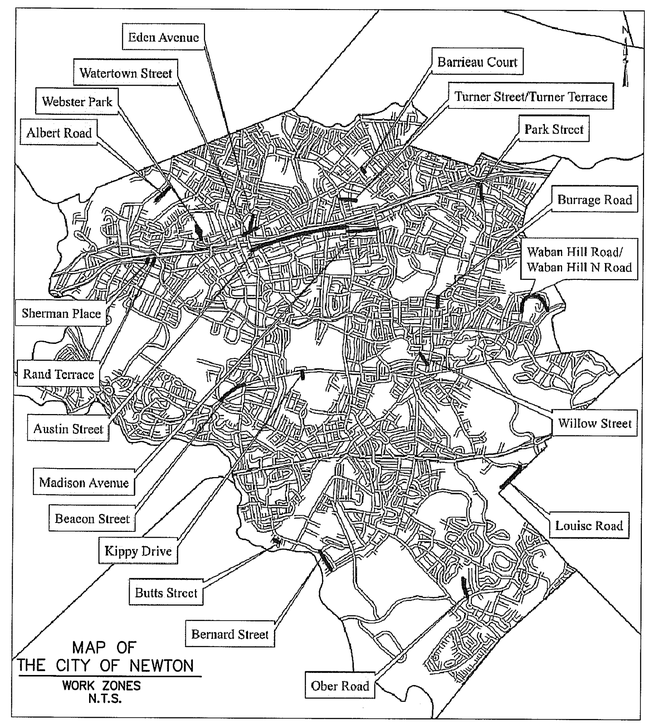
CITY OF NEWTON, MASSACHUSETTS
2016 WATER MAIN REHABILITATION

BID NO. 17-06
PLAN NO. N84-38929



LOCUS MAP

NEWTON CITY HALL
1000 COMMONWEALTH AVENUE
NEWTON CENTRE, MA 02459

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CIVIL
No. 46503
REGISTERED PROFESSIONAL ENGINEER
COMMONWEALTH OF MASSACHUSETTS
7-26-16

TATA & HOWARD

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Consulting Engineers

AUGUST 2016

Marlborough, MA

GENERAL PROCESS AND CONSTRUCTION NOTES:

1. THE LOCATION OF THE EXISTING UTILITIES AS SHOWN ON THE PLANS ARE APPROXIMATE AND ARE INTENDED ONLY TO ADVISE THE CONTRACTOR OF THEIR PRESENCE. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING THE ACTUAL LOCATIONS OF ALL EXISTING UTILITIES, INCLUDING SERVICES. CALL "DIG SAFE" (1-888-344-7233) FOR FIELD LOCATIONS OF ALL EXISTING UTILITIES. CONTRACTOR SHALL NOT OCCUPY ANY AREA(S) UNTIL THE "DIG SAFE" AUTHORIZATION DATE HAS BEEN ATTAINED. IN ADDITION, THE CONTRACTOR SHALL CONTACT THE CITY OF NEWTON FOR WATER, SEWER, AND DRAIN LINE LOCATIONS.
2. ALL BENDS, TEES, CAPS AND HYDRANTS SHALL BE BACKED WITH CONCRETE THRUST BLOCKS AS INDICATED IN THE CONTRACT DRAWINGS. MEGALUGS ARE TO BE INSTALLED ON ALL BENDS, VALVES AND TEES.
3. THE CONTRACTOR SHALL MAKE EVERY EFFORT NOT TO DISTURB THE EXISTING WATER SYSTEM OUTSIDE THE PROJECT AREA. NO ADDITIONAL PAYMENT SHALL BE MADE FOR DAMAGE CREATED AT THE CONVENIENCE OF THE CONTRACTOR.
4. UNLESS OTHERWISE NOTED OR APPROVED BY THE ENGINEER, THE NEW WATER MAIN SHALL PASS UNDER THE EXISTING UTILITIES, DRAIN LINES, EXISTING WATER MAINS AND HYDRANTS.
5. THE CONTRACTOR SHALL MAINTAIN A MINIMUM CLEARANCE BETWEEN THE NEW WATER MAIN AND OTHER EXISTING UTILITIES OF AT LEAST 18-INCHES. ANY WATER MAIN OR SERVICE WITHIN 10 FEET HORIZONTALLY AND 18 INCHES VERTICALLY OF A SEWER LINE OR STRUCTURE SHALL BE ENCASED IN CONCRETE.
6. ALL WATER PIPES ARE TO BE LAID WITH A MINIMUM OF 5'-0" COVER, EXCEPT AS INDICATED OTHERWISE IN THE CONTRACT DRAWINGS.
7. NEW WATER MAINS MUST PASS A CHLORINATION TEST AND A PRESSURE TEST BEFORE WATER SERVICES ARE TIED OVER.
8. THE CONTRACTOR AT HIS EXPENSE SHALL PROVIDE ADDITIONAL TAPS AS NECESSARY FOR THE CHLORINATING AND HYDROSTATIC TESTING. TAPS SHALL BE CLOSED OR PLUGGED AFTER TESTING IS COMPLETE.
9. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY OF NEWTON. ALL EXCAVATION AND RESTORATION SHALL MEET CITY SPECIFICATIONS. A CITY STREET OPENING PERMIT AND TRENCH OPENING PERMIT (APPLICATION FEES WAIVED) WILL BE REQUIRED FOR ALL STREETS WITHIN THE PROJECT AREA PRIOR TO ANY CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH ALL REQUIREMENTS OF THE ABOVE MENTIONED PERMITS. PURSUANT TO M.G.L. CHAPTER 82A:1; 520 CMR 7.00 AND 520 CMR 14.00, ALSO IN ACCORDANCE WITH 'SUMMARY OF 1926 SUBPART P - OSHA EXCAVATION STANDARD' THE CONTRACTOR IS RESPONSIBLE FOR THE FILING OF AND FULLY MEETING THE CONDITIONS OF THE NEWLY ADOPTED TRENCH PERMIT.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPLACEMENT OF PAVEMENT MARKINGS, TRAFFIC SIGN LOOPS, STRIPING, ARROWS, CROSSWALKS, ETC.
11. THE CONTRACTOR AT HIS EXPENSE SHALL BRACE UTILITY POLES IF REQUIRED, AND REPAIR ANY DAMAGE OR DISTURBANCE TO EXISTING SIDEWALKS, CURBS, PAVING, SHRUBS, TREES, STONE WALLS, LAWNS, ETC. ALL EXCAVATED/DISTURBED AREAS SHALL BE RETURNED TO EQUAL OR BETTER THAN PRIOR CONDITION BY THE CONTRACTOR.
12. BASE MAP INFORMATION BASED UPON CITY OF NEWTON GIS MAPPING AND FIELD VERIFICATION.
13. STATIONING ALONG THE LENGTH OF THE WATER MAIN IS INTENDED FOR GENERAL REFERENCE. WHERE PRECISE GROUND LOCATION IS REQUIRED, REFER TO PLANS FOR ACTUAL DISTANCES FROM EXISTING GROUND FEATURES.
14. ALL WATER MAIN TRENCHES IN EXISTING PAVED ROADS SHALL BE RESURFACED WITH TRENCH PAVEMENT IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
15. SERVICE CONNECTIONS MAY BE INSTALLED UNDER EXISTING PAVEMENT USING A TRENCHLESS METHOD WHERE POSSIBLE UNLESS OTHERWISE NOTED ON THE PLANS.
16. WHERE NEW WATER MAINS RUN PARALLEL TO EXISTING WATER MAINS, THE EXISTING MAINS AND HYDRANTS SHALL REMAIN IN SERVICE UNTIL ALL SERVICES HAVE BEEN TRANSFERRED TO THE NEW MAIN.
17. ALL EXISTING WATER SERVICES THAT ARE NOT OF COPPER MATERIAL ARE TO BE REPLACED TO THE PROPERTY LINE INCLUDING A NEW CORPORATION, SERVICE TUBING, COUPLING AND CURB STOP UNLESS OTHERWISE NOTED BY THE ENGINEER. NEW SERVICES ARE TO BE INSTALLED AS SPECIFIED AND IN ACCORDANCE WITH THE CONTRACT DRAWINGS. NEW SERVICES ARE SHOWN ON PLANS NEXT TO EXISTING SERVICES FOR CLARITY. NEW SERVICES ARE TO BE INSTALLED IN EXISTING WATER SERVICE TRENCH. UNLESS OTHERWISE APPROVED BY THE ENGINEER, ALL ABANDONED SERVICES ARE TO BE SHUT OFF AT THE CORPORATION AT THE TIME OF THE NEW TIE OVER. ALL EXISTING COPPER WATER SERVICES SHALL REMAIN IN-PLACE AND WILL BE TIED OVER TO THE NEW WATER MAIN WITH A NEW CORPORATION, NEW SERVICE TUBING, AND NEW COUPLING.
18. THE HOUSE SERVICE CONNECTIONS SHALL BE COMPLETED AFTER THE NEW WATER MAIN HAS BEEN PRESSURE TESTED, CHLORINATED AND APPROVED.
19. ALL VALVES ON ABANDONED WATER MAINS SHALL BE CLOSED, VALVE BOXES REMOVED, AND BACKFILLED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
20. REMOVE EXISTING HYDRANTS AS INDICATED ON THE DRAWINGS AND CAP BRANCH WHEN NEW WATER MAINS ARE IN SERVICE UNLESS OTHERWISE NOTED. DELIVER UP TO TEN (10) REMOVED HYDRANTS TO CITY OF NEWTON STOCK YARD AT 60 ELLIOT STREET.
21. CONTRACTOR SHALL USE A WATER TIGHT PLUG DURING THE WATER MAIN INSTALLATION. PLUG SHALL REMAIN IN PLACE AT ALL TIMES.
22. CONTRACTOR IS REQUIRED TO SUBMIT A COMPACTION REPORT AS SPECIFIED IN THE SPECIFICATIONS (SECTION 02222).
23. AS APPROPRIATE, CONTRACTOR TO TAKE ALL NECESSARY MEASURES, INCLUDING HAND DIGGING, TO MAINTAIN THE INTEGRITY OF THE EXISTING DRAINAGE PIPES.
24. LOCATION OF EXISTING DRAINAGE IS APPROXIMATE AND SHALL BE VERIFIED BY THE CONTRACTOR IN THE FIELD. CONTRACTOR SHALL VERIFY SIZE AND DEPTH OF ALL DRAIN LINES.
25. THE CONTRACTOR IS REQUIRED TO PROVIDE A SUPERINTENDENT OF OPERATIONS, A QUALIFIED INDIVIDUAL WHO WILL BE ON-SITE AT ALL TIMES TO ADDRESS THE CRITICAL NEEDS OF THE PROJECT. IN ADDITION, A 7 DAY/24 HOUR CELL PHONE MUST BE LISTED WITH THE CITY TO RESPOND TO ALL PROJECT BUSINESS AND/OR EMERGENCY CALLS WITHIN ONE-HOUR.
26. FOR FURTHER UTILITY SUPPORT AND EMERGENCY RESPONSE REQUESTS, THE CONTRACTOR IS ADVISED TO CONTACT: KEYSPAN @ GAS, N-STAR @ ELEC., VERIZON @ TEL., AT&T CABLE, COMCAST CABLE, NEWTON WATER, NEWTON SEWER & DRAIN.
27. ANY UTILITY RELOCATIONS, AND/OR UTILITY ISSUES, ARE TO BE DIRECTLY ADDRESSED AND COORDINATED BY THE CONTRACTOR WITH THE RESPECTIVE UTILITY COMPANY. FURTHER, IN THE EVENT CERTAIN AGED GAS MAINS AND/OR SERVICES ARE TARGETED TO BE RENEWED THEN THE CONTRACTOR SHALL MODIFY HIS PAVING SCHEDULE(S) AS DETERMINED BY THE ENGINEER.
28. ALL EXCESS EXCAVATED MATERIAL AND/OR WASTE ITEMS OF ANY TYPE OR MATERIAL, ARE TO BE DISPOSED OF AT A LEGAL DUMPING SITE AT THE CONTRACTORS OWN EXPENSE. NO DISPOSAL SITE SHALL BE PROVIDED BY THE CITY.
29. ALL DEBRIS IS TO BE REMOVED FROM THE SITE ON A DAILY BASIS. HOWEVER, IF SITE CONSTRAINTS ARE NOT AN ISSUE THEN THE CONTRACTOR CAN MAINTAIN A 'LOCKED LID' DUMPSTER AT THE DISCRETION OF THE ENGINEER AND BY PERMIT ONLY AT NO ADDITIONAL EXPENSE TO THE OWNER.
30. ALL RESIDUAL MATERIAL IS TO BE HAND BROOMED FROM THE ROADWAY AT THE END OF EACH DAYS OPERATION AND EVERY MEASURE TAKEN TO MINIMIZE DUST, INCLUSIVE OF CHEMICAL TREATMENT AND /OR WATER APPLICATION AS DIRECTED BY THE ENGINEER.
31. STAGING AND STOCKPILING SITES, FOR NEW MATERIALS ONLY WILL BE APPROVED ON A SITE BY SITE BASIS SUBJECT TO THE REVIEW OF TRAFFIC, SCHOOL, PARKING, AND ANY OTHER CRITICAL FACTORS WHICH MAY ADVERSELY AFFECT THE AREAS WITHIN AND/OR ADJACENT TO THE CONSTRUCTION ZONE.
32. ALL EXCAVATIONS ARE TO BE BACKFILLED IN LIFTS, WITH EACH SUCCESSIVE LIFT BEING COMPACTED ONLY WITH APPROVED MECHANICAL TYPE COMPACTORS AND/OR PNEUMATICALLY POWERED TAMPING BITS, UNTIL SUCH TIME AS THE OPTIMUM COMPACTION REQUIREMENTS ARE OBTAINED. THIS IS STRICTLY ENFORCED TO ENSURE LONG-TERM STRUCTURAL INTEGRITY OF THE ROADWAY SYSTEM.
33. AREAS BEYOND THE LIMITS OF THIS CONTRACT AND/OR STRUCTURES DISTURBED AND/OR DAMAGED BY THE CONTRACTOR, ARE TO BE REPAIRED AND/OR REPLACED BY THE CONTRACTOR AT HIS OWN EXPENSE.
34. THE CONTRACTOR IS RESPONSIBLE FOR ALL SAFETY ASPECTS OF THE PROJECT, AND COMPLIANCE WITH THE MOST CURRENT U.S. OCCUPATIONAL HEALTH AND SAFETY ADMINISTRATION (OSHA) & THE MASSACHUSETTS DEPT. OF LABOR DIVISION OF OCCUPATIONAL SAFE REGULATIONS (617-727-3982). THESE COMPLIANCE STANDARDS ARE OF PARTICULAR IMPORTANCE WITH REGARD TO TRENCH EXCAVATION SAFETY REQUIREMENTS.
35. HOURS OF OPERATIONS ARE SET BY LAW. NO MACHINES OR EQUIPMENT ARE TO BE ACTIVATED BEFORE 7:00 A.M. & NO WORK IS TO EXTEND BEYOND 4:30 P.M. NO WEEKEND OR HOLIDAY WORK IS ALLOWED WITHOUT SPECIAL PERMISSION. THE CONTRACTOR IS LIMITED TO AN EIGHT HOUR WORKDAY UNLESS OTHERWISE APPROVED BY THE CITY.
36. PRIOR TO MOBILIZATION, THE CONTRACTOR IS TO COORDINATE WITH THE WATER DEPT. AND THE ENGINEER, AND IS THEN TO LOCATE, UNCOVER, BLOW-OUT, AND DETERMINE THE SERVICEABILITY OF ALL EXISTING GATE VALVES AND/OR HYDRANTS WHICH ARE TO BE UTILIZED TO PERFORM THE WORK. OPERATION OF THE GATE VALVES WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AND IS TO BE PERFORMED UNDER THE DIRECTION OF THE ENGINEER.
37. THE CONTRACTOR MUST GIVE THE CITY OF NEWTON WATER DEPARTMENT (617-796-1640), THE CITY OF NEWTON CUSTOMER SERVICE CENTER (617-796-1000), THE NEWTON FIRE DEPT. (617-796-2210), THE NEWTON POLICE DEPT. (617-796-2100) AT LEAST 24 HOURS NOTICE PRIOR TO ANY SCHEDULED WATER MAIN SHUT-DOWN. IN ADDITION, ANY EMERGENCY SHUT-DOWN OF WATER MAINS IS TO BE REPORTED TO THESE SAME AUTHORITIES FOR EACH EVENT. FURTHER, ANY SCHEDULED WATER MAIN SHUT-DOWN(S) SHALL NOT BEGIN BEFORE 9:00 A.M. UNLESS OTHERWISE DIRECTED.
38. THE CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING, COMMUNICATING WITH, AND SUBSEQUENTLY ADDRESSING THE NEEDS OF THE VISUALLY IMPAIRED AND/OR THE PHYSICALLY CHALLENGED WHO RESIDE IN OR ABOUT THE PROJECT ZONE OR WHO OTHERWISE MUST ACCESS THE AREA(S).
39. THE VARIOUS PROPOSED WATER MAINS, WATER SERVICES, HYDRANTS, VALVES, GENERAL SCOPE OF COMPONENTS AND THEIR RESPECTIVE LOCATIONS, AND OTHER APPURTENANCES WHICH ARE SHOWN ON THESE PLANS ARE SUBJECT TO CHANGE AT THE ENGINEERS DISCRETION IN THE FIELD.
40. THE FINAL DETERMINATION OF THE PROJECT LIMIT(S) SHALL BE ESTABLISHED IN THE FIELD BY THE ENGINEER, INCLUSIVE OF WORK WHICH MUST BE PERFORMED ALONG THE OUTER PERIMETER(S) OF THE PROJECT ZONE(S) IN ORDER TO REPAIR DEFECTIVE WATER APPURTENANCES TO ISOLATE THE PROJECT ZONE FROM WATER PRESSURE INTERFERENCE.
41. THE CONTRACTOR IS TO BAG AND TAG ALL OUT OF SERVICE HYDRANTS, AND IS TO NOTIFY THE CITY OF NEWTON FIRE DEPT. OF ALL OUT OF SERVICE HYDRANTS IN A MANNER ACCEPTABLE TO THE ENGINEER.
42. ALL EXISTING WATER SERVICES SHALL BE RENEWED FROM THE MAIN TO THE PROPERTY LINE UNLESS OTHERWISE DIRECTED BY THE ENGINEER (NOTE: PVT. COUPLING SIZES WILL VARY). THIS WORK INCLUDES THE TAPPING OF THE MAIN (GENERALLY OF 1" SIZE, HOWEVER IN CERTAIN CASES A SERVICE COCK OF 1 1/2" OR 2" SIZE WILL BE REQUIRED)
43. NEW COPPER WATER SERVICES, AS WELL AS THE NEW CURB STOP, ARE TO BE CONSISTENT IN SIZE WITH THE MAIN TAP. SUBSEQUENT TO THIS WORK THE CONTRACTOR IS TO FLUSH THE PIPE AT THE SILL COCK NEAREST TO THE METER, AND IF FURTHER ACTION IS DEEMED NECESSARY BY THE ENGINEER, THE CONTRACTOR IS TO COORDINATE WITH THE BUILDING OWNER TO PERFORM THE REMOVAL, CLEARING AND REINSTALLATION OF THE WATER METER, METER VALVE AND SEAL.
44. THE CONTRACTOR IS REQUIRED TO LEAVE WRITTEN NOTICES AT ALL ADDRESSES DIRECTLY AFFECTED BY THE SCHEDULED DISRUPTION OF THE WATER SUPPLY. THESE NOTICES MUST BE DELIVERED AT LEAST 24 HOURS IN ADVANCE OF EITHER THE SCHEDULED SHUT-DOWN AND/OR A REQUEST FOR ACCESS TO THE METER. NOTIFICATIONS SHALL BE ON A FORMAT APPROVED OR PROVIDED BY THE ENGINEER, AND SHALL BE POSTED IN A CONSPICUOUS MANNER AT EACH ADDRESS AND AS NEAR TO THE LOCATION OF THE REGULAR MAIL DELIVERY AS POSSIBLE.
45. THE CONTRACTOR IS REQUIRED TO TAKE AS-BUILT TIES AS THE WORK PROGRESSES. THIS ACTIVITY IS TO TAKE PLACE UNDER THE DIRECT SUPERVISION OF THE ENGINEER AND ALL RECORDS ARE TO BE SUBMITTED ON A DAILY BASIS AND ON A FORMAT WHICH IS ACCEPTABLE TO THE ENGINEER.
46. THE CONTRACTOR MUST PURGE ALL AIR FROM THE WATER MAIN(S) & SERVICES WHEN THE VALVES ARE REOPENED, AND MAINTAIN LOW FLOW UNTIL SUCH TIME AS ALL DISCOLORATION AND AIR IS REMOVED FROM THE WATER SYSTEM.
47. ALL 'SHORT-TERM' STEEL TRENCH PLATES, (UP TO FIVE CALENDAR DAYS OF USE), ARE TO BE SECURED IN SUCH A MANNER SO AS TO PREVENT MOVEMENT AND/OR 'RATTLING'. ALL 'LONG-TERM' PLATES ARE TO BE RECESSED INTO THE EXISTING ROADWAY.
48. THE CONTRACTOR IS TO MAINTAIN AND/OR PROVIDE EMERGENCY VEHICLE ACCESS THROUGHOUT EACH PROJECT AREA. IN ADDITION, NO TRAFFIC DELAY IS TO EXCEED FOUR MINUTES IN DURATION ON ANY ARTERIAL ROAD. ALL SECONDARY ROADS MUST BE APPROPRIATELY DETOURED, MARKED, OR ADDITIONALLY SIGNED TO PREVENT DELAYS AND/OR CONFUSION.
49. THE CONTRACTOR IS RESPONSIBLE FOR THE COORDINATION, POSTING, AND SUBSEQUENT REMOVAL OF ALL TEMPORARY PARKING BANS. SIGNS ARE NOT TO BE POSTED ON TREES. THE CONTRACTOR IS TO NOTIFY THE CITY OF NEWTON TRAFFIC DIVISION (617-796-1490) AT LEAST 24 HOURS PRIOR TO ACTUAL POSTING.
50. FOR FURTHER DETAILS NOT SHOWN ON THESE PLANS SEE 'CITY OF NEWTON GENERAL CONSTRUCTION DETAILS,' A COPY OF WHICH CAN BE OBTAINED AT THE OFFICE OF THE CITY ENGINEER.
51. TEMPORARY TRENCH PAVEMENT SHALL BE INSTALLED ON A WEEKLY BASIS. OWNER RESERVES THE RIGHT TO REQUEST PAVEMENT INSTALLATION AT MORE FREQUENT INTERVALS IF WEATHER OR OTHER CONDITIONS MAKE IT NECESSARY. THERE WILL BE NO ADDITIONAL COMPENSATION FOR CHANGES IN THE PAVING SCHEDULE. TEMPORARY PAVEMENT SHALL BE COMPLETELY REMOVED PRIOR TO THE INSTALLATION OF PERMANENT PAVEMENT. PERMANENT PAVEMENT SHALL BE INSTALLED AT A TIME SPECIFIED BY THE OWNER.
52. IN THE EVENT THE ROADWAY CASTINGS HAVE BEEN LOWERED AND FINAL TOP WILL NOT BE APPLIED BEFORE MANDATORY WINTER SHUTDOWN, THEN THE CONTRACTOR IS TO RAISE ALL CASTINGS AND GATES TO BINDER GRADE AT HIS OWN EXPENSE.
53. THE CONTRACTOR MAY BE REQUIRED FROM TIME TO TIME TO MAKE SCHEDULE CHANGES AND/OR TO MAKE SPECIAL ACCOMMODATIONS IN ORDER TO ELIMINATE AND/OR MINIMIZE ANY ADVERSE IMPACT ON CERTAIN PUBLIC OR PRIVATE EVENTS, TRAFFIC, ETC.
54. THE ILLUSTRATIONS OF PROPOSED WORK WHICH ARE SHOWN ON THESE PLANS ARE SUBJECT TO CHANGE BASED UPON FIELD CONDITIONS, OR AS MAY OTHERWISE BE NECESSARILY ALTERED BY THE ENGINEER.
55. UPON THE COMPLETION OF THE RESPECTIVE WATER MAIN REHABILITATION ACTIVITIES, THE CONTRACTOR IS TO RESTORE ALL ROADWAY ELEMENTS IN ACCORDANCE WITH THE CASE-BY-CASE DIRECTIVES OF THE ENGINEER.
56. THE CONTRACTOR IS TO SUBSTANTIALLY COMPLETE ALL WORK, EXCLUSIVE OF FINAL ROADWAY TOP, BEFORE ENTERING INTO THE NEXT DESIGNATED WORK ZONE, UNLESS, OR UNTIL, THE ENGINEER SO DIRECTS.
57. THE CONTRACTOR IS NOT TO CUT THROUGH THE MAJOR PORTION OF THE ROOT SYSTEM OF STREET TREES UNLESS PERMITTED TO DO SO BY THE CITY OF NEWTON TREE SUPERINTENDENT.
58. THE CONTRACTOR SHALL NOT TAKE DOWN ANY TREE LIMB UNTIL ALLOWED TO DO SO BY THE CITY OF NEWTON TREE SUPERINTENDENT. ANY SUCH LIMB REMOVAL SHALL BE DONE IN ACCORDANCE WITH THE TREE SUPERINTENDENTS INSTRUCTIONS. NO LIMBS ARE TO BE 'SNAPPED' OFF.
59. LEDGE/ROCK REMOVAL SHALL BE BY RAM HOE METHOD ONLY. ONLY IN EXTREME CASES WHERE THE CONTRACTOR HAS MADE EVERY REASONABLE EFFORT TO REMOVE THE LEDGE/ROCK BY THE RAM HOE METHOD, AND HAS FAILED, SHALL CONTROLLED BLASTING BE ALLOWED.
60. THE ENGINEER SHALL BE SOLE JUDGE AS TO WHETHER OR NOT THE RAM HOE EQUIPMENT IS OF ADEQUATE SIZE TO SUIT BOTH THE AREA AND THE TASK BEFORE THE BLASTING OPTION IS ALLOWED.
61. NO DETOURS WILL BE ALLOWED UNLESS APPROVED AND/OR DIRECTED BY THE ENGINEER, HOWEVER DETOURING IS NOT TO BE FACTORED INTO THE CONTRACTOR'S OPERATIONAL PLANS FOR THIS PROJECT.
62. ALL DETOURS SHALL BE CLEARLY MARKED ALONG THEIR ENTIRE ROUTE, AND ONLY WITH APPROVED DEVICES & SIGNS, SUCH THAT A STEADY STREAM OF TRAFFIC IS TO BE SAFELY MAINTAINED AT ALL TIMES.
63. NON-EMERGENCY DETOURS MUST BE APPROVED BY THE CITY OF NEWTON TRAFFIC ENGINEER AT LEAST 24 HOURS IN ADVANCE OF THE EVENT. TO THAT END THE CONTRACTOR MAY BE REQUIRED TO PROVIDE A HARD-COPY TRAFFIC CONTROL PLAN TO THE TRAFFIC ENGINEER FOR COMMENTARY OR APPROVAL.
64. THE CONTRACTOR IS REQUIRED TO STRATEGICALLY SCHEDULE HIS WORK IN ORDER TO MINIMIZE THE IMPACT ON ESTABLISHED TRUCK, FIRE DEPT., PUBLIC WORKS AND COMMUTER TRAFFIC PATTERNS. TO THAT END THE CONTRACTOR IS TO RESTRICT HIS OPERATIONS TO THE SPECIFIC WORK ZONE (WHICH MAY BE MODIFIED BY DIRECTION OR BY MUTUAL AGREEMENT). FURTHER, THE CONTRACTOR IS NOT TO BEGIN EXCAVATION OPERATIONS IN THE NEXT WORK ZONE UNTIL THE WORK IN THE PREVIOUS WORK ZONE HAS BEEN SUBSTANTIALLY COMPLETED TO THE SATISFACTION OF THE ENGINEER.
65. THE CITY OF NEWTON RESERVES THE RIGHT TO DESIGNATE THE ORDER IN WHICH THE WORK IS COMPLETED. THE INTENT IS TO MINIMIZE THE IMPACT WHICH THE CONSTRUCTION RELATED ACTIVITIES MAY HAVE ON SCHEDULED PUBLIC EVENTS, ON PEAK PERIODS OF TRAFFIC, ON SCHOOL OPERATIONS, ETC. TO THAT END, THE CONTRACTOR IS REQUIRED TO WORK CLOSELY WITH THE CITY OF NEWTON TO CREATE THE BEST OVERALL SCHEDULE, WHICH MUST BE EXPECTED TO CHANGE FROM TIME TO TIME AS FIELD CONDITIONS, WEATHER, AND/OR OTHER SITUATIONS MAY DICTATE.
66. UTILITY MAINS, SEWER HOUSE CONNECTIONS AND/OR WATER SERVICES LOCATED ALONG THE PROJECT CORRIDOR(S) ARE NOT ALWAYS SHOWN IN THEIR ENTIRETY, NOR IN THEIR EXACT LOCATIONS, THEREFORE ANY SUPPLEMENTAL HARD-COPY SERVICE AND/OR TRUNK LINE RELATED INFORMATION MUST BE RETRIEVED AND SUBSEQUENTLY LAID OUT AND CLEARLY MARKED IN THE FIELD BY THE CONTRACTOR. THE AFOREMENTIONED HARD-COPY INFORMATION WILL BE SUPPLIED BY THE CITY ONLY IF SUCH RECORDS EXIST AND SHALL BE SUPPLIED ON A CASE-BY-CASE BASIS AS SUPPLEMENTAL STREET OPENINGS ARE IDENTIFIED BY THE CONTRACTOR, OR AS THEY MAY BE OTHERWISE REQUIRED BY THE ENGINEER.
67. STREET OPENINGS ARE TO BE MADE ONLY WITH THE PRIOR APPROVAL OF THE CITY ENGINEER. THE INTENT OF THE ORDER IS TO PREVENT AN OVERABUNDANCE OF STREET OPENINGS AND/OR TO MINIMIZE THE IMPACT THAT THESE OPERATIONS WILL HAVE ON TRAFFIC RELATED ISSUES.
68. CONTRACTOR SHALL PROTECT THE STRUCTURAL INTEGRITY OF ALL CAST IRON GAS MAINS AND SMALLER IN ACCORDANCE WITH 220 CMR 113. CONTRACTOR SHALL LIMIT TRENCH WIDTH TO 3 FEET MAXIMUM WHERE UNDER MINING OCCURS AT A PERPENDICULAR CROSSING.
69. ALL GAS SERVICES ARE NOT SHOWN ON PLANS. CALL "DIG SAFE" (1-888-344-7233) FOR FIELD LOCATIONS OF ALL UTILITIES PRIOR TO EXCAVATION.
70. SILT SACKS SHALL BE USED ON ALL CATCH BASINS WITHIN PROJECT LIMITS TO MINIMIZE SILT DEPOSITS INTO DRAINAGE SYSTEM. AT LOCATIONS WHERE TEMPORARY SERVICES CROSS THE ROAD, SERVICES SHALL BE ADEQUATELY PROTECTED IN A SOLID SLEEVE, PLACED IN A TRENCH OF ADEQUATE DEPTH AND COVERED WITH BITUMINOUS PAVEMENT TO PREVENT BREAKAGE DURING CONSTRUCTION.
71. ALL ROADWAYS ARE ASPHALT UNLESS OTHERWISE NOTED.
72. TEMPORARY BY-PASS PIPING FIRE SERVICE CONNECTIONS (WHETHER SHOWN ON THESE PLANS OR NOT), AND PUBLIC HYDRANT RISERS ARE TO BE ESTABLISHED AND MAINTAINED AT ALL TIMES VIA A BY-PASS PIPING SYSTEM, BASED UPON A 'TARGET' PLAN THAT HAS BEEN PRE-APPROVED BY THE ENGINEER, WHICH AT A MINIMUM SHOWS THE PIPE SIZE, MATERIAL, LOCATIONS OF RECESSED CROSSINGS & TEMPORARY HYDRANT LOCATIONS.
73. BY-PASS PIPES ARE NOT TO INTERFERE WITH PEDESTRIAN, HANDICAP, OR VEHICULAR TRAFFIC. SUPPLEMENTAL RAMPING AND/OR ADDITIONAL 'CUT-IN'/HOT MIX CAPPED RECESSED PIPES, OR THEIR APPURTENANCE, WILL BE AT THE DISCRETION OF THE ENGINEER SHOULD THE NECESSITY ARISE DURING THE COURSE OF THE PROJECT.
74. THE CONTRACTOR IS TO PROVIDE A TEMPORARY FIRE LINE BY-PASS CONNECTION TO ALL BUILDINGS THAT ARE CURRENTLY SERVICED BY A FIRE LINE.
75. ALL TEMPORARY BY-PASS, CEMENT CONCRETE AND/OR PERMANENT BITUMINOUS PATCH WORK (SUBJECT TO APPLICABLE RESTRICTIONS) MUST BE COMPLETED PRIOR TO THE ONSET OF FREEZING AND/OR WINTER CONDITIONS (OCTOBER 31 TARGET). ALL OTHER WORK MUST BE COMPLETED BY NOVEMBER 30TH, UNLESS A WRITTEN ORDER HAS BEEN ISSUED BY THE ENGINEER TO DO OTHERWISE.
77. PRIOR TO THE START OF CONSTRUCTION, A TEMPORARY BY-PASS PIPING SYSTEM SHALL BE INSTALLED, CHLORINATED, AND TESTED PRIOR TO INSTALLING TEMPORARY SERVICE CONNECTIONS. THE LOCATION, METHOD, AND MATERIAL OF THE TEMPORARY BY-PASS PIPING SYSTEM SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, AND THE CONTRACTOR SHALL SUBMIT A BY-PASS PIPING PLAN FOR ENGINEER REVIEW AND APPROVAL PRIOR TO INSTALLATION.
78. PAYMENT FOR TEMPORARY BY-PASS PIPING SHALL BE LUMP SUM. TEMPORARY BY-PASS SYSTEM REQUIRES A MINIMUM OF A 4-INCH AND 2-INCH PIPING SYSTEM THROUGHOUT PROJECT EXTENTS. ALL COMPONENTS IN TEMPORARY BY-PASS PIPING SYSTEM SHALL BE NSF-61 APPROVED AND SUBMITTED TO ENGINEER FOR APPROVAL.
79. TEMPORARY BY-PASS PIPING WILL BE USED ALONG THE ENTIRE LENGTH OF THE PROJECT AREAS.
80. CONTRACTOR SHALL RECESS TEMPORARY BY-PASS PIPING AT ALL COMMERCIAL APRONS.
81. TEST PITS SHALL BE DUG AT EACH EXISTING WATER SERVICE ALONG THE PROJECT LIMITS TO DETERMINE THE WATER SERVICE LINE MATERIAL. ALL SERVICES THAT ARE NOT COPPER SHALL BE REPLACED. ALL COPPER SERVICES SHALL REMAIN.
82. EXISTING WATER MAIN SHALL BE REMOVED AND PROPERLY DISPOSED OF WHERE NEW WATER MAINS ARE PROPOSED.
83. **ALL MWRA WATER MAINS SHOWN ARE APPROXIMATE LOCATIONS. CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ACTUAL LOCATION OF MWRA MAINS. CONTRACTOR SHALL CONTACT AND COORDINATE ALL WORK THAT ENCROACHES UPON MWRA WATER MAINS WITH MWRA.
84. WHERE AN EXISTING WATER SERVICE IS NOT SHOWN, PROPOSED WATER SERVICE LOCATION IS APPROXIMATE. CONTRACTOR SHALL VERIFY LOCATION OF EXISTING SERVICE IN THE FIELD PRIOR TO INSTALLING NEW SERVICE LINE.

