

**PROJECT NO. WP 8034**  
**SOUTHWEST TRANSMISSION MAIN**  
**HOWARD COUNTY, MARYLAND**

**DEPARTMENT OF PUBLIC WORKS**

C.W.O. 40815

QUANTITIES	
36" Water	2560.58 LF
16" Water	30 LF

36" Lock Joint Pipe  
Prestressed Concrete Cylinder Pipe

OPERATING GRADIENT = ELEVATION 350  
TEST GRADIENT = ELEVATION 525

"AS-BUILT"  
 Stakeout F.B.# 5837  
 Diary #1 F.B.# 5842  
 #2 F.B.# 5802  
 #3 F.B.# 5837

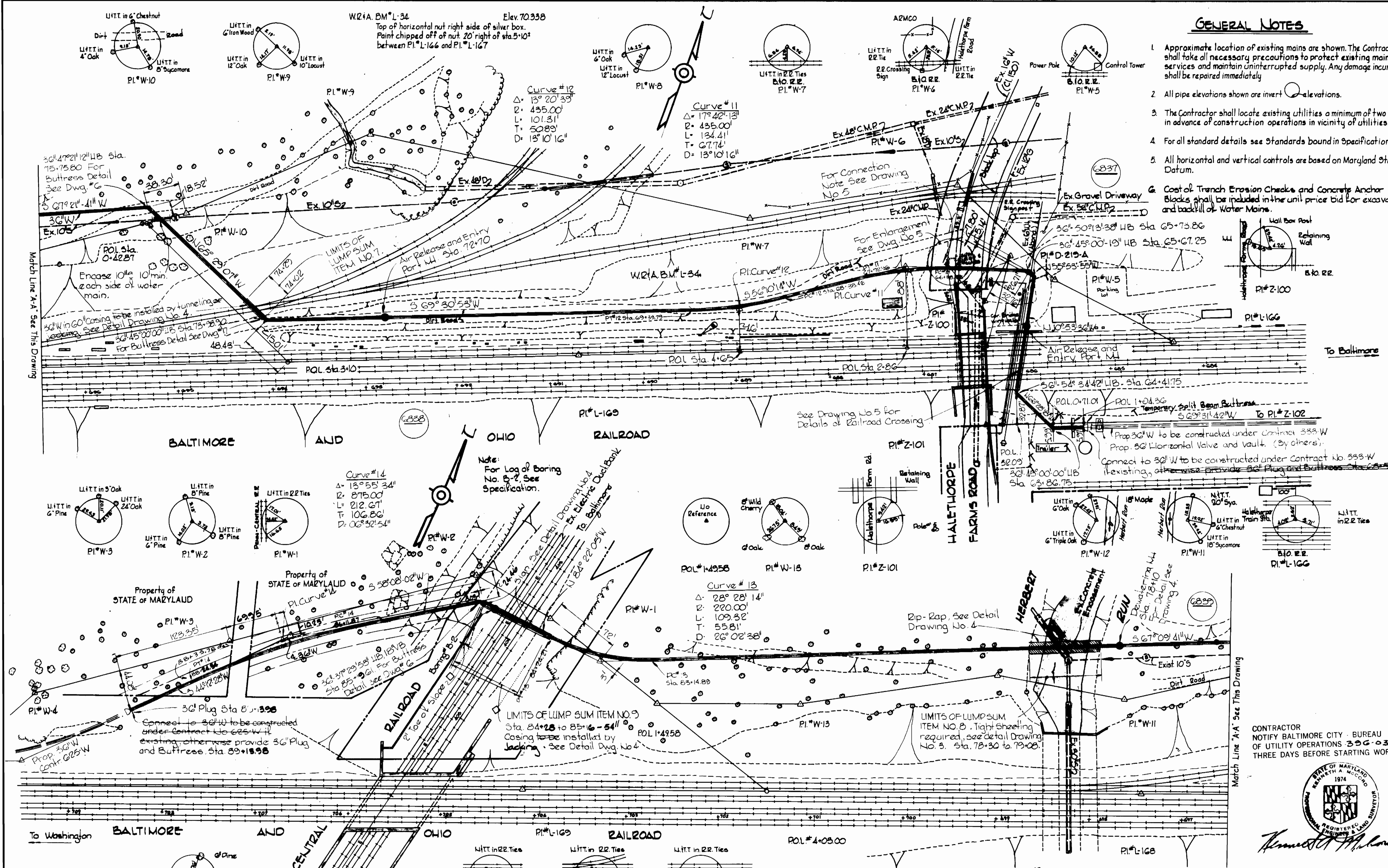


*Kenneth A. McLeod*  
 Kenneth A. McLeod  
 Registered Professional Engineer & Land Surveyor

Haliethorpe Farms Road to Relay  
 Contract No. 624-W

CITY OF BALTIMORE		BALTIMORE COUNTY	
<i>Thomas J. ...</i> DIRECTOR DEPT. OF PUBLIC WORKS	DATE	<i>...</i> CHIEF, WATER DIV. BUREAU OF ENGINEERING	DATE

<b>WHITMAN, REQUARDT &amp; ASSOCIATES</b> ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	HOWARD COUNTY <i>...</i> DIRECTOR DEPT. OF PUBLIC WORKS	BALTIMORE COUNTY <i>...</i> DIRECTOR DEPT. OF PUBLIC WORKS	CONTRACT NO. 624-W	LOCATION PLAN	SOUTHWEST TRANSMISSION MAIN	DRAWING NO. 1 OF 6	SCALE 1"=600'
	DATE	DATE	DATE	DATE	DATE	DATE	DATE



- ### GENERAL NOTES
1. Approximate location of existing mains are shown. The Contractor shall take all necessary precautions to protect existing mains and services and maintain uninterrupted supply. Any damage incurred shall be repaired immediately.
  2. All pipe elevations shown are invert elevations.
  3. The Contractor shall locate existing utilities a minimum of two weeks in advance of construction operations in vicinity of utilities.
  4. For all standard details see Standards bound in Specifications.
  5. All horizontal and vertical controls are based on Maryland State Datum.
  6. Cost of Trench Erosion Checks and Concrete Anchor Blocks shall be included in the unit price bid for excavation and backfill of Water Mains.

