WATER SYSTEM IMPROVEMENTS

FOR

HARRIMAN , TENNESSEE

CONTRACT I — 500,000 GALLON GROUND LEVEL WATER STORAGE TANK

CONTRACT II — WATER TRANSMISSION LINES

SEPTEMBER, 1986

CDBG PROJECT NO. Z-31265

JOB NO. 86-09

INDEX OF DRAWINGS

SHEET	DESCRIPTION
1.	KEY MAP
2.	WATER STORAGE TANK PLANS, SECTION & DETAILS
3.	ALTITUDE VALVE ASSEMBLY & OVERFLOW DETAILS
4.	WATER LINE "A" STA. 0+00 TO STA. 15+00
5.	WATER LINE "A" STA. 15+00 TO STA. 29+18
6.	WATER LINE "A-1" STA. 0+00 TO STA. 15+00
7.	WATER LINE "A-1" STA. 15+00 TO STA. 17+30
8.	STANDARD WATER LINE DETAILS

EDWARD T. WALKER, III — STATE OF TENNESSEE — 9-29-86

WHITE - TAYLOR - WALKER , INC.

BRENTWOOD , TENNESSEE

SET NO. 1

WEST HILLS RESERVOIR
OVERFLOW 1066.77
(500,000 GALLONS)

BROWDER HILL RESERVOIR
OVERFLOW 1344.92
(25,000 GALLONS)

ALTITUDE VALVE

BOOSTER PUMPING STATION

EXISTING WATER TREATMENT PLANT AND INTAKE

NEW 500,000 GALLON STORAGE RESERVOIR
OVERFLOW 1066.77
(SHEET 2)

BOOSTER PUMPING STATION

EXISTING RESERVOIR
OVERFLOW 1066.77
(640,000 GALLONS)

WOLF BRANCH RESERVOIR
OVERFLOW 1405.50
(25,000 GALLONS)

LINE "A"
SHEET 4 & 5

LINE "A-1"
SHEET 6 & 7
(NOT IN CONTRACT)

SWICEGOOD RESERVOIR
OVERFLOW 1184.94
(25,000 GALLONS)

EMERY HEIGHTS RESERVOIR
OVERFLOW 1066.77
(500,000 GALLONS)

ALTITUDE VALVE

LEGEND

- EXISTING WATER LINE
- PROPOSED WATER LINE
- EXISTING RESERVOIR
- PROPOSED RESERVOIR

WHITE - TAYLOR - WALKER, INC.
NASHVILLE, TENNESSEE

REVISION	DATE	DESCRIPTION	BY

DESIGNED	SCALE
ETW	1" = 1000'
DRAWN	DATE
MM	SEPT. 1986
CHECKED	JOB NO
ETW	86-09

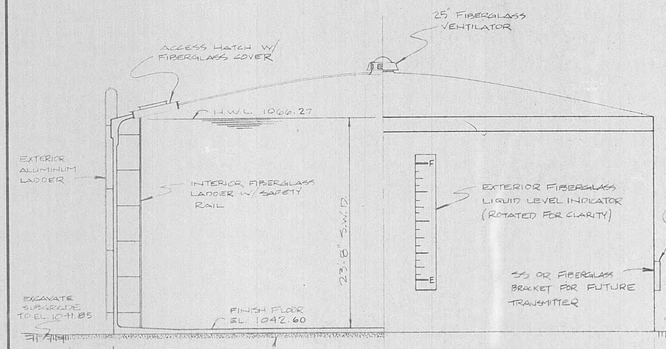
WATER SYSTEM IMPROVEMENTS
CONTRACTS I & II

KEY MAP

HARRIMAN, TENNESSEE

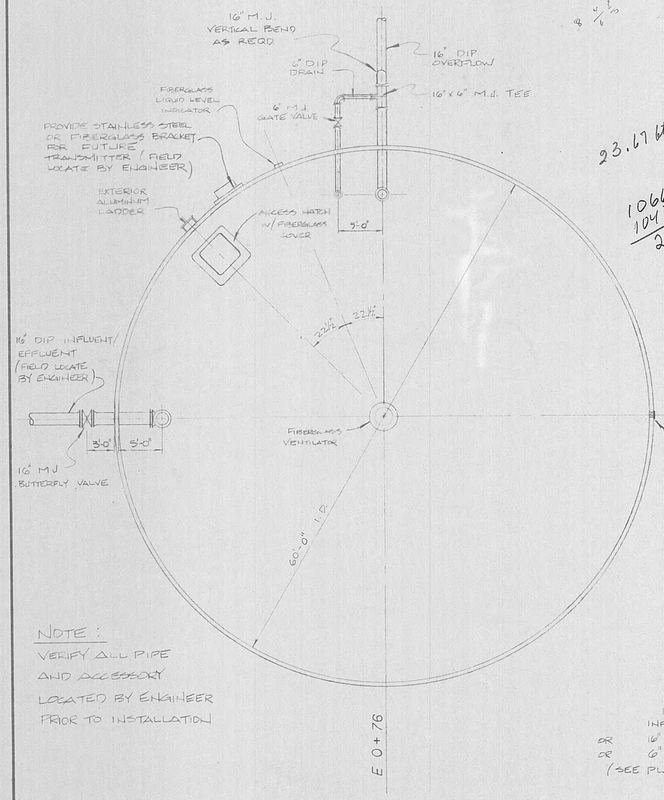
SHEET 1 OF 8

BRUNING 40-23-4682



TANK ELEVATION

SCALE : 1/8" = 1'-0"

