

# VILLAGE of LONGREACH

## SECTION 3 - AREA 2

### WATER AND SEWER MAINS

### CONTRACT NO. 24-1715-D

#### 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 THE 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". CLEAR ALL POLES BY 2'-0" MINIMUM OR TUNNEL AS REQUIRED. ANY COST INCURRED TO THE CONTRACTOR FOR TUNNELING OR BRACING AT POLES SHALL BE INCLUDED IN UNIT PRICES BID FOR CONSTRUCTION OF THE MAIN.
- FOR DETAILS NOT SHOWN ON THE DRAWINGS USE HOWARD COUNTY STANDARD SPECIFICATIONS.
- FOR MATERIALS AND CONSTRUCTION METHODS USE HOWARD COUNTY STANDARD SPECIFICATIONS.
- CONTRACTOR SHALL LOCATE EXISTING UTILITIES OR AGENCIES AT LEAST FIVE (5) WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:

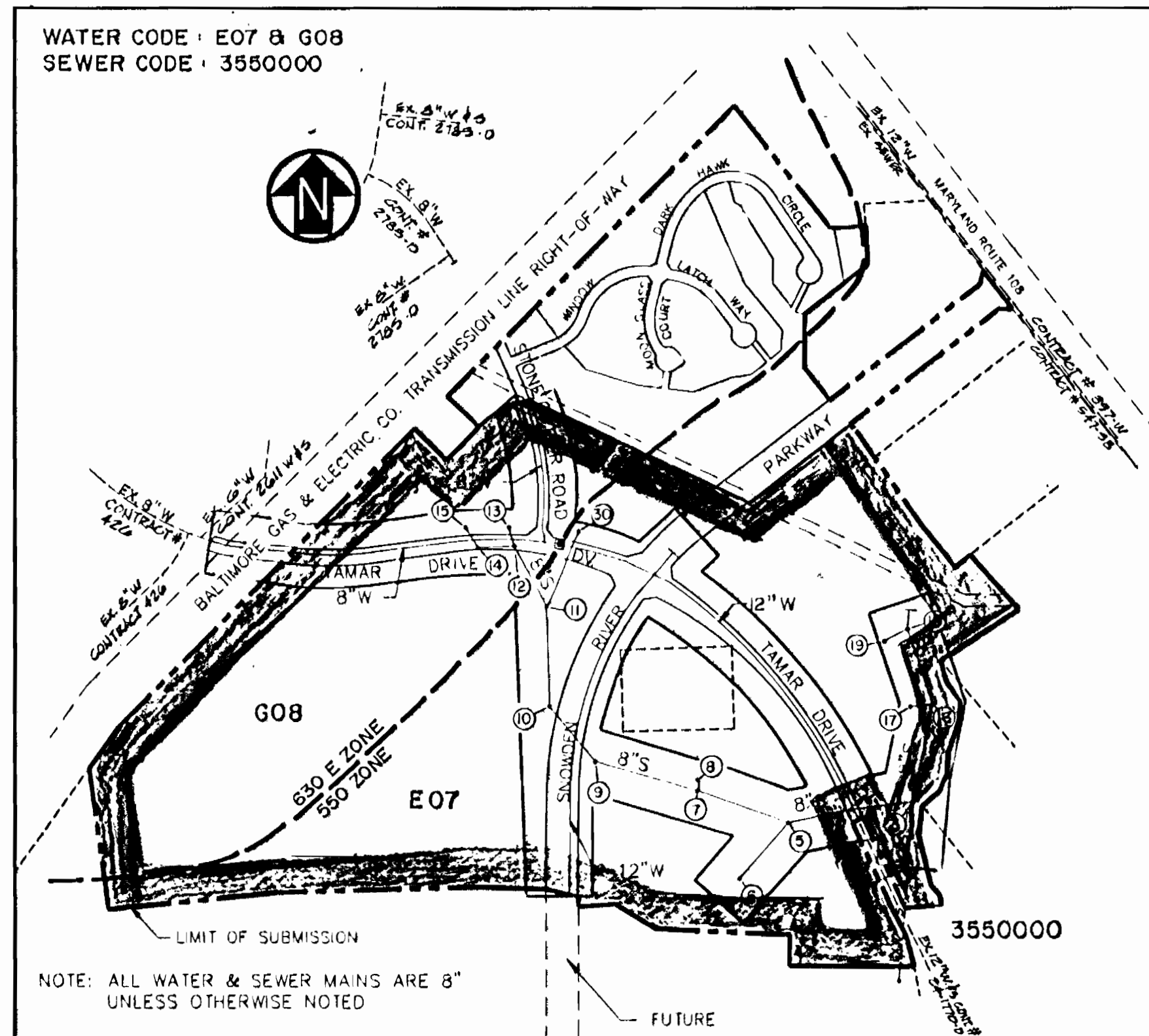
STATE HIGHWAY ADMINISTRATION - 531-5533  
 BALTIMORE GAS AND ELECTRIC COMPANY - UNDERGROUND ELECTRIC DISTRIBUTION CUSTOMER SERVICE - 685-0123  
 BALTIMORE GAS AND ELECTRIC COMPANY - UNDERGROUND GAS DISTRIBUTION CUSTOMER SERVICE - 685-0123  
 ENGINEERING - "DAMAGE CONTROL" - 234-5621  
 "MISS UTILITY" - 1-559-0100  
 CHESAPEAKE AND POTOMAC (C&P) TELEPHONE COMPANY - 725-9976  
 AMERICAN TELEPHONE AND TELEGRAPH - CABLE LOCATION DIVISION - 393-3553  
 COLONIAL PIPELINE COMPANY - 781-4881  
 BUREAU OF UTILITIES HOWARD COUNTY - 992-2366

- TREES ARE TO BE PROTECTED FROM DAMAGE TO MAXIMUM EXTENT. TREES 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 AS DIRECTED BY THE ENGINEER. PAYMENT FOR SUCH REMOVAL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CONSTRUCTION OF THE MAIN.
- PLACE REGULATION "MEN WORKING" AND WARNING SIGNS AS REQUIRED TO COMPLY WITH MARYLAND STATE HIGHWAY ADMINISTRATION MANUAL OF TRAFFIC CONTROL FOR HIGHWAY CONSTRUCTION AND MAINTENANCE OPERATIONS.
- ALL WATER MAINS SHALL BE D.I.P. CL 52, UNLESS OTHERWISE NOTED.
- TOP OF ALL WATER MAINS SHALL HAVE MINIMUM OF 3-1/2' COVER UNLESS OTHERWISE NOTED.
- VALVES ADJACENT TO TEES SHALL BE STRAPPED TO TEES.
- BLOCK ALL FITTINGS WITH CONCRETE.
- BURY LINE ELEVATIONS ON FIRE HYDRANTS SHALL BE SET TO THE 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 TO BE COMPACTED IN ACCORDANCE WITH SECTIONS 37.01 AND 37.05 OF THE STANDARD SPECIFICATIONS.
- ALL WATER HOUSE CONNECTIONS SHALL BE FOR AN INSIDE METER SETTING.
- THE CONTRACTOR SHALL NOT OPERATE ANY WATER MAIN VALVES ON THE EXISTING SYSTEM.
- ALL SEWER MAINS SHALL BE C.S.P.X., R.C.S.P., V.C.P.X., A.C.P. CLASS 2400, D.I.P. OR PVC 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.
- MANHOLES SHOWN WITH 12" AND 16" WALLS ARE FOR BRICK MANHOLES ONLY.
- MANHOLES DESIGNATED WITH IN PLAN AND PROFILE SHALL HAVE WATERTIGHT FRAME AND COVERS, STANDARD DETAIL 6-5-52.
- ALL MANHOLE FRAME AND COVERS SHALL BE SET 0.5' ABOVE EXISTING GRADE WHERE SHOWN IN PROFILE.
- ORIGINAL GROUND OVER WATER AND SEWER WAS TAKEN FROM AERIAL PHOTOGRAPHY PREPARED BY MAPS, INC. AND BY FIELD SURVEY IN AUGUST, 1987 BY PURDUM & JESCHKE.
- ALL D.I.P. FITTINGS SHALL BE IN ACCORDANCE WITH AWWA SPECIFICATION C-153 DUCTILE IRON COMPACT FITTINGS, 3-INCH THROUGH 12-INCH FOR WATER AND OTHER LIQUIDS.

#### CONSTRUCTION SEQUENCE SEDDIMENT CONTROL PROCEDURES

- OBTAIN SEDIMENT CONTROL PERMIT (ARTICLE 15.05-3).
- CONSTRUCT DIKE AND SILT FENCE STRUCTURES.
- CLEAR, GRUB AND STRIP AS REQUIRED FOR SEWER CONSTRUCTION -- PROTECT STRAINS FROM EROSION OF STORED TOPSOIL.
- CONSTRUCT SEWER PIPE LINES.
- RESTORE EROSION CONTROL STRUCTURES DISTURBED BY SEWER CONSTRUCTION.
- STABILIZE DISTURBED AREAS AS CONSTRUCTION PROGRESSES WITH TEMPORARY SEEDING AND MULCHING (OR PERMANENT RESTORATION).
- COMPLETE PERMANENT RESTORATION.
- REMOVE SEDIMENT STRUCTURES WHEN DIRECTED.

NOTE: SEDIMENT CONTROL MEASURES TO BE IMPLEMENTED IN ACCORDANCE WITH VOL. 4 SECT. 219 OF THE HOWARD CO DESIGN MANUAL AND THIS PLAN.



NUMBER OF LOTS - 6  
 TYPE OF BUILDING - MULTI-FAMILY & ATTACHED  
 DRAINAGE AREA - LITTLE PATUXENT

SITE PLAN  
 SCALE: 1 = 600'

#### INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	WATER PLAN AND PROFILE - TAMAR DRIVE STA. 4+00 TO 13+00
3	TAMAR DRIVE STA. 13+00 TO 25+00
4	TAMAR DRIVE STA. 25+00 TO 36+50
5	STONECUTTER ROAD
6	SNOWDEN RIVER PARKWAY STA. 45+20 TO 61+88
7	SEWER PLAN AND PROFILE - MANHOLES #1,3,4,5
8	SEWER PLAN AND PROFILE - MANHOLES #3,6,7,8,9,10
9	SEWER PLAN AND PROFILE - MANHOLES #11,12,13,30
10	SEWER PROFILE - MANHOLES #10,11,12,14,15
11	SEWER PLAN AND PROFILE - MANHOLES #3,16,17,18,19
12	SEDIMENT AND EROSION CONTROL NOTES & DETAILS

#### QUANTITIES

ITEM	UNIT	AREA 2	AS BUILT	MATERIAL/SHIFTER
8" D.I.P. WATER LINE	L.F.	3030	3030'-0"	Giffen Pipe Products
12" D.I.P. WATER LINE	L.F.	3097	3097'-0"	"
6" D.I.P. WATER LINE	L.F.	322	322'-0"	"
AIR RELEASE VALVE MH	EA.	1	1	"
FIRE HYDRANTS	EA.	16	15	Muller Company
12" X 12" CROSS	EA.	1	1	Giffen Pipe Products
8" X 8" TEE	EA.	6	5	"
8" X 6" TEE	EA.	6	6	"
8" VALVES	EA.	14	15	Muller Company
6" VALVES	EA.	16	16	"
12" VALVES	EA.	5	5	"
12" X 8" TEE	EA.	4	7	Giffen Pipe Products
12" X 6" TEE	EA.	10	10	"
12" X 8" REDUCER	EA.	1	1	"
8" DIVISION VALVE	EA.	1	1	Muller Company
10" D.I.P. SEWER PIPE	L.F.	363	364'-0"	Giffen Pipe Products
8" SEWER PIPE	L.F.	4446	3370'-6"	National Pipe
8" D.I.P. SEWER PIPE	L.F.	232	1125'-0"	Giffen Pipe Products
6" SEWER PIPE	L.F.	235	581'-0"	National Pipe
4' TYPE 'A' DROP MH	EA.	2	2	Atlantic Concrete Products
4' TYPE 'B' DROP MH	EA.	1	1	"
4' STANDARD MH	EA.	15	14	"
4' WATERTIGHT MH	EA.	1	2	"

F-88-171

WASTE WATER DISPOSAL: SAVAGE WWTP  
 DRAINAGE AREA: LITTLE PATUXENT  
 NO. OF SHC = 20  
 NO. OF MHC = 0  
 NO. OF LOTS = 6

This Development Plan is approved for soil erosion and sediment control by the Howard Soil Conservation District.  
 [Signature] 6/13/88  
 Date

Reviewed for Howard Soil Conservation District and meets technical requirements.  
 [Signature] 6/13/88  
 Date

**PURDUM & JESCHKE**  
 CONSULTING ENGINEERS AND  
 LAND SURVEYORS  
 1029 North Calvert Street  
 Baltimore, Maryland 21202 (301)837-0194

**OWNER/DEVELOPER**  
 THE HOWARD RESEARCH &  
 DEVELOPMENT LAND COMPANY  
 THE ROUSE BUILDING  
 10275 LITTLE PATUXENT PARKWAY  
 COLUMBIA, MD. 21044

**DEPARTMENT OF PUBLIC WORKS**  
 HOWARD COUNTY, MARYLAND

[Signature] 6/20/88  
 DATE  
 [Signature] 6/20/88  
 DATE

NO.	DATE	DESCRIPTION
1	7-19-88	COMMENTS AS PER DPW
REVISIONS		



CONTRACT NO. 24-1715-D  
 VILLAGE OF LONGREACH  
 SECTION 3 AREA 2 - WATER AND SEWER MAINS  
 TITLE SHEET  
 PARCELS: 27, 50, 229, 242, 254, 255 & 448  
 REFERENCE: SB7-46  
 SIXTH ELECTION DISTRICT HOWARD COUNTY, MD.  
 DATE: 2/8/88 SCALE: NOTED

