

TOWN OF SALEM, NEW HAMPSHIRE

NORTH MAIN STREET WATER SERVICES CHANGEOVER PROJECT

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LOCUS MAP
SCALE: NTS

DRAWING INDEX

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C501	CONSTRUCTION DETAILS I

CONTRACT 2023-1 BID # 2023 - 020 MAY 2023



Weston & SampsonSM

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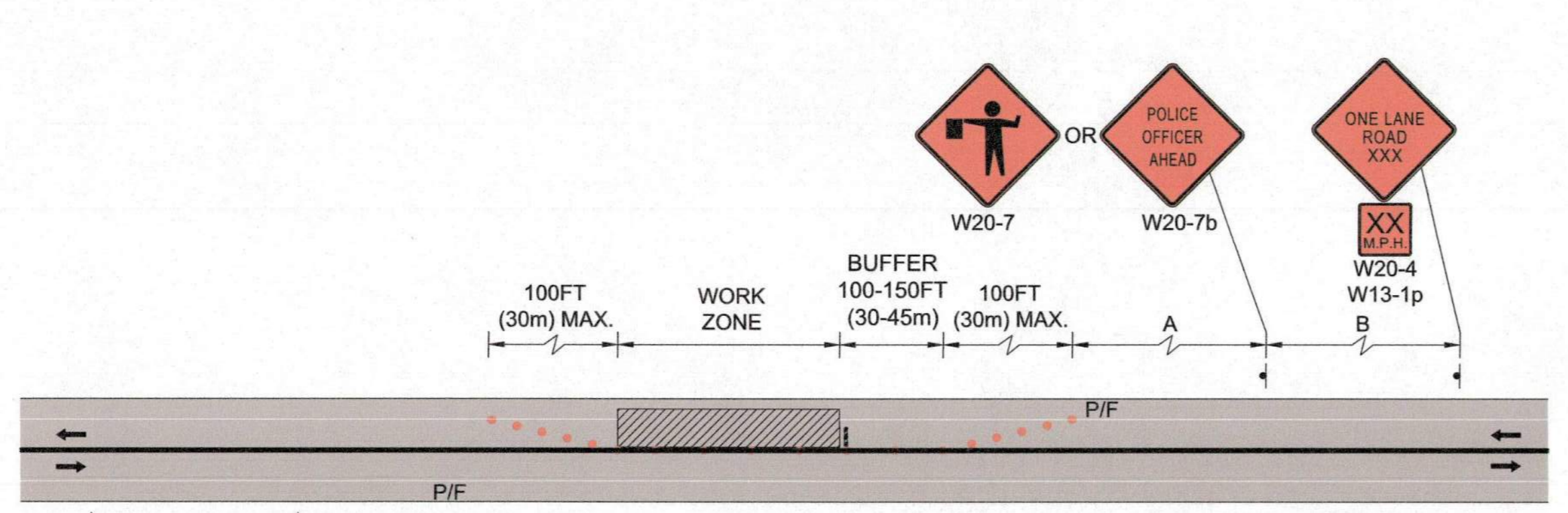
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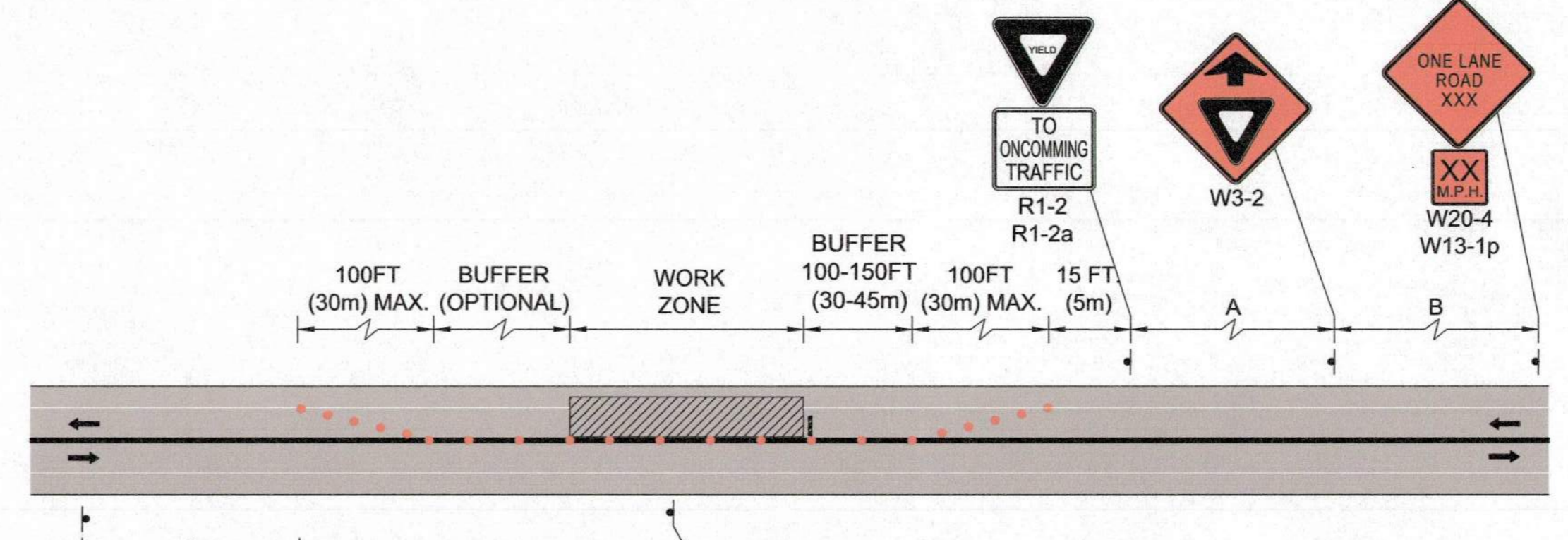
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TRAFFIC CONTROL DETAILS

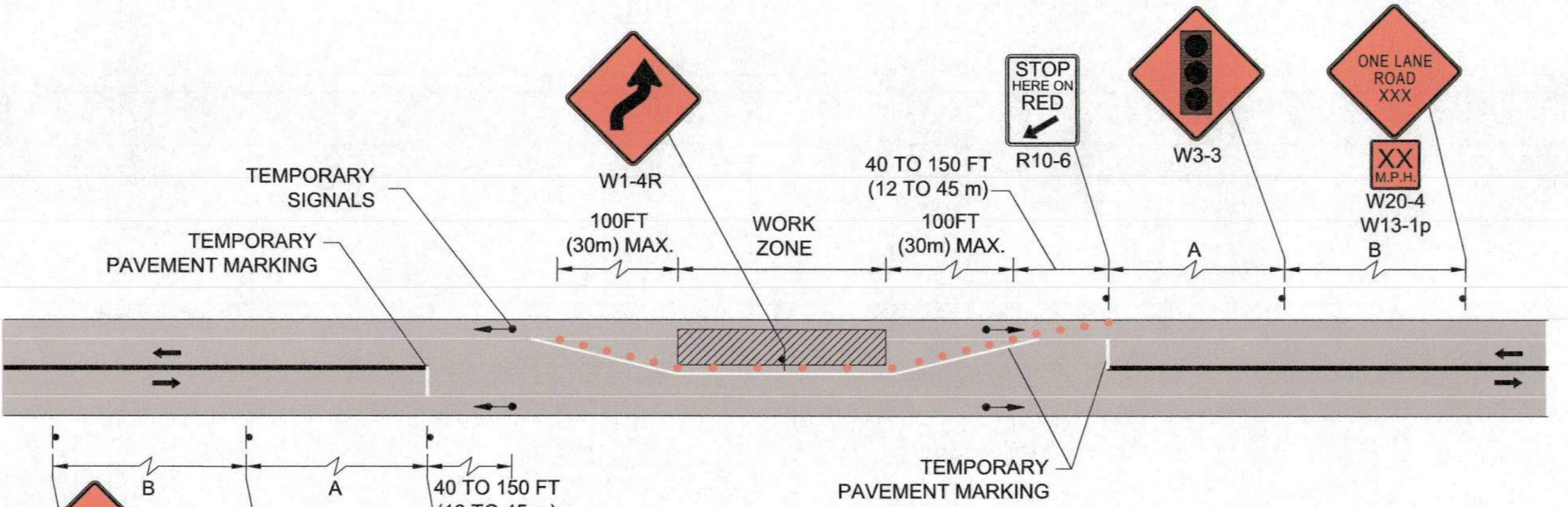
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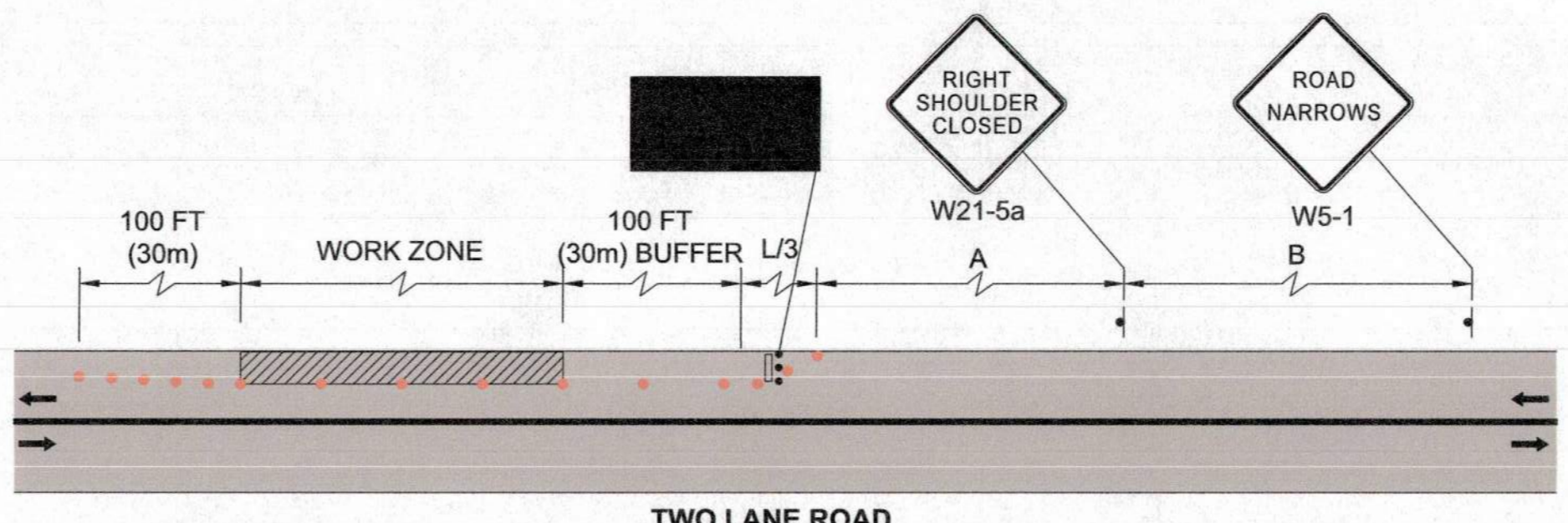
TWO LANE ROAD ONE LANE ALTERNATING TRAFFIC



