TOWN OF NATICK, MASSACHUSETTS
BOARD OF SELECTMEN

CONTRACT NO. W-153
WATER MAIN
REHABILITATION / REPLACEMENT
RT. 9 & RT. 135

BOARD OF SELECTMEN

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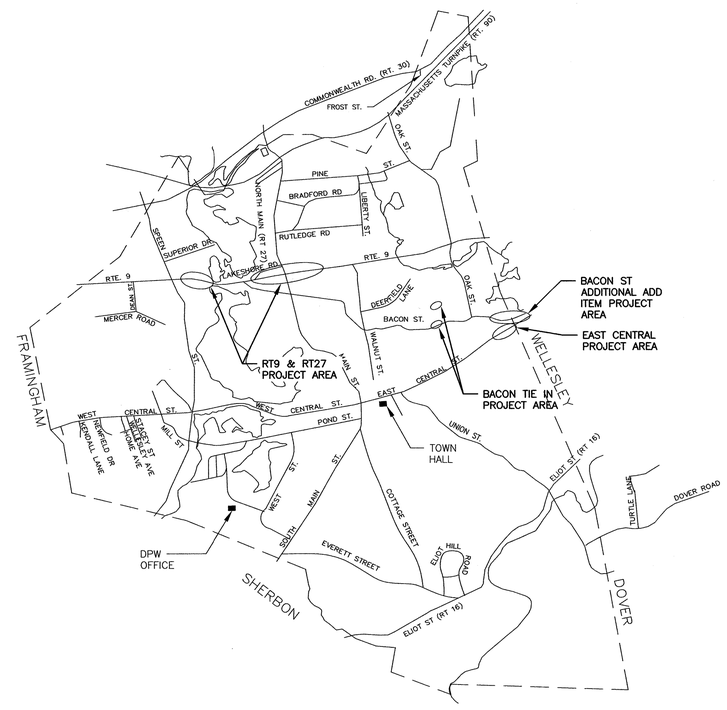
MELISSA MALONE

DIRECTOR OF PUBLIC WORKS

JEREMY MARSETTE

WATER AND SEWER SUPERINTENDENT

ANTHONY COMEAU



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HALEY AND WARD, INC.
ENGINEERS
MAYNARD, MASSACHUSETTS

MARCH, 2019

TOWN OF NATICK, MASSACHUSETTS
BOARD OF SELECTMEN
WATER MAIN REHAB. / REPLACEMENT RT. 9 & RT. 135

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Haley and Ward, Inc.
63 GREAT ROAD, SUITE 200,
MAYNARD, MASSACHUSETTS 01754-2097
PHONE: (978) 648-6025 FAX: (978) 648-6068
www.haleyward.com

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SHEET NO.: 1 OF 17
CONTRACT NO.: W-153
SCALE: NONE
DATE DRAWN: MARCH, 2019
DRAWN BY: GJE
FILE NO.: NAT-451_COVER W-153.DWG

DWG. NO.
1

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GENERAL NOTES:

1. THE WORK UNDER THE CONTRACT DOCUMENTS IS LOCATED WITHIN THE LAYOUTS OF THE PUBLIC WAYS IDENTIFIED ON THE DRAWINGS.
2. THE CONTRACTOR TO VIDEO TAPE ALL EXISTING CONDITIONS AT ALL PROJECT SITES PRIOR TO CONSTRUCTION INCLUDING EDGE OF ROAD, SIDEWALKS AND CURBS, LAWN AREAS, WALLS AND FENCES PER SECTION 01550.
3. ALL FITTINGS TO BE RESTRAINED JOINTS AND PROVIDED WITH THRUST BLOCKS.
4. CONTRACTOR SHALL MAKE ARRANGEMENTS WITH THE UTILITY COMPANY TO SUPPORT UTILITY POLES WHILE EXCAVATING ADJACENT TO POLES. ALL COSTS ASSOCIATED WITH POLE SUPPORT TO BE INCLUDED IN PIPE ITEM.
5. CONTRACTOR SHALL OBTAIN ROAD OPENING PERMIT, TRENCH SAFETY PERMIT AND NOTIFY DIG-SAFE AT 1-888-DIG-SAFE (1-888-344-7233) AT LEAST 72 HOURS PRIOR TO EXCAVATION.

5.1. CONTRACTOR IS TO BE RESPONSIBLE FOR CONFIRMING ALL UTILITY MARK-OUTS PRIOR TO START OF EXCAVATION INCLUDING NOTIFICATION OF DIG-SAFE AND NATICK ENGINEERING DEPARTMENT.

6. ALL UTILITIES AND SERVICES ARE SHOWN TO INDICATE THEIR PRESENCE ONLY, ACTUAL LOCATIONS WILL BE MARKED OUT IN FIELD THROUGH DIG-SAFE MARK OUT AND NATICK ENGINEERING MARK OUT.

6.1. WATER AND SEWER UTILITIES ARE THE PROPERTY OF THE TOWN OF NATICK. LOCATION OF WATER AND SEWER SERVICES AND MAINS IDENTIFIED ON PLANS ARE APPROXIMATE, ACTUAL LOCATIONS WILL BE MARKED OUT BY THE TOWN PRIOR TO START OF CONSTRUCTION. CONTRACTOR TO MAINTAIN MARKINGS THROUGHOUT CONSTRUCTION.

6.2. CONTRACTOR TO ASSUME EACH HOUSE HAS A WATER AND SEWER SERVICE WHERE THERE IS A WATER MAIN OR SEWER MAIN IN FRONT OF THE HOUSE.

6.3. ALL DAMAGE TO EXISTING WATER AND SEWER SERVICES CAUSED BY CONTRACTOR'S OPERATIONS WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.

6.4. ANY CONTRACTOR DAMAGE TO EXISTING WATER AND SEWER SERVICES WILL REQUIRE REPLACEMENT WITH NEW MATERIALS TO A MINIMUM OF 2' OUTSIDE THE MAIN LINE TRENCH.

7. CONTRACTOR TO ASSUME EACH HOUSE HAS A GAS SERVICE WHERE THERE IS A GAS MAIN IN FRONT OF EACH HOUSE. DIG-SAFE MARK-OUT WILL CONFIRM LOCATION OF GAS SERVICES.
8. THE CONTRACTOR SHALL PROTECT EXISTING UNDERGROUND UTILITIES.
9. GAS MAINS ARE ASSUMED TO HAVE 2-3 FEET OF COVER, THE EXISTING WATER SEWER AND FORCEMAINS ARE ASSUMED TO HAVE 5 TO 6 FEET OF COVER, ELECTRIC DUCT BANKS ASSUMED TO HAVE 2-3 FEET OF COVER, UNLESS OTHERWISE NOTED, OR CROSSING UNDER UTILITIES.
10. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY WATER AND SEWER SERVICES THAT ARE IN CONFLICT WITH THE WORK.
11. ALL TRENCHES AND TEST PITS MUST BE BACKFILLED OR COVERED WITH STEEL PLATES, WITH COLD PATCH RAMPS ON ALL SIDES, DURING NON-WORKING HOURS.
12. THE CONTRACTOR MUST MAINTAIN THE FLOW OF TRAFFIC AT ALL TIMES AND IS RESPONSIBLE FOR SCHEDULING POLICE DETAILS. SEE TRAFFIC CONTROL NOTES.
13. OVERHEAD WIRES EXISTING WITHIN THE PROJECT SITE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING THE WIRES WHERE NECESSARY. ALL OVERHEAD WIRES ARE NOT SHOWN ON DRAWINGS TO MAINTAIN CLARITY.
14. CONTRACTOR TO MITIGATE PROPERTY OWNER'S ACCESS TO AND FROM THEIR DRIVEWAYS WHEN TRENCHING IN FRONT OF DRIVEWAY. IT IS IMPORTANT TO MINIMIZE IMPACT TO DRIVEWAYS BOTH DURING BUSINESS HOURS AND AFTER HOURS AND WEEKENDS.
15. SEE DETAIL DRAWING FOR TRENCH RESTORATION WORK.
16. ALL EXISTING WATER MAIN PIPE IS CAST IRON UNLESS OTHERWISE NOTED.
17. CONTRACTOR SHALL FURNISH AND INSTALL STEEL PLATES SIZED TO PROTECT TRENCHES FROM HEAVY VEHICLE TRAFFIC WHEN WORK IS NOT OCCURRING IN TRENCH. CONTRACTOR SHALL PIN DOWN EDGES OF PLATES TO PREVENT VEHICLE DAMAGE OR INSTALL "COLD-PATCH" AROUND EDGES OF PLATES TO PREVENT VEHICLE DAMAGE. IF PLATES BOUNCE UNDER VEHICLE TRAFFIC THEN PLATES MUST BE PINNED.
18. EAST CENTRAL ROAD STRUCTURE INCLUDES APPROXIMATELY 5"-7" THICK BITUMINOUS PAVEMENT OVER A 8" PLUS REINFORCED CONCRETE ROAD SUB-BASE. ROUTE 9 ROAD STRUCTURE INCLUDES APPROXIMATELY 8" THICK BITUMINOUS PAVEMENT OVER A PROCESS GRAVEL ROAD SUB-BASE. RT 27 ROAD STRUCTURE INCLUDES APPROXIMATELY 6" THICK BITUMINOUS PAVEMENT OVER A PROCESS GRAVEL ROAD SUB-BASE. BACON STREET ROAD STRUCTURE INCLUDES APPROXIMATELY 6" THICK BITUMINOUS PAVEMENT OVER A PROCESS GRAVEL ROAD SUB-BASE. BACON STREET ROAD STRUCTURE INCLUDES APPROXIMATELY 5-6" BITUMINOUS PAVEMENT OVER PROCESS GRAVEL.
19. CONTRACTOR TO TAKE ALL PRECAUTIONS TO AVOID DAMAGE TO EXISTING LANDSCAPING DURING CONSTRUCTION, IF LANDSCAPING IS DAMAGED DURING CONSTRUCTION THEN CONTRACTOR TO RETURN AREA TO ORIGINAL OR BETTER CONDITION.
20. ALL EXISTING STRUCTURES INCLUDING MAIL BOXES, PAPER BOXES AND FENCING, IF DAMAGED OR REMOVED DURING CONSTRUCTION, MUST BE RE-INSTALLED IF APPROVED BY OWNER/ENGINEER OR REPLACED WITH NEW MATERIALS.
21. CONTRACTOR SHALL NOTIFY ALL BUSINESS AND RESIDENTS OF PLANNED CONSTRUCTION DAILY TO ALLOW ALL VEHICLES TO BE LOCATED OFF THE CONSTRUCTION SITE, WHERE POSSIBLE. ACCESS TO BUSINESS DRIVEWAYS MUST NOT BE CLOSED DURING THEIR BUSINESS HOURS. ALL WORK REQUIRED TO BLOCK DRIVEWAY MUST BE COMPLETED AFTER CLOSING HOURS FOR THAT BUSINESS.
22. CONTRACTOR WILL NOT BE ALLOWED TO CUT AND REMOVE EXISTING UTILITIES TO ALLOW INSTALLATION OF NEW UTILITY, UNLESS EXISTING UTILITY IS IN POOR CONDITION AS APPROVED BY OWNER. SEWER SERVICES ARE ASSUMED TO BE CLAY.

TRAFFIC MANAGEMENT NOTES:

1. BACON STREET AND EAST CENTRAL, THE CONTRACTOR MUST ALLOW THE FLOW OF TRAFFIC, 2-WAY TRAFFIC IS PREFERRED OR ALTERNATING DIRECTIONS AT ALL TIMES AND IS RESPONSIBLE FOR SCHEDULING POLICE DETAILS. SEE TRAFFIC MANAGEMENT DRAWINGS FOR ADDITIONAL REQUIREMENTS.
2. RT 9I & 27, THE CONTRACTOR MUST ALLOW THE FLOW OF TRAFFIC, NO LANE REDUCTION IS PREFERRED FOR RT 27, RT 9 NO LOSS OF LANE WILL BE ALLOWED. CONTRACTOR IS RESPONSIBLE FOR SCHEDULING POLICE DETAILS. SEE TRAFFIC MANAGEMENT DRAWINGS FOR ADDITIONAL REQUIREMENTS.
3. CONTRACTOR TO MITIGATE PROPERTY OWNER'S ACCESS TO AND FROM THEIR DRIVEWAYS WHEN TRENCHING IN FRONT OF DRIVEWAY. IT IS IMPORTANT TO MINIMIZE IMPACT TO DRIVEWAYS BOTH DURING BUSINESS HOURS AND AFTER HOURS AND WEEKENDS.
4. EAST CENTRAL STREET WATER SERVICE INSTALLATION WILL REQUIRE ONE LANE ALTERNATING TRAFFIC AT ALL TIMES.
5. SEE THE TRAFFIC MANAGEMENT DRAWINGS FOR ADDITIONAL TRAFFIC MANAGEMENT REQUIREMENTS AND NOTES.
6. COMPLETE SHUT DOWN OF ANY ROADWAY WILL NOT BE ALLOWED.
7. CONTRACTOR TO FURNISH AND SETUP ELECTRONIC MESSAGE BOARDS AS REQUIRED BY CONTRACT DOCUMENTS, AT A MINIMUM OF TWO WEEKS PRIOR TO START OF WORK IN EACH PROJECT LOCATION, AND REMAIN IN PLACE FOR SEVEN DAYS.
8. CONTRACTOR TO INSTALL CONSTRUCTION SIGNAGE IN ACCORDANCE WITH CONTRACT DOCUMENTS AND MASSDOT TRAFFIC CONTROL, INCLUDING BUT NOT LIMITED TO CONSTRUCTION AHEAD SIGNS, POLICE DETAIL AHEAD, CONSTRUCTION BARRELS, CONES ETC.. ALL IN ACCORDANCE WITH THE SPECIFICATIONS AND DRAWINGS AND THE MASSDOT PERMIT INCLUDED IN THE APPENDIX SECTION OF THE CONTRACT DOCUMENTS.
9. CONTRACTOR'S OPERATIONS SHALL BE SUCH THAT EMERGENCY VEHICLES CAN HAVE ACCESS TO ALL PROPERTIES AND BUILDINGS, COMMERCIAL AND RESIDENTIAL.CONTRACTOR TO MITIGATE PROPERTY OWNER'S ACCESS TO AND FROM THEIR DRIVEWAYS WHEN TRENCHING IN FRONT OF DRIVEWAY.
10. IT IS IMPORTANT TO MINIMIZE IMPACT TO DRIVEWAYS BOTH DURING BUSINESS HOURS AND AFTER HOURS AND WEEKENDS.

ENVIRONMENTAL CONTROLS:

1. CONSERVATION COMMISSION'S AUTHORIZATION DOES NOT RELIEVE THE CONTRACTOR OR ANY OTHER PERSON OF THE NECESSITY OF COMPLYING WITH ALL OTHER APPLICABLE FEDERAL, STATE, OR LOCAL STATUTES, ORDINANCES, BYLAWS OR REGULATIONS.
2. CONTRACTOR SHALL TAKE APPROPRIATE MEASURES TO ENSURE THAT SEDIMENT-LADEN WATER, IF DEWATERING IS REQUIRED, IS APPROPRIATELY SETTLED PRIOR TO DISCHARGE TOWARDS RESOURCE AREAS IN ACCORDANCE WITH ALL APPLICABLE PERMITS, BY-LAWS, STANDARDS AND GUIDELINES.
3. PESTICIDES AND HERBICIDES SHALL NOT BE USED WITHIN THE BUFFER ZONE OF ANY WETLAND RESOURCE AREA OR WITHIN THE 200-FOOT RIVERFRONT PROTECTION AREA.
4. THE PROPOSED ACTIVITY SHALL COMPLY WITH THE PLANS AS PREPARED BY HALEY AND WARD, INC. ANY PROPOSED OR EXECUTED CHANGES MADE IN THE PLANS SHALL NOT BE MADE UNTIL THE CONTRACTOR HAS INQUIRED, IN WRITING, AND ENGINEER AND OR CONSERVATION COMMISSION HAS FORMALLY MADE A DETERMINATION AS TO THE NATURE OF THE CHANGE OR CHANGES.
5. PRIOR TO ANY WORK STARTING ON THE PROJECT SITE, THE CONTRACTOR SHALL INFORM THE OWNER AND ENGINEER, IN WRITING, OF THE NAMES, ADDRESSES, BUSINESS AND HOME PHONE NUMBERS OF BOTH THE PROJECT SUPERVISOR WHO WILL BE RESPONSIBLE FOR ENSURING ON-SITE COMPLIANCE WITH THE THE ENVIRONMENTAL CONTROLS. THE CONTRACTOR SHALL ALSO NOTIFY THE OWNER AND ENGINEER IN WRITING OF ANY CHANGES IN THIS INFORMATION.
6. ACCEPTED ENGINEERING AND CONSTRUCTION STANDARDS AND PROCEDURES SHALL BE FOLLOWED IN THE COMPLETION OF THIS PROJECT.
7. MEMBERS OF THE COMMISSION OR THEIR AGENTS SHALL HAVE THE RIGHT TO ENTER UPON AND INSPECT THE PREMISES TO EVALUATE THE ENVIRONMENTAL CONTROL.
8. A COPY OF THE CONSTRUCTION PLANS, SHALL BE ON SITE UPON COMMENCEMENT OF ANY SITE WORK AND MADE AVAILABLE TO ANY PERSON DOING WORK ON THE SITE.
9. THE CONTRACTOR SHALL ACT WITHIN 12 HOURS TO CONTROL ANY EROSION PROBLEMS THAT OCCUR ON THE SITE. ANY EROSION PREVENTION AND SEDIMENTATION PROTECTION MEASURES FOUND NECESSARY BY THE COMMISSION DURING CONSTRUCTION SHALL BE IMPLEMENTED AT THE DIRECTION OF THE COMMISSION OR ITS AGENT.
10. PRIOR TO THE COMMENCEMENT OF THE WORK ON THE PROJECT SITE, THE FILTER SOCK LINE SHALL BE INSTALLED AND INSPECTED BY THE CONSERVATION COMMISSION AS SHOWN ON THE PROJECT PLANS.
11. PRIOR TO ANY EXCAVATION ON THE PROJECT SITE, ANY CATCH BASIN POTENTIALLY RECEIVING RUNOFF FROM THE PROJECT SITE SHALL BE PROTECTED WITH A SILT BASKET TO ENSURE THAT RUNOFF FROM THE SITE DOES NOT CONVEY SEDIMENT INTO THE DRAINAGE SYSTEM. THE CONTRACTOR SHALL TAKE ADDITIONAL STEPS REQUIRED TO PREVENT THE MOVEMENT OF SEDIMENT FROM THE SITE.
12. THE EROSION CONTROLS SPECIFIED ON THE PROJECT PLANS SHALL NOT BE REMOVED UNTIL SUCH TIME AS THE ENTIRE SITE IS PERMANENTLY STABILIZED AND THE OWNER OR CONSERVATION COMMISSION HAS APPROVED THE REMOVAL. THIS SHALL MEAN THAT ALL DISTURBED AREAS HAVE BEEN COVERED BY BUILDING, PAVEMENT AND/OR COMPLETELY VEGETATED. IF THE APPLICANT INTENDS TO REMOVE THE EROSION CONTROLS PRIOR TO THE EVENTS AS STATED ABOVE, THE CONTRACTOR SHALL MAKE A WRITTEN REQUEST TO THE ENGINEER.
13. AS SOON AS POSSIBLE DURING CONSTRUCTION, ALL DISTURBED UPLAND AREAS WITHIN 100-FEET OF ANY RESOURCE AREA SHALL BE BROUGHT TO FINAL FINISHED GRADE AND STABILIZED PERMANENTLY AGAINST EROSION. THIS SHALL BE DONE EITHER BY SOD, OR BY LOAMING, SEEDING, AND MULCHING. STABILIZATION WILL BE CONSIDERED COMPLETE ONCE THE SURFACE SHOWS COMPLETE VEGETATIVE COVER. BARE GROUND THAT CANNOT BE PERMANENTLY STABILIZED WITHIN THIRTY (30) DAYS SHALL BE STABILIZED BY TEMPORARY MEASURES AS MAY BE REQUIRED BY THE NATICK CONSERVATION COMMISSION.
14. EXCEPT AS HEREIN NOTED, THERE SHALL BE NO STOCKPILING OF SOIL OR BRUSH OR ANY OTHER MATERIALS WITHIN THE BUFFER ZONE OF ANY RESOURCE AREA UNLESS IT IS ISOLATED WITHIN THE PAVED ROADWAY AND WILL BE IMMEDIATELY BACKFILLED ONCE THE PIPE IS INSTALLED.
15. DURING AND AFTER WORK ON THIS PROJECT, THERE SHALL BE NO DISCHARGE OR SPILLAGE OF FUEL, OIL, OR OTHER POLLUTANTS INTO ANY RESOURCE AREA OR BUFFER ZONE. THE APPLICANT SHALL TAKE ALL REASONABLE PRECAUTIONS TO PREVENT THE RELEASE OF POLLUTANTS BY IGNORANCE, ACCIDENT OR VANDALISM.
16. NO STORAGE OF PETROLEUM PRODUCTS (MOTOR OIL, GASOLINE, OR DIESEL FUEL) SHALL BE ALLOWED WITHIN 100-FEET OF ANY WETLAND RESOURCE AREA ON THE SITE AT ANY TIME. NO MOTORIZED VEHICLES SHALL BE STORED WITHIN 100-FEET OF ANY RESOURCE AREA. AT THE CONCLUSION OF THE WORK DAY, ALL MOTORIZED VEHICLES AND MOTORIZED EQUIPMENT SHALL BE REMOVED FROM ALL BUFFER ZONE AREAS.

