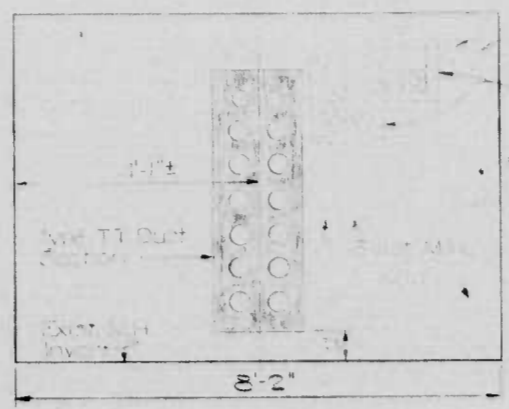


Work within these limits to be closely coordinated with the Balto. Gas & Elect. Co. No exist. conduits to be removed until new conduits are in place and in service. Each conduit relocation is to be made to avoid existing and proposed utility lines.

**COMPLETE**

**MECHANICAL-ELECTRICAL CONDUIT RELOCATION**



Section C-C  
Scale 1"=2'

**CURVE DATA**  
 4. STORM DRAIN OUTFALL  
 Δ = 22°09'21.6"  
 D = 20'00'00"  
 R = 286.4759'  
 T = 56.09'  
 L = 110.78'  
 E = 5.44'

**CURVE DATA**  
 4. STORM DRAIN OUTFALL  
 Δ = 29°29'31.3"  
 R = 50.00'  
 T = 51.32'  
 L = 79.84'  
 E = 21.65'

- DISPOSITION OF EXISTING UTILITIES**
- Existing 10" water to be supported during construction (See Special Provisions) **COMPLETE**
  - Existing Mech. Elec. Conduit to be relocated as shown **COMPLETE**
  - Existing 4" gas to be relocated by others
  - Existing 8" San. and Telephone duct not to be disturbed.

- DISPOSITION OF EXISTING UTILITIES**
- See Section B-B
  - Existing Telephone Duct not to be disturbed

**NOTE (B)**  
 FOR PERCENT COMPLETE SEE PROJECT STATUS SUPPLEMENTAL

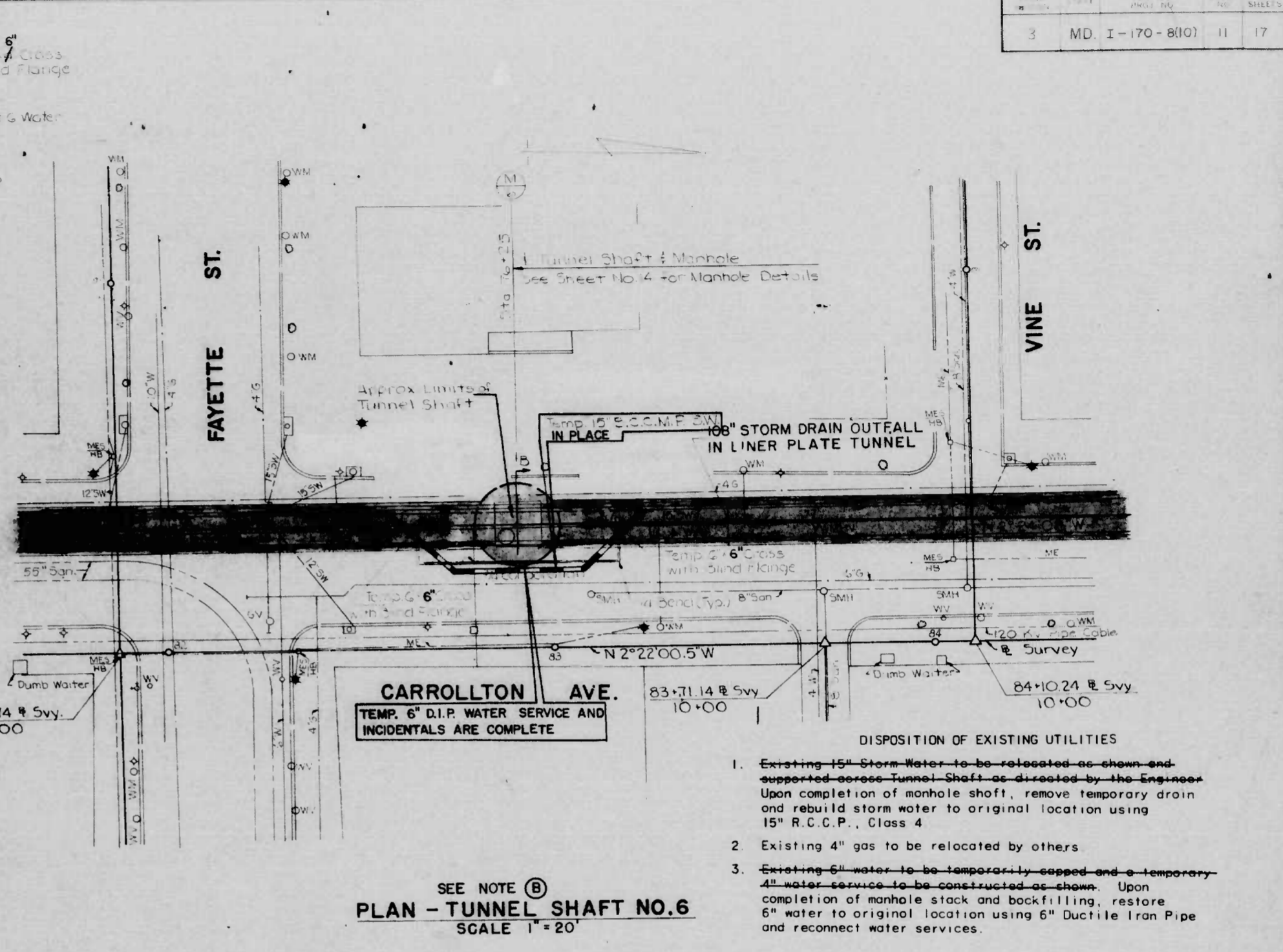
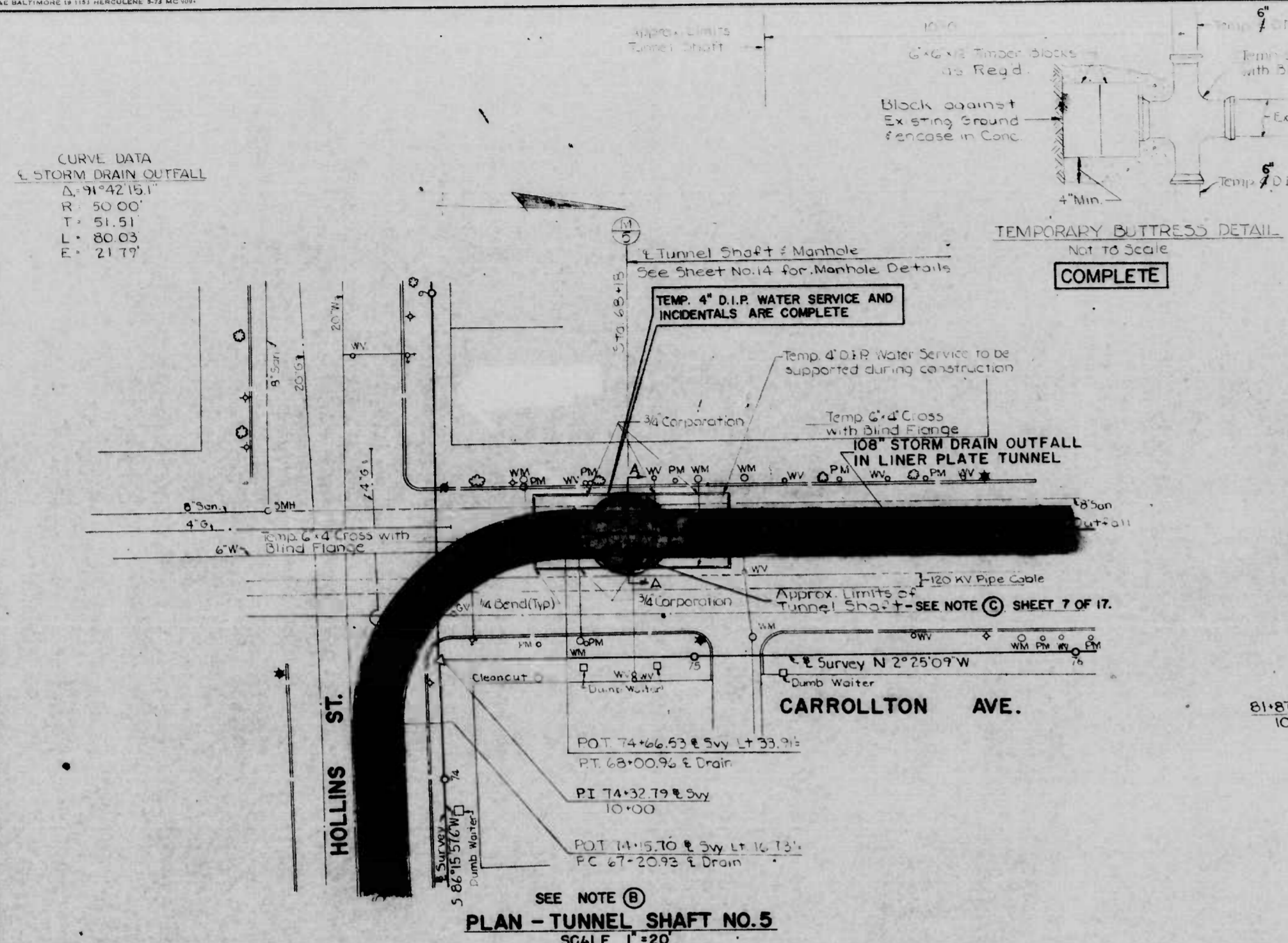
**SECTION A-A**  
 STA. 57+19 & STORM DRAIN OUTFALL  
 SCALE 1"=10'

**SECTION B-B**  
 STA. 63+11 & STORM DRAIN OUTFALL  
 SCALE 1"=10'

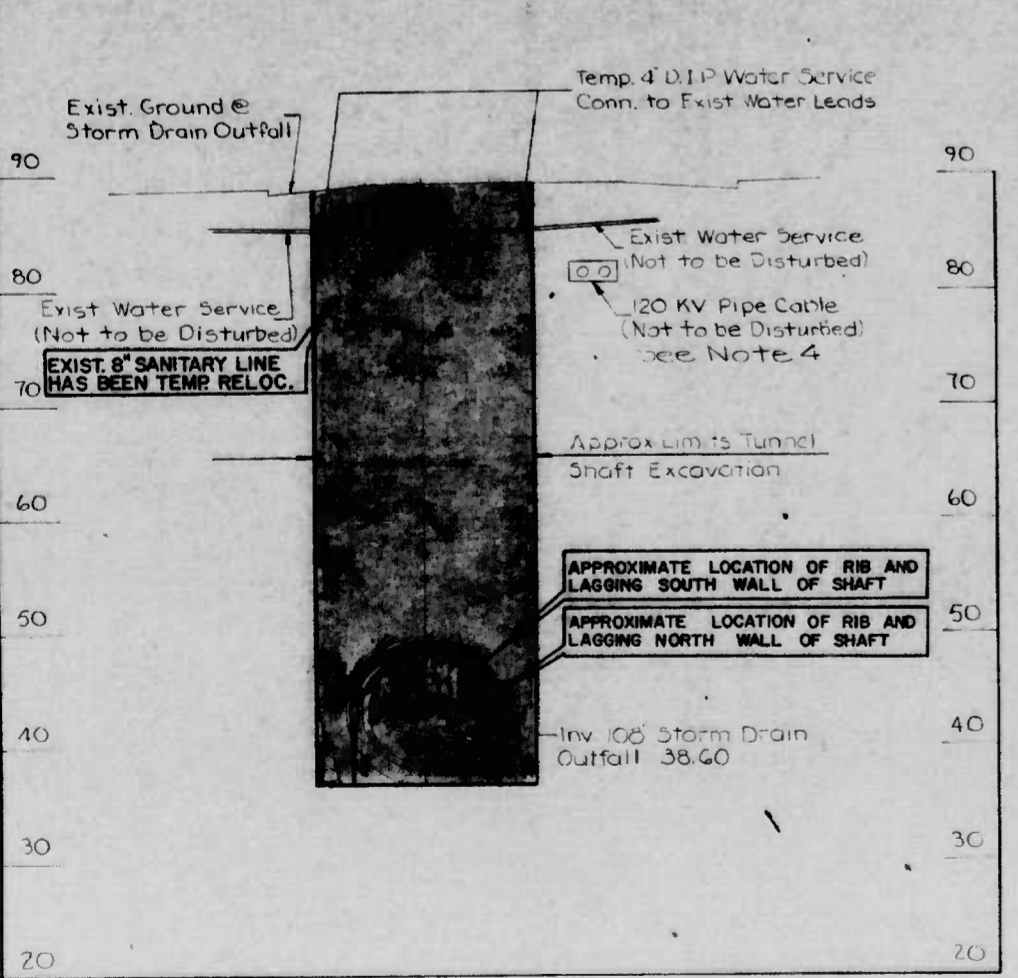
<p>REVISIONS</p> <p>Approved: Not May (1974)                  UPDATED - JULY 1976</p>	<p>CONSULTANT</p> <p>BALLARD-DIVER                  JOINT VENTURE                  CONSULTING ENGINEERS                  OWINGS MILLS, MARYLAND</p>	<p>CITY OF BALTIMORE                  DEPARTMENT OF PUBLIC WORKS &amp;                  INTERSTATE ROUTE 170                  STORM DRAIN OUTFALL                  I-170 TO SOUTH OF CARROLL STREET                  TUNNEL SHAFT NO 3 &amp; TUNNEL SHAFT NO 4 DETAILS</p>	<p>STATE HIGHWAY ADMINISTRATION OF MARYLAND                  INTERSTATE DIVISION FOR BALTIMORE CITY</p>
<p>SCALE AS SHOWN</p>		<p>DATE: MARCH 1974</p>	<p>DRAWN BY: R.A.W.                  TRACED BY: R.A.W.                  P.A.W. NO. I-170-B(1)                  S.H.A. NO. 59-9-R15                  BALTO. DIST. NO. 2234-R</p>

3	MD. I-170-8107	11	17
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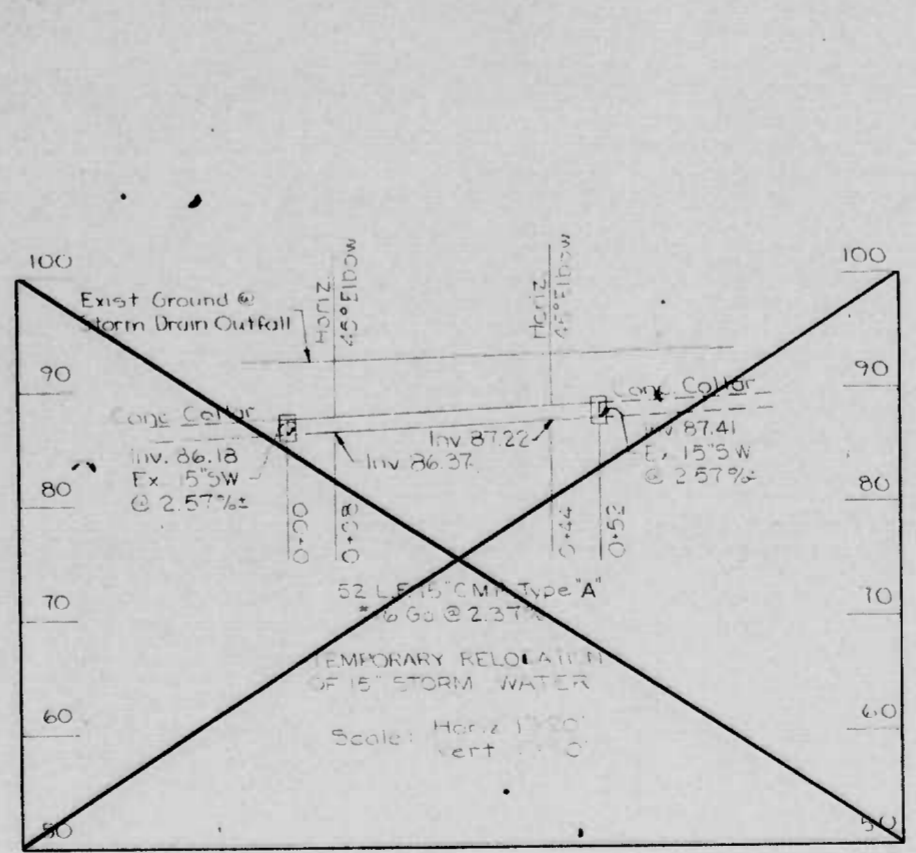
CURVE DATA  
 E. STORM DRAIN OUTFALL  
 Δ, 91°42'15.1"  
 R, 50.00'  
 T, 51.51'  
 L, 80.03'  
 E, 21.79'



- DISPOSITION OF EXISTING UTILITIES
- Existing 15" Storm Water to be relocated as shown and supported across Tunnel Shaft as directed by the Engineer. Upon completion of manhole shaft, remove temporary drain and rebuild storm water to original location using 15" R.C.C.P., Class 4.
  - Existing 4" gas to be relocated by others.
  - Existing 6" water to be temporarily capped and a temporary 4" water service to be constructed as shown. Upon completion of manhole shaft and backfilling, restore 6" water to original location using 6" Ductile Iron Pipe and reconnect water services.

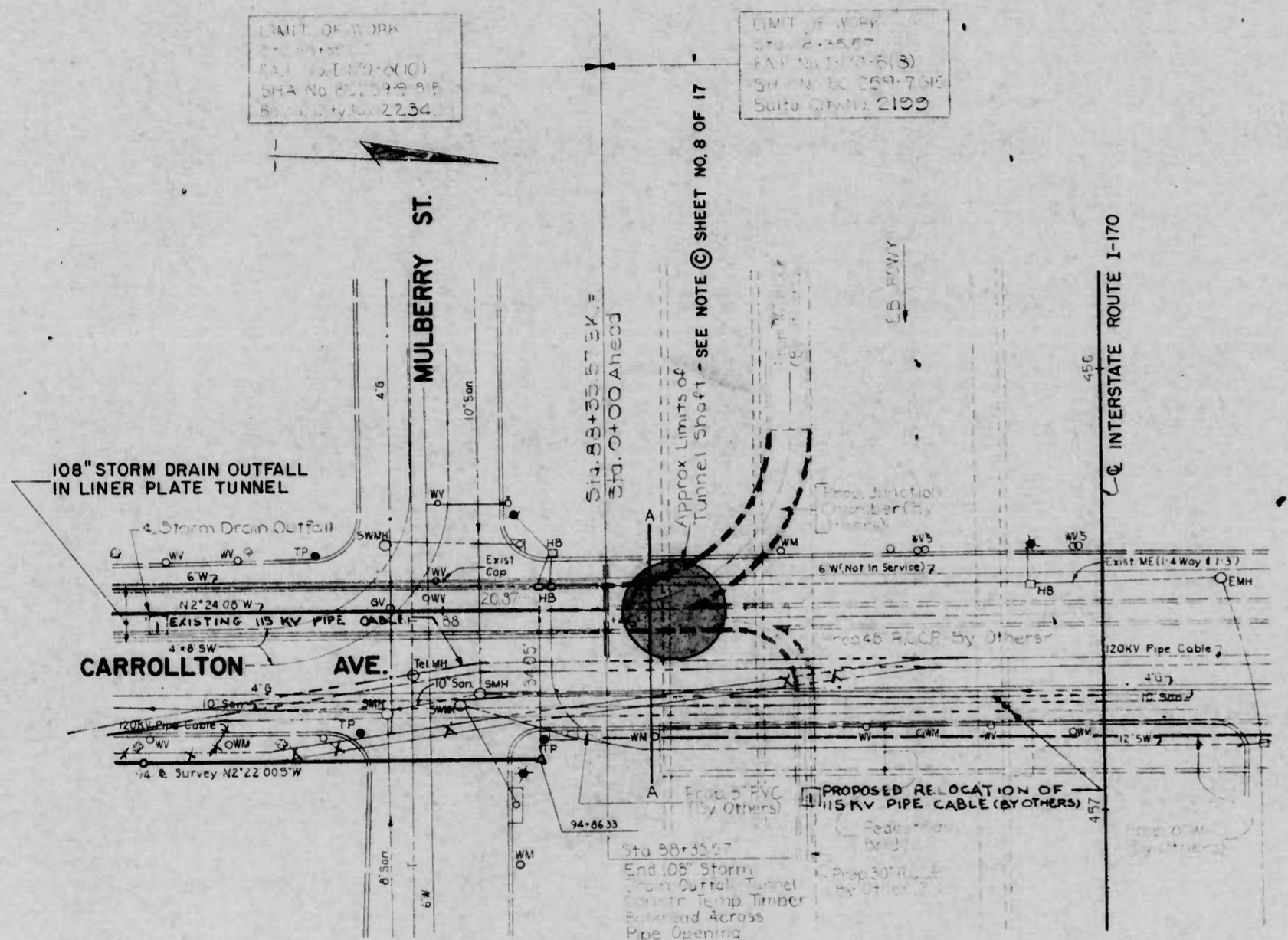


- DISPOSITION OF EXISTING UTILITIES
- Existing 6" water to be temporarily capped as shown. A temporary 4" water service to be constructed as shown to service those houses interrupted by capping 6" water. Upon completion of the manhole shaft and backfilling, restore water main to original location using 6" Ductile Iron Pipe and reconnect water services.
  - The existing 8" Sanitary to be supported through the tunnel shaft or temporarily relocated around the shaft using 8" V.C.P. (Extra Strength). Upon completion of the manhole shaft and backfilling, reconnect service connections in original location.
  - Existing gas line connections are to be relocated by others.
  - The Asphaltic Compound protective coating of the existing 120 KV Pipe Cable is not to be disturbed. The Baltimore Gas and Electric Company shall be notified immediately if any damage to the protective coating occurs.
- NOTE (B)**  
 FOR PERCENT COMPLETE SEE PROJECT STATUS SUPPLEMENTAL