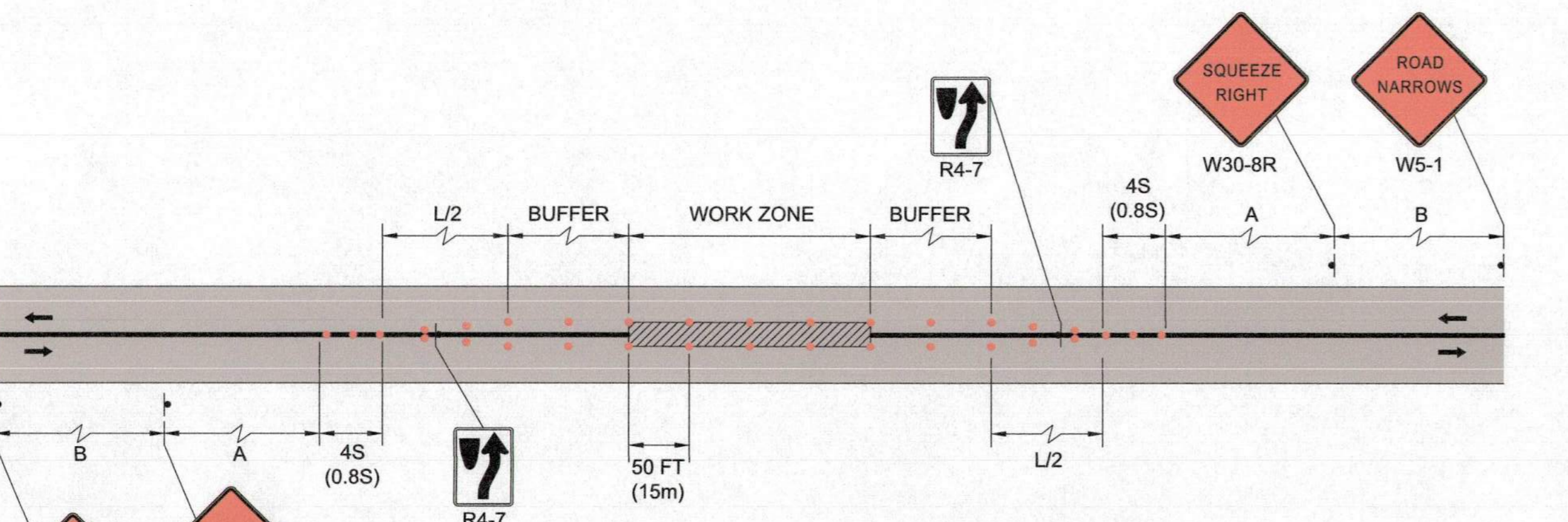
TWO LANE ROAD ONE LANE ALTERNATING TRAFFIC WITH YIELD



TWO LANE ROAD ONE LANE ALTERNATING TRAFFIC WITH TEMPORARY SIGNAL



TWO LANE ROAD SHOULDER CLOSED



TWO LANE ROAD CENTER OF ROAD CLOSURE

NOTE:

- FOR THE LATEST SPECIFICATION ON TEXT DIMENSIONS AND COLOR, CONTRACTOR SHALL REFER TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (CURRENT EDITION).

LEGEND:

- REFLECTORIZED DRUM
- TRAFFIC FLOW DURING CONSTRUCTION
- NORMAL TRAFFIC FLOW
- POLICE DETAIL OFFICER
- CONSTRUCTION SIGN
- WORK AREA

TEMPORARY TRAFFIC SIGN SUMMARY

MUTCD CODE	SIZE OF SIGN		SIGN
	WIDTH	HEIGHT	
W1-4L	30"	30"	Right Turn Ahead
W1-4R	30"	30"	Right Turn Ahead
W20-1	36"	36"	Road Work Ahead
W20-4	36"	36"	One Lane Road Ahead
W20-8	36"	36"	Police Officer Ahead
G20-2	36"	18"	End Construction
R7-2a	18"	12"	No Parking 7:30 A.M. TO 4:30 P.M.
CZ-1	-	-	All Businesses Are Open During Construction
R11-3a	36"	18"	Road Closed Ahead Local Traffic Only

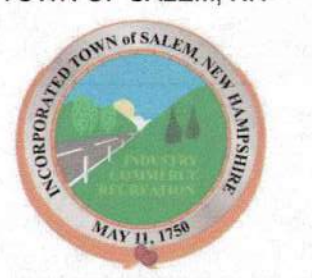
GENERAL NOTES:

- PLACEMENT OF ALL CONSTRUCTION SIGNS, DRUMS, BARRICADES, TRAFFIC DEVICES AND THE SHAPE, SIZE & COLOR OF ALL TEMPORARY TRAFFIC SIGNS SHALL CONFORM WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
- ADVANCE WARNING SIGN PLACEMENT AND TAPER LENGTH TO BE ADJUSTED ACCORDING TO STREET CONDITIONS AND DRIVEWAY OPENINGS.
- ALL DRUMS SHALL BE APPROXIMATELY PLACED AND MOVED AS NECESSARY TO MAINTAIN ADEQUATE ABUTTER ACCESS AT ALL TIMES.
- THE CONTRACTOR SHALL NOTIFY EACH ABUTTER AT LEAST 24 HOURS IN ADVANCE OF THE START OF ANY WORK THAT WILL REQUIRE THE TEMPORARY CLOSURE OF ACCESS, SUCH AS EXISTING PAVEMENT EXCAVATION, TEMPORARY DRIVEWAY PAVEMENT PLACEMENT AND SIMILAR OPERATIONS.
- NONESSENTIAL TRAFFIC CONTROL DEVICES SHALL BE COVERED OR REMOVED DURING NON-WORKING HOURS.
- PEDESTRIANS SHALL BE PROVIDED WITH ACCESS AND SAFE PASSAGE THROUGH THE TEMPORARY TRAFFIC CONTROL ZONE AT ALL TIMES.
- W20-8 SHALL BE TAKEN DOWN OR COVERED AFTER EACH WORKING DAY OR WHEN OTHERWISE NOT APPLICABLE, OR WHEN POLICE OFFICERS ARE NOT PRESENT TO DIRECT TRAFFIC.
- NO DIFFERENCE IN ROADWAY LANE ELEVATION WILL BE ALLOWED AT THE END OF THE WORK DAY.
- SAMPLE TRAFFIC PLANS INCLUDED ON THIS PLAN SHEET ARE BASED ON AN URBAN (LOW SPEED) ROAD TYPE FROM THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
- THE CONTRACTOR SHALL SUBMIT ANY REVISIONS TO THE CONSTRUCTION ZONE SAFETY PLAN TO THE ENGINEER FOR APPROVAL.
- THIS CONSTRUCTION ZONE SAFETY PLAN SHALL NOT RELIEVE THE CONTRACTOR OF HIS SOLE RESPONSIBILITY FOR CONSTRUCTION SITE SAFETY.
- CONSTRUCTION WORKING HOURS SHALL BE AS STATED IN SPECIFICATION SECTION 01140, SPECIAL PROVISIONS.

