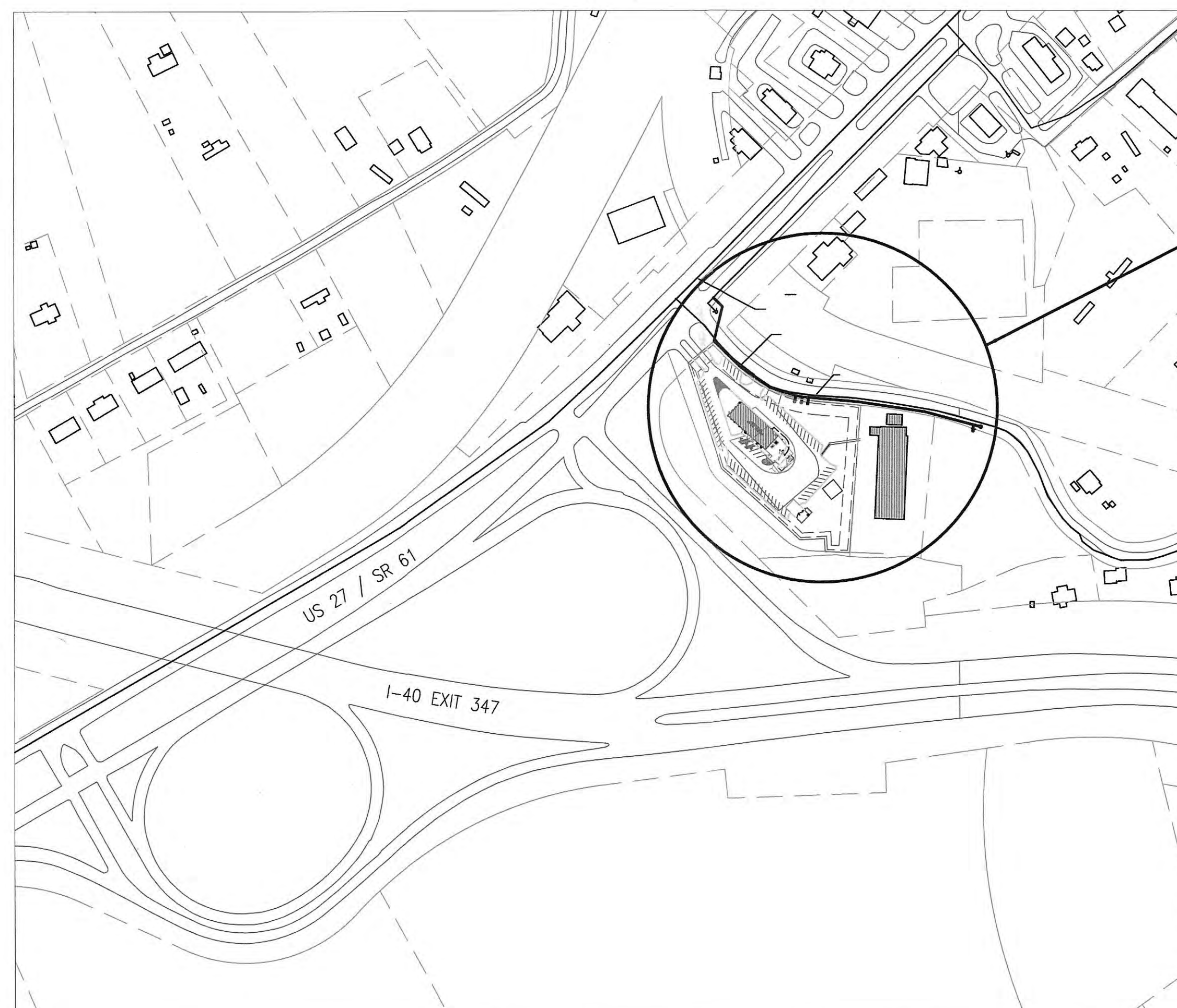


HARRIMAN UTILITY BOARD

Roane County, Tennessee

Water Main Upgrade & Fire Hydrant Installation

LOCATION MAP



PROJECT LOCATION

Project Engineer



APPROVAL EXPIRES
MAR 18 2010
TENN DEPT OF ENVIRONMENT & CONSERVATION
DIVISION OF WATER SUPPLY

WS 09 0148

No.	Revision/Issue	Date

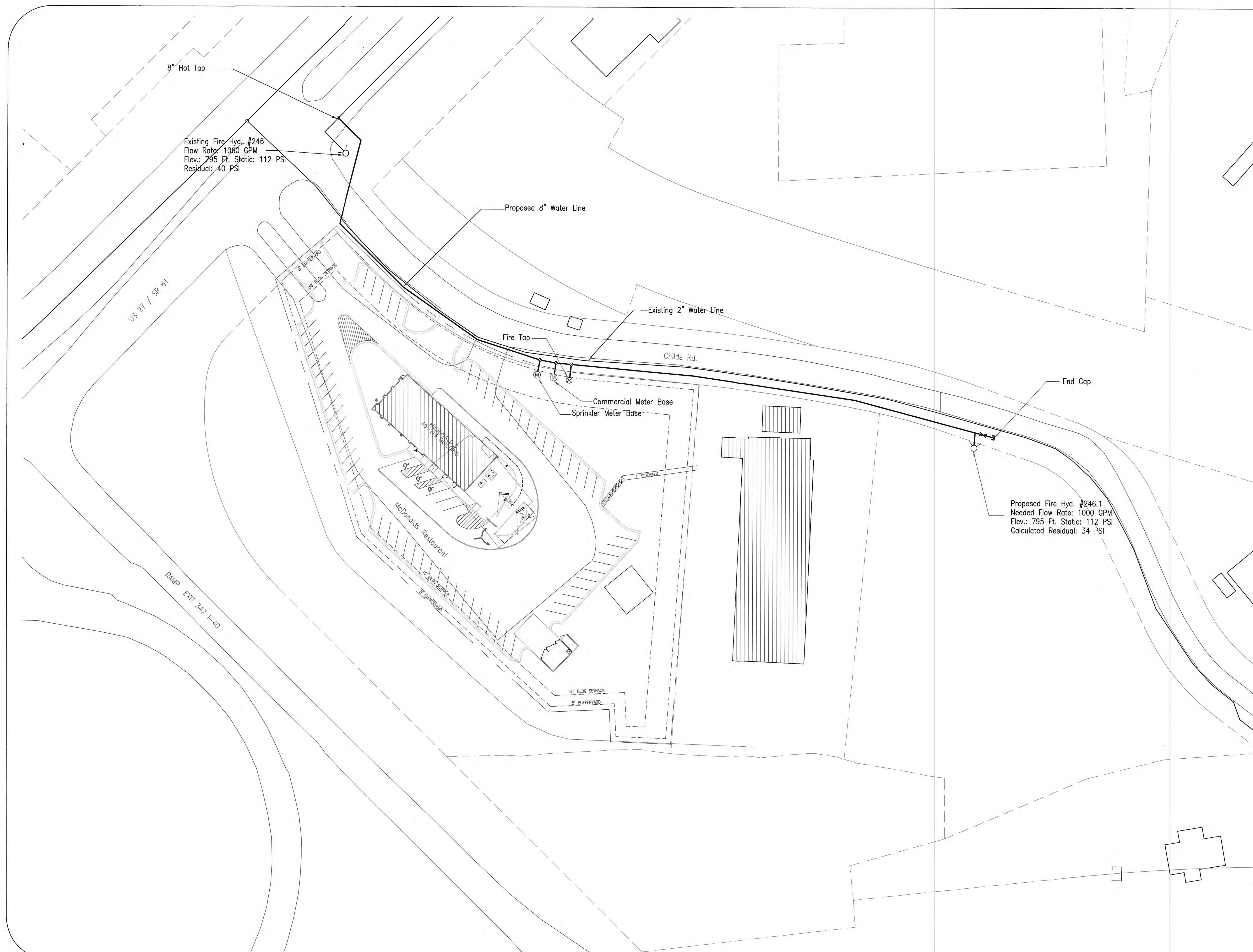
APPROVED FOR CONSTRUCTION
THE DOCUMENT BEARING THIS SEAL HAS BEEN REVIEWED BY THE
TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF WATER SUPPLY
AND IS HEREBY APPROVED FOR CONSTRUCTION BY THE ENGINEER
MAR 18 2009
THIS SEAL IS VALID FOR ONE YEAR
THE APPROVAL SHALL NOT BE CONSIDERED AS A PRELIMINARY PREPARATION OF PROJECT
OPERATION OR A SUBSTITUTION FOR THE ENGINEER'S RESPONSIBILITY FOR THE PROJECT'S DESIGN
AND CONSTRUCTION

Firm Name and Address
Harriman Utility Board
300 N. Roane St.
Harriman, TN 37748

Project Name and Address
Water Main Upgrade
1705 S. Roane St.
HWY. 27 / SR 61
Harriman, TN 37748

SYMBOL KEY	
	Fire Hydrant
	Elbow and Tee
	Fire System Tap
	Shutoff Valve
	Water Meter