WATER MAIN NOTES:

1. VALVE REPLACEMENT MAY BE REQUIRED TO ACHIEVE POSITIVE SHUTDOWN OF SIDE STREET CONNECTIONS. ALL COSTS ASSOCIATED WITH THESE MISCELLANEOUS PITS SHALL BE MEASURED AND PAID FOR UNDER THE MISCELLANEOUS PIT ITEM. VALVE, PIPE, FITTINGS, SOIL AND PAVEMENT TO BE PAID UNDER THE APPROPRIATE ITEMS.
2. ALL VALVES SHALL BE EPOXY COATED WITH STAINLESS STEEL HARDWARE.
3. WATER SERVICE GATE TIE CARDS WILL BE AVAILABLE TO THE CONTRACTOR UPON AWARD OF THE CONTRACT.
4. ALL FITTINGS AND VALVES ARE TO BE FULLY RESTRAINED, THRUST BLOCKED AND SUPPORTED. FITTING AND VALVE RESTRAINT SHALL BE "MEGA-LUG" "FOR D.I. PIPE OR "GRIP RING" FOR C.I. PIPE IN ALL INSTALLED LOCATIONS. WHERE NECESSARY CONTRACTOR SHALL USE FOSTER ADAPTERS TO ANCHOR ADDITIONAL VALVES TO TEES.
5. SOLID SLEEVES SHALL BE PROVIDED WHERE FEASIBLE (AT PROPOSED DUCTILE IRON PIPE AND WHERE CAST IRON PIPE O.D. PERMITS); THEY REQUIRE FULL RESTRAINT. FOR WORK AT OVERSIZED CAST IRON PIPE WHERE SOLID SLEEVES ARE NOT AN OPTION, IN THE OPINION OF THE ENGINEER THAT GRINDING THICK SPOTS IS NOT FEASIBLE TO FIT SLEEVE ALTERNATIVE COUPLINGS MAY BE PROVIDED AS OUTLINED IN SECTION 02610, BUT ALSO REQUIRE FULL RESTRAINT.
6. REPLACEMENT HYDRANTS SHALL NOT BLOCK DRIVEWAYS AND SHALL HAVE NO BENDS.
7. WATER SERVICE NOTES:
   - 7.1. NEW EAST CENTRAL WATER SERVICES REQUIRE A 2" DIAMETER PVC SLEEVE ACROSS THE ROADWAY.
   - 7.2. SERVICE LINES SHALL BE FLUSHED PRIOR TO RETURNING TO PERMANENT SERVICE.
8. CONTRACTOR SHALL NOTIFY WATER DEPARTMENT SUPERINTENDENT 48 HOURS IN ADVANCE OF WHEN ANY SHUTDOWN IS REQUIRED. WATER DEPARTMENT PERSONNEL WILL OPERATE GATE VALVES TO ACHIEVE SHUTDOWN. CONTRACTOR TO SCHEDULE FOR AND ALLOW 48 HOURS BEFORE SHUT DOWN IS ACHIEVED.
9. TEST PITS FOR UTILITY INVESTIGATION SHALL BE AS DIRECTED BY OWNER OR ENGINEER.

LEGEND:

- EDGE OF PAVEMENT
- RIGHT OF WAY AND APPROXIMATE LOCATION OF PROPERTY LINES
- 12" RCP — EXISTING 12" REINFORCED CONCRETE PIPE STORM DRAIN
- 4" GAS — EXISTING GAS LINE
- 8" PVC SEWER — EXISTING SEWER (type labeled)
- 8" C.I. WATER — EXISTING CAST IRON WATER
- 6" PVC … D=8.0' — EXISTING SEWER SERVICE (depth at end labeled)
- EXISTING WATER SERVICE
- 172 — EXISTING CONTOUR ELEVATION
- EXISTING POST/RAIL FENCE
- PROPOSED WATER
- PROPOSED SEWER
- A1 BVW — BORDERING VEGETATED WETLAND (BVW)
- SS — SILT SOCK
- BVW 100' BUFFER ZONE
- MEAN ANNUAL HIGH WATER LINE
- RIVER FRONT AREA BOUNDARY

EXISTING RIP-RAP	EXISTING FIRE HYDRANT
DRAIN MANHOLE	EXISTING WATER GATE
117/4 UTILITY POLE	NEW FIRE HYDRANT
117/4 UTILITY POLE W/GUY	NEW WATER GATE
GG GAS GATE	NEW SOLID SLEEVE
EXISTING SEWER MANHOLE	SIGN
CB WITH GRANITE THROAT STONE	BORING

ABBREVIATIONS

AC = ASBESTOS CEMENT	MJ = MECHANICAL JOINT
BIT = BITUMINOUS	OD = OUTSIDE DIAMETER
CI = CAST IRON	OHW = OVERHEAD WIRES
CL = CEMENT LINED	PE = POLYETHYLENE
CMP = CORRUGATED METAL PIPE	PL = PLASTIC
DI = DUCTILE IRON	PVC = POLYVINYL CHLORIDE
DMH = DRAIN MANHOLES	RCP = REINFORCED CONCRETE PIPE
EOP = EDGE OF PAVEMENT	RG = RETAINER GLAND
EP = EDGE OF PAVEMENT	SMH = SEWER MANHOLE
GALV. = GALVANIZED IRON	ST = STEEL
GRNT = GRANITE CURB	SW = SIDEWALK
GS = GAS SERVICE	T = COMMUNICATIONS DUCT BANK
HDPE = HIGH DENSITY POLYETHYLENE	VC = VITRIFIED CLAY
ID = INSIDE DIAMETER	WS = WATER SERVICE
IP = INTERMEDIATE PRESSURE	6"SS = 6" SEWER SERVICE
	UP = UTILITY POLE

WATER MAIN CLEANING AND LINING NOTES:

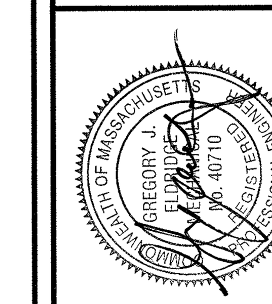
1. CLEAN AND LINE 12", 10" AND 8" UNLINED CI WATER MAIN IN RT9 (WORCESTER ROAD), RT 27 (NORTH MAIN) & RT 135 (EAST CENTRAL). CONTRACT ALSO INCLUDES TIE IN CONNECTIONS AT BACON STREET. CONTRACT ALSO INCLUDES CLEAN AND LINE BACON STREET AND EAST CENTRAL (WELLESLEY) 10" UNLINED CAST IRON, WHICH IS INCLUDED AS ADDITIONAL BID ITEMS. OWNER WILL DETERMINE IF FUNDING IS AVAILABLE FOR INCLUSION OF WETS STREET WORK IN THE CONTRACT AWARD.
2. CONTRACTOR TO MINIMIZE NUMBER OF PITS BY COORDINATED LINING PITS WITH GATE VALVE REMOVALS/REPLACEMENTS AND HYDRANT REPLACEMENTS BY CONTRACTOR, AND SHALL BE PLACED AT THE CONTRACTORS DISCRETION. MISCELLANEOUS PITS WILL BE PAID FOR UNDER THEIR RESPECTIVE ITEM AS DESCRIBED IN 01025, MEASUREMENT AND PAYMENT. LINING PITS COSTS WILL BE INCLUDED IN THE COST OF CLEANING AND LINING THE WATER MAIN.
3. ADDITIONAL MISCELLANEOUS PITS MAY BE REQUIRED TO ACHIEVE SHUTDOWN, WHICH ARE NOT SHOWN ON THE DRAWINGS. ALL COSTS ASSOCIATED WITH THESE PITS SHALL BE MEASURED AND PAID FOR UNDER THE MISCELLANEOUS PIT BID ITEM.
4. ALL VALVES, FITTINGS AND ASSOCIATED APPURTENANCES SHALL BE EPOXY COATED. STAINLESS STEEL HARDWARE INCLUDING NUTS AND BOLTS SHALL BE USED FOR INSTALLATION OF ALL MATERIAL.
5. WATER RECORD DRAWINGS AND WATER SERVICE GATE TIE CARDS WILL BE AVAILABLE TO THE CONTRACTOR FOLLOWING CONTRACT SIGNING.
6. ALL FITTINGS AND VALVES ARE TO BE FULLY RESTRAINED, THRUST BLOCKED AND SUPPORTED. FITTING AND VALVE RESTRAINT SHALL BE "MEGA-LUG" "FOR D.I. PIPE OR "GRIP RING" FOR C.I. PIPE IN ALL INSTALLED LOCATIONS. WHERE NECESSARY CONTRACTOR SHALL USE FOSTER ADAPTERS TO ANCHOR ADDITIONAL VALVES TO TEES.
7. SOLID SLEEVES SHALL BE PROVIDED (AT PROPOSED DUCTILE IRON PIPE TO CAST IRON PIPE CONNECTIONS); THEY REQUIRE FULL RESTRAINT. CONTRACTOR TO GRIND THICK SPOTS ON CAST IRON PIE TO FACILITATE MECHANICAL JOINT INSTALLATION. FOR WORK AT OVERSIZED CAST IRON PIPE WHERE SOLID SLEEVES ARE NOT AN OPTION, IN THE OPINION OF ENGINEER WHERE EXCESSIVE GRINDING IS REQUIRED, ALTERNATIVE COUPLINGS MAY BE PROVIDED AS OUTLINED IN SECTION 02610, BUT ALSO REQUIRE FULL RESTRAINT.
8. TEMPORARY WATER SERVICE NOTES:
   - 8.1. TEMPORARY BYPASS PIPING SHALL BE PROVIDED ON SIDE OF STREET THAT SERVICES ARE CONNECTED TO WATER MAIN.
   - 8.2. SEE NOTES ON EACH DRAWING FOR REQUIREMENT FOR SIZE AND LOCATION OF TEMPORARY WATER MAINS. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
   - 8.3. TEMPORARY WATER MAIN TO INCLUDE FIRE HOSE CONNECTIONS AT EXISTING HYDRANT LOCATIONS.
   - 8.4. CONTRACTOR TO TRENCH TEMPORARY WATER MAINS ACROSS ALL SIDE STREETS AND PROVIDE RAMPS AT ALL DRIVEWAY CROSSINGS TO PREVENT VEHICLE DAMAGE.
   - 8.5. TEMPORARY SERVICE SHALL BE PROVIDED THROUGH CONNECTION INSIDE AT THE SERVICE METER. WATER DEPARTMENT WILL ASSIST IN REMOVING METER.
   - 8.6. WATER SERVICE LINES SHALL BE FLUSHED PRIOR TO RETURNING TO PERMANENT SERVICE.
9. CONTRACTOR SHALL NOTIFY WATER DEPARTMENT SUPERINTENDENT 48 HOURS IN ADVANCE OF WHEN ANY SHUTDOWN IS REQUIRED. WATER DEPARTMENT PERSONNEL WILL OPERATE GATE VALVES TO ACHIEVE SHUTDOWN. CONTRACTOR TO SCHEDULE FOR AND ALLOW 48 HOURS BEFORE WATER MAIN TURN ON IS REQUIRED.
10. TEST PITS FOR UTILITY INVESTIGATION SHALL BE AS DIRECTED BY OWNER OR ENGINEER.
11. IMMEDIATELY AFTER MAIN IS LINED CONTRACTOR SHALL BLOW OUT EACH WATER SERVICE TO REMOVE CEMENT PLUG AT EACH CORPORATION.
12. IF CEMENT LINING FAILS CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING, SEE SPECIFICATION SECTION 02766 FOR DETAILS.
13. AFTER THE CLEANING AND LINING WORK IS COMPLETE, THE PITS BACKFILLED, AND THE LINE PRESSURIZED, A THIRD PARTY WILL PERFORM A LEAK DETECTION SURVEY, PER SPECIFICATION SECTION 02766.

TOWN OF NATICK, MASSACHUSETTS
BOARD OF SELECTMEN

WATER MAIN REHAB. / REPLACEMENT RT. 9 & RT. 135

NOTES AND LEGEND

Haley and Ward, Inc.
63 GREAT ROAD, SUITE 200,
MAYNARD, MASSACHUSETTS 01754-2097
PHONE: (978) 648-6025 FAX: (978) 648-6068
www.haleyward.com



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SHEET NO.:	2 OF 17
CONTRACT NO.:	W-153
SCALE:	NONE
DATE DRAWN:	MARCH 2019
DRAWN BY:	GJE
FILE NO.:	NAT-451_002W-153.DWG

DWG. NO.
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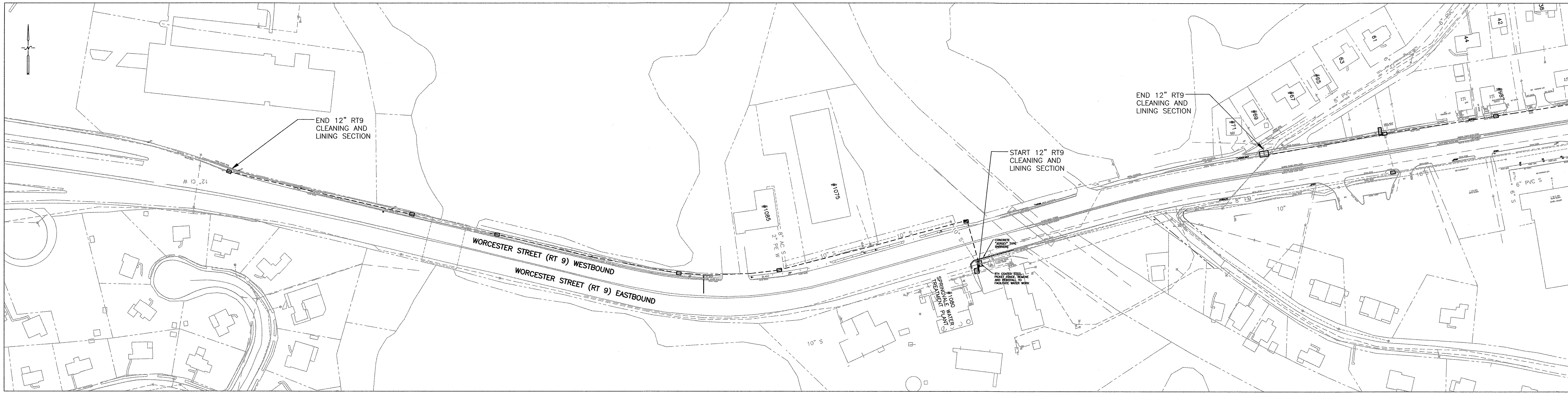

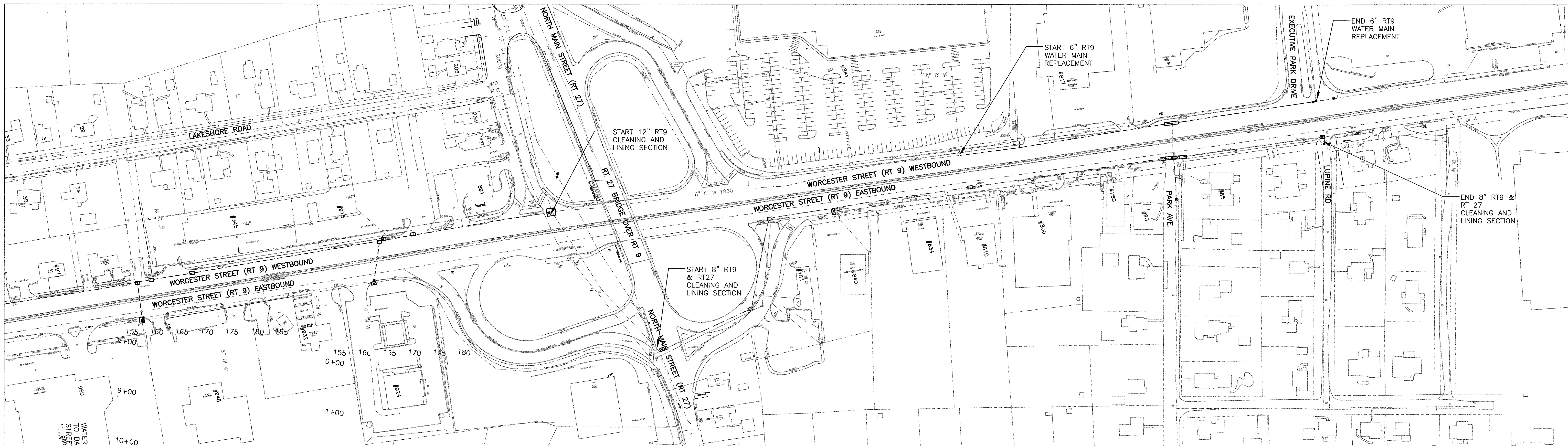

<u>**ROUTE 9 12", 8" & 6" WATER MAIN WORK**</u>
<u>**AND 8" & 10" SEWER MAIN LINING WORK**</u>
<u>**PLAN VIEW**</u>

SCALE: 1" = 100'

GRAPHIC SCALE

50 0 50 100 100 FEET

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TOWN OF NATICK, MASSACHUSETTS
BOARD OF SELECTMEN

WATER MAIN
REHAB. / REPLACEMENT
RT. 9 & RT. 135

RT 9 & RT 27
LOCUS PLAN

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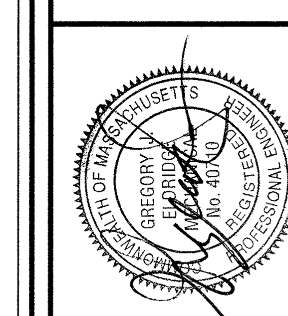

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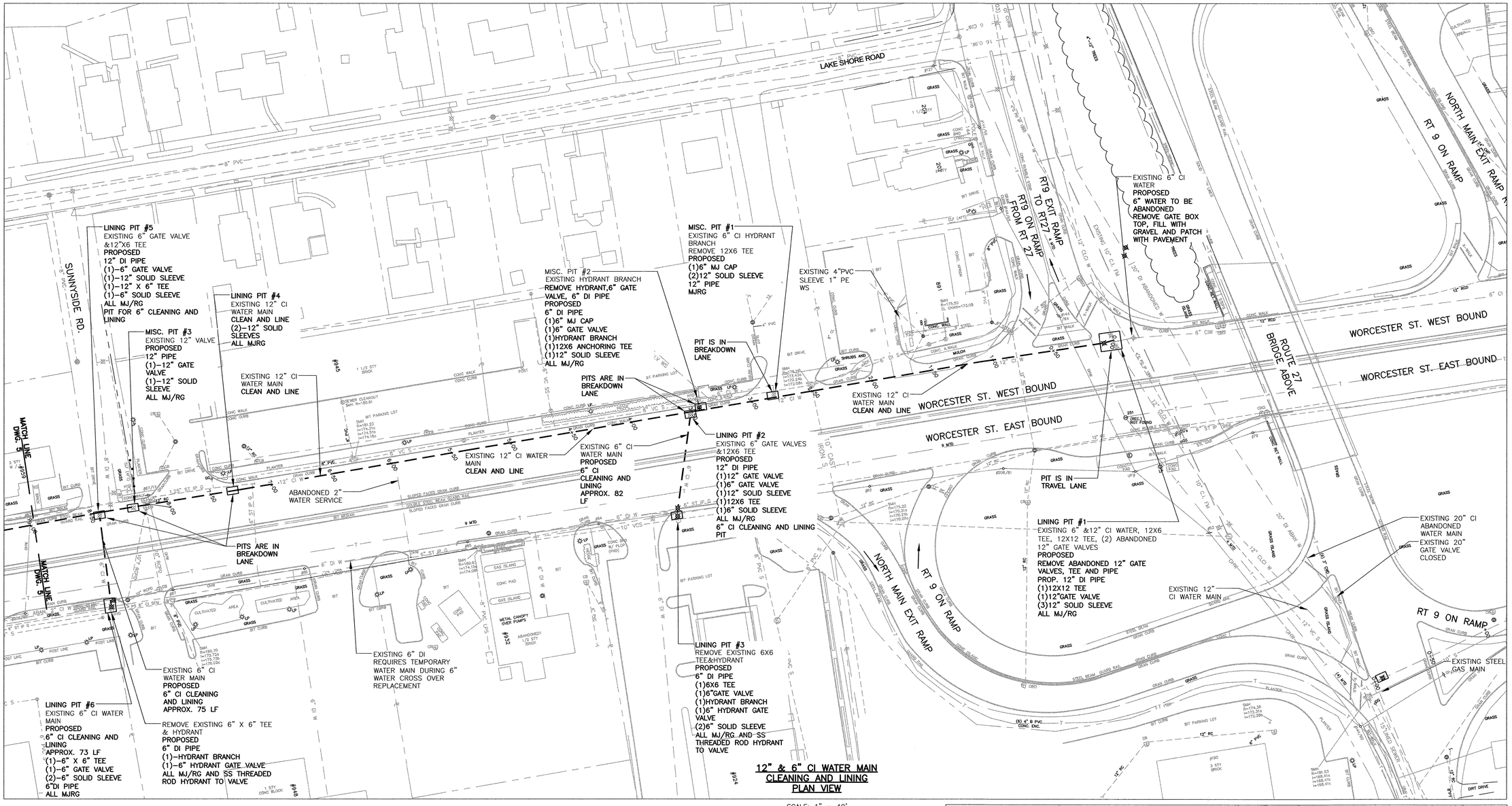
SHEET NO.: 3 OF 17
CONTRACT NO.: W–153
SCALE: AS NOTED
DATE DRAWN: FEB. 2019
DRAWN BY: GJE
FILE NO.: NAT_451_BASE.DWG

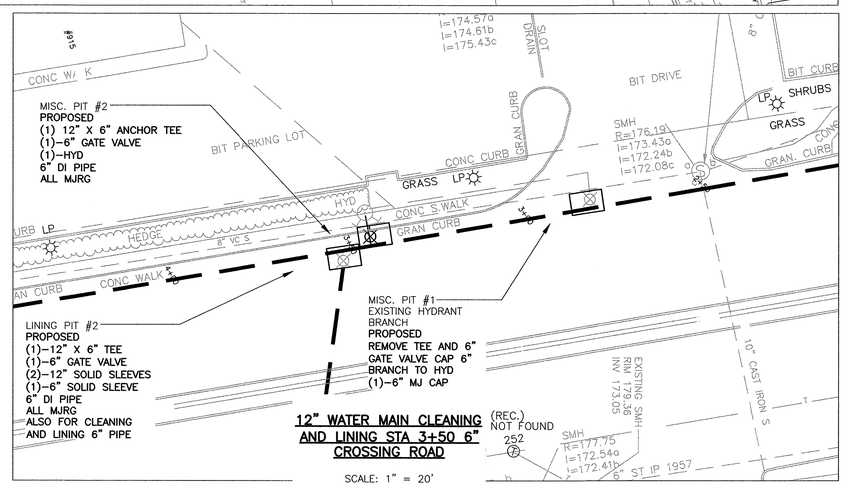
DWG. NO.

