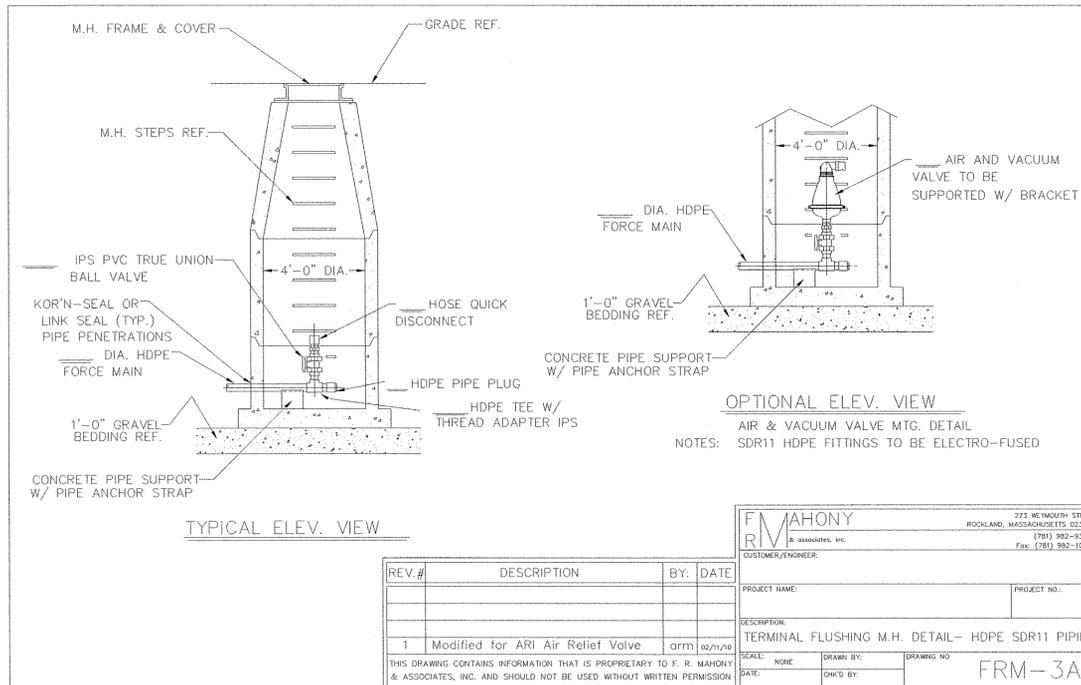
ALL STUBS, EXCEPT FOR THE SC740EPE24B ARE PLACED AT BOTTOM OF END CAP SUCH THAT THE OUTSIDE DIAMETER OF THE STUB IS FLUSH WITH THE BOTTOM OF THE END CAP. FOR ADDITIONAL INFORMATION CONTACT STORMTECH AT 1-888-892-2694.

* FOR THE SC740EPE24B THE 24" (600 mm) STUB LIES BELOW THE BOTTOM OF THE END CAP APPROXIMATELY 1.75" (44 mm). BACKFILL MATERIAL SHOULD BE REMOVED FROM BELOW THE N-12 STUBS SO THAT THE FITTING SITS LEVEL.

NOTE: ALL DIMENSIONS ARE NOMINAL

2 TERMINAL FLUSHING MANHOLE DETAIL

SCALE: NO SCALE



REV.#	DESCRIPTION	BY:	DATE
1	Modified for ARI Air Relief Valve	orm	02/11/16

FRMAHONY
373 WENMOUTH STREET
ROSLAND, MASSACHUSETTS 02070
(781) 982-9300
Fax: (781) 982-1056

CUSTOMER/ENGINEER:

PROJECT NO.:

DATE: NONE DRAWN BY: DATE: NONE

DATE: NONE CHK'D BY: DATE: NONE

DRAWING NO. **FRM-3A**

I CERTIFY THAT THIS PLAN CONFORMS TO THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS.

DATE: _____

SUBDIVISION PLAN OF LAND IN WELLESLEY, MASSACHUSETTS	
APPROVED BY WELLESLEY PLANNING BOARD	preliminary application filed
	definitive application filed
	definitive plan filed
	public hearing date
	area regulation district
	project number
	PB number

Date	By:	App'd:	HD
07/01/15			

Submittal / Revision	DATE
DEFINITIVE SUBDIVISION SUBMITTAL	

Northland Residential Corporation

GABRIEL R. CROCKER
CIVIL ENGINEER
No. 47917
REGISTERED PROFESSIONAL ENGINEER

MAINTAINED THROUGH OR ACTION OF THE BOARD OF REGISTRATION TO THE DOCUMENT IS A VIOLATION OF APPLICABLE STATE AND/or LOCAL LAW

7-1-2015

CHA

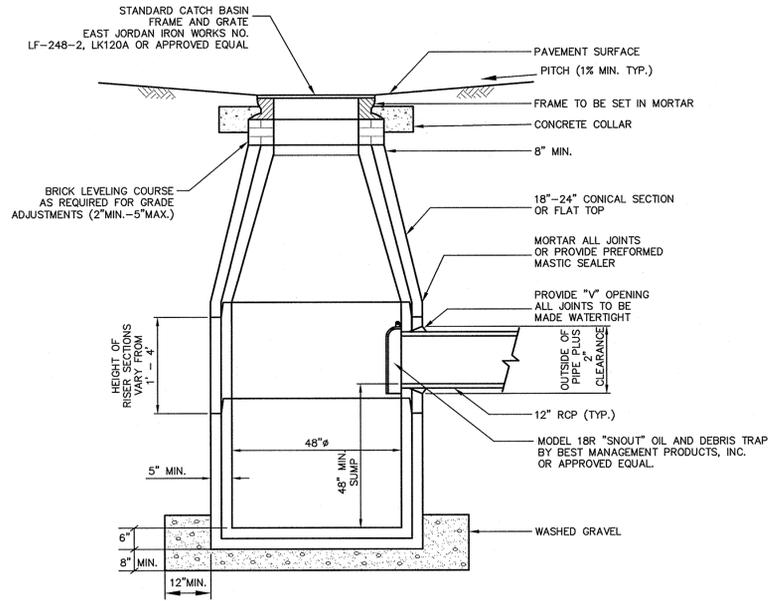
101 Accord Park Drive
Wellesley, MA 02158
Main: (781) 982-5400 • www.chacompanies.com

