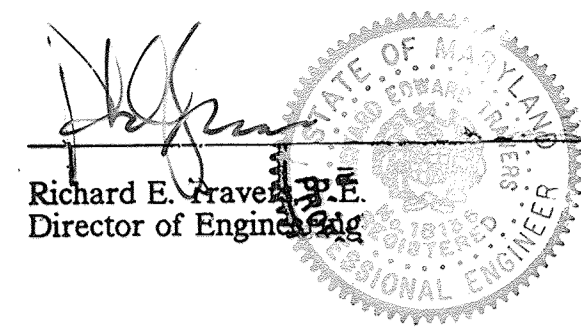


I hereby certify to the best of my knowledge and belief that there are no known wetlands on this site, that Section 404 and Section 401 do not apply and permits are not required.

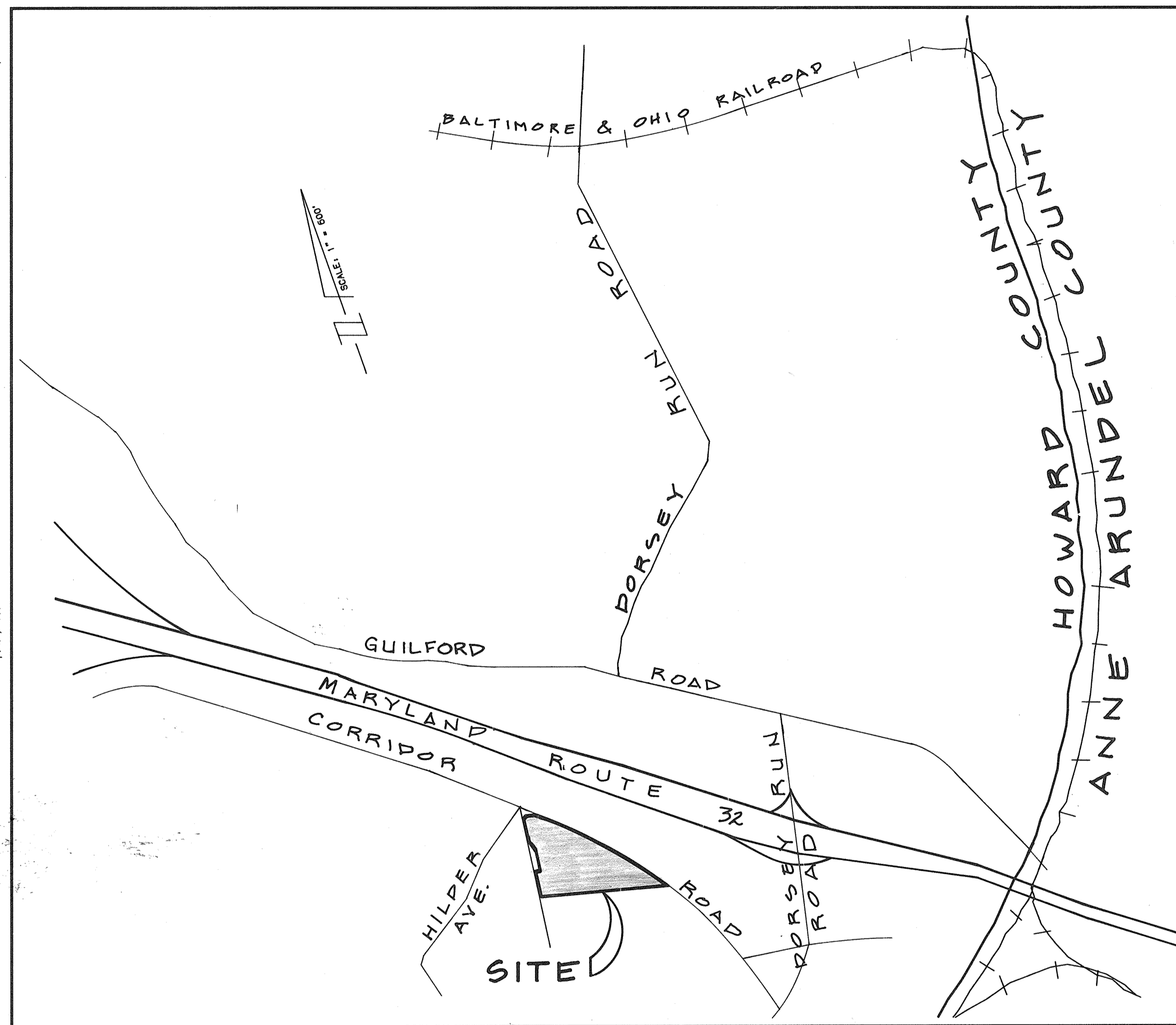
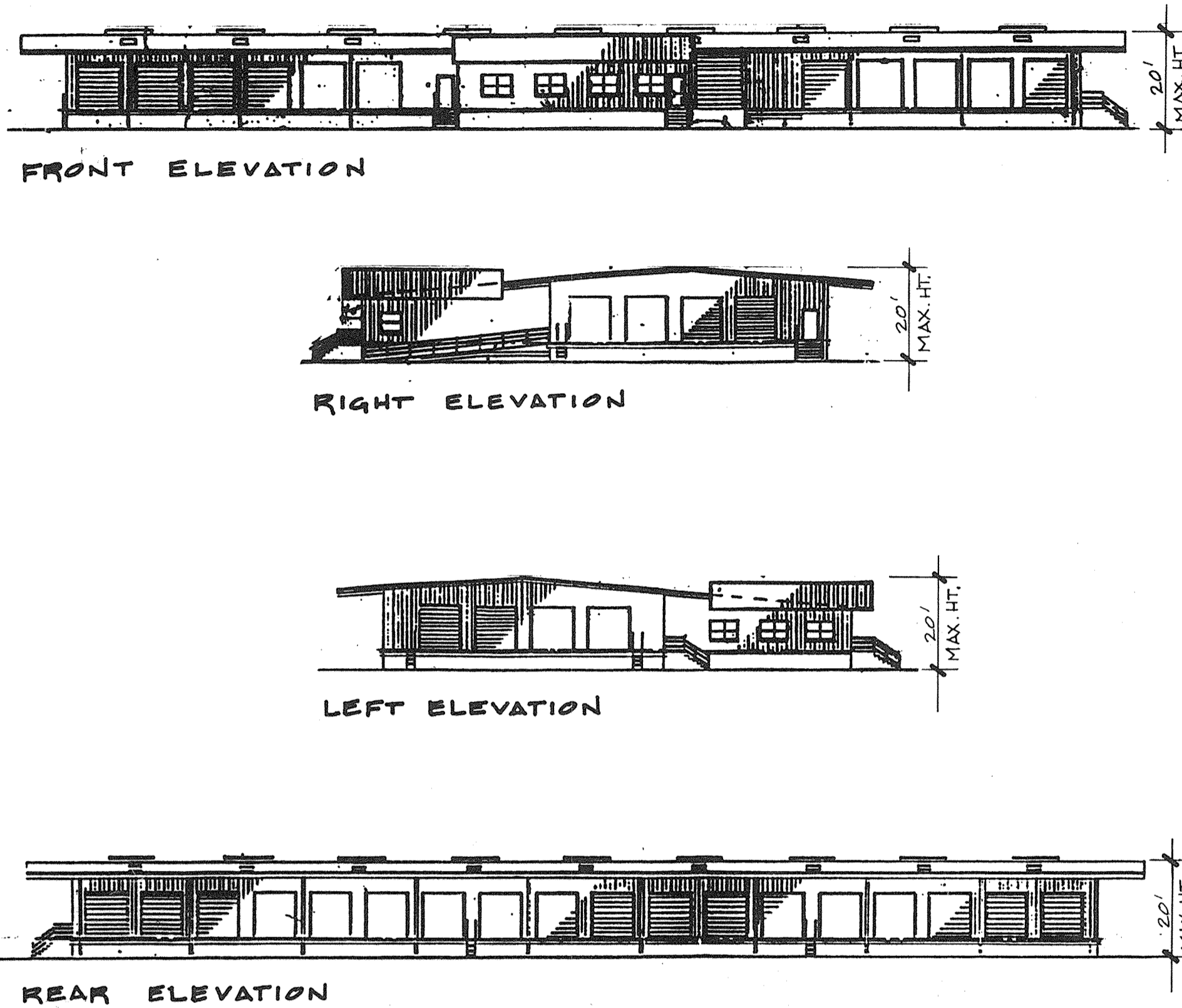


# SITE DEVELOPMENT PLANS WATKINS MOTOR LINES, INC. HOWARD COUNTY, MARYLAND

## GENERAL NOTES

1. THE APPROXIMATE LOCATION OF ALL UTILITIES IS SHOWN BASED ON INFORMATION OBTAINED FROM AVAILABLE RECORDS. THE CONTRACTOR SHALL LOCATE, PROTECT AND SUPPORT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER/INSPECTOR, AT THE CONTRACTOR'S EXPENSE.
2. CONTRACTOR SHALL LOCATE EXISTING UTILITIES A MINIMUM OF TWO (2) WEEKS IN ADVANCE OF CONSTRUCTION OPERATIONS IN THE VICINITY OF PROPOSED UTILITIES AT HIS OWN EXPENSE.
3. CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE (5) WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS.  
 STATE HIGHWAY ADMINISTRATION - 531-5533  
 BALTIMORE GAS & ELECTRIC COMPANY - 561-2585 (CONTRACTOR SERVICES)  
 BALTIMORE GAS & ELECTRIC COMPANY - 234-6313 (UNDERGROUND DAMAGE CONTROL)  
 BALTIMORE GAS & ELECTRIC COMPANY - 298-9013 (TROUBLE SHOOTING)  
 "MISS UTILITY" - 800-257-7777  
 CHESAPEAKE & POTOMAC (C&P) TELEPHONE COMPANY - 725-9976  
 BUREAU OF UTILITIES/HOWARD COUNTY - 313-2366  
 THE CONTRACTOR OR DEVELOPER SHALL CONTACT THE CONSTRUCTION INSPECTION DIVISION 24 HOURS IN ADVANCE OF COMMENCEMENT OF WORK, AT 792-2630.
4. ALL DETAILS NOT SHOWN ON THE DRAWINGS SHALL BE CONSTRUCTED IN ACCORDANCE WITH HOWARD COUNTY STANDARD DETAILS, DESIGN MANUAL VOLUME IV.
5. ALL MATERIALS AND CONSTRUCTION METHODS SHALL BE IN ACCORDANCE WITH HOWARD COUNTY SPECIFICATIONS AND HOWARD COUNTY DESIGN MANUAL, VOLUME IV.
6. ALL HORIZONTAL AND VERTICAL CONTROLS ARE BASED ON MARYLAND STATE PLANE COORDINATES SYSTEM PROVIDED BY HOWARD COUNTY.
7. EXISTING TOPOGRAPHY BASED ON FIELD RUN SURVEY ON JUNE, 1986 BY PHR&A.
8. ALL PIPE ELEVATIONS ARE INVERT ELEVATIONS.
9. ALL ROADS SHALL BE PAVED IN ACCORDANCE WITH HOWARD COUNTY STANDARD DETAIL R-2.01, P-3. (PUB. STREETS ONLY)
10. STANDARD PARKING SPACES ARE 9' X 18'.
11. PARKING AREAS SHALL MEET ALL ZONING REGULATIONS AND ALL DEPARTMENT OF PUBLIC WORKS PAVING SPECIFICATIONS.
12. THIS SUBMISSION IS ZONED M-2.
13. THE CONTRACTOR SHALL PROVIDE A JOINT IN ALL SEWER MAINS WITHIN 2'-0" OF EXTERIOR MANHOLE WALLS.
14. ALL PLAN DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED.
15. ALL STORM DRAIN PIPE BEDDING SHALL BE CLASS A.
16. WETLANDS DO NOT EXIST ON THE SITE.
17. ALL LIGHTING FIXTURES DIRECTED AWAY FROM ADJOINING PROPERTIES.

## BUILDING ELEVATIONS



## SITE ANALYSIS

Area of Parcel:	7.01 AC; 305,530 S.F.
Present Zoning:	M-2
Proposed use of structure:	Freight Terminal/Office Space
Floor Space - Freight Terminal:	18,000 S.F.
Office Space:	2,000 S.F.
Total Building:	20,000 S.F.
Building coverage of site:	0.46 AC, 6.95% of gross
Unbuilt green area:	2.19 AC 31.25% of gross
Paved area:	4.36 AC 62.20% of gross
Total Site Area:	7.01 AC 100.00%

## VICINITY MAP

ADDRESS CHART	
LOT NUMBER	STREET ADDRESS
P-81	8850 CORRIDOR ROAD

## SHEET INDEX

1. COVER SHEET
2. SITE DEVELOPMENT PLAN AND STORMWATER MANAGEMENT PLAN
3. DETAIL SHEET
4. STORMWATER MANAGEMENT PROFILES AND DRAINAGE AREA MAP
5. STORMWATER MANAGEMENT DETAILS AND NOTES
6. EROSION AND SEDIMENT CONTROL PLAN
7. EROSION AND SEDIMENT CONTROL DETAIL SHEET
8. LANDSCAPE PLAN
9. R.O.W. DITCH GRADING PLAN
10. WQ RETROFIT SITE PLAN

## PARKING AND PARKING LOT TABULATION

NUMBER OF OFFICE & TERMINAL EMPLOYEES FOR DAY SHIFT	40
NIGHT SHIFT	20
NUMBER OF AUTO PARKING SPACES INCLUDING 2 HANDICAPPED SPACES	61
NUMBER OF TRUCK/TRAILER PARKING SPACES	85
LOADING SPACES	52
EMPLOYEE PARKING LOT AREA	22,089 S.F.
PARKING LOT LANDSCAPE AREA	1,371 S.F. OR 6.2%
PARKING SPACES REQUIRED AT 1 PER 500 SQ. FT. =	40

## OWNER:

**WATKINS MOTOR LINES**  
 MR. JOHN TISDALE  
 DIRECTOR OF REAL ESTATE  
 1144 WEST GRIFFIN ROAD  
 LAKELAND, FLORIDA 33805  
 (813) 687 4545

SUBDIVISION NAME J. DUINKER SUB.		SECT./AREA	LOT/PARCEL # PARTS OF LOTS 6 & 7
WATKINS MOTOR LINES, INC.			
PLAT # OR L/P	BLOCK #	ZONE	TAX/ZONE MAP
191/896	13	M-2	4B 3 G 6064
WATER CODE 24-1912-D		SEWER CODE 20-1731-D	

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

APPROVED: *Jane M. Adams/jma* 11/21/91  
 HOWARD COUNTY HEALTH DEPARTMENT

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENT

SIGNATURE: *Robert W. Zichem/rwj* 11/21/91  
 DATE

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

*Jane M. Adams/jma* 12/23/91  
 COUNTY HEALTH OFFICER

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*Jane M. Adams/jma* 12/23/91  
 DIRECTOR

*Anna Helmuth* 11/23/91  
 CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT

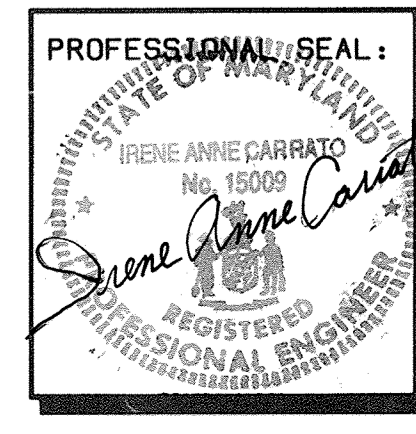
APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE STORM DRAINAGE SYSTEM AND PUBLIC ROADS HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

*Jane M. Adams/jma* 12/23/91  
 DIRECTOR

*James G. Prave* 12-17-91  
 CHIEF, BUREAU OF ENGINEERING

HOWARD COUNTY APPROVAL

No.	REVISIONS	DATE	CHKD.
1	SUBMITTED TO HO. CO. FOR REVIEW	6/20/91	MJK
2	REVISED PER P&Z COMMENTS	7/18/91	JAC
3	ISSUED FOR HO.C. REVIEW	7/20/91	JAC
4	REVISED PER COMMENTS FROM DRZ.	11/15/91	
5	SITE TO BE LOWERED 1' FOOT.	8-28-92	GEL
6	WATER QUALITY RETROFIT FOR 12-SW PERMIT CBR	8/16/98	BTB
7	TO ADD A SECURITY FENCE	12-19-98	RVE



PROJECT: TAX MAP 48 PARCEL 81  
**WATKINS MOTOR LINES, INC.**  
 J. DUINKER SUBDIVISION  
 PARTS OF LOTS 6 AND 7  
 L. HBN 131 F. 596  
 SIXTH ELECTION DISTRICT  
 HOWARD COUNTY, MARYLAND

TITLE:  

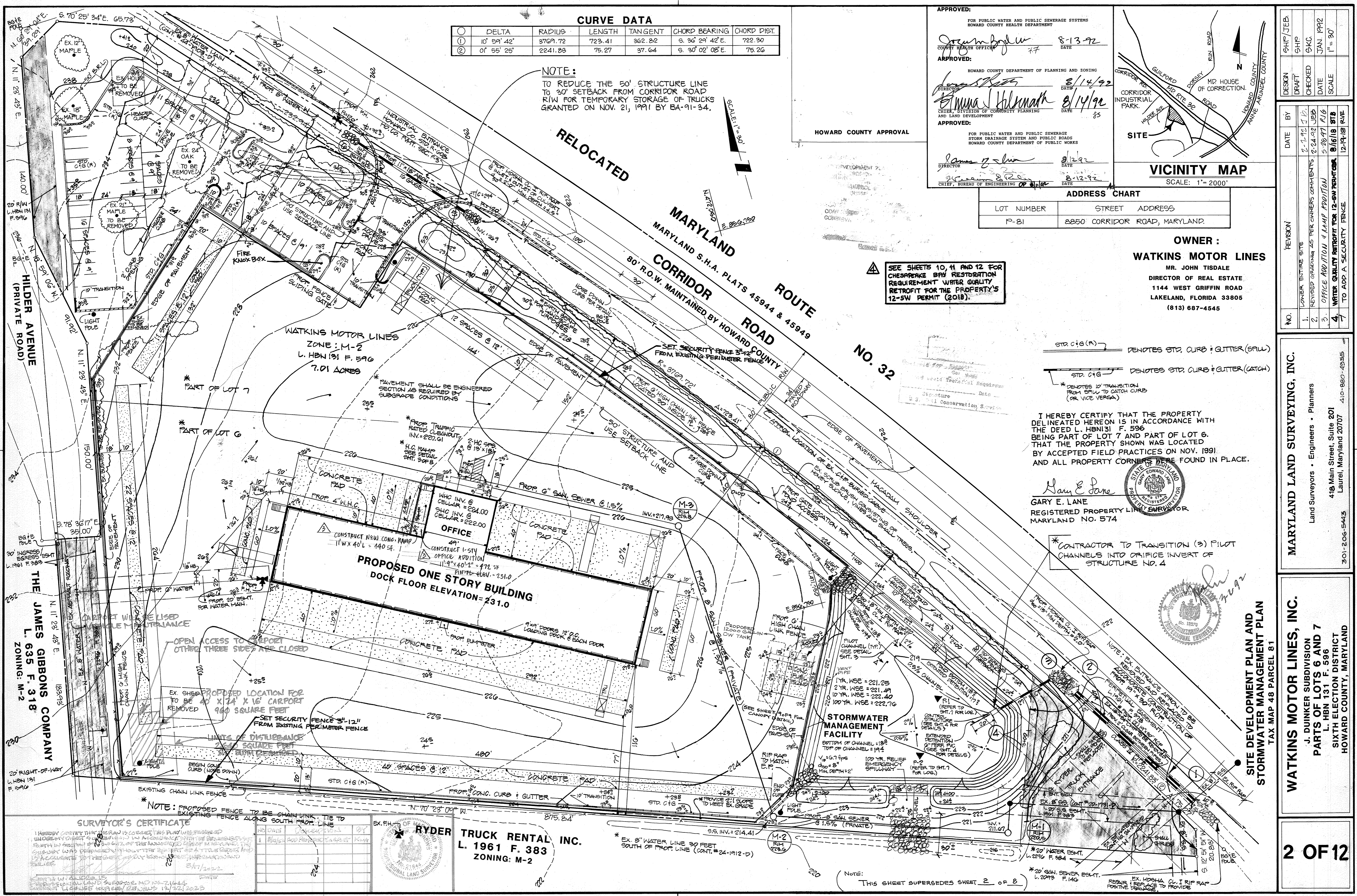
## COVER SHEET

**PHR&A**  
 Patton Harris Rust & Associates, P.C.  
 Engineers, Surveyors, Planners, Landscape Architects  
 7809 Grandish Place  
 Rockville, Maryland 20855  
 301-762-2220 Baltimore Metro-792-7244

Offices:  
 Fairfax, Va.  
 Bridgewater, Va.  
 Leesburg, Va.  
 Rockville, Md.  
 Virginia Beach, Va.  
 Chantilly, Va.  
 Winchester, Va.

SURVEY	PHR&A	DATE	JUNE 1991
DESIGN	MJK	DRAWN	RLP/BLP/CADD
CHKD.	IAC	SCALE	AS SHOWN
SHEET	1 OF 12	FILE NO.	2212-5-0





**CURVE DATA**

DELTA	RADIUS	LENGTH	TANGENT	CHORD BEARING	CHORD DIST.
10° 59' 42"	3769.72	723.41	362.82	S. 86° 29' 42" E.	722.30
0° 55' 25"	2241.83	75.27	37.64	S. 30° 02' 08" E.	75.26

**NOTE:**  
TO REDUCE THE 50' STRUCTURE LINE TO 30' SETBACK FROM CORRIDOR ROAD RIW FOR TEMPORARY STORAGE OF TRUCKS GRANTED ON NOV. 21, 1991 BY BA-91-34.

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

*[Signature]* 8-13-92  
COUNTY HEALTH OFFICER DATE

**APPROVED:**  
HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

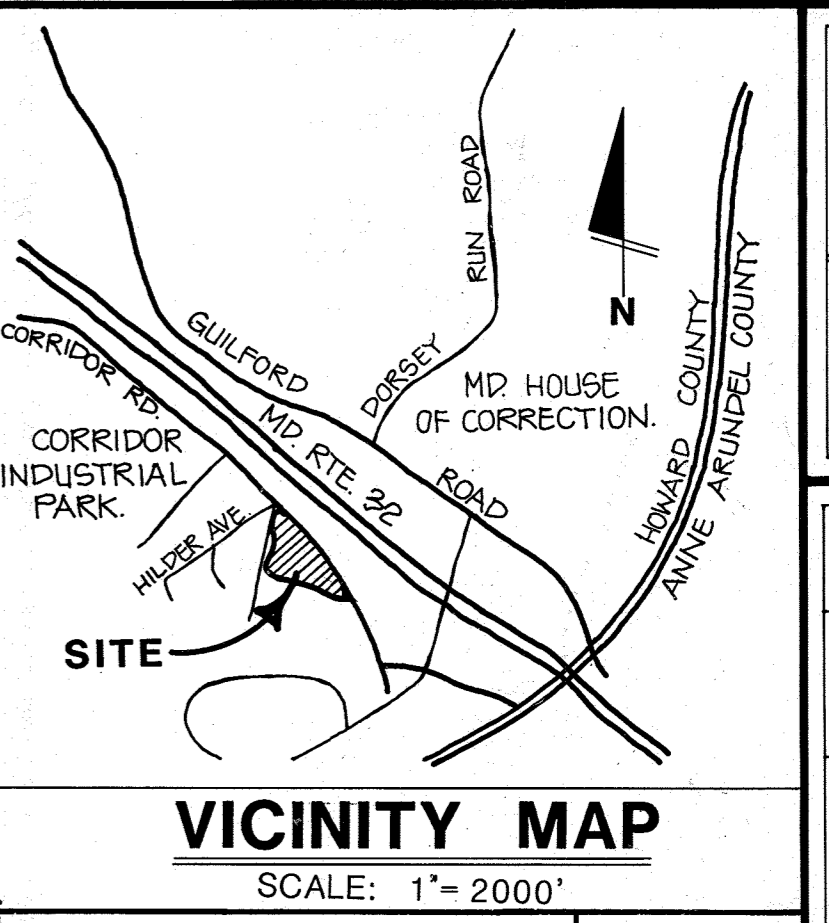
*[Signature]* 8/14/92  
DIRECTOR DATE

*[Signature]* 8/14/92  
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE

**APPROVED:**  
FOR PUBLIC WATER AND PUBLIC SEWERAGE  
STORM DRAINAGE SYSTEM AND PUBLIC ROADS  
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

*[Signature]* 8/12/92  
DIRECTOR DATE

*[Signature]* 8-12-92  
CHIEF, BUREAU OF ENGINEERING DATE



**ADDRESS CHART**

LOT NUMBER	STREET ADDRESS
P-81	8850 CORRIDOR ROAD, MARYLAND.

