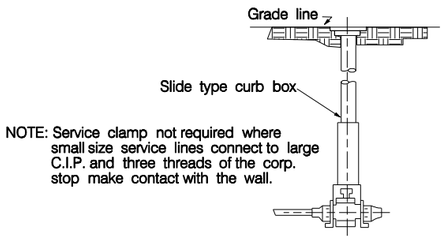
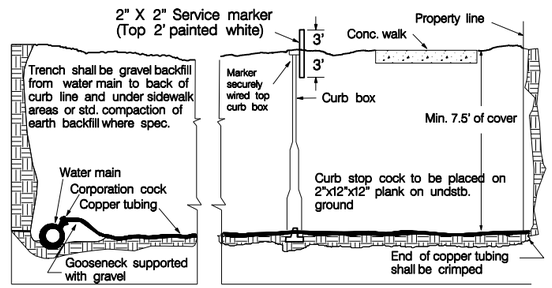
WATERWORKS

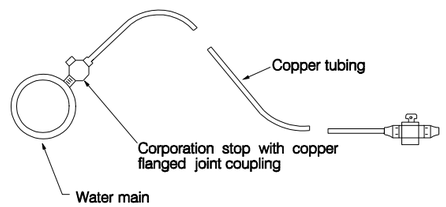


CURB STOP

WATER CURB CONNECTION

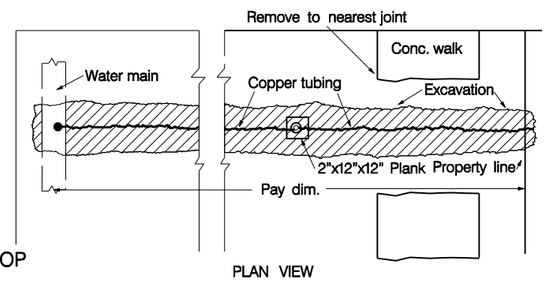


SECTIONAL ELEVATION

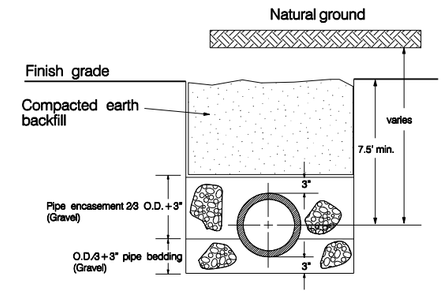


TYPICAL CORPORATION STOP AND CURB STOP

No scale

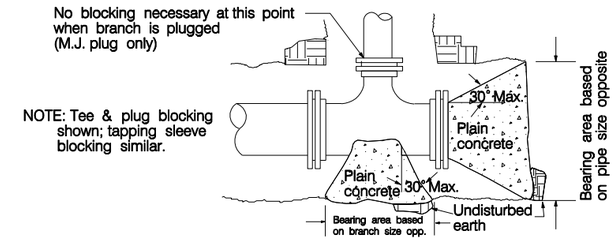


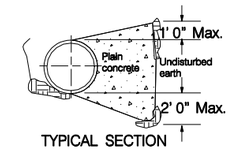
PLAN VIEW



TRENCH BACKFILL

WATERMAIN THRUST BLOCK DETAILS

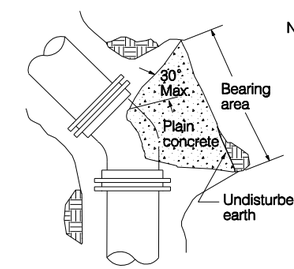




TYPICAL SECTION

TEE, PLUG & TAPPING SLEEVE

TABLE OF REQUIRED BEARING AREAS					
SIZE OF PIPE	90° BEND	45° BEND	22.5° BEND	11.25° BEND	TEES, PLUGS & TAPPING SLEEVE
4"	2' SQ.	2' SQ.	2' SQ.	2' SQ.	2' SQ.
6"	3' SQ.	2' SQ.	2' SQ.	2' SQ.	3' SQ.
8"	5' SQ.	3' SQ.	2' SQ.	2' SQ.	4' SQ.
10"	8' SQ.	4' SQ.	3' SQ.	2' SQ.	6' SQ.
12"	11' SQ.	6' SQ.	3' SQ.	2' SQ.	8' SQ.
16"	20' SQ.	11' SQ.	6' SQ.	4' SQ.	15' SQ.
18"	25' SQ.	14' SQ.	7' SQ.	4' SQ.	18' SQ.



