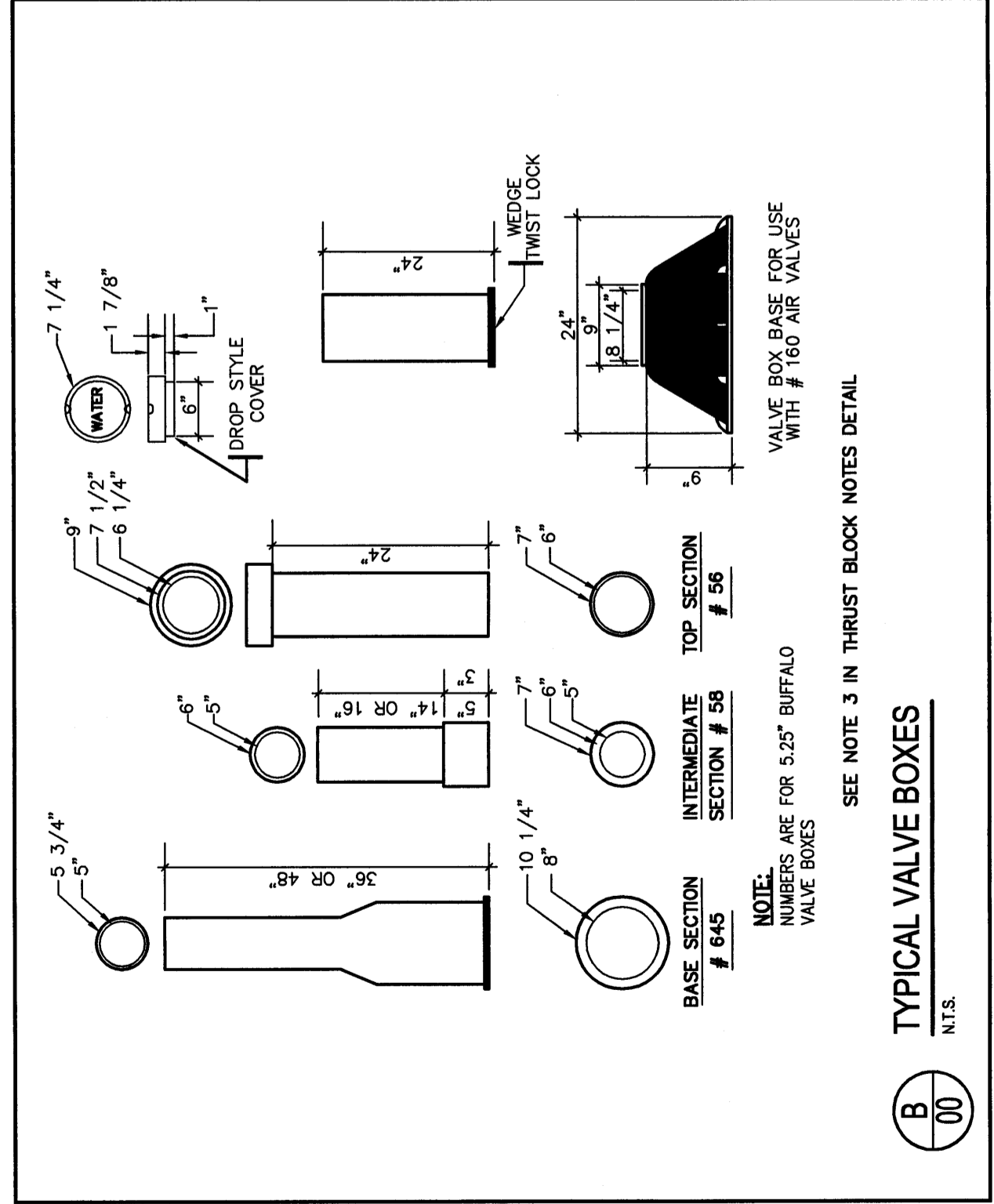
