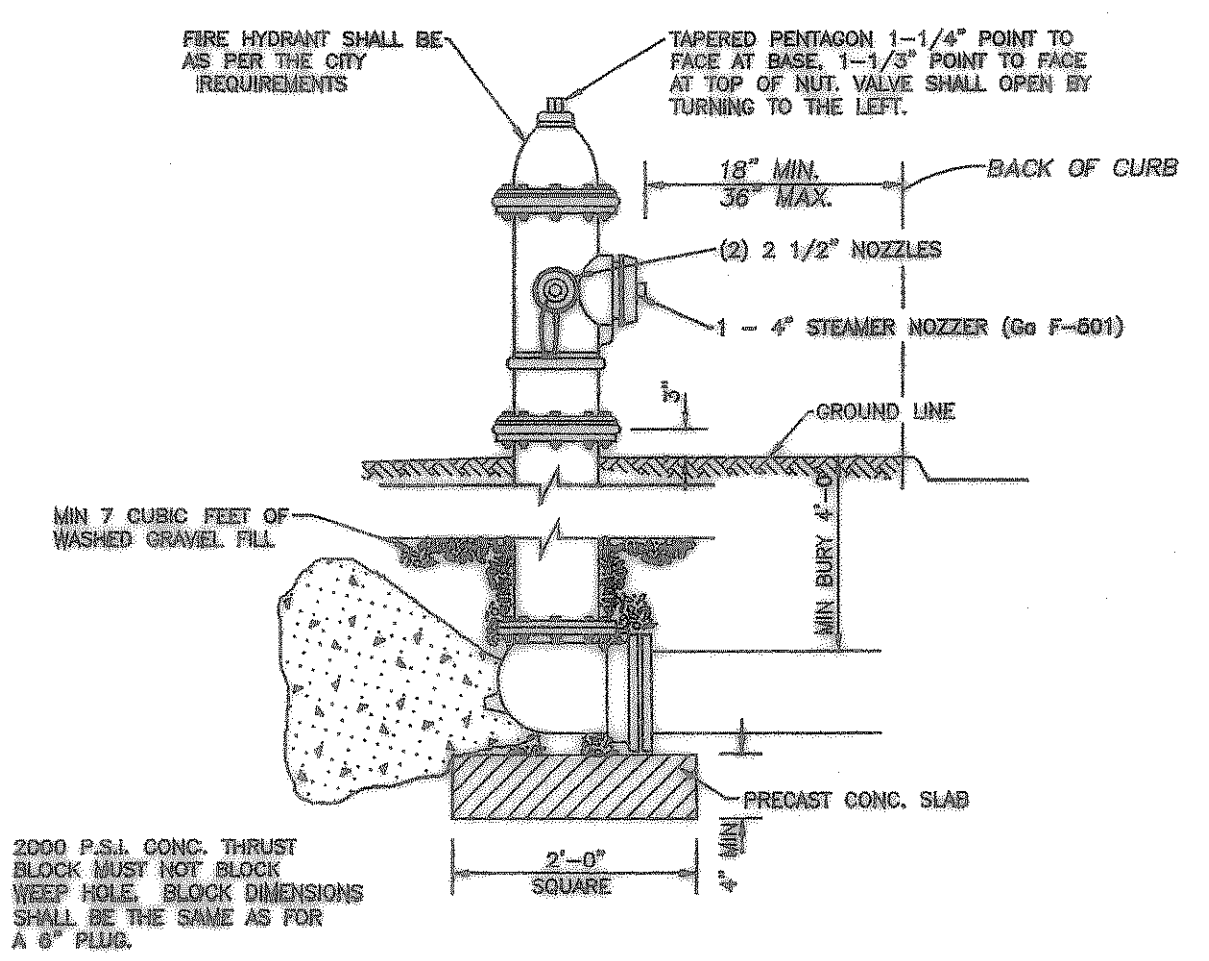
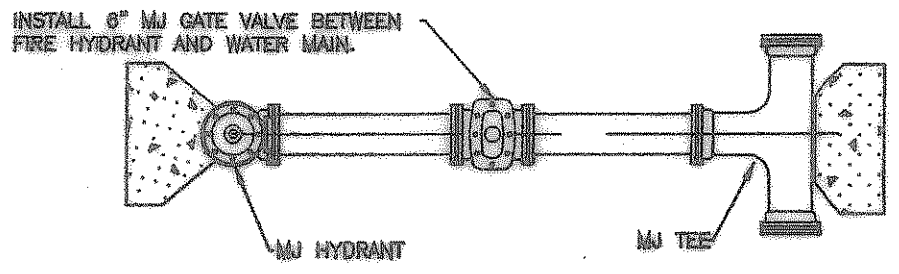


