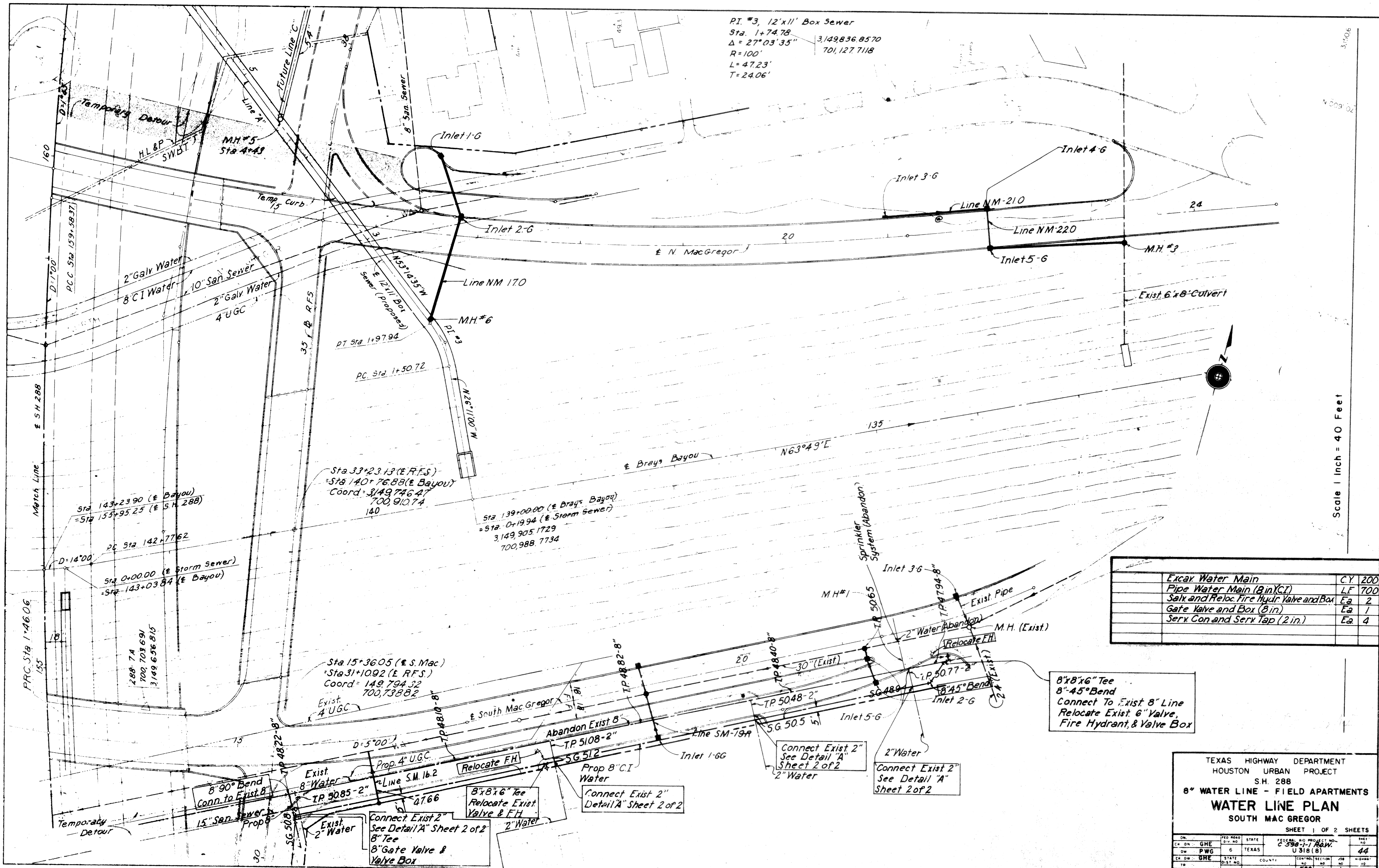


PI #3, 12"x11" Box Sewer
 Sta. 1+74.78
 $\Delta = 27^{\circ}03'35''$ 3,149,836.8570
 R=100' 701,127.7118
 L=47.23'
 T=24.06'

3/10/06



Excav Water Main	CY	200
Pipe Water Main (Bin/CI)	LF	700
Salv and Reloc. Fire Hydr. Valve and Box	Ea	2
Gate Valve and Box (8 in)	Ea	1
Serv Con and Serv Tap (2 in)	Ea	4

