

PROJECT NAME: Cloverdale Water/Sewer Improv.
DATE: December 1991
TYPE: _____
LOCATION: _____
TOTAL # SHEETS: 13
A/E FIRM: Dewberry & Davis
OF SETS: 1

TOWN OF CLOVERDALE WATER / SANITARY SEWER IMPROVEMENTS

Botetourt County, Virginia



Financial Assistance By: Farmers Home Administration (FHA)

Dewberry & Davis

Architects

Engineers

Planners

Surveyors

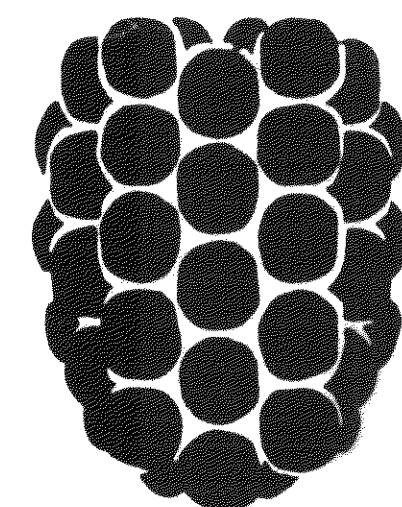
5238 Valleypointe

Parkway

Suite One B

Roanoke, VA. 24019

703 362-7725



COMMONWEALTH OF VIRGINIA
Department of Health
Office of Water Programs
Lexington Regional Office

() Water Line (X) Gravity Sewer

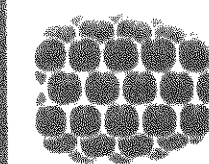
(X) Extension Approved

() Extension Approved w/condition(s)

() Extension Disapproved

Date: 12/11/91 Douglas M. Caldwell
Regional Director for REC





Dewberry & Davis

Architects Engineers Planners Surveyors
5238 VALLEYPOINT PARKWAY SUITE ONE-B
ROANOKE, VIRGINIA 24019 (703) 362-7725

**CLOVERDALE
WATER IMPROVEMENTS**
BOTETOURT COUNTY, VIRGINIA

LOCATION MAP

Scale
3/4" = 10 MILES

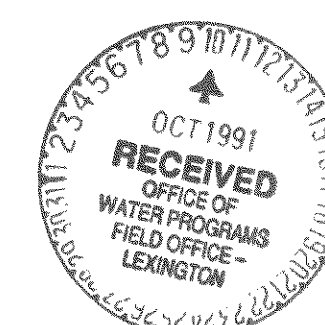
Sheet

1

of

Date

File Number



LEGEND

WATER IMPROVEMENTS

COVER SHEET
SHEET 1 LOCATION MAP
SHEET 2 LINE 100, 101, 103
SHEET 3 LINE 101, 102
SHEET 4 LINE 105
SHEET 5 LINE 104, 104A
SHEET 6 LINE 106

SANITARY SEWER IMPROVEMENTS

SHEET 7 LINE 100,101,102,200,201
SHEET 8 LINE 300,400
SHEET 9 LINE 600
SHEET 10 LINE 500,700,800
SHEET 11, 12 STANDARD DETAILS

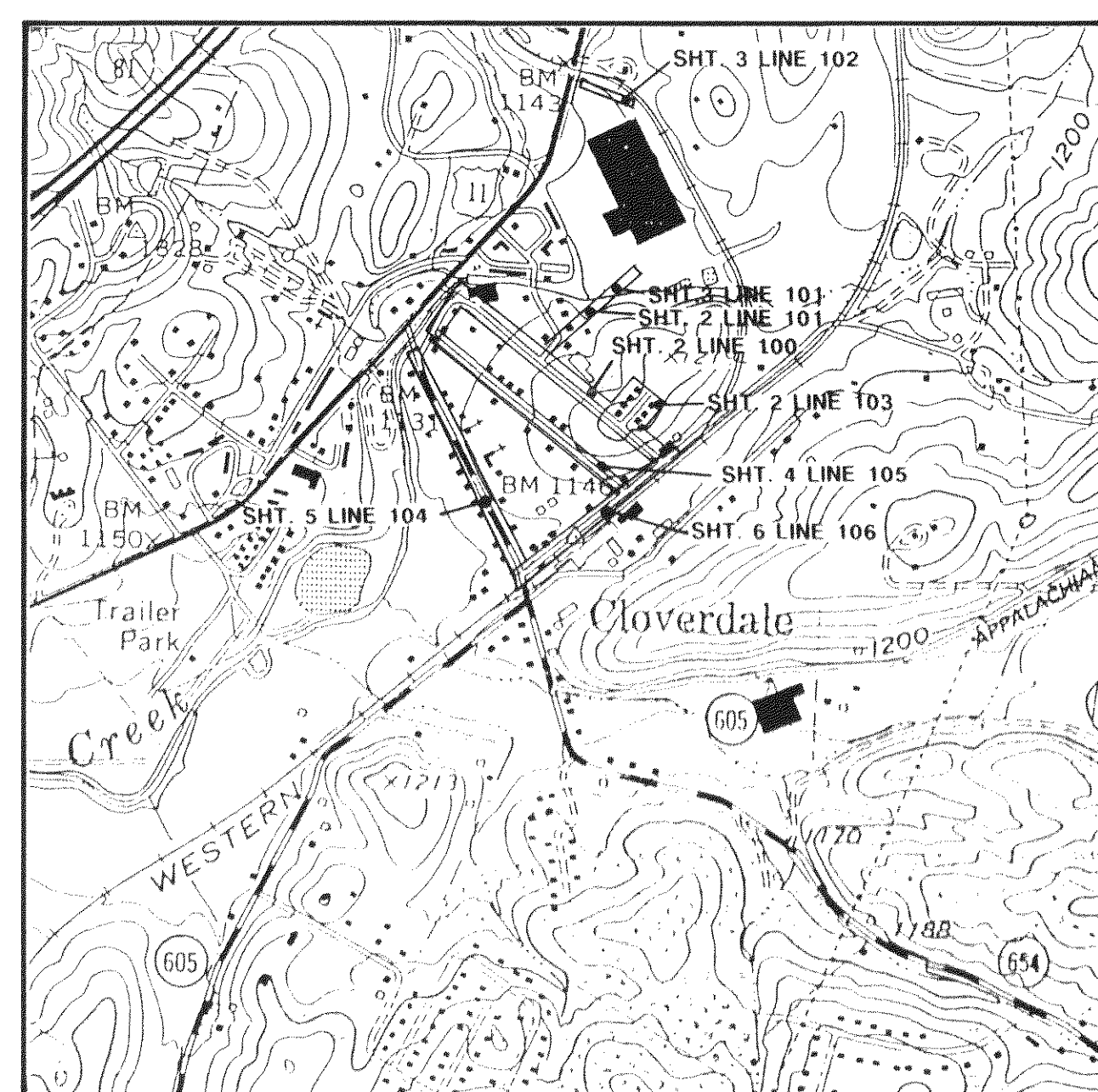
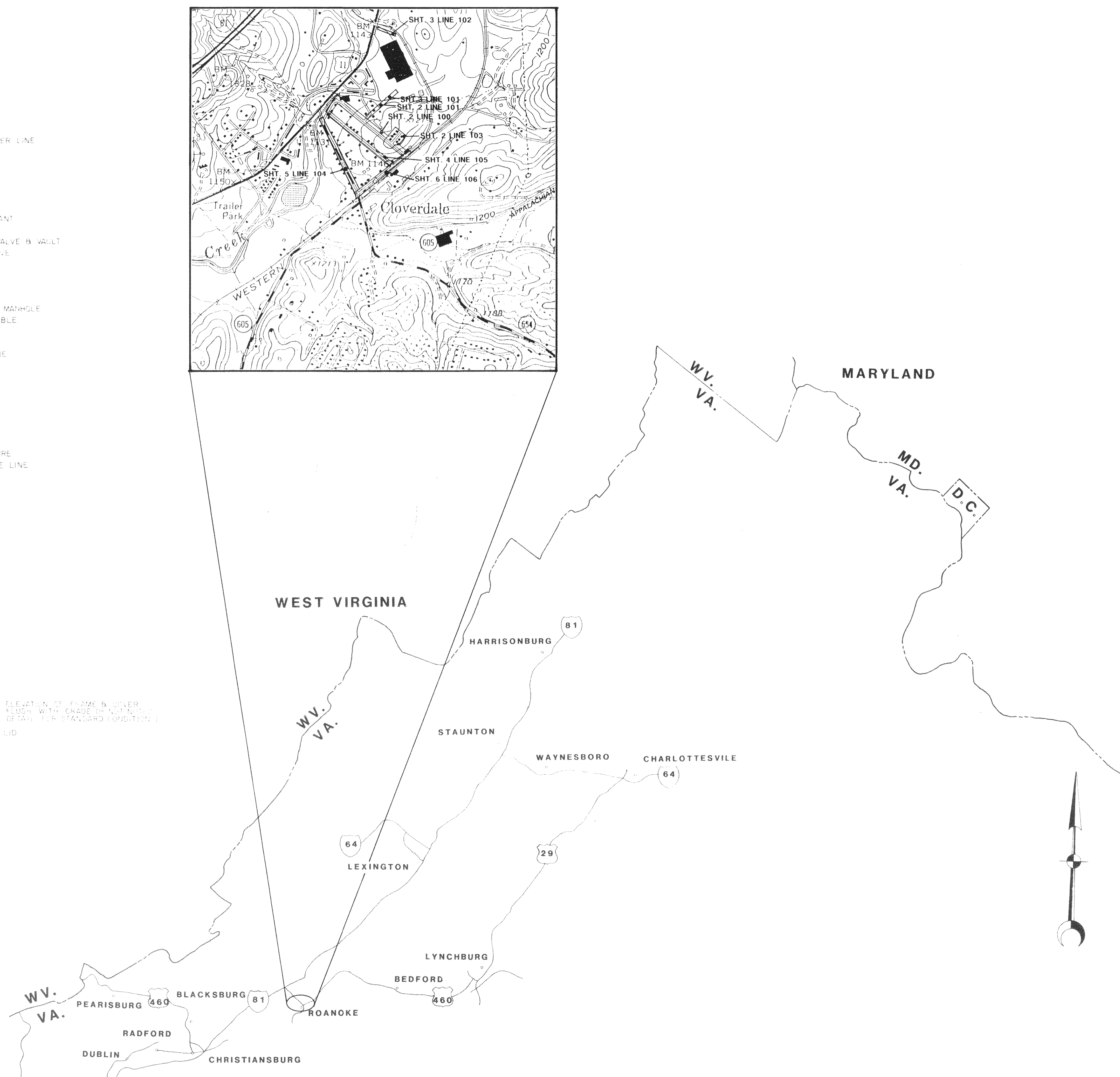
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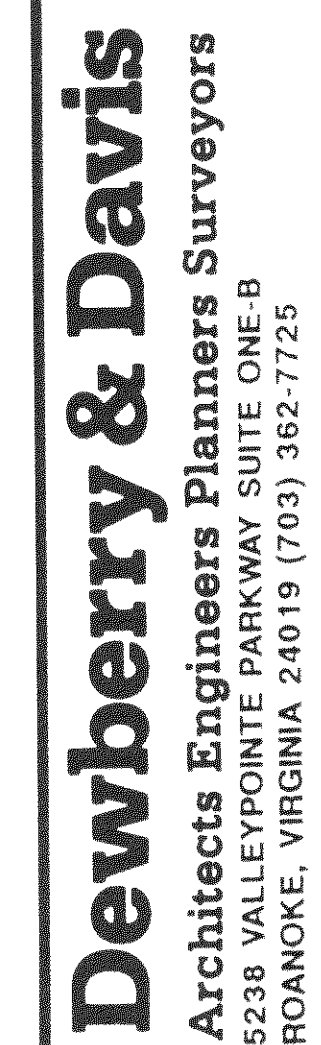
- PROPOSED SANITARY SEWER LINE
- PROPOSED MANHOLE
- PROPOSED SERVICE LINE
- PROPOSED CLEAN OUT
- PROPOSED FORCE MAIN
- PROPOSED WATER LINE
- PROPOSED FIRE HYDRANT
- PROPOSED SAMPLE HYDRANT
- PROPOSED GATE VALVE
- PROPOSED AIR RELEASE VALVE & VAULT
- PROPOSED BLOW OFF VALVE
- PROPOSED WATER METER

- EXISTING WATER LINE
- EXISTING SEWER LINE & MANHOLE
- EXISTING TELEPHONE CABLE
- EXISTING POWER LINE
- EXISTING GAS LINE
- EXISTING TELEVISION LINE
- EXISTING FIRE HYDRANT
- EXISTING WATER METER
- EXISTING GATE VALVE

- SPOT ELEVATION
- FIRST FLOOR ELEVATION
- BASEMENT ELEVATION
- UTILITY POLE & GUY WIRE
- SURVEY STATION & BASE LINE
- FENCE
- WATER
- TREE
- INEQUALITY
- BENCHMARK

- MANHOLE IDENTIFICATION
- TOP ELEVATION OF FRAME & COVER
- SET FLOOR WITH GRADE TO NOT EXCEED
- SPE. DETAIL FOR STANDARD CONDITION
- VENT (DROP) - MH ID NUMBER - WATERPROOF LID





**CLOVERDALE
WATER IMPROVEMENTS**
BOTETOURT COUNTY, VIRGINIA

LINE 100
LINE 101
LINE 103

Designed By _____

Checked By _____

Date _____

Horizontal Scale

1"=100'

Vertical Scale

1''=10'

Plan Number

1

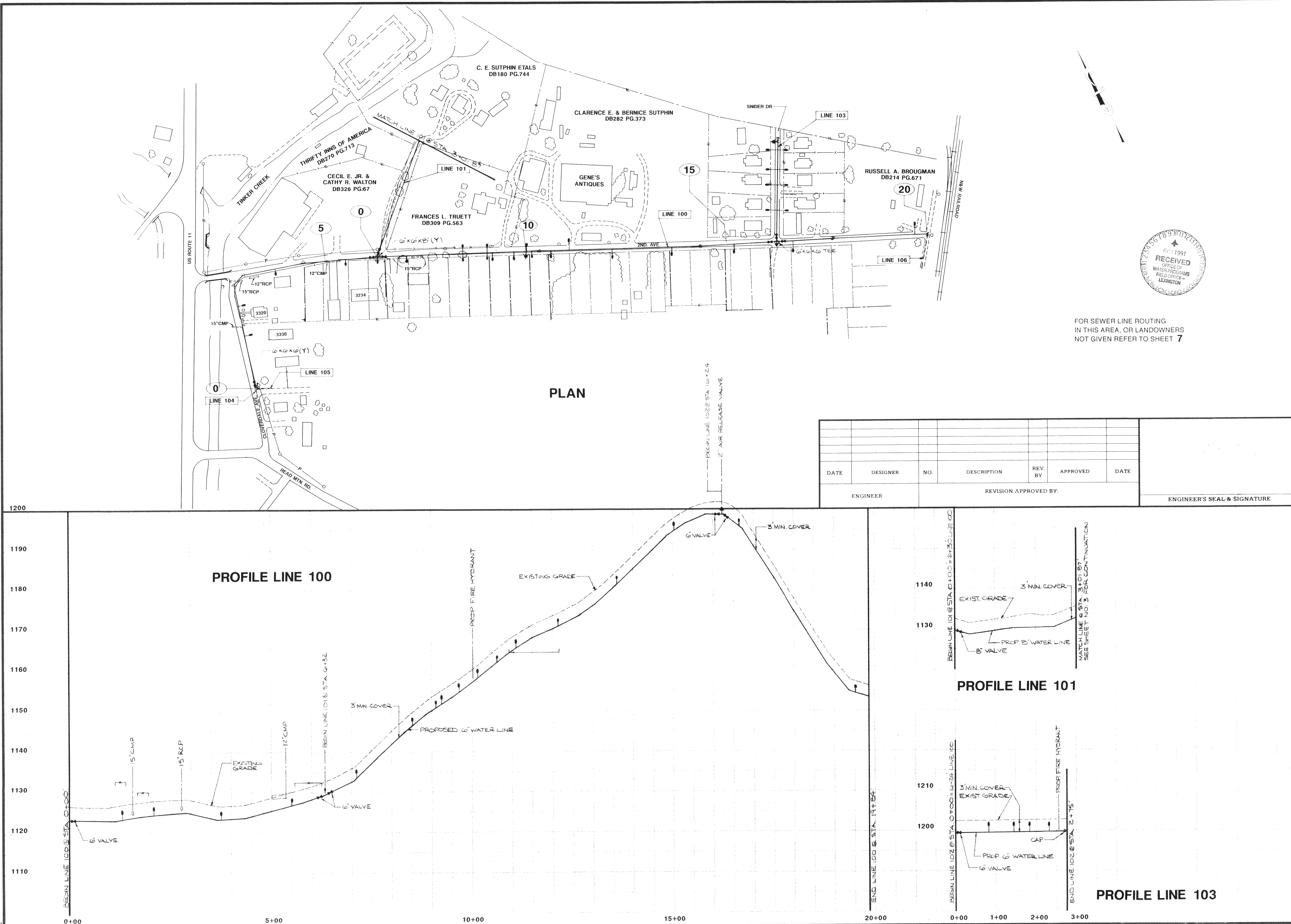
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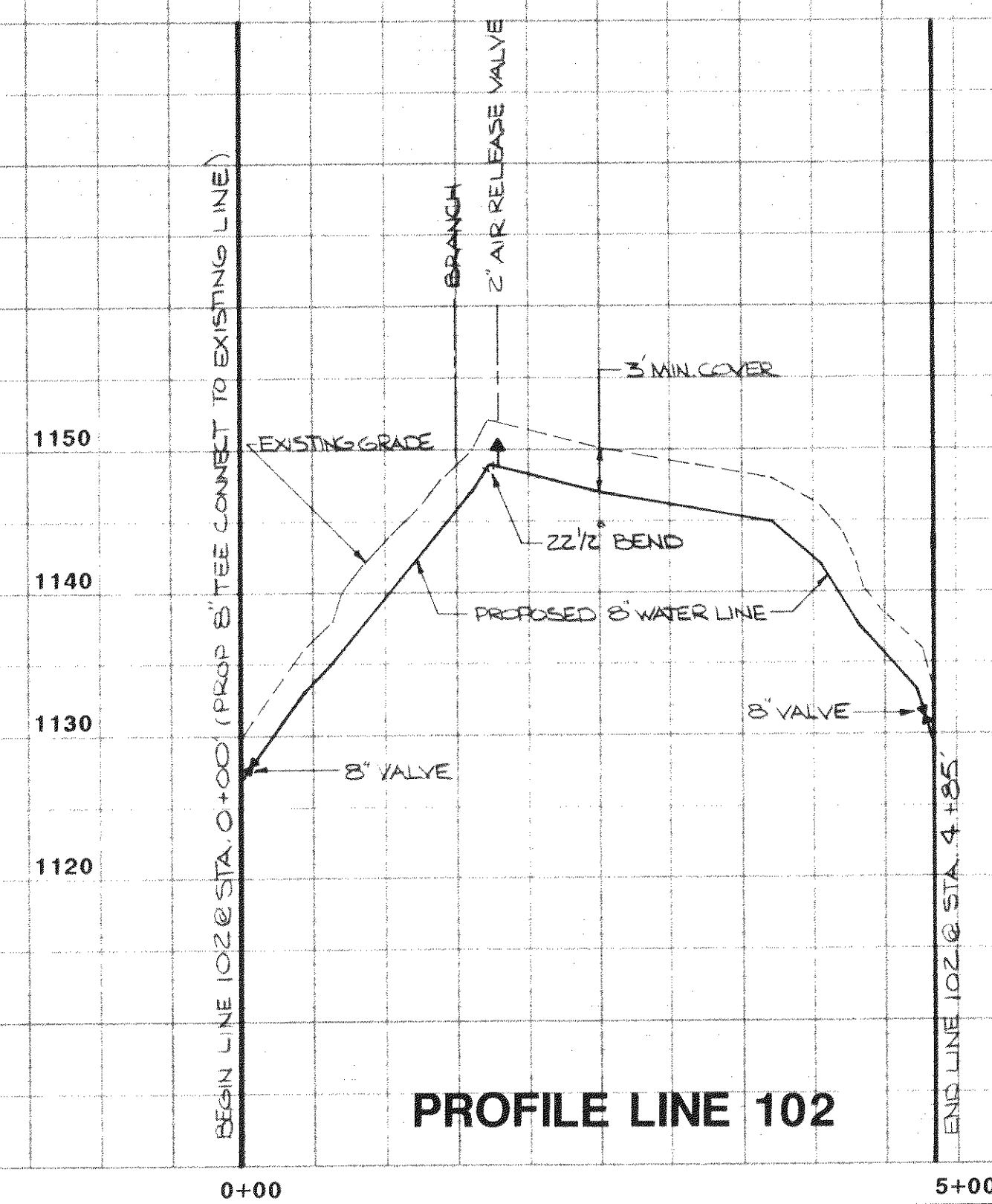
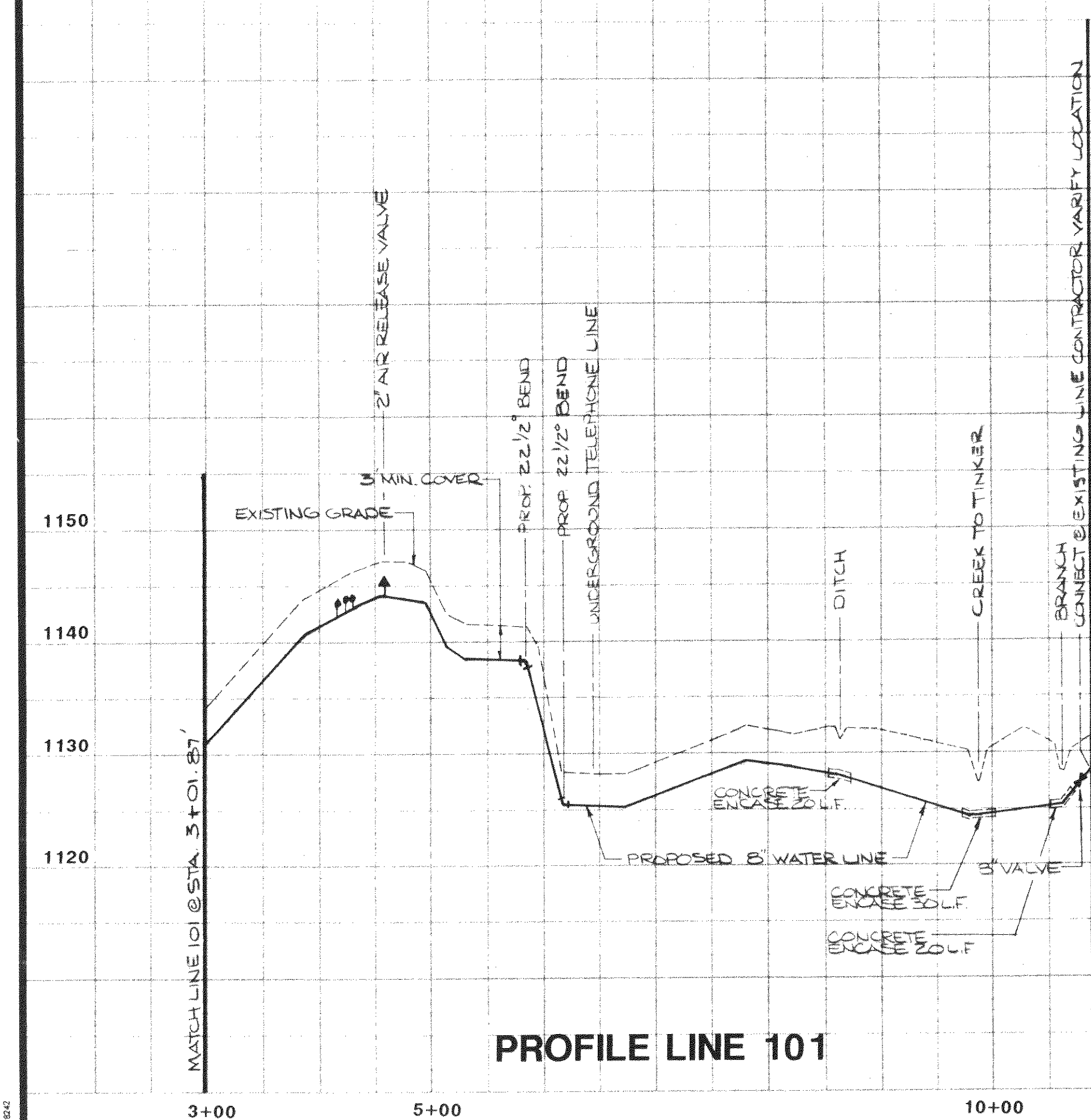
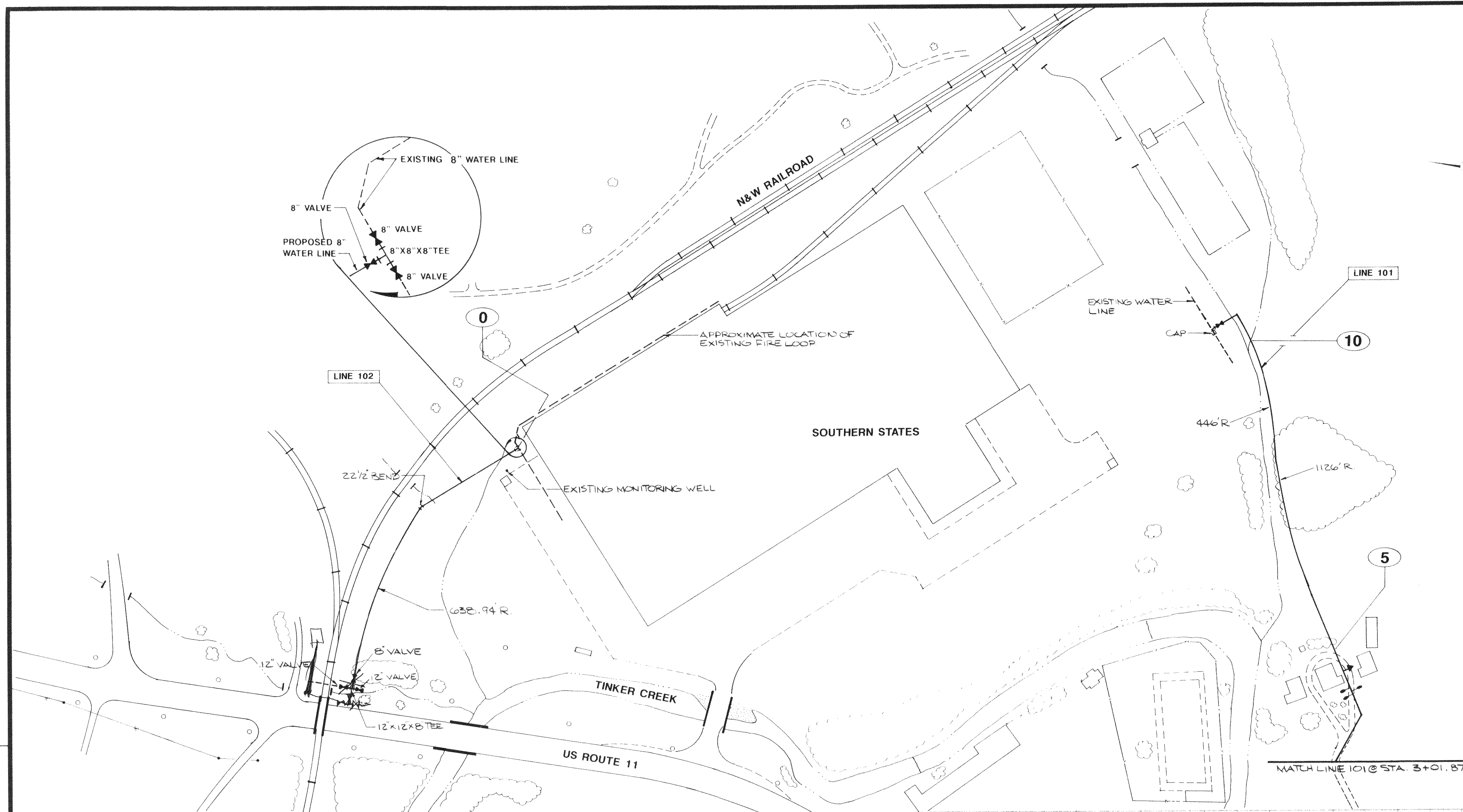
100