Project	Sheet
Water Main Upgrade	1 of 3
Date	1/12/09
Scale	NOT TO SCALE



General Notes

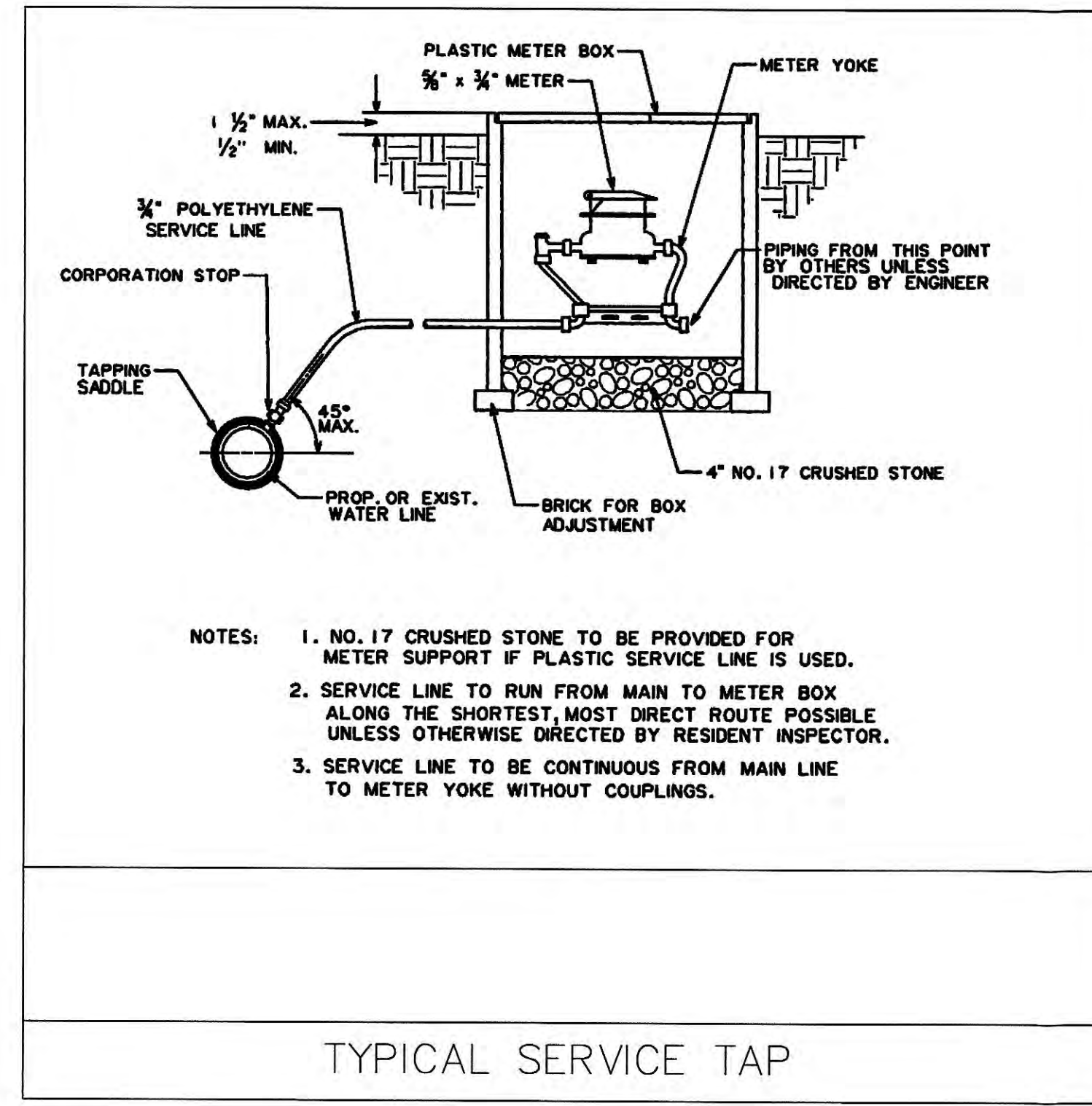
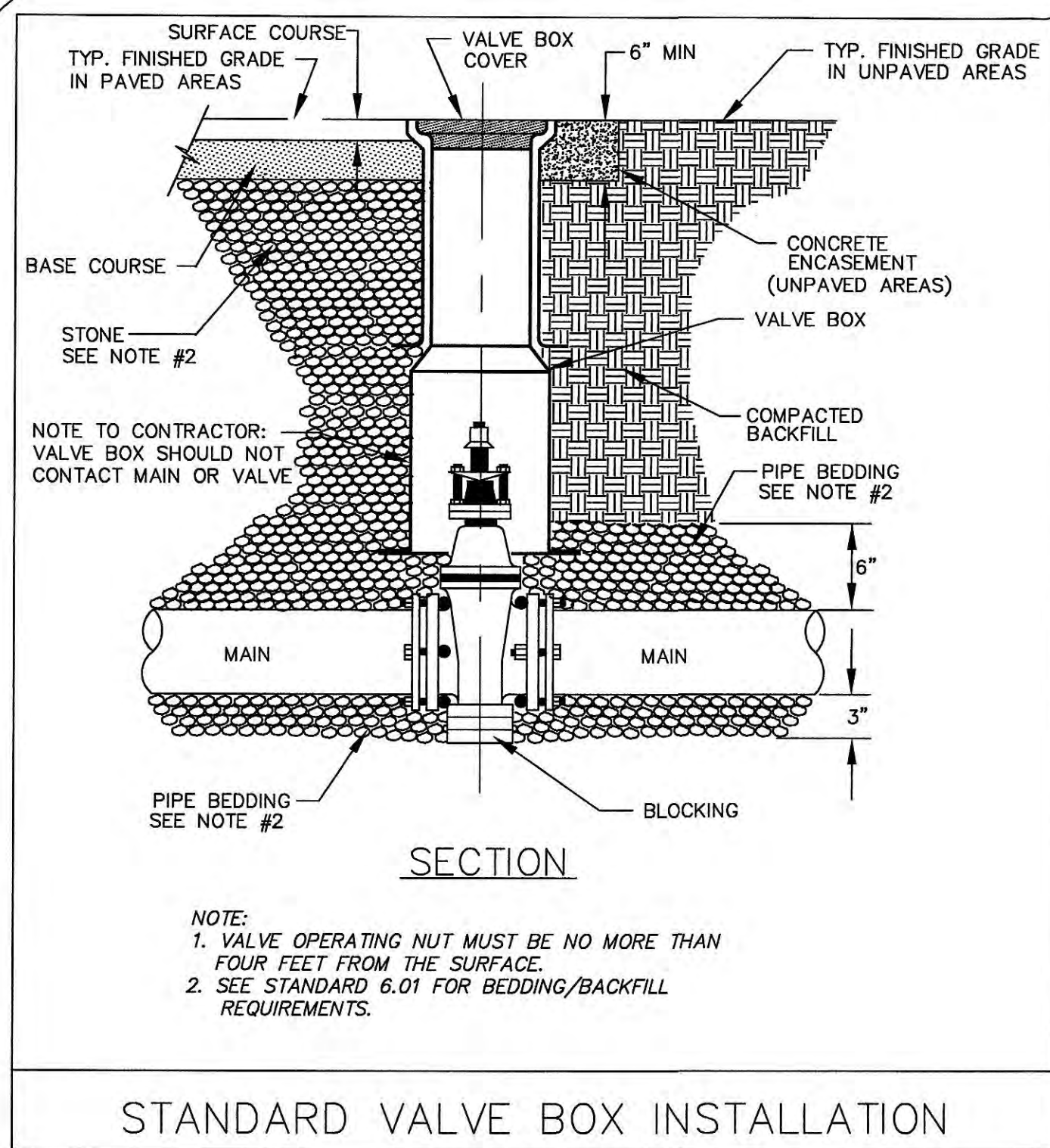