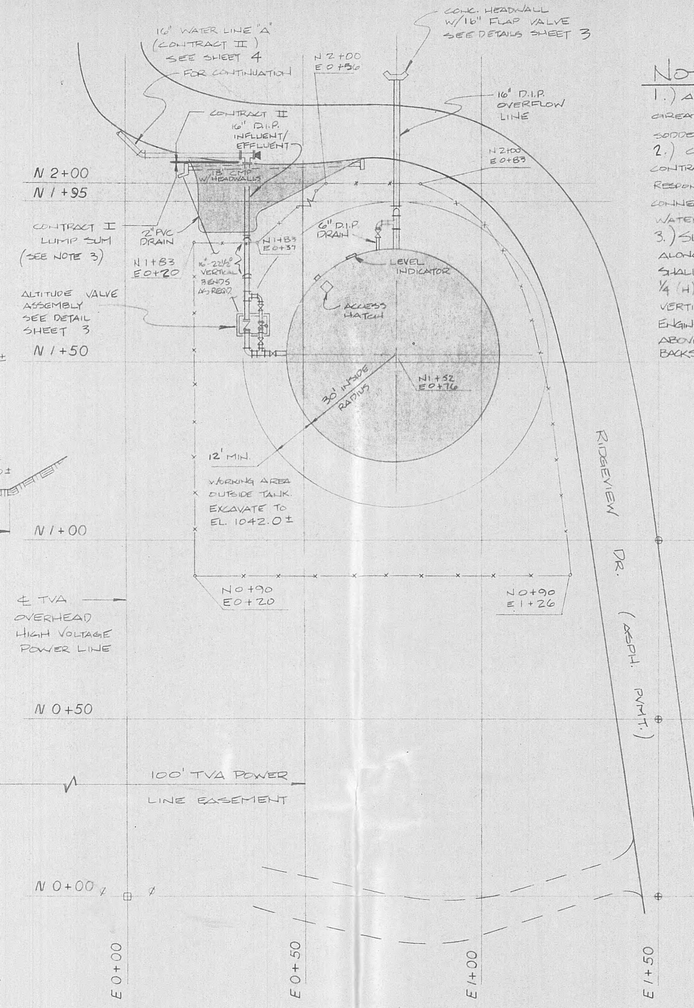


23.67 ft
1066.77
1043
23.77

NOTE:
VERIFY ALL PIPE AND ACCESSORY LOCATED BY ENGINEER PRIOR TO INSTALLATION

PRESTRESSED CONCRETE TANK PLAN

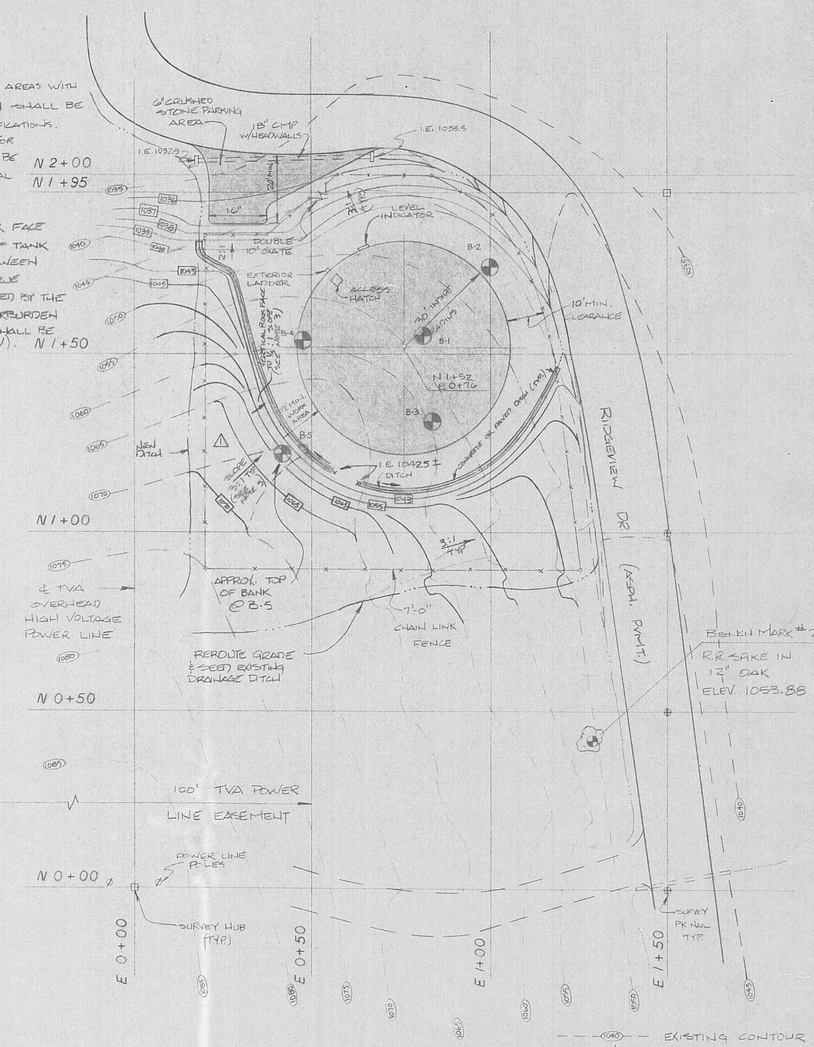
SCALE : 1/8" = 1'-0"



TANK SITE PIPING PLAN

SCALE : 1" = 20'

NOTE:
1.) ALL DISTURBED AREAS WITH GREATER THAN 3:1 SHALL BE SODDED PER SPECIFICATIONS.
2.) CONTRACTOR FOR CONTRACT I SHALL BE RESPONSIBLE FOR FINAL CONNECTION OF 16" WATER LINE.
3.) SLOPE OF ROCK FACE ALONG BACKSIDE OF TANK SHALL RANGE BETWEEN 1/4 (H) : 1 (V) AND TRUE VERTICAL AS DIRECTED BY THE ENGINEER. SOIL OVERBURDEN ABOVE ROCK FACE SHALL BE BACKSLOPED 3(H):1(V).

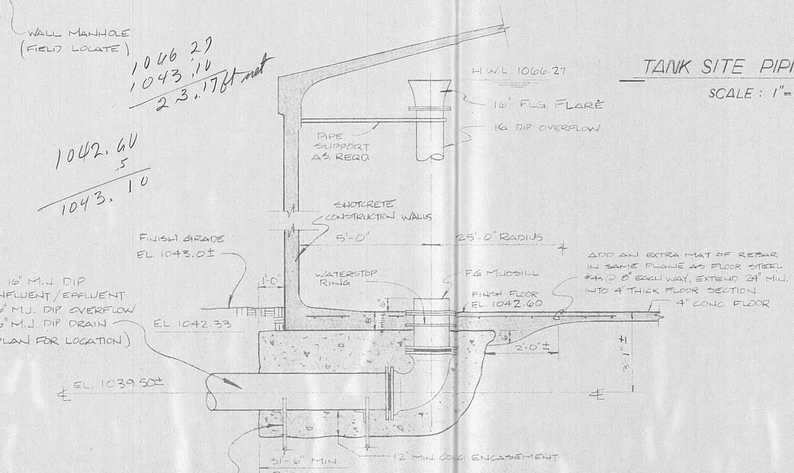


TANK SITE GRADING PLAN

SCALE : 1" = 20'

1066.27
1043.10
23.17 ft not

1042.60
5
1043.10



ADD AN EXTRA MAT OF REBAR IN SAME PLANE AS FLOOR STEEL #4 @ 8" EACH WAY, EXTEND 24" MIN. INTO 4" THICK FLOOR SECTION.

TYPICAL PIPE LINE DETAIL

NO SCALE

1066.27
1042.6
23.67

EDWARD T. WALKER III
REGISTERED ENGINEER
No. 9275
STATE OF TENNESSEE

WHITE - TAYLOR - WALKER, INC.

