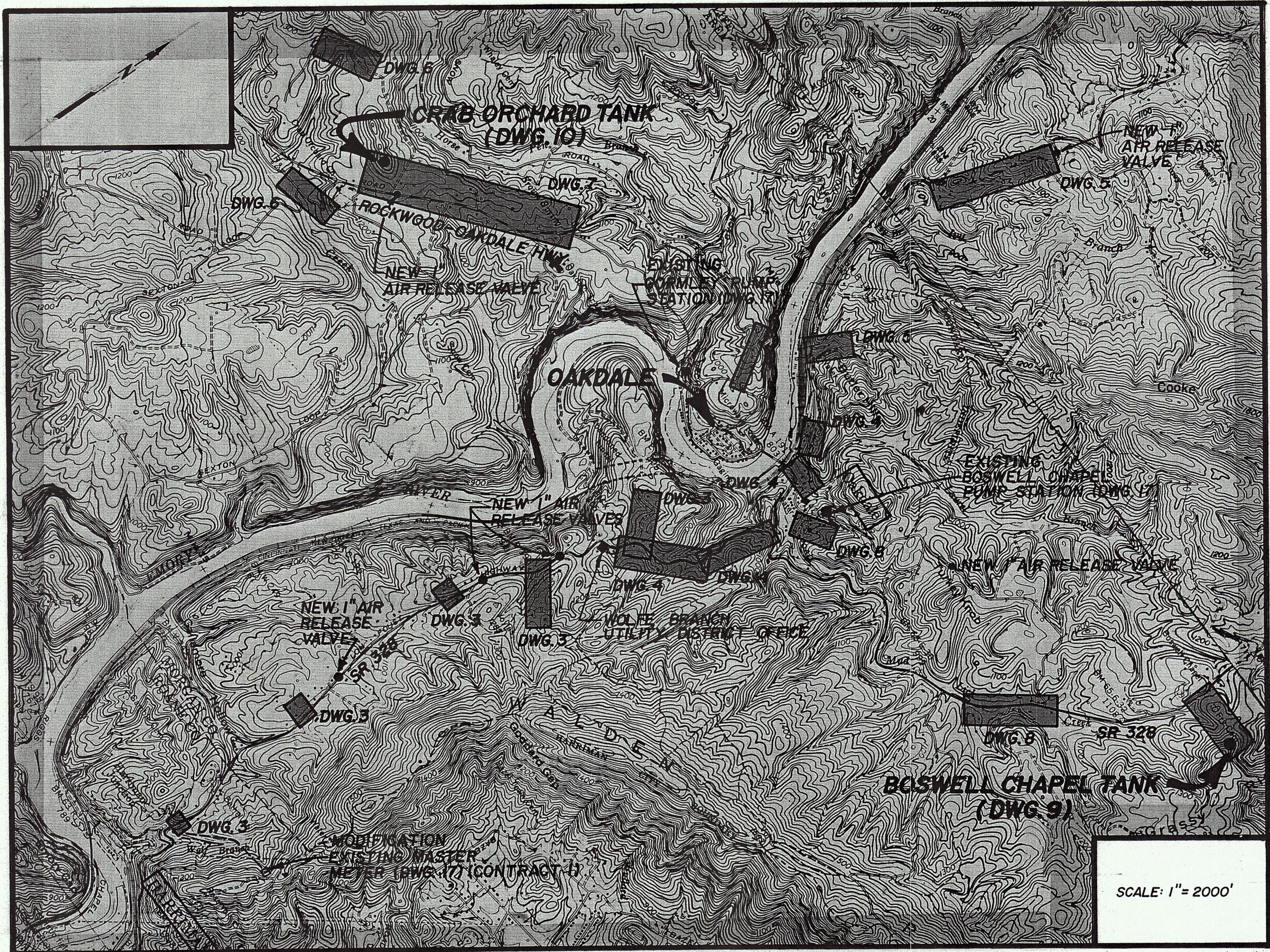




DRAWING LOCATION PLAN

GENERAL NOTES

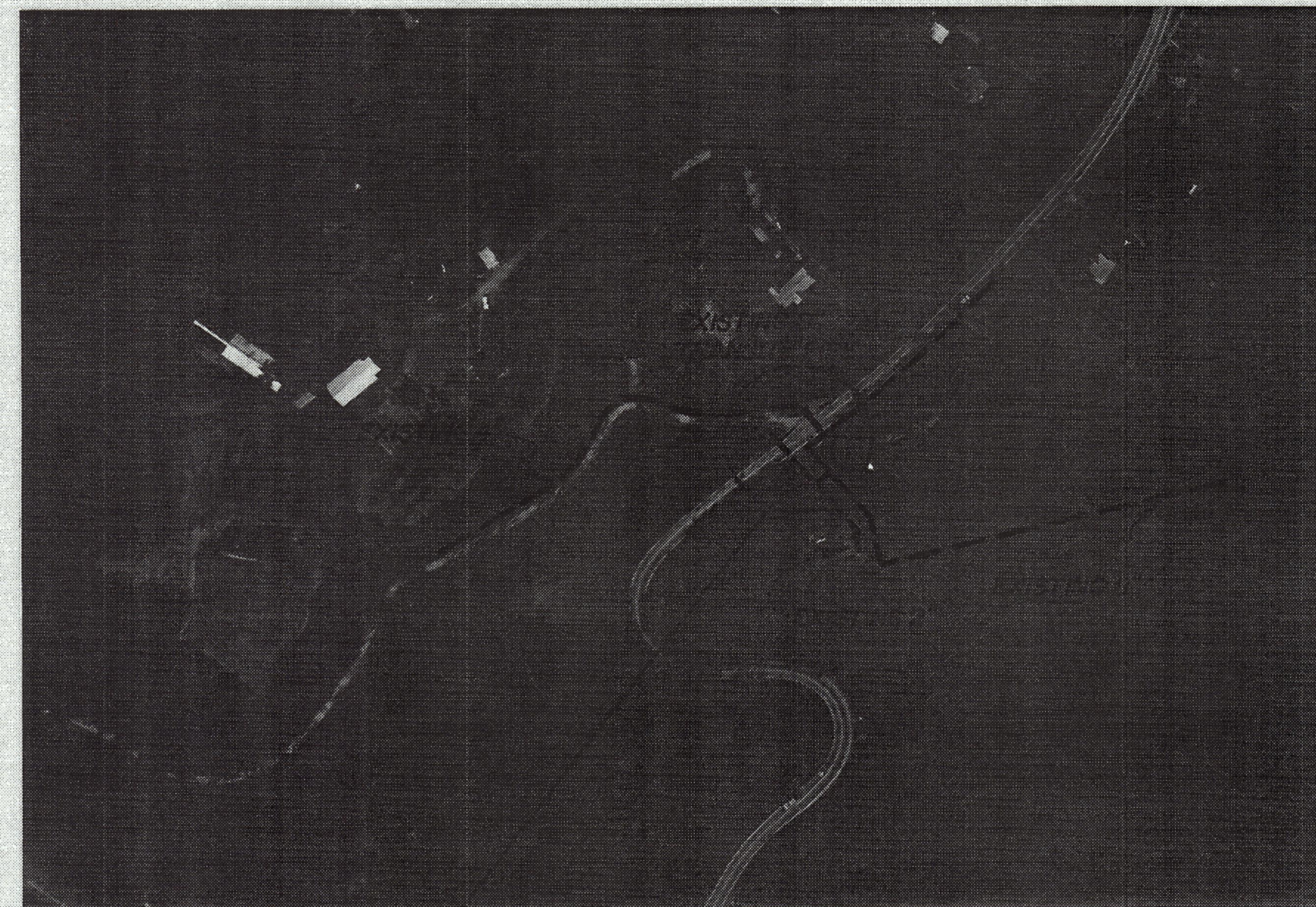
1. EXACT LOCATION OF EXISTING WATER LINES IS NOT KNOWN. LOCATION AND SIZE SHOWN IS APPROXIMATE ONLY AND MAY VARY.
2. CONTRACTOR IS TO IMMEDIATELY REPAIR OR REPLACE ANY EXISTING WATER LINES WHICH ARE BROKEN OR DAMAGED DURING CONSTRUCTION. WATER TO CUSTOMERS WITH EXISTING WATER SERVICE IS TO REMAIN UNINTERRUPTED DURING CONSTRUCTION. NO ADDITIONAL COMPENSATION SHALL BE ALLOWED FOR ANY REPAIRS OR REPLACEMENT TO EXISTING WATER LINES.
3. CONTRACTOR WILL BE REQUIRED TO RUN SERVICE LINE FROM WATER MAIN TO WATER METER LOCATED AT THE PROPERTY LINE. METER TO BE IN A LOCATION SATISFACTORY TO THE PROPERTY OWNER. CONTRACTOR TO BE PAID UNDER UNIT PRICE BID FOR APPLICABLE TYPE PIPE BID IN THE BID SCHEDULE.
4. THE CONTRACTOR SHALL LOCATE ALL WATER, GAS, TELEPHONE, STORM DRAINAGE, AND OTHER UNDERGROUND UTILITIES, BEFORE PROCEEDING WITH ANY TRENCH EXCAVATION FOR PIPE LINES SO THAT WATER LINES TO BE INSTALLED MAY BE LOCATED WITH THE LEAST CONFLICT WITH EXISTING UTILITIES AS DETERMINED BY THE ENGINEER.
5. EXISTING WATER LINES TO REMAIN UNLESS OTHERWISE NOTED IN THE PLANS OR AS DIRECTED BY THE ENGINEER.
6. NO ADDITIONAL PAYMENT SHALL BE ALLOWED FOR WATER LINES REQUIRED TO BE BURIED DEEPER THAN THAT FOR NORMAL COVER PAYMENT TO BE INCLUDED IN UNIT PRICE BID FOR PIPE.
7. WHERE WATER LINES CROSS IMPROVED, GRASSED, OR LAWN AREAS, ETC., ALL SOD, SHRUBS, FLOWERS, PLANTINGS, ETC., SHALL BE REPLACED IN ORIGINAL CONDITION AT CONTRACTOR'S EXPENSE. GRASSED AREAS SHALL BE RESTORED TO PRIOR CONDITIONS IN THE FOLLOWING MANNER:
AREAS LESS THAN 3:1 SLOPE SHALL BE RESEEDED AND MULCHED WITH GRASSES OR GROUND COVER AS OUTLINED IN THE SPECIFICATIONS. AREAS GREATER THAN 3:1 SLOPE SHALL BE RESEEDED AND MULCHED WITH A FABRIC MATERIAL AS OUTLINED IN THE SPECIFICATIONS. PAYMENT SHALL BE INCLUDED IN THE APPLICABLE UNIT PRICE BID FOR THE WATER LINE.
8. WHERE LINES CROSS UNDER CURBS, THEY SHALL BE TUNNELED UNDER THE CURB. NO SEPARATE PAYMENT WILL BE ALLOWED FOR REPAIRING CURBS DAMAGED OR DESTROYED DURING WATER LINE CONSTRUCTION.
9. PROMISCUOUS DESTRUCTION OF TREES ALONG WATER LINE RIGHT-OF-WAY WILL NOT BE PERMITTED. ALL REASONABLE EFFORTS WILL BE MADE BY THE CONTRACTOR TO PROTECT AND SAFEGUARD TREES.
10. ANY EXISTING FENCES, ROCK WALLS, GUARDRAILS, ETC., ALONG THE WATER LINE RIGHT-OF-WAY ARE TO BE REMOVED AND REINSTALLED IN THEIR ORIGINAL CONDITION (OR BETTER). NO SEPARATE PAYMENT WILL BE ALLOWED. PAYMENT TO BE INCLUDED IN THE APPLICABLE UNIT PRICE BID FOR THE WATER LINE.
11. ALL WATER LINES SHALL HAVE A MINIMUM COVER OF 30 INCHES, EXCEPT AS OTHERWISE NOTED.
12. THE COST FOR DIVERSION OF WATER IN DITCHES, CREEKS, OR RIVERS SHALL BE INCLUDED IN THE APPLICABLE UNIT PRICE BID FOR THE WATER LINE IN THE BID SCHEDULE. NO SEPARATE PAYMENT SHALL BE ALLOWED.
13. WHEN BLASTING FOR EXCAVATION OF WORK, ADEQUATE PRECAUTIONS SHALL BE USED TO PREVENT DAMAGE TO SURROUNDING PROPERTY.
14. NO SEPARATE PAYMENT SHALL BE ALLOWED FOR PIPE HANGERS AND SUPPORTS REQUIRED FOR BRIDGE CROSSING. PAYMENT TO BE INCLUDED IN THE APPLICABLE UNIT PRICE BID PER LINEAR FOOT OF PIPE IN THE BID SCHEDULE.
15. UNDER ITEM 15061A, COPPER TUBING SERVICE PIPE, IN THE BID SCHEDULE, NO SEPARATE PAYMENT SHALL BE MADE FOR CONNECTIONS TO EXISTING WATER METERS FOR EXISTING SERVICES. THE COST OF THIS WORK IS TO BE INCLUDED IN THE UNIT PRICE BID FOR OTHER ITEMS OF WORK.



REV.	BY	DATE	DESCRIPTION
WATER SYSTEM IMPROVEMENTS—PHASE II			
GENERAL PLAN			
WOLFE BRANCH UTILITY DISTRICT OAKDALE, TENNESSEE			
DESIGNED BY: JDH	HENSLEY-SCHMIDT, INC.		DRAWING NO.
DRAWN BY: GAW	Engineers and Managers		
CHKD. JDH	DATE:	ATLANTA-CHATTANOOGA-KNOXVILLE	7972-2
APPR. GMC	DATE:		

NOT FINISHED

STATE ROUTE 328
TO OAKDALE



BEN HENRY ROAD

FORREST HILLS ROAD

SR 328 TO OAKDALE



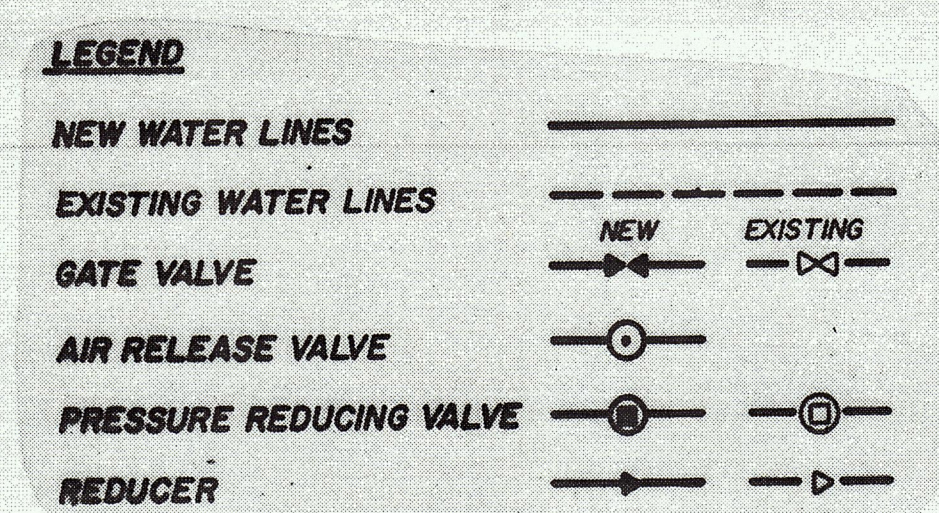
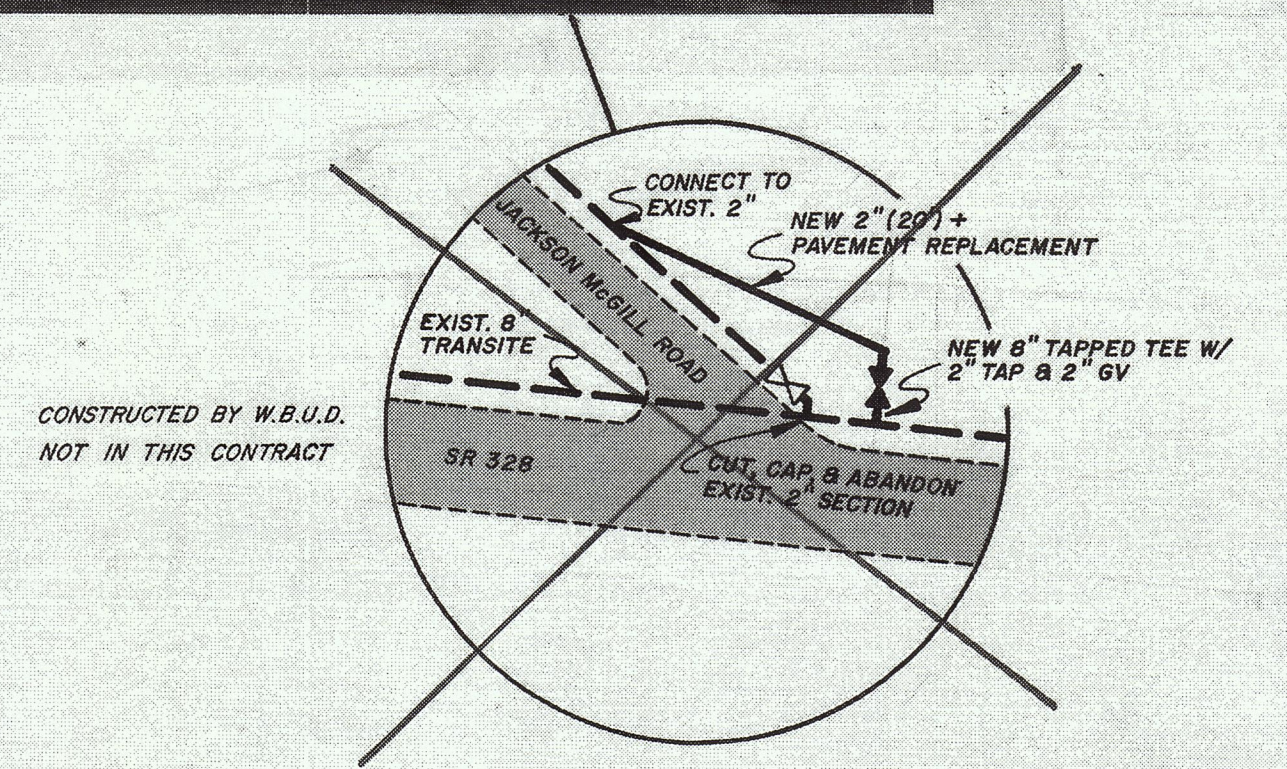
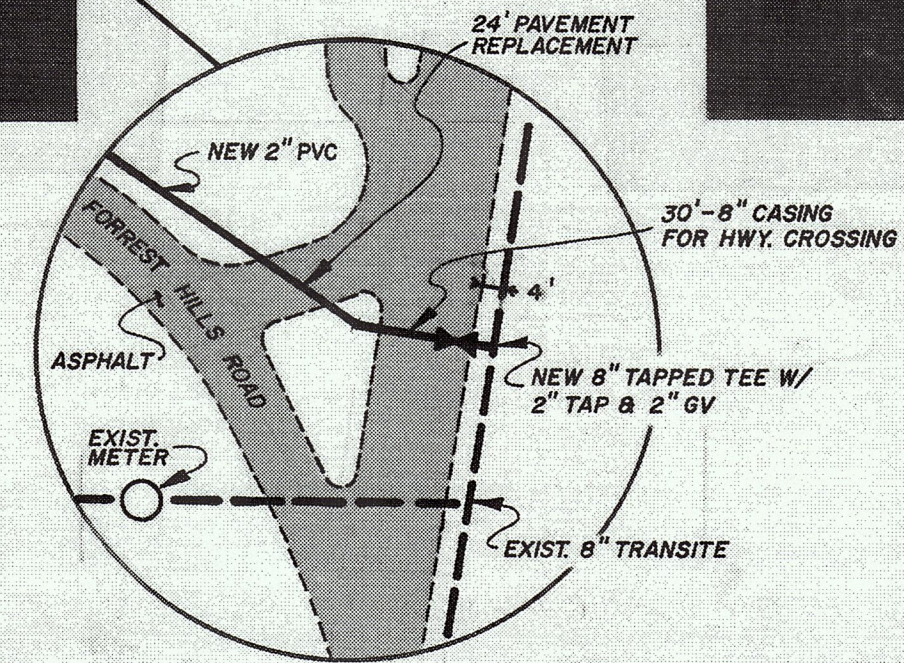
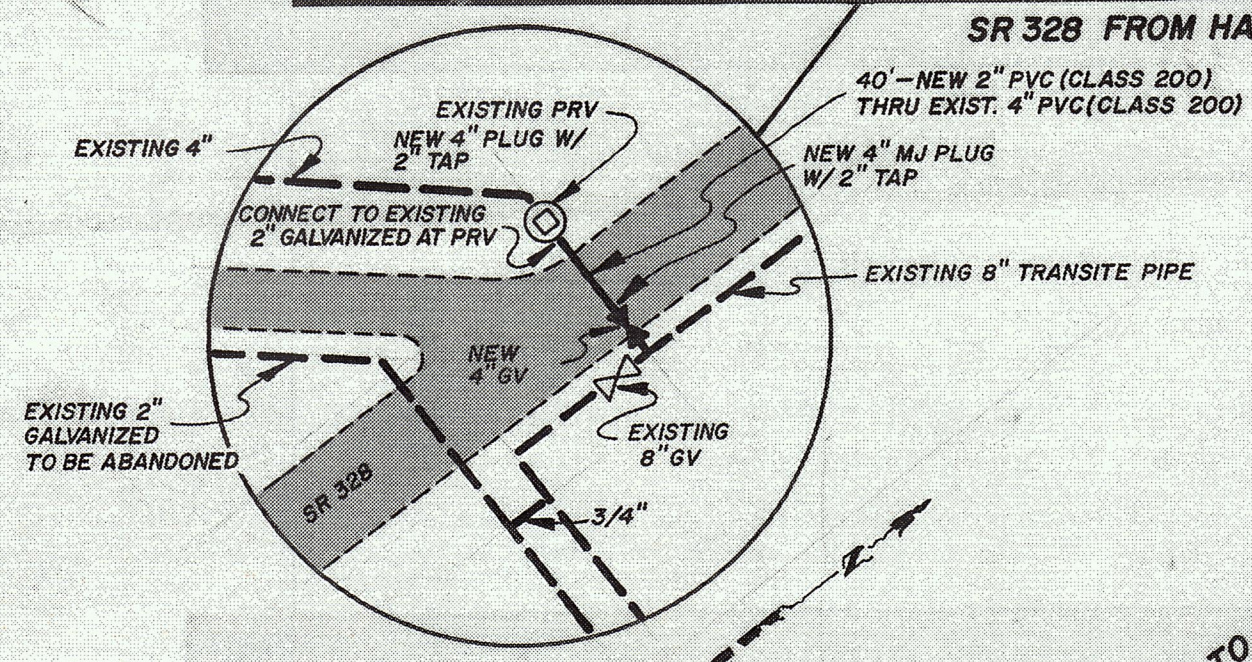
STATE ROUTE 328
FROM HARRIMAN

TO OAKDALE



SR 328 FROM HARRIMAN

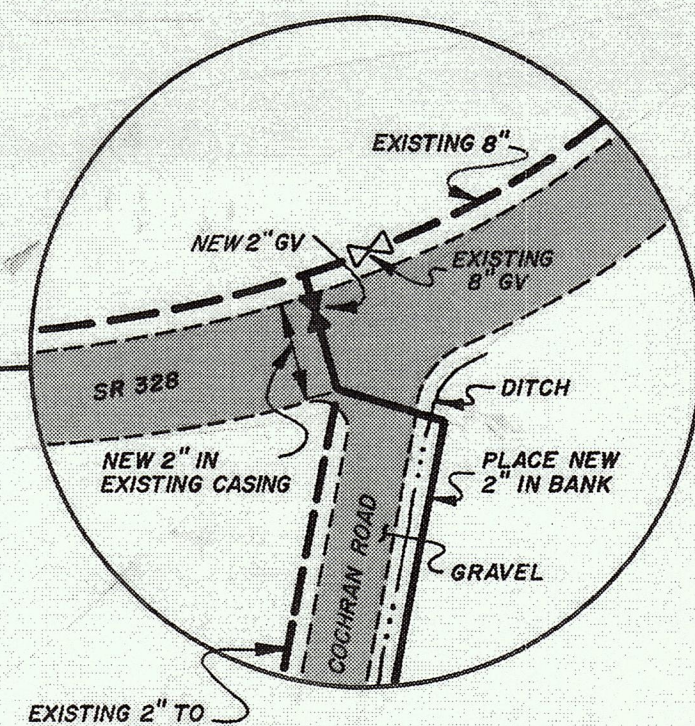
SR 328 FROM HARRIMAN



STATE ROUTE 328
FROM HARRIMAN

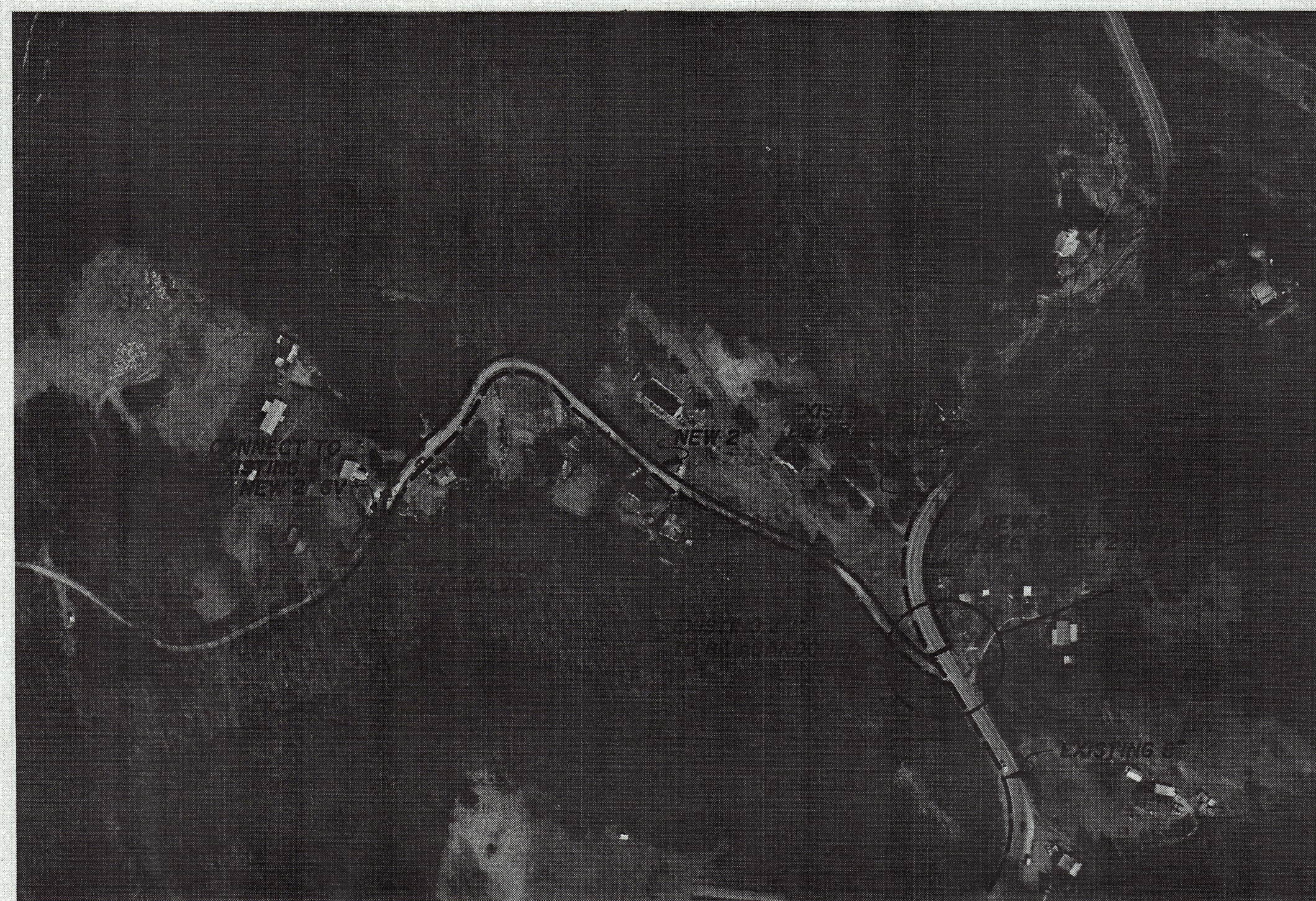


TO OAKDALE

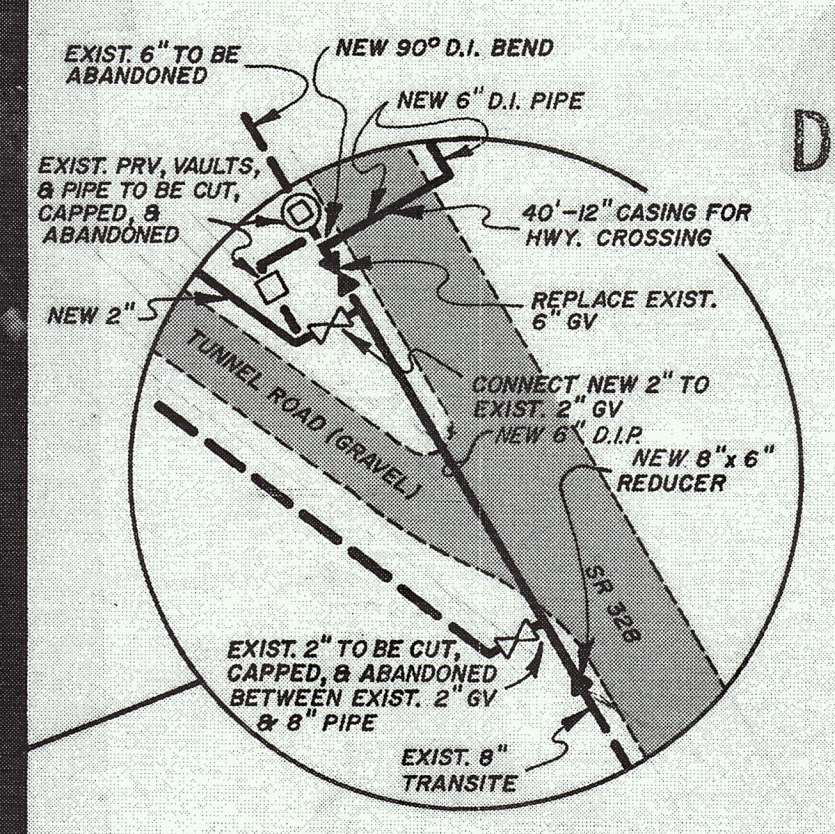


SCALE: 1"=200'

TUNNEL ROAD
(GRAVEL)



SR 328
FROM
HARRIMAN



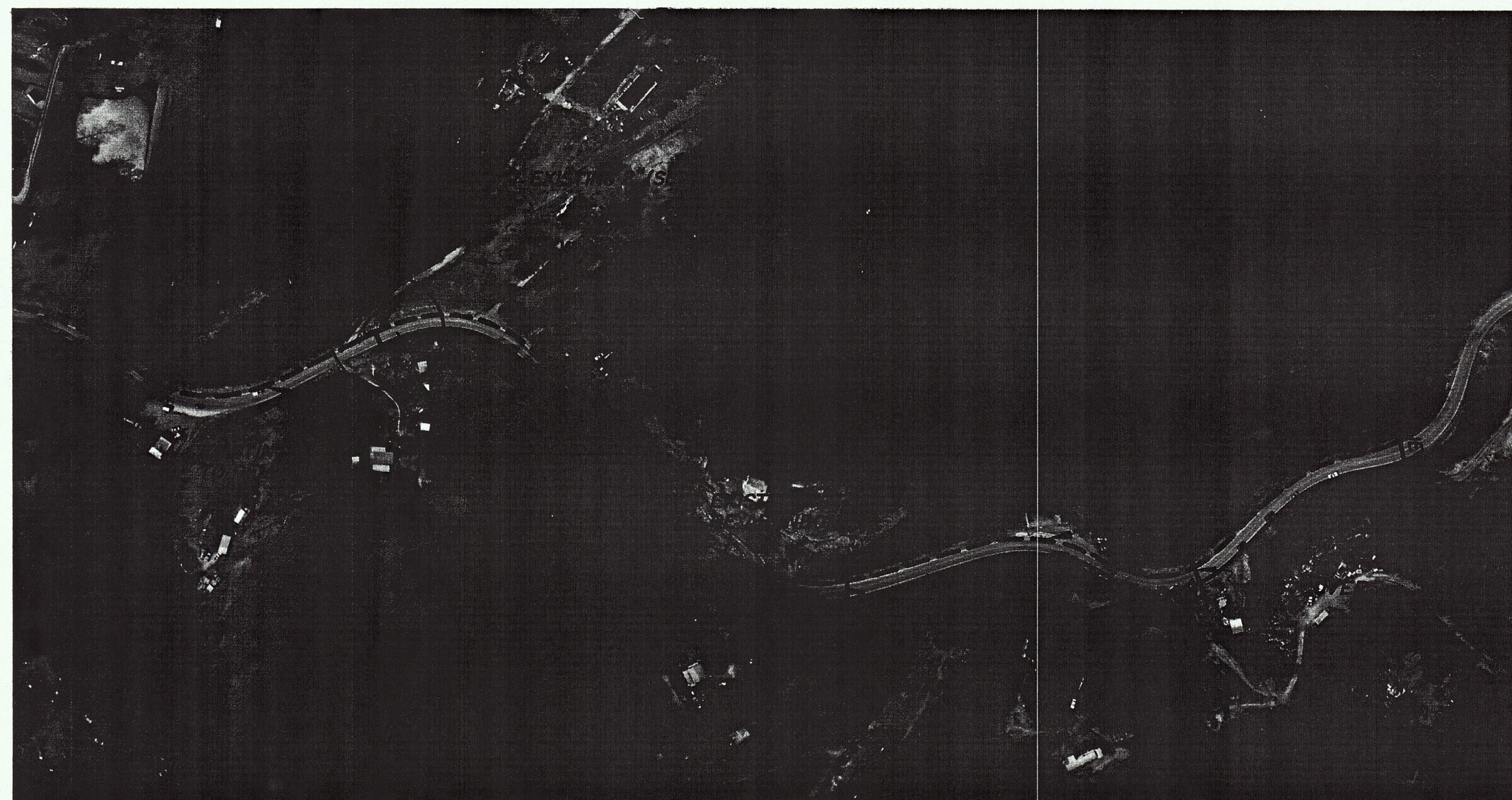
Record Drawing
Date *March, 1987*



REV RECORD DRAWING 3/87 JDH

REV.	BY	DATE	DESCRIPTION
WATER SYSTEM IMPROVEMENTS—PHASE II			
WATER LINE REPLACEMENT PLANS SHEET 1 OF 6			
WOLFE BRANCH UTILITY DISTRICT OAKDALE, TENNESSEE			
DESIGNED BY: <i>JDH</i>	HENSLEY-SCHMIDT, INC.		DRAWING NO.
DRAWN BY: <i>GAW</i>	Engineers and Managers		
CHKD. <i>JDH</i>	DATE:	ATLANTA · CHATTANOOGA · KNOXVILLE	7972-3.1
APPR. <i>GMC</i>	DATE:		

