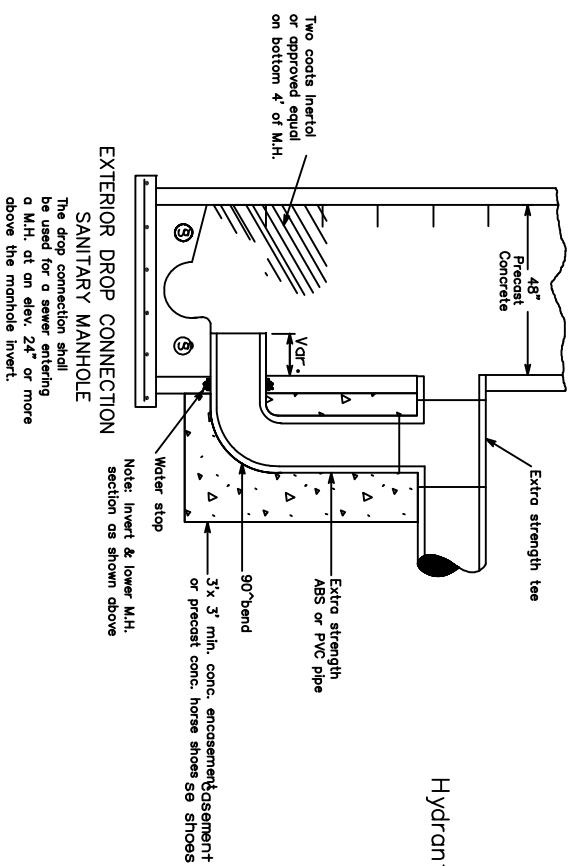
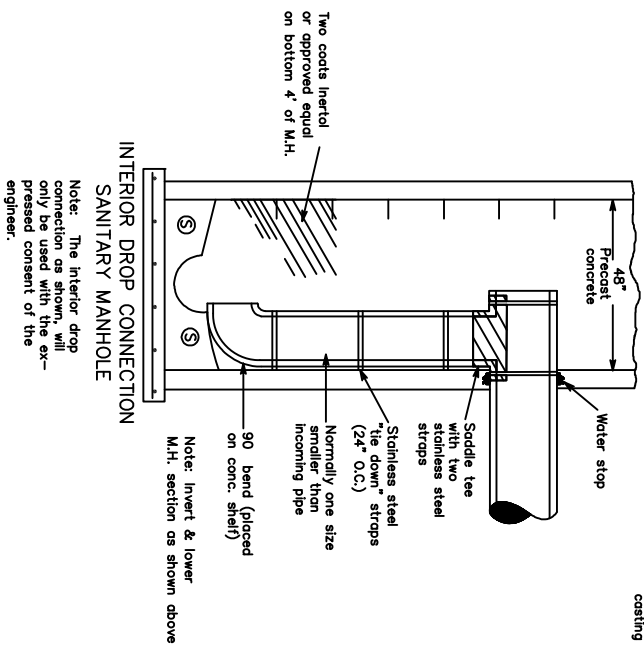
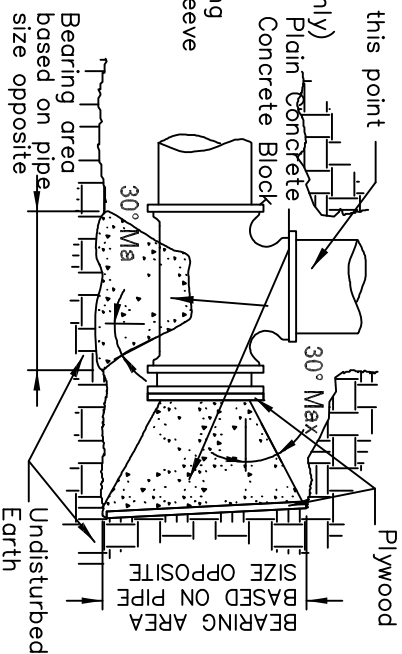


Note: Top of M.H. shall be a 4" come with std. casting frame & cover



No blocking necessary at this point when branch is plugged (mechanical joint plug only)



