

CAPITAL PROJECT NO. S-6695
 CONTRACT NO. 10-3471

HARWOOD PARK

IVY TERRACE WATER AND SEWER MAIN EXTENSIONS

LOTS: 1150 - 1160, 1183 - 1194

1st ELECTION DISTRICT

HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS

GENERAL NOTES

- PART I
- APPROXIMATE LOCATION OF EXISTING MAINS ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING MAINS AND SERVICES AND MAINTAIN UNINTERRUPTED SERVICE. 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. DATA.
 - ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS UNLESS OTHERWISE NOTED ON THE PLANS.
 - 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 DETAIL FOR CONSTRUCTION (LATEST EDITION). 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 LOCATED BY THE CONTRACTOR TWO WEEKS IN ADVANCE OF CONSTRUCTION OPERATIONS AT HIS OWN EXPENSE. CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:
 - AT&T 865-3803
 - BG & E CO.(CONTRACTOR SERVICES) 850-4620
 - BG & E CO.-UNDERGROUND DAMAGE CONTROL 787-9068
 - BUREAU OF UTILITIES (DPU) 313-4900
 - CHESAPEAKE & POTOMAC TELEPHONE CO. 597-8585
 - COLONIAL PIPELINE CO. 795-1390
 - MISSISSIPPI 1-800-257-7777
 - STATE HIGHWAY ADMINISTRATION 531-5533
 - TREES AND SHRUBS ARE TO BE PROTECTED FROM DAMAGE TO THE 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 MAIN.
 - THE CONTRACTOR SHALL NOTIFY THE BUREAU OF HIGHWAYS, HOWARD COUNTY, @ (410) 313-2450 AT LEAST FIVE WORKING DAYS BEFORE ANY OPEN CUT OF ANY COUNTY ROAD OR BORING/JACKING OPERATION IN COUNTY ROADS FOR LAYING WATER/SEWER MAINS OR HOUSE CONNECTIONS. THE APPROVAL OF THESE DRAWINGS WILL CONSTITUTE COMPLIANCE WITH DPW REQUIREMENTS PER SECTION 18.11(a) OF THE HOWARD COUNTY CODE.

- PART II WATER
- ALL WATER MAINS SHALL BE D.I.P. CLASS 52 UNLESS OTHERWISE NOTED.
 - TOPS OF ALL WATER MAINS TO HAVE A MINIMUM OF 3'-6" COVER UNLESS OTHERWISE NOTED.
 - VALVES ADJACENT TO TEES SHALL BE STRAPPED TO TEES.
 - 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 IN ACCORDANCE WITH STANDARD DETAILS. SOIL AROUND THE FIRE HYDRANT SHALL BE COMPACTED IN ACCORDANCE WITH SECTION 1000 AND SECTION 1005 OF THE STANDARD SPECIFICATIONS.
 - THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING WATER SYSTEM.

- PART III SEWER
- ALL SEWER MAINS SHALL BE D.I.P. OR P.V.C. UNLESS OTHERWISE NOTED.
 - ALL MANHOLES SHALL BE 4'-0" INSIDE DIAMETER UNLESS OTHERWISE NOTED.
 - FORCE MAINS SHALL BE D.I.P. ONLY.
 - 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 COVER, STANDARD DETAIL G5.52. WHERE WATERTIGHT MANHOLE FRAME AND COVER ARE 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.

PLAN REFERENCE NUMBER:
 S-6695-1
 EP-2638

QUANTITIES		AS-BUILT		
ITEM	ESTIMATED	QUANTITIES	TYPE	SUPPLIER
8" WATER D.I.P.	821 L.F.	919'	DIP	
3/4" WHC	30 L.F.	74'	COPPER	
1" TWIN WHC	188 L.F.	220'	COPPER	
12"x8" T.S. & V.	1	1		
FIRE HYDRANTS	2	2		
8"x6" E.H.T.	2	2		
8"x8" I	1	1		
8" VALVE	2	2		
6" VALVE	2	2		
1" AIR RELEASE VALVE AND MANHOLE	1	1		
1 1/2" DRAIN	1	1		
8" CAP & BUTTRESS	2	2		
8" SEWER	680 L.F.	687'		
8" SEWER D.I.P.	130 L.F.	130'		
24" STEEL CASING	40 L.F.	40'	PVC	
6" TWIN SHC	54 L.F.	59'	" "	
4" SHC	513 L.F.	520'		
STANDARD MANHOLE	3	3	PRECAST	
DROP MANHOLE	1	1	PRECAST	

NAME OF UTILITY CONTRACTOR: IACOBONE
 SURVEY & DRAFTING DIVISION AS-BUILT DATE: 10-24-96

NOTE:
 "SEDIMENT CONTROL TO BE IMPLEMENTED IN ACCORDANCE WITH SECTION 219 OF THE STDS. & SPECS. (VOL. IV) OF THE HOWARD COUNTY DESIGN MANUAL AND THESE PLANS."

BENCH MARKS					
BENCH MARK NO.	TRAVERSE NO.	DESCRIPTION	NORTHING	EASTING	ELEVATION
100	PK NAIL		494314.85033	873422.34996	96.59
2	107	PK NAIL	494511.08940	873056.91870	125.18

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 THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT.

Paul D. Lapsen 10/17/95
 DEVELOPER'S SIGNATURE DATE

Emilio G. Lapsen
 DEVELOPER'S NAME

I HEREBY 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 SOIL CONSERVATION DISTRICT.

John A. Haddock 10/14/95
 ENGINEER'S SIGNATURE DATE

John A. Haddock
 ENGINEER'S NAME

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS.

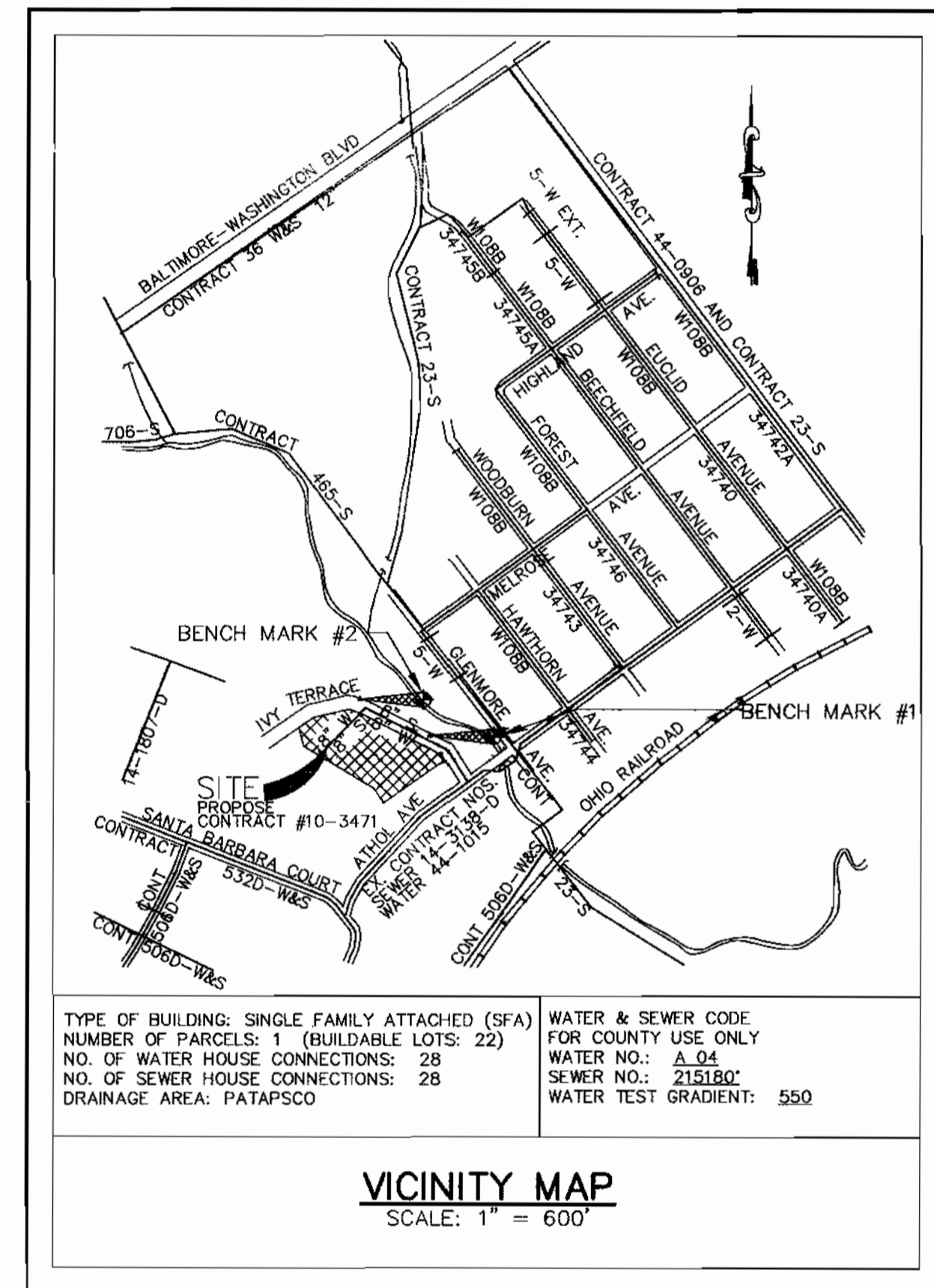
Patricia Englehart 4/13/95
 USDA-NATURAL RESOURCES CONSERVATION SERVICE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE SOIL CONSERVATION DISTRICT.