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Water Main Upgrade
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HWY. 27 / SR 61
Harriman, TN 37748

Project Water Main Upgrade	Sheet 2 of 3
Date 2/11/09	
Scale 1" = 40'	

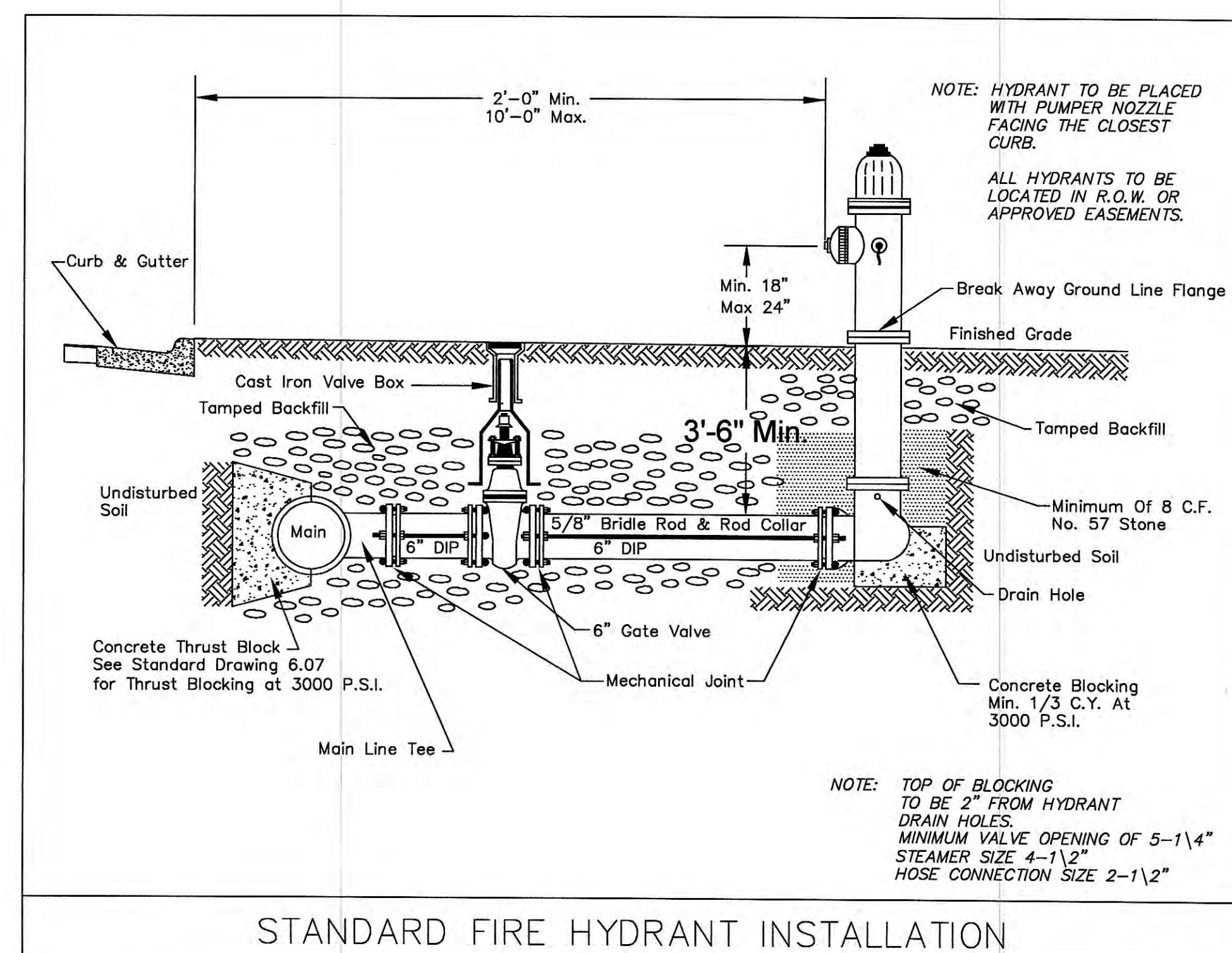
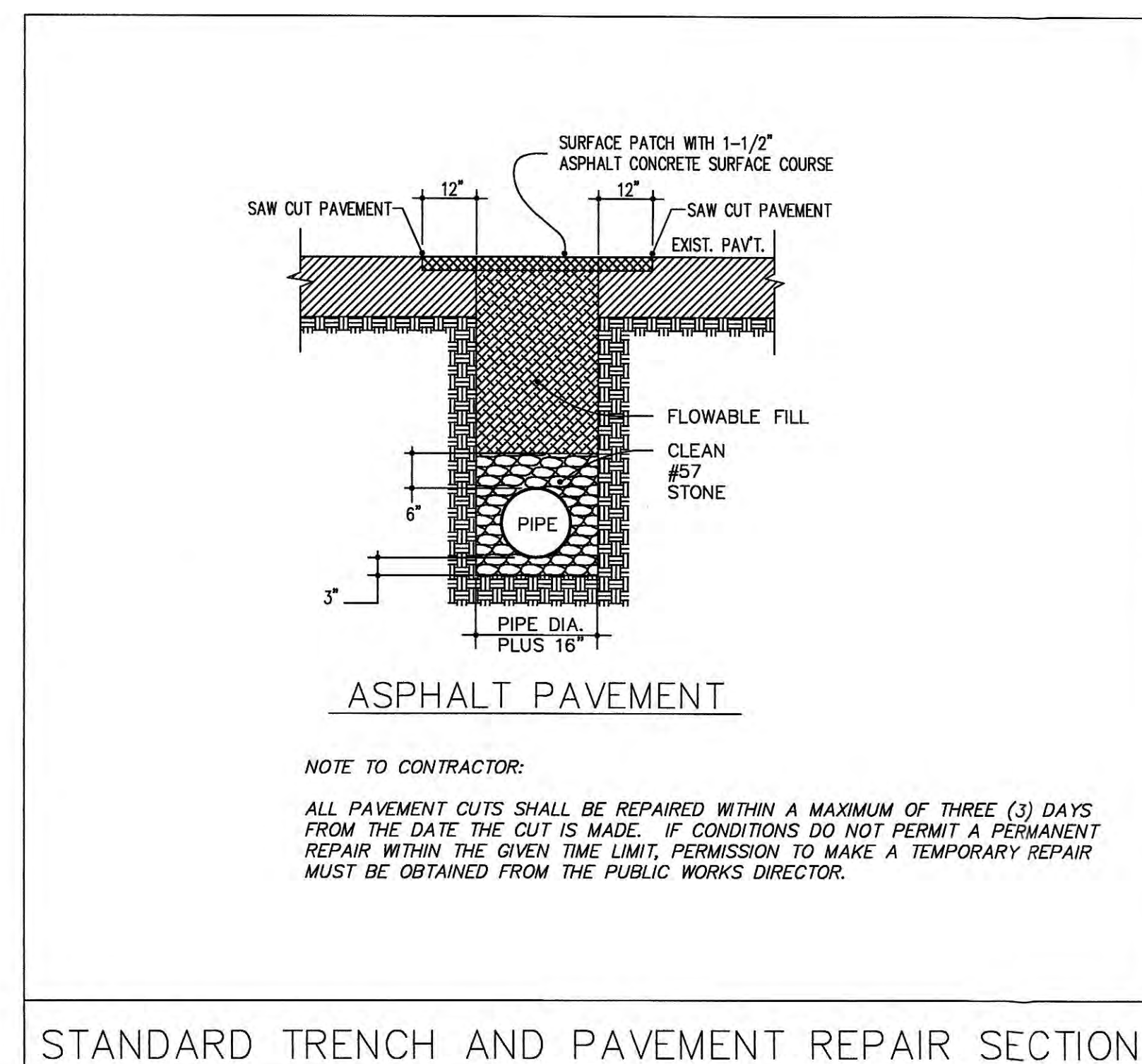
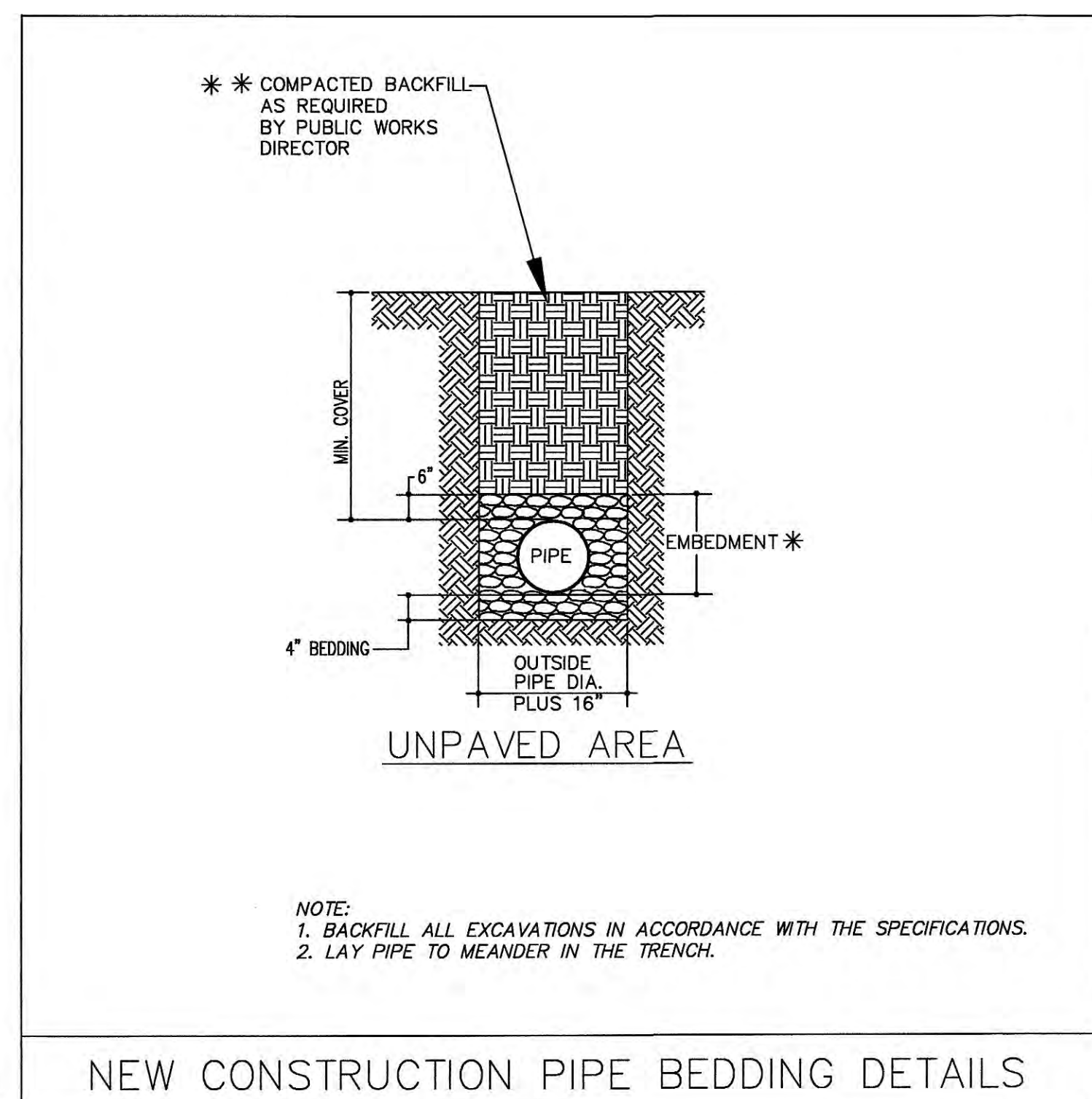