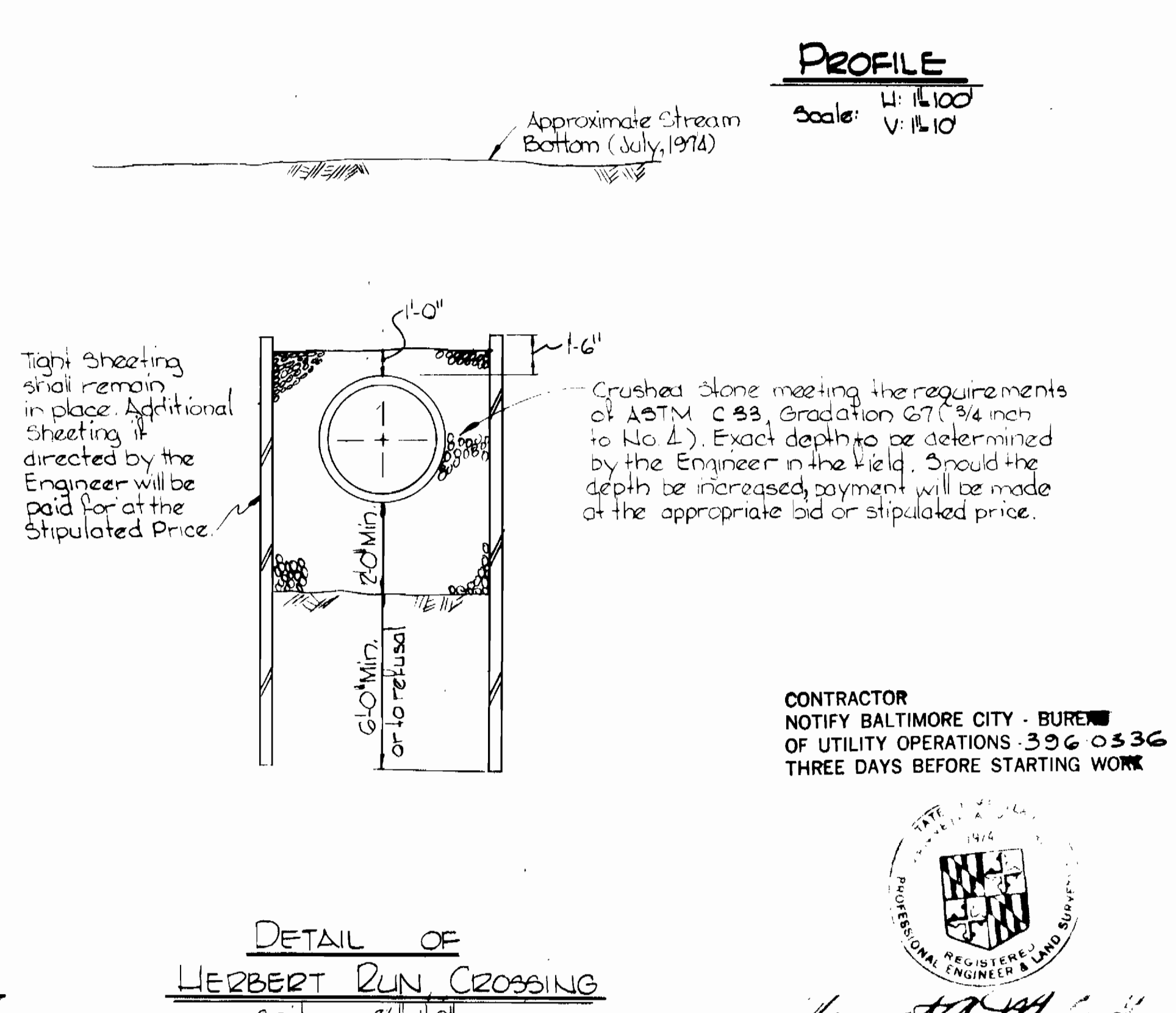
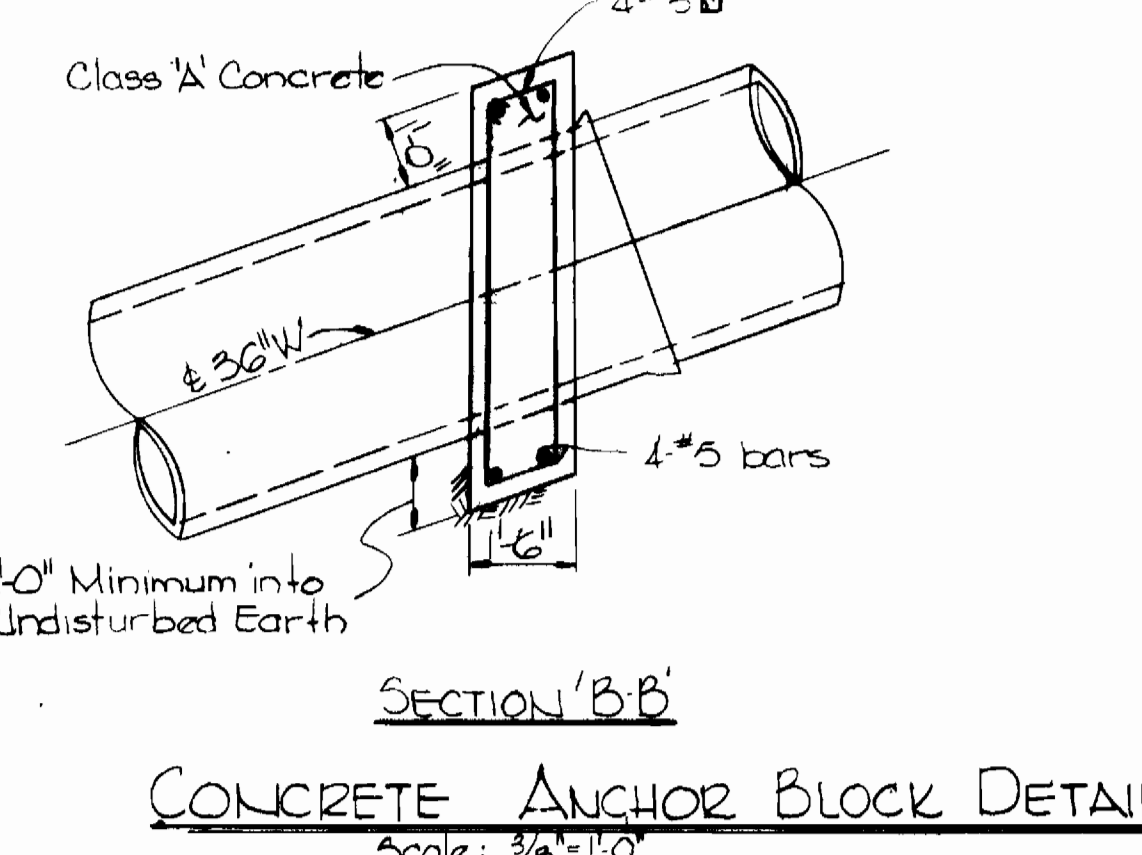
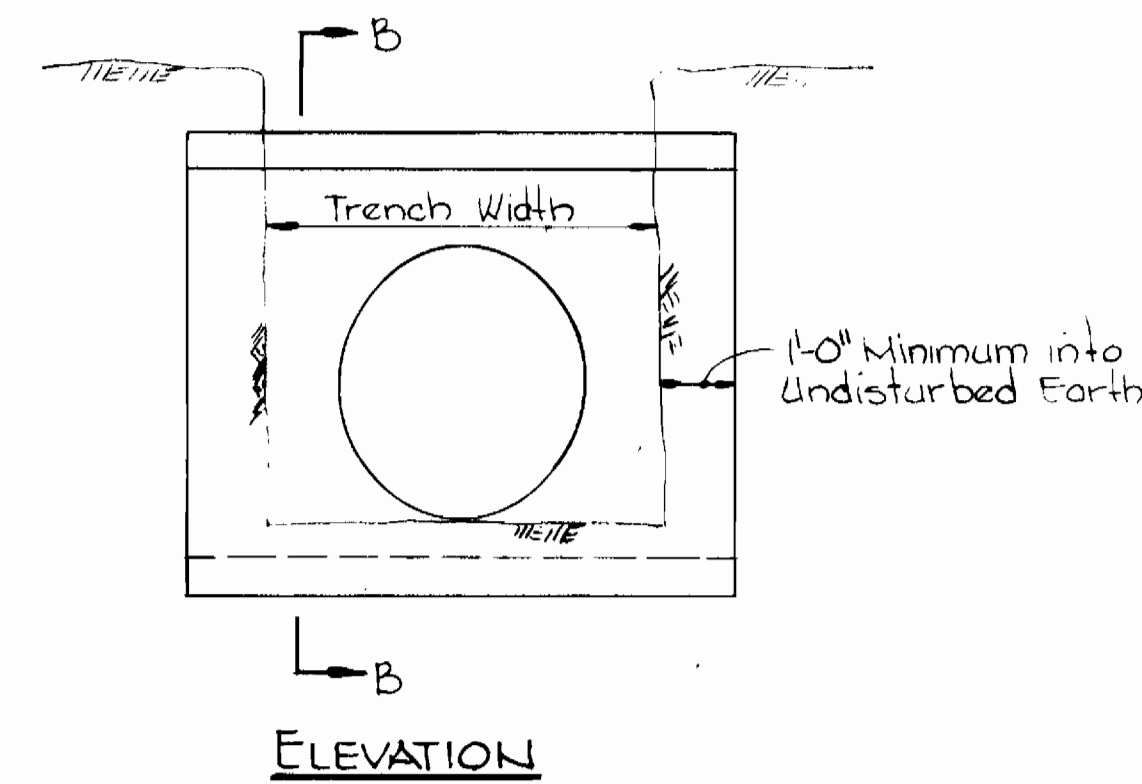
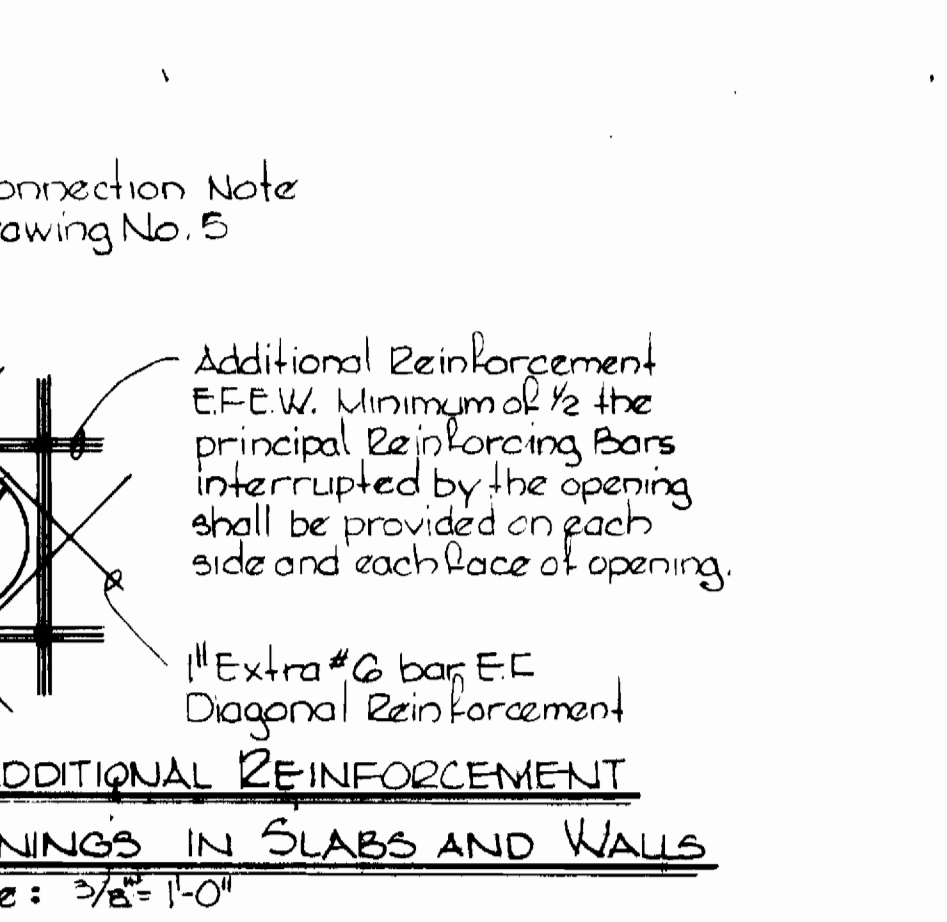
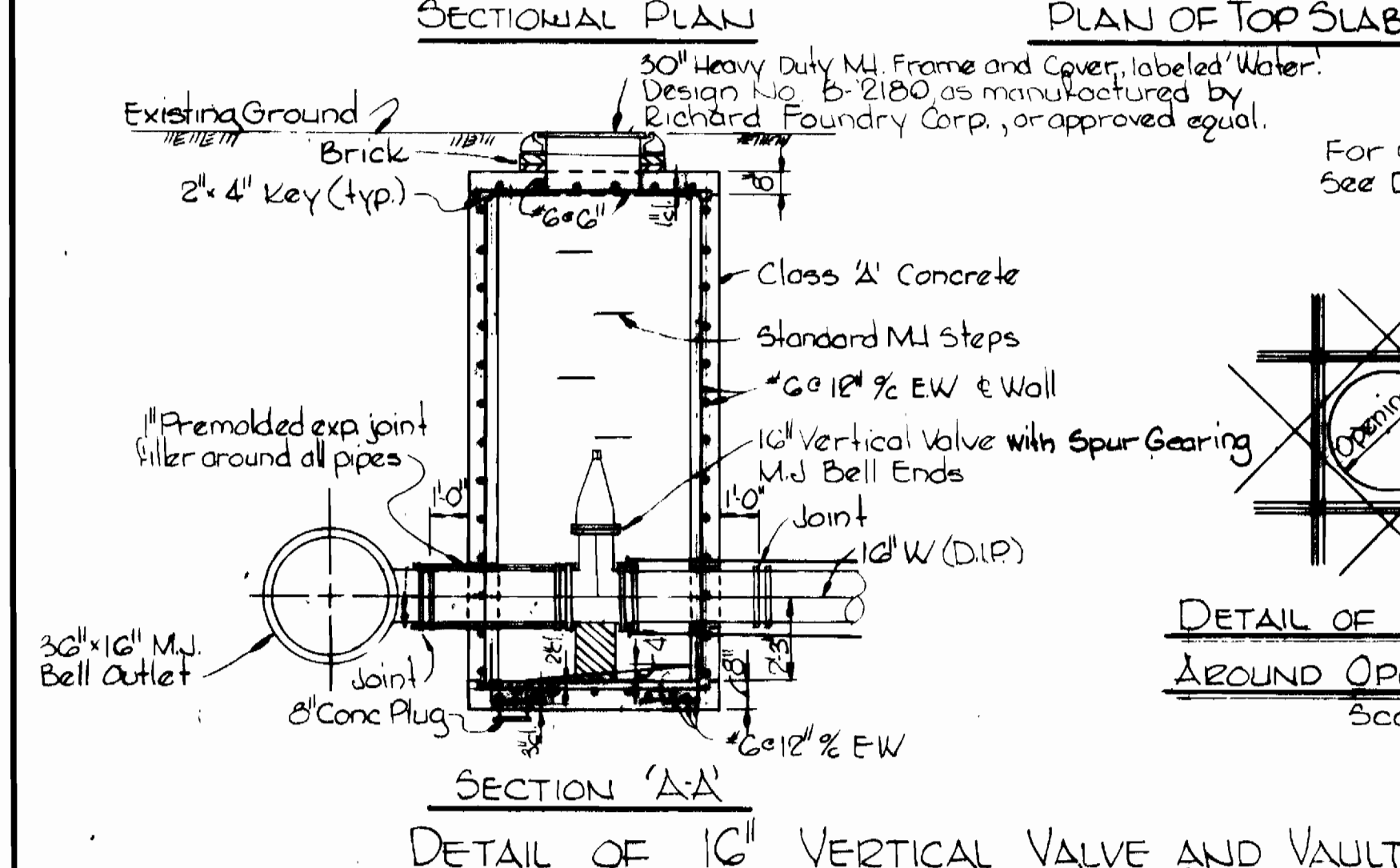
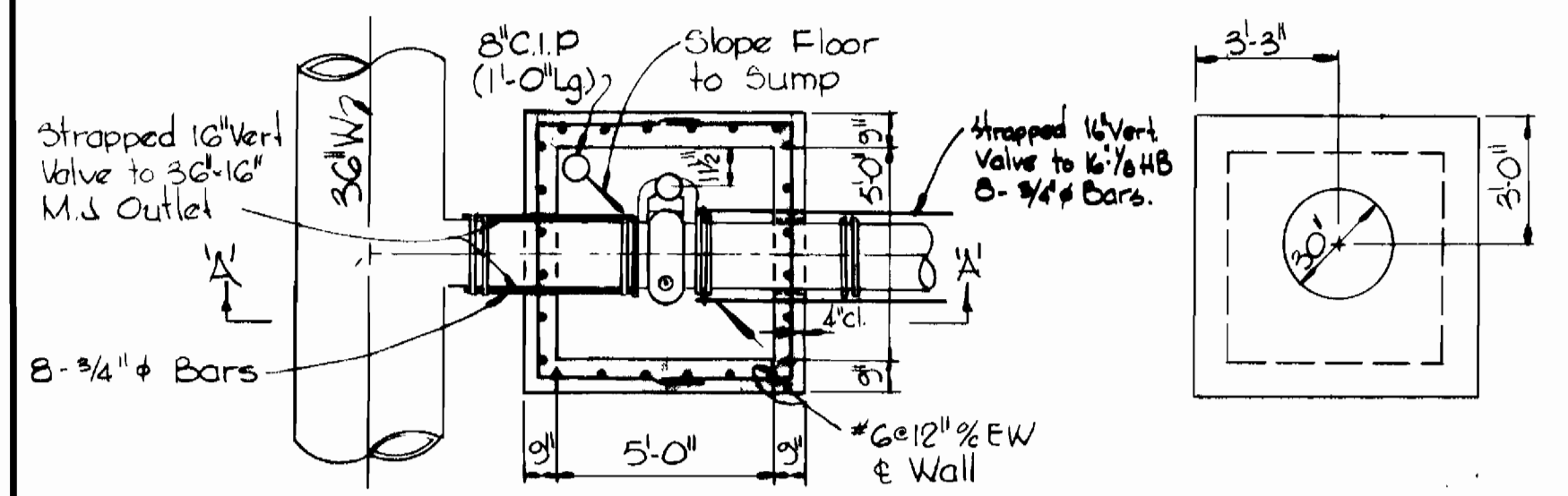
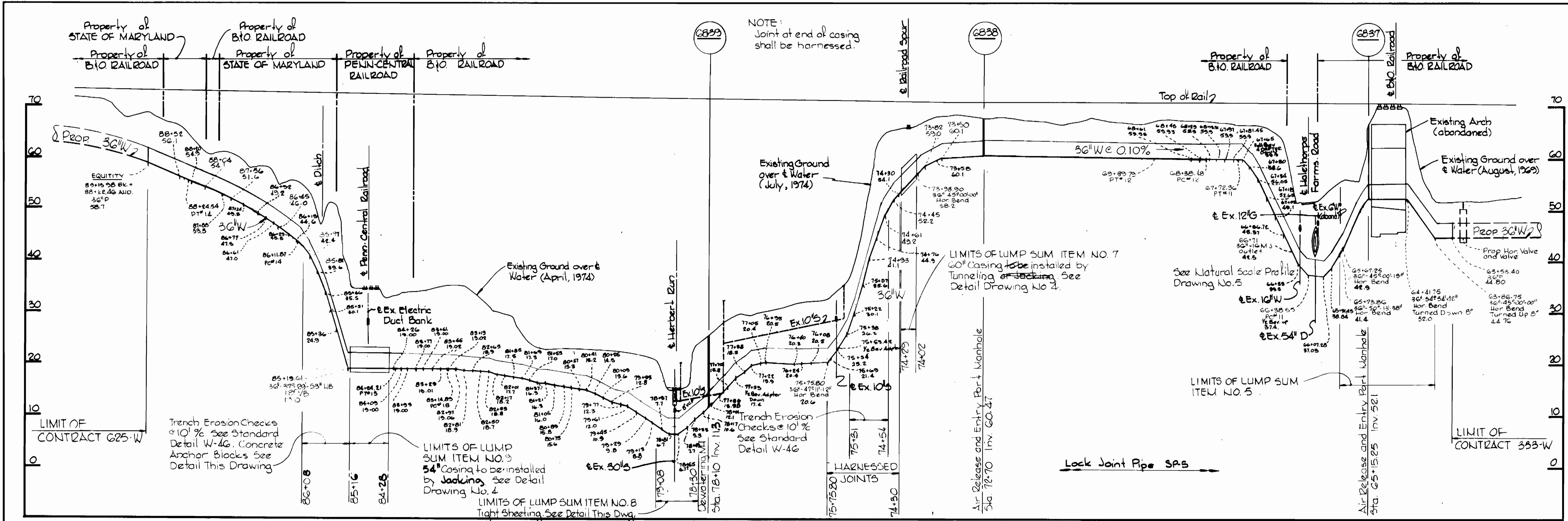
CONTRACTOR NOTIFY BALTIMORE CITY - BUREAU OF UTILITY OPERATIONS 396-0333 THREE DAYS BEFORE STARTING WORK



