

TRAVERSE SCHEDULE

P. I. #	NORTH COORDINATE	EAST COORDINATE	QUAD.	BEARING	DISTANCE
45	526544.15	851886.71			
44	526716.34	852117.81	NE	53° 18' 40.8"	288.20'
43	527034.13	852539.92	NE	53° 01' 13.4"	528.40'
42	527222.20	852814.76	NE	55° 37' 29.9"	332.99'
41	527467.23	853134.13	NE	52° 30' 14.8"	402.54'
40	527781.34	853556.98	NE	53° 23' 35.5"	526.75'
39	528098.11	853980.53	NE	53° 12' 25.5"	528.90'
38	528409.07	854394.56	NE	53° 05' 29.0"	517.80'
37	528705.82	854795.30	NE	53° 28' 51.1"	498.65'
36	529009.62	855204.23	NE	53° 23' 24.6"	509.43'
35	529253.77	855536.08	NE	53° 39' 27.0"	411.99'
34	529556.34	855942.53	NE	53° 20' 06.2"	506.70'
33	529860.58	856347.18	NE	53° 03' 41.0"	506.26'
32	530117.36	856692.56	NE	53° 22' 16.4"	430.38'
31	530406.14	857080.01	NE	53° 18' 04.7"	483.22'

US ROUTE 40


WATER TRANSMISSION MAIN

SECTION 3

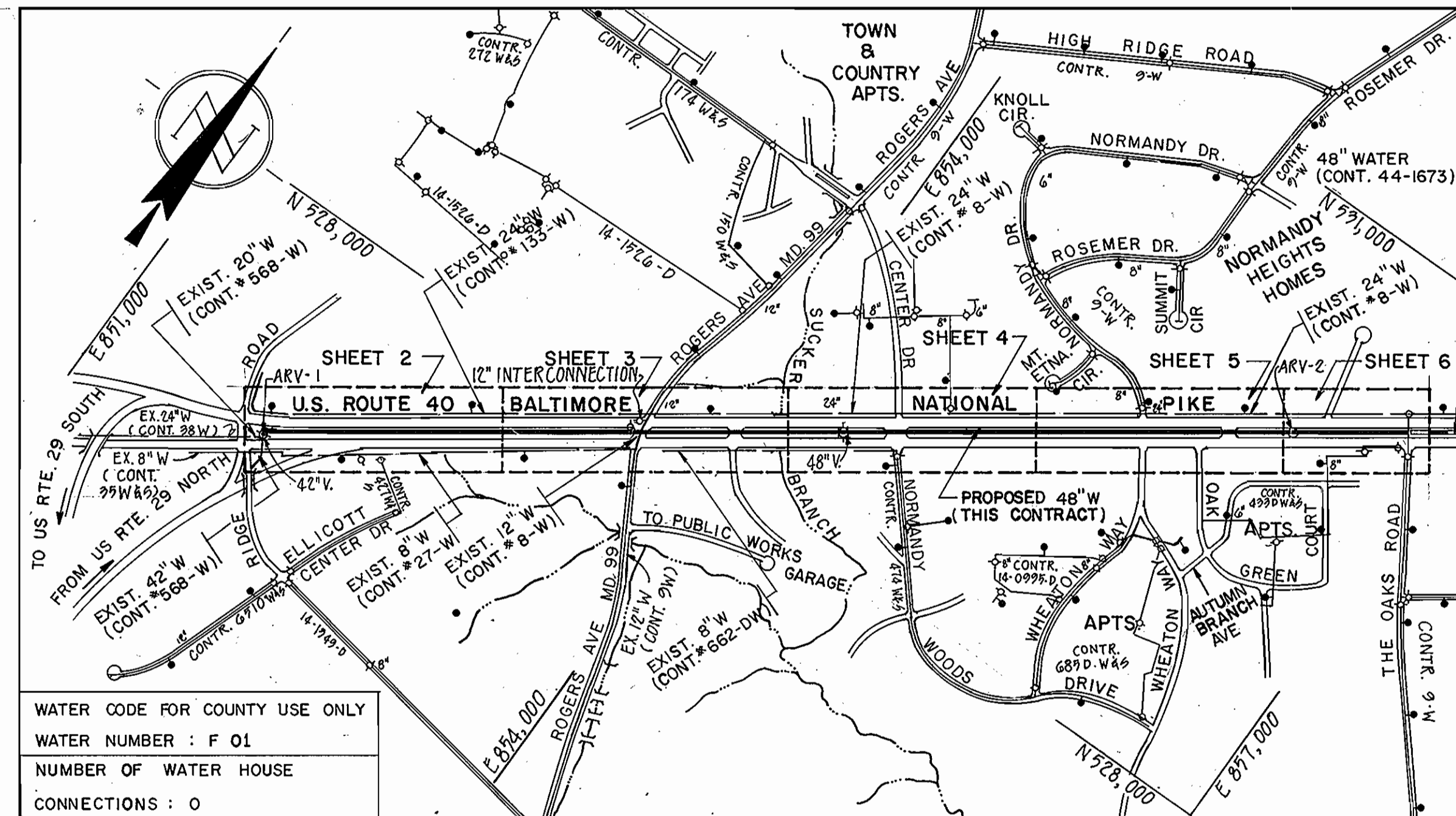
CAPITAL PROJECT W-8052

CONTRACT NO. 44-1674

GENERAL NOTES

- APPROXIMATE LOCATION OF EXISTING UTILITIES AND MAINS ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING UTILITIES, 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 STATE OF MARYLAND 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". CLEAR ALL POLES BY 2'-0" MINIMUM OR TUNNEL AS REQUIRED. THE OWNER HAS CONTACTED THE UTILITY COMPANIES AND HAS MADE ARRANGEMENTS FOR BRACING OF POLES AS SHOWN ON THE DRAWINGS. IN THE EVENT THE CONTRACTOR'S WORK REQUIRES THE BRACING OF ADDITIONAL POLES, ANY COST INCURRED BY THE OWNER FOR THE BRACING OF ADDITIONAL POLES OR DAMAGES SHALL BE DEDUCTED FROM MONEY OWED THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES TO SCHEDULE THE BRACING OF THE POLES.
- 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 DRAWINGS. 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 AND 859-7501 (TRAFFIC OPERATIONS)
 - BALTIMORE GAS AND ELECTRIC CO. - CONTRACTOR SERVICES - 850-4620
 - BALTIMORE GAS AND ELECTRIC CO. - UNDER GROUND DAMAGE CONTROL - 859-9004
 - BALTIMORE GAS AND ELECTRIC CO. - TROUBLE SHOOTING - 298-9001
 - MISS UTILITY - 1-800-257-7777
 - COLONIAL PIPELINE CO. - 795-1390
 - BUREAU OF UTILITIES, HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS - 992-2366
- WHERE CONSTRUCTION INTERFERES WITH EXISTING TRAFFIC CONTROL WIRING AND SENSORS, THEY ARE TO BE REPLACED BY SHA PERSONNEL ONLY. SEE SHA PERMIT AND SPECIFICATIONS.
- 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 MAIN.
- TOPS OF ALL WATER MAINS TO HAVE A MINIMUM OF 3 1/2 FEET COVER UNLESS OTHERWISE NOTED.
- VALVES ADJACENT TO TEES SHALL BE STRAPPED TO TEES.
- ALL HORIZONTAL/VERTICAL BENDS AND FITTINGS SHALL BE BUTTRESSED OR ANCHORED WITH CONCRETE IN ACCORDANCE WITH THE STANDARD DETAILS UNLESS OTHERWISE PROVIDED FOR ON THE DRAWINGS.
- THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEM.
- PAVING REPAIRS TO DISTURBED AREAS SHALL BE DONE IMMEDIATELY CONFORMING TO THE CONTRACT DOCUMENTS.
- PROPOSED 48-INCH WATER MAIN SHALL BE OF DUCTILE IRON PIPE CONFORMING TO AWWA AND HOWARD COUNTY STANDARDS.
- BORINGS LABELED A-SERIES EXTRACTED FROM "ROUTE 40 TRANSMISSION MAIN, CAPITAL PROJECTS W-8051 & 8052" DATED MARCH 1, 1986. PREPARED BY WHITMAN, REQUARDT & ASSOCIATES. BORINGS LABELED L-SERIES TAKEN FROM "REPORT OF GEOTECHNICAL EXPLORATION, CAPITAL PROJECT W-8052" DATED FEB. 20, 1988. PREPARED BY LAW ENGINEERING. (TYPICAL ALL SHEETS) SEE APPENDIX D TO THE SPECIFICATION FOR BORING LOGS.

ITEM	QUANTITIES		MATERIAL TYPE	SUPPLIER
	ESTIMATE	AS BUILT		
48" WATER PIPE	5,768 L.F.	5767 LF	RESTRAINED JOINT	U.S. PIPE & FOUNDRY
42" WATER PIPE	30 L.F.	32 LF	RESTRAINED JOINT	U.S. PIPE & FOUNDRY
42" BUTTERFLY VALVE	1 EA	1 EA	STREAMSEAL	A.C. VALVE INC.
42"x 90" BEND	1 EA	1 EA	DUCTILE	U.S. PIPE & FOUNDRY
48"x 42" ECCENTRIC REDUCER	1 EA	1 EA	TR. FLEX.	U.S. PIPE & FOUNDRY
48" BUTTERFLY VALVE	1 EA	1 EA	STREAMSEAL	A.C. VALVE INC.
4" AIR/VACUUM RELIEF VALVE	2 EA	2 EA	TR. FLEX.	U.S. PIPE & FOUNDRY
48" X 22 1/2" BEND	4 EA	4 EA	TR. FLEX.	U.S. PIPE & FOUNDRY
48" X 11 1/4" BEND	2 EA	2 EA	TR. FLEX.	U.S. PIPE & FOUNDRY
48" X 5 5/8" BEND	1 EA	1 EA	TR. FLEX.	U.S. PIPE & FOUNDRY
12" DIP CL 52	42 L.F.	42 LF	DUCTILE	U.S. PIPE & FOUNDRY
12" VALVE & BOX	1 EA	1 EA	CAST IRON	B.Y.C. UTILITY SUPPLY
12" 90° BEND	1 EA	1 EA	DUCTILE	U.S. PIPE & FOUNDRY
12" 22 1/2° BEND	1 EA	1 EA	DUCTILE	U.S. PIPE & FOUNDRY
8" VALVE & BOX	1 EA	1 EA	CAST IRON	U.S. PIPE & FOUNDRY
12" X 8" TAPPING SLEEVE	1 EA	1 EA	DUCTILE	U.S. PIPE & FOUNDRY
12" X 6" REDUCER	1 EA	1 EA	DUCTILE	U.S. PIPE & FOUNDRY



LOCATION MAP
SCALE: 1" = 600'

INDEX

SHEET #	DESCRIPTION
1	TITLE, LOCATION MAP AND GENERAL NOTES
2	PLAN & PROFILE
3	PLAN & PROFILE
4	PLAN & PROFILE
5	PLAN & PROFILE
6	PLAN & PROFILE
7	DETAILS FOR VALVES, CONNECTIONS AND APPURTENANCES
8	DETAILS FOR VALVES, CONNECTIONS AND APPURTENANCES
9	TRAFFIC CONTROL PLAN
10	TRAFFIC CONTROL PLAN
11	TRAFFIC CONTROL PLAN
12	SEDIMENT AND EROSION CONTROL

RESTORATION SCHEDULES HAVE BEEN PROVIDED ON THE PLANS AS A GENERAL DESCRIPTION OF THE SURFACES TO BE RESTORED. THE SCHEDULE IS NOT INTENDED TO ADDRESS SPECIFIC ITEMS TO BE REPLACED OR RESTORED. IN GENERAL, SURFACE FEATURES SHALL BE REPLACED OR RESTORED AS SPECIFIED IN THE STATE HIGHWAY ADMINISTRATION PERMIT, "IN KIND", OR AS DIRECTED BY THE ENGINEER.

1. DEVELOPER'S CERTIFICATION:

I (WE) CERTIFY THAT:

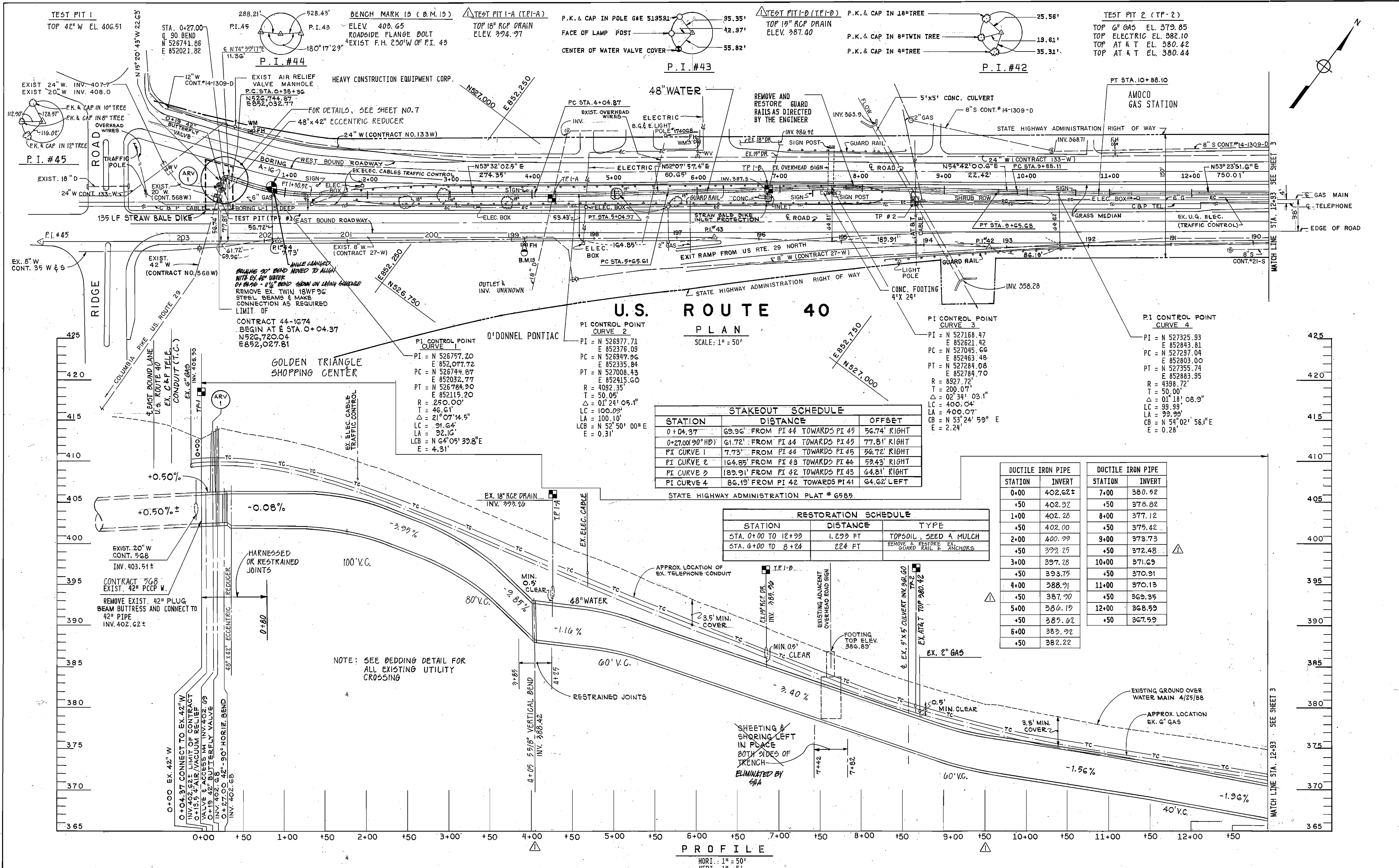
- ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE IN ACCORDANCE WITH THIS SEDIMENT AND EROSION CONTROL PLAN, AND FURTHER, AUTHORIZE THE RIGHT OF ENTRY FOR PERIODIC ON-SITE EVALUATION BY THE STATE OF MARYLAND, DEPARTMENT OF THE ENVIRONMENT SEDIMENT AND STORMWATER PROGRAM, INSPECTORS.
- ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT.

William B. Reay 5-31-88
DATE

<p>DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND</p> <p><i>James M. ...</i> 5/31/88 DIRECTOR OF PUBLIC WORKS DATE</p> <p><i>William B. Reay</i> 5-31-88 CHIEF, BUREAU OF ENGINEERING DATE</p> <p><i>...</i> 5-31-88 ACT. CHIEF, UTILITY DESIGN DIVISION DATE</p>	<p>WHITNEY BAILEY ENGINEERS COX MAGNANI</p> <p>CONSULTING ENGINEERS 1850 YORK ROAD TIMONIUM, MD 21093 301-252-6060</p>	<p>DES: J. P. H.</p> <p>DRN: S. H. B.</p> <p>CHK: J. P.</p> <p>DATE: 6/16/88</p> <p>BY NO. ELIMINATED PCCP 7/22/88</p> <p>REVISION DATE</p>	<p>VICINITY MAP & GENERAL NOTES OF THE WATER MAIN</p> <p>U.S. ROUTE 40, 48" WATER TRANSMISSION MAIN SECTION 3 (U.S. ROUTE 29 TO THE OAKS ROAD) CAPITAL PROJECT NO. W-8052 CONTRACT NO. 44-1674 ELECTION DISTRICT NO. 2 HOWARD COUNTY, MARYLAND</p> <p>SCALE AS SHOWN</p> <p>SHEET 1 OF 12</p>
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BRUNING 68150

WATER AS BUILTS 12/15/10



DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Director of Public Works: *[Signature]* DATE: 5/31/88

Chief, Bureau of Engineering: *[Signature]* DATE: 5-31-88

Chief, Bureau of Utilities: *[Signature]* DATE: 5-31-88

Chief, Utility Design Division: *[Signature]* DATE: 5-31-88

WHITNEY CONSULTING ENGINEERS
BAILEY COX MAGNANI

1850 YORK ROAD
TIMONIUM, MD 21093
301-252-6060

DES: J. P. H.
DRN: S. H. B.
CHK: J. P. J.P.H. ELIMINATED PCCP 7/22/88
DATE: 6/16/88 BY: J.P.H. ADD TPI-A & TPI-B REVISE PROFILE STA. 4+05 TO 9+50 7/11/88