NASHVILLE, TENNESSEE

REVISION	DATE	DESCRIPTION	BY
1	8-3-87	REVISED GRADING PLAN	ETW

DESIGNED ETW	SCALE AS SHOWN
DRAWN MM	DATE SEPT. 1986
CHECKED ETW	JOB NO. 86-09

WATER SYSTEM IMPROVEMENTS
CONTRACT I
500,000 GALLON GROUND LEVEL
WATER STORAGE TANK

WATER STORAGE TANK
PLANS, SECTION & DETAILS

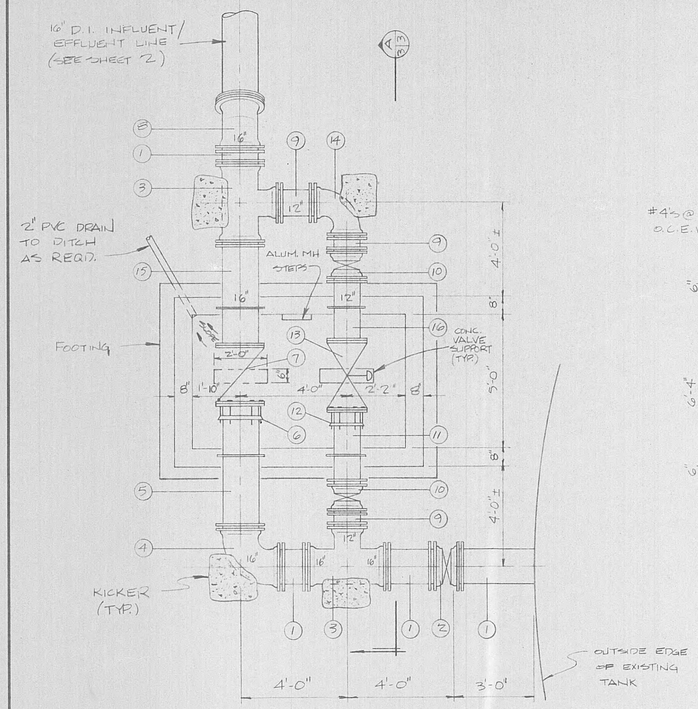
HARRIMAN, TENNESSEE

SHEET 2 OF 8

BRUNING 40-23 46821

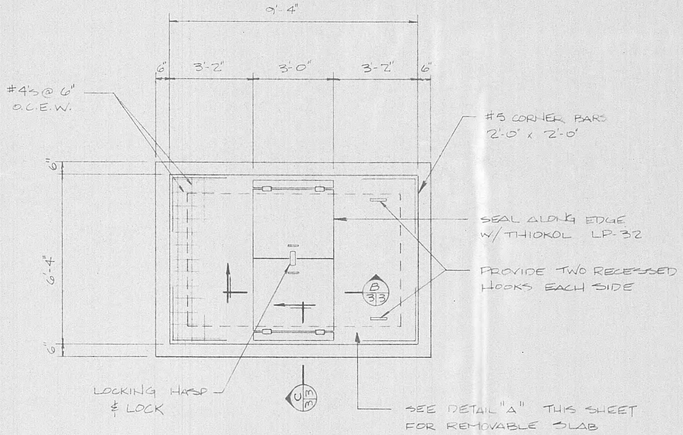
NOTES:

1. SEE SHEET 2 FOR ORIENTATION OF ALTITUDE VALVE ASSEMBLY.
2. PAINT EXTERIOR WALLS OF VALVE PIT WITH TWO COATS OF BITUMASTIC.



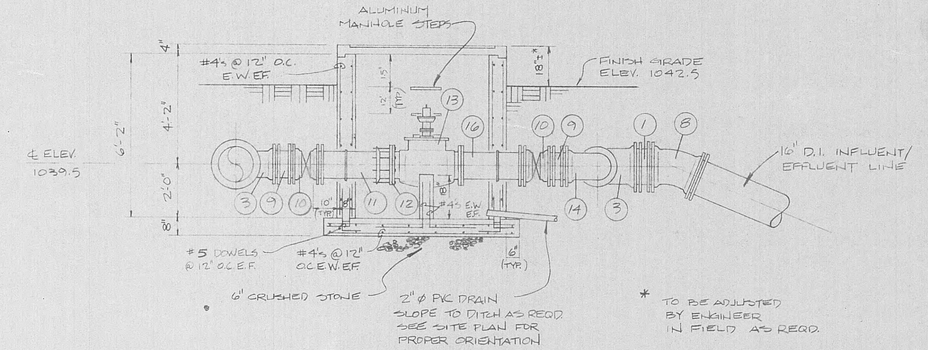
ALTITUDE VALVE INSTALLATION - PLAN

SCALE 3/8" = 1'-0"



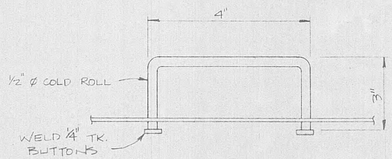
TOP PLAN

SCALE 3/8" = 1'-0"



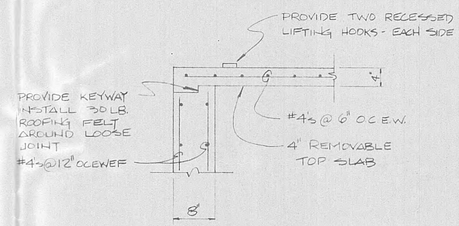
SECTION A 3/3

SCALE 3/8" = 1'-0"



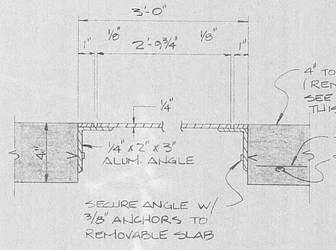
DROP HANDLE DETAIL

NO SCALE



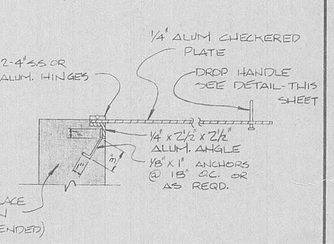
DETAIL "A"

NO SCALE



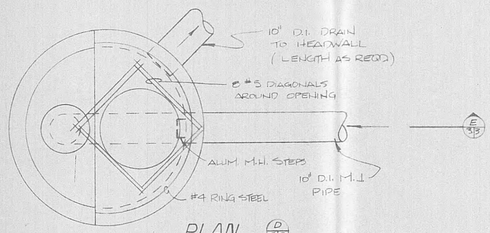
SECTION B 3/3

NO SCALE



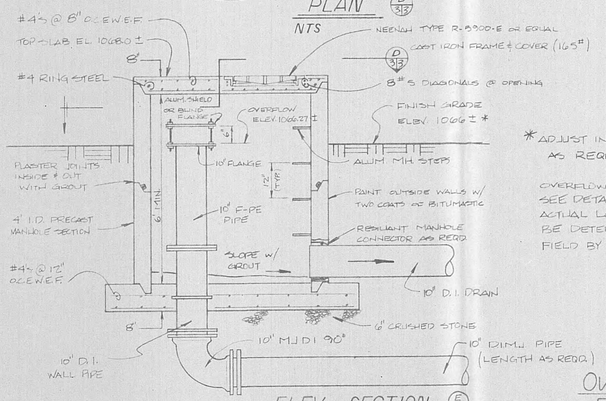
SECTION C 3/3

NO SCALE



PLAN D 3/3

NTS

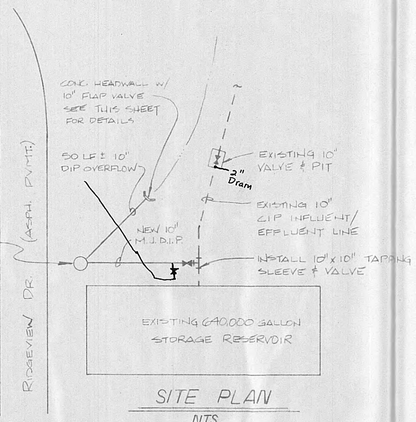


ELEV. SECTION E 3/3

NTS

* ADJUST IN FIELD AS REQD.

