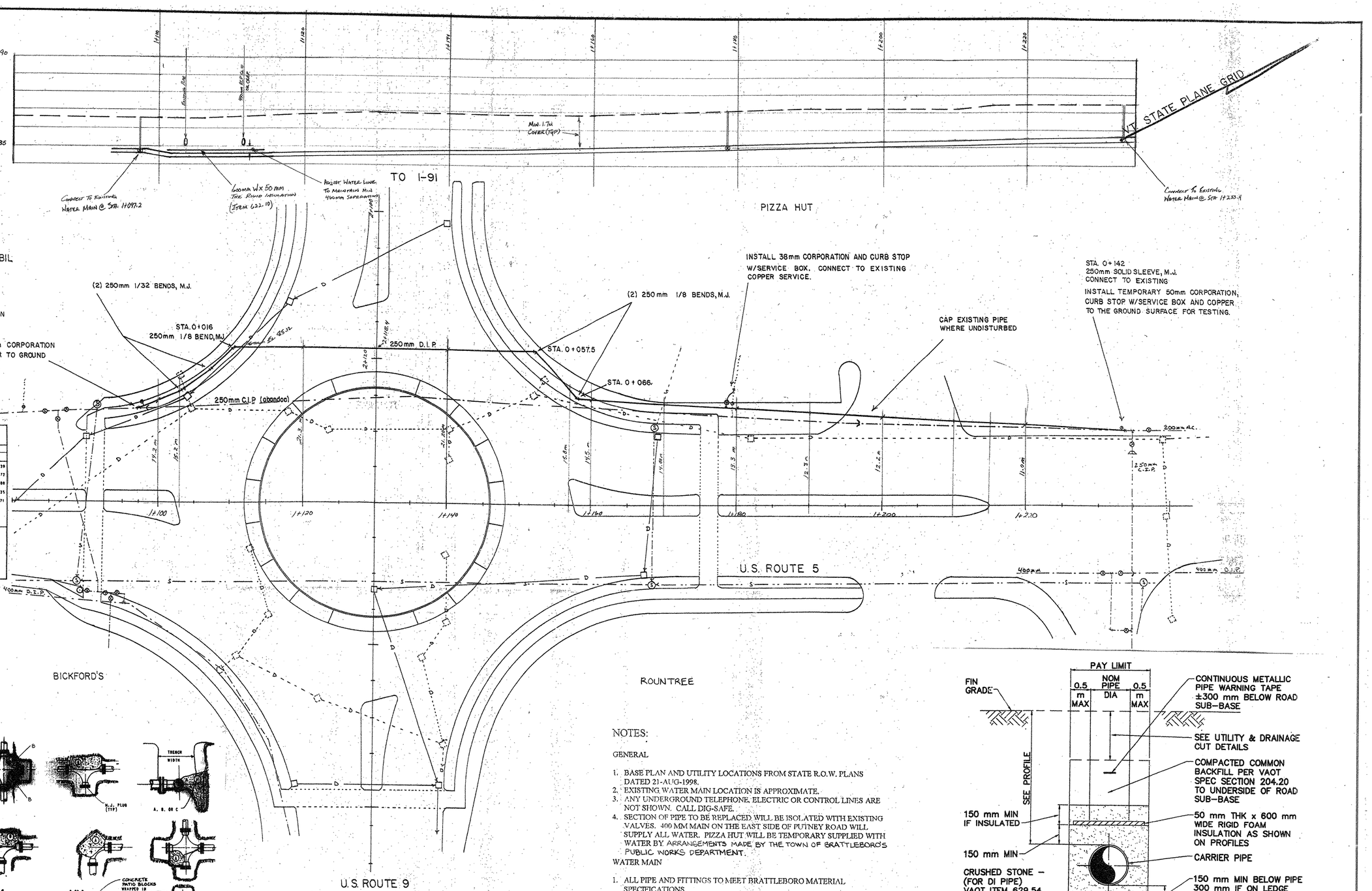


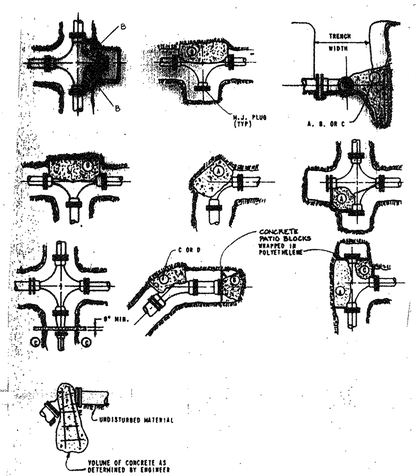
SQUARE FEET OF CONCRETE THRUST BLOCKING BEARING ON UNDISTURBED MATERIAL												
REACTION TYPE	PIPE SIZE											
TEST PRESSURE = 100 PSI	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"	30"	36"
Ⓐ 90°	0.89	2.19	3.92	5.57	8.02	10.91	15.91	18.02	24.06	34.64	53.83	77.39
Ⓑ 180°	0.65	1.55	2.76	4.19	6.09	8.37	10.89	13.87	17.01	24.49	38.06	54.72
Ⓒ 45°	0.48	1.19	2.12	3.01	4.66	5.91	8.34	9.71	13.02	19.[illegible]	29.13	41.88
Ⓓ 22 1/2°	0.25	0.60	1.08	1.54	2.37	3.01	4.25	4.97	6.64	9.56	14.85	21.35
Ⓔ 11 1/4°	0.13	0.30	0.54	0.77	1.19	1.52	2.12	2.51	3.33	4.78	7.45	10.71

OTHER TEST PRESSURES FOR THE ABOVE REACTIONS

SQUARE FEET OF CONCRETE THRUST BLOCKING FOR OTHER TEST PRESSURES IS DIRECTLY PROPORTIONAL TO THE ABOVE TABLE. FOR INSTANCE, AT 200 PSI TEST PRESSURE THE ABOVE NUMBERS DOUBLE.