PIPE SIZE	90 DEGREE				45 DEGREE				22 1/2 DEGREE				11 1/4 DEGREE				TEES AND PLUGS								
	H1	H2*	V	D	CU.FT.	H1	H2*	V	D	CU.FT.	H1	H2*	V	D	CU.FT.	H1	H2*	V	D	CU.FT.					
3"	18"	10"	12"	8"	0.71	14"	5.5"	9"	8"	0.40	10"	5.5"	7"	8"	0.27	7"	5.5"	5"	8"	0.19	18"	10"	10"	8"	0.58
4"	24"	12"	16"	8"	1.16	18"	7"	12"	8"	0.66	13"	7"	9"	8"	0.43	9"	7"	6"	8"	0.28	21"	12"	14"	8"	0.95
6"	36"	15"	24"	11"	3.31	27"	9"	18"	9"	1.54	19"	9"	13"	8"	0.81	14"	9"	9"	8"	0.53	31"	15"	21"	8"	1.92
8"	48"	16"	32"	16"	8.13	36"	10"	24"	13"	3.76	26"	10"	17"	8"	1.33	18"	10"	12"	8"	0.81	41"	17"	27"	12"	4.66
10"	60"	20"	40"	20"	15.72	45"	12"	30"	16"	7.12	32"	12"	21"	10"	2.48	23"	12"	15"	8"	1.22	51"	20"	41"	16"	11.14
12"	72"	22"	48"	25"	27.83	53"	13"	36"	20"	12.36	38"	13"	26"	13"	4.56	27"	13"	18"	8"	1.63	61"	22"	41"	20"	16.73

BASED ON 1000 PSF SOIL BEARING VALUE AND 150 PSI WATER PRESSURE IN PIPE W/NO SF
 * DIMENSIONS FOR STANDARD FITTINGS SHOWN. MODIFY COMPACT FITTINGS
 ALL CONCRETE TO BE 3000# (28 DAY STRENGTH). NO CONCRETE SHALL COVER BOLTS OR GLANDS.

NOTE: DIMENSIONS ARE CONTROLLED BY DIAMETER OF BRANCH MAIN.