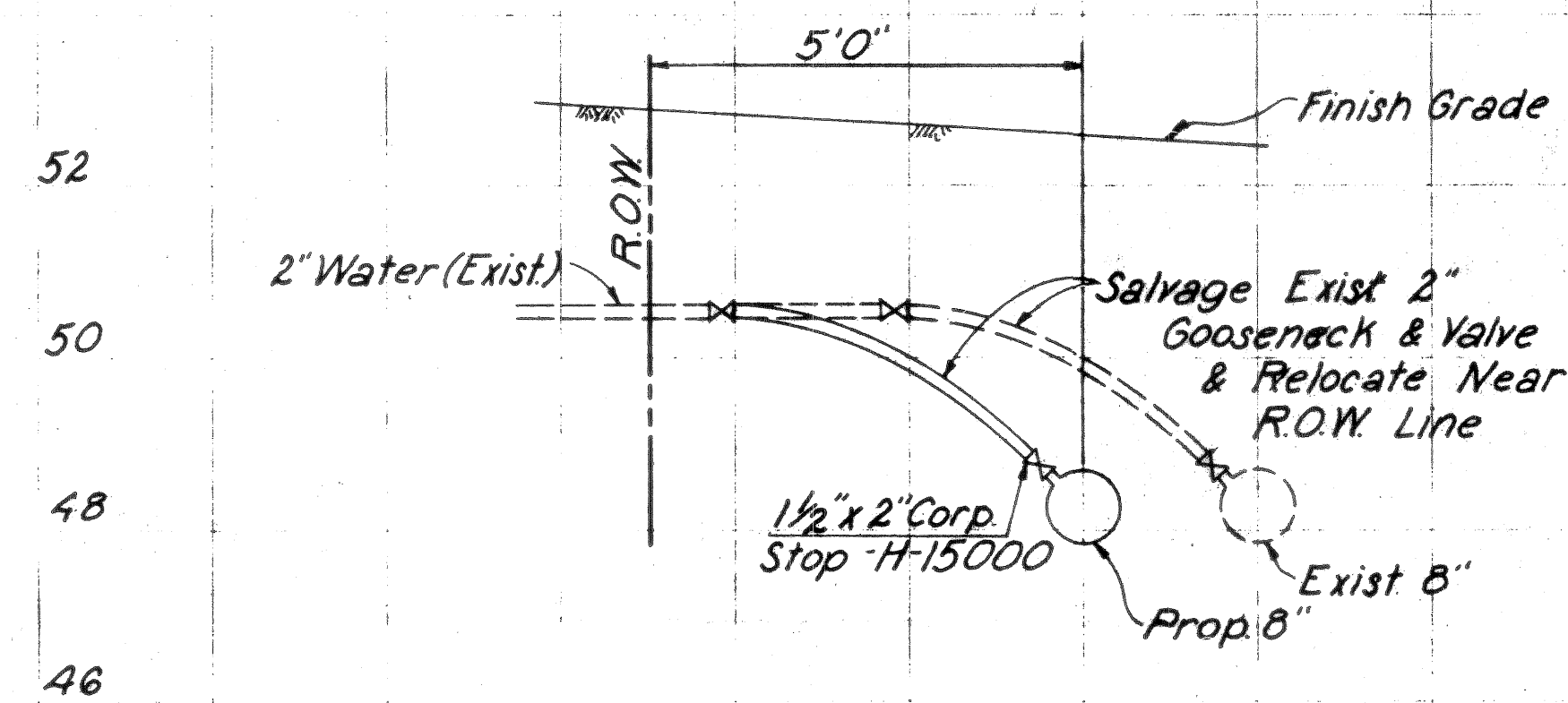
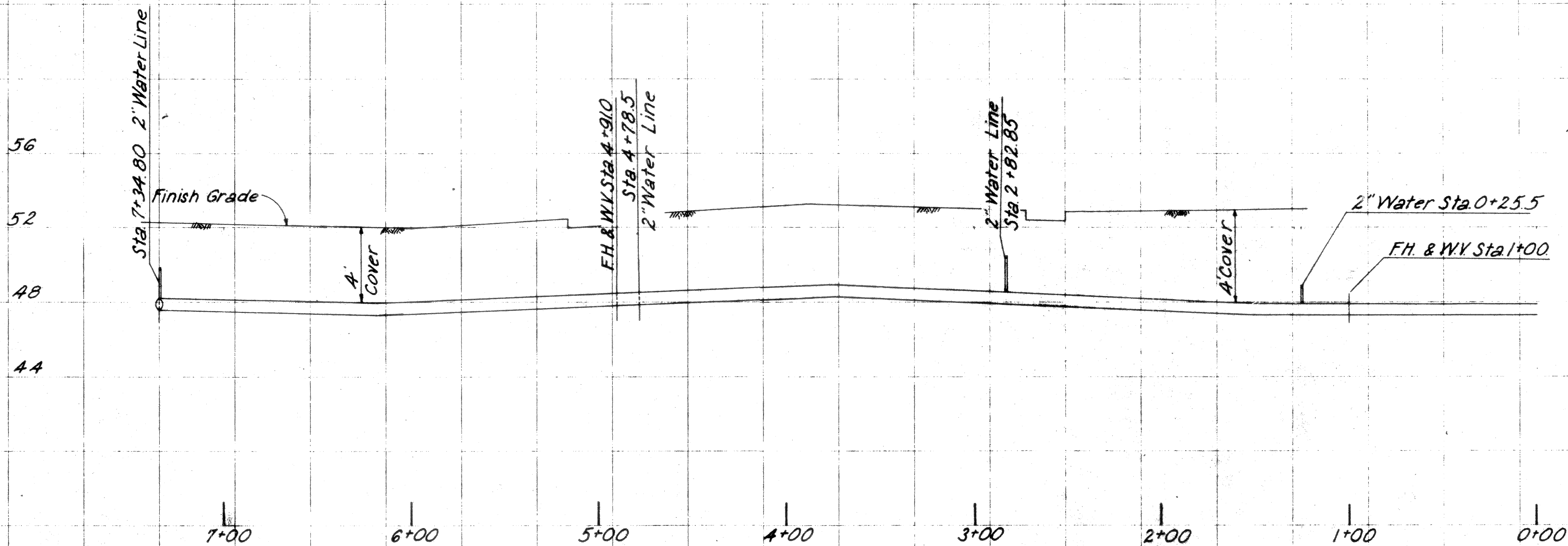
8"x8"x6" Tee
 8"-45° Bend
 Connect To Exist 8" Line
 Relocate Exist. 6" Valve,
 Fire Hydrant, & Valve Box

TEXAS HIGHWAY DEPARTMENT
 HOUSTON URBAN PROJECT
 S.H. 288
8" WATER LINE - FIELD APARTMENTS
WATER LINE PLAN
 SOUTH MAC GREGOR

SHEET 1 OF 2 SHEETS

CR. DN.	GME	FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.
CR. DN.	PWG	5	TEXAS	2-598-7-1/160W	44
CR. DN.	GHE	DIST. NO.	COUNTY	CONTRACT NO.	JOB NO.
CR. TR.	12	HARRIS	598	7-1	160W

Scale 1 inch = 40 Feet



DETAIL "A"

TEXAS HIGHWAY DEPARTMENT
 HOUSTON URBAN PROJECT
 SH. 288
 WATER LINE - FIELD APARTMENT
 WATER LINE PROFILE
 SOUTH MAC GREGOR

SHEET 2 of 2	
GHE DIV. NO. 6 STATE TEXAS COUNTY HARRIS DIST. NO. 12	FEDERAL PROJECT NO. C 598-1-1 R.O.W. U 318 (8) SHEET NO. 45 CONT. SECT. JOB HIGHWAY NO. 288 / 7 288

PI. #3, 12"x11" Box Sewer
 Sta. 1+74.78
 $\Delta = 27^{\circ}03'35''$ 3,149,836.8570
 $R = 100'$ 701,127.7118
 $L = 47.23'$
 $T = 24.06'$

8" GATE VLV.
 8" VLV. BOX
 8"x22 1/2" BEND AB
 8"x11 1/4" BEND AB
 8" PLUG & CLAMP

8"x8" C.I TEE AB
 2-8" GATE VLV.
 8" VLV. BOX
 8"x22 1/2" BEND AB
 8"x45" BEND AB
 CONNECT TO EXIST
 8" WATER

8"x90° STEEL BEND
 8" S/O FLG. 150*
 8" B/F CONNECTION
 INSULATING GASKET
 & EPOXY COATED BOLTS,
 NUTS, WASHERS FOR
 FLANGE

CITY OF HOUSTON
 PUBLIC WORKS DEPT. WATER DIVISION
 PROPOSED WATER MAINS APPROVED FOR CONSTRUCTION
 BY THE TEXAS HIGHWAY DEPARTMENT

TEXAS HIGHWAY DEPARTMENT
 HOUSTON URBAN PROJECT
 S.H. 288

BY: *E.B. [Signature]*
 DIRECTOR, PUBLIC WORKS DEPT.