Sheet,

2 of

File Number



[illegible]

ENGINEER'S SEAL & SIGNATURE

**CLOVERDALE
WATER IMPROVEMENTS**
BOTETOURT COUNTY, VIRGINIA

LINE 101
LINE 102

Drawn By *Hick*

Designed By

Checked By _____

Date _____

Horizontal Scale

1"=100'

Vertical Scale

1"=10'

Plan Number

Zoned

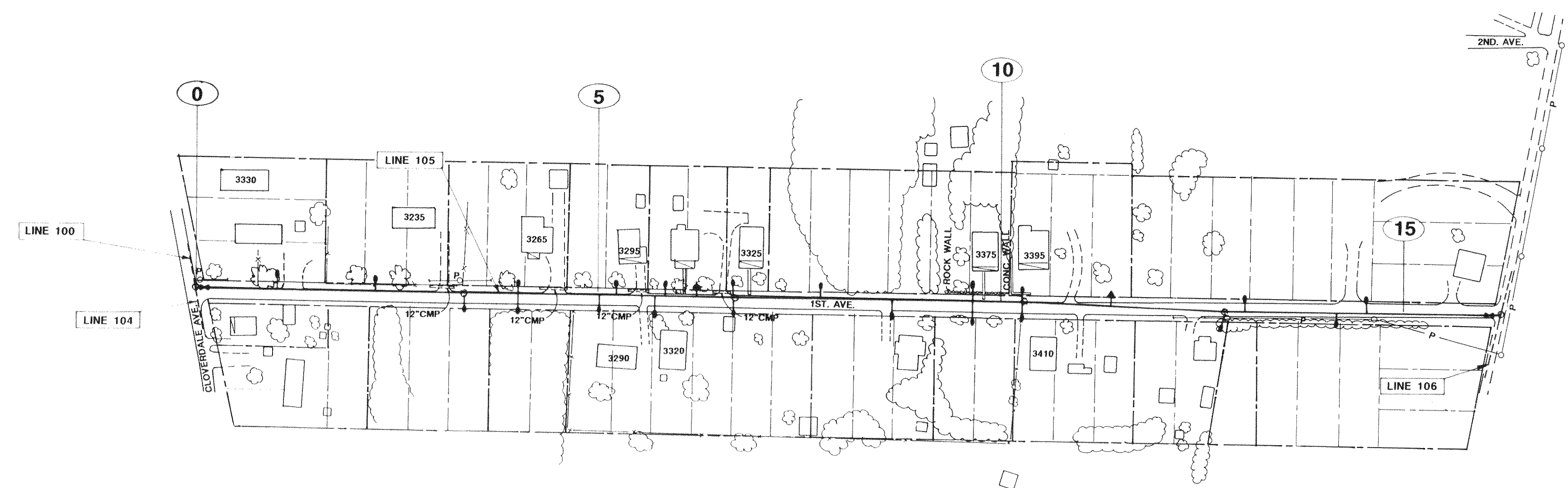
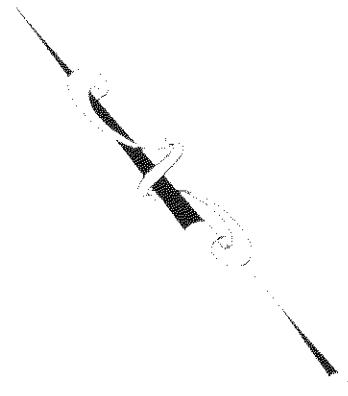
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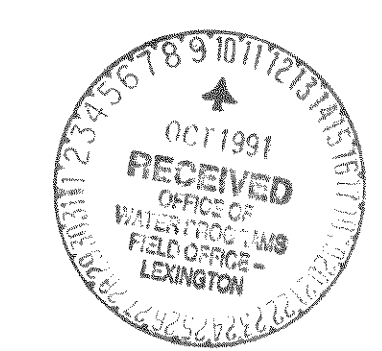
File Number

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Architects Engineers Planners Surveyors
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ROANOKE, VIRGINIA 24019 (703) 362-7725

BOTETOURT COUNTY, VIRGINIA

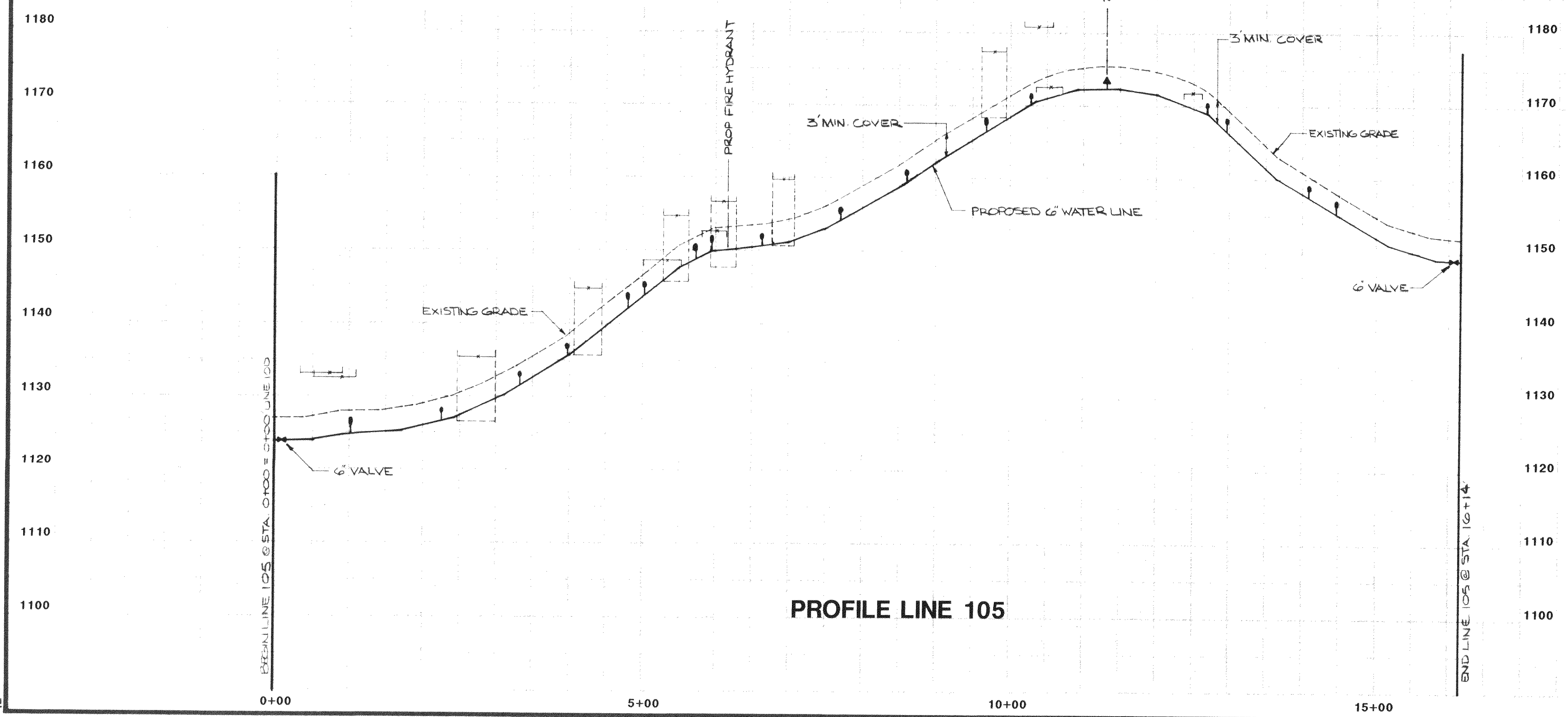


FOR SEWER LINE ROUTING
IN THIS AREA, OR LANDOWNERS
NOT GIVEN REFER TO SHEET 8

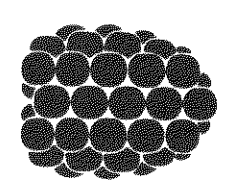


PLAN LINE 105

DATE	DESIGNER	NO.	DESCRIPTION	REV. BY	APPROVED	DATE	
ENGINEER		REVISION APPROVED BY:					
							ENGINEER'S SEAL & SIGNATURE



PROFILE LINE 105



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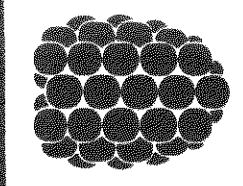
CLOVERDALE
WATER IMPROVEMENTS
BOTETOURT COUNTY, VIRGINIA

LINE 105

Drawn By *Nicks*
Designed By
Checked By
Date

Horizontal Scale
1"=100'
Vertical Scale
1"=10'
Plan Number
Zoned

Sheet
4 of
File Number

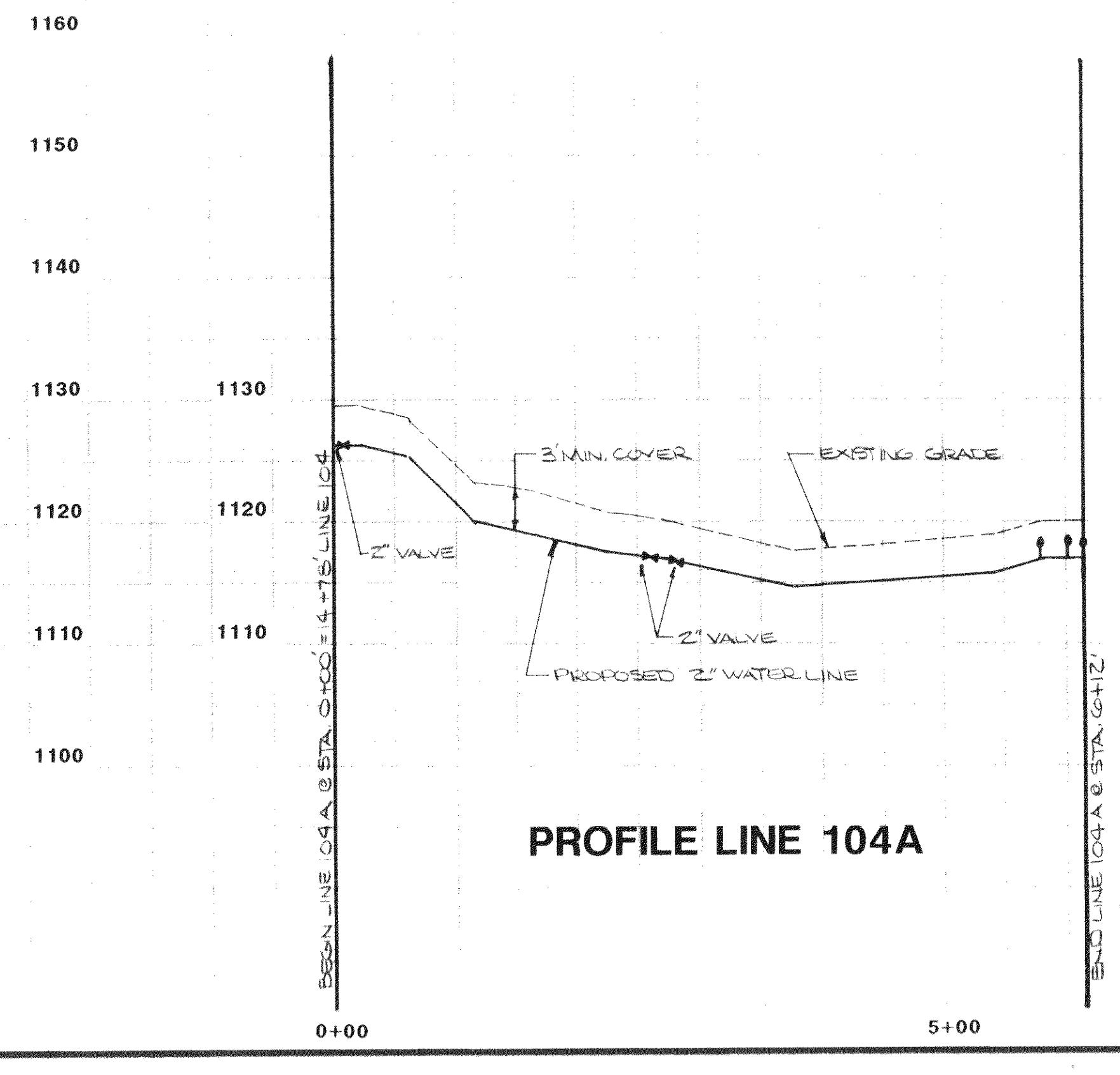
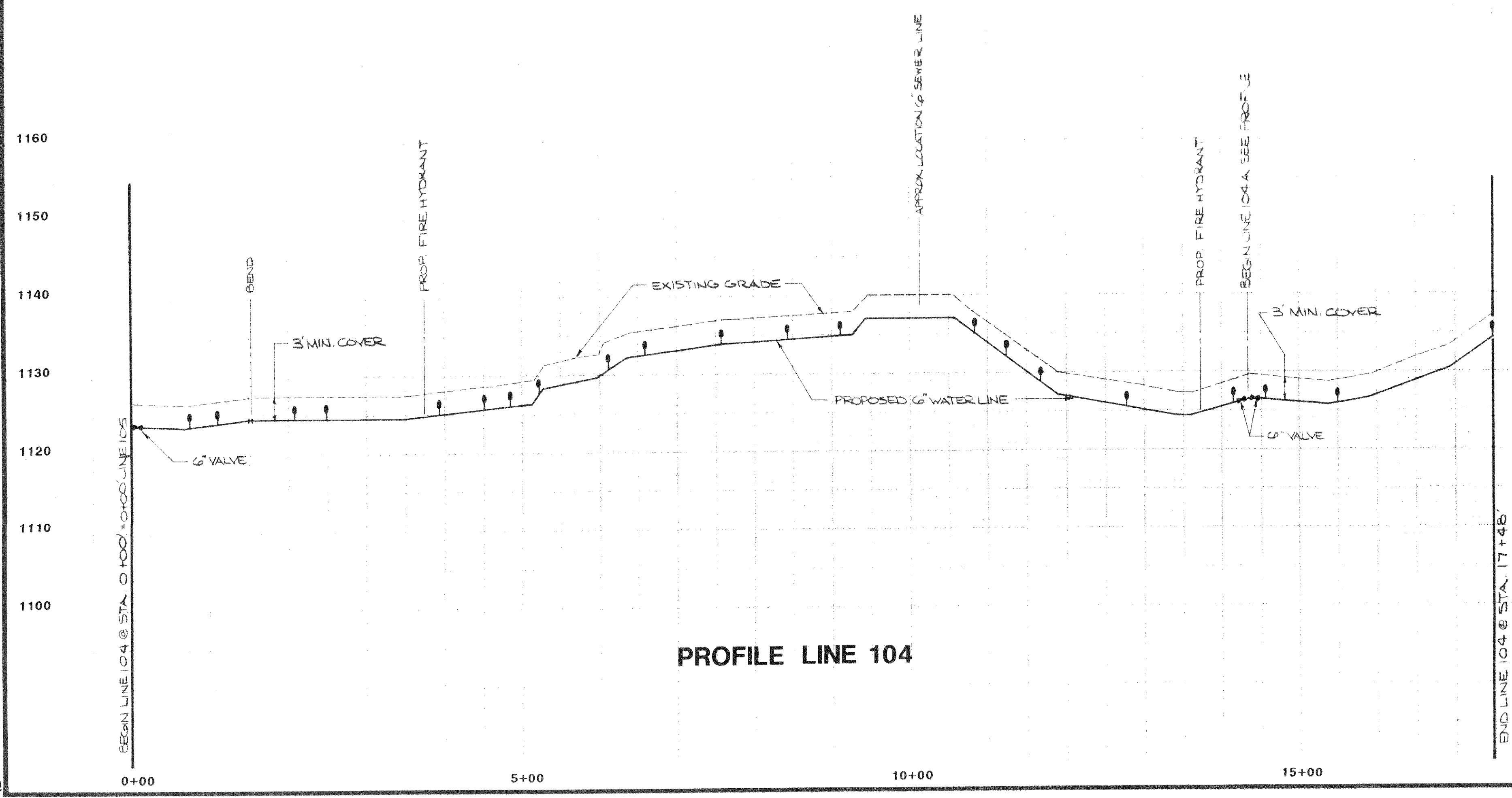
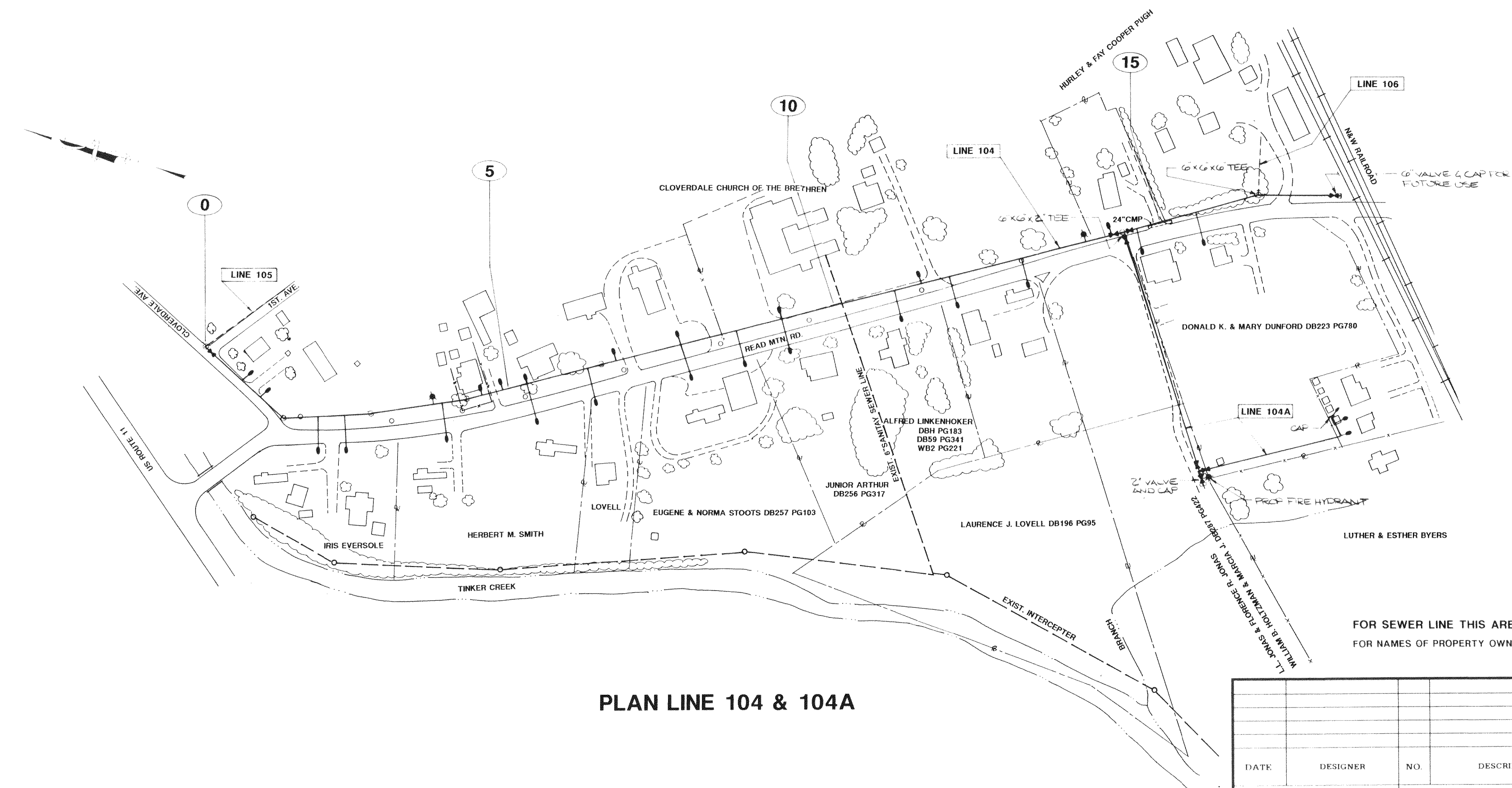


