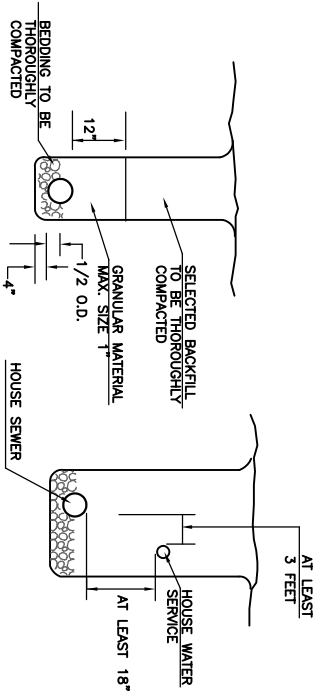
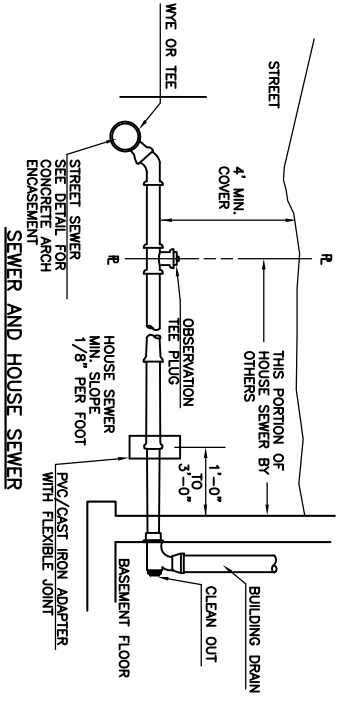
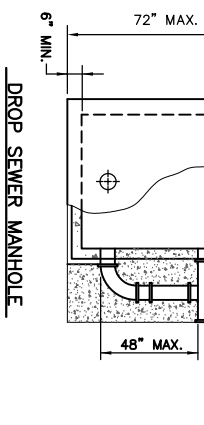


NOTE: MINIMUM SIZE PIPE FOR HOUSE/BUILDING SERVICES SHALL BE SIX (6) INCHES



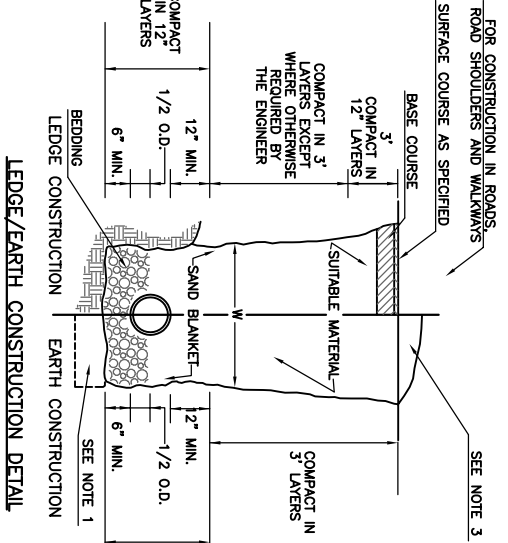
TRENCH CROSS SECTION

WATER & SEWER IN SAME TRENCH

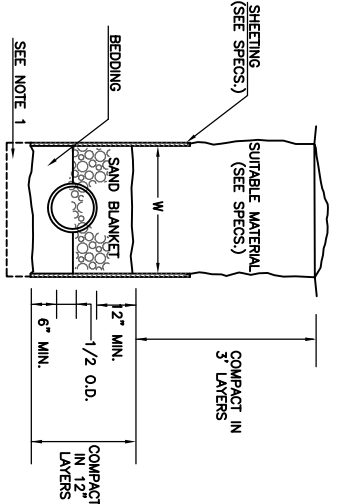


DROP SEWER MANHOLE

HOUSE SEWER DETAILS



LEDGE/EARTH CONSTRUCTION DETAIL



EARTH CONSTRUCTION WITH SHEETING

- ORDERED EXCAVATION OF UNSUITABLE MATERIAL BELOW GRADE. REFILL WITH BEDDING MATERIAL. SEE ALSO NOTE 2.
- W-MAXIMUM ALLOWABLE TRENCH WIDTH TO A PLANE 12 INCHES ABOVE THE PIPE. FOR PIPES 15 INCHES NOMINAL DIAMETER OR LESS, W SHALL BE NO MORE THAN 36 INCHES; FOR PIPES GREATER THAN 15 INCHES NOMINAL DIAMETER, W SHALL BE 24 INCHES PLUS PIPE O.D. W SHALL ALSO BE THE PAYMENT WIDTH FOR LEDGE EXCAVATION AND FOR ORDERED EXCAVATION BELOW GRADE.
- FOR CROSS COUNTRY CONSTRUCTION, SEE MOUNDING DETAIL, MISCELLANEOUS DETAILS - SEWERS (WHERE INDICATED) OR ROUND TO A HEIGHT OF 6\"/>

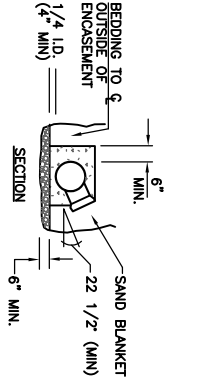
'RECORD DRAWING'

I HEREBY CERTIFY THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE INFORMATION CONTAINED HEREON CONFORMS TO THE RECORDS PROVIDED BY THE RESIDENT ENGINEER AND THE CONTRACTOR. ALL WORK SHOWN ON THIS DRAWING HAS BEEN COMPLETED AS SHOWN.
HOYLE, TANNER & ASSOCIATES, INC.