ASSISTANT DIRECTOR, WATER DIV.

LOCKWOOD, ANDREWS & NEWMAN, INC.
 CONSULTING ENGINEERS

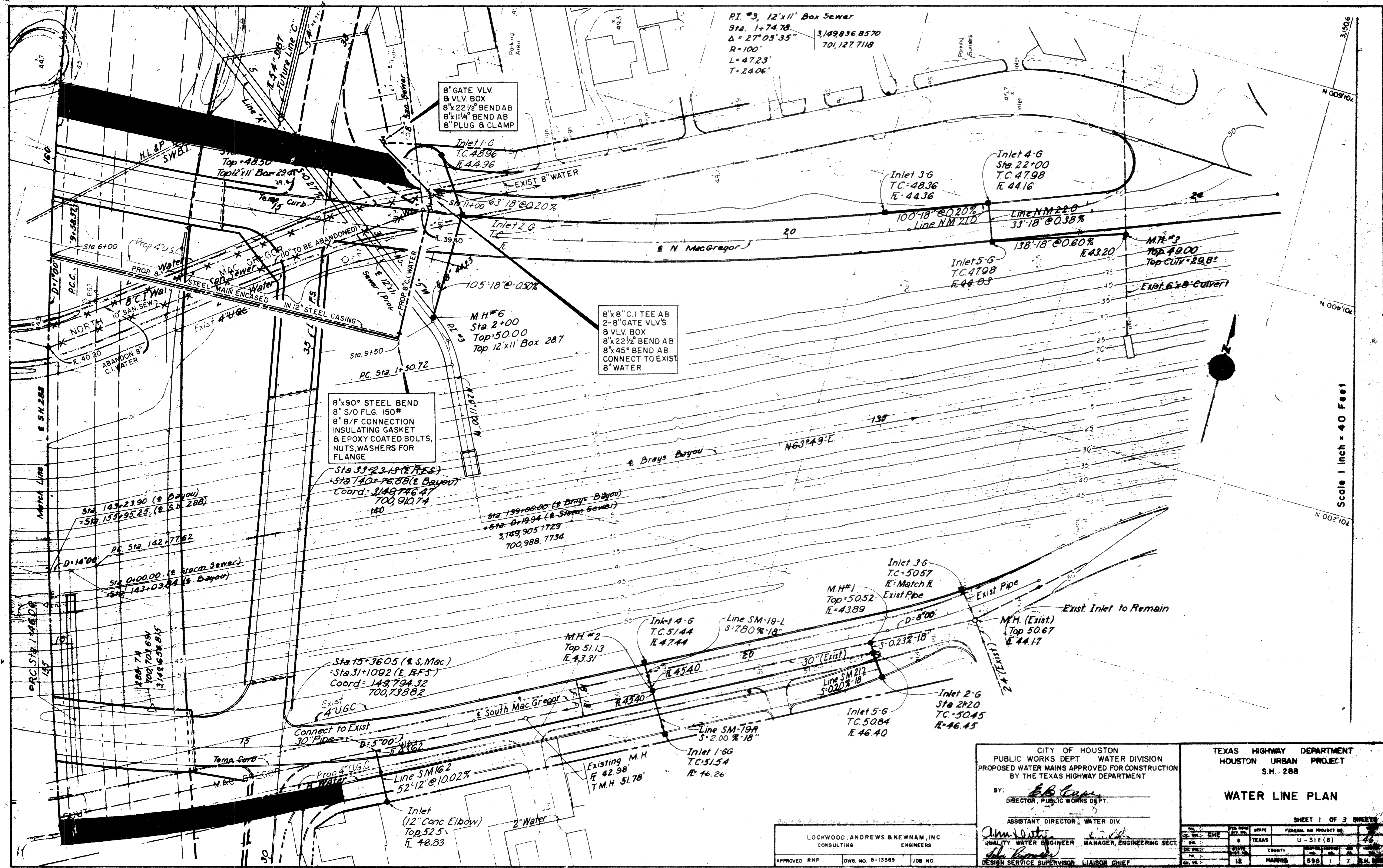
[Signature]
 QUALITY WATER ENGINEER
[Signature]
 MANAGER, ENGINEERING SECT.

APPROVED RHP DWG. NO. B-13589 JOB NO.

