

ACTON WATER DISTRICT

CONTRACT DRAWINGS FOR

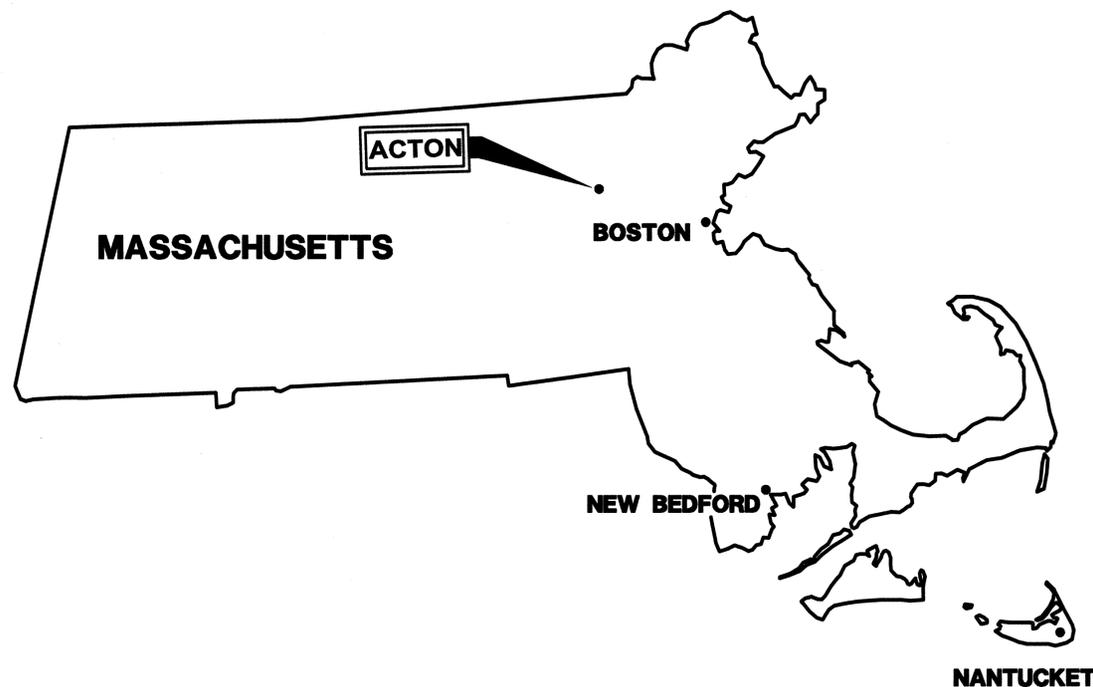
HAYWARD ROAD & STOW STREET

WATER MAIN REPLACEMENT

ACTON, MASSACHUSETTS

MARCH 2013

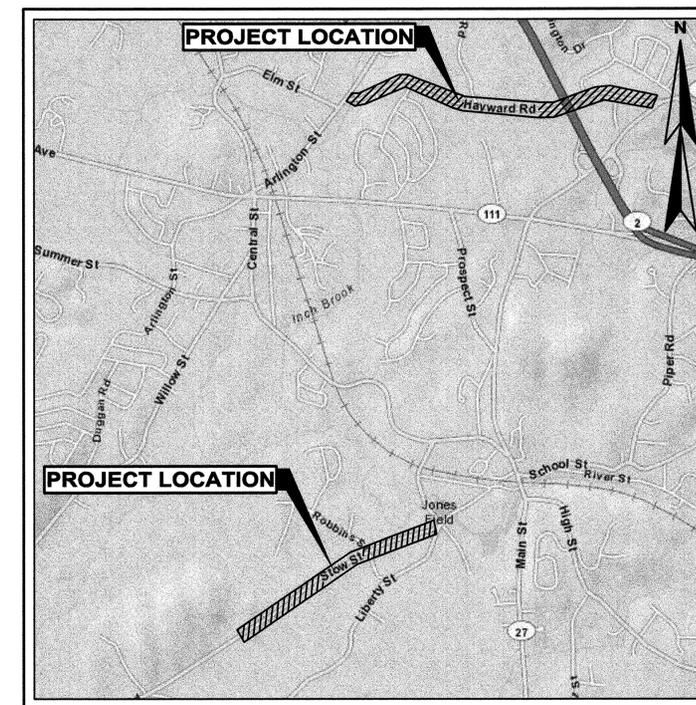
ISSUED FOR PERMITTING



DRAWING INDEX

CIVIL

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LOCATION PLAN

NTS

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WP PROJECT No. 12380A

GENERAL NOTES:

- 1. THE LOCATIONS OF ALL EXISTING DRAINS, SEWERS, WATER MAINS, POWER LINES, TELEPHONE CABLES AND OTHER UTILITIES ARE APPROXIMATE ONLY. FIELD LOCATIONS SHALL BE OBTAINED BY THE CONTRACTOR (BIDDER) PRIOR TO STARTING THE WORK. TEST PITS SHALL BE MADE AS NECESSARY TO VERIFY LOCATION AND DEPTH. TELEPHONE CABLES AND POWER LINES ARE NOT DELINEATED ON THE PLANS, COORDINATE LOCATION WITH UTILITY COMPANIES. IT IS UNDERSTOOD AND AGREED THAT EACH BIDDER WILL NOT RELY UPON THESE DRAWINGS FOR SUCH INFORMATION, BUT THAT EACH BIDDER SHALL MAKE EXAMINATIONS IN THE FIELD BY VARIOUS AVAILABLE METHODS AND SHALL OBTAIN INFORMATION FROM UTILITY CORPORATIONS AND INDIVIDUALS AS TO THE LOCATION OF ALL SUBSURFACE STRUCTURES.
2. NEW WATER SERVICE CONNECTIONS ARE SHOWN FOR ESTIMATING PURPOSES. THE ACTUAL LENGTH AND LOCATION SHALL BE FIELD DETERMINED AT THE TIME OF CONSTRUCTION. THE CONTRACTOR SHALL MAKE ALL CONNECTIONS TO THE EXISTING SERVICE PIPES. SERVICES SHALL BE 1" UNLESS SHOWN OTHERWISE ON THE DRAWINGS. ALL TAPS SHALL BE MADE "WET" AFTER THE NEW LINE HAS BEEN TESTED AND PLACED IN SERVICE.
3. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH OTHERS. REFER TO SPECIFICATIONS, SECTION 01050.
4. UNDERGROUND STRUCTURES AND PIPELINES LOCATED ADJACENT TO THE TRENCH EXCAVATIONS SHALL BE PROTECTED AND FIRMLY SUPPORTED BY THE CONTRACTOR UNTIL THE TRENCH IS BACKFILLED. DAMAGE TO ANY SUCH STRUCTURES AND PIPELINES SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE AND TO THE SATISFACTION OF THE OWNERS OF THE STRUCTURES AND PIPELINES. REFER TO SPECIFICATION SECTION 02640.
5. WATER SERVICE SHALL BE MAINTAINED TO ALL CUSTOMERS THROUGHOUT THE CONSTRUCTION PERIOD EXCEPT DURING SCHEDULED SHUTDOWNS AND DURING THE CHANGEOVER OF A CUSTOMER'S SERVICE. CUSTOMERS THAT ARE TO BE CHANGED OVER SHALL BE GIVEN 24 HOURS NOTICE PRIOR TO SHUT OFF.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LAYOUT OF ALL NEW WATER LINES. LAYOUT SHALL BE REVIEWED AND ACCEPTED BY THE OWNER AND THE ENGINEER. THE NEW WATER MAINS MUST BE LOCATED WITHIN THE RIGHT-OF-WAY OR EASEMENTS SHOWN ON THE DRAWINGS.
7. MINIMUM DEPTH OF COVER SHALL BE 5'-0". THE NEW MAINS SHALL GENERALLY FOLLOW THE GROUND CONTOUR, HOWEVER, ABRUPT CHANGES IN GRADE SHALL BE AVOIDED. IF LEDGE IS ENCOUNTERED THE MINIMUM DEPTH OF COVER SHALL BE 4'-6" AND MAINS SHALL BE INSULATED AS SHOWN ON THE DETAILS.
8. NEW HYDRANTS SHALL BE FIELD LOCATED BY THE OWNER.
9. NEW MAINS SHALL BE HDPE SDR 9 OR DUCTILE IRON CLASS 52 AS INDICATED IN THE SPECIFICATIONS, WITH PUSH-ON JOINTS UNLESS SHOWN OTHERWISE ON THE DRAWINGS. ALL FITTINGS SHALL BE DUCTILE IRON MECHANICAL JOINT CLASS 350, MINIMUM UNLESS OTHERWISE REQUIRED FOR JOINT RESTRAINT OR AS SHOWN ON THE DRAWINGS.
10. ALL BENDS, TEES, REDUCERS, HYDRANTS, AND PLUGS SHALL BE RESTRAINED BY USING CONCRETE THRUST BLOCKS AND PIPE RESTRAINTS. ANCHOR TEES SHALL BE USED FOR ALL HYDRANT BRANCHES AND FIRE PROTECTION MAINS.
11. TEST PRESSURE FOR THE COMBINED PRESSURE AND LEAKAGE TEST SHALL BE 150 PSI. TEST DURATION SHALL BE 2 HOURS, MINIMUM.
12. THE CONTRACTOR SHALL VERIFY TO HIS OWN SATISFACTION THAT ALL PERMITS HAVE BEEN OBTAINED TO COMPLETE SPECIFIED WORK.
13. THE CONTRACTOR SHALL REPAIR ALL PAVEMENT DISTURBED BY THE CONSTRUCTION WORK. THE TRENCH PATCHING SHALL BE PERFORMED AS EACH SECTION OF THE WORK IS COMPLETED AS OUTLINED IN SECTION 01010. FOR PAVEMENT REPAIRS ON TOWN ROADS, SEE THE DETAIL SHEET.
14. THE CONTRACTOR SHALL MILL THE EXISTING ROAD SURFACE FOR THE ENTIRE WIDTH ON ROADS AND PLACES OVERLAY PAVEMENT FOR THE ENTIRE WIDTH OF THE ROADS, AS REQUIRED IN THE CONTRACT DOCUMENTS. AT DRIVES AND WALKS, THE OVERLAY SHALL EXTEND AT LEAST 24 INCHES BEYOND THE EDGE OF THE TRAVELED WAY. THE OVERLAY SHALL BE TAPERED AS REQUIRED TO MATCH EXISTING PAVEMENT. THE OVERLAY PAVEMENT WORK SHALL BE DONE TO THE COMPLETE SATISFACTION OF THE ACTON ENGINEERING DEPARTMENT.
15. SIDEWALKS AND CURBS SHALL BE REPAIRED TO MATCH EXISTING. AT LOCATIONS WHERE SHORT SECTIONS OF THE EXISTING SIDEWALKS AND CURBS ARE DISTURBED AS WOULD BE THE CASE WITH SERVICES, THE SIDEWALKS AND CURBS SHALL BE REPLACED "IN KIND".
16. TRENCHES SHALL NOT BE LEFT OPEN DURING NON-WORKING HOURS. ALL OPEN PIPES SHALL BE SECURED WITH A WATER TIGHT PLUG WHEN THE PIPE IS TEMPORARILY BACKFILLED AND WHEN PIPE LAYING IS NOT IN PROCESS.
17. THE USE OF TEMPORARY WATER MAINS AND SERVICES MAY BE REQUIRED FOR THIS PROJECT. CONTINUOUS WATER SERVICE MUST BE MAINTAINED AT ALL TIMES IN ACCORDANCE WITH NOTE 5. COORDINATE TIE-INS WITH THE OWNER.
18. ALL WATER MAINS THAT ARE TO BE LEFT IN PLACE SHALL BE FILLED WITH FLOWABLE FILL AND CAPPED WITH M.J. CAP OR PLUG. WATER MAINS THAT ARE REMOVED SHALL BE DISPOSED OF AT AN APPROVED LOCATION PROVIDED BY THE CONTRACTOR.
19. THE CONTRACTOR WILL ENCOUNTER ASBESTOS CEMENT PIPE DURING EXECUTION OF THE WORK. CONTRACTOR SHALL CONFORM TO ALL APPLICABLE PROVISIONS OF OSHA AND ALL OTHER FEDERAL, STATE AND LOCAL REGULATIONS WHEN HANDLING AND/OR DISPOSING OF ASBESTOS CEMENT PRODUCTS IN ADDITION TO THE MASS DEP REQUIREMENTS.
20. NEW CURB STOPS SHALL BE INSTALLED IF REQUIRED AFTER INSPECTION BY THE WATER SYSTEM INSPECTOR.
21. ALL HYDRANTS, FITTINGS AND GATE VALVES REMOVED DURING THE INSTALLATION OF THE NEW WATER MAIN SHALL REMAIN THE PROPERTY OF THE OWNER. THE CONTRACTOR SHALL DELIVER HYDRANTS, FITTINGS AND GATE VALVES, ETC. TO THE OWNER'S STORAGE YARD.
22. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL BENDS, FITTINGS, AND ANY AND ALL APPURTENANCES NECESSARY FOR THE COMPLETION OF THE WORK AS SHOWN HEREIN. NOT ALL BENDS AND FITTINGS REQUIRED ARE SHOWN OR CALLED OUT ON THE DRAWINGS.
23. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PREVENTION OF EROSION. ALL DISTURBED EARTH SURFACES ARE TO BE STABILIZED IN THE SHORTEST PRACTICAL TIME AND TEMPORARY EROSION CONTROL DEVICES SHALL BE EMPLOYED UNTIL SUCH TIME AS ADEQUATE SOIL STABILIZATION HAS BEEN ACHIEVED. TEMPORARY STORAGE OF EXCAVATED MATERIAL IS TO BE IN A MANNER THAT WILL MINIMIZE EROSION. THE CONTRACTOR SHALL DISPOSE OF UNSUITABLE EXCAVATED MATERIAL AT A SITE PROVIDED BY HIM WHICH IS IN COMPLIANCE WITH ALL STATE AND LOCAL LAWS. MATERIALS AND METHODS USED FOR TEMPORARY EROSION CONTROL SHALL BE AS SPECIFIED BY THE LOCAL EROSION AND SEDIMENT CONTROL HANDBOOK FOR CONSTRUCTION: BEST MANAGEMENT PRACTICES AND IN COMPLIANCE WITH THE LOCAL CONSERVATION COMMISSION. REFER TO SPECIFICATION SECTIONS 01050 AND 02270.
24. THE CONTRACTOR SHALL TAKE SPECIAL CARE NOT TO DAMAGE TREES WITHIN THE CONSTRUCTION AREA.
25. 2-INCHES OF RIGID INSULATION SHALL BE PROVIDED BETWEEN STORM DRAINAGE PIPES AND THE WATER MAIN.
26. ALL ELEVATIONS REFER TO NAVD88.