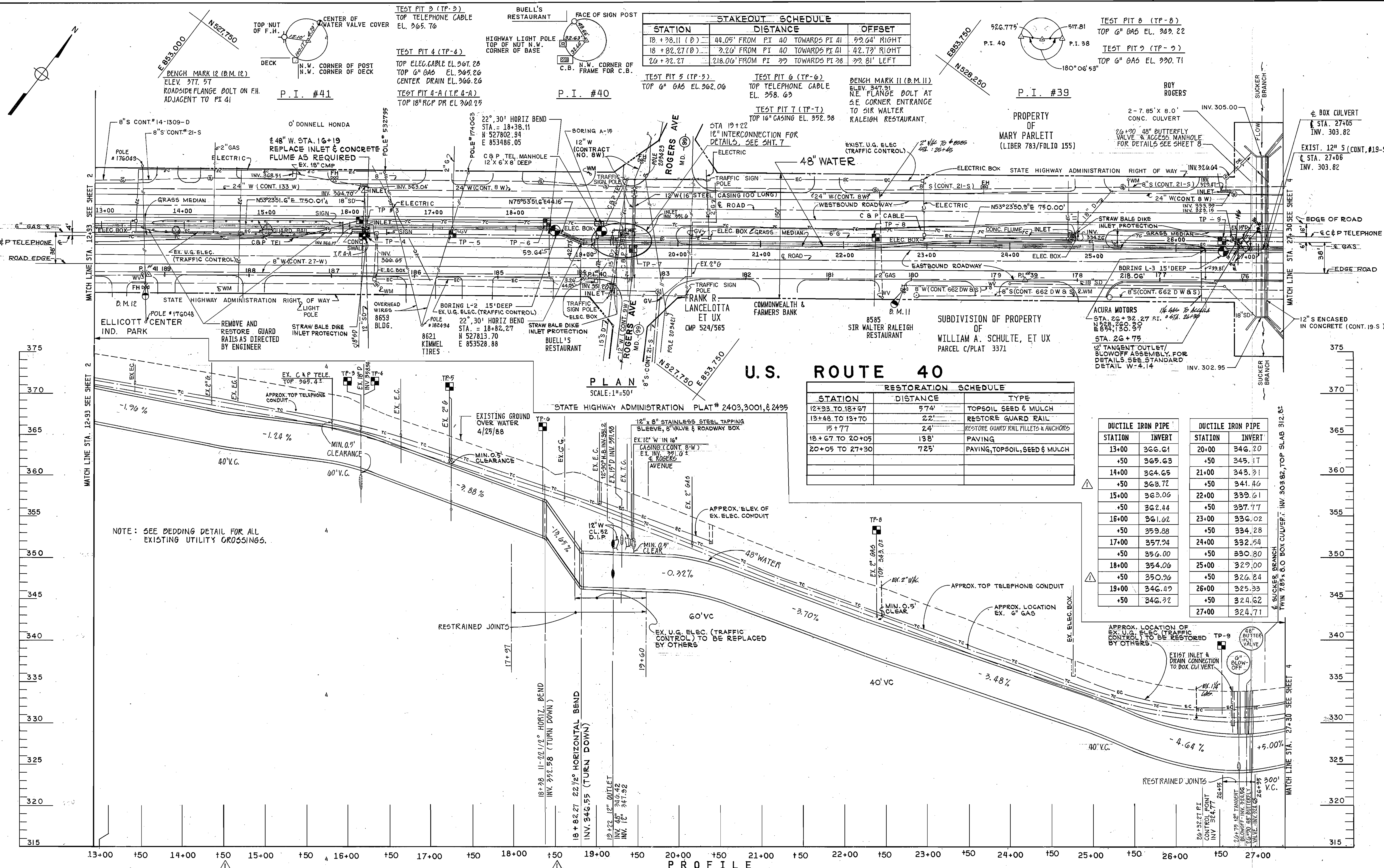
PLAN AND PROFILE OF THE WATER MAIN

600 SCALE MAP NO. 24 BLOCK NO. 6

U.S. ROUTE 40, 48" WATER TRANSMISSION MAIN SECTION 3 (U.S. ROUTE 29 TO THE OAKS ROAD)
CAPITAL PROJECT NO. W-8052
CONTRACT NO. 44-1674
ELECTION DISTRICT NO. 2
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 2 OF 12

WHERE: AS SHOWN 10/10/80



STATION	DISTANCE	OFFSET
18+38.11 (0)	44.05' FROM PI 40 TOWARDS PI 41	32.64' RIGHT
18+82.27 (0)	7.20' FROM PI 40 TOWARDS PI 41	42.73' RIGHT
20+32.27	218.00' FROM PI 39 TOWARDS PI 38	39.81' LEFT

STATION	DISTANCE	TYPE
12+93 TO 18+67	574'	TOPSOIL SEED & MULCH
13+48 TO 13+70	22'	RESTORE GUARD RAIL
15+77	24'	RESTORE GUARD RAIL FILLETS & ANCHORS
18+67 TO 20+05	138'	PAVING
20+05 TO 27+30	725'	PAVING, TOPSOIL, SEED & MULCH

STATION	INVERT	STATION	INVERT
13+00	366.61	20+00	346.20
+50	369.63	+50	345.17
14+00	364.65	21+00	343.31
+50	363.72	+50	341.46
15+00	363.06	22+00	339.61
+50	362.44	+50	337.77
16+00	361.62	23+00	336.02
+50	359.88	+50	334.28
17+00	357.74	24+00	332.54
+50	356.00	+50	330.80
18+00	354.06	25+00	329.00
+50	350.96	+50	326.84
19+00	346.49	26+00	325.33
+50	346.32	+50	324.62
		27+00	324.71

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

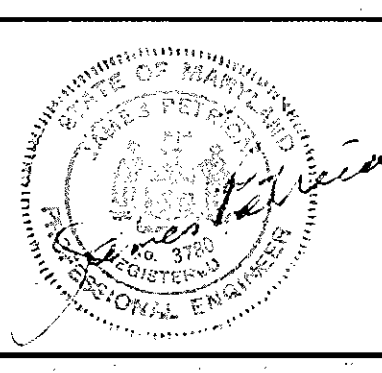
James J. ...
DIRECTOR OF PUBLIC WORKS
DATE: 5/31/88

William E. ...
CHIEF, BUREAU OF ENGINEERING
DATE: 5/31/88

John ...
CHIEF, BUREAU OF UTILITIES
DATE: 5/31/88

WHITNEY CONSULTING ENGINEERS
1850 YORK ROAD
TIMONIUM, MD 21093
301-252-6060

BAILEY COX MAGNANI



DES: J.P.H.	
DRN: H.H.	
CHK: J.P.	J.P.H. ELIMINATED PCCP 7/22/88
DATE: 6/16/88	J.P.H. ADD T.P. 4-A, REVISE PROFILE STA. 14+50 TO 18+50 7/1/88
BY NO.	REVISION

PLAN AND PROFILE OF THE WATER MAIN

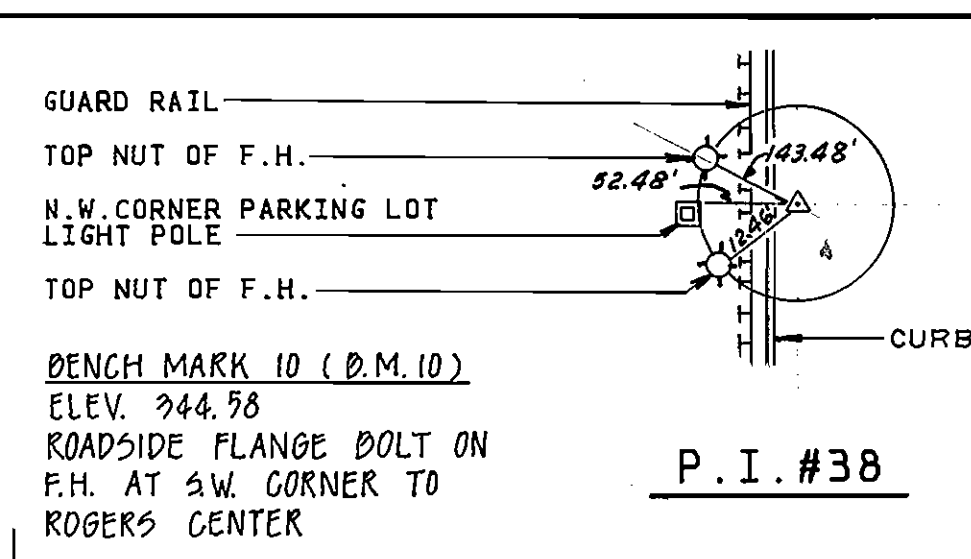
600' SCALE MAP NO. 17, 18, 24. BLOCK NO. 24, 19, 6

U.S. ROUTE 40, 48" WATER TRANSMISSION LINE SECTION 3 (U.S. ROUTE 29 TO THE OAKS ROAD)
CAPITAL PROJECT NO. W-8052
CONTRACT NO. 44-1674
ELECTION DISTRICT NO. 2
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 3 OF 12

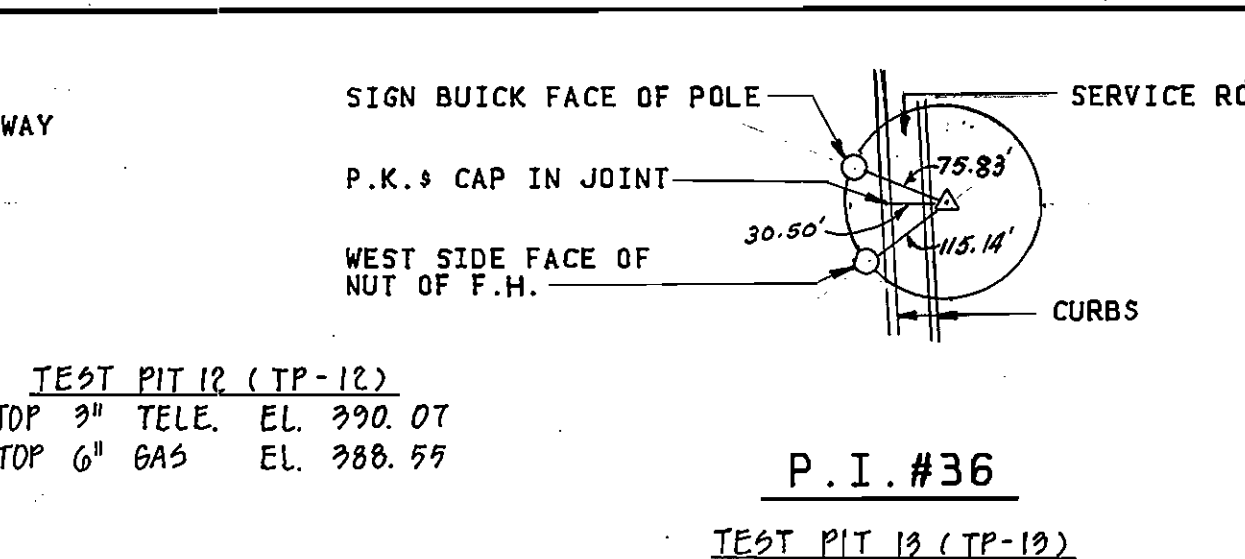
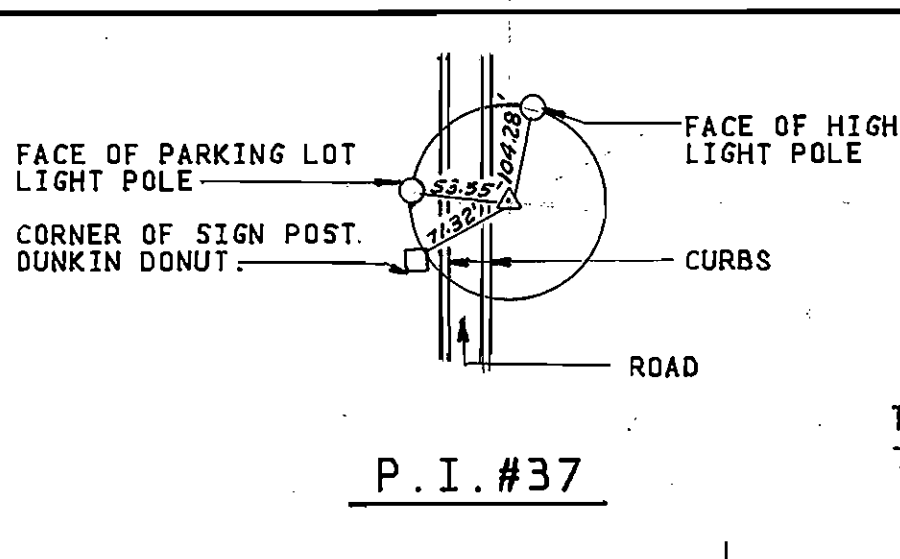
WATER AS BUILTS 10/10/80



RESTORATION SCHEDULE		
STATION	DISTANCE	TYPE
STA 27+30 TO 28+40	510'	PAVING, TOPSOIL, SEED & MULCH
STA 28+40 TO 29+25	85'	PAVING
STA 29+25 TO 40+25	710'	PAVING, TOPSOIL, SEED & MULCH

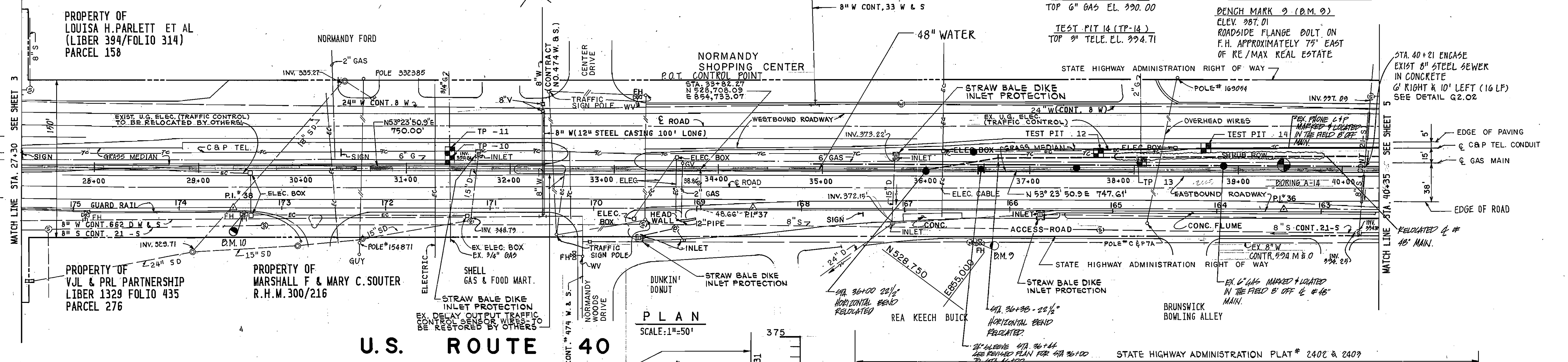
TEST PIT 10 (TP-10)
TOP 6" GAS EL 390.99

TEST PIT 11 (TP-11)
TOP 3" TELE. EL 392.40
TOP 3/4" GAS EL 392.08



STAKEOUT SCHEDULE		
STATION	DISTANCE	OFFSET
33+82.27	48.66' FROM P.I. 37 TOWARDS P.I. 38	38.86' RIGHT

BENCH MARK 9 (D.M. 9)
ELEV. 387.01
ROADSIDE FLANGE BOLT ON F.H. APPROXIMATELY 75' EAST OF RE/MAX REAL ESTATE

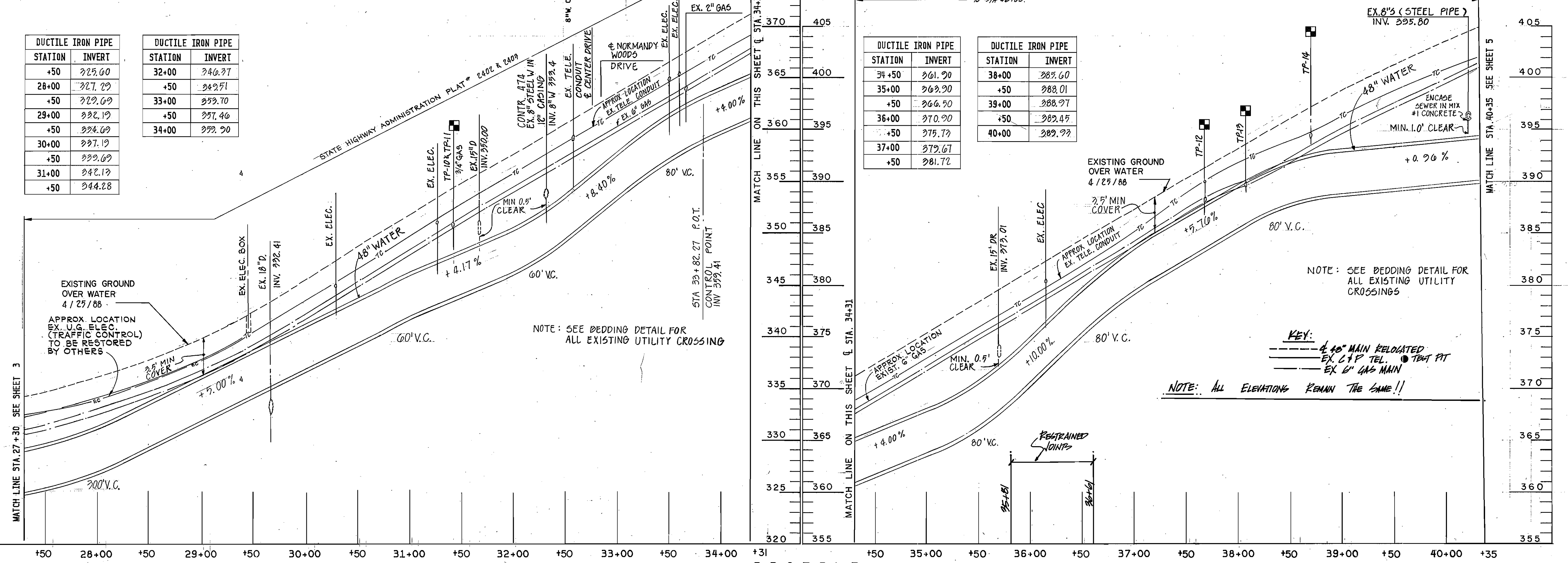


U.S. ROUTE 40

SCALE: 1"=50'

DUCTILE IRON PIPE		DUCTILE IRON PIPE	
STATION	INVERT	STATION	INVERT
+50	329.60	32+00	340.97
28+00	327.29	+50	342.51
+50	329.69	33+00	353.70
29+00	322.19	+50	357.46
+50	324.69	34+00	359.20
30+00	327.19		
+50	329.69		
31+00	342.19		
+50	344.28		

DUCTILE IRON PIPE		DUCTILE IRON PIPE	
STATION	INVERT	STATION	INVERT
34+50	361.20	38+00	383.60
35+00	362.20	+50	388.01
+50	366.20	39+00	388.97
36+00	370.20	+50	382.45
+50	375.79	40+00	382.99
37+00	379.67		
+50	381.72		



PROFILE
HOR.: 1"=50' VERT.: 1"=5'

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

James J. ... 5/31/88
DIRECTOR OF PUBLIC WORKS DATE

Richard ... 5-31-88
CHIEF, BUREAU OF UTILITIES DATE

Whitney ... 5-31-88
CHIEF, BUREAU OF ENGINEERING DATE

Ad. ... 5-31-88
Asst. CHIEF, UTILITY DESIGN DIVISION DATE

WHITNEY
BAILEY
COX
MAGNANI

CONSULTING
ENGINEERS
1850 YORK ROAD
TIMONIUM, MD 21093
301-252-6060



DES: J.P.H.	
DRN: H.H.	
CHK: J.P.	
DATE: 6/10/88	
J.P.H.	ELIMINATED PCCP
BY NO.	REVISION
	7/22/88

PLAN AND PROFILE
OF
THE WATER MAIN

600' SCALE MAP NO. 18 BLOCK NO. 19

U.S. ROUTE 40, 48" WATER TRANSMISSION MAIN,
SECTION 3 (U.S. ROUTE 29 TO THE OAKS ROAD)
CAPITAL PROJECT NO. W-8052
CONTRACT NO. 44-1674
ELECTION DISTRICT NO. 2
HOWARD COUNTY, MARYLAND