OVERFLOW STRUCTURE SEE DETAIL THIS SHEET ACTUAL LOCATION WILL BE DETERMINED IN FIELD BY ENGINEER



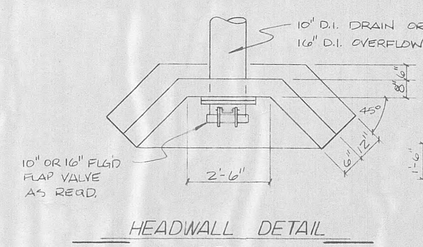
SITE PLAN

NTS

OVERFLOW INSTALLATION AT EXISTING 0.64 MG RESERVOIR

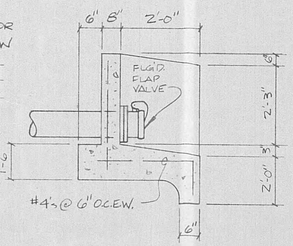
MATERIAL SCHEDULE (ALTITUDE VALVE)

1	16" ϕ D.I.P., PE-PE, LENGTH TO SUIT
2	16" M.J. BUTTERFLY VALVE
3	16" x 12" M.J. D.I. TEE
4	16" M.J. D.I. 90° BEND
5	16" D.I. WALL PIPE, PE-PE, LENGTH TO SUIT
6	16" ROCKWELL TYPE 913 FLANGED COUPLING ADAPTOR
7	16" FLANGED CHECK VALVE W/ OUTSIDE SPRING & LEVER
8	16" M.J. D.I. 22 1/2° BEND
9	12" ϕ D.I.P., PE-PE, LENGTH TO SUIT
10	12" M.J. GATE OR BUTTERFLY VALVE
11	12" D.I. WALL PIPE, PE-PE, LENGTH TO SUIT
12	12" ROCKWELL TYPE 912 FLANGED COUPLING ADAPTOR
13	12" FLANGED ALTITUDE VALVE (SEE SPECIFICATIONS)
14	12" M.J. D.I. 90° BEND
15	16" D.I. WALL PIPE, FLGD.-PE, LENGTH TO SUIT
16	12" D.I. WALL PIPE, FLGD.-PE, LENGTH TO SUIT



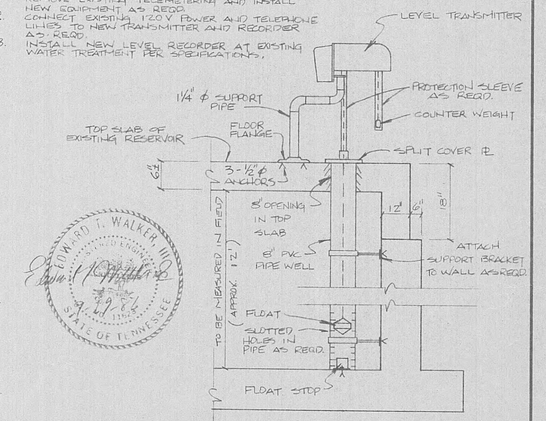
HEADWALL DETAIL

NTS



NOTES:

1. REMOVE EXISTING TELEMETERING AND INSTALL NEW EQUIPMENT AS REQD.
2. CONNECT EXISTING 120V POWER AND TELEPHONE LINES TO NEW TRANSMITTER AND RECORDER AS REQD.
3. INSTALL NEW LEVEL RECORDER AT EXISTING WATER TREATMENT PER SPECIFICATIONS.



LEVEL TRANSMITTER INSTALLATION AT EXISTING 0.64 MG RESERVOIR

NTS

WHITE - TAYLOR - WALKER, INC.

NASHVILLE, TENNESSEE

REVISION	DATE	DESCRIPTION	BY

DESIGNED E.T.W.	SCALE AS SHOWN
DRAWN M.M.	DATE SEPT. 1986
CHECKED E.T.W.	JOB NO. 86-09

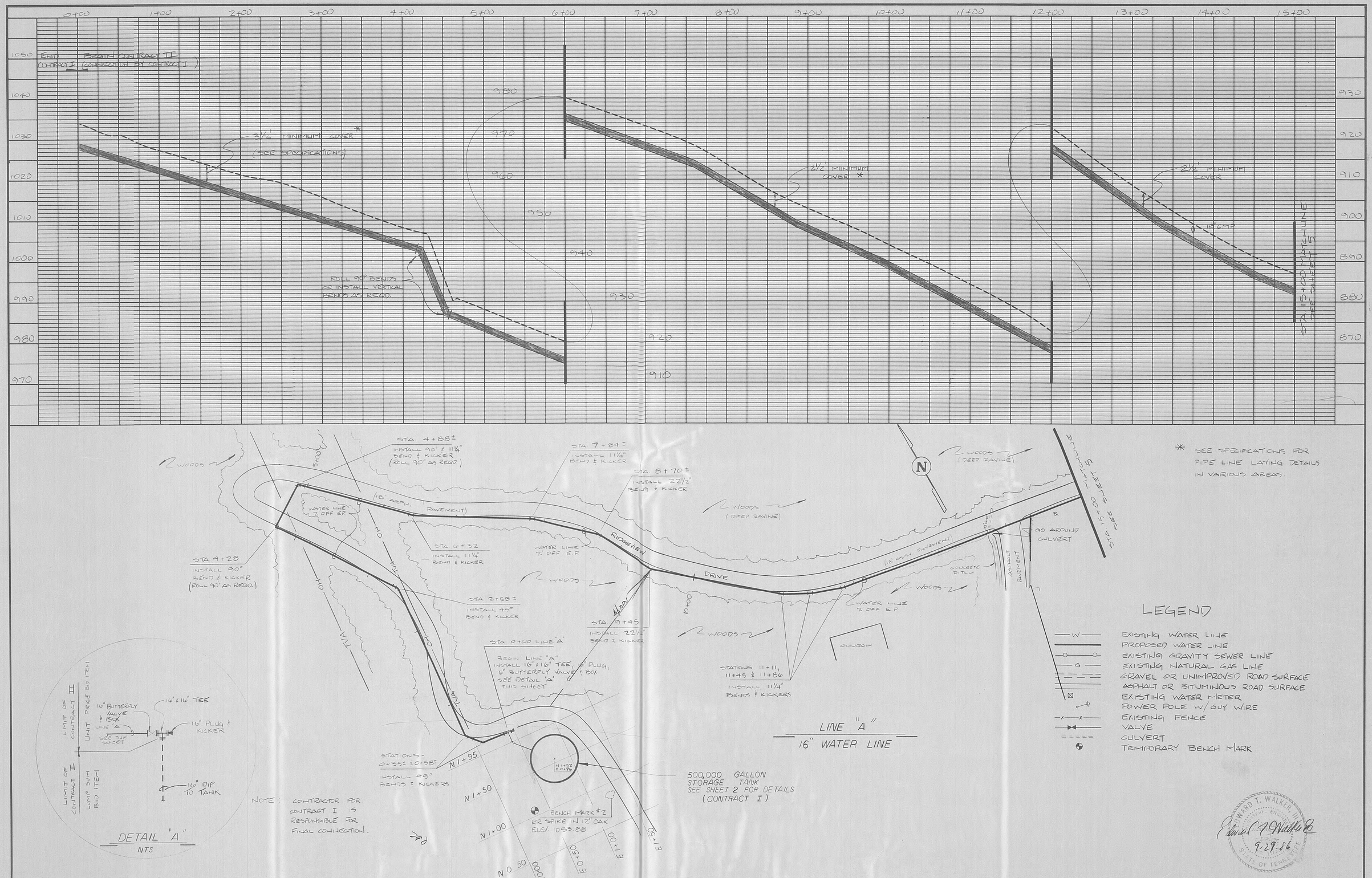
WATER SYSTEM IMPROVEMENTS
CONTRACT - I
500,000 GALLON GROUND LEVEL WATER STORAGE TANK