3



12" & 6" CI WATER MAIN CLEANING AND LINING PLAN VIEW

SCALE: 1" = 40'



12" WATER MAIN CLEANING AND LINING STA 3+50 6" CROSSING ROAD

SCALE: 1" = 20'

RT.6 AND RT. 27 GENERAL NOTES:

1. WORK REQUIRES A MASSDOT PERMIT. OWNER HAS OBTAINED THE PERMIT, SEE APPENDIX FOR COPY OF PERMIT AND THE ADDITIONAL REQUIREMENTS FOR MATERIALS AND SCHEDULE.

1.1. ALL WATER MAIN CLEANING AND LINING AND 6 INCH WATER MAIN REPLACEMENT WILL BE COMPLETED DURING THE NIGHT TIME HOURS DUE TO EQUIPMENT IN PAVED ROADWAY. WORK LIMITATIONS ARE 9:00PM TO 5:00AM. THIS INCLUDES SETUP AND TAKE DOWN OF TRAFFIC MANAGEMENT SIGNS.
1.2. CONTRACTOR HAS THE OPTION TO PROVIDE INFORMATION TO MASSDOT TO REQUEST A WAVIER OF NIGHT TIME WORK REQUIREMENT.
1.3. SEE TRAFFIC MANAGEMENT DRAWINGS FOR MINIMUM REQUIRED SIGNS. AND DEVICES.
1.4. PITS CAN BE COVERED WITH STEEL PLATES WITH PROPER COLD PATCH RAMPS, UNLESS MASSDOT DETERMINES OTHERWISE.
1.5. 6-INCH PIPE REPLACEMENT TRENCH CAN HAVE SHORT EXCAVATION LEFT OPEN PROVIDED THERE IS A TRENCH BOX AND STEEL PLATE ADEQUATELY PROTECTING THE EXCAVATION. OTHERWISE BACKFILL TRENCH EACH MORNING AND INSTALL PROCESS GRAVEL.

2. ALL BUILDINGS TO RECEIVE TEMPORARY WATER SERVICE DURING PROJECT.
2.1. SEE TEMPORARY WATER SERVICE SECTION FOR ADDITIONAL DETAILS.
2.2. 12" CI WATER MAIN, STA 0+00 TO 8+25 REQUIRES A 4-INCH DIAMETER TEMPORARY WATER MAIN ON THE WESTBOUND LANE SIDE TO REPLACE ONE HYDRANT. SUNNYSIDE WATER MAN IS LOOPED, AND CAN BE UTILIZED AS FEED TO TEMPORARY WATER MAIN.
2.3. 6" CI WATER MAIN IN THE EASTBOUND SIDE REQUIRES A 6-INCH DIAMETER TEMPORARY WATER MAIN FROM THE HYDRANT ON ROUTE 27 (SOUTHBOUND) NEAR THE RT9 EASTBOUND EXIT RAMP.
2.4. 6-INCH CI WATER MAIN REPLACED WITH NEW 8-INCH DIAMETER WATER MAIN REQUIRES TEMPORARY SERVICE TO THE JEEP DEALERSHIP AT #817 ROUTE 9.

GRAPHIC SCALE
20 0 20 40 80 FEET
1" = 40'

2.5. 8-INCH DIAMETER WATER MAIN, CLEANING AND LINING, IN EASTBOUND LANE OF RT9 REQUIRES A 4-INCH DIAMETER TEMPORARY WATER MAIN.
2.5.1. CONTRACTOR TO INSTALL NEW 8" GATE VALVE ONTO 12" WATER MAIN ON RT 27 BEFORE STARTING CLEANING AND LINING TO KEEP 12" ACTIVE.
2.6. 12" CI WATER MAIN DRAWING NO. 5 REQUIRES 6-INCH DIAMETER TEMPORARY WATER MAIN FOR THE TWO OFFICE BUILDINGS 1075 & 1085 WORCESTER ROAD .

3. ALL MISCELLANEOUS AND LINING PITS IN THE PAVED ROADWAY SHALL BE BACKFILLED WITH FLOWABLE FILL FOLLOWING PIPING INSTALLATION, WITH THE EXCEPTION OF BACON ST. CLEANING AND LINING PROJECT.
3.1. SEE CONTRACT DOCUMENTS FOR REQUIRED PAVEMENT RESTORATION.
3.2. ALL OTHER PITS TO BE BACKFILLED WITH APPROVED MATERIAL.

4. 12" DI PIPE THROUGH BRIDGE IN DRAWING NO. 5 DOES NOT REQUIRE CLEANING AND LINING. OWNER MAY REQUIRE 12" DI TO BE CLEANED IF FOUND TO HAVE EXCESSIVE BUILDUP.

5. STEEL GUARD RAIL MAY REQUIRE REMOVAL FOR PIT EXCAVATION. IF REQUIRED THEN INSTALLATION WILL REQUIRE NEW POSTS AND REATTACHMENT OF STEEL GUARD RAIL WITH NEW HARDWARE, ALL IN ACCORDANCE WITH MASSDOT CONSTRUCTION DETAILS.

6. WORK WILL REQUIRE INSTALLATION OF FILTER SOCKS WHERE SHOWN ON DRAWING NO. 5. ALL FILTER SOCK INSTALLATION REQUIRES APPROVAL BY NATICK CONSERVATION COMMISSION PRIOR TO PIT EXCAVATION.

7. 6" WATER MAIN REPLACEMENT TO BEGIN AFTER 8" CLEANING AND LINING WORK IS COMPLETED. 8" CLEANING AND LINING WORK WILL REMOVE 8" X 6" TEE AND PIPE CROSSING RT 9.

8. REPLACE ALL WATER SERVICES, ON EAST CENTRAL AND FOR NO. 817 WORCESTER ST. MAIN TO STOP INCLUDING REPLACING CORPORATION AND CURB STOP WITH NEW.

9. 6" GATE VALVE ON PARK ST STA 0+25 WILL NOT CLOSE FULLY, CONTRACTOR TO INSTALL NEW 8" GATE VALVE AT STA 0+75 PRIOR TO 8" CLEANING AND LINING WORK.

10. LAKEVIEW RD. IS A DEAD END RD., NO ACCESS TO RT. 9.

11. LAKEVIEW RD. 6" GATE VALVE IS ASSUMED TO BE NOT FUNCTIONING, CONTRACTOR TO INSTALL NEW 6" GATE VALVE. PRIOR TO TAKING 12" WATER MAIN OUT OF SERVICE.

11.1. LAKEVIEW WATER MAIN IS LOOPED, DOES NOT REQUIRE TEMPORARY BY-PASS UNLESS VALVE INSTALLATION TAKES MORE THAN THREE HOURS.

12. CONTRACTOR TO REMOVE AND REINSTALL GRANITE CURB WHERE NECESSARY FOR COMPLETION OF WORK.

13. CONTRACTOR TO REPLACE CEMENT, CONCRETE, AND BITUMINOUS CONCRETE SIDEWALKS WHERE DISTURBED DURING WORK.

EXISTING ROAD STRUCTURE NOTE:

1. ROUTE 9 EXISTING ROAD STRUCTURE INCLUDES 8" THICK RE-ENFORCED (REBAR BOTH WAYS) CONCRETE SUB-BASE AND 7" DEPTH OF BITUMINOUS CONCRETE PAVEMENT.

2. ROUTE 27 AND EXIT RAMPS ARE APPROXIMATELY 8" DEPTH OF BITUMINOUS CONCRETE PAVEMENT.

TOWN OF NATICK, MASSACHUSETTS
BOARD OF SELECTMEN

WATER MAIN REHAB. / REPLACEMENT RT. 9 & RT. 135

12" WATER MAIN CLEANING AND LINING STA 0+00 TO 9+00
6" CLEAN AND LINING

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COMMONWEALTH OF MASSACHUSETTS GREGORY J. CULTRERA No. 40711 REGISTERED PROFESSIONAL ENGINEER

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SHEET NO.: 4 OF 17
CONTRACT NO.: W-153
SCALE: AS NOTED
DATE DRAWN: JANUARY 2019
DRAWN BY: LJC
FILE NO.: NAT_451_BASE.DWG

DWG. NO.
4

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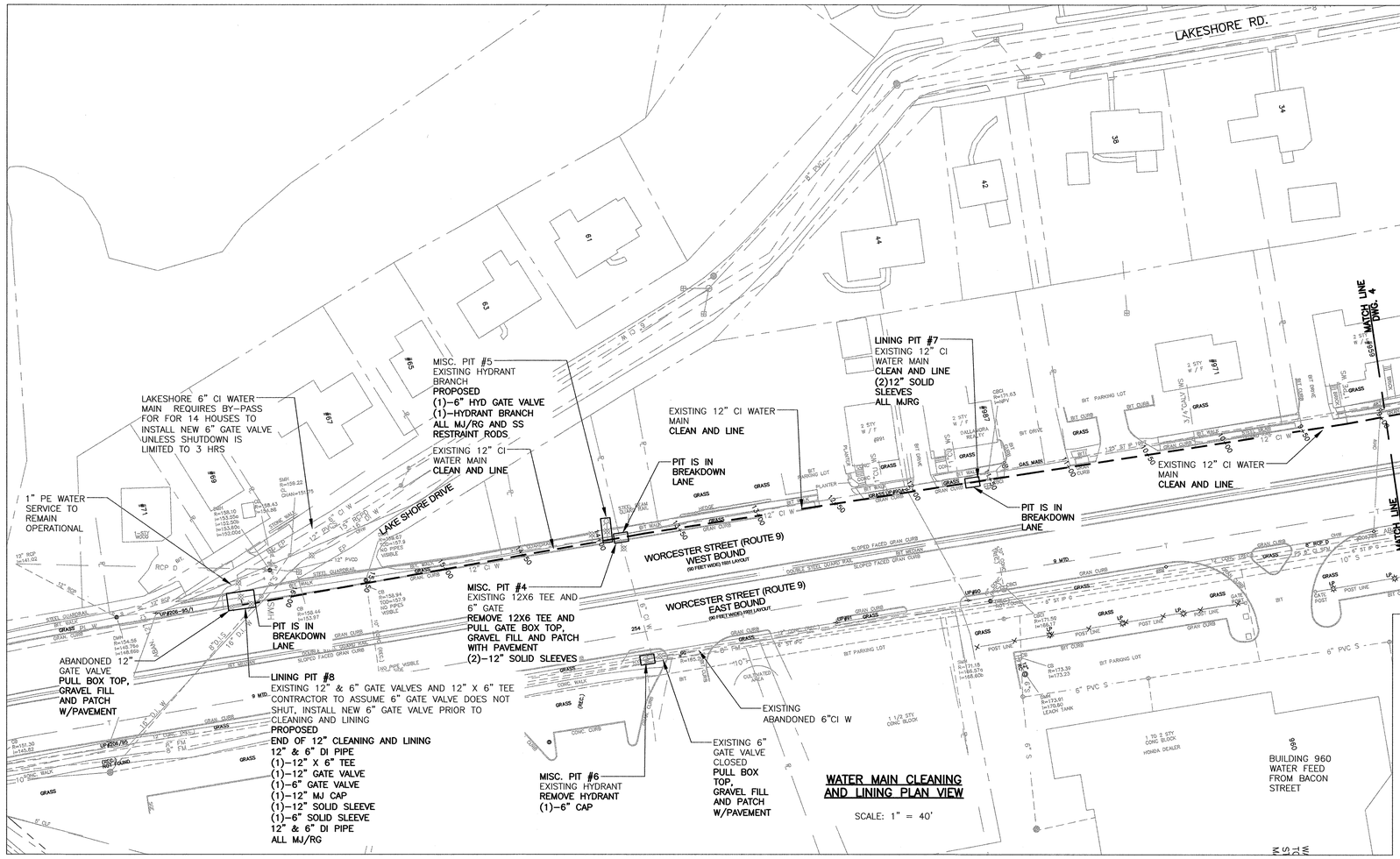
NOTE:

1. SEE DWG. NO. 4 FOR RT. 9 AND RT. 27 GENERAL NOTES.

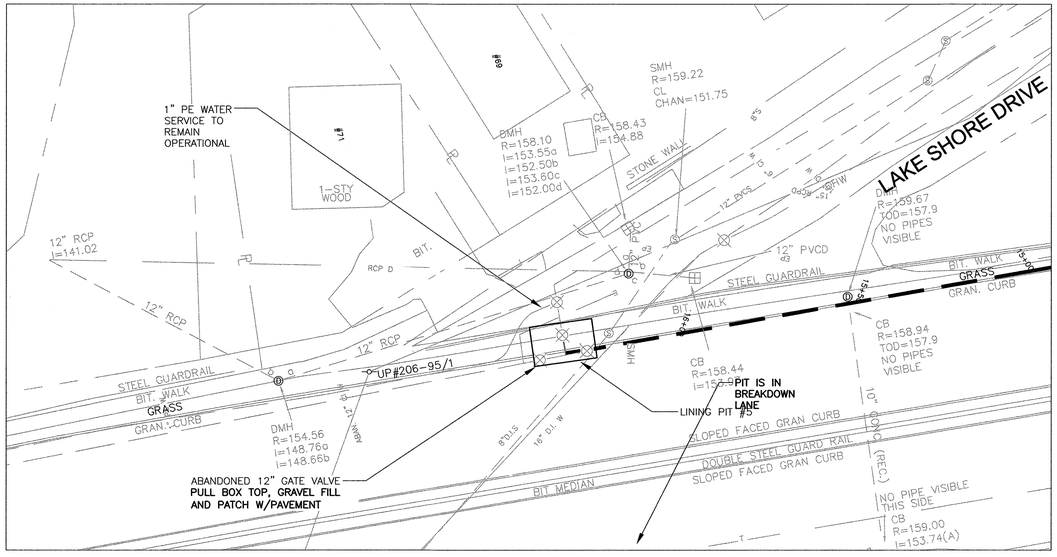
EXISTING ROAD STRUCTURE NOTE:

1. ROUTE 9 EXISTING ROAD STRUCTURE INCLUDES 8" THICK RE-ENFORCED (REBAR BOTH WAYS) CONCRETE SUB-BASE AND 7" DEPTH OF BITUMINOUS CONCRETE PAVEMENT.
2. ROUTE 27 AND EXIT RAMPS ARE APPROXIMATELY 8" DEPTH OF BITUMINOUS CONCRETE PAVEMENT.



WATER MAIN CLEANING AND LINING PLAN VIEW

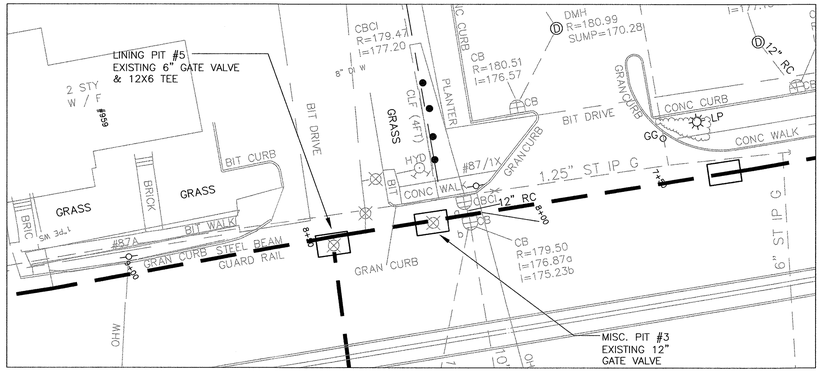
SCALE: 1" = 40'



GRAPHIC SCALE

20 0 20 40 80 FEET

1" = 40'



WATER MAIN CLEANING AND LINING PLAN VIEW

SCALE: 1" = 20'

TOWN OF NATICK, MASSACHUSETTS
BOARD OF SELECTMEN

WATER MAIN REHAB. / REPLACEMENT RT. 9 & RT. 135

12" WATER MAIN CLEANING AND LINING STA 9+00 TO 16+32

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SHEET NO.: 5 OF 17
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FILE NO.: NAT_451_BASE.DWG

DWG. NO.

5

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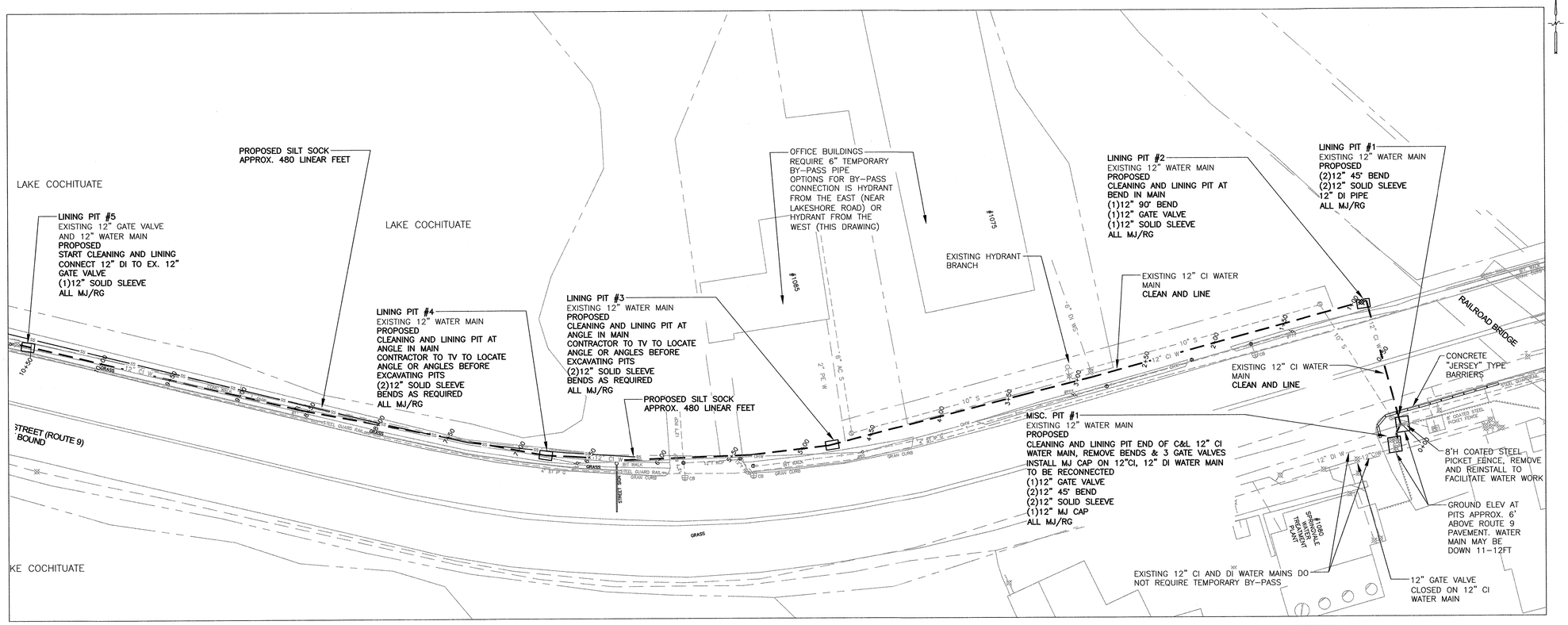

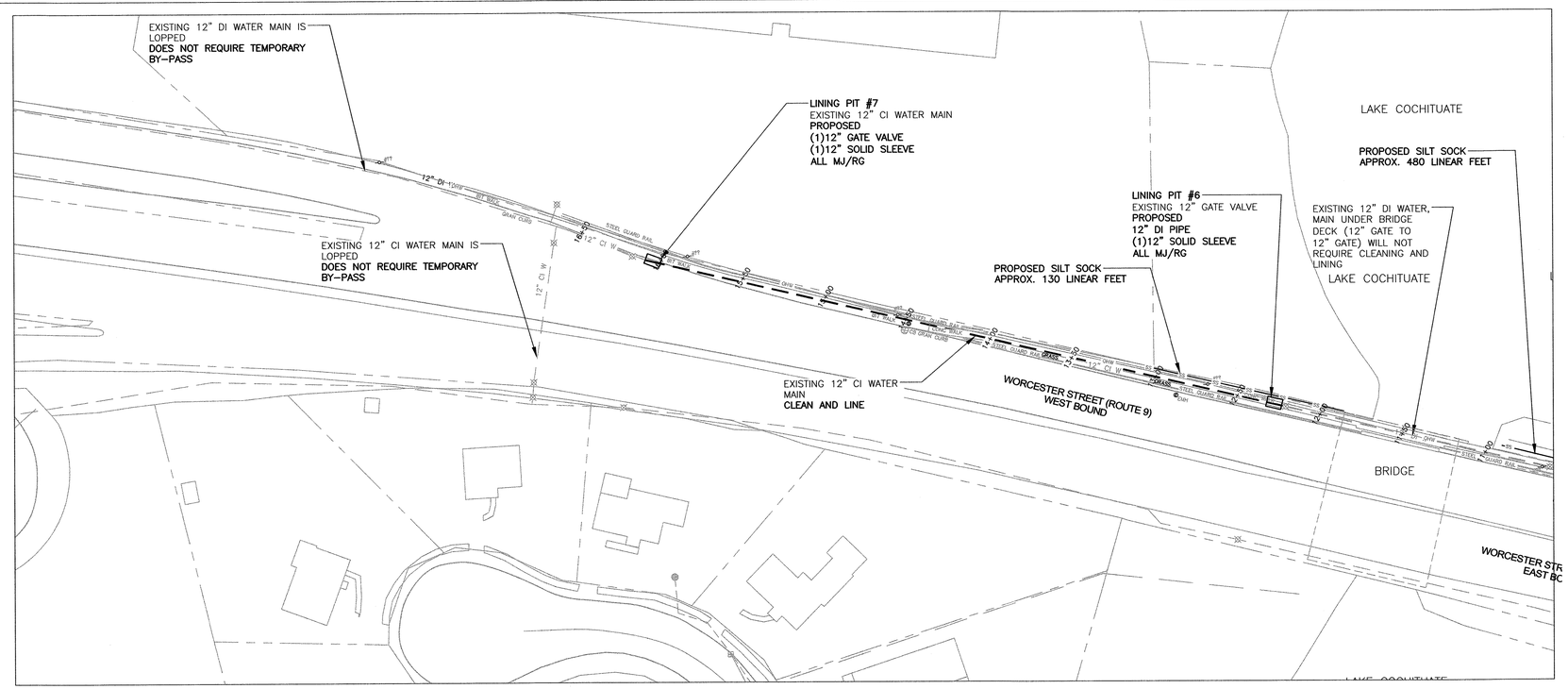

GENERAL NOTES:

1. SEE DRAWING 4 FOR GENERAL NOTES

GRAPHIC SCALE

20 0 20 40 80 FEET

12" CI WATER MAIN CLEANING AND LINING PLAN VIEW

SCALE: 1" = 40'

TOWN OF NATICK, MASSACHUSETTS
BOARD OF SELECTMEN

WATER MAIN REHAB. / REPLACEMENT RT. 9 & RT. 135

12" WATER MAIN CLEANING AND LINING STA 0+00 TO 16+00

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COMMONWEALTH OF MASSACHUSETTS
GREGORY J. CORKUM
No. 40710
PROFESSIONAL ENGINEER

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SHEET NO.: 6 OF 17
CONTRACT NO.: W-153
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DWG. NO.

