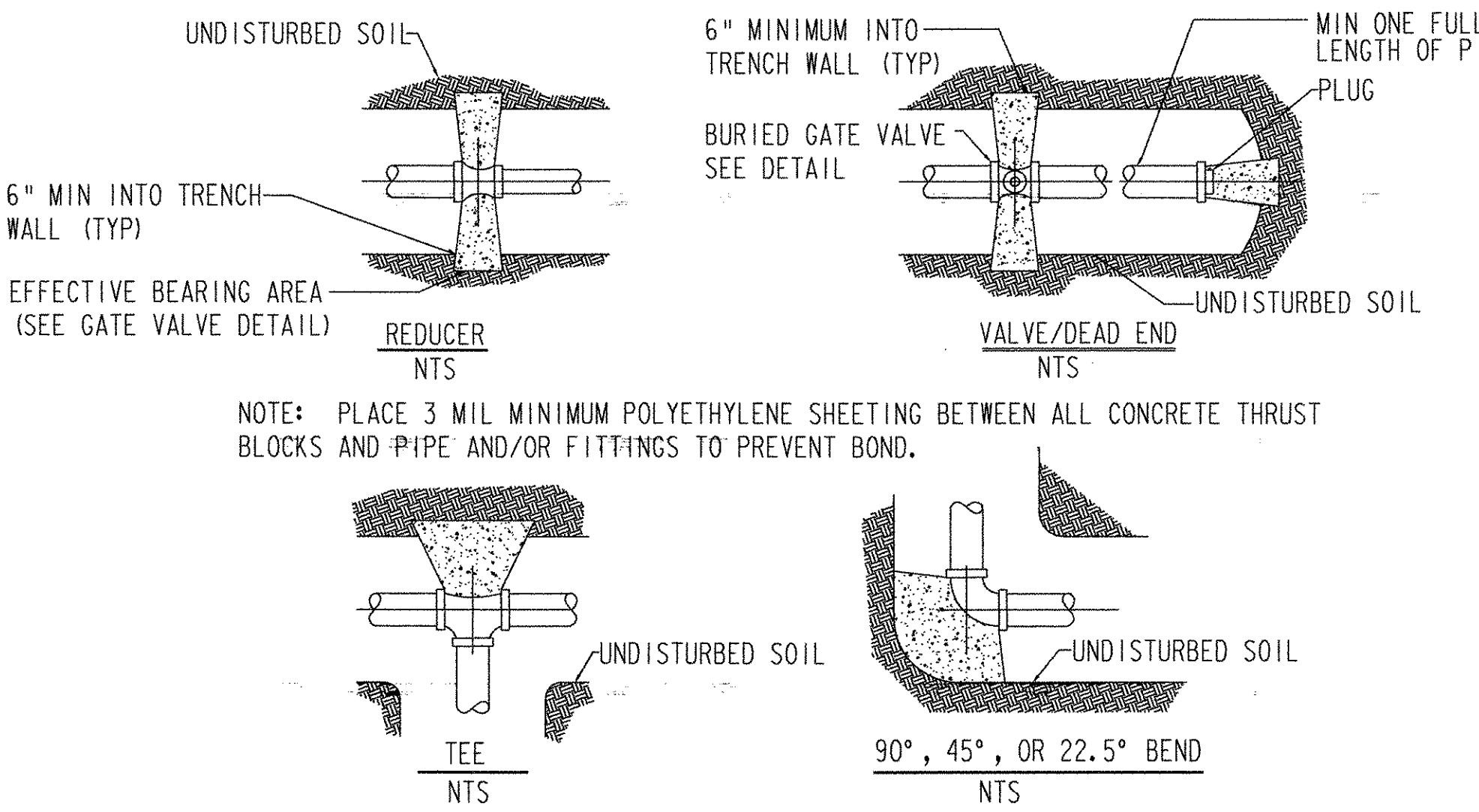


CONSTRUCTION NOTES:

- ALL WORK SHALL BE COMPLETED AND TESTED IN ACCORDANCE WITH THE TOWN OF BENNINGTON CONSTRUCTION ORDINANCE, STATE AGENCY OF NATURAL RESOURCES REGULATIONS, STATE AGENCY OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION, 1990 EDITION AND AWWA WATERLINE CONSTRUCTION STANDARDS C600 AND C652.
- EXISTING UTILITIES ARE APPROXIMATE ONLY AND MAY NOT BE COMPLETE. THE CONTRACTOR SHALL FIELD VERIFY ALL UTILITY CONFLICTS PRIOR TO THE PLACEMENT OF PIPE. ALL DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER. THE CONTRACTOR SHALL CONTACT 'DIG SAFE' (800.225.4977) PRIOR TO ANY CONSTRUCTION.
- THE CONTRACTOR SHALL PROTECT AND SUPPORT EXISTING UTILITIES (i.e. POWER POLES, SEWER LINES, ETC.) AS NECESSARY DURING CONSTRUCTION. UTILITY COMPANIES SHALL BE CONTACTED BY THE CONTRACTOR WHEN CONSTRUCTION IS INITIATED IN THE VICINITY OF THEIR UTILITIES. THE CONTRACTOR SHALL COMPACT ALL MATERIAL UNDER EXISTING UTILITIES TO PREVENT SETTLEMENT. SPECIAL CARE AND COORDINATION SHALL BE OBSERVED WHILE WORKING NEAR POWER POLE. CONTRACTOR TO COORDINATE AND PAY FOR ANY NECESSARY UTILITY COMPANY CHARGES FOR TEMPORARY BRACING OF POLE.
- THE CONTRACTOR SHALL MAINTAIN AND PROTECT ALL FOUNDATIONS, ROADS, TREES AND VEGETATION DURING CONSTRUCTION. THE CONTRACTOR SHALL REPAIR/RESTORE ALL DAMAGE TO EXISTING UTILITIES, ROADS/DRIVES, WALKWAYS AND WALLS AS A DIRECT OR INDIRECT RESULT OF THE CONSTRUCTION AT NO COST TO THE OWNER.
- INSTALL EXPANSION JOINT NEAR BRIDGE WEST END ABUTMENT TO ALLOW FOR MAINTENANCE ACCESS. JOINT TO BE "EX-TEND 200" SINGLE BALL TYPE AS MANUFACTURED BY EBAA IRON SALES (817-629-1731) OR ENGINEER APPROVED EQUAL. SUPPORT JOINT TO MANUFACTURER'S INSTALLATION RECOMMENDATIONS.
- PIPING MATERIALS TO BE ATLANTIC STATES OR APPROVED EQUAL, CLASS 52 MECHANICAL JOINT DUCTILE IRON PIPE WITH MEGALUG RESTRAINTS. ALL PIPE TO BE MECHANICALLY RESTRAINED AT JOINTS.
PIPE INSULATION: 2" THICKNESS POLYISOCYANURATE, 'TRYMER 2000'
PIPE INSULATION JACKET: 'PERMA-JAC SX' PVC JACKET ON MAIN PIPE AND CORRUGATED ALUMINUM JACKET AT BRIDGE DIAPHRAGM LOCATIONS.
- IF THERE ARE ANY CONFLICTS OR INCONSISTENCIES WITH THE PLANS OR SPECIFICATIONS, THE CONTRACTOR SHALL CONTACT THE ENGINEER FOR VERIFICATION BEFORE WORK CONTINUES ON THE ITEM IN QUESTION.
- CONTRACTOR TO DESIGN PVC WATERLINE AS PART OF TEMPORARY BRIDGE PROJECT. DESIGN WILL BE IN ACCORDANCE WITH TOWN OF BENNINGTON STATE AGENCY OF NATURAL RESOURCES AND AMERICAN WATER WORKS ASSOCIATION STANDARDS. TOWN ENGINEER TO APPROVE DESIGN PRIOR TO CONSTRUCTION. TEMPORARY WATERLINE TO BE INSULATED IF CONTRACTOR INTENDS TO MAINTAIN WATERLINE OVER WINTER. LUMP SUMP FOR WATERLINE ON BRIDGE TO START AND STOP 10' OFF TEMPORARY BRIDGE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING THE TOWN OF BENNINGTON OF ALL WORK WITHIN THE STREET RIGHT-OF-WAY. THE CONTRACTOR SHALL COORDINATE WITH THE TOWN FOR ALL STREET EXCAVATIONS AND WATER LINE CONNECTIONS. STATE-CERTIFIED FLAG PERSONS SHALL BE UTILIZED AT ALL TIMES WHENEVER WORK IS TO BE PERFORMED WITHIN ROADWAY LIMITS.
- CONTRACTOR SHALL CHLORINATE AND PRESSURE TEST NEW SEGMENT OF WATER PIPE PRIOR TO FINAL CONNECTION OF SYSTEM. TESTING SHALL BE IN ACCORDANCE WITH AWWA STANDARDS C600 AND C652.
- INSTALL IN LINE VALVE. INSTALLATION TO BE DONE LIVE. CONTRACTOR TO INSTALL ALL NEW PIPING FROM NEW IN LINE VALVE.
- INSTALL STAINLESS STEEL TAPPING SLEEVE AND 12" VALVE. NEW SLEEVE TO BE MODEL 3490AS BY POWER SEAL OR ENGINEER APPROVED EQUAL. AFTER PROJECT IS COMPLETED/TESTED/APPROVED BY TOWN CONTRACTOR TO INSTALL CAP ON VALVE AND ROD BACK TO SLEEVE/VALVE ASSEMBLY AND CLOSE VALVE.
- INSTALL "T" AND VALVE FOR FLUSHING. AFTER COMPLETION OF TESTING AND ACCEPTANCE BY TOWN/STATE CAP AND THRUST BLOCK "T".
- INSTALL TAPS FOR TESTING AND CHLORINATION AS REQUIRED. REVIEW LOCATIONS WITH TOWN PRIOR TO INSTALLATION.