**FIRE HYDRANT ASSEMBLY DETAIL
RESTRAINTED JOINT INSTALLATION**

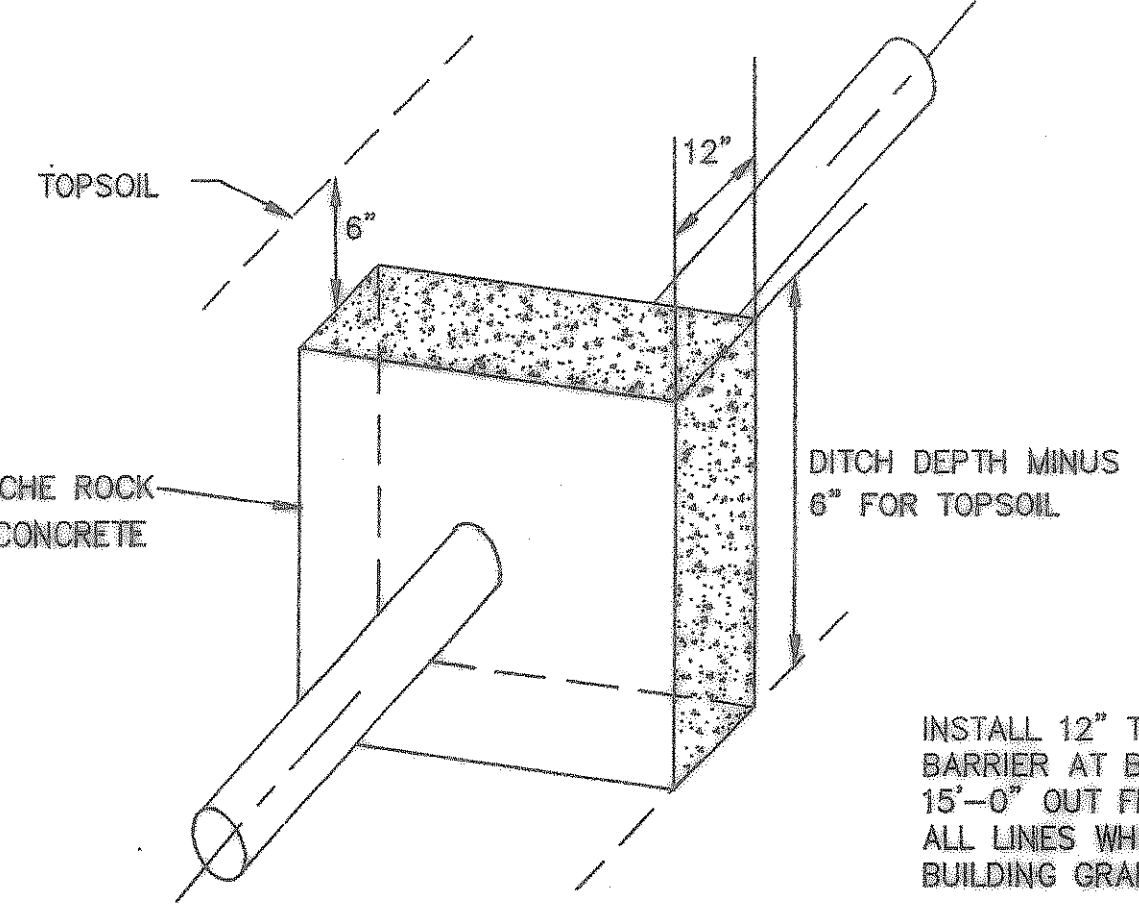
NOTE: USE WHERE THERE IS INSUFFICIENT UNDISTURBED TRENCH TO BLOCK HYDRANT.