**OWNER:**  
**WATKINS MOTOR LINES**  
MR. JOHN TISDALE  
DIRECTOR OF REAL ESTATE  
1144 WEST GRIFFIN ROAD  
LAKELAND, FLORIDA 33805  
(813) 687-4545

**SEE SHEETS 10, 11 AND 12 FOR CHESAPEAKE BAY RESTORATION REQUIREMENT WATER QUALITY RETROFIT FOR THE PROPERTY'S 12-SW PERMIT (2018).**

STR. C+G (R) DENOTES STR. CURB + GUTTER (SPALL)  
STR. C+G DENOTES STR. CURB + GUTTER (CATCH)  
\* DENOTES 10' TRANSITION FROM SPALL TO CATCH CURB (OR VICE VERSA)

I HEREBY CERTIFY THAT THE PROPERTY DELINEATED HEREON IS IN ACCORDANCE WITH THE DEED L. HEN 131 F. 596 BEING PART OF LOT 7 AND PART OF LOT 6. THAT THE PROPERTY SHOWN WAS LOCATED BY ACCEPTED FIELD PRACTICES ON NOV. 1991 AND ALL PROPERTY CORNERS WERE FOUND IN PLACE.

*[Signature]*  
GARY E. LANE  
REGISTERED PROPERTY LINES SURVEYOR  
MARYLAND NO. 574

\* CONTRACTOR TO TRANSITION (3) PILOT CHANNELS INTO OFFICE INVERT OF STRUCTURE NO. 4



**SITE DEVELOPMENT PLAN AND STORMWATER MANAGEMENT PLAN**  
TAX MAP 48 PARCEL 81

DESIGN	DATE	BY	REVISION
SHP/JEB	7-1-92	JEB	1
DRAFT	7-1-92	JEB	2
CHECKED	7-24-92	JEB	3
DATE	5-20-97	RJB	4
SCALE	8/16/18	RTB	5
	12-19-18	RJE	6

**MARYLAND LAND SURVEYING, INC.**  
Land Surveyors • Engineers • Planners  
418 Main Street, Suite 201  
Laurel, Maryland 20707  
410-680-4355  
301-206-5443

**WATKINS MOTOR LINES, INC.**  
J. DIUNKER SUBDIVISION  
PARTS OF LOTS 6 AND 7  
L. HEN 131 F. 596  
SIXTH ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

**2 OF 12**

**SURVEYOR'S CERTIFICATE**  
I HEREBY CERTIFY THAT THE PLAN IS CORRECT AND THAT THE PROPERTY SHOWN IS IN ACCORDANCE WITH THE DEED L. HEN 131 F. 596 BEING PART OF LOT 7 AND PART OF LOT 6. THAT THE PROPERTY SHOWN WAS LOCATED BY ACCEPTED FIELD PRACTICES ON NOV. 1991 AND ALL PROPERTY CORNERS WERE FOUND IN PLACE.

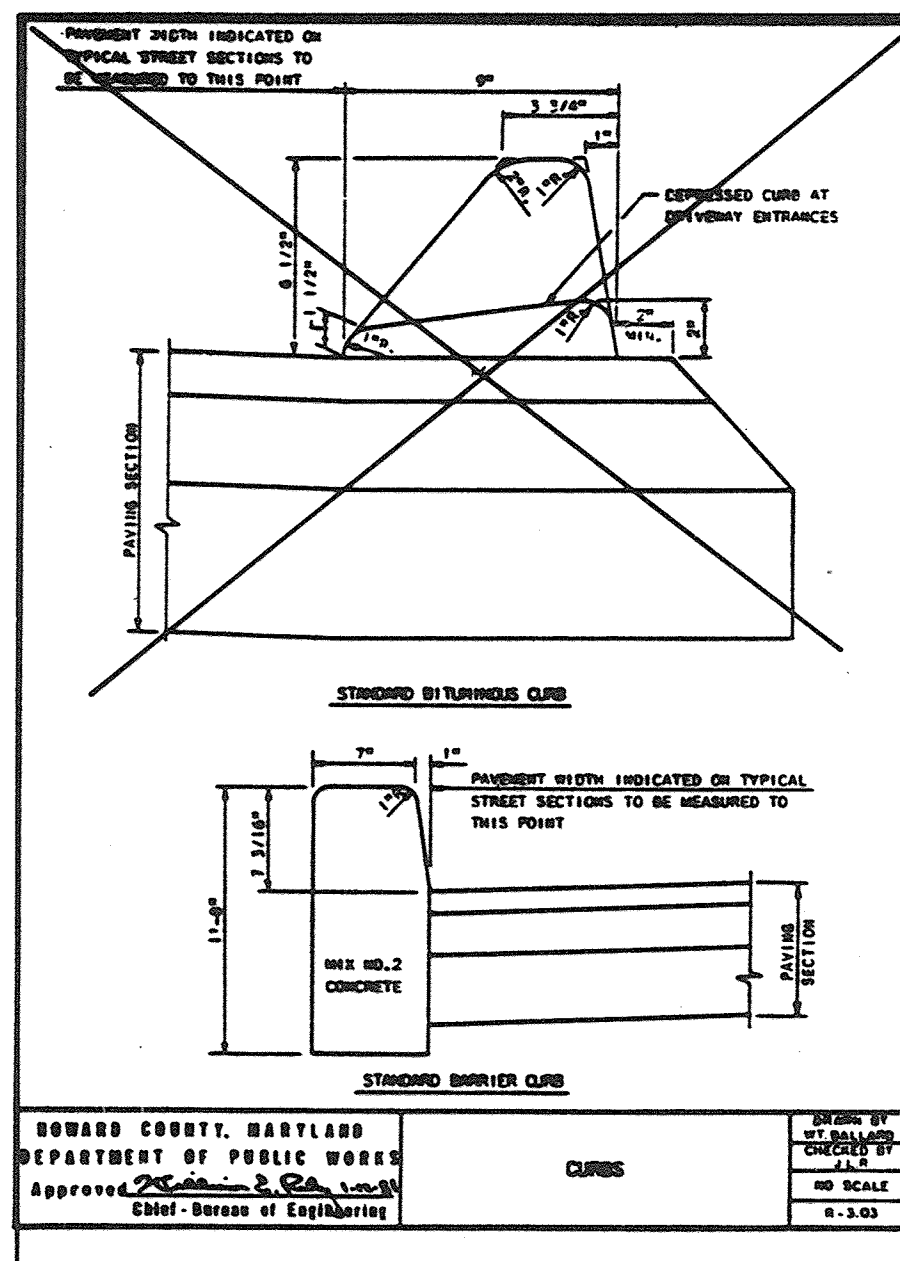
**RYDER TRUCK RENTAL INC.**  
L. 1961 F. 383  
ZONING: M-2

\* EX. 8" WATER LINE 30 FEET SOUTH OF PROP. LINE (CONT. # 24-1912-D)

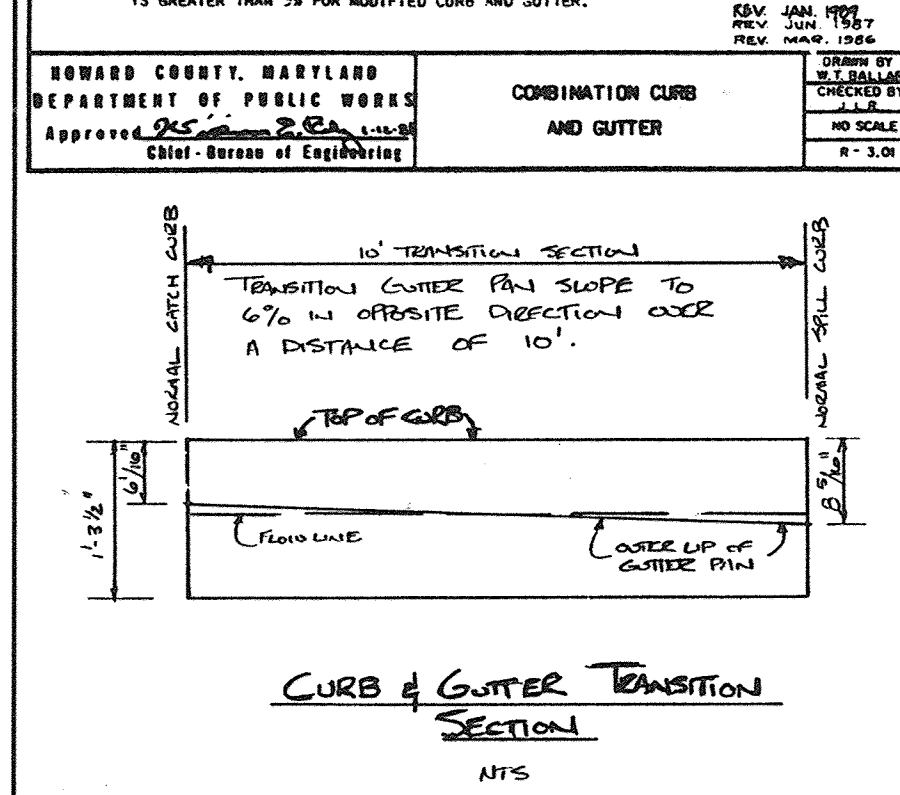
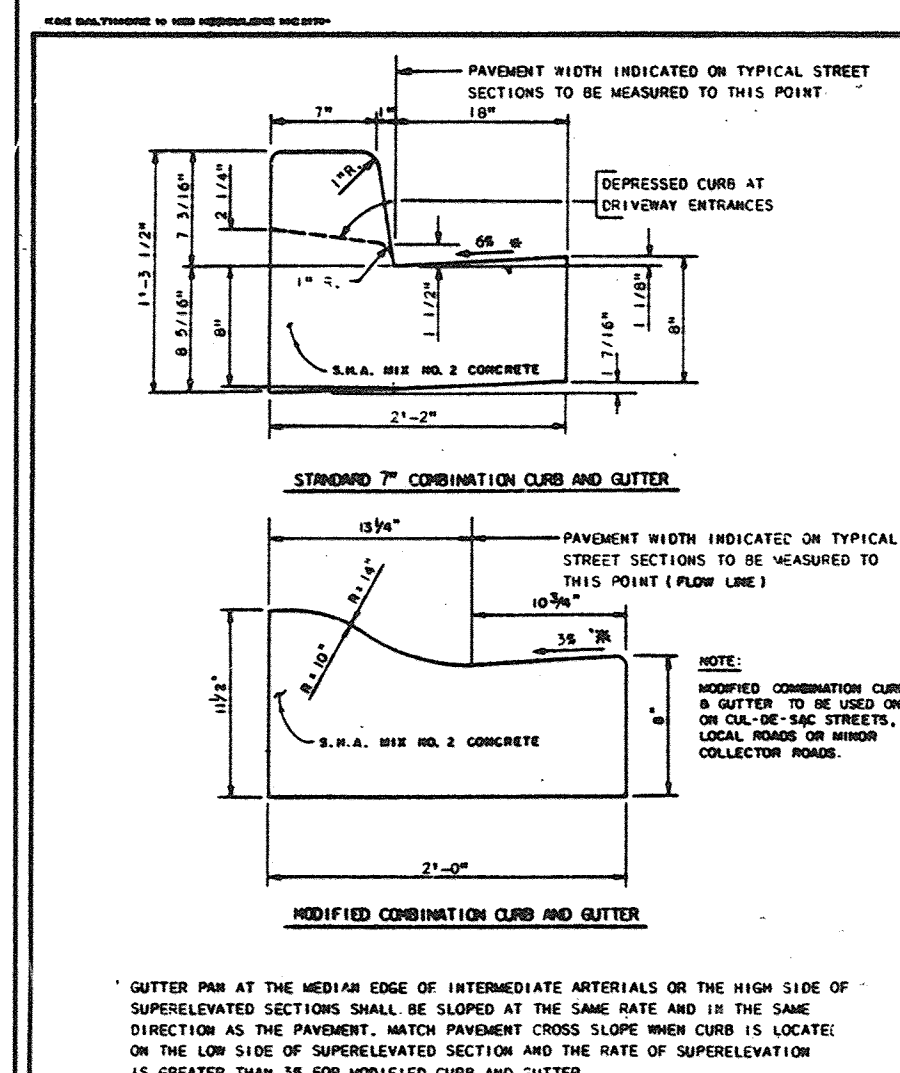
**NOTE:**  
THIS SHEET SUPERSEDES SHEET 2 OF 8