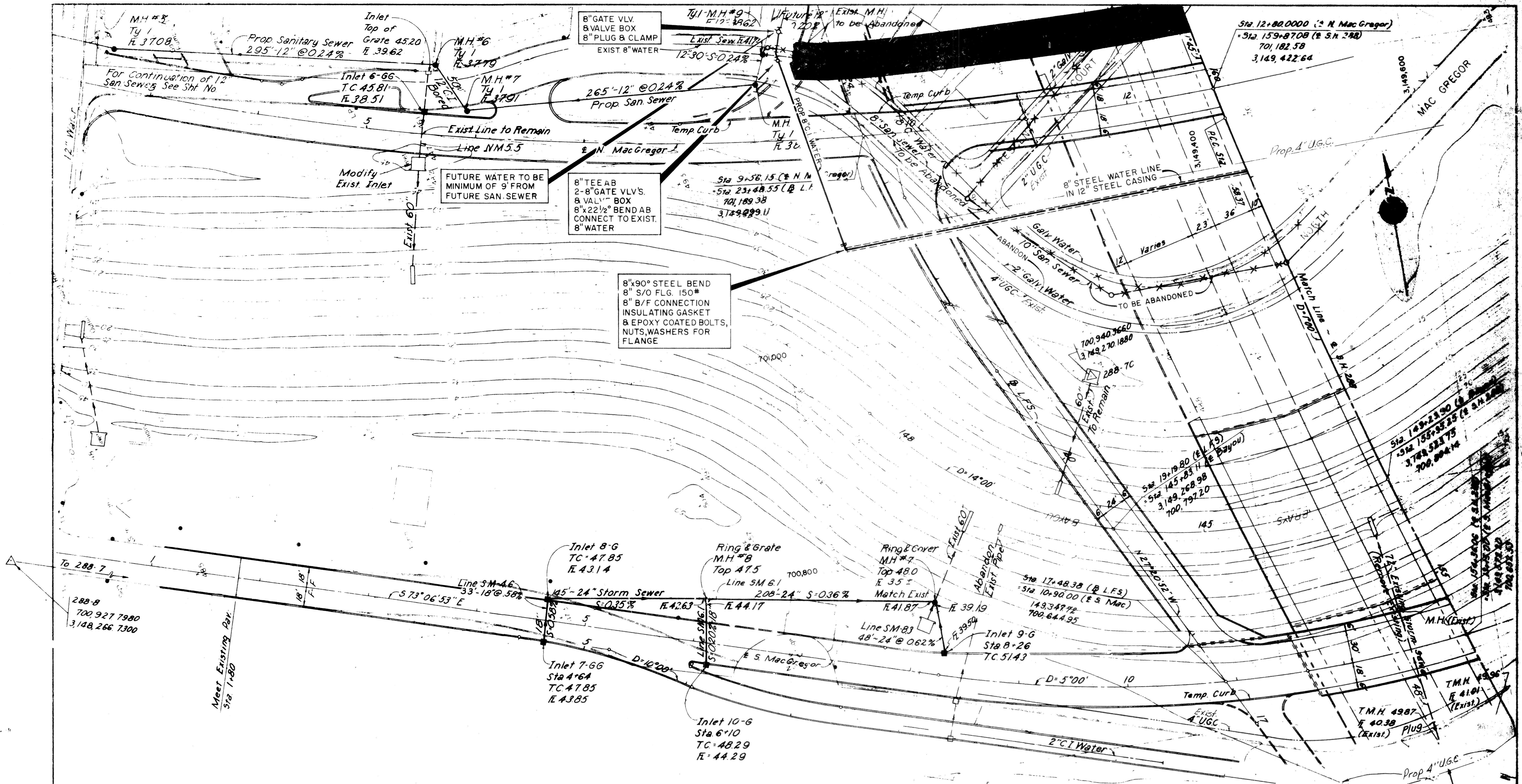
DESIGN SERVICE SUPERVISOR LIAISON CHIEF

SHEET 1 OF 3 SHEETS	
CD. NO. 686	FEDERAL NO. PROJECT 88
CD. NO. 6	U - 318 (B)
CD. NO. 12	598 1 7

WD 4932



Scale 1 inch = 40 Feet



CITY OF HOUSTON
PUBLIC WORKS DEPT. WATER DIVISION
PROPOSED WATER MAINS APPROVED FOR CONSTRUCTION
BY THE TEXAS HIGHWAY DEPARTMENT

TEXAS HIGHWAY DEPARTMENT
HOUSTON URBAN PROJECT
S.H. 288

BY: *[Signature]*
DIRECTOR, PUBLIC WORKS DEPT.
ASSISTANT DIRECTOR, WATER DIV.
[Signature]
QUALITY WATER ENGINEER MANAGER, ENGINEERING SECT.
[Signature]
DESIGN SERVICE SUPERVISOR LIAISON CHIEF

WATER LINE PLAN

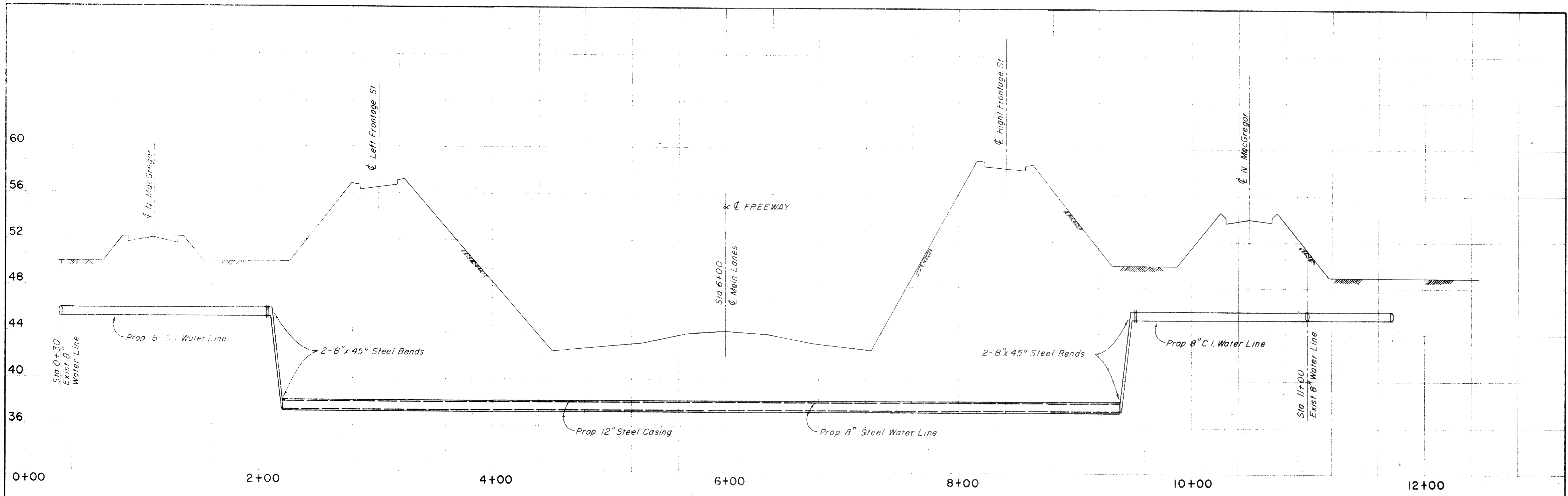
SHEET 2 OF 3 SHEETS

DN.	GHE	FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	CONTRACT NO.
DN.	GPC	6	TEXAS	U 318 (8)	47
CH. DN.	GHE				
TR. NO.					
CD. TR.	12	HARRIS	500	1	7 S.H. 288

LOCKWOOD, ANDREWS & NEWMAN, INC.
CONSULTING ENGINEERS

APPROVED RHP DWG. NO. B-13590 JOB NO. 69-235

WD 4937



NOTES:
 1. All Flanged Connections To Have Epoxy Coated Bolts, Nuts And Washers With Insulated Gaskets.