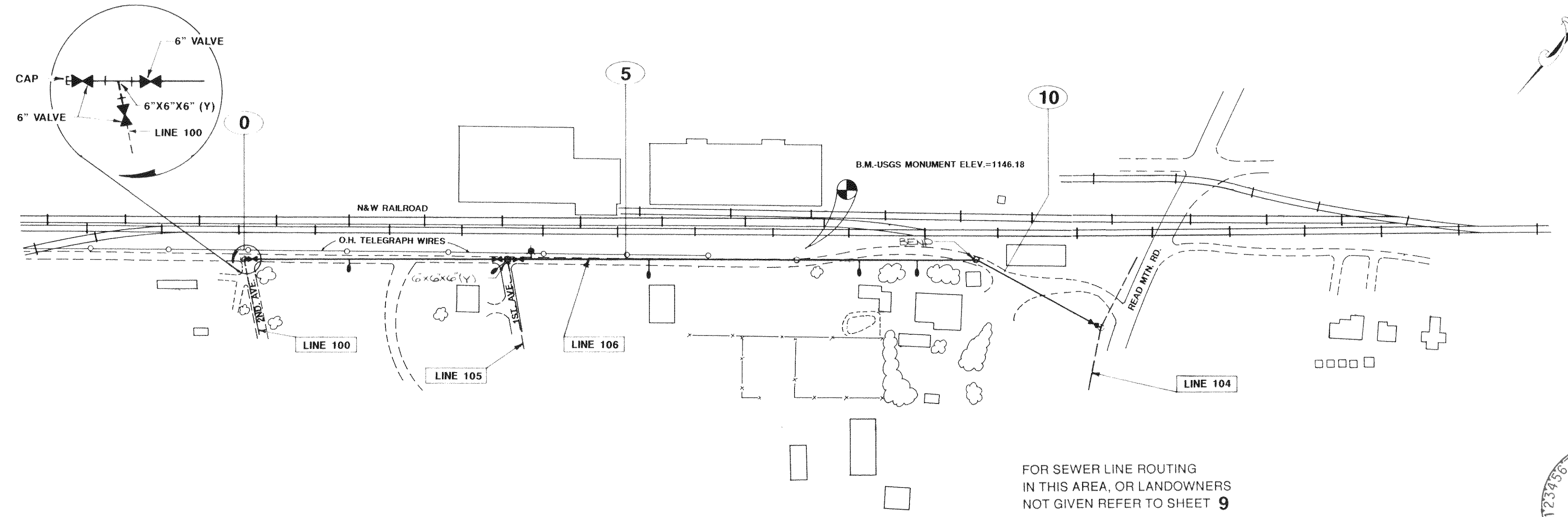
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CLOVERDALE
WATER IMPROVEMENTS
BOTETOURT COUNTY, VIRGINIA

LINE 104
LINE 104A

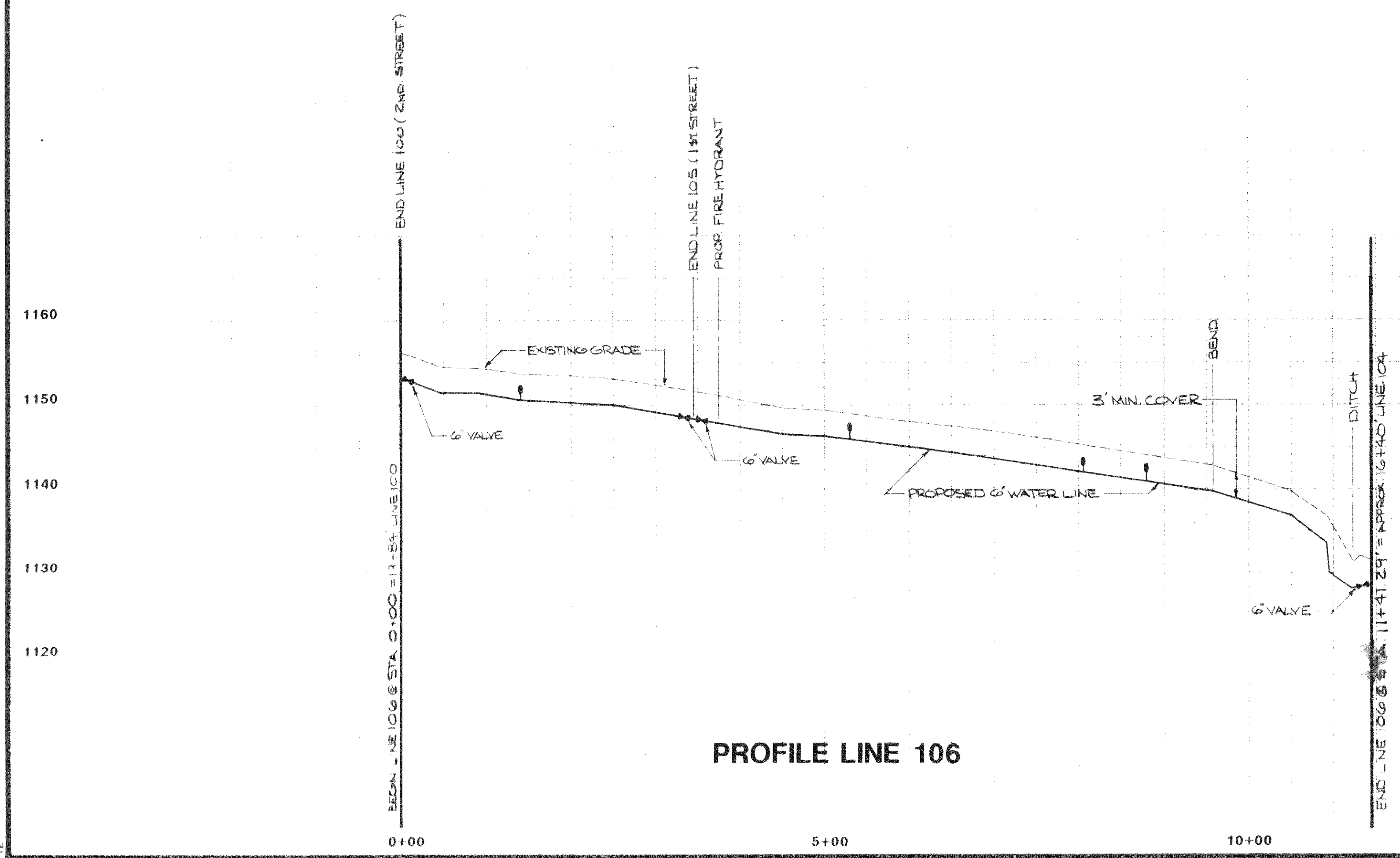
Drawn By *hicks*
Designed By
Checked By
Date
Horizontal Scale
1"=100'
Vertical Scale
1"=10'
Plan Number
Zoned
Sheet
5 of
File Number



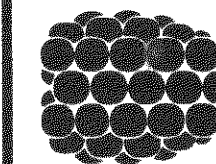


PLAN LINE 106

DATE	DESIGNER	NO.	DESCRIPTION	REV BY	APPROVED	DATE
ENGINEER			REVISION APPROVED BY:			ENGINEER'S SEAL & SIGNATURE



PROFILE LINE 106

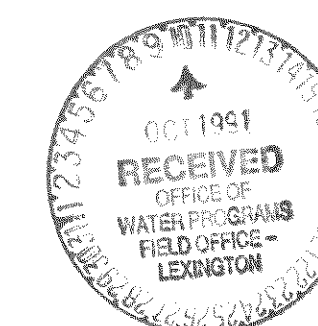


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Architects Engineers Planners Surveyors
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CLOVERDALE
SANITARY SEWER
BOTETOURT COUNTY, VIRGINIA

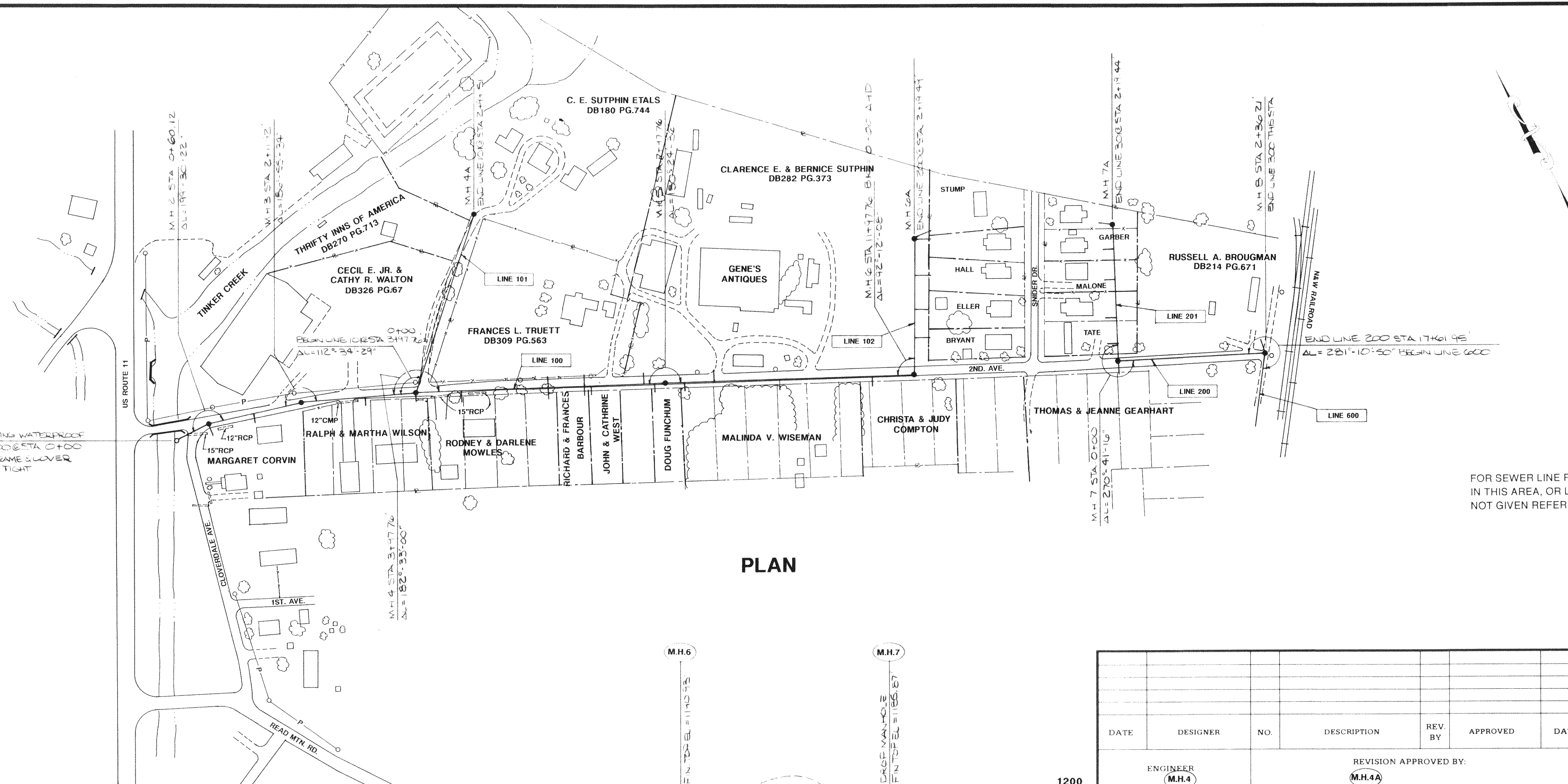
**LINE 100,
101, 102**
LINE 200, 201

Drawn By *Wicks*
Designed By
Checked By
Date
Horizontal Scale
1"=100'
Vertical Scale
1"=10'
Plan Number
Zoned
Sheet
7 of
File Number



FOR SEWER LINE ROUTING
IN THIS AREA, OR LANDOWNERS
NOT GIVEN REFER TO SHEET 2

PLAN

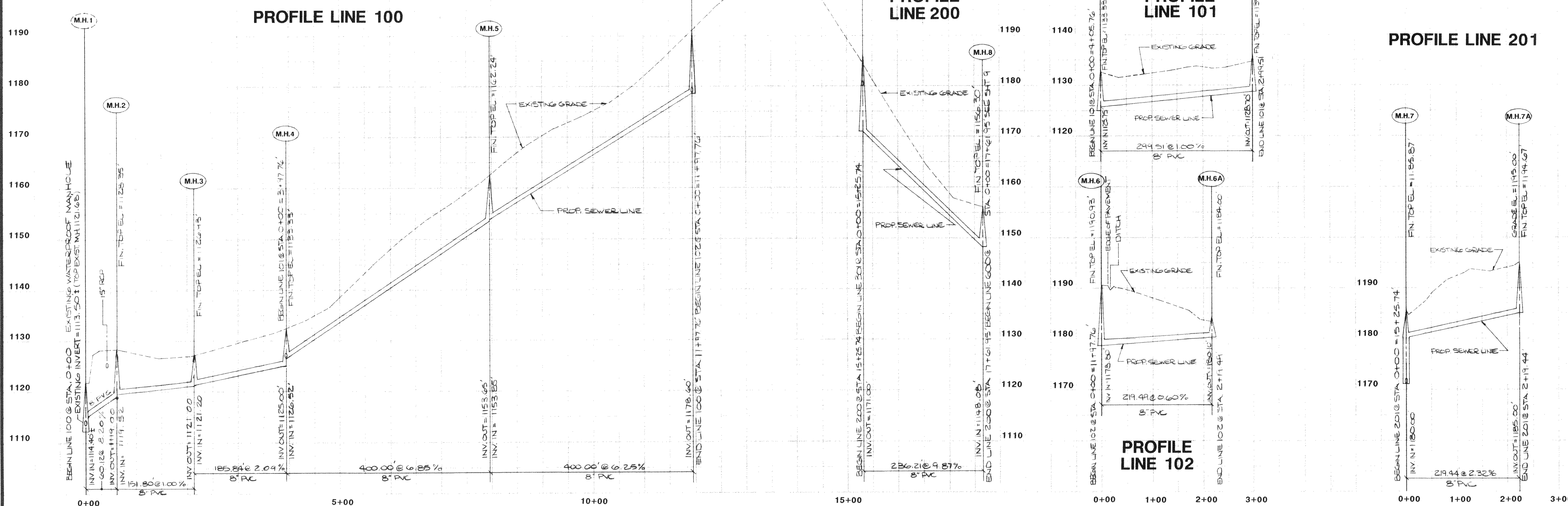


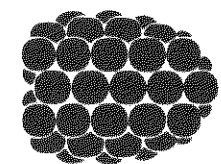
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PROFILE LINE 200

PROFILE LINE 101

PROFILE LINE 201



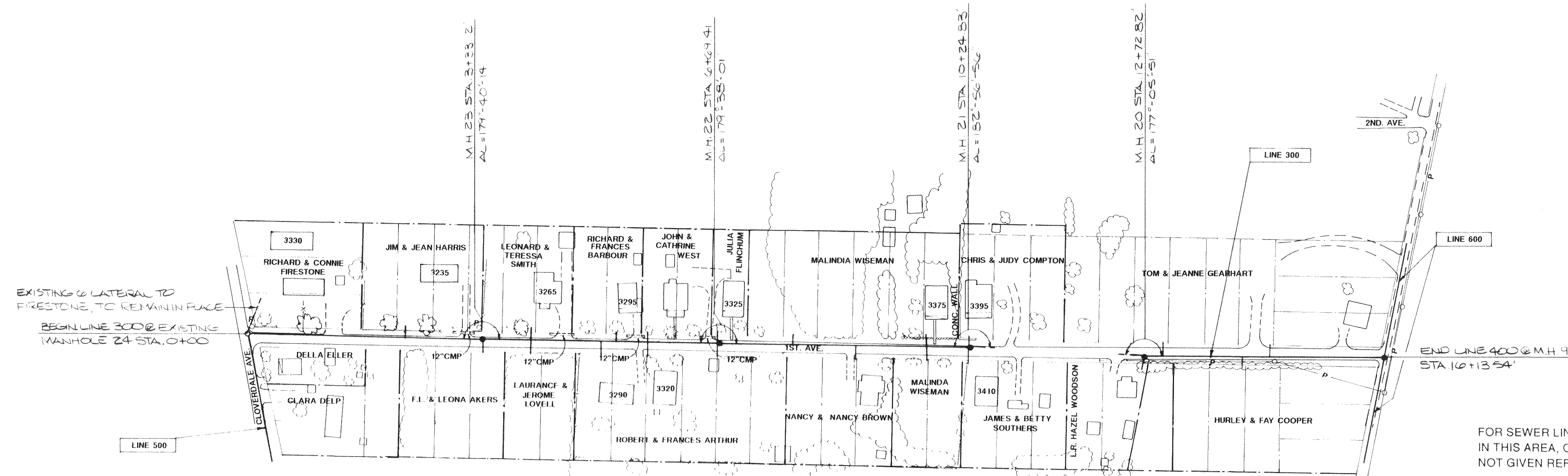


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ROANOKE, VIRGINIA 24019 (703) 362-7725