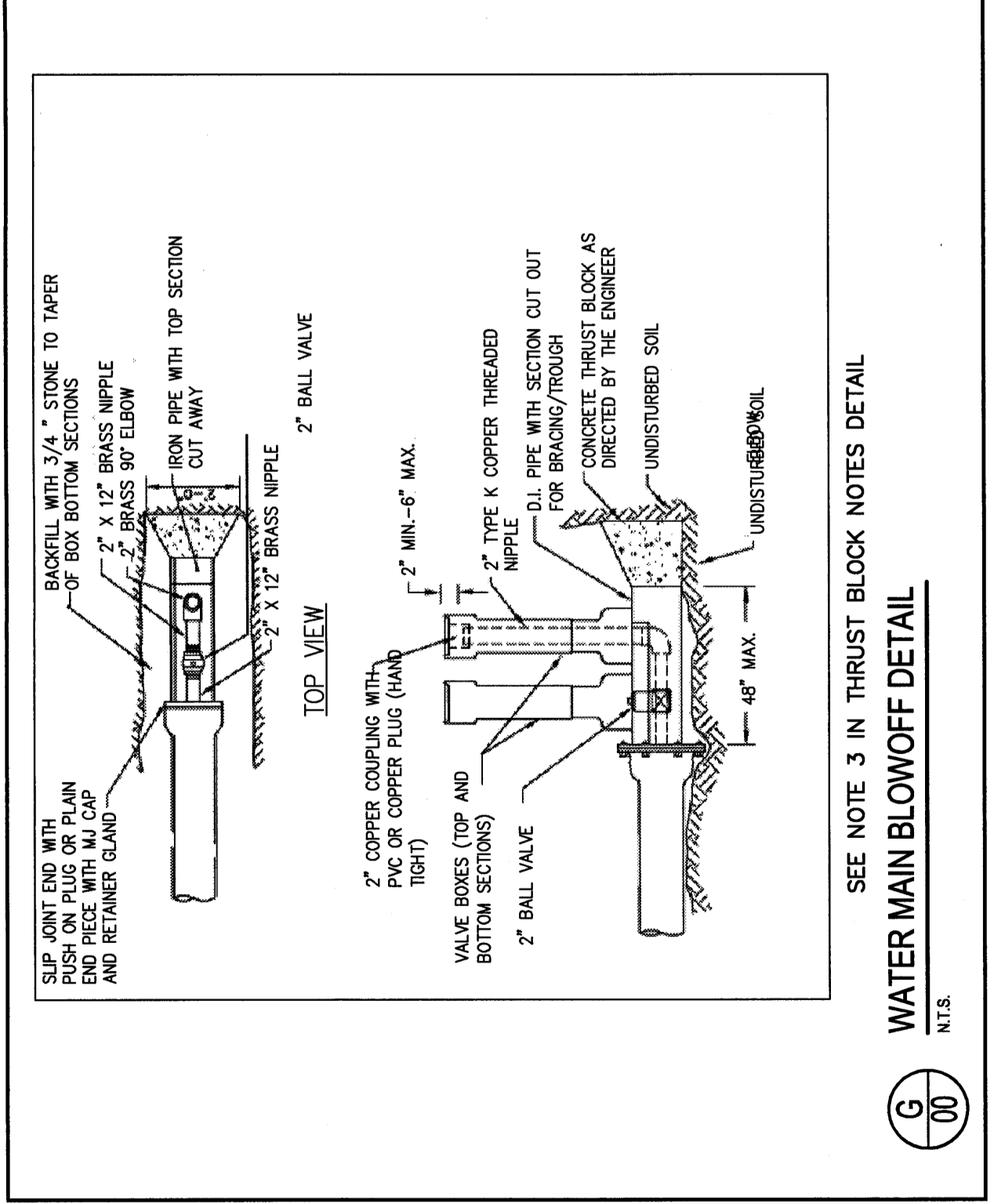