STATE ROUTE 328



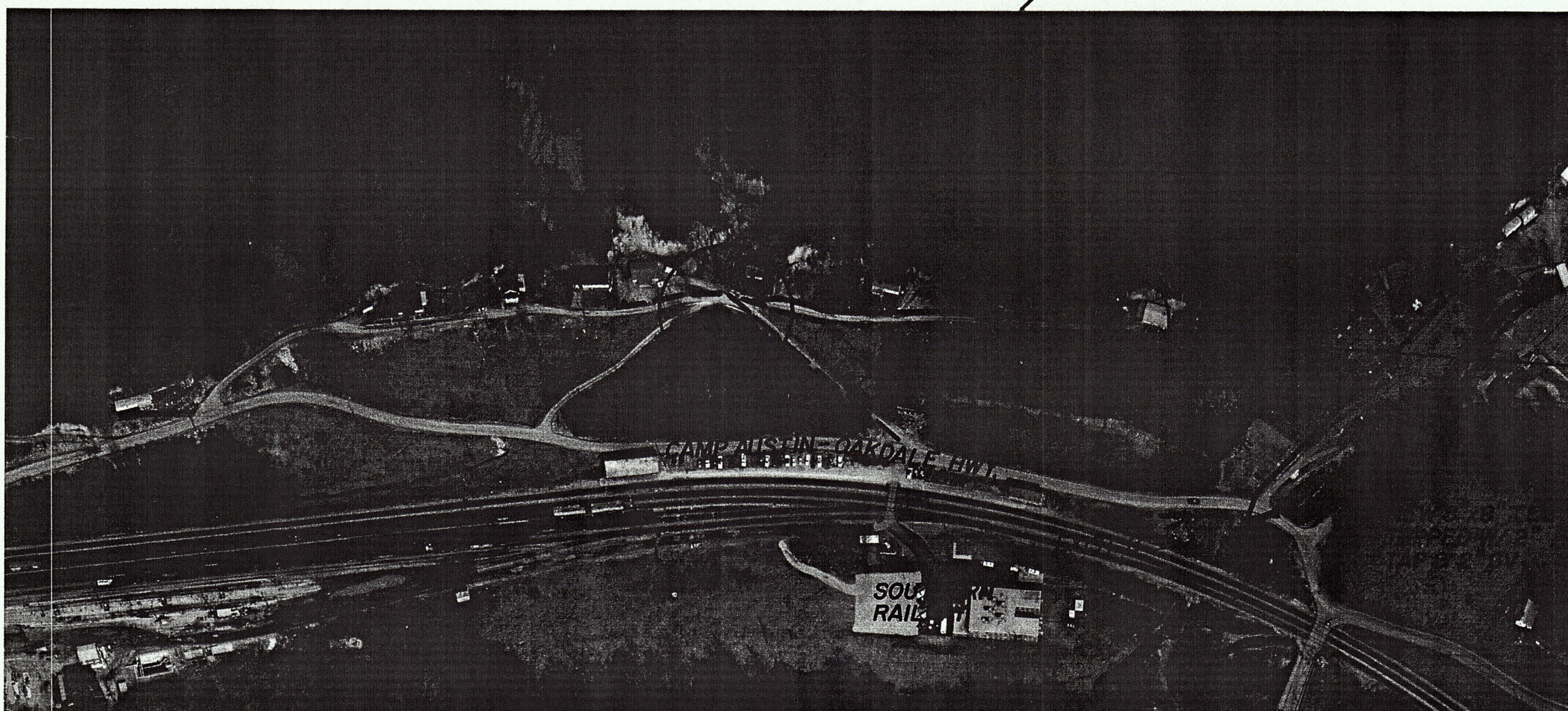
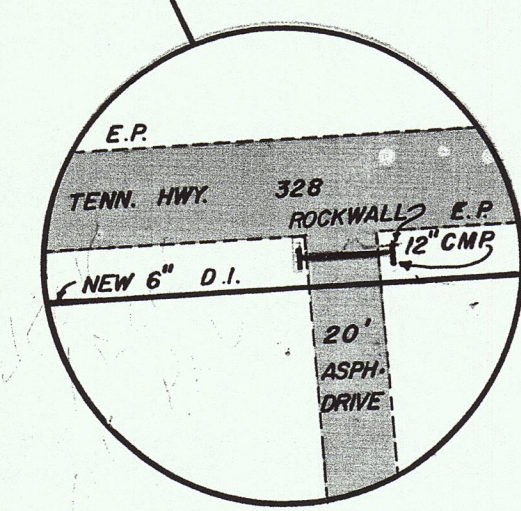
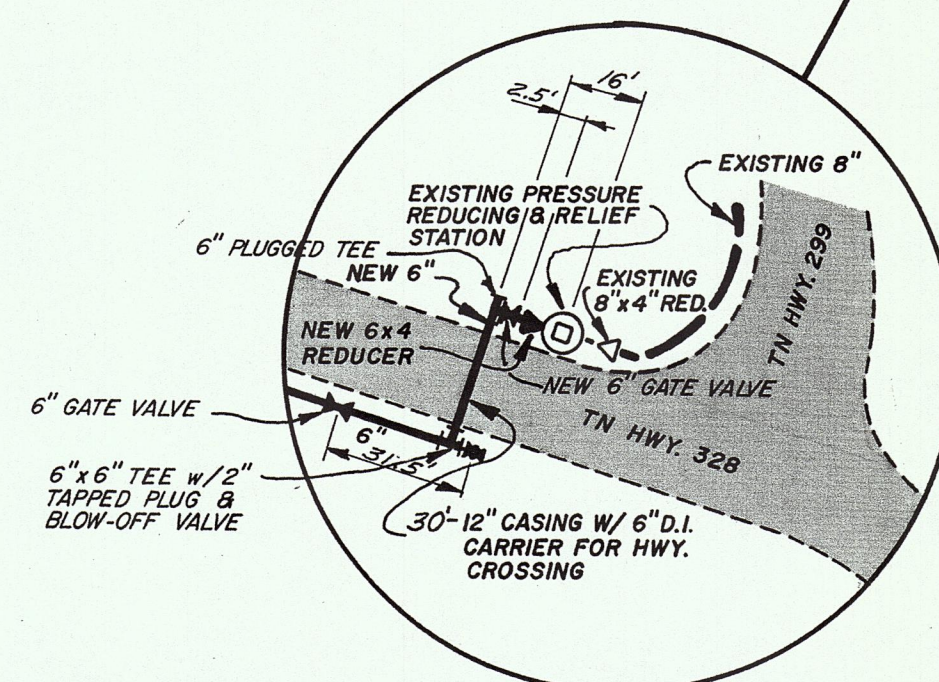
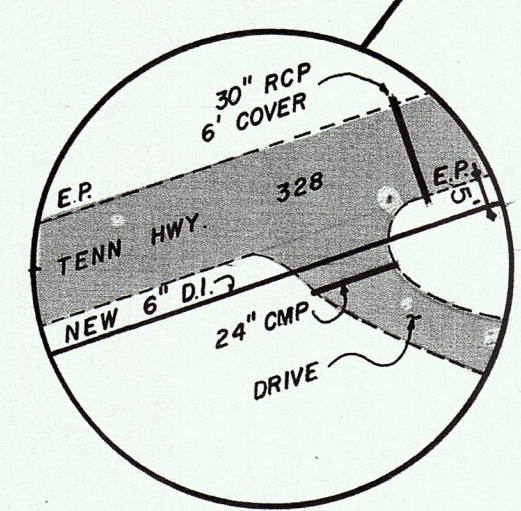
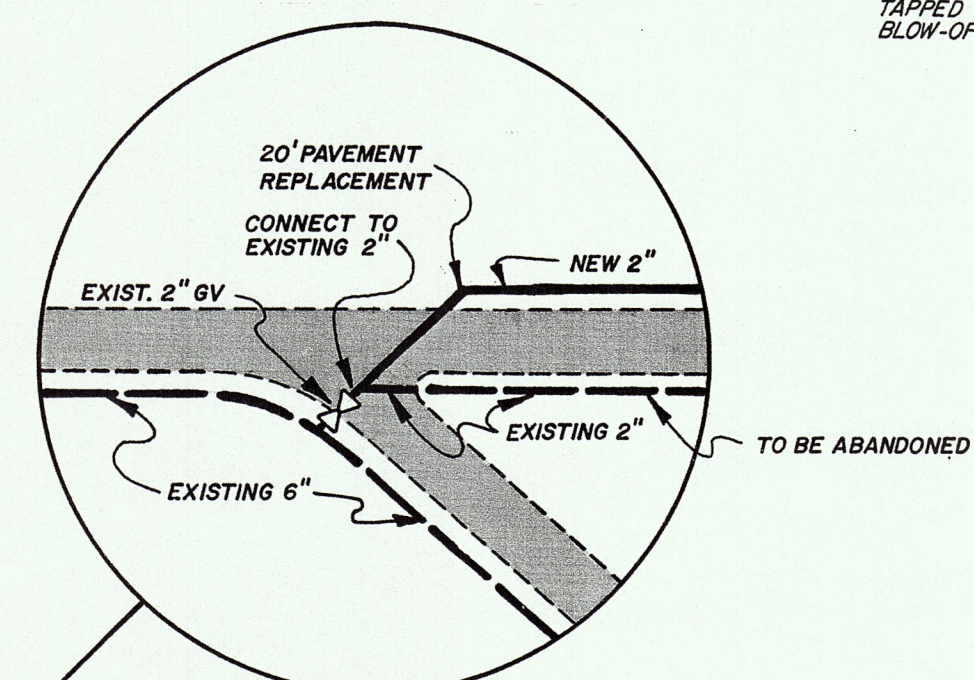
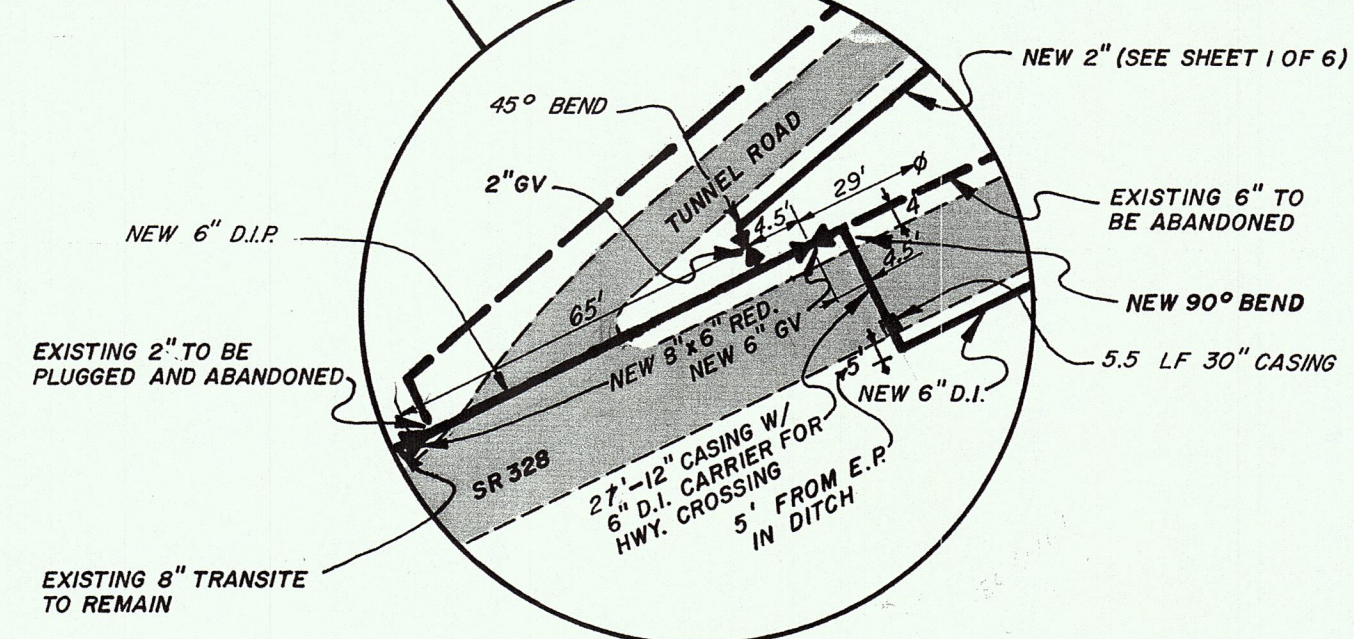
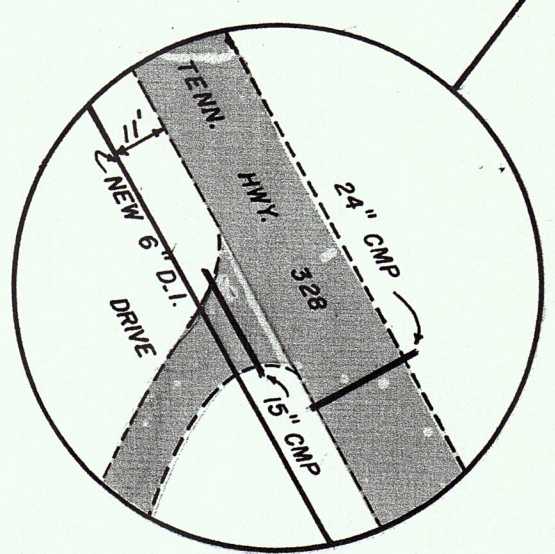
STATE ROUTE 328 TO OAKDALE

STATE ROUTE 328 CONTINUED

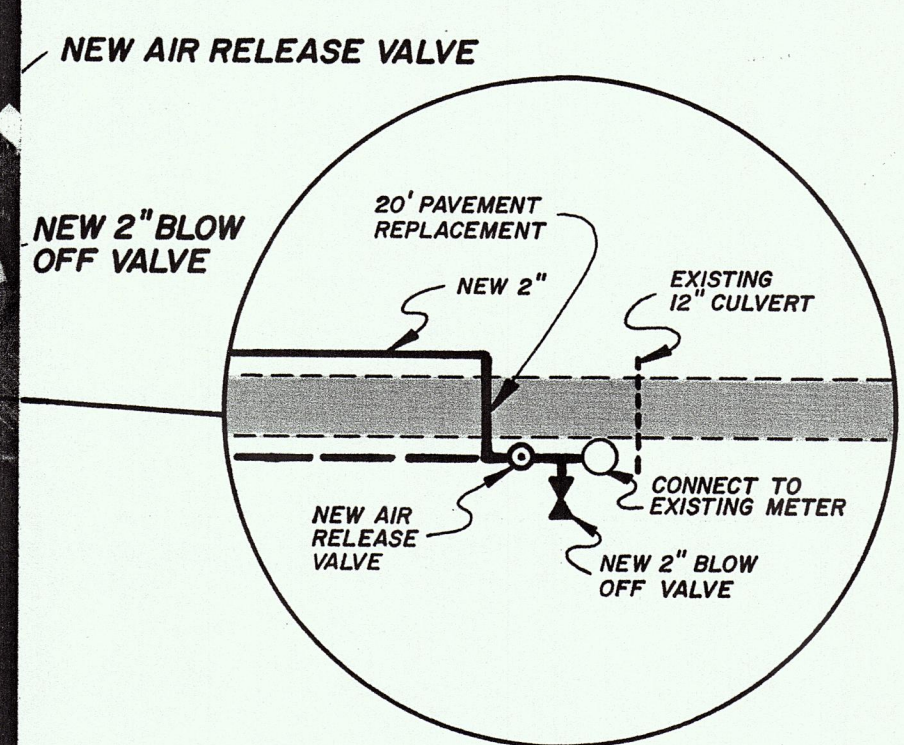


TO OAKDALE (TN HWY. 299)

TN HWY. 328



EMORY RIVER FROM OAKDALE



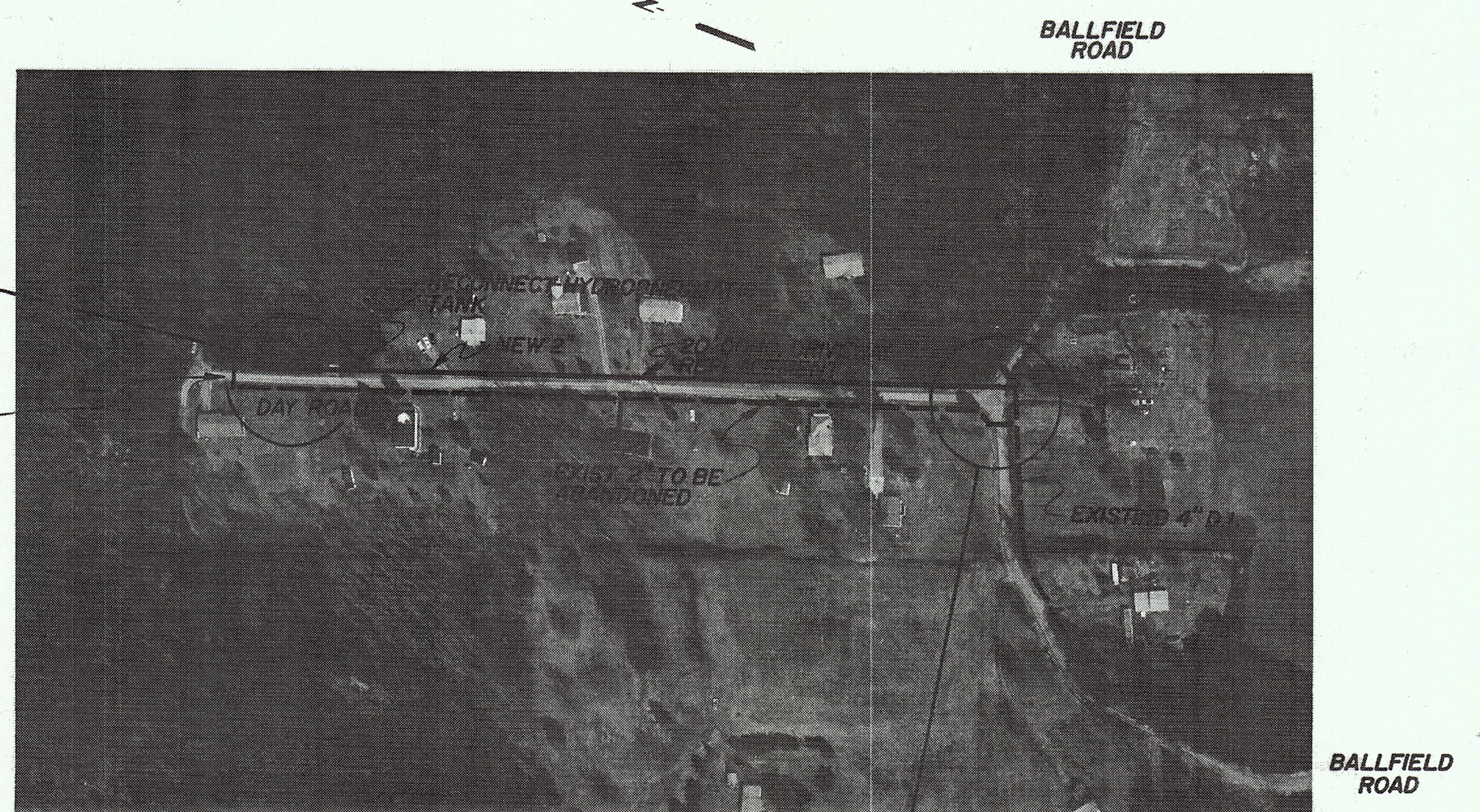
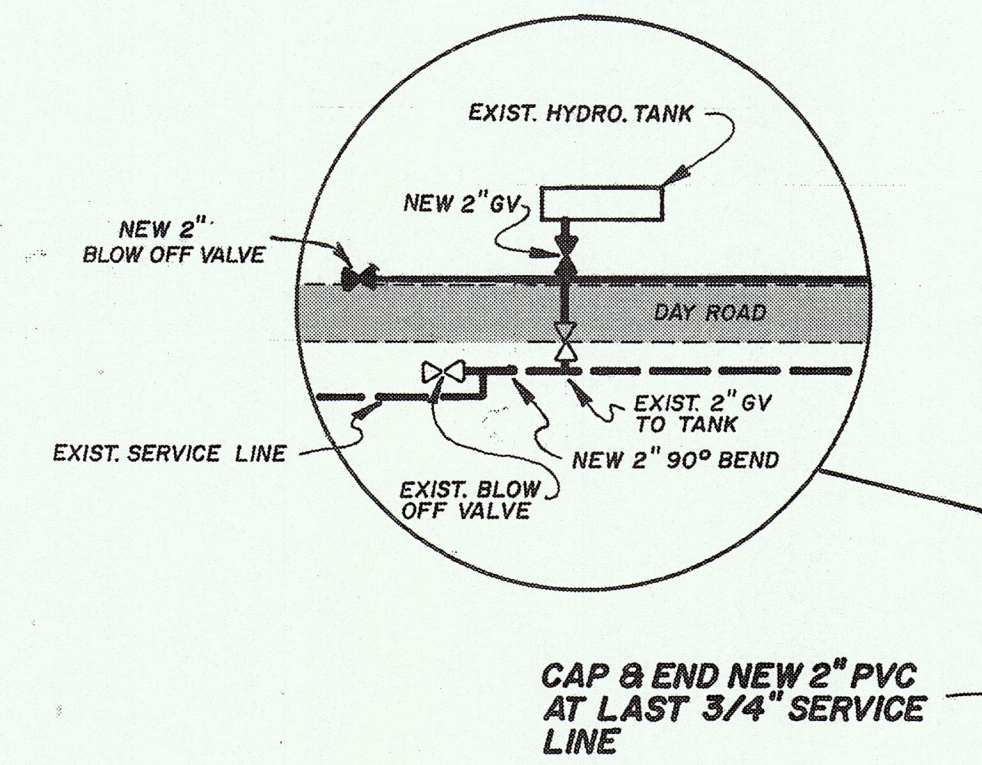
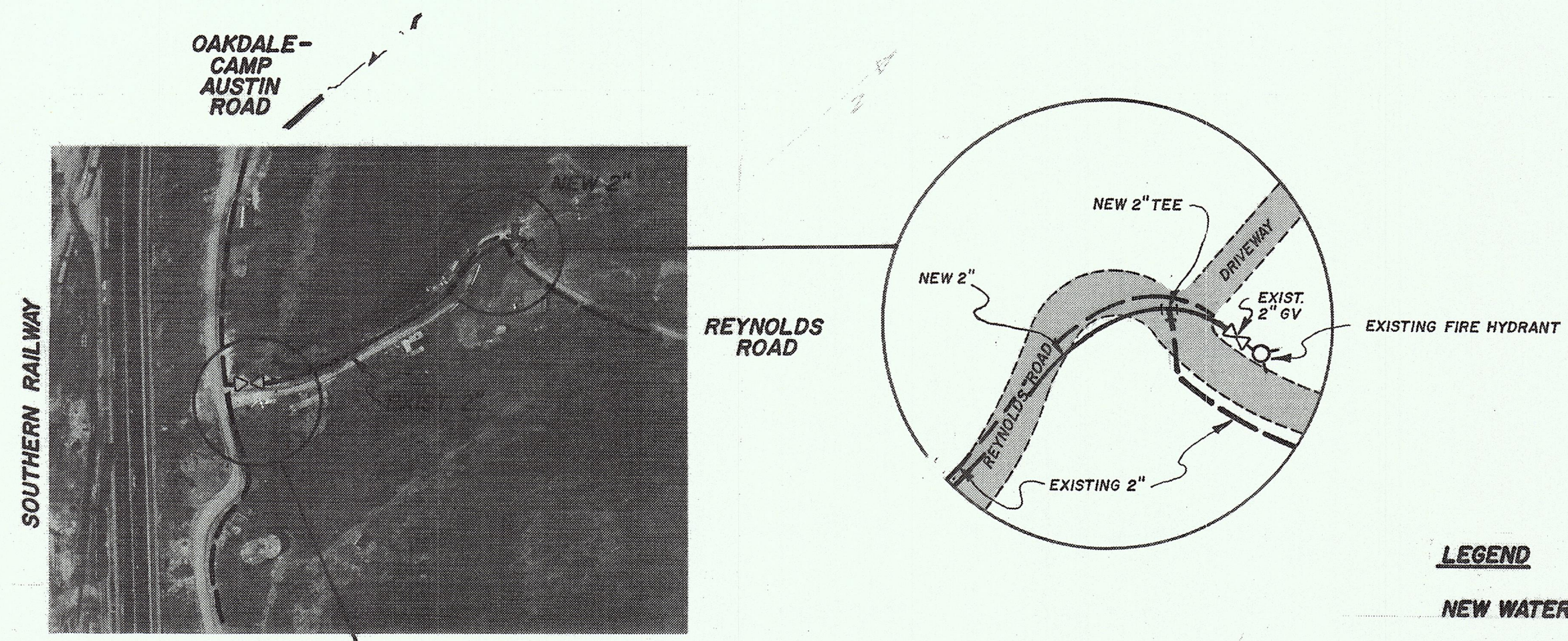
Record Drawing
Date March, 1987

LEGEND

- NEW WATER LINES
- EXISTING WATER LINES
- GATE VALVE
- AIR RELEASE VALVE
- PRESSURE REDUCING VALVE
- REDUCER

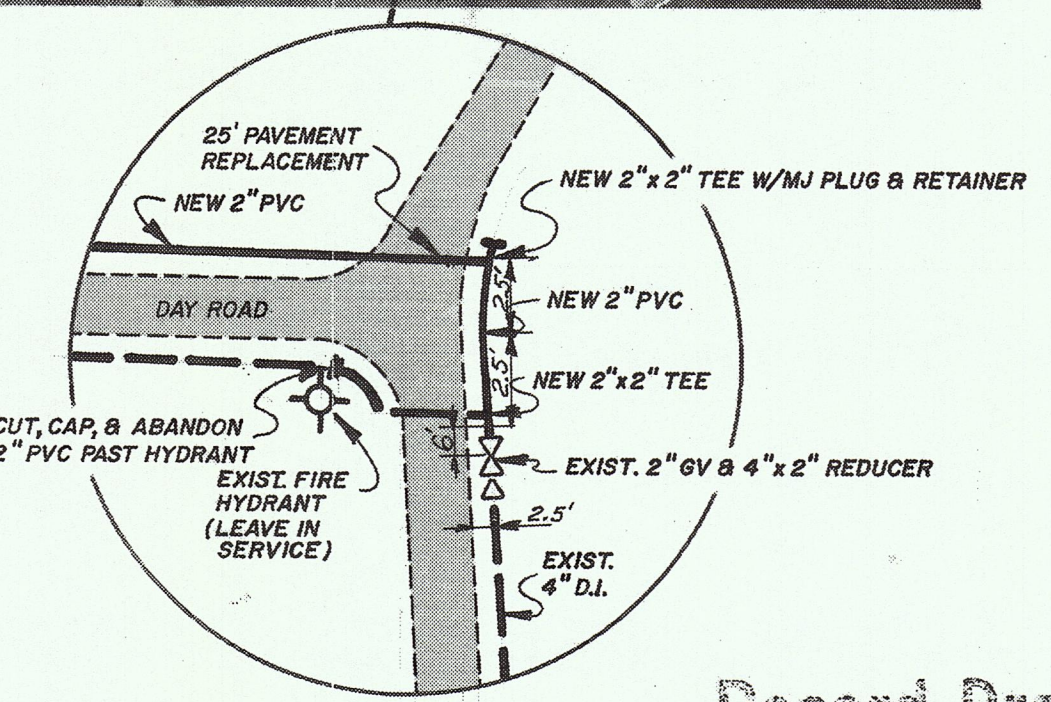
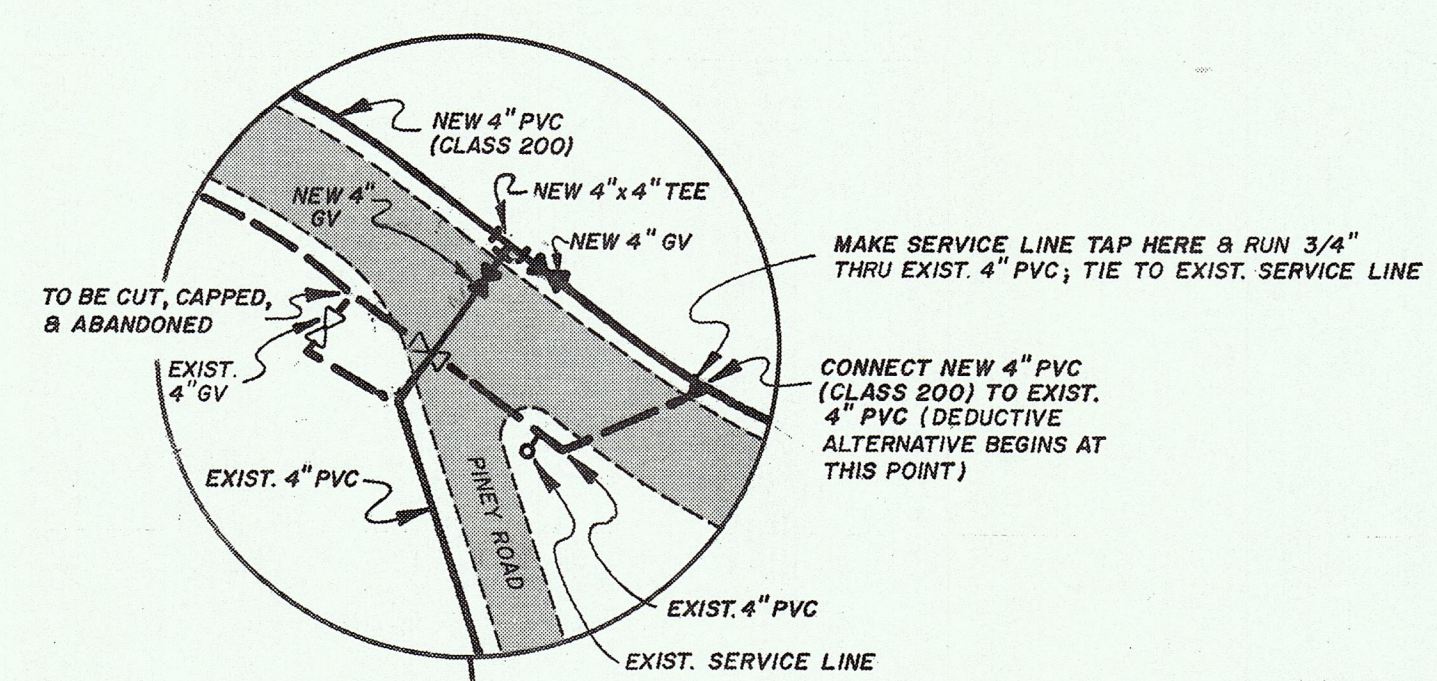
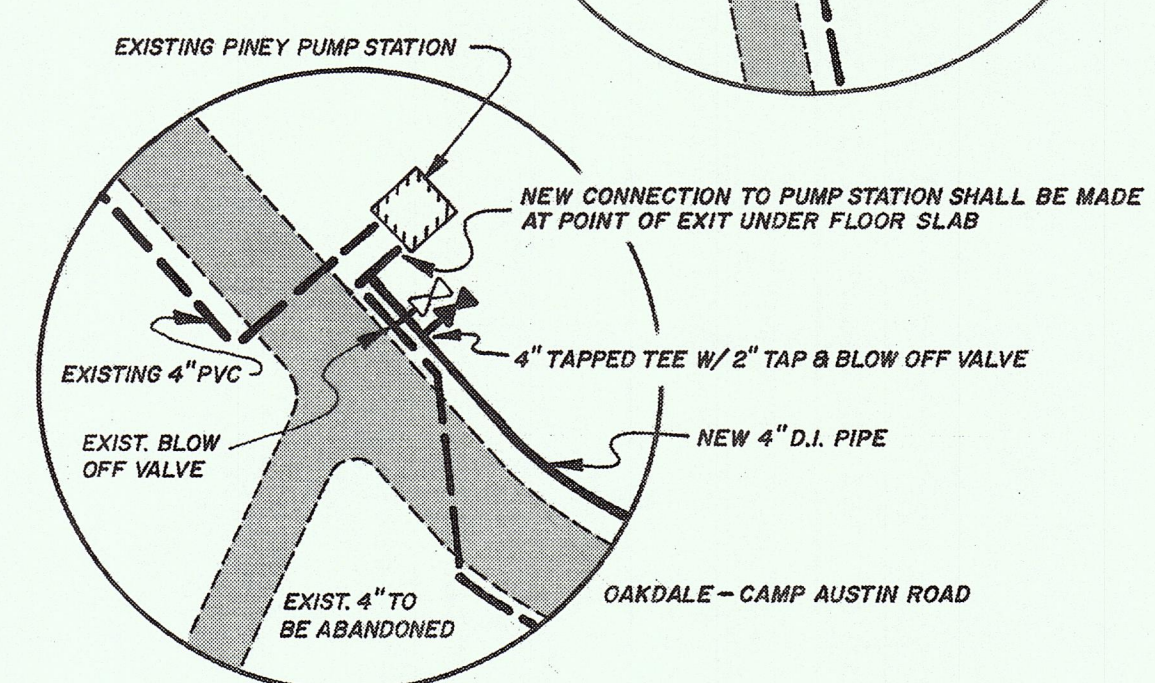
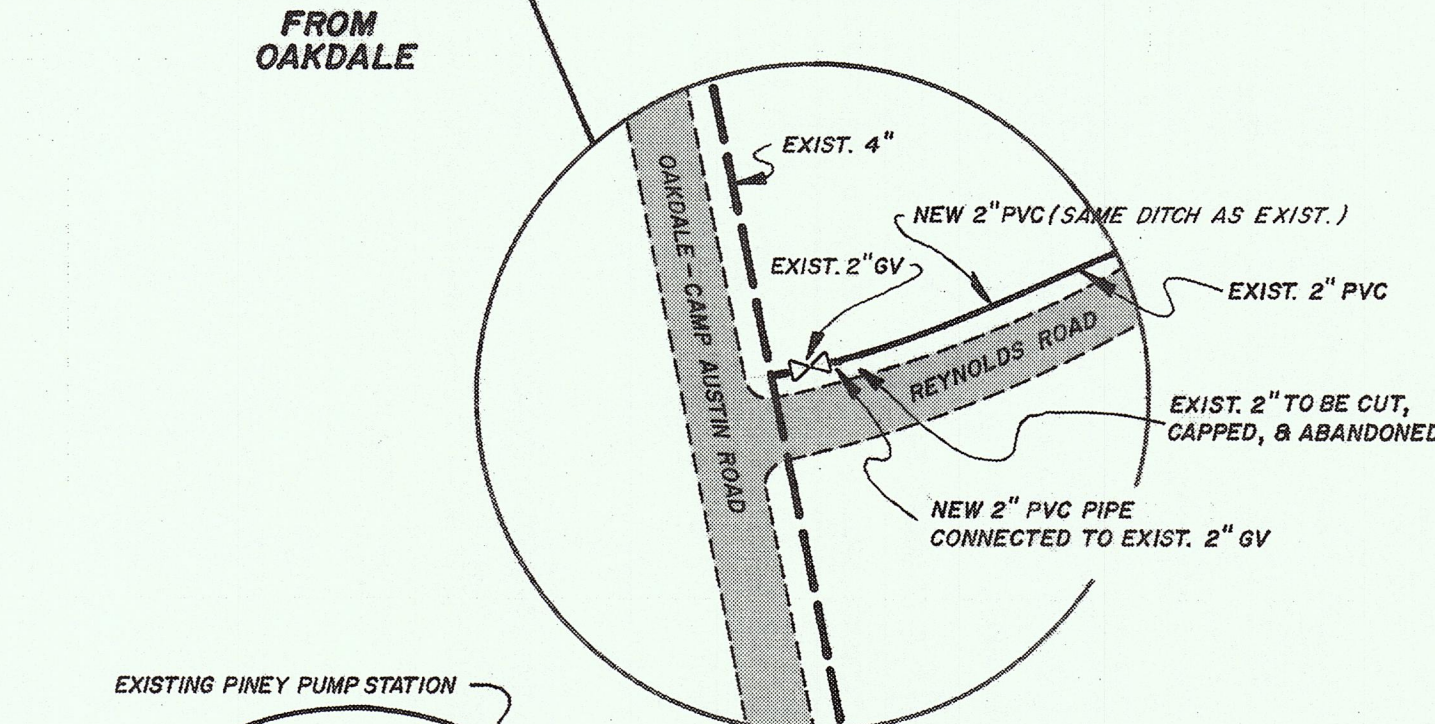


REV	RECORD DRAWING	3/87	JDH
Dr.	1/86	GAW	CL
HENSLEY - SCHMIDT, INC.			
CONSULTING ENGINEERS			
ATLANTA, CHATTANOOGA, KNOXVILLE			
PLAN SCALE	1" = 100'	7972-4.1	

