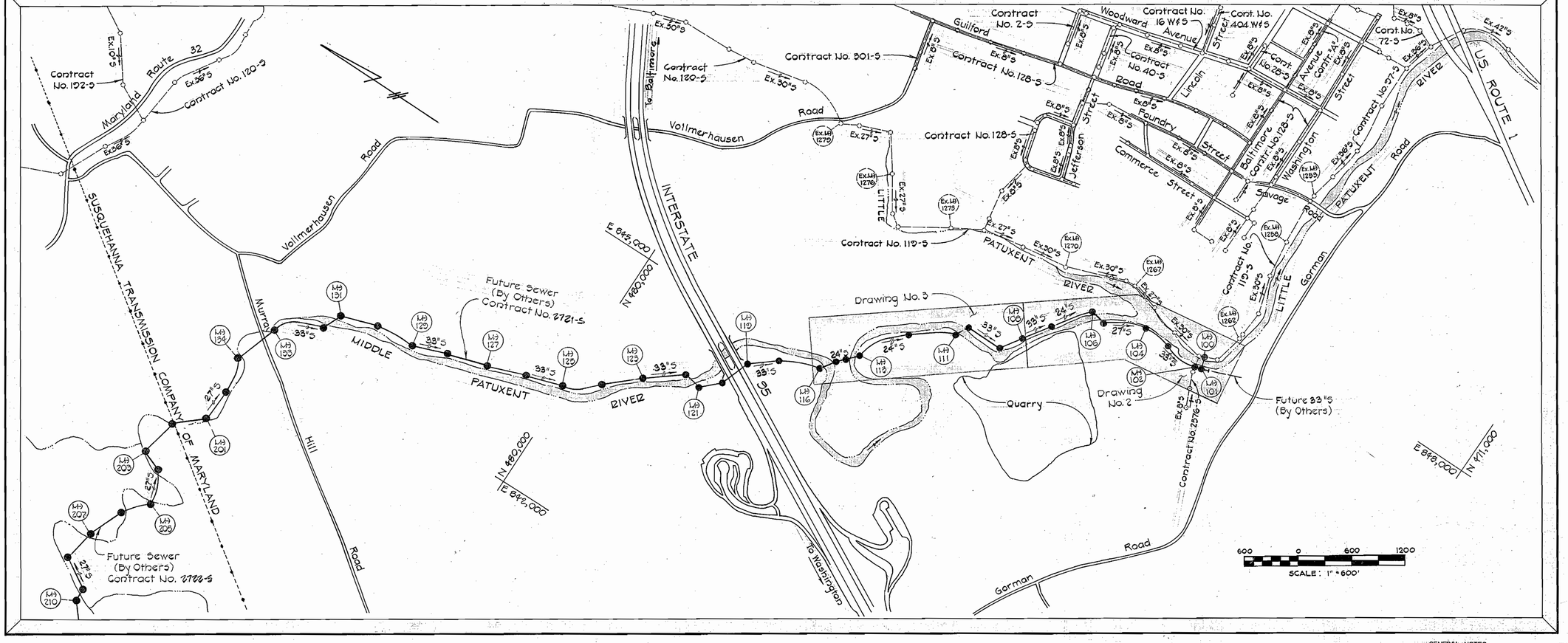


CAPITAL PROJECT S-4-6047
CONTRACT NO. ~~2720-S~~
MIDDLE PATUXENT INTERCEPTOR
LITTLE PATUXENT RIVER TO I-95
HOWARD COUNTY, MARYLAND
DEPARTMENT OF PUBLIC WORKS

QUANTITIES		
Item	Estimated	As-Built
12" Sewer	5 L.F.	3 L.F.
16" Sewer	150 L.F.	144 L.F.
24" Sewer	2280 L.F.	2,257 L.F.
27" Sewer	615 L.F.	608 L.F.
33" Sewer	1980 L.F.	1,942 L.F.
Manholes	260 V.F.	228 V.F.

STATE OF MARYLAND — BEVERLY A. JOHNSON — No. 3307 — REGISTERED PROFESSIONAL ENGINEER

Beverly A Johnson

GENERAL NOTES

1. Approximate location of existing utilities is shown. The Contractor shall take all necessary precautions to protect existing utilities and to maintain uninterrupted service. Any damage incurred shall be repaired immediately to the satisfaction of the Engineer by the Contractor at the Contractor's expense.
2. The Contractor shall locate existing utilities a minimum of two weeks in advance of construction operations in vicinity of utilities. Cost shall be included in the unit price bid for excavation and backfill of sewer mains.
3. Contractor shall notify the following utilities or agencies at least (5) days before starting work shown on these plans:
   Miss Utility 1-800-441-8355
   State of Maryland - Department of Water Resources 301-267-5551
4. Clear all utilities by a minimum of 8". Clear all poles 2'-0" minimum, or tunnel as required. Cost for tunneling or bracing at poles shall be included in the unit prices bid for excavation and backfill of sewer mains.
5. All pipe elevations shown are invert (I) elevations.
6. All Manholes shall be 4'-0" inside diameter unless otherwise noted.
7. The Contractor shall provide a pipe joint in each sewer main within 2'-0" of the exterior manhole walls.
8. Watertight manhole frame and cover to be used where indicated on drawings [Standard Detail S-12 (RCP-63A)]. Where watertight manhole frame and cover is used, set top of frame 1'-6" above finished grade.
9. For details not shown on the Contract Drawings see Standard Details bound in the specifications.
10. Trees are to be protected from damage to the maximum extent.
11. Contractor shall remove trees, stumps and roots along line of excavation as directed by the Engineer. Payment for such removal shall be included in the unit price bid for excavation and backfill for sewer mains.
12. Horizontal and Vertical controls are based on the Maryland State Grid Coordinate System.