NOTES:

- ALL DUCTILE IRON PIPE UTILIZED SHALL BE ZINC COATED, CLASS 52, AS OUTLINED BY THE CONTRACT SPECIFICATIONS.
- SERVICE LINES TO BE ABANDONED SHALL BE CUT, CRIMPED, AND SEALED AS DIRECTED BY OWNER AND ENGINEER. CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING ALL ABANDONED WATER SERVICE LINES ARE SEALED WITHOUT LEAKS WHILE 6" AC MAIN IS IN SERVICE DURING CHANGEOVER WORK.
- CONTRACTOR SHALL INSTALL CATCH BASIN PROTECTION PRIOR TO THE START OF ANY WORK.
- CONTRACTOR SHALL LOAM AND SEED ALL GRASS AREAS DISTURBED DURING CONSTRUCTION. REFER TO SECTION 02920.
- CONTRACTOR SHALL NOT DAMAGE EXISTING ROCK-WALLS LOCATED IN AREAS ADJACENT TO WATER MAIN OR SERVICE INSTALLATION. CONTRACTOR SHALL CONTACT OWNER AND ENGINEER IF ROCK-WALLS MAY INHIBIT THE WORK PROPOSED, OR IF ROCK-WALLS ARE DAMAGED IN ANY WAY.
- MAINTAIN VERTICAL SEPARATION OF 18" BETWEEN WATER SERVICES AND EXISTING SEWERS.
- SERVICE TO LEMAY ROAD PREVIOUSLY RELOCATED TO 16" MAIN BY SALEM WATER DEPARTMENT.
- WORK WITHIN THE INTERSECTION OF BLUFF ST EXT. & NORTH MAIN ST SHALL BE COMPLETED AS NIGHT WORK. ABANDONMENT OF EXISTING WATER MAINS SHALL BE CONDUCTED UPON COMPLETION OF ALL WATER SERVICE CHANGEOVER WORK AND WITH PERMISSION OF OWNER AND ENGINEER. ALL CONNECTIONS TO EXISTING WATER MAINS SHALL BE CONDUCTED UTILIZING RESTRAINED FITTINGS AS OUTLINED BY THE CONTRACT SPECIFICATIONS AND REQUIRED BY TABLE 1 ON SHEET C501.
- EXISTING 6" AC AND 16" DI WATER MAINS LOCATED ABOVE EXISTING 24" TRANSMISSION MAIN.
- BRICK, MORTAR AND CLOSE EACH END OF ABANDONED 6" AC. WHERE REMOVAL IS REQUIRED, REMOVE EXISTING 6" AC PIPE AS DIRECTED BY SECTION 02112.
- PRIOR TO PROPOSED WORK WITHIN THE INTERSECTION OF BLUFF ST AND NORTH MAIN ST, CONTRACTOR SHALL COORDINATE WITH OWNER AND ENGINEER TO CONFIRM THE LOCATION OF THE WATER SERVICE FOR #1 BLUFF ST. IF IT IS DETERMINED THAT THE SERVICE WILL REQUIRE REPLACEMENT TO ACCOMMODATE THE WORK OUTLINED HEREIN, IT SHALL BE COMPLETED AS OUTLINED BY THE CONTRACT DOCUMENTS.

Project: TOWN OF SALEM, NH



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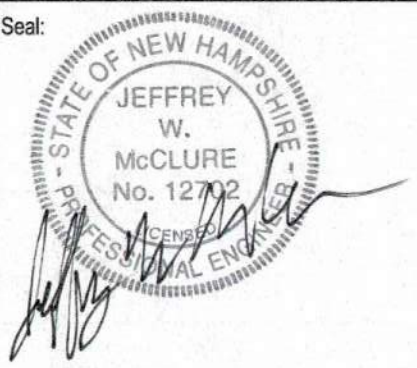
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NORTH MAIN STREET - BLUFF ST TO KENTHILL AVE

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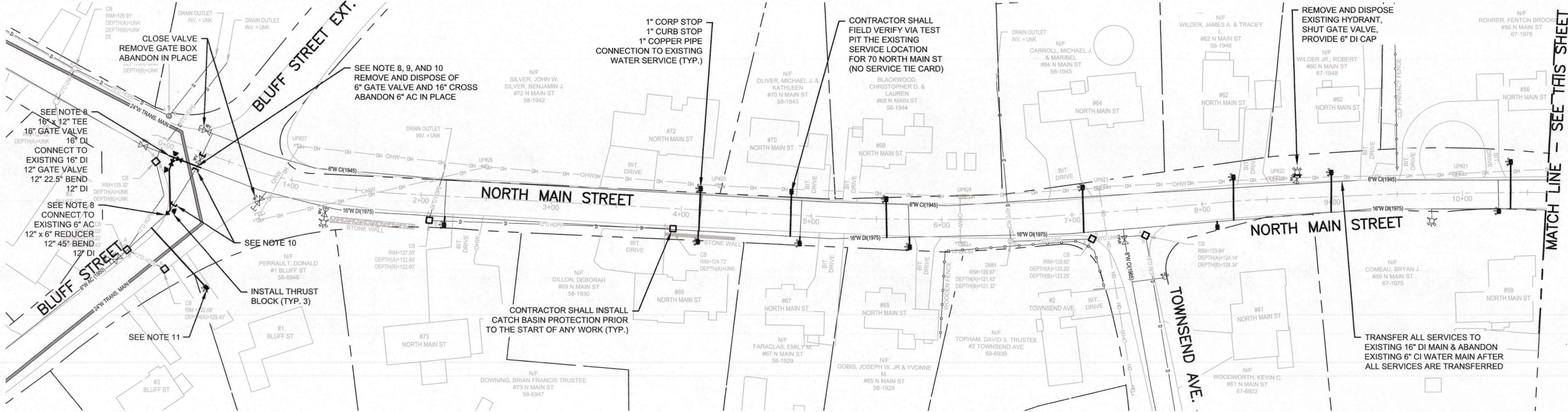
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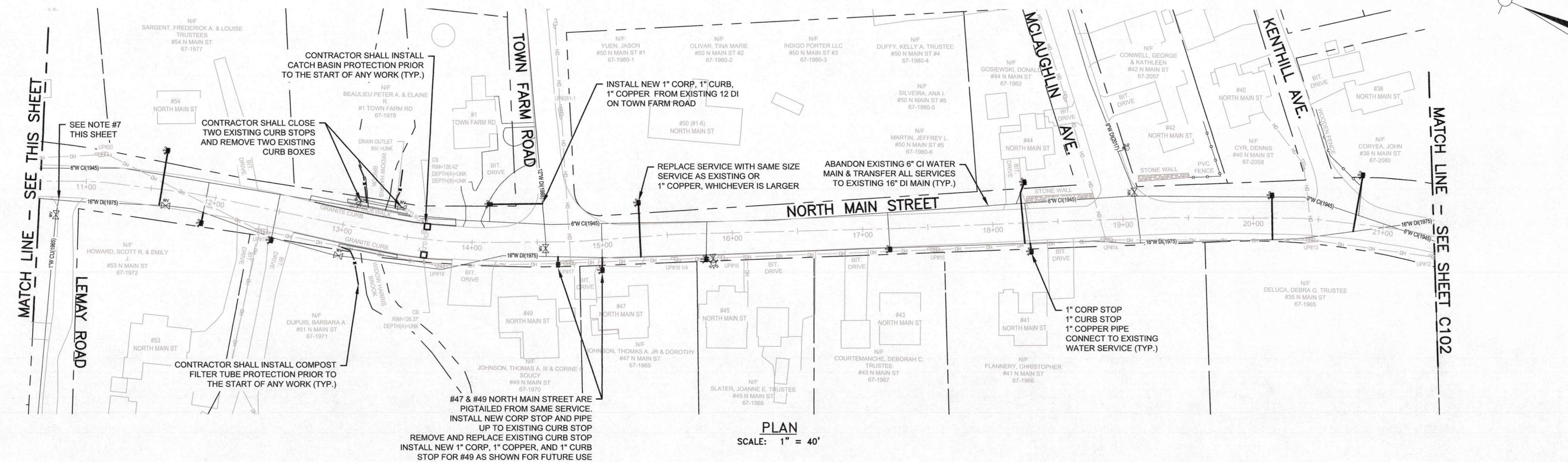
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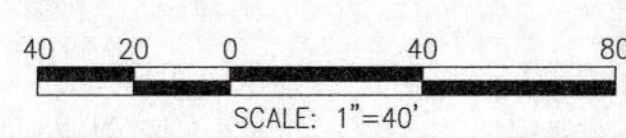
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PLAN
SCALE: 1" = 40'



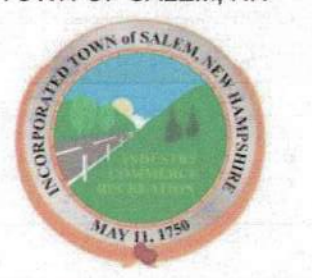
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NOTES:

- ALL DUCTILE IRON PIPE ON THIS PROJECT SHALL BE ZINC COATED.
- SERVICE LINES TO BE ABANDONED SHALL BE CUT, CRIMPED, AND SEALED AS DIRECTED BY OWNER AND ENGINEER. CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING ALL ABANDONED WATER SERVICE LINES ARE SEALED WITHOUT LEAKS WHILE 6" AC MAIN IS IN SERVICE DURING CHANGEOVER WORK.
- CONTRACTOR SHALL INSTALL CATCH BASIN PROTECTION PRIOR TO THE START OF ANY WORK.
- CONTRACTOR SHALL LOAM AND SEED ALL GRASS AREAS DISTURBED DURING CONSTRUCTION.
- CONTRACTOR SHALL NOT DAMAGE EXISTING ROCK-WALLS LOCATED IN AREAS ADJACENT TO WATER MAIN OR SERVICE INSTALLATION. CONTRACTOR SHALL CONTACT OWNER AND ENGINEER IF ROCK-WALLS MAY INHIBIT THE WORK PROPOSED, OR IF ROCK-WALLS ARE DAMAGED IN ANY WAY.
- MAINTAIN VERTICAL SEPARATION OF 18" BETWEEN WATER SERVICES AND EXISTING SEWERS, WHERE APPLICABLE.
- CONTRACTOR TO CLOSE GATE VALVE, REMOVE GATE BOX, AND ABANDON EXISTING 6" WATER MAIN AT ENTRANCE TO #1 NORTH MAIN ST AT PINE GROVE CEMETERY AND AT THE INTERSECTION OF BLUFF STREET/NORTH MAIN STREET AT DIRECTED BY THE OWNER AND ENGINEER.