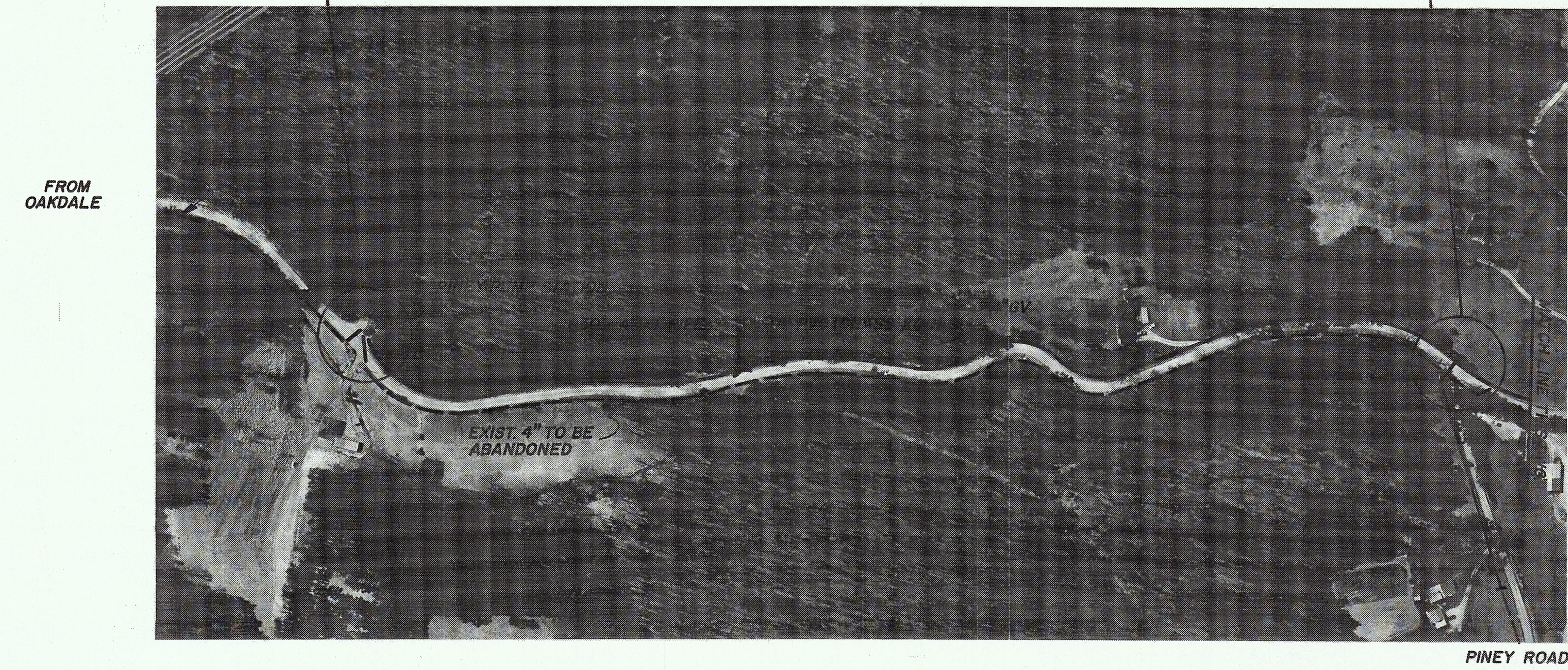


LEGEND

NEW WATER LINES	—
EXISTING WATER LINES	---
GATE VALVE	⊗
AIR RELEASE VALVE	⊙
PRESSURE REDUCING VALVE	⊞
REDUCER	⊞

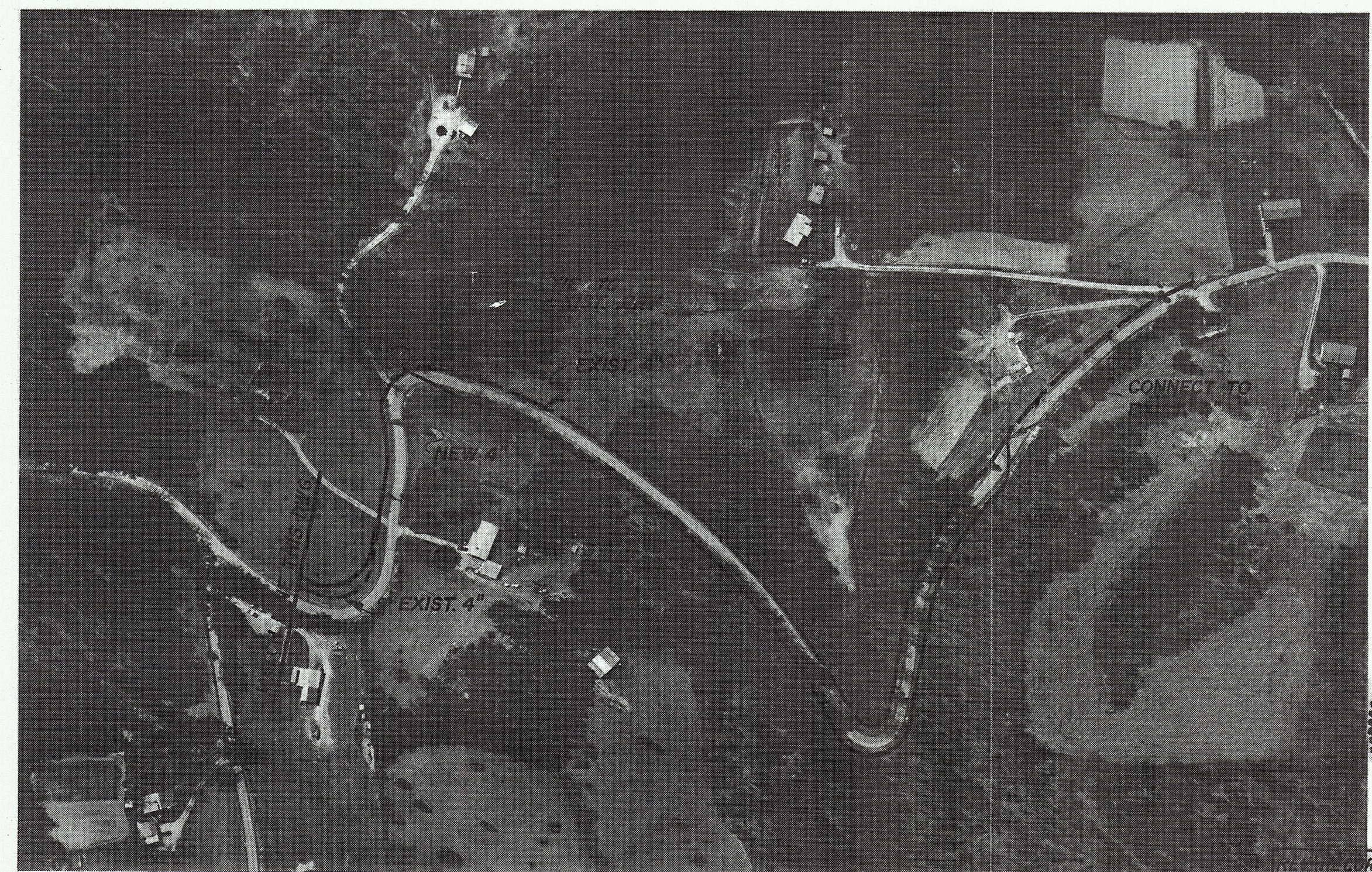


Record Drawing
Date March, 1987



OAKDALE-CAMP AUSTIN ROAD

SCALE: 1"=200'



DEDUCTIVE ALTERNATE NO. 1



Dr.	1/86	GAW	Cl.	JDH
HENLEY-SCHMIDT, INC. CONSULTING ENGINEERS ATLANTA, CHATTANOOGA, KNOXVILLE				
PLAN SCALE 1"=100'				7972-5.1

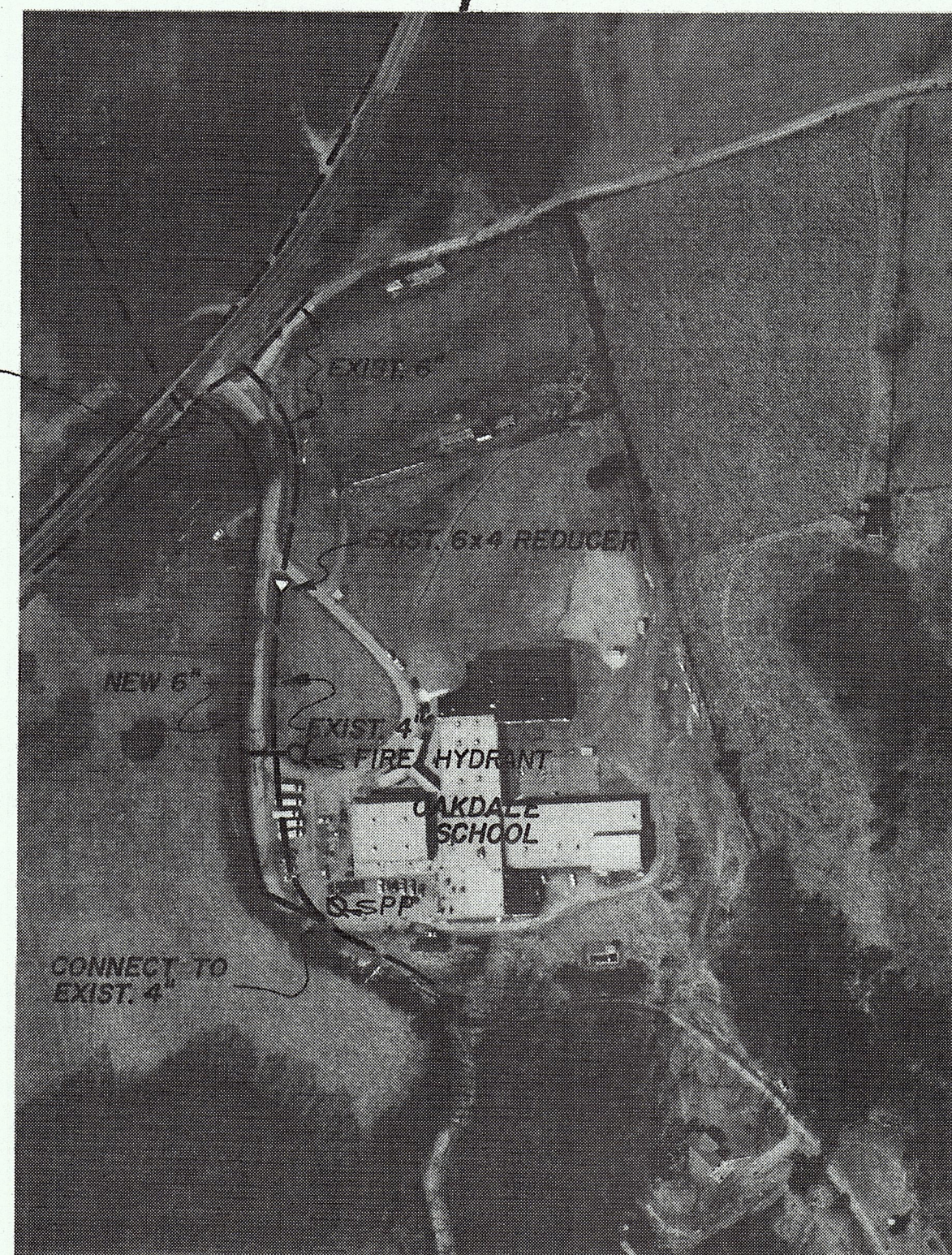
FLOYD LEATHERS ROAD



ROCKWOOD-OAKDALE HWY.

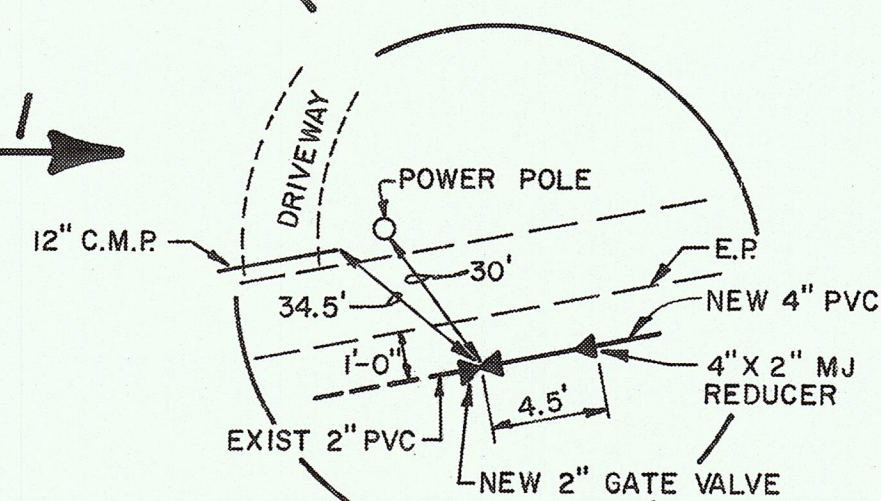
CONNECT 6" 6" TAPPING TEE & VALVE TO EXIST. 6"

ROCKWOOD-OAKDALE HWY.

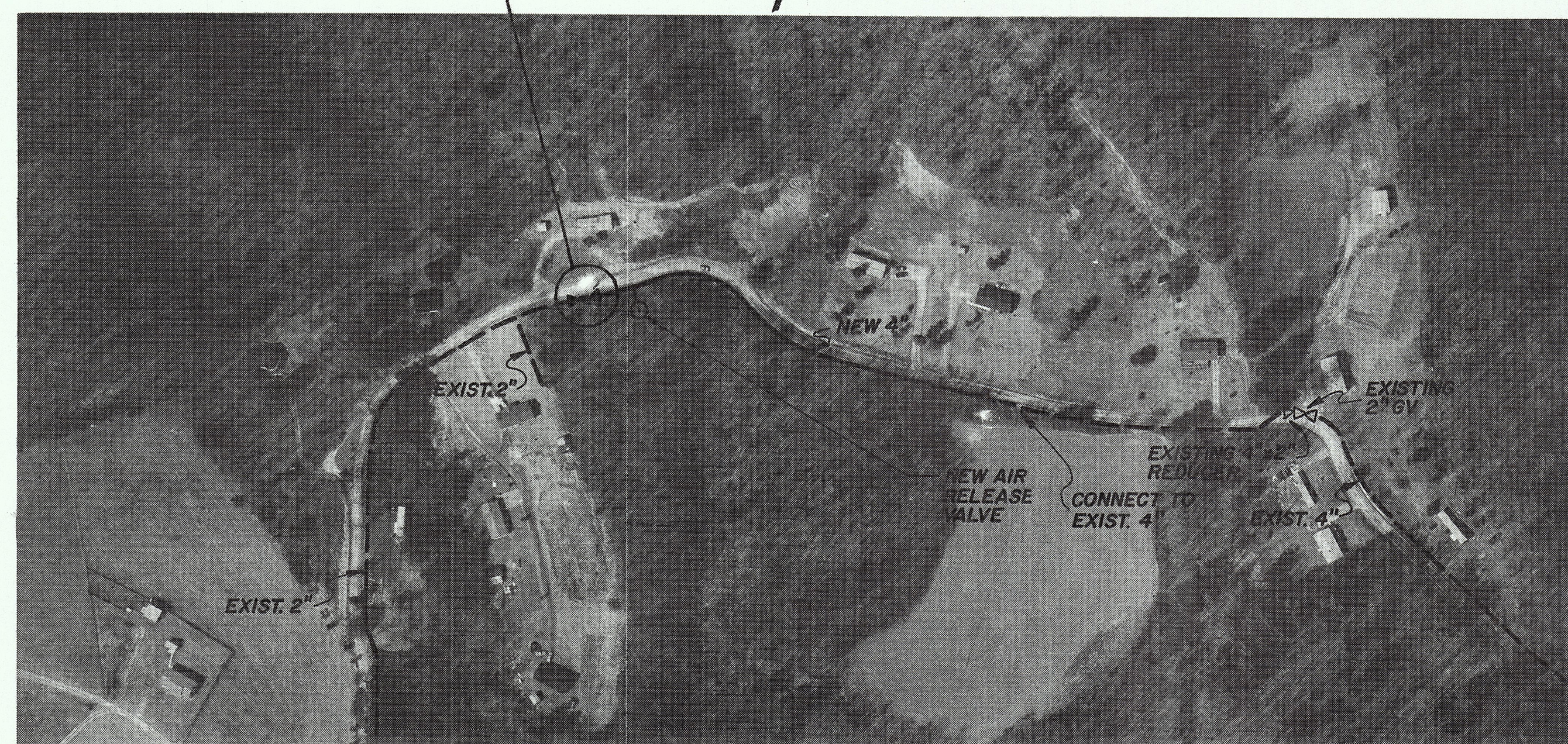


CONNECT TO EXIST. 4"

NOT CONSTRUCTED
DEDUCTIVE ALTERNATE NO. 1

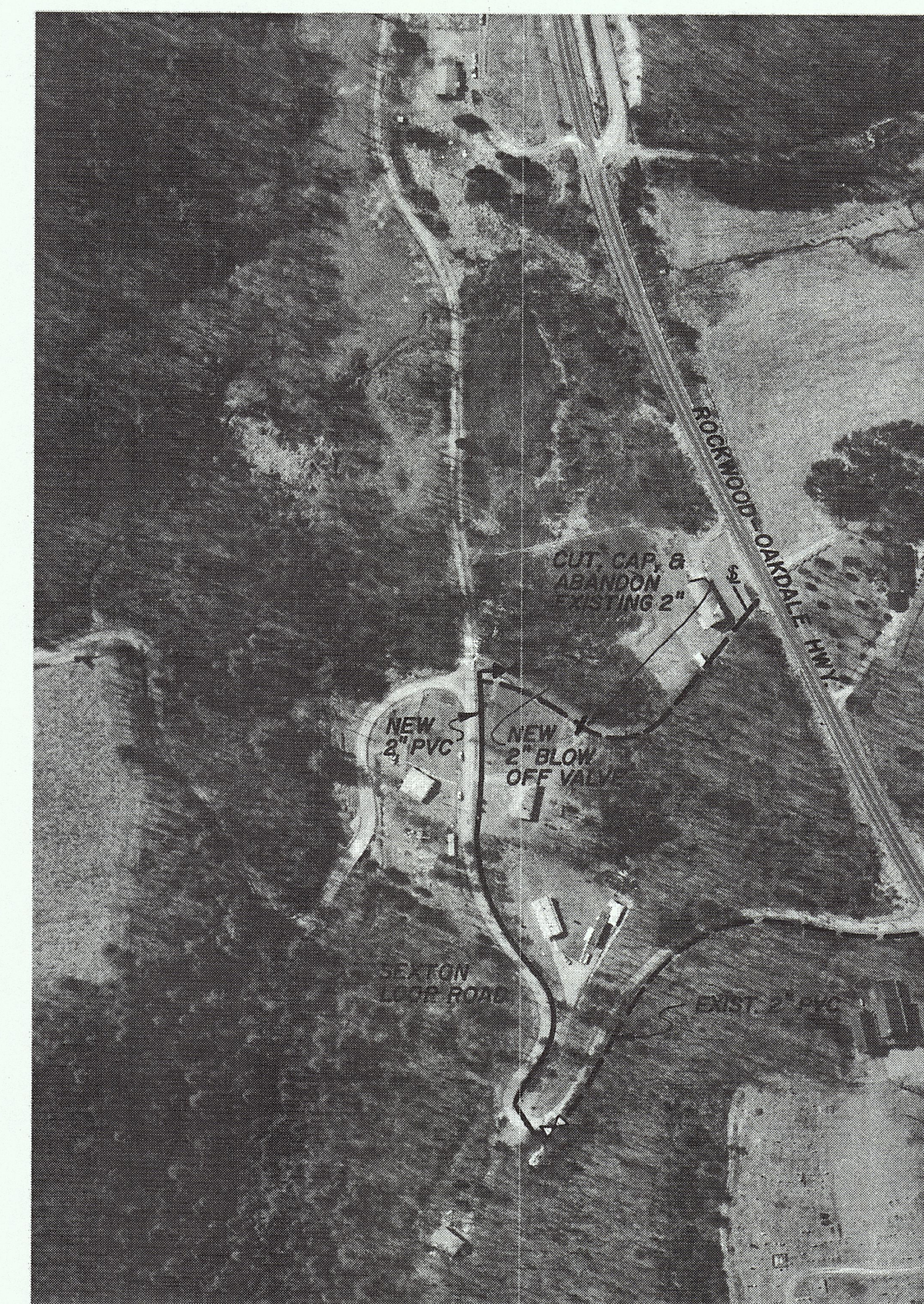


DEDUCTIVE ALTERNATE NO. 1



POWERS LOOP ROAD

POWERS LOOP ROAD



TO OAKDALE

LEGEND

NEW WATER LINES

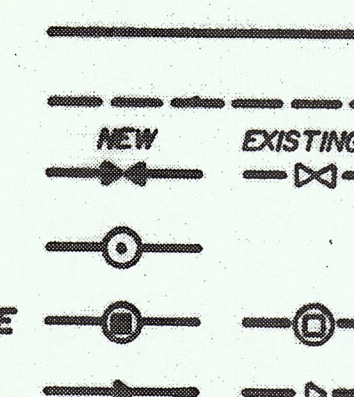
EXISTING WATER LINES

GATE VALVE

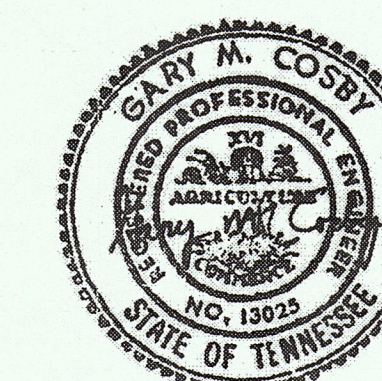
AIR RELEASE VALVE

PRESSURE REDUCING VALVE

REDUCER

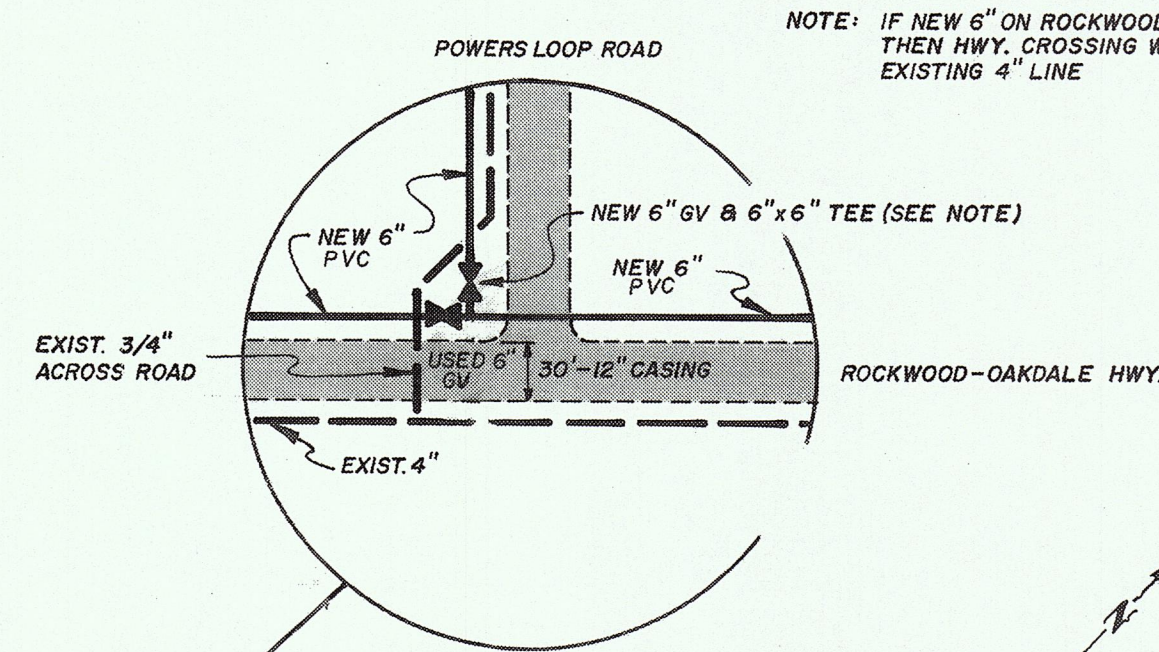
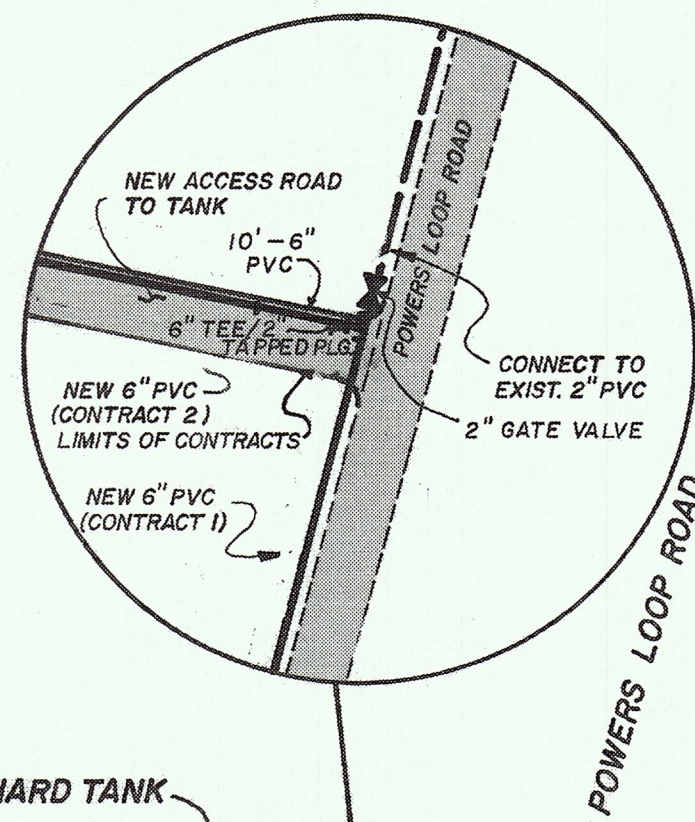


Record Drawing
Date MARCH 1987

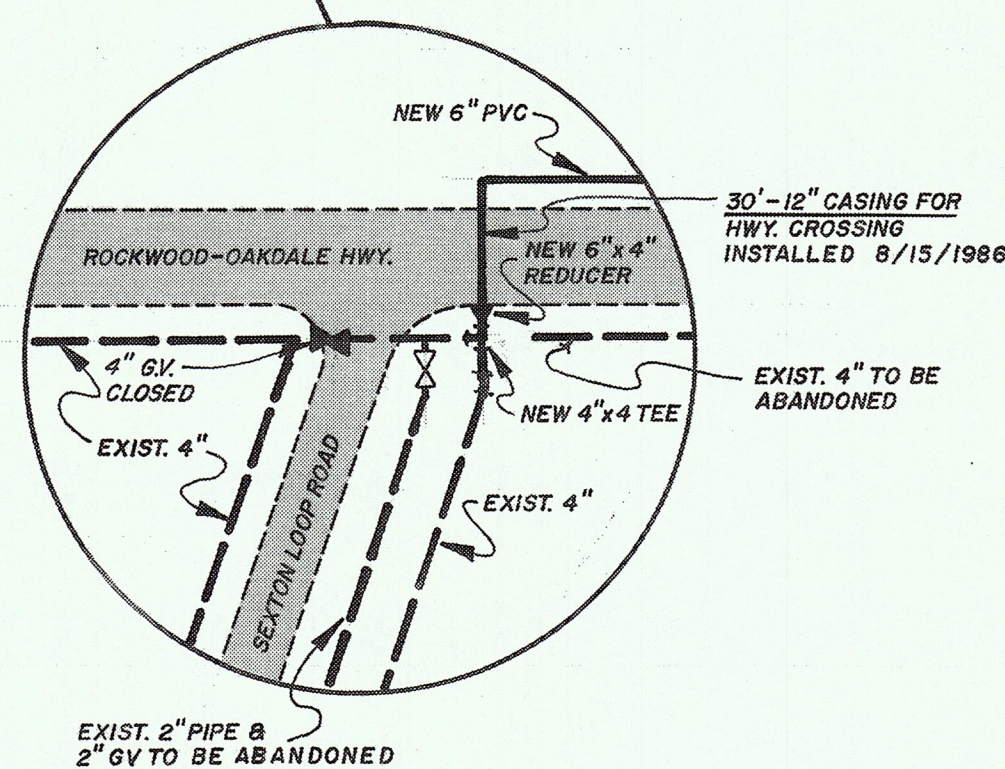
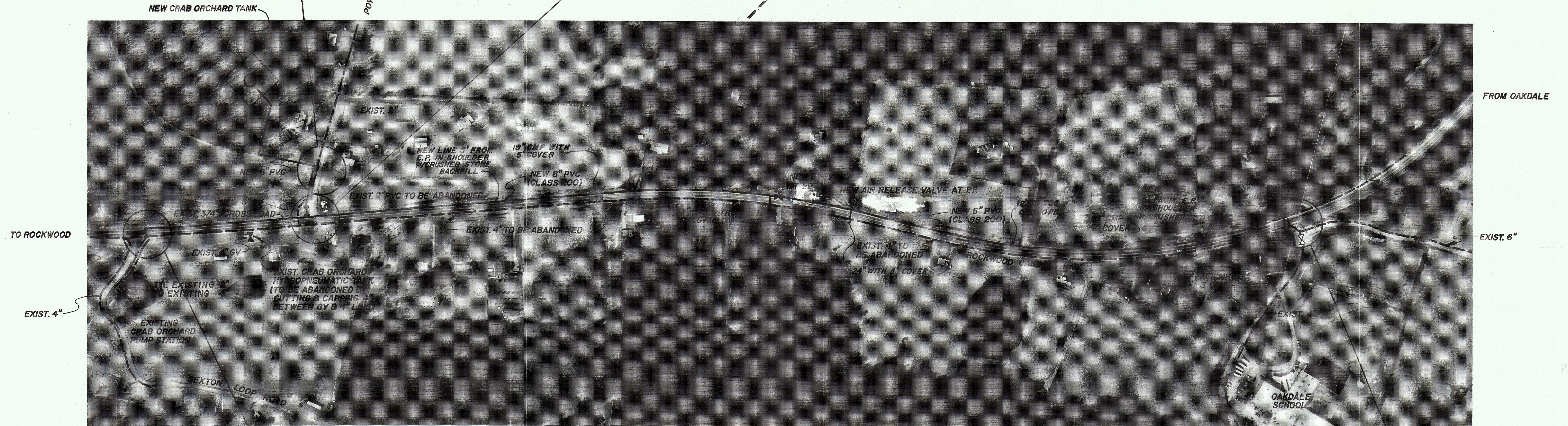


REV.	RECORD DRAWING	3/87	JDH
Dr.	1/86	GAW	CL
HENSLEY - SCHMIDT, INC. CONSULTING ENGINEERS ATLANTA, CHATTANOOGA, KNOXVILLE			
PLAN SCALE	1" = 100'	7972-6.1	

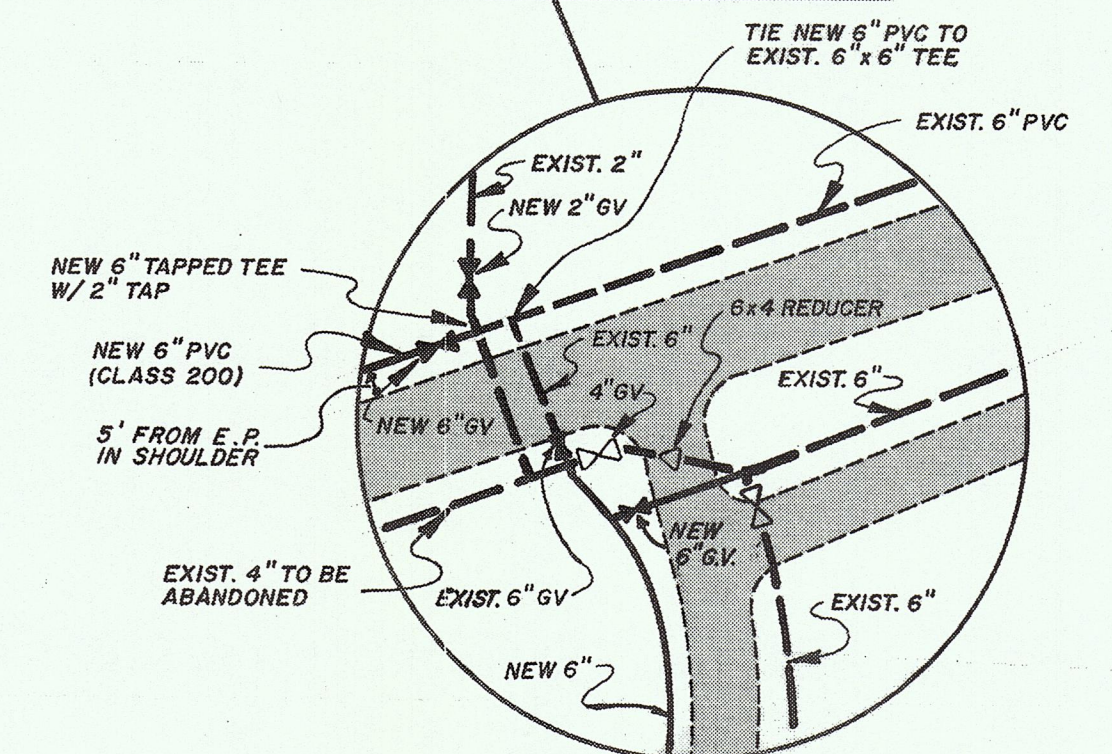
SCALE: 1" = 200'



NOTE: IF NEW 6" ON ROCKWOOD-OAKDALE HWY. IS NOT CONSTRUCTED THEN HWY. CROSSING WILL BE NECESSARY FOR TIE-IN TO EXISTING 4" LINE



DEDUCTIVE ALTERNATE NO. 2
(ALL WORK THIS DWG. EXCEPT 6" LINE ON POWERS LOOP ROAD TO NEW TANK)



Record Drawing
Date MARCH 1987



REV.	RECORD DRAWING	3/87	JDH
Dr.	1/86	CAW	CL. JDH
HENSLEY - SCHMIDT, INC. CONSULTING ENGINEERS ATLANTA, CHATTANOOGA, KNOXVILLE			
PLAN SCALE	1" = 100'	7972-7.1	

SCALE: 1"=200'

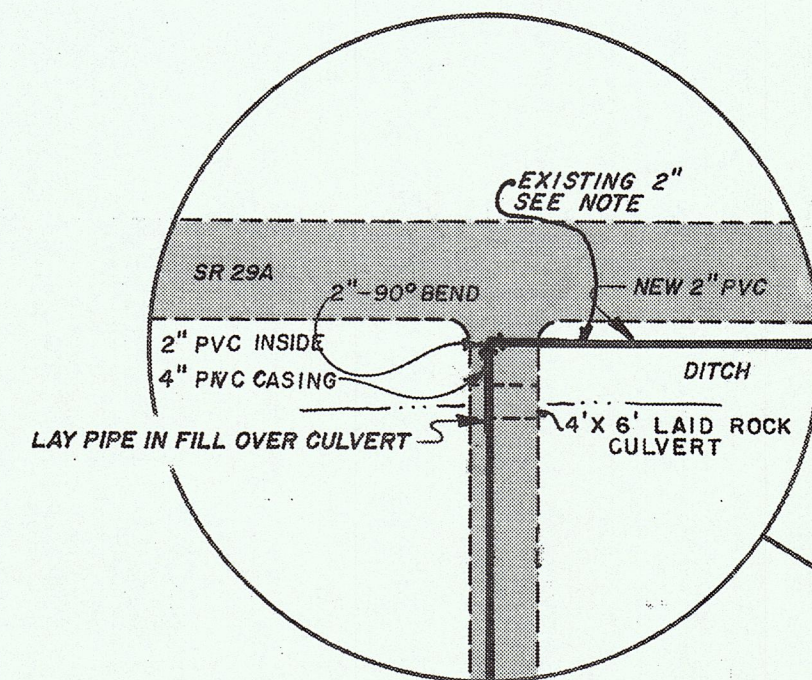
FROM
OAKDALE



NEW 2"

NOTE 1:
REPLACE EXIST. 2" PVC W/
NEW 2" PVC (CLASS 200)
(IN SAME TRENCH, IF TOTAL
COST TO OWNER WOULD BE
LESS THAN W/ NEW TRENCH)

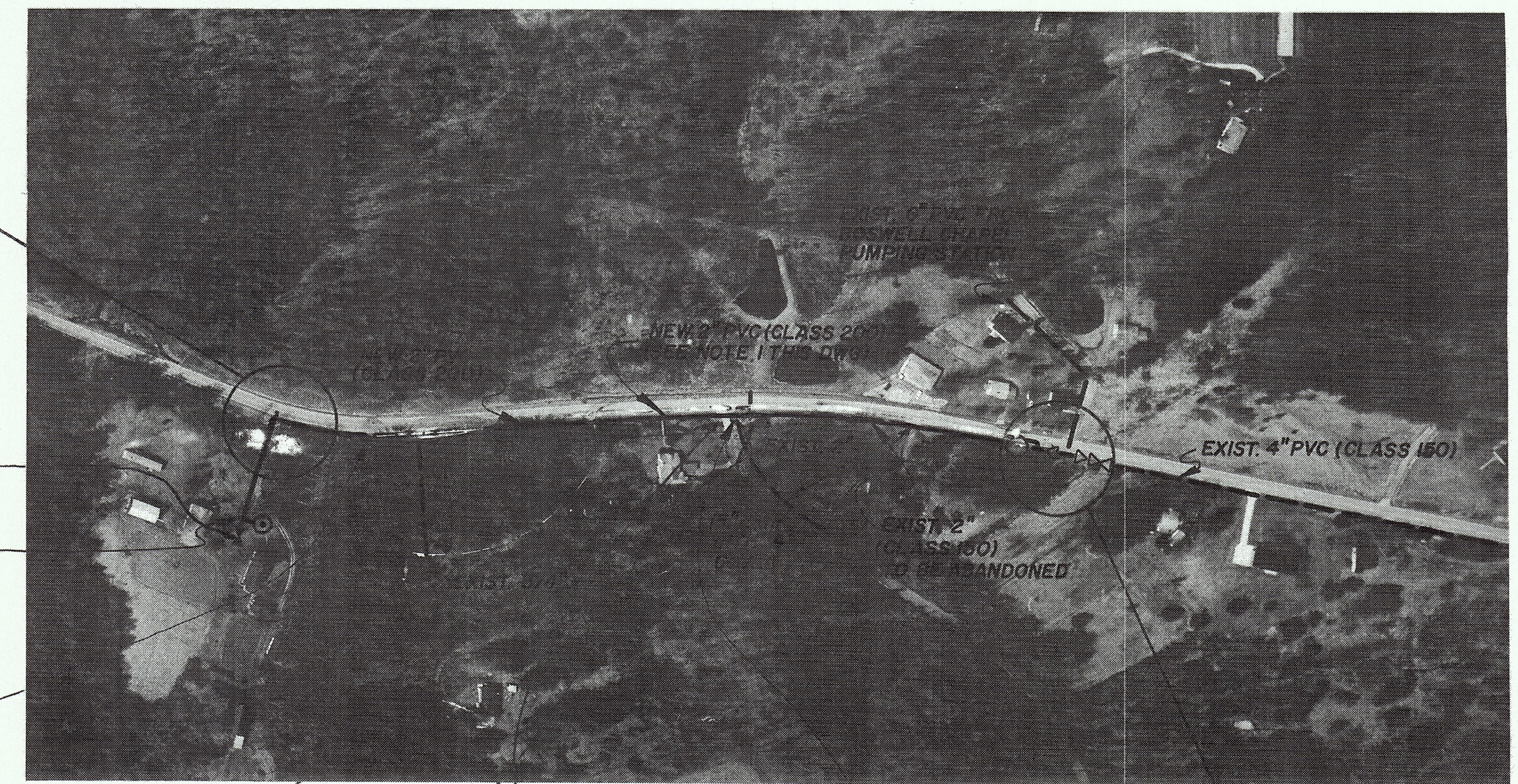
EAST MAIN STREET



FROM
OAKDALE

NEW 2" BLOW OFF VALVE
AT E.O.L.