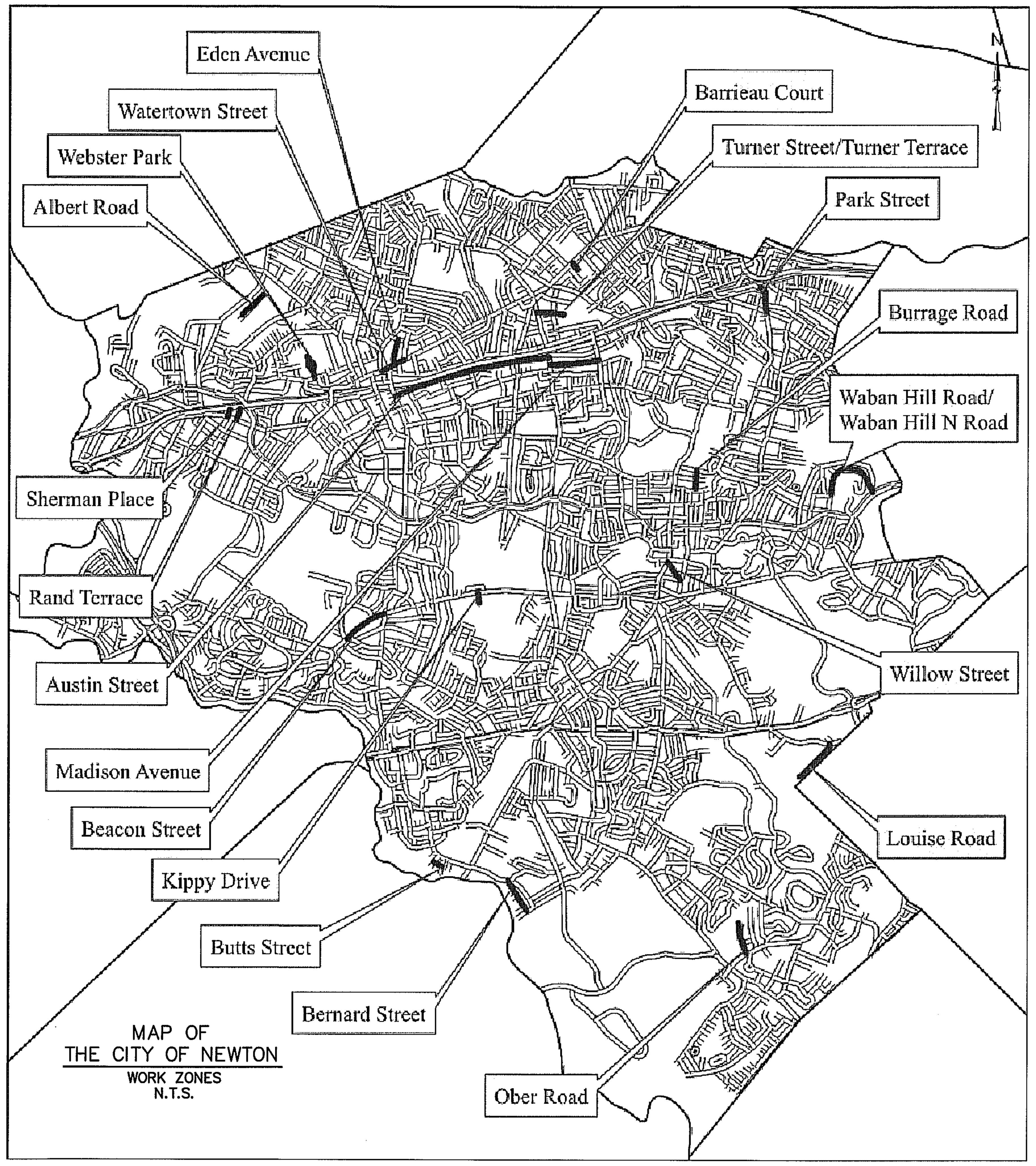
NEWTON CITY HALL
1000 COMMONWEALTH AVENUE
NEWTON CENTRE, MA 02459

LEGEND

EXISTING	DESCRIPTION	PROPOSED
— W —	WATER MAIN	———
	CLEAN AND LINE WATER MAIN	- - - - -
	GATE VALVE	
	GATE VALVE MANHOLE	
	REDUCER	
	SOLID SLEEVE	
	TEE	
	COUPLING	
	CAP	
	FIRE HYDRANT	
	WATER SERVICE	
	CAP	
	WATER MAIN BEND	
	SEWER MANHOLE	
— S —	SEWER LINE	
	DRAIN MANHOLE	
	CATCH BASIN	
— D —	DRAIN LINE	
— E —	ELEC. LINE	
	ELEC. MANHOLE	
	UTILITY POLE	
	GUY WIRE	
	LIGHT	
— G —	GAS LINE	
	GAS VALVE	
	COMM. MANOLE	
— C —	COMM. LINE	
	STONEWALL	
	MONITORING WELL	
	UNMARKED MANHOLE	

ABBREVIATIONS

HYD	HYDRANT
RCP	REINFORCED CONCRETE PIPE
D.I.	DUCTILE IRON
C.I.	CAST IRON
A.C.	ASBESTOS CEMENT
C.I.C.L.	CAST IRON CEMENT LINED
C.I.B.L.	CAST IRON BITUMASTIC LINED
INV	INVERT
TYP	TYPICAL
CDF	CONTROLLED DENSITY FILL
CB	CATCH BASIN
DMH	DRAIN MANHOLE
SMH	SEWER MANHOLE
EX	EXISTING
B.S.	BARE STEEL
C.S.	COATED STEEL
P.S.	PLASTIC
L.P.	LOW PRESSURE
I.P.	INTERMEDIATE PRESSURE
H.P.	HIGH PRESSURE
EOP	EDGE OF PAVEMENT
BIT.	BITUMINOUS ASPHALT
CONC.	CONCRETE
GR.	GRANITE
MWRA	MASSACHUSETTS WATER RESOURCES AUTHORITY
NWW	NEWTON WATER WORKS



MAP OF
THE CITY OF NEWTON
WORK ZONES
N.T.S.