SDP-91-125





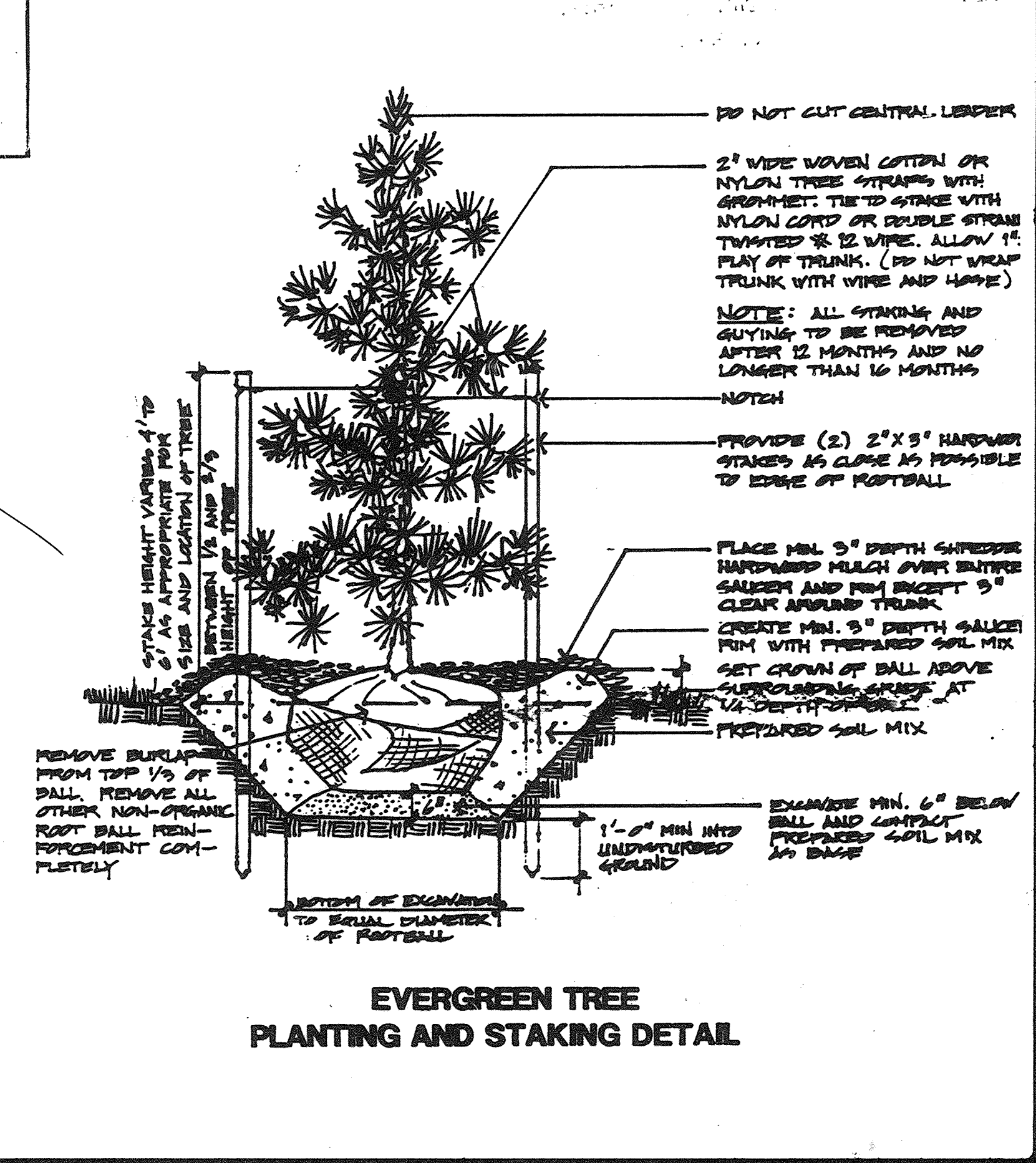
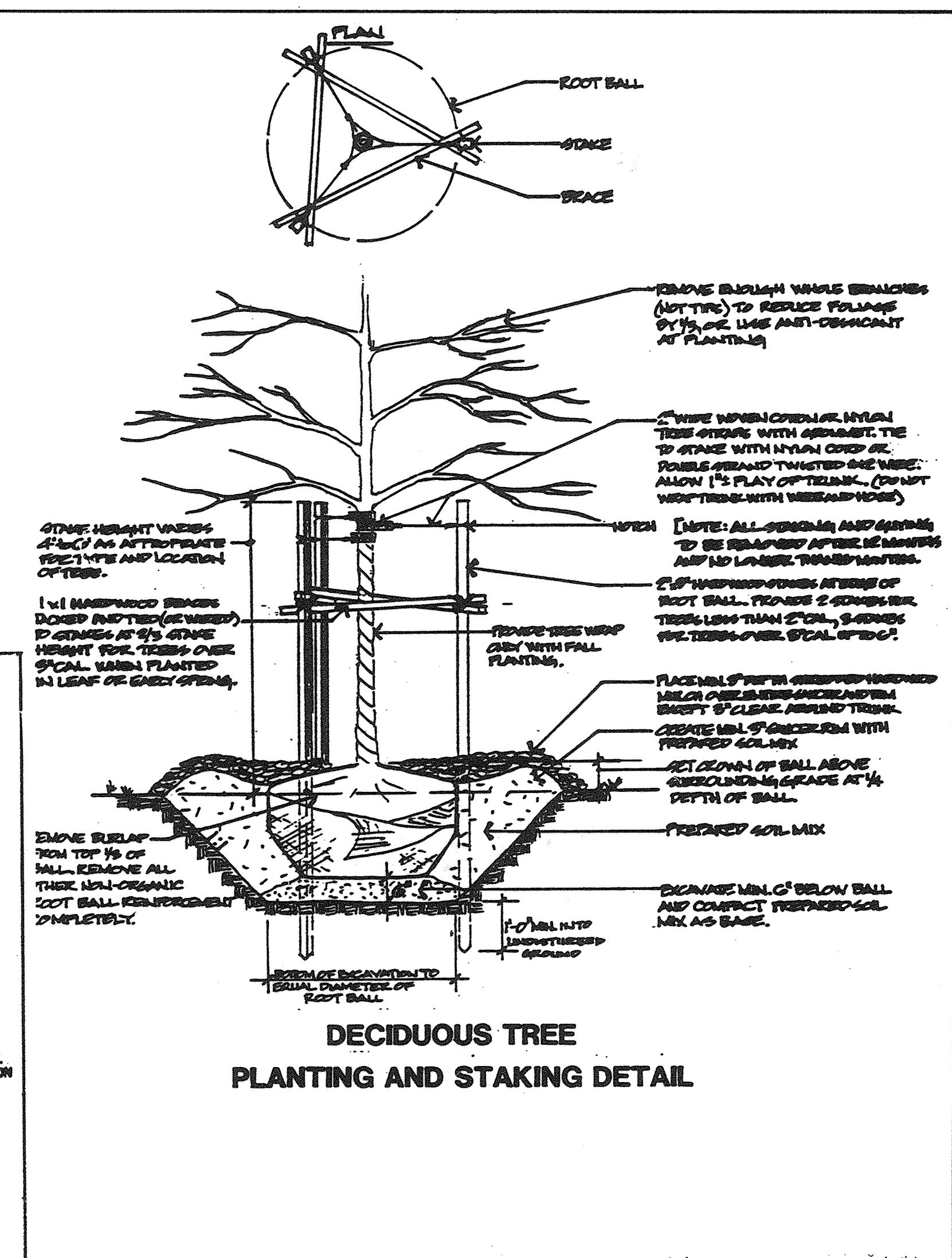
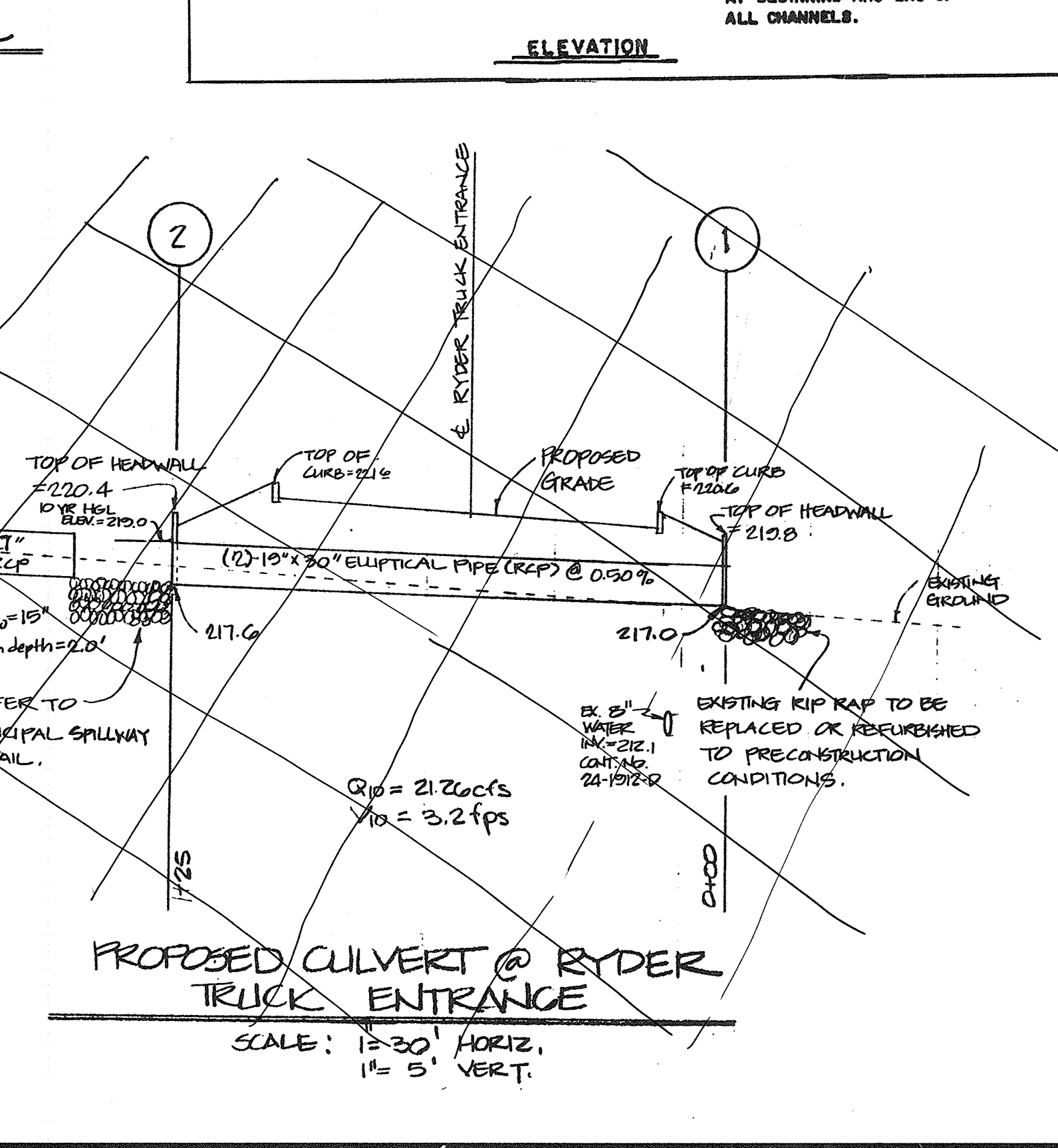
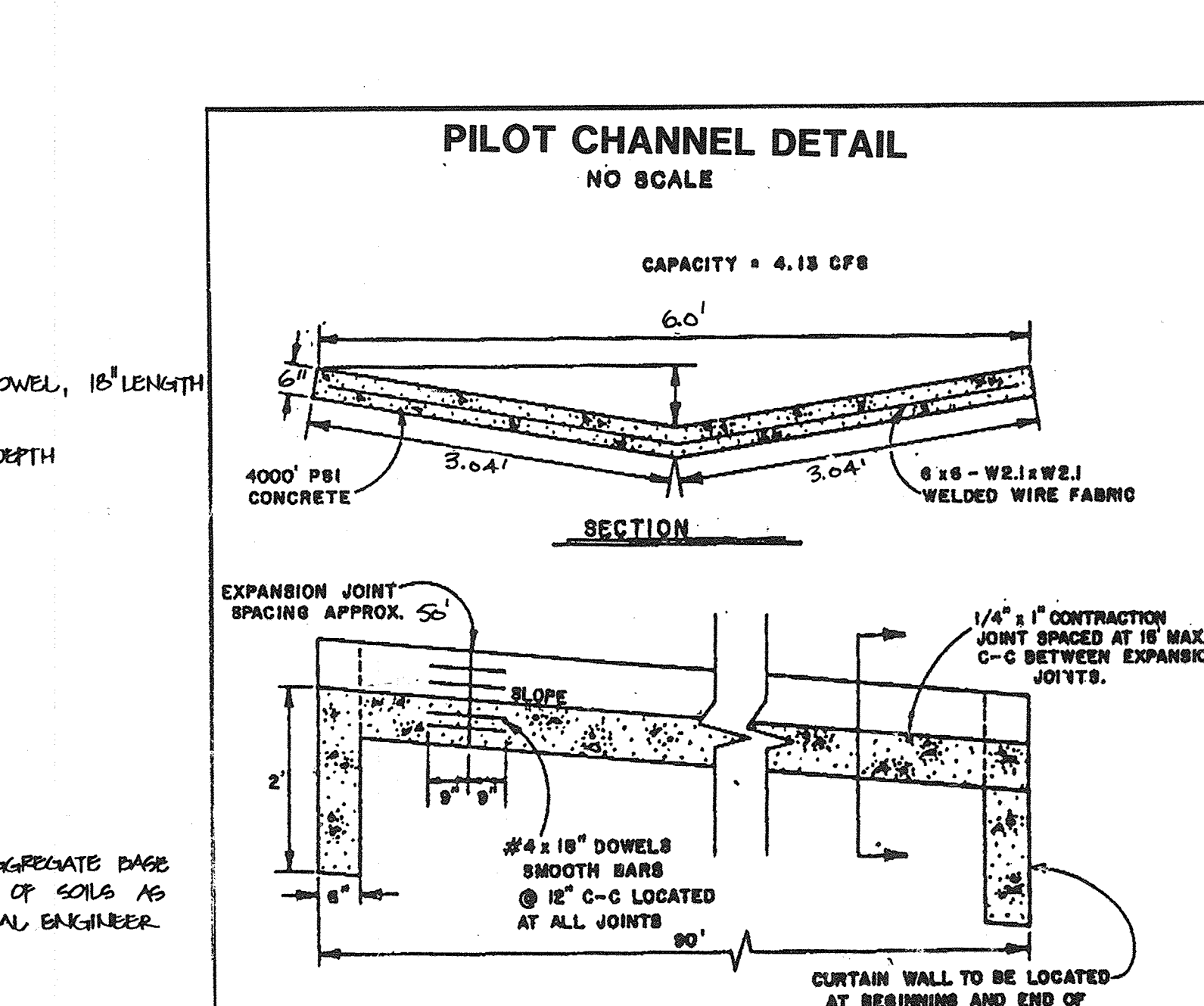
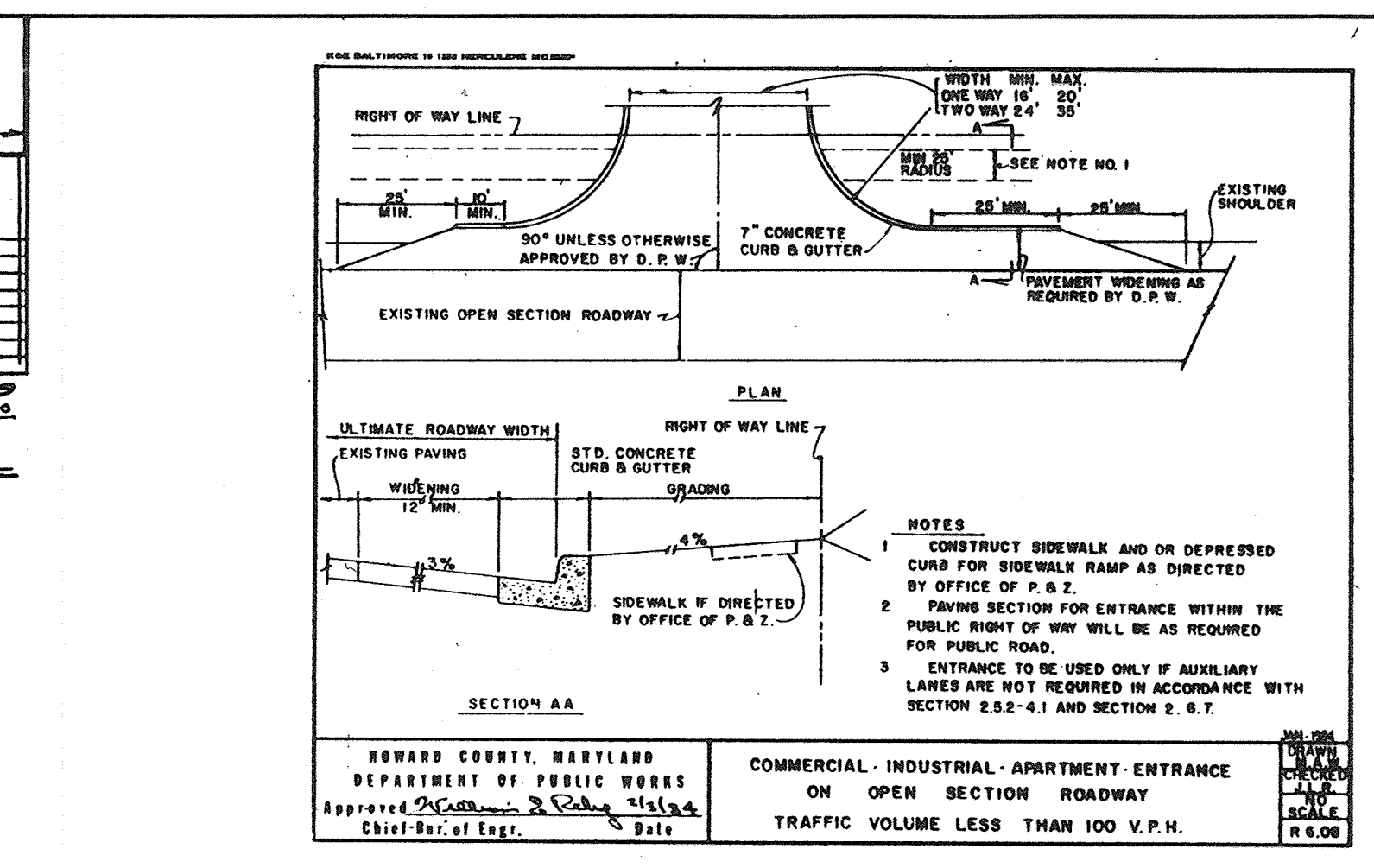
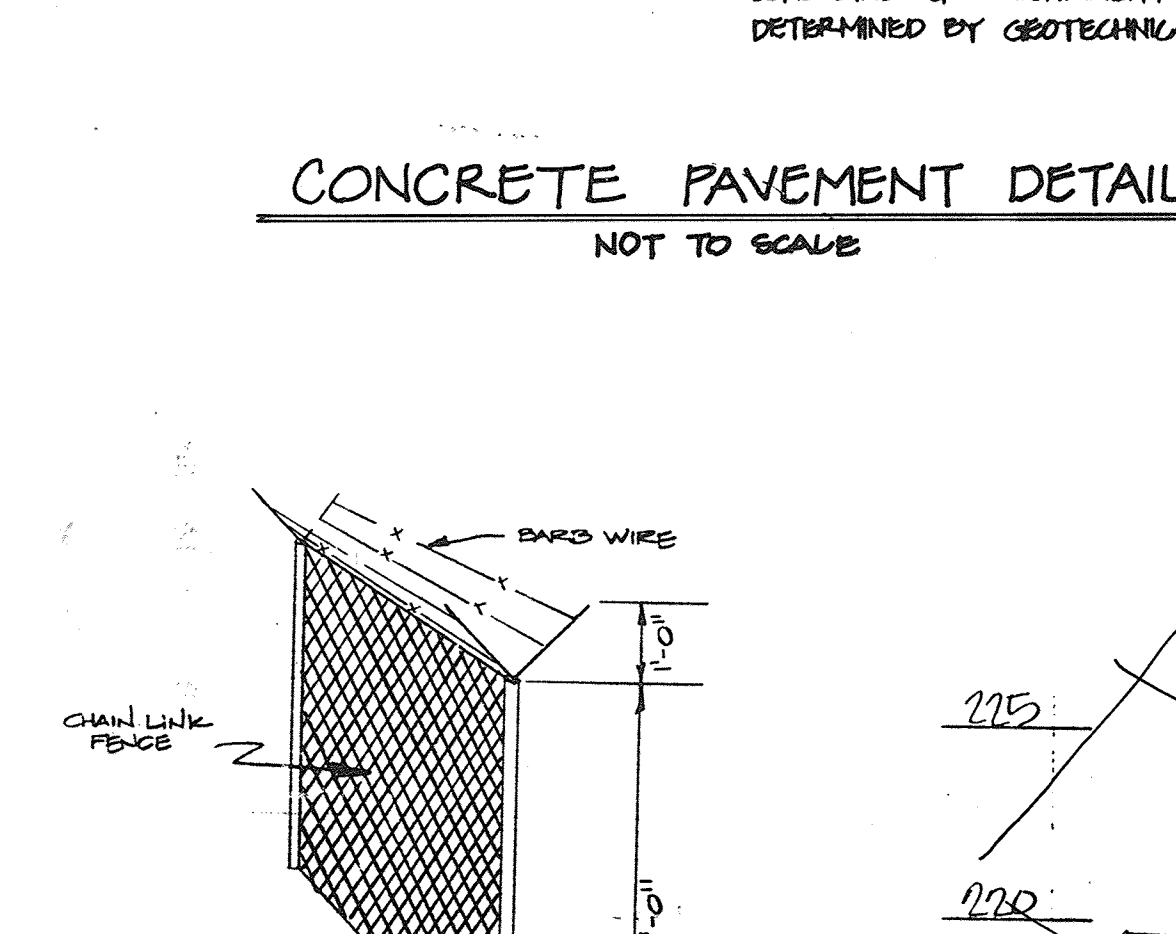
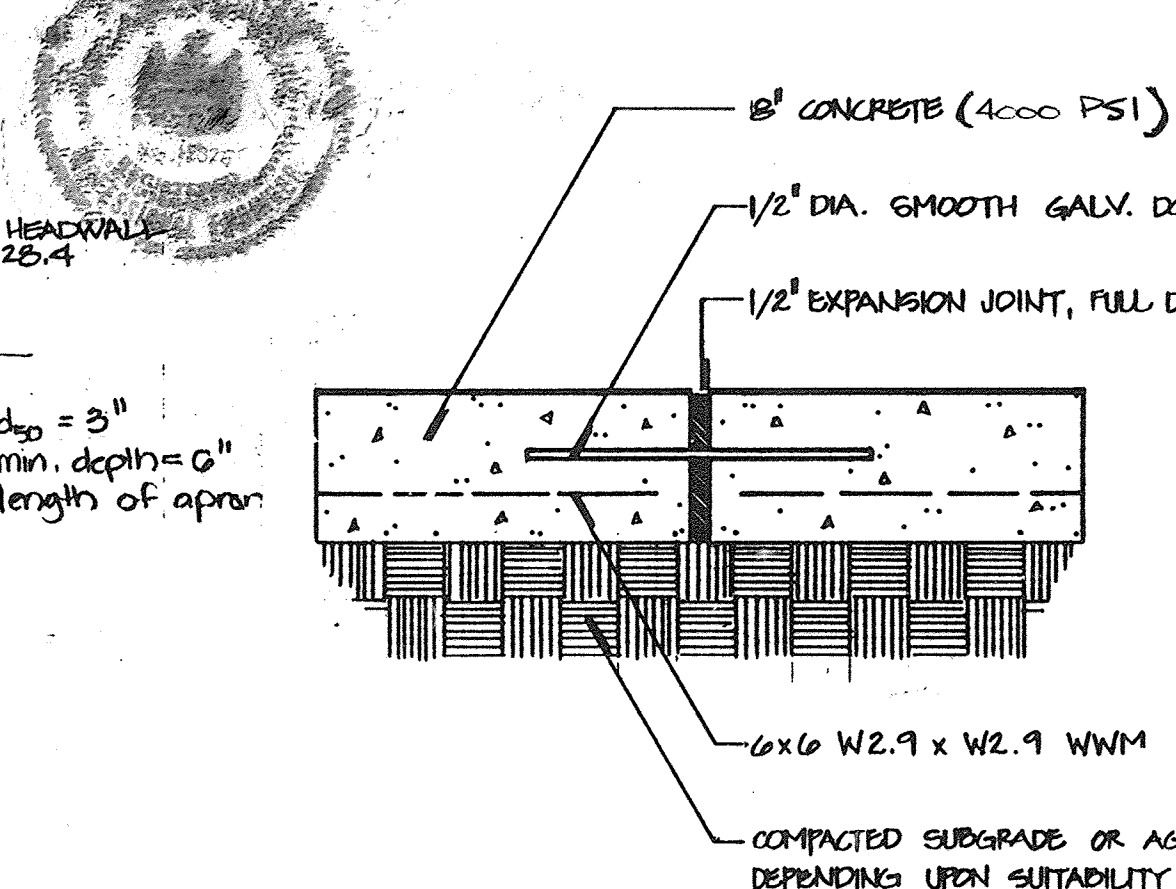
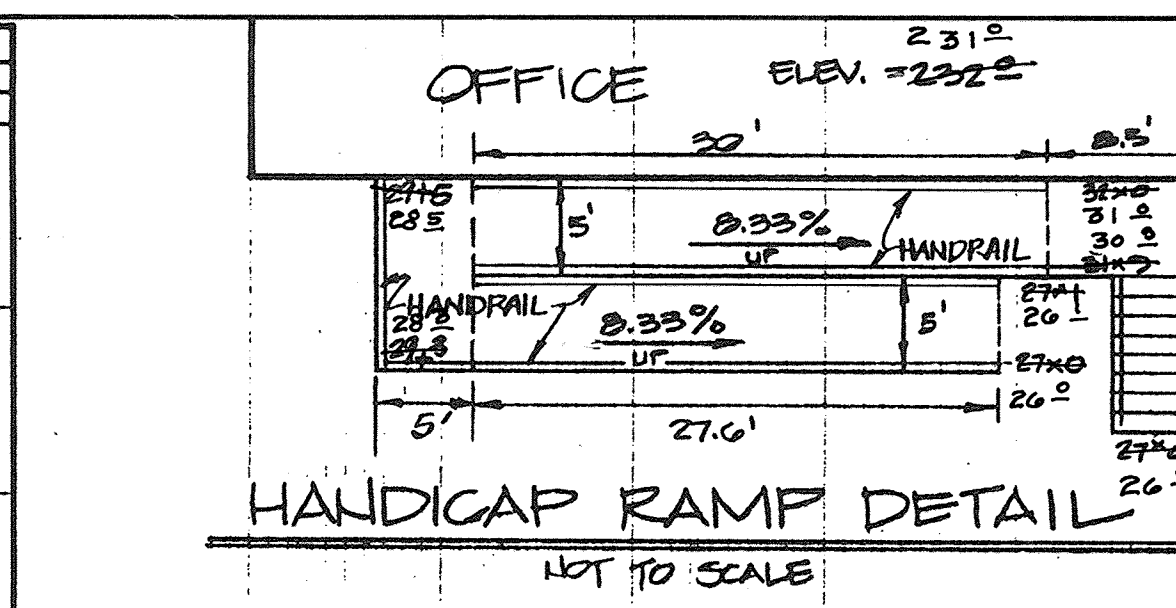
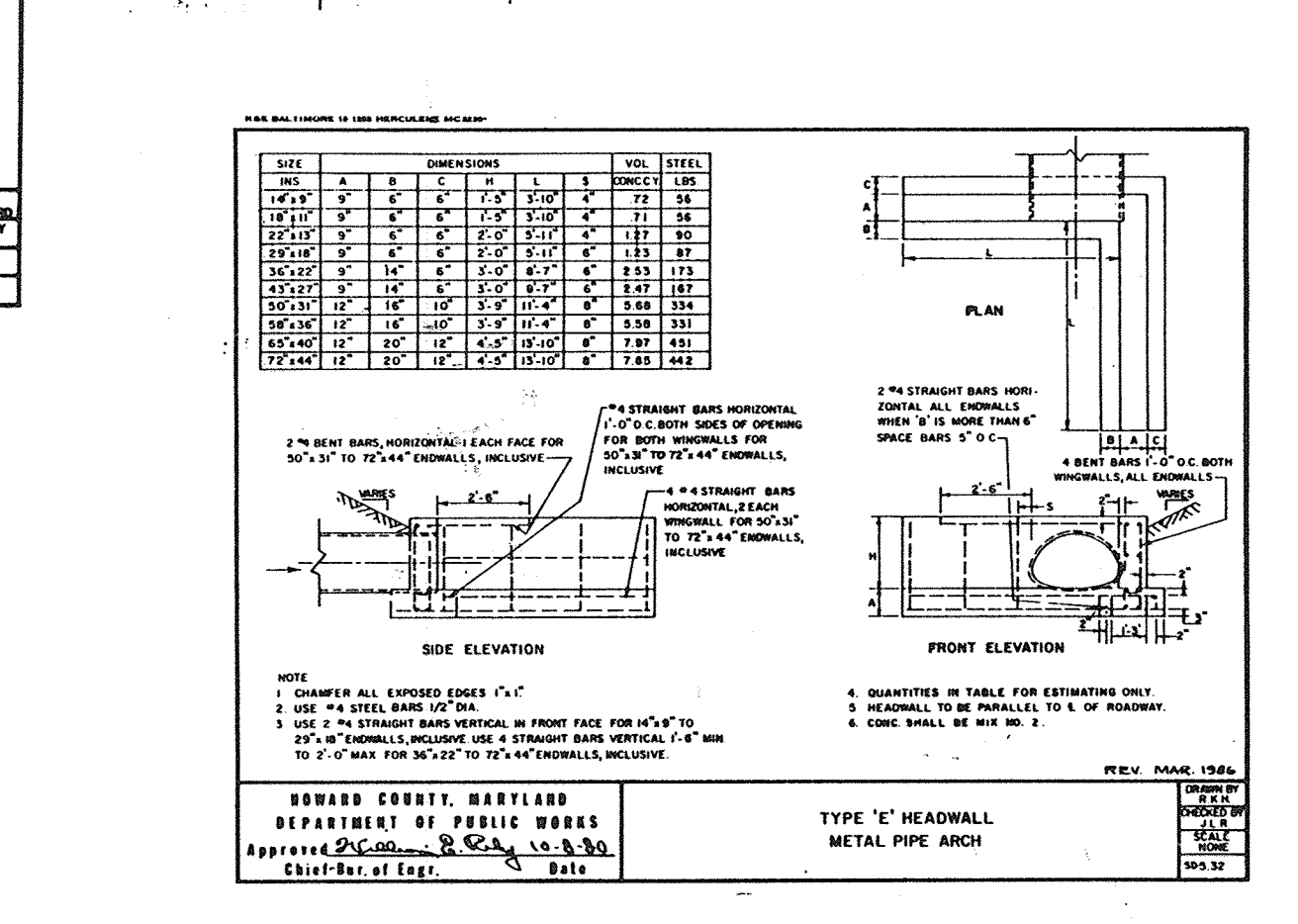
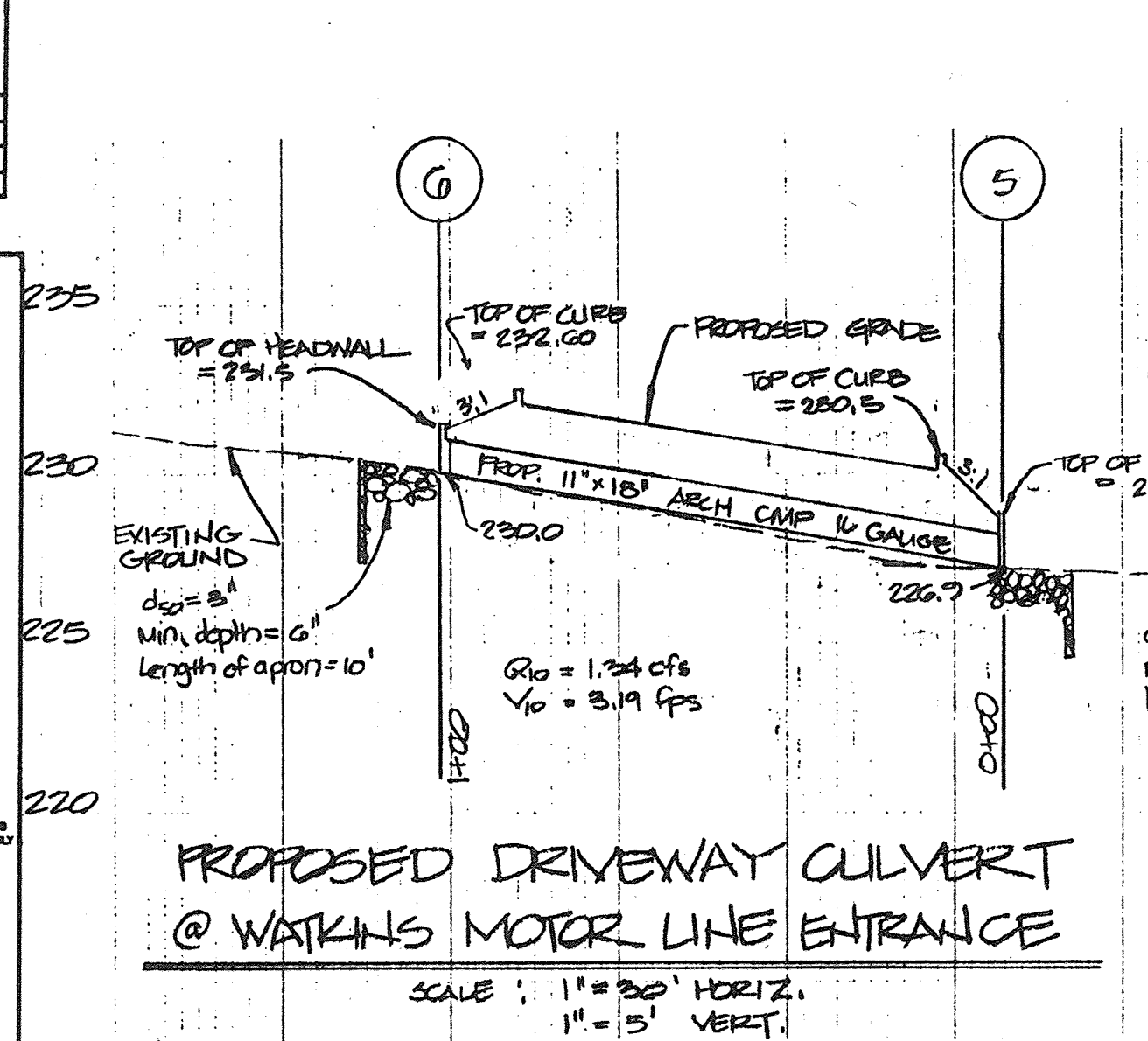
SECTION NUMBER	ROAD AND STREET CLASSIFICATION	PAVEMENT MATERIALS	
		FILL DEPTH BIT. CONC. ALTERNATE	CIRCULAR BASE ALTERNATES
P-1	PARKING DRIVE APARTMENTS AND COMMERCIAL-INDUSTRIAL ZONES WITH NO HEAVY TRUCKS	1" BIT. CONC. SURFACE 4" BIT. CONC. BASE	1" FIT. CONC. SURFACE 4" GRADED AGGREGATE (BASE 10A)
P-2	RESIDENTIAL ZONES LOCAL, COL-DC-SAC STREETS, ALLEYS AND PRIVATE ROADS SERVING RESIDENTIAL TRAVELERS AND COMMERCIAL-INDUSTRIAL ZONES (MIN TO MAX 100 TO 1000 HEAVY TRUCKS PER DAY)	1 1/2" BIT. CONC. SURFACE 4" BIT. CONC. BASE	1 1/2" FIT. CONC. SURFACE 4" GRADED AGGREGATE (BASE 10A)
P-3	RESIDENTIAL ZONES LOCAL, COL-DC-SAC STREETS, ALLEYS AND PRIVATE ROADS SERVING RESIDENTIAL TRAVELERS AND COMMERCIAL-INDUSTRIAL ZONES (MIN TO MAX 100 TO 1000 HEAVY TRUCKS PER DAY)	1 1/2" BIT. CONC. SURFACE 4" BIT. CONC. BASE	1 1/2" FIT. CONC. SURFACE 4" GRADED AGGREGATE (BASE 10A)
P-4	COMMERCIAL-INDUSTRIAL ZONES HIGHWAY COLLECTOR	1 1/2" BIT. CONC. SURFACE 3 1/2" FIT. CONC. BASE 5" FIT. CONC. BASE	1 1/2" FIT. CONC. SURFACE 3 1/2" FIT. CONC. BASE 5" GRADED AGGREGATE (BASE 10A)



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

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

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



No.	REVISIONS	DATE	CHKD.
1	SUBMITTED TO HO CO FOR REVIEW	6-20-91	
2	REVISED PER P&Z, DPW & H&SD COMMENTS	7-18-91	JAC
3	ISSUED TO HO CO FOR REVIEW	7-19-91	JAC
4	REVISED TO ADD PROFILE @ WATKINS ENTRANCE, HEADWALL DETAIL	7-30-91	
5	REVISED PER COMMENTS FROM DPZ, DPW & H&SD	11-15-91	
6	SITE TO BE LOWERED 1' FOOT	8-22-92	GEL