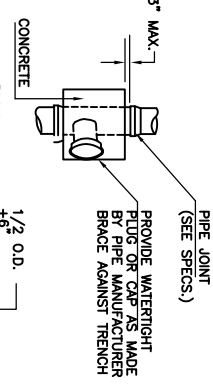
NOTE:

ALL PROJECT REQUIREMENTS AS SET FORTH ON THIS SHEET HAVE BEEN COMPLIED WITH DURING THE COURSE OF CONSTRUCTION. ALL NOTE WORDING CONTAINED HEREON IS UNDERSTOOD TO BE PAST TENSE.

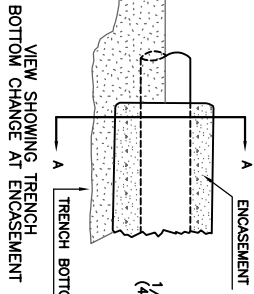
STANDARD TRENCH DETAILS



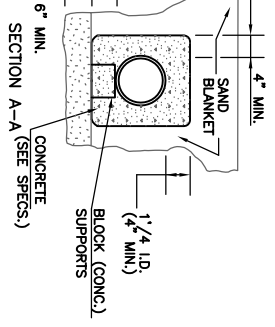
CONCRETE FULL ENGAGEMENT (NOT FOR PVC PIPES)



CONCRETE FULL ENGAGEMENT (NOT FOR PVC PIPES)



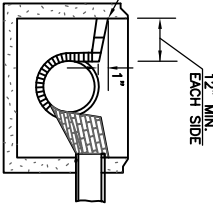
CONCRETE FULL ENGAGEMENT (NOT FOR PVC PIPE)



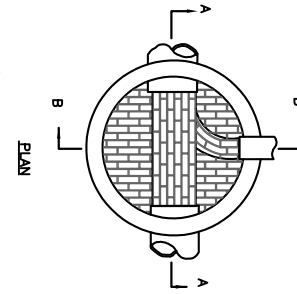
SECTION A-A (SEE SPECS.)

NOTE: INVERT AND SHELF TO BE PLACED AFTER LEAKAGE TEST

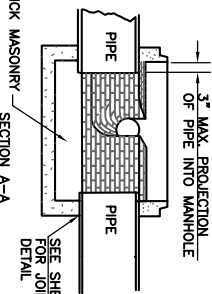
TOP OF SHELF SHALL BE 1\"/>



SECTION B-B



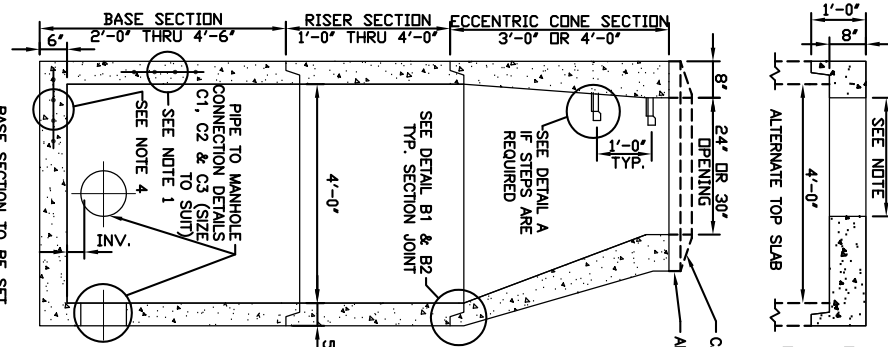
PLAN



SECTION A-A

- HORIZONTAL JOINTS BETWEEN SECTIONS OF PRECAST CONCRETE BARRELS SHALL BE OF THE TYPE APPROVED BY THE ENGINEER WHICH TYPE SHALL IN GENERAL DEPEND FOR WATER-TIGHTNESS UPON AN ELASTOMERIC OR MASTIC-LIKE GASKET.
- PIPE TO MANHOLE JOINTS SHALL BE ONLY AS APPROVED BY THE ENGINEER AND IN GENERAL WILL DEPEND FOR WATER-TIGHTNESS UPON ELASTOMERIC SEALANT.
- FOR BRICKMASONRY JOINTS THE AMOUNT OF SEALANT SHALL BE SUFFICIENT TO FILL AT LEAST 75% OF THE JOINT CAVITY.
- NON-SHRINKING MORTAR SHALL ONLY BE USED WHERE SPECIFICALLY APPROVED BY THE ENGINEER.