ALTITUDE VALVE ASSEMBLY & OVERFLOW DETAILS

HARRIMAN, TENNESSEE

SHEET 3 OF 8

BRUNING 40-23 46821



WHITE - TAYLOR - WALKER, INC.

BRENTWOOD, TENNESSEE

REVISION	DATE	DESCRIPTION	BY

DESIGNED	SCALE
E.T.W.	1" = 50' HOR. 10' VERT.
DRAWN	DATE
M.M.	SEPT. 1986
CHECKED	JOB NO.
E.T.W.	86-09

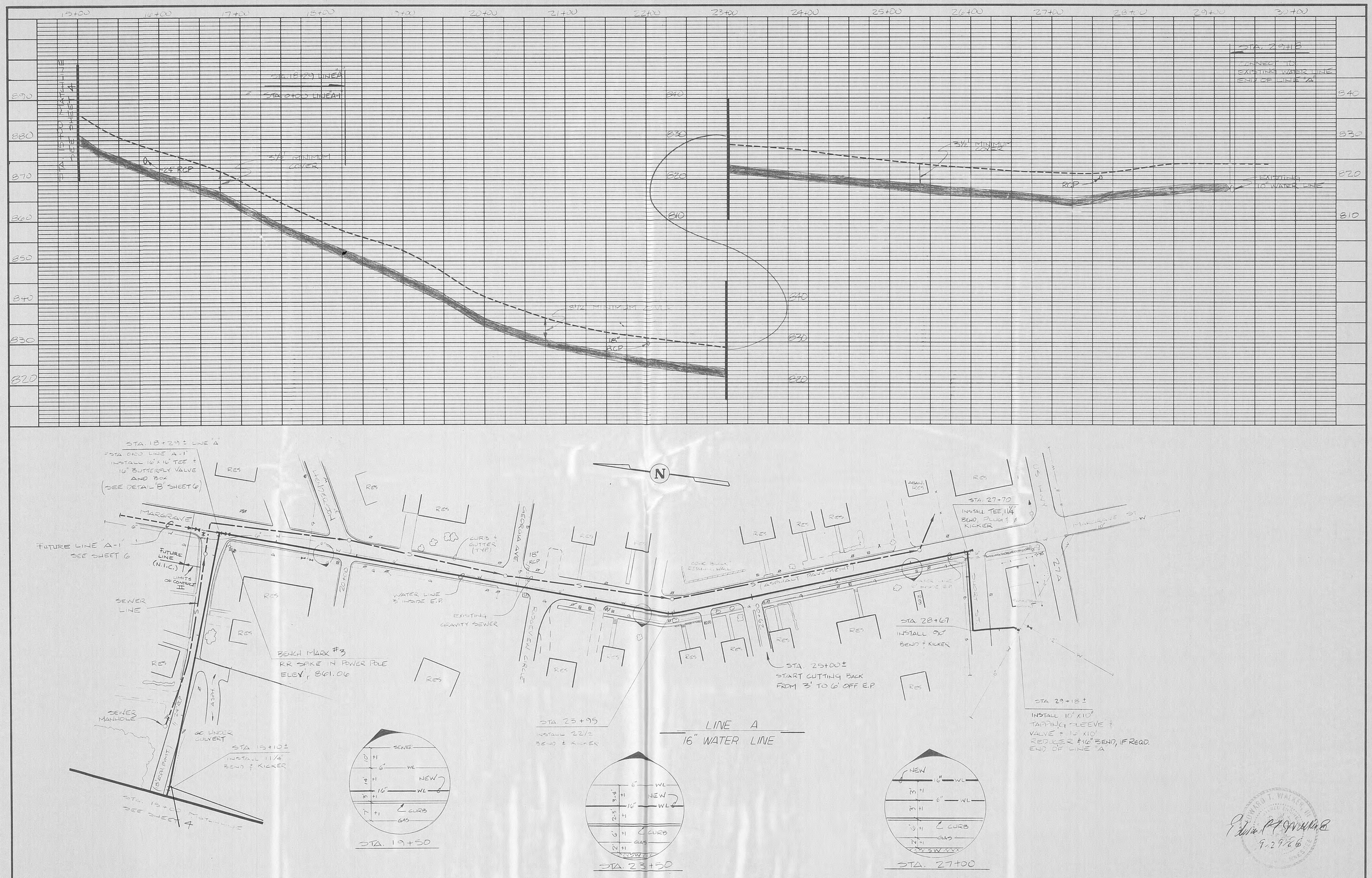
WATER SYSTEM IMPROVEMENTS
CONTRACT II
WATER TRANSMISSION LINES

LINE "A" STA. 0+00 TO STA. 15+00

HARRIMAN, TENNESSEE

SHEET 4 OF 8

BRUNING 44-132 69351



WHITE - TAYLOR - WALKER, INC.