STANDARD REACTION BLOCKING—HORIZONTAL BEND



General Notes

2/11/09

No.	Revision/Issue	Date

Firm Name and Address

Harriman Utility Board
 300 N. Roane St.
 Harriman, TN 37748

Project Name and Address

Water Main Upgrade
 1705 S. Roane St.
 HWY. 27 / SR 61
 Harriman, TN 37748

Project

Water Main Upgrade

Date

1/12/09

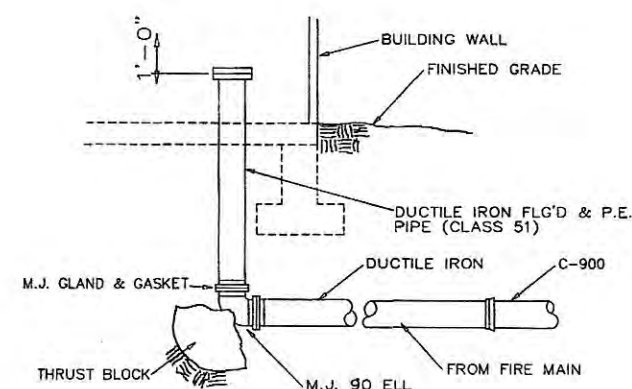
Scale

NOT TO SCALE

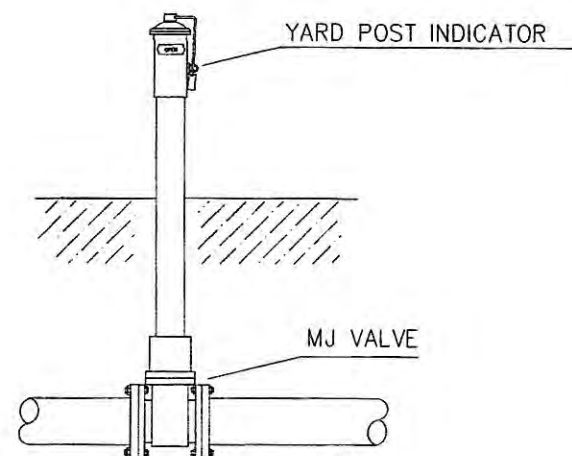
Sheet

3 of 3

- UNDERGROUND GENERAL NOTES
- ALL UNDERGROUND PIPE IS TO BE DUCTILE IRON
 - NEW FIRE LINE IS TO BE TESTED AT 200 PSI AND THOROUGHLY FLUSHED ACCORDING TO NFPA STANDARDS.
 - CONNECTION TO EXISTING WATER LINE IS TO BE MADE BY K.U.B.
 - ALL PIPE IS TO HAVE A MINIMUM BURY OF 36" TO THE TOP OF THE PIPE.
 - THRUST BLOCKS ARE TO BE PROVIDED AT EACH CHANGE IN DIRECTION OF A PIPELINE AND AT ALL TEES, PLUGS, CAPS, AND BENDS.
 - BACKFILLING OF TRENCH SHALL BE ACCOMPLISHED BY USING THE EXISTING SOIL AS THE BACKFILL MATERIAL.



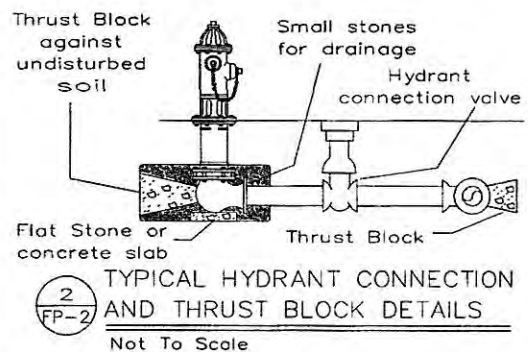
TYPICAL RUN-IN DETAIL
NO SCALE



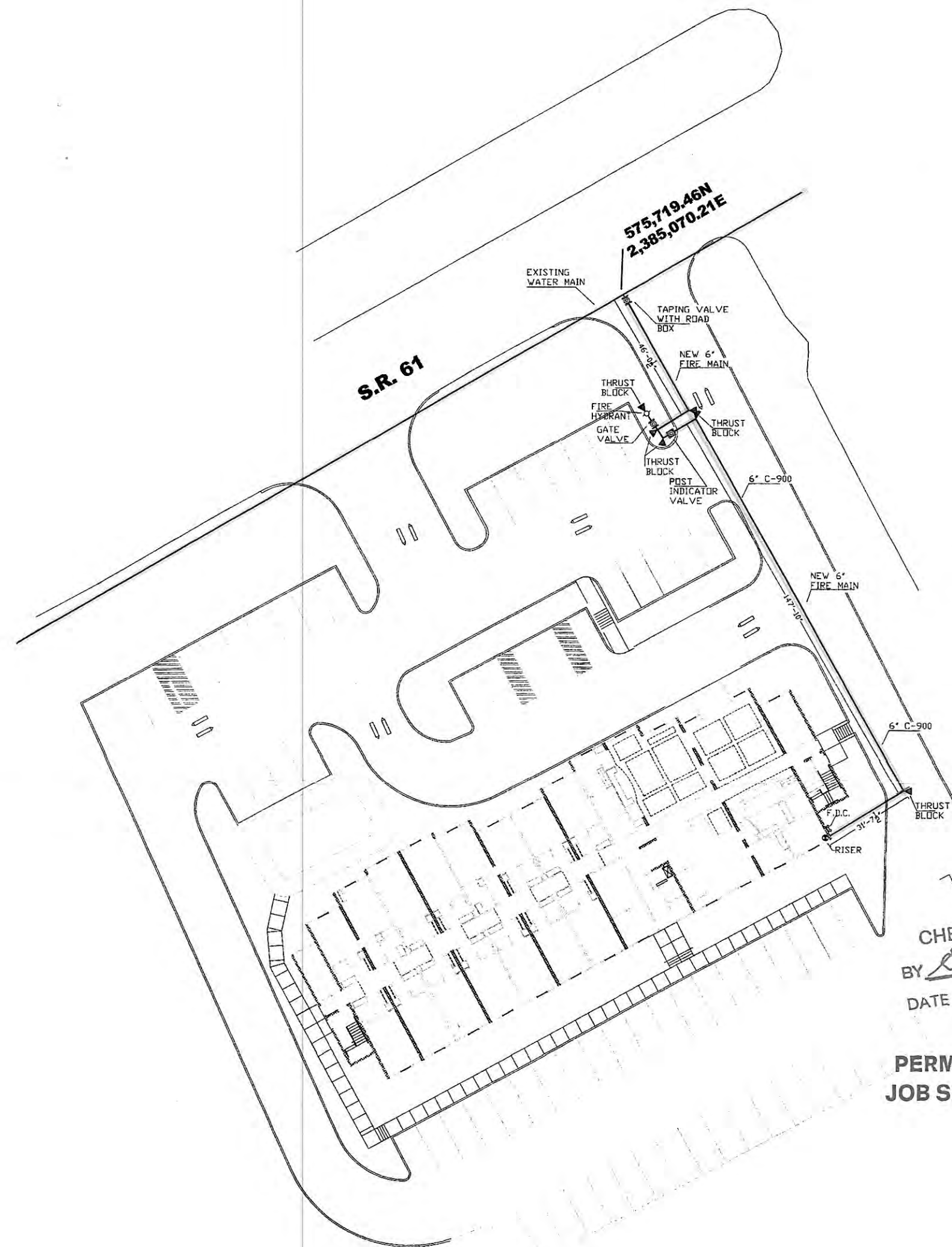
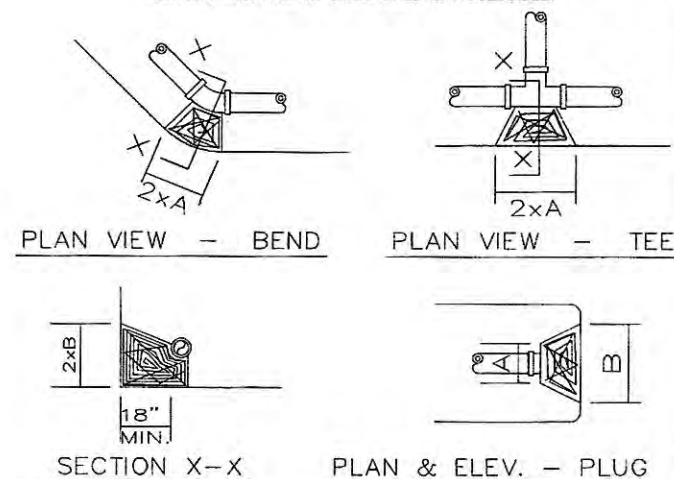
POST INDICATOR VALVE