NEWTON, MASSACHUSETTS

2016 WATER MAIN REHABILITATION

GENERAL PROCESS AND CONSTRUCTION NOTES

Drawn By: MEC | Designed By: MEC | Checked By: PBH | Approved By: KLG

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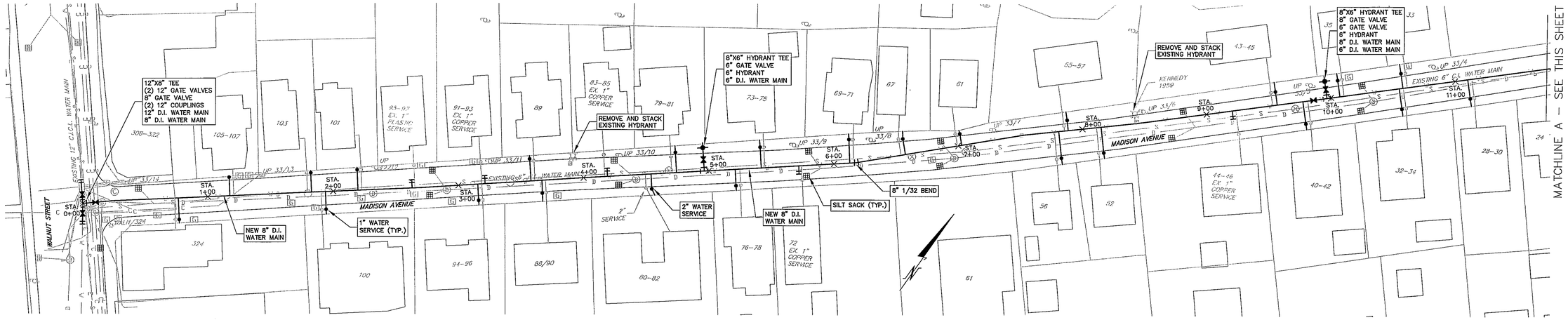
COMMONWEALTH OF MASSACHUSETTS
KAREN L. GRACEY
CIVIL
No. 48603
REGISTERED PROFESSIONAL ENGINEER
7-28-16

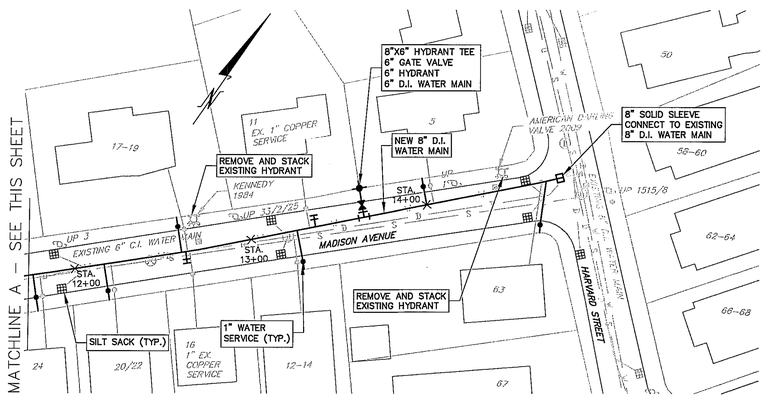
TATA & HOWARD

T&H NO.: 4224
DATE: AUGUST 2016
SCALE: NONE

C-1



MADISON AVENUE STA. 0+00 TO STA. 11+74
SCALE: 1" = 40'



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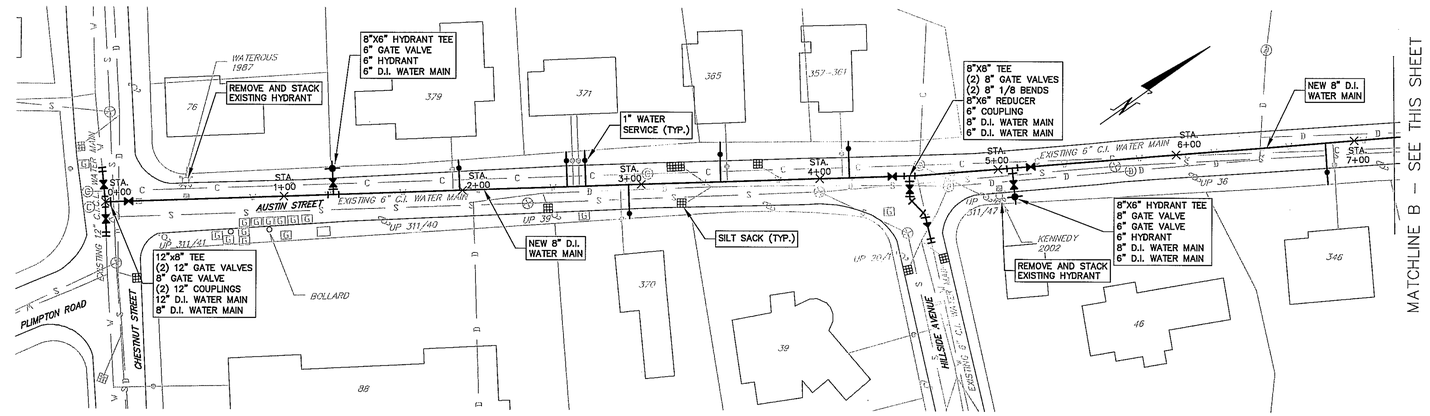
SCALE: 1" = 40'



AUSTIN STREET STA. 0+00 TO STA. 7+22
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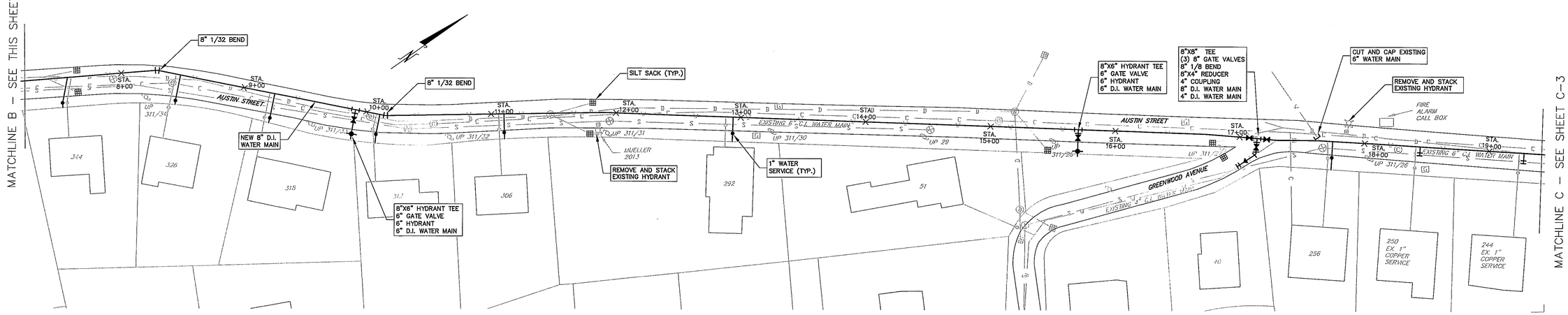

AUSTIN STREET STA. 7+22 TO STA. 19+42
SCALE: 1" = 40'

NEWTON, MASSACHUSETTS
2016 WATER MAIN REHABILITATION

MADISON AVENUE
STA. 0+00 TO STA. 14+77
AUSTIN STREET
STA. 0+00 TO STA. 19+42

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COMMONWEALTH OF MASSACHUSETTS
KARSEN L. KLOCKEY
CIVIL
No. 46004
REGISTERED PROFESSIONAL ENGINEER
7/22/16

TATA & HOWARD

T&H NO.: 4224
DATE: AUGUST 2016
SCALE: 1"=40'

C-2

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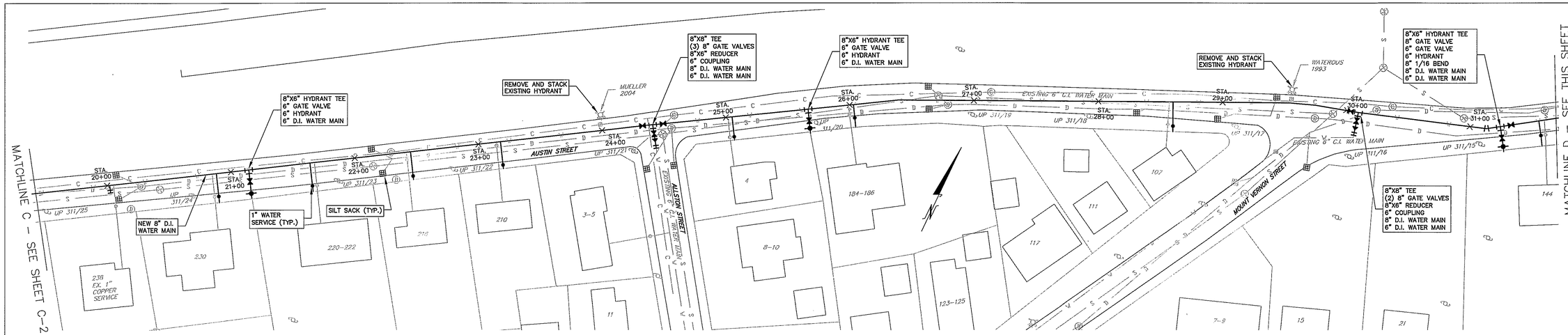
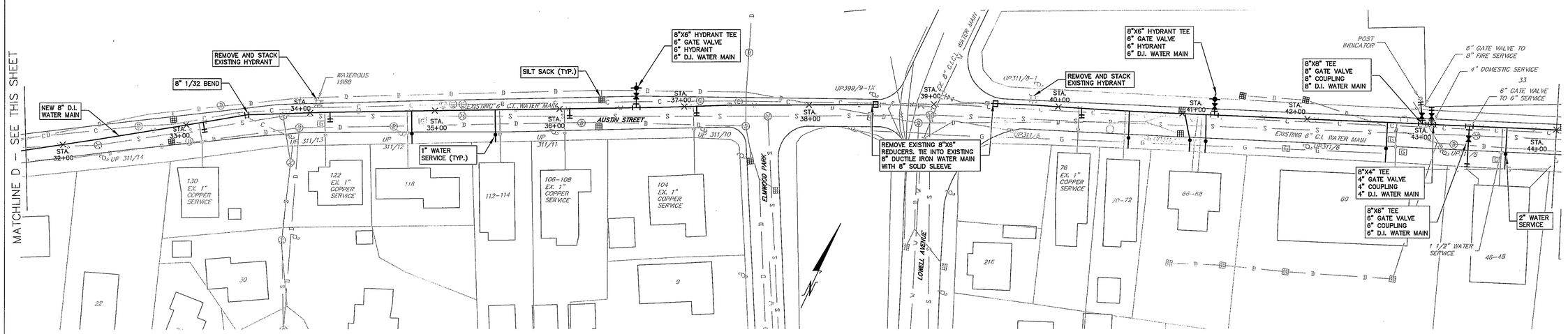


AUSTIN STREET STA. 19+42 TO STA. 31+70

SCALE: 1" = 40'

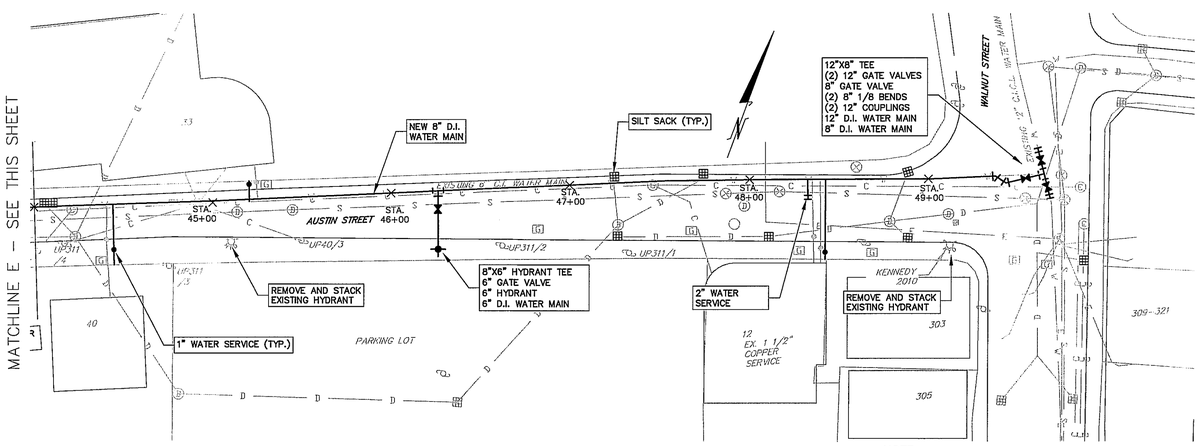


AUSTIN STREET STA. 31+70 TO STA. 44+00

SCALE: 1" = 40'

NOTE:

1. ALL WORK ON AUSTIN STREET BETWEEN LOWELL AVENUE AND WALNUT STREET MUST BE PERFORMED AT NIGHT.



AUSTIN STREET STA. 44+00 TO STA. 49+68

SCALE: 1" = 40'

NOTE:

1. ALL WORK ON AUSTIN STREET BETWEEN LOWELL AVENUE AND WALNUT STREET MUST BE PERFORMED AT NIGHT.

NEWTON, MASSACHUSETTS
2016 WATER MAIN REHABILITATION

AUSTIN STREET STA. 19+42 TO STA. 49+68

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KARL L. GUNDERSON CIVIL No. 43008 REGISTERED PROFESSIONAL ENGINEER COMMONWEALTH OF MASSACHUSETTS 7/25/16

TATA & HOWARD

T&H NO.: 4224
DATE: AUGUST 2016
SCALE: 1" = 40'

C-3

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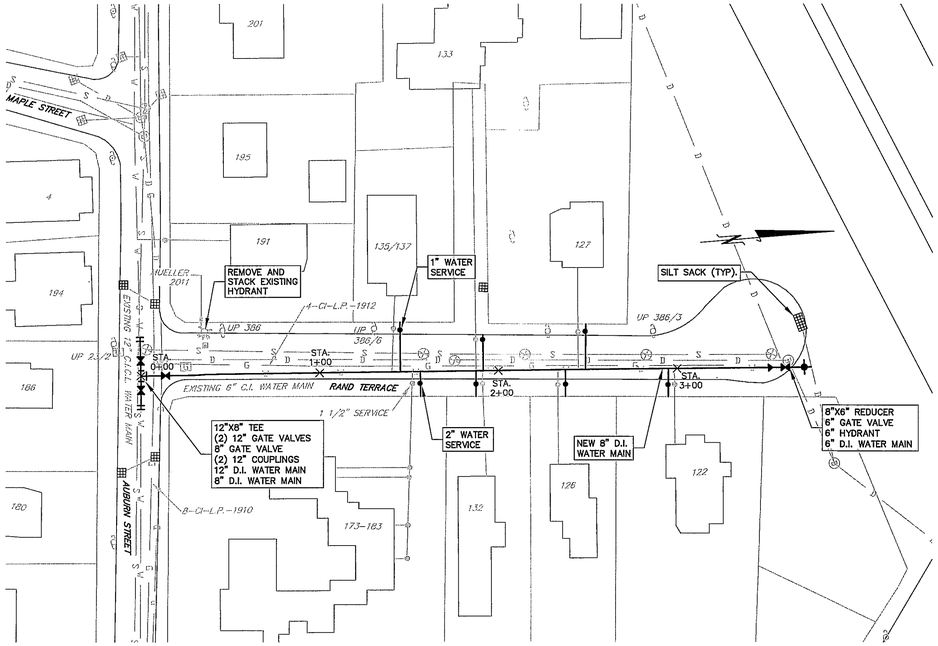
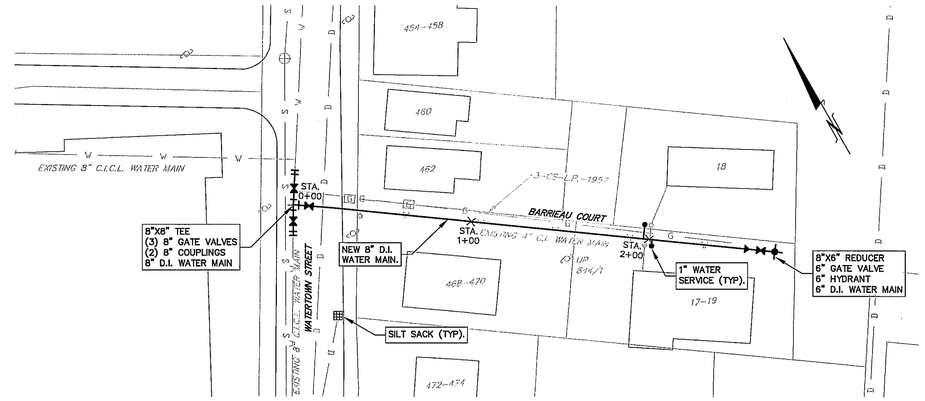


RAND TERRACE STA. 0+00 TO STA. 3+71
SCALE: 1" = 40'



BARRIEAU COURT STA. 0+00 TO STA. 2+70
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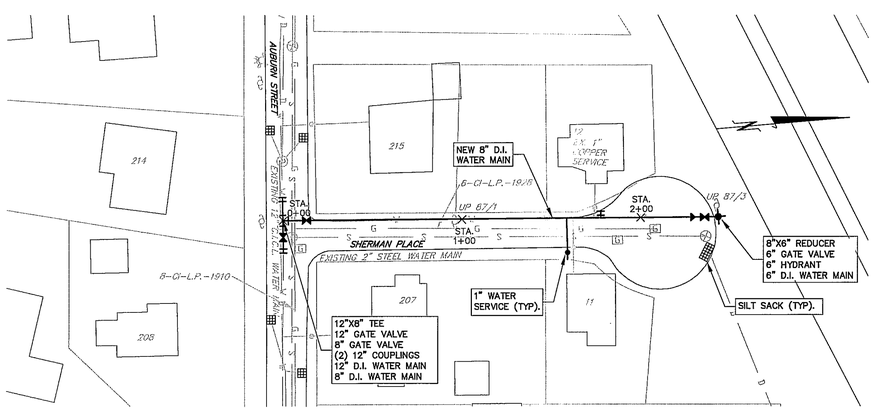
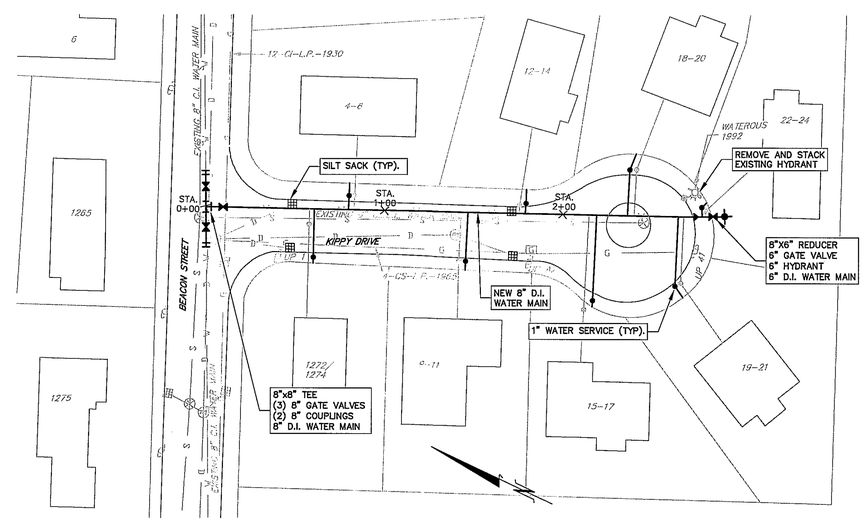


SHERMAN PLACE STA. 0+00 TO STA. 2+44
SCALE: 1" = 40'



KIPPY DRIVE STA. 0+00 TO STA. 2+95
SCALE: 1" = 40'

NEWTON, MASSACHUSETTS

2016 WATER MAIN REHABILITATION

RAND TERRACE
STA. 0+00 TO STA. 3+71
BARRIEAU COURT
STA. 0+00 TO STA. 2+70
SHERMAN PLACE
STA. 0+00 TO STA. 2+44
KIPPY DRIVE
STA. 0+00 TO STA. 2+95

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SCALE: 1" = 40'

C-4

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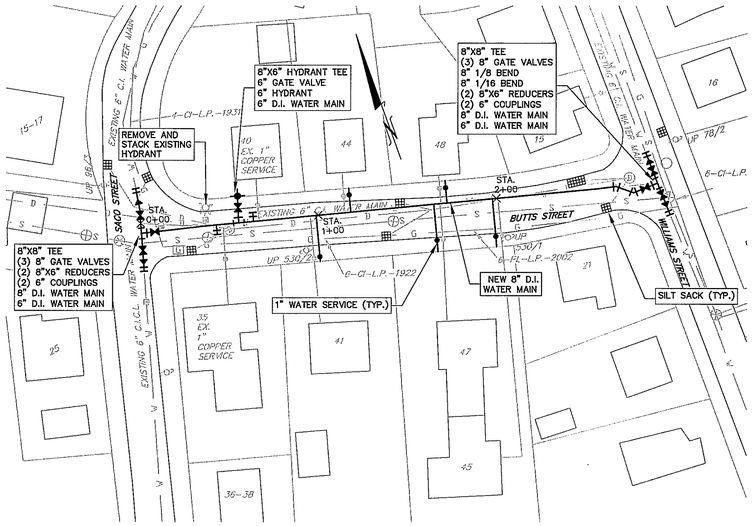
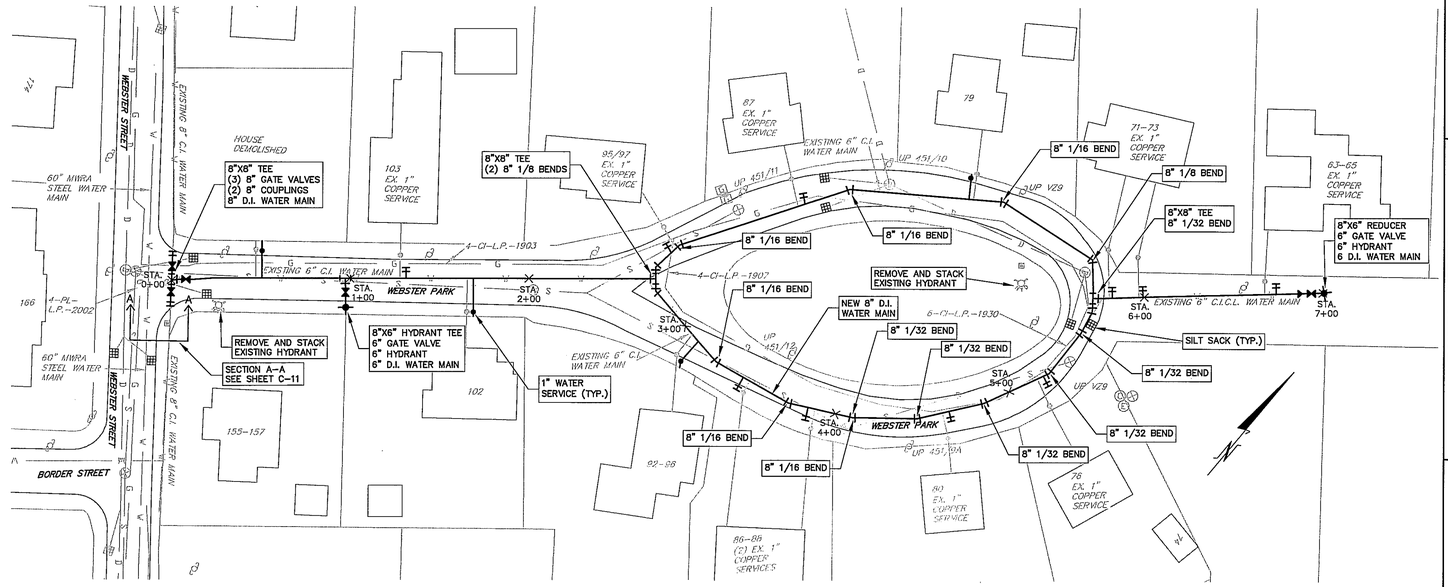
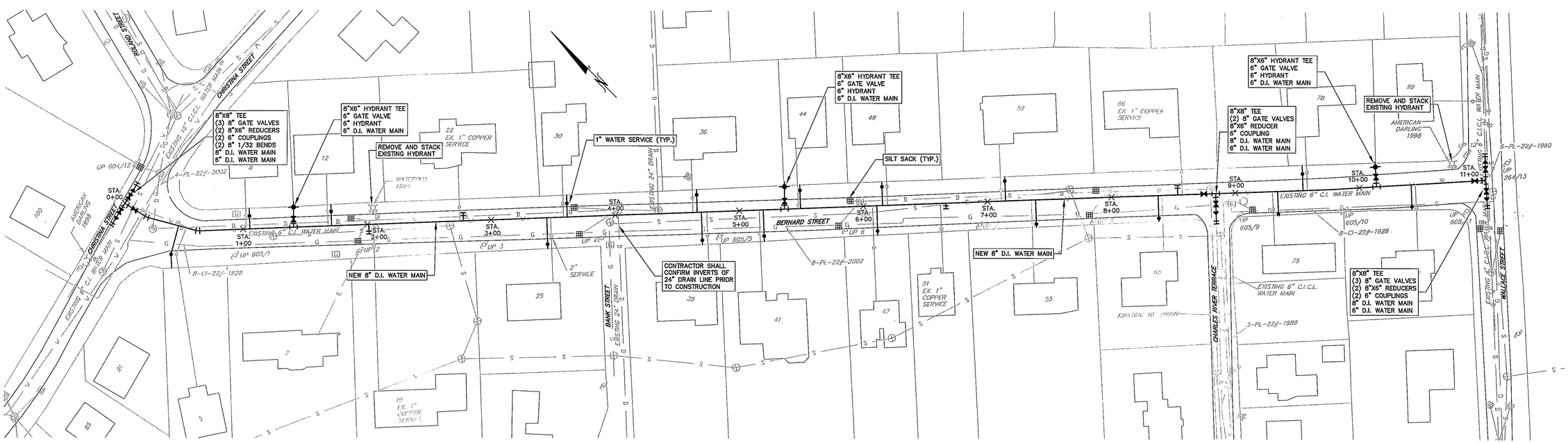


