

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS, HOWARD COUNTY HEALTH DEPARTMENT

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE, STORM DRAINAGE SYSTEMS AND PUBLIC ROADS HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

*John J. ...*  
COUNTY HEALTH OFFICER  
1/31/74  
DATE

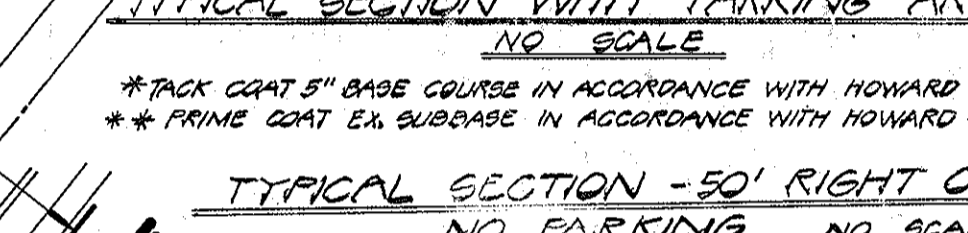
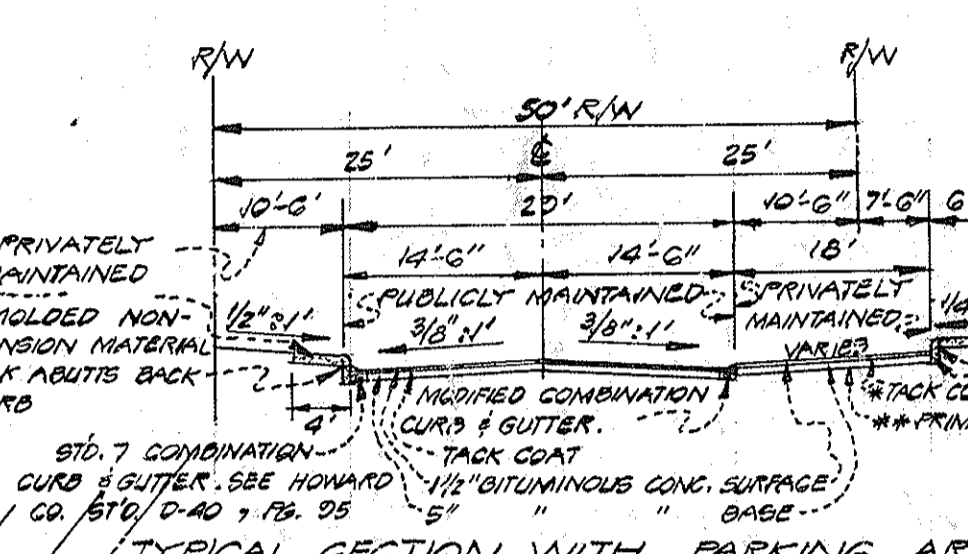
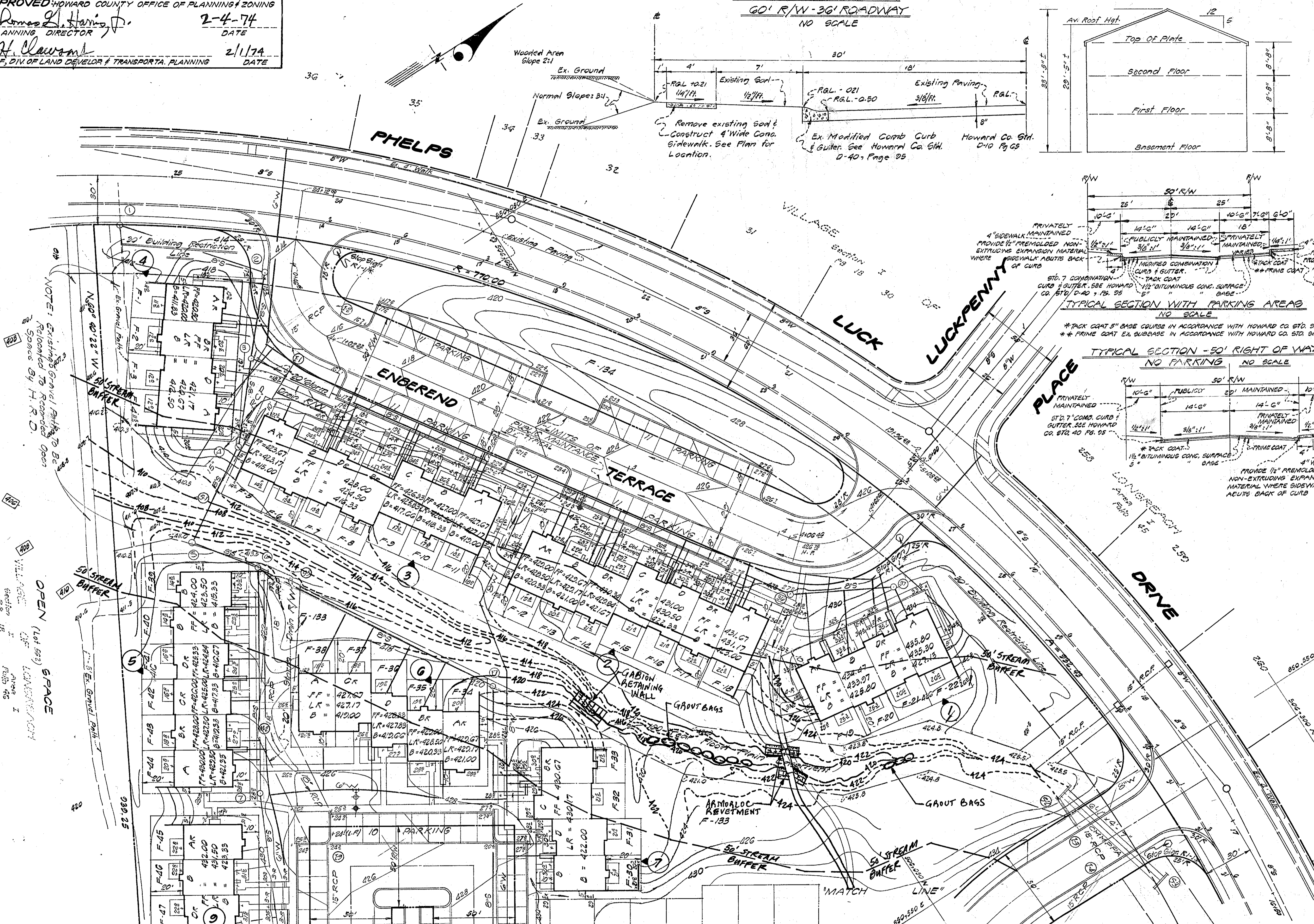
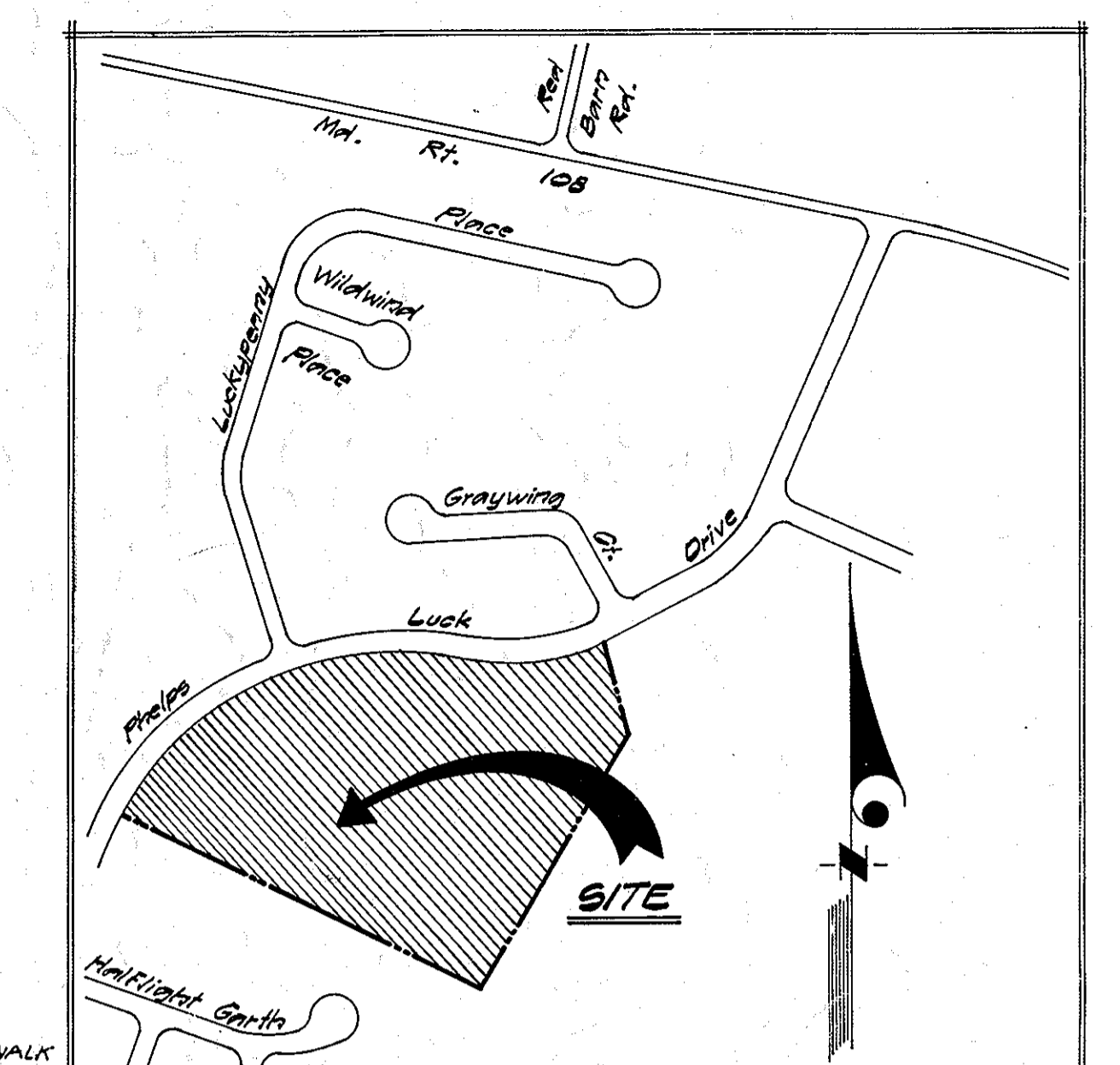
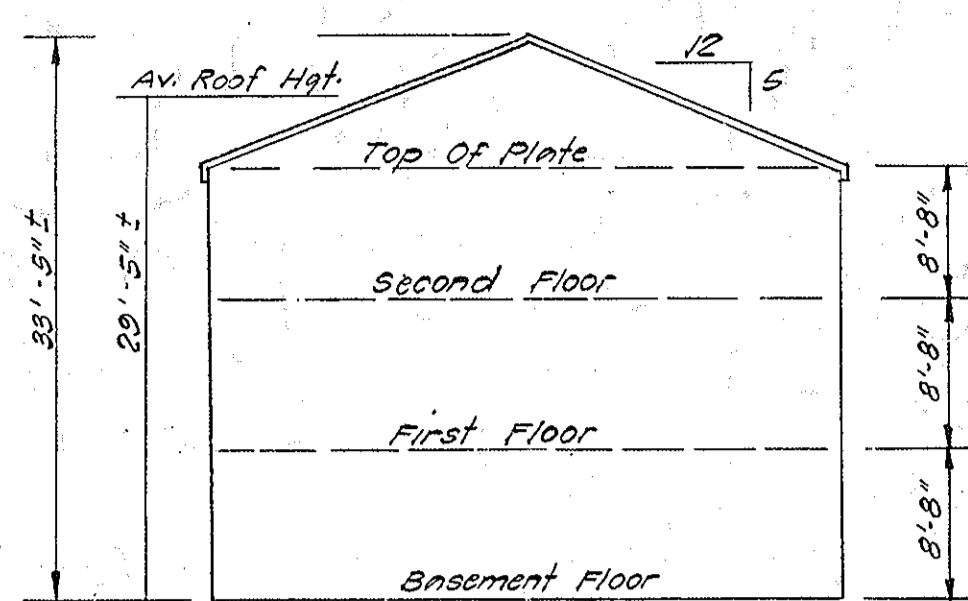
*William D. ...*  
DIRECTOR  
1/28/74  
DATE  
*B. M. ...*  
CHIEF BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY OFFICE OF PLANNING & ZONING  
*Thomas L. ...*  
PLANNING DIRECTOR  
2-4-74  
DATE

*J. H. ...*  
CHIEF, DIV. OF LAND DEVELOPMENT & TRANSPORTATION PLANNING  
2/1/74  
DATE

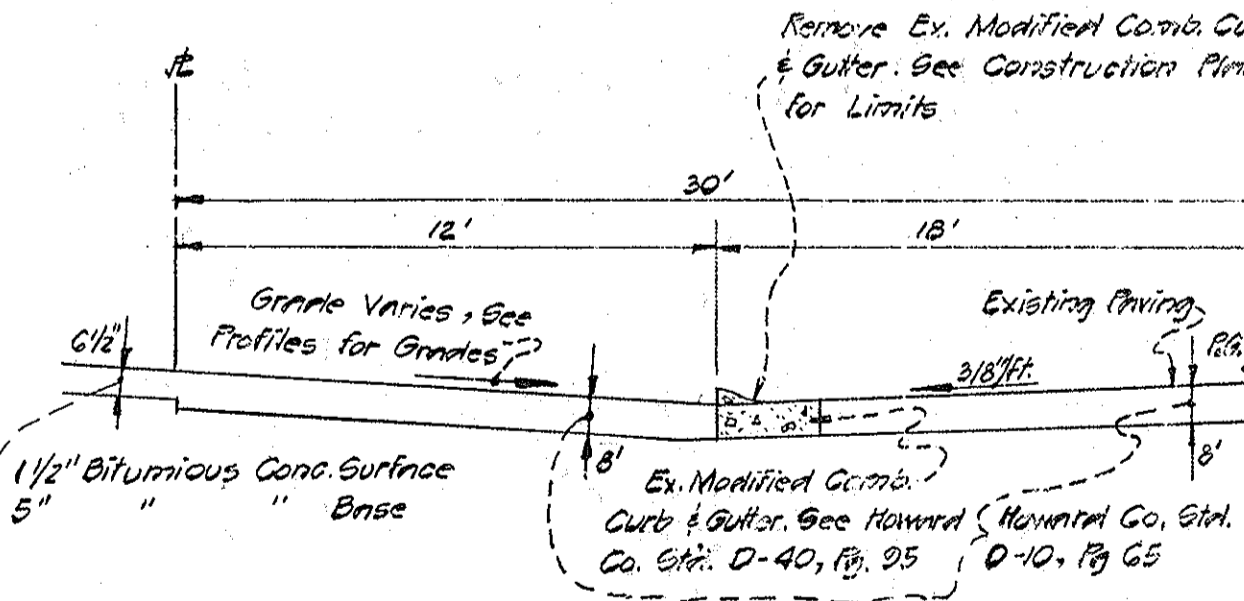
TYPICAL HALF SECTION  
PHELPS LUCK DRIVE  
60' R/W - 36' ROADWAY  
NO SCALE

TYPICAL END ELEVATION  
NO SCALE



- "NOTES"
- Zone: Apartment Land Use (Single Family Attached).
  - Total Area = 594,160 sq. ft., or 13,640 Ac.
  - No Units Allowed = 136; No Units Shown = 132.
  - No Parking Spaces Required = 264; No Parking Spaces Shown = 273.
  - Property Located On Tax Map No. 3. (Block 23, Parcel 283).
  - Plat Reference: Plat Book 18 - Folio - 47.
  - Final Development Plan Map Reference = 77.
- | Type  | Square Feet | Number |
|-------|-------------|--------|
| A     | 2,412 #     | 39     |
| B     | 2,112 #     | 52     |
| C     | 2,129 #     | 16     |
| D     | 2,244 #     | 25     |
| Total |             | 132    |

2. \* Indicates "Stop Sign R1-1" To Be Installed In Accordance With The Manual On Uniform Traffic Control Devices 1971 Edition.

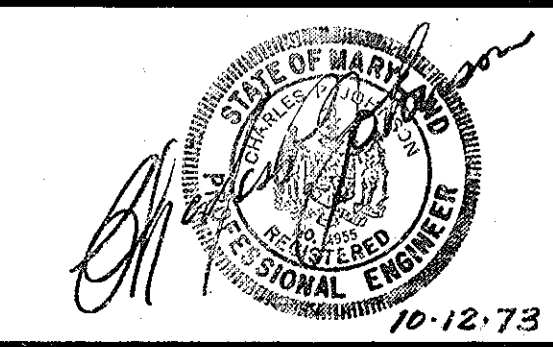


TYPICAL ENTRANCE SECTION  
PHELPS LUCK DRIVE  
NO SCALE

APPROVED  
PLANNING BOARD  
OF HOWARD COUNTY  
DATE Dec. 3, 1973  
*Thomas L. ...*

REVISIONS  
1. Raised Basement Floor Elevation on Lots F-1 Thru F-22 and F-30 Thru F-33; and F-30 to hold Basement Elevations Two Feet Above the 50 Year Flood Plain. Revised Unit Types on Lots F-32 & F-33. 3-4-74 M.W.M.

2. The purpose of this revision is to show maintenance repairs to the retaining wall, pedestrian bridge and grout bags in the vicinity of the stream 2-12-09 R.L.S.



JOHNSON - MCCORDIC - THOMPSON  
ENGINEERS • PLANNERS • SURVEYORS  
1620 ELTON ROAD SILVER SPRING, MD.  
434-7000 20903

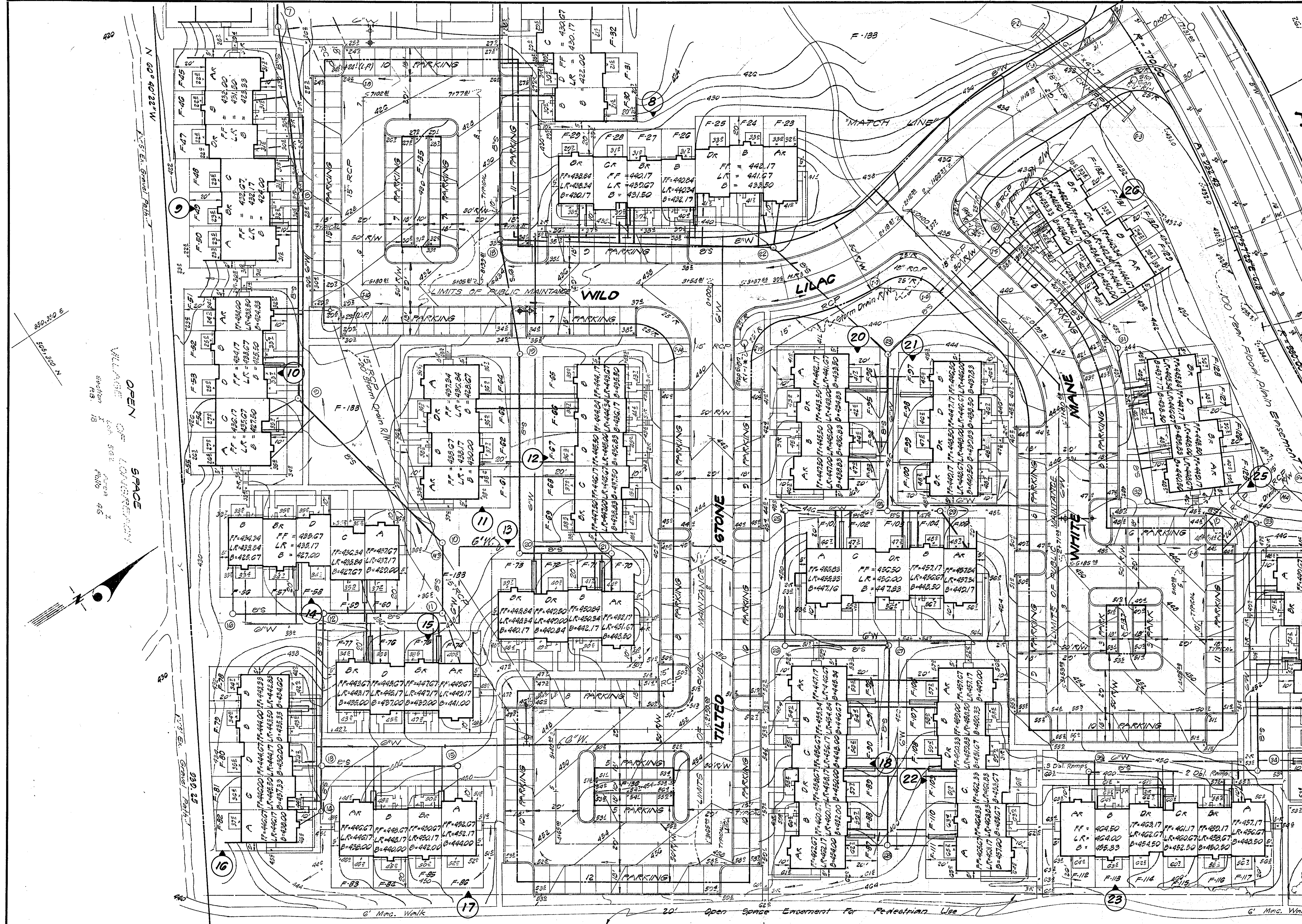
REVISED SITE DEVELOPMENT PLAN  
COLUMBIA VILLAGE OF LONGREACH  
SECTION I - AREA I  
LOTS 1 TO 137  
A RESUBDIVISION OF PARCEL "F"  
6TH ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

OWNER: Porelsky & Starr  
8401 Connecticut Ave. Suite PH7  
Chevy Chase, Md. 20015  
301 682-8921  
DESIGN M.W.M. SHEET 1 OF 2  
DRAFT B.T.O. DATE: SEPT., 1973 JOB NO. 3-08-21  
APPROVED M.W.M. SCALE: 1" = 30' FILE NO. 3-08-21-B

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE, STORM DRAINAGE SYSTEMS AND PUBLIC ROADS  
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 William G. Altman 1/29/74  
 DIRECTOR DATE  
 D. M. Neeland 1/28/73  
 CHIEF BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY OFFICE OF PLANNING & ZONING  
 Planning Director 2-4-74  
 DATE  
 W. Lawton 2/1/74  
 CHIEF, DIV. OF LAND DEVELOP. & TRANSPORT. PLANNING DATE

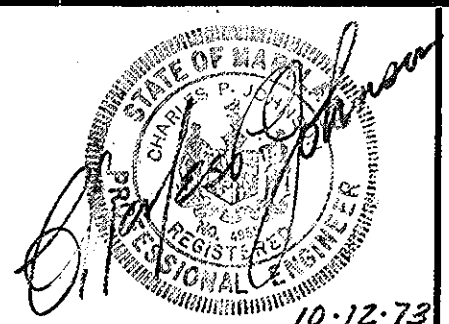
APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS, HOWARD COUNTY HEALTH DEPARTMENT  
 J. P. Hays 1/31/74  
 COUNTY HEALTH OFFICER DATE



VILLAGE OF LONGREACH  
 Sect. I Area I P.G. 13

PHELPS LUCK LOT 503 SCHOOL SITE  
 P.G. 18 P.L. 47

APPROVED  
 PLANNING BOARD  
 OF HOWARD COUNTY  
 DATE Dec 3, 1973  
 Planning Director



JOHNSON - MCCORDIC - THOMPSON  
 ENGINEERS • PLANNERS • SURVEYORS  
 1620 ELTON ROAD SILVER SPRING, MD.  
 434-7000 20903

SITE DEVELOPMENT PLAN  
**COLUMBIA-VILLAGE OF LONGREACH**  
 SECTION I - AREA I  
 LOTS 1 TO 137  
 A RESUBDIVISION OF PARCEL "F"  
 6TH ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

OWNER: Parshley & Starr  
 8401 Connecticut Ave., Suite PH7  
 Chevy Chase, Md. 20015  
 301 682-5921

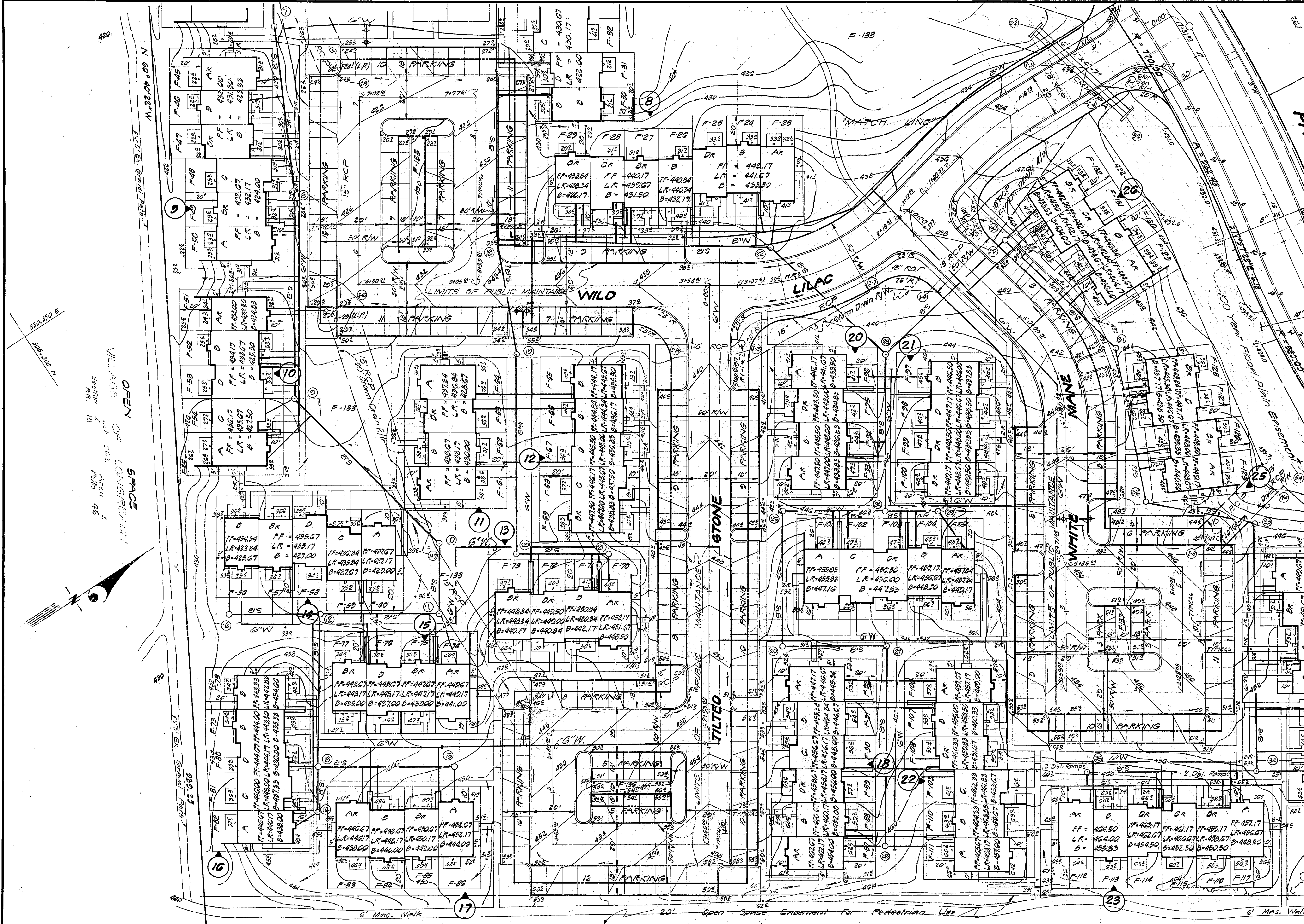
DESIGN	M.W.M.	SHEET 2 OF 2
DRAFT	S.T.D.	DATE: SEPT. 1973
APPROVED	M.W.M.	SCALE: 1" = 30'
		JOB NO. 3-018-21
		FILE NO. 3-018-21-B



APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE, STORM DRAINAGE SYSTEMS AND PUBLIC ROADS  
 HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 WILLIAM G. WILSON 4/27/74  
 DIRECTOR DATE  
 DON REBELD 1/28/73  
 CHIEF BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY OFFICE OF PLANNING & ZONING  
 J. DONALD HANCOCK 2-4-74  
 PLANNING DIRECTOR DATE  
 W. LAWRENCE 2/1/74  
 CHIEF, DIV. OF LAND DEVELOP. & TRANSPORT. PLANNING DATE

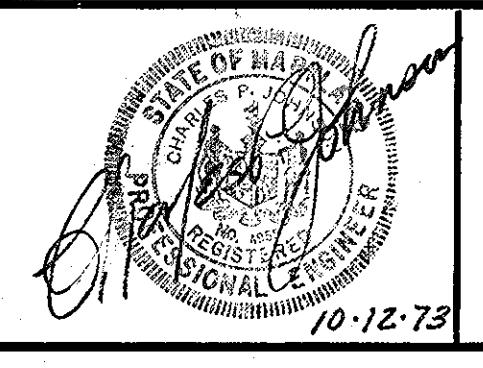
APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS, HOWARD COUNTY HEALTH DEPARTMENT  
 J. HAZEN 1/31/74  
 COUNTY HEALTH OFFICER DATE



VILLAGE OF LONGREACH 5 32' 53" 22" W  
 Parcel "G"  
 Sects. 2 Area 1 P.B. 18 Folio 53

PHELPS LUCK SCHOOL SITE  
 P.B. 18 Folio 47

APPROVED  
 PLANNING BOARD  
 OF HOWARD COUNTY  
 DATE Dec. 3, 1973  
 J. DONALD HANCOCK



JOHNSON - McCORDIC - THOMPSON  
 ENGINEERS • PLANNERS • SURVEYORS  
 1620 ELTON ROAD SILVER SPRING, MD.  
 434-7000 20903

SITE DEVELOPMENT PLAN  
 COLUMBIA-VILLAGE OF LONGREACH  
 SECTION I - AREA I  
 LOTS 1 TO 137  
 A RESUBDIVISION OF PARCEL "F"  
 6TH ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

OWNER: Parotky & Son  
 8401 Connecticut Ave., Suite PH7  
 Chevy Chase, Md. 20015  
 301 652-5921

DESIGN M.M.M. SHEET 3 OF 15  
 DRAFT B.T.D. DATE 3-28-71  
 APPROVED M.M.M. SCALE 7" = 30' FILE NO. 3-28-71-B

APPROVED FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS, HOWARD COUNTY HEALTH DEPARTMENT

APPROVED FOR PUBLIC WATER AND PUBLIC SEWERAGE, STORM DRAINAGE SYSTEMS AND PUBLIC ROADS, HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS  
 Director: *Wilbur D. Utman* 1/29/74  
 Chief Bureau of Highways: *B. M. Meiland* 1/28/74

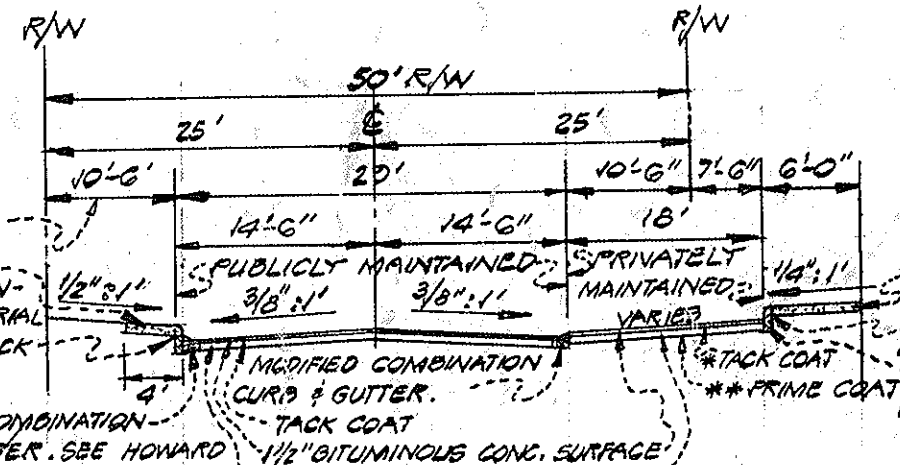
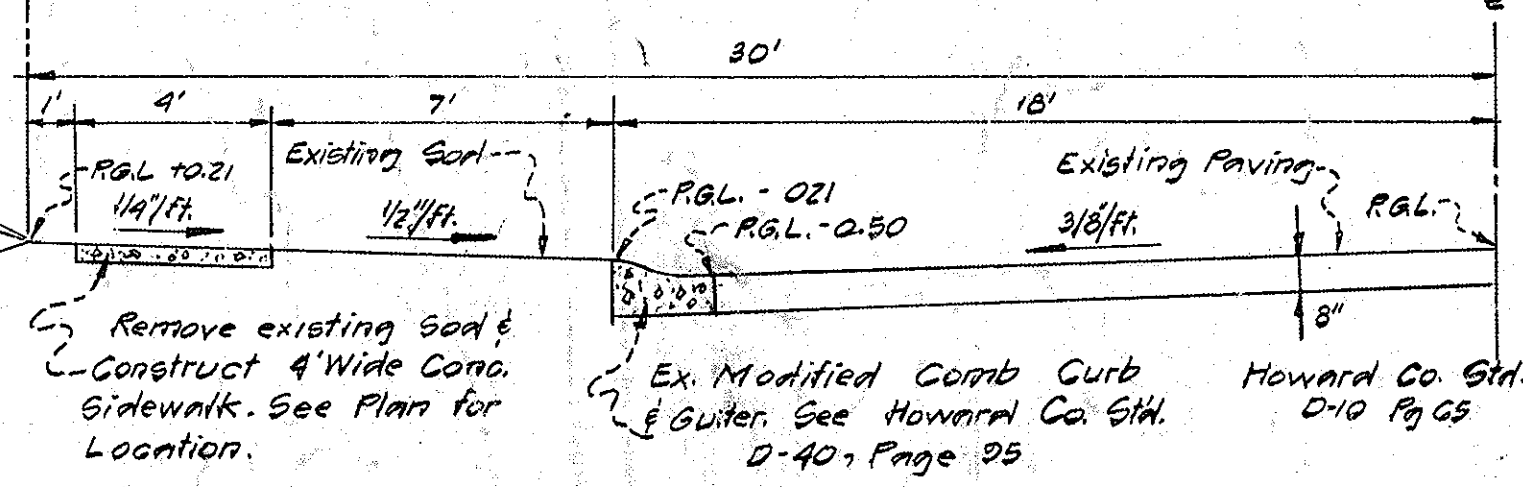
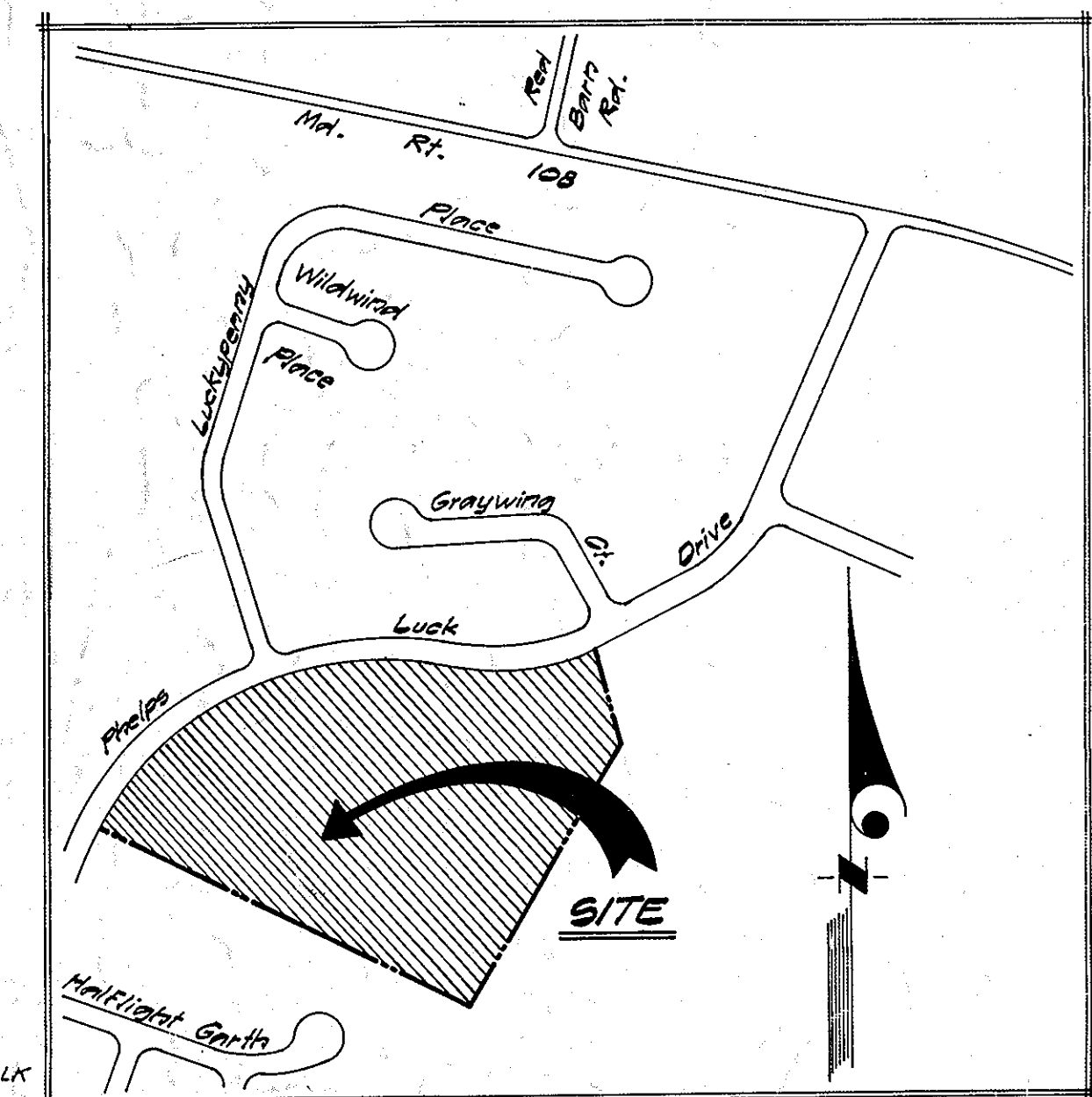
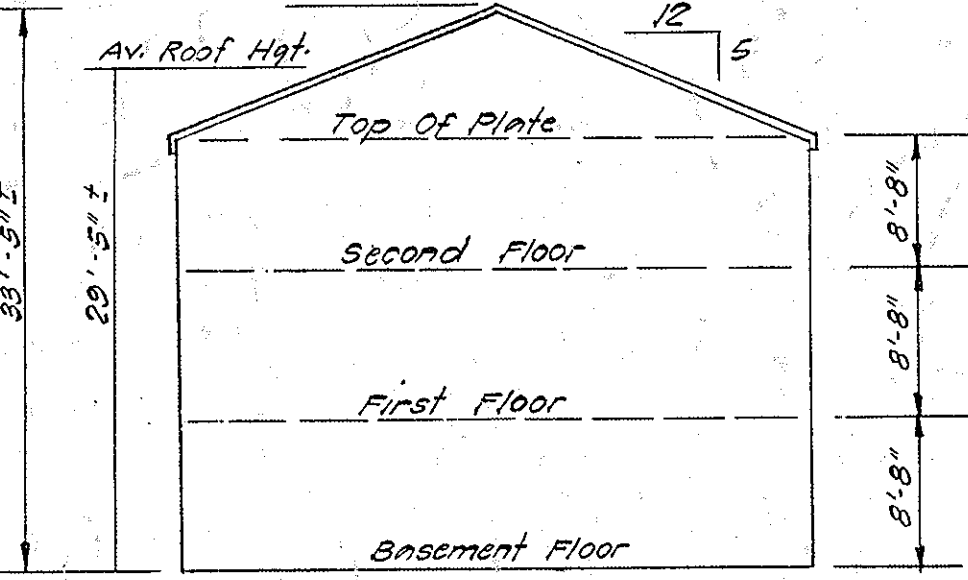
*John A. ...* 1/31/74  
 COUNTY HEALTH OFFICER DATE

APPROVED HOWARD COUNTY OFFICE OF PLANNING & ZONING  
 Planning Director: *Thomas G. Harris, Jr.* 2-4-74  
 DATE

*W. H. ...* 2/1/74  
 CHIEF, DIV. OF LAND DEVELOPMENT & TRANSPORTATION PLANNING DATE

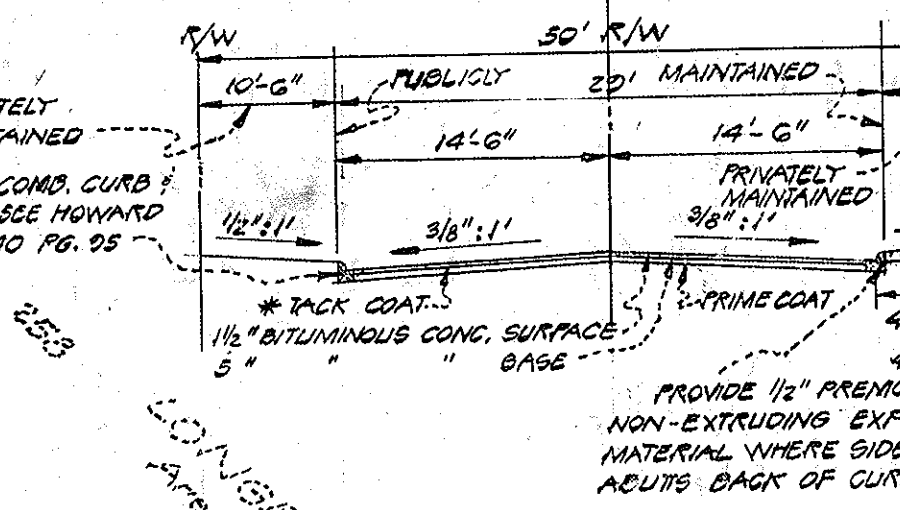
TYPICAL HALF SECTION  
 PHELPS LUCK DRIVE  
 60' R/W - 36' ROADWAY  
 NO SCALE

TYPICAL END ELEVATION  
 NO SCALE



TYPICAL SECTION WITH PARKING AREAS  
 NO SCALE

TYPICAL SECTION - 50' RIGHT OF WAY  
 NO PARKING  
 NO SCALE

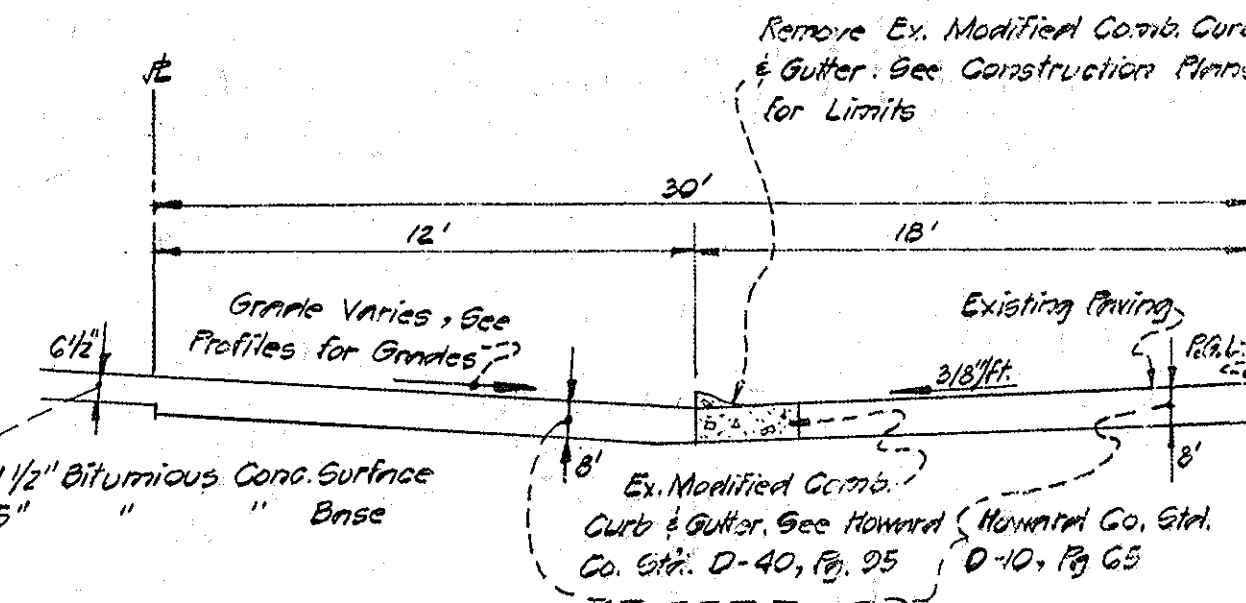


"NOTES"

- Zone: Apartment Land Use (Single Family Attached).
- Total Area = 594,160 sq. ft., or 13,640 Ac.
- No Units Allowed = 136; No Units Shown = 132.
- No Parking Spaces Required = 264; No Parking Spaces Shown = 278.
- Property Located On Tax Map No. 3 (Block 23, Parcel 289).
- Plat Reference: Plat Book 18 - Folio 47.
- Final Development Plan Map Reference = 77.

Type	Square Feet	Number
A	2,412 #	30
B	2,112 #	52
C	2,129 #	16
D	2,244 #	25
Total		132

2. \* Indicates "Stop Sign R1-1" To Be Installed In Accordance With The Manual On Uniform Traffic Control Devices 1971 Edition.



TYPICAL ENTRANCE SECTION  
 PHELPS LUCK DRIVE  
 NO SCALE

APPROVED PLANNING BOARD OF HOWARD COUNTY  
 DATE: Dec 3, 1973

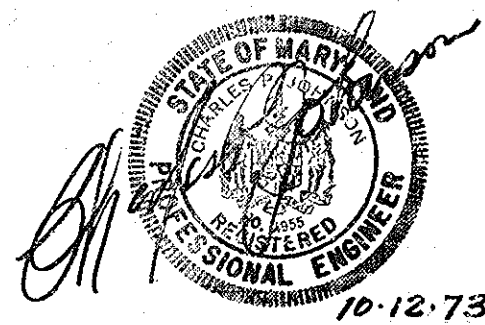
*Thomas G. Harris, Jr.*

NOTE: Existing ground profiles to be shown on Space by H.R.C.

OPEN (14' 0") SPACE

REVISIONS  
 1. Raised Basement Floor Elevation on Lots F-1 thru F-22 and F-30 thru F-33 and F-39 to hold Basement Elevations Two Feet Above the 50 Year Flood Plain. Revised Unit Types on Lots F-32 & F-33. 3-4-74 M.W.M.

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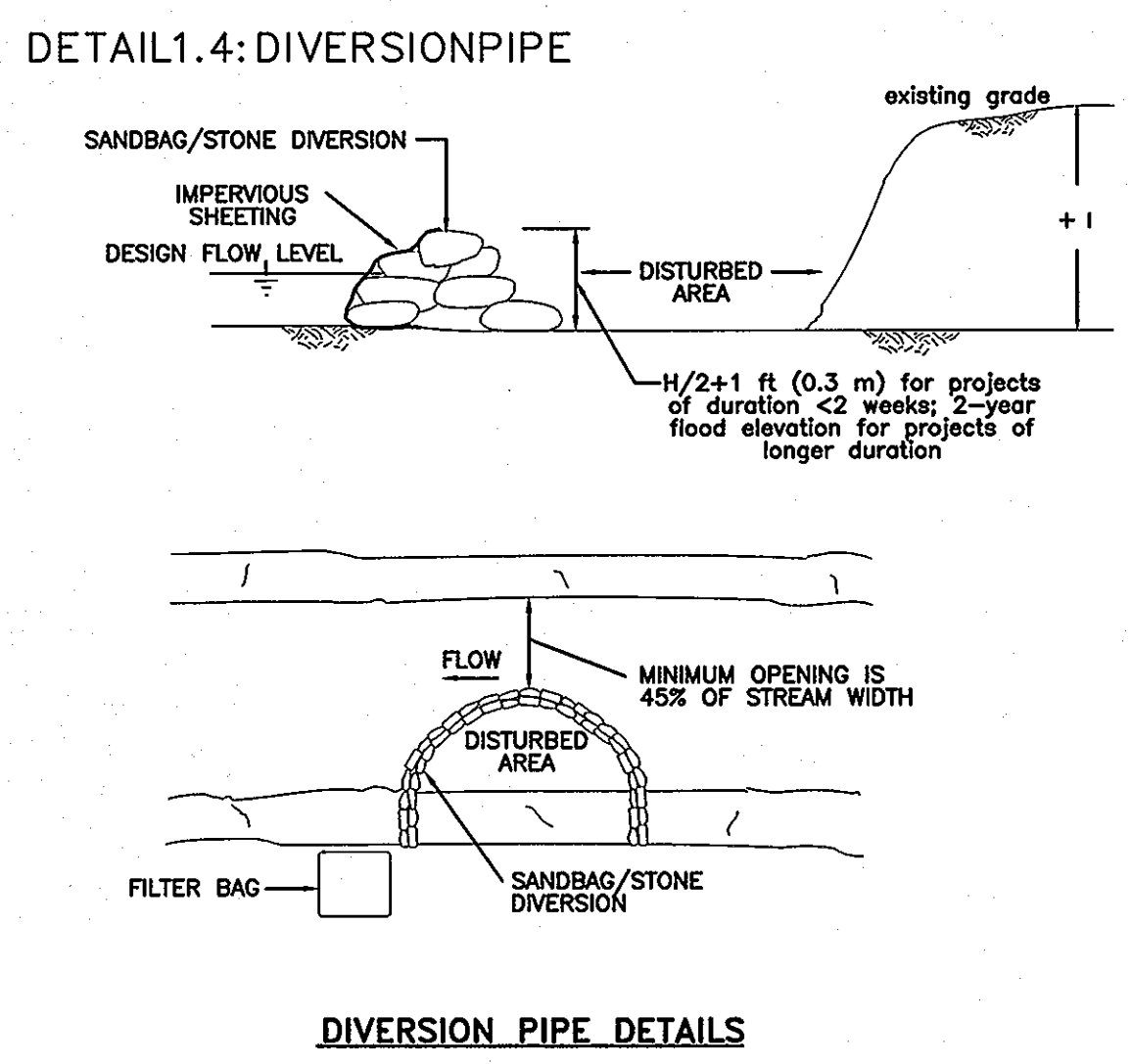
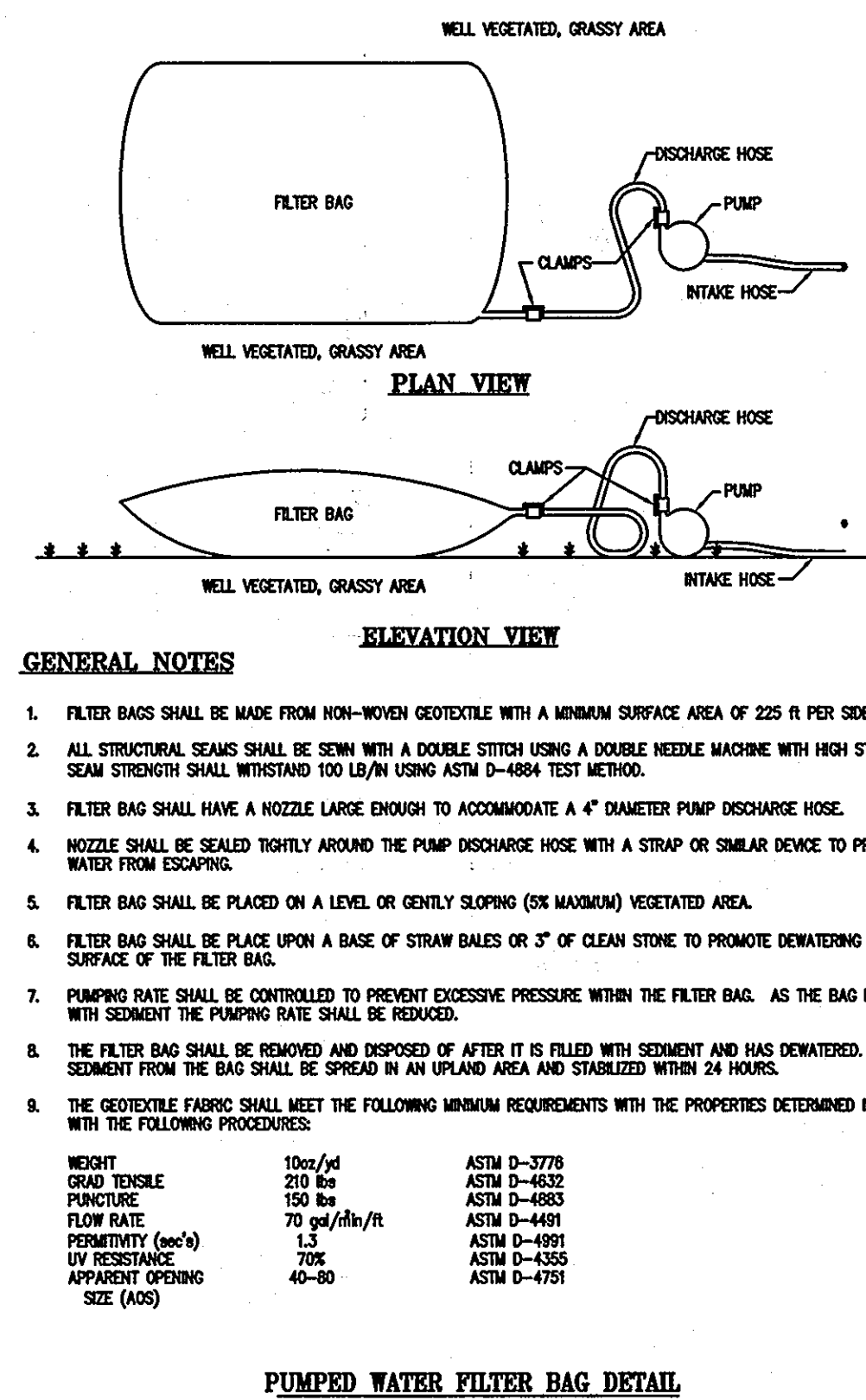
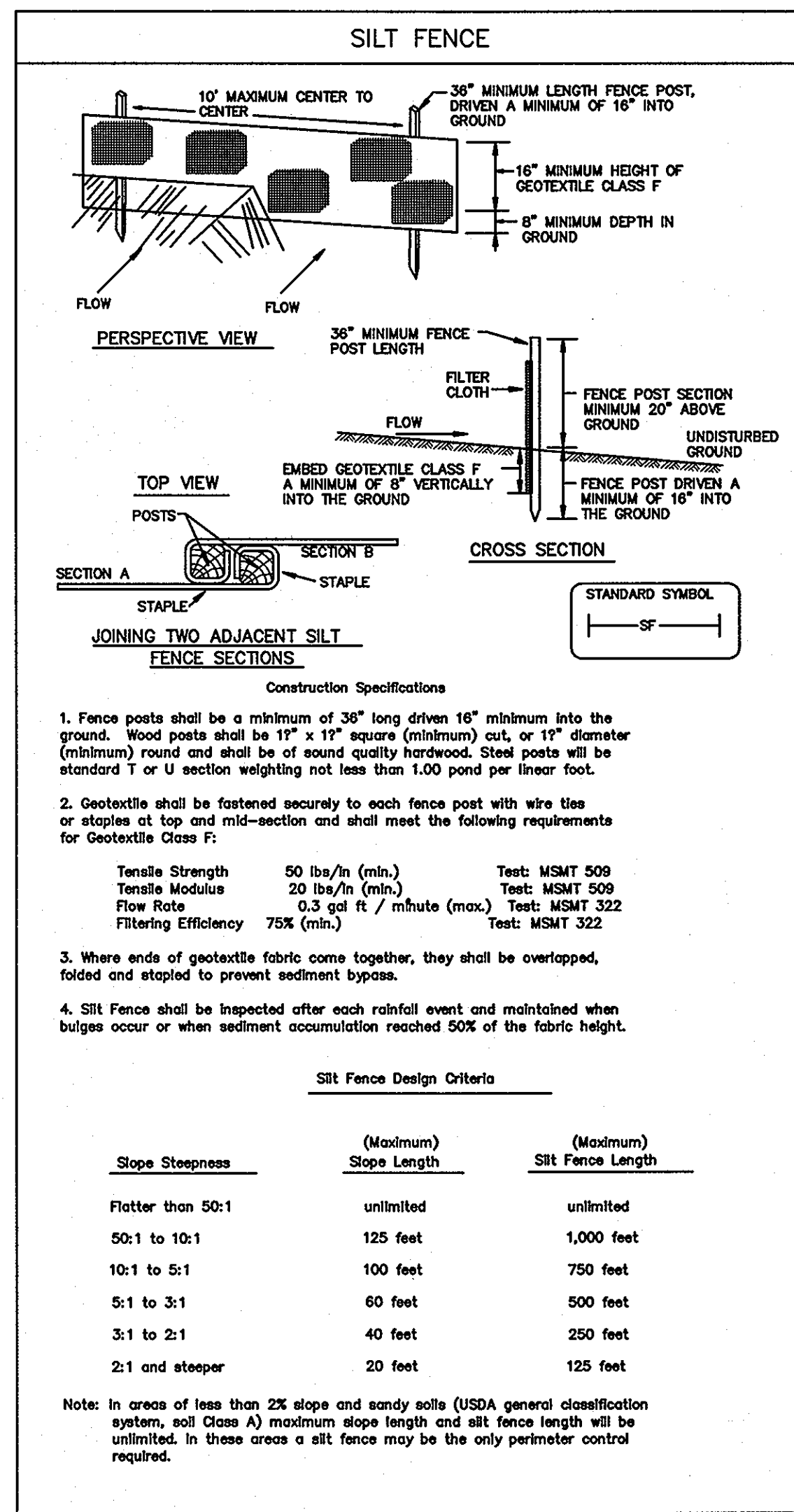
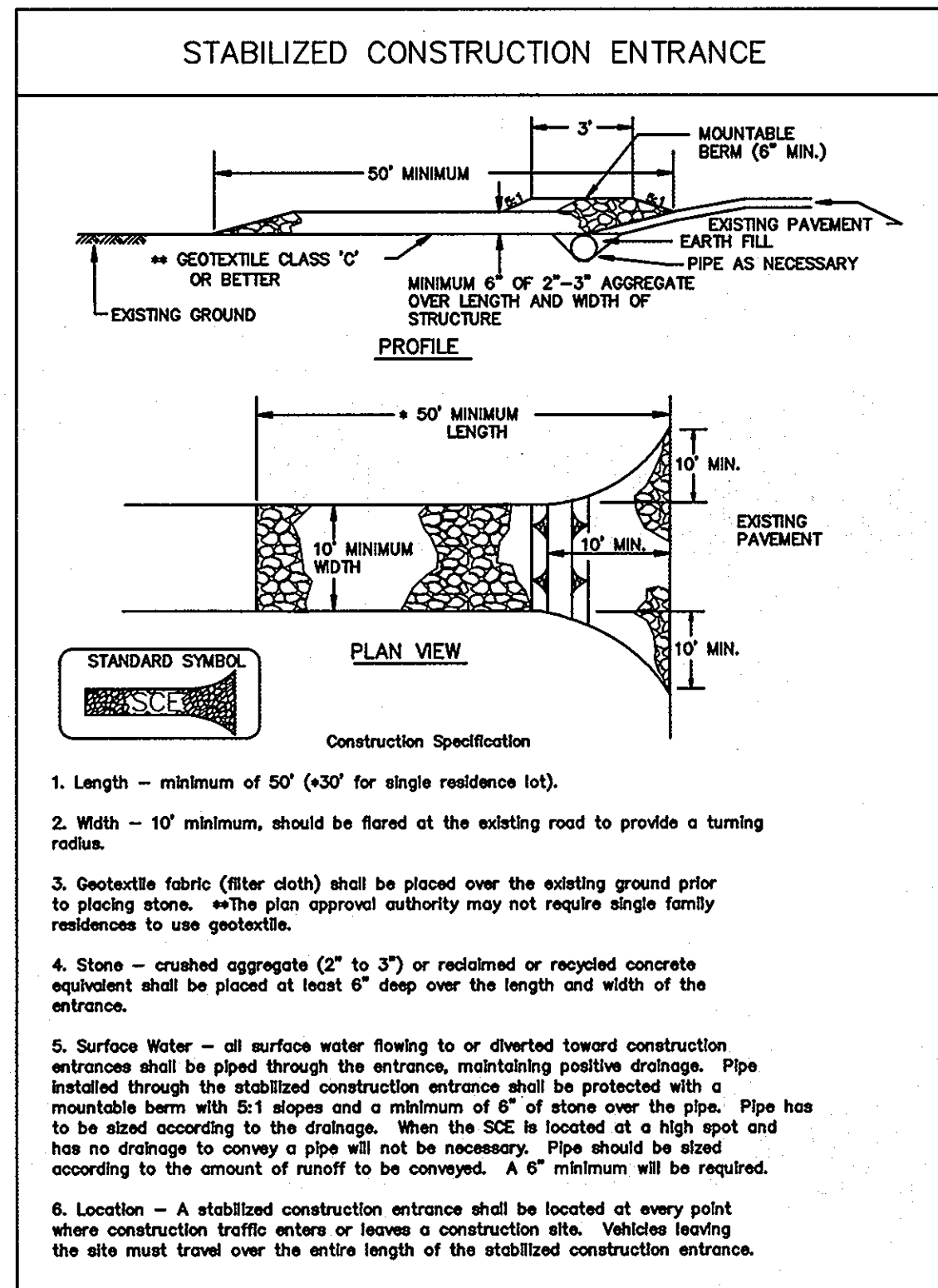


JOHNSON - MCCORDIC - THOMPSON  
 ENGINEERS - PLANNERS - SURVEYORS  
 1620 ELTON ROAD SILVER SPRING, MD.  
 434-7000 20903

REVISED SITE DEVELOPMENT PLAN  
 COLUMBIA VILLAGE OF LONGREACH  
 SECTION I - AREA I  
 LOTS 1 TO 137  
 A RESUBDIVISION OF PARCEL "F"  
 6TH ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

OWNER: *Abelsky & Starr*  
 8401 Connecticut Ave. Suite PH7  
 Chevy Chase, Md. 20015  
 301 692-8021  
 DESIGN: M.W.M. SHEET 2 OF 15  
 DRAFT: B.T.D. DATE: SEPT., 1973 JOB NO.: 3-218-21  
 APPROVED: M.W.M. SCALE: 1" = 30' FILE NO.: 3-218-21-B





### STANDARD SEDIMENT CONTROL NOTES

- 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 (410) 313-1855.
- 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.
- FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, 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.
- 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.
- ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 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.
- 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.
- SITE ANALYSIS:
 

TOTAL AREA OF SITE	13.640 ACRES
AREA DISTURBED	0.285 ACRES
AREA TO BE ROOFED OR PAVED	0 ACRES
AREA TO BE VEGETATIVELY STABILIZED	0.270 ACRES
TOTAL CUT	15 CU. YDS.
TOTAL FILL	0 CU. YDS.
OFFSITE WASTE/BORROW AREA LOCATION:	N/A
- ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
- ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF THE 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.
- TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED BY THE END OF EACH WORK DAY, WHICHEVER IS SHORTER.

### DEVELOPER'S CERTIFICATION

" I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF 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 Gerulatis* 2/12/09  
 SIGNATURE OF DEVELOPER DATE  
 PAUL GERULATIS

### ENGINEER'S CERTIFICATION

" I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."

*Richard L. Sobott* 2/12/09  
 SIGNATURE OF ENGINEER DATE  
 RICHARD L. SOBBOTT, P.E.  
 MD NO. 15222



REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

USDA - NATURAL RESOURCES CONSERVATION SERVICE DATE

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

*John R. Roberts* 2/12/09  
 HOWARD SCD DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

*John Roberts* 2/12/09  
 Chief, Development Engineering Division Date

*Christy Harts* 3/2/09  
 Chief, Division of Land Development Date

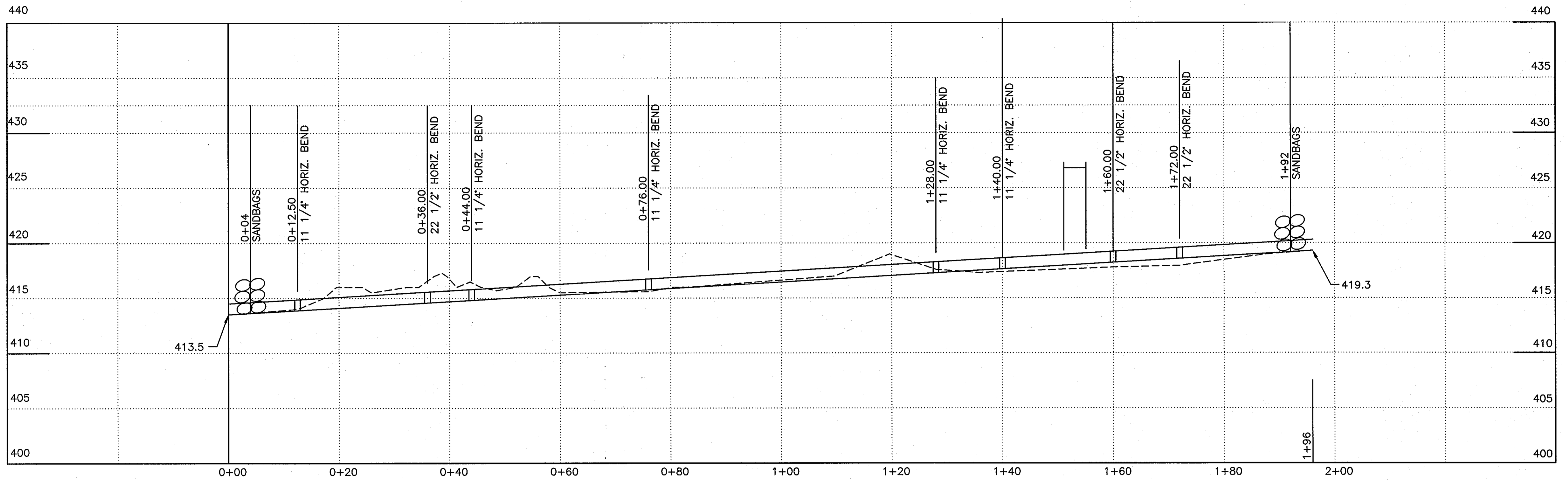
*Paul D. Leight* 2/12/09  
 Director Date

### EROSION AND SEDIMENT CONTROL NOTES AND DETAILS

**DCI**  
 DANIEL CONSULTANTS INC.  
 CONSULTING ENGINEERS AND PLANNERS  
 8950 Rt. 108 E., Suite 229, Columbia, MD 21045  
 Phone: 410-995-0090 Fax: 410-992-7038

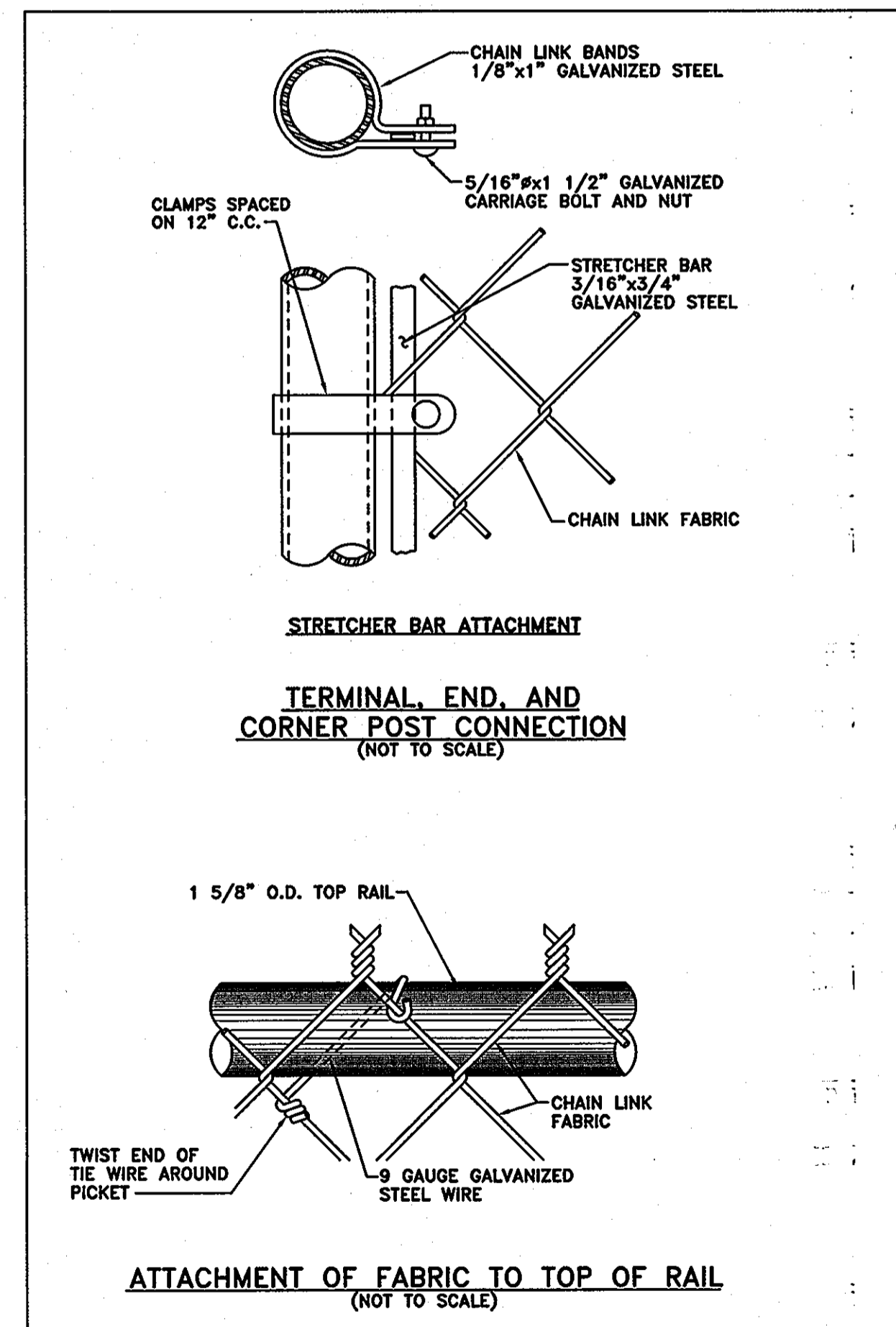
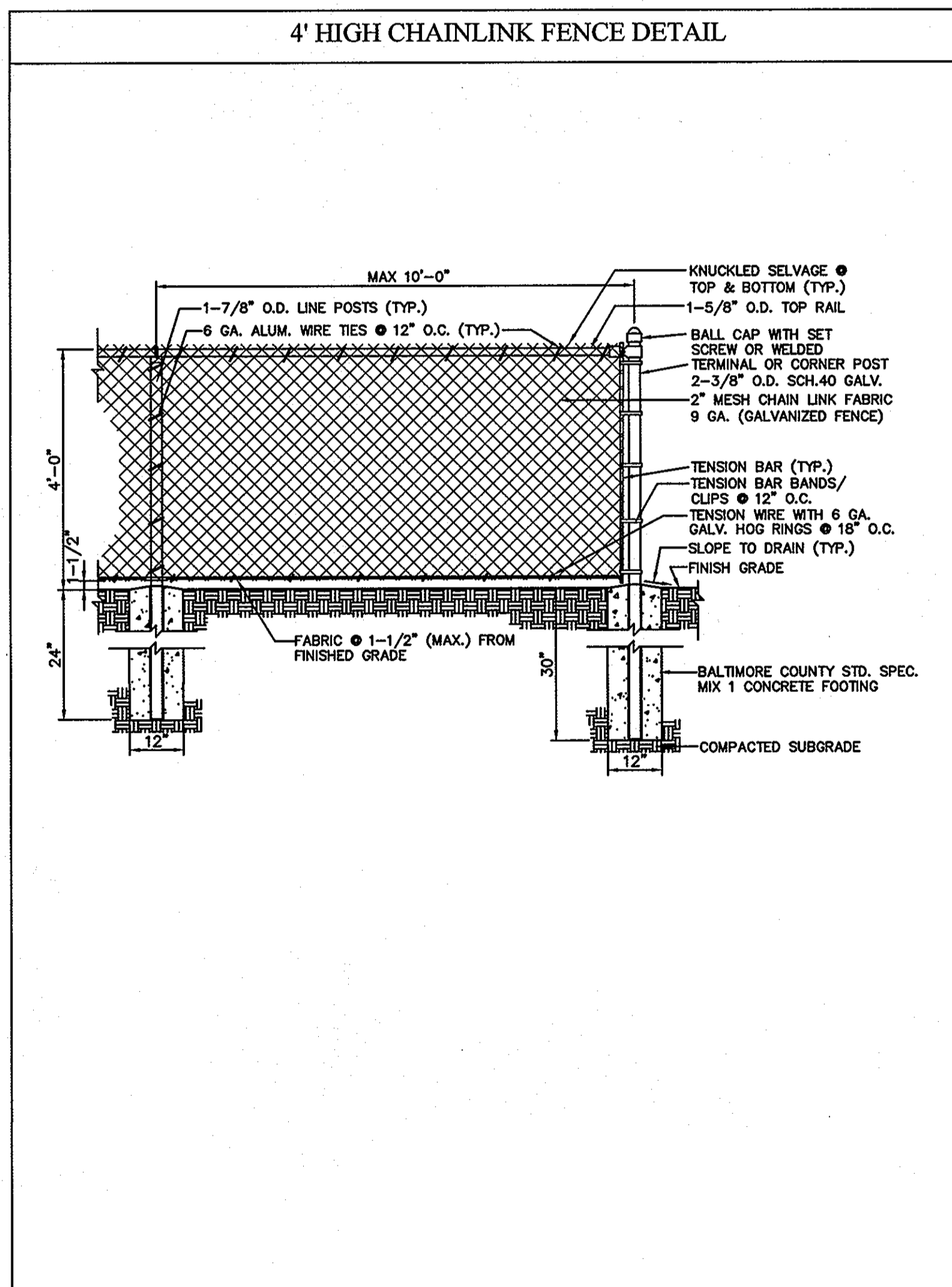
**COLUMBIA - VILLAGE OF LONG REACH**  
 SECTION 1 - AREA 1 LOTS F-1 TO F-137  
 A RESUBDIVISION OF PARCEL "F"  
 6TH ELECTION DISTRICT HOWARD COUNTY, MD

REVISIONS			
1. ADDITIONAL SHEET FOR EROSION AND SEDIMENT CONTROL NOTES & DETAILS			
OWNER: <b>WOODCREEK H.O.A.</b>			
DESIGN:	JW	SHEET	14 OF 15
DRAWN:	JW	DATE:	JAN. 2009
APPROVED:	RLS	SCALE:	N.T.S.
		PROJ. NO.:	06-11-001
		FILE NO.:	



PIPE DIVERSION PROFILE

SCALE: HORIZ. 1" = 10'  
VERT. 1" = 5'



DEVELOPER'S CERTIFICATION

"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF 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 Gerulatis*  
SIGNATURE OF DEVELOPER  
PAUL GERULATIS  
2/12/09  
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 SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."



*Richard L. Sobott*  
SIGNATURE OF ENGINEER  
RICHARD L. SOBBOTT, P.E.  
MD NO. 15222  
2/17/09  
DATE

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*John R. Deaton* 2/21/09  
Chief, Development Engineering Division  
*Andy Hunter* 3/2/09  
Chief, Division of Land Development  
*Paul D. Loyall* 3/4/09  
Director

USDA - NATURAL RESOURCES CONSERVATION SERVICE  
DATE  
THIS DEVELOPMENT IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.  
*John R. Deaton* 2/10/09  
HOWARD SCD DATE

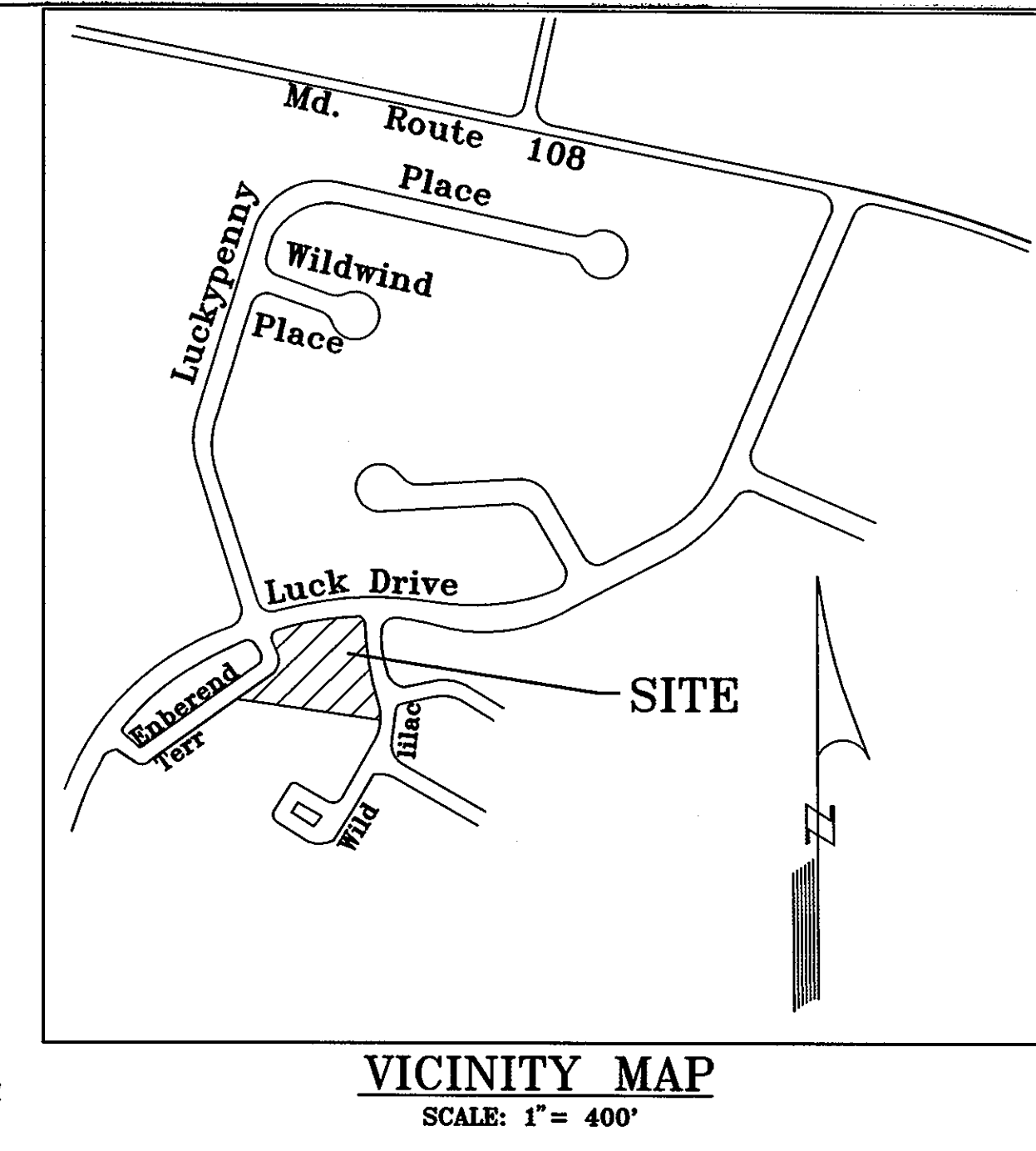
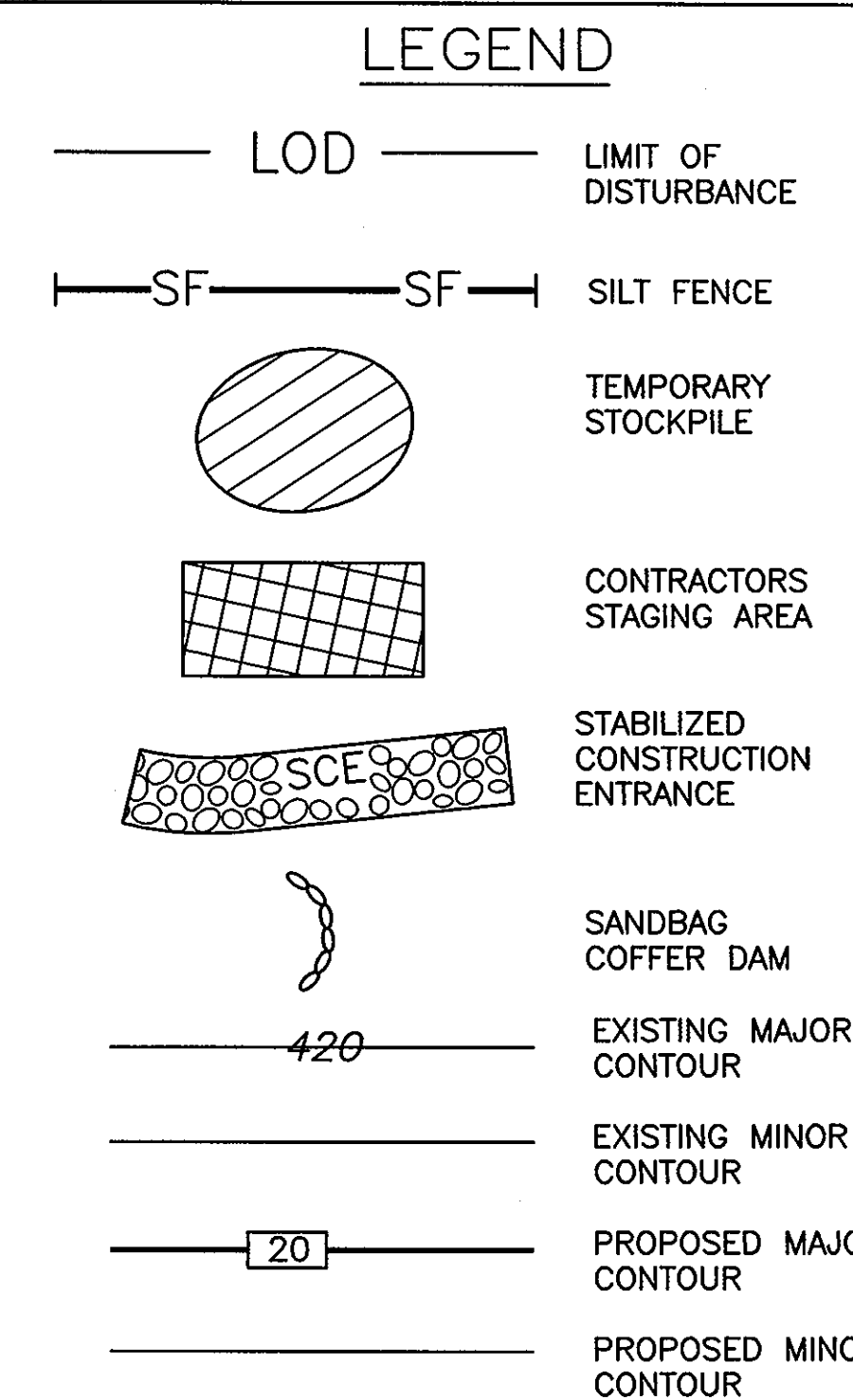
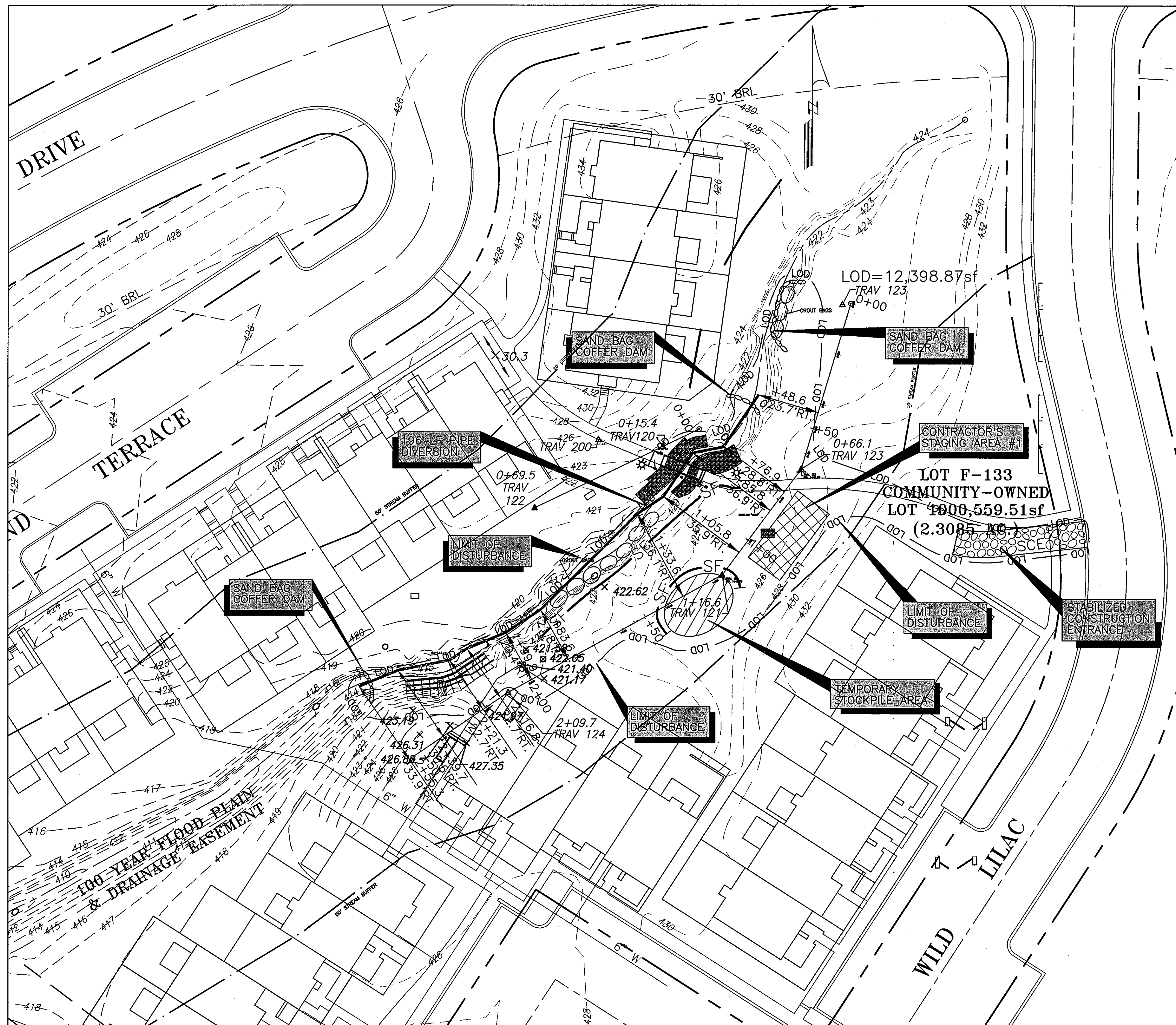
EROSION & SEDIMENT CONTROL PROFILE

**DCI**  
DANIEL CONSULTANTS INC.  
CONSULTING ENGINEERS AND PLANNERS  
8950 Rt. 108 E., Suite 229, Columbia, MD 21045  
Phone: 410-995-0090 Fax: 410-992-7038

**COLUMBIA - VILLAGE OF LONG REACH**  
SECTION 1 - AREA 1 LOTS F-1 TO F-137  
A RESUBDIVISION OF PARCEL "F"  
6TH ELECTION DISTRICT HOWARD COUNTY, MD

REVISIONS			
1 ADDITIONAL SHEET FOR STREAM DIVERSION PIPE PROFILE, SEQUENCE OF CONSTRUCTION AND SEDIMENT CONTROL NOTES.			
OWNER: <b>WOODCREEK H.O.A.</b>			
DESIGNER: JW	SHEET 13 OF 15		
DRAWN: JW	DATE: JAN. 2009	PROJ. NO.: 06-11-001	
APPROVED: RLS	SCALE: AS SHOWN	FILE NO.:	





### DEVELOPER'S CERTIFICATION

" I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF 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 Gerulatis*  
 SIGNATURE OF DEVELOPER  
 PAUL GERULATIS

2/12/09  
 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 SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. "

*Richard L. Sobott*  
 SIGNATURE OF ENGINEER  
 RICHARD L. SOBOTT, P.E.  
 MD NO. 15222

2/12/09  
 DATE



### SEQUENCE OF CONSTRUCTION

1. OBTAIN THE REQUIRED PERMITS.
2. A MINIMUM OF 48 HOURS PRIOR TO COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION AT (410) 313-1855.
3. CLEAR AND GRUB FOR INSTALLATION OF PERIMETER CONTROLS. INSTALL THE STABILIZED CONSTRUCTION ENTRANCE AND SILT FENCE. PLACE ORANGE SNOW FENCE AROUND LIMIT OF DISTURBANCE ON BOTH SIDES OF STREAM.
4. WITH INSPECTORS PERMISSION, INSTALL THE TEMPORARY STREAM DIVERSION PIPE AND SANDBAG/STONE DIVERSION AS SHOWN ON THE PLANS. DEWATER AREAS OF CONSTRUCTION BY PUMPING THROUGH A SILT BAG LOCATED ON UNDISTURBED GROUND AT TOP OF BANK.
5. WITH THE INSPECTOR'S PERMISSION, BEGIN EXCAVATION FOR THE GABION RETAINING WALL. LOWER BASKETS AND RIPRAP FROM TOP OF BANK AND PLACE GEOTEXTILE CLOTH ON EMBANKMENT. CONTINUE TO CONSTRUCT RIPRAP, BACKFILLING WITH PORUS BACKFILL AFTER EACH ROW OF BASKETS IS SET. WHEN WALL IS WITHIN 6" OF TOP OF WALL, PLACE A LAYER OF GEOTEXTILE CLOTH OVER THE POROUS BACKFILL AND FILL WITH TOPSOIL.
6. WITH APPROVAL OF THE INSPECTOR, BEGIN FINE GRADING OF THE PEDESTRIAN BRIDGE BANKS FOR INSTALLATION OF ARMOR-LOC. PLACE GEOTEXTILE CLOTH ON THE SLOPES BELOW THE EXISTING ABUTMENTS. INSTALL ARMOR-LOC UNITS ON GEOTEXTILE USING HAND LABOR AND BACKFILL UNITS WITH GRAVEL. STABILIZE ANY DISTURBED AREAS WITH SEED AND MULCH.
7. PLACE GROUT BAGS AT BASE OF EMBANKMENT, IN AREAS OF UNDERCUT. STAKE THE BAGS IN PLACE IN THE STREAM BED, ALLOWING THEM TO FILL THE AREA OF UNDERCUT. INSERT A PVC PIPE AND FILL WITH GROUT FROM THE TOP OF BANK.
8. STABILIZE ANY REMAINING AREAS OF DISTURBANCE WITH PERMANENT SEED AND MULCH.
9. WITH THE INSPECTOR'S PERMISSION, REMOVE PERIMETER CONTROLS AND REMOVE DIVERSION PIPE AND SANDBAGS FROM THE STREAM BED. STABILIZE ANY REMAINING AREAS OF STAGING AREA THAT MAY HAVE BEEN DISTURBED WITH PERMANENT SEED AND MULCH.

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

USDA -- NATURAL RESOURCES CONSERVATION SERVICE DATE

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

*John R. Roberts*  
 HOWARD SCD

2/26/09  
 DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

*John P. ...*  
 Chief, Development Engineering Division 2/21/09 Date

*Cindy ...*  
 Chief, Division of Land Development 3/2/09 Date

*Mark ...*  
 Director 2/10/09 Date

**DCI**  
 DANIEL CONSULTANTS INC.  
 CONSULTING ENGINEERS AND PLANNERS  
 8950 Rt. 108 E., Suite 229, Columbia, MD 21045  
 Phone: 410-995-0090 Fax: 410-992-7036

## EROSION AND SEDIMENT CONTROL PLAN

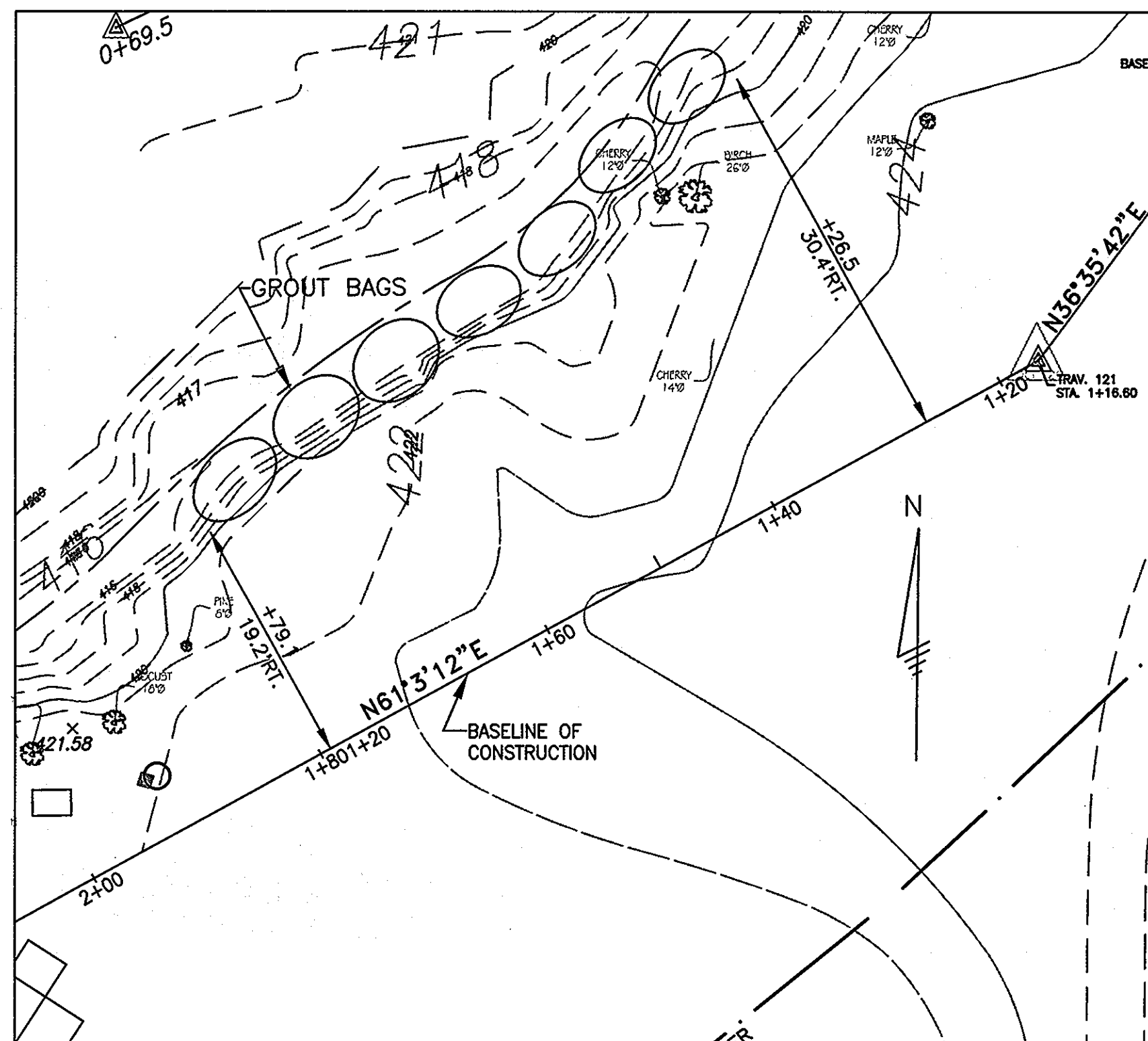
### COLUMBIA - VILLAGE OF LONG REACH

SECTION 1 - AREA 1 LOTS F-1 TO F-137

A RESUBDIVISION OF PARCEL "F"

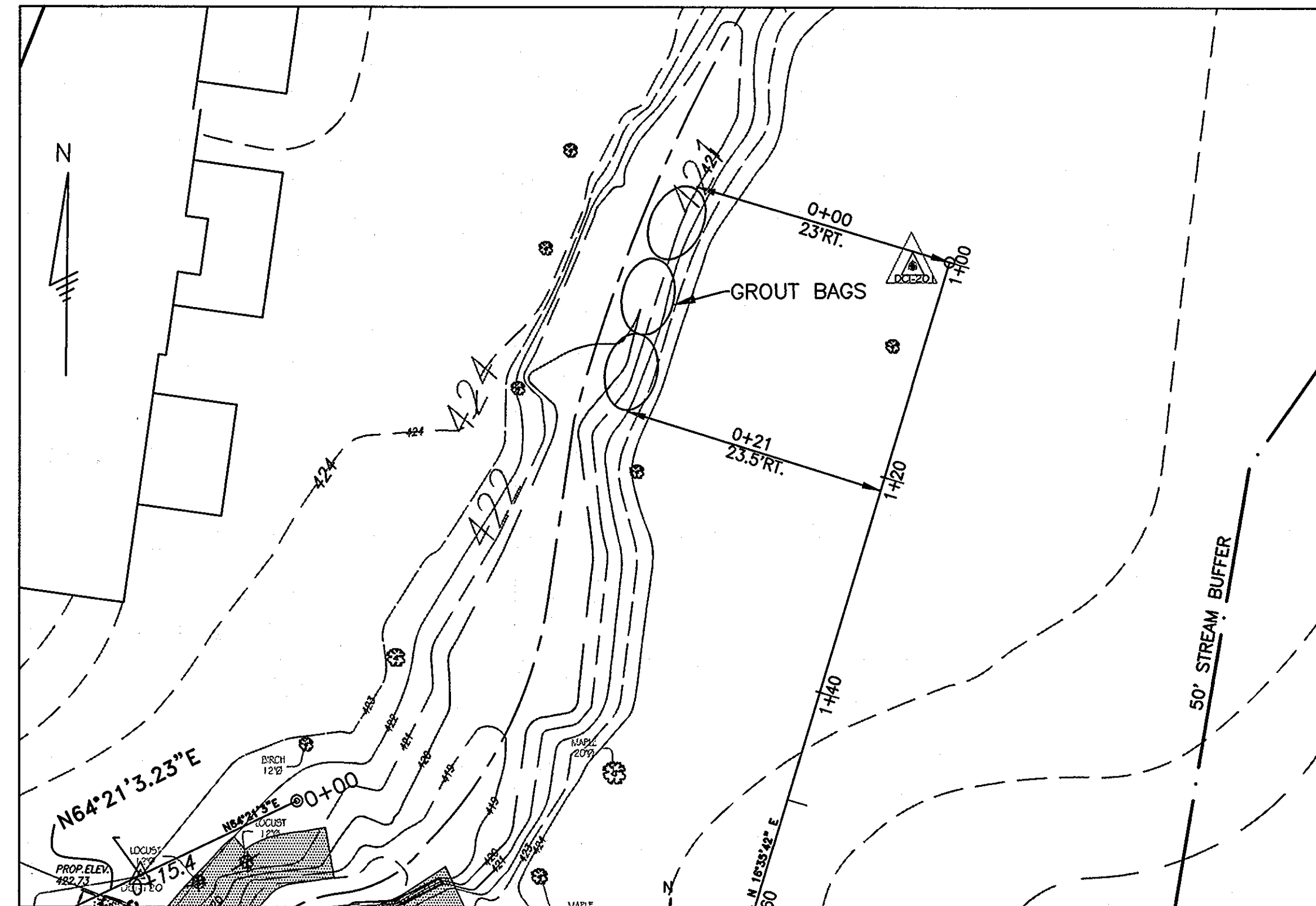
6TH ELECTION DISTRICT HOWARD COUNTY, MD

REVISIONS		
1	ADDITIONAL PLAN SHEET FOR EROSION AND SEDIMENT CONTROL PLAN.	
OWNER: <b>WOODCREEK H.O.A.</b>		
DESIGN: JW	SHEET 12 OF 15	
DRAWN: JW	DATE: JAN. 2009	PROJ. NO.: 06-11-001
APPROVED: RLS	SCALE: 1" = 20'	FILE NO.:



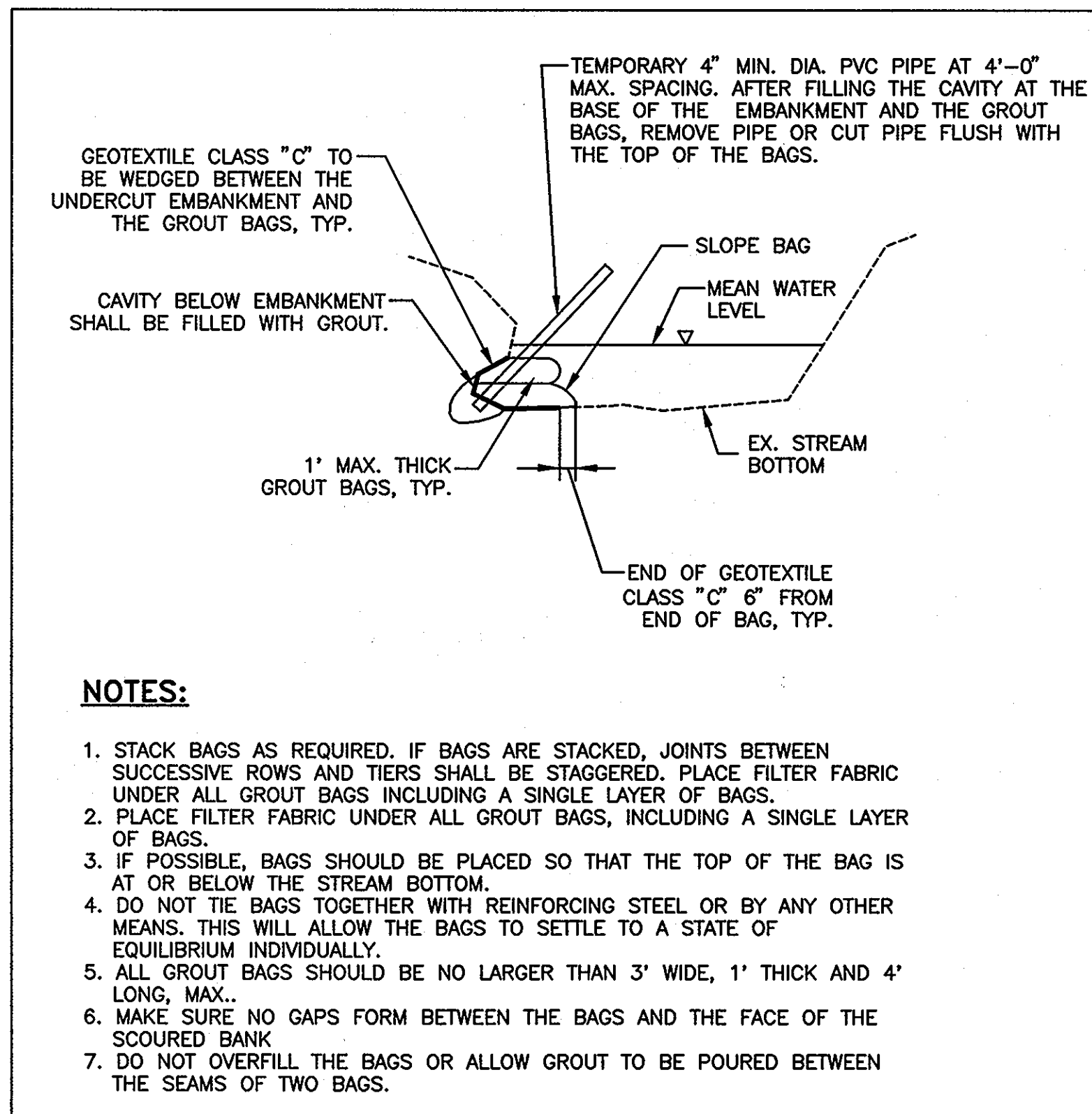
**GROUT BAG STABILIZATION**

SCALE: 1" = 10'



**GROUT BAG STABILIZATION**

SCALE: 1" = 10'



**NOTES:**

1. STACK BAGS AS REQUIRED. IF BAGS ARE STACKED, JOINTS BETWEEN SUCCESSIVE ROWS AND TIERS SHALL BE STAGGERED. PLACE FILTER FABRIC UNDER ALL GROUT BAGS INCLUDING A SINGLE LAYER OF BAGS.
2. PLACE FILTER FABRIC UNDER ALL GROUT BAGS, INCLUDING A SINGLE LAYER OF BAGS.
3. IF POSSIBLE, BAGS SHOULD BE PLACED SO THAT THE TOP OF THE BAG IS AT OR BELOW THE STREAM BOTTOM.
4. DO NOT TIE BAGS TOGETHER WITH REINFORCING STEEL OR BY ANY OTHER MEANS. THIS WILL ALLOW THE BAGS TO SETTLE TO A STATE OF EQUILIBRIUM INDIVIDUALLY.
5. ALL GROUT BAGS SHOULD BE NO LARGER THAN 3' WIDE, 1' THICK AND 4' LONG, MAX.
6. MAKE SURE NO GAPS FORM BETWEEN THE BAGS AND THE FACE OF THE SCOURED BANK.
7. DO NOT OVERFILL THE BAGS OR ALLOW GROUT TO BE POURED BETWEEN THE SEAMS OF TWO BAGS.

**GROUT BAG INSTALLATION DETAIL**

NOT TO SCALE

**GENERAL GROUT BAG INSTALLATION NOTES:**

1. DEPENDING ON THE DEPTH OF UNDERMINING, PLACE ONE GROUT BAG OR STACK SEVERAL LAYERS OF GROUT BAGS ALONG THE FACE OF THE UNDERMINED EMBANKMENT. IF BAGS ARE STACKED, BAGS IN SUCCESSIVE ROWS AND TIERS SHALL BE STAGGERED.
2. ONCE THE VENT/FILL PIPES HAVE BEEN INSTALLED AND THE BAGS ARE FILLED, PUMP GROUT INTO THE UNDERMINED AREA UNTIL THE MATERIAL APPEARS IN THE TOP OF ADJACENT VENT PIPES. CUT OR REMOVE THE VENT/FILL PIPES FLUSH WITH THE TOP OF THE BAGS AFTER THE PUMPING OPERATION IS COMPLETE.
3. ADEQUATE VENTING OF THE WATER TO BE DISPLACED IN THE UNDERMINED AREA IS IMPORTANT. THE WATER MUST BE ABLE TO ESCAPE WHEN IT IS DISPLACED BY THE GROUT PUMPED INTO THE CAVITY. 4' MAXIMUM SPACING OF THE VENT/FILL PIPES IS RECOMMENDED.
4. IT IS IMPORTANT TO KEEP THE NOZZLE BURIED IN THE GROUT DURING THE PUMPING. THIS IS TO REDUCE THE AMOUNT OF MIXING OF THE GROUT AND THE WATER TO BE DISPLACED.
5. IF POSSIBLE, CLEAN OUT UNSTABLE MATERIAL ALONG THE BOTTOM OF THE UNDERMINED AREA PRIOR TO FILLING WITH GROUT.

**DEVELOPER'S CERTIFICATION**

" I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF 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 Gerulatis*  
 SIGNATURE OF DEVELOPER  
 PAUL GERULATIS  
 2/12/09  
 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 SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT."



*Richard L. Sobott*  
 SIGNATURE OF ENGINEER  
 RICHARD L. SOBBOTT, P.E.  
 MD NO. 15222  
 2/12/09  
 DATE

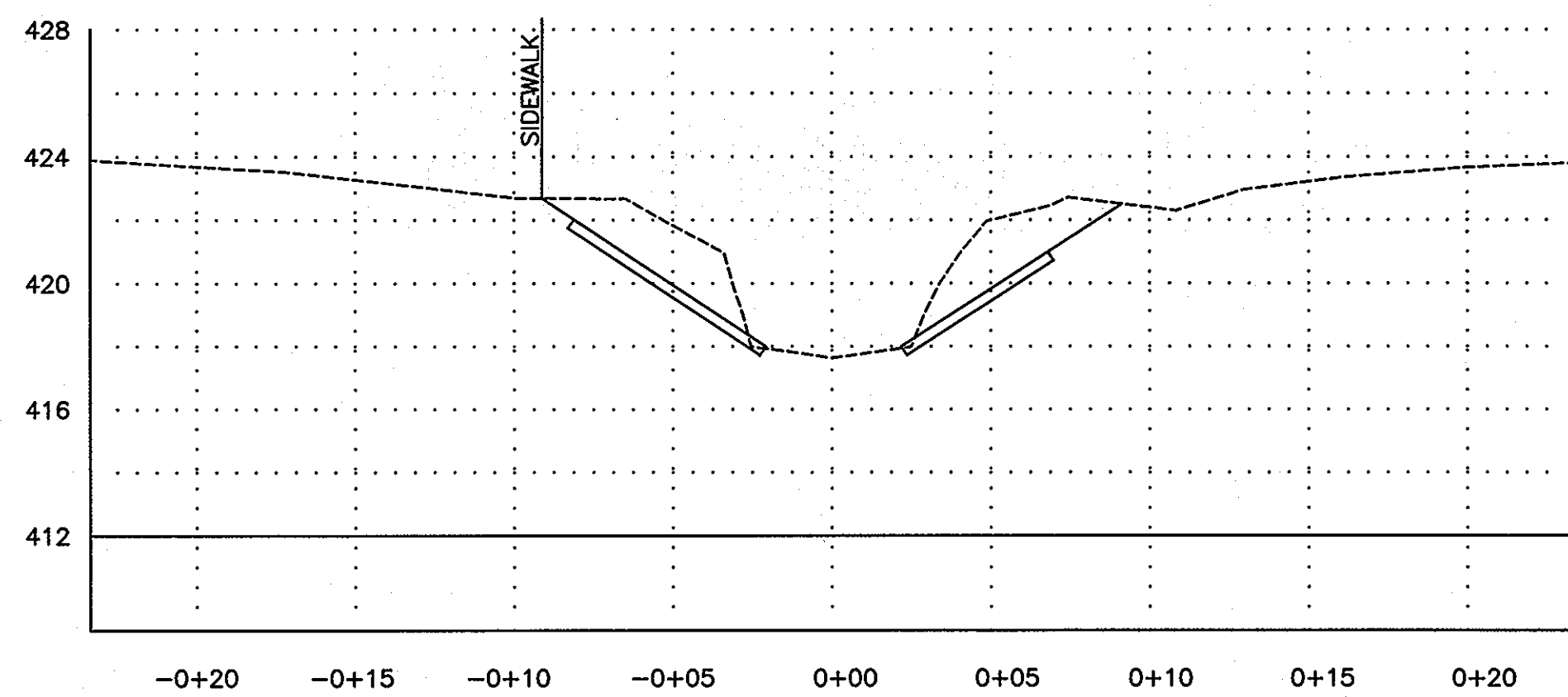
~~REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS~~  
 USDA - NATURAL RESOURCES CONSERVATION SERVICE  
 THIS DEVELOPMENT IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.  
 HOWARD SCD

APPROVED: DEPARTMENT OF PLANNING AND ZONING  
*Chris Damann* 2/27/09  
 Chief, Development Engineering Division  
*Christy Harris* 3/2/09  
 Chief, Division of Land Development  
*James K. Ugle* 3/4/09  
 Director

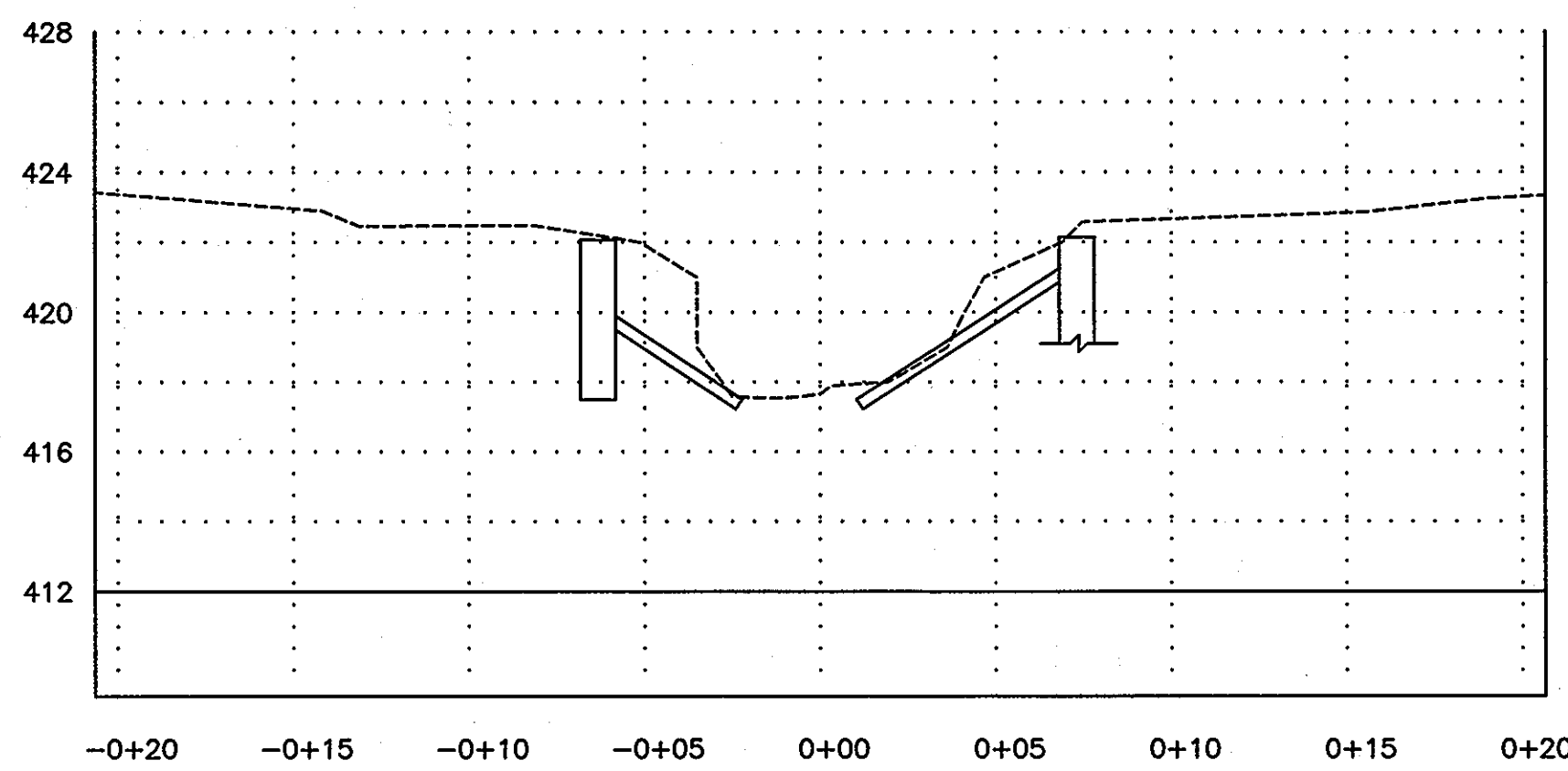
**DCI**  
 DANIEL CONSULTANTS INC.  
 CONSULTING ENGINEERS AND PLANNERS  
 8950 Rt. 108 E., Suite 229, Columbia, MD 21045  
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**GROUT BAG PLAN**  
**COLUMBIA - VILLAGE OF LONG REACH**  
 SECTION 1 - AREA 1 LOTS F-1 TO F-137  
 A RESUBDIVISION OF PARCEL "F"  
 6TH ELECTION DISTRICT HOWARD COUNTY, MD

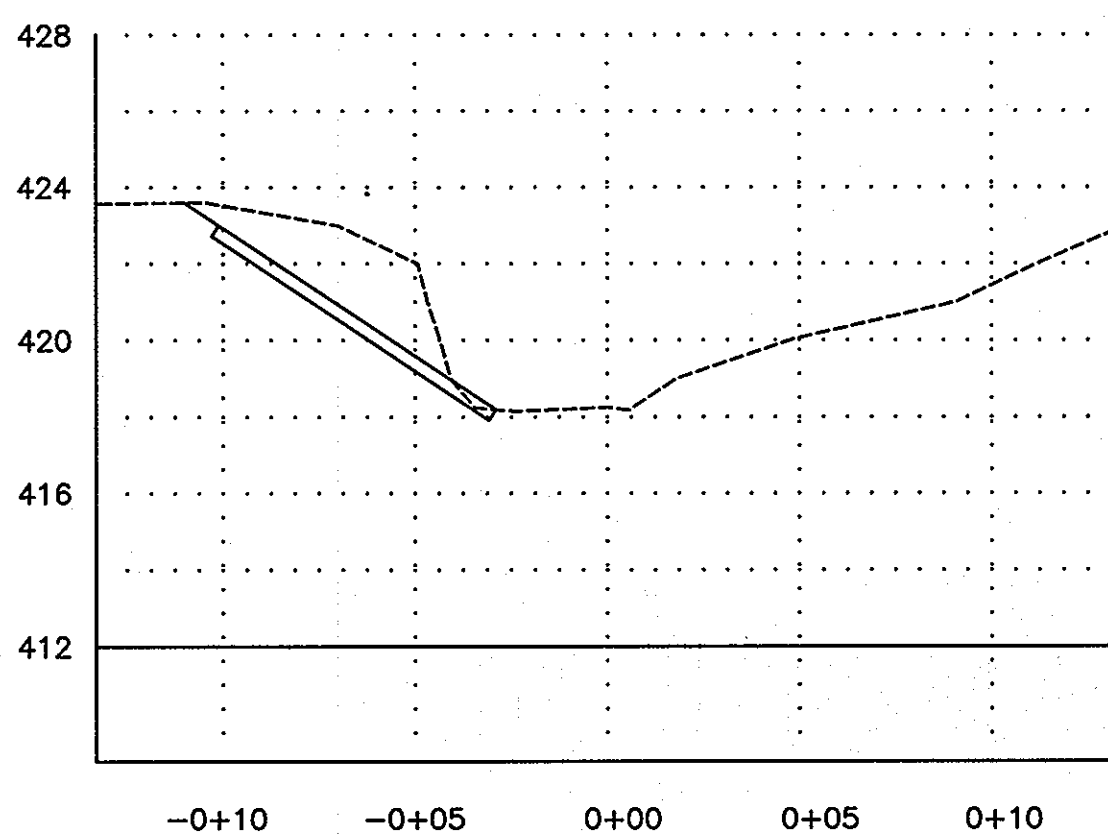
REVISIONS		
1	ADDITIONAL DETAIL SHEET FOR THE BRIDGE ABUTMENT STABILIZATION	
OWNER: <b>WOODCREEK H.O.A.</b>		
DESIGN: JW	SHEET 11 OF 15	
DRAWN: JW	DATE: JAN. 2009	PROJ. NO.: 06-11-001
APPROVED: RLS	SCALE: AS SHOWN	FILE NO.:



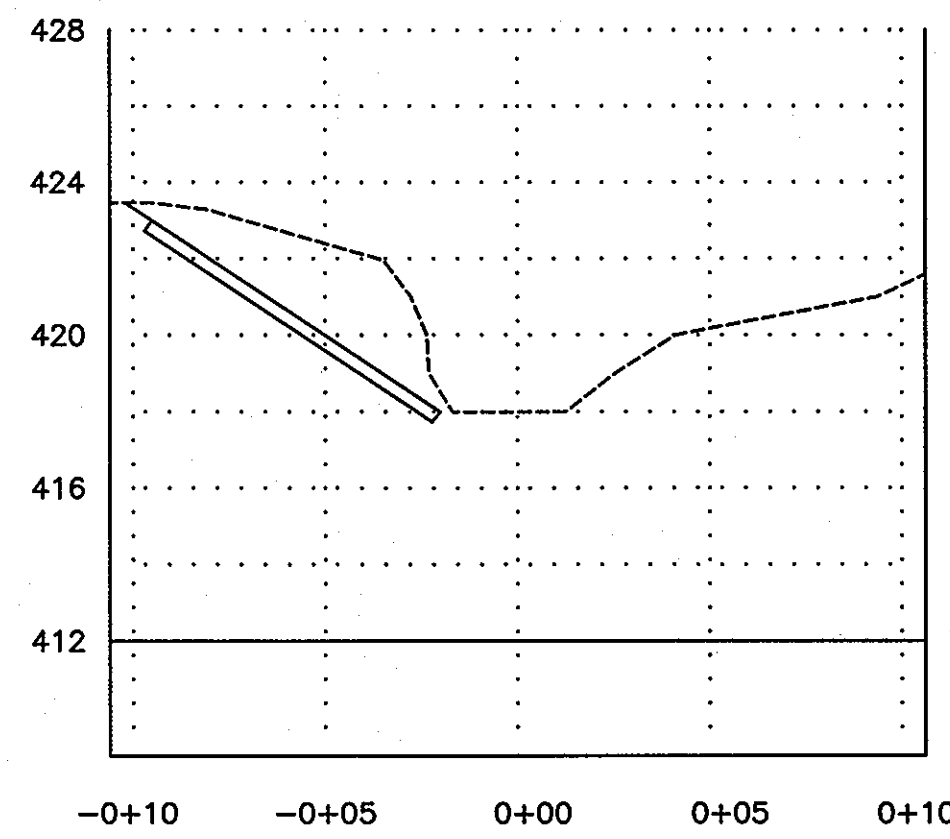
SECTION E3



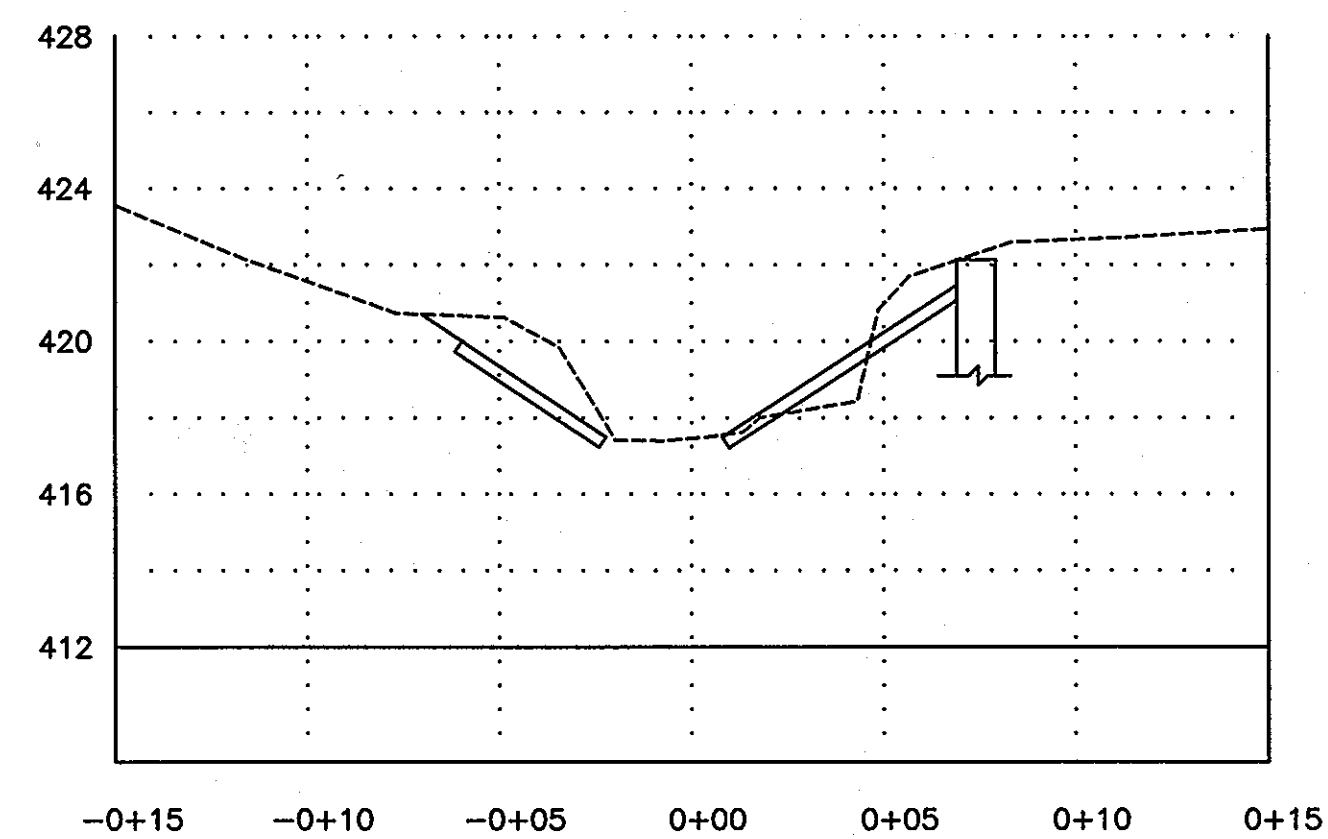
SECTION W3



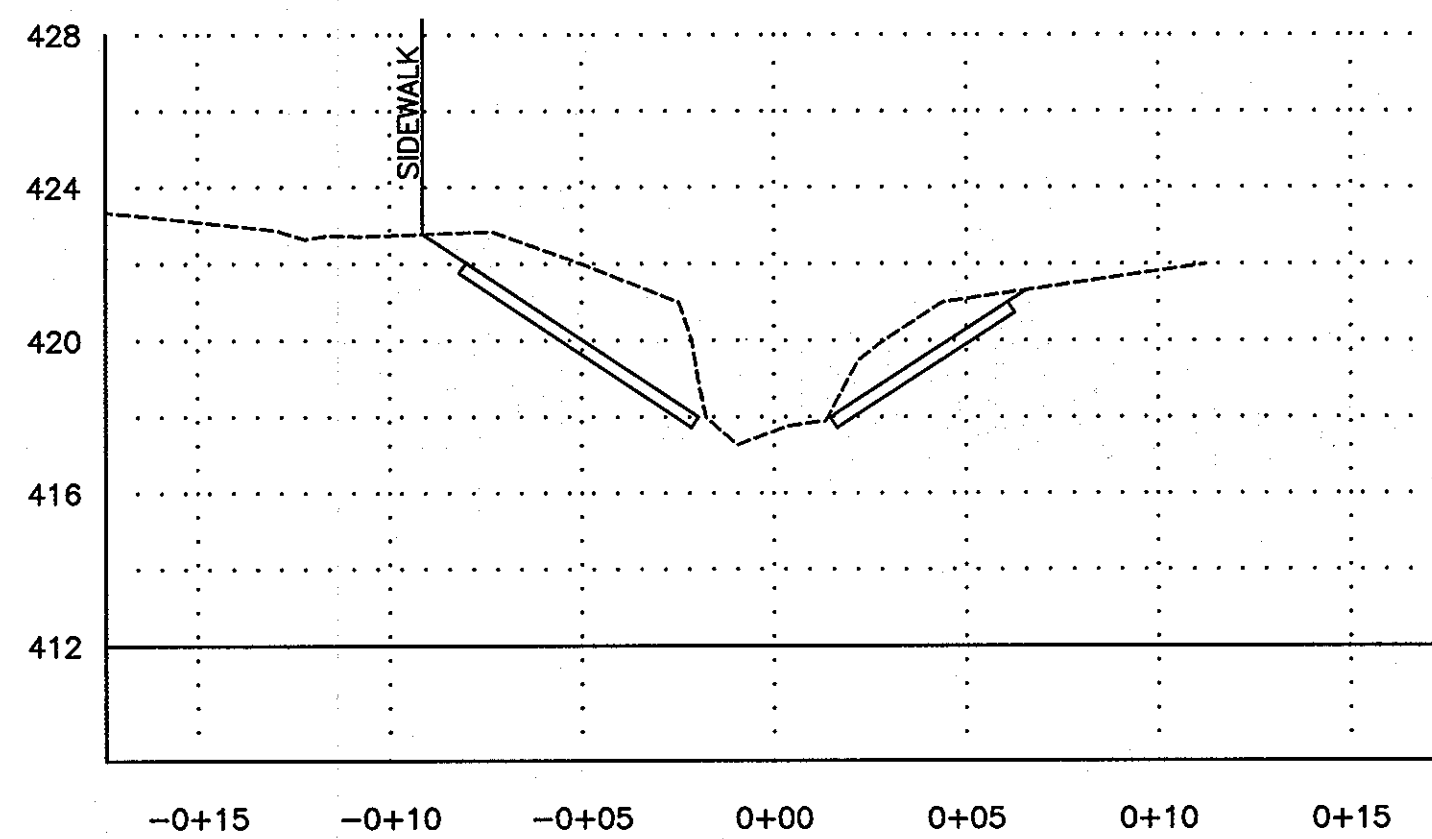
SECTION E1



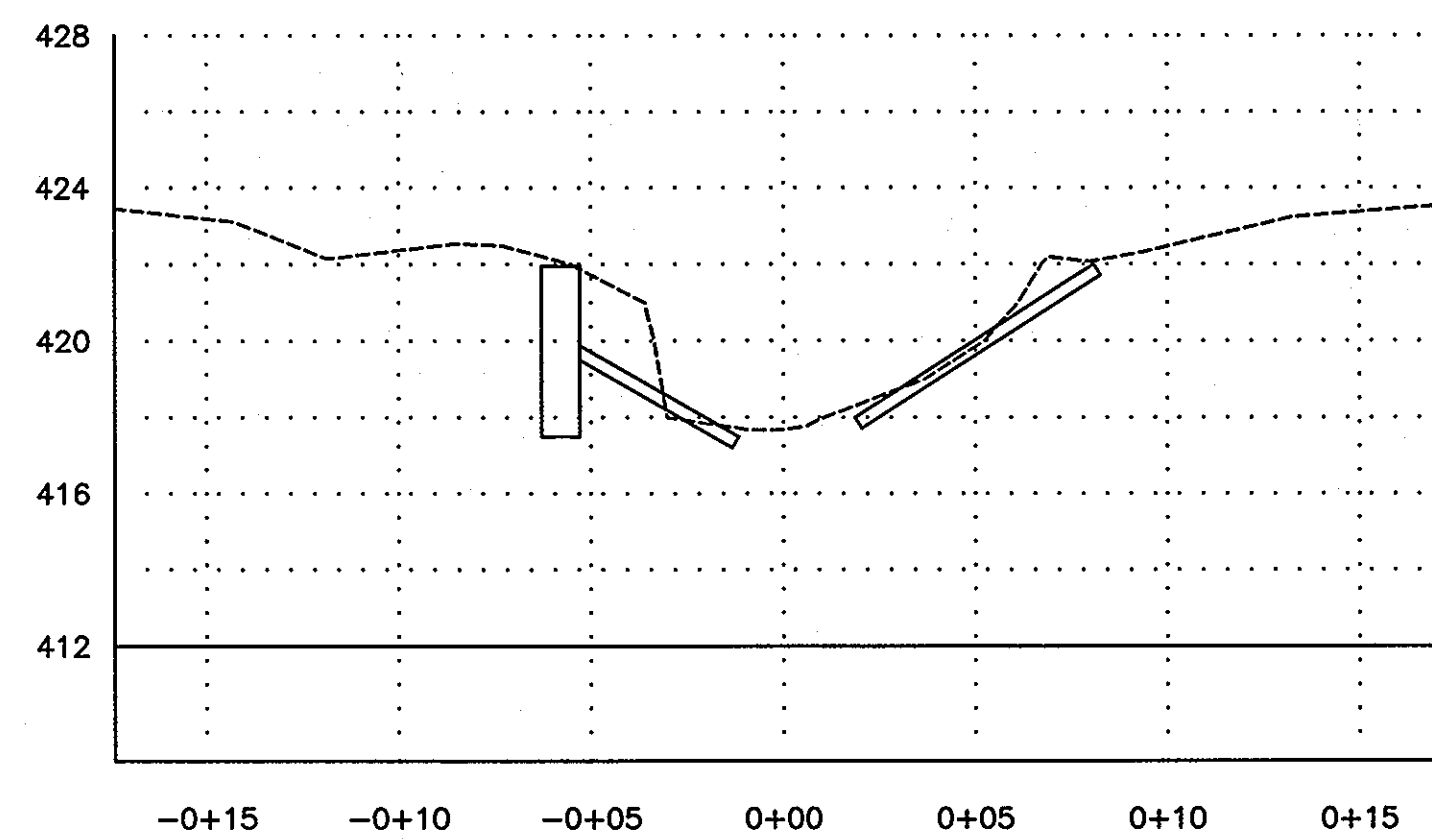
SECTION E2



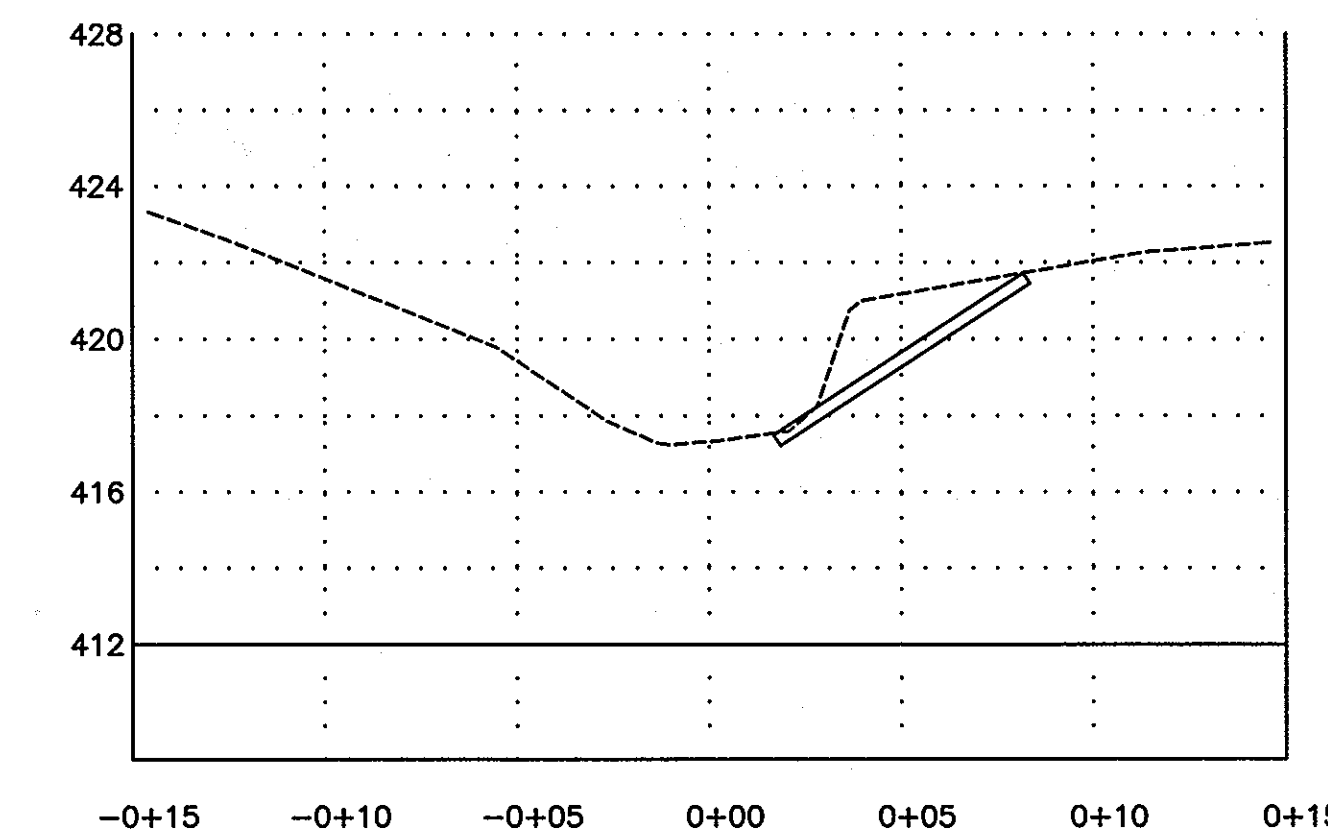
SECTION E4



SECTION W1



SECTION W2



SECTION W4

NOTE: ALL SECTIONS ARE LOOKING DOWNSTREAM

SECTIONS  
SCALE: HORIZ. 1"=5'-0"  
VERT. 1"=5'-0"

DEVELOPER'S CERTIFICATION

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*Paul Gerulatis*  
SIGNATURE OF DEVELOPER  
PAUL GERULATIS

2/12/09  
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 SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. "

*Richard L. Sobott*  
SIGNATURE OF ENGINEER  
RICHARD L. SOBBOTT, P.E.  
MD NO. 15222

2/12/09  
DATE



REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

USDA - NATURAL RESOURCES CONSERVATION SERVICE DATE

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

HOWARD SCD DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

*John Williams* 2/27/09  
Chief, Development Engineering Division Date

*Cindy Hauer* 3/2/09  
Chief, Division of Land Development Date

*Paul Gerulatis* 3/4/09  
Director Date

**DCI**  
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SLOPE PROTECTION DETAIL

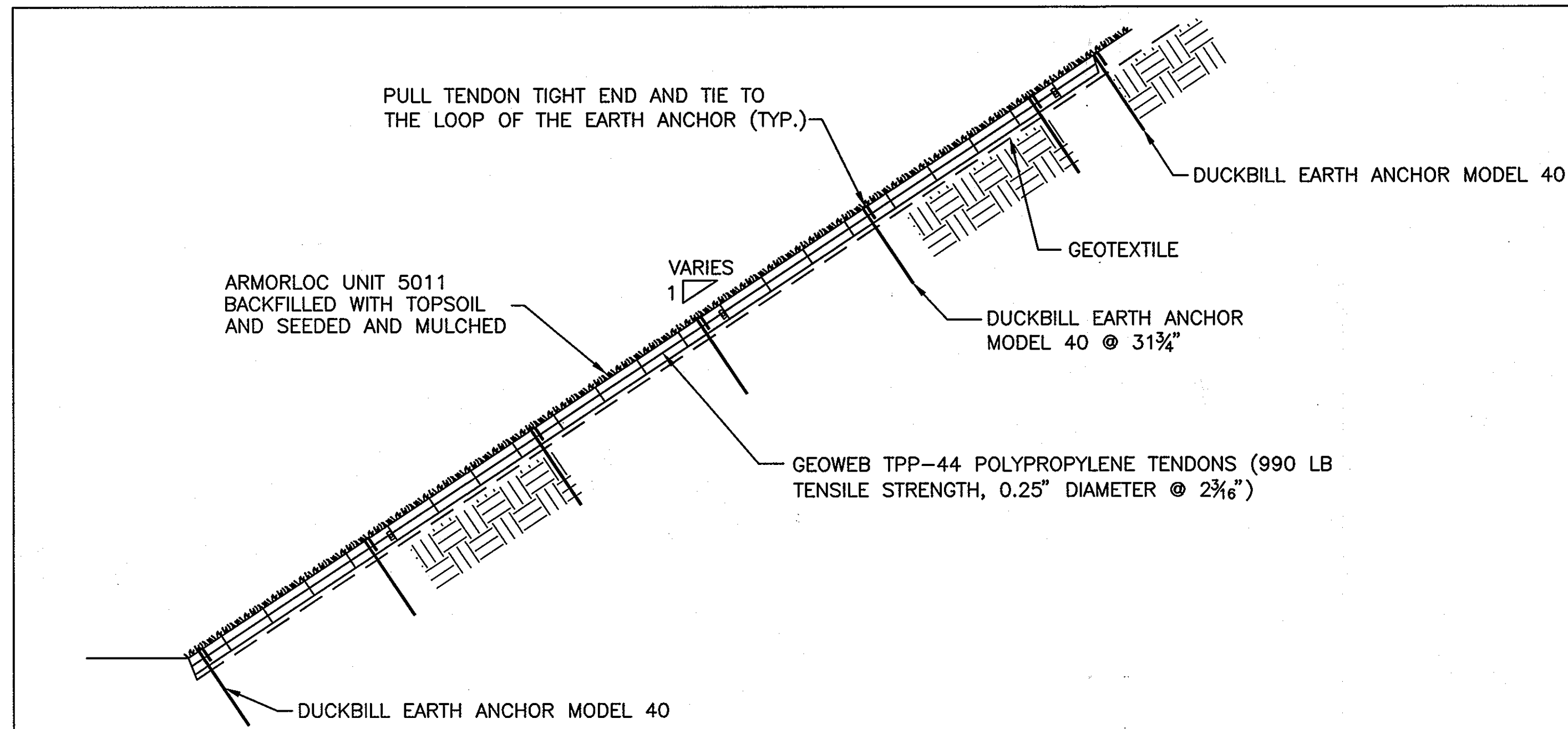
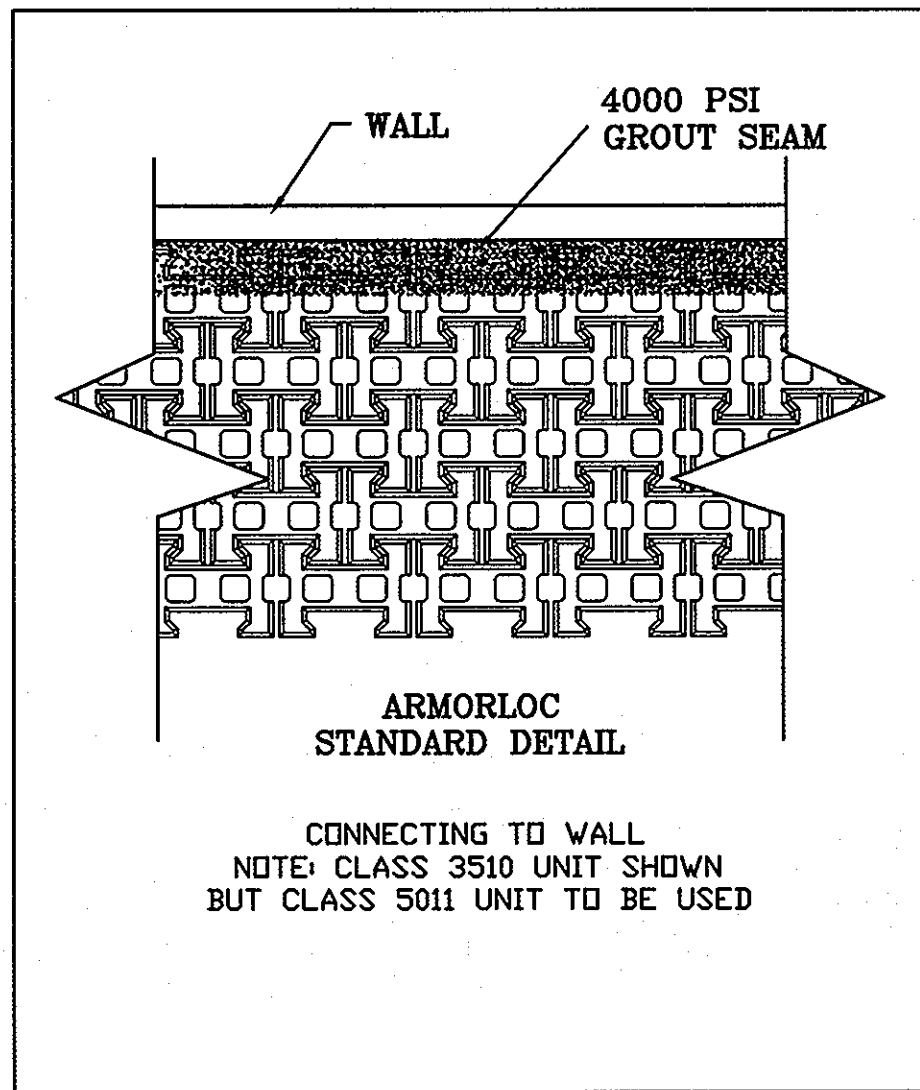
COLUMBIA - VILLAGE OF LONG REACH

SECTION 1 - AREA 1 LOTS F-1 TO F-137

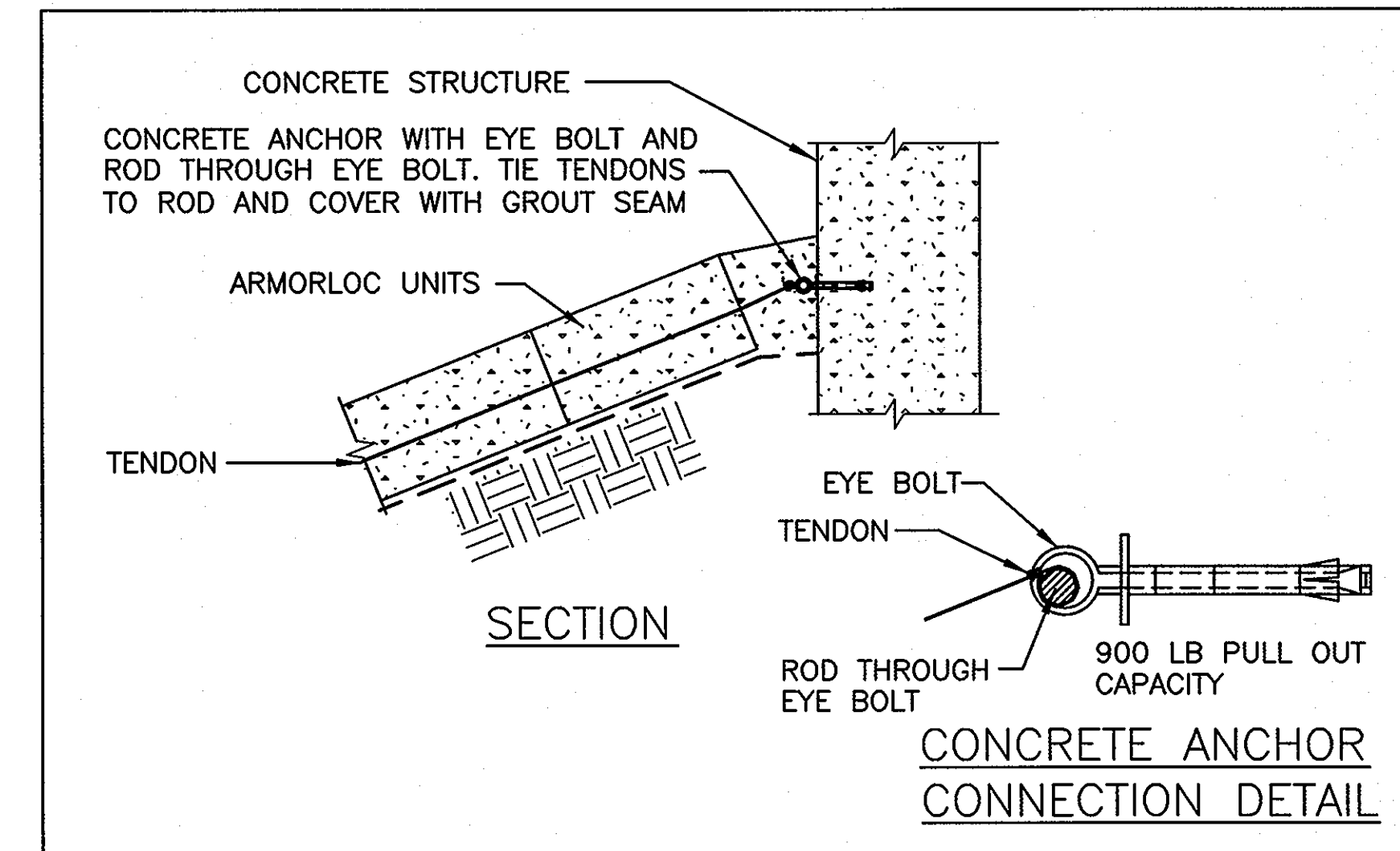
A RESUBDIVISION OF PARCEL "F"

6TH ELECTION DISTRICT HOWARD COUNTY, MD

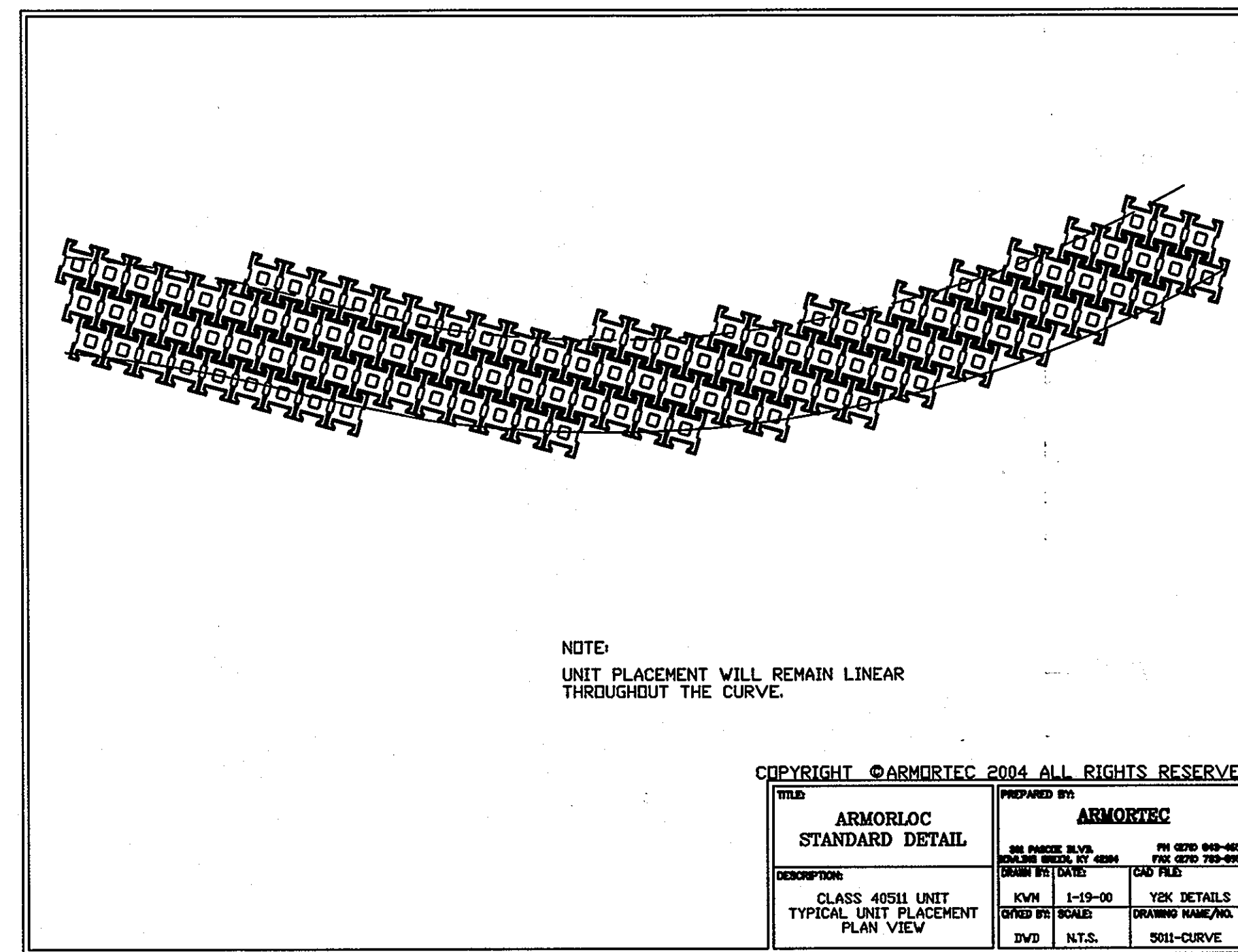
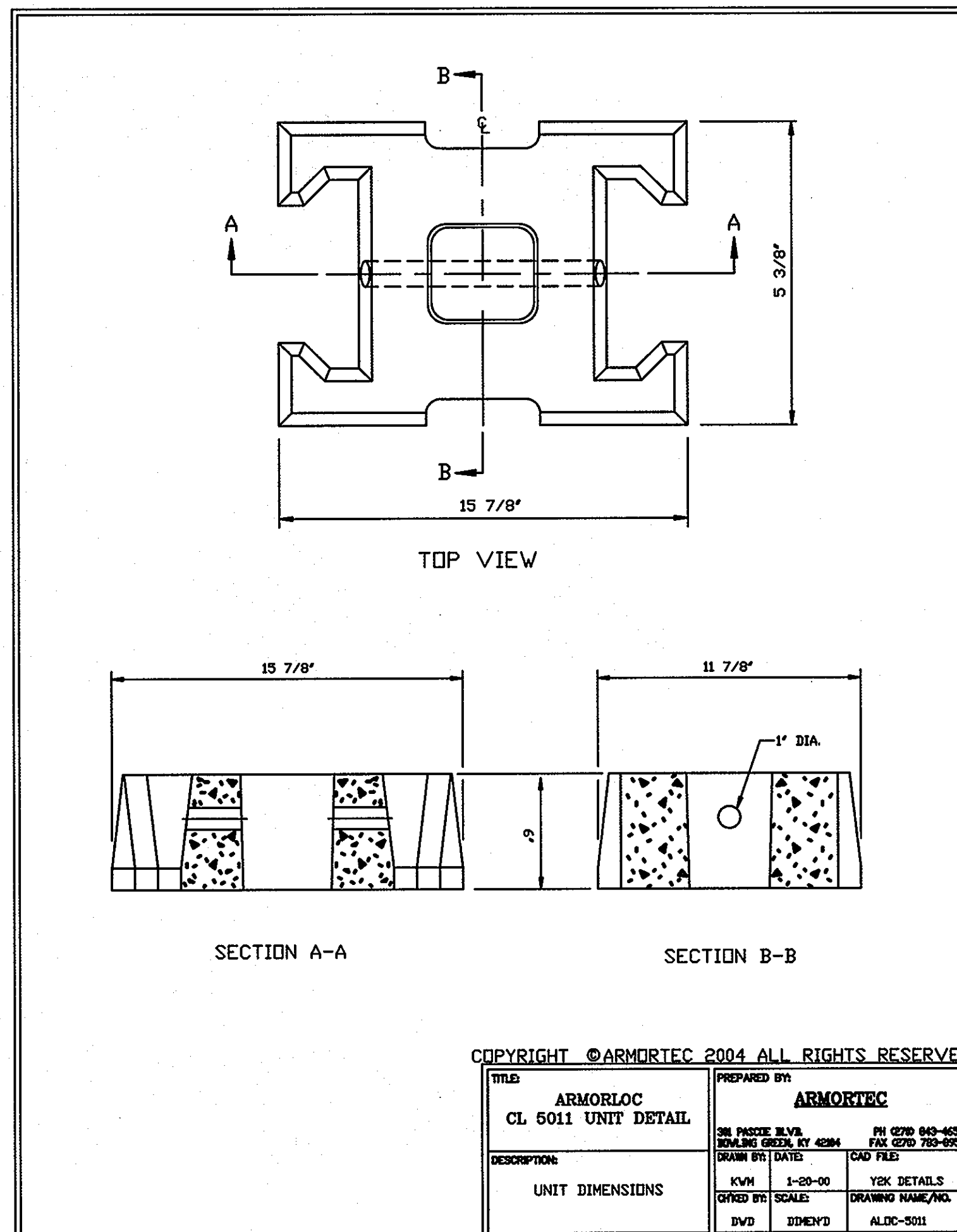
REVISIONS			
1	ADDITIONAL DETAIL SHEET FOR THE ARMORLOG BRIDGE ABUTMENT DETAILS.		
OWNER: <b>WOODCREEK H.O.A.</b>			
DESIGN:	JW	SHEET 10 OF 15	
DRAWN:	JW	DATE: JAN. 2009	PROJ. NO.: 06-11-001
APPROVED:	RLS	SCALE: AS SHOWN	FILE NO.:



CROSS SECTION OF A TYPICAL PROTECTION SYSTEM



TYPICAL CONNECTION TO EXISTING STRUCTURE



DEVELOPER'S CERTIFICATION

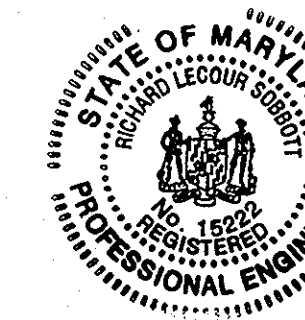
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*Paul Gerulatis*  
SIGNATURE OF DEVELOPER  
PAUL GERULATIS

2/12/09  
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 SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. "



*Richard L. Sobott*  
SIGNATURE OF ENGINEER  
RICHARD L. SOBBOTT, P.E.  
MD NO. 15222

2/12/09  
DATE

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

USDA - NATURAL RESOURCES CONSERVATION SERVICE DATE

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

HOWARD SCD DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

*Paula Williams* 2/12/09  
Chief, Development Engineering Division Date

*Christy Kline* 3/2/09  
Chief, Division of Land Development Date

*Paul H. Wyle* 3/4/09  
Director Date

SLOPE PROTECTION SECTION & DETAILS

**DCI**  
DANIEL CONSULTANTS INC.  
CONSULTING ENGINEERS AND PLANNERS  
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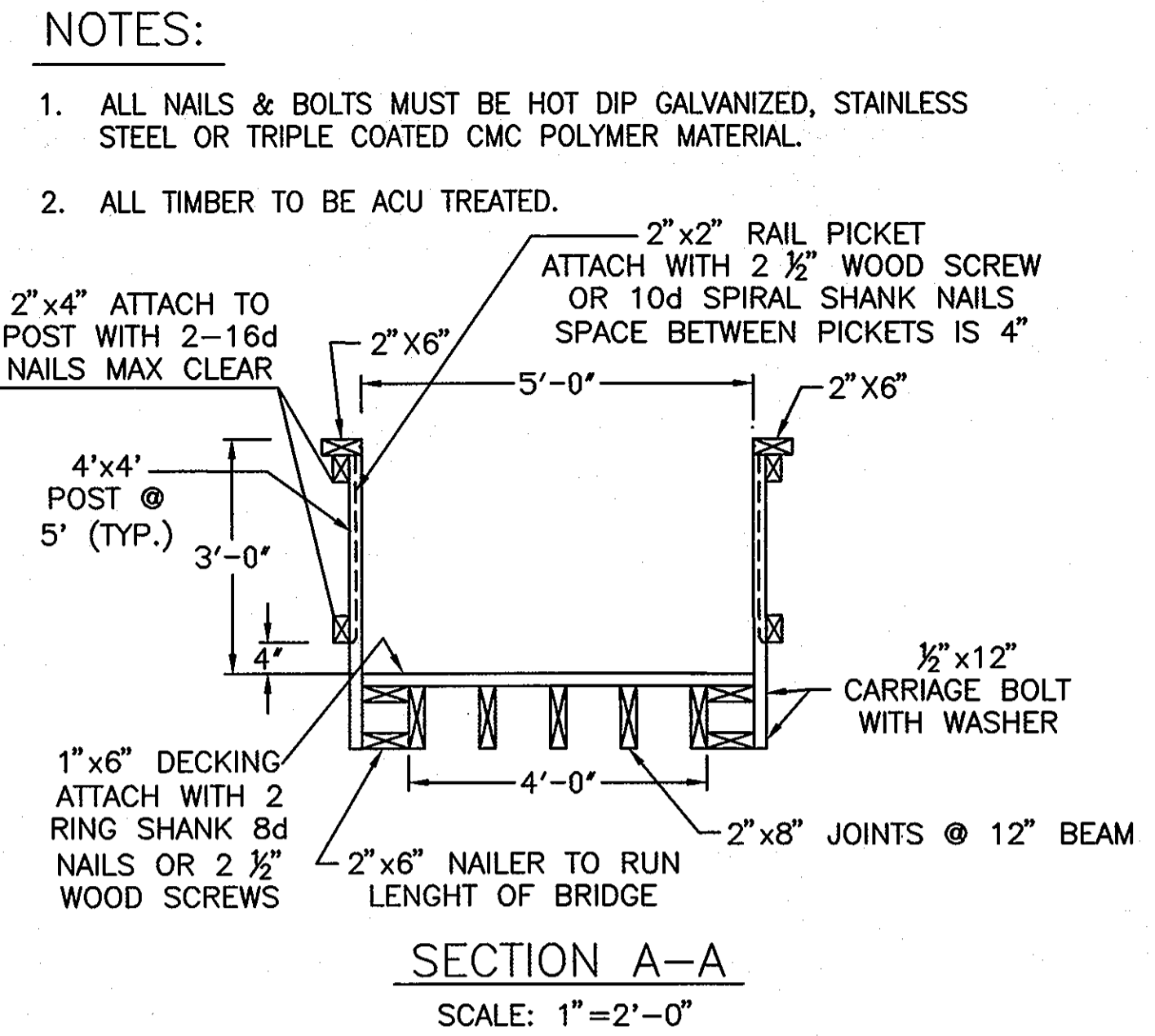
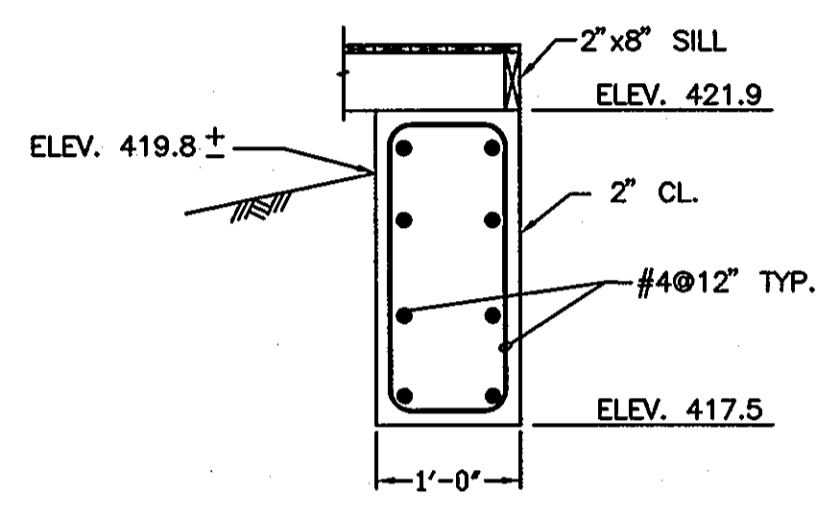
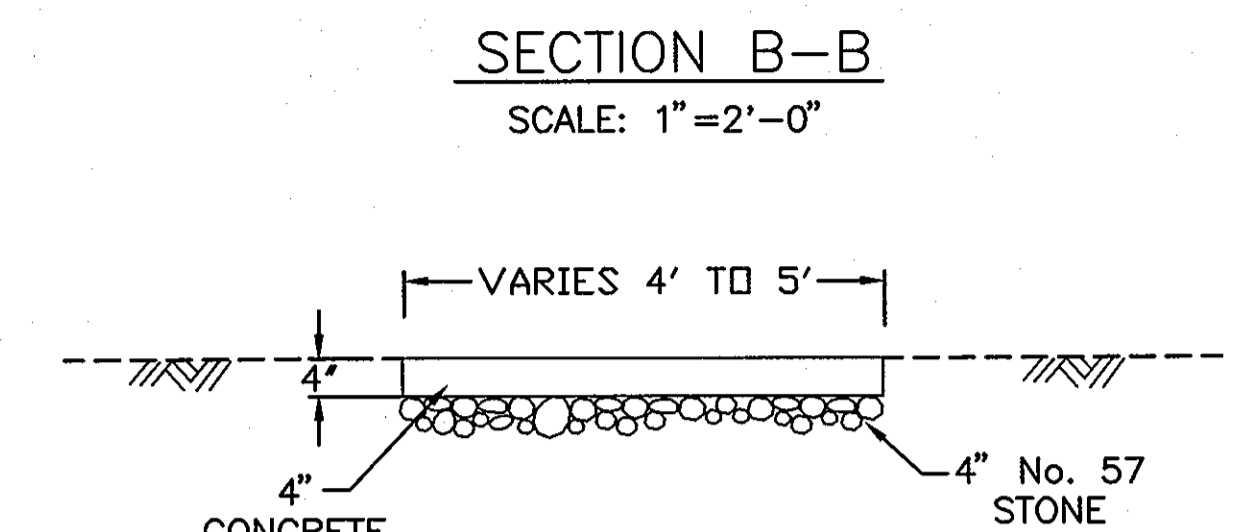
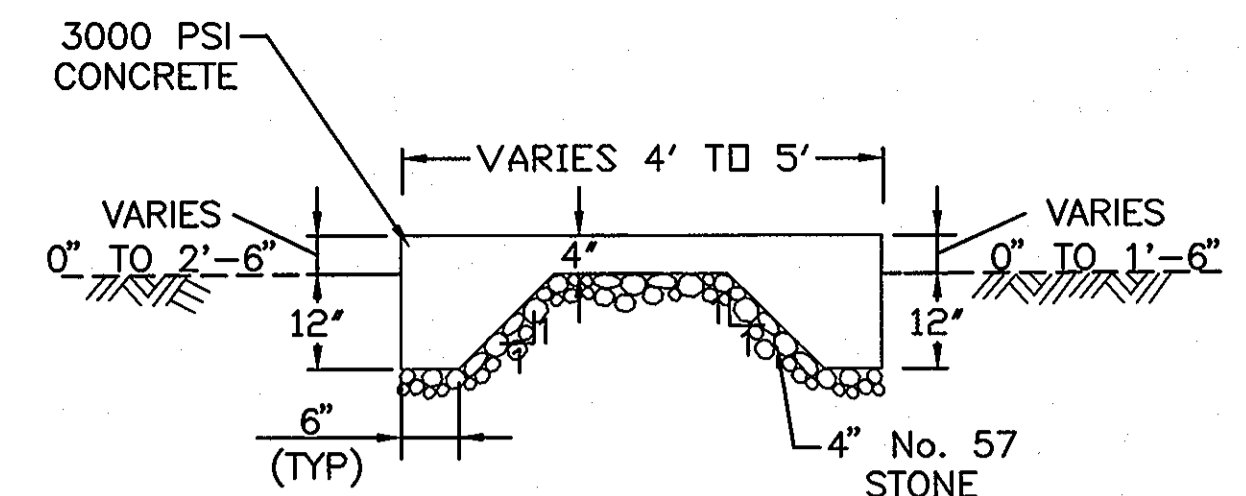
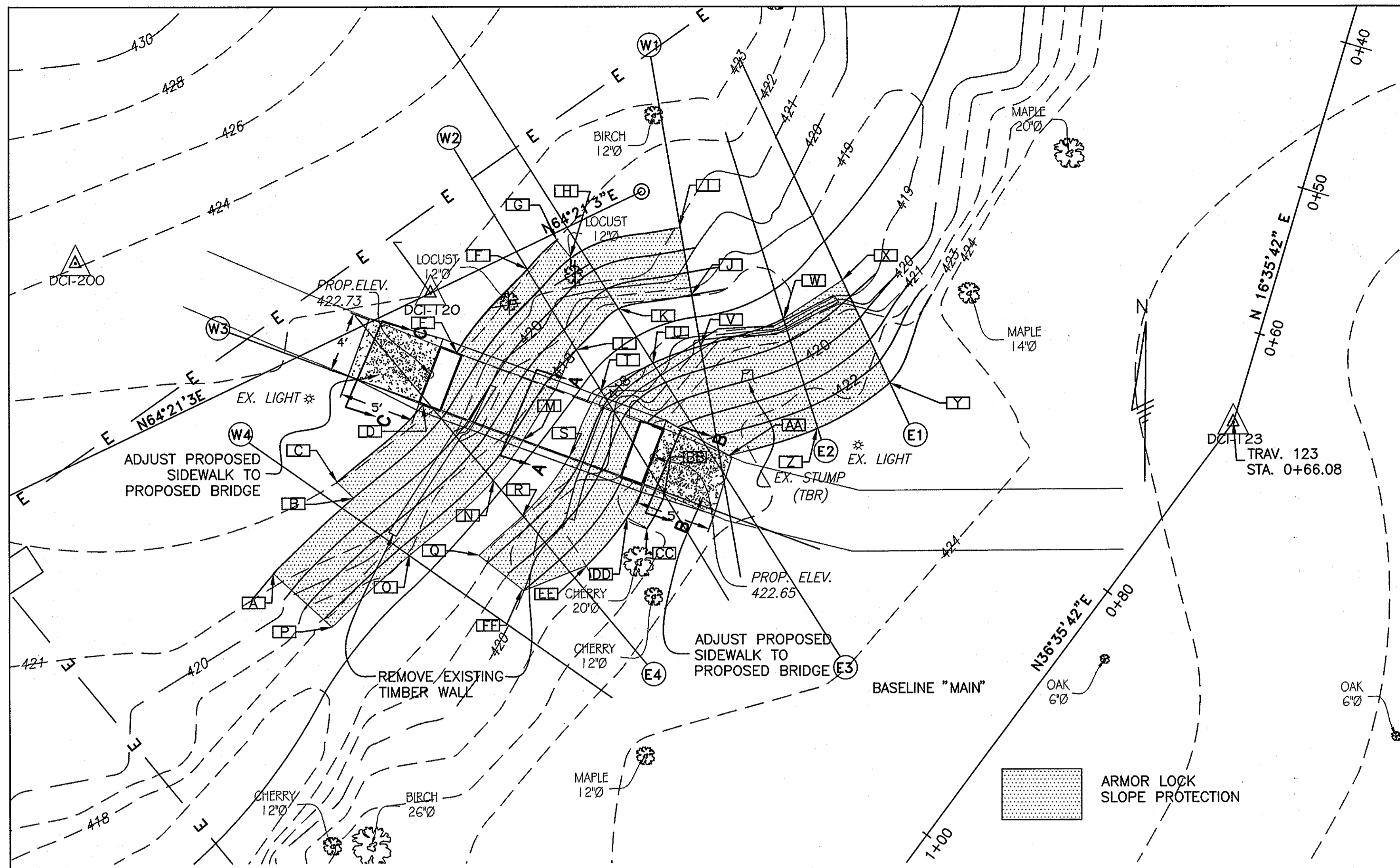
COLUMBIA - VILLAGE OF LONG REACH

SECTION 1 - AREA 1 LOTS F-1 TO F-137

A RESUBDIVISION OF PARCEL "F"

6TH ELECTION DISTRICT HOWARD COUNTY, MD

REVISIONS		
1	ADDITIONAL SHEET FOR ARMORLOC BRIDGE ABUTMENT STABILIZATION DETAILS AND SECTIONS	
OWNER: <b>WOODCREEK H.O.A.</b>		
DESIGNER: JW	SHEET 9 OF 15	
DRAWN: JW	DATE: JAN. 2009	PROJ. NO.: 06-11-001
APPROVED: RLS	SCALE: AS SHOWN	FILE NO.:



**NOTES:**

- ALL NAILS & BOLTS MUST BE HOT DIP GALVANIZED, STAINLESS STEEL OR TRIPLE COATED CMC POLYMER MATERIAL.
- ALL TIMBER TO BE ACU TREATED.

**ARMORLOCK STAKE-OUT**

POINT	STATION	OFFSET	BASELINE
A	1+30.61	42.83' R	MAIN
B	1+04.50	43.48' R	MAIN
C	1+04.30	44.97' R	MAIN
D	0+96.84	43.46' R	MAIN
E	0+92.75	43.73' R	MAIN
F	0+85.57	43.28' R	MAIN
G	0+82.89	42.87' R	MAIN
H	0+83.25	41.42' R	MAIN
I	0+77.41	36.85' R	MAIN
J	0+80.50	33.60' R	MAIN
K	0+84.08	36.91' R	MAIN
L	0+87.92	37.52' R	MAIN
M	0+94.80	36.85' R	MAIN
N	0+98.12	36.52' R	MAIN
O	1+05.37	38.29' R	MAIN
P	1+28.95	37.84' R	MAIN
Q	1+02.64	34.61' R	MAIN
R	0+98.84	33.84' R	MAIN
S	0+93.90	33.71' R	MAIN
T	0+89.14	34.61' R	MAIN
U	0+85.62	32.97' R	MAIN
V	0+82.86	31.11' R	MAIN
W	0+78.15	27.82' R	MAIN
X	0+77.42	26.23' R	MAIN
Y	1+78.46	19.70' R	MAIN
Z	1+81.61	21.74' R	MAIN
AA	0+84.52	25.33' R	MAIN
BB	0+87.42	27.09' R	MAIN
CC	0+88.73	26.79' R	MAIN
DD	0+89.89	28.24' R	MAIN
EE	0+91.32	28.54' R	MAIN
FF	1+01.64	30.87' R	MAIN

**DEVELOPER'S CERTIFICATION**

"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF 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."

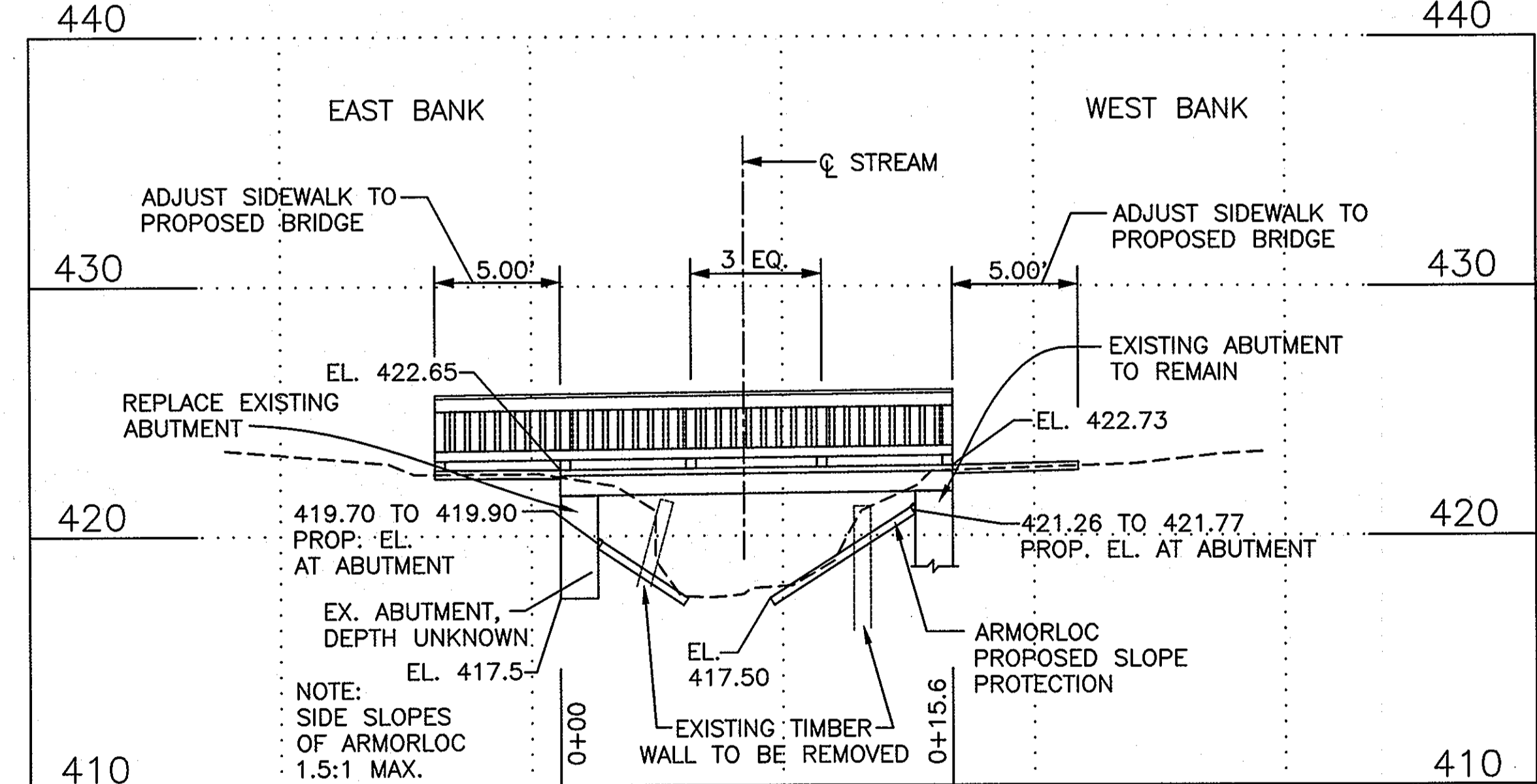
Signature of Developer: Paul Gerulats  
DATE: 2/12/09

**ENGINEER'S CERTIFICATION**

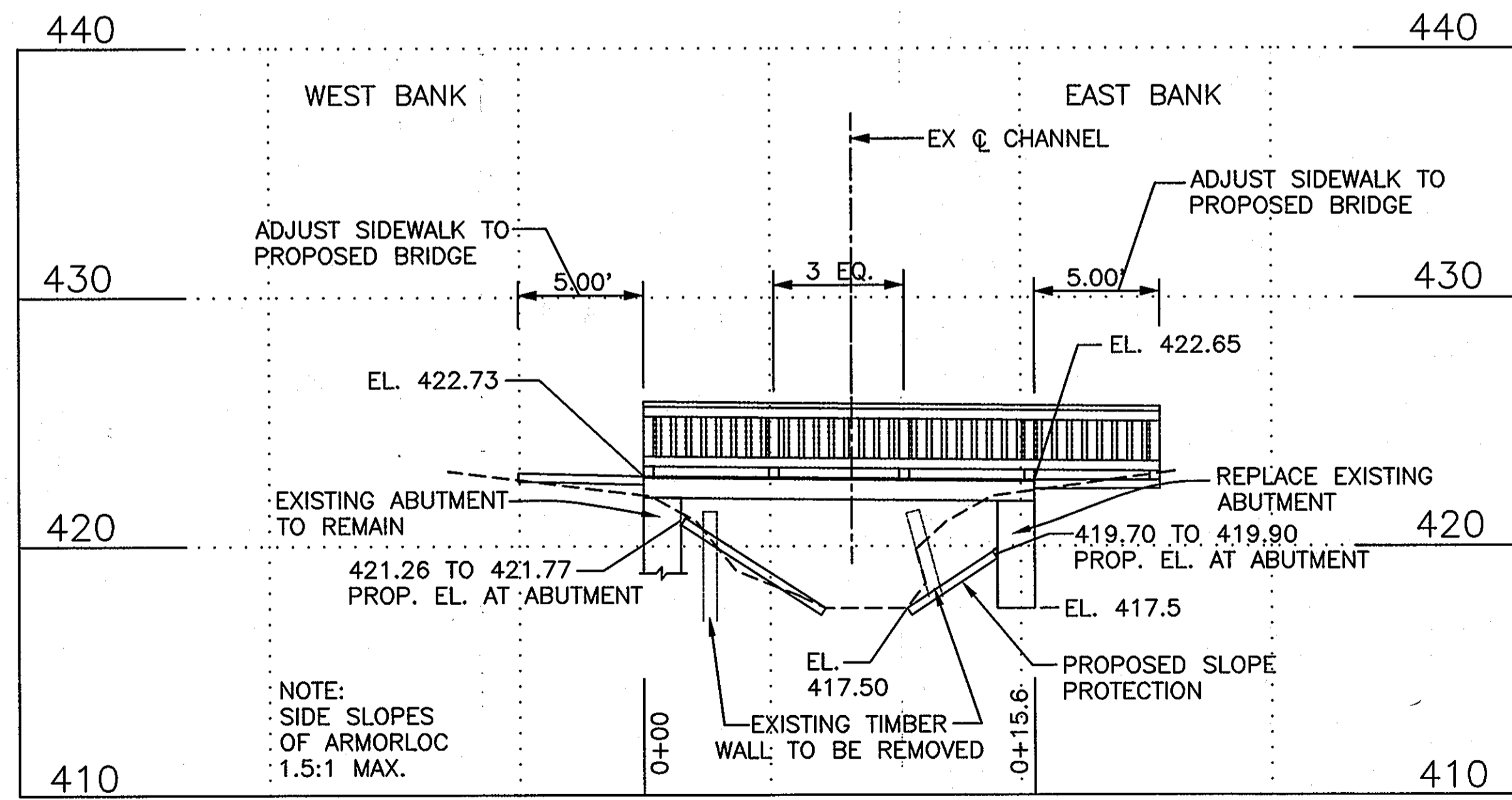
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Signature of Engineer: Richard L. Sobott, P.E.  
DATE: 2/12/09

**BRIDGE**  
SCALE: 1" = 5'



**DOWNSTREAM BRIDGE ELEVATION**  
LOOKING DOWNSTREAM  
SCALE: 1" = 5'



**UPSTREAM BRIDGE ELEVATION**  
LOOKING UPSTREAM  
SCALE: 1" = 5'

REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

USDA - NATURAL RESOURCES CONSERVATION SERVICE  
DATE: \_\_\_\_\_

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

HOWARD SCD  
DATE: \_\_\_\_\_

APPROVED: DEPARTMENT OF PLANNING AND ZONING

Chief, Development Engineering Division  
Date: 2/12/09

Chief, Division of Land Development  
Date: 3/2/09

Director  
Date: 3/12/09

**DCL**  
DANIEL CONSULTANTS INC.  
CONSULTING ENGINEERS AND PLANNERS  
8950 Rt. 108 E., Suite 229, Columbia, MD 21045  
Phone: 410-995-0090 Fax: 410-992-7038

**COLUMBIA - VILLAGE OF LONG REACH**  
SECTION 1 - AREA 1 LOTS F-1 TO F-137  
A RESUBDIVISION OF PARCEL "F"  
6TH ELECTION DISTRICT HOWARD COUNTY, MD

REVISIONS	
1	ADD COVER SHEET TO SDP NO. 74-39 FOR STREAM MAINTENANCE

OWNER: **WOODCREEK H.O.A.**

DESIGNER: JW SHEET 8 OF 15

DRAWN: JW DATE: JAN. 2009 PROJ. NO.: 06-11-001

APPROVED: RLS SCALE: FILE NO.:

# CONSTRUCTION NOTES FOR MACCAFERRI PVC COATED GABION STRUCTURES

## 1. PRODUCT DESCRIPTION

1.1. PVC GABIONS ARE BASKETS MANUFACTURED FROM 8X10 DOUBLE TWISTED HEXAGONAL WOVEN STEEL WIRE MESH, HEAVILY GALVANIZED THEN PVC COATED, AS PER ASTM A975-97 ( FIGS. 1 - 4 ). GABIONS ARE FILLED WITH STONES AT THE PROJECT SITE TO FORM FLEXIBLE, PERMEABLE, MONOLITHIC STRUCTURES SUCH AS RETAINING WALLS, CHANNEL LININGS, AND WEIRS FOR EROSION CONTROL PROJECTS. THE STEEL WIRE USED IN THE MANUFACTURE OF THE GABION IS HEAVILY GALVANIZED SOFT TEMPER STEEL. THE STANDARD SPECIFICATIONS FOR MESH-WIRE ARE SHOWN IN TABLE 2. THE GABION IS DIVIDED INTO CELLS BY DIAPHRAGMS POSITIONED AT APPROXIMATELY 3 ft (0.9m) CENTERS ( FIG. 2 ). TO REINFORCE THE STRUCTURE, ALL MESH PANEL EDGES ARE SELVEDGED WITH A WIRE HAVING A GREATER DIAMETER ( TABLE 3 ). DIMENSIONS AND SIZES OF PVC COATED GABIONS ARE SHOWN IN TABLE 1. GABIONS SHALL BE MANUFACTURED AND SHIPPED WITH ALL COMPONENTS MECHANICALLY CONNECTED AT THE PRODUCTION FACILITY.

## 2. MATERIALS

2.1. BACKFILL MATERIAL SPECIFIED BELOW SHALL BE FREE DRAINING. BACKFILL MATERIALS SHALL BE APPROVED BY THE OWNER OR OWNER'S REPRESENTATIVE, AND SHALL MEET THE PHYSICAL PROPERTIES REQUIREMENTS DEFINED IN SECTION 7.1, AND SHALL BE CLEAN, FREE DRAINING CRUSHED STONE.

2.2. COBBLES MATERIAL SHALL BE A CLEAN CRUSHED STONE OR GRANULAR FILL MEETING THE FOLLOWING GRADATION PER ASTM D 422:

Table 0 Rock Sizing for Gabions

Sieve Size	Percent Passing
8"	100%
4"	0 to 5%

2.3. GABION WALL UNITS SHALL BE GALVANIZED THEN PVC COATED 8x10 HEXAGONAL DOUBLE TWIST WIRE MESH TYPE AS PER ASTM A975-97.

L=Length ft (m)	W=Width ft (m)	H=Height ft (m)	# of Cells
6 (1.8)	3 (0.9)	3 (0.9)	29
9 (2.7)	3 (0.9)	3 (0.9)	0
12 (3.6)	3 (0.9)	3 (0.9)	0
4.5 (1.4)	3 (0.9)	1.5 (0.45)	4
6 (1.8)	3 (0.9)	1.5 (0.45)	1
12 (3.6)	3 (0.9)	1.5 (0.45)	0
6 (1.8)	3 (0.9)	1 (0.3)	0
9 (2.7)	3 (0.9)	1 (0.3)	0
12 (3.6)	3 (0.9)	1 (0.3)	0
4.5 (1.4)	3 (0.9)	3 (0.9)	9

Mesh Type	"D" in (mm)	Tolerance	Wire Dia. in (mm)
8x10/ Galvanized + PVC	3.25 (83)	±10%	0.106 (2.70) 0.146 (3.70)

	Lacing Wire	Mesh Wire	Selvedge Wire / Preformed Stiffeners
Wire Diameter Int. Ø in (mm)	0.087 (2.20)	0.106 (2.70)	0.134 (3.4)
Wire Tolerance (±) Ø in (mm)	0.004 (0.10)	0.004 (0.10)	0.004 (0.10)
Min. Zinc Qty. oz/ft <sup>2</sup> (g/m <sup>2</sup> )	0.70 (214)	0.80 (244)	0.85 (259)
Wire + PVC Ext. Ø in (mm)	0.127 (3.20)	0.146 (3.70)	0.174 (4.4)

2.4. WIRE -- ALL TESTS ON WIRE MUST BE PERFORMED PRIOR TO MANUFACTURING THE MESH. ALL WIRE SHALL COMPLY WITH ASTM A975-97. WIRE USED FOR THE MANUFACTURE OF GABIONS AND THE LACING WIRE, SHALL HAVE A MAXIMUM TENSILE STRENGTH OF 75,000 psi (515 MPa) AS PER ASTM A641/A641M-03, SOFT TEMPER STEEL.

2.5. WOVEN WIRE MESH TYPE 8X10 -- THE MESH AND WIRE CHARACTERISTICS SHALL BE IN ACCORDANCE WITH ASTM A975-97 TABLE 1, MESH TYPE 8X10. THE NOMINAL MESH OPENING D = 3.25 in. (83 mm) ( FIG. 11a & 11b ). THE MINIMUM MESH PROPERTIES FOR STRENGTH AND FLEXIBILITY SHALL BE IN ACCORDANCE WITH THE FOLLOWING: MESH TENSILE STRENGTH SHALL BE 3500 lb/ft (51.1 kN/m) MINIMUM WHEN TESTED IN ACCORDANCE WITH ASTM A975-97 SECTION 13.1.1. PUNCH TEST RESISTANCE SHALL BE A MINIMUM OF 8000 lb (26.7 kN) WHEN TESTED IN COMPLIANCE WITH ASTM A975-97 SECTION 13.1.4. CONNECTION TO SELVEDGES SHALL BE 1400 lb/ft (20.4 kN/m) WHEN TESTED IN ACCORDANCE WITH ASTM A975-97.

## 3. FOUNDATION PREPARATION

3.1. THE FOUNDATION ON WHICH THE GABIONS ARE TO BE PLACED SHALL BE LEVEL, AND GRADED TO THE ELEVATIONS AS SHOWN ON THE PROJECT CONSTRUCTION DRAWINGS. THE FOUNDATION FOR GABIONS SHALL BE LEVEL, SMOOTH, AND FREE OF SURFACE IRREGULARITIES, LOOSE MATERIAL, AND VEGETATION, IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS. APPROPRIATE MEASURES SHALL BE TAKEN FOR FILTERING AND DRAINAGE OF THE FOUNDATION, AS PER THE PROJECT SPECIFICATIONS (FILTER CLOTH, DRAIN WORKS, ETC.). GEOTEXTILES REQUIRED TO BE INSTALLED BEHIND GABION STRUCTURES SHALL COMPLY WITH THE REQUIREMENTS FOR SUBSURFACE DRAINAGE APPLICATIONS.

## 4. CONSTRUCTION

4.1. ASSEMBLY -- OPEN AND UNFOLD EACH GABION ON A FLAT, HARD SURFACE AND REMOVE ANY SHIPPING FOLDS IF NECESSARY. THIS CAN BE DONE BY PLACING THE FOLD OVER A 2" X 4" BOARD AND WALKING ALONG THE SIDES. LIFT UP THE SIDES, ENDS AND DIAPHRAGMS INTO A VERTICAL POSITION TO FORM AN OPEN BOX SHAPE ( FIG. 3 ). CONNECT THE EDGES OF THE GABION AND DIAPHRAGMS BY USING EITHER LACING WIRE OR RING FASTENERS ( FIG. 5a & 5b ) THE USE OF PLIERS TO AID ASSEMBLY AND TYING OF THE UNITS USING THE LACING WIRE SUPPLIED WITH THE GABIONS IS NORMALLY RECOMMENDED.

4.2. FASTENING PROCEDURE -- WHEN USING LACING WIRE, CUT OFF A PIECE OF WIRE APPROXIMATELY 1.5 TIMES THE LENGTH OF THE EDGE TO BE TIED. LONGER EDGES SHALL BE JOINED BY SEVERAL LENGTHS OF WIRE. TIE WIRES SHALL BE SECURED AROUND THE SELVEDGE WIRE OR HEAVIER EDGE WIRE, WHERE PRESENT, BY LOOPING AND TWISTING THE LACING WIRE AROUND ITSELF. PROCEED TYING WITH ALTERNATE DOUBLE AND SINGLE LOOPS. DOUBLE LOOPS SHALL BE MADE AT INTERVALS NOT GREATER THAN 6 in. (150 mm). PULL BASKETS TIGHTLY TOGETHER DURING THE TYING OPERATION. THE OTHER END OF THE TIE WIRE SHALL BE SECURED BY AGAIN LOOPING AND TWISTING THE WIRE AROUND ITSELF. WHEN STEEL RING FASTENERS ARE USED, THE USE OF EITHER A MECHANICAL OR A PNEUMATIC FASTENING TOOL IS REQUIRED. SPACING OF THE RINGS SHALL BE IN ACCORDANCE WITH ASTM A975-97, TABLE 2 Minimum Strength Requirements of Mesh and Connections. IN ANY CASE, RING FASTENERS SPACING SHALL NOT EXCEED 6 in. (150 mm). RINGS SHALL BE INSTALLED AT THE END AND CENTER DIAPHRAGMS AND ALONG ALL EDGES. CARE SHALL BE TAKEN TO ENSURE THE STEEL RING FASTENER IS COMPLETELY CLOSED AFTER INSTALLATION.

4.3. INSTALLATION AND FILLING -- GABIONS SHALL BE CONNECTED TOGETHER AND ALIGNED BEFORE FILLING THE BASKETS WITH ROCK. ROCKS FOR GABIONS MAY BE PRODUCED BY ANY SUITABLE QUARRYING METHOD, AND BY THE USE OF ANY DEVICE THAT YIELDS THE REQUIRED SIZES WITHIN THE GRADATION LIMITS CHOSEN. ROCKS SHALL BE HARD, ANGULAR TO ROUND, DURABLE AND OF SUCH QUALITY THAT THEY SHALL NOT DISINTEGRATE ON EXPOSURE TO WATER OR WEATHERING DURING THE LIFE OF THE STRUCTURE. GABION ROCKS SHALL RANGE BETWEEN 4-8 in. (100-200 mm). THE RANGE IN SIZES MAY ALLOW FOR A VARIATION OF 5% OVERSIZE AND/OR 5% UNDERSIZE ROCK, PROVIDED IT IS NOT PLACED ON THE GABION'S EXPOSED SURFACE. IN ALL CASES, THE OVERSIZE ROCK SHALL NOT BE LARGER THAN 10 in. (250 mm), AND THE UNDERSIZE ROCK SHALL NOT BE SMALLER THAN 2 in. (50 mm). DURING THE FILLING OPERATION SOME MANUAL STONE PLACEMENT IS REQUIRED TO MINIMIZE VOIDS. THE EXPOSED FACES OF VERTICAL STRUCTURES MAY BE CAREFULLY HAND PLACED TO GIVE A NEAT, FLAT, AND COMPACT APPEARANCE. THE CELLS SHALL BE FILLED IN STAGES SO THAT LOCAL DEFORMATION MAY BE AVOIDED. THAT IS, AT NO TIME, SHALL ANY CELL BE FILLED TO A DEPTH EXCEEDING 1 ft (300 mm) HIGHER THAN THE ADJOINING CELL ( FIG. 14a - 14c ). STIFFENERS OR CROSSIES SHALL BE INSTALLED AS INDICATED ( FIGS. 12a & 12b, 13a & 13b ), FIXED AT 1/3 AND 2/3 OF THE HEIGHT FOR 3 ft OR 1m GABIONS AS THE CELL IS BEING FILLED. IN 1.5 ft (500 mm) HIGH UNITS STIFFENERS MAY BE FIXED AT THE HALF HEIGHT LEVEL, IF REQUIRED. PREFORMED CORNER STIFFENERS ARE INSTALLED AT 45° TO THE FACE/SIDE OF THE UNIT, EXTENDING AN EQUAL DISTANCE ALONG EACH SIDE BEING BRACED ( APPROXIMATELY 1 ft [300 mm] ). WHEN MORE THAN ONE LAYER OF GABIONS IS REQUIRED, IN ORDER FOR THE INDIVIDUAL UNITS TO BECOME INCORPORATED INTO ONE CONTINUOUS STRUCTURE, THE NEXT LAYER OF GABIONS MUST BE CONNECTED TO THE LAYER UNDERNEATH AFTER THIS LAYER HAS BEEN SECURELY CLOSED ( FIG. 15 ).

4.4. CLOSING -- TO ALLOW FOR SETTLEMENT, LEVEL OFF THE FILL 1-1.5 in. (25-40 mm) ABOVE THE TOP OF THE MESH. FOLD THE LID DOWN AND PULL THE EDGES OF THE PANELS TO BE CONNECTED USING AN APPROPRIATE TOOL SUCH AS A LID CLOSER ( FIG. 9 ). THE LIDS SHALL BE TIGHTLY LACED ALONG ALL EDGES, ENDS AND DIAPHRAGMS IN THE SAME MANNER AS DESCRIBED FOR ASSEMBLING UNITS ( FIGS. 6a & 6b, 10a & 10b ). ADJACENT LIDS MAY BE SECURELY ATTACHED SIMULTANEOUSLY. ALL END WIRES SHALL THEN BE TURNED IN TO AVOID PROTRUSIONS.

4.5. TESTING METHODS -- TESTING METHODS AND FREQUENCY, AND VERIFICATION OF MATERIAL SPECIFICATIONS AND COMPACTION SHALL BE THE RESPONSIBILITY OF THE OWNER'S GEOTECHNICAL ENGINEER, UNDER THE DIRECTION OF THE OWNER. THE SHEAR STRENGTH TESTING OF REINFORCED BACKFILL SHALL BE REQUIRED FOR EVERY 1000 CUBIC YARDS PLACED OR IF THE NATURE OF BACKFILL SOIL VISUALLY CHANGES.

## 5. TECHNICAL REQUIREMENTS

5.1. THE CONTRACTOR SHALL HAVE AN APPROVED SET OF CONSTRUCTION DRAWINGS AND CONTRACT SPECIFICATIONS ON-SITE AT ALL TIMES DURING CONSTRUCTION OF THE GABION WALL STRUCTURE.

5.2. GABION SHALL BE PLACED AT THE LOCATIONS AND ELEVATIONS SHOWN ON THE PROJECT DRAWING SHEETS.

5.3. TRACKED CONSTRUCTION EQUIPMENT SHALL NOT BE OPERATED DIRECTLY ON THE GABION WALL. A MINIMUM FILL THICKNESS OF 6 in. (150mm) IS REQUIRED FOR OPERATION OF TRACKED VEHICLES OVER THE GABION WALL. TURNING OF TRACKED VEHICLES SHALL BE KEPT TO A MINIMUM TO PREVENT DISPLACING THE FILL AND / OR THE GABION WALL.

## 6. DRAINAGE

6.1. THE BACKFILL SURFACE SHALL BE GRADED AWAY FROM THE WALL FACE A MINIMUM OF 2 PERCENT SLOPE AND A TEMPORARY SOIL BERM SHALL BE CONSTRUCTED NEAR THE WALL CREST TO PREVENT SURFACE AND WATER RUNOFF FROM OVERTOPPING THE WALL. GRADING SHALL BE PERFORMED AT THE END OF EACH WORK DAY.

6.2. AT THE END OF EACH WORK DAY, BACKFILL SURFACE SHALL BE COMPACTED WITH A SMOOTH WHEEL ROLLER TO MINIMIZE PONDING OF WATER AND SATURATION OF THE BACKFILL.

6.3. THE ENGINEERING, DESIGN ANALYSIS, DETAILING AND MITIGATION OF BOTH SURFACE DRAINAGE AND SEEPAGE OF GROUNDWATER SHALL BE THE RESPONSIBILITY OF THE OWNER OR THE OWNER'S REPRESENTATIVE.

6.4. PERMANENT SURFACE WATER DIVERSION AND / OR COLLECTION SHALL BE AS REQUIRED AND PROVIDED BY THE OWNER OR OWNER'S REPRESENTATIVE.

## 7. DESIGN PARAMETERS

7.1. DESIGN OF THE GABION WALL STRUCTURE IS BASED ON THE FOLLOWING ASSUMED SOIL PARAMETERS:

Table 4 Assumed Soil Parameters

	EFFECTIVE FRICTION ANGLE	EFFECTIVE COHESION	MOIST UNIT WEIGHT
BACKFILL SOIL	30 DEGREES	0 psf	120 pcf
RETAINED SOIL	30 DEGREES	0 psf	120 pcf
FOUNDATION SOIL	30 DEGREES	0 psf	120 pcf

7.2. MINIMUM REQUIRED FACTOR OF SAFETY (FS):

7.2.1. WALL CHECKS

Table 5 Minimum Safety Factors - Wall Checks

SLIDING	1.5
INTERNAL STABILITY	1.5
OVERTURNING	2.0
BEARING CAPACITY	2.0

7.2.2. EXTERNAL STABILITY

Table 6 Minimum Safety Factors - External Stability

GLOBAL STABILITY	1.3
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7.3. TRAFFIC SURCHAR = 250 psf

7.4. GROUND WATER TABLE -- GROUNDWATER / PHREATIC SURFACES NOT CONSIDERED IN WALL DESIGN. WATER SURFACE ASSUMED TO BE SUFFICIENTLY BELOW BOTTOM OF WALL AS NOT TO INFLUENCE INTERNAL AND EXTERNAL STABILITY.

7.5. SEISMIC LOAD = NONE

## 8. SPECIAL PROVISIONS

8.1. THE DESIGN PRESENTED HERE IN IS BASED ON SOIL PARAMETERS, FOUNDATION CONDITIONS, GROUNDWATER CONDITION, AND LOADING STATED IN SECTION 7.0 AND SHALL BE VERIFIED BY THE OWNER OR OWNER'S REPRESENTATIVE.

8.2. WALL ELEVATION VIEWS AND LOCATIONS AND GEOMETRY OF EXISTING STRUCTURES AND GRADE ABOVE AND BELOW THE WALLS MUST BE VERIFIED BY THE OWNER OR OWNER'S REPRESENTATIVE PRIOR TO CONSTRUCTION.

8.3. MACCAFERRI, INC. ASSUMES NO LIABILITY FOR INTERPRETATION OR VERIFICATION OF SUBSURFACE CONDITIONS, SUITABILITY OF SOIL DESIGN PARAMETERS AND INTERPRETATION OF SUBSURFACE GROUNDWATER CONDITIONS.

8.4. THE OWNER OR OWNER'S REPRESENTATIVE IS RESPONSIBLE FOR REVIEWING AND VERIFYING THAT THE ACTUAL SITE CONDITIONS ARE AS DESCRIBED IN SECTION 7.0 PRIOR TO AND DURING CONSTRUCTION. THE OWNER OR OWNER'S REPRESENTATIVE SHALL BE ON-SITE TO ASSURE THE PROVISIONS IN THE CONSTRUCTION NOTES ARE FOLLOWED.

8.5. IF ANY ROCK FORMATIONS AND / OR GROUNDWATER ARE ENCOUNTERED DURING CONSTRUCTION OF THIS WALL, IMMEDIATELY CONTACT THE OWNER OR OWNER'S REPRESENTATIVE.

8.6. ANY REVISIONS TO DESIGN PARAMETERS STATED IN SECTION 7.0 OR STRUCTURE GEOMETRY SHALL REQUIRE DESIGN MODIFICATIONS PRIOR TO PROCEEDING WITH CONSTRUCTION.

## DEVELOPER'S CERTIFICATION

" I / WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF 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 Gerulatis*  
SIGNATURE OF DEVELOPER  
PAUL GERULATIS

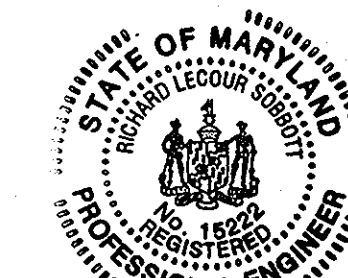
2/12/09  
DATE

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

*Richard L. Sobott, P.E.*  
SIGNATURE OF ENGINEER  
RICHARD L. SOBBOTT, P.E.  
MD NO. 15222

2/12/09  
DATE



REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

USDA - NATURAL RESOURCES CONSERVATION SERVICE DATE \_\_\_\_\_

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

HOWARD SCD DATE \_\_\_\_\_

APPROVED: DEPARTMENT OF PLANNING AND ZONING

*Charles J. Thomas* 2/12/09  
Chief, Development Engineering Division Date

*Conrad Thomas* 2/12/09  
Chief, Division of Land Development Date

*Marvin D. Joyce* 2/14/09  
Director Date



CONSULTING ENGINEERS AND PLANNERS  
8950 Rt. 108 E., Suite 229, Columbia, MD 21045  
Phone: 410-995-0090 Fax: 410-992-7038

## GABION CONSTRUCTION NOTES

COLUMBIA - VILLAGE OF LONG REACH

SECTION 1 -- AREA 1 LOTS F-1 TO F-137

A RESUBDIVISION OF PARCEL "F"

6TH ELECTION DISTRICT HOWARD COUNTY, MD

REVISIONS  
1 ADD COVER SHEET TO SDP NO. 74-39 FOR STREAM MAINTENANCE

OWNER:  
**WOODCREEK H.O.A.**

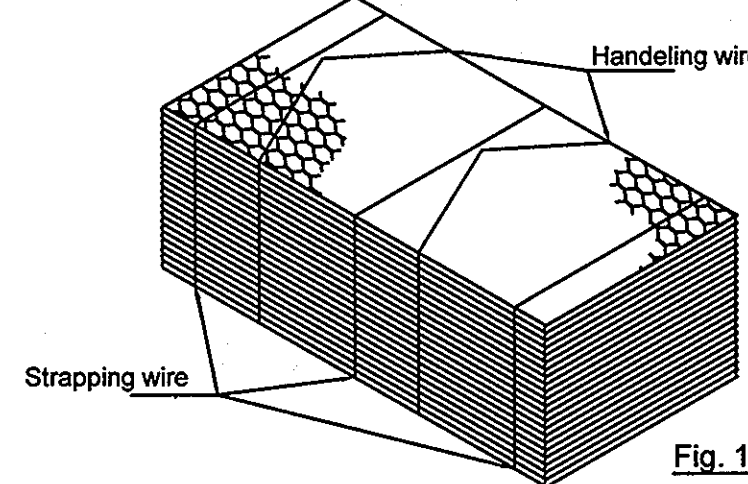
DESIGN:  
JW SHEET 7 OF 15

DRAWN: JW DATE: JAN. 2009 PROJ. NO.: 06-11-001

APPROVED: RLS SCALE: FILE NO.:

**UNPACKING & ASSEMBLY PROCESS**

Maccferri Gabions Are Delivered To The Job Site In Bundles. They Are Compressed And Strapped In The Factory For Easier Shipping And Handling.



1. Open And Unfold The Gabions One By One On A Flat, Hard Surface. Eliminate All Folds Due To The Packaging.

2. Pull Up The Sides And The Diaphragms To Form An Open Box. Be Sure The Top Of The Face And The Side Are At The Same Level.

3. Fold By Hand The End Of The Reinforcing Wire Of The Main Unit And The Diaphragms Allowing The Gabion To Stand By Itself.

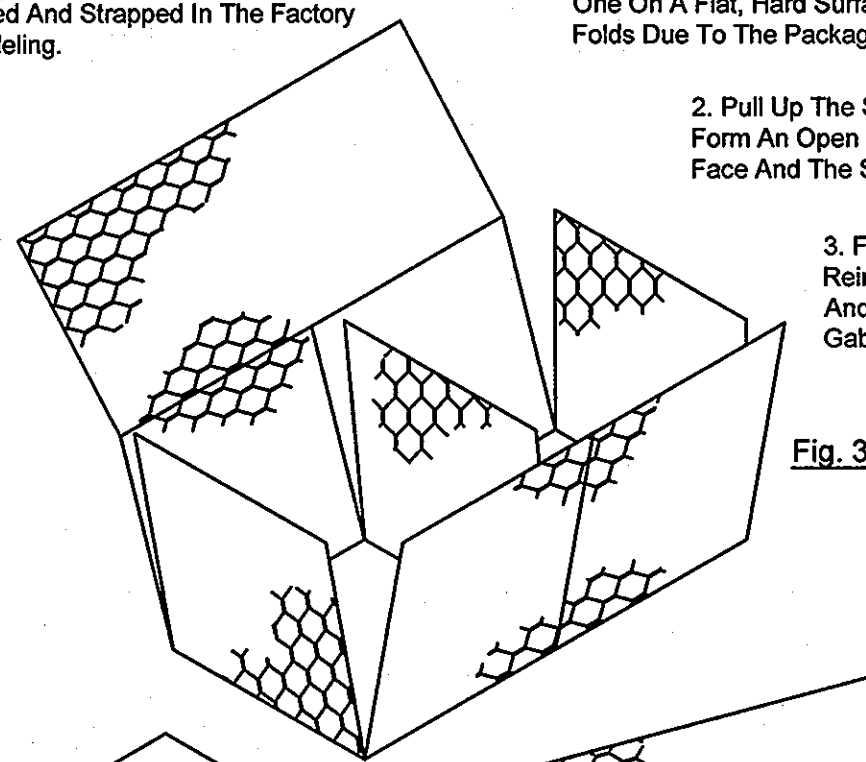


Fig. 3

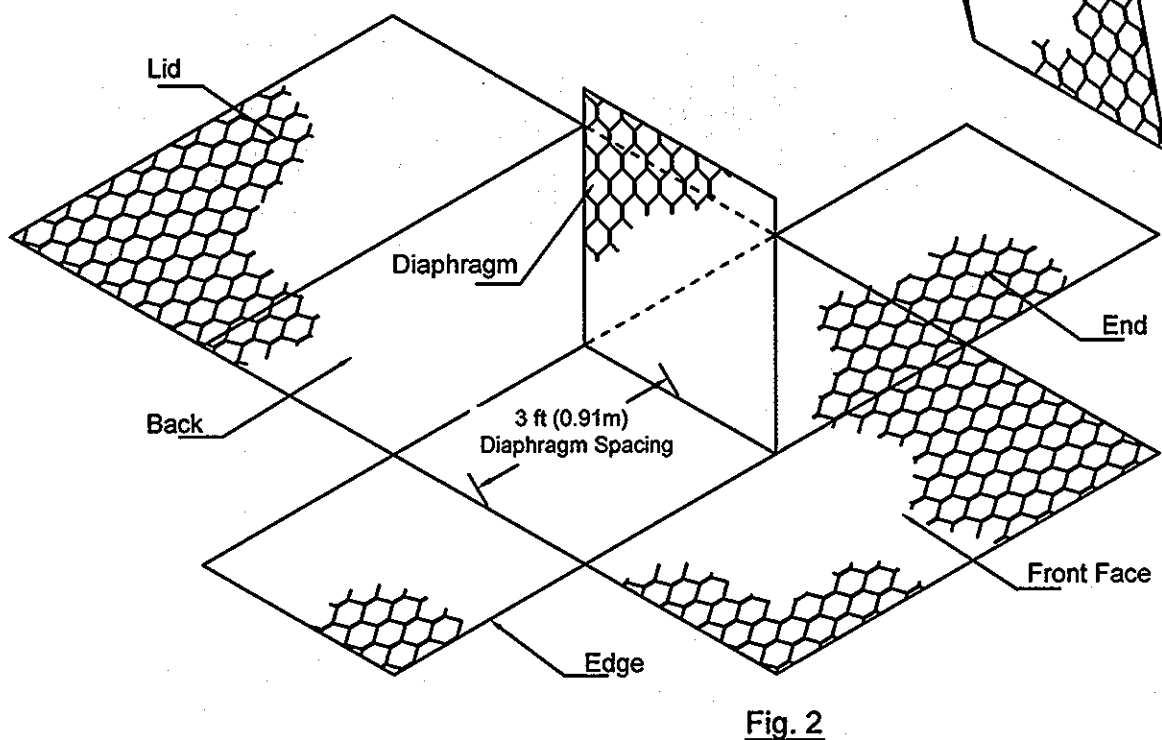


Fig. 2

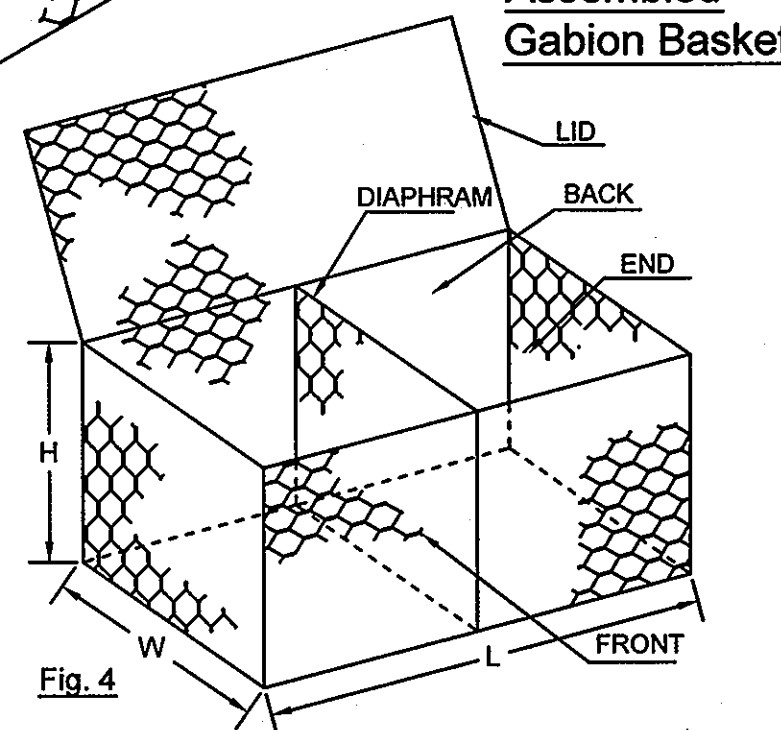


Fig. 4

**Assembled Gabion Basket**

**REINFORCING DETAIL**

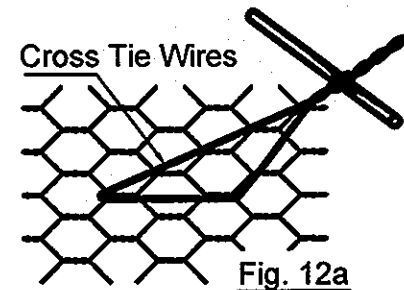


Fig. 12a

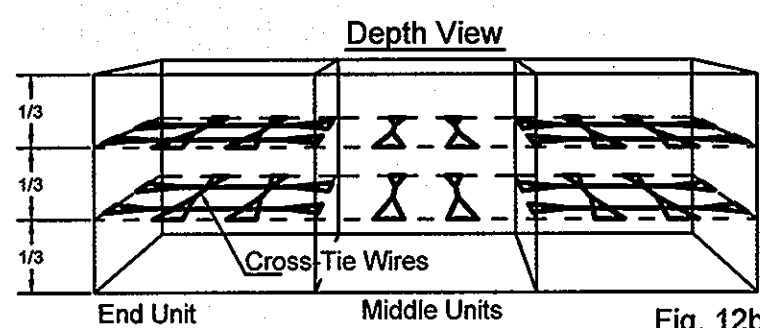


Fig. 12b

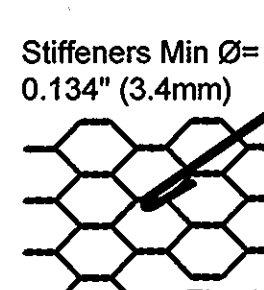


Fig. 13a

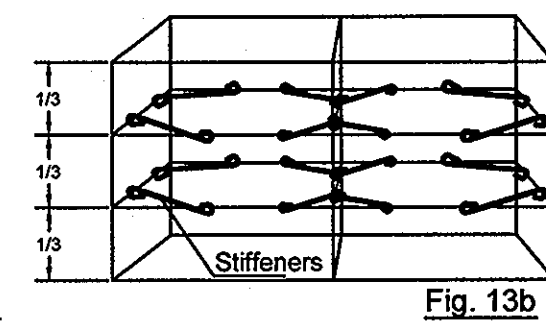


Fig. 13b

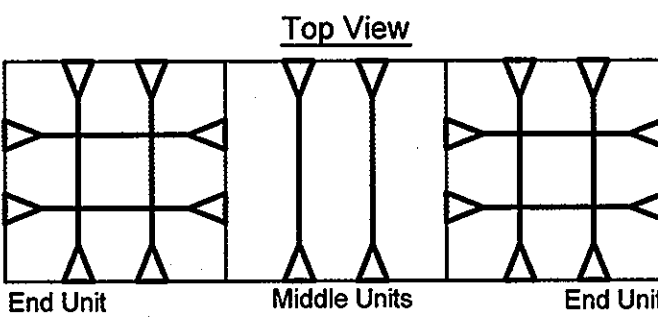


Fig. 12c

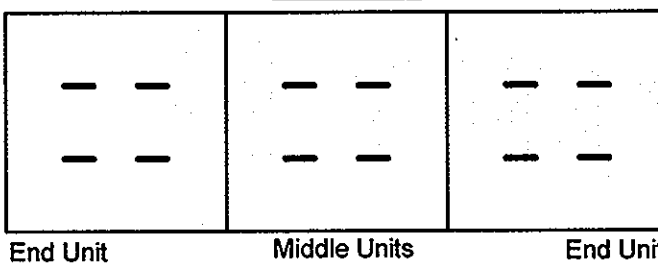


Fig. 12d

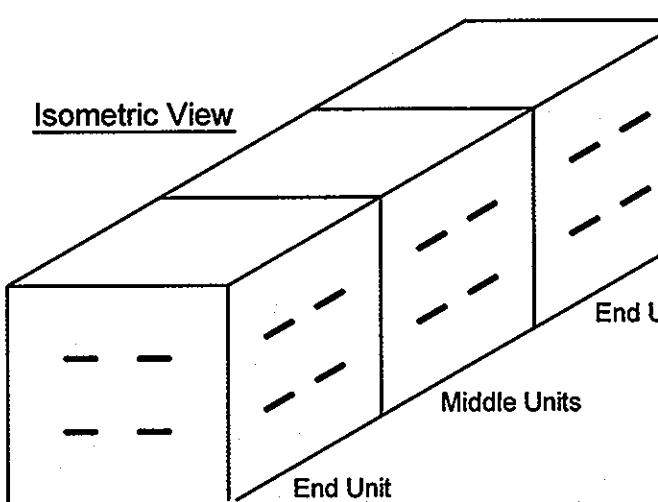


Fig. 12e

**FILLING PROCESS**

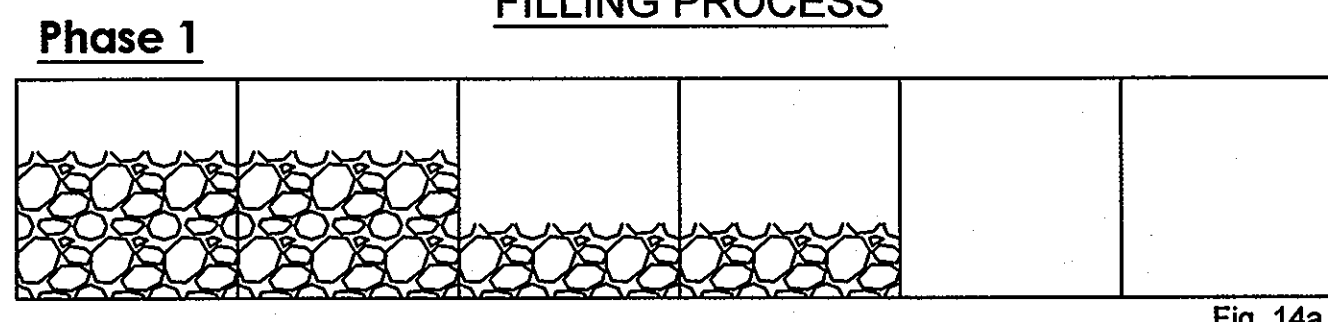


Fig. 14a

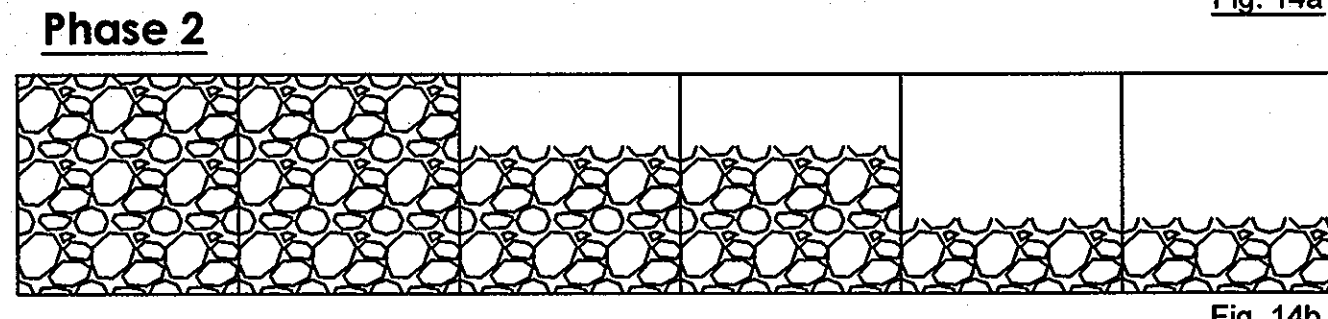


Fig. 14b

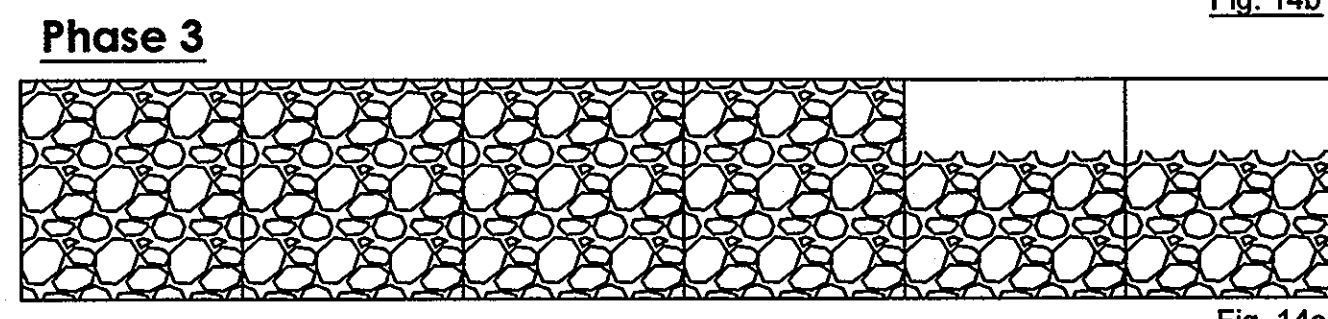
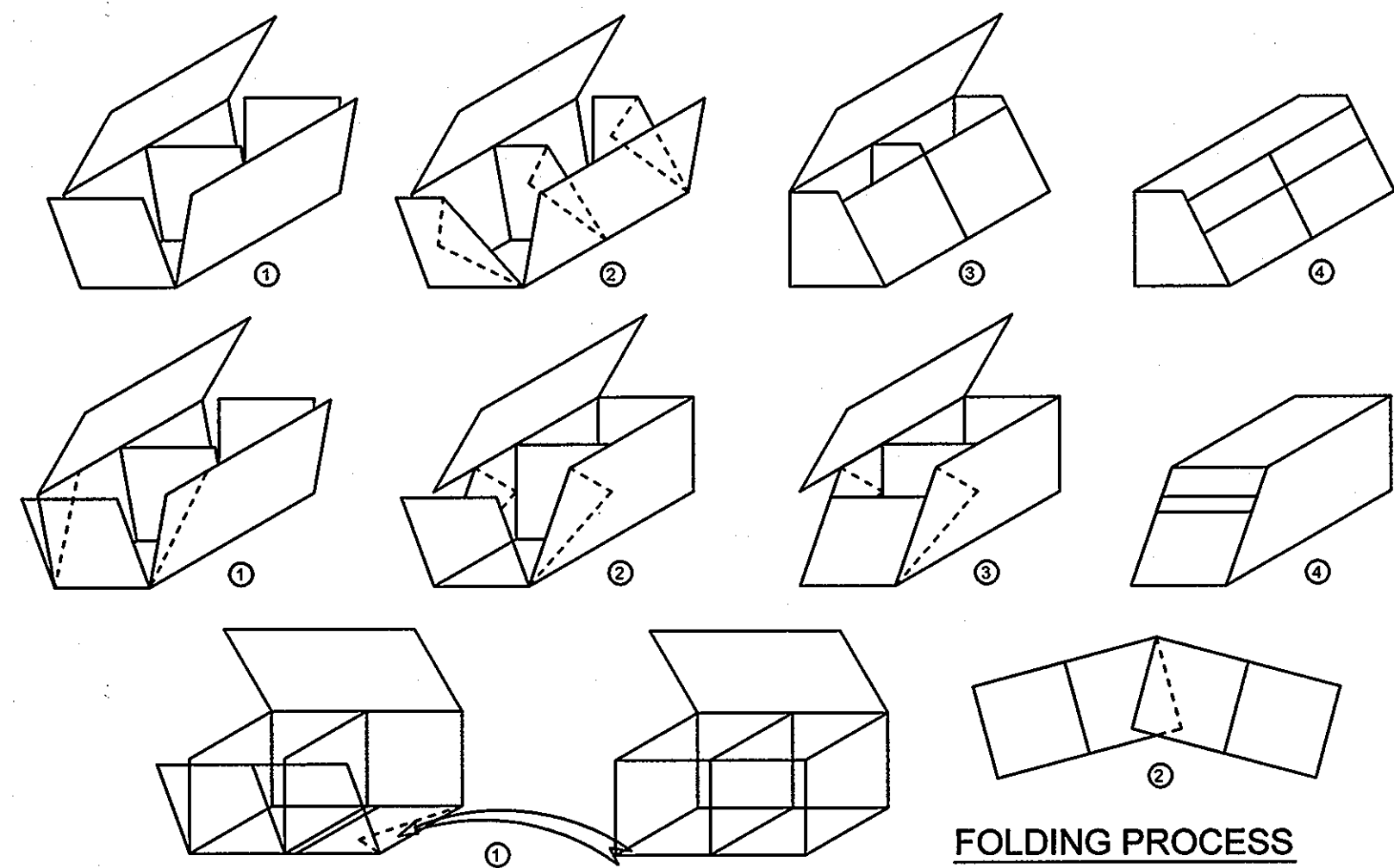


Fig. 14c



FOLDING PROCESS

**CLOSING PROCESS**

4. Edges Are Joined Together, Using The Appropriate Lacing Techniques.  
Manual: Continuous Wire Looped Tightly Around Every Other Mesh Opening, Alternating Single And Double Loops (Fig. 5a).  
Mechanical: Using A Pneumatic Or Hand Power Tool, Employing Stainless Steel "c" Shaped Fasteners. For Continuity And Strength, The Recommended Spacing Is 6 Inches, Max 150mm (Fig. 5b).

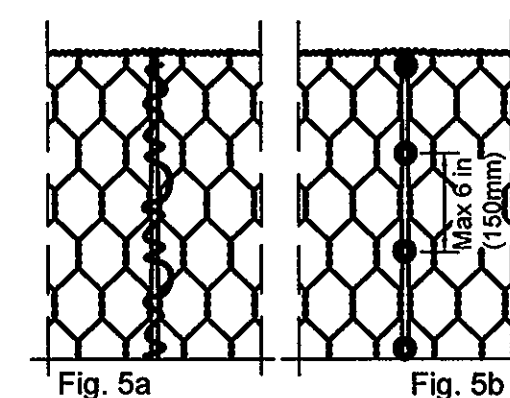


Fig. 5a

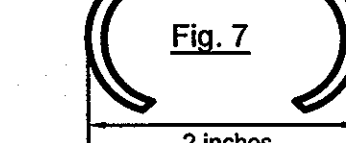


Fig. 7

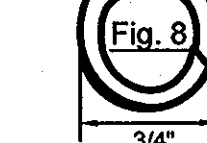


Fig. 8

- 1.) Spenax Fastener  $\phi = 2$ in (50mm) open and 3/4in (20 mm) closed.
- 2.) Spenax Fastener has 170 Kg/mm<sup>2</sup> Breaking Load
- 3.) Spenax Fastener Wire  $\phi = 0.120$ in (3.00mm)

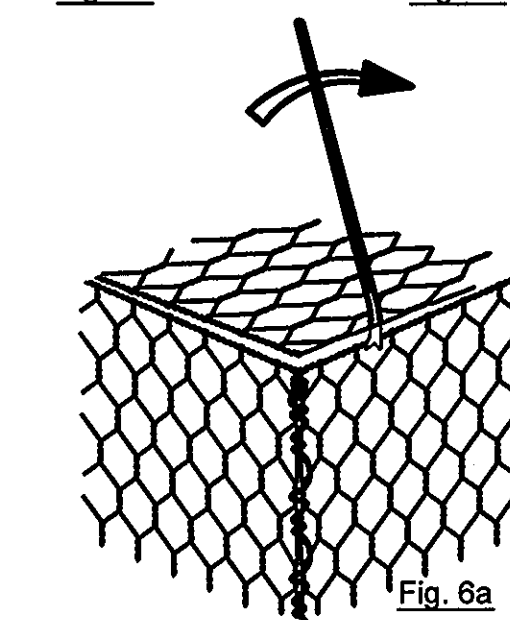


Fig. 6a

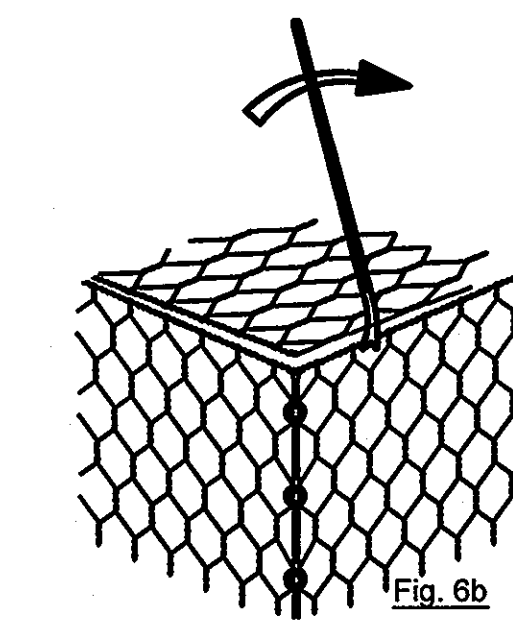


Fig. 6b

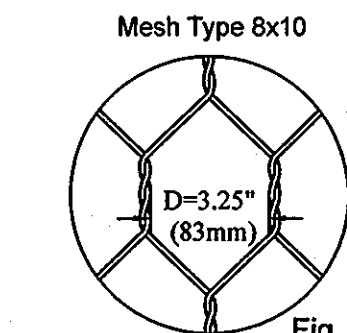


Fig. 11a

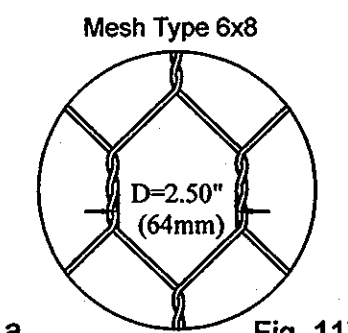


Fig. 11b

The Tolerance Of The Mesh Opening "D", (The Distance Between The Axis's Of Two Parallel Twists) Is According To Astm A975-97



Fig. 9

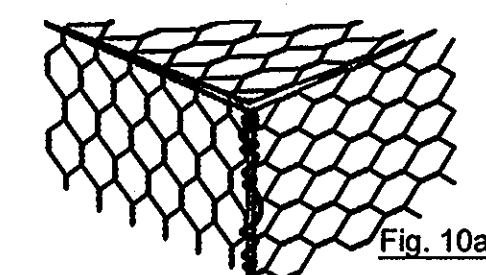


Fig. 10a

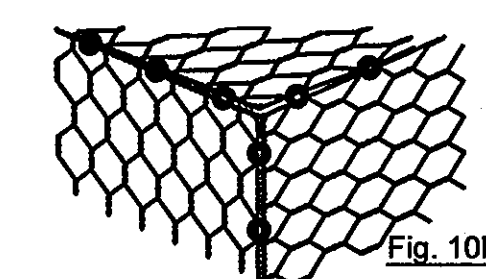
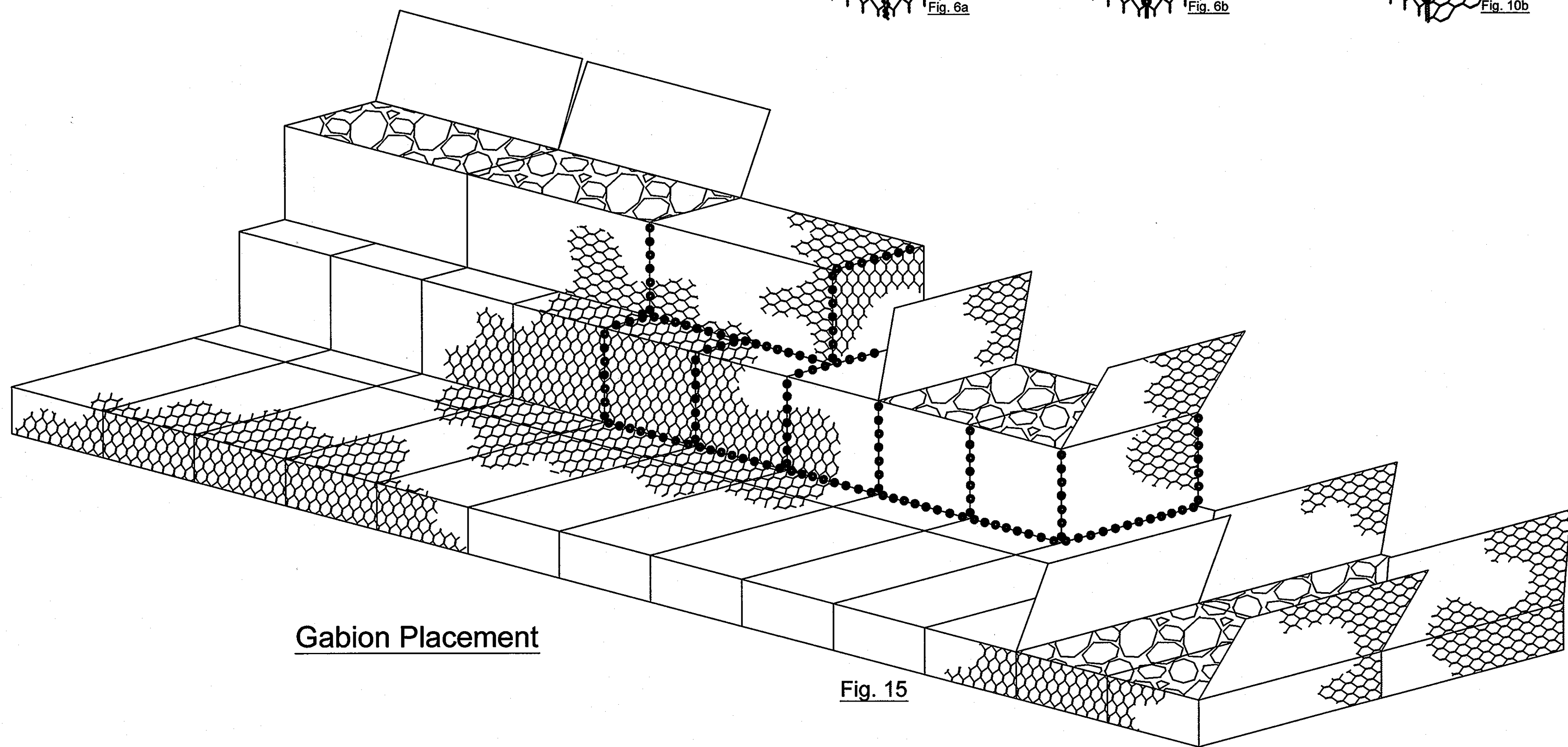


Fig. 10b



Gabion Placement

Fig. 15

**DEVELOPER'S CERTIFICATION**

" I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF 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 Gerulatis*  
SIGNATURE OF DEVELOPER  
PAUL GERULATIS

2/13/09  
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 SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT. "

*Richard L. Sobott*  
SIGNATURE OF ENGINEER  
RICHARD L. SOBOTT, P.E.  
MD NO. 15222

2/12/09  
DATE



REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

USDA - NATURAL RESOURCES CONSERVATION SERVICE DATE

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

HOWARD SCD DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

*John D. ...* 2/2/09  
Chief, Development Engineering Division / Date  
*Candy ...* 2/2/09  
Chief, Division of Land Development / Date  
*Paul ...* 2/13/09  
Director / Date

**GABION DETAILS**

**COLUMBIA - VILLAGE OF LONG REACH**

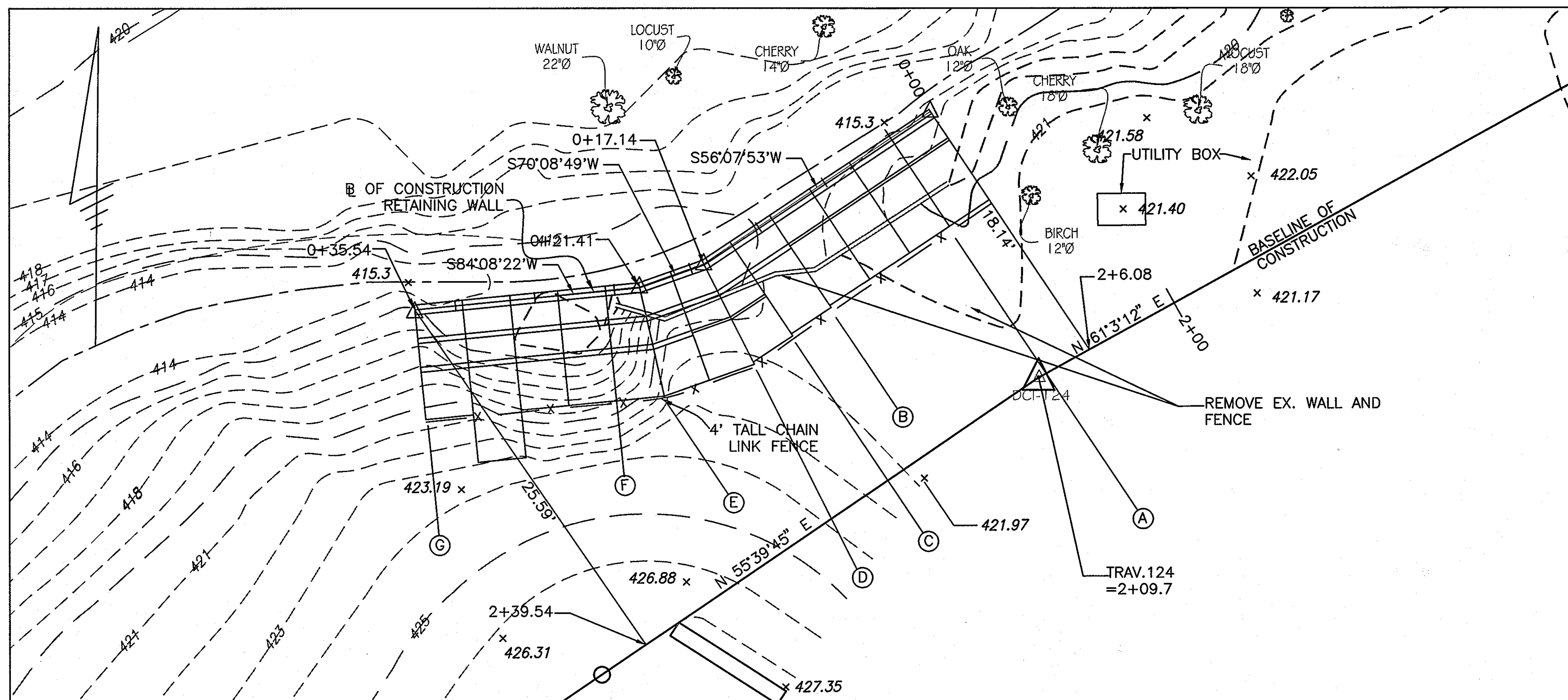
SECTION 1 - AREA 1 LOTS F-1 TO F-137

A RESUBDIVISION OF PARCEL "F"

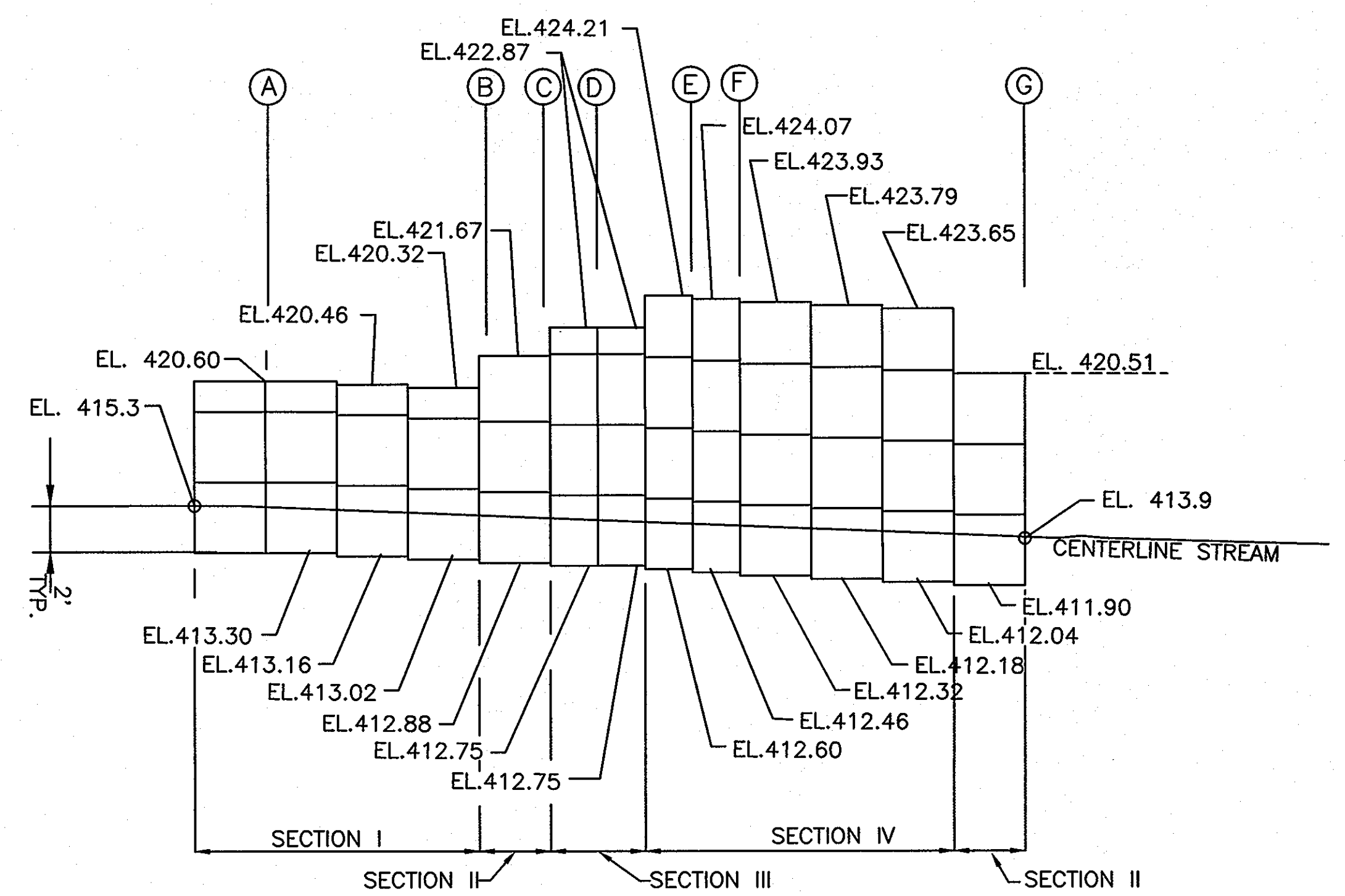
6TH ELECTION DISTRICT HOWARD COUNTY, MD

**DCI**  
DANIEL CONSULTANTS INC.  
CONSULTING ENGINEERS AND PLANNERS  
8950 Rt. 108 E., Suite 229, Columbia, MD 21045  
Phone: 410-995-0090 Fax: 410-992-7038

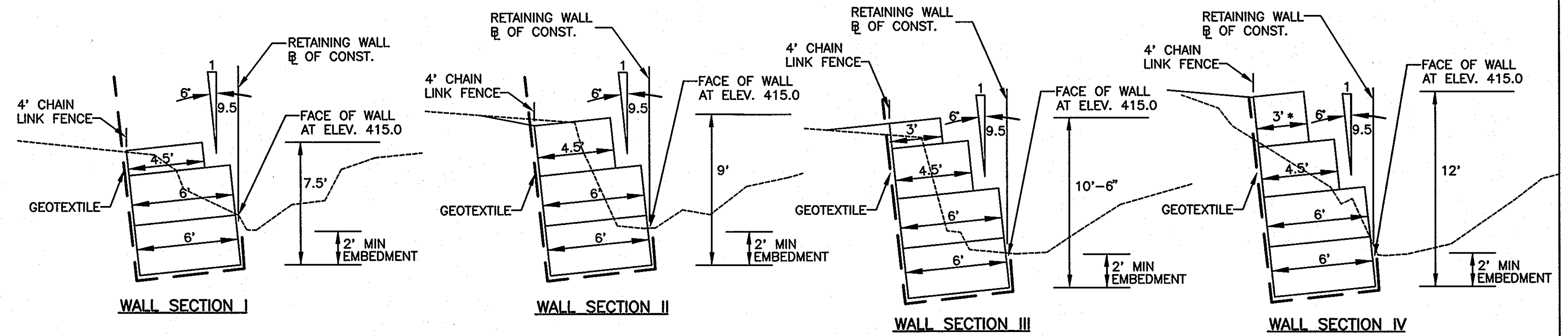
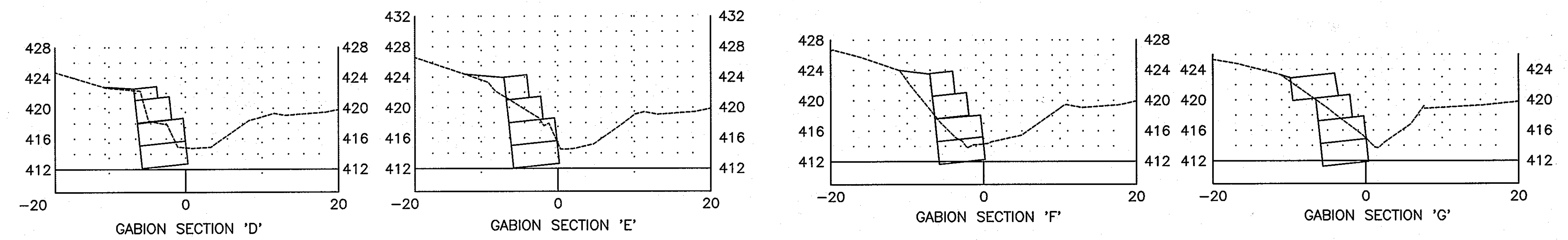
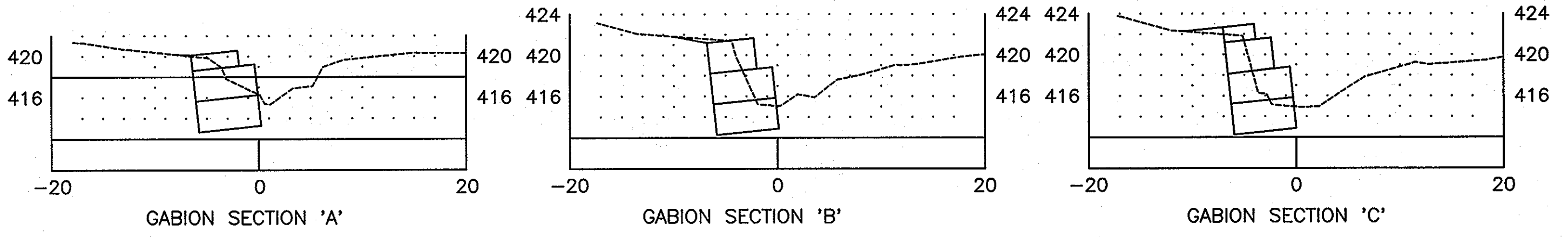
REVISIONS		1	ADD COVER SHEET TO SDP NO. 74-39 FOR STREAM MAINTENANCE
OWNER: <b>WOODCREEK H.O.A.</b>			
DESIGN:	JW	SHEET 6 OF 15	
DRAWN:	JW	DATE:	PROJ. NO.:
APPROVED:	RLS	JAN. 2009	06-11-001
		SCALE:	FILE NO.:



GABION RETAINING WALL PLAN  
SCALE: 1" = 5'



GABION RETAINING WALL ELEVATION  
SCALE: 1" = 5'



SCALE HORIZ 1"=5'-0"  
VERT 1"=5'-0"

\*NOTE:  
LAST DOWNSTREAM GABION  
ON TOP ROW IS 6' LONG.

DEVELOPER'S CERTIFICATION

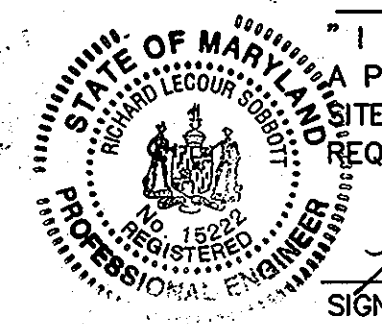
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*Paul Gerulatis* 2/12/09  
SIGNATURE OF DEVELOPER DATE  
PAUL GERULATIS

ENGINEER'S CERTIFICATION

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*Richard L. Sobott* 2/12/09  
SIGNATURE OF ENGINEER DATE  
RICHARD L. SOBBOTT, P.E.  
MD NO. 15222



REVIEWED FOR HOWARD SCD AND MEETS TECHNICAL REQUIREMENTS

USDA - NATURAL RESOURCES CONSERVATION SERVICE DATE

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

HOWARD SCD DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

*John Deussen* 2/21/09  
Chief, Development Engineering Division Date

*Guidy Hana* 2/21/09  
Chief, Division of Land Development Date

*Paul D. Unger* 2/14/09  
Director Date

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GABION WALL PLAN

**COLUMBIA - VILLAGE OF LONG REACH**

SECTION 1 - AREA 1 LOTS F-1 TO F-137

A RESUBDIVISION OF PARCEL "F"

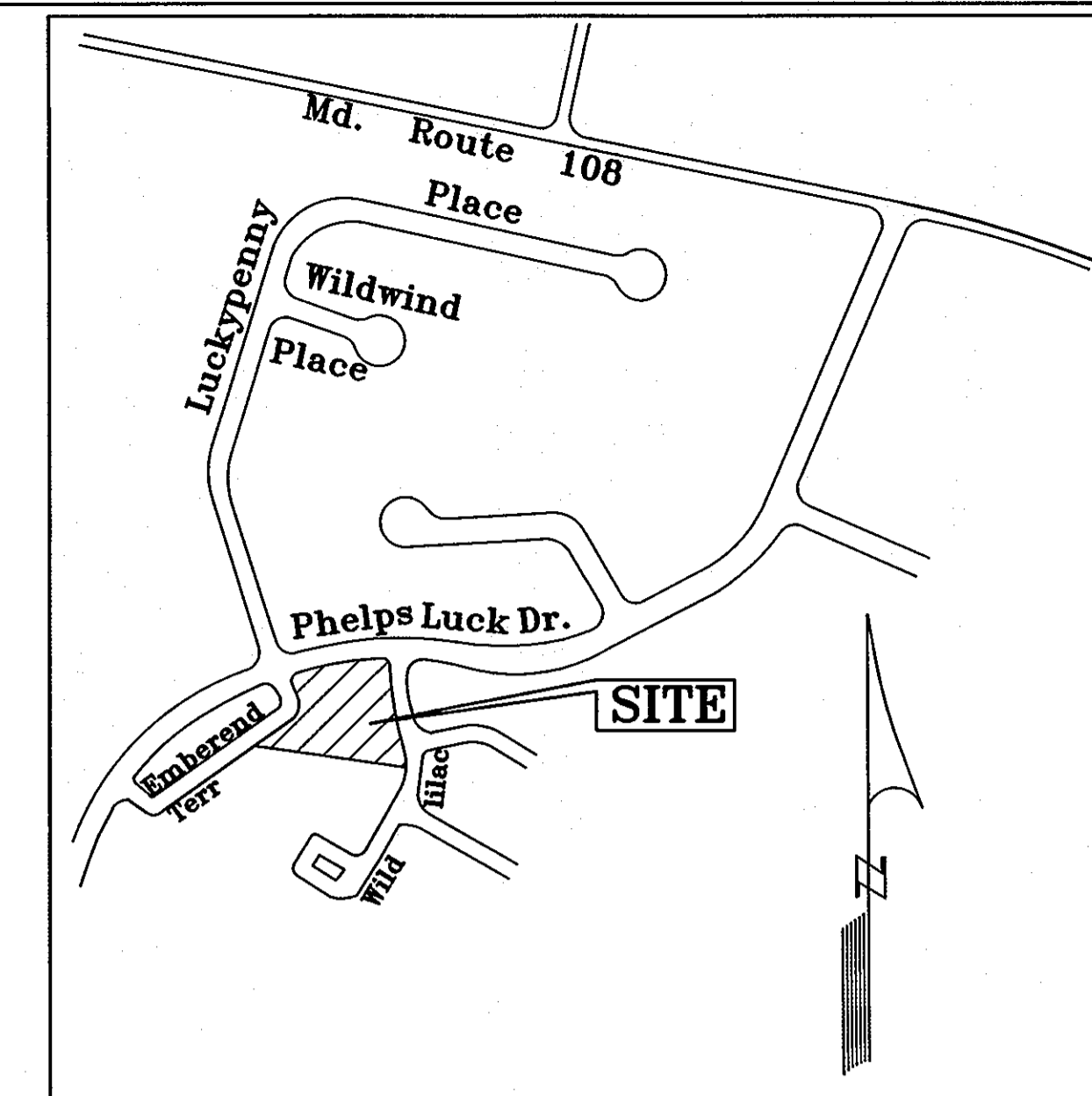
6TH ELECTION DISTRICT HOWARD COUNTY, MD

REVISIONS	
1	NEW DETAILS SHEET FOR THE GABION RETAINING WALL
OWNER: <b>WOODCREEK H.O.A.</b>	
DESIGN:	JW SHEET 5 OF 15
DRAWN:	JW DATE: JAN. 2009 PROJ. NO.: 06-11-001
APPROVED:	RLS SCALE: AS SHOWN FILE NO.:



**GENERAL NOTES**

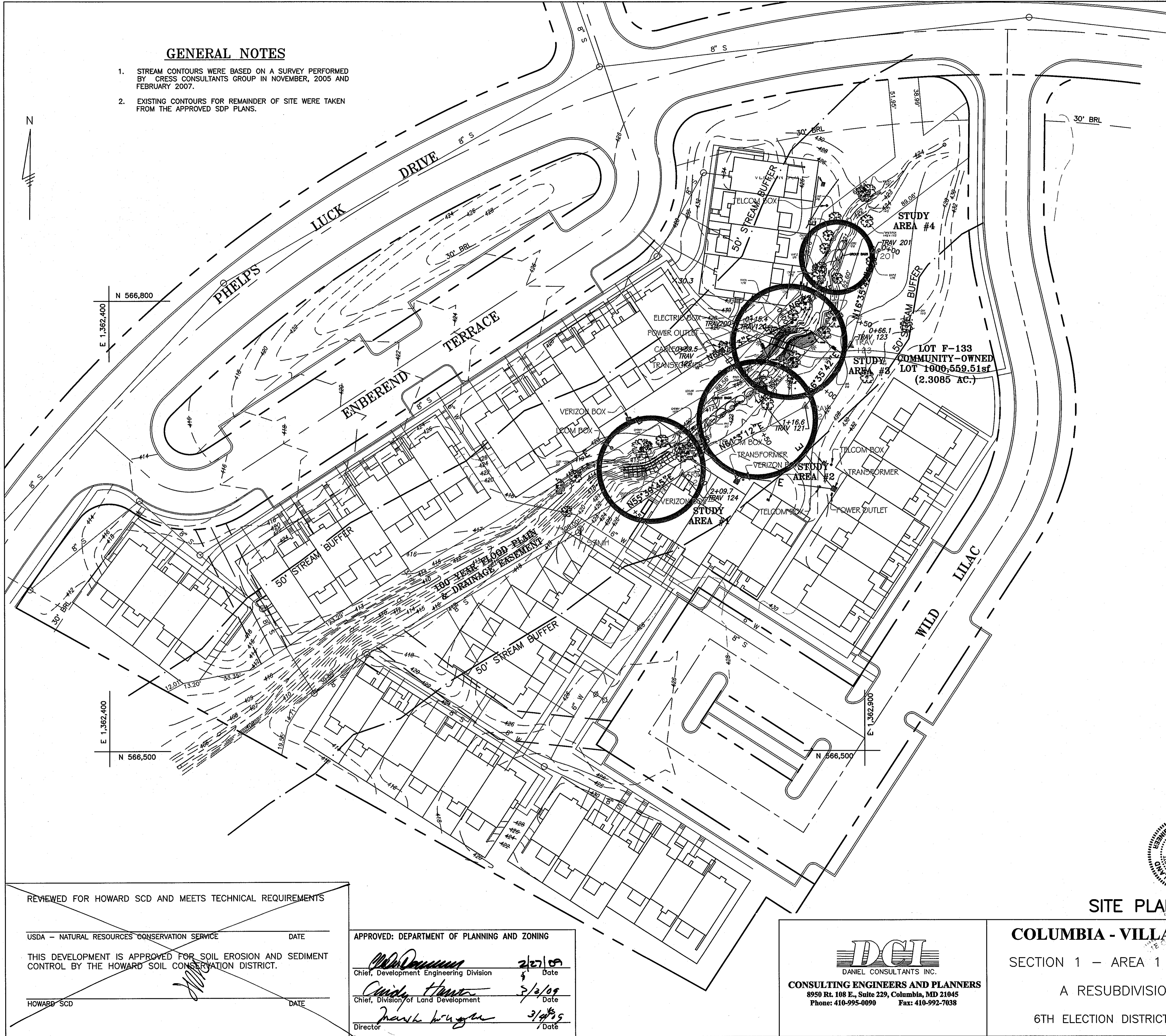
1. STREAM CONTOURS WERE BASED ON A SURVEY PERFORMED BY CRESS CONSULTANTS GROUP IN NOVEMBER, 2005 AND FEBRUARY 2007.
2. EXISTING CONTOURS FOR REMAINDER OF SITE WERE TAKEN FROM THE APPROVED SDP PLANS.



**VICINITY MAP**  
SCALE: 1" = 400'

**SURVEY CONTROL**

POINT NO.	NORTHING	EASTING	ELEVATION
120	566,788.9210	1,362,838.2670	423.00
121	566,729.7440	1,362,860.8730	425.31
122	566,755.5010	1,362,789.4930	421.48
123	566,770.3080	1,362,890.9930	425.13
124	566,684.6760	1,362,779.3890	421.34
200	566,780.9226	1,362,814.9313	424.13
201	566,833.3132	1,362,906.6407	425.78



**DEVELOPER'S CERTIFICATION**

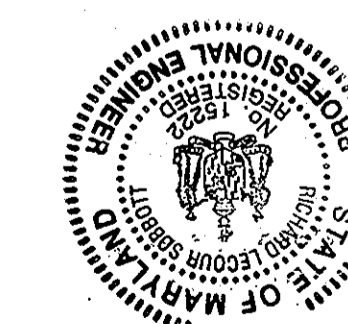
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*Paul Gerulatis*  
SIGNATURE OF DEVELOPER  
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SIGNATURE OF ENGINEER  
RICHARD L. SOBBOTT, P.E.  
MD NO. 15222  
2/12/09  
DATE



**SITE PLAN**

**COLUMBIA - VILLAGE OF LONG REACH**

SECTION 1 - AREA 1 LOTS F-1 TO F-137

A RESUBDIVISION OF PARCEL "F"

6TH ELECTION DISTRICT HOWARD COUNTY, MD

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USDA - NATURAL RESOURCES CONSERVATION SERVICE DATE

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HOWARD SCD DATE

APPROVED: DEPARTMENT OF PLANNING AND ZONING

*Mark Wagner* 2/27/09  
Chief, Development Engineering Division Date

*Cindy Hunter* 3/2/09  
Chief, Division of Land Development Date

*Mark Wagner* 3/4/09  
Director Date

REVISIONS		
1	ADDITIONAL SITE PLAN WITH NEW STREAM CONTOURS AND ERODED AREAS PRIORITIZED FOR MAINTENANCE.	
OWNER: <b>WOODCREEK H.O.A.</b>		
DESIGN: JW	SHEET 4 OF 15	
DRAWN: JW	DATE: JAN. 2009	PROJ. NO.: 06-11-001
APPROVED: RLS	SCALE: 1" = 30'	FILE NO.: