Tee - Thrustblock Calc

PROJECT NAME: Murphy Oil - Parker and Pine

PROJECT NUMBER: MOC46

DATE: July 9, 2020 BY: ZLS

DETERMINE SOIL TYPE & BEARING STRENGTH:

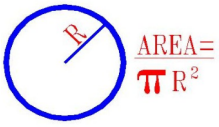
BEARING STRENGTH LB / FT SQ.

MUCK:	0
SOFT CLAY:	1000
SILT:	1500
SANDY SILT:	3000
SAND:	4000
SANDY CLAY:	6000
HARD CLAY:	9000

Soil Bearing Pressure From Geotech

3000 LB / FT SQ.

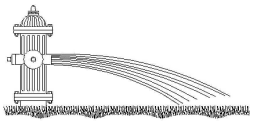
DETERMINE CROSS SECTIONAL AREA OF PIPE INTERIOR:



PIPE SIZE	DUCTILE IRON	PLASTIC
4"	13.203	14.120
6"	29.802	29.033
8"	53.716	50.014
10"	83.000	75.276
12"	119.597	105.683

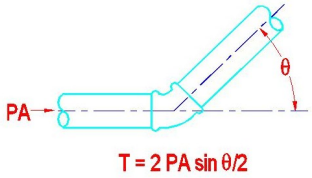
29.033 SQ / IN

HIGHEST ANTICIPATED WATER PRESSURE:



150.00 P.S.I

ANGLE OF CHANGE & RESULTING THRUST ON FITTING:

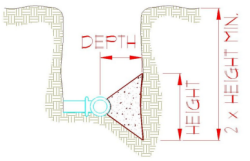


T = Thrust
P = Water Pressure
A = Cross sectional area of pipes interior

180.00 DEG.

8709.90 LBS THRUST

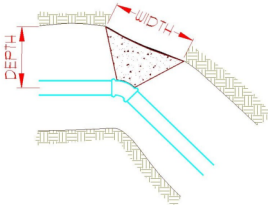
HEIGHT OF BLOCK:



Note:
1. Block height should be equal to or less than one half the total depth to the bottom of the block, but not less than the pipe diameter.
2. Block height should be chosen such that the calculated block width is between one & two times the height.

2.50 FEET

REQUIRED BLOCK AREA, WIDTH, DEPTH & VOLUME



Note:

1. Thrust blocks shall be of a concrete mix not leaner than: 1 part cement, 2-1/2 parts sand, 5 parts stone

2. Where possible the bearing surface of the block should be placed against undisturbed soil. Where it is not possible, fill between the bearing surface and undisturbed soil must be compacted to at least 90% standard proctor density

4.35 ft REQUIRED AREA

1.74 ft CALCULATED WIDTH

0.87 ft CALCULATED DEPTH

3.79 cu.ft. CALCULATED VOLUME

90 Deg. - Thrustblock Calc

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Soil Bearing Pressure From Geotech

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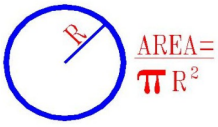
DETERMINE CROSS SECTIONAL AREA OF PIPE INTERIOR:



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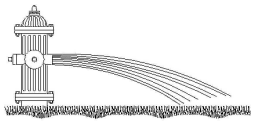
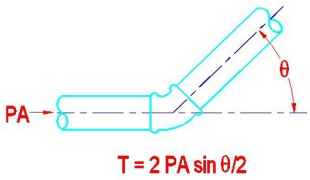
29.033 SQ / IN

HIGHEST ANTICIPATED WATER PRESSURE:



150.00 P.S.I

ANGLE OF CHANGE & RESULTING THRUST ON FITTING:

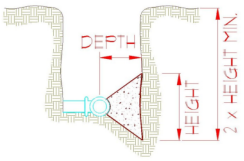


T = Thrust
P = Water Pressure
A = Cross sectional area of pipes interior

90.00 DEG.

6158.83 LBS THRUST

HEIGHT OF BLOCK:



Note:
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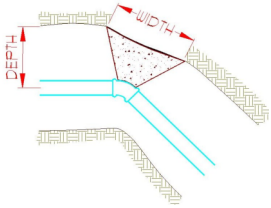
1.50 FEET

REQUIRED BLOCK AREA, WIDTH, DEPTH & VOLUME



Note:

1. Thrust blocks shall be of a concrete mix not leaner than: 1 part cement
   2-1/2 parts sand
   5 parts stone

2. Where possible the bearing surface of the block should be placed against undisturbed soil. Where it is not possible, fill between the bearing surface and undisturbed soil must be compacted to at least 90% standard proctor density

3.08 ft REQUIRED AREA

2.05 ft CALCULATED WIDTH

1.03 ft CALCULATED DEPTH

3.16 cu.ft. CALCULATED VOLUME