Notes: Tee & plug blocking shown; tapping sleeve blocking similar

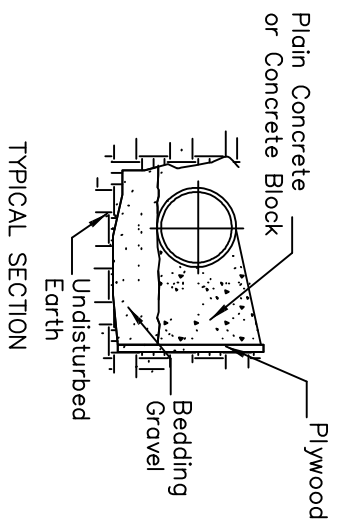
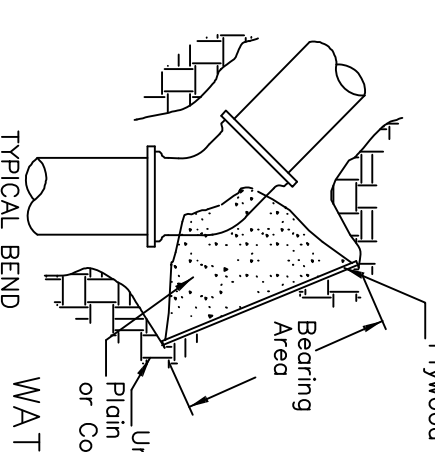


Table of Required Bearing Areas

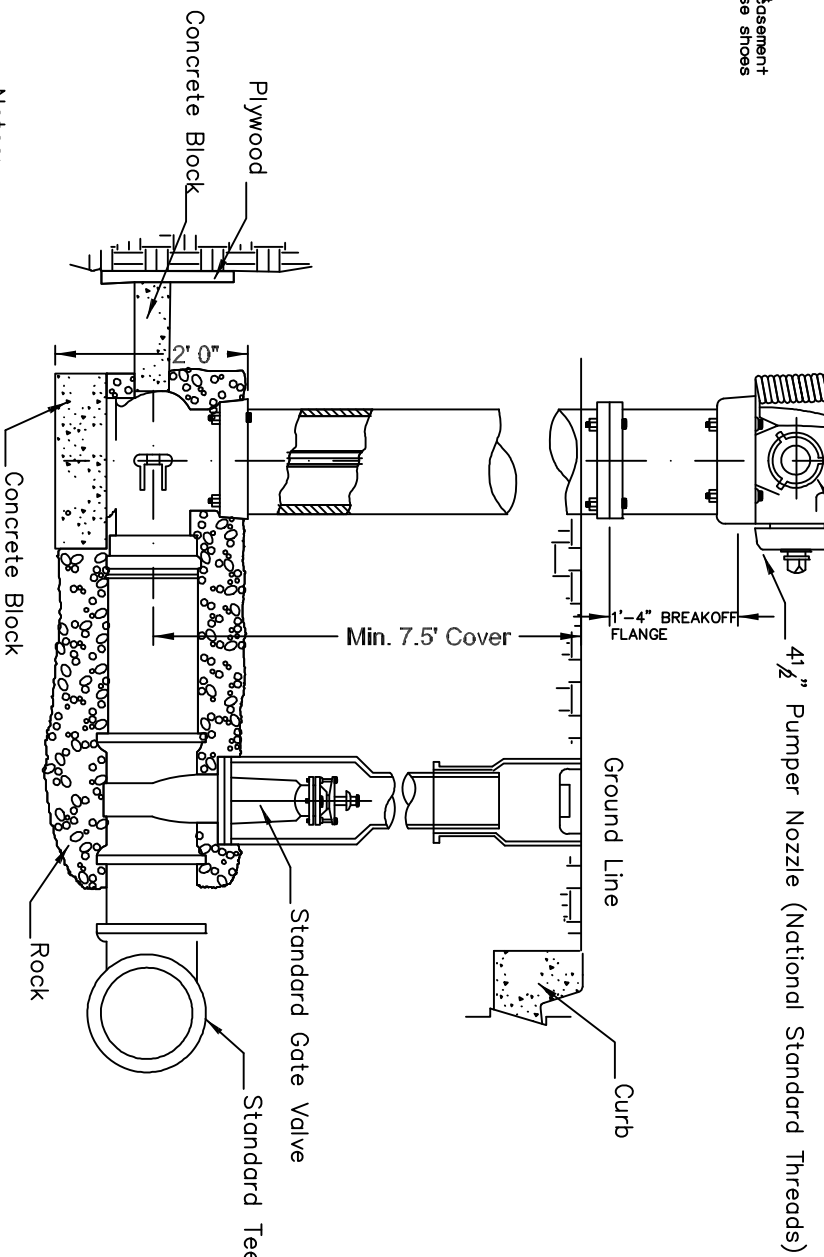
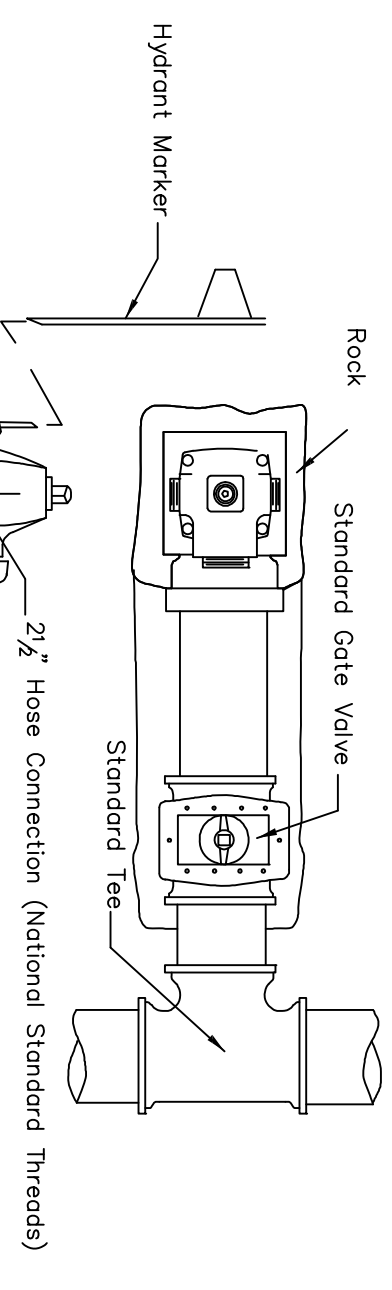
Size of Pipe	90° Bend	45° Bend	22.5° Bend	11.25° Bend	Tees, Plugs & Tapping Sleeves
4"	2' Sq	2' Sq	2' Sq	2' Sq	2' Sq
6"	3' Sq	2' Sq	2' Sq	2' Sq	3' Sq
8"	5' Sq	3' Sq	2' Sq	2' Sq	4' Sq
10"	8' Sq	4' Sq	3' Sq	2' Sq	6' Sq
12"	11' Sq	6' Sq	3' Sq	2' Sq	8' Sq
16"	20' Sq	11' Sq	6' Sq	4' Sq	15' Sq
18"	25' Sq	14' Sq	7' Sq	4' Sq	18' Sq