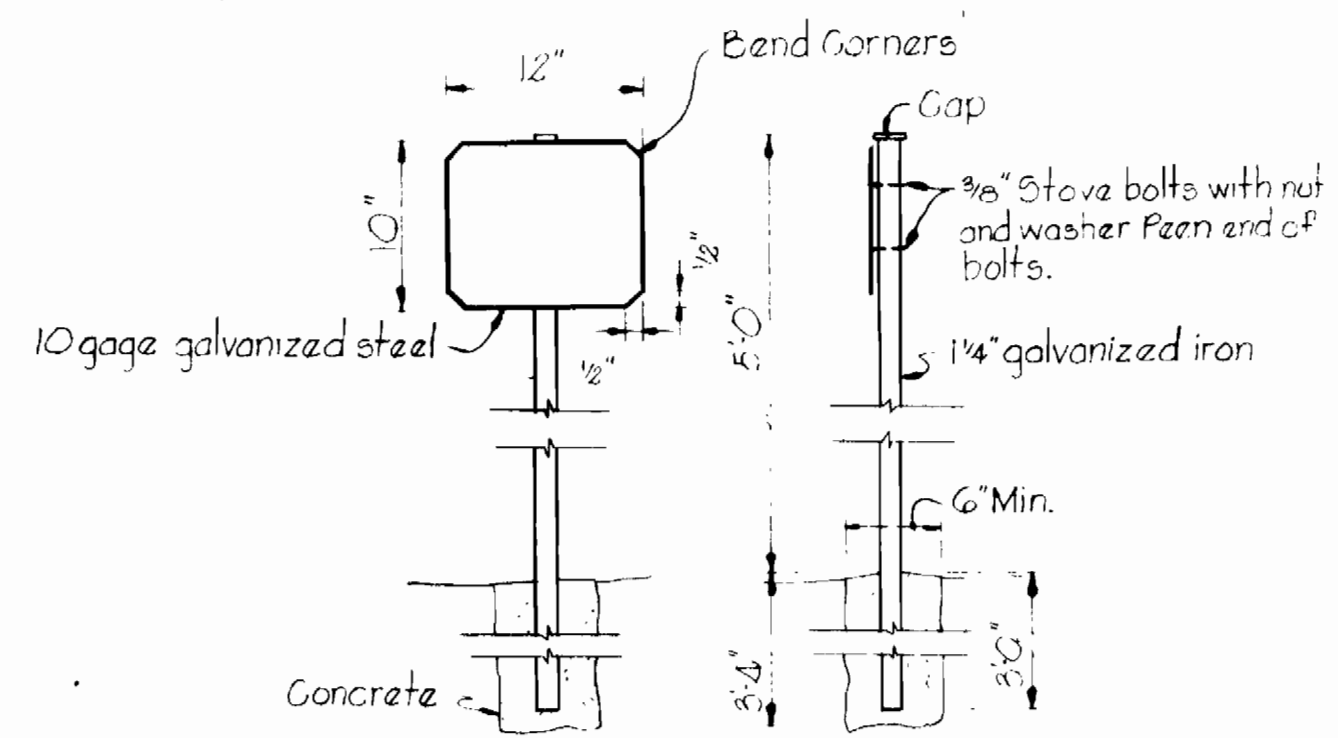
*Kenneth A. Leonard*

C.W.O. 40815		BALTIMORE COUNTY	
CITY OF BALTIMORE		BALTIMORE COUNTY	
<i>Francis W. ...</i>	10/18/74	<i>...</i>	9/17/74
DIRECTOR	DATE	DIRECTOR	DATE
DEPT. OF PUBLIC WORKS		DEPT. OF PUBLIC WORKS	

<b>WHITMAN, REQUARDT &amp; ASSOCIATES</b> ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND	HOWARD COUNTY <i>Will ...</i> DIRECTOR DEPT. OF PUBLIC WORKS	BALTIMORE COUNTY <i>W.O. Fellert</i> CHIEF BUREAU OF ENGINEERING	CONTRACT NO. 624-W 8-14-74	PLAN OF WATER MAINS	BALTIMORE COUNTY DEPT. OF PUBLIC WORKS	DRAWING NO. 2 OF 6	SCALE 1"=50'
	W.O. 6257-2		CONTRACT NO. 624-W		BALTIMORE COUNTY DEPT. OF PUBLIC WORKS		DRAWING NO. 2 OF 6

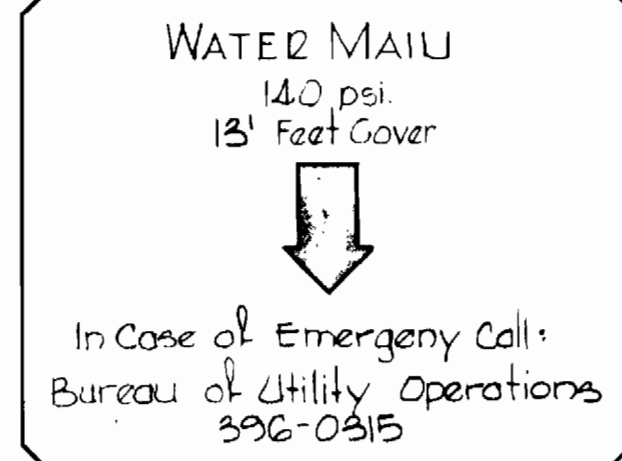


<b>WITMAN, REQUARDT &amp; ASSOCIATES</b> ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND		<b>CITY OF BALTIMORE</b> Director: <i>William W. Muller</i> 10/17/74 DEPT. OF PUBLIC WORKS		<b>BALTIMORE COUNTY</b> Chief: <i>Robert Kratochewski</i> 10/18/74 BUREAU OF ENGINEERING		<b>HOWARD COUNTY</b> Director: <i>William A. Altman</i> 8/20/74 DEPT. OF PUBLIC WORKS		<b>DEPT. OF PUBLIC WORKS</b> Chief: <i>W. O. Pillemer</i> 8-14-74 BUREAU OF ENGINEERING			
<b>WHITMAN, REQUARDT &amp; ASSOCIATES</b> ENGINEERS 1304 ST. PAUL ST. BALTIMORE, MARYLAND				<b>CITY OF BALTIMORE</b> Director: <i>William W. Muller</i> 10/17/74 DEPT. OF PUBLIC WORKS				<b>BALTIMORE COUNTY</b> Chief: <i>Robert Kratochewski</i> 10/18/74 BUREAU OF ENGINEERING			
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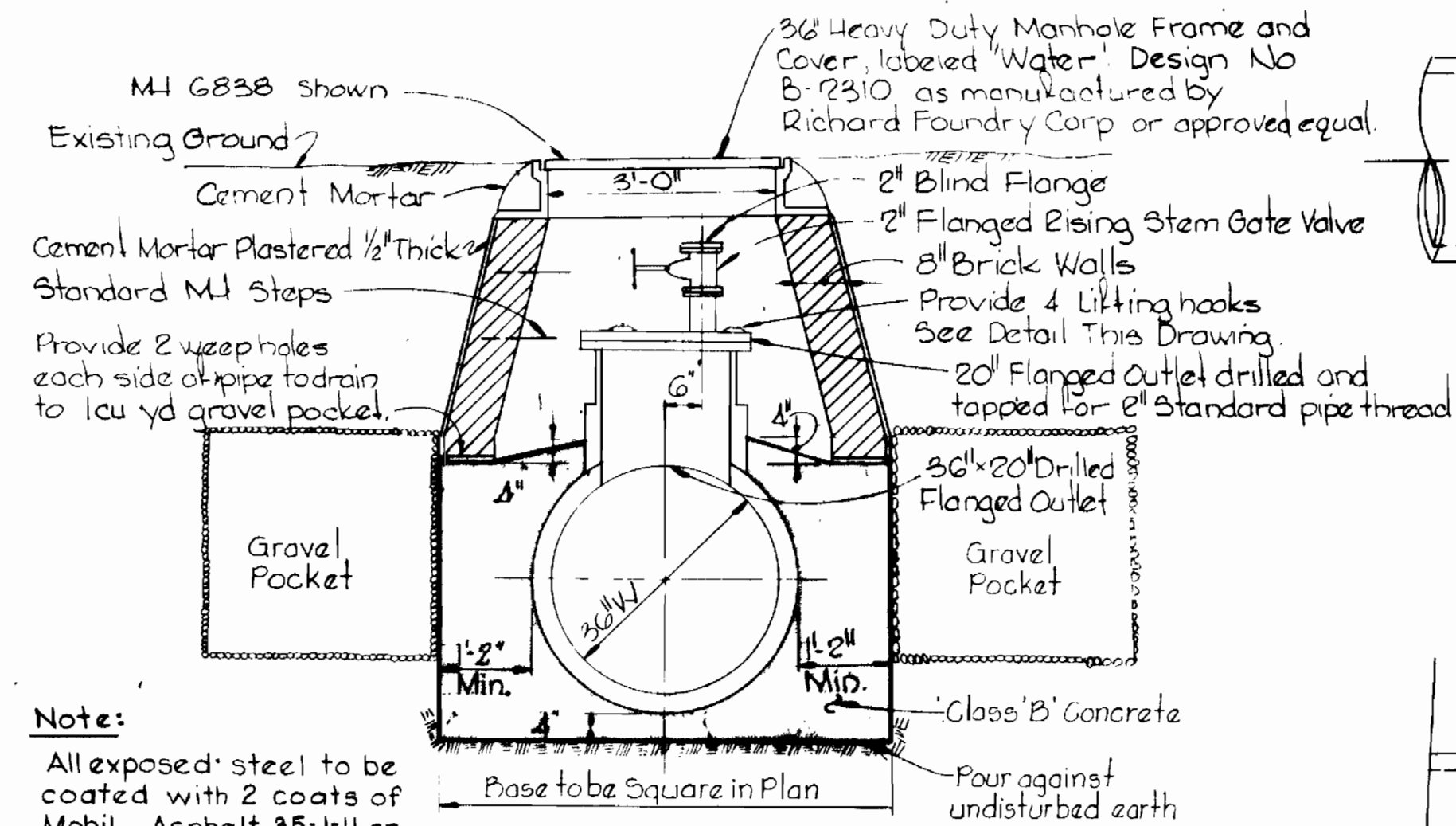


**WATER MARKER**  
Scale: 1"=1'-0"

- Notes For Painting Marker:
1. Koppers 40 passivator powder blue background.
  2. Inert rust inhibitor primer G21.
  3. 2 Coats Torax 810 heavy enamel.
  4. 1 Coat Torax 800 enamel.
  5. Letters shall be Torax 800 orange enamel.