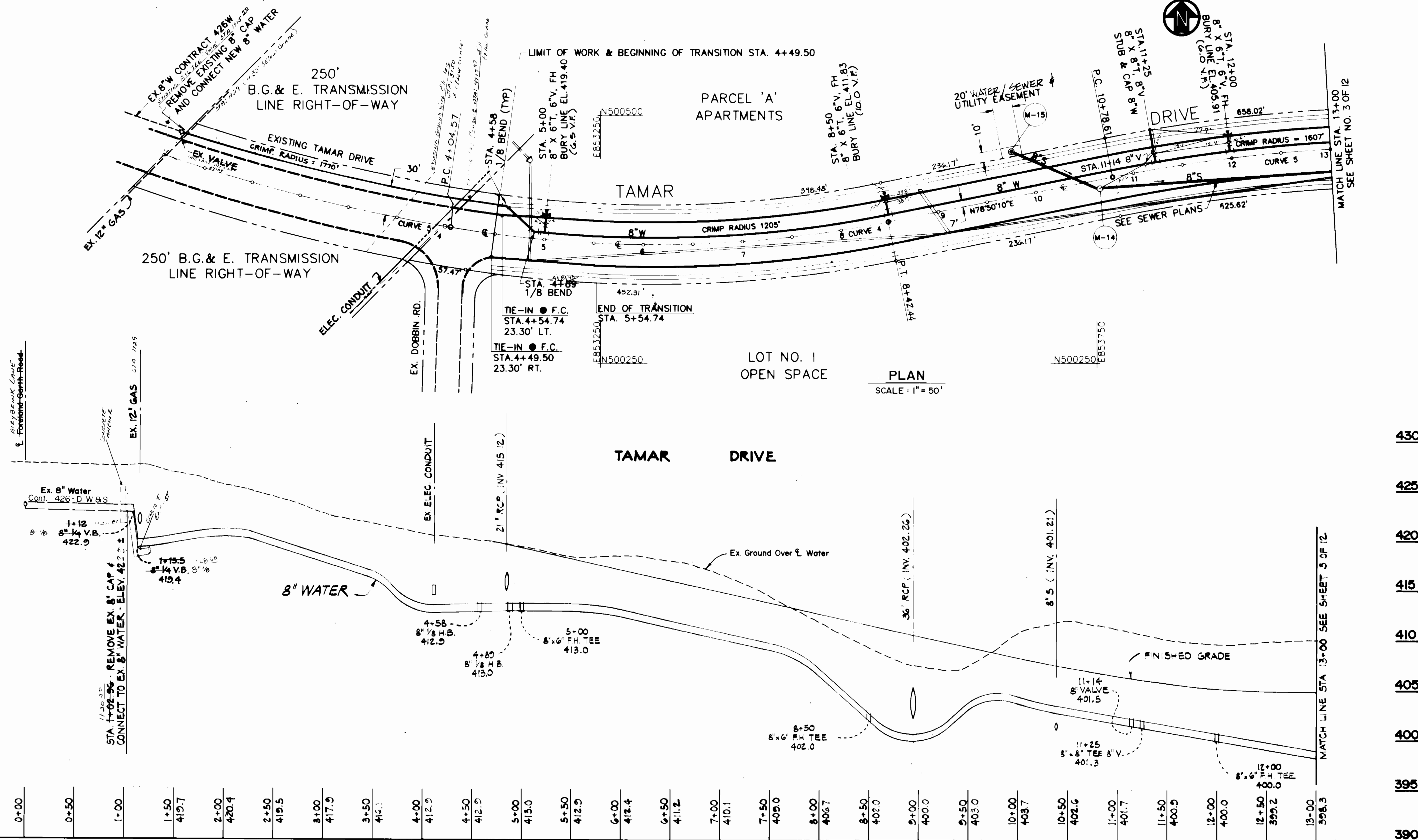
SHEET 1 OF 12  
 DES: GDT  
 DRAWN: JMJ  
 CHK: RHB

CURVE NO.	Δ	RADIUS	LENGTH	TANGENT	CHORD LENGTH	CHORD BEARING
4	20°41'40"	1212.30	437.67	221.35	435.49	N81°11'00"E
5	44°31'14"	1800.00	1252.56	860.30	1220.82	S78°44'13"E

HOWARD COUNTY MONUMENT #2542001 LOCATED  
100 FT± SOUTHWEST OF B. G. & E. TOWERS  
#16 & 16E, 1060 FT± SOUTHWEST OF DOBBIN RD.  
N499539.293 E852111.258 - EL.426.971

**BENCHMARKS**

HOWARD COUNTY MONUMENT #2643006 LOCATED  
55 FT± BETWEEN B. G. & E. TOWERS  
#14 AND 14E, 792 FT± NORTHEAST OF DOBBIN RD.  
N500984.483 E853503.747 - EL.437.461



PLAN  
SCALE: 1" = 50'

**DEPARTMENT OF PUBLIC WORKS**  
HOWARD COUNTY, MARYLAND

*Francis W. Williams* 6-22-88  
DIRECTOR OF PUBLIC WORKS DATE

*Richard J. ...* 6-20-88  
CHIEF, BUREAU OF ENGINEERING DATE

*Michael A. ...* 6-20-88  
CHIEF, BUREAU OF UTILITIES DATE

*Richard J. ...* 6-20-88  
CHIEF, LAND DEVELOPMENT DIV. DATE

**PURDUM & JESCHKE**  
CONSULTING ENGINEERS  
AND LAND SURVEYORS

1029 N. CALVERT ST.  
BALTIMORE, MD. 21202



DES: GDT			
DRN: ARW			
CHK: RHB			
DATE:			
BY:	NO.	REVISION	DATE

**WATER AND SEWER  
PLAN AND PROFILES**

SCALE MAP NO. 36 & 37 BLOCK NO.

CONTRACT NO. 24-1715-D  
**LONGREACH - SECTION 3, AREA 2**

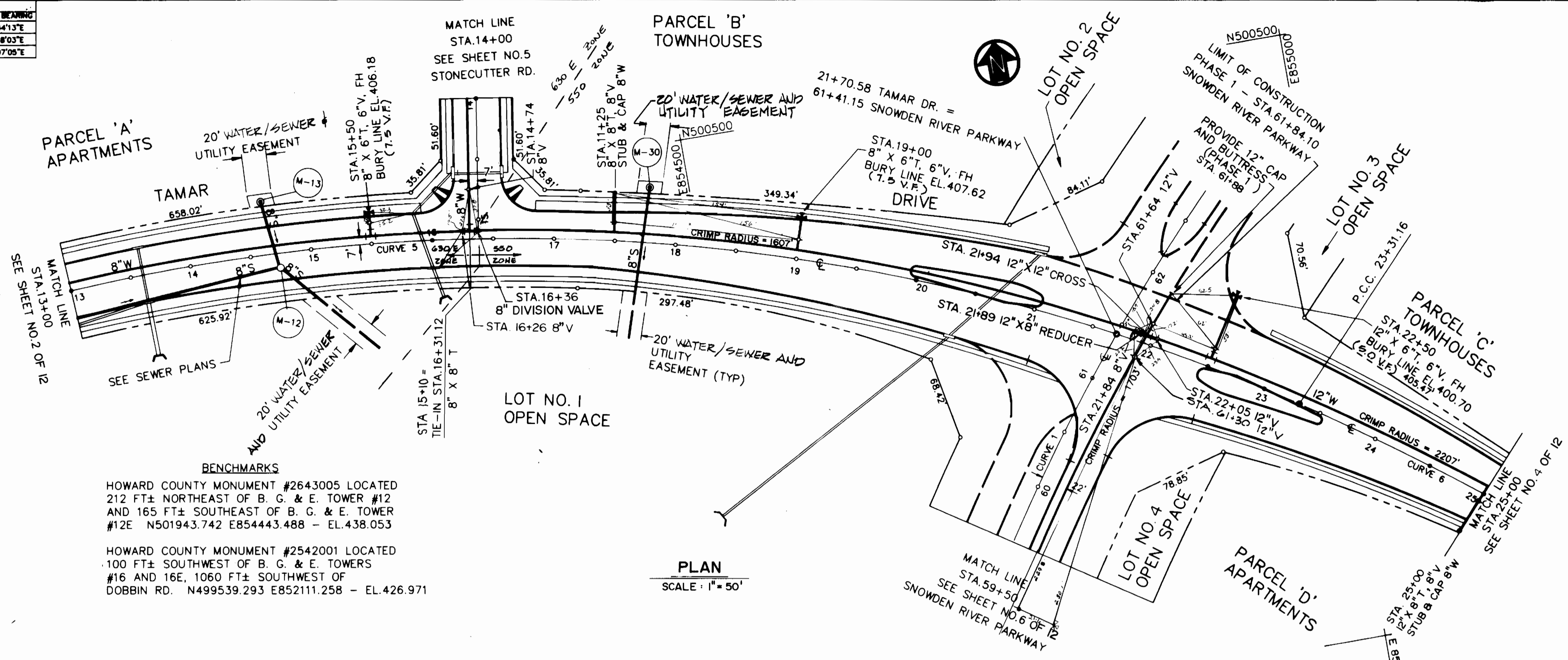
PARCELS 27, 50, 229, 254, 255, 492, 498  
TAX MAP 36 & 37  
SIXTH ELECTION DISTRICT  
DATE: 2/8/88

REFERENCE: S87-46  
HOWARD COUNTY, MD.

SCALE  
HOR: 1" = 50'  
VERT: 1" = 5'

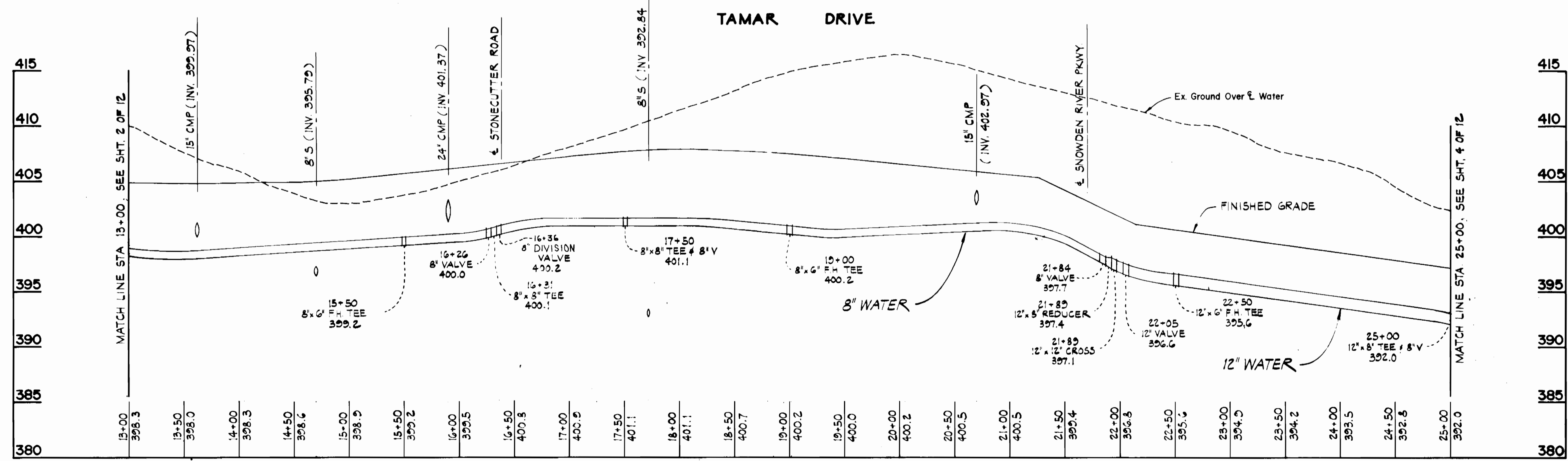
SHEET  
OF 12

CURVE NO.	Δ	RADIUS	LENGTH	TANGENT	CHORD LENGTH	CHORD BEARING
1	44°31'14"	1800.00	1292.98	880.35	1220.82	S78°44'13"E
2	08°41'05"	2200.00	371.87	186.38	371.43	S51°28'03"E
3	51°38'31"	1725.00	1945.32	841.19	1912.17	N26°07'09"E



**BENCHMARKS**  
 HOWARD COUNTY MONUMENT #2643005 LOCATED 212 FT± NORTHEAST OF B. G. & E. TOWER #12 AND 165 FT± SOUTHWEST OF B. G. & E. TOWER #12E N501943.742 E854443.488 - EL.438.053  
 HOWARD COUNTY MONUMENT #2542001 LOCATED 100 FT± SOUTHWEST OF B. G. & E. TOWERS #16 AND 16E, 1060 FT± SOUTHWEST OF DOBBIN RD. N499539.293 E852111.258 - EL.426.971

**PLAN**  
 SCALE: 1" = 50'



**DEPARTMENT OF PUBLIC WORKS**  
 HOWARD COUNTY, MARYLAND  
 Director of Public Works: *William W. Williams*  
 Chief, Bureau of Engineering: *James L. Ryan*  
 Chief, Bureau of Utilities: *Michael J. Ryan*  
 Chief, Land Development Div.: *James L. Ryan*  
 DATE: 6/20/88

**PURDUM & JESCHKE**  
 CONSULTING ENGINEERS AND LAND SURVEYORS  
 1029 N. CALVERT ST.  
 BALTIMORE, MD. 21202



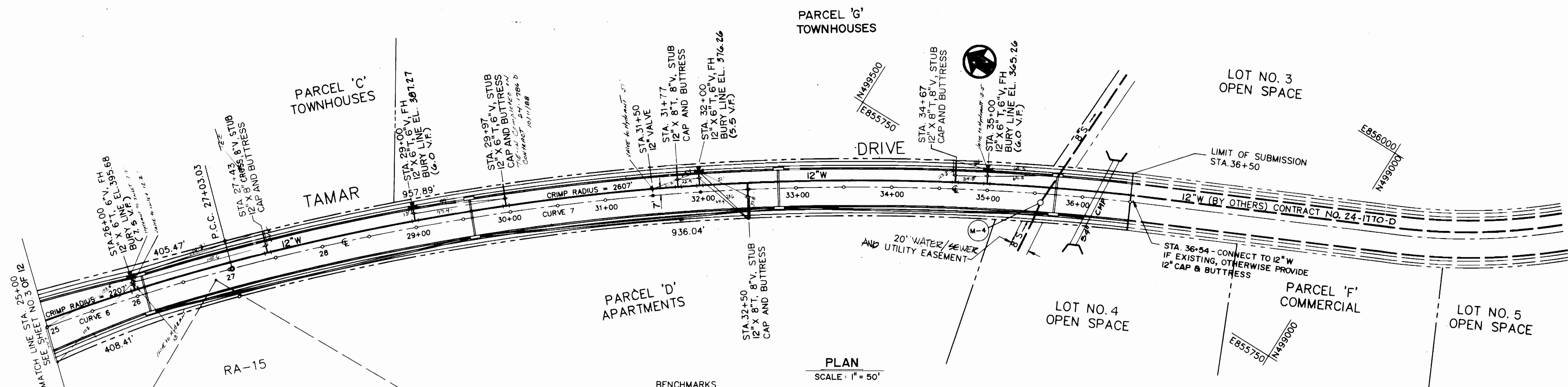
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CHK: RHB	
DATE:	
BY NO.	REVISION
B/G 1	COMMENTS AS PER DPW
7-19-88	

**WATER AND SEWER PLAN AND PROFILES**  
 SCALE MAP NO. 36 & 37 BLOCK NO.

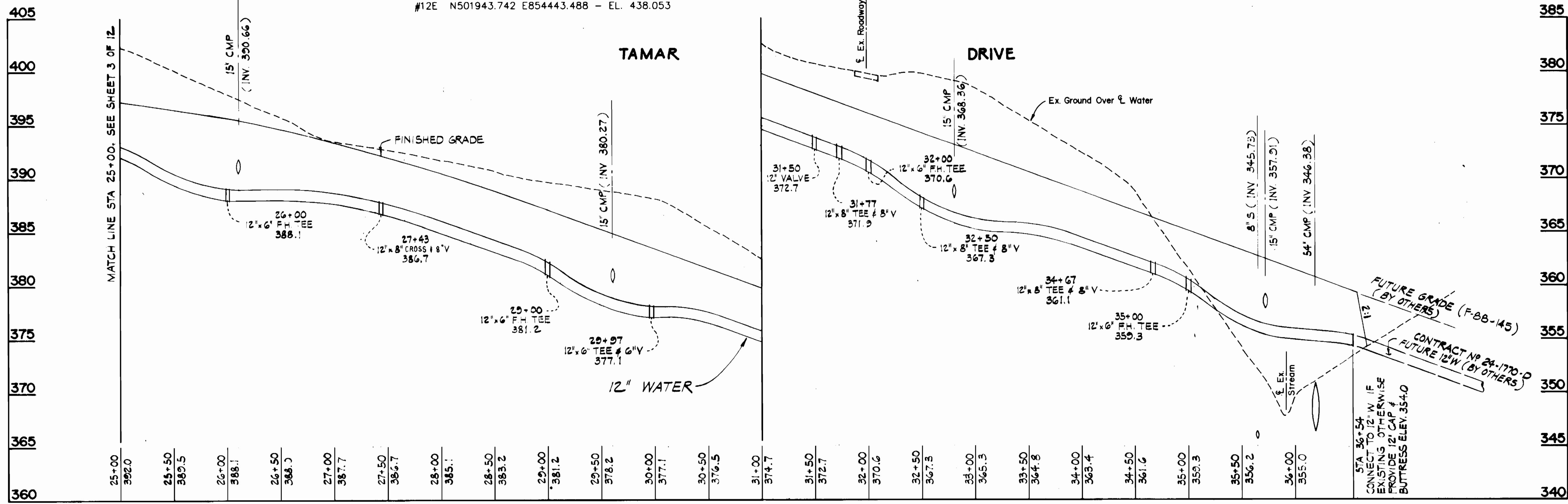
CONTRACT NO. 24-1715-D  
**LONGREACH - SECTION 3, AREA 2**  
 PARCELS 27, 50, 229, 254, 255, 492, 498  
 TAX MAP 36 & 37  
 SIXTH ELECTION DISTRICT  
 DATE: 2/2/88  
 REFERENCE: S87-46  
 HOWARD COUNTY, MD.