GENERAL SEQUENCE NOTES:

- 1. DESIGN INTENT IS FOR CONTRACTOR TO STAGE THE WATER MAIN INSTALLATION SUCH THAT WATER SERVICE IS MAINTAINED TO ALL WITH MINIMAL DISRUPTION AS NO OVER LAND TEMPORARY WATER MAIN IS DESIRED.
2. ANTICIPATED SEQUENCE FOR WATER MAIN INSTALLATION IS AS FOLLOWS:
a. INSTALL 4 WAY CUT-IN VALVE ASSEMBLY AT THE INTERSECTION OF STOW STREET AND MARTIN STREET. THIS WORK SHALL BE COMPLETED AT NIGHT TO MINIMIZE SERVICE DISRUPTIONS.
b. INSTALL CUT-IN VALVE ASSEMBLY ON LIBERTY STREET
c. INSTALL NEW MAIN BETWEEN STOW/MARTIN INTERSECTION AND LIBERTY/STOW INTERSECTION. BACK FEED LIBERTY STREET AND STOW STREET FROM ROBBINS STREET.
d. INSTALL NEW WATER ON STOW FROM LIBERTY STREET TO END.
e. CLEAN, TEST AND OBTAIN APPROVAL TO FILL/USE NEW WATER MAIN.
f. RECONNECT NEW WATER MAIN TO ALL EXISTING SERVICES AND INTERCONNECTIONS.
g. CUT AND CAP EXISTING 6" AC WATER MAIN AND CONNECT NEW WATER MAIN TO EXISTING BY LIBERTY STREET AND ROBBINS STREET.
h. ABANDON EXISTING 6" AC WATER MAIN AND REMOVE EXISTING HYDRANTS. EXISTING HYDRANTS TO REMAIN PROPERTY OF THE ACTON WATER DISTRICT.
i. INSTALL NEW WATER ON HAYWARD FROM ROUTE 27 TO ROUTE 2.
j. CLEAN, TEST AND OBTAIN APPROVAL TO FILL/USE NEW WATER MAIN.
k. RECONNECT NEW WATER MAIN TO ALL EXISTING SERVICES AND INTERCONNECTIONS.
l. CUT AND CAP EXISTING 8" AC WATER MAIN AND CONNECT NEW WATER MAIN TO EXISTING BY ROUTE 27 AND JEFFERSON DRIVE.
m. ABANDON EXISTING 8" AC WATER MAIN AND REMOVE EXISTING HYDRANTS. EXISTING HYDRANTS TO REMAIN PROPERTY OF THE ACTON WATER DISTRICT.
n. INSTALL NEW WATER ON HAYWARD FROM ARLINGTON STREET TO ROUTE 2.
o. CLEAN, TEST AND OBTAIN APPROVAL TO FILL/USE NEW WATER MAIN.
p. RECONNECT NEW WATER MAIN TO ALL EXISTING SERVICES AND INTERCONNECTIONS.
q. CUT AND CAP EXISTING AC WATER MAIN AND CONNECT NEW WATER MAIN TO EXISTING BY ARLINGTON STREET, JOSEPH REED LANE, CHARTER ROAD AND HIGH SCHOOL CONNECTIONS.
r. ABANDON EXISTING AC WATER MAIN AND REMOVE EXISTING HYDRANTS. EXISTING HYDRANTS TO REMAIN PROPERTY OF THE ACTON WATER DISTRICT.
3. PROVIDE TEMPORARY WATER SERVICE TO ANY CONNECTIONS THAT CANNOT BE ISOLATED OR BACKFED FROM ANOTHER DIRECTION.
4. CONTRACTOR SHALL SUBMIT SEQUENCING PLAN FOR APPROVAL PRIOR TO STARTING ANY CONSTRUCTION.

CIVIL ABBREVIATIONS

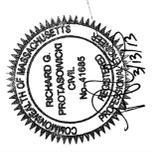
Table with 2 columns: Abbreviation and Description. Includes entries like & DIA (DIAMETER), #, NO (NUMBER), APP'D (APPROVED), BIT (BITUMINOUS), BLDG (BUILDING), CB (CATCH BASIN), CEN (CENTER), CFS (CUBIC FEET PER SECOND), CI (CAST IRON), CL (CENTERLINE), CMP (CORRUGATED METAL PIPE), CO (CLEANOUT), CONC (CONCRETE), COR (CORNER), CY (CUBIC YARD), DEMO (DEMOLITION), DMH (DRAIN MANHOLE), DI (DUCTILE IRON), DR (DRAIN), DWG (DRAWING), EL (ELEVATION), EMH (ELECTRIC MANHOLE), FM (FORCE MAIN), FT (FEET), G (GAS), HYD (HYDRANT), IN (INCH), INF (INFLUENT), INV (INVERT), LBS (POUNDS), MAX (MAXIMUM), MH (MANHOLE), MIN (MINIMUM), MW (MONITORING WELL), N (NORTH), NGVD (NATIONAL GEODETIC VERTICAL DATUM), N/A (NOT AVAILABLE/APPLICABLE), NTS (NOT TO SCALE), OD (OUTSIDE DIAMETER), PC (PERFORATED CLAY), PSF (POUNDS PER SQUARE FOOT), PSI (POUNDS PER SQUARE INCH), PS (PRIMARY SLUDGE), PT (POINT OF TANGENCY), PVC (POLYVINYL CHLORIDE), RCP (REINFORCED CONCRETE PIPE), RD (ROOF DRAIN), REQ'D (REQUIRED), S (SLOPE, SEWER), SD (STORM DRAIN), SF (SQUARE FEET), SMH (SANITARY SEWER MANHOLE), SQ (SQUARE), STA (STATION), T, XFMR (TRANSFORMER), TBM (TEMPORARY BENCH MARK), THK (THICKNESS), TOS (TOP OF STRUCTURE), TYP (TYPICAL), UD (UNDERDRAIN), UG (UNDERGROUND), UGE (UNDERGROUND ELECTRIC), VC (VITRIFIED CLAY), W (WITH), W (POTABLE WATER).

