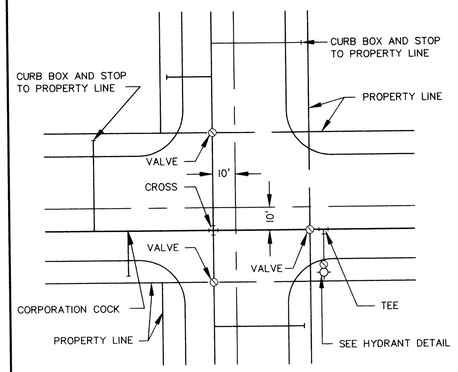
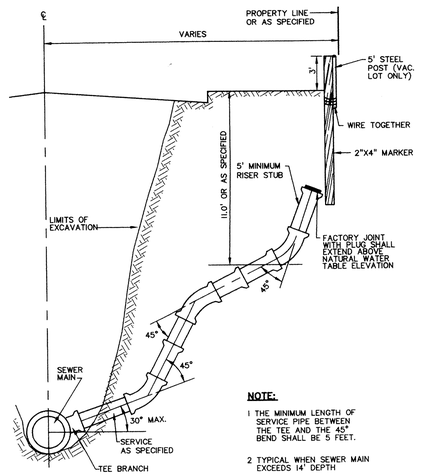
RECORD DRAWINGS

PRIME CONTRACTOR/UTILITIES: C.W. HOULE, INC.
CURB & GUTTER: SCHMIDT CURB CO.
STREETS: BAUERLY BROS., INC.
INSPECTION: RALPH BADER, HOWARD R. GREEN CO.
SURVEY: JOHN OLIVER & ASSOCIATES, INC.
EARTHWORK: NORTH PINE AGGREGATE, INC.
RECORD DRAWINGS: FRED FRITSCHEL, JOA
CONSTRUCTED: UTILITIES 1996, STREETS 1997



TYPICAL WATER LAYOUT

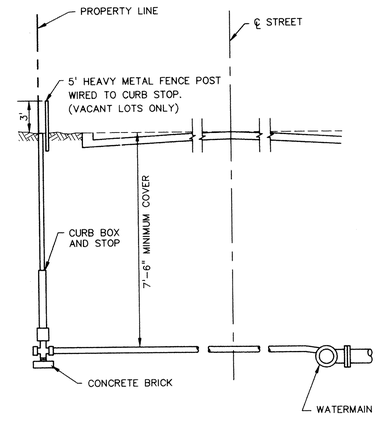


NOTE:

1 THE MINIMUM LENGTH OF SERVICE PIPE BETWEEN THE TEE AND THE 45° BEND SHALL BE 5 FEET.

2 TYPICAL WHEN SEWER MAIN EXCEEDS 14' DEPTH

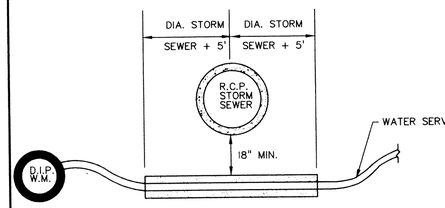
TYPICAL HOUSE SERVICE (DEEP SEWER MAIN) (S-07)

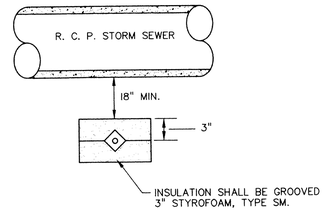


NOTE:

SERVICE TAP SHALL BE MADE SLIGHTLY ABOVE HORIZONTAL CENTER OF PIPE.

TYPICAL WATER SERVICE CONNECTION (W-03)