John R. Robertson 4/13/95
 HOWARD SCD

AS-BUILT WATER HOUSE CONNECTIONS

Lot	1" Line	3/4" Line	Station	Offset	
1151	12'		8+19	RT	
1152	12'		7+69	RT	
1153	12'		7+19	RT	
1154	12'		6+69	RT	
1155	12'		6+69	RT	
1156	12'		8+20	LT	
1157	12'		7+20	LT	
1158	12'		7+20	LT	
1159	0	4'	6+70	LT	
1193	23'		6+70	LT	
1194	23'		6+21	LT	
1197	23'		5+70	LT	
1198	23'		8+39	RT	
1199	23'		3+73	LT	
1123	17'		3+75	LT	
1124	17'				
1125	17'				
1126	17'				



INDEX OF DRAWINGS	
NO.	DESCRIPTION
1	TITLE SHEET, INDEX OF DRAWINGS, GENERAL NOTES
2	WATER & SEWER SITE PLAN
3	WATER MAIN PROFILE
4	SEWER MAIN PROFILE
5	SEDIMENT & EROSION CONTROL, NOTES & DETAILS

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

John M. Dargatzis 10/20/95
 DIRECTOR OF PUBLIC WORKS DATE

Paul D. Lapsen 10/17/95
 CHIEF, BUREAU OF ENGINEERING DATE

Michael J. Hummel 10-19-95
 CHIEF, BUREAU OF UTILITIES DATE

John D. Lapsen 10-17-95
 CHIEF, WATER AND SEWER DIVISION DATE

MILDENBERG, BOENDER & ASSOC., INC.
 Engineers Planners Surveyors
 5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
 (410) 997-0295 Balt. (301) 621-5521 Wash. (410) 997-0298 Fax



engineering	MAT	DATE	BY	NO.	REVISION	DATE
Illustration	MAT					
approval	JBM					
project	9501B					
date	7/95					

TITLE,
 INDEX OF DRAWINGS,
 GENERAL NOTES

600' SCALE MAP NO. 38 BLOCK NO. 3

HARWOOD PARK
 IVY TERRACE WATER & SEWER MAINS EXTENSIONS
 CAPITAL PROJECT NO. S-6695
 CONTRACT NO. 10-3471
 1ST ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

scale AS SHOWN
 1 OF 5

NOTE: OFFSETS ARE AT A 90° FROM TRAVERSE LINE

SEWER MAIN STAKEOUT

TRAV. STATION	OFFSET	SEWER MAIN PROFILE STATION	TYPE	LOT NO.	INV. • EASEMENT	SLOPE(%)
7+45	5' RT	2-61	SHC	1192	112.38	2.00
7+46	5' RT	2-66	SHC	1153	114.00	5.00
7+48	4' LT	2-75	"A" DHC	EX. 1145/149	SEE PROFILE	
7+48	12' LT	2+83	SHC	1193	113.63	2.00
7+49	17' LT	2+88	SHC	1152	114.55	5.00
7+51	44' LT	3+14	MH 4			
7+51	44' LT	3+14	SHC @ MH	EX. 1150	122.75	5.00
7+51	44' LT	3+14	SHC @ MH	1151	120.40	5.00
7+51	44' LT	3+14	SHC	1194	114.25	2.00
7+51	44' LT	3+14	SHC	1154	113.30	5.00
10+39	126' RT	2+38	SHC	1191	112.38	2.00
10+44	145' RT	2+33	SHC	1191	112.38	2.00
10+60	139' RT	2+16	SHC	1155	112.75	5.00
10+65	137' RT	2+11	"A" DHC	1190	116.38	2.00
10+86	129' RT	1+88	SHC	1156	112.05	5.00
10+91	127' RT	1+83	"A" DHC	1189	116.38	2.00
11+06	121' RT	1+66	SHC	1157	111.50	5.00
11+11	119' RT	1+61	"A" DHC	1188	116.38	2.00
11+32	110' RT	1+39	SHC	1158	110.83	5.00
11+37	109' RT	1+34	"A" DHC	1187	116.38	2.00
11+54	102' RT	1+15	"A" DHC	1186	114.38	2.00
11+59	100' RT	1+10	SHC	1159	110.10	5.00
11+83	90' RT	0+84	SHC	1185	108.64	2.00
12+52	54' RT	0+65	SHC	1184	108.18	2.00
12+67	26' RT	0+34	SHC	1183	107.40	2.00
12+82	4' LT	0+00 = 1+89	MH 3			
14+70	6' LT	0+00 = 1+30	MH 2			
16+00	3' LT	0+00 = 1+77	MH 1			
0+00	24' LT	1+50	6" TWIN SHC	5 & 6	82.83	1.00
0+06	173' LT	0+00	EX. MH 387			

WATER MAIN STAKEOUT

TRAV. STATION	OFFSET	WATER MAIN STATION	LOT NO.
7+54	22' RT	7+69	WHC 1153, 1154
7+55	21' RT	7+70	WHC 1191, 1192
7+59	28' LT	8+20	WHC 1193, 1194
7+60	27' LT	8+19	WHC 1151, 1152
7+61	46' LT	8+39	WHC 1150
10+71	124' RT	7+20	WHC 1189, 1190
10+72	123' RT	7+19	WHC 1155, 1156
11+17	106' RT	6+70	WHC 1187, 1188
11+18	104' RT	6+69	WHC 1157, 1158
11+64	87' RT	6+21	WHC 1186, 1185
11+65	86' RT	6+19	WHC 1159
12+50	36' RT	5+70	WHC 1183, 1184

WATER HOUSE CONNECTION STA.

LOT NO.	OFFSET	WATER MAIN STATION
1153, 1154	RT	7+69
1191, 1192	LT	7+70
1193, 1194	LT	8+20
1151, 1152	RT	8+19
1150	RT	8+39
1189, 1190	LT	7+20
1155, 1156	RT	7+19
1187, 1188	LT	6+70
1157, 1158	RT	6+69
1186, 1185	LT	6+21
1159	RT	6+19
1183, 1184	LT	5+70
1123, 1124	LT	3+73
1125, 1126	LT	3+75

INSTALL 188 L.F. OF 1" TWIN WATER HOUSE CONNECTION. PLACE BALL VALVE AT EASEMENT LINE.

WATER MAIN TABULATION CHART

IVY TERRACE			
WATER MAIN STATION	APPURTENANCE	TRAV. STATION	OFFSET
0+00	12" x 8" T.S. & V	LINE "A"	197', 192'
1+89	8" - 1/16 H.B.	LINE "A"	8'
	8" x 6" F.H.T.	LINE "H"	11'
2+50	6" V	LINE "H"	16'
	HYDRANT	LINE "H"	20'
5+00	8" x 6" F.H.T.	LINE "H"	6'
	6" V	LINE "H"	10'
	HYDRANT	LINE "H"	21'
5+37	8" x 8" T	LINE "H"	4'
	8" V	LINE "H"	4'
5+42	8" CAP & BUTTRESS	LINE "H"	4'
5+42	8" V	LINE "H"	9'
5+53	8" - 1/16 H.B.	LINE "H"	21'

10' WIDE ALLEY			
WATER MAIN STATION	APPURTENANCE	TRAV. STATION	OFFSET
8+30	1 1/2" DRAIN	LINE "F"	37'
8+35	1" AIR RELEASE VALVE AND MANHOLE	LINE "F"	33'
8+40.42	8" CAP & BUTTRESS	LINE "F"	48'