AREA OF BEARING FACE REQUIRED											
PIPE SIZE	90° BEND	45° BEND	TEE	PLUG	90° BEND	45° BEND	TEE	PLUG	90° BEND	45° BEND	TEE
2h	6	4	4	6	3	4	4	6	8		
4	9	7	5	8	4	6	7	8	12		
6	16	10	9	10	6	8	10	12	21		
8	22	13	12	13	8	10	13	16	29		
10	26	17	14	17	10	13	16	20	36		
12	32	20	17	20	12	16	20	24	45		

NOTE: ALL DIMENSIONS GIVEN IN INCHES



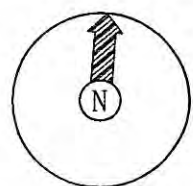
- NOTES:
- 1) AREAS OF BEARING SHOWN IN CHART ARE TO BE USED WHEN SOIL IS A SUITABLE EQUIVALENT TO SAND AND GRAVEL MIXED WITH CLAY. FOR OTHER SOILS THE DIMENSIONS SHOWN SHALL BE MULTIPLIED BY THE APPROPRIATE FACTOR:
SOFT CLAY: 4.0
SAND: 2.0
SAND & GRAVEL: 1.33
SHALE: 0.4
 - 2) CONCRETE FOR THRUST BLOCKS SHALL BE MIN. 3000 PSI.
 - 3) THRUST BLOCKS SHALL BE POURED BETWEEN UN-DISTURBED SOIL AND THE FITTING TO BE RESTRAINED, LEAVING ALL JOINTS UNCOVERED & ACCESSIBLE.



T.D.O.T.
CHECKED & APPROVED
BY *George W. [Signature]*
DATE DEC 15 2008

PERMIT SHALL BE ON
JOB SITE AT ALL TIMES

FIRE PROTECTION UNDERGROUND PIPING
SCALE 1" = 40' - 0"



PFP

PRECISION FIRE PROTECTION, L.L.C.
P.O. BOX 7367
KNOXVILLE, TN. 37921
STATE OF TENNESSEE LICENSE # 534
STATE OF TENNESSEE RME # 529
PHONE & FAX: 865-690-8869
11-4-08
DATE
MIKE MCMULLEN

General Notes

1. All Pipe Locations are to be Field Measured Prior to Fabrication and Installation by Sprinkler Contractor.
2. All Dimensions Shown are Center to Center.
3. High Temperature Heads are to be Field Located Where Required.
4. All Pipes and Hangers are to be Installed per NFPA #13.
5. Hangers are to be U.L. Listed and F.M. Approved.

Symbols

Symbol	Description
○	Hydraulic Reference Points
[+/-]	Elev. Below Top of Steel
[+/-]	Elev. Above Finished Floor
+ (100 20-0)	Elev. of Top of Steel
⊕	Ceiling Height
⊙	Denotes Hanger Location
○	Rise up or down

Number of Sprinklers

Total This Sheet	Total This Job

Drawing FP-1

Contract No.	Fire Protection	Revisions:	Date:
Drawn By	J.A.M.		
Scale	1" = 20'-0"		
Date	11-3-08		
Approval By	HARRIMAN		

Job: SUPER 8 HOTEL
HARRIMAN
TENNESSEE
Contractor: D&S BUILDERS
SEVIERVILLE
TENNESSEE

SHEET 1 OF 1