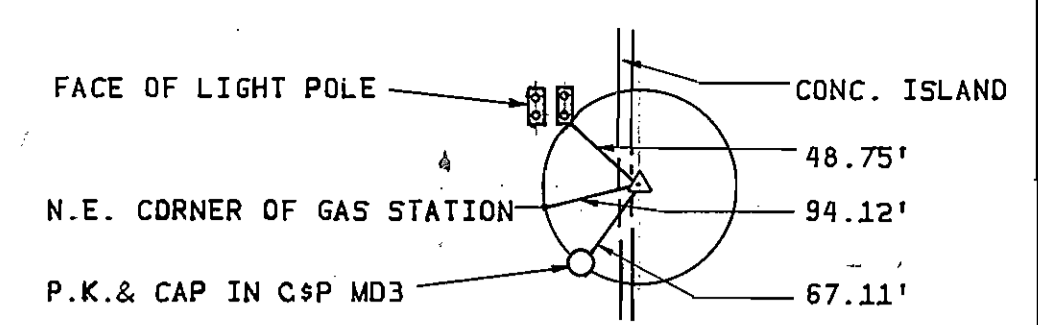
SCALE AS SHOWN

SHEET 4 OF 12

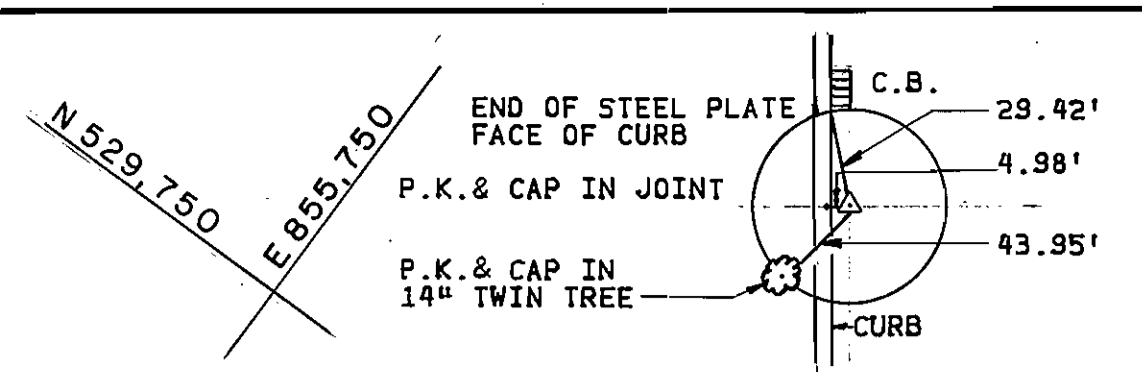
WATER AS BUILT'S 10/10

TEST PIT 15 (TP-15)
TOP 6" GAS EL. 404.97

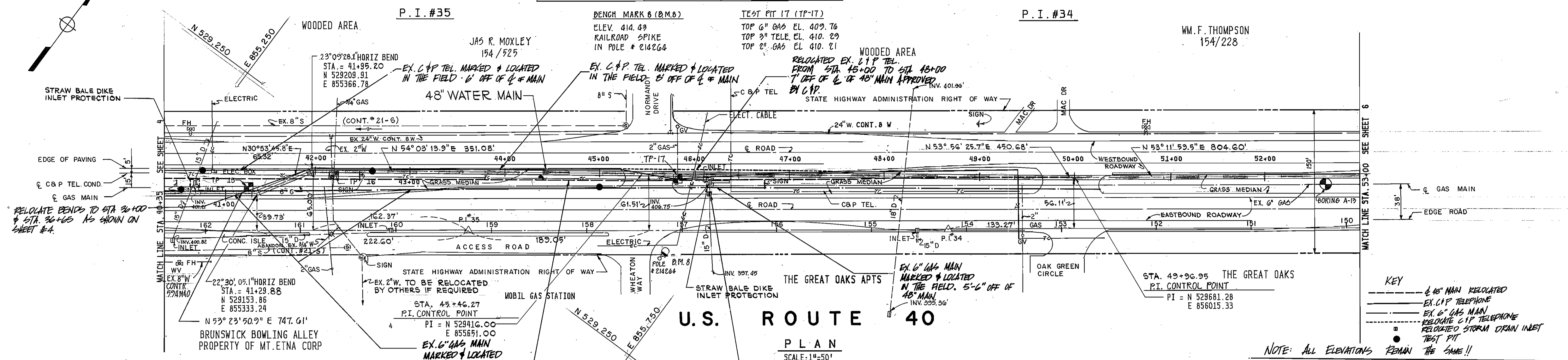
TEST PIT 16 (TP-16)
TOP 3" TELE. EL. 407.11
TOP 2" WATER EL. 406.89
TOP 3/4" GAS EL. 406.61



RESTORATION SCHEDULE		
STATION	DISTANCE	TYPE
40+95 TO 41+32	37'	PAVING
41+32 TO 45+26	394'	TOPSOIL, SEED, & MULCH
45+26 TO 47+74	248'	PAVING
47+74 TO 49+66	192'	TOPSOIL, SEED & MULCH
49+66 TO 50+30	64'	PAVING
50+30 TO 53+00	270'	PAVING, TOPSOIL, SEED & MULCH



STAKEOUT SCHEDULE		
STATION	DISTANCE	OFFSET
41+29.88 (0)	222.00 FROM PI-35 TOWARDS PI-36	39.73' RIGHT
41+95.20 (0)	162.37 FROM PI-35 TOWARDS PI-36	65.00' RIGHT
PI 45+46.27	185.05 FROM PI-35 TOWARDS PI-36	61.91' LEFT
PI 49+96.95	183.27 FROM PI-34 TOWARDS PI-33	56.11' LEFT

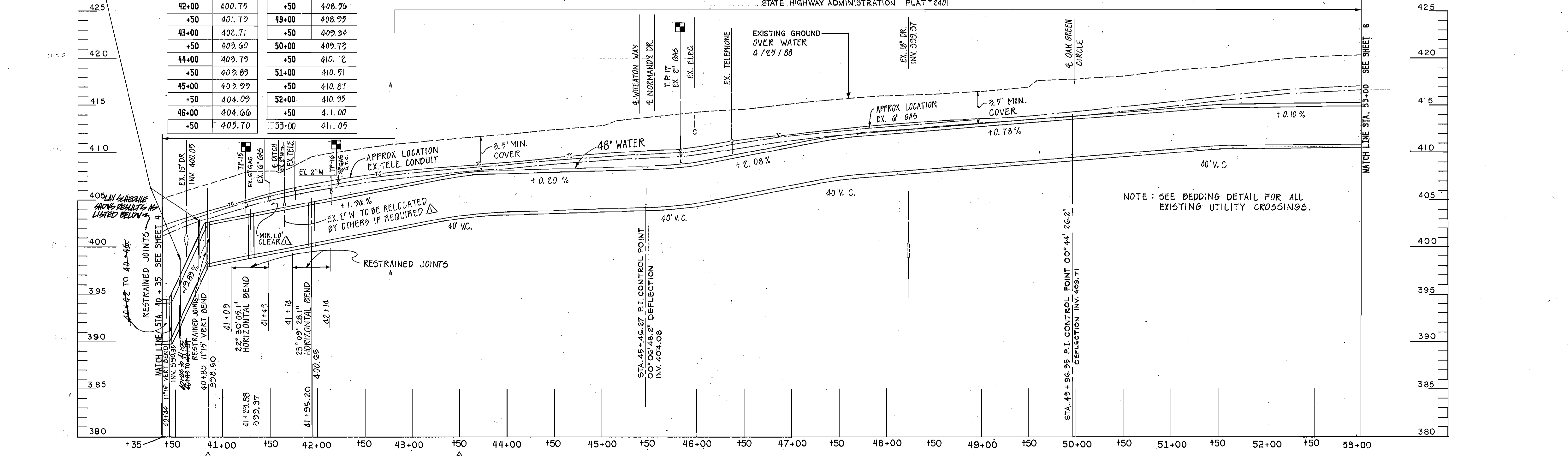


DUCTILE IRON PIPE		DUCTILE IRON PIPE	
STATION	INVERT	STATION	INVERT
+50	391.74	47+00	406.74
41+00	398.79	+50	407.68
+50	399.77	48+00	408.17
42+00	400.75	+50	408.56
+50	401.72	49+00	408.95
43+00	402.71	+50	409.34
+50	403.60	50+00	409.72
44+00	403.79	+50	410.12
+50	403.89	51+00	410.51
45+00	403.99	+50	410.87
+50	404.09	52+00	410.95
46+00	404.66	+50	411.00
+50	405.70	53+00	411.05

STATIONS 40+55 AND 40+75
PROVIDE MIX NO. 3 CONCRETE
FRICTION BLOCKS - SEE DETAILS
ON SHEET 7

KEY
 - - - - - 48" MAIN RELOCATED
 - - - - - EX. C/P TELEPHONE
 - - - - - EX. 6" GAS MAIN
 - - - - - RELOCATED C/P TELEPHONE
 - - - - - RELOCATED STORM DRAIN INLET
 - - - - - TEST PIT

NOTE: ALL ELEVATIONS REMAIN THE SAME!!



PROFILE
HORIZ. 1"=50' VERT. 1"=5'

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Director of Public Works: *[Signature]* DATE: 5-31-88

Chief, Bureau of Engineering: *[Signature]* DATE: 5-31-88

Chief, Bureau of Utilities: *[Signature]* DATE: 5-31-88

WHITNEY CONSULTING ENGINEERS
BAILEY COX MAGNANI
1850 YORK ROAD
TIMONUM, MD 21093
301-252-6060

DES: J.P.H.
DRN: R.D.H.
CHK: J.P.
DATE: 6/11/88

ELIMINATED PCCP
REVISE PROFILE PLOT STA. 40+85 TO STA. 43+90, ADD NOTES
7/22/88

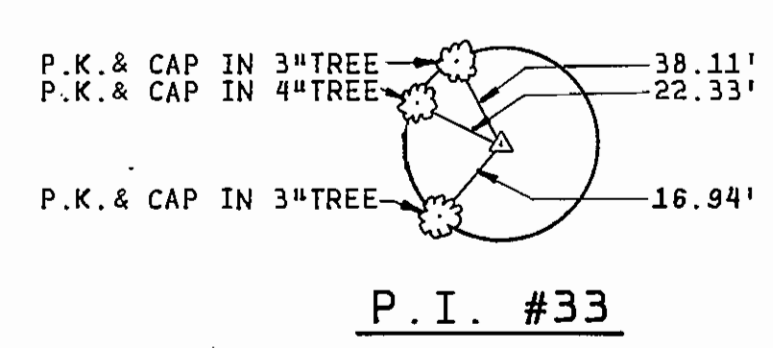
PLAN AND PROFILE OF THE WATER MAIN

600' SCALE MAP NO. 18 BLOCK NO. 19

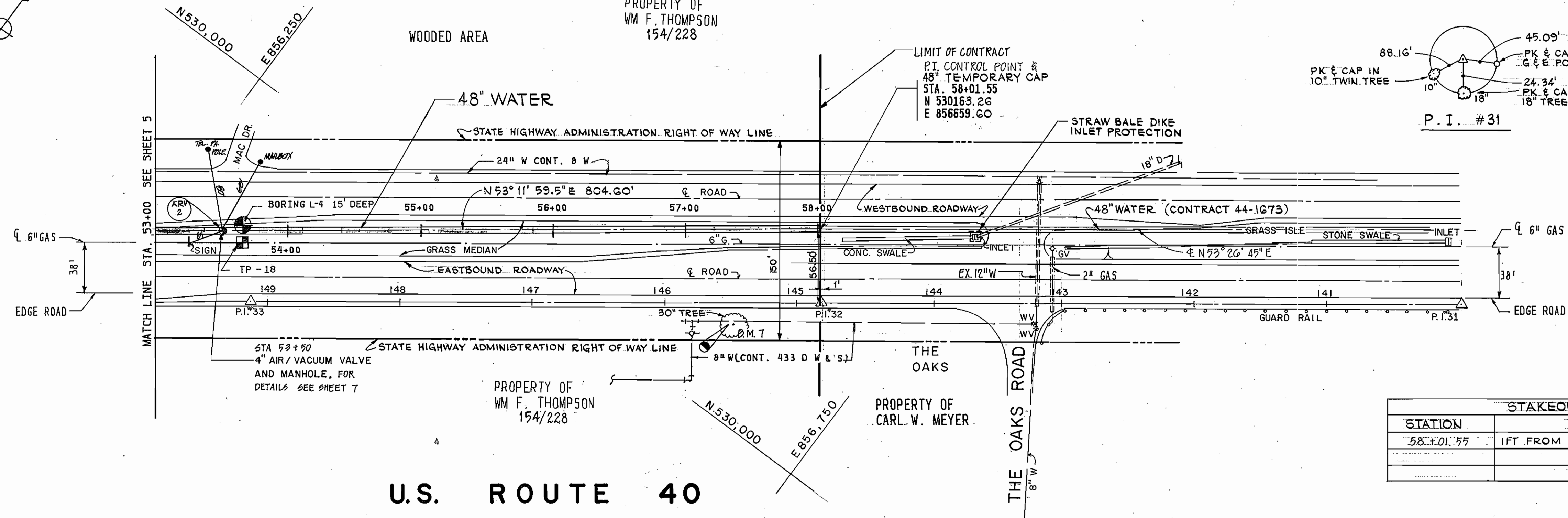
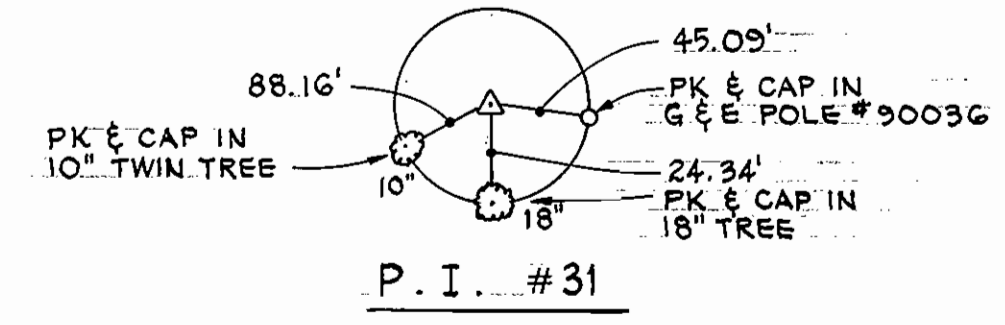
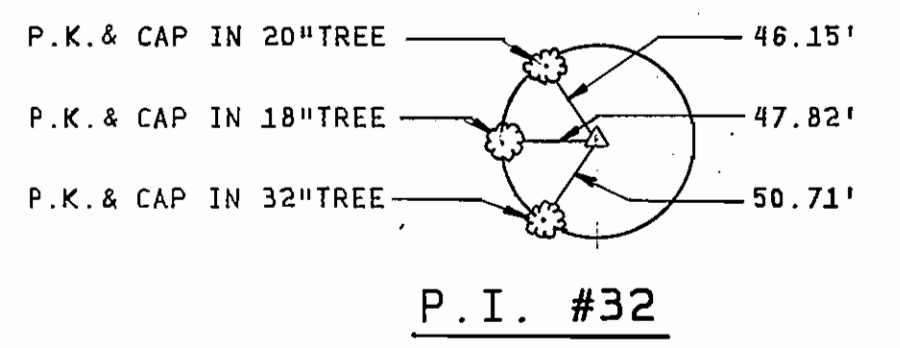
U.S. ROUTE 40, 48" WATER TRANSMISSION MAIN SECTION 3 (U.S. ROUTE 29 TO THE OAKS ROAD)
CAPITAL PROJECT NO. W-8052
CONTRACT NO. 44-1674
ELECTION DISTRICT NO. 2
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
SHEET 5 OF 12

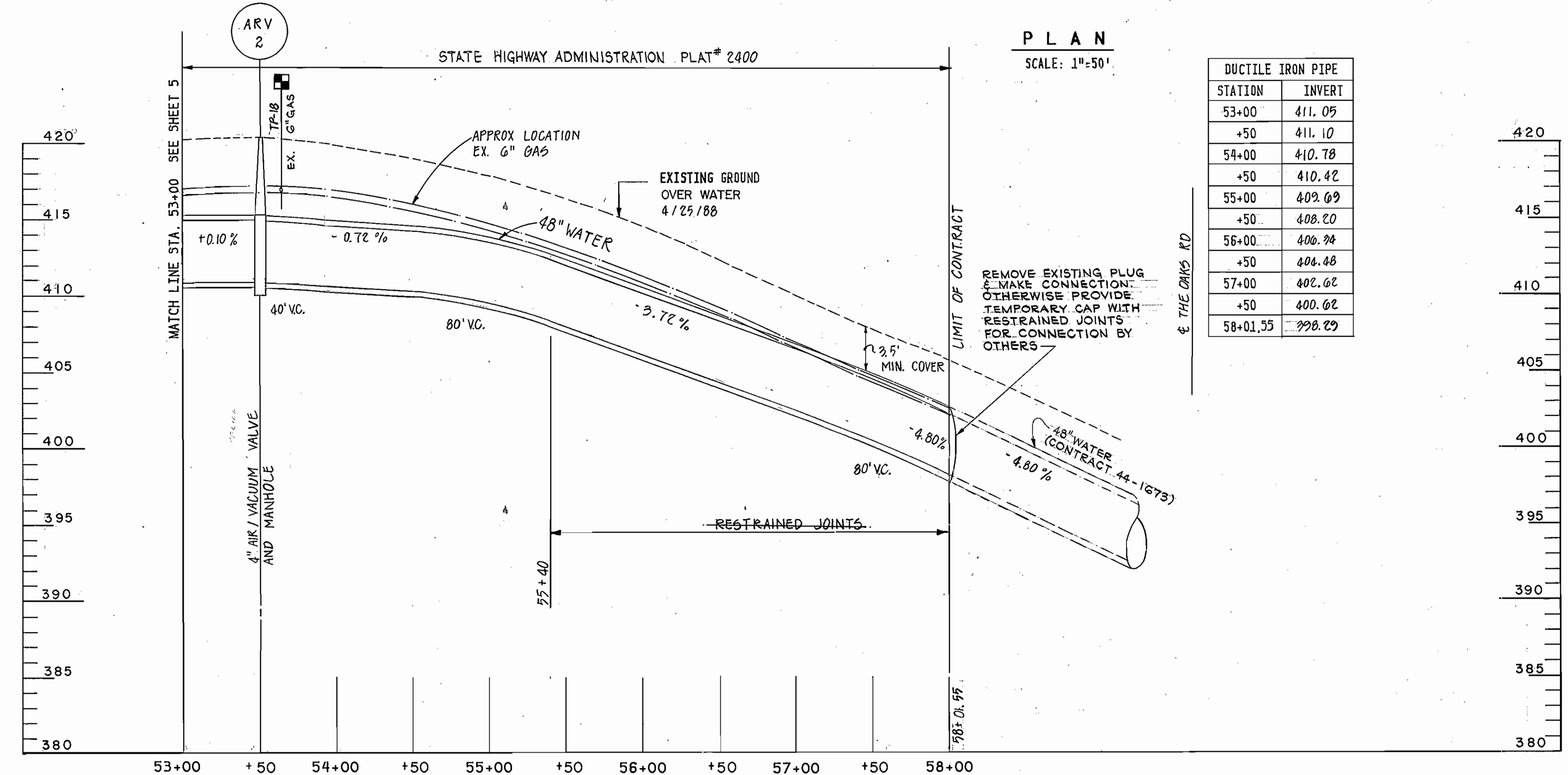
WATER "AS-BUILT" 8/1/88



TEST PIT 18 (TP-18)
 TOP 6\"/>



STAKEOUT SCHEDULE		
STATION	DISTANCE	OFFSET
58+01.55	1FT FROM PI-32 TOWARDS PI-31	56.70' LEFT



DUCTILE IRON PIPE	
STATION	INVERT
53+00	411.05
+50	411.10
54+00	410.78
+50	410.42
55+00	409.69
+50	408.20
56+00	406.74
+50	404.48
57+00	402.62
+50	400.62
58+01.55	398.29