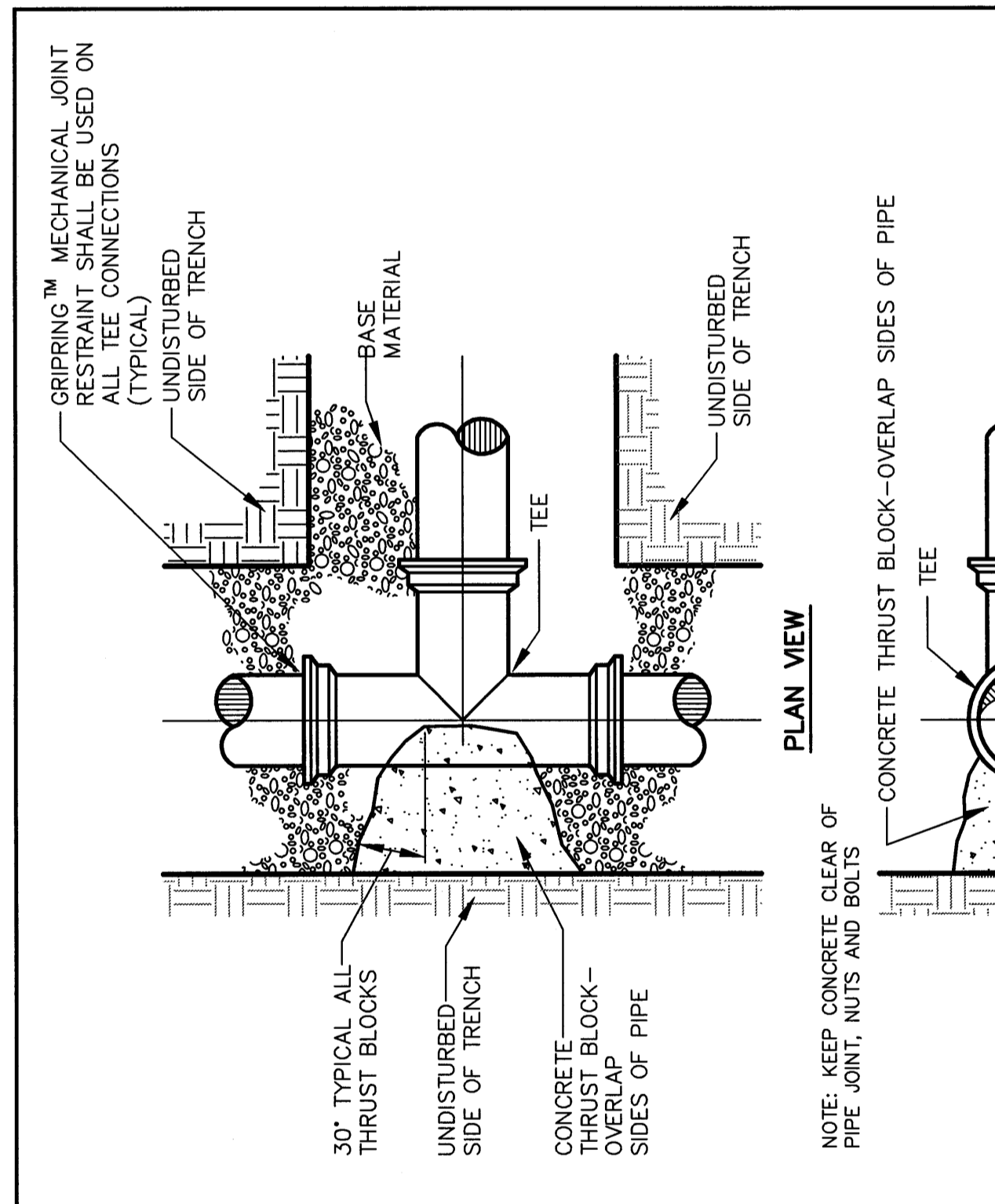
**A** FIRE HYDRANT INSTALLATION DETAIL  
SEE NOTE 3 IN THRUST BLOCK NOTES DETAIL