PROFESSIONAL SEAL:  
IRENE ANNE CARRATO  
REGISTERED PROFESSIONAL ENGINEER

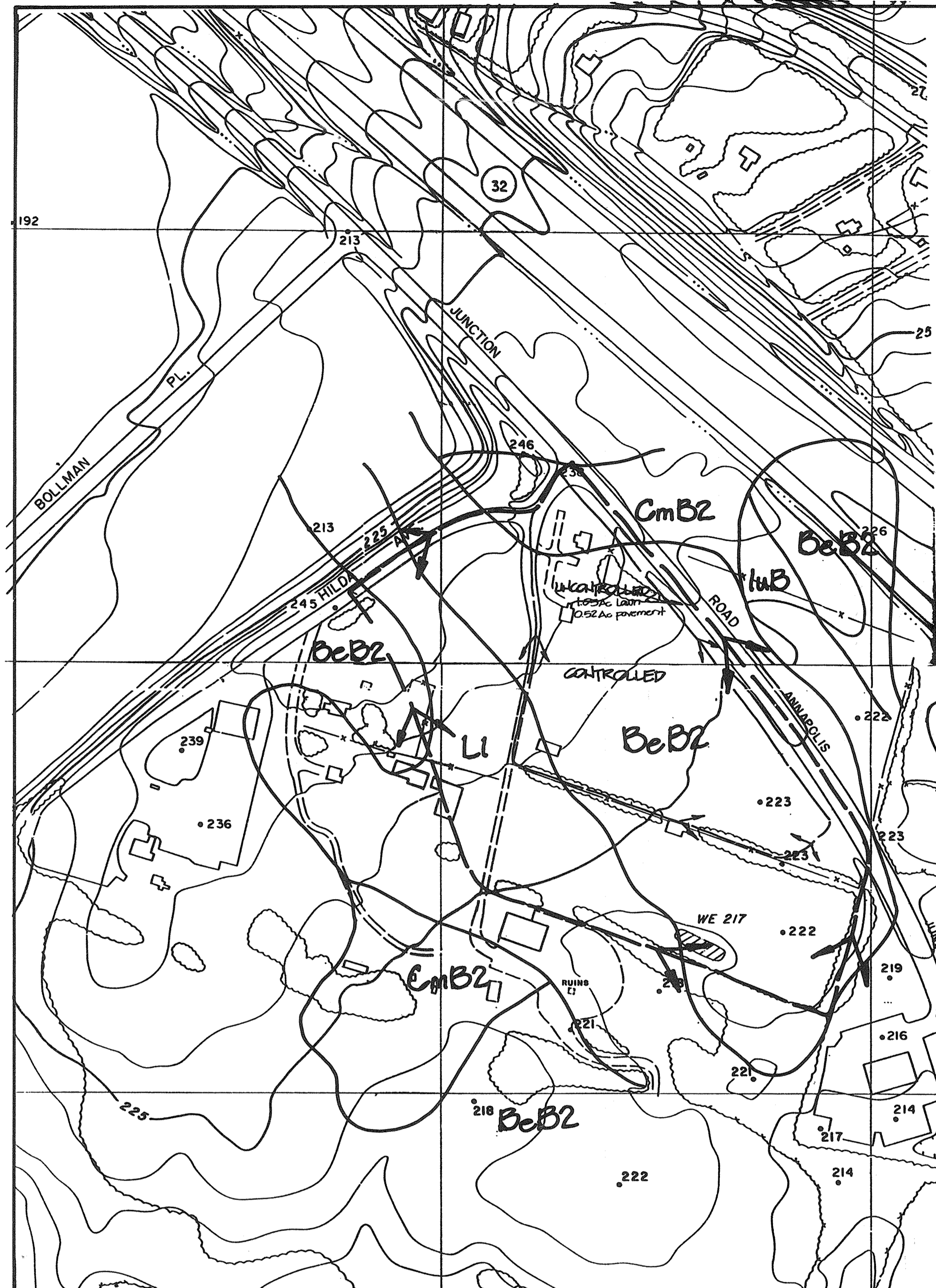
PROJECT: TAX MAP 48 PARCEL 81  
**WATKINS MOTOR LINES, INC.**  
J. DUINKER SUBDIVISION  
PARTS OF LOTS 6 AND 7  
L. HBN 131 F. 596  
SIXTH ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

TITLE: **DETAIL SHEET**

**PHR&A**  
Palton Harris Rust & Associates, P.C.  
Engineers, Surveyors, Planners, Landscape Architects  
7809 Standish Plaza  
Rockville, Maryland 20855  
301-762-2220 Baltimore Metro-792-7244

SURVEY	PHR&A	DATE	JUNE, 1991
DESIGN	MJK	DRAWN	R/LP/BLP/CADD
CHKD.	IAC	SCALE	AS SHOWN
SHEET	3 OF 12	FILE NO.	2212-5-0





**DRAINAGE AREA MAP / SOILS MAP**

SCALE: 1" = 200'

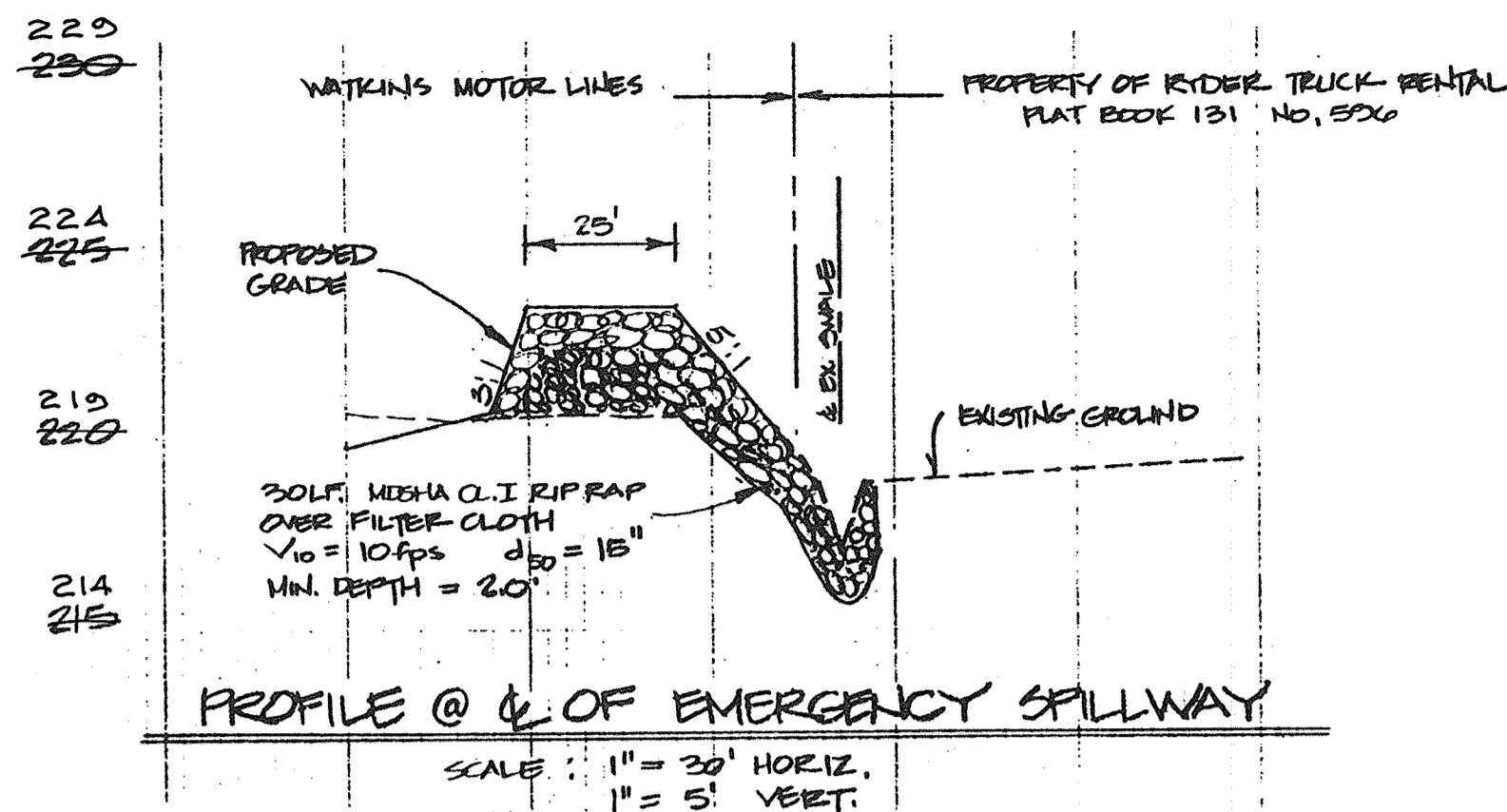
SOURCE: HOWARD COUNTY TOPOGRAPHIC SURVEY  
HOWARD COUNTY SOILS SURVEY

**SOILS**

L1 LEONARDTOWN SILT LOAM

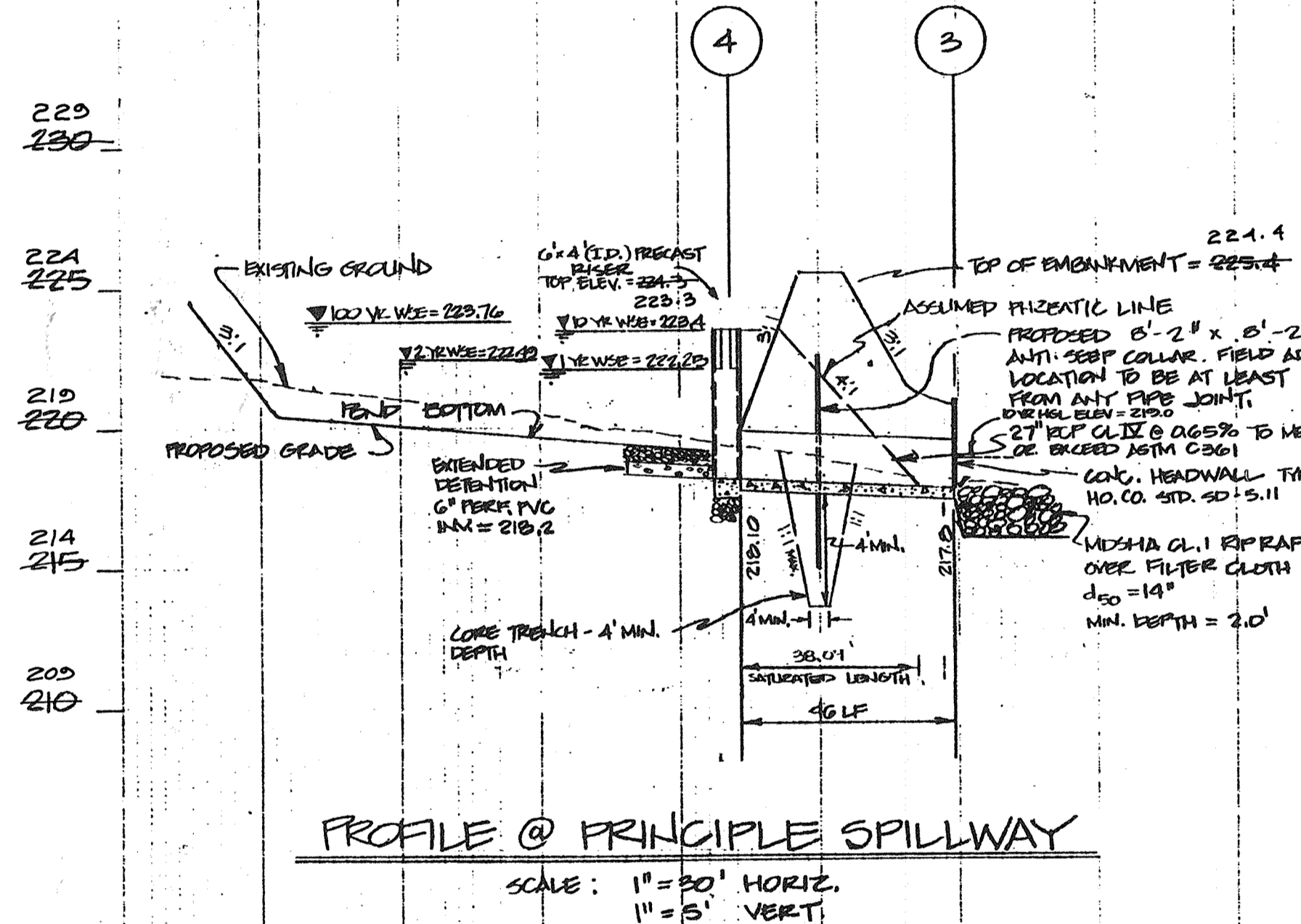
CmB2 CHILLUM SILT LOAM, 1-5% SLOPES, MODERATELY ERODED

BeB2 BELTSVILLE SILT LOAM, 1-5% SLOPES, MODERATELY ERODED



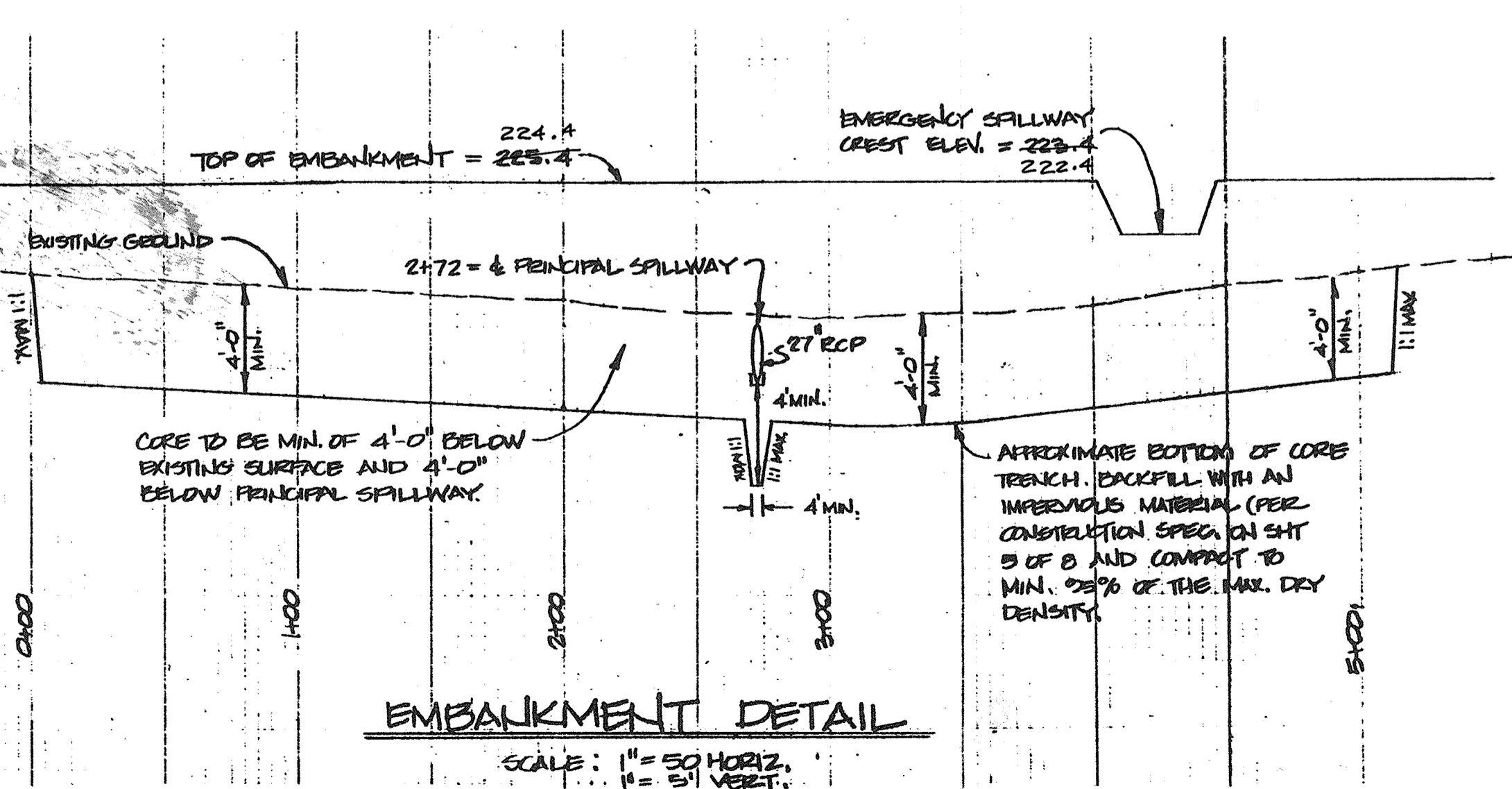
PROFILE @ 1/4 OF EMERGENCY SPILLWAY

SCALE: 1" = 20' HORIZ.  
1" = 5' VERT.



PROFILE @ PRINCIPLE SPILLWAY

SCALE: 1" = 20' HORIZ.  
1" = 5' VERT.

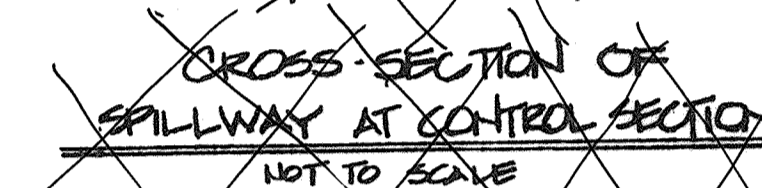


EMBANKMENT DETAIL

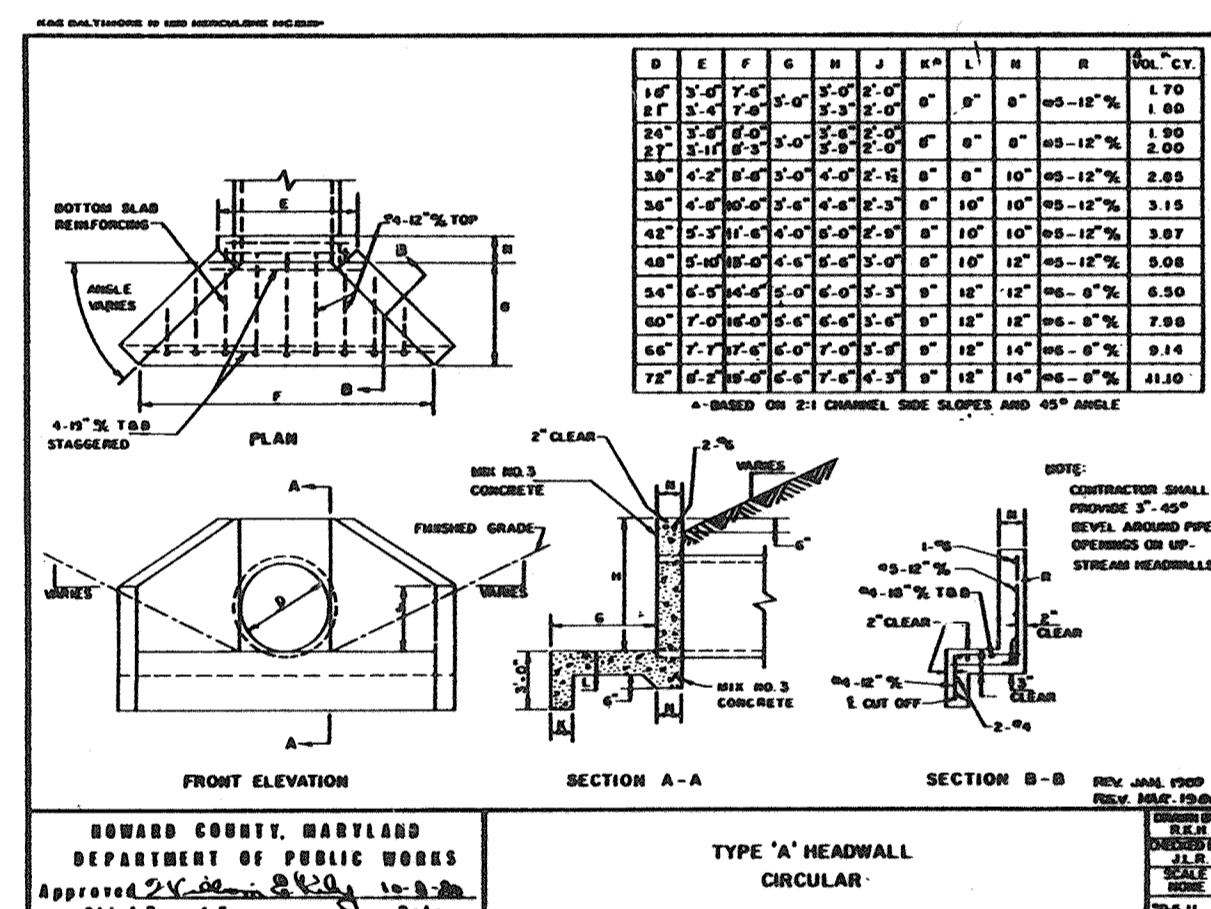
SCALE: 1" = 50' HORIZ.  
1" = 5' VERT.

PIPE SCHEDULE					
SIZE	TYPE	CLASS	LENGTH	PRIVATE OR PUBLIC	
12" x 20"	ELLIPITICAL R.C.P.	IV	250'	PUBLIC	
11" x 18"	RECT. G.M.P.	16 GAUGE	100'	PUBLIC	
21"	RCP	ASTM C301	40'	PRIVATE	
6"	PRECAST FVG	SCHED 40	0'	PRIVATE	

STRUCTURE SCHEDULE					
STR. NO.	TYPE	PRECAST ALT.	TOP ELEVATION UPPER	LOWER	REMARKS
4	CONTROL STRUCTURE (PRECAST)		224.4	224.4	SEE DETAIL 217 S&G
3	HEADWALL		221.0	221.0	TYPE A HO. CO. STD. 50' x 11'
*2	HEADWALL		220.4	220.4	TYPE O HO. CO. STD. 50' x 11'
*1	HEADWALL		219.8	219.8	TYPE O HO. CO. STD. 50' x 11'
6	HEADWALL		221.5	221.5	TYPE B HO. CO. STD. 50' x 11'
2	HEADWALL		229.1	229.1	TYPE E HO. CO. STD. 50' x 11'



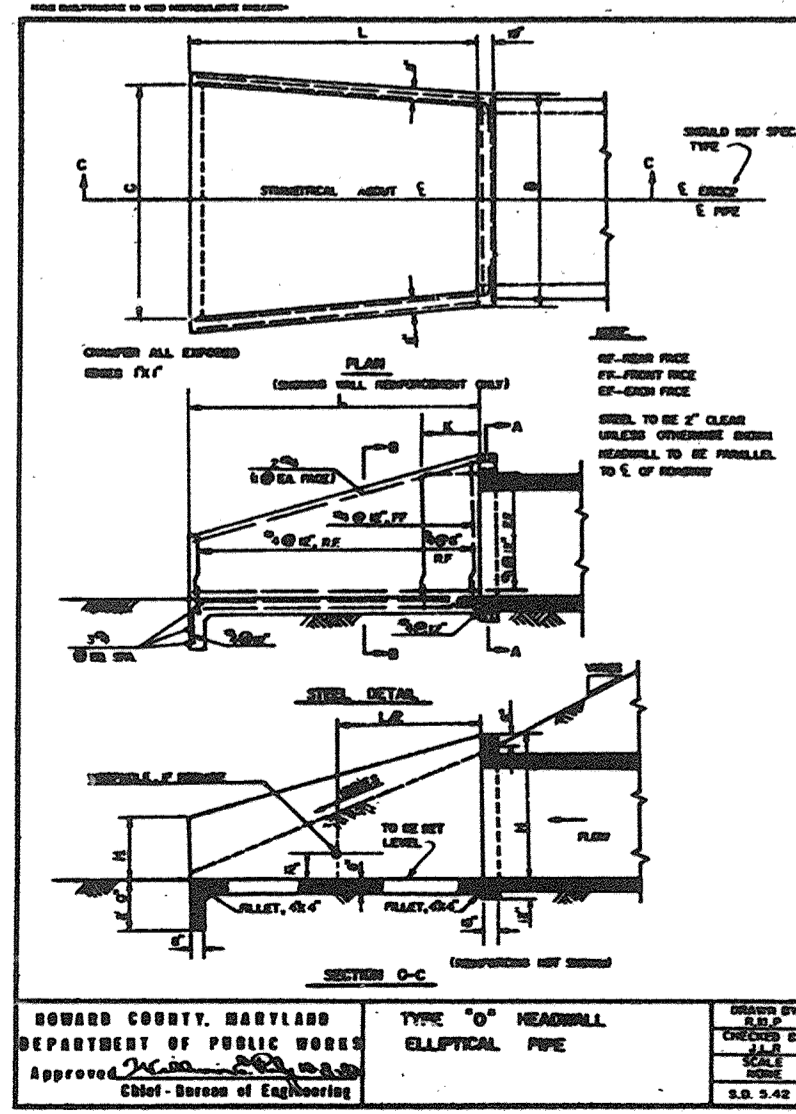
CROSS SECTION OF SPILLWAY AT CONTROL SECTION



HOWARD COUNTY, MARYLAND DEPARTMENT OF PUBLIC WORKS

Approved: [Signature] Date: [Blank]

Chief-Dir. of Eng.



HOWARD COUNTY, MARYLAND DEPARTMENT OF PUBLIC WORKS

Approved: [Signature] Date: [Blank]

Chief-Dir. of Eng.

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

County Health Officer: [Signature] Date: 12/23/91

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

Director: [Signature] Date: 12/23/91

Chief, Division of Community Planning and Land Development: [Signature] Date: 12/23/91

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

Director: [Signature] Date: 12/20/91

Chief, Bureau of Engineering: [Signature] Date: 12-17-91

SEDIMENT CONTROL & POND CONSTRUCTION

By the Developer:

"I/We certify that all development and/or construction will be done according to these plans, and that any responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of Natural Resources Approved Training Program for the control of Sediment and Erosion before beginning the project. I will provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion. I also authorize periodic on-site inspections by the Howard Soil Conservation District."

[Signature] Date: 8/20/91

By the Engineer:

"I certify that this plan for pond construction, erosion and sediment control represents a practical and workable plan based on my personal knowledge of the site conditions. This plan was prepared in accordance with the requirements of the Howard Soil Conservation District. I have notified the District that he must provide the Howard Soil Conservation District with an "as-built" plan of the pond within 30 days of completion."

[Signature] Date: 9-18-91

These plans have been reviewed for the Howard Soil Conservation District and meet the technical requirements for small pond construction, soil erosion and sediment control.

[Signature] Date: 11/21/91

These plans for small pond construction, soil erosion and sediment control meet the requirements of the Howard Soil Conservation District.