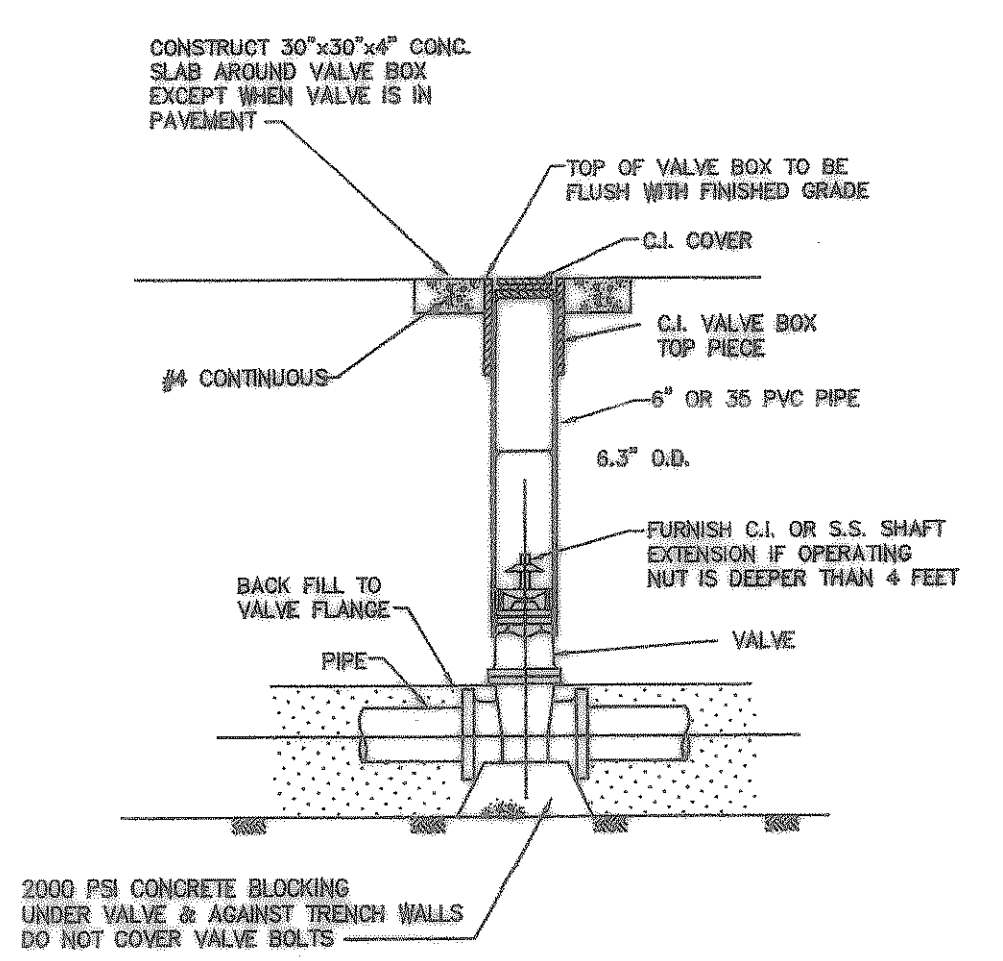
**FIRE HYDRANT ASSEMBLY DETAIL
BLOCKED INSTALLATION**



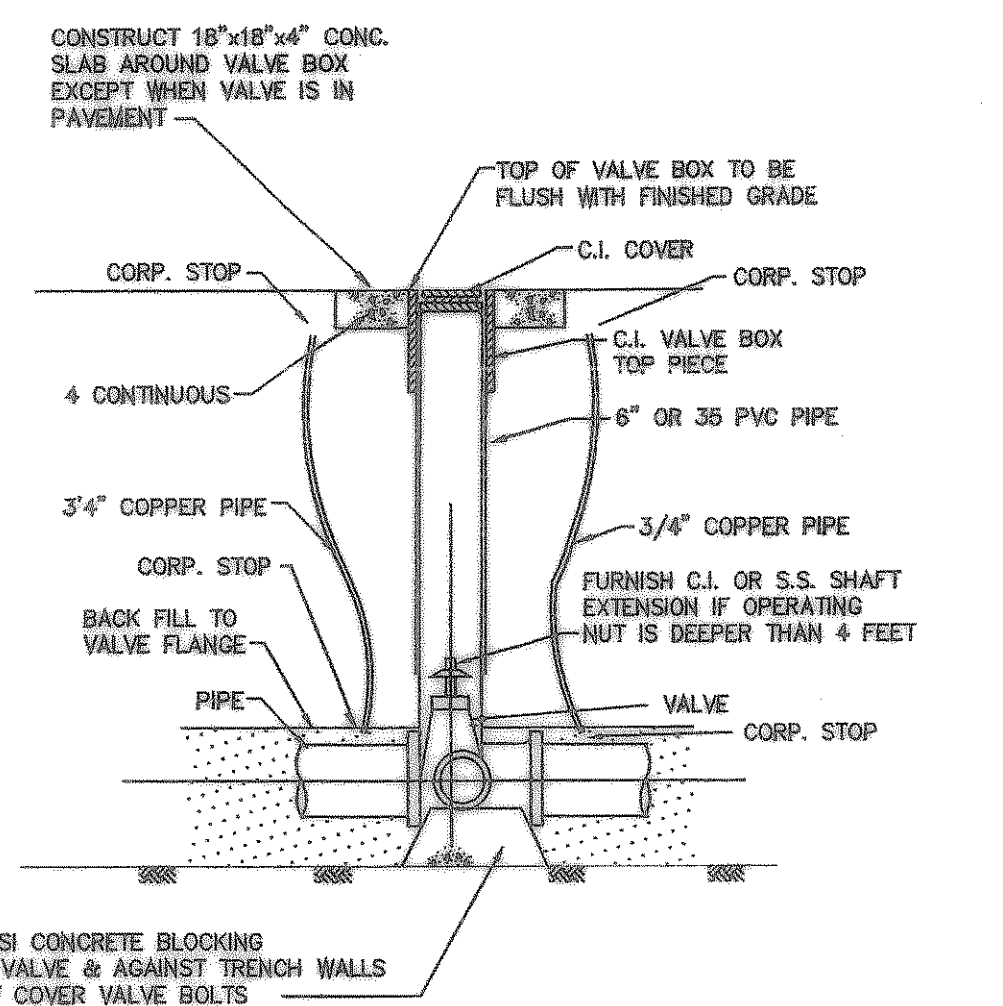
**FIRE HYDRANT ASSEMBLY DETAIL
BLOCKED INSTALLATION**