<b>REVISIONS</b> UPDATED - JULY 1976 ADDENDUM NO. 1 8/25/76	<b>CONSULTANT</b> BALLARD-DIVER JOINT VENTURE CONSULTING ENGINEERS OWINGS MILLS, MARYLAND	CITY OF BALTIMORE DEPARTMENT OF PUBLIC WORKS & STATE HIGHWAY ADMINISTRATION OF MARYLAND INTERSTATE ROUTE 170 STORM DRAIN OUTFALL I-170 TO SOUTH OF CARROLL STREET TUNNEL SHAFT NO. 5 & TUNNEL SHAFT NO. 6 DETAILS	DRAWN BY T.R.K. TRACED BY T.R.K. DES. BY C.A.J. CHK. BY K.L.E.
SCALE AS SHOWN	DATE MARCH 1974	F.A.P. NO. I-170-8(10) S.H.A. NO. BC-259-9-815 BALTO. CITY NO. 2234-R	SHEET NO. 11 OF 17

3	MD I-170-8(0)	12	17
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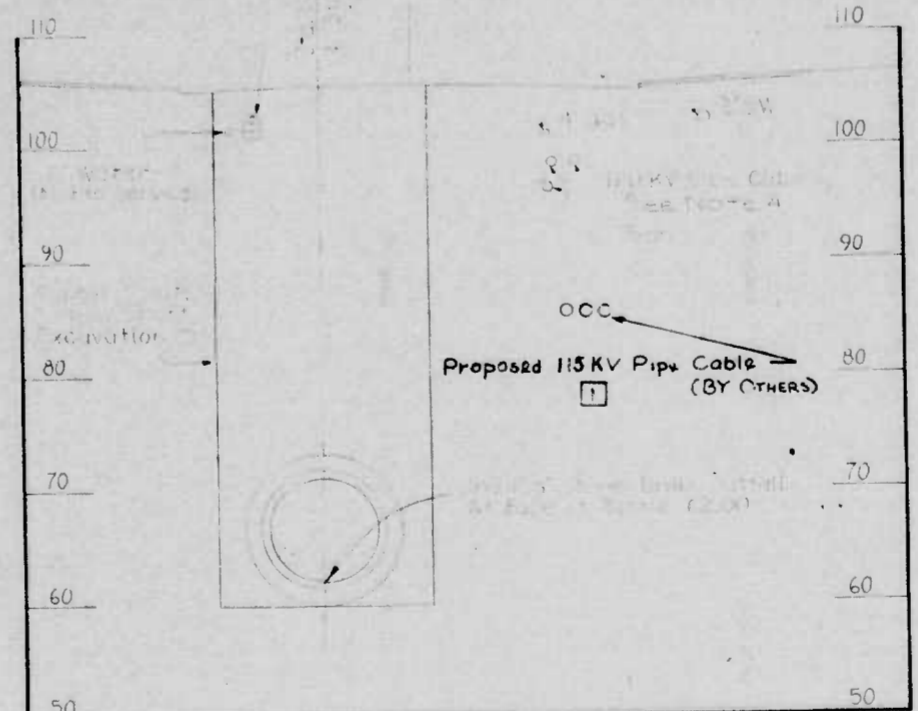
SEE NOTE (B)  
**PLAN - TUNNEL SHAFT NO. 7**  
 SCALE 1" = 20'

**DISPOSITION OF EXISTING UTILITIES**

1. The existing 6" water in the tunnel shaft limits is not in service and shall be removed within the limits of the tunnel shaft excavation.
2. The existing M-E Conduit (1-4 way and 1-3") is to be abandoned after new conduits are constructed by others.
3. All other existing utilities shall be protected and maintained in service during the tunnel construction.
4. The Asphaltic Compound protective coating of the existing 120 KV Pipe Cable is not to be disturbed. The Baltimore Gas and Electric Company shall be notified immediately if any damage to the protective coating occurs.

NOTE (B)  
 FOR PERCENT COMPLETE SEE  
 PROJECT STATUS SUPPLEMENTAL

NOTE: The I-170 grading, retaining wall and storm drain junction chamber construction is to be performed by others under the I-170 Roadway Contract. Excavation and backfill of Tunnel Shaft No. 7 is to be coordinated with the Contractor for I-170-8(0) with the concurrence of the Engineer.

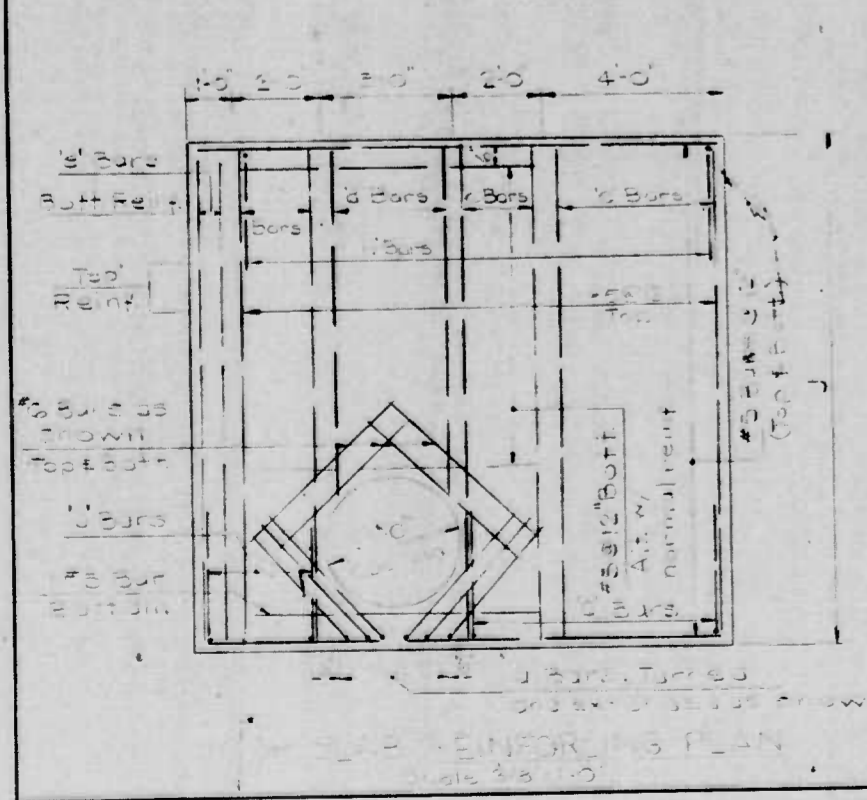
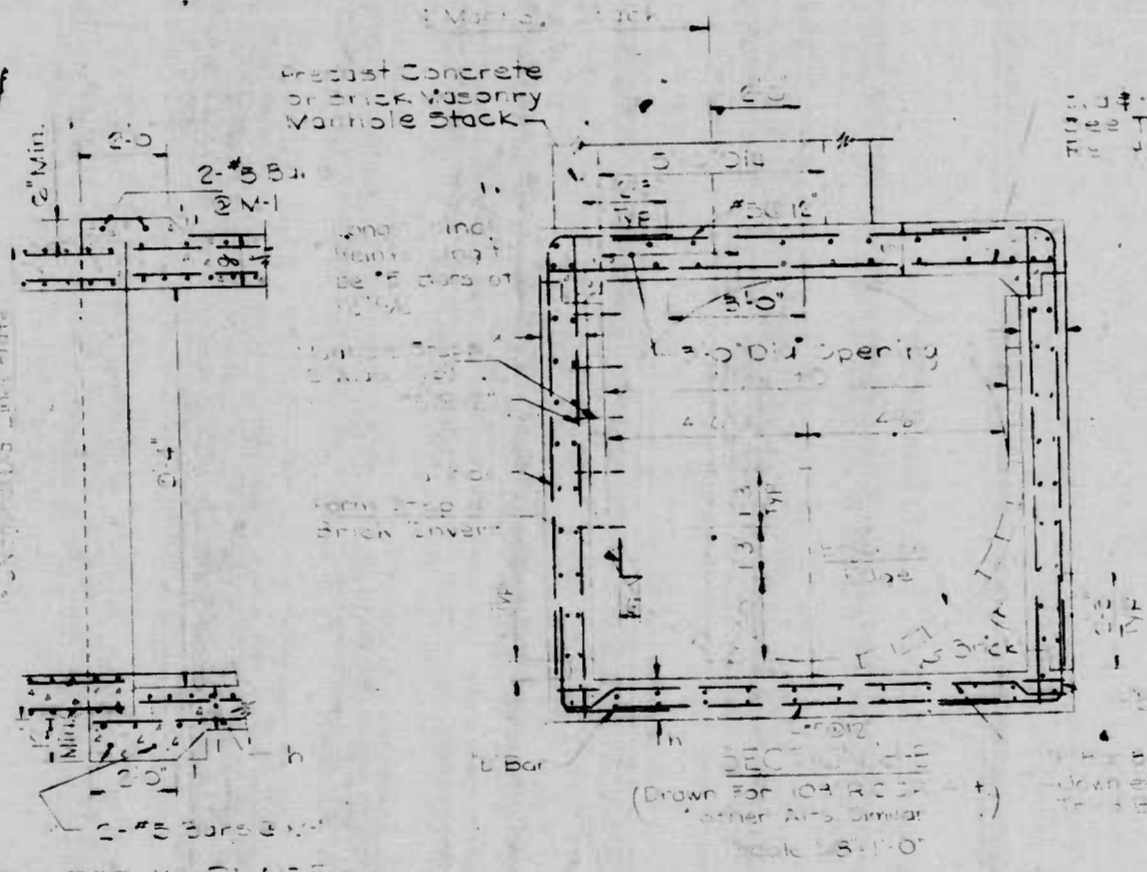
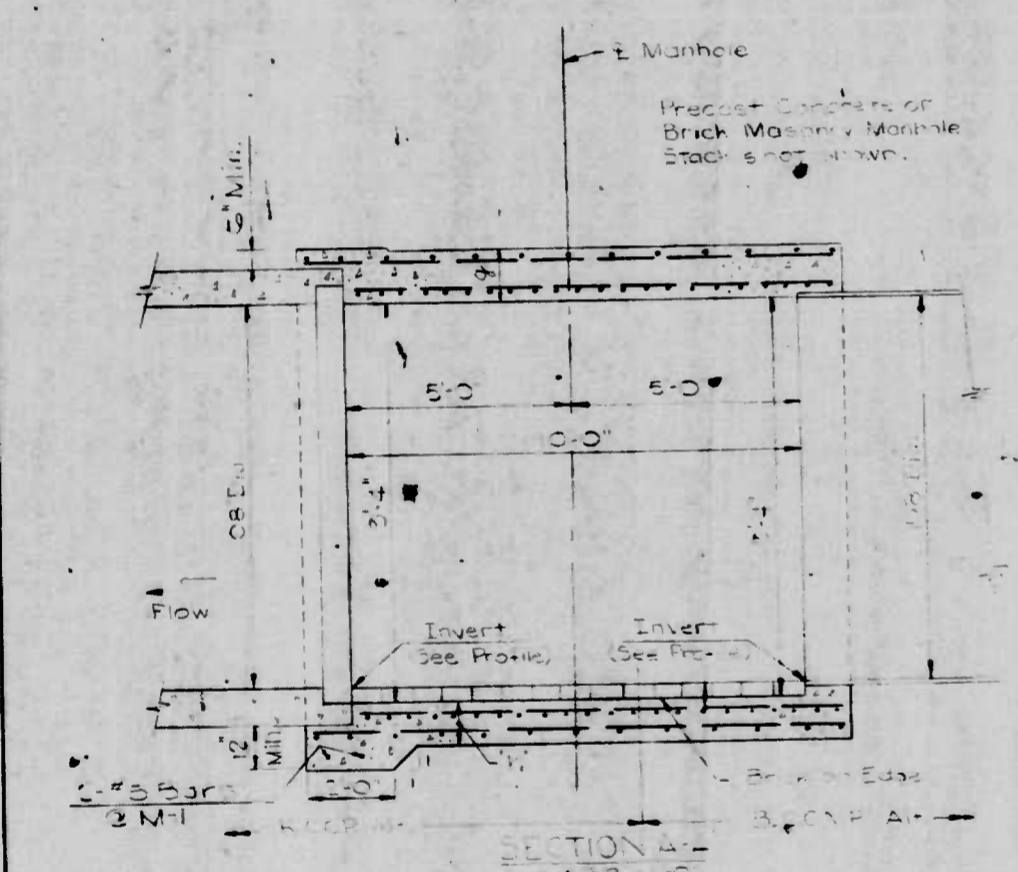
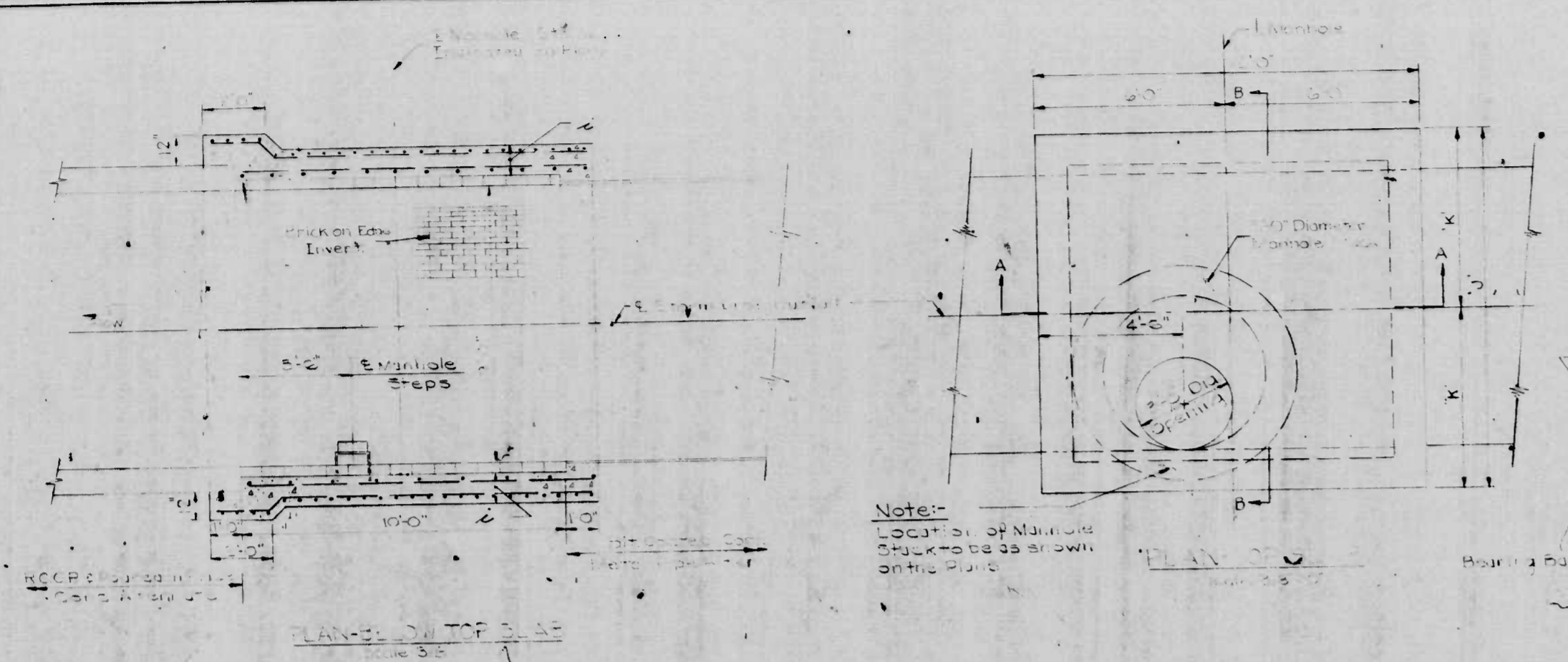