SCALE  
 HOR: 1" = 50'  
 VERT: 1" = 5'  
 SHEET  
 2 OF 12

CURVE NO.	Δ	RADIUS	LENGTH	TANGENT	CHORD LENGTH	CHORD BEARING
6	09°41'05"	2200.00	371.87	186.38	371.43	S81°28'03"E
7	20°31'55"	2600.35	946.97	478.79	941.74	S38°11'33"E



BENCHMARKS  
 HOWARD COUNTY MONUMENT #2643005 LOCATED 212 FT ± NORTHEAST OF B. G. & E. TOWER #12 AND 165 FT ± SOUTHEAST OF B. G. & E. TOWER #12E N501943.742 E854443.488 - EL. 438.053  
 TBM - RR SPIKE IN FACE OF POLE #10 AT DRIVE TO HOUSE #8390 OLD MONTGOMERY RD. - EL. 337.63



DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND  
 Director of Public Works: *William J. Williams* DATE: 6/20/88  
 Chief, Bureau of Engineering: *Paul H. Jernigan* DATE: 6/20/88  
 Chief, Bureau of Utilities: *Paul H. Jernigan* DATE: 6/20/88  
 Chief, Land Development Div. DATE:

PURDUM & JESCHKE  
 CONSULTING ENGINEERS AND LAND SURVEYORS  
 1029 N. CALVERT ST.  
 BALTIMORE, MD. 21202

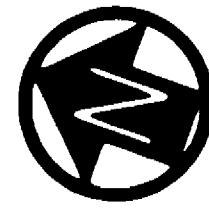


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CHK:	RHB
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BY:	NO.
REVISION:	
DATE:	

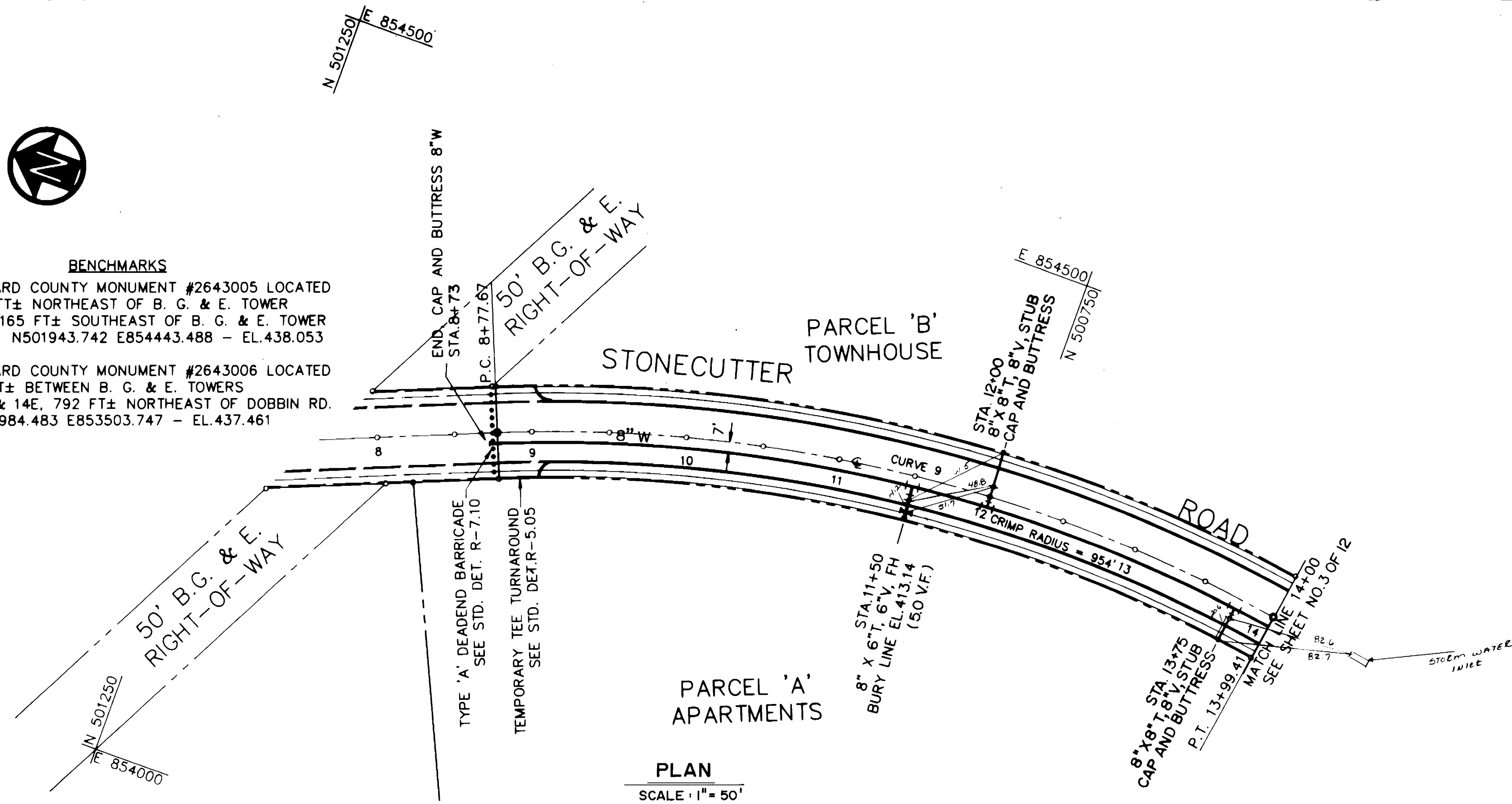
WATER AND SEWER  
 PLAN AND PROFILES  
 SCALE: MAP NO. 36 & 37 BLOCK NO.

CONTRACT NO. 24-1715-D  
 LONGREACH - SECTION 3, AREA 2  
 PARCELS 27, 50, 229, 254, 255, 492, 498  
 TAX MAP 36 & 37  
 SIXTH ELECTION DISTRICT  
 DATE: 2/18/88  
 REFERENCE: S87-46  
 HOWARD COUNTY, MD.  
 SHEET 4 OF 12

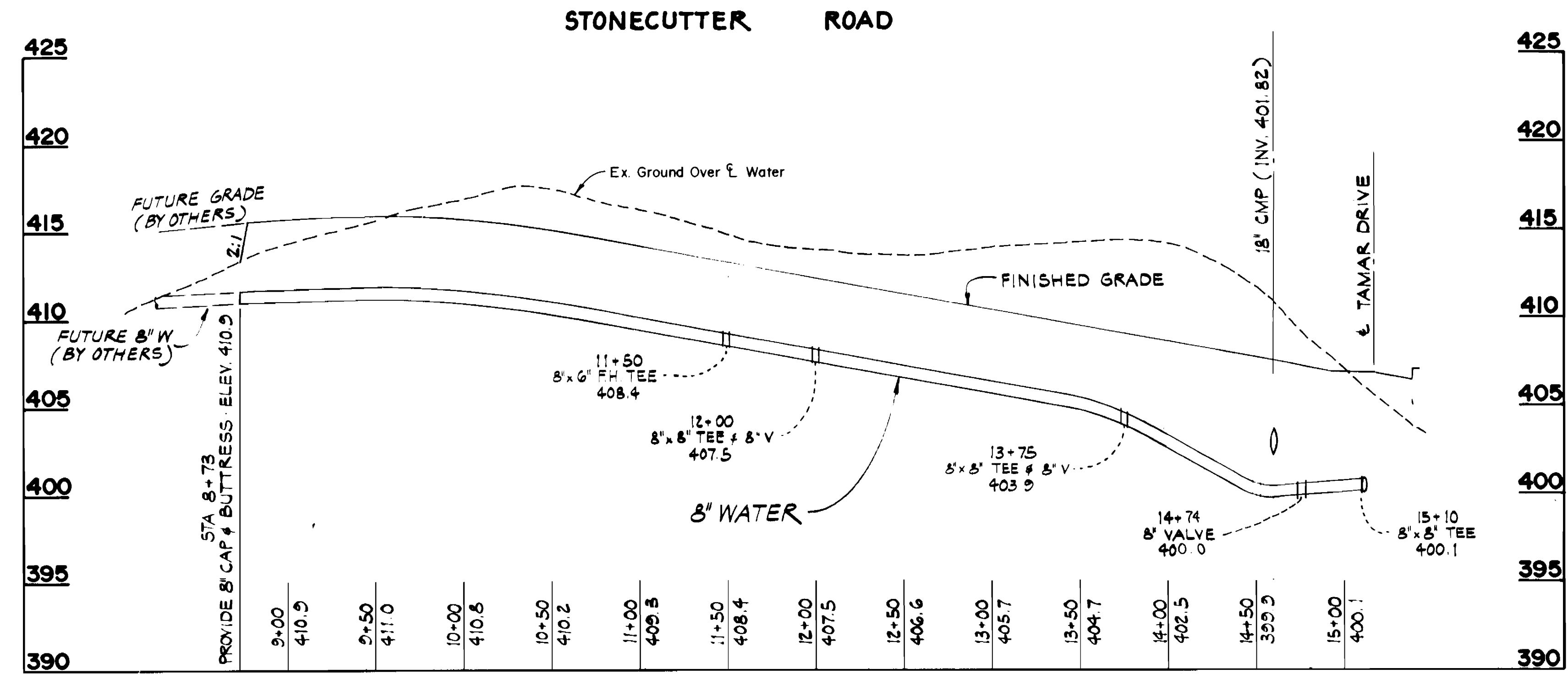
CURVE NO.	Δ	RADIUS	LENGTH	TANGENT	CHORD LENGTH	CHORD BEARING
9	31°08'15"	961.09	521.74	267.47	916.38	308°40'47"E



**BENCHMARKS**  
 HOWARD COUNTY MONUMENT #2643005 LOCATED 212 FT± NORTHEAST OF B. G. & E. TOWER  
 #12, 165 FT± SOUTHEAST OF B. G. & E. TOWER  
 #12E N501943.742 E854443.488 - EL.438.053  
 HOWARD COUNTY MONUMENT #2643006 LOCATED 55 FT± BETWEEN B. G. & E. TOWERS  
 #14 & 14E, 792 FT± NORTHEAST OF DOBBIN RD.  
 N500984.483 E853503.747 - EL.437.461

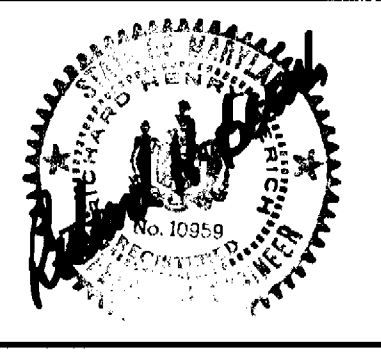


**PLAN**  
 SCALE: 1" = 50'



**DEPARTMENT OF PUBLIC WORKS**  
 HOWARD COUNTY, MARYLAND  
*William W. Williams* 6/20/88  
 DIRECTOR OF PUBLIC WORKS DATE  
*Richard A. Brumby* 6/20/88  
 CHIEF, BUREAU OF UTILITIES DATE  
*James E. Ryan* 6/20/88  
 CHIEF, BUREAU OF ENGINEERING DATE  
*Paul J. Ryan* 6/20/88  
 CHIEF, LAND DEVELOPMENT DIV. DATE