LEGEND

Legend table with 3 columns: EXISTING, PROPOSED, and Description. Includes entries like PROPERTY/ROW LINE, SETBACK LINE, EASEMENT LINE, CENTERLINE, EDGE OF PAVEMENT, CURBING, EDGE OF GRAVEL, EDGE OF CONCRETE, CONTOUR, BUILDING, STONEWALL, TREELINE, CHAIN LINK FENCE, STOCKADE FENCE, BARB WIRE FENCE, RETAINING WALL, GUARDRAIL, SEWER, SEWER FORCE MAIN, GAS, WATER, STORM DRAIN, UNDERDRAIN, CULVERT, UNDERGROUND ELECTRIC, OVERHEAD ELECTRIC, IRON PIPE/REBAR, DRILLHOLE, MONUMENT, SURVEY CONTROL POINT, SPOT ELEVATION, SEWER MANHOLE, DRAINAGE MANHOLE, CATCH BASIN, ELECTRIC MANHOLE, TELEPHONE MANHOLE, SHUTOFF VALVE, WATER SERVICE SHUTOFF, YARD HYDRANT, HYDRANT, UTILITY POLE, UTILITY POLE W/ GUY, UTILITY POLE W/ LIGHT, LIGHT POLE, BOLLARD, FLAGPOLE, CONIFEROUS TREE, DECIDUOUS TREE, SHRUB, EDGE OF WATER, STREAM, EDGE OF WETLANDS/BUFFER, FLOODPLAIN, WETLANDS, DRAINAGE FLOW, DRAINAGE SWALE, PAVEMENT MARKINGS, SIGN, MAILBOX, TEMPORARY BENCH MARK, TEST PIT, TEST BORING, TEST PROBE, MONITORING WELL, LIMIT OF WORK, SILT FENCE/STRAW WATTLE, RIPRAP, RAILROAD, MATCHLINE, ROCK OUTCROP.

Table with columns: DATE, APP'D, SUBMISSIONS/REVISIONS, ISSUED FOR PERMITTING, RGP, 2/7/15.

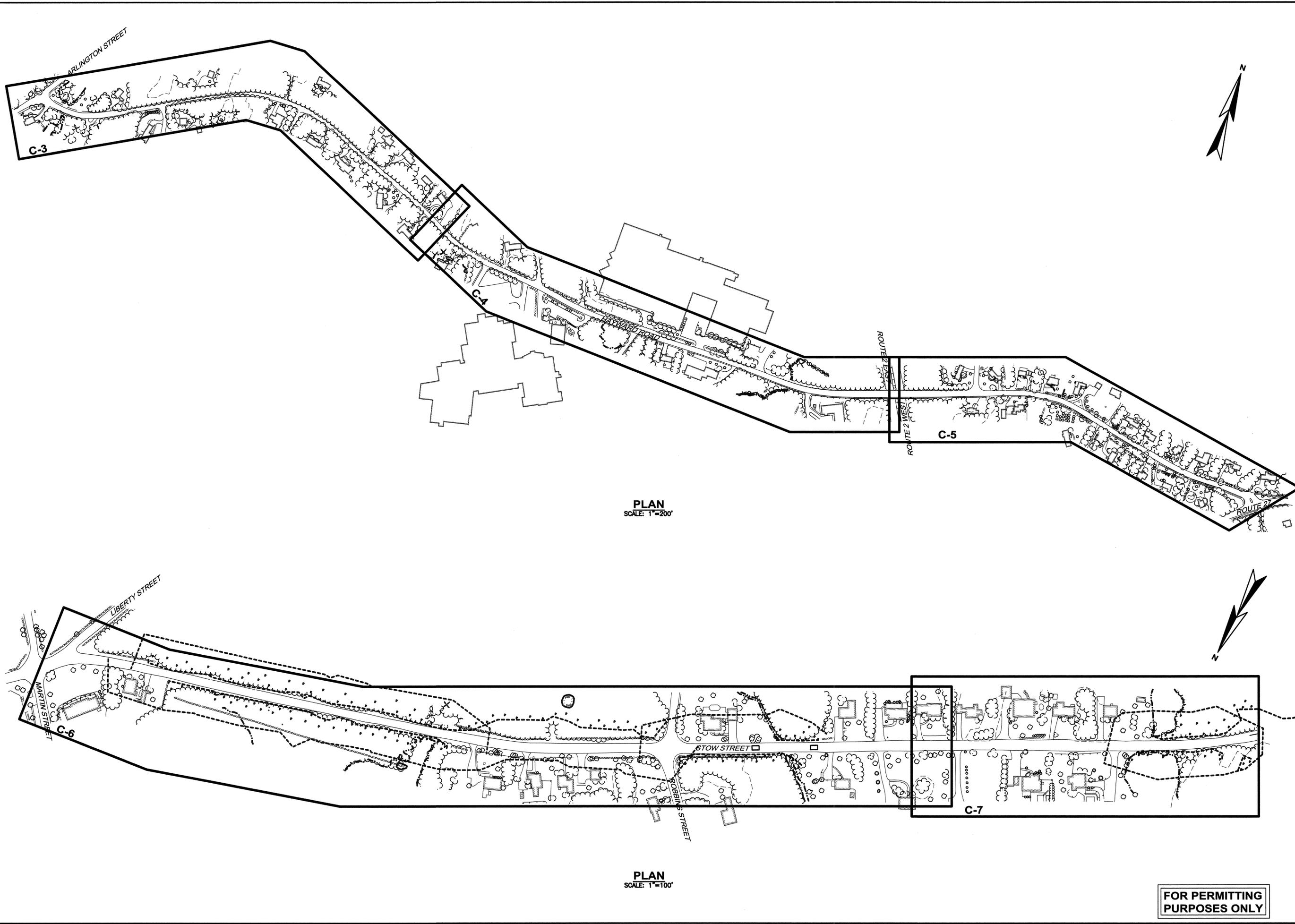
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ACTON WATER DISTRICT logo and drawing title: HAYWARD ROAD & STOW STREET WATER MAIN REPLACEMENT ACTON, MASSACHUSETTS. Includes 'GENERAL NOTES, LEGEND & ABBREVIATIONS' and 'DRAWING C-1'.

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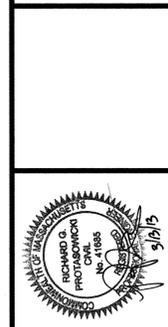
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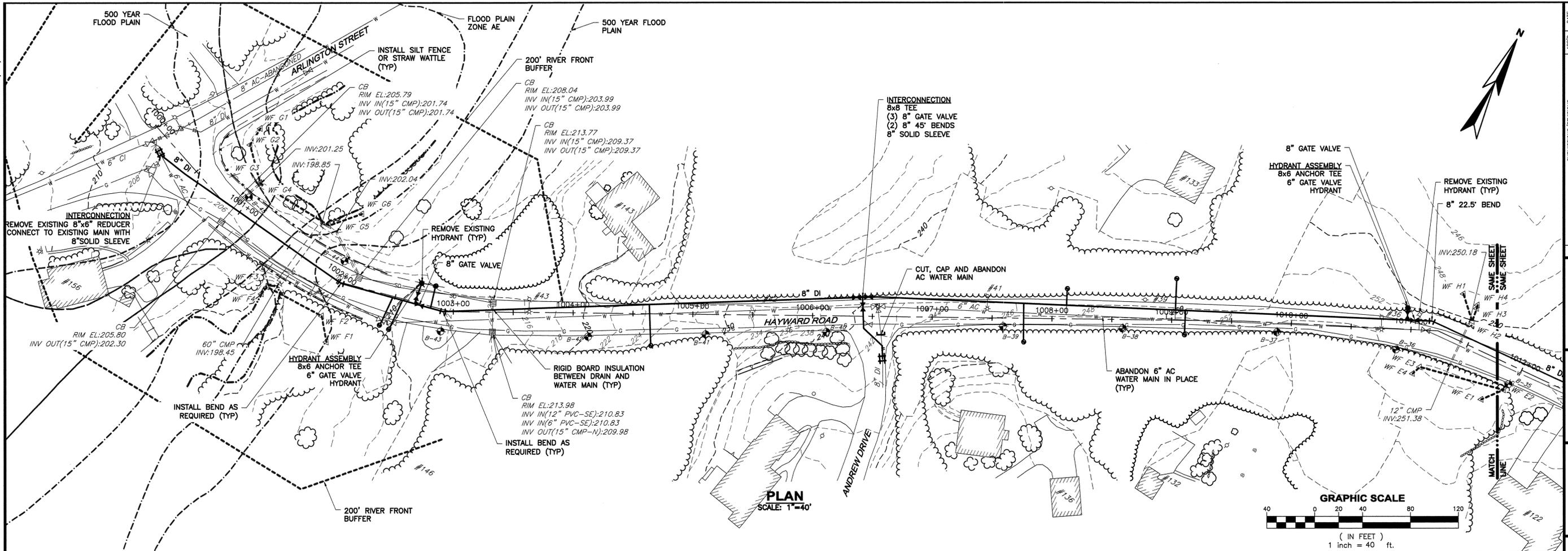
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ACTON WATER DISTRICT
 HAYWARD ROAD & STOW STREET
 WATER MAIN REPLACEMENT
 ACTON, MASSACHUSETTS
 SITE KEY PLAN