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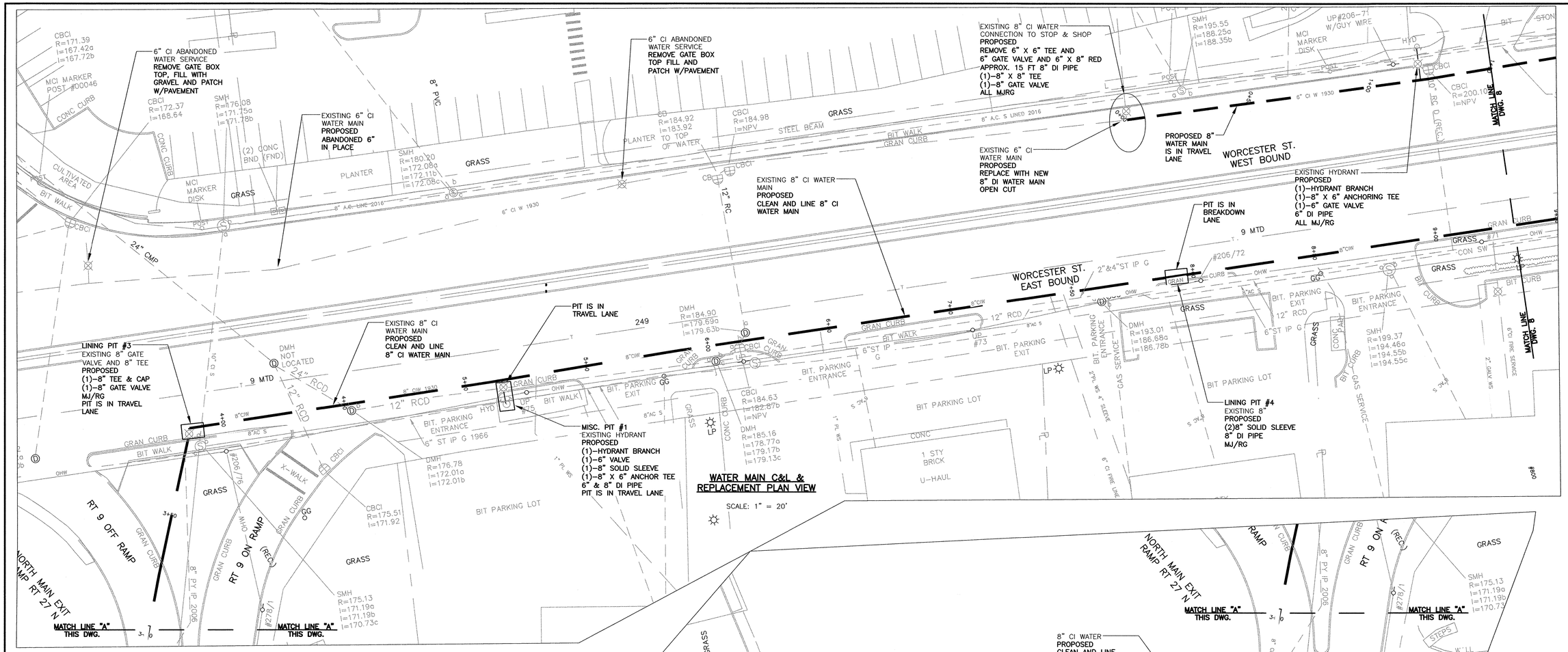
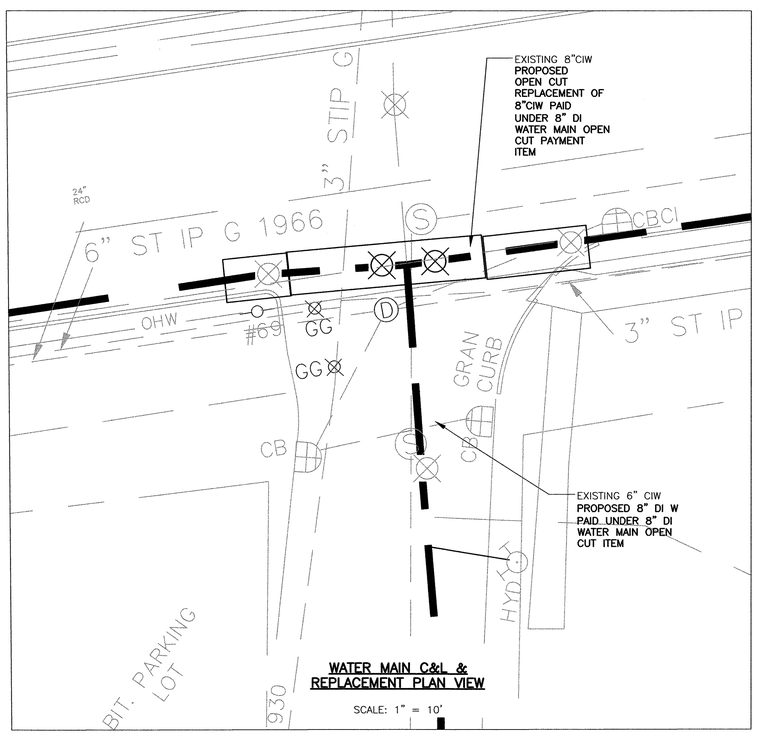


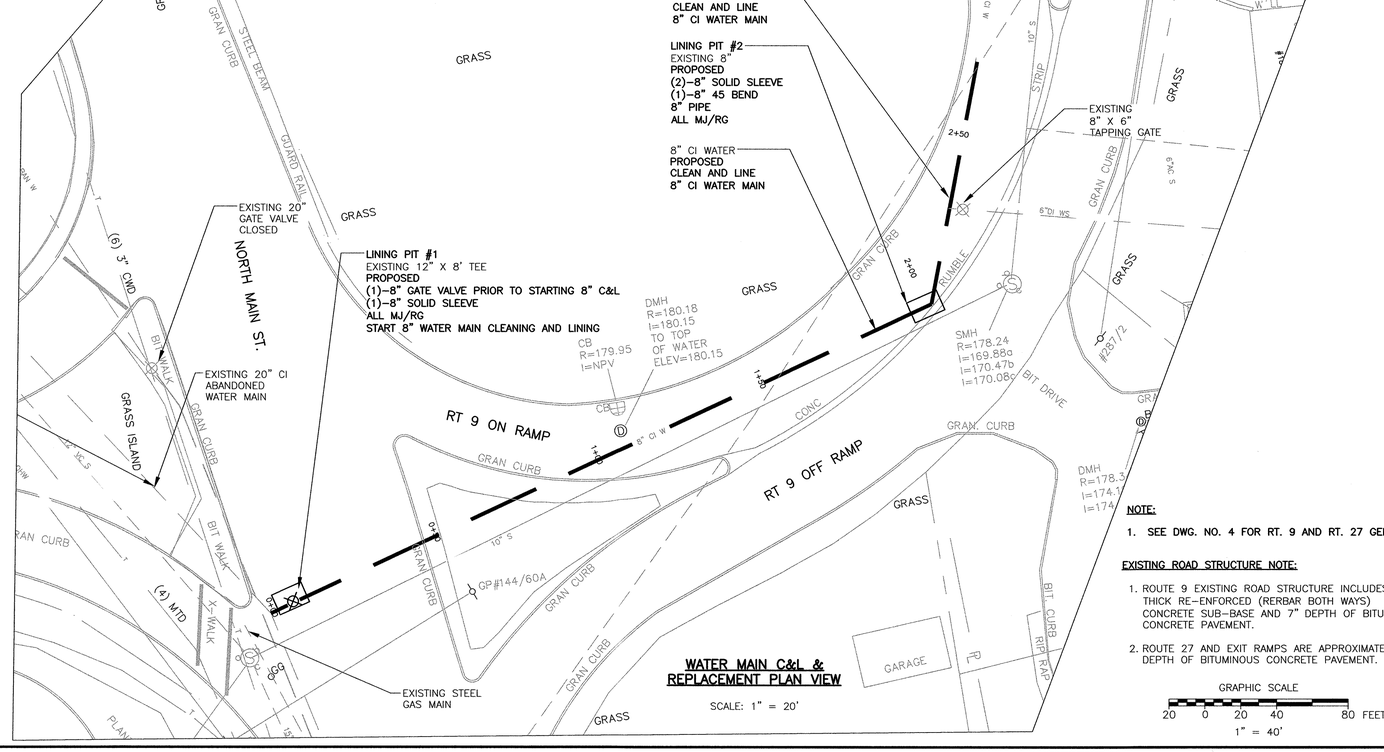
WATER MAIN C&L & REPLACEMENT PLAN VIEW

SCALE: 1" = 20'



WATER MAIN C&L & REPLACEMENT PLAN VIEW

SCALE: 1" = 10'



WATER MAIN C&L & REPLACEMENT PLAN VIEW

SCALE: 1" = 20'

NOTE:

1. SEE DWG. NO. 4 FOR RT. 9 AND RT. 27 GENERAL NOTES.

EXISTING ROAD STRUCTURE NOTE:

1. ROUTE 9 EXISTING ROAD STRUCTURE INCLUDES 8" THICK RE-ENFORCED (RERBAR BOTH WAYS) CONCRETE SUB-BASE AND 7" DEPTH OF BITUMINOUS CONCRETE PAVEMENT.
2. ROUTE 27 AND EXIT RAMPS ARE APPROXIMATELY 8" DEPTH OF BITUMINOUS CONCRETE PAVEMENT.

GRAPHIC SCALE

20 0 20 40 80 FEET

1" = 40'

TOWN OF NATICK, MASSACHUSETTS
BOARD OF SELECTMEN

WATER MAIN REHAB. / REPLACEMENT RT. 9 & RT. 135

WATER MAIN REPLACEMENT
WESTBOUND STA 0+00 TO 9+32
C&L EASTBOUND 0+00 TO 1+50

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SHEET NO.: 7 OF 17
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7

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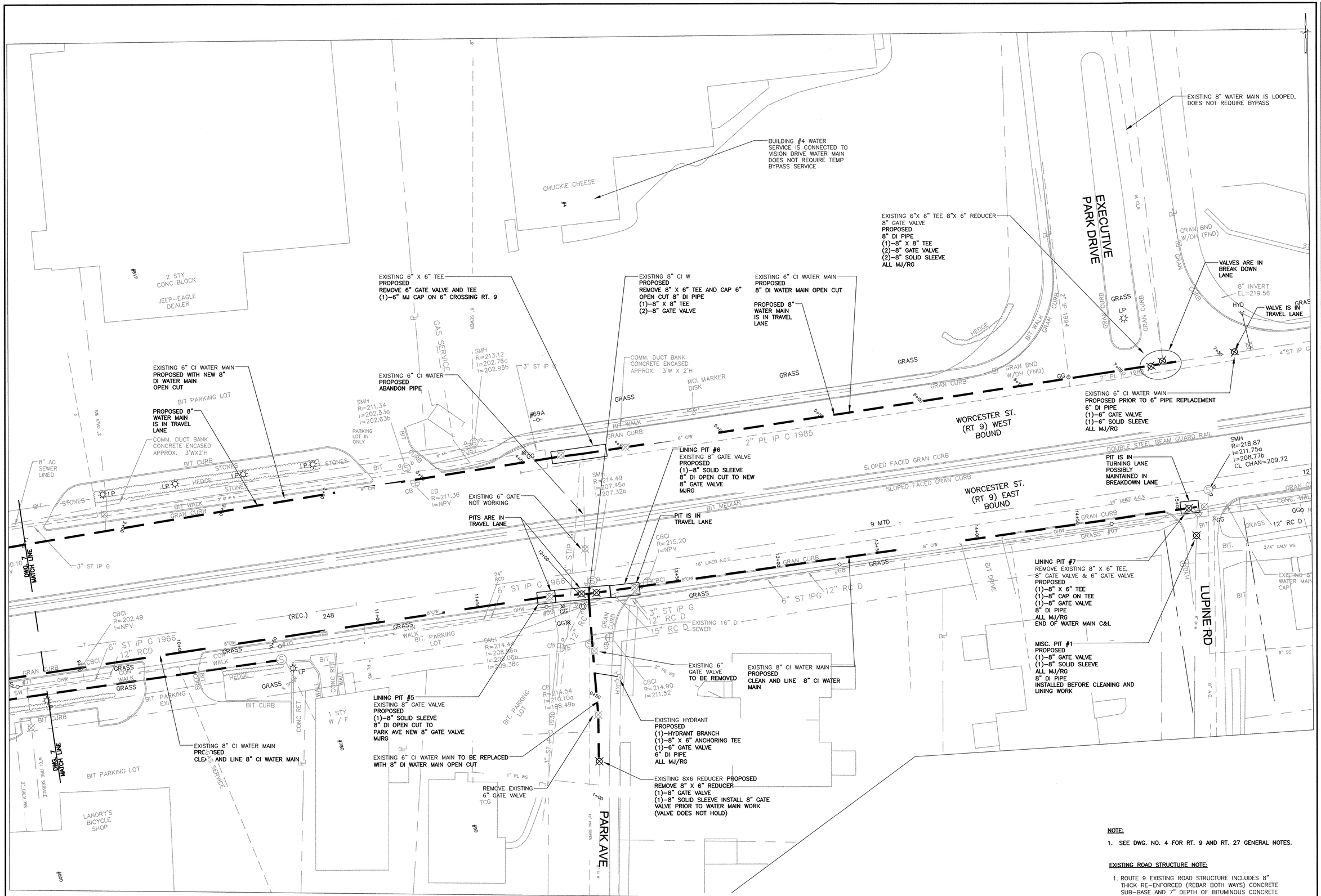

WATER MAIN REPLACEMENT PLAN VIEW

SCALE: 1" = 20'

NOTE:

1. SEE DWG. NO. 4 FOR RT. 9 AND RT. 27 GENERAL NOTES.

EXISTING ROAD STRUCTURE NOTE:

1. ROUTE 9 EXISTING ROAD STRUCTURE INCLUDES 8" THICK RE-ENFORCED (REBAR BOTH WAYS) CONCRETE SUB-BASE AND 7" DEPTH OF BITUMINOUS CONCRETE PAVEMENT.
2. ROUTE 27 AND EXIT RAMPS ARE APPROXIMATELY 8" DEPTH OF BITUMINOUS CONCRETE PAVEMENT.

TOWN OF NATICK, MASSACHUSETTS
BOARD OF SELECTMEN

WATER MAIN REHAB. / REPLACEMENT RT. 9 & RT. 135

WATER MAIN REPLACEMENT WESTBOUND STA 1+50 TO 7+30 C&L EASTBOUND 9+32 TO 15+25

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COMMONWEALTH OF MASSACHUSETTS
GREGORY J. LAPOINTE
No. 40715
PROFESSIONAL ENGINEER

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DWG. NO.
8

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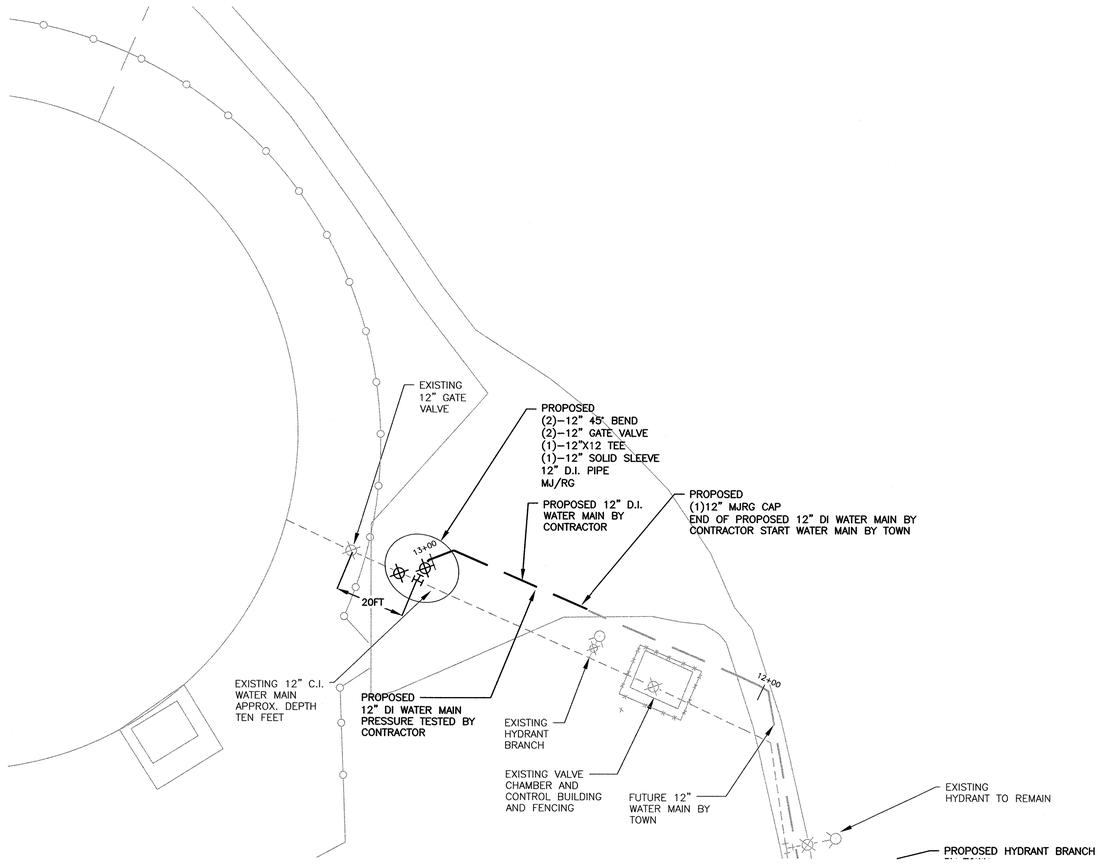
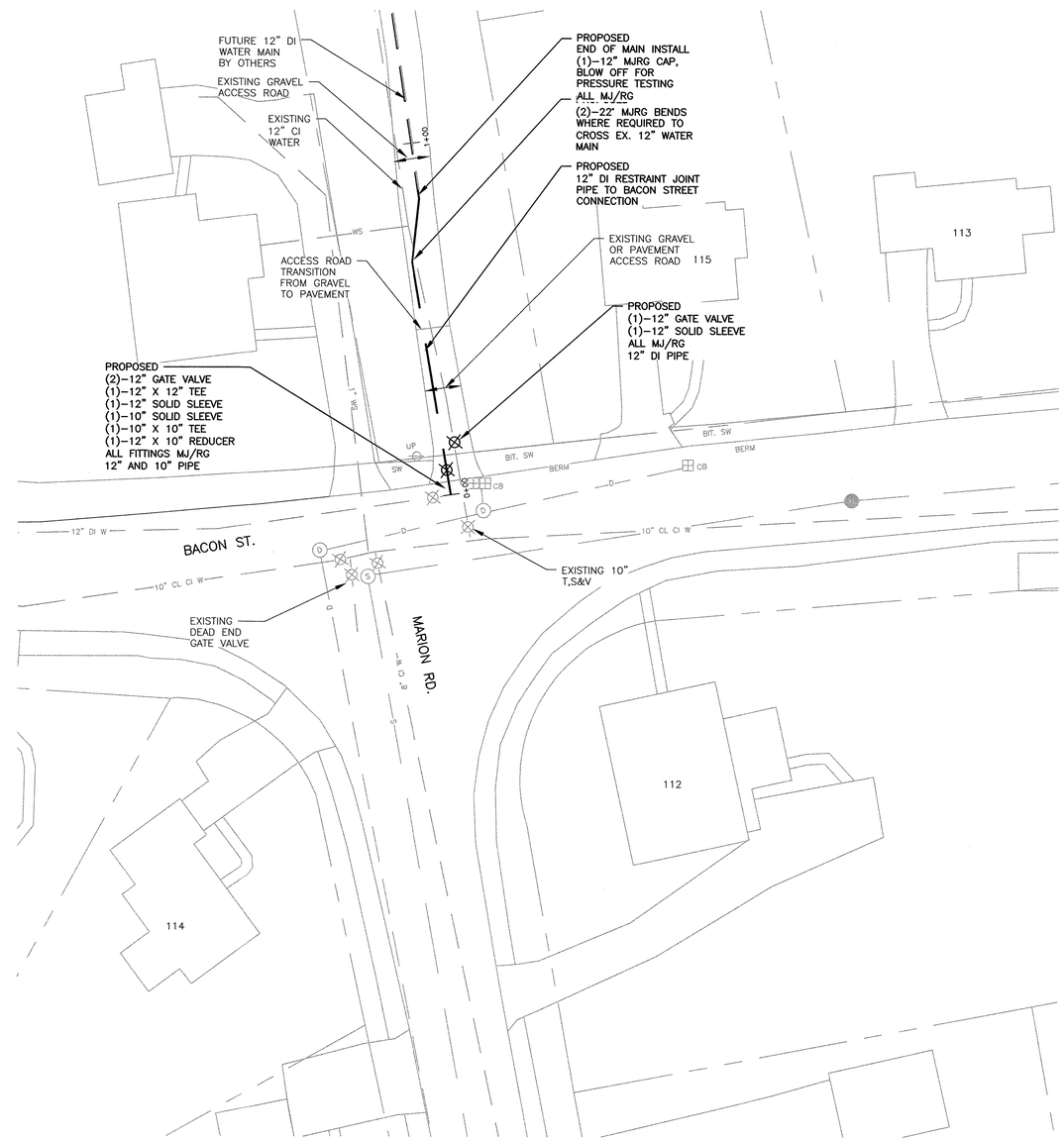


PLAN VIEW
TOWN FOREST TANK CONNECTION

SCALE: 1" = 20'



PLAN VIEW
BACON STREET AT TOWN FOREST TANK ACCESS ROAD

SCALE: 1" = 20'

GENERAL NOTES:

1. SEE TRAFFIC MANAGEMENT DRAWINGS FOR MINIMUM REQUIRED SIGNS.
   - 1.1.1. BACON STREET CANNOT BE CLOSED COMPLETELY. ONE LANE ALTERNATING TRAFFIC IS REQUIRED.
   - 1.1.2. CONTRACTOR TO INSTALL ELECTRONIC MESSAGE BOARD ONE WEEK BEFORE WORK STARTS ON BACON STREET AND LEAVE SIGN FOR ONE WEEK.
   - 1.1.3. WORK SHALL NOT START IN ROADWAY PRIOR TO 8:30 AM.
   - 1.1. CONTRACTOR TO CUT IN NEW TEES BY LIMITING DOWNTIME OF THE WATER MAINS TO 2 HOURS EACH CUT IN.
   - 1.2. CONTRACTOR TO PRESSURE TEST THE COMPLETED PIPING IN ACCORDANCE WITH THE SPECIFICATION FOR TESTING.
   - 1.3. DISINFECTION WILL BE COMPLETED BY THE OWNER DURING FUTURE PIPE EXTENSION.
   - 1.4. CONTRACTOR TO INSTALL 6" DEPTH OF GRAVEL TO REPLACE THE GRAVEL ROADWAY REMOVED DURING CONSTRUCTION.
   - 1.5. CONTRACTOR TO INSTALL 4 1/2" DEPTH OF TRENCH PAVEMENT (3" BINDER 1-1/2" TOP) WHERE EXISTING PAVEMENT EXISTS.
   - 1.6. CONTRACTOR TO LOAM AND SEED DISTURBED AREAS.
   - 1.7. EXISTING PAVEMENT IS APPROXIMATELY SIX (6") DEPTH.
   - 1.8. BACKFILL IN PAVED ROADWAY 9BACON ST.) SHALL BE FLOWABLE FILL FROM PIPE INVERT EXTENDING UP TO BOTTOM OF PROPOSED PAVEMENT.
   - 1.9. PROPOSED PAVEMENT TO BE TOTAL OF FIVE (5"), CONSISTING OF OF 3 1/2" BINDER AND 2 1/2" TOPCOAT.