CLOVERDALE
SANITARY SEWER
BOTETOURT COUNTY, VIRGINIA

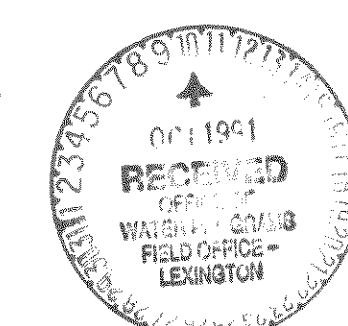
LINE 300
LINE 400

Drawn By: *Nicks*
Designed By:
Checked By:
Date:
Horizontal Scale:
1"=100'
Vertical Scale:
1"=10'
Plan Number:
Zoned:
Sheet
8
of
File Number:

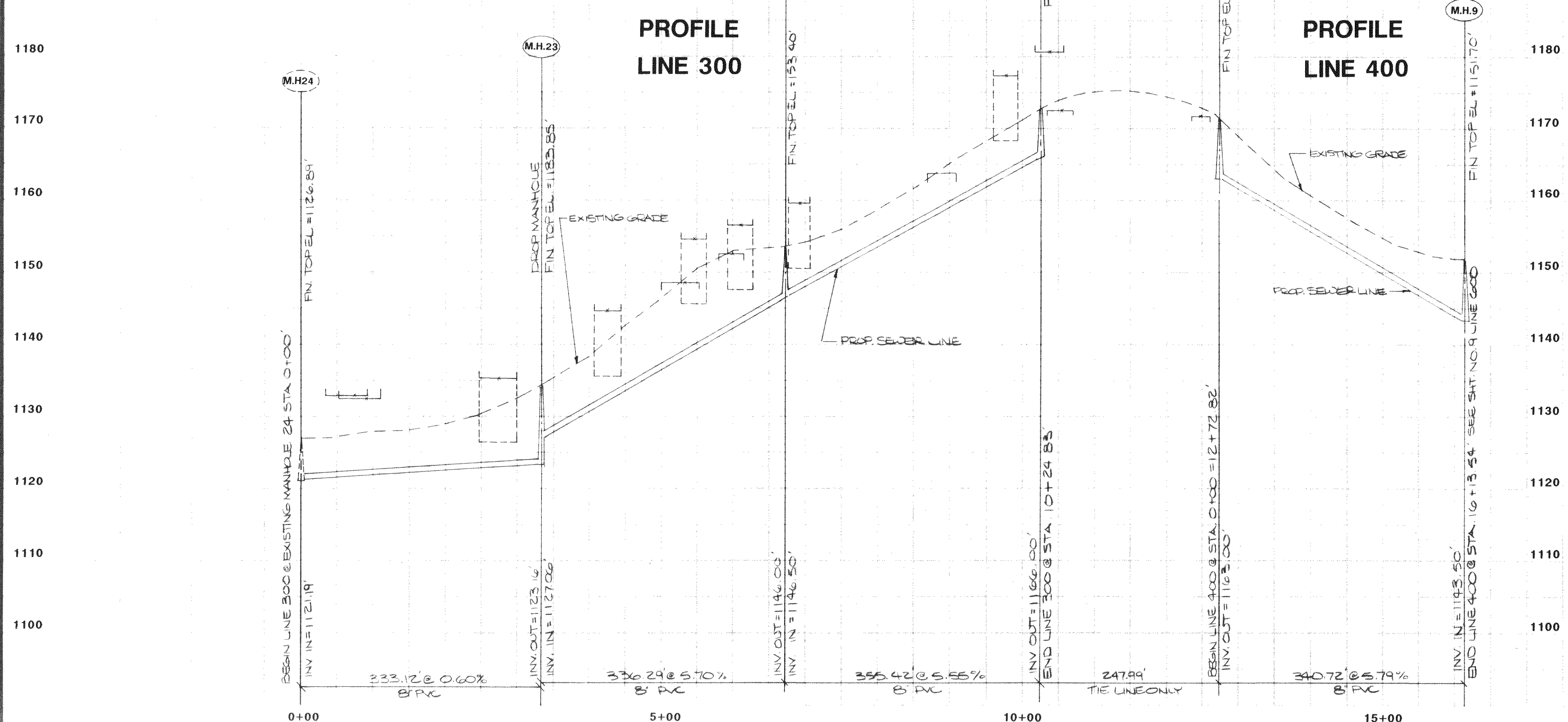


PLAN

FOR SEWER LINE ROUTING
IN THIS AREA, OR LANDOWNERS
NOT GIVEN REFER TO SHEET **4**

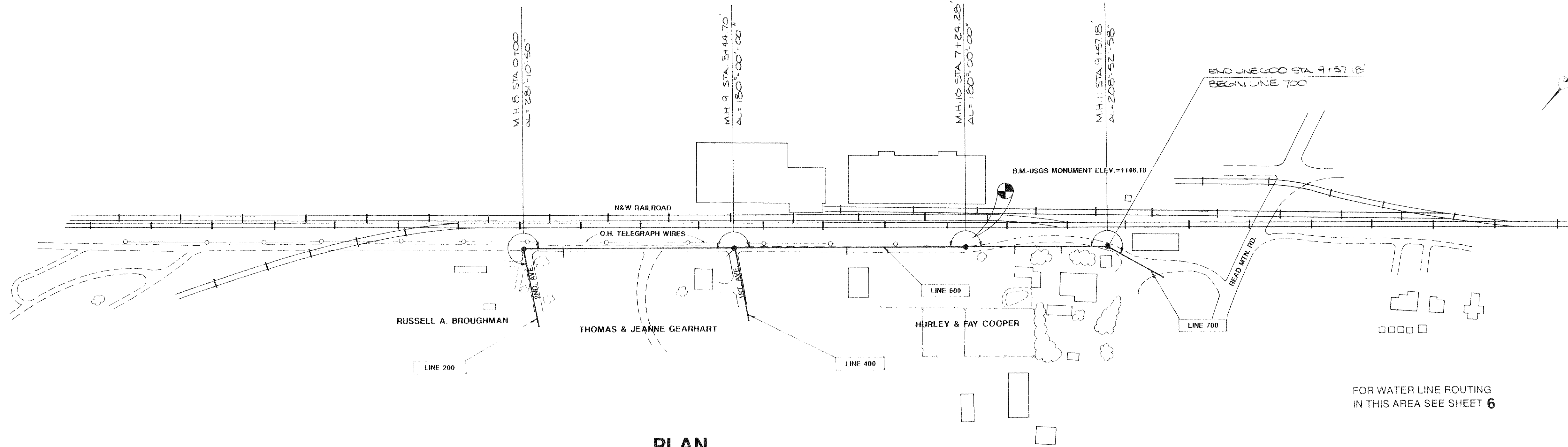


DATE	DESIGNER	NO.	DESCRIPTION	REV. BY	APPROVED	DATE
ENGINEER		REVISION APPROVED BY:				
						ENGINEER'S SEAL & SIGNATURE



**PROFILE
LINE 300**

**PROFILE
LINE 400**

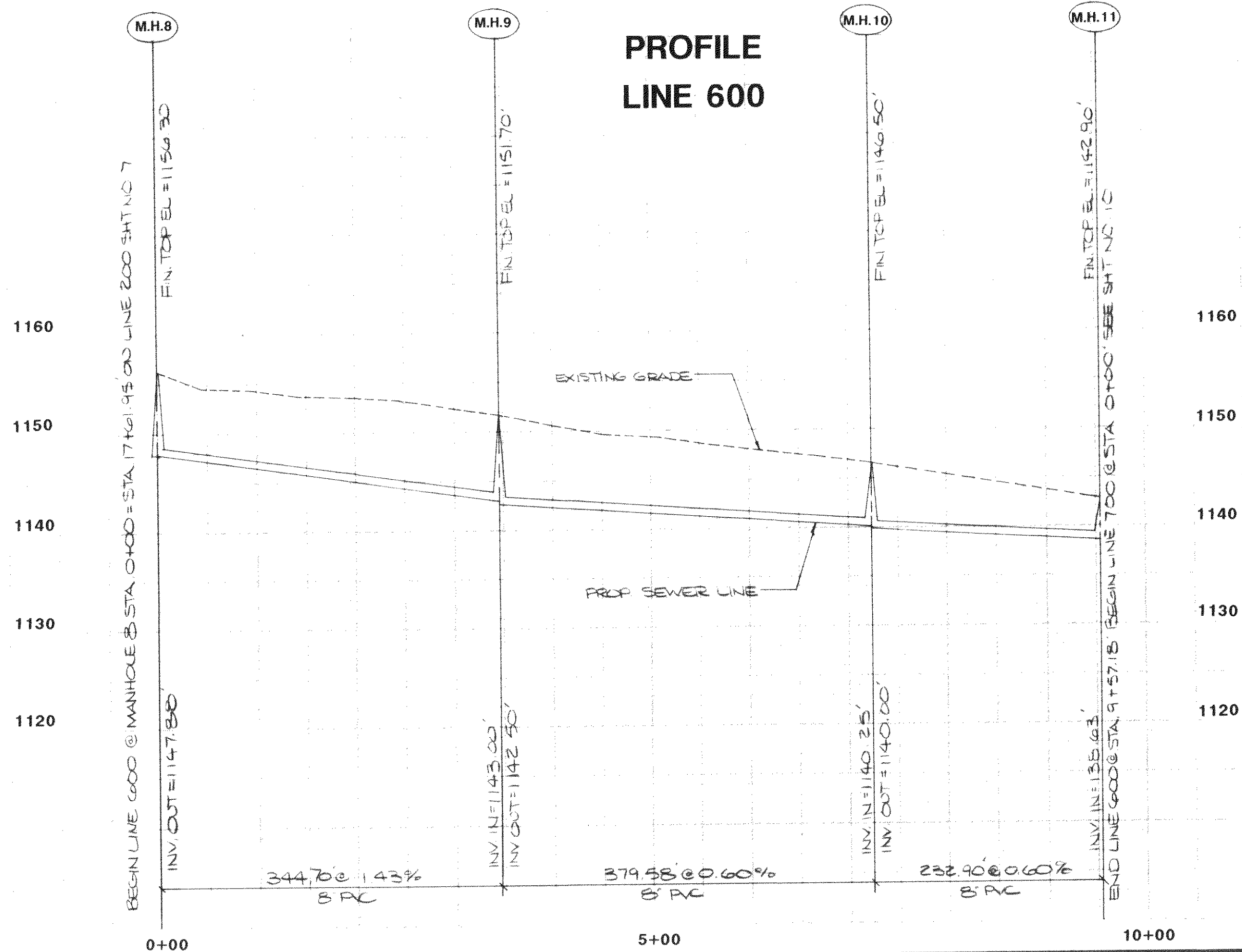


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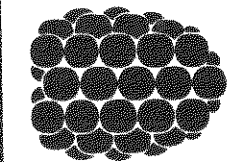


DATE	DESIGNER	NO.	DESCRIPTION	REV. BY	APPROVED	DATE
ENGINEER			REVISION APPROVED BY:			

ENGINEER'S SEAL & SIGNATURE



PROFILE
LINE 600

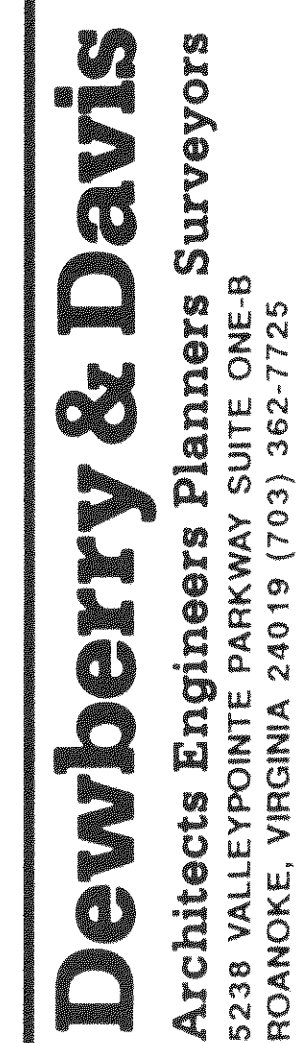


Dewberry & Davis
Architects Engineers Planners Surveyors
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ROANOKE, VIRGINIA 24019 (703) 362-7725

CLOVERDALE
SANITARY SEWER
BOTETOURT COUNTY, VIRGINIA

LINE 600

Drawn By: *hicks*
Designed By:
Checked By:
Date:
Horizontal Scale:
1"=100'
Vertical Scale:
1"=10'
Plan Number:
Zoned:
Sheet:
9 of
File Number:



**CLOVERDALE
SANITARY SEWER
BOTETOURT COUNTY, VIRGINIA**

LINE 500
LINE 700
LINE 800

Drawn By *Liak*

Designed By

Checked By _____

Date _____

Horizontal Scale

1"=100'

Vertical Scale

1"=10'

Plan Number

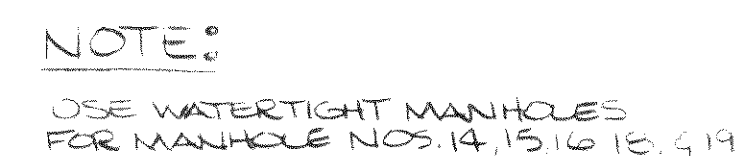
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Sheet 10

170 of

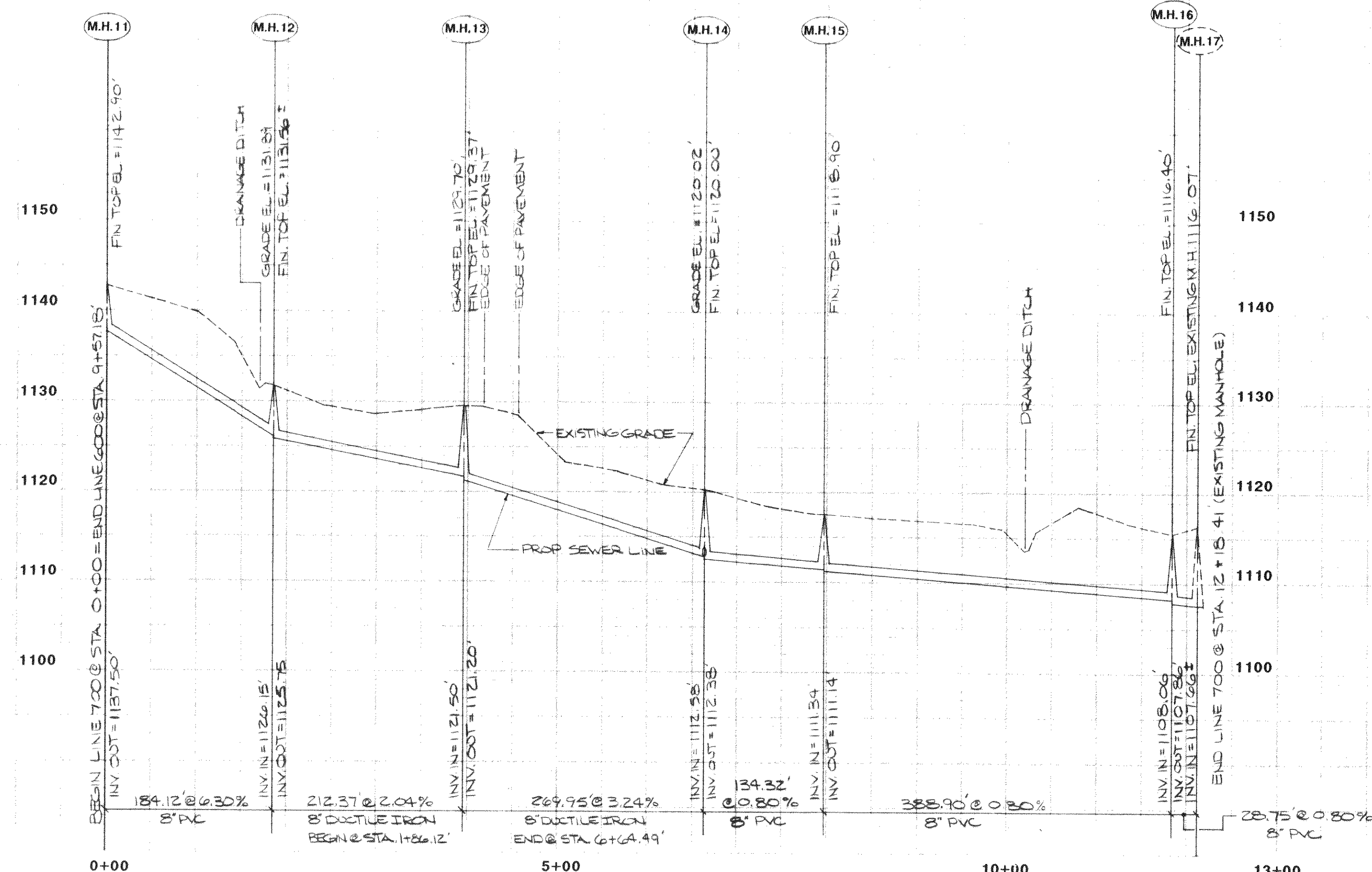
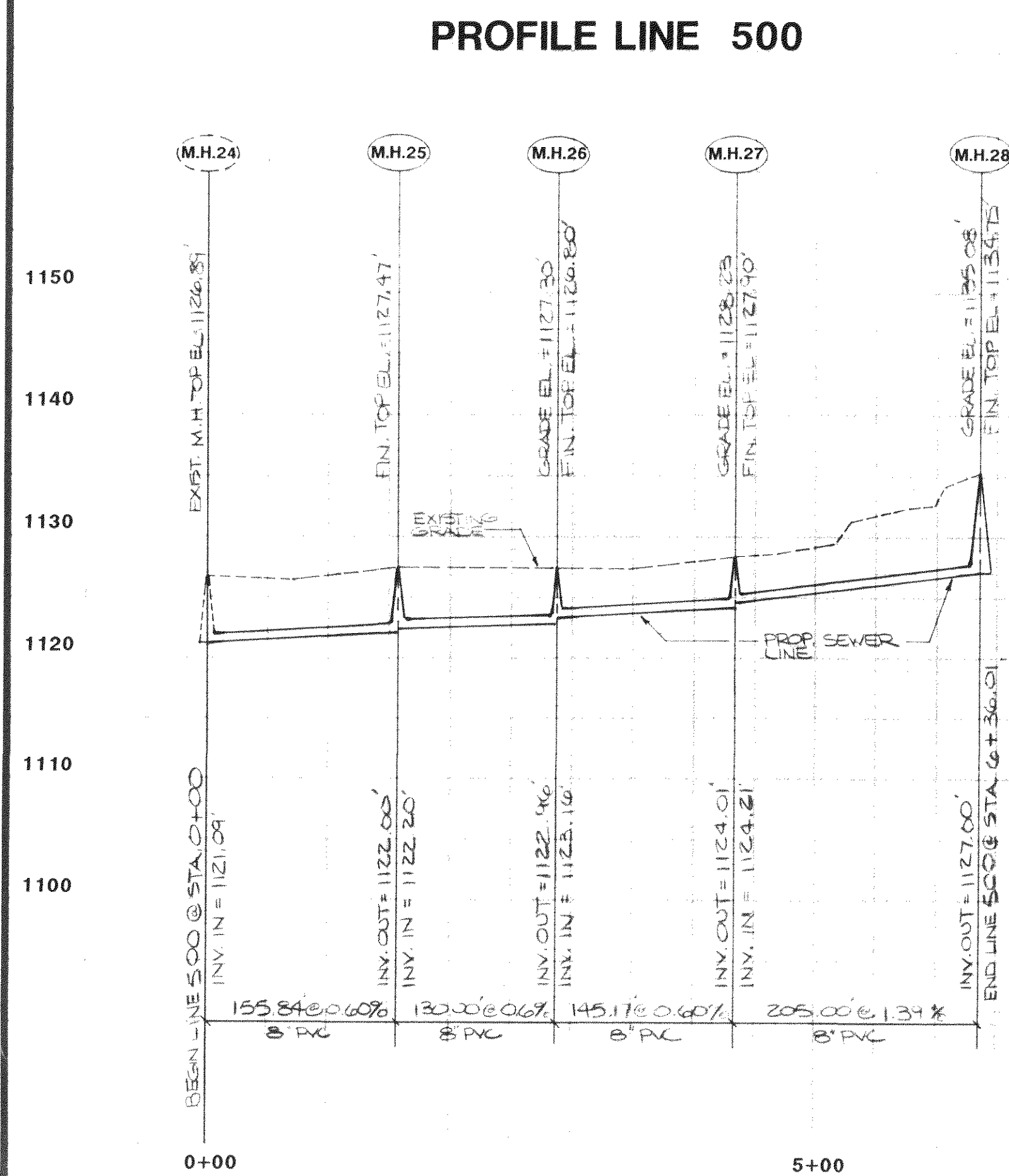
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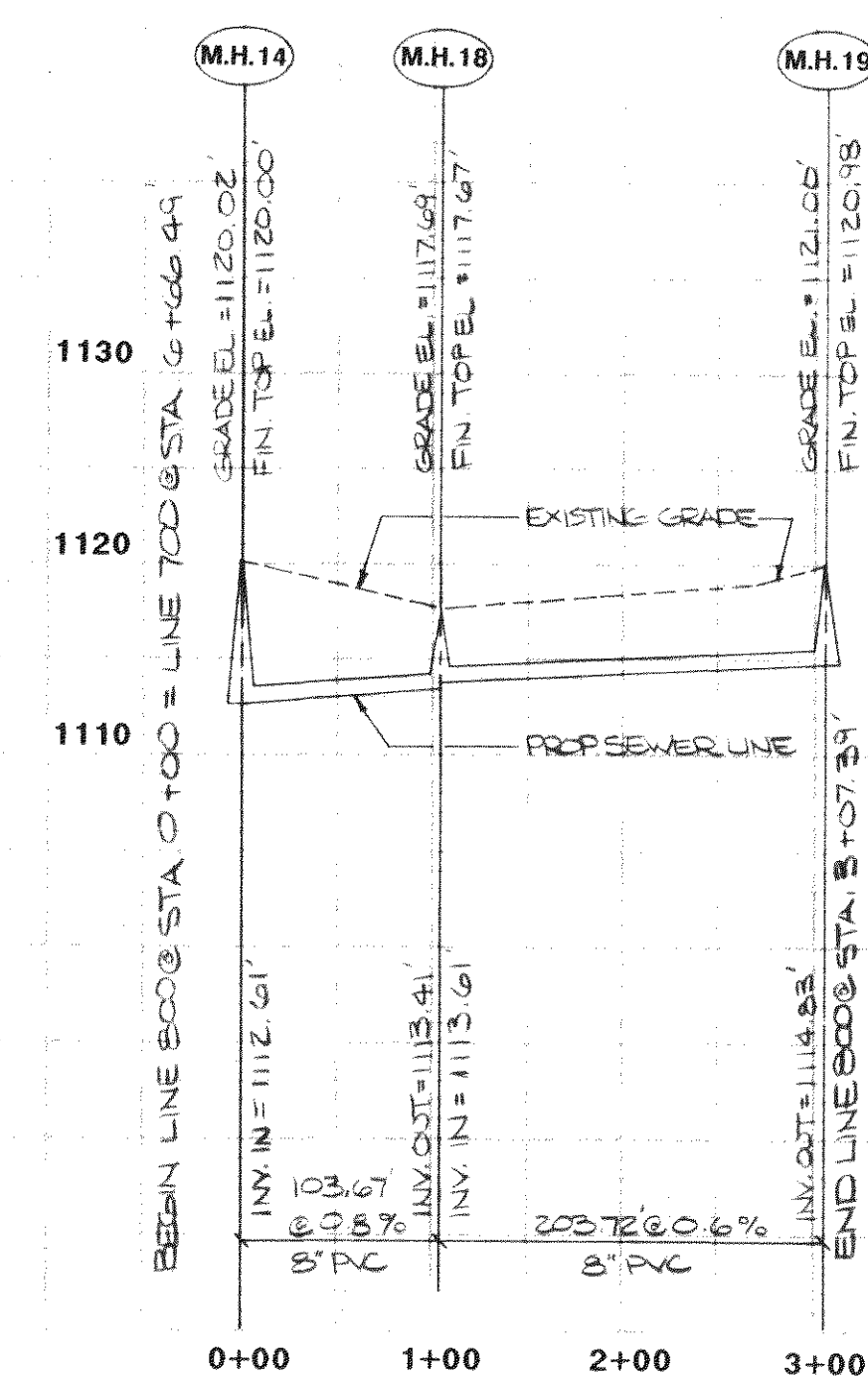
FOR WATER LINE ROUTING
IN THIS AREA SEE SHEET 5