**B** TYPICAL VALVE BOXES  
SEE NOTE 3 IN THRUST BLOCK NOTES DETAIL



**G** WATER MAIN BLOWOFF DETAIL  
SEE NOTE 3 IN THRUST BLOCK NOTES DETAIL



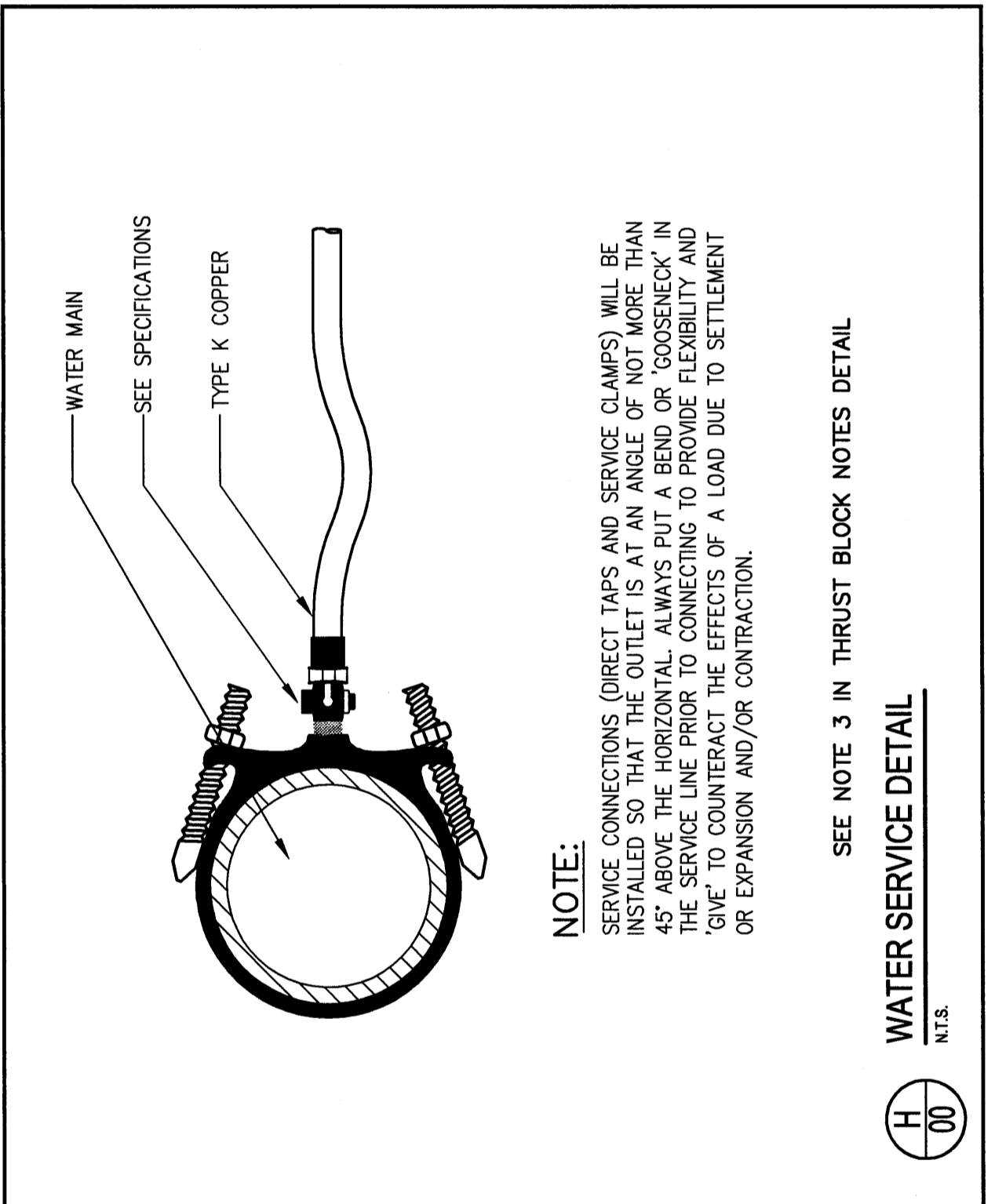
**C** PLACEMENT ON TEES - TYPICAL THRUST BLOCK  
SEE NOTE 3 IN THRUST BLOCK NOTES DETAIL