**SECTION A-A**  
**STA. 88+46.5 ± & STORM DRAIN OUTFALL**  
 SCALE 1" = 10'

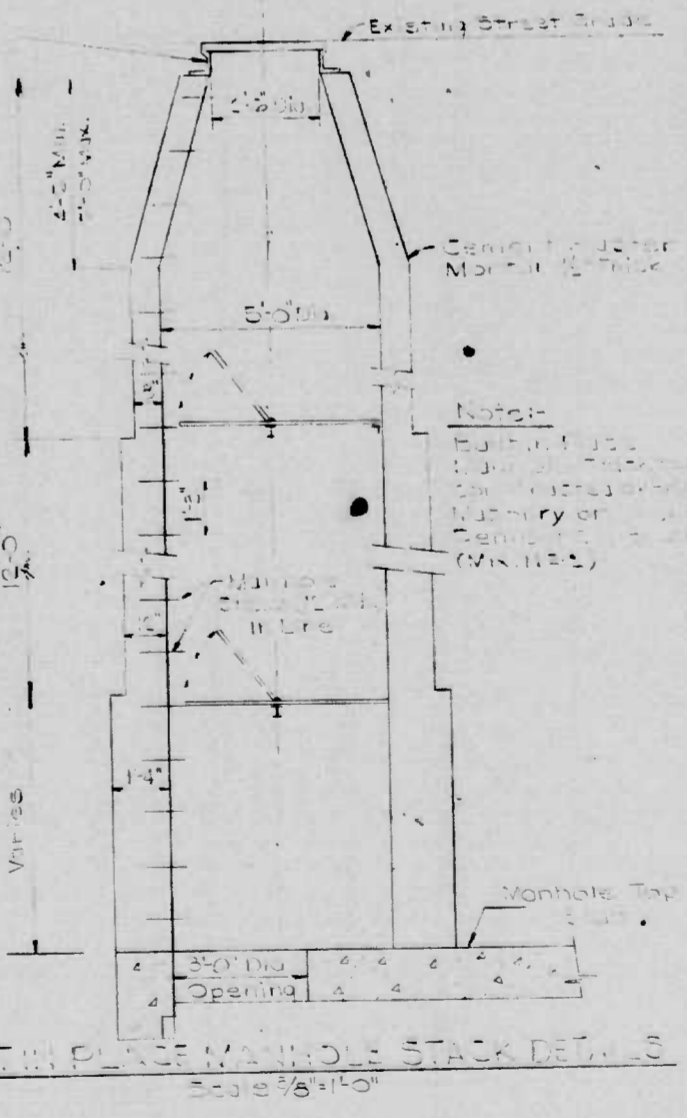
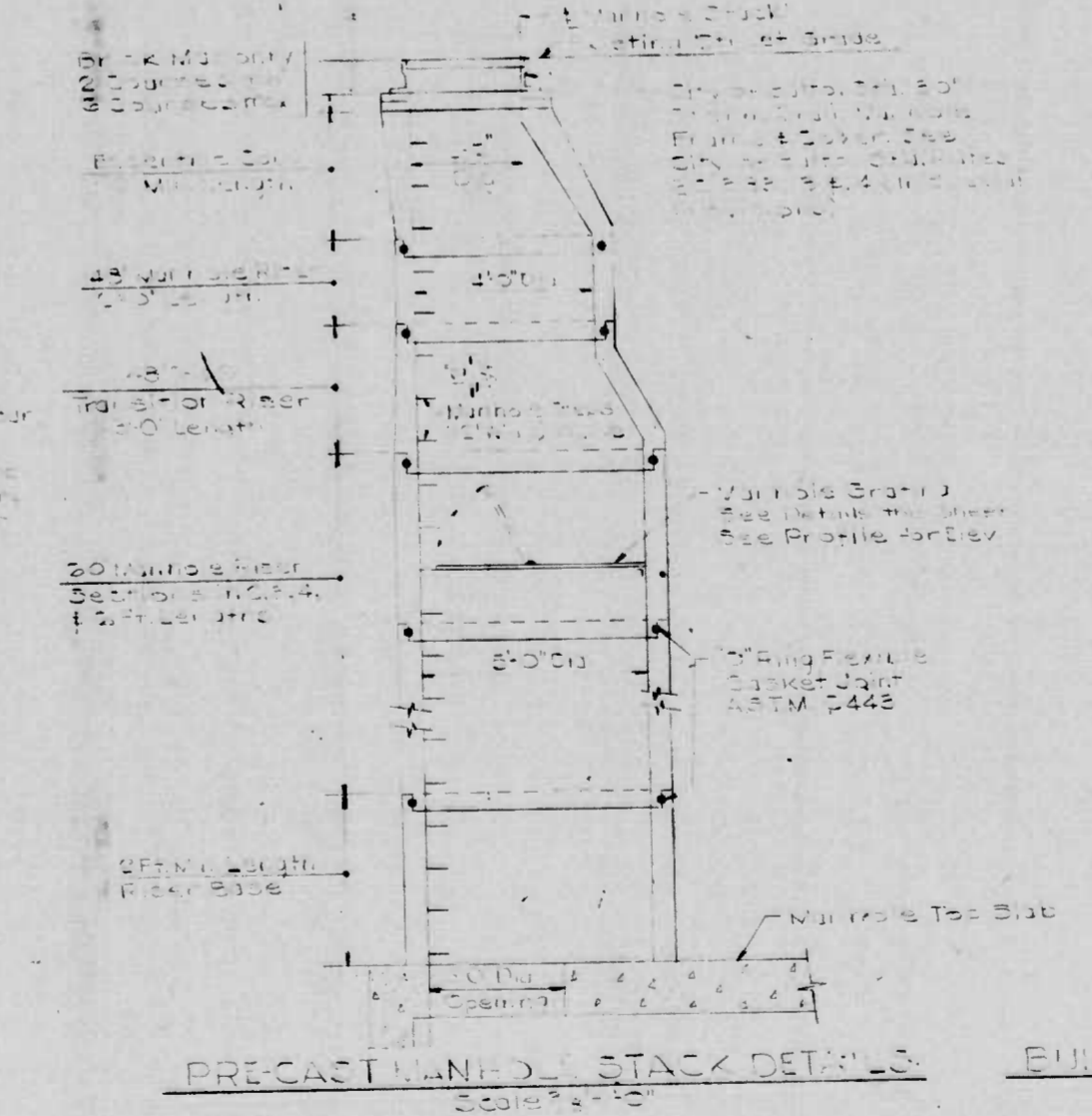
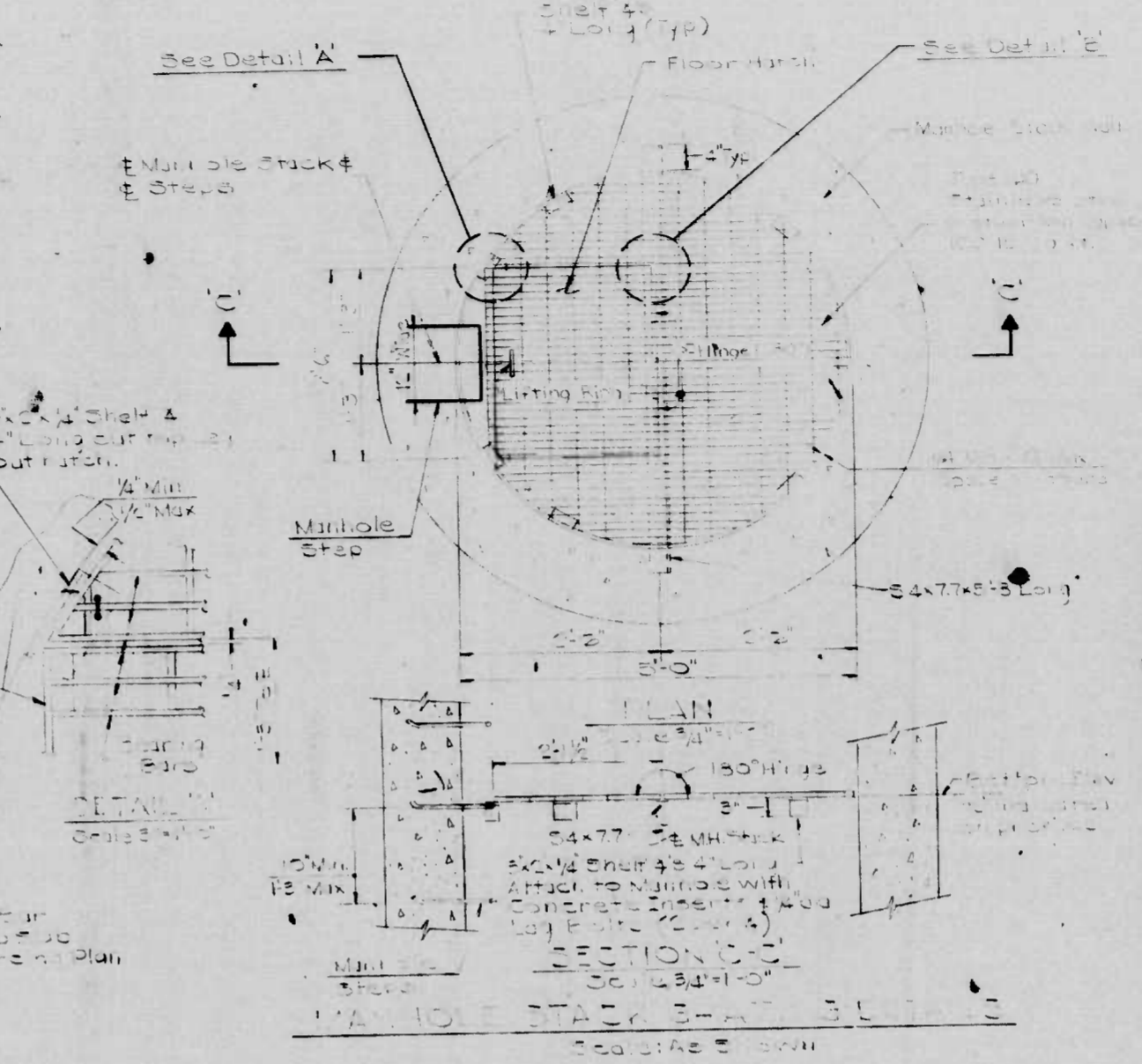
REVISIONS 11 REVISED 7/8/74 UPDATED - JULY 1976	CONSULTANT BALLARD-DIVER JOINT VENTURE CONSULTING ENGINEERS OWINGS MILLS, MARYLAND	CITY OF BALTIMORE DEPARTMENT OF PUBLIC WORKS & STATE HIGHWAY ADMINISTRATION OF MARYLAND INTERSTATE DIVISION FOR BALTIMORE CITY	
		INTERSTATE ROUTE 170 STORM DRAIN OUTFALL I-170 TO SOUTH OF CARROLLTON STREET TUNNEL SHAFT NO. 7 DETAILS	DRAWN BY T.R.K. TRACED BY I.R.K. F.A.P. NO. I-170-8(0) S.H.A. NO. EG-258-9-B15 BALTO. CITY NO. 2734-R
SCALE AS SHOWN		DATE MARCH 1974	
		DES. BY C.A.J. CHK. BY K.L.E.	SHEET NO. 12 OF 17



FED. REGION	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	MD.	I-170-8(10)	14	17



MANHOLE NUMBER	SIZE SCHEDULE									
	a	b	c	d	e	f	g	h	i	j
M-1	4'-0"	7'-0"	8'-0"	8'-0"	6'-0"	7'-0"	10'	12'	11'	5'-10"
M-2	4'-0"	8'-0"	8'-0"	8'-0"	6'-0"	8'-0"	20'	5'	15'	4'-1"
M-3	4'-0"	8'-0"	10'-0"	8'-0"	6'-0"	7'-0"	10'	15'	12'-2"	6'-1"
M-4	4'-0"	8'-0"	8'-0"	7'-0"	6'-0"	7'-0"	24'	20'	5'	6'-1"
M-5	4'-0"	8'-0"	10'-0"	7'-0"	6'-0"	7'-0"	24'	20'	5'	6'-1"

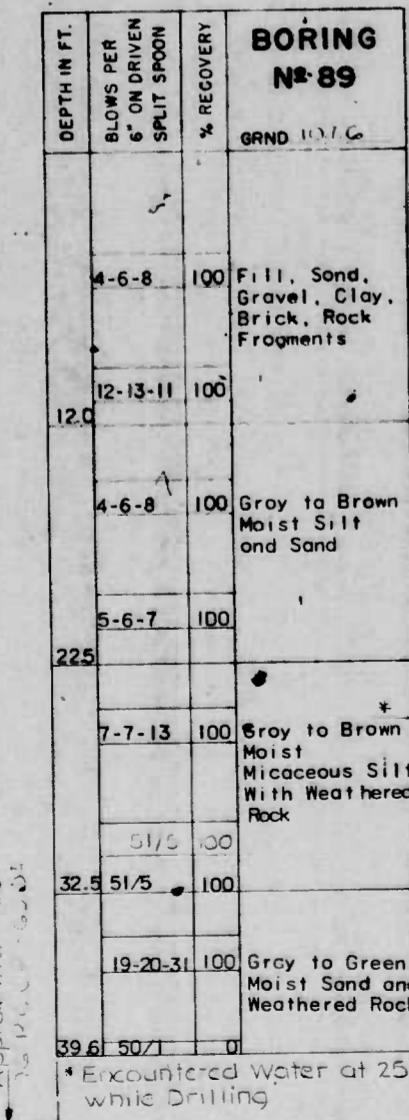
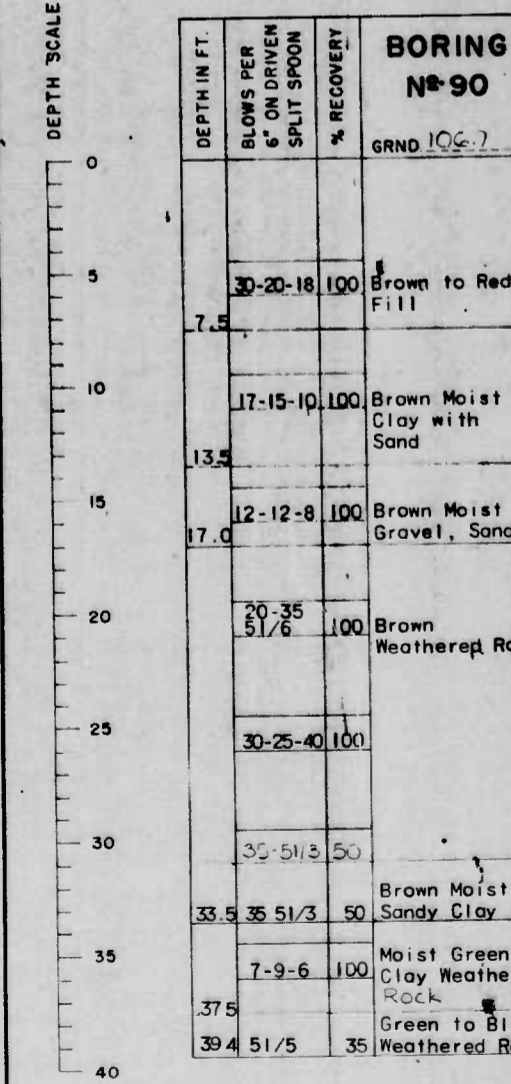
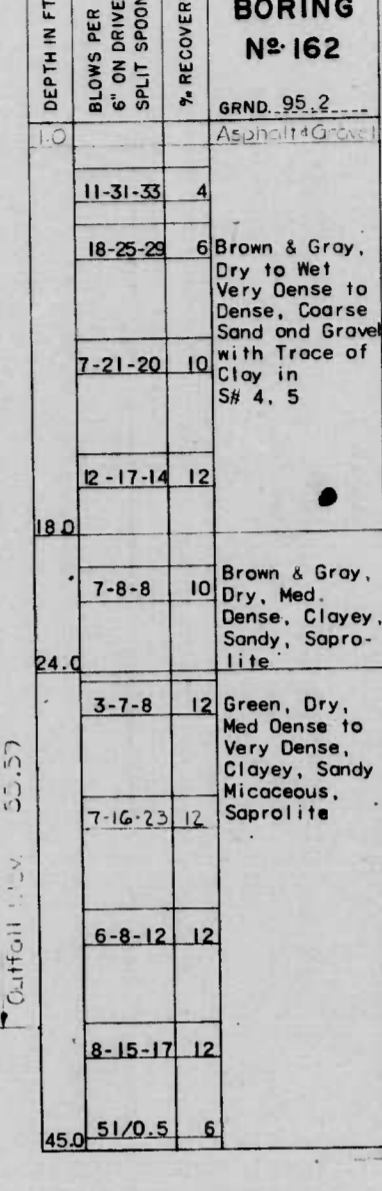
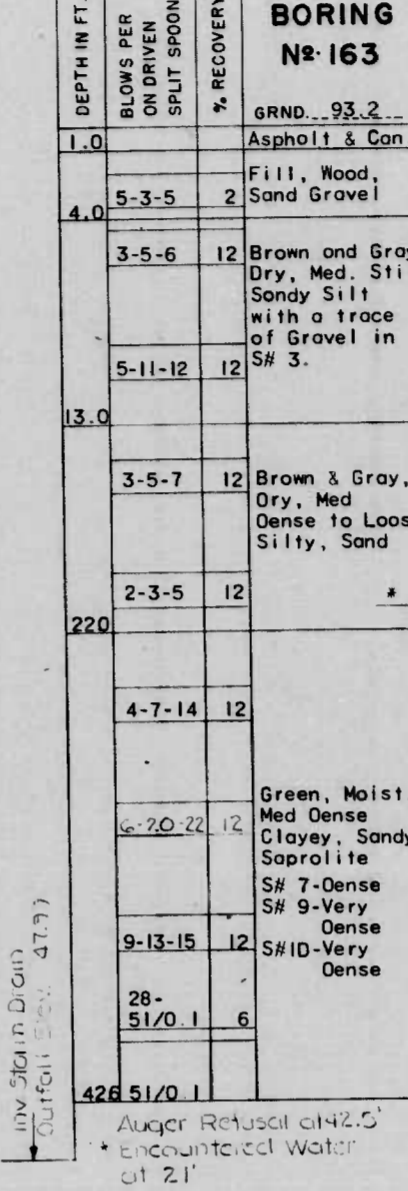
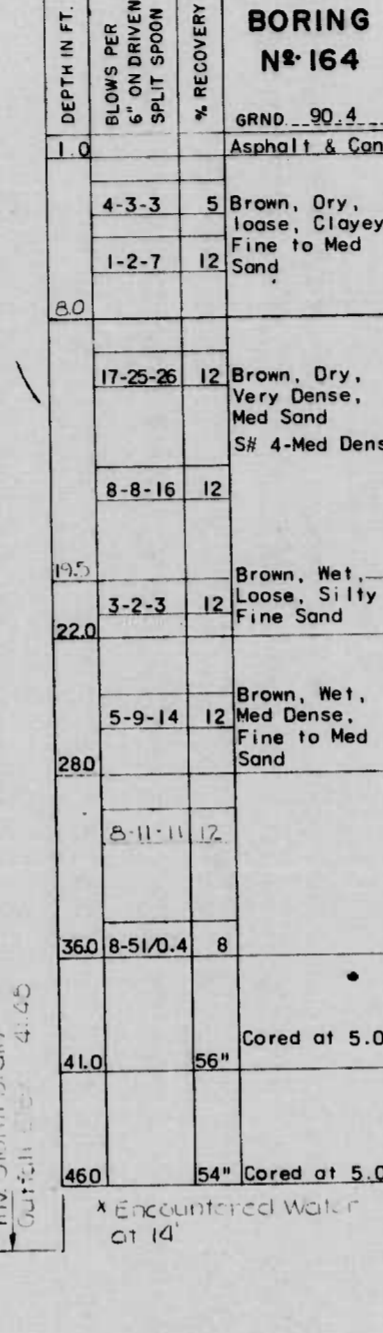
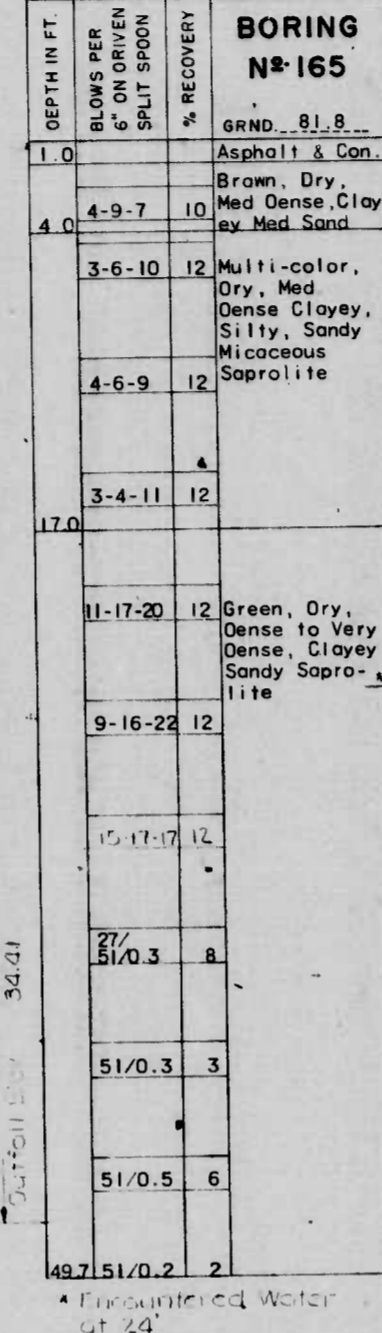
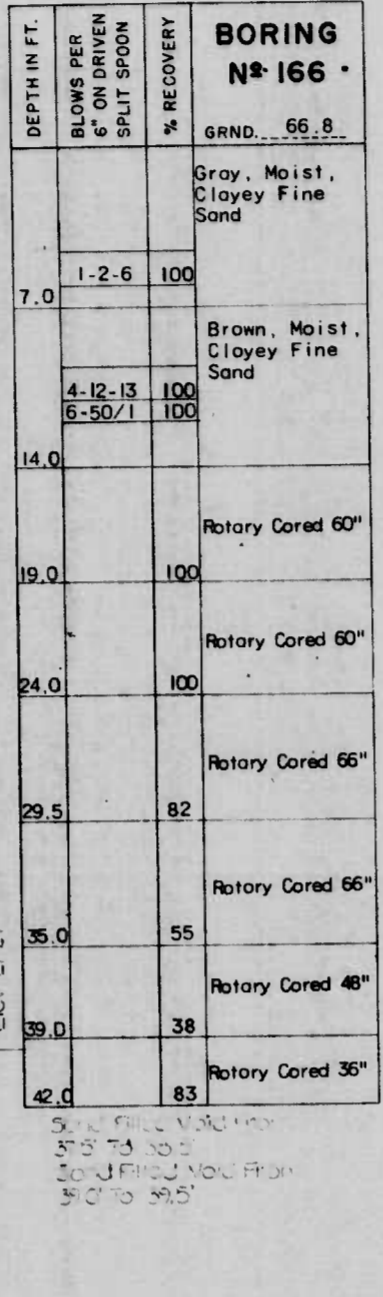
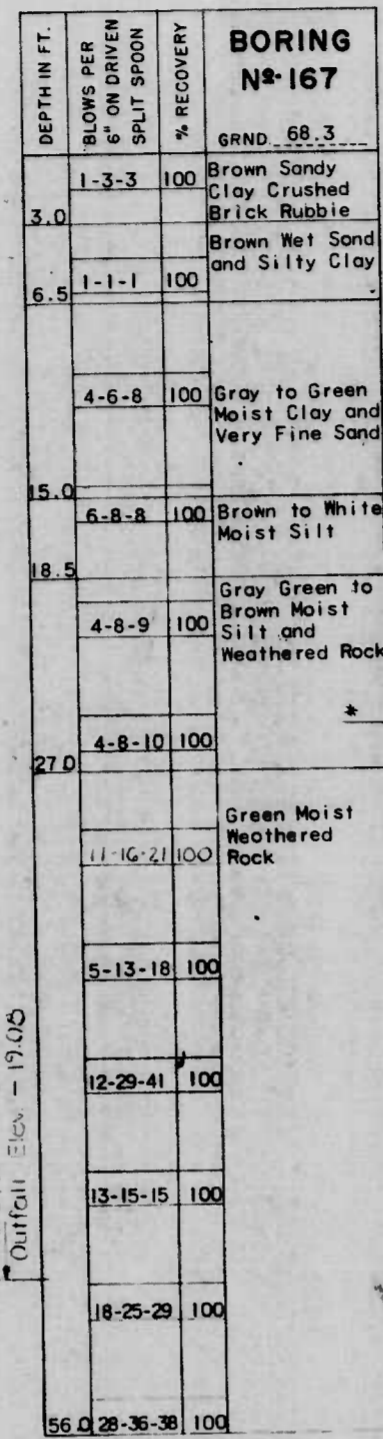
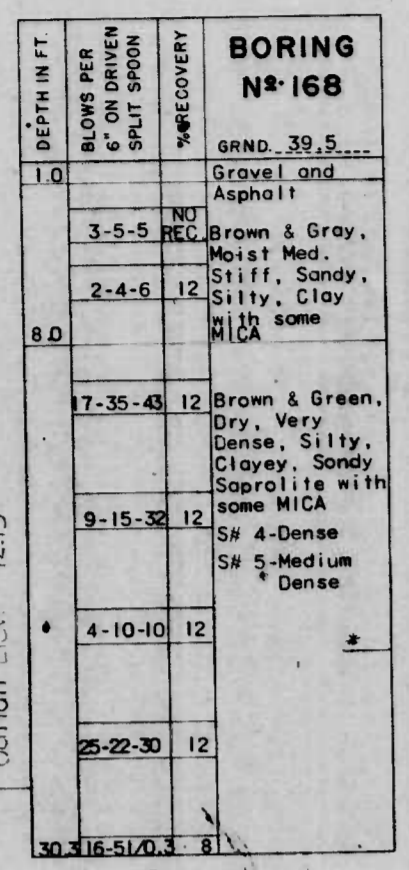
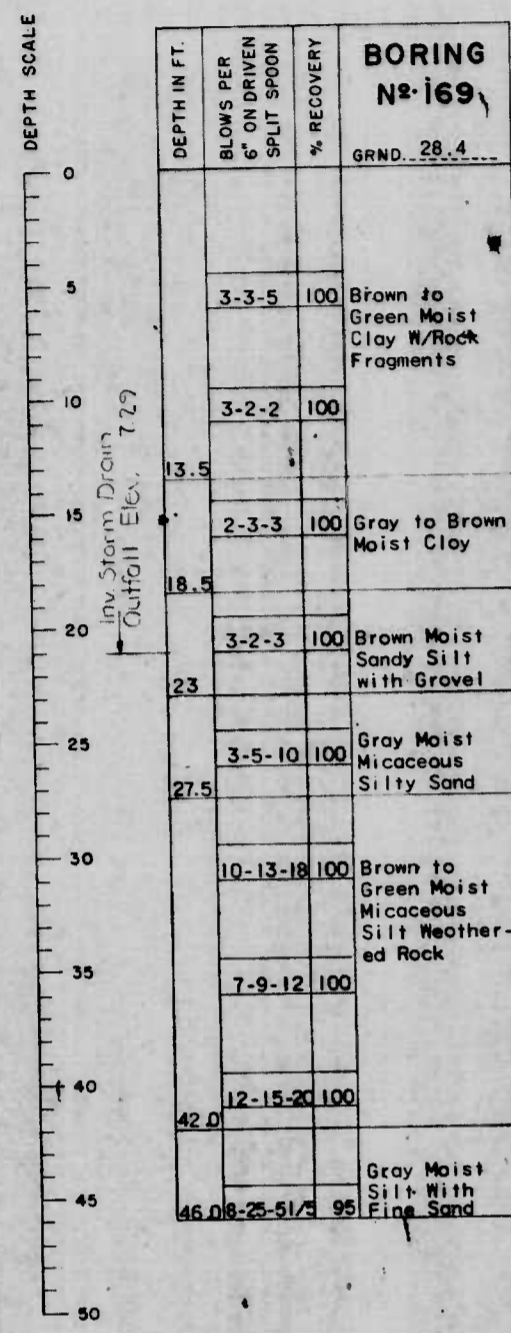


- NOTES:**
1. Brick masonry shall be laid in accordance with the provisions of the Building Code of Baltimore, Maryland.
  2. Manhole stack shall be laid in accordance with the provisions of the Building Code of Baltimore, Maryland.
  3. All work shall be done in accordance with the provisions of the Building Code of Baltimore, Maryland.
  4. All work shall be done in accordance with the provisions of the Building Code of Baltimore, Maryland.

