

HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS

Reviewed for Howard County S.C.D. and meets technical requirements

John M. Vela Date 8/22/85
U.S. SOIL CONSERVATION SERVICE

This development plan is approved for soil erosion and sediment control by The Howard County Soil Conservation District.

Approved *Stephen L. Paul* Date 8/27/85
HOWARD COUNTY S.C.D.

ENGINEER'S CERTIFICATION

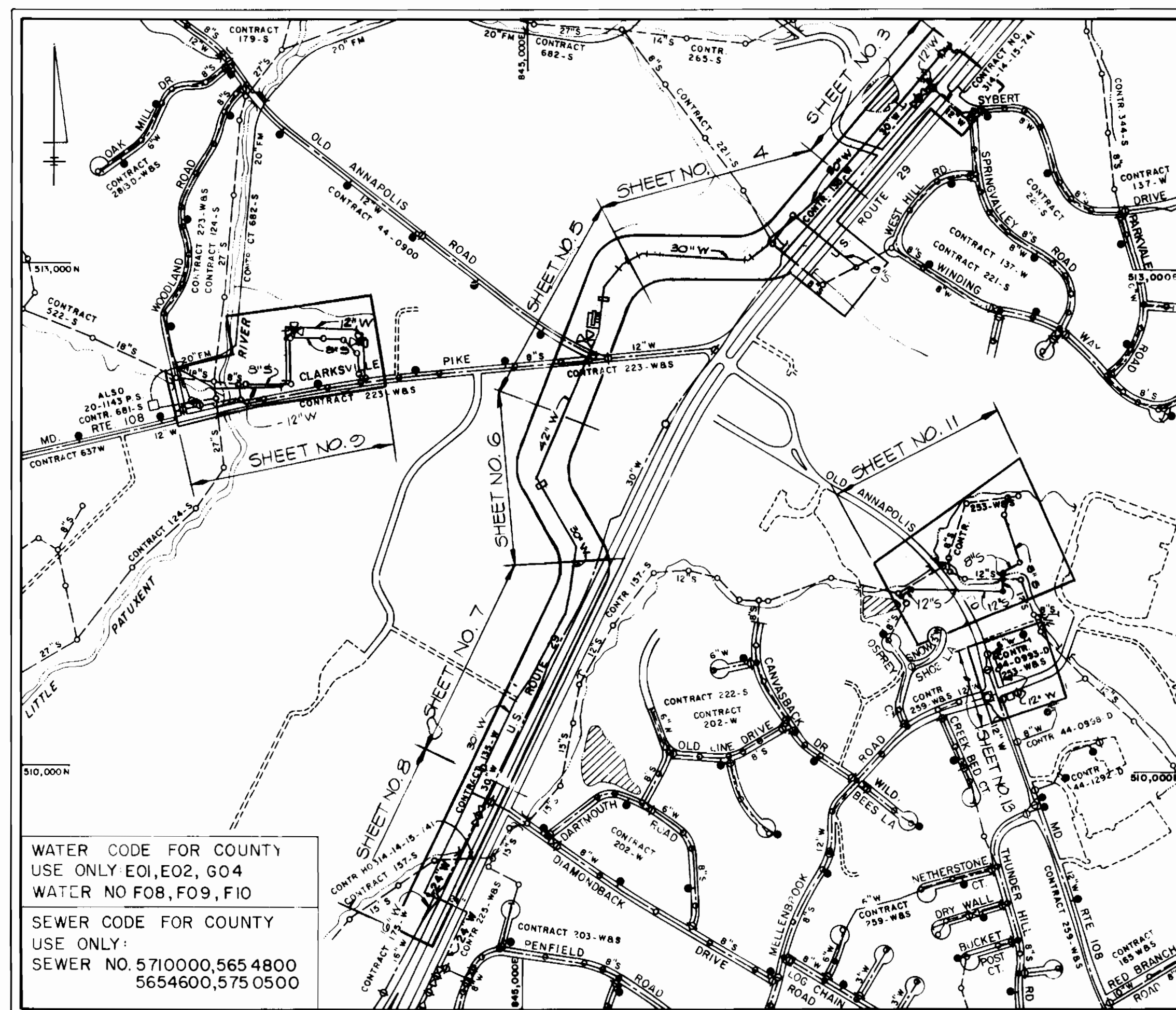
I certify that this plan for erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard County Soil Conservation District.

Walter D. Kemmer Date: 1/6/85
KIDDE CONSULTANTS, INC.
1020 CROMWELL BRIDGE ROAD
TOWSON, MD. 21204

DEVELOPER'S CERTIFICATION

"I/We certify that all development and construction will be done according to this plan, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of Natural Resources Approved Training Program for the Control of Sediment and Erosion before beginning the project."

William B. Riedy Date: 12-85
BUREAU OF ENGINEERING
DEPARTMENT OF PUBLIC WORKS



WATER CODE FOR COUNTY
USE ONLY E01, E02, G04
WATER NO F08, F09, F10

SEWER CODE FOR COUNTY
USE ONLY:
SEWER NO. 5710000, 565 4800
5654600, 575 0500

NO SEWER HOUSE CONN. -
NO WATER HOUSE CONN. -
DRAINAGE AREA: PATAPSCO

VICINITY MAP
SCALE: 1"=600'

AS BUILT PLANS

GENERAL NOTES

- 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 TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
- ALL HORIZONTAL CONTROLS ARE BASED ON MARYLAND STATE COORDINATES.
- ALL VERTICAL CONTROLS ARE BASED ON U.S.G.S. DATUM.
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS
- CLEAR ALL UTILITIES BY A MINIMUM OF 6"
- FOR DETAILS NOT SHOWN ON THE DRAWINGS, AND FOR MATERIALS AND CONSTRUCTION METHODS, USE HOWARD COUNTY DESIGN MANUAL, VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION. THE CONTRACTOR SHALL HAVE A COPY OF VOLUME IV ON THE JOB.
- WHERE TEST PITS HAVE BEEN MADE ON EXISTING UTILITIES, THEY ARE NOTED BY THE SYMBOL AT THE LOCATION OF THE TEST PIT. A NOTE OR NOTES CONTAINING THE RESULTS OF THE TEST PIT OR PITS IS INCLUDED ON THE DRAWING. EXISTING UTILITIES IN THE VICINITY OF THE PROPOSED WORK FOR WHICH TEST PITS HAVE NOT BEEN DUG SHALL BE VERIFIED BY THE CONTRACTOR TO HIS OWN SATISFACTION. ANY DAMAGE TO EXISTING FACILITIES DUE TO THE CONTRACTOR'S NEGLIGENCE SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
- CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:
STATE HIGHWAY ADMINISTRATION - 531-5533
BALTIMORE GAS AND ELECTRIC CO. - CONTRACTOR SERVICES 561-2585
BALTIMORE GAS AND ELECTRIC CO. - UNDERGROUND DAMAGE CONTROL 234-5621
BALTIMORE GAS AND ELECTRIC CO. - TROUBLE SHOOTING - 298-9013
MISS UTILITY - 1-559-0100
COLONIAL PIPELINE CO. - 795-1390
BUREAU OF UTILITIES, HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS - 992-2366
- TREES AND SHRUBS ARE TO BE PROTECTED FROM DAMAGE TO MAXIMUM EXTENT. TREES AND SHRUBS LOCATED WITHIN THE CONSTRUCTION STRIP ARE NOT TO BE REMOVED OR DAMAGED BY THE CONTRACTOR.
- CONTRACTOR SHALL REMOVE TREES, STUMPS, AND ROOTS ALONG LINE OF EXCAVATION. PAYMENT FOR SUCH REMOVAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONSTRUCTION OF THE VARIOUS ITEMS IN THE PROPOSAL.
- ALL WATER MAINS TO BE D.I.P. CLASS 52 UNLESS OTHERWISE NOTED.
- TOPS OF ALL WATER MAINS TO HAVE A MINIMUM OF 3-1/2' COVER UNLESS OTHERWISE NOTED.
- VALVES ADJACENT TO TEES SHALL BE STRAPPED TO TEES, UNLESS OTHERWISE NOTED.
- ALL FITTINGS SHALL BE BUTTRESSED OR ANCHORED WITH CONCRETE IN ACCORDANCE WITH THE STANDARD DETAILS UNLESS OTHERWISE PROVIDED FOR ON THE DRAWINGS.
- FIRE HYDRANTS SHALL BE SET TO THE BURY LINE ELEVATIONS SHOWN ON THE DRAWINGS. ALL FIRE HYDRANTS SHALL BE STRAPPED AND BUTTRESSED WITH CONCRETE IN ACCORDANCE WITH STANDARD DETAILS. SOIL AROUND THE FIRE HYDRANT SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 1003 THE STANDARD SPECIFICATIONS.
- THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEM.
- ALL WATER HOUSE CONNECTIONS SHALL BE FOR INSIDE METER SETTING, UNLESS OTHERWISE NOTED ON THE PLAN OR IN THE SPECIFICATIONS.
- ALL SEWER MAINS SHALL BE C.S.P.X., R.C.S.P., V.C.P.X., A.C.P. CLASS 2400 OR P.V.C. UNLESS OTHERWISE NOTED.
- THE CONTRACTOR SHALL PROVIDE A JOINT IN ALL SEWER MAINS WITHIN 2'-0" OF EXTERIOR MANHOLE WALL.
- ALL MANHOLES SHALL BE 4'0" INSIDE DIAMETER UNLESS OTHERWISE NOTED.
- ALL TIE-INS TO EXISTING WATER MAINS SHALL BE CO-ORDINATED WITH THE BUREAU OF UTILITIES AT LEAST 10 WORKING DAYS PRIOR TO SCHEDULING WORK.
- MANHOLES SHOWN WITH 12" AND 16" WALLS ARE FOR BRICK MANHOLES ONLY.
- MANHOLES DESIGNATED W.T. IN PLAN AND PROFILE SHALL HAVE WATERTIGHT FRAME AND COVERS, STANDARD DETAIL G5.52. WHERE WATERTIGHT MANHOLE FRAME AND COVER IS USED, SET TOP OF FRAME 1'-6" ABOVE FINISHED GRADE UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- HOUSE (S) WITH THE SYMBOL "C.N.S." INDICATES THAT CELLAR CANNOT BE SERVED.

B-1 DENOTES LOCATION OF SOIL BORING

U.S. ROUTE 29 / MD. ROUTE 108 WATER AND SEWER RELOCATIONS

CAPITAL PROJECT W-8117 W&S

CONTRACT NO. 14-1374

STATE HIGHWAY ADMINISTRATION CONTRACT HO-314-501-770

ELECTION DISTRICTS NO. 2, 5 AND 6

ITEM	WATER QUANTITIES		TYPE MATERIAL	SUPPLIERS
	ESTIMATE	AS BUILT		
8" WATER	10	L.F.		
12" WATER	2142	L.F.		
16" WATER	182	L.F.		
24" WATER	112	L.F.		
30" WATER	5614	L.F.		
42" WATER (PCCP)	425	L.F.		
42" WATER (D.I.P.)	16	L.F.		
6" WATER	130	L.F.		
TEMPORARY 6" WATER	1055	L.F.		

ITEM	SEWER QUANTITIES		TYPE MATERIAL	SUPPLIERS
	ESTIMATE	AS BUILT		
8" SEWER	2682	L.F.		
12" SEWER	716	L.F.		
MANHOLES	10	E.A.		
MANHOLES OVER 6'	26	V.F.		
6" S.H.C.	50	L.F.		
8"x6" WYES, TEES, ETC.	5	E.A.		

S.H.A. DRAWING NO. _____
S.H.A. CONTRACT HO-314-501-770

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS DATE _____
CHIEF, BUREAU OF UTILITIES DATE _____

CHIEF, BUREAU OF ENGINEERING DATE _____
CHIEF, UTILITY DIVISION DATE _____

KIDDE CONSULTANTS, INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

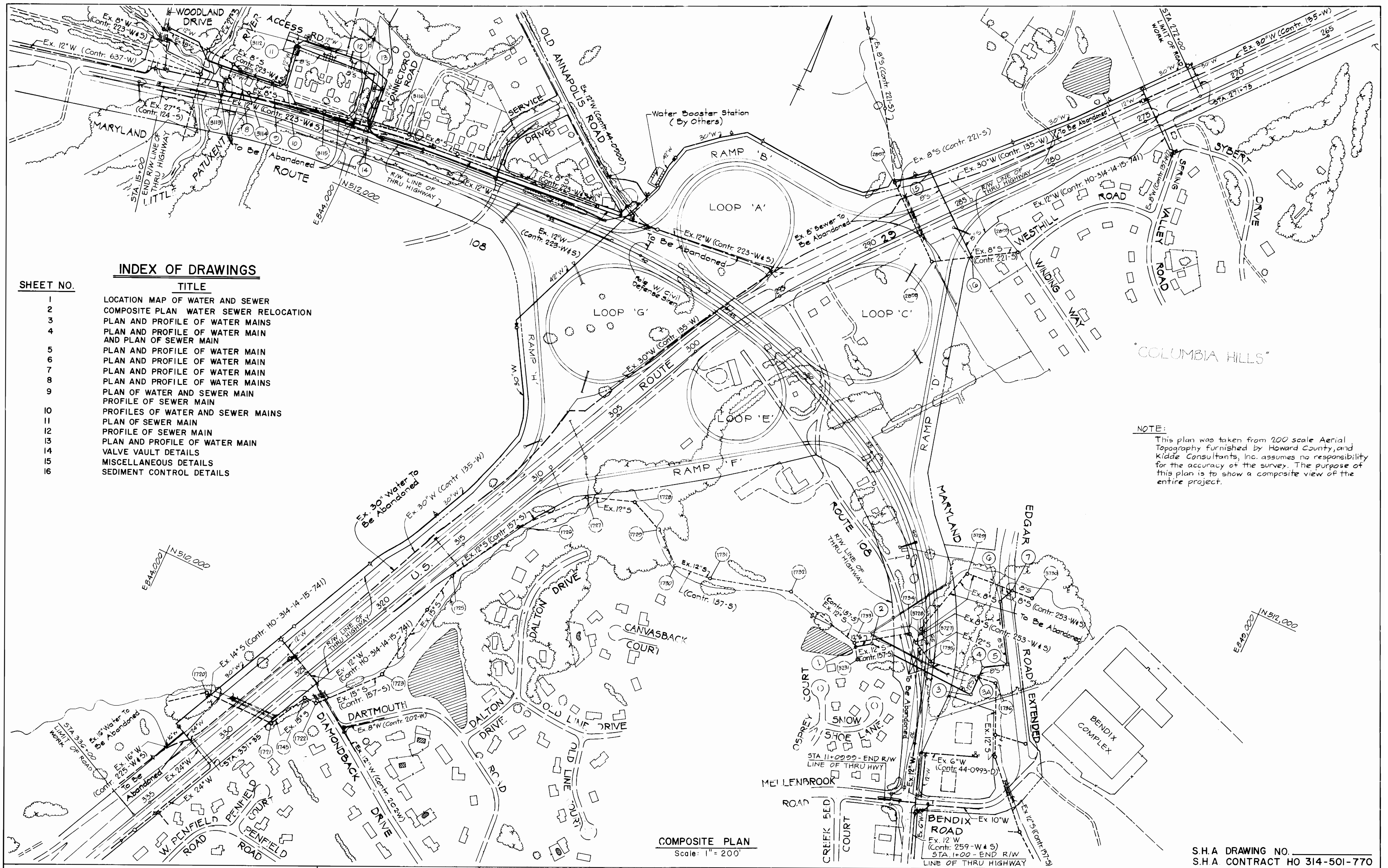
DES: A.B.C.				
DRN: D.E.R.				
CHK: G.H.I.	KCI	AS BUILT	7-25-85	
	KCI	QUANTITIES REVISED	8-27-85	
	KCI	GENERAL REVISION TO CONTRACT DRAWING	8-28-85	
DATE: 7-2-85	BY: NO.	REVISION	DATE	

LOCATION MAP OF
WATER AND SEWER

600' SCALE MAP NO. S-30/W-30 BLOCK NOS. 4, 9, 10, 11, 13 & 14

ROUTE 29/ROUTE 108 WATER & SEWER RELOCATIONS
CAPITAL PROJECT W-8117 W&S
CONTRACT NO. 14-1374
ELECTION DISTRICT NO. 2, 5 & 6
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 1 OF 16



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3	PLAN AND PROFILE OF WATER MAINS
4	PLAN AND PROFILE OF WATER MAIN AND PLAN OF SEWER MAIN
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9	PLAN OF WATER AND SEWER MAIN
10	PROFILE OF SEWER MAIN
11	PROFILES OF WATER AND SEWER MAINS
12	PLAN OF SEWER MAIN
13	PROFILE OF SEWER MAIN
14	PLAN AND PROFILE OF WATER MAIN
15	VALVE VAULT DETAILS
16	MISCELLANEOUS DETAILS
17	SEDIMENT CONTROL DETAILS

NOTE:
 This plan was taken from 200 scale Aerial Topography furnished by Howard County, and Kidde Consultants, Inc. assumes no responsibility for the accuracy of the survey. The purpose of this plan is to show a composite view of the entire project.

COMPOSITE PLAN
 Scale: 1" = 200'

S.H.A DRAWING NO. _____
 S.H.A CONTRACT HO 314-501-770

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS: *[Signature]* DATE: 6-12-85
 CHIEF, BUREAU OF UTILITIES: *[Signature]* DATE: _____

KIDDE CONSULTANTS, INC.
 CONSULTING ENGINEERS
 BALTIMORE, MARYLAND

CHIEF, BUREAU OF ENGINEERING: *[Signature]* DATE: _____
 CHIEF, UTILITY DIVISION: *[Signature]* DATE: _____

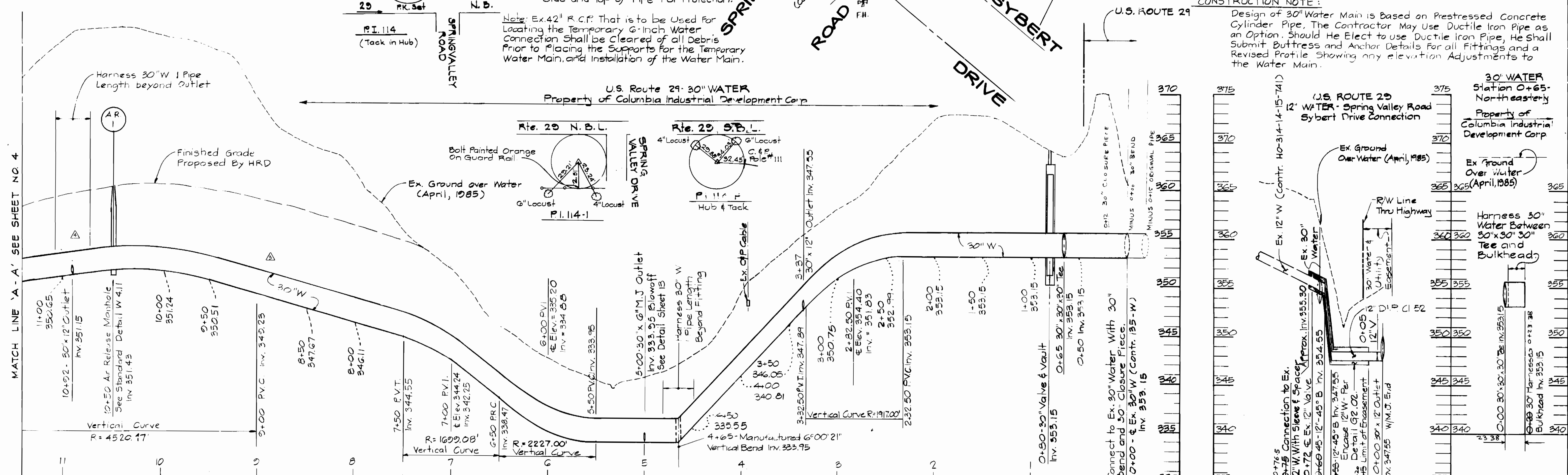
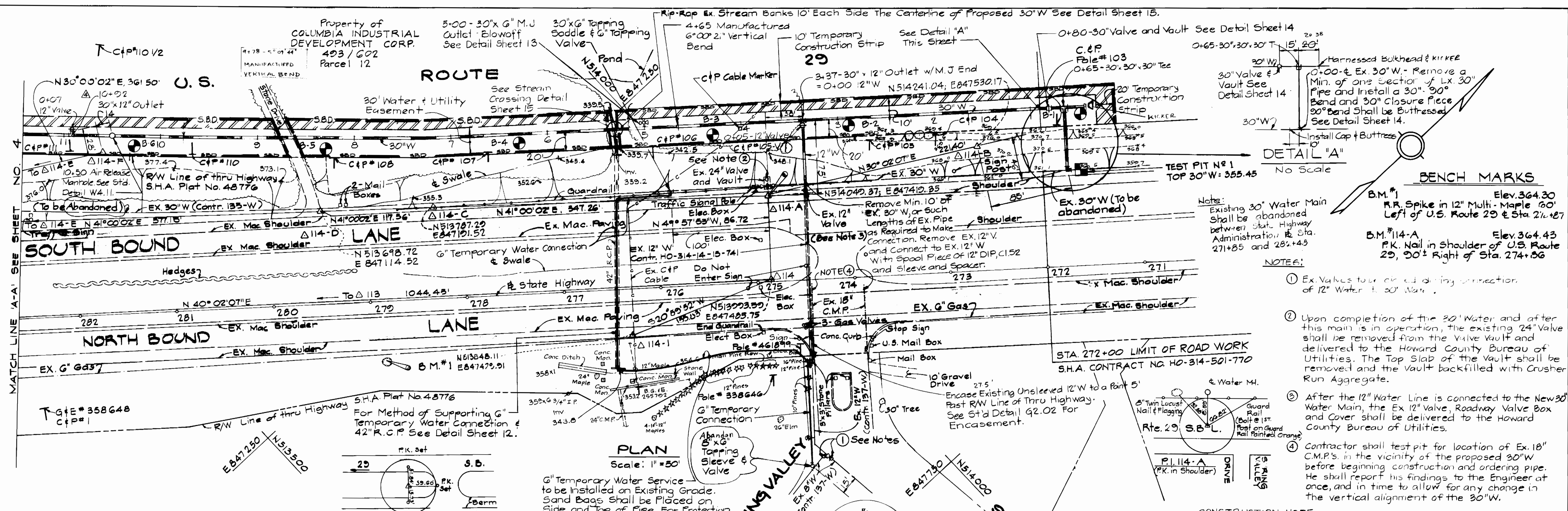
DES: A.B.C.			
DRN: D.E.R.			
CHK: G.H.I.	KCI	AS BUILT PLANS	5-21-85
DATE: 7-2-85	KCI	GENERAL REVISION TO CONTRAT DRAWING	5-26-85
BY: NO.		REVISION	