BUTTS STREET STA. 0+00 TO STA. 2+92
SCALE: 1" = 40'



WEBSTER PARK STA. 0+00 TO STA. 7+01
SCALE: 1" = 40'



BERNARD STREET STA. 0+00 TO STA. 11+02
SCALE: 1" = 40'

NEWTON, MASSACHUSETTS

2016 WATER MAIN REHABILITATION

BUTTS STREET
STA. 0+00 TO STA. 2+92
WEBSTER PARK
STA. 0+00 TO STA. 7+01
BERNARD STREET
STA. 0+00 TO STA. 11+02

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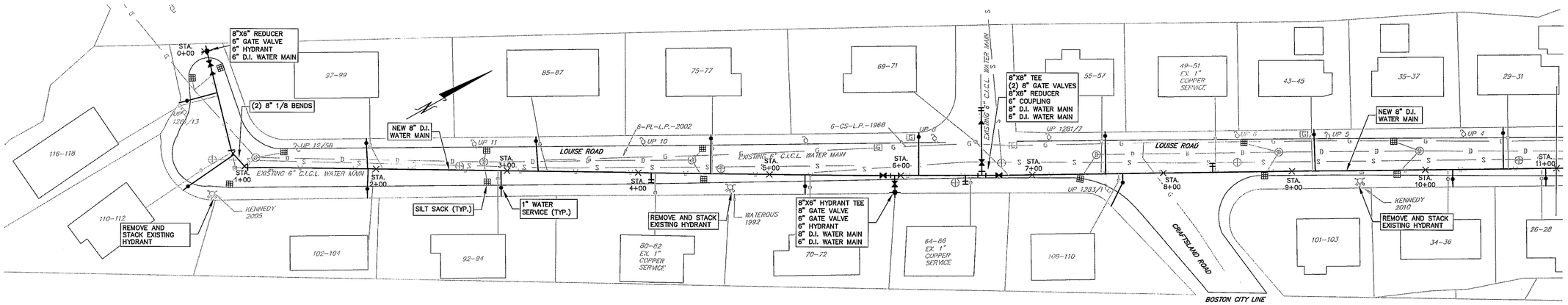
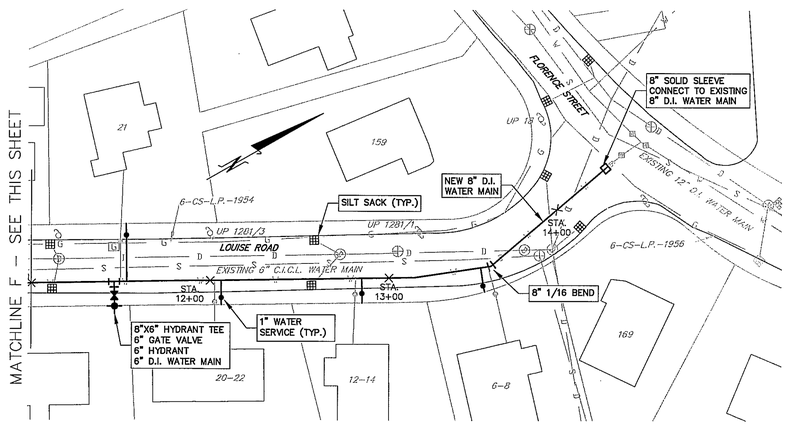
DATE: AUGUST 2016
SCALE: 1" = 40'

C-5



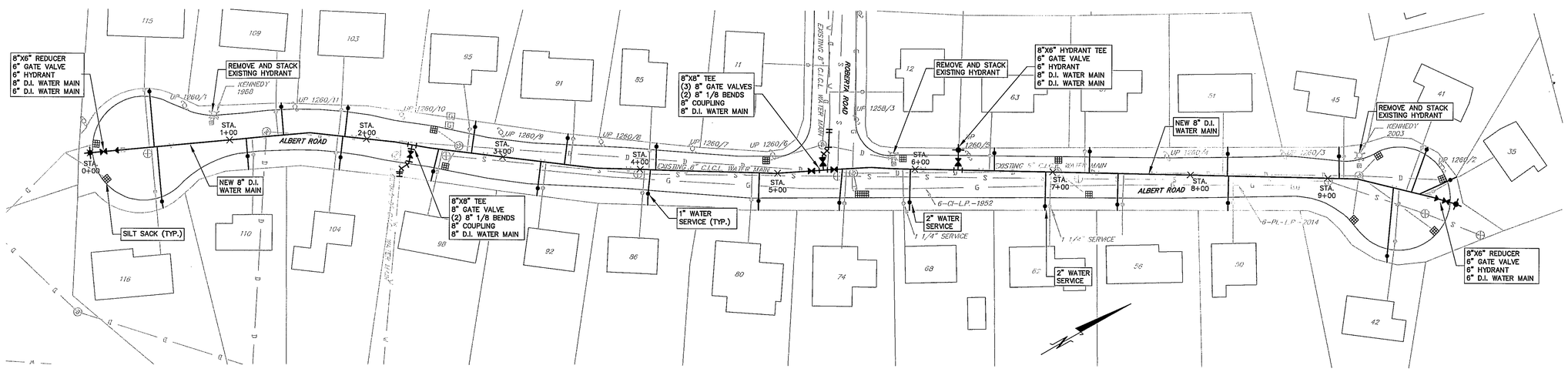
LOUISE ROAD STA. 0+00 TO STA. 11+00

SCALE: 1" = 40'



LOUISE ROAD STA. 11+00 TO STA. 14+60

SCALE: 1" = 40'



ALBERT ROAD STA. 0+00 TO STA. 9+93

SCALE: 1" = 40'

NEWTON, MASSACHUSETTS

2016 WATER MAIN REHABILITATION

LOUISE ROAD
STA. 0+00 TO STA. 14+60
ALBERT ROAD
STA. 0+00 TO STA. 9+73

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DATE: AUGUST 2016
SCALE: 1" = 40'

C-6

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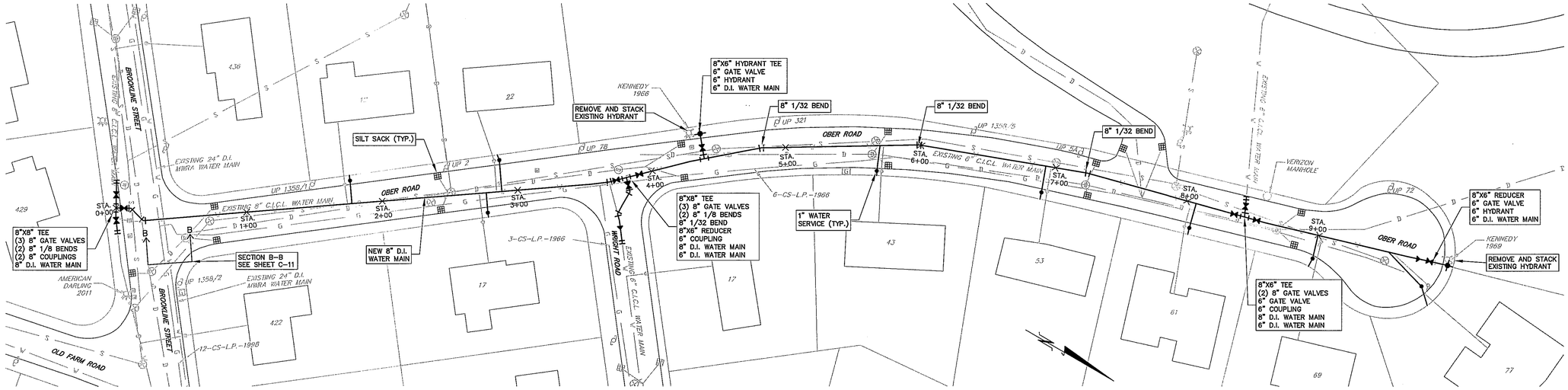
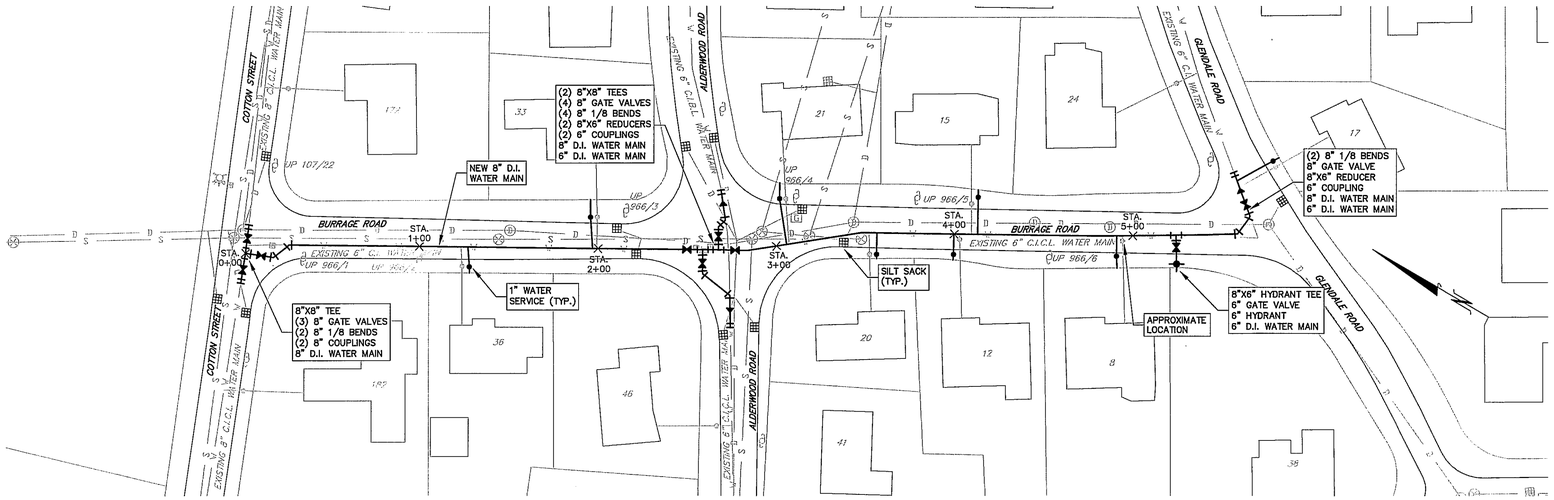


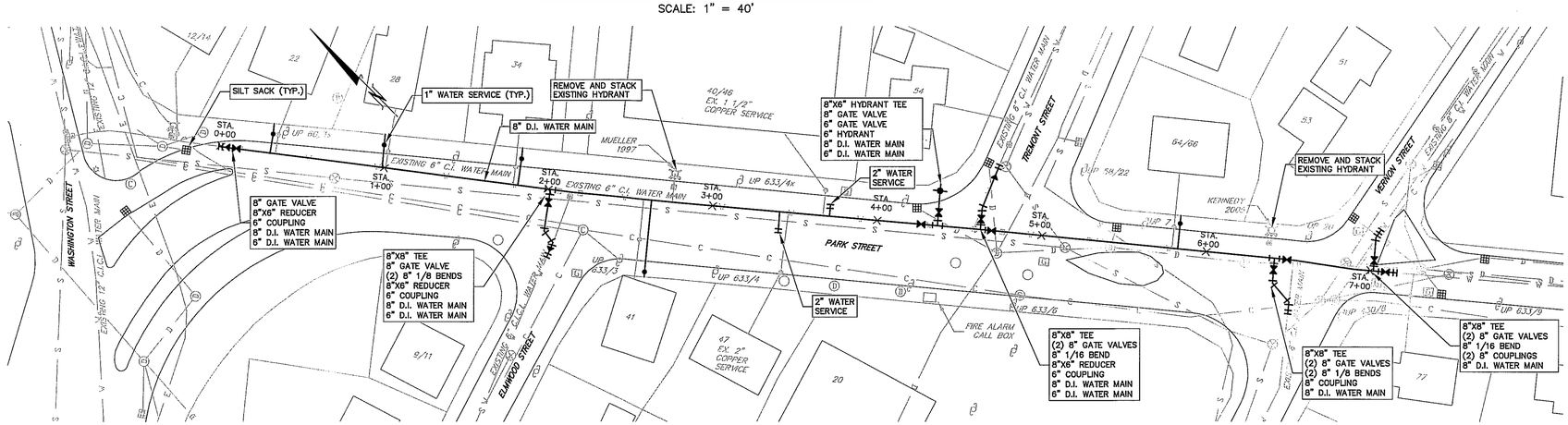
OBER ROAD STA. 0+00 TO STA. 9+97

SCALE: 1" = 40'



BURRAGE ROAD STA. 0+00 TO STA. 5+92

SCALE: 1" = 40'



PARK STREET STA. 0+00 TO STA. 7+15

SCALE: 1" = 40'

NEWTON, MASSACHUSETTS
2016 WATER MAIN REHABILITATION

OBER ROAD
STA. 0+00 TO STA. 9+97
BURRAGE STREET
STA. 0+00 TO STA. 5+92
PARK STREET
STA. 0+00 SO STA. 7+15

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COMMONWEALTH OF MASSACHUSETTS
MARK L. GUCKY
Date: 2016.08.22 11:50:01 -04'00'
7.22.16

TATA & HOWARD

T&H NO.: 4224
DATE: AUGUST 2016
SCALE: 1" = 40'

C-7

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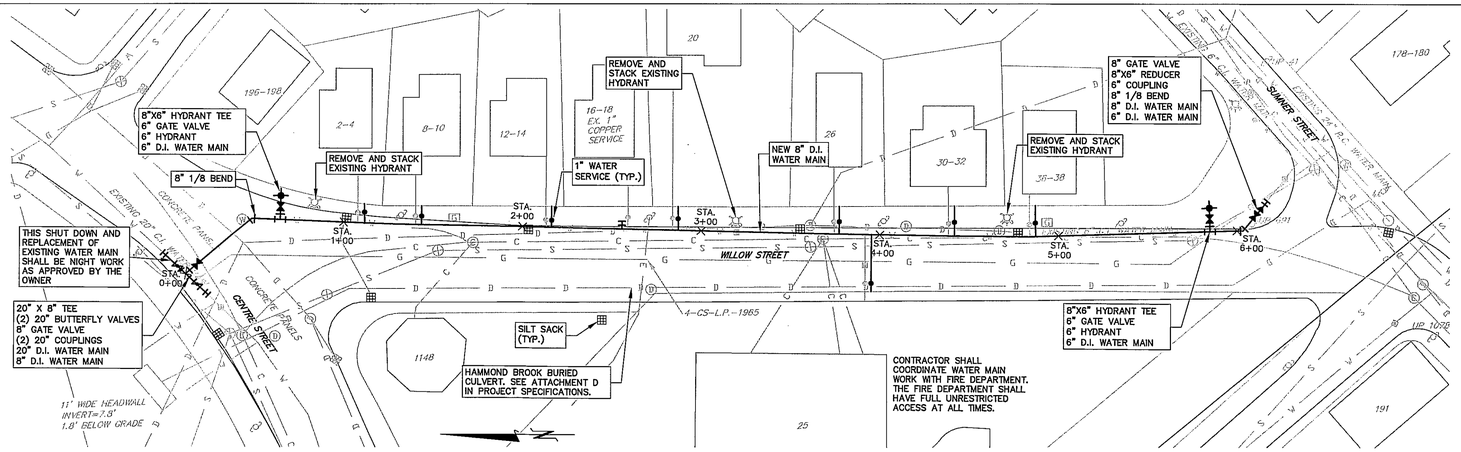
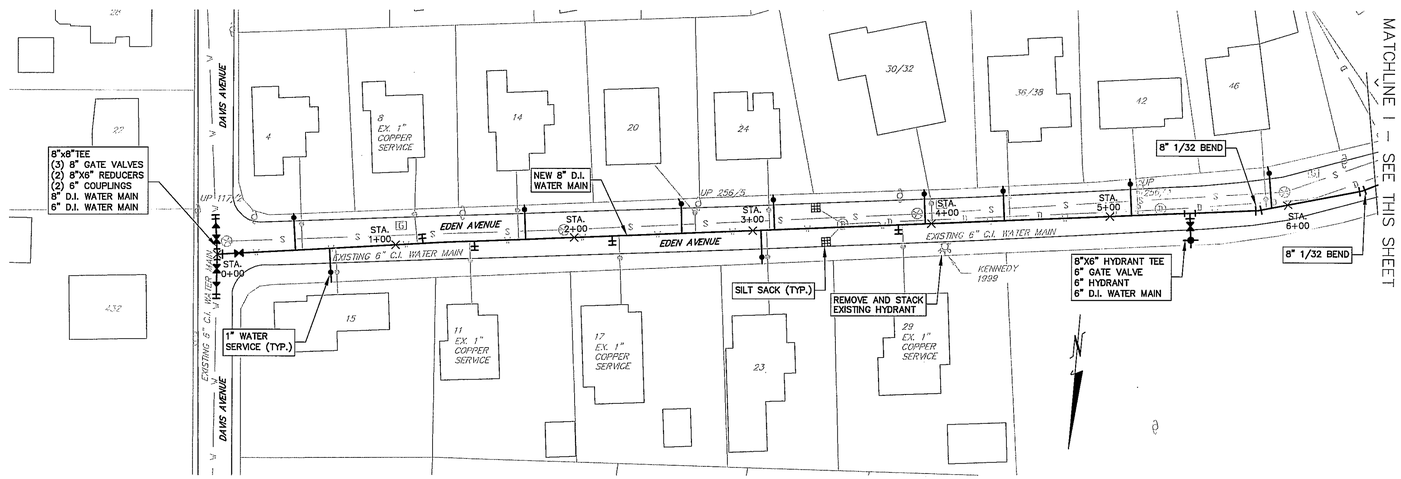


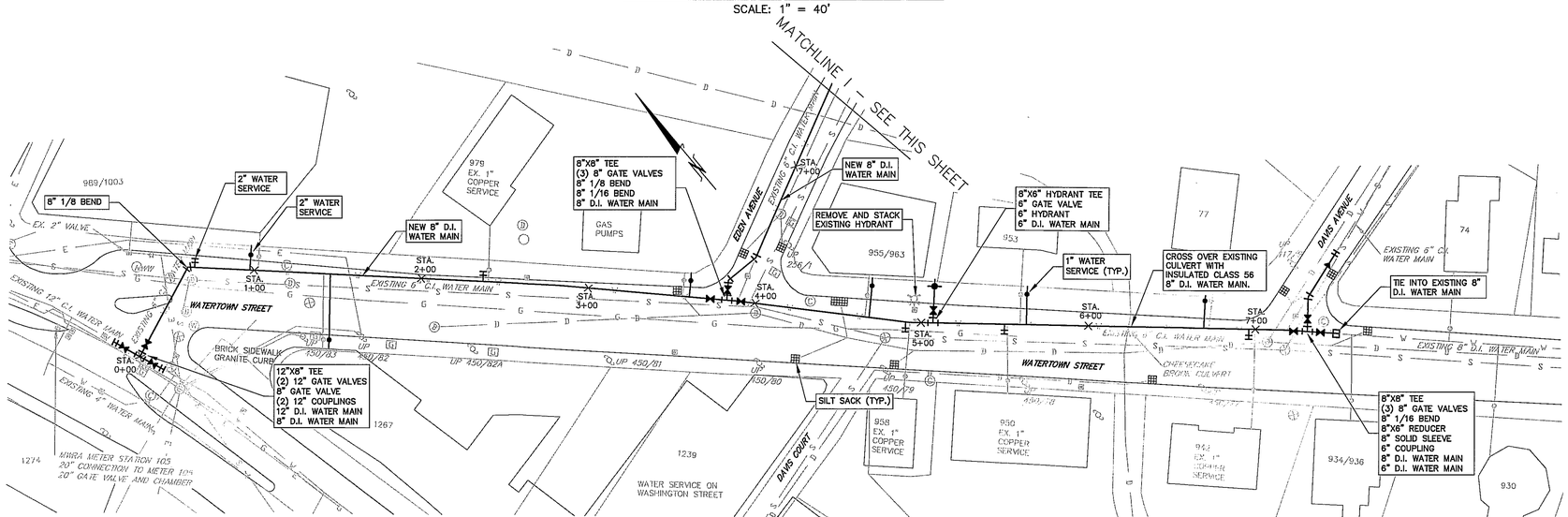
WILLOW STREET STA. 0+00 TO STA. 6+24

SCALE: 1" = 40'