TRAVERSE POINTS

BENCH MARK NO.	TRAVERSE NO.	NORTHING	EASTING	ELEVATION	BEARING	DISTANCE
1	100	494314.85033	873422.34996	96.59	LINE "A" S48° 14' 26" W	233.74'
	101	494159.20305	873247.98273	107.1	LINE "B" S61° 25' 20" W	95.00'
	102	494113.75868	873164.55461	113.31	LINE "C" N42° 10' 56" W	159.31'
	103	494231.81081	873057.57867	106.65	LINE "D" S75° 02' 21" W	132.53'
	104	494197.59834	872929.54529	111.05	LINE "E" N08° 24' 02" E	90.83'
	105	494287.20542	872944.38052	121.85	LINE "F" N41° 22' 48" W	214.73'
	106	494448.33040	872802.43300	150.62	LINE "G" S76° 08' 48" W	262.11'
2	107	494511.08940	873056.91870	125.18	LINE "H" N61° 45' 50" W	414.79'

LOT NO.	OFFSET	SEWER MAIN PROFILE STATION
1192	LT	2-61
1153	RT	2-66
EX. 1145/149	RT	2-75
1193	LT	2+83
1152	RT	2+88
EX. 1150	RT	3+14
1151	RT	3+14
1194	LT	3+08
1154	RT	2+38
1191	LT	2+33
1155	RT	2+16
1190	LT	2+11
1156	RT	1+88
1189	LT	1+83
1157	RT	1+66
1188	LT	1+61
1158	RT	1+39
1187	LT	1+34
1186	LT	1+15
1159	RT	1+10
1185	LT	0+84
1184	LT	0+65
1183	LT	0+34

INSTALL 480 L.F. 4" SEWER HOUSE CONNECTION

LOT NO.	OFFSET	SEWER MAIN PROFILE STATION
1123 & 1124	LT	0+34
1125 & 1126	LT	0+36

INSTALL 54 LF OF 6" TWIN SEWER HOUSE CONNECTION

FRONTAGE SCHED.

LOT NO.	FRONTAGE LENGTH
1150	103.94'
1151	25'
1152	25'
1153	25'
1154	25'
1155	25'
1156	25'
1157	25'
1158	25'
1159	25'
1160	25'
1183	17.61'
1184	25'
1185	25'
1186	25'
1187	25'
1188	25'
1189	25'
1190	25'
1191	25'
1192	25'
1193	25'
1194	25'

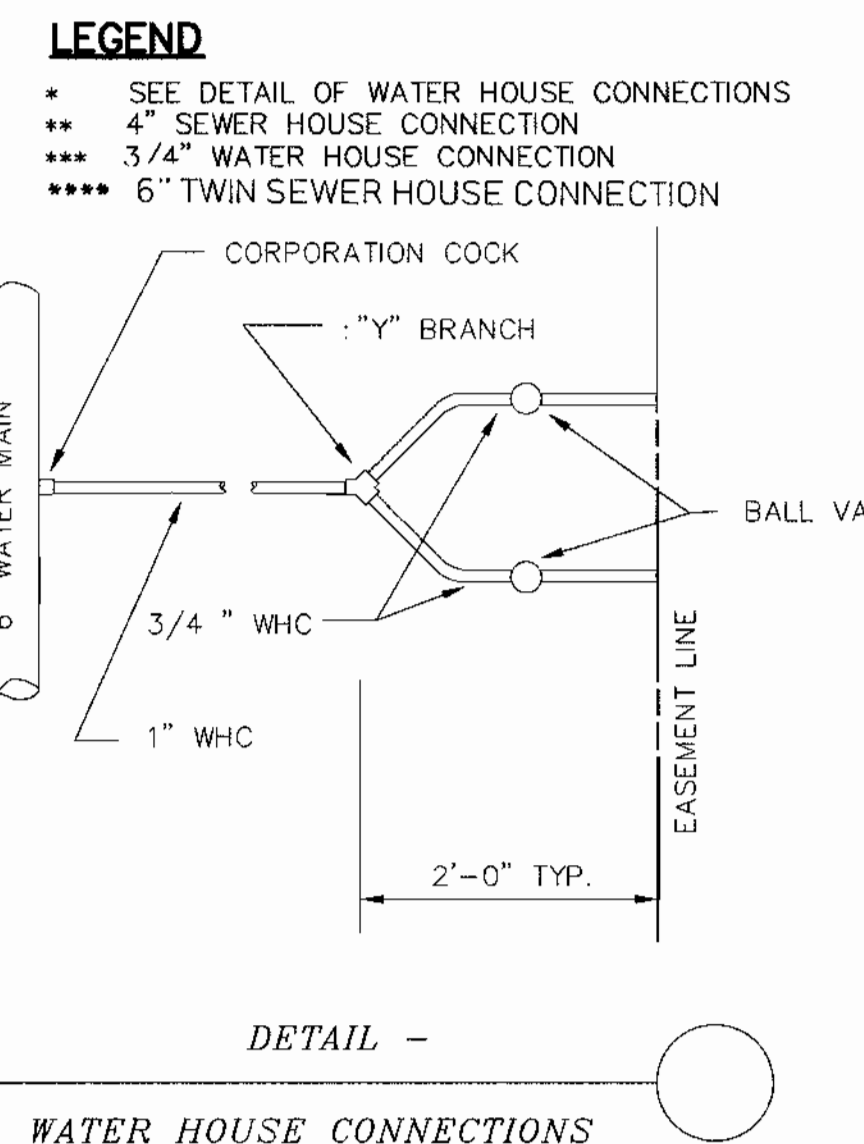
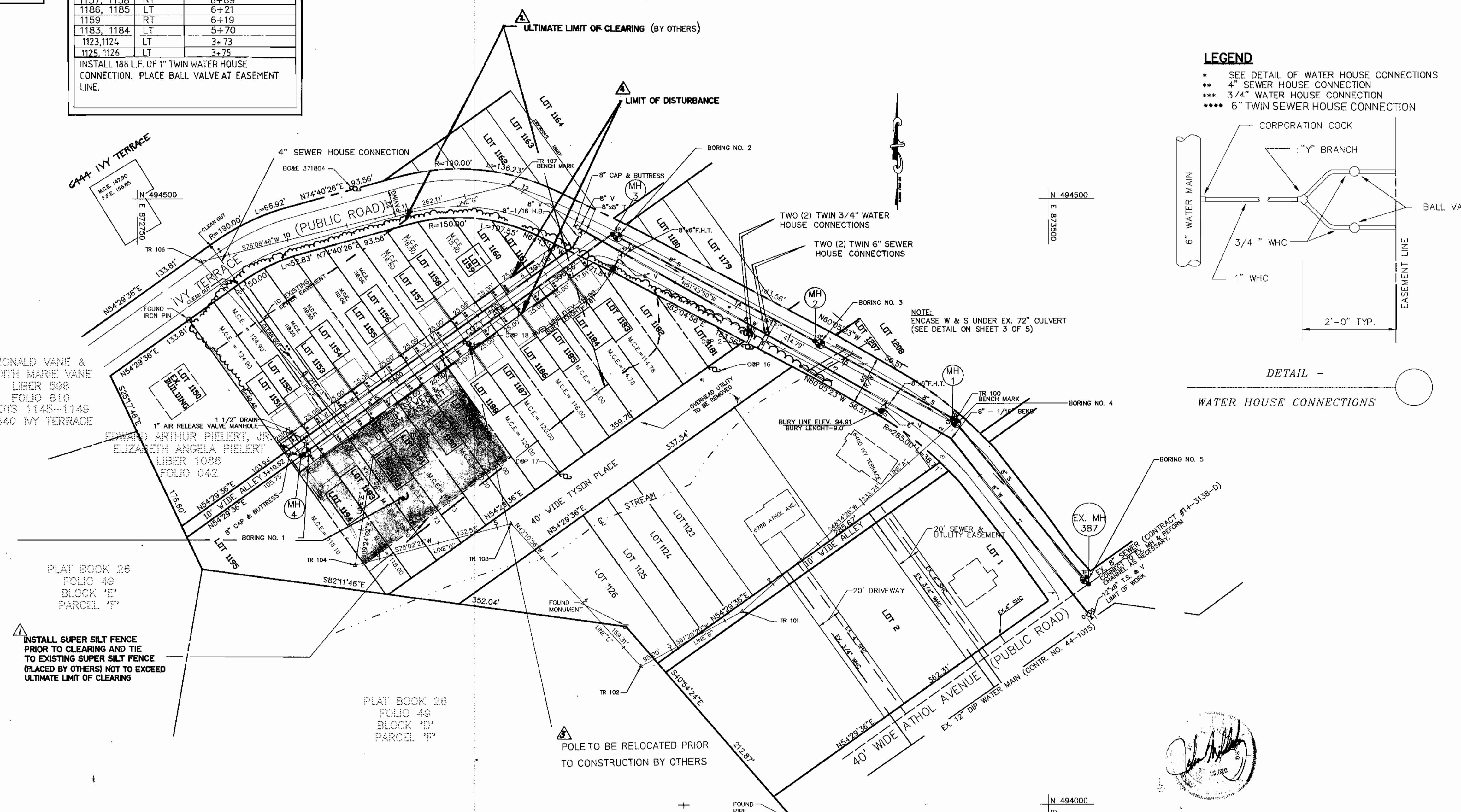
MANHOLE TABULATION CHART