DATE	DESIGNER	NO.	DESCRIPTION	REV. BY	APPROVED	DATE	
ENGINEER		REVISION APPROVED BY:					
							ENGINEER'S SEAL & SIGNATURE

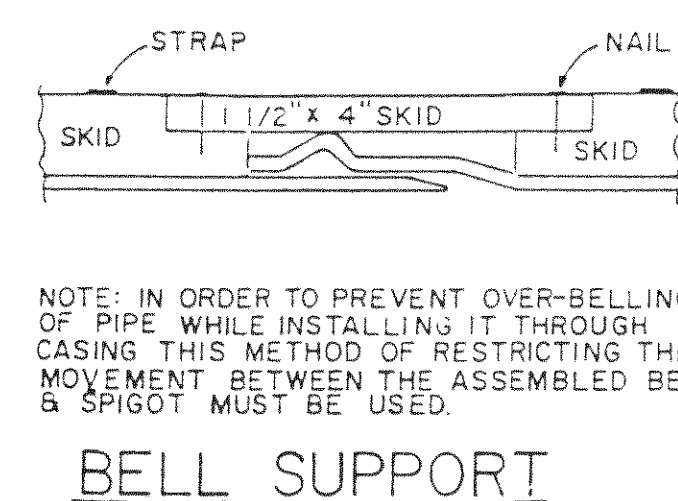
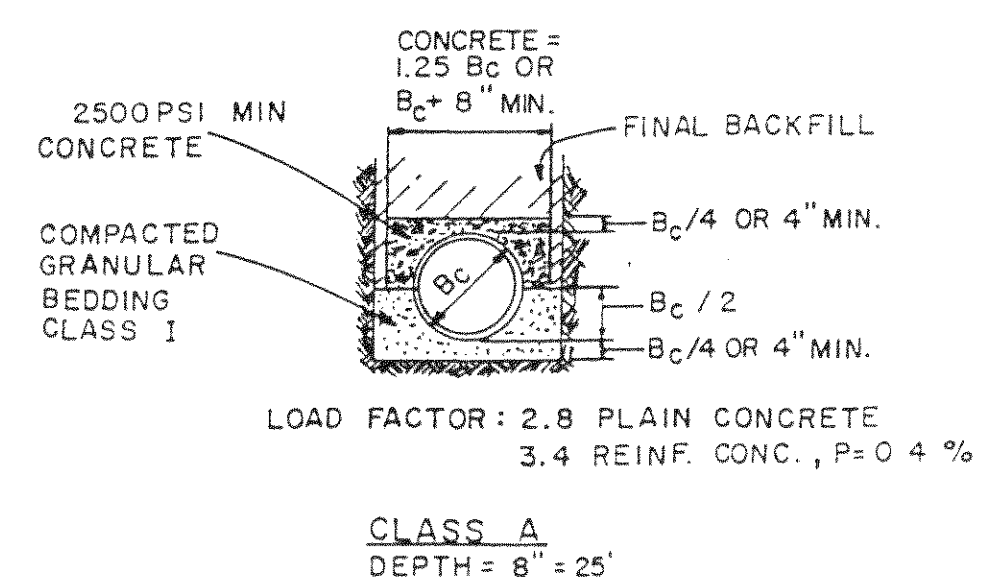
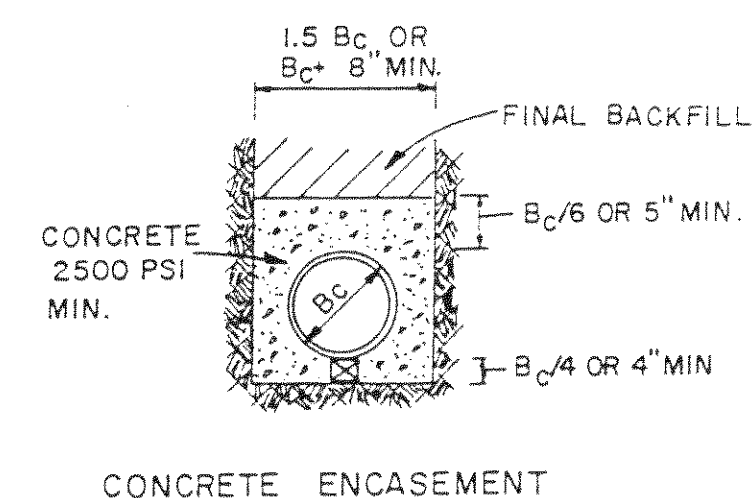
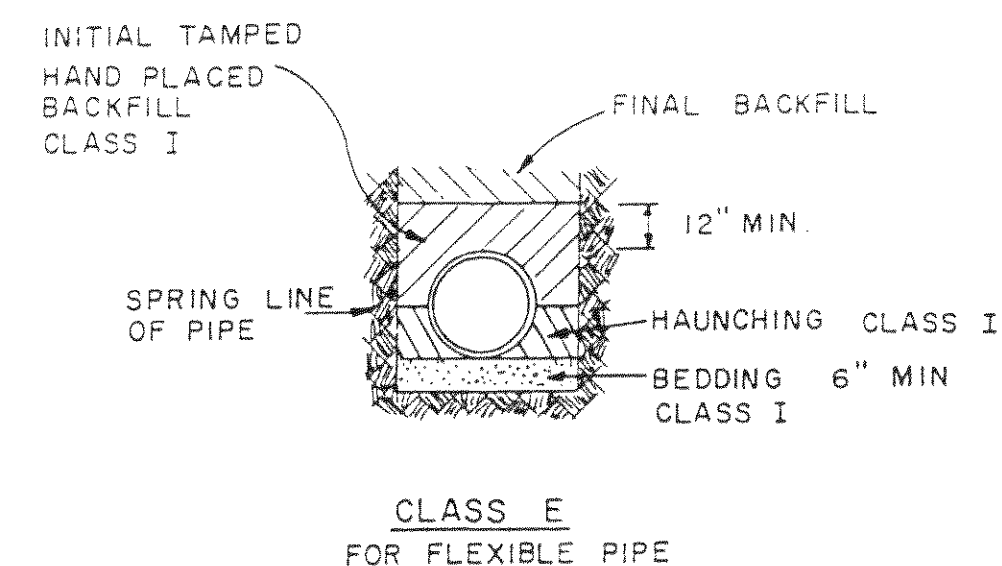
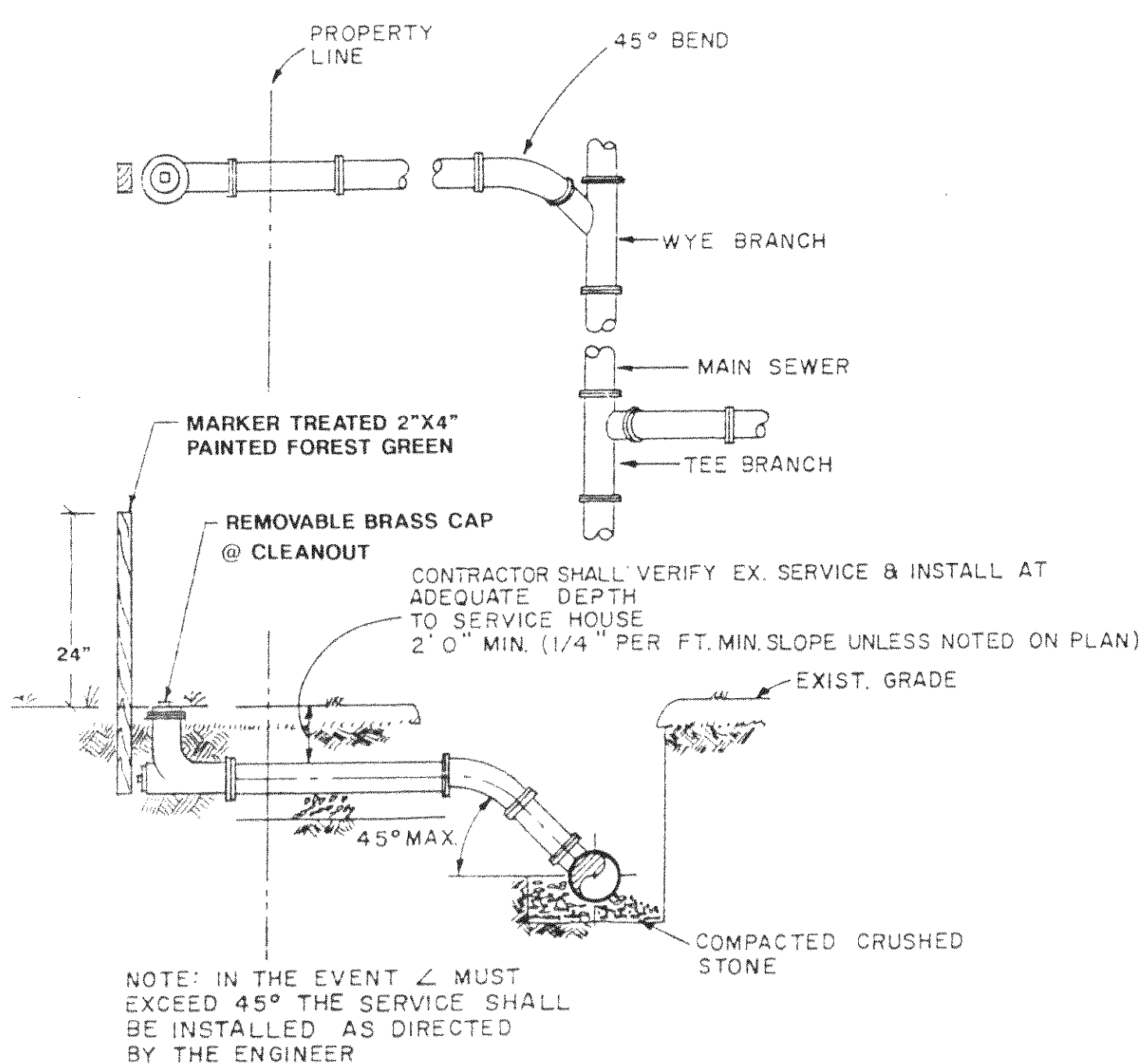
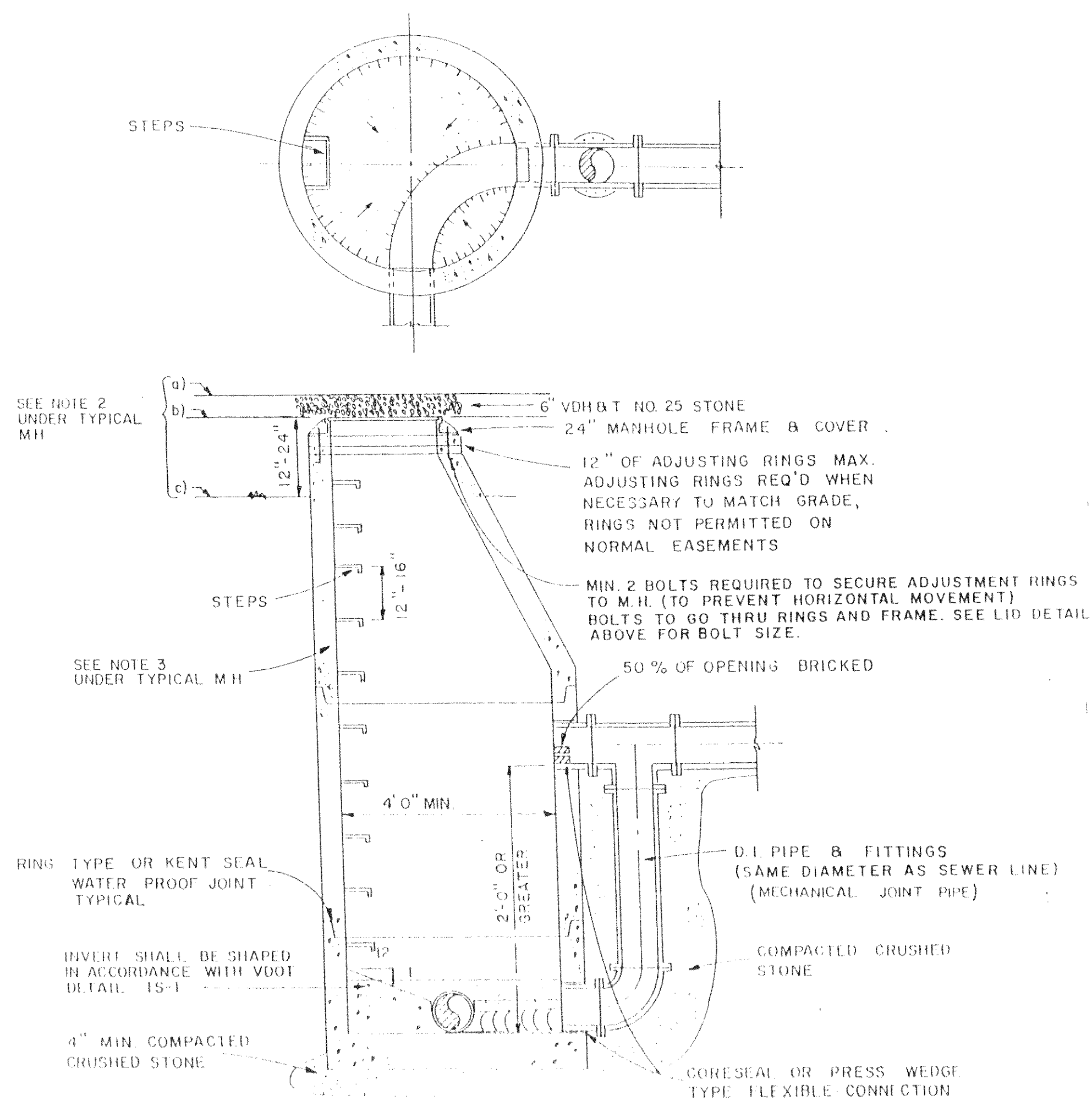
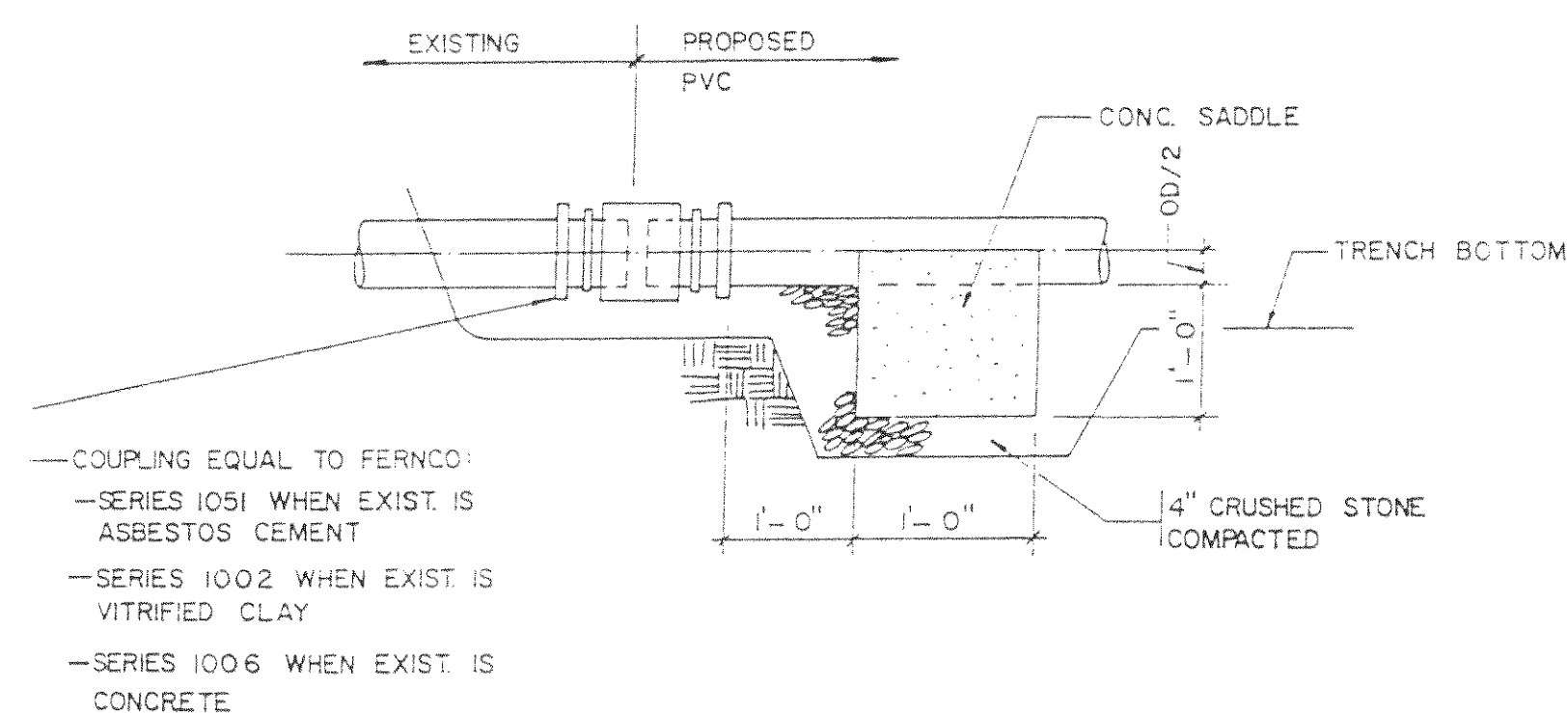
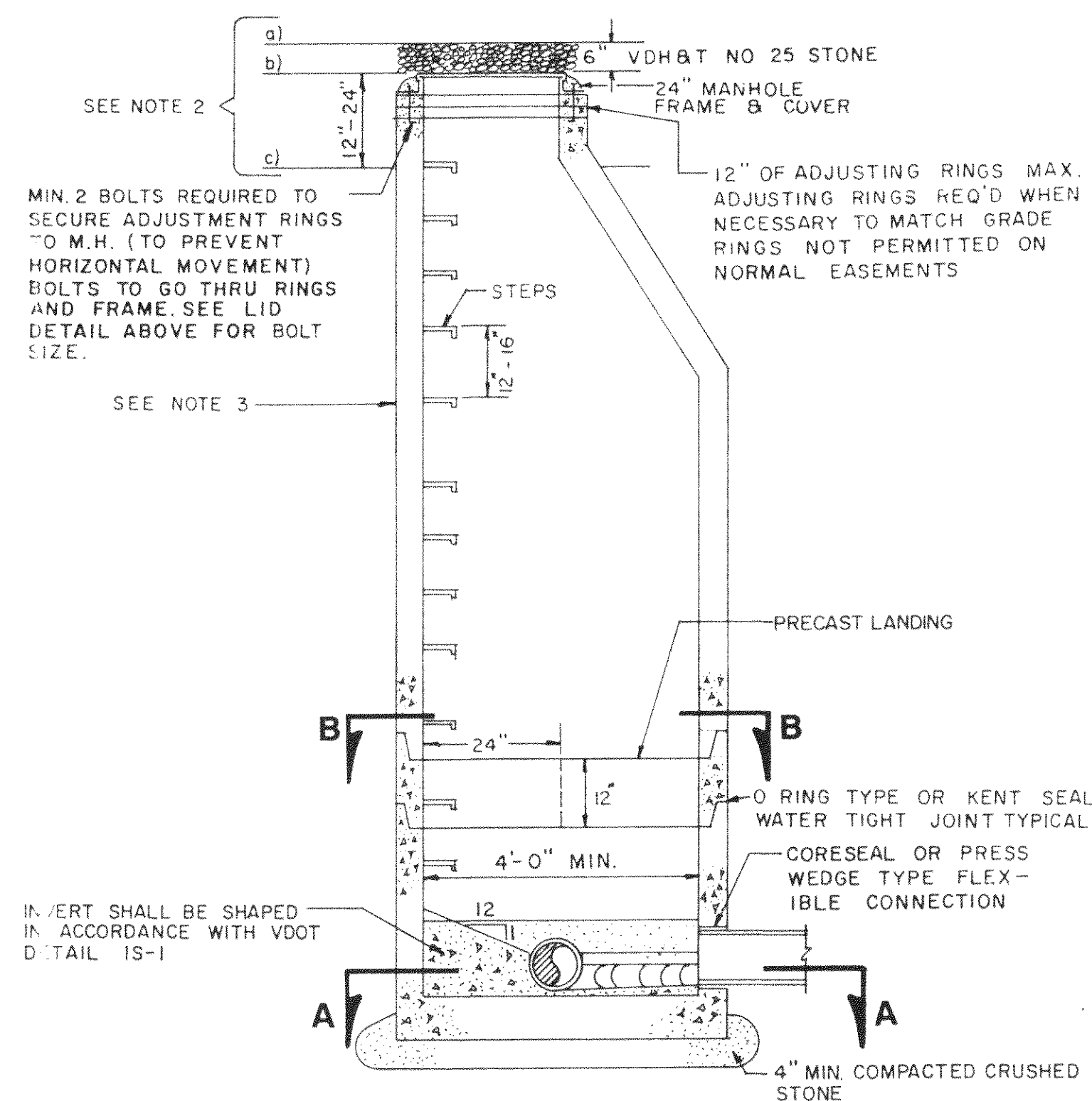
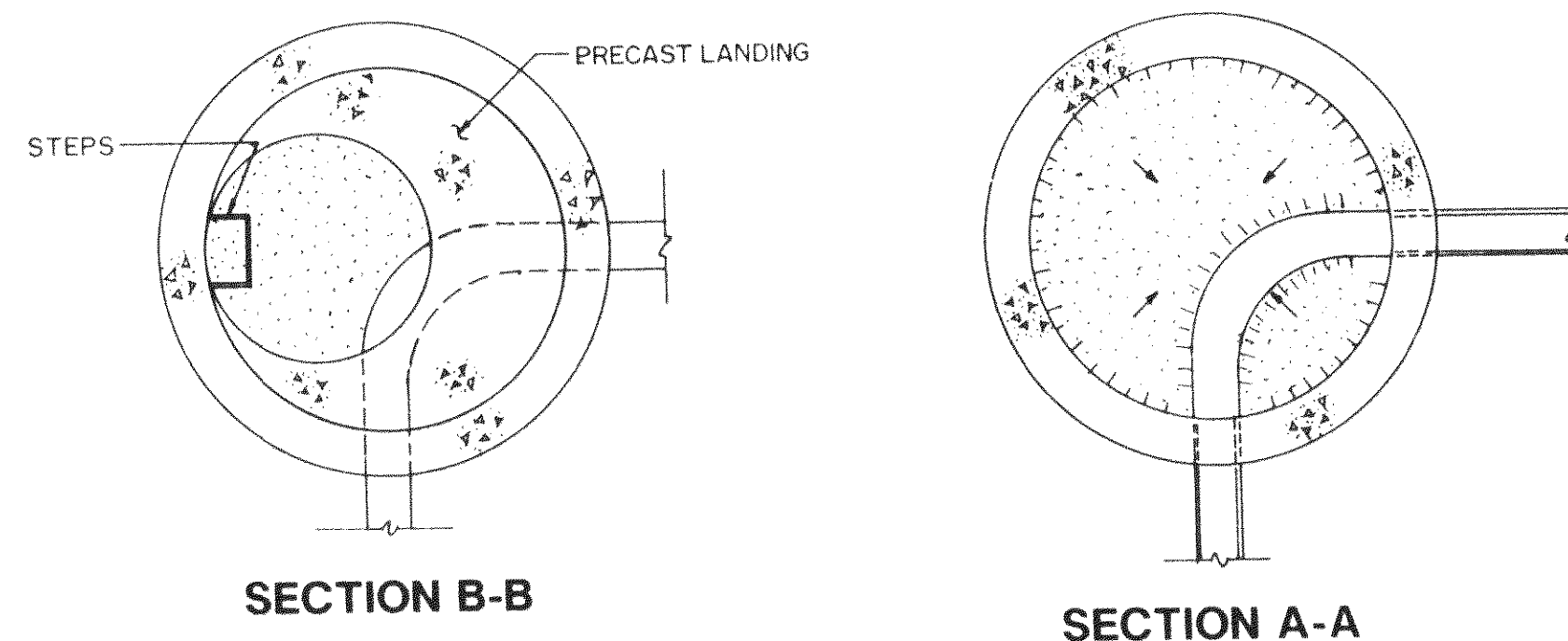
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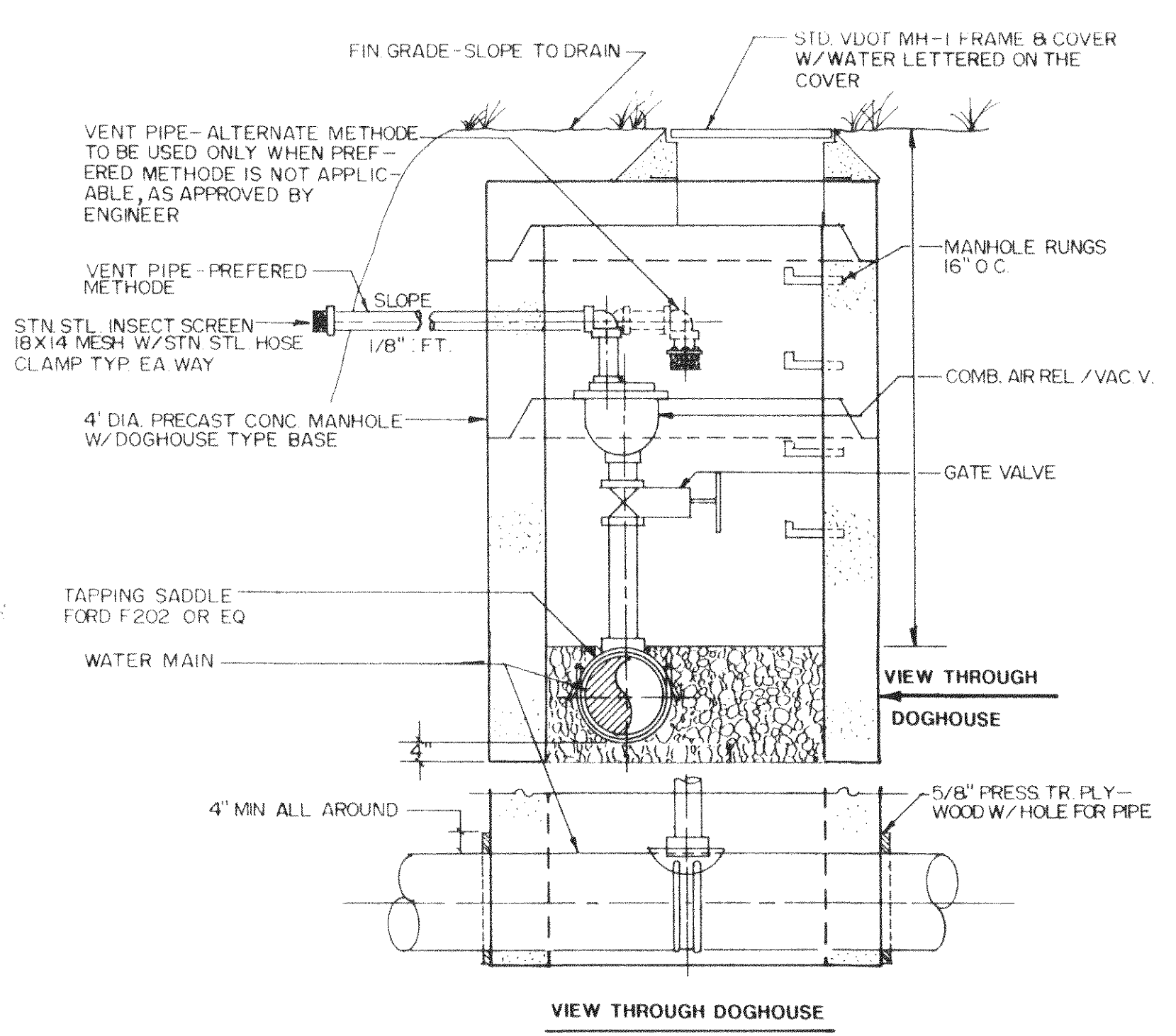