[Signature] Date: 11/21/91

OWNER:

WATKINS MOTOR LINES

MR. JOHN T. DALE  
DIRECTOR OF REAL ESTATE  
1144 WEST GRIFFIN ROAD  
LAKELAND, FLORIDA 33805  
(813) 687 4545

No.	REVISIONS	DATE	CHKD.
1	SUBMITTED TO HO. CO. FOR REVIEW	6-20-91	
2	REVISED PER DPW/HOCD COMMENTS	7-18-91	DK
3	ISSUED TO HO. CO. FOR REVIEW	7-27-91	DK
4	REVISED STRUCTURE SCHEDULE TO ADD TOP ELEV'S FOR STR'S S&G	7-30-91	
5	REVISED PER COMMENTS FROM DPW, DPZ & HOCD	11-15-91	
6	SITE TO BE LOWERED 1' FOOT	8-28-92	GEL



PROJECT: TAX MAP 48 PARCEL 81  
**WATKINS MOTOR LINES, INC.**  
J. DUINKER SUBDIVISION  
PARTS OF LOTS 6 AND 7  
L. HBN 131 F. 596  
SIXTH ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

TITLE:  
**STORMWATER MANAGEMENT PROFILES  
AND  
DRAINAGE AREA MAP**

**PHR&A**  
Patton Harris Rust & Associates, P.C.  
Engineers, Surveyors, Planners, Landscape Architects  
7609 Sandhill Place  
Rockville, Maryland 20855  
301-762-2220 Baltimore Metro-792-7244

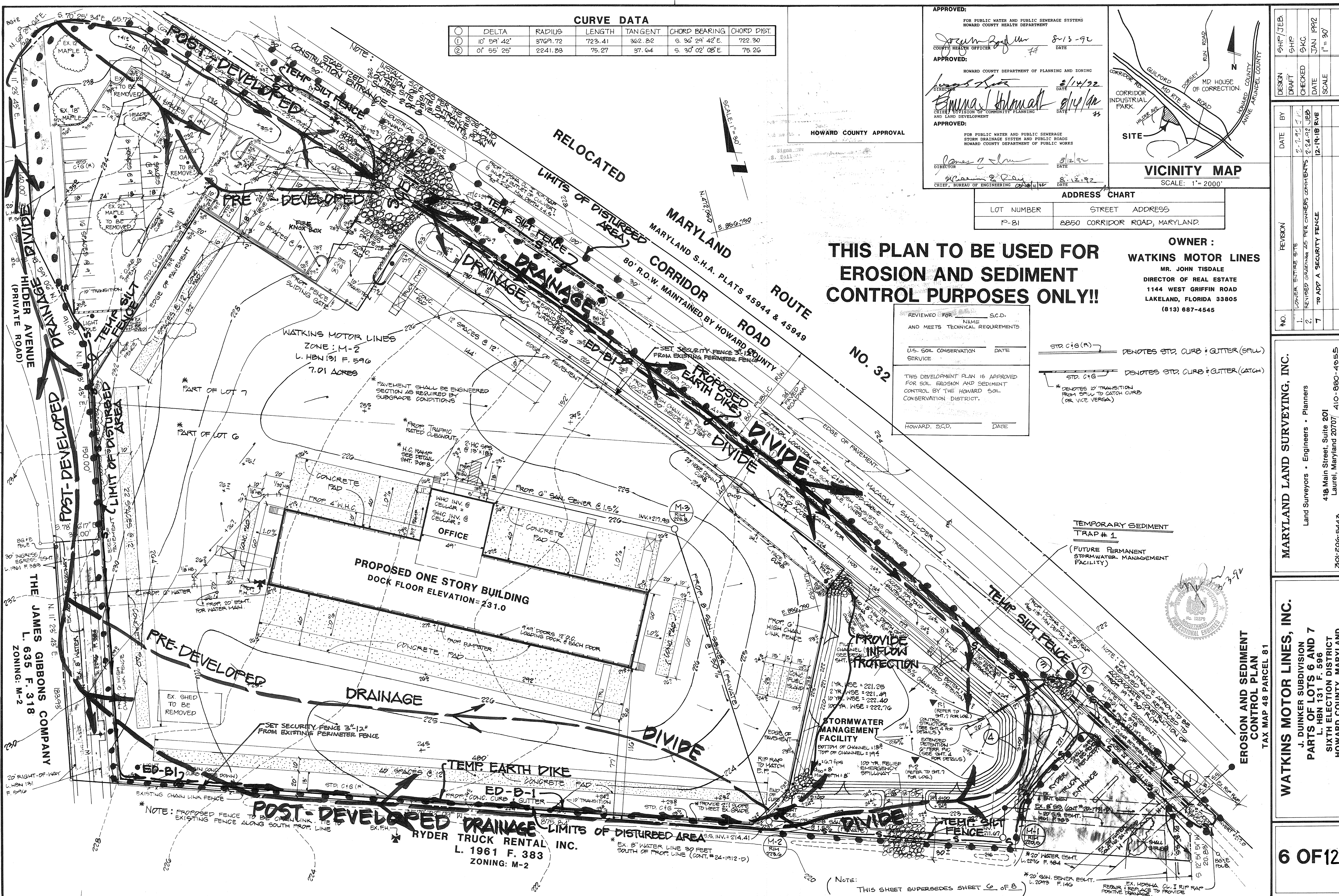
Offices:  
Fairfax, Va.  
Bridgewater, Va.  
Leesburg, Va.  
Rockville, Md.  
Virginia Beach, Va.  
Chantilly, Va.  
Winchester, Va.

SURVEY	DATE
	JUNE, 1991
DESIGN	DRAWN
CTC / RET	CTC
CHKD.	SCALE
IAC	AS SHOWN
SHEET	FILE NO.
4 OF 12	2212-5-0









**CURVE DATA**

DELTA	RADIUS	LENGTH	TANGENT	CHORD BEARING	CHORD DIST.
10° 59' 42"	3769.72	723.41	362.82	S. 96° 29' 42" E.	722.30
0° 55' 25"	2241.83	75.27	37.64	S. 30° 02' 08" E.	75.26

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

*James P. ...* 8-13-92  
COUNTY HEALTH OFFICER DATE

**APPROVED:**  
HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

*Emma ...* 8/14/92  
DIRECTOR DATE

**APPROVED:**  
FOR PUBLIC WATER AND PUBLIC SEWERAGE  
STORM DRAINAGE SYSTEM AND PUBLIC ROADS  
HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

*James ...* 8/14/92  
DIRECTOR DATE

*William ...* 8-12-92  
CHIEF, BUREAU OF ENGINEERING DATE

**VICINITY MAP**  
SCALE: 1" = 2000'

**ADDRESS CHART**

LOT NUMBER	STREET ADDRESS
P-81	8850 CORRIDOR ROAD, MARYLAND.

**THIS PLAN TO BE USED FOR  
EROSION AND SEDIMENT  
CONTROL PURPOSES ONLY!!**

**OWNER :**  
**WATKINS MOTOR LINES**  
MR. JOHN TISDALE  
DIRECTOR OF REAL ESTATE  
1144 WEST GRIFFIN ROAD  
LAKELAND, FLORIDA 33805  
(813) 687-4545

REVIEWED FOR \_\_\_\_\_ NAME \_\_\_\_\_ S.C.D.  
AND MEETS TECHNICAL REQUIREMENTS

U.S. SOIL CONSERVATION SERVICE DATE \_\_\_\_\_

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

HOWARD, S.C.D. DATE \_\_\_\_\_

STD. C16(A) DENOTES STD. CURB & GUTTER (SAW)

STD. C16 DENOTES STD. CURB & GUTTER (CATCH)

\* DENOTES 10' TRANSITION FROM SAW TO CATCH CURB (OR VICE VERSA)

**MARYLAND LAND SURVEYING, INC.**  
Land Surveyors • Engineers • Planners  
418 Main Street, Suite 201  
Laurel, Maryland 20707 410-880-4955  
301-206-5443

**WATKINS MOTOR LINES, INC.**  
J. DIUNKER SUBDIVISION  
PARTS OF LOTS 6 AND 7  
L. HBN 131 F. 596  
SIXTH ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

**6 OF 12**

**THE JAMES GIBBONS COMPANY**  
L. 635 F. 318  
ZONING: M-2

**RYDER TRUCK RENTAL INC.**  
L. 1961 F. 383  
ZONING: M-2



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. (192-2437)
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 perimeter sediment control structures, dikes, perimeter slopes and all slopes greater than 3:1, b) 14 days as to all other disturbed or graded areas on the project site.
4) All sediment traps/basins shown must be fenced and warning signs posted around their perimeter in accordance with Vol. 1, Chapter 12, of the HOWARD COUNTY DESIGN MANUAL, Storm Drainage.
5) All disturbed areas must be stabilized within the time period specified above in accordance with the 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 alone can only be done when recommended seeding dates do not allow for proper germination and establishment of grasses.
6) All sediment control structures are to remain in place and are to be maintained in operative condition until permission for their removal has been obtained from the Howard County Sediment Control Inspector.
7) Site Analysis:
Total Area of Site 7.01 Acres
Area Disturbed 0.96 Acres 7.30 AC.
Area to be roofed or paved 4.22 Acres
Area to be vegetatively stabilized 2.83 Acres 2.83 AC.
Total Cut 0.00 Cu. Yds. 3160 Cu. Yds.
Total Fill 0.00 Cu. Yds.
Office waste/borrow area location
QUANTITIES NOT TO BE USED FOR CONSTRUCTION.
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.

PERMANENT SEEDING NOTES

Apply to graded or cleared areas not subject to immediate further disturbance where a permanent long-lived vegetative cover is needed.
Seedbed Preparation: Loosen upper three inches of soil by raking, disking or other acceptable means before seeding. If not previously loosened.
Soil Amendments: In lieu of soil test recommendations, use one of the following schedules:
1) Preferred - Apply 2 tons per acre dolomitic limestone (92 lbs/1000 sq ft) and 600 lbs per acre 10-0-10 fertilizer (14 lbs/1000 sq ft) before seeding. Narrow 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. Narrow 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.

TEMPORARY SEEDING NOTES

Apply to graded or cleared areas likely to be redistributed where a short-term vegetative cover is needed.
Seedbed Preparation: Loosen upper three inches of soil by raking, disking or other acceptable means before seeding. If not previously loosened.
Soil Amendments: Apply 60 lbs per acre 10-10-10 fertilizer (14 lbs/1000 sq ft).
Seeding: For periods March 1 thru April 30 and August 15 thru November 15, seed with 24 bushel per acre of annual rye (3.2 lbs/1000 sq ft). For the period May 1 thru August 31, seed with 3 lbs per acre of weeping lovegrass (.07 lbs/1000 sq ft). For the period November 16 thru February 28, protect site by applying 2 tons per acre of well anchored straw mulch and seed as soon as possible in the spring, or use sod.
Mulching: Apply 1 1/2 to 2 tons per acre (70 to 90 lbs/1000 sq ft) of unrotted small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 218 gal per acre (5 gal/1000 sq ft) of emulsified asphalt on flat areas. On slopes 8 ft or higher, use 348 gal per acre (8 gal/1000 sq ft) for anchoring.
Refer to the 1983 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL for rate and methods not covered.

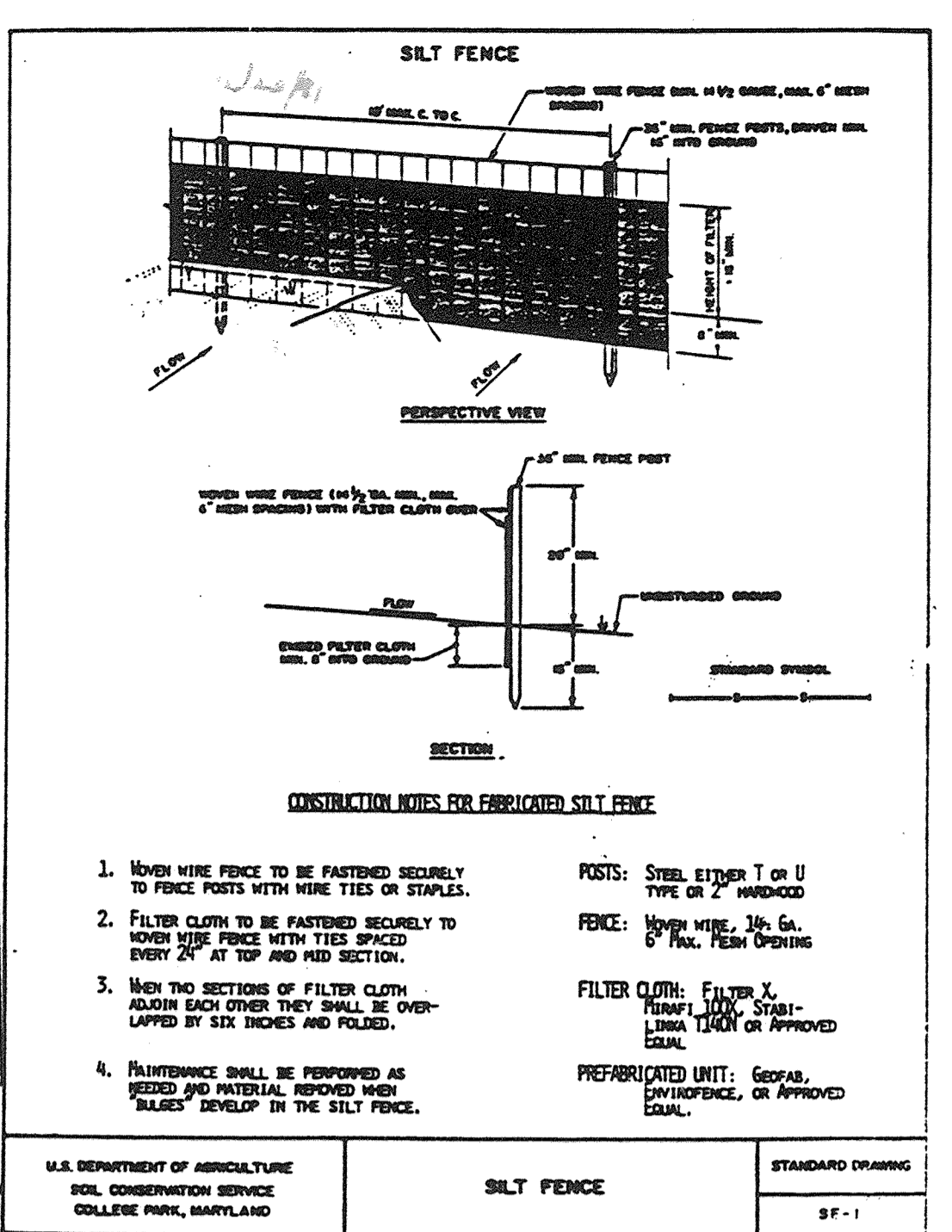
Table with columns: DEPTH (ft.), GROUP, VISUAL DESCRIPTION, REMARKS. Includes data for 15 ft depth with descriptions like '12" Topsoil (06)', 'Medium dense, moist, light brown clayey P-C sand (8C)', 'Dense, moist, light brown P-C sand and P-C gravel, trace clay (5C)', 'Terminated at 1'', 'Terminated at 1''.

GENERAL REMARKS: Percolation test began on March 12, 1991; completed on March 13, 1991

PROJECT: Watkins Motor Lines BORING NO.: P-1
PROJECT: Watkins Motor Lines BORING NO.: P-2
PROJECT NO.: 2212-5-1 BORING LOCATION: See boring location plan
SURFACE ELEVATION: APPROX 220.0 DATE: 03-12-91 INSPECTOR: DPS
GROUNDWATER LEVELS (DEPTH/DATE): None encountered

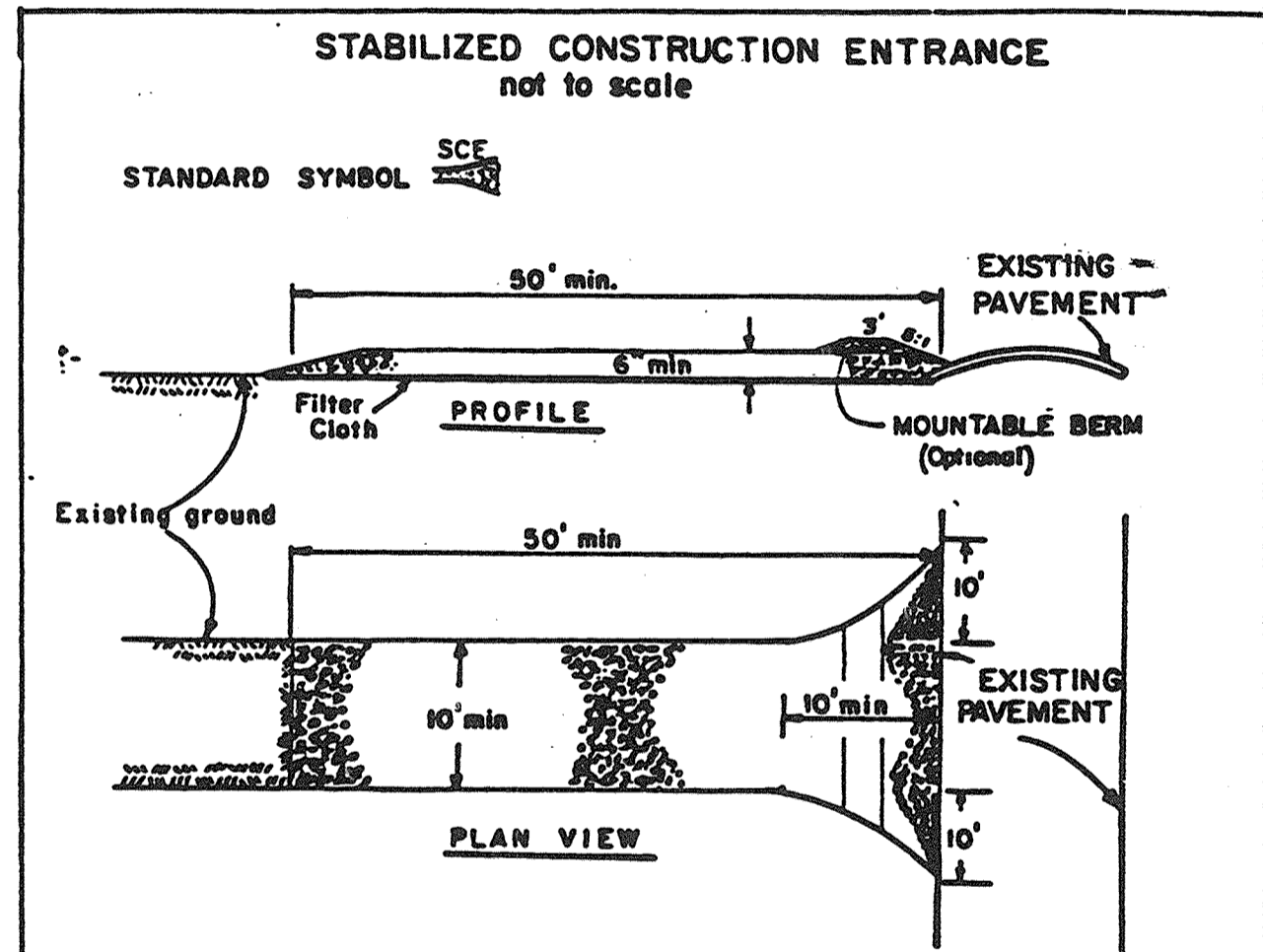
Table with columns: DEPTH (ft.), GROUP, VISUAL DESCRIPTION, REMARKS. Includes data for 15 ft depth with descriptions like 'Loose to medium dense, moist, light brown clayey silty P-C sand, little P-C gravel (8C)', 'Dense, moist to dry, light brown silty P-C sand, some P-C gravel (5C)', 'Terminated at 1''.

GENERAL REMARKS: Percolation test began on March 12, 1991; completed on March 13, 1991

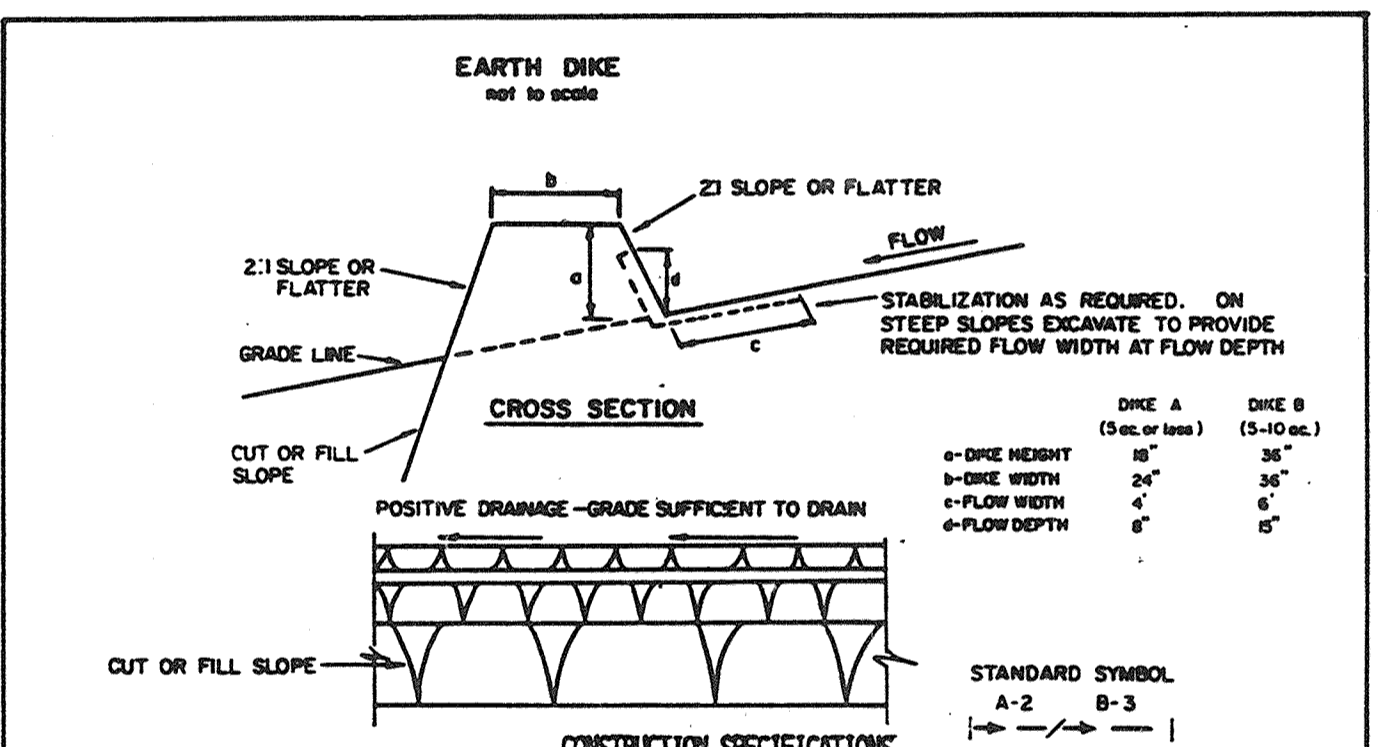


SEQUENCE OF CONSTRUCTION

- 1. Obtain required grading permits.
2. Contact Howard County 48 hours before beginning construction for meeting.
3. Install all site perimeter sediment control devices and, stone construction entrance.
4. Sandbag inlet of existing 18" X 24" CMP and install silt fence from Ryder concrete island to outlet end of 18" X 24" CMP. Pump or divert run-off from existing inlet to existing out fall as necessary.
5. Demolish existing concrete entrance from concrete island to outfall end of existing 18" X 24" CMP keeping access to west side of entrance and remove 18" X 24" CMP within same limits.
6. Install proposed 19" X 30" RCP pipes and endwall within limits described in notes. Backfill as required and install concrete entrance. Upon successful stabilization remove silt fence.
7. Relocate access to Ryder site to newly constructed east side of entrance and install silt fence from curb side across west side. Demolish west side of existing concrete entrance, remove existing 18" X 24" CMP and install proposed 19" X 30" RCP and headwall.
8. Install concrete entrance upon completion of 19" X 30" pipes and headwall. Stabilize twin culvert inlet and outfall with rip-rap. Remove sandbags and allow run-off through new twin culvert.
9. Construct sediment trap as follows:
A. From Stormwater Management Plan construct - embankment - outfall - control structure
Upon construction of control structure, temporarily block 1-1/2 feet of the 4-foot front weir opening to the top of the 10 foot weir elevation with brick and mortar.
B. From this plan - excavate pond bottom to indicated grades
C. Provide a sediment trap dewatering device as shown on this sheet.
10. Remove existing buildings, asphalt pavement, etc. Abandon all existing utility connections at their respective mains.
11. Begin site grading and construct building foundation. Trench to install underground utilities (i.e. water, sanitary sewer). Continue building construction.
12. Begin curb and gutter construction, concrete pad construction and paving operations.
13. Begin construction of industrial entrance off Corridor Road and grading of landscape berm. Complete curb and gutter and concrete pad construction and paving operations.
14. Begin to stabilize all disturbed areas, removing sediment control devices as directed by the inspector. Complete permanent pond construction as per stormwater management plan.
15. Permanently stabilize all remaining disturbed areas (landscape berm, etc) and remove remaining sediment control devices after obtaining approval from the sediment control inspector.
16. INSTALL SEDIMENT CONTROL MEASURE PRIOR TO DITCH EXCAVATION.
17. REMOVE EXISTING RIP-RAP AT PIPE OUTLET AND START DITCH EXCAVATION.
18. NO GRADING ALLOWED AROUND EXISTING B.G.F.E. PAVES. IF GUY-WIRES HAVE TO BE RELOCATED CONTACT CONTRACT RAYMOND CAIN OF B.G.F.E. (410) 265-4071.
19. CONSTRUCT CONCRETE DITCH FROM STRUCTURE #1 TO EX. #1-A.
20. SOODOO THE DISTURBED AREAS.