Project: TOWN OF SALEM, NH



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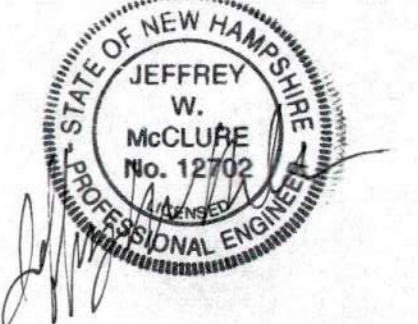
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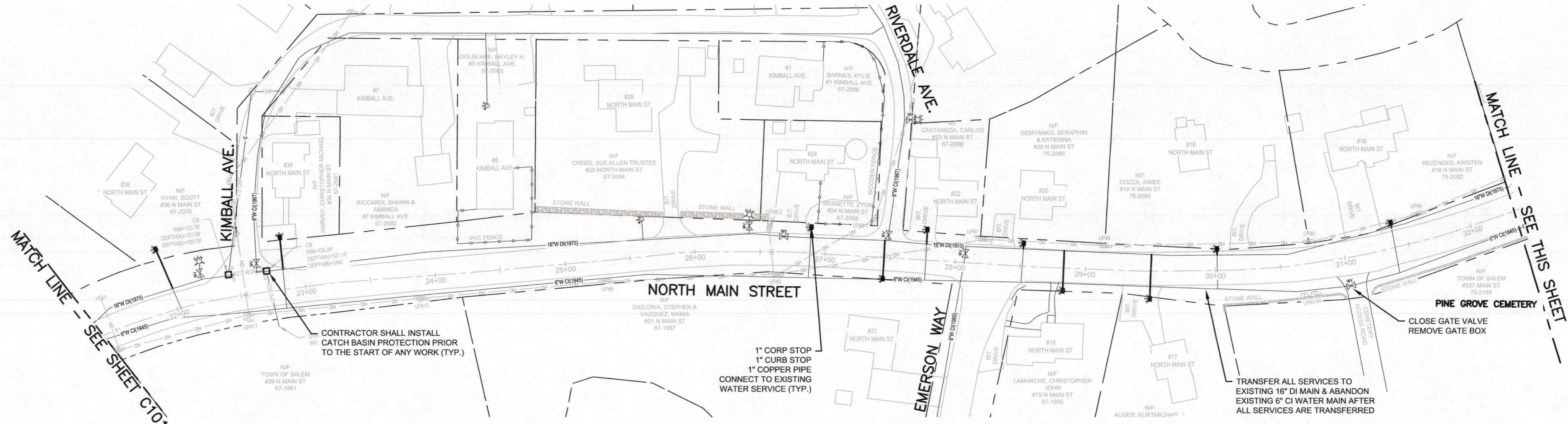
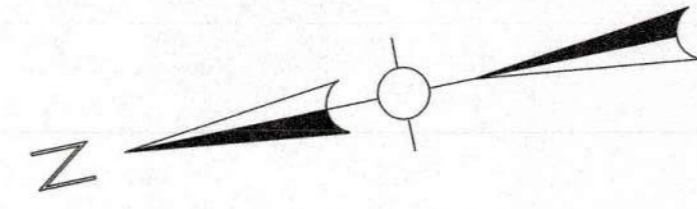
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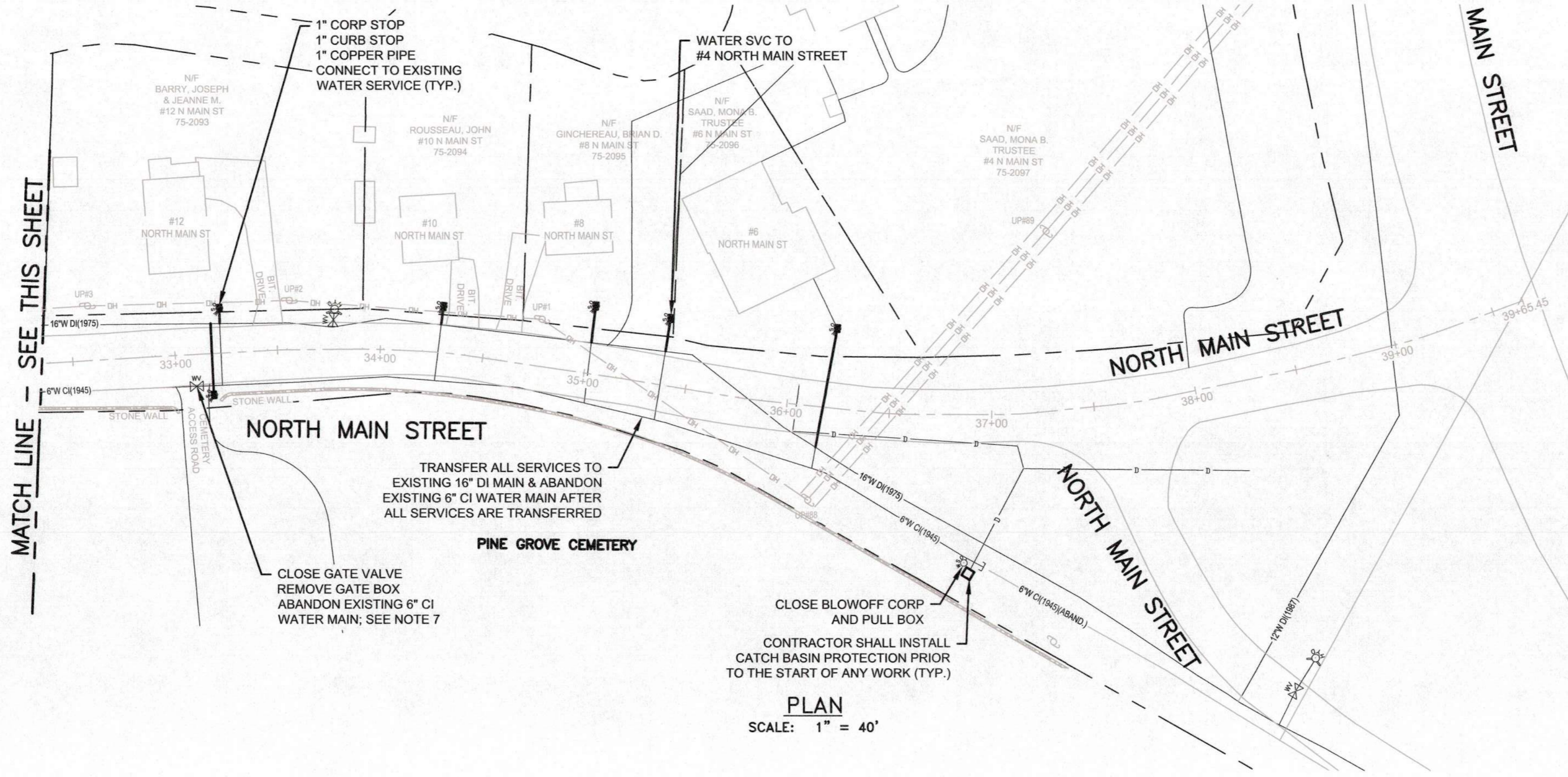
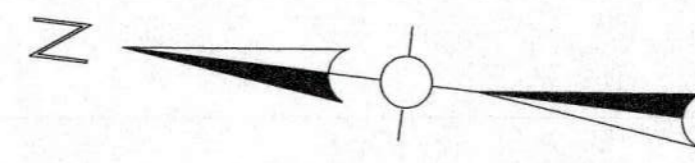
NORTH MAIN STREET - KENTHILL AVE TO MAIN ST