COMPOSITE PLAN
 WATER — SEWER
 RELOCATION

600' SCALE MAP NO. S-30/W-30 BLOCK NOS. 4, 9, 10, 11, 13, 14

ROUTE 29/ROUTE 108 WATER & SEWER RELOCATIONS
 CAPITAL PROJECT W-8117 W&S
 CONTRACT NO. 14-1374
 ELECTION DISTRICT NO. 2, 5 & 6
 HOWARD COUNTY, MARYLAND

SCALE
 1" = 200'
 SHEET
 2 OF 16



DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

KIDDE CONSULTANTS, INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

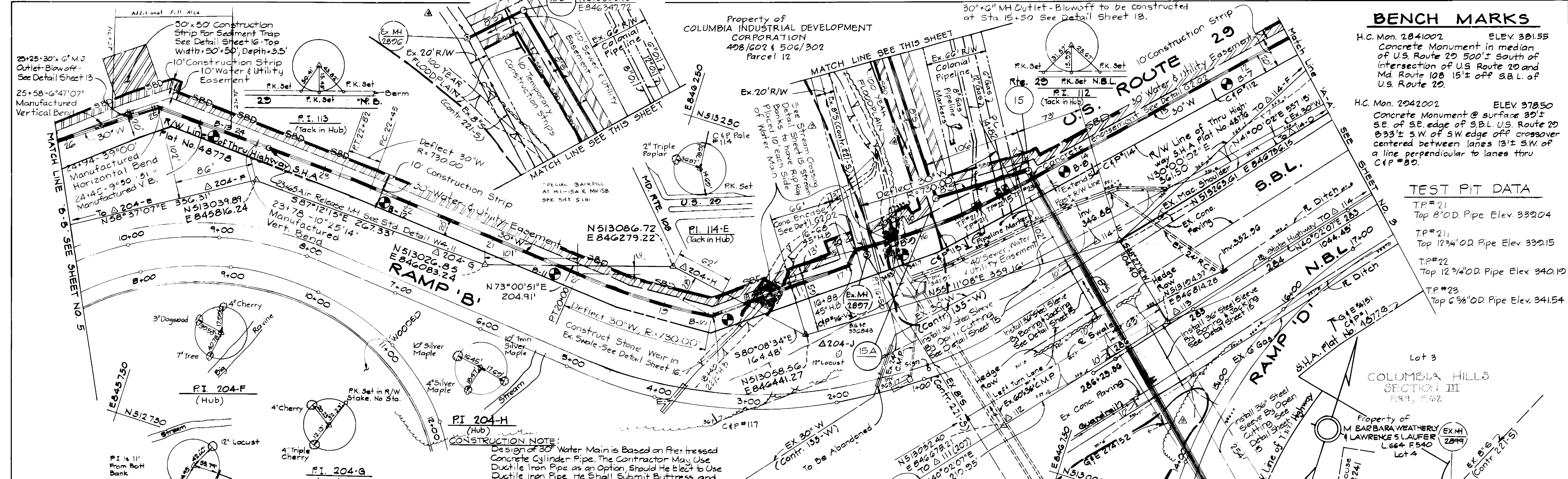
DES: A.B.C.
DRN: D.E.R.
CHK: G.H.I.
DATE: 7-2-85

AS BUILTS
Adjusted 30"x12" Outlet @ Sta 10+92
Revised Water Main Profile - Sta. 6+50 to 14+50
GENERAL REVISION TO CONTRACT DRAWING

PLAN AND PROFILE OF WATER MAINS

ROUTE 29/ROUTE 108 WATER & SEWER RELOCATIONS
CAPITAL PROJECT W-8117 W&S
CONTRACT NO. 14-1374
ELECTION DISTRICT NO. 2, 5 & 6
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 3 OF 16



BENCH MARKS

H.C. Mon. 2841002 ELEV. 381.55
Concrete Monument in median of U.S. Route 29 500'± south of intersection of U.S. Route 29 and Md. Route 108 15'± off S.B.L. of U.S. Route 29.

H.C. Mon. 2842002 ELEV. 378.50
Concrete Monument @ surface 30'± SE. of SE. edge of S.B.L. U.S. Route 29 833'± SW. of SW. edge of crossover centered between lanes 13'± S.W. of a line perpendicular to lanes thru C/P #89.

TEST PIT DATA

TP#21
Top 8" O.D. Pipe Elev. 339.04

TP#21
Top 12 3/4" O.D. Pipe Elev. 339.15

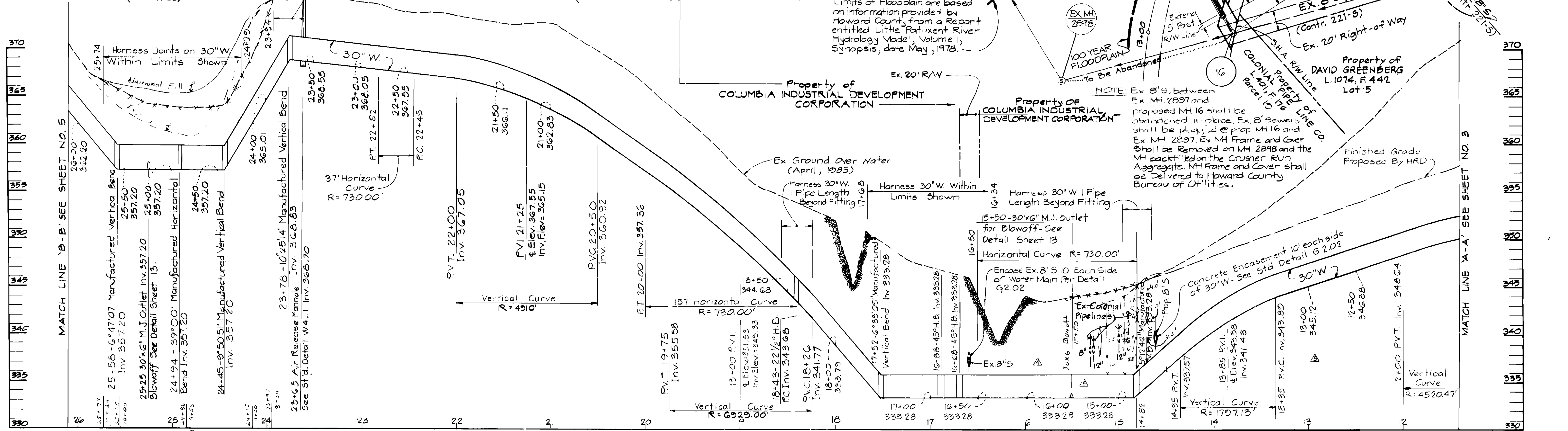
TP#22
Top 12 3/4" O.D. Pipe Elev. 340.19

TP#23
Top 6 3/8" O.D. Pipe Elev. 341.54

CONSTRUCTION NOTE:
Design of 30" Water Main is Based on Pre-stressed Concrete Cylinder Pipe. The Contractor May Use Ductile Iron Pipe as an Option. Should He Elect to Use Ductile Iron Pipe, He Shall Submit Buttress and Anchor Details for all Fitting and a Revised Profile Showing any elevation Adjustments to the Water Main.

PLAN
Scale: 1"=50'

Limits of Floodplain are based on information provided by Howard County from a Report entitled Little Patuxent River Hydrology Model, Volume 1, Synopsis, date May, 1978.



PROFILE
Scale: Hor: 1"=50'
Vert: 1"=5'

NOTE: Ex 8" S. between Ex. MH 2897 and proposed MH 16 shall be abandoned in place. Ex 8" Sewers shall be plugged @ prop. MH 16 and Ex. MH 2897. Ex. MH Frame and Cover shall be removed on MH 2898 and the MH backfilled on the Crusher Run Aggregate. MH Frame and Cover shall be delivered to Howard County Bureau of Utilities.

S.H.A. DRAWING NO. _____
S.H.A. CONTRACT HO 314-501-770

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS _____ DATE _____
CHIEF, BUREAU OF ENGINEERING _____ DATE _____

CHIEF, BUREAU OF UTILITIES _____ DATE _____
CHIEF, UTILITY DIVISION _____ DATE _____

KIDDE CONSULTANTS, INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

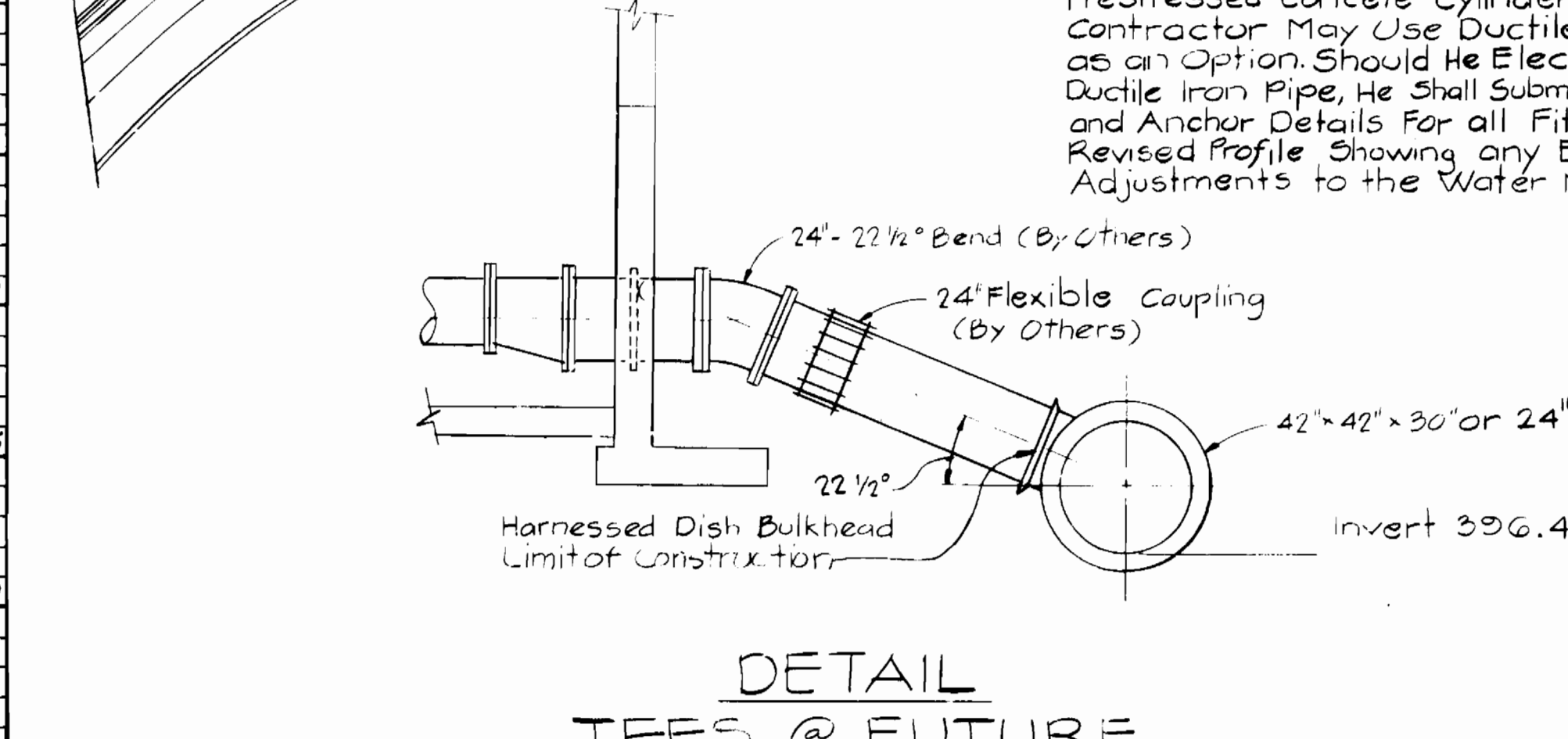
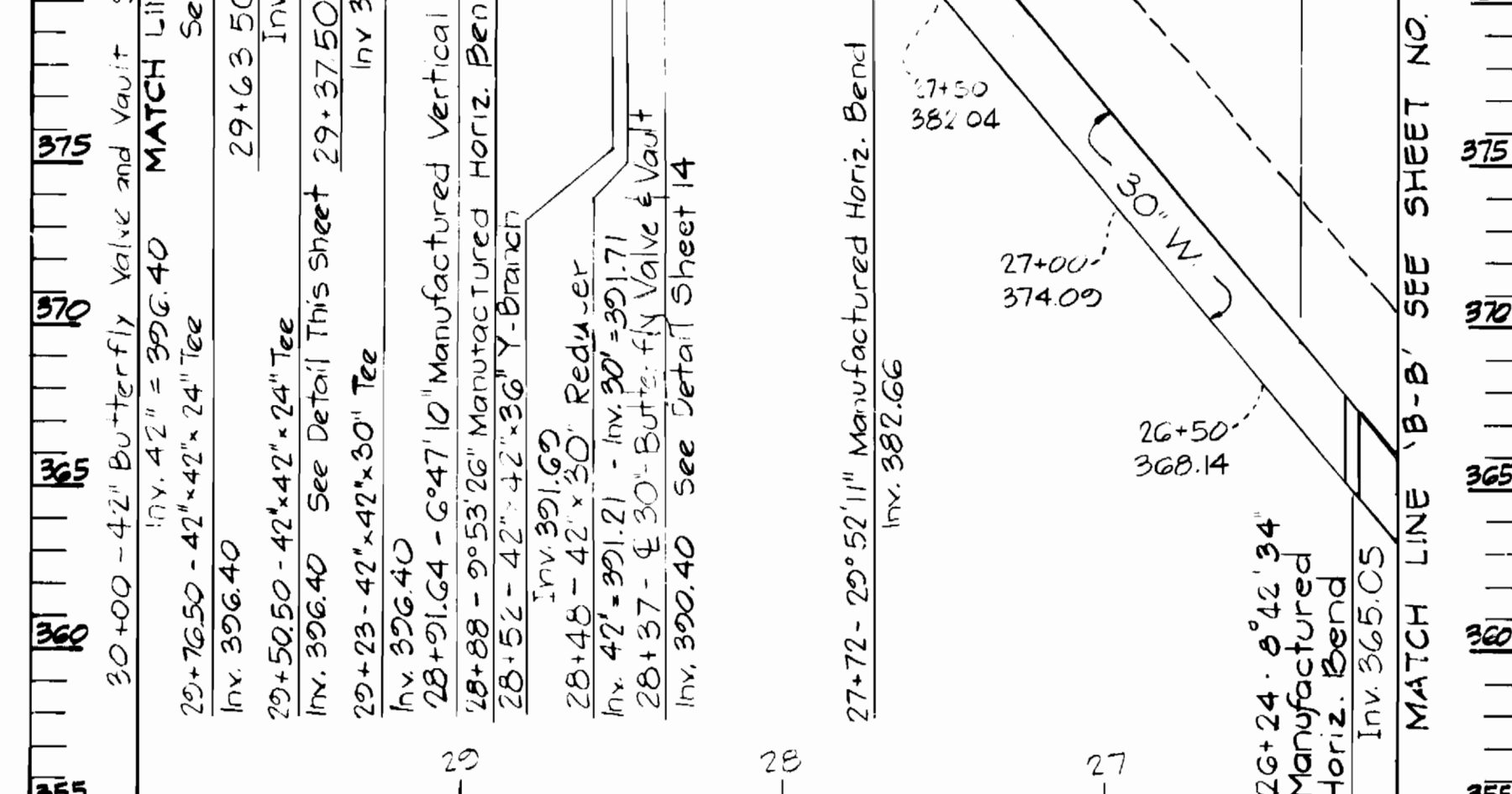
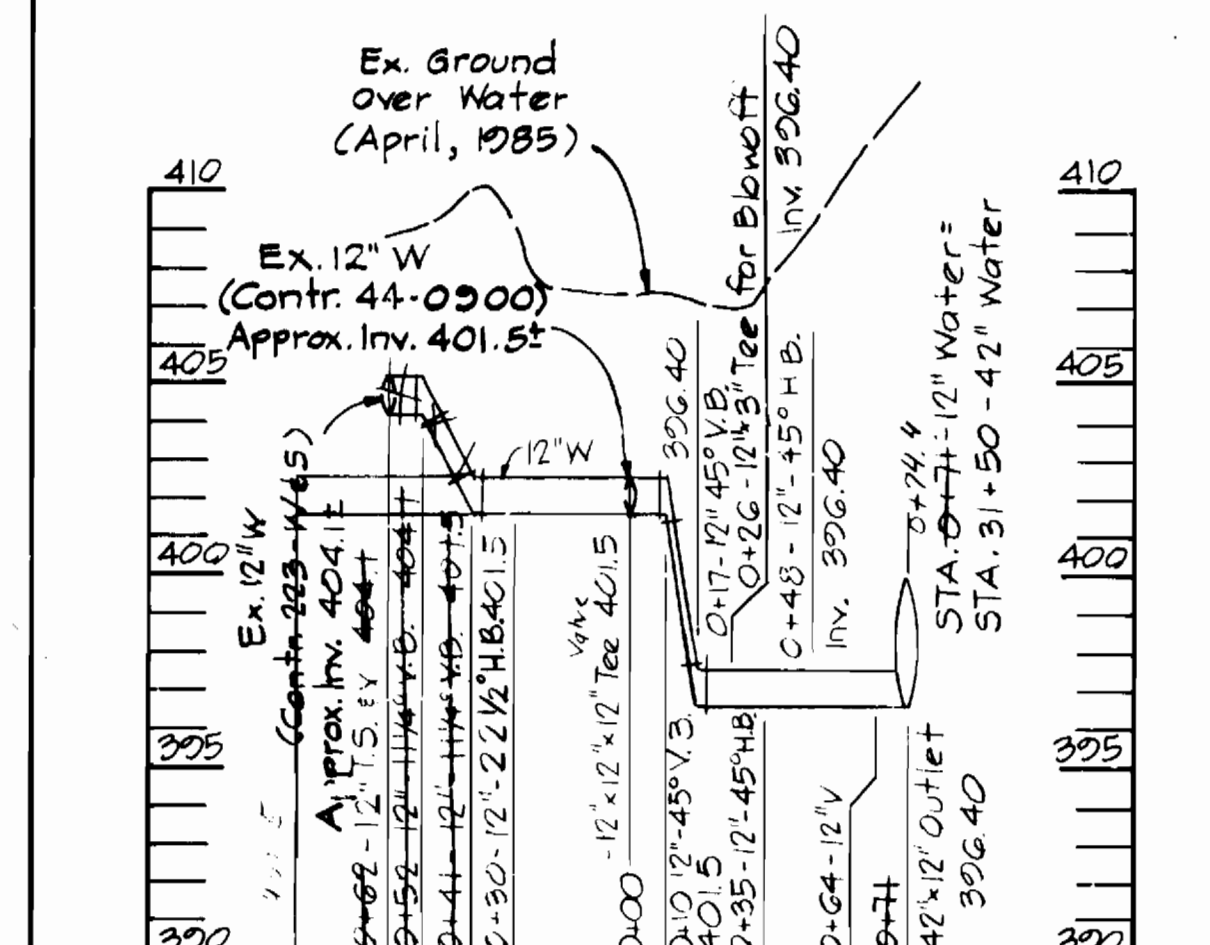
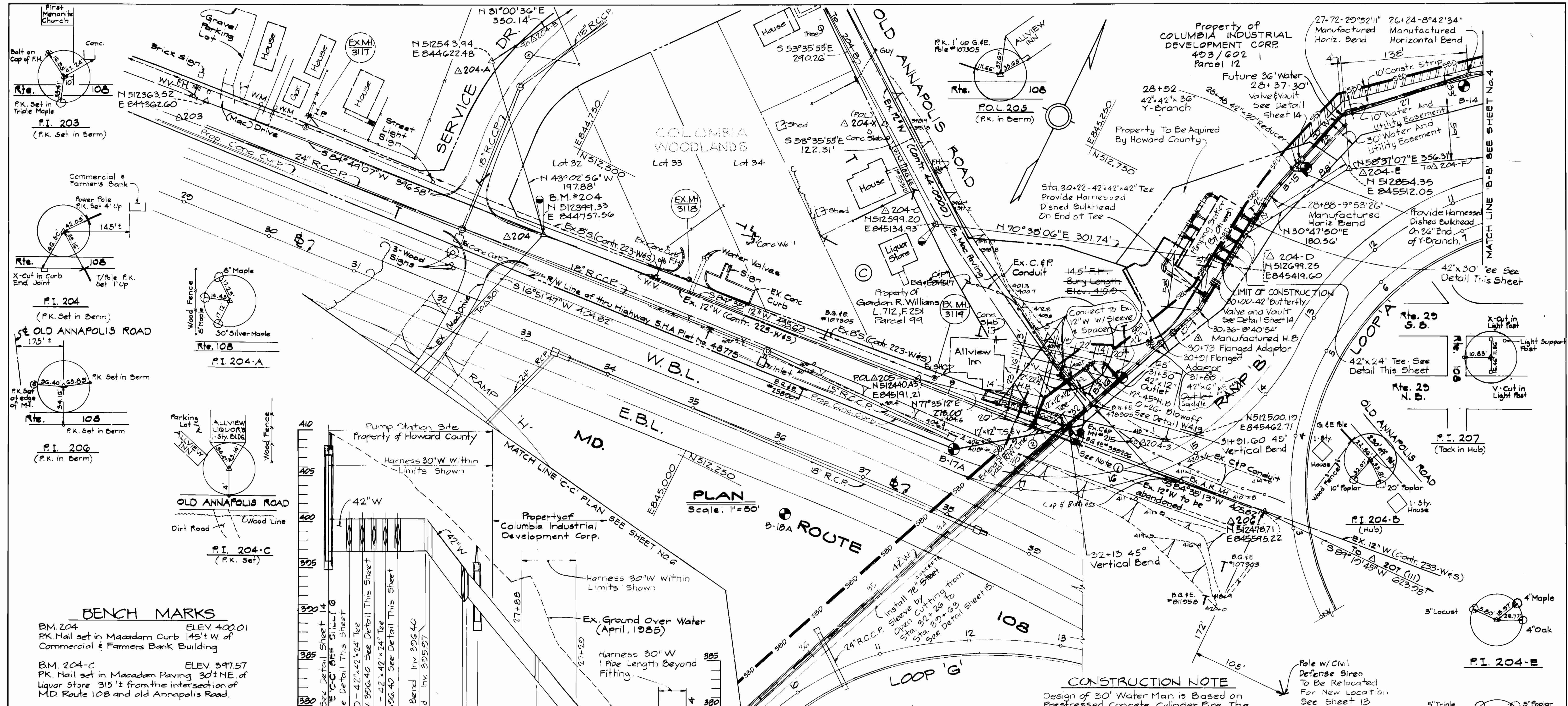
DES: A.B.C.	E.C.F.	A	AS BUILT	3-28-83
DRN: D.E.R.	K.C.I.	Δ	General Revisions to Contract Drawings 3-28-83	
CHK: G.H.I.	K.C.I.	Δ	Revised Water Main Profile - Sta. 6+50 to 14+50 11-13-84	
	K.C.I.	Δ	Revised Sewer Alignment & Water Main Profile 11-27-85	
	K.C.I.	Δ	Revised Sewer Alignment & Water Main Profile 11-28-85	
	K.C.I.	Δ	GENERAL REVISIONS TO CONTRACT DRAWINGS 8-28-88	
DATE: 7-2-88	BY: NO.		REVISION	DATE