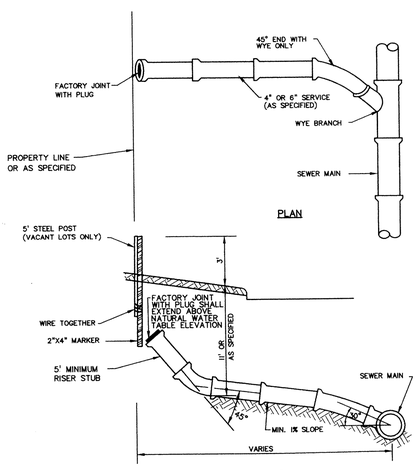
TYPICAL SERVICE INSULATION

NOMINAL FITTING SIZE (INCHES)	TEE, WYE, PLUG OR CAP	90° BEND, PLUGGED CROSS	TEE PLUGGED ON RUN A¹	TEE PLUGGED ON RUN A²	45° BEND	22 1/2° BEND	11 1/4° BEND
4	1.0	1.4	1.9	1.4	1.0	---	---
6	2.1	3.0	4.3	3.0	1.6	1.0	---
8	3.8	5.3	7.6	5.4	2.9	1.5	1.0
10	5.9	8.4	11.8	8.4	4.6	2.6	1.2
12	8.5	12.0	17.0	12.0	6.6	3.4	1.7

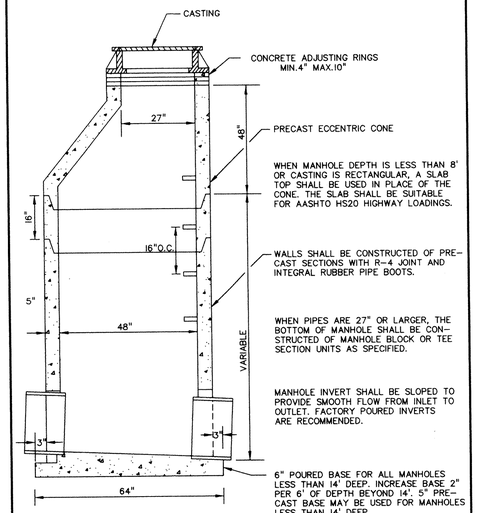
NOTE

1. Thrust restraint for 4-inch through 12-inch diameter pipe shall be with concrete blocking. Thrust restraint for vertical bends and pipe diameter over 12-inch shall be by restrained joints.
2. Restrained joints with tie rods, "restraining glands" or other method may be substituted for concrete blocking when approved by the engineer. Timber blocking will not be allowed.
3. Bearing area (ft2) against undisturbed earth is shown above, based on a test pressure of 150 psi and a soil bearing capacity of 2,000 psf.
4. For soil bearing capacity less than 2,000 psf and/or a test pressure > 150 psi, bearing area = (test pressure / .50) x (2,000 / soil bearing capacity) x (table value).

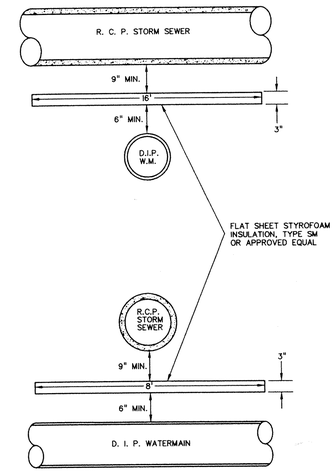
THRUST BLOCKING DETAIL



TYPICAL HOUSE SERVICE (STD. DEPTH SEWER MAIN) (S-05)



STANDARD MANHOLE - SANITARY SEWER (S-01)



TYPICAL WATERMAIN INSULATION (W-08)

REV NO.	DATE	DESCRIPTION
1	11/21/96	RECORD DRAWINGS

DATE: 9/4/96
DESIGN BY: DC
DRAWN BY: BG
CHECKED BY: IM
DWG FILE: CC3DET2
TEXT FILE:
FILE NO.: 6719.40

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Registered Professional Engineer under the laws of the State of Minnesota.

Signed: [signature]
Date: 10/3/96 Reg. No. 20383

John Oliver & Associates, Inc.
Civil Engineering, Land Surveying, Land Planning
580 Dodge Avenue
Elk River, MN 55330
(612)441-2072 (FAX)441-5665
301 W. Travelers Trail, Suite 200
Burnsville, MN 55337
(612)894-3045 (FAX)894-3049

COUNTRY CROSSING THIRD ADDITION DETAILS

SHEET NO. 7 OF 8

1248

DRAWING NUMBER

DRAWING NUMBER
COUNT3.96

SAFCO PRODUCTS • NEW HOPE, MINNESOTA
REORDER BY PART NUMBER 6592
PRINTED ON 100% RECYCLED PAPER WITH 10% POST CONSUMER CONTENT