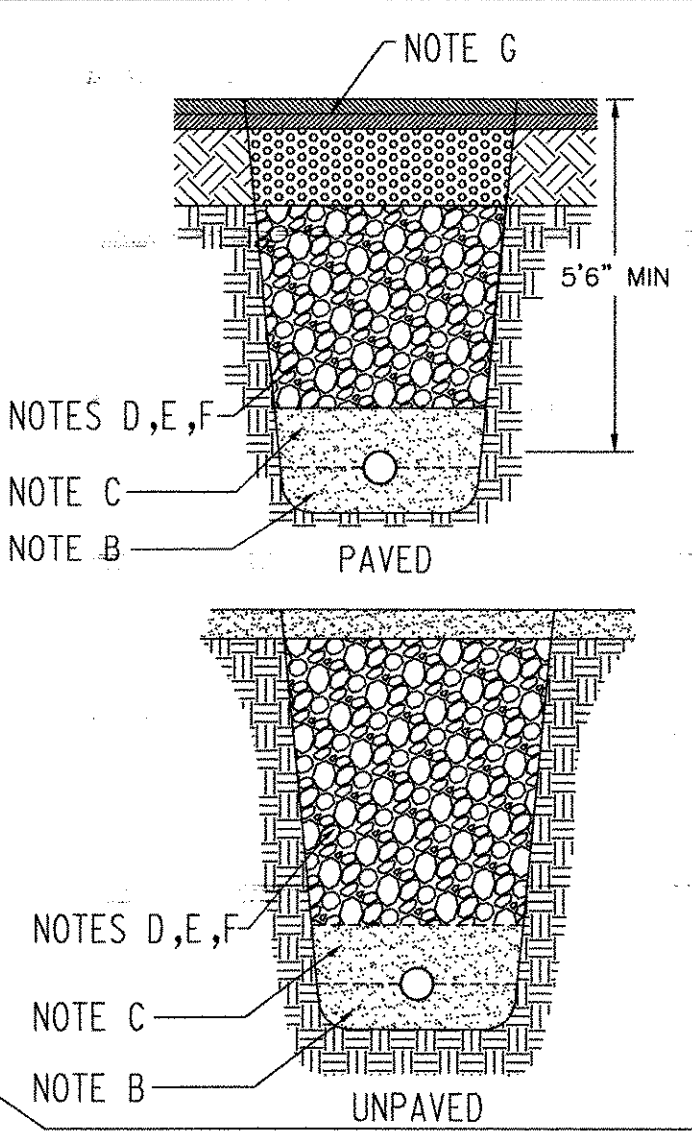
PIPE ROLLER HANGERS: DOUBLE ADJUSTABLE PIPE ROLLER SUPPORT, ROLLER TO BE BY PHD MANUFACTURING, INC OR ENGINEER APPROVED EQUAL. INSTALL STEEL SADDLE PROTECTION AT ROLLER. ROLLER/SUPPORT TO BE INSTALLED AT BELL SIDE OF PIPE, SEE DETAIL B&E.