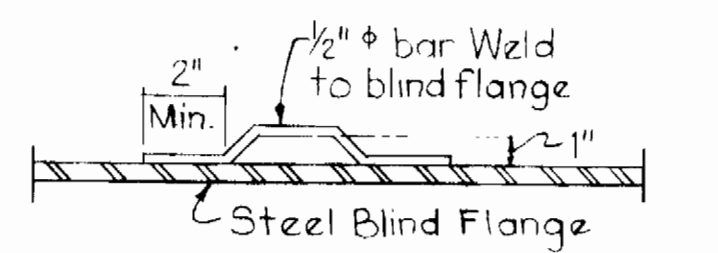


**LETTERING DETAIL**  
Scale: 1/8"=1'-0"

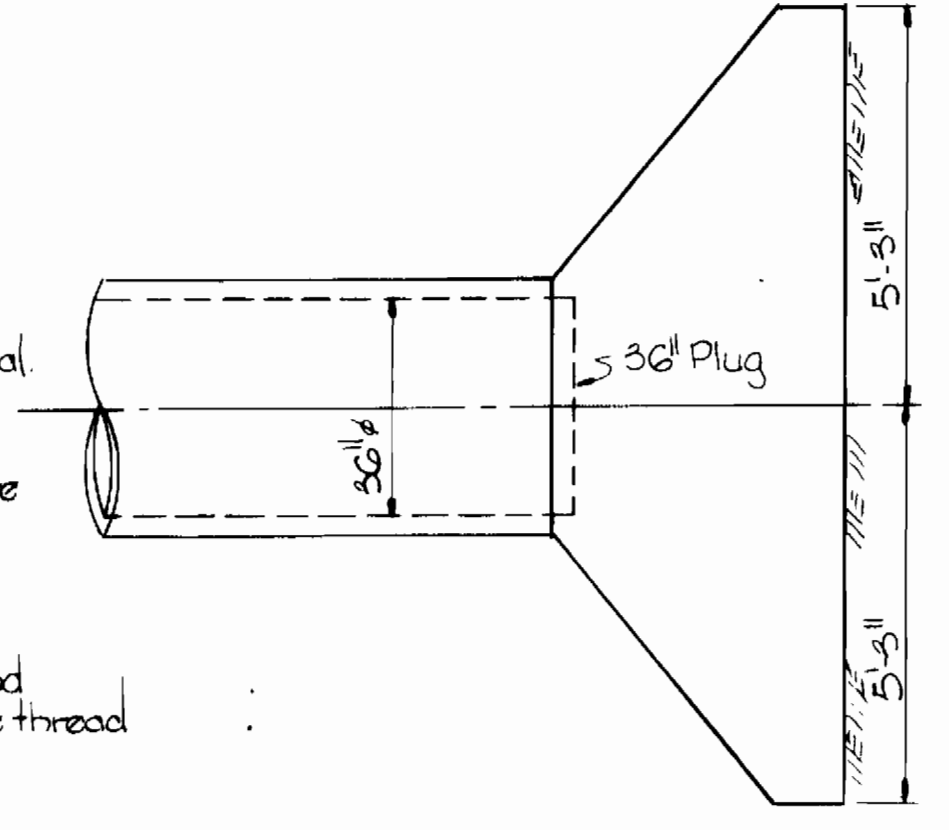


Note:  
All exposed steel to be coated with 2 coats of Mobil Asphalt 35-J-11 or approved equal.

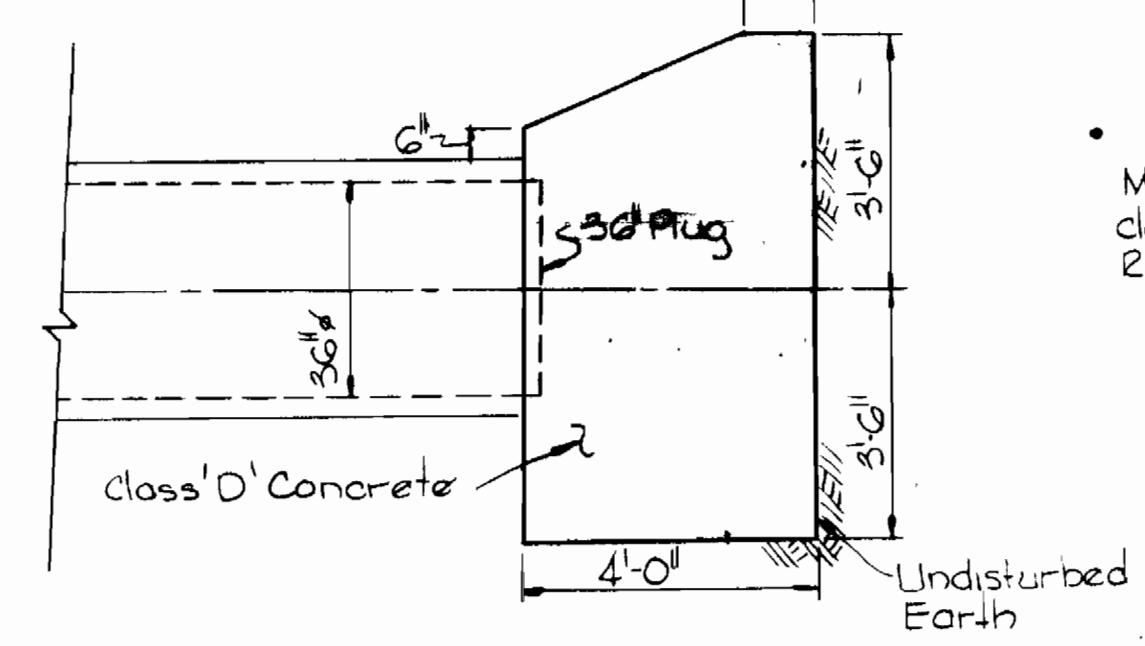
**DETAIL OF AIR RELEASE AND ENTRY PORT MANHOLE**  
Scale: 1/2"=1'-0"



**LIFTING HOOK DETAIL**  
Scale: 1/2"=1'-0"

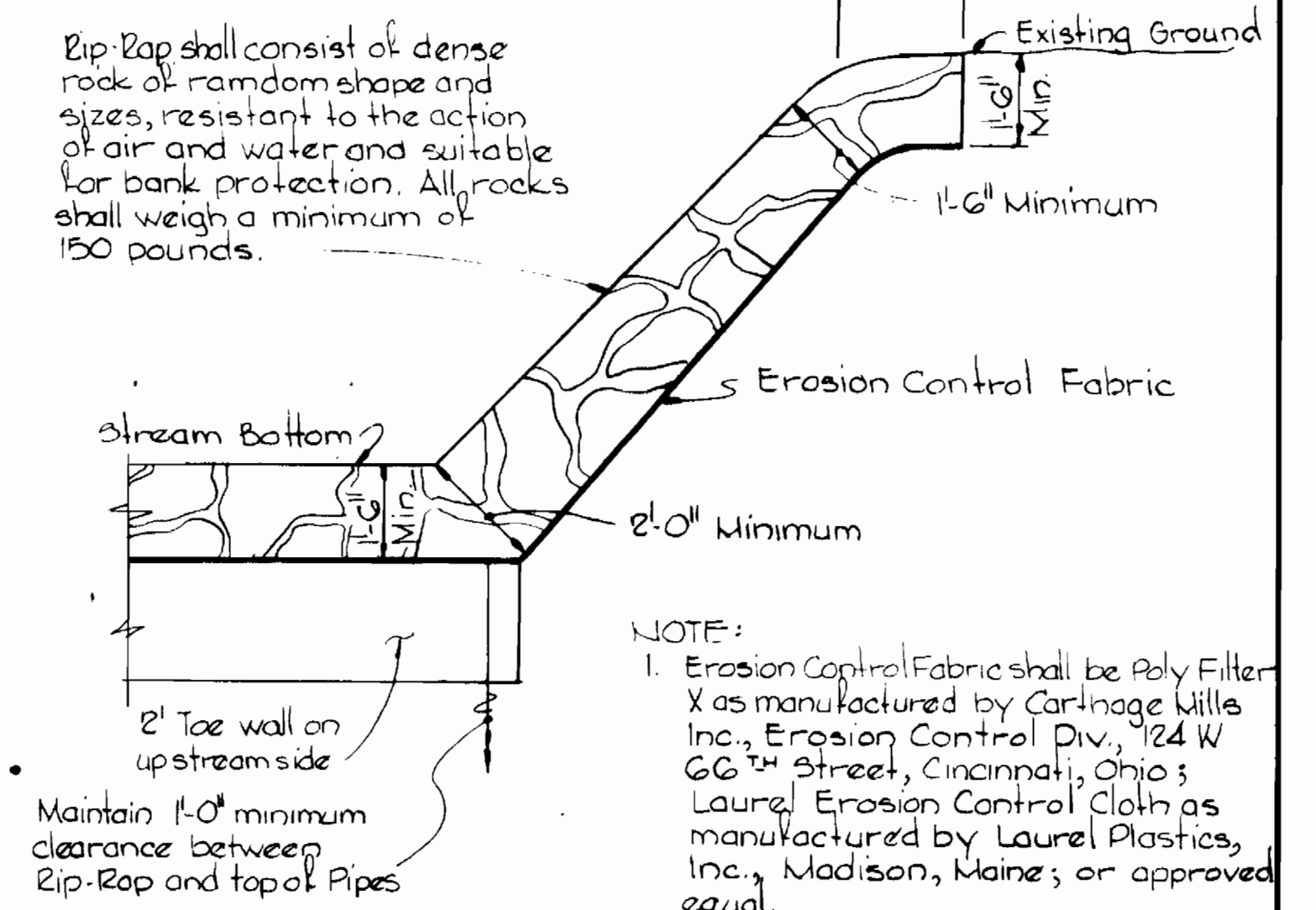


**PLAN**



**SECTION**

**BUTTRESS DETAIL FOR 36" PLUG**  
Scale: 3/8"=1'-0"

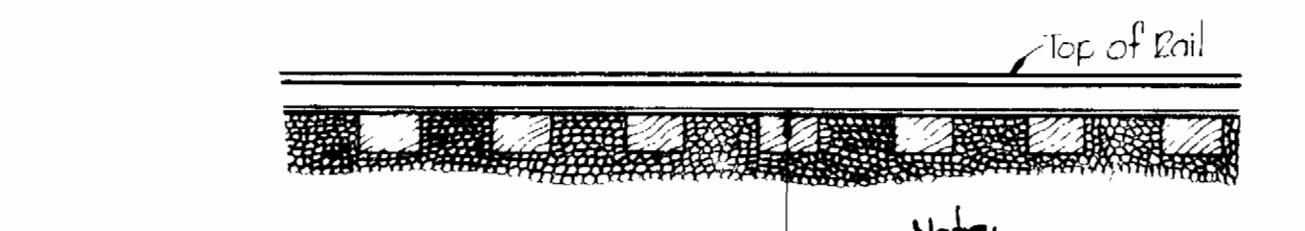


Rip-Rap shall consist of dense rock of random shape and sizes, resistant to the action of air and water and suitable for bank protection. All rocks shall weigh a minimum of 150 pounds.

- NOTE:
1. Erosion Control Fabric shall be Poly Filter X as manufactured by Carthage Mills Inc., Erosion Control Div., 124 W. 66th Street, Cincinnati, Ohio; Laurel Erosion Control Cloth as manufactured by Laurel Plastics, Inc., Madison, Maine; or approved equal.
  2. Rip-Rap shall be placed 1' on each side of Water.

**RIp-RAP DETAIL**  
Scale: 3/8"=1'-0"

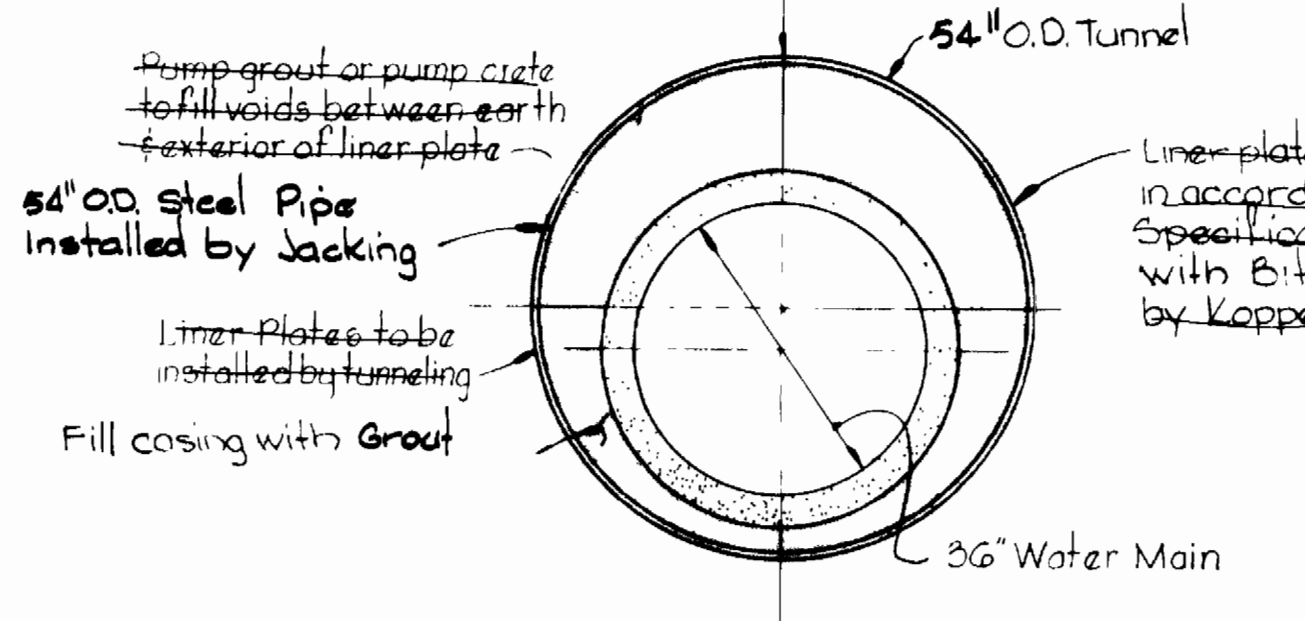
**CONTRACTOR NOTIFY BALTIMORE CITY - BUREAU OF UTILITY OPERATIONS - 396-0315 THREE DAYS BEFORE STARTING WORK**