IVY TERRACE AND ALLEY

MH NO.	NORTHING	EASTING	RIM ELEV.	TYPE
1	494318.60270	873421.17739	96.02	STANDARD
2	494382.55436	873307.99530	94.00	TYPE "B" DROP
3	494470.79215	873141.24132	113.00	STANDARD
4	494288.11528	872885.20017	133.96	STANDARD

LOT ADDRESSES

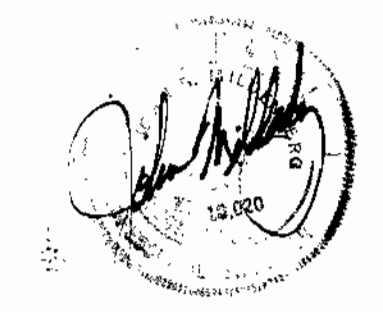
LOT	ADDRESS
1159	6712 COZY LANE
1158	6716 COZY LANE
1157	6720 COZY LANE
1156	6724 COZY LANE
1155	6728 COZY LANE
1154	6732 COZY LANE
1153	6736 COZY LANE
1152	6740 COZY LANE
1151	6744 COZY LANE
1183	6705 COZY LANE
1184	6709 COZY LANE
1185	6713 COZY LANE
1186	6717 COZY LANE
1187	6721 COZY LANE
1188	6725 COZY LANE
1189	6729 COZY LANE
1190	6733 COZY LANE
1191	6737 COZY LANE
1192	6741 COZY LANE
1193	6745 COZY LANE
1194	6749 COZY LANE



STAGING AREA FOR USE BY CONTRACTOR AND AREA FOR DISPOSAL OF EXCESS MATERIAL TO BE PLACED UNDER THE DIRECTION OF THE ENGINEER IN THE FIELD

INSTALL SUPER SILT FENCE PRIOR TO CLEARING AND TIE TO EXISTING SUPER SILT FENCE (PLACED BY OTHERS) NOT TO EXCEED ULTIMATE LIMIT OF CLEARING

POLE TO BE RELOCATED PRIOR TO CONSTRUCTION BY OTHERS



GENERATION BUILDERS, LLC
P.O. BOX 460
LISBON, MARYLAND 21765-0460
(410) 799-5988

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
Alan M. Langman 10/17/95
DIRECTOR OF PUBLIC WORKS (Admin) / DATE
Richard A. Hummel 10-17-95
CHIEF, BUREAU OF UTILITIES / DATE
Paul D. Sapan 10/17/95
CHIEF, BUREAU OF ENGINEERING / DATE
John D. ... 10-17-95
CHIEF, WATER AND SEWER DIVISION / DATE

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5072 Dorsey Hall Drive, Suite 202, Elkton City, Maryland 21042
(410) 997-0286 Ball. (301) 621-5621 Wash. (410) 997-0286 Fax

engineering	MAT	50	CHANGED STAGING AREA	2/1/94
illustration	MAT	50	ADDED ULTIMATE LIMIT OF CLEARING	2/1/94
approval	JBM	50	ADDED LIMIT OF DISTURBANCE	2/1/94
project	95018			
date	7/95			

WATER & SEWER SITE PLAN
600' SCALE MAP NO. 38 BLOCK NO. 3

HARWOOD PARK
IVY TERRACE WATER & SEWER MAINS EXTENSIONS
CAPITAL PROJECT NO. S-6695
CONTRACT NO. 10-3471
1ST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

scale AS SHOWN
2 OF 5

ATHOL AVENUE

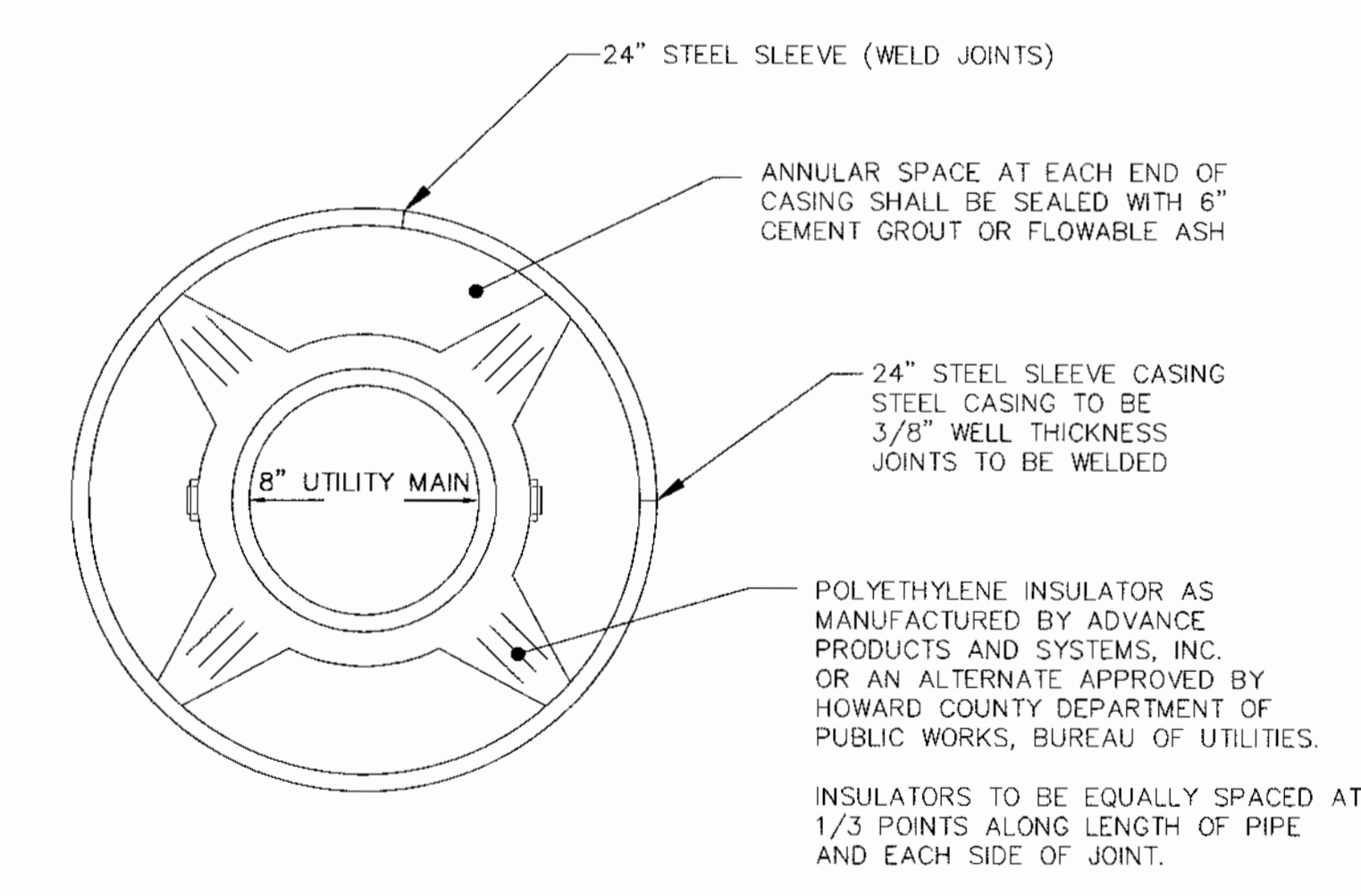
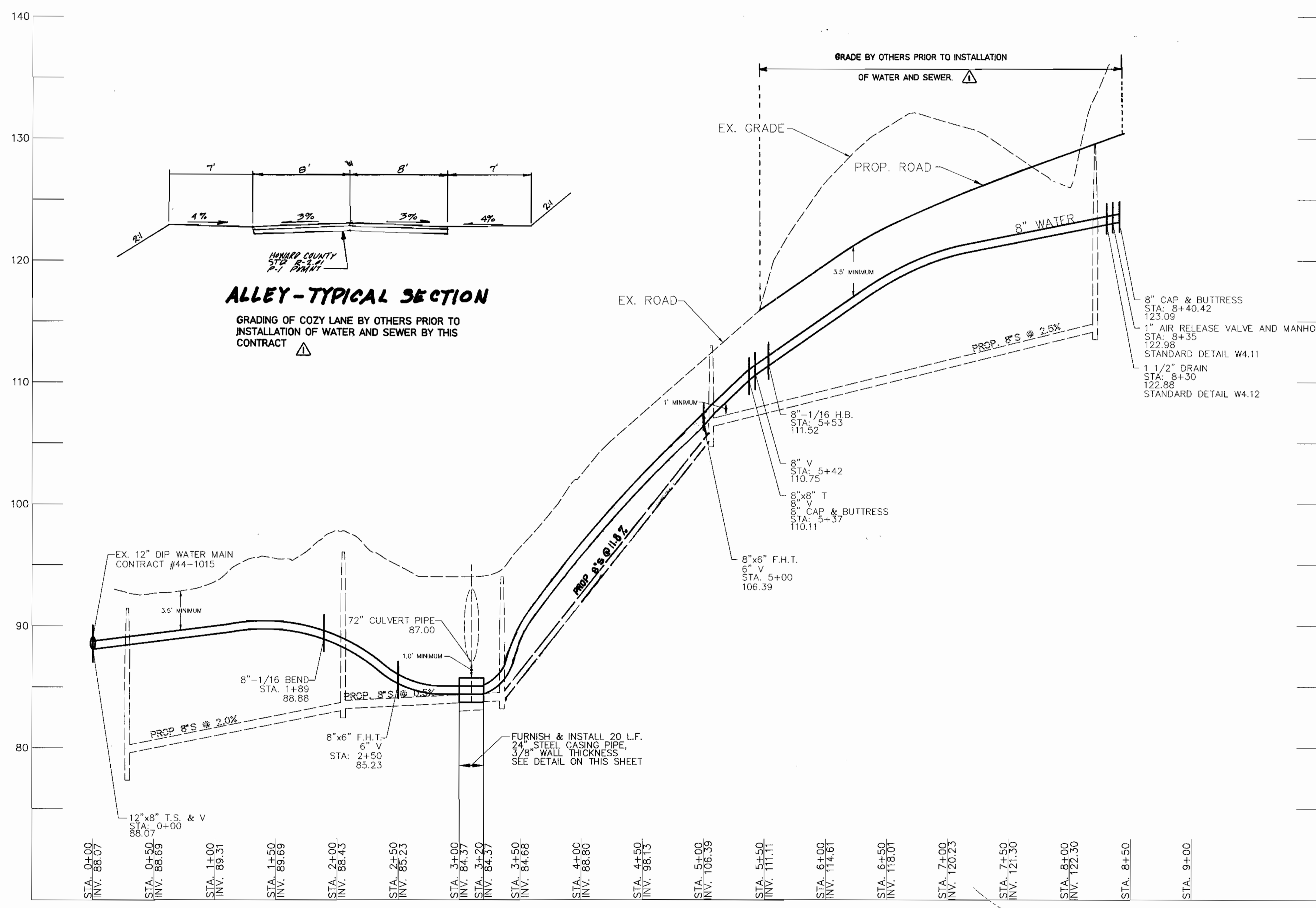
R/W