PLAN AND PROFILE OF WATER MAIN AND PLAN OF SEWER MAIN

600' SCALE MAP NO. S-30/W-30 BLOCK NO. 10

ROUTE 29/ROUTE 108 WATER & SEWER RELOCATIONS
CAPITAL PROJECT W-8117 W&S
CONTRACT NO. 14-1374
ELECTION DISTRICT NO. 2, 5 & 6
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 4 OF 16



CONSTRUCTION NOTE
 Design of 30" Water Main is Based on Prestressed Concrete Cylinder Pipe. The Contractor May Use Ductile Iron Pipe as an Option. Should He Elect to Use Ductile Iron Pipe, He Shall Submit Buttress and Anchor Details For all Fittings and a Revised Profile Showing any Elevation Adjustments to the Water Main.

- NOTES:**
- Ex. 12" Valves and Air Release Valve Shall be Removed and Delivered to the Bureau of Utilities. Areas shall be Backfilled with Crusher Run Aggregate.
 - Contractor shall excavate for 12" Water, cut Ex. 12" Water and install a 12" Cap and Buttress. Cap and Buttress shall be located a minimum of 5 feet from Tapping Sleeve and Valve.

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

KIDDE CONSULTANTS, INC.
 CONSULTING ENGINEERS
 BALTIMORE, MARYLAND

DES: A.B.C.			
DRN: D.E.R.	KCI	As BUILT	3-25-81
CHK: G.H.I.	KCI	General Revisions to Contract Drawings	3-19-82
	KCI	Relocated Flanged Adaptors + Fire Hydrant	11-8-85
	KCI	GENERAL REVISION TO CONTRACT DRAWING	8-22-88
DATE: 7-2-85	BY NO.	REVISION	DATE

PLAN AND PROFILE OF WATER MAIN

ROUTE 29/ROUTE 108 WATER & SEWER RELOCATIONS
 CAPITAL PROJECT W-817 W&S
 CONTRACT NO. 14-1374
 ELECTION DISTRICT NO. 2,5&6
 HOWARD COUNTY, MARYLAND

CONSTRUCTION NOTE

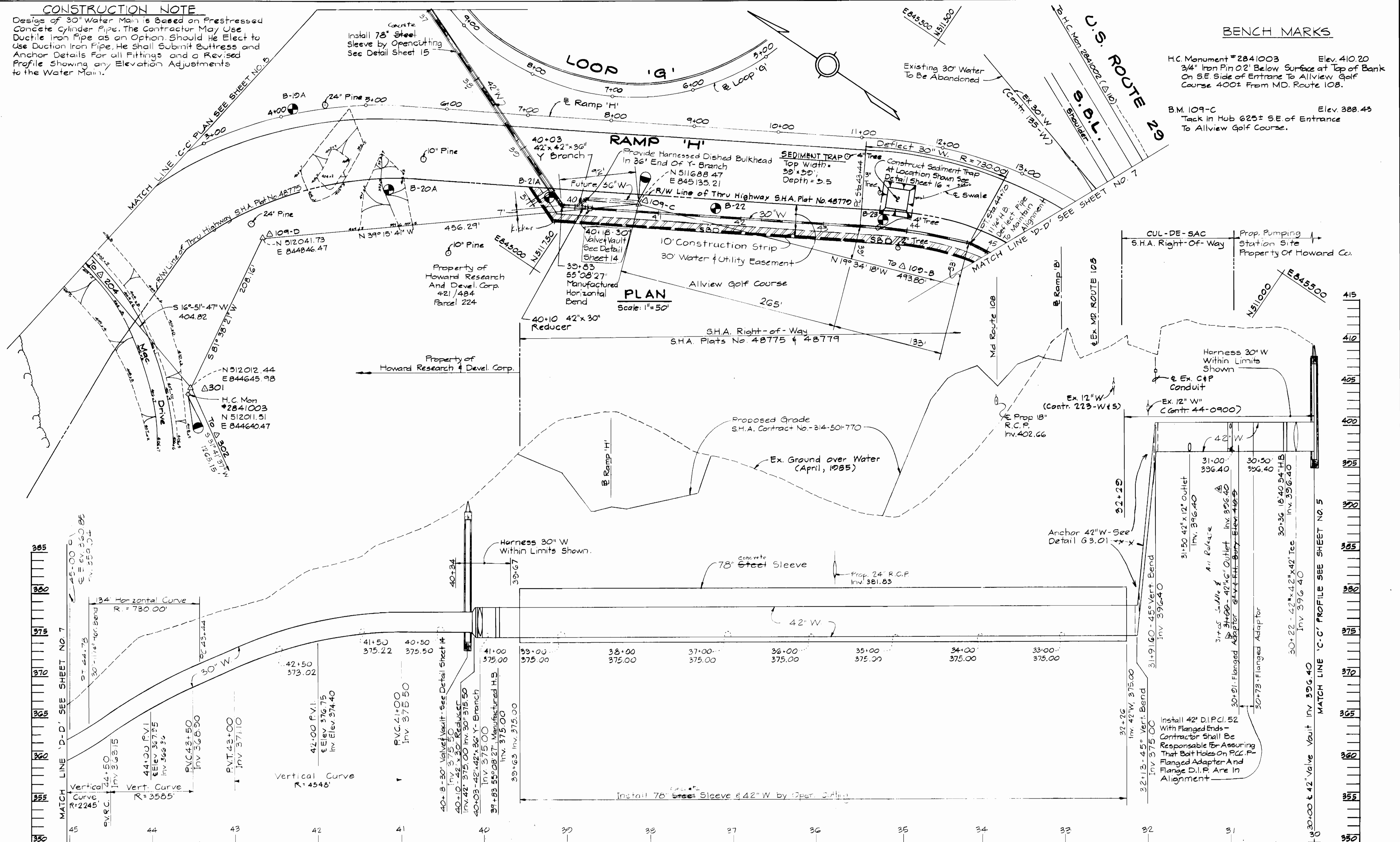
Design of 30" Water Main is based on Prestressed Concrete Cylinder Pipe. The Contractor May Use Ductile Iron Pipe as an Option. Should He Elect to Use Ductile Iron Pipe, He Shall Submit Buttress and Anchor Details For all Fittings and a Revised Profile Showing any Elevation Adjustments to the Water Main.

Install 78" Steel Sleeve by Open-cutting See Detail Sheet 15

BENCH MARKS

H.C. Monument #2841003 Elev. 410.20
3/4" Iron Pin 02' Below Surface at Top of Bank On S.E. Side of Entrance To Allview Golf Course 400± From MD. Route 108.

B.M. 109-C Elev. 388.43
Tack in Hub 625± S.E. of Entrance To Allview Golf Course.



PROFILE

Scale: Hor. 1"=50'
Vert. 1"=5'

S.H.A. DRAWING NO. HO-314-501-770

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

[Signature]
DIRECTOR OF PUBLIC WORKS

[Signature]
CHIEF, BUREAU OF ENGINEERING

[Signature]
CHIEF, UTILITY DIVISION

KIDDE CONSULTANTS, INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

DES: A.B.C.					
DRN: D.E.R.	REV	DATE	DESCRIPTION		
CHK: G.H.I.	KCI	11-19-85	Corrected Invert Elevation @ Sta. 31+00		
	KCI	11-8-85	Relocated 42" Outlet & Flanged Adaptor		
	KCI	8-28-85	GENERAL REVISION TO CONTRACT DRAWING		
DATE: 7-2-85	BY	NO.	REVISION	DATE	

PLAN AND PROFILE
OF WATER MAIN

600' SCALE MAP NOSS-30-W-30 BLOCK NOS 9 8 10

ROUTE 29/ ROUTE 108 WATER & SEWER RELOCATIONS
CAPITAL PROJECT W-8117 W&S
CONTRACT NO. 14-1374
ELECTION DISTRICT NO. 2,586
HOWARD COUNTY, MARYLAND

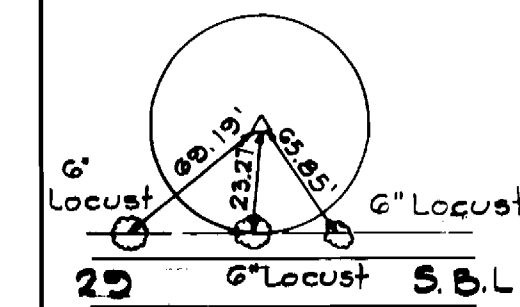
SCALE AS SHOWN

SHEET 6 OF 16

CONSTRUCTION NOTE

Design of 30" Water Main is Based on Prestressed Concrete Cylinder Pipe. The Contractor May Use Ductile Iron Pipe as an Option. Should He Elect to Use Ductile Iron Pipe, He Shall Submit Buttress and Anchor Details For all Fittings and a Revised Profile Showing any Elevation Adjustments to the Water Main.

Property of
HOWARD RESEARCH & DEVELOPMENT CORPORATION
421/484
Parcel 224



10'-Y
(Nail & Flagging)

6" Locust
6" Locust
S.B.L.

60'-00"
30" Valve
Vault, See
Detail Sheet 14

15'-00'-00"

EX. C. & P. Cable

524°50'25"W 401.03'

N510051.94
E844824.66

100 YEAR FLOOD PLAIN
(Contr. 135'-W)

EX. Mac. Shoulder

To Δ 108
N25°25'42"E 467.79'

Hedge

324
323
322
321
320
319
318
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309
308
307
306
305
304
303
302
301
300

EX. Mac. Shoulder

EX. G. Gas

EX. G. Gas

EX. G. Gas

EX. G. Gas

EX. G. Gas

EX. G. Gas

EX. G. Gas

EX. G. Gas

EX. G. Gas

EX. G. Gas

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EX. G. Gas

EX. G. Gas

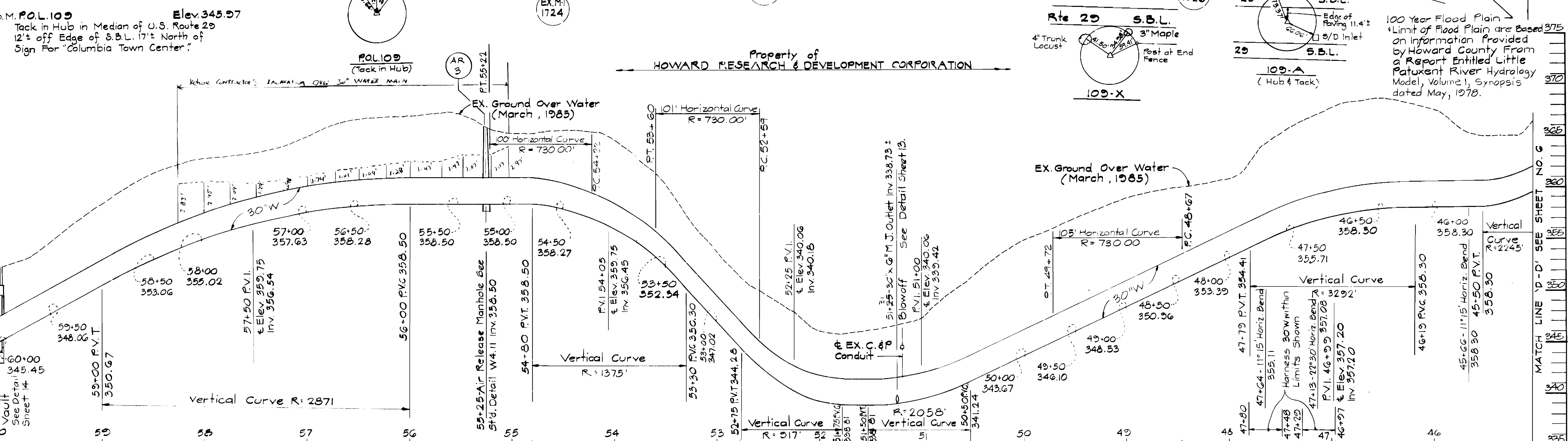
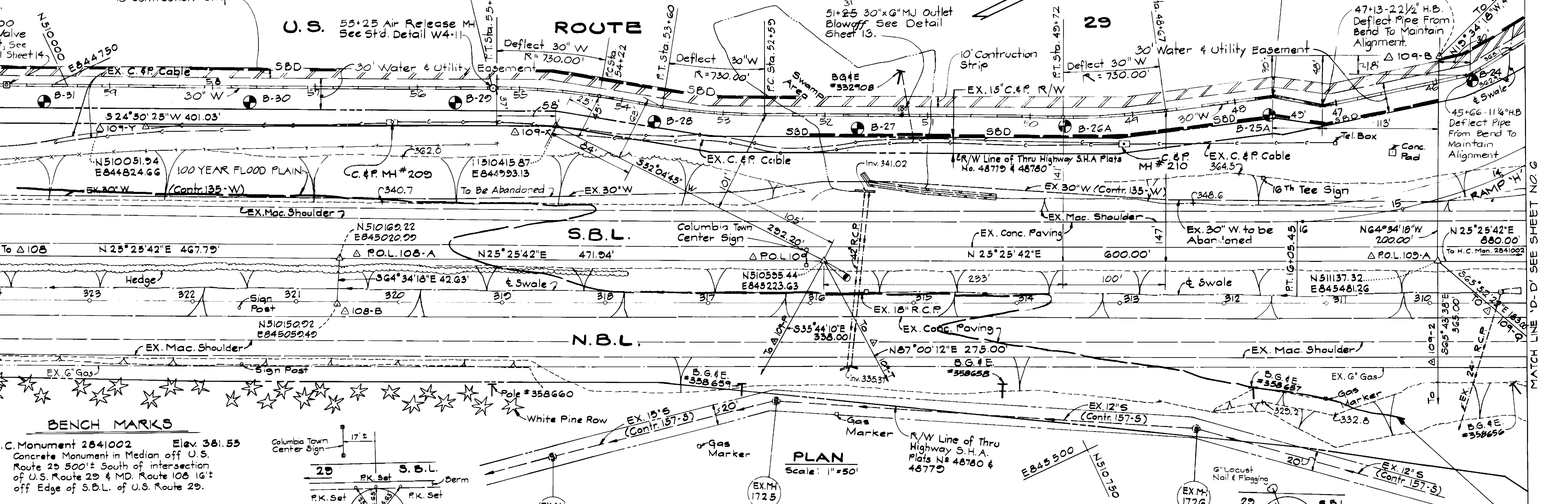
EX. G. Gas

EX. G. Gas

EX. G. Gas

EX. G. Gas

EX. G. Gas



PLAN
Scale: 1"=50'

PROFILE
Scale: Hor: 1"=50'
Vert: 1"=5'