MINIMUM LINER PLATE REQUIREMENTS

Manufacturer	Gage	Thickness
Armed	12	.1046
Commercial	12	.1046
Republic	12	.105

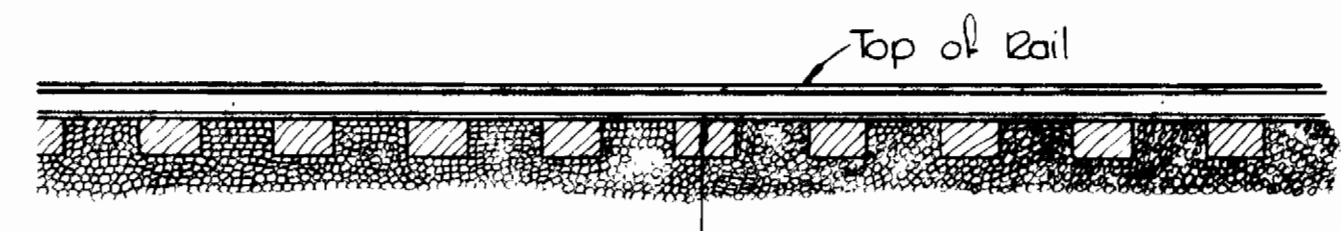
Note:  
54" O.D. Steel Pipe, 0.75" walls with 2" girth holes on 4' centers. Coated with Mobil CS-85-11



**DETAIL OF CASING UNDER PENN-CENTRAL RAILROAD**  
Scale: 1/2"=1'-0"

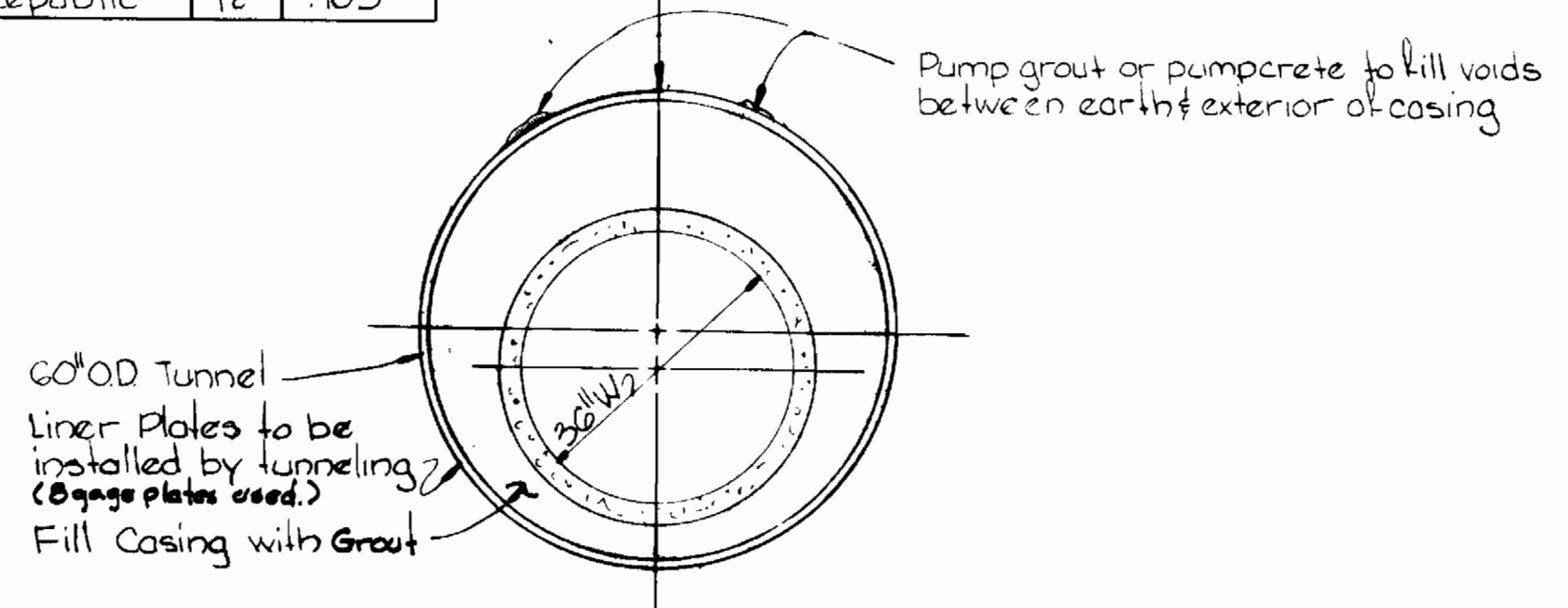
- TUNNEL NOTES:**
1. Poling plates and breast boards or shields shall be used in poor or running sand, and there shall be no unsupported faces of earth under the tracks during passage of trains.
  2. Headings of ends of tunnel shall be properly sheeted and braced.
  3. A joint shall be provided in the water main within 2 feet of each outside end of 54" and 60" casing.
  4. Water Mains through tunnels shall pass the leakage test before grouting between the main and tunnel.
  5. Block water main to prevent flotation and movement prior to grouting.

Note:  
Additional requirements for crossing the Penn Central Railroad are found in Specifications.

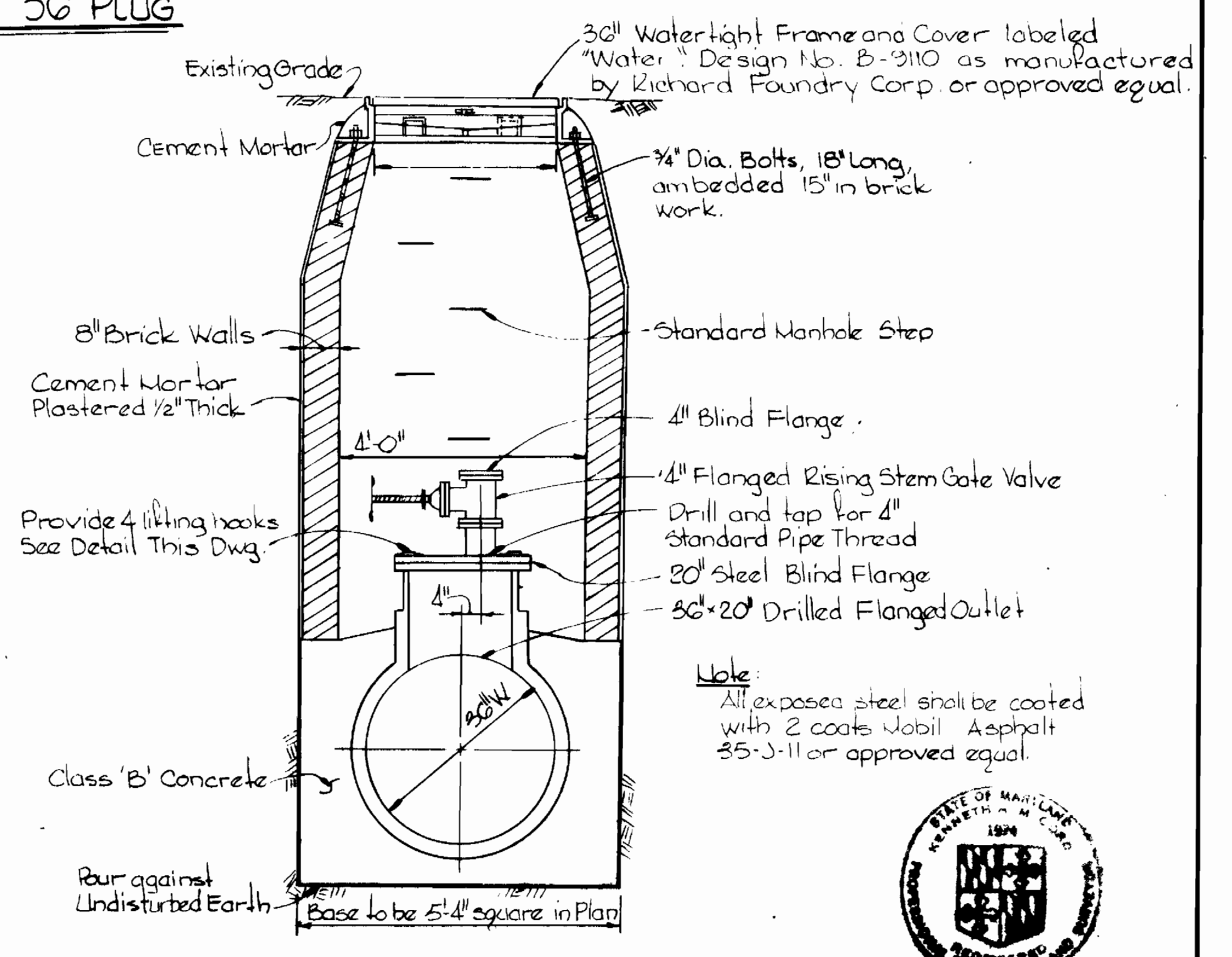


MINIMUM LINER PLATE REQUIREMENT

Manufacturer	Gage	Thick
Armed	12	.1046
Commercial	12	.1046
Republic	12	.105



**DETAIL OF CASING UNDER B&O RAILROAD**  
Scale: 1/2"=1'-0"



Note:  
All exposed steel shall be coated with 2 coats Mobil Asphalt 35-J-11 or approved equal.

**DEWATERING MANHOLE**  
Scale: 1/2"=1'-0"



CITY OF BALTIMORE		BALTIMORE COUNTY	
<i>Thomas M. Spitzer</i>	11/11/74	<i>John J. Hester</i>	10/17/74
DIRECTOR	DATE	CHIEF, WATER DIV.	DATE
DEPT. OF PUBLIC WORKS		BUREAU OF ENGINEERING	

Walthorpe Farms Road to Relay  
Contract No. 624-W

**WHITMAN, REQUARDT & ASSOCIATES ENGINEERS**  
1304 ST. PAUL ST.  
BALTIMORE, MARYLAND

**HOWARD COUNTY**  
*William A. Altman* 8/14/74  
DIRECTOR DATE  
DEPT. OF PUBLIC WORKS

*W. O. Pilbert* 3-19-74  
CHIEF DATE  
BUREAU OF ENGINEERING

**CONTRACT NO. 624-W**

**DETAILS OF WATER MAINS**

**SOUTHWEST TRANSMISSION MAIN**

**DRAWING NO. 4 OF 6 SCALE AS SHOWN**

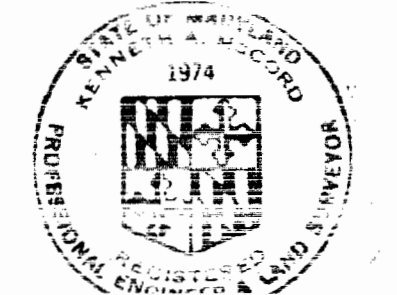
CONSTRUCTION WITHIN ABANDONED  
B+O RAILROAD ARCH

The Contractor shall submit for approval by the Engineer the method of construction through the Abandoned Railroad Arch. It may be by Open Cut or Jacking Carrier Pipe or by Jacking a Steel Sleeve. The following conditions shall be met:

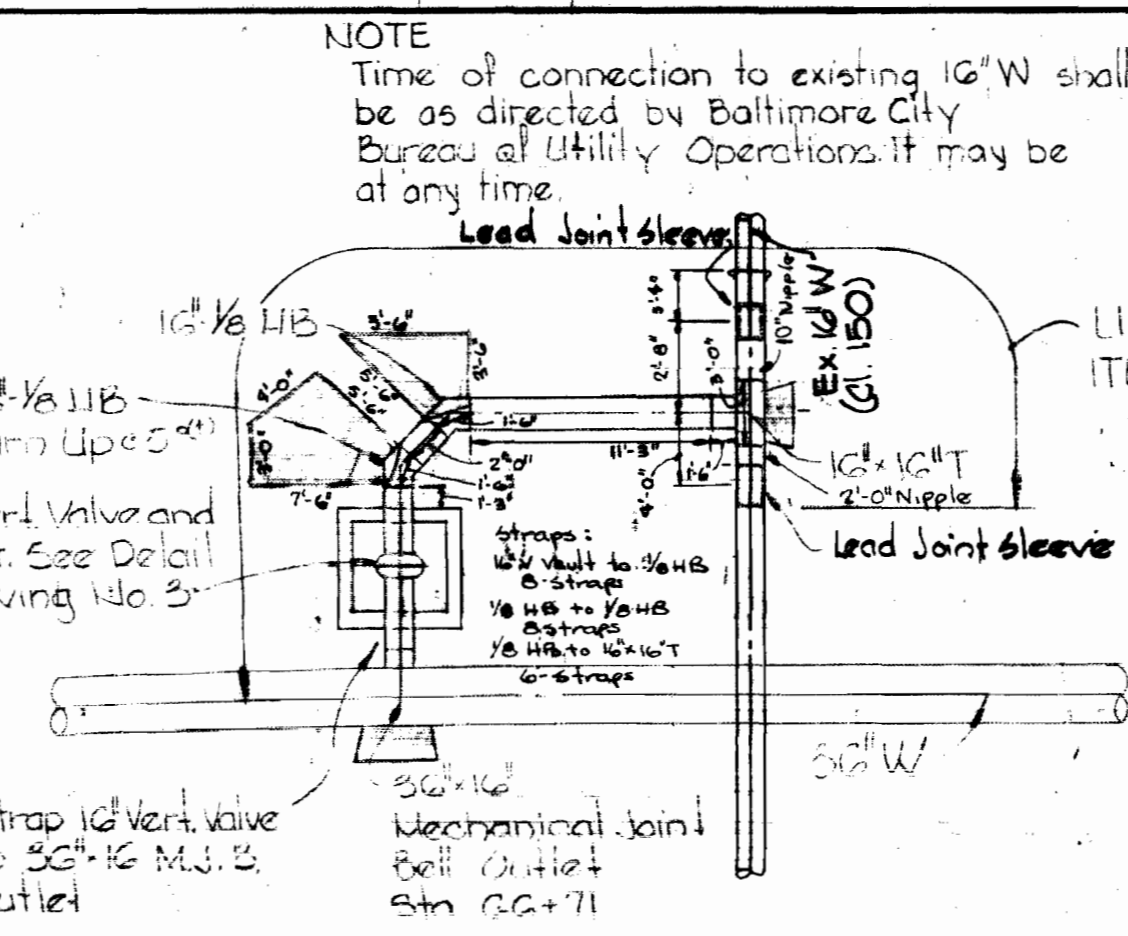
1. Open Cut (This Method Used)
  - a. The excavation through the arch shall be of sufficient size to allow at all points the proper compacting of the re-fill around it.
  - b. The area within the arch shall be completely refilled to the inside limits of the arch.
2. Jacking Carrier Pipe (ACCP Only)
  - a. The 36" Water Main which is jacked shall be of uniform outside diameter.
  - b. The cuts in the 36"inch water main shall be prevented from closing during the jacking operation. A special device to accomplish this, if approved by the Engineer, shall be used.
  - c. A cutting ring shall be installed on the first pipe to be jacked.
  - d. The portions of the bell and spigot rings which are exposed after jacking shall be given a protective coating before installing. The protective coating shall be as approved by the Engineer.
3. Jacking Casing Pipe
 

A minimum 48"inch Schedule 40 Steel Casing Pipe may be installed by the jacking method, grout pumped between outside of sleeve and earth, and the carrier pipe threaded through. The casing shall then be filled with grout or Class C Concrete.

CONTRACTOR  
NOTIFY BALTIMORE CITY - BUREAU  
OF UTILITY OPERATIONS - 306-0336  
THREE DAYS BEFORE STARTING WORK



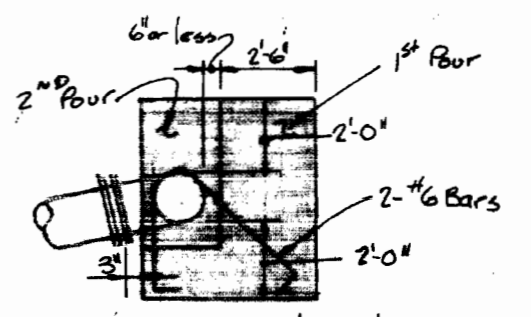
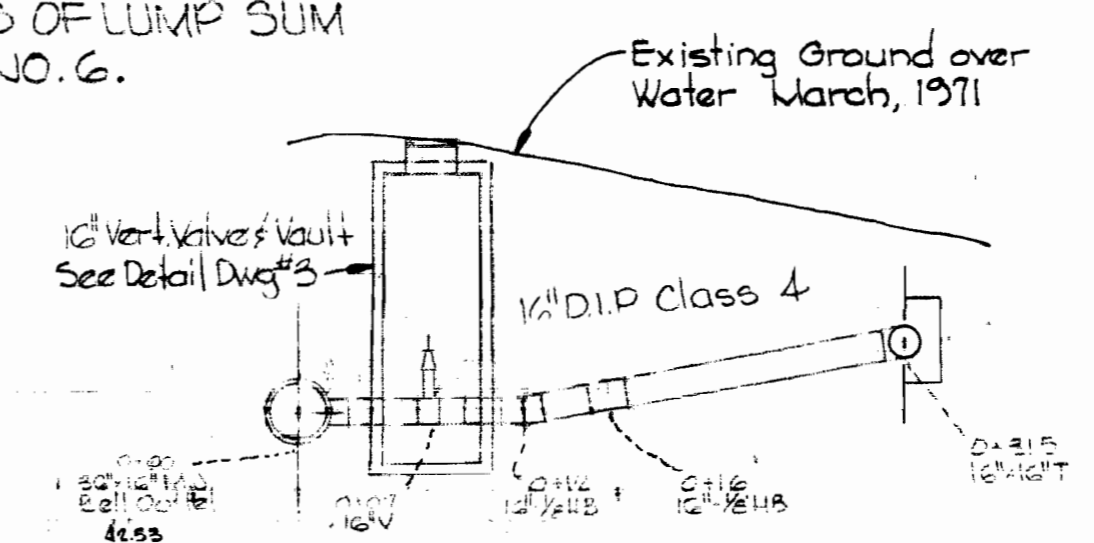
*James M. Lord*



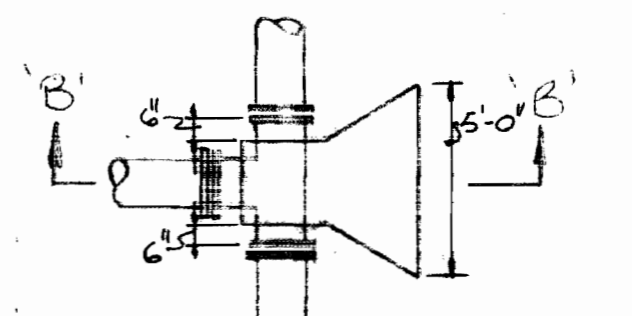
PLAN

16" CONNECTION  
Scale: 1"=10'

NOTE:  
16" VALVE SHALL REMAIN CLOSED  
UNTIL BALTIMORE COUNTY CONTRACT  
74066 W.X.O., HOWARD COUNTY  
CONTRACTS 333-W AND 625-W  
ARE COMPLETE AND IN SERVICE,  
OR UNTIL PERMISSION IS GRANTED  
BY BALTIMORE CITY AND BALTIMORE  
COUNTY.

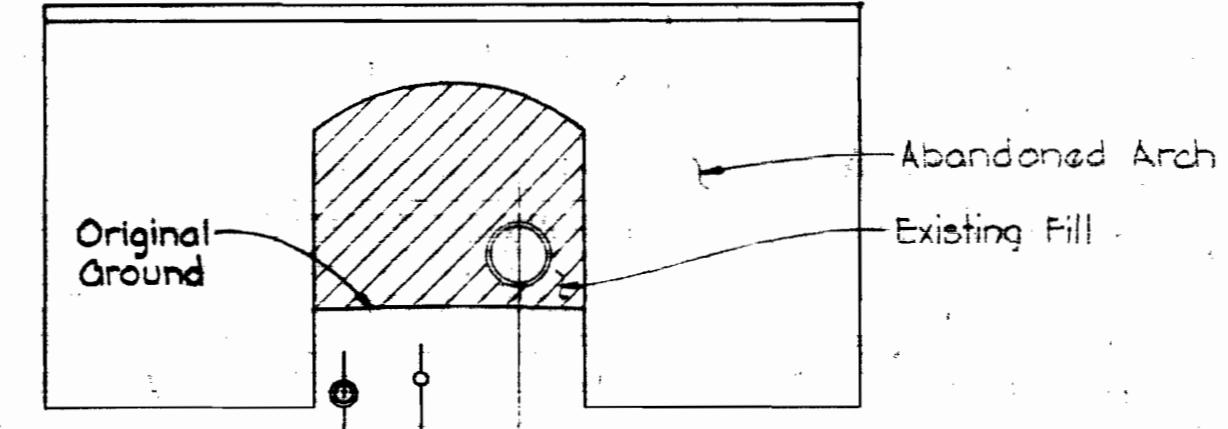


SECTION B-B



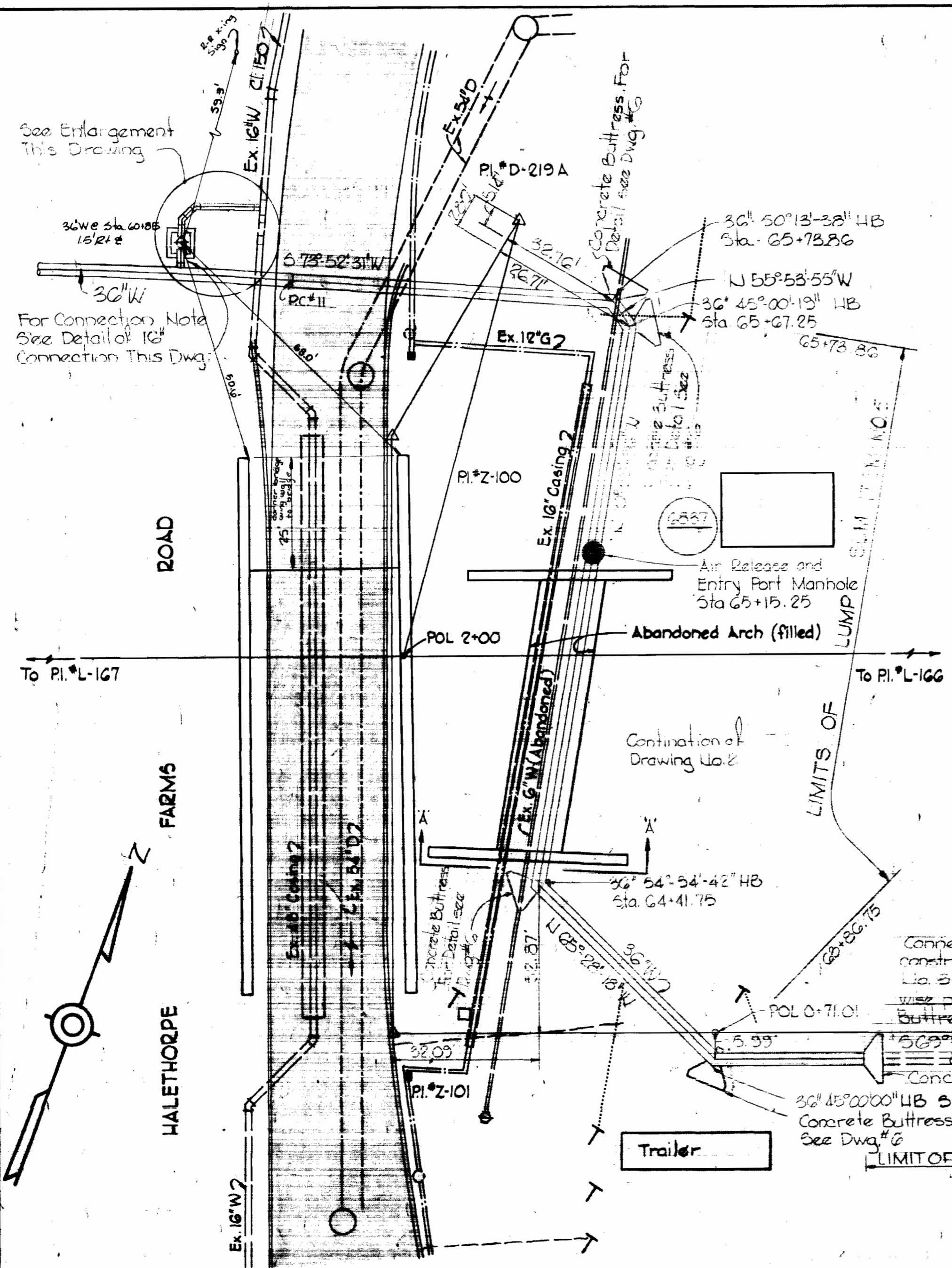
PLAN

16"X16" BUTTRESS @ WALTHORPE  
FARM ROAD  
Scale: 1"=5'-0"

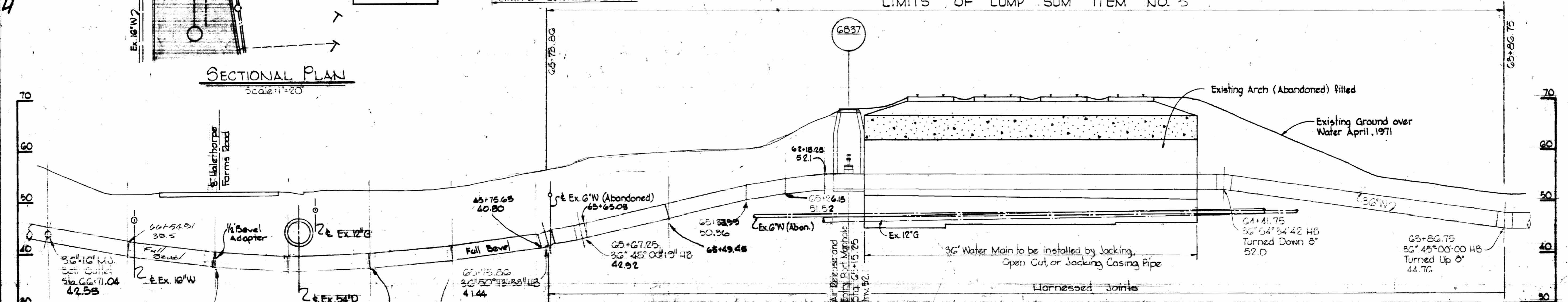


SECTION 'A-A'  
Scale: 1"=10'