<b>REVISIONS</b> Addendum No. 1, May 7, 1974 UPDATED - JULY 1976	<b>CONSULTANT</b> BALLARD-DIVER JOINT VENTURE CONSULTING ENGINEERS OWINGS MILLS, MARYLAND	<b>CITY OF BALTIMORE</b> DEPARTMENT OF PUBLIC WORKS & STATE HIGHWAY ADMINISTRATION OF MARYLAND INTERSTATE ROUTE 170 STORM DRAIN OUTFALL I-170 TO SOUTH OF CARROLL STREET TYPICAL MANHOLE DETAILS		DRAWN BY K.L.E. TRACED BY R.A.W. & D.M.S. F.A.P. NO. I-170-8(10) S.H.A. NO. 80-259-9-815 BALTO. CITY NO. 2234-R	DES. BY K.L.E. CHK. BY M.K.K. SHEET NO. 14 OF 17
		SCALE: AS SHOWN DATE: MARCH 1974			

# BORINGS

FHWA REGION	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	MD	I-170-B-(10)	15	17



**NOTES**

- Boring Method - Hollow Stem Auger.
- Standard Penetration Test - Driving 2" O.O. Sampler With 140 Lb. Hammer Falling 30". Blow Count Made at 6" Intervals
- Soil Classifications Shown Are Visual
- For Boring Locations, See Plan Sheets

NOTE  
SEE SHEET NO. 16A FOR ADDITIONAL BORINGS

<b>REVISIONS</b> UPDATED JULY 1976	<b>CONSULTANT</b> BALLARD DIVER JOINT VENTURE CONSULTING ENGINEERS OWINGS MILLS, MARYLAND	<b>CITY OF BALTIMORE</b> DEPARTMENT OF PUBLIC WORKS & INTERSTATE ROUTE 170 STORM DRAIN OUTFALL I-170 TO SOUTH OF CARROLL STREET BORINGS	<b>STATE HIGHWAY ADMINISTRATION OF MARYLAND</b> INTERSTATE DIVISION FOR BALTIMORE CITY
SCALE: 1"=5'-0" VERT.		DATE: MARCH 1974	SHEET NO. 15 of 17

# BORINGS

FED. PROJ. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	MD.	I-170-B-(10)	16	17

DEPTH SCALE

DEPTH IN FT.	BLOWS PER 6" ON DRIVEN SPLIT SPOON	% RECOVERY	BORING N <sup>o</sup> 168-A
0			GRND. 33.5
6.5	2-3-4	100	Brown to Gray, Moist, Silty, Clayey Sand
12.5	3-10-15	100	Gray, Green, Moist, Silty Clay and Fine Sand
18.0	5-10-13	100	Brown, Moist, Silty Sand
24.0	4-7-10	100	Green, Moist, Silty, Clayey Sand
30.0	9-15-18	100	
36.0	11-17	100	
42.0	13-19	100	

DEPTH SCALE

DEPTH IN FT.	BLOWS PER 6" ON DRIVEN SPLIT SPOON	% RECOVERY	BORING N <sup>o</sup> 167-A
0			GRND. 50.2
1.5			COARSE GRAVEL
3.0			Gray-Silt
6.5	8-8-14	100	Brn. Moist, Micaceous Silty sand with some small gravel.
13.5	6-8-11	100	Yellow, Moist, Micaceous Silty Sand
18.0	8-11-12	100	Gray, Green, Moist, Silty Clay with some fine sand
24.0	9-11-14	100	Green, Moist, Silty, Clay with some fine sand
30.0	5-9-20	100	
36.0	7-14-20	100	
42.0	14-16-29	100	Brown, Moist, Silty Clay with some fine to medium sand
48.0	17-23-33	100	

DEPTH SCALE

DEPTH IN FT.	BLOWS PER 6" ON DRIVEN SPLIT SPOON	% RECOVERY	BORING N <sup>o</sup> 166-A
0			GRND. 64.3
1.0			Asphalt-Cobble
11.5	1-1-1	30	Brown Moist, Silty Clay
17.0	2-2-2	30	
22.5	6-6-6	100	Brown, Moist, Silty, Clayey Sand, some oil
28.0	9-10-12	100	Brown to Gray, Moist, Micaceous Silt
34.0	8-10-14	100	Gray, Green, Moist, Silty, Clayey Sand
40.0			Rotary Cored 7"
46.0			Rotary Cored 60"

DEPTH SCALE

DEPTH IN FT.	BLOWS PER 6" ON DRIVEN SPLIT SPOON	% RECOVERY	BORING N <sup>o</sup> 165-C
0			GRND. 69.6
6.5	3-2-3	100	Brown, Moist, Clayey Sand
12.0	4-8-9	100	Yellow to White, Moist, Micaceous Silt
15.5	2-7-11	100	Brn. to Gray, Silty, Clayey Sand
22.0	6-10-34	100	Green, Moist, Clayey Sand
28.0			Rotary Cored 30"
34.0			Rotary Cored 60"
40.0			Rotary Cored 60"
46.0			Rotary Cored 60"

DEPTH SCALE

DEPTH IN FT.	BLOWS PER 6" ON DRIVEN SPLIT SPOON	% RECOVERY	BORING N <sup>o</sup> 165-B
0			GRND. 73.5
6.5	8-7-9	100	Asphalt, Conc. Brown, Moist, Clayey Sand
12.0	3-5-8	100	Yellow to White, Moist, Micaceous Silt with some fine sand
15.5	3-5-5	100	Gray, Green, Moist, Silty, Clayey Sand
21.0	14-53-50	100	Rotary Cored 60"
26.0			Rotary Cored 60"
31.0			Rotary Cored 60"
36.0			Rotary Cored 60"
41.0			Rotary Cored 60"
46.0			Rotary Cored 60"

DEPTH SCALE

DEPTH IN FT.	BLOWS PER 6" ON DRIVEN SPLIT SPOON	% RECOVERY	BORING N <sup>o</sup> 165-A
0			GRND. 76.1
7.0	7-7-7	100	Asphalt, Conc. Light Brown, Moist, Clayey Sand
15.5	5-6-15	100	Yellow, Micaceous Silt
18.0	9-17-19	100	Gray, Micaceous Silt and Sand
20.5	5-15-18	100	Red, Brown, Moist, Micaceous Silty Sand
23.5	60/3	100	Green to Black, Wet Weathered Rock
28.0			Rotary Cored 30"
31.0			Rotary Cored 60"
34.0			Rotary Cored 60"
37.0			Rotary Cored 60"
40.0			Rotary Cored 60"
46.0			Rotary Cored 60"
51.0			Rotary Cored 60"

DEPTH SCALE

DEPTH IN FT.	BLOWS PER 6" ON DRIVEN SPLIT SPOON	% RECOVERY	BORING N <sup>o</sup> 164-A
0			GRND. 88.5
7.0	19-24-29	100	Brown, Moist, Silty, Clayey Fine Sand
16.5	8-9-13	100	Red Brown, Moist, Clayey Fine Sand
20.5	5-7-10	100	Gray to Black, Wet, Fine to Medium Sand with Layers of Organic Mat'l.
27.5	12-14-19	100	Gray Green to Black, Moist, Silty, Clayey, Silty Fine Sand
31.0	15-20-23	100	
34.0	15-24-27	100	
41.0	12-15-18	100	
46.5	23-47-53	100	
51.5			Rotary Cored 60"

DEPTH SCALE

DEPTH IN FT.	BLOWS PER 6" ON DRIVEN SPLIT SPOON	% RECOVERY	BORING N <sup>o</sup> 163-A
0			GRND. 87.8
7.5	7-6-7	100	Brown, Silty, Clayey Sand with some Gravel
12.5	10-11-12	100	Light Brown, Moist Silt and Very Fine Sand
17.5	17-20-27	100	Gray-Green, Wet Silty Clay
21.0	15-20-23	100	Light Brown, Wet Fine to Medium Sand
24.0	60/0	0	Red Brown, Moist, Clayey Sand
30.0	60/0	0	
35.0	24-40-44	100	Gray Green, Moist, Silty, Clayey with Very Fine Sand
40.0	75/6	100	
45.0			Rotary Cored 60"
48.0			Rotary Cored 60"

DEPTH SCALE

DEPTH IN FT.	BLOWS PER 6" ON DRIVEN SPLIT SPOON	% RECOVERY	BORING N <sup>o</sup> 162-A
0			GRND. 97.9
1.0			Asphalt, Conc.
6.5	8-12-15	75	Brown, Moist, Clayey, Fine Sand
9.5	9-15-27	40	Gray, Very Moist, Medium Sand and Gravel
15.0	3-4-5	100	Brown to Yellow Moist, Clayey, Micaceous Silt
18.5	12-11-20	100	Red, Brown, Moist, Clayey, Fine Sand
25.5	12-12-19	100	Gray-Green, Moist, Silty, Clayey Sand
31.5	15-22-24	100	
38.0	14-19-26	100	
44.0	18-29-38	100	
51.0	19-27-42	100	
58.0	25-41-57	100	

DEPTH SCALE

DEPTH IN FT.	BLOWS PER 6" ON DRIVEN SPLIT SPOON	% RECOVERY	BORING N <sup>o</sup> 161-B
0			GRND. 97.4
1.0			Asphalt, Conc.
3.5	3-3-4	50	Gray, Wet, Silty Sand and Gravel with some Organic Mat'l (Wood)
7.0	7-10-15	20	
13.0	23-40-43	50	Brown to Yellow, Wet, Silty, Clayey Sand
22.0	3-7-9	50	
28.0	16-19-29	100	Brown to Red-Brown, Moist, Clayey Sand with Layers of Yellow to Gray Silty Clay
34.0	25-39-42	100	
40.0	30-67	100	
47.0			Gray-Green, Moist, Micaceous Silt
54.0	25-47-61	100	

DEPTH SCALE

DEPTH IN FT.	BLOWS PER 6" ON DRIVEN SPLIT SPOON	% RECOVERY	BORING N <sup>o</sup> 161-A
0			GRND. 101.8
3.5	3-3-4	30	Brown, Moist, Silty Clay, Sand, Gravel, Bricks/bats
11.5	2-4-7	60	Fill
22.5	3-6-9	100	Gray to Yellow, Micaceous, Silty Clay with some Sand
28.5	4-6-9	100	
32.5	3-9-12	100	Gray to Yellow Micaceous Silty Sand
37.5	10-15-25	100	Brown to Gray-Green, Moist, Clayey, Fine Sand
45.0	15-28-57	75	Green to Black, Silty, Fine Sand, Very Dense
50.0	100/0	0	
55.0			Rotary Cored 60"