Designed: JPM Drawn: JPM Checked: SK

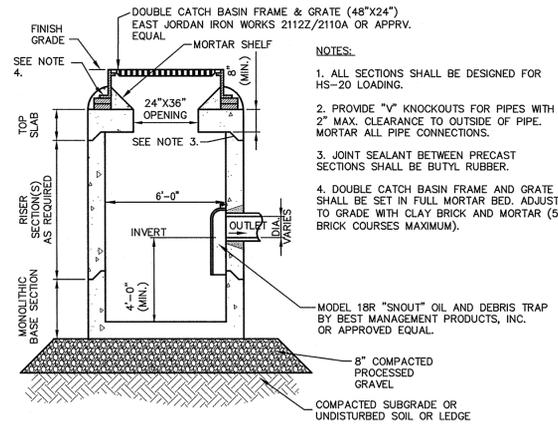
135 GREAT PLAIN AVENUE
WELLESLEY, MASSACHUSETTS

DETAILS

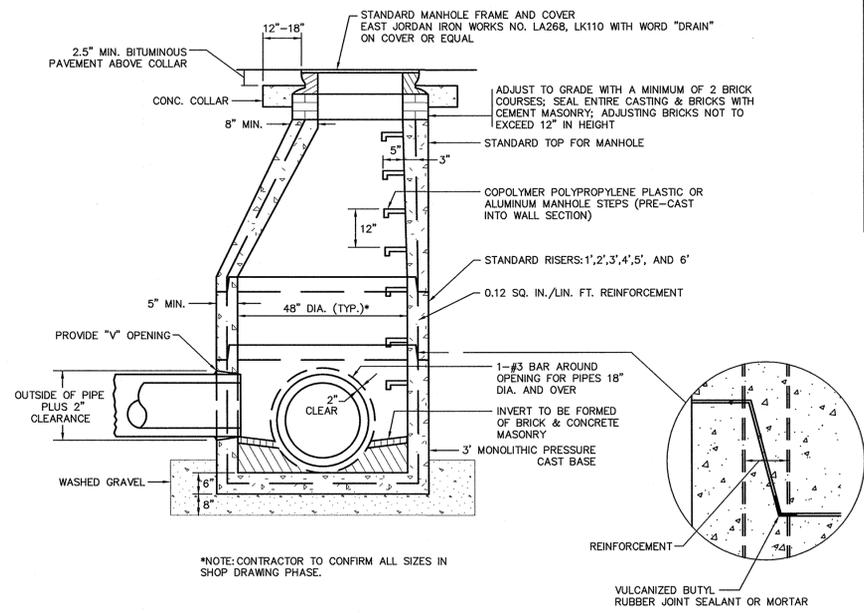
Project No.: 29219
Scale: AS NOTED
Issue Date: 07/01/15



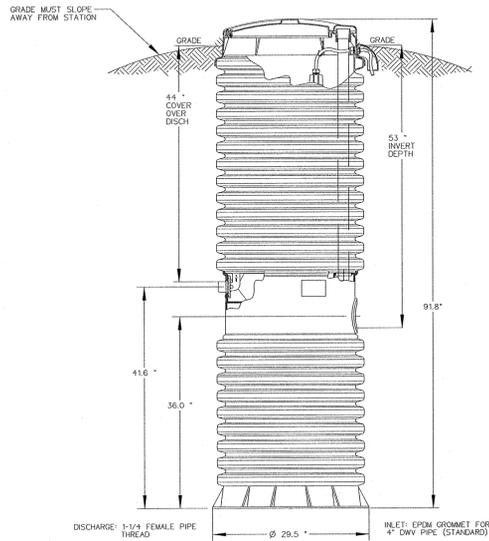
1 PRECAST CONCRETE SINGLE GRATE CATCH BASIN (MASS.)
SCALE: NO SCALE



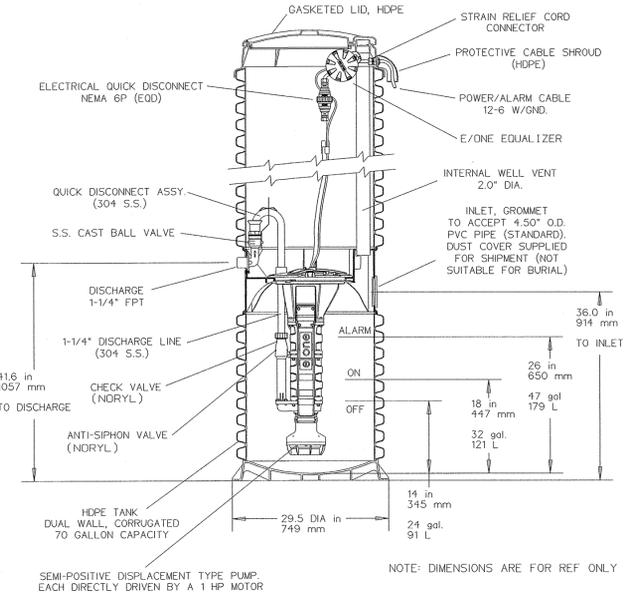
2 DOUBLE GRATE CATCH BASIN
SCALE: NO SCALE



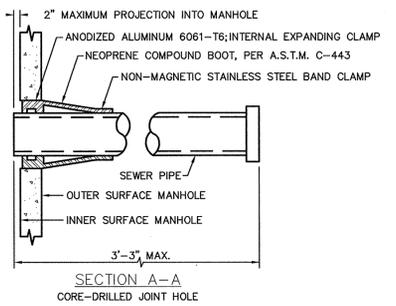
3 STANDARD PRE-CAST DRAIN MANHOLE
SCALE: NO SCALE



4 EONE LOW PRESSURE GRINDER PUMP
SCALE: NO SCALE



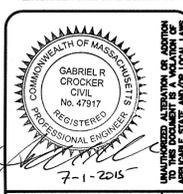
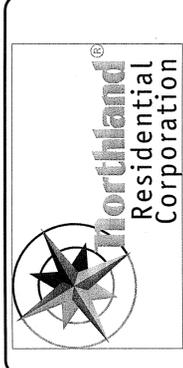
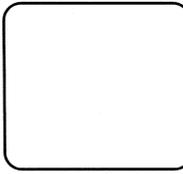
5 STANDARD PRE-CAST SEWER MANHOLE
SCALE: NO SCALE



I CERTIFY THAT THIS PLAN CONFORMS TO THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS.