NEW AIR RELEASE VALVE

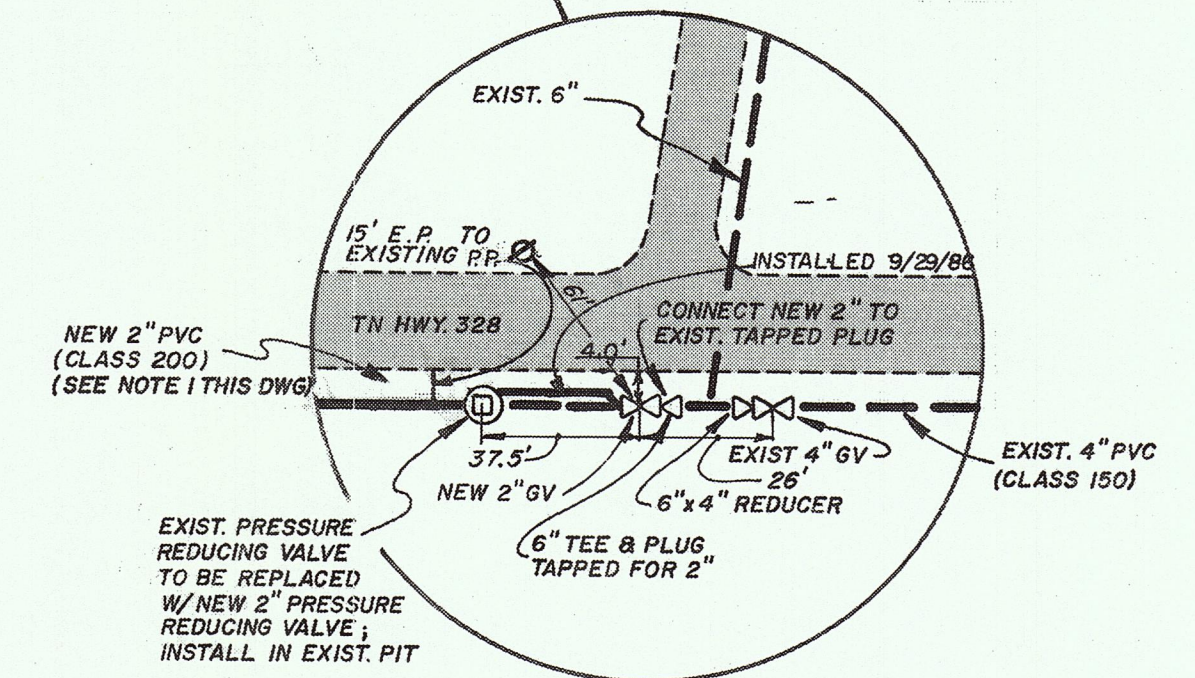


STATE ROUTE
328

12' TO NEW LINE

EXISTING LINE
2.5' FROM E.P.

RECONNECT EXIST.
2" LINE
25' ASPHALT



Record Drawing
Date March, 1987

LEGEND

NEW WATER LINES

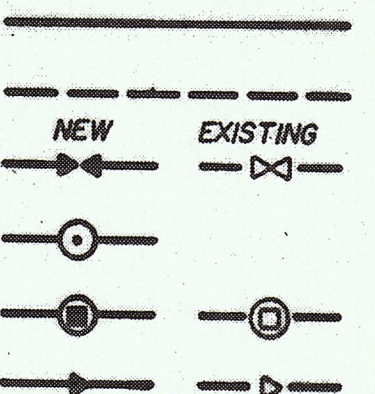
EXISTING WATER LINES

GATE VALVE

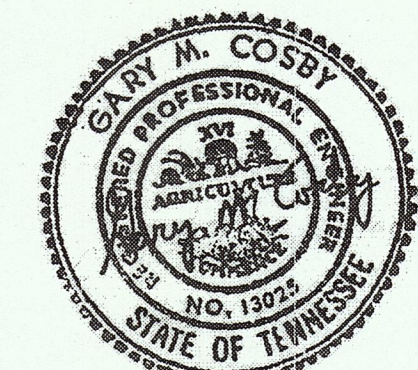
AIR RELEASE VALVE

PRESSURE REDUCING VALVE

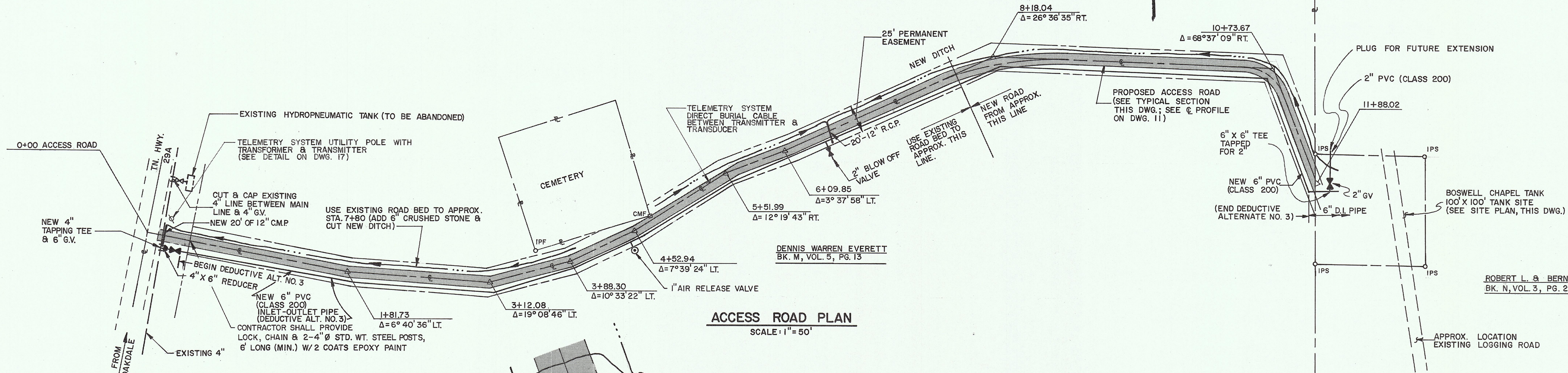
REDUCER



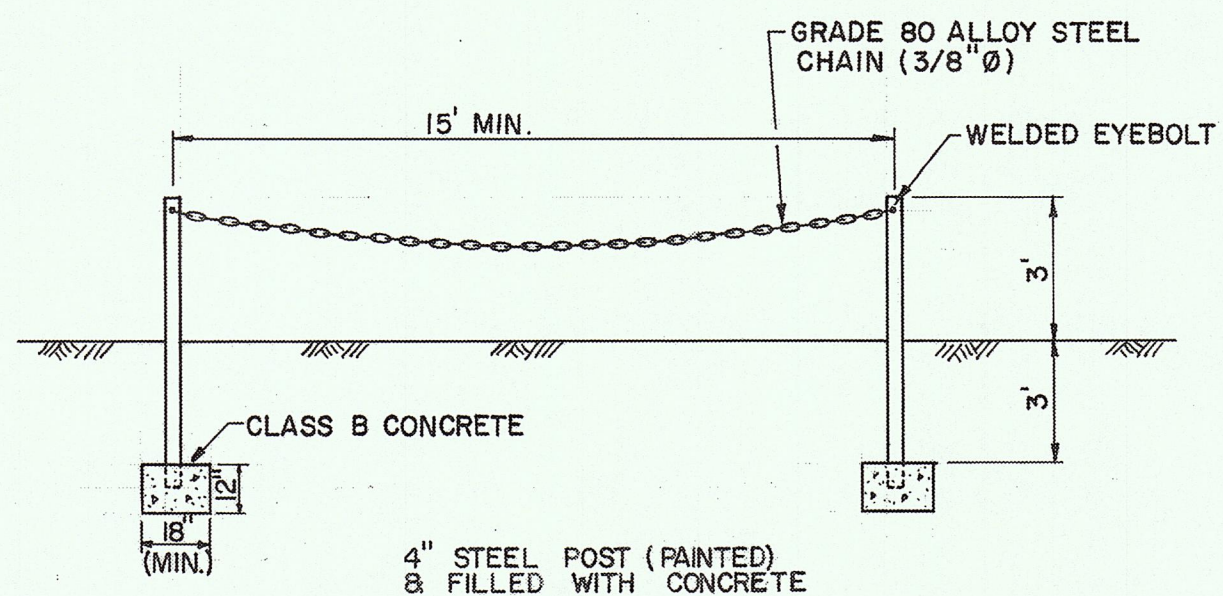
SCALE: 1" = 200'



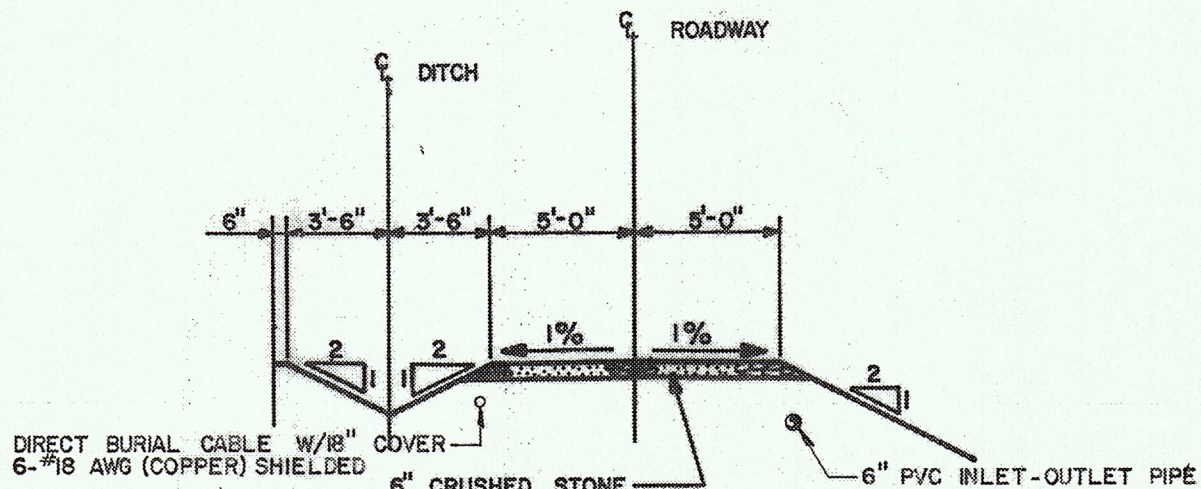
REV	RECORD DRAWING	3/87	JDH
Dr.	1/86	GAW	CL
HENSLEY - SCHMIDT, INC.			
CONSULTING ENGINEERS			
ATLANTA, CHATTANOOGA,			
KNOXVILLE			
PLAN SCALE	7972-8.1		
1" = 100'			



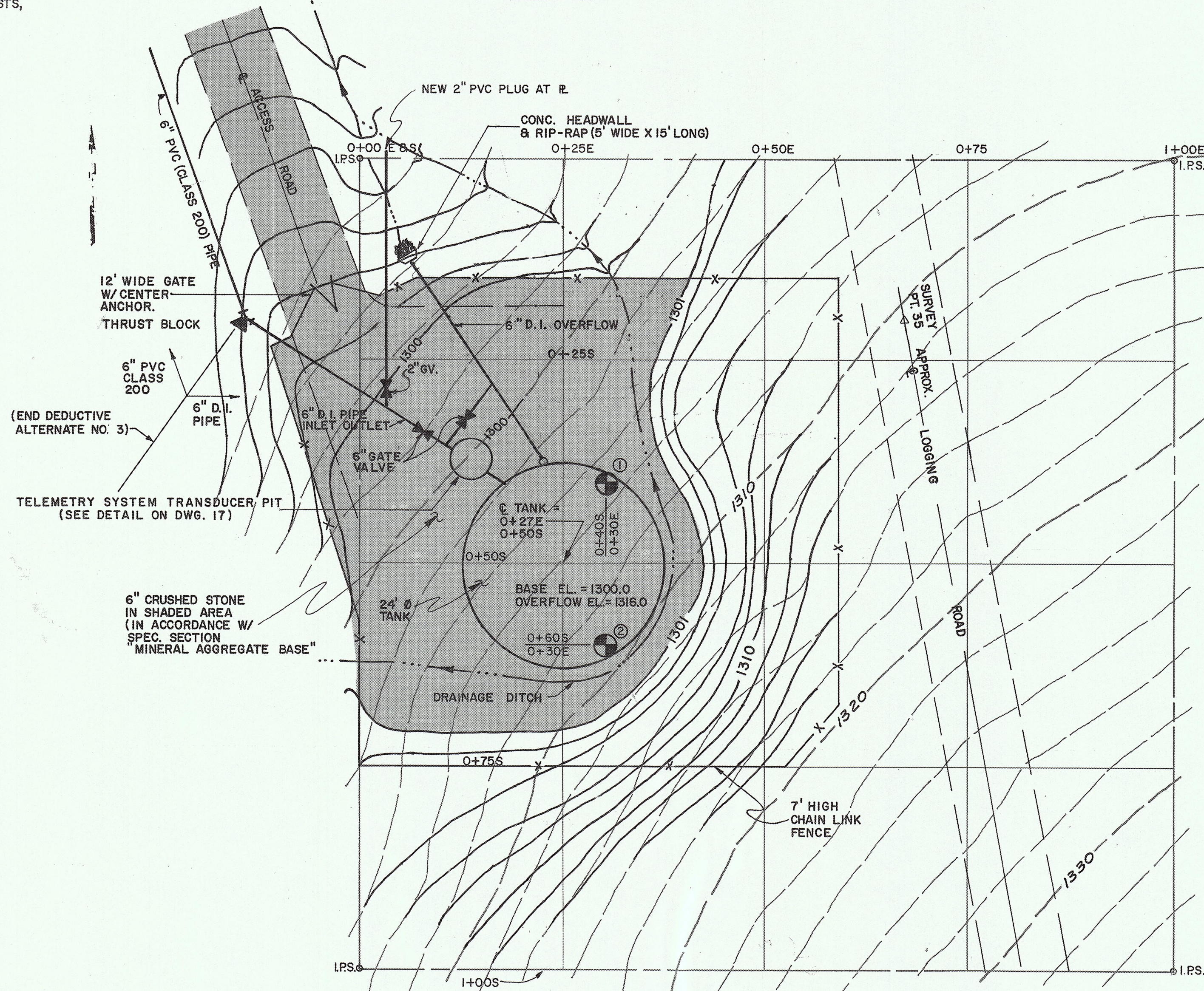
ACCESS ROAD PLAN
SCALE: 1" = 50'



ACCESS ROAD CHAIN DETAIL



PROPOSED ROADWAY TYPICAL SECTION
NO SCALE



BOSWELL CHAPEL TANK
SITE PLAN
SCALE: 1" = 10'

NOTES:

1. ALL WORK ON THIS DRAWING SHALL BE INCLUDED IN CONTRACT 2, WATER STORAGE TANK.
2. ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE SEEDDED OR OTHERWISE TREATED AS SHOWN OR SPECIFIED.
3. ALL NOTES LISTED ON DWG. 2 SHALL ALSO APPLY TO WORK UNDER CONTRACT 2.
4. 6" PVC INLET-OUTLET PIPE BETWEEN LIMITS SHOWN SHALL BE DEDUCTIVE ALTERNATE NO. 3, AND MAY BE INSTALLED BY OWNER AS PART OF LOCAL SHARE OF PROJECT.

2	JDH	3/87	RECORD DRAWING
1	JDH	5/86	ADDED TELEMETRY SYSTEM
REV.	BY	DATE	DESCRIPTION

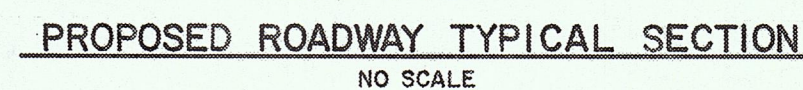
CONTRACT NO. 2 - WATER STORAGE TANKS

**BOSWELL CHAPEL TANK -
ACCESS ROAD AND
SITE PLAN**

**WOLFE BRANCH UTILITY DISTRICT
OKDALE, TENNESSEE**

DESIGNED BY:	HENSLEY-SCHMIDT, INC.	DRAWING NO.
DRAWN BY:	Engineers and Managers	7972-9.2
CHECKED:	ATLANTA - CHATTANOOGA - JACKSON	
APPROVED:	CHARLOTTE - KNOXVILLE - VALDOSTA	





HEADWALL SIMILAR TO DETAIL
ON DWG. 13

6" PVC
(CLASS 200)
INLET-OUTLET
PIPE (DEDUCTIVE
ALTERNATE NO. 3)
25' EASEMENT

5" PVC

TELEMETRY SYSTEM
DIRECT BURIAL CABLE BETWEEN
TRANSMITTER & TRANSDUCER

5"-TEE
W/2" TAP
CONTRACT 1
ALT. 3

BM- NAIL
EL.-1245.91

STA. 0+00
ACCESS ROAD

ACCESS ROAD PLAN

SCALE: 1" = 50'

SCALE: 1" = 50'

NOTES :

1. ALL WORK ON THIS DRAWING, EXCEPT AS NOTED, SHALL BE INCLUDED IN CONTRACT 2, WATER STORAGE TANK.
2. ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE SEEDED OR OTHERWISE TREATED AS SHOWN OR SPECIFIED.
3. ALL NOTES LISTED ON DWG. 2 SHALL ALSO APPLY TO WORK UNDER CONTRACT 2.
4. 6" PVC INLET-OUTLET PIPE BETWEEN LIMITS SHOWN SHALL BE DEDUCTIVE ALTERNATE NO. 3, AND MAY BE INSTALLED BY OWNER AS PART OF LOCAL SHARE OF PROJECT.

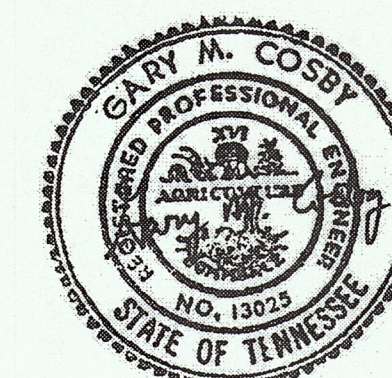
2	JDH	3/87	RECORD DRAWING
1	JDH	5/86	ADDED TELEMETRY SYSTEM
REV.	BY	DATE	DESCRIPTION

CONTRACT NO. 2 - WATER STORAGE TANKS

CRAB ORCHARD TANK - ACCESS ROAD AND SITE PLAN

WOLFE BRANCH UTILITY DISTRICT
OAKDALE, TENNESSEE

DESIGNED BY: J.D.H.	HENSLEY-SCHMIDT, INC.	DRAWING NO.
DRAWN BY: G. RAMEY		
CHKD. DATE:		7972- 10
APPR. DATE:		



PERINING 44-132 32756-4

FINAL SURVEY
DATE: 10/11/85
BY: J. JONES
H-S
3119

ORIGINAL SURVEY
DATE: 10/11/85
BY: J. JONES
H-S
3119

1360

1340

1320

1300

1280

1260

1240

1220

POWERS LOOP ROAD

0+00

1+00

2+00

3+00

4+00

5+00

6+00

7+00

8+00

PROPOSED
FINISHED GRADE

EXISTING GRADE

NEW 12" RCP OR CMP CULVERT

2 @ TANK SITE

FINISHED GRADE EL. ~~1345~~ 1345

1360

1340

1320

1300

1280

1260

1240

1220

CRAB ORCHARD TANK
PROPOSED ACCESS ROAD & PROFILE
SCALE: 1" = 50' HOR.
1" = 20' VERT.

1300

1280

1260

1240

1220

1200

1180

1160

STATE HWY. 29A

0+00

1+00

2+00

3+00

4+00

5+00

6+00

7+00

8+00

9+00

10+00

11+00

12+00

PROPOSED
FINISHED GRADE

NEW 12" RCP OR CMP CULVERT

2 @ TANK SITE

PROPOSED ACCESS ROAD
FINISHED GRADE

EXISTING GROUND

1300

1280

1260

1240

1220

1200

1180

1160

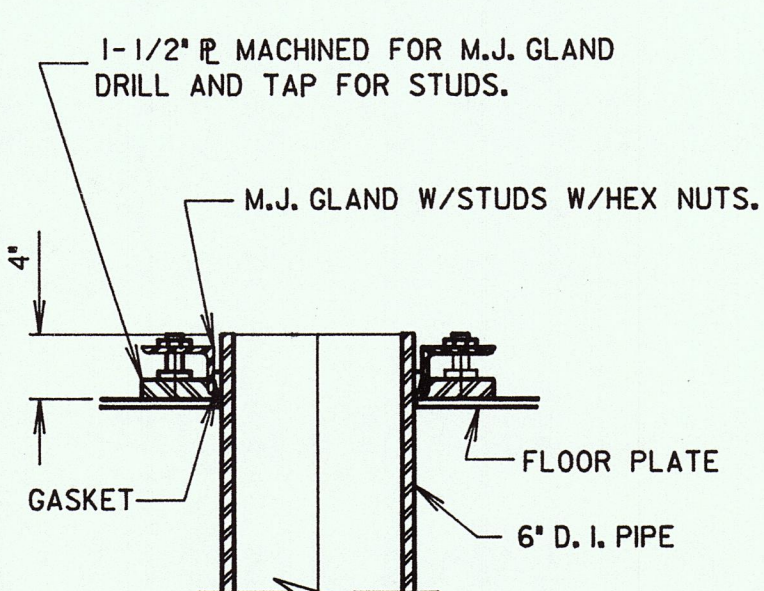
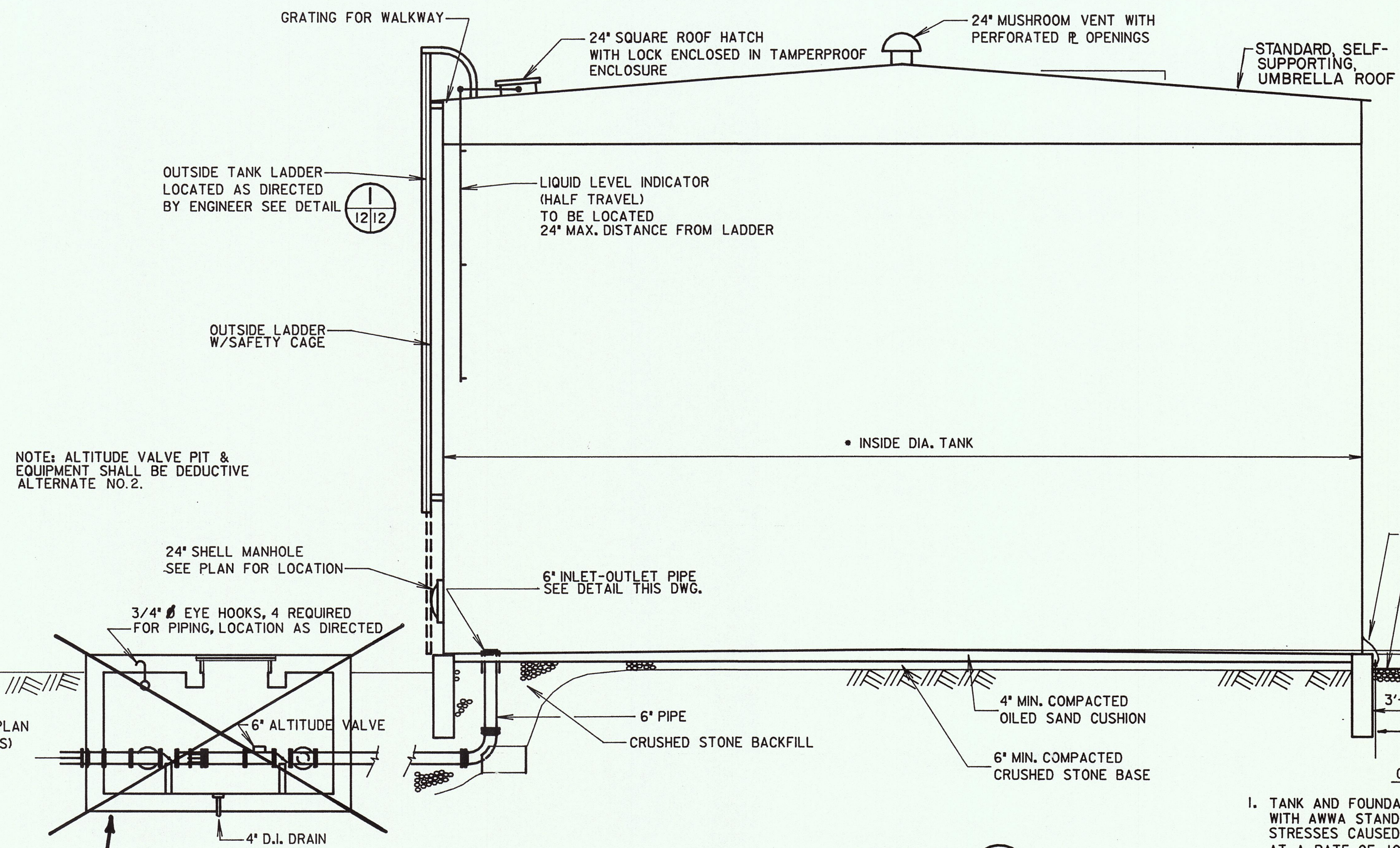
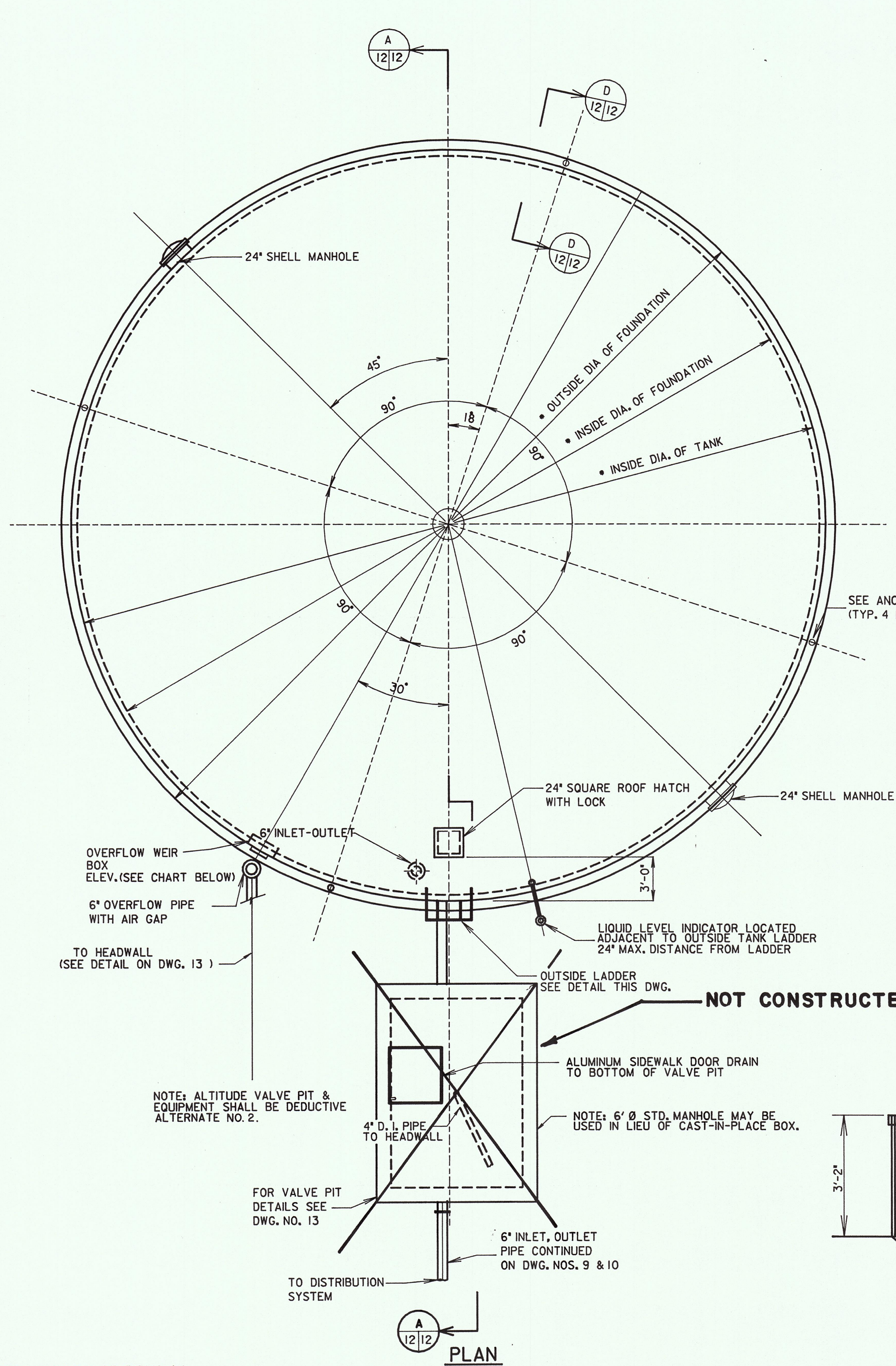
BOSWELL CHAPEL TANK
PROPOSED ACCESS ROAD & PROFILE
SCALE: 1" = 50' HOR.
1" = 20' VERT.



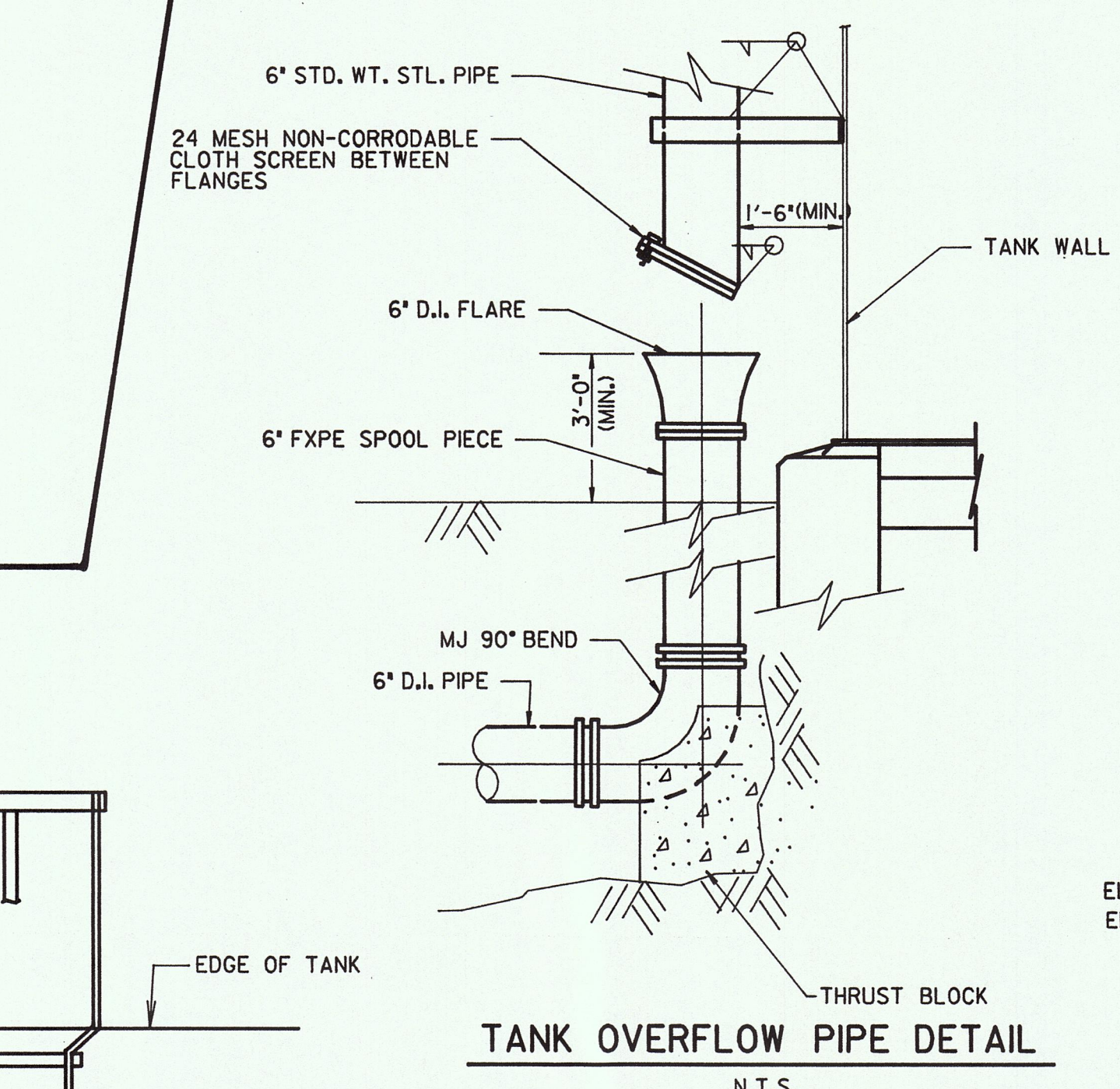
13+00

1180

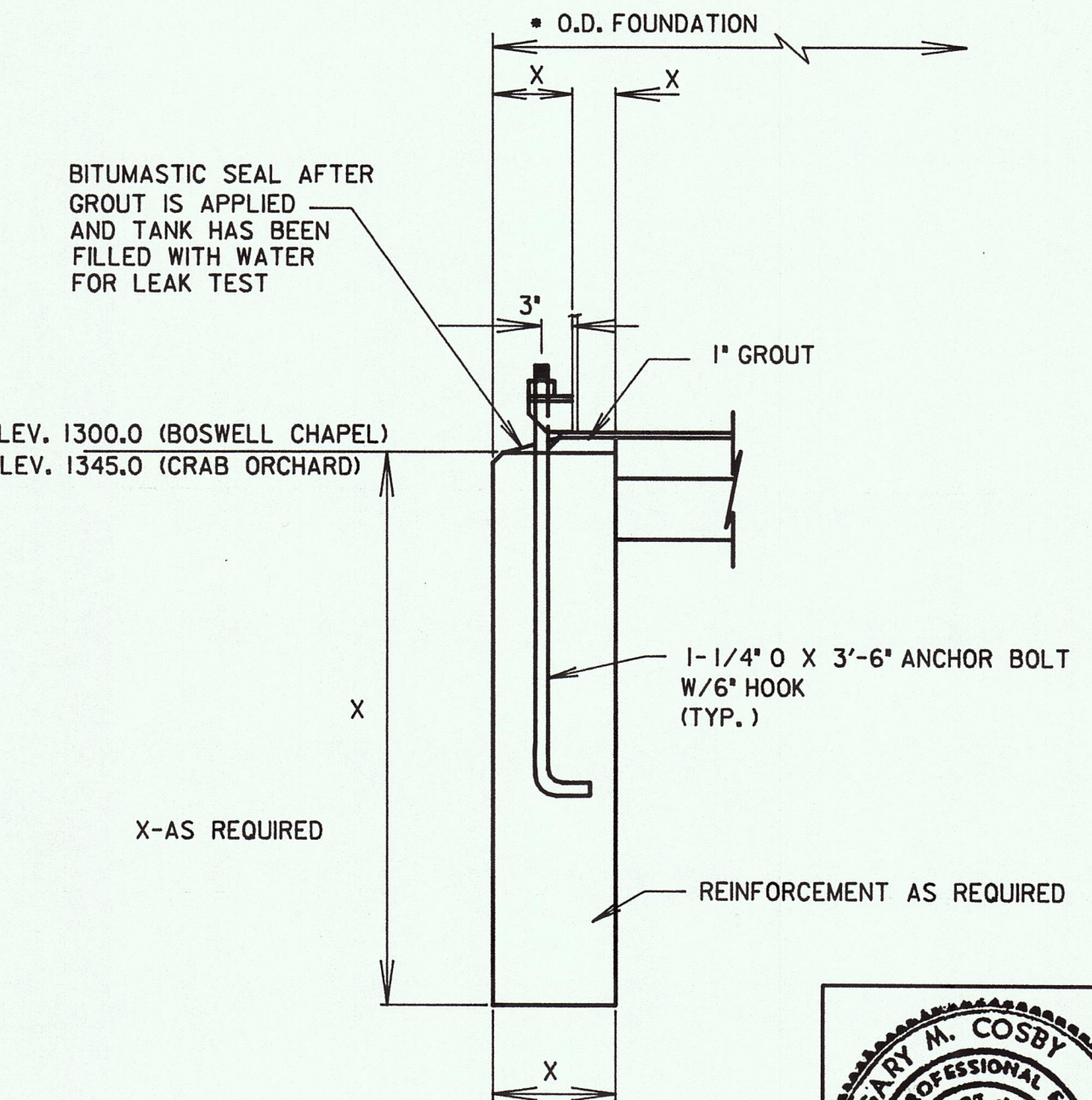
REV.	BY	DATE	DESCRIPTION
CONTRACT NO. 2 - WATER STORAGE TANKS			
TANK ACCESS ROADS - PROFILE			
WOLFE BRANCH UTILITY DISTRICT OAKDALE, TENNESSEE			
DESIGNED BY: JDH	HENSLEY - SCHMIDT, INC.		DRAWING NO.
DRAWN BY: JVD	CONSULTING ENGINEERS		7972- 11
CHKD.	DATE:	ATLANTA - CHATTANOOGA - JACKSON	
APPR	DATE:	CHARLOTTE - KNOXVILLE - NASHVILLE	



INLET / OUTLET PIPE
SCALE: 1" = 1'-0"



TANK OVERFLOW PIPE DETAIL
N.T.S.

