

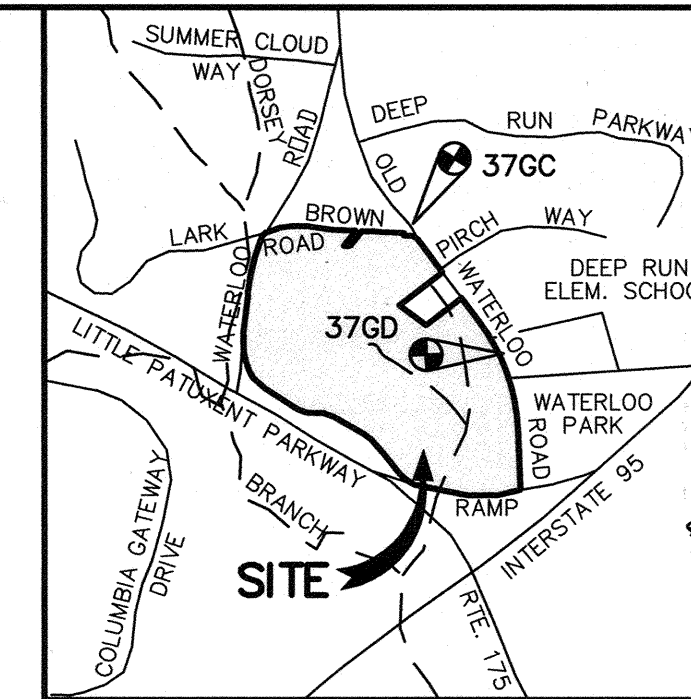
SHEET INDEX	
NO	DESCRIPTION
1	TITLE SHEET
2	PLAN AND PROFILE AND STREET TREE PLANTINGS OF OLD WATERLOO ROAD FROM STA 11+00 TO 24+50
3	PLAN AND PROFILE AND STREET TREE PLANTINGS OF OLD WATERLOO ROAD FROM STA 24+50 TO END
4	PLAN AND PROFILE AND STREET TREE PLANTINGS OF LARK BROWN ROAD FROM STA 0+00 TO 13+00
5	PLAN AND PROFILE AND STREET TREE PLANTINGS OF LARK BROWN ROAD FROM STA 13+00 TO END
6	PLAN OF MARYLAND ROUTE 108 FROM STA 50+00 TO 75+89
7	STRIPING PLAN FOR LARK BROWN ROAD AND OLD WATERLOO ROAD
8	GRADING AND SEDIMENT CONTROL PLAN AND DRAINAGE AREA MAP
9	GRADING AND SEDIMENT CONTROL PLAN AND DRAINAGE AREA MAP
10	GRADING AND SEDIMENT CONTROL PLAN AND DRAINAGE AREA MAP
11	GRADING AND SEDIMENT CONTROL PLAN AND DRAINAGE AREA MAP
12	GRADING AND SEDIMENT CONTROL PLAN AND DRAINAGE AREA MAP
13	PLAN AND PROFILE OF ROAD A FROM STA 0+00 TO 13+50
14	PLAN AND PROFILE OF ROAD A FROM STA 13+50 TO 18+81
15	PLAN AND PROFILE OF ROAD B FROM STA 0+00 TO 9+88
16	SEDIMENT CONTROL DETAILS
17	NOTES AND DETAILS
18	STRIPING PLAN FOR ROADS A, B AND D
19	STRIPING PLAN FOR ROAD A AND GRADING, SEDIMENT CONTROL PLAN
20	STORM DRAIN PROFILES
21	STORM DRAIN PROFILES
22	STORM DRAIN PROFILES
23	SIGNAL PLAN
24	MOT PLAN
25	MOT PLAN

ROADWAY AND STORM DRAIN PLANS

BENSON EAST

6th ELECTION DISTRICT

HOWARD COUNTY, MARYLAND



VICINITY MAP
SCALE: 1" = 2000'

BENCHMARKS

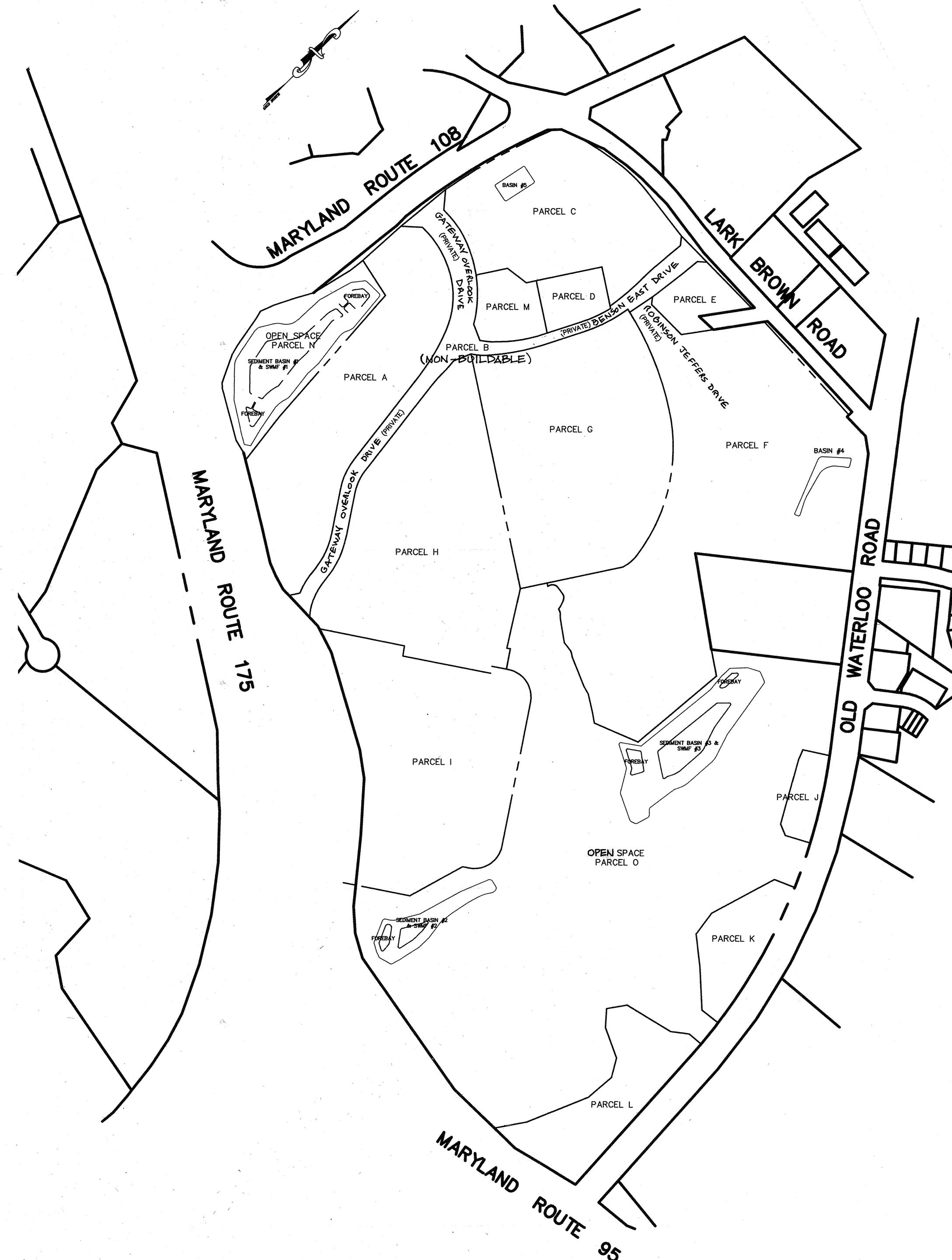
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ELEVATION 331.855
N 555,250.791
E 1,370,946.348

CONTROL STATION 37GC
ELEVATION 307.455
N 552,081.826
E 1,370,625.818

GENERAL NOTES

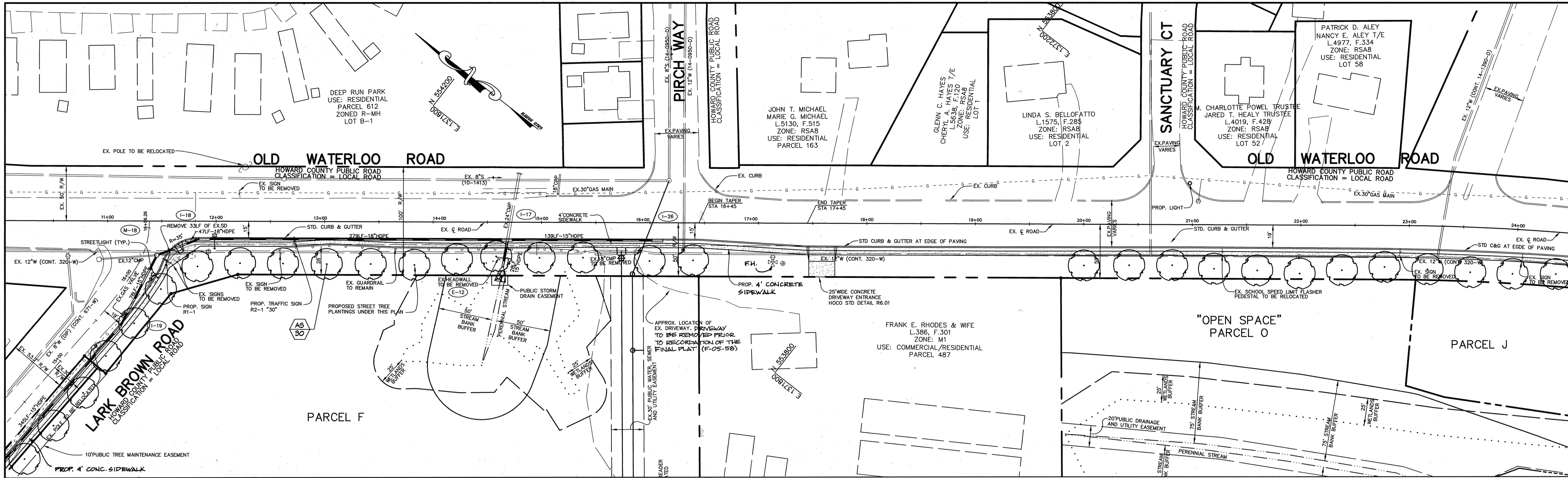
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOL. IV "STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION" PLUS MSHA STANDARDS AND SPECIFICATIONS, IF APPLICABLE.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
- TRAFFIC CONTROL DEVICES, MARKINGS, AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
- STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURE AND POLE SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME III (1993) AND AS MODIFIED BY "GUIDELINES FOR STREET LIGHTS IN RESIDENTIAL DEVELOPMENTS, (JANUARY 1998)." A MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.
- THE EXISTING TOPOGRAPHY IS TAKEN FROM FIELD SURVEY WITH MAXIMUM TWO FOOT CONTOUR INTERVALS PREPARED BY DAFT McCUNE WALKER, INC. DATED MAY 2003.
- THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENT NOS. 37GD AND 43AJ WERE USED FOR THIS PROJECT.
- WATER IS PUBLIC. CONTRACT NO. 24-4209-D AND 24-4284-D.
- SEWER IS PUBLIC. CONTRACT NO. 24-4209-D AND 24-4284-D.
- THE STORMWATER MANAGEMENT FACILITIES PROPOSED UNDER SDP-04-163 FOR THIS SITE ARE ALL PRIVATELY OWNED AND MAINTAINED. WATER QUALITY VOLUME AND CHANNEL PROTECTION WILL BE PROVIDED IN ONE WET POND AND TWO MICROPOOL EXTENDED DETENTION PONDS. REV MANAGEMENT WILL BE ADDRESSED AT THE TIME OF ULTIMATE SITE DEVELOPMENT OF THE INDIVIDUAL PARCELS. NO STORMWATER MANAGEMENT IS PROVIDED FOR RESIDENTIAL USE PARCELS ALONG OLD WATERLOO ROAD.
- APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE. EXISTING UTILITIES ARE SHOWN BASED ON THE BEST AVAILABLE INFORMATION.
- THE WETLANDS AND STREAMS ARE BASED ON FIELD OBSERVATIONS BY DMW AND CONFIRMED BY ON-SITE MEETING WITH US ARMY CORP. OF ENGINEERS ON DEC. 13, 2002.
- THE TRAFFIC STUDY FOR THIS PROJECT WAS PREPARED BY WELLS & ASSOCIATES DATED APRIL, 2005.
- THE NOISE STUDY IS NOT REQUIRED FOR THIS PROJECT.
- THIS PROJECT IS EXEMPT FROM FOREST CONSERVATION BECAUSE THE PROPERTY IS ZONED NT.
- THE BOUNDARY SURVEY FOR THIS PROJECT WAS PREPARED BY DAFT, McCUNE & WALKER, INC. SEPTEMBER 2002.
- SUBJECT PROPERTY ZONED NT PER 2-2-04 COMPREHENSIVE ZONING PLAN.
- ALL ELEVATIONS SHOWN ARE BASED ON THE U.S.C. AND G.S. MEAN SEA LEVEL DATUM, 1929.
- SEE DEPARTMENT OF PLANNING AND ZONING FILE NO'S.: S-03-05, FDP-240, PB 360, WP-04-113, 24-4209-D, WP-04-135, SDP-04-163.
- THE CONTRACTOR SHALL TEST PIT EXISTING UTILITIES AT LEAST (5) DAYS BEFORE STARTING WORK SHOWN ON THESE DRAWINGS.
- CONTRACTOR IS SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, AND SAFETY PRECAUTIONS AND PROGRAMS.
- PIPE SHALL NOT BE INSTALLED BY THE CONTRACTOR UNTIL THE LENGTH CALLED FOR AT EACH STATION HAS BEEN APPROVED BY THE ENGINEER IN THE FIELD.
- NO PIPE SHALL BE LAID UNTIL LINES OF EXCAVATION HAVE BEEN BROUGHT WITHIN 6" OF FINISHED GRADE.
- ALL INLETS SHALL BE CONSTRUCTED IN ACCORDANCE WITH HOWARD COUNTY STANDARDS.
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS.
- STORM DRAIN TRENCHES WITHIN ROAD RIGHT OF WAY SHALL BE BACKFILLED AND COMPACTED IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME IV, I.E., STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION, LATEST AMENDMENTS.
- PROFILE STATIONS SHALL BE ADJUSTED AS NECESSARY TO CONFORM TO PLAN DIMENSIONS.
- DESIGNED TRAFFIC SPEED IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL VOL. III.
- ALL FILL AREAS WITHIN ROADWAY AND UNDER STRUCTURES TO BE COMPACTED TO A MINIMUM OF 95% COMPACTION OF AASHTO T180.
- ALL STREET CURB RETURNS SHALL HAVE 25' RADII UNLESS OTHERWISE NOTED.
- ALL STREET LIGHTS SHALL BE LOCATED BETWEEN 2'-0" AND 4'-0" BEHIND FACE OF CURB.
- PERIMETER LANDSCAPING, PRIVATE ROAD STREET TREES AND PROPOSED SWM FACILITY PLANTINGS ARE DEFERRED UNTIL SITE DEVELOPMENT PLAN. STREET TREE PLANTINGS FOR LARK BROWN ROAD AND OLD WATERLOO ROAD SHALL BE PROVIDED AS SHOWN ON STREET TREE PLANTING SHEETS OF THESE ROAD CONSTRUCTION DRAWINGS. SURETY FOR 72 SHADE TREES SHALL BE POSTED WITH THE DPW'S DEVELOPERS AGREEMENT.
- STREAM BUFFERS ARE DETERMINED BY LAND USE ADJOINING THE OPEN SPACE. EMPLOYMENT USE = 50' BUFFER FROM ANY STREAM. RESIDENTIAL USES= 50' BUFFER FOR INTERMITTENT STREAMS AND 75' BUFFER FOR PERENNIAL STREAMS.
- FLOODPLAIN STUDY WAS PREPARED BY DAFT McCUNE & WALKER, INC. DATED 2003.
- THERE ARE NO KNOWN CEMETERIES OR GRAVE SITES ON THIS PROPERTY. ADDITIONAL FOREBAY LOCATIONS AND STORAGE VOLUME MAY BE REQUIRED AT THAT TIME.
- WP-04-113 DENIED REQUEST TO WAIVE SECTION 16.155.a.1.(i), WHICH REQUIRES APPROVAL OF SITE DEVELOPMENT PLAN PRIOR TO ISSUANCE OF GRADING OR BUILDING PERMIT, TO ALLOW THE PETITIONER TO MASS GRADE THE SUBJECT PROPERTY.
- WP-04-135 APPROVED REQUEST TO WAIVE SECTION 16.146.a.(1), WHICH REQUIRES SUBMISSION OF PRELIMINARY PLAN APPLICATION WITHIN A CERTAIN TIME AFTER APPROVAL OF A SKETCH PLAN, AND PRIOR TO SUBMISSION OF A FINAL PLAN.

- APPROVAL IS SUBJECT TO THE FOLLOWING CONDITIONS:
- THE FINAL PLAN SHALL BE SUBMITTED WITHIN 4 MONTHS OF APPROVAL FOR THIS WAIVER (ON OR BEFORE 10/23/04) FOR THE AREA ASSOCIATED WITH PHASE 1; WITHIN 6 MONTHS OF APPROVAL OF THIS WAIVER (ON OR BEFORE 12/23/04) FOR THE AREA ASSOCIATED WITH PHASE 2; AND WITHIN 9 MO ENTHS OF APPROVAL OF THIS WAIVER (ON OR BEFORE 03/23/05) FOR THE NON-RESIDENTIAL AREA OF THE SUBDIVISION. YOU MAY SUBMIT A SINGLE FINAL PLAN APPLICATION TO COVER THE ENTIRE SUBDIVISION SINCE THE MILESTONE DATE TO REMAIN IN COMPLIANCE WITH APFO REQUIREMENTS.
 - YOU MAY NOT CONVERT THE ROADS TO PUBLIC ROADS.
 - YOU WILL HAVE TO COMPLY WITH ALL SHA REQUIREMENTS FOR ROAD IMPROVEMENTS ON ROUTE 108, IN CONJUNCTION WITH THE REVIEW AND APPROVAL OF THE FINAL.
 - LANDSCAPING FOR THE EXISTING SWM FACILITIES WAS ADDRESSED UNDER SDP-04-163. PERIMETER LANDSCAPING, PROPOSED SWM PLANTINGS AND ALL OTHER REQUIRED LANDSCAPING IN ACCORDANCE WITH SECTION 16.124 OF THE LANDSCAPE MANUAL SHALL BE DEFERRED UNTIL SITE DEVELOPMENT PLAN APPROVAL FOR THIS SITE.
 - PROPOSED STORMWATER MANAGEMENT DRAINAGE AREA BOUNDARIES WILL REQUIRE VERIFICATION AT THE ULTIMATE DEVELOPMENT SDP SUBMITTED. MODIFICATIONS TO DRAINAGE AREAS CURRENTLY SHOWN FOR THESE POND DESIGNS MAY REQUIRE ADDITIONAL SWM. DRAINAGE AREA PERCENT IMPERVIOUSNESS VALUES USED TO DESIGN PROPOSED PONDS MUST BE VERIFIED AT THE TIME ULTIMATE DEVELOPMENT SITE DEVELOPMENT PLAN SUBMITTAL. ANY INCREASE IN DRAINAGE AREA PERCENT IMPERVIOUSNESS VALUES WILL REQUIRE STORMWATER MANAGEMENT. AT THE ULTIMATE DEVELOPMENT SITE DEVELOPMENT PLAN SUBMISSION, FOREBAY REQUIREMENTS WILL BE VERIFIED. ADDITIONAL FOREBAY LOCATIONS AND STORAGE VOLUME MAY BE REQUIRED AT THAT TIME.
 - ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT OF WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (12 GAUGE) - 3' LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
 - STORM DRAINS UNDER PRIVATE ROADS GATEWAY OVERLOOK DR AND BENSON EAST DR SHALL BE PRIVATELY OWNED AND MAINTAINED.



PLAN
SCALE: 1" = 200'

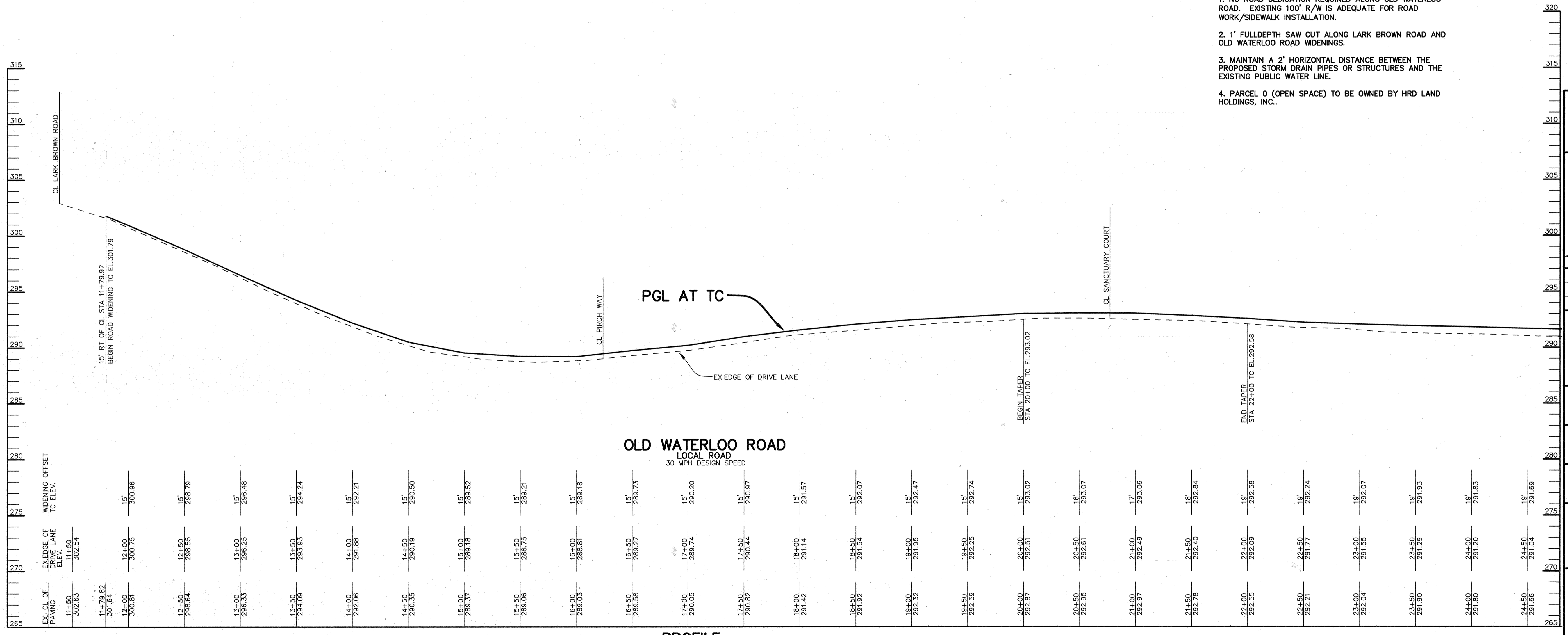
APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.	
<i>William T. ...</i> CHIEF, BUREAU OF HIGHWAYS	9-19-05 DATE
APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.	
<i>Cindy ...</i> CHIEF, DIVISION OF LAND DEVELOPMENT	10/11/05 DATE
<i>[Signature]</i> CHIEF, DEVELOPMENT ENGINEERING DIVISION	9/26/05 DATE
DATE	NO. REVISION
OWNER / DEVELOPER HRD LAND HOLDINGS, INC. HOWARD RESEARCH AND DEVELOPMENT CORPORATION THE ROUSE BUILDING 10275 LITTLE PATUXENT PARKWAY COLUMBIA, MARYLAND 21044 410-992-6000	
PROJECT BENSON EAST PARCELS A, NON-BUILDABLE PARCEL B (PRIVATE ROADS) PARCELS C TO M AND O.S. PARCELS N & O	
AREA TAX MAP 37 & 43 ZONED - NEWTOWN PARCELS 482, 587, 382, 421, 547 6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND	
TITLE TITLE SHEET	
Patton Harris Rust & Associates, PC Engineers. Surveyors. Planners. Landscape Architects. 8818 Centre Park Drive Columbia, MD 21045 T 410.997.8900 F 410.997.9282	
DATE 8-18-05	DESIGNED BY : C.J.R.
	DRAWN BY: DAM
	PROJECT NO : 11621/PRELIM RD1.DWG
	DATE : AUGUST 18, 2005
	SCALE : AS SHOWN
	DRAWING NO. 1 OF 25



PLAN
SCALE: 1"=50'

NOTES:

1. NO ROAD DEDICATION REQUIRED ALONG OLD WATERLOO ROAD. EXISTING 100' R/W IS ADEQUATE FOR ROAD WORK/SIDEWALK INSTALLATION.
2. 1' FULLDEPTH SAW CUT ALONG LARK BROWN ROAD AND OLD WATERLOO ROAD WIDENINGS.
3. MAINTAIN A 2' HORIZONTAL DISTANCE BETWEEN THE PROPOSED STORM DRAIN PIPES OR STRUCTURES AND THE EXISTING PUBLIC WATER LINE.
4. PARCEL 0 (OPEN SPACE) TO BE OWNED BY HRD LAND HOLDINGS, INC.



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

FOR CONTINUATION SEE SHEET 3

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
William J. Madala 9-19-05
 CHIEF, BUREAU OF HIGHWAYS *ms* DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.
Clifford Hamann 10/11/05
 CHIEF, DIVISION OF LAND *80* DEVELOPMENT DATE

[Signature] 9/20/05
 CHIEF, DEVELOPMENT *900* ENGINEERING DIVISION DATE

DATE	NO.	REVISION

OWNER / DEVELOPER
 HRD LAND HOLDINGS, INC.
 HOWARD RESEARCH AND DEVELOPMENT CORPORATION
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044
 410-992-6000

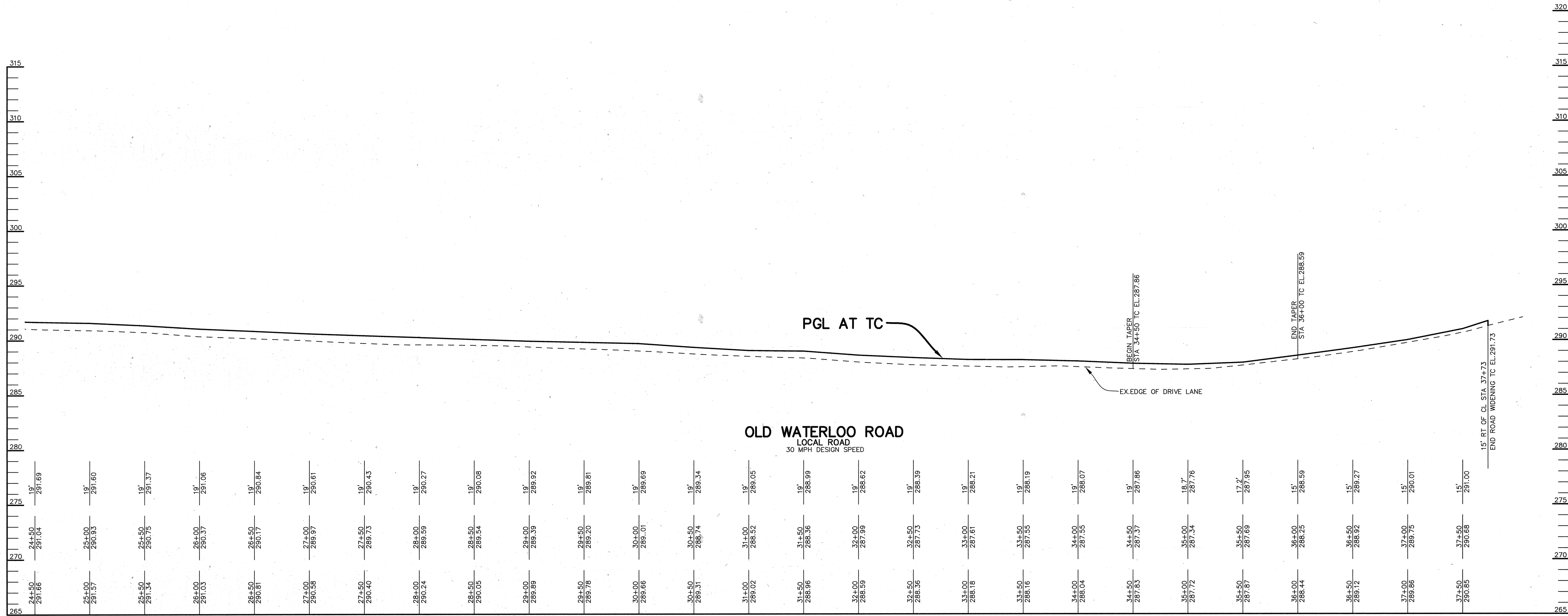
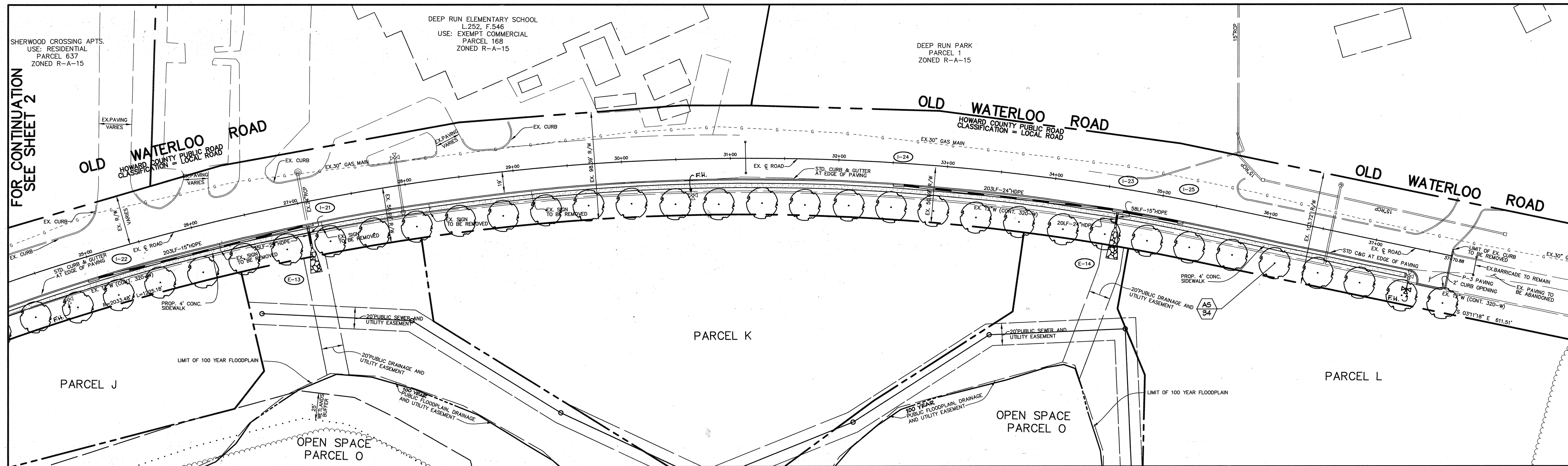
PROJECT **BENSON EAST**
 PARCELS A, NON-BUILDABLE PARCEL B (PRIVATE ROADS), PARCELS C TO M AND O & PARCELS N & O

AREA TAX MAP 37 & 43 ZONED - NEWTOWN
 PARCELS 482, 587, 382, 421, 547
 6th ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

TITLE **PLAN AND PROFILE AND STREET TREE PLANTINGS OF OLD WATERLOO ROAD FROM STA 11+00 TO 24+50**

Patton Harris Rust & Associates, pc
 Engineers, Surveyors, Planners, Landscape Architects,
 8818 Centre Park Drive
 Columbia, MD 21045
 T 410.997.8900
 F 410.997.9282

8-18-05 DATE
 DESIGNED BY: C.J.R.
 DRAWN BY: DAM
 PROJECT NO: 11621/PRELIM RD2.DWG
 DATE: AUGUST 18, 2005
 SCALE: AS SHOWN
 DRAWING NO. 2 OF 25



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
William J. Mahoney 9-19-05
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.
Amie C. Remington 10/11/05
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

John P. ... 9/24/05
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

DATE	NO.	REVISION

OWNER / DEVELOPER: HRD LAND HOLDINGS, INC.
 HOWARD RESEARCH AND DEVELOPMENT CORPORATION
 THE ROUSE BUILDING
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044
 410-992-6000

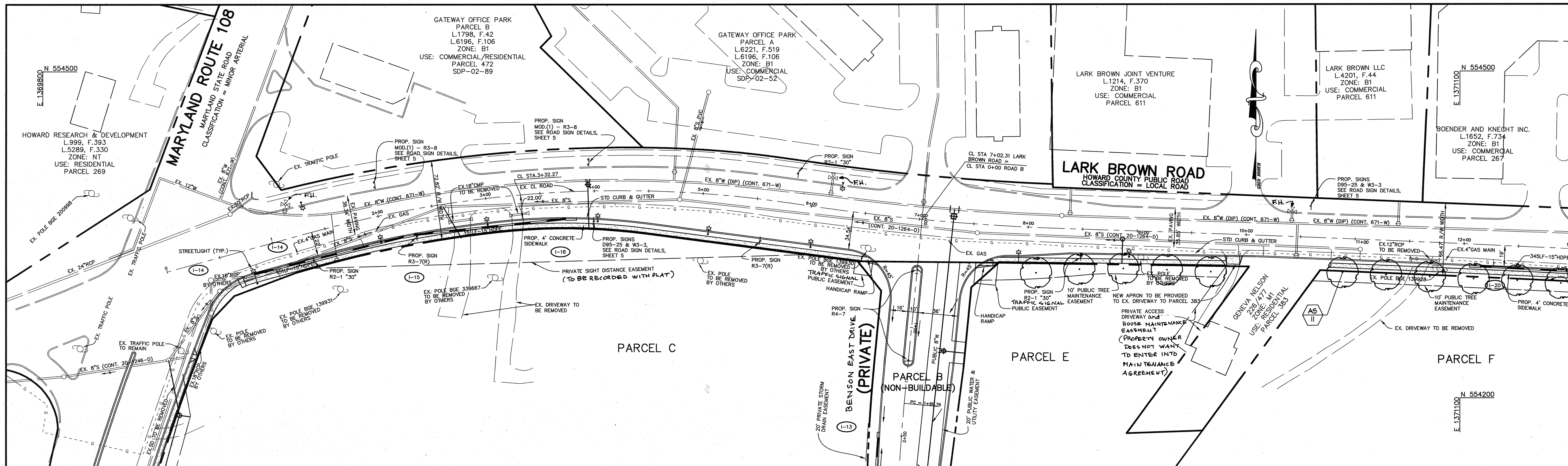
PROJECT: BENSON EAST
 PARCELS A, NON-BUILDABLE PARCEL D (PRIVATE ROADS), PARCELS C TO M AND O.S. PARCELS N10

AREA: TAX MAP 37 & 43 ZONED - NEWTOWN
 PARCELS 482, 587, 382, 421, 547
 6th ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

TITLE: PLAN AND PROFILE AND STREET TREE PLANTINGS OF OLD WATERLOO ROAD FROM STA 24+50 TO END

Patton Harris Rust & Associates, pc
 Engineers, Surveyors, Planners, Landscape Architects.
 8818 Centre Park Drive
 Columbia, MD 21045
 T 410.997.8900
 F 410.997.9282

DATE: 8-18-05
 DESIGNED BY: C.J.R.
 DRAWN BY: DAM
 PROJECT NO: 11621/PRELIM RD3.DWG
 DATE: AUGUST 18, 2005
 SCALE: AS SHOWN
 DRAWING NO. 3 OF 25

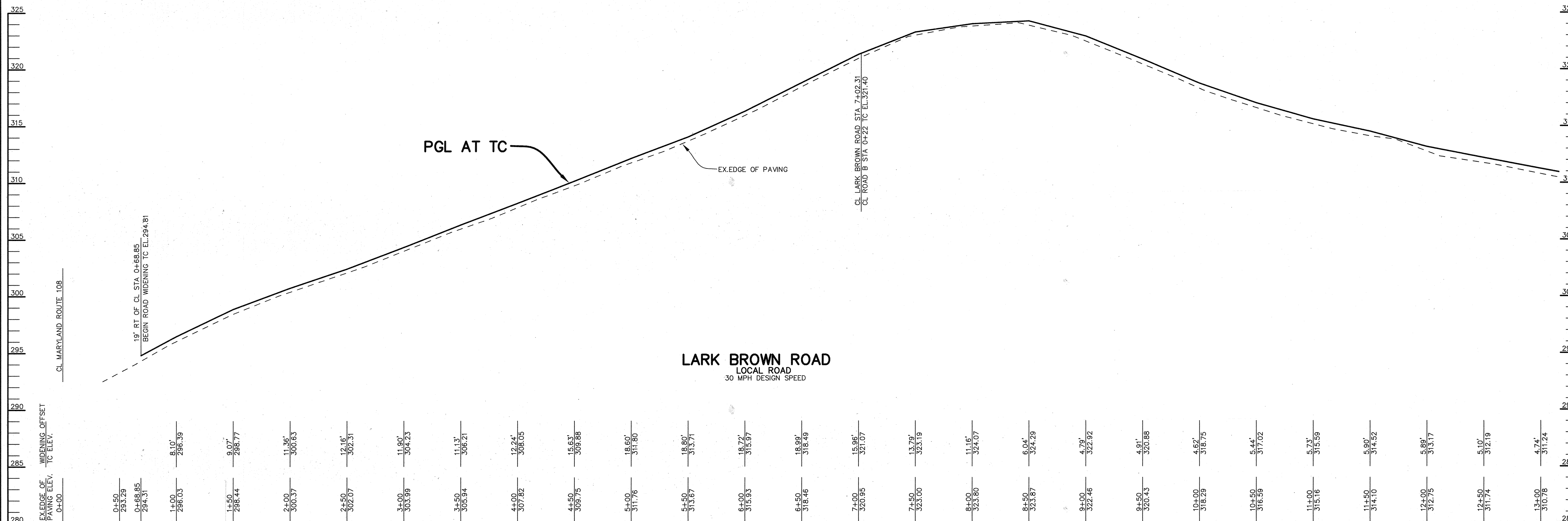


PLAN
SCALE: 1"=50'

NOTE: FOR CONSTRUCTION DRAWINGS OF MD ROUTE 108 SEE PLANS FROM WALLACE MONTGOMERY & ASSOCIATES, HOWARD COUNTY SOIL CONSERVATION DISTRICT (SCD) TRACKING NUMBER GP-05-51.

NOTES: 1. 1' FULLDEPTH SAW CUT ALONG LARK BROWN ROAD AND OLD WATERLOO ROAD WIDENINGS.
2. STORM DRAINS UNDER PRIVATE ROAD A AND ROAD B SHALL BE PRIVATELY OWNED AND MAINTAINED.

FOR CONTINUATION SEE SHEET 5



LARK BROWN ROAD
LOCAL ROAD
30 MPH DESIGN SPEED

PROFILE
SCALE
HOR. - 1"=50'
VERT. - 1"=5'

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

William J. ... 9-19-05
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Christy ... 10/10/05
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

... 9/20/05
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

DATE NO. REVISION

OWNER / DEVELOPER
HRD LAND HOLDINGS, INC.
HOWARD RESEARCH AND DEVELOPMENT CORPORATION
THE ROUSE BUILDING
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
410-992-6000

PROJECT
BENSON EAST
PARCELS A, NON-BUILDABLE PARCELS B (PRIVATE ROADS), PARCELS C TO M AND O, PARCELS N & O

AREA
TAX MAP 37 & 43 ZONED - NEWTOWN
PARCELS 482, 587, 382, 421, 547
6th ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE PLAN AND PROFILE AND STREET TREE PLANTINGS OF LARK BROWN ROAD FROM STA 0+00 TO 13+00

Patton Harris Rust & Associates, pc
Engineers, Surveyors, Planners, Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

8-18-05
DATE

DESIGNED BY: C.J.R.

DRAWN BY: DAM

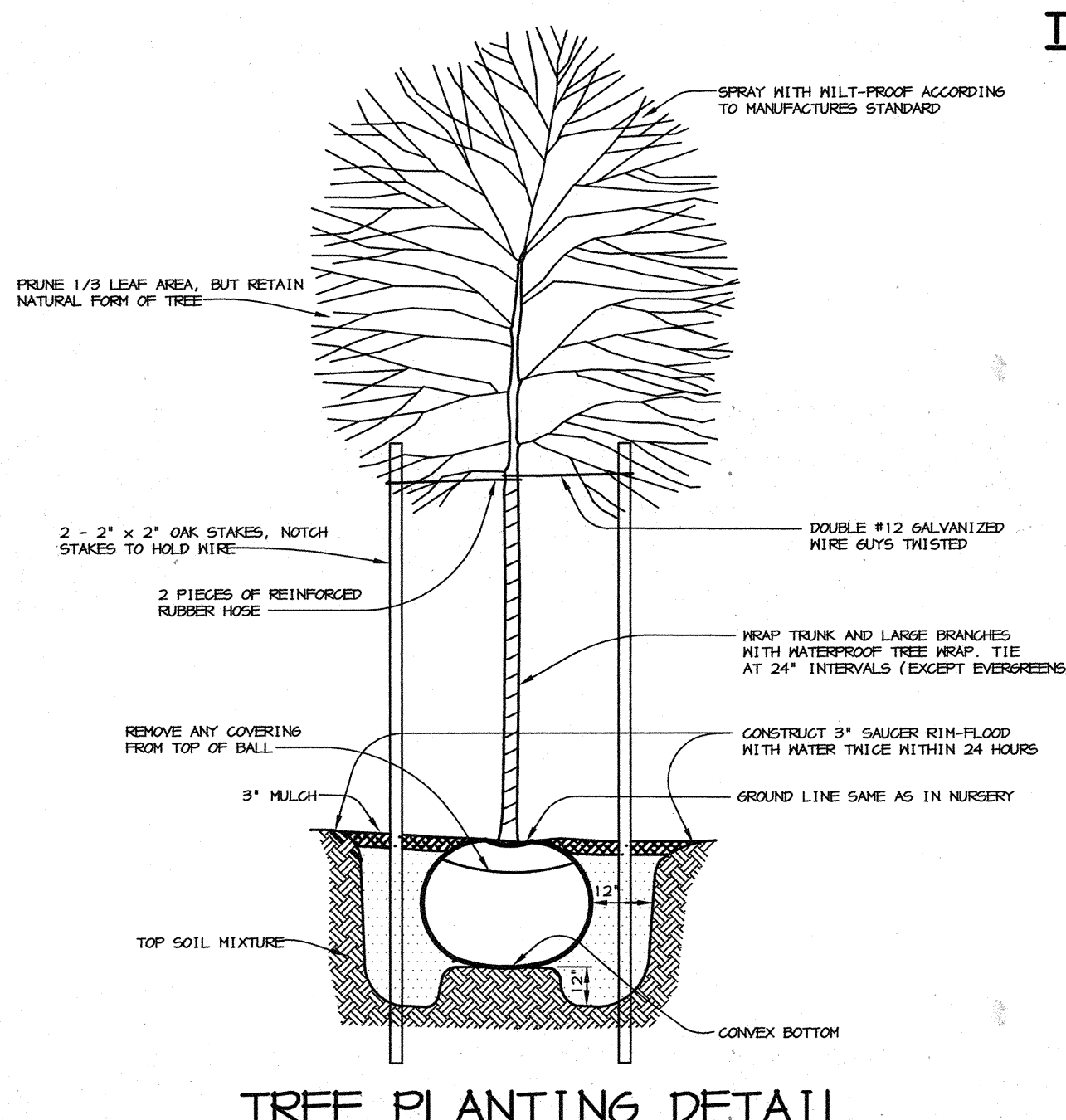
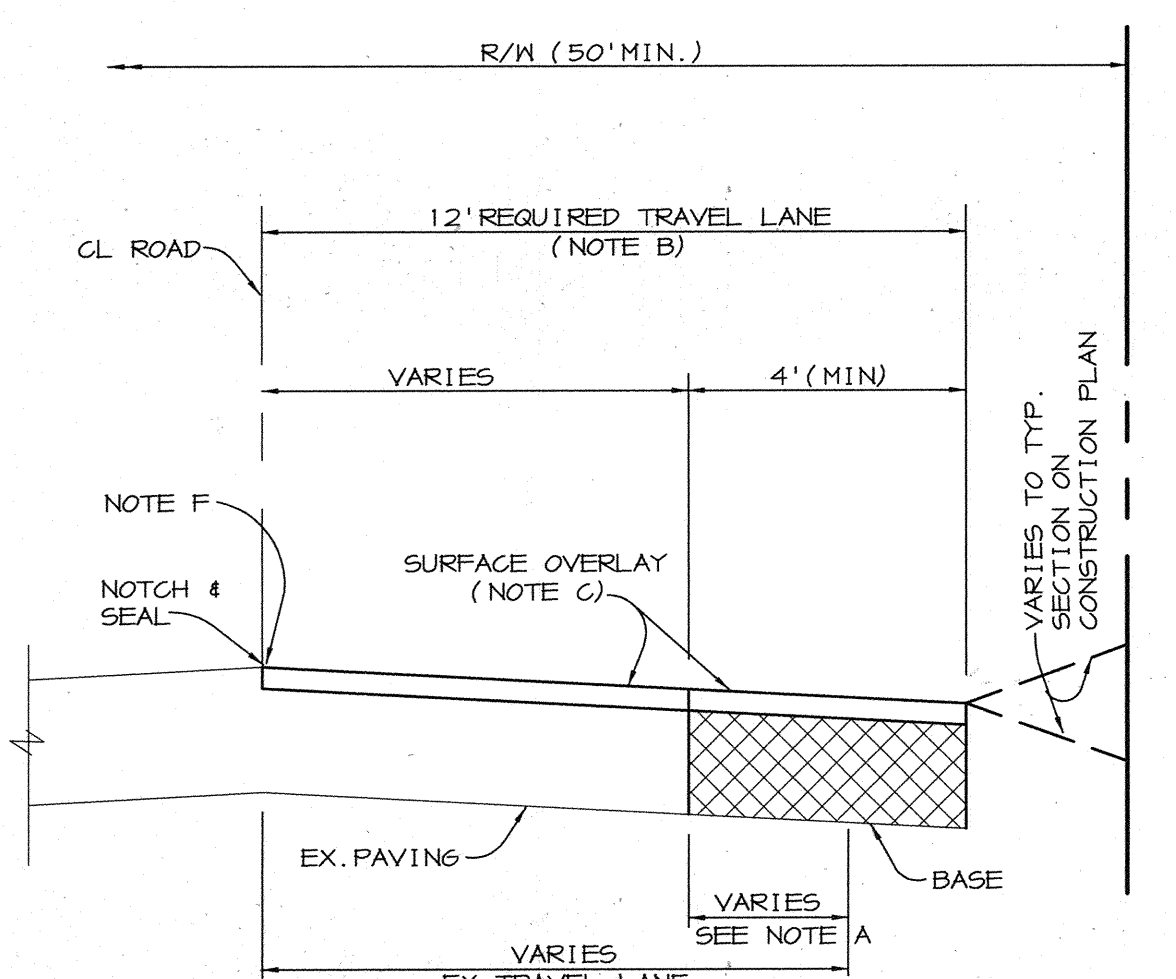
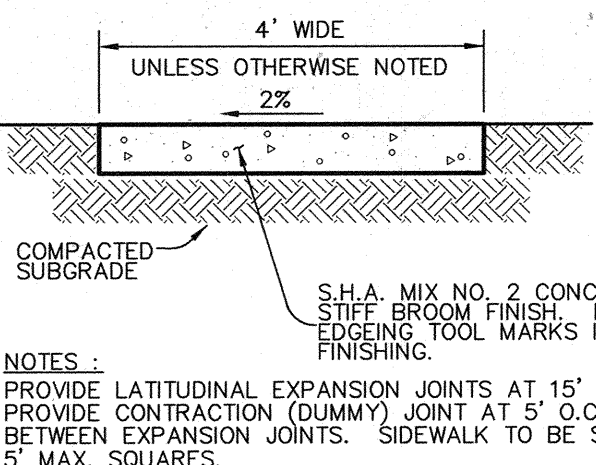
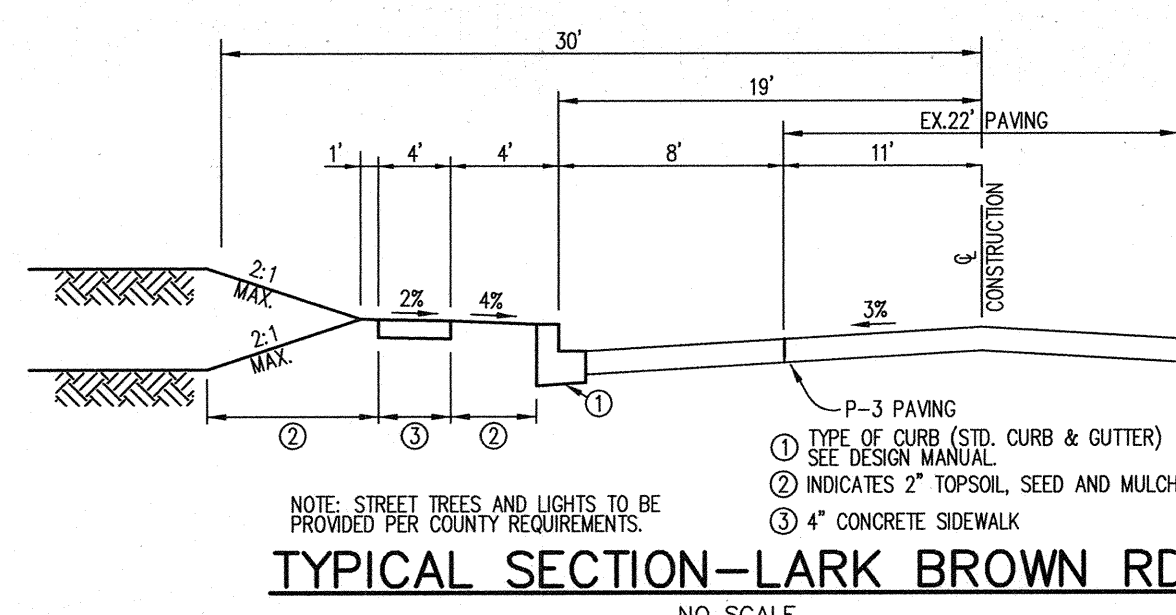
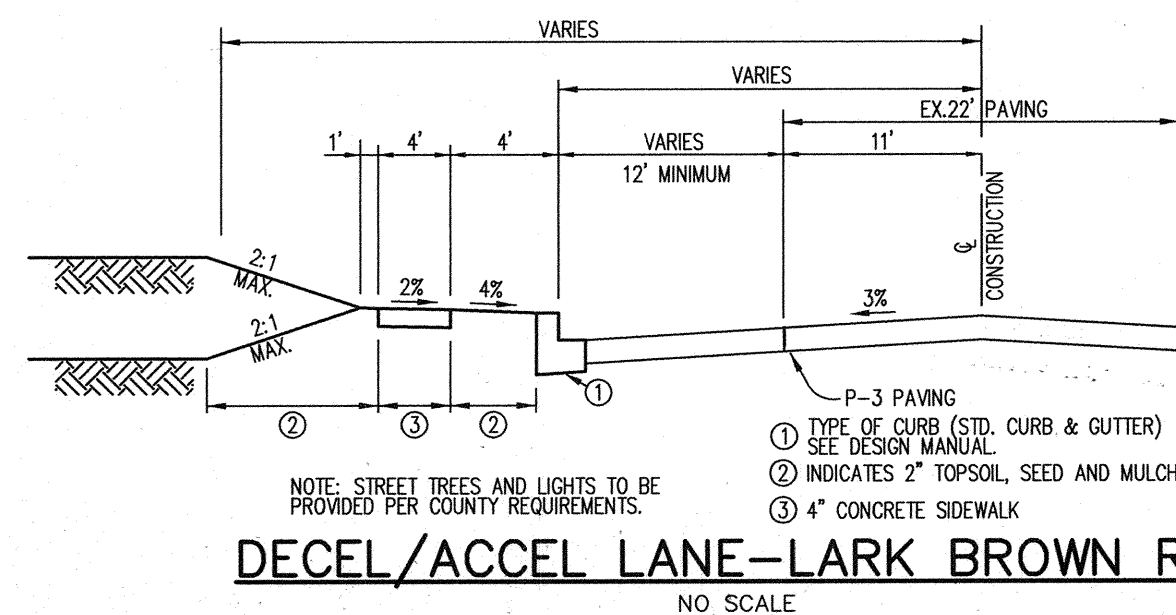
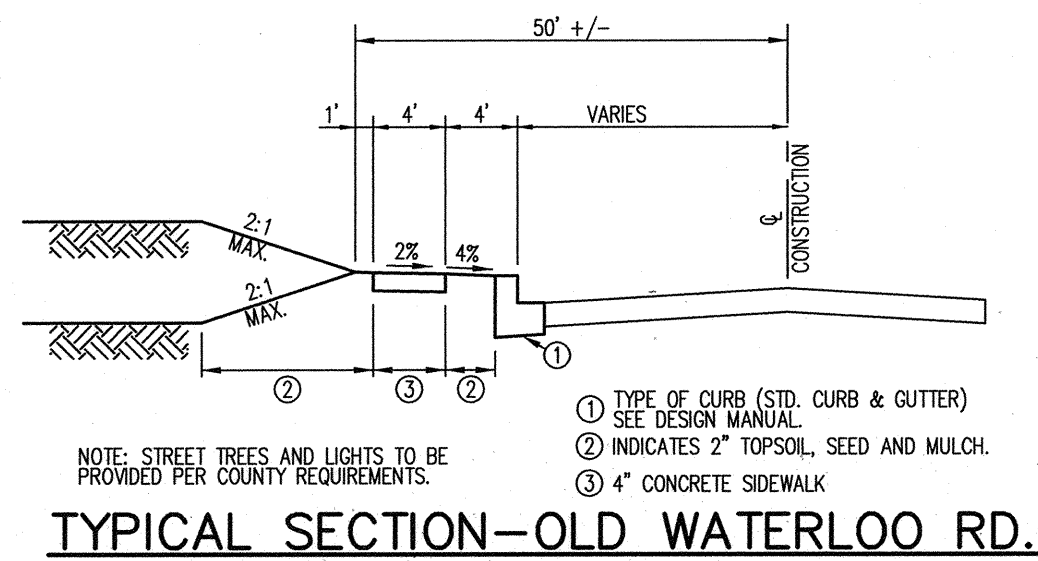
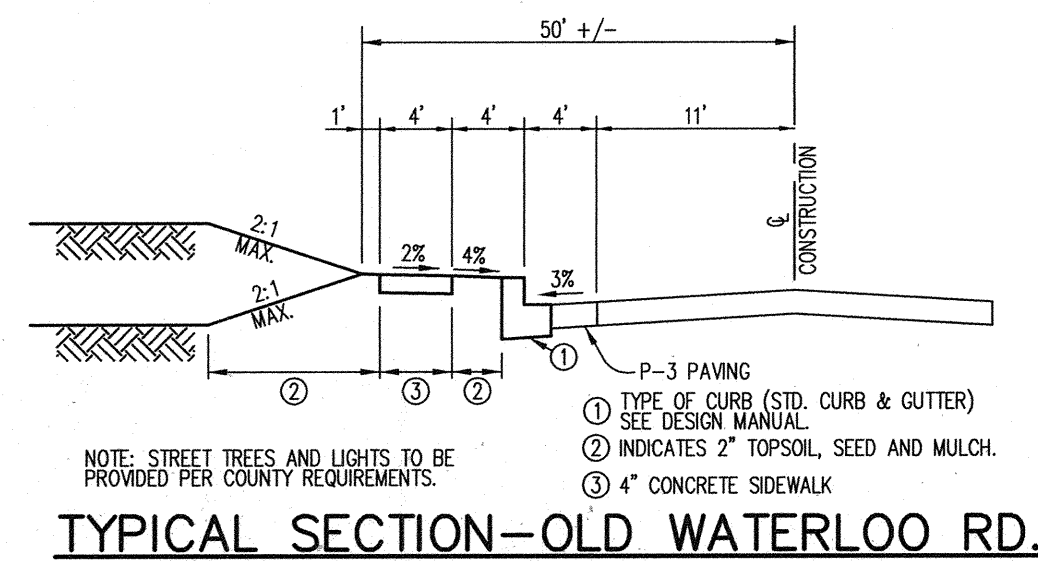
PROJECT NO: 11621/PRELIM RD4.DWG

DATE: AUGUST 18, 2005

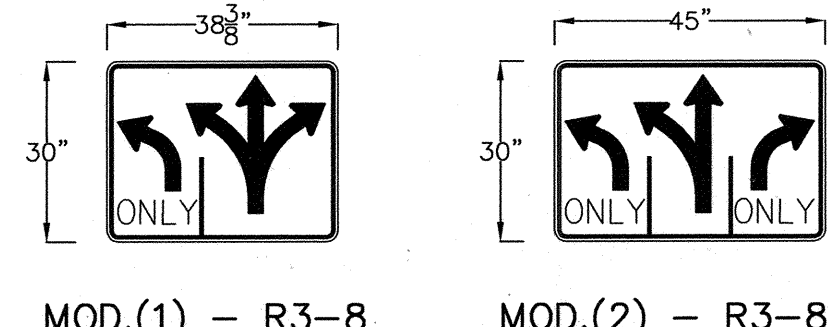
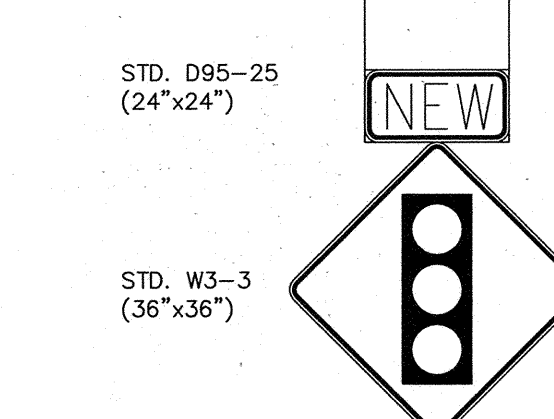
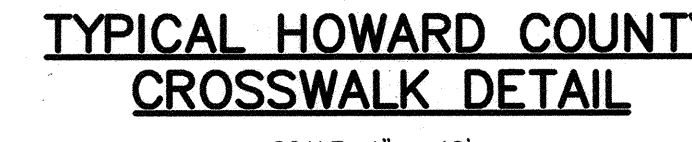
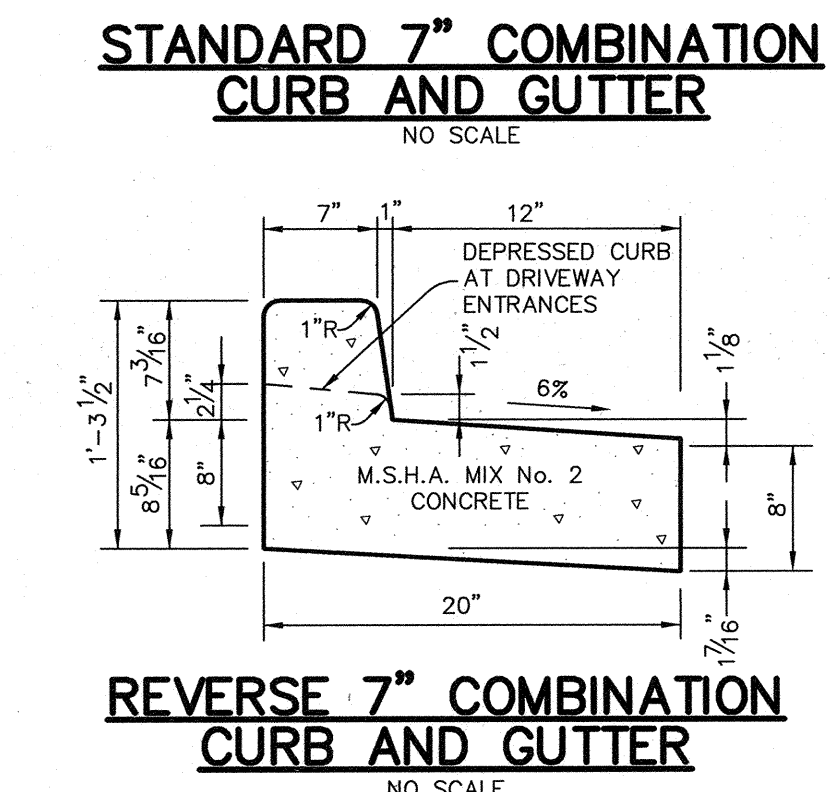
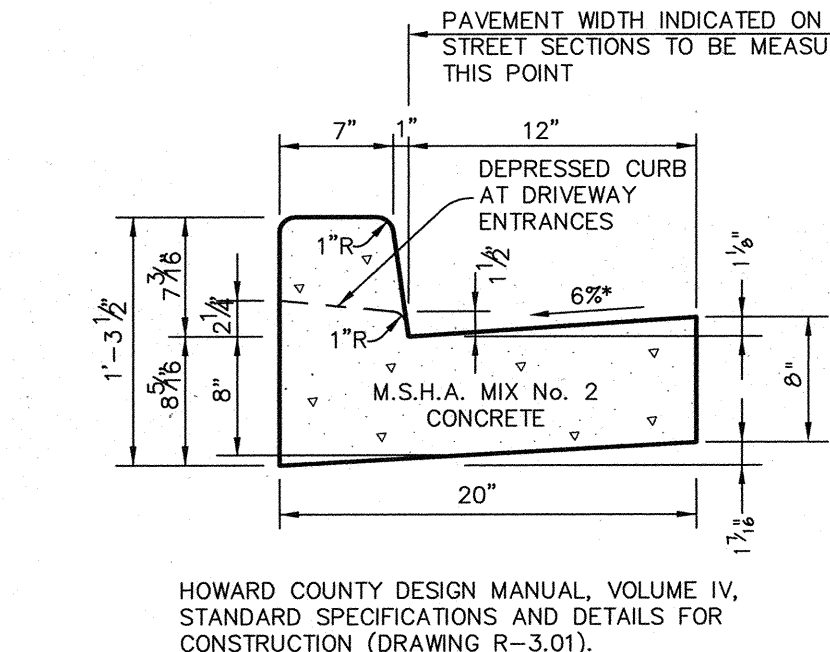
SCALE: AS SHOWN

DRAWING NO. 4 OF 25

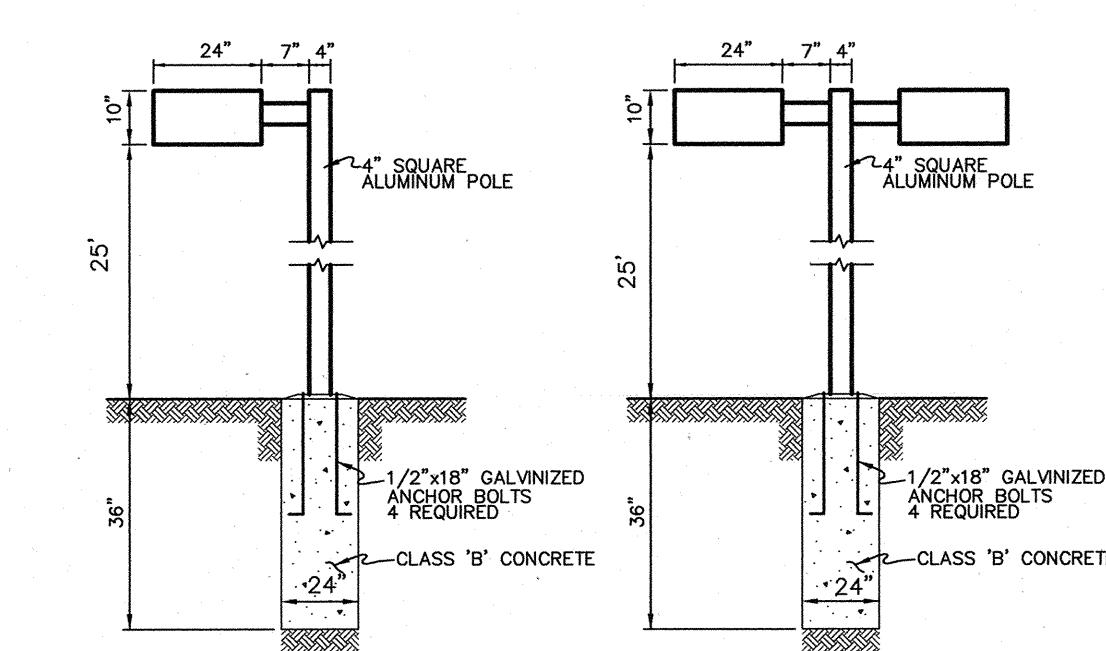
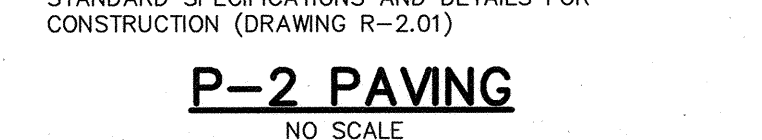
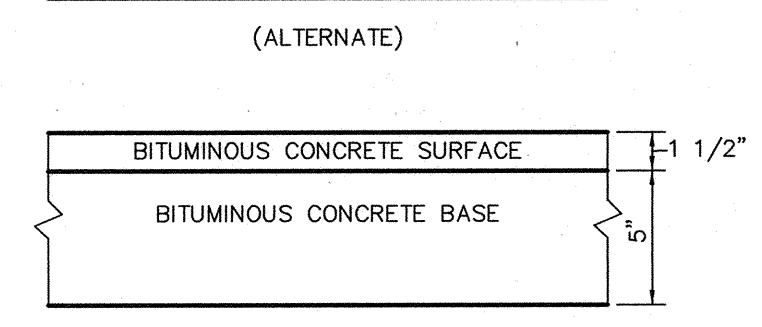
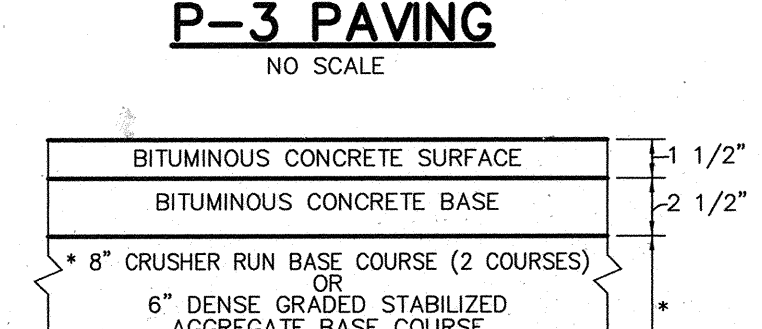
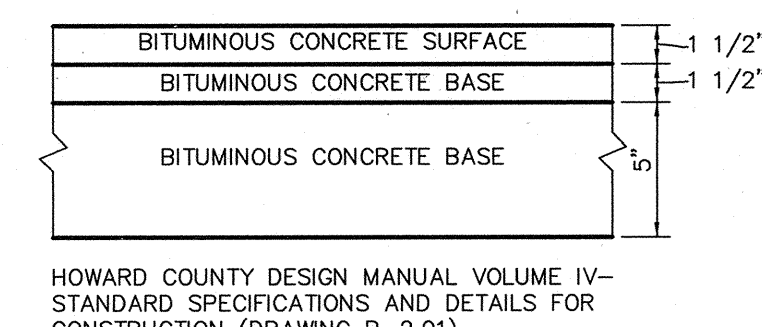
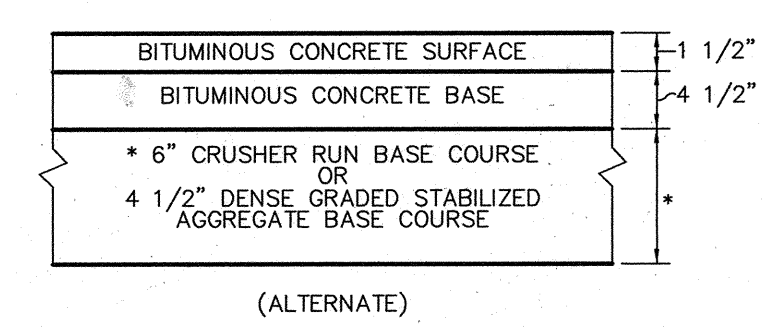
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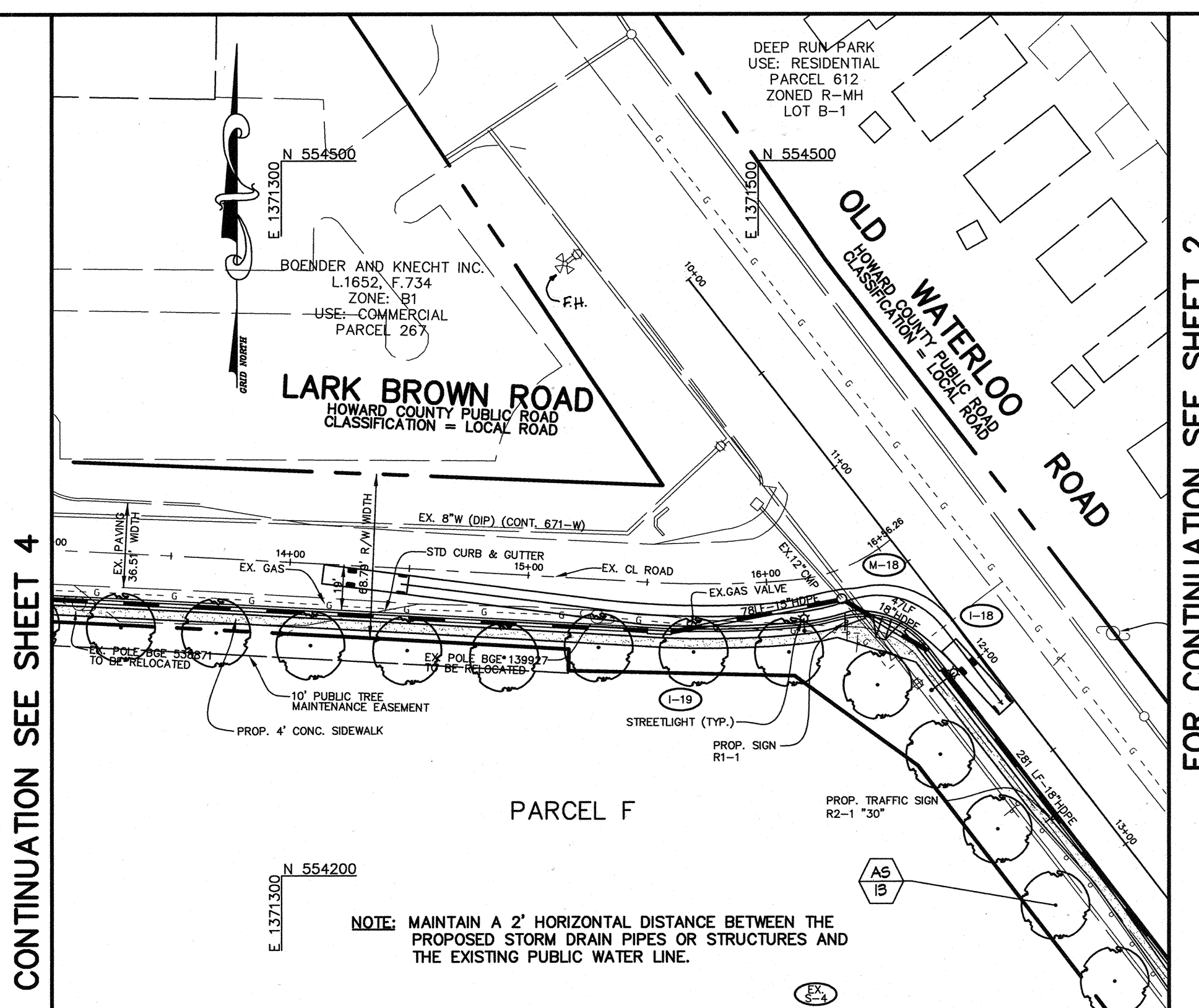
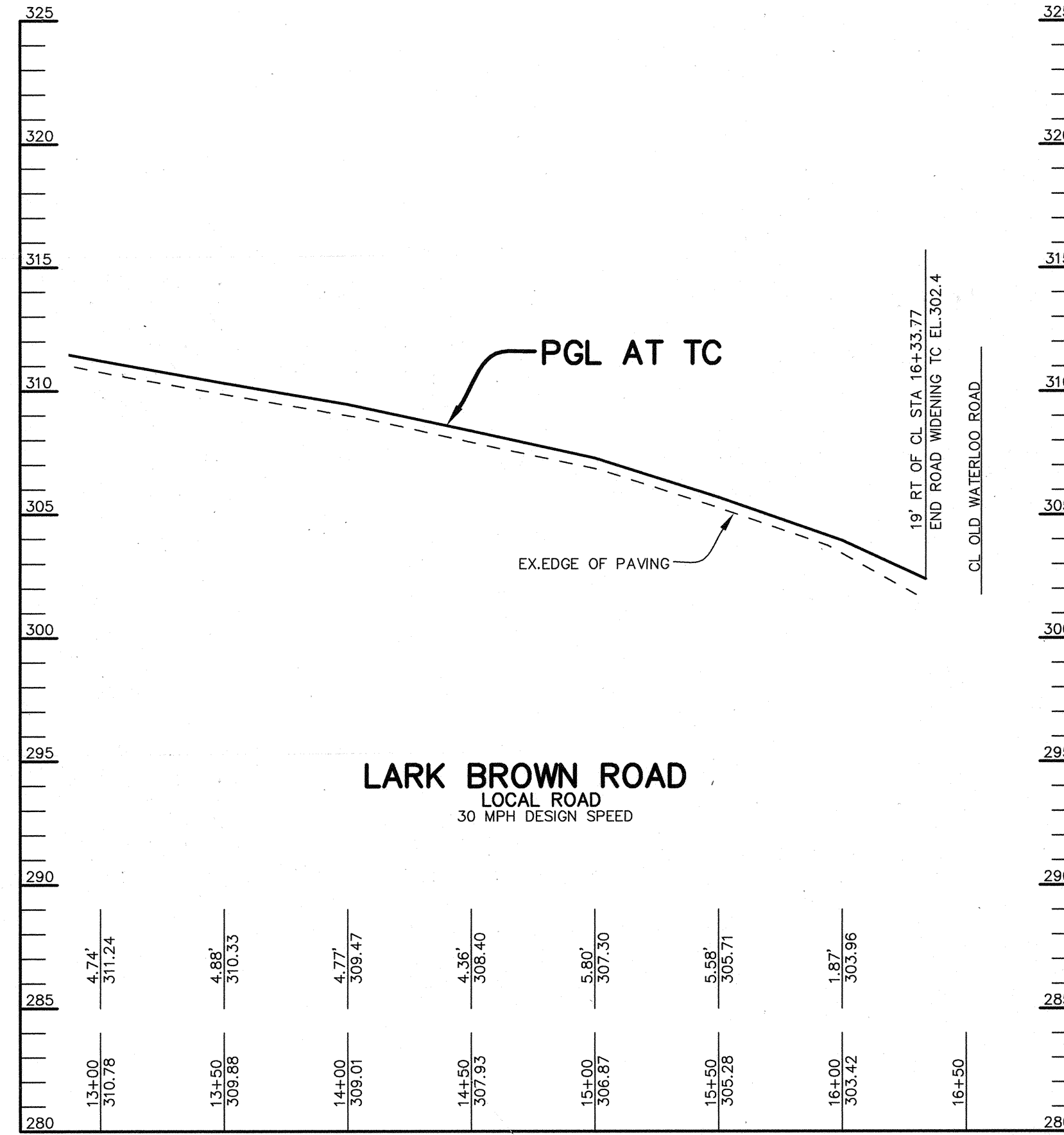
STREET TREE PLANTING SCHEDULE				
SYMBOL	QTY.	SCIENTIFIC / COMMON NAME	SIZE	REMARKS
AS	76	Acer dasycarpum Sugar Maple	2.5'-3' cal.	BBB Plant as shown



- NOTES:
1. SIGNS SHOWN HERE ARE MODIFICATIONS OF STANDARD SIGNS FOUND IN THE MARYLAND STATE HIGHWAY ADMINISTRATION (MSHA) STANDARD SIGN BOOK. ALL OTHER SIGNS ON ROAD PLANS AND STRIPING PLANS ARE STANDARD MSHA SIGNS.
2. ALL SIGNS SHOWN HERE ARE GROUND-MOUNTED.
3. MODIFICATIONS TO THE R3-8 SIGN SHALL REMAIN CONSISTENT WITH THE STANDARD SIZE, COLOR, AND REFLECTIVITY OF ARROWS, TEXT, LEGEND AND BACKGROUND OF STANDARD SIGN.
4. SIGNS ARE SUBJECT TO APPROVAL BY HOWARD COUNTY TRAFFIC DIVISION AND MSHA.