EDEN AVENUE STA. 0+00 TO STA. 6+50

SCALE: 1" = 40'



EDEN AVENUE STA. 6+50 TO STA. 7+92

SCALE: 1" = 40'

WATERTOWN STREET STA. 0+00 TO STA. 7+50

SCALE: 1" = 40'

NEWTON, MASSACHUSETTS

2016 WATER MAIN REHABILITATION

WILLOW STREET
STA. 0+00 TO STA. 6+24
EDEN AVENUE
STA. 0+00 TO STA. 7+92
WATERTOWN STREET
STA. 0+00 TO STA. 7+50

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COMMONWEALTH OF MASSACHUSETTS
MICHAEL STANLEY CRAGOY
No. 46060
REGISTERED PROFESSIONAL ENGINEER
7-26-16

TATA & HOWARD

T&H NO.: 4224
DATE: AUGUST 2016
SCALE: 1" = 40'

C-8

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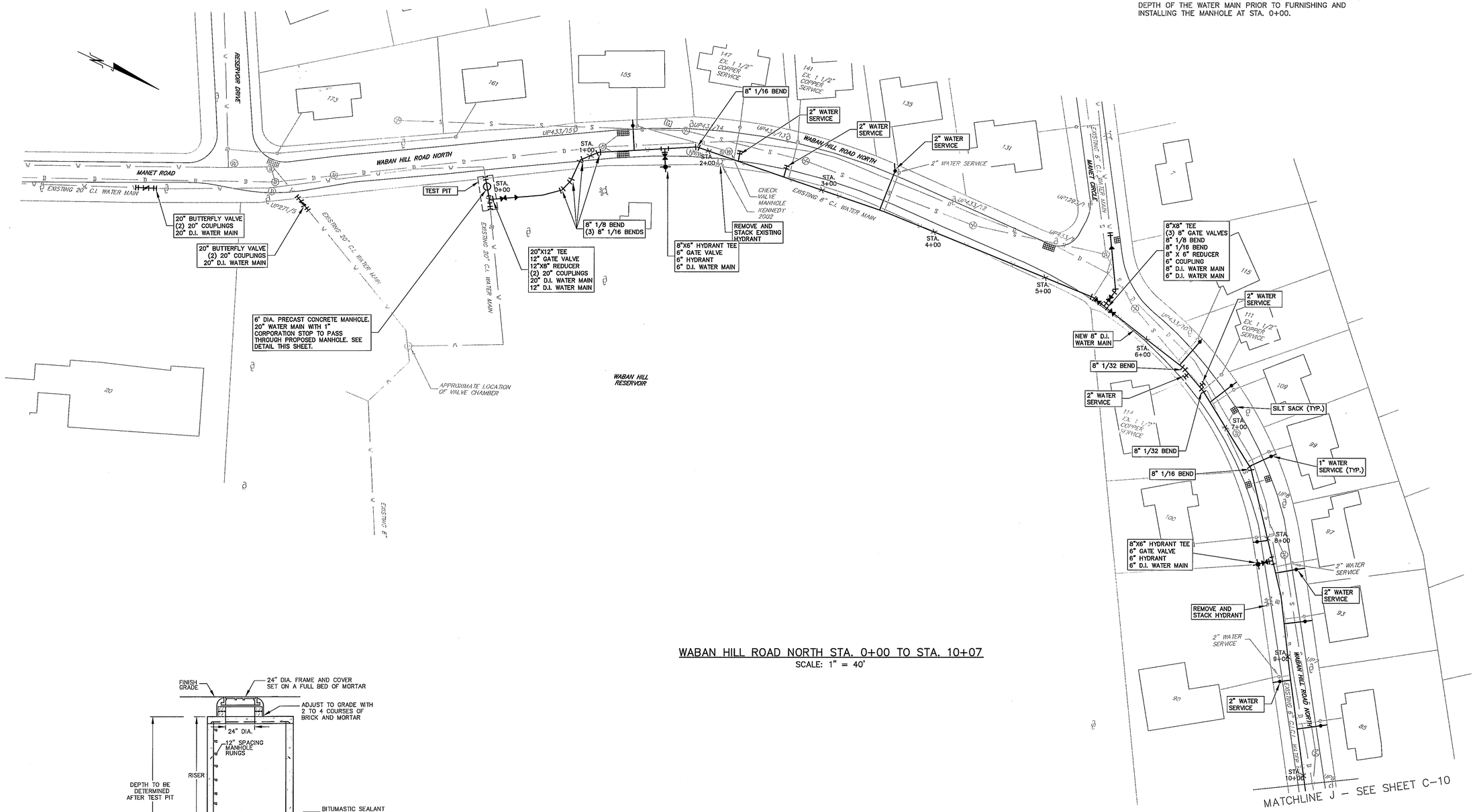
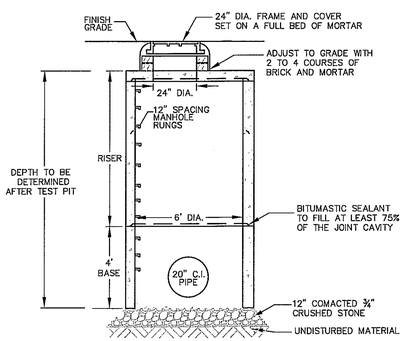
NOTE:

1. CONTRACTOR SHALL COORDINATE WITH THE CITY FOR THE SHUT DOWN OF THE 10 MG RESERVOIR PRIOR TO CUTTING IN 20" VALVE.
2. CONTRACTOR SHALL PERFORM A TEST PIT TO DETERMINE DEPTH OF THE WATER MAIN PRIOR TO FURNISHING AND INSTALLING THE MANHOLE AT STA. 0+00.



WABAN HILL ROAD NORTH STA. 0+00 TO STA. 10+07
SCALE: 1" = 40'



PRECAST STRAIGHT DRAIN MANHOLE
SCALE: NONE

NOTE:

1. APPROXIMATE DEPTH OF 20" C.I. PIPE IS 9 FEET.
2. CONTRACTOR SHALL CONFIGURE MANHOLE BASE AND RISERS TO ACCOMMODATE DEPTH.

NEWTON, MASSACHUSETTS
2016 WATER MAIN REHABILITATION

WABAN HILL ROAD NORTH
STA. 0+00 TO STA. 10+07

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COMMONWEALTH OF MASSACHUSETTS
MARK J. GUIDOTTI
NO. 46508
CIVIL
REGISTERED PROFESSIONAL ENGINEER
7-26-16

TATA & HOWARD

T&H NO.: 4224
DATE: AUGUST 2016
SCALE: 1" = 40'

C-9

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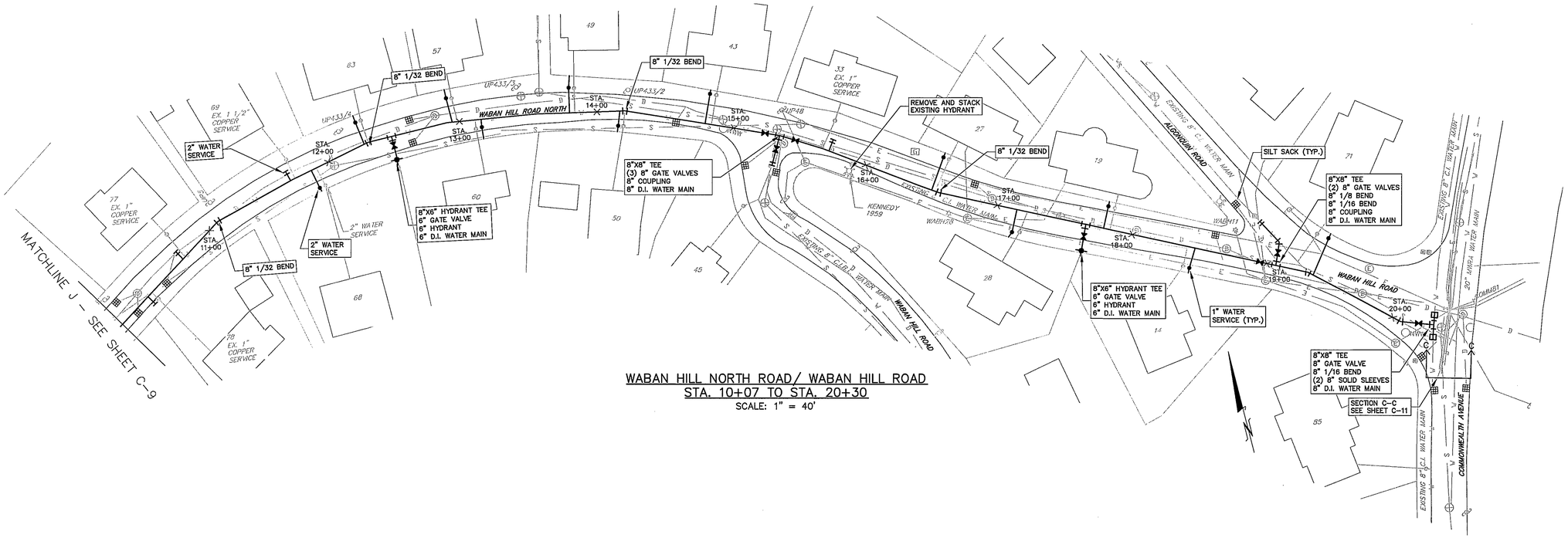
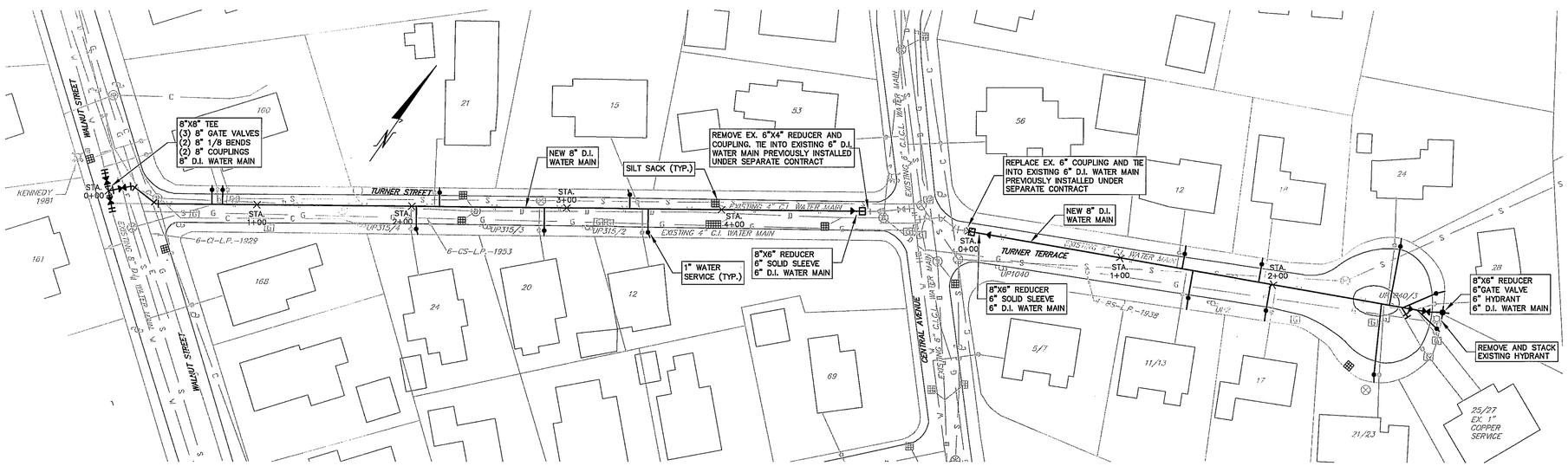


WABAN HILL NORTH ROAD/ WABAN HILL ROAD
STA. 10+07 TO STA. 20+30
SCALE: 1" = 40'



TURNER STREET STA. 0+00 TO STA. 4+94
SCALE: 1" = 40'

TURNER TERRACE STA. 0+00 TO STA. 2+96
SCALE: 1" = 40'

NEWTON, MASSACHUSETTS
2016 WATER MAIN REHABILITATION

WABAN HILL ROAD NORTH/ WABAN HILL ROAD
STA. 10+07 TO STA. 20+30
TURNER STREET
STA. 0+00 TO STA. 4+94
TURNER TERRACE
STA. 0+00 TO STA. 2+96

Rev.	Date	Description
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Drawn By: MEC Designed By: MEC Checked By: PBH Approved By: KLG

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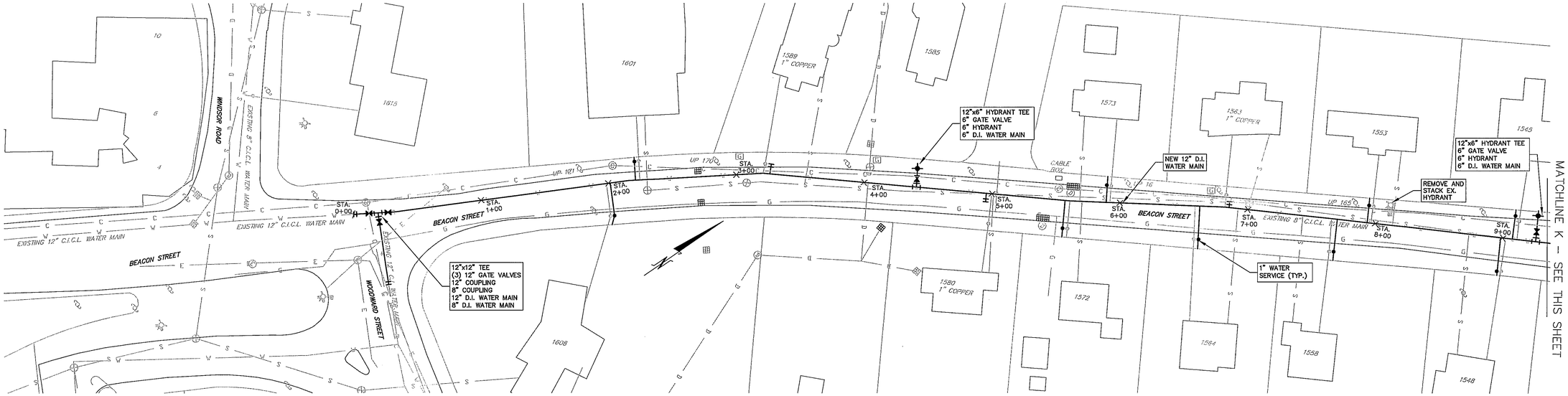
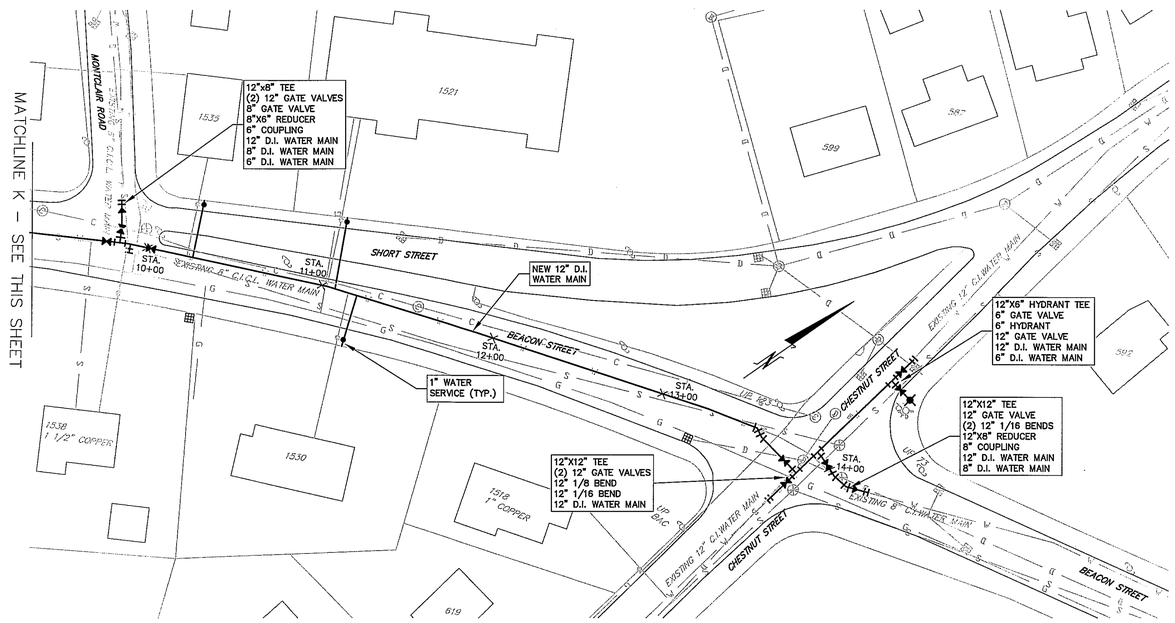
SCALE: 1" = 40'

C-10



BEACON STREET STA. 0+00 TO STA. 9+48
SCALE: 1" = 40'



BEACON STREET STA. 9+48 TO STA. 14+26
SCALE: 1" = 40'

NEWTON, MASSACHUSETTS
2016 WATER MAIN REHABILITATION

BEACON STREET
STA. 0+00 TO STA. 14+26

Rev.	Date	Description
1	5/11/16	Lexington Street & Profile Revisions

Drawn By: MEC Designed By: MEC Checked By: PBH Approved By: KLG

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COMMONWEALTH OF MASSACHUSETTS
KAREN L. GRACEY
CIVIL
No. 46603
REGISTERED PROFESSIONAL ENGINEER
7-26-16

TATA & HOWARD

T&H NO.: 4224
DATE: AUGUST 2016
SCALE: 1" = 40'

C-11

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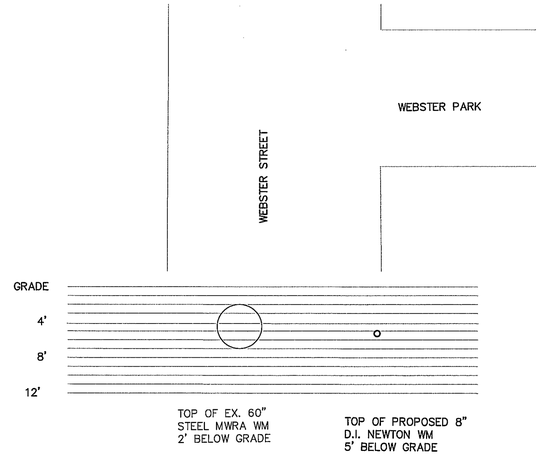
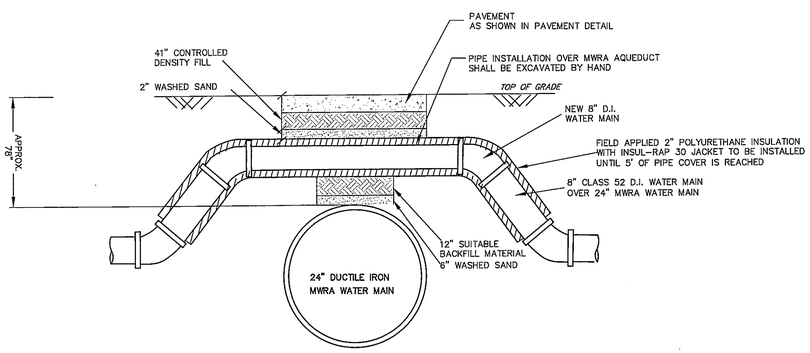


SECTION A–A: WEBSTER STREET MWRA 60" WATER MAIN AT WEBSTER PARK

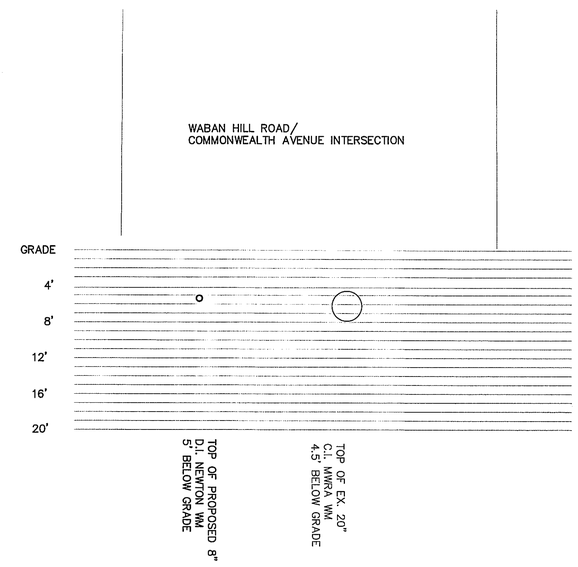
SCALE: 1" = 8'



NOTE: ALL PIPE GASKETS WITHIN LUMP SUM ITEM LIMITS SHALL BE TYTON JOINT FIELD LOCKING GASKETS

SECTION B–B: MWRA 24" WATER MAIN CROSSING BROOKLINE STREET AT OBER ROAD

SCALE: NONE



SECTION C–C: WABAN HILL ROAD MWRA 20" WATER MAIN AT COMMONWEALTH AVENUE

SCALE: 1" = 8'

NEWTON, MASSACHUSETTS

2016 WATER MAIN REHABILITATION

MWRA CROSSINGS DETAILS

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Drawn By: MEC Designed By: MEC Checked By: PBH Approved By: RLG