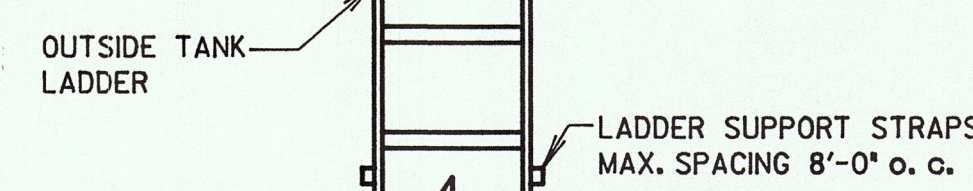


SECTION D
SCALE: 3/4" = 1'-0"

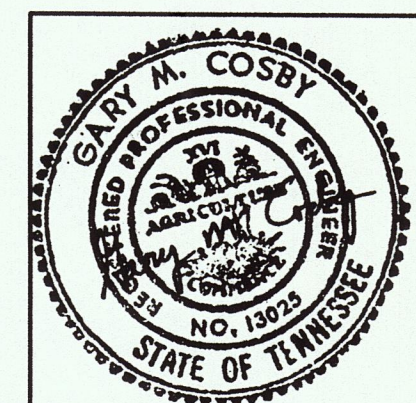
- GENERAL NOTES**
- TANK AND FOUNDATION SHALL BE DESIGNED IN ACCORDANCE WITH AWWA STANDARD SPECIFICATION D-100 INCLUDING STRESSES CAUSED BY A WIND FORCE BLOWING AT A RATE OF 100 MPH IN ANY DIRECTION.
 - THE TANK SHALL CONFORM TO THE DESIGN AND DIMENSIONS SHOWN ON THE DRAWINGS. THE CONTRACTOR MAY VARY THE GENERAL CONFIGURATION WITHIN REASONABLE LIMITS TO ADAPT THE TANK TO HIS STANDARD DESIGN PROCEDURES. THE TANK OVERFLOW AND TOP OF FOOTINGS SHALL BE AT THE RESPECTIVE ELEVATIONS SHOWN ON THE DRAWINGS.
 - ACCESSORIES:
 - TANK ACCESSORIES TO BE FURNISHED AND INSTALLED UNDER THIS CONTRACT ARE SHOWN AND/OR LISTED HEREINAFTER ON THE CONTRACT DRAWINGS OR SPECIFICATIONS.
 - THE TANK ACCESSORIES SHALL CONFORM TO ALL APPLICABLE PROVISIONS OF AWWA STANDARD SPECIFICATION D-100, LATEST EDITION.
 - THE ACCESSORIES TO BE FURNISHED AND INSTALLED ARE AS FOLLOWS:
 - OUTSIDE TANK LADDER W/SAFETY CAGE
 - TWO (2) 24-INCH-DIAMETER SHELL MANHOLES
 - ONE (1) 24-INCH-SQUARE WATERPROOF ROOF HATCH WITH LOCK
 - ONE (1) 24-INCH REMOVABLE MUSHROOM VENT
 - LIQUID LEVEL INDICATOR
 - 6-INCH OVERFLOW PIPING WITH WEIR BOX
 - PAINTER'S TROLLEY RAIL AT TOP OF TANK

TANK DIMENSIONS	BOSWELL CHAPEL	CRAB ORCHARD
OUTSIDE DIAMETER OF FOUNDATION	AS REQUIRED	AS REQUIRED
INSIDE DIAMETER OF FOUNDATION	AS REQUIRED	AS REQUIRED
INSIDE DIAMETER OF TANK	24'	24'
OVERFLOW WEIR BOX ELEVATION	1323.8	1366.2
BASE OF TANK ELEVATION	1300.0	1342.4

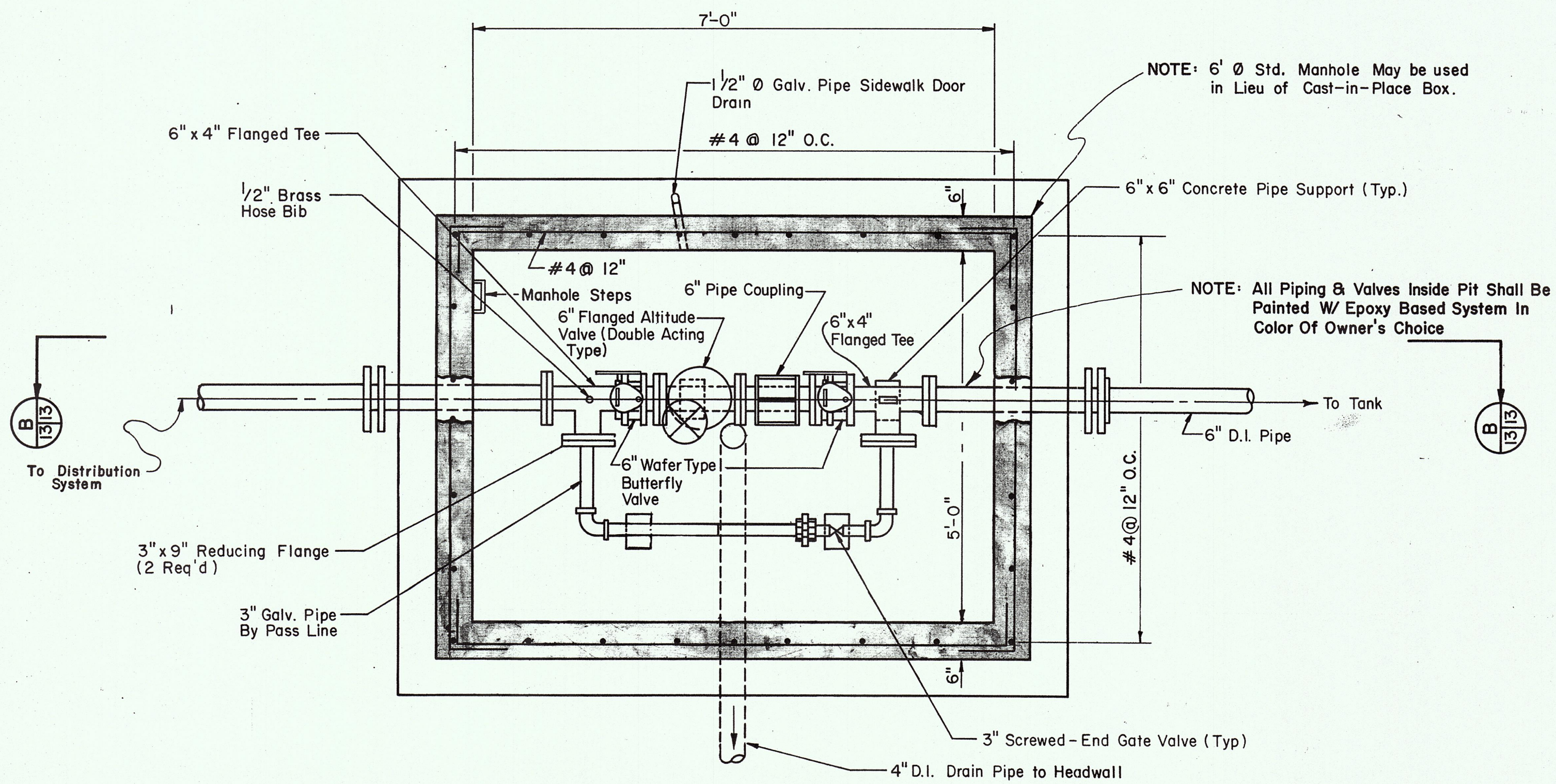
NOTE: DIMENSIONS SHOWN ARE FOR 50,000 GAL. TANK. DIMENSIONS FOR 30,000 GAL. TANK ARE 19' 0" X 16' TO OVERFLOW. BASE ELEVATIONS WOULD BE SAME FOR EITHER SIZE TANK.



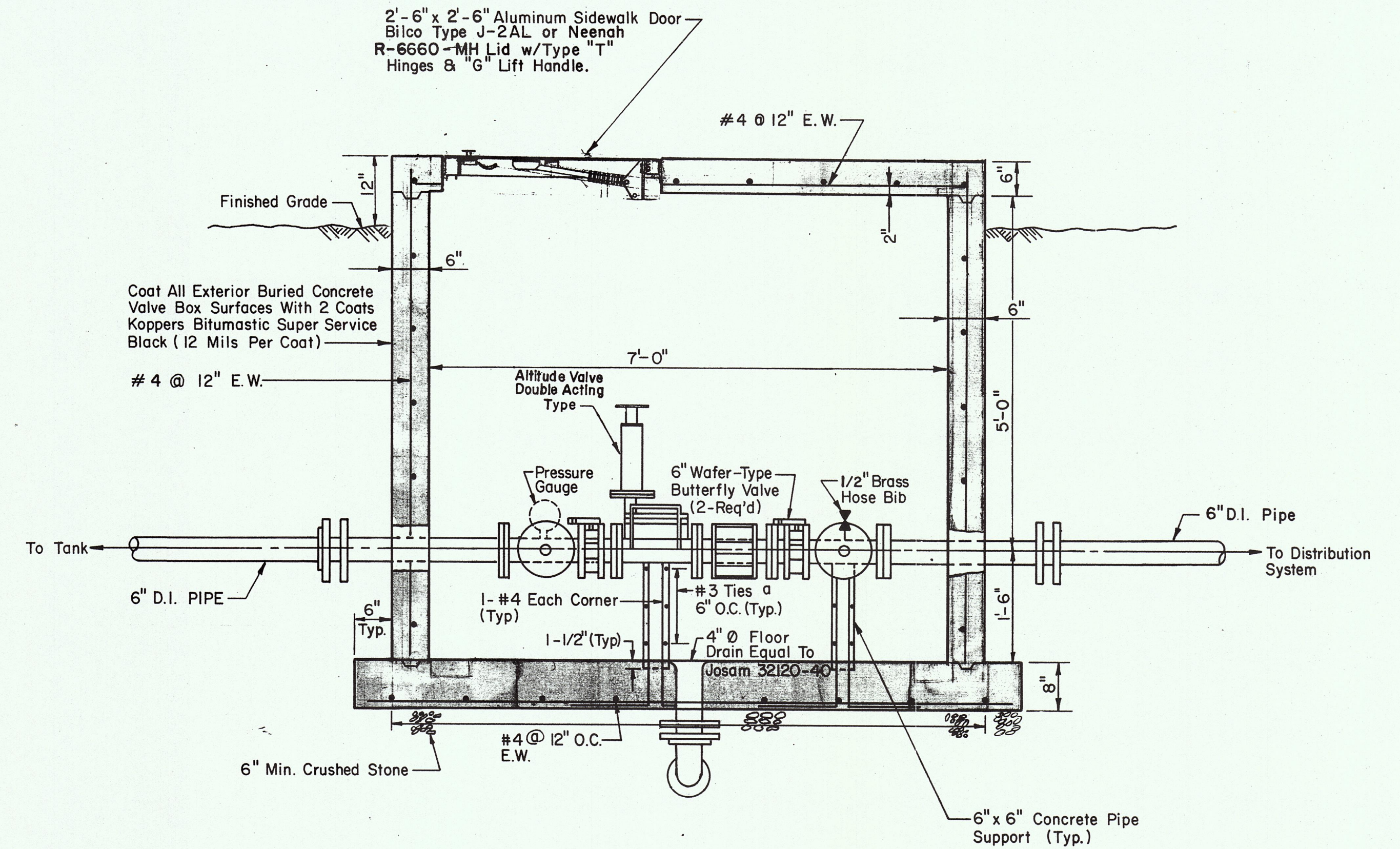
DETAIL I
SCALE: 1/2" = 1'-0"



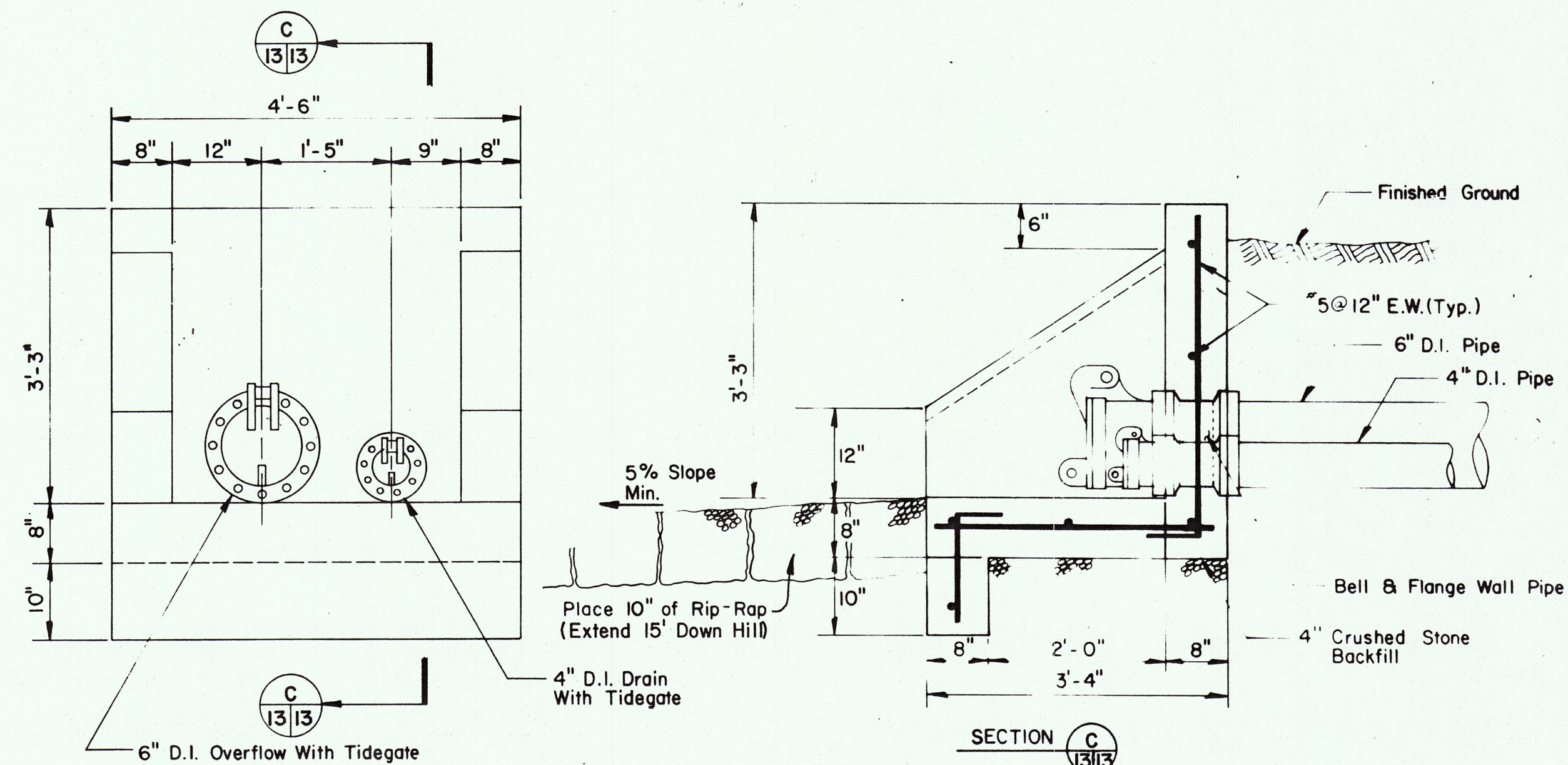
DESIGN	J.D.H.	1/86	HENSLEY - SCHMIDT, INC.	DRAWING NO.
DRWN	CADD	1/86	ENGINEERS, MANAGERS AND SURVEYORS	7972-12.1
CHKD			ATLANTA • CHATTANOOGA	
APPR			KNOXVILLE • RALEIGH	



ALTITUDE VALVE PIT (DEDUCTIVE ALTERNATE, CONTRACT 2)
Scale: $\frac{3}{4}" = 1'-0"$

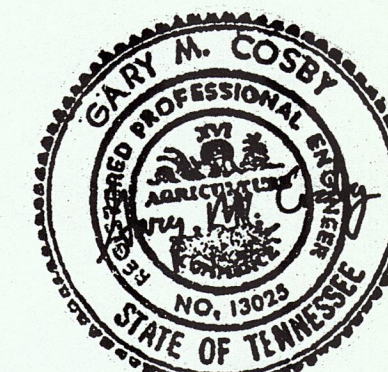


SECTION B
Scale: $\frac{3}{4}" = 1'-0"$



HEADWALL DETAIL
Scale: $\frac{3}{4}" = 1'-0"$

NOT CONSTRUCTED
(TELEMETRY SYSTEMS
UTILIZED TO CONTROL
TANK ELEVATIONS)



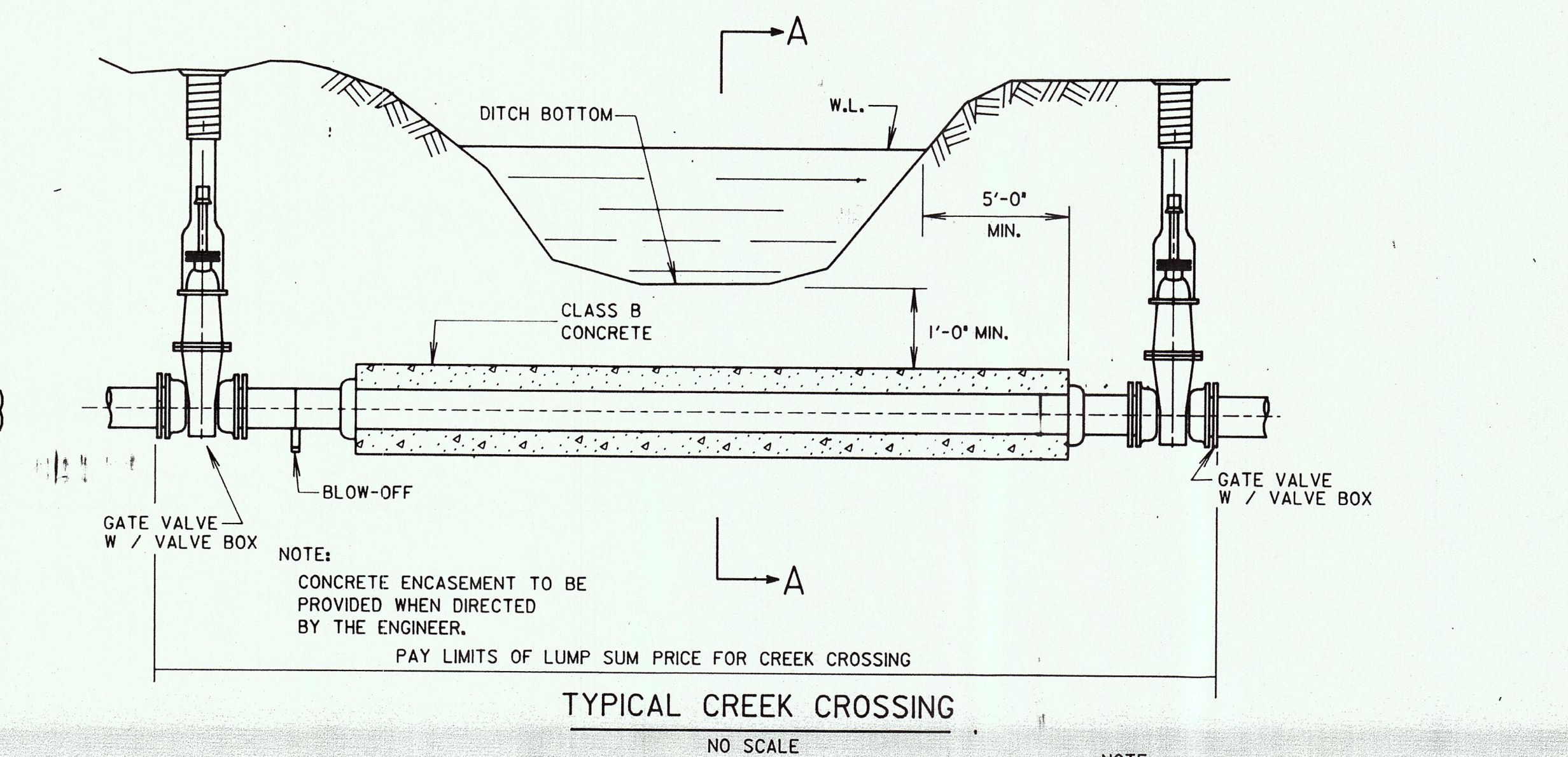
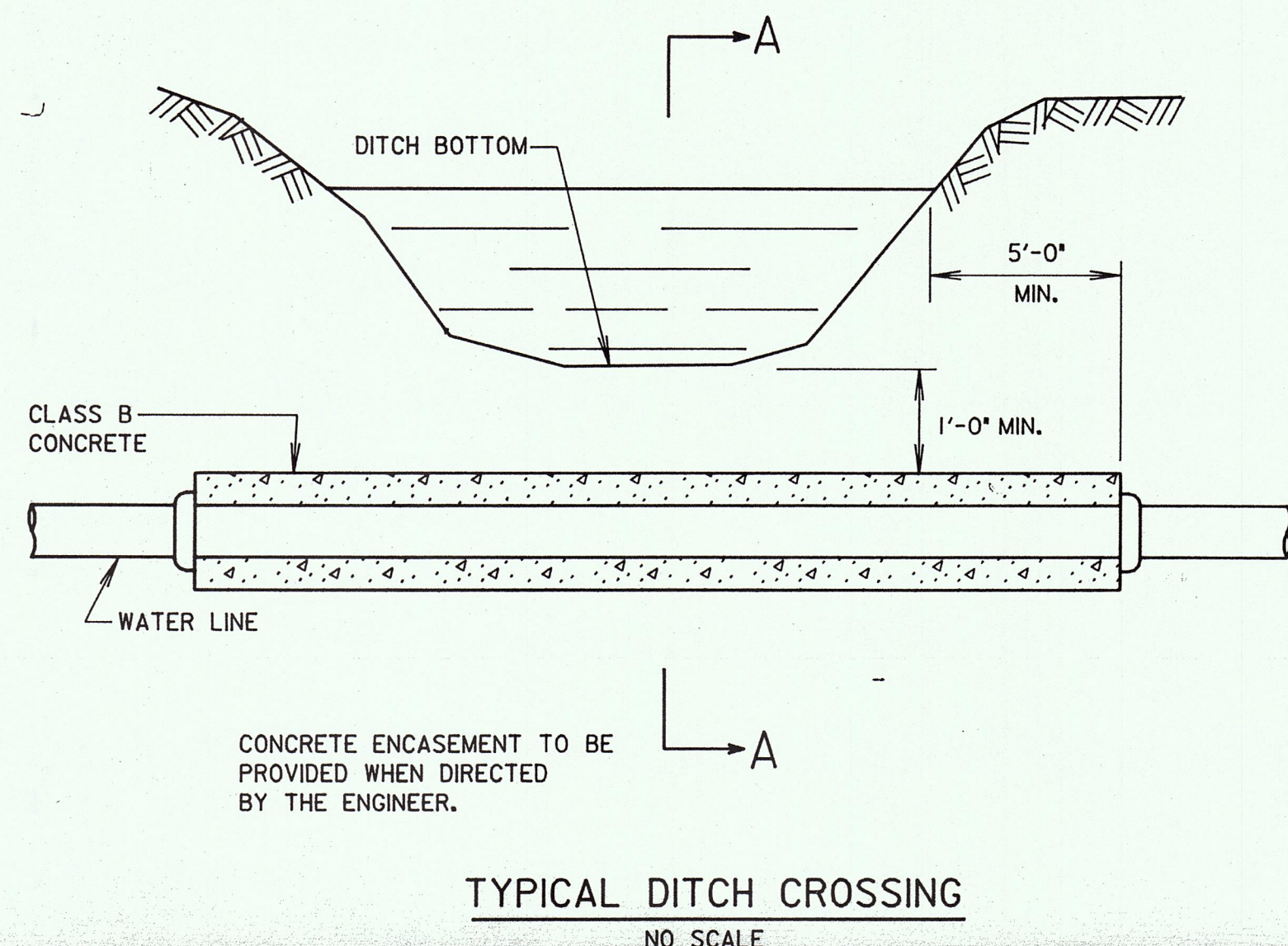
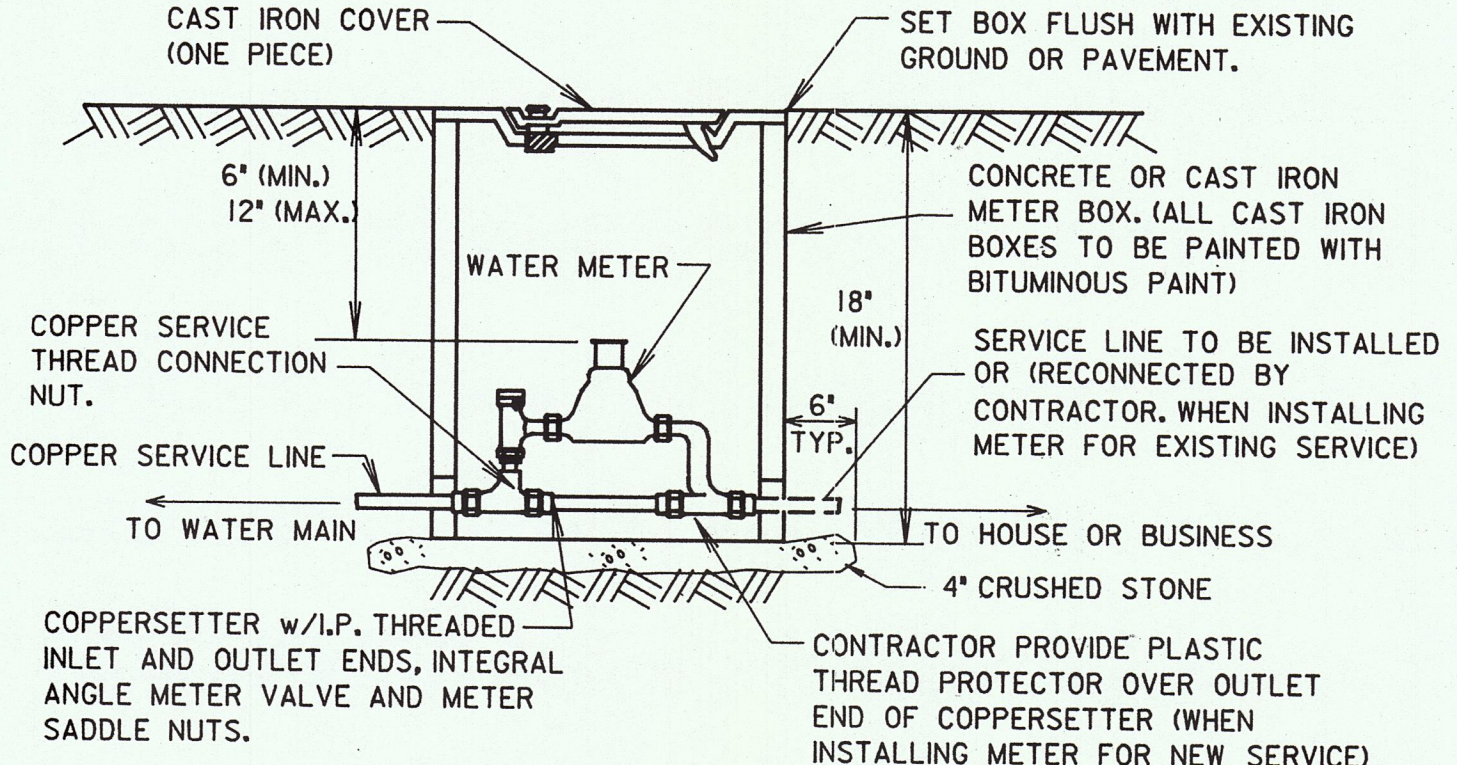
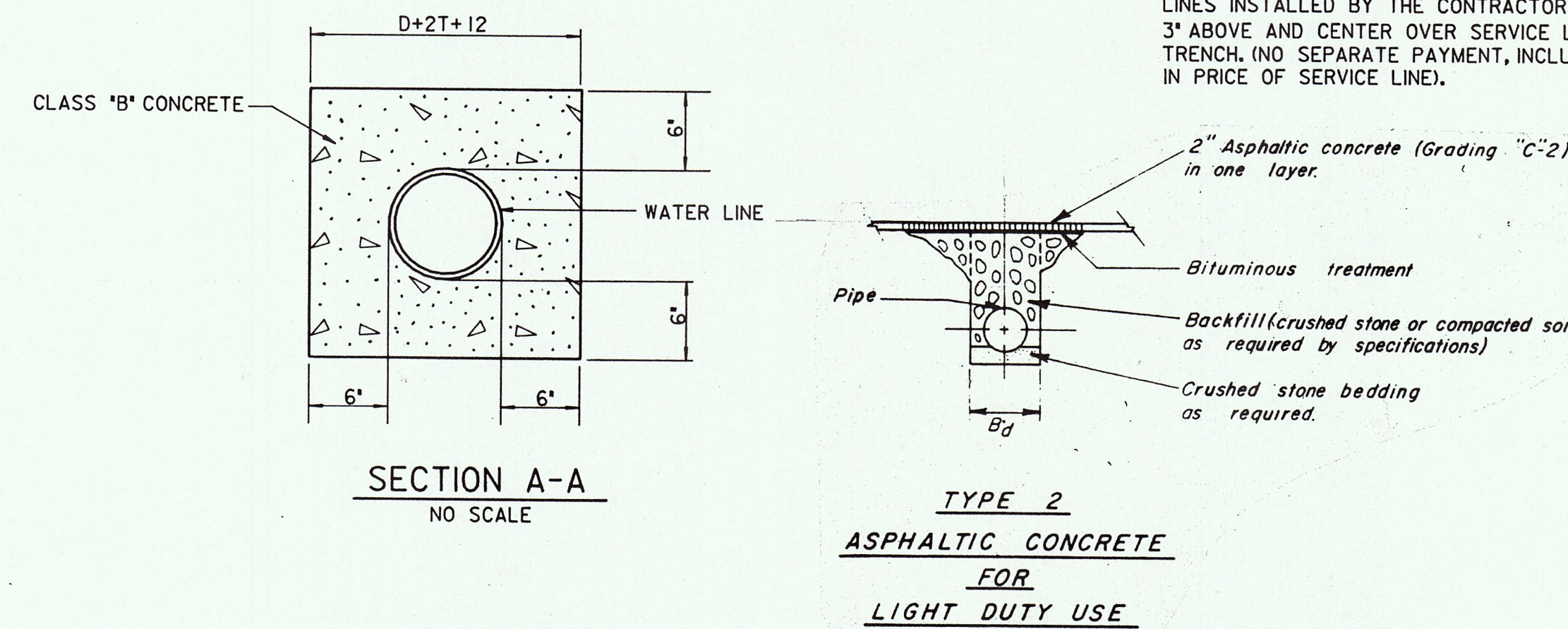
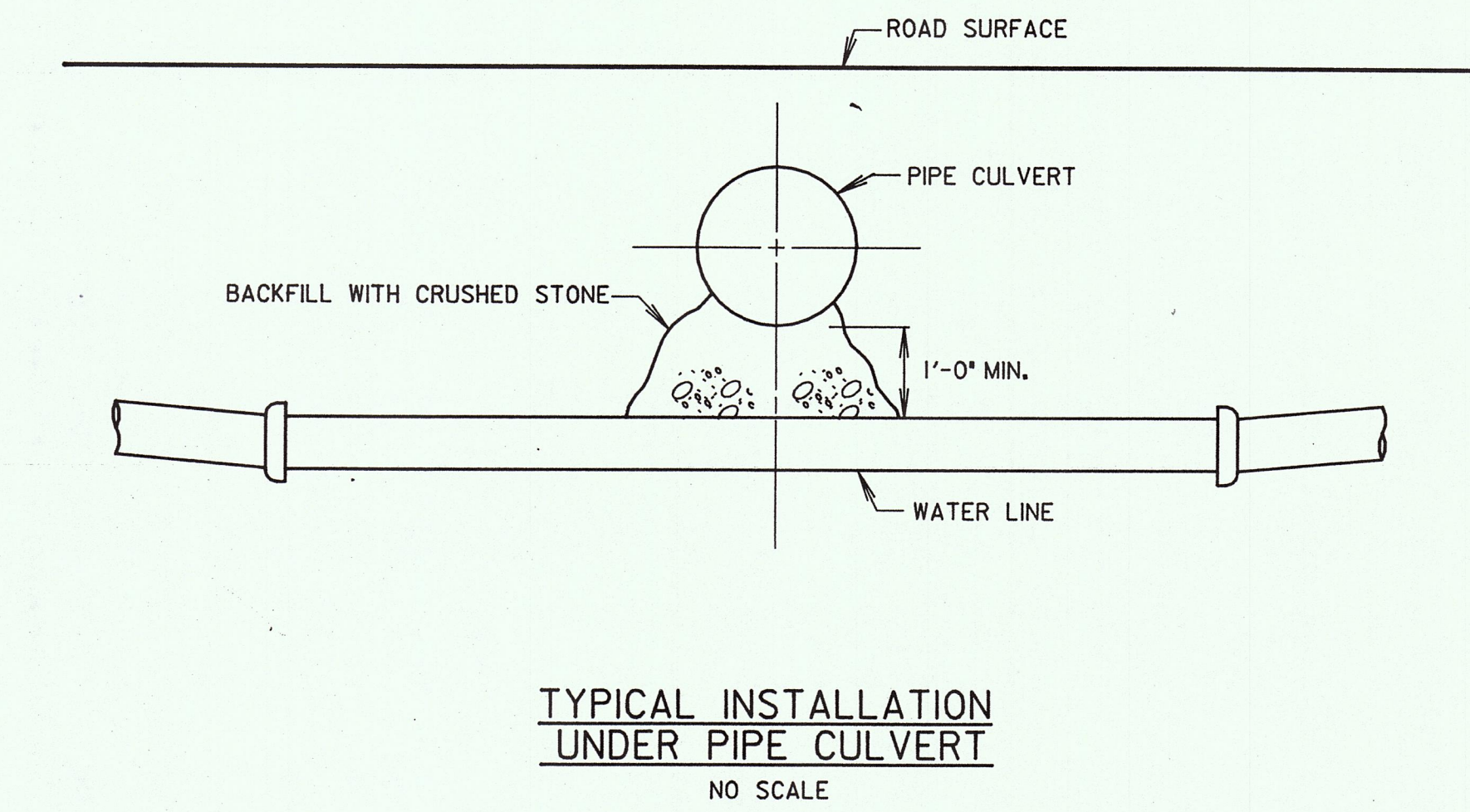
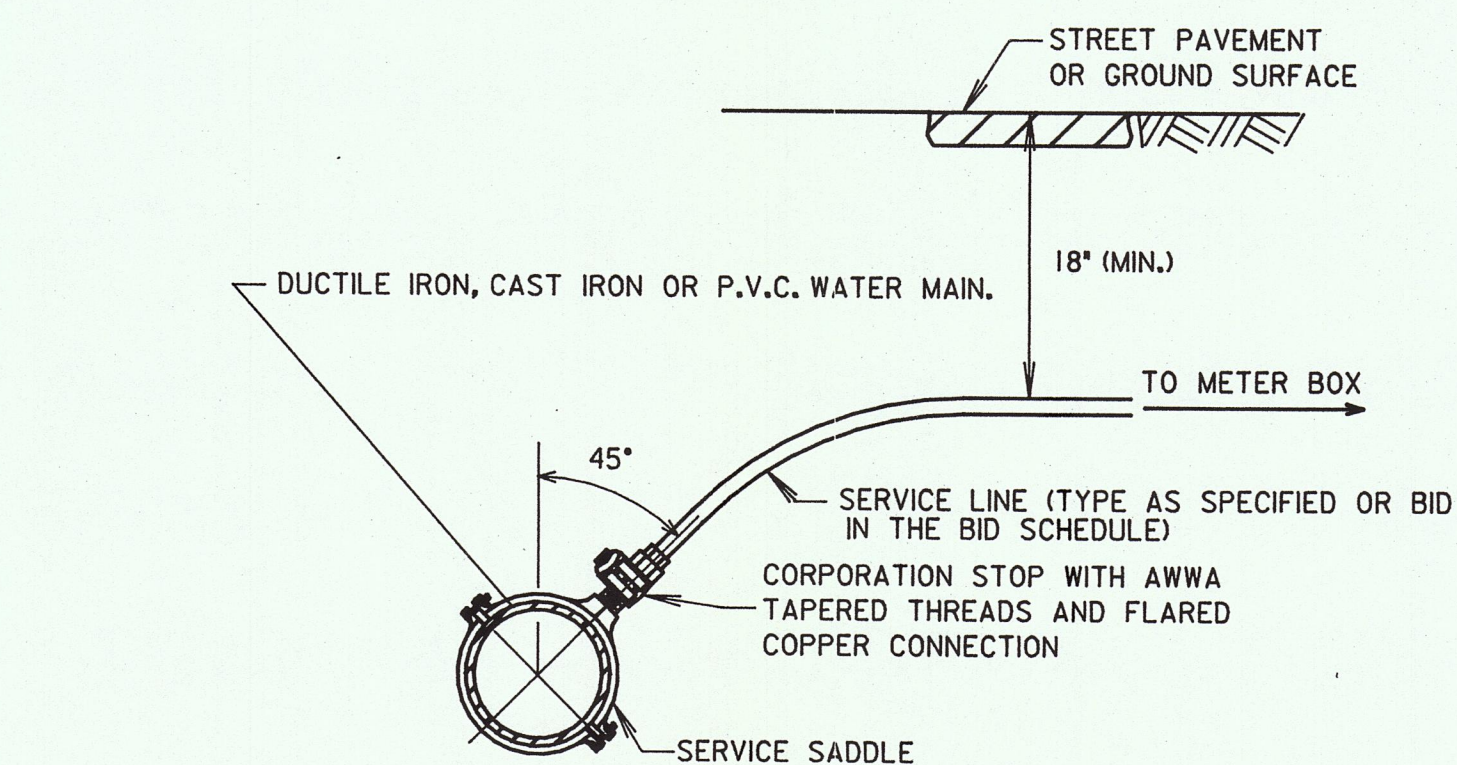
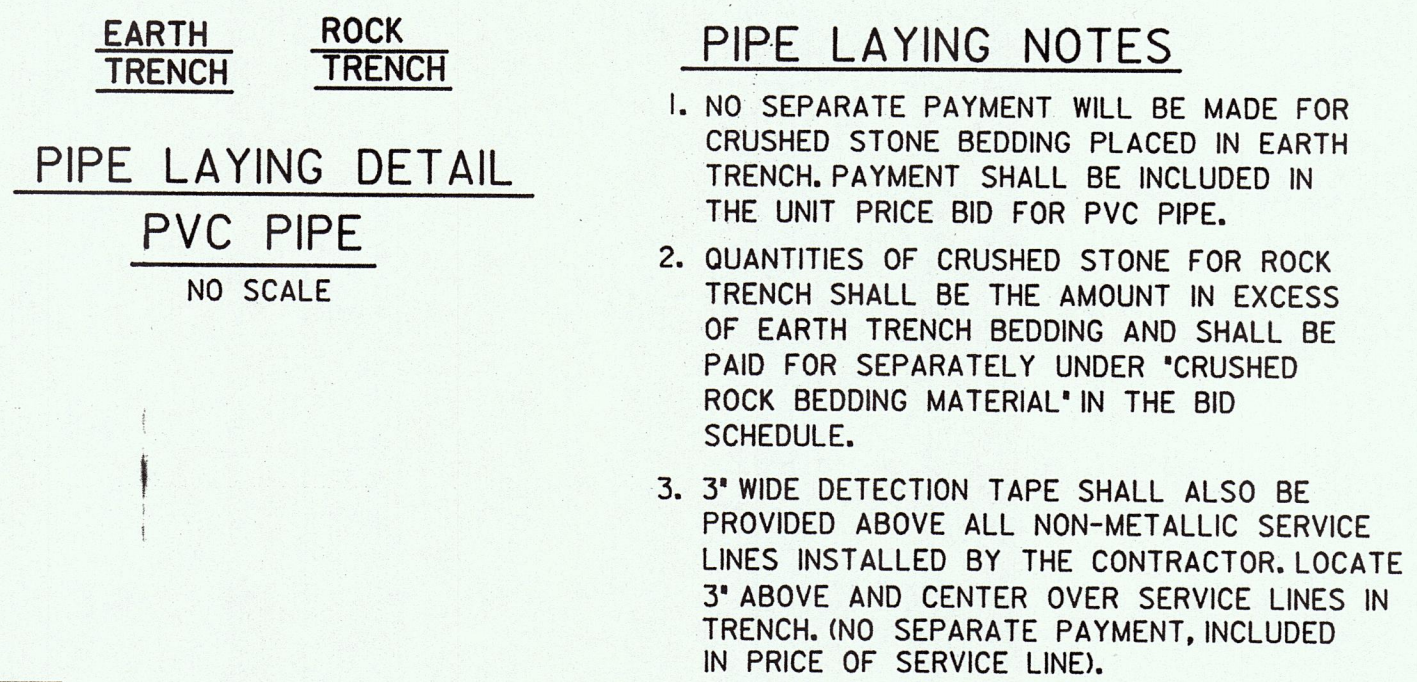
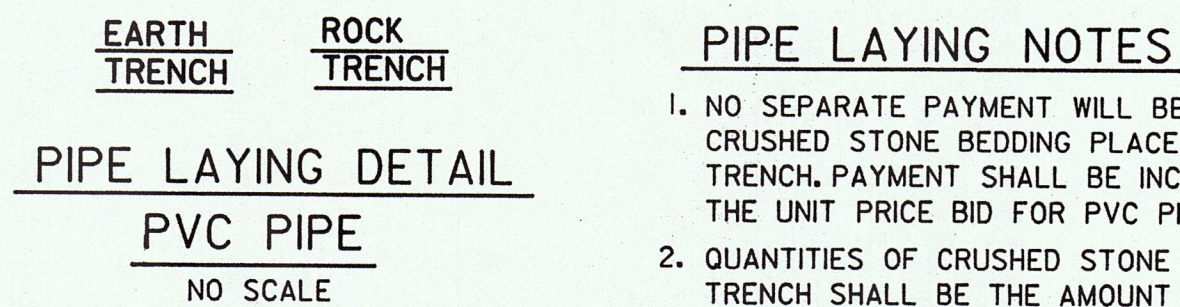
REV.	BY	DATE	DESCRIPTION