PROFILE LINE 800

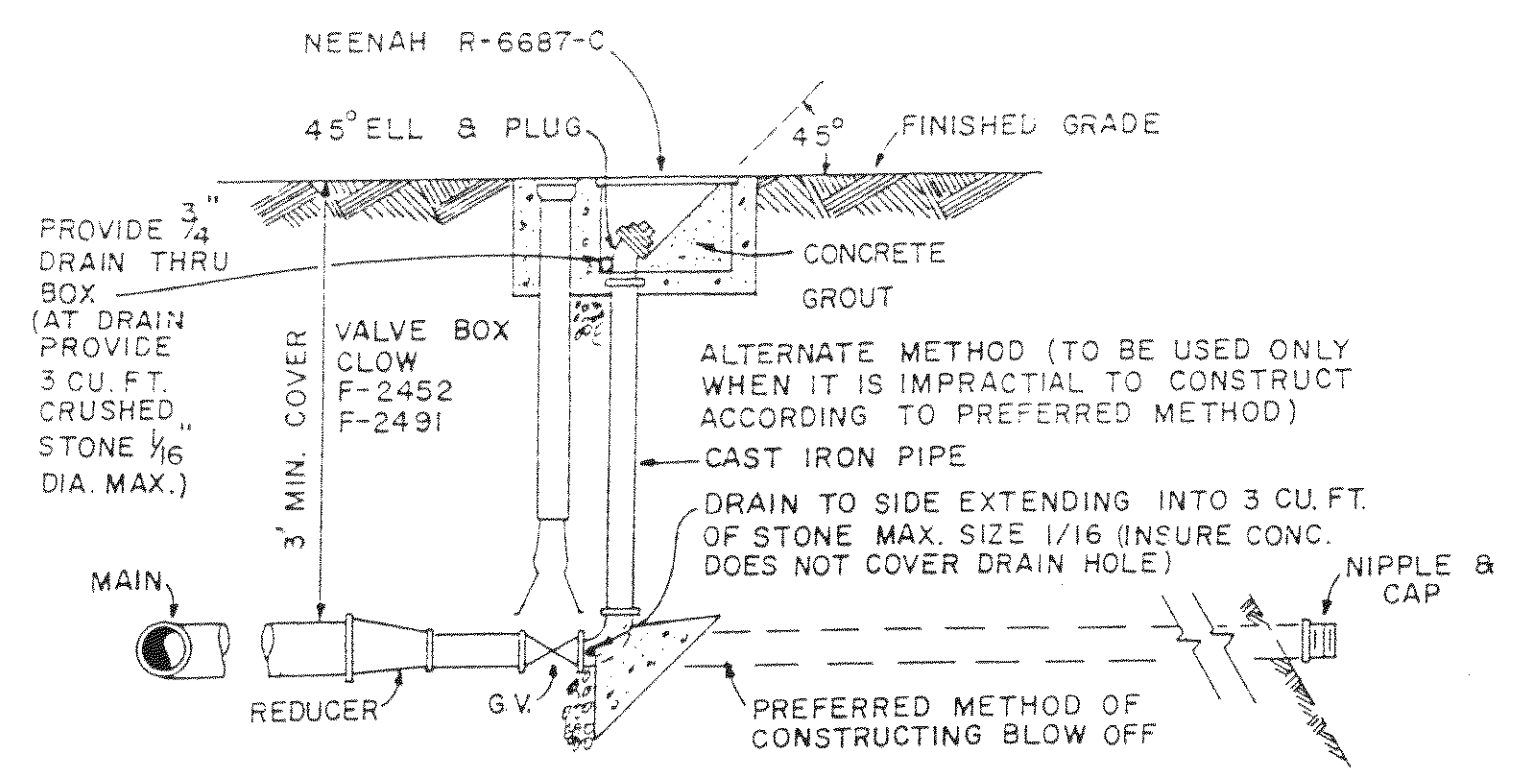


- NOTES: 1. USE WATERPROOF FRAME AND COVER ONLY WHEN SHOWN ON PLANS AS "WP", VENT WHEN SHOWN AS "V".
2. THE TOP ELEVATION OF THE FRAME & COVER SHALL BE SET BY THE FOLLOWING CONDITIONS UNLESS NOTED ON PLANS:
- 6" BELOW GRADE IN UNPAVED SHOULDER OF ROAD
 - FLUSH WITH GRADE IN PAVED AREAS
 - 12"-24" ABOVE GRADE NOT SUBJECT TO VEHICULAR TRAFFIC
3. USE ECCENTRIC TAPER TOP UNLESS GRADE REQUIRES A FLAT SLAB TOP.
4. USE PRECAST LANDING SECTION ON ALL MANHOLES DEEPER THAN 15' AT 10' MAXIMUM INTERVAL, ALIGN THE 24" OPENING WITH STEPS FOR ACCESS.





COMBINATION AIR RELEASE / VACUUM VALVE DETAIL

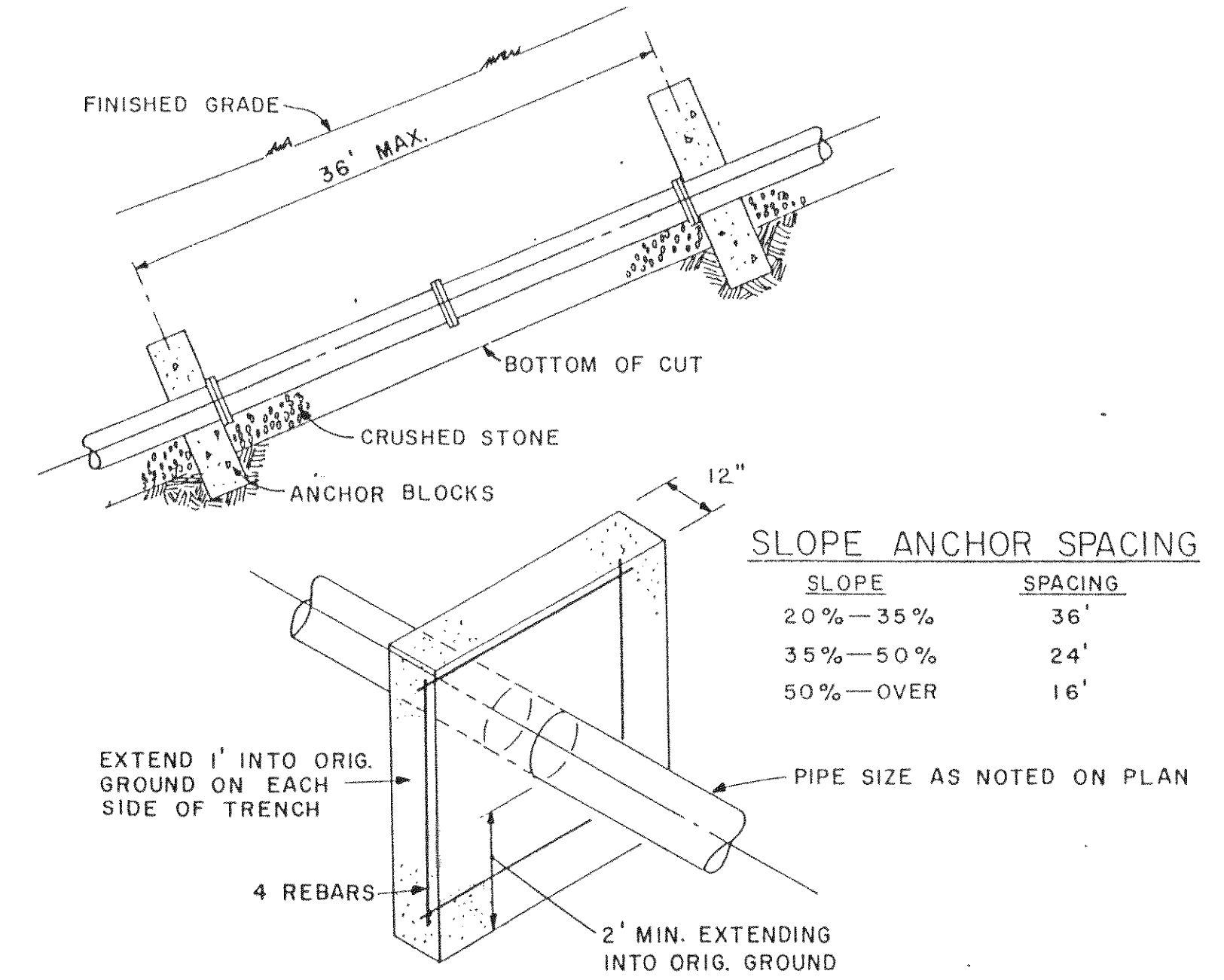


BLOW OFF DETAIL

BLOW OFF VALVES	
MAIN	G.V. & PIPE SIZE
2"-6"	2"
8"-12"	4"

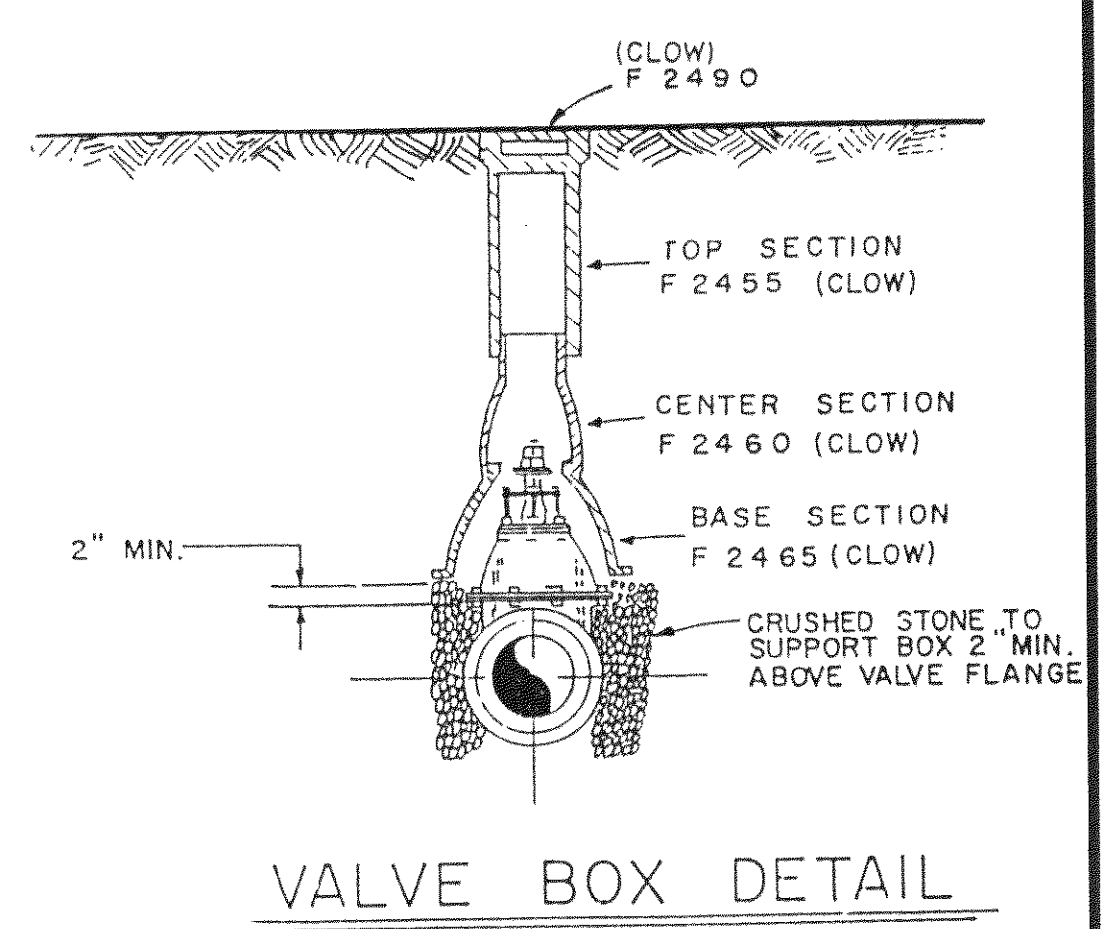
MATERIALS INCLUDED WITH BLOW OFF VALVE:

REDUCER
SLEEVE
GATE VALVE
VALVE BOX
NIPPLE & CAP (PREFER ONLY)
CAST IRON PIPE (ALT. ONLY)
45° BEND (ALT. ONLY)
90° BEND (ALT. ONLY)
PLUG (ALT. ONLY)
PROTECTOR CAP (ALT. ONLY)
CONCRETE PAD (ALT. ONLY)
THRUST BLOCK (ALT. ONLY)
NO 56 STONE (ALT. ONLY)