GRAPHIC SCALE

10 0 10 20 40 FEET

TOWN OF NATICK, MASSACHUSETTS
BOARD OF SELECTMEN

WATER MAIN REHAB. / REPLACEMENT RT. 9 & RT. 135

TOWN FOREST TANK WATER MAIN CONNECTIONS

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No. 40776
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SHEET NO.: 9 OF 17
CONTRACT NO.: W-153
SCALE: 1"= 20'
DATE DRAWN: MARCH, 2019
DRAWN BY: LJC
FILE NO.: NAT_458_BASE.DWG

DWG. NO.
9

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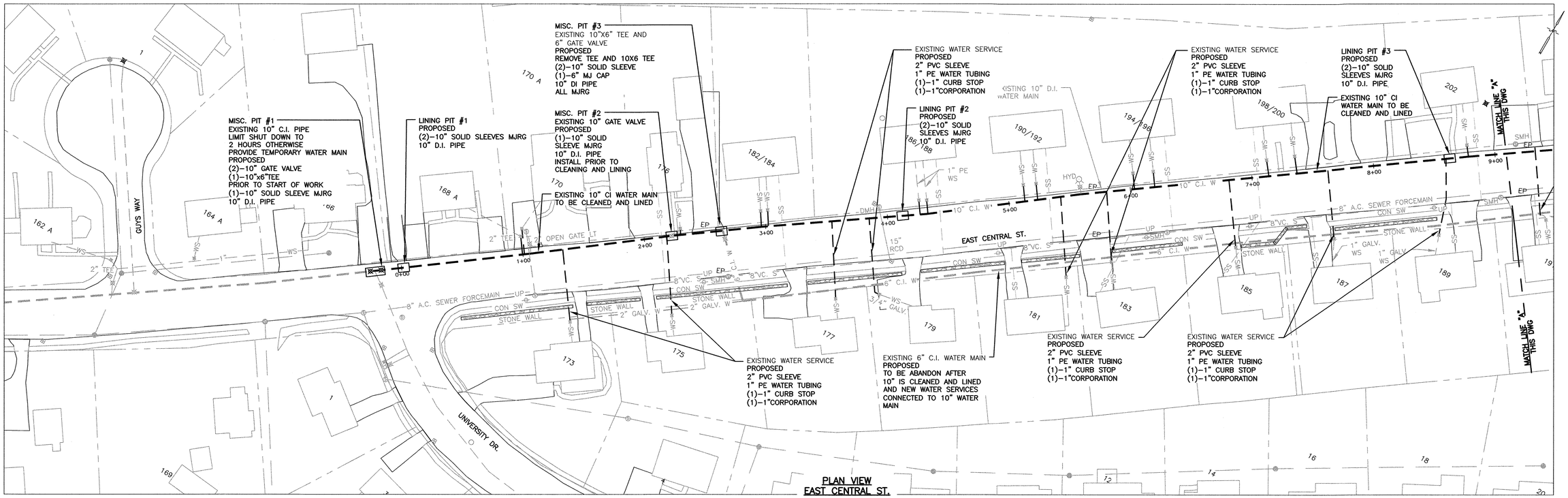

PLAN VIEW
EAST CENTRAL ST.

SCALE: 1" = 40'

PLAN VIEW
EAST CENTRAL ST.

SCALE: 1" = 40'

GRAPHIC SCALE

20 0 20 40 80 FEET

PAVING NOTES:

1. EXISTING EAST CENTRAL ROADWAY STRUCTURE CONSISTS OF AN APPROXIMATE 8" THICK REINFORCED (BOTH WAYS) CONCRETE ROAD SUB-BASE WITH APPROXIMATE FIVE INCHES (5") DEPTH OF ASPHALTIC CONCRETE PAVING.
2. PROPOSED PAVEMENT SHALL BE AS FOLLOWS:
   2.1. PITS AND TRENCH IN ROADWAY TOTAL OF FIVE INCHES (5"), CONSISTING OF 3 1/2" BINDER AND 1 1/2" TOP.
   2.2. DRIVEWAYS TO BE FOUR INCHES (4") TOTAL, CONSISTING OF 3" BINDER AND 1" TOP.

NOTE:

1. SEE DWG. NO. 11 FOR GENERAL NOTES.

STONE WALL NOTES:

1. EXISTING STONE WALL RUNS ALONG THE WEST BOUND LANE ON THE BACK SIDE OF THE SIDEWALK.
2. STONE WALL IS A COMBINATION OF DRY LAID STONE AND AREAS OF WET LAID (CONCRETE FILLED AROUND STONE).
3. STONE WALL FROM HOUSE #173 TO #201 & #217 TO #221 IS APPROXIMATELY 3 FEET HIGH AND IS ALSO A RETAINING WALL.
4. STONE WALL ALL OTHER LOCATIONS IS APPROXIMATELY 3 FEET TALL AS AN ELEVATED WALL.
5. CONTRACTOR SHALL TUNNEL UNDER STONE WALLS TO INSTALL NEW WATER SERVICE AND CONNECT TO EXISTING SERVICE WHERE WALL DAMAGE WILL NOT OCCUR. OTHERWISE REMOVE SECTION OF WALL TO FACILITATE SERVICE INSTALLATION AND REBUILD WALL TO CONDITION PRIOR TO CONSTRUCTION.

WATER SERVICE NOTES:

1. EXISTING WATER SERVICES TO BE REPLACED FROM THE CURB STOP TO THE 10" WATER MAIN.
2. CONTRACTOR TO CUT 6" MAIN OUR OF WAY TO EXTEND NEW WATER SERVICE TO EXISTING WATER SERVICE WHEN REQUIRED TO MAINTAIN 4 1/2 FT DEPTH.
3. 2" PVC SLEEVE TO BE INSTALLED ACROSS THE ROADWAY, STARTING AND ENDING ENDING 3 FEET FROM THE PROPOSED CURB STOP AND CORPORATION.
4. WATER SERVICE CONNECTIONS TO BE MADE TO THE 10" WATER MAIN AFTER THE 10" WATER MAIN IS CLEANED AND LINED AND BACK ONLINE.
5. WATER SERVICE TRENCHES IN EAST CENTRAL STREET PAVEMENT TO BE BACKFILLED WITH FLOWABLE FILL.
6. COVER PVC SLEEVE AT END WITH SAND TO PREVENT FLOWABLE FILL FROM FLOWING INTO SLEEVE.
7. 8" AC SEWER FORCEMAIN WAS INSTALLED WITHIN 3-4 FEET OF THE 8" GRAVITY SEWER PIPE.
8. 8" FORCEMAIN AND 8" GRAVITY SEWER PIPES ARE APPROXIMATELY 4-5 FEET IN DEPTH. WATER SERVICES MUST BE INSTALLED UNDER THE GRAVITY AND FORCEMAIN PIPE.
9. 8" AC GRAVITY SEWER PIPE IS LINED WITH A CURED IN PLACE LINER

TOWN OF NATICK, MASSACHUSETTS
BOARD OF SELECTMEN

WATER MAIN REHAB. / REPLACEMENT RT. 9 & RT. 135

EAST CENTRAL 0+00 TO 21+20

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COMMONWEALTH OF MASSACHUSETTS
GREGORY J. LUNARDINI
No. 40710
REGISTERED PROFESSIONAL ENGINEER

CHECKED	DATE	BY
REVISED	DATE	BY

SHEET NO.: 10 OF 17
CONTRACT NO.: W-153
SCALE: 1" = 40'
DATE DRAWN: MARCH, 2019
DRAWN BY: LJC
FILE NO.: NAT_462-SHT_10-12.dwg

DWG. NO.
10

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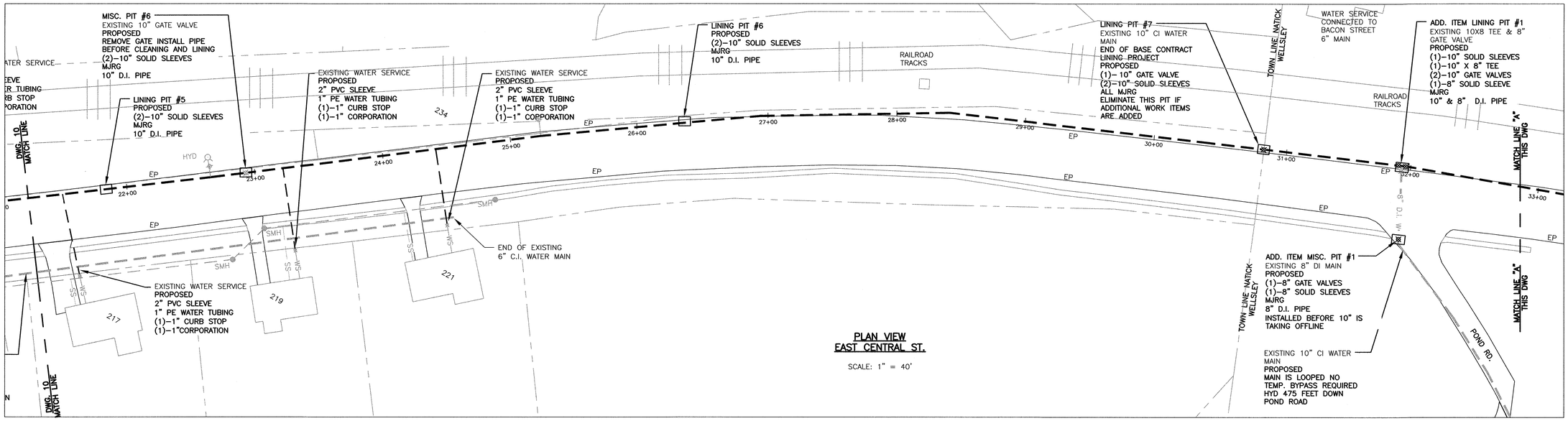
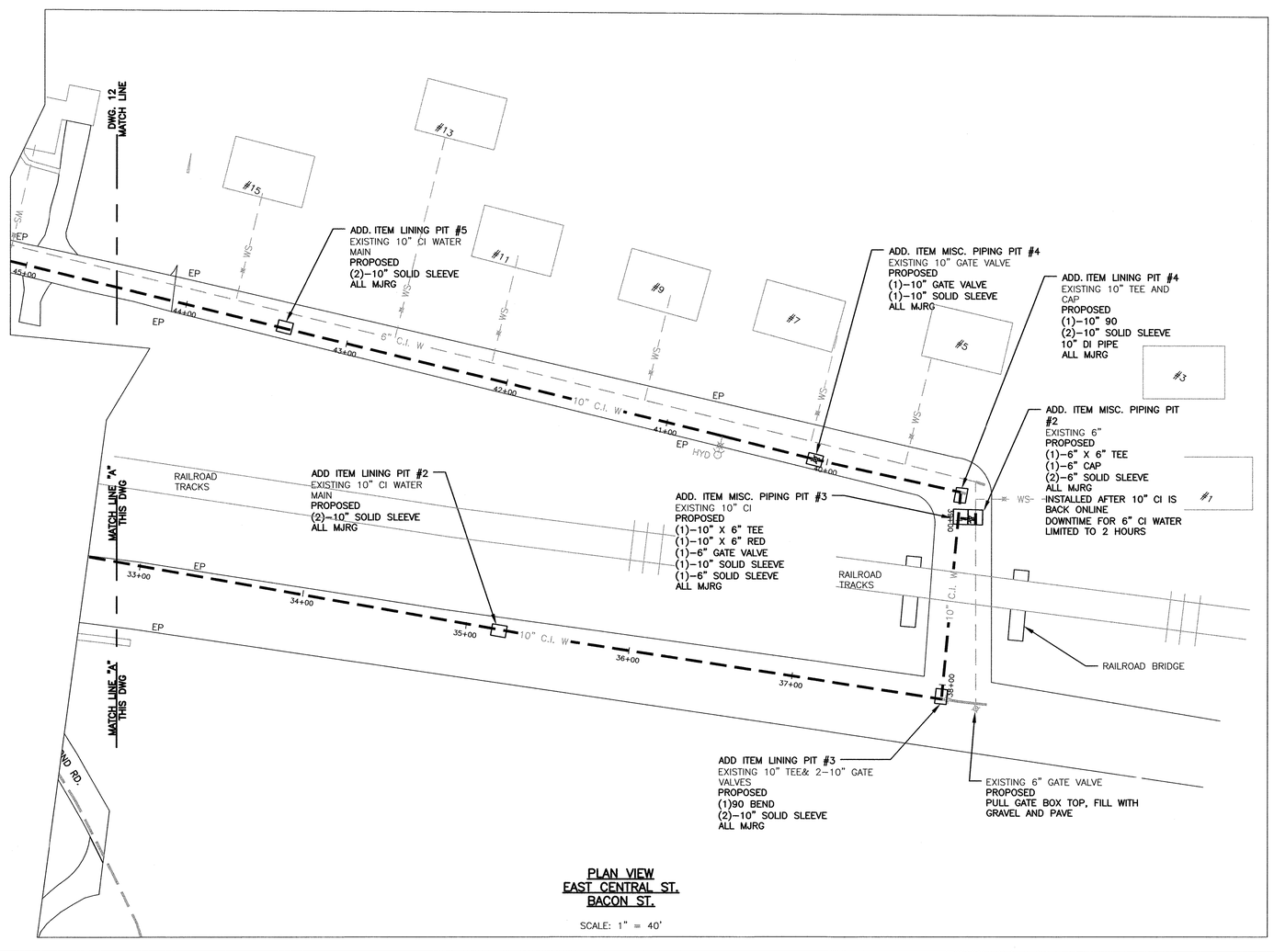


PLAN VIEW
EAST CENTRAL ST.

SCALE: 1" = 40'



PLAN VIEW
EAST CENTRAL ST.
BACON ST.

SCALE: 1" = 40'

GENERAL NOTES:

1. SEE TRAFFIC MANAGEMENT DRAWINGS FOR MINIMUM REQUIRED SIGNS.
2. ALL BUILDINGS CONNECTED TO 10" WATER MAIN TO RECEIVE TEMPORARY WATER SERVICE DURING PROJECT.
   - 2.1. SEE TEMPORARY WATER SERVICE SECTION FOR ADDITIONAL DETAILS.
   - 2.2. EAST CENTRAL 10" CI WATER MAIN TEMPORARY WATER MAIN TO BE 4INCH DIAMETER PROVIDED BACON STREET IS NOT ON BY-PASS AT SAME TIME.
   - 2.3. TEMPORARY PIPE TO BE RAMPED AT DRIVEWAYS UNLESS RAMP IS TOO HIGH FOR SAFE VEHICLE EXIT AND ENTRY ONTO RT. 135, OTHERWISE BURY PIPE BELOW GRADE.
   - 2.4. EAST CENTRAL WATER SERVICES ON 6" CI WATER MAIN DO NOT REQUIRE TEMPORARY WATER SERVICE PROVIDED WATER SHUT OFF DOES NOT EXCEED THREE HOURS.
3. ALL CENTRAL ST. MISCELLANEOUS AND LINING PITS IN THE PAVED ROADWAY SHALL BE BACKFILLED WITH FLOWABLE FILL FOLLOWING PIPING INSTALLATION.
   - 3.1. SEE CONTRACT DOCUMENTS FOR REQUIRED PAVEMENT RESTORATION.
   - 3.2. ALL OTHER PITS TO BE BACKFILLED WITH APPROVED MATERIAL.
   - 3.3. CONTRACTOR TO INSTALL NEW GRANITE CURB WHERE REMOVED ALONG EAST CENTRAL.
   - 3.4. CONTRACTOR TO INSTALL NEW CONCRETE SIDEWALK SECTIONS WHERE REMOVED DURING WATER SERVICE INSTALLATION.
   - 3.5. CONTRACT HAS BASE BID WORK FOR EAST CENTRAL 10" CLEANING AND LINING TO THE NATICK-WELLESLEY TOWN LINE. IF ADDITIONAL ITEMS ARE AWARDED, THE CLEANING AND LINING WILL EXTEND INTO WELLESLEY AND ONTO BACON STREET.
     - 3.5.1. LINING PIT #7 COULD BE MOVED TO ADD ITEM LINING PIT #1, IF ADDITIONAL ITEM WORK ITEMS IS APPROVED

PAVING NOTES:

1. EXISTING EAST CENTRAL ROADWAY STRUCTURE CONSISTS OF AN APPROXIMATE 8" THICK REINFORCED (BOTH WAYS) CONCRETE ROAD SUB-BASE WITH APPROXIMATE FIVE INCHES (5") DEPTH OF ASPHALTIC CONCRETE PAVING.
2. PROPOSED PAVEMENT SHALL BE AS FOLLOWS:
   - 2.1. PITS AND TRENCH IN ROADWAY TOTAL OF FIVE INCHES (5"), CONSISTING OF OF 3 1/2" BINDER AND 1 1/2" TOP.
   - 2.2. DRIVEWAYS TO BE FOUR INCHES (4") TOTAL, CONSISTING OF 3" BINDER AND 1" TOP.

GRAPHIC SCALE

20 0 20 40 80 FEET

STONE WALL NOTES:

1. EXISTING STONE WALL RUNS ALONG THE WEST BOUND LANE ON THE BACK SIDE OF THE SIDEWALK.
2. STONE WALL IS A COMBINATION OF DRY LAID STONE AND AREAS OF WET LAID (CONCRETE FILLED AROUND STONE).
3. STONE WALL FROM HOUSE #173 TO #201 & #217 TO #221 IS APPROXIMATELY 3 FEET HIGH AND IS ALSO A RETAINING WALL.
4. STONE WALL ALL OTHER LOCATIONS IS APPROXIMATELY 3 FEET TALL AS AN ELEVATED WALL.
5. CONTRACTOR SHALL TUNNEL UNDER STONE WALLS TO INSTALL NEW WATER SERVICE AND CONNECT TO EXISTING SERVICE WHERE WALL DAMAGE WILL NOT OCCUR. OTHERWISE REMOVE SECTION OF WALL TO FACILITATE SERVICE INSTALLATION AND REBUILD WALL TO CONDITION PRIOR TO CONSTRUCTION.

WATER SERVICE NOTES:

1. EXISTING WATER SERVICES TO BE REPLACED FROM THE CURB STOP TO THE 10" WATER MAIN.
2. CONTRACTOR TO CUT 6" MAIN OUR OF WAY TO EXTEND NEW WATER SERVICE TO EXISTING WATER SERVICE WHEN REQUIRED TO MAINTAIN 4 1/2 FT DEPTH.
3. 2" PVC SLEEVE TO BE INSTALLED ACROSS THE ROADWAY, STARTING AND ENDING ENDING 3 FEET FROM THE PROPOSED CURB STOP AND CORPORATION.
4. WATER SERVICE CONNECTIONS TO BE MADE TO THE 10" WATER MAIN AFTER THE 10" WATER MAIN IS CLEANED AND LINED AND BACK ONLINE.
5. WATER SERVICE TRENCHES IN EAST CENTRAL STREET PAVEMENT TO BE BACKFILLED WITH FLOWABLE FILL.
6. COVER PVC SLEEVE AT END WITH SAND TO PREVENT FLOWABLE FILL FROM FLOWING INTO SLEEVE.
7. 8" AC SEWER FORCEMAIN WAS INSTALLED WITHIN 3-4 FEET OF THE 8" GRAVITY SEWER PIPE.
8. 8" FORCEMAIN AND 8" GRAVITY SEWER PIPES ARE APPROXIMATELY 4-5 FEET IN DEPTH. WATER SERVICES MUST BE INSTALLED UNDER THE GRAVITY AND FORCEMAIN PIPE.
9. 8" AC GRAVITY SEWER PIPE IS LINED WITH A CURED IN PLACE LINER

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WATER MAIN REHAB. / REPLACEMENT RT. 9 & RT. 135

EAST CENTRAL
21+20 TO 38+00
BACON ST.
38+00 TO 44+43

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COMMONWEALTH OF MASSACHUSETTS
GREGORY J. ALLEN
ELECTRICAL
No. 40116
REGISTERED PROFESSIONAL ENGINEER

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REVISED	DATE	BY

SHEET NO.: 11 OF 17
CONTRACT NO.: W-153
SCALE: 1" = 40'
DATE DRAWN: MARCH, 2019
DRAWN BY: LJC
FILE NO.: NAT_462-SHT_10-12.dwg

DWG. NO.
11

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GENERAL NOTES:

1. SEE TRAFFIC MANAGEMENT DRAWINGS FOR MINIMUM REQUIRED SIGNS.

2. ALL BUILDINGS CONNECTED TO 10" WATER MAIN TO RECEIVE TEMPORARY WATER SERVICE DURING PROJECT.
   - 2.1. SEE TEMPORARY WATER SERVICE SECTION FOR ADDITIONAL DETAILS.
   - 2.2. BACON STREET 10" CI WATER MAIN TEMPORARY WATER MAIN TO BE 4–INCH DIAMETER AND 2–INCH OTHER SIDE OF ROAD
   - 2.3. BACON STREET 6–INCH WATER MAIN IF IT REQUIRES A TEMPORARY WATER MAIN, WILL REQUIRE 2–INCH TEMPORARY WATER SERVICE.
   - 2.4. COLLEGE ROAD REQUIRES 4–INCH TEMPORARY WATER MAIN.