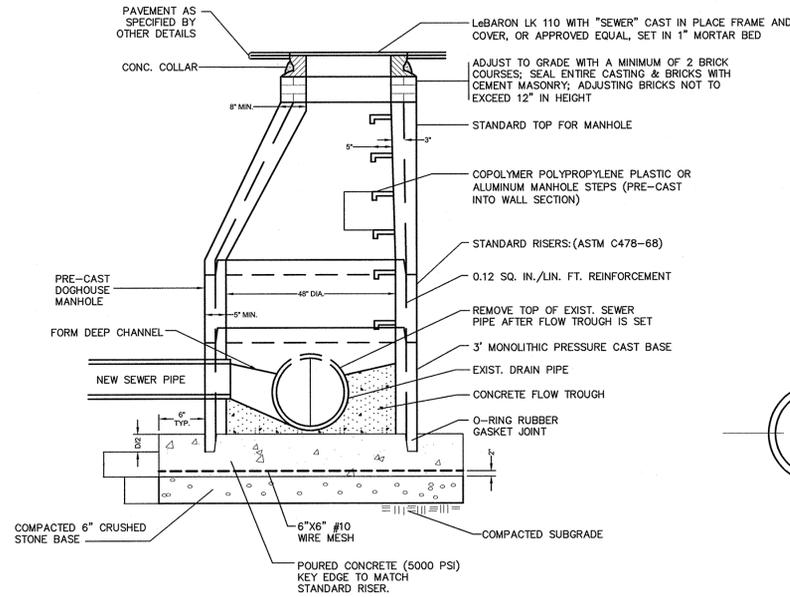
SUBDIVISION PLAN OF LAND IN WELLESLEY, MASSACHUSETTS	
APPROVED BY WELLESLEY PLANNING BOARD	preliminary application filed
	definitive application filed
	definitive plan filed
	public hearing date
	area regulation district
	project number
	PB number

No.	Submitted / Revision	App'd	By	Date
0	DEFINITIVE SUBDIVISION SUBMITTAL	GRC	HD	07/01/15

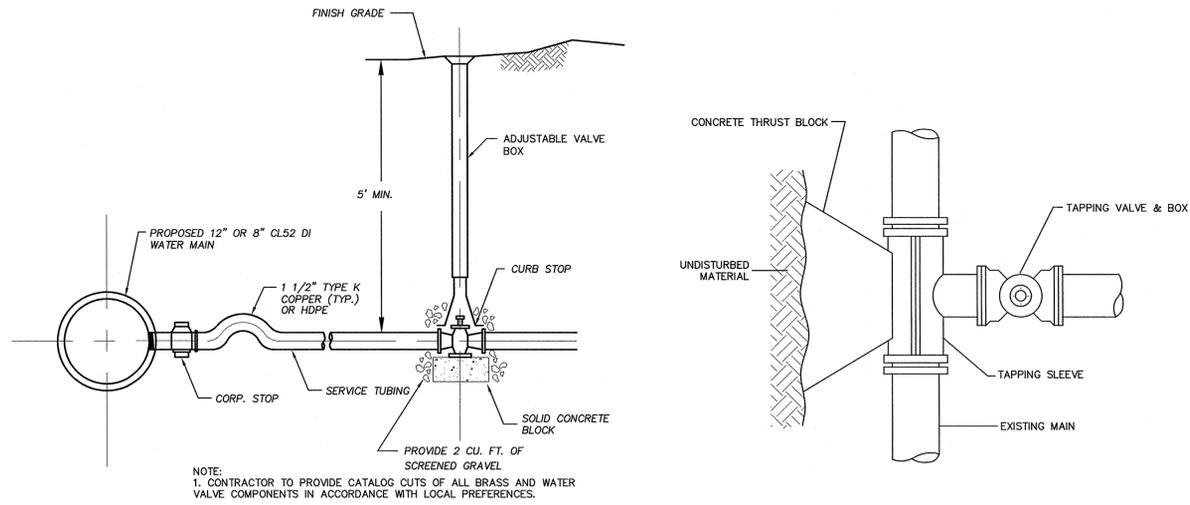


135 GREAT PLAIN AVENUE WELLESLEY, MASSACHUSETTS	DETAILS
Issue Date: 07/01/15	Project No.: 29219
Scale: AS NOTED	Checked: SK
	Drawn: JPM

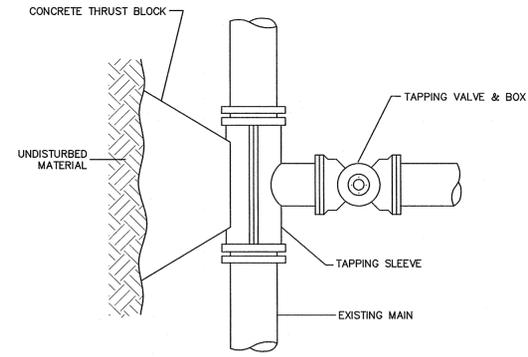
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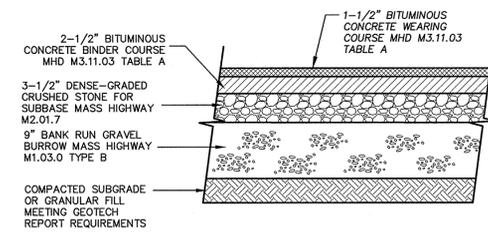
1 "DOGHOUSE" SEWER MANHOLE W/CAST IN PLACE BASE
SCALE: NO SCALE



2 WATER SERVICE CONNECTION
SCALE: NO SCALE

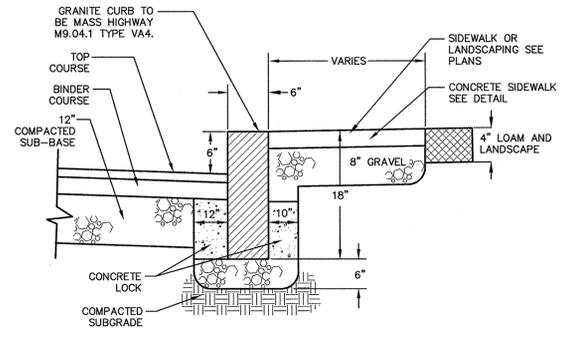


3 TAPPING SLEEVE & VALVE DETAIL
SCALE: NO SCALE



NOTE:
1. COMPACTED LIFTS NOT TO EXCEED 8 INCHES BETWEEN COURSES.
2. CONTRACTOR TO PROOF ROLL SUBGRADE PRIOR TO GRAVEL PLACEMENT.
3. CONTRACTOR TO CONFIRM PAVEMENT SECTION WITH GEOTECH REPORT PRIOR TO CONSTRUCTION.