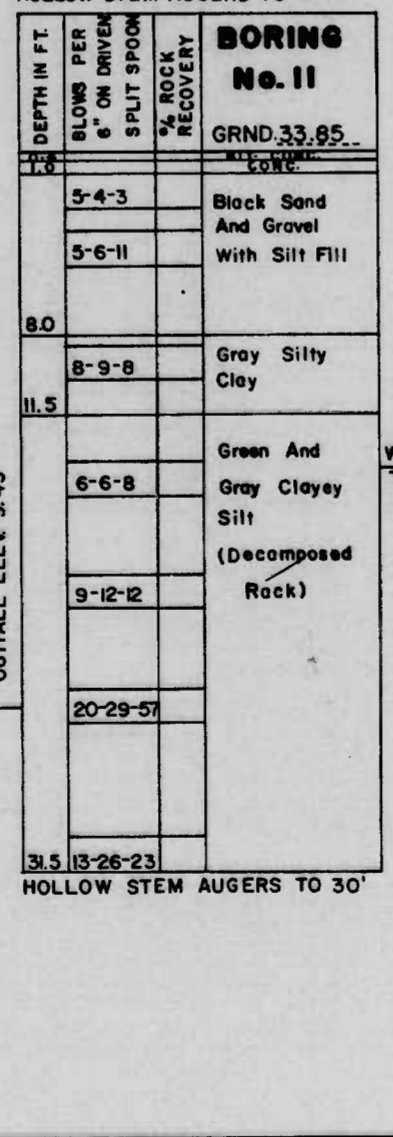
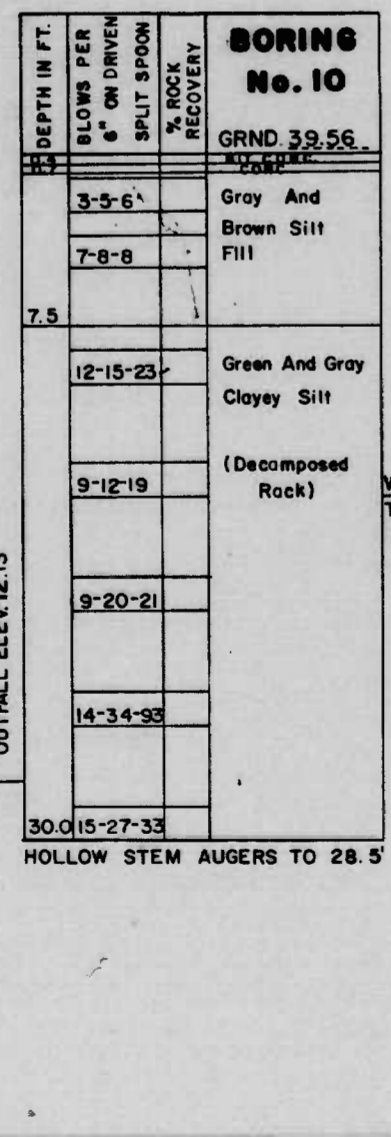
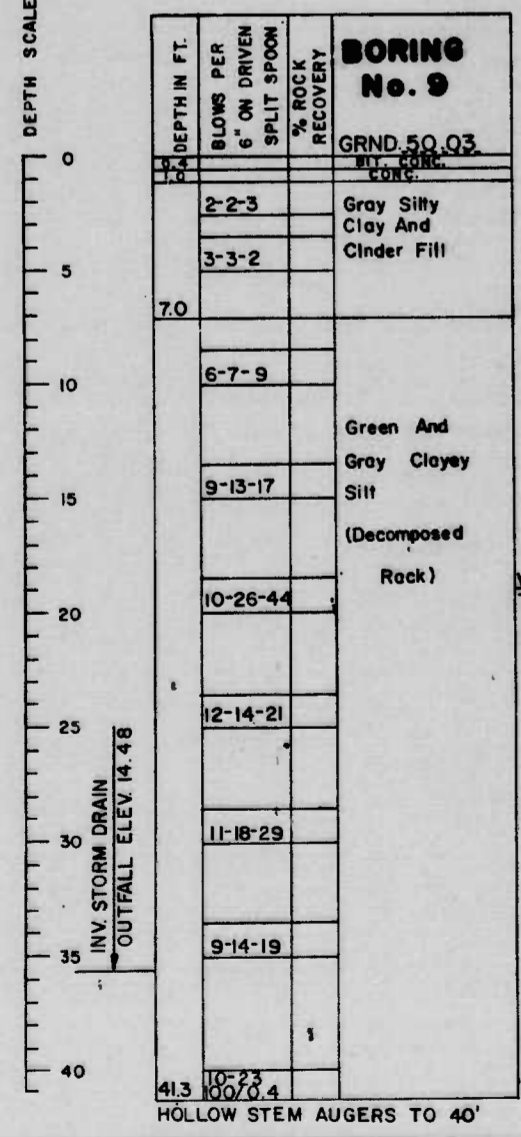
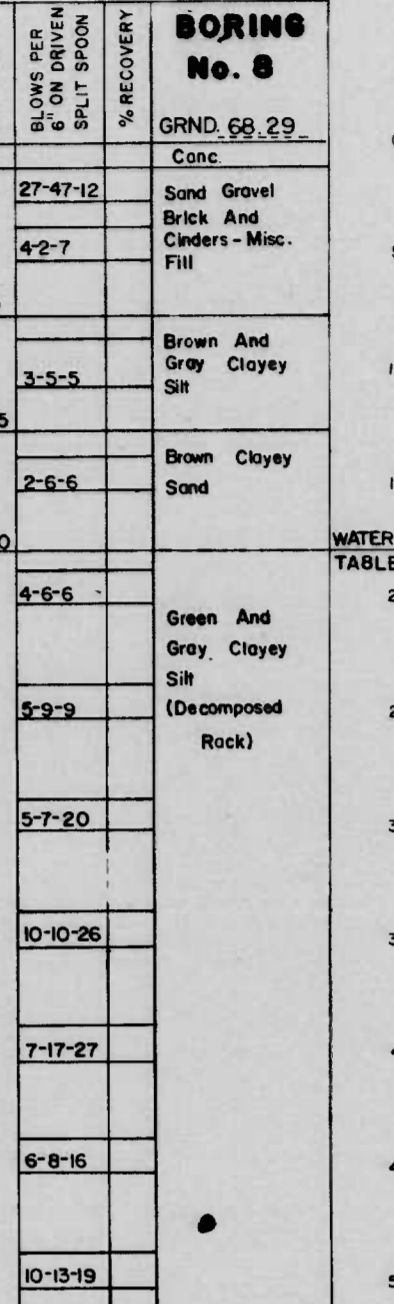
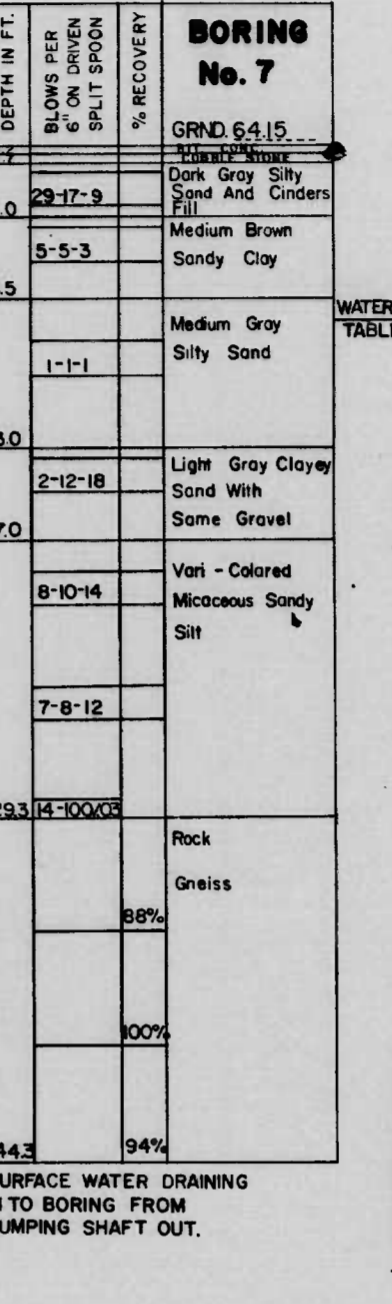
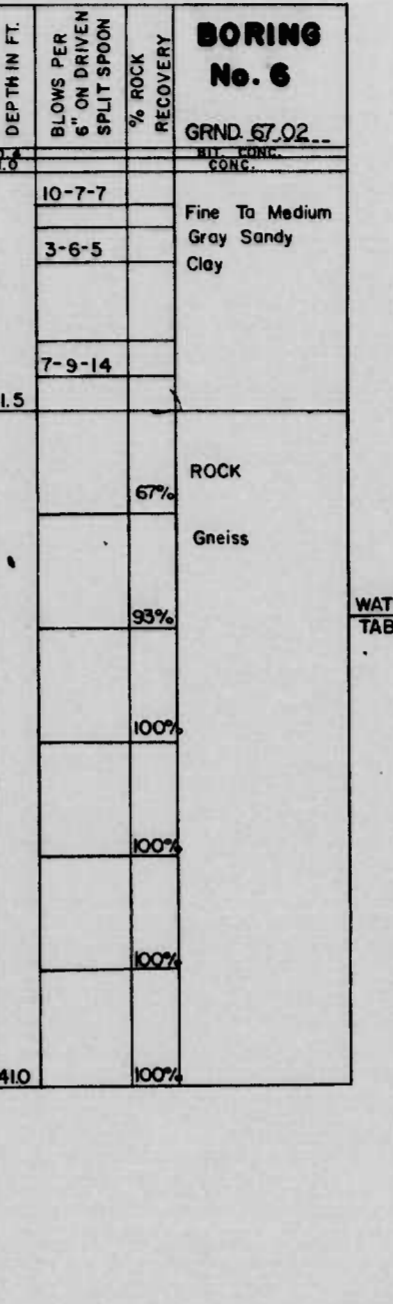
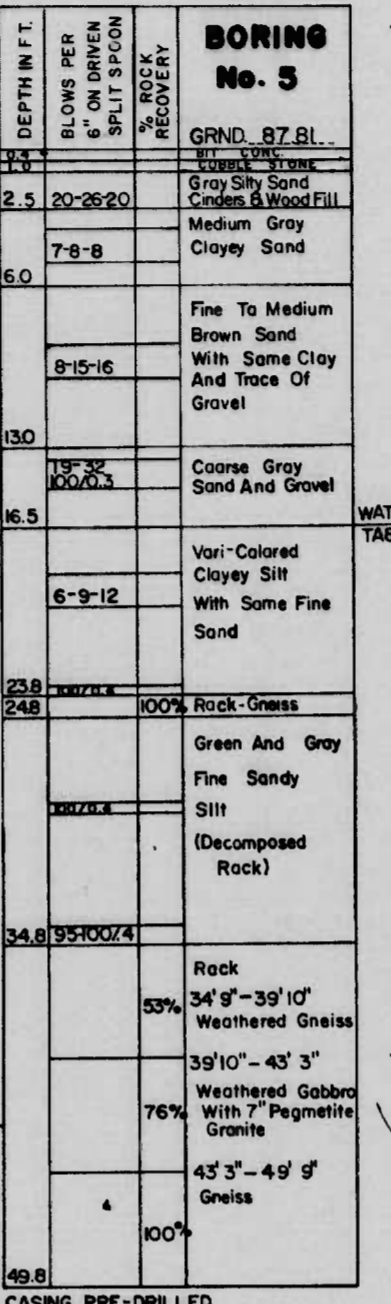
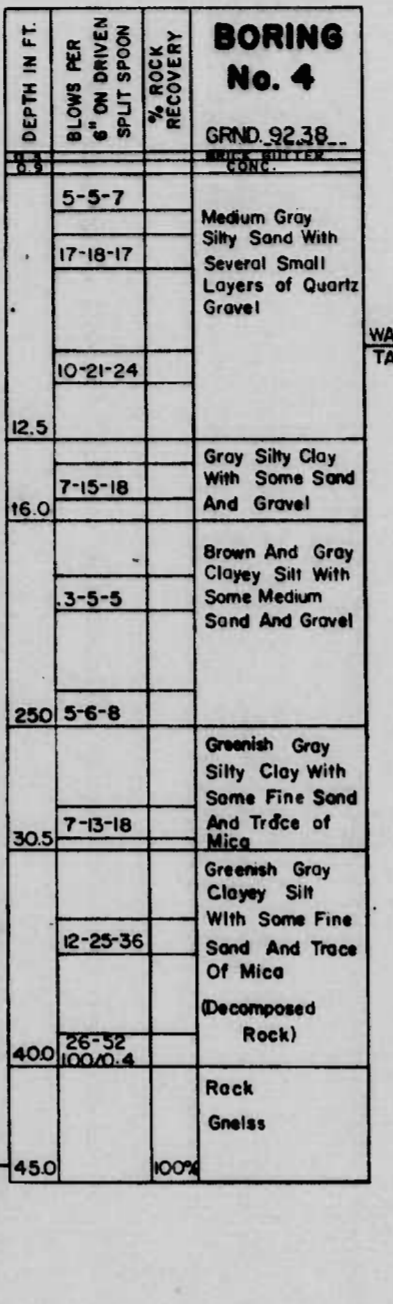
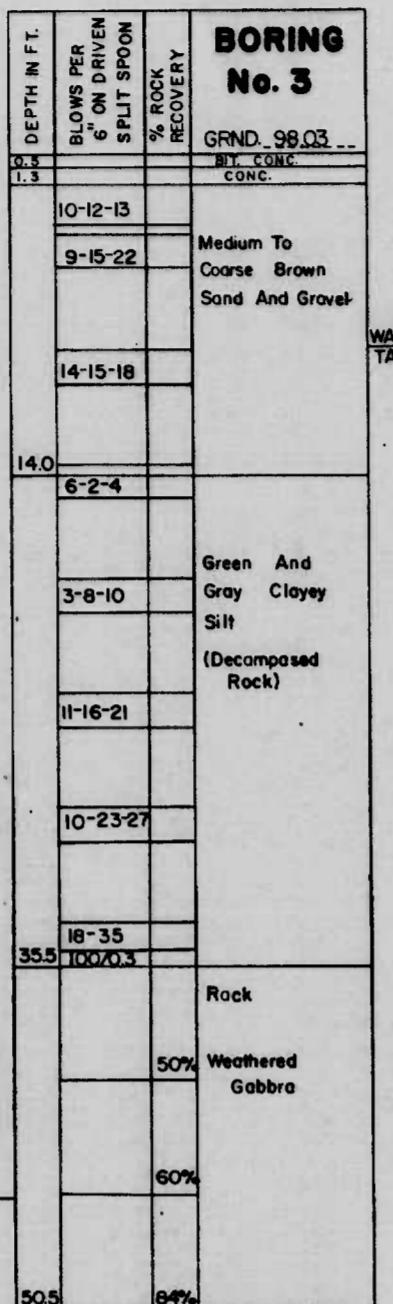
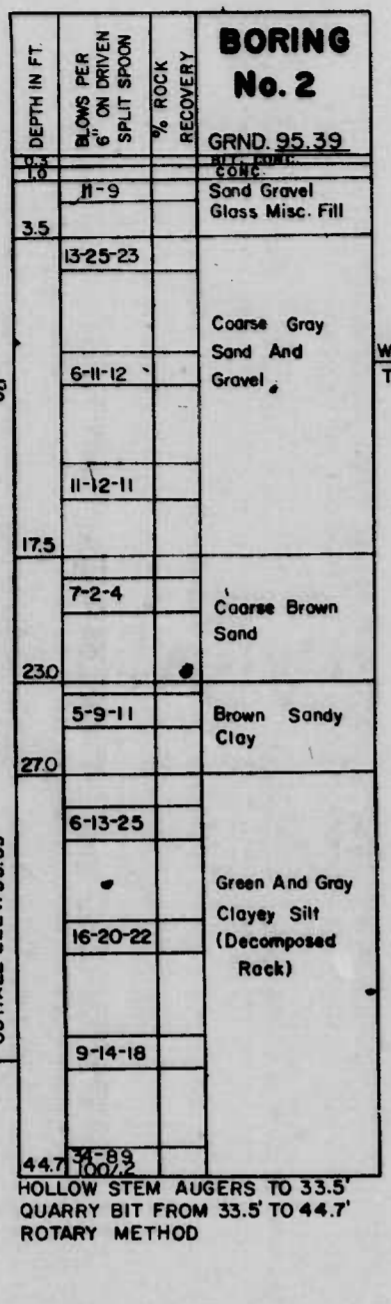
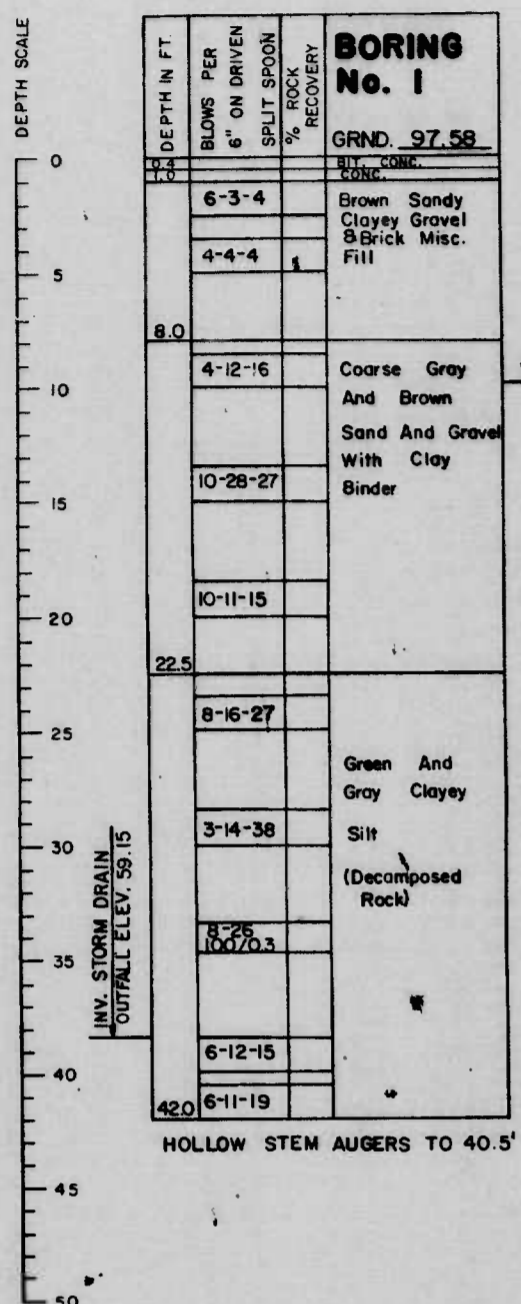
\* 15' 166A" Encountered Water at 170'  
 \* 5' 165 C" Water at 12' at 14'.

NOTE  
 SEE SHEET NO. 16A FOR ADDITIONAL BORINGS

REVISIONS	CONSULTANT	CITY OF BALTIMORE DEPARTMENT OF PUBLIC WORKS	STATE HIGHWAY ADMINISTRATION OF MARYLAND INTERSTATE DIVISION FOR BALTIMORE CITY
UPDATED- JULY 1976	ALLARD & JER JOINT VENTURE CONSULTING ENGINEERS SWINGS MILLS, MARYLAND	INTERSTATE ROUTE 170 STORM DRAIN OUTFALL I-170 TO SOUTH OF CARROLL STREET BORINGS	DRAWN BY D.M.S. TRACED BY F.A.P. NO. I-170-B(10) S.H.A. NO. 86-259-9-815 BALTO. CITY NO. 2234-R
		DES. BY	SHEET NO.
		CHK. BY	16 of 17
		DATE MARCH 1974	

SUPPLEMENTAL BORINGS BY S.H.A.

FED. AID PROJ. NO.	STATE	SHEET NO.	TOTAL SHEETS
3	MD. I-170-8-(10)	16A	17



NOTE: SEE SHEET NO. 15 & 16 FOR ADDITIONAL BORING

REVISIONS	CONSULTANT	CITY OF BALTIMORE DEPARTMENT OF PUBLIC WORKS & STATE HIGHWAY ADMINISTRATION OF MARYLAND INTERSTATE DIVISION FOR BALTIMORE CITY	
ADDITIONAL SHEET ADDED JULY, 1976		INTERSTATE ROUTE 170 STORM DRAIN OUTFALL I-170 TO SOUTH OF CARROLL STREET BORINGS	DES. BY N.L.H. TRACED BY F.A.P. NO. I-170-8(10) S.H.A. NO. BC-259-9-815 BALTO. CITY NO. 2234-R
		SCALE: 1"=5'-0" VERT.	DATE: JULY 1976
			SHEET NO. 16A OF 17



# SUMMARY OF QUANTITIES

PROJECT NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	MD.	I-170-8(10)	17	17

IDENT. NO.	PAY ITEM	UNIT	QUANTITY	CONTINGENT QUANTITY	PROPOSAL QUANTITY
PRELIMINARY ITEMS					
101	Engineer Facilities	L.S.	L.S.		L.S.
102	Maintenance of Traffic	L.S.	L.S.		L.S.
103	Construction Stakeout	L.S.	L.S.		L.S.
104	Mobilization	L.S.	L.S.		L.S.
105	On The Job Training	HR			4,000
GRADING ITEMS					
201	Test Pit Excavation	C.Y.			35
202	Removal of Existing Curb	L.F.	40		100
203	Removal of Existing Combination Curb and Gutter	L.F.	40		100
204	Removal of Existing Pavement	S.Y.	25		50
205	Removal of Existing Sidewalk	S.Y.	25		50
206	Removal of Existing Masonry	C.Y.	25		40
DRAINAGE ITEMS					
301	Class 3 Excavation for Incidental Construction	C.Y.		50	50
302	Selected Backfill Using #6 Aggregate	C.Y.		250	250
303	Selected Backfill Using Crusher Run	C.Y.		250	250
304	15 In. R.C. Pipe Class 4	L.F.	55		55
305	15 In. B.C.C.M. Pipe, Type A, #16 Gauge and Fittings	L.F.		10	10
306	Class P-1 Concrete for Miscellaneous Structures	C.Y.		10	10
307	Class B Concrete/Miscellaneous Structures	C.Y.		10	10
308	Ordinary Brick Masonry For Miscellaneous Structures	C.Y.		10	10
STRUCTURE ITEMS					
401	Excavating and Sheeting Tunnel Shaft No. 1	L.S.	L.S.		L.S.
402	Excavating and Sheeting Tunnel Shaft No. 2	L.S.	L.S.		L.S.
403	Excavating and Sheeting Tunnel Shaft No. 3	L.S.	L.S.		L.S.
404	Excavating and Sheeting Tunnel Shaft No. 4	L.S.	L.S.		L.S.
405	Excavating and Sheeting Tunnel Shaft No. 5	L.S.	L.S.		L.S.
406	Excavating and Sheeting Tunnel Shaft No. 6	L.S.	L.S.		L.S.
407	Excavating and Sheeting Tunnel Shaft No. 7	L.S.	L.S.		L.S.
408	Excavating and Tunneling For 108 In. R.C.C.P. Storm Drain	L.F.	4,943		4,943
409	Excavating and Tunneling For 108 In. Paired-In-Place S.D.	L.F.	4,943		4,943
410	Excavating and Tunneling For 108 In. B.C.C.M.P. Storm Drain	L.F.	4,943		4,943
411	Furnishing and Placing 108 In. R.C.C.P. In Tunnel	L.F.	4,943		4,943
412	Furnishing and Pairing-In-Place 108 In. Reinforced Concrete S.D.	L.F.	4,943		4,943
413	Furnishing and Placing 108 In. B.C.C.M.P. In Tunnel	L.F.	4,943		4,943
414	Manhole Structure No. 1	L.S.	L.S.		L.S.
415	Manhole Structure No. 2	L.S.	L.S.		L.S.
416	Manhole Structure No. 3	L.S.	L.S.		L.S.
417	Manhole Structure No. 4	L.S.	L.S.		L.S.
418	Manhole Structure No. 5	L.S.	L.S.		L.S.
419	Manhole Structure No. 6	L.S.	L.S.		L.S.
420	Sheeting Left In Place	S.F.	22,150		22,500
PAVING ITEMS					
501	Variable Depth Sub-Base Using Crusher Run	Ton	315		320
502	Crusher Run Aggregate For Maintenance of Traffic	Ton		15	15
503	Bituminous Concrete Using Band ST./STONE	Ton	95		100
504	Bituminous Concrete Using Band B-1	Ton	190		200
505	Bituminous Concrete for Maintenance of Traffic, Stone or Slag	Ton		15	15
506	Patching Existing Pavement Using Cl. H.E.S. Concrete	S.Y.	480		500
507	Calcium Chloride	Ton		2	2
SHOULDER ITEMS					
601	B.C. Type A Curb 7 In. x 20 In.	L.F.	60		120
602	Std. Type A Comb. Curb and Gutter 12 In. Gutter Pan 9 In. Depth	L.F.	60		120
603	5 In. Concrete Sidewalk	S.F.	100		200
UTILITY ITEMS					
801	Type TT Duct Section 12'4 In. 1.0 & 2.3 In. 1.0 Fibers	L.F.	7		10
802	This number not used.				
803	Type F Manhole - Mechanical Electrical	L.S.	L.S.		L.S.
804	Manhole Roof Slab - Mechanical Electrical	L.S.	L.S.		L.S.
805	4 In. Ductile Iron Pipe and Fittings	L.F.	162		170
806	6 In. Ductile Iron Pipe and Fittings	L.F.	48		60
807	3/4 In. Copper Pipe, Type K Water Service Incl. Tap & Fittings	Ea.	3		6
808	1 In. Copper Pipe, Type K Water Service Incl. Tap & Fittings	Ea.		10	10
809	2 In. Copper Pipe, Type K Water Service Incl. Tap & Fittings	Ea.		10	10
810	Temp. Relocation of Sanitary Sewer House Connection	Ea.		1	1
811	Reconstruct Exist. Sanitary Sewer House Connection	Ea.		5	5
812	Class H.E.S. Concrete For Buttresses	C.Y.		5	5
813	Class 'C' Concrete, Contingent	C.Y.		5	5

<b>REVISIONS</b> Addendum No. 1 May 7, 1974 Updated - July 1976	<b>CONSULTANT</b> BALLARD-DIVER JOINT VENTURE CONSULTING ENGINEERS OWINGS MILLS, MARYLAND	CITY OF BALTIMORE DEPARTMENT OF PUBLIC WORKS		STATE HIGHWAY ADMINISTRATION OF MARYLAND INTERSTATE DIVISION FOR BALTIMORE CITY	
		INTERSTATE ROUTE 170 STORM DRAIN OUTFALL I-170 TO SOUTH OF CARROLL STREET SUMMARY OF QUANTITIES			
SCALE: NONE		DATE: MARCH 1974			

MD I-170-8104 2 17

SOIL LEGEND

	FILL MAT'L.		A-7, CLAY
	A-3, SAND, NON-PLASTIC		A-7-2, SANDY CLAY
	A-2, SAND & FINES		A-2-7, CLAYEY SAND
	A-4-2, SANDY SILT		A-2-4, SILTY SAND
	A-4, SILT		A-5 MICA, DIATOMS, DECOMPOSED ROCK
	BLOWS PER FOOT		PLAN LOCATION OF SOIL BORINGS
	BLOWS PER FRACTIONAL FOOT		

L.L. - LIQUID LIMIT P.I. - PLASTICITY INDEX N.P. - NON PLASTIC  
M.D.D. & O.M.C. - MAXIMUM DRY DENSITY AND OPTIMUM MOISTURE CONTENT  
AS DETERMINED BY A.A.S.H.O. DESIGNATION T-180 METHOD 'C'

ABBREVIATIONS

B C C M P	- BITUMINOUS COATED CORRUGATED METAL PIPE	M E	- MECHANICAL-ELECTRICAL
Bit	- BITUMINOUS	Mfg.	- MANUFACTURING
Constr	- BASE LINE OF CONSTRUCTION	M H	- MANHOLE
Survey	- BASE LINE OF SURVEY	M T O	- MULTI-TERRA COTTA DUCT
Blk	- BLOCK	M H	- METAL
B M	- BENCH MARK	P M	- PARKING METER
Br	- BRICK	P S	- POLICE SIGNAL
C B	- CATCH BASIN	R C C P	- REINFORCED CONCRETE PIPE
C & G	- CURB AND GUTTER	Ret S1	- RETAIL STORE
C I P	- CAST IRON PIPE	Ret. W.	- RETAINING WALL
Conc	- CONCRETE	S	- SIGN
C P	- CLEANOUT PLUG	Son	- SANITARY SEWER LINE
C & P	- CHESAPEAKE & POTOMAC TELEPHONE CO	Sh	- SHINGLE
(d)	- DEAD VALVE	S L	- STREET LIGHT
D I P	- DUCTILE IRON PIPE	S M H	- SANITARY MANHOLE
Owg	- OWELLING	S P P	- STRUCTURAL PLATE PIPE
Elev	- ELEVATION	Sto	- STATION
E M H	- ELECTRIC MANHOLE	Std P1	- STANDARD PLATE
F H	- FIRE HYDRANT	Sto	- STONE
F B	- FIRE ALARM BOX	Sty	- STORY
Fr	- FRAME	S W	- STORM WATER
G	- GAS MAIN	S A M H	- STORM WATER MANHOLE
Gar	- GARAGE	T & T	- TRANSIT AND TRAFFIC
G B	- GAS BOX	Te1 MH	- TELEPHONE MANHOLE
G & E	- GAS AND ELECTRIC CO	T P	- TRAFFIC POLE
G M H	- GAS MANHOLE	U D	- UNDERDRAIN
G R	- GUARD RAIL	V C P	- VITRIFIED CLAY PIPE
G V	- GAS VALVE	V C P X	- VITRIFIED CLAY PIPE EXTRA STRENGTH
G W	- GUY WIRE	W	- WATER MAIN
H B	- HAND BOX	W B R	- WESTBOUND ROADWAY
H W	- HEADWALL	W M	- WATER METER
Inv	- INVERT	W M H V	- WATER MANHOLE VALVE
Mas	- MASONRY	W V	- WATER VALVE
M B	- MAIL BOX		

LEGEND

EXISTING	PROPOSED

EXPLANATORY NOTES AND REFERENCES

**VERTICAL CONTROL**  
THE LOCATION AND ELEVATIONS OF BENCH MARKS ARE SHOWN ON THE PLAN SHEETS ALL ELEVATIONS SHOWN ARE BASED ON BALTIMORE CITY DATUM.