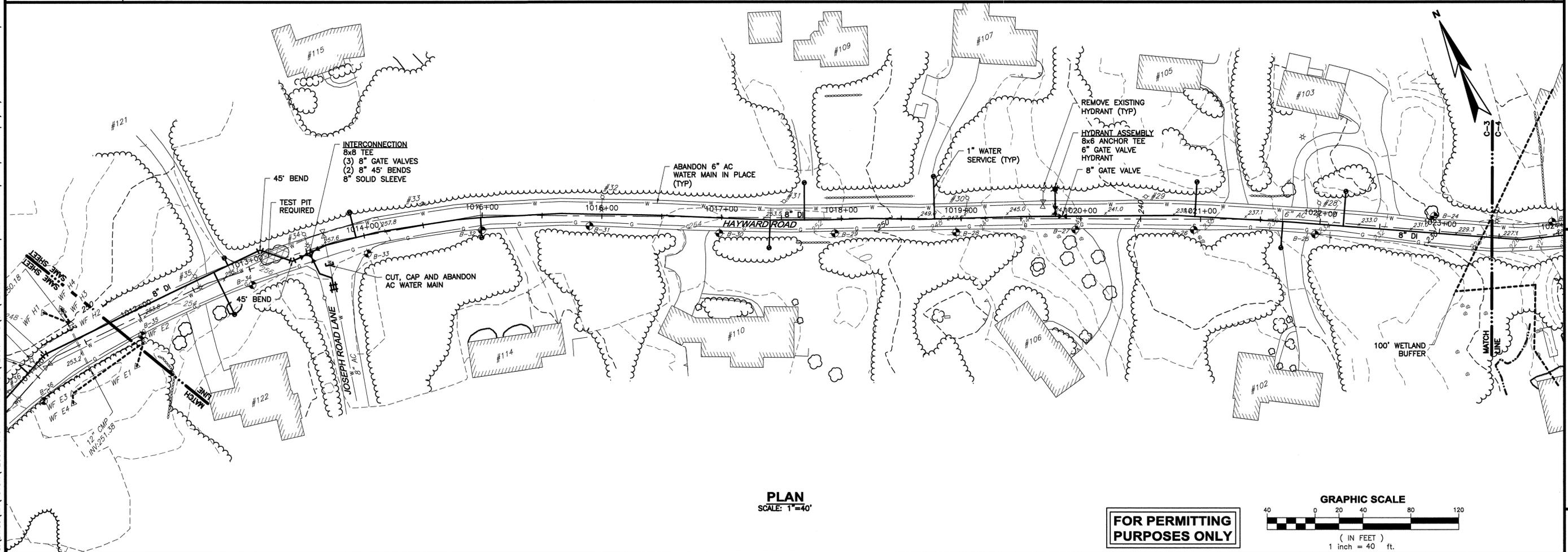
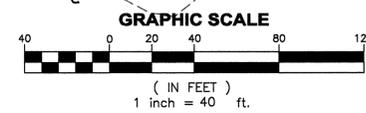
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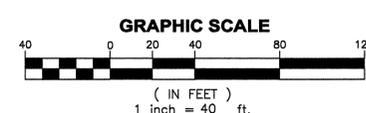
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PLAN
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PLAN
SCALE: 1"=40'



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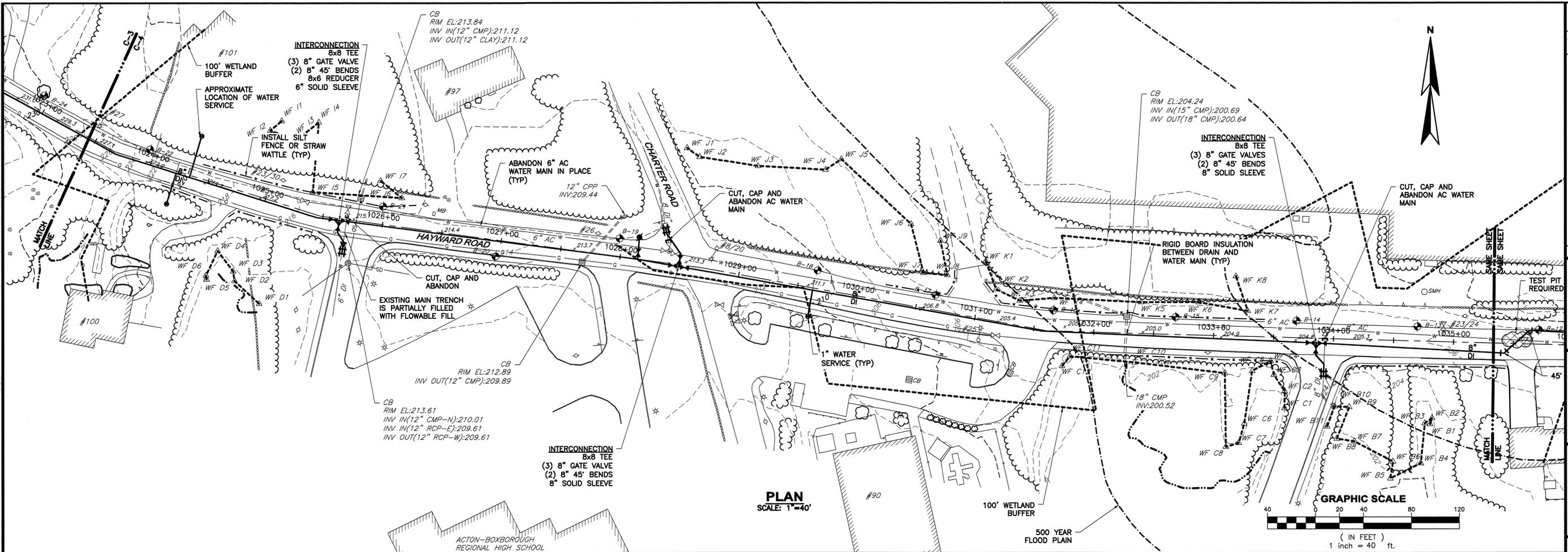


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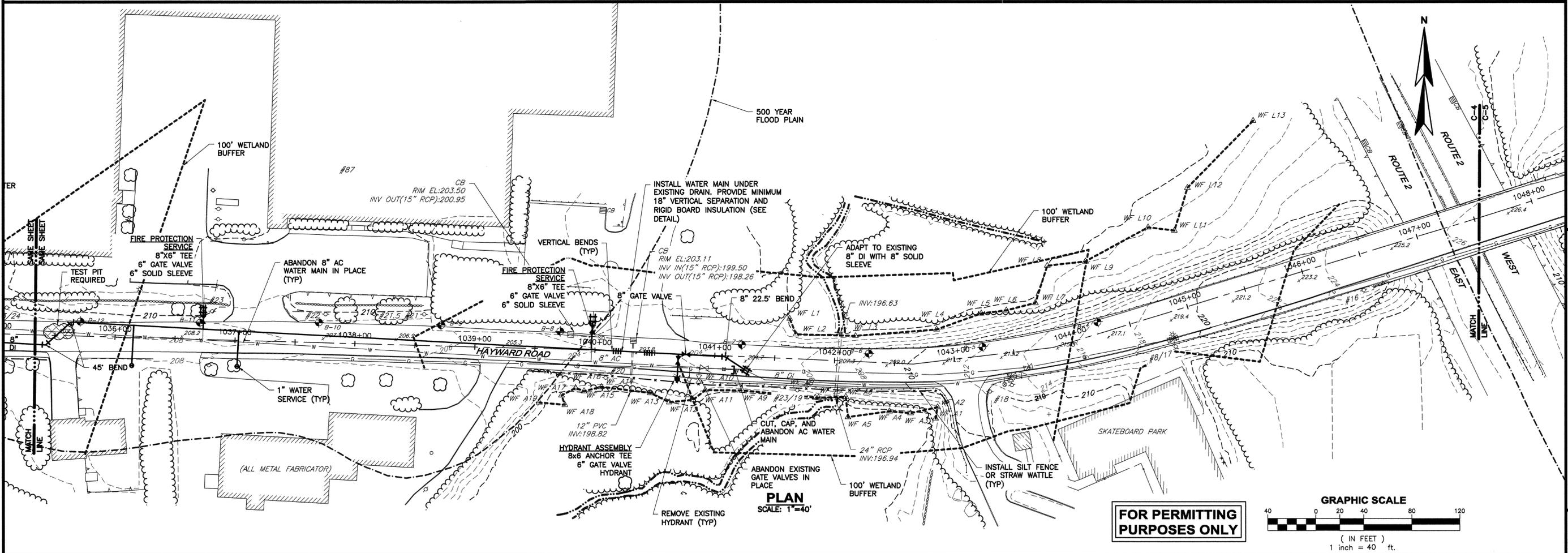
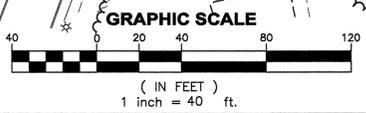
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C-3
ACTION WATER DISTRICT
HAYWARD ROAD & STOW STREET
WATER MAIN REPLACEMENT
ACTON, MASSACHUSETTS
PLAN VIEW: HAYWARD ROAD
STA 1000+00 TO STA 1023+50

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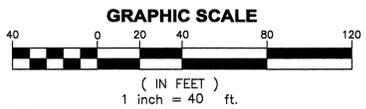
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PLAN SCALE: 1"=40'



PLAN SCALE: 1"=40'



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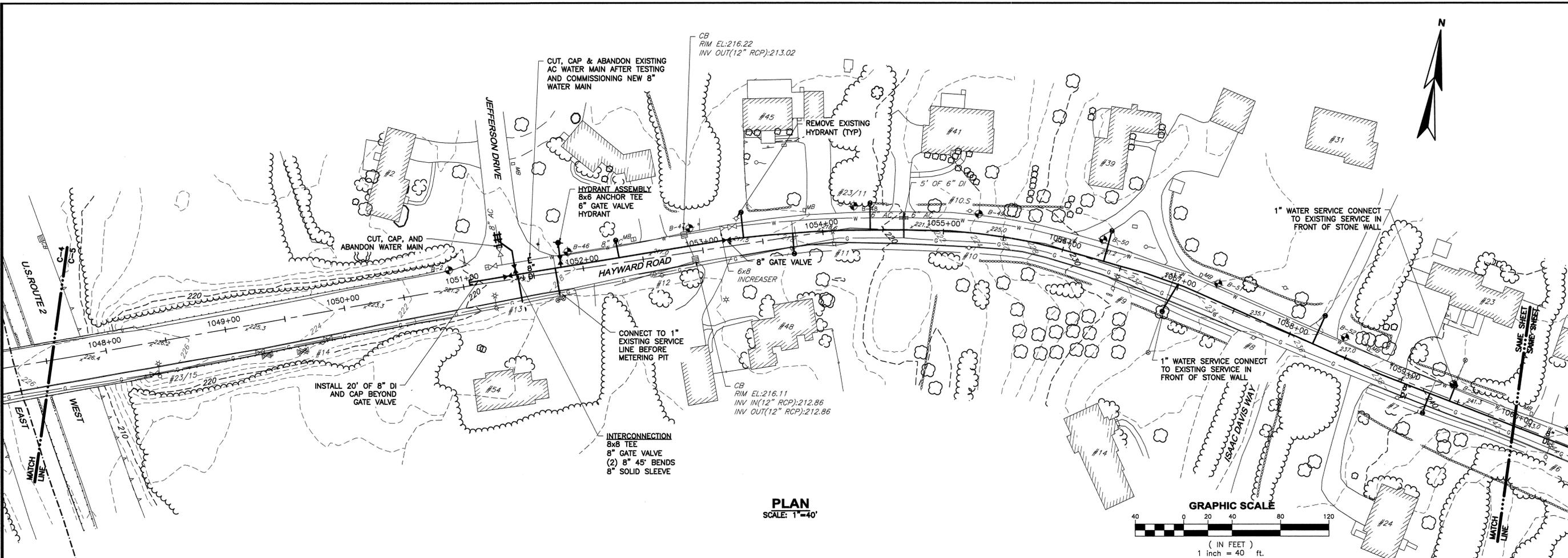
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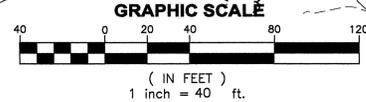
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DRAWING
 C-4