STANDARD MANHOLE DETAILS



BASE SECTION TO BE SET PER JOB SPECIFICATIONS SEWER MANHOLE

NOTE: STEEL REINFORCED COPOLYMER POLYPROPYLENE PLASTIC STEP CONFORMS TO LATEST ASTM C478

NOTE: BUTYL RUBBER SECTION JOINT CONFORMS TO LATEST ASTM C443 SPEC. AND FED SPEC. SS-S-210A

NOTE: OPENING SIZES ARE: 24\"/>

- JOINT SEALANT SHALL BE PERFORMED BUTYL RUBBER MASTIC TYPE SEAL THAT COMPLES WITH AASHTO SPECIFICATION M-198 OR SYNTHETIC RUBBER GASKET THAT COMPLES WITH ASTM C443 OR C361.
- REINFORCING ASTM A195 AREA 0.12 SQ. IN./VERT. FT. REINFORCING IN BOTH BELL & SPIGOT.
- CONCRETE COMPRESSIVE STRENGTH 4000 PSI. TYPE II CEMENT.
- ALUMINUM OR COPOLYMER POLYPROPYLENE PLASTIC MANHOLE STEPS COMPLIANT WITH OSHA REGULATION 29 CFR 1910.27 AND SECTION 11 ASTM SPECIFICATION C478.

STANDARD TRENCH DETAILS

- GENERAL NOTES:
 - REINFORCING STEEL CONFORMS TO LATEST ASTM A195 OR A82 SPEC.
 - CONCRETE COMPRESSIVE STRENGTH = 4000 PSI MIN.
 - MANHOLE DESIGN SPEC'S CONFORM TO LATEST ASTM C478 SPEC. FOR PRECAST REINFORCED CONCRETE MANHOLE SECTIONS.
 - ONE FOUR MONOLITHIC BASE SECTION REINFORCED TO MEET OR EXCEED HS25 LOADING AND SUPERIMPOSED DEAD LOAD AND COATING AS PER SPECIFICATION IF REQUIRED.
 - MANHOLE INCLUDING ALL COMPONENT PARTS SHALL HAVE ADEQUATE SPACE STRENGTH AND LEAKPROOF QUALITIES CONSIDERED NECESSARY FOR THE INTENDED SERVICE SPACE REQUIREMENTS AND CONFIGURATIONS. SHALL BE AS SHOWN ON THE DRAWING. MANHOLES MAY BE AN ASSEMBLY OF PRECAST SECTIONS, WITH OR WITHOUT STEEL REINFORCEMENT, WITH ADEQUATE JOINTING, OR CONCRETE CAST MONOLITHICALLY IN PLACE WITH OR WITHOUT REINFORCEMENT. IN ANY APPROVED MANHOLE, THE JOINTS SHALL BE OF THE STANDING JOINT TYPE AND SHALL BE PROTECTED WITH AN APPROPRIATE SEALANT TO PREVENT LEAKAGE IN EXCESS OF ONE GALLON PER DAY PER VERTICAL FOOT OF MANHOLE, CONTINUOUSLY FOR THE LIFE OF THE STRUCTURE. A PERIOD GENERALLY IN EXCESS OF 28 YEARS IS TO BE UNDERSTOOD IN BOTH CASES.
 - INVERTS AND SHELVES: MANHOLES SHALL HAVE A BRICK PAVED SHELF AND INVERT CONSTRUCTED TO CONFORM TO THE SIZE OF PIPE AND FLOW. OF THE MANHOLE. DRAINAGE SHALL BE TO THE CENTER LINE OF THE SEWER PIPES. SHELVES SHALL BE CONSTRUCTED TO THE ELEVATION OF THE HIGHEST PIPE CROWN AND SLOPE TO DRAIN TOWARD THE FLOWING THROUGH CHANNEL. UNDERLAYMENT OF INVERT AND SHELF SHALL CONSIST OF BRICK MASONRY, UNLESS OTHERWISE APPROVED BY THE ENGINEER.
 - SHALLOW MANHOLE: IN LIEU OF A CONE SECTION, WHEN MANHOLE SETTING IS PROBLEMATIC, A BRICK PAVED SHELF SHALL BE CONSTRUCTED TO THE CENTER LINE OF THE SEWER PIPE. SHALL BE USED WHERE INDICATED, HAVING AN ECCENTRIC ENTRANCE OPENING AND CAPABLE OF SUPPORTING H-20 LOADS. SEE MISCELLANEOUS DETAILS-SEWERS.

CHERRY VALLEY SEWER DISTRICT
LEICESTER, MASSACHUSETTS

PLAN AND PROFILE

MANHOLE DETAILS

DRAWING NO. 17

SHEET 17 OF 19

HTA Hoyle, Tanner & Associates, Inc.
150 Dow Street • Manchester • New Hampshire 03101
Consulting Engineers

PROJECT NO. 105710

FILE NAME MHDET

DO NOT SCALE DRAWING

DES. BY JAH	DR. BY CAB	CHKD. BY NLT
DATE: FEB. 2002		

1. RECORD DRAWING	S.R.	W.C.	W.C.	3/03
REV.	DR. BY	CHKD. BY	APPR. BY	DATE