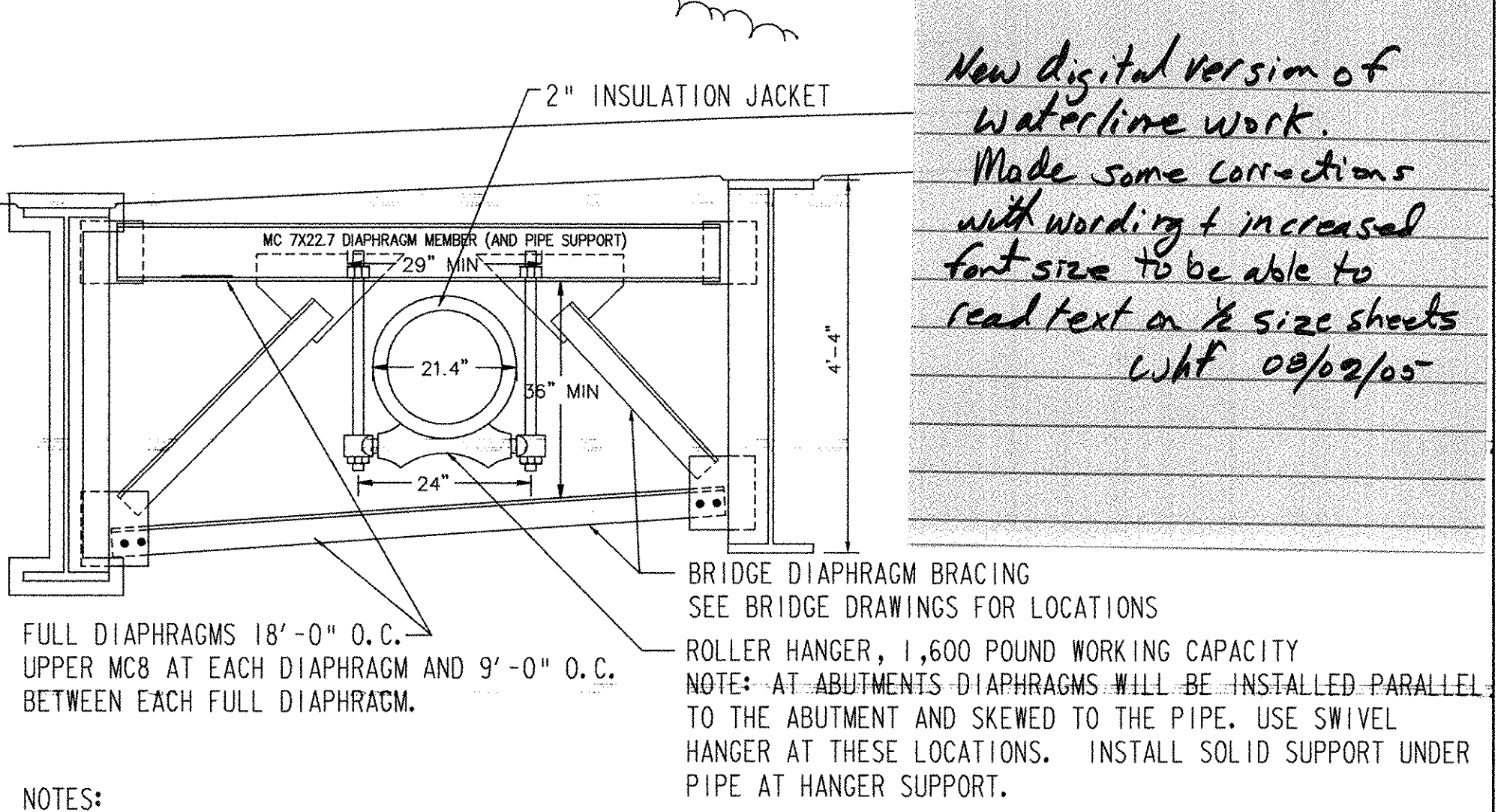
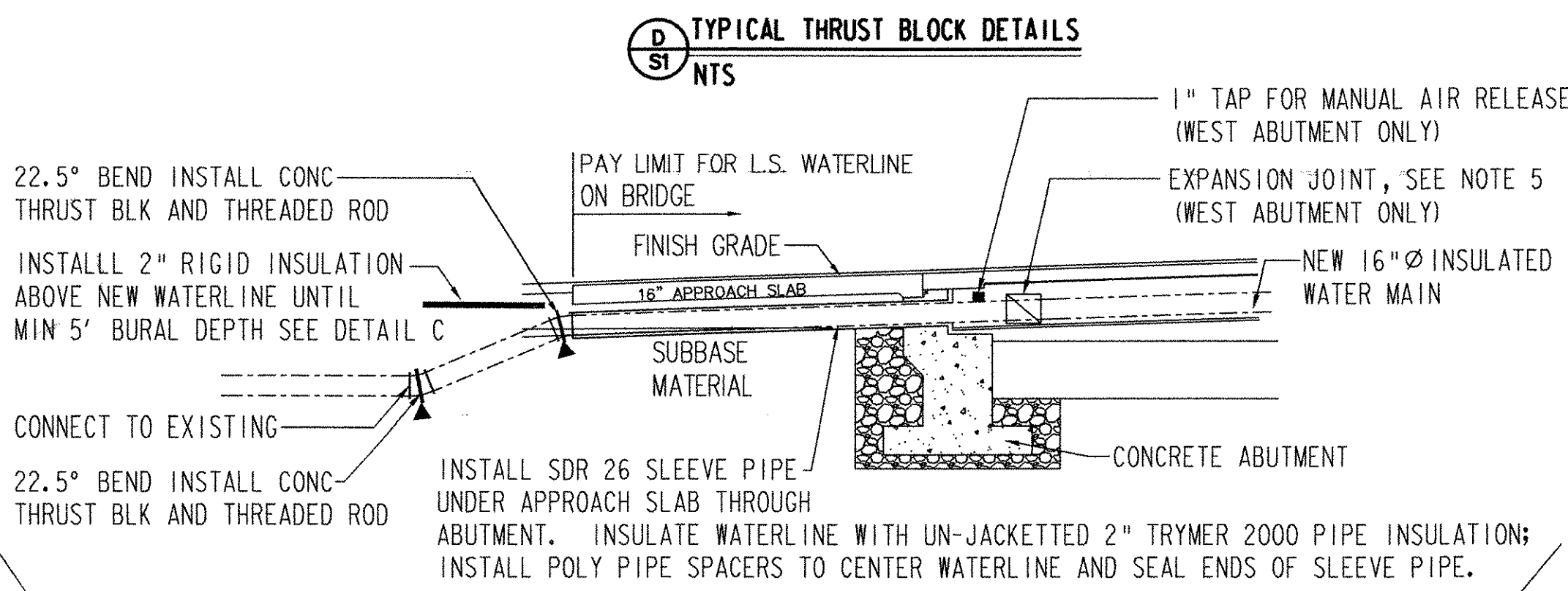
MINIMUM BEARING SURFACE AREA OF CONCRETE THRUST BLOCKS (IN SQUARE FEET)