3. ALL MISCELLANEOUS AND LINING PITS IN THE PAVED ROADWAY SHALL BE BACKFILLED WITH APPROVED SOIL FOLLOWING PIPING INSTALLATION.
   - 3.1. SEE CONTRACT DOCUMENTS FOR REQUIRED PAVEMENT RESTORATION.
   - 3.2. CONTRACT HAS BASE BID WORK FOR EAST CENTRAL 10" CLEANING AND LINING TO THE NATICK–WELLESLEY TOWN LINE. IF ADDITIONAL ITEMS ARE AWARDED, THE CLEANING AND LINING WILL EXTEND INTO WELLESLEY AND ONTO BACON STREET.

PAVING NOTES:

1. EXISTING EAST CENTRAL ROADWAY STRUCTURE CONSISTS OF AN APPROXIMATE 8" THICK REINFORCED (BOTH WAYS) CONCRETE ROAD SUB–BASE WITH APPROXIMATE FIVE INCHES (5") DEPTH OF ASPHALTIC CONCRETE PAVING.

2. PROPOSED PAVEMENT SHALL BE AS FOLLOWS:
   - 2.1. PITS AND TRENCH IN ROADWAY TOTAL OF FIVE INCHES (5"), CONSISTING OF OF 3 1/2" BINDER AND 1 1/2" TOP.
   - 2.2. DRIVEWAYS TO BE FOUR INCHES (4") TOTAL, CONSISTING OF 3" BINDER AND 1" TOP.

GRAPHIC SCALE

20 0 20 40 80 FEET

PLAN VIEW
BACON ST.

SCALE: 1" = 40'

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WATER MAIN REHAB. / REPLACEMENT RT. 9 & RT. 135

BACON ST.
44+33 TO 55+55

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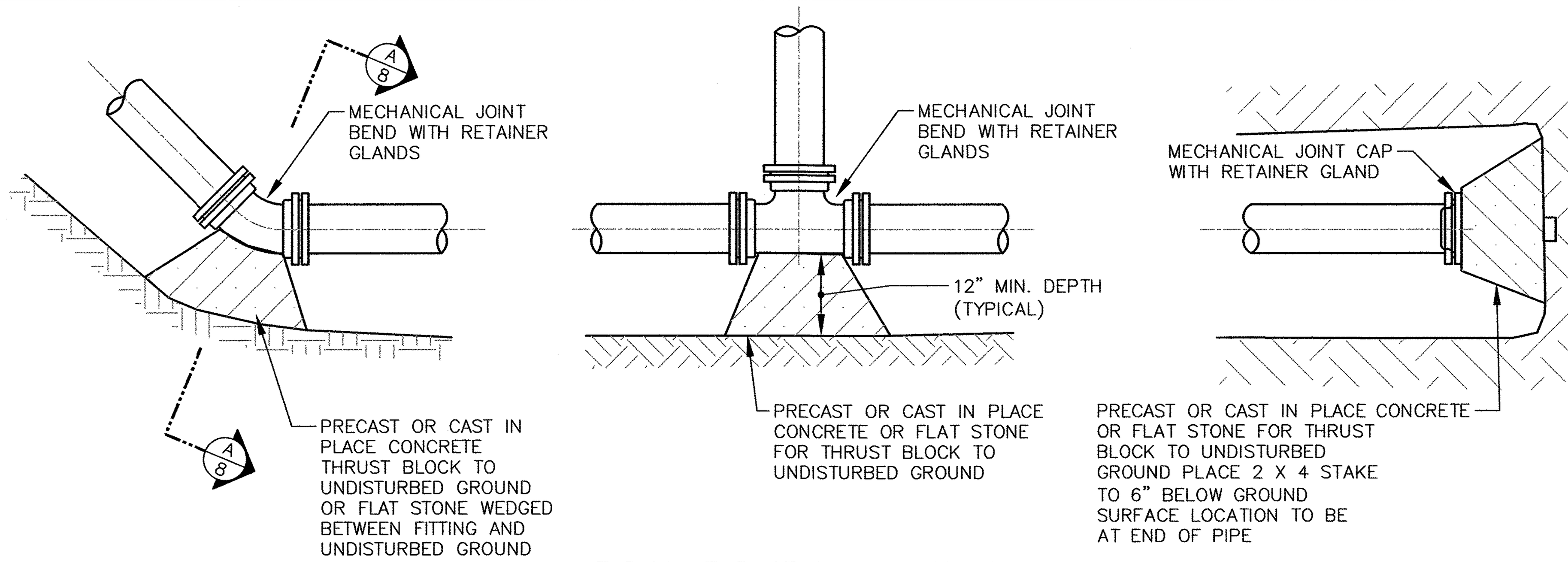
COMMONWEALTH OF MASSACHUSETTS
GREGORY J. LUDUCHE
No. 40710
REGISTERED PROFESSIONAL ENGINEER

CHECKED	DATE	BY
REVISED	DATE	BY

SHEET NO.: 12 OF 17
CONTRACT NO.: W–153
SCALE: 1"= 40'
DATE DRAWN: MARCH, 2019
DRAWN BY: LJC
FILE NO.: NAT_462–SHT_10–12.dwg

DWG. NO.

12

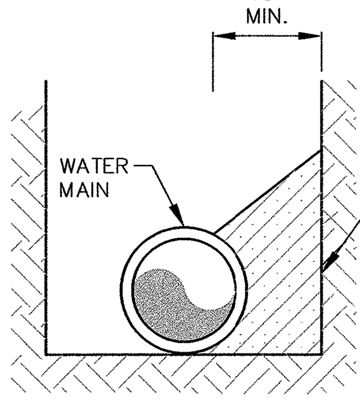


TYPICAL THRUST BLOCK DETAILS

NO SCALE

PIPE DIAMETER	BENDS				TEE
	11.25	22.5	45	90	
6	1	1	1	2	1.5
8	1	1	2	3	2.5
12	1	2	3.5	6.5	5

THRUST BLOCK BEARING AREA (SF)
(BASED UPON 100 psi WATER PRESSURE AND 3000 PSF BEARING LOAD CAPACITY)



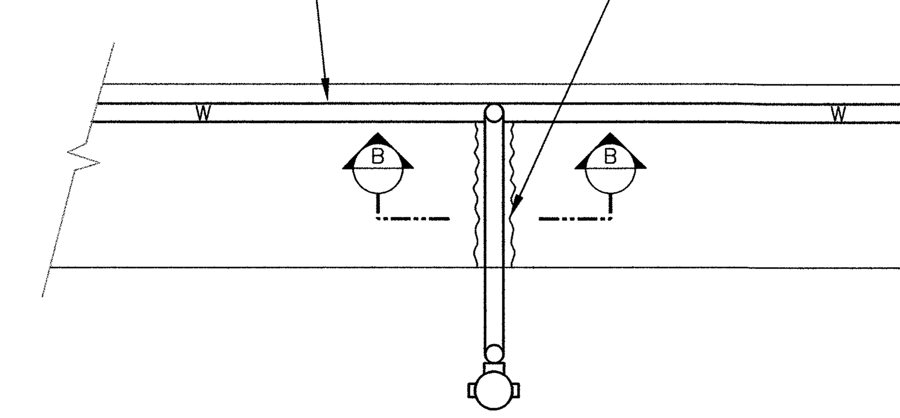
NOTE:

1. FITTINGS AND VALVES TO BE SURROUNDED BY CRUSHED STONE IF PRECAST OR FLAT STONE THRUST BLOCK IS USED.

A/8 NO SCALE

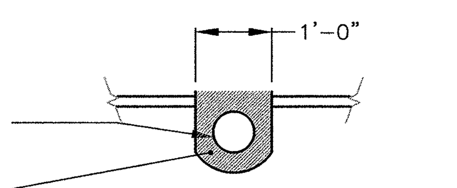
FITTINGS	RESTRAINED LENGTH (ft)
8" 90° BEND	31
8" 60° BEND	18
8" 45° BEND	13
8" 30° BEND	8
8" 22.5° BEND	6
8" 11.25° BEND	3
8" x 8" TEE	52
10" x 8" REDUCER	45
8" x 6" REDUCER	34
6" 90° BEND	26
6" 60° BEND	16
6" 45° BEND	10
6" 30° BEND	8
6" 22.5° BEND	6
6" 11.25° BEND	3

MINIMUM ONE RESTRAINED JOINT

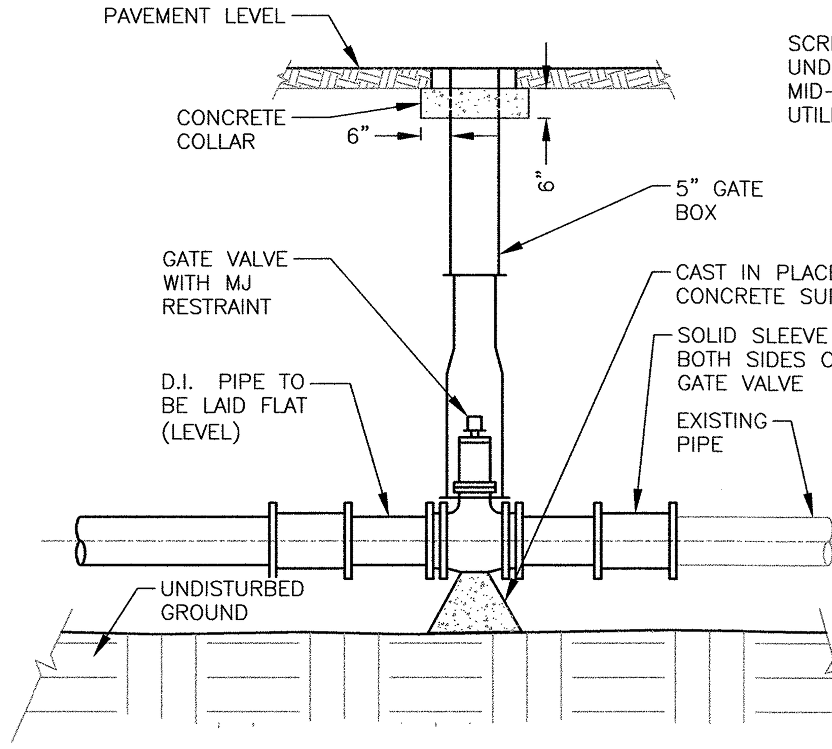


TEMPORARY WATER SERVICE CROSSING ROAD

NOT TO SCALE

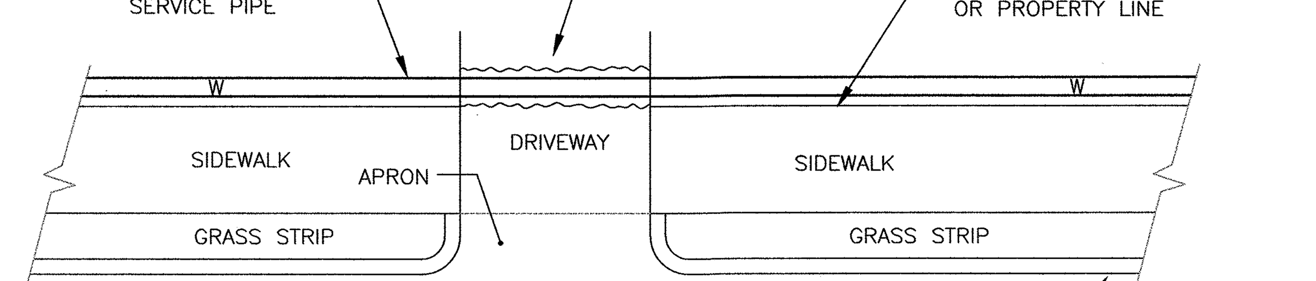


B SECTION VIEW



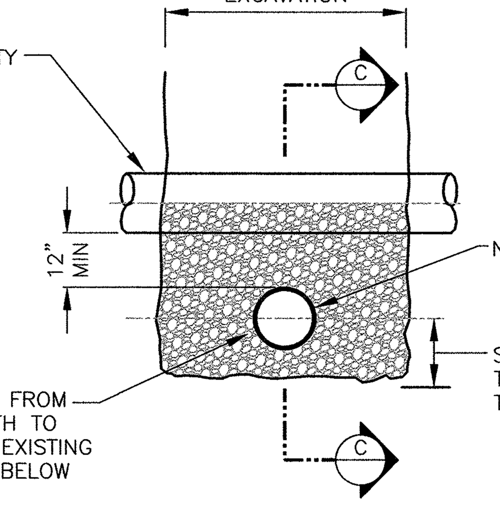
TYPICAL GATE VALVE INSTALLATION

NOT TO SCALE

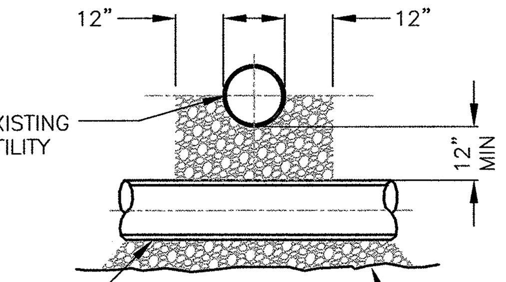


TEMPORARY WATER SERVICE ALONG BACK OF SIDEWALK

NOT TO SCALE



TYPICAL SECTION



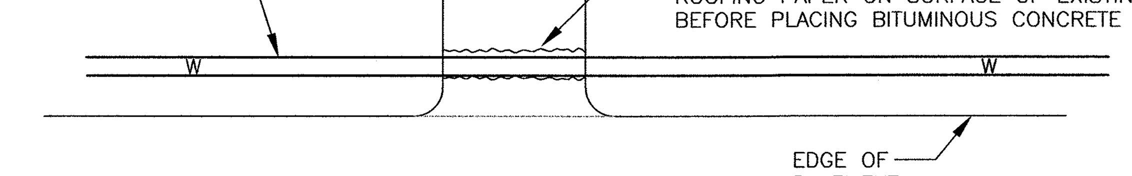
C SECTION

NOTE:

1. WHERE WATER MAINS CROSS WITHIN 18 INCHES OF EXISTING SEWERS, THE NEW WATER MAIN SHALL HAVE MECHANICAL JOINTS (MJ) UNLESS OTHERWISE SHOWN ON THE DRAWINGS

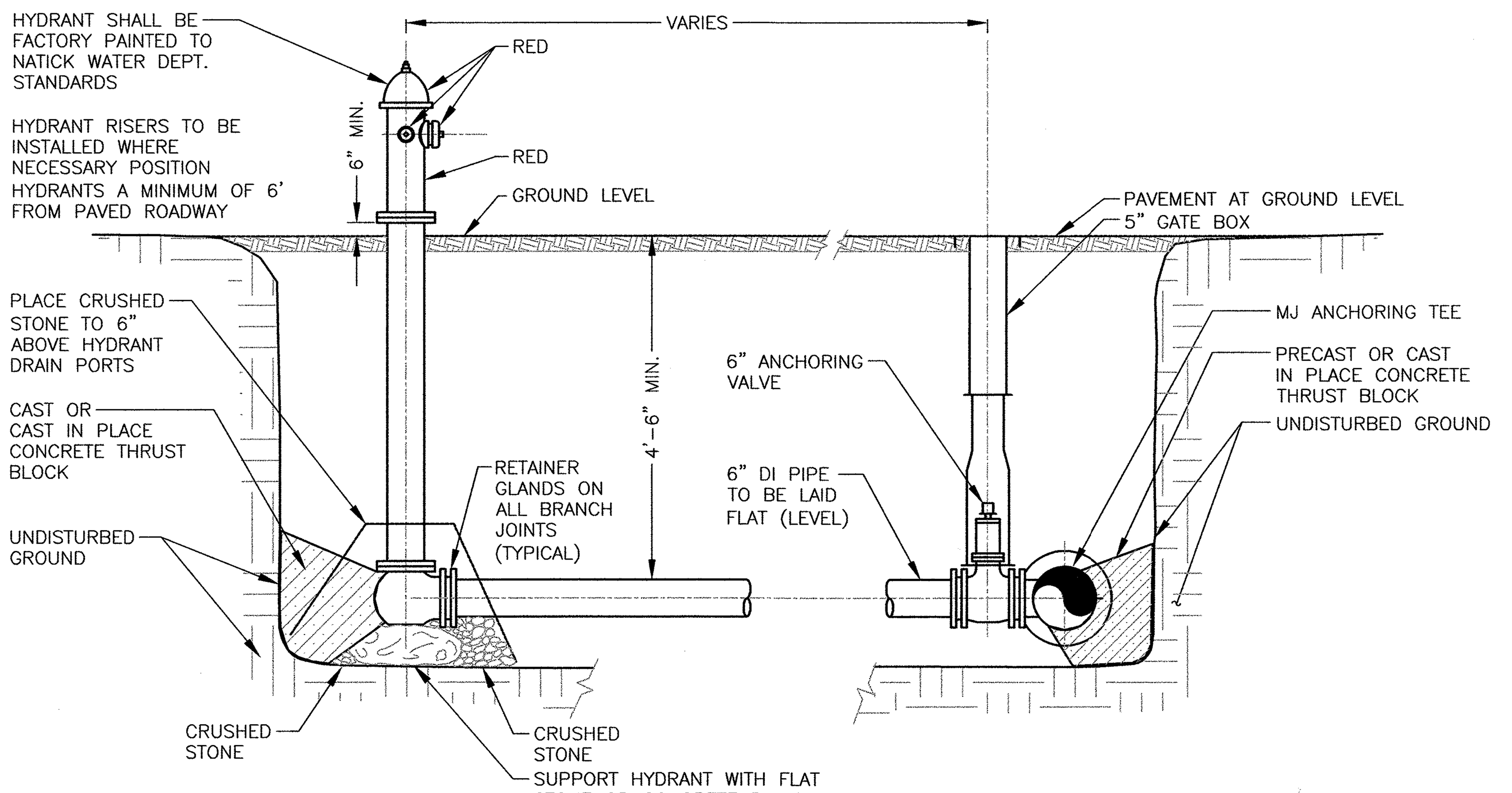
UTILITY CROSSING DETAIL

NOT TO SCALE



TEMPORARY WATER SERVICE ALONG BACK SIDE OF PAVEMENT

NOT TO SCALE

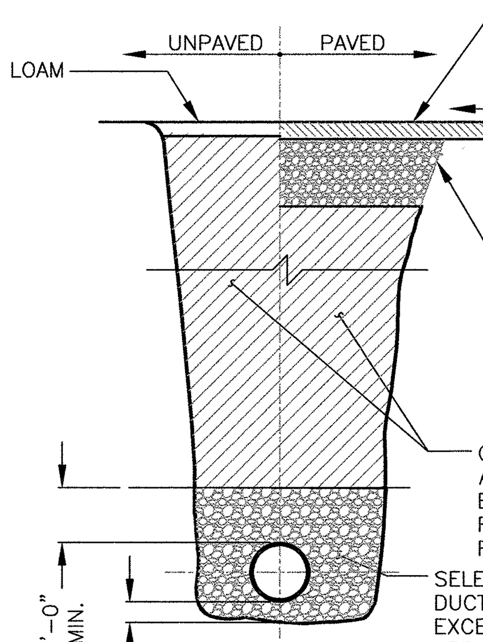


TYPICAL HYDRANT ASSEMBLY INSTALLATION

NOT TO SCALE

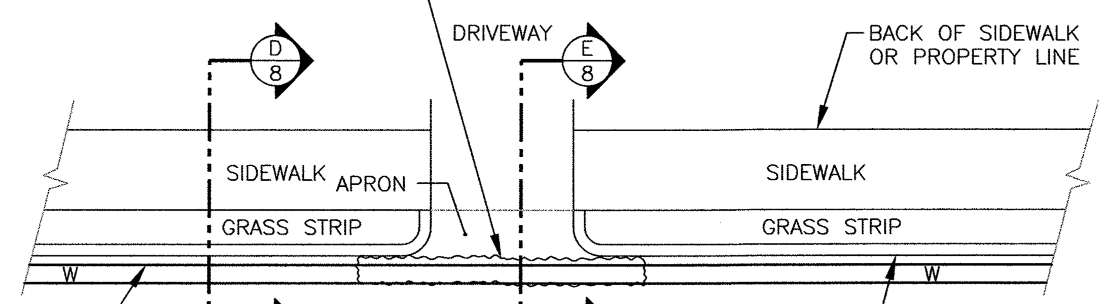
NOTES:

1. HYDRANTS ARE TO BE INSTALLED WITHIN THE ROADWAY RIGHT OF WAY.
2. FOR HYDRANTS INSTALLED AT DEAD END OF WATER MAINS: INSTALL VALVE WITH RESTRAINED JOINTS AND ONE FULL LENGTH OF PIPE, NO COUPLINGS OR PIPE BELL JOINTS, BETWEEN VALVE AND HYDRANT WITH RESTRAINED JOINTS.