SHEET TOTALS

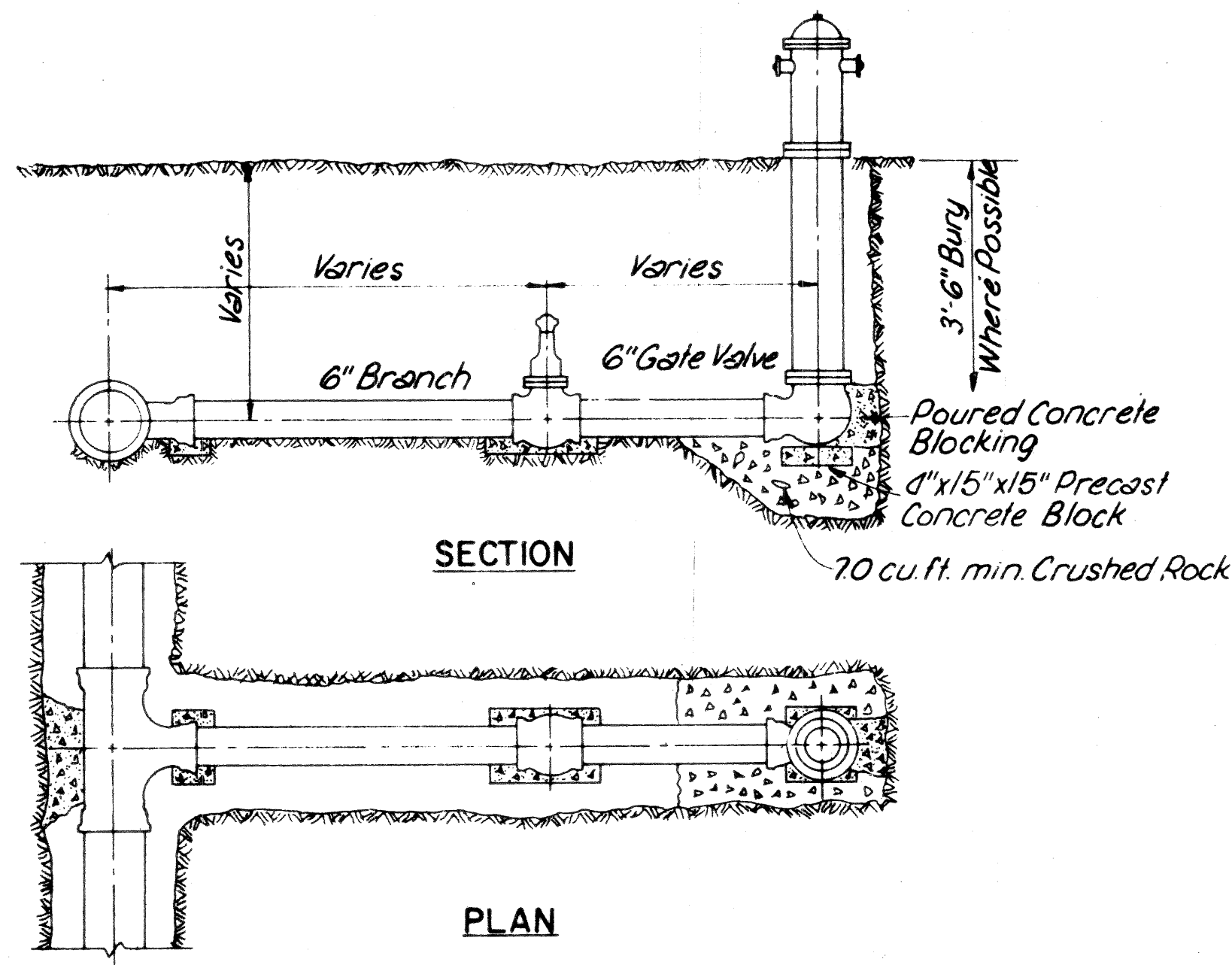
Item	Description	Unit	Quan.
	Seal Bkfl (C.I.)	CY	20
	Excav Water Main	CY	701
	Pipe Water Main (8in) (C.I.)	LF	426
	Pipe Water Main (8in) (Stl)	LF	74.2
	Casing (12in) (Stl)	LF	725
	Gate Valve & Box (8in)	Ea	6

LOCKWOOD, ANDREWS & NEWMAN, INC.
 CONSULTING ENGINEERS
 APPROVED RHP DWG. NO. B-13591 JOB NO. 69-235

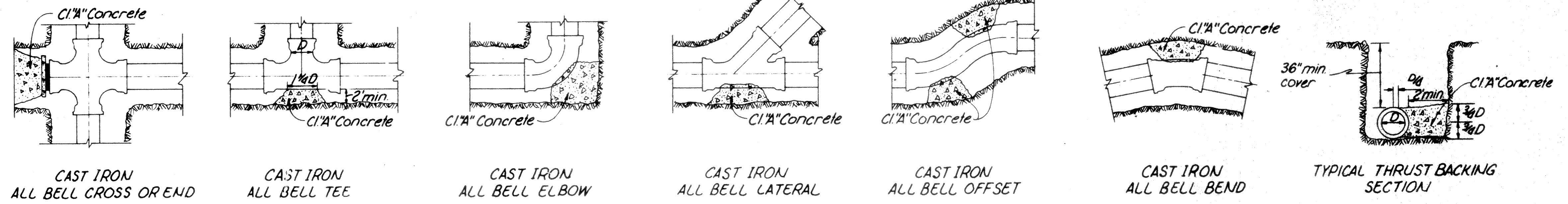
CITY OF HOUSTON
 PUBLIC WORKS DEPT. WATER DIVISION
 PROPOSED WATER MAINS APPROVED FOR CONSTRUCTION
 BY THE TEXAS HIGHWAY DEPARTMENT
 BY: *[Signature]*
 DIRECTOR, PUBLIC WORKS DEPT.
[Signature]
 ASSISTANT DIRECTOR, WATER DIV.
[Signature]
 QUALITY WATER ENGINEER MANAGER, ENGINEERING SECT.
[Signature]
 DESIGN SERVICE SUPERVISOR LIAISON CHIEF