**THRUST BLOCK NOTES**

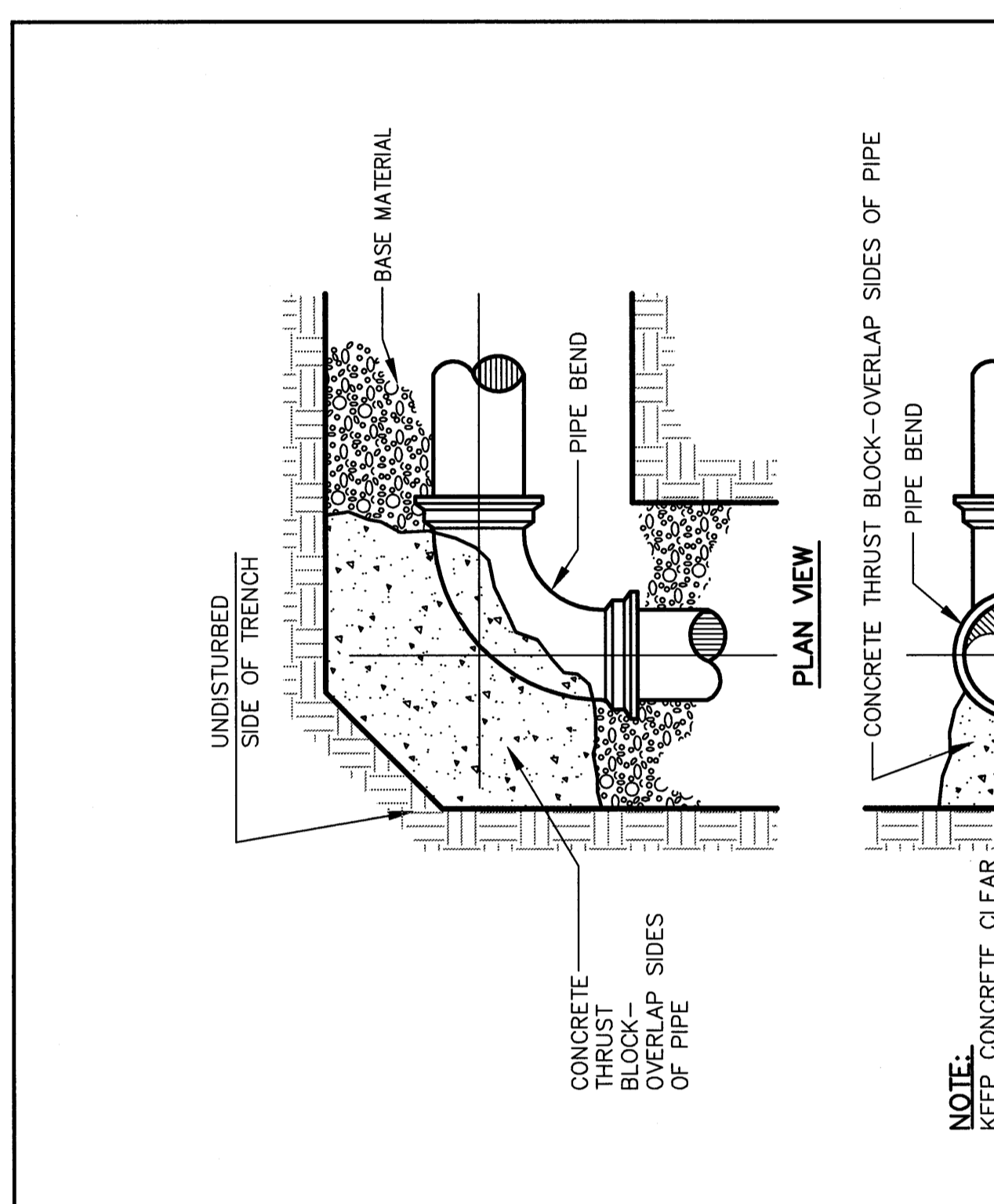
PIPE SIZE	1/32 BEND	1/16 BEND	1/8 BEND	1/4 BEND	TEES/CAPS
6\"/>					