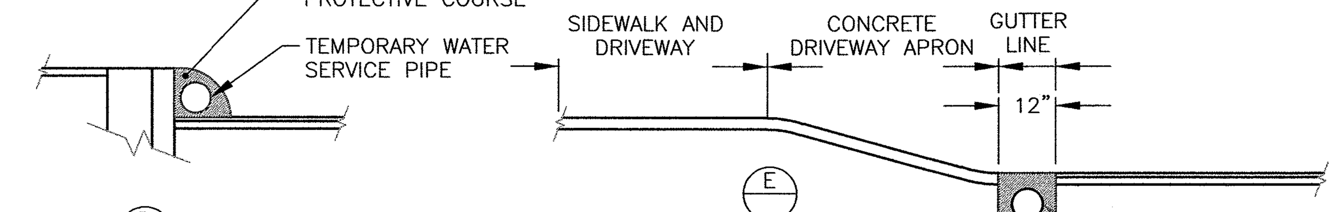
TYPICAL PIT & TRENCH SECTION FOR WATER MAINS

NOT TO SCALE



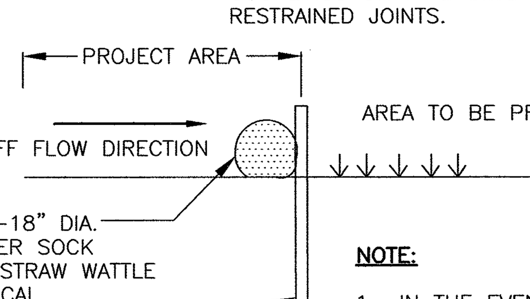
TEMPORARY WATER SERVICE ALONG EDGE OF PAVEMENT

NOT TO SCALE



TEMPORARY WATER SERVICE ALONG CURB LINES AT BUSINESS DRIVEWAYS AND SIDE STREETS

NOT TO SCALE



NOTE:

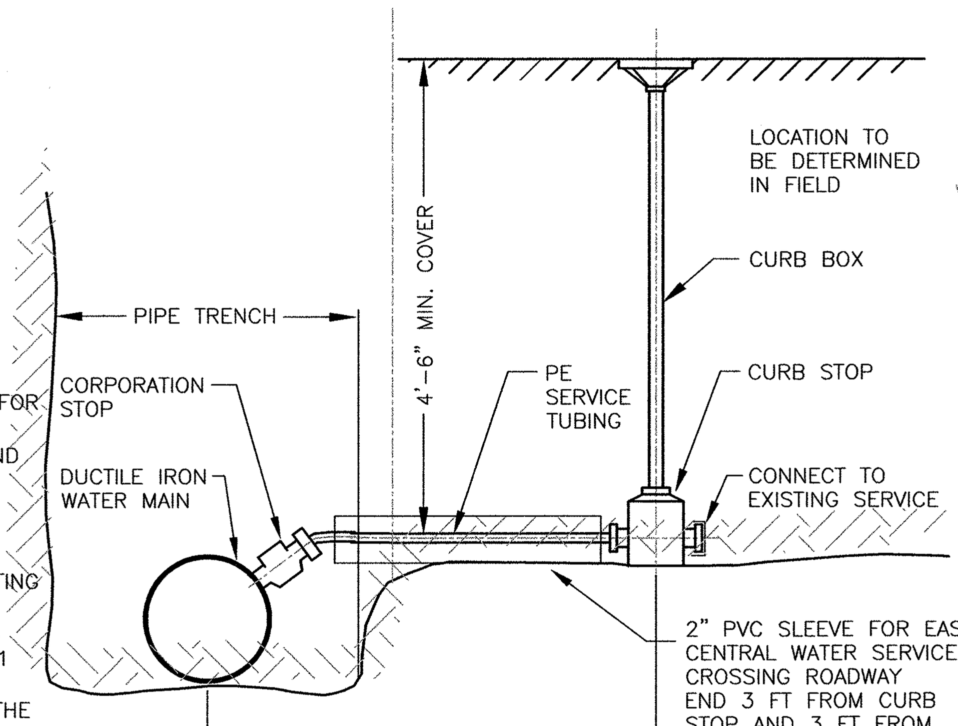
1. IN THE EVENT STAKING IS NOT POSSIBLE I.E., WHEN SEDIMENT CONTROL IS USED ON PAVEMENT HEAVY CONCRETE BLOCKS SHALL BE USED BEHIND THE SEDIMENT CONTROL.

TYPICAL SILT FENCE DETAIL

NOT TO SCALE

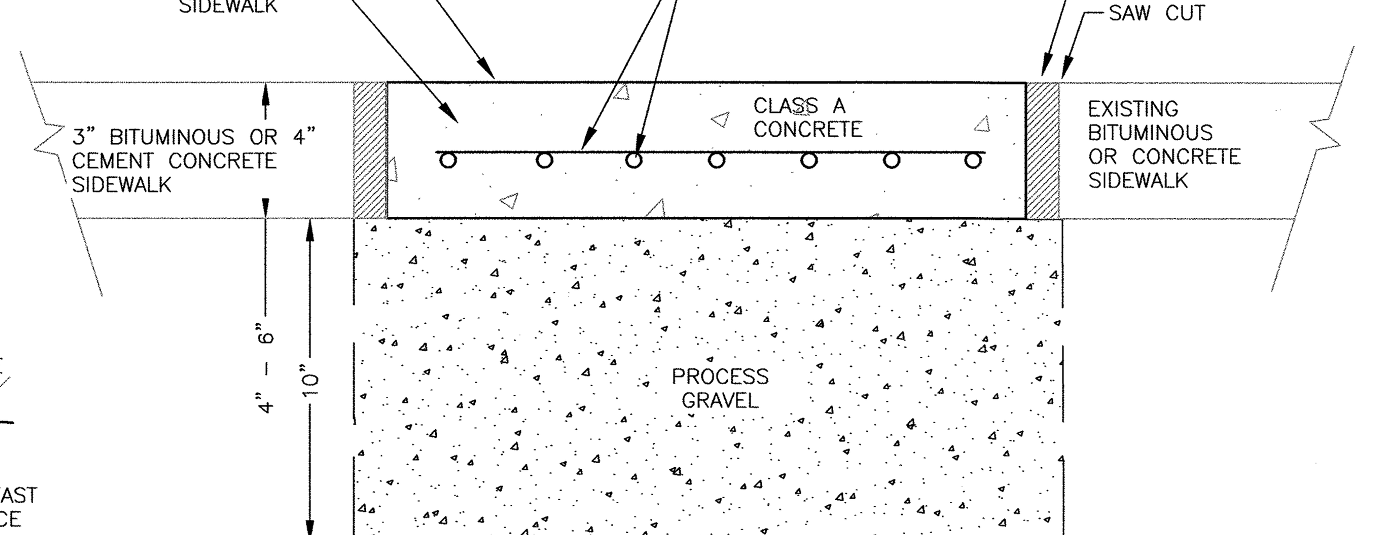
PAVING NOTES:

1. SEE EACH PARTICULAR PROJECT DRAWING OR THE NOTES DRAWING FOR SPECIFIC REQUIREMENTS.
2. RT 9 WATER MAIN REPLACEMENT TRENCH TO RECEIVE 3" DEPTH OF TEMPORARY PAVEMENT, TYPE I-1 FOR 90 DAYS MINIMUM OR ONE WINTER CONSISTING OF TWO (2) 1 ½" LIFTS .
3. RT9, RT 27 & RT 135 CLEANING AND LINING MISCELLANEOUS AND LINING PITS ARE TO BE PLATED, AND AFTER FLOWABLE FILL SETS-UP, CONTRACTOR TO INSTALL 7" DEPTH OF PERMANENT PIT PAVEMENT CONSISTING OF 4" HOT MIX ASPHALT CONCRETE TYPE I-1 AND 3" (2 COURSES OF 1-1/2") HOT MIX ASPHALT.
4. FOLLOWING REQUIRED MINIMUM TIME PERIOD FOR REPLACEMENT TRENCHES, CONTRACTOR TO CUT BACK TRENCH ONE FOOT BOTH SIDES, 7" DEPTH, AND INSTALL 7" DEPTH OF PERMANENT PAVEMENT CONSISTING OF 4" HOT MIX ASPHALT CONCRETE TYPE I-1 AND 3" (2 COURSES OF 1-1/2") HOT MIX ASPHALT.
5. FOLLOWING REQUIRED TIME PERIOD, CONTRACTOR SHALL MILL BACON AND RT 27 CLEANING AND LINING MISCELLANEOUS AND LINING PITS TO 1'-0" BEYOND PIT LIMITS TO A DEPTH OF 1 1/2" AND INSTALL 1 1/2" DEPTH OF TOP MIX PAVEMENT. MILLED TRENCHES SHALL NOT BE LEFT OVERNIGHT.
6. EAST CENTRAL STREET TO RECEIVE A FULL ROAD WIDTH MILLING, FROM FIRST PIT TO AND INCLUDING THE LAST WATER SERVICE CROSSING, TO 1" DEPTH AND 1" DEPTH OF HOT MIX ASPHALT INSTALLED. WORK TO INVOLVE MAINTAINING ROADWAY CROWN AND DRAINAGE PATTERNS.



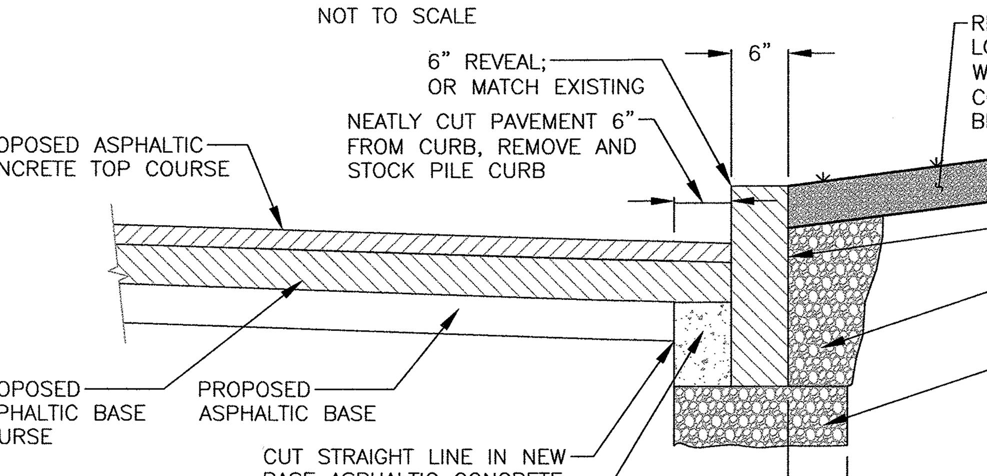
2" AND UNDER TYPICAL SERVICE CONNECTION

NOT TO SCALE



CONCRETE SIDEWALK DETAIL

NOT TO SCALE



CURB TO BE SET LEVEL AND MATCH EXISTING CURB EACH SITE.
CURB TO CURB JOINTS TO RECEIVE CEMENT CONCRETE FULL DEPTH OF JOINT

TYPICAL GRANITE CURB REMOVAL AND REPLACEMENT

NOT TO SCALE

TOWN OF NATICK, MASSACHUSETTS
BOARD OF SELECTMEN

WATER MAIN REHAB. / REPLACEMENT RT. 9 & RT. 135

WATER MAIN INSTALLATION DETAILS

Haley and Ward, Inc.
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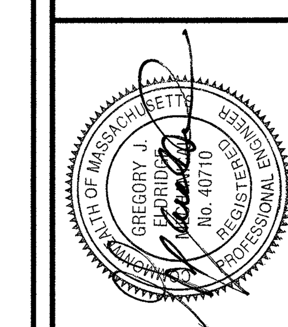

CHECKED	DATE	BY
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SHEET NO.: 13 OF 17
CONTRACT NO.: W-153
SCALE: AS NOTED
DATE DRAWN: MARCH, 2019
DRAWN BY: GJE
FILE NO.: NAT-451-WATER DETAILS.DWG

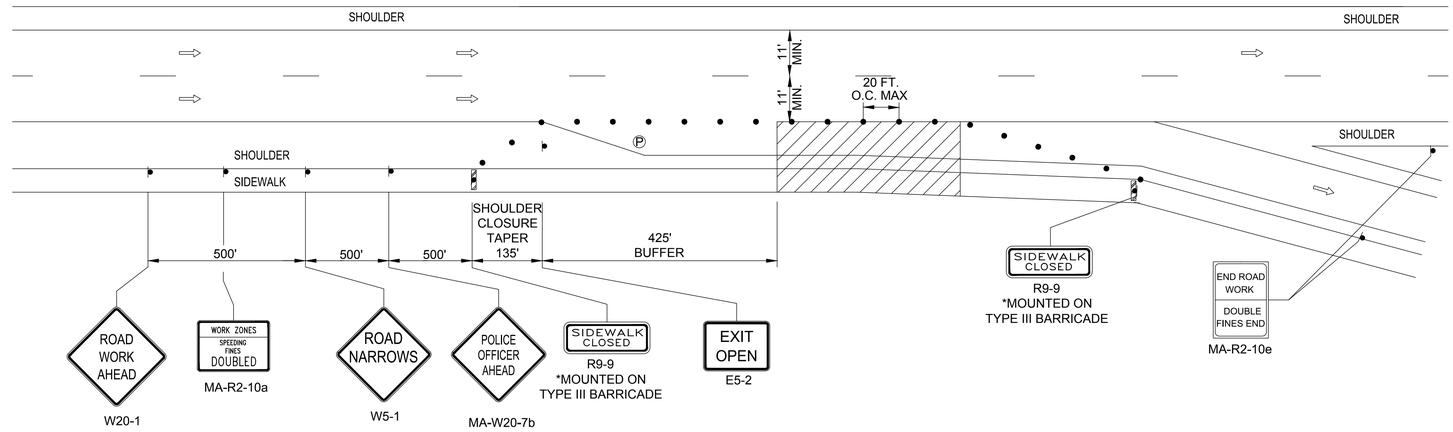
DWG. NO.

13

J:\Natick\451 Rt 9 & 27 Utility replacement\Cadd\NAT_451-WATER DETAILS.dwg, 3/28/2019 9:59:41 AM

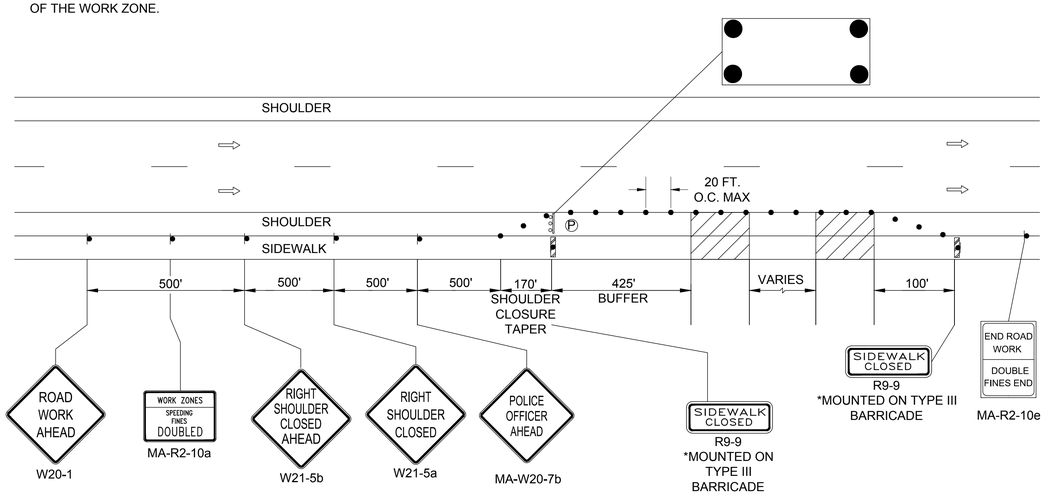
TEMPORARY TRAFFIC CONTROL NOTES:

1. MINIMUM LANE WIDTH OF 11 FEET SHALL BE MAINTAINED UNLESS OTHERWISE NOTED. MINIMUM LANE WIDTH TO BE MEASURED FROM THE EDGE OF THE DRUMS OR CONES (IF USED).
2. THE CONTRACTOR SHALL COORDINATE APPROVAL OF ANY CHANGES TO THE TEMPORARY TRAFFIC CONTROL PLAN WITH MASSACHUSETTS DEPARTMENT OF TRANSPORTATION (MASSDOT) PRIOR TO CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL ALSO NOTIFY MASSDOT AND THE TOWN OF NATICK THREE (3) WEEKS IN ADVANCE OF PLACING TEMPORARY TRAFFIC CONTROL SIGNS.
3. THESE PLANS ARE NOT INTENDED TO LIMIT THE CONTRACTOR'S APPROACH TO SCHEDULE THE WORK BUT TO OUTLINE ONE WAY OF PROGRESSING. THE CONTRACTOR IS EXPECTED TO USE KNOWLEDGE AND EXPERIENCE TO PERFORM THE WORK IN THE MOST EFFICIENT AND SAFE MANNER IN COMPLIANCE WITH THE DRAWINGS AND SPECIFICATIONS.
4. PLACE ALL SAFETY DEVICES AND CONSTRUCTION SIGNING BEFORE ACTUAL CONSTRUCTION WORK BEGINS.
5. DISTANCES ARE A GUIDE AND MAY BE ADJUSTED BASED ON FIELD CONDITIONS WITH THE APPROVAL OF THE ENGINEER.
6. WHEN EXISTING SIGNS ARE NO LONGER APPLICABLE THEY SHALL BE TEMPORARILY COVERED DURING CONSTRUCTION OR REMOVED AND RESET UPON COMPLETION OF CONSTRUCTION. THE COST SHALL BE INCIDENTAL TO THE CONTRACT.
7. ALL SIGNS SHALL BE REFLECTORIZED, WITH REFLECTIVE SHEETING CONFORMING TO M9.30.0. ALL SIGN COLORS SHALL BE PER THE CONSTRUCTION SIGN SUMMARY TABLE AND CURRENT MUTCD.
8. SIGNS AND SIGN SUPPORTS LOCATED ON OR NEAR THE TRAVELED WAY, CHANNELIZING DEVICES, BARRIERS, AND CRASH ATTENUATORS MUST PASS THE CRITERIA SET FORTH IN NCHRP REPORT 350, "RECOMMENDED PROCEDURES FOR THE SAFETY PERFORMANCE EVALUATION OF HIGHWAY FEATURES" AND/OR "MANUAL FOR ASSESSING SAFETY HARDWARE" (MASH).
9. CONTRACTOR SHALL RECORD EXISTING PAVEMENT MARKINGS AND RESTORE ALL MARKINGS TO EXISTING CONDITIONS AT THE CONCLUSION OF CONSTRUCTION AT EACH LOCATION.
10. CONTRACTOR SHALL REMOVE ALL TRAFFIC CONTROL DEVICES IMMEDIATELY WHEN NO LONGER NEEDED.
11. UNLESS OTHERWISE NOTED, ALL PAVEMENT MARKINGS, SIGNS AND OTHER TRAFFIC EQUIPMENT REMOVED OR DAMAGED AS A RESULT OF THE CONTRACTOR'S OPERATIONS SHALL BE REPLACED IN CONFORMANCE WITH THE CONTRACT DOCUMENTS.
12. CONTRACTOR SHALL INSTALL, RENEW, AND MAINTAIN ALL TRAFFIC CONTROL DEVICES AS SHOWN ON THE DRAWINGS IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
13. ACCESS/EGRESS TO ALL ABUTTERS SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION.
14. THE CONTRACTOR SHALL MAINTAIN ADA COMPLIANT ACCESS AT ALL TIMES INCLUDING PEDESTRIAN GUIDANCE SYSTEMS. ALL PEDESTRIAN DETOURS OR BYPASSES SHALL BE ADA COMPLIANT WITH PROPER BARRICADES, RAILINGS, RAMPS, SIGNS, ETC.
15. CONTRACTOR SHALL MAINTAIN EMERGENCY PASSAGE AT ALL TIMES TO BUILDINGS WITHIN AND ADJACENT TO THE PROJECT LIMITS AS WELL AS A LARGER AREA IF AFFECTED BY CONSTRUCTION CONDITIONS. CONTRACTOR SHALL MAINTAIN 24 HOUR EMERGENCY VEHICLE ACCESS TO CONSTRUCTION AREAS.
16. CONTRACTOR SHALL COORDINATE WITH ABUTTERS FOR THE PROPOSED WORK AND SHALL NOTIFY EACH ABUTTER AT LEAST 24 HOURS IN ADVANCE OF THE START OF THE WORK THAT WILL REQUIRE TEMPORARY CLOSURE OF ACCESS TO THEIR PROPERTY.
17. THE CONTRACTOR SHALL COORDINATE THE WORK WITH ALL ABUTTING PROJECTS.
18. ALL TEMPORARY TRAFFIC CONTROL WORK SHALL CONFORM TO THE LATEST EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) AND ALL REVISIONS, UNLESS SUPERCEDED BY THESE PLANS.
19. THE FIRST FIVE (5) PLASTIC DRUMS OF A TAPER SHALL BE MOUNTED WITH TYPE A LIGHTS.
20. ALL SIGNS SHALL BE MOUNTED ON THEIR OWN STANDARD SIGN SUPPORTS.
21. FOR WORK LOCATED OFF THE ROAD, CONTRACTORS SHALL PLACE W20-1, MA-R2-10a, AND MA-R2-10e SIGNS WITHIN THE VICINITY OF THE WORK ZONE.



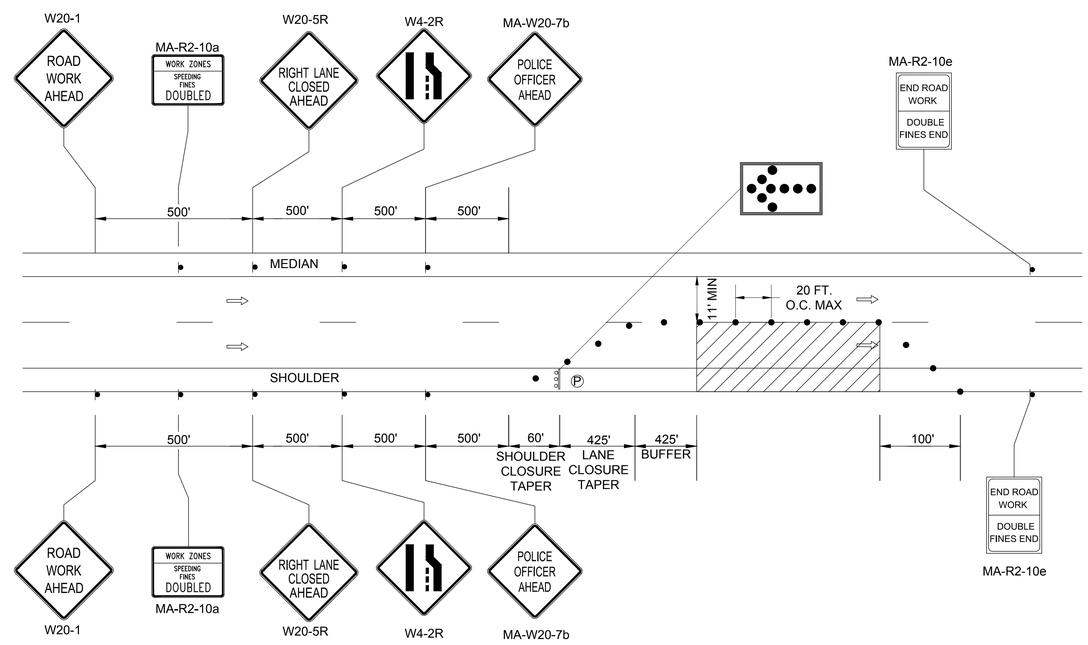
TRAFFIC MANAGEMENT PLAN
FOR WATER MAIN REPLACEMENT
EXIT RAMP TYPICAL
NOT TO SCALE

NOTES:
1. ALL WORK CONDUCTED ON SIDEWALKS SHALL BE COMPLETED DURING NIGHT TIME HOURS.
2. MAINTAIN 11' MINIMUM LANE WIDTH OR MAINTAIN EXISTING LANE WIDTH IF LESS THAN 11'.
3. THIS TRAFFIC CONTROL DETAIL SET UP SHALL BE UTILIZED FOR WORK ON THE ROUTE 9 WESTBOUND OFF RAMP TO ROUTE 27 NORTHBOUND.