ENDS & TEES	4"			6"			8"			12"			SOIL CONDITION	SAFE BEARING LOAD (PSF)			
	90° ELB	45° ELB	225° ELB	90° ELB	45° ELB	225° ELB	90° ELB	45° ELB	225° ELB	90° ELB	45° ELB	225° ELB					
0.5	1.0	0.5	0.5	1.0	1.5	1.0	0.5	2.0	2.5	1.5	1.0	4.0	5.5	3.0	1.5	SOUND SHALE	10000
1.5	2.0	1.0	0.5	3.0	4.0	2.0	1.0	4.5	6.5	3.5	2.0	10.0	14.0	7.5	2.0	CEMENTED GRAVEL AND SAND	4000
2.0	2.5	1.5	1.0	3.5	5.0	3.0	1.5	6.0	8.5	5.0	2.5	13.0	18.5	10.0	5.0	COARSE AND FINE COMPACT SAND	3000
2.5	3.5	2.0	1.0	5.5	7.5	4.0	2.0	9.0	13.0	7.0	3.5	20.0	27.5	15.0	8.0	MEDIUM CLAY (CAN BE SPADED)	2000
5.0	7.0	4.0	2.0	10.5	15.0	8.0	4.0	18.0	25.0	14.0	7.0	39.0	55.0	30.0	15.0	SOFT CLAY	1000