**HORIZONTAL CONTROL**  
THE PROJECT IS ORIENTED TO CONFORM WITH THE BALTIMORE CITY GRID SYSTEM

**SPECIFICATIONS**  
STATE ROADS COMMISSION, SPECIFICATIONS FOR MATERIALS, HIGHWAYS, BRIDGES AND INCIDENTAL STRUCTURES, DATED MARCH, 1968 AND REVISED THEREOF OR ADDITIONS THERE TO INCLUDED IN THE PROPOSAL AND SPECIAL PROVISIONS

**STANDARD PLATES**  
ALL BALTIMORE CITY STANDARD PLATES REFERRED TO IN THE PLANS ARE INCLUDED IN THE SPECIAL PROVISIONS

**MAINTENANCE OF TRAFFIC**  
SPECIAL ATTENTION IS DIRECTED TO THE REQUIREMENTS FOR MAINTENANCE OF TRAFFIC DURING THE CONSTRUCTION OF THIS PROJECT SEE SPECIAL PROVISIONS

**EXISTING UTILITIES**  
EXISTING UTILITY LOCATIONS SHOWN ON PLANS ARE APPROXIMATE IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE EXACT LOCATIONS PRIOR TO COMMENCING WORK THE NECESSARY RELOCATION AND/OR ADJUSTMENT OF THE EXISTING UTILITIES WILL BE PERFORMED BY OTHERS UNLESS OTHERWISE PROVIDED FOR IN THE PROPOSAL OR SPECIAL PROVISIONS

**OBSTRUCTIONS**  
"OBSTRUCTIONS" ARE SHOWN ON THE DRAWINGS FOR THE CONVENIENCE OF THE CONTRACTOR ONLY, AND THE CITY DOES NOT WARRANT OR GUARANTEE THE CORRECTNESS OR THE COMPLETENESS OF THE INFORMATION GIVEN THE CONTRACTOR MUST VERIFY ALL SUCH INFORMATION TO HIS OWN SATISFACTION

**INVERT ELEVATIONS**  
IF APPROVED BY THE ENGINEER PROPOSED INVERT ELEVATIONS MAY BE MODIFIED TO MEET CONDITIONS ENCOUNTERED DURING INSTALLATION OF UNDERGROUND FACILITIES

**MATERIALS SALVAGED IN CONSTRUCTION**  
THESE MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE SITE OF CONSTRUCTION EXCEPT FOR THOSE ITEMS PROVIDED FOR SALVAGE AS SHOWN ON THE PLANS OR IN THE SPECIAL PROVISIONS

**BORINGS NUMBERED:** I THROUGH II

**LEGEND**

STATE HIGHWAY ADMINISTRATION BORINGS BY SHA COMPLETED 10/75

PLAN LOCATION OF BORING

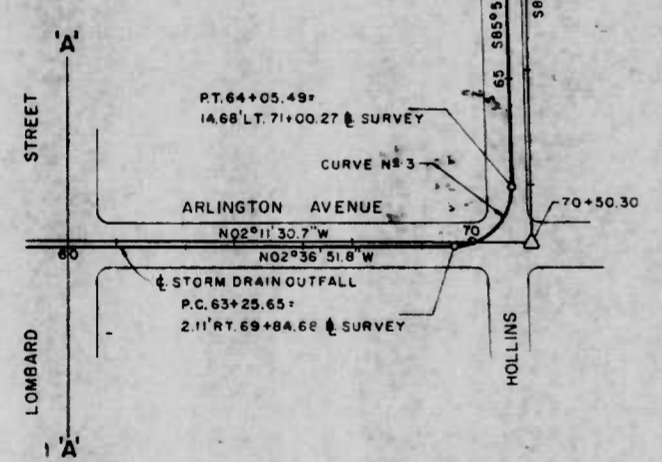
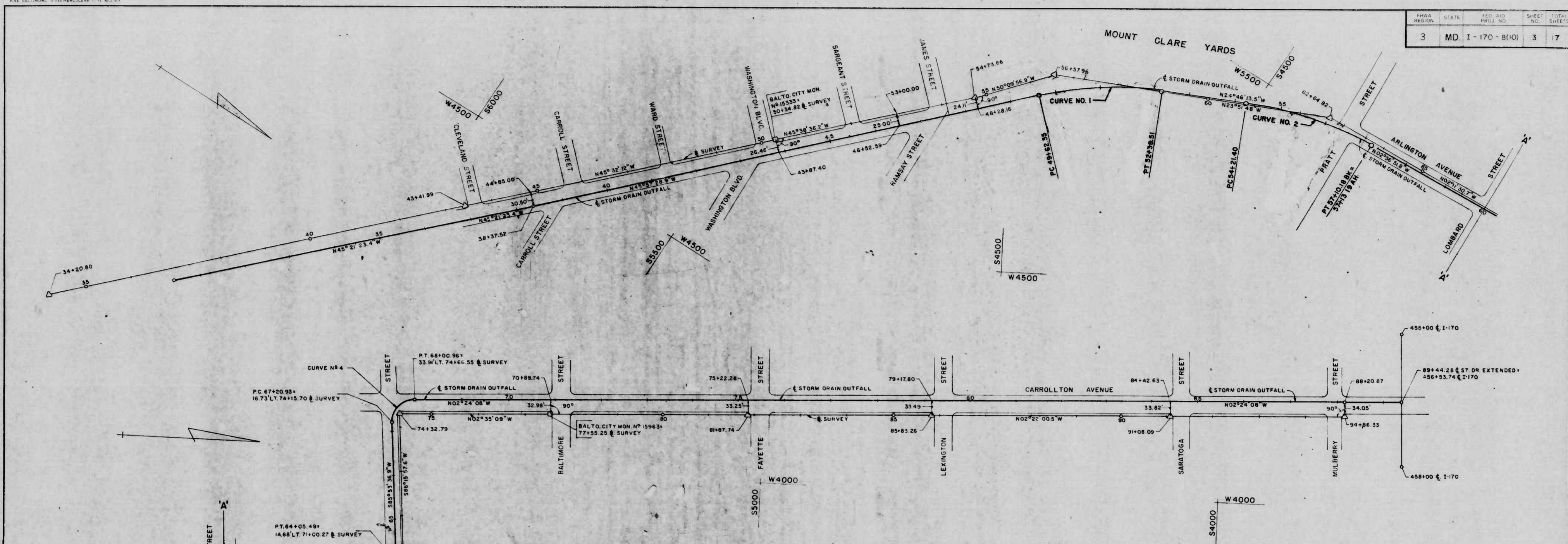
PROFILE BORING LOCATION  
BORINGS: I THROUGH II

N - BLOWS PER FOOT IN PENETRATION TEST  
ELEVATION MARKED AT BOTTOM OF PENETRATION TEST  
CORING THROUGH ROCK

N% - PERCENT OF ROCK RECOVERY PER BORINGS I THROUGH II

REVISIONS	CONSULTANT	CITY OF BALTIMORE DEPARTMENT OF PUBLIC WORKS & STATE HIGHWAY ADMINISTRATION OF MARYLAND INTERSTATE DIVISION FOR BALTIMORE CITY	
UPDATED JULY 1976	BALLARD-DIVER JOINT VENTURE CONSULTING ENGINEERS OWINGS MILLS, MARYLAND	INTERSTATE ROUTE 170 STORM DRAIN OUTFALL I-170 TO SOUTH OF CARROLL STREET LEGEND AND GENERAL NOTES	DRAWN BY: R.A.W. TRACED BY: R.A.W. F.A.P. NO. I-170-8104 S.H.A. NO. RC-259-9-815 BALTO. CITY NO. 2234-R
		SCALE	DATE MARCH 1974
			DES BY: C.A.J. CHK BY: K.L.E. SHEET NO. 2 OF 17

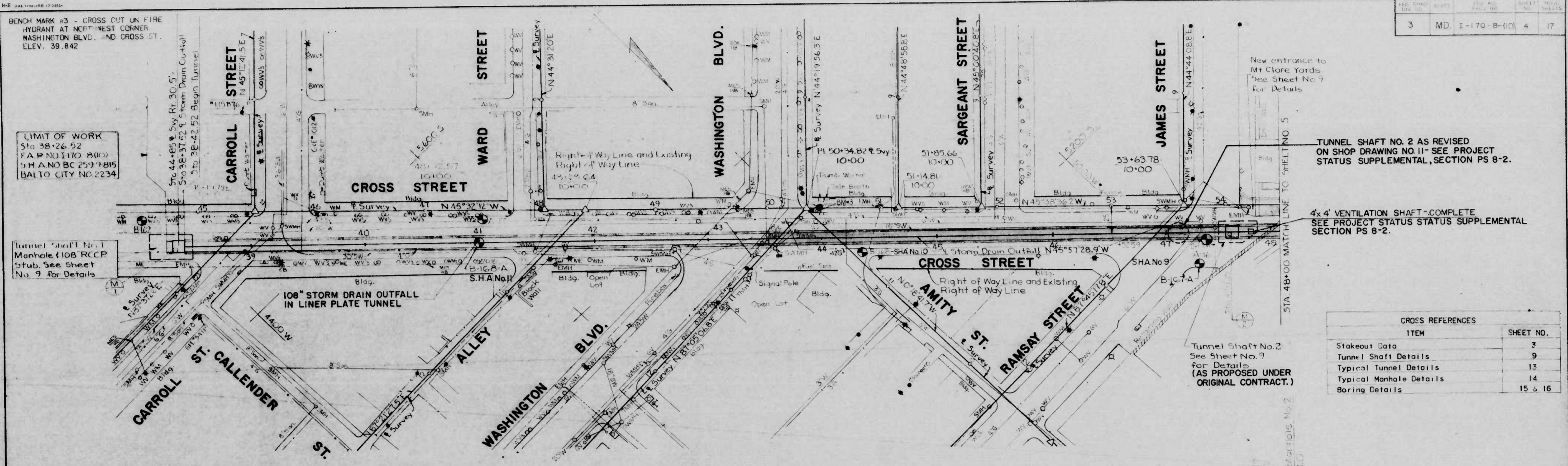
FHWA REGION	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	MD	I-170-B(10)	3	17



CURVE NO.	Δ	Dc	R	T	Lc	E	BASELINE SURVEY		CENTERLINE STORM DRAIN OUTFALL			
							STATION	COORDINATES	STATION	COORDINATES		
								SOUTH	WEST	SOUTH	WEST	
1	21°11'15.4"	7°40'20"	746.80	139.68'	276.16'	13.54'	43+41.99	5813.0374	4314.5192	38+37.52=MH No. 1	5691.0979	4395.2214
2	22°09'21.6"	7°40'20"	746.80	146.22'	288.78'	14.88'	50+34.82=Balto City Mon. 15333	5327.7436	4808.9904	43+87.40	5308.8273	4790.4942
3	91°29'31.3"		50.00'	51.32'	79.84'	21.65'	54+73.66	5020.9373	5122.7656	47+60.00=MH No. 2	5049.8034	5058.3283
4	91°42'15.1"		50.00'	51.51'	80.03'	21.65'	56+57.95	4902.8838	5264.2860	48+28.16	5002.4224	5107.3208
							62+64.82	4347.9051	5509.7939	P.C. 49+6235	4909.1264	5203.7903
							70+50.30	3562.9925	5539.8356	P.I. Curve No. 1	4812.0255	5304.1939
							74+32.79	3587.9017	5921.5086	P.T. 52+38.51	4685.2003	5362.7159
							77+55.25=Balto City Mon. 15963	3265.7694	5936.0567	P.C. 54.2130	4519.1342	5439.3452
							81+87.74	2833.6483	5953.9172	P.I. Curve No. 2	4386.3684	5500.6084
							85+83.26	2438.4657	5970.2509	P.T. 52+18 BACK + P.T. 52+19 AHEAD	4240.3018	5507.2780
							91+08.09	1914.0835	5991.9248	57+19.00=MH No. 3	4234.5011	5507.5428
										63+11.00=MH No. 4	3643.1173	5534.5463
										P.C. 63+25.65	3628.4833	5535.2145
										P.I. Curve No. 3	3577.2174	5537.5554
										P.T. 64+05.49	3580.8923	5588.7429
										P.C. 67+20.93	3603.4805	5903.3695
										P.I. Curve No. 4	3607.1691	5954.7470
										P.T. 68+00.96	3555.7046	5956.8060
										68+18.00=MH No. 5	3538.6740	5957.6204
										70+89.79	3267.1315	5969.0119
										75+22.28	2835.0214	5987.1393
										76+25.00=MH No. 6	2732.3831	5991.4451
										79+17.80	2439.8489	6003.7172
										84+42.63	1915.4801	6025.7149
										88+20.87	1537.5702	6041.5685
										89+44.28 & Storm Drain Outfall Extended	1414.2649	6046.7472
										456+53.74 & I-170		

REVISIONS	CONSULTANT	CITY OF BALTIMORE DEPARTMENT OF PUBLIC WORKS & STATE HIGHWAY ADMINISTRATION OF MARYLAND INTERSTATE DIVISION FOR BALTIMORE CITY	
UPDATED JULY - 1976	BALLARO-DIVER JOINT VENTURE CONSULTING ENGINEERS OWINGS MILLS, MARYLAND	INTERSTATE ROUTE 170 STORM DRAIN OUTFALL TO SOUTH OF CARROLL STREET STAKEOUT DATA	DESIGNED BY K.L.E. CHECKED BY C.A.J.
		SCALE: 1"=100'	SHEET NO. 3 OF 17
		DATE: MARCH 1974	

3	MD. I-170-B-10	4	17
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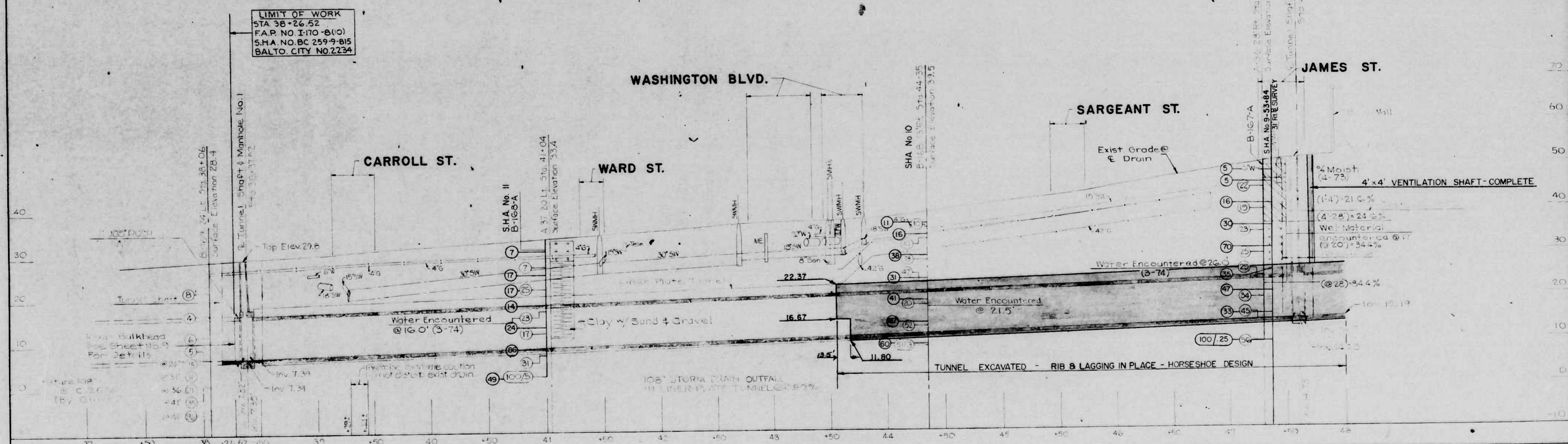
LIMIT OF WORK  
Sta 38+26.52  
F.A.P. NO. I-170-B(10)  
S.H.A. NO. BC 259-9-815  
BALTO. CITY NO. 2234

Tunnel Shaft No. 1  
Manhole #108 RCCP  
Stub. See Sheet  
No. 9 for Details

TUNNEL SHAFT NO. 2 AS REVISED  
ON SHOP DRAWING NO. 11- SEE PROJECT  
STATUS SUPPLEMENTAL, SECTION PS 8-2.

4x4' VENTILATION SHAFT-COMplete  
SEE PROJECT STATUS SUPPLEMENTAL  
SECTION PS 8-2.

CROSS REFERENCES	
ITEM	SHEET NO.
Stakeout Data	3
Tunnel Shaft Details	9
Typical Tunnel Details	13
Typical Manhole Details	14
Boring Details	15 & 16

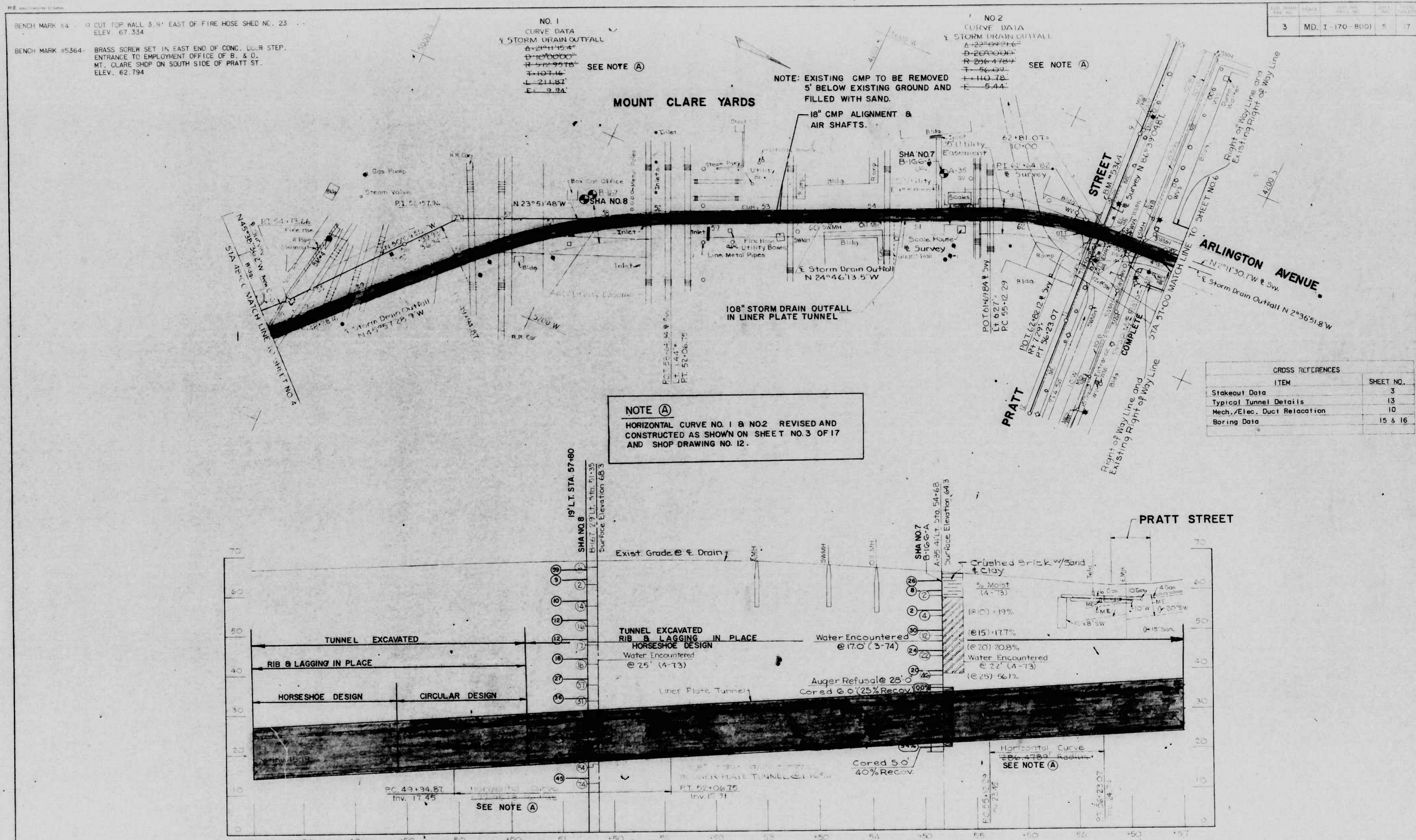


LIMIT OF WORK  
Sta 38+26.52  
F.A.P. NO. I-170-B(10)  
S.H.A. NO. BC 259-9-815  
BALTO. CITY NO. 2234

Manhole Bulkhead  
See Sheet No. 9  
For Details

4x4' VENTILATION SHAFT-COMplete  
% Moist (4-73)  
(14) 21.6%  
(4-28) 21.6%  
Well Material  
encountered @ 17'  
(3-20) 34.4%

<b>REVISIONS</b> UPDATED - JULY 1976 ADDENDUM NO. 1 8/25/76	<b>CONSULTANT</b> BALLARD-DIVER JOINT VENTURE CONSULTING ENGINEERS OWINGS MILLS, MARYLAND	CITY OF BALTIMORE DEPARTMENT OF PUBLIC WORKS & STATE HIGHWAY ADMINISTRATION INTERSTATE DIVISION FOR BALTIMORE CITY	
		INTERSTATE ROUTE 170 STORM DRAIN OUTFALL I-170 TO SOUTH OF CARROLL STREET PLAN & PROFILE STA 38+00 TO STA 48+00 HORIZ. 1"=40' SCALE: PLAN 1"=40' PROFILE VERT 1"=10' DATE MARCH 1974	DRAWN BY R.A.W. TRACED BY R.A.W. F.A.P. NO. I-170-B(10) S.H.A. NO. BC 259-9-815 BALTO. CITY NO. 2234-R
		DES. BY C.A.J. CHK. BY K.L.E.	SHEET NO. 4 of 17



BENCH MARK #4 - CUT TOP WALL 3.9' EAST OF FIRE HOSE SHED NO. 23  
ELEV. 67.334

BENCH MARK #5364 - BRASS SCREW SET IN EAST END OF CONC. CUR STEP,  
ENTRANCE TO EMPLOYMENT OFFICE OF B. & O.  
MT. CLARE SHOP ON SOUTH SIDE OF PRATT ST.  
ELEV. 62.794

NO. 1  
CURVE DATA  
STORM DRAIN OUTFALL  
SEE NOTE (A)

NO. 2  
CURVE DATA  
STORM DRAIN OUTFALL  
SEE NOTE (A)

**MOUNT CLARE YARDS**

NOTE: EXISTING CMP TO BE REMOVED  
5' BELOW EXISTING GROUND AND  
FILLED WITH SAND.