IVY TERRACE

ALLEY

LOTS 1183	LOTS 1184	LOTS 1185	LOTS 1186	LOTS 1187	LOTS 1188	LOTS 1189	LOTS 1190	LOTS 1191	LOTS 1192	LOTS 1193	LOTS 1194
-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------

WATER SUPPLY RESTORATION SCHEDULE			
LOCATION	LENGTH	APPURTENANCE	MATERIAL
STA. 0+00 TO STA. 8+40.42	840.42	8" D.I.P. PIPE	PAVEMENT, SEED & MULCH
STA. 0+00		12"x8" T.S. & V	PAVEMENT
STA. 1+89		8"-1/16 H.B.	PAVEMENT, SEED & MULCH
STA. 2+50		8"x6" F.H.T.	PAVEMENT, SEED & MULCH
STA. 5+00		6" V	PAVEMENT, SEED & MULCH
STA. 5+37		8" V	PAVEMENT, SEED & MULCH
STA. 5+42		8" V	PAVEMENT, SEED & MULCH
STA. 5+53		8"-1/16 H.B.	PAVEMENT, SEED & MULCH
STA. 5+70, LT, LOTS #1183, #1184	20'	1" TWIN WHC	SEED & MULCH
STA. 6+19, RT, LOT #1159	10'	3/4" WHC	SEED & MULCH
STA. 6+21, LT, LOTS #1185, #1186	20'	1" TWIN WHC	SEED & MULCH
STA. 6+69, RT, LOTS #1157, #1158	10'	1" TWIN WHC	SEED & MULCH
STA. 6+70, LT, LOTS #1187, #1188	20'	1" TWIN WHC	SEED & MULCH
STA. 7+19, RT, LOTS #1155, #1156	10'	1" TWIN WHC	SEED & MULCH
STA. 7+20, LT, LOTS #1189, #1190	20'	1" TWIN WHC	SEED & MULCH
STA. 7+69, RT, LOTS #1153, #1154	10'	1" TWIN WHC	SEED & MULCH
STA. 7+70, LT, LOTS #1191, #1192	20'	1" TWIN WHC	SEED & MULCH
STA. 8+19, RT, LOTS #1151, #1152	10'	1" TWIN WHC	SEED & MULCH
STA. 8+20, LT, LOTS #1193, #1194	20'	1" TWIN WHC	SEED & MULCH
STA. 8+30	10'	1 1/2" DRAIN	SEED & MULCH
STA. 8+35		1" AIR RELEASE VALVE AND MANHOLE	SEED & MULCH
STA. 8+39, RT, LOT #1150	11'	3/4" WHC	SEED & MULCH

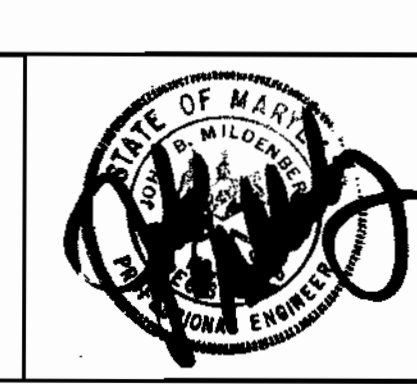


ENCASEMENT PIPE DETAIL
NO SCALE



DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
10/20/95
10/17/95

MILDENBERG, BOENDER & ASSOC., INC.
Engineers Planners Surveyors
5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
(410) 997-0296



engineering	MAT	50	NOTE ABOUT COZY LANE GRADE	2/17/90
illustration	MAT			
approval	JBM			
project	95018			
date	7/95			

WATER MAIN PROFILE
600' SCALE MAP NO. 38 BLOCK NO. 3

HARWOOD PARK
IVY TERRACE WATER & SEWER MAINS EXTENSIONS
CAPITAL PROJECT NO. S-6695
CONTRACT NO. 10-3471
1ST ELECTION DISTRICT
HOWARD COUNTY, MARYLAND
3 of 5