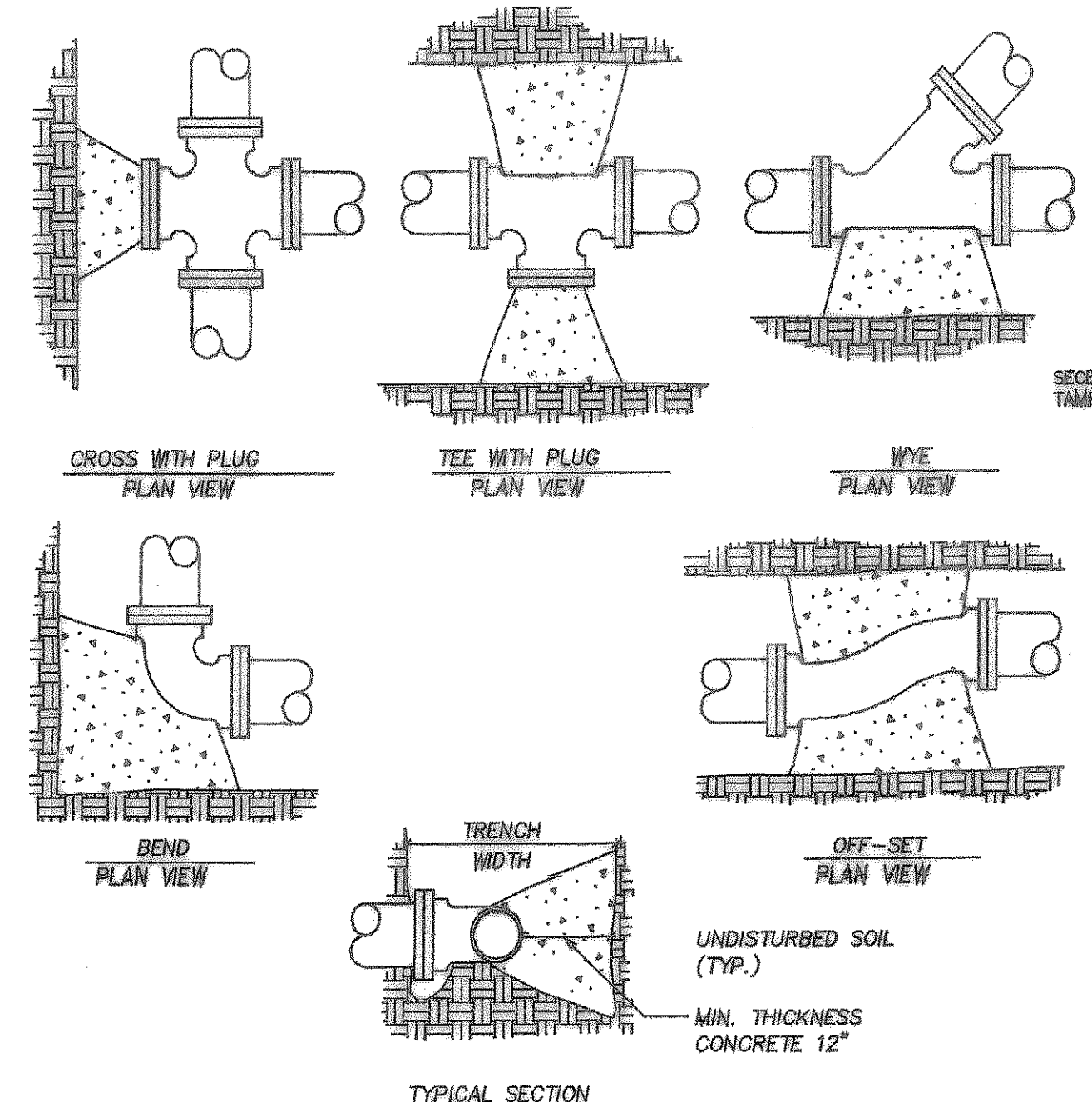
IMPERIOUS BARRIER



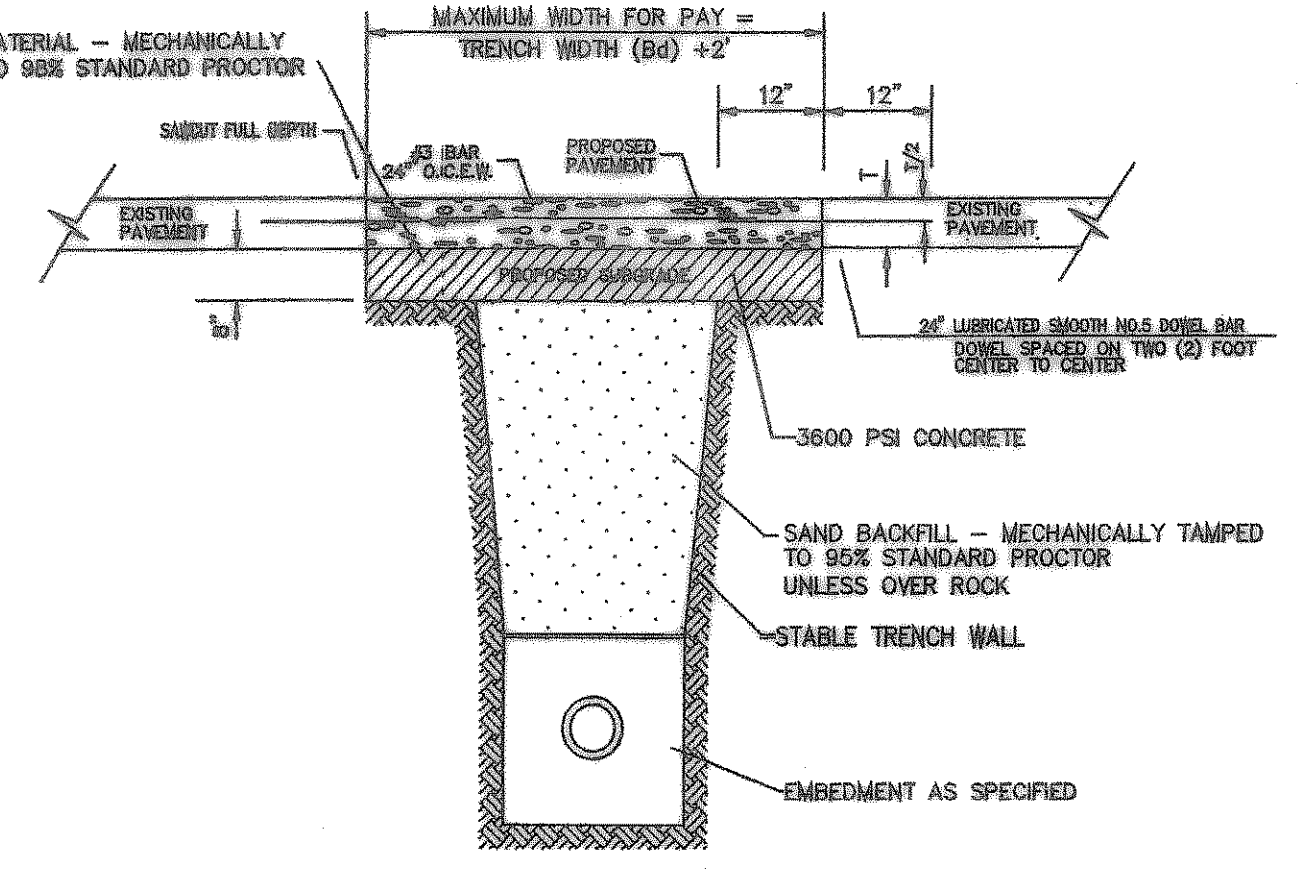
VALVE INSTALLATION DETAIL



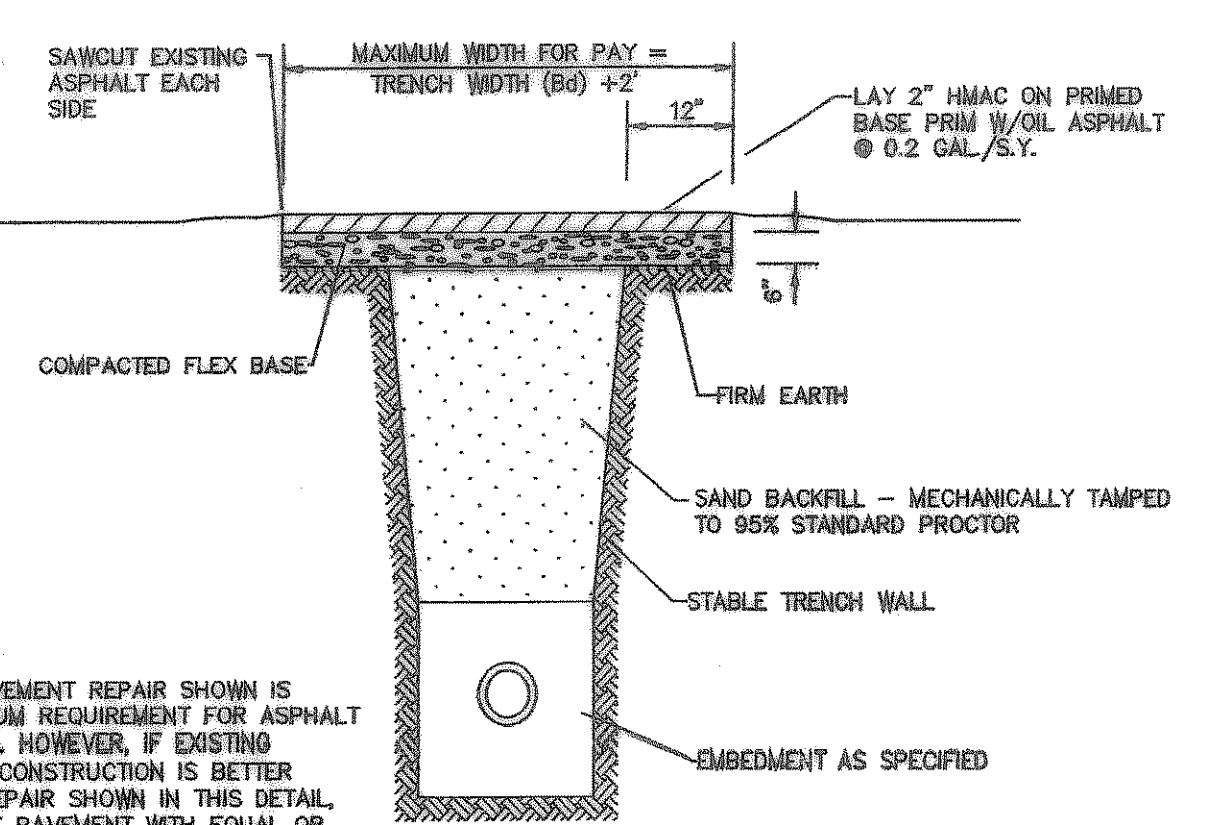
BUTTERFLY VALVE INSTALLATION DETAIL



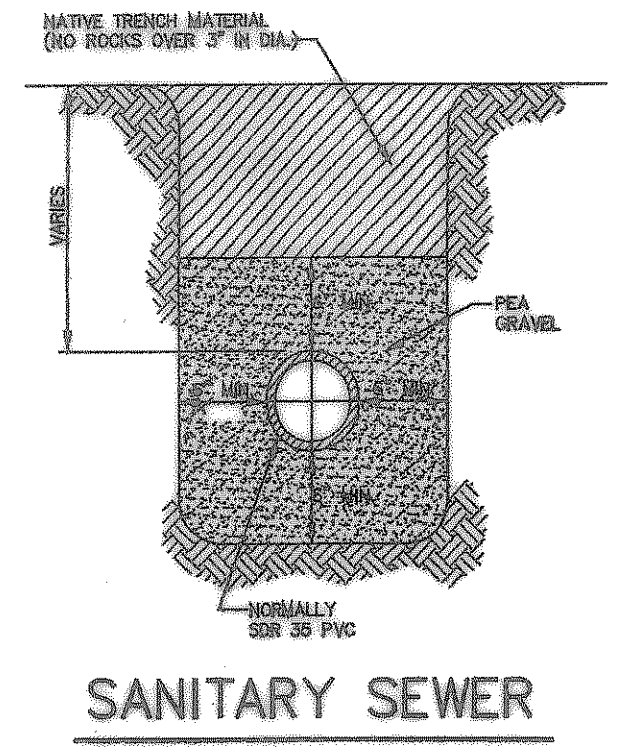
**TYPICAL THRUST BLOCKS
NOT TO SCALE**



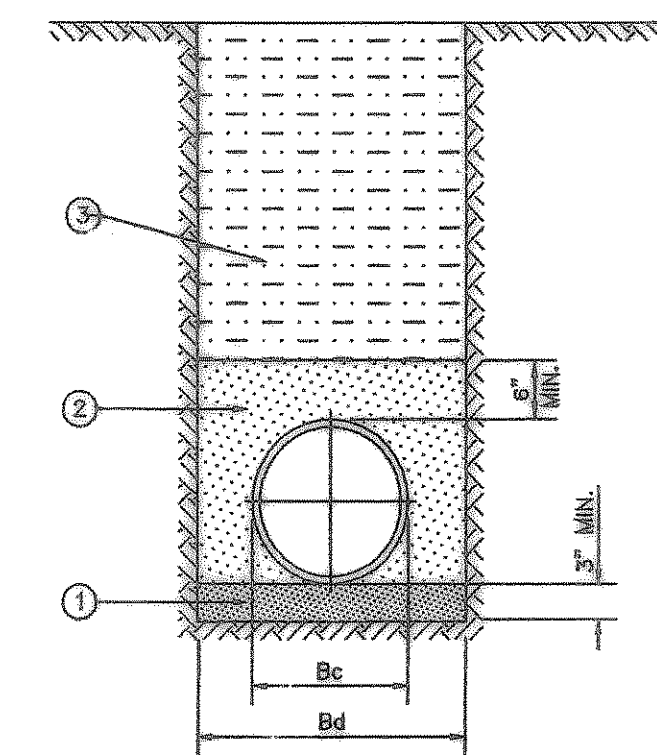