Rev.	Date	Description
1	5/11/16	Lexington Street & Profile Revisions

COMMONWEALTH OF MASSACHUSETTS
MARIEL E. CONLEY
CIVIL
No. 40002
REGISTERED PROFESSIONAL ENGINEER
7-26-16

TATA & HOWARD

T&H NO.: 4224
DATE: AUGUST 2016
SCALE: AS NOTED

C-12

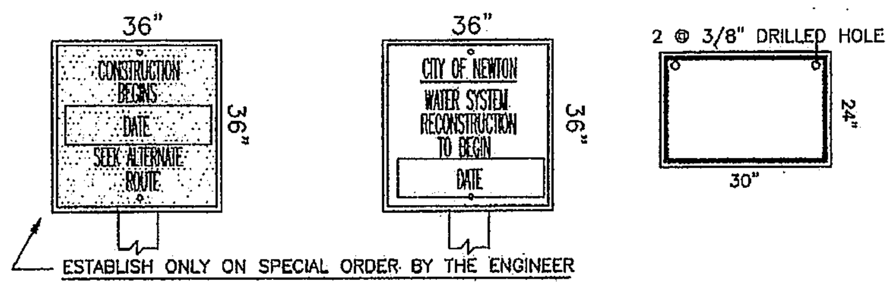
P:\Project_Files\Newton\2016 Water Main Design\Drawings\Civil\225_Final_Design.dwg 7/25/2016 5:19 PM MCOUGHLIN

SIGN REQUIREMENTS & LEGEND:

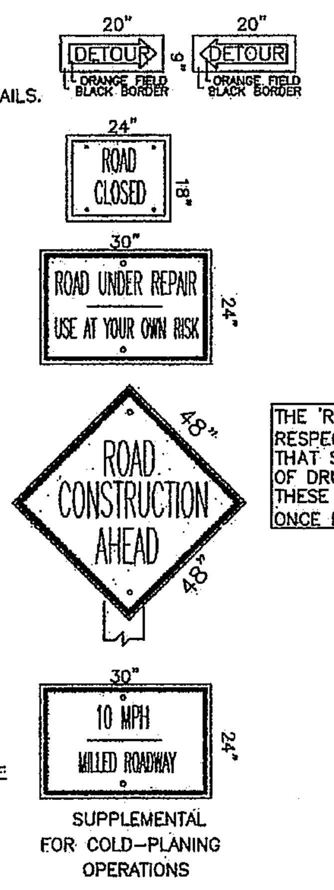
- SIGNS ARE TO BE FIRMLY FASTENED TO THE RESPECTIVE SUPPORTS AND/OR DRUMS AND ARE TO COMPLY WITH THE DIRECTIVES OUTLINED IN THE GENERAL CONSTRUCTION DETAILS.
- POST MOUNTED SIGNS ARE TO BE SET IN FULL VIEW WITH THE BOTTOM OF THE SIGN NOT LESS THAN 7' NOR MORE THAN 10' ABOVE THE ADJACENT GRADE.
- SIGNS ARE TO BE PROFESSIONALLY MADE OF 3/4" EXTERIOR PLYWOOD. THE FIELD IS TO BE REFLECTORIZED ORANGE BEARING A BLACK LEGEND 6" IN HEIGHT AND A BLACK SOLID 1" BORDER SET 1 1/4" IN FROM THE EDGE.
- ANY SIGN WHICH IS DAMAGED FOR ANY REASON DURING THE TERM OF THE PROJECT IS TO BE IMMEDIATELY REPLACED.
- ANY MISSING SIGN SHALL REDUCE THE PAYMENT AT THE RATE OF THE PRO-RATED VALUE FOR THE LENGTH OF TIME THAT THE SIGN IS OUT OF SERVICE.
- SIGNS AND SIGN POSTS ARE TO BE MOUNTED AND ESTABLISHED SO AS TO BE BOTH STURDY AND WIND RESISTANT. ONLY ADEQUATELY SIZED NUT, BOLT & WASHER FASTENERS SHALL BE USED. NO NAILS ARE TO BE USED TO FASTEN ANY SIGN, NOR SHALL ANY SIGN BE MOUNTED ON ANY TREE. THE SIGN LOCUS ON THESE PLANS REPRESENT THE MOST LIKELY LOCATIONS, HOWEVER, FINAL LOCATIONS AND/OR SUPPLEMENTAL SIGNS AND DRUMS SHALL BE LOCATED, RELOCATED, AND/OR PLACED AS THE OPERATIONAL PROCESS MAY NECESSITATE AND/OR AS DIRECTED BY THE ENGINEER.
- SIGNS SHALL BE PLACED IN THE MOST CONSPICUOUS LOCATIONS AS A MEANS FOR BOTH VEHICULAR AND PEDESTRIAN WARNING, HOWEVER, IN NO CASE SHALL ANY SIGN IMPEDE THE SIGHT LINE NOR INTERFERE WITH EITHER PEDESTRIAN AND/OR VEHICULAR TRAFFIC.

SPECIALTY SIGNS:

- SITE-MADE SIGNS: 'BLANKS' ARE TO HAND LETTERED ON SITE WITH EXTRA LARGE WATER PROOF PERMANENT FELT TIP MARKERS AND ARE TO BE WIRED TO BARRELS AND POSTED AS DIRECTED BY THE ENGINEER. THESE SIGNS ARE ONLY TO BE USED FOR MESSAGES WHICH ARE SITE SPECIFIC. AFTER EACH USE THE SIGN FIELD IS TO BE CLEANED WITH A SOLVENT AND PLACED AT THE READY.



- ALTERNATE ROUTE & PROJECT SIGNS ARE TO BE ESTABLISHED AT LEAST TWO WEEKS BEFORE THE COMMENCMENT OF THE CONSTRUCTION ACTIVITIES, AND ARE TO BE MAINTAINED FOR THE DURATION OF ACTIVITIES WITHIN THAT PARTICULAR PROJECT ZONE.



DRUM REQUIREMENTS: { STANDARD (LOCUS NOT SHOWN. QUANTITY & LOCATIONS AS REQUIRED) / 'RC' & 'D' TYPE (SEE ACCOMPANYING NOTES REGARDING THESE DEVICES)

STANDARD TYPE ARE TO COMPLY WITH BOTH THE FOLLOWING DIRECTIVES AND TO THE WRITTEN CONTRACT SPECIFICATIONS:

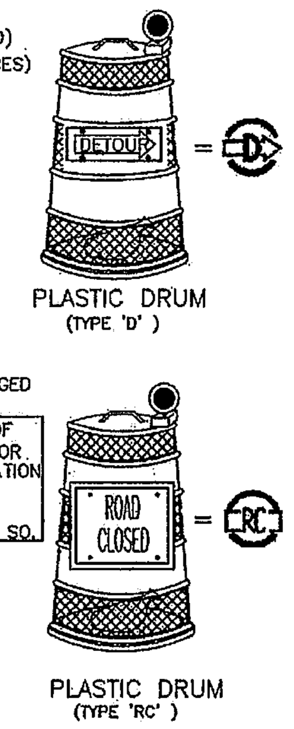
- THEY ARE TO BE PLASTIC DRUMS, COMPLYING WITH M.U.T.D. AND EQUIPPED WITH OPERATING TYPE 'C' FLASHERS.
- DRUMS ARE TO BE U.V. RESISTANT. LOW DENSITY, IMPACT RESISTANT POLYETHYLENE.
- REFLECTORIZED SHEETING IS TO BE OF AN APPROVED ORANGE AND WHITE TYPE IV SHEETING CONFORMING TO M.9.30.0
- MINIMUM WALL THICKNESS IS TO BE 3/32"
- MINIMUM DRUM DIAMETER SHALL BE 18"
- DRUMS SHALL BE APPROXIMATELY 36" IN HEIGHT
- ALL DRUMS SHALL BE MAINTAINED AND WHEN IT LOSES ITS TARGET VALUE (INCLUDING DUST BUILD-UP) IT IS TO BE REPLACED.
- ALL DRUMS ARE TO BE EQUIPPED WITH BASES THAT DO NOT DETACH WHEN THE DRUM IS DRAGGED AND EACH DRUM IS TO BE PROPERLY WEIGHTED TO FULLY RESIST 65 MPH WIND CONDITIONS.

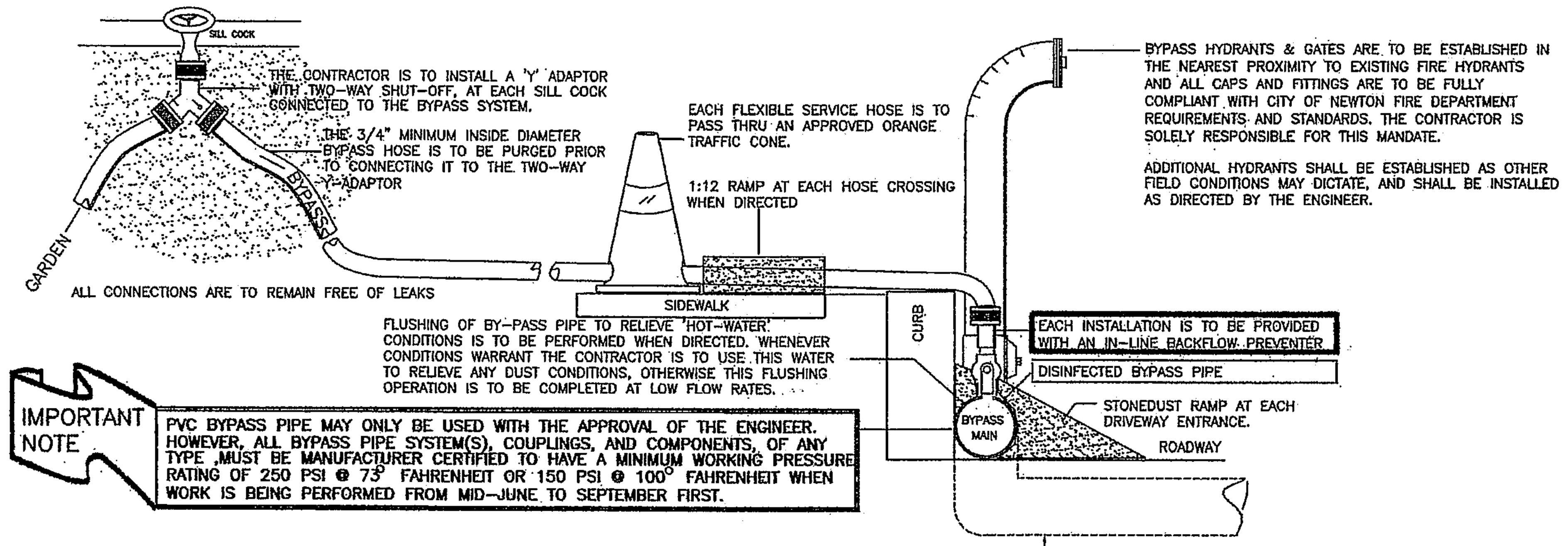
THE 'RC' AND 'D' TYPE DRUM LOCATIONS THAT ARE SHOWN ON THESE PLANS DEPICT THE MINIMUM NUMBER OF RESPECTIVE PERIMETER DRUMS THAT MUST BE INITIALLY PLACED 'AT THE READY' TO CONTROL THE TRAFFIC FOR THAT SECTION OF ROADWAY WHICH IS ACTIVELY UNDER CONSTRUCTION. HOWEVER, THE NUMBER, TYPE & LOCATION OF DRUMS MAY VARY AS THE ENGINEER DEEMS NECESSARY, AND ONLY WHEN THE ENGINEER DIRECTS ARE THESE DRUMS BE MOVED TO THEIR NEW 'AT THE READY' LOCATIONS WITHIN THE SAME PROJECT ZONE, AND ONCE RELOCATED THEY ARE NOT TO BE MOVED FROM THAT RE-POSITIONED LOCATION UNTIL DIRECTED TO DO SO.

- AT THE BEGINNING OF EACH WORKDAY, AND/OR AS OTHERWISE DIRECTED THROUGHOUT THE COURSE OF THE WORKDAY, THE CONTRACTOR IS TO ESTABLISH AND MAINTAIN A WELL MARKED DETOUR ROUTE, AND IS TO FURTHER COORDINATE THIS EFFORT WITH THE ON-SITE POLICE DETAILS. ALL DETOUR ROUTES SHALL TAKE INTO CONSIDERATION BUS STOPS, BUS AND TRUCK TRAFFIC, SCHOOL CROSSINGS, BUSINESS TRAFFIC, ETC., AND ARE TO BE ESTABLISHED SO AS TO HAVE THE LEAST ADVERSE IMPACT ON THE AREA.

'RC' & 'D' TYPE ARE TO COMPLY WITH ALL DIRECTIVES LISTED FOR 'STANDARD TYPE' IN ADDITION TO THE FOLLOWING SPECIAL INSTRUCTIONS:

- DRUMS ARE TO BE ESTABLISHED FOR EACH PHASE AT EACH INTERSECTION PER THE ACCOMPANYING LOCUS PLAN, OR AS DIRECTED, AND ARE NOT TO BE REMOVED FROM THE DESIGNATED INTERSECTIONS FOR THE ENTIRE TERM OF THE PHASE BUT ARE TO BE LEFT 'AT THE READY' FOR IMMEDIATE ACCESS AND USE.
- THE REMOVABLE BOTTOMS OF SUCH DRUMS ARE TO BE PERMANENTLY ATTACHED TO THE DRUM ITSELF SUCH THAT THE BASE WILL NOT SEPARATE FROM THE DRUM WHEN IT IS DRAGGED BUT YET WILL BREAK FREE IF HIT. FASTENERS ARE TO BE LIGHT DUTY. 'TIRE TYPE' WEIGHTS MAY BE USED IN LIEU OF FASTENED BOTTOMS.
- DRUMS ARE TO BE MOVED INTO AND OFF OF THE ROADWAY AS NECESSARY AND/OR AS DIRECTED. WHILE FULL SITE REMOVAL WILL BE AT THE DISCRETION OF THE ENGINEER.
- ONE SIGN IS TO BE PERMANENTLY FASTENED TO THE DRUM.
- SIGNS ARE TO BE ATTACHED TO THE DRUM WITH 3/8" HEAVY DUTY NUT, BOLT, AND FENDER WASHER FASTENERS WITH A MINIMUM OF FOUR EQUALLY SPACED FASTENERS PER SIGN.
- THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ESTABLISHING DAILY DETOURS TO THE SATISFACTION OF THE ENGINEER.



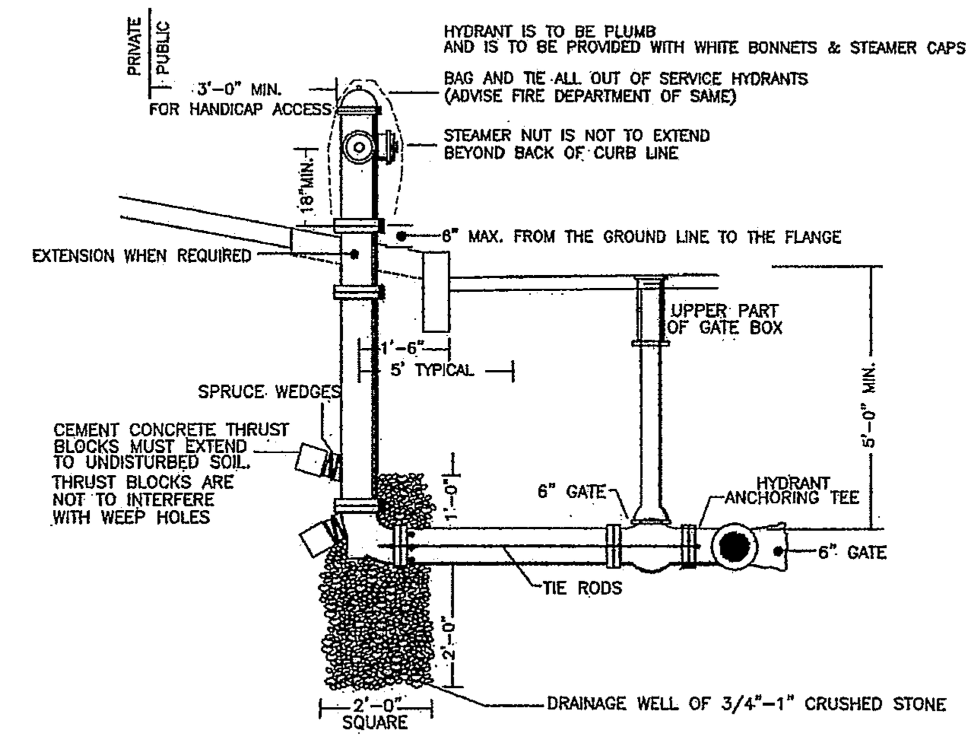


IMPORTANT NOTE: PVC BYPASS PIPE MAY ONLY BE USED WITH THE APPROVAL OF THE ENGINEER. HOWEVER, ALL BYPASS PIPE SYSTEM(S), COUPLINGS, AND COMPONENTS, OF ANY TYPE ,MUST BE MANUFACTURER CERTIFIED TO HAVE A MINIMUM WORKING PRESSURE RATING OF 250 PSI @ 73° FAHRENHEIT OR 150 PSI @ 100° FAHRENHEIT WHEN WORK IS BEING PERFORMED FROM MID-JUNE TO SEPTEMBER FIRST.

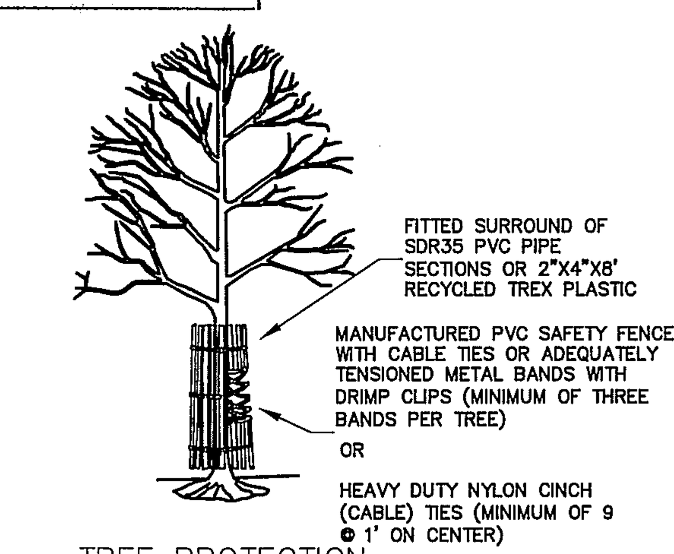
THE BYPASS PIPE IS TO BE RECESSED INTO THE EXISTING ROADWAY AT ALL STREET CROSSINGS & PEDESTRIAN RAMPS, AND SUBSEQUENTLY TOPPED WITH TYPE I-I BITUMINOUS HOT MIX.

THE ENTIRE BYPASS SYSTEM IS TO REMAIN FREE OF LEAKS AT ALL TIMES.

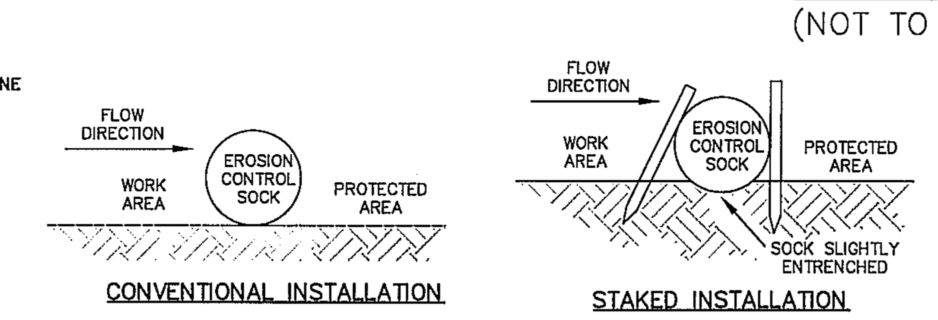
BYPASS, SILL COCK ADAPTOR & BACKFLOW PREVENTER



HYDRANT SCHEME
(NOT TO SCALE)

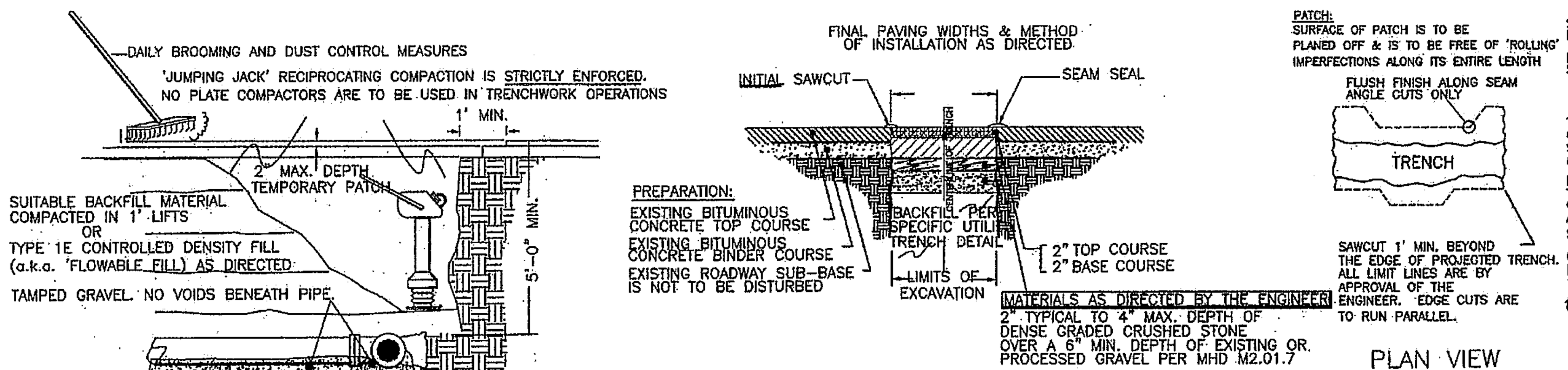


TREE PROTECTION
(NOT TO SCALE)



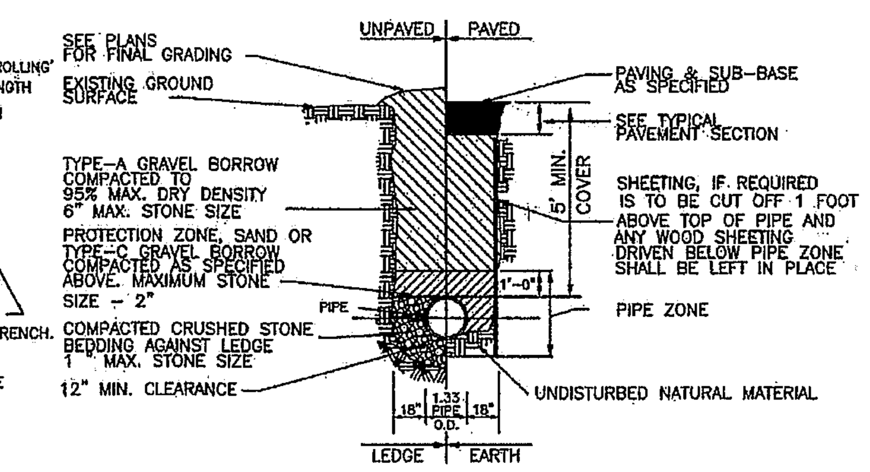
NOTES:
1. SOCK INSTALLED IN VEGETATED AREAS AND IN AREAS WITH MINIMAL SLOPES AND A LOW RISK OF RUNOFF SHALL BE CONVENTIONAL INSTALLATION.
2. SOCKS INSTALLED IN AREAS WITH A MODERATE RISK OF RUNOFF AND MODERATE SLOPES SHALL BE INSTALLED WITH A SLIGHT ENTRENCHMENT WITH NO STAKING.
3. SOCKS INSTALLED IN AREAS WITH A HIGH RISK OF RUNOFF OR STEEP SLOPES SHALL BE INSTALLED WITH ENTRENCHMENT AND STAKING.
4. FINAL INSTALLATION TECHNIQUES SHALL BE AS RECOMMENDED BY THE MANUFACTURER AND AS DIRECTED BY THE ENGINEER.