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

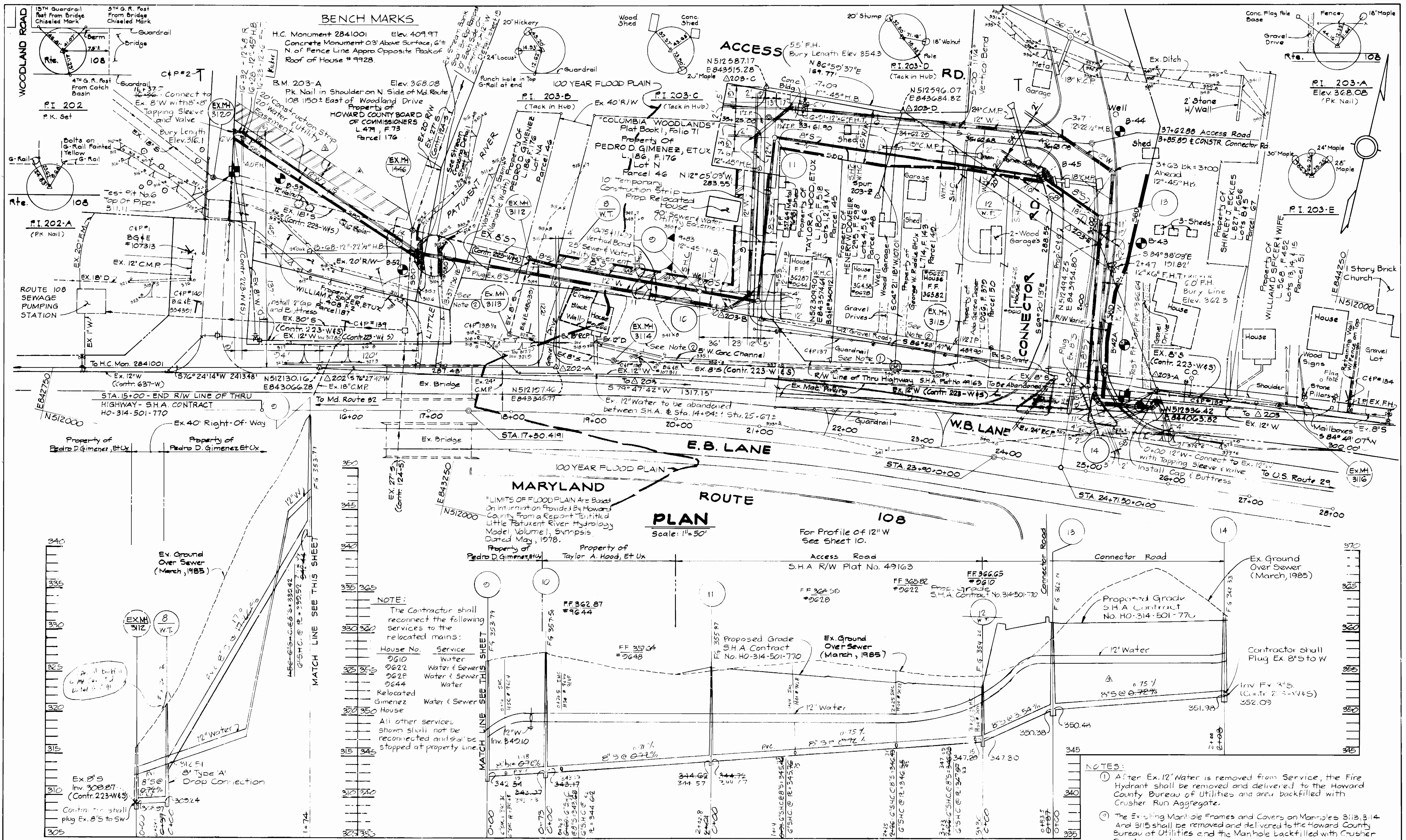
KIDDE CONSULTANTS, INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

DES: A.B.C.
DRN: D.E.R.
CHK: G.H.I.
DATE: 7-2-85

PLAN AND PROFILE
OF WATER MAIN

ROUTE 29 / ROUTE 108 WATER & SEWER RELOCATIONS
CAPITAL PROJECT W-8117 W&S
CONTRACT NO. 14-1374
ELECTION DISTRICT NO. 2, 5 & 6
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 7 OF 16



DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS: [Signature]
DATE: [Blank]
CHIEF, BUREAU OF UTILITIES: [Signature]
DATE: [Blank]

CHIEF, BUREAU OF ENGINEERING: [Signature]
DATE: [Blank]
CHIEF, UTILITY DIVISION: [Signature]
DATE: [Blank]

KIDDE CONSULTANTS, INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

[Signature]
DATE: 7-2-85

DES: A.B.C.	REV. NO.	REVISION	DATE
KCI	1	General Revisions to Contract Drawings	5-19-84
KCI	2	Revised Water Main Alignment	11-10-85
KCI	3	Revised Water & Sewer Alignments & Profile	11-8-85
KCI	4	GENERAL REVISION TO CONTRACT DRAWING	5-16-85

PLAN OF WATER AND SEWER MAIN PROFILE OF SEWER MAIN

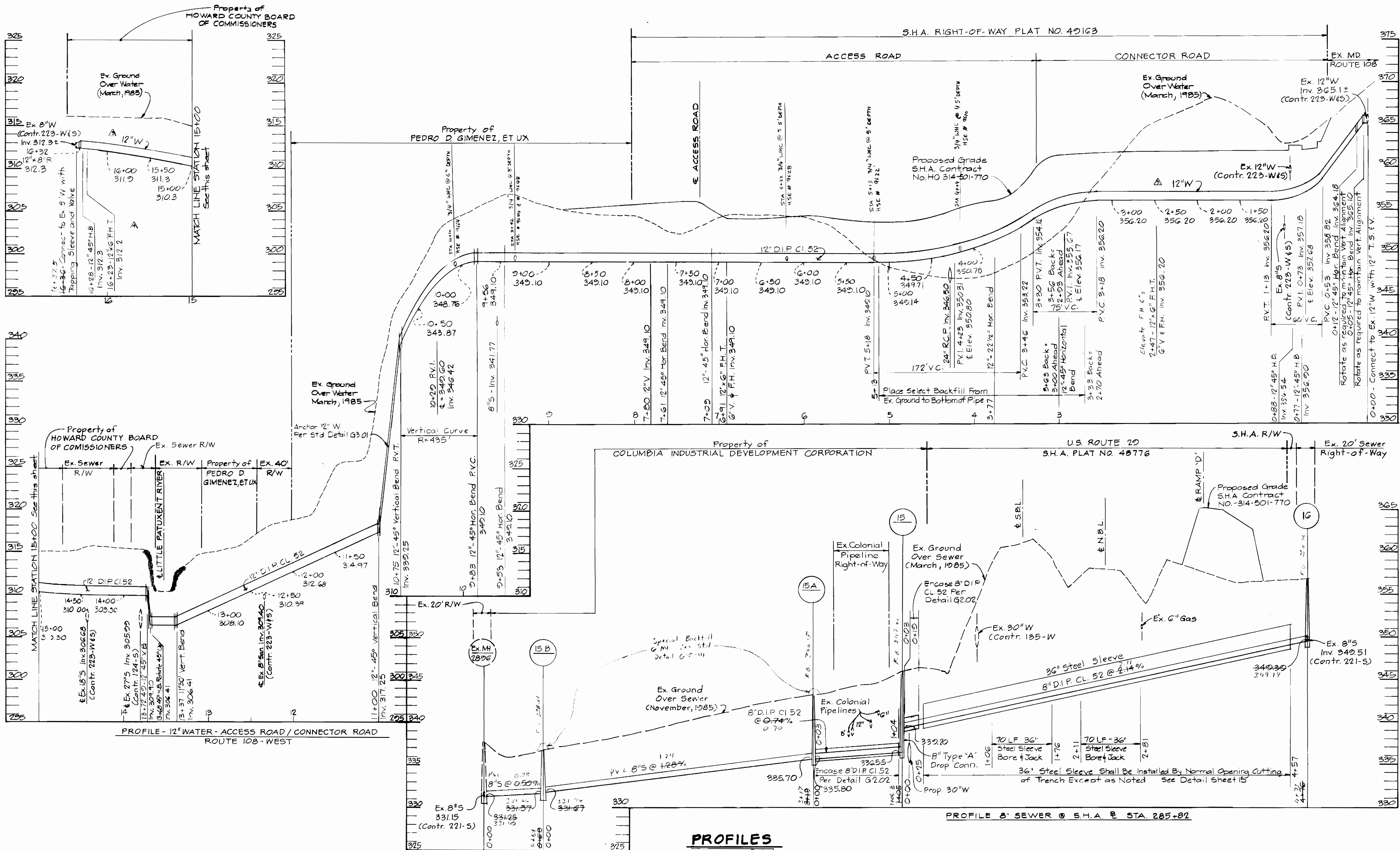
600' SCALE MAP NO. S-30/W-30 BLOCK NO. 9

ROUTE 29/ROUTE 108 WATER & SEWER RELOCATIONS CAPITAL PROJECT W-8117 W&S
CONTRACT NO. 14-1374
ELECTION DISTRICT NO. 2, 5 & 6
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 9 OF 16

- NOTES:**
- After Ex. 12" Water is removed from Service, the Fire Hydrant shall be removed and delivered to the Howard County Bureau of Utilities and area backfilled with Crusher Run Aggregate.
 - The Existing Manhole Frames and Covers on Manholes 3113, 3114 and 3115 shall be removed and delivered to the Howard County Bureau of Utilities and the Manhole backfilled with Crusher Run Aggregate.

S.H.A. DRAWING NO. _____
S.H.A. CONTRACT HO-314-501-770



PROFILES

Scale: Hor. 1"=50'
Vert. 1"=5'

S.H.A. DRAWING NO. _____
S.H.A. CONTRACT HO-314-501-770

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS: _____
DATE: _____

CHIEF, BUREAU OF ENGINEERING: _____
DATE: _____

CHIEF, BUREAU OF UTILITIES: _____
DATE: _____

CHIEF, UTILITY DIVISION: _____
DATE: _____

KIDDE CONSULTANTS, INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

DES: A.B.C.			
DRN: D.E.R.	KCI	As Built	3-15-87
CHK: G.H.I.	KCI	Revised Sewer & Water Main Profiles	11-27-85
	KCI	Revised Water & Sewer Main Profiles	11-8-85
	KCI	GENERAL REVISION TO CONTRACT DRAWING	8-26-85
DATE: 7-2-85	BY: _____	NO. _____	REVISION _____

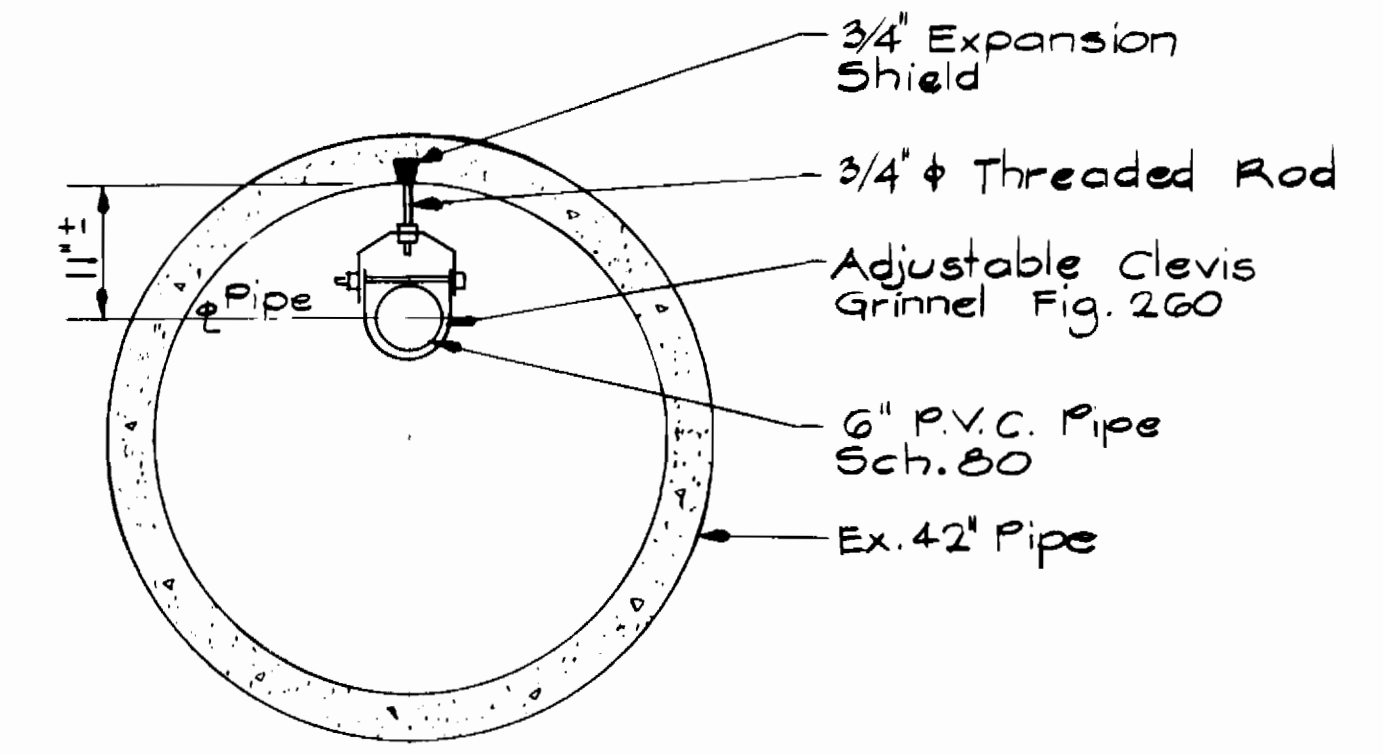
PROFILES OF
WATER AND SEWER MAINS

600' SCALE MAP NO. S-30/W-30 BLOCK NO. 9

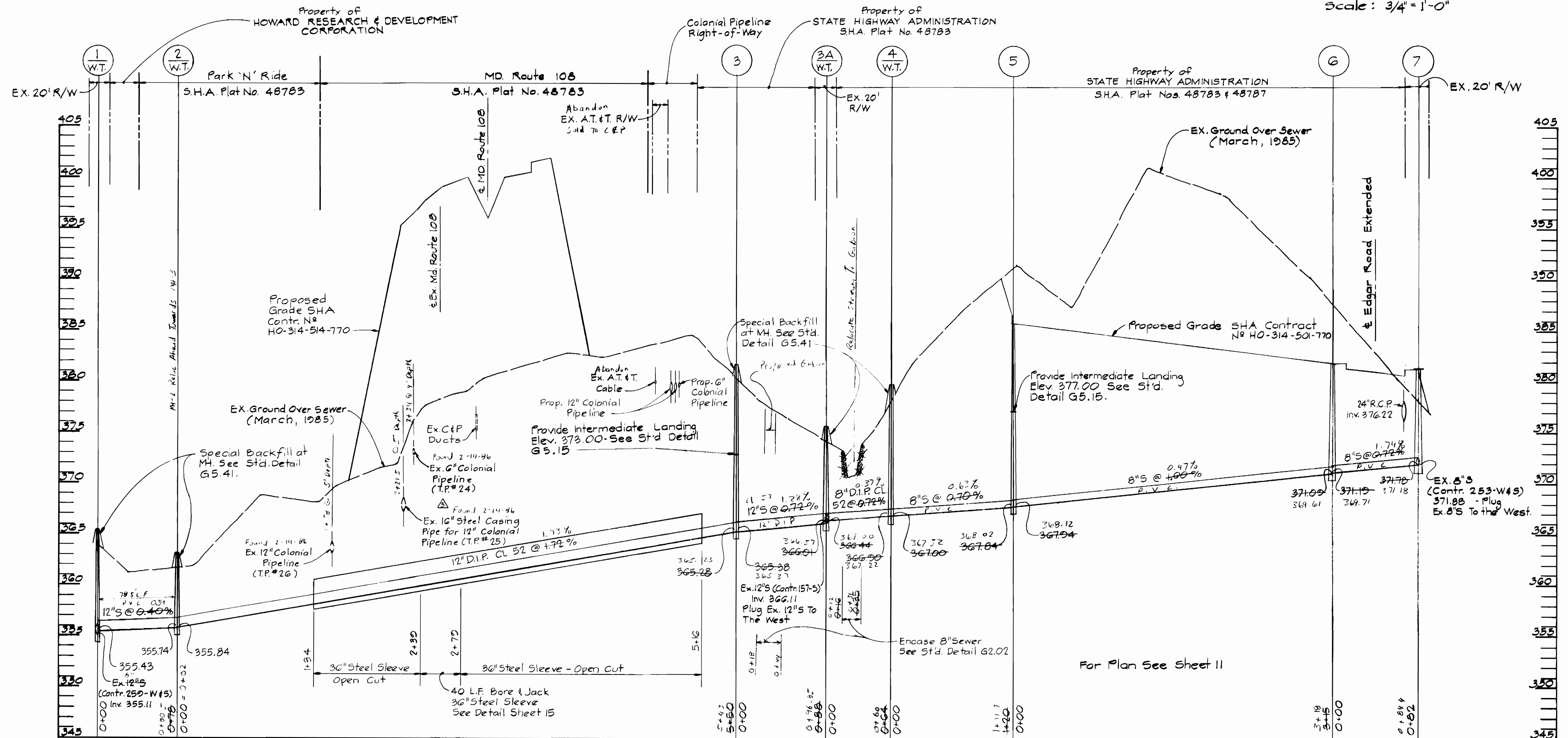
ROUTE 29/ROUTE 108 WATER & SEWER RELOCATIONS
CAPITAL PROJECT W-8117 W&S
CONTRACT NO. 14-1374
ELECTION DISTRICT NOS. 2, 5 & 6
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 10 OF 16



PIPE SUPPORT DETAIL
Scale: 3/4" = 1'-0"



PROFILE

Scale: Hor. 1" = 50'
Vert. 1" = 5'

S.H.A. DRAWING NO. _____
S.H.A. CONTRACT HO-314-501-770

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS DATE _____
CHIEF, BUREAU OF UTILITIES DATE _____

CHIEF, BUREAU OF UTILITIES DATE _____
CHIEF, UTILITY DIVISION DATE _____

KIDDE CONSULTANTS, INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

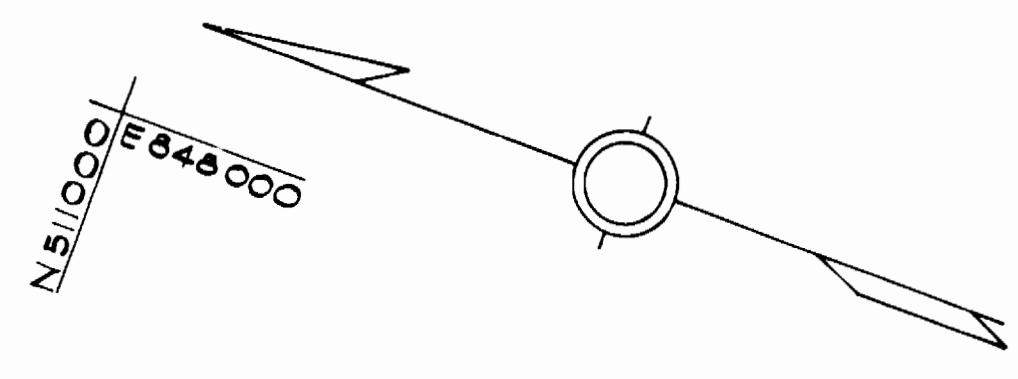
DES: T.E.S.			
DRN: J.M.G.			
CHK: W.B.H.	KCI	AS BUILT	3-22-87
	KCI	SHOWED PIPES ACCORDING TO TEST PIT DATA	11-10-85
	KCI	GENERAL REVISION TO CONTRACT DRAWING	8-26-88
DATE: 7-2-85	BY NO.	REVISION	DATE

PROFILE OF
SEWER MAIN

ROUTE 29/ROUTE 108 WATER & SEWER RELOCATIONS
CAPITAL PROJECT W-8117 W&S
CONTRACT NO. 14-1374
ELECTION DISTRICT NO. 2, 5 & 6
HOWARD COUNTY, MARYLAND