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

2. If approved by the engineer, solid concrete blocks may be used for blocking on 8" Dia. pipe and below. 10" Dia. pipe and above will conform to concrete poured in place areas as shown above.



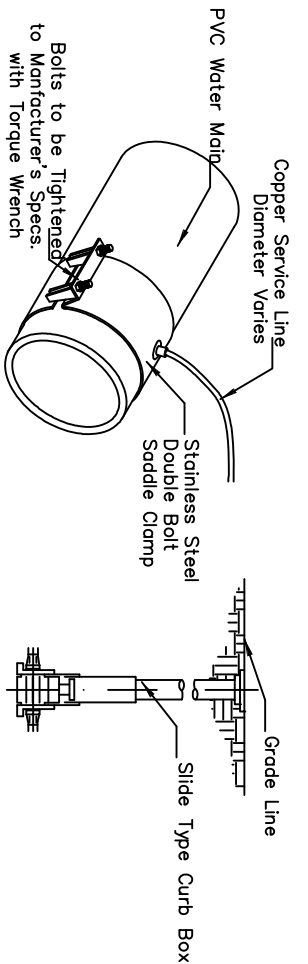
WATERMAIN THRUST BLOCK DETAILS



Notes:

- Operating & Cap Nuts: City Standards
- Supply and furnish and install hydrant marker. Cost will be included with the unit bid price for the hydrant. The hydrant marker shall be current with city standards or as approved by the engineer in the field.

STANDARD FIRE HYDRANT & CONNECTION



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WATER & SEWER DETAILS 1
MACEDONIA HILLS—FIRST ADDITION
PROJECT NUMBER 2013-21
CITY OF MANDAN
MORTON COUNTY, NORTH DAKOTA

SHEET
C-11
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