ACTON WATER DISTRICT
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 WATER MAIN REPLACEMENT
 ACTON, MASSACHUSETTS
 PLAN VIEW: HAYWARD ROAD
 STA 1023+50 TO STA 1041+50

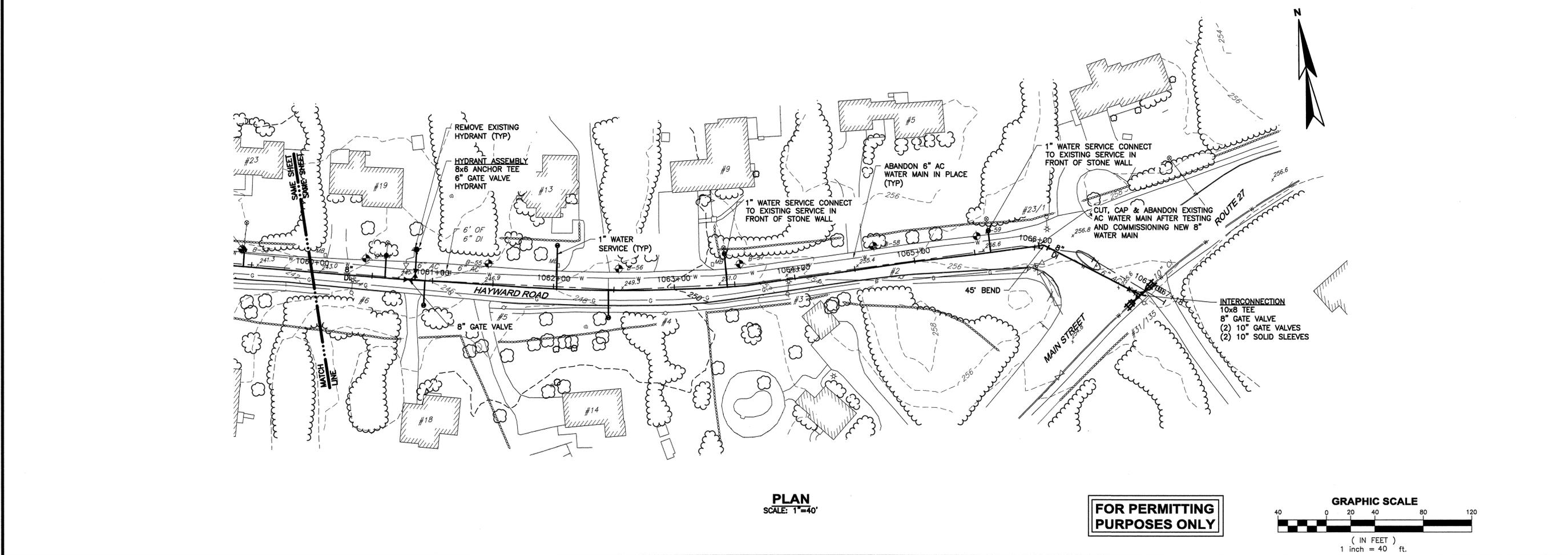


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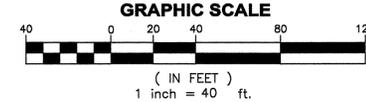
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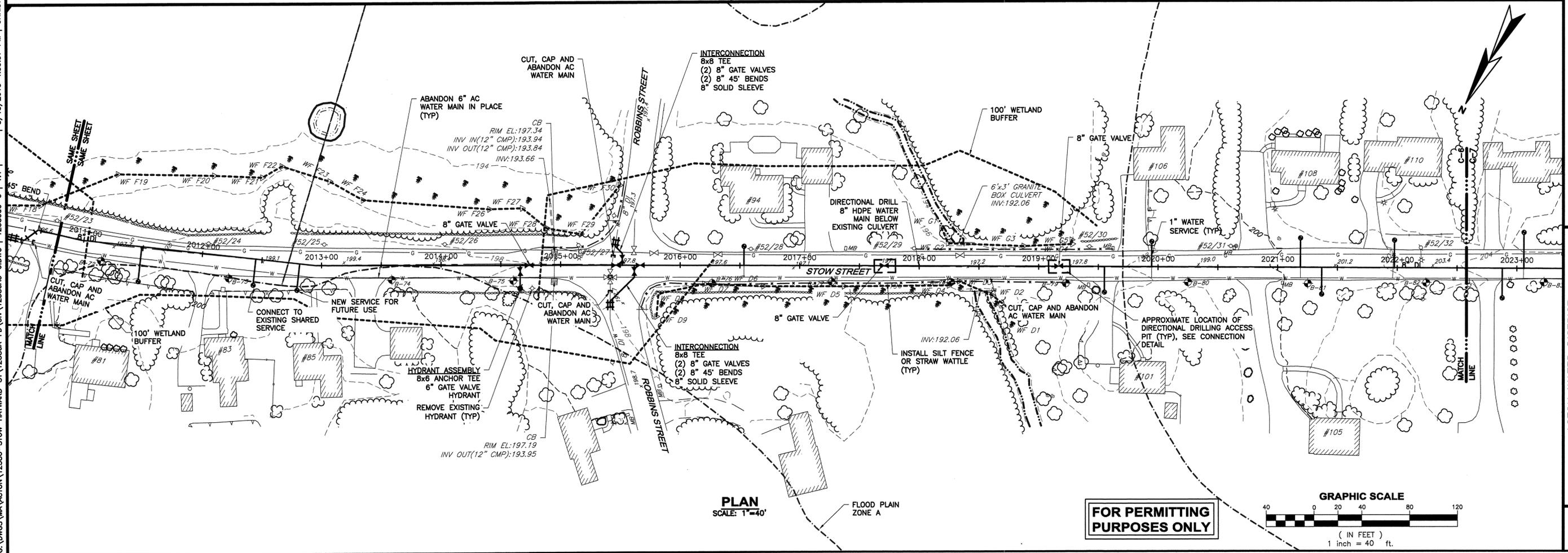
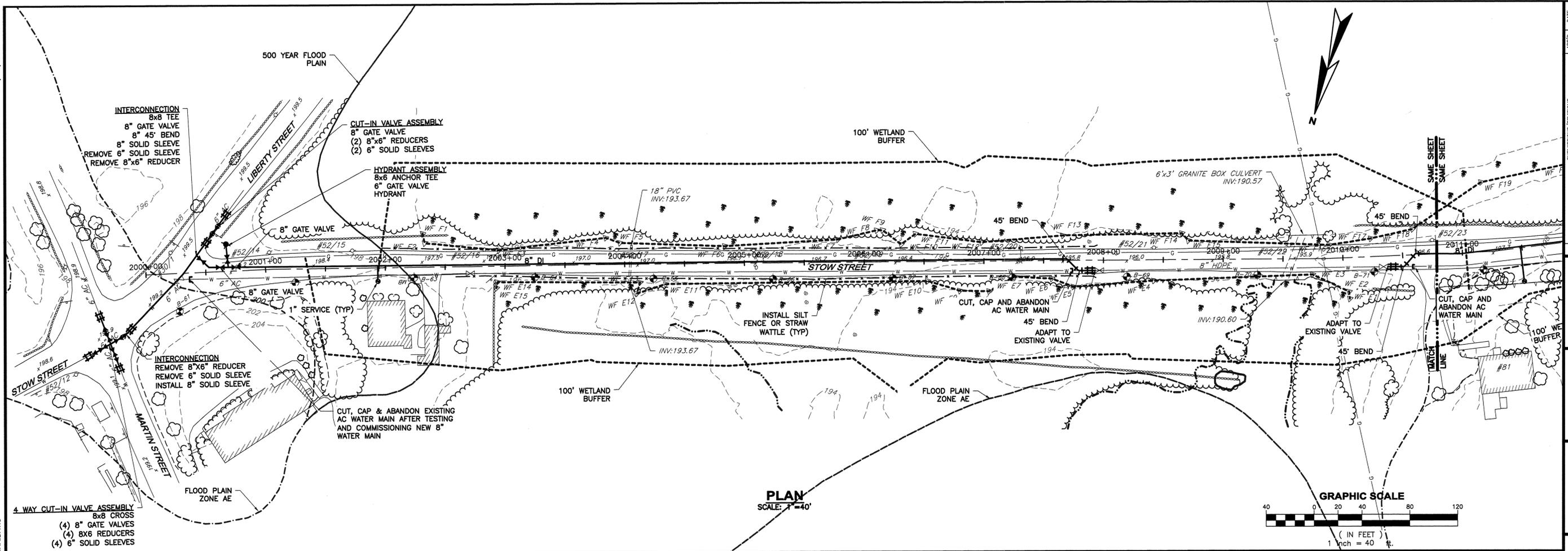
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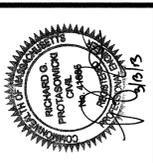
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 ACTON, MASSACHUSETTS
 PLAN VIEW: HAYWARD ROAD
 STA 1048+00 TO STA 1067+00
DRAWING
 C-5