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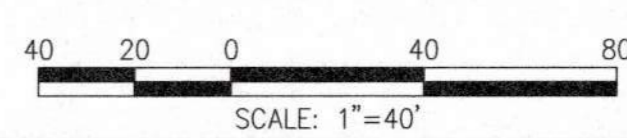
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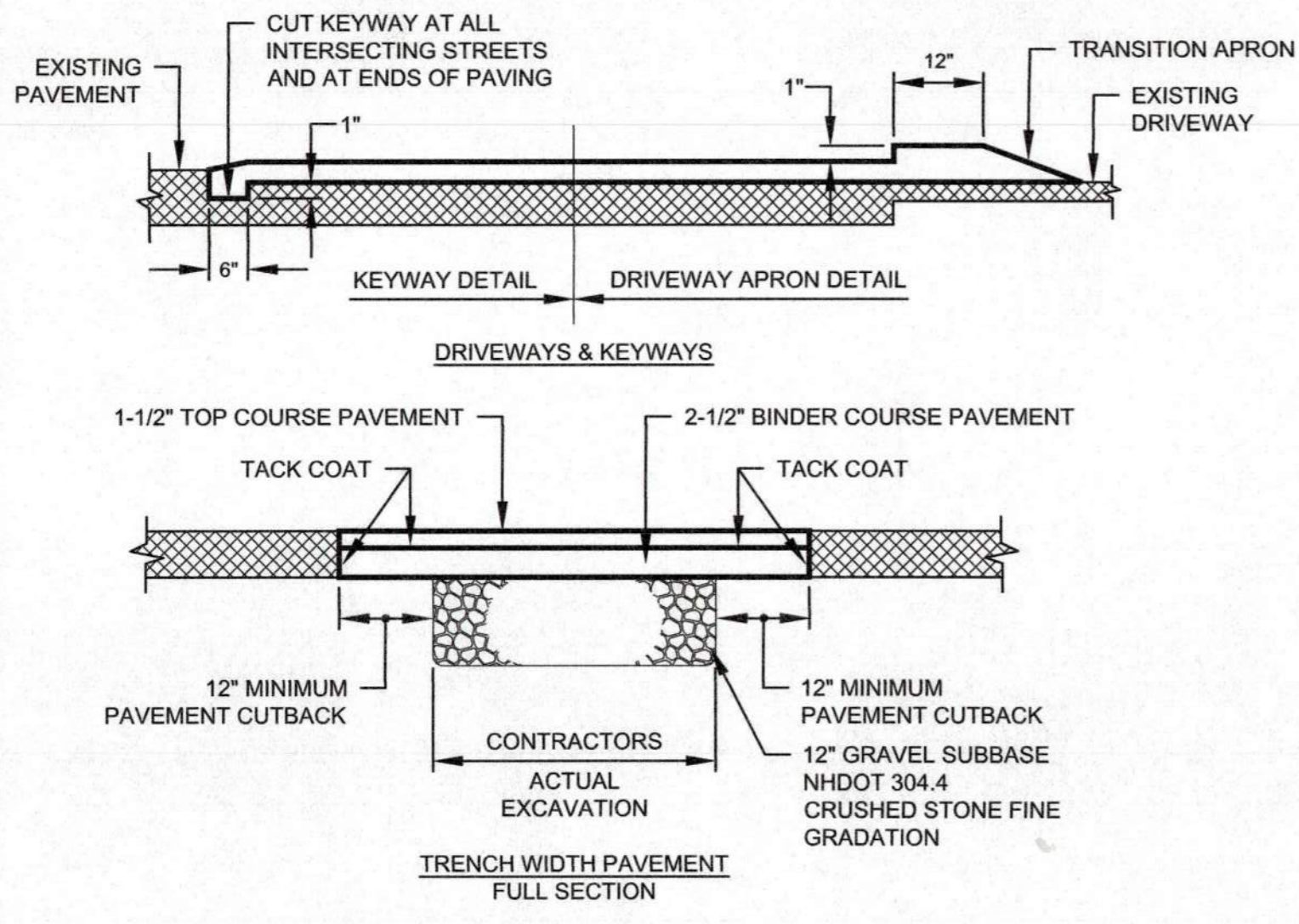
PLAN
SCALE: 1" = 40'



PLAN
SCALE: 1" = 40'



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- NOTES:**
1. REFERENCE TOWN OF SALEM STREET EXCAVATION REQUIREMENTS FOR ADDITIONAL REQUIREMENTS AND INFORMATION. THESE DETAILS ARE NOT COMPLETE WITHOUT ALL REFERENCE ITEMS.
 2. TEMPORARY PATCHING: AN APPROVED BITUMINOUS PLANT MIX MATERIAL SHALL BE PLACED AND CAREFULLY GRADED AND ROLLED TO THE ADJACENT PAVEMENT GRADE AS A TEMPORARY PATCH WHERE NEEDED. JUST BEFORE COMPLETION OF THE PROJECT AND AFTER SUITABLE EXPOSURE OF THE TEMPORARY PATCHES TO TRAFFIC COMPACTION, THE PAVEMENT SHALL BE SAW-CUT, REMOVED AND RE-PAVED AS SHOWN.
 3. SHOULDERS, OTHER THAN PAVED, DISTURBED DURING CONSTRUCTION, SHALL BE RESTORED BY EXCAVATING TO A DEPTH SUFFICIENT TO RECEIVE 6" CRUSHED BANK RUN GRAVEL WHICH SHALL BE GRADED AND COMPACTED ON A SLOPE OF 5% AWAY FROM THE PAVEMENT OR AS ORDERED BY THE TOWN. PAVED SHOULDER SHALL BE RECONSTRUCTED WITH IN-KIND GEOMETRY.
 4. TRAFFIC SHALL BE MAINTAINED, CONTROLLED, AND PROTECTED BY SUITABLE WARNING AND/OR CHANNELING DEVICES, ADVANCE WARNING SIGNS AND FLAGS DURING THE PERFORMANCE OF THE WORK IN ACCORDANCE WITH THE TOWN REQUIREMENTS AND ACCEPTED CONSTRUCTION PRACTICES.
 5. THE CONTRACTOR SHALL MARK ALL HAZARDS WITHIN THE LIMITS OF THE PROJECT AND CONNECTING ROADS. THESE DEVICES SHALL BE MOVED, SUPPLEMENTED, CHANGED OR REMOVED DURING THE PROGRESS OF THE CONSTRUCTION. UNIFORMED TRAFFIC CONTROL OFFICERS SHALL BE PROVIDED FOR THE PROTECTION OF THE PUBLIC WHILE WORKING WITHIN THE TOWN RIGHT-OF-WAY.
 6. UPON COMPLETION OF BACKFILL OPERATIONS THE EXISTING ROAD GRAVELS SHALL BE OVER EXCAVATED 12" BEYOND THE TRENCH WALL. THIS WORK SHALL NOT BE COMPLETED PRIOR TO COMPLETING BACKFILL AND COMPACTION.
 7. IF EXISTING PAVEMENT DEPTH IS >4" CONTRACTOR SHALL USE ADDITIONAL BINDER COURSE TO MATCH EXISTING DEPTH.
 8. IF PATCHES ARE CLOSE TOGETHER (AS DETERMINED BY THE ENGINEER) THEY SHALL BE PAVED AS A SINGLE PATCH BY MILLING AND PLACING TOP COURSE OVER BOTH TRENCHES.

REQUIRED LENGTH OF RESTRAINED JOINTS FROM FITTINGS (FEET)

PIPE SIZE	90° BEND	45° BEND OR WYE BRANCH	22 1/2" BEND	11 1/4" BEND	PLUG, CAP OR IN-LINE VALVE	TEE (BRANCH)
6"	25 (30.5)	10.5 (12.5)	5 (6)	2.5 (3)	43 (64)	34 (51)
8"	33 (40)	13.5 (16.5)	6.5 (8)	3 (4)	55 (82)	47 (70)
10"	40 (48.5)	16.5 (20)	8 (9.5)	4 (5)	67 (100)	58 (87)
12"	47 (56.5)	19.5 (23.5)	9.5 (11.5)	4.5 (5.5)	79 (118)	70 (105)
16"	59.5 (72)	24.5 (30)	12 (14.5)	6 (7)	101 (152)	92 (139)
20"	72 (86.5)	30 (36)	14.5 (17)	7 (8.5)	123 (184)	114 (171)
24"	84 (100)	35 (41)	16.5 (20)	8 (10)	144 (216)	134 (202)
30"	100 (120)	41 (50)	20 (24)	10 (12)	174 (261)	165 (247)

- NOTES:**
1. RESTRAINED LENGTHS LISTED IN PARENTHESES ARE FOR PIPE WRAPPED IN POLYETHYLENE. THE OTHER ASSOCIATED LENGTHS ARE FOR PLAIN UNWRAPPED DUCTILE IRON PIPE.
 2. THE CONTRACTOR SHALL USE THIS TABLE IN CONJUNCTION WITH THE APPROPRIATE PIPE SPECIFICATION SECTION.