EROSION CONTROL SOCK
SCALE: NONE



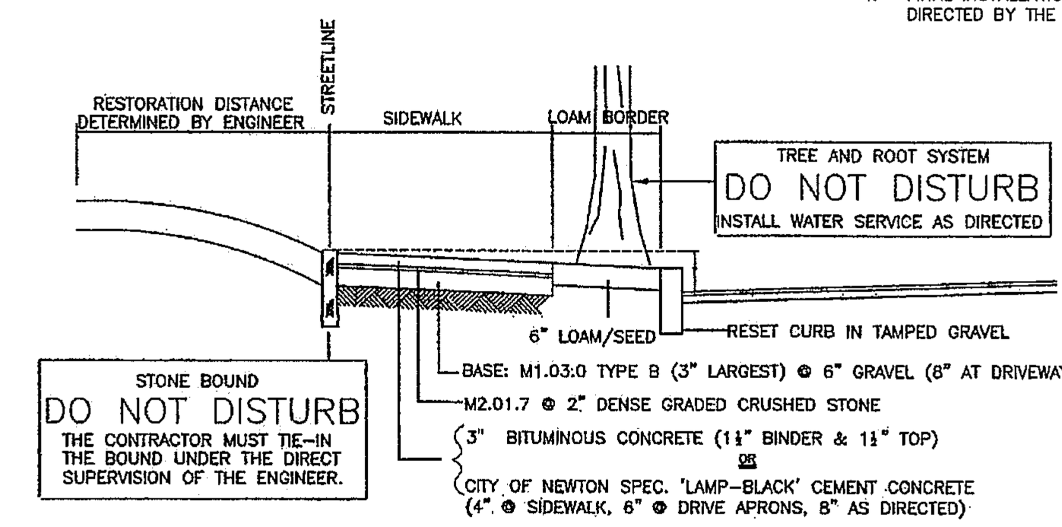
NOTES:
1. ALL INSTALLATION AND MATERIAL SPECIFICATIONS PER MASS. HIGHWAY DEPARTMENT STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, 1988 AS AMENDED.
2. ANY TOP COURSE APPLIED AT A WIDTH OF 3' WIDE OR GREATER IS TO BE PLACED BY MACHINE/BOX SPREADER WHEN & AS DIRECTED BY THE CITY OF NEWTON.
3. ENTIRE PROJECT SHALL RECEIVE PERMANENT TRENCH PAVEMENT

TYPICAL TRENCH REPAIR & PAVEMENT SECTION
(NOT TO SCALE)

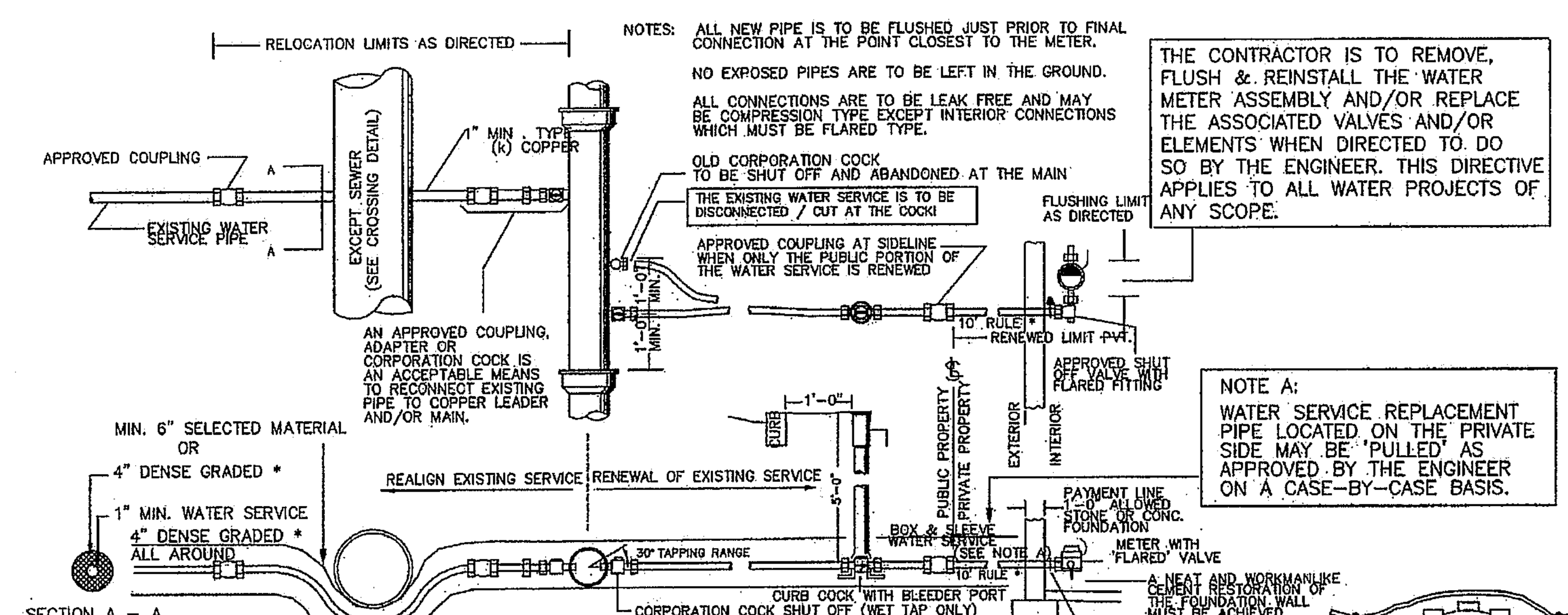


1. GRAVEL BORROW SHALL CONFORM TO MASS HIGHWAY SPECIFICATION M1.03.0
2. CRUSHED STONE BEDDING SHALL CONFORM TO MASS HIGHWAY SPECIFICATION M2.01.1
3. NO BROKEN PAVEMENT IS TO BE USED AS BACKFILL MATERIAL BUT IS TO BE DISPOSED OF AT THE CONTRACTORS EXPENSE

TYPICAL WATER TRENCH
(NOT TO SCALE)



TYPICAL CROSS SECTION OF STREETS SHOWING ELEMENTS OF RESTORATION



NOTES: ALL NEW PIPE IS TO BE FLUSHED JUST PRIOR TO FINAL CONNECTION AT THE POINT CLOSEST TO THE METER.

NO EXPOSED PIPES ARE TO BE LEFT IN THE GROUND.

ALL CONNECTIONS ARE TO BE LEAK FREE AND MAY BE COMPRESSION TYPE EXCEPT INTERIOR CONNECTIONS WHICH MUST BE FLARED TYPE.

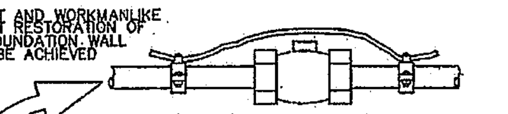
THE CONTRACTOR IS TO REMOVE, FLUSH & REINSTALL THE WATER METER ASSEMBLY AND/OR REPLACE THE ASSOCIATED VALVES AND/OR ELEMENTS WHEN DIRECTED TO DO SO BY THE ENGINEER. THIS DIRECTIVE APPLIES TO ALL WATER PROJECTS OF ANY SCOPE.

NOTE A:
WATER SERVICE REPLACEMENT PIPE LOCATED ON THE PRIVATE SIDE MAY BE 'PULLED' AS APPROVED BY THE ENGINEER ON A CASE-BY-CASE BASIS.

* DENSE GRADED MATERIAL SHALL BE PLACED ONLY AT THE DIRECTION OF THE ENGINEER WHERE SOIL CONDITIONS WARRANT THIS TREATMENT.

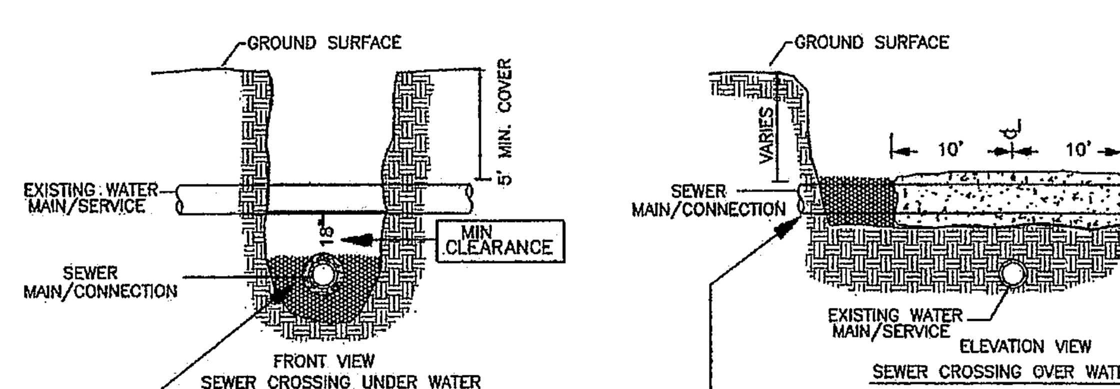
NOTE: THE CONTRACTOR SHALL LOCATE AND VERIFY THE WORKING CONDITION OF ALL WATER MAIN GATES WHICH MAY HAVE TO BE ACCESSED SHOULD IT BECOME NECESSARY TO SHUT THE AREA SYSTEM DOWN DURING THE COURSE OF THIS PROJECT. THIS VERIFICATION PROCESS SHALL BE DONE BEFORE THE WORK COMMENCES.

* **NOTE:** THE NATIONAL ELECTRIC CODE REQUIRES THAT NO LESS THAN 10' OF UNINTERRUPTED PIPE BE IN CONTACT WITH THE EARTH. THEREFORE THE ENTIRE WATER SERVICE SHALL BE REPLACED AS REQUIRED UNDER THIS RULE.
('PULLING' OF WATER SERVICES FROM THE METER TO THE SIDELINE WILL BE ALLOWED ON A CASE BY CASE BASIS AT THE DISCRETION OF THE ENGINEER.)



10' RULE ALTERNATE TYPICAL BONDING (GROUND) JUMPER
IN THOSE CASES WHERE COMPRESSION FITTINGS ARE LOCATED WITHIN (10') OF THE BUILDING FOUNDATION THE CONTRACTOR IS TO THOROUGHLY CLEAN THE EXISTING WATER SERVICE PIPE AND IS TO SUBSEQUENTLY INSTALL A BONDING JUMPER(S) SYSTEM CONSISTING OF 2 ELECTRICAL GROUND CLAMPS AND ONE #4 SOLID COPPER WIRE. CERTAIN CASES MAY REQUIRE THAT TWO SUCH BONDING JUMPERS BE INSTALLED IN ORDER TO SATISFY THE 10' RULE CRITERIA. THIS WORK, AS WELL AS THE PARTS INVOLVED, SHALL BE PAID AS PART OF THE COPPER PIPE ITEM.

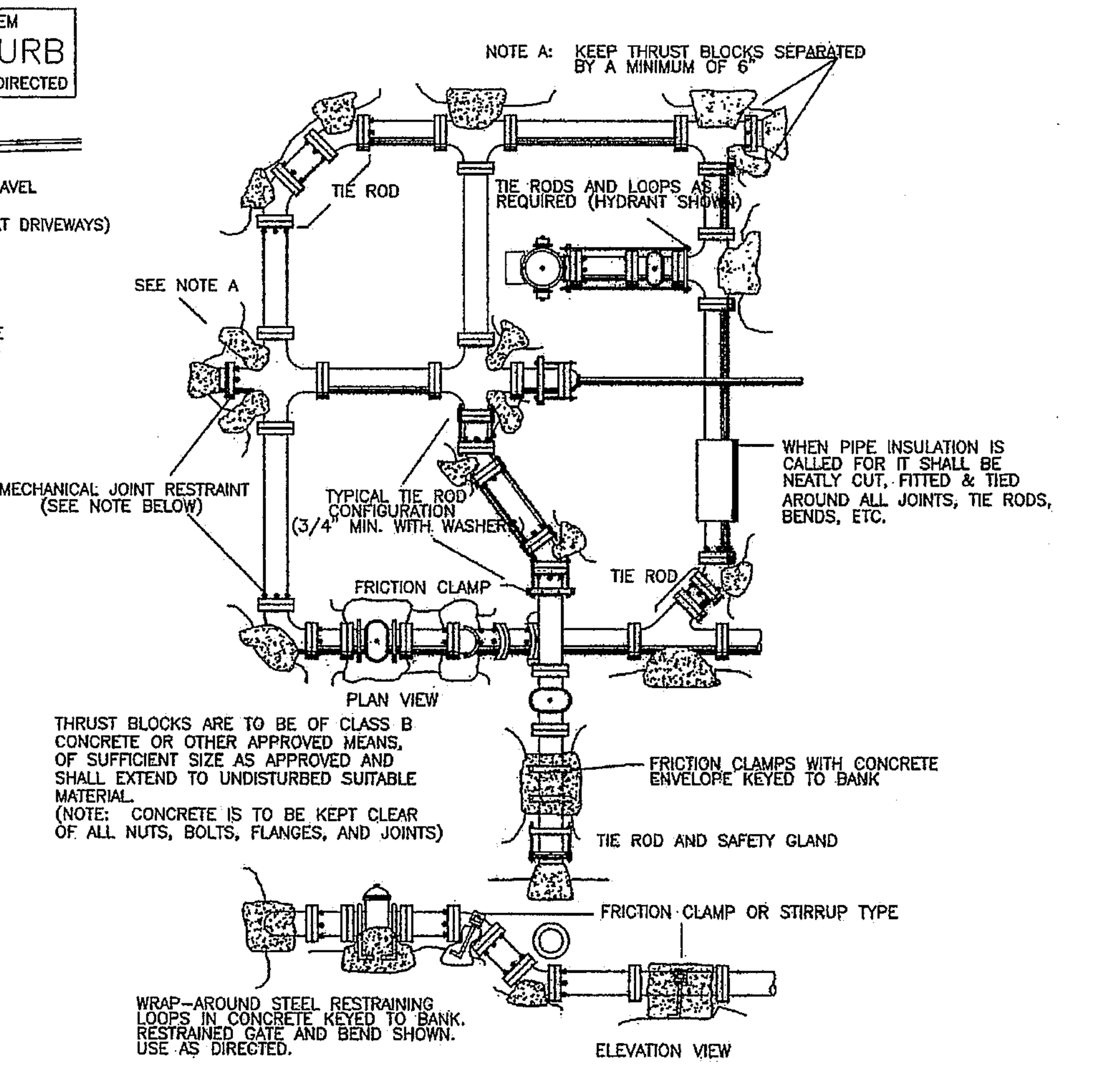
TYPICAL WATER SERVICE CONFIGURATIONS
(NOT TO SCALE)



WHEN THE SEWER MAIN/CONNECTION CROSSES UNDER THE WATER MAIN/SERVICE AND THE DISTANCE BETWEEN PIPES IS LESS THAN 18" THEN THE SEWER IS TO BE ENCASED IN 6" OF 3000 PSI CONCRETE FOR A DISTANCE OF 10' TO EITHER SIDE OF THE CROSSING CENTERLINE.

WHEN THE SEWER MAIN/CONNECTION CROSSES ABOVE THE WATER MAIN/SERVICE, REGARDLESS OF THE DISTANCE BETWEEN THE PIPES, THEN THE SEWER IS TO BE ENCASED IN 6" OF 3000 PSI CONCRETE FOR A DISTANCE OF 10' TO EITHER SIDE OF THE CROSSING CENTERLINE

TYPICAL WATER VS. SEWER CROSSING
(WORK TO BE PERFORMED AT ENGINEERS DISCRETION ONLY)
(NOT TO SCALE)



THRUST BLOCKS ARE TO BE OF CLASS B CONCRETE OR OTHER APPROVED MEANS, OF SUFFICIENT SIZE AS APPROVED AND SHALL EXTEND TO UNDISTURBED SUITABLE MATERIAL.
(NOTE: CONCRETE IS TO BE KEPT CLEAR OF ALL NUTS, BOLTS, FLANGES, AND JOINTS)

TYPICAL THRUST BLOCK CONFIGURATIONS

NOTE: MECHANICAL JOINT RESTRAINING GLANDS ARE TO BE USED AT ALL BENDS IN ADDITION TO THRUST BLOCKS AS SHOWN OR AS OTHERWISE DIRECTED BY THE ENGINEER.

(THE DETAILS SHOWN ON THIS SHEET ARE NOT TO SCALE)
DETAILS OF SIMILAR TYPE PUBLISHED IN THE 'GENERAL CONSTRUCTION DETAILS' ARE SUPERCEDED BY THE DETAILS SHOWN ON THESE PLANS.
FOR DETAILS NOT SHOWN ON THESE PLANS SEE 'CITY OF NEWTON GENERAL CONSTRUCTION DETAILS' WHICH CAN BE OBTAINED AT THE OFFICE OF THE CITY ENGINEER.

NEWTON, MASSACHUSETTS
2016 WATER MAIN REHABILITATION

Approved By: KLG | Checked By: PBH | Designed By: MEC | Drawn By: MEC

DETAIL SHEET

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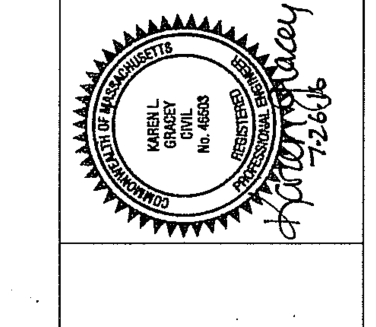
Rev.	Date	Description

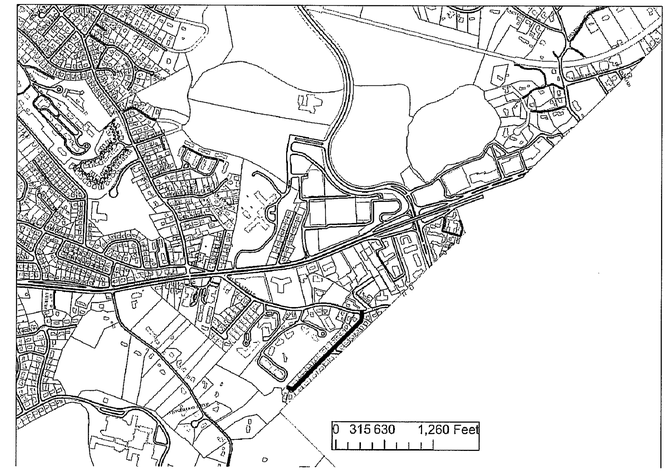


TATA & HOWARD

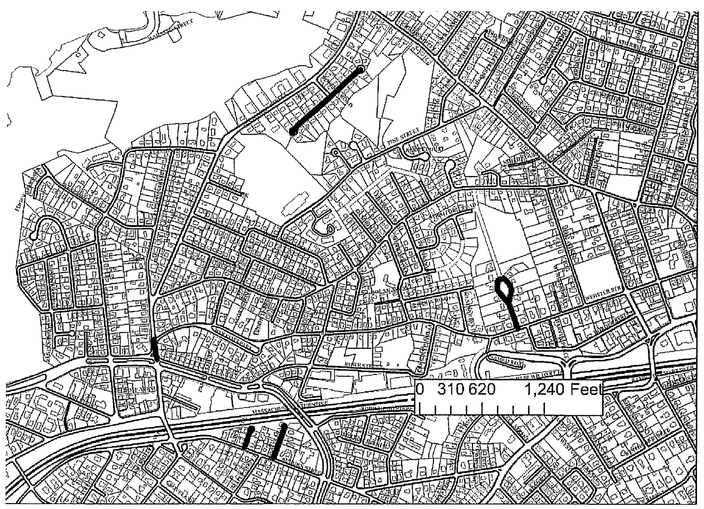
T&H NO.: 4224
DATE: AUGUST 2016
SCALE: NONE

C-13

BURRAGE ROAD, WABAN HILL ROAD N, AND WABAN HILL ROAD
SCALE: NONE



LOUISE ROAD
SCALE: NONE



SHERMAN PLACE, RAND TERRACE, LEXINGTON STREET, ALBERT ROAD, AND WEBSTER PARK
SCALE: NONE

KENSINGTON AVENUE, HARDING STREET, BARRIEAU COURT, TURNER STREET AND TURNER TERRACE
SCALE: NONE

THIS INFORMATION IS ONLY INTENDED TO PROVIDE A GENERAL OVERVIEW OF THE PROJECT AREA. THE CONTRACTOR IS TO CONDUCT HIS OWN FIELD REVIEW FOR THE PURPOSE OF CONFIGURING THE BYPASS SYSTEM(S), FOR THE PREPARATION AND DISTRIBUTION OF NOTICES, FOR DETERMINING THE ACCURACY OF TEH GATE VALVE AND HYDRANT LOCATIONS, AND/OR FOR ADDRESSING ANY OTHER MATTER(S) OF CONCERN.