RESTORATION SCHEDULE		
STATION	DISTANCE	TYPE
53+00 TO 53+66	66'	PAVING
53+66 TO 58+02	436'	TOPSOIL, SEED & MULCH

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

James L. ... 5-31-88
 DIRECTOR OF PUBLIC WORKS DATE

Michael S. ... 5-31-88
 CHIEF, BUREAU OF ENGINEERING DATE

John ... 5-31-88
 CHIEF, BUREAU OF UTILITIES DATE

John ... 5-31-88
 ACT. CHIEF, UTILITY DESIGN DIVISION DATE

WHITNEY
 BAILEY
 COX
 MAGNANI

CONSULTING
 ENGINEERS
 1850 YORK ROAD
 TIMONUM, MD 21093
 301-252-6060



DES: J.P.H.
 DRN: R.D.H.
 CHK: J.P.
 DATE: 6/10/88

J.P.H.
 BY NO. ELIMINATED PCCP 7/22/88

REVISION DATE

PLAN AND PROFILE
 OF
 THE WATER MAIN

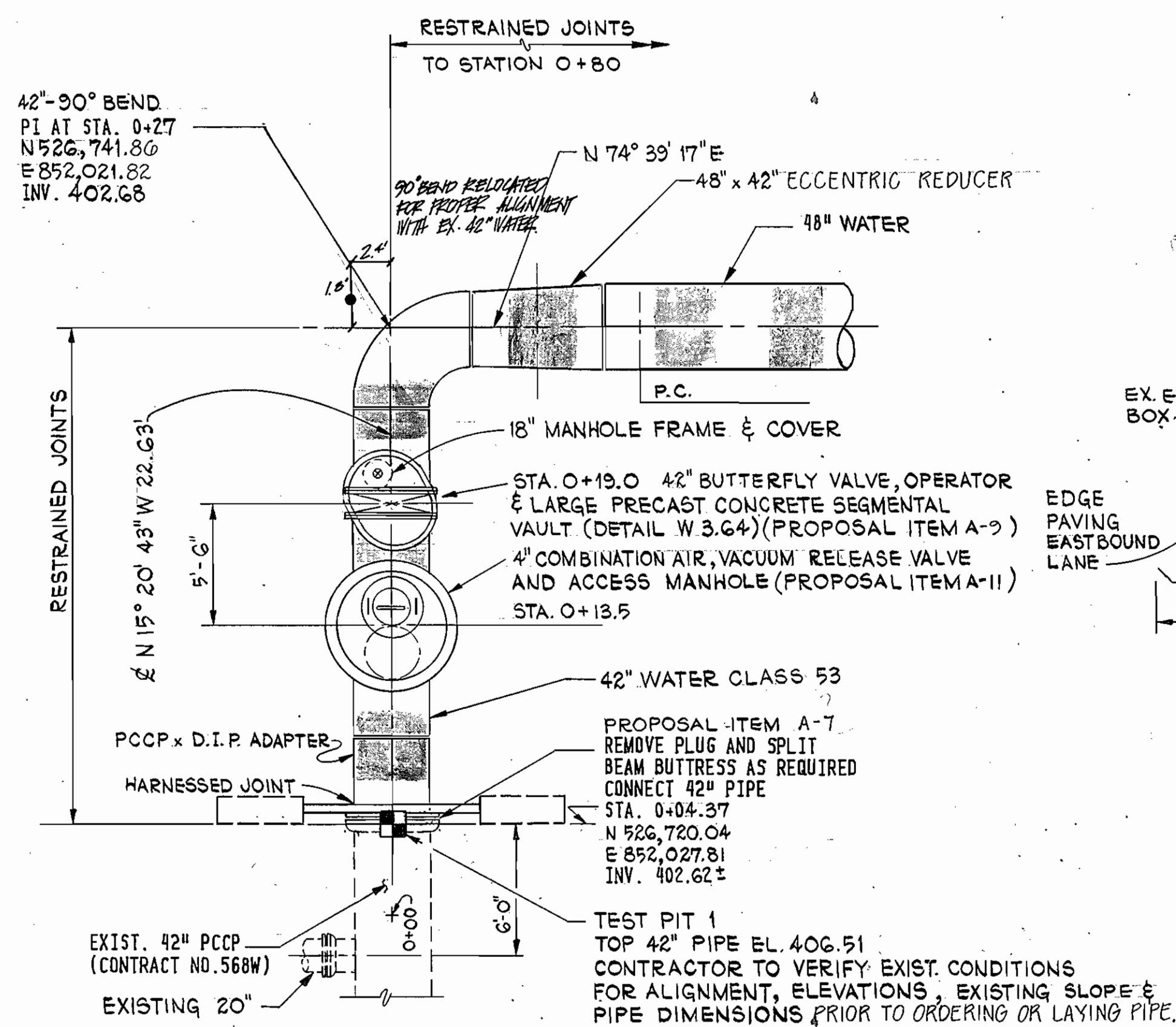
600' SCALE MAP NO. 18 BLOCK NO. 19

U.S. ROUTE 40, 48" WATER TRANSMISSION MAIN
 SECTION 3 (U.S. ROUTE 29 TO THE OAKS ROAD)
 CAPITAL PROJECT NO. W-8052
 CONTRACT NO. 44-1674
 ELECTION DISTRICT NO. 2
 HOWARD COUNTY, MARYLAND

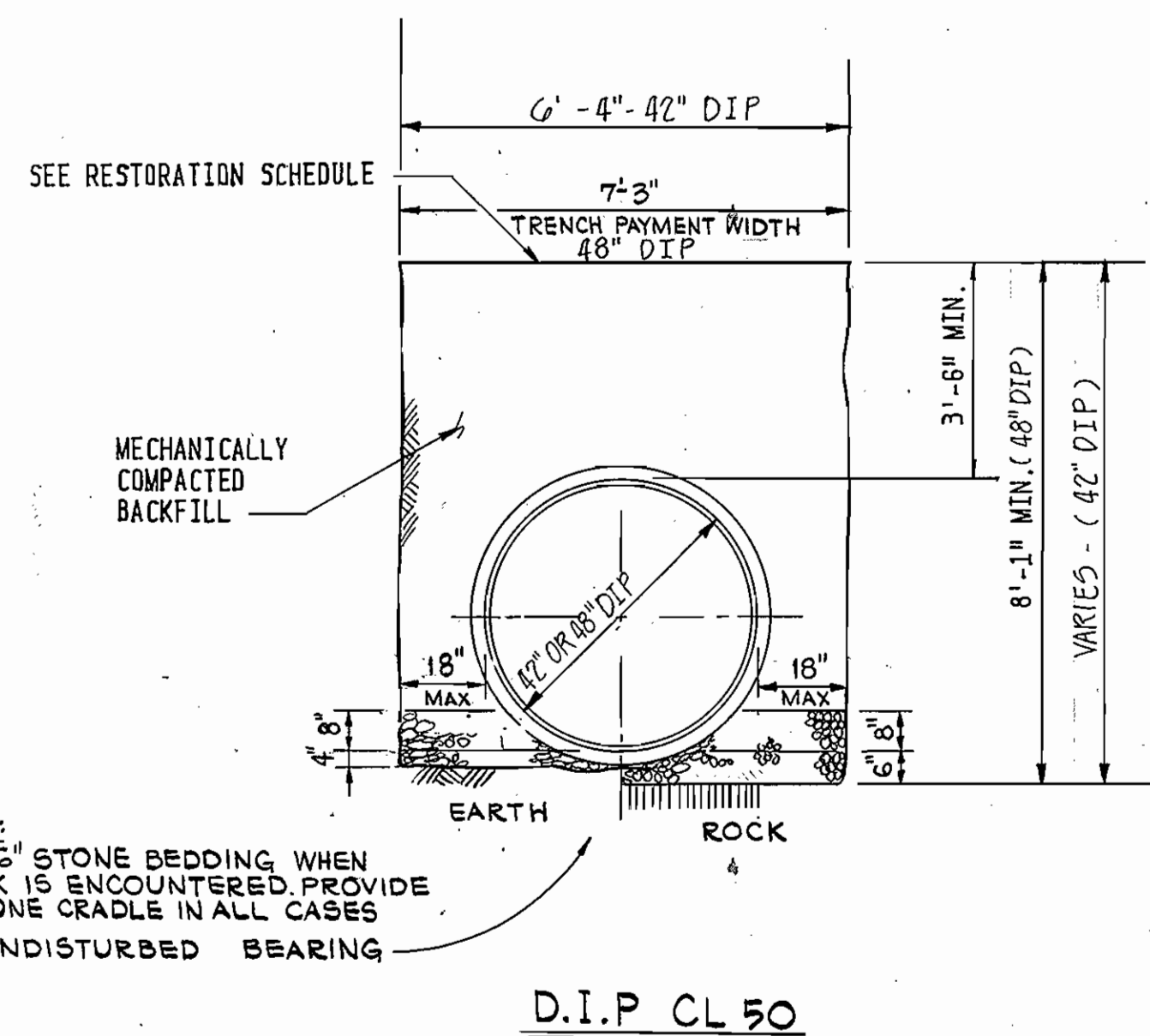
SCALE
 AS
 SHOWN

SHEET
 6 OF 12

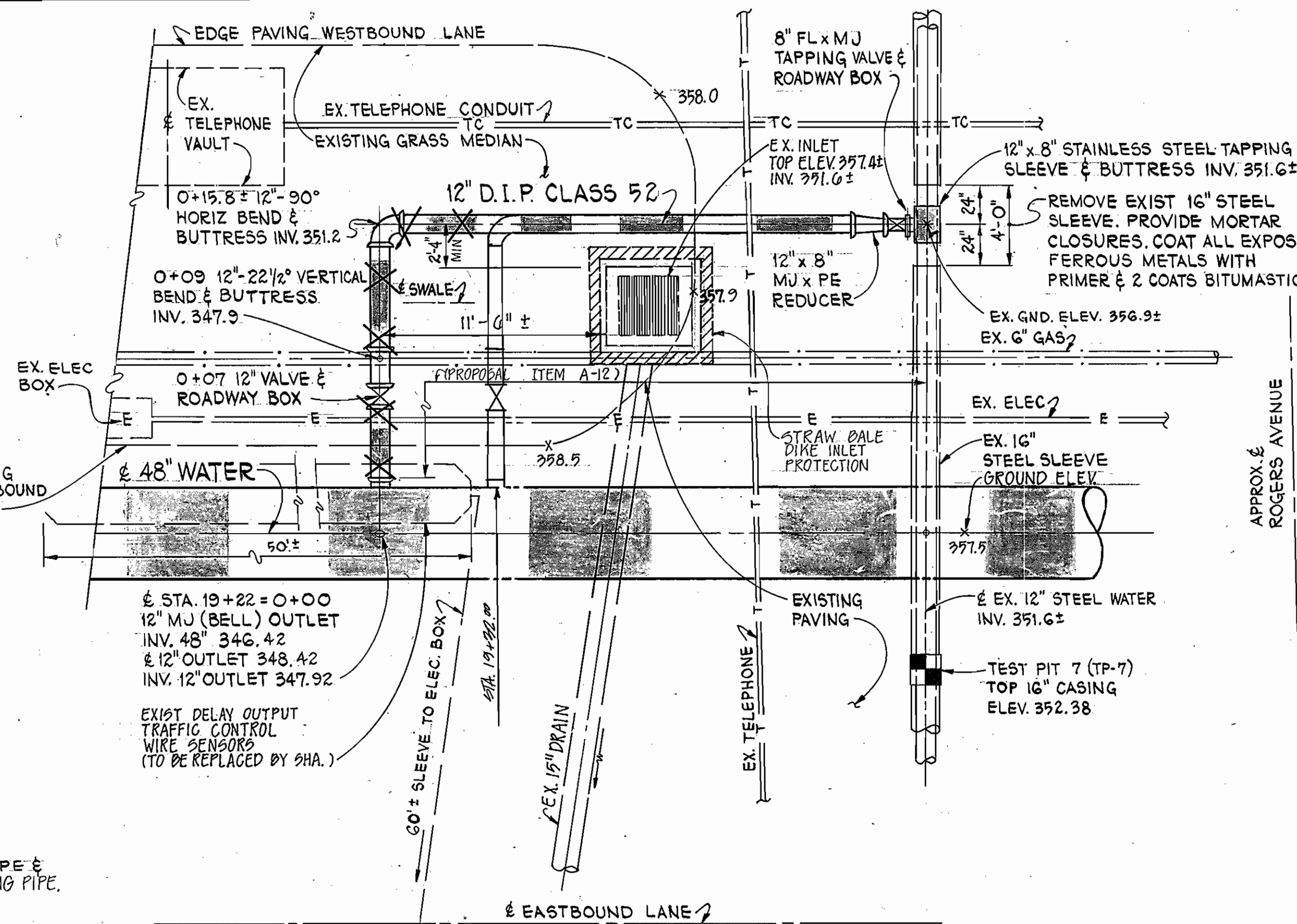
NOTE: "NO BUILDS" 11/10/80



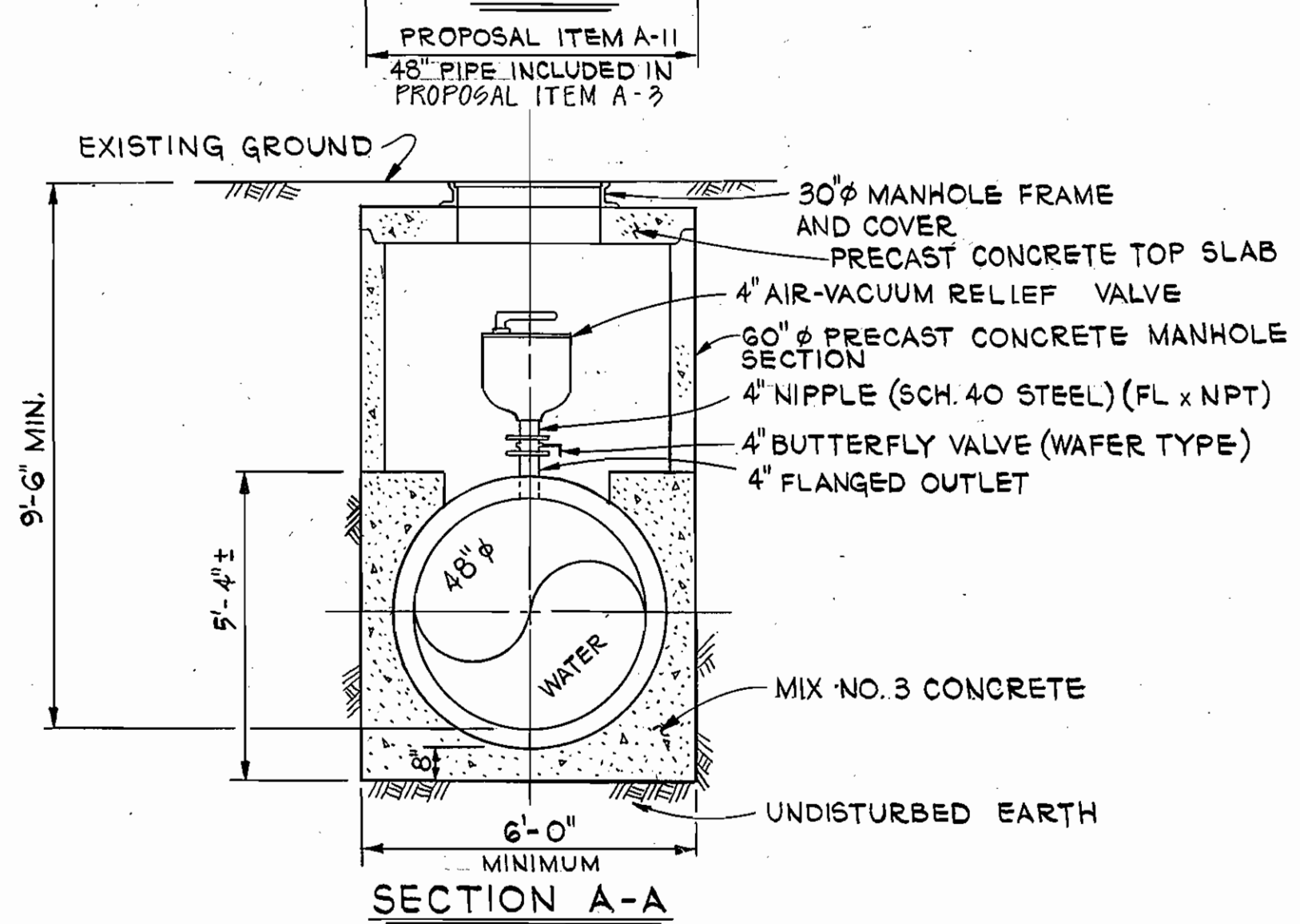
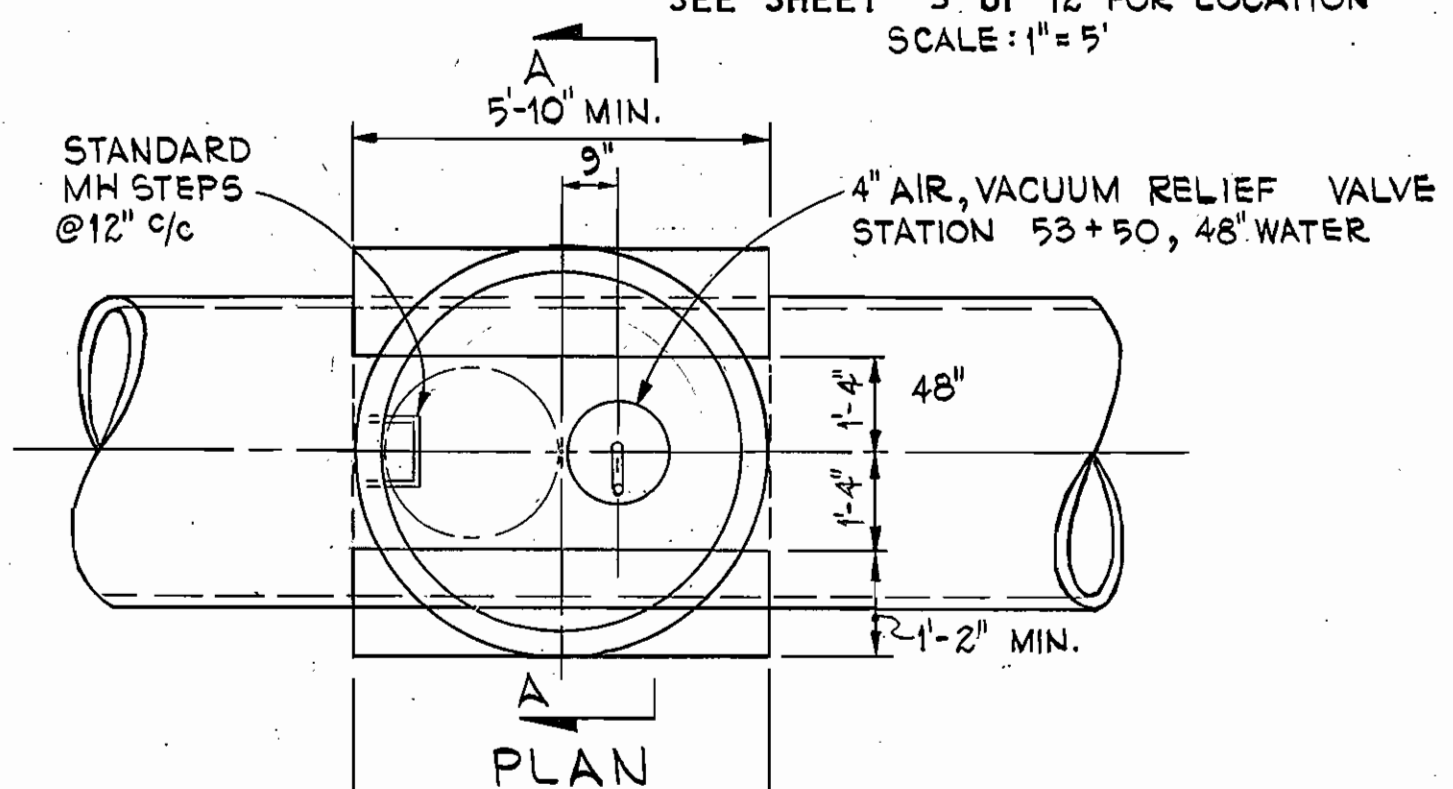
CONNECTION DETAILS TO EXISTING 42" WATER AT STA. O+04.37
 SEE SHEET 2 OF 12 FOR LOCATION
 SCALE: 3/16" = 1'-0"