LIMITS OF LUMP SUM ITEM NO. 5



SECTIONAL PLAN  
Scale: 1"=20'



PROFILE  
Scale: 1"=10'

CITY OF BALTIMORE		BALTIMORE COUNTY	
DIRECTOR	DATE	DIRECTOR	DATE
<i>William A. O'Neil</i>	10/12/74	<i>James M. Lord</i>	9/12/74
DEPT. OF PUBLIC WORKS		DEPT. OF PUBLIC WORKS	

G.W. 40815

Walthorpe Farm Road to Relay  
Contract No. 624-W

WHITMAN, REQUARDT & ASSOCIATES  
ENGINEERS  
1304 ST. PAUL ST.  
BALTIMORE, MARYLAND

HOWARD COUNTY  
DIRECTOR  
*William A. O'Neil*  
DATE  
8-14-74  
BUREAU OF ENGINEERING

CONTRACT NO. 624-W

DETAILS OF  
WATER MAINS

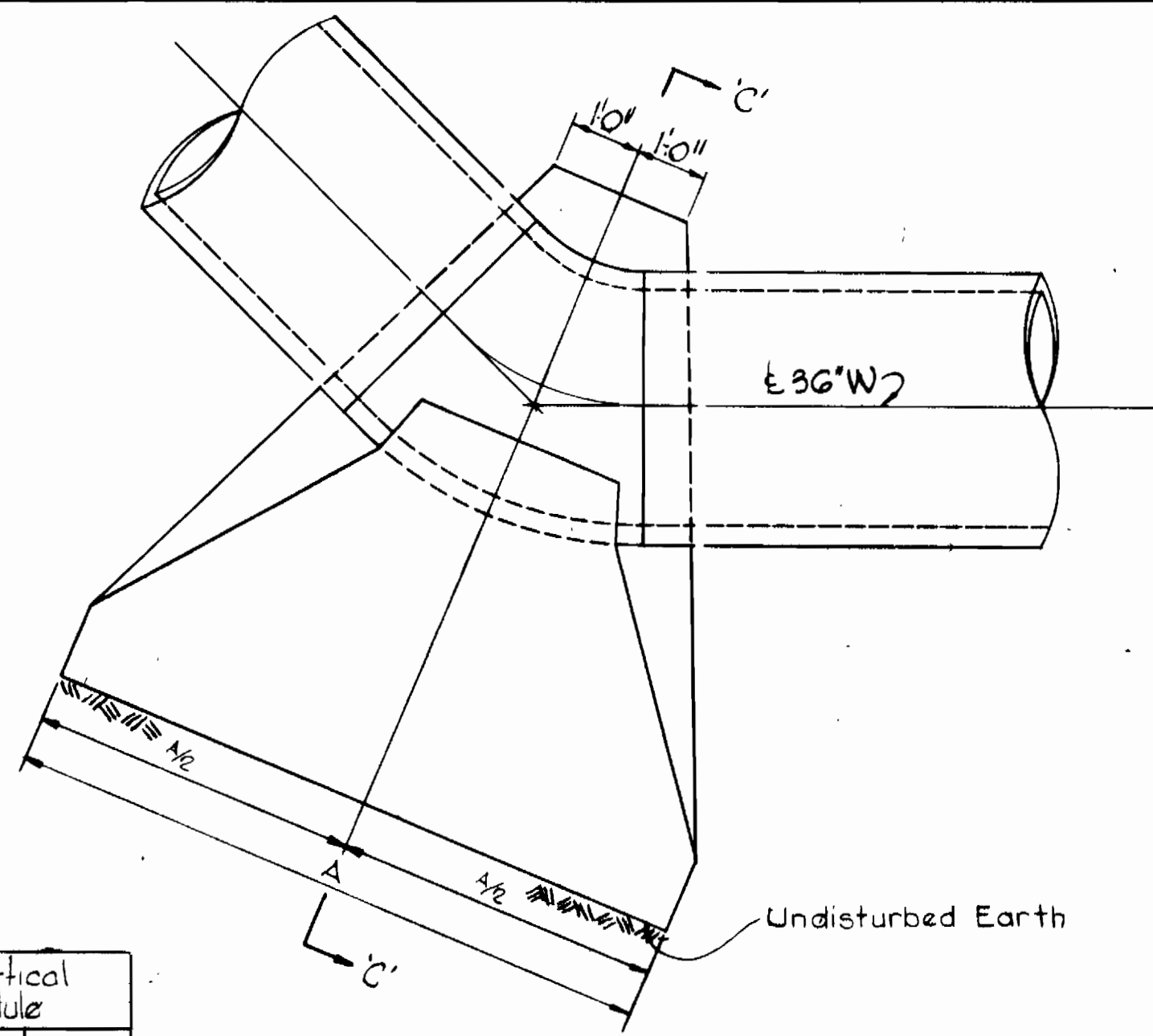
SOUTHWEST TRANSMISSION MAIN

DRAWING NO. 5 OF 6 SCALE AS SHOWN

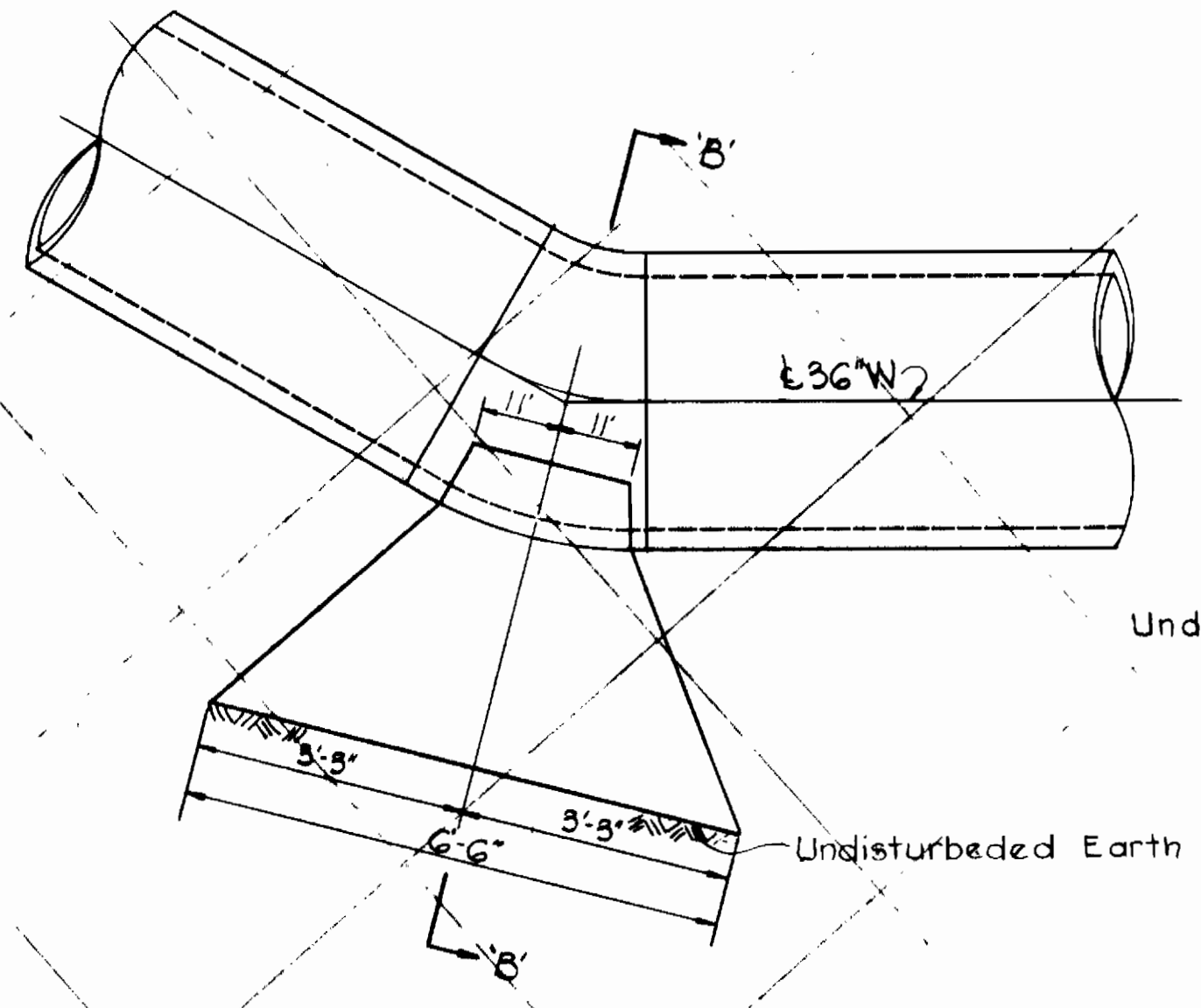
W.O. G257-2

AS BUILT  
March 1976  
SEPTEMBER 18, 1974  
MARCH 24, 1975

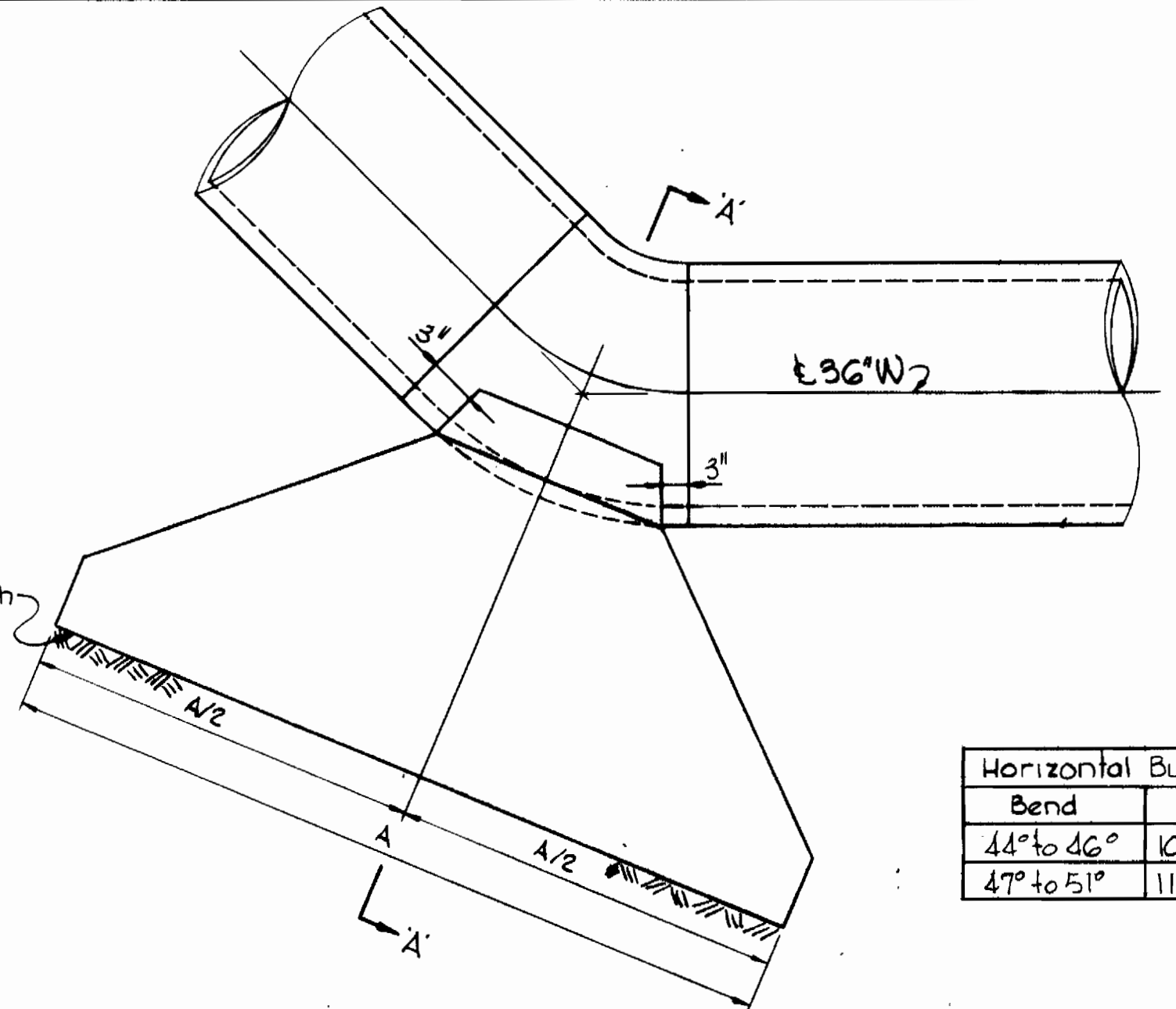
W. O. G257-2



PLAN  
Scale: 1/4"=1'-0"