SCALE
AS
SHOWN

SHEET
12 OF 16



SEE BELOW REVISED 12" WATER MAIN LOCATION PLAN

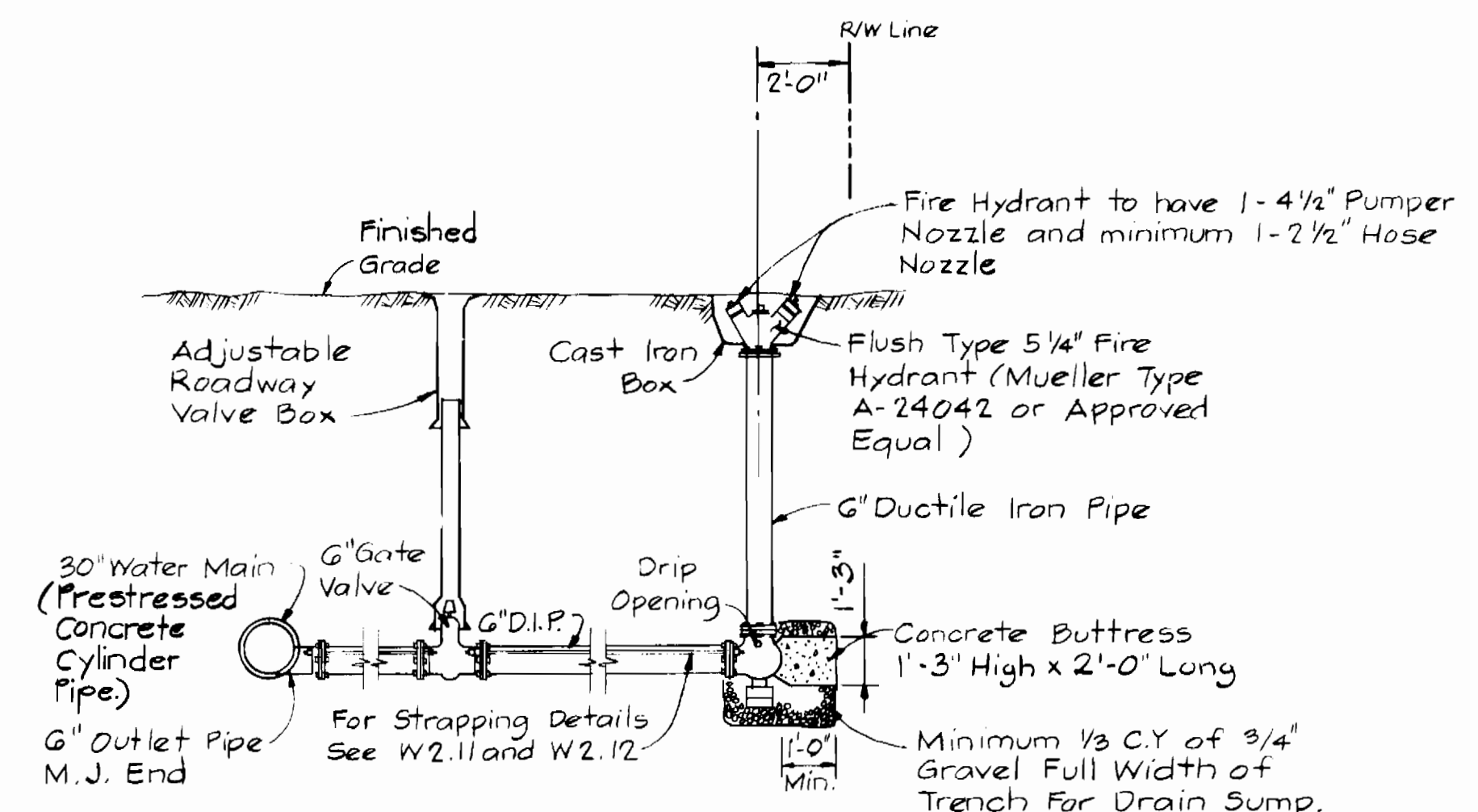
BENCH MARKS

H.C. Mon. 2842002 (Δ 212) ELEV. 398.18
 Concrete Monument @ Surface 15'± NE.
 of Edge of Road and 380'± NW of
 E Mellenbrook Road.

BM #215 ELEV. 403.24
 Tack & Hub 150'± NW of Bendix Road
 on N.E. Side of M.D. Route 108.

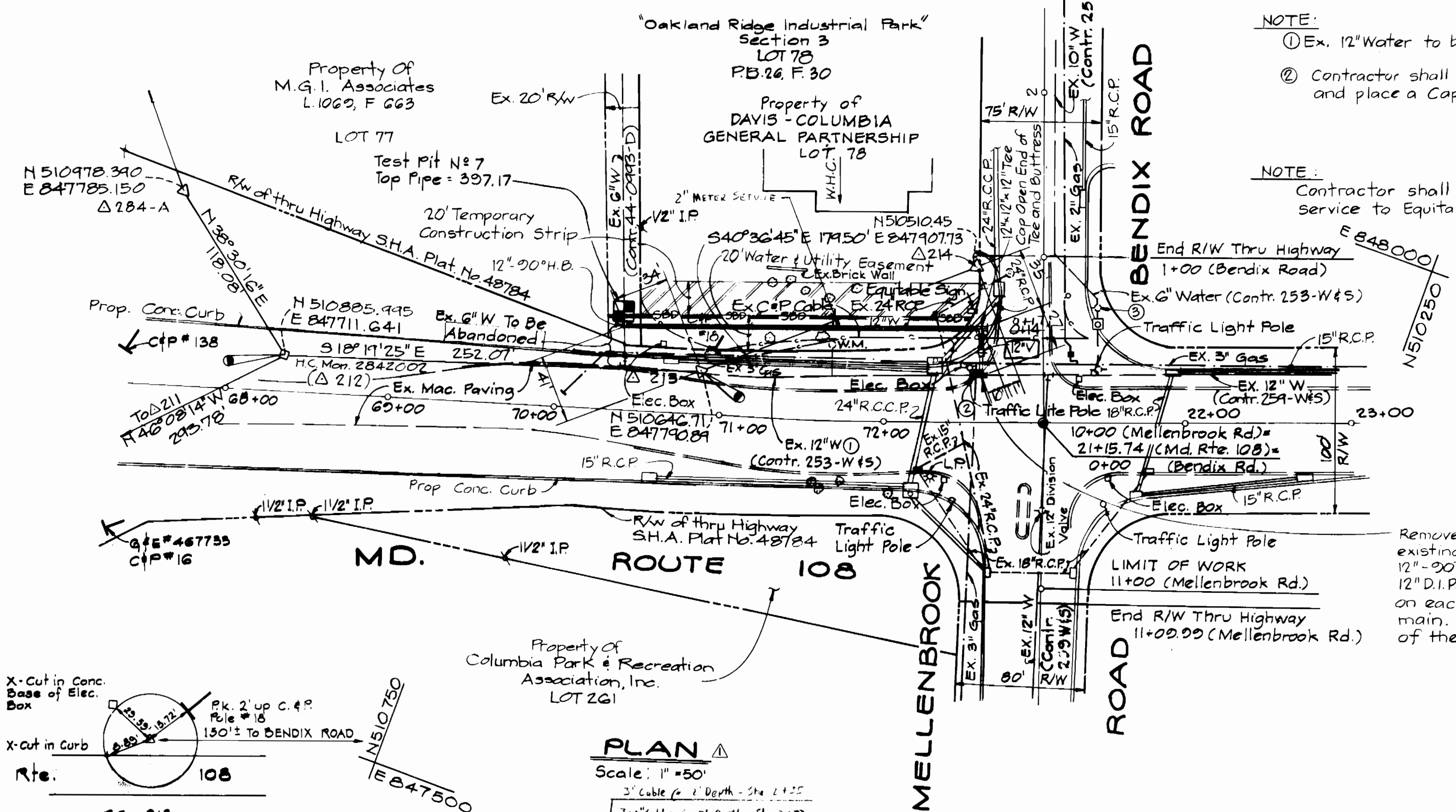
NOTE:
 ① Ex. 12" Water to be abandoned.
 ② Contractor shall cut Ex. 12" W
 and place a Cap and Buttress.

NOTE:
 Contractor shall reconnect water
 service to Equitable Bank N.A.

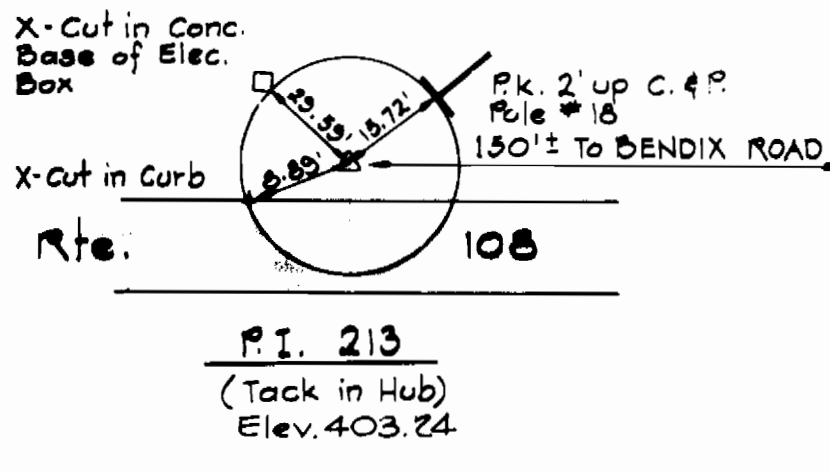


- NOTES:**
1. Place Minimum Of 1/3 C.Y. of 3/4" Gravel Full Width Of Trench For Drain Sump. Install 3/4" Copper Tubing To Gravel From Drip Holes Above Gravel.
 2. Blowoff Fire Hydrant Shall Be Strapped, See Detail W2.11
 3. Use S.H.A. Mix No. 1 Concrete For Concrete Buttrusses.
 4. If Ductile Iron Pipe is Used by Contractor, Standard Detail W4-14 Shall Apply.

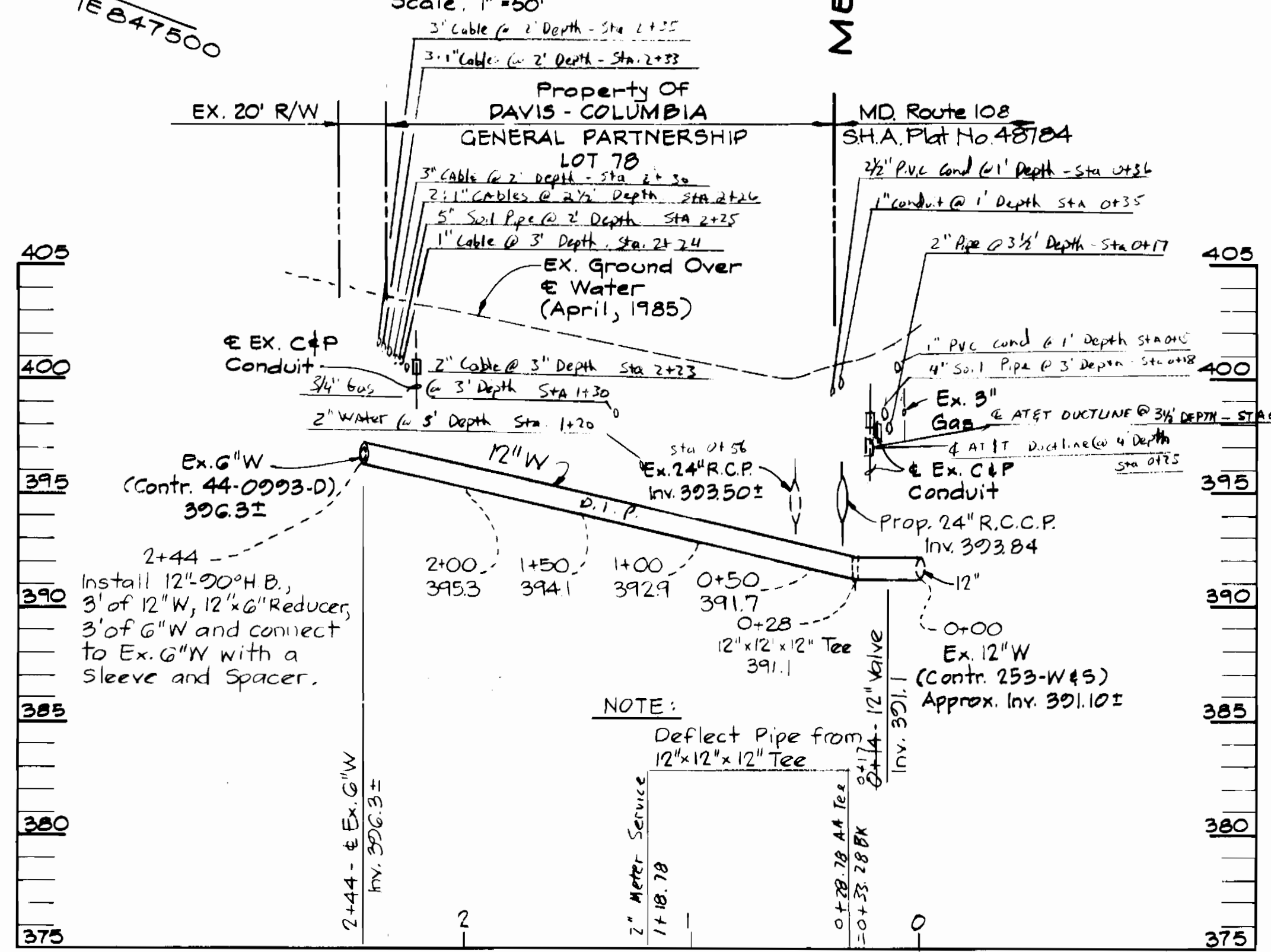
BLOWOFF DETAIL
 No Scale



Remove a minimum of 10 feet of existing 12" Water Main and install 12"-90° H.B. with Spool Piece of 12" D.I.P., C.I. 52 and Sleeve and Spacer on each side to connect to existing main. The Water Main to the North of the 90° H.B. shall be Capped.



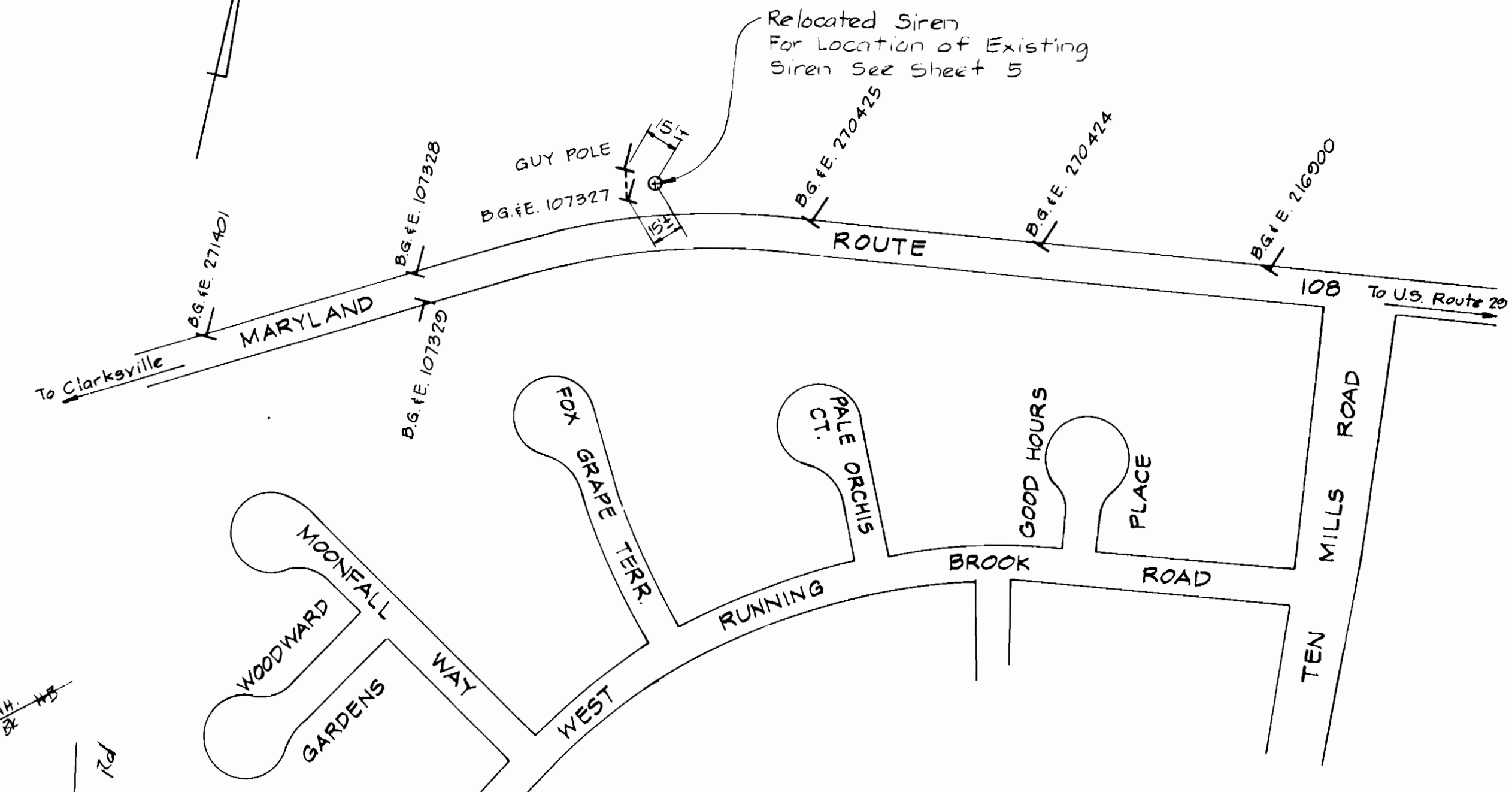
PLAN
 Scale: 1" = 50'



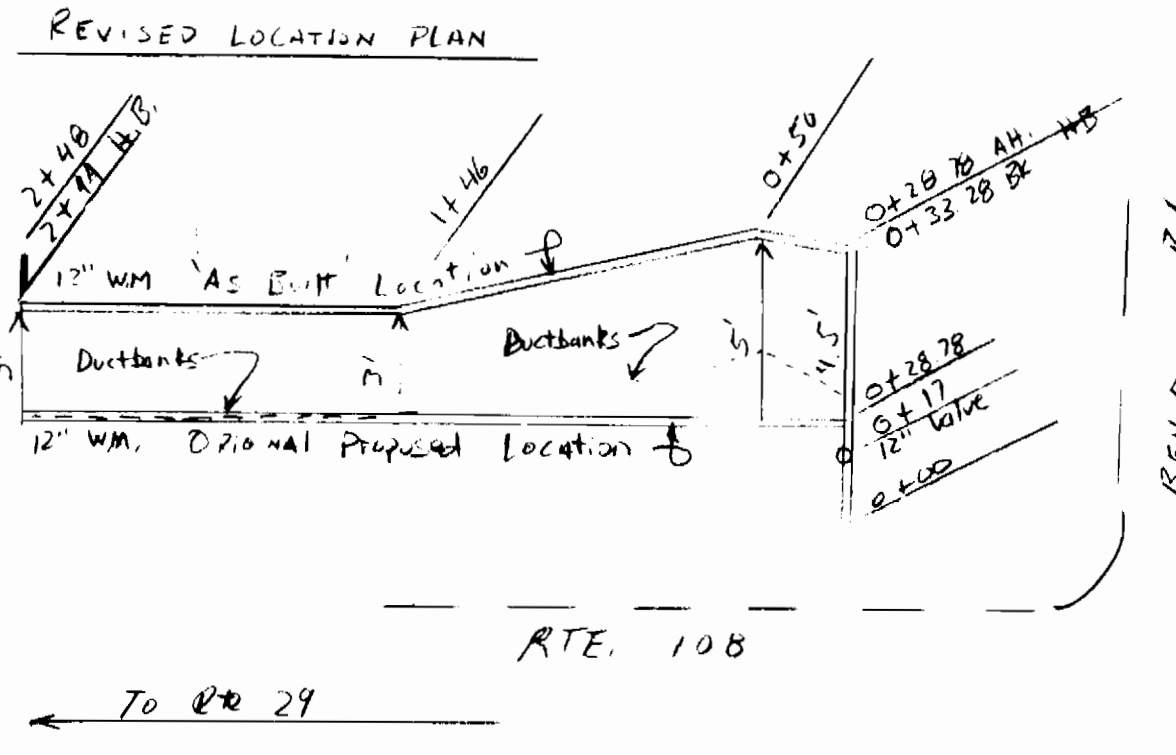
NOTE:

Deflect Pipe from 12"x12"x12" Tee

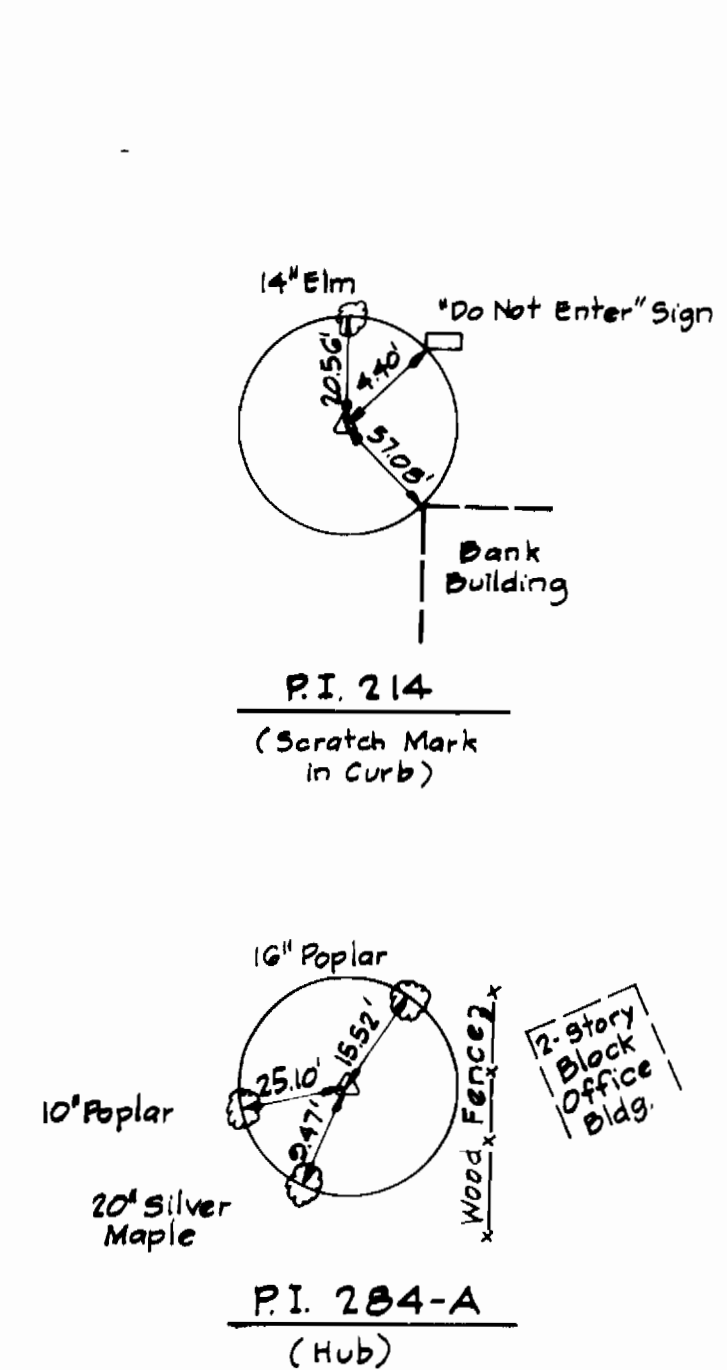
PROFILE
 Scale: Hor: 1" = 50'
 Vert: 1" = 5'



PLAN - SIREN RELOCATION
 No Scale



REVISED LOCATION PLAN



S.H.A. DRAWING NO. _____
 S.H.A. CONTRACT HO 314-501-770

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS
 DATE: 6/10/85

CHIEF, BUREAU OF ENGINEERING
 DATE: 6/10/85

CHIEF, BUREAU OF UTILITIES
 DATE: 6/10/85

KIDDE CONSULTANTS, INC.
 CONSULTING ENGINEERS
 BALTIMORE, MARYLAND

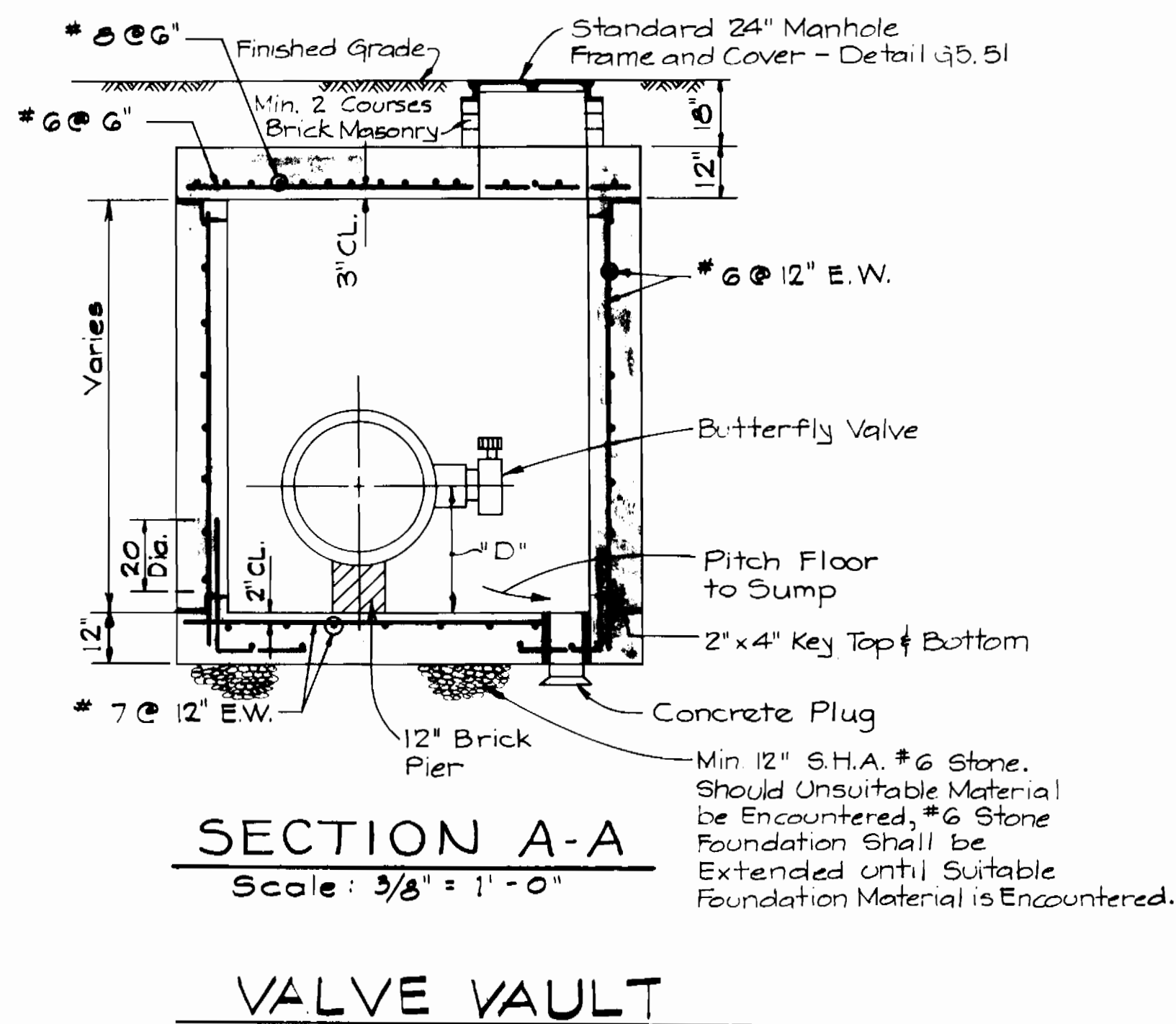
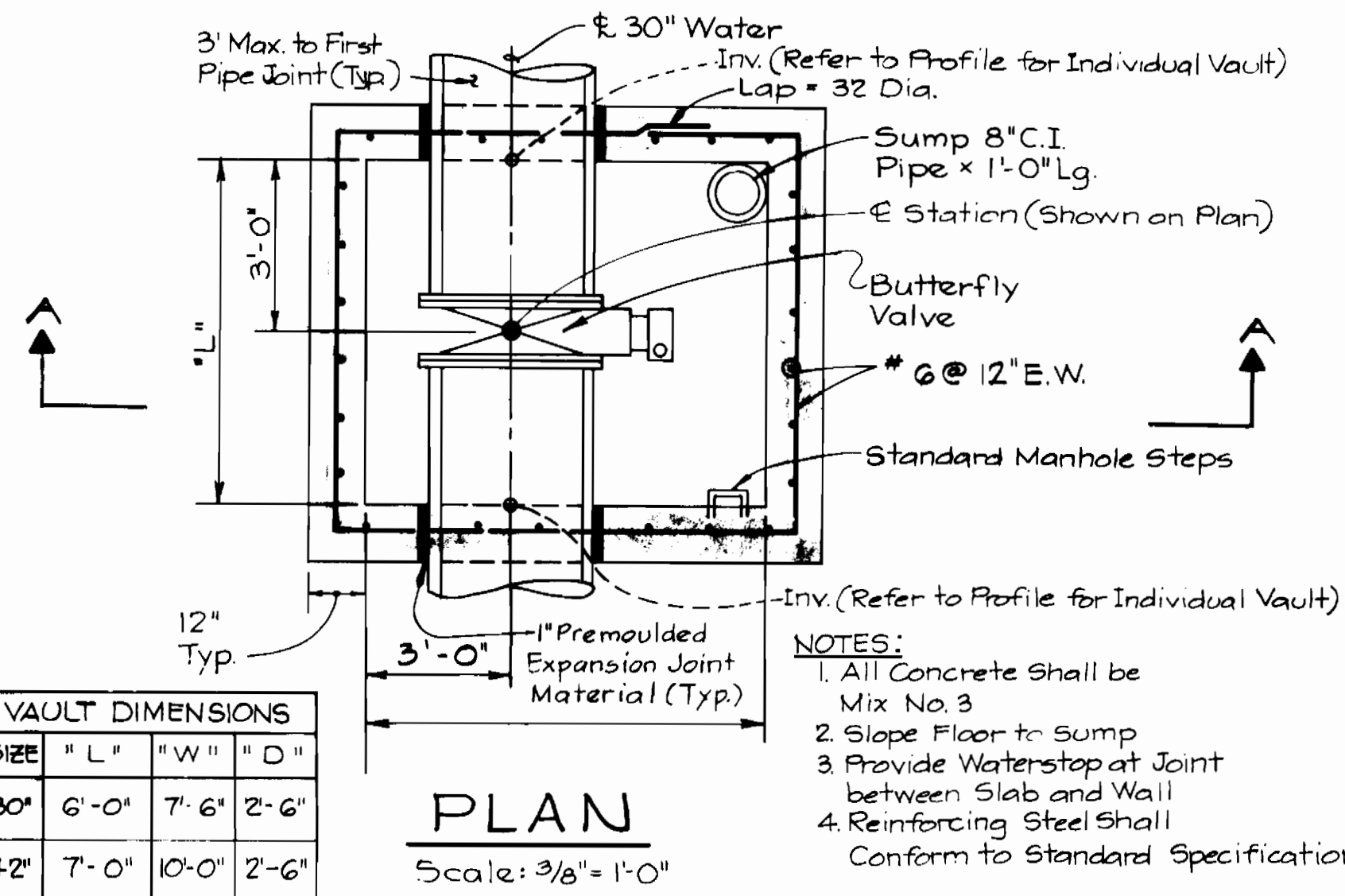
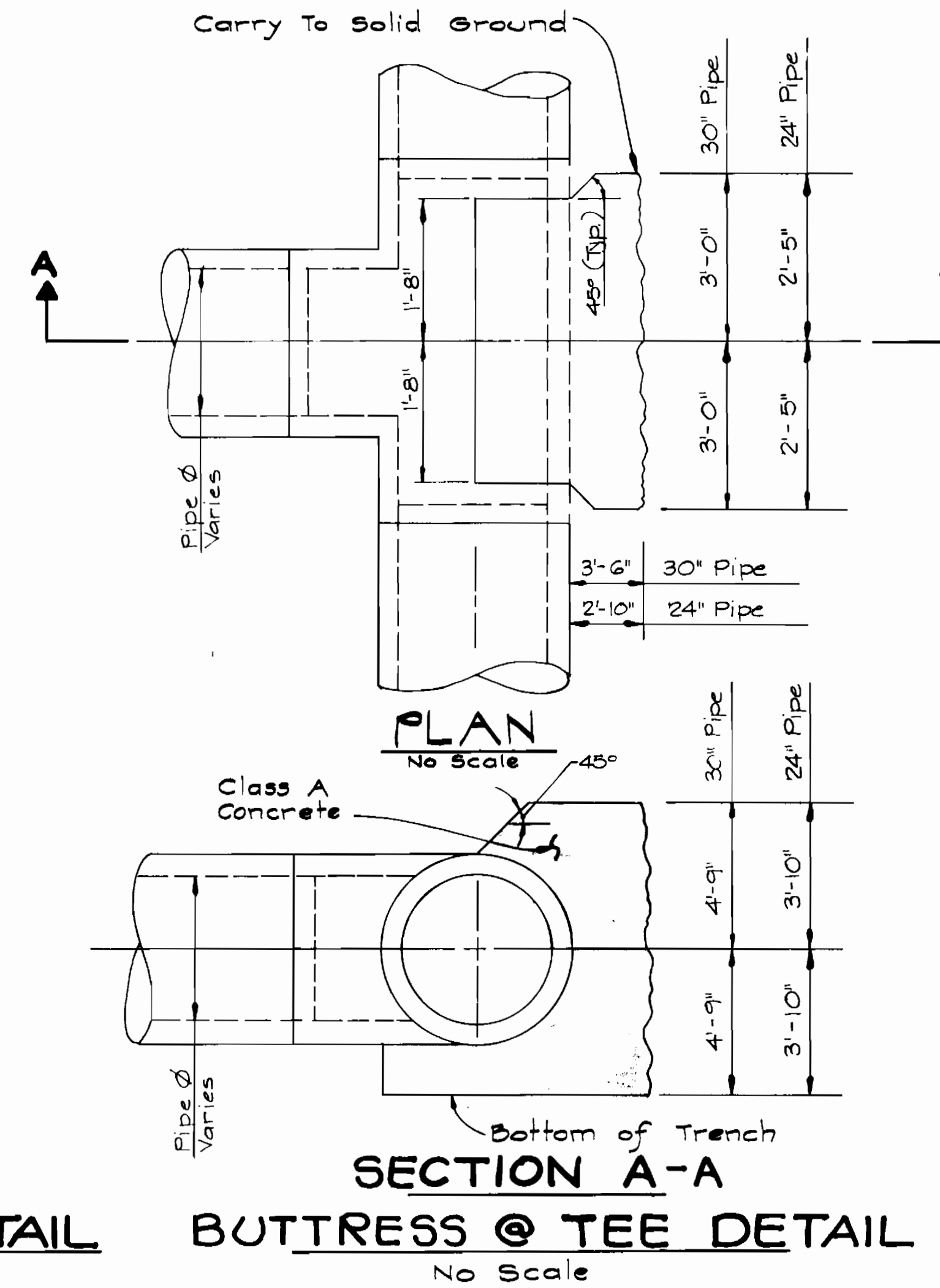
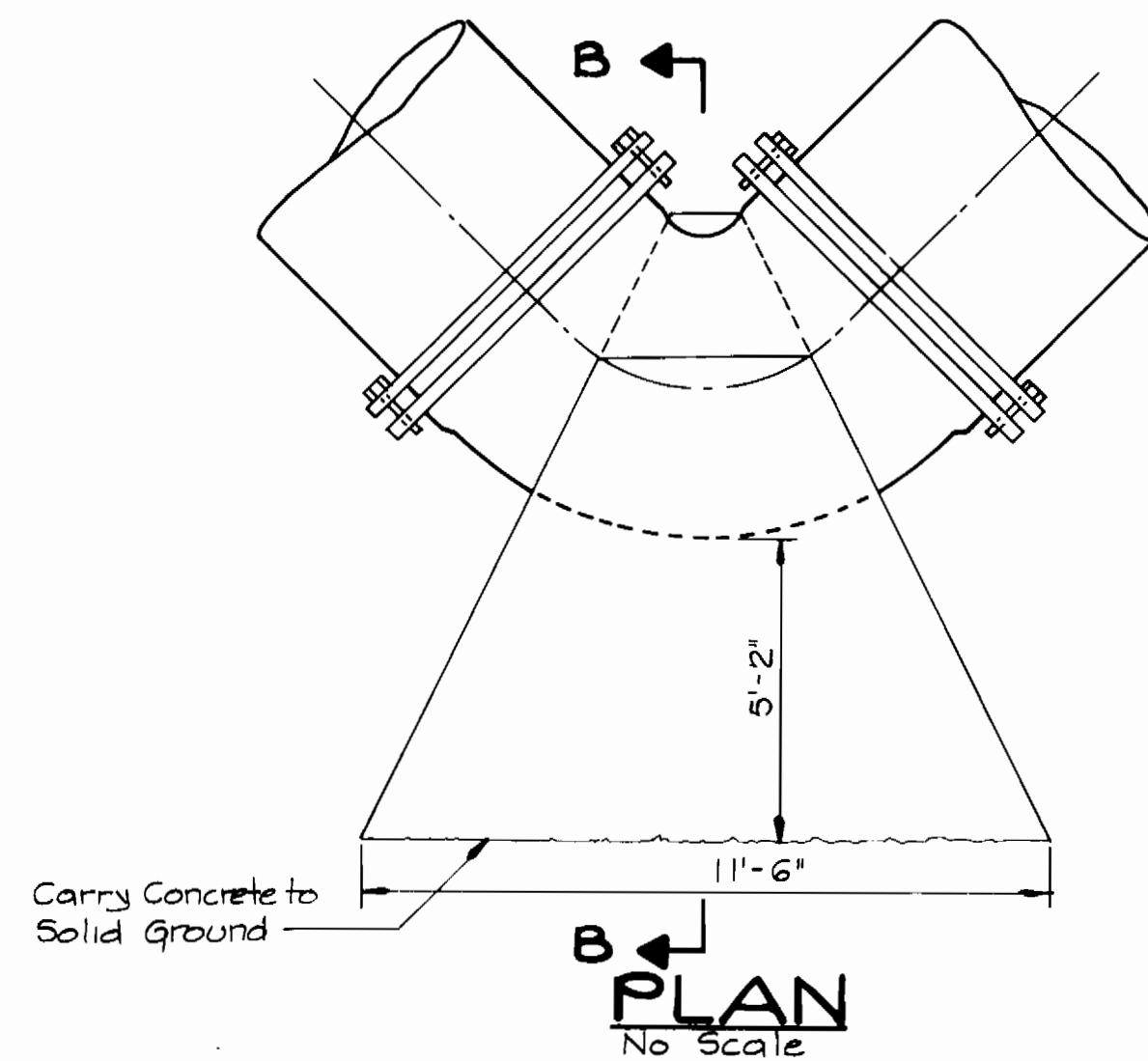
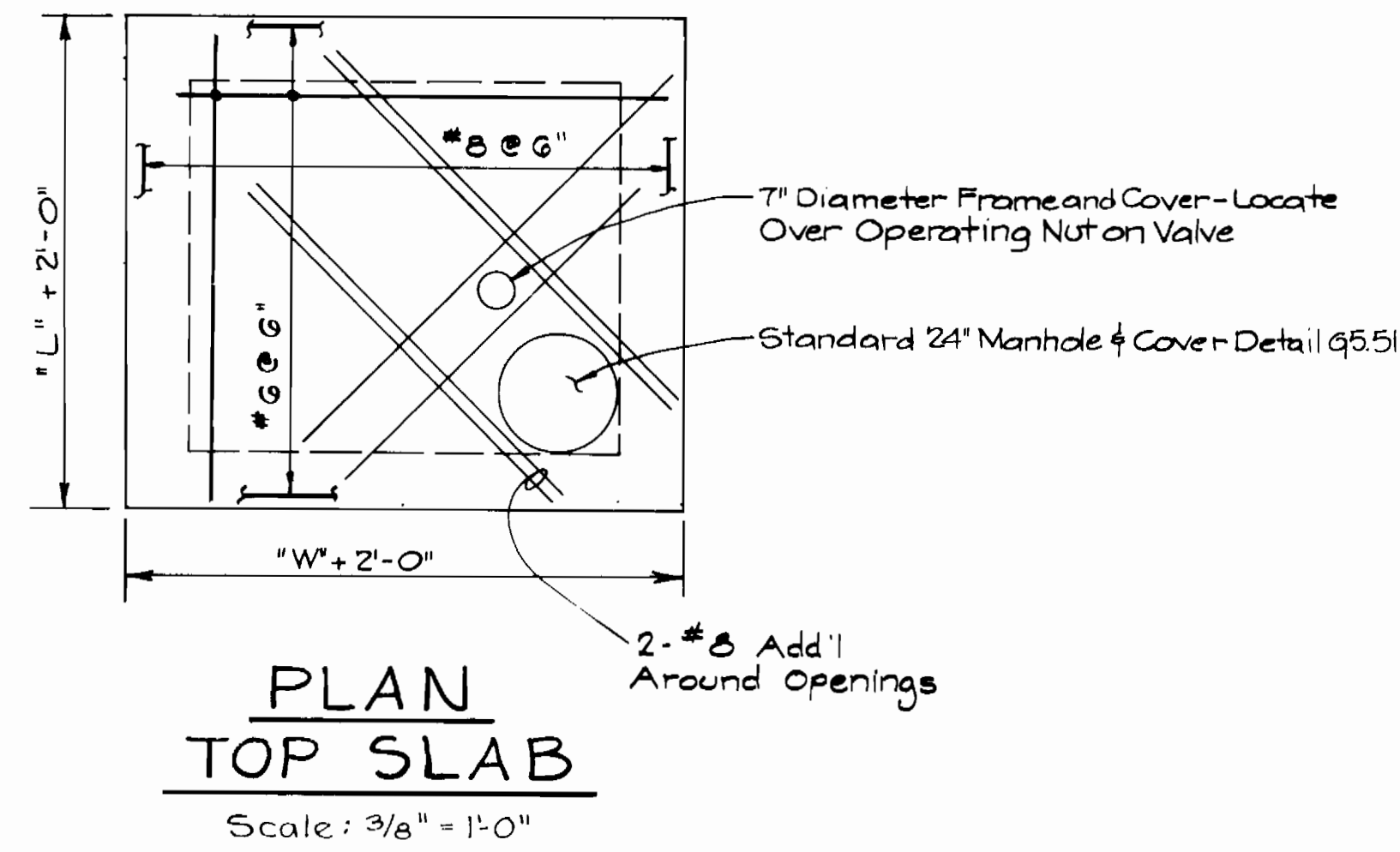
DES: A.B.C.			
DRN: D.E.R.			
CHK: G.H.I.	KCI	Δ 3 BUILT	3-25-85
	KCI	Δ 12" VALVE @ STA. 2+34 DELETED	9/10/85
	APD	GENERAL REVISION TO CONTRACT DRAWING	8/26/85
DATE: 7-2-85	BY: NO.	REVISION	DATE