BEARING SURFACE REQUIRED IN SQUARE FEET

**D** THRUST BLOCK NOTES  
SEE NOTE 3 IN THRUST BLOCK NOTES DETAIL



**H** WATER SERVICE DETAIL  
SEE NOTE 3 IN THRUST BLOCK NOTES DETAIL



**E** PLACEMENT ON BENDS - TYPICAL THRUST BLOCK  
SEE NOTE 3 IN THRUST BLOCK NOTES DETAIL

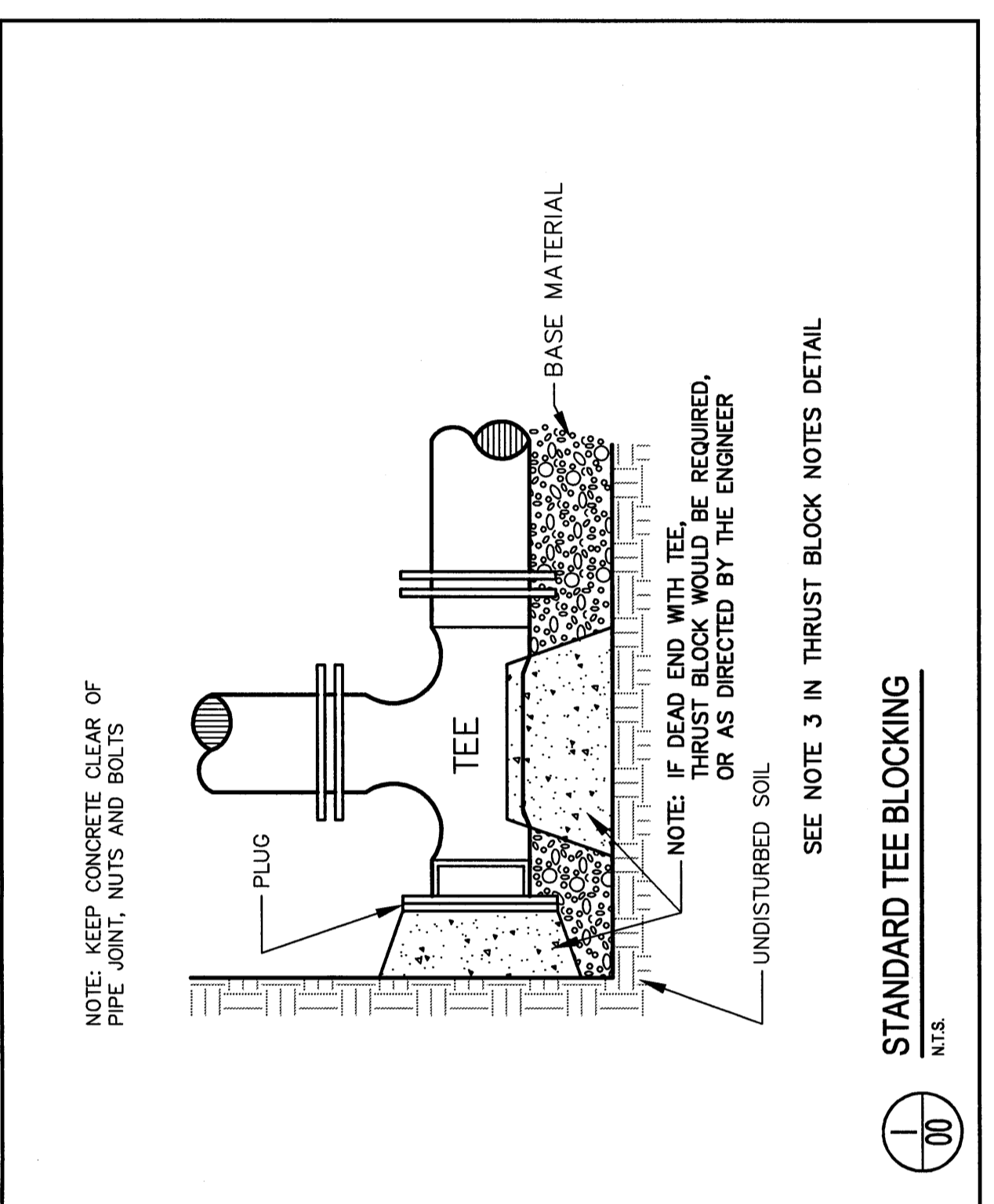
**THRUST/RETAINER GLAND SCHEDULE**

THRUST/RETAINER GLAND SCHEDULE
1/4 BEND (90°)
1/8 BEND (45°)
1/16 BEND (22.5°)
1/32 BEND (11.25°)