ELEVATION  
Scale: 1/2"=1'-0"

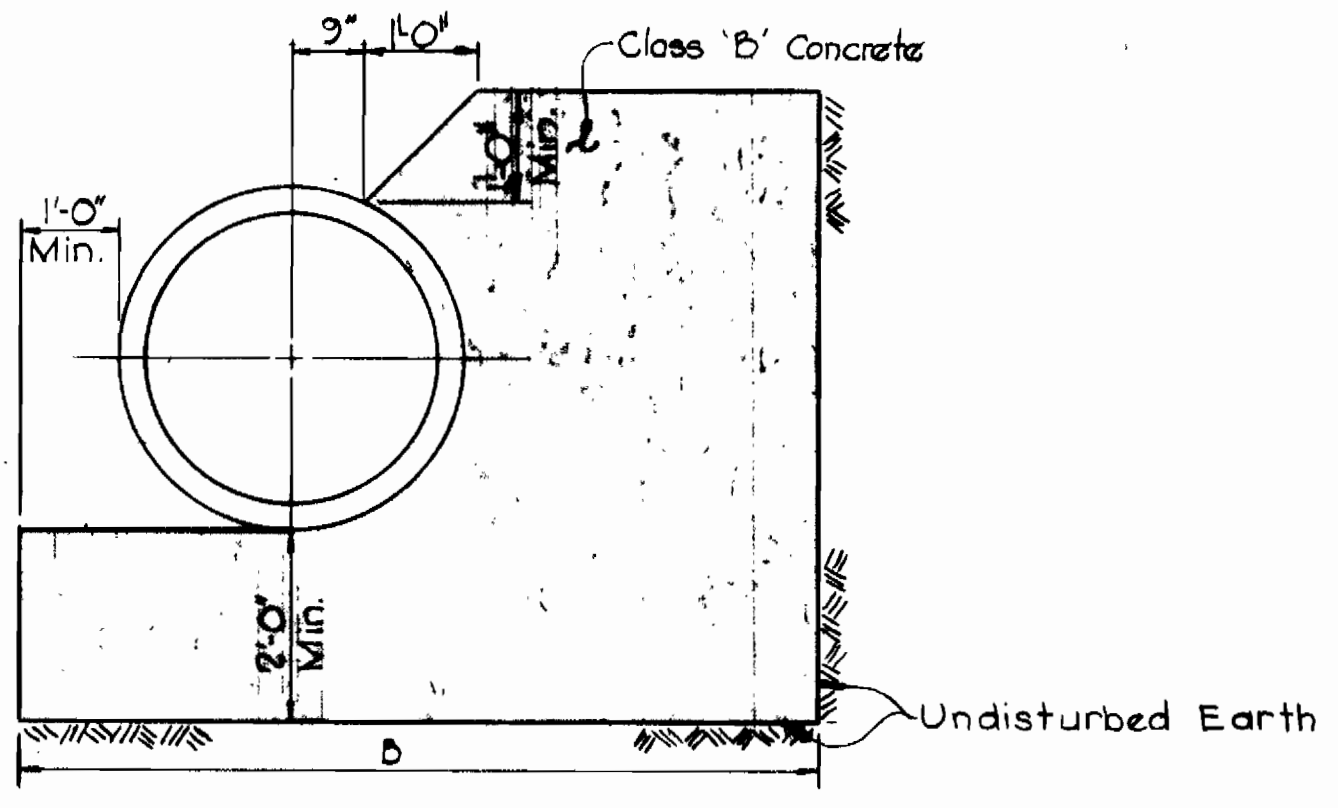


PLAN  
Scale: 1/4"=1'-0"

Horizontal Buttress Schedule			
Bend	A	B	C
44° to 46°	10'-0"	5'-9"	5'-6"
47° to 51°	11'-0"	5'-9"	5'-6"

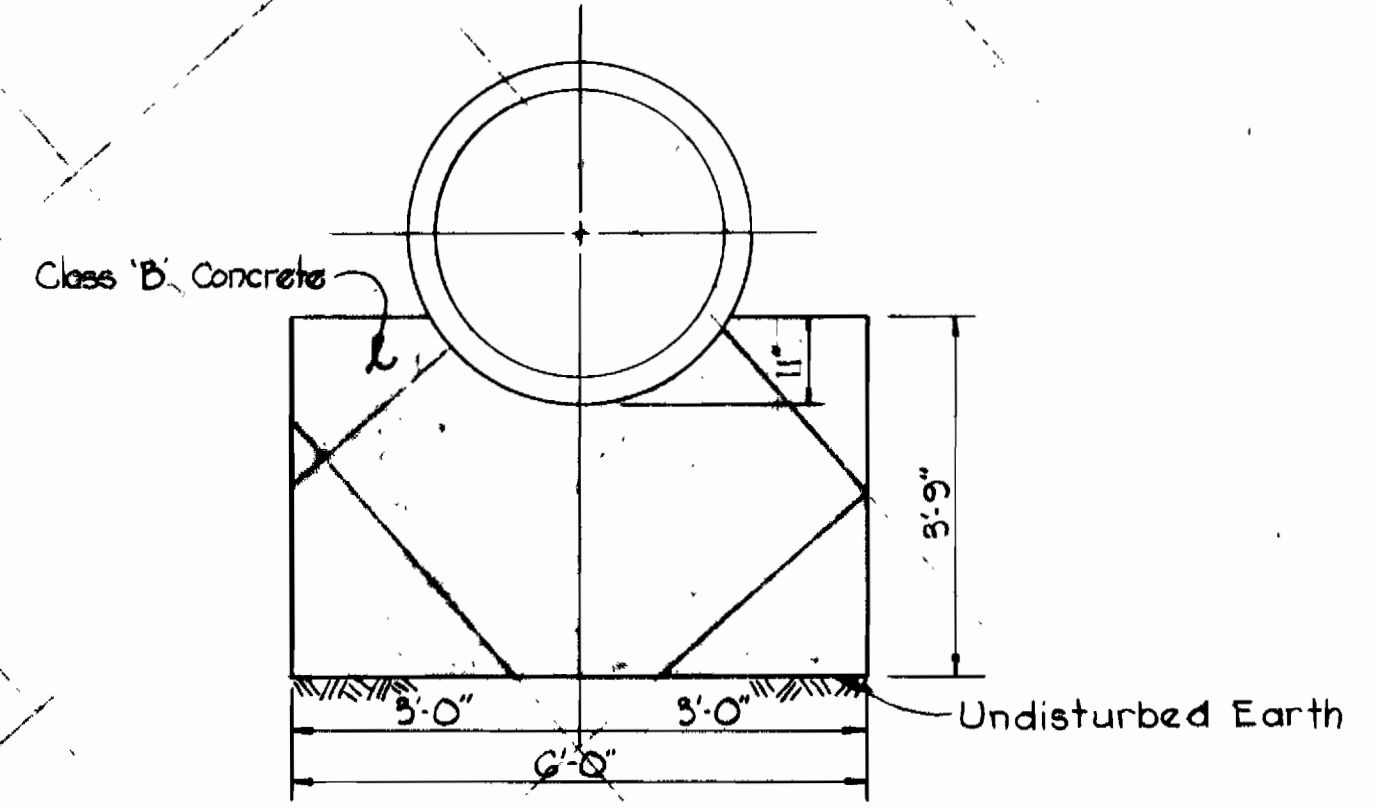
Horizontal and Vertical Buttress Schedule		
36" Bends	A	B
Hor. 45°-00'-00"	8'-0"	8'-0"
Vert. 8°-00'-00"	8'-0"	8'-0"
Hor. 37°-24'-53"	8'-0"	8'-0"
Vert. 18°-00'-00"	8'-0"	8'-0"
Hor. 54°-34'-42"	9'-0"	8'-0"
Vert. 8°-00'-00"	9'-0"	8'-0"

NOT INCLUDED IN THIS CONTRACT



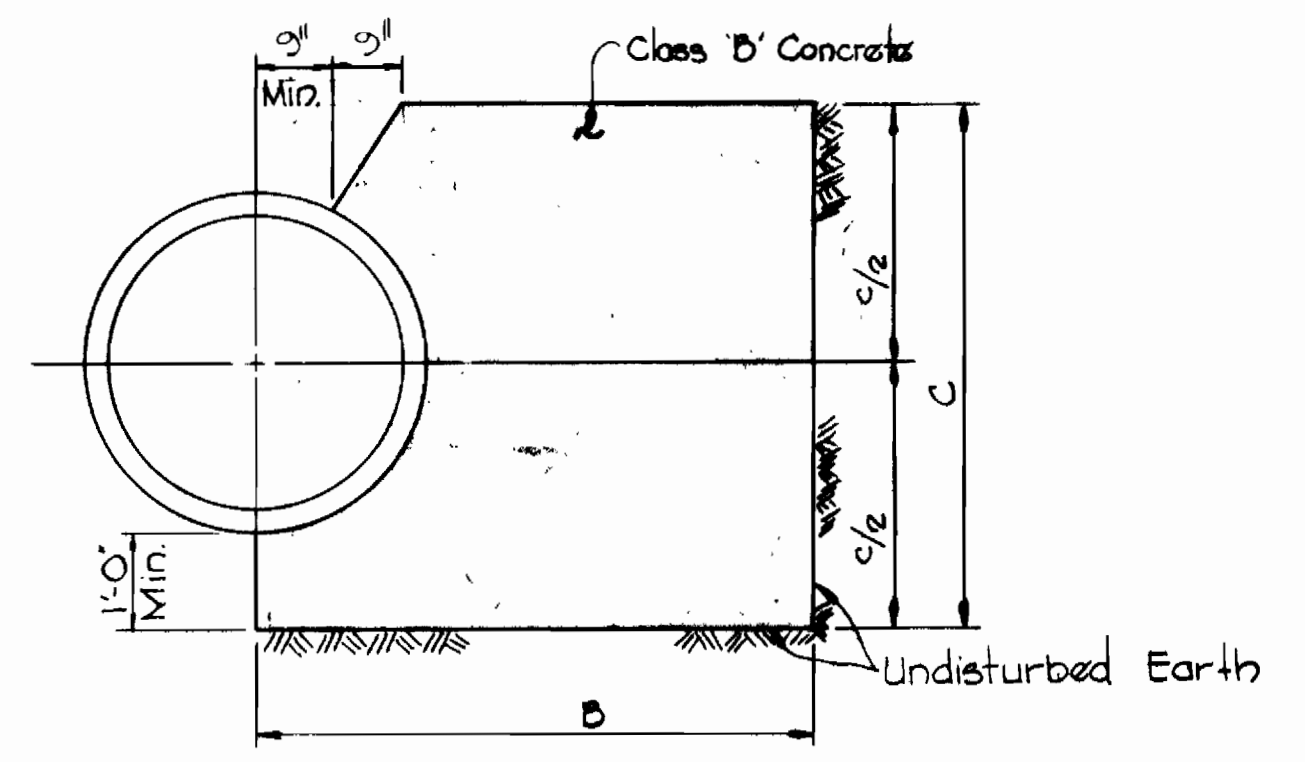
SECTION 'C-C'  
Scale: 1/4"=1'-0"

DETAILS OF HORIZONTAL AND VERTICAL BUTTRESSES



SECTION 'B-B'  
Scale: 1/4"=1'-0"

DETAILS OF VERTICAL BUTTRESS



SECTION 'A-A'  
Scale: 1/4"=1'-0"

DETAILS OF HORIZONTAL BUTTRESSES

- NOTES: (FOR ALL BUTTRESSES.)
1. Design Soil Bearing Capacity is 3,000 psf.
  2. An increase in the size of the buttress will be made if the soil bearing capacity of the actual soil is less than the design.
  3. Payment for such increase will be made under stipulated item No. 15 of the proposal.

CONTRACTOR  
NOTIFY BALTIMORE CITY - BUREAU  
OF UTILITY OPERATIONS 326-0336  
THREE DAYS BEFORE STARTING WORK



*Kenneth A. McCord*  
Walt Thorne Farms Road to Esley  
Contract No. G24-W

CITY OF BALTIMORE		BALTIMORE COUNTY	
<i>William W. Whitman</i> DIRECTOR DEPT. OF PUBLIC WORKS	10/17/74 DATE	<i>Robert J. Hartog</i> CHIEF WATER DIV. BUREAU OF ENGINEERING	9/1/74 DATE

WHITMAN, REQUARDT & ASSOCIATES  
ENGINEERS  
1304 ST. PAUL ST.  
BALTIMORE, MARYLAND

HOWARD COUNTY	
<i>William A. Ott</i> DIRECTOR DEPT. OF PUBLIC WORKS	<i>W. O. Falbert</i> CHIEF BUREAU OF ENGINEERING

CONTRACT NO. 624-W

DETAILS OF  
WATER MAINS

SOUTHWEST TRANSMISSION MAIN

DRAWING NO. 5 OF 6	SCALE AS SHOWN
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