6 STANDARD DUTY BITUMINOUS PAVEMENT SECTION (PRIVATE ROADWAY)
SCALE: NO SCALE



NOTE:
EXISTING SOIL OR ORDINARY FILL COMPACT GRAVEL AND FILL BEHIND CURB TO 95% DRY DENSITY

7 VERTICAL GRANITE CURB
SCALE: NO SCALE

TYPE A BLOCKING FOR 11 1/4" & 22 1/2" VERT BENDS

PIPE SIZE NOM DIA (INCHES)	VERTICAL BEND DEGREES	NO. OF CU FT OF CONC BLOCKING	SIDE OF CURB (FEET)	DIA OF SHAKKLE RODS (INCHES)	DEPTH OF RODS IN CONC (FEET)
4"	11 1/4"	8	2.0	3/4"	1.6
	22 1/2"	16	2.5	3/4"	1.6
6"	11 1/4"	16	2.5	3/4"	1.6
	22 1/2"	32	3.2	3/4"	1.6
8"	11 1/4"	28	3.0	3/4"	1.6
	22 1/2"	55	3.8	3/4"	1.6
10"	11 1/4"	42	3.5	3/4"	1.6
	22 1/2"	83	4.4	3/4"	1.6
12"	11 1/4"	60	3.9	3/4"	1.6
	22 1/2"	118	4.9	7/8"	2.2
16"	11 1/4"	104	4.7	7/8"	2.2
	22 1/2"	205	5.9	1 1/8"	3.7

THRUST BLOCK NOTES

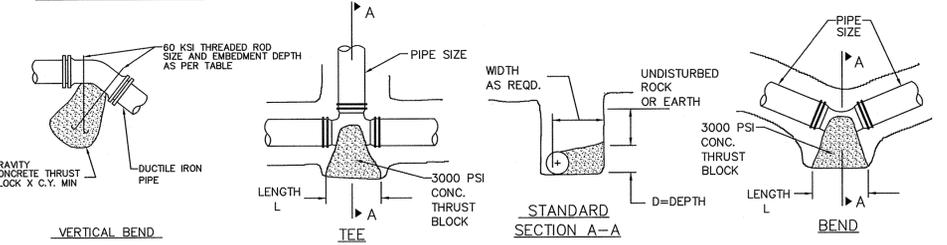
- FOR REQUIRED BEARING AREA DIMENSIONS D & L SEE TABLE. DIMENSIONS OF D & L OTHER THAN THOSE SHOWN IN THE TABLE MAY BE USED PROVIDED THEY YIELD A BEARING AREA EQUAL TO OR LARGER THAN THAT REQUIRED.
- CONCRETE NOT TO OVERLAP ANY JOINT.
- CONCRETE TO BE PLACED SO AS NOT TO INTERFERE WITH REMOVING OR INSTALLING ANY OF THE JOINTING HARDWARE.
- APPROXIMATE VOLUME OF CONCRETE THRUST BLOCK:
 $V = \frac{LD(W+ID) - ID^2}{81}$
WHERE:
V = VOLUME IN CUBIC YARDS
L = LENGTH OF BLOCK IN FEET
D = DEPTH OF BLOCK IN FEET
W = WIDTH OF BLOCK IN FEET
ID = INSIDE DIAMETER OF PIPE IN FEET
- VALUES FOR TEE ALSO APPLY TO END PLUGS, CAPS, AND TAPPING SLEEVES.
- REQUIRED BEARING AREAS ARE DUE TO THRUSTS CAUSED BY 150 PSI WORKING PRESSURE PLUS 50% (75 PSI) SURGE ALLOWANCE RESULTING IN 225 PSI TOTAL INTERNAL PRESSURE. NORMAL PIPE DIAMETER USED.
- REQUIRED BEARING AREAS ARE BASED ON ALLOWABLE SOIL BEARING CAPACITY OF 2000 LBS. PER SQUARE FOOT FOR SAND. DUE TO OTHER SOIL CONDITIONS ENCOUNTERED, BEARING AREAS MAY BE MODIFIED BY THE ENGINEER.
- IN MUCK, PEAT, OR RECENTLY PLACED FILL ALL THRUST SHALL BE RESISTED BY PILES OR THE RODS TO SOLID FOUNDATIONS, OR BY REMOVAL OF SUCH UNSTABLE MATERIAL AND REPLACEMENT WITH BALLAST OF SUFFICIENT STABILITY TO RESIST THE THRUSTS, ALL AS REQUIRED BY THE ENGINEER.

REQUIRED BEARING AREAS & DIMENSIONS FOR CONCRETE THRUST BLOCKS

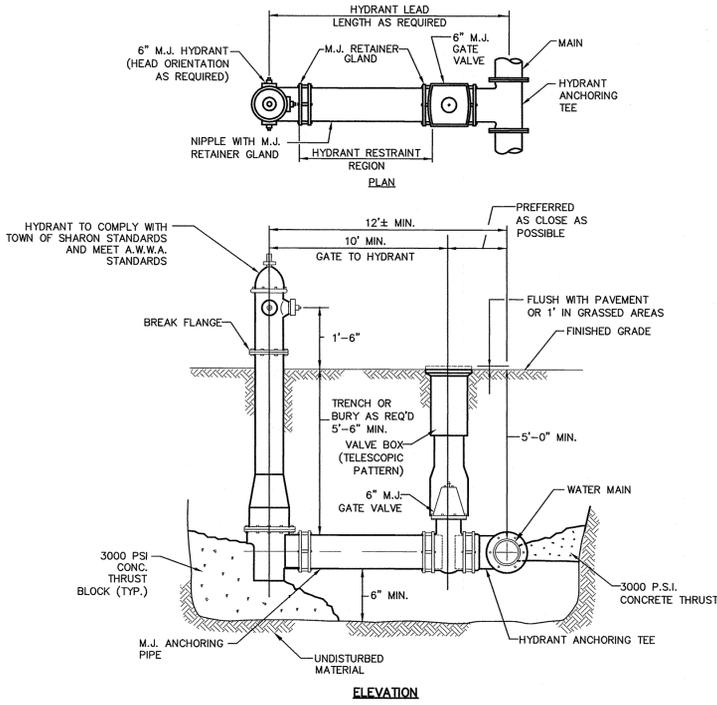
PIPE SIZE (IN.)	TEE (See Note 5) AREA Sq.Ft.	90°(1/4)BEND		45°(1/8)BEND		22-1/2°(1/16)BEND		11-1/4°(1/32)BEND		
		AREA Sq.Ft.	Dimen. D x L	AREA Sq.Ft.	Dimen. D x L	AREA Sq.Ft.	Dimen. D x L	AREA Sq.Ft.	Dimen. D x L	
3 & 4	1.4	1.0 x 1.5	2.0	1.0 x 2.0	1.1	1.0 x 1.5	0.6	0.5 x 1.5	0.3	0.5 x 1.0
6	3.2	1.5 x 2.5	4.5	2.0 x 2.5	2.4	1.5 x 2.0	1.2	1.0 x 1.5	0.6	1.5 x 1.5
8	5.7	2.0 x 3.0	8.0	2.0 x 4.0	4.3	2.0 x 2.5	2.2	1.5 x 1.5	1.1	1.0 x 1.5
12	12.7	3.5 x 3.5	18.0	4.0 x 4.5	9.7	2.5 x 4.0	5.0	2.0 x 2.5	2.5	1.5 x 2.0
16	50.0	6.0 x 8.5	50.0	6.0 x 8.5	27.0	5.0 x 5.5	13.8	3.5 x 4.0	6.9	2.5 x 3.0