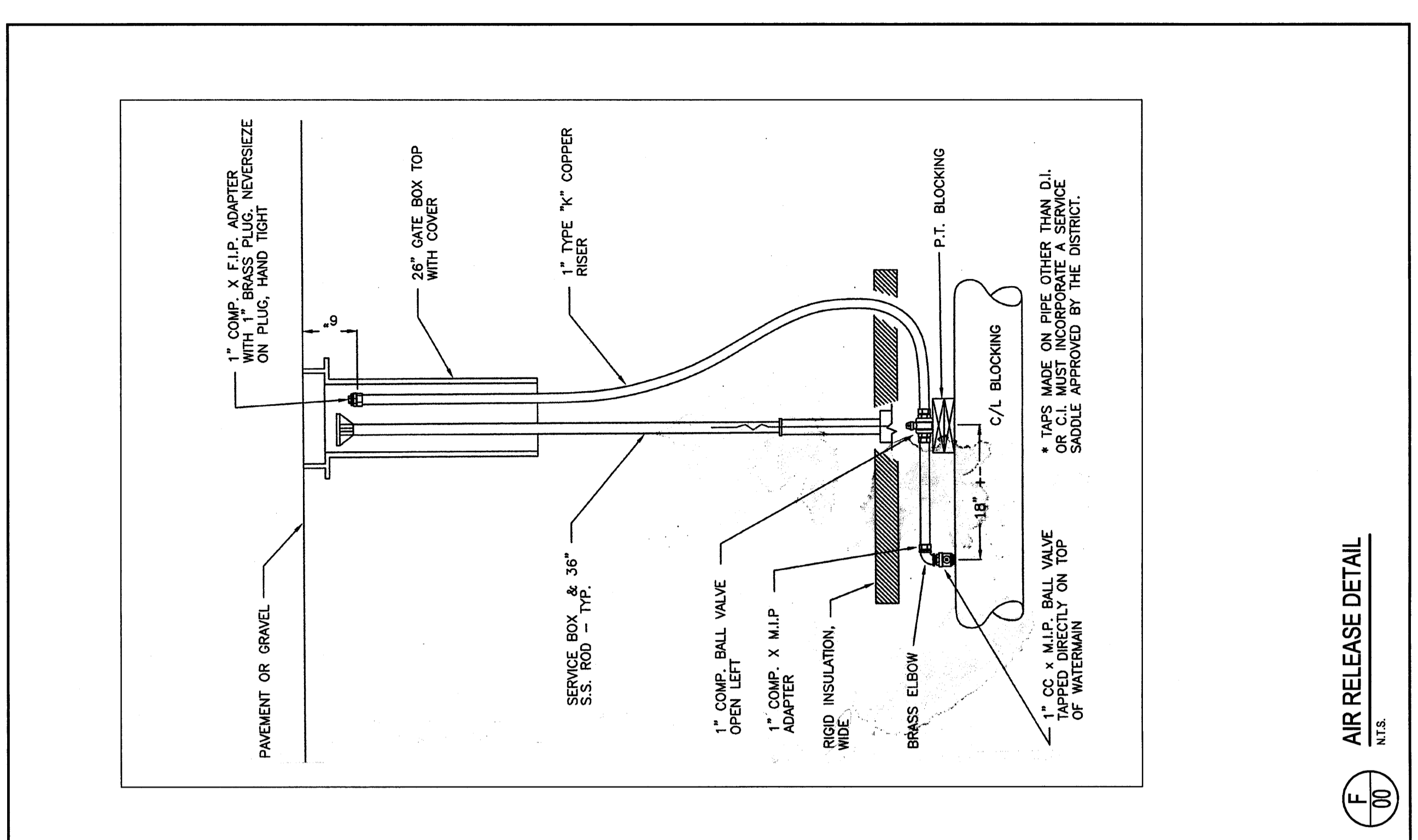
USE POURED-IN-PLACE THRUST BLOCK WITH GRIPPING IN MECHANICAL JOINT RESTRAINT THRUST BLOCK W/RETAINERS

THE ABOVE SCHEDULE IS SUBJECT TO THE APPROVAL OF THE ON-SITE INSPECTOR DUE TO SOILS AND WORKING PRESSURES IN THE AREA.