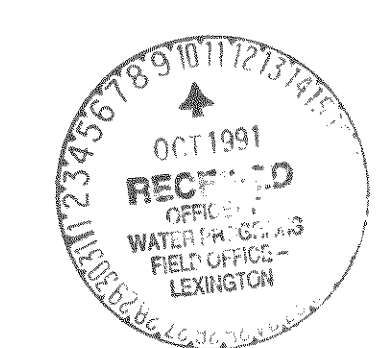


ANCHOR BLOCK DETAIL

USE ONLY WHEN SLOPES EXCEED 20%



VALVE BOX DETAIL

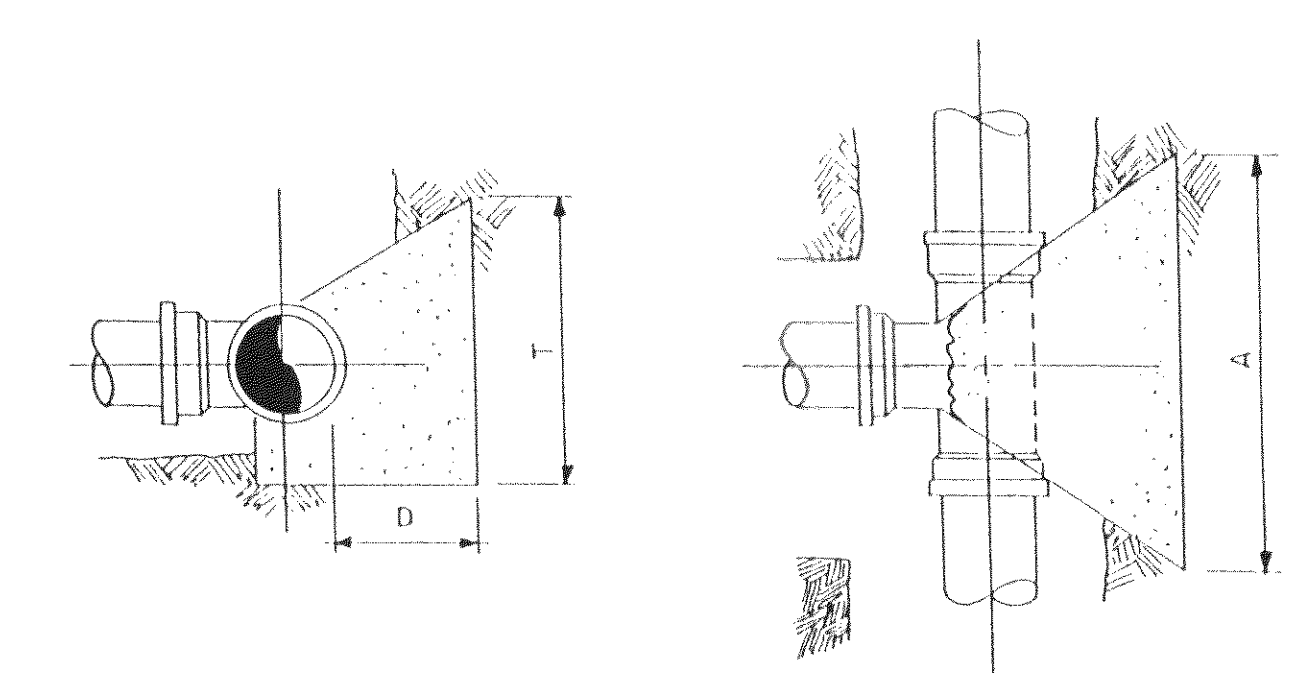


PIPELINE THRUST BLOCK DATA													
PIPE SIZE	TEES AND DEADEND			90° BEND			45° BEND			22-1/2° BEND			REDUCER
	A	T	D	A	T	D	A	T	D	A	T	D	
4"-6"	2'-6"	1'-8"	10"	2'-4"	1'-4"	8"	1'-8"	1'-6"	8"	1'-0"	1'-2"	6"	
8"	3'-8"	2'-0"	1'-3"	2'-6"	2'-0"	10"	2'-8"	1'-6"	10"	1'-8"	1'-4"	8"	
10"	4'-0"	2'-0"	1'-6"	3'-0"	2'-0"	10"	3'-0"	1'-8"	1'-0"	2'-0"	1'-6"	8"	
12"	7'-0"	5'-0"	3'-0"	6'-0"	4'-0"	3"	5'-0"	3'-0"	2'-0"	5'-0"	2'-6"	2"	

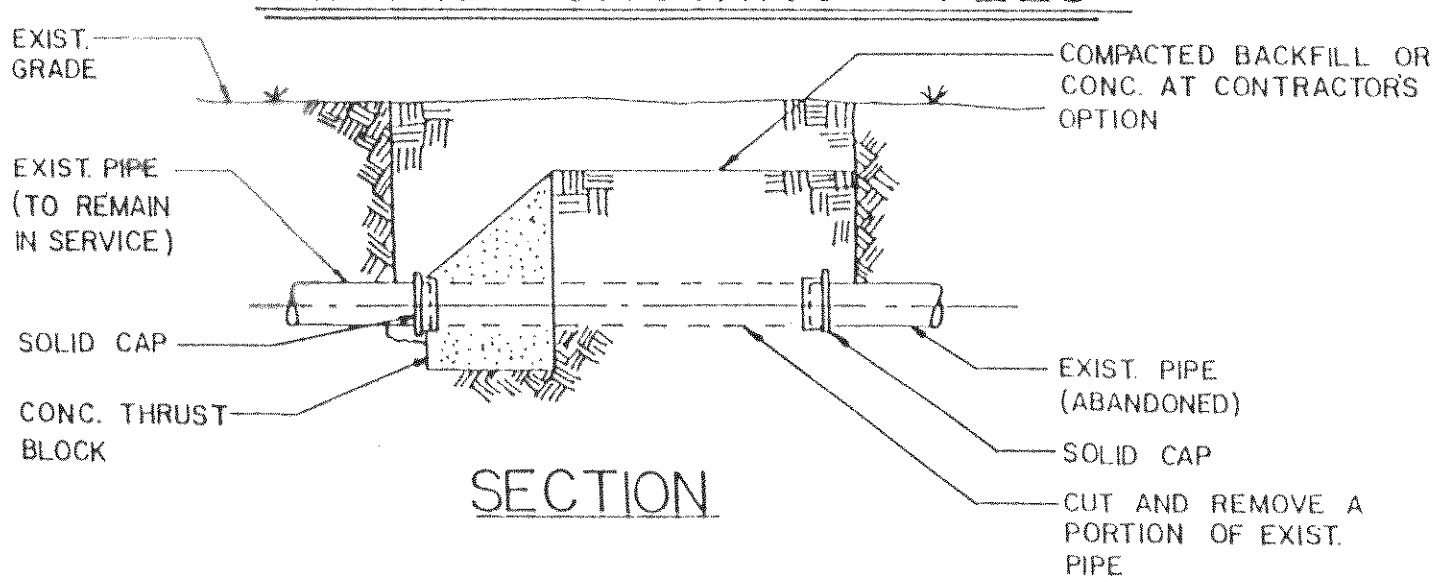
DESIGN DATA ALLOWABLE BEARING VALUE: 2000 psf

- PIPE LINES SHALL NOT BE PUT UNDER PRESSURE UNTIL 7 DAYS AFTER THE THRUST BLOCKS HAVE BEEN PLACED OR UNTIL THE BLOCKS HAVE ATTAINED A STRENGTH OF 2400 PSI
- THRUST BLOCKS AT REDUCING FITTING SHALL BE SAME SIZE AS REQUIRED FOR A DEAD END THRUST BLOCK FOR THE LARGER PIPE.
- WHERE UNDERGROUND CONDITIONS ARE WET AND UNSTABLE, TIE RODS SHALL BE ADDED AND/OR THE AMOUNT OF CONCRETE IN THE THRUST BLOCKS SHALL BE INCREASED AT THE DISCRETION OF THE ENGINEER.
- ANY DEVIATION IN THE TYPE OR METHOD OF RESTRAINING JOINTS AT THE CUTOVER POINTS MUST BE APPROVED BY THE ENGINEER PRIOR TO PERFORMING WORK.

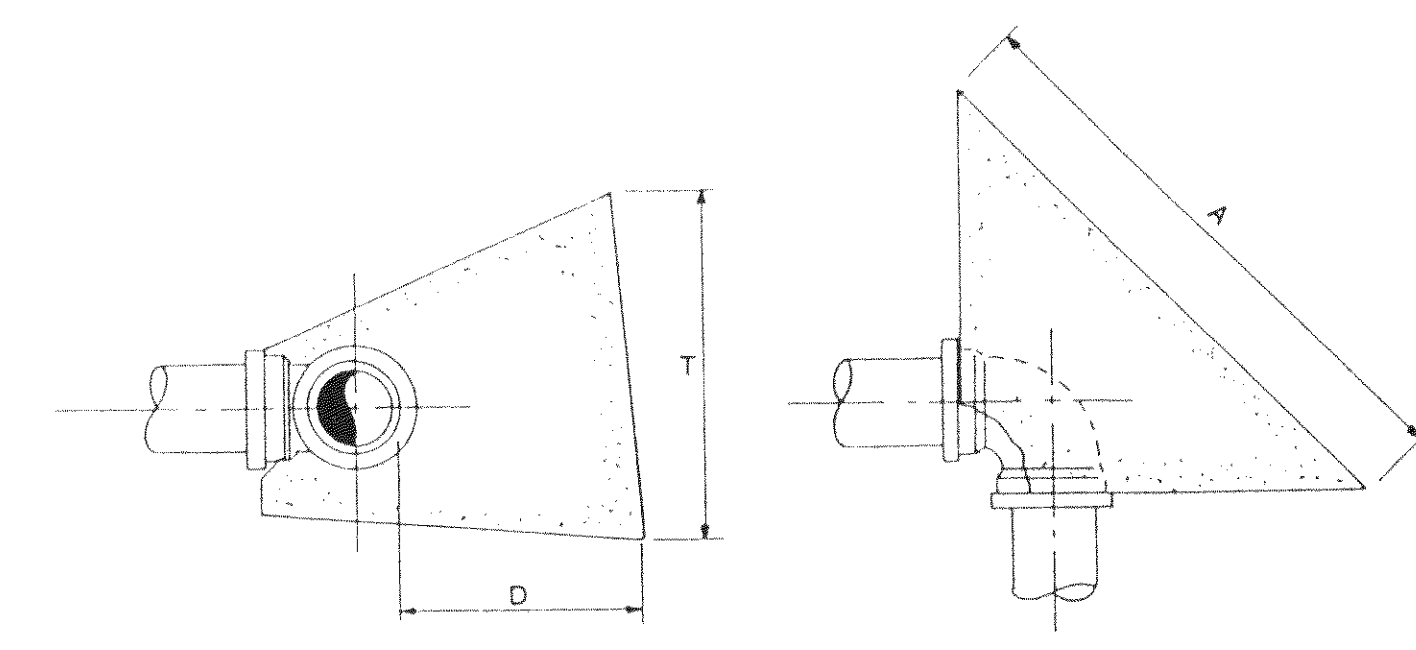
THRUST BLOCK DETAIL



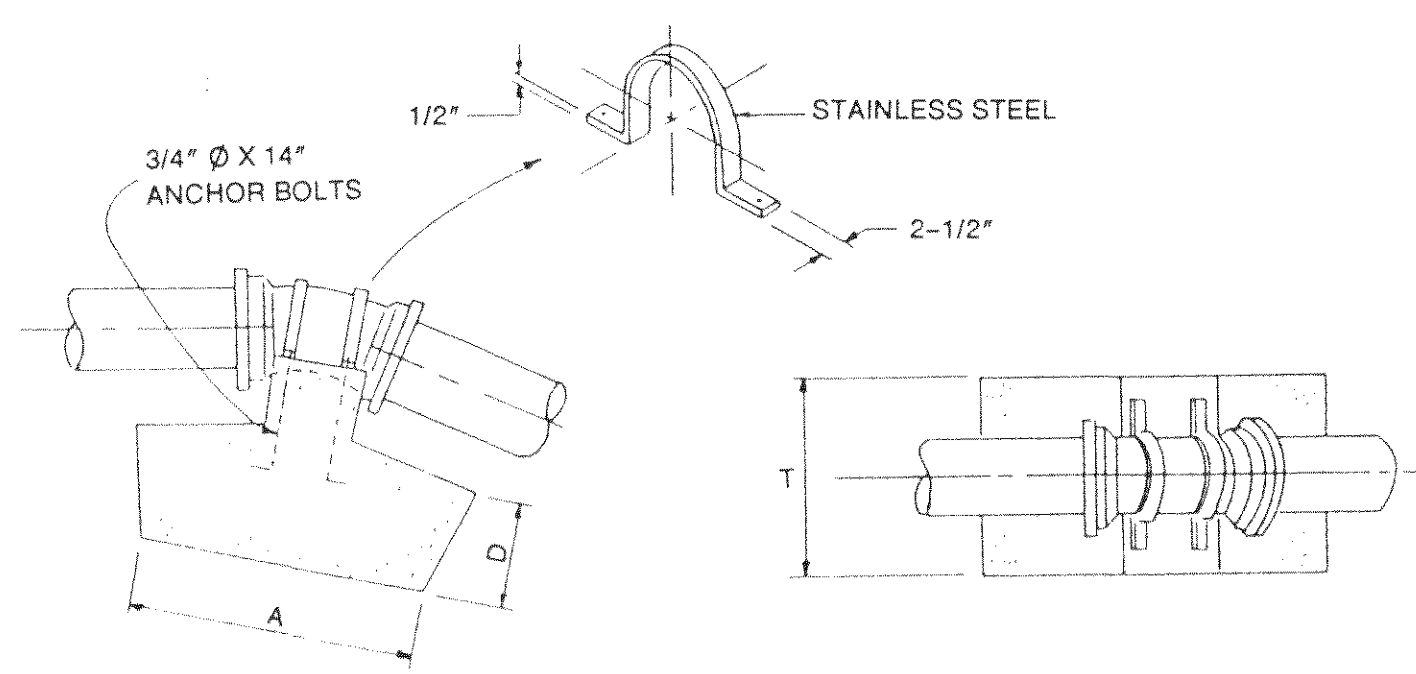
DETAIL SHOWING TEES



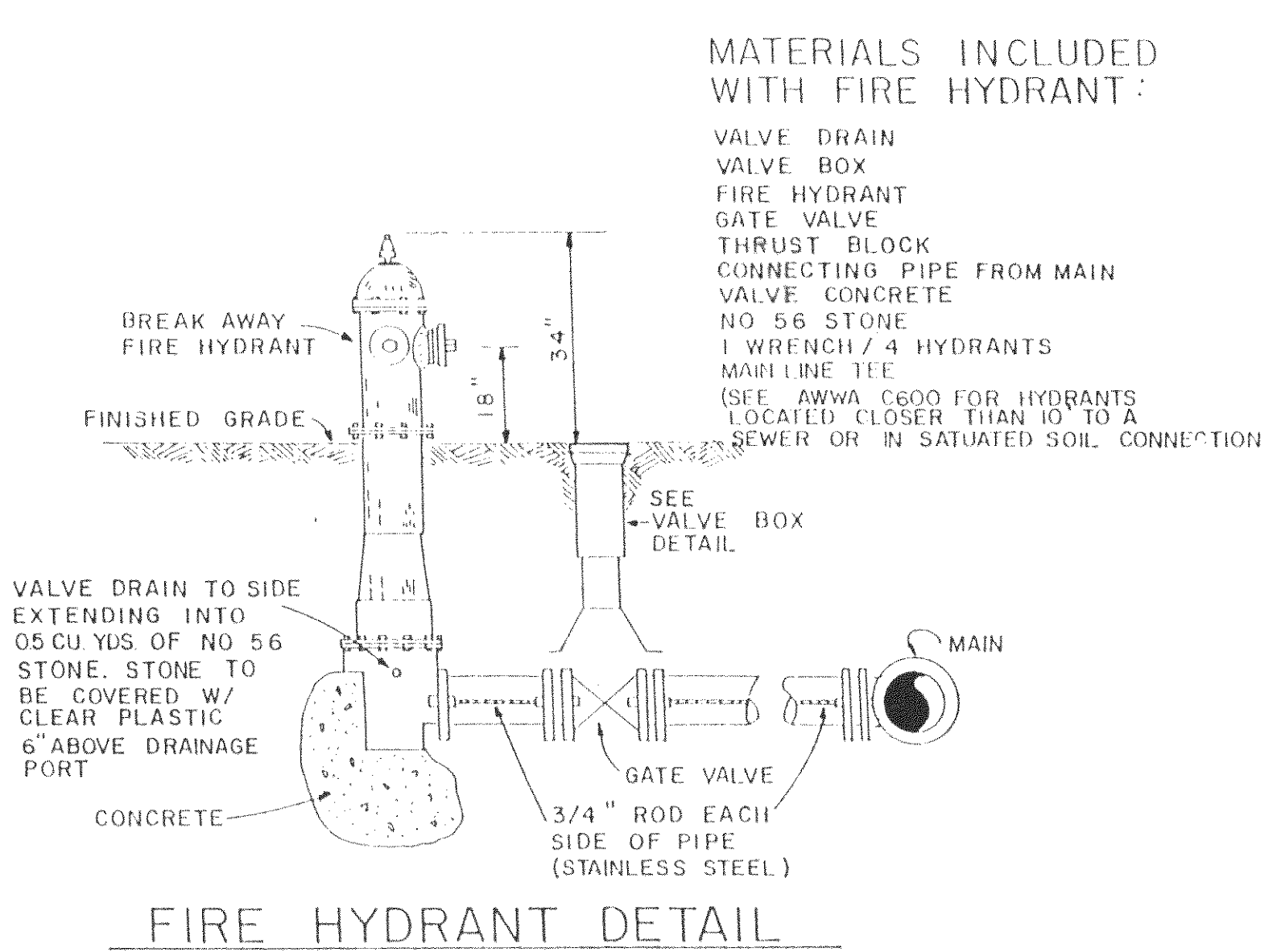
CONDITION WHERE EXISTING PIPE IS ABANDONED