NOTE: REDUCER BEARING AREA = 45° BEND, ONE SIZE LARGER PIPE



- INSTALLATION SPECIFICATIONS:**
- MINIMUM BURIAL DEPTH 5'6" (4'-0" FOR SEWER) IF CONDITIONS PREVENT MINIMUM BURIAL DEPTH, ALL SECTIONS OF LINE LESS THAN MIN. DEPTH SHALL BE INSULATED WITH 1" THICKNESS RIGID FOAM INSULATION PER FOOT LESS THAN MINIMUM.
 - BED PIPE IN 6" OF CRUSHED STONE (PASSING 1/2" BUT RETAINED ON #4 SIEVE) IF IN WET CONDITIONS. PIPE SHALL NOT BE LAID IN UNCOMPACTED SOIL OR IN WATER. IF IN LEDGE CONDITIONS, BED PIPE IN A MINIMUM OF 6" OF CLEAN SAND. DO NOT REST PIPE ON LEDGE ROCK.
 - BACKFILL OVER PIPE W/ 12" MINIMUM SAND, COMPACTED ENTIRE WIDTH OF TRENCH. BACKFILL WITH BEDDING STONE TO 12" DEPTH IF IN WATER.
 - REMAINDER OF BACKFILL TO BE SELECT EARTH OR BANK RUN GRAVEL NOT GREATER THAN 6" IN LARGEST DIMENSION. BACKFILL TO BE COMPACTED IN 6" LIFTS UNDER ROADS AND PAVED AREAS.
 - BACKFILL SHALL CONSIST OF SUITABLE MATERIAL REMOVED FROM EXCAVATION, AND SHALL BE FREE OF CLODS, DEBRIS, FROZEN CHUNKS, PAVEMENT PIECES, LARGE STONES, ORGANIC MATERIAL OR ANY OTHER MATERIAL DEEMED UNSUITABLE BY THE ENGINEER.
 - BACKFILL SHALL BE COMPACTED TO 95% OF MAXIMUM DRY DENSITY IN ALL TRENCH EXCAVATIONS.
 - EDGES OF PAVEMENT SHALL BE CUT PRIOR TO EXCAVATION TO PREVENT LIFTING OF REMAINING PAVEMENT, AND FOLLOWING EXCAVATION PRIOR TO PAVEMENT PATCHING. PAVEMENT PATCH TO CONSIST OF 2" BASE, 1" TOPCOAT OVER COMPACTED BACKFILL.



- NOTES:**
- PROVIDE MC7X22.7 PIPE SUPPORT BEAMS AND ROLLER HANGERS 9'-0" ON CENTER. DIAPHRAGM AND INTERMEDIATE MC8X20 LOCATIONS WILL BE INDICATED ON THE BRIDGE SHOP DRAWINGS. SUBMIT BRIDGE SHOP DRAWINGS TO MSK ENGINEERING. FOR FINAL COORDINATION OF PIPE SUPPORTS.
 - THE BRIDGE DIAPHRAGM BRACING WILL ALLOW CLEARANCE FOR A 24" OVERALL PIPE AND JACKET DIMENSION. COORDINATE THE FINAL LOCATION OF THE PIPE WITH THE BRIDGE DIAPHRAGM BRACING. REMOVE AND RE-INSTALL THE BOTTOM DIAPHRAGM MEMBER AS REQUIRED TO INSTALL THE PIPE.

LEGEND:

- RESILIENT-WEDGE VALVE, 'OPEN-RIGHT' KENNEDY OR APPROVED EQUAL WITH 'MUELLER' CURB SERVICE BOX ROD TYPE, TWO HOLE COVER.
- NOTE: SEE CONSTRUCTION NOTES 11&12

APPROXIMATE LOCATION CONCRETE THRUST BLOCKS

REV.	DESCRIPTION	BY	DATE
Δ	REVISED SECTION B/S1 BASED ON AOT COMMENTS	JMD	07/22/02
Δ	REVISED PER STATE AOT COMMENTS	JMD	07/15/2002

MSK ENGINEERING AND DESIGN, INC.
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BENNINGTON, VT 05201
PH: (802) 447-3340 FAX: (802) 447-0702

WOODFORD WATER LINE BRIDGE CROSSING AT TREATMENT PLANT WOODFORD, VERMONT	DRAWN BY: JFE	CHECKED BY: JRS
DESCRIPTION: WATERLINE PLAN	SCALE: 1" = 20'	DATE: 11-13-00
rt9water.dwg	SHEET 57 OF 106	S-1

New digital version of waterline work. Made some corrections with wording & increased font size to be able to read text on 1/2 size sheets whf 08/02/05