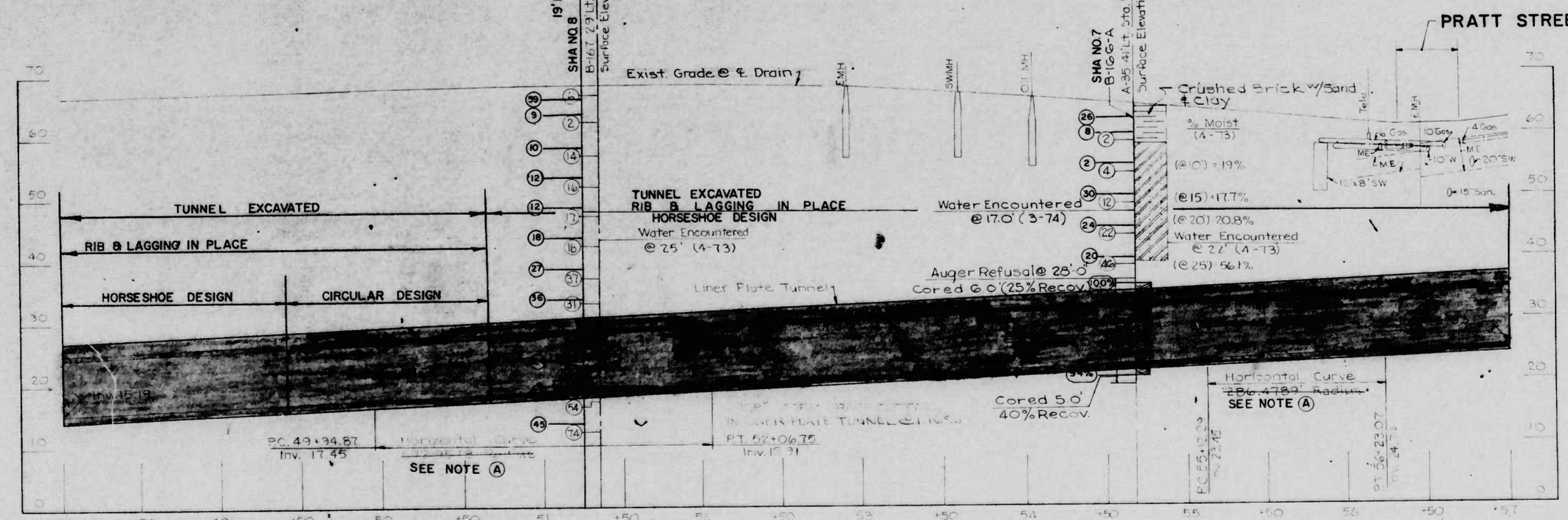
18" CMP ALIGNMENT &  
AIR SHAFTS.

108" STORM DRAIN OUTFALL  
IN LINER PLATE TUNNEL

**ARLINGTON AVENUE**

**NOTE (A)**  
HORIZONTAL CURVE NO. 1 & NO. 2 REVISED AND  
CONSTRUCTED AS SHOWN ON SHEET NO. 3 OF 17  
AND SHOP DRAWING NO. 12.

CROSS REFERENCES		
ITEM	SHEET NO.	
Stakeout Data	3	
Typical Tunnel Details	13	
Mech./Elec. Duct Relocation	10	
Boring Data	15 & 16	



**PROFILE NOTES**

- Profile is shown for Liner Plate Tunnel and 108" Storm Drain Alternates.
- Invert elevations are shown for the Liner Plate Tunnel with Foundation. Reinforced Concrete Alternates are shown for the Storm Drain Alternates.
- Existing Utilities Only the Parallel Existing Utility located within 8' of the centerline of the proposed 108" Storm Drain Outfall Tunnel have been shown.

REVISIONS	CONSULTANT	CITY OF BALTIMORE & STATE HIGHWAY ADMINISTRATION	
DEPARTMENT OF PUBLIC WORKS		INTERSTATE DIVISION FOR BALTIMORE CITY	
UPDATED - JULY 1976	BALLARD-DIVER JOINT VENTURE CONSULTING ENGINEERS OWINGS MILLS, MARYLAND	INTERSTATE ROUTE 170 STORM DRAIN OUTFALL I-170 TO SOUTH OF CARROLL STREET PLAN & PROFILE STA 48+00 TO STA 57+00 HORIZ. 1"=40' SCALE PLAN 1"=40' PROFILE VERT 1"=10' DATE MARCH 1974	DRAWN BY R.A.W. TRACED BY R.A.W. DES. BY C.A.J. CHK. BY K.L.E. F.A.P. NO. I-170-8(10) S.H.A. NO. BC-259-9-815 BALTO. CITY NO. 2274-R
			SHEET NO. 5 of 17

BENCH MARK #5 - NORTHEAST FLANGE BOLT ON FIRE HYDRANT AT NORTHWEST CORNER HOLLINS ST. AND SOUTH ARLINGTON AVENUE. ELEV. 82.584

**NOTE (B)**  
 FOR PERCENT COMPLETE SEE PROJECT STATUS SUPPLEMENTAL THE SOUTHEAST CORNER OF HOLLINS STREET MARKET IS PROTECTED BY STEEL I-BEAM FRAMEWORK.  
 THIS STEEL FRAMEWORK SHALL BE REMOVED AFTER CONSTRUCTION AND SAID REMOVAL COST SHALL BE INCIDENTAL TO THE LUMP SUM BID FOR "EXCAVATING & SHEETING OF TUNNEL SHAFT NO. 4"

**SEE NOTE (B)**  
 Sta 57+19 Tunnel Shaft & Manhole No 3 See Sheet No. 10 for Details  
 SHAFT NO. 3 DIAMETER 17.5'

EXISTING 10" WATER MAIN SUSPENDED IN SHAFT #3

EXISTING BITUMINOUS CONC. TO BE REMOVED AND REPLACED

108" STORM DRAIN OUTFALL IN LINER PLATE TUNNEL

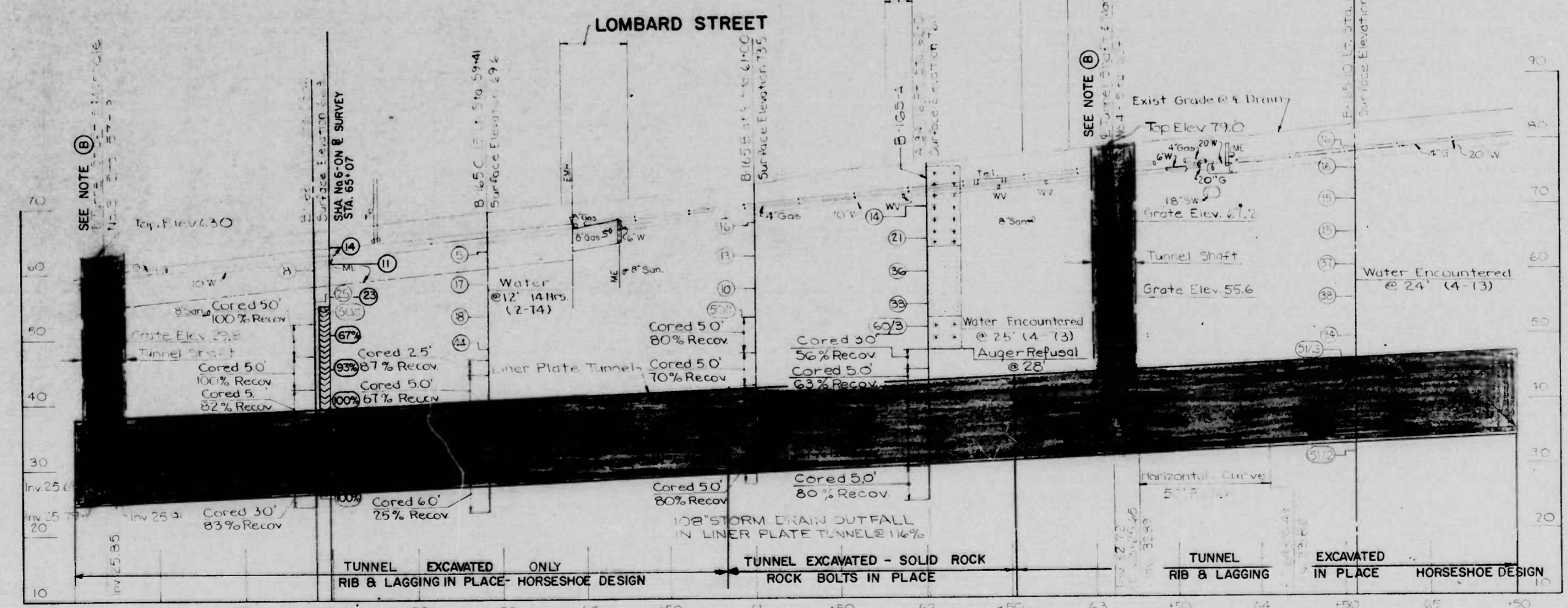
EXISTING 10" WATER MAIN SUSPENDED IN SHAFT #4

Sta 63+11 Tunnel Shaft & Manhole No 4 See Sheet No. 10 for Details  
 SEE NOTE (B)  
 POT. 63+84.60 @ 5vy  
 RT 2.11'  
 P.C. 63+25.65  
 SHAFT NO. 4 DIAMETER 21.0'

**CURVE DATA**  
 STORM DRAIN OUTFALL  
 $\Delta = 91^{\circ}23'31.3"$   
 $R = 50.00'$   
 $T = 51.32'$   
 $M = 79.84'$   
 $E = 21.65'$

NO. SHEETS	3	MD. I-170-8(10)	6	17
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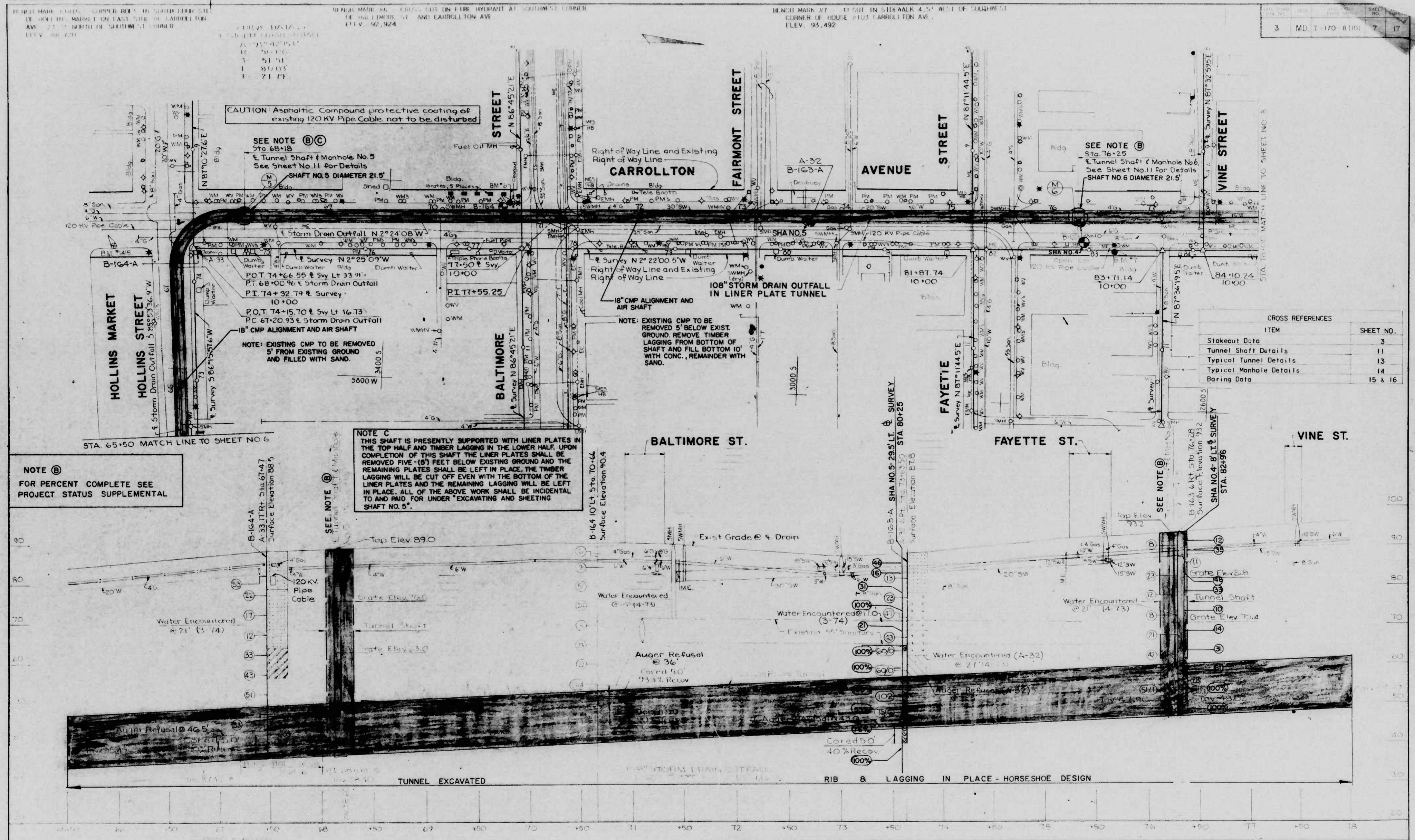
CROSS REFERENCES	
ITEM	SHEET NO.
Stakeout Data	3
Tunnel Shaft Details	10
Typical Tunnel Details	13
Typical Manhole Details	14
Mech/Elec. Duct Relocation	10
Boring Data	15 & 16



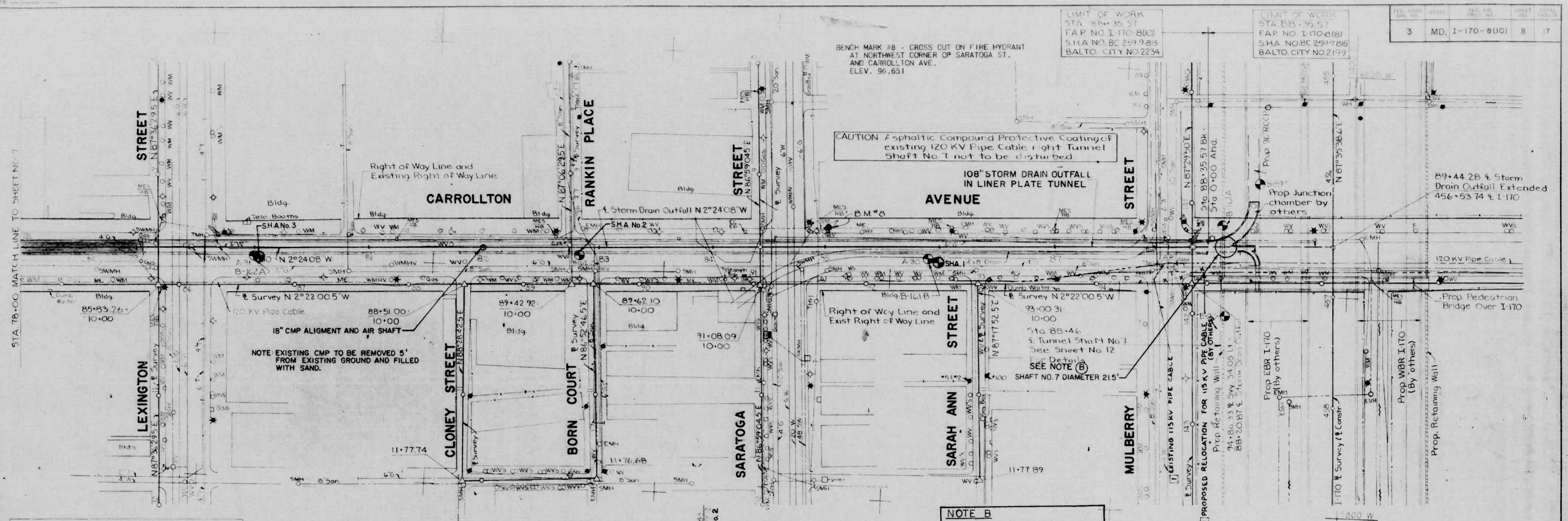
**PROFILE NOTES**  
 1. The profile of the liner plate tunnel and the ground surface are shown. The profile of the ground surface is shown with a 2' grid. The profile of the liner plate tunnel is shown with a 2' grid. The profile of the ground surface is shown with a 2' grid. The profile of the liner plate tunnel is shown with a 2' grid.