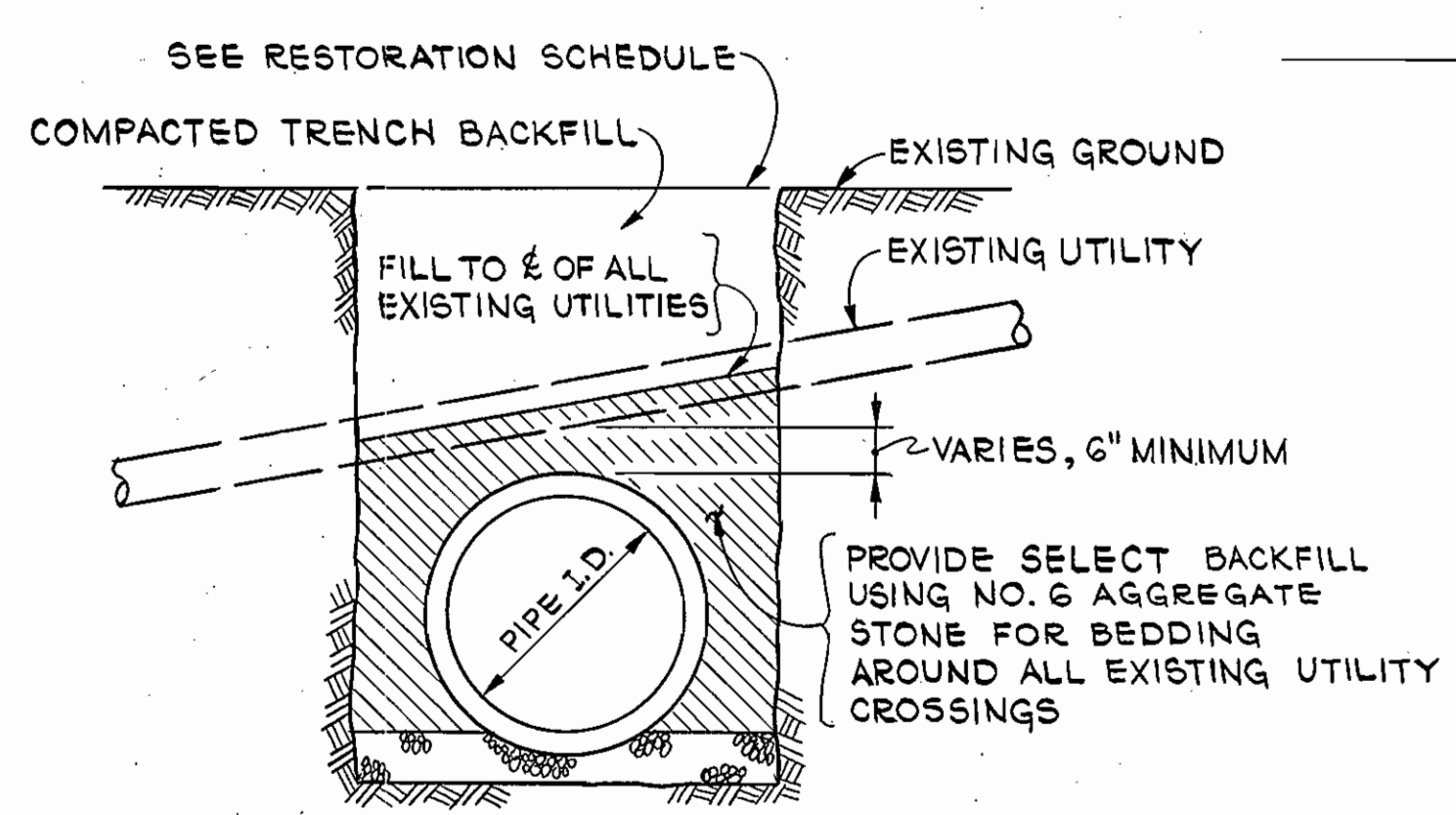
TYPICAL TRENCH DETAIL
 (SCALE: 3/8" = 1'-0")



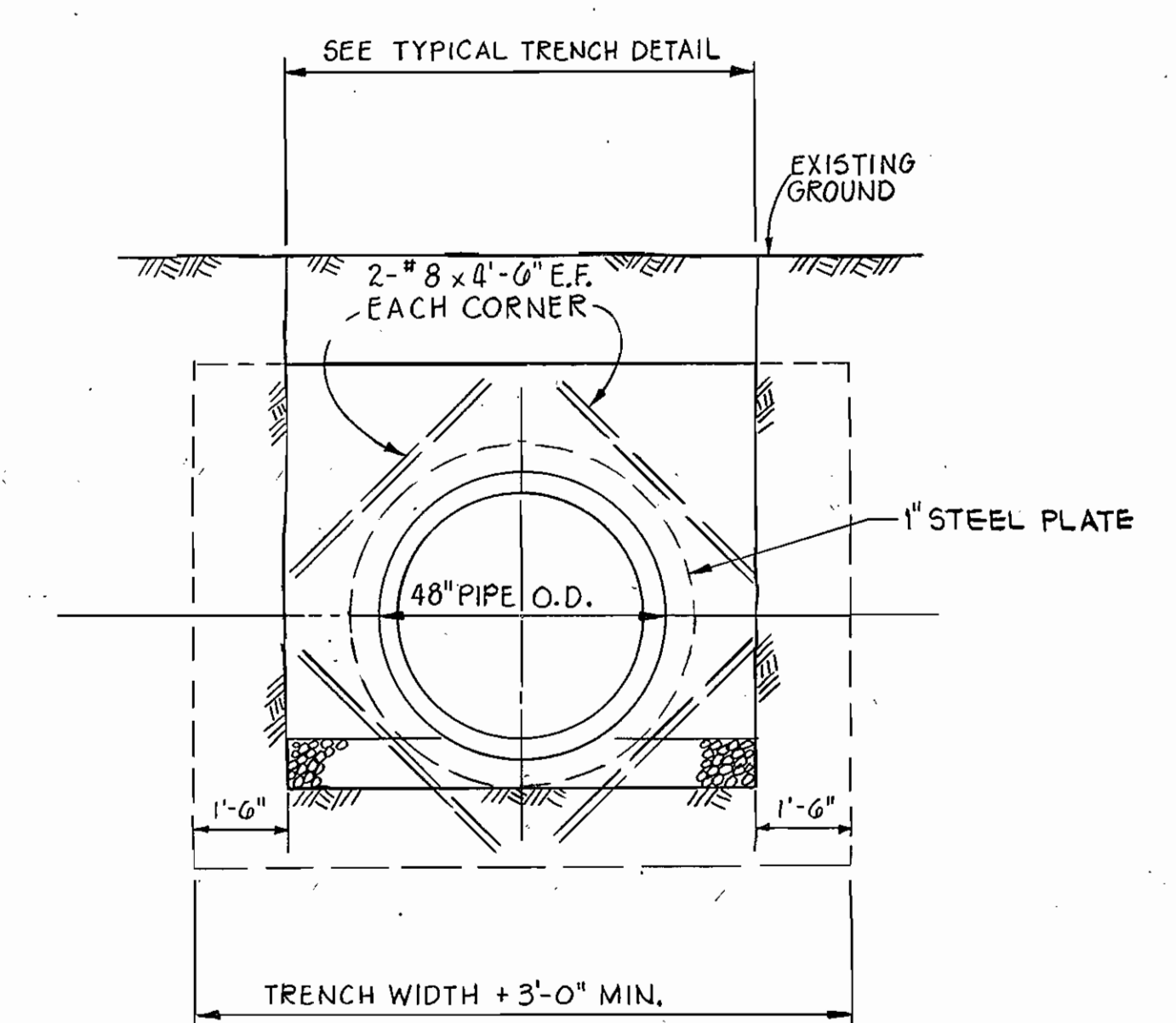
INTERCONNECTION DETAIL TO EXISTING 12" WATER-ROGERS AVENUE
 SEE SHEET 3 OF 12 FOR LOCATION
 SCALE: 1" = 5'



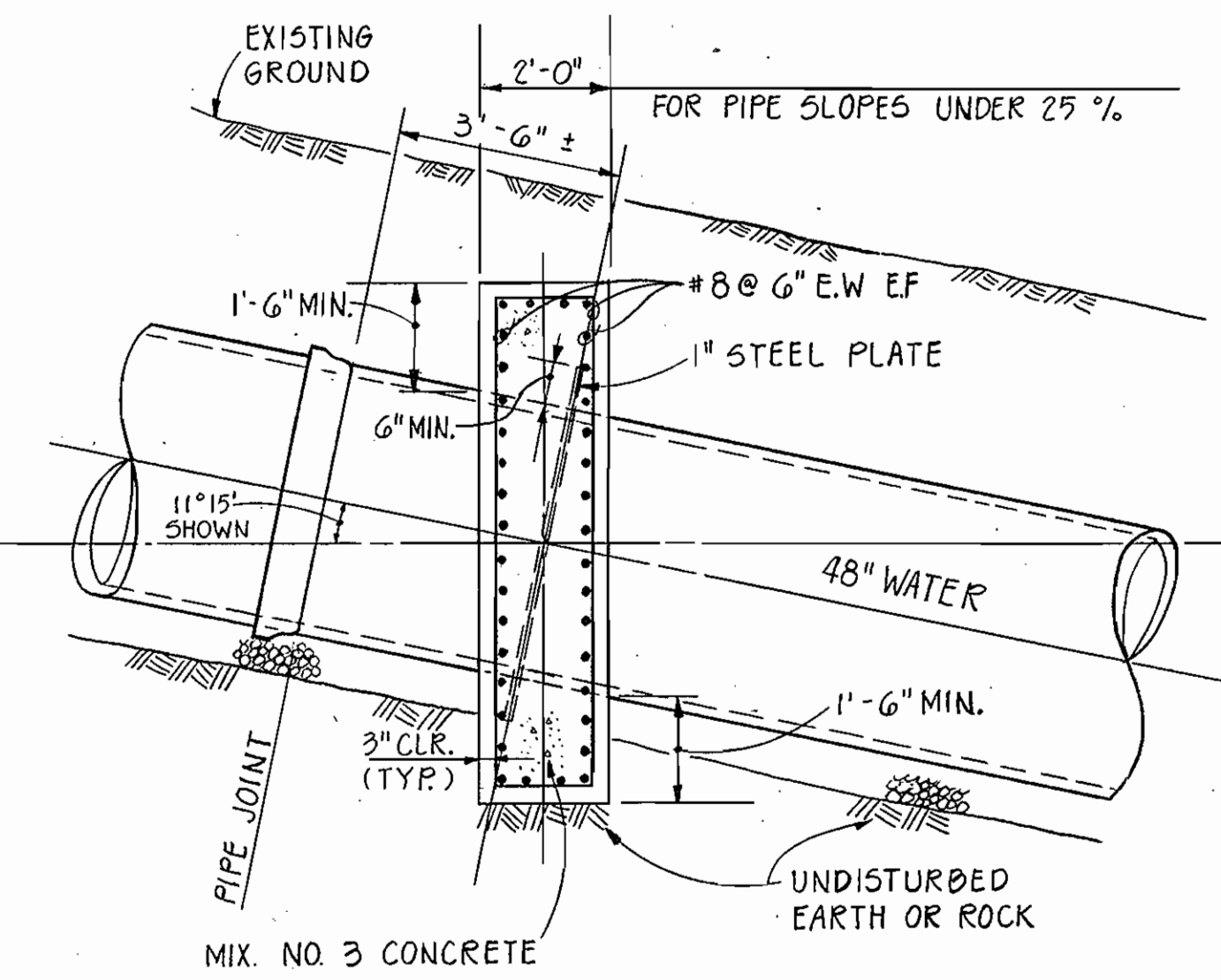
AIR RELEASE VALVE MANHOLE
 SCALE: 3/8" = 1'-0"



BEDDING FOR EXISTING UTILITY CROSSING
 NOT TO SCALE



ELEVATION



SECTION

FRICTION BLOCK DETAIL
 SCALE: 3/8" = 1'-0"
 FOR LOCATIONS OF FRICTION BLOCKS SEE SHEET 9
 NOTE: THE COST OF FRICTION BLOCKS IS TO BE INCLUDED IN THE PRICE BID PER LINEAL FOOT OF PIPE.

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 Director of Public Works: *Robert A. Bailey*
 Chief, Bureau of Engineering: *Ray S. ...*
 Chief, Bureau of Utilities: *Robt. ...*
 Chief, Utility Design Division: *Don ...*

WHITNEY BAILEY
 CONSULTING ENGINEERS
 1850 YORK ROAD
 TIMONIUM, MD 21093
 301-252-6060

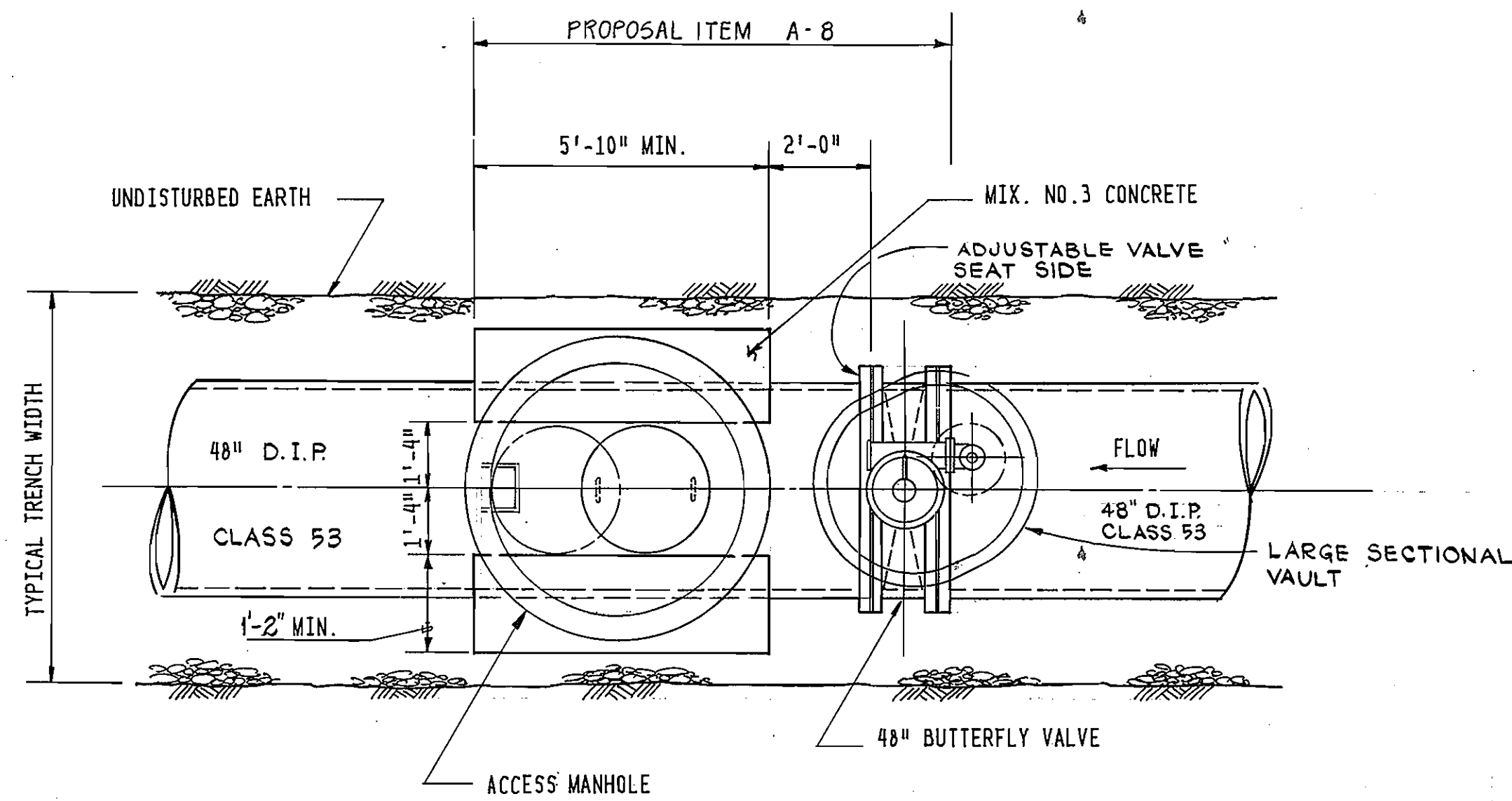
DES: J.P.H.				
DRN: R.D.H.				
CHK: J.P.				
DATE: 6/16/88	J.P.H.	ELIMINATED PCCP	7/22/88	
BY: NO.		REVISION	DATE	

DETAILS FOR VALVES, CONNECTIONS AND APPURTENANCES

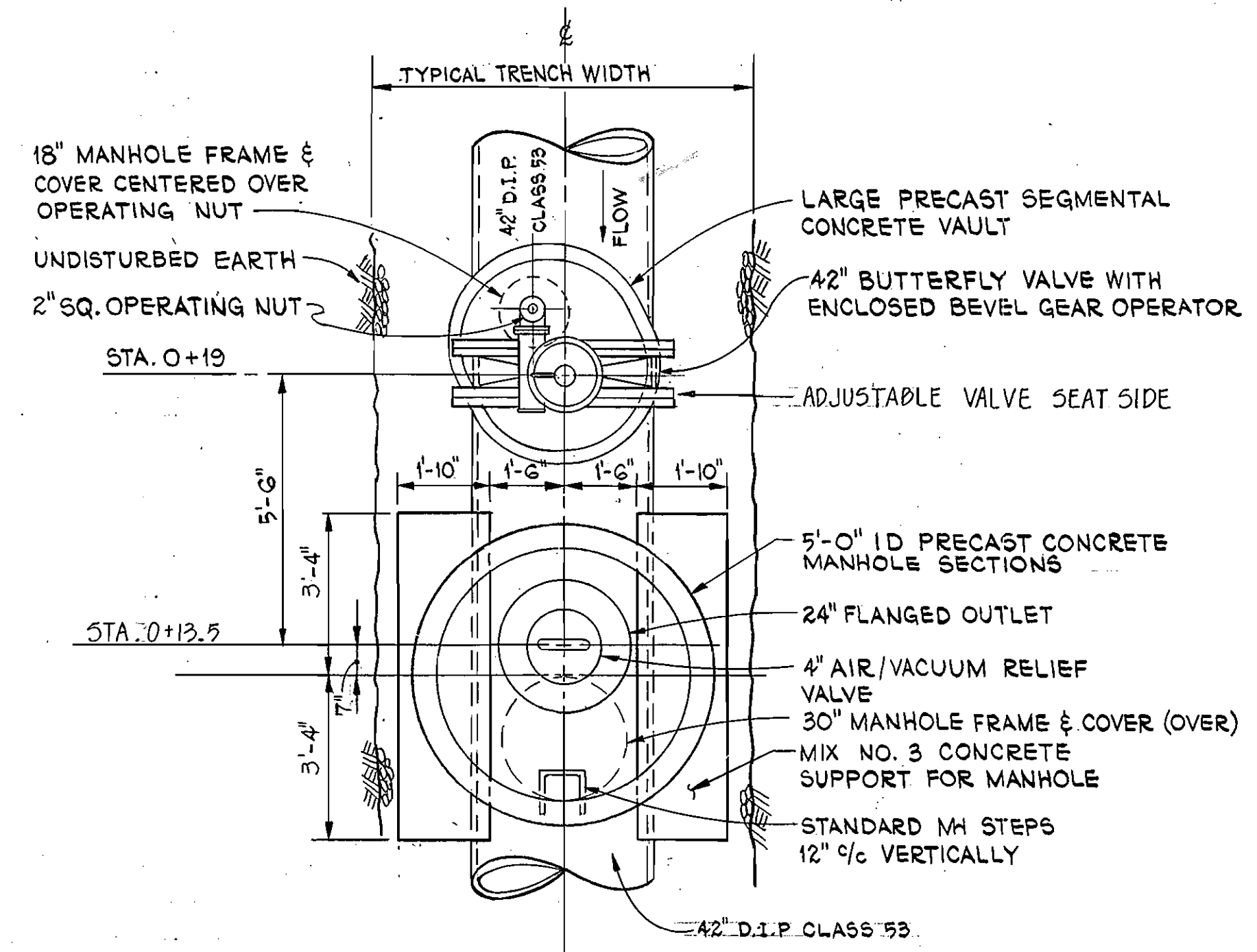
U.S. ROUTE 40, 48" WATER TRANSMISSION MAIN SECTION 3 (U.S. ROUTE 29 TO THE OAKS ROAD)
 CAPITAL PROJECT NO. W-8052
 CONTRACT NO. 44-1674
 ELECTION DISTRICT NO. 2
 HOWARD COUNTY, MARYLAND