TEXAS HIGHWAY DEPARTMENT
 HOUSTON URBAN PROJECT
 S.H. 288
**WATER LINE PROFILE
 & UTILITY SHEET**
 SHEET 3 OF 3 SHEETS

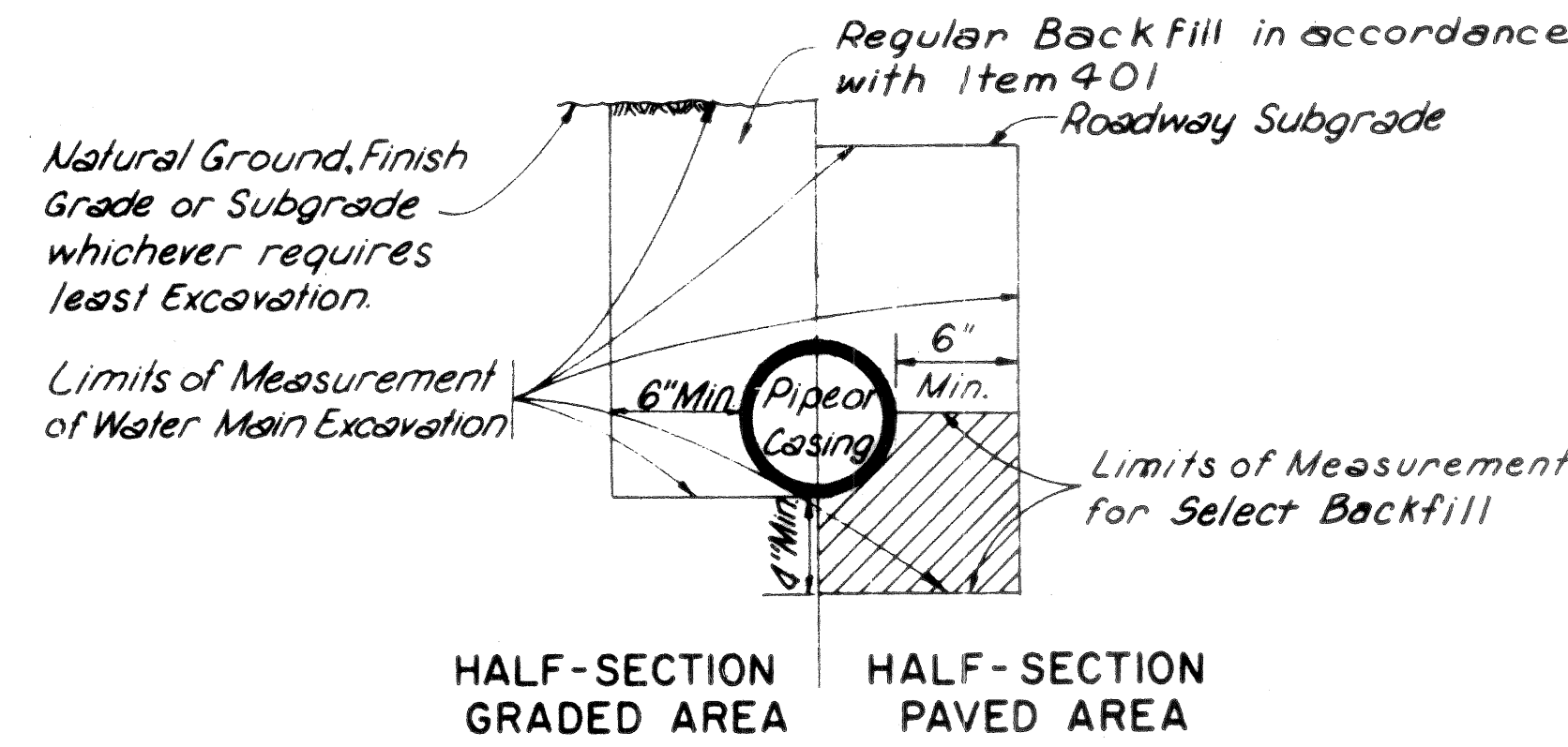
DN	FED. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.
CK. DN	6	TEXAS	U-318(8)	48
CK. DN	STATE DIST. NO.	COUNTY	CONTROL SECTION NO.	JOB NO.
CK. TR.	12	HARRIS	598 1	7 S.H. 288