REVISIONS	CONSULTANT	CITY OF BALTIMORE DEPARTMENT OF PUBLIC WORKS	STATE HIGHWAY ADMINISTRATION INTERSTATE DIVISION FOR BALTIMORE CITY
UPDATED - JULY 1976 ADDENDUM NO. 1 8/25/76	BALLARD-DIVER JOINT VENTURE CONSULTING ENGINEERS OWINGS MILLS, MARYLAND	INTERSTATE ROUTE 170 STORM DRAIN OUTFALL I-170 TO SOUTH OF CARROLL STREET PLAN & PROFILE STA 57+00 TO STA 65+50 SCALE PLAN 1"=40' PROFILE VERT 1"=10' DATE: MARCH 1974	DRAWN BY: R.A.W. TRACED BY: R.A.W. F.A.P. NO. I-170-8(10) SHA. NO. BC-259-S-815 BALTO. CITY NO. 2234-R

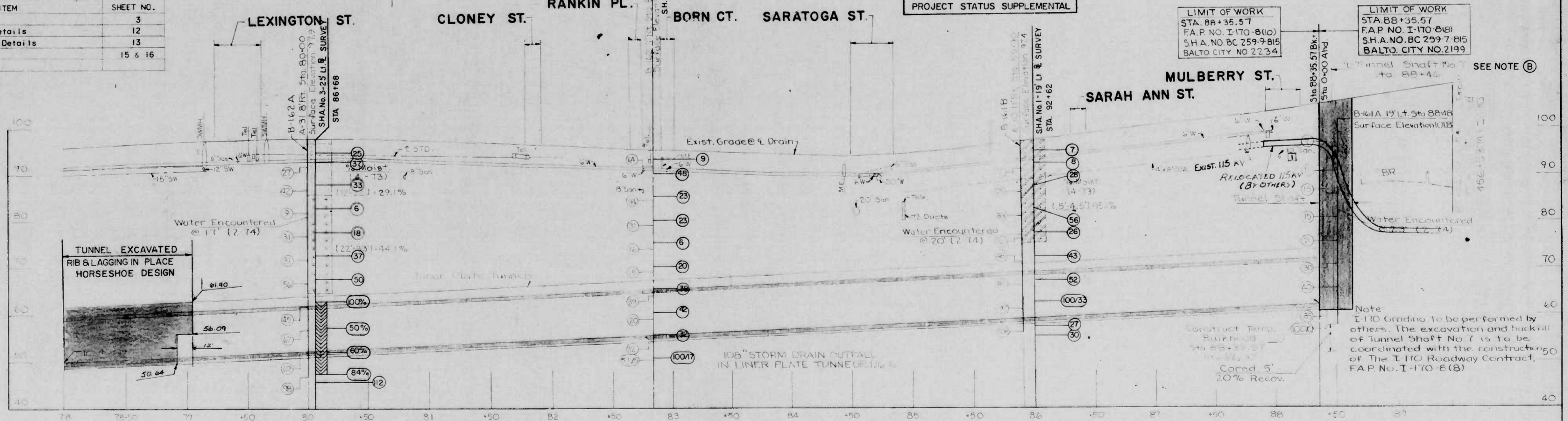
3	MD. I-170-8(10)	7	17
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<b>REVISIONS</b> UPDATED - JULY 1976 ADDENDUM NO. 1 8/25/76	<b>CONSULTANT</b> BALLARD-DIVER JOINT VENTURE CONSULTING ENGINEERS OWINGS MILLS, MARYLAND	CITY OF BALTIMORE DEPARTMENT OF PUBLIC WORKS & STATE HIGHWAY ADMINISTRATION INTERSTATE ROUTE 170 STORM DRAIN OUTFALL I-170 TO SOUTH OF CARROLL STREET PLAN & PROFILE STA 65+50 TO STA 78+00 SCALE PLAN 1"=40' PROFILE VERT 1"=10' DATE MARCH 1974	
		DRAWN BY: R.A.W. TRACED BY: R.A.W. F.A.P. NO. I-170-8(10) S.H.A. NO. BC-259-9-815 BALTO. CITY NO. 2234-R	DES. BY: C.A.J. CHK. BY: K.L.E. SHEET NO. 7 OF 17



CROSS REFERENCES	
ITEM	SHEET NO.
Stakeout Data	3
Tunnel Shaft Details	12
Typical Tunnel Details	13
Boring Data	15 & 16

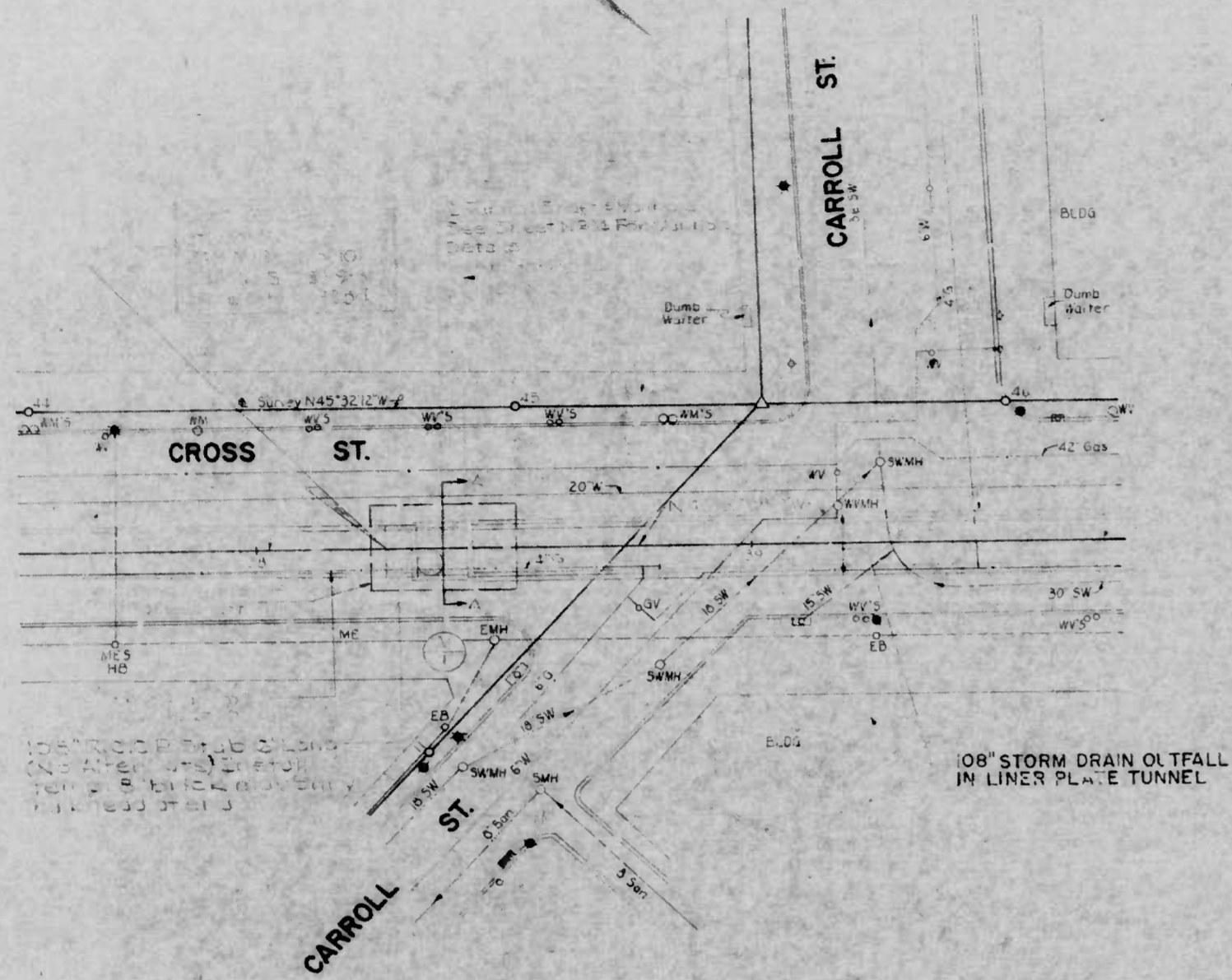


PROFILE NOTES  
 1 Profile is shown for Liner Plate Tunnel and 108" Alternates  
 2 Elevation shown also apply to the Liner Plate Tunnel with Parallel Place Rein. Concrete Alternates and 108" Alternates  
 3 Existing Utilities Only the Parallel Existing Utilities located within 2' of the centerline of the proposed 108" Storm Drain

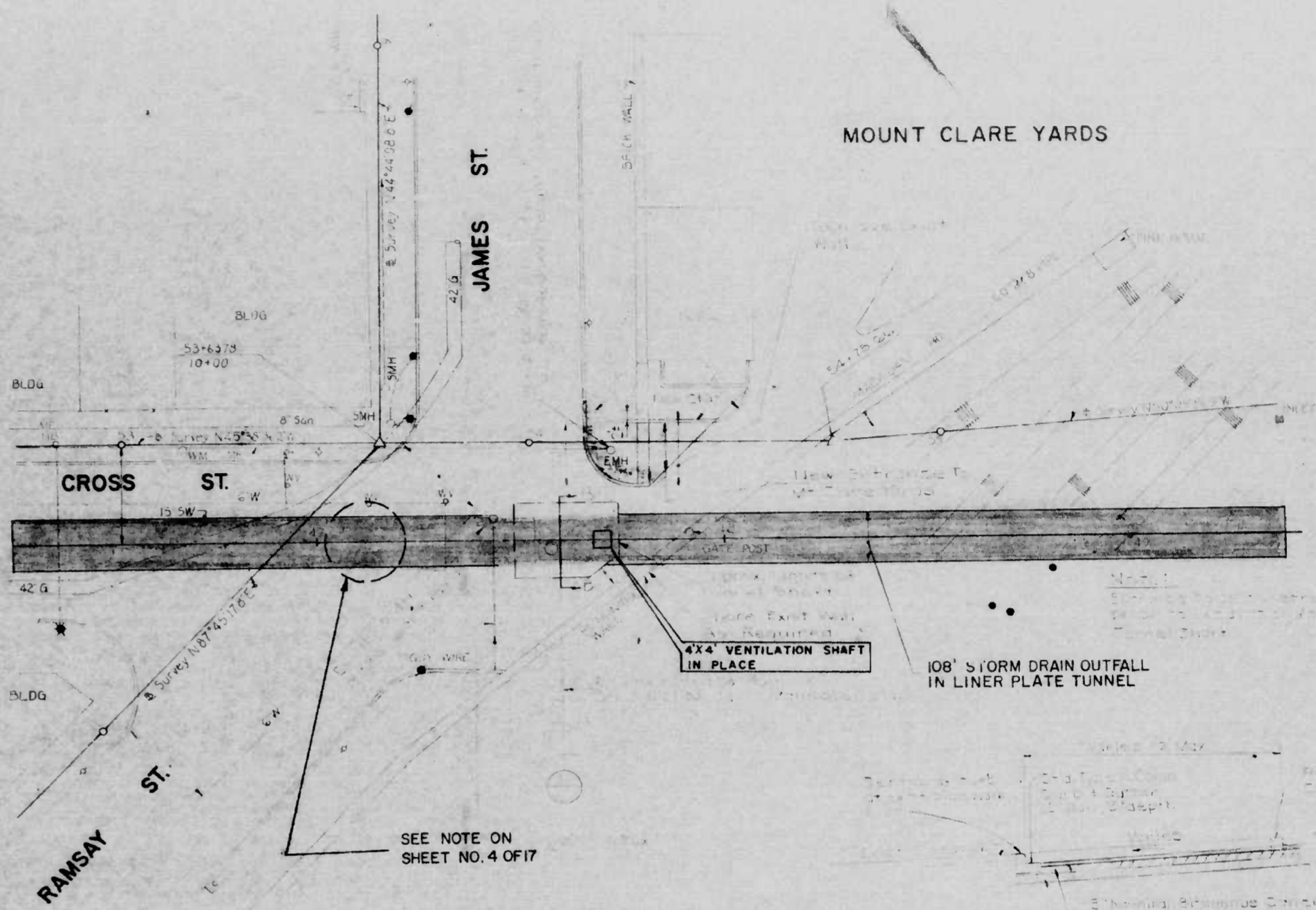
REVISIONS	CONSULTANT	CITY OF BALTIMORE DEPARTMENT OF PUBLIC WORKS	STATE HIGHWAY ADMINISTRATION INTERSTATE DIVISION FOR BALTIMORE CITY
1 REVISED 7/2/74 UPDATED-JULY 1976 ADDENDUM NO.2 9/2/76	BALLARD-DIVER JOINT VENTURE CONSULTING ENGINEERS OWINGS MILLS, MARYLAND	INTERSTATE ROUTE 170 STORM DRAIN OUTFALL I-170 TO SOUTH OF CARROLL STREET PLAN AND PROFILE STA 78+00 TO STA 89+00	DRAWN BY: R.A.W. TRACED BY: R.A.W. F.A.P. NO. I-170-8(10) S.H.A. NO. BC-259-9-815 BALTO. CITY NO. 2234-R

SCALE: PLAN 1"=40' PROFILE VERT 1"=10' DATE: MARCH 1974

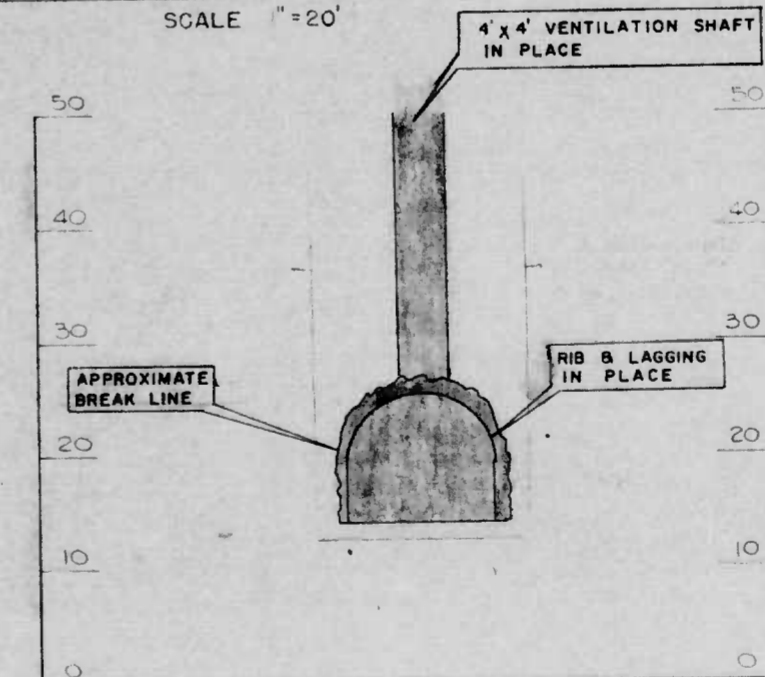




PLAN - TUNNEL SHAFT NO. 1  
SCALE 1" = 20'



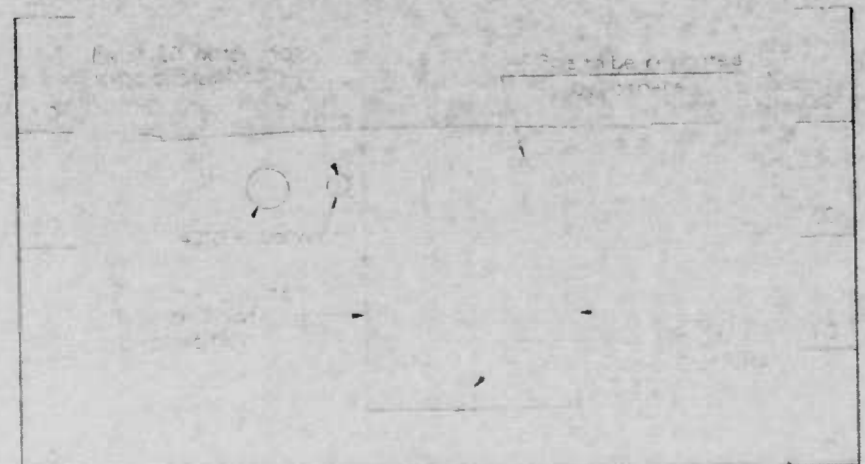
PLAN - TUNNEL SHAFT NO. 2  
SCALE 1" = 20'



SECTION B-B  
STA. 47+60 & STORM DRAIN OUTFALL  
SCALE 1" = 10'

TYPICAL SECTION  
ENTRANCE TO MOUNT CLARE YARDS  
SCALE 1" = 5'

MECHANICAL-ELECTRICAL MANHOLE  
ROOF LOWERING DETAILS  
SCALE 1/4" = 1'-0"



SECTION A-A  
STA. 38+37.52 & STORM DRAIN OUTFALL  
SCALE 1" = 10'

REVISIONS UPDATED JULY 1976	CONSULTANT BALLARD-DIVER JOINT VENTURE CONSULTING ENGINEERS OWINGS MILLS, MARYLAND	CITY OF BALTIMORE DEPARTMENT OF PUBLIC WORKS INTERSTATE ROUTE 170 STORM DRAIN OUTFALL I-170 TO SOUTH OF CARROLL STREET TUNNEL SHAFT NO. 1 & TUNNEL SHAFT NO. 2 DETAILS SCALE AS SHOWN	STATE HIGHWAY ADMINISTRATION OF MARYLAND INTERSTATE DIVISION FOR BALTIMORE CITY DRAWN BY P.A.W. CHECKED BY P.A.W. P.A.W. 1-170-800 P.A.W. 1-170-800-815 P.A.W. 1-170-815
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PROJECT	STATE	FED. AID	SHEET TOTAL
3	MD	I-170-8(10)	17

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	TITLE SHEET AND LOCATION PLAN
2	LEGEND AND GENERAL NOTES
3	STAKEOUT DATA
4	PLAN & PROFILE STA. 38+00 TO STA. 48+00
5	PLAN & PROFILE STA. 48+00 TO STA. 57+00
6	PLAN & PROFILE STA. 57+00 TO STA. 65+50
7	PLAN & PROFILE STA. 65+50 TO STA. 78+00
8	PLAN & PROFILE STA. 78+00 TO STA. 89+00
9	TUNNEL SHAFT NO.1 DETAILS (CROSS & CARROLL STS.)
	TUNNEL SHAFT NO.2 DETAILS (CROSS & JAMES/RAMSAY STS.)
10	TUNNEL SHAFT NO.3 DETAILS (ARLINGTON AVE. & PRATT ST.)
	TUNNEL SHAFT NO.4 DETAILS (ARLINGTON AVE. & HOLLINS ST.)
11	TUNNEL SHAFT NO.5 DETAILS (CARROLLTON AVE. & HOLLINS ST.)
	TUNNEL SHAFT NO.6 DETAILS (CARROLLTON AVE. & FAYETTE ST.)
12	TUNNEL SHAFT NO.7 DETAILS (CARROLLTON AVE. & MULBERRY ST.)
13	TYPICAL TUNNEL DETAILS
14	TYPICAL MANHOLE DETAILS
15 & 16	BORINGS
17	SUMMARY OF QUANTITIES
16A	SUPPLEMENTAL BORINGS BY SHA

CITY OF BALTIMORE  
DEPARTMENT OF PUBLIC WORKS  
AND  
THE STATE HIGHWAY ADMINISTRATION  
INTERSTATE DIVISION FOR BALTIMORE CITY  
FEDERAL AID PROJECT NO. I-170-8(10)  
STATE HIGHWAY ADMINISTRATION NO. BC-259-9-815  
CITY OF BALTIMORE BUREAU OF ENGINEERING  
HIGHWAY ENGINEERING DIVISION CONTRACT NO. 2234-R

**INTERSTATE ROUTE 170  
STORM DRAIN OUTFALL**

I-170 TO SOUTH OF CARROLL STREET

**PROJECT STATUS PLANS**

BALTIMORE CITY SURVEY BOOKS	
BOOK NO.	DESCRIPTION
I-170-213	STORM DRAIN OUTFALL - TRAVERSE REFERENCES AND TIES TO BALTO. CITY SURVEY CONTROL. SIDE STREET SPUR LINES: WARNER ST. TO LOMBARD ST.
I-170-214	STORM DRAIN OUTFALL - LEVELS
I-170-215, 216 & 217	STORM DRAIN OUTFALL - TOPOGRAPHY, UTILITY ELEVATIONS AND CROSS SECTIONS
I-170-218, 219 & 220	SIDE STREETS - REFERENCES & TOPOGRAPHY WARNER STREET TO PRATT STREET
I-170-221 & 222	SIDE STREETS - SPUR LINES, REFERENCES & TOPOGRAPHY - LOMBARD ST. TO SARAH ANN ST.
I-170-223, 224, 225 & 226	SIDE STREETS - BENCH MARKS, PROFILES & CROSS SECTIONS - WARNER STREET TO SARATOGA STREET
I-170-227	STORM DRAIN OUTFALL - BORING & AUGER LOCATIONS
19300	STORM DRAIN OUTFALL - PRESENT STATUS - JULY 1976



RIGHT OF WAY PLAT NO. I-170-12

LOCATION PLAN  
SCALE 1"=500'

LENGTH OF PROJECT 5009 FEET

CONTRACT PLANS UPDATED BY THE INTERSTATE DIVISION FOR BALTIMORE CITY - JULY 1976  
*W. H. ...* July 30, 1976  
CHIEF, INTERSTATE DIVISION FOR BALTIMORE CITY

RIGHT OF WAY LINES SHOWN ON THESE PLANS DO NOT INCLUDE EASEMENT THEY ARE FOR ASSISTANCE IN INTERPRETING THE PLANS. THESE LINES DO NOT REPRESENT THE OFFICIAL PROPERTY ACQUISITION LINES FOR OFFICIAL FEE RIGHT OF WAY AND EASEMENT INFORMATION. SEE THE APPROPRIATE RIGHT OF WAY PLAT OR PLATS.

NOTE:  
EFFECTIVE JULY 1, 1971, IN ACCORDANCE WITH THE PROVISION OF CHAPTER 526 OF THE ACTS OF THE 1970 GENERAL ASSEMBLY WHEREVER THE TITLE "STATE ROADS COMMISSION" AND/OR TERM "COMMISSION" IS USED, IT SHALL BE CONSTRUED TO BE "THE STATE HIGHWAY ADMINISTRATION."

CHECKED BY: BUREAU OF ENGINEERING WATER DIVISION WASTE WATER DIVISION HIGHWAY ENGINEERING DIVISION SURVEY AND RECORDS DIVISION BUREAU OF UTILITY OPERATIONS LIGHTING SECTION HIGHWAY MAINTENANCE DIV. CONDUIT SECTION HIGHWAY MAINTENANCE DIV.	INITIALS <i>R.K./B.P.</i>	DATE 3-6-74	CITY OF BALTIMORE DEPARTMENT OF PUBLIC WORKS	PREPARED BY BALLARD-DIVER JOINT VENTURE CONSULTING ENGINEERS 17 GWYNNS MILL COURT OWINGS MILLS, MARYLAND 21117	CITY OF BALTIMORE APPROVED <i>David A. ...</i> 3/6/74 SEDIMENTATION AND EROSION CONTROL REPRESENTATIVE	THE STATE HIGHWAY ADMINISTRATION REVIEWED AND APPROVAL RECOMMENDED <i>William ...</i> CHIEF, BUREAU OF DESIGN	U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION APPROVAL RECOMMENDED <i>Neil ...</i> CHIEF, INTERSTATE DIVISION FOR BALTIMORE CITY
	DEPARTMENT OF TRANSIT AND TRAFFIC <i>J.H.E.</i> 3-6-74	APPROVAL RECOMMENDED <i>J.H.E.</i> 3-6-74	APPROVED DATE	APPROVED DATE <i>John ...</i> 3/5/74	APPROVED DATE <i>Angela ...</i>	APPROVED DATE	APPROVED DATE