CONTRACT NO.2 — WATER STORAGE TANKS

ALTITUDE VALVE PIT SECTION AND DETAILS

WOLFE BRANCH UTILITY DISTRICT
OAKDALE, TENNESSEE

DESIGNED BY: D.B.R.	HENSLEY-SCHMIDT, INC.	DRAWING NO.
DRAWN BY: G. Ramsey	CONSULTANTS	7972 -13
CHKD. DATE:	ATLANTA - CHATTANOOGA - JACKSON	
APPR. DATE:	CHARLOTTE - KNOXVILLE - NASHVILLE	



NOTE:
NO SEPARATE PAYMENT ALLOWED FOR DITCH CROSSING
CLASS "B" CONCRETE TO BE PAID FOR PER CUBIC YARD
AS BID UNDER THE APPROPRIATE ITEM IN THE BID SCHEDULE

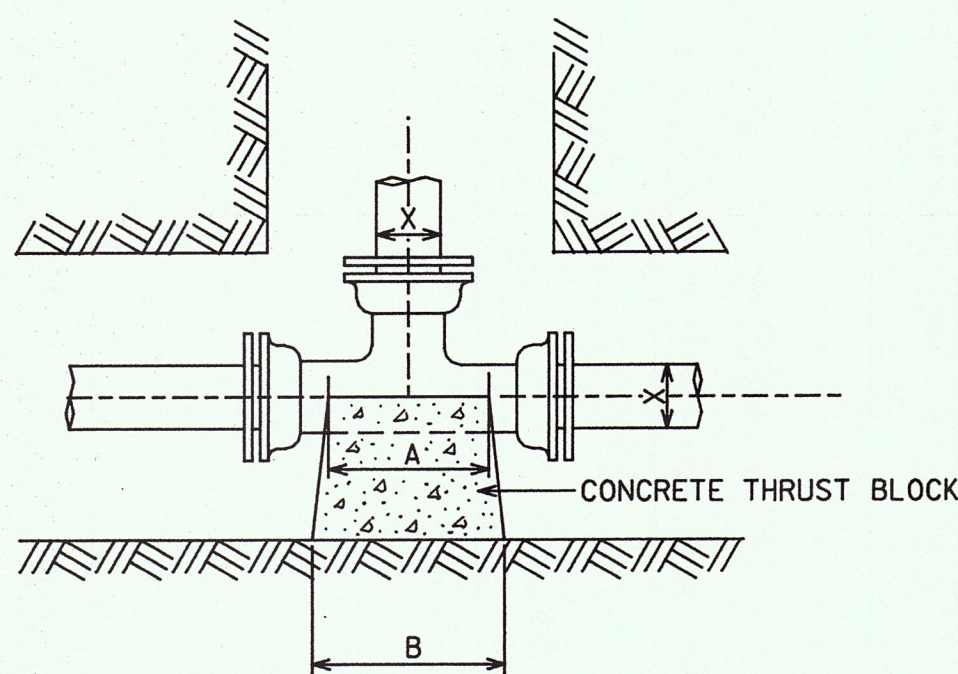
NOTE:
CREEK CROSSING TO BE BID AS A SEPARATE
ITEM IN THE BID SCHEDULE

△			
△			
△			
REV. NO.	RELEASED BY	DESCRIPTION OF REVISION	
WATER SYSTEM IMPROVEMENTS PHASE II			
PIPING DETAILS			
SHEET 1 OF 2			
WOLFE BRANCH UTILITY DISTRICT OAKDALE, TENNESSEE			
J.D.H.	10/85	HENSLEY - SCHMIDT, INC. ENGINEERS, MANAGERS and SURVEYORS ATLANTA - CHATTANOOGA KNOXVILLE - RALEIGH	
CADD	10/85		
JDH			
GMG			
		7972-14	

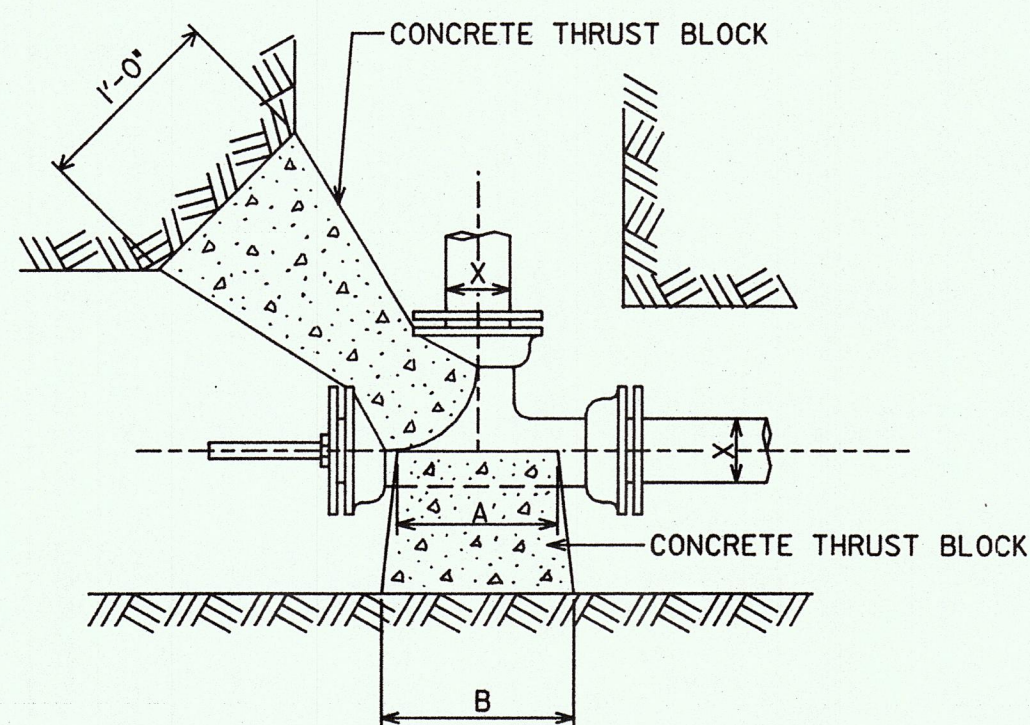


PIPE SIZE X	A	B	DEPTH C
90° BEND			
24"	2'-4"	4'-6"	5'-0"
20"	2'-4"	4'-0"	4'-6"
18"	2'-0"	3'-6"	4'-0"
16"	1'-9"	3'-4"	3'-6"
14"	1'-9"	2'-6"	3'-0"
12"	1'-6"	2'-0"	3'-0"
10"	1'-4"	2'-0"	2'-6"
8"	1'-0"	1'-6"	2'-0"
6"	1'-0"	1'-0"	2'-0"
4"	0'-9"	1'-0"	1'-0"
45° BEND			
24"	1'-4"	4'-6"	3'-0"
20"	1'-4"	3'-3"	3'-0"
18"	1'-0"	4'-0"	2'-0"
16"	1'-0"	4'-3"	1'-6"
14"	1'-0"	3'-6"	1'-4"
12"	1'-0"	3'-4"	1'-0"
10"	0'-9"	2'-6"	1'-0"
8"	0'-9"	1'-6"	1'-0"
6"	0'-9"	1'-0"	1'-0"
4"	0'-6"	1'-0"	1'-0"
22-1/2° BEND			
24"	1'-4"	3'-0"	2'-0"
20"	1'-4"	2'-6"	2'-0"
18"	1'-0"	2'-9"	1'-6"
16"	1'-0"	2'-4"	1'-4"
14"	1'-0"	2'-0"	1'-2"
12"	1'-0"	1'-9"	1'-0"
10"	0'-9"	1'-6"	0'-10"
8"	0'-9"	1'-0"	0'-8"
6"	0'-9"	1'-0"	0'-6"
4"	0'-6"	1'-0"	0'-4"
11-1/4° BEND			
24"	1'-4"	1'-6"	2'-0"
20"	1'-4"	1'-3"	2'-0"
18"	1'-0"	1'-4"	1'-6"
16"	1'-0"	1'-2"	1'-4"
14"	1'-0"	1'-0"	1'-2"
12"	1'-0"	1'-0"	1'-0"
10"	0'-9"	1'-0"	0'-10"
8"	0'-9"	1'-0"	0'-8"
6"	0'-9"	1'-0"	0'-6"
4"	0'-6"	1'-0"	0'-4"
UNBALANCED TEE & PLUG			
24"	3'-0"	7'-0"	5'-0"
20"	3'-0"	5'-0"	5'-0"
18"	2'-0"	5'-6"	3'-6"
16"	2'-0"	5'-6"	3'-0"
14"	2'-0"	4'-0"	3'-0"
12"	2'-0"	4'-6"	2'-0"
10"	1'-0"	3'-0"	2'-0"
8"	1'-0"	2'-9"	1'-6"
6"	1'-0"	1'-0"	1'-0"
4"	1'-0"	1'-0"	1'-0"
TEE			
24"	2'-6"	7'-0"	5'-0"
20"	2'-6"	5'-0"	5'-0"
18"	2'-6"	5'-6"	3'-6"
16"	2'-6"	5'-6"	3'-0"
14"	2'-4"	4'-0"	3'-0"
12"	2'-0"	4'-6"	2'-0"
10"	1'-9"	3'-0"	2'-0"
8"	1'-6"	2'-9"	1'-6"
6"	1'-0"	1'-0"	1'-0"
4"	1'-0"	1'-0"	1'-0"

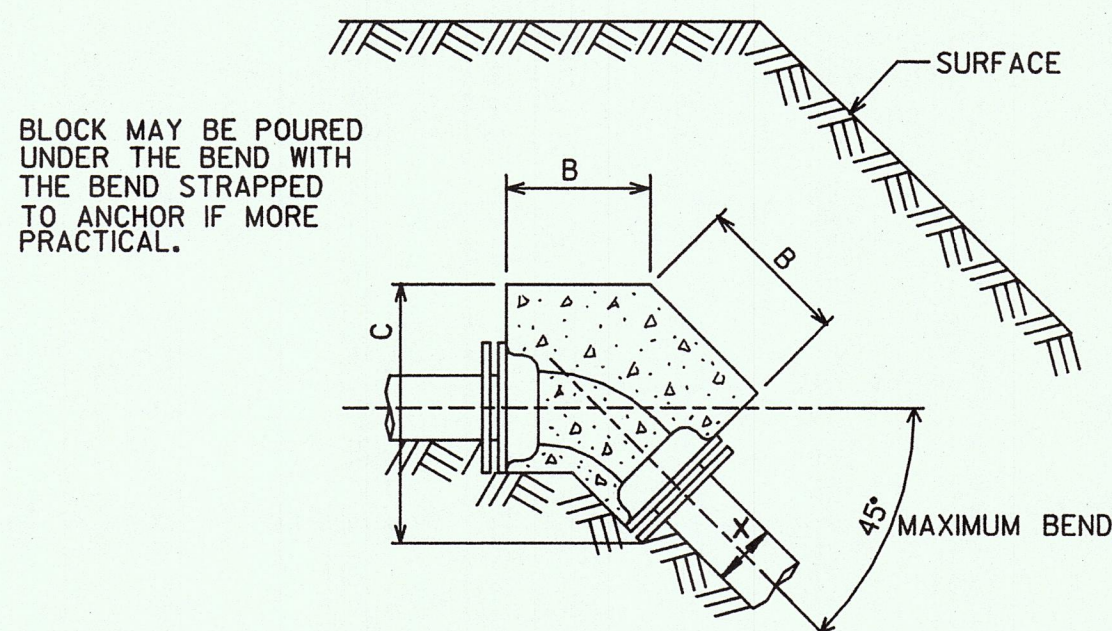
TABLE OF DIMENSIONS FOR HORIZONTAL & VERTICAL SAG BENDS.



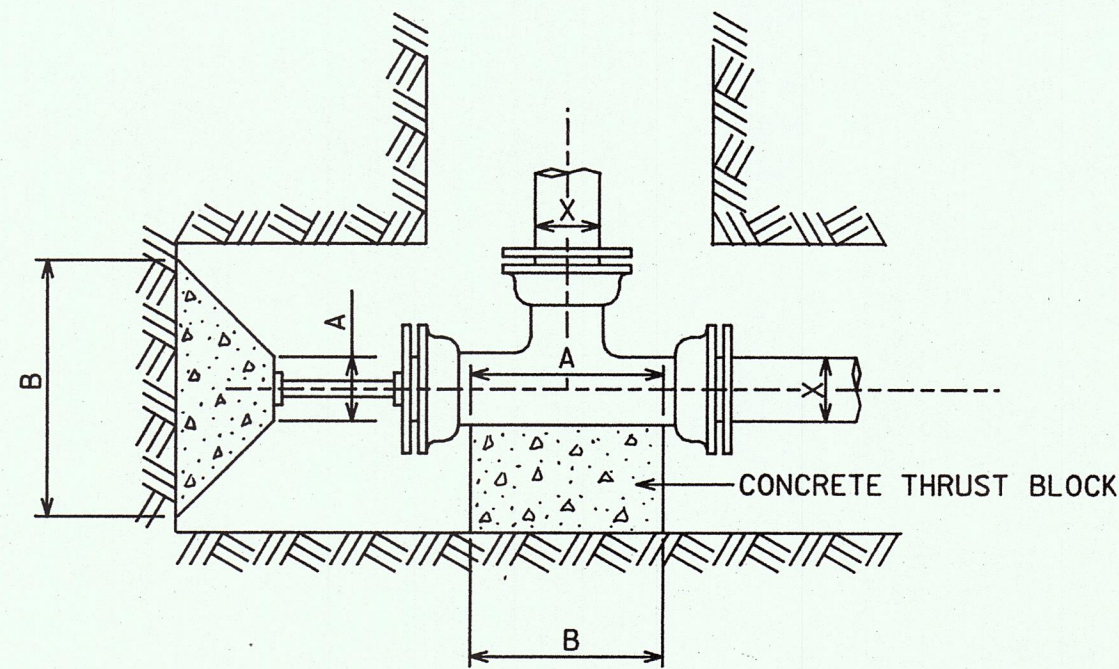
PLAN
TYPICAL TEE
NO SCALE



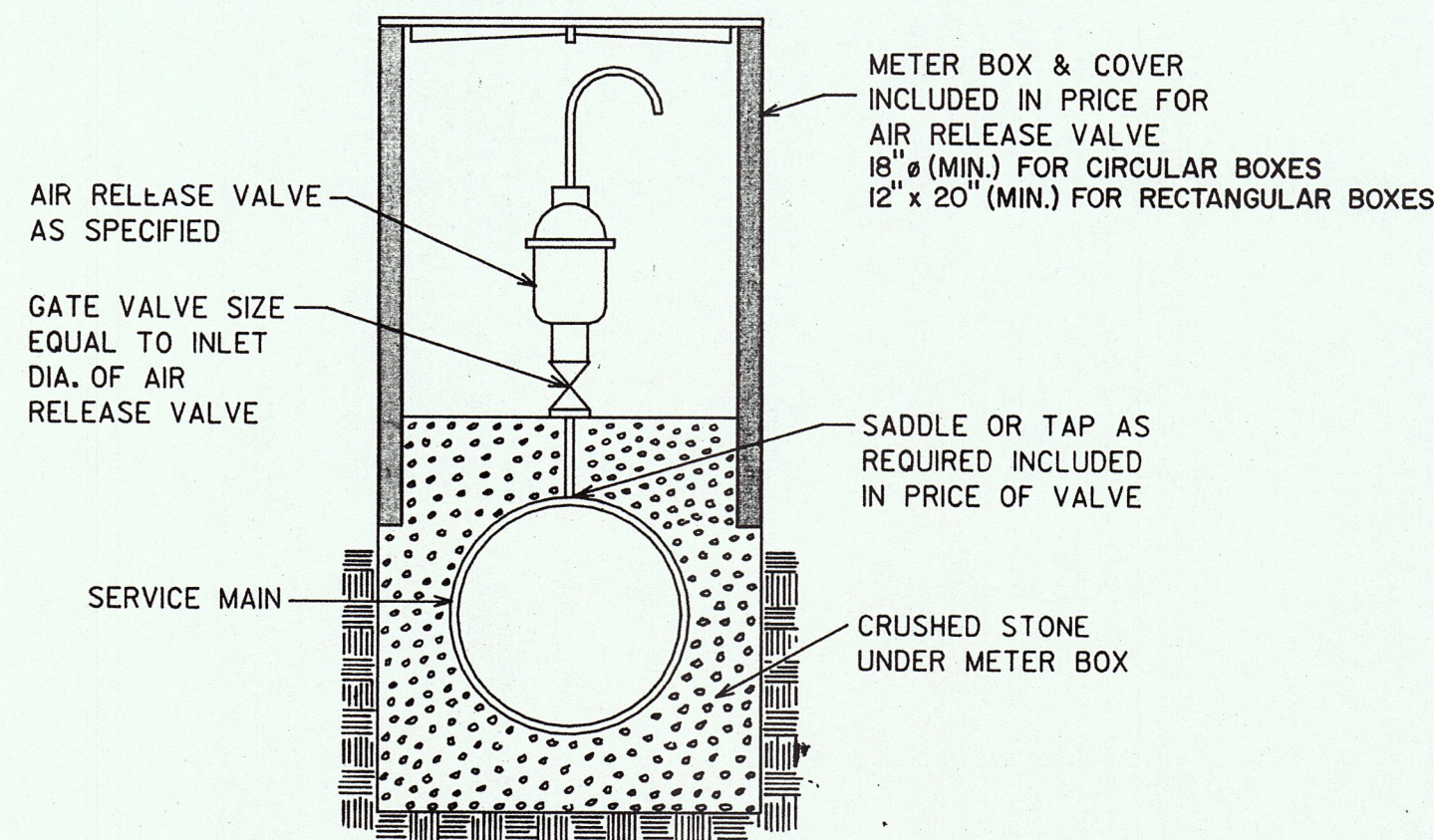
PLAN
UNBALANCED TEE
NO SCALE



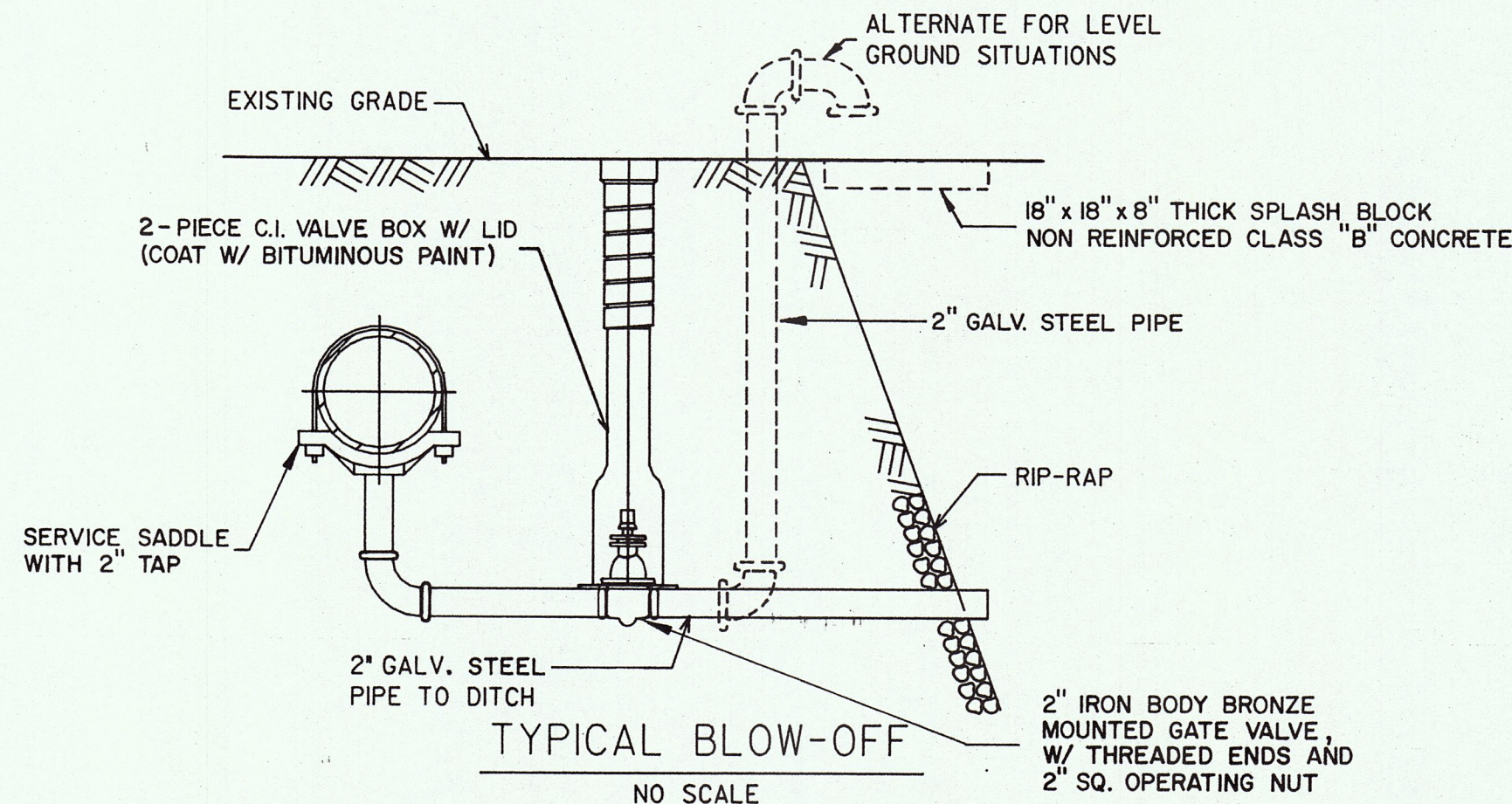
ELEVATION
TYPICAL VERTICAL BEND
NO SCALE



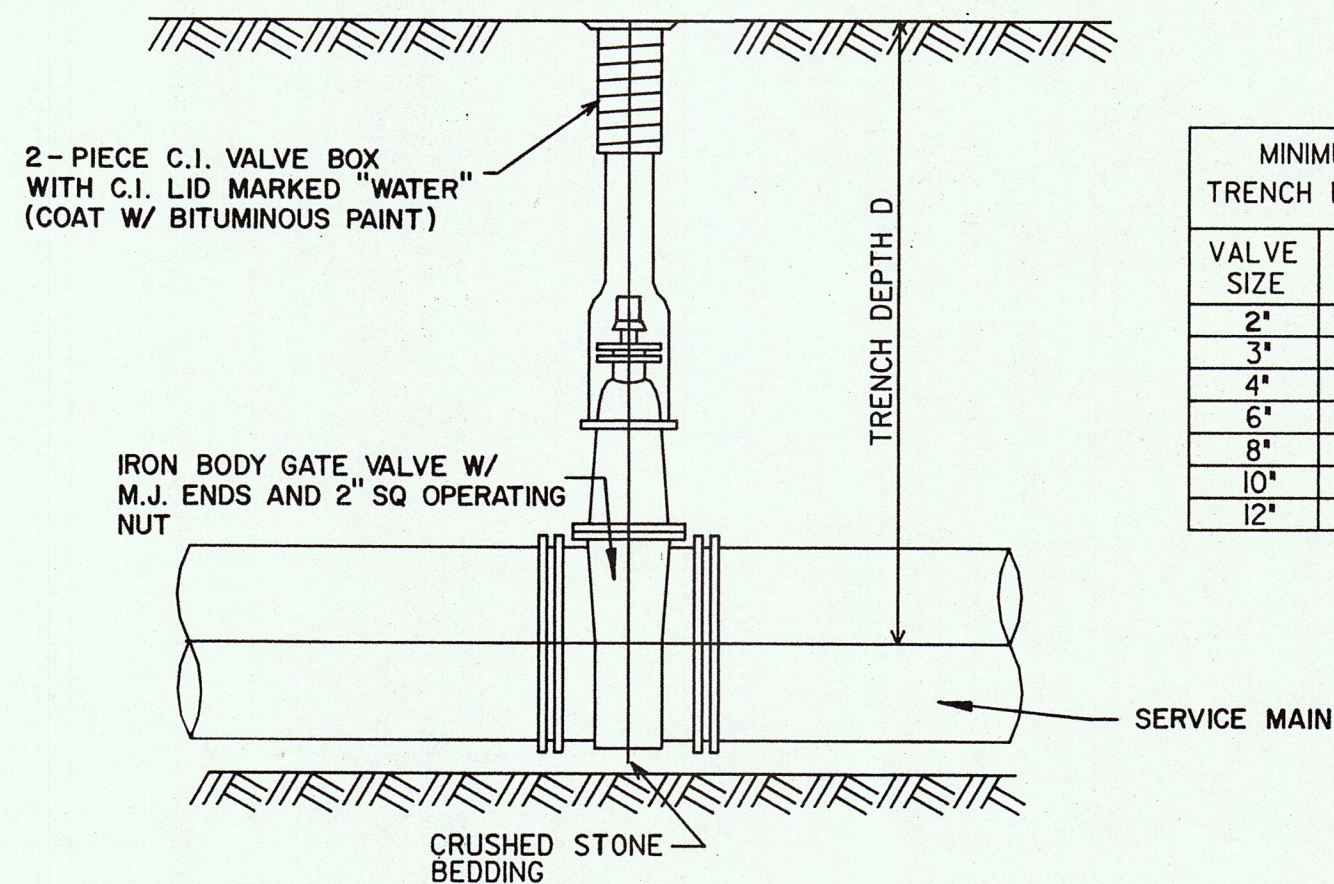
PLAN
TYPICAL PLUG
NO SCALE



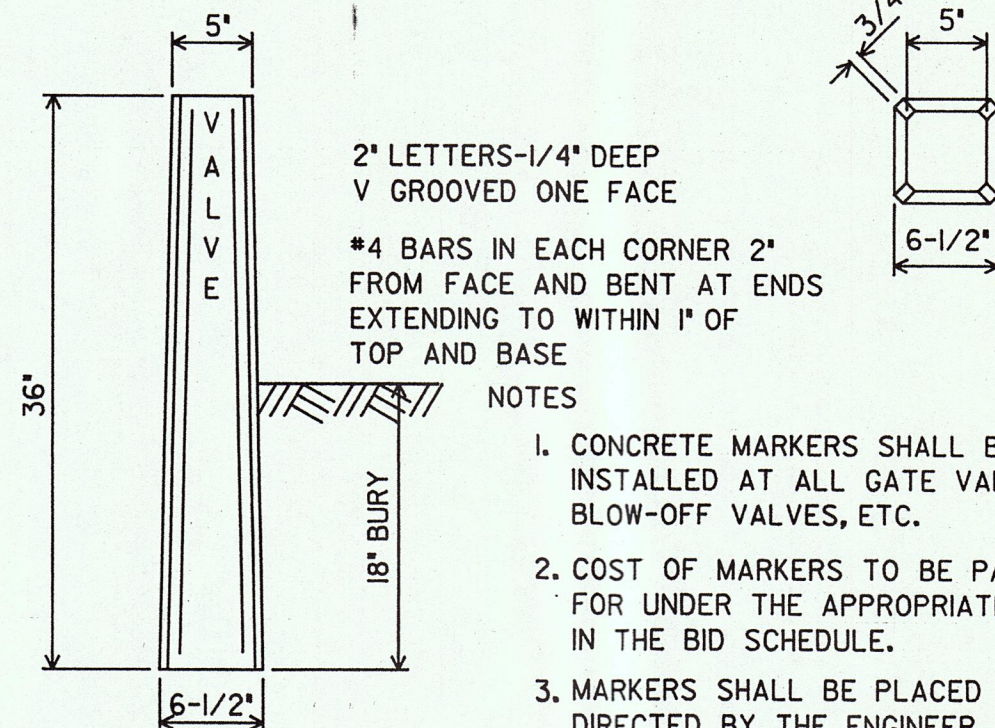
TYPICAL AIR RELEASE VALVE
NO SCALE



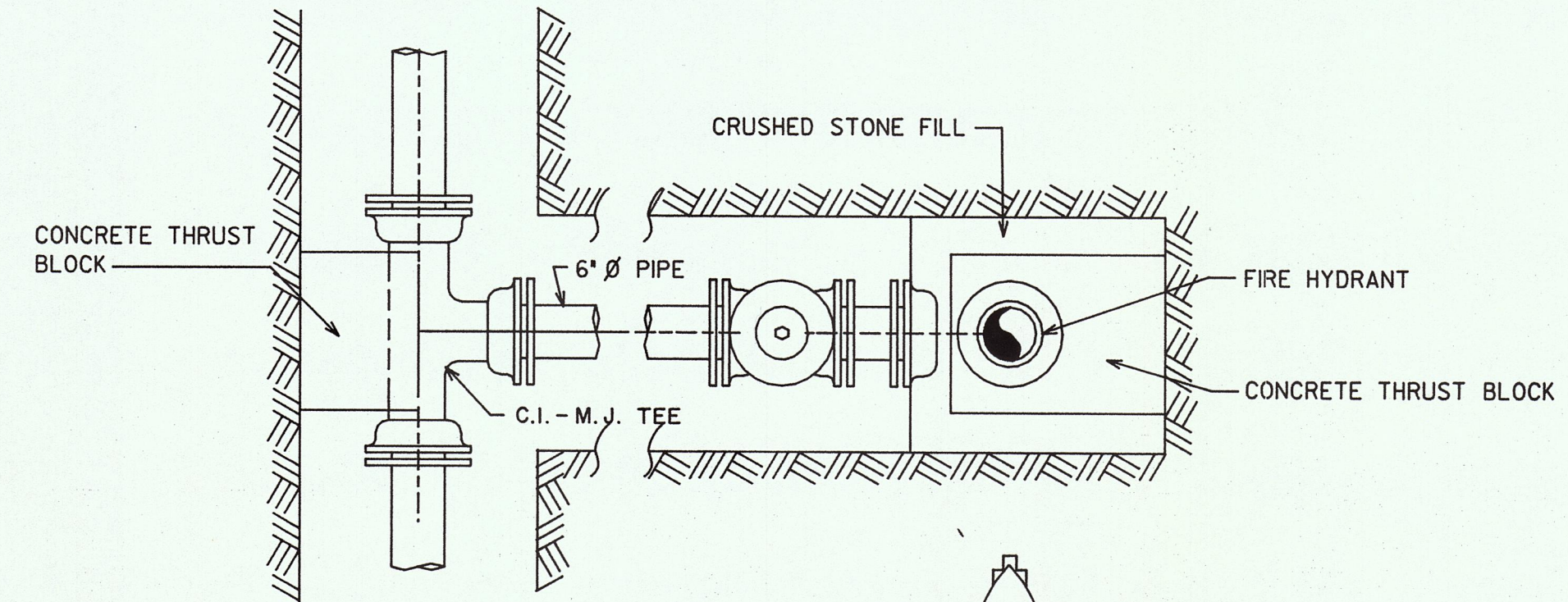
TYPICAL BLOW-OFF
NO SCALE



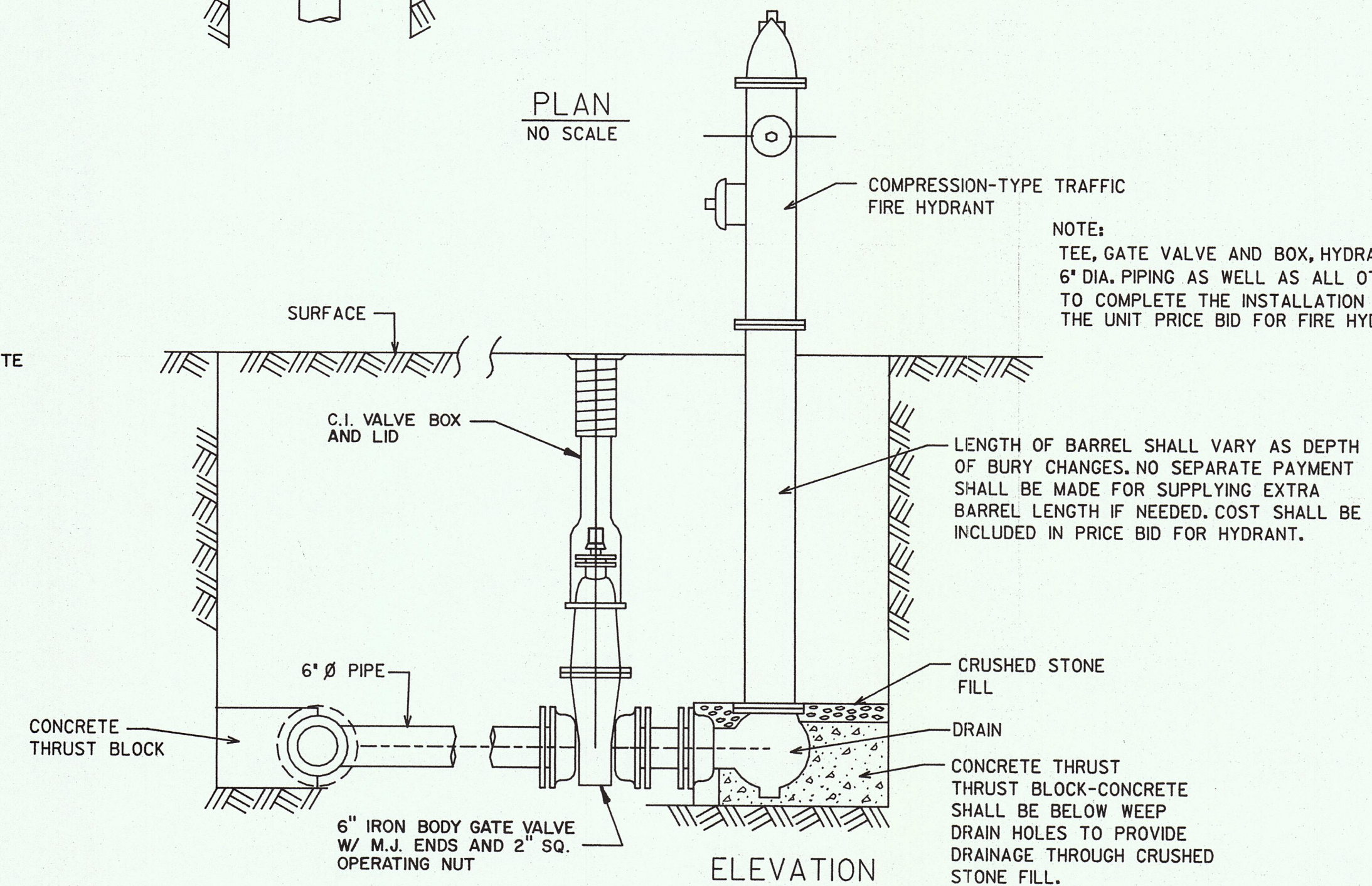
TYPICAL VALVE BOX
GATE VALVE 12" & SMALLER
NO SCALE