REV.	DATE	REMARKS

Contract No. 2720-S
Capital Project S-4-6047
Middle Patuxent Interceptor
Little Patuxent River To Interstate 95

PURDUM & JESCHKE ENGINEERS 1023 N. CALVERT ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND — DIRECTOR OF PUBLIC WORKS DATE 6-28-77 — CHIEF-BUREAU OF ENGINEERING DATE 6-27-77	CONTRACT NO. ~~2720-S~~ CAPITAL PROJECT NO. S-4-6047	LOCATION MAP OF SANITARY SEWERS	MIDDLE PATUXENT INTERCEPTOR ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	DRAWING NO. 1 OF 6 — SCALE 1" = 600' — MAPS: 220-41,42 221-41,42

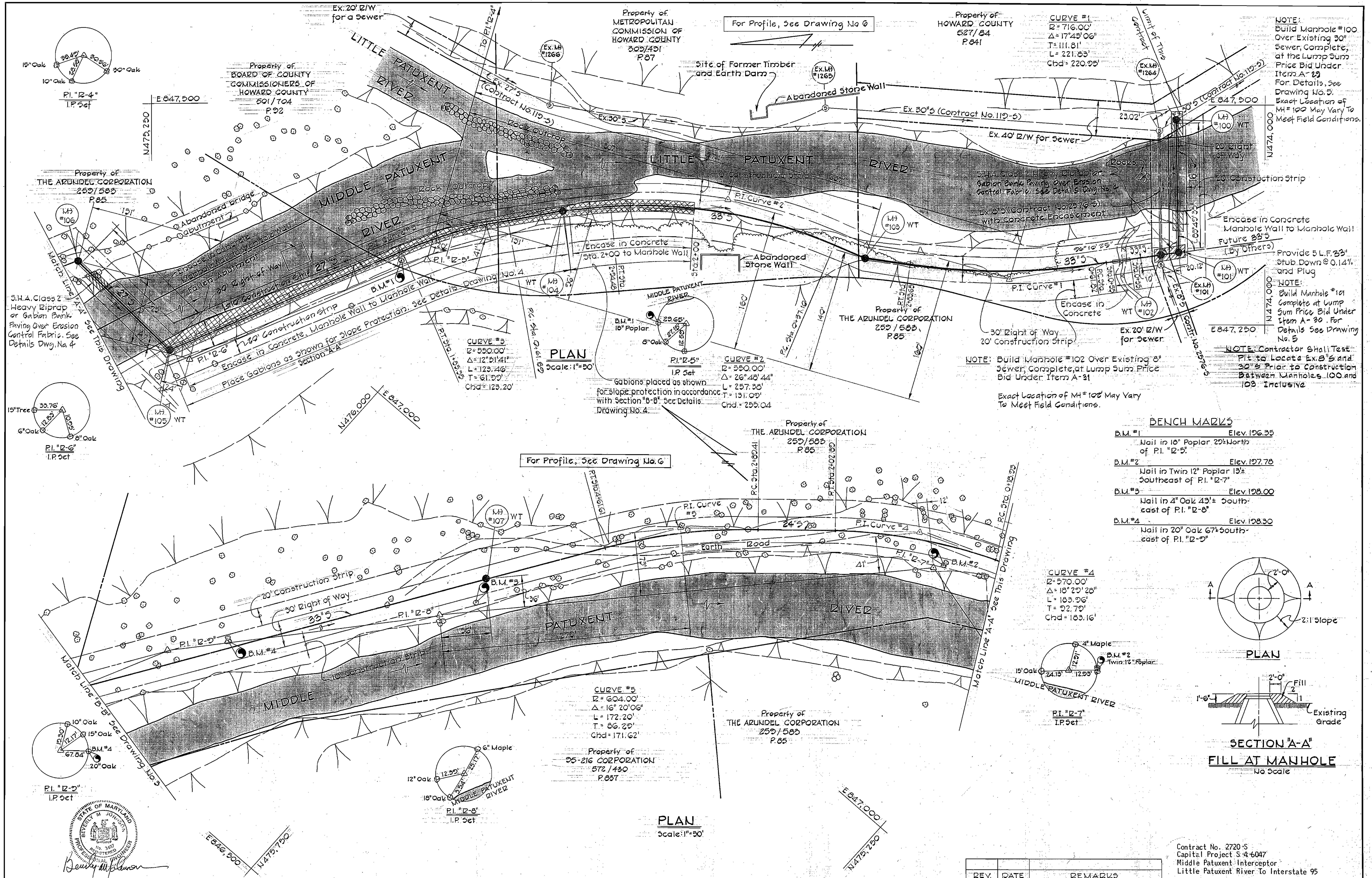
K&E BALTIMORE 17 0493 PHOENIX MC 1316

W.O. 3388-00 F.D.# 3388-3320, 3388-1, 3388-2, 3388-3

WS 720 S/21

As Built August 20, 1980

September 5, 1979



STATE OF MARYLAND BEVERLY M. JOHNSON REGISTERED PROFESSIONAL ENGINEER

Contract No. 2720-S
Capital Project S-4-6047
Middle Patuxent Interceptor
Little Patuxent River To Interstate 95