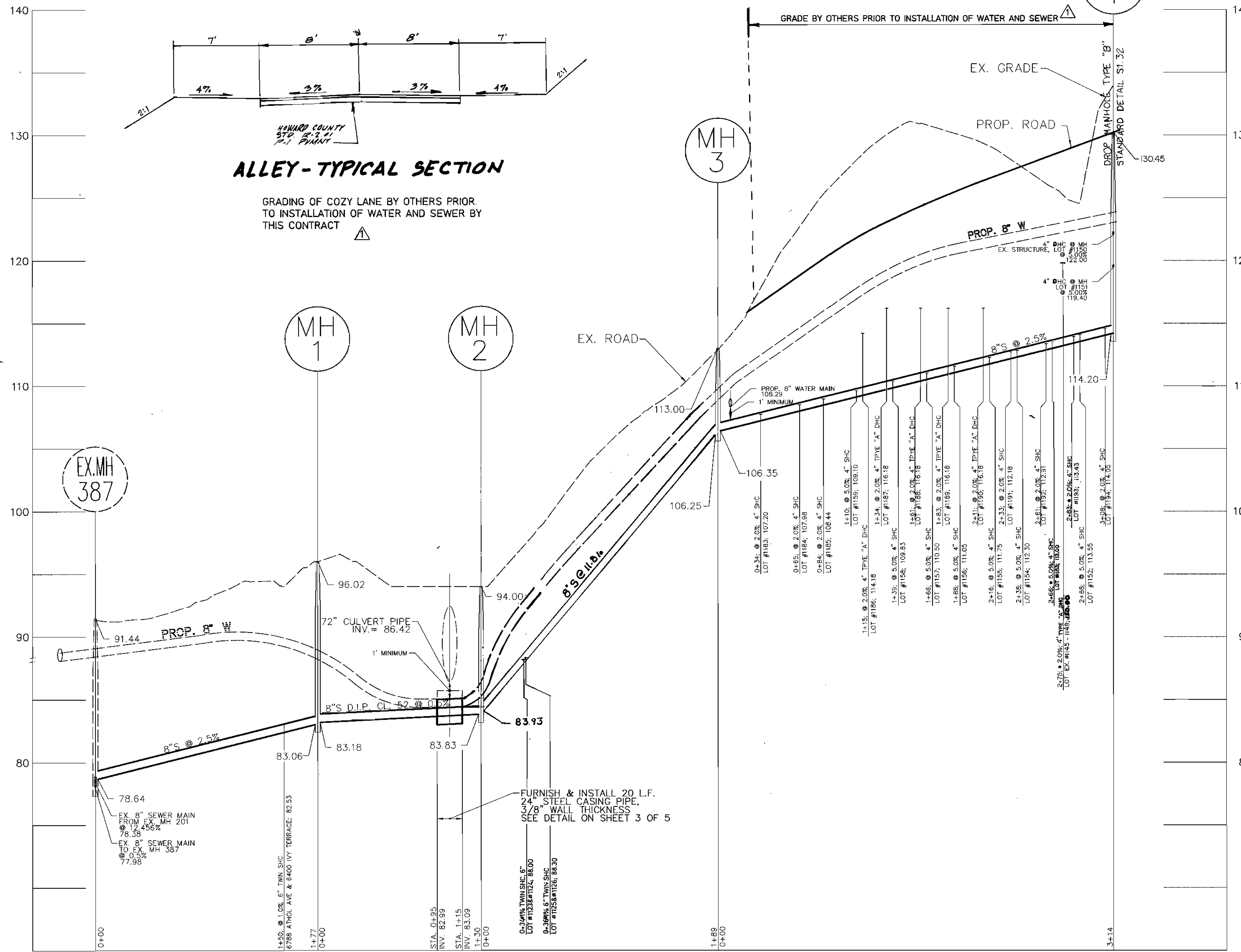
ATHOL AVENUE

IVY TERRACE

ALLEY

R/W

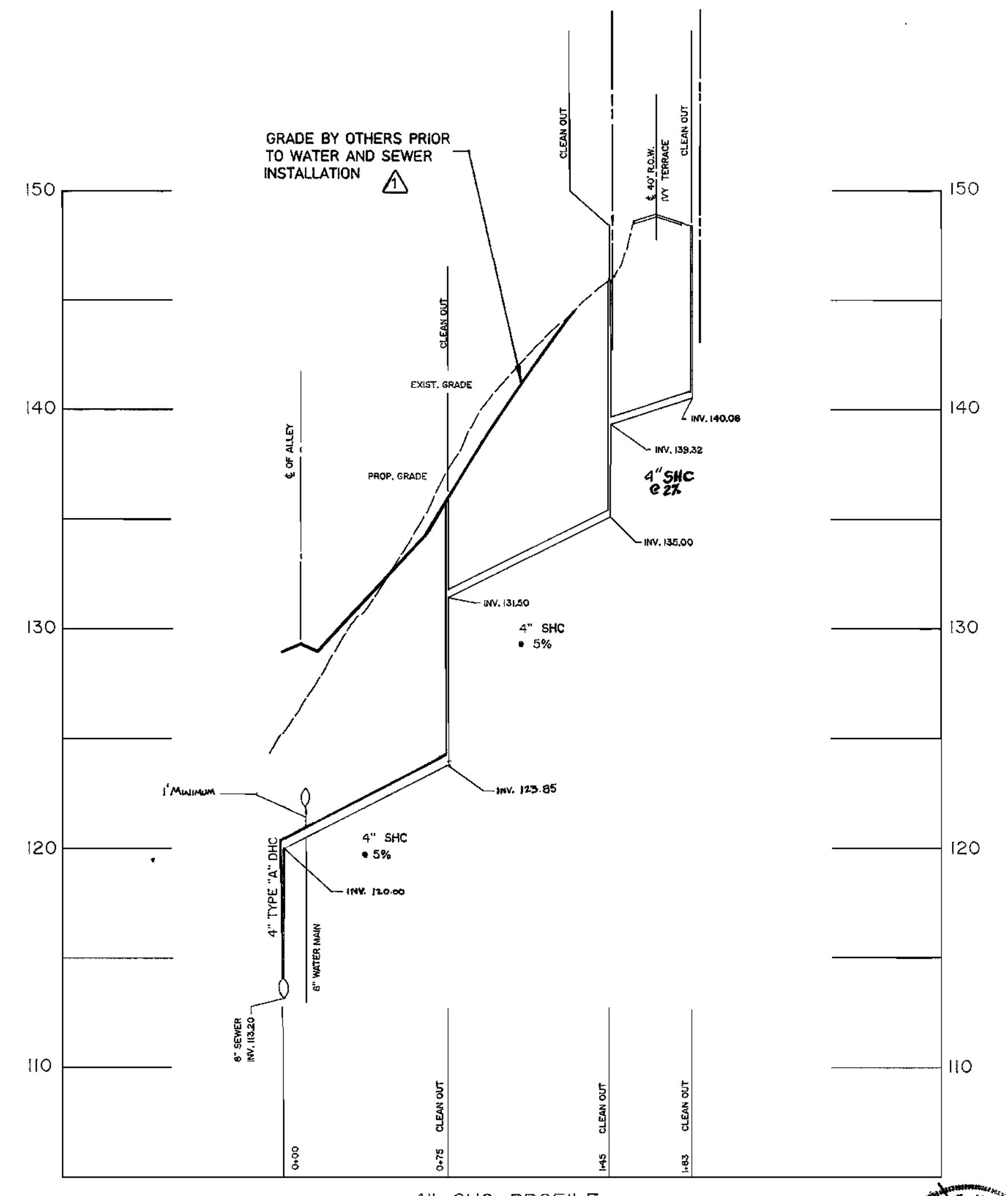
LOTS 1183
 LOTS 1184
 LOTS 1160 & 1185
 LOTS 1159 & 1186
 LOTS 1158 & 1187
 LOTS 1157 & 1188
 LOTS 1156 & 1189
 LOTS 1155 & 1190
 LOTS 1154 & 1191
 LOTS 1153 & 1192
 LOTS 1152 & 1193
 LOTS 1151 & 1194