SCALE AS SHOWN
 SHEET 7 OF 12

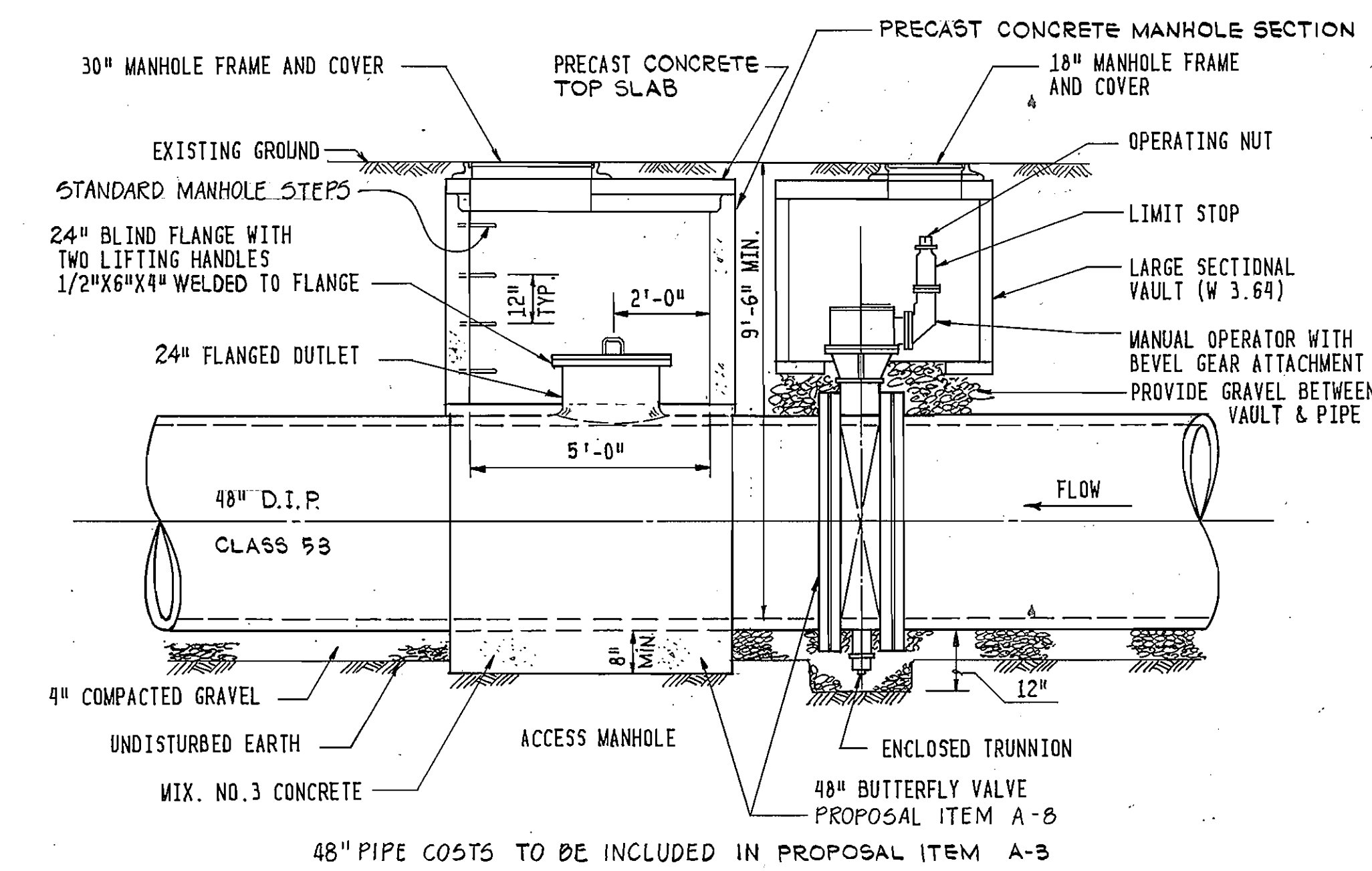
NO BUILTS 12/10/88



PLAN



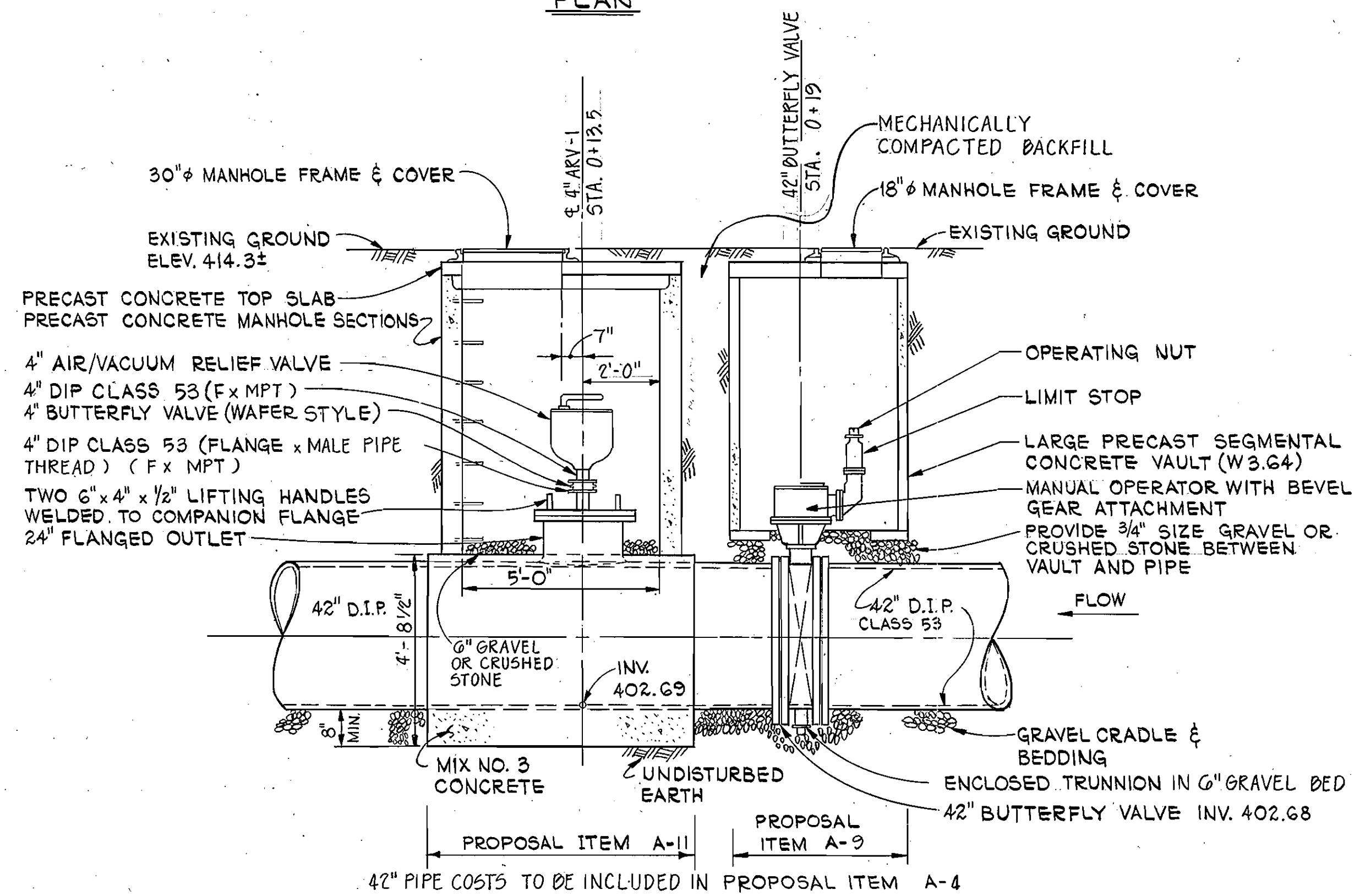
PLAN



ELEVATION

FOR LOCATION, SEE SHEET 3

48" BUTTERFLY VALVE AND ACCESS MANHOLE STA. 26+90
(SCALE: 3/8" = 1'-0")



ELEVATION

FOR LOCATION SEE SHEET 2

42" BUTTERFLY VALVE AND COMBINATION 4" AIR/VACUUM RELIEF VALVE INSTALLATION

SCALE: 3/8" = 1'-0"

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

James A. ...
DIRECTOR OF PUBLIC WORKS
DATE: 5/31/88

... 5-31-88
CHIEF, BUREAU OF ENGINEERING
DATE: 5-31-88

WR WHITNEY
BAILEY
COX
MAGNANI
CONSULTING
ENGINEERS
1850 YORK ROAD
TIMONIUM, MD 21093
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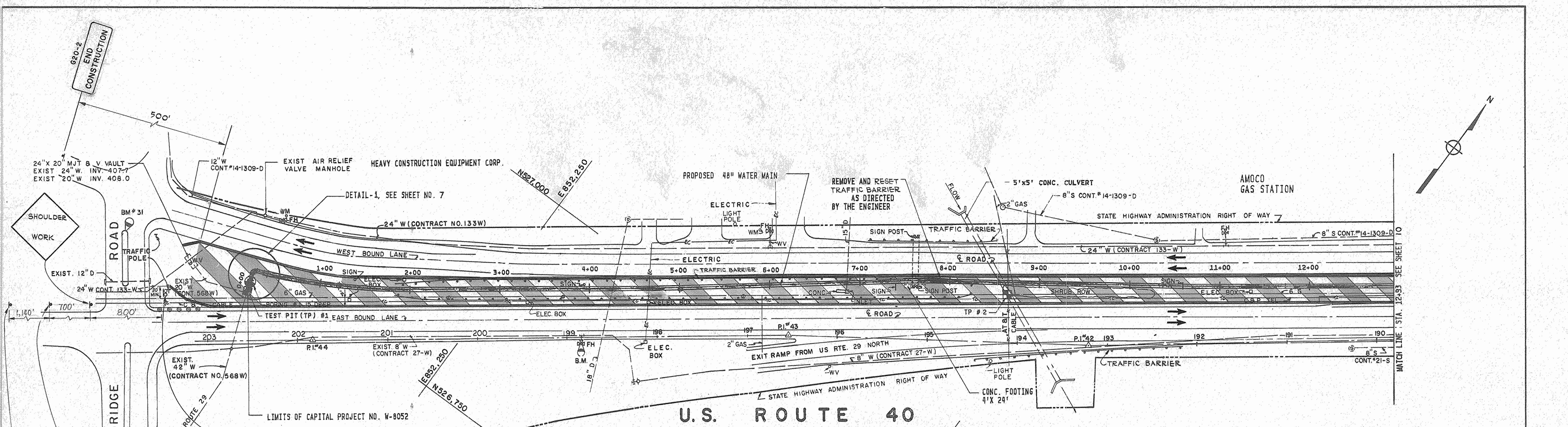
James ...

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DRN: R.D.H.			
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DATE: 6/16/88	J.P.H.	ELIMINATED PCCP	7/22/88
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DETAILS FOR VALVES,
CONNECTIONS AND APPURTENANCES

U.S. ROUTE 40, 48" WATER TRANSMISSION MAIN
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CAPITAL PROJECT NO. W-8052
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HOWARD COUNTY, MARYLAND

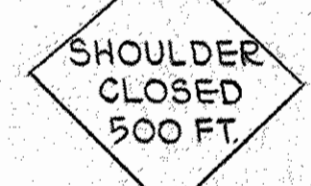
SCALE
AS
SHOWN
SHEET
8 OF 12



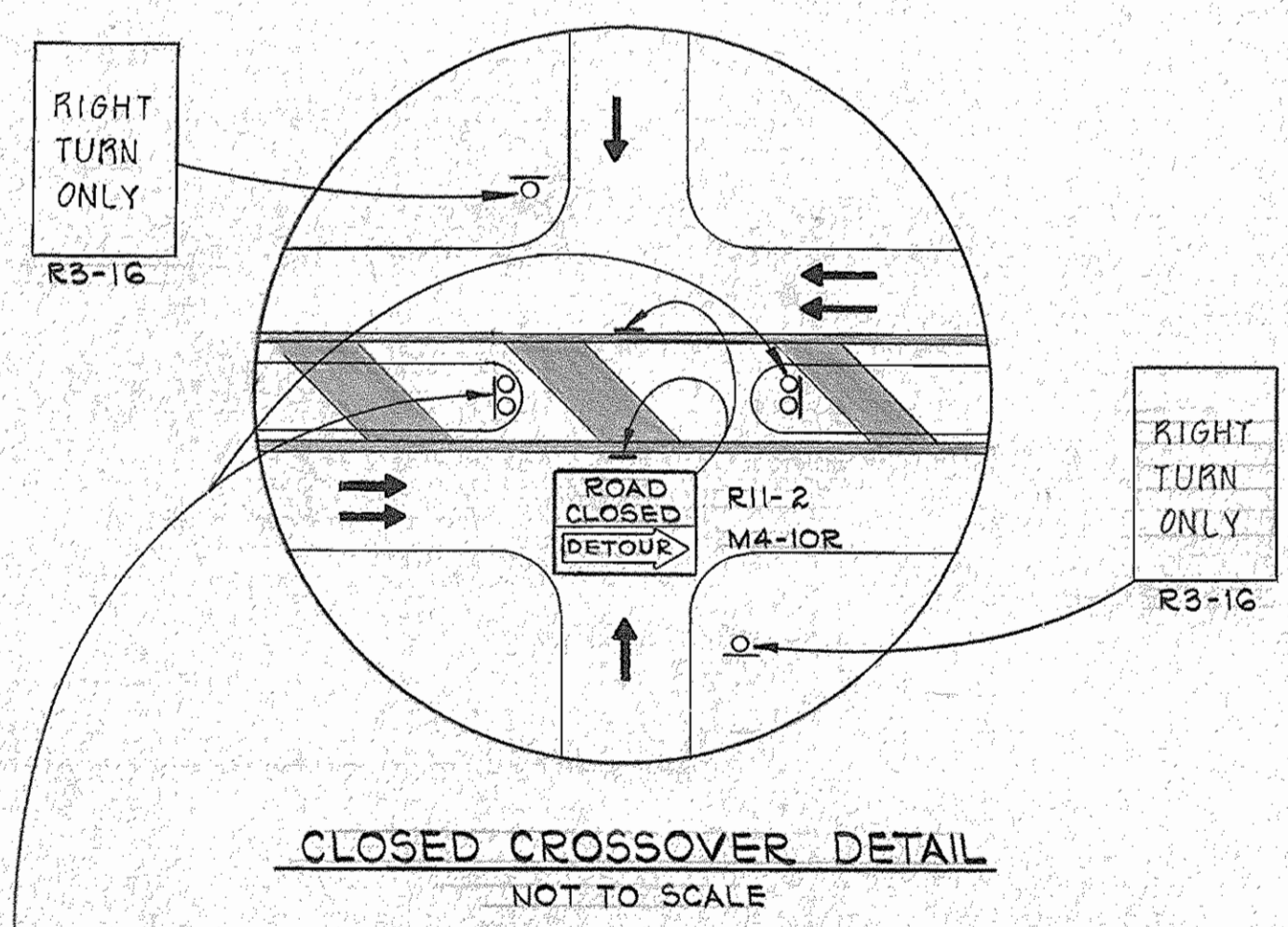
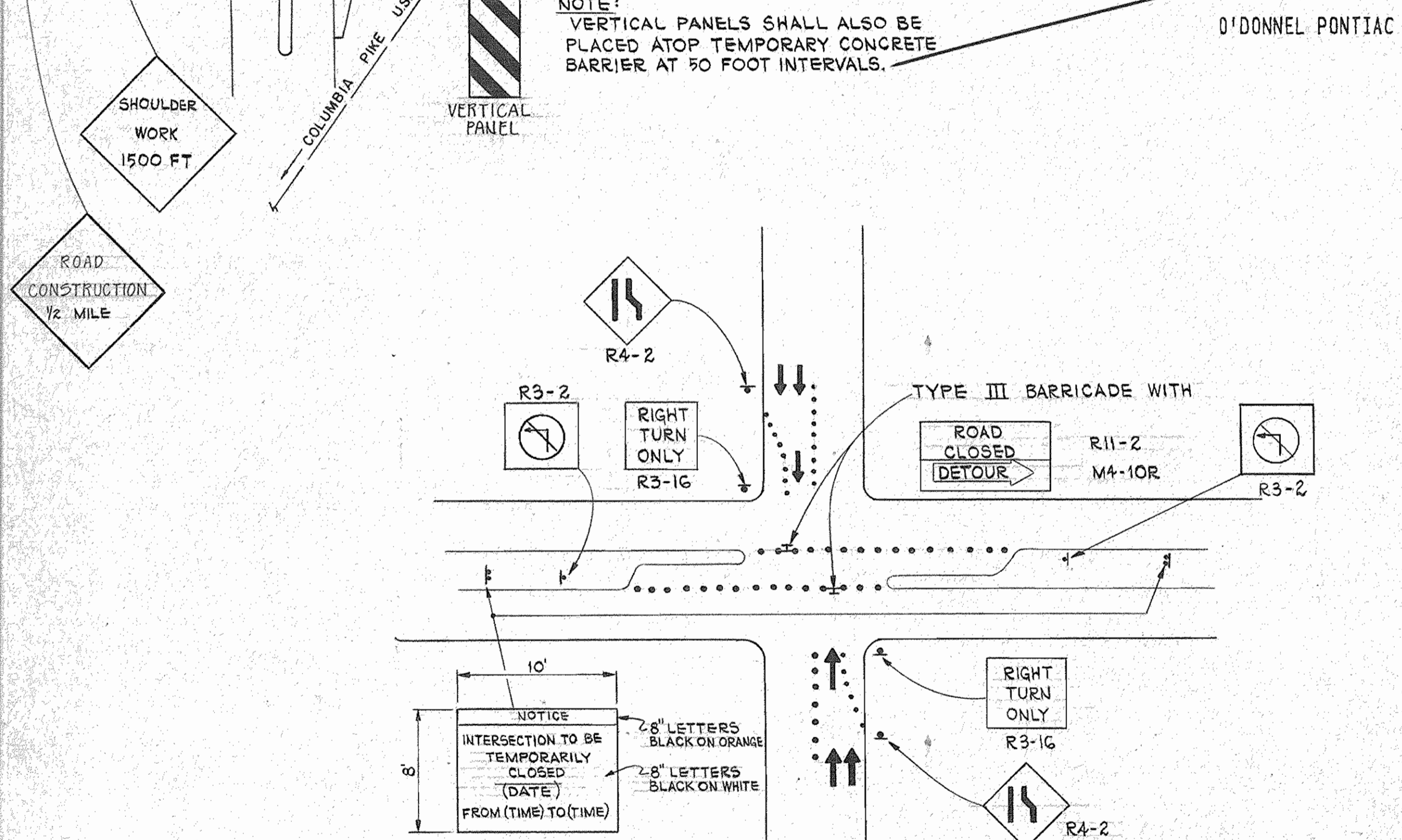
U.S. ROUTE 40
PLAN
SCALE: 1" = 50'

NOTE: VERTICAL PANELS SHALL ALSO BE PLACED ATOP TEMPORARY CONCRETE BARRIER AT 50 FOOT INTERVALS.