LEGEND

- PROPOSED WATER MAIN
- EXISTING WATER MAIN
- SANITARY SEWER
- EXISTING DRAINAGE
- PROPOSED DRAINAGE
- WATER SERVICE LINE
- VALVE
- HYDRANT
- CAPPED PIPE
- BEND
- S. SEWER MANHOLE
- PROPOSED DRAIN INLET
- EXISTING DRAIN INLET



THRUST BLOCK DETAIL
NOT TO SCALE

NOTES:

1. POUR THRUST BLOCKS AGAINST UNDISTURBED MATERIAL. WHERE TRENCH WALL HAS BEEN DISTURBED, EXCAVATE LOOSE MATERIAL AND EXTEND THRUST BLOCK TO UNDISTURBED MATERIAL. NO JOINTS SHALL BE COVERED WITH CONCRETE.
2. ON BENDS AND TEES, EXTEND THRUST BLOCKS FULL LENGTH OF FITTING.
3. PLACE CONCRETE PATIO BLOCKS IN FRONT OF ALL PLUGS BEFORE POURING THRUST BLOCK.
4. REQUIREMENTS OF THE ABOVE TABLE PRESUME MINIMUM SOIL BEARING OF 1 TON PER SQUARE FOOT, AND MAY BE VARIED BY THE ENGINEER TO MEET OTHER CONDITIONS ENCOUNTERED.
5. Retainer glands are required for all mechanical joints. These glands do not reduce the requirements for thrust restraint.
6. All fittings shall be wrapped in polyethylene or building paper prior to installation of concrete restraint.
7. Threaded rod shall be ANSI A242 FY50 pipe restraint nuts to match AWWA C111. Threaded rods and nuts to be field coated with bituminous paint.

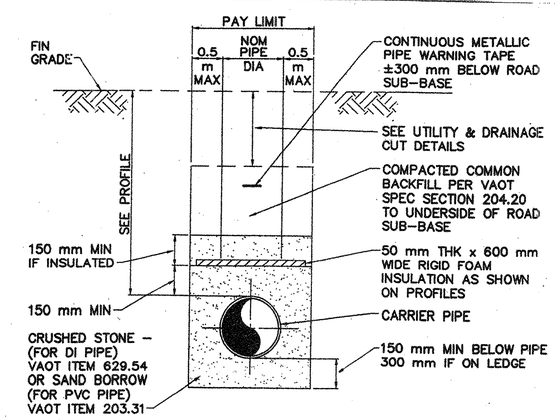
NOTES:

GENERAL

1. BASE PLAN AND UTILITY LOCATIONS FROM STATE R.O.W. PLANS DATED 21-AUG-1998.
2. EXISTING WATER MAIN LOCATION IS APPROXIMATE.
3. ANY UNDERGROUND TELEPHONE, ELECTRIC OR CONTROL LINES ARE NOT SHOWN. CALL DIG-SAFE.
4. SECTION OF PIPE TO BE REPLACED WILL BE ISOLATED WITH EXISTING VALVES. 400 MM MAIN ON THE EAST SIDE OF PUTNEY ROAD WILL SUPPLY ALL WATER. PIZZA HUT WILL BE TEMPORARY SUPPLIED WITH WATER BY ARRANGEMENTS MADE BY THE TOWN OF BRATTLEBORO'S PUBLIC WORKS DEPARTMENT.

WATER MAIN

1. ALL PIPE AND FITTINGS TO MEET BRATTLEBORO MATERIAL SPECIFICATIONS.
2. ALL FITTINGS SHALL INCLUDE RETAINER TYPE GLANDS
3. CONCRETE THRUST BLOCKS WILL BE REQUIRED AT ALL BENDS.
4. WATER PIPE MINIMUM DEPTH TO BE 1.7 METERS TO TOP OF PIPE
5. PIPE TO BE PRESSURE AND LEAKAGE TESTED TO AWWA STANDARDS.
6. TEMPORARY CORPORATIONS FOR TESTING WILL BE TURNED OFF AND CAPPED AT COMPLETION OF WORK.
7. EXISTING PIPE AT STA. 0+142 IS BELIEVED TO BE 250 MM CIP. A 250>200 MM REDUCER WILL BE REQUIRED IF PIPE IS FOUND TO BE 200MM.
8. MAINTAIN A 3-METER HORIZONTAL SEPERATION FROM SANITARY SEWERS.
9. WATER MAIN CROSSING OF SEWER SERVICE TO PIZZA HUT MAY REQUIRE REPLACEMENT OF SEWER WITH 6 METERS OF WATER PIPE IF 450 MM SEPARATION CAN NOT BE MAINTAINED.



PIPE BEDDING DETAIL
NOT TO SCALE

TOWN OF BRATTLEBORO, VT.

DEPARTMENT OF PUBLIC WORKS

WATER MAIN REPLACEMENT AT ROUTES 5, 9 AND I-91

SCALE: 1:250 METRIC GHK 34-67 2/4/99