FIRE HYDRANT DETAIL



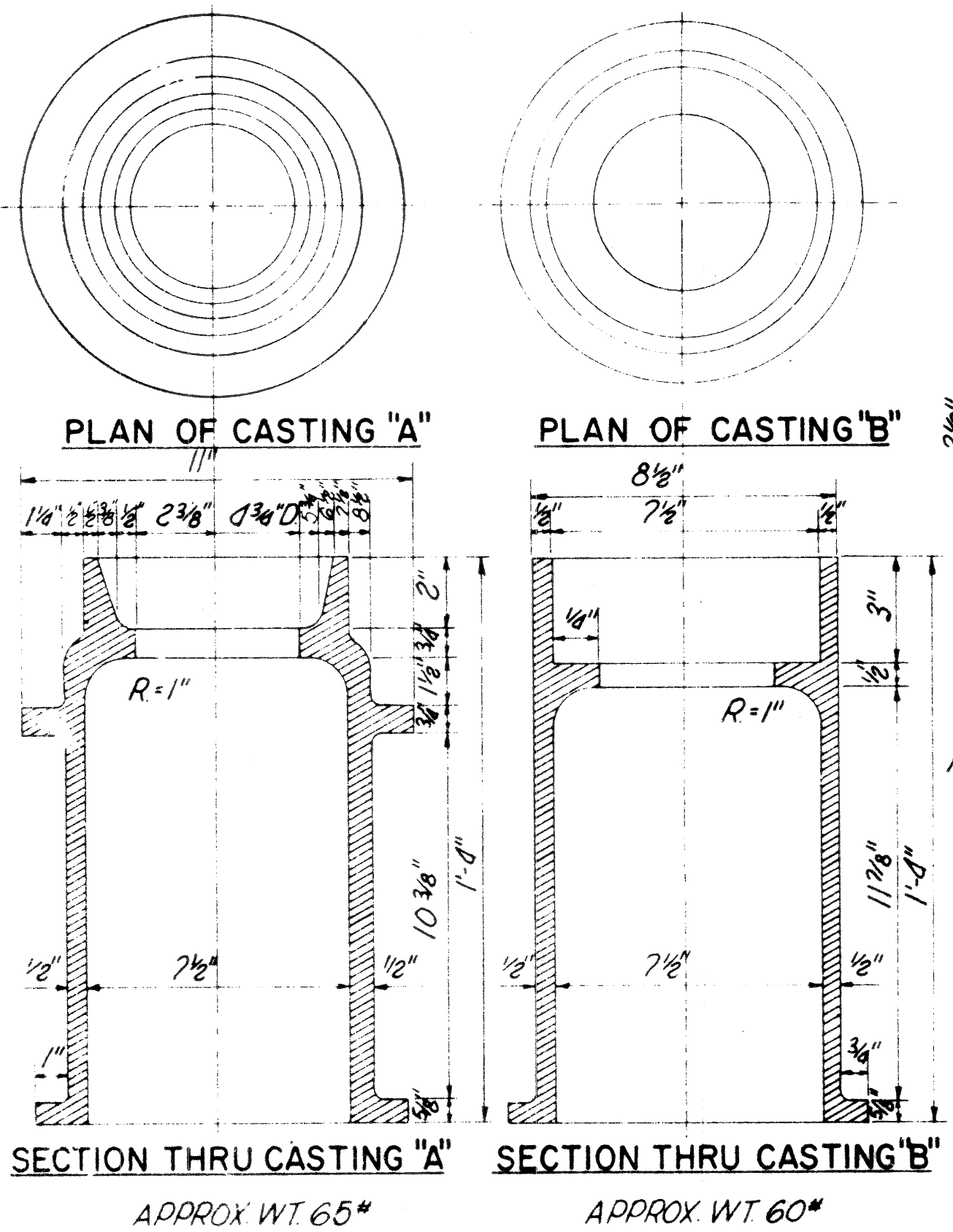
THRUST BACKING DETAILS



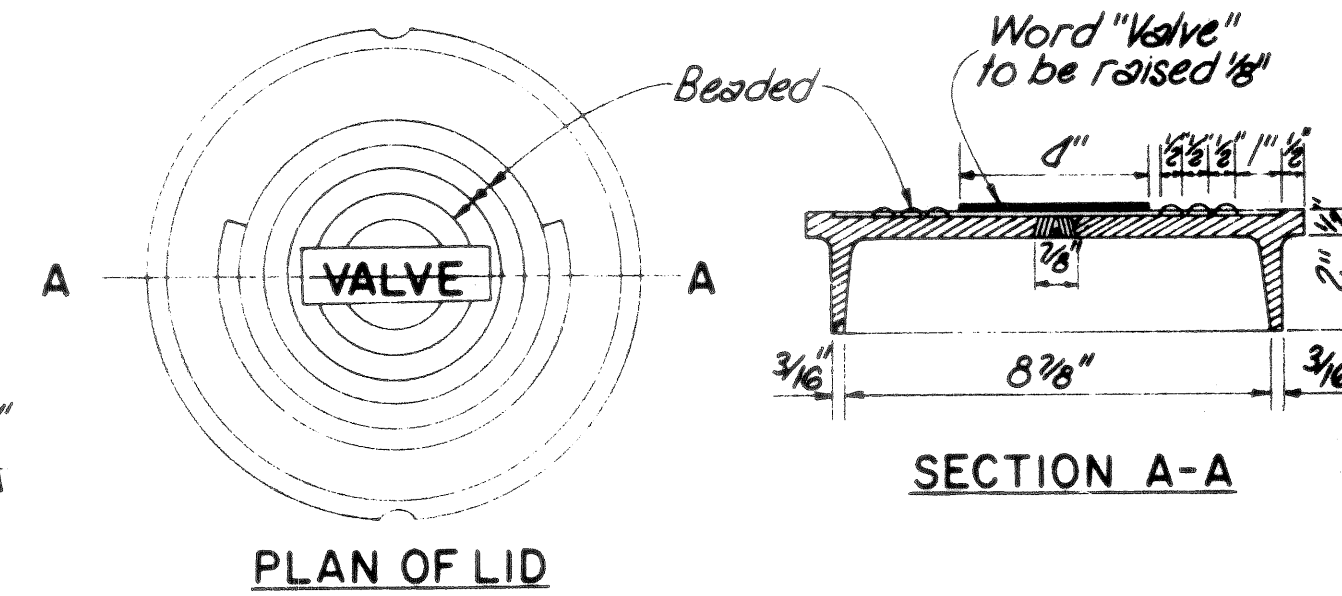
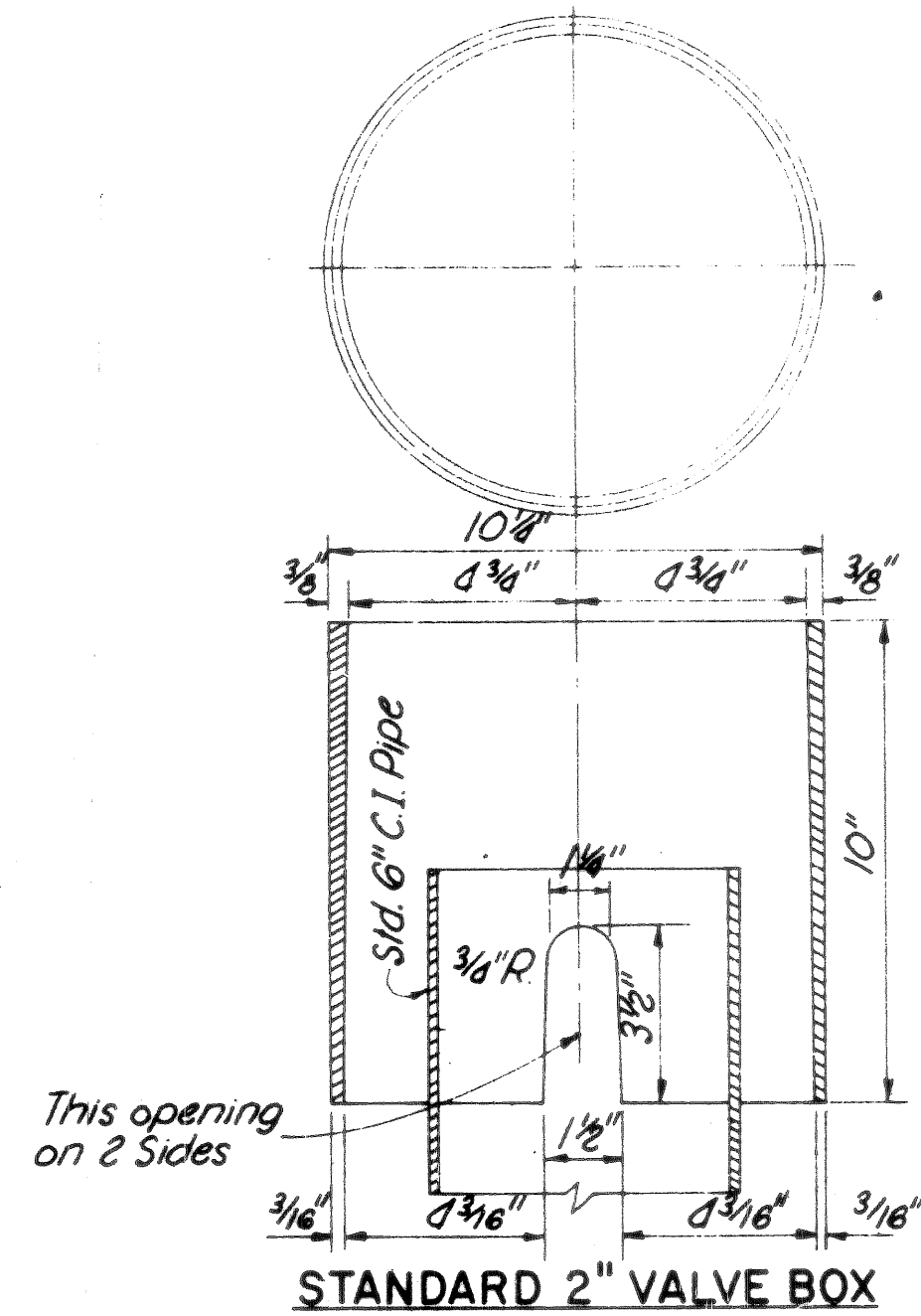
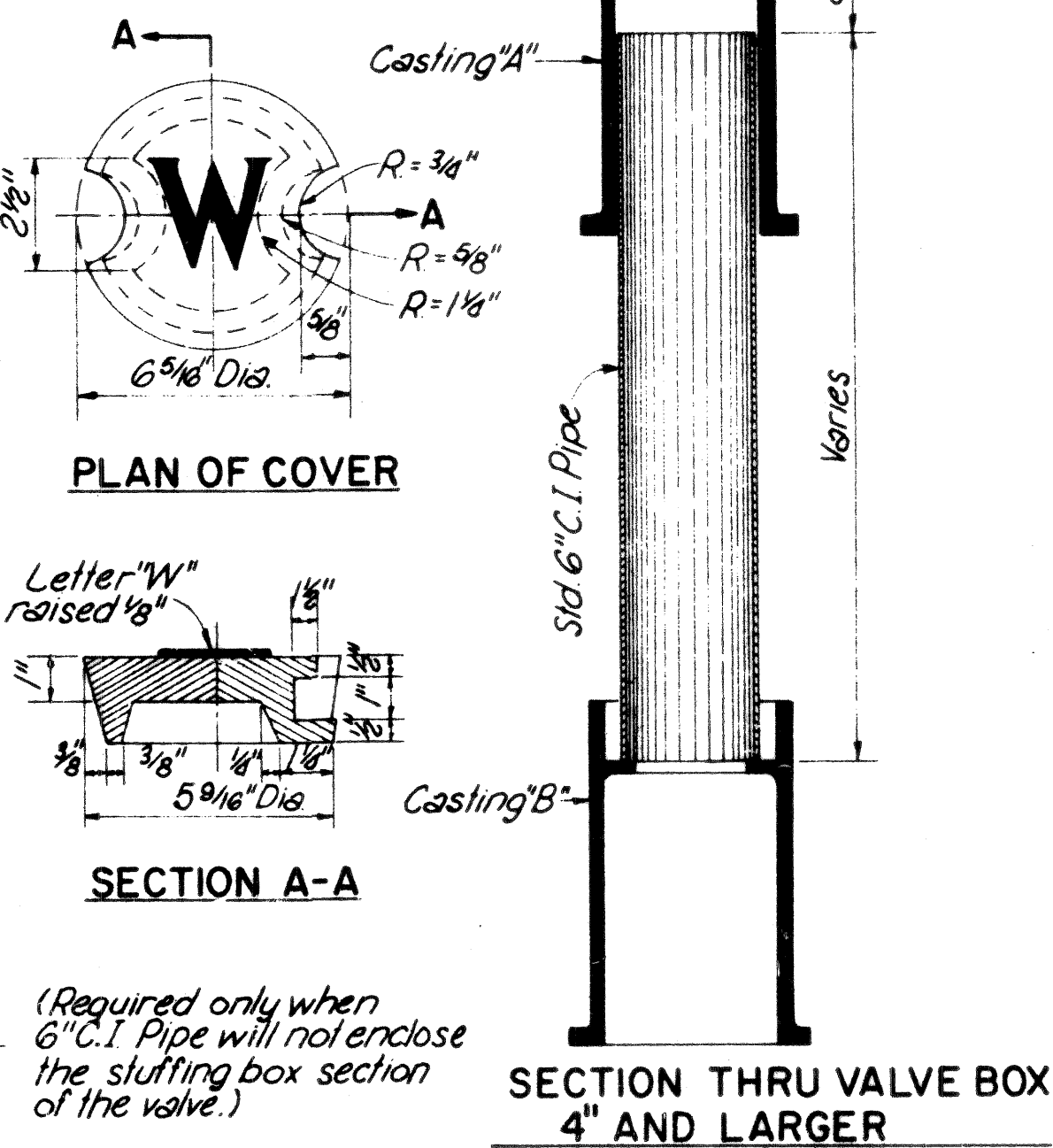
EXCAVATION & BACKFILL DIAGRAM