NO.	DATE	ISSUED FOR PERMITTING
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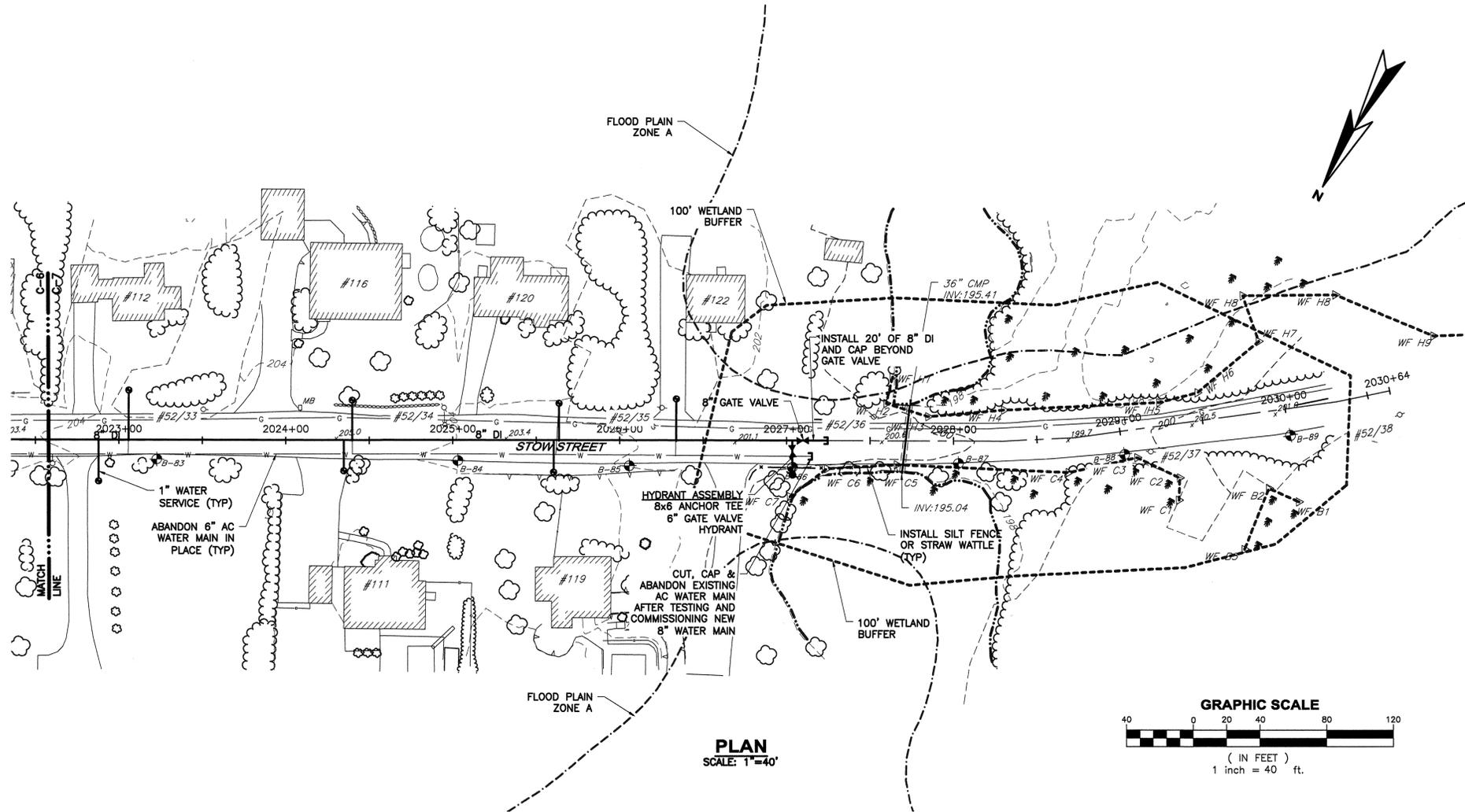
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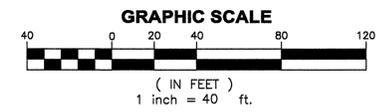
PLAN VIEW: STOW STREET
 STA 2000+00 TO STA 2022+50

DRAWING
 C-6

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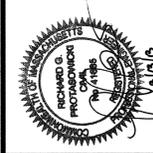
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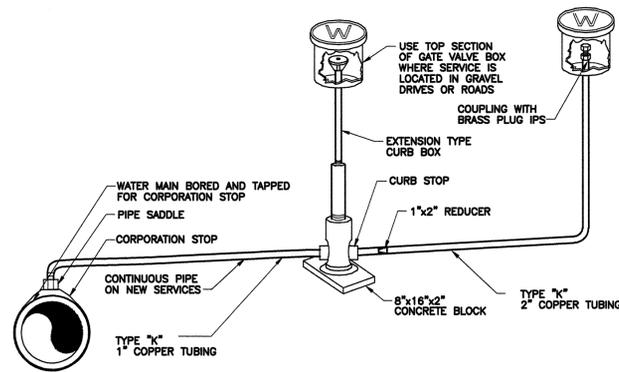
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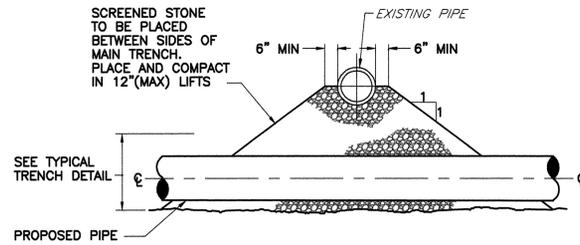
ACTON WATER DISTRICT
 HAYWARD ROAD & STOW STREET
 WATER MAIN REPLACEMENT
 ACTON, MASSACHUSETTS
 PLAN VIEW: STOW STREET
 STA 2022+50 TO STA 2-3+50

DRAWING
 C-7



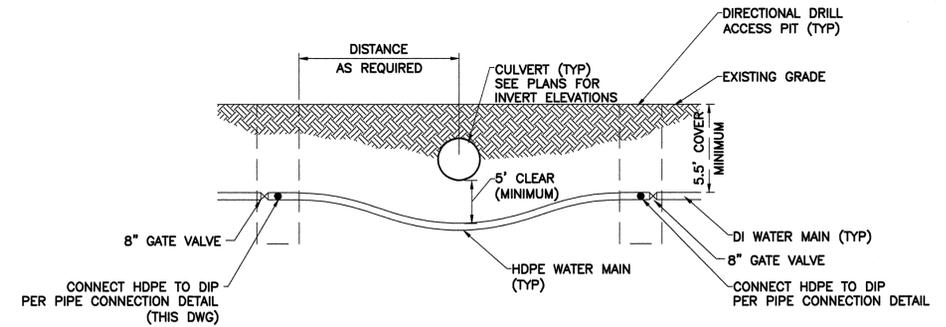
NOTE: TO BE PLACED AT HIGH SPOTS IN WATER MAIN. FIELD LOCATE AS SHOWN ON DRAWINGS AND AS REQUIRED TO PREVENT AIR BINDING.

MANUAL AIR RELEASE ASSEMBLY
NTS

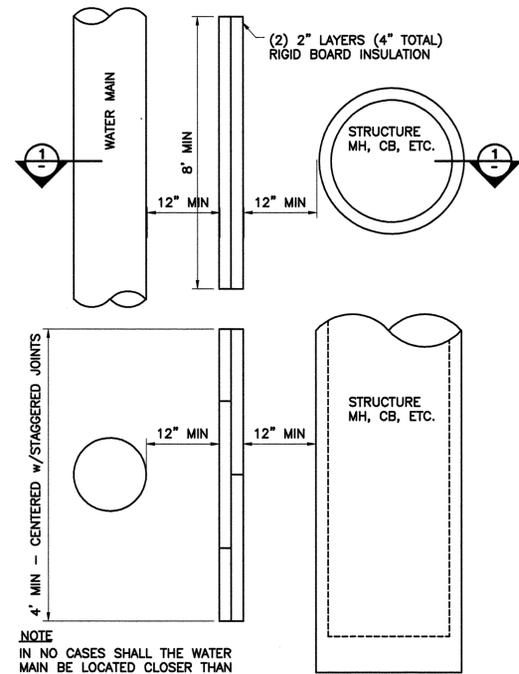


NOTE: JOINTS ON EACH PIPE TO BE AS FAR FROM INTERSECTION AS POSSIBLE

PIPE CROSSING
NTS



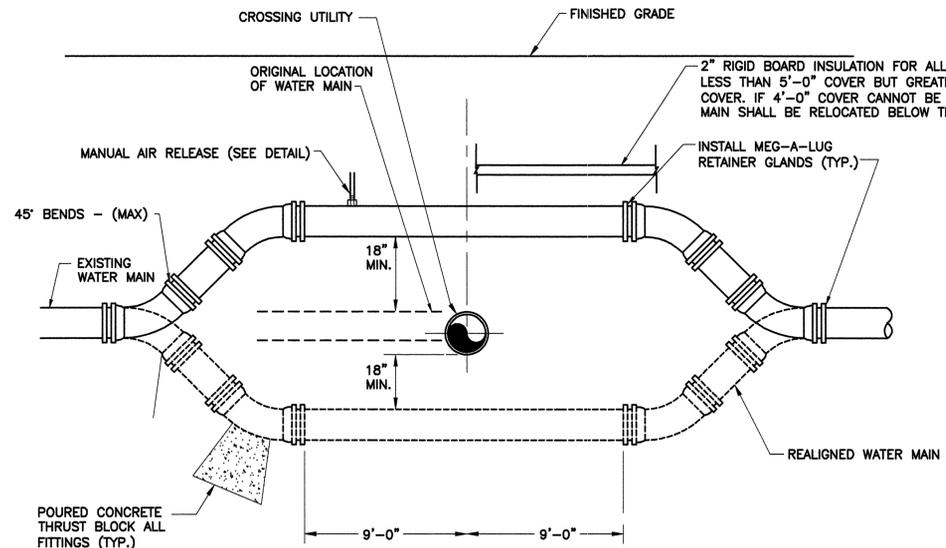
TYPICAL CULVERT CROSSING VIA DIRECTIONAL DRILL
NTS