NOTE: WHERE POSSIBLE, THE 4' MEDIAN SHOULDER SHALL BE LEFT OPEN BY PLACING THE TEMPORARY CONCRETE BARRIER ON THE GRASS MEDIAN. WHERE THE BARRIER IS PLACED ON THE SHOULDER, MAINTAIN AS MUCH SHOULDER AS POSSIBLE AND PLACE A



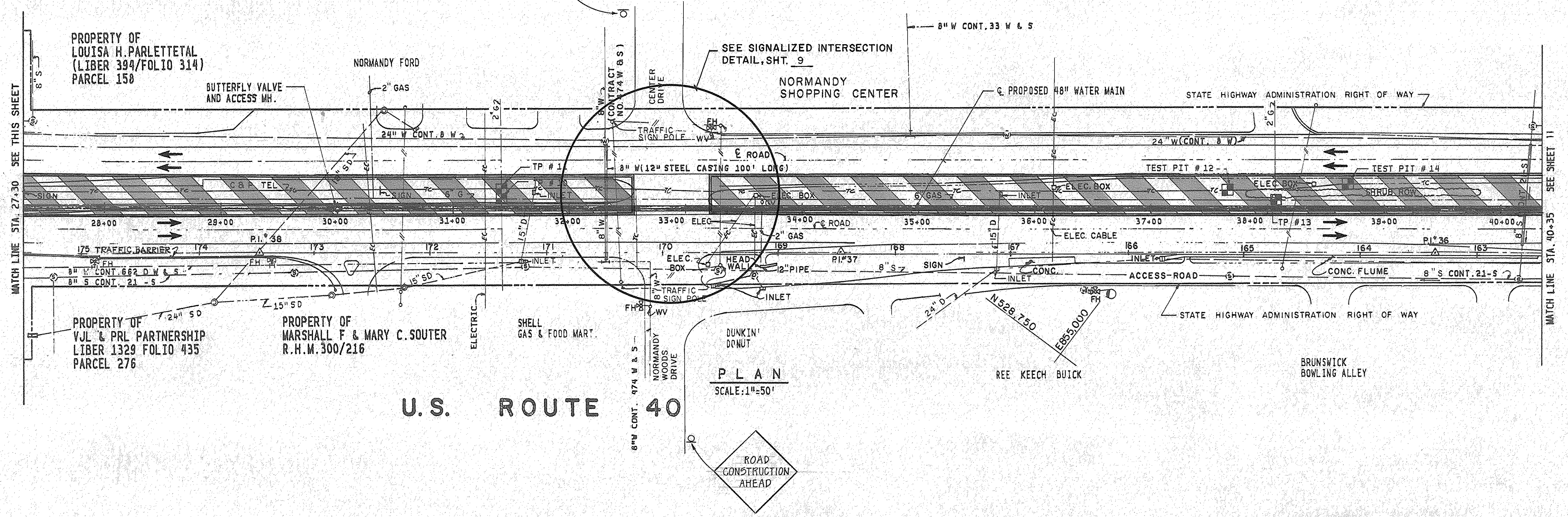
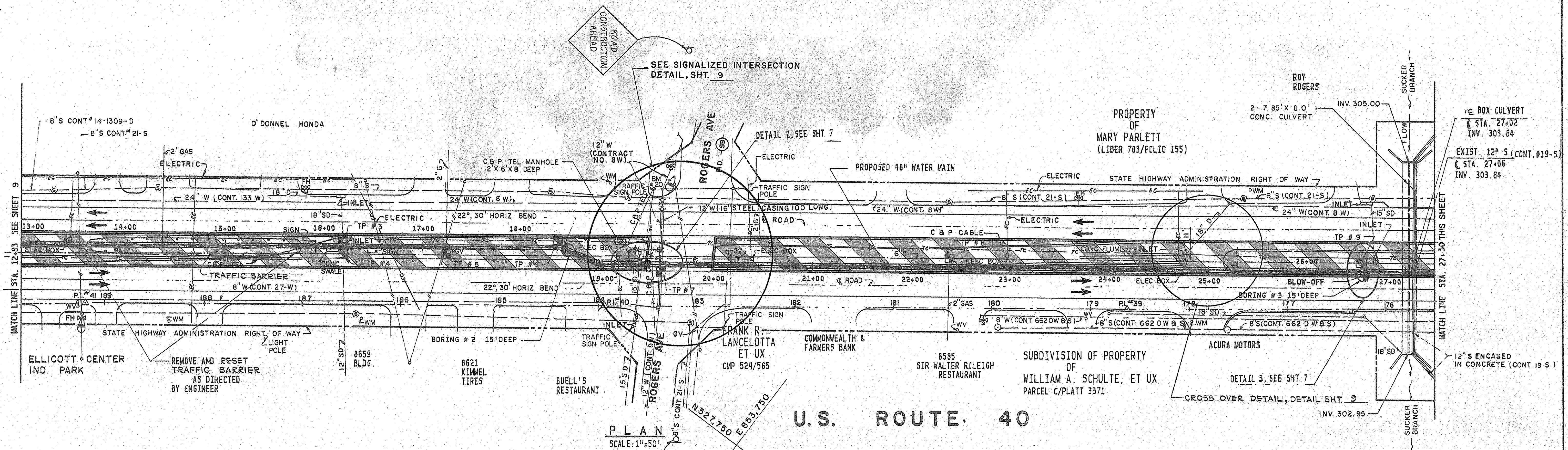
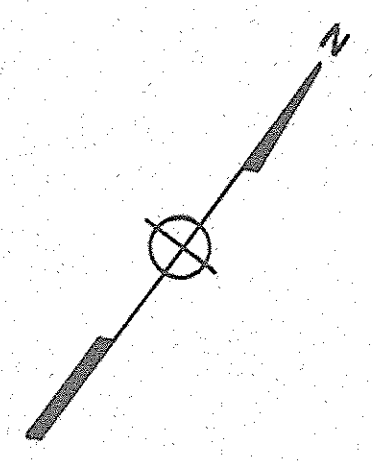
SIGN (48" x 48" BLACK ON ORANGE) 500 FEET PRIOR TO SHOULDER ENCROACHMENT.



LEGEND

	CONSTRUCTION AREA
	TEMPORARY DOUBLE FACE MEDIAN BARRIER FOR MAINTENANCE OF TRAFFIC
	PLASTIC DRUMS
	TRAFFIC LANES
	ARROW BOARD
	IMPACT ATTENUATION DEVICES

<p>DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND</p> <p><i>James A. Stiles</i> DIRECTOR OF PUBLIC WORKS DATE: 5-31-88</p> <p><i>Michael J. Bailey</i> CHIEF, BUREAU OF ENGINEERING DATE: 5-31-88</p> <p><i>Don L. ...</i> CHIEF, UTILITY DESIGN DIVISION DATE: 5-31-88</p>	<p>WHITNEY BAILEY COX MAGNANI CONSULTING ENGINEERS 1850 YORK ROAD TIMONIUM, MD 21093 301-252-6080</p>	<p>DES: M. B.</p> <p>DRN:</p> <p>CHK: J. P.</p> <p>DATE: 6/16/88</p>	<p>BY: J.P.H.</p> <p>NO.:</p> <p>REVISION: ELIMINATED PCCP</p> <p>DATE: 7/22/88</p>	<p>TRAFFIC CONTROL PLAN</p>	<p>U.S. ROUTE 40, 48" WATER TRANSMISSION MAIN SECTION 3 (U.S. ROUTE 29 TO THE OAKS ROAD) CAPITAL PROJECT NO. W-8052 CONTRACT NO. 44-1674 ELECTION DISTRICT NO. 2 HOWARD COUNTY, MARYLAND</p>	<p>SCALE AS SHOWN</p> <p>SHEET 9 OF 12</p>
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DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

James J. ...
DIRECTOR OF PUBLIC WORKS DATE 5/31/88

W. ...
CHIEF, BUREAU OF ENGINEERING DATE 5/31/88

...
CHIEF, BUREAU OF UTILITIES DATE 5/31/88

WHITNEY BAILEY COX MAGNANI
CONSULTING ENGINEERS
1850 YORK ROAD
TIMONIUM, MD 21093
301-252-6060

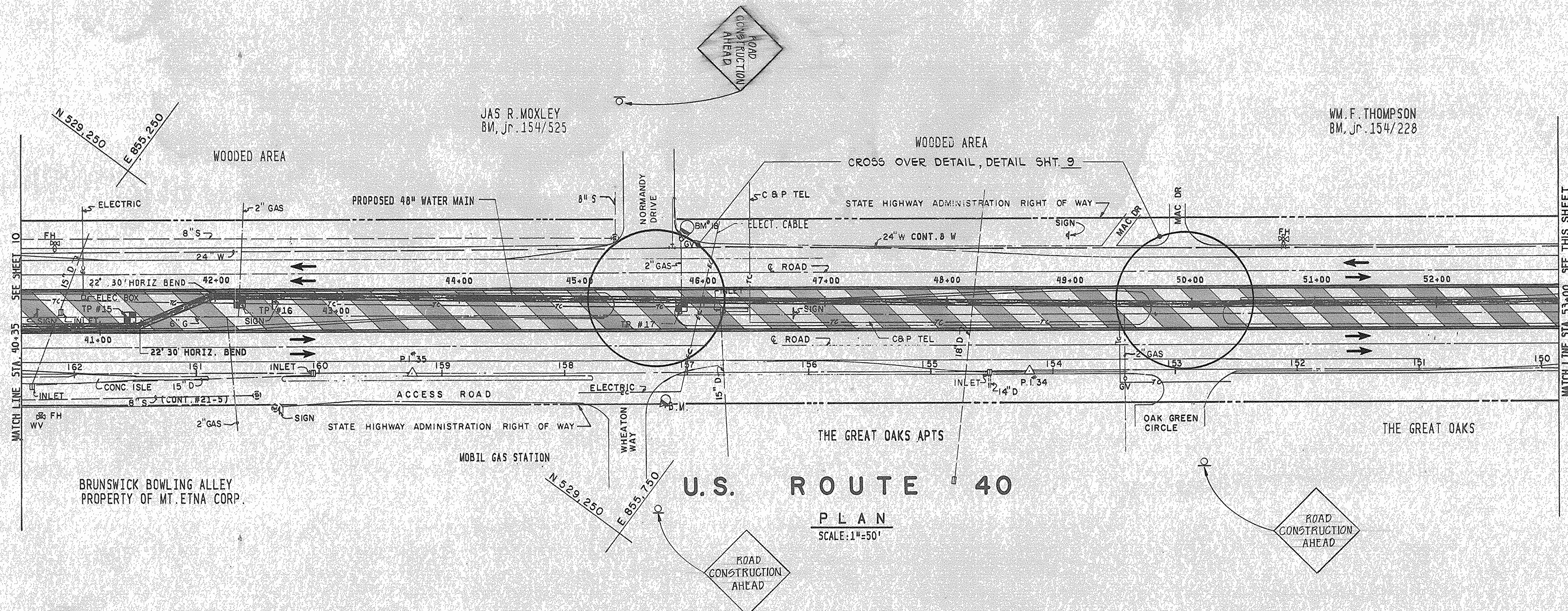
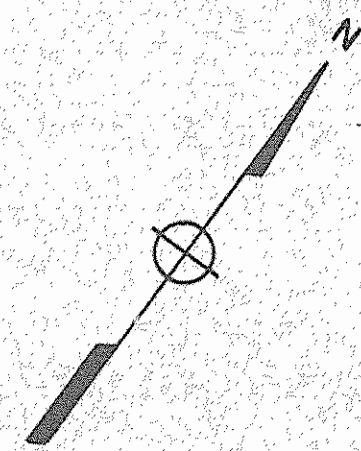


DES: M. B.			
DRN:			
CHK: J. P.			
DATE: 6/16/88	J.P.H.	ELIMINATED PCCP	7/22/88
BY: NO.		REVISION	DATE
		600' SCALE MAP NO.	BLOCK NO.

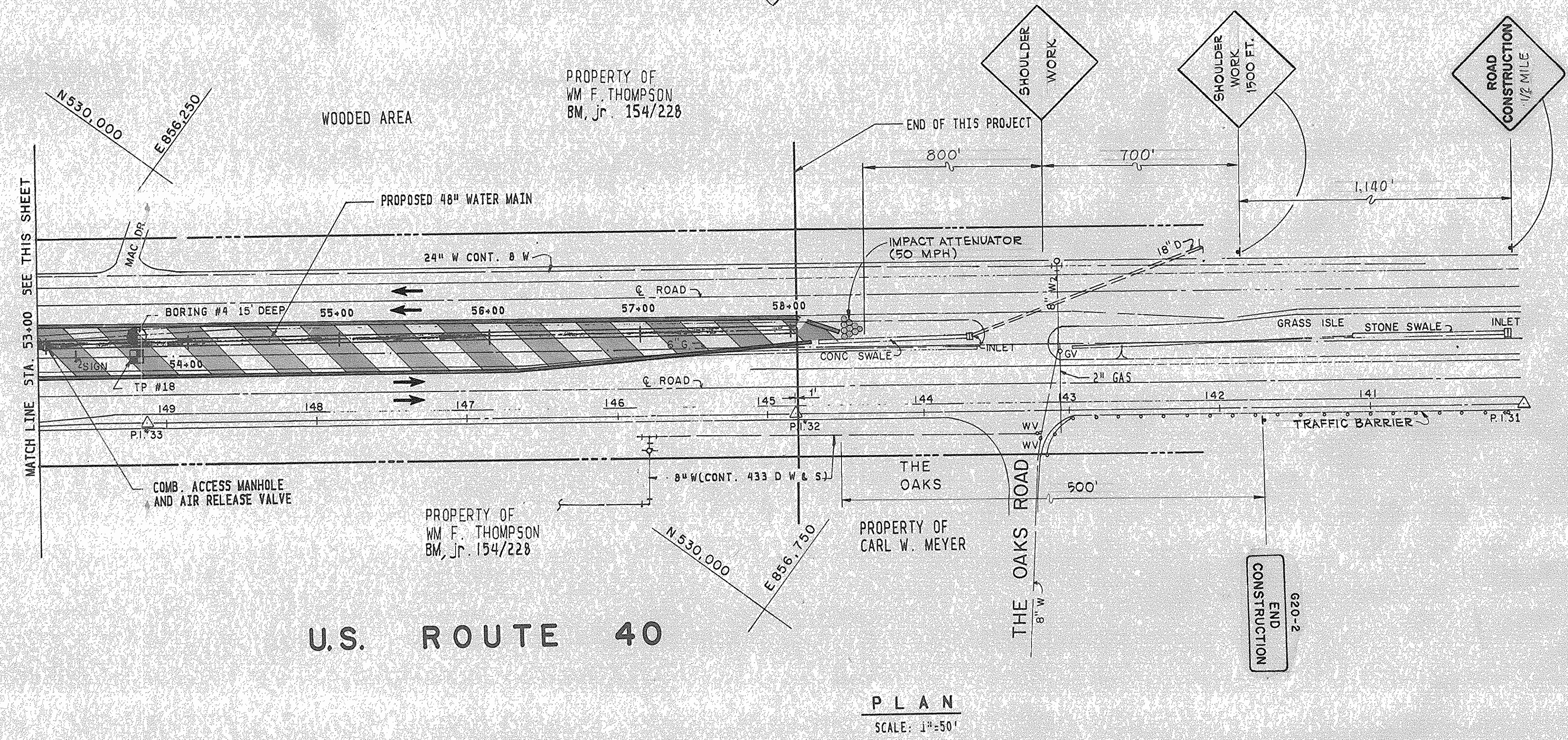
U.S. ROUTE 40, 48" WATER TRANSMISSION MAIN SECTION 3 (U.S. ROUTE 29 TO THE OAKS ROAD)
CAPITAL PROJECT NO. W-8052
CONTRACT NO. 44-1674
ELECTION DISTRICT NO. 2
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 10 OF 12



U.S. ROUTE 40
PLAN
SCALE: 1"=50'



U.S. ROUTE 40
PLAN
SCALE: 1"=50'

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

James P. Bailey
DIRECTOR OF PUBLIC WORKS
DATE: 5-31-88

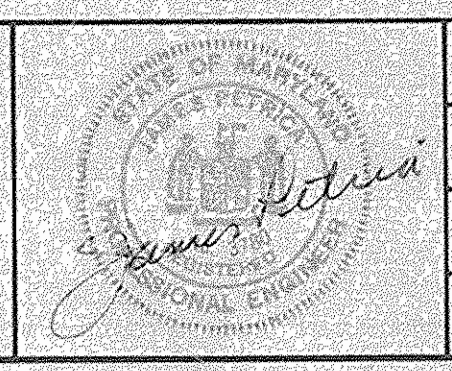
William S. Poley
CHIEF, BUREAU OF ENGINEERING
DATE: 5-31-88