NEWTON, MASSACHUSETTS

2016 WATER MAIN REHABILITATION

Designed By: MEC | Checked By: PBR | Approved By: KLB

Drawn By: MEC

ADDITIONAL GIS INFORMATION SHEET 1

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Rev.	Date	Description

KARSEN L. BARRY CIVIL No. 40008 COMMONWEALTH OF MASSACHUSETTS PROFESSIONAL ENGINEER

8/22/2016

TATA & HOWARD

T&H NO.: 4224
DATE: AUGUST 2016
SCALE: AS NOTED

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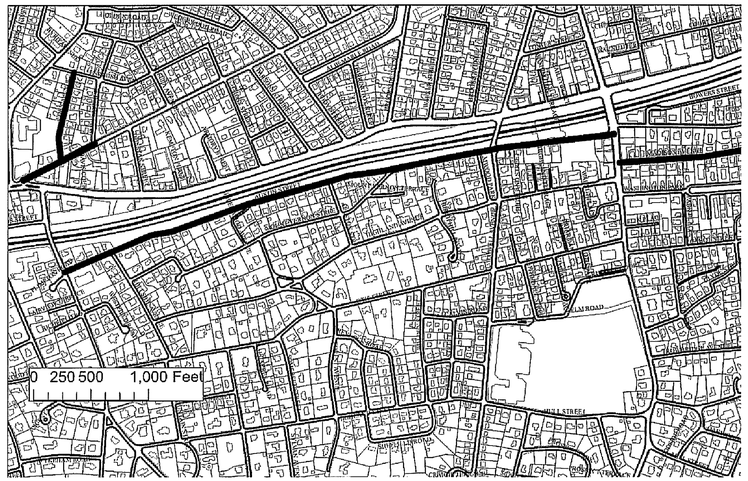
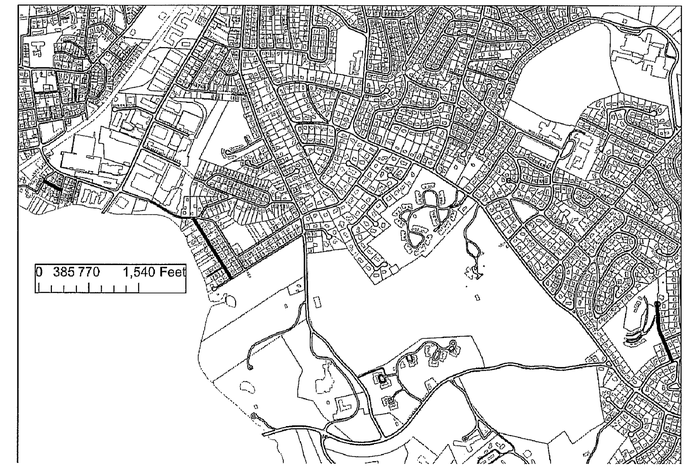
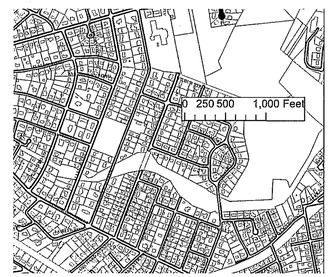


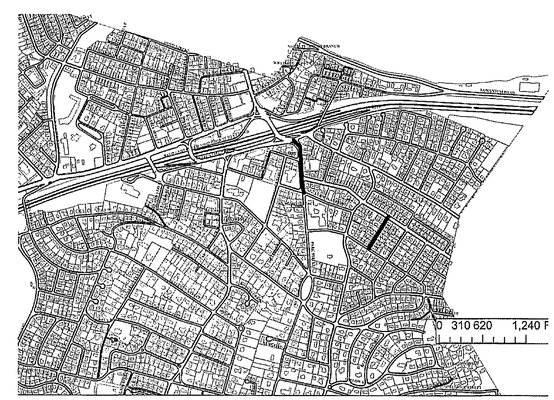
EDEN AVENUE, WATERTOWN STREET, AUSTIN STREET, AND MADISON AVENUE
SCALE: NONE



BUTTS STREET, BERNARD STREET, AND OBER ROAD
SCALE: NONE



WILLOW STREET
SCALE: NONE



PARKS STREET AND BELMONT STREET
SCALE: NONE

BEACON STREET AND KIPPY DRIVE
SCALE: NONE

THIS INFORMATION IS ONLY INTENDED TO PROVIDE A GENERAL OVERVIEW OF THE PROJECT AREA. THE CONTRACTOR IS TO CONDUCT HIS OWN FIELD REVIEW FOR THE PURPOSE OF CONFIGURING THE BYPASS SYSTEM(S), FOR THE PREPARATION AND DISTRIBUTION OF NOTICES, FOR DETERMINING THE ACCURACY OF TEH GATE VALVE AND HYDRANT LOCATIONS, AND/OR FOR ADDRESSING ANY OTHER MATTER(S) OF CONCERN.

NEWTON, MASSACHUSETTS

2016 WATER MAIN REHABILITATION

Drawn By: MEC | Designed By: MEC | Checked By: PBH | Approved By: KLG

ADDITIONAL GIS INFORMATION SHEET 2

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COMMONWEALTH OF MASSACHUSETTS
KAREN L. GRACEY
CIVIL
No. 46503
REGISTERED PROFESSIONAL ENGINEER
7-26-16

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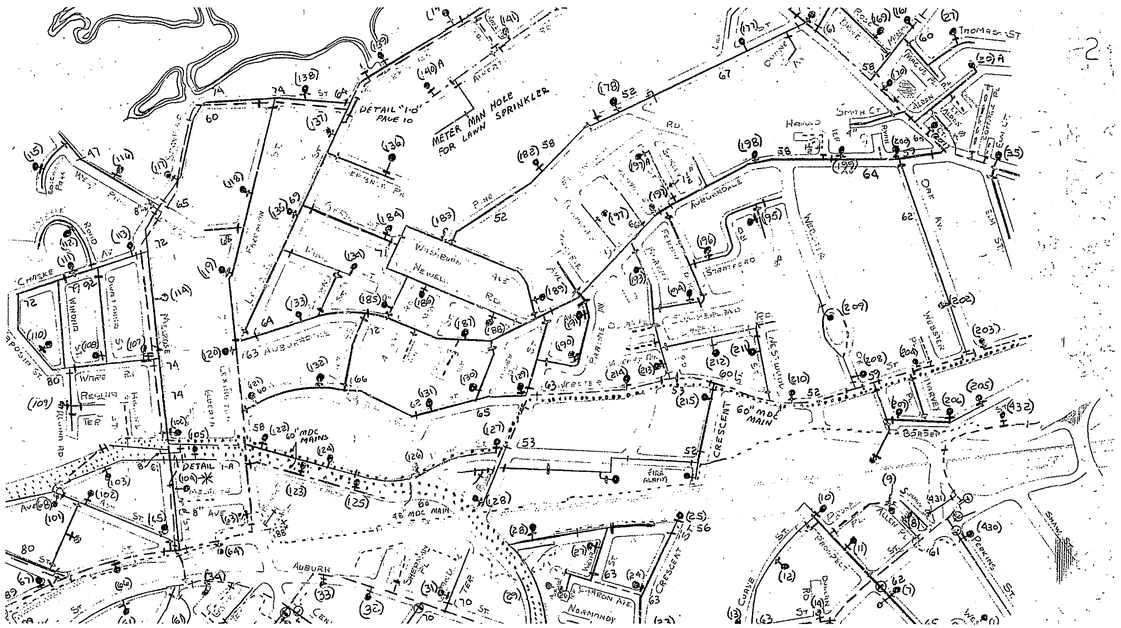
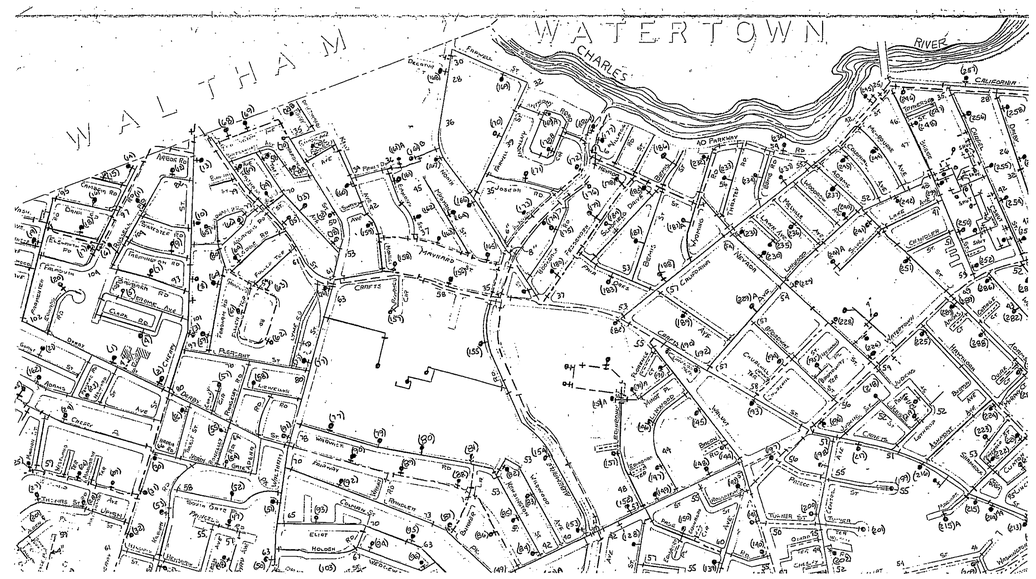
T&H NO.: 4224
DATE: AUGUST 2016
SCALE: AS NOTED

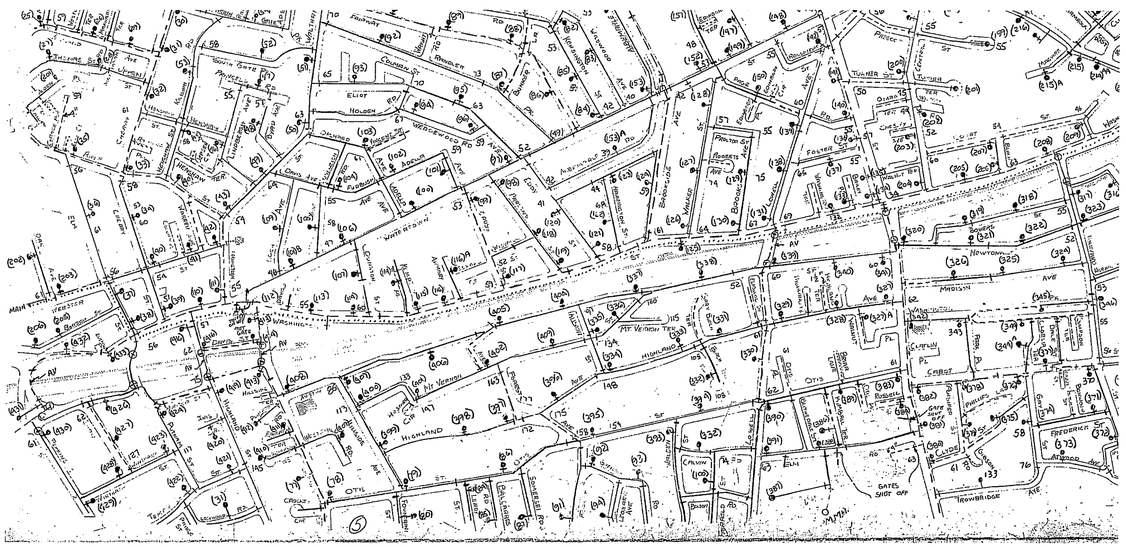
C-15



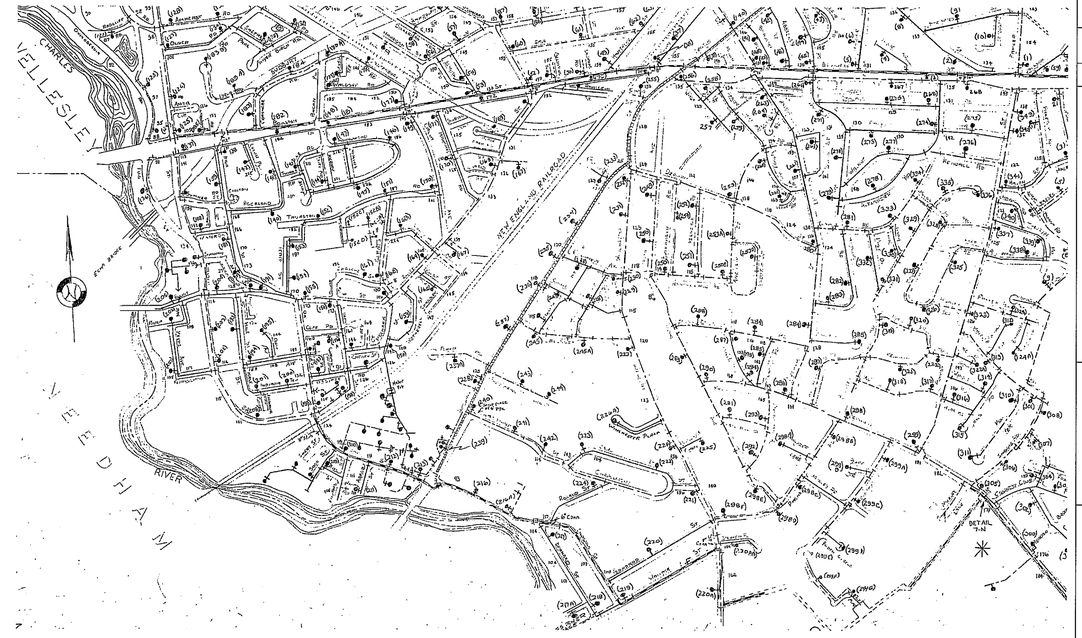
ATLAS MAP – ALBERT ROAD, RAND TERRACE, SHERMAN PLACE, AND WEBSTER PARK
SCALE: NONE



ATLAS MAP – BARRIEAU COURT, TURNER STREET, AND TURNER TERRACE
SCALE: NONE



ATLAS MAP – AUSTIN STREET, EDEN AVENUE, MADISON AVENUE, AND WATERTOWN STREET
SCALE: NONE



ATLAS MAP – BERNARD STREET AND BUTTS STREET
SCALE: NONE

LEGEND

- 4"
- 6"
- 8"
- 10"
- 12"
- 16"
- 20"
- 24"
- GATE
- CLOSED GATE
- HYDRANT
- DWELLINGS
- (DEVELOPED AREA)
- HYDRANT NUMBERS (000)
- FIGURES INDICATE ELEVATION ABOVE BOSTON CITY BASE

NEWTON, MASSACHUSETTS

2016 WATER MAIN REHABILITATION

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ATLAS MAPS SHEET 1

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August 22, 2016

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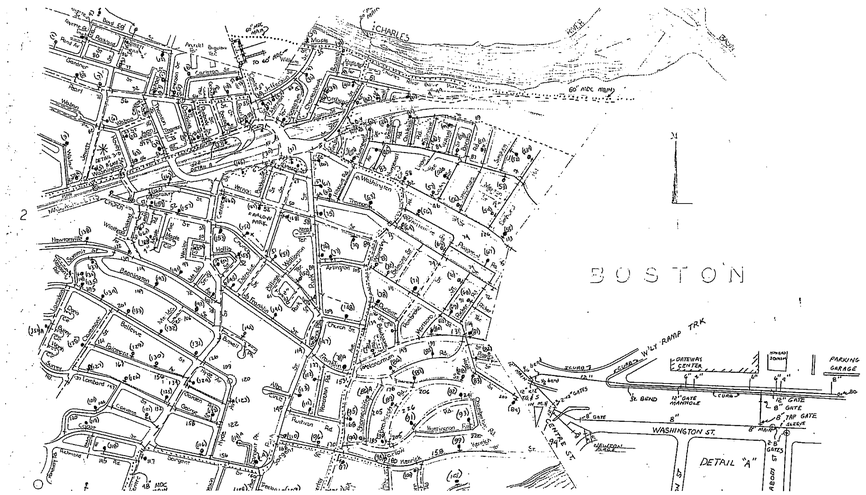
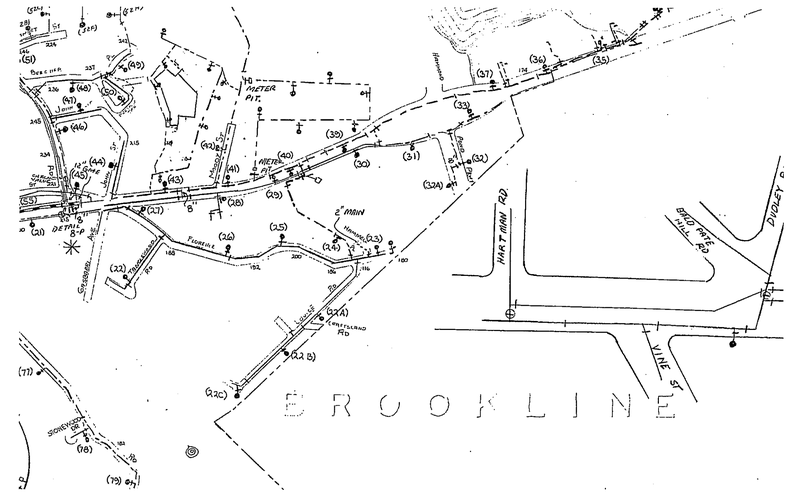
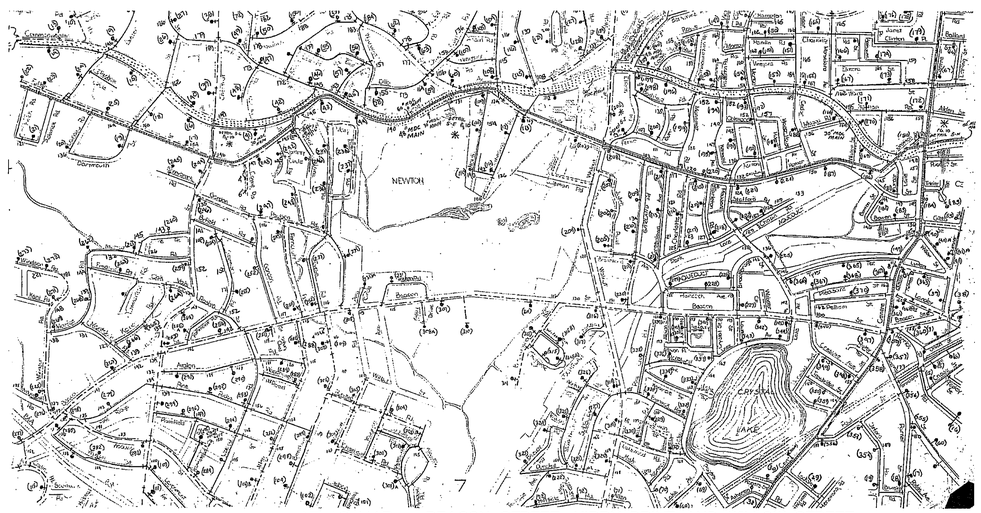


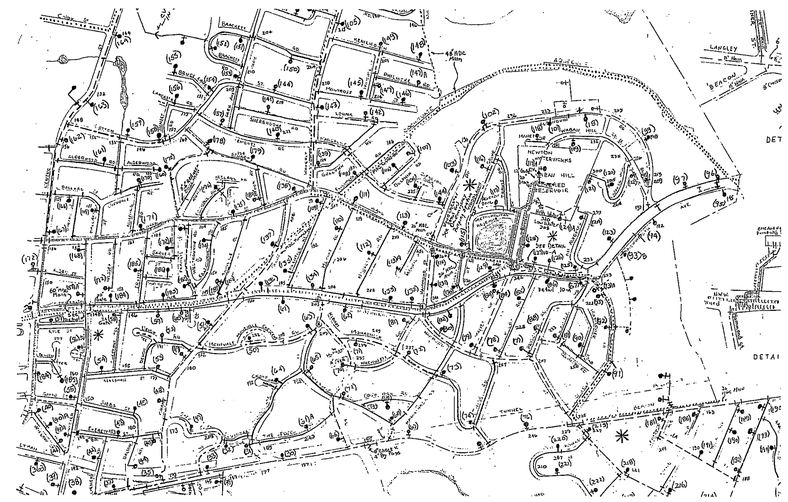
ATLAS MAP – PARK STREET
SCALE: NONE



ATLAS MAP – LOUISE ROAD
SCALE: NONE



ATLAS MAP – BEACON STREET, KIPPY DRIVE AND WILLOW STREET
SCALE: NONE



ATLAS MAP – BURRAGE ROAD, WABAN HILL ROAD, AND WABAN HILL ROAD NORTH
SCALE: NONE

LEGEND
1" to 2"
4"
6"
8"
10"
12"
16"
20"
24"
GATE
GATE
HYDRANT
HYDRANT NUMBERS (000)
FIGURES INDICATE ELEVATION ABOVE BOSTON CITY BASE

NEWTON, MASSACHUSETTS

2016 WATER MAIN REHABILITATION

ATLAS MAPS SHEET 2

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COMMONWEALTH OF MASSACHUSETTS
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7-26-16

TATA & HOWARD

T&H NO.: 4224
DATE: AUGUST 2016
SCALE: NONE

C-17