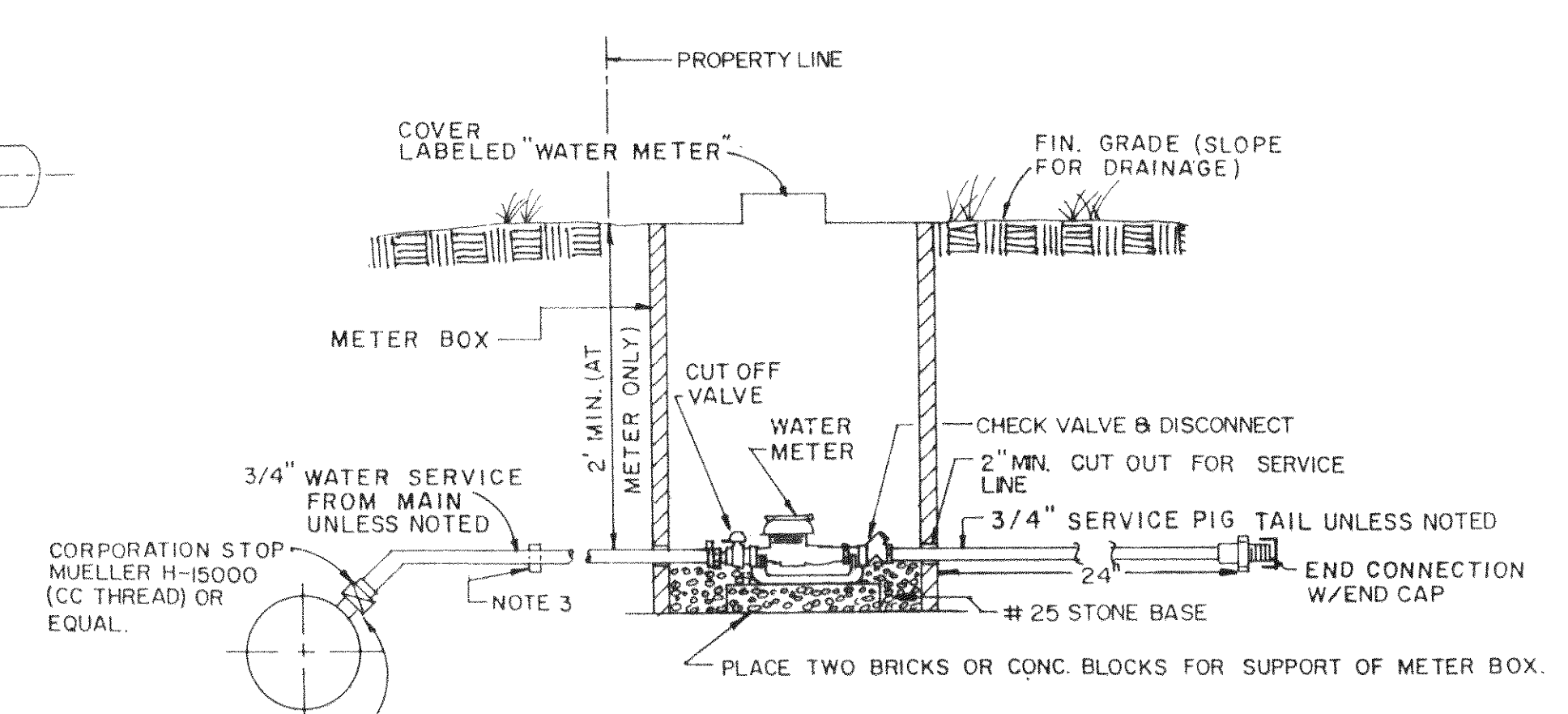
HORIZONTAL & VERTICAL BENDS



VERTICAL SUMMIT BENDS



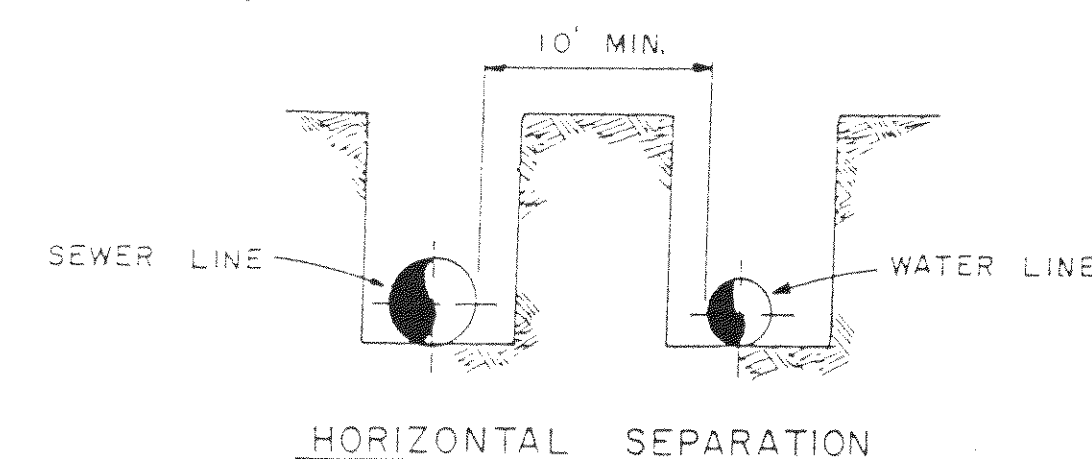
FIRE HYDRANT DETAIL



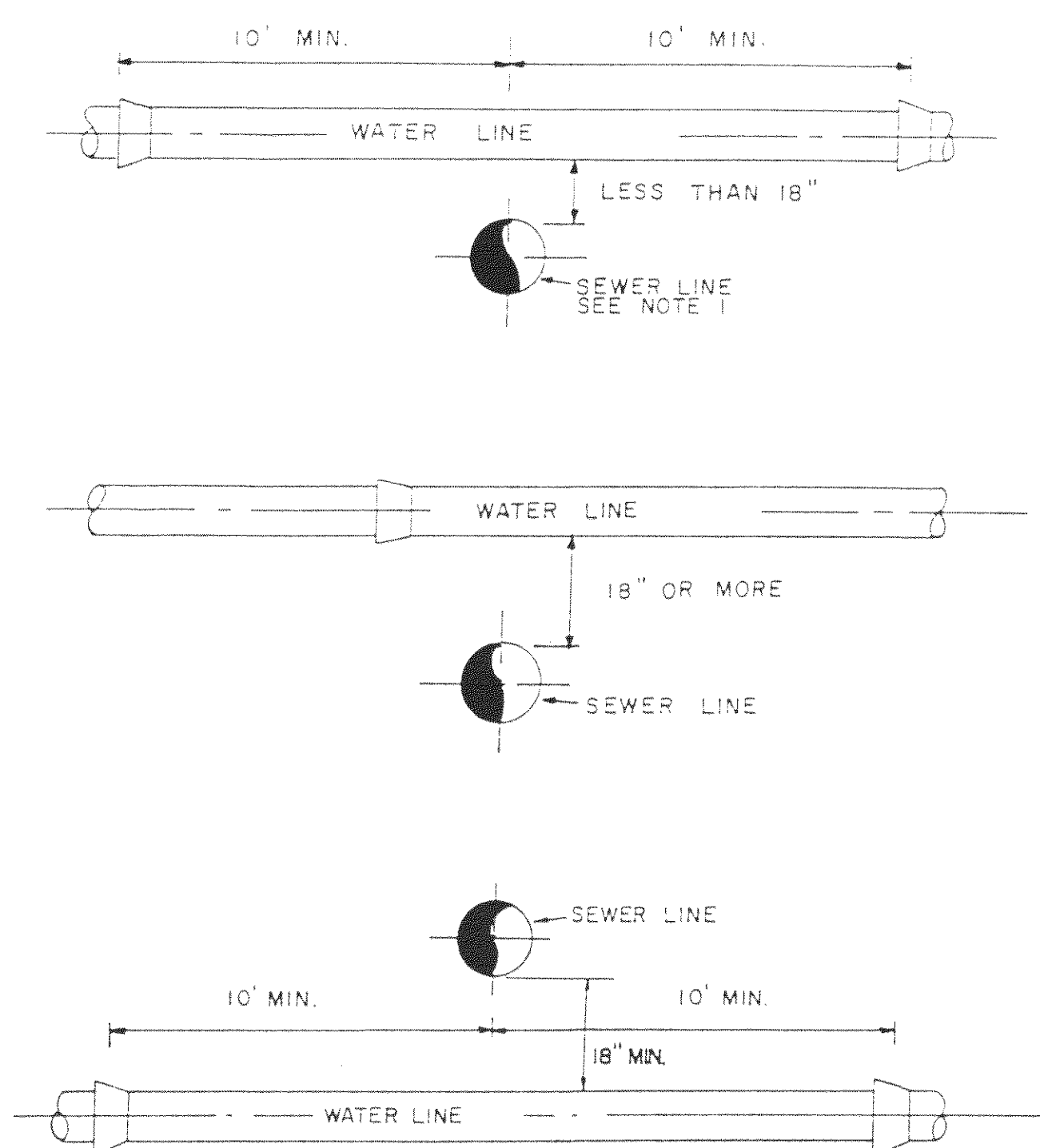
- NOTES: 1. METER SHALL BE MOUNTED SUCH THAT IT CAN BE EASILY READ FROM GRADE LEVEL.
2. FOR METER ON EXISTING SERVICE CONTRACTOR SHALL PROVIDE ALL FITTINGS & PIPE REQ'D. TO MAKE CONNECTION.
3. INSTALL DIELECTRIC COUPLING EQ. TO WATTS SERIES 3000 WHEN CONNECTING TO EXISTING SERVICE.
4. COST FOR FURNISHING & INSTALLING CORP STOP & COUPLING SHALL BE INCLUDED IN THE BID PRICE FOR WATER SERVICE LINE.

WATER METER SETTING

ENGINEER'S SEAL & SIGNATURE

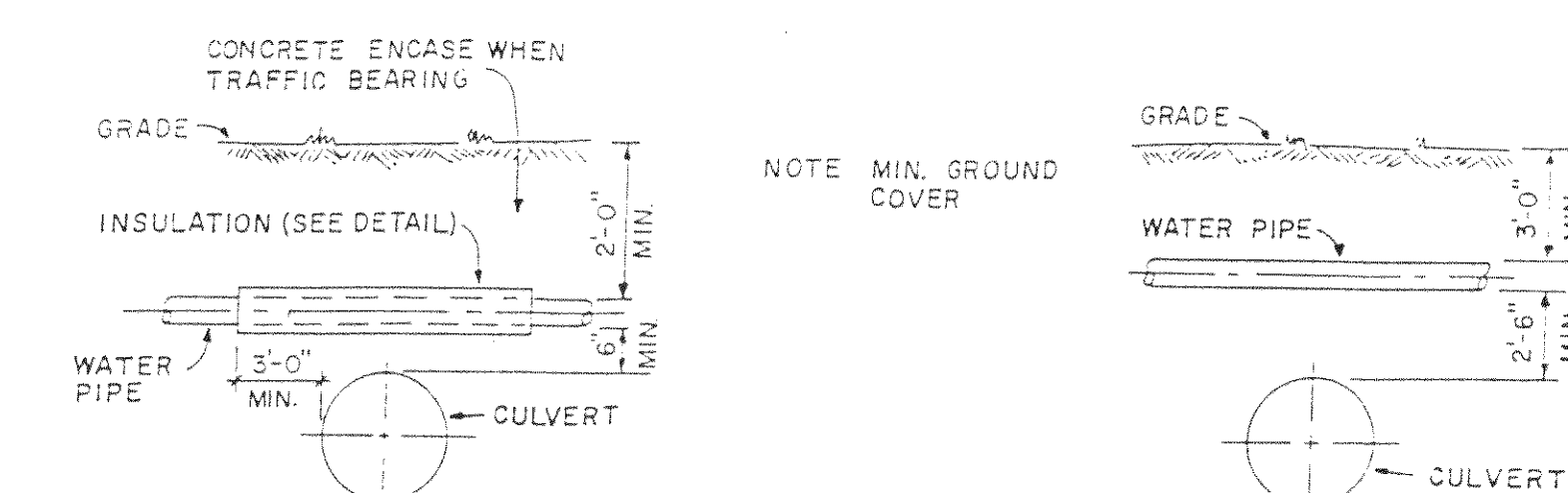


WATER & SEWER SEPARATION DETAIL

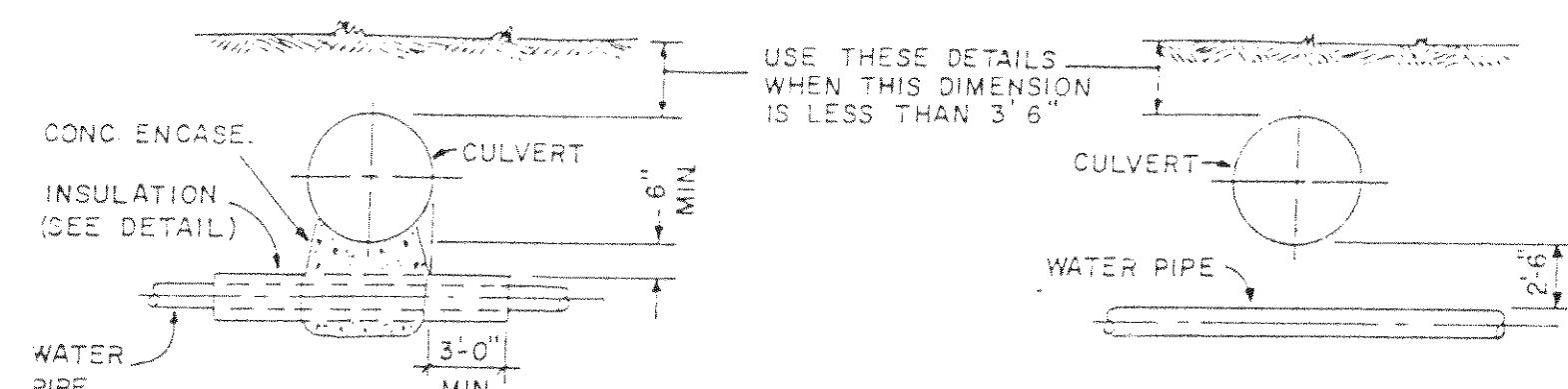


NOTE SEWER LINE TO BE CONSTRUCTED OF AWWA
WATER LINE MATERIAL & PRESSURE
TESTED (SEE SPEC.) AT NO ADDITIONAL
COST (SEE SEWER LINE COUPLING DETAIL)

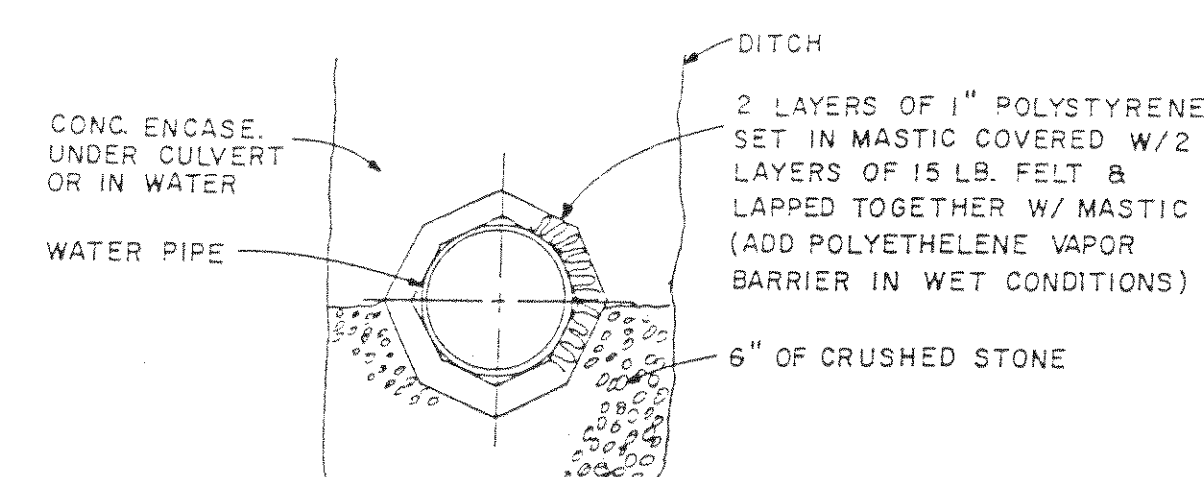
WATER & SEWER CROSSING DETAIL



WATER LINE CROSSING OVER CULVERT

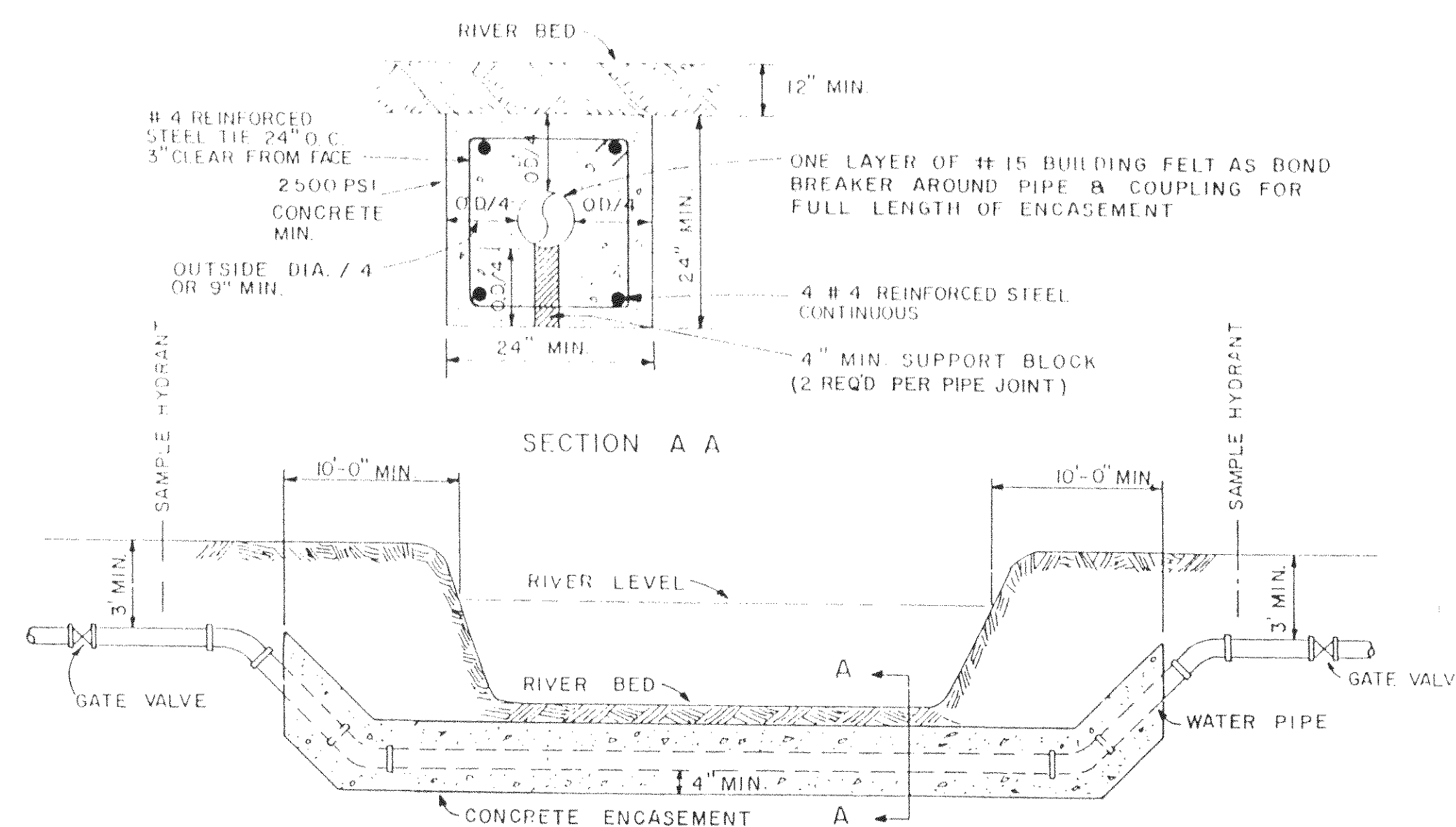


WATER LINE CROSSING UNDER CULVERT

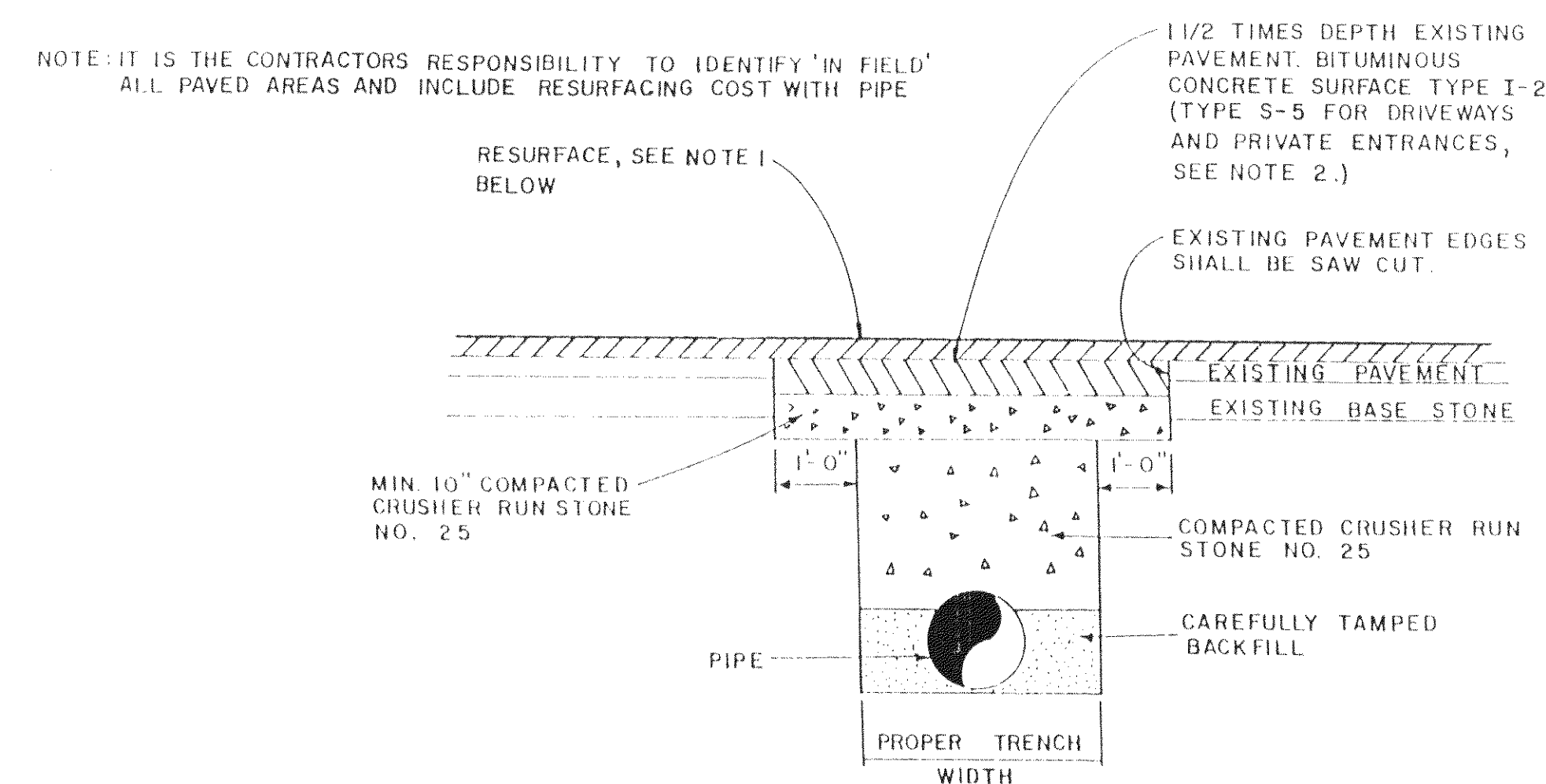


NOTE: INSULATION SHALL BE PLACED UNTIL 3' OF COVER IS OBTAINED BOTH HORIZONTAL & VERTICAL

WATER PIPE INSULATION DETAIL

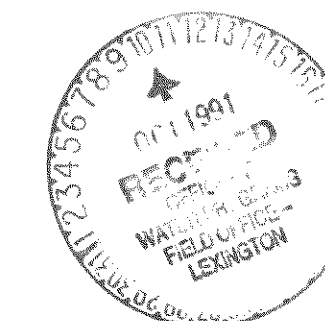


RIVER CROSSING DETAIL



OPEN CUT ROAD CROSSING DETAIL

- NOTES:
- 1) ALL PAVED SURFACES OWNED BY THE STATE SHALL BE RESURFACED 25' EACH SIDE OF CUT, AS PER V.D.O.T. SPECIFICATIONS
 - 2) THIS DETAIL ALSO APPLIES TO ALL PAVED DRIVEWAYS AND ENTRANCES - EXCLUDING 25' RESURFACING EACH WAY
 - 3) WHERE EXISTING SURFACE IS GRAVEL, REPLACEMENT SURFACE TO BE CRUISHER RUN STONE NO. 25

Architects
Engineers
Planners
Surveyors

Dewberry & Davis

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ROANOKE, VIRGINIA 24019 (703) 362-7725

**CLOVERDALE
WATER IMPROVEMENTS
SANITARY SEWER
BOTETOURT COUNTY, VIRGINIA**

STANDARD DETAILS

Drawn By

Designed By

Checked By _____

Date _____

1

Scale

1

Plan Number

1

Zoned

1

Sheet

13 of

File Number

ENGINEER'S SEAL & SIGNATURE