TYPICAL VALVE MARKER
NO SCALE



PLAN
NO SCALE

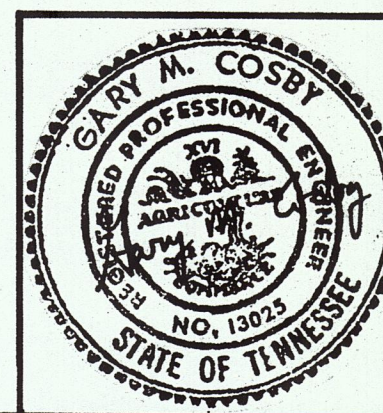


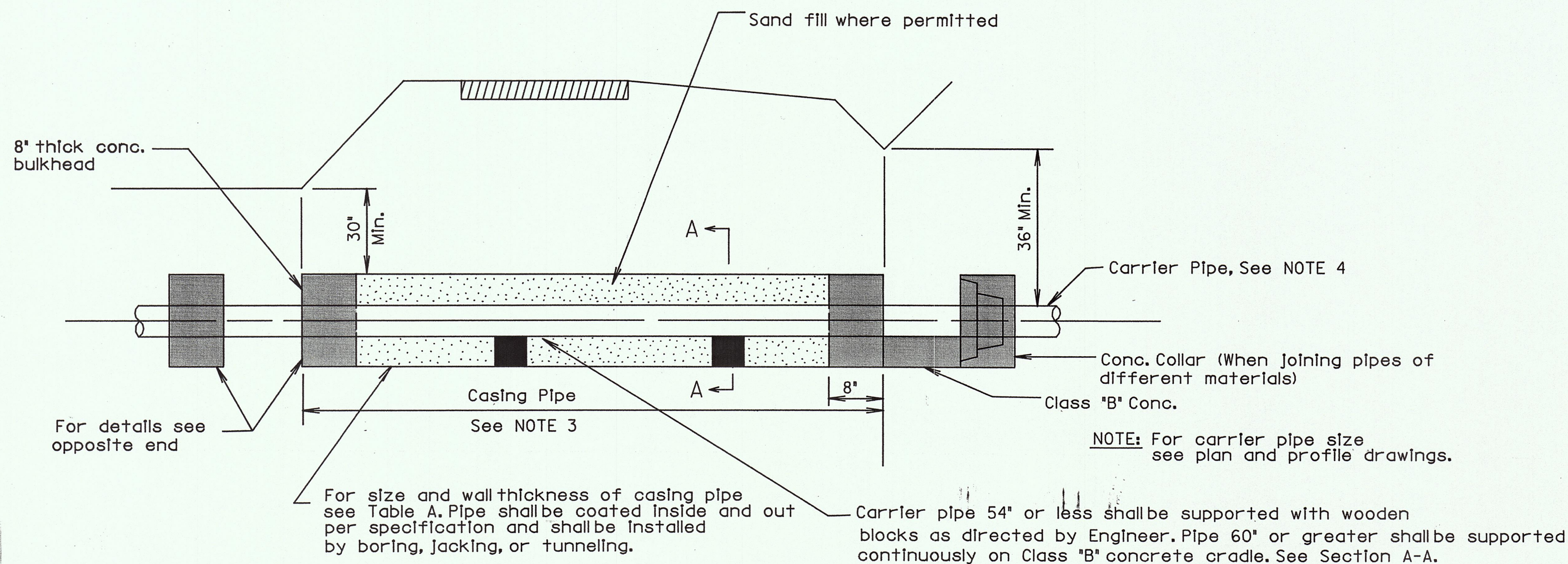
ELEVATION
FIRE HYDRANT INSTALLATION
NO SCALE

- GENERAL NOTES
- WHERE WATER LINES CROSS IMPROVED, GRASSED, OR LAWN AREAS, ETC., ALL SOD, SHRUBS, FLOWERS, PLANTINGS, ETC., SHALL BE REPLACED IN ORIGINAL CONDITION AT CONTRACTOR'S EXPENSE. GRASSED AREAS SHALL BE RESTORED TO PRIOR CONDITIONS IN THE FOLLOWING MANNER:

AREAS LESS THAN 3:1 SLOPE SHALL BE RESEEDED AND MULCHED WITH GRASSES OR GROUND COVER AS OUTLINED IN THE SPECIFICATIONS. AREAS GREATER THAN 3:1 SLOPE SHALL BE RESEEDED AND MULCHED WITH A FABRIC MATERIAL AS OUTLINED IN THE SPECIFICATIONS. PAYMENT SHALL BE INCLUDED IN THE APPLICABLE UNIT PRICE BID FOR THE WATER LINE.
 - WHERE LINES CROSS UNDER CURBS, THEY SHALL BE TUNNELED UNDER THE CURB. NO SEPARATE PAYMENT WILL BE ALLOWED FOR REPAIRING CURBS DAMAGED OR DESTROYED DURING WATER LINE CONSTRUCTION.
 - PROMISCUOUS DESTRUCTION OF TREES ALONG WATER LINE RIGHT-OF-WAY WILL NOT BE PERMITTED. ALL REASONABLE EFFORTS WILL BE MADE BY THE CONTRACTOR TO PROTECT AND SAFEGUARD TREES.
 - ANY EXISTING FENCES, ROCK WALLS, GUARDRAILS, ETC., ALONG THE WATER LINE RIGHT-OF-WAY ARE TO BE REMOVED AND REINSTALLED IN THEIR ORIGINAL CONDITION (OR BETTER). NO SEPARATE PAYMENT WILL BE ALLOWED. PAYMENT TO BE INCLUDED IN THE APPLICABLE UNIT PRICE BID FOR THE WATER LINE.
 - ALL WATER LINES SHALL HAVE A MINIMUM COVER OF 30 INCHES, EXCEPT AS OTHERWISE NOTED.
 - THE COST FOR DIVERSION OF WATER IN DITCHES, CREEKS, OR RIVERS SHALL BE INCLUDED IN THE APPLICABLE UNIT PRICE BID FOR THE WATER LINE IN THE BID SCHEDULE. NO SEPARATE PAYMENT SHALL BE ALLOWED.
 - WHEN BLASTING FOR EXCAVATION OF WORK ADEQUATE PRECAUTIONS SHALL BE USED TO PREVENT DAMAGE TO SURROUNDING PROPERTY.

3			
2			
1			
REV. NO.	RELEASED BY	DESCRIPTION OF REVISION	
WATER SYSTEM IMPROVEMENTS PHASE II			
PIPING DETAILS			
SHEET 2 OF 2			
WOLFE BRANCH UTILITY DISTRICT OAKDALE, TENNESSEE			
DSGN	JDH	1/86	HENSLEY-SCHMIDT, INC. ENGINEERS AND MANAGERS ATLANTA-CHATTANOOGA-KNOXVILLE VALDOSTA
DRWN	GAW	1/86	
CHKD	JDH		
APPR	GMC		
DRAWING NO.			7972-15





TYPICAL HIGHWAY CROSSING
For State & U.S. Highways and Designated City Streets
ALTERNATE BID ITEM

HIGHWAY CROSSING NOTES FOR PLACING UTILITY LINES WITHIN THE RIGHT-OF-WAY OR CROSSING STATE AND U. S. HIGHWAYS, AND DESIGNATED CITY STREETS

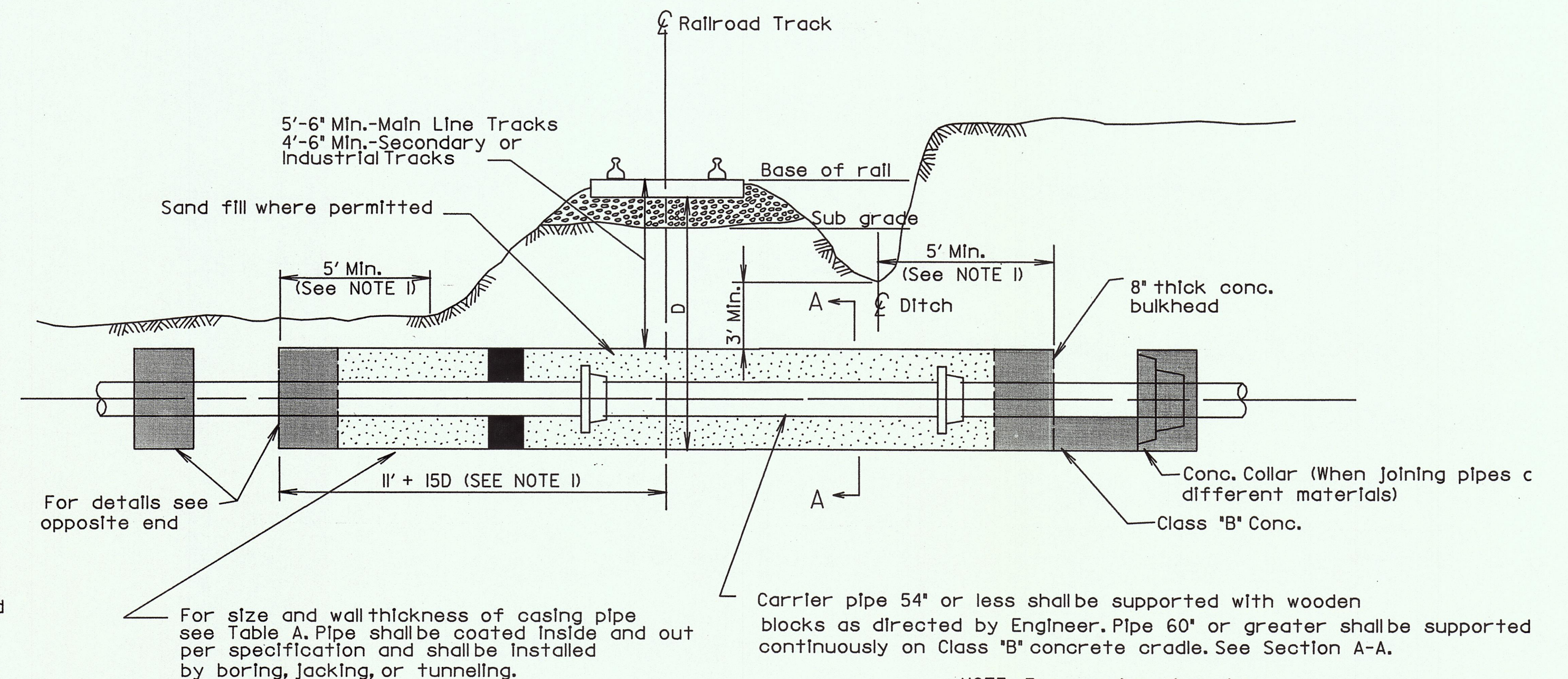
1. LINES CROSSING UNDER PAVED ROADS AND PAVED CROSSROADS WITHIN THE DESIGNATED CITY STREETS, STATE AND U. S. HIGHWAY RIGHT-OF-WAY SHALL BE ENCASED AND PLACED BY BORING, JACKING, OR TUNNELING. BORING, JACKING, OR TUNNELING SHALL EXTEND FROM TOE OF SHOULDER SLOPE TO TOE OF SHOULDER SLOPE. ON LINES CROSSING THE ENTIRE WIDTH OF RIGHT-OF-WAY, THE LENGTH OF CASING SHALL BE DETERMINED BY THE STATE HIGHWAY DIVISION ENGINEER AND/OR CITY ENGINEER. ALL WORK SHALL BE DONE AS SHOWN ON THIS DRAWING.
2. ALL LINES SHALL HAVE A MINIMUM COVER OF 30" EXCEPT WHERE DEEPER COVER IS INDICATED ON THE DRAWINGS. ALL TRENCH EXCAVATION WITHIN THE RIGHT-OF-WAY AND NOT UNDER PAVING SHALL BE BACKFILLED BY TAMPING IN 6" LAYERS. ALL SURPLUS MATERIAL SHALL BE REMOVED FROM THE RIGHT-OF-WAY, AND THE EXCAVATION FINISHED FLUSH WITH SURROUNDING GROUND.
3. CASING PIPE SHALL BE EITHER SPIRAL WELDED STEEL PIPE OR STEEL LINER PLATE, APPLICABLE AND SUITABLE TO METHOD OF INSTALLATION EMPLOYED (SEE TABLE "A"). ALL CASING PIPE SHALL BE COATED INSIDE AND OUT PER SPECIFICATIONS.
4. CARRIER PIPE FOR ALL LINES 6" TO 54" IN DIAMETER SHALL BE CAST OR DUCTILE IRON PIPE WITH "PUSH-ON" TYPE JOINTS. CARRIER PIPE 60" IN DIAMETER AND LARGER SHALL BE REINFORCED CONCRETE WITH "BELL & SPIGOT" JOINTS. FOR SIZE, SEE PLAN AND PROFILE DRAWINGS.
5. ALL INSTALLATIONS SHALL BE DONE TO LEAVE FREE FLOWS IN DRAINAGE DITCHES, PIPES, CULVERTS, OR OTHER SURFACE WATER DRAINAGE FACILITIES OF THE HIGHWAY, STREET, OR ITS CONNECTIONS.

TABLE "A"		
PIPE SIZE		
Carrier Pipe (Inches)	Casing Pipe	
	Dia. (Inches)	Steel Pipe Wall Thick
6 & 8	16	1/4"
10	20	5/16"
12	24	3/8"
14 & 16	30	1/2"
18	36	1/2"
24	36	1/2"
30	54	See TABLE "B"
36	54	
42	66	
48	72	
54	78	
60	84	
66	96	
72	108	
84	120	
96	144	

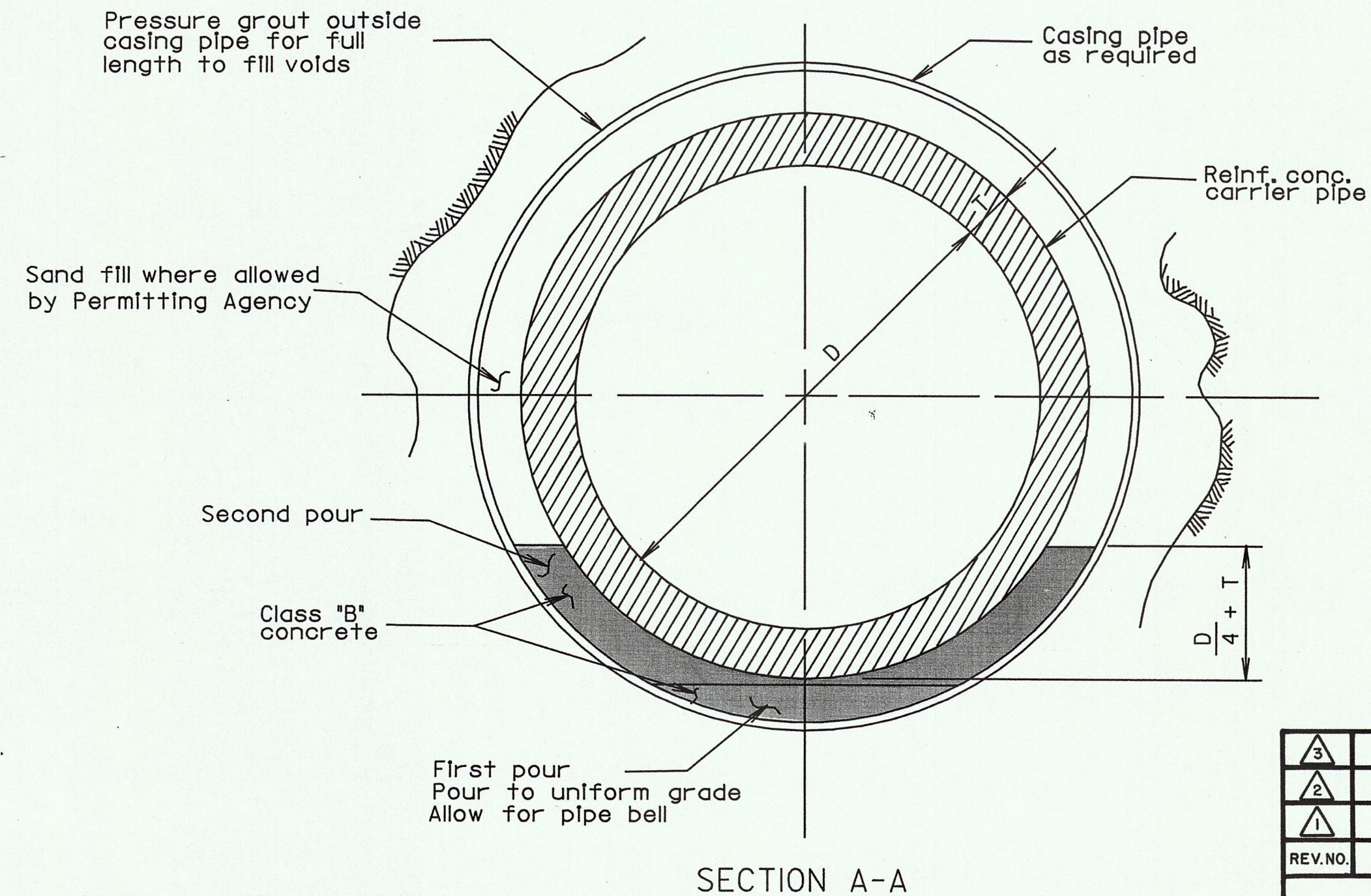
RAILROAD CROSSING NOTES FOR PLACING UTILITY PIPELINES WITHIN OR CROSSING A RAILROAD RIGHT-OF-WAY

1. CASING PIPE SHALL EXTEND THE DISTANCES SHOWN IN THE ABOVE TYPICAL CROSSING DETAILS, BUT IN NO CASE LESS THAN 25 FEET FROM CENTER LINE OF OUTSIDE TRACK TO END OF PIPE. THE CASING PIPE SHALL EXTEND BEYOND THE LIMITS OF RAILWAY RIGHT-OF-WAY, IF NECESSARY, TO OBTAIN THIS DISTANCE.
2. UNDER TRACKS AND RIGHT-OF-WAY, CARRIER PIPES 54" OR LESS IN DIAMETER SHALL BE DUCTILE IRON WITH "PUSH-ON" TYPE JOINTS; CARRIER PIPE 60" OR GREATER IN DIAMETER SHALL BE REINFORCED CONCRETE PIPE WITH "BELL & SPIGOT" JOINTS OF THE SAME TYPE REQUIRED FOR LINE INSTALLED IN TRENCH.
3. ANY REPLACEMENT OF A CARRIER PIPE SHALL BE CONSIDERED A NEW INSTALLATION.
4. ALL WORK ON RAILWAY RIGHT-OF-WAY INCLUDING NECESSARY SUPPORTING OF TRACKS, SAFETY OF OPERATIONS, AND OTHER STANDARD AND INCIDENTAL OPERATION PROCEDURES SHALL BE UNDER THE SUPERVISION OF THE APPROPRIATE AUTHORIZED REPRESENTATIVE OF THE RAILWAY SYSTEM AFFECTED, AND ANY DECISIONS OF THIS REPRESENTATIVE PERTAINING TO CONSTRUCTION SHALL GOVERN.
5. IF, IN THE OPINION OF THE RAILWAY COMPANY, IT BECOMES NECESSARY TO PROVIDE FLAGGING PROTECTION, WATCHMEN, REMOVAL OR REPLACEMENT OF TRACKS, OR THE PERFORMANCE OF ANY OTHER WORK IN ORDER TO KEEP THE TRACKS SAFE FOR TRAFFIC, THE CONTRACTOR SHALL REIMBURSE THE RAILROAD IN CASH FOR SUCH SERVICES IN ACCORDANCE WITH ACCOUNTING PROCEDURES AGREED ON BY THE CONTRACTOR AND AFFECTED RAILWAY COMPANY BEFORE CONSTRUCTION IS STARTED.
6. THE CONTRACTOR SHALL, AT HIS EXPENSE AND BEFORE ENTERING UPON RAILWAY PROPERTY, SECURE AND MAINTAIN THROUGHOUT THE CONSTRUCTION PERIOD INSURANCE OF THE KINDS AND AMOUNTS REQUIRED BY THE AFFECTED RAILWAY COMPANY.
7. WHERE SODDING IS DISTURBED BY EXCAVATION OR BACKFILLING OPERATIONS, SUCH AREAS SHALL BE REPLACED BY SEEDING AND MULCHING ON ALL SIDE SLOPES OF 5% OR LESS. ALL DRAINAGE DITCHES AND SWALES AND ALL SLOPES OVER 5% SHALL BE REGRASSED WITH BLOCK SODDING. NO SEPARATE PAYMENT SHALL BE MADE FOR SEEDING AND MULCHING OR SODDING. SAID COST SHALL BE INCLUDED IN THE BID PRICES FOR INSTALLATION OF PIPE.
8. THE INSTALLATION OF SAID FACILITY SHALL BE DONE UNDER THE SUPERVISION AND CONTROL OF THE STATE HIGHWAY DIVISION ENGINEER AND/OR CITY ENGINEER, AND THE METHOD OF CROSSING SHALL BE DIRECTED BY THE STATE HIGHWAY DIVISION ENGINEER AND/OR CITY ENGINEER.
9. THE CONTRACTOR SHALL MAKE NECESSARY ARRANGEMENTS FOR HIGHWAY TRAFFIC OVER SAID POINT DURING SUCH WORK AND SHALL PLACE NECESSARY BARRICADES, WARNING SIGNS, SIGNALS, LIGHTS, AND, IF NECESSARY, WATCHMEN FOR THE TRAVELING PUBLIC.

TABLE "B"	
Gages of Liner Plate for Continuous Load-Carrying Structures	
Nominal Dia. (Inches)	Height of Cover (Feet)
	2-5 5-10 10-15 15-20 20-25 25-30 30-35 35-40 40-45
48	12 12 12 12 12 12 12 12 10
54	12 12 12 12 12 12 12 12 10
60	12 12 12 12 12 12 10 8 7
66	12 12 12 12 12 10 8 8 5
72	12 12 12 12 10 8 7 5 5
78	12 12 12 10 10 8 7 5 5
84	12 12 10 10 10 8 5 5 5
96	12 10 10 10 10 8 5 5 5
108	10 10 10 10 8 7 5 5 5
120	10 10 10 8 8 7 5 5 3
144	8 8 8 8 5 5 3 1 1