BRENTWOOD, TENNESSEE

REVISION	DATE	DESCRIPTION	BY
1	4-13-87	DELETED LINE "A-1" FROM CONTRACT II	ETW

DESIGNED ETW	SCALE 1" = 50' HOR. 10' VERT.
DRAWN MM	DATE SEPT. 1986
CHECKED ETW	JOB NO. 86-09

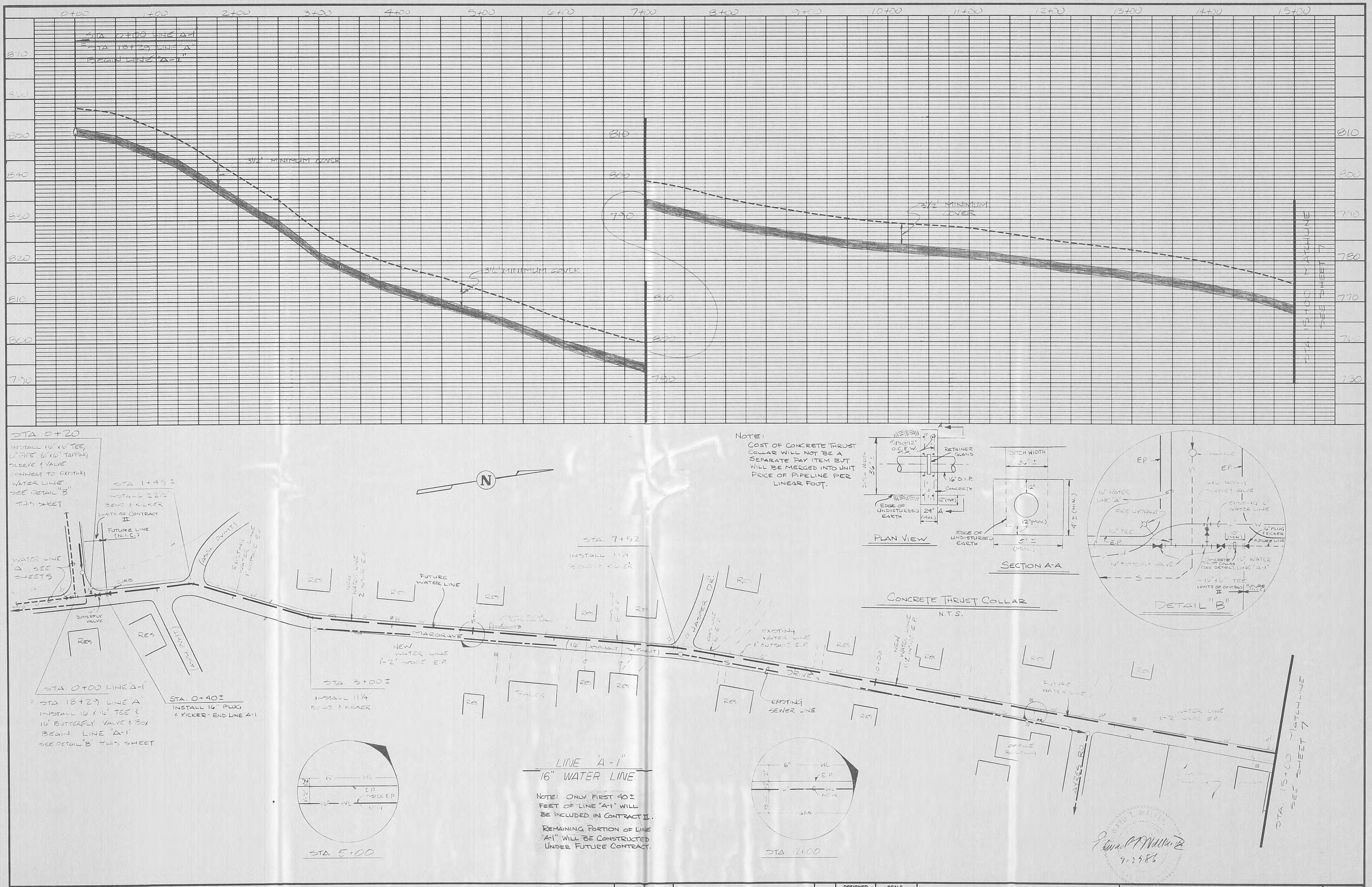
WATER SYSTEM IMPROVEMENTS
CONTRACT II
WATER TRANSMISSION LINES

LINE "A" STA. 15+00 TO STA. 29+18

HARRIMAN, TENNESSEE

SHEET 5 OF 8

BRUNING 44 132 69351



WHITE - TAYLOR - WALKER, INC.

BRENTWOOD, TENNESSEE

REVISION	DATE	DESCRIPTION	BY
1	4-13-87	DELETED LINE A-1 FROM CONTRACT II	ETW

DESIGNED ETW	SCALE 1" = 50' HOR. 10' VERT.
DRAWN MM	DATE SEPT. 1986
CHECKED ETW	JOB NO. 86-09

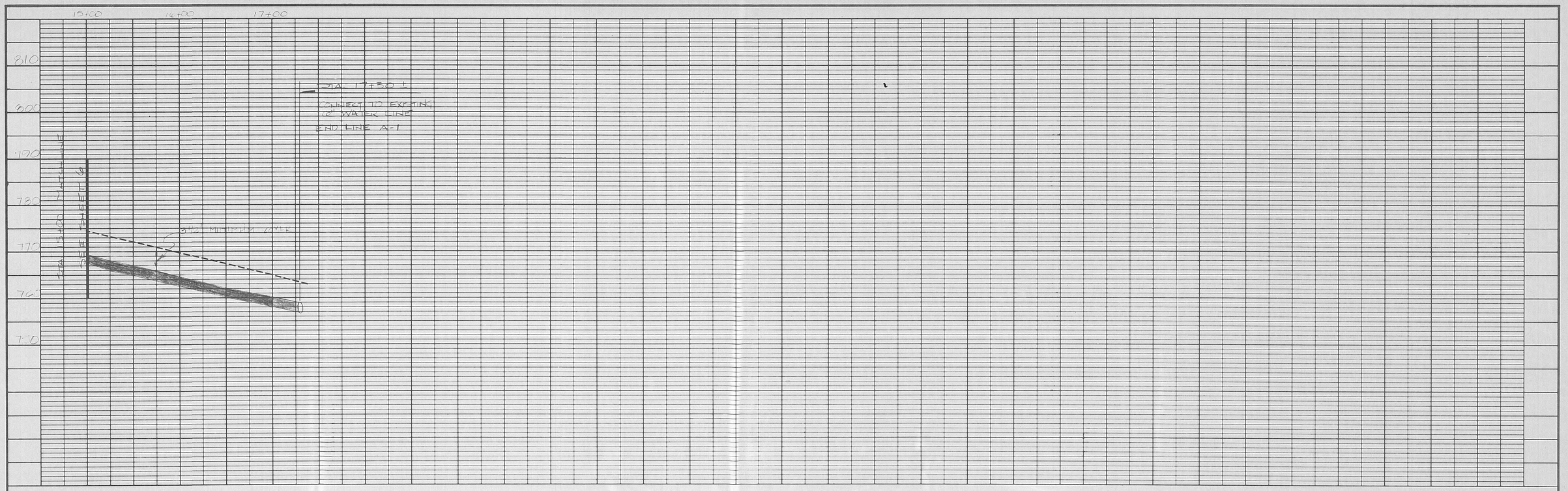
WATER SYSTEM IMPROVEMENTS
CONTRACT II
WATER TRANSMISSION LINES