TYPE B BLOCKING FOR 45° VERTICAL BENDS

PIPE SIZE NOM DIA (INCHES)	NO. OF CU FT OF CONC BLOCKING	SIDE OF CURB (FEET)	DIA OF SHAKKLE RODS (INCHES)	DEPTH OF RODS IN CONC (FEET)
4"	29	3.1	3/4"	1.6
6"	59	3.9	3/4"	1.6
8"	102	4.7	3/4"	1.6
10"	154	5.4	3/4"	1.6
12"	218	6.0	3/4"	1.6
16"	378	7.2	1 1/8"	3.7



4 THRUST BLOCK DETAILS
SCALE: NO SCALE



NOTE:
1. HYDRANT TO BE INSTALLED WITHIN RIGHT-OF-WAY OR AS SHOWN ON THE PLANS.
2. ALL MATERIALS AND INSTALLATION TO CONFORM WITH TOWN OF SHARON SPECIFICATIONS.

5 HYDRANT AND VALVE ASSEMBLY INSTALLATION DETAIL
SCALE: NO SCALE

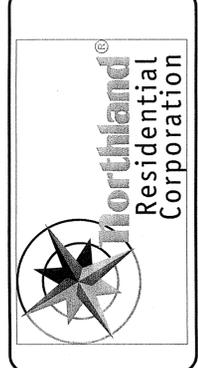
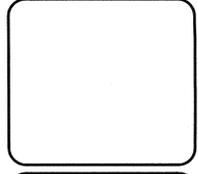
SUBDIVISION PLAN OF LAND IN WELLESLEY, MASSACHUSETTS

APPROVED BY WELLESLEY PLANNING BOARD	preliminary application filed
	definitive application filed
	definitive plan filed
	public hearing date
	area regulation district
	project number
	PB number

DATE: _____

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Date	07/01/15
By	HD
App'd	GRC
Submitted / Revision	DEFINITIVE SUBDIVISION SUBMITTAL
No.	0

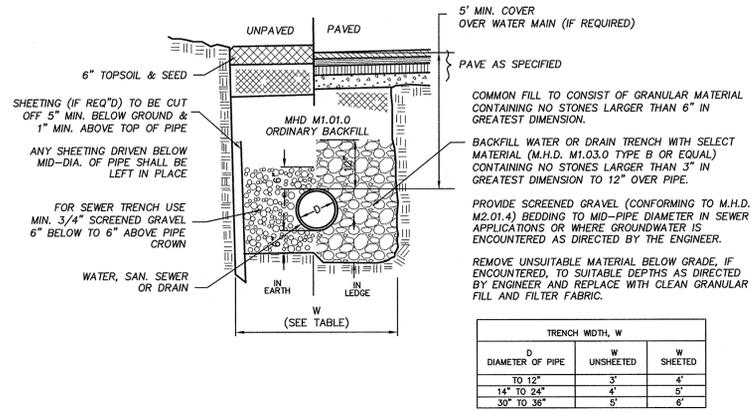


CHA
101 Accord Park Drive
Norwell, MA 02061
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Designed: CHA Drawn: JPM Checked: SK
Scale: AS NOTED
Project No.: 29219
Issue Date: 07/01/15

135 GREAT PLAIN AVENUE WELLESLEY, MASSACHUSETTS

DETAILS

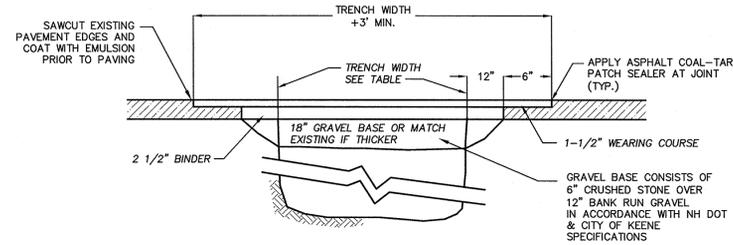


TRENCH WIDTH, W		
D DIAMETER OF PIPE	W UNSHEETED	W SHEETED
TO 12"	3'	4'
14" TO 24"	4'	5'
30" TO 36"	5'	6'

NOTES:

- ALL TRENCH CONSTRUCTION TO CONFORM TO APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS.
- COMPACT FILL AND TAMP PIPE TO 95% MAX. DRY DENSITY IN 8" LIFTS UNLESS OTHERWISE SPECIFIED.
- INSTALL DUCTILE IRON WATER PIPE IN ACCORDANCE WITH ANSI A21.51 (AWWA C151) LAYING CONDITION TYPE 2. BACKFILL TO CONFORM TO MHD M1.03.0 GRAVEL BURROW TYPE c TO 12" ABOVE PIPE CROWN OR AS DIRECTED BY MANUFACTURER OR ENGINEER.
- MATERIALS FOR SEWER BEDDING, HAUNCHING, AND BACKFILL TO CONFORM TO CLASSES I, II, OR III AS DESCRIBED IN ASTM D 2321 AND TR-16 GUIDES FOR THE DESIGN OF WASTEWATER TREATMENT WORKS.

1 TYPICAL TRENCH SECTION
SCALE: NO SCALE

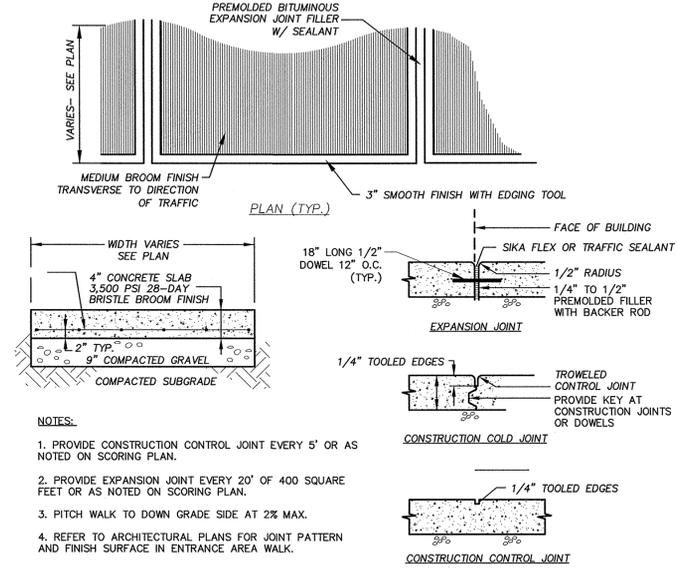


TRENCH WIDTH, W		
D DIAMETER OF PIPE	W UNSHEETED	W SHEETED
TO 12"	3'	4'
14" TO 24"	4'	5'
30" TO 36"	5'	6'

NOTES:

- CONTRACTOR TO PROVIDE PAVEMENT PATCH TO MEET CITY OF WELLESLEY SPECIFICATIONS.
- PAVEMENT TO BE MINIMUM 3" HOT MIX OR GREATER TO MATCH EXISTING.