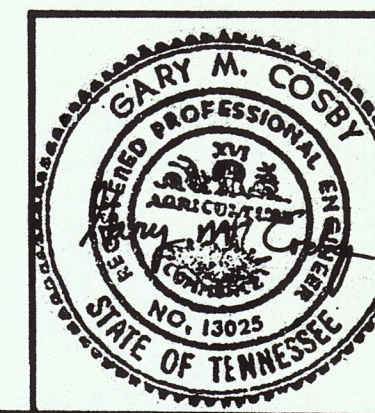


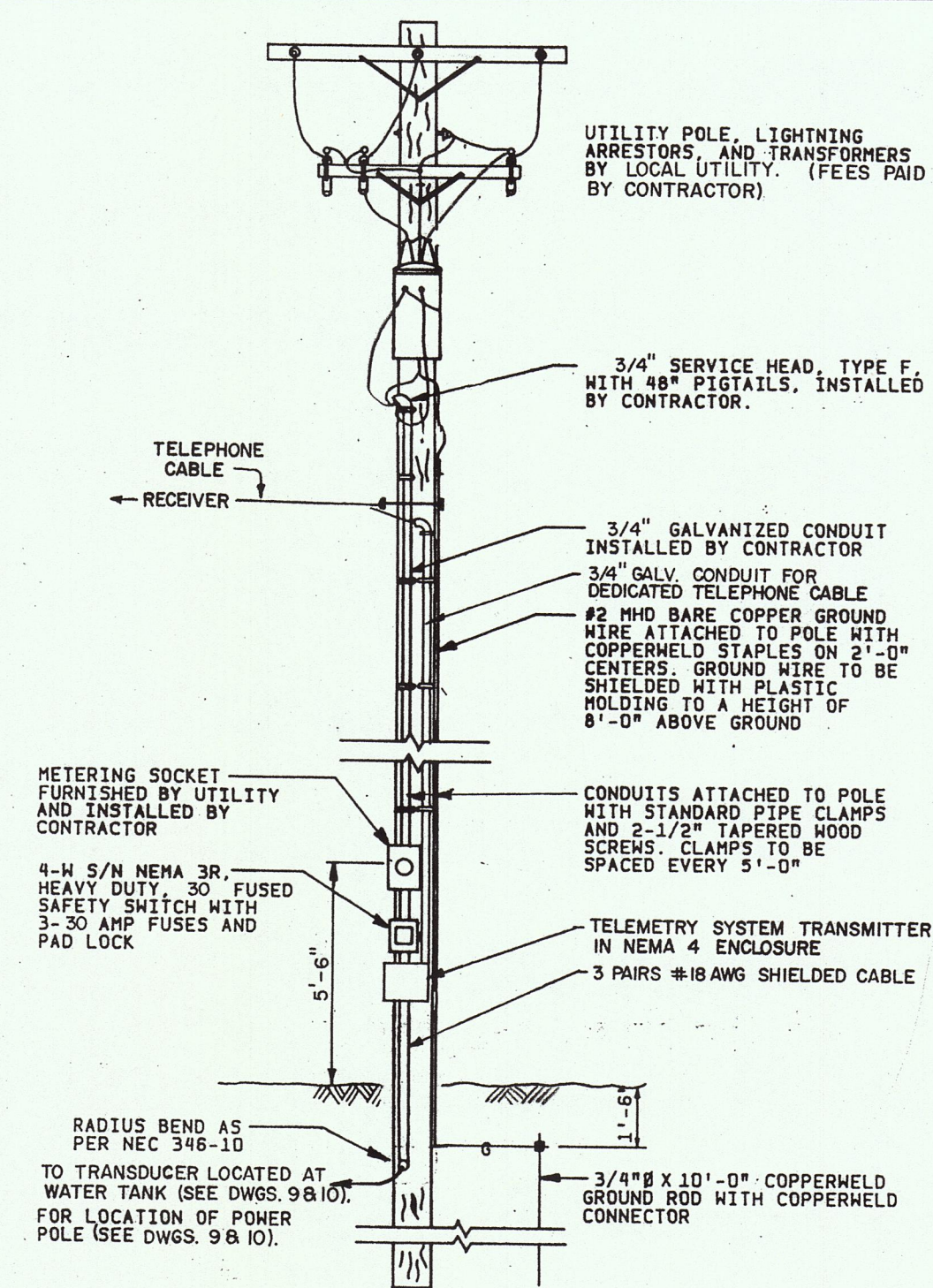
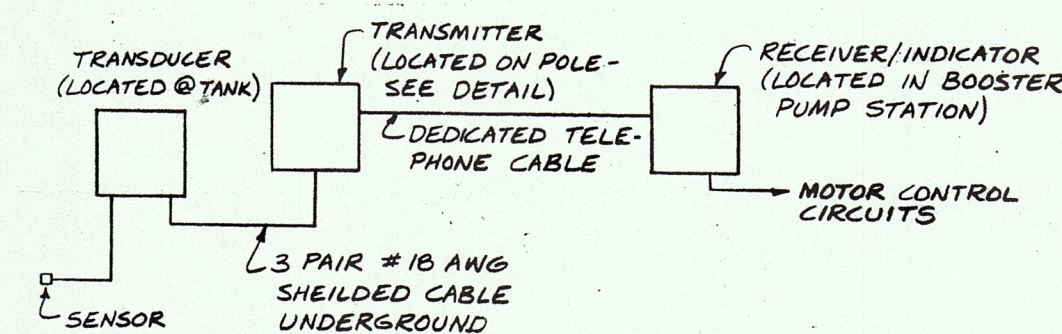
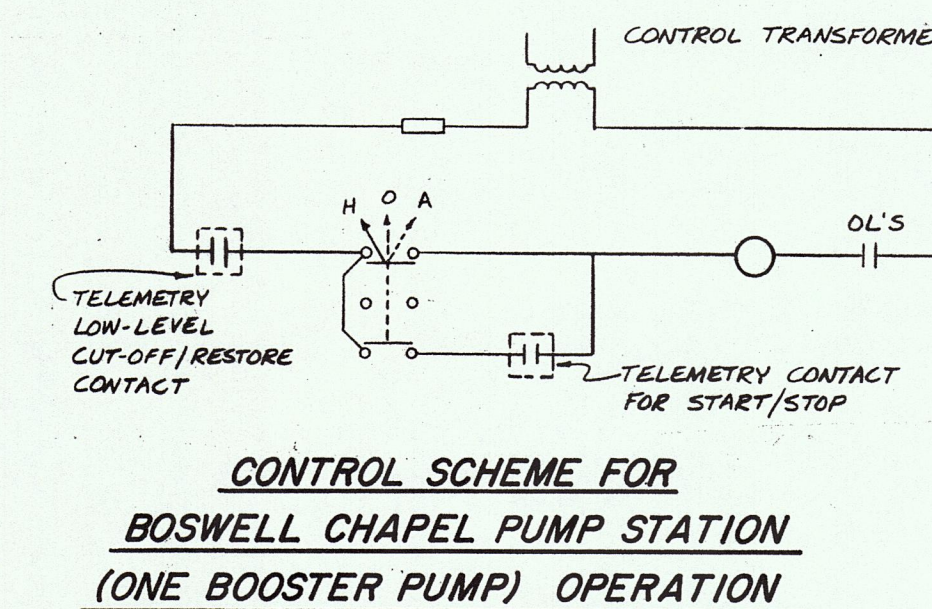
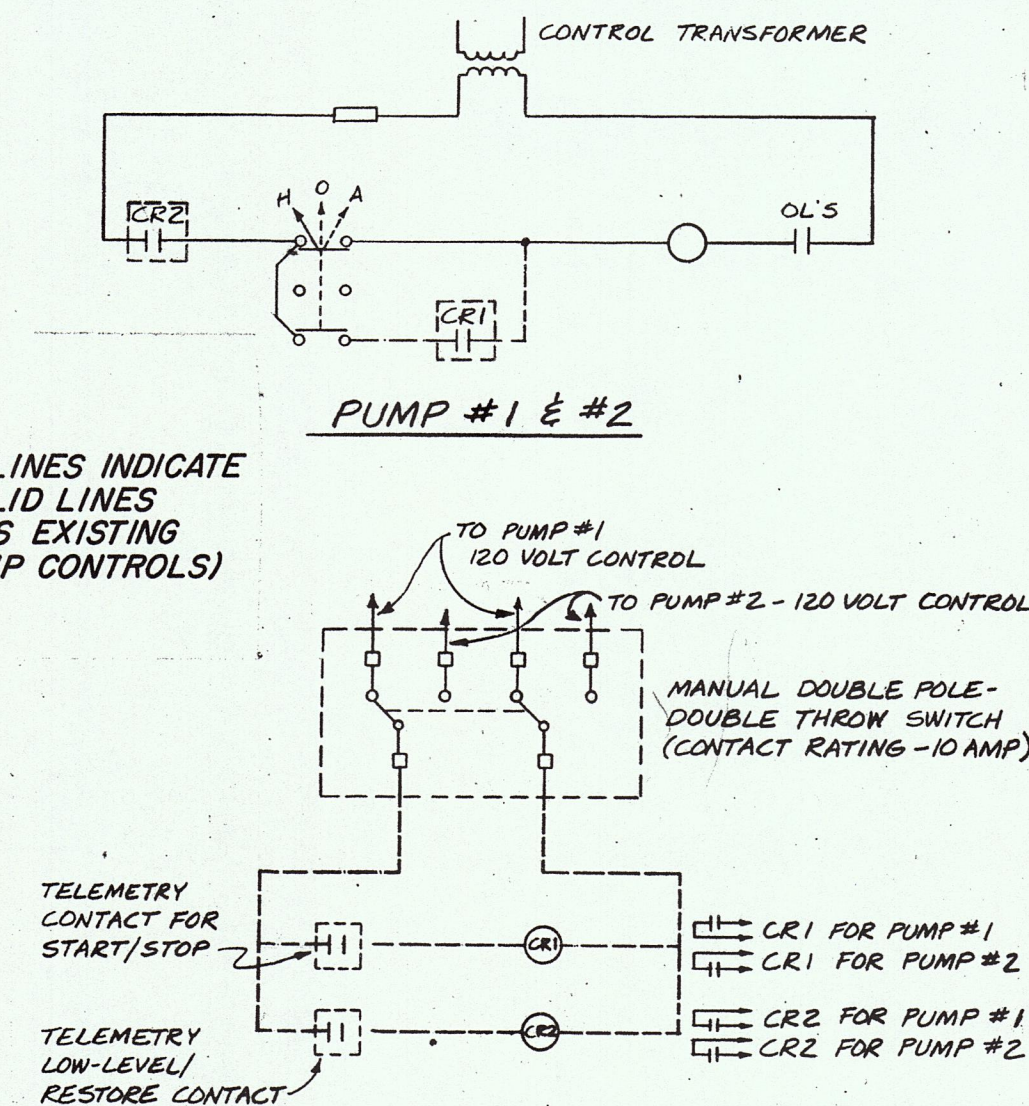
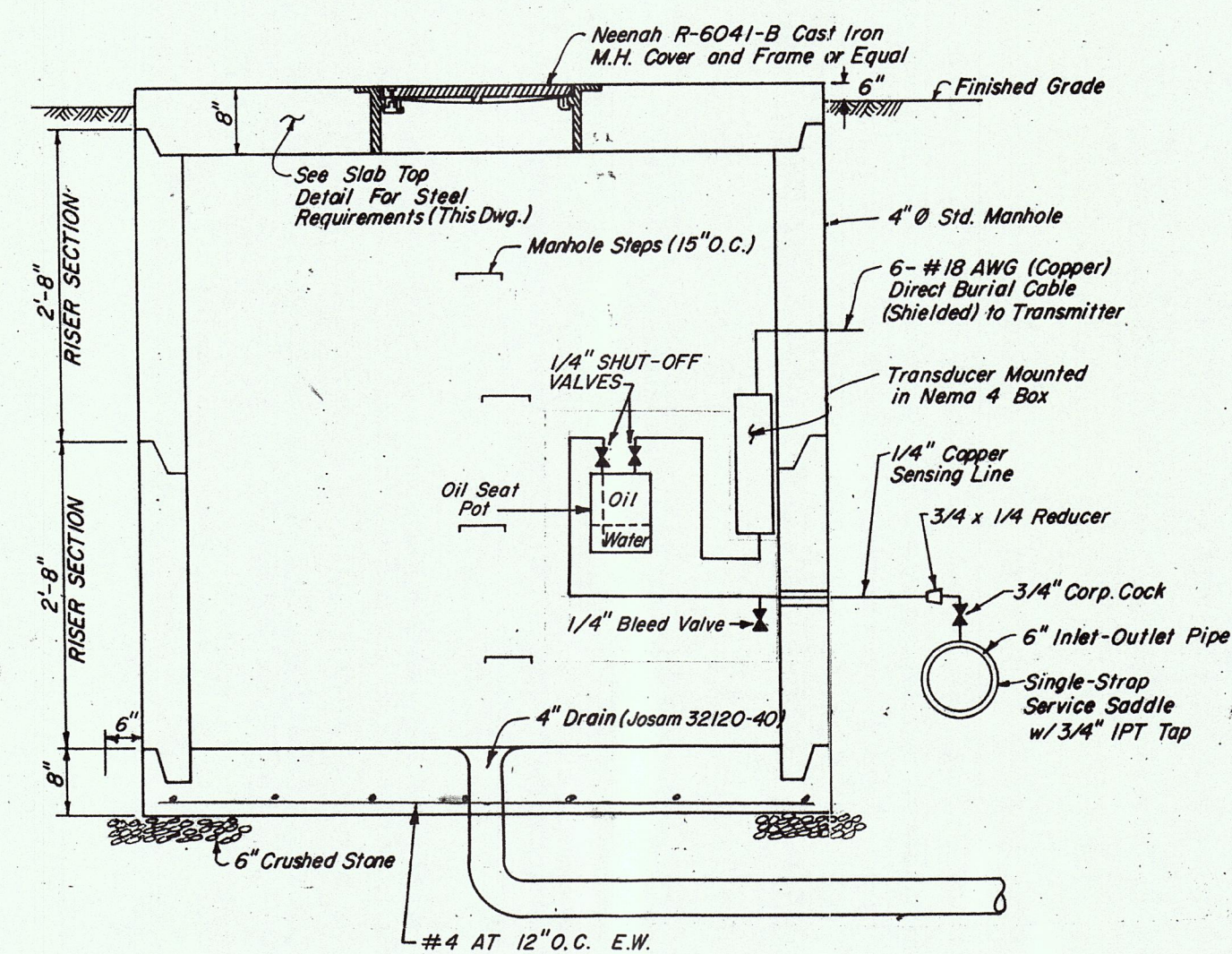
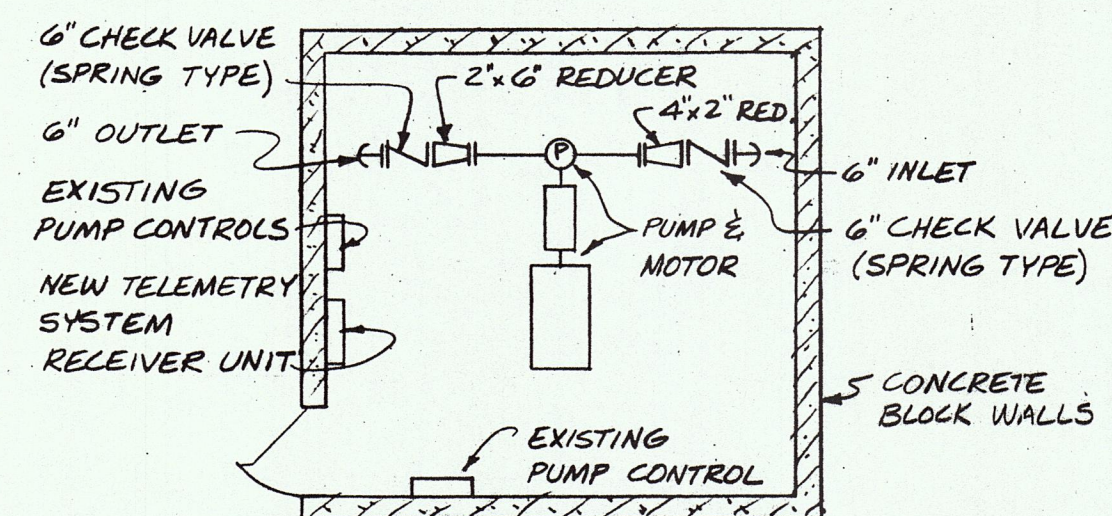
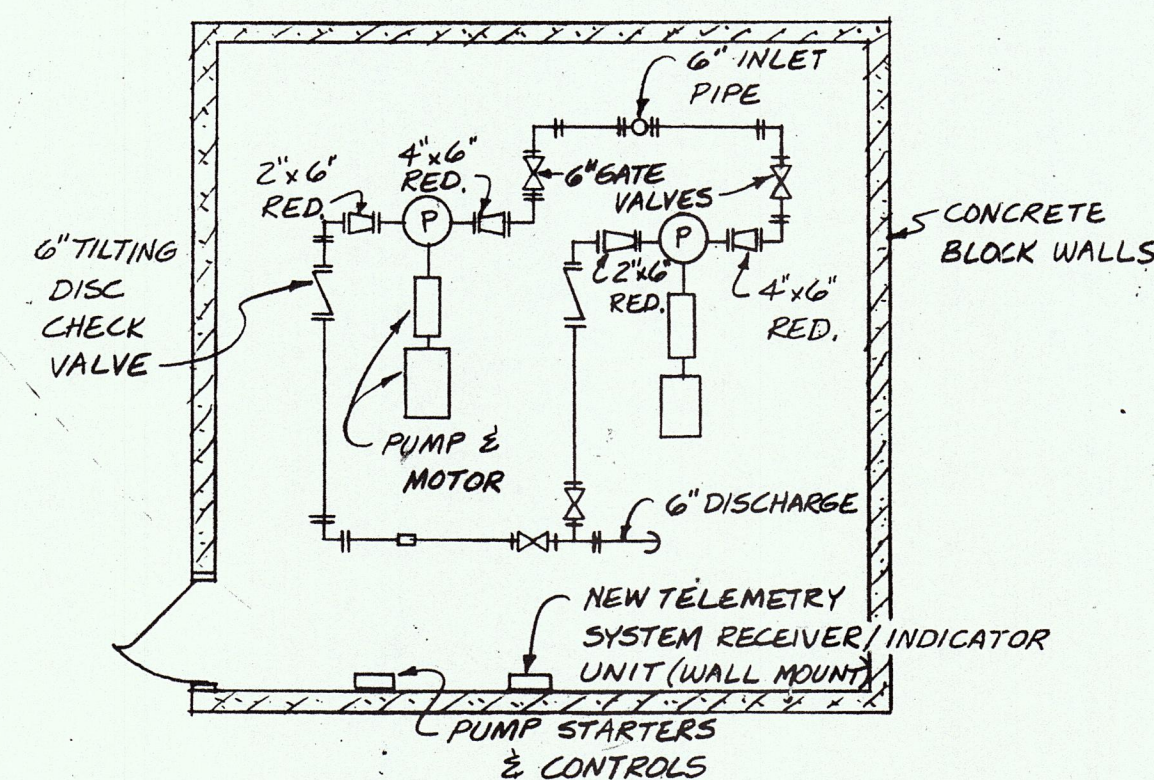
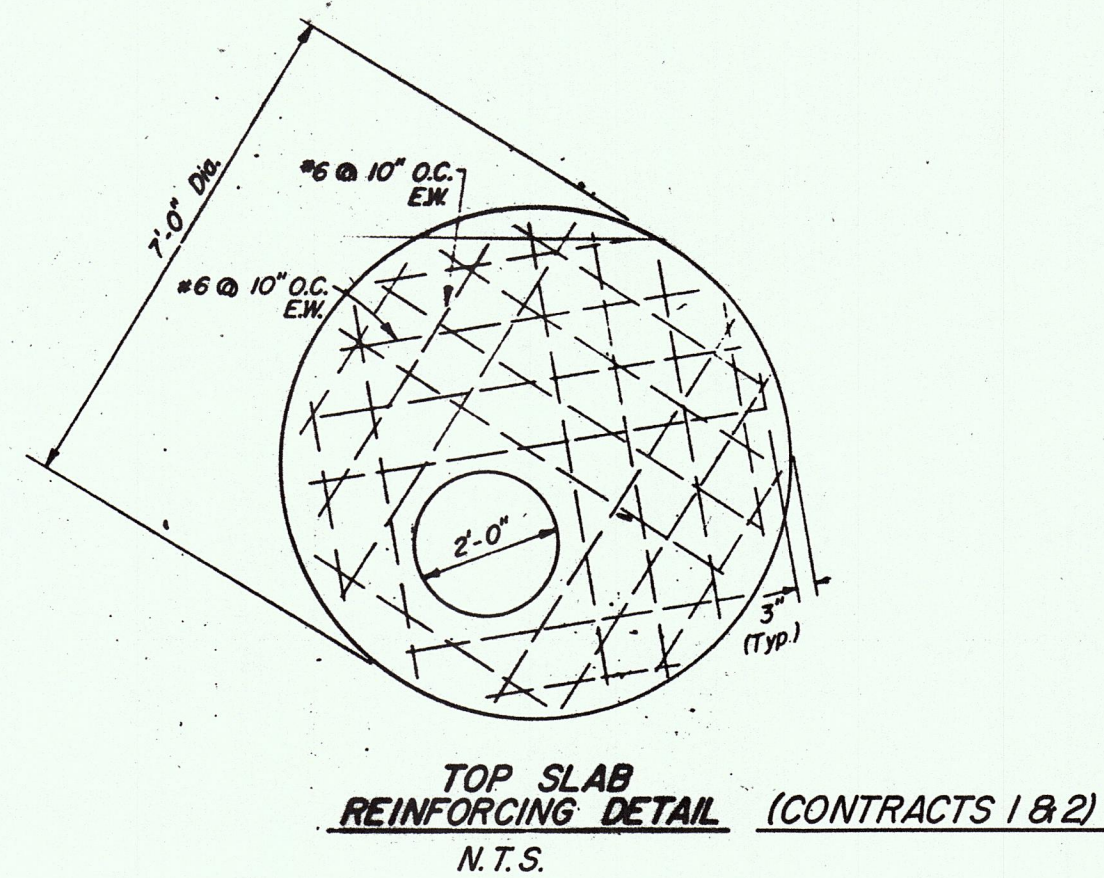
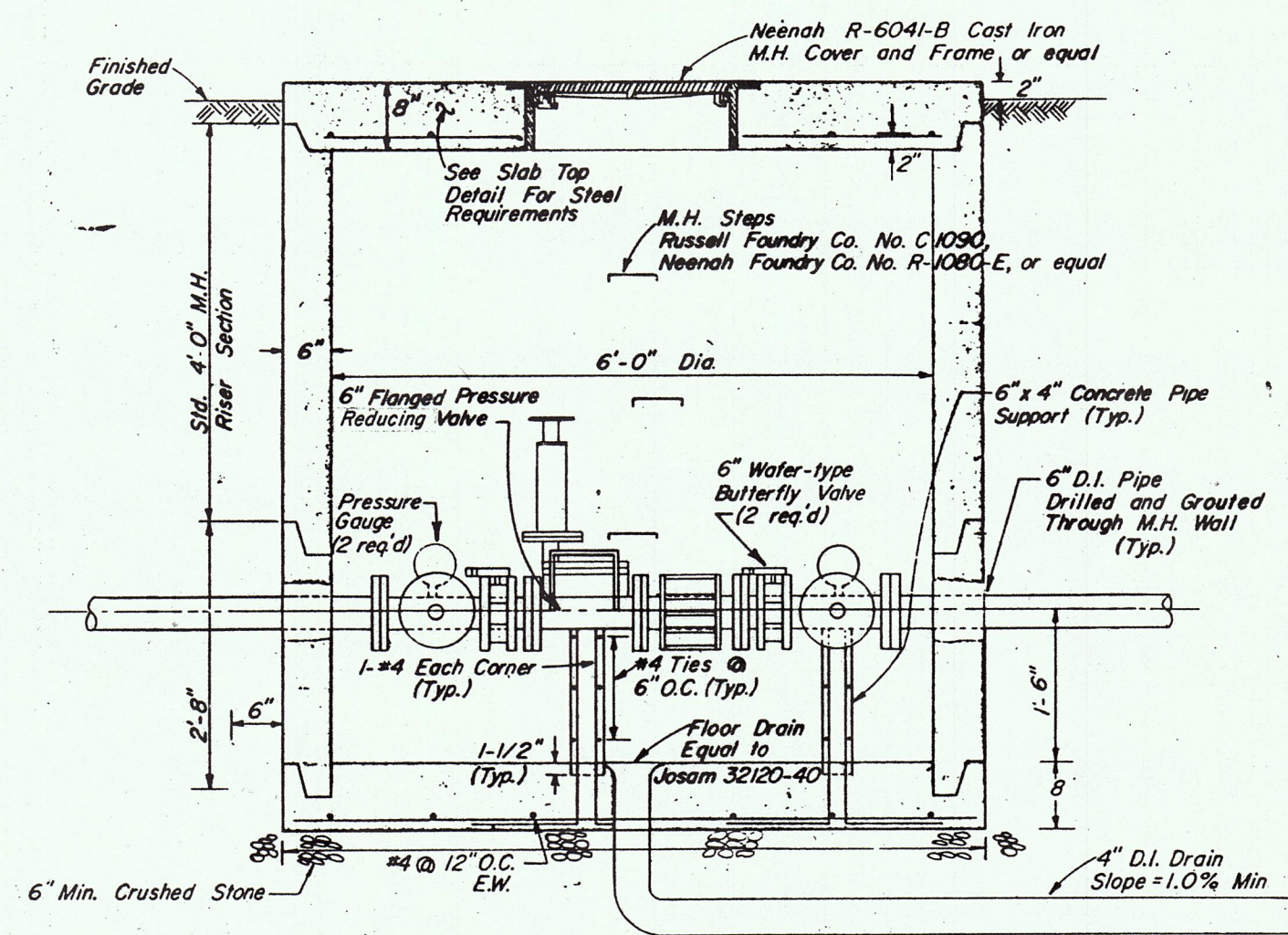
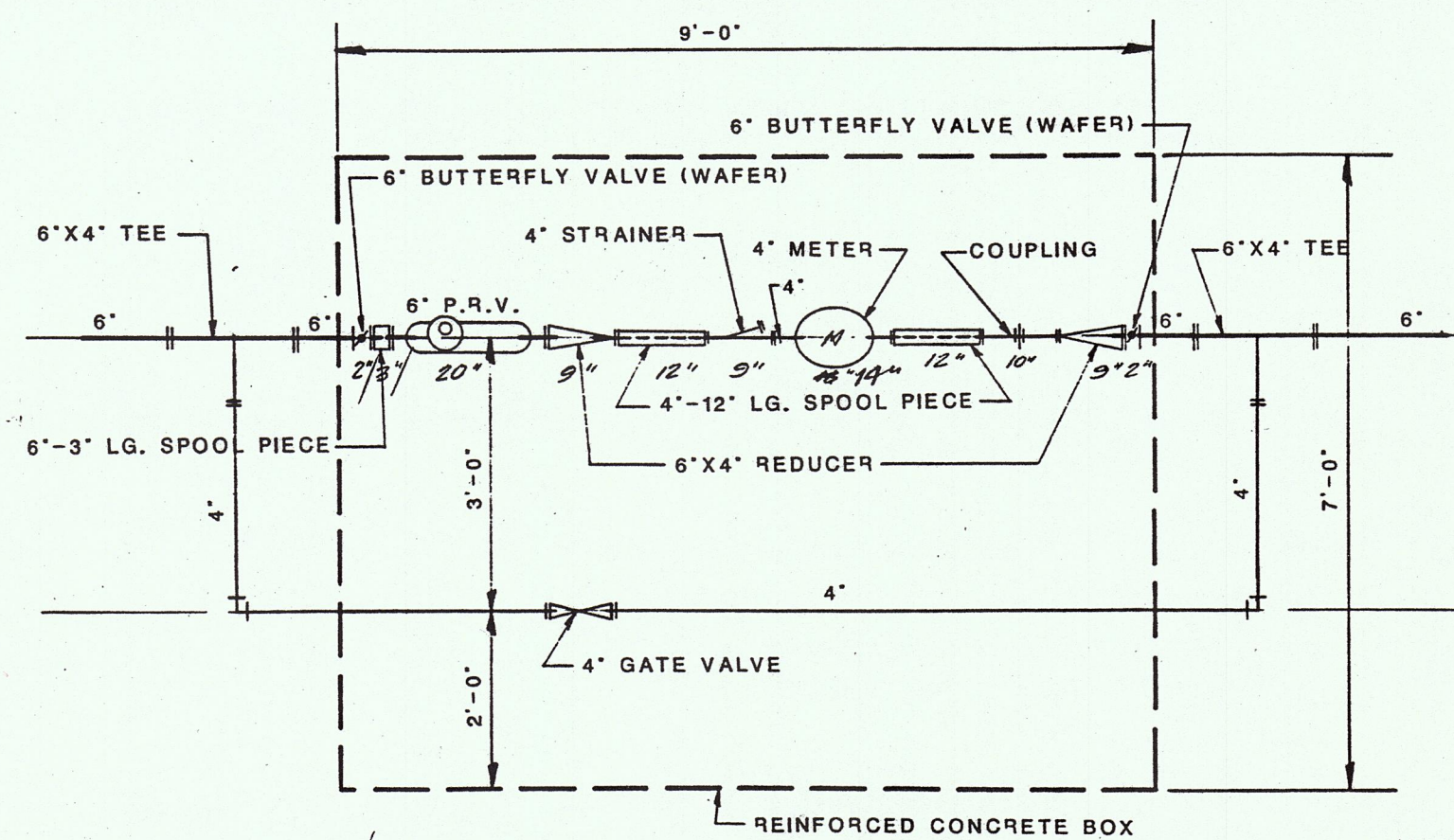
TYPICAL RAILROAD CROSSING



CASING PIPE
Size & Thickness of pipe for Railroad & Highway Crossing.
(Min. thickness for liner plate casing) in railroad crossing 10 gage.

REV. NO.	RELEASED BY	DESCRIPTION OF REVISION
3		
2		
1		
WATER SYSTEM IMPROVEMENTS—PHASE II		
HIGHWAY AND RAILROAD CROSSING DETAILS		
WOLFE BRANCH UTILITY DISTRICT OAKDALE, TENNESSEE		
DSGN JDH	1/86	HENSLEY-SCHMIDT, INC.
DRWN GAW	1/86	ENGINEERS AND MANAGERS
CHKD JDH		ATLANTA-CHATTANOOGA-KNOXVILLE
APPR GMC		VALDOSTA
		DRAWING NO. 7972-16





1. Existing pump controls shall be modified and wired for telemetry.
2. Manual switch shall be labeled to indicate Pump No. 1 or Pump No. 2 operation via telemetry.
3. Between the transmitter and receiver, a dedicated DC metallic phone line pair or No. 3002 voice-grade phone line pair shall be supplied and installed on existing poles for each Booster Pump Station.
4. 120-volt AC single phase, two wire, 60 cycle shall be installed for the transmitter and receiver at each end (Pole/Pump Station).
5. A lighting arrester shall be installed to each line of the incoming side of the 120-volt AC power input terminals at the transmitter and receiver.
6. A heater element (± 100 watt) shall be installed in the enclosure with thermo switch.
7. Transmitter enclosure (NEMA 4) shall have a padlock.
8. Receiver/indicator shall be installed in the Booster Pump Building and No. 14 AWC conductors in 3/4-inch IMC conduit to motor control circuit. (See control scheme for each Booster Pump Station.)
9. The transducer (telemetry signal) shall be installed in the concrete manhole at each tank.

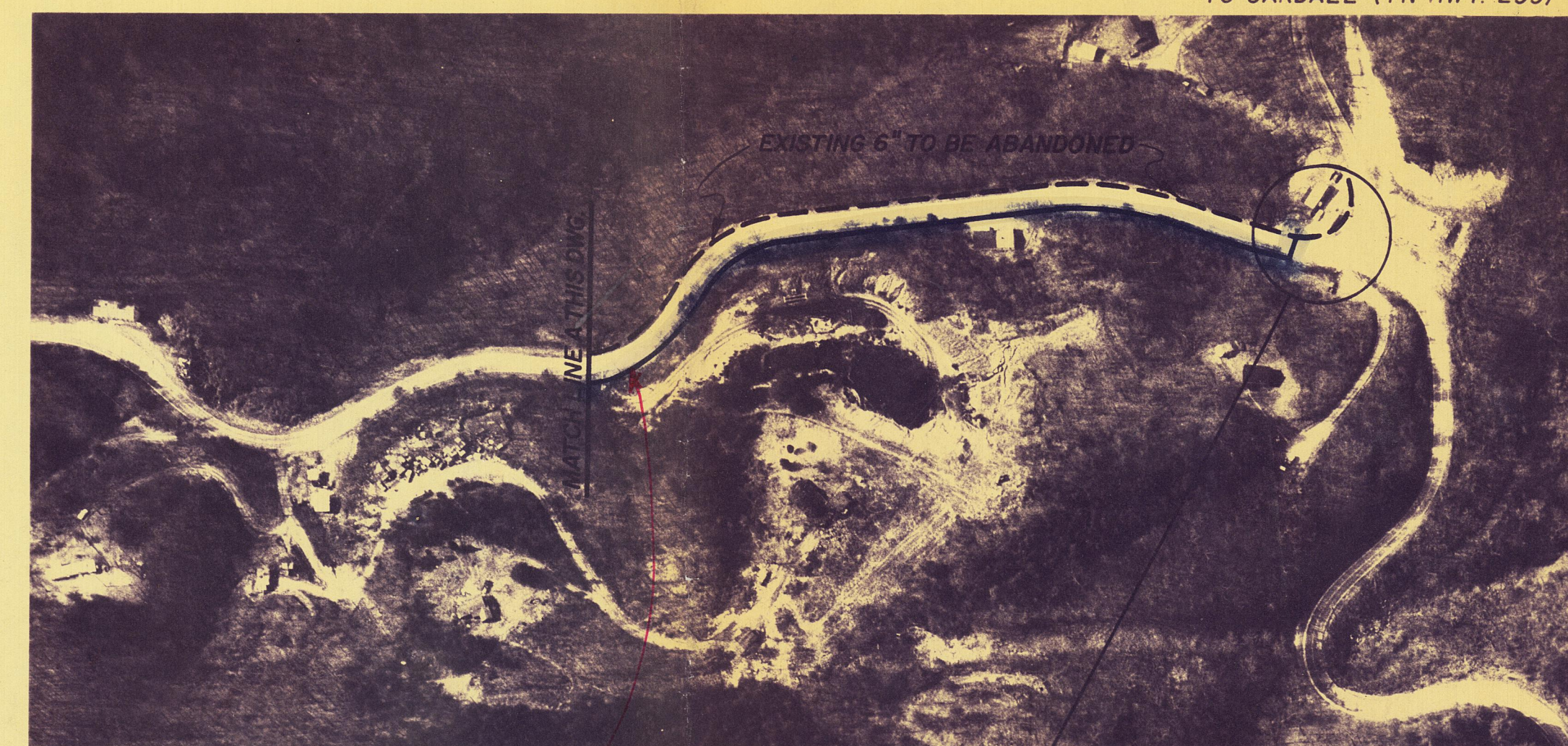
3		
2	JDH	3/87 RECORD DRAWING
1	JDH	5/86 ADDED ENTIRE DRAWING
REV. NO.	RELEASED BY	DESCRIPTION OF REVISION
WATER SYSTEM IMPROVEMENTS PHASE II		
MISCELLANEOUS MODIFICATIONS TO EXISTING FACILITIES		
WOLFE BRANCH UTILITY DISTRICT OAKDALE, TENNESSEE		
DSGN	HENSLEY - SCHMIDT, INC.	DRAWING NO.
DRWN JRC	ENGINEERS AND SURVEYORS	7972-17.2
CHKD	ATLANTA - CHATTANOOGA - KNOXVILLE	
APPR	VALDOSTA	

STATE ROUTE
328



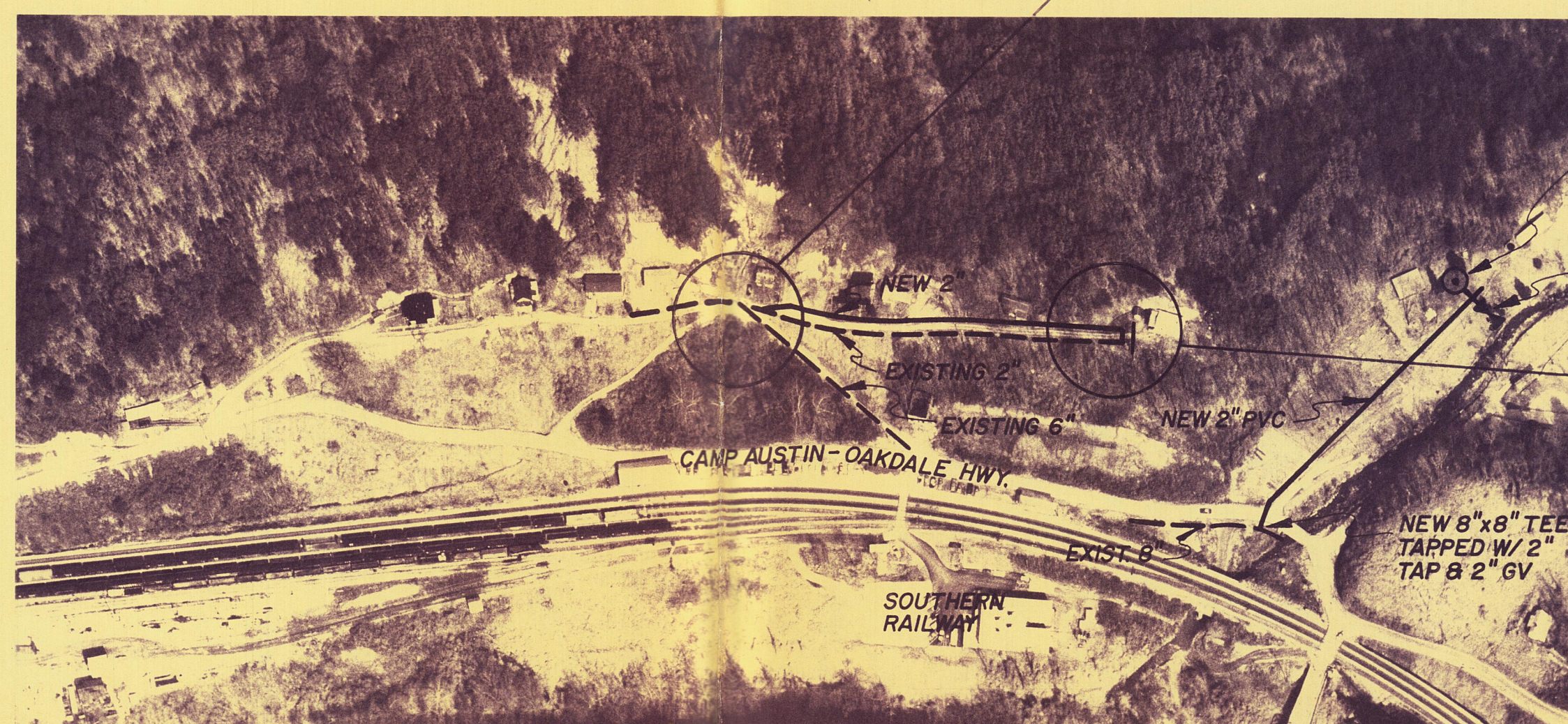
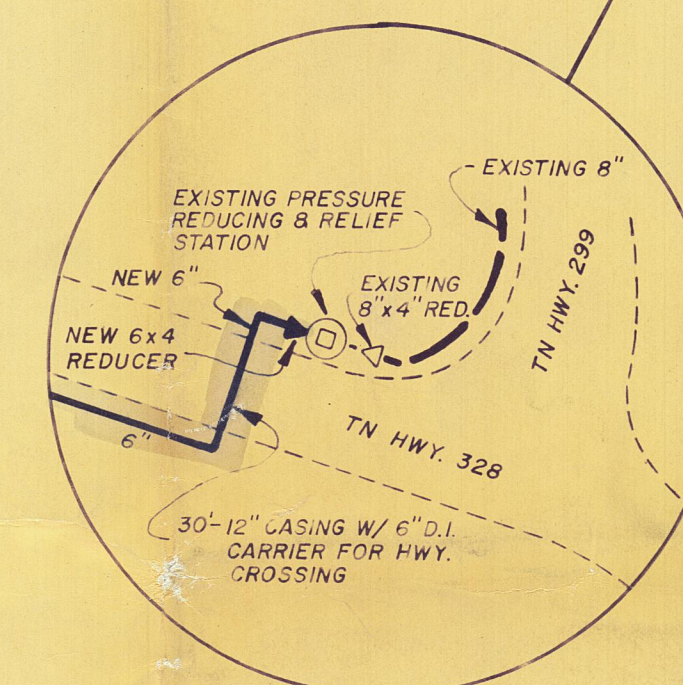
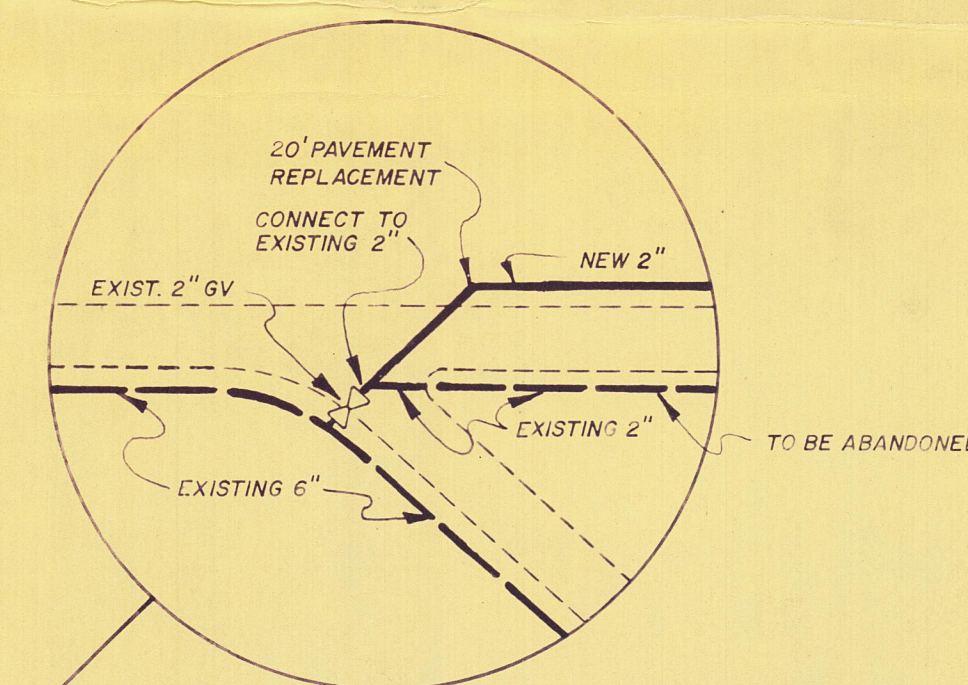
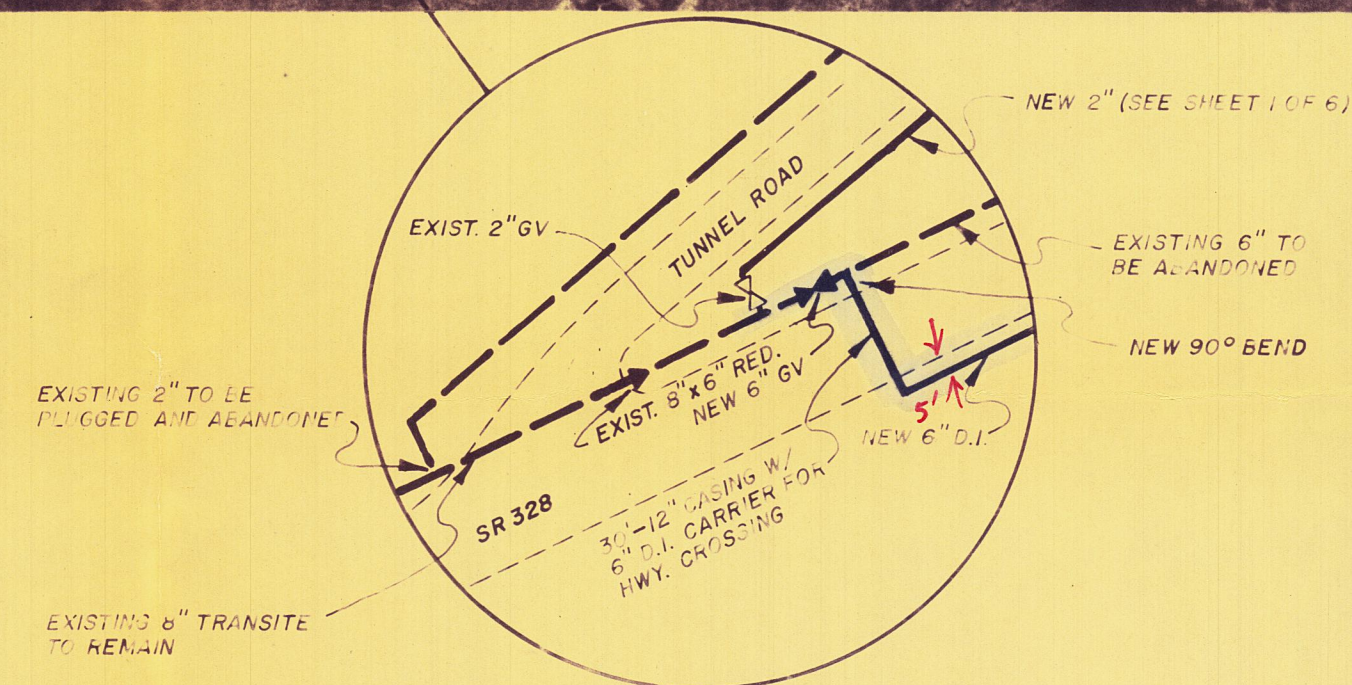
STATE ROUTE
328
TO OAKDALE

STATE ROUTE
328
CONTINUED



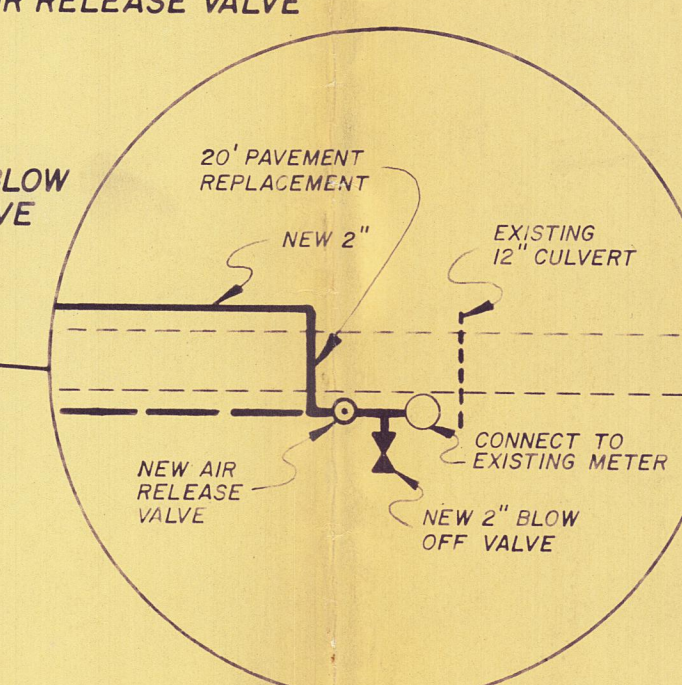
TN HWY 328

LINE TO BE
LAID IN DITCH
OR BEHIND DITCH
WHERE POSSIBLE



NEW AIR RELEASE VALVE

NEW 2" BLOW
OFF VALVE



LEGEND

NEW WATER LINES

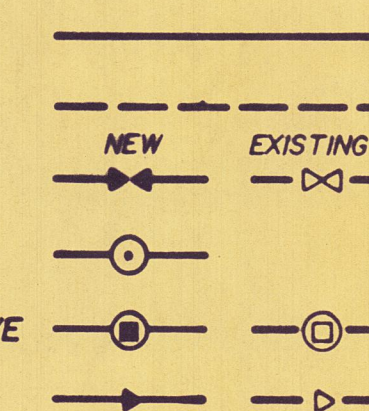
EXISTING WATER LINES

GATE VALVE

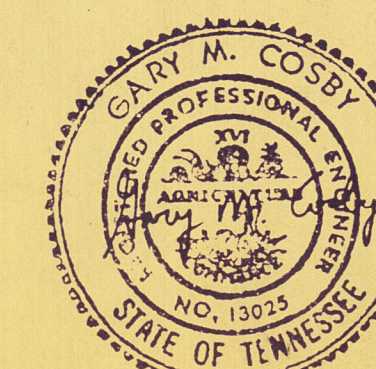
AIR RELEASE VALVE

PRESSURE REDUCING VALVE

REDUCER



CHECKED & APPROVED
By *Hensley-Schmidt*
ENGINEER - 4
Date APR 21 1986



Dr. 1/86 GAW Ca. JPH
HENSLEY - SCHMIDT, INC.
CONSULTING ENGINEERS
ATLANTA, CHATTANOOGA,
KNOXVILLE
PLAN SCALE
1" = 100' 7972-4

SCALE: 1" = 200'