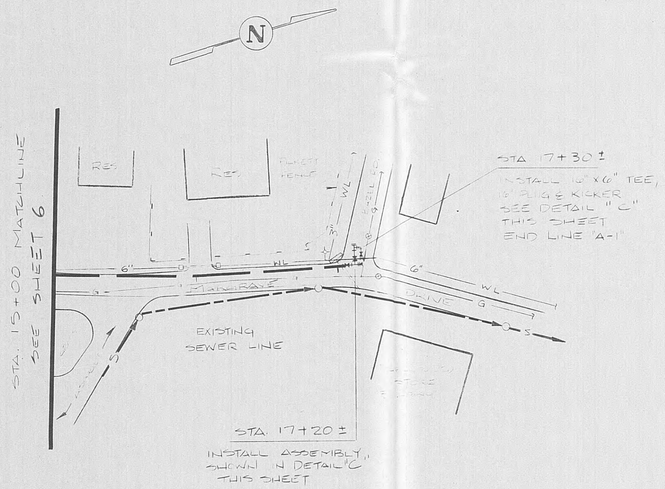
WATER LINE "A-1"
STA. 0+00 TO STA. 15+00

HARRIMAN, TENNESSEE

SHEET 6 OF 8

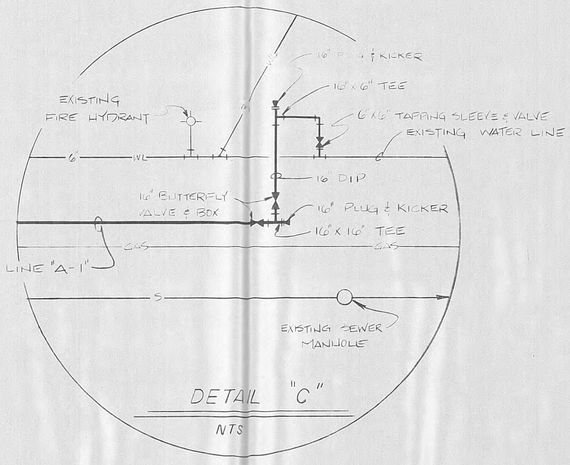
BRUNING 44-132 63351





LINE "A-1"
16" WATER LINE

NOT IN CONTRACT



DETAIL "C"
NTS

9-29-86

WHITE - TAYLOR - WALKER, INC.
BRENTWOOD, TENNESSEE

REVISION	DATE	DESCRIPTION	BY
1	4-13-87	DELETED LINE A-1 FROM CONTRACT II	ETW

DESIGNED	SCALE
ETW	1" = 50' HOR 10' VERT
DRAWN	DATE
MM	SEPT. 1986
CHECKED	JOB NO.
ETW	86-09

WATER SYSTEM IMPROVEMENTS
CONTRACT II
WATER TRANSMISSION LINES

WATER LINE "A-1"
STA. 15+00 TO STA. 17+30
HARRIMAN, TENNESSEE

SHEET 7 OF 8

BRUNING 44-132 69351

90° BEND						
SIZE	4"	6"	8"	10"	12"	16"
D	8	8	10	12	12	18
L	21	24	27	30	34	50
W	12	12	16	20	24	36
T	13	16	18	20	22	24

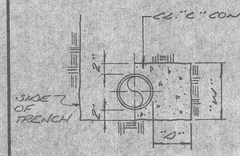
45° & 22½° BENDS						
SIZE	4"	6"	8"	10"	12"	16"
D	6	6	6	6	6	18
L	16	18	20	22	24	50
W	12	12	14	16	18	24
T	14	16	16	18	18	18

11¼° BEND						
SIZE	4"	6"	8"	10"	12"	16"
D	6	6	6	6	6	16
L	12	14	16	18	20	48
W	12	12	14	16	18	24
T	12	14	14	16	16	16

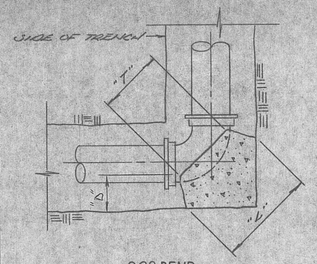
TEE						
SIZE	4"	6"	8"	10"	12"	16"
D	8	8	10	12	12	18
L	16	18	18	22	27	50
W	12	12	16	20	24	36
T	10	12	12	16	18	22

PLUG						
SIZE	4"	6"	8"	10"	12"	16"
D	12	12	24	30	30	36
L	21	24	24	30	30	44
W	12	12	18	24	24	44
T	8	8	12	12	12	14

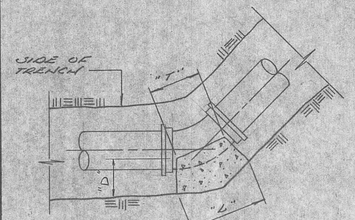
NOTE: W IS WIDTH DIMENSION



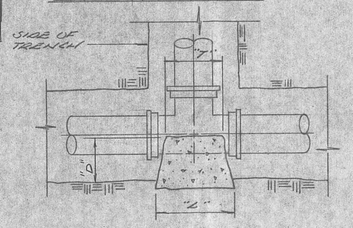
TYPICAL SECTION



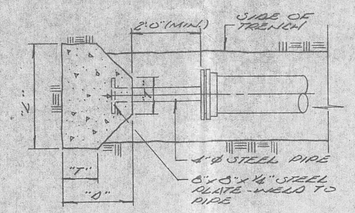
90° BEND



45°, 22-1/2°, 11-1/4° BENDS

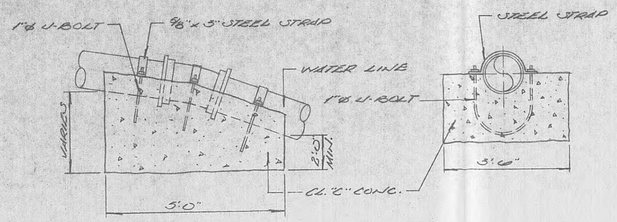


TEE



PLUG

CONCRETE BLOCKING FOR PIPE

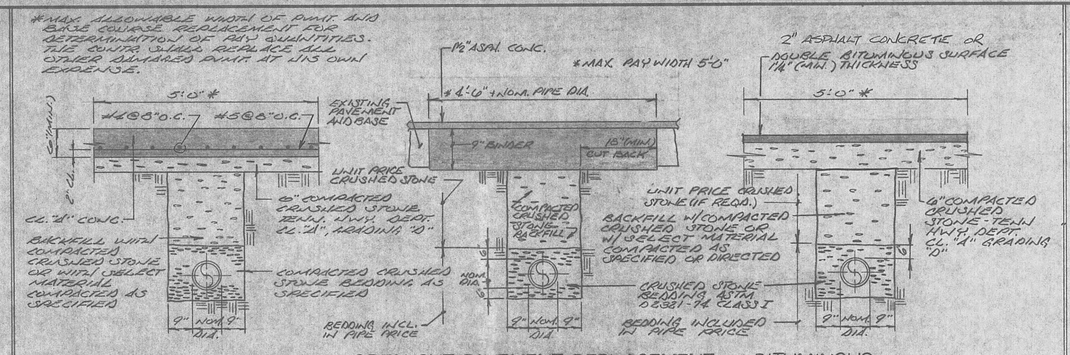


NOTE

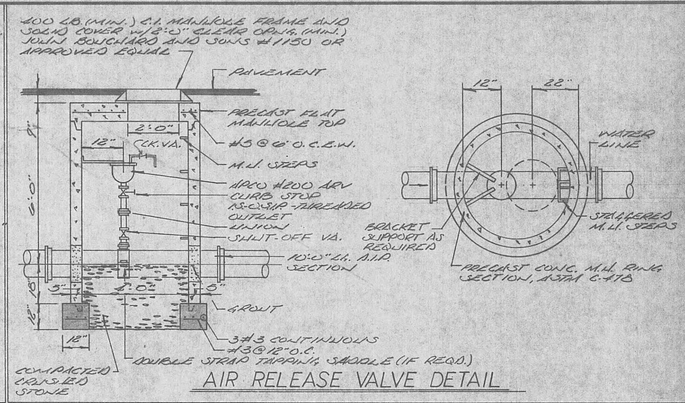
ANCHORS SHALL BE OF ADEQUATE SIZE TO RESIST UPLIFT AT NORMAL WORKING PRESSURE OF 150 P.S.I. FOR VARIOUS SIZE PIPES.