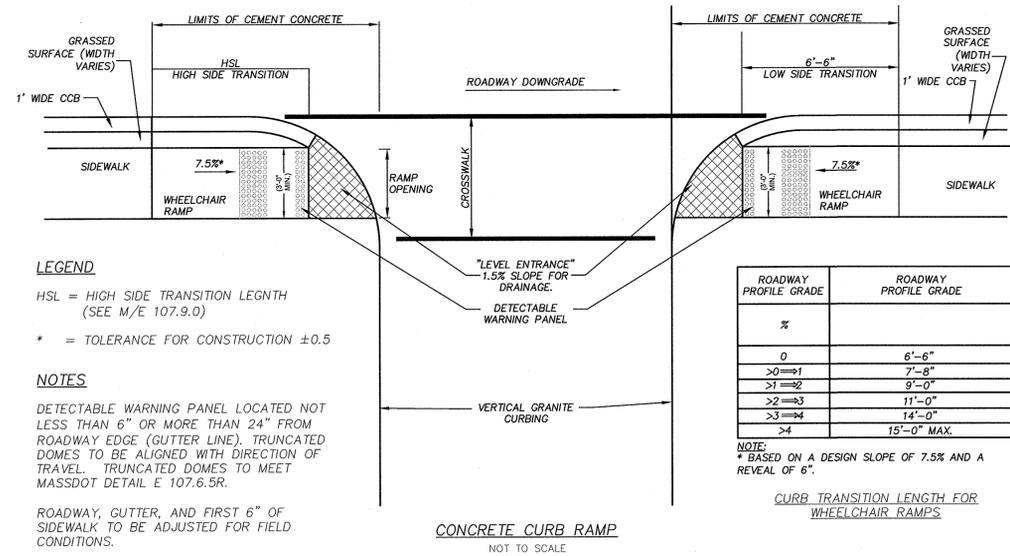
2 PAVEMENT PATCH DETAIL FOR TRENCH SECTIONS
SCALE: NO SCALE



NOTES:

- PROVIDE CONSTRUCTION CONTROL JOINT EVERY 5' OR AS NOTED ON SCORING PLAN.
- PROVIDE EXPANSION JOINT EVERY 20' OF 400 SQUARE FEET OR AS NOTED ON SCORING PLAN.
- PITCH WALK TO DOWN GRADE SIDE AT 2% MAX.
- REFER TO ARCHITECTURAL PLANS FOR JOINT PATTERN AND FINISH SURFACE IN ENTRANCE AREA WALK.

3 CONCRETE SIDEWALK
SCALE: NO SCALE



LEGEND

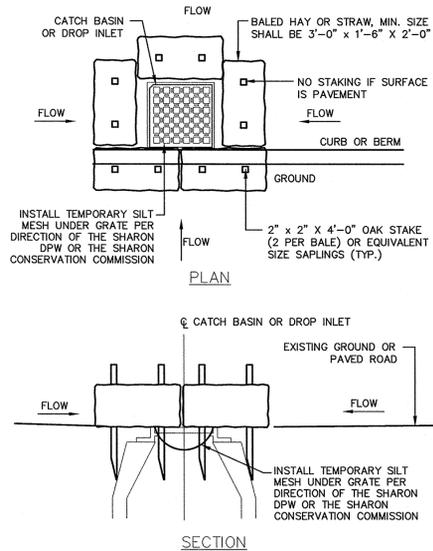
HSL = HIGH SIDE TRANSITION LENGTH (SEE M/E 107.9.0)
* = TOLERANCE FOR CONSTRUCTION ±0.5

NOTES

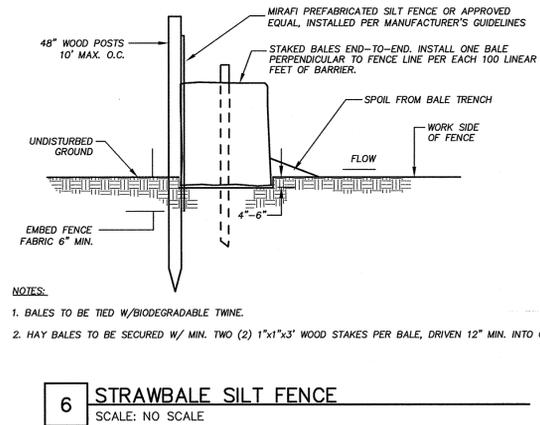
DETECTABLE WARNING PANEL LOCATED NOT LESS THAN 6" OR MORE THAN 24" FROM ROADWAY EDGE (GUTTER LINE). TRUNCATED DOMES TO BE ALIGNED WITH DIRECTION OF TRAVEL. TRUNCATED DOMES TO MEET MASSDOT DETAIL E 107.6.5R.

ROADWAY, GUTTER, AND FIRST 6" OF SIDEWALK TO BE ADJUSTED FOR FIELD CONDITIONS.

4 CONCRETE CURB RAMP
SCALE: NO SCALE



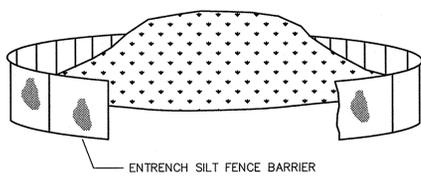
5 DRAIN INLET PROTECTION
SCALE: NO SCALE



6 STRAWBALE SILT FENCE
SCALE: NO SCALE

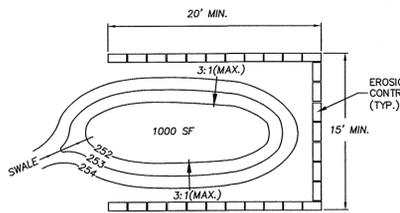
NOTES:

- BALES TO BE TIED W/BIODEGRADABLE TWINE.
- HAY BALES TO BE SECURED W/ MIN. TWO (2) 1"x1"x3" WOOD STAKES PER BALE, DRIVEN 12" MIN. INTO GRADE.



NOTE:
STABILIZE STOCKPILE WITH ANNUAL RYEGRASS, MULCH OR EROSION CONTROL BLANKETS.