**EMBEDMENT UNDER CONCRETE STREETS
& PAVEMENT REPAIR DETAIL
N.T.S.**



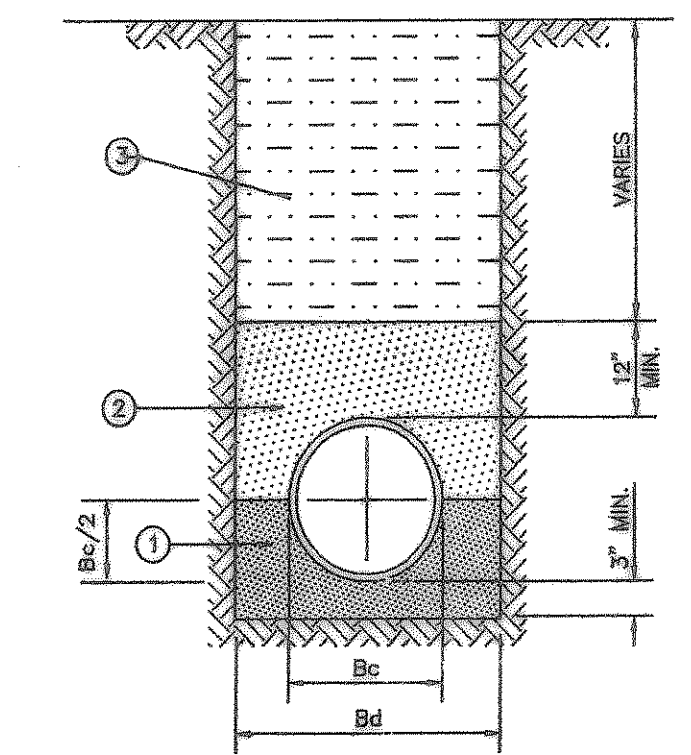
**EMBEDMENT UNDER ASPHALT STREETS
& PAVEMENT REPAIR DETAIL
N.T.S.**



SANITARY SEWER



**CLASS "C-2" EMBEDMENT
WATER
AS SHOWN**



**CLASS "B+" EMBEDMENT
ROOF DRAIN LINES, FORCE MAIN AND
STORM SEWER LINES**

- NOTES:**
1. GRANULAR MATERIAL (SAND) - TOP OF LAYER IS TO BE PLACED TO GRADE TO PROVIDE UNIFORM SUPPORT OF PIPE BARREL. EXCAVATE BELL HOLES. COMPACT TO 90% PROCTOR DENSITY.
 2. SELECT MATERIAL FREE OF ROCKS, CLUMPS OR DEBRIS LARGER THAN 6" IN GREATEST DIMENSION. COMPACT TO 90% STANDARD PROCTOR DENSITY. UNDER STRUCTURES, ROADWAYS AND PAVEMENT, USE NON-GRANULAR MATERIAL COMPACTED TO 95% STANDARD PROCTOR DENSITY. (NO SAND PERMITTED ABOVE STONE)
 3. SELECT MATERIAL FREE OF ROCKS, CLUMPS OR DEBRIS LARGER THAN 6" IN GREATEST DIMENSION. COMPACT TO 90% STANDARD PROCTOR DENSITY. UNDER STRUCTURES, ROADWAYS AND PAVEMENT, COMPACT TO 95% STANDARD PROCTOR DENSITY.