1. ALL LIGHT FIXTURES TO BE SINGLE LUMINAIRE 400 WATT MERCURY TYPE WITH METAL POLES AND DIRECTED DOWNWARD.
2. LOCATIONS OF LIGHT FIXTURES ARE ON THE PLAN AND ARE SHOWN THUS.
3. LIGHTS TO BE MODULE II TYPE AS MANUFACTURED BY MOLDCAST OR APPROVED EQUAL.
4. POLE AND FIXTURE TO HAVE BLACK POLYESTER ENAMEL FINISH.
5. POLE TO BE LOCATED 3' BACK FROM BACK OF CURB.



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
Walter J. ... 9-19-05
CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.
Clayton ... 9/26/05
CHIEF, DIVISION OF LAND DEVELOPMENT

CHIEF, DEVELOPMENT ENGINEERING DIVISION *gno* 9/26/05

DATE NO. REVISION

OWNER / DEVELOPER
HRD LAND HOLDINGS, INC.
HOWARD RESEARCH AND DEVELOPMENT CORPORATION
THE ROUSE BUILDING
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
410-992-6000

PROJECT
BENSON EAST
PARCELS A, NON-BUILDABLE PARCEL B (PRIVATE ROADS), PARCELS C TO M AND O.S. PARCELS N+O

AREA
TAX MAP 37 & 43 ZONED - NEWTOWN
PARCELS 482, 587, 382, 421, 547
6th ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE PLAN AND PROFILE AND STREET TREE PLANTINGS FOR LARK BROWN ROAD FROM STA 13+00 TO END

Patton Harris Rust & Associates, PC
Engineers, Surveyors, Planners, Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

DATE 8-18-05

DESIGNED BY: C.J.R.

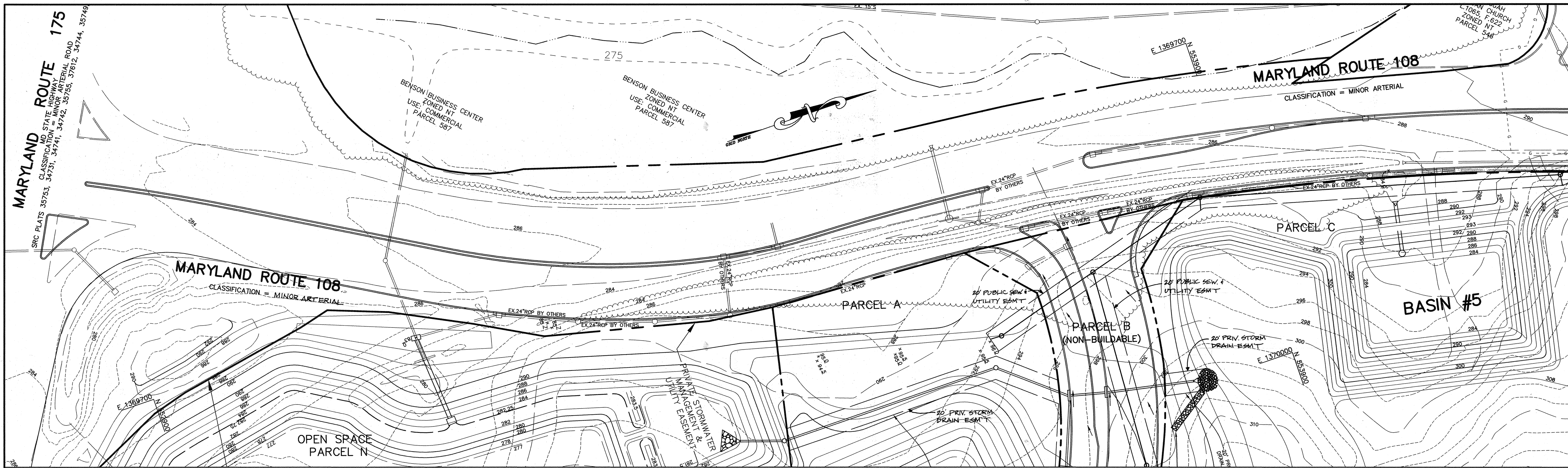
DRAWN BY: DAM

PROJECT NO: 11621/PRELIM RDS.DWG

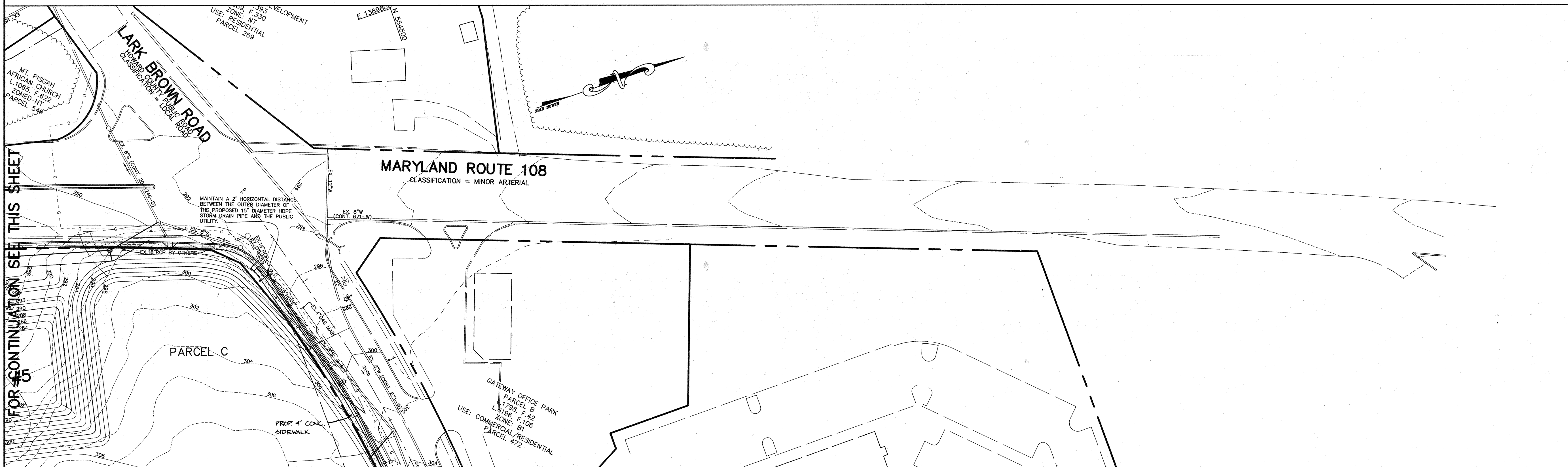
DATE: AUGUST 18, 2005

SCALE: AS SHOWN

DRAWING NO. 5 OF 25



PLAN
SCALE: 1"=50'



PLAN
SCALE: 1"=50'

FOR CONTINUATION SEE THIS SHEET

- NOTES:
1. ALL STORMWATER MANAGEMENT FACILITIES SHOWN ARE EXISTING.
 2. FOR CONSTRUCTION DRAWINGS OF MD ROUTE 108 SEE PLANS FROM WALLACE MONTGOMERY & ASSOCIATES, HOWARD COUNTY SOIL CONSERVATION DISTRICT (SCD) TRACKING NUMBER GP-05-51.
 3. PARCEL N (OPEN SPACE) TO BE OWNED BY HRD LAND HOLDINGS, INC..

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

William Z. M... 9-19-05
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Conrad Hambley 10/11/05
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[Signature] 9/20/05
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

DATE	NO.	REVISION

OWNER / DEVELOPER
HRD LAND HOLDINGS, INC.
HOWARD RESEARCH AND DEVELOPMENT CORPORATION
THE ROUSE BUILDING
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
410-992-6000

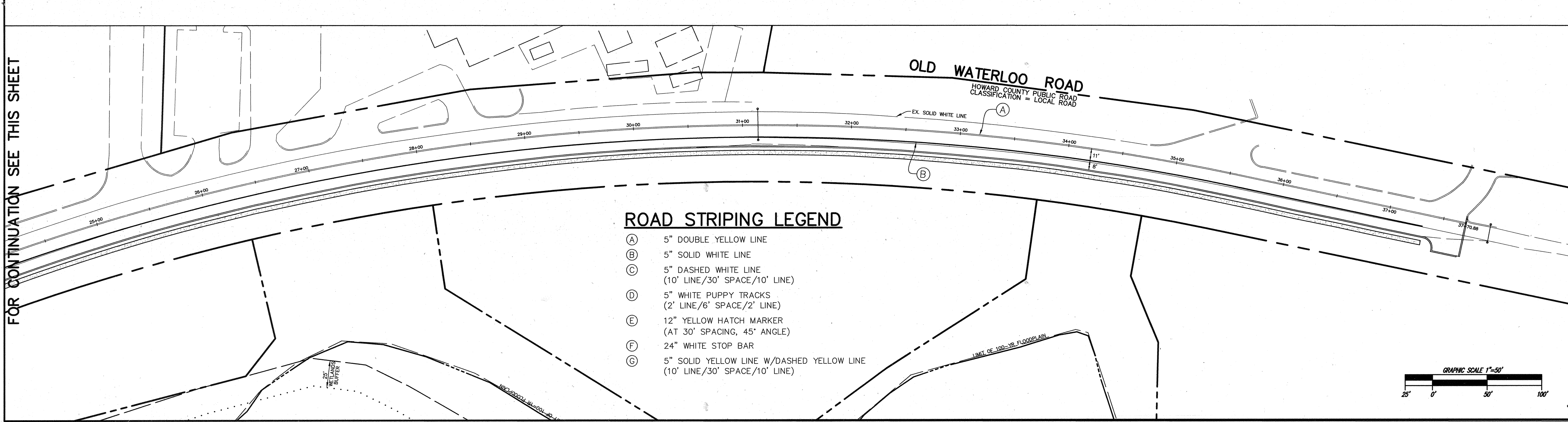
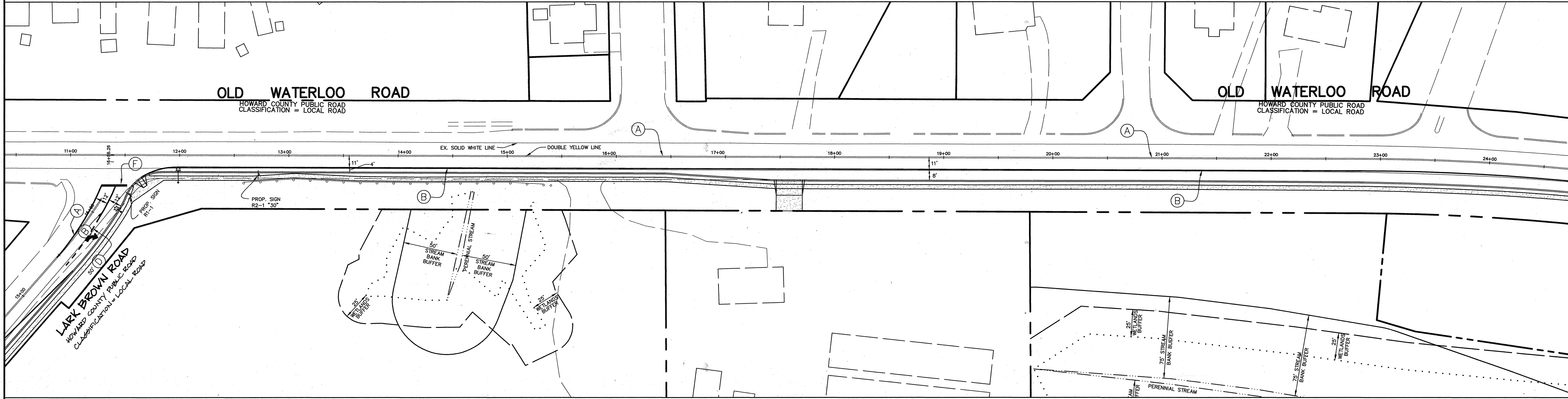
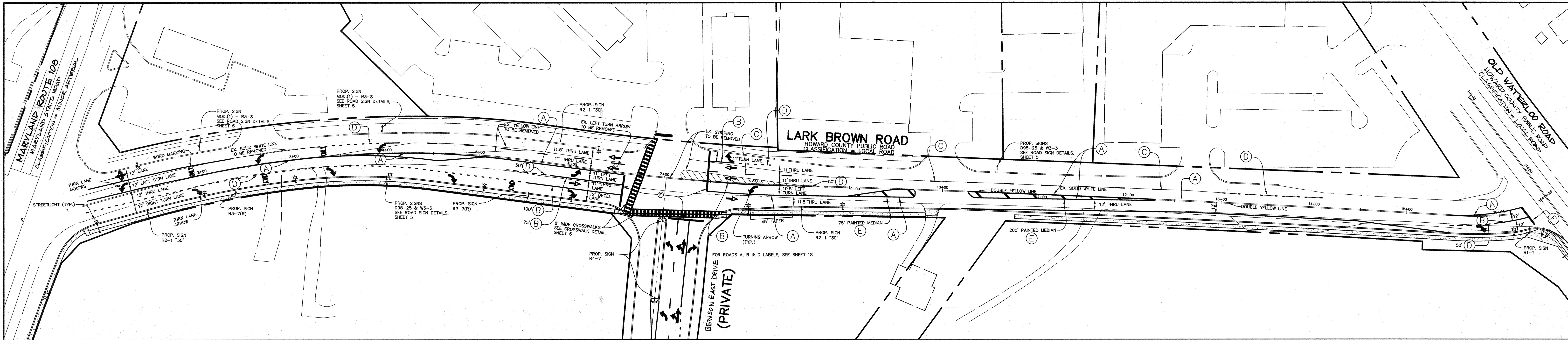
PROJECT
BENSON EAST
PARCELS A, NON-BUILDABLE PARCEL B (PRIVATE ROADS), PARCELS C TO M AND O & PARCELS N & O

AREA TAX MAP 37 & 43 ZONED - NEWTOWN
PARCELS 482, 587, 382, 421, 547
6th ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE
PLANS OF MARYLAND ROUTE 108 FROM STA 50+00 TO 75+89

Patton Harris Rust & Associates, PC
Engineers, Surveyors, Planners, Landscape Architects.
PHRA
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

DATE 8-18-05	DESIGNED BY : C.J.R.
STATE OF MARYLAND AIMEE C. REMINGTON PROFESSIONAL ENGINEER NO. 29923	DRAWN BY: DAM
<i>Aimee C. Remington</i>	PROJECT NO : 11621/PRELIM RD6.DWG
	DATE : AUGUST 18, 2005
	SCALE : AS SHOWN
	DRAWING NO. 6 OF 25



ROAD STRIPING LEGEND

- (A) 5" DOUBLE YELLOW LINE
- (B) 5" SOLID WHITE LINE
- (C) 5" DASHED WHITE LINE (10' LINE/30' SPACE/10' LINE)
- (D) 5" WHITE PUPPY TRACKS (2' LINE/6' SPACE/2' LINE)
- (E) 12" YELLOW HATCH MARKER (AT 30' SPACING, 45° ANGLE)
- (F) 24" WHITE STOP BAR
- (G) 5" SOLID YELLOW LINE W/DASHED YELLOW LINE (10' LINE/30' SPACE/10' LINE)

FOR CONTINUATION SEE THIS SHEET

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
W. J. White 9-19-05
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.
Cynthia Hamaker 10/18/05
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

CHIEF - DEVELOPMENT ENGINEERING DIVISION *gmo* 9/26/05 DATE

DATE NO. REVISION

OWNER / DEVELOPER
 HRD LAND HOLDINGS, INC.
 HOWARD RESEARCH AND DEVELOPMENT CORPORATION
 THE ROUSE BUILDING
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044
 410-992-6000

PROJECT
BENSON EAST
 PARCELS A, NON-BUILDABLE PARCELS B (PRIVATE ROADS), PARCELS C TO M AND O'S PARCELS N & O

AREA
 TAX MAP 37 & 43 ZONED - NEWTOWN
 PARCELS 482, 587, 382, 421, 547
 6th ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

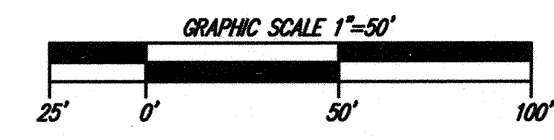
TITLE
STRIPING PLAN FOR LARK BROWN ROAD AND OLD WATERLOO ROAD

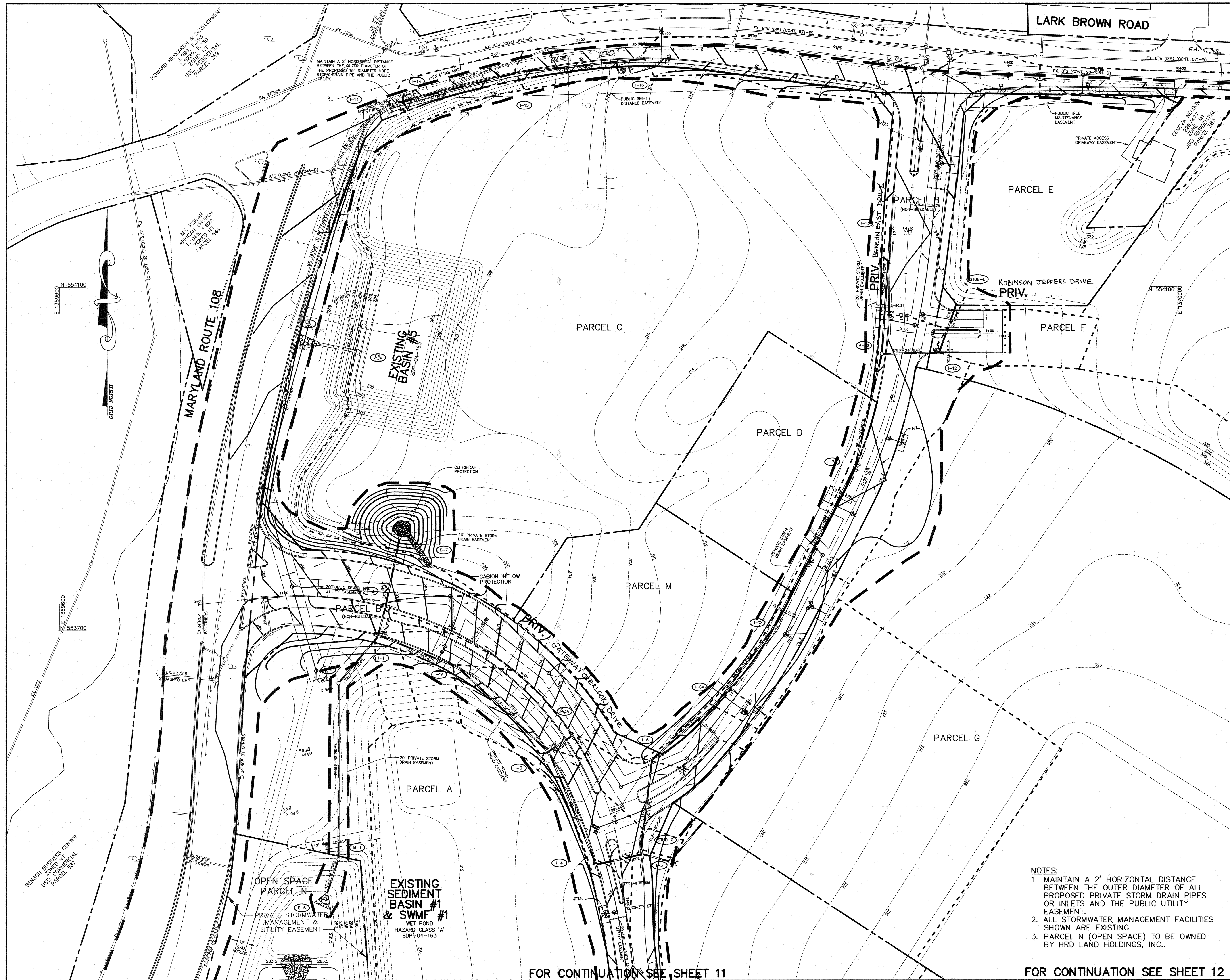
Patton Harris Rust & Associates, PC
 Engineers, Surveyors, Planners, Landscape Architects.
 8818 Centre Park Drive
 Columbia, MD 21045
 T 410.997.8900
 F 410.997.9282

DATE
 8-18-05

DESIGNED BY : C.J.R.
 DRAWN BY: DAM
 PROJECT NO : 11621/PRELIM RD7.DWG
 DATE : AUGUST 18, 2005
 SCALE : AS SHOWN
 DRAWING NO. 7 OF 25

STATE OF MARYLAND
 ANNE C. REMINGTON
 PROFESSIONAL ENGINEER
 #29923





LEGEND

EXISTING 2' CONTOUR	---	300
EXISTING 10' CONTOUR	---	300
PROPOSED 2' CONTOUR	---	300
PROPOSED 10' CONTOUR	---	300
PROPERTY LINE AND RIGHT OF WAY	---	15'0
STORM DRAIN	---	15'0
EXISTING TIE LINE	---	15'0
PROPOSED TIE LINE	---	15'0
PROP. SPOT ELEVATION	---	15'0
RRAP INFLOW PROTECTION	---	15'0
SOIL LINES	---	15'0
REMOVABLE PUMPING STATION	---	15'0
LIMIT OF DISTURBANCE	---	15'0
EARTH DIKE	---	15'0
SUPER SILT FENCE	---	15'0
SILT FENCE	---	15'0
STABILIZED CONSTRUCTION ENTRANCE	---	15'0
LIMIT OF WETLANDS	---	15'0
DRAINAGE AREA DIVIDE	---	15'0

BY THE DEVELOPER :

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 INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

[Signature] 8-18-05
DEVELOPER DATE

BY THE ENGINEER :

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.

[Signature] 8-18-05
ENGINEER DATE

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.

[Signature] 9-6-05
NATURAL RESOURCES CONSTRUCTION SERVICE DATE

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

[Signature] 9-6-05
HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

[Signature] 9-9-05
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

[Signature] 10/16/05
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[Signature] 9/26/05
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

DATE	NO.	REVISION

OWNER / DEVELOPER
HRD LAND HOLDINGS, INC.
HOWARD RESEARCH AND DEVELOPMENT CORPORATION
THE ROUSE BUILDING
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
410-992-6000

PROJECT
BENSON EAST
PARCELS A, NON-BUILDABLE PARCELS B (PRIVATE ROADS), PARCELS C TO M AND O, PARCELS N & O

AREA
TAX MAP 37 & 43 ZONED - NEWTOWN
PARCELS 482, 587, 382, 421, 547
6th ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE
GRADING AND SEDIMENT CONTROL PLAN AND DRAINAGE AREA MAP

Patton Harris Rust & Associates, pc
Engineers, Surveyors, Planners, Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

8-18-05
DATE

DESIGNED BY : C.J.R.

DRAWN BY: DAM

PROJECT NO : 11621/PRELIM RD&DWG

DATE : AUGUST 18, 2005

SCALE : 1" = 50'

DRAWING NO. 8 OF 25



- NOTES:**
1. MAINTAIN A 2' HORIZONTAL DISTANCE BETWEEN THE OUTER DIAMETER OF ALL PROPOSED PRIVATE STORM DRAIN PIPES OR INLETS AND THE PUBLIC UTILITY EASEMENT.
 2. ALL STORMWATER MANAGEMENT FACILITIES SHOWN ARE EXISTING.
 3. PARCEL N (OPEN SPACE) TO BE OWNED BY HRD LAND HOLDINGS, INC..

FOR CONTINUATION SEE SHEET 11

FOR CONTINUATION SEE SHEET 12

FOR CONTINUATION SEE SHEET 8



NOTES:
 1. ALL STORMWATER MANAGEMENT FACILITIES SHOWN ARE EXISTING.
 2. PARCEL O (OPEN SPACE) TO BE OWNED BY HRD LAND HOLDINGS, INC..

DRAINAGE AREA CHART			
INLET NO.	AREA (AC.)	C	% IMP
I-1	0.15	0.76	85
I-2	0.25	0.76	85
I-3	0.22	0.76	85
I-4	0.19	0.76	85
I-5	0.21	0.76	85
I-6	0.10	0.76	85
I-7	0.24	0.76	85
I-8	0.13	0.76	85
I-9	0.13	0.76	85
I-10	0.14	0.76	85
I-11	0.13	0.76	85
I-12	0.24	0.76	85
I-13	0.73	0.76	85
I-14	0.16	0.76	85
I-3A	0.25	0.76	85
I-1A	0.23	0.76	85
I-6A	0.04	0.76	85
I-7A	0.55	0.76	85

DRAINAGE AREA CHART			
INLET NO.	AREA (AC.)	C	% IMP
I-15	0.16	0.76	85
I-16	0.44	0.76	85
I-17	0.30	0.86	100
I-18	0.12	0.86	100
I-19	0.58	0.86	100
I-20	0.25	0.86	100
I-21	0.21	0.86	100
I-22	0.38	0.86	100
I-23	0.24	0.86	100
I-24	0.75	0.86	100
I-25	0.13	0.86	100
I-26	0.27	0.86	100
I-30	0.12	0.76	85
I-31	0.10	0.76	85
I-32	0.10	0.76	85
I-33	0.14	0.76	85

LEGEND

- EXISTING 2' CONTOUR
- EXISTING 10' CONTOUR
- PROPOSED 2' CONTOUR
- PROPOSED 10' CONTOUR
- PROPERTY LINE AND RIGHT OF WAY
- STORM DRAIN
- EXISTING TREELINE
- PROPOSED TREELINE
- PROP-SPOT ELEVATION
- RIPRAP INFLOW PROTECTION
- SOIL LINES
- REMOVABLE PUMPING STATION
- LIMIT OF DISTURBANCE
- EARTH DIKE
- SUPER SILT FENCE
- SILT FENCE
- STABILIZED CONSTRUCTION ENTRANCE
- LIMIT OF WETLANDS
- DRAINAGE AREA DIVIDE

BY THE DEVELOPER:
 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 INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.
Michael 8/18/05
 DEVELOPER DATE

BY THE ENGINEER:
 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.
Aimee C. Remington 8-18-05
 ENGINEER DATE

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.
Jim Brown 8/18/05
 NATURAL RESOURCE CONSERVATION SERVICE DATE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
J.R. Robertson 10/12/05
 HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
Walter Z. ... 9/19/05
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.
Charles ... 8/11/05
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION
gms 9/26/05
 DATE

DATE	NO.	REVISION

OWNER / DEVELOPER
 HRD LAND HOLDINGS, INC.
 HOWARD RESEARCH AND DEVELOPMENT CORPORATION
 THE ROUSE BUILDING
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044
 410-992-6000

PROJECT **BENSON EAST**
 PARCELS A, NON-BUILDABLE PARCELS B (PRIVATE ROADS), PARCELS C TO M AND O.S. PARCELS N & O

AREA TAX MAP 37 & 43 ZONED - NEWTOWN
 PARCELS 482, 587, 382, 421, 547
 6th ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

TITLE **GRADING AND SEDIMENT CONTROL PLAN AND DRAINAGE AREA MAP**

Patton Harris Rust & Associates, PC
 Engineers, Surveyors, Planners, Landscape Architects.
 8818 Centre Park Drive
 Columbia, MD 21045
 T 410.997.8900
 F 410.997.9282

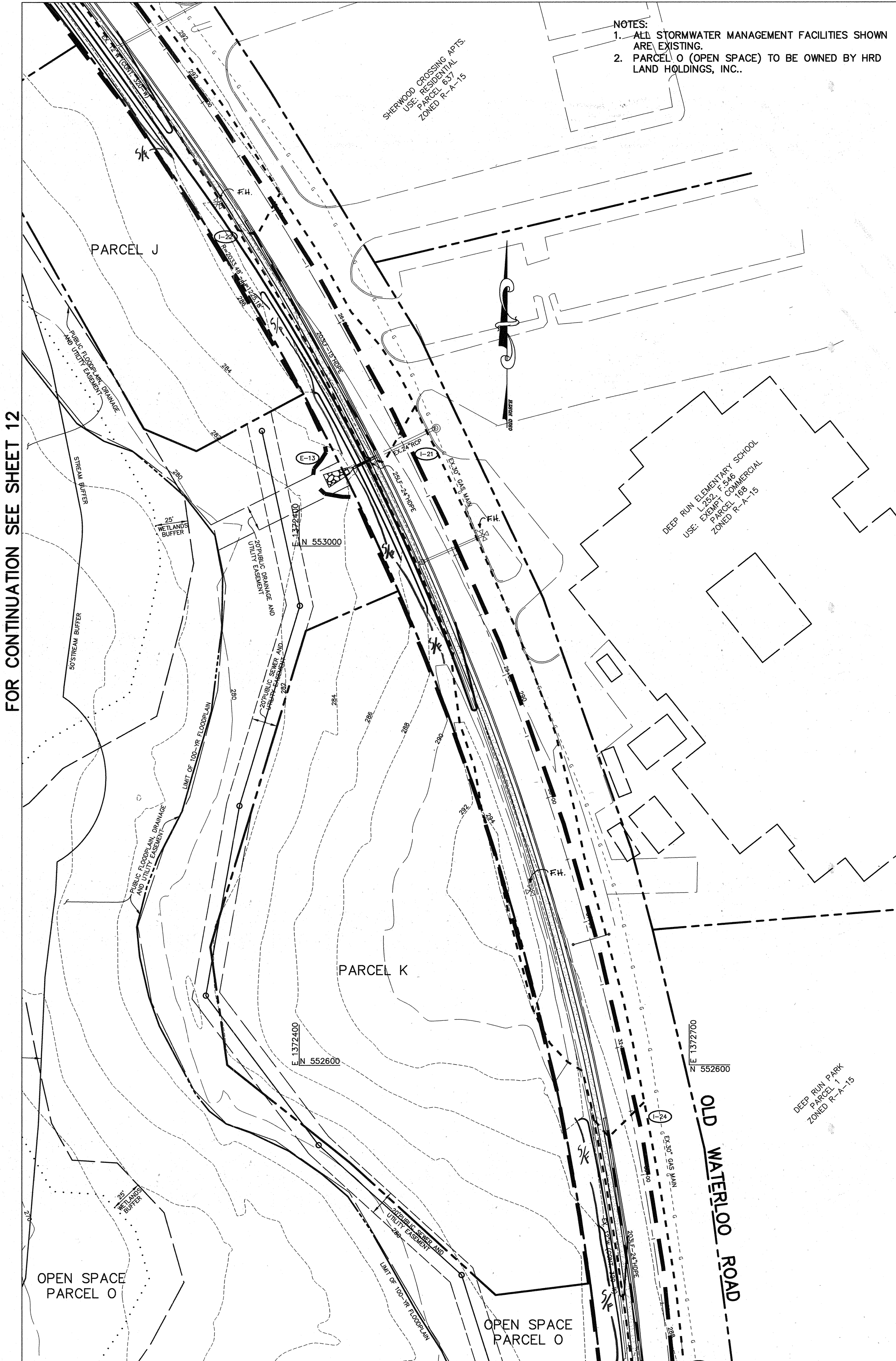
8-18-05
 DATE
 DESIGNED BY: C.J.R.
 DRAWN BY: DAM
 PROJECT NO: 11621/PRELIM RDS.DWG
 DATE: AUGUST 18, 2005
 SCALE: 1" = 50'
 DRAWING NO. 9 OF 25

FOR CONTINUATION SEE SHEET 8

FOR CONTINUATION SEE SHEET 12

FOR CONTINUATION SEE SHEET 10

FOR CONTINUATION SEE SHEET 9

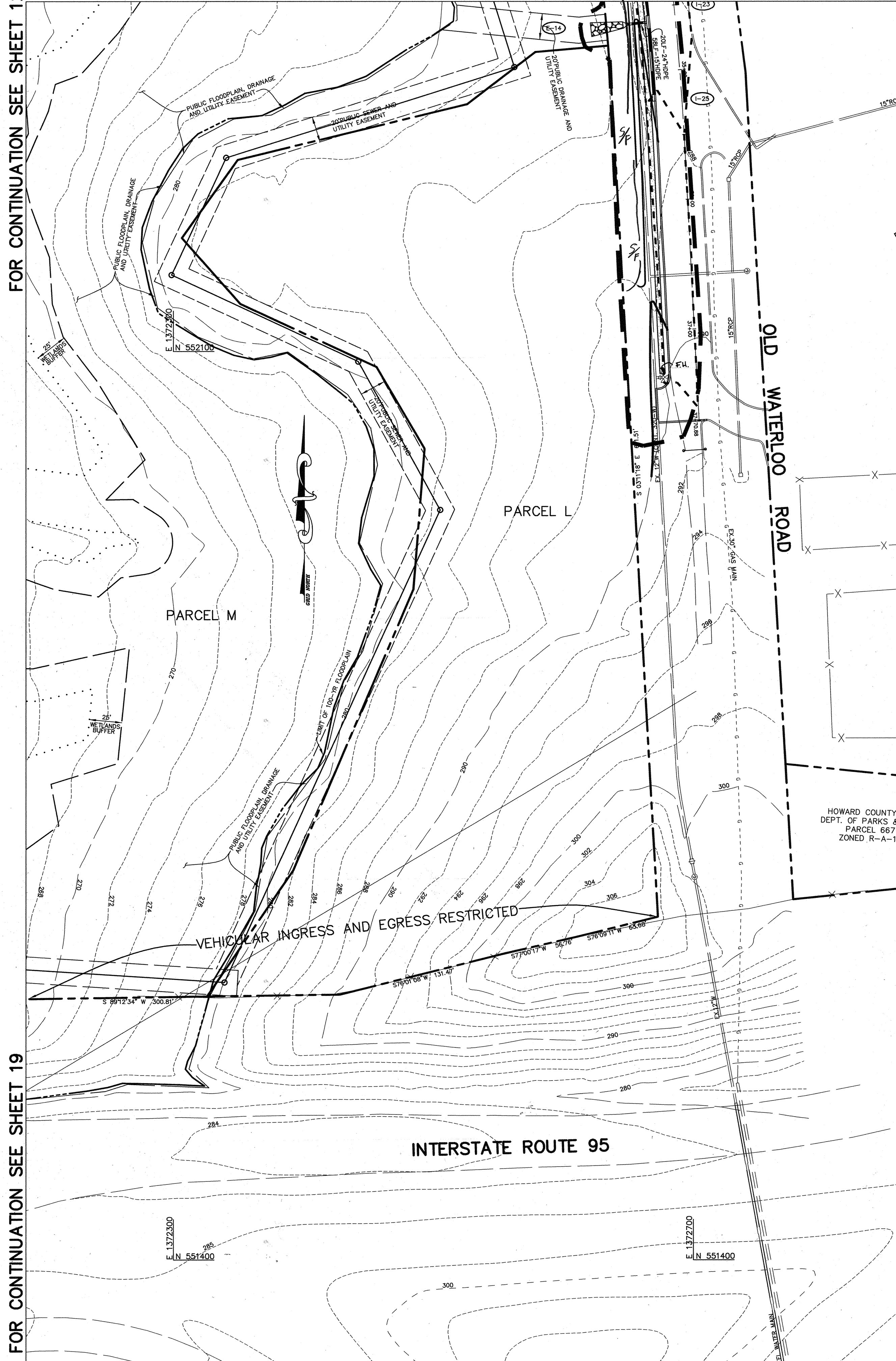


NOTES:
 1. ALL STORMWATER MANAGEMENT FACILITIES SHOWN ARE EXISTING.
 2. PARCEL O (OPEN SPACE) TO BE OWNED BY HRD LAND HOLDINGS, INC..

FOR CONTINUATION SEE SHEET 12

FOR CONTINUATION SEE THIS SHEET

FOR CONTINUATION SEE THIS SHEET



FOR CONTINUATION SEE SHEET 12

FOR CONTINUATION SEE SHEET 19

LEGEND

EXISTING 2' CONTOUR	---	300
EXISTING 10' CONTOUR	---	300
PROPOSED 2' CONTOUR	---	300
PROPOSED 10' CONTOUR	---	300
PROPERTY LINE AND RIGHT OF WAY	---	15'±
STORM DRAIN	---	15'±
EXISTING TREELINE	---	---
PROPOSED TREELINE	---	---
PROP. SPOT ELEVATION	---	13.2
RRIPAP INFLOW PROTECTION	---	---
SOIL LINES	---	---
REMOVABLE PUMPING STATION	---	---
LIMIT OF DISTURBANCE	---	---
EARTH DIKE	---	---
SUPER SILT FENCE	---	SSF
SILT FENCE	---	SF
STABILIZED CONSTRUCTION ENTRANCE	---	---
LIMIT OF WETLANDS	---	---
DRAINAGE AREA DIVIDE	---	---

BY THE DEVELOPER:
 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 INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

[Signature] 8-18-05
 DEVELOPER DATE

BY THE ENGINEER:
 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.

[Signature] 8-18-05
 ENGINEER DATE

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.

[Signature] 10/12/05
 NATURAL RESOURCES CONSERVATION SERVICE DATE

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

[Signature] 10/12/05
 HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

[Signature] 9-19-05
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

[Signature] 10/11/05
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[Signature] 9/26/05
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

DATE	NO.	REVISION

OWNER / DEVELOPER
 HRD LAND HOLDINGS, INC.
 HOWARD RESEARCH AND DEVELOPMENT CORPORATION
 THE ROUSE BUILDING
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044
 410-992-6000

PROJECT
BENSON EAST
 PARCELS A, NON-BUILDABLE PARCEL B (PRIVATE ROADS), PARCELS C TO M AND O, PARCELS N & O

AREA
 TAX MAP 37 & 43 ZONED - NEWTOWN
 PARCELS 482, 587, 382, 421, 547
 6th ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

TITLE
GRADING AND SEDIMENT CONTROL PLAN AND DRAINAGE AREA MAP

Patton Harris Rust & Associates, PC
 Engineers, Surveyors, Planners, Landscape Architects.
 8818 Centre Park Drive
 Columbia, MD 21045
 T 410.997.8900
 F 410.997.9282

8-18-05
 DATE
 DESIGNED BY: C.J.R.
 DRAWN BY: DAM
 PROJECT NO: 11621/PRELIM RD10.DWG
 DATE: AUGUST 18, 2005
 SCALE: 1" = 50'
 DRAWING NO. 10 OF 25

FOR CONTINUATION SEE SHEET 8

LEGEND

EXISTING 2' CONTOUR	---	300
EXISTING 10' CONTOUR	---	300
PROPOSED 2' CONTOUR	---	300
PROPOSED 10' CONTOUR	---	300
PROPERTY LINE AND RIGHT OF WAY	---	15'
STORM DRAIN	---	15'
EXISTING TREELINE	---	15'
PROPOSED TREELINE	---	15'
PROP. SPOT ELEVATION	---	15'
RIPRAP INFLOW PROTECTION	---	15'
SOIL LINES	---	15'
REMOVABLE PUMPING STATION	---	15'
LIMIT OF DISTURBANCE	---	15'
EARTH DIKE	---	15'
SUPER SILT FENCE	---	15'
SILT FENCE	---	15'
STABILIZED CONSTRUCTION ENTRANCE	---	15'
LIMIT OF WETLANDS	---	15'
DRAINAGE AREA DIVIDE	---	15'

BY THE DEVELOPER :

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 INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

[Signature] 8-18-05
DEVELOPER DATE

BY THE ENGINEER :

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.

[Signature] 8-18-05
ENGINEER DATE

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.

[Signature] 10/26/05
NATURAL RESOURCE CONSERVATION SERVICE DATE

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

[Signature] 10/26/05
HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

[Signature] 9-15-05
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

[Signature] 10/11/05
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

CHIEF - DEVELOPMENT ENGINEERING DIVISION
[Signature] 9/26/05 DATE

DATE	NO.	REVISION

OWNER / DEVELOPER
HRD LAND HOLDINGS, INC.
HOWARD RESEARCH AND DEVELOPMENT CORPORATION
THE ROUSE BUILDING
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
410-992-6000

PROJECT
BENSON EAST
PARCELS A, NON-BUILDABLE PARCELS B (PRIVATE ROADS), PARCELS C TO M AND O.S. PARCELS N1 & O

AREA
TAX MAP 37 & 43 ZONED - NEWTOWN
PARCELS 482, 587, 382, 421, 547
6th ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE
GRADING AND SEDIMENT CONTROL PLAN AND DRAINAGE AREA MAP

Patton Harris Rust & Associates, PC
Engineers, Surveyors, Planners, Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

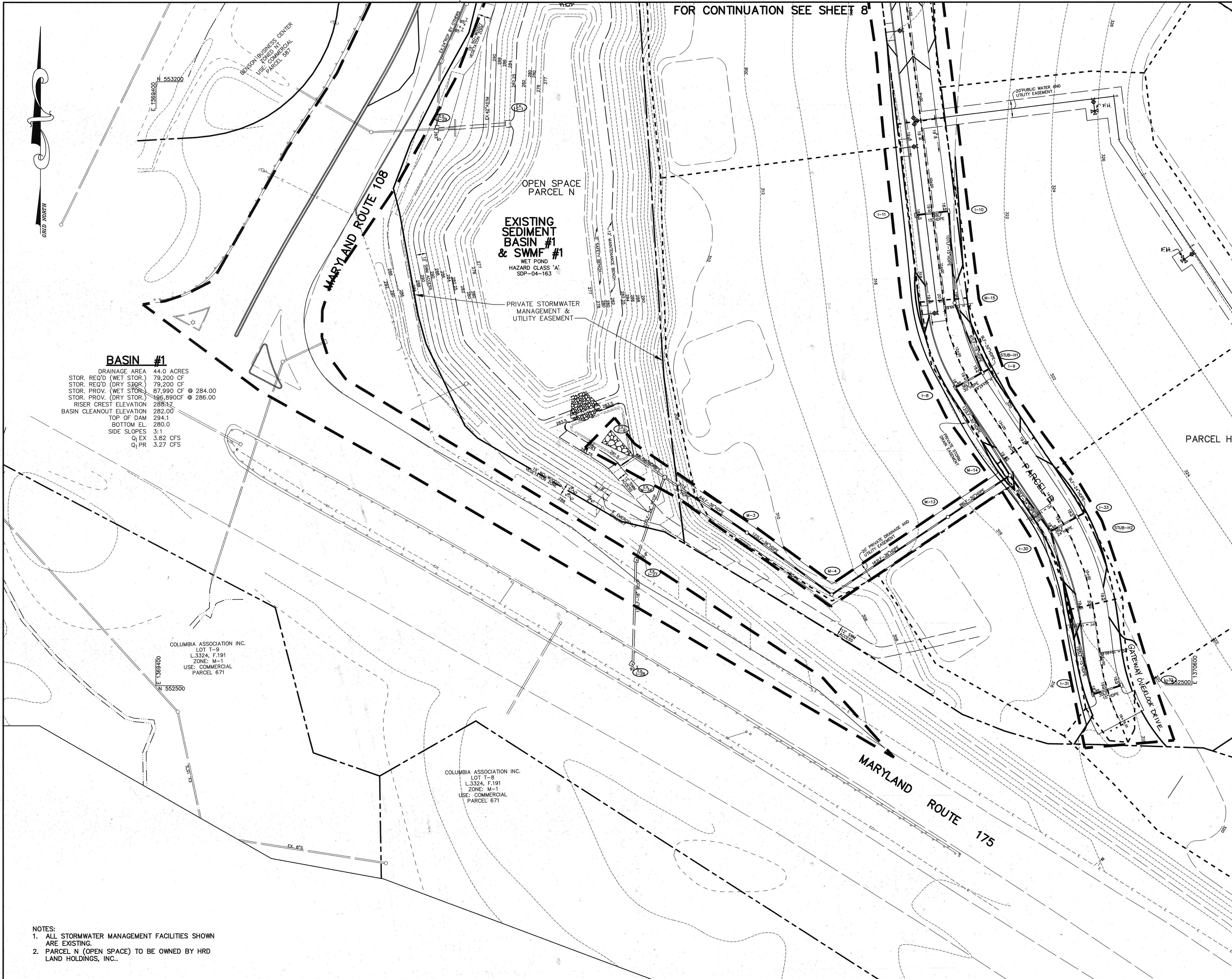
8-18-05
DATE

DESIGNED BY : C.J.R.
DRAWN BY: DAM
PROJECT NO : 11621/PRELIM RD12.DWG
DATE : AUGUST 18, 2005
SCALE : 1" = 50'
DRAWING NO. 11 OF 25

[Signature]
AIMEE C. REMINGTON 29923

FOR CONTINUATION SEE SHEET 12

PARCEL H



BASIN #1
DRAINAGE AREA 44.0 ACRES
STOR. REQ'D (WET STOR.) 79,200 CF
STOR. REQ'D (DRY STOR.) 79,200 CF
STOR. PROV. (WET STOR.) 87,990 CF @ 284.00
STOR. PROV. (DRY STOR.) 196,890 CF @ 286.00
RISER CREST ELEVATION 288.72
BASIN CLEANOUT ELEVATION 282.00
TOP OF DAM 294.1
BOTTOM EL. 280.0
SIDE SLOPES 3:1
Q1 EX 3.82 CFS
Q1 PR 3.27 CFS

OPEN SPACE PARCEL N
EXISTING SEDIMENT BASIN #1 & SWMF #1
WET POND
HAZARD CLASS 'A'
SDP-04-163

PRIVATE STORMWATER MANAGEMENT & UTILITY EASEMENT

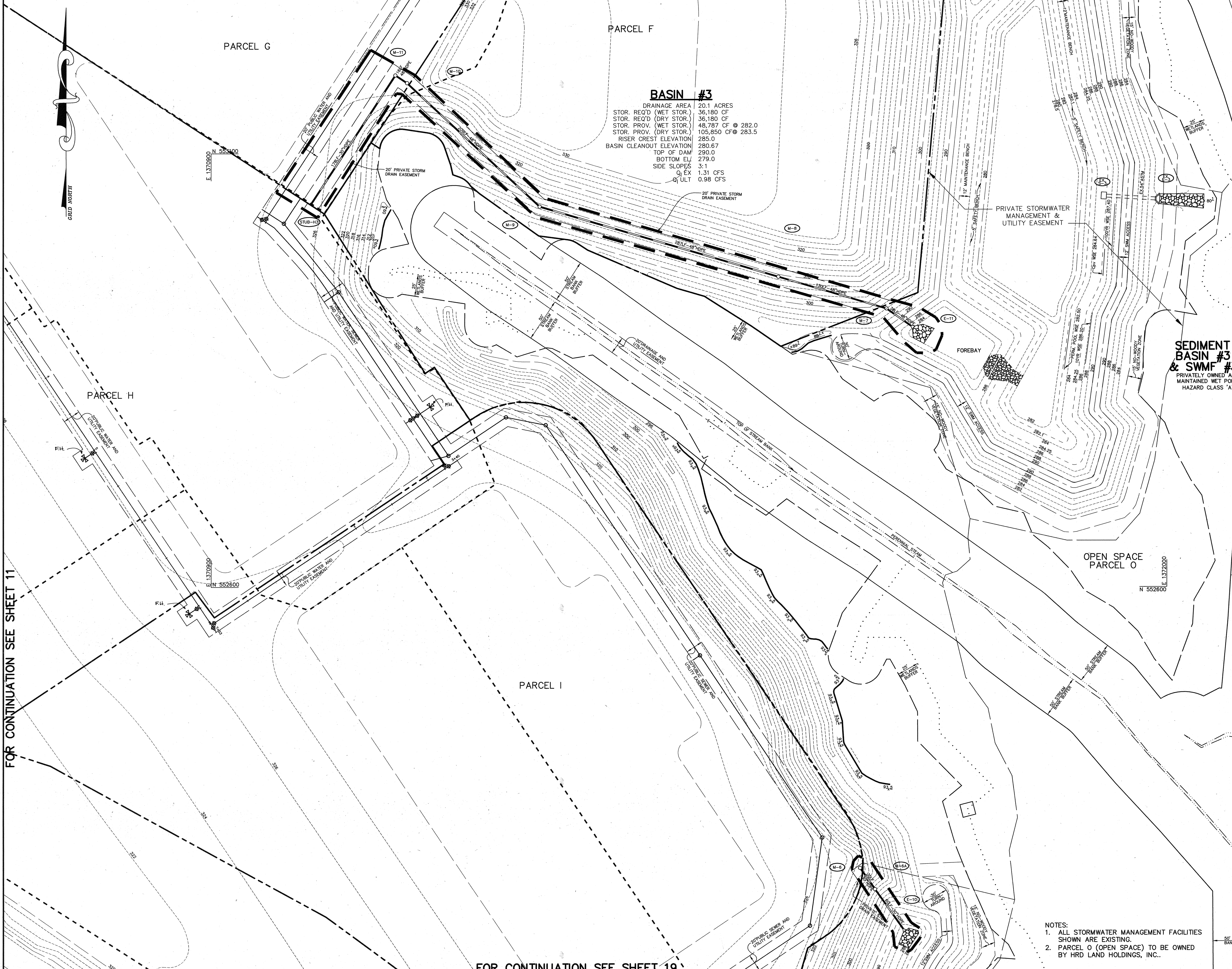
COLUMBIA ASSOCIATION INC.
LOT T-9
L.3324, F.191
ZONE: M-1
USE: COMMERCIAL
PARCEL 671

COLUMBIA ASSOCIATION INC.
LOT T-9
L.3324, F.191
ZONE: M-1
USE: COMMERCIAL
PARCEL 671

NOTES:
1. ALL STORMWATER MANAGEMENT FACILITIES SHOWN ARE EXISTING.
2. PARCEL N (OPEN SPACE) TO BE OWNED BY HRD LAND HOLDINGS, INC..

FOR CONTINUATION SEE SHEET 8

FOR CONTINUATION SEE SHEET 9



BASIN #3
 DRAINAGE AREA 20.1 ACRES
 STOR. RECD (WET STOR.) 36,180 CF
 STOR. RECD (DRY STOR.) 36,180 CF
 STOR. PROV. (WET STOR.) 48,787 CF @ 282.0
 STOR. PROV. (DRY STOR.) 105,850 CF @ 283.5
 RISER CREST ELEVATION 285.0
 BASIN CLEANOUT ELEVATION 280.67
 TOP OF DAM 290.0
 BOTTOM EL. 279.0
 SIDE SLOPES 3:1
 Q EX 1.31 CFS
 Q ULT 0.98 CFS

SEDIMENT BASIN #3 & SWMF #3
 PRIVATELY OWNED AND MAINTAINED WET POND HAZARD CLASS 'A'

LEGEND

EXISTING 2' CONTOUR	---	300
EXISTING 10' CONTOUR	---	300
PROPOSED 2' CONTOUR	---	300
PROPOSED 10' CONTOUR	---	300
PROPERTY LINE AND RIGHT OF WAY	---	15'
STORM DRAIN	---	15'
EXISTING TIE LINE	---	15'
PROPOSED TIE LINE	---	15'
PROP. SPOT ELEVATION	---	15'
RIPRAP INFLOW PROTECTION	---	15'
SOIL LINES	---	15'
REMOVABLE PUMPING STATION	---	15'
LIMIT OF DISTURBANCE	---	15'
EARTH DIKE	---	15'
SUPER SILT FENCE	---	15'
SILT FENCE	---	15'
STABILIZED CONSTRUCTION ENTRANCE	---	15'
LIMIT OF WETLANDS	---	15'
DRAINAGE AREA DIVIDE	---	15'

BY THE DEVELOPER:
 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 INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.
 DEVELOPER: *HRD Land Holdings, Inc.* 8-18-05 DATE

BY THE ENGINEER:
 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.
 ENGINEER: *Amee C. Remington* 8-18-05 DATE

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.

Jim Meyer 9-6-05
 NATURAL RESOURCE CONSERVATION SERVICE DATE

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

John R. Robertson 9-6-05
 HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

Whella J. Mahoney 9-19-05
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Chris Hambley 9/20/05
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[Signature] 9/20/05
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

DATE NO.	REVISION

OWNER / DEVELOPER
 HRD LAND HOLDINGS, INC.
 HOWARD RESEARCH AND DEVELOPMENT CORPORATION
 THE ROUSE BUILDING
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044
 410-992-6000

PROJECT **BENSON EAST**
 PARCELS A, NON-BUILDABLE PARCEL B (PRIVATE ROADS), PARCELS C TO M AND O, PARCELS N & O
 AREA TAX MAP 37 & 43 ZONED - NEWTOWN
 PARCELS 482, 587, 382, 421, 547
 6th ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

TITLE **GRADING AND SEDIMENT CONTROL PLAN AND DRAINAGE AREA MAP**

Patton Harris Rust & Associates, pc
 Engineers, Surveyors, Planners, Landscape Architects.
 8818 Centre Park Drive
 Columbia, MD 21045
 T 410.997.8900
 F 410.997.9282

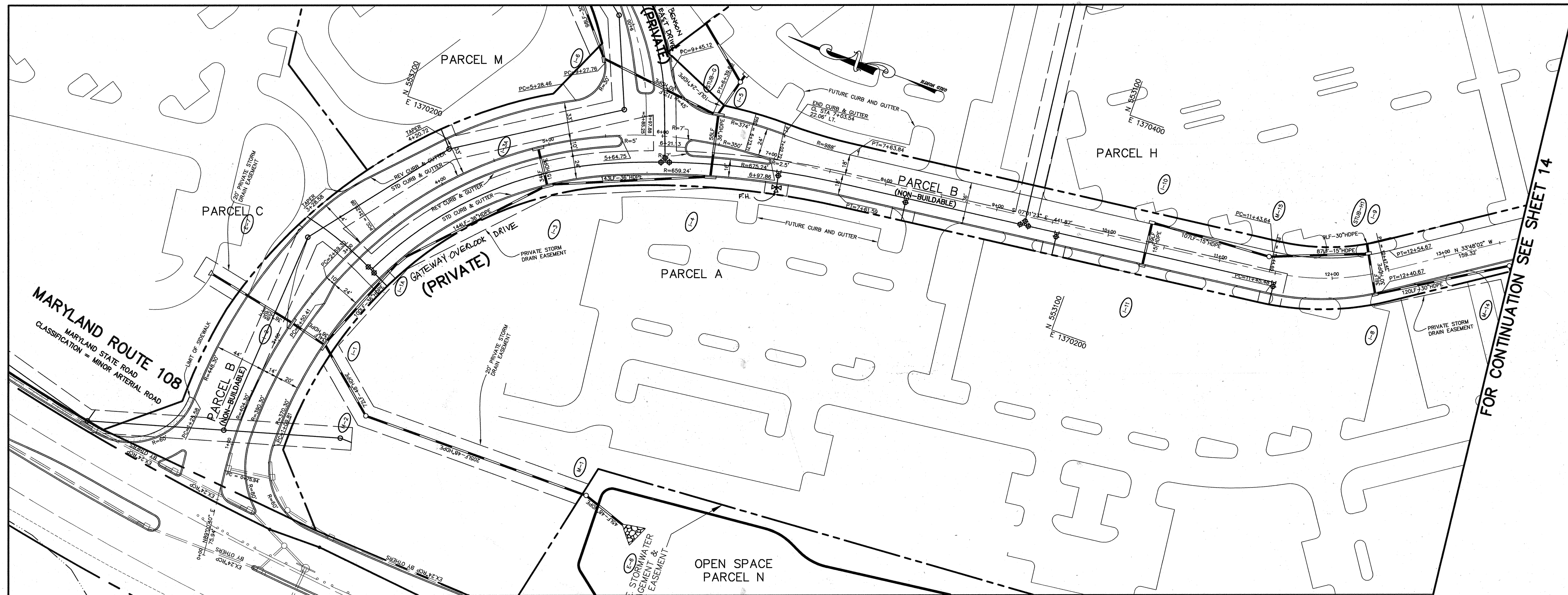
8-18-05 DATE
 DESIGNED BY: C.J.R.
 DRAWN BY: DAM
 PROJECT NO: 11621/PRELIM RD13.DWG
 DATE: AUGUST 18, 2005
 SCALE: 1" = 50'
 DRAWING NO. 12 OF 25

Amee C. Remington
 AMEE C. REMINGTON #29923

NOTES:
 1. ALL STORMWATER MANAGEMENT FACILITIES SHOWN ARE EXISTING.
 2. PARCEL O (OPEN SPACE) TO BE OWNED BY HRD LAND HOLDINGS, INC..

FOR CONTINUATION SEE SHEET 19

FOR CONTINUATION SEE SHEET 11



CL CURVE DATA
 FROM CL STA 0+75.94 TO STA 3+29.08
 RADIUS = 404.30'
 LENGTH = 253.14'
 TANGENT = 130.87'
 DELTA = 35° 52' 26"
 CHORD = N 78° 03' 07" W 249.02'

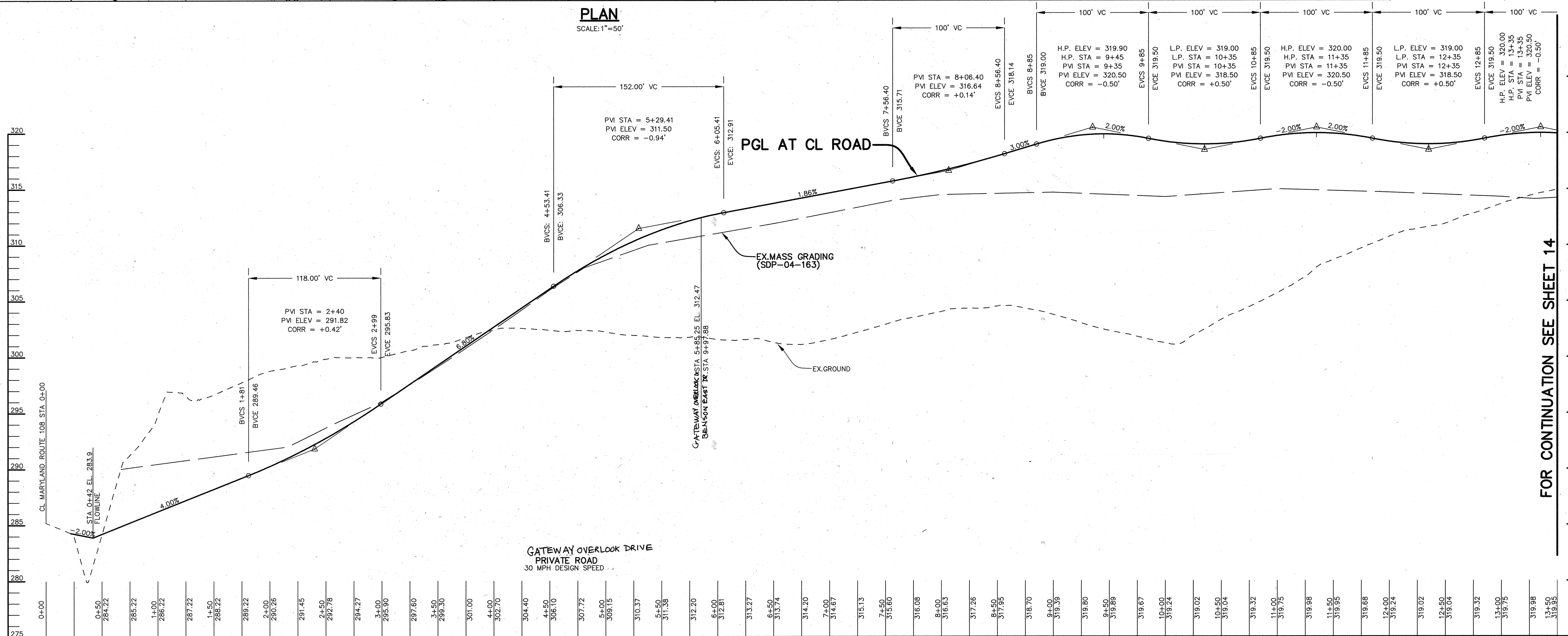
CL CURVE DATA
 FROM CL STA 3+29.08 TO STA 6+73.71
 RADIUS = 350.00'
 LENGTH = 344.63'
 TANGENT = 187.73'
 DELTA = 56° 25' 00"
 CHORD = S 31° 54' 23" E 330.88'

CL CURVE DATA
 FROM CL STA 6+73.71 TO STA 7+02.72
 RADIUS = 500.00'
 LENGTH = 29.01'
 TANGENT = 14.51'
 DELTA = 03° 19' 31"
 CHORD = N 05° 21' 38" W 29.01'

CL CURVE DATA
 FROM CL STA 11+44.60 TO STA 12+47.41
 RADIUS = 220.00'
 LENGTH = 102.82'
 TANGENT = 52.37'
 DELTA = 26° 46' 38"
 CHORD = N 20° 24' 43" W 101.88'

NOTES:
 1. STORM DRAINS UNDER PRIVATE ROADS GATEWAY OVERLOOK DR. and BEANS ON EAST DR. SHALL BE PRIVATELY OWNED AND MAINTAINED.
 2. PARCEL N (OPEN SPACE) TO BE OWNED BY HRD LAND HOLDINGS, INC..

PLAN
 SCALE: 1"=50'



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

FOR CONTINUATION SEE SHEET 14

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

William J. ...
 CHIEF, BUREAU OF HIGHWAYS *9-19-05* DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

... ..
 CHIEF, DIVISION OF LAND DEVELOPMENT *10/10/05* DATE

... ..
 CHIEF, DEVELOPMENT ENGINEERING DIVISION *9/24/05* DATE

DATE NO. REVISION

OWNER / DEVELOPER
 HRD LAND HOLDINGS, INC.
 HOWARD RESEARCH AND DEVELOPMENT CORPORATION
 THE ROUSE BUILDING
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044
 410-992-6000

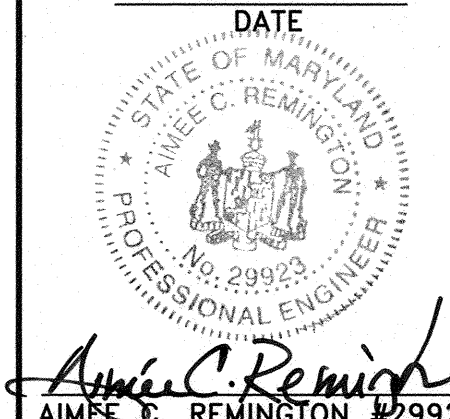
PROJECT
BENSON EAST
 PARCELS A, NON-BUILDABLE PARCELS B (PRIVATE ROADS), PARCELS C TO M AND O, PARCELS N & O

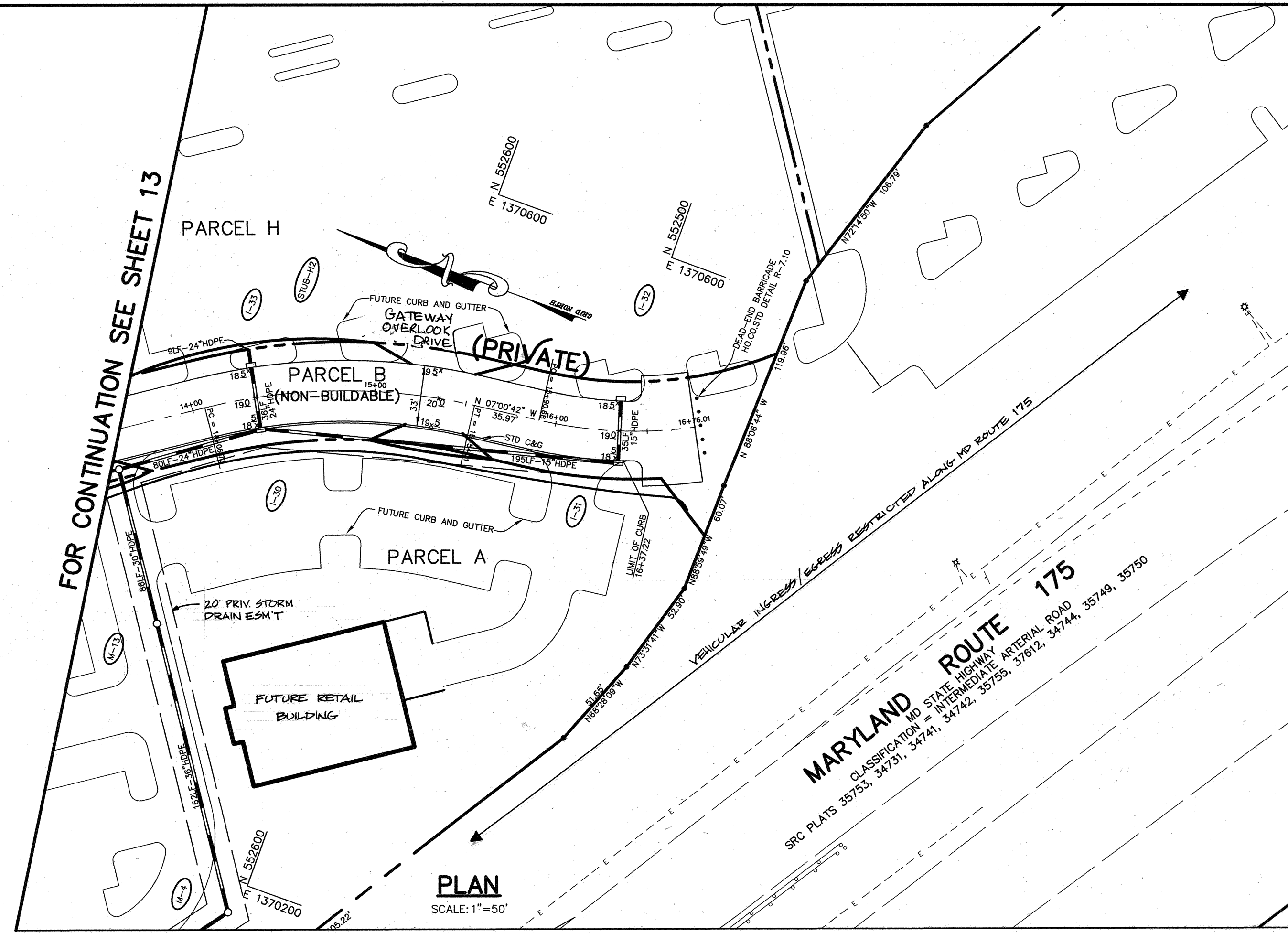
AREA
 TAX MAP 37 & 43 ZONED - NEWTOWN
 PARCELS 482, 587, 382, 421, 547
 6th ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

TITLE
PLAN AND PROFILE OF PRIVATE ROAD A FROM STA 0+00 TO 13+50

Patton Harris Rust & Associates, PC
 Engineers. Surveyors. Planners. Landscape Architects.
 8818 Centre Park Drive
 Columbia, MD 21045
 T 410.997.8900
 F 410.997.9282

8-18-05
 DATE
 DESIGNED BY: C.J.R.
 DRAWN BY: DAM
 PROJECT NO: 11621/PRELIM RD14.DWG
 DATE: AUGUST 18, 2005
 SCALE: AS SHOWN
 DRAWING NO. 13 OF 25

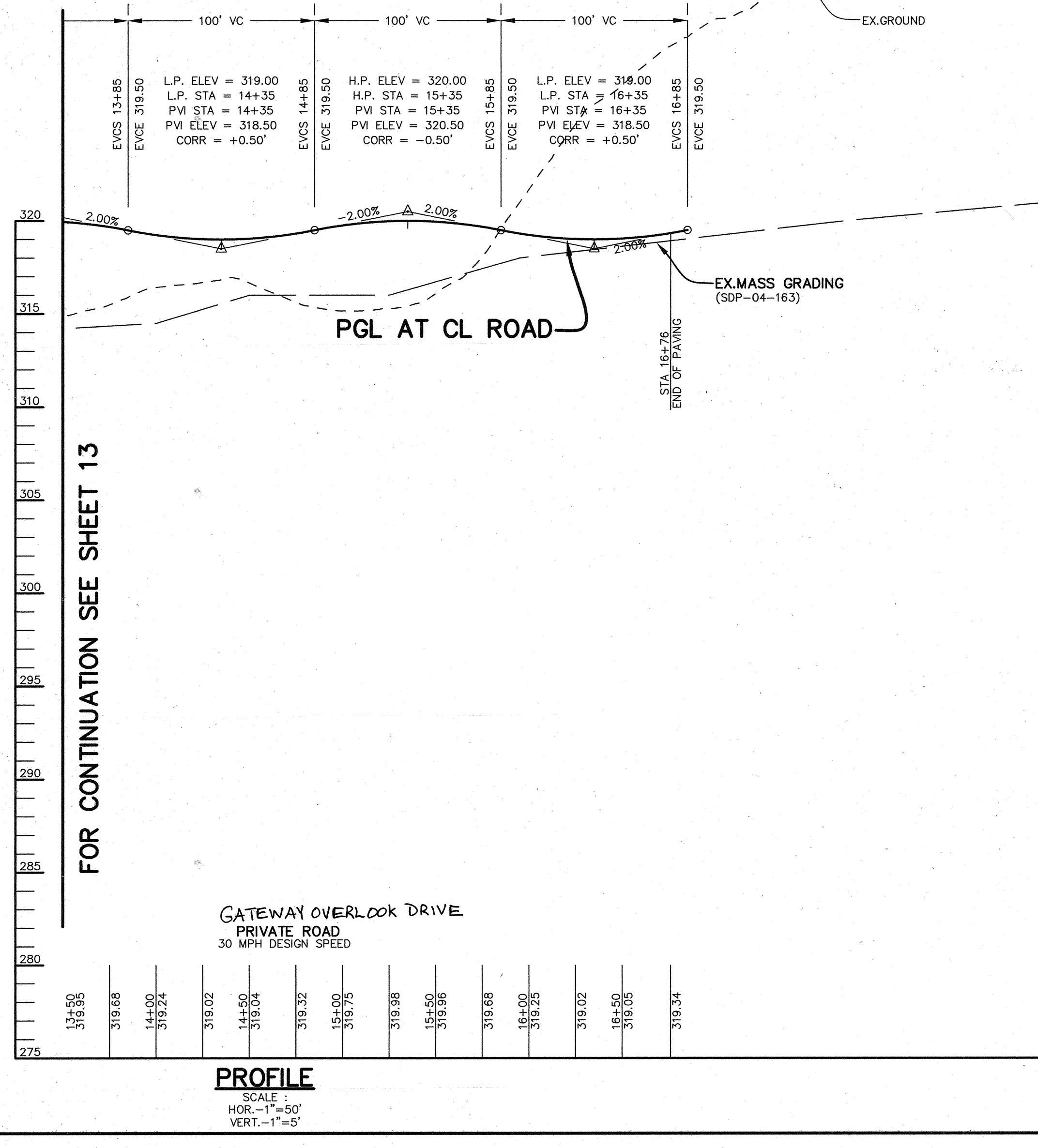




CL CURVE DATA
 FROM CL STA 14+06.73 TO STA 15+54.71
 RADIUS = 316.50'
 LENGTH = 147.98'
 TANGENT = 75.37'
 DELTA = 26° 47'19"
 CHORD = S 20° 24'22"E 146.64'

CL CURVE DATA
 FROM CL STA 15+90.68 TO STA 16+76.01
 RADIUS = 233.50'
 LENGTH = 85.33'
 TANGENT = 43.15'
 DELTA = 20° 56'20"
 CHORD = N 17° 28'52"W 84.86'

NOTE: STORM DRAINS UNDER PRIVATE ROADS GATEWAY OVERLOOK DR. and BENSON EAST DR. SHALL BE PRIVATELY OWNED AND MAINTAINED.



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
W. Z. Wall 9-19-05
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.
Carole Hanft 9/20/05
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION *gno* 9/20/05 DATE

DATE	NO.	REVISION

OWNER / DEVELOPER
 HRD LAND HOLDINGS, INC.
 HOWARD RESEARCH AND DEVELOPMENT CORPORATION
 THE ROUSE BUILDING
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044
 410-992-6000

PROJECT
BENSON EAST
 PARCELS A, NON-BUILDABLE PARCEL B (PRIVATE ROADS), PARCELS C TO M AND O.S. PARCELS N TO O

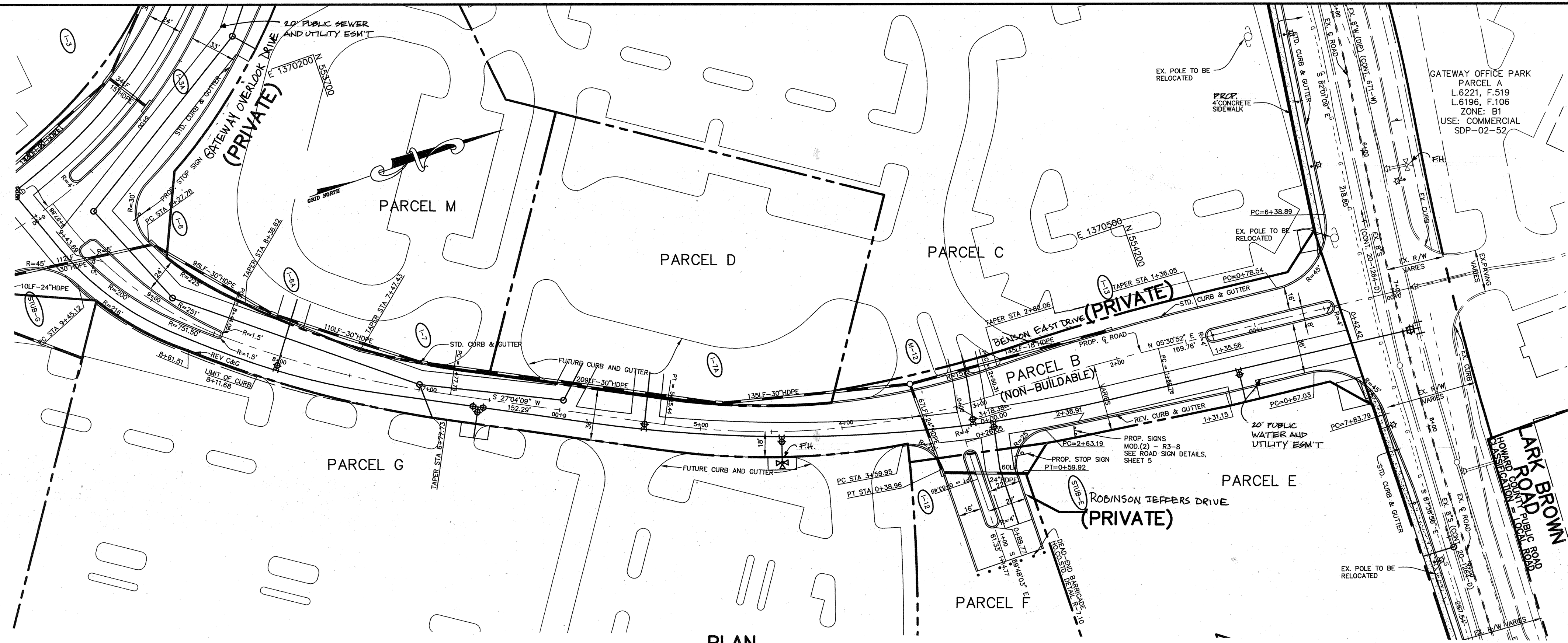
AREA
 TAX MAP 37 & 43 ZONED - NEWTOWN
 PARCELS 482, 587, 382, 421, 547
 6th ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

TITLE
PLAN AND PROFILE OF PRIVATE ROAD A FROM STA 13+50 TO 18+81

Patton Harris Rust & Associates, pc
 Engineers. Surveyors. Planners. Landscape Architects.
 8818 Centre Park Drive
 Columbia, MD 21045
 T 410.997.8900
 F 410.997.9282

8-18-05 DATE
 DESIGNED BY: C.J.R.
 DRAWN BY: DAM
 PROJECT NO: 11621/PRELIM RD15.DWG
 DATE: AUGUST 18, 2005
 SCALE: AS SHOWN
 DRAWING NO. 14 OF 25

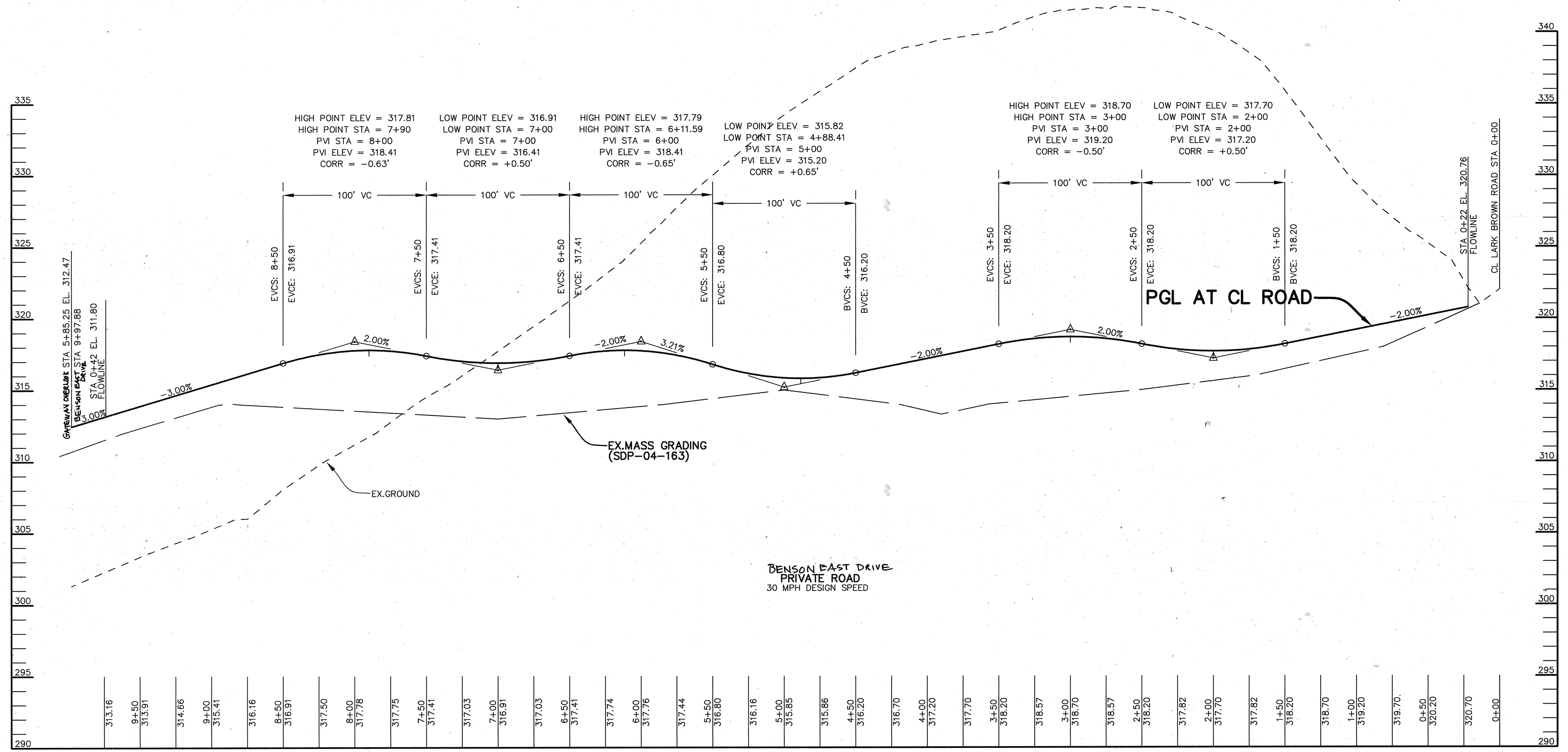
Amiee C. Remington
 AMIEE C. REMINGTON #39823



PLAN
SCALE: 1"=50'

ROAD	CL CURVE DATA
BENSON EAST DRIVE	FROM CL STA 1+69.76 TO STA 2+90.31 RADIUS = 1500.00' LENGTH = 120.55' TANGENT = 60.31' DELTA = 04° 36' 17" CHORD = S 03° 12' 44" W 120.52'
BENSON EAST DRIVE	FROM CL STA 2+90.31 TO STA 5+25.44 RADIUS = 515.00' LENGTH = 235.13' TANGENT = 119.65' DELTA = 26° 09' 34" CHORD = S 13° 59' 22" W 233.10'
BENSON EAST DRIVE	FROM CL STA 6+77.73 TO STA 8+44.08 RADIUS = 750.00' LENGTH = 166.34' TANGENT = 83.51' DELTA = 12° 42' 27" CHORD = N 33° 25' 22" E 166.00'
BENSON EAST DRIVE	FROM CL STA 8+44.08 TO STA 9+97.88 RADIUS = 250.00' LENGTH = 139.80' TANGENT = 71.78' DELTA = 32° 02' 21" CHORD = S 55° 47' 47" W 137.98'

NOTE: STORM DRAINS UNDER PRIVATE ROADS GATEWAY OVERLOOK DR. and BENSON EAST DR. SHALL BE PRIVATELY OWNED AND MAINTAINED.



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

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
Walter M. M... 9-19-05
CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.
Chris... 10/11/05
CHIEF, DIVISION OF LAND DEVELOPMENT

CHIEF, DEVELOPMENT ENGINEERING DIVISION
[Signature] 9/16/05

DATE	NO.	REVISION

OWNER / DEVELOPER
HRD LAND HOLDINGS, INC.
HOWARD RESEARCH AND DEVELOPMENT CORPORATION
THE ROUSE BUILDING
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
410-992-6000

PROJECT
BENSON EAST
PARCELS A, NON-BUILDABLE PARCEL B (PRIVATE ROADS), PARCELS C TO M AND O.S. PARCELS N TO O.

AREA
TAX MAP 37 & 43 ZONED - NEWTOWN
PARCELS 482, 587, 382, 421, 547
6th ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE
PLAN AND PROFILE OF ROAD B FROM STA 0+00 TO 9+88

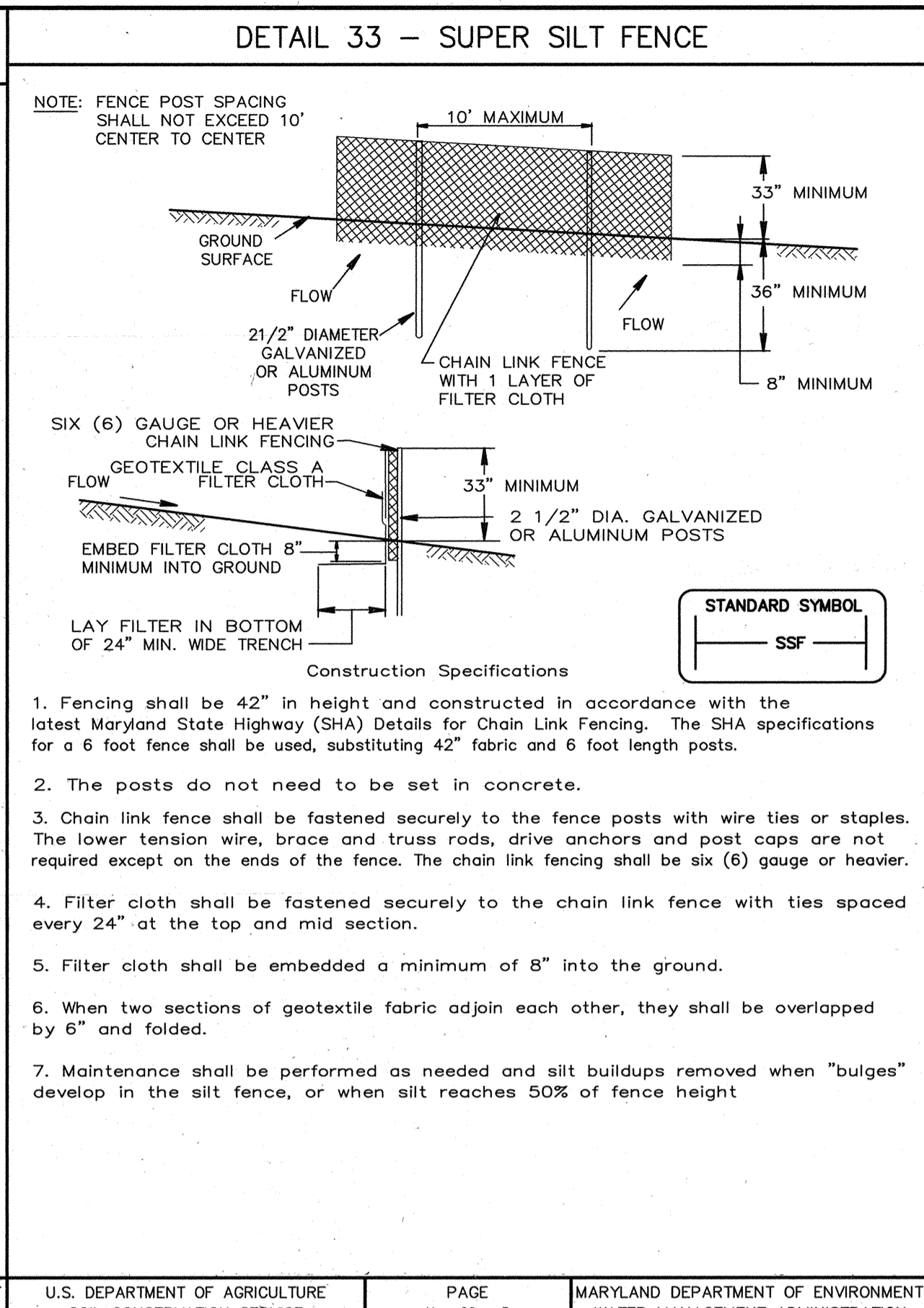
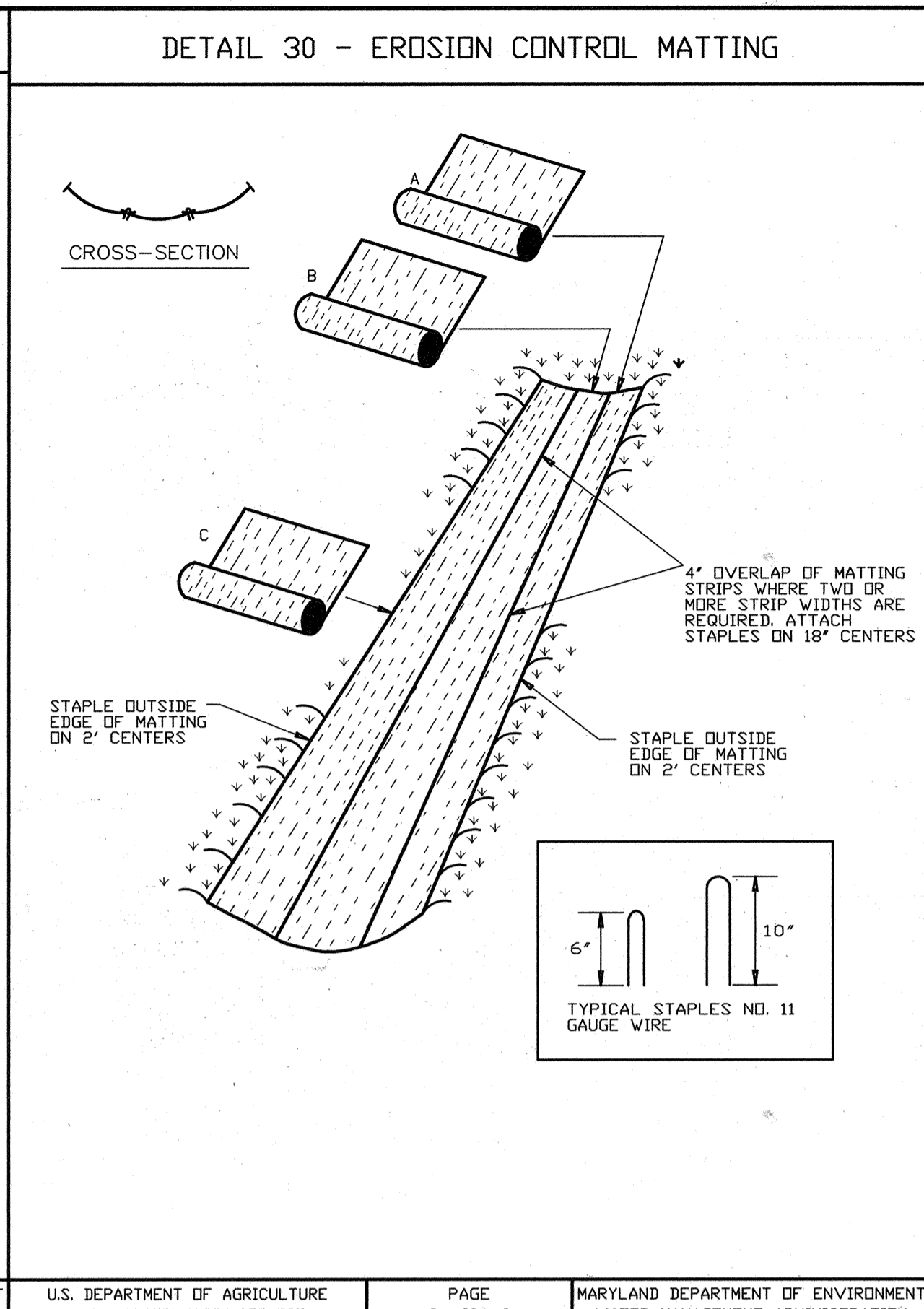
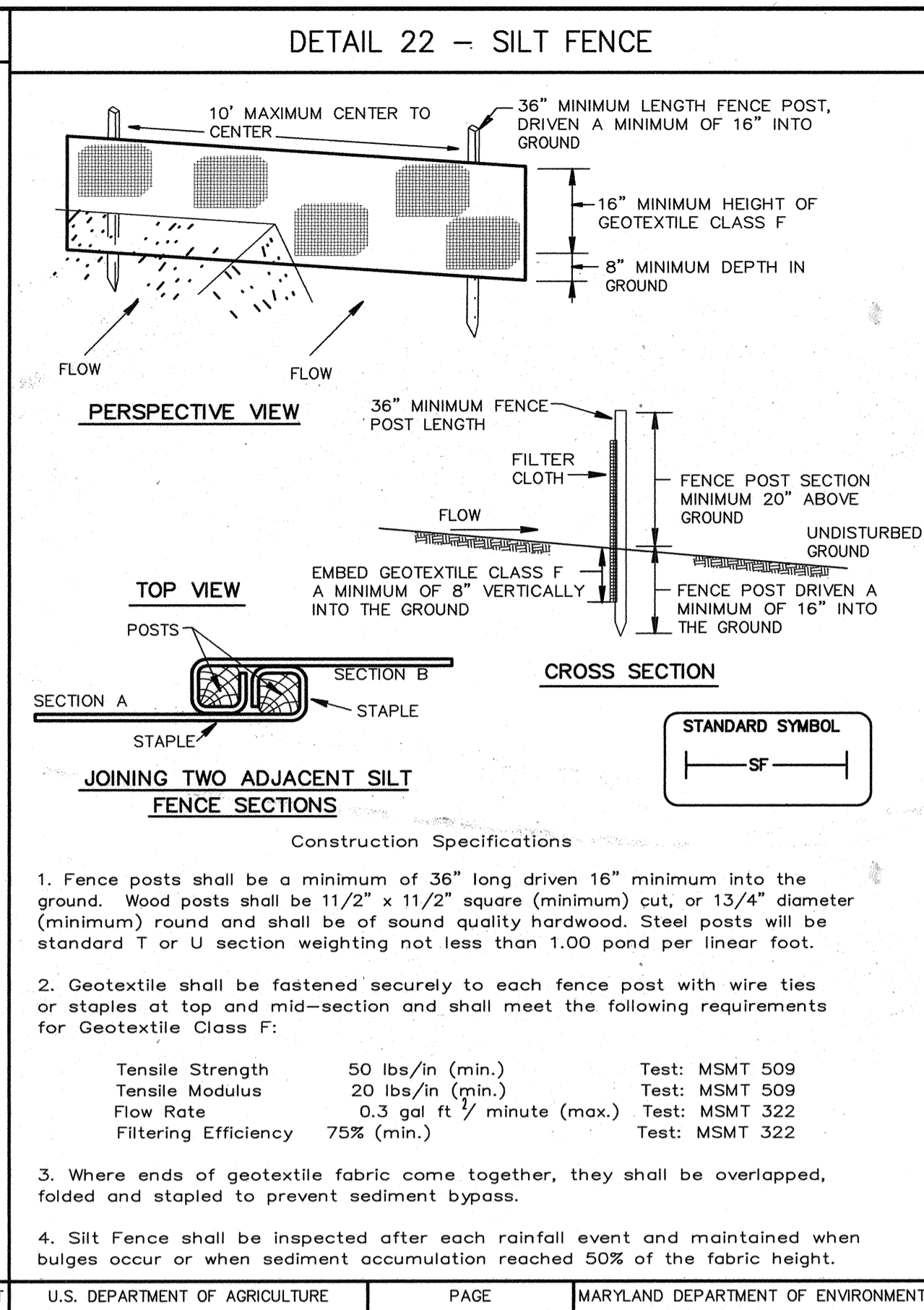
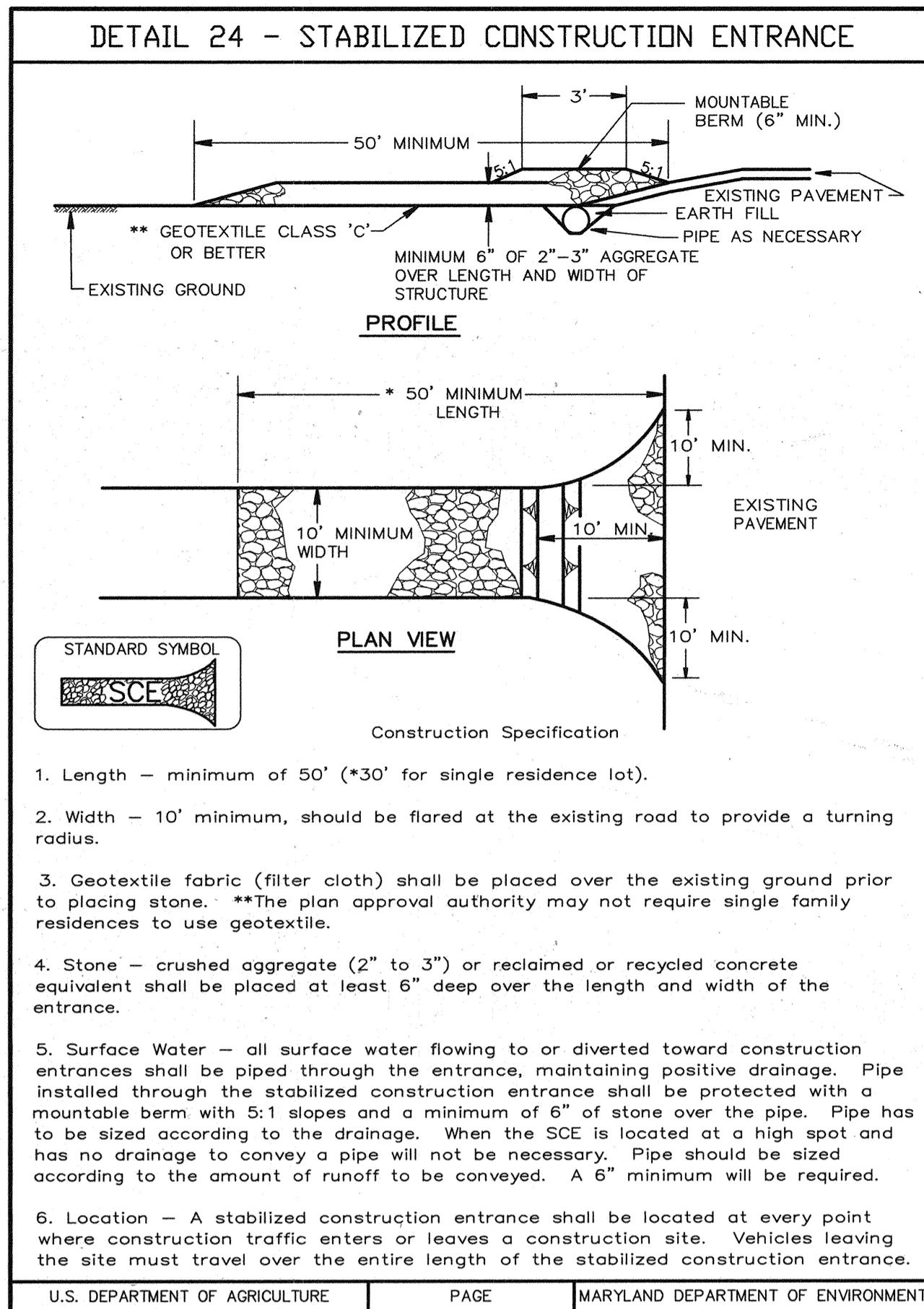
Patton Harris Rust & Associates, PC
Engineers, Surveyors, Planners, Landscape Architects, PC
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

PHRA

DATE: 8-16-05

DESIGNED BY: C.J.R.
DRAWN BY: DAM
PROJECT NO: 11621/PRELIM RD16.DWG
DATE: AUGUST 18, 2005
SCALE: AS SHOWN
DRAWING NO. 15 OF 25

Aimee C. Remington
AIMEE C. REMINGTON #19923

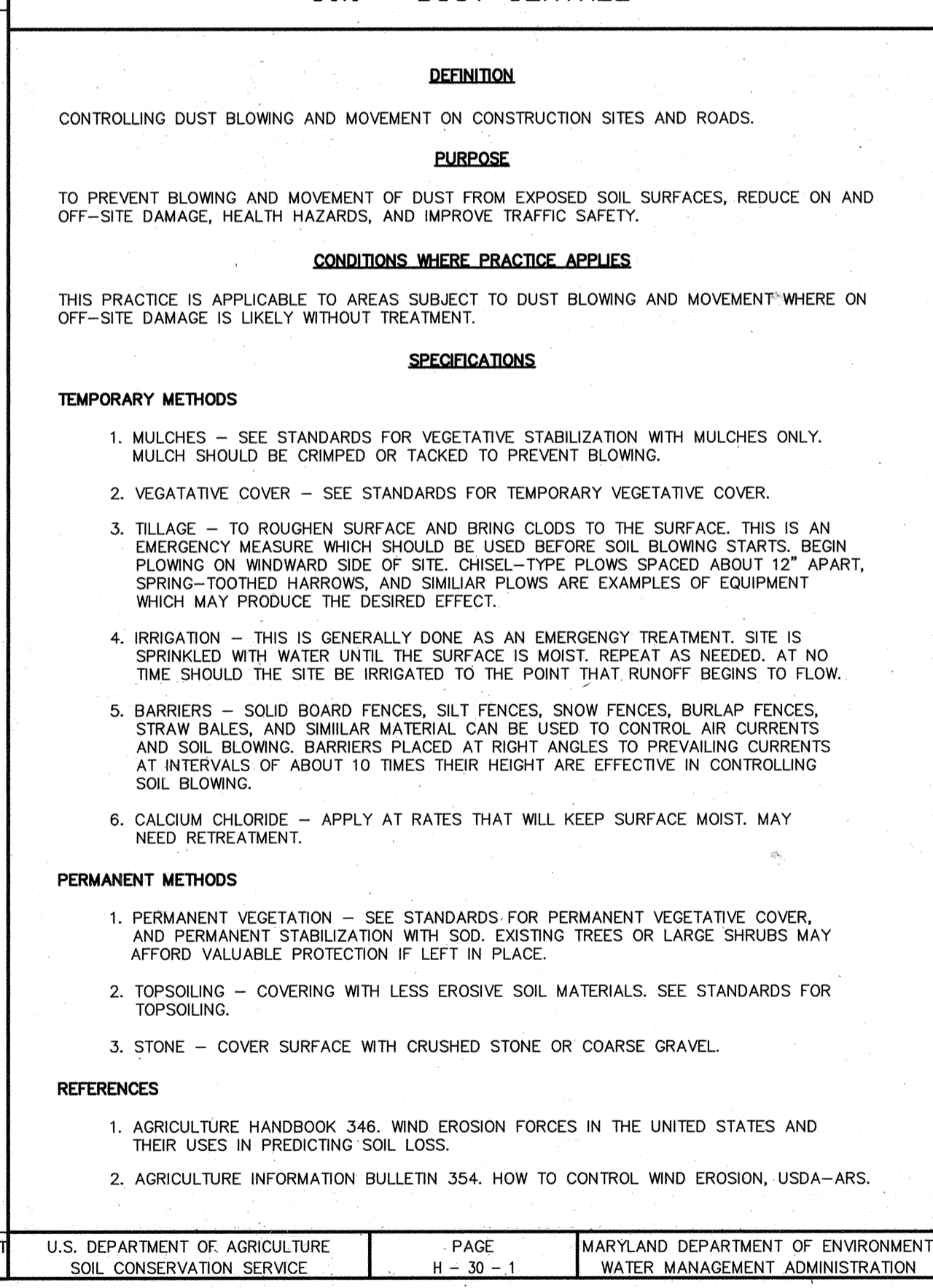
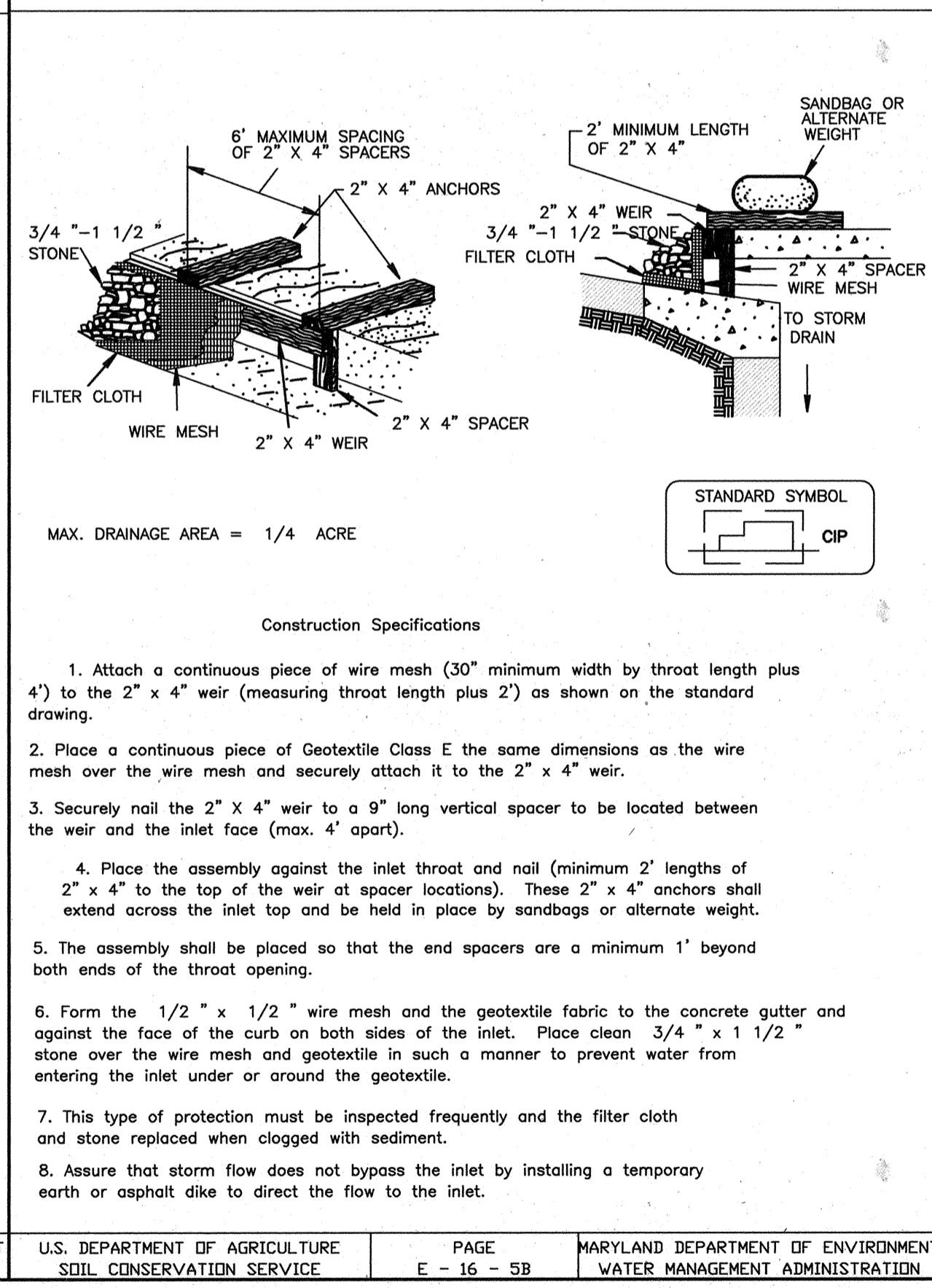
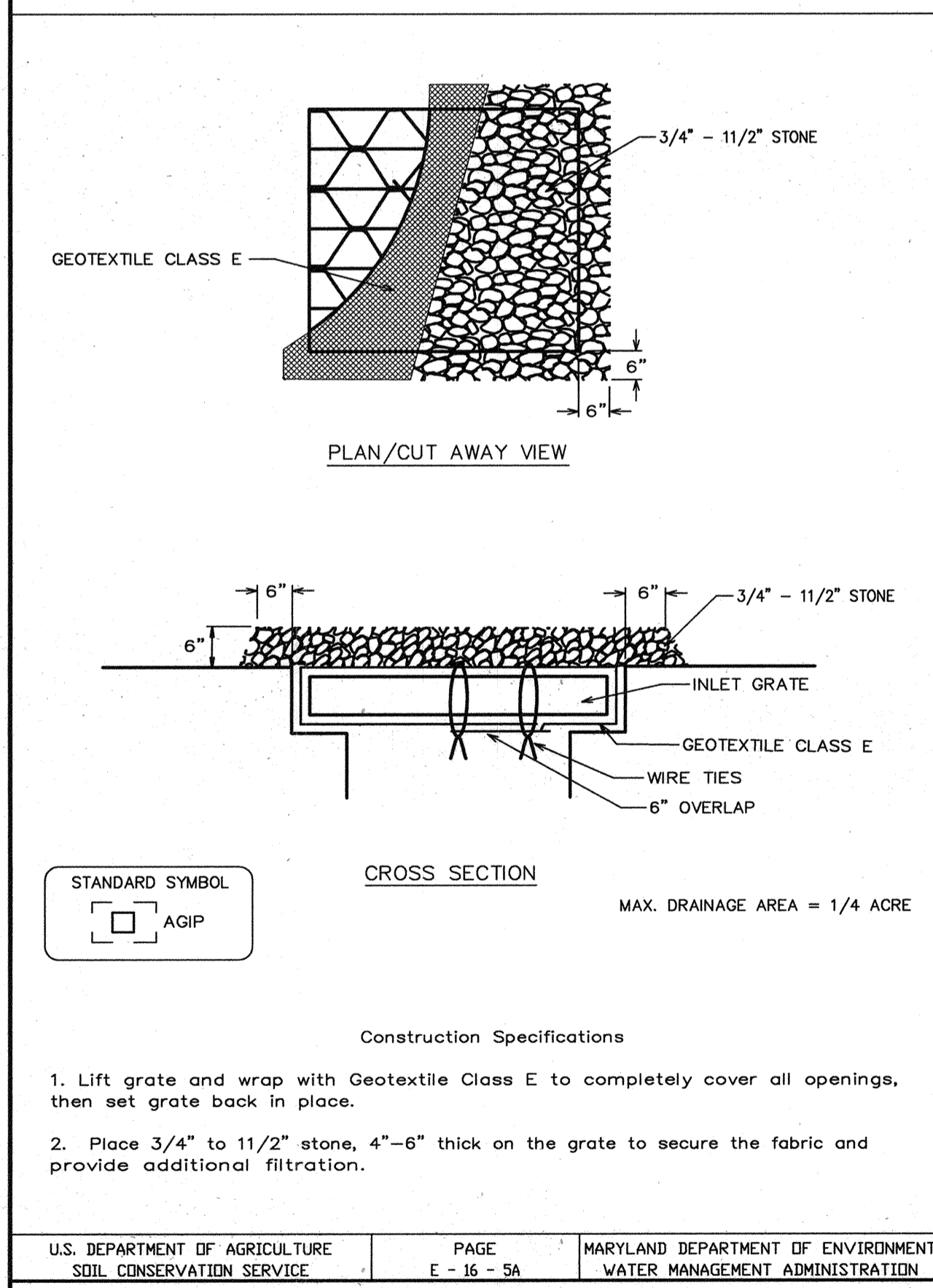


U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE E-17-3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE E-15-3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE G-22-2 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE H-26-3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE E-16-5A MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE E-16-5B MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE H-30-1 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

BY THE DEVELOPER :

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 INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

William B. 8-18-05
DEVELOPER DATE

BY THE ENGINEER :

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.

Aimee C. Remington 8-18-05
ENGINEER DATE

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.

Jim Meyer 9-6-05
NATURAL RESOURCES CONSERVATION SERVICE DATE

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

John P. Remington 9-6-05
HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

William J. 9-19-05
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Linda 10/11/05
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION

9/20/05 DATE

DATE	NO.	REVISION

OWNER / DEVELOPER
HRD LAND HOLDINGS, INC.
HOWARD RESEARCH AND DEVELOPMENT CORPORATION
THE HOUSE BUILDING
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
410-992-6000

PROJECT
BENSON EAST
PARCELS A, NON-BUILDABLE PARCELS B (PRIVATE ROADS), PARCELS C TO M AND OS PARCELS N & O

AREA TAX MAP 37 & 43 ZONED - NEWTOWN
PARCELS 482, 587, 382, 421, 547
6th ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE
SEDIMENT CONTROL DETAILS

Patton Harris Rust & Associates, pc
Engineers, Surveyors, Planners, Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

8-18-05
DATE

DESIGNED BY : C.J.R.

DRAWN BY: DAM

PROJECT NO : 11621/PRELIM RD17.DWG

DATE : AUGUST 18, 2005

SCALE : AS SHOWN

DRAWING NO. 16 OF 25

Aimee C. Remington 8-18-05
AIMEE C. REMINGTON #39923

21.0 STANDARD AND SPECIFICATIONS

FOR TOPSOIL

Definition

Placement of topsoil over a prepared subsoil prior to establishment of permanent vegetation.

Purpose

To provide a suitable soil medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.

Conditions Where Practice Applies

- 1. This practice is limited to areas having 2:1 or flatter slopes where:
a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
b. The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.
c. The original soil is to be vegetated contains material toxic to plant growth.
d. The soil is so acidic that treatment with limestone is not feasible.

- II. For the purpose of these standards and specifications, areas having slopes steeper than 2:1 require special consideration and design for adequate stabilization. Areas having slopes steeper than 2:1 shall have the appropriate stabilization shown on the plans.

Construction and Material Specifications

1. Topsoil salvaged from the existing site may be used provided that it meets the standards as set forth in these specifications. Topsoil, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-SGS in cooperation with Maryland Agricultural Experimentation Station.

II. Topsoil Specifications - Soil to be used as topsoil must meet the following:

- 1. Topsoil shall be a loam, sandy loam, clay loam, silt loam, sandy clay loam, loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Regardless, topsoil shall not be a mixture of contrasting textured subsoils and shall contain less than 5% by volume of clinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1 1/2" in diameter.
II. Topsoil must be free of plants or plant parts such as bermuda grass, quackgrass, johnsongrass, nutsedge, poison ivy, thistle, or others as specified.

- III. Where subsoil is either highly acidic or composed of heavy clays, ground limestone shall be spread at the rate of 4-8 tons/acre (200-400 pounds per 1,000 square feet) prior to the placement of topsoil. Lime shall be distributed uniformly over designated areas and worked into the soil in conjunction with tillage operations as described in the following procedures.

II. For sites having disturbed areas under 5 acres:

- 1. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.

III. For sites having disturbed areas over 5 acres:

- 1. On soil meeting topsoil specifications, obtain test results dictating fertilizer and lime amendments required to bring the soil into compliance with the following:
a. pH for topsoil shall be between 6.0 and 7.5. If soil tested soil demonstrates a pH of less than 6.0, sufficient lime shall be prescribed to raise the pH to 6.5 or higher.
b. Organic content of topsoil shall be not less than 1.5 percent by weight.
c. Topsoil having soluble soil content greater than 500 parts per million shall not be used.
d. No sod or seed shall be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phytotoxic materials.

Note: Topsoil substitutes to amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority may be used in lieu of natural topsoil.

- II. Place topsoil (if required) and apply soil amendments as specified in 20.0 Vegetative Stabilization - Section I - Vegetative Stabilization Methods and Materials.

V. Topsoil Application

- 1. When topsoiling, maintain needed erosion and sediment control practices such as diversions, grade stabilization structures, earth dikes, slope silt fence and sediment traps and basins.

- II. Grades on the areas to be topsoiled, which have been previously established, shall be maintained, albeit 4" - 8" higher in elevation.

- III. Topsoil shall be uniformly distributed in a 4" - 8" layer and lightly compacted to a minimum thickness of 4". Spreading shall be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations shall be corrected in order to prevent the formation of depressions or water pockets.

- IV. Topsoil shall not be placed while the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading and seedbed preparation.

VI. Alternative for Permanent Seeding - Instead of applying the full amounts of lime and commercial fertilizer, composted sludge and amendments may be applied as specified below:

1. Composted Sludge Material for use as a soil conditioner for sites having disturbed areas over 5 acres shall be tested to prescribe amendments and for site having disturbed areas under 5 acres shall conform to the following requirements:

- a. Composted sludge shall be supplied by, or originate from, a person or persons that are permitted at the time of acquisition of the compost by the Maryland Department of the Environment under COMAR 26.04.06.
b. Composted sludge shall contain at least 1 percent nitrogen, 1.5 percent phosphorus, and 0.2 percent potassium and have a pH of 7.0 to 9.0. If compost does not meet these requirements, the appropriate constituents must be added to meet the requirements prior to use.
c. Composted sludge shall be applied at a rate of 1 ton/1,000 square feet.
d. Composted sludge shall be amended with a potassium fertilizer applied at the rate of 4 lb/1,000 square feet, and 1/3 the normal lime application rate.

References: Guideline Specifications, Soil Preparation and Sodding, MD-VA, Pub. #1, Cooperative Extension Service, University of Maryland and Virginia Polytechnic Institutes. Revised 1973.

TEMPORARY SEEDING NOTES

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

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

Soil Amendments: Apply 600 lbs. per acre 10-10-10 fertilizer (14 lbs. per 1,000 sq. ft.).

Seeding: For periods March 1 thru April 30 and from August 15 thru November 15, seed with 5-1/2 bushels per acre of annual ryegrass (2.2 lbs. per 1,000 sq. ft.). For the period May 1 thru August 14, seed with 3 lbs. per acre of seeping lovegrass (0.07 lbs. per 1,000 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. per 1,000 sq. ft.) of untreated small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 2 1/2 gal. per acre (5 gal. per 1,000 sq. ft.) of emulsified asphalt on flat areas. On slopes, 8 ft. or higher, use 3 1/2 gal. per acre (6 gal. per 1,000 sq. ft.) for anchoring.

Refer to the 1984 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL. For rate and methods not covered.

PERMANENT SEEDING NOTES

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

Seeded Preparation: Loosen upper three inches of soil by raking, discing 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 (42 lbs. per 1,000 sq. ft.) and 600 lbs. per acre 10-10-10 fertilizer (14 lbs. per 1,000 sq. ft.) before seeding. Harrow or disc into upper three inches of soil. At time of seeding, apply 400 lbs. per acre 30-0-0 ureaform fertilizer (9 lbs. per 1,000 sq. ft.)
2) Acceptable - Apply 2 tons per acre dolomitic limestone (42 lbs. per 1,000 sq. ft.) and 1,000 lbs. per acre 10-10-10 fertilizer (23 lbs. per 1,000 sq. ft.) before seeding. Harrow or disc into upper three inches of soil.

Seeding: For the period March 1 thru April 30 and from August 15 thru October 15, seed with 60 lbs. per acre Kentucky 31 Tall Fescue (14 lbs. per 1,000 sq. ft.). For the period May 1 thru July 31, seed with 60 lbs. Kentucky 31 Tall Fescue per acre and 2 lbs. per acre (0.05 lbs. per 1,000 sq. ft.) of seeping lovegrass. During the period October 16 thru February 28, protect site by one of the following options:

- 1) 2 tons per acre of well-anchored mulch straw and seed as soon as possible in the spring.
2) Use sod.
3) Seed with 60 lbs. per acre Kentucky 31 Tall Fescue and mulch with 2 tons per acre well anchored straw.

Mulching: Apply 1-1/2 to 2 tons per acre (70 to 90 lbs. per 1,000 sq. ft.) of untreated small grain straw immediately after seeding. Anchor mulch immediately after application using mulch anchoring tool or 2 1/2 gal. per acre (5 gal. per 1,000 sq. ft.) of emulsified asphalt on flat areas. On slopes, 8 ft. or higher, use 3 1/2 gal. per acre (6 gal. per 1,000 sq. ft.) for anchoring.

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

STANDARD SEDIMENT CONTROL NOTES

- 1. A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (313-1855).
2. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 1984 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO.
3. 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 STEEPER 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 MARKING SIGNS POSTED AROUND THE PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 7, 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 1984 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING, SO2, TEMPORARY SEEDING, AND MULCHING (SEC. 6.) TEMPORARY STABILIZATION WITH MULCH ALONE SHALL 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 PERMITS FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
7. SITE ANALYSIS:
TOTAL AREA OF SITE 122.0519 ACRES
AREA DISTURBED 16.4 ACRES
AREA TO BE ROOFED OR PAVED 12.0 ACRES
AREA TO BE VEGETATIVELY STABILIZED 4.4 ACRES
TOTAL CUT 5,000 CY
TOTAL FILL 5,000 CY
OFFSITE WASTE AREA LOCATION TO HAVE ACTIVE GRADING PERMIT.

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 SEDIMENT CONTROL INSPECTOR.
10. ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.

11. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.
12. SITE GRADING WILL BEGIN ONLY AFTER ALL PERIMETER SEDIMENT CONTROL MEASURES HAVE BEEN INSTALLED AND ARE IN A FUNCTIONING CONDITION.

13. SEDIMENT WILL BE REMOVED FROM TRAPS WHEN ITS DEPTH REACHES CLEAN OUT ELEVATION SHOWN ON THE PLANS.
14. CUT AND FILL QUANTITIES PROVIDED UNDER SITE ANALYSIS DO NOT REPRESENT BID QUANTITIES. THESE QUANTITIES DO NOT DISTINGUISH BETWEEN TOPSOIL, STRUCTURAL FILL OR EMBANKMENT MATERIAL, NOR DO THEY REFLECT CONSIDERATION OF UNDERCUTTING OR REMOVAL OF UNSUITABLE MATERIAL. THE CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH SITE CONDITIONS WHICH MAY AFFECT THE WORK.

SEQUENCE OF CONSTRUCTION

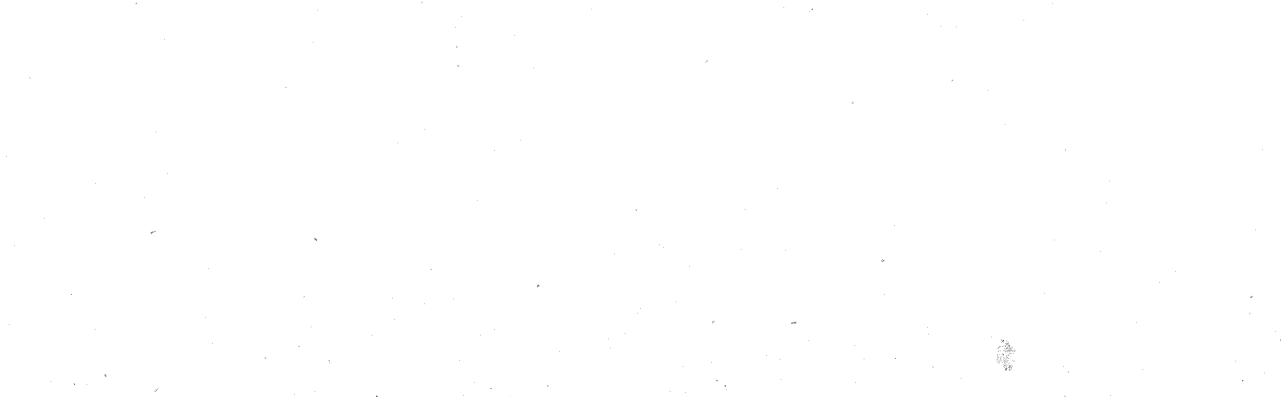
- 1. ONCE SEDIMENT CONTROL DEVICES FROM SDP-04-163 ARE REMOVED AND/OR FUNCTIONING PER COUNTY SEDIMENT CONTROL INSPECTOR PROCEED WITH FINAL ROAD LAYOUT.
2. PERFORM GRADING FOR ROADS. INSTALL WATER, SEWER AND STORM DRAINS. (2 MONTHS)
3. INSTALL CURB AND PAVE. (3 WEEKS)
4. CONTRACTOR TO INSPECT, REPAIR OR REPLACE ANY SEDIMENT CONTROLS DAILY WHILE MAINTAINING POSITIVE DRAINAGE TO BASINS.
5. PERFORM FINE GRADING, SIDEWALKS, LIGHTING AND LANDSCAPING. (1 MONTH)
6. APPLY TOPSOIL AND STABILIZE DISTURBED AREAS IN ACCORDANCE WITH PERMANENT SEEDING NOTES. (2 WEEKS)

CONSTRUCTION SPECIFICATIONS

- 1. THE SUBGRADE FOR THE FILTER, RIP-RAP, OR GABION SHALL BE PREPARED TO THE REQUIRED LINES AND GRADES. ANY FILL REQUIRED IN THE SUBGRADE SHALL BE COMPACTED TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL.
2. THE ROCK OR GRAVEL SHALL CONFORM TO THE SPECIFIED GRADING LIMITS WHEN INSTALLED RESPECTIVELY IN THE RIP-RAP OR FILTER.
3. "SE" GEOTEKSTILE OR BETTER SHALL BE PROTECTED FROM PUNCHING, CUTTING, OR TEARING, ANY DAMAGE OTHER THAN AN OCCASIONAL SMALL HOLE SHALL BE REPAIRED BY CONTRACTOR ANOTHER PIECE OF GEOTEKSTILE FABRIC OVER THE DAMAGED SECTION, WHETHER FOR REPAIRS OR FOR JOINING TWO PIECES OF GEOTEKSTILE FABRIC, IT SHALL BE A MINIMUM OF ONE FOOT.
4. STONE FOR THE RIP-RAP OR GABION OUTLETS MAY BE PLACED BY EQUIPMENT, THEY SHALL BE CONSTRUCTED TO THE FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER AS TO AVOID DISPLACEMENT OF UNDERLYING MATERIALS. THE STONE FOR RIP-RAP OR GABION OUTLETS SHALL BE DELIVERED AND PLACED IN A MANNER THAT WILL ENSURE THAT IT IS REASONABLY HOMOGENOUS WITH THE SMALLER STONES AND SPALLS FILLING THE VOIDS BETWEEN THE LARGER STONES. RIP-RAP SHALL BE PLACED IN A MANNER TO PREVENT DAMAGE TO THE FILTER BLANKET OR GEOTEKSTILE FABRIC. HAND PLACEMENT WILL BE REQUIRED TO THE EXTENT NECESSARY TO PREVENT DAMAGE TO THE PERMANENT WORKS.
5. THE STONE SHALL BE PLACED SO THAT IT BLENDS IN WITH THE EXISTING GROUND. IF THE STONE IS PLACED TOO HIGH THEN THE FLOW WILL BE FORCED OUT OF THE CHANNEL AND SCOUR ADJACENT TO THE STONE WILL OCCUR.

Table with 7 columns: STRUCTURE, MEDIAN STONE DIA., LENGTH (L), WIDTH (W), THICKNESS (T), Q10, Vp, DEPTH. Includes rows for E-6, E-7, E-9, E-10, E-11, E-12, E-13, E-14.

RIPPRAP OUTLET PROTECTION DETAIL



STRUCTURE SCHEDULE

Table with 7 columns: STRUCTURE, TYPE, LOCATION, INV. IN, INV. OUT, TOP, REMARKS. Lists structures 1-33 and M-1 to M-16, including their locations and elevations.

PIPE SCHEDULE

Table with 3 columns: PIPE LENGTH, SIZE, TYPE. Lists pipes of lengths 1651, 674, 297, 1191, 1060, 0, and 1017 with sizes 15", 18", 24", 30", 36", 42", and 48" and type HDPE.

BY THE DEVELOPER: 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 INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

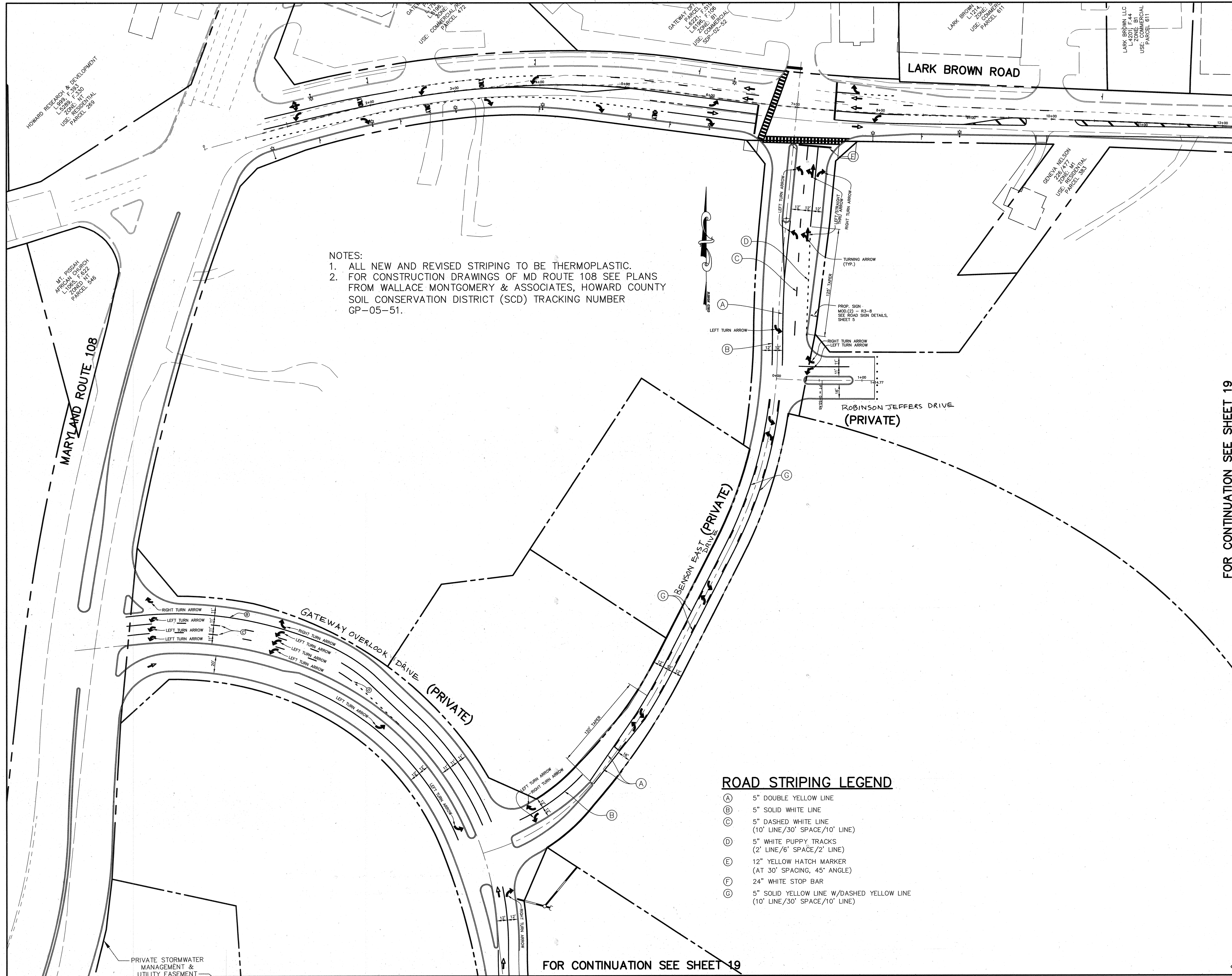
BY THE ENGINEER: I CERTIFY THAT THIS PLAN FOR EROSION AND SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED ON MY PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE HOWARD SOIL CONSERVATION DISTRICT.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS. CHIEF, BUREAU OF HIGHWAYS. APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING. CHIEF, DIVISION OF LAND DEVELOPMENT. CHIEF, DEVELOPMENT ENGINEERING DIVISION.

APPROVED: BENSON EAST. PARCELS A, NON-BUILDABLE PARCELS B (PRIVATE ROADS), PARCELS C TO M AND O'S, PARCELS N TO. TAX MAP 37 & 43 ZONED - NEWTOWN. PARCELS 482, 587, 382, 421, 547. 6th ELECTION DISTRICT. HOWARD COUNTY, MARYLAND.

NOTES AND DETAILS. PROJECT: BENSON EAST. AREA: TAX MAP 37 & 43 ZONED - NEWTOWN. TITLE: NOTES AND DETAILS.

Professional seal and signature of Aimee C. Remington, P.E. DESIGNED BY: C.J.R. DRAWN BY: DAM. PROJECT NO.: 11621/PRELIM RD11.DWG. DATE: AUGUST 18, 2005. SCALE: AS SHOWN. DRAWING NO.: 17 OF 25. F-05-058



NOTES:
 1. ALL NEW AND REVISED STRIPING TO BE THERMOPLASTIC.
 2. FOR CONSTRUCTION DRAWINGS OF MD ROUTE 108 SEE PLANS FROM WALLACE MONTGOMERY & ASSOCIATES, HOWARD COUNTY SOIL CONSERVATION DISTRICT (SCD) TRACKING NUMBER GP-05-51.

- ROAD STRIPING LEGEND**
- (A) 5" DOUBLE YELLOW LINE
 - (B) 5" SOLID WHITE LINE
 - (C) 5" DASHED WHITE LINE (10' LINE/30' SPACE/10' LINE)
 - (D) 5" WHITE PUPPY TRACKS (2' LINE/6' SPACE/2' LINE)
 - (E) 12" YELLOW HATCH MARKER (AT 30' SPACING, 45° ANGLE)
 - (F) 24" WHITE STOP BAR
 - (G) 5" SOLID YELLOW LINE W/DASHED YELLOW LINE (10' LINE/30' SPACE/10' LINE)

FOR CONTINUATION SEE SHEET 19

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

White J. McCall 7-19-05
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Cynthia Horvath 10/1/05
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[Signature] 9/24/05
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

DATE	NO.	REVISION

OWNER / DEVELOPER
 HRD LAND HOLDINGS, INC.
 HOWARD RESEARCH AND DEVELOPMENT CORPORATION
 THE ROUSE BUILDING
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044
 410-992-6000

PROJECT
BENSON EAST
 PARCELS A, NON-BUILDABLE PARCEL B (PRIVATE ROADS), PARCELS C TO M AND O, PARCELS N TO O

AREA
 TAX MAP 37 & 43 ZONED - NEWTOWN
 PARCELS 482, 587, 382, 421, 547
 6th ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

TITLE
STRIPING PLAN FOR ROADS A, B, & D

Patton Harris Rust & Associates, PC
 Engineers, Surveyors, Planners, Landscape Architects.
 8818 Centre Park Drive
 Columbia, MD 21045
 T 410.997.8900
 F 410.997.9282

8-18-05
 DATE

DESIGNED BY : C.J.R.

DRAWN BY: DAM

PROJECT NO : 11621/PRELIM RD19.DWG

DATE : AUGUST 18, 2005

SCALE : AS SHOWN

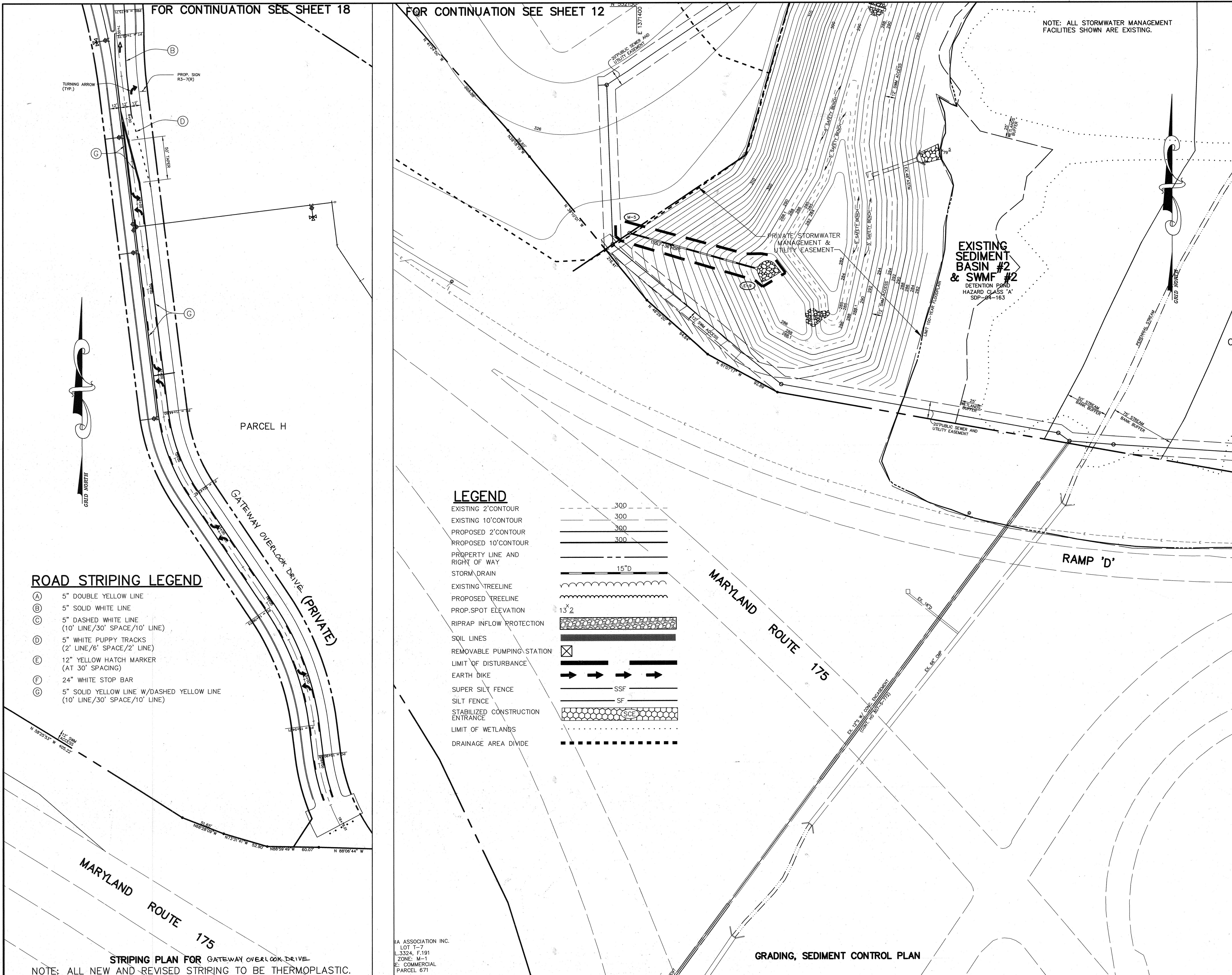
DRAWING NO. 18 OF 25

[Signature]
 AIMEE C. REMINGTON #28923

FOR CONTINUATION SEE SHEET 18

FOR CONTINUATION SEE SHEET 12

NOTE: ALL STORMWATER MANAGEMENT FACILITIES SHOWN ARE EXISTING.



ROAD STRIPING LEGEND

- (A) 5" DOUBLE YELLOW LINE
- (B) 5" SOLID WHITE LINE
- (C) 5" DASHED WHITE LINE (10' LINE/30' SPACE/10' LINE)
- (D) 5" WHITE PUPPY TRACKS (2' LINE/6' SPACE/2' LINE)
- (E) 12" YELLOW HATCH MARKER (AT 30' SPACING)
- (F) 24" WHITE STOP BAR
- (G) 5" SOLID YELLOW LINE W/DASHED YELLOW LINE (10' LINE/30' SPACE/10' LINE)

LEGEND

- EXISTING 2' CONTOUR
- EXISTING 10' CONTOUR
- PROPOSED 2' CONTOUR
- PROPOSED 10' CONTOUR
- PROPERTY LINE AND RIGHT OF WAY
- STORM DRAIN
- EXISTING TREELINE
- PROPOSED TREELINE
- PROP. SPOT ELEVATION
- RIPRAP INFLOW PROTECTION
- SOIL LINES
- REMOVABLE PUMPING STATION
- LIMIT OF DISTURBANCE
- EARTH DIKE
- SUPER SILT FENCE
- SILT FENCE
- STABILIZED CONSTRUCTION ENTRANCE
- LIMIT OF WETLANDS
- DRAINAGE AREA DIVIDE

STRIPING PLAN FOR GATEWAY OVERLOOK DRIVE
NOTE: ALL NEW AND REVISED STRIPING TO BE THERMOPLASTIC.

GRADING, SEDIMENT CONTROL PLAN

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

William J. ... 9-19-05
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Conita ... 10/1/05
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

... 9/26/05
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

DATE	NO.	REVISION

OWNER / DEVELOPER
HRO LAND HOLDINGS, INC.
HOWARD RESEARCH AND DEVELOPMENT CORPORATION
THE ROUSE BUILDING
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
410-992-6000

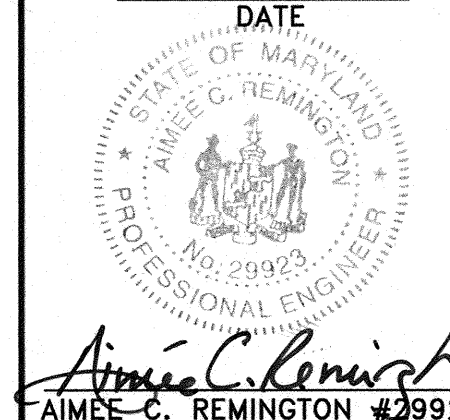
PROJECT
BENSON EAST
PARCELS A, NON-BUILDABLE PARCEL B (PRIVATE ROADS), PARCELS C TO M AND O & PARCELS N & O

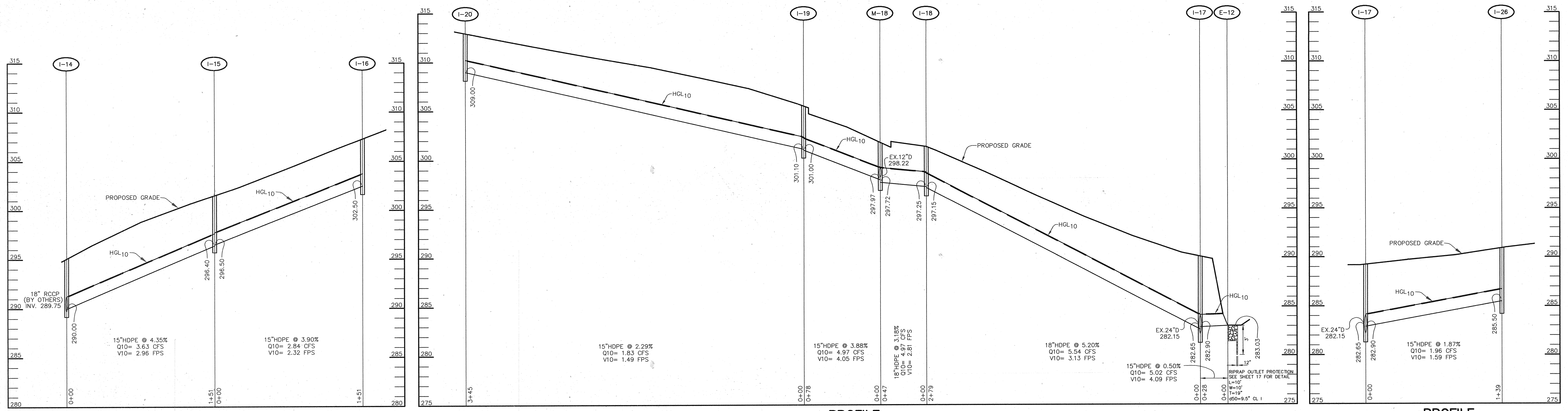
AREA
TAX MAP 37 & 43 ZONED - NEWTOWN
PARCELS 482, 587, 382, 421, 547
6th ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE
STRIPING PLAN FOR ROAD A AND GRADING, SEDIMENT CONTROL PLAN

Patton Harris Rust & Associates, PC
Engineers. Surveyors. Planners. Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

DATE: 8-18-05
DESIGNED BY: C.J.R.
DRAWN BY: DAM
PROJECT NO: 11621/PRELIM RD20.DWG
DATE: AUGUST 18, 2005
SCALE: AS SHOWN
DRAWING NO. 19 OF 25

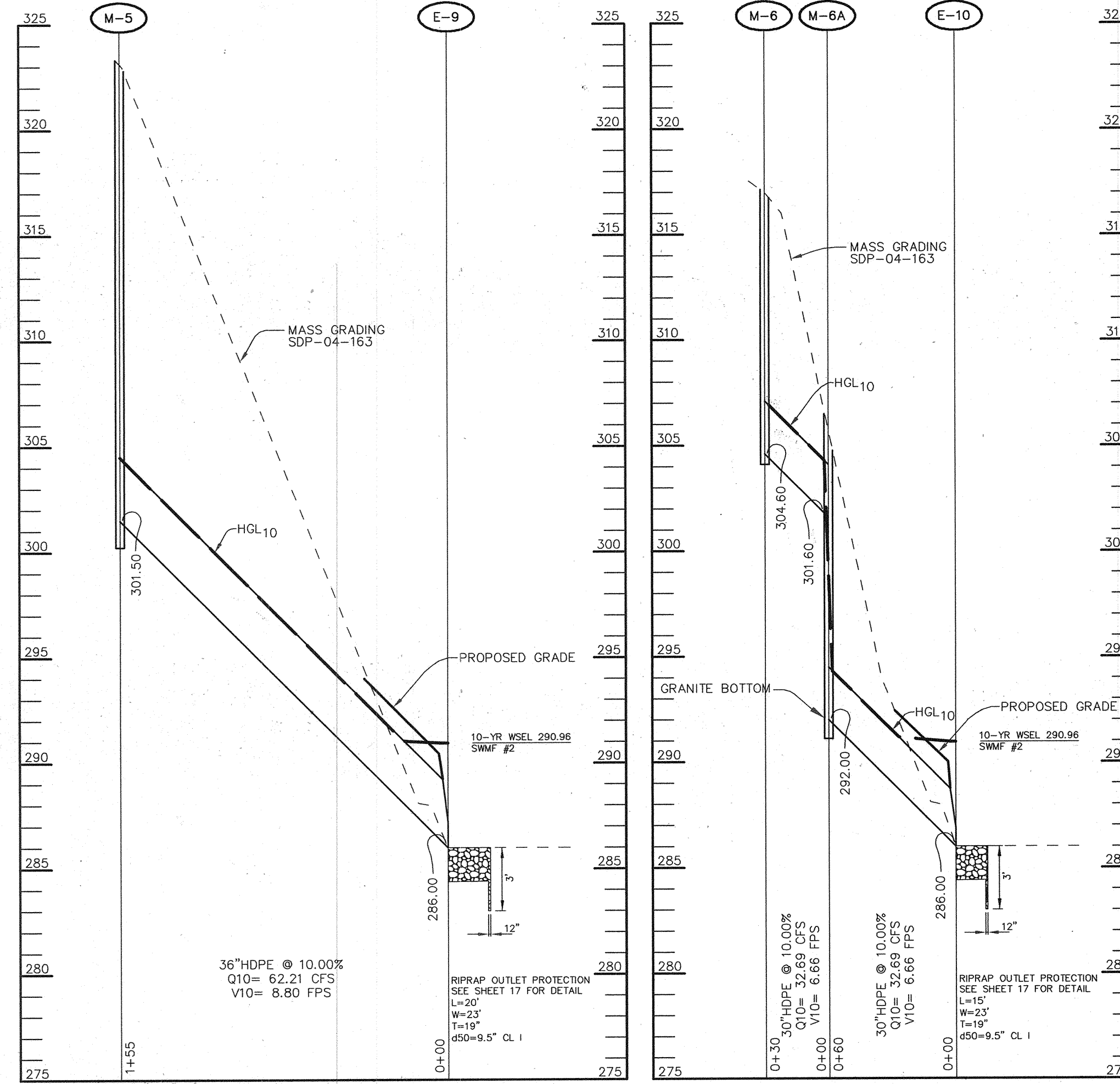




PROFILE
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HOR. - 1"=50'
VERT. - 1"=5'

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

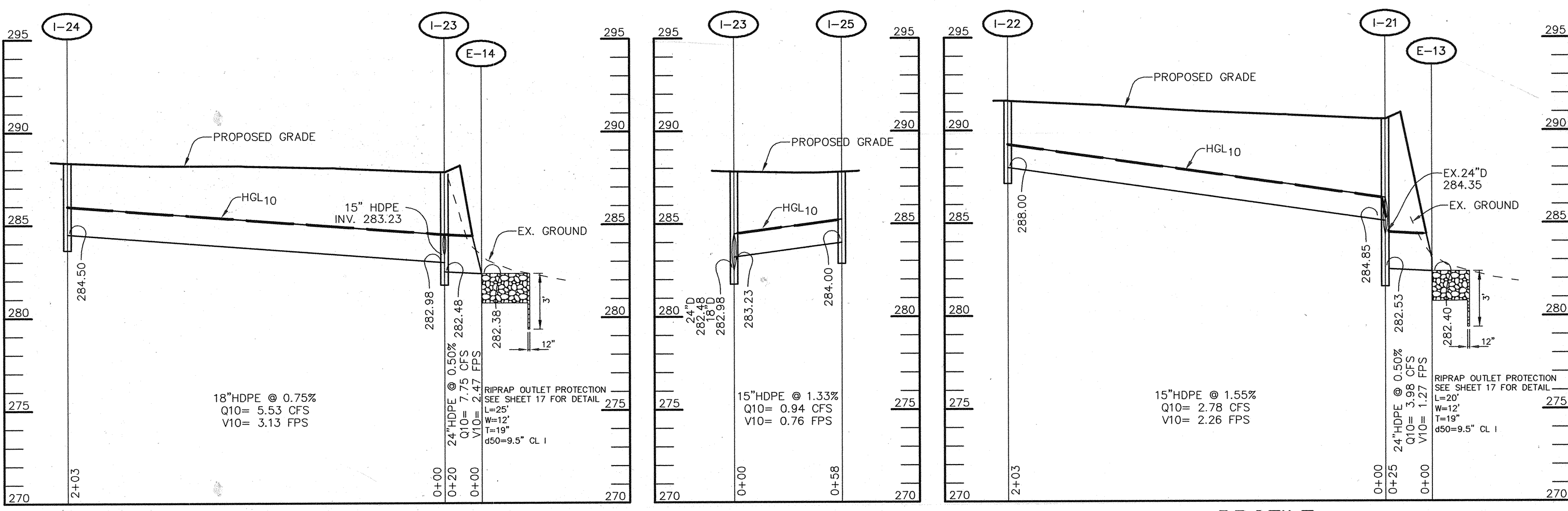
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PROFILE
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PROFILE
SCALE:
HOR. - 1"=50'
VERT. - 1"=5'

NOTE: COMPACT BACKFILL AREAS PER AASHTO T-180.



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

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

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

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
W. Dale Z. White 9-19-05
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.
Cindy Hammett 10/1/05
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

gmc 9/26/05
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

DATE	NO.	REVISION

OWNER / DEVELOPER
HRD LAND HOLDINGS, INC.
HOWARD RESEARCH AND DEVELOPMENT CORPORATION
THE ROUSE BUILDING
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
410-992-6000

PROJECT
BENSON EAST
PARCELS A, NON-BUILDABLE PARCEL B (PRIVATE ROADS), PARCELS C TO M AND O.S. PARCELS N TO O

AREA
TAX MAP 37 & 43 ZONED - NEWTOWN
PARCELS 482, 587, 382, 421, 547
6th ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE
STORM DRAIN PROFILES

Patton Harris Rust & Associates, pc
Engineers, Surveyors, Planners, Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

E.18-05
DATE

DESIGNED BY: C.J.R.

DRAWN BY: DAM

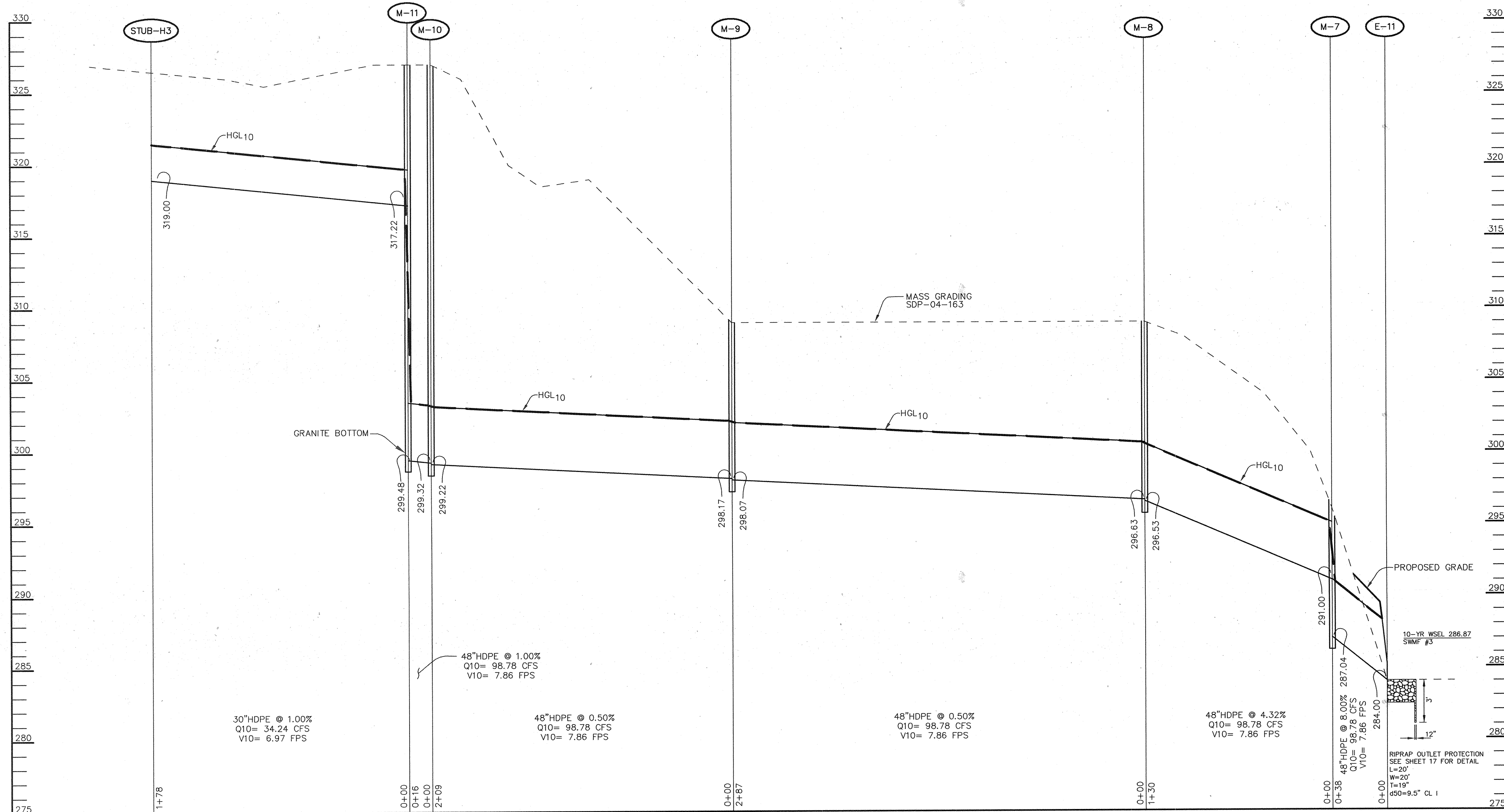
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DATE: AUGUST 18, 2005

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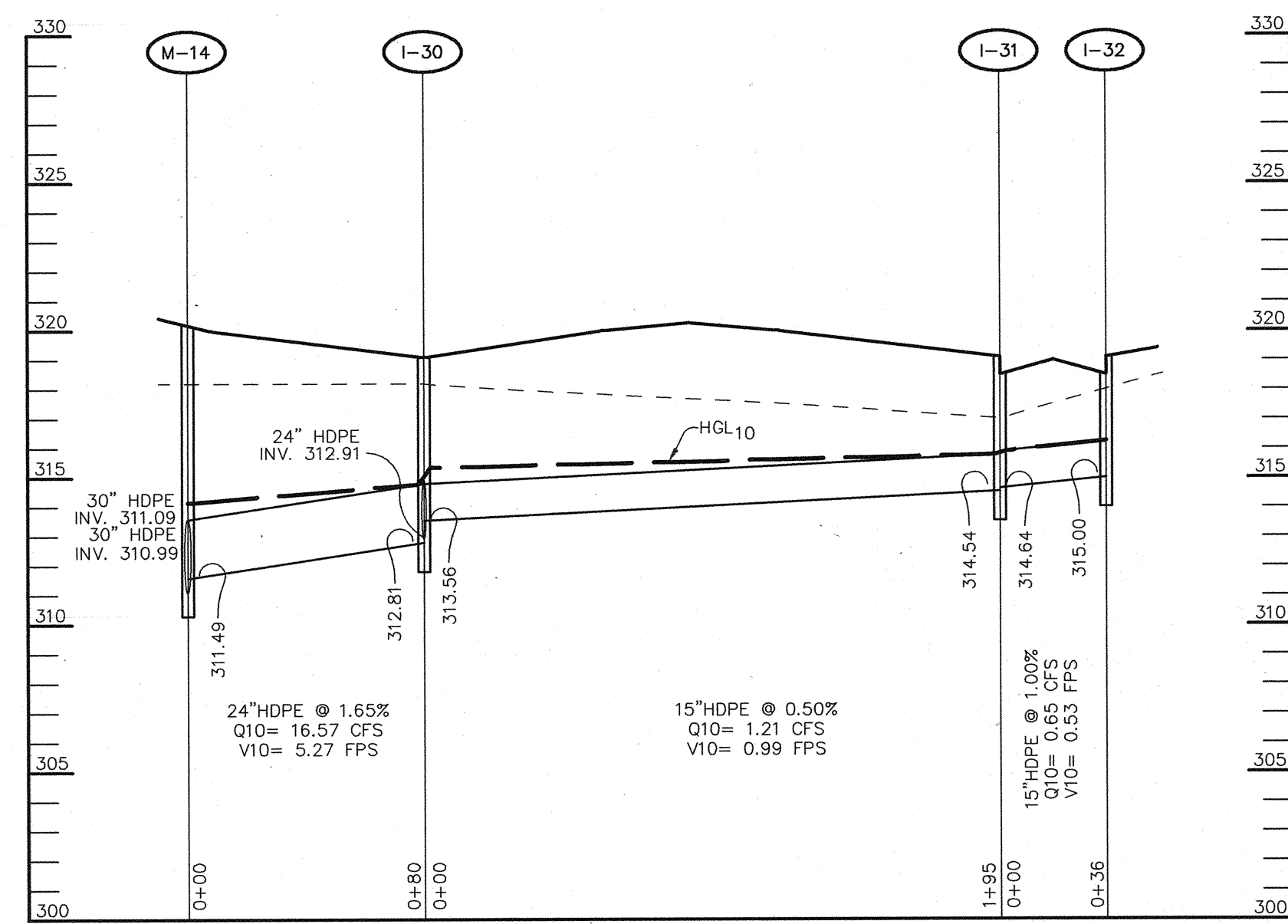
DRAWING NO. 20 OF 25

Aimee C. Remington
AIMEE-C. REMINGTON 029923



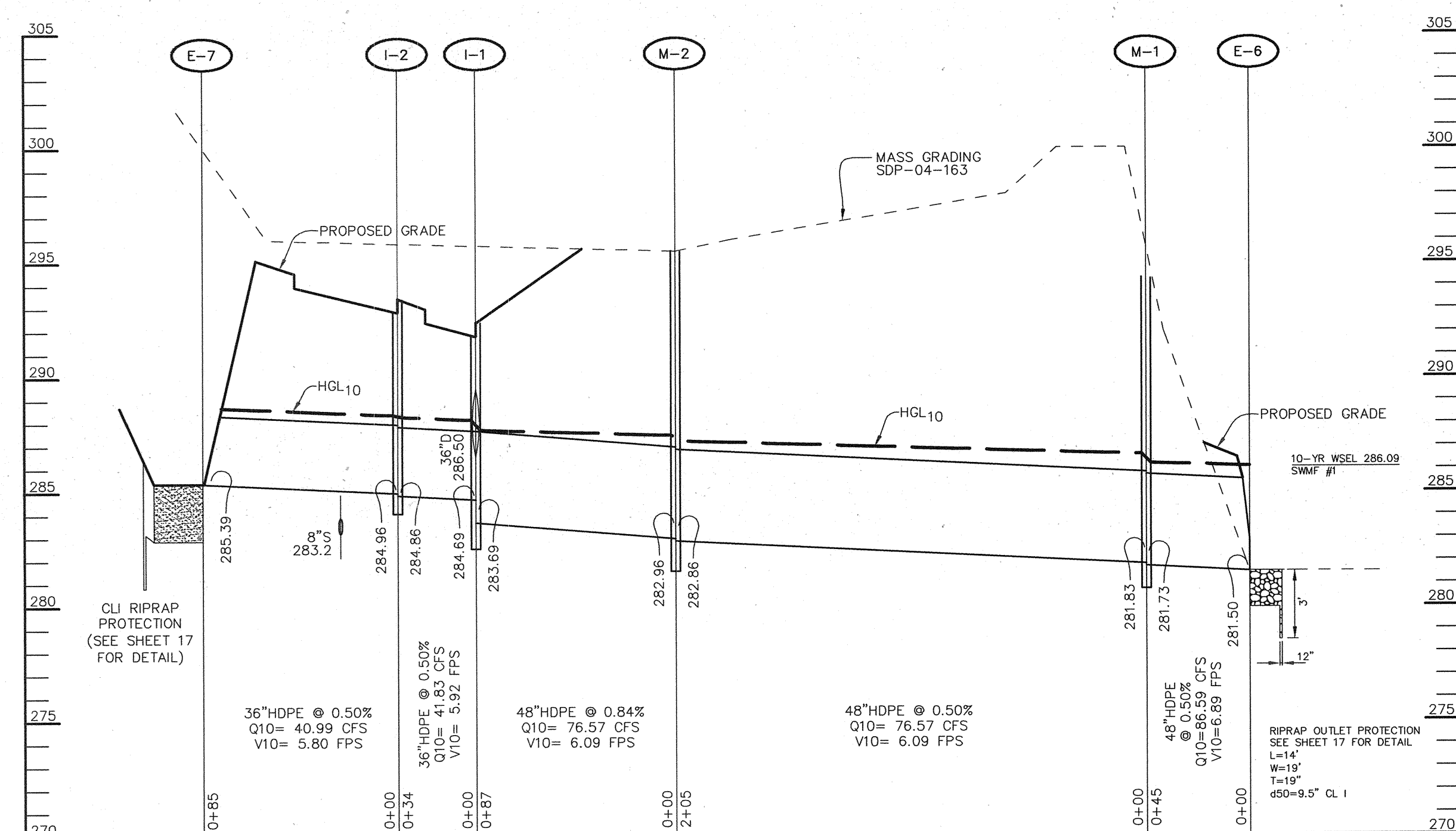
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NOTE: COMPACT BACKFILL AREAS PER AASHTO T-180.



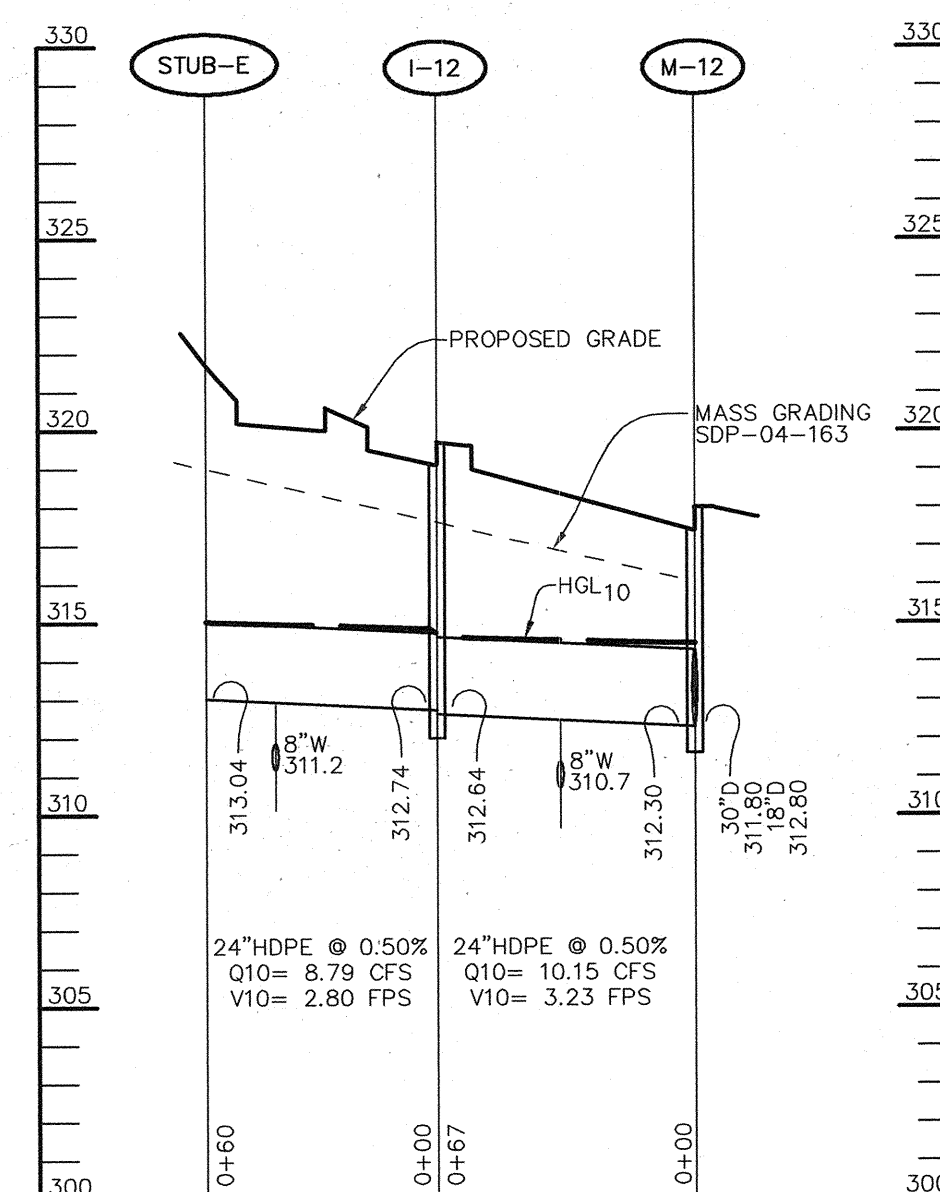
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NOTE: COMPACT BACKFILL AREAS PER AASHTO T-180.

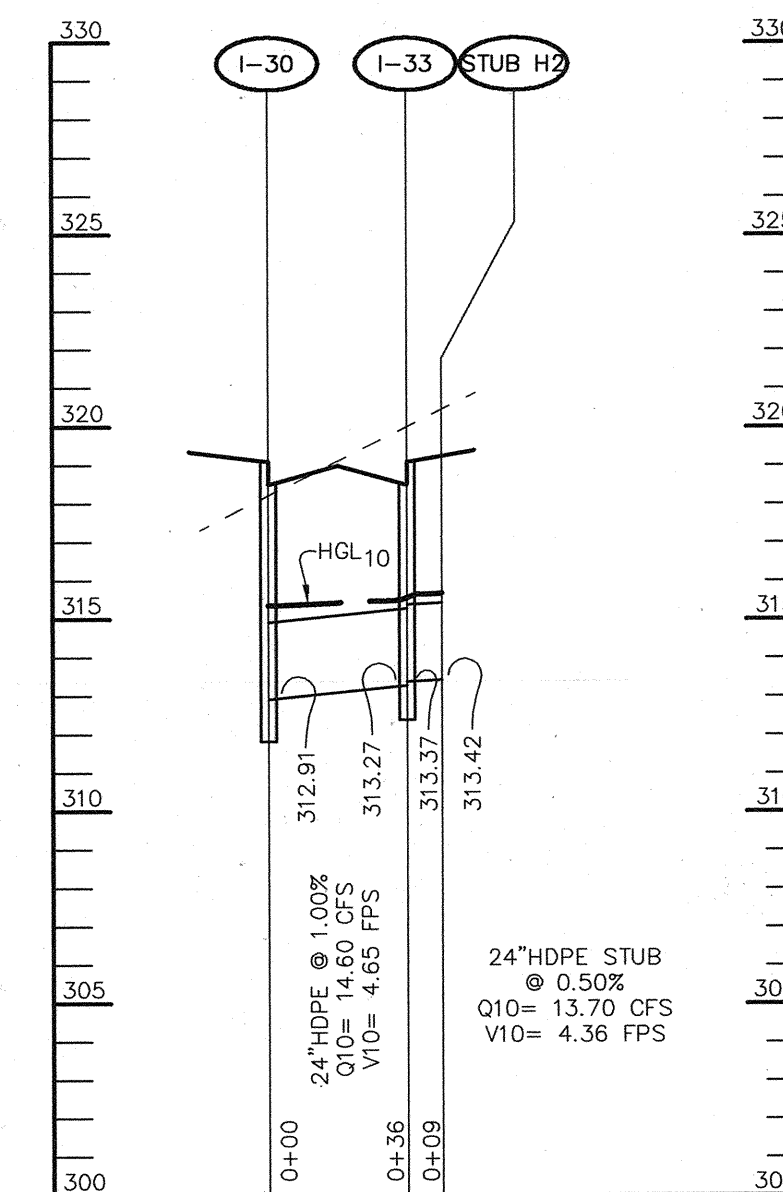


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NOTE: COMPACT BACKFILL AREAS PER AASHTO T-180.

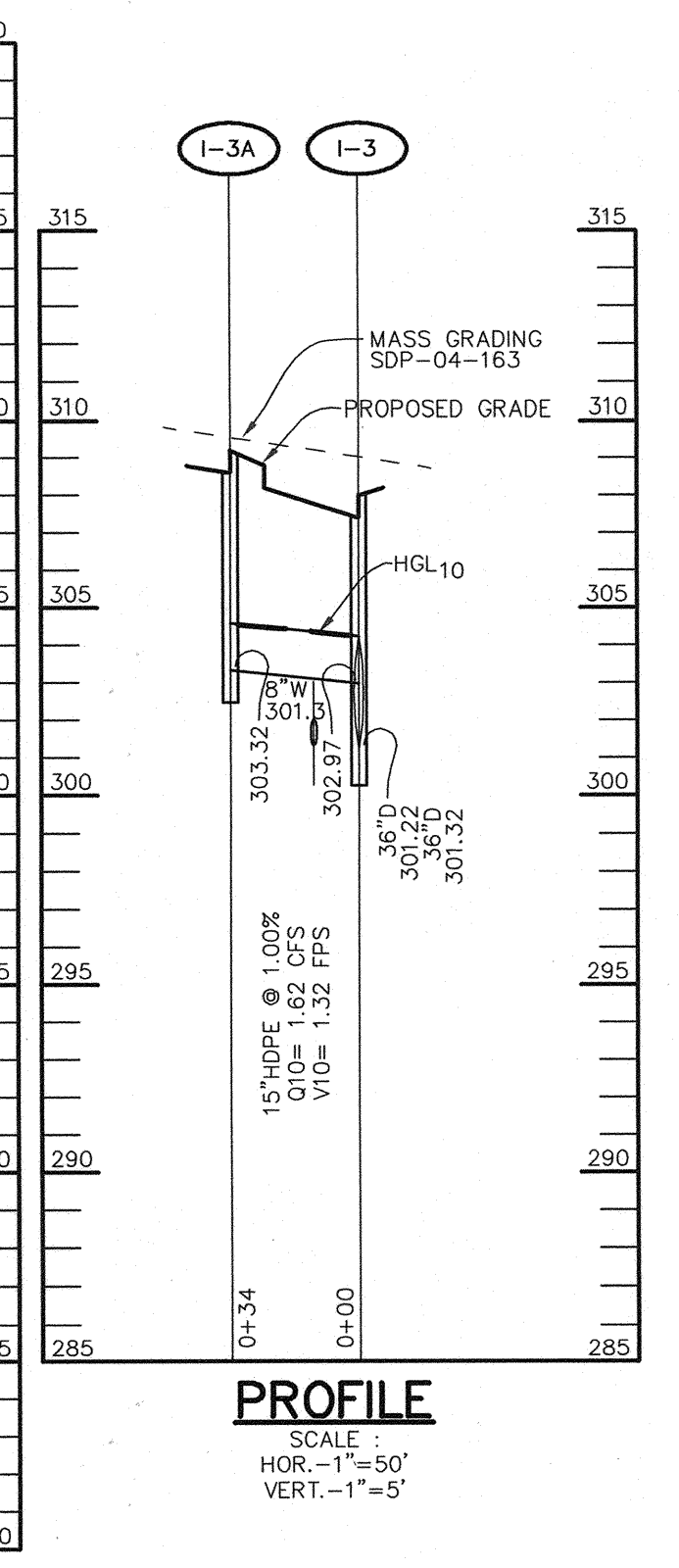
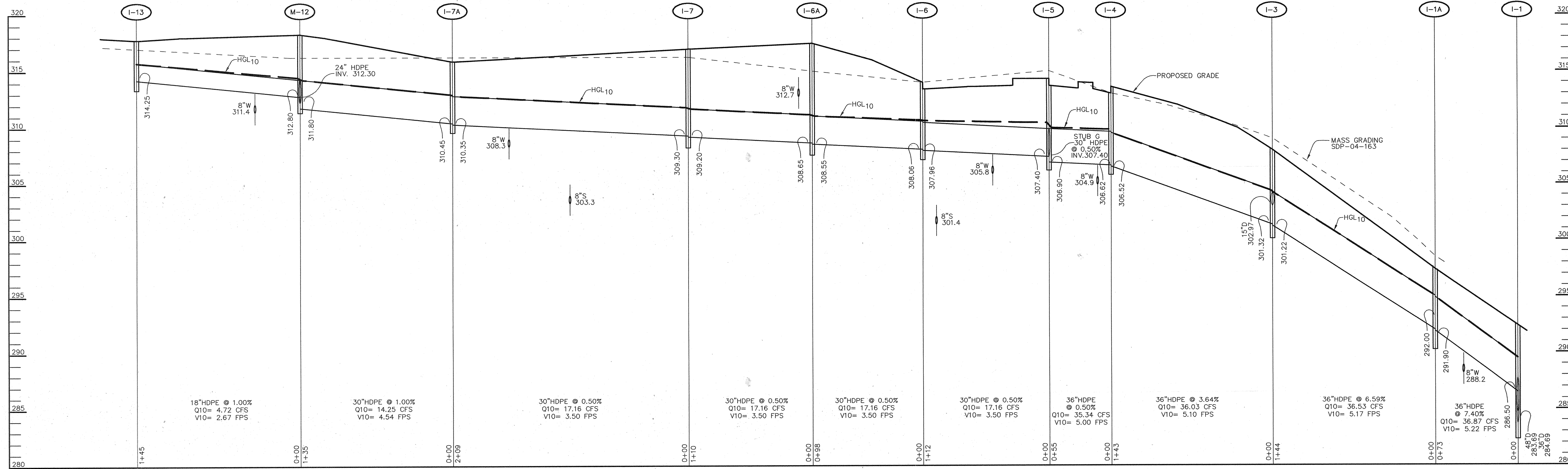


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VERT.-1"=5'



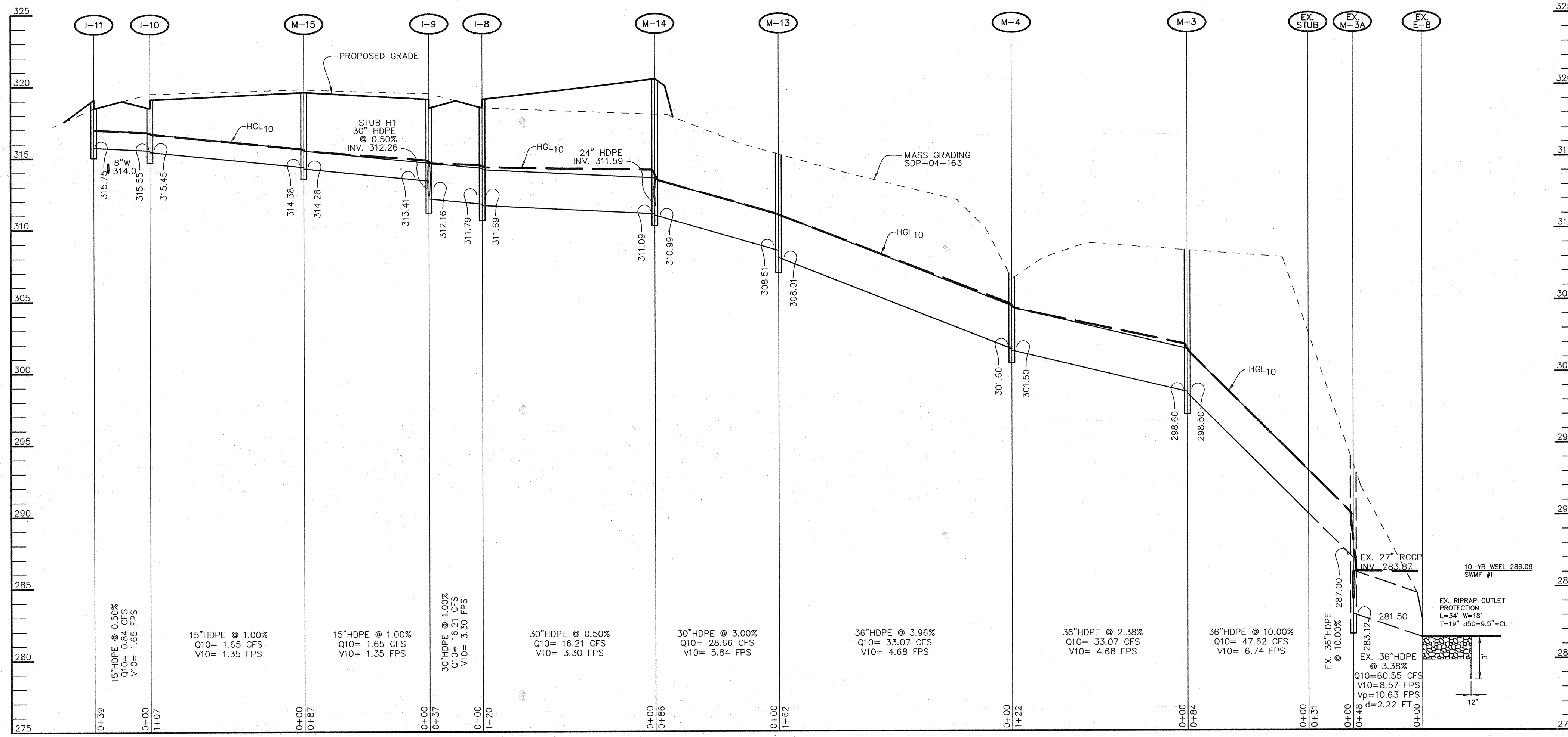
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SCALE:
HOR.-1"=50'
VERT.-1"=5'

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS. <i>Walter Z. ...</i> 9-19-05 CHIEF, BUREAU OF HIGHWAYS DATE	
APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING. <i>Cecilia ...</i> 10/1/05 CHIEF, DIVISION OF LAND DEVELOPMENT DATE	
CHIEF, DEVELOPMENT ENGINEERING DIVISION 9/24/05 DATE	
DATE NO.	REVISION
OWNER / DEVELOPER HRD LAND HOLDINGS, INC. HOWARD RESEARCH AND DEVELOPMENT CORPORATION THE ROUSE BUILDING 10275 LITTLE PATUXENT PARKWAY COLUMBIA, MARYLAND 21044 410-992-6000	
PROJECT BENSON EAST PARCELS A, NON-BUILDABLE PARCEL B (PRIVATE ROADS), PARCELS C TO M AND OS, PARCELS N TO O	
AREA TAX MAP 37 & 43 ZONED - NEWTOWN PARCELS 482, 587, 382, 421, 547 6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND	
TITLE STORM DRAIN PROFILES	
Patton Harris Rust & Associates, pc Engineers, Surveyors, Planners, Landscape Architects. 8818 Centre Park Drive Columbia, MD 21045 T 410.997.8900 F 410.997.9282	
DATE 8-18-05	DESIGNED BY : C.J.R.
	DRAWN BY: DAM
	PROJECT NO : 11621/PRELIM SDPROFILES
	DATE : AUGUST 18, 2005
SCALE : AS SHOWN	DRAWING NO. 21 OF 25



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

NOTE: COMPACT BACKFILL AREAS PER AASHTO T-180.



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

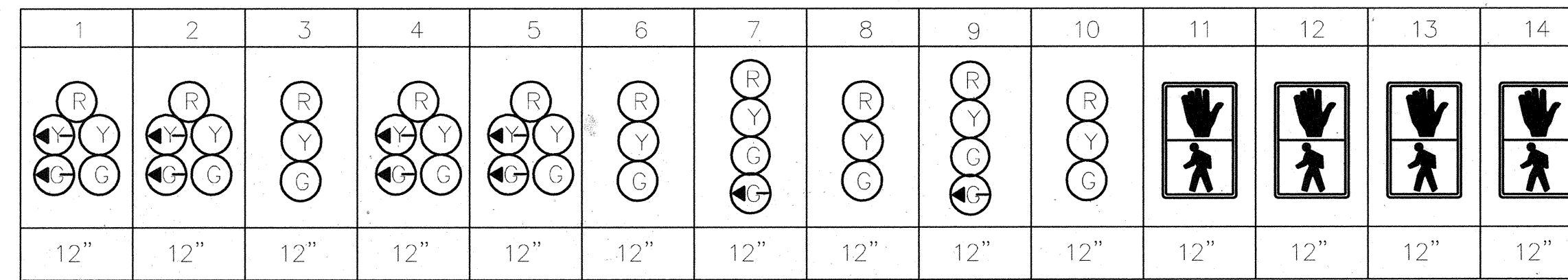
NOTE: COMPACT BACKFILL AREAS PER AASHTO T-180.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS. <i>William Z. White</i> 9-19-05 CHIEF, BUREAU OF HIGHWAYS DATE	
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING. <i>Condy Harris</i> 9/26/05 CHIEF, DIVISION OF LAND DEVELOPMENT DATE	
CHIEF, DEVELOPMENT ENGINEERING DIVISION	
DATE	REVISION
OWNER / DEVELOPER HRD LAND HOLDINGS, INC. HOWARD RESEARCH AND DEVELOPMENT CORPORATION THE ROUSE BUILDING 10275 LITTLE PATUXENT PARKWAY COLUMBIA, MARYLAND 21044 410-992-6000	
PROJECT BENSON EAST PARCELS A, NON-BUILDABLE PARCEL B (PRIVATE ROADS), PARCELS C TO M AND O, PARCELS 11 TO	
AREA TAX MAP 37 & 43 ZONED - NEWTOWN PARCELS 482, 587, 382, 421, 547 6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND	
TITLE STORM DRAIN PROFILES	
Patton Harris Rust & Associates, pc Engineers, Surveyors, Planners, Landscape Architects. 8818 Centre Park Drive Columbia, MD 21045 T 410.997.8900 F 410.997.9282	
DESIGNED BY: C.J.R.	DRAWN BY: DAM
PROJECT NO.: 11621/PRELIM SDPROFILES	
DATE: AUGUST 18, 2005	
SCALE: AS SHOWN	
DRAWING NO.: 22 OF 25	

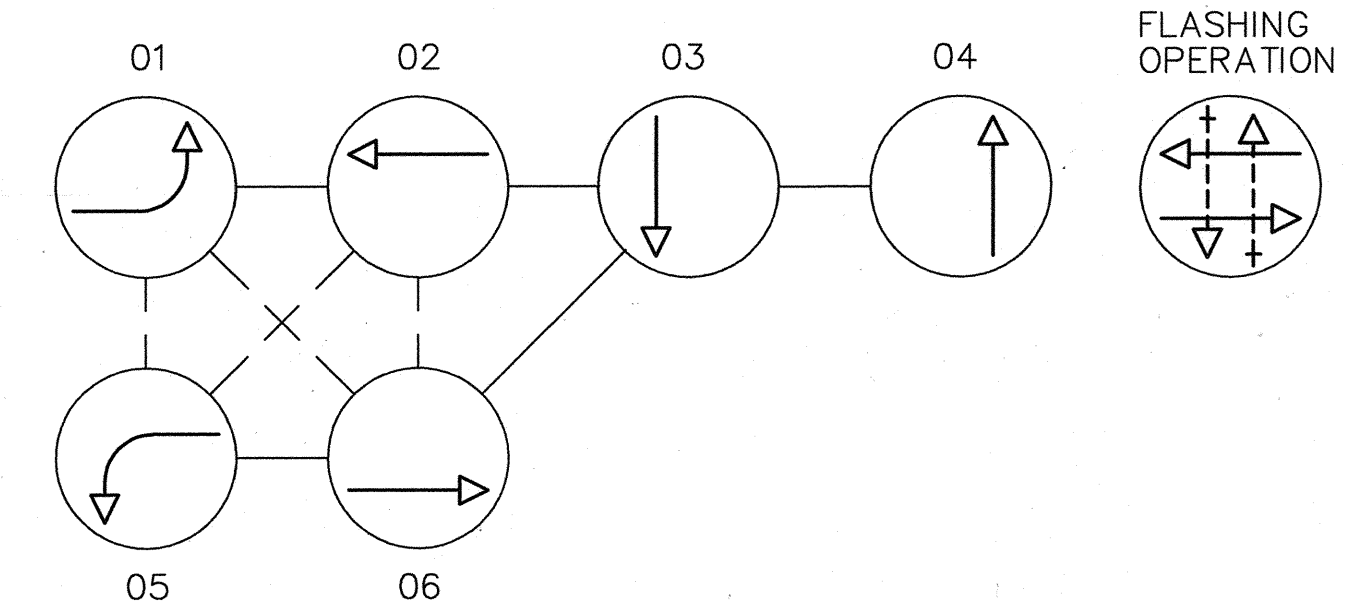
GENERAL NOTES

1. THE CONTRACTOR SHALL VERIFY ALL PROPOSED POLE, CABINET, AND DETECTOR LOCATIONS WITH HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS PERSONNEL PRIOR TO INSTALLATION.
2. FOR FINAL PAVEMENT MARKINGS REFER TO THE PAVEMENT MARKING PLANS, OTHER THAN THOSE DETAILED ON THE PLAN. ALL PAVEMENT MARKINGS SHALL BE INSTALLED IN ACCORDANCE WITH HOWARD COUNTY STANDARDS.
3. ALL PROPOSED LUMINAIRES SHALL BE SUPPLIED WITH A PHOTOCCELL.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TERMINATING ALL SIGNAL CABLE TO THE APPROPRIATE TERMINALS AND PROPERLY LABEL EACH CABLE.
5. THE CONTRACTOR SHALL VERIFY ALL UNDERGROUND UTILITIES PRIOR TO INSTALLING PROPOSED SIGNAL EQUIPMENT. IF ANY UTILITY CONFLICTS SHOULD ARISE THE CONTRACTOR SHALL CONTACT THE PROJECT ENGINEER.
6. ALL TRAFFIC SIGNAL FOUNDATIONS SHALL BE INSTALLED AT THE FINAL SIDEWALK OR CURB GRADE FOR CLOSED SECTIONS, HIGHEST ROADWAY PROFILE GRADE FOR OPEN SECTIONS, TO MEET CLEARANCES AS SPECIFIED IN THE HOWARD COUNTY STANDARD DETAILS. THE CONTRACTOR SHALL VERIFY ULTIMATE GRADES PRIOR TO THE INSTALLATION OF ALL SIGNAL EQUIPMENT.
7. ALL EXISTING RIGHT-OF-WAY LINES SHOWN ON THE PLAN ARE APPROXIMATE.
8. ALL TRAFFIC SIGNAL POLES AND MAST ARMS SHALL BE STATE OF MARYLAND POLES AND MAST ARMS.
9. DEVELOPER SHALL PURCHASE CABINET, CONTROLLER, VIDEO CAMERAS, SIGNAL HEADS AND LED SIGNALS FROM HOWARD COUNTY BUREAU OF HIGHWAYS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER ASSEMBLY AND CONFIGURATION OF SIGNAL HEADS AS SHOWN ON THE PLANS.

PROPOSED SIGNALS



NEMA PHASING

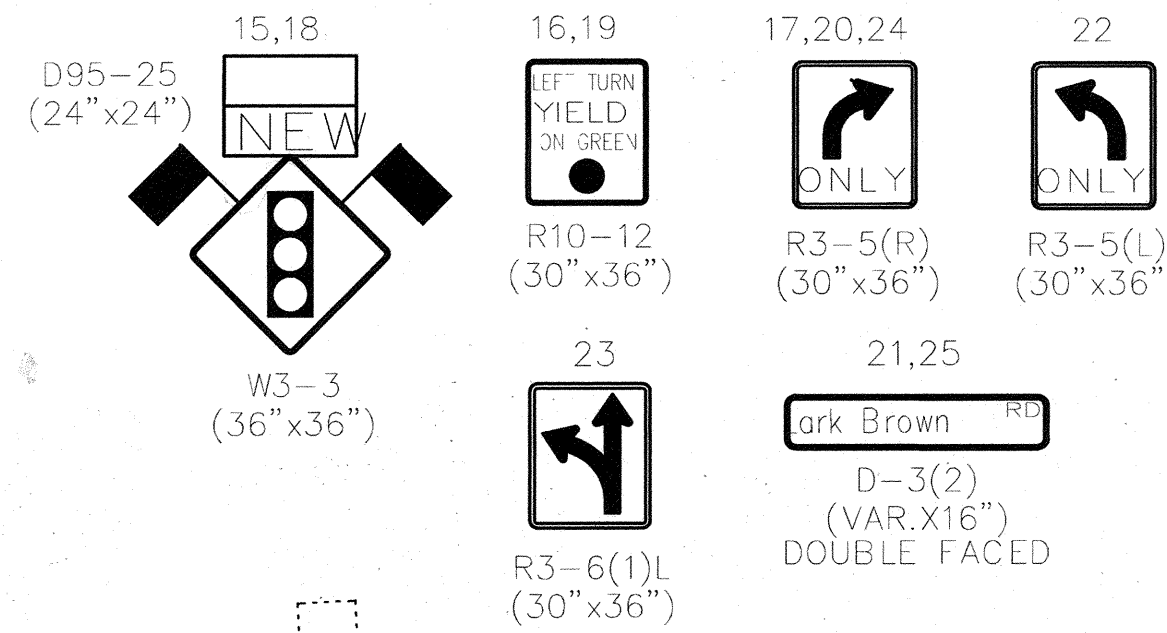


NOTE: PHASES ASSOCIATED BY A DASHED LINE WILL OPERATE CONCURRENTLY. PHASES ASSOCIATED BY A SOLID LINE WILL NOT OPERATE CONCURRENTLY.

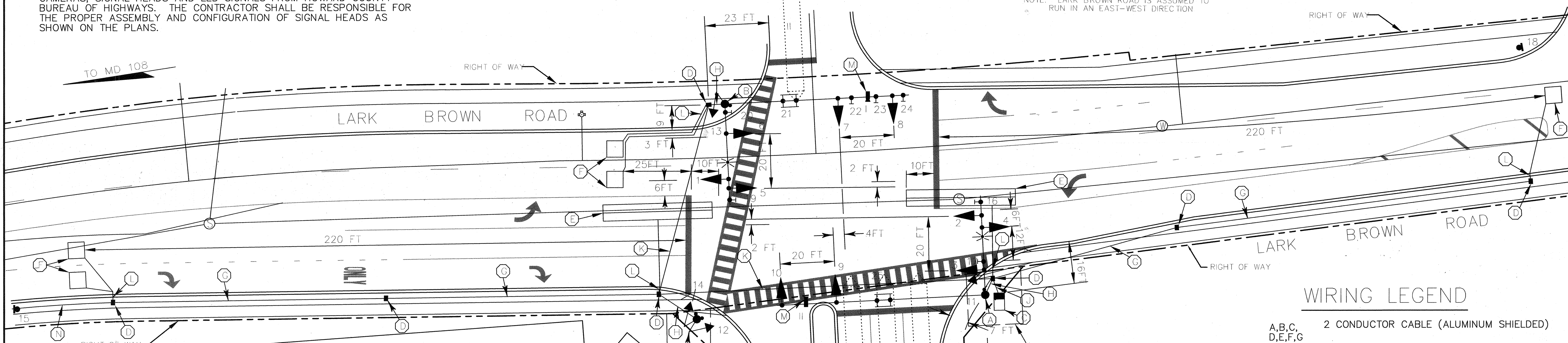
PROPOSED VIDEO DETECTION CAMERA



PROPOSED SIGNS



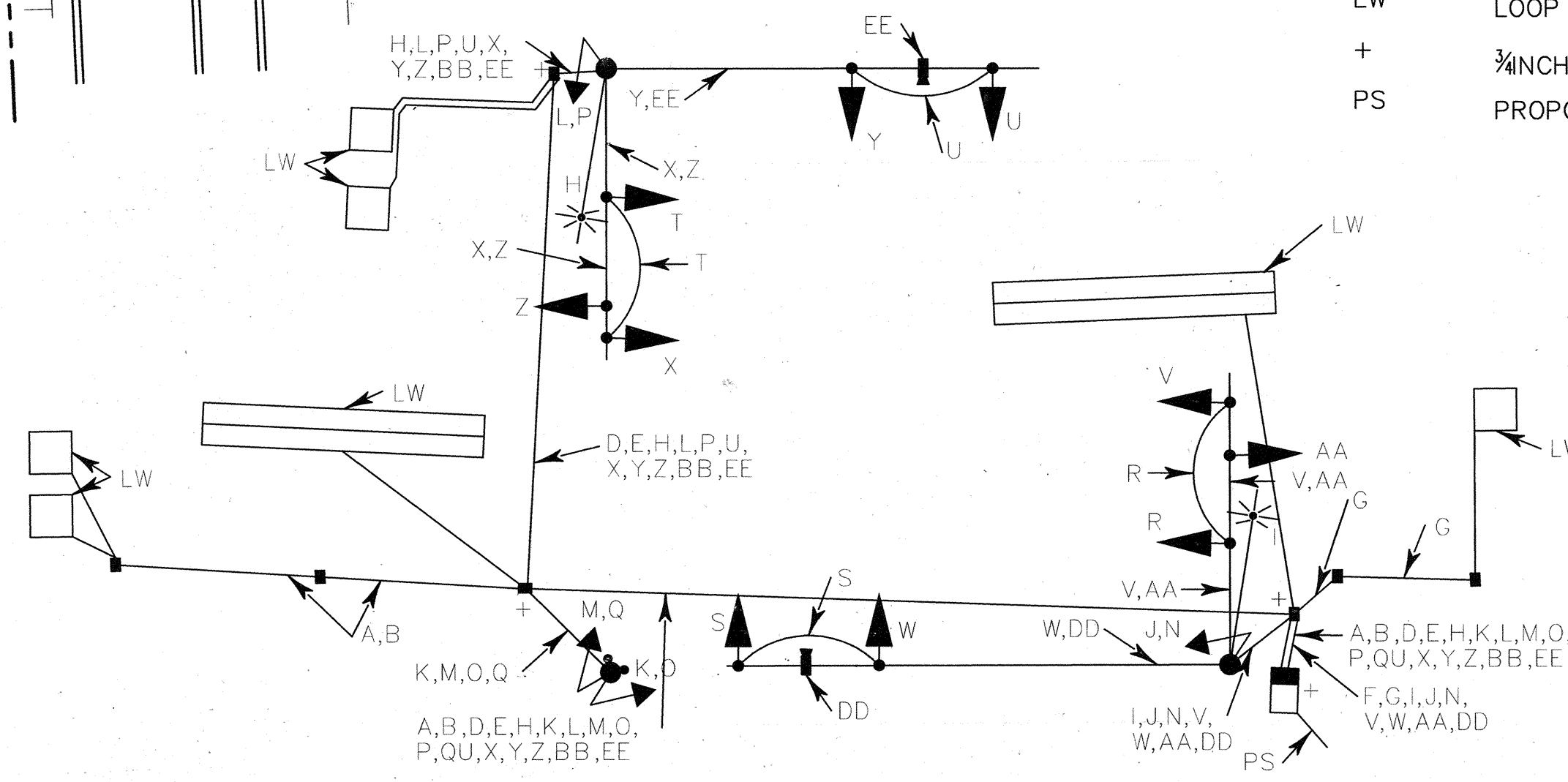
NOTE: LARK BROWN ROAD IS ASSUMED TO RUN IN AN EAST-WEST DIRECTION



CONSTRUCTION DETAILS

- INSTALL 27 FT. STEEL POLE WITH TWIN 70 FT/50 FT MAST ARMS, TRAFFIC SIGNAL HEADS, PEDESTRIAN PUSHBUTTON AND SIGNAL HEAD, SIGNS, 25 FT. STREET LIGHTING ARM, 250-WATT H.P.S. (CUTOFF) LUMINAIRE, AND CONCRETE FOUNDATION. (NOTE: ONE 3-INCH SCHEDULE 80, 90 DEGREE PVC CONDUIT BEND IN POLE BASE). CLEAN AND CUT THE 50 FT MAST ARM CROSSING MAJOR STREET APPROACH TO 40 FT. GALVANIZE AND CAP BOTH TRAFFIC SIGNAL ARMS.
- INSTALL 27 FT. STEEL POLE WITH TWIN 70 FT/50 FT MAST ARMS, TRAFFIC SIGNAL HEADS, PEDESTRIAN PUSHBUTTON AND SIGNAL HEAD, SIGNS, 20 FT. STREET LIGHTING ARM, 250-WATT H.P.S. (CUTOFF) LUMINAIRE, AND CONCRETE FOUNDATION. (NOTE: ONE 3-INCH SCHEDULE 80, 90 DEGREE PVC CONDUIT BEND IN POLE BASE). CLEAN AND CUT THE 50 FT MAST ARM CROSSING MAJOR STREET APPROACH TO 37 FT. AND THE 70 FT MAST ARM CROSSING MINOR STREET APPROACH TO 68 FT., GALVANIZE AND CAP BOTH TRAFFIC SIGNAL ARMS.
- INSTALL BASE MOUNTED NEMA SIZE "6" BASE MOUNTED CABINET AND CONTROLLER, CONCRETE FOUNDATION, GROUND ROD, METER SOCKET, 2-30 AMP DISCONNECT SWITCHES, AND ALL NECESSARY EQUIPMENT FOR ELECTRICAL SERVICE. FOUNDATION SHALL HAVE TWO 4-INCH AND TWO 2-INCH P.V.C. 90-DEGREE ELBOWS.
- INSTALL HANDHOLE.
- INSTALL 6 FT X 40 FT QUADRUPOLE TYPE VEHICLE DETECTOR (2-4-2 TURNS).
- INSTALL 6 FT X 6 FT VEHICLE LOOP DETECTOR (3 TURNS).
- INSTALL 2-INCH P.V.C. (SCHEDULE 80) ELECTRICAL CONDUIT (TRENCHED).
- INSTALL 3-INCH P.V.C. (SCHEDULE 80) ELECTRICAL CONDUIT (TRENCHED).
- INSTALL TWO 4-INCH P.V.C. (SCHEDULE 80) ELECTRICAL CONDUITS (TRENCHED).
- INSTALL 4-INCH P.V.C. (SCHEDULE 80) ELECTRICAL CONDUIT (PUSHED).
- INSTALL 1-INCH FLEXIBLE LIQUID TIGHT ELECTRICAL CONDUIT LOOP DETECTOR SLEEVE FROM HANDHOLE TO FACE OF CURB (NOTE: ONE LOOP DETECTOR PER CONDUIT).
- INSTALL VIDEO DETECTION CAMERA TO MAST ARM.
- INSTALL 2-INCH P.V.C. (SCHEDULE 80) ELECTRICAL CONDUIT (TRENCHED) TO THE CONTROLLER CABINET AT THE MD 108/LARK BROWN ROAD INTERSECTION. INSTALL HANDHOLES AT 180-FOOT MAXIMUM INTERVALS.
- INSTALL 10 FOOT PEDESTRIAN POLE, BREAKAWAY BASE SUPPORT, PUSHBUTTONS, SIGNAL HEADS AND SIGNS (NOTE: 1-3 INCH SCHEDULE 80, 90° PVC ELECTRICAL CONDUIT ELBOW IN POLE BASE).

WIRING DIAGRAM



WIRING LEGEND

- A,B,C, D,E,F,G 2 CONDUCTOR CABLE (ALUMINUM SHIELDED)
- H,I 2 CONDUCTOR TRAY CABLE (NO. 12 A.W.G.)
- J,K,L,M 2 CONDUCTOR CABLE (NO. 14 A.W.G.)
- N,O,P,Q 3 CONDUCTOR CABLE (NO. 14 A.W.G.)
- R,S,T,U 5 CONDUCTOR CABLE (NO. 14 A.W.G.)
- V,W,X, Y,Z,AA 7 CONDUCTOR CABLE (NO. 14 A.W.G.)
- BB,CC 1 CONDUCTOR COPPER GROUND WIRE (NO. 6 A.W.G.-THWN)
- DD,EE VIDEO DETECTION LEAD-IN CABLE
- LW LOOP WIRE
- + 3/4 INCH X 10 FT GROUND ROD
- PS PROPOSED ELECTRIC SERVICE

BY THE DEVELOPER :

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 INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

Walter Z. Uebel 8-18-05
DEVELOPER DATE

BY THE ENGINEER :

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.

Aimee C. Remington 8-18-05
ENGINEER DATE

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.

NATURAL RESOURCES CONSERVATION SERVICE DATE

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

HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

Walter Z. Uebel 8-18-05
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Walter Z. Uebel 8-18-05
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

Walter Z. Uebel 8-18-05
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

DATE NO. REVISION

OWNER / DEVELOPER
HRD LAND HOLDINGS, INC.
HOWARD RESEARCH AND DEVELOPMENT CORPORATION
THE ROUSE BUILDING
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
410-992-6000

PROJECT **BENSON EAST**
PARCELS A, NON-BUILDABLE PARCELS B (PRIVATE ROADS), PARCELS C TO M AND O, PARCELS N & O.

AREA TAX MAP 37 & 43 ZONED - NEWTOWN
PARCELS 482, 587, 382, 421, 547
6th ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE **SIGNAL PLAN**

Patton Harris Rust & Associates, pc
Engineers. Surveyors. Planners. Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

Walter Z. Uebel 8-18-05
DATE

DESIGNED BY : C.J.R.

DRAWN BY: DAM

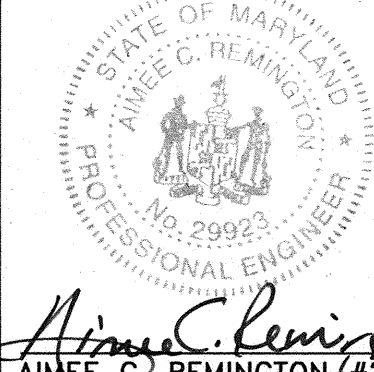
PROJECT NO : 11621/PRELIM RD22.DWG

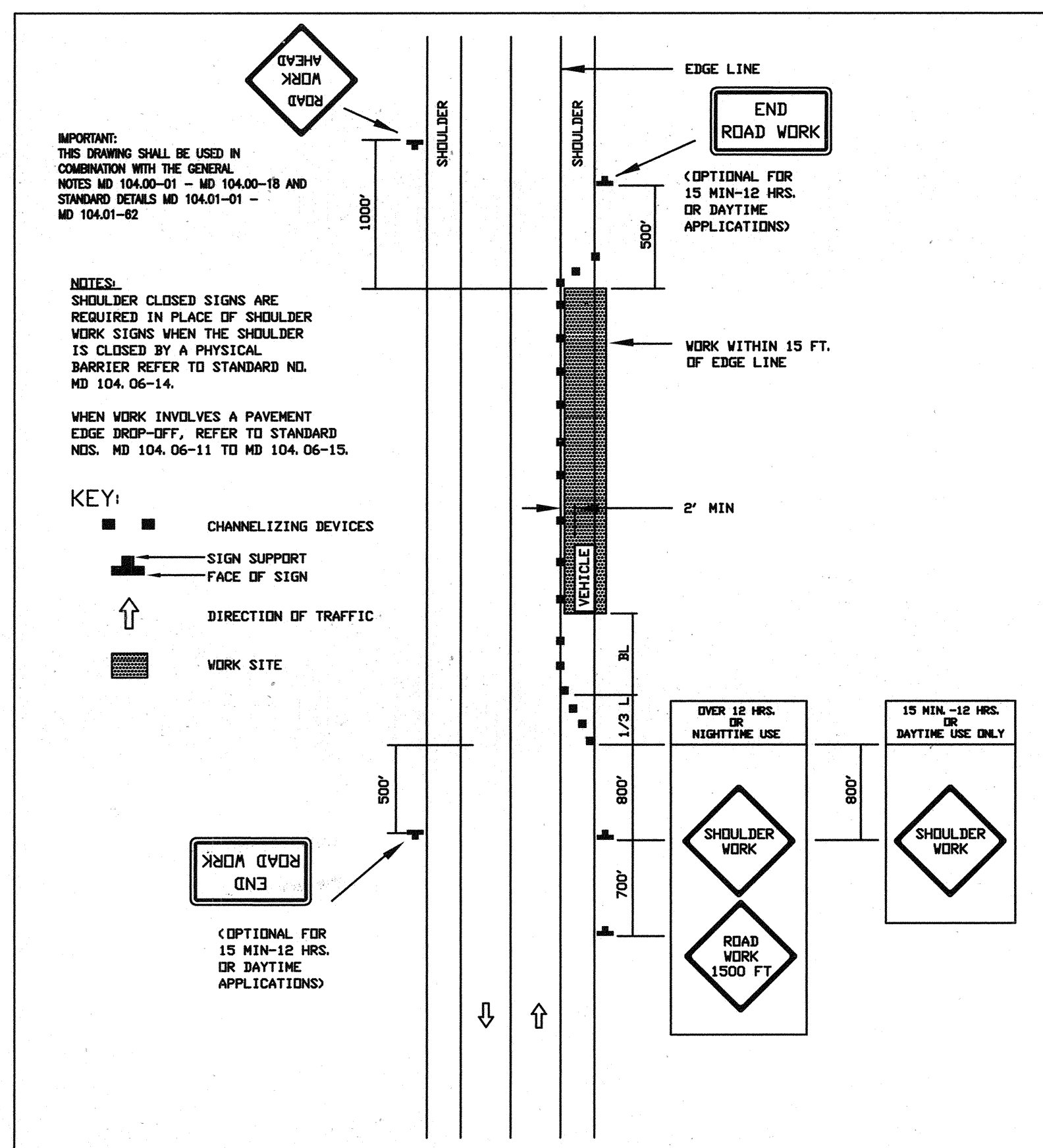
DATE : AUGUST 18, 2005

SCALE : 1"=20'

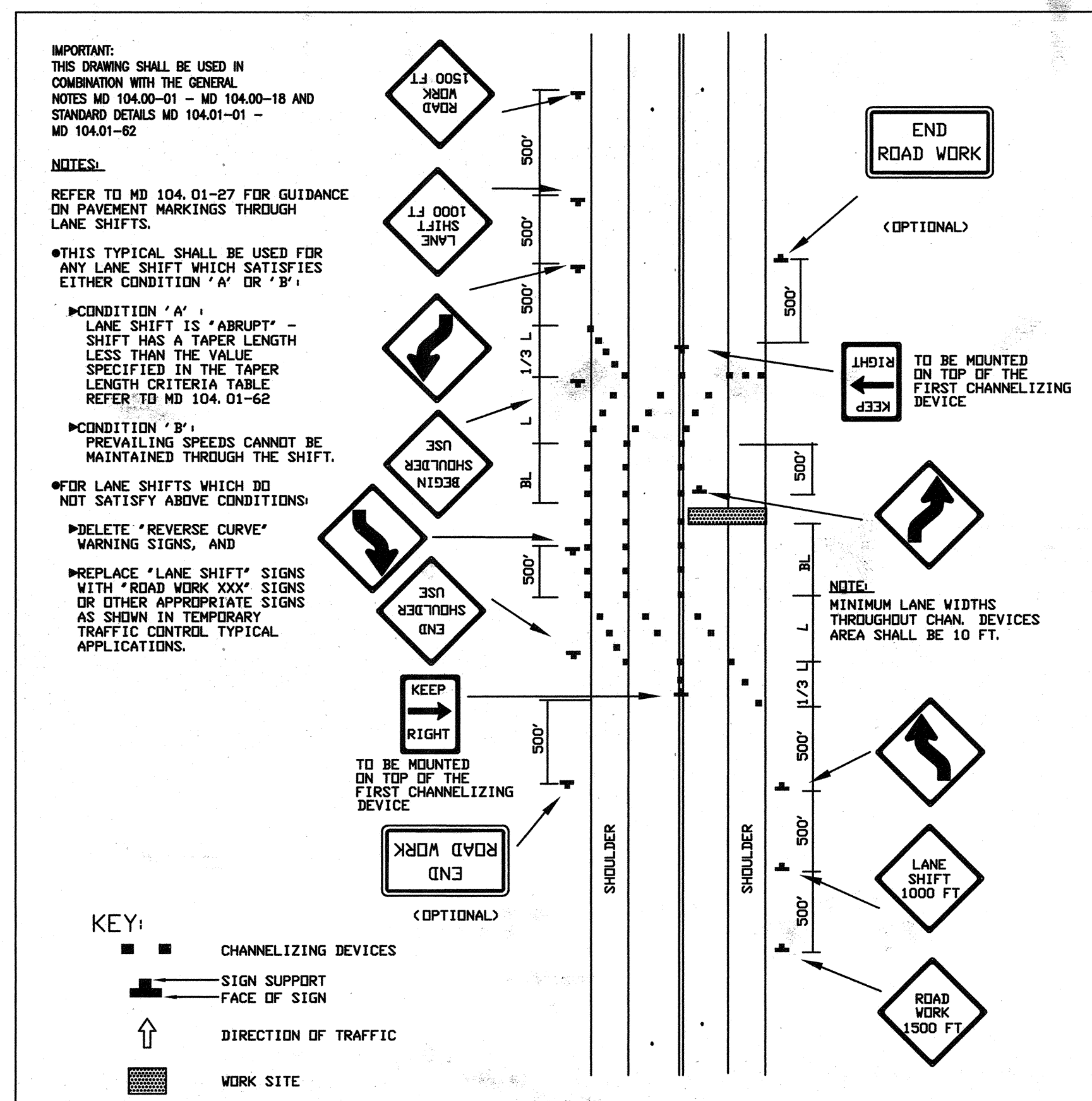
DRAWING NO. 23 OF 25

WALLACE, MONTGOMERY & ASSOCIATES
CIVIL AND STRUCTURAL ENGINEERS
110 WEST ROAD
TOWSON, MARYLAND 21204

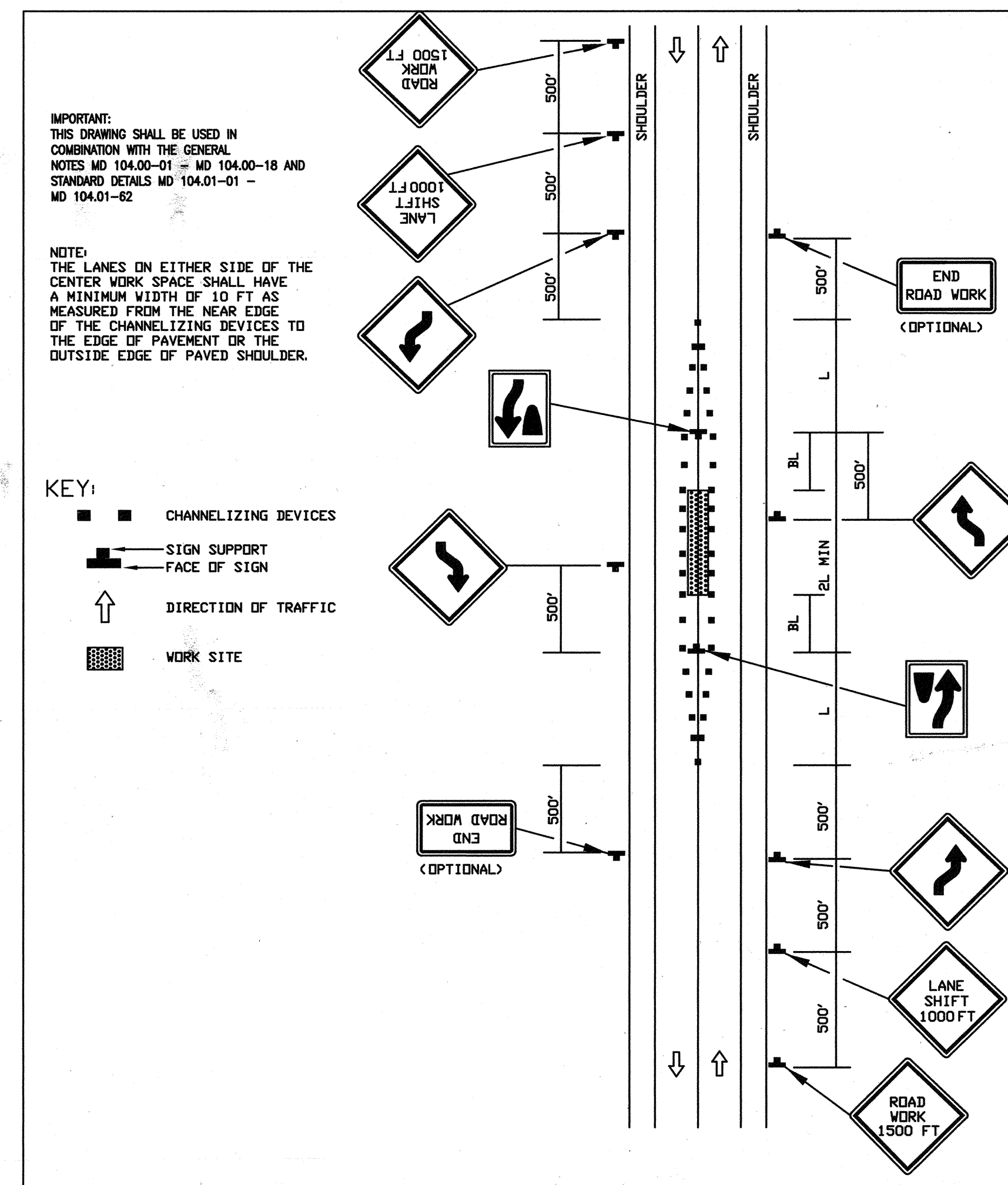




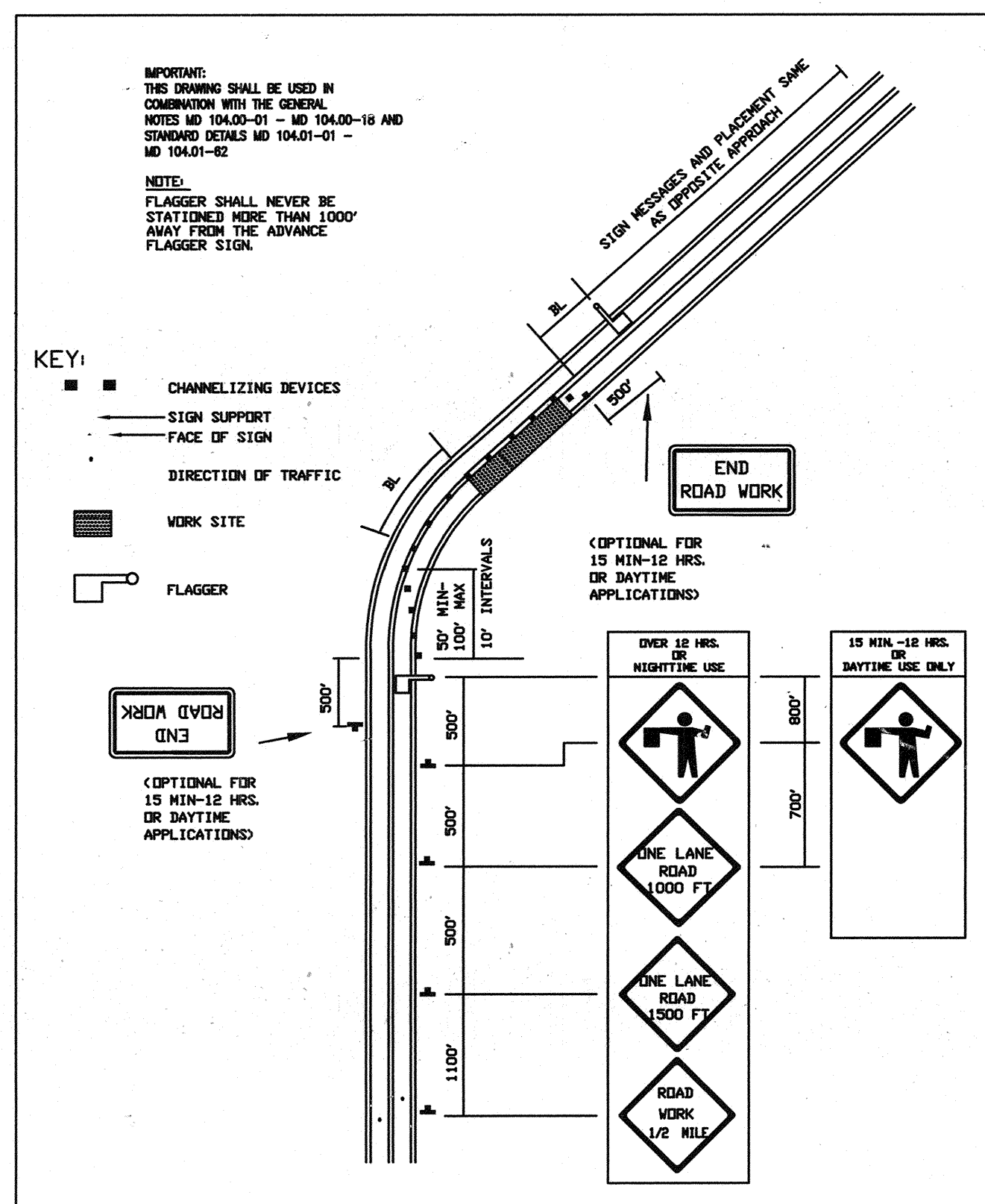
MD. 104.02-02
SHOULDER WORK, 2 LANE,
2-WAY TRAFFIC, ≤ 40MPH



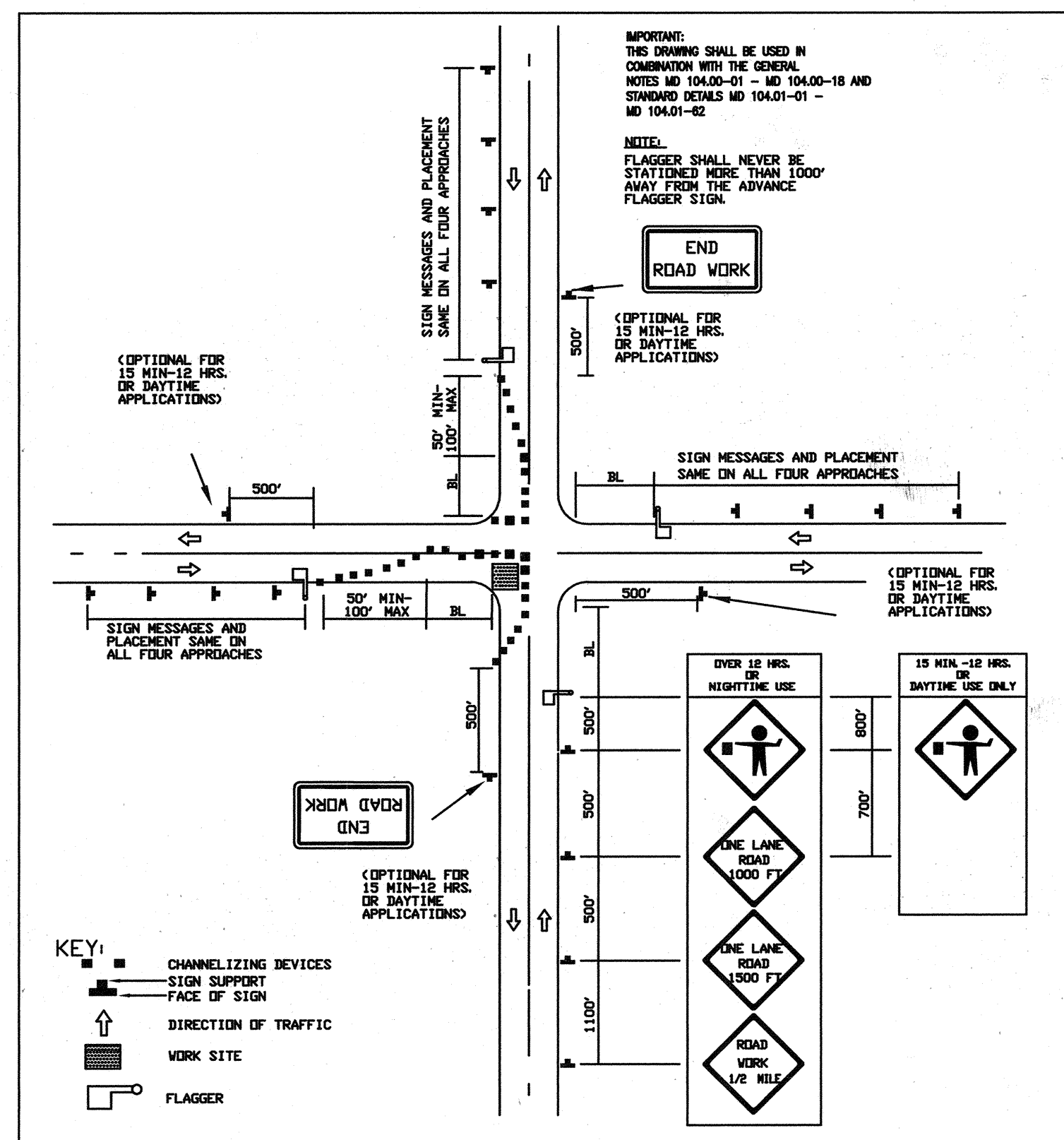
MD. 104.02-04
LANE SHIFT RIGHT OR LEFT SIDE, 2 LANE,
2-WAY TRAFFIC, ≤ 40MPH



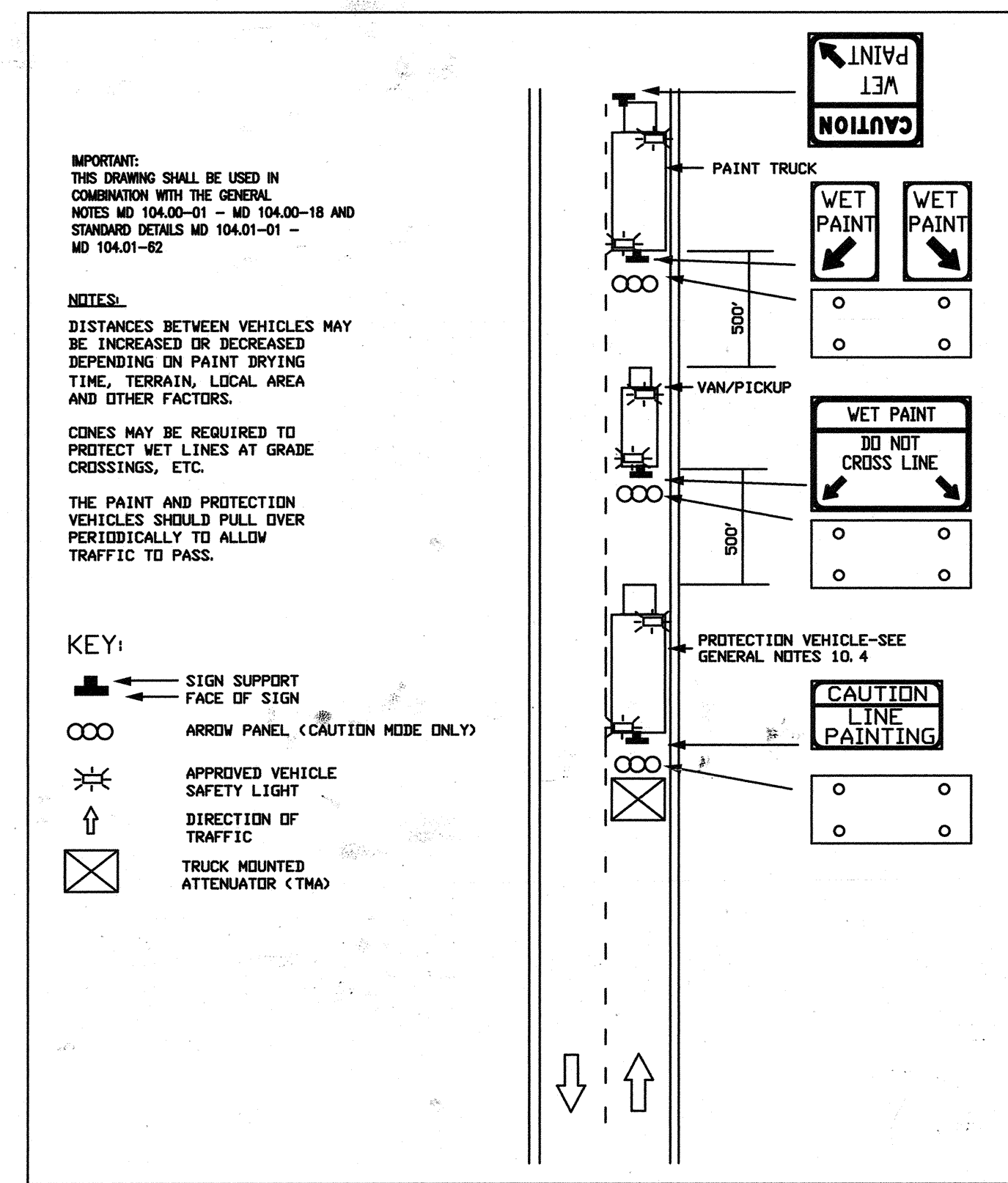
MD. 104.02-06
WORK IN CENTER OF LOW-VOLUME ROAD,
2 LANE, 2-WAY TRAFFIC, ≤ 40MPH



MD. 104.02-10
FLAGGING OPERATION, 2 LANE,
2-WAY TRAFFIC, ≤ 40MPH



MD. 104.02-14
INTERSECTION FLAGGING OPERATION,
2 LANE, 2-WAY TRAFFIC, ≤ 40MPH



MD. 104.02-18
MOBILE MARKING OPERATION, 2 LANE,
2-WAY TRAFFIC, ≤ 40MPH

- NOTES**
1. OLD WATERLOO ROAD IS A 2 LANE, 2-WAY ROAD. THE PROPOSED SPEED LIMIT FOR THE ROAD IS 30 MPH.
 2. LARK BROWN ROAD INCLUDES PORTIONS WITH 2 LANE, 2-WAY TRAFFIC AND MULTILANE, UNDIVIDED TRAFFIC. THE PROPOSED SPEED LIMIT FOR THE ROAD IS 30 MPH.
 3. REFER TO MSHA STANDARDS MD 104.01-80 AND MD 104.01-81 FOR BUFFER LENGTHS AND TAPER LENGTHS. FOR GENERAL NOTES FOR CHANNELIZATION DEVICES, REFER TO MSHA STANDARD MD 104.00-10.
 4. REFER TO MSHA STANDARD MD 104.00-12 FOR GENERAL NOTES FOR FLAGGING OPERATION.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

Walter J. Mohr 9-19-05
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Chris Thomas 10/11/05
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

gms 9/26/05
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

DATE NO.	REVISION
OWNER / DEVELOPER	
HRD LAND HOLDINGS, INC. HOWARD RESEARCH AND DEVELOPMENT CORPORATION THE ROUSE BUILDING 10275 LITTLE PATUXENT PARKWAY COLUMBIA, MARYLAND 21044 410-992-6000	
PROJECT	
BENSON EAST PARCELS A, NON-BUILDABLE PARCELS B (PRIVATE ROAD), PARCELS C TO M AND O.S. PARCELS N-L-I-D	
AREA	
TAX MAP 37 & 43 ZONED - NEWTOWN PARCELS 482, 587, 382, 421, 547 6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND	
TITLE	
MOT PLAN	

Patton Harris Rust & Associates, pc
Engineers, Surveyors, Planners, Landscape Architects.

PHRA
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

DATE: 8-18-05

DESIGNED BY: C.J.R.

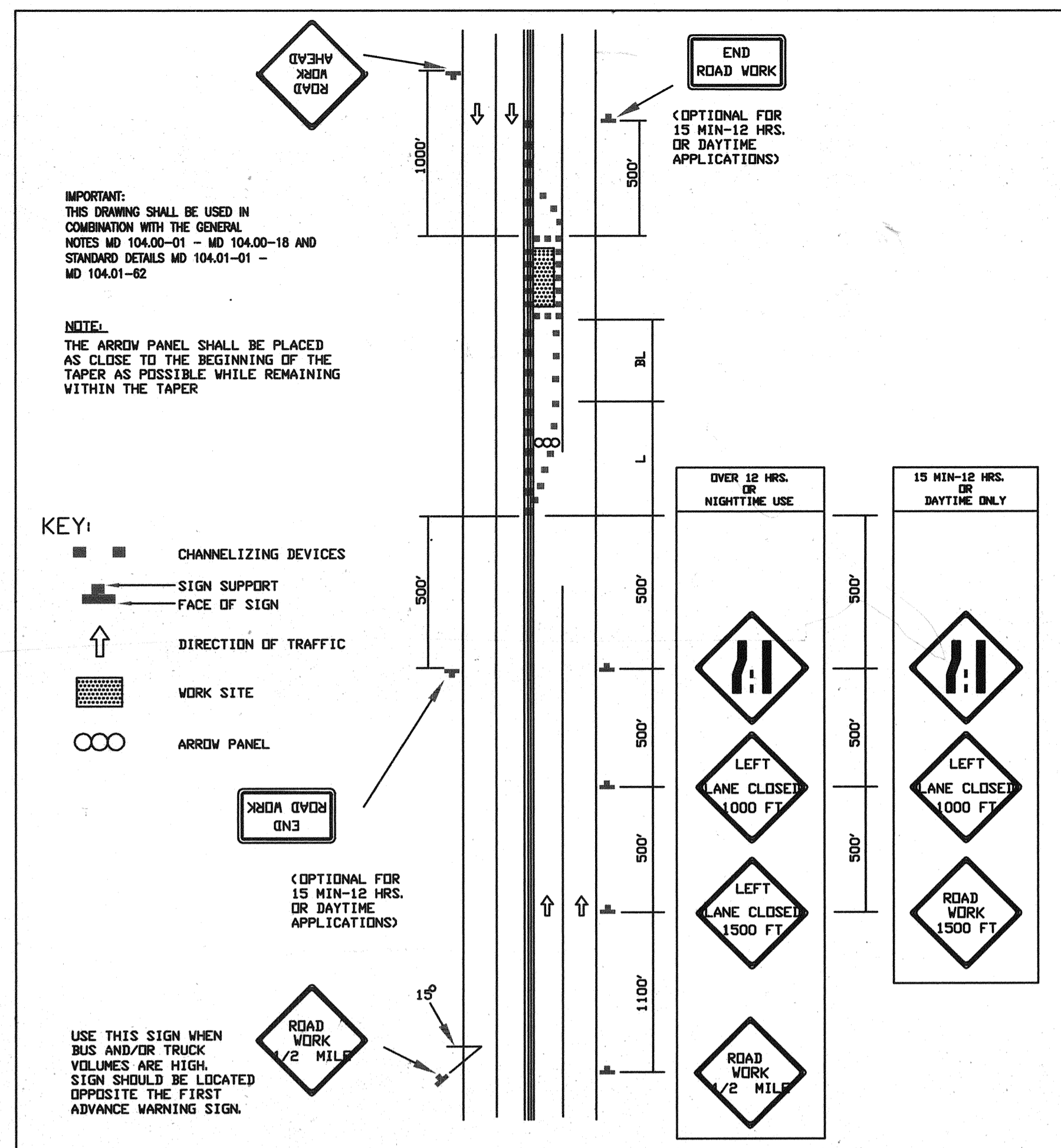
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PROJECT NO: 11621/PRELIM RD7.DWG

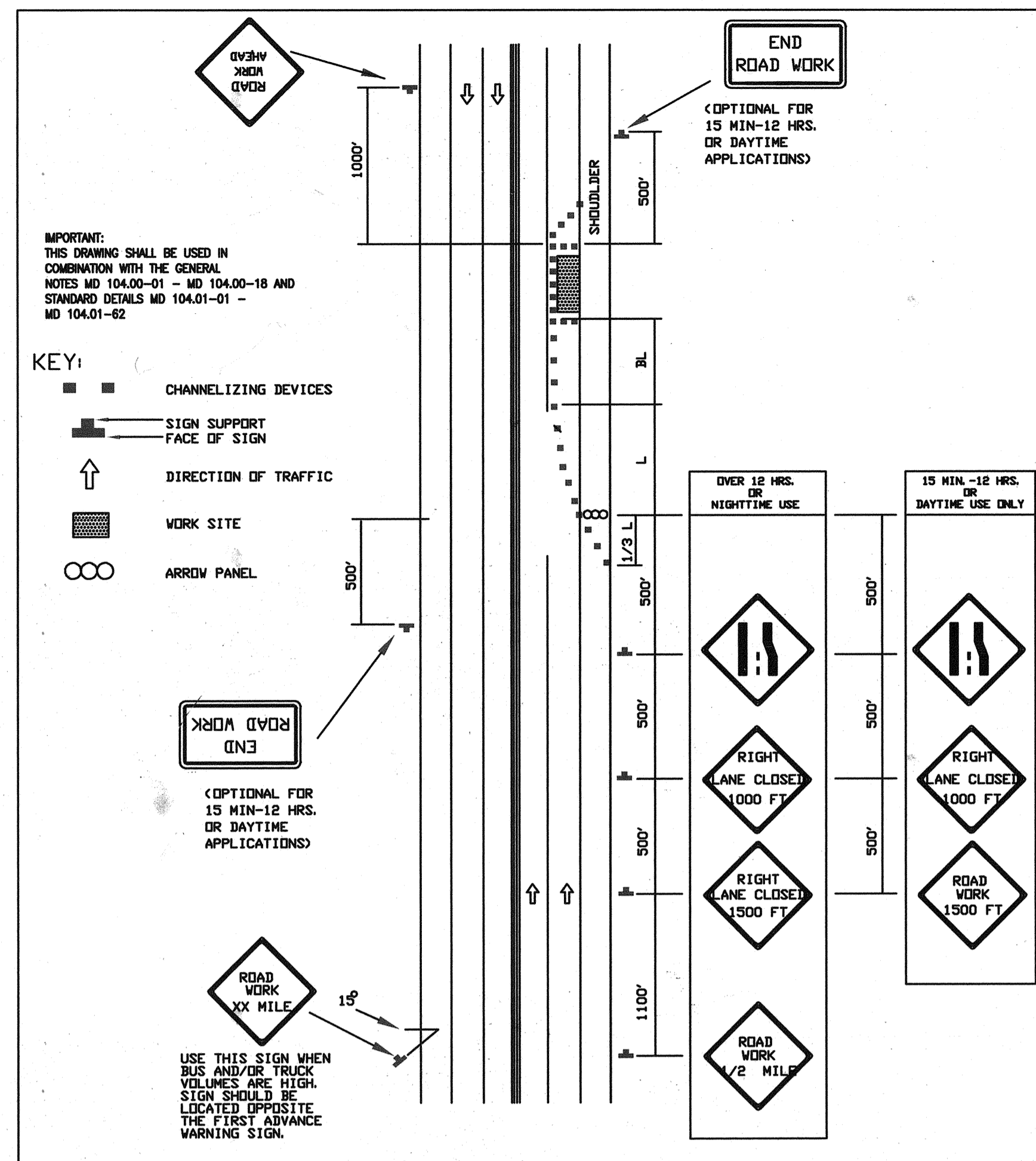
DATE: AUGUST 18, 2005

SCALE: AS SHOWN

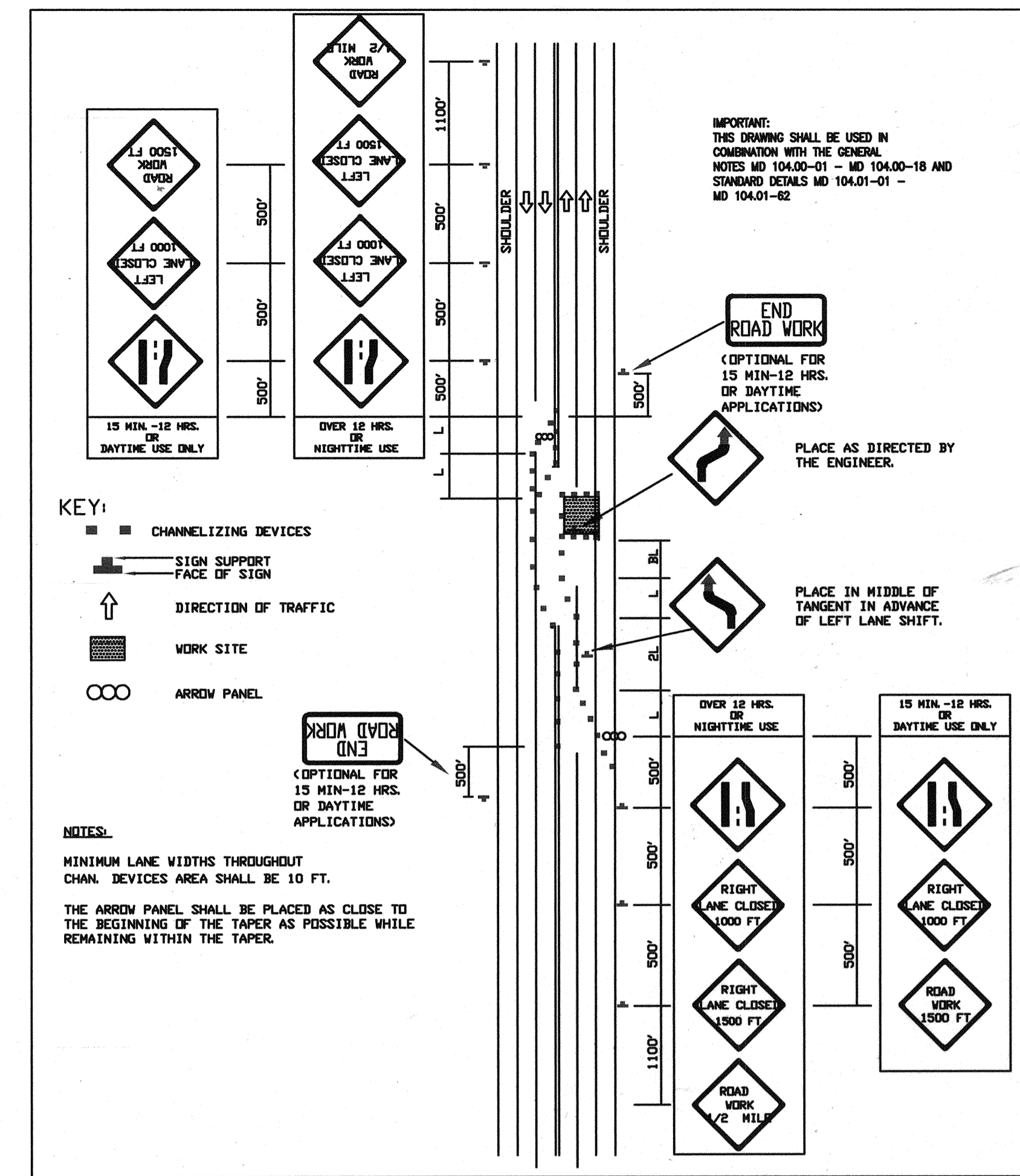
DRAWING NO. 24 OF 25



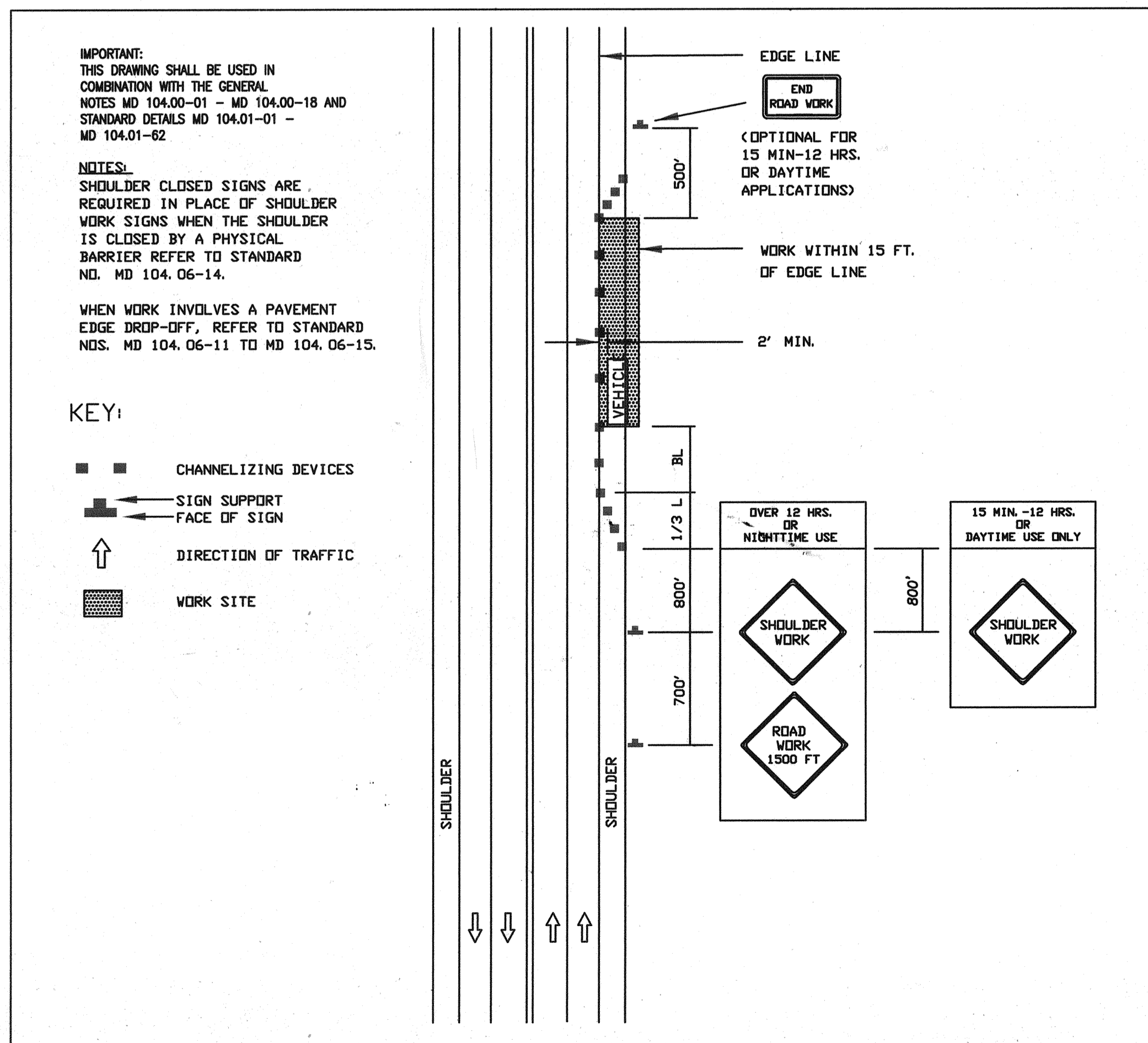
MD. 104.03-04
LEFT LANE CLOSURE, MULTILANE,
UNDIVIDED, ≤ 40MPH



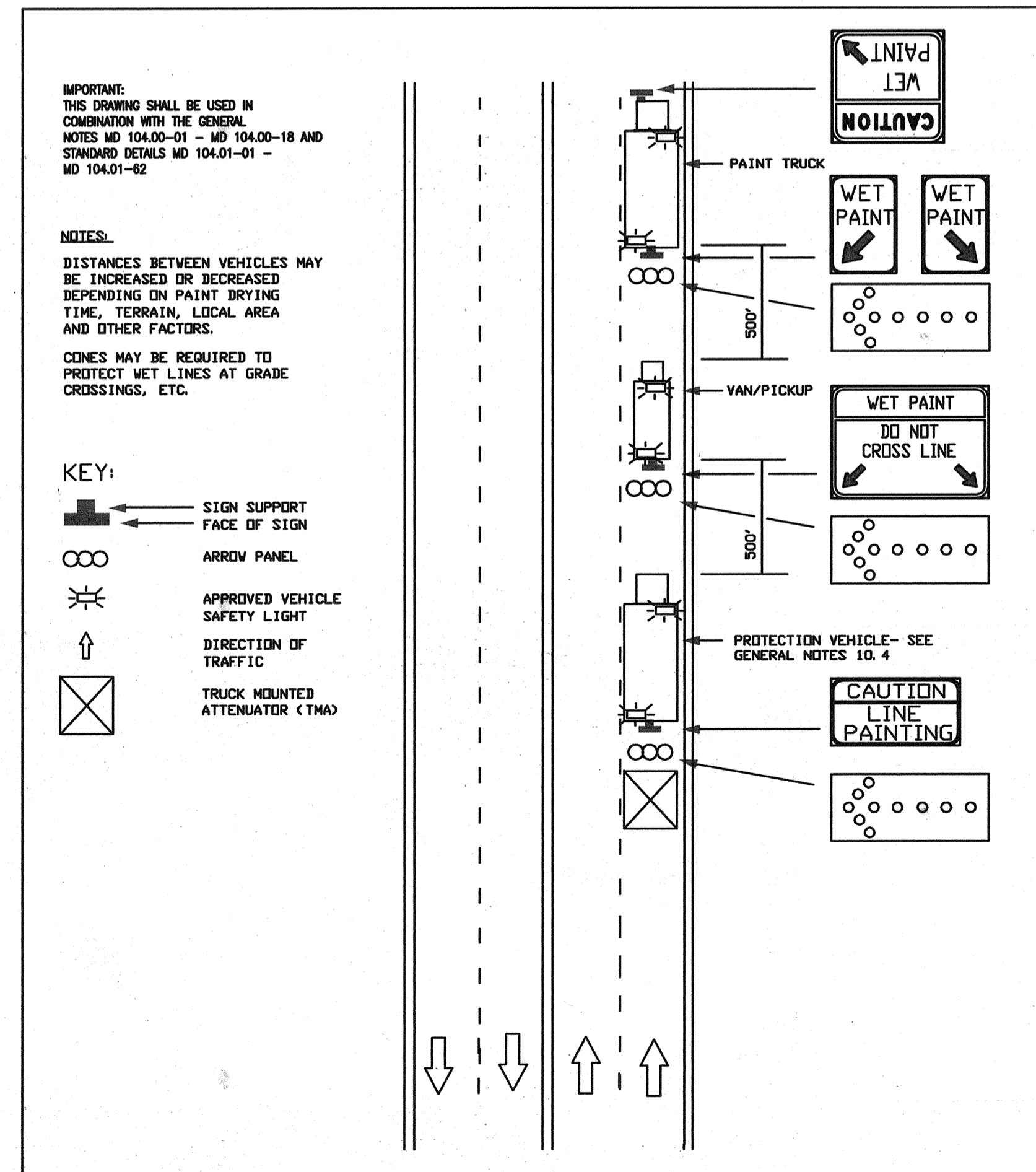
MD. 104.03-06
RIGHT LANE CLOSURE, MULTILANE,
UNDIVIDED, ≤ 40MPH



MD. 104.03-08
PARTIAL ROADWAY CLOSURE,
MULTILANE, UNDIVIDED, ≤ 40MPH



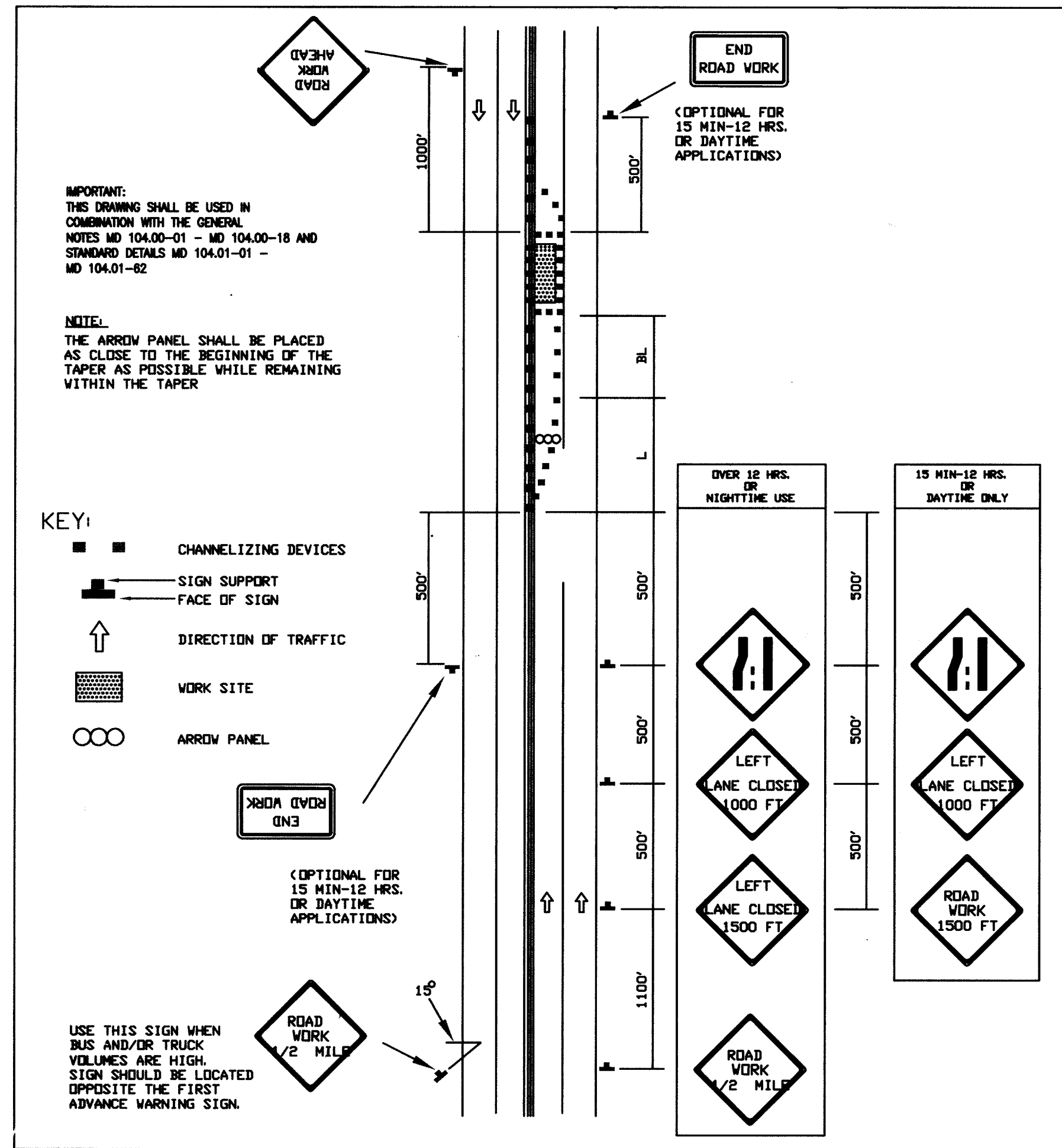
MD. 104.03-02
SHOULDER WORK, MULTILANE,
UNDIVIDED, ≤ 40MPH



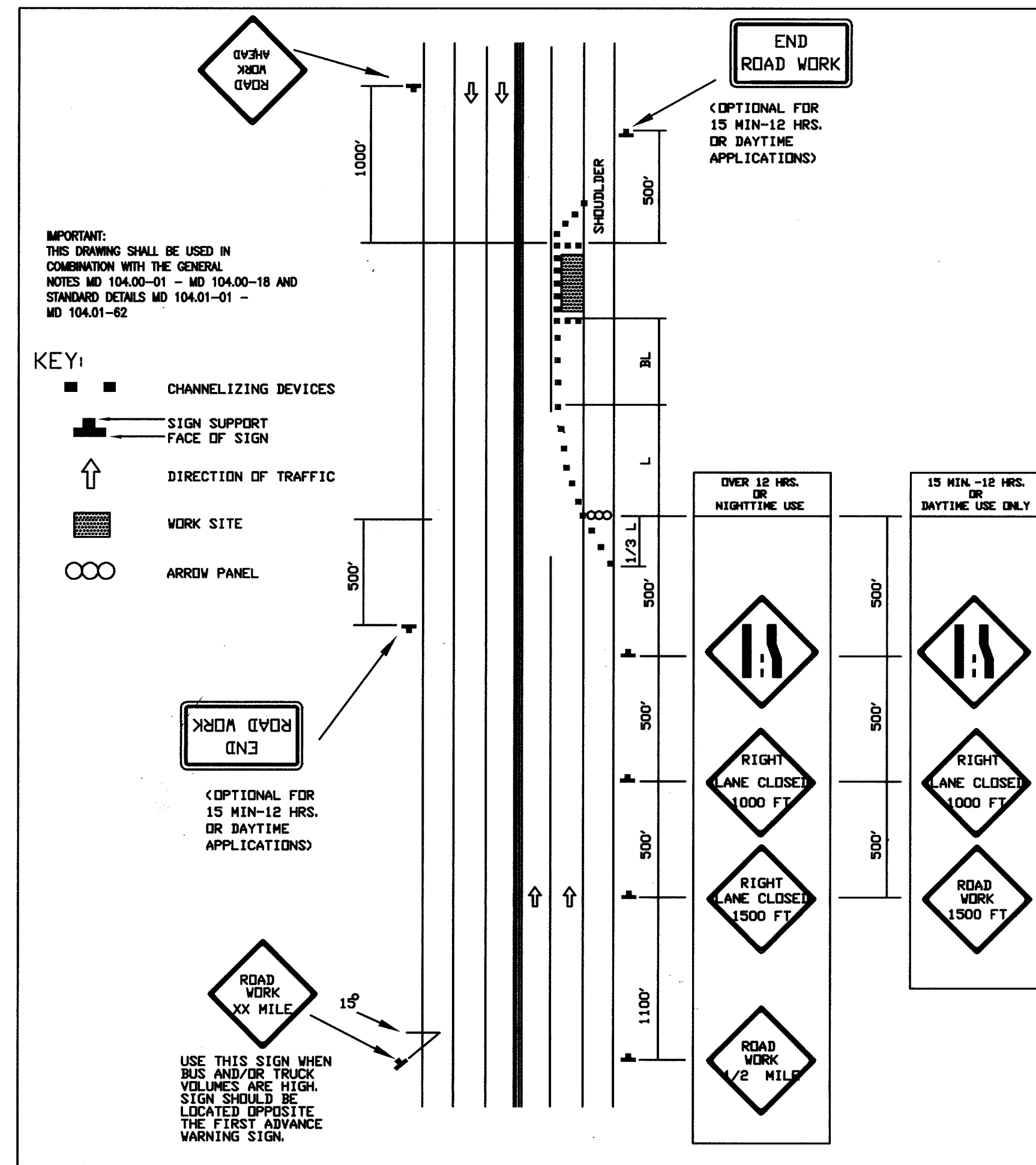
MD. 104.03-18
MOBILE MARKING OPERATION,
MULTILANE, UNDIVIDED, ≤ 40MPH

- NOTES:**
- OLD WATERLOO ROAD IS A 2 LANE, 2-WAY ROAD. THE PROPOSED SPEED LIMIT FOR THE ROAD IS 30 MPH.
 - LARK BROWN ROAD INCLUDES PORTIONS WITH 2 LANE, 2-WAY TRAFFIC AND MULTILANE, UNDIVIDED TRAFFIC. THE PROPOSED SPEED LIMIT FOR THE ROAD IS 30 MPH.
 - REFER TO MSHA STANDARDS MD 104.01-80 AND MD 104.01-81 FOR BUFFER LENGTHS AND TAPER LENGTHS. FOR GENERAL NOTES FOR CHANNELIZATION DEVICES, REFER TO MSHA STANDARD MD 104.00-10.
 - REFER TO MSHA STANDARD MD 104.00-12 FOR GENERAL NOTES FOR FLAGGING OPERATION.

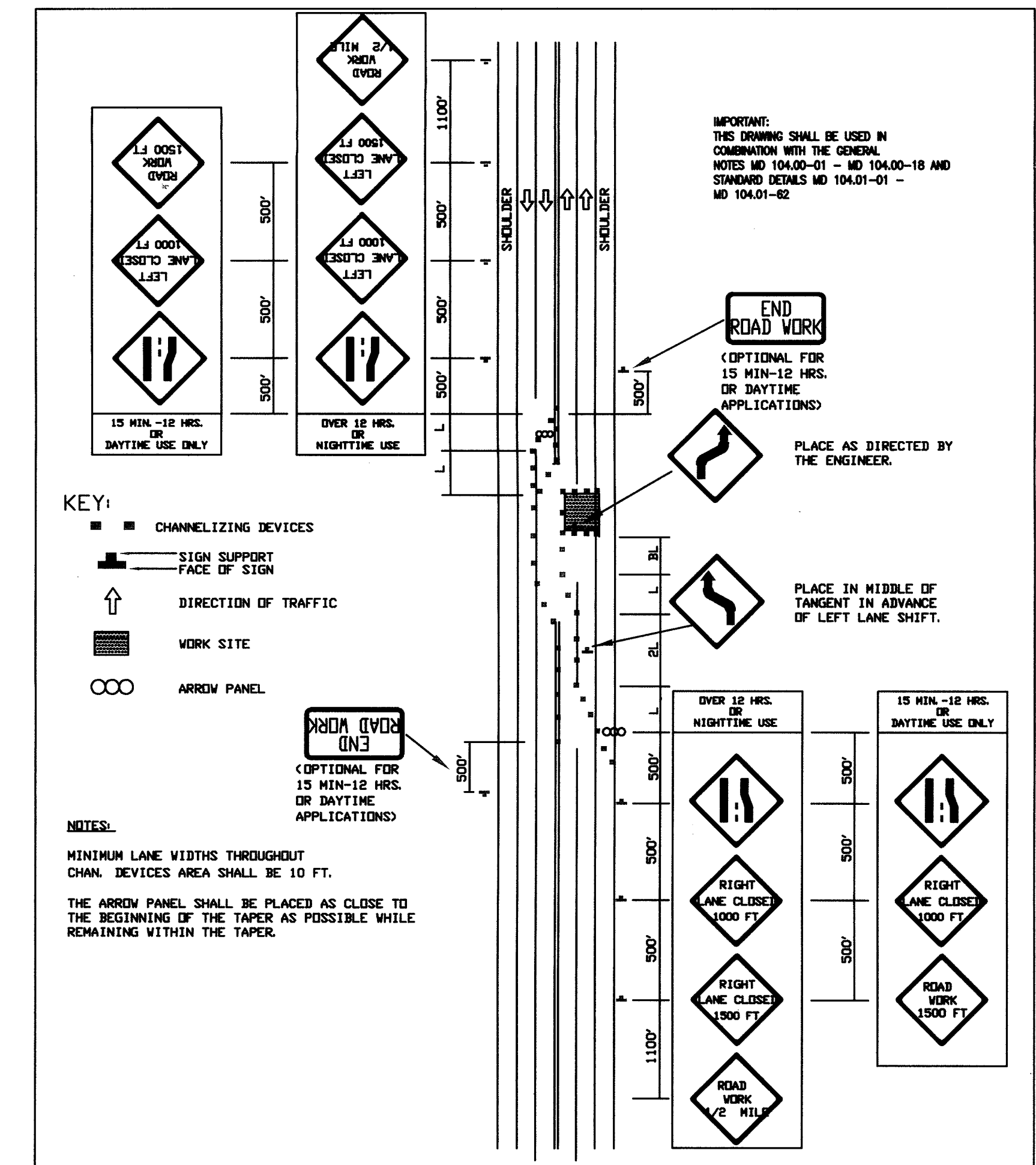
APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.	
<i>Willie Z. Caldwell</i>	9-19-05
CHIEF, BUREAU OF HIGHWAYS	DATE
APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.	
<i>Cindy Hammett</i>	10/14/05
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
<i>[Signature]</i>	9/26/05
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
DATE NO.	REVISION
OWNER / DEVELOPER	
HRD LAND HOLDINGS, INC.	
HOWARD RESEARCH AND DEVELOPMENT CORPORATION	
THE ROUSE BUILDING	
10275 LITTLE PATUXENT PARKWAY	
COLUMBIA, MARYLAND 21044	
410-992-6000	
PROJECT	
BENSON EAST	
PARCELS A, NON-BUILDABLE PARCEL B (PRIVATE ROADS), PARCELS C TO M AND O. PARCELS N+O	
AREA	
TAX MAP 37 & 43 ZONED - NEWTOWN	
PARCELS 482, 587, 382, 421, 547	
6th ELECTION DISTRICT	
HOWARD COUNTY, MARYLAND	
TITLE	
MOT PLAN	
Patton Harris Rust & Associates, pc	
Engineers, Surveyors, Planners, Landscape Architects.	
8818 Centre Park Drive	
Columbia, MD 21045	
T 410.997.8900	
F 410.997.9282	
8-18-05	DATE
DESIGNED BY : C.J.R.	
DRAWN BY: BCL	
PROJECT NO .11621/PRELIM RD7.DWG	
DATE : AUGUST 18, 2005	
SCALE : AS SHOWN	
DRAWING NO. 25 OF 25	



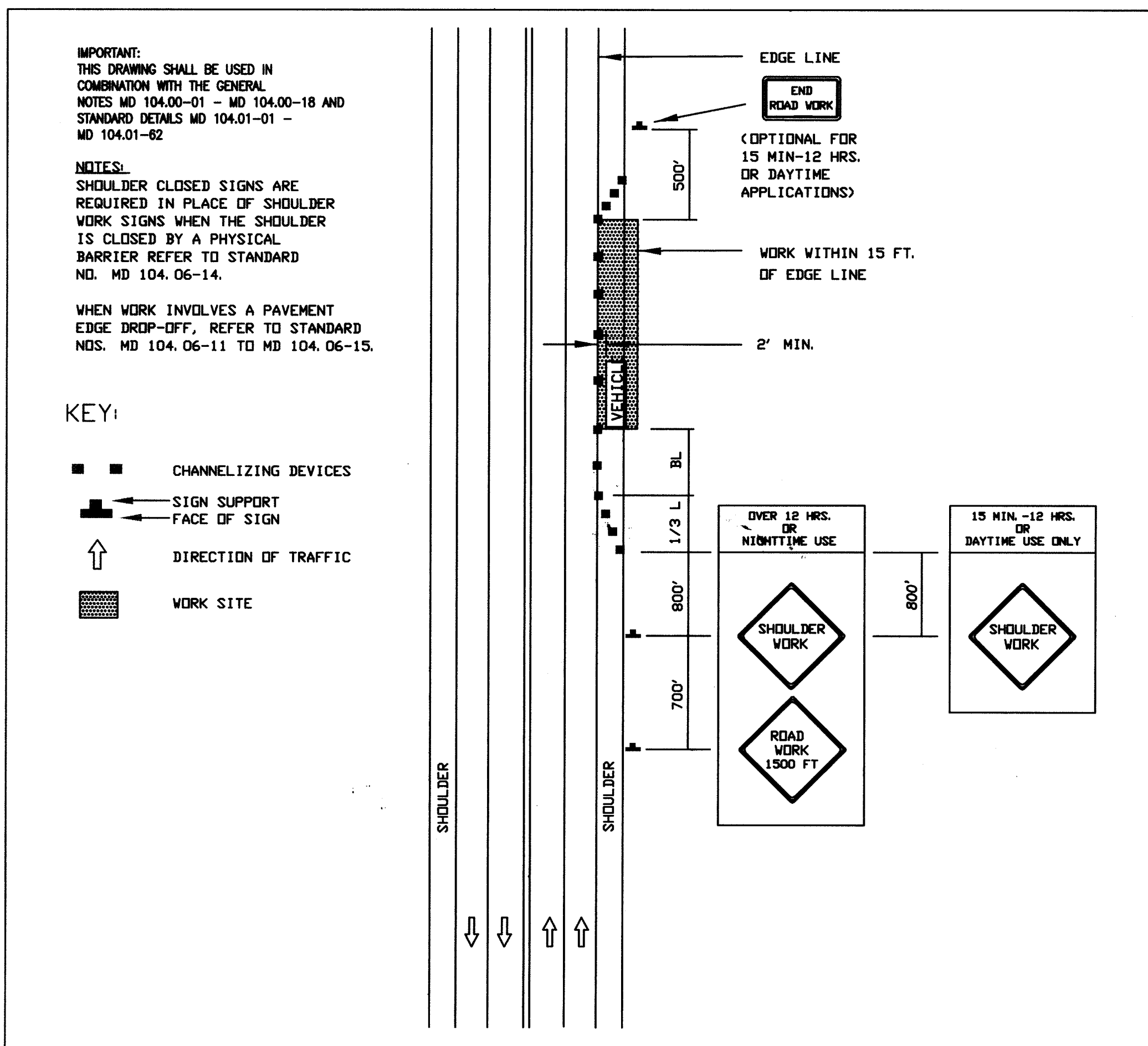
MD. 104.03-04
LEFT LANE CLOSURE, MULTILANE,
UNDIVIDED, ≤ 40MPH



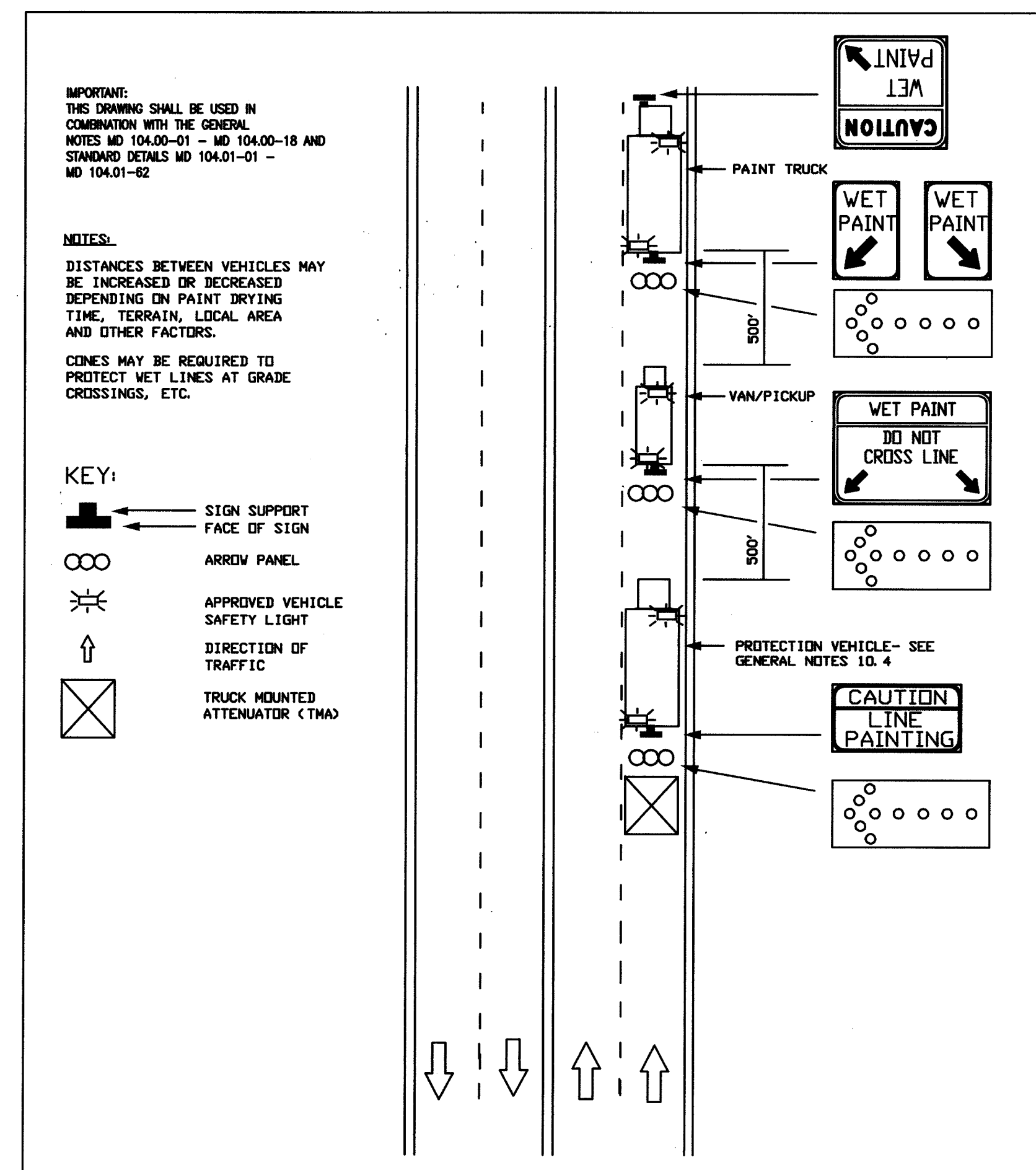
MD. 104.03-06
RIGHT LANE CLOSURE, MULTILANE,
UNDIVIDED, ≤ 40MPH



MD. 104.03-08
PARTIAL ROADWAY CLOSURE,
MULTILANE, UNDIVIDED, ≤ 40MPH



MD. 104.03-02
SHOULDER WORK, MULTILANE,
UNDIVIDED, ≤ 40MPH



MD. 104.03-18
MOBILE MARKING OPERATION,
MULTILANE, UNDIVIDED, ≤ 40MPH

- NOTES:**
- OLD WATERLOO ROAD IS A 2 LANE, 2-WAY ROAD. THE PROPOSED SPEED LIMIT FOR THE ROAD IS 30 MPH.
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 - REFER TO MSHA STANDARD MD 104.00-12 FOR GENERAL NOTES FOR FLAGGING OPERATION.

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

William Z. ... 9-19-05
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

... .. 10/14/05
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

... .. 9/20/05
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

04/14/06 1 INCORPORATE ROAD R.O.W. PER PB CASE N.P. 373; REVISE

DATE NO. REVISION

OWNER / DEVELOPER
HRD LAND HOLDINGS, INC.
HOWARD RESEARCH AND DEVELOPMENT CORPORATION
THE ROUSE BUILDING
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
410-992-6000

PROJECT **BENSON EAST**
PARCELS A, E-G, J-M, P, R, T, U, NON-BUILDABLE PARCELS S (PRIVATE ROAD) AND OPEN SPACE PARCELS Q AND V

AREA TAX MAP 37 & 43 ZONED - NEWTOWN
PARCELS 482, 587, 582, 421, 547
6th ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE **MOT PLAN**

Patton Harris Rust & Associates, pc
Engineers. Surveyors. Planners. Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

8-18-05
DATE

DESIGNED BY : C.J.R.

DRAWN BY: BCL

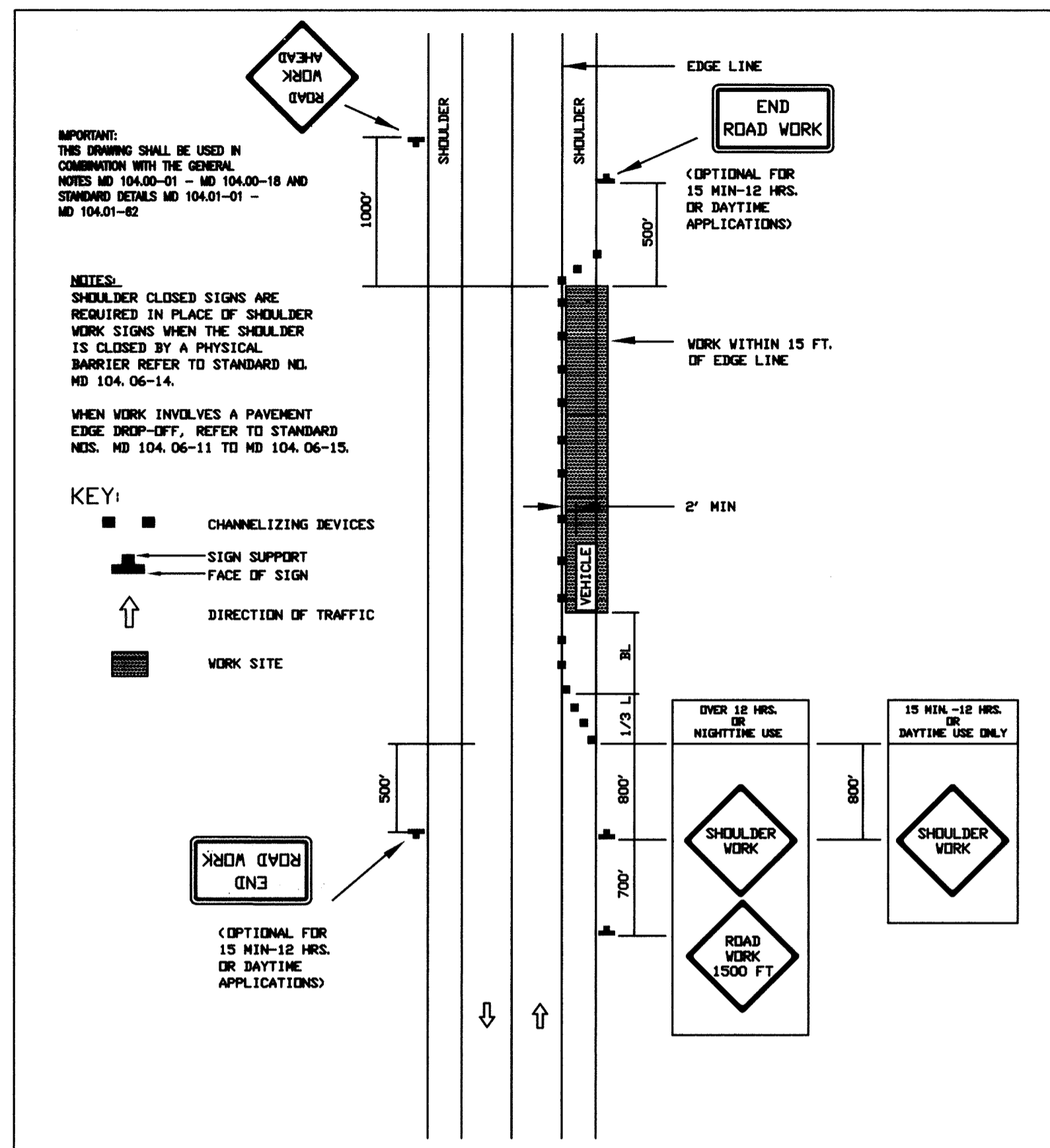
PROJECT NO : 11621/PRELIM
RD23-24.006

DATE : AUGUST 18, 2005

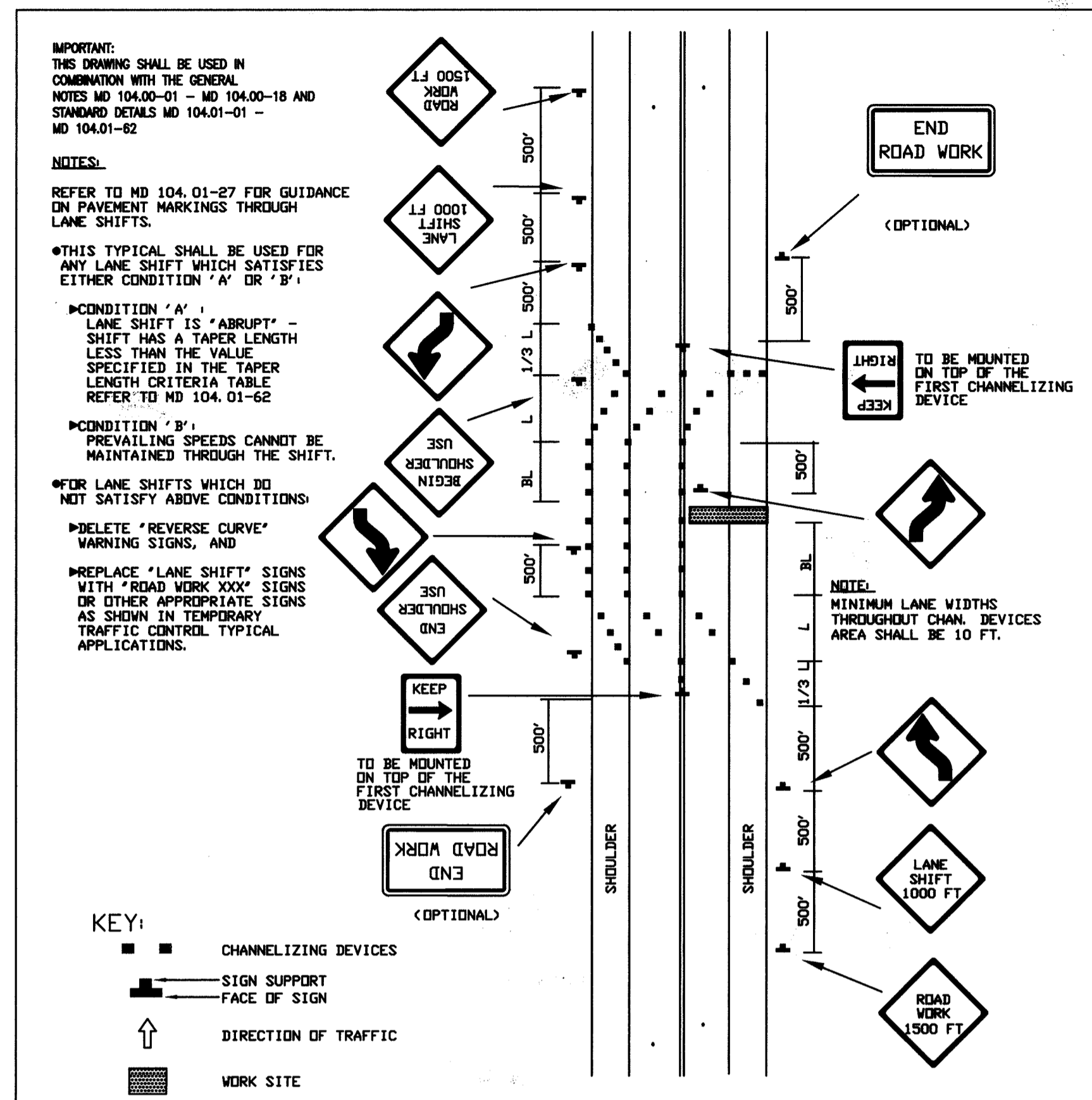
SCALE : AS SHOWN

DRAWING NO. 25 OF 25

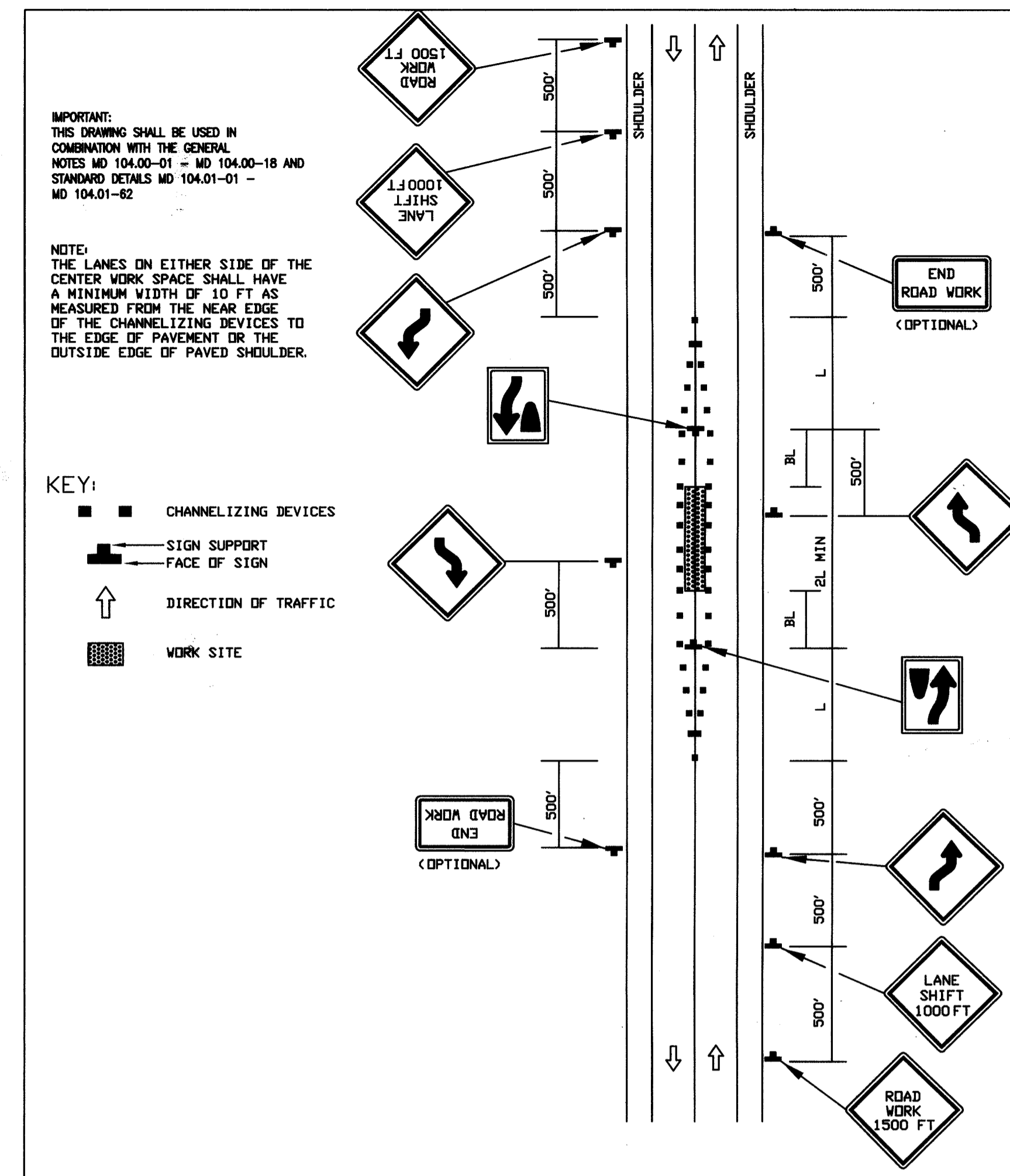
Aimee C. Remington
AIMEE C. REMINGTON #29923



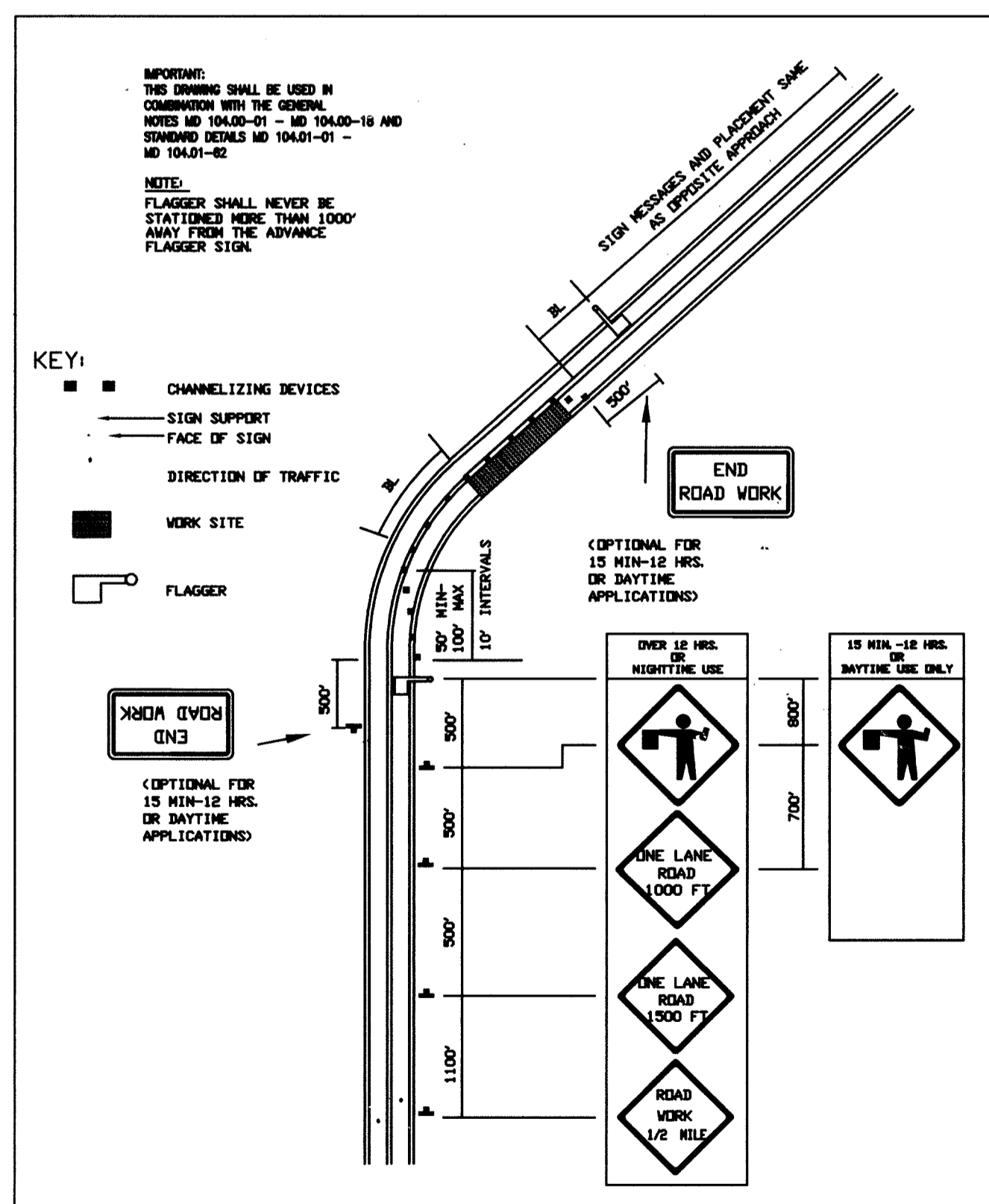
MD. 104.02-02
SHOULDER WORK, 2 LANE,
2-WAY TRAFFIC, ≤ 40MPH



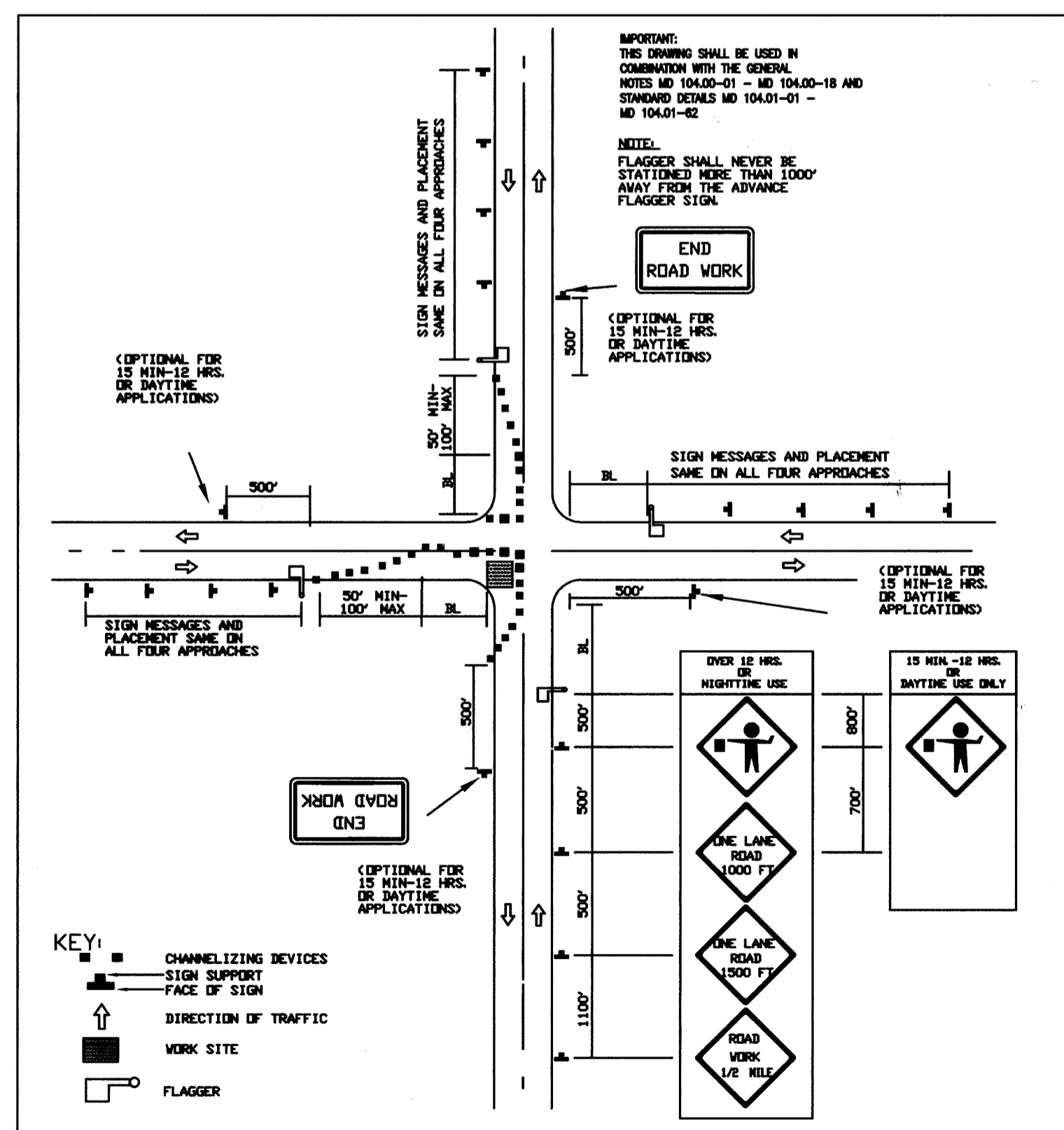
MD. 104.02-04
LANE SHIFT RIGHT OR LEFT SIDE, 2 LANE,
2-WAY TRAFFIC, ≤ 40MPH



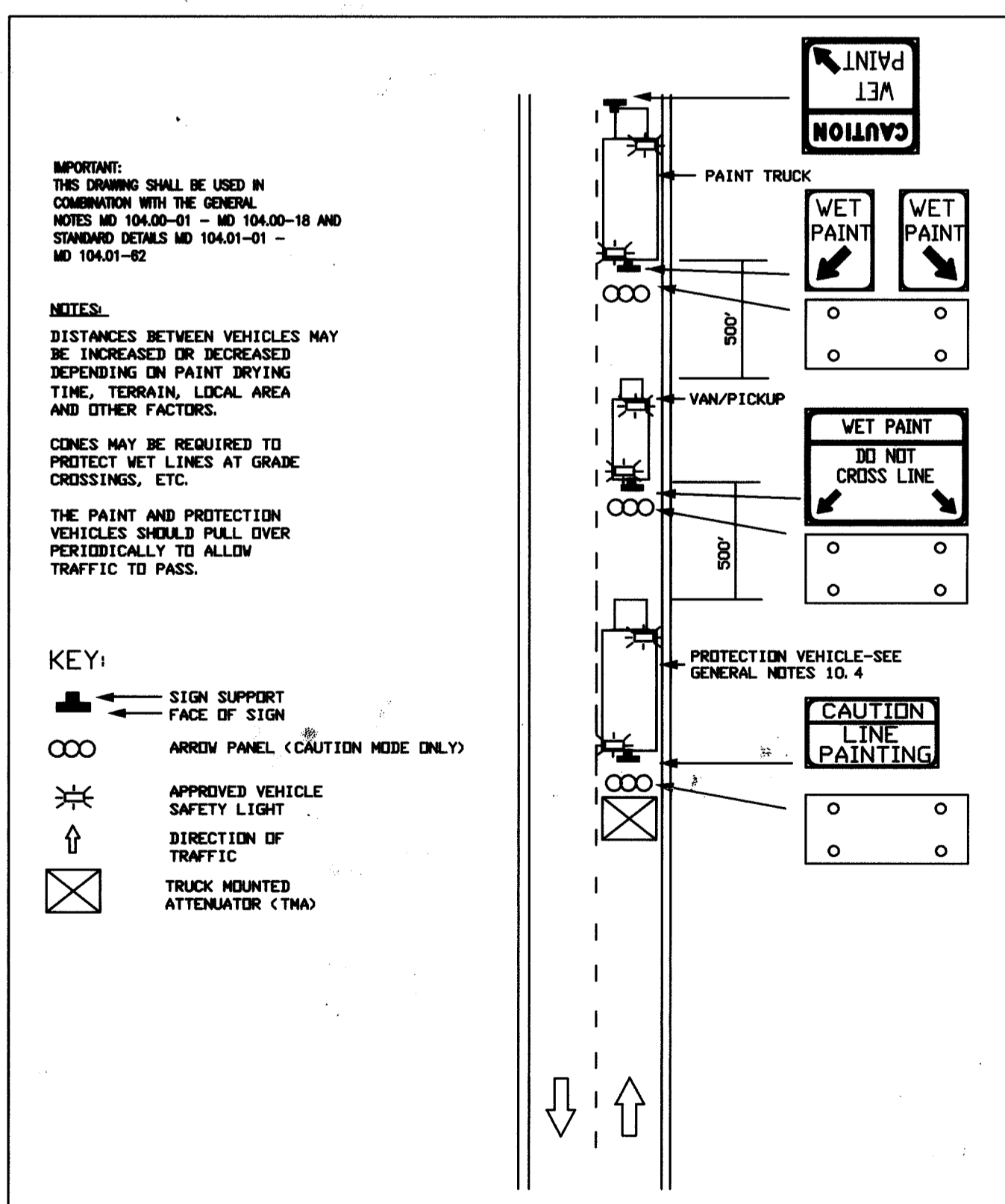
MD. 104.02-06
WORK IN CENTER OF LOW-VOLUME ROAD,
2 LANE, 2-WAY TRAFFIC, ≤ 40MPH



MD. 104.02-10
FLAGGING OPERATION, 2 LANE,
2-WAY TRAFFIC, ≤ 40MPH



MD. 104.02-14
INTERSECTION FLAGGING OPERATION,
2 LANE, 2-WAY TRAFFIC, ≤ 40MPH



MD. 104.02-18
MOBILE MARKING OPERATION, 2 LANE,
2-WAY TRAFFIC, ≤ 40MPH

- NOTES**
1. OLD WATERLOO ROAD IS A 2 LANE, 2-WAY ROAD. THE PROPOSED SPEED LIMIT FOR THE ROAD IS 30 MPH.
 2. LARK BROWN ROAD INCLUDES PORTIONS WITH 2 LANE, 2-WAY TRAFFIC AND MULTILANE, UNDIVIDED TRAFFIC. THE PROPOSED SPEED LIMIT FOR THE ROAD IS 30 MPH.
 3. REFER TO MSHA STANDARDS MD 104.01-80 AND MD 104.01-81 FOR BUFFER LENGTHS AND TAPER LENGTHS. FOR GENERAL NOTES FOR CHANNELIZATION DEVICES, REFER TO MSHA STANDARD MD 104.00-10.
 4. REFER TO MSHA STANDARD MD 104.00-12 FOR GENERAL NOTES FOR FLAGGING OPERATION.

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

Walter J. Madala 9-19-05
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Chris Stambaugh 10/11/05
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[Signature] 9/26/05
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

06/14/06 1 INCORPORATE ROAD R.O.W. PER PB CASE NO. 373; REMOVE PARCEL DESIGNATIONS AND ADD EASEMENTS AND ROAD NAME

DATE	NO.	REVISION

OWNER / DEVELOPER
HRD LAND HOLDINGS, INC.
HOWARD RESEARCH AND DEVELOPMENT CORPORATION
THE ROUSE BUILDING
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
410-992-6000

PROJECT **BENSON EAST**
PARCELS A, E, G, J, M, R, R, T, U, NON-BUILDABLE PARCELS (PRIVATE ROAD) AND OPEN SPACE PARCELS G AND V

AREA TAX MAP 37 & 43 ZONED - NEWTOWN
PARCELS 482, 587, 382, 421, 547
6th ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE **MOT PLAN**

Patton Harris Rust & Associates, pc
Engineers, Surveyors, Planners, Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

G.F.E. 05
DATE

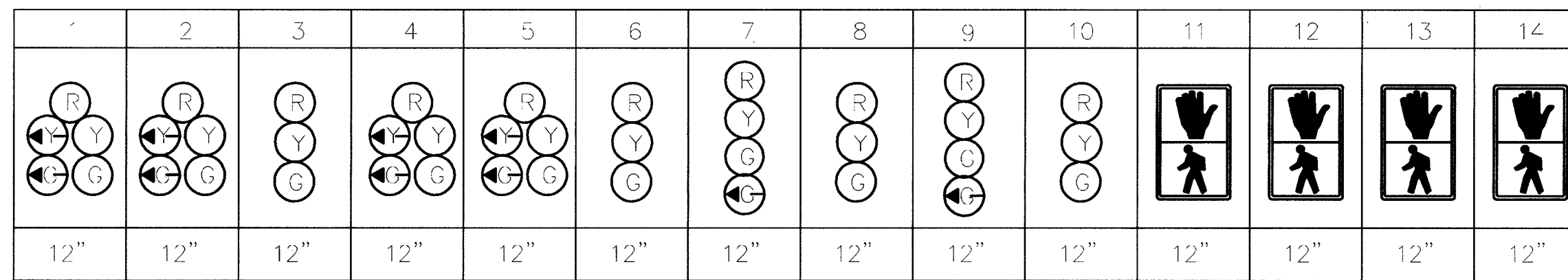
DESIGNED BY : C.J.R.
DRAWN BY: BCL
PROJECT NO : 11621/PRELIM
RD 23-24.DWG
DATE : AUGUST 18, 2005
SCALE : AS SHOWN
DRAWING NO. 24 OF 25

Aimee C. Remington
AIMEE C. REMINGTON #29923

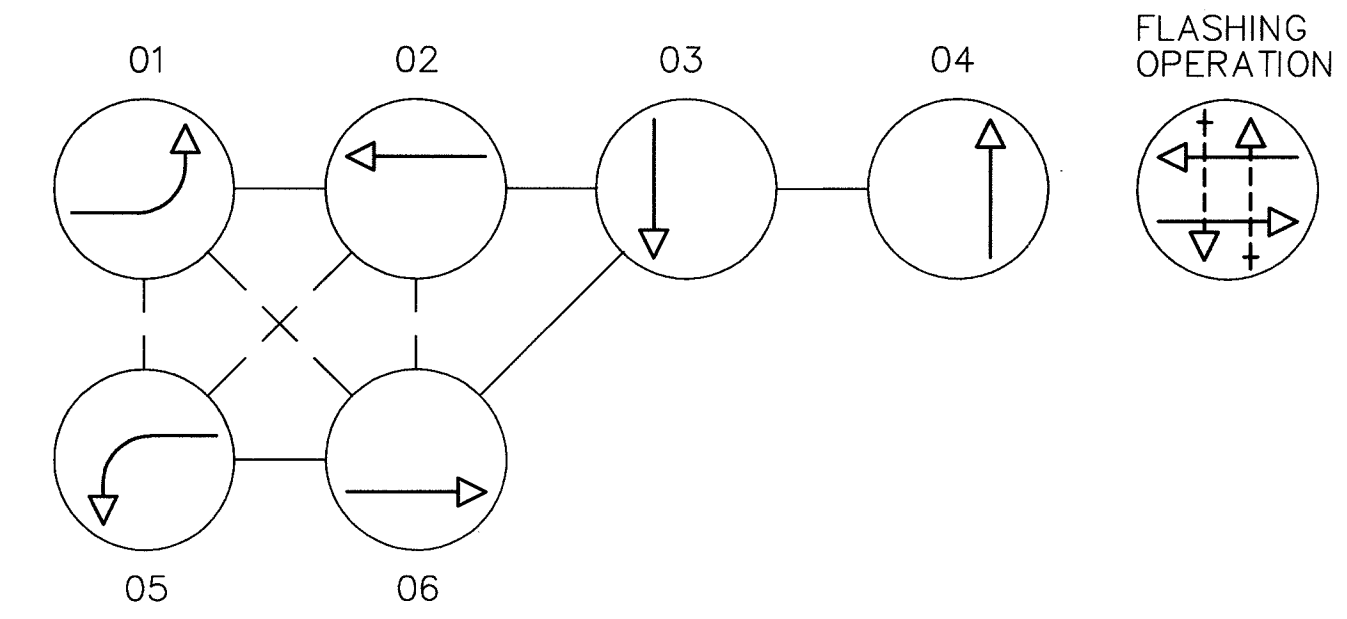
GENERAL NOTES

1. THE CONTRACTOR SHALL VERIFY ALL PROPOSED POLE, CABINET, AND DETECTOR LOCATIONS WITH HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS PERSONNEL PRIOR TO INSTALLATION.
2. FOR FINAL PAVEMENT MARKINGS REFER TO THE PAVEMENT MARKING PLANS, OTHER THAN THOSE DETAILED ON THE PLAN. ALL PAVEMENT MARKINGS SHALL BE INSTALLED IN ACCORDANCE WITH HOWARD COUNTY STANDARDS.
3. ALL PROPOSED LUMINAIRES SHALL BE SUPPLIED WITH A PHOTOCCELL.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TERMINATING ALL SIGNAL CABLE TO THE APPROPRIATE TERMINALS AND PROPERLY LABEL EACH CABLE.
5. THE CONTRACTOR SHALL VERIFY ALL UNDERGROUND UTILITIES PRIOR TO INSTALLING PROPOSED SIGNAL EQUIPMENT. IF ANY UTILITY CONFLICTS SHOULD ARISE THE CONTRACTOR SHALL CONTACT THE PROJECT ENGINEER.
6. ALL TRAFFIC SIGNAL FOUNDATIONS SHALL BE INSTALLED AT THE FINAL SIDEWALK OR CURB GRADE FOR CLOSED SECTIONS, HIGHEST ROADWAY PROFILE GRADE FOR OPEN SECTIONS, TO MEET CLEARANCES AS SPECIFIED IN THE HOWARD COUNTY STANDARD DETAILS. THE CONTRACTOR SHALL VERIFY ULTIMATE GRADES PRIOR TO THE INSTALLATION OF ALL SIGNAL EQUIPMENT.
7. ALL EXISTING RIGHT-OF-WAY LINES SHOWN ON THE PLAN ARE APPROXIMATE.
8. ALL TRAFFIC SIGNAL POLES AND MAST ARMS SHALL BE STATE OF MARYLAND POLES AND MAST ARMS.
9. DEVELOPER SHALL PURCHASE CABINET, CONTROLLER, VIDEO CAMERAS, SIGNAL HEADS AND LED SIGNALS FROM HOWARD COUNTY BUREAU OF HIGHWAYS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER ASSEMBLY AND CONFIGURATION OF SIGNAL HEADS AS SHOWN ON THE PLANS.

PROPOSED SIGNALS



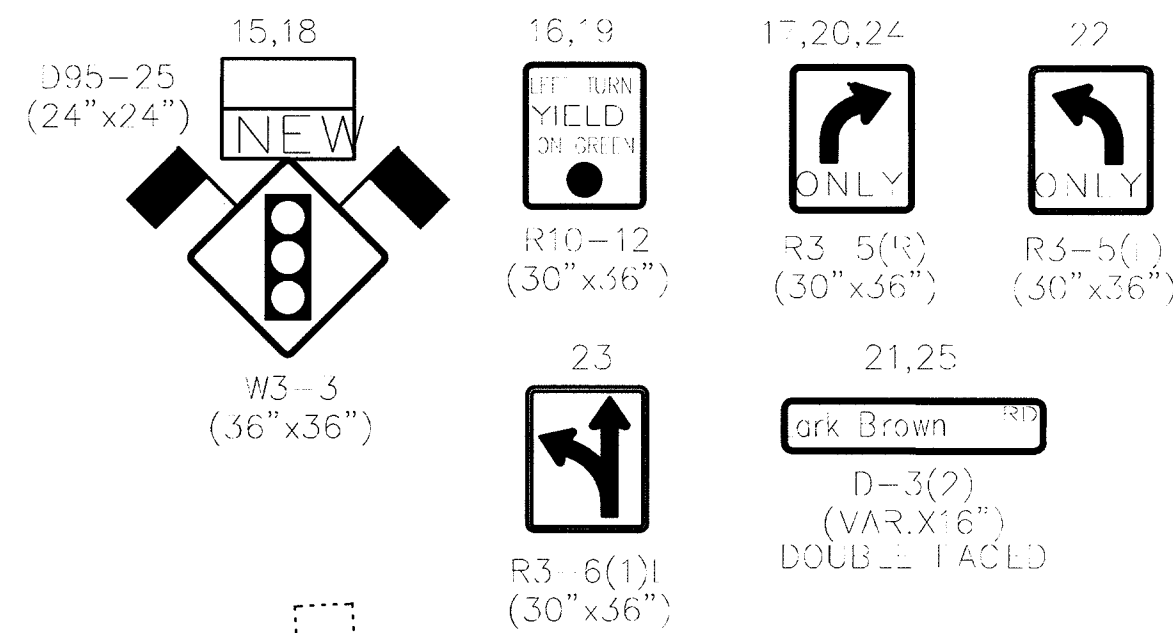
NEMA PHASING



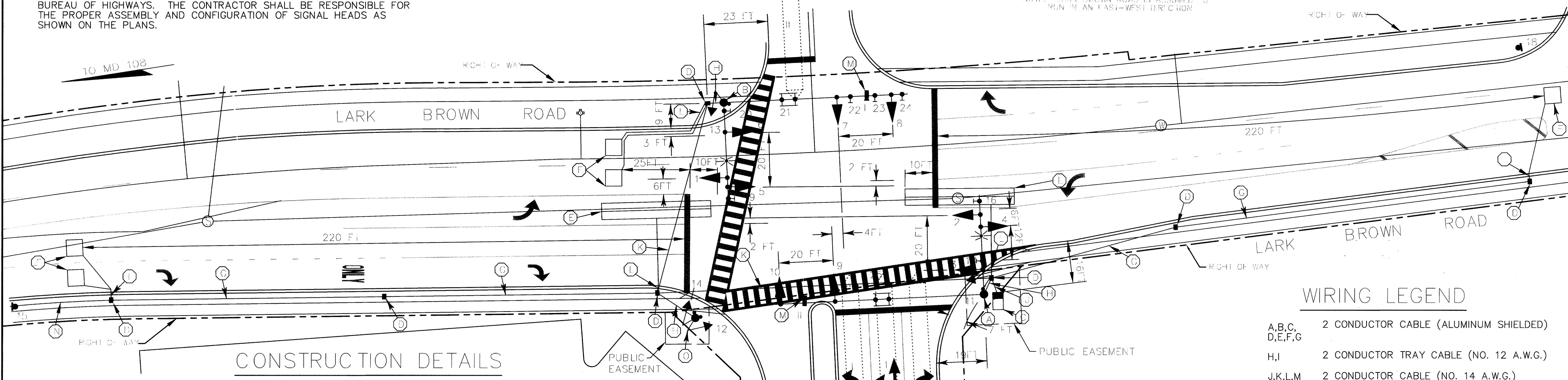
NOTE: PHASES ASSOCIATED BY A DASHED LINE WILL OPERATE CONCURRENTLY. PHASES ASSOCIATED BY A SOLID LINE WILL NOT OPERATE CONCURRENTLY.

PROPOSED VIDEO DETECTION CAMERA

PROPOSED SIGNS



NOTE: LARK BROWN ROAD IS ASSUMED TO RUN IN AN EAST-WEST DIRECTION



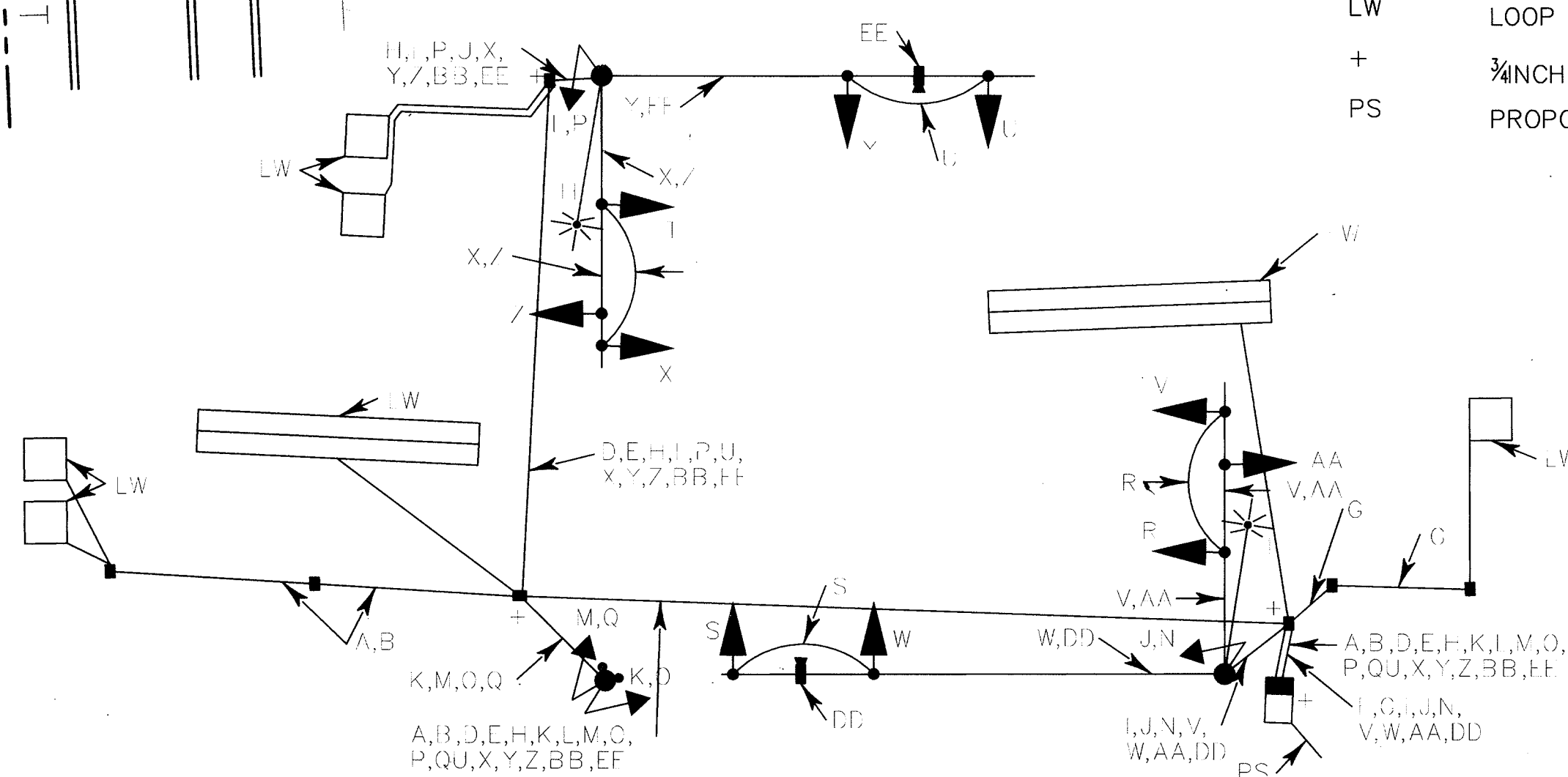
CONSTRUCTION DETAILS

1. INSTALL 27 FT. STEEL POLE WITH TWIN 70 FT/50 FT MAST ARMS, TRAFFIC SIGNAL HEADS, PEDESTRIAN PUSHBUTTON AND SIGNAL HEAD, SIGNS, 25 FT. STREET LIGHTING ARM, 250-WATT H.P.S. (CUTOFF) LUMINAIRE, AND CONCRETE FOUNDATION. (NOTE: ONE 3-INCH SCHEDULE 80, 90 DEGREE PVC CONDUIT BEND IN POLE BASE). CLEAN AND CUT THE 50 FT MAST ARM CROSSING MAJOR STREET APPROACH TO 40 FT. GALVANIZE AND CAP BOTH TRAFFIC SIGNAL ARMS.
2. INSTALL 27 FT. STEEL POLE WITH TWIN 70 FT/50 FT MAST ARMS, TRAFFIC SIGNAL HEADS, PEDESTRIAN PUSHBUTTON AND SIGNAL HEAD, SIGNS, 20 FT. STREET LIGHTING ARM, 250-WATT H.P.S. (CUTOFF) LUMINAIRE, AND CONCRETE FOUNDATION. (NOTE: ONE 3-INCH SCHEDULE 80, 90 DEGREE PVC CONDUIT BEND IN POLE BASE). CLEAN AND CUT THE 50 FT MAST ARM CROSSING MAJOR STREET APPROACH TO 37 FT. AND THE 70 FT MAST ARM CROSSING MINOR STREET APPROACH TO 68 FT., GALVANIZE AND CAP BOTH TRAFFIC SIGNAL ARMS.
3. INSTALL BASE MOUNTED NEMA SIZE "6" BASE MOUNTED CABINET AND CONTROLLER, CONCRETE FOUNDATION, GROUND ROD, METER SOCKET, 2-30 AMP DISCONNECT SWITCHES, AND ALL NECESSARY EQUIPMENT FOR ELECTRICAL SERVICE. FOUNDATION SHALL HAVE TWO 4-INCH AND TWO 2-INCH P.V.C. 90-DEGREE ELBOWS.
4. INSTALL HANDHOLE.
5. INSTALL 6 FT X 40 FT QUADRUPOLE TYPE VEHICLE DETECTOR (2-4-2 TURNS).
6. INSTALL 6 FT X 6 FT VEHICLE LOOP DETECTOR (3 TURNS).
7. INSTALL 2-INCH P.V.C. (SCHEDULE 80) ELECTRICAL CONDUIT (TRENCHED).
8. INSTALL 3-INCH P.V.C. (SCHEDULE 80) ELECTRICAL CONDUIT (TRENCHED).
9. INSTALL TWO 4-INCH P.V.C. (SCHEDULE 80) ELECTRICAL CONDUITS (TRENCHED).
10. INSTALL 4-INCH P.V.C. (SCHEDULE 80) ELECTRICAL CONDUIT (PUSHED).
11. INSTALL 1-INCH FLEXIBLE LIQUID TIGHT ELECTRICAL CONDUIT LOOP DETECTOR SLEEVE FROM HANDHOLE TO FACE OF CURB (NOTE: ONE LOOP DETECTOR PER CONDUIT).
12. INSTALL VIDEO DETECTION CAMERA TO MAST ARM.
13. INSTALL 2-INCH P.V.C. (SCHEDULE 80) ELECTRICAL CONDUIT (TRENCHED) TO THE CONTROLLER CABINET AT THE MD 108/LARK BROWN ROAD INTERSECTION. INSTALL HANDHOLES AT 180-FOOT MAXIMUM INTERVALS.
14. INSTALL 10 FOOT PEDESTRIAN POLE, BREAKAWAY BASE SUPPORT, PUSHBUTTONS, SIGNAL HEADS AND SIGNS (NOTE: 1-3 INCH SCHEDULE 80, 90° PVC ELECTRICAL CONDUIT ELBOW IN POLE BASE).

WIRING LEGEND

- A,B,C, D,E,F,G 2 CONDUCTOR CABLE (ALUMINUM SHIELDED)
- H,I 2 CONDUCTOR TRAY CABLE (NO. 12 A.W.G.)
- J,K,L,M 2 CONDUCTOR CABLE (NO. 14 A.W.G.)
- N,O,P,Q 3 CONDUCTOR CABLE (NO. 14 A.W.G.)
- R,S,T,U 5 CONDUCTOR CABLE (NO. 14 A.W.G.)
- V,W,X, Y,Z,AA 7 CONDUCTOR CABLE (NO. 14 A.W.G.)
- BB,CC 1 CONDUCTOR COPPER GROUND WIRE (NO. 6 A.W.G.-THWN)
- DD,EE VIDEO DETECTION LEAD-IN CABLE
- LW LOOP WIRE
- + 3/4 INCH X 10 FT GROUND ROD
- PS PROPOSED ELECTRIC SERVICE

WIRING DIAGRAM



BY THE DEVELOPER :

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 INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

DEVELOPER: *W. Z. W. W.* 8-18-05 DATE

BY THE ENGINEER :

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.

ENGINEER: *Aimee C. Remington* 8-18-05 DATE

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.

NATURAL RESOURCES CONSERVATION SERVICE DATE

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

HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

CHIEF, BUREAU OF HIGHWAYS 8-18-05 DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

CHIEF, DIVISION OF LAND DEVELOPMENT 8/18/05 DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION 8/18/05 DATE

08/14/05 1 INCORPORATE ROAD ROW PER PB CASE NO. 375; REVISE PARCEL DESIGNATIONS AND ADD EASEMENTS AND ROW LINES

DATE NO. REVISION

OWNER / DEVELOPER
HRD LAND HOLDINGS, INC.
HOWARD RESEARCH AND DEVELOPMENT CORPORATION
THE ROUSE BUILDING
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
410-992-6000

PROJECT **BENSON EAST**
PARCELS A, E, G, J, M, P, R, T, V, NON-BUILDABLE PARCELS S (PRIVATE ROAD) AND OPEN SPACE PARCELS Q AND U
AREA TAX MAP 37 & 43 ZONED - NEWTOWN
PARCELS 482, 587, 382, 421, 547
6th ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE **SIGNAL PLAN**

Patton Harris Rust & Associates, pc
Engineers, Surveyors, Planners, Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

DATE 8-18-05

DESIGNED BY : C.J.R.

DRAWN BY: DAM

PROJECT NO : 11621/PRELIM RD22.DWG

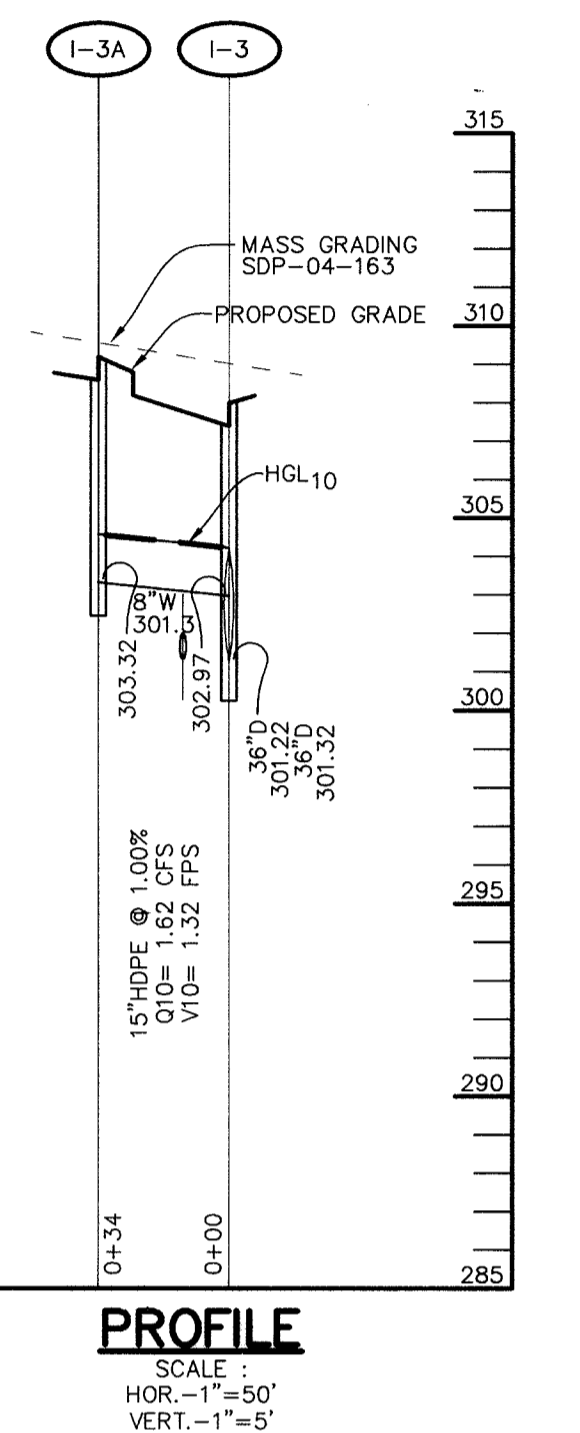
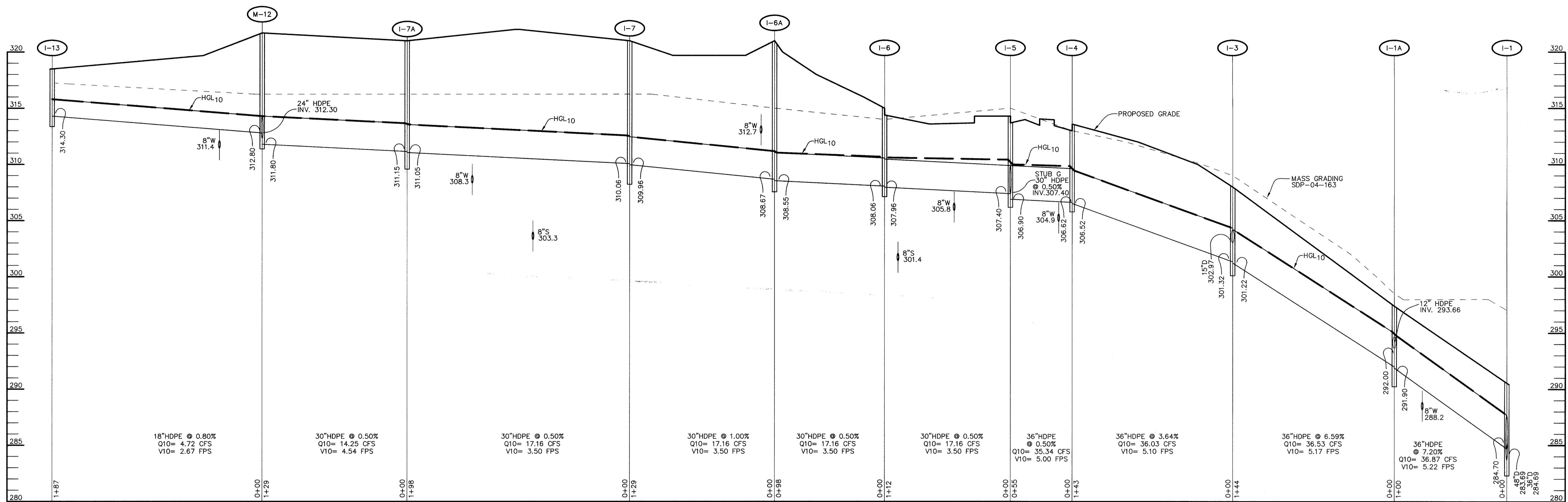
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DRAWING NO. 23 OF 25

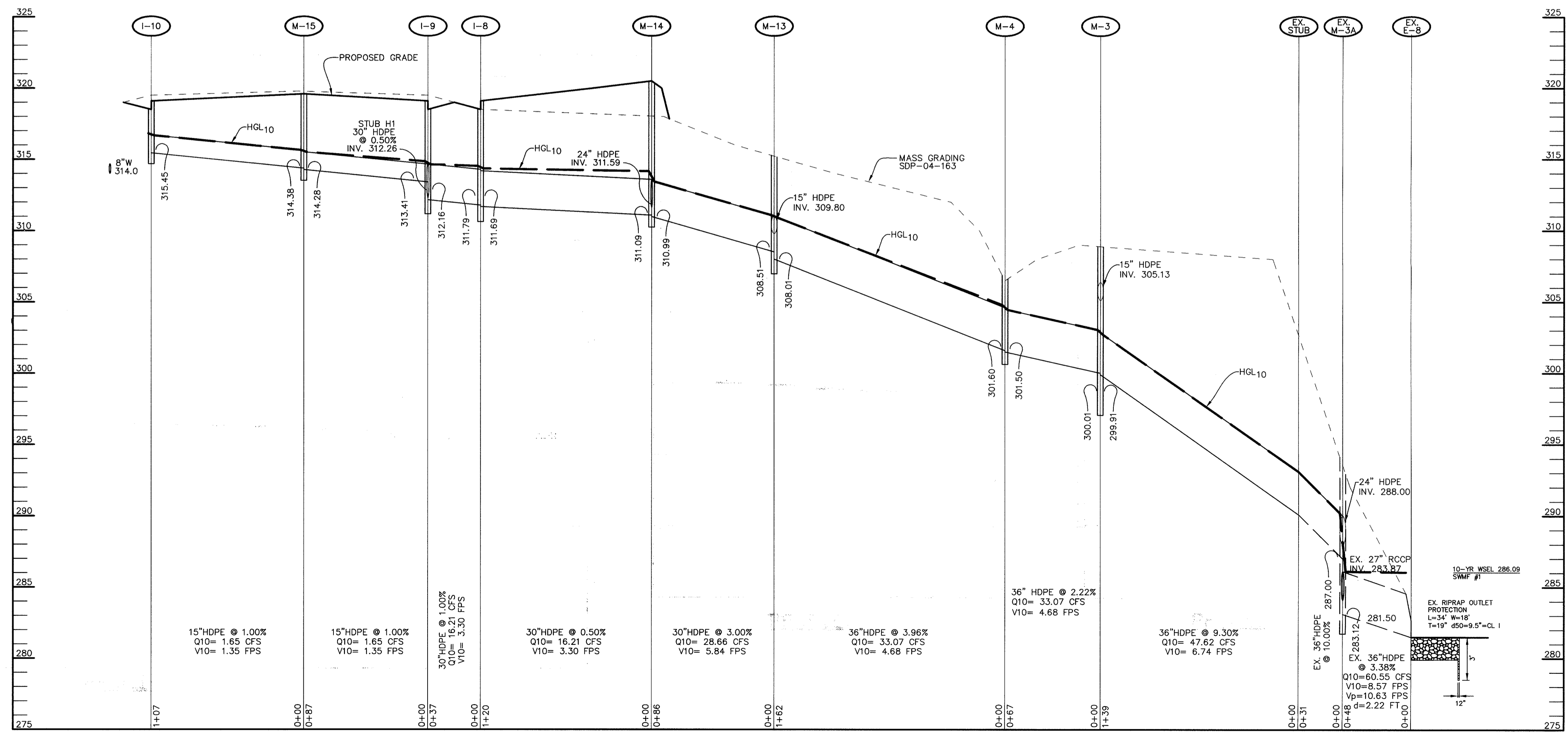
WALLACE, MONTGOMERY & ASSOCIATES
CIVIL AND STRUCTURAL ENGINEERS
110 WEST ROAD
TOWSON, MARYLAND 21204

Aimee C. Remington
AIMEE C. REMINGTON #29923



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

NOTE: COMPACT BACKFILL AREAS PER AASHTO T-180.



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

NOTE: COMPACT BACKFILL AREAS PER AASHTO T-180.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

Michael J. ...
CHIEF, BUREAU OF HIGHWAYS DATE 7/26/06

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

...
CHIEF, DIVISION OF LAND DEVELOPMENT DATE 5/9/06

...
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE 6/16/06

07/06/06 | 1 INCORPORATE ROAD R.O.W. PER PB CASE NO. 373; REVISE

DATE NO. REVISION

OWNER / DEVELOPER
HRD LAND HOLDINGS, INC.
HOWARD RESEARCH AND DEVELOPMENT CORPORATION
THE ROUSE BUILDING
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
410-992-6000

PROJECT **BENSON EAST**
PARCELS A, E-G, J-M, P, R, T, U, NON-BUILDABLE PARCELS (PRIVATE ROAD) AND OPEN SPACE PARCELS Q AND V

AREA TAX MAP 37 & 43 ZONED - NEWTOWN
PARCELS 482, 587, 382, 421, 547
6th ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE **STORM DRAIN PROFILES**

Patton Harris Rust & Associates, pc
Engineers, Surveyors, Planners, Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

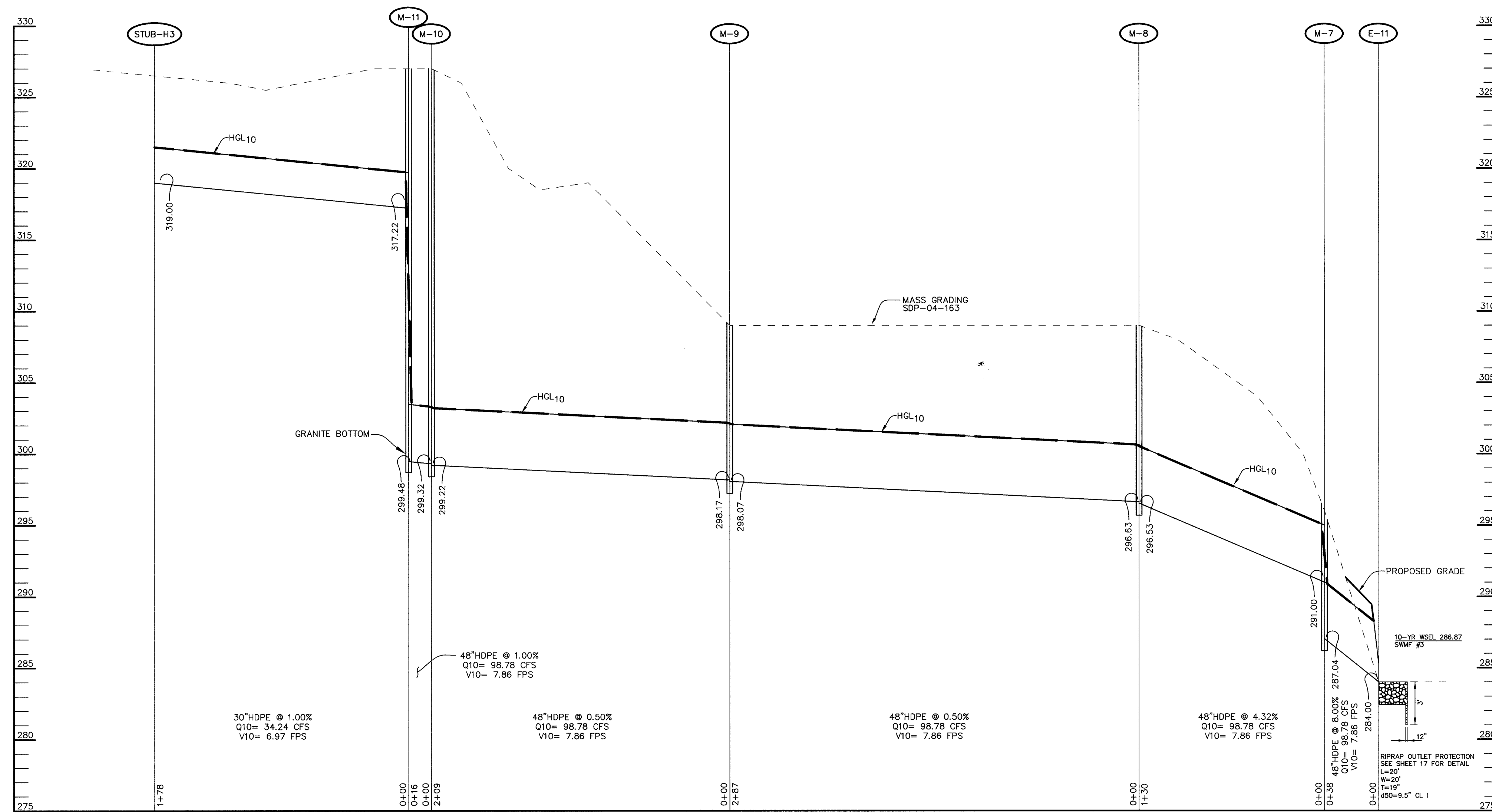
07/06/06
DATE
DESIGNED BY: C.J.R.

DRAWN BY: DAM

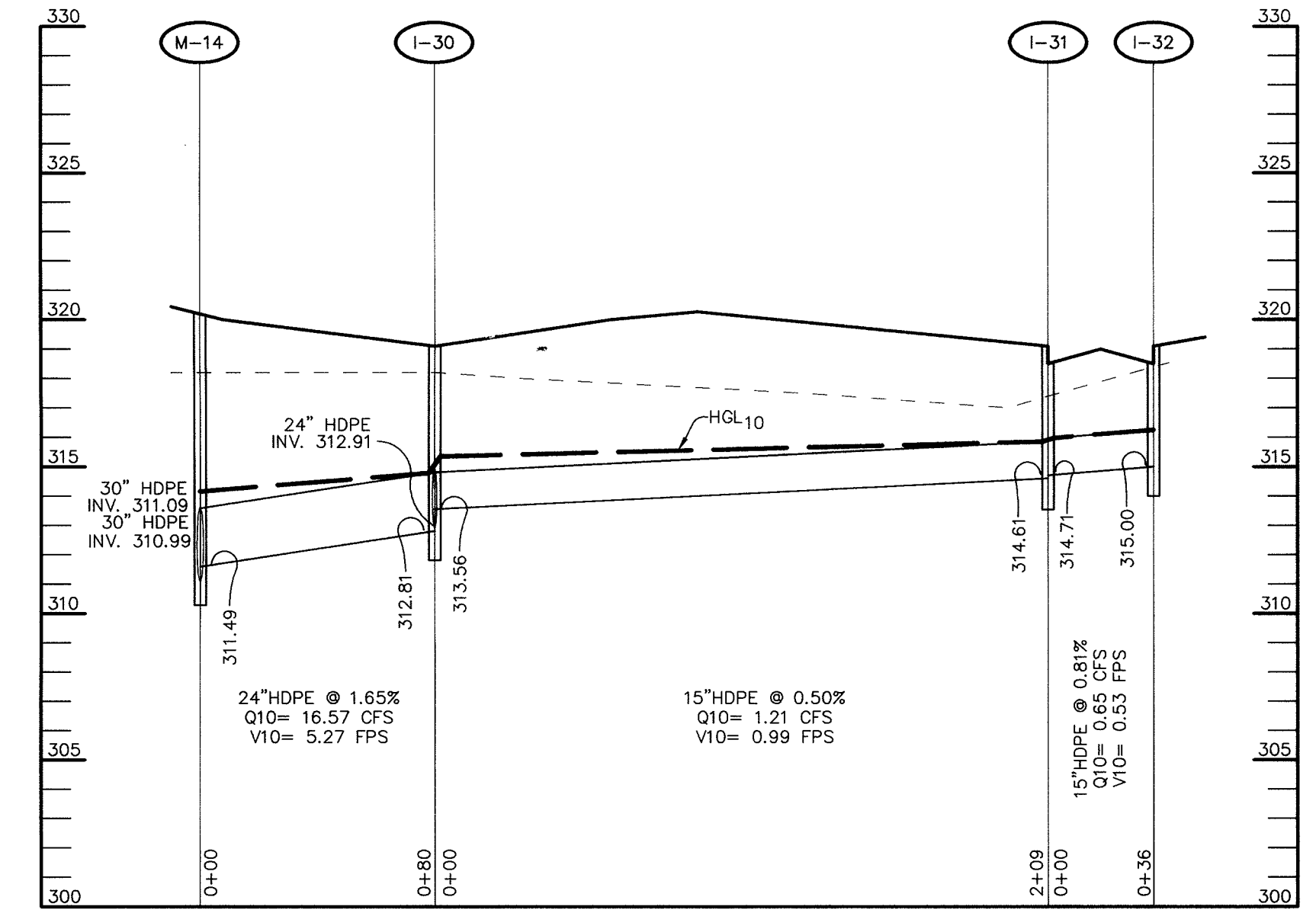
PROJECT NO. 11621/PRELIM SDPROFILES

DATE: AUGUST 18, 2005
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DRAWING NO. 22 OF 25

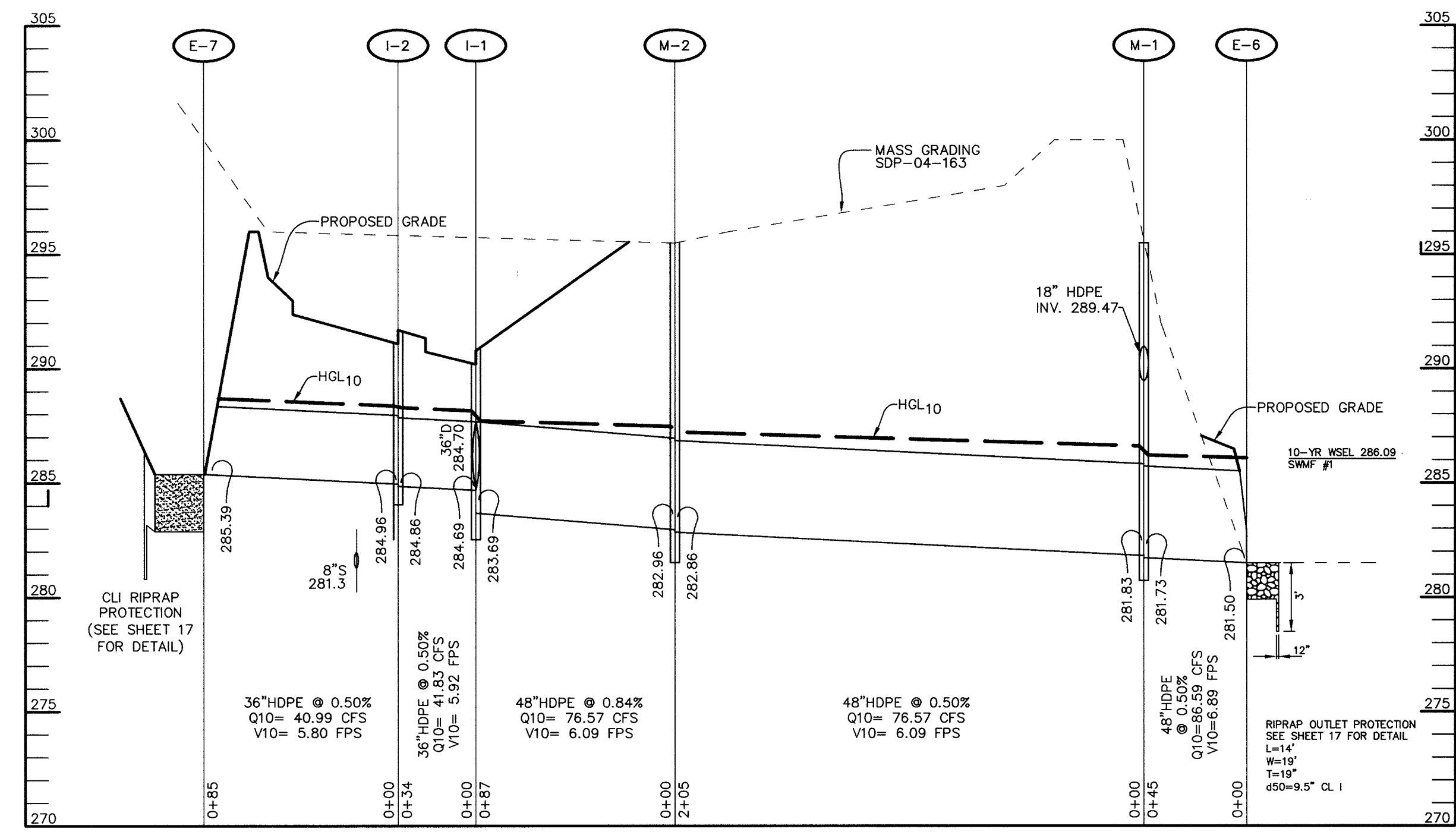




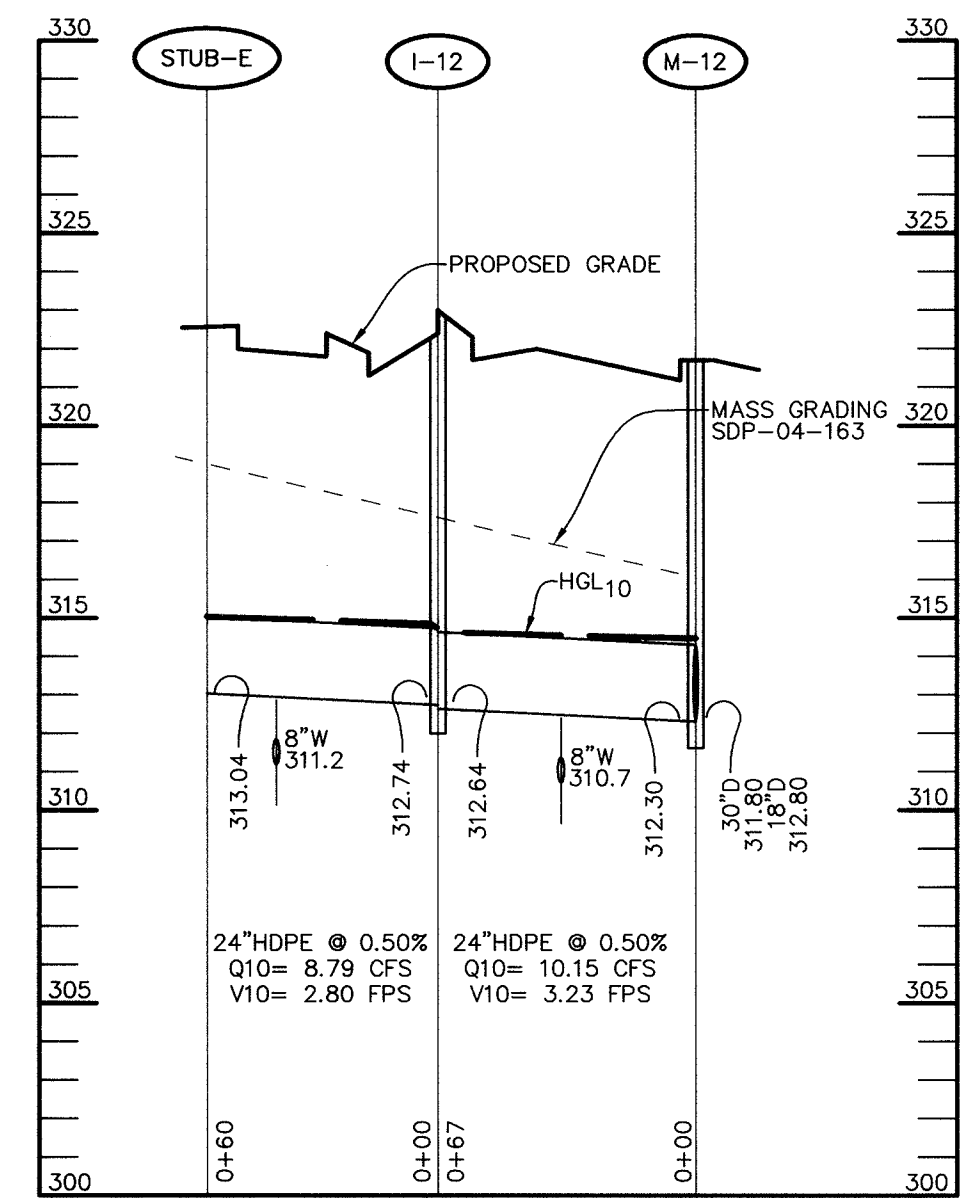
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VERT. - 1"=5'
NOTE: COMPACT BACKFILL AREAS PER AASHTO T-180.



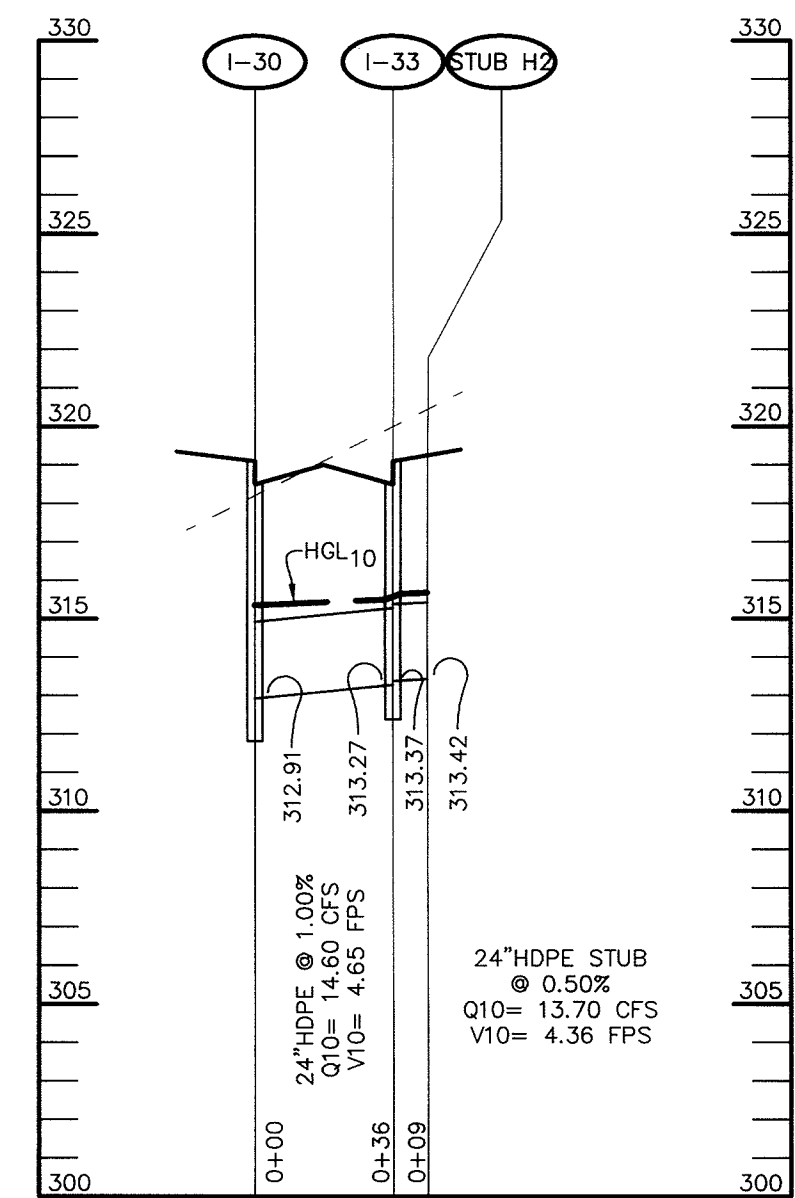
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HOR. - 1"=50'
VERT. - 1"=5'
NOTE: COMPACT BACKFILL AREAS PER AASHTO T-180.



PROFILE
SCALE :
HOR. - 1"=50'
VERT. - 1"=5'
NOTE: COMPACT BACKFILL AREAS PER AASHTO T-180.



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



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

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS
Michael J. ... 7/29/06
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.
... 5/9/06
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

... 08/06
CHIEF - DEVELOPMENT ENGINEERING DIVISION DATE

07/06/06	1	INCORPORATE ROAD R.O.W. PER PB CASE NO. 373; REVISE
DATE	NO.	REVISION

OWNER / DEVELOPER
HRO LAND HOLDINGS, INC.
HOWARD RESEARCH AND DEVELOPMENT CORPORATION
THE ROUSE BUILDING
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
410-992-6000

PROJECT **BENSON EAST**
PARCELS A, E-G, J-M, P, R, T, U, NON-BUILDABLE PARCELS S (PRIVATE ROAD) AND OPEN SPACE PARCELS Q AND V

AREA TAX MAP 37 & 43 ZONED - NEWTOWN
PARCELS 482, 587, 382, 421, 547
6th ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE **STORM DRAIN PROFILES**

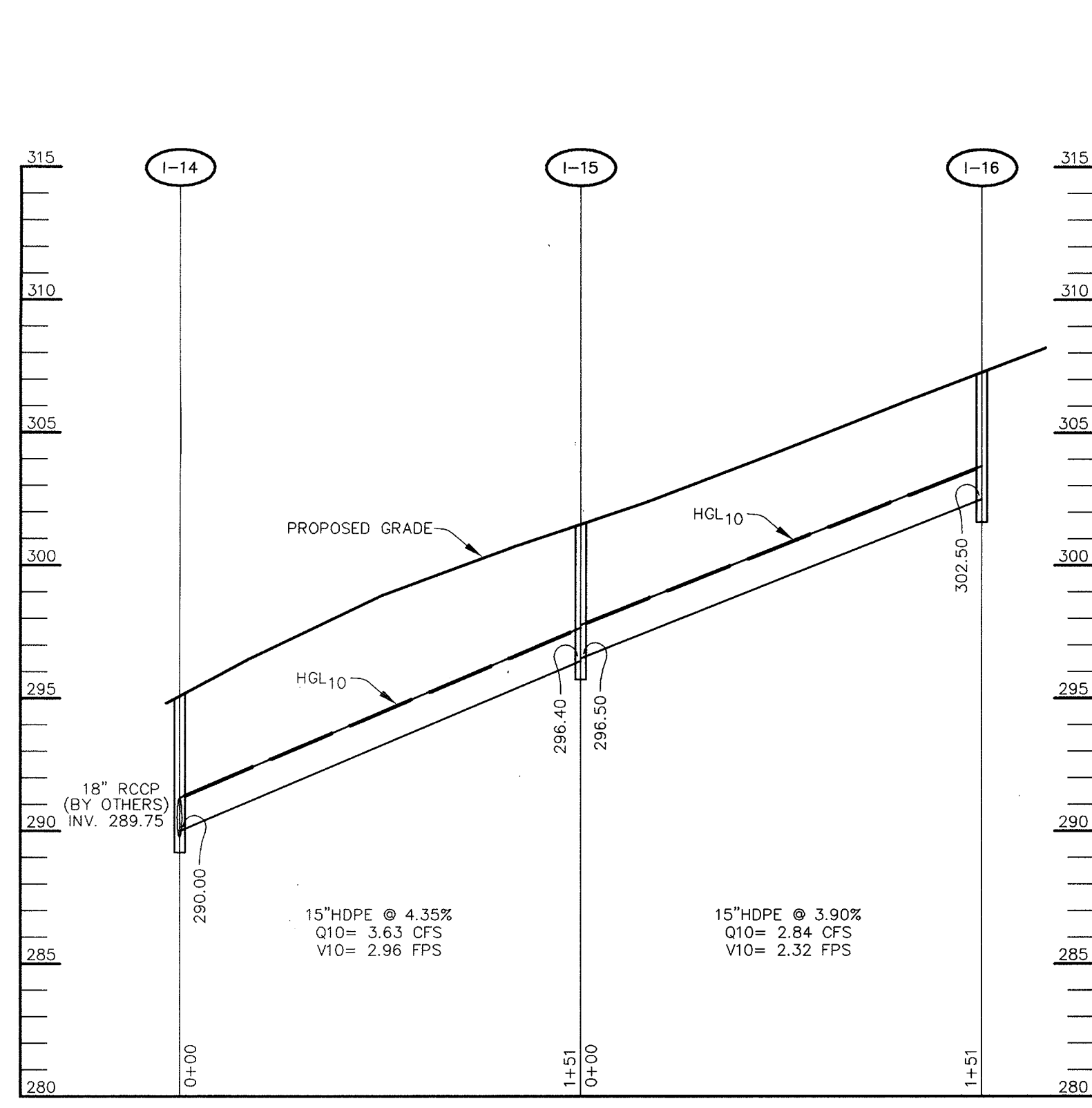
Patton Harris Rust & Associates, pc
Engineers, Surveyors, Planners, Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

07/06/06
DATE

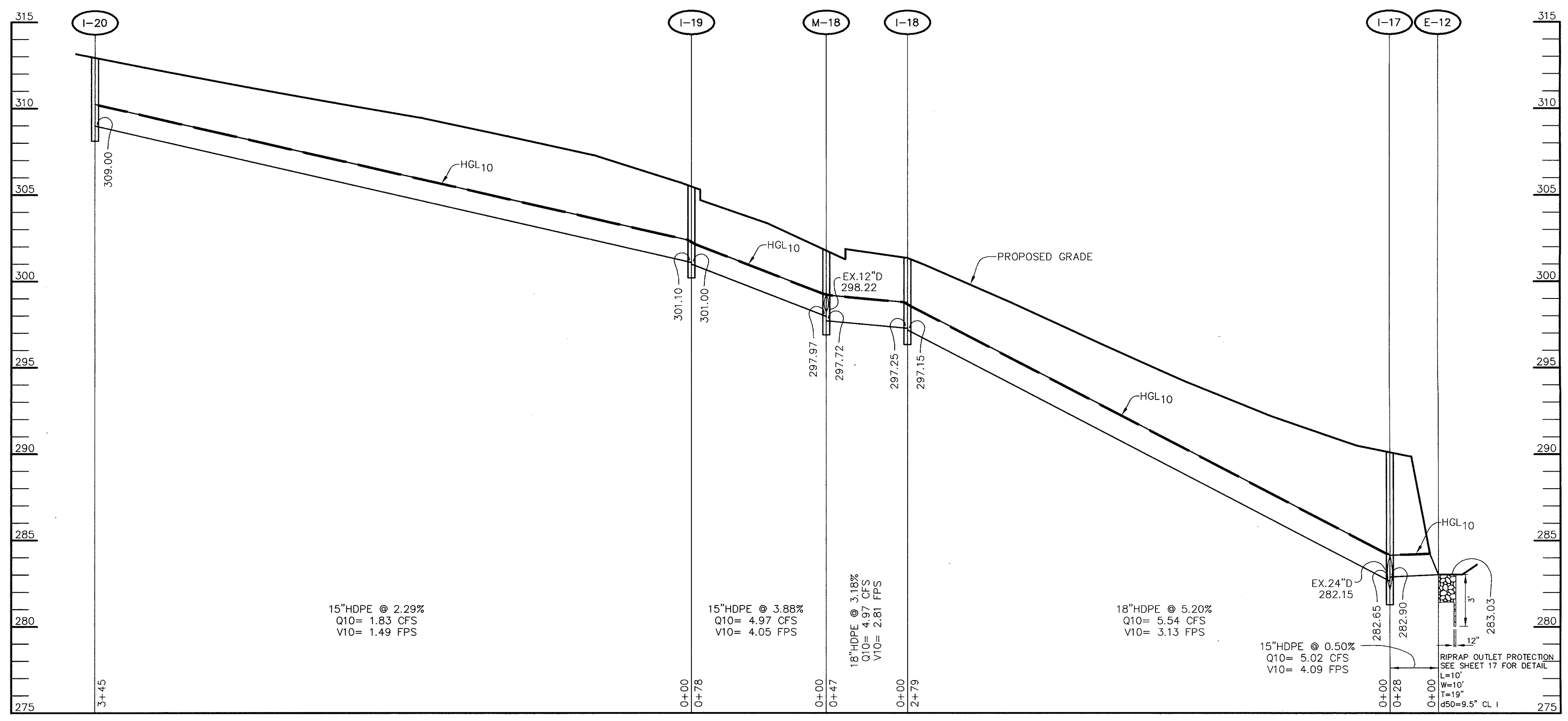
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DRAWN BY: DAM
PROJECT NO : 11621/PRELIM/SDPROFILES
DATE : AUGUST 18, 2005
SCALE : AS SHOWN
DRAWING NO. 21 OF 25

DOMENICK W. COLANGELO #27200
PROFESSIONAL ENGINEER

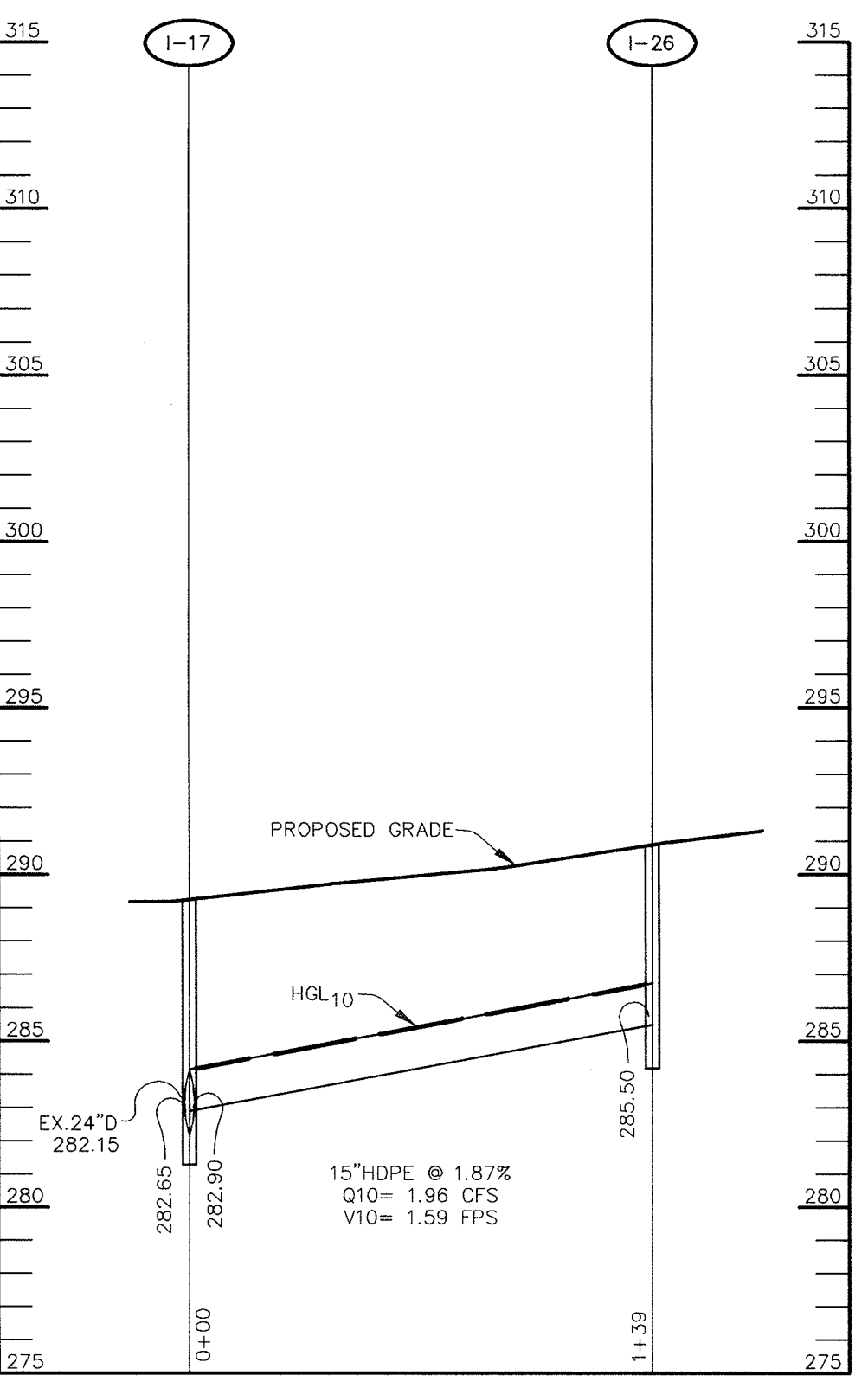
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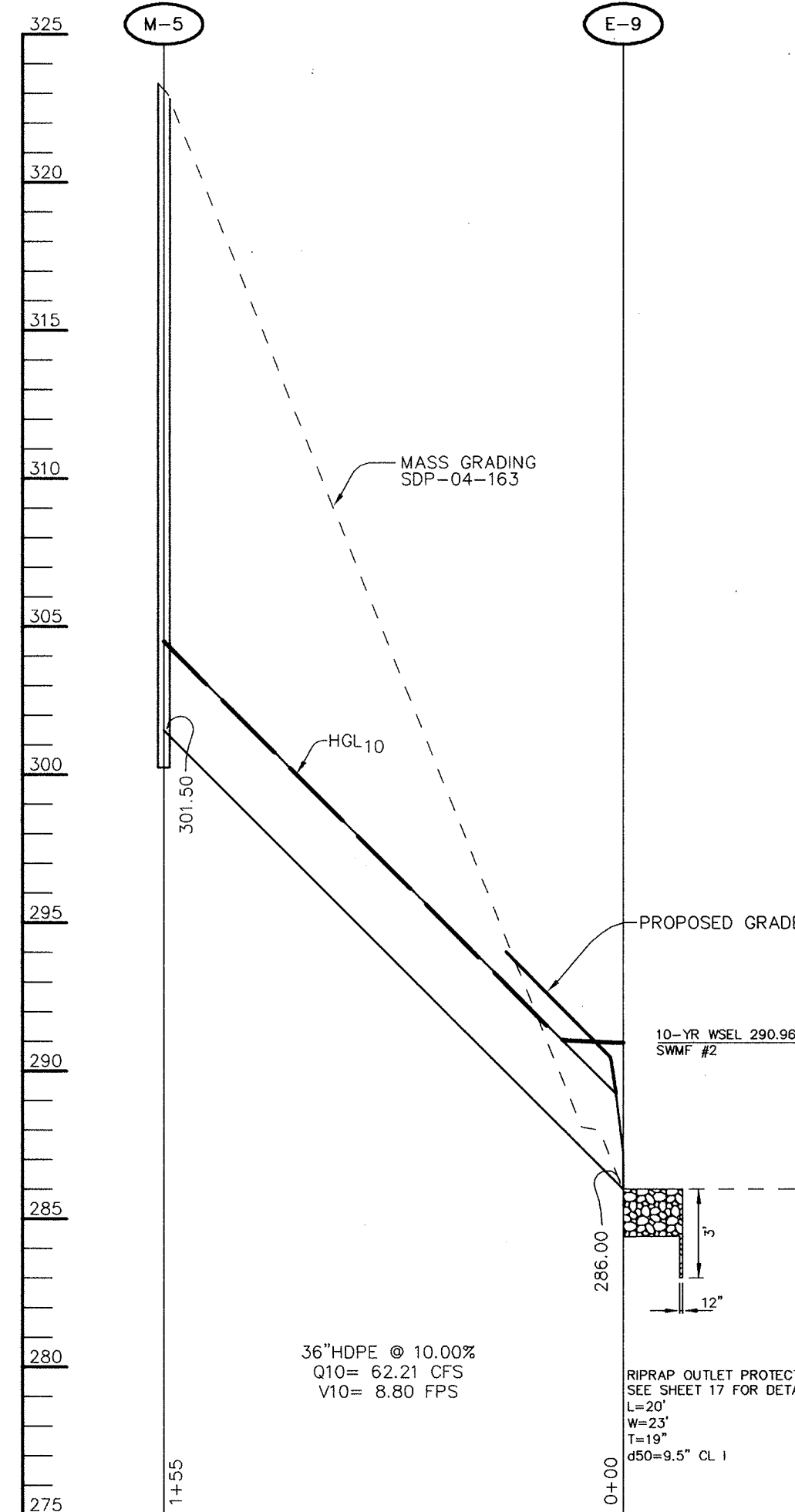
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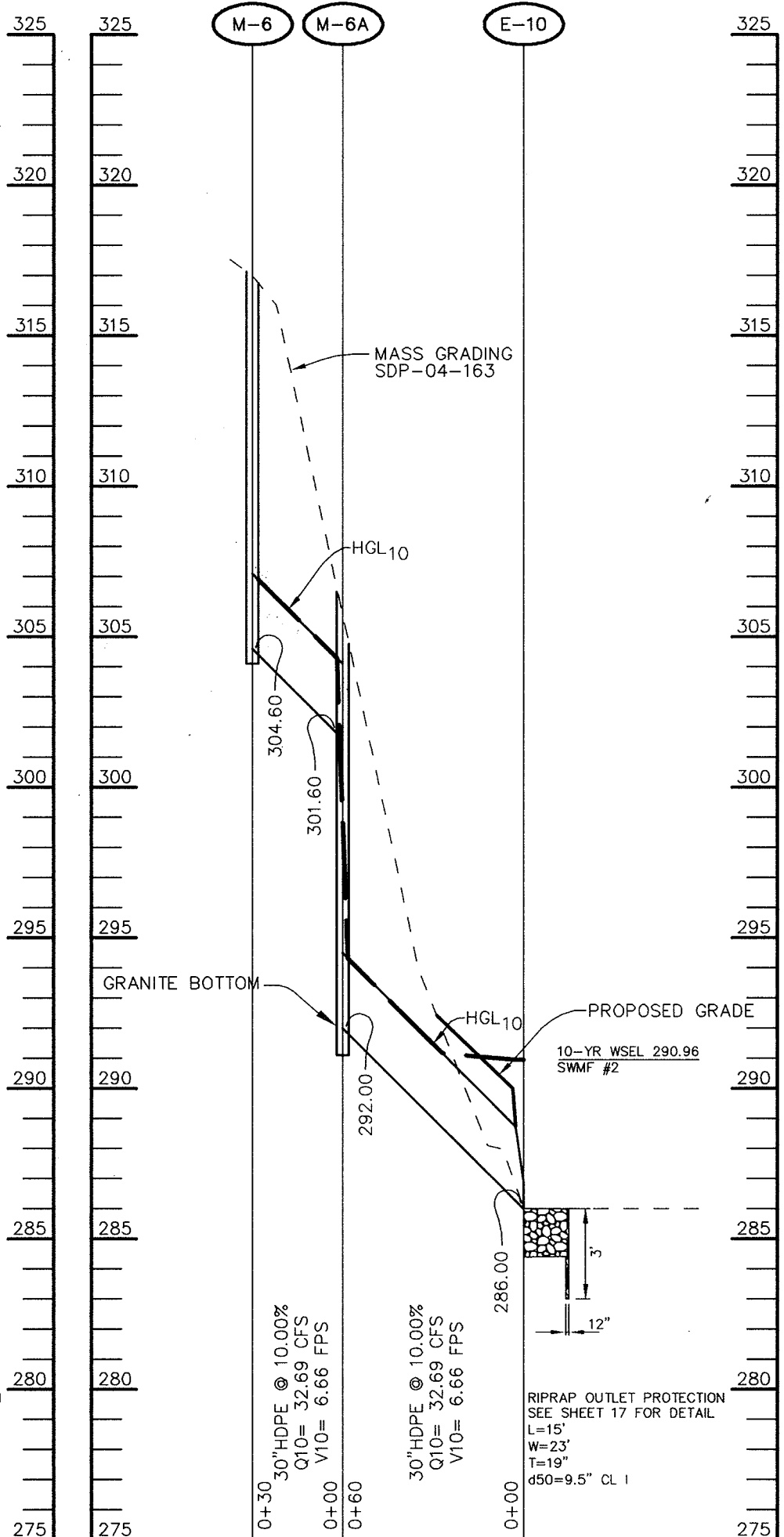
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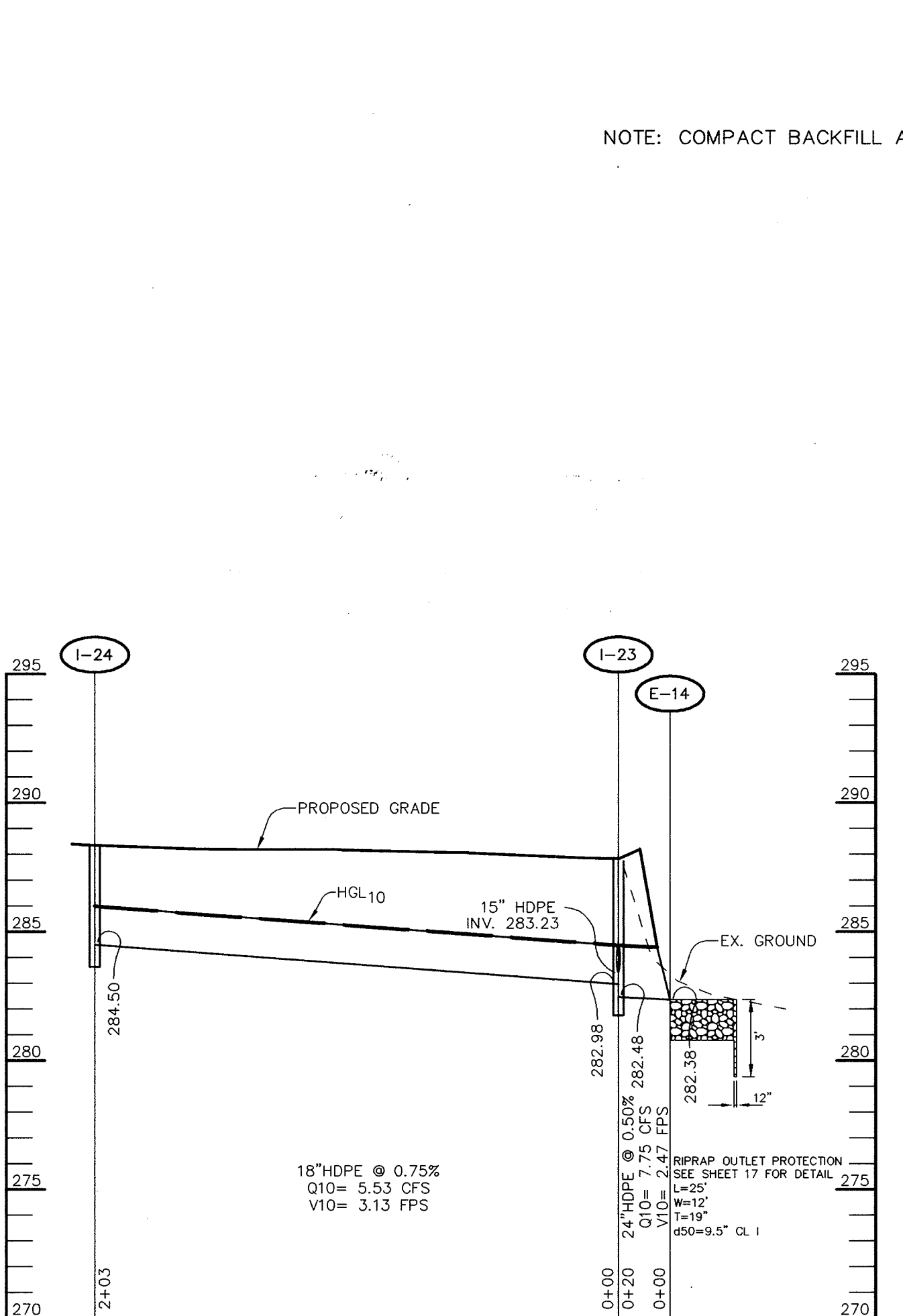
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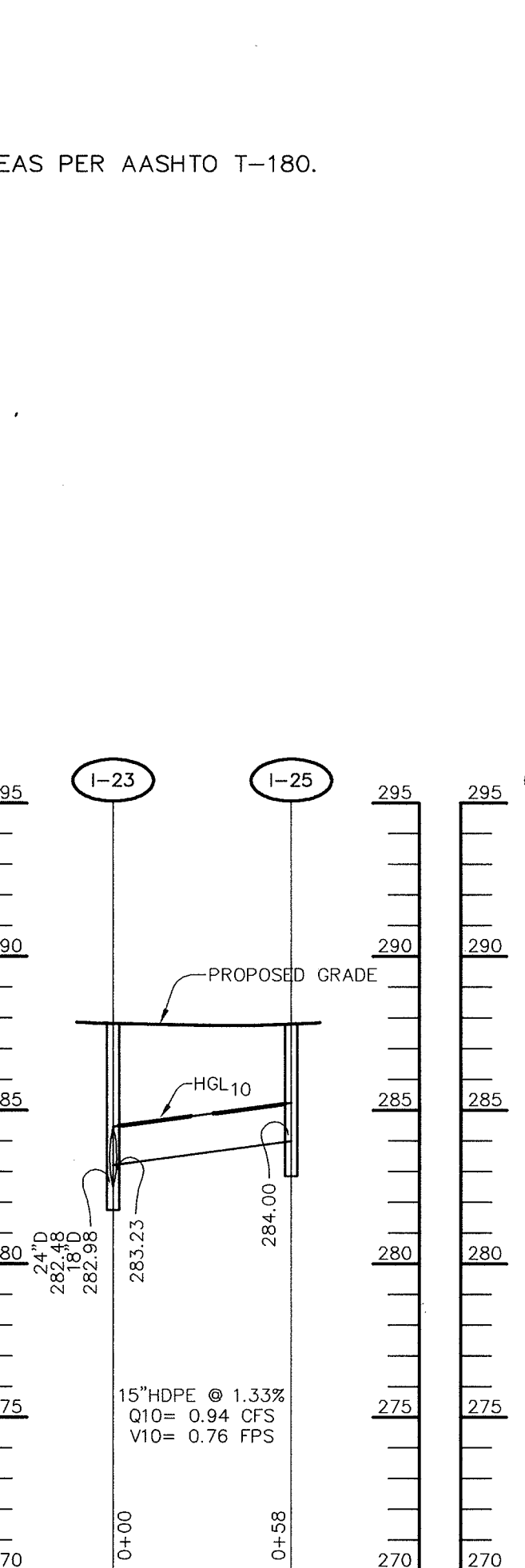
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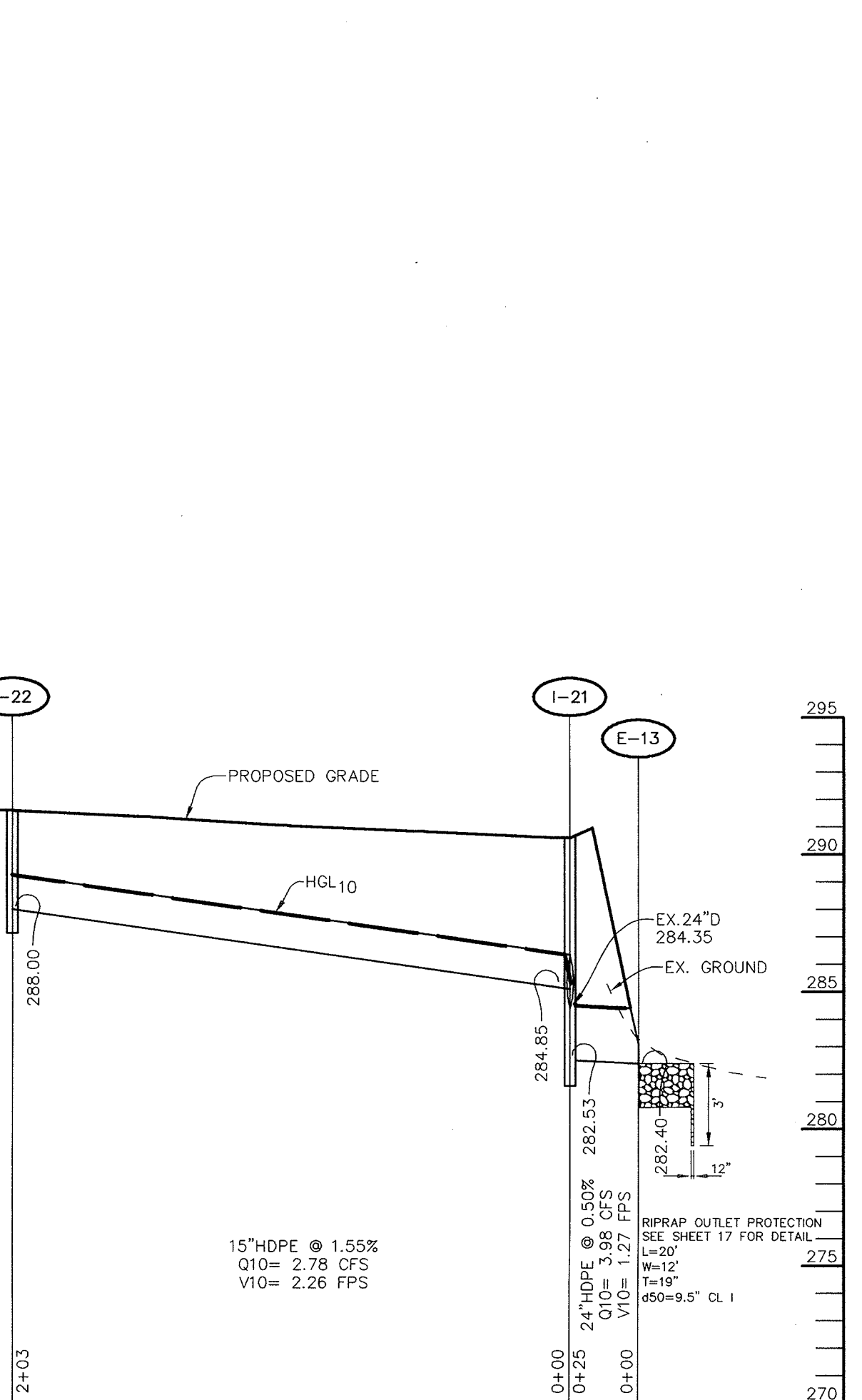
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PROFILE
SCALE:
HOR.-1"=50'
VERT.-1"=5'



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



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

NOTE: COMPACT BACKFILL AREAS PER AASHTO T-180.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
Walter Z. ... 9-19-05
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.
Cindy ... 10/11/05
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION *gmc* 9/26/05 DATE

DATE: 10/14/05 REVISION: 1
 W/ CORRECT ROAD R.O.W. PER PB CASE NO. 378; REVISE
 PARCEL DESIGNATIONS AND ADJUSTMENTS AND ROAD NAME

OWNER / DEVELOPER: HRD LAND HOLDINGS, INC. HOWARD RESEARCH AND DEVELOPMENT CORPORATION THE ROUSE BUILDING 10275 LITTLE PATUXENT PARKWAY COLUMBIA, MARYLAND 21044 410-992-6000

PROJECT: **BENSON EAST**
 PARCELS A, E-G, J-M, P, R, T, U, NON BUILDABLE PARCEL S (PRIVATE ROAD) AND OPEN SPACE PARCELS Q AND V

AREA: TAX MAP 37 & 43 ZONED - NEWTOWN PARCELS 482, 587, 382, 421, 547 6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND

TITLE: **STORM DRAIN PROFILES**

Patton Harris Rust & Associates, pc
 Engineers, Surveyors, Planners, Landscape Architects.
 8818 Centre Park Drive
 Columbia, MD 21045
 T 410.997.8900
 F 410.997.9282

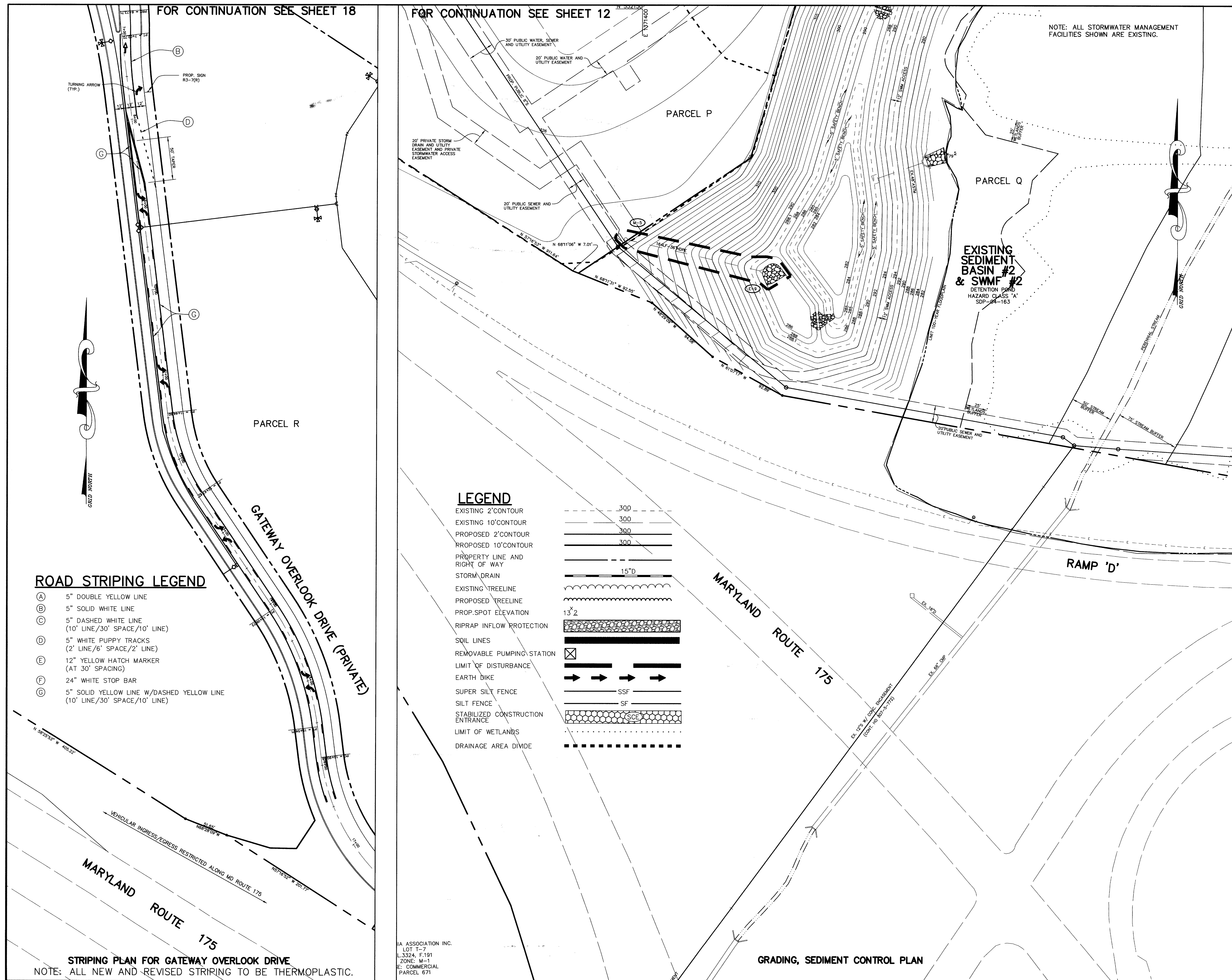
DATE: 8-18-05
 DESIGNED BY: C.J.R.
 DRAWN BY: DAM
 PROJECT NO: 11621/PRELIM SDPROFILES
 DATE: AUGUST 18, 2005
 SCALE: AS SHOWN
 DRAWING NO. 20 OF 25

AIMEE C. REMINGTON 439923

FOR CONTINUATION SEE SHEET 18

FOR CONTINUATION SEE SHEET 12

NOTE: ALL STORMWATER MANAGEMENT FACILITIES SHOWN ARE EXISTING.



ROAD STRIPING LEGEND

- (A) 5" DOUBLE YELLOW LINE
- (B) 5" SOLID WHITE LINE
- (C) 5" DASHED WHITE LINE (10' LINE/30' SPACE/10' LINE)
- (D) 5" WHITE PUPPY TRACKS (2' LINE/6' SPACE/2' LINE)
- (E) 12" YELLOW HATCH MARKER (AT 30' SPACING)
- (F) 24" WHITE STOP BAR
- (G) 5" SOLID YELLOW LINE W/DASHED YELLOW LINE (10' LINE/30' SPACE/10' LINE)

LEGEND

- EXISTING 2' CONTOUR
- EXISTING 10' CONTOUR
- PROPOSED 2' CONTOUR
- PROPOSED 10' CONTOUR
- PROPERTY LINE AND RIGHT OF WAY
- STORM DRAIN
- EXISTING TREELINE
- PROPOSED TREELINE
- PROP. SPOT ELEVATION
- RIPRAP INFLOW PROTECTION
- SOIL LINES
- REMOVABLE PUMPING STATION
- LIMIT OF DISTURBANCE
- EARTH DIKE
- SUPER SILT FENCE
- SILT FENCE
- STABILIZED CONSTRUCTION ENTRANCE
- LIMIT OF WETLANDS
- DRAINAGE AREA DIVIDE

STRIPING PLAN FOR GATEWAY OVERLOOK DRIVE
NOTE: ALL NEW AND REVISED STRIPING TO BE THERMOPLASTIC.

GRADING, SEDIMENT CONTROL PLAN

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

 CHIEF, BUREAU OF HIGHWAYS 7/18/06
 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

 CHIEF, DIVISION OF LAND DEVELOPMENT 8/9/06
 DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION 8/16/06
 DATE

07/06/06 1 INCORPORATE ROAD R.O.W. PER PB CASE NO. 373; REVISE PARCEL DESIGNATIONS AND ADD EASEMENTS, ROAD NAME, EXTENDED ROAD & REVISE WATER LINE

DATE	NO.	REVISION
07/06/06	1	INCORPORATE ROAD R.O.W. PER PB CASE NO. 373; REVISE PARCEL DESIGNATIONS AND ADD EASEMENTS, ROAD NAME, EXTENDED ROAD & REVISE WATER LINE

OWNER / DEVELOPER
 HRD LAND HOLDINGS, INC.
 HOWARD RESEARCH AND DEVELOPMENT CORPORATION
 THE ROUSE BUILDING
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044
 410-992-6000

PROJECT **BENSON EAST**
 PARCELS A, E-G, J-M, P, R, T, U, NON-BUILDABLE PARCEL S (PRIVATE ROAD) AND OPEN SPACE PARCELS Q AND V
 AREA TAX MAP 37 & 43 ZONED - NEWTOWN
 PARCELS 482, 587, 382, 421, 547
 6th ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

TITLE **STRIPING PLAN FOR GATEWAY OVERLOOK DRIVE AND GRADING, SEDIMENT CONTROL PLAN**

Patton Harris Rust & Associates, pc
 Engineers, Surveyors, Planners, Landscape Architects.

 8818 Centre Park Drive
 Columbia, MD 21045
 T 410.997.8900
 F 410.997.9282

07/06/06
 DATE

DESIGNED BY: C.J.R.

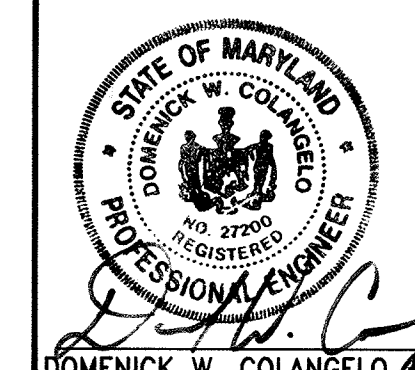
DRAWN BY: DAM

PROJECT NO: 11621/PRELIM RD20.DWG

DATE: AUGUST 18, 2005

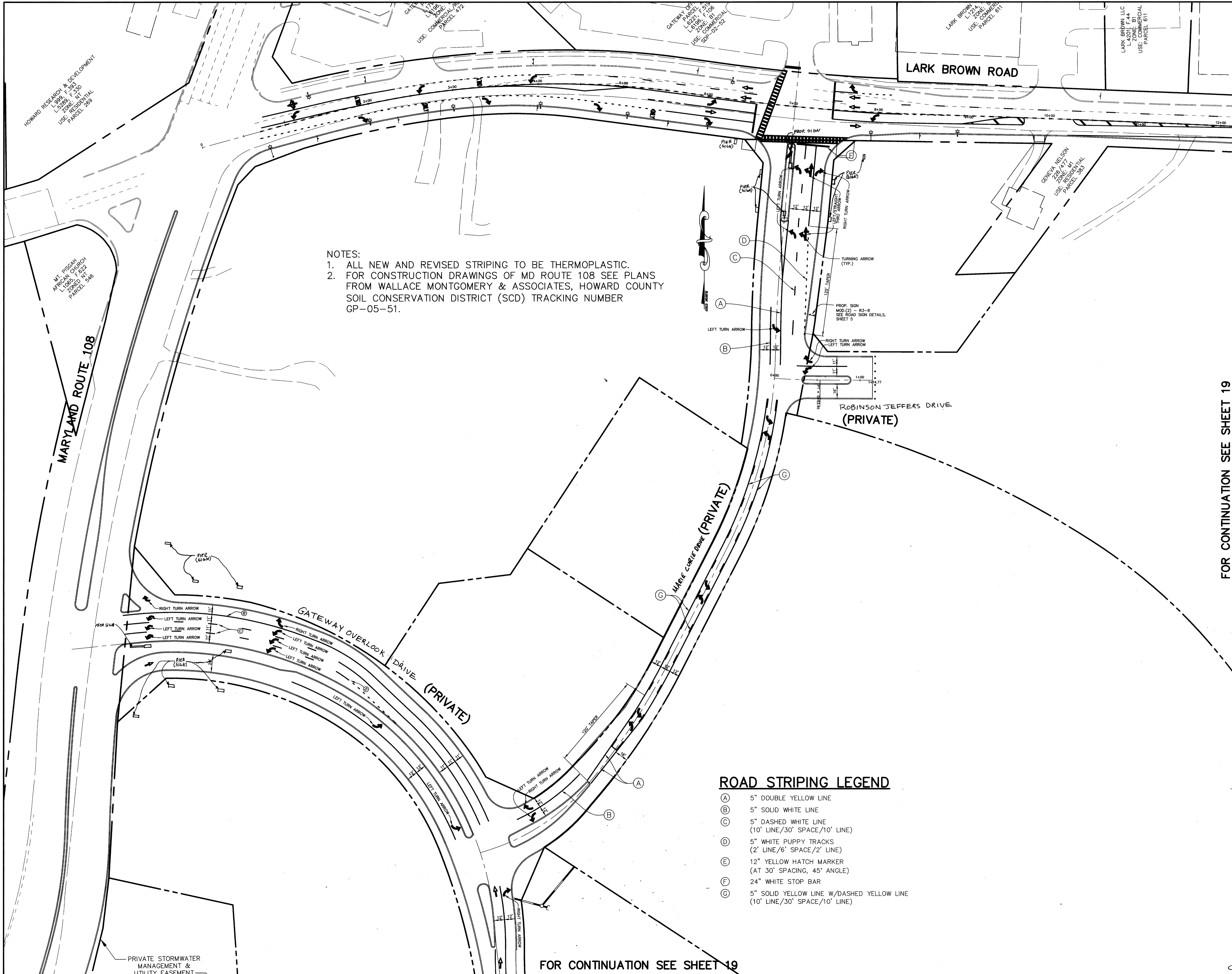
SCALE: AS SHOWN

DRAWING NO. 19 OF 25



DOMENICK W. COLANGELO 427200

P:\Project\11621\11621-1\05Eng\Plan\PRELIM\Roadway & Storm Drain\Revised\MTLARS\RD20.dwg, 7/6/2006 4:08:11 PM



NOTES:
 1. ALL NEW AND REVISED STRIPING TO BE THERMOPLASTIC.
 2. FOR CONSTRUCTION DRAWINGS OF MD ROUTE 108 SEE PLANS FROM WALLACE MONTGOMERY & ASSOCIATES, HOWARD COUNTY SOIL CONSERVATION DISTRICT (SCD) TRACKING NUMBER GP-05-51.

- ROAD STRIPING LEGEND**
- (A) 5" DOUBLE YELLOW LINE
 - (B) 5" SOLID WHITE LINE
 - (C) 5" DASHED WHITE LINE (10' LINE/30' SPACE/10' LINE)
 - (D) 5" WHITE PUPPY TRACKS (2' LINE/6' SPACE/2' LINE)
 - (E) 12" YELLOW HATCH MARKER (AT 30' SPACING, 45° ANGLE)
 - (F) 24" WHITE STOP BAR
 - (G) 5" SOLID YELLOW LINE W/DASHED YELLOW LINE (10' LINE/30' SPACE/10' LINE)

FOR CONTINUATION SEE SHEET 19

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.	
<i>Walter Z. ...</i>	9-19-05
CHIEF, BUREAU OF HIGHWAYS	DATE
APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.	
<i>...</i>	10/11/05
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
<i>...</i>	9/14/05
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
06/14/06	1 INCORPORATE ROAD R.O.W. PER PL CASE NO. 373; REVISE PARCEL DESIGNATIONS AND ADJUSTMENTS AND ROAD NAME
DATE	REVISION
OWNER / DEVELOPER HRD LAND HOLDINGS, INC. HOWARD RESEARCH AND DEVELOPMENT CORPORATION THE ROUSE BUILDING 10275 LITTLE PATUXENT PARKWAY COLUMBIA, MARYLAND 21044 410-992-6000	
PROJECT BENSON EAST PARCELS A, E, G, J, M, P, R, T, V NON-BUILDABLE PARCELS (PRIVATE ROAD) AND OPEN SPACE PARCELS Q AND V.	
AREA TAX MAP 37 & 43 ZONED - NEWTOWN PARCELS 482, 587, 382, 421, 547 6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND	
TITLE STRIPING PLAN FOR GATEWAY OVERLOOK DRIVE, MARIE CURIE DRIVE AND ROBINSON JEFFERS DRIVE	
Patton Harris Rust & Associates, pc Engineers, Surveyors, Planners, Landscape Architects. 8818 Centre Park Drive Columbia, MD 21045 T 410.997.8900 F 410.997.9282	
<i>...</i>	8-18-05
DATE	DESIGNED BY : C.J.R.
	DRAWN BY: DAM
	PROJECT NO : 11621/PRELIM RD19_DWG
	DATE : AUGUST 18, 2005
	SCALE : AS SHOWN
<i>...</i>	DRAWING NO. 18 OF 25

FOR CONTINUATION SEE SHEET 19

21.0 STANDARD AND SPECIFICATIONS FOR TOPSOIL

Placement of topsoil over a prepared subsoil prior to establishment of permanent vegetation. Purpose: To provide a suitable soil medium for vegetative growth. Conditions Where Practice Applies: 1. This practice is limited to areas having 2:1 or flatter slopes where...

STANDARD SEDIMENT CONTROL NOTES

- 1. A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (318-1898). 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 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO.

SEQUENCE OF CONSTRUCTION

- 1. ONCE SEDIMENT CONTROL DEVICES FROM SDP-04-163 ARE REMOVED AND/OR FUNCTIONING PER COUNTY SEDIMENT CONTROL INSPECTOR PROCEED WITH FINAL ROAD LAYOUT. 2. PERFORM GRADING FOR ROADS. INSTALL WATER, SEWER AND STORM DRAINS. (2 MONTHS)

CONSTRUCTION SPECIFICATIONS

- 1. THE SUBGRADE FOR THE FILTER, RIP-RAP, OR GABION SHALL BE PREPARED TO THE REQUIRED LINES AND GRADES. ANY FILL REQUIRED IN THE SUBGRADE SHALL BE COMPACTED TO A DENSITY OF APPROXIMATELY THAT OF THE SURROUNDING UNDISTURBED MATERIAL. 2. THE ROCK OR GRAVEL SHALL CONFORM TO THE SPECIFIED GRADING LIMITS WHEN INSTALLED RESPECTIVELY IN THE RIP-RAP OR FILTER.

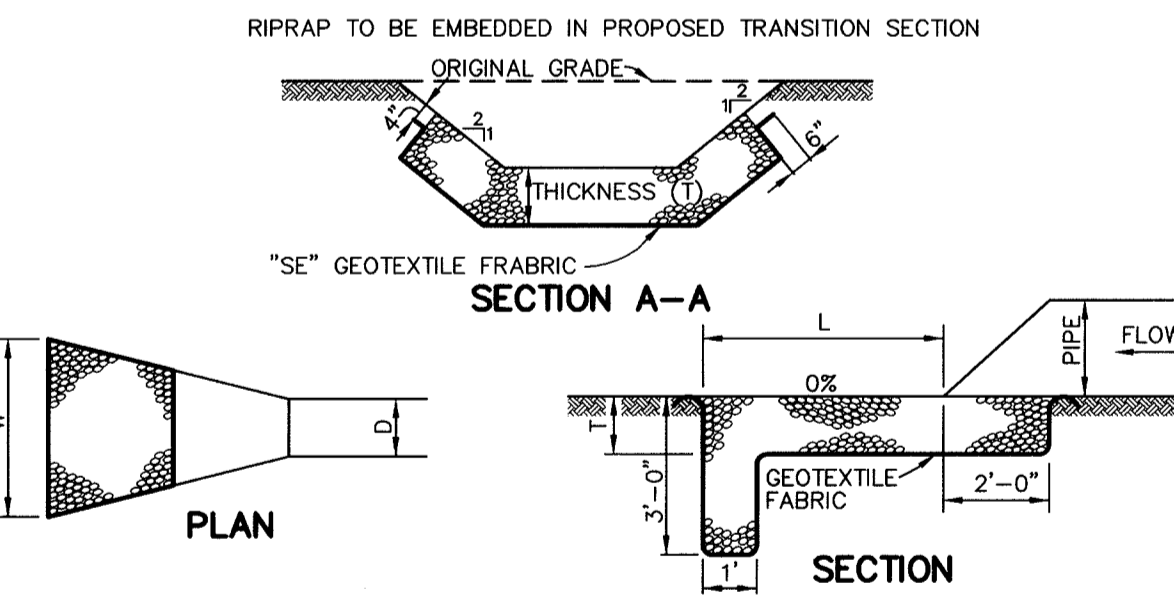


Table with 8 columns: STRUCTURE, MEDIAN STONE DIA. (L), LENGTH (L), WIDTH (W), THICKNESS (T), Q10, Vp, DEPTH. Rows include structures E-6 through E-14.

RIPRAP OUTLET PROTECTION DETAIL NO SCALE

STRUCTURE SCHEDULE

Table with columns: STRUCTURE, TYPE, LOCATION, INV. IN, INV. OUT, TOP, REMARKS. Lists structures 1-15 and M-1 through M-15 with their respective coordinates and elevations.

PIPE SCHEDULE

Table with columns: PIPE LENGTH, SIZE, TYPE. Lists pipe specifications for various structures.

BY THE DEVELOPER: 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...

BY THE ENGINEER: 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.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS. APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING. APPROVED: CHIEF, DEVELOPMENT ENGINEERING DIVISION

DATE 06/11/06 1 INCORPORATE ROAD ROW PER PB CASE NO 373; REVISE PARCEL DESIGNATIONS, REVISED STRUCTURE SCHEDULE AND ADD BASEMENTS AND ROAD NAME

OWNER / DEVELOPER: HRD LAND HOLDINGS, INC. HOWARD RESEARCH AND DEVELOPMENT CORPORATION THE ROUSE BUILDING 10275 LITTLE PATUXENT PARKWAY COLUMBIA, MARYLAND 21044

PROJECT: BENSON EAST PARCELS A, E-G, J-M, P, R, T, V. NON-BUILDABLE PARCELS 3 (PRIVATE ROAD) AND OPEN SPACE PARCELS AND V. AREA: TAX MAP 37 & 43 ZONED - NEWTOWN PARCELS 482, 587, 382, 421, 547

TITLE: NOTES AND DETAILS

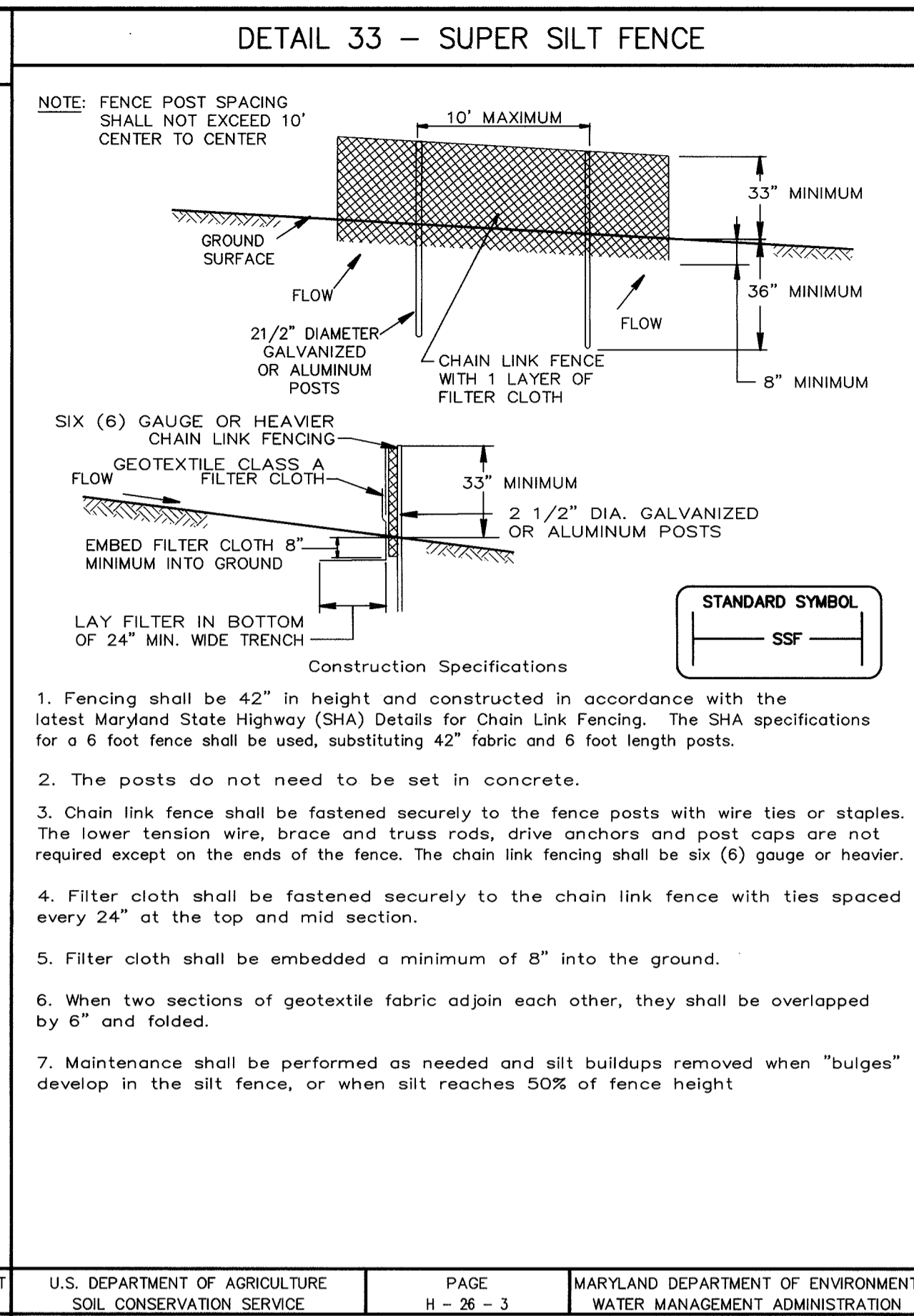
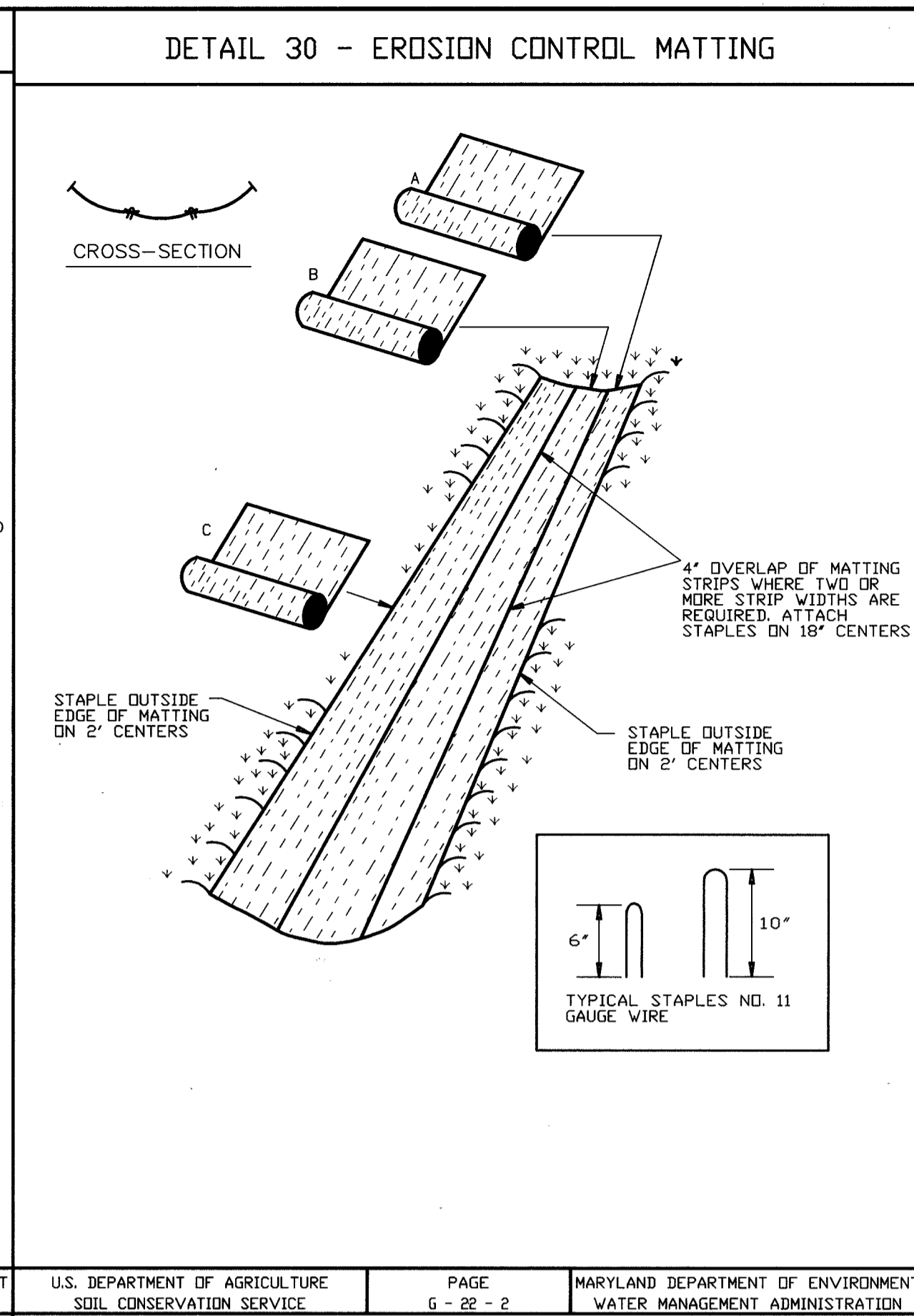
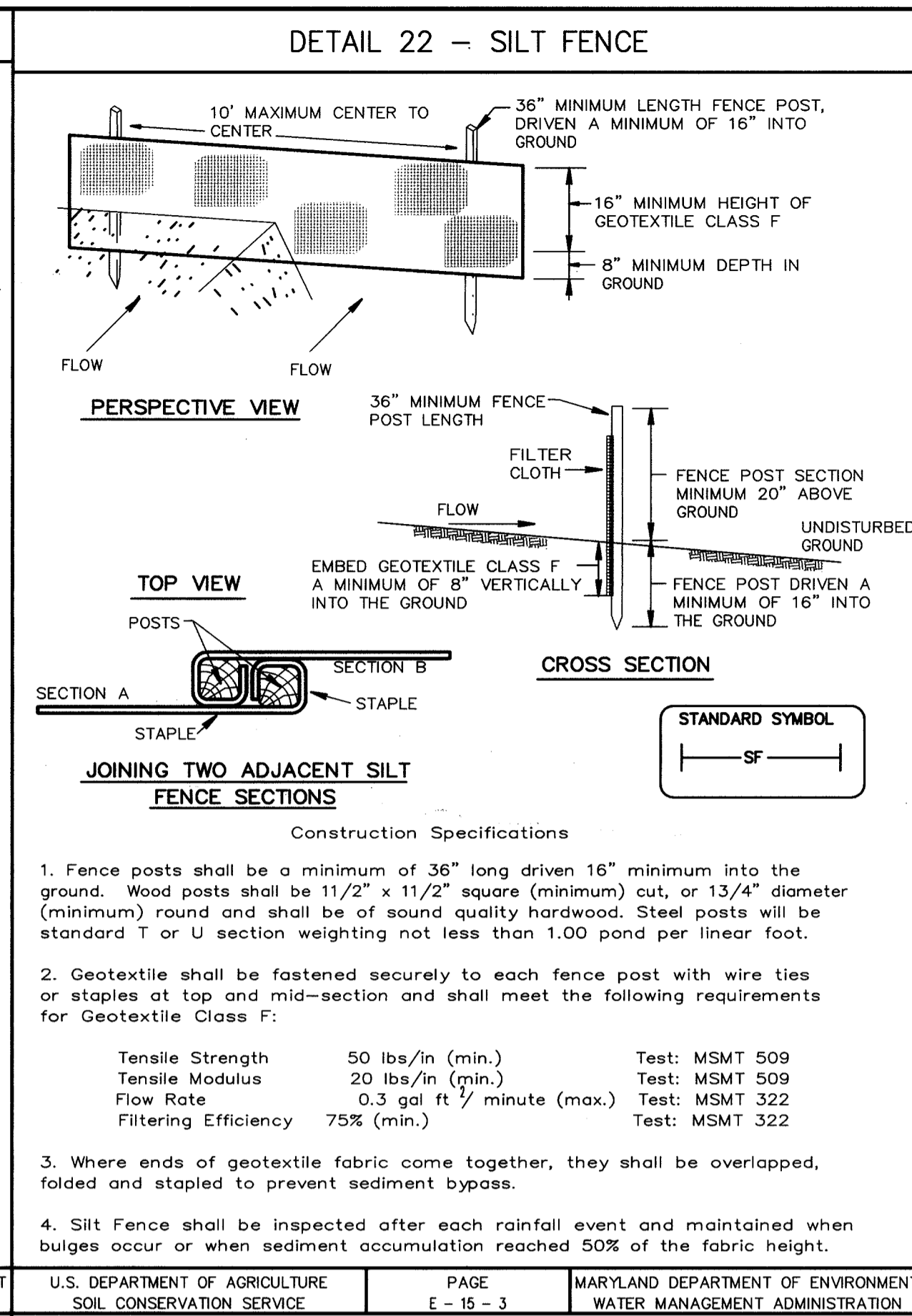
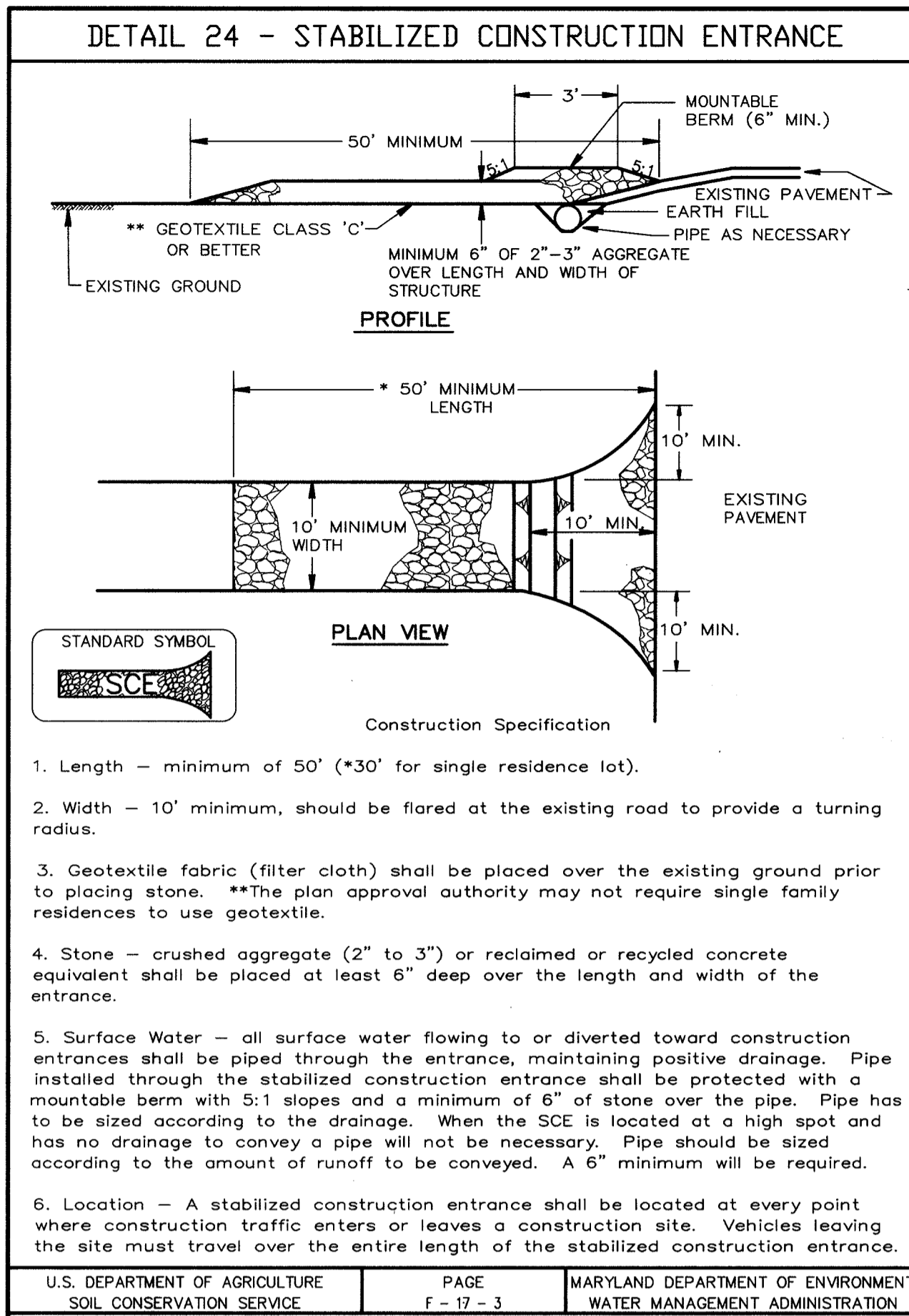
Patton Harris Rust & Associates, pc Engineers, Surveyors, Planners, Landscape Architects. 8818 Centre Park Drive Columbia, MD 21045 T 410.997.8900 F 410.997.9282 DESIGNED BY: C.J.R. DRAWN BY: DAM PROJECT NO. 11621/PRELIM RD11.DWG DATE: AUGUST 18, 2005 SCALE: AS SHOWN DRAWING NO. 17 OF 25

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

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. Soil Amendments: In lieu of soil test recommendations, use one of the following schedules: 1) Preferred - Apply 2 tons per acre dolomitic limestone (42 lbs. per 1000 sq. ft.) and 600 lbs. per acre 10-10-10 fertilizer (14 lbs. per 1000 sq. ft.) before seeding.

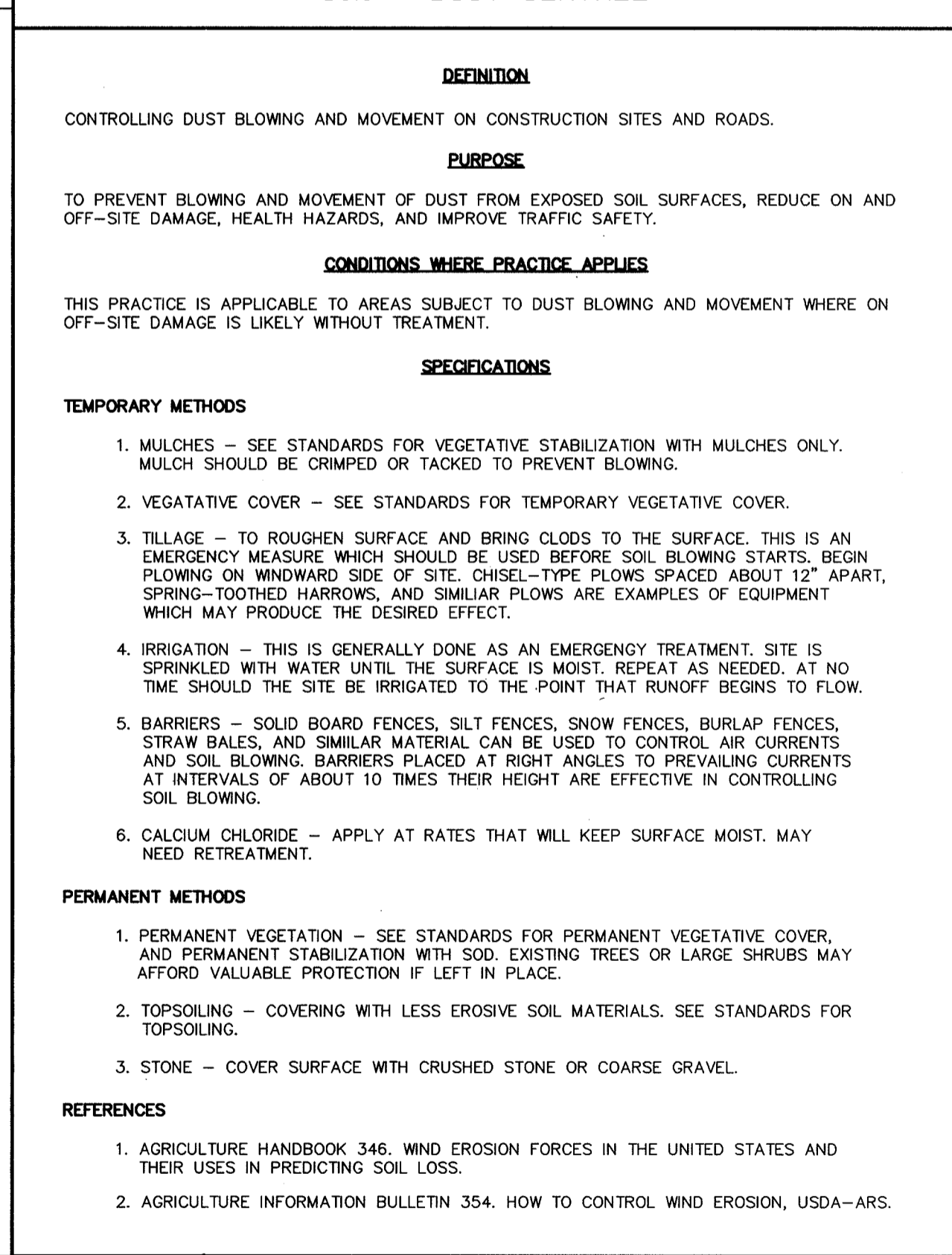
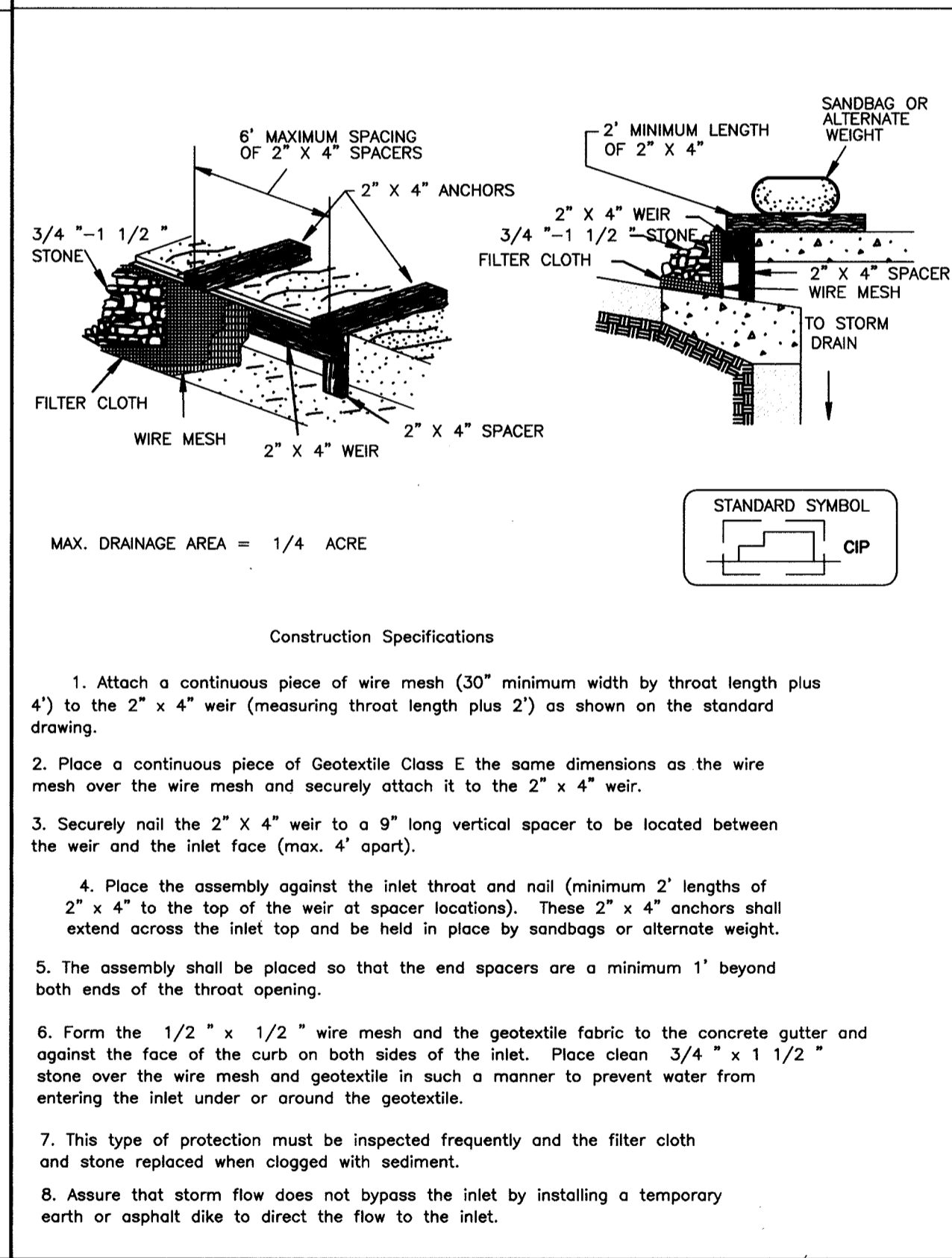
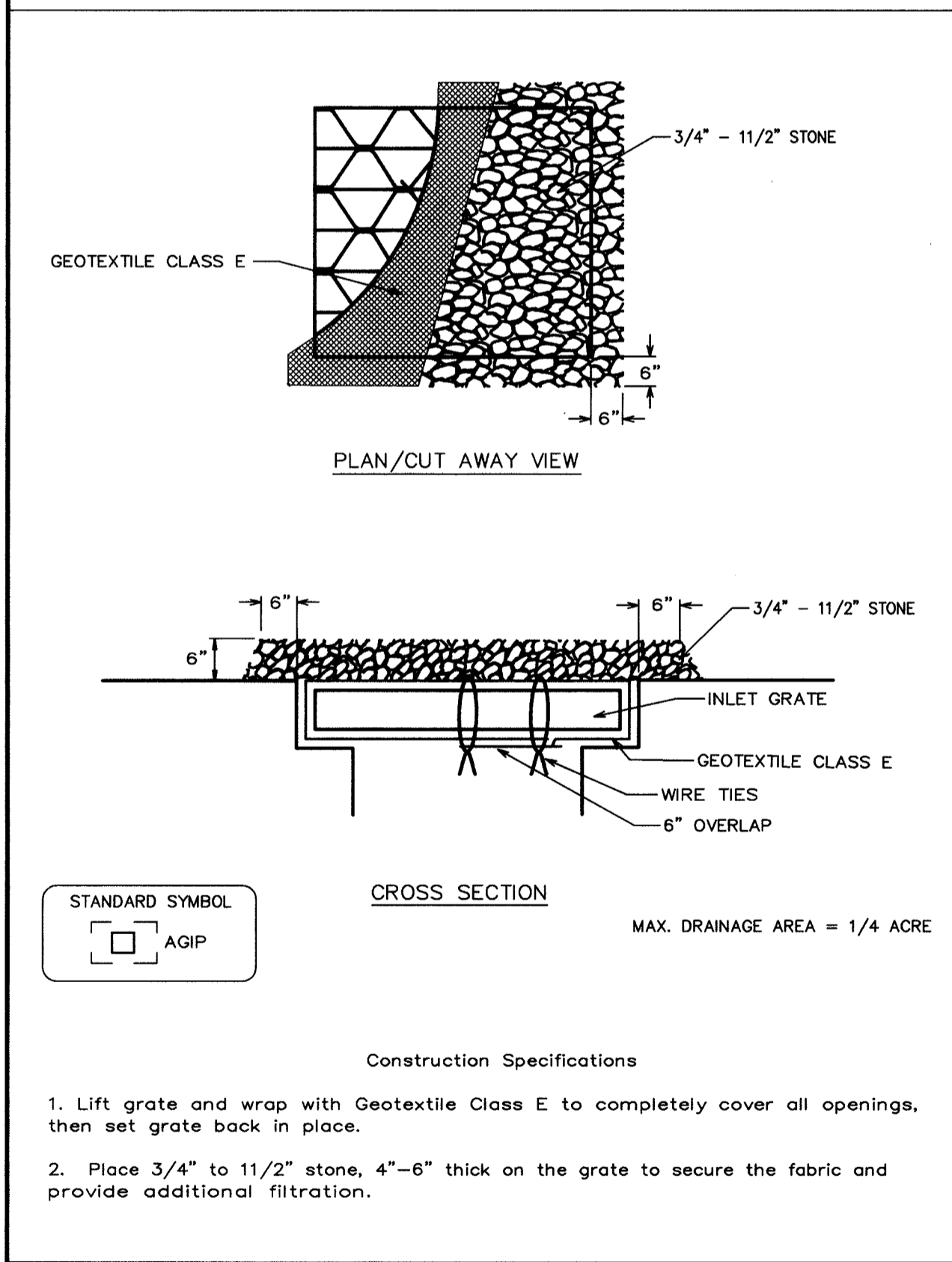


U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE F-17-3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE E-15-3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE G-22-2 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE H-26-3 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE E-16-5A MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE E-16-5B MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE H-30-1 MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

BY THE DEVELOPER:

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 INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

William J. White 8-18-05
DEVELOPER DATE

BY THE ENGINEER:

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.

Aimee C. Remington 8-18-05
ENGINEER DATE

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.

Jim Mays 9-6-05
NATURAL RESOURCES CONSERVATION SERVICE DATE

John L. Roberts 9-6-05
HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

William J. White 9-19-05
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Wanda Thomas 10/11/05
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION 9-20 9/20/05 DATE

09/14/06 1 INCORPORATE ROAD ROW PER PB CASE NO. 373; REVISE PARCEL DESIGNATIONS AND ADD EASEMENTS AND ROAD NAME

DATE	NO.	REVISION

OWNER / DEVELOPER
HRD LAND HOLDINGS, INC.
HOWARD RESEARCH AND DEVELOPMENT CORPORATION
THE ROUSE BUILDING
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
410-992-6000

PROJECT **BENSON EAST**
PARCELS A, E-G, J-M, P, R, T, U, NON-BUILDABLE PARCEL S (PRIVATE ROAD) AND OPEN SPACE PARCELS Q AND V

AREA TAX MAP 37 & 43 ZONED - NEWTOWN
PARCELS 482, 587, 382, 421, 547
6th ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE **SEDIMENT CONTROL DETAILS**

Patton Harris Rust & Associates, pc
Engineers, Surveyors, Planners, Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

8-18-05
DATE

DESIGNED BY: C.J.R.

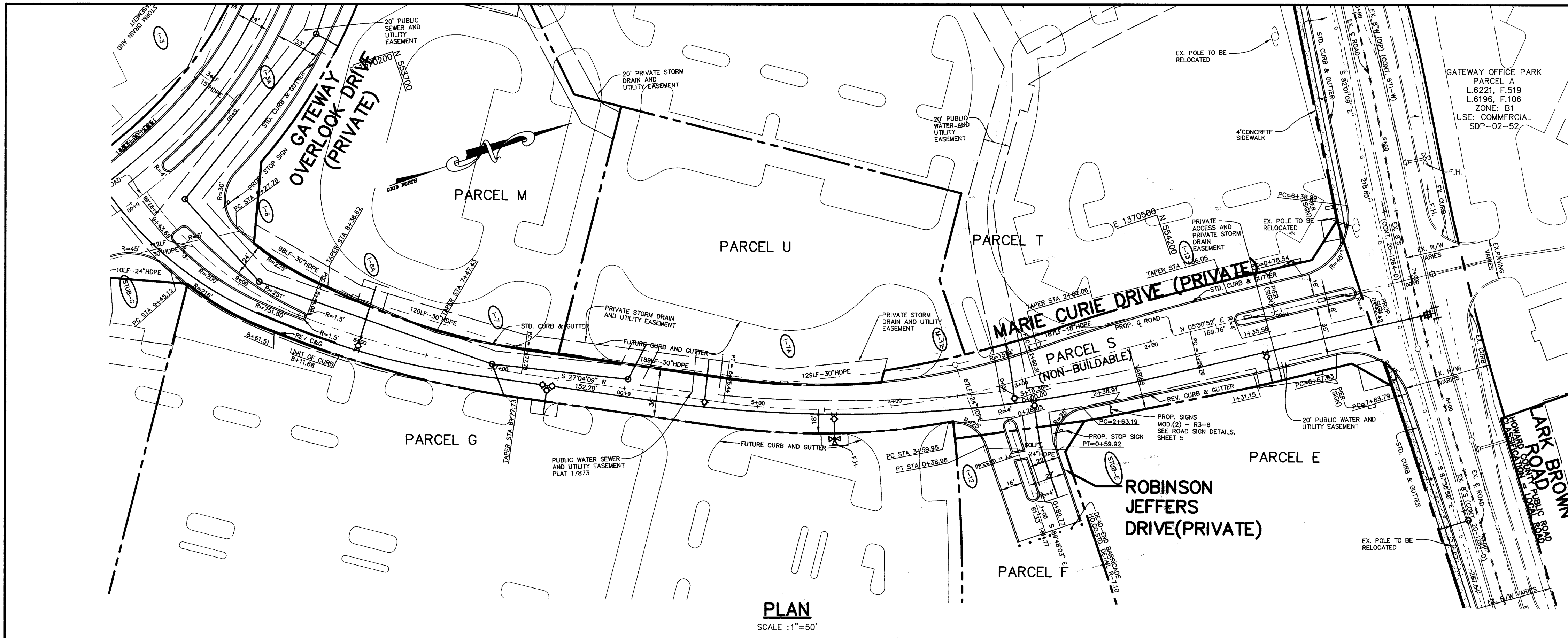
DRAWN BY: DAM

PROJECT NO.: 11621/PRELIM RD17.DWG

DATE: AUGUST 18, 2005

SCALE: AS SHOWN

Aimee C. Remington 8-18-05
AIMEE C. REMINGTON #39923
DRAWING NO. 16 OF 25



CL ROAD B CURVE DATA
FROM CL STA 1+69.76 TO STA 2+90.31
RADIUS = 1500.00'
LENGTH = 120.55'
TANGENT = 60.31'
DELTA = 04° 36'17"
CHORD = S 03° 12'44"W 120.52'

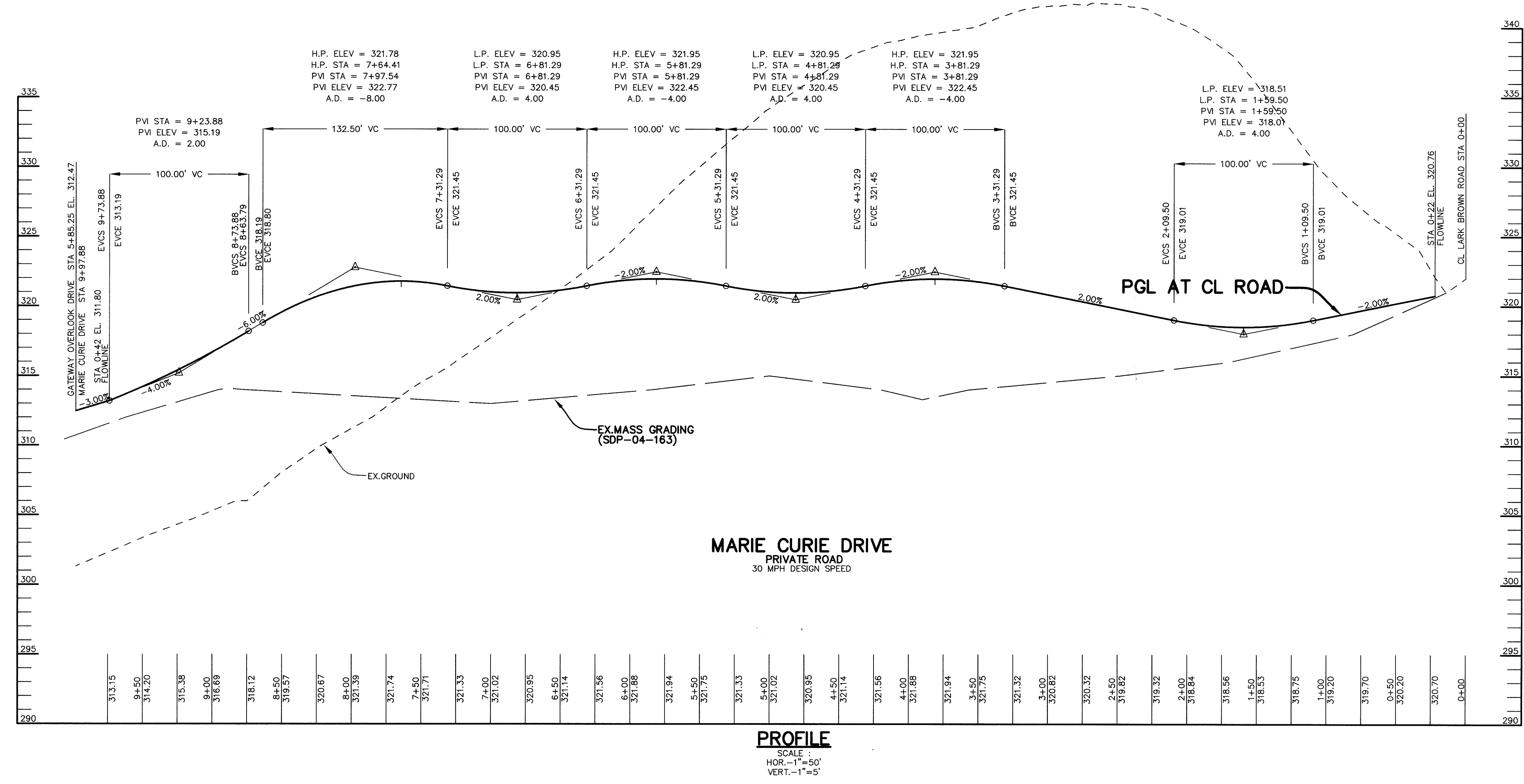
CL ROAD D CURVE DATA
FROM CL STA 0+00.00 TO STA 0+53.45
RADIUS = 800.00'
LENGTH = 53.45'
TANGENT = 26.73'
DELTA = 03° 49'40"
CHORD = S 87° 53'13"E 53.44'

CL ROAD B CURVE DATA
FROM CL STA 2+90.31 TO STA 5+25.44
RADIUS = 515.00'
LENGTH = 235.13'
TANGENT = 119.65'
DELTA = 26° 09'34"
CHORD = S 13° 59'22"W 233.10'

CL ROAD B CURVE DATA
FROM CL STA 6+77.73 TO STA 8+44.08
RADIUS = 750.00'
LENGTH = 166.34'
TANGENT = 83.51'
DELTA = 12° 42'27"
CHORD = N 33° 25'22"E 166.00'

CL ROAD B CURVE DATA
FROM CL STA 8+44.08 TO STA 9+97.88
RADIUS = 250.00'
LENGTH = 139.80'
TANGENT = 71.78'
DELTA = 32° 02'21"
CHORD = S 55° 47'47"W 137.98'

NOTE: STORM DRAINS UNDER PRIVATE ROADS BENSON EAST DRIVE AND PRIVATE ROAD B SHALL BE PRIVATELY OWNED AND MAINTAINED.



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
[Signature]
 CHIEF, BUREAU OF HIGHWAYS 2/6/06 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.
[Signature] 8/18/05 DATE
 CHIEF, DIVISION OF LAND DEVELOPMENT

[Signature] 8/18/05 DATE
 CHIEF, DEVELOPMENT ENGINEERING DIVISION

07/06/06	1	INCORPORATE ROAD R.O.W. PER PB CASE NO. 373; REVISE PARCEL DESIGNATIONS AND ADD EASEMENTS, ROAD NAME, ROAD PROFILES & STORM SEWER
DATE	NO.	REVISION

OWNER / DEVELOPER
 HRD LAND HOLDINGS, INC.
 HOWARD RESEARCH AND DEVELOPMENT CORPORATION
 THE ROUSE BUILDING
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044
 410-992-6000

PROJECT
BENSON EAST
 PARCELS A, E-G, I-W, P, R, T, U, NON-BUILDABLE PARCEL S (PRIVATE ROAD) AND OPEN SPACE PARCELS Q AND V

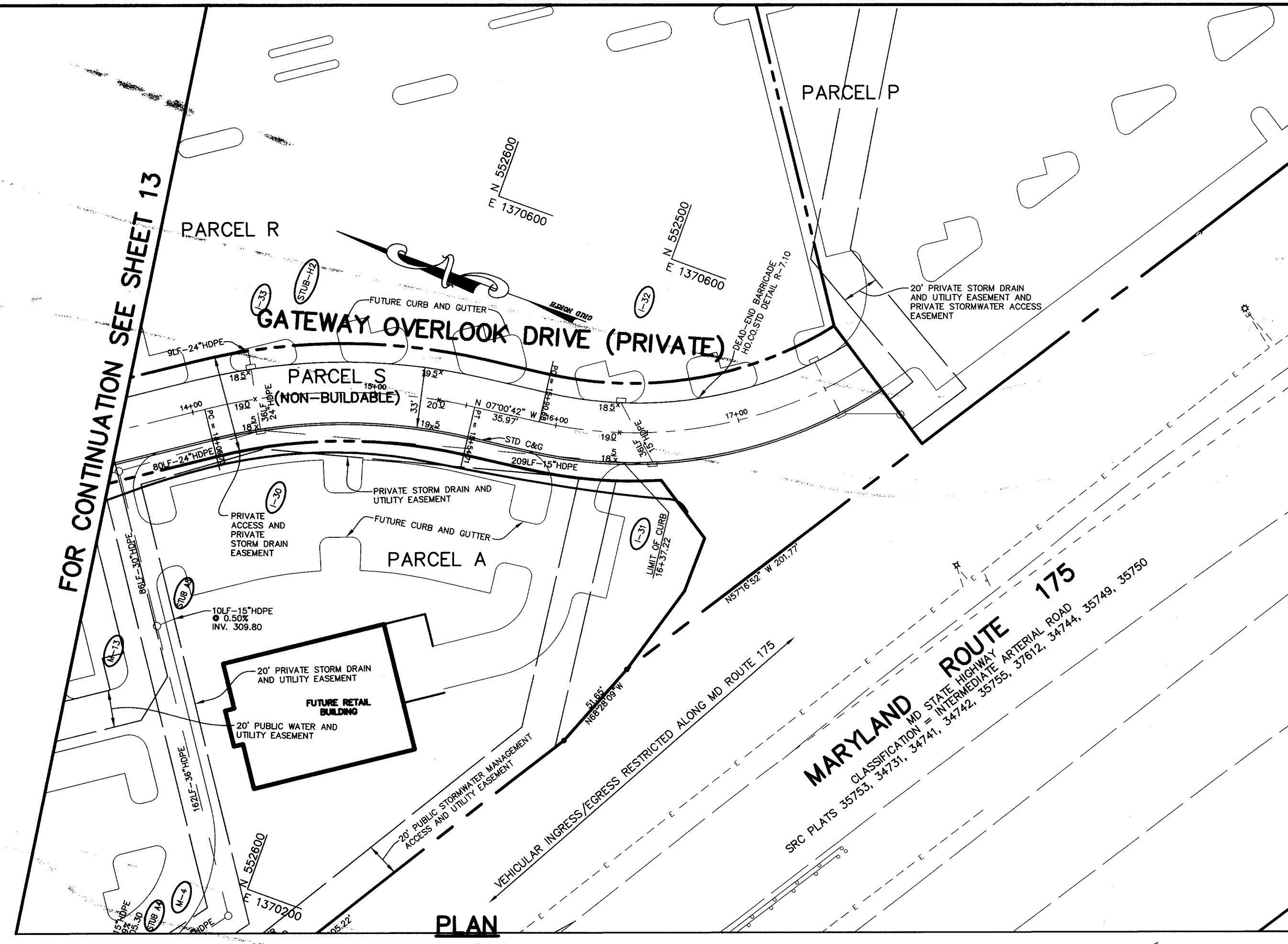
AREA
 TAX MAP 37 & 43 ZONED - NEWTOWN
 PARCELS 482, 587, 382, 421, 547
 6th ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

TITLE
PLAN AND PROFILE OF MARIE CURIE DRIVE FROM STA 0+00 TO 9+88

Patton Harris Rust & Associates, p.c.
 Engineers, Surveyors, Planners, Landscape Architects.
 8818 Centre Park Drive
 Columbia, MD 21045
 T 410.997.8900
 F 410.997.9282

[Signature] 07/06/06 DATE
 DOMENICK W. COLANGELO #27200

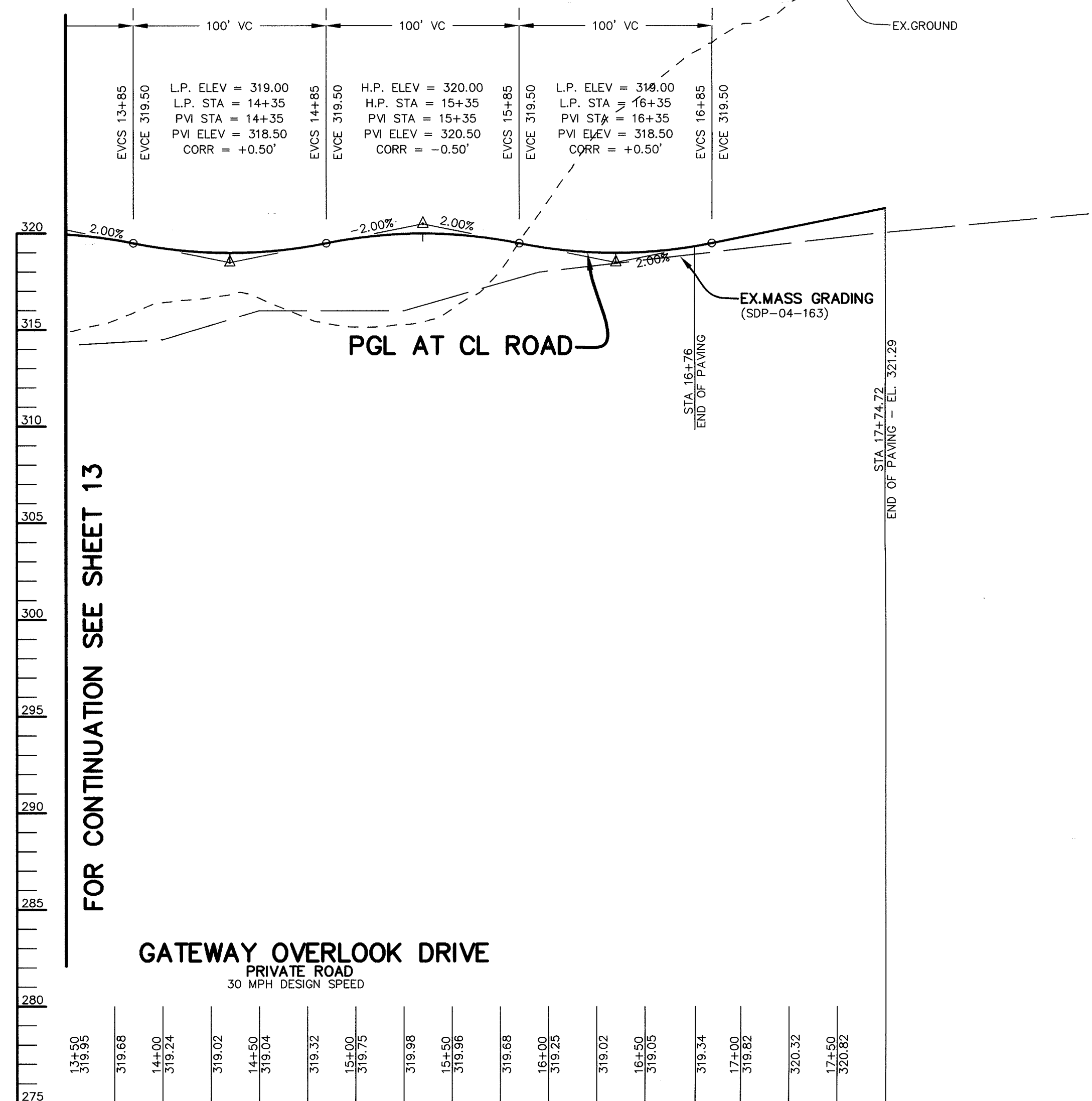
DESIGNED BY: C.J.R.
DRAWN BY: DAM
PROJECT NO.: 11621/PRELIM RD16.DWG
DATE: AUGUST 18, 2005
SCALE: AS SHOWN
DRAWING NO. 15 OF 25



CL CURVE DATA
 FROM CL STA 14+06.73 TO STA 15+54.71
 RADIUS = 316.50'
 LENGTH = 147.98'
 TANGENT = 75.37'
 DELTA = 26° 47'19"
 CHORD = S 20° 24'22"E 146.64'

CL CURVE DATA
 FROM CL STA 15+90.68 TO STA 16+76.01
 RADIUS = 233.50'
 LENGTH = 85.33'
 TANGENT = 43.15'
 DELTA = 20° 56'20"
 CHORD = N 17° 28'52"W 84.86'

NOTE: STORM DRAINS UNDER PRIVATE ROADS GATEWAY OVERLOOK DRIVE AND PRIVATE MARIE CURIE DRIVE SHALL BE PRIVATELY OWNED AND MAINTAINED.



APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
Howard (Signature)
 CHIEF, BUREAU OF HIGHWAYS 2/25/06 DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.
Howard (Signature)
 CHIEF, DIVISION OF LAND DEVELOPMENT 8/9/05 DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF ENGINEERING DIVISION.
Howard (Signature)
 CHIEF, DEVELOPMENT ENGINEERING DIVISION 8/2/05 DATE

07/06/06 1 INCORPORATE ROAD R.O.W. PER PB CASE NO. 373; REVISE PARCEL DESIGNATIONS AND ADD EASEMENTS, ROAD NAME, EXTENDED ROAD AND PROFILE

DATE	NO.	REVISION

OWNER / DEVELOPER
 HRD LAND HOLDINGS, INC.
 HOWARD RESEARCH AND DEVELOPMENT CORPORATION
 THE ROUSE BUILDING
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044
 410-992-6000

PROJECT
BENSON EAST
 PARCELS A, E-G, J-M, P, R, T, U, NON-BUILDABLE PARCELS S (PRIVATE ROAD) AND OPEN SPACE PARCELS Q AND V

AREA
 TAX MAP 37 & 43 ZONED - NEWTOWN
 PARCELS 482, 587, 382, 421, 547
 6th ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

TITLE
PLAN AND PROFILE OF GATEWAY OVERLOOK DRIVE FROM STA 13+50 TO 18+81

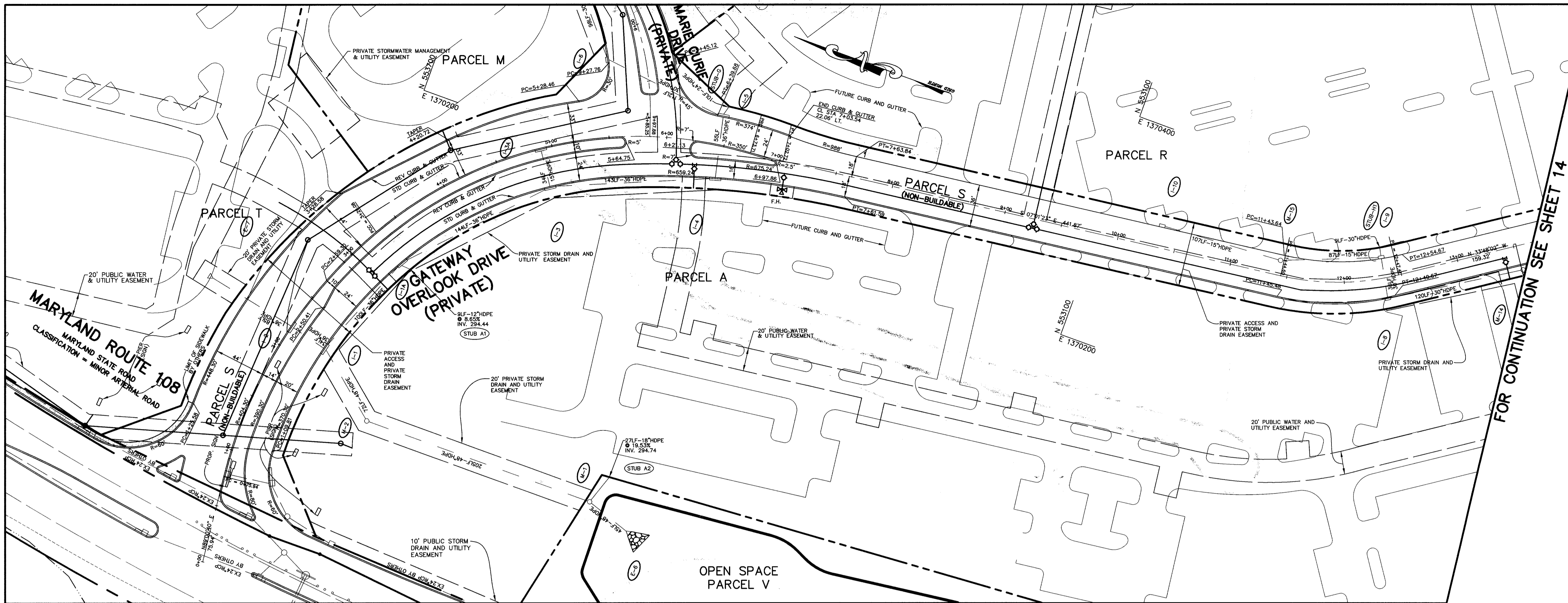
Patton Harris Rust & Associates, pc
 Engineers. Surveyors. Planners. Landscape Architects.
 8818 Centre Park Drive
 Columbia, MD 21045
 T 410.997.8900
 F 410.997.9282

PHRA

DATE: 8/2/06
 DESIGNED BY : C.J.R.
 DRAWN BY: DAM
 PROJECT NO : 11621/PRELIM RD15.DWG
 DATE : AUGUST 18, 2005
 SCALE : AS SHOWN
 DRAWING NO. 14 OF 25

DOMENICK W. COLANGELO #27200

P:\Project\11621-01\Eng\Plan\PRELIM\Roadway & Storm Drain\Regline.MXD\ASRD15.dwg, 7/6/2006 4:08:32 PM



CL CURVE DATA
 FROM CL STA 0+75.94 TO STA 3+29.08
 RADIUS = 404.30'
 LENGTH = 253.14'
 TANGENT = 130.87'
 DELTA = 35° 52' 26"
 CHORD = N 78° 03' 07" W 249.02'

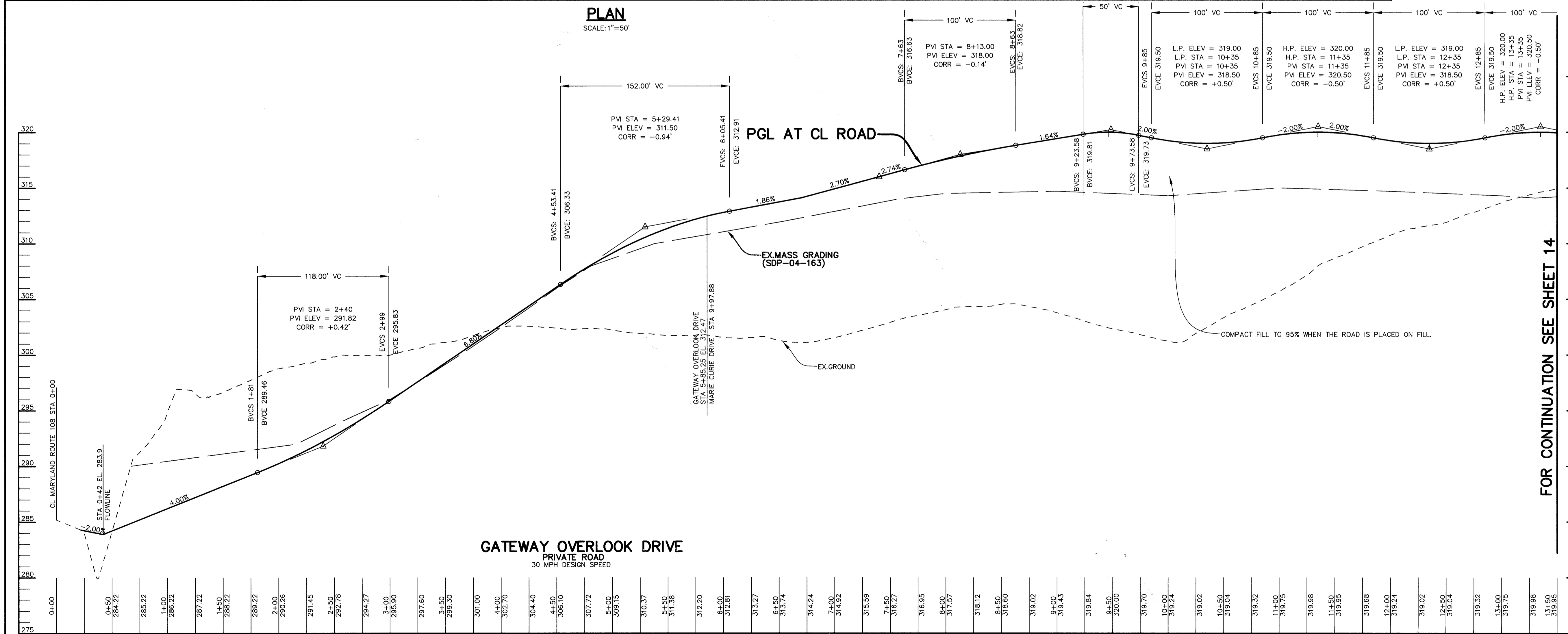
CL CURVE DATA
 FROM CL STA 3+29.08 TO STA 6+73.71
 RADIUS = 350.00'
 LENGTH = 344.63'
 TANGENT = 187.73'
 DELTA = 56° 25' 00"
 CHORD = S 31° 54' 23" E 330.88'

CL CURVE DATA
 FROM CL STA 6+73.71 TO STA 7+02.72
 RADIUS = 500.00'
 LENGTH = 29.01'
 TANGENT = 14.51'
 DELTA = 03° 19' 31"
 CHORD = N 05° 21' 38" W 29.01'

CL CURVE DATA
 FROM CL STA 11+44.60 TO STA 12+47.41
 RADIUS = 220.00'
 LENGTH = 102.82'
 TANGENT = 52.37'
 DELTA = 26° 46' 38"
 CHORD = N 20° 24' 43" W 101.88'

- NOTES:
- STORM DRAINS UNDER PRIVATE ROADS GATEWAY OVERLOOK DRIVE AND MARIE CURIE DRIVE SHALL BE PRIVATELY OWNED AND MAINTAINED.
 - PARCEL V (OPEN SPACE) TO BE OWNED BY HRD LAND HOLDINGS, INC..

PLAN
 SCALE: 1"=50'



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

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
 M. D. P. (signature) 7/26/06
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.
 C. H. (signature) 8/9/06
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF ENGINEERING.
 J. P. (signature) 8/15/06
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

DATE	NO.	REVISION
07/06/06	1	INCORPORATE ROAD R.O.W. PER PB CASE NO. 373; REVISE PARCEL DESIGNATIONS AND ADD EASEMENTS AND ROAD NAME

OWNER / DEVELOPER
 HRD LAND HOLDINGS, INC.
 HOWARD RESEARCH AND DEVELOPMENT CORPORATION
 THE ROUSE BUILDING
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044
 410-992-6000

PROJECT
BENSON EAST
 PARCELS A, E-G, J-M, P, R, T, U, NON-BUILDABLE PARCEL S (PRIVATE ROAD) AND OPEN SPACE PARCELS Q AND V

AREA
 TAX MAP 37 & 43 ZONED - NEWTOWN
 PARCELS 482, 587, 382, 421, 547
 6th ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

TITLE
PLAN AND PROFILE OF GATEWAY OVERLOOK DRIVE FROM STA 0+00 TO 13+50

Patton Harris Rust & Associates, p.c.
 Engineers, Surveyors, Planners, Landscape Architects.
 8818 Centre Park Drive
 Columbia, MD 21045
 T 410.997.8900
 F 410.997.9282

07/06/06
 DATE

DESIGNED BY: C.J.R.
 DRAWN BY: DAM
 PROJECT NO.: 11621/PRELIM RD14.DWG
 DATE: AUGUST 18, 2005
 SCALE: AS SHOWN
 DRAWING NO. 13 OF 25

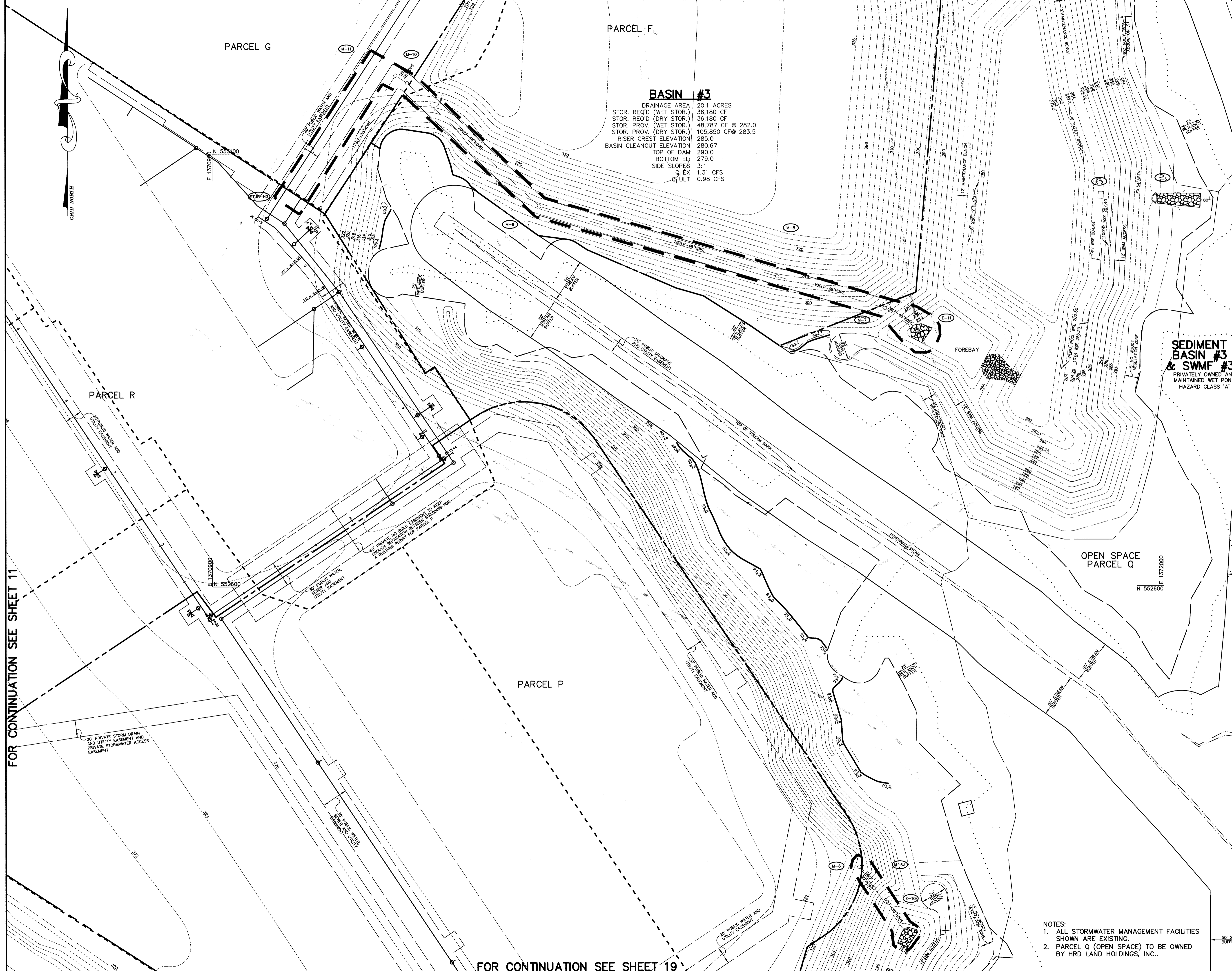
DOMENICK W. COLANGELO #27200
 PROFESSIONAL ENGINEER

FOR CONTINUATION SEE SHEET 14

FOR CONTINUATION SEE SHEET 14

FOR CONTINUATION SEE SHEET 8

FOR CONTINUATION SEE SHEET 9



BASIN #3

DRAINAGE AREA 20.1 ACRES
 STOR. REQ'D (WET STOR.) 36,180 CF
 STOR. REQ'D (DRY STOR.) 36,180 CF
 STOR. PROV. (WET STOR.) 48,787 CF @ 282.0
 STOR. PROV. (DRY STOR.) 105,850 CF @ 283.5
 RISER CREST ELEVATION 285.0
 BASIN CLEANOUT ELEVATION 280.67
 TOP OF DAM 290.0
 BOTTOM EL. 279.0
 SIDE SLOPES 3:1
 Q_{EX} 1.31 CFS
 Q_{ULT} 0.98 CFS

SEDIMENT BASIN #3 & SWMF #3
 PRIVATELY OWNED AND MAINTAINED WET POND HAZARD CLASS 'A'

LEGEND

EXISTING 2' CONTOUR	---
EXISTING 10' CONTOUR	---
PROPOSED 2' CONTOUR	---
PROPOSED 10' CONTOUR	---
PROPERTY LINE AND RIGHT OF WAY	---
STORM DRAIN	---
EXISTING TREELINE	---
PROPOSED TREELINE	---
PROP. SPOT ELEVATION	---
RIPRAP INFLOW PROTECTION	---
SOIL LINES	---
REMOVABLE PUMPING STATION	---
LIMIT OF DISTURBANCE	---
EARTH DIRT	---
SUPER SILT FENCE	---
SILT FENCE	---
STABILIZED CONSTRUCTION ENTRANCE	---
LIMIT OF WETLANDS	---
DRAINAGE AREA DIVIDE	---

BY THE DEVELOPER :

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 ACCOSION BEFORE BEGINNING THE PROJECT. I ALSO AUTHORIZE PERIODIC ON-SITE INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

Paul G. Colangelo 7/1/06
 DEVELOPER DATE

BY THE ENGINEER :

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.

D. W. Coll 07/06/06
 ENGINEER DATE

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.

Jim Meyer 7/17/06
 NATURAL RESOURCES CONSERVATION SERVICE DATE

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

John K. Hester 7/17/06
 HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

Mark D. Costantini 7/28/06
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

John M. ... 8/9/06
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

John P. ... 8/8/06
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

07/06/06 1 INCORPORATE ROAD R.O.W. PER PB CASE NO. 373; REVISE PARCEL DESIGNATIONS AND ADD EASEMENTS, ROAD NAME, REV. WATER AND SEWER LINES

OWNER / DEVELOPER
 HRD LAND HOLDINGS, INC.
 HOWARD RESEARCH AND DEVELOPMENT CORPORATION
 THE ROUSE BUILDING
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044
 410-992-6000

PROJECT **BENSON EAST**
 PARCELS A, E-G, J-M, P, R, T, U, NON-BUILDABLE PARCEL S (PRIVATE ROAD) AND OPEN SPACE PARCELS Q AND V

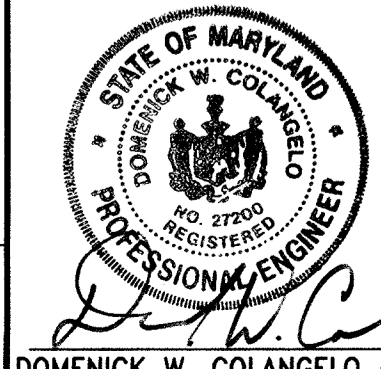
AREA TAX MAP 37 & 43 ZONED - NEWTOWN
 PARCELS 482, 587, 382, 421, 547
 6th ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

TITLE **GRADING AND SEDIMENT CONTROL PLAN AND DRAINAGE AREA MAP**

Patton Harris Rust & Associates, pc
 Engineers, Surveyors, Planners, Landscape Architects.
 8818 Centre Park Drive
 Columbia, MD 21045
 T 410.997.8900
 F 410.997.9282

07/06/06
 DATE

DESIGNED BY : C.J.R.
 DRAWN BY : DAM
 PROJECT NO : 11621/PRELIM RD13.DWG
 DATE : AUGUST 18, 2005
 SCALE : 1" = 50'
 DRAWING NO. 12 OF 25



NOTES:
 1. ALL STORMWATER MANAGEMENT FACILITIES SHOWN ARE EXISTING.
 2. PARCEL Q (OPEN SPACE) TO BE OWNED BY HRD LAND HOLDINGS, INC..

FOR CONTINUATION SEE SHEET 11

FOR CONTINUATION SEE SHEET 19

FOR CONTINUATION SEE SHEET 8

LEGEND	
EXISTING 2' CONTOUR	300
EXISTING 10' CONTOUR	300
PROPOSED 2' CONTOUR	300
PROPOSED 10' CONTOUR	300
PROPERTY LINE AND RIGHT OF WAY	15'0"
STORM DRAIN	
EXISTING TREELINE	
PROPOSED TREELINE	
PROP. SPOT ELEVATION	13.2
RIPRAP INFLOW PROTECTION	
SOIL LINES	
REMOVABLE PUMPING STATION	
LIMIT OF DISTURBANCE	
EARTH DIKE	
SILT FENCE	SS7
SUPER SILT FENCE	SS7
STABILIZED CONSTRUCTION ENTRANCE	
LIMIT OF WETLANDS	
DRAINAGE AREA DIVIDE	

BY THE DEVELOPER :

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 INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

Paul G. Caranavage 7/7/06
DEVELOPER DATE

BY THE ENGINEER :

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.

Scott W. Cuffe 07/06/06
ENGINEER DATE

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.

Jim Meyer 7/16/06
NATURAL RESOURCES CONSERVATION SERVICE DATE

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

John R. Bruto 7/16/06
HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

Michael (Arthur) ... 7-28-06
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Cindy ... 8/9/06
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

... 8/9/06
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

07/06/06 | 1 | INCORPORATE ROAD R.O.W. PER PB CASE NO. 373; REVISE

DATE NO. REVISION

OWNER / DEVELOPER
HRD LAND HOLDINGS, INC.
HOWARD RESEARCH AND DEVELOPMENT CORPORATION
THE ROUSE BUILDING
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
410-992-6000

PROJECT
BENSON EAST
PARCELS A, E-G, J-M, P, R, T, U, NON-BUILDABLE PARCELS S (PRIVATE ROAD) AND OPEN SPACE PARCELS Q AND V

AREA TAX MAP 37 & 43 ZONED - NEWTOWN
PARCELS 482, 587, 382, 421, 547
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE
GRADING AND SEDIMENT CONTROL PLAN AND DRAINAGE AREA MAP

Patton Harris Rust & Associates, pc
Engineers, Surveyors, Planners, Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

... 07/06/06
DATE

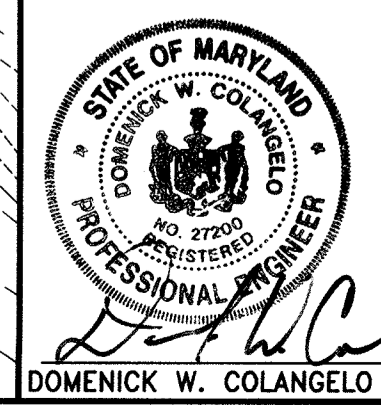
DESIGNED BY : C.J.R.

DRAWN BY: DAM

PROJECT NO : 11621/PRELIM RD12.DWG

DATE : AUGUST 18, 2005

SCALE : 1" = 50'
DRAWING NO. 11 OF 25



F-05-058

FOR CONTINUATION SEE SHEET 12

PARCEL R

BASIN #1

- DRAINAGE AREA 44.0 ACRES
- STOR. REQ'D (WET STOR.) 79,200 CF
- STOR. REQ'D (DRY STOR.) 79,200 CF
- STOR. PROV. (WET STOR.) 87,990 CF @ 284.00
- STOR. PROV. (DRY STOR.) 196,890 CF @ 286.00
- RISER CREST ELEVATION 288.12
- BASIN CLEANOUT ELEVATION 282.00
- TOP OF DAM 294.1
- BOTTOM EL. 280.0
- SIDE SLOPES 3:1
- Q₁ EX 3.82 CFS
- Q₁ PR 3.27 CFS

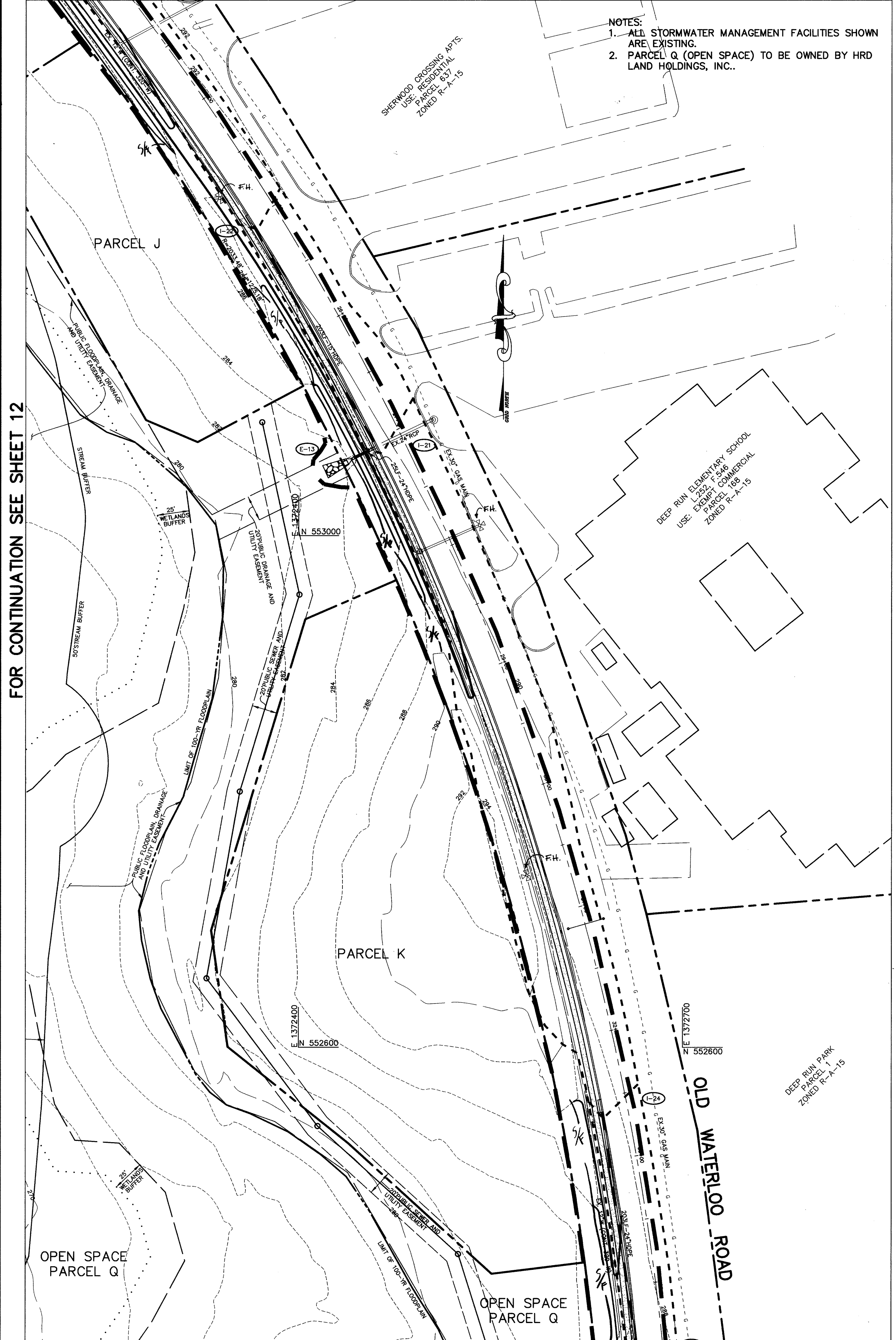
EXISTING SEDIMENT BASIN #1 & SWMF #1

WET POND
HAZARD CLASS 'A'
SDP-04-163

- NOTES:
- ALL STORMWATER MANAGEMENT FACILITIES SHOWN ARE EXISTING.
 - PARCEL V (OPEN SPACE) TO BE OWNED BY HRD LAND HOLDINGS, INC.

P:\Project\11621-01\Eng\Plans\PRELIM\Roadway & Storm Drain\Revised\11621-01.dwg, 7/6/2006 3:48:03 PM

FOR CONTINUATION SEE SHEET 9

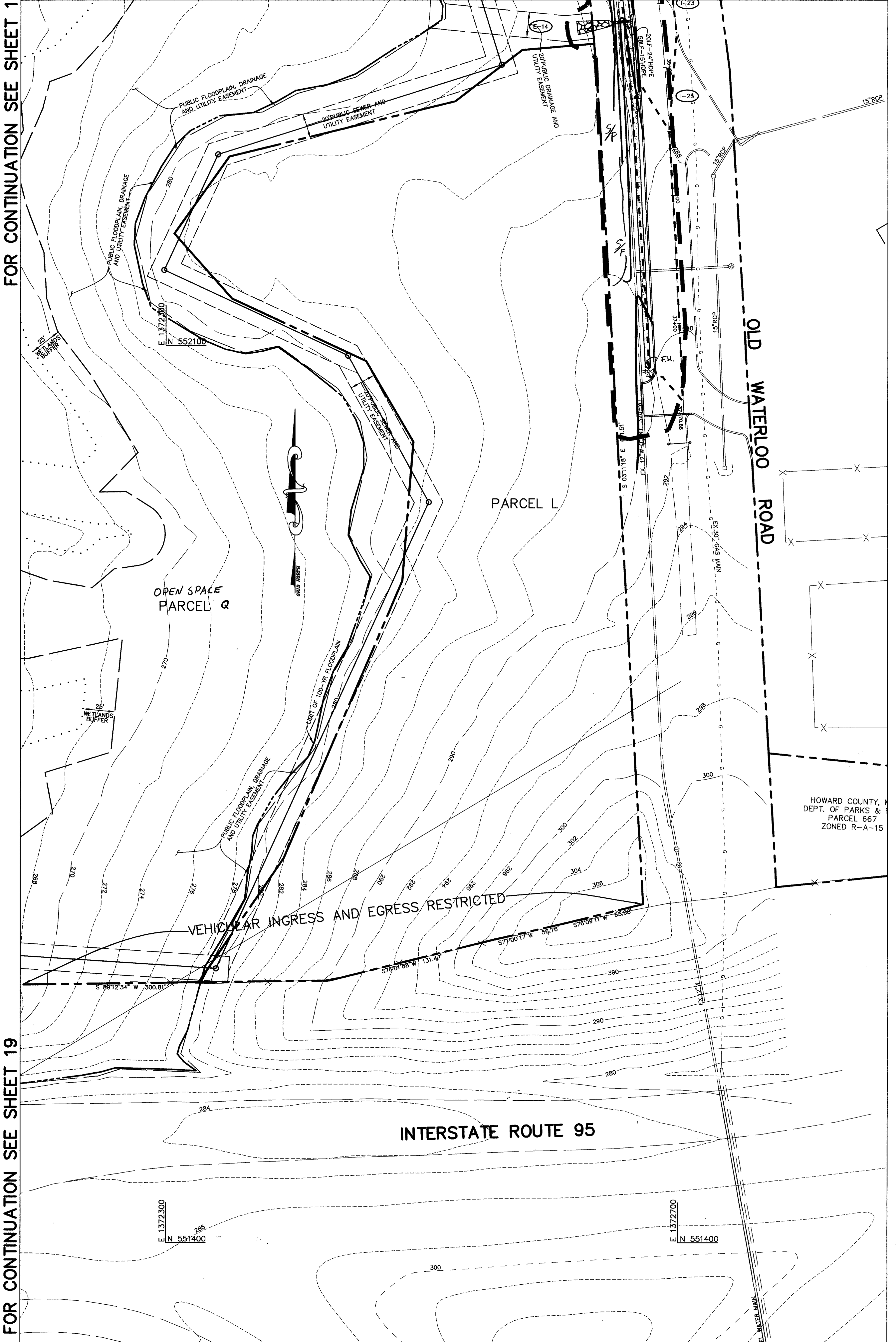


NOTES:
 1. ALL STORMWATER MANAGEMENT FACILITIES SHOWN ARE EXISTING.
 2. PARCEL Q (OPEN SPACE) TO BE OWNED BY HRD LAND HOLDINGS, INC..

FOR CONTINUATION SEE SHEET 12

FOR CONTINUATION SEE THIS SHEET

FOR CONTINUATION SEE THIS SHEET



FOR CONTINUATION SEE SHEET 12

FOR CONTINUATION SEE SHEET 19

LEGEND

EXISTING 2' CONTOUR	---
EXISTING 10' CONTOUR	---
PROPOSED 2' CONTOUR	---
PROPOSED 10' CONTOUR	---
PROPERTY LINE AND RIGHT OF WAY	---
STORM DRAIN	---
EXISTING TREELINE	---
PROPOSED TREELINE	---
PROP. SPOT ELEVATION	---
RIPRAP INFLOW PROTECTION	---
SOIL LINES	---
REMOVABLE PUMPING STATION	---
LIMIT OF DISTURBANCE	---
EARTH DIKE	---
SUPER SILT FENCE	---
SILT FENCE	---
STABILIZED CONSTRUCTION ENTRANCE	---
LIMIT OF WETLANDS	---
DRAINAGE AREA DIVIDE	---

BY THE DEVELOPER:
 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 INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.
 DEVELOPER: *[Signature]* 8-18-05 DATE

BY THE ENGINEER:
 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.
 ENGINEER: *[Signature]* 8-18-05 DATE

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.
 NATURAL RESOURCES CONSERVATION SERVICE: *[Signature]* 10/12/05 DATE

THIS DEVELOPMENT PLAN IS APPROVED FOR SOIL EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
 HOWARD SOIL CONSERVATION DISTRICT: *[Signature]* 10/12/05 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
 CHIEF, BUREAU OF HIGHWAYS: *[Signature]* 9-19-05 DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.
 CHIEF, DIVISION OF LAND DEVELOPMENT: *[Signature]* 10/11/05 DATE

CHIEF, DEVELOPMENT ENGINEERING DIVISION: *[Signature]* 9/20/05 DATE
 OWNER / DEVELOPER: HRD LAND HOLDINGS, INC. HOWARD RESEARCH AND DEVELOPMENT CORPORATION THE ROUSE BUILDING 10275 LITTLE PATUXENT PARKWAY COLUMBIA, MARYLAND 21044 410-992-6000

PROJECT: **BENSON EAST**
 PARCELS A, E-G, J-M, P-R, T, U, NON-BUILDABLE PARCELS (PRIVATE ROAD) AND OPEN SPACE PARCELS Q AND V
 AREA: TAX MAP 37 & 43 ZONED - NEWTOWN PARCELS 482, 587, 382, 421, 547 6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND

TITLE: **GRADING AND SEDIMENT CONTROL PLAN AND DRAINAGE AREA MAP**
 Patton Harris Rust & Associates, pc
 Engineers, Surveyors, Planners, Landscape Architects.
 8818 Centre Park Drive
 Columbia, MD 21045
 T 410.997.8900
 F 410.997.9282

DATE: 8-18-05
 DESIGNED BY: C.J.R.
 DRAWN BY: DAM
 PROJECT NO: 11621/PRELIM RD10.DWG
 DATE: AUGUST 18, 2005
 SCALE: 1" = 50'
 DRAWING NO. 10 OF 25



NOTES:
 1. ALL STORMWATER MANAGEMENT FACILITIES SHOWN ARE EXISTING.
 2. PARCEL Q (OPEN SPACE) TO BE OWNED BY HRD LAND HOLDINGS, INC..

DRAINAGE AREA CHART				DRAINAGE AREA CHART			
INLET NO.	AREA (AC.)	C	% IMP	INLET NO.	AREA (AC.)	C	% IMP
I-1	0.15	0.76	85	I-15	0.16	0.76	85
I-2	0.25	0.76	85	I-16	0.44	0.76	85
I-3	0.22	0.76	85	I-17	0.30	0.86	100
I-4	0.19	0.76	85	I-18	0.12	0.86	100
I-5	0.21	0.76	85	I-19	0.58	0.86	100
I-6	0.10	0.76	85	I-20	0.25	0.86	100
I-7	0.24	0.76	85	I-21	0.21	0.86	100
I-8	0.13	0.76	85	I-22	0.38	0.86	100
I-9	0.13	0.76	85	I-23	0.24	0.86	100
I-10	0.14	0.76	85	I-24	0.75	0.86	100
I-11	0.13	0.76	85	I-25	0.13	0.86	100
I-12	0.24	0.76	85	I-26	0.27	0.86	100
I-13	0.73	0.76	85	I-30	0.12	0.76	85
I-14	0.16	0.76	85	I-31	0.10	0.76	85
I-3A	0.25	0.76	85	I-32	0.10	0.76	85
I-1A	0.23	0.76	85	I-33	0.14	0.76	85
I-6A	0.04	0.76	85				
I-7A	0.55	0.76	85				

LEGEND	
EXISTING 2' CONTOUR	---
EXISTING 10' CONTOUR	---
PROPOSED 2' CONTOUR	---
PROPOSED 10' CONTOUR	---
PROPERTY LINE AND RIGHT OF WAY	---
STORM DRAIN	---
EXISTING TREELINE	---
PROPOSED TREELINE	---
PROP. SPOT ELEVATION	---
RIPRAP INFLOW PROTECTION	---
SOIL LINES	---
REMOVABLE PUMPING STATION	---
LIMIT OF DISTURBANCE	---
EARTH DIKE	---
SUPER SILT FENCE	---
SILT FENCE	---
STABILIZED CONSTRUCTION ENTRANCE	---
LIMIT OF WETLANDS	---
DRAINAGE AREA DIVIDE	---

BY THE DEVELOPER :
 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 INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

Al Michalek 8-18-05
 DEVELOPER DATE

BY THE ENGINEER :
 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.

Aimee C. Remington 8-18-05
 ENGINEER DATE

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.

Jim Meyer 10/14/05
 NATURAL RESOURCE CONSERVATION SERVICE DATE

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

J.R. Robinson 10/12/05
 HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

William Z. ... 9-19-05
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Cynthia ... 10/11/05
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

... 9/26/05
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

DATE	NO.	REVISION
06/14/04	1	INCORPORATE ROAD R.O.W. PER PB CASE NO. 373; REMOVE PARCEL DESIGNATIONS AND ADJ. EASEMENTS; ROAD NAME AND ADJ. STOCK PILE

OWNER / DEVELOPER
 HRD LAND HOLDINGS, INC.
 HOWARD RESEARCH AND DEVELOPMENT CORPORATION
 THE ROUSE BUILDING
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044
 410-992-6000

PROJECT
BENSON EAST
 PARCELS A, E-G, J-M, P, R, T, U, NON-BUILDABLE PARCELS (PRIVATE ROADS) AND OPEN SPACE PARCELS Q AND V
 AREA
 TAX MAP 37 & 43 ZONED - NEWTOWN
 PARCELS 482, 587, 382, 421, 547
 6th ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

TITLE
GRADING AND SEDIMENT CONTROL PLAN AND DRAINAGE AREA MAP

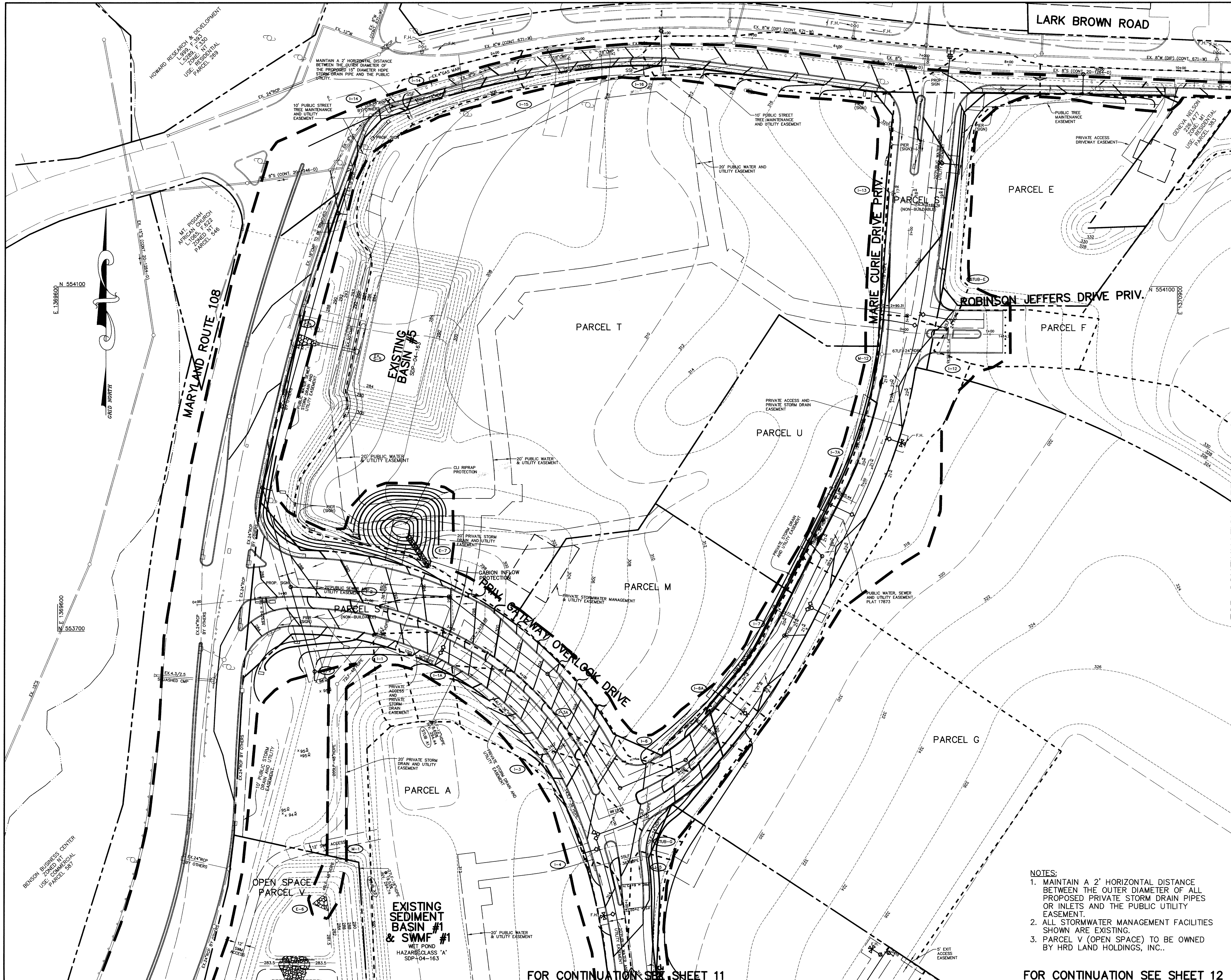
Patton Harris Rust & Associates, pc
 Engineers, Surveyors, Planners, Landscape Architects.
 8818 Centre Park Drive
 Columbia, MD 21045
 T 410.997.8900
 F 410.997.9282

8-18-05
 DATE
 DESIGNED BY : C.J.R.
 DRAWN BY : DAM
 PROJECT NO : 11621/PRELIM RD9.DWG
 DATE : AUGUST 18, 2005
 SCALE : 1" = 50'
 DRAWING NO. 9 OF 25

FOR CONTINUATION SEE SHEET 8

FOR CONTINUATION SEE SHEET 12

FOR CONTINUATION SEE SHEET 10



LEGEND

EXISTING 2' CONTOUR	---	300
EXISTING 10' CONTOUR	---	300
PROPOSED 10' CONTOUR	---	300
PROPERTY LINE AND RIGHT OF WAY	---	15'
STORM DRAIN	---	15'
EXISTING TREELINE	---	15'
PROPOSED TREELINE	---	15'
PROP. SPOT ELEVATION	---	13.2
RRRAP INFLOW PROTECTION	---	13.2
SOIL LINES	---	13.2
REMOVABLE PUMPING STATION	---	13.2
LIMIT OF DISTURBANCE	---	13.2
EARTH DIKE	---	13.2
SILT FENCE	---	13.2
SUPER SILT FENCE	---	13.2
STABILIZED CONSTRUCTION ENTRANCE	---	13.2
LIMIT OF WETLANDS	---	13.2
DRAINAGE AREA DIVIDE	---	13.2

BY THE DEVELOPER :

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 INSPECTIONS BY THE HOWARD SOIL CONSERVATION DISTRICT.

Paul G. Converse 7/7/06
DEVELOPER DATE

BY THE ENGINEER :

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.

D. W. Zell 07/06/06
ENGINEER DATE

THESE PLANS HAVE BEEN REVIEWED FOR THE HOWARD SOIL CONSERVATION DISTRICT AND MEET THE TECHNICAL REQUIREMENTS FOR SOIL EROSION AND SEDIMENT CONTROL.

Jim Meyer 7/17/06
NATURAL RESOURCES CONSERVATION SERVICE DATE

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

John R. Robinson 7/17/06
HOWARD SOIL CONSERVATION DISTRICT DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

Mark D. Lane 7-28-06
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Colleen 8/9/06
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

William 8/9/06
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

07/06/06	1	INCORPORATE ROAD R.O.W. PER PB CASE NO. 573; REVISE PARCEL DESIGNATIONS AND ADDED EASEMENTS, ROAD NAME, REV. WATER LINE, STORM PIPE AND ROAD GRADES
DATE	NO.	REVISION

OWNER / DEVELOPER
HRD LAND HOLDINGS, INC.
HOWARD RESEARCH AND DEVELOPMENT CORPORATION
THE ROUSE BUILDING
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
410-992-6000

PROJECT **BENSON EAST**
PARCELS A, E-G, J-M, P, R, T, U, NON-BUILDABLE PARCELS S (PRIVATE ROAD) AND OPEN SPACE PARCELS Q AND V

AREA TAX MAP 37 & 43 ZONED - NEWTOWN
PARCELS 482, 587, 382, 421, 547
6th ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE
GRADING AND SEDIMENT CONTROL PLAN
AND DRAINAGE AREA MAP

Patton Harris Rust & Associates, pc
Engineers, Surveyors, Planners, Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

07/06/06
DATE

DESIGNED BY : C.J.R.

DRAWN BY : DAM

PROJECT NO : 11621/PRELIM RDB.DWG

DATE : AUGUST 18, 2005

SCALE : 1" = 50'

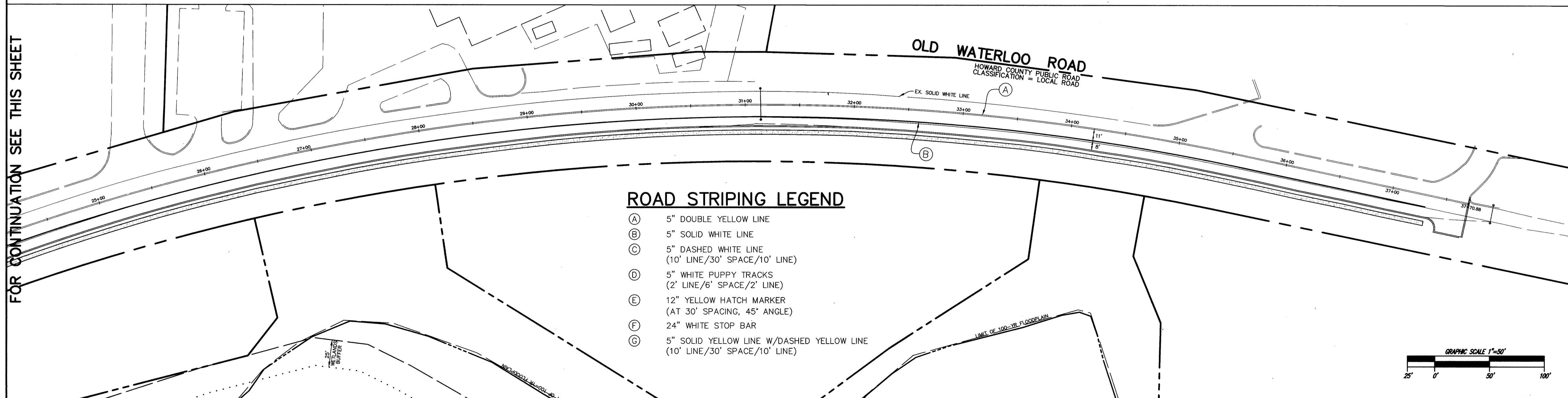
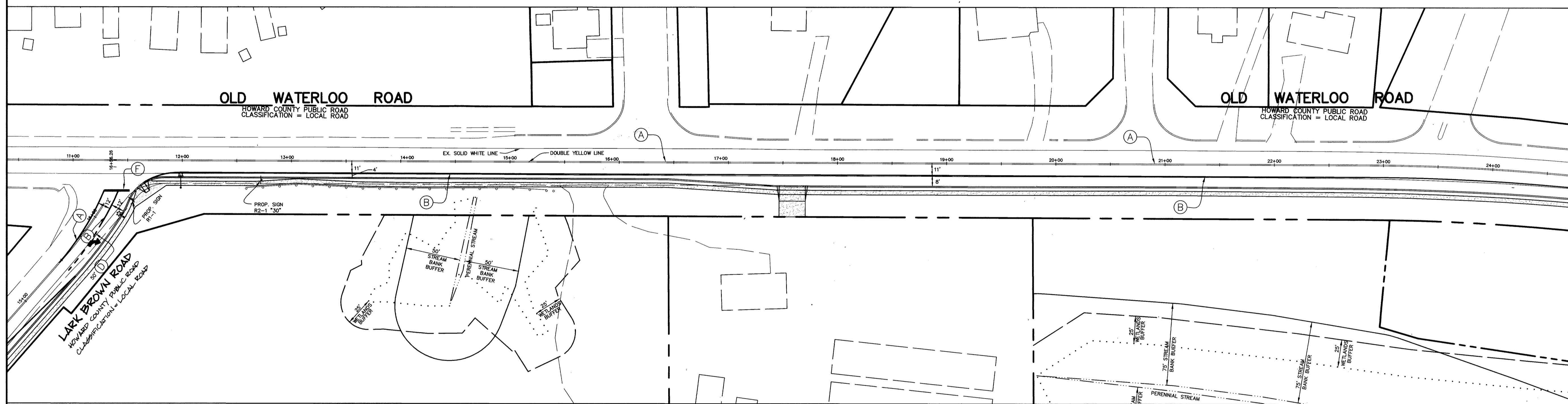
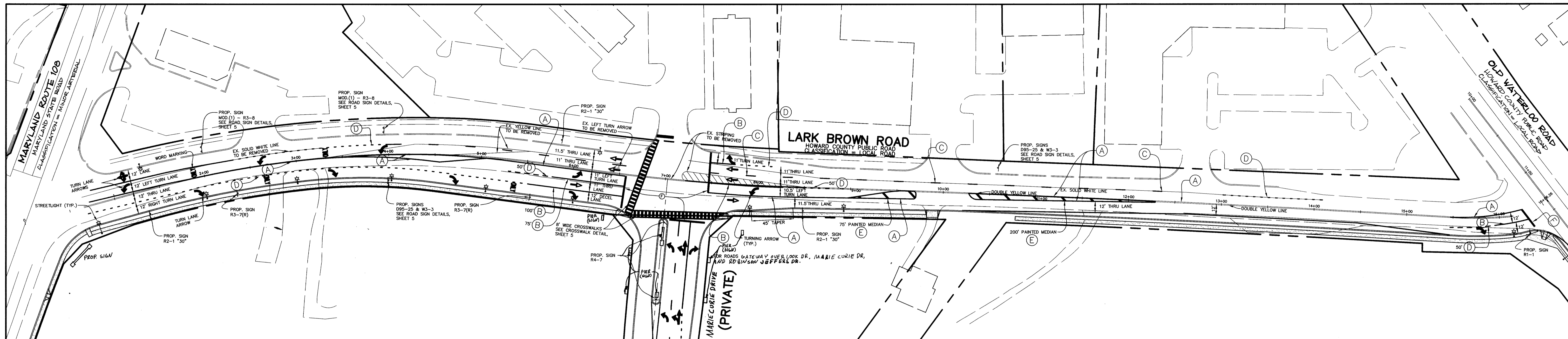
DRAWING NO. 8 OF 25

Domenic W. Colangelo #27200
DOMENICK W. COLANGELO #27200

- NOTES:**
1. MAINTAIN A 2' HORIZONTAL DISTANCE BETWEEN THE OUTER DIAMETER OF ALL PROPOSED PRIVATE STORM DRAIN PIPES OR INLETS AND THE PUBLIC UTILITY EASEMENT.
 2. ALL STORMWATER MANAGEMENT FACILITIES SHOWN ARE EXISTING.
 3. PARCEL V (OPEN SPACE) TO BE OWNED BY HRD LAND HOLDINGS, INC..

FOR CONTINUATION SEE SHEET 11

FOR CONTINUATION SEE SHEET 12



FOR CONTINUATION SEE THIS SHEET

- STRIPING NOTES**
1. ALL NEW AND REVISED STRIPING TO BE THERMOPLASTIC.
 2. ALL STRIPING SHALL BE 5 INCHES WIDE UNLESS OTHERWISE NOTED.
 3. SOLID PAINTED ARROWS SHOWN ON THESE PLANS SHALL BE PAINTED ON THE ROAD AS INDICATED. HOLLOW ARROWS ARE SHOWN FOR DIRECTIONAL INFORMATION ONLY. THEY SHALL NOT BE PAINTED ON THE ROAD.
 4. ALL EXISTING MARKINGS IN CONFLICT WITH NEW MARKINGS SHALL BE REMOVED BY GRINDING.
 5. ALL MARKINGS AND SIGN LOCATIONS SHALL BE APPROVED BY THE TRAFFIC DIVISION PRIOR TO INSTALLATION.

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

Walter Z. Wanda 9-19-05
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Cindy Hanna 10/11/05
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

[Signature] 7/26/05
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

06/18/05 1 W/CON FORATE ROAD R.O.M. PER PR CASE NO 873; REVISE

DATE NO. REVISION

OWNER / DEVELOPER
HRD LAND HOLDINGS, INC.
HOWARD RESEARCH AND DEVELOPMENT CORPORATION
THE ROUSE BUILDING
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
410-992-6000

PROJECT **BENSON EAST**
PARCELS A, E-G, J-M, P-R, T-V, W-X, Y-Z BUILDABLE PARCELS & (PRIVATE ROAD) AND OPEN SPACE PARCELS Q AND V

AREA TAX MAP 37 & 43 ZONED - NEWTOWN
PARCELS 482, 587, 382, 421, 547
6TH ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE **STRIPING PLAN FOR LARK BROWN ROAD AND OLD WATERLOO ROAD**

Patton Harris Rust & Associates, pc
Engineers, Surveyors, Planners, Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

8-18-05
DATE

DESIGNED BY: C.J.R.

DRAWN BY: DAM

PROJECT NO.: 11621/PRELIM RD7.DWG

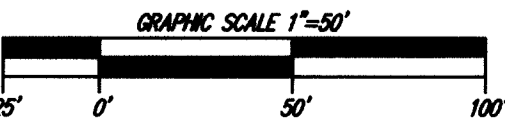
DATE: AUGUST 18, 2005

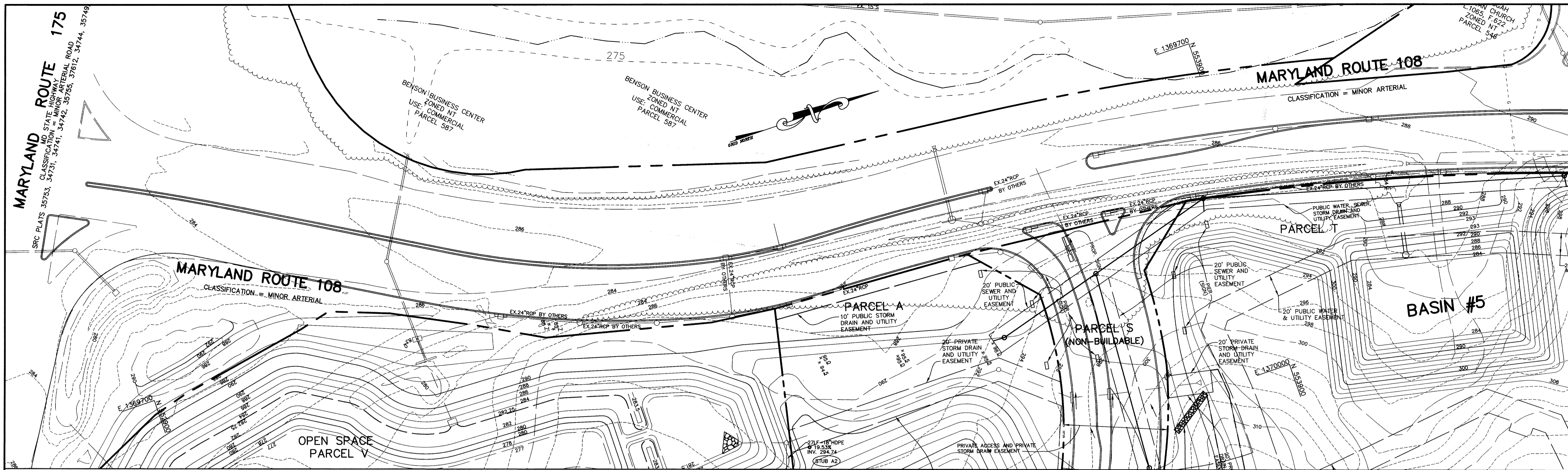
SCALE: AS SHOWN

DRAWING NO.: 7 OF 25

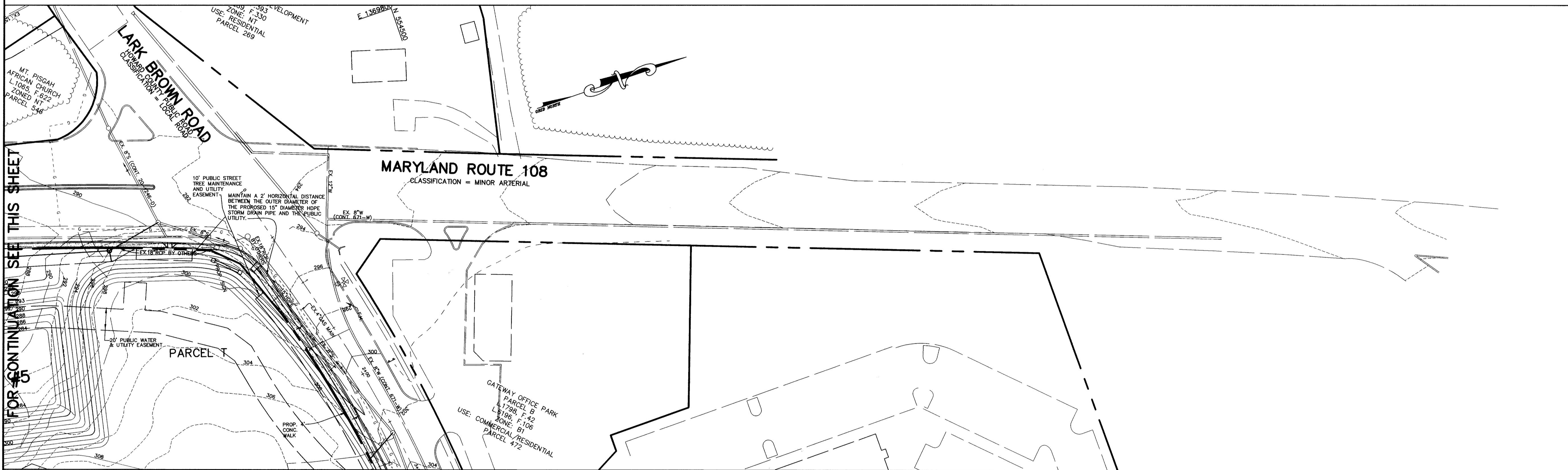
ROAD STRIPING LEGEND

- (A) 5" DOUBLE YELLOW LINE
- (B) 5" SOLID WHITE LINE
- (C) 5" DASHED WHITE LINE
(10' LINE/30' SPACE/10' LINE)
- (D) 5" WHITE PUPPY TRACKS
(2" LINE/6" SPACE/2" LINE)
- (E) 12" YELLOW HATCH MARKER
(AT 30' SPACING, 45° ANGLE)
- (F) 24" WHITE STOP BAR
- (G) 5" SOLID YELLOW LINE W/DASHED YELLOW LINE
(10' LINE/30' SPACE/10' LINE)





PLAN
SCALE: 1"=50'



PLAN
SCALE: 1"=50'

FOR CONTINUATION SEE THIS SHEET

- NOTES:
1. ALL STORMWATER MANAGEMENT FACILITIES SHOWN ARE EXISTING.
 2. FOR CONSTRUCTION DRAWINGS OF MD ROUTE 108 SEE PLANS FROM WALLACE MONTGOMERY & ASSOCIATES, HOWARD COUNTY SOIL CONSERVATION DISTRICT (SCD) TRACKING NUMBER GP-05-51.
 3. PARCEL N (OPEN SPACE) TO BE OWNED BY HRD LAND HOLDINGS, INC..

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

Mark DeLeon (signature)
CHIEF, BUREAU OF HIGHWAYS
7-28-06 DATE

APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Chris Grant (signature)
CHIEF, DIVISION OF LAND DEVELOPMENT
8/9/06 DATE

Mark DeLeon (signature)
CHIEF, DEVELOPMENT ENGINEERING DIVISION
8/6/06 DATE

07/06/06 1 INCORPORATE ROAD R.O.W. PER PB CASE NO. 373; REVISE PARCEL DESIGNATIONS AND ADD EASEMENTS, ROAD NAME, & STORM STUB

DATE NO. REVISION

OWNER / DEVELOPER
HRD LAND HOLDINGS, INC.
HOWARD RESEARCH AND DEVELOPMENT CORPORATION
THE ROUSE BUILDING
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
410-992-6000

PROJECT **BENSON EAST**
PARCELS A, E-G, J-M, P, R, T, U, NON-BUILDABLE PARCELS S (PRIVATE EASEMENT) AND OPEN SPACE PARCELS Q AND V

AREA TAX MAP 37 & 43 ZONED - NEWTOWN
PARCELS 482, 587, 382, 421, 547
6th ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

TITLE **PLANS OF MARYLAND ROUTE 108 FROM STA 50+00 TO 75+89**

Patton Harris Rust & Associates, pc
Engineers, Surveyors, Planners, Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

07/06/06 DATE

DESIGNED BY : C.J.R.

DRAWN BY: DAM

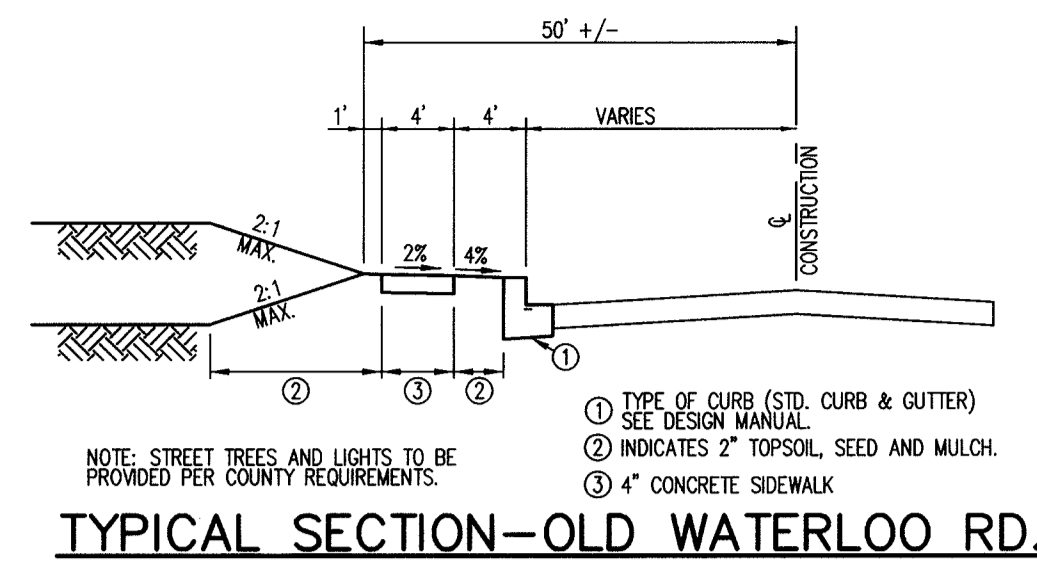
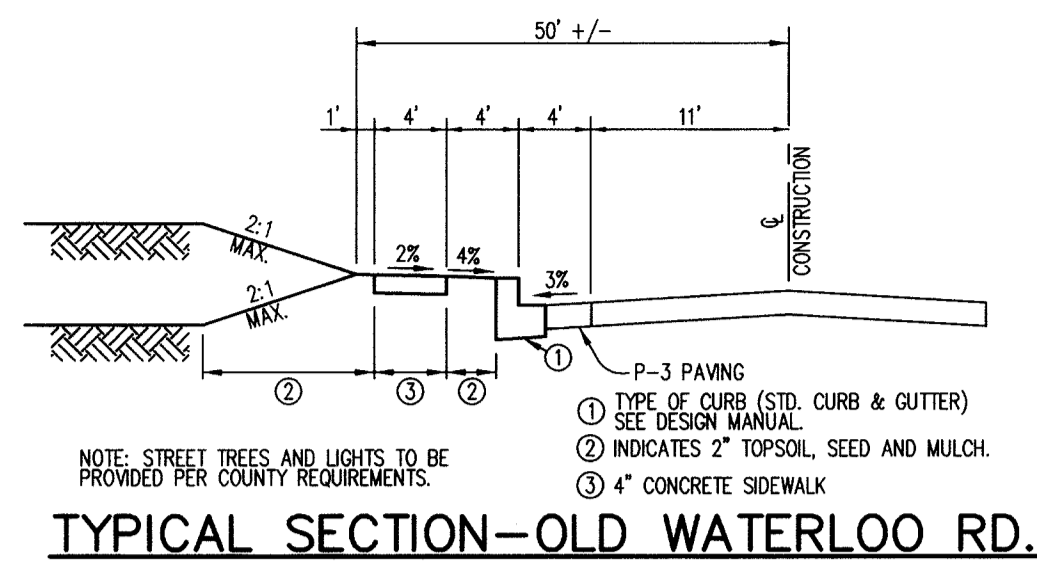
PROJECT NO : 11621/PRELIM RD6.DWG

DATE : AUGUST 18, 2005

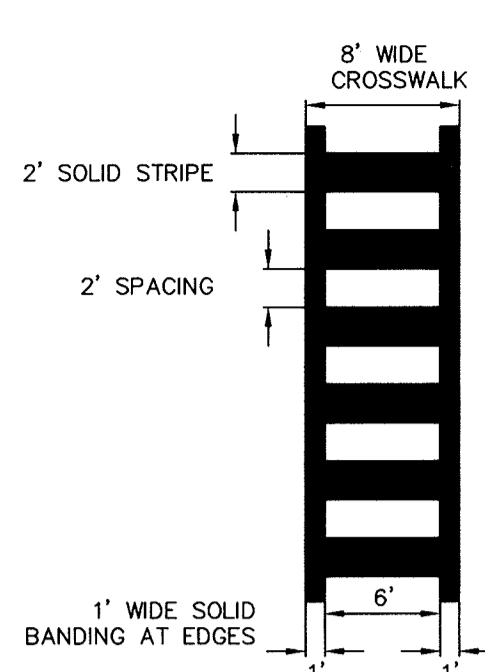
SCALE : AS SHOWN

DRAWING NO. 6 OF 25

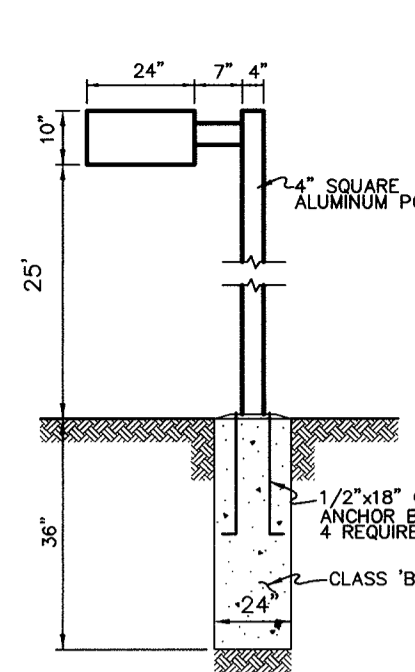
DOMENICK W. COLANGELO #27200



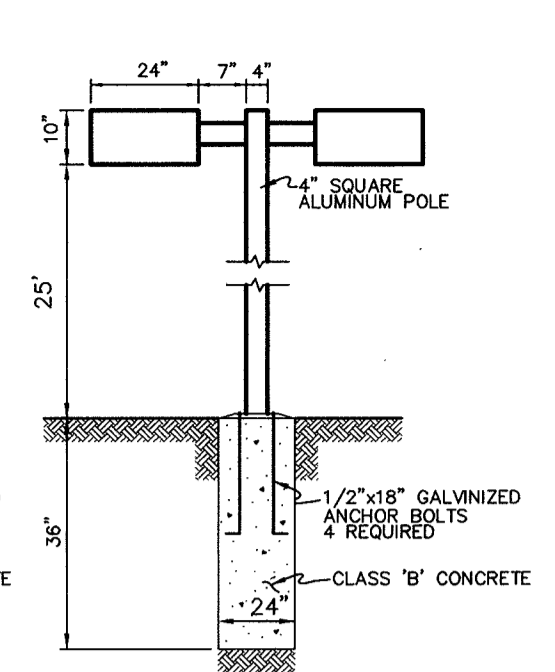
TYPICAL HOWARD COUNTY CROSSWALK DETAIL
SCALE: 1" = 10'