ALLEY-TYPICAL SECTION

GRADING OF COZY LANE BY OTHERS PRIOR TO INSTALLATION OF WATER AND SEWER BY THIS CONTRACT

LOCATION	LENGTH	MATERIAL
EX. MH 387 TO MH 1		
STA. 0+00 TO STA. 1+77	177'	PAVEMENT, SEED & MULCH
STA. 1+50, LT, LOTS 5 & 6 (6" TWIN SHC)	30'	PAVEMENT, SEED & MULCH
MH 1 TO MH 2		
STA. 0+00 TO STA. 1+30	130'	PAVEMENT, SEED & MULCH
STA. 0+95 TO STA. 1+15, ENCASED PIPE	20'	PAVEMENT, SEED & MULCH
MH 2 TO MH 3		
STA. 0+00 TO STA. 1+89	189'	PAVEMENT, SEED & MULCH
MH 3 TO MH 4		
STA. 0+00 TO STA. 3+14	314'	PAVEMENT, SEED & MULCH
STA. 0+34, LT, LOT #1183 (4" SHC)	10'	SEED & MULCH
STA. 0+65, LT, LOT #1184 (4" SHC)	10'	SEED & MULCH
STA. 0+84, LT, LOT #1185 (4" SHC)	10'	SEED & MULCH
STA. 1+10, RT, LOT #1159 (4" SHC)	20'	SEED & MULCH
STA. 1+15, LT, LOT #1186 (4" DHC)	10'	SEED & MULCH
STA. 1+34, LT, LOT #1187 (4" DHC)	10'	SEED & MULCH
STA. 1+39, RT, LOT #1158 (4" SHC)	20'	SEED & MULCH
STA. 1+61, LT, LOT #1188 (4" DHC)	10'	SEED & MULCH
STA. 1+66, RT, LOT #1157 (4" SHC)	20'	SEED & MULCH
STA. 1+83, LT, LOT #1189 (4" DHC)	10'	SEED & MULCH
STA. 1+88, RT, LOT #1156 (4" SHC)	20'	SEED & MULCH
STA. 2+11, LT, LOT #1190 (4" DHC)	10'	SEED & MULCH
STA. 2+16, RT, LOT #1155 (4" SHC)	20'	SEED & MULCH
STA. 2+33, RT, LOT #1191 (4" SHC)	10'	SEED & MULCH
STA. 2+38, RT, LOT #1154 (4" SHC)	20'	SEED & MULCH
STA. 2+61, LT, LOT #1192 (4" SHC)	10'	SEED & MULCH
STA. 2+66, RT, LOT #1153 (4" SHC)	20'	SEED & MULCH
STA. 2+75, RT, LOT #1145 (4" DHC)	183'	SEED, MULCH & PAVEMENT
STA. 2+83, LT, LOT #1193 (4" SHC)	10'	SEED & MULCH
STA. 2+88, RT, LOT #1152 (4" SHC)	20'	SEED & MULCH
STA. 3+08, LT, LOT #1194 (4" SHC)	10'	SEED & MULCH
STA. 3+14, RT, LOT #1151 (4" SHC+MH)	20'	SEED & MULCH
STA. 3+14, RT, LOT #1150 (4" SHC+MH)	15'	SEED & MULCH



DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 Director of Public Works: *Alma M. Lemmon* 10/20/95
 Chief, Bureau of Engineering: *Paul J. Zeman* 10/17/95
 Chief, Bureau of Utilities: *Nicholas J. ...* 10/19/95
 Chief, Water and Sewer Division: *...* 10-17-95

MILDENBERG, BOENDER & ASSOC., INC.
 Engineers Planners Surveyors
 5072 Dorsey Hall Drive, Suite 202, Ellicott City, Maryland 21042
 (410) 997-0286 Ball. (301) 821-5521 Wash. (410) 997-0288 Fax

engineering	MAT	60	NOTE ABOUT COZY LANE GRADE	3/7/95
illustration	MAT			
approval	JBM			
project	95018			
date	7/95	BY	NO.	REVISION

SEWER MAIN PROFILE
 600' SCALE MAP NO. 38 BLOCK NO. 3

HARWOOD PARK
 IVY TERRACE WATER & SEWER MAINS EXTENSIONS
 CAPITAL PROJECT NO. S-6695
 CONTRACT NO. 10-3471
 1ST ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

HOWARD SOIL CONSERVATION DISTRICT
PERMANENT SEEDING NOTES

Apply to graded or cleared areas not subject to immediate further disturbance where a permanent long-lived vegetative cover is needed.

Seedbed Preparation: Loosen upper three inches of soil by raking, disking or other acceptable means before seeding, if not previously loosened.

Soil Amendments: In lieu of soil test recommendations, use one of the following schedules:

- 1) Preferred - Apply 2 tons per acres dolomitic limestone (92 lbs./1000 sq.ft.) and 600 lbs. per acre 10-10-10 fertilizer (14 lbs./1000 sq.ft.) before seeding. Harrow or disk into upper three inches of soil. At time of seeding, apply 400 lbs. per acre 30-0-0 ureaform fertilizer (9 lbs./1000 sq.ft.).
- 2) Acceptable - Apply 2 tons per acre dolomitic limestone (92 lbs./1000 sq.ft.) and 1000 lbs. per acre 10-10-10 fertilizer (23 lbs./1000 sq.ft.) before seeding. Harrow or disk into upper three inches of soil.

Seeding - For the periods March 1 thru April 30, and August 1 thru October 15, seed with 60 lbs. per acre 1.4 lbs./1000 sq.ft.) of Kentucky 31 Tall Fescue. For the period May 1 thru July 31, seed with 60 lbs. Kentucky 31 Tall Fescue per acre and 2 lbs. per acre (.05 lbs./1000 sq.ft.) of weeping lovegrass. During the period of October 16 thru February 28, protect site by: Option (1) - 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring. Option (2) - Use sod. Option (3) - Seed with 60 lbs./acre Kentucky 31 Tall Fescue and mulch with 2 tone/acre well anchored straw.

Mulching - Apply 1-1/2 to 2 tons per acre (70 to 90 lbs./1000 sq.ft.) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gallons per acre (5 gal/1000 sq.ft.) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 348 gallons per acre (8 gal/1000 sq.ft.) for anchoring.

Maintenance - Inspect all seeding areas and make needed repairs, replacements and reseeds.

TEMPORARY SEEDING NOTES

Apply to graded or cleared areas likely to be redisturbed where a short-term vegetative cover is needed.

Seedbed Preparation: Loosen upper three inches of soil by raking, disking or other acceptable means before seeding, for not previously loosened.

Soil Amendments: Apply 600 lbs. per acre 10-10-10 fertilizer (14 lbs./1000 sq.ft.)

Seeding: For periods March 1 thru April 30 and from August 15 thru October 15, seed with 2-1/2 bushel per acre of annual rye (3.2 lbs./1000 sq.ft.) For the period May 1 thru August 14, seed with 3 lbs. per acre of weeping lovegrass (.07 lbs./1000 sq.ft.). For the period November 16 thru November 28, protect site by applying 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.

Mulching: Apply 1-1/2 to 2 tons per acre (70 to 90 lbs./1000 sq.ft.) of unrotted weed free small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gal per acre (5 gal/1000 sq.ft.) of emulsified asphalt on flat areas. On slopes 8 feet or higher, use 348 gal per acre (8 gal/1000 sq.ft.) for anchoring.

Refer to the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for additional rates and methods not covered.

STANDARD SEDIMENT CONTROL NOTES

- 1) A minimum of 48 hours notice must be given to the Howard County Department of Inspections, Licenses and Permits, Sediment Control Division prior to the start of any construction, (313-1855).
- 2) All vegetative and structural practices are to be installed according to the provisions of this plan and are to be in conformance with the most current "MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL", and revisions thereto.
- 3) 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.
- 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 areas must be stabilized within the time period specified above in accordance with the 1991 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 mulch 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) Site Analysis:

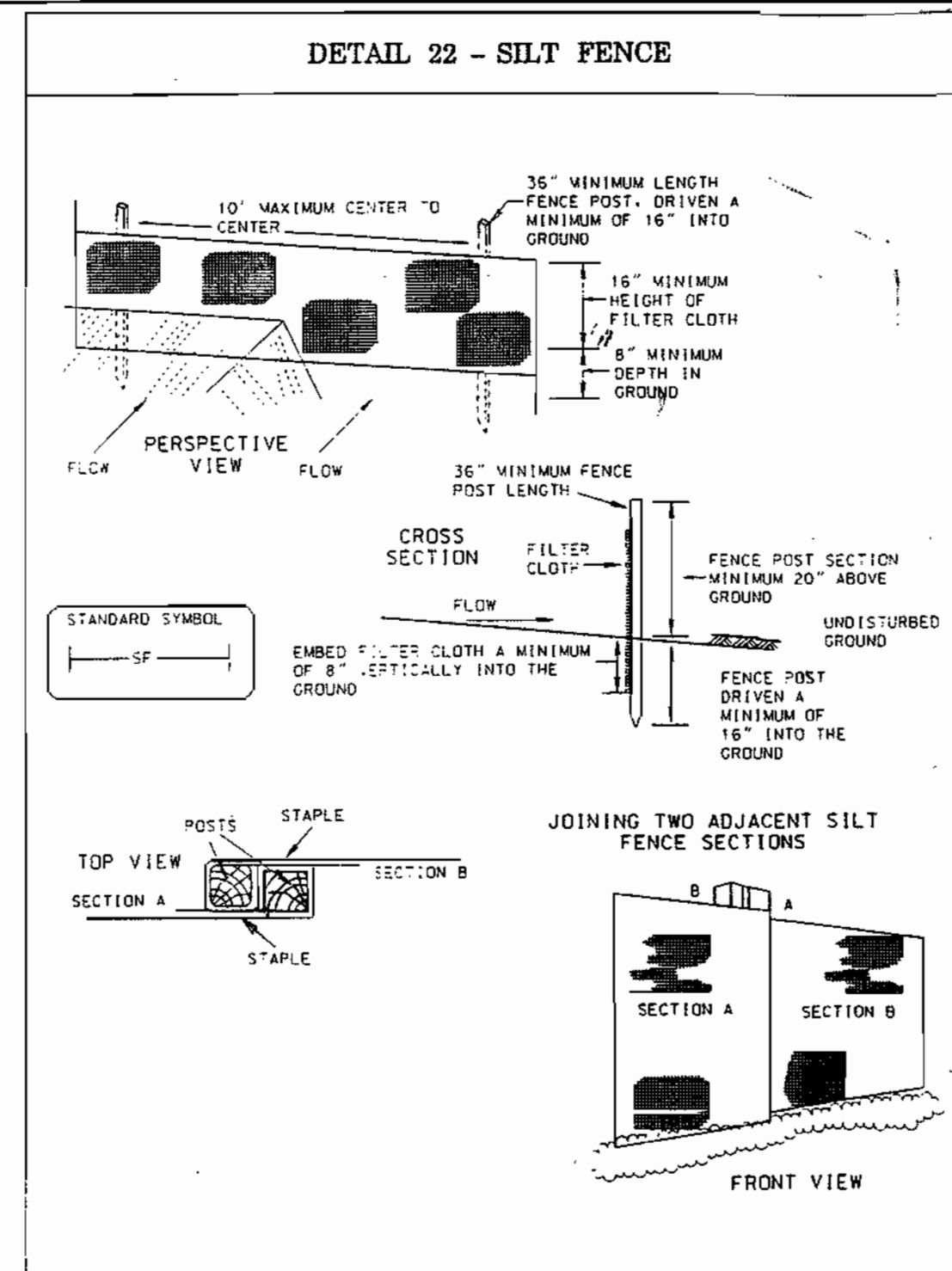
Total Area of Site:	2.83	ACRES
Area Disturbed:	0.30	ACRES
Area to be roofed or paved:	0.16	ACRES
Area to be vegetatively stabilized:	0.14	ACRES
Total Cut:	4,369	YARDS ³
Total fill:	5,666	YARDS ³
Total waste/borrow area location:		
- 8) Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
- 9) Additional sediment control must be provided, if deemed necessary by the Howard County Sediment Control Inspector.
- 10) On all sites with disturbed areas in excess of 2 acres, approval of the inspection agency shall be requested upon completion of installation of perimeter erosion and sediment controls, but before proceeding with any other earth disturbance or grading. Other building or grading inspection approvals may not be authorized until this initial approval by the inspection agency is made.
- 11) Trenches for the construction of utilities is limited to three pipe lengths or that which can be back filled and stabilized within one working day, whichever is shorter.

EROSION AND SEDIMENT CONTROL NOTES:

- 1) ALL SEDIMENT CONTROL OPERATIONS ARE TO BE DONE IN ACCORDANCE WITH SECTION 219 OF THE HOWARD COUNTY VOLUME IV DESIGN MANUAL AND THE STANDARDS AND SPECIFICATIONS FOR SEDIMENT CONTROL IN DEVELOPING AREAS.
- 2) ALL EROSION AND SEDIMENT CONTROL DEVICES SHALL BE INSTALLED AS THE FIRST ORDER OF BUSINESS.
- 3) ALL EXCAVATED MATERIALS SHALL BE STOCKPILED ON THE UPGRADE SIDE OF THE SEWER MAIN TRENCH.
- 4) IMMEDIATELY FOLLOWING BACKFILL OF THE SEWER MAIN TRENCH, ALL DISTURBED AREAS ARE TO BE STABILIZED IN ACCORDANCE WITH THE PERMANENT STABILIZATION AND SEEDING NOTES SHOWN ON THIS SHEET.
- 5) THROUGHOUT THE PROJECT, THE CONTRACTOR SHALL REGULARLY INSPECT ALL SEDIMENT CONTROL DEVICES AND PROVIDE ALL NECESSARY MAINTENANCE TO INSURE THAT ALL DEVICES ARE IN OPERATIVE CONDITION.
- 6) ALL SEDIMENT CONTROL FACILITIES SHALL REMAIN IN PLACE UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.

SEQUENCE OF OPERATIONS:

- 1) CONTACT HOWARD COUNTY CONSTRUCTION INSPECTION DIVISION 48 HOURS PRIOR TO COMMENCING WORK AT 792-7272.
- 2) OBTAIN THE REQUIRED GRADING PERMIT.
- 3) CLEAR AND GRUB AS NECESSARY. ONLY AS REQUIRED FOR EXCAVATION AND INSTALLATION OF THE WATER AND SEWER MAINS. ONLY WITHIN THE DESIGNATED WATER, SEWER & UTILITY EASEMENTS OR WITHIN THE LIMIT OF DISTURBANCE.
- 4) INSTALL SEDIMENT CONTROL DEVICE PERPENDICULAR TO THE CURB ON THE DOWN-SLOPE SIDE OF CONSTRUCTION.
- 5) SAW CUT AND EXCAVATE DITCH TO THE GRADE SPECIFIED ON THE PROFILE.
- 6) INSTALL SEWER AND WATER LINES.
- 7) STABILIZE, SEED & MULCH ALL DISTURBED AREAS IN ACCORDANCE WITH THE PERMANENT SEEDING NOTES SHOWN ON THIS SHEET.
- 8) INSPECT ALL SEDIMENT CONTROL DEVICES DAILY AND AFTER EACH RAINFALL, REPAIR AS NECESSARY.
- 9) BACKFILL TRENCH AND RESURFACE WITH TEMPORARY BITUMINOUS PAVING.
- 10) CLEAN UP CONSTRUCTION SITE.
- 11) WHEN ALL CONTRIBUTING AREAS TO SEDIMENT CONTROL DEVICE HAVE BEEN PERMANENTLY STABILIZED, AND AFTER PERMISSION HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR, REMOVE ALL EROSION & SEDIMENT CONTROL DEVICES.
- 12) FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN A.) 7 CALENDAR DAYS FOR ALL PERIMETER SLOPES GREATER THAN 3:1 B.) 14 CALENDAR DAYS FOR ALL OTHER DISTURBED GRADED AREAS ON THE PROJECT SITE.



U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE B-8-3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

SILT FENCE

Construction Specifications
 1. A detail of the silt fence shall be shown on the plan, and contain the following minimum requirements:
 a. The type, size, and spacing of fence posts.
 b. The type of filter cloth used.
 c. The method of fastening the filter cloth to the fencing support.
 d. Accumulated sediment must be removed when it reaches 50% of the height of the fabric.
 2. Where ends of filter cloth come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
 3. Design computations are not required.
 4. All silt fences shall be placed as close to the contour as possible.
 5. The area below the fence must be undisturbed or stabilized.
 6. Silt Fence Fabric: The fabric shall meet the Filter fabric specifications listed in Table 27.
 7. Fence Posts (for fabricated units): The length shall be a minimum of 36 inches long. Wood posts, 2" x 2", with a minimum cross sectional area of 3.0 square inches will be of sound quality hardwood. Steel posts will be standard T or U section weighing not less than 1.00 pound per linear foot.

Silt Fence Design Criteria

Slope Steadiness	(Maximum)	
	Slope Length	Silt Fence Length
Flatter than 50:1	unlimited	unlimited
50:1 to 10:1	125 feet	1,000 feet
10:1 to 5:1	100 feet	750 feet
5:1 to 3:1	60 feet	500 feet
3:1 to 2:1	40 feet	250 feet
2:1 and steeper	20 feet	125 feet

Note: In areas of less than 2% slope and sandy soils (USA general classification system, soil Class A) maximum slope length and silt fence length will be unlimited. In those areas a silt fence may be the only perimeter control required.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE B-8-3A MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 Director of Public Works (Area) DATE 10/17/95
 Chief, Bureau of Engineering
 Chief, Bureau of Utilities DATE 10/14/95
 Chief, Water and Sewer Division DATE 10-17-95

MILDENBERG, BOENDER & ASSOC., INC.
 Engineers Planners Surveyors
 5072 Dorsey Hall Drive, Suite 202, Elkton City, Maryland 21042
 (410) 397-0296 Balt. (301) 621-5521 Wash. (410) 987-0298 Fax



engineering	MAT				
illustration	MAT				
approval	JBM				
project	95018				
date	7/95	BY	NO.	REVISION	DATE

TITLE, INDEX OF DRAWINGS, GENERAL NOTES
 600' SCALE MAP NO. 38 BLOCK NO. 3

HARWOOD PARK
 IVY TERRACE WATER & SEWER MAINS EXTENSIONS
 CAPITAL PROJECT NO. S-6695
 CONTRACT NO. 10-3471
 1ST ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

scale AS SHOWN
 5 OF 5