PLAN AND PROFILE
 OF WATER MAIN

600' SCALE MAP NO. S-30/W-30 BLOCK NO. 10

ROUTE 29/ ROUTE 108 WATER & SEWER RELOCATIONS
 CAPITAL PROJECT W-8117 W&S
 CONTRACT NO. 14-1374
 ELECTION DISTRICT NO. 5 & 6
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
 SHEET 13 OF 16



DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

KIDDE CONSULTANTS, INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

DES: T.E.S.			
DRN: J.M.G.			
CHK: W.B.H.			
DATE: 7-2-85	BY: NO.	REVISION	DATE

VALVE VAULT DETAILS

ROUTE 29/ROUTE 108 WATER & SEWER RELOCATIONS
CAPITAL PROJECT W-8117 W&S
CONTRACT NO. 14-1374
ELECTION DISTRICT NO. 2, 5 & 6
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

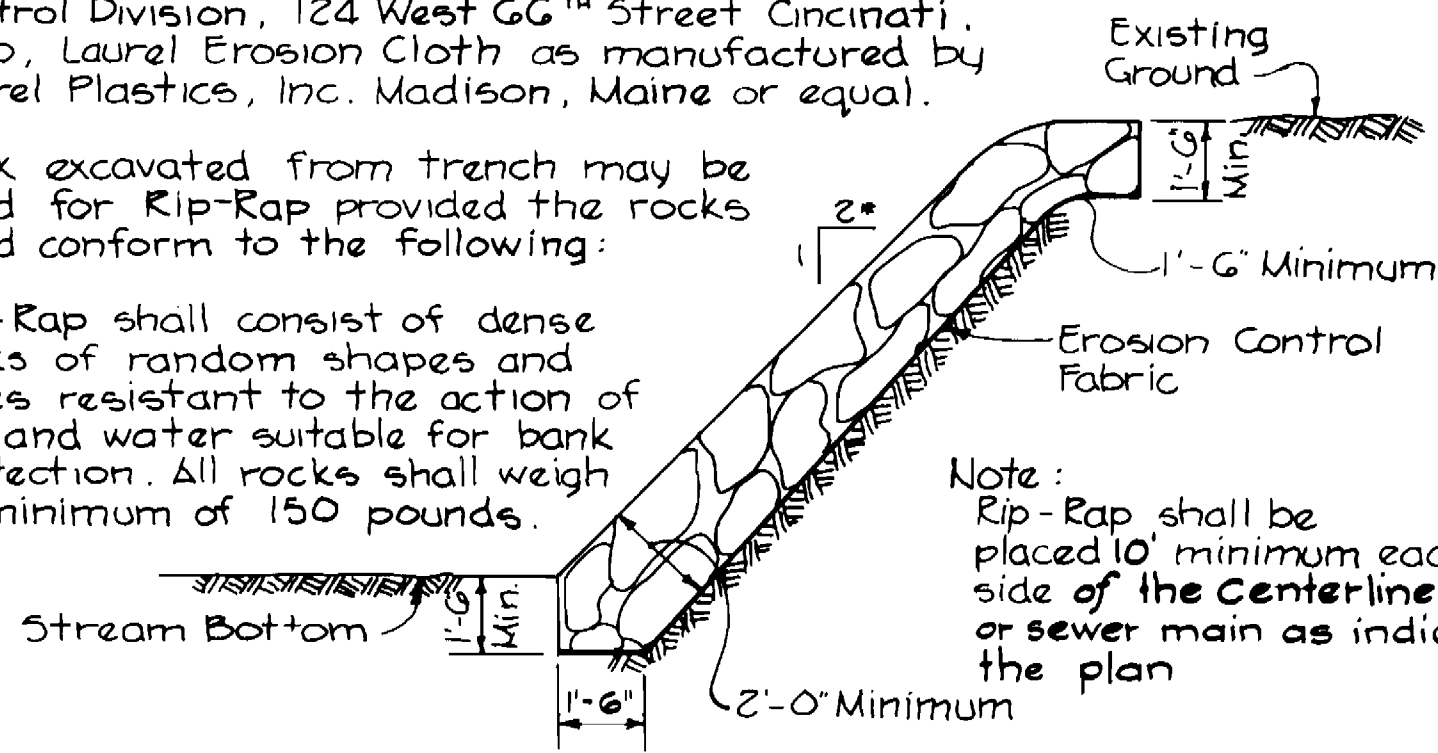
SHEET 14 OF 16

Note:

Erosion Control Fabric shall be Poly Filter X as manufactured by Carthage Mills Inc., Erosion Control Division, 124 West 66th Street Cincinnati, Ohio, Laurel Erosion Cloth as manufactured by Laurel Plastics, Inc. Madison, Maine or equal.

Rock excavated from trench may be used for Rip-Rap provided the rocks used conform to the following:

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



Note: Rip-Rap shall be placed 10' minimum each side of the centerline of water or sewer main as indicated in the plan

* Maximum Slope

RIP-RAP DETAIL

No Scale

6" Rigid Overflow Pipe, one or more, as required by stream flow. Minimum pipe length 4'-0". Support ends as necessary

Any disturbed stream bed will be compacted and topped with 2'-0" depth of 3" to 2" stone compacted in place. Stream banks will be fully compacted and sodded to a point 2'-0" beyond the top of bank, except where placement of Rip Rap is required.

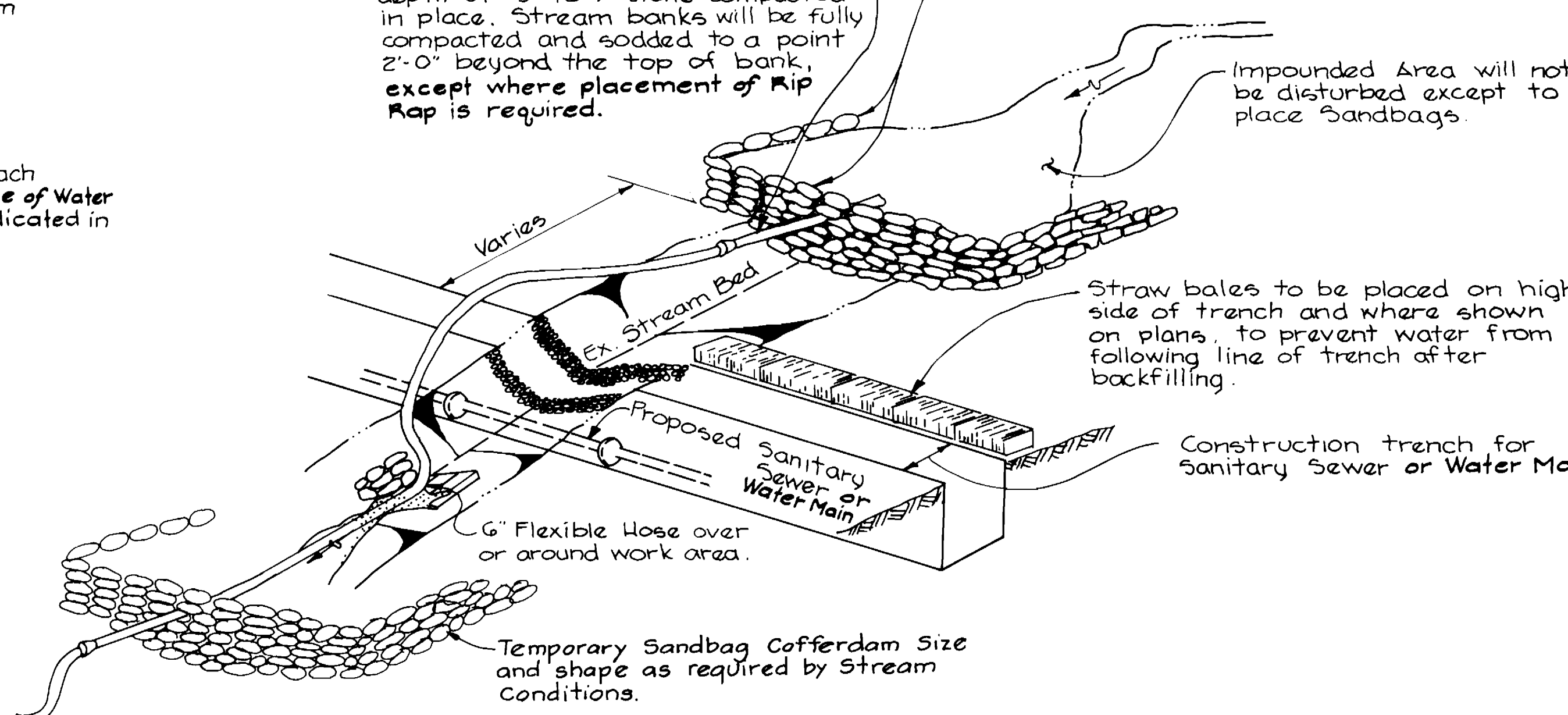
Temporary Sandbag Cofferdam shall be constructed and in an approved operating condition prior to beginning the trenching operation.

Temporary Sandbag Cofferdam Size and shape as required by Stream Conditions.

Impounded Area will not be disturbed except to place Sandbags.

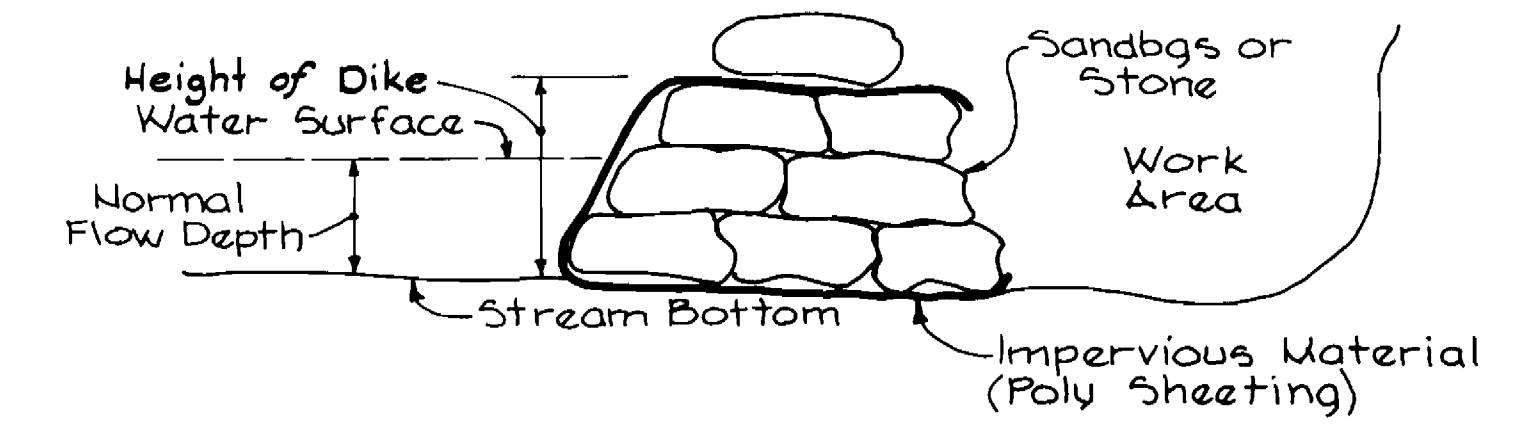
Straw bales to be placed on high side of trench and where shown on plans, to prevent water from following line of trench after backfilling.

Construction trench for Sanitary Sewer or Water Main.



STREAM CROSSING DETAIL

No Scale

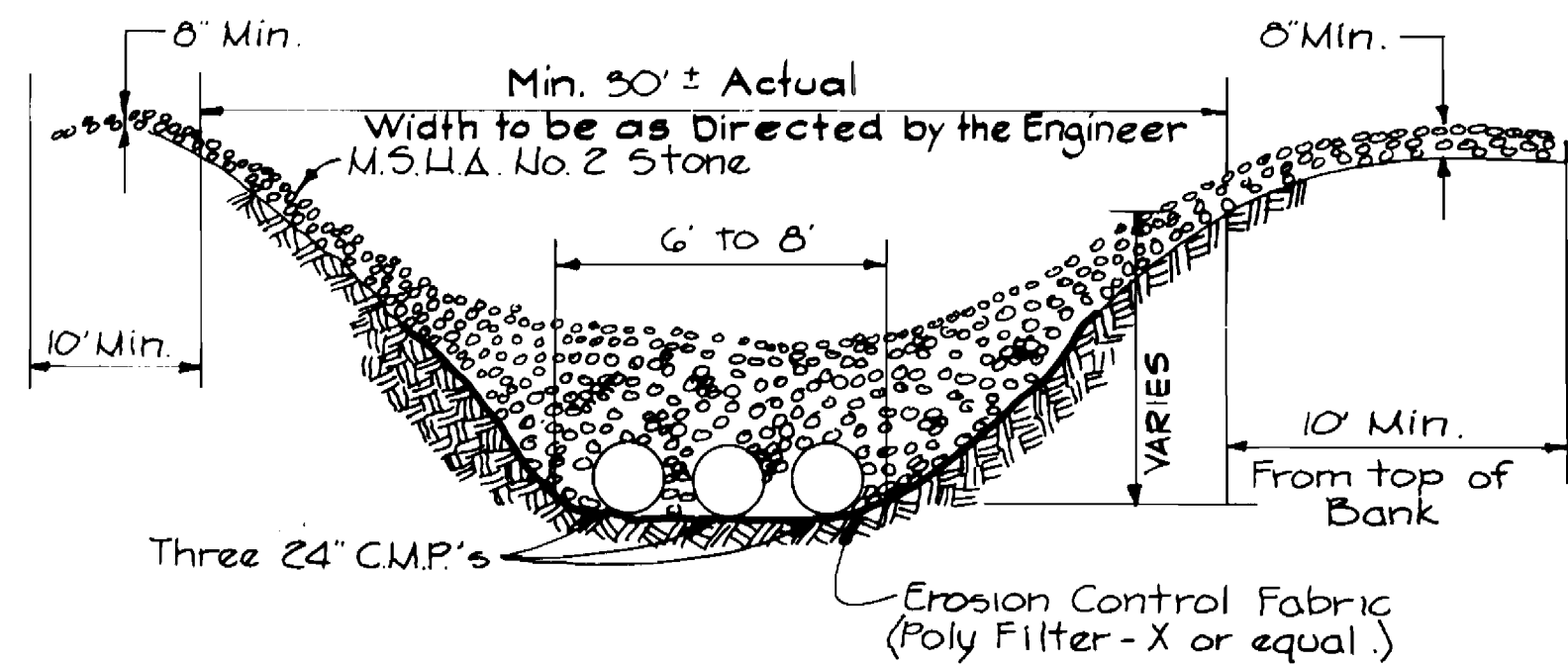


**DETAIL
INSTREAM FLOW DIVERSION
STRUCTURE**

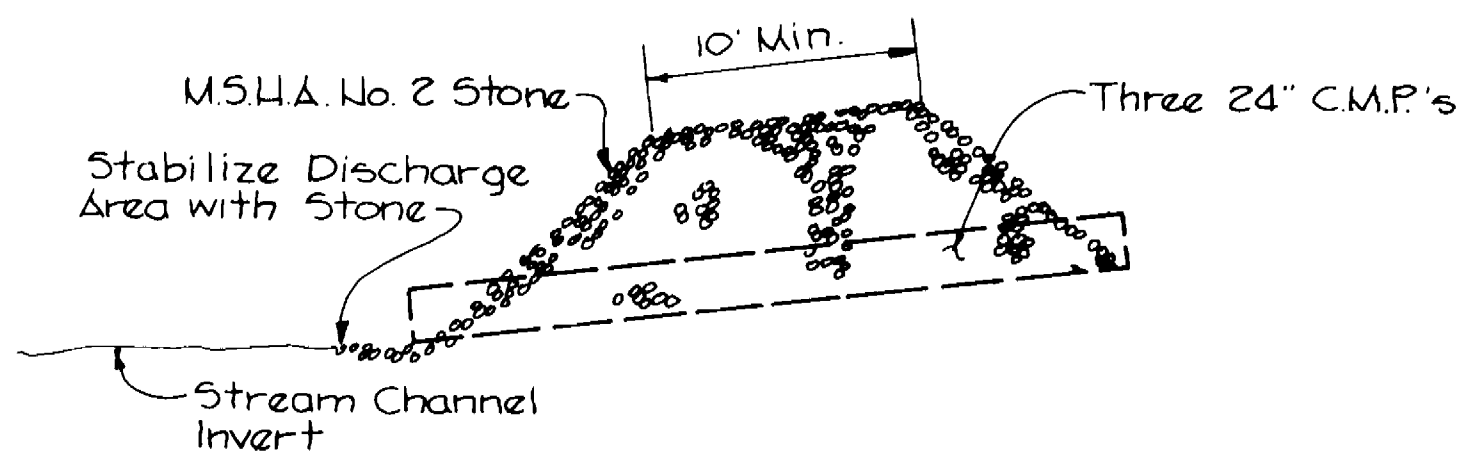
No Scale

Notes:

- The height of the dike shall be twice the normal depth of flow, for example: 4' 1" of flow depth, the dike should be 2' high at the extent of the Poly Sheeting.
- Whenever sheeting is overlapped it shall be from upstream to downstream, for example: SHEETING OVERLAP
- An upland dewatering pit should be constructed to pump any seepage from the work area.



SECTION ACROSS CHANNEL



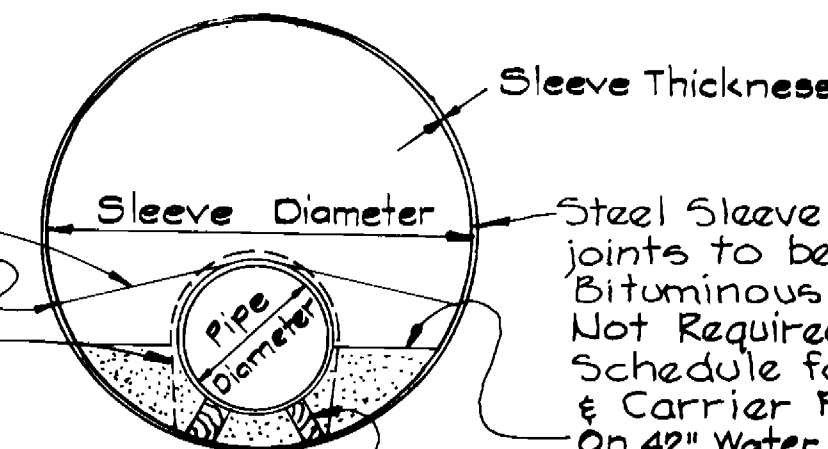
SECTION ALONG CHANNEL

**STABILIZED STREAM BED
CROSSING**

No Scale

Provide one Additional 3" x 1/4" Steel Strap with Turnbuckle per Length of Pipe

Weld Steel Strap to Pipe Two 3" x 1/4" Steel Straps Per Pipe Length



Steel Sleeve Casing: joints to be welded. Bituminous Coating Not Required. See Schedule for Casing & Carrier Pipe Sizes. On 42" Water Main and 8" and 12" Sewer Mix No. 1 Concrete Grout shall be Filled to a Height Equal to 1/3 of the Pipe O.D. Timber Skids, Creosoted or treated with Chromated Copper Arsenate. Notch @ Steel Straps.

PIPE SLEEVE SIZES			
PIPE DIAMETER	SLEEVE DIAM.	WALL THICKNESS	REMARKS
6 1/2"	36"	1/2"	For Class of Pipe Refer To Plans & Specs.
42"	78"	1"	

**DETAIL
STEEL SLEEVE OR TUNNEL**

No Scale

SHA. DRAWING NO. _____
SHA. CONTRACT NO. 314-501-770

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DATE: 7-2-85

CHIEF, BUREAU OF UTILITIES

KIDDE CONSULTANTS, INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

DATE: 7-2-85

DES: T.E.S.					
DRN: J.M.G.					
CHK: W.B.H.	KCI	AS BUILT			
DATE: 7-2-85	KCI	GENERAL REVISION TO CONTRACT DRAWING	8-2-85		
BY: NO.		REVISION		DATE	

MISCELLANEOUS DETAILS

600' SCALE MAP NO. 8-30/W-30 BLOCK NO. _____

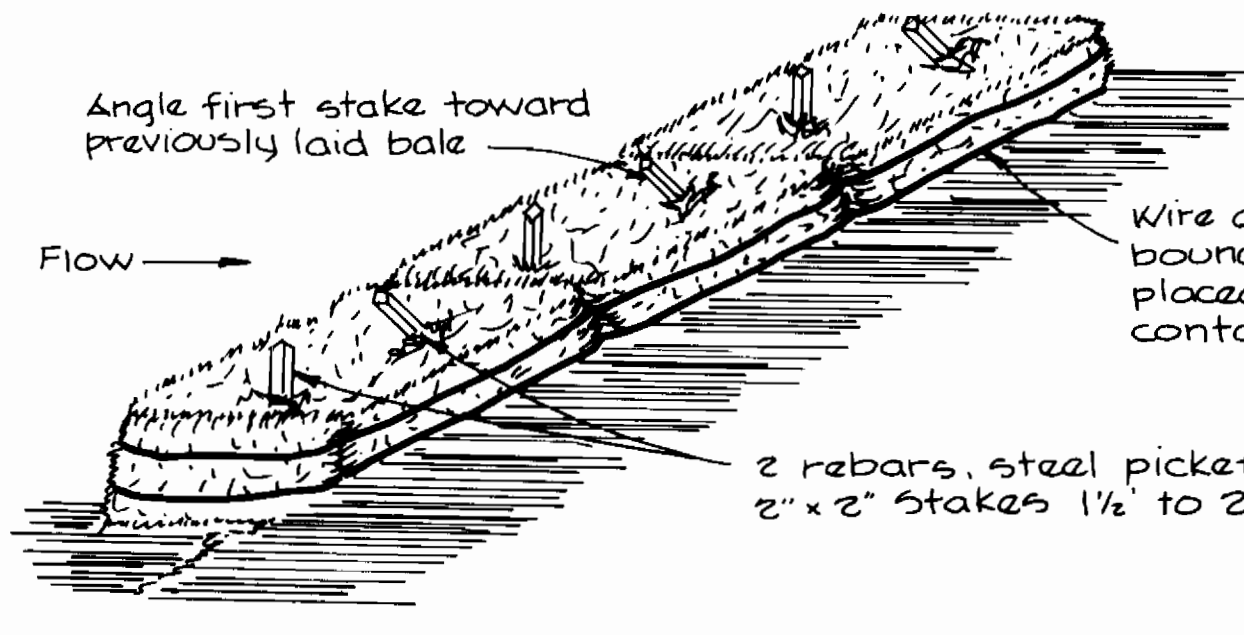
ROUTE 29/ROUTE 108 WATER & SEWER RELOCATIONS
CAPITAL PROJECT W-8117 W&S
CONTRACT NO. 14-1374
ELECTION DISTRICT NO. 2,5 & 6
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 15 OF 16

SEDIMENT CONTROL NOTES

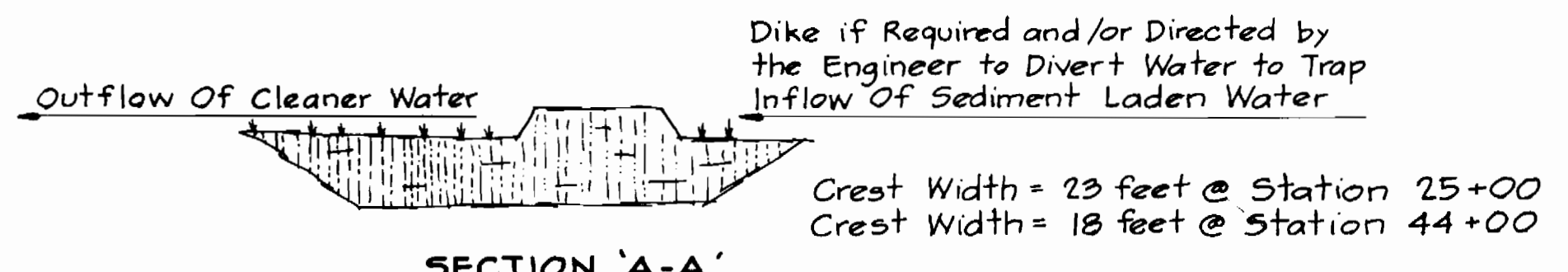
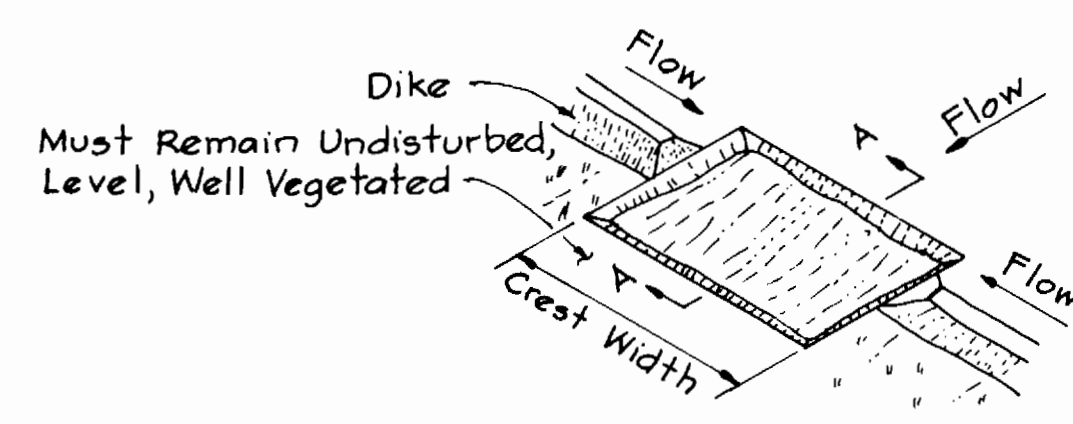
1. A minimum of 24 hours notice must be given to the Howard County Office of Inspections and Permits prior to the start of any construction. (992-2437)
2. All vegetative and structural practices are to be installed according to the provisions of this plan and are to in conformance with 1983 Maryland Standards and Specifications for Soil Erosion and Sediment Control.
3. Following initial soil disturbed or redistribution, permanent or temporary stabilization shall be completed within: a) 7 calendar days for all perimeter sediment control structures, dikes, perimeter slopes, and all slopes greater than 3:1, b) 14 days for all other disturbed or graded areas on the project site.
4. All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol. 1, chapter 12, of the Howard County Design Manual, Storm Drainage.
5. All disturbed area must be stabilized within the time period specified above in accordance with the 1983 Maryland Standards and Specifications for Soil Erosion and Sediment Control for permanent seeding (Sec. 51) sod (Sec. 54) temporary seeding (Sec. 50) and mulching (Sec. 52). Temporary stabilization with mulching alone can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
6. All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.
7. Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
8. Additional sediment controls must be provided, if deemed necessary by Howard County Department of Public Works Sediment Control Inspector.
9. The Contractor shall not pump from excavated areas directly into the Howard County Storm Drainage System or any Natural Water Course. Where groundwater is encountered during construction, the Contractor shall provide Portable or Excavated Sediment Traps to prevent Silted Trench Water from entering Storm Drainage Systems or Natural Waterways.
10. All excavated material shall be placed on the high side of the trench whenever possible, and confined to an area where it will not obstruct the normal flow or drainage courses.



Construction Specifications

1. Bales shall be placed in a row with ends tightly abutting adjacent bales.
2. Each bale shall be embedded in the soil a minimum of 4"
3. Bales shall be securely anchored in place by stakes or rebars driven through the bales. The first stake in each bale shall be angled toward previously laid bale to force bales together.
4. Inspections shall be frequent, and repair or replacement shall be made promptly as needed.
5. Bales shall be removed when they have served their usefulness so as not to block or impede storm flow or drainage.

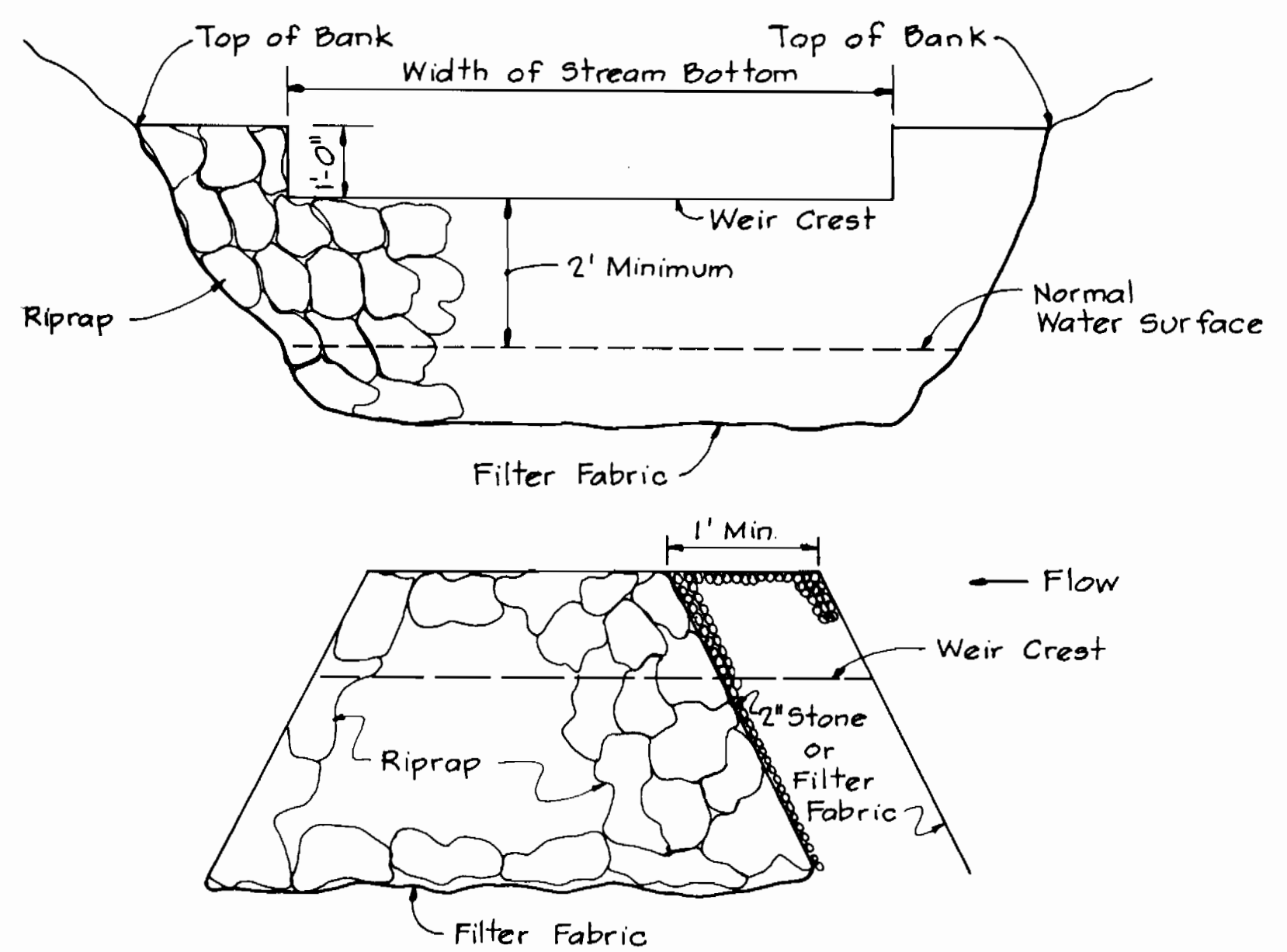
DETAIL STRAW BALE DIKE
No Scale



CONSTRUCTION SPECIFICATION

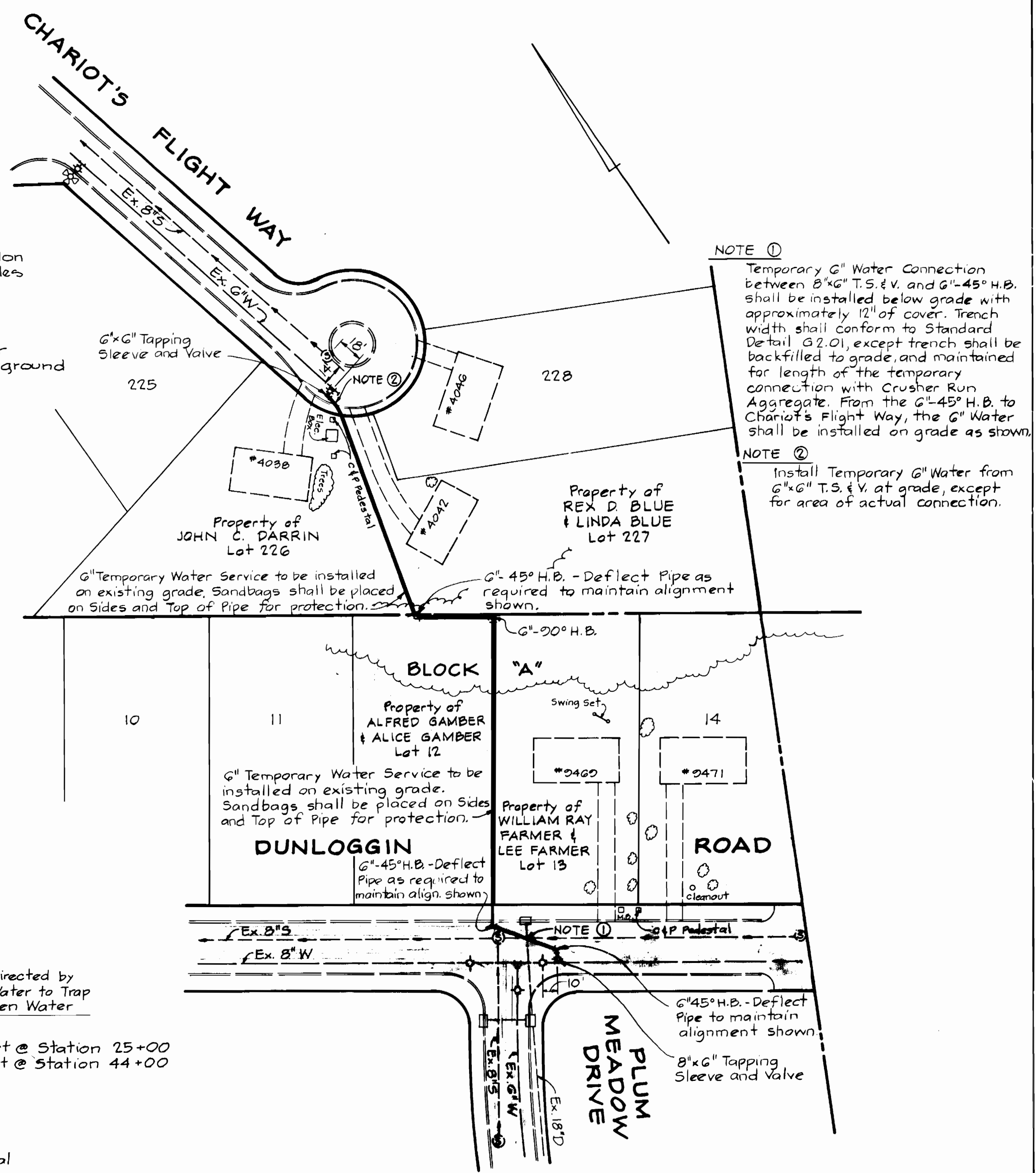
1. Sediment shall be removed and trap restored to its original dimensions when the sediment has accumulated to 1/2 the design depth of the trap. Removed sediment shall be deposited in a suitable area and in such a manner that it will not erode.
2. The structure shall be inspected after each rain and repairs made as needed.
3. Construction operations shall be carried out in such a manner that erosion and water pollution shall be minimized.
4. The sediment trap shall be removed and area stabilized when the water in the vicinity of the Sediment Trap has been completed and accepted.
5. All cut slopes shall be 2:1 or flatter.

GRASS OUTLET SEDIMENT TRAP
No Scale



NOTE:
Device shall be constructed from top of stream bank to top of stream bank.

TEMPORARY WEIR IN SWALE
STA. 17+60± (30-INCH WATER MAIN)
No Scale



NOTE ①
Temporary 6" Water Connection between 8" 6" T.S. & V. and 6"-45° H.B. shall be installed below grade with approximately 12" of cover. Trench width shall conform to Standard Detail G2.01, except trench shall be backfilled to grade, and maintained for length of the temporary connection with Crusher Run Aggregate. From the 6"-45° H.B. to Chariot's Flight Way, the 6" Water shall be installed on grade as shown.

NOTE ②
Install Temporary 6" Water from 6" 6" T.S. & V. at grade, except for area of actual connection.

TEMPORARY 6-INCH WATER CONNECTION
DORSEY HALL

Scale: 1" = 50'

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DIRECTOR OF PUBLIC WORKS
DATE

CHIEF, BUREAU OF ENGINEERING
DATE

CHIEF, BUREAU OF UTILITIES
DATE

CHIEF, UTILITY DIVISION
DATE

KIDDE CONSULTANTS, INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

DES: T.E.S.				
DRN: J.M.G.				
CHK: W.B.H.	K.C.I.	APD	AS BUILT	P. 25 V2
DATE: 7-2-85	BY: NO.	REVISION	GENERAL REVISIONS TO CONTRACT DRAWINGS 8-26-85	

SEDIMENT CONTROL DETAILS

600' SCALE MAP NO. S-30/W-30 BLOCK NO.

ROUTE 29/ROUTE 108 WATER & SEWER RELOCATIONS
CAPITAL PROJECT W-8117 W&S
CONTRACT NO. 14-1374
ELECTION DISTRICT NO. 2,5&6
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 16 OF 16

SHA DRAWING NO. _____
SHA CONTRACT NO. 314-501-770