TRAFFIC MANAGEMENT PLAN
FOR WATER MAIN REPLACEMENT
SIDEWALK AND SHOULDER CLOSURE TYPICAL
NOT TO SCALE

NOTES:
1. ALL WORK CONDUCTED ON SIDEWALKS SHALL BE COMPLETED DURING NIGHT TIME HOURS.
2. MAINTAIN 11' MINIMUM LANE WIDTH OR MAINTAIN EXISTING LANE WIDTH IF LESS THAN 11'.
3. THIS TRAFFIC CONTROL DETAIL SET UP SHALL BE UTILIZED FOR WORK ALONG ROUTE 9 EASTBOUND AND WESTBOUND.



TRAFFIC MANAGEMENT PLAN
FOR WATER MAIN REPLACEMENT
RIGHT LANE CLOSURE ON DIVIDED HIGHWAY TYPICAL
NOT TO SCALE

NOTES:
1. MAINTAIN 11' MINIMUM LANE WIDTH OR MAINTAIN EXISTING LANE WIDTH IF LESS THAN 11'.
2. THIS TRAFFIC CONTROL DETAIL SET UP SHALL BE UTILIZED FOR WATER MAIN REPLACEMENT ALONG ROUTE 9 WESTBOUND.

TRAFFIC DEVICE LEGEND

- WORK ZONE
- DIRECTION OF VEHICULAR TRAFFIC
- SIGN
- TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM OR 36" CONE
- (P) POLICE OFFICER

TOWN OF NATICK, MASSACHUSETTS
BOARD OF SELECTMEN

WATERMAIN REHABILITATION/ REPLACEMENT RT. 9, 27 & 135

TEMPORARY TRAFFIC MANAGEMENT PLANS

GREEN INTERNATIONAL AFFILIATES, INC.
CIVIL & STRUCTURAL ENGINEERS
229 LITTLETON ROAD, SUITE 3
WESTFORD, MASSACHUSETTS

CHECKED	DATE	BY
	3/22/2019	JG/WW
REVISED	DATE	BY

14 OF 17
CONTRACT NO.: W-153
SCALE: AS NOTED
DATE DRAWN: FEBRUARY 2019
DRAWN BY: AV
FILE NO.: NAT_501_TMP.DWG

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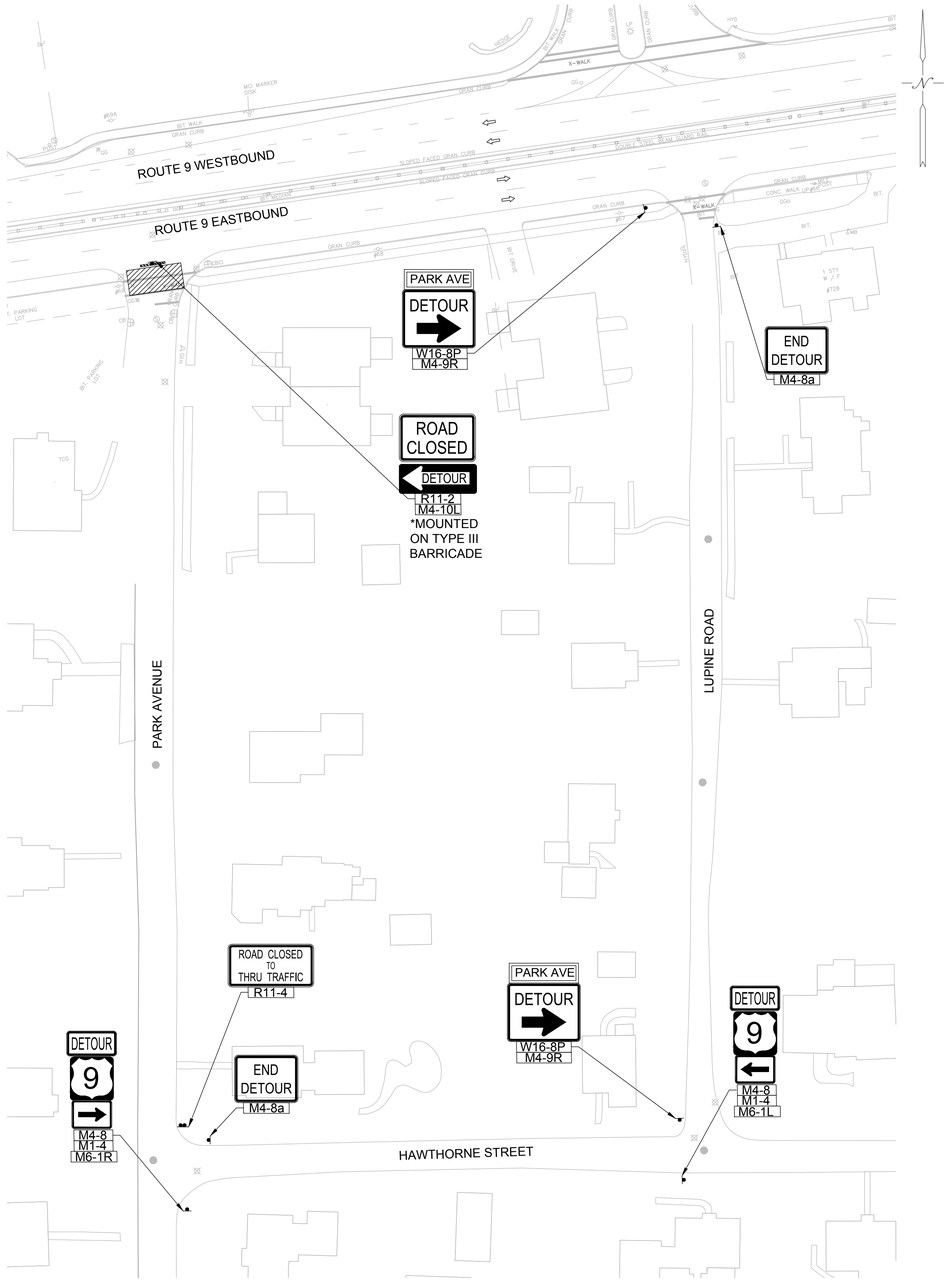
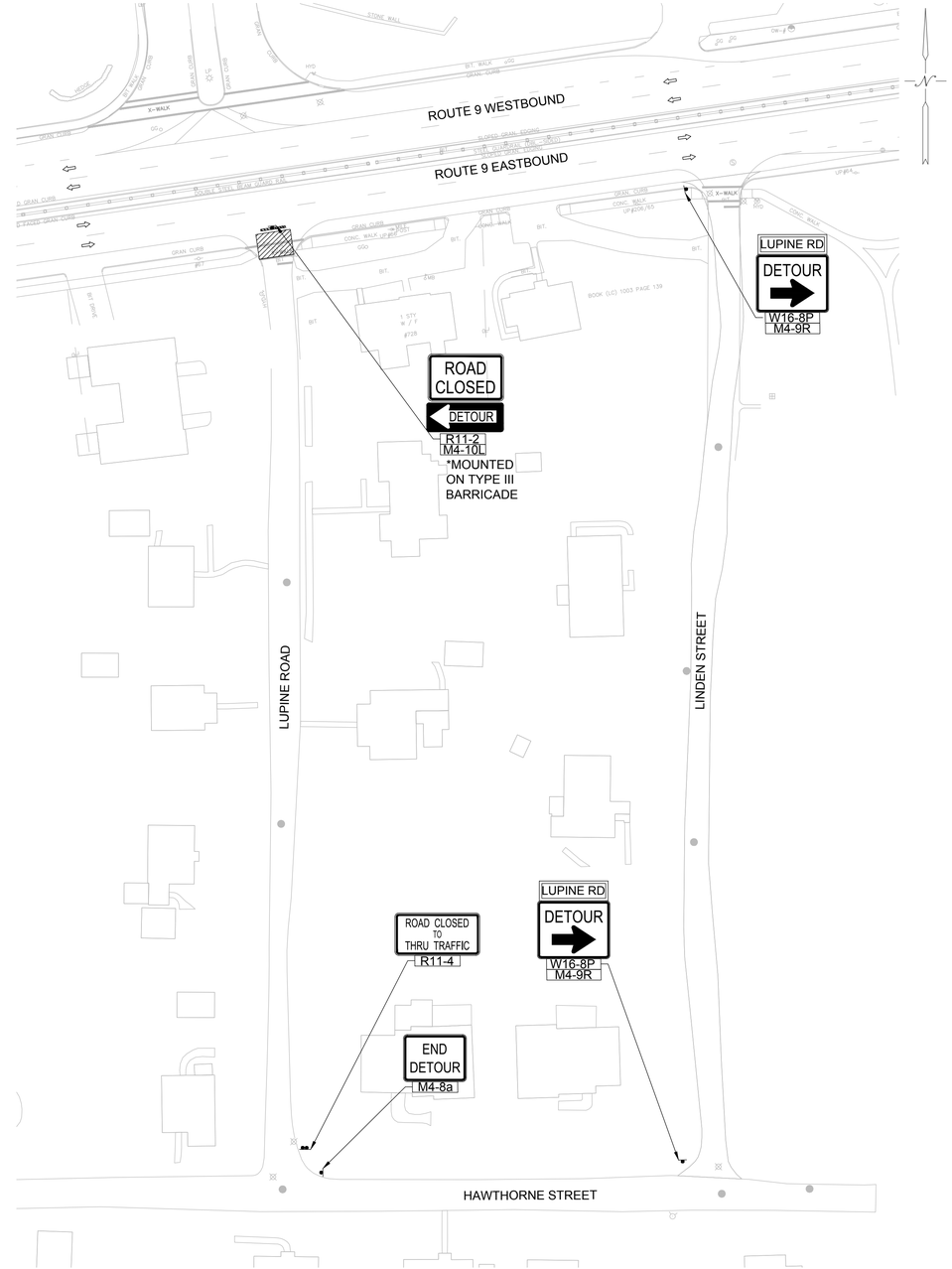


TRAFFIC MANAGEMENT PLAN
FOR WATER MAIN REPLACEMENT
PARK AVENUE DETOUR

NOTES:
1. THE FOLLOWING DETOUR SHALL BE UTILIZED WITH THE SIDEWALK AND SHOULDER CLOSURE TYPICAL SET-UP ALONG ROUTE 9 EASTBOUND.
2. ALL WORK DURING THE PARK AVENUE DETOUR SHALL BE COMPLETED DURING NIGHT TIME HOURS.



TRAFFIC MANAGEMENT PLAN
FOR WATER MAIN REPLACEMENT
LUPINE ROAD DETOUR

NOTES:
1. THE FOLLOWING DETOUR SHALL BE UTILIZED WITH THE SIDEWALK AND SHOULDER CLOSURE TYPICAL SET UP ON ROUTE 9 EASTBOUND.
2. ALL WORK DURING THE LUPINE ROAD DETOUR SHALL BE COMPLETED DURING NIGHT TIME HOURS.

TRAFFIC DEVICE LEGEND

- WORK ZONE
- DIRECTION OF VEHICULAR TRAFFIC
- SIGN
- TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM OR 36" CONE
- (P) POLICE OFFICER

0 40 100 160
SCALE: 1" = 40'

TOWN OF NATICK, MASSACHUSETTS
BOARD OF SELECTMEN

WATERMAIN REHABILITATION/ REPLACEMENT RT. 9, 27 & 135

TEMPORARY TRAFFIC MANAGEMENT PLANS

GREEN INTERNATIONAL AFFILIATES, INC.
CIVIL & STRUCTURAL ENGINEERS
2239 LITTLETON ROAD, SUITE 3
WESTFORD, MASSACHUSETTS

COMMONWEALTH OF MASSACHUSETTS
WING C. WONG
CIVIL
NO. 50269
REGISTERED PROFESSIONAL ENGINEER
3/21/19

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REVISED	DATE	BY

15 OF 17
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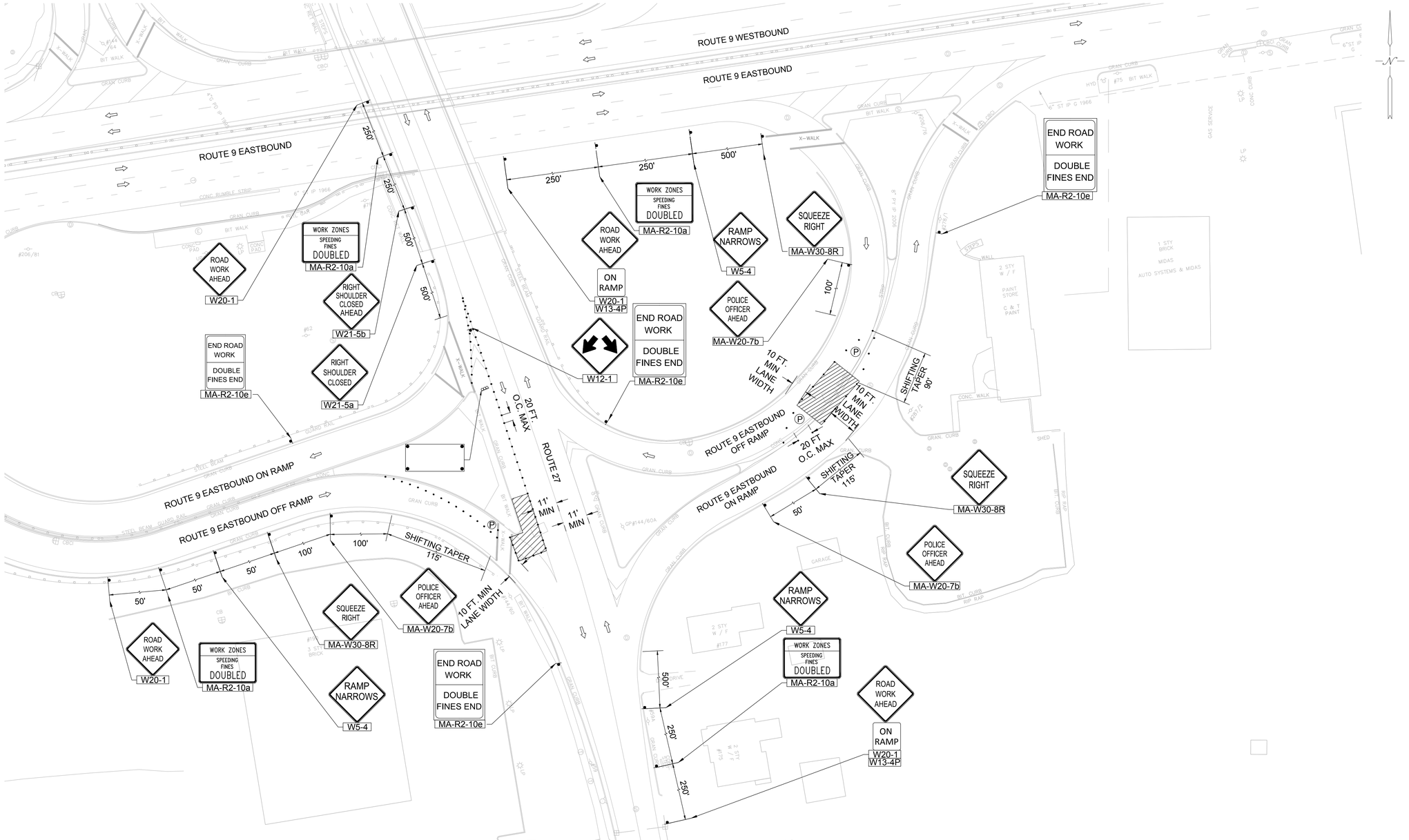

TRAFFIC MANAGEMENT PLAN
FOR WATER MAIN REPLACEMENT
ROUTE 9 EASTBOUND ON/OFF RAMP
FOR ROUTE 27

NOTES:
1. CONTRACTOR SHALL MAINTAIN 11' MINIMUM LANE WIDTH UNLESS OTHERWISE SHOWN.
2. CONTRACTOR SHALL MAINTAIN PEDESTRIAN ACCESS AT ALL CROSSWALKS.

TRAFFIC DEVICE LEGEND

- WORK ZONE
- DIRECTION OF VEHICULAR TRAFFIC
- SIGN
- TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM OR 36" CONE
- (P) POLICE OFFICER

0 30 60 100
SCALE: 1" = 30'

TOWN OF NATICK, MASSACHUSETTS
BOARD OF SELECTMEN

WATERMAIN REHABILITATION/ REPLACEMENT RT. 9, 27 & 135

TEMPORARY TRAFFIC MANAGEMENT PLANS

GREEN INTERNATIONAL AFFILIATES, INC.
CIVIL & STRUCTURAL ENGINEERS
229 LITTLETON ROAD, SUITE 3
WESTFORD, MASSACHUSETTS

COMMONWEALTH OF MASSACHUSETTS
WING C. WONG
CIVIL
NO. 50268
REGISTERED PROFESSIONAL ENGINEER
3/22/19

CHECKED	DATE	BY
	3/22/2019	JG/WW
REVISED	DATE	BY

16 OF 17
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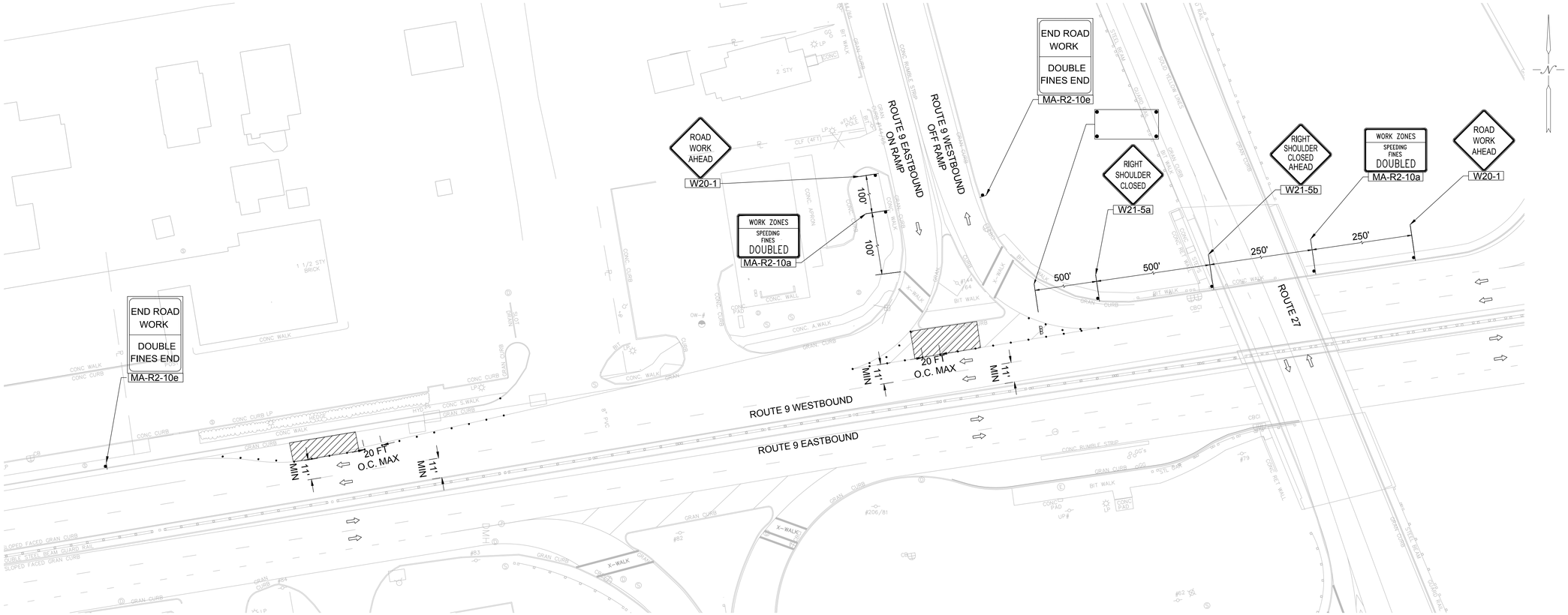

TRAFFIC MANAGEMENT PLAN
FOR WATER MAIN REPLACEMENT
ROUTE 27 EXIT RAMP TO ROUTE 9 WESTBOUND

NOTES:
1. CONTRACTOR SHALL MAINTAIN 11' MINIMUM LANE WIDTH OR MAINTAIN EXISTING LANE WIDTH IF LESS THAN 11'.
2. CONTRACTOR SHALL MAINTAIN PEDESTRIAN ACCESS AT ALL CROSSWALKS.

TRAFFIC DEVICE LEGEND

- WORK ZONE
- DIRECTION OF VEHICULAR TRAFFIC
- SIGN
- TYPE III BARRICADE
- REFLECTORIZED PLASTIC DRUM OR 36" CONE
- (P) POLICE OFFICER

0 30 60 100
SCALE: 1" = 30'

TOWN OF NATICK, MASSACHUSETTS
BOARD OF SELECTMEN

WATERMAIN REHABILITATION/ REPLACEMENT RT. 9, 27 & 135

TEMPORARY TRAFFIC MANAGEMENT PLANS

GREEN INTERNATIONAL AFFILIATES, INC.
CIVIL & STRUCTURAL ENGINEERS
239 LITTLETON ROAD, SUITE 3
WESTFORD, MASSACHUSETTS

COMMONWEALTH OF MASSACHUSETTS
WING C. WONG
CIVIL
NO. 50268
REGISTERED PROFESSIONAL ENGINEER
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