REV.	DATE	REMARKS

PURDUM & JESCHKE ENGINEERS 1023 N. CALVERT ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND — DIRECTOR OF PUBLIC WORKS DATE 6-28-77 — CHIEF-BUREAU OF ENGINEERING DATE 6-27-77	CONTRACT NO. 2720-S CAPITAL PROJECT NO. S-4-6047	PLAN OF SANITARY SEWERS AND DETAILS	MIDDLE PATUXENT INTERCEPTOR ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	DRAWING NO. 2 OF 6	SCALE AS SHOWN — DESIGNED: JAM/TAF DRAFTED: ARZ CHECKED: TAF

W.O. 3388-00 F.B.# 3388-3390, 3388-1, 3388-2, 3388-3

As Built — August 20, 1980

September 5, 1979

WS 720 S/2

CURVE #6
R = 604.00'
Δ = 27°22'52"
L = 288.65'
T = 147.13'
Chd. = 285.91'

Property of
HOWARD COUNTY
551/199
P.81

MIDDLE PATUXENT RIVER

15" Dead Tree
4" Maple
8" Tree
P.I. "12-12"
I.P. Set

12" Poplar
14" Oak
10" Beech
P.I. "12-11"
I.P. Set

For Profile, See Drawing No. 6

E 846,500
N 476,250

Match Line "12-2" See this Drawing

MIDDLE PATUXENT RIVER

Gabion Bank Paving over Erosion Control Fabric. See Detail Drawing No. 4

Rock Outcrop

10' Construction Strip

30' Right of Way
20' Construction Strip

P.I. Curve #6
P.I. "12-13"
P.I. "12-12"
P.I. "12-11"
P.I. "12-10"

B.M. #6
B.M. #5

W.A. #110
W.A. #111
W.A. #108
W.A. #109

WT

Sta. 0+00
Sta. 1+50
Sta. 3+42.776

N 476,750
E 846,000

Property of
55-216 CORPORATION
572/430
P.837

Pc Sta. 0+54.11

Match Line "12-2" See this Drawing

24" Oak
14" Beech
12" Hickory
P.I. "12-13"
I.P. Set

10" Oak
8" Oak
B.M. #5 - 30" Sycamore
P.I. "12-10"
I.P. Set

BENCH MARKS

B.M. #10 Elev. 238.32
Nail in 12" Oak 42'± South of P.I. "12-17"

PLAN

Scale: 1" = 50'

REV.	DATE.	REMARKS

15" Oak
24" Beech
24" Beech
P.I. "12-19"
I.P. Set

B.M. #11
10" Beech
12" Beech
20" Beech
P.I. "12-18"
I.P. Set

4" Beech
10' Dirt Road
20" Beech
18" Beech
P.I. "12-17"
I.P. Set

6" Poplar
20" Walnut
24" Sycamore

N 477,750
E 845,500

Property of
THE ARUNDEL CORPORATION
253/203
P.10

CURVE #7
R = 441.00'
Δ = 50°03'32"
L = 385.30'
T = 205.92'
Chd. = 373.16'

E 846,000
N 476,250

For Profile, See Drawing No. 6

Property of
THE ARUNDEL CORPORATION
253/200
P.12

N 477,250
E 846,000

Property of
THE ARUNDEL CORPORATION
253/197
P.11

To P.I. "12-20"

P.I. "12-19"

B.M. #11
P.I. "12-18"

MIDDLE PATUXENT RIVER

Property of
STATE ROADS COMMISSION
Liber 555 Folio 511

Connect to 33"S (Constr. No. 2721-S) if Existing, Otherwise Place 33" Stub up @ 0.12% and Plug

To P.I. "14-1"

33"S (By Others)

114°21'05"

Limit of Rip Rap

S.H.A. Class 2 Heavy Rip Rap or Gabion Bank Paving Over Erosion Control Fabric; See Detail Dwg. No. 4

Encase in Concrete

To P.I. "12-16"

Hill

10' Dirt Road

14" L.E. 54" Tunnel with 14" L.E. 24"S. See Detail Drawing No. 4

P.I. "12-16"
I.P. Set

P.I. "12-17"
Hill

B.M. #10

P.I. "12-16A"

Rock Outcrop

Sta. 0+00

Sta. 1+50

Encase in Concrete

Future 12"S (By Others)

Provide 12" Stub up @ 0.30% and Plug

P.I. "12-15"
I.P. Set

Tree
11.62'
14.95'
10" Beech
B.M. #9
10" Beech

P.I. Curve #7

Rock Outcrop

MIDDLE PATUXENT RIVER

10' Dirt Road

24"S

20' Construction Strip
30' Right of Way

P.I. Sta. 5+35.89

P.I. Sta. 1+30.89

WT

W.A. #112

Match Line "C-C" See this Drawing

Property of
55-216 CORPORATION
572/430
P.837

20" Sycamore
8" Maple
P.I. "12-14"
I.P. Set

B.M. #8 - 24" Sycamore

12" Poplar
24" Poplar
P.I. "12-15 M"
I.P. Set

15" Oak
10" Beech
12" Triple Sycamore
P.I. "12-16A"
I.P. Set

8" Hickory
4" Hickory
6" Beech
P.I. "12-16B"
I.P. Set

STATE OF MARYLAND
BEVERLY M. JOHNSON
No. 3903
REGISTERED
PROFESSIONAL ENGINEER

Contract No. 2720-S
Capital Project S-4-6047
Middle Patuxent Interceptor
Little Patuxent River To Interstate 95

BENCH MARKS

B.M. #5 Elev. 199.65
Nail in 30" Sycamore 42'± Southeast of P.I. "12-10"

B.M. #6 Elev. 201.18
Nail in 48" Sycamore 45'± Northeast of P.I. "12-12"

B.M. #8 Elev. 203.69
Nail in 24" Sycamore 18'± East of P.I. "12-14"

B.M. #9 Elev. 206.35
Nail in 18" Beech 41'± West of P.I. "12-15"

B.M. #11 Elev. 217.64
Nail in 12" Beech 12'± Northeast of P.I. "12-18"

PURDUM & JESCHKE ENGINEERS 1023 N. CALVERT ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND D.J. Regan 6-22-77 — DIRECTOR OF PUBLIC WORKS — DATE W.O. Elbert 6-27-77 — CHIEF-BUREAU OF ENGINEERING — DATE	CONTRACT NO. 2720-S CAPITAL PROJECT NO. S-4-6067	PLAN OF SANITARY SEWERS	MIDDLE PATUXENT INTERCEPTOR ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	DRAWING NO. 3 OF 6	SCALE 1" = 50'	DESIGNED: JAM/TAF DRAFTED: ARZ CHECKED: TAF

W.O. 3388-00 F.B.# 3388-3390, 3388-1, 3388-2, 3388-3

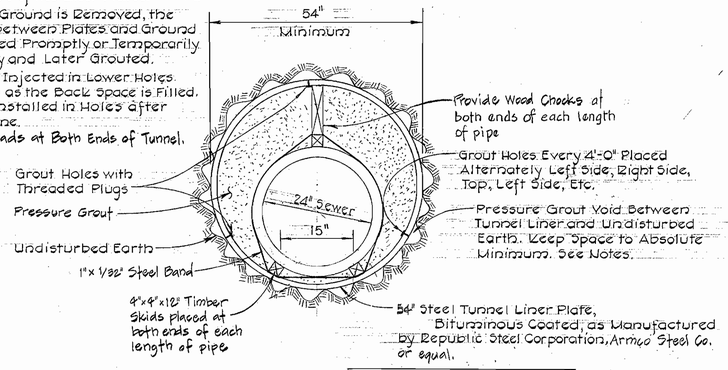
K&E BALTIMORE 17 0453 PHOENIX MC 1316

As Built August 20, 1980
September 5, 1979

WS 720 S/3

NOTES:

1. The Excavated Opening Shall Fit Closely the Outside Shape of the Liner Plates.
2. Where too much Ground is Removed, the Annular Space between Plates and Ground Shall be Grouted Promptly or Temporarily Packed with Hay and Later Grouted.
3. Grout Shall be Injected in Lower Holes First, Moving Up as the Back Space is Filled. Plugs shall be Installed in Holes after Filling at Each One.
4. Place Brick Bulkheads at Both Ends of Tunnel.

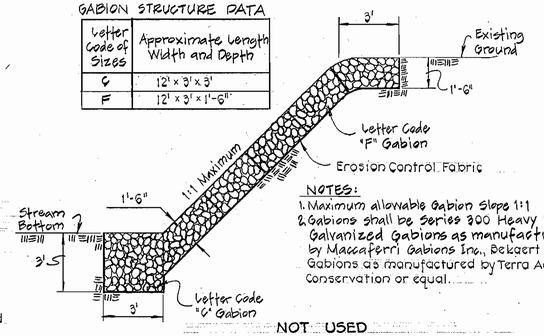


LINER PLATE DIMENSIONS	
MANUFACTURER	GAGE
REPUBLIC	12
~~ARMCO~~	~~14~~

TUNNEL DETAIL
Scale: 1/2"=1'-0"

GABION STRUCTURE DATA

Letter Code of Sizes	Approximate Length Width and Depth
C	12' x 3' x 3'
F	12' x 3' x 1'-6"

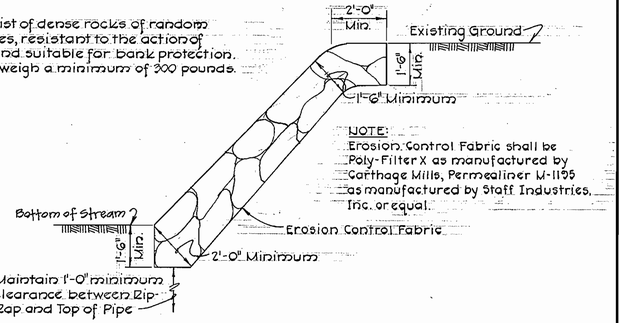


NOTES:
1. Maximum allowable Gabion Slope 1:1
2. Gabions shall be Series 300 Heavy Duty Galvanized Gabions as manufactured by Maccaferri Gabions Inc., Bekaert Gabions as manufactured by Terra Aqua Conservation or equal.

NOT USED

GABION BANK PAVING AT PIPE CROSSINGS
No Scale

Rip-Rap to consist of dense rocks of random shapes and sizes, resistant to the action of air and water, and suitable for bank protection. All rocks shall weigh a minimum of 300 pounds.

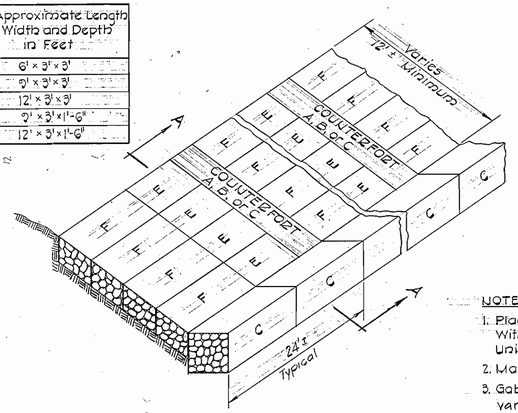


NOTE:
Erosion Control Fabric shall be Poly-Filter X as manufactured by Carthage Mills, Permealiner M-1195 as manufactured by Staff Industries, Inc. or equal.

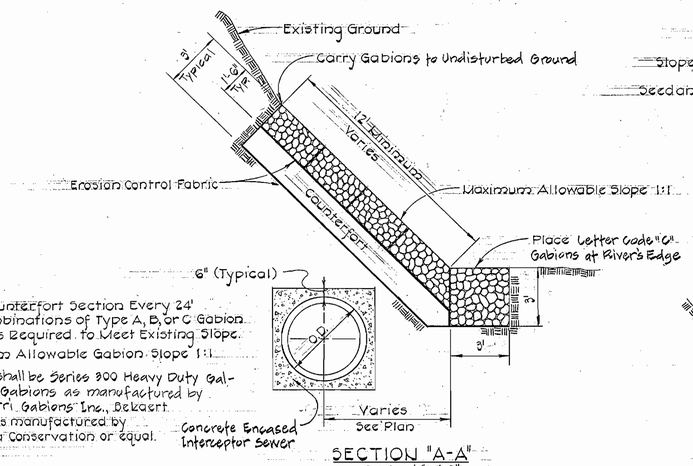
S.H.A. CLASS 2
HEAVY RIP-RAP DETAIL
No Scale

GABION STRUCTURE DATA

Letter Code of Size	Approximate Length Width and Depth in Feet
A	6' x 3' x 3'
B	9' x 3' x 3'
C	12' x 3' x 3'
E	9' x 3' x 1'-6"
F	12' x 3' x 1'-6"



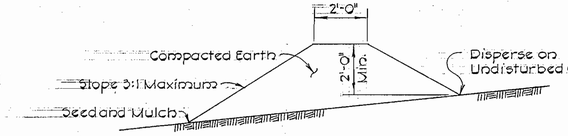
ISOMETRIC VIEW
No Scale



NOTES:
1. Place Counterfort Section Every 24' With Combinations of Type A, B, or C Gabion Units As Required to Meet Existing Slope.
2. Maximum Allowable Gabion Slope 1:1
3. Gabions shall be Series 300 Heavy Duty Galvanized Gabions as manufactured by Maccaferri Gabions Inc., Bekaert Gabions as manufactured by Terra Aqua Conservation or Equal.

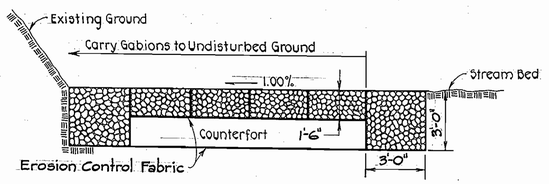
SECTION "A-A"
Scale: 1/4" = 1'-0"

GABION SLOPE PROTECTION



Diversion Berms are required every 250 feet on continous slopes of 4% or greater. The berms shall conform to the typical section shown hereon and shall be constructed across the construction areas immediately after the backfilling of the pipe trench and prior to placing stabilization in order to prevent erosion of the backfilled areas.

TEMPORARY EARTH DIVERSION BERM
No Scale



SECTION "B-B"
Not to Scale

REV.	DATE	REMARKS

Contract No. 2720-S
Capital Project S-4-6047
Middle Patuxent Interceptor
Little Patuxent River To Interstate 95

PURDUM & JESCHKE ENGINEERS 1023 N. CALVERT ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND 6-28-77 DIRECTOR OF PUBLIC WORKS DATE 6-27-77 CHIEF-BUREAU OF ENGINEERING DATE	CONTRACT NO. 2720-S CAPITAL PROJECT NO. S-4-6047	DETAILS	MIDDLE PATUXENT INTERCEPTOR ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	DRAWING NO. 4 OF 6	SCALE AS SHOWN	DESIGNED: JAM/TAF DRAFTED: ARZ CHECKED: TAF

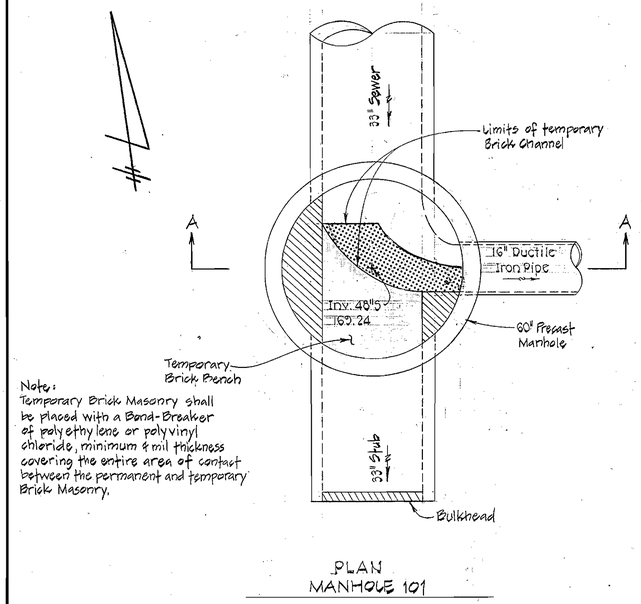
W.O. 3388-00

K&E BALTIMORE 17 0453 PHOENIX MC 3343•

September 5, 1978

As Built August 20, 1980

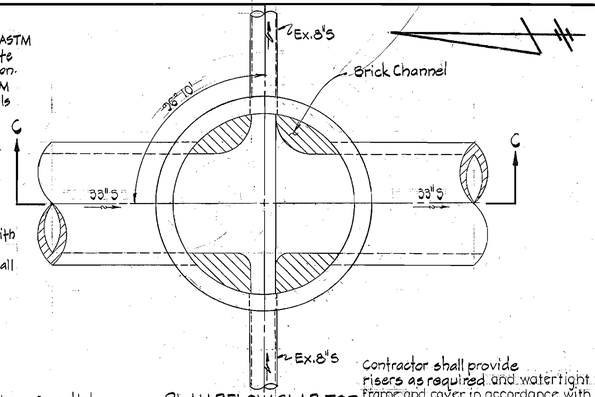
WS 720 S/4

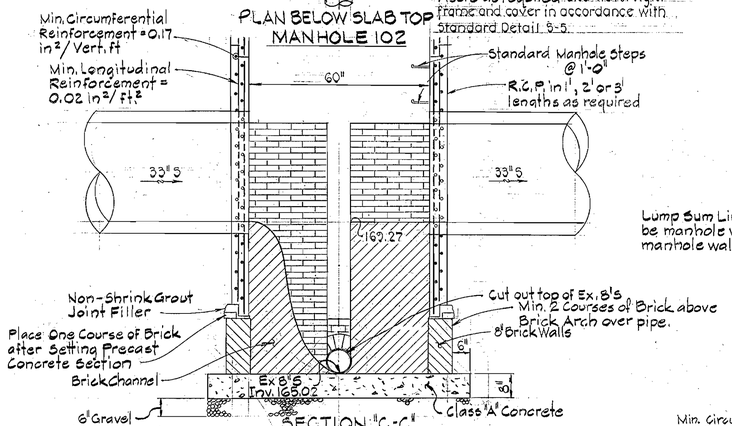


Note:
Temporary Brick Masonry shall be placed with a Bond-Breaker of polyethylene or polyvinyl chloride, minimum 4 mil thickness covering the entire area of contact between the permanent and temporary Brick Masonry.

PLAN
MANHOLE 101

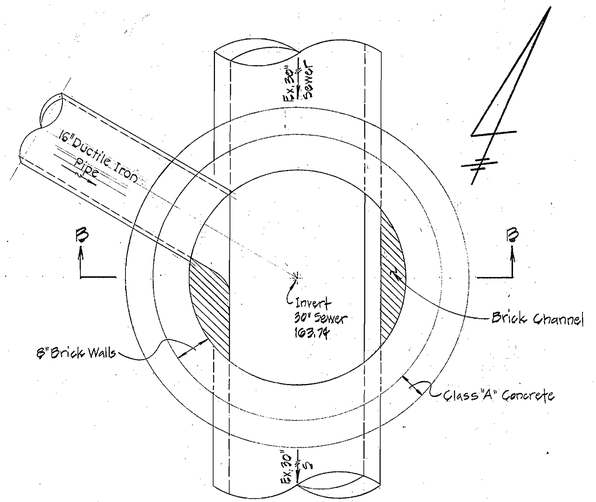
Notes:
1. Manhole Design shall conform to ASTM C 478 "Precast Reinforced Concrete Manhole Sections", latest Revision.
2. Reinforcing shall conform to ASTM A 185 and shall be provided in Bells and Spigots.
Area 60" Diameter = 0.17 in²/Vertical Ft.
3. All Concrete shall be 4000 p.s.i.
4. Pipe Openings shall be Provided as Required.
5. All Pipe Openings shall be sealed with Non-Shrink Grout Joint Filler.
6. Lift Pin Holes shall be provided in all Pieces for Handling.





SECTION "C-C"

MANHOLE 102-STANDARD
PRECAST CONCRETE MH
BUILT OVER EXISTING SEWER
Scale: 1/2"=1'-0"

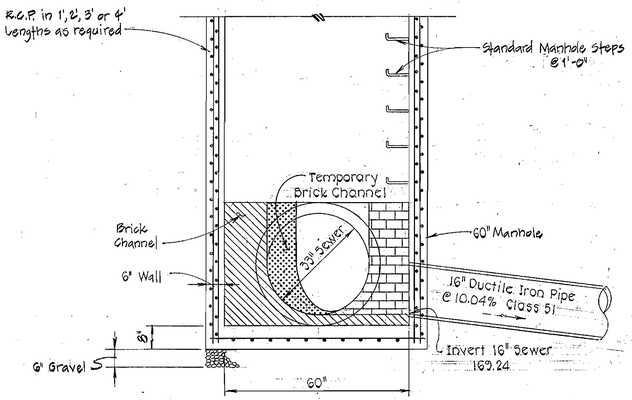


PLAN
SECTION "A-A"
MANHOLE 100

Contractor shall provide risers and Frame & Cover in accordance with Standard Detail 5-5 or 5-2.

Note:
Lump Sum Limits shall be manhole wall to manhole wall.

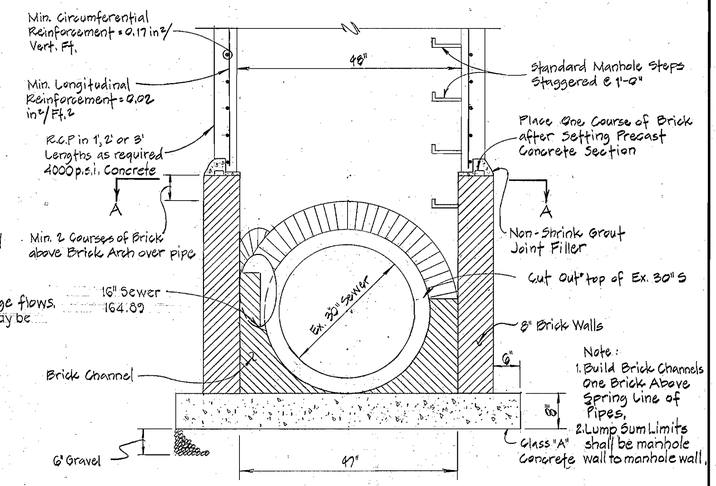
Contractor shall Provide Risers as Required and Watertight Frame and Cover in Accordance with Standard Detail 5-5.



SECTION "A-A"

MANHOLE 101
5'-0" PRECAST MANHOLE
Scale: 1/2"=1'-0"

Notes:
1. Contractor shall thoroughly clean and apply a Bonding Agent to surfaces of the existing Sewers as directed in the Specifications.
2. Contractor shall take all necessary precautions to maintain continuous sewage flows.
3. Manholes 100, 101, and 102 may be built entirely of Brick.



SECTION "B-B"

MANHOLE 100
PRECAST CONCRETE MH
BUILT OVER EXISTING SEWER
Scale: 3/4"=1'-0"

CONTRACT NO. 2720-S
CAPITAL PROJECT S-4-6057
MIDDLE PATUXENT INTERCEPTOR
LITTLE PATUXENT RIVER TO
INTERSTATE 95

REV.	DATE	REMARKS

PURDUM & JESCHKE ENGINEERS 1023 N. CALVERT ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DIRECTOR OF PUBLIC WORKS 6-28-77 DATE — CHIEF-BUREAU OF ENGINEERING 6-27-77 DATE	CONTRACT NO. X720-S CAPITAL PROJECT NO. S-4-6047	DETAILS	MIDDLE PATUXENT INTERCEPTOR ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	DRAWING NO. 5 OF 6	SCALE AS SHOWN	DESIGNED: REP DRAFTED: REC CHECKED: TAF

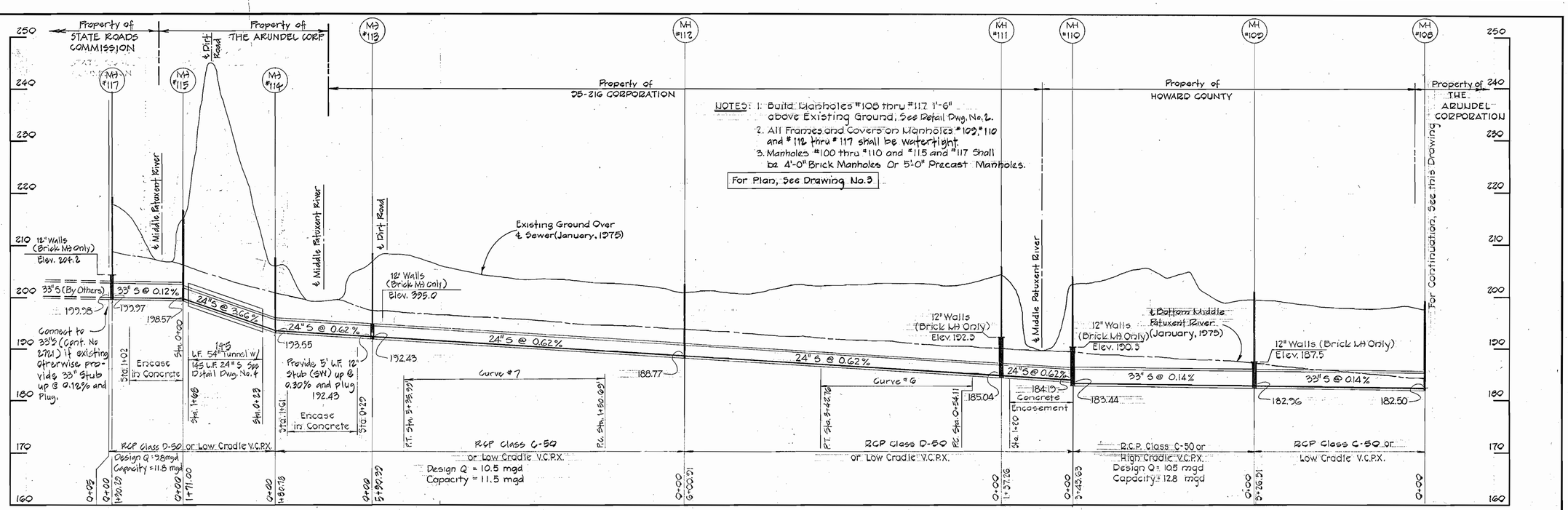
K&E BALTIMORE 17 0433 PHOENIX MC 3243

W.O. 3388-00

September 5 1979

As Built August 20, 1980

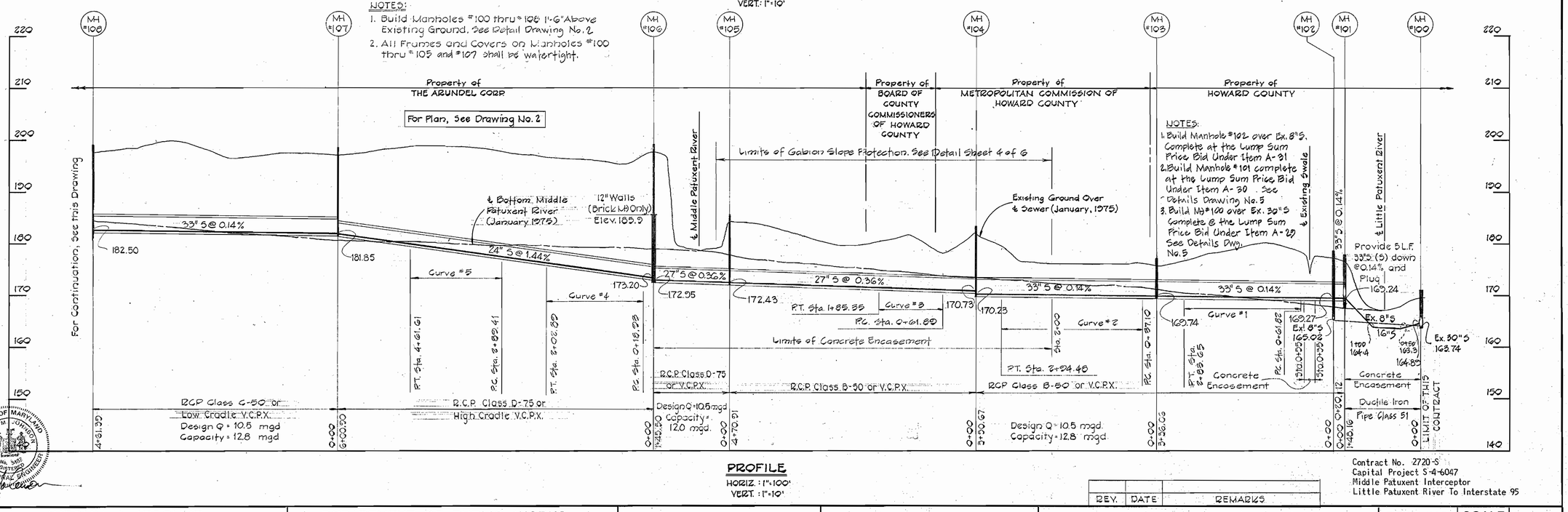
WS 720 S/S



PROFILE
HORIZ.: 1"=100'
VERT.: 1"=10'

NOTES:
1. Build Manholes #108 thru #117 1'-6" above Existing Ground. See Detail Dwg. No. 2.
2. All Frames and Covers on Manholes #109, #110 and #112 thru #117 shall be Watertight.
3. Manholes #100 thru #110 and #115 and #117 Shall be 4'-0" Brick Manholes Or 5'-0" Precast Manholes.

For Plan, See Drawing No. 3



NOTES:
1. Build Manholes #100 thru #108 1'-6" Above Existing Ground. See Detail Drawing No. 2
2. All Frames and Covers on Manholes #100 thru #105 and #107 shall be watertight.

NOTES:
1. Build Manhole #102 over Ex. 8"S. Complete at the Lump Sum Price Bid Under Item A-31
2. Build Manhole #101 complete at the Lump Sum Price Bid Under Item A-30. See Details Drawing No. 5
3. Build MH #100 over Ex. 30"S Complete @ the Lump Sum Price Bid Under Item A-29 See Details Dwg. No. 5

PROFILE
HORIZ.: 1"=100'
VERT.: 1"=10'

STATE OF MARYLAND — STEVEN M. JESCHKE — No. 9907 — REGISTERED PROFESSIONAL ENGINEER

REV.	DATE	REMARKS

Contract No. 2720-S
Capital Project S-4-6047
Middle Patuxent Interceptor
Little Patuxent River To Interstate 95

PURDUM & JESCHKE ENGINEERS 1023 N. CALVERT ST. BALTIMORE, MARYLAND	DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND DIRECTOR OF PUBLIC WORKS 6-28-77 DATE · CHIEF-BUREAU OF ENGINEERING 6-27-77 DATE	CONTRACT NO. 2720-S CAPITAL PROJECT NO. S-4-6047	PROFILES	MIDDLE PATUXENT INTERCEPTOR ELECTION DISTRICT NO. 6 HOWARD COUNTY, MARYLAND	DRAWING NO. 6 OF 6	SCALE AS SHOWN	DESIGNED: JAM DRAFTED: REC CHECKED: TAF

K&E BALTIMORE 17 0433 PHOENIX MG 3243•

W.O. 3368-00

September 5, 1979

WS 720 S/6

As Built August 20, 1980