ANCHOR DETAIL FOR VERTICAL BENDS 5° AND GREATER

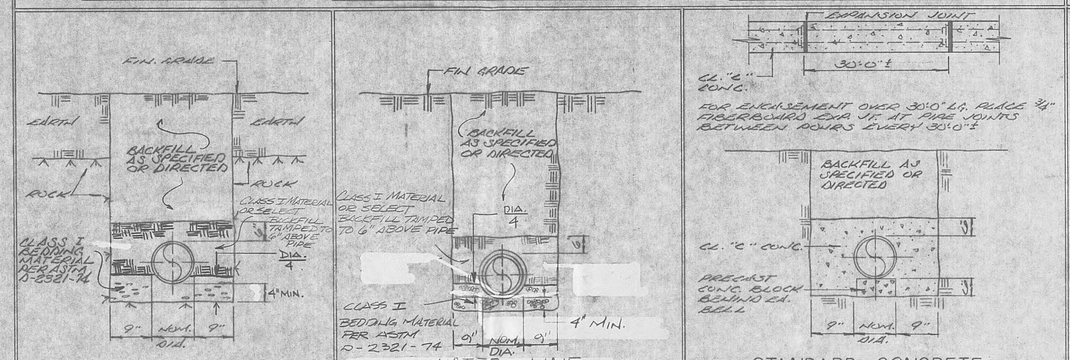
*MAX. ALLOWABLE WIDTH OF PVMT. AND BASE COURSE REPLACEMENT FOR DETERMINATION OF ANY QUANTITIES. THE COUNTY SHALL REPLACE ALL OTHER DAMAGED PVMT. AT HIS OWN EXPENSE.



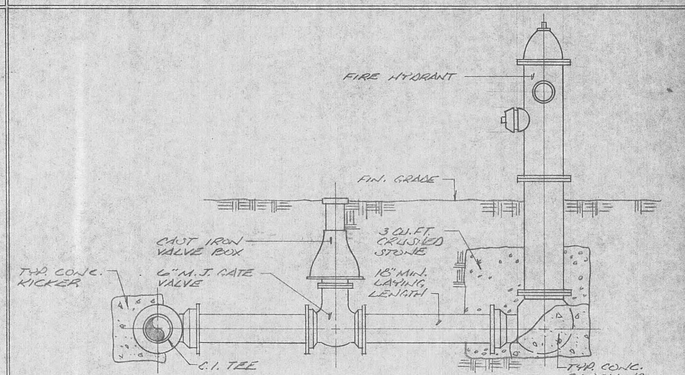
CONCRETE PAVEMENT REPLACEMENT — OPEN CUT PAVEMENT REPLACEMENT WITHIN STATE HIGHWAY RIGHT-OF-WAY — BITUMINOUS PVMT. REPLACEMENT



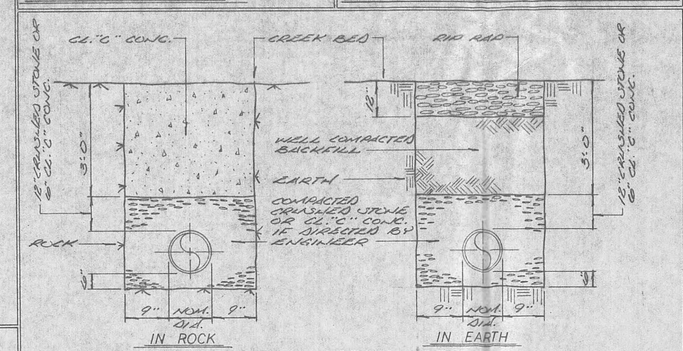
AIR RELEASE VALVE DETAIL



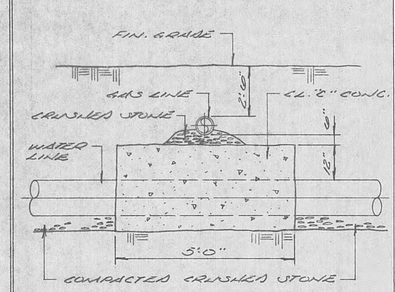
STANDARD PIPE BEDDING IN ROCK TRENCH — WATER LINE STANDARD BEDDING DETAIL — STANDARD CONCRETE ENCASEMENT



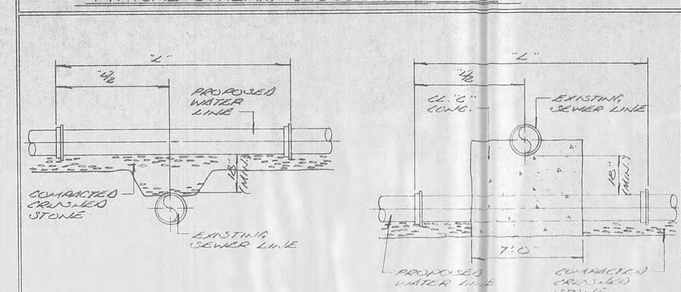
TYPICAL FIRE HYDRANT SETTING



TYPICAL STREAM CROSSING DETAIL

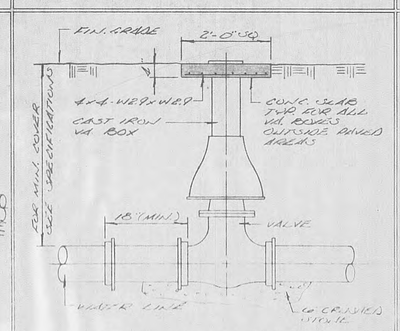


GAS TRANSMISSION LINE CROSSING DETAIL



WATER LINE ABOVE SEWER — WATER LINE BELOW SEWER

SEWER LINE CROSSING DETAIL



TYPICAL VALVE SETTING

Edward T. Walker
9-29-86

WHITE - TAYLOR - WALKER, INC.
BRENTWOOD, TENNESSEE

REVISION	DATE	DESCRIPTION	BY

DESIGNED	SCALE
ETW	NONE
DRAWN	DATE
JDO	SEPT. 1986
CHECKED	JOB NO.
ETW	86-05

WATER SYSTEM IMPROVEMENTS
CONTRACTS I & II

STANDARD WATER LINE DETAILS — 8

HARRIMAN, TENNESSEE — 8

BRUNING 4X-25 4882