Robert W. Senior
CHIEF, BUREAU OF UTILITIES
DATE: 5-31-88

Don L. ...
ACT. CHIEF, UTILITY DESIGN DIVISION
DATE: 5-31-88

WR WHITNEY
BAILEY
COX
MAGNANI

CONSULTING
ENGINEERS
1850 YORK ROAD
TIMONIUM, MD 21093
301-252-6060



DES: M. B.			
DRN:			
CHK: J. P.			
DATE: 4/10/88	J.P.H.	ELIMINATED PCCP	7/22/88
BY NO.		REVISION	DATE

TRAFFIC CONTROL PLAN

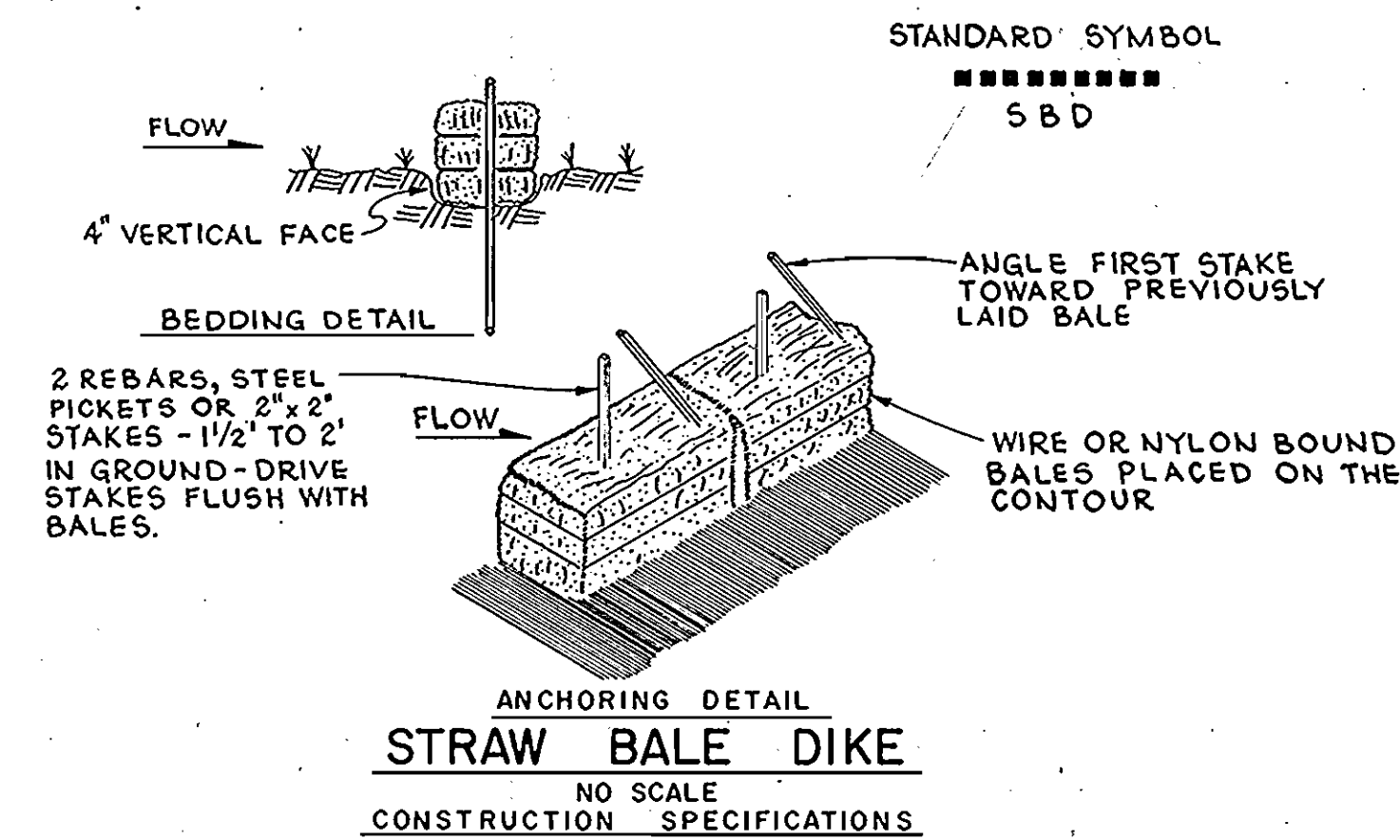
600' SCALE MAP NO. _____ BLOCK NO. _____

U.S. ROUTE 40, 48" WATER TRANSMISSION MAIN
SECTION 3 (U.S. ROUTE 29 TO THE OAKS ROAD)
CAPITAL PROJECT NO. W-8052
CONTRACT NO. 44-1674
ELECTION DISTRICT NO. 2
HOWARD COUNTY, MARYLAND

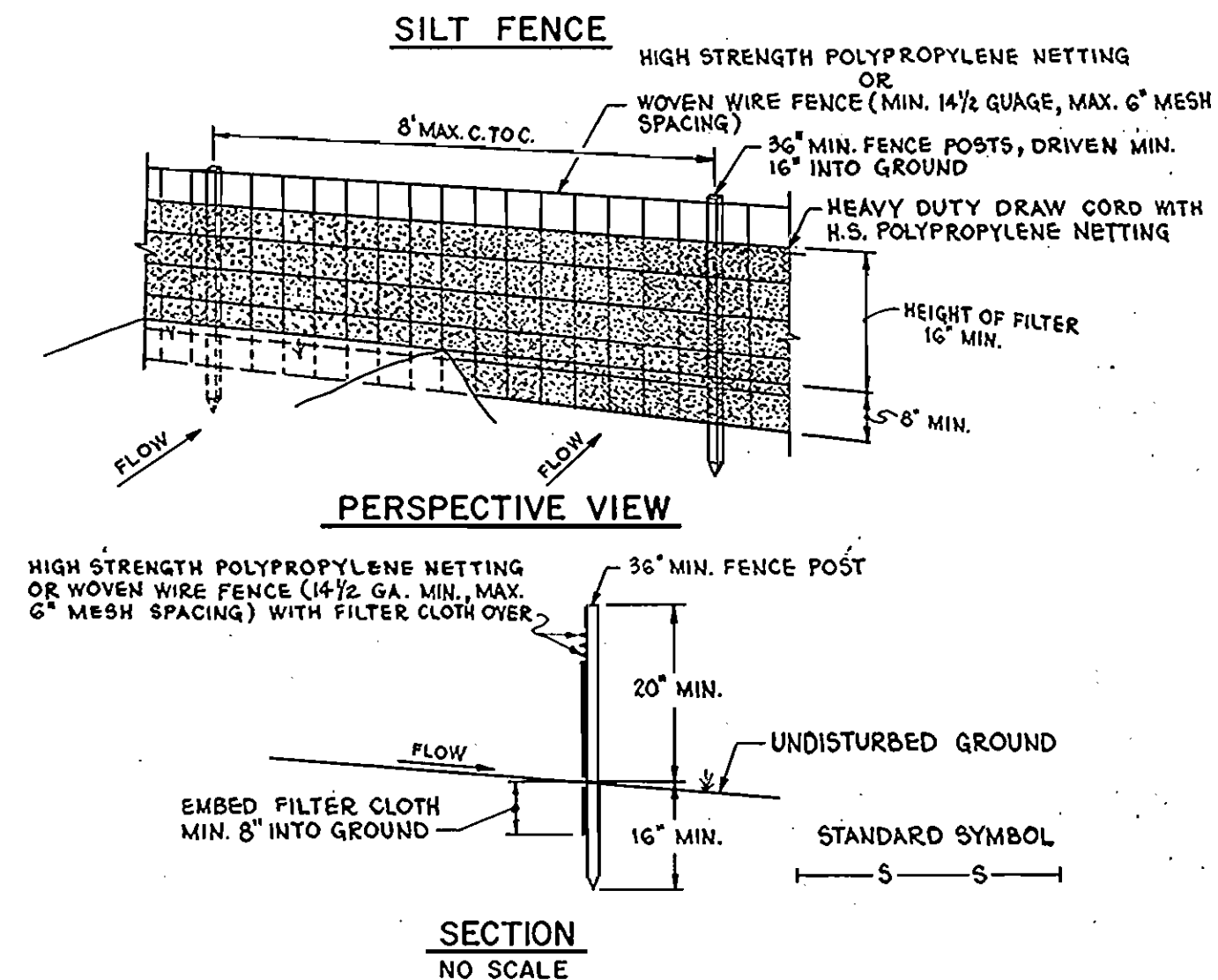
SCALE AS SHOWN
SHEET 11 OF 12

SEDIMENT CONTROL SEQUENCE OF CONSTRUCTION

1. ALL SEDIMENT AND EROSION CONTROL MEASURES SHALL BE INSTALLED IN THE AREA OF THE PROPOSED WORK PRIOR TO ANY CONSTRUCTION.
2. FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, 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 AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.



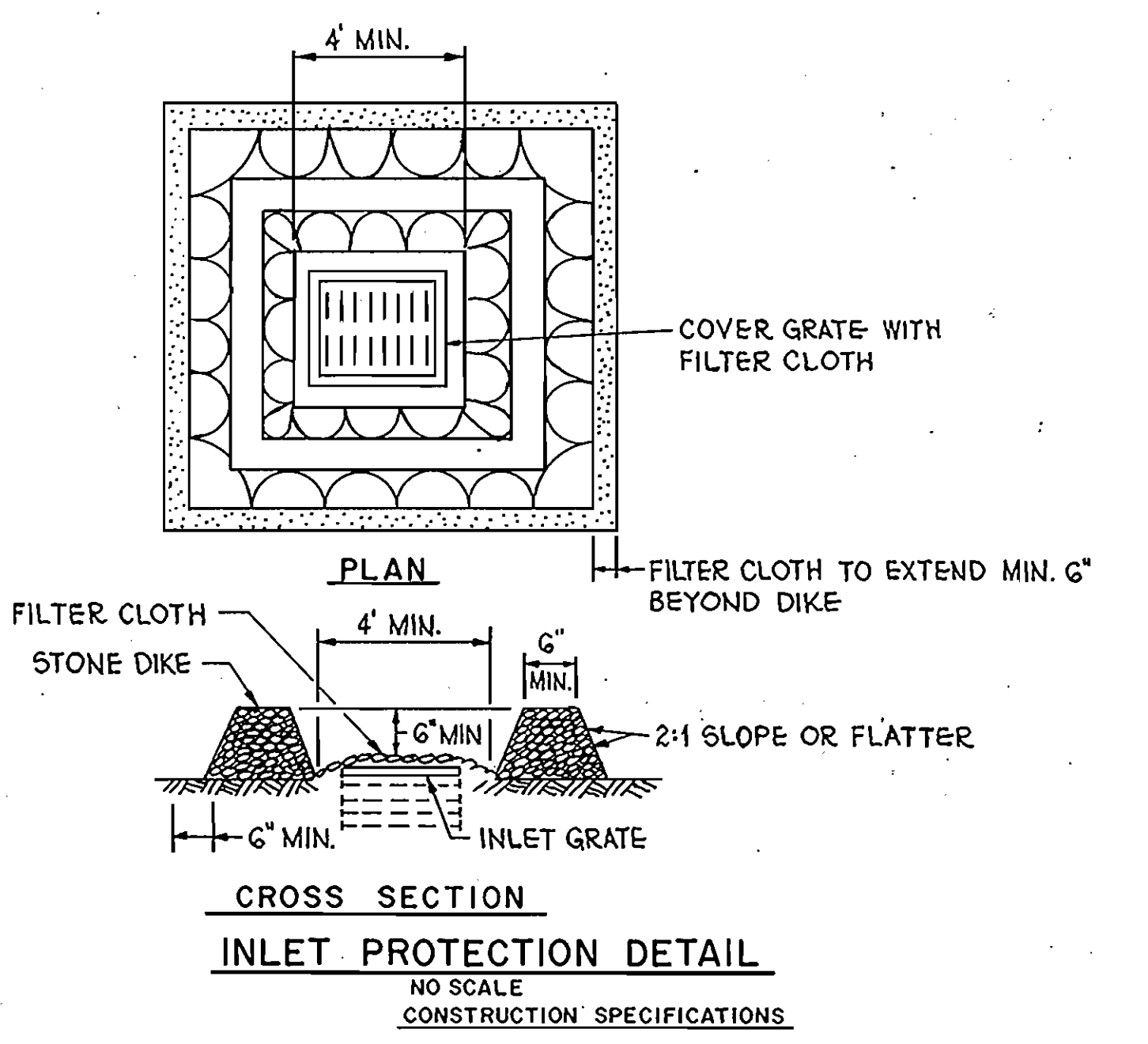
1. BALES SHALL BE PLACED AT THE TOE OF A SLOPE OR ON THE CONTOUR AND IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES.
2. EACH BALE SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF (4) INCHES AND PLACED SO THE BINDINGS ARE HORIZONTAL.
3. BALES SHALL BE SECURELY ANCHORED IN PLACE BY EITHER TWO STAKES OR REBARS DRIVEN THROUGH THE BALE. THE FIRST STAKE IN EACH BALE SHALL BE DRIVEN TOWARD PREVIOUSLY LAID BALE AT AN ANGLE TO FORCE THE BALES TOGETHER. STAKES SHALL BE DRIVEN FLUSH WITH THE BALE.
4. INSPECTION SHALL BE FREQUENT AND REPAIR 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.



- CONSTRUCTION NOTES FOR FABRICATED SILT FENCE**
1. HIGH STRENGTH POLYPROPYLENE NETTING OR WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
 2. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION.
 3. WHEN TWO SECTION OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED.
 4. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.
- POSTS: STEEL EITHER T OR U TYPE OR 1 1/4" x 1 1/4" MIN. (ACTUAL) HARDWOOD
FENCE: WOVEN WIRE, 1/4 GA. 6" MAX. MESH OPENING OR HIGH STRENGTH POLYPROPYLENE NETTING
FILTER CLOTH: FILTER X, MIRAFI 100X, STABLINKA T140N OR APPROVED EQUAL
PREFABRICATED UNIT: GEOFAB, ENVIROFENCE, OR APPROVED EQUAL.

SEDIMENT CONTROL GENERAL NOTES

1. NOTIFICATION OF WRA ENFORCEMENT DIVISION (301) 269-3551, AT LEAST 5 DAYS PRIOR TO THE START OF WORK.
2. PRIOR TO THE START OF WORK, THE CONTRACTOR IS TO OBTAIN WRA APPROVAL OF ANY PROPOSED PLAN CHANGES AND SEQUENCE OF CONSTRUCTION, SPECIFICALLY RELATING TO INSTALLATION, INSPECTION, MAINTENANCE AND REMOVAL OF EROSION AND SEDIMENT CONTROL MEASURES.
3. SEDIMENT CONTROL MEASURES ARE NOT TO BE REMOVED UNTIL THE AREAS SERVED HAVE ESTABLISHED VEGETATIVE COVER, WITH THE PERMISSION OF THE WRA ENFORCEMENT INSPECTOR.
4. WHEN PUMPING SEDIMENT-LADEN WATER, THE DISCHARGE MUST BE DIRECTED TO APPROVED SEDIMENT TRAPPING MEASURE PRIOR TO RELEASE FROM THE SITE.
5. ALL TEMPORARY STOCKPILES ARE TO BE LOCATED WITHIN AREAS PROTECTED BY SEDIMENT CONTROL MEASURES, AND ARE TO BE TEMPORARILY STABILIZED.
6. ALL SEDIMENT CONTROL DIKES, SWALES, BASINS AND FLOW LINES TO BASINS WILL BE TEMPORARILY SEEDED IMMEDIATELY UPON INSTALLATION TO REDUCE THE CONTRIBUTION TO SEDIMENT LOADING.
7. DISPOSAL OF EXCESS EARTH MATERIALS ON STATE OR FEDERAL PROPERTY REQUIRES WRA APPROVAL, OTHERWISE MATERIALS ARE TO BE DISPOSED OF AT A LOCATION APPROVED BY THE LOCAL AUTHORITY.
8. TEMPORARY SOIL EROSION CONTROL AND SEDIMENT CONTROL MEASURES ARE TO BE PROVIDED AS PER THE APPROVED PLAN PRIOR TO GRADING OPERATIONS. LOCATION ADJUSTMENTS ARE TO BE MADE IN THE FIELD AS NECESSARY. THE MINIMUM AREA PRACTICAL SHALL BE DISTURBED FOR THE MINIMUM POSSIBLE TIME.
9. IF GRADING IS COMPLETED OUT OF A SEEDING SEASON, GRADED AREAS ARE TO BE TEMPORARILY STABILIZED BY MULCH AND MULCH ANCHORING. MULCH MATERIAL SHALL BE UNWEATHERED, UNCHOPPED SMALL GRAIN STRAW SPREAD AT THE RATE OF 1 1/2 TO 2 TONS PER ACRE. MULCH ANCHORING TO BE ACCOMPLISHED BY AN APPROVED METHOD. USE OF A MULCH ANCHORING TOOL IS RECOMMENDED WHERE POSSIBLE.
10. PERMANENT SEEDING SPECIFICATIONS: (a) SEED BED PREPARATION (b) LIME, FERTILIZER AND SEED (c) MULCH AND ANCHORING METHOD (d) TIME FRAME TO ACCOMPLISH
11. TEMPORARY SEEDING SPECIFICATIONS: (a) SURFACE PREPARATION (b) LIME, FERTILIZER AND SEED (c) MULCH AND ANCHORING METHOD (d) TIME FRAME TO ACCOMPLISH
12. PERMANENT SODDING SPECIFICATIONS: (a) SOD TYPE (b) SURFACE PREPARATION (c) LIME AND FERTILIZER AS NECESSARY (d) WATERING AND ROLLING (e) TIME FRAME TO ACCOMPLISH
13. IMPLEMENTATION OF THE SEDIMENT CONTROL PLAN SHALL BE IN ACCORDANCE WITH THE "1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL", OF THE DEPARTMENT OF NATURAL RESOURCES.
14. THE CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTATION AND MAINTENANCE OF THE APPROVAL PLAN, AND ALL OTHER MEASURES NECESSARY TO CONTROL, FILTER, OR PREVENT SEDIMENT FROM LEAVING THE SITE.
15. SEDIMENT CONTROL MEASURES FOR THE CONTRACTOR'S OFFICES, STAGING AND STOCKPILE AREAS, IF LOCATED OUTSIDE OF THE DESIGNED SEDIMENT CONTROL MEASURES MUST BE SUBMITTED TO WRA FOR APPROVAL.
16. ROADBEDS ARE TO BE STABILIZED BY INSTALLATION OF AGGREGATE SUB-BASE WITHIN 5 DAYS OF REACHING GRADE. OR WATER BREAKS SHALL BE CUT INTO THE ROADBED TO DIRECT DRAINAGE ONTO STABLE AREAS OR INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
17. SEDIMENT CONTROL FOR UTILITY CONSTRUCTION IN AREAS OUTSIDE OF DESIGNED CONTROLS: (a) EXCAVATED TRENCH MATERIAL SHALL BE PLACED ON THE HIGH SIDE OF THE TRENCH. (b) IMMEDIATELY FOLLOWING PIPE INSTALLATION THE TRENCH SHALL BE BACKFILLED, COMPACTED AND STABILIZED AT THE END OF EACH WORKING DAY. (c) TEMPORARY SILT FENCE OF STRAW BALE DIKES SHALL BE PLACED IMMEDIATELY DOWNSTREAM OF ANY DISTURBED AREA INTENDED TO REMAIN DISTURBED LONGER THAN ONE WORKING DAY.



1. STONE FOR THE DIKE SHALL BE CRUSHED STONE. GRAVEL MAY BE USED IF CRUSHED STONE IS NOT AVAILABLE. THE STONE SHALL MEET MSHA SIZE NO. 2 OF AASHTO DESIGNATION M43 SIZE NO. 2 OR 24. CRUSHER RUN IS NOT ACCEPTABLE.
2. FILTER CLOTH SHALL BE POLY-FILTER X OR APPROVED EQUAL.
3. THE STRUCTURE SHALL BE INSPECTED AFTER EACH RAIN AND REPAIRS MADE AS NEEDED.

69150

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

James M. ... 5/31/88
DIRECTOR OF PUBLIC WORKS DATE

William E. ... 5/31/88
CHIEF, BUREAU OF ENGINEERING DATE

... 5/31/88
CHIEF, BUREAU OF UTILITIES DATE

... 5/31/88
CHIEF, UTILITY DESIGN DIVISION DATE

WHITNEY CONSULTING ENGINEERS
BAILEY
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MAGNANI

1850 YORK ROAD
TIMONUM, MD 21093
301-252-6060

DES: R.J.H.			
DRN: R.D.H.			
CHK: J.P.			
DATE: 6/16/88	J.P.H.	ELIMINATED PCCP	7/22/88
	BY NO.	REVISION	DATE

SEDIMENT AND EROSION CONTROL

600' SCALE MAP NO. 18 / BLOCK NO.

U.S. ROUTE 40, WATER TRANSMISSION MAIN.
CAPITAL PROJECT W-8052
CONTRACT NO. 44-1674
ELECTION DISTRICT NO. 2
HOWARD COUNTY, MARYLAND

SCALE AS SHOWN

SHEET 12 OF 12