Select Backfill shall be extended 3' beyond edge of pavement including shoulders.

Pipe sizes 2" and smaller shall be backfilled in accordance with Item 401.



Note: Material- Gray Cast Iron
Paint - Dip in coal tar pitch varnish.



Pipe Dia	Tee, Cross, or End	1/4 Bend	1/8 Bend	1/2 Bend
6"	1.40	1.40	0.75	0.60
8"	2.40	2.40	1.30	0.70
12"	5.40	5.40	4.00	1.50

Required Thrust Backing Area in Square Feet

LOCKWOOD, ANDREWS & NEWMAN, INC.
CONSULTING ENGINEERS
APPROVED R.P.P. DWG. NO. B-13592 JOB NO. 69-235

CITY OF HOUSTON
PUBLIC WORKS DEPT. WATER DIVISION
PROPOSED WATER MAINS APPROVED FOR CONSTRUCTION
BY THE TEXAS HIGHWAY DEPARTMENT
BY: *[Signature]*
DIRECTOR, PUBLIC WORKS DEPT.
ASSISTANT DIRECTOR, WATER DIV.
QUALITY WATER ENGINEER
DESIGN SERVICE SUPERVISOR

TEXAS HIGHWAY DEPARTMENT
HOUSTON URBAN EXPRESSWAYS

WATER MAIN DETAILS

DR.	DRAWING	DATE	PER. ROAD DIV. NO.	STATE	FEDERAL AID PROJECT NO.	SHEET NO.
Ck. D.	ORIGINAL	JULY, 1963	6	TEXAS	U-318 (8)	49
Dw.						
Ck. D.						
Tr.						
Ck. Tr.						

STATE DIST. NO. 12 COUNTY HARRIS CONTRACT SECTION 598 1 7 SHEET NO. 54, 200