TABLE 1: RESTRAINED JOINT TABLE

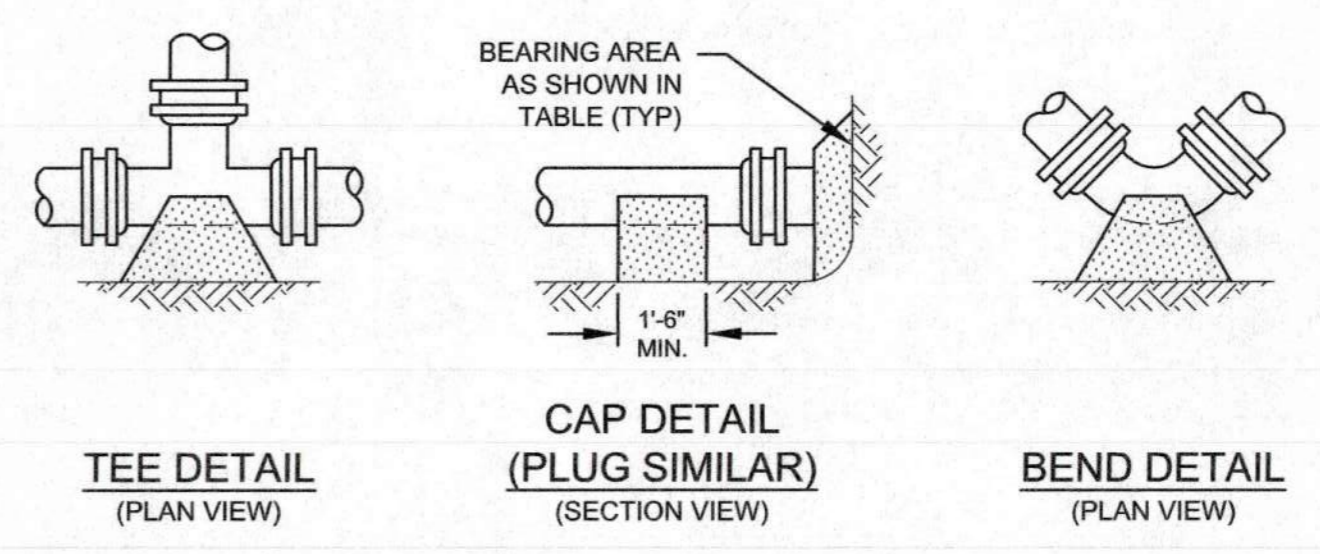
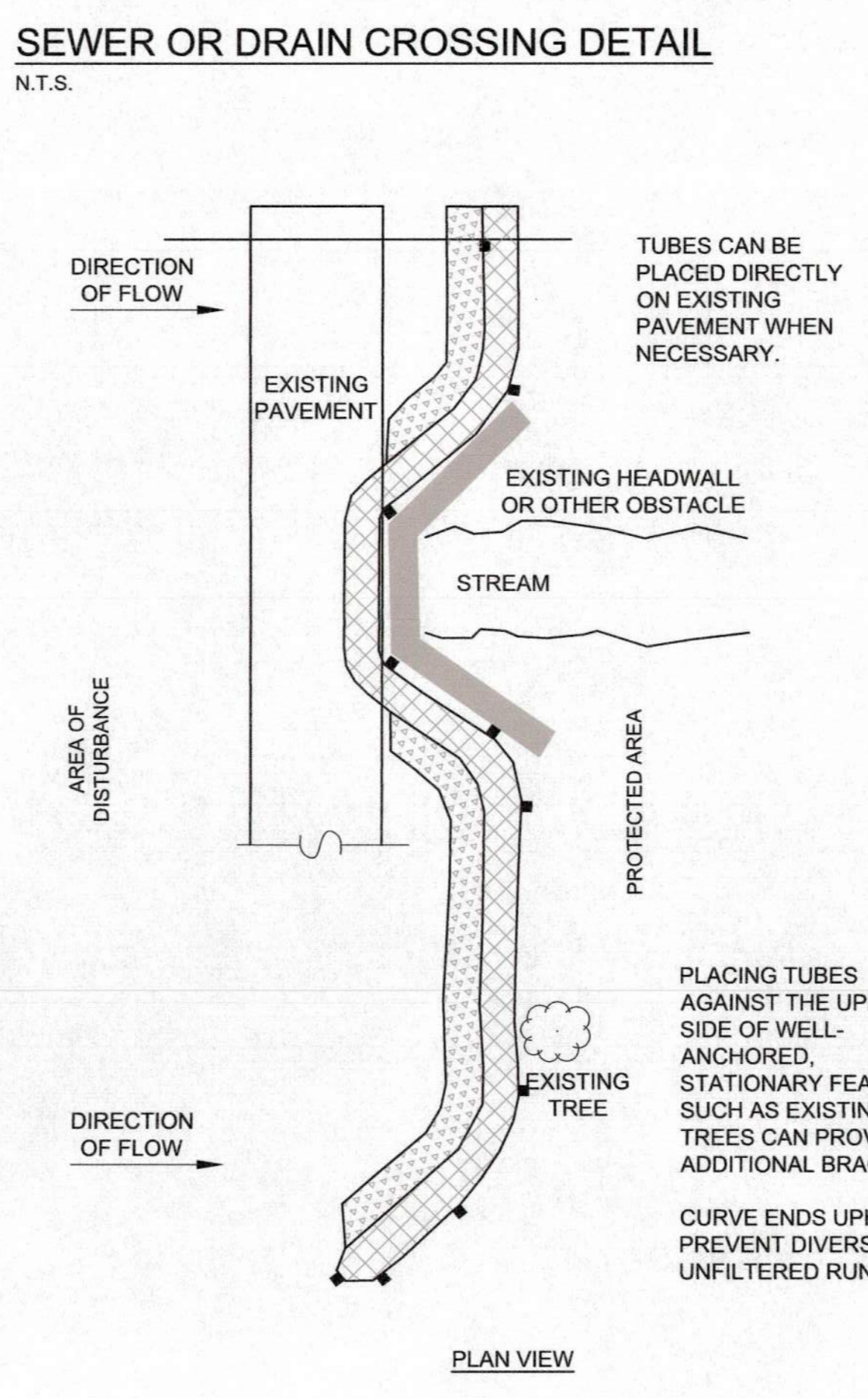
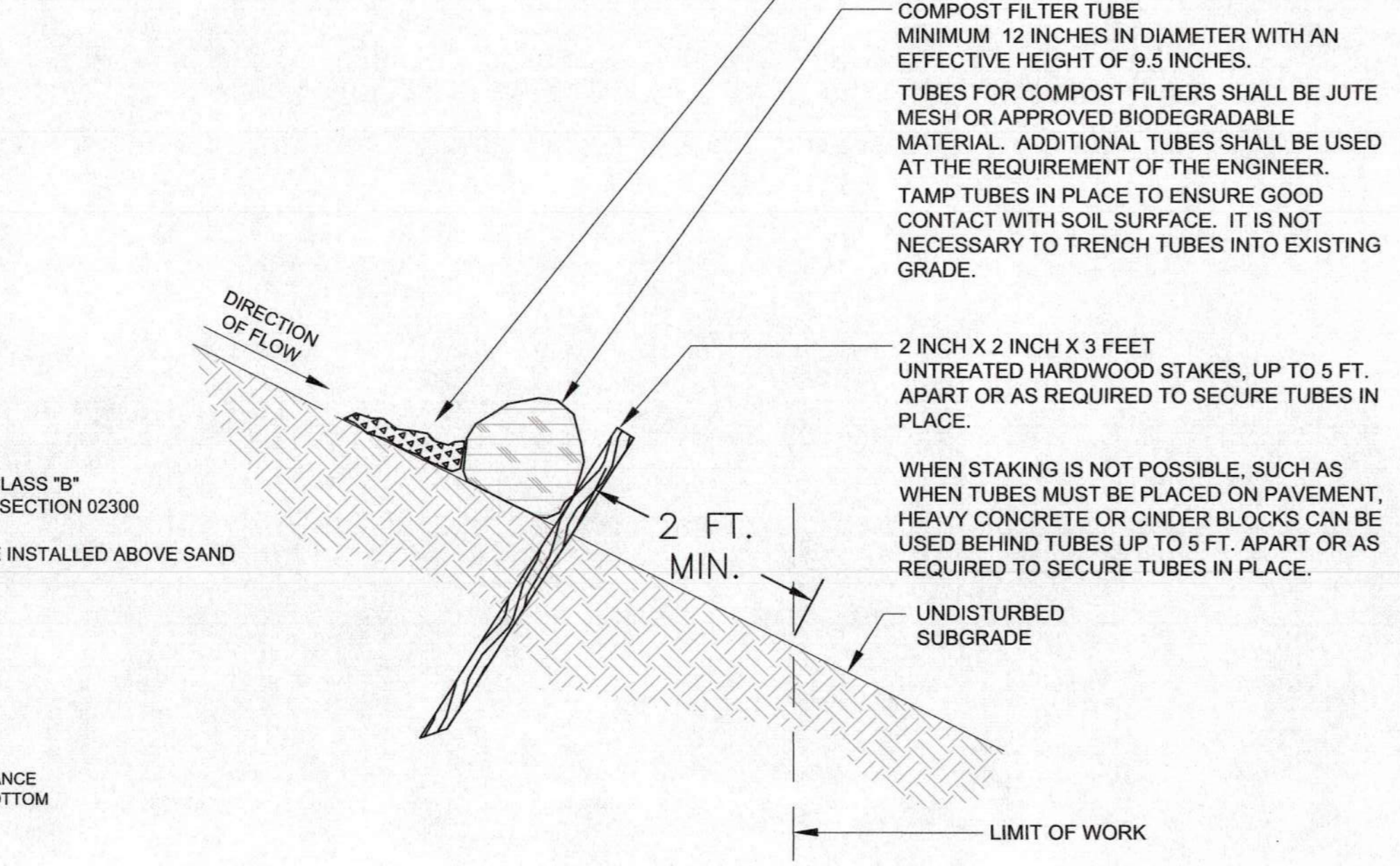
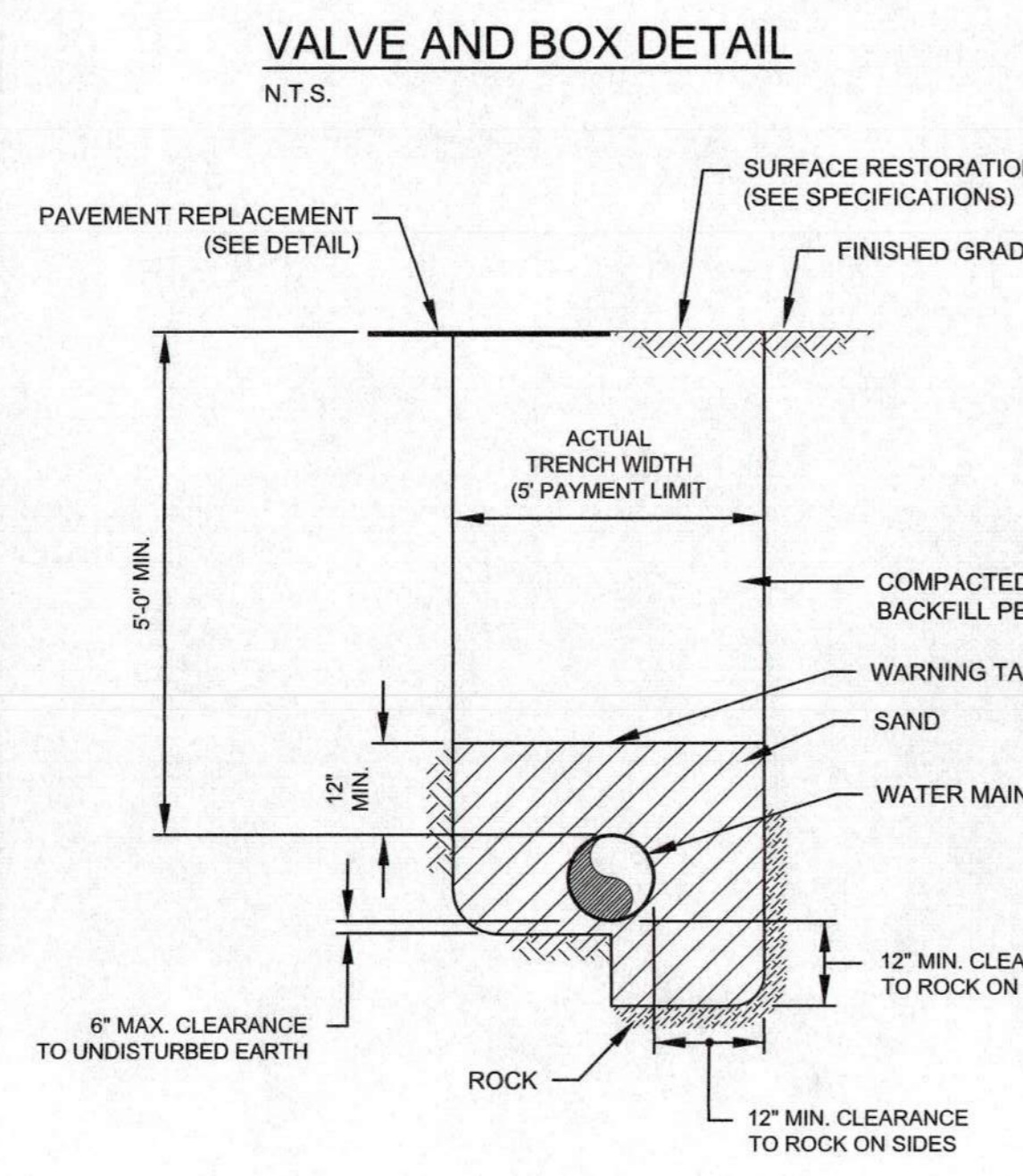
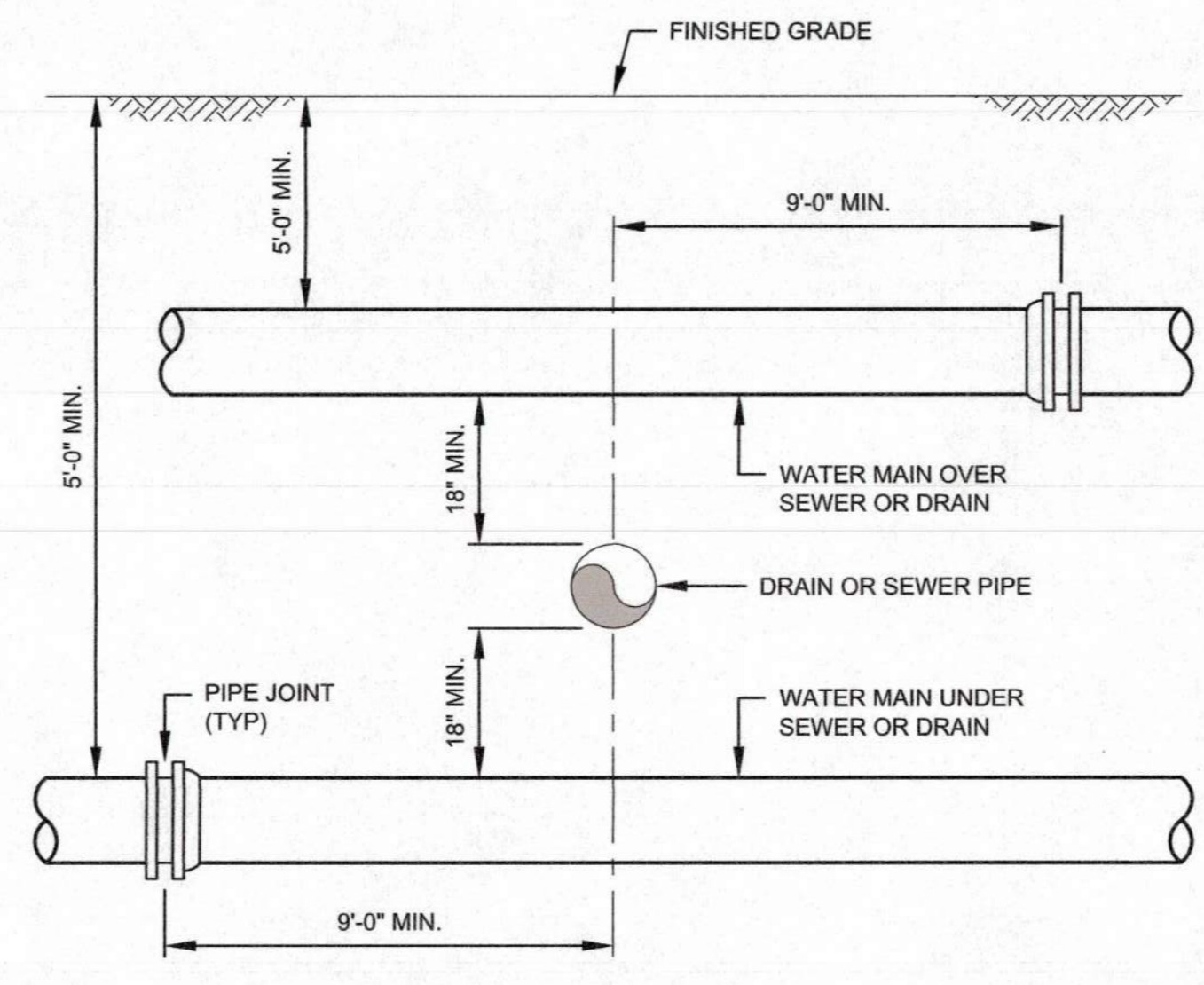
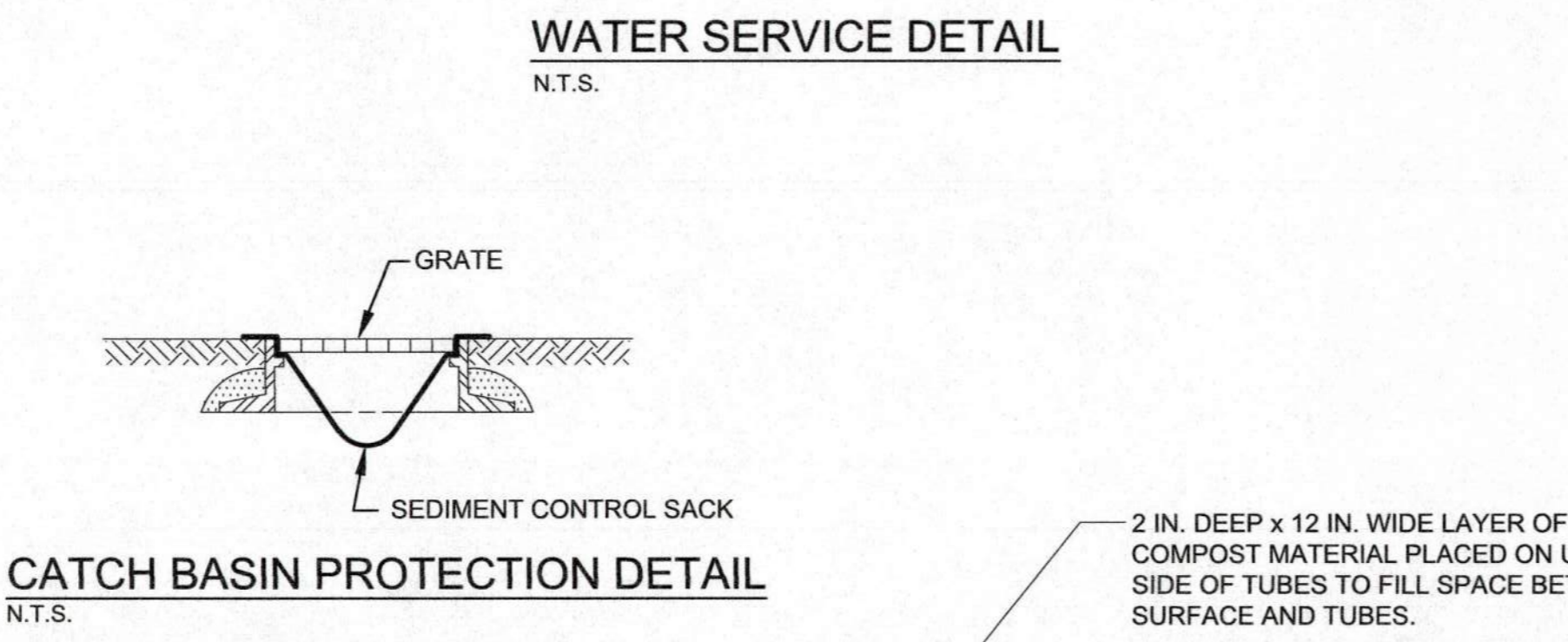
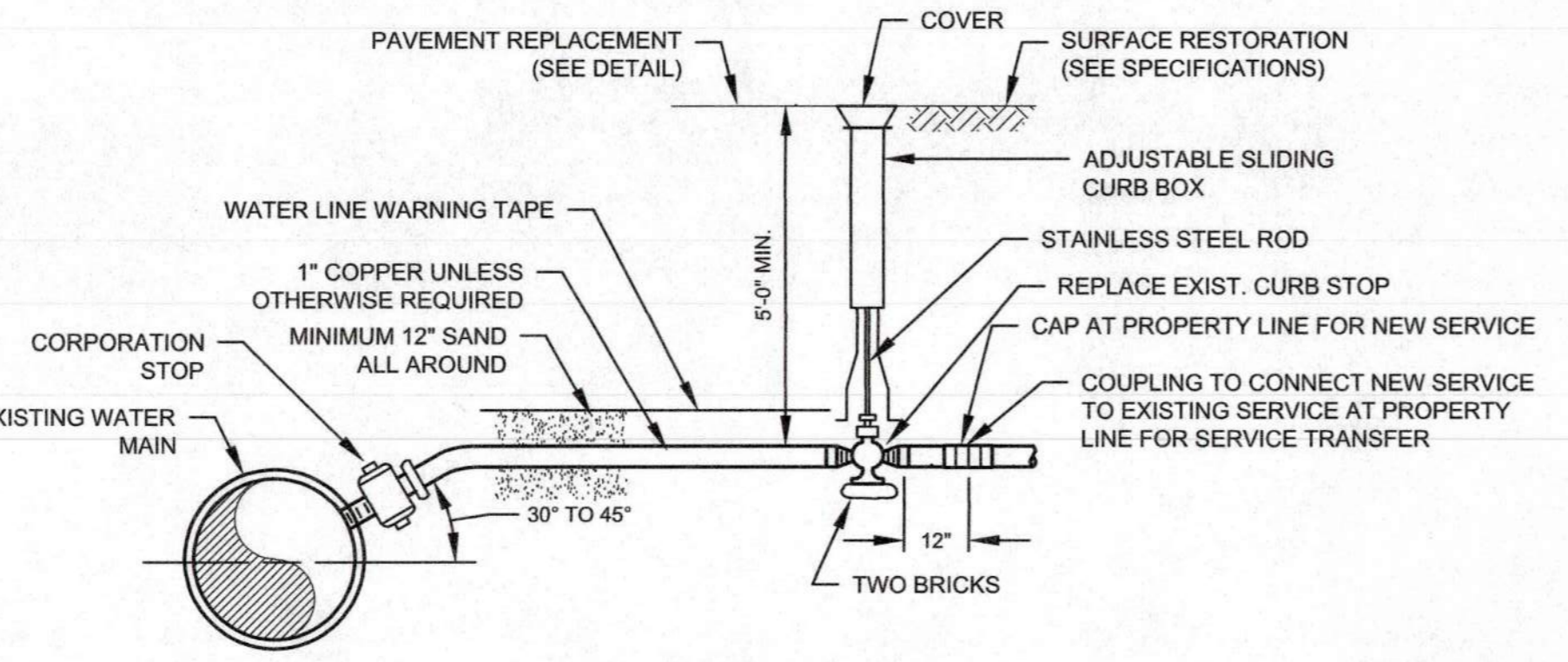