7 SOIL STOCKPILE
SCALE: NO SCALE



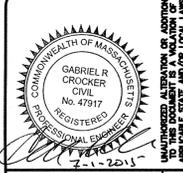
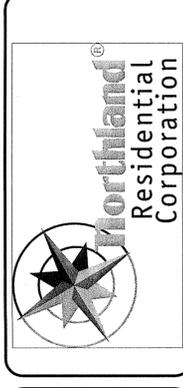
8 TEMPORARY SEDIMENTATION BASIN
SCALE: NO SCALE

- SEDIMENT BASINS AND TRAPS SHALL BE SIZED IN ACCORDANCE WITH EPA GUIDELINES.
- SEDIMENT TRAPS ARE UTILIZED FOR DRAINAGE AREAS SMALLER THAN 5 ACRES. THE SEDIMENT TRAP SHOULD HAVE A MINIMUM VOLUME BASED ON 1/2 INCH OF STORAGE FOR EACH ACRE OF DRAINAGE AREA. THIS VOLUME EQUATES TO 1800 CUBIC FEET OF STORAGE OR 67 CUBIC YARDS FOR EACH ACRE OF DRAINAGE AREA.
- SEDIMENT BASIN ARE UTILIZED FOR DRAINAGE AREAS FROM 5 TO 100 ACRES. THE TEMPORARY SEDIMENT BASIN SHOULD HAVE A MINIMUM VOLUME OF 3,600 CUBIC FEET FOR EACH ACRE OF DRAINAGE AREA.
- LOCATION DICTATED BY SEQUENCE OF CONSTRUCTION. CONTRACTOR TO PROVIDE WHERE NECESSARY TO FILTER RUNOFF FROM CONSTRUCTION AREAS PRIOR TO DISCHARGE.

SUBDIVISION PLAN OF LAND IN WELLESLEY, MASSACHUSETTS	
APPROVED BY WELLESLEY PLANNING BOARD	preliminary application filed
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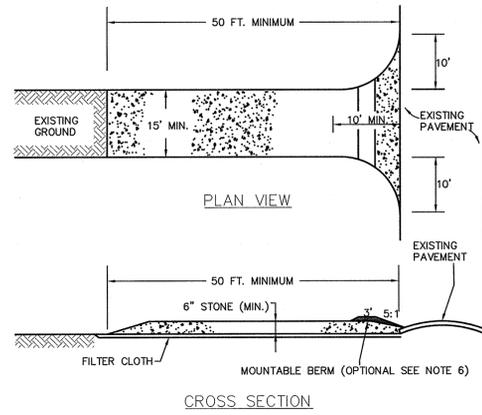
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No.	Submittal / Revision
0	DEFINITIVE SUBDIVISION SUBMITTAL



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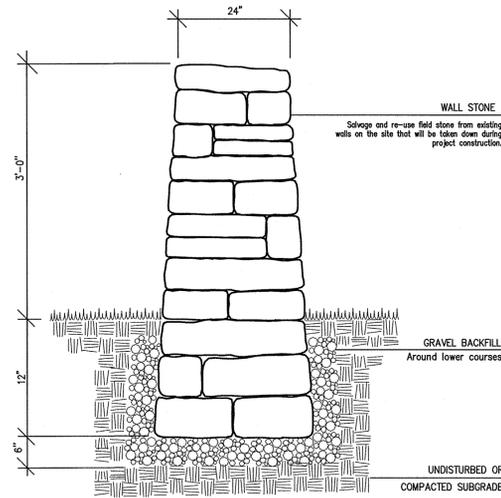
**135 GREAT PLAIN AVENUE
WELLESLEY, MASSACHUSETTS**
DETAILS
Issue Date: 07/01/15 | Project No.: 29219 | Scale: AS NOTED



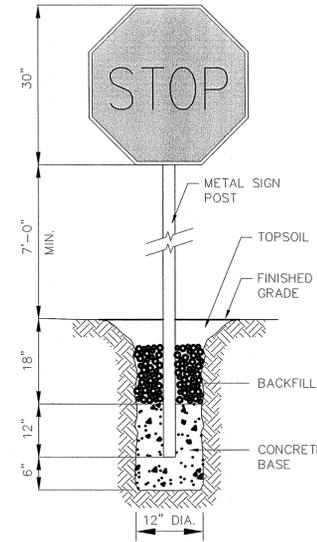
CONSTRUCTION SPECIFICATIONS:

- STONE SIZE—USE 2" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
- LENGTH—RECOMMEND GREATER THAN OR EQUAL TO 50 FEET WHERE SOILS ARE SANDS AND GRAVELS AND 100 FEET IN SILTS AND CLAYS.
- THICKNESS—NOT LESS THAN SIX (6) INCHES.
- WIDTH—FIFTEEN (15) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OF EGRESS OCCURS.
- FILTER CLOTH—SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
- SURFACE WATER—ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM SHALL BE INSTALLED.
- MAINTENANCE—THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH SHALL PREVENT TRACKING OF FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
- PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED.

1 STABILIZED CONSTRUCTION ENTRANCE
SCALE: NO SCALE

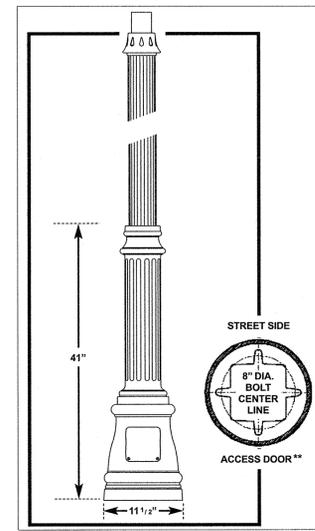


2 FIELD STONE WALL DETAIL
SCALE: NO SCALE

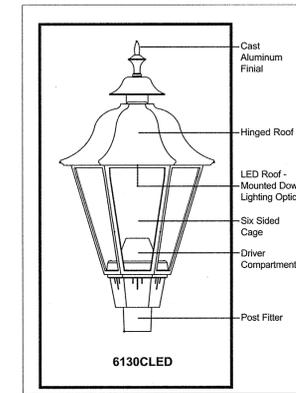


NOTE:
1. PROVIDE SIGN IN ACCORDANCE WITH MUTCD SPECIFICATIONS AND LOCAL AUTHORITIES HAVING JURISDICTION.