**PURDUM & JESCHKE**  
 CONSULTING ENGINEERS  
 AND LAND SURVEYORS  
 1029 N. CALVERT ST.  
 BALTIMORE, MD. 21202



DES:	GDT
DRN:	ARW
CHK:	RHB
DATE:	7-19-88
BY:	BG
NO.:	1
REVISION:	COMMENTS AS PER DPW

**WATER AND SEWER  
 PLAN AND PROFILES**  
 SCALE MAP NO. 36 & 37 BLOCK NO.

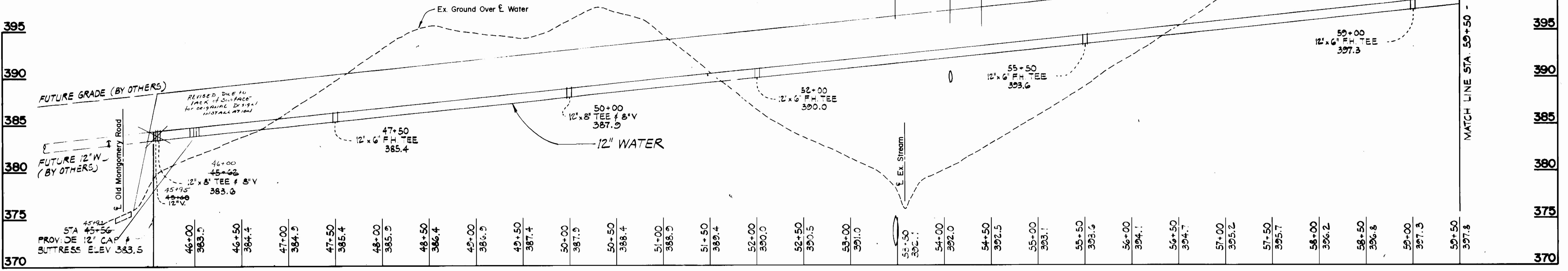
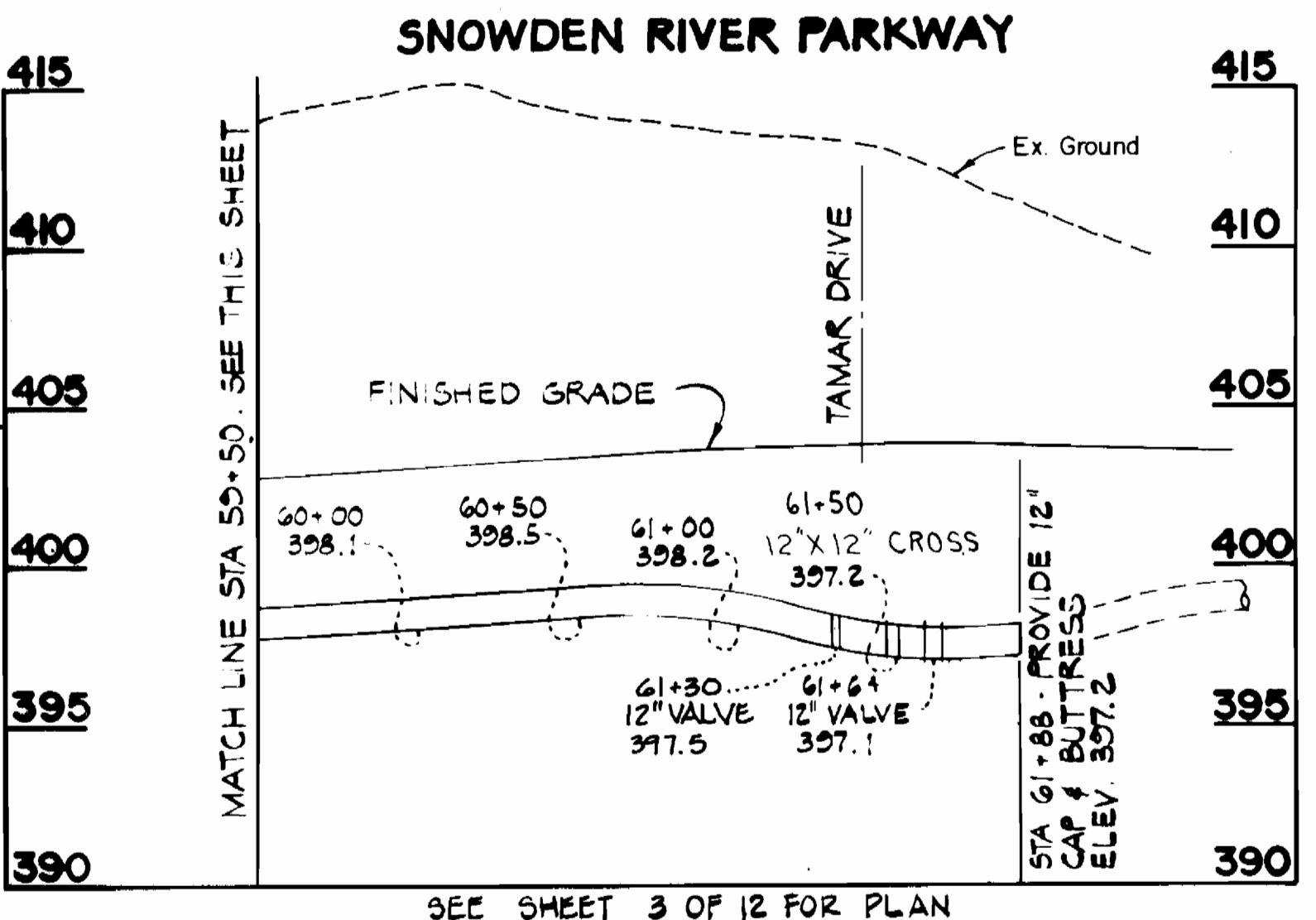
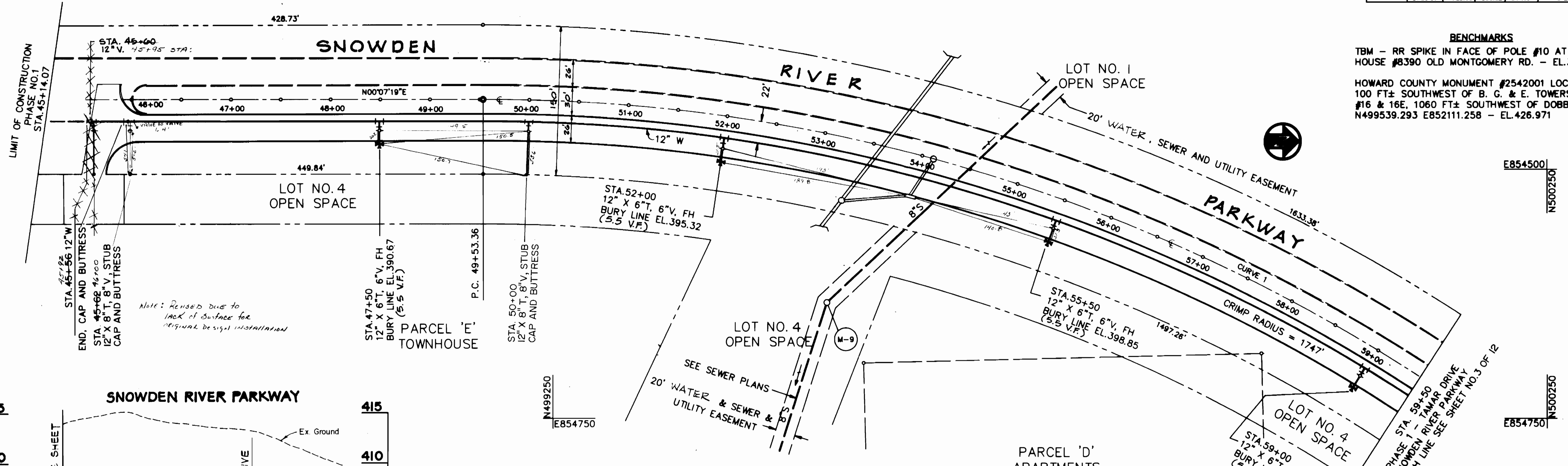
CONTRACT NO. 24-1715-D  
**LONGREACH - SECTION 3, AREA 2**  
 PARCELS 27, 50, 229, 254, 255, 492, 498  
 TAX MAP 36 & 37  
 SIXTH ELECTION DISTRICT  
 DATE: 2/8/88  
 REFERENCE: S87-46  
 HOWARD COUNTY, MD.

SCALE  
 HOR: 1" = 50'  
 VERT: 1" = 5'  
 SHEET  
**5 OF 12**

AS-BUILT 1-10-89

CURVE NO.	Δ	RADIUS	LENGTH	TANGENT	CHORD	AREA
1	81°30'31"	1728.00	1868.32	841.10	1812.17	48977.87

**BENCHMARKS**  
 TBM - RR SPIKE IN FACE OF POLE #10 AT DRIVE TO HOUSE #8390 OLD MONTGOMERY RD. - EL. 337.63  
 HOWARD COUNTY MONUMENT #2542001 LOCATED 100 FT± SOUTHWEST OF B. G. & E. TOWERS #16 & 16E, 1060 FT± SOUTHWEST OF DOBBIN RD. N499539.293 E852111.258 - EL. 426.971



**DEPARTMENT OF PUBLIC WORKS**  
 HOWARD COUNTY, MARYLAND  
 Director: W. W. Howard  
 Chief, Bureau of Engineering: [Signature]  
 Chief, Bureau of Utilities: [Signature]  
 Chief, Land Development Div.: [Signature]

**PURDUM & JESCHKE**  
 CONSULTING ENGINEERS AND LAND SURVEYORS  
 1029 N. CALVERT ST.  
 BALTIMORE, MD. 21202

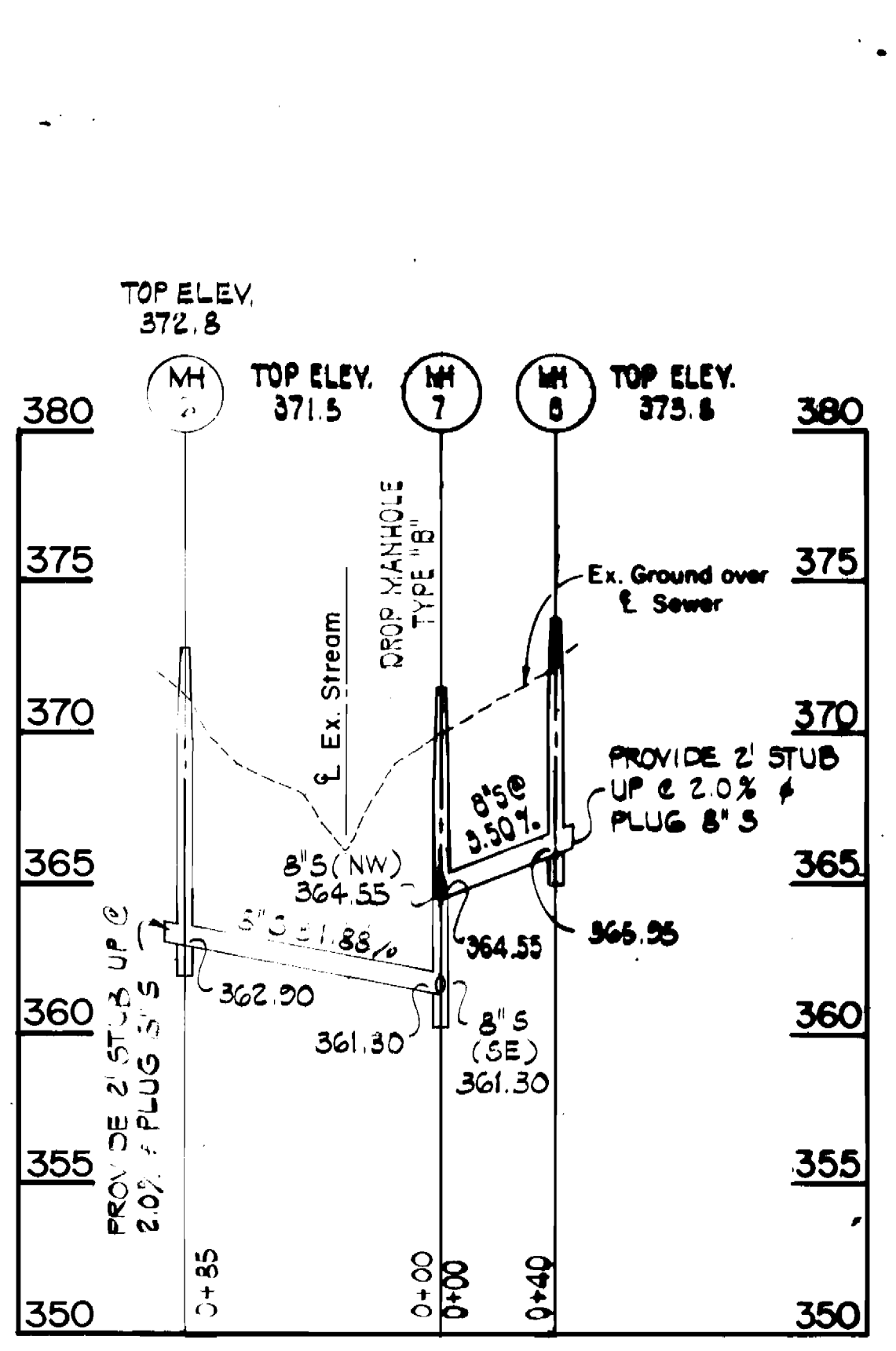
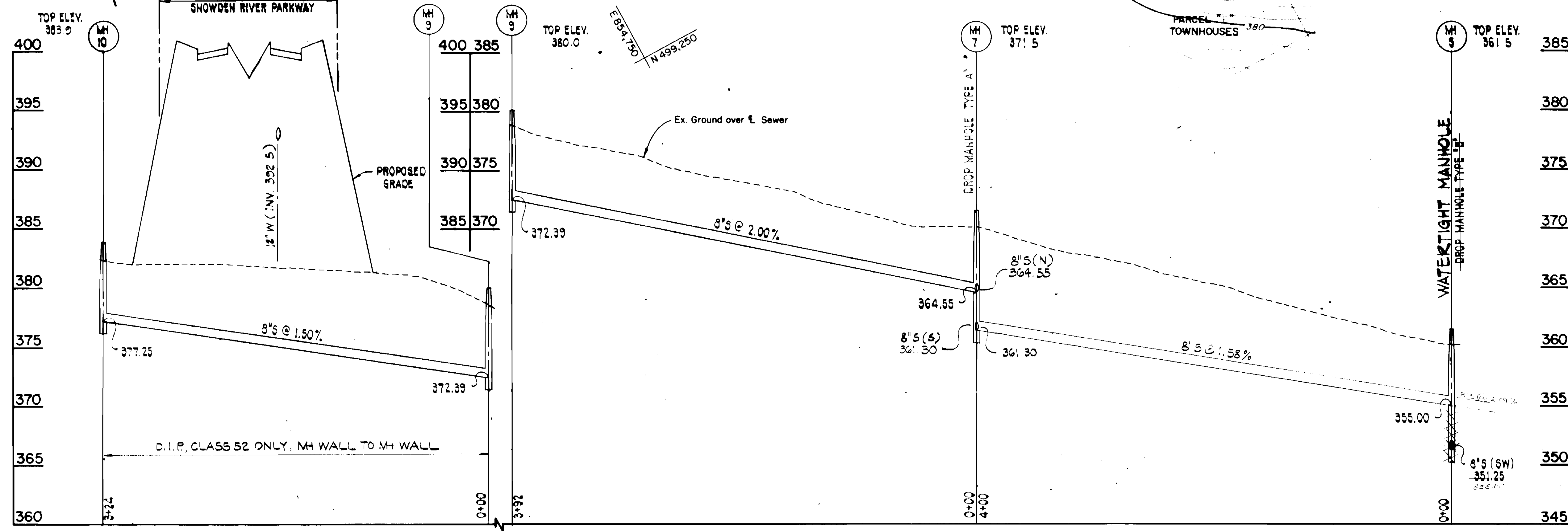
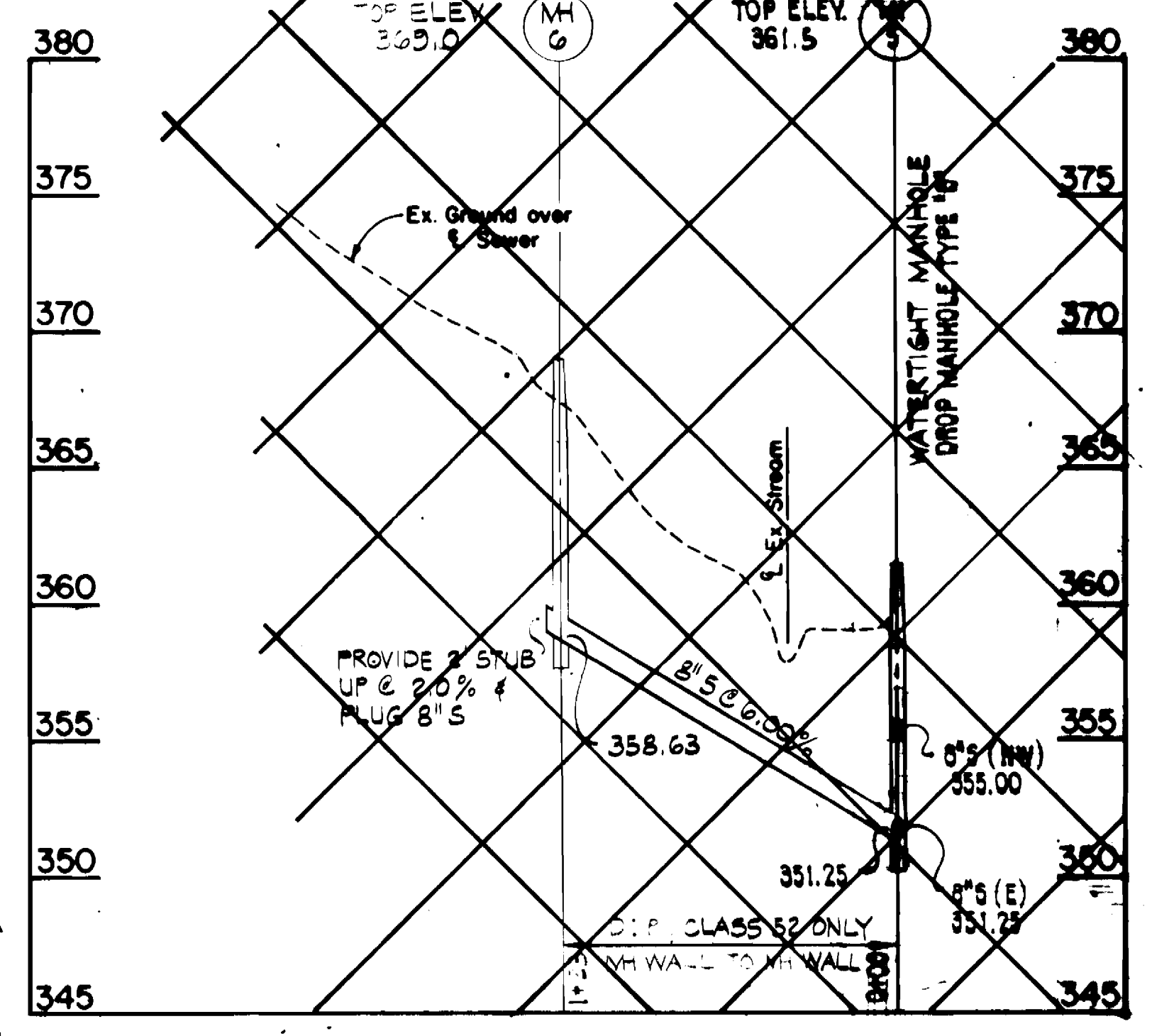
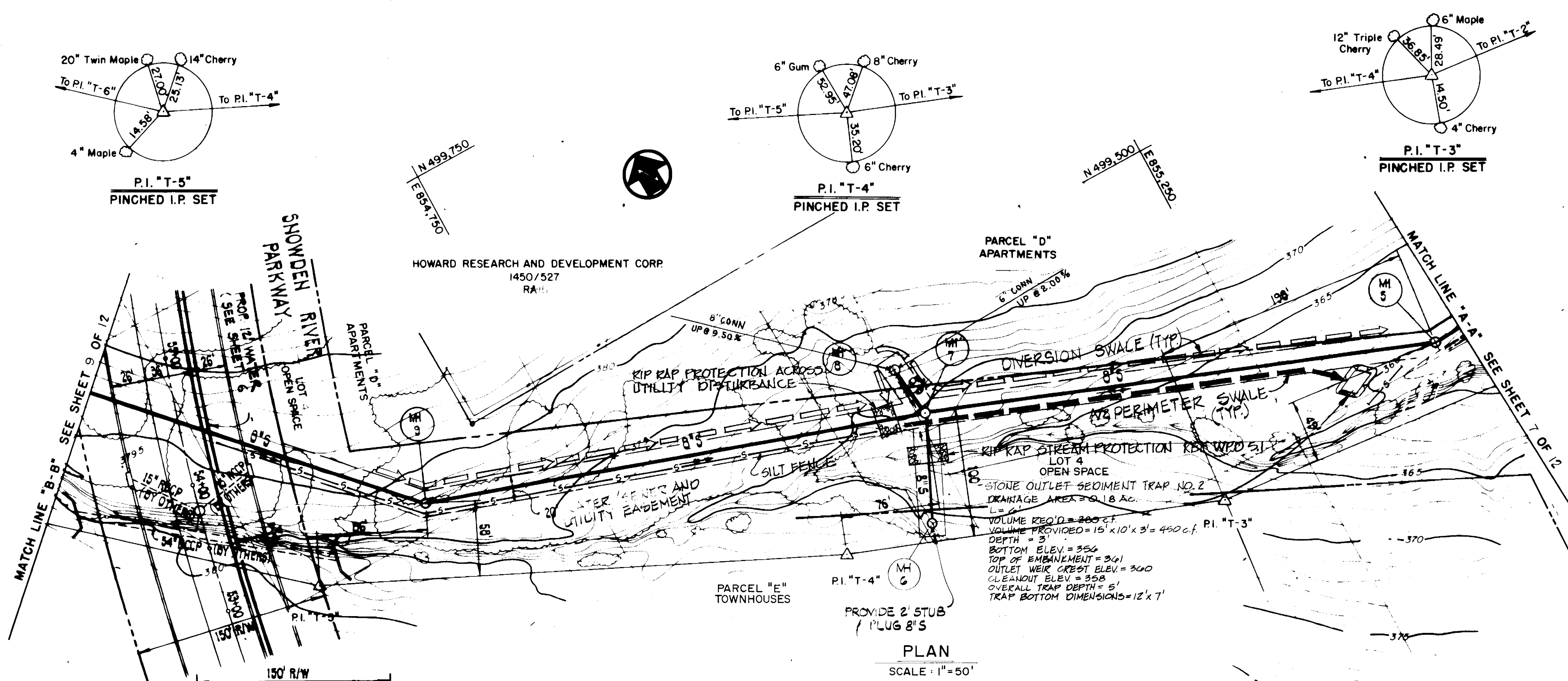
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DRN:	ARW
CHK:	RHB
DATE:	
BY:	NO.
REVISION:	
DATE:	

**WATER AND SEWER PLAN AND PROFILES**  
 SCALE: MAP NO. 36 & 37 BLOCK NO.

CONTRACT NO. 24-1715-D  
**LONGREACH - SECTION 3, AREA 2**  
 PARCELS 27, 50, 229, 254, 255, 492, 498  
 TAX MAP 36 & 37  
 SIXTH ELECTION DISTRICT  
 DATE: 2/10/00  
 REFERENCE: S87-46  
 HOWARD COUNTY, MD.  
 SCALE: HOR: 1"=50'  
 VERT: 1"=5'  
 SHEET 6 OF 12

AS-BUILT 1-10-00





PLAN  
SCALE: 1" = 50'

DEPARTMENT OF PUBLIC WORKS  
HOWARD COUNTY, MARYLAND

*Richard W. Jeschke* 6-22-88  
DIRECTOR OF PUBLIC WORKS DATE

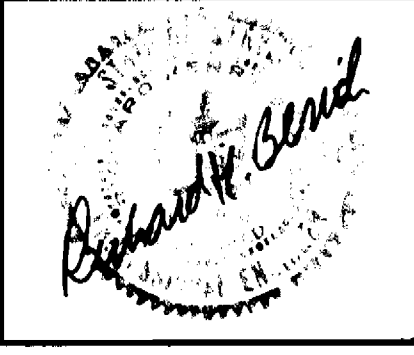
*Richard W. Jeschke* 6/20/88  
CHIEF, BUREAU OF ENGINEERING DATE

*Richard W. Jeschke* 6/20/88  
CHIEF, BUREAU OF UTILITIES DATE

*Richard W. Jeschke* 6/20/88  
CHIEF, LAND DEVELOPMENT DIV. DATE

PURDUM & JESCHKE  
CONSULTING ENGINEERS  
AND LAND SURVEYORS

1029 N. CALVERT ST.  
BALTIMORE, MD. 21202



DES:	GDT		
DRN:	ARW		
CHK:	RHB	B.G. 2	PROVIDE TWO 8" SEWER CONNECTION AT MH-8 8-26-88
DATE:		B.G. 1	COMMENT AS PER DPW 7-19-88
BY:	NO.		REVISION
			DATE

**WATER AND SEWER  
PLAN AND PROFILES**

SCALE MAP NO. 36 & 37 BLOCK NO.

CONTRACT NO. 24-1715-D  
**LONGREACH, - SECTION 3, AREA 2**

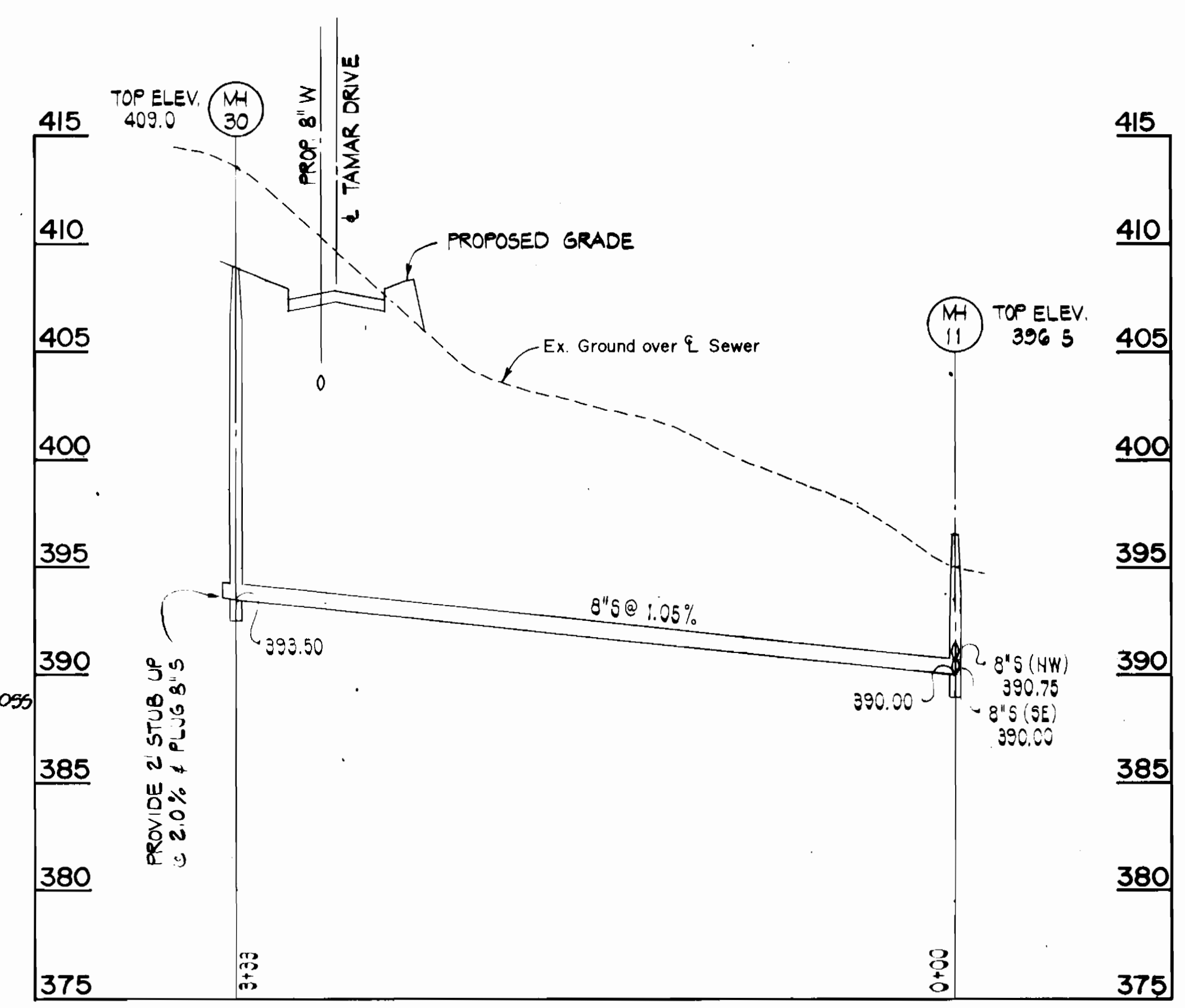
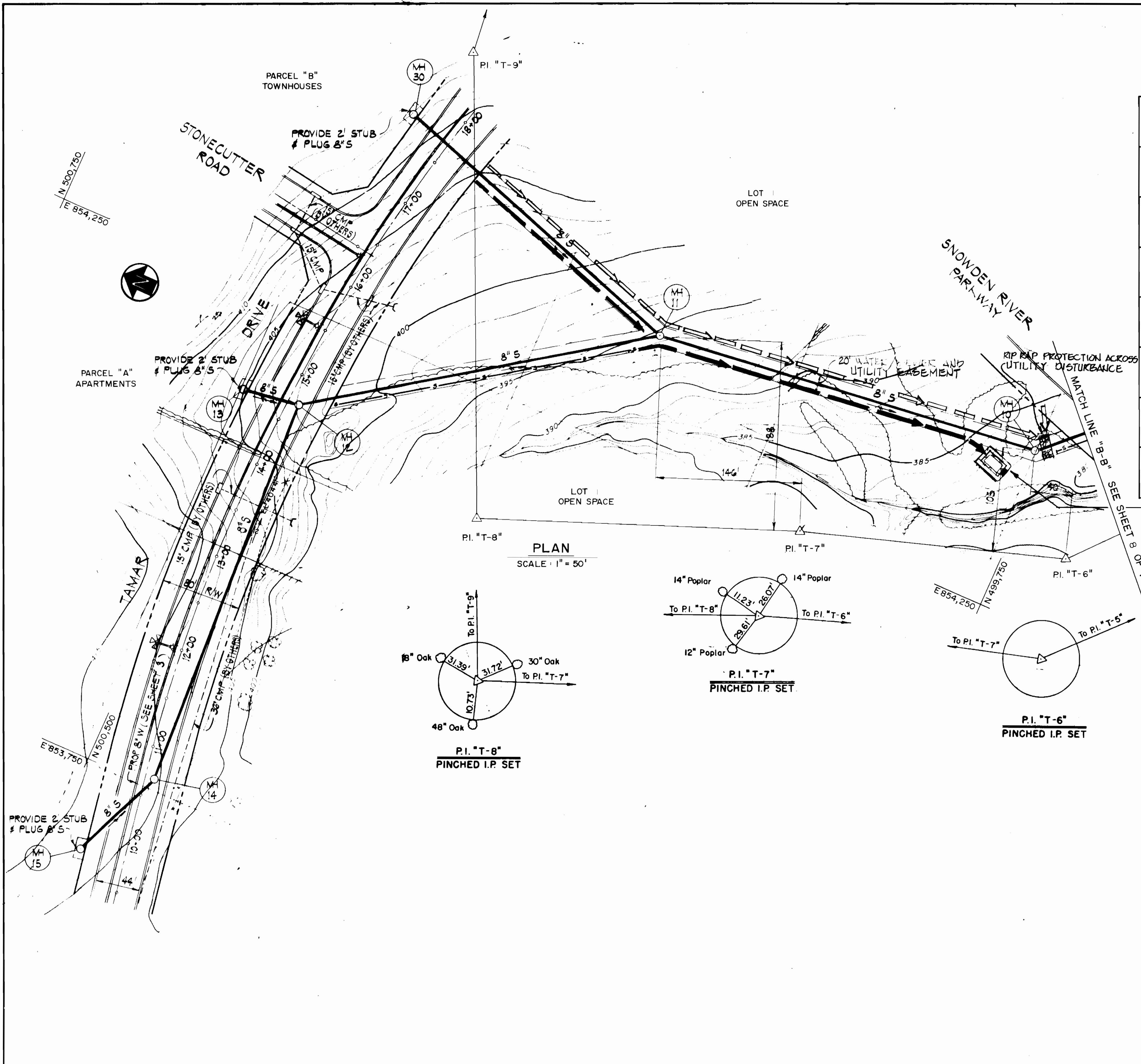
PARCELS 27, 50, 229, 254, 492, 498  
TAX MAP 36 & 37  
SIXTH ELECTION DISTRICT  
DATE: 2/8/88

REFERENCE: S87-46  
HOWARD COUNTY, MD.

SCALE  
HOR: 1" = 80'  
VERT: 1" = 5'

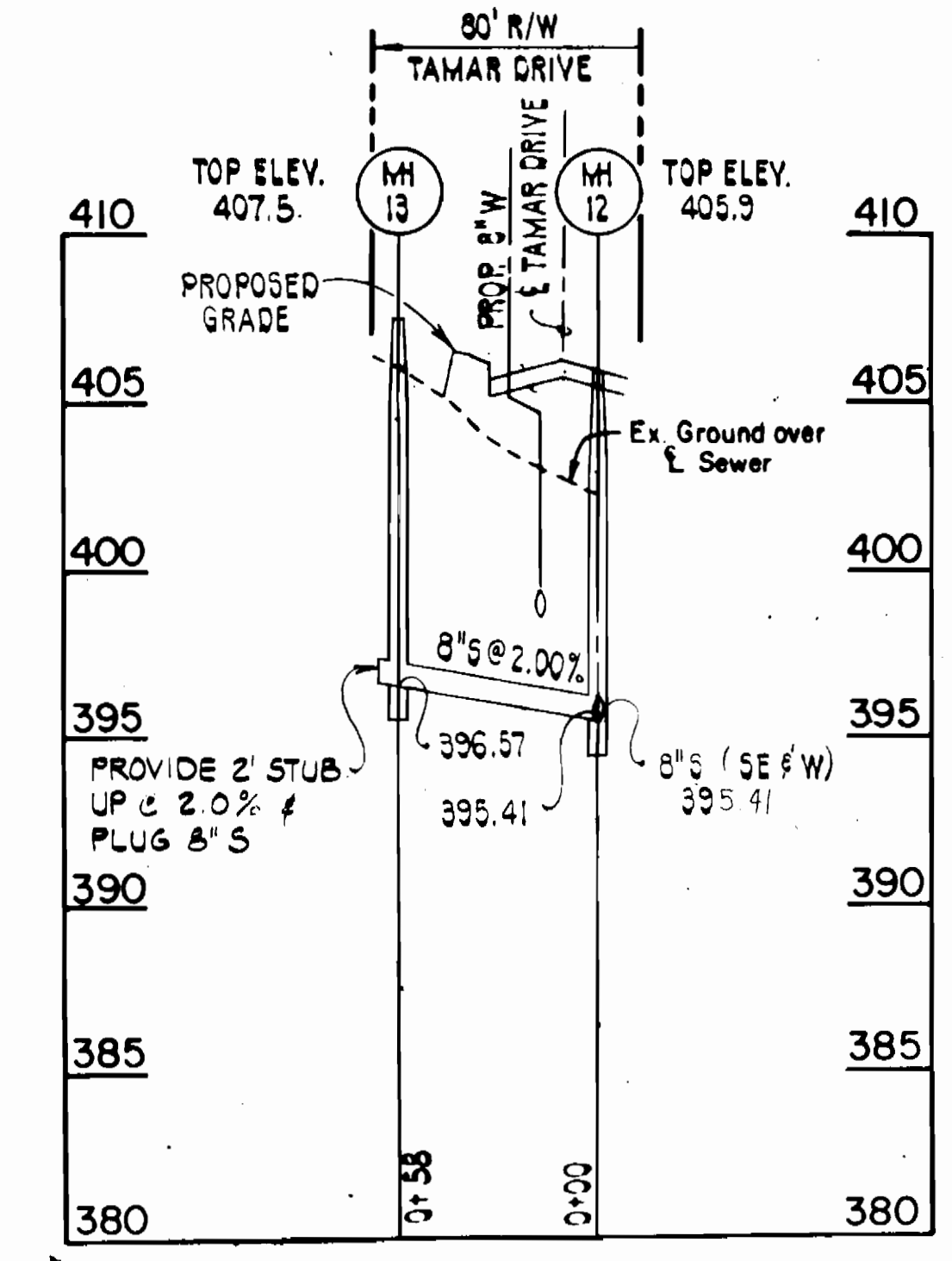
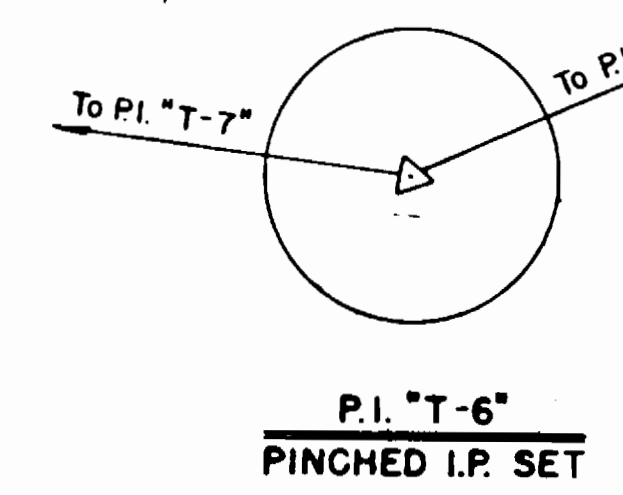
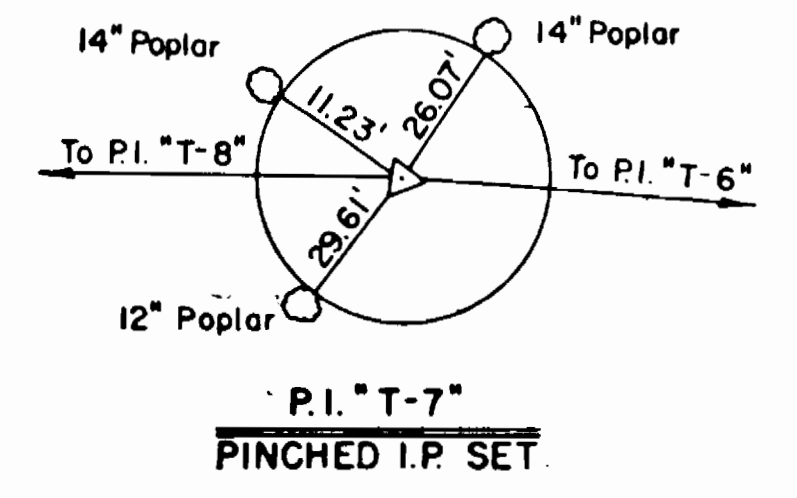
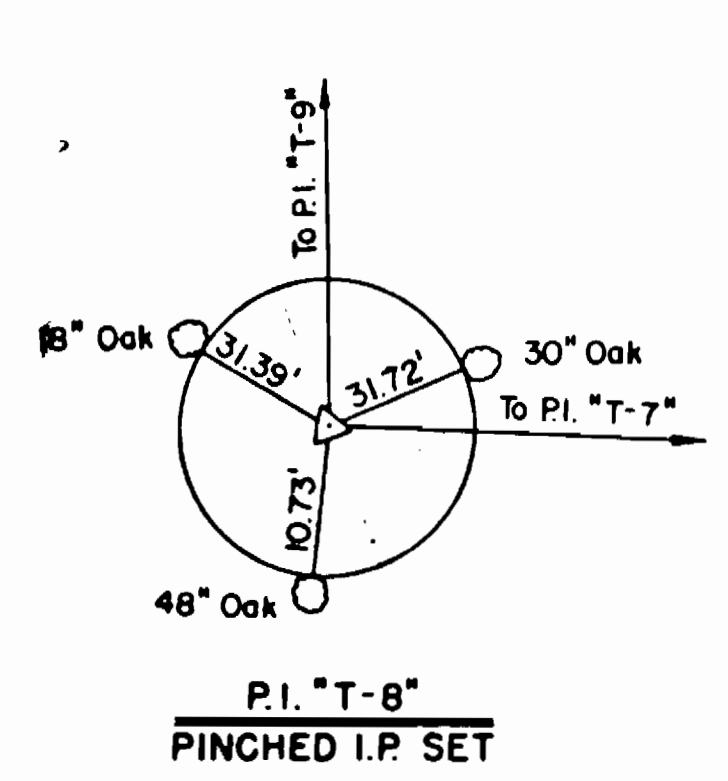
SHEET  
8 OF 12





STONE OUTLET SEDIMENT TRAP NO. 4  
 DRAINAGE AREA = 0.26 AC.  
 L = 4'  
 VOLUME REQ'D = 400 c.f.  
 VOLUME PROVIDED = 20' x 12' x 3' = 720 c.f.  
 DEPTH = 3'  
 BOTTOM ELEV. = 376  
 TOP OF EMBANKMENT = 383  
 OUTLET WEIR CREST ELEV. = 382  
 CLEANOUT ELEV. = 380  
 OVERALL TRAP DEPTH = 5'  
 TRAP BOTTOM DIMENSIONS = 17' x 7'

PLAN  
 SCALE: 1" = 50'



DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND  
 Director of Public Works: Michael A. Ursanillo, Jr. RMB  
 Chief, Bureau of Utilities: [Signature]  
 Chief, Bureau of Engineering: [Signature]  
 Chief, Land Development Div: [Signature]

PURDUM & JESCHKE  
 CONSULTING ENGINEERS  
 AND LAND SURVEYORS  
 1029 N. CALVERT ST.  
 BALTIMORE, MD. 21202

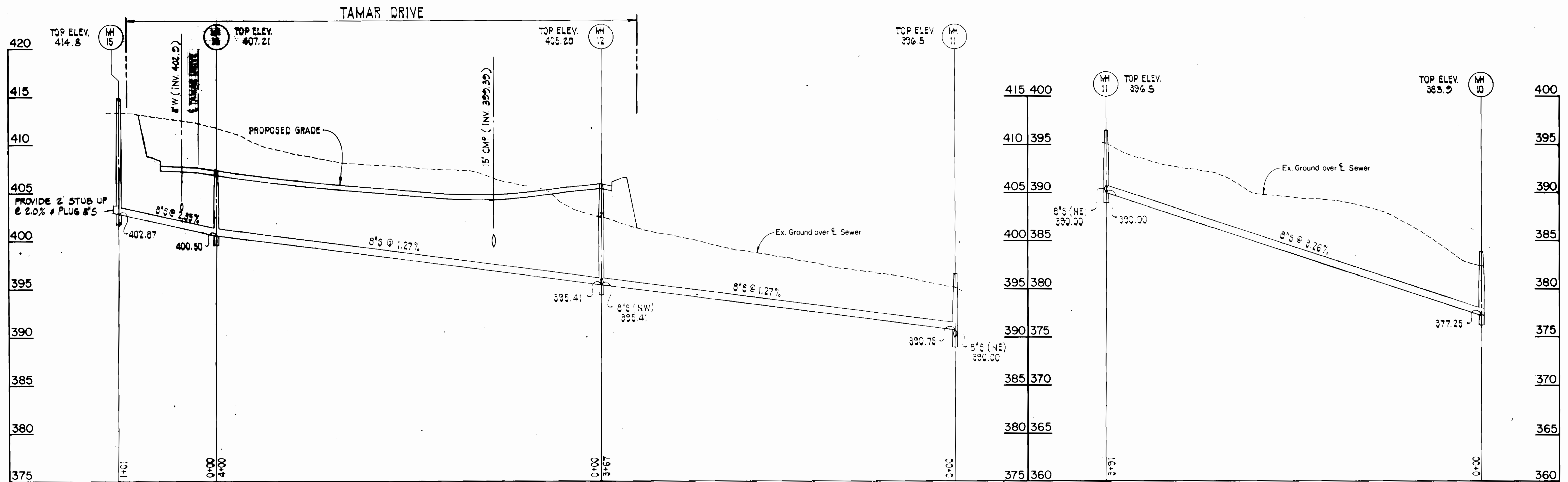


DES: GDT	DATE: 7-19-88
DRN: ARW	BY: NO
CHK: RHB	NO
DATE:	REVISION:
COMMENTS AS PER DPW	

WATER AND SEWER  
 PLAN AND PROFILES  
 SCALE: MAP NO. 36 & 37 BLOCK NO.

CONTRACT NO. 24-1715-D  
 LONGREACH - SECTION 3, AREA 2  
 PARCELS 27, 50, 229, 254, 255, 492, 498  
 TAX MAP 36 & 37  
 SIXTH ELECTION DISTRICT  
 DATE: 2/8/88  
 REFERENCE: S87-46  
 HOWARD COUNTY, MD

SCALE:  
 HOR: 1" = 50'  
 VERT: 1" = 5'  
 SHEET  
 9 OF 12



DEPARTMENT OF PUBLIC WORKS  
 HOWARD COUNTY, MARYLAND

**PURDUM & JESCHKE**  
 CONSULTING ENGINEERS  
 AND LAND SURVEYORS  
 1029 N. CALVERT ST.  
 BALTIMORE, MD. 21202

*Richard H. Christ*

DES: GDT			
DRN: ARW			
CHK: RHB			
DATE:	BY	NO.	REVISION

**WATER AND SEWER  
 PLAN AND PROFILES**

CONTRACT NO. 24-1715-D  
**LONGREACH - SECTION 3, AREA 2**

PARCELS 27, 50, 229, 254, 255, 492, 498  
 TAX MAP 36 & 37  
 SIXTH ELECTION DISTRICT  
 DATE: 2/8/88

REFERENCE: S87-46  
 HOWARD COUNTY, MD.

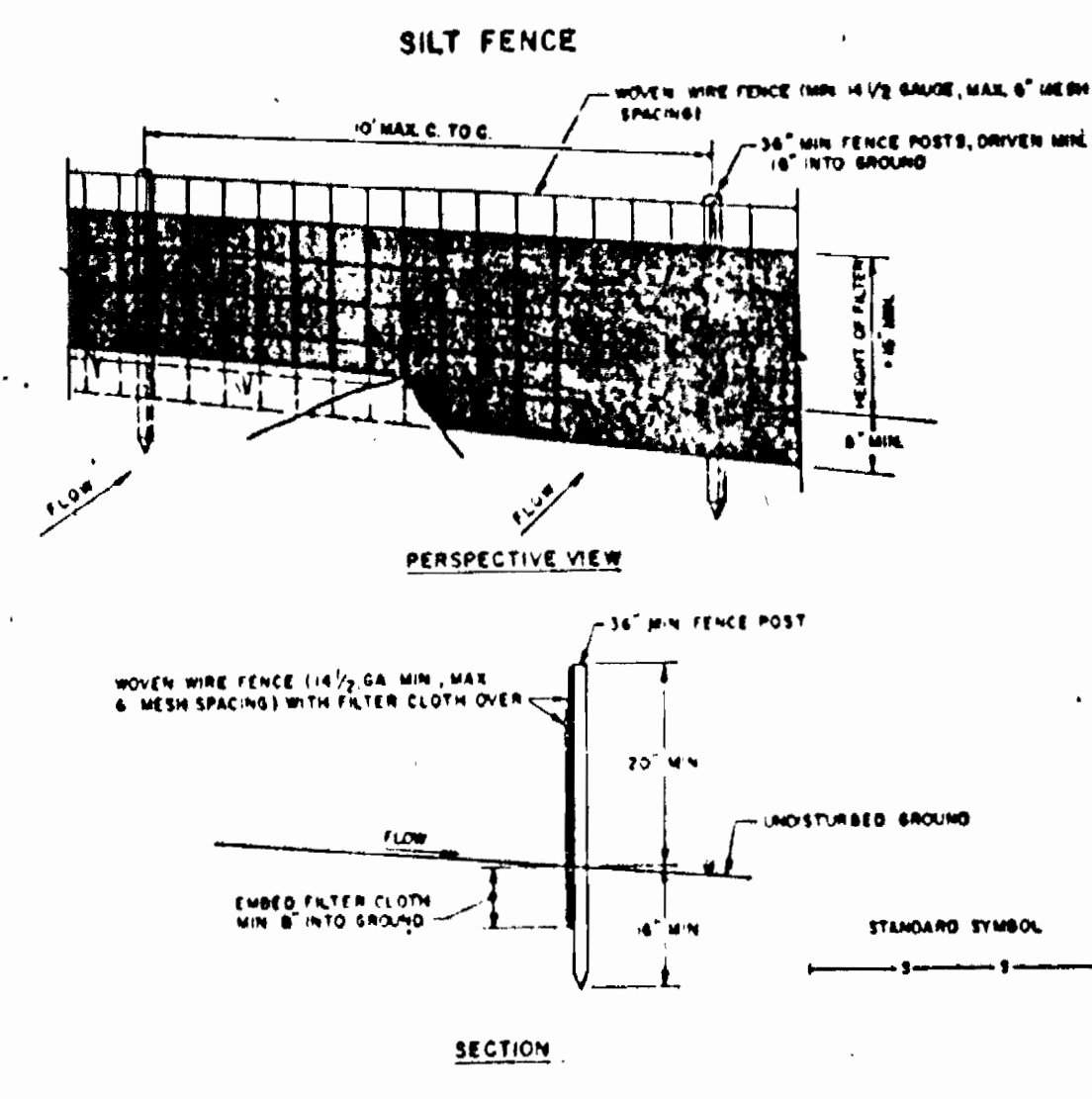
SCALE  
 HOR: 1"=50'  
 VERT: 1"=5'  
 SHEET  
**10 OF 12**

DIRECTOR OF PUBLIC WORKS  
 CHIEF, BUREAU OF UTILITIES  
 DATE

CHIEF, BUREAU OF ENGINEERING  
 DATE

CHIEF, LAND DEVELOPMENT DIV.  
 DATE



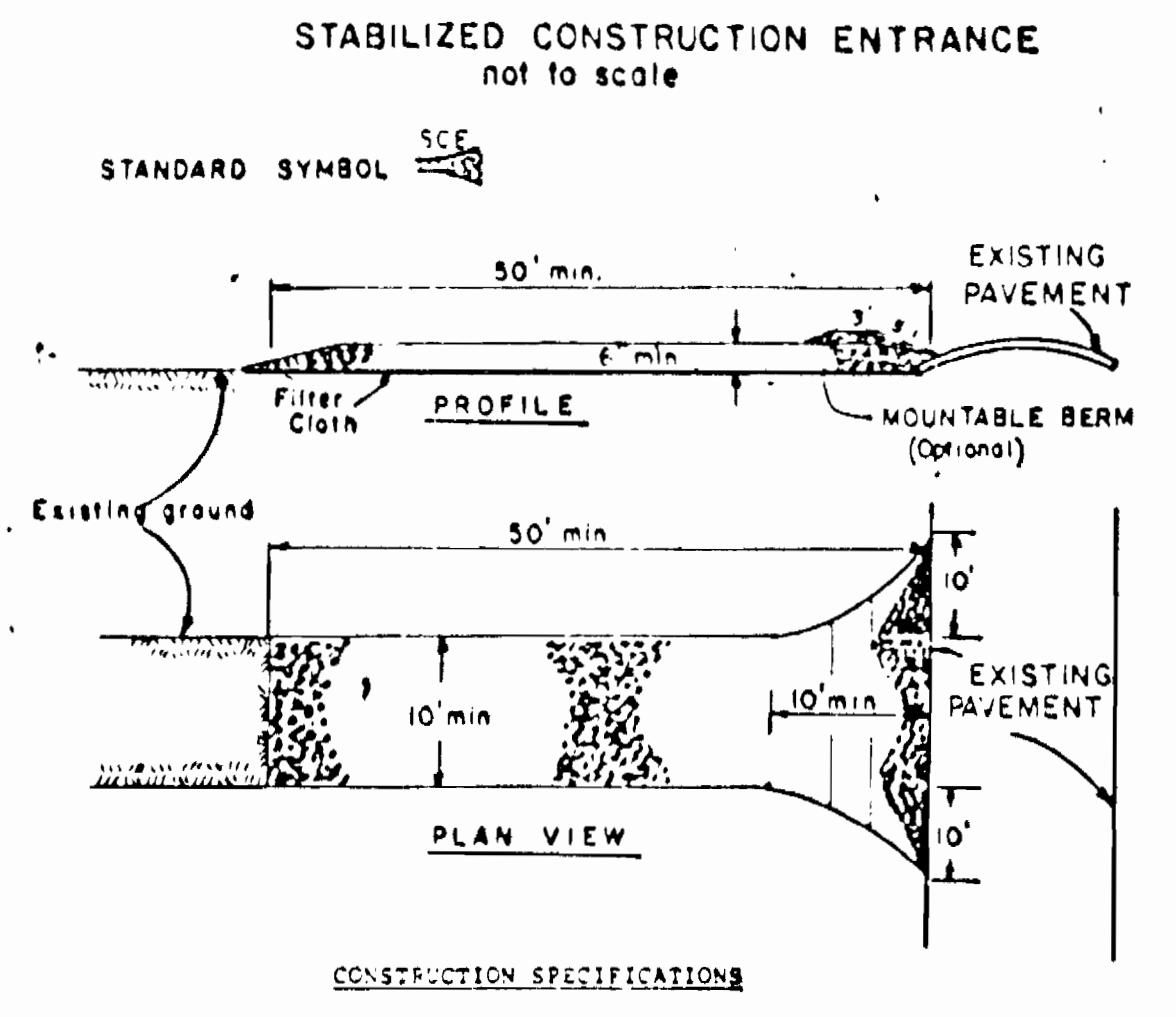


- CONSTRUCTION NOTES FOR FABRICATED SILT FENCE**
1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
  2. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24\"/>
- POSTS: STEEL EITHER T OR U TYPE OR 2\"/>

FENCE: WOVEN WIRE, 34\"/>

FILTER CLOTH: FILTER X, 15\"/>

PRE-FABRICATED UNIT: GEORGE, ANTI-ROCK, OR APPROVED EQUAL.



- CONSTRUCTION SPECIFICATIONS**
1. Stone Size - Use 2\"/>
  - 2. Length - As required, but not less than 50 feet (except on a single residence lot where a 30 foot minimum length would apply).
  - 3. Thickness - Not less than six (6) inches.
  - 4. Width - Ten (10) foot minimum, but not less than the full width at points where ingress or egress occurs.
  - 5. Filter Cloth - Will be placed over the entire area prior to placing of stone. Filter will not be required on a single family residence lot.
  - 6. Surface Water - All surface water flowing or diverted toward construction entrances shall be piped across the entrance. If piping is impractical, a mountable beam with 5/8\"/>
  - 7. Maintenance - The entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto public right-of-way. This may require periodic top dressing with additional stone as conditions demand and repair and/or cleanout of any measures used to trap sediment. All sediment spilled, dropped, washed or tracked onto public right-of-way must be removed immediately.
  - 8. Washing - Wheels shall be cleaned to remove sediment prior to entrance onto public right-of-way. When washing is required, it shall be done on an area stabilized with stone and which drains into an approved sediment trapping device.
  - 9. Periodic inspection and needed maintenance shall be provided after each rain.

**PERMANENT SEEDING NOTES**

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

**Seeded Preparation:** Loosen upper three inches of soil by raking, disking or other acceptable means before seeding.

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

- 1) Preferred -- Apply 2 tons per acre 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 disc 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 disc into upper three inches of soil.

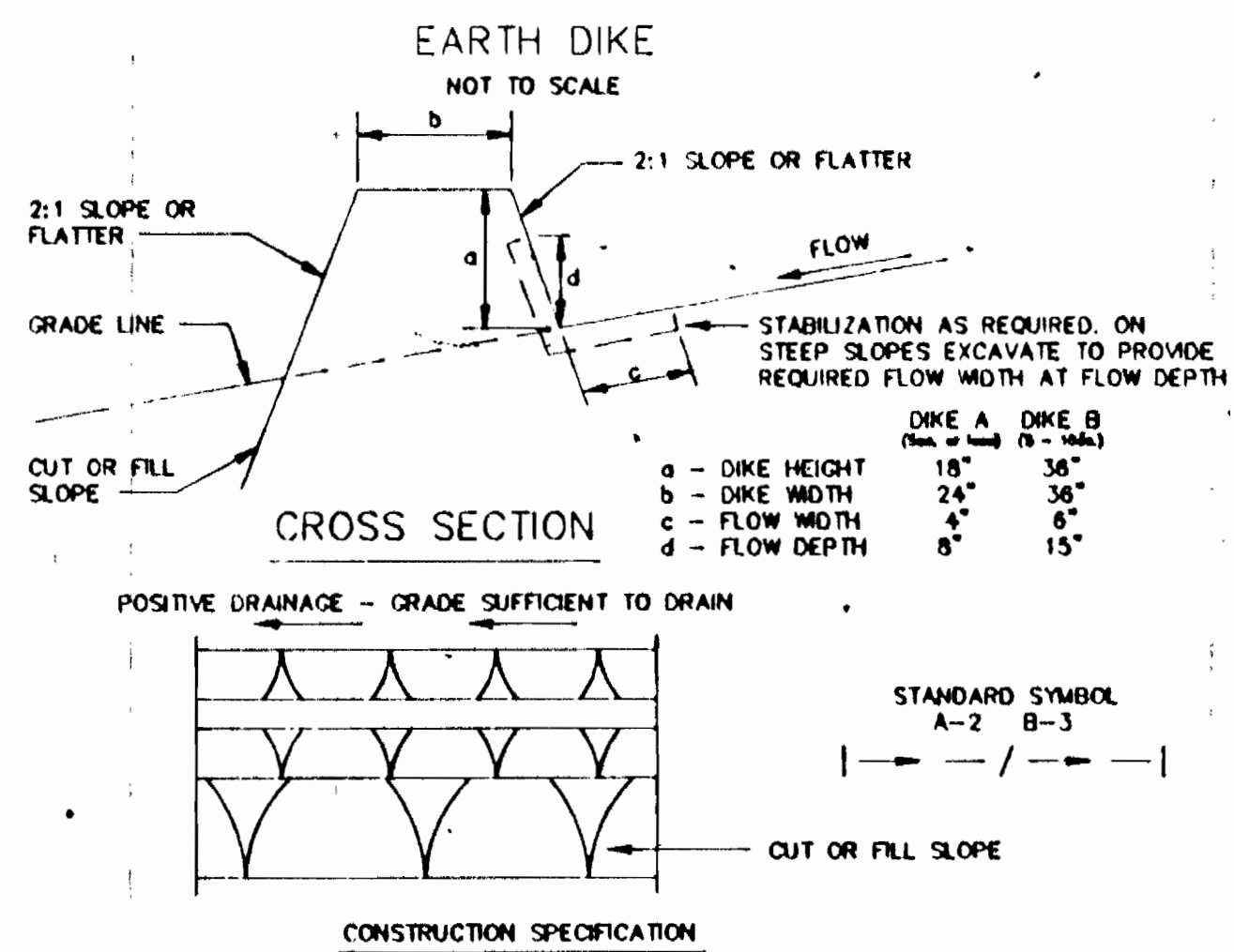
**Seeding -** For the periods March 1 thru April 30, and August 1 thru October 15, seed with 60 lbs per acre (1.4 lbs/1000 sq ft) of Kentucky 31 Tall Fescue. For the period May 1 thru July 31, seed with 60 lbs Kentucky 31 Tall Fescue per acre and 2 lbs per acre (.05 lbs/1000 sq ft) of weeping lovegrass. 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 tons/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.

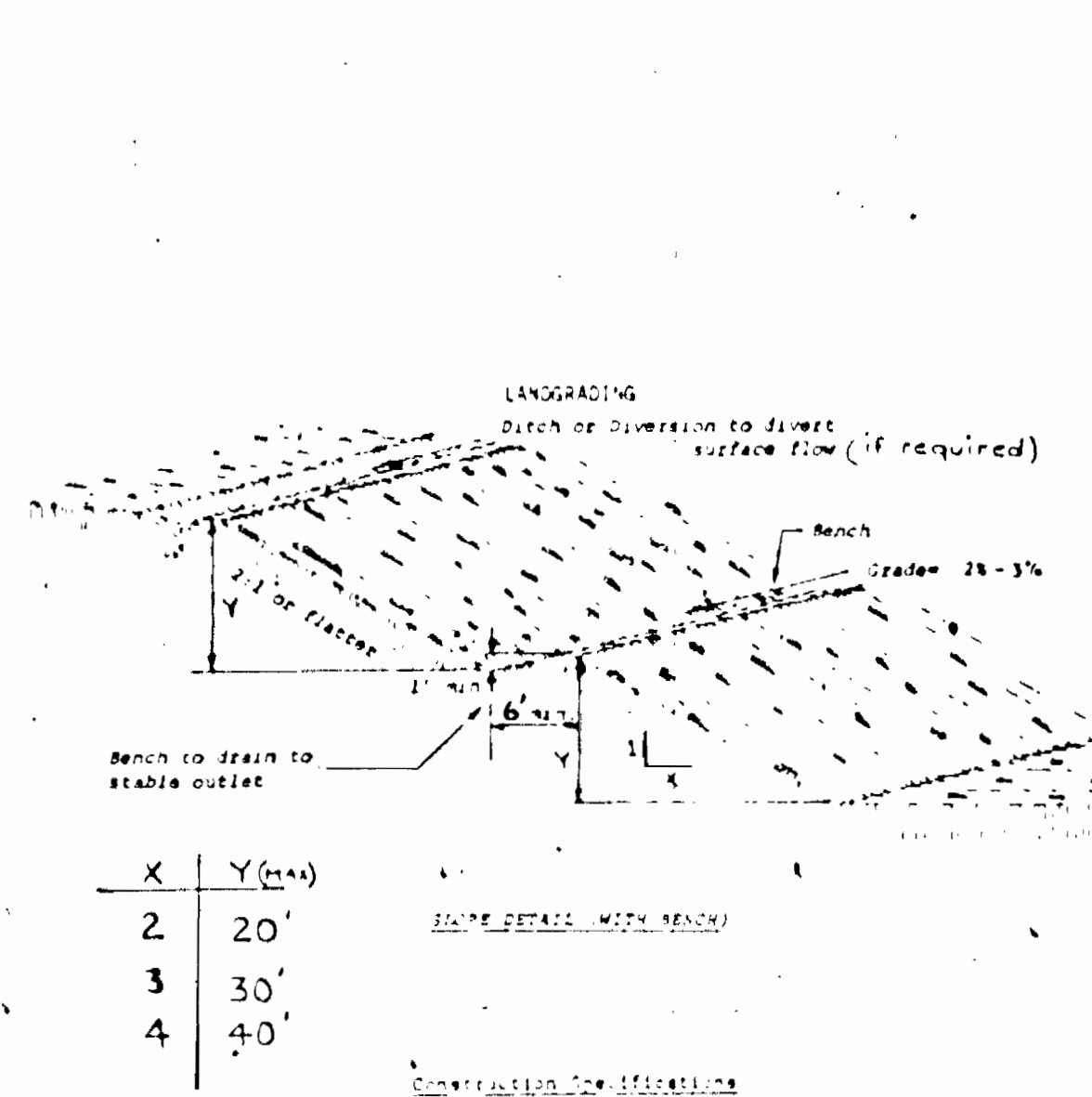
**Maintenance -** Inspect all seeded areas and make needed repairs, replacements and reseedings.

- SEDIMENT CONTROL NOTES**
- 1) A minimum of 24 hours notice must be given to the Howard County Office of Inspection 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 be in conformance with the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
  - 3) Following initial soil disturbance or redistribution, permanent or temporary stabilization shall be completed within: a) 7 calendar days for all permanent 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 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for permanent seedings (Sec. 51) sod (Sec. 54), temporary seeding (Sec. 50) and mulching (Sec. 52.) Temporary stabilization with mulch slona can only be done when recommended seeding rates 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:
 

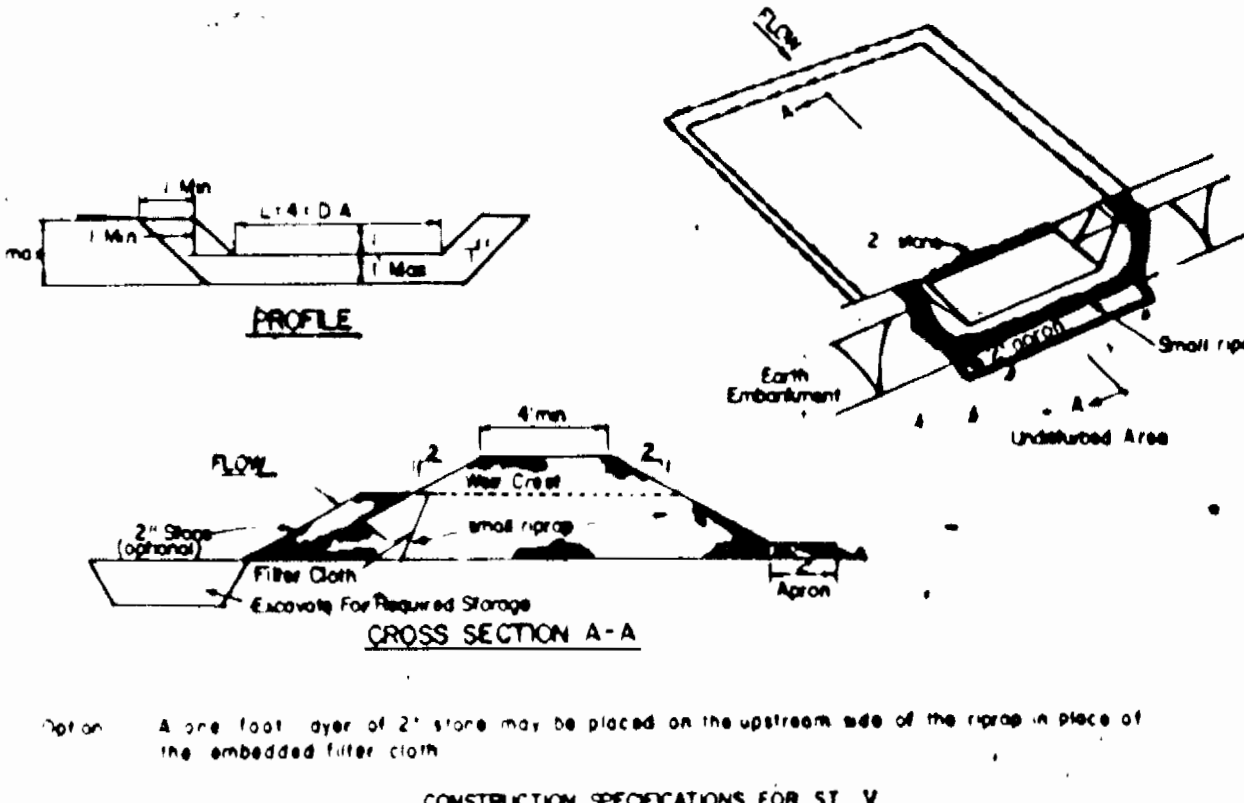
Total Area of Site	186.42 Acres
Area Disturbed	2.57 Acres
Area to be roofed or paved	0.00 Acres
Area to be vegetatively stabilized	2.57 Acres
Total Cut	10,000 Cu. yds
Total Fill	10,000 Cu. yds
Offsite waste/borrow area location	NA.
  - 8) Any sediment control practice which is disturbed by grading activity for placement of utilities must be repaired on the same day of disturbance.
  - 9) Additional sediment controls must be provided, if deemed necessary by the Howard County DPW 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.



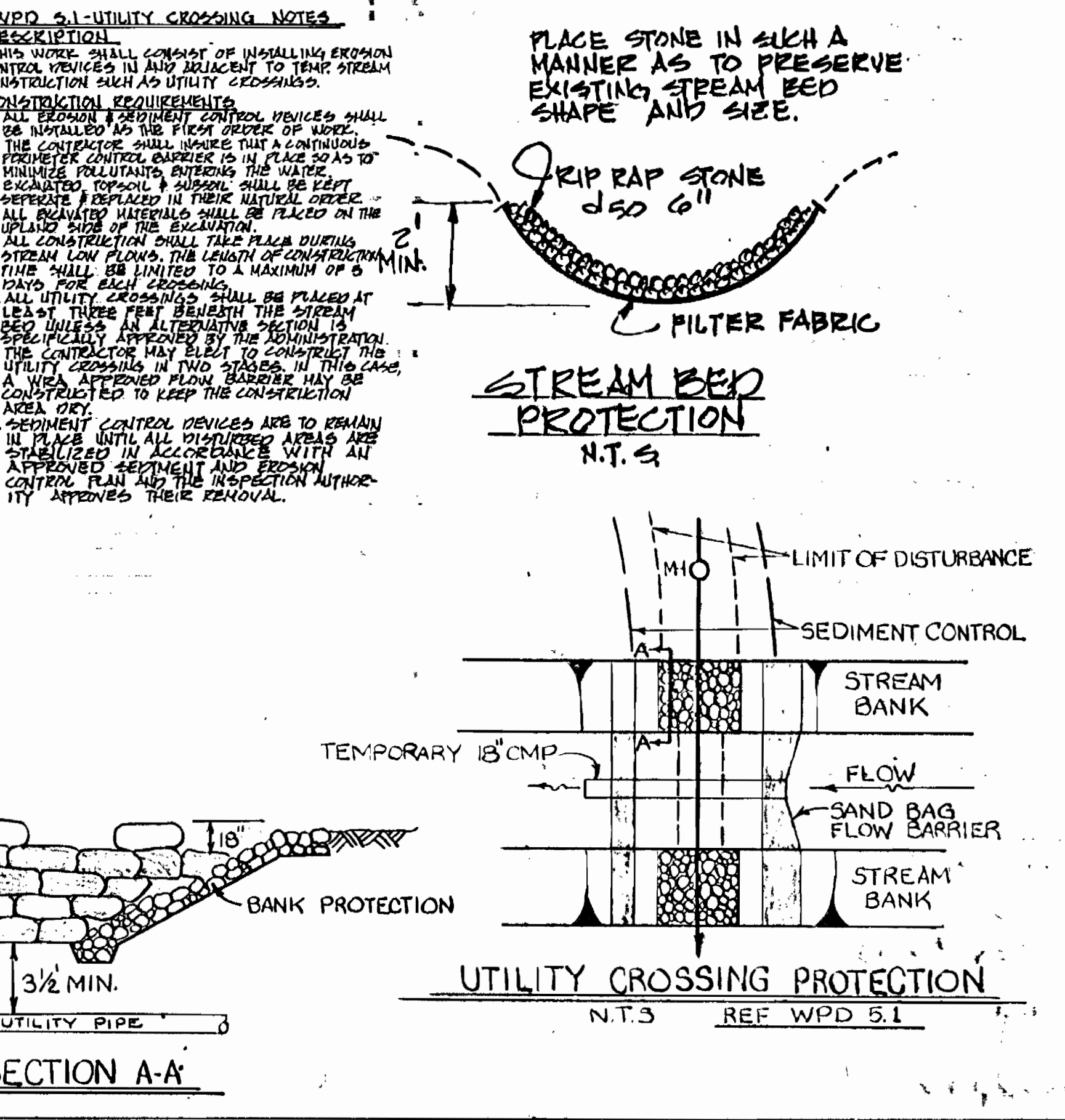
- CONSTRUCTION SPECIFICATION**
1. ALL DIKES SHALL BE COMPACTED BY EARTH-MOVING EQUIPMENT.
  2. ALL DIKES SHALL HAVE POSITIVE DRAINAGE TO AN OUTLET.
  3. TOP WIDTH MAY BE WIDER AND SIDE SLOPES MAY BE FLATTER IF DESIRED TO FACILITATE CROSSING BY CONSTRUCTION TRAFFIC.
  4. FIELD LOCATION SHOULD BE ADJUSTED AS NEEDED TO UTILIZE A STABILIZED SAFE OUTLET.
  5. EARTH DIKES SHALL HAVE AN OUTLET THAT FUNCTIONS WITH A MINIMUM OF EROSION. RUNOFF SHALL BE CONVEYED TO A SEDIMENT TRAPPING DEVICE SUCH AS A SEDIMENT TRAP OR SEDIMENT BASIN WHERE EITHER THE DIKE CHANNEL OR THE DRAINAGE AREA ABOVE THE DIKE ARE NOT ADEQUATELY STABILIZED.
  6. STABILIZATION SHALL BE: (A) IN ACCORDANCE WITH STANDARD SPECIFICATION FOR SEED AND STRAW MULCH OR STRAW MULCH IF NOT IN SEEDING SEASON, (B) FLOW CHANNEL AS PER THE CHART BELOW.
- | TYPE OF TREATMENT | CHANNEL GRADE | FLOW CHANNEL STABILIZATION    |   |
|-------------------|---------------|-------------------------------|---|
|                   |               | DIKE A                        | DIKE B                                    |
| 1                 | .5 - 3.0%     | SEED AND STRAW MULCH          | SEED AND STRAW MULCH                      |
| 2                 | 3.1 - 5.0%    | SEED AND STRAW MULCH          | SEED USING JUTE, OR EXCELSIOR; SOD; 2\"/> |
| 3                 | 5.1 - 8.0%    | SEED WITH JUTE, OR SOD; 2\"/> |   |
| 4                 | 8.1 - 20%     | LINED RIPRAP 4 - 8\"/>        |   |
- A. STONE TO BE 2 INCH STONE, OR RECYCLE CONCRETE EQUIVALENT, IN A LAYER AT LEAST 3 INCHES IN THICKNESS AND BE PRESSED INTO THE SOIL WITH CONSTRUCTION EQUIPMENT.
- B. RIPRAP TO BE 4 - 8 INCHES IN A LAYER AT LEAST 8 INCHES THICKNESS AND PRESSED INTO THE SOIL.
- C. APPROVED EQUIVALENT CAN BE SUBSTITUTED FOR ANY OF THE MATERIALS.
7. PERIODIC INSPECTION AND REQUIRED MAINTENANCE MUST BE PROVIDED AFTER EACH RAIN EVENT.



- CONSTRUCTION SPECIFICATIONS**
1. All graded or disturbed areas (including slopes) shall be protected during clearing and construction in accordance with the approved sediment control plan until they are permanently stabilized.
  2. All sediment control practices and measures shall be constructed, applied and maintained in accordance with the approved sediment control plan and the Standards and Specifications for Soil Erosion and Sediment Control in "Developing Areas".
  3. Topsoil required for the reestablishment of vegetation shall be stockpiled in amount necessary to complete finished grading of all exposed areas.
  4. Areas to be filled shall be cleared, grubbed and stripped of topsoil to remove trees, vegetation, roots or other objectionable material.
  5. Areas which are to be topsoiled shall be certified to a minimum depth of three inches prior to placement of topsoil.
  6. All fills shall be compacted as required to reduce erosion, slippage, settlement, subsidence or other related problems. Fill intended to support buildings, structures and conduits, etc., shall be compacted in accordance with local requirements of codes.
  7. All fill to be placed and compacted in layers not to exceed 8 inches in thickness. Except for approved landfills, fill material shall be free of brush, rubbish, rocks, logs, stumps, building debris and other objectionable materials that would interfere with or prevent construction of satisfactory fill.
  8. Frozen materials or soft, sticky or highly compressible materials shall not be incorporated into fills.
  9. Fill shall not be placed on a frozen foundation.
  10. All benches shall be kept free of sediment during all phases of development.
  11. Steps or sprints encountered during construction shall be handled in accordance with the Standards and Specifications for Subsurface Drain or other approved method.
  12. All graded areas shall be permanently stabilized immediately following finished grading.
  13. Stockpiles, borrow areas and spoil areas shall be shown on the plans and shall be subject to the provisions of this Standard and Specifications.



- UTILITY CROSSING NOTES**
- THIS WORK SHALL CONSIST OF INSTALLING EROSION CONTROL DEVICES IN ANY ADJACENT TO NEAR STREAM CONSTRUCTION SUCH AS UTILITY CROSSINGS.
- CONSTRUCTION REQUIREMENTS**
1. ALL EROSION SEDIMENT CONTROL DEVICES SHALL BE INSTALLED IN THE PROPER ORDER OF WORK.
  2. THE CONTRACTOR SHALL INSURE THAT A CONTINUOUS PERIMETER CONTROL BARRIER IS IN PLACE SO AS TO MINIMIZE POLLUTANTS ENTERING THE WATER.
  3. EXCAVATED TOPSOIL & SUBSOIL SHALL BE KEPT SEPARATE & REPLACED IN THEIR NATURAL ORDER.
  4. ALL EXCAVATED MATERIAL SHALL BE PLACED ON THE UPWARD SIDE OF THE EXCAVATION.
  5. ALL CONSTRUCTION SHALL TAKE PLACE DURING STREAM LOW FLOWS. THE LENGTH OF CONSTRUCTION TIME SHALL BE LIMITED TO A MAXIMUM OF 6 MONTHS.
  6. ALL UTILITY CROSSINGS SHALL BE PLACED AT LEAST THREE FEET BENEATH THE STREAM BED UNLESS AN ALTERNATIVE SOLUTION IS SPECIFICALLY APPROVED BY THE ADMINISTRATION.
  7. THE CONTRACTOR MAY ELECT TO CONSTRUCT THE UTILITY CROSSINGS IN TWO STAGES. IN THIS CASE A WELL APPROVED FLOW BARRIER MAY BE CONSTRUCTED TO KEEP THE CONSTRUCTION AREA DRY.
  8. SEDIMENT CONTROL DEVICES ARE TO REMAIN IN PLACE UNTIL ALL DISTURBED AREAS ARE STABILIZED IN ACCORDANCE WITH AN APPROVED SEDIMENT AND EROSION CONTROL PLAN AND THE INSPECTION AUTHORITY APPROVES THEIR REMOVAL.
- CONSTRUCTION SPECIFICATIONS FOR ST X**
1. Area under embankment and to be cleared, grubbed, and stripped of any vegetation and root mat. The soil area shall be cleared.
  2. The fill material for the embankment shall be free of rocks and other woody vegetation as well as other hard stones, rocks or other objectionable material. The embankment shall be constructed by raking with equipment while it is being constructed.
  3. All cut and fill slopes shall be 2:1 or flatter.
  4. The stone used in the outlet shall be small riprap 4 - 8\"/>
  - 5. Sediment shall be removed and bag related to its original dimensions when the sediment has accumulated to 1/2 the design sum of the trap.
  - 6. The structure shall be inspected after each rain and repairs made as needed.
  - 7. Construction operations shall be carried out in such a manner that erosion and water pollution is minimized.
  - 8. The structure shall be removed and the area stabilized when the drainage area has been properly stabilized.



**PURDUM & JESCHKE**  
CONSULTING ENGINEERS AND LAND SURVEYORS  
1029 North Convent Street  
Baltimore, Maryland 21202 (301)837-0194

**DEPARTMENT OF PUBLIC WORKS**  
HOWARD COUNTY, MARYLAND

*Graville W. Howard* 6/21/88  
DIRECTOR OF PUBLIC WORKS

*Michael A. ...* 6-21-88  
CHIEF, BUREAU OF UTILITIES

*...* 6/21/88  
CHIEF, BUREAU OF ENGINEERING

*...* 6/21/88  
CHIEF, LAND DEVELOPMENT DIV.

**DEVELOPER'S CERTIFICATION**

I CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN AND ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT THE DEPARTMENT OF NATURAL RESOURCES APPROVED TRAINING PROGRAM FOR THE CONTROL OF ANY SEDIMENT EROSION BEFORE BEGINNING THE PROJECT.

*Gregory R. ...* 1-26-88  
DATE

**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 CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

*Richard H. ...* 6/21/88  
DATE

**VILLAGE OF LONGREACH-SECT. 3-AREA 2**  
**SEDIMENT & EROSION CONTROL DETAIL**

CONTRACT NO. 24-1718-0

SIXTH ELECTION DISTRICT HOWARD COUNTY, MD.  
DATE: 2/10/88

SHEET 206/12

DES: GDT  
DRAWN: RC  
CHK: RHB

SCALE: 1" = 50'