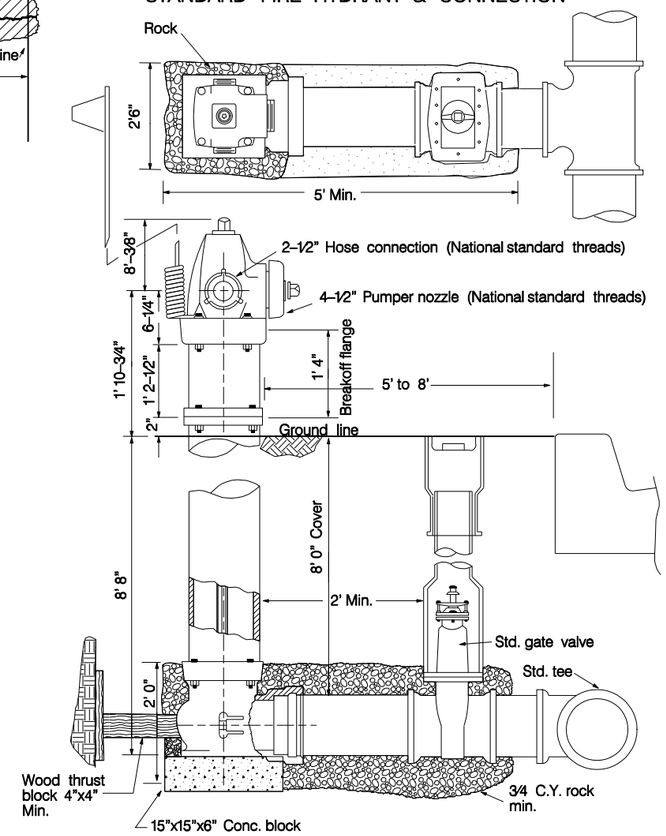
TYPICAL BEND

NOTE: concrete blocking to be poured against undisturbed earth. Keep bells and bolts free of concrete. Concrete in place to be included in price bid for water main.

THRUST BLOCK DETAIL

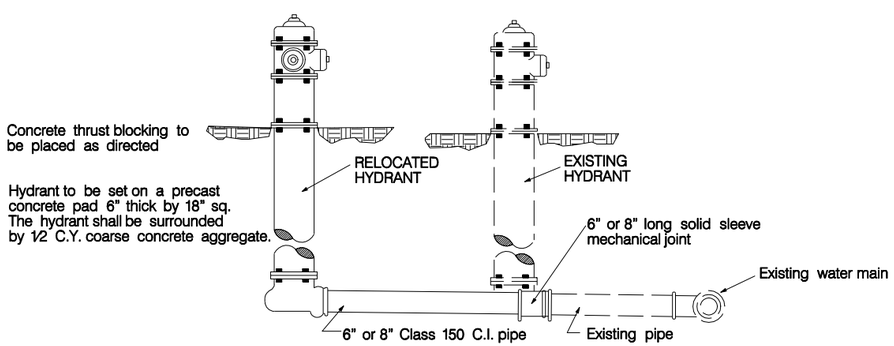
No scale

STANDARD FIRE HYDRANT & CONNECTION



NOTES:

1. Operating & Cap nuts: city standards
2. Supplier will furnish and install hydrant marker. Cost will be incluced with the unit bid price for the hydrant. The hydrant marker shall be the Nordic Flexi-flag as manufactured by Nordic Fiberglass, Inc. or approved equal. marker will be rust resistant.



LAYOUT FOR RELOCATION OF HYDRANTS

TYPICAL SEQUENCE OF INSTALLATION

1. Remove existing hydrant.
2. Install long solid sleeve mechanical joint, Cl. 150 C.I.P.
3. Install 6" or 8" Cl. 150 C.I. Pipe (length as needed).
4. Install salvaged hydrant at new location.

All materials necessary for the relocation of the hydrant to be included in price bid for "Relocate Hydrant".

Existing water main valve to be adjusted as necessary and paid for as "Adjusted Utility Appurtenances".

NORTH DAKOTA DEPARTMENT OF TRANSPORTATION	
10-1-86	
REVISIONS	
DATE	CHANGE
06-26-03	Layout revision
12-01-04	PE Stamp added

This document was originally issued and sealed by MARK S GAYDOS, Registration Number PE-4518, on 12/01/04 and the original document is stored at the North Dakota Department of Transportation