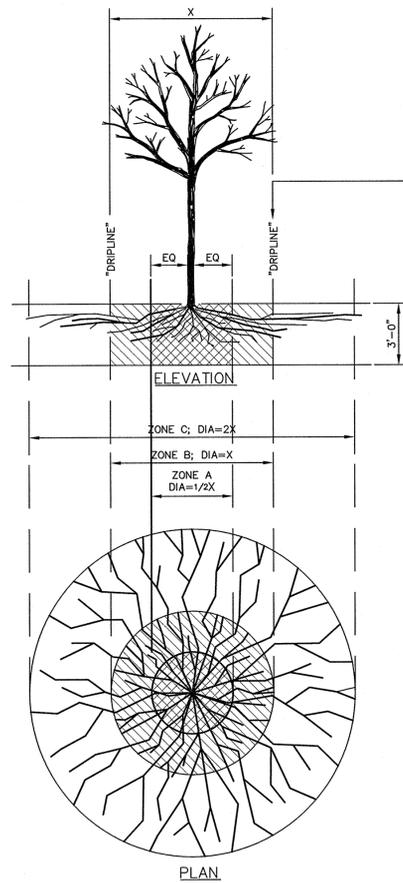
3 STOP SIGN (R1-1) DETAIL
SCALE: NO SCALE



4 STERNBERG 14' STRAIGHT FLUTED LIGHT POLE RICHMOND SERIES 3900
SCALE: NO SCALE



5 STERNBERG LED LIGHT HERITAGE SERIES 6130C
SCALE: NO SCALE



6 TREE PROTECTION DURING CONSTRUCTION
SCALE: NO SCALE

FENCING/ROOT PROTECTION

CHAIN LINK FENCING TO BE PROVIDED AND MAINTAINED AT DRIPLINE

ENGINEER'S APPROVAL REQUIRED FOR USE/ACCESS WITHIN ZONE B. PERMISSION FOR USE/ACCESS REQUIRES SURFACE PROTECTION FOR ALL UNFENCED, UNPAVED SURFACES WITHIN ZONE B

*** SURFACE PROTECTION MEASURES**

- MULCH LAYER, 6"-8" DEPTH
- 3/4" PLYWOOD
- STEEL PLATES

TRENCHING/EXCAVATION

ZONE A (CRITICAL ROOT ZONE)

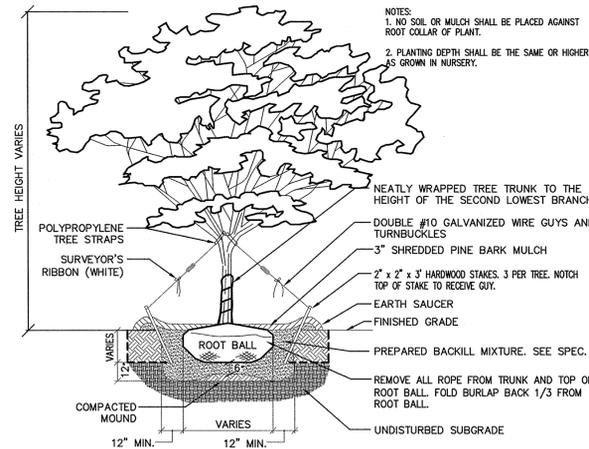
- NO DISTURBANCE ALLOWED WITHOUT SITE-SPECIFIC INSPECTION AND APPROVAL OF METHODS TO MINIMIZE ROOT DAMAGE
- SEVERANCE OF ROOTS LARGER THAN 2" DIA REQUIRES ENGINEER'S APPROVAL
- TUNNELING REQUIRED TO INSTALL LINES 3'-0" BELOW GRADE OR DEEPER

ZONE B (DRIPLINE)

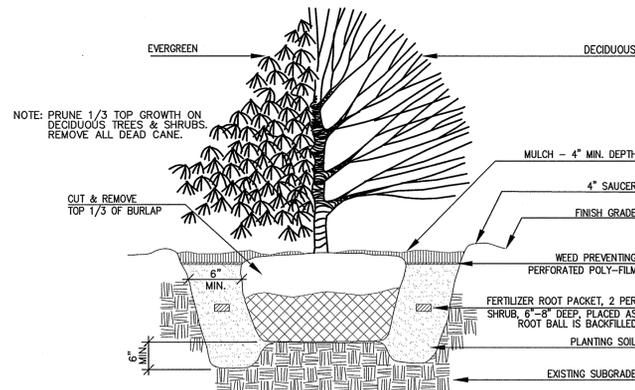
- OPERATION OF HEAVY EQUIPMENT AND/OR STOCKPILING OF MATERIALS SUBJECT TO ENGINEER'S APPROVAL. SURFACE PROTECTION MEASURES REQUIRED
- TRENCHING ALLOWED AS FOLLOWS:
 - EXCAVATION BY HAND OR WITH HAND-DRIVEN TRENCHER MAY BE REQUIRED
 - LIMIT TRENCH WIDTH. DO NOT DISTURB ZONE A. MAINTAIN 2/3 OR MORE OF ZONE B IN UNDISTURBED CONDITION
- TUNNELING MAY BE REQUIRED FOR TRENCHES DEEPER THAN 3'-0"

ZONE C (FEEDER ROOT ZONE)

- OPERATION OF HEAVY EQUIPMENT AND/OR STOCKPILING OF MATERIALS SUBJECT TO ENGINEER'S APPROVAL. SURFACE PROTECTION MEASURES MAY BE REQUIRED
- TRENCHING WITH HEAVY EQUIPMENT ALLOWED AS FOLLOWS:
 - MINIMIZE TRENCH WIDTH
 - MAINTAIN 2/3 OR MORE OF ZONE C IN UNDISTURBED CONDITION



7 DECIDUOUS TREE PLANTING DETAIL
SCALE: NO SCALE



9 SHRUB PLANTING DETAIL
SCALE: NO SCALE

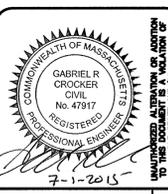
NOTE:
STREET LIGHTING SHALL BE IN ACCORDANCE WITH WELLESLEY MUNICIPAL LIGHT AND POWER REQUIREMENTS.

NOTE:
STREET LIGHTING SHALL BE IN ACCORDANCE WITH WELLESLEY MUNICIPAL LIGHT AND POWER REQUIREMENTS.

I CERTIFY THAT THIS PLAN CONFORMS TO THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS.

SUBDIVISION PLAN OF LAND IN WELLESLEY, MASSACHUSETTS	
APPROVED BY WELLESLEY PLANNING BOARD	preliminary application filed
	definitive application filed
	definitive plan filed
	public hearing date
	area regulation district
	project number
	PB number
DATE	

Date	07/01/15
By	HD
App'd	GRC
Submitted / Revision	DEFINITIVE SUBDIVISION SUBMITTAL
No.	0



135 GREAT PLAIN AVENUE WELLESLEY, MASSACHUSETTS	DETAILS	Scale: AS NOTED
	Project No.: 29219	Issue Date: 07/01/15

File: \\VA-PROJECTS\NMA\78\PROJ\1\2015\CADD\ACAD\CIVIL\SHEET FILES\C-605-2015-DETAIL.DWG
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