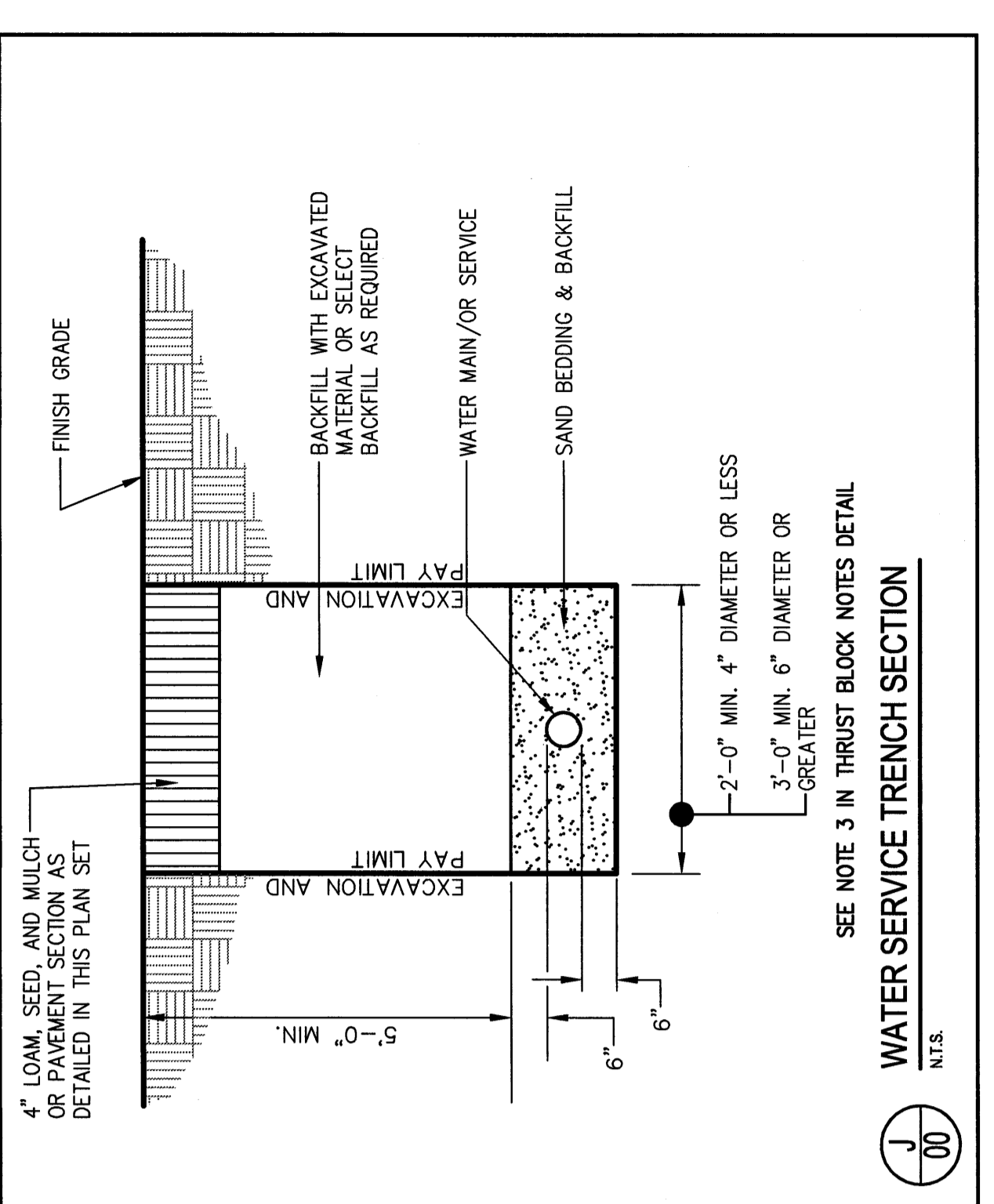
**E** PLACEMENT ON BENDS - TYPICAL THRUST BLOCK  
SEE NOTE 3 IN THRUST BLOCK NOTES DETAIL



**J** STANDARD TEE BLOCKING  
SEE NOTE 3 IN THRUST BLOCK NOTES DETAIL



**F** AIR RELEASE DETAIL  
SEE NOTE 3 IN THRUST BLOCK NOTES DETAIL



**J** WATER SERVICE TRENCH SECTION  
SEE NOTE 3 IN THRUST BLOCK NOTES DETAIL

**DeLUCA-HOFFMAN ASSOCIATES, INC.**  
1700 MAIN STREET, SUITE 200  
WATERLOO, ONTARIO, CANADA N2L 2K1  
WWW.DELUCAHOFFMAN.COM

**DH**

PROJECT: MARTIN'S POINT REDEVELOPMENT PROJECT  
SHEET TITLE: WATER DETAILS  
CLIENT: CITY OF WATERLOO

DESIGNED BY: J. B. HOFFMAN  
SCALE: AS SHOWN  
DRAWN BY: J. B. HOFFMAN  
DATE: NOV. 2005  
FILE NO.: 2344301  
SHEET: C-11

REV.	DATE	DESCRIPTION
1	12/22/05	ISSUED TO CLIENT FOR REVIEW
2	01/03/06	SECOND SKETCH PLAN SUBMISSION TO CITY
3	02/28/06	SECOND SKETCH PLAN SUBMISSION TO CITY
4	04/11/06	WORK SET FOR PERMITS SUBMISSION TO CITY
5	04/11/06	WORK SET FOR PERMITS SUBMISSION TO CITY
6	04/24/06	PERMITS - RELEASED FOR BID

DESIGNED BY: J. B. HOFFMAN  
SCALE: AS SHOWN  
DRAWN BY: J. B. HOFFMAN  
DATE: NOV. 2005  
FILE NO.: 2344301  
SHEET: C-11