NOTE: IN NO CASES SHALL THE WATER MAIN BE LOCATED CLOSER THAN 3 FEET TO THE STRUCTURE

SECTION 1
SCALE: NTS

WATER MAIN-STRUCTURE INSULATION DETAIL
NTS



WATER MAIN RELOCATION
NTS

- NOTES:
- ALL FITTINGS AND JOINTS IN LOWERING AREA TO BE RESTRAINED.
 - WHEN IT IS IMPOSSIBLE TO OBTAIN HORIZONTAL OR VERTICAL SEPARATION AS INDICATED IN THE DETAIL ABOVE, BOTH THE WATER AND THE SEWER SHOULD BE ENCASED IN CONTROLLED DENSITY FILL FOR A DISTANCE OF 10 FEET ON EITHER SIDE OF THE CROSSING.
 - ALL DUCTILE IRON PIPE AND FITTINGS SHALL BE WRAPPED WITH POLYETHYLENE ENCASEMENT WHEN CONTACTING POURED CONCRETE PRODUCTS

NO.	DATE	ISSUED FOR PERMITTING
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DRAWN BY: CSH
 CHECKED BY: DDL
 DATE: 3/13/13
 APPROVED BY: RGP
 DATE: 3/13/13
 PROJECT NO: 12380A
 SCALE: AS NOTED

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ACTON WATER DISTRICT
 HAYWARD ROAD & STOW STREET
 WATER MAIN REPLACEMENT
 ACTON, MASSACHUSETTS
 DETAILS II

FOR PERMITTING PURPOSES ONLY

EROSION AND SEDIMENTATION CONTROL NOTES

THIS PLAN HAS BEEN DEVELOPED AS A STRATEGY TO CONTROL SOIL EROSION AND SEDIMENTATION DURING AND AFTER CONSTRUCTION. THIS PLAN IS BASED ON THE STANDARDS AND SPECIFICATIONS FOR EROSION PREVENTION IN URBAN AND SUBURBAN AREAS AS CONTAINED IN THE "MASSACHUSETTS EROSION AND SEDIMENT CONTROL GUIDELINES FOR URBAN AND SUBURBAN AREAS", FRANKLIN, HAMPDEN, HAMPSHIRE CONSERVATION DISTRICTS, DATED MARCH, 1997.

THE PROPOSED LOCATIONS OF SILTATION AND EROSION CONTROL STRUCTURES REQUIRED FOR THE PUMP STATION AND WATER METERING STATION ARE SHOWN ON THE GRADING/EROSION CONTROL PLANS. PROVIDE SILT FENCE, STONE CHECK DAMS AND OTHER EROSION CONTROL MEASURES AS REQUIRED TO ADEQUATELY PREVENT SEDIMENT TRANSPORT AS NOTED IN THE BMP.

- ALL SEDIMENT AND EROSION CONTROL MEASURES SHALL BE DONE IN ACCORDANCE WITH THE "MASSACHUSETTS EROSION AND SEDIMENT CONTROL GUIDELINES FOR URBAN AND SUBURBAN AREAS", FRANKLIN, HAMPDEN, HAMPSHIRE CONSERVATION DISTRICTS, DATED MARCH, 1997.
- THOSE AREAS UNDERGOING ACTUAL CONSTRUCTION WILL BE MAINTAINED IN AN UNTREATED OR UNVEGETATED CONDITION FOR THE MINIMUM TIME REQUIRED. IN GENERAL, AREAS TO BE VEGETATED SHALL BE PERMANENTLY STABILIZED WITHIN 15 DAYS OF FINAL GRADING AND TEMPORARILY STABILIZED WITHIN 30 DAYS OF INITIAL DISTURBANCE OF THE SOIL.
- SEDIMENT BARRIERS (SILT FENCE, STONE CHECK DAMS, ETC.) SHOULD BE INSTALLED PRIOR TO ANY SOIL DISTURBANCE OF UPGRADIENT DRAINAGE AREAS.
- INSTALL SILT FENCE AT TOE OF SLOPES TO FILTER SILT FROM RUNOFF. SEE SILT FENCE DETAIL FOR PROPER INSTALLATION.
- ALL EROSION CONTROL STRUCTURES WILL BE INSPECTED, REPLACED AND/OR REPAIRED EVERY 7 DAYS AND IMMEDIATELY FOLLOWING ANY SIGNIFICANT RAINFALL OR SNOW MELT OR WHEN NO LONGER SERVICEABLE DUE TO SEDIMENT ACCUMULATION OR DECOMPOSITION. SEDIMENT DEPOSITS MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE HALF THE HEIGHT OF THE BARRIER. SEDIMENT CONTROL DEVICES SHALL REMAIN IN PLACE AND BE MAINTAINED BY THE CONTRACTOR UNTIL AREAS UPSLOPE ARE PERMANENTLY STABILIZED.
- NO SLOPES, EITHER PERMANENT OR TEMPORARY, SHALL BE STEEPER THAN TWO HORIZONTAL TO ONE VERTICAL (2 TO 1) UNLESS STABILIZED WITH PERMANENT EROSION CONTROL MEASURES.
- IF FINAL SEEDING OF THE DISTURBED AREAS IS NOT TO BE COMPLETED 30 DAYS PRIOR TO THE ANTICIPATED DATE OF THE FIRST KILLING FROST, USE TEMPORARY MULCHING (DORMANT SEEDING MAY BE ATTEMPTED AS WELL) TO PROTECT THE SITE AND DELAY PERMANENT SEEDING, UNTIL UPGRADIENT AREAS ARE STABILIZED.
- WHEN FEASIBLE, TEMPORARY SEEDING OF DISTURBED AREAS THAT HAVE NOT BEEN FINISH GRADED SHALL BE COMPLETED 30 DAYS PRIOR TO THE FIRST KILLING FROST.
- DURING THE CONSTRUCTION PHASE, INTERCEPTED SEDIMENT WILL BE RETURNED TO THE SITE AND REGRADED ONTO OPEN AREAS. POST SEEDING SEDIMENT, IF ANY, WILL BE DISPOSED OF IN AN ACCEPTABLE MANNER.
- REVEGETATION MEASURES WILL COMMENCE UPON COMPLETION OF CONSTRUCTION EXCEPT AS NOTED ABOVE. ALL DISTURBED AREAS NOT OTHERWISE STABILIZED WILL BE GRADED, SMOOTHED, AND REVEGETATED AS FOLLOWS:
 - A MINIMUM OF FOUR (4) INCHES OF LOAM WILL BE SPREAD OVER DISTURBED AREAS AND SMOOTHED TO A UNIFORM SURFACE.
 - APPLY LIMESTONE AND FERTILIZER ACCORDING TO SOIL TEST. IF SOIL TESTING IS NOT DEEMED FEASIBLE ON SMALL OR VARIABLE SITES, OR WHERE TIMING IS CRITICAL, FERTILIZER MAY BE APPLIED AT THE RATE OF 800 POUNDS PER ACRE OR 18.4 POUNDS PER 1,000 SQUARE FEET USING 10-20-20 (N-P205-K20) OR EQUIVALENT. APPLY GROUND LIMESTONE (EQUIVALENT TO 50% CALCIUM PLUS MAGNESIUM OXIDE) AT A RATE OF 3 TONS PER ACRE (138 LB PER 1,000 SQ. FT.).
 - FOLLOWING SEED BED PREPARATION, DITCHES AND BACK SLOPES WILL BE SEEDED WITH A MIXTURE OF 47% CREEPING RED FESCUE, 5% REDTOP, AND 48% TALL FESCUE. THE LAWN AREAS WILL BE SEEDED WITH A PREMIUM TURF MIXTURE OF 44% KENTUCKY BLUEGRASS, 44% CREEPING RED FESCUE, AND 12% PERENNIAL RYE GRASS. SEEDING RATE IS 3.0 LBS PER 1000 SQ. FT. LAWN QUALITY SOD MAY BE SUBSTITUTED FOR SEED.
 - HAY MULCH AT THE RATE OF 70-90 LBS PER 1000 SQUARE FEET OR A HYDRO-APPLICATION OF CELLULOSE FIBER SHALL BE APPLIED FOLLOWING SEEDING. A SUITABLE BINDER WILL BE USED ON HAY MULCH FOR WIND CONTROL.
- ALL TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED ONCE THE WORK AREA IS STABILIZED.
- WETLANDS (EXCEPTING THOSE WHICH ARE TO BE FILLED IN ACCORDANCE WITH STATE AND FEDERAL REGULATIONS) WILL BE PROTECTED WITH SILT FENCE INSTALLED AT THE EDGE OF THE WETLAND OR THE BOUNDARY OF WETLAND DISTURBANCE.
- IN GENERAL, AREAS WITHIN 100 FEET OF DELINEATED WETLANDS OR STREAMS SHALL HAVE A MAXIMUM PERIOD OF EXPOSURE OF NOT MORE THAN 15 DAYS.
- FOLLOW APPROPRIATE EROSION CONTROL MEASURES PRIOR TO EACH STORM IN ALL AREAS WITHIN 100 FEET OF DELINEATED WETLANDS OR STREAMS.

EROSION CONTROL DURING WINTER CONSTRUCTION

- WINTER CONSTRUCTION PERIOD DEFINED: NOVEMBER 1 THROUGH APRIL 15
- WINTER EXCAVATION AND EARTHWORK SHALL BE DONE SUCH THAT NO MORE THAN 1 ACRE OF THE SITE IS WITHOUT STABILIZATION AT ANY ONE TIME.
- EXPOSED AREA SHOULD BE LIMITED TO THAT THAT CAN BE MULCHED IN ONE DAY PRIOR TO ANY PRECIPITATION EVENT.
- AN AREA SHALL BE CONSIDERED TO HAVE BEEN STABILIZED WHEN EXPOSED SURFACES HAVE BEEN EITHER MULCHED WITH STRAW OR HAY AT A RATE OF 100 LB. PER 1,000 SQUARE FEET (WITH OR WITHOUT SEEDING) OR DORMANT SEEDED, MULCHED AND ADEQUATELY ANCHORED BY AN APPROVED ANCHORING TECHNIQUE. IN ALL CASES, MULCH SHALL BE APPLIED SUCH THAT SOIL SURFACE IS NOT VISIBLE THROUGH THE MULCH.
- BETWEEN THE DATES OF OCTOBER 15 AND APRIL 1ST, LOAM OR SEED WILL NOT BE REQUIRED. DURING PERIODS OF ABOVE-FREEZING TEMPERATURES, THE SLOPES SHALL BE FINE GRADED AND EITHER PROTECTED WITH MULCH OR TEMPORARILY SEEDED AND MULCHED UNTIL SUCH TIME AS THE FINAL TREATMENT CAN BE APPLIED. IF THE DATE IS AFTER NOVEMBER 1ST AND IF THE EXPOSED AREA HAS BEEN LOAMED, FINAL GRADED AND IS SMOOTH, THEN THE AREA MAY BE DORMANT SEEDED AT A RATE 200 - 300% HIGHER THAN SPECIFIED FOR PERMANENT SEED AND THEN MULCHED. IF CONSTRUCTION CONTINUES DURING FREEZING WEATHER, ALL EXPOSED AREAS SHALL BE GRADED BEFORE FREEZING AND THE SURFACE TEMPORARILY PROTECTED FROM EROSION BY THE APPLICATION OF MULCH. SLOPES SHALL NOT BE LEFT EXPOSED OVER THE WINTER OR ANY OTHER EXTENDED TIME OF WORK SUSPENSION UNLESS TREATED IN THE ABOVE MANNER. UNTIL SUCH TIME AS WEATHER CONDITIONS ALLOW DITCHES TO BE FINISHED WITH THE PERMANENT SURFACE TREATMENT, EROSION SHALL BE CONTROLLED BY THE INSTALLATION OF BALES OF HAY OR STONE CHECK DAMS IN ACCORDANCE WITH THE STANDARD DETAILS.
- BETWEEN THE DATES OF NOVEMBER 1ST AND APRIL 15TH ALL MULCH SHALL BE EITHER WOOD CELLULOSE FIBER OR BE ANCHORED WITH MULCH NETTING OR CHEMICAL TACK.
 - MULCH NETTING SHALL BE USED TO ANCHOR MULCH IN ALL DRAINAGE WAYS WITH A SLOPE GREATER THAN 3%, FOR SLOPES EXPOSED TO DIRECT WINDS AND FOR ALL OTHER SLOPES GREATER THAN 8%.
 - MULCH NETTING SHALL BE USED TO ANCHOR MULCH IN ALL AREAS WITH SLOPES GREATER THAN 15%. AFTER OCTOBER 1ST, THE SAME APPLIES FOR ALL SLOPES GREATER THAN 8%.
- AFTER NOVEMBER 1ST THE CONTRACTOR SHALL APPLY DORMANT SEEDING OR MULCH AND ANCHORING ON ALL BARE EARTH AT THE END OF EACH WORKING DAY.
- DURING WINTER CONSTRUCTION PERIODS ALL SNOW SHALL BE REMOVED FROM AREAS OF SEEDING AND MULCHING PRIOR TO PLACEMENT.

MULCH ANCHORING

ANCHOR MULCH WITH: MULCH NETTING (AS PER MANUFACTURER); ASPHALT EMULSION (0.05 GALLONS PER SQ. YD.); CHEMICAL TACK (AS PER MANUFACTURER'S SPECIFICATIONS); OR BE WOOD CELLULOSE FIBER (2000 LBS/ACRE). WETTING FOR SMALL AREAS AND ROAD DITCHES MAY BE PERMITTED.

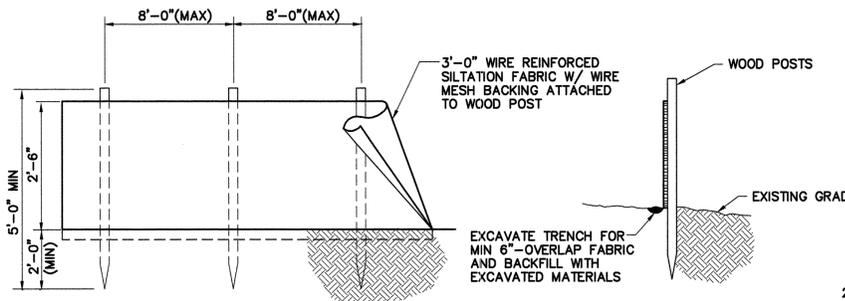
ADDITIONAL TEMPORARY SEED MIXTURE (OR PERIODS LESS THAN 12 MONTHS)		
DATES	SEED	RATE
4/1/02 - 7/1/02	OATS	80 LBS/ACRE
8/15/02 - 9/15/02		
4/1/02 - 6/1/02	ANNUAL RYE GRASS	40 LBS/ACRE
8/15/02 - 9/15/02		
8/15/02 - 10/15/02	WINTER RYE	120 LBS/ACRE
(11/1/02 - 4/1/03)	MULCH W/ DORMANT SEED	80 LBS/ACRE*
(5/1/02 - 6/30/01)	FOXTAIL MILLET	30 LBS/ACRE

*SEED RATE ONLY

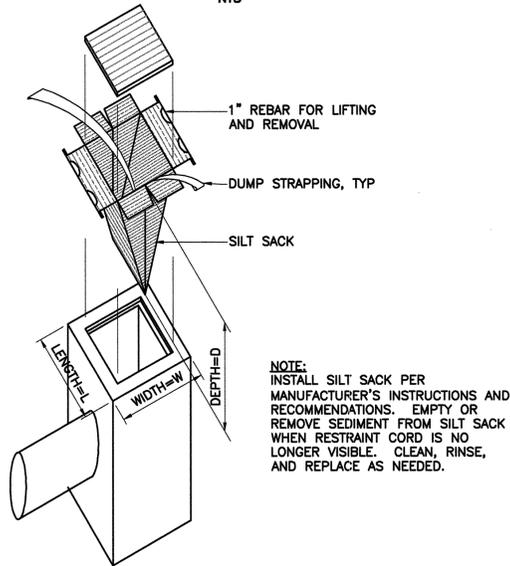
MULCH AND MULCH ANCHORING

LOCATION	MULCH	RATE (1000 S.F.)
PROTECTED AREA	STRAW OR HAY *	100 POUNDS
WINDY AREAS	STRAW OR HAY (ANCHORED) *	100 POUNDS
MODERATE TO HIGH VELOCITY AREAS OR STEEP SLOPES (GREATER THAN 3:1)	JUTE MESH, EXCELSIOR MAT OR EQUIV.	AS REQUIRED

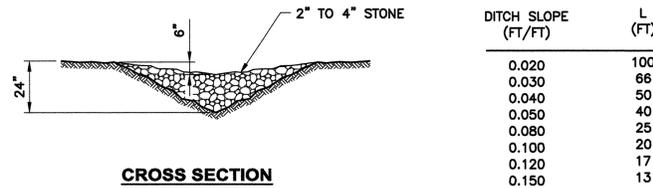
* A HYDRO-APPLICATION OF CELLULOSE FIBER MAY BE APPLIED FOLLOWING SEEDING. A SUITABLE BINDER SHALL BE USED ON HAY MULCH FOR WIND CONTROL.



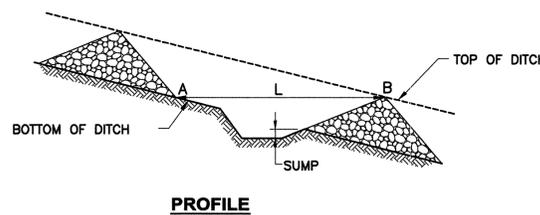
SILT FENCE INSTALLATION DETAIL



SILT SACK CATCH BASIN INLET

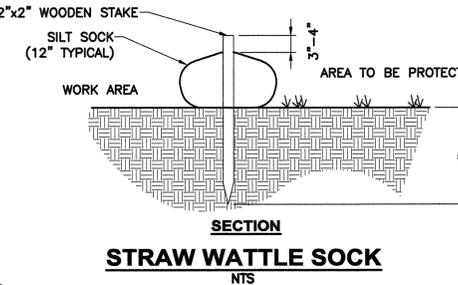
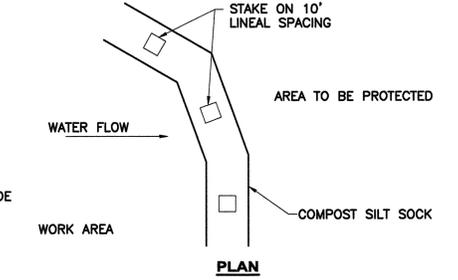


CROSS SECTION



PROFILE

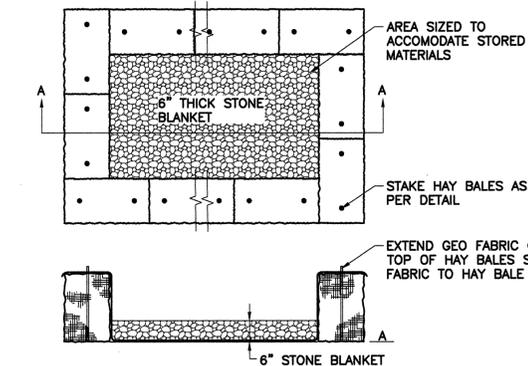
STONE CHECK DAM DETAIL



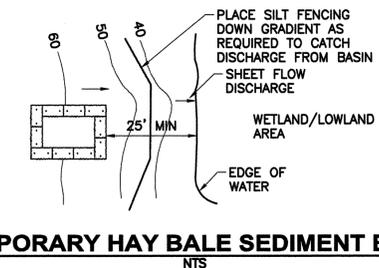
SECTION STRAW WATTLE SOCK

NOTES:

- ALL MATERIAL TO MEET SPECIFICATIONS
- SILT SOCK COMPOST/SOIL/ROCK/SEED FILL TO MEET APPLICATION REQUIREMENTS
- SILT SOCK DEPICTED IS FOR MINIMUM SLOPES. GREATER SLOPES MAY REQUIRE LARGER SOCKS PER THE ENGINEER
- COMPOST MATERIAL TO BE DISPERSED ON SITE, AS DETERMINED BY ENGINEER.



TEMPORARY HAY BALE SEDIMENT BASIN



FOR PERMITTING PURPOSES ONLY

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1	2/7/15	RGP

NO.	DATE	ISSUED FOR PERMITTING
1	2/7/15	RGP

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EROSION CONTROL NOTES & DETAILS

DRAWING C-10