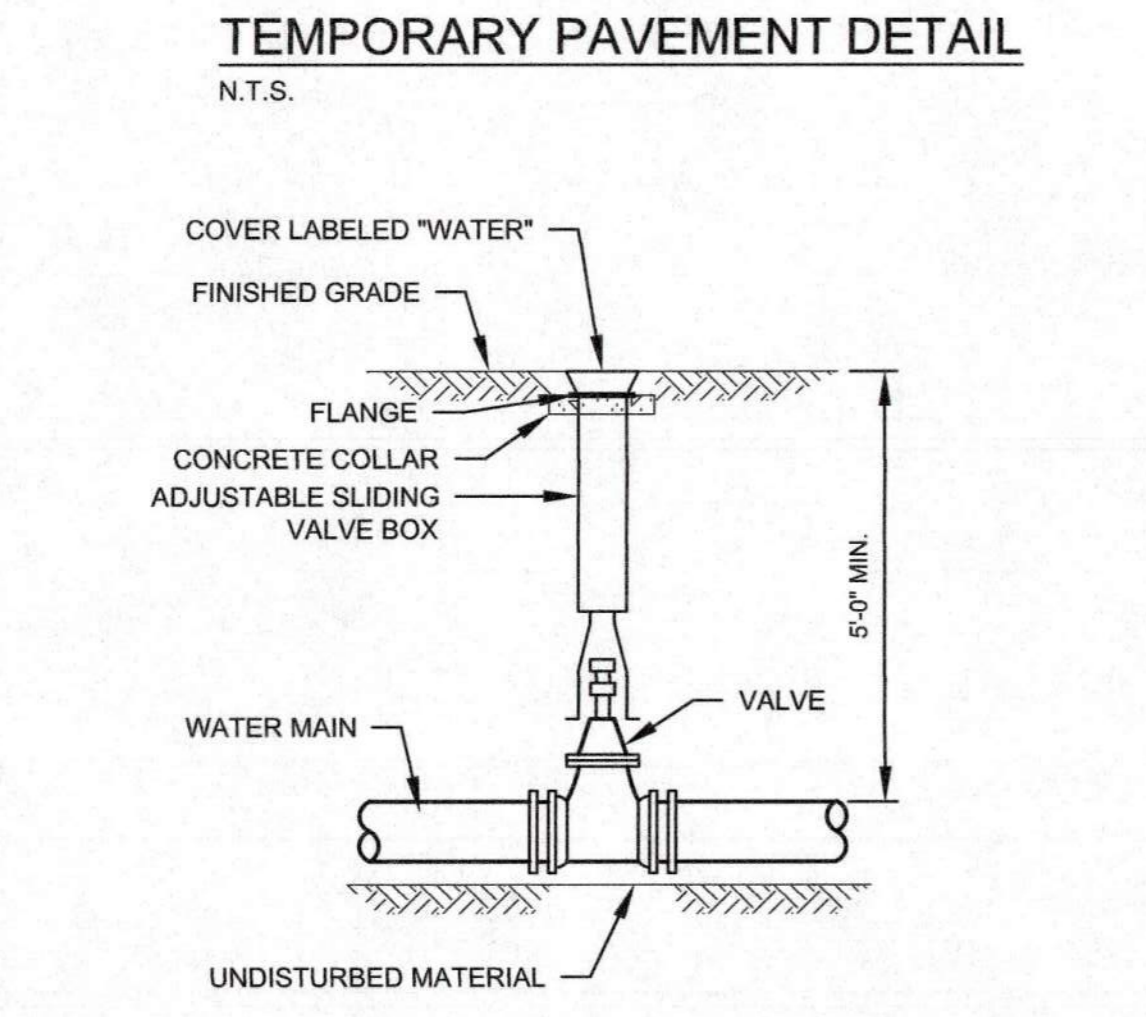
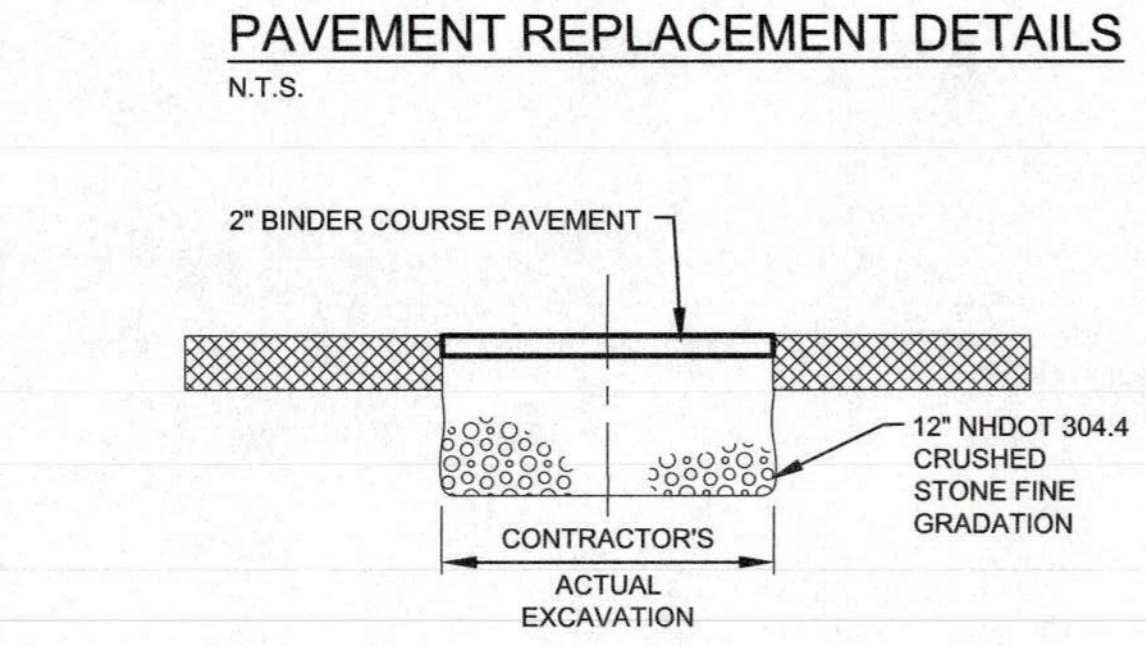


TABLE OF CONCRETE THRUST RESTRAINT MINIMUM BEARING AREAS IN SQUARE FEET AGAINST UNDISTURBED MATERIAL FOR WATER MAIN FITTINGS

SIZE OF MAIN	90° BENDS, TEES, CAPS AND PLUGS	45° BENDS AND WYES	22-1/2" BENDS	11-1/4" BENDS
6", 8"	5	4	2	2
10", 12"	12	9	5	2

- NOTES:**
1. CONCRETE THRUST RESTRAINT SHALL ONLY BE USED WHERE OTHER MEANS OF RESTRAINT ARE NOT FEASIBLE.
 2. CONTRACTOR SHALL USE CARE TO AVOID PLACEMENT OF CONCRETE ON THE FITTING JOINTS

CONCRETE THRUST RESTRAINT FOR FITTINGS
N.T.S.



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