- NOTES:**
1. THRUST BLOCKS SHALL BE POURED AGAINST UNDISTURBED SOIL.
 2. IN UNSTABLE MATERIALS, FOR VERTICAL BENDS OR OFFSETS, BLOCKING SHALL BE DESIGNED FOR ACTUAL THRUST USING THE FORMULA $P=125(H)(A)\sin 1/2$ WHERE H=1-1/2 RATED HEAD, A=AREA OF PIPE IN SQ. FT., θ =ANGLE, AND P=THRUST IN POUNDS.
 3. BEFORE POURING, PLUGS SHALL BE WRAPPED WITH VISQUEEN AND A BOARD PLACED IN FRONT.
 4. CONC. SHALL BE 2500 PSI MIN.
 5. THRUST BLOCKS SHOWN ALSO APPLY TO SANITARY FORCE MAINS.
 6. PLUMBING CONTRACTOR TO FURNISH SIZES OF THRUST BLOCKS FOR APPROVAL PRIOR TO CONSTRUCTION.

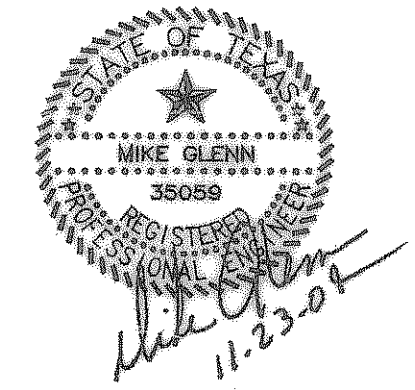
- NOTES:**
1. NO. 6 SMOOTH DOWEL BAR MAY BE USED IN 5", 6" AND 7" PAVEMENT THICKNESS.
 2. LONGITUDINAL BUTT CONSTRUCTION MAY BE UTILIZED IN PLACE OF LONGITUDINAL HINGED (KEYWAY) JOINT AT CONTRACTOR'S OPTION.
 3. DOWEL BARS SHALL BE DRILLED INTO PAVEMENT HORIZONTALLY BY USE OF A MECHANICAL RIG. DRILLING BY HAND IS NOT APPLICABLE. PUSHING DOWEL BARS INTO GREEN CONCRETE IS NOT ACCEPTABLE.

NOTE: THE PAVEMENT REPAIR SHOWN IS A MINIMUM REQUIREMENT FOR ASPHALT STREETS. HOWEVER, IF EXISTING STREET CONSTRUCTION IS BETTER THAN REPAIR SHOWN IN THIS DETAIL, REPLACE PAVEMENT WITH EQUAL OR BETTER CONSTRUCTION, MATERIAL THICKNESSES & QUALITY.

SHW Group, LLP
Architects + Engineers + Planners

Consultants:
CIVIL: GLENN ENGINEERING CORP.
STRUCTURAL: SHW GROUP, LLP
MEP: ESTES MCCLURE AND ASSOCIATES
LANDSCAPING: GRUBBS RAMSEY

Final Plans for Bidding and Construction



Rockwall Independent School District

AMANDA ROCHELL ELEMENTARY ADDITIONS AND RENOVATIONS

ROCKWALL, TEXAS

Project Number: 1441.04.018
Drawing Date: 08/31/2004
Drawn: R.HOWMAN
Checked: RAH
Scale: AS SHOWN
ACAD File: ROCHELLE-ENG-ADD1-REV2
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Revisions:

1	10/12/2004	CITY COMMENTS
2	11/8/2004	CITY COMMENTS
3	11/23/2004	CITY COMMENTS

Water Details

These Drawings have been modified to conform to the Construction Records.
Glenn Engineering Corporation
By: [Signature] Date: 11.23.04

GLENN ENGINEERING
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CU1.05

User: Rick Nov 23, 2004 - 9:34am \\Robert-xp\C-DRIVE\ROCKWALL\Rockwell\BID-SET\ADDITION\BIDSET\ROCHELLE-ENG-ADD1-REV2.dwg