- 1. Stone Size - Use 2" stone, or reclaimed or recycled concrete equivalent.
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 berm with 5:1 slopes will be permitted.
7. Maintenance - The entrance shall be maintained in a condition which will prevent tracking or flowing of sediment onto public rights-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 rights-of-way must be removed immediately.
8. Washing - Wheels shall be cleaned to remove sediment prior to entrance onto public rights-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.



- 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. 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.
5. STABILIZATION SHALL BE (A) IN ACCORDANCE WITH STANDARD SPECIFICATIONS FOR SEED AND STRAW MULCH OR STRAW MULCH IF NOT IN SEEDING SEASON, (B) FLOW CHANNEL AS PER THE CHART BELOW.
6. FLOW CHANNEL STABILIZATION
TYPE OF TREATMENT CHANNEL GRADE 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 EXCELSTOR; SOD; 2" STONE
3 5.1-8.0% SEED WITH JUTE, OR SOD; 2" STONE LINED RIP-RAP 4-8"
4 8.1-20% LINED RIP-RAP 4-8" ENGINEERING DESIGN
7. STONE TO BE 2 INCH STONE, OR RECYCLED CONCRETE EQUIVALENT, IN A LAYER AT LEAST 3 INCHES IN THICKNESS AND BE PRESSED INTO THE SOIL WITH CONSTRUCTION EQUIPMENT.
8. RIP-RAP TO BE 4-8 INCHES IN A LAYER AT LEAST 8 INCHES THICKNESS AND PRESSED INTO THE SOIL.
9. APPROVED EQUIVALENTS CAN BE SUBSTITUTED FOR ANY OF THE ABOVE MATERIALS.
10. PERIODIC INSPECTION AND REQUIRED MAINTENANCE MUST BE PROVIDED AFTER EACH RAIN EVENT.

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET TECHNICAL REQUIREMENTS.
James M. Huber/MSK 11/2/91 Date
U.S. Soil Conservation Service

THIS PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
APPROVED Robert W. Zickler/MSK 11/2/91 Date
Howard S.C.D.
PLAN NUMBER

DEVELOPER'S/BUILDER'S CERTIFICATE
I/we certify that all development and construction will be done according to this plan of development and plan for erosion and sediment control and that all responsible personnel involved in the construction project will have a Certificate of Attendance at a Department of Natural Resources Approved Training Program for the Control of Erosion and Sediment before beginning the project. I also authorize periodic on-site inspections by the Howard Soil Conservation District or their authorized agents, as are deemed necessary.
John Huber 8/20/91 Date
Signature of Developer/Builder

ENGINEER'S CERTIFICATE
I hereby certify that this plan for Erosion and Sediment Control represents a practical and workable plan based on my personal knowledge of the site conditions and that it was prepared in accordance with the requirements of the Howard Soil Conservation District.
Diane Anne Carato 9-18-91 Date
Professional Engineer
OWNER:
WATKINS MOTOR LINES
MR. JOHN TISDALE
DIRECTOR OF REAL ESTATE
1144 WEST GRIFFIN ROAD
LAKELAND, FLORIDA 33805
(813) 607 4545

APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE SYSTEMS HOWARD COUNTY HEALTH DEPARTMENT
James M. Boyd/MSK 12/23/91 DATE
COUNTY HEALTH OFFICER
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING
James M. Boyd/MSK 12/23/91 DATE
DIRECTOR
Shirley J. Helms 10/3/91 DATE
CHIEF, DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT
APPROVED: FOR PUBLIC WATER AND PUBLIC SEWERAGE STORM DRAINAGE SYSTEM AND PUBLIC ROADS HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
James J. Shaw 12/20/91 DATE
DIRECTOR
Diane Anne Carato 12-17-91 DATE
CHIEF, BUREAU OF ENGINEERING

HOWARD COUNTY APPROVAL

Table with columns: No., REVISIONS, DATE, CHND. Includes 6 revisions from submitted to HO. CO. FOR REVIEW to SITE TO BE LOWSEASO 1' FOOT.

PROFESSIONAL SEAL: DIANE ANNE CARATO No. 15209 REGISTERED PROFESSIONAL ENGINEER

PROJECT: TAX MAP 48 PARCEL 81 WATKINS MOTOR LINES, INC. J. DUINKER SUBDIVISION PARTS OF LOTS 6 AND 7 L. HBN 131 F. 596 SIXTH ELECTION DISTRICT HOWARD COUNTY, MARYLAND

TITLE: EROSION & SEDIMENT CONTROL DETAILS & NOTES

PHR&A
Patton Harris Rust & Associates, P.C.
Engineers, Surveyors, Planners, Landscape Architects
7809 Glenloch Pkwy
Rockville, Maryland 20855
301-762-2200
Baltimore Metro-792-7244

Table with columns: SURVEY, PHR&A, DATE, JUNE 1991; DESIGN, MJK, DRAWN, RLP/BLP/CADD; CHRD, IAC, SCALE, AS SHOWN; SHEET 7 OF 12, FILE NO., 2212-5-0



**CURVE DATA**

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①	10° 59' 42"	3769.72	723.41	362.82	S. 96° 29' 42" E.	722.30
②	0° 55' 25"	2241.83	75.27	37.64	S. 30° 02' 02" E.	75.26

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

*James P. Ryan* 8-13-92  
COUNTY HEALTH OFFICER DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

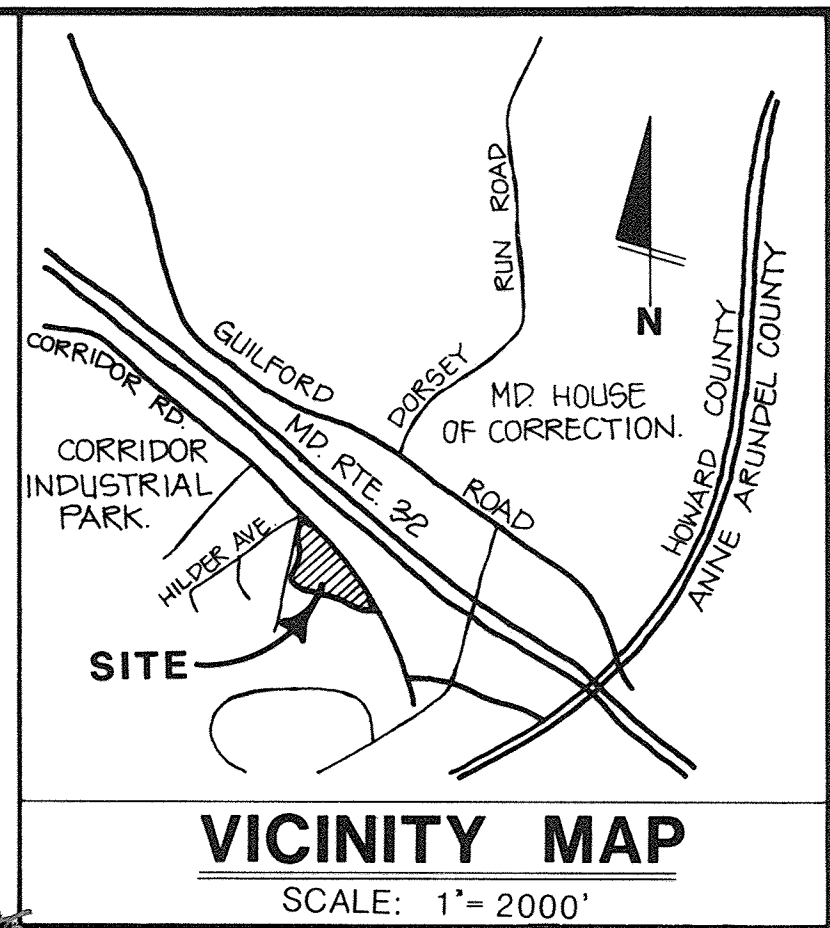
*James P. Ryan* 8/14/92  
DIRECTOR DATE

*Anna K. Blomquist* 8/14/92  
CHECKING DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT DATE

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

*James P. Ryan* 8/14/92  
DIRECTOR DATE

*James P. Ryan* 8-12-92  
CHIEF, BUREAU OF ENGINEERING DATE



**ADDRESS CHART**

LOT NUMBER	STREET ADDRESS
P-81	8850 CORRIDOR ROAD, MARYLAND.

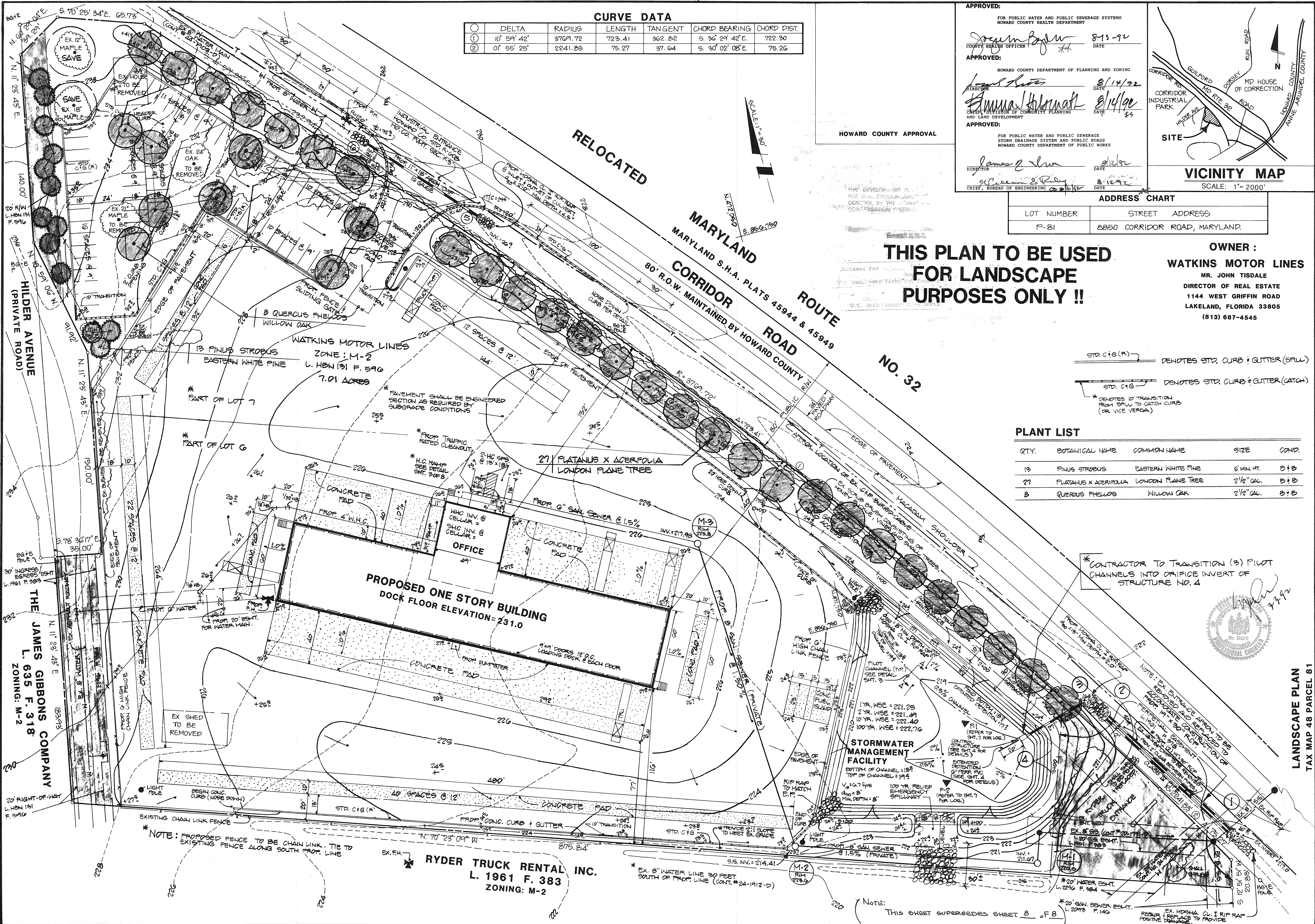
**THIS PLAN TO BE USED FOR LANDSCAPE PURPOSES ONLY !!**

**OWNER :**  
WATKINS MOTOR LINES  
MR. JOHN TISDALE  
DIRECTOR OF REAL ESTATE  
1144 WEST GRIFFIN ROAD  
LAKELAND, FLORIDA 33805  
(813) 687-4545

STD C&G (A) DENOTES STD. CURB & GUTTER (SPALL)  
STD. C&G DENOTES STD. CURB & GUTTER (CATCH)  
\* DENOTES 10' TRANSITION FROM SPALL TO CATCH CURB (OR VICE VERSA)

**PLANT LIST**

QTY.	BOTANICAL NAME	COMMON NAME	SIZE	COND.
13	PINUS STROBUS	EASTERN WHITE PINE	6' MIN. HT.	B + B
27	PLATANUS X ACERIFOLIA	LONDON PLANE TREE	2 1/2" CAL.	B + B
8	QUERCUS PHELOS	WILLOW OAK	2 1/2" CAL.	B + B



**HILDER AVENUE (PRIVATE ROAD)**

**THE JAMES GIBBONS COMPANY**  
L. 635 F. 318  
ZONING: M-2

**WATKINS MOTOR LINES**  
ZONE: M-2  
L. HEN 131 F. 596  
7.01 ACRES

**RYDER TRUCK RENTAL INC.**  
L. 1961 F. 383  
ZONING: M-2

**RELOCATED**

**MARYLAND CORRIDOR ROUTE NO. 32**

MARYLAND S.H.A. PLATS 45944 & 45949

60' R.O.W. MAINTAINED BY HOWARD COUNTY

\* CONTRACTOR TO TRANSITION (3) PILOT CHANNELS INTO OFFICE INVERT OF STRUCTURE NO. 4



**LANDSCAPE PLAN**  
TAX MAP 48 PARCEL 81

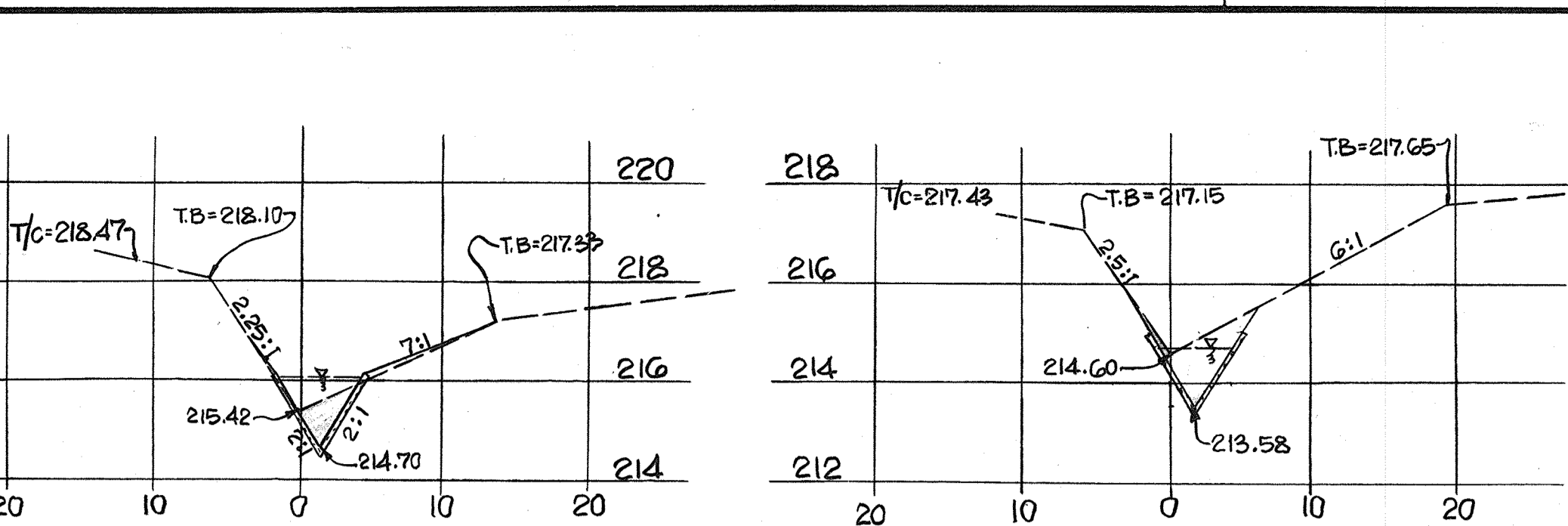
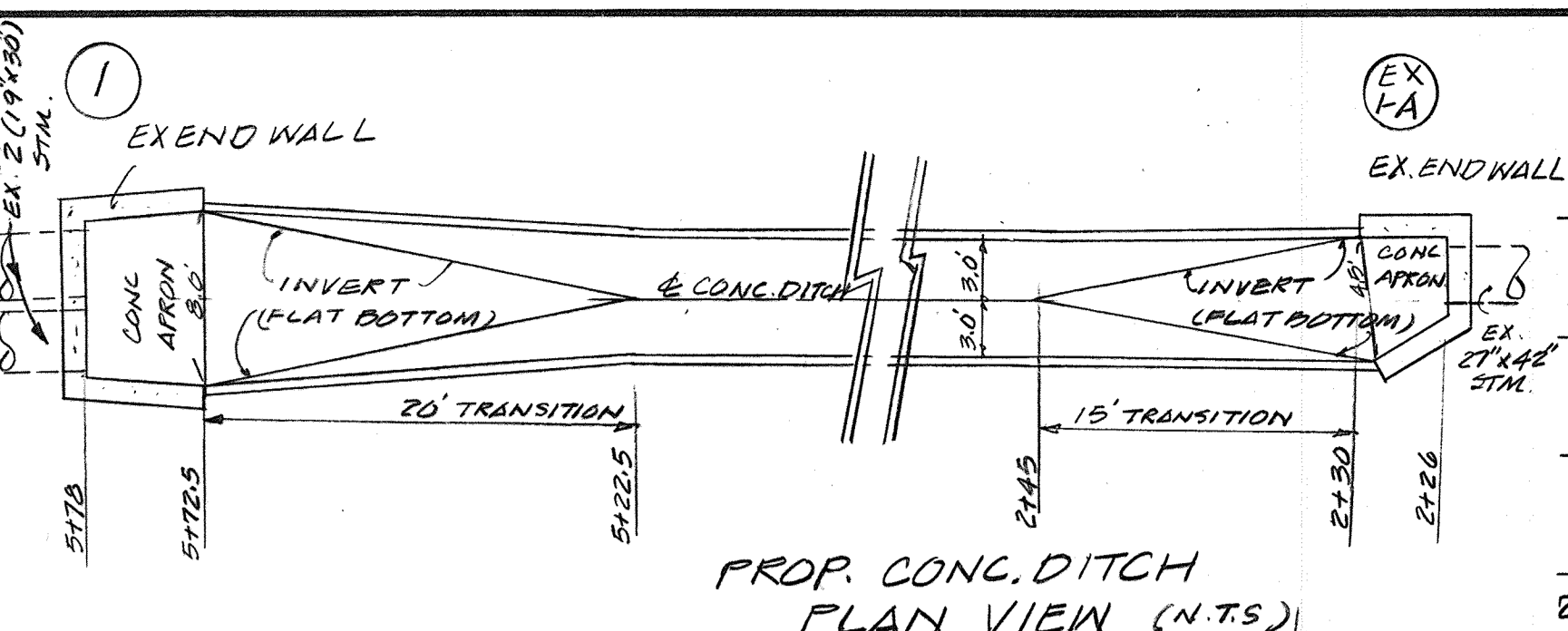
**WATKINS MOTOR LINES, INC.**  
J. DUINKER SUBDIVISION  
PARTS OF LOTS 6 AND 7  
L. HBN 131 F. 596  
SIXTH ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND

**MARYLAND LAND SURVEYING, INC.**  
Land Surveyors • Engineers • Planners  
418 Main Street, Suite 201  
Laurel, Maryland 20707 410-880-4955  
301-206-5443

NOTE: THIS SHEET SUPERSEDES SHEET 8 OF 8

SDP-91-125





**HOWARD COUNTY APPROVAL**

REVIEWED FOR HOWARD S.C.D. AND MEETS TECHNICAL REQUIREMENTS.

NAME: *James M. Holman*  
DATE: 8/17/92

SERVICE: SOIL CONSERVATION

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

DATE: 8/17/92

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

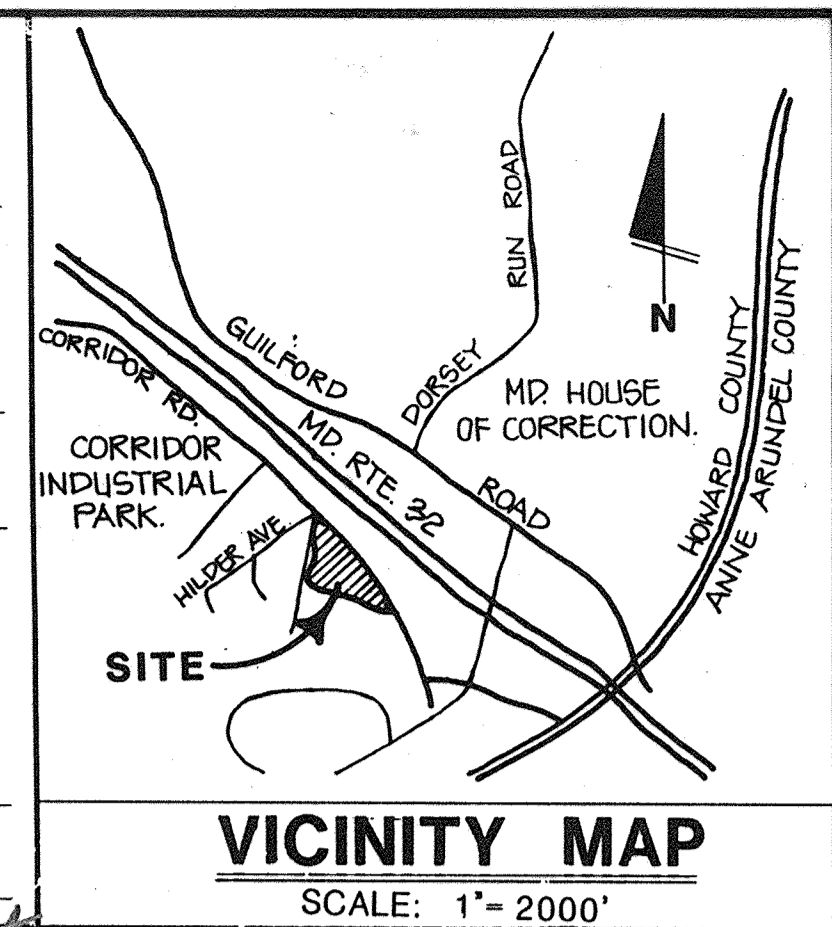
DATE: 8-15-92

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING

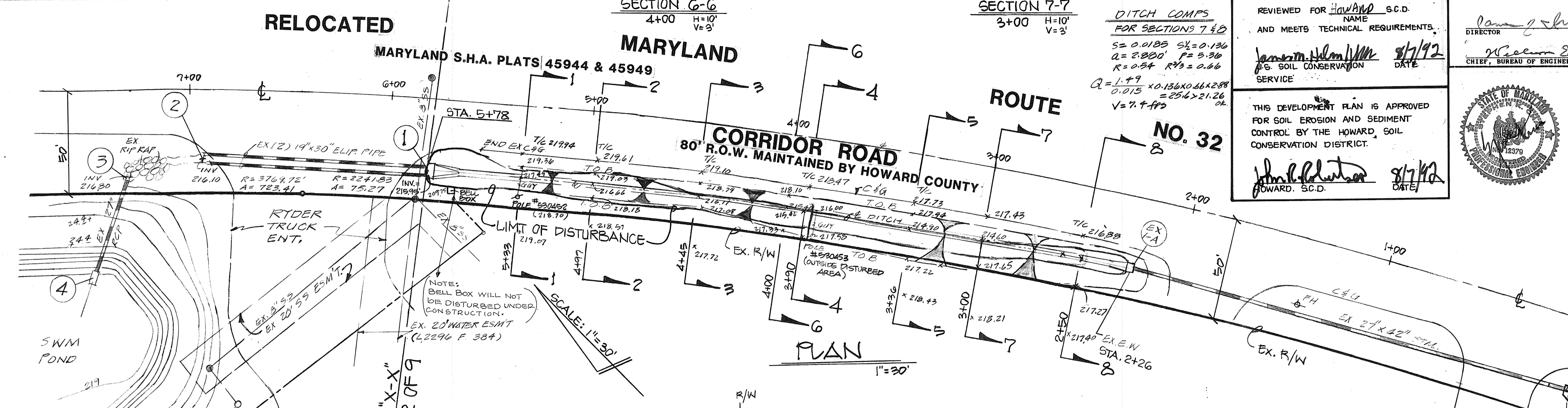
DATE: 8/14/92

APPROVED: CHIEF DIVISION OF COMMUNITY PLANNING AND LAND DEVELOPMENT

DATE: 8-18-92



DESIGN	DATE	BY
DRAFT	6/17/92	JFH
CHECKED	7/17/92	JFH
DATE	7/17/92	JFH
SCALE	A5	SHOWN



**DITCH COMPS FOR SECTIONS 7-6 & 7-7**

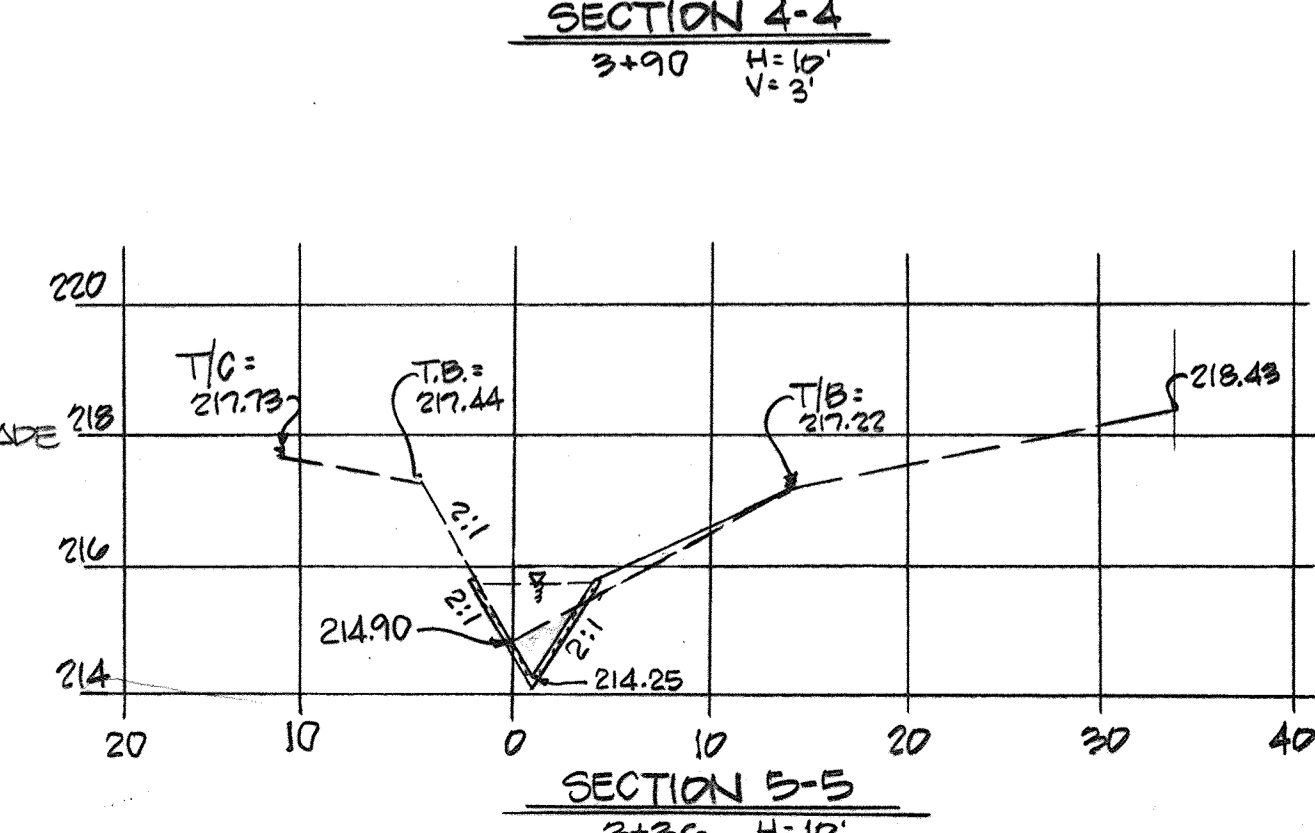
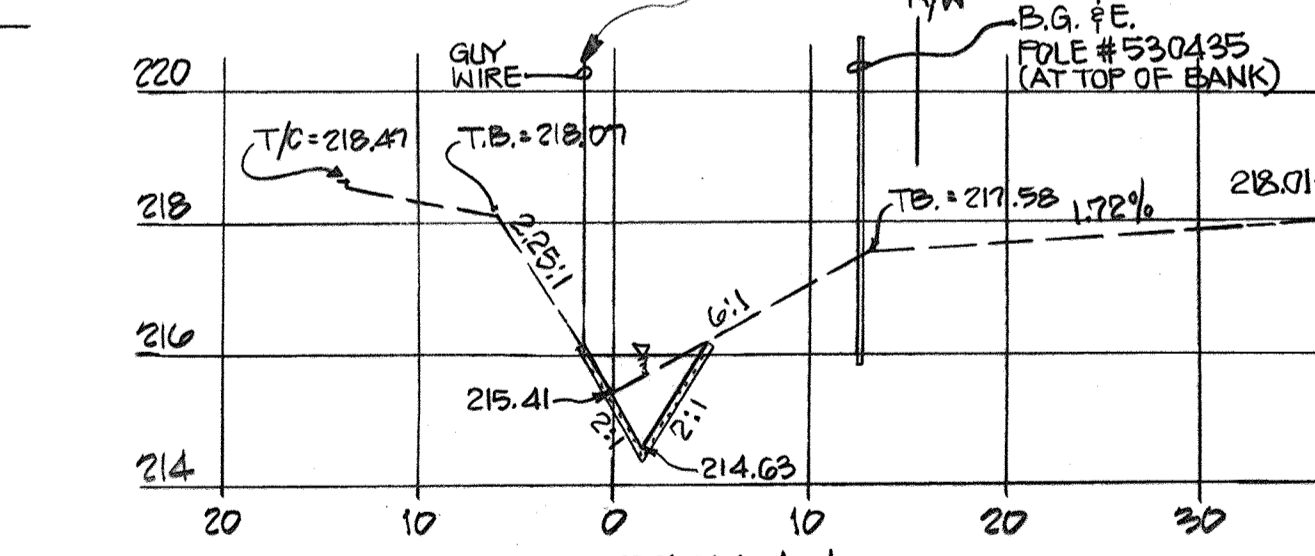
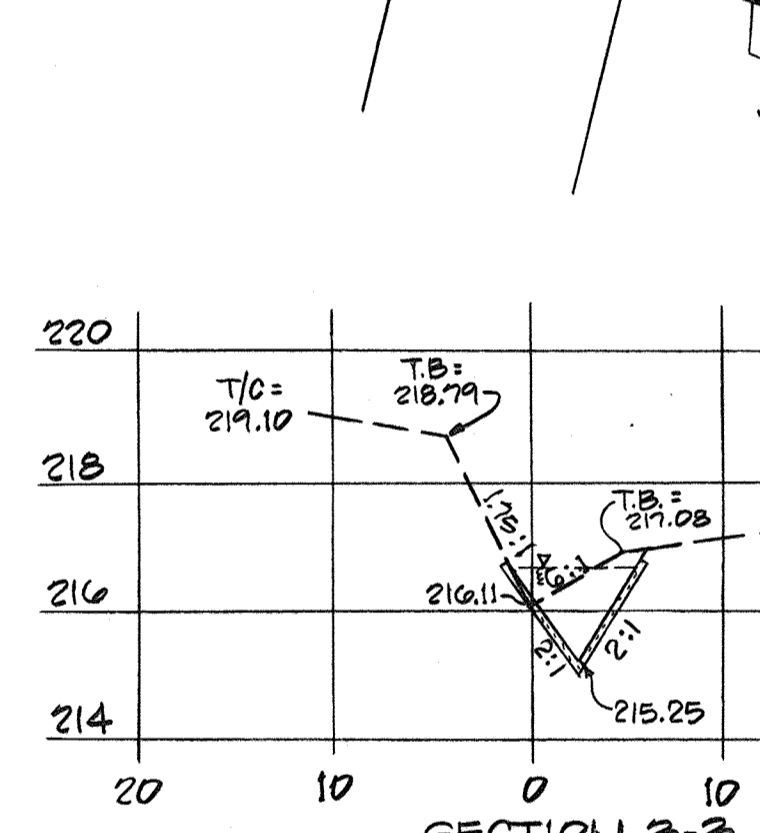
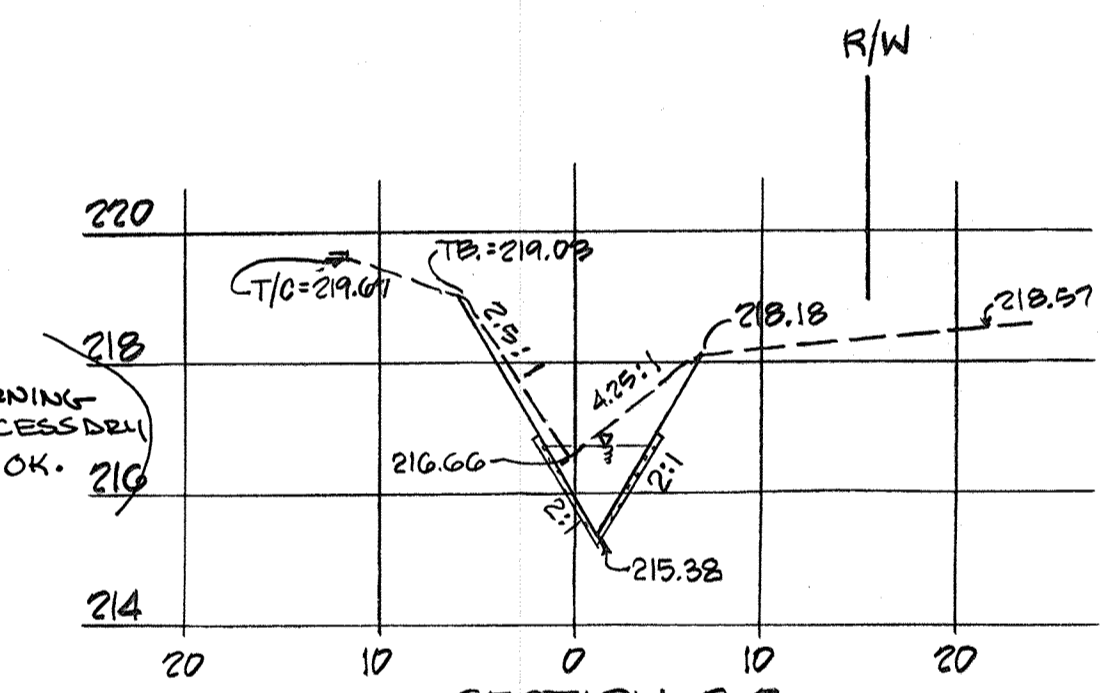
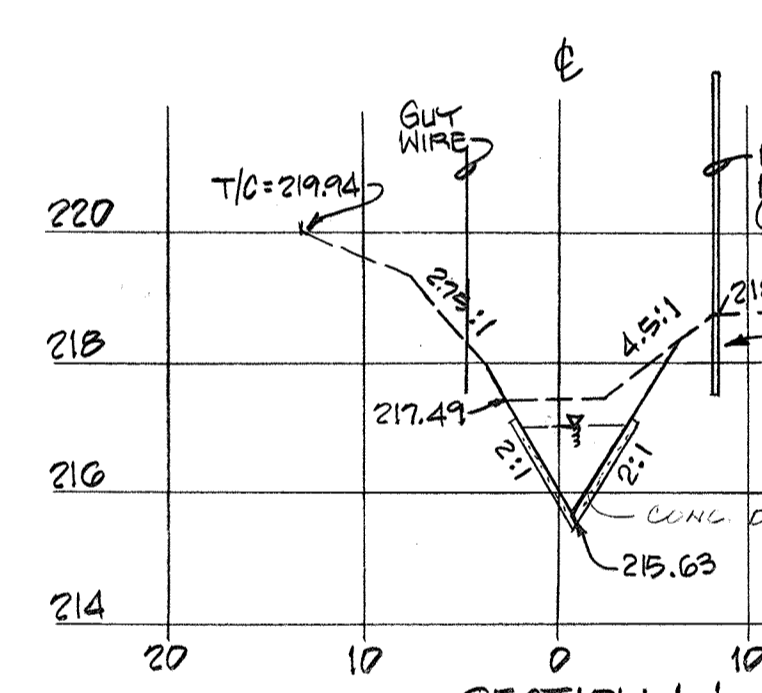
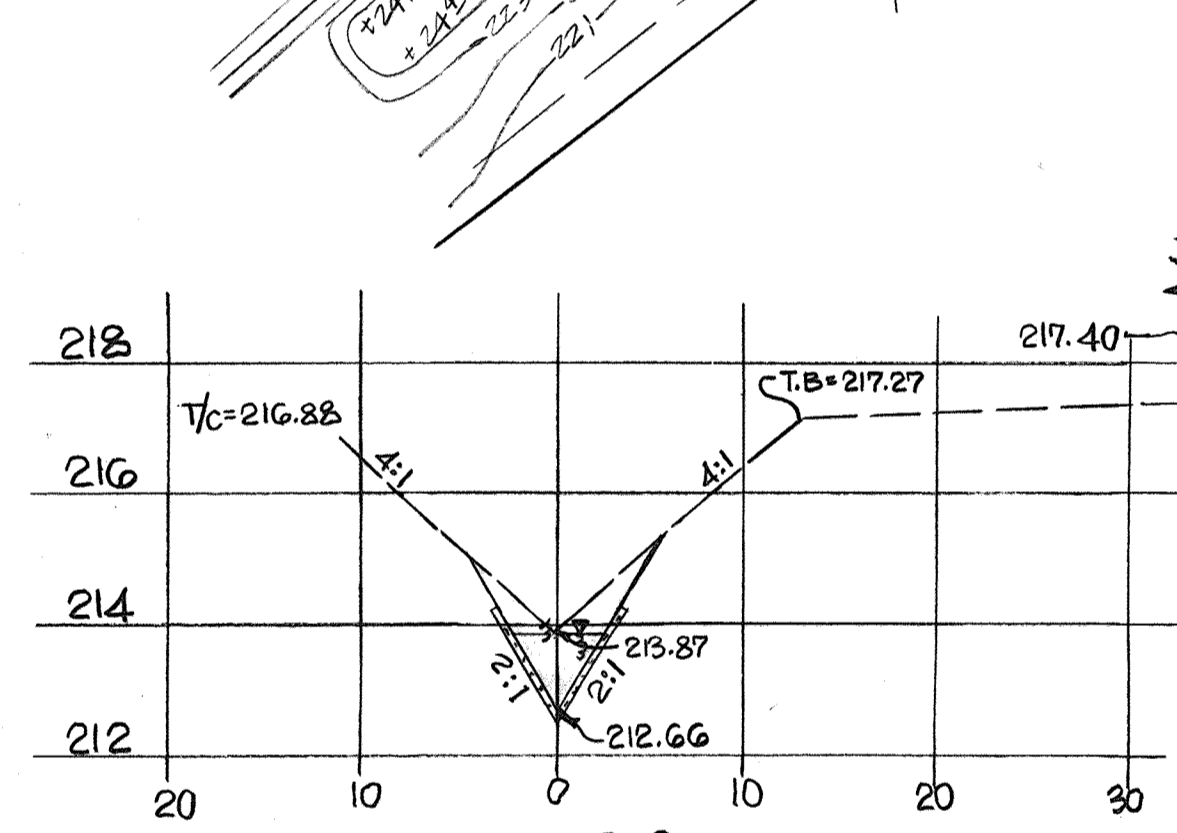
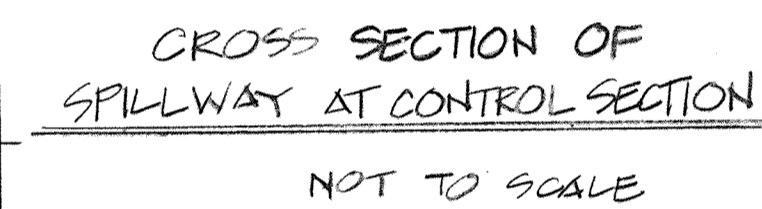
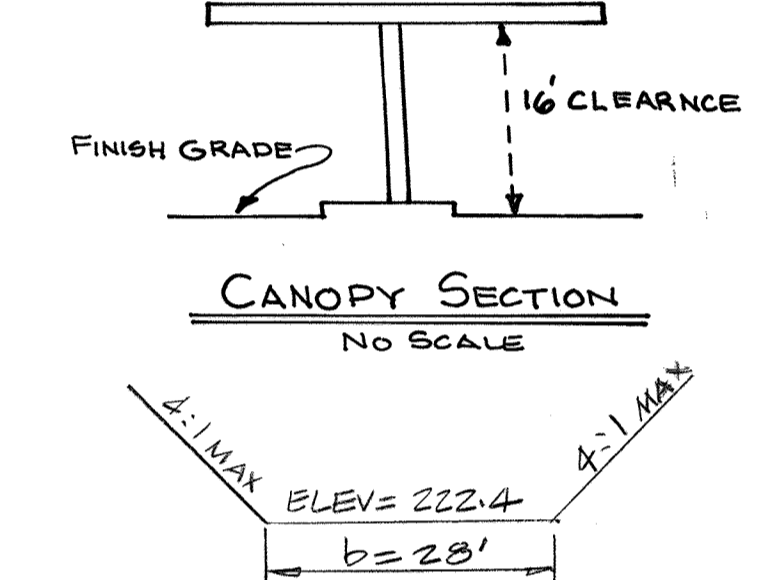
$S = 0.0185$   $S_x = 0.136$   
 $Q = 2.880$   $F = 5.30$   
 $R = 0.54$   $R^2 = 0.66$

$Q = 1.49 \times 0.136 \times 0.66 \times 2.88$   
 $0.015 = 25.6 \times 21.26$   
 $V = 7.4$  fps

**STRUCTURE SCHEDULE**

STR. NO.	TYPE	PRECAST ALT.	TOPELEVATION UPPER	TOPELEVATION LOWER	REMARKS
4	CONTROL STRUCT. (PRECAST)		223.4	223.4	SEE DETAIL SH. 5 OF 8
3	CONC. HEADWALL		220.0	220.0	TYPE A HO CO STD DETAIL 5-11
#2	CONC. HEADWALL		220.4	220.4	TYPE D HO CO STD DETAIL 5-12 A
#1	CONC. HEADWALL		219.8	219.8	TYPE D HO CO STD DETAIL 5-12 A
0	CONC. HEADWALL		231.5	231.5	TYPE E HO CO STD DETAIL 5-12 B
5	CONC. HEADWALL		229.1	229.1	TYPE E HO CO STD DETAIL 5-12 B

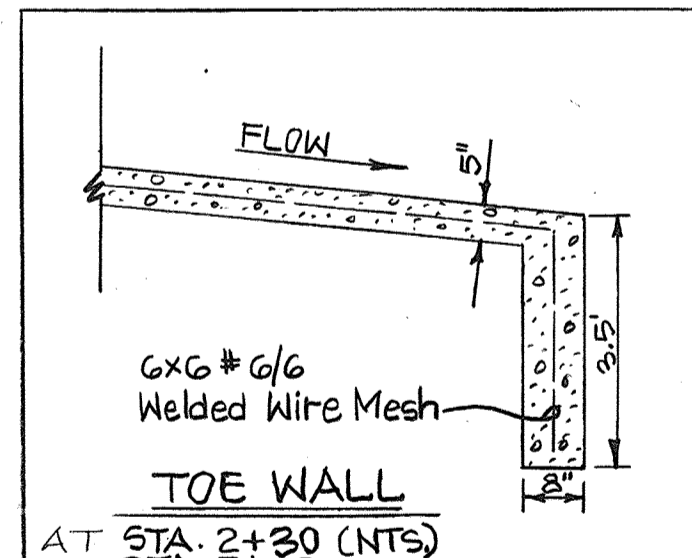
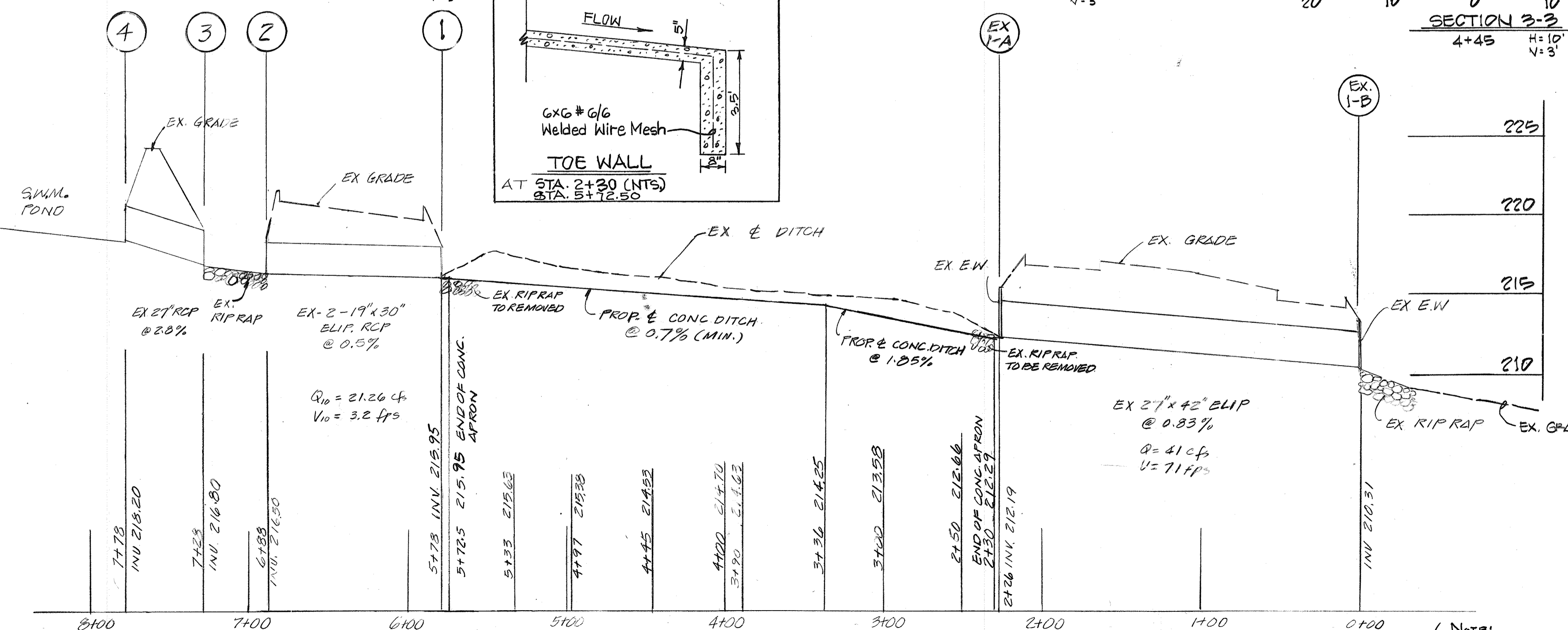
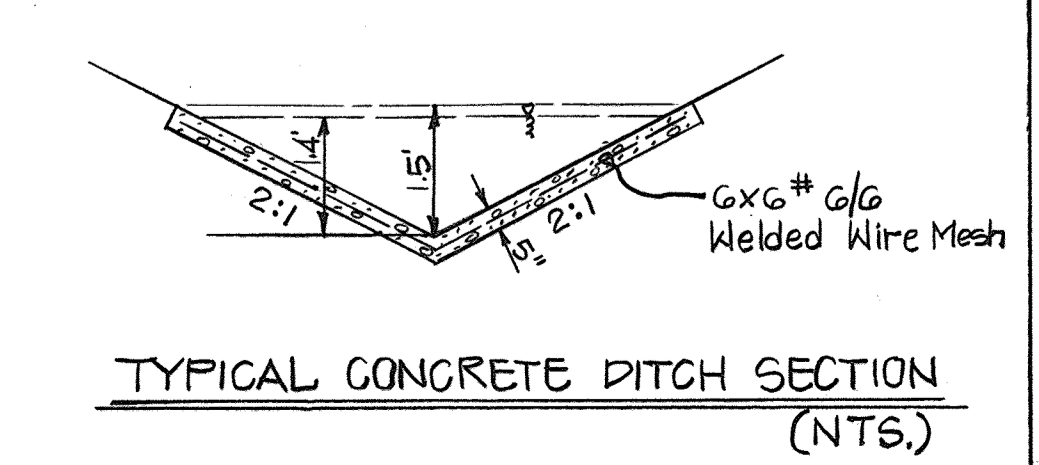
\* FEELINGS 2' MIN SPACING BETWEEN PIPES. CELESTE WINGWALLS BETWEEN PIPES AND JOIN HEADWALLS AT PIPES



**DITCH COMPS FOR SECTIONS 1 TO 6**

$Q = 21.26$  cfs.  
 $S = 0.007$   $S_x = 0.084$   
 $d = 1.40'$   $q = 3.92$  cfs  
 $F = 6.2$   $R = 0.62$   
 $R^2 = 0.73$   
 $Q = 1.49 \times 0.084 \times 0.73 \times 3.92$   
 $0.015 = 23.88$  cfs > 21.26 cfs.  
 $V = 6.1$  fps.

- NOTE 3-**
- CONCRETE SHALL BE S.H.A. MIX NO.2.
  - NO GRADING SHALL BE ALLOWED AROUND EX. POLES AND GUY WIRES.
  - OTHER DISTURBED AREAS IN THE DITCH ARE TO BE SOPDED.



TO RELOCATE GUY WIRE CONTACT MR. RAMOND GAIN AT B.G. #E FILE #530435 (AT TOP OF BANK)

(Note: THIS SHEET IS AN ADDITIONAL SHEET TO THE PREVIOUS SHEETS 1 Thru 8 OF 8.)

**MARYLAND LAND SURVEYING, INC.**

Land Surveyors • Engineers • Planners

418 Main Street, Suite 201  
Laurel, Maryland 20707

410-880-4955

301-206-5433

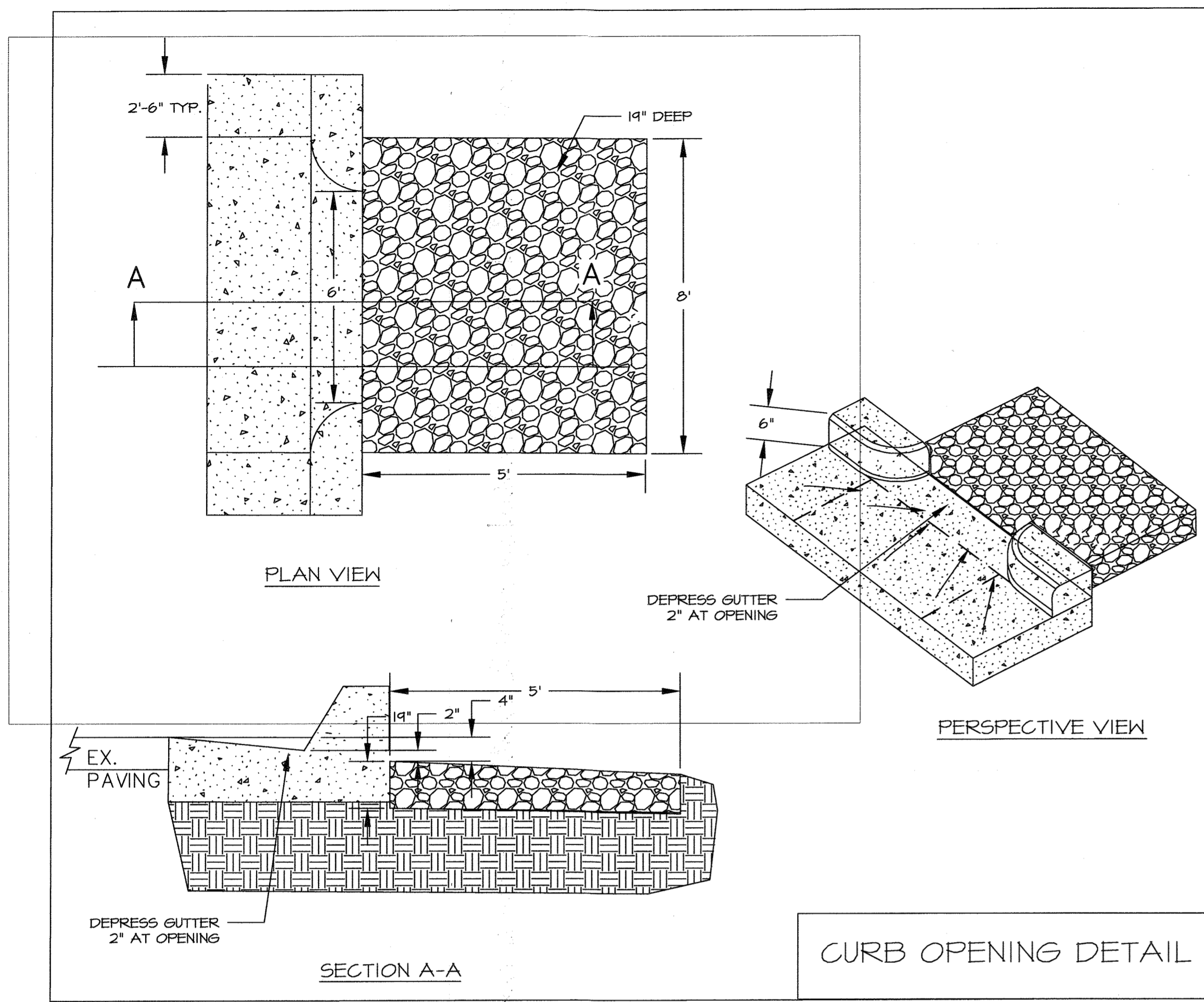
**WATKINS MOTOR LINES, INC.**

J. DUNKER SUBDIVISION  
PARTS OF LOTS 6 AND 7  
L. HBN 131 F. 596  
SIXTH ELECTION DISTRICT  
HOWARD COUNTY, MARYLAND





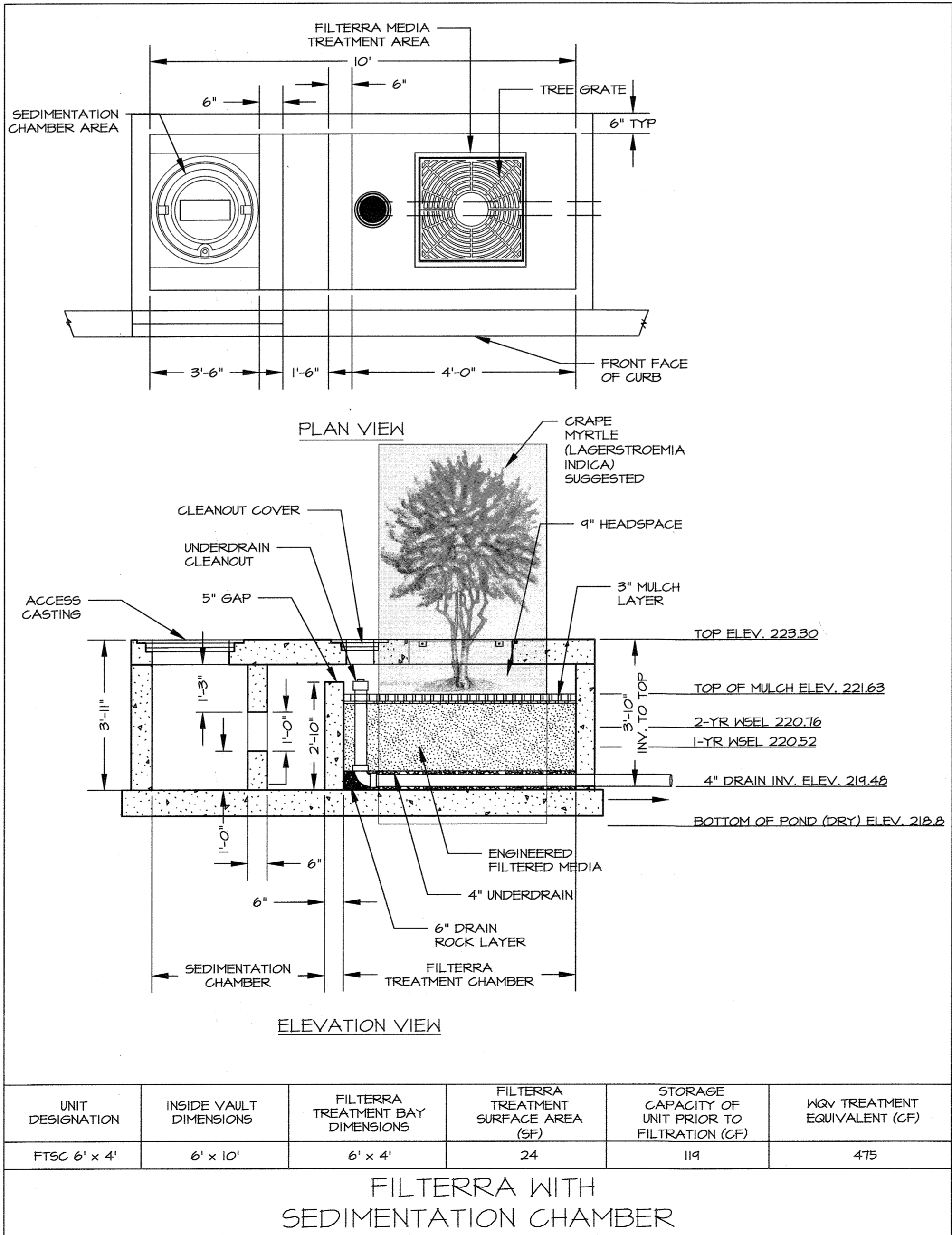




FILTERRA STANDARD PLAN NOTES

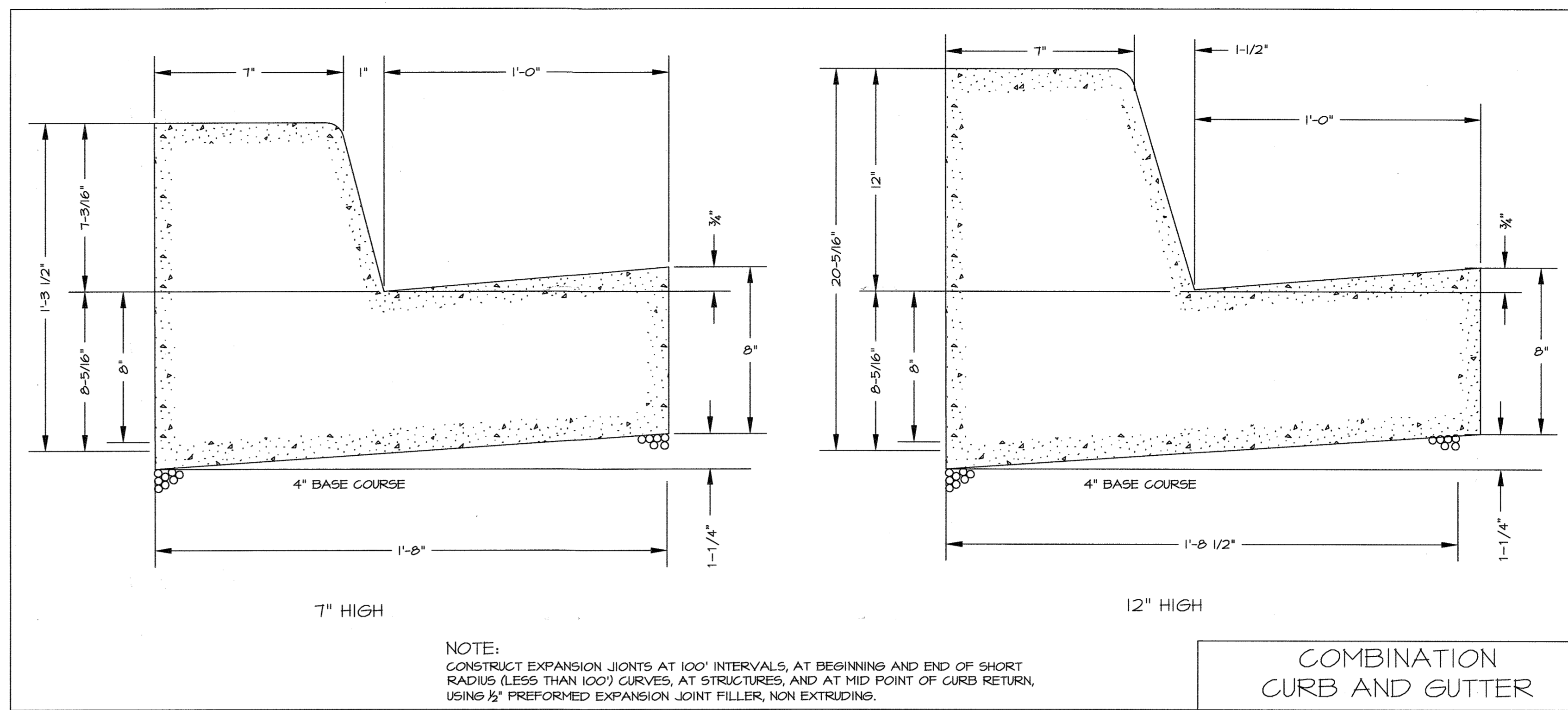
- A. EACH UNIT SHALL BE CONSTRUCTED AT THE LOCATIONS AND ELEVATIONS ACCORDING TO THE SIZES SHOWN ON THE APPROVED DRAWINGS. ANY MODIFICATIONS TO THE ELEVATION OR LOCATION SHALL BE AT THE DIRECTION OF AND APPROVED BY THE ENGINEER.
- B. IF THE FILTERRA IS STORED BEFORE INSTALLATION, THE TOP SLAB MUST BE PLACED ON THE BOX USING THE 2x4 WOOD PROVIDED, TO PREVENT ANY CONTAMINATION FROM THE SITE. ALL INTERNAL FITTINGS SUPPLIED (IF ANY), MUST BE LEFT IN PLACE AS PER THE DELIVERY.
- C. THE UNIT SHALL BE PLACED ON A COMPACTED SUB-GRADE WITH A MINIMUM 6-INCH GRAVEL BASE MATCHING THE FINAL GRADE OF THE CURB LINE IN THE AREA OF THE UNIT. THE UNIT IS TO BE PLACED SUCH THAT THE LINE UNIT AND TOP SLAB MATCH THE GRADE OF THE CURB IN THE AREA OF THE UNIT. COMPACT UNDISTURBED SUB-GRADE MATERIALS TO 95% OF MAXIMUM DENSITY AT +1-2% OF OPTIMUM MOISTURE. UNSUITABLE MATERIAL BELOW SUB-GRADE SHALL BE REPLACED TO THE SITE ENGINEER'S APPROVAL.
- D. OUTLET CONNECTIONS SHALL BE ALIGNED AND SEALED TO MEET THE APPROVAL DRAWINGS WITH MODIFICATIONS NECESSARY TO MEET SITE CONDITIONS AND LOCAL REGULATIONS.
- E. ONCE THE UNIT IS SET, THE INTERNAL WOODEN FORMS AND PROTECTIVE MESH MUST BE LEFT INTACT. REMOVE ONLY THE TEMPORARY WOODEN SHIPPING BLOCKS BETWEEN THE BOX AND TOP SLAB. THE TOP LID SHOULD BE SEALED ONTO THE BOX SECTION BEFORE BACKFILLING, USING A NON-SHRINK GROUT, BUTYL RUBBER OR SIMILAR WATERPROOF SEAL. THE BOARDS ON TOP OF THE LID AND BOARDS SEALED IN THE UNITS THROAT MUST NOT BE REMOVED. THE SUPPLIER (AMERICAST OR ITS AUTHORIZED DEALER) WILL REMOVE THESE SECTIONS AT THE TIME OF ACTIVATION. BACKFILLING SHOULD BE PERFORMED IN A CAREFUL MANNER, BRINGING THE APPROPRIATE FILL MATERIAL UP IN 6" LIFTS ON ALL SIDES. PRECAST SECTIONS SHALL BE SET IN A MANNER THAT WILL RESULT IN A WATERTIGHT JOINT. IN ALL INSTANCES, INSTALLATION OF FILTERRA UNIT SHALL CONFORM TO ASTM SPECIFICATION G991 "STANDARD PRACTICE FOR INSTALLATION OF UNDERGROUND PRECAST UTILITY STRUCTURES", UNLESS DIRECTED OTHERWISE IN CONTRACT DOCUMENTS.
- F. THE CONTRACTOR IS RESPONSIBLE FOR INLET PROTECTION/SEDIMENT CONTROL AND CLEANING AROUND EACH FILTERRA UNIT.
- G. CURB AND GUTTER CONSTRUCTION (WHERE PRESENT) SHALL ENSURE THAT THE FLOW-LINE OF THE FILTERRA UNITS IS A GREATER ELEVATION THAN THE FLOW-LINE OF THE BYPASS STRUCTURE OR RELIEF (DROP INLET, CURB CUT OR SIMILAR). FAILURE TO COMPLY WITH THIS GUIDELINE MAY CAUSE FAILURE AND/OR DAMAGE TO THE FILTERRA ENVIRONMENTAL DEVICE.
- H. EACH FILTERRA UNIT MUST RECEIVE ADEQUATE IRRIGATION TO ENSURE SURVIVAL OF THE LIVING SYSTEM DURING PERIODS OF DRIER WEATHER. THIS MAY BE ACHIEVED THROUGH A PIPED SYSTEM, GUTTER FLOW OR THROUGH THE TREE GRATE.

- ACTIVATION**
- A. ACTIVATION OF THE FILTERRA UNIT IS PERFORMED ONLY BY THE SUPPLIER. PURCHASER IS RESPONSIBLE FOR FILTERRA INLET PROTECTION, AND SUBSEQUENT CLEAN OUT COST. THIS PROCESS CANNOT COMMENCE UNTIL THE PROJECT SITE IS FULLY STABILIZED AND CLEANED (FULL LANDSCAPING, GRASS COVER, FINAL PAVING AND STREET SWEEPING COMPLETED), NEGATING THE CHANCE OF CONSTRUCTION MATERIALS CONTAMINATING THE FILTERRA SYSTEM. CARE SHALL BE TAKEN DURING CONSTRUCTION NOT TO DAMAGE THE PROTECTIVE THROAT AND TOP PLATES.
  - B. ACTIVATION INCLUDES INSTALLATION OF PLANT(S) AND MULCH LAYERS AS NECESSARY.
- INCLUDED MAINTENANCE**
- A. EACH CORRECTLY INSTALLED FILTERRA UNIT IS TO BE MAINTAINED BY THE SUPPLIER, OR A SUPPLIER APPROVED CONTRACTOR FOR A MINIMUM PERIOD OF 1 YEAR. THE COST OF THIS SERVICE IS TO BE INCLUDED IN THE PRICE OF EACH FILTERRA UNIT. EXTENDED MAINTENANCE CONTRACTS ARE AVAILABLE AT EXTRA COST UPON REQUEST.
  - B. ANNUAL INCLUDED MAINTENANCE CONSISTS OF A MAXIMUM OF (2) SCHEDULED VISITS. THE VISITS ARE SCHEDULED SEASONALLY; THE SPRING VISIT AIMS TO CLEAN UP AFTER WINTER LOADS THAT MAY INCLUDE SALTS AND SANDS. THE FALL VISIT HELPS THE SYSTEM BY REMOVING EXCESSIVE LEAF LITTER.
  - C. EACH INCLUDED MAINTENANCE VISIT CONSISTS OF THE FOLLOWING TASKS:
    1. FILTERRA UNIT INSPECTION
    2. FOREIGN DEBRIS, SILT, MULCH & TRASH REMOVAL.
    3. FILTER MEDIA EVALUATION AND RECHARGE AS NECESSARY.
    4. PLANT HEALTH EVALUATION AND PRUNING OR REPLACEMENT AS NECESSARY.
    5. REPLACEMENT OF MULCH.
    6. DISPOSAL OF ALL MAINTENANCE REFUSE ITEMS.
    7. MAINTENANCE RECORDS UPDATED AND STORED (REPORTS AVAILABLE UPON REQUEST)
  - D. THE BEGINNING AND ENDING DATE OF SUPPLIER'S OBLIGATION TO MAINTAIN THE INSTALLED SYSTEM SHALL BE DETERMINED BY THE SUPPLIER AT THE TIME THE SYSTEM IS ACTIVATED. OWNERS MUST PROMPTLY NOTIFY THE SUPPLIER OF ANY DAMAGE TO THE PLANT(S), WHICH CONSTITUTE(S) AN INTEGRAL PART OF BIORETENTION TECHNOLOGY.



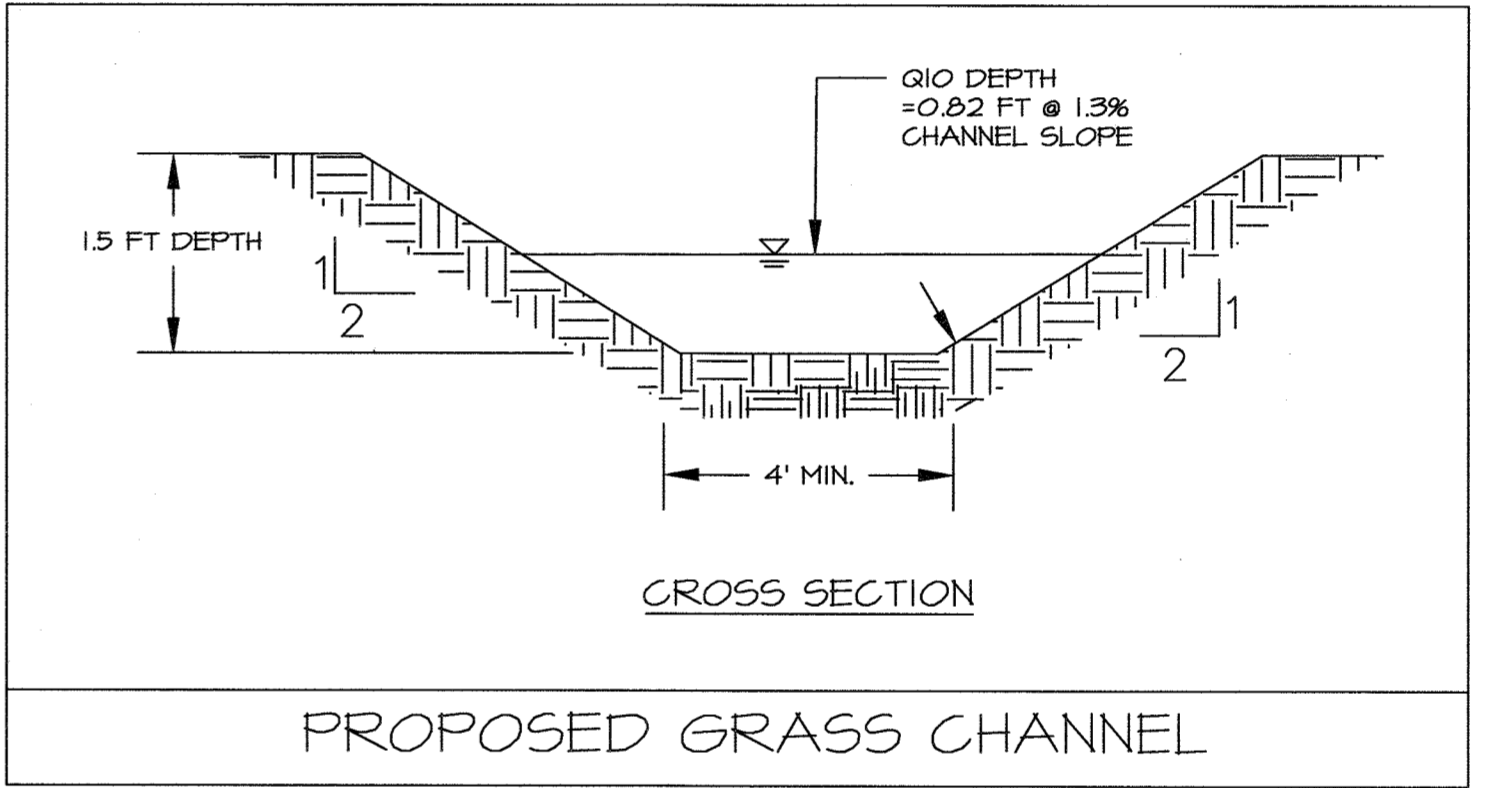
UNIT DESIGNATION	INSIDE VAULT DIMENSIONS	FILTERRA TREATMENT BAY DIMENSIONS	FILTERRA TREATMENT SURFACE AREA (SF)	STORAGE CAPACITY OF UNIT PRIOR TO FILTRATION (CF)	WQV TREATMENT EQUIVALENT (CF)
FTSC 6' x 4'	6' x 10'	6' x 4'	24	119	475

FILTERRA WITH SEDIMENTATION CHAMBER



NOTE:  
CONSTRUCT EXPANSION JOINTS AT 100' INTERVALS, AT BEGINNING AND END OF SHORT RADIUS (LESS THAN 100') CURVES, AT STRUCTURES, AND AT MID POINT OF CURB RETURN, USING 1/2" PREFORMED EXPANSION JOINT FILLER, NON EXTRUDING.

COMBINATION CURB AND GUTTER



PROPOSED GRASS CHANNEL

PURPOSE STATEMENT

THE PURPOSE OF THIS NEW SHEET IS TO SHOW STORMWATER QUALITY IMPROVEMENTS REQUIRED BY THE SITE'S 12-SW PERMIT FOR CHESAPEAKE BAY RESTORATION, AND TO RELOCATE THE PERIMETER FENCE TO COMPLY WITH THE 30-FOOT FENCE SETBACK.

APPROVED: DEPARTMENT OF PLANNING AND ZONING

CHIEF, DEVELOPMENT ENGINEERING DIVISION JP 9/20/18 DATE

CHIEF, DIVISION OF LAND DEVELOPMENT DJ 10/2/18 DATE

DIRECTOR 10-2-18 DATE

REVISED SITE DEVELOPMENT PLAN

OWNER/DEVELOPER

FEDEX FREIGHT, INC.  
2200 FORWARD DRIVE, DC. 2219  
HARRISON, AR 72601  
ATTN: BRENDEN ROSE  
PHONE: 870-365-4087

WQ RETROFIT NOTES & DETAILS

FEDEX FREIGHT, INC.  
FORMERLY WATKINS MOTOR LINES INC.  
ANNAPOLIS JUNCTION  
WATER QUALITY RETROFIT FOR 12-SW  
CHESAPEAKE BAY RESTORATION  
8850 CORRIDOR ROAD  
ANNAPOLIS JUNCTION, MD 20701

REVISIONS

REV#	DATE	DESCRIPTION

ARCHITECTS ENGINEERS PLANNERS SURVEYORS

FREDERICK WARD ASSOCIATES  
410-679-2090  
frederickward.com  
PO Box 727, 6 South Main Street, Baltimore, Maryland 21014

DATE: 08/16/18

DRAWING NO: WQ2  
SCALE: NTS  
SHEET 11 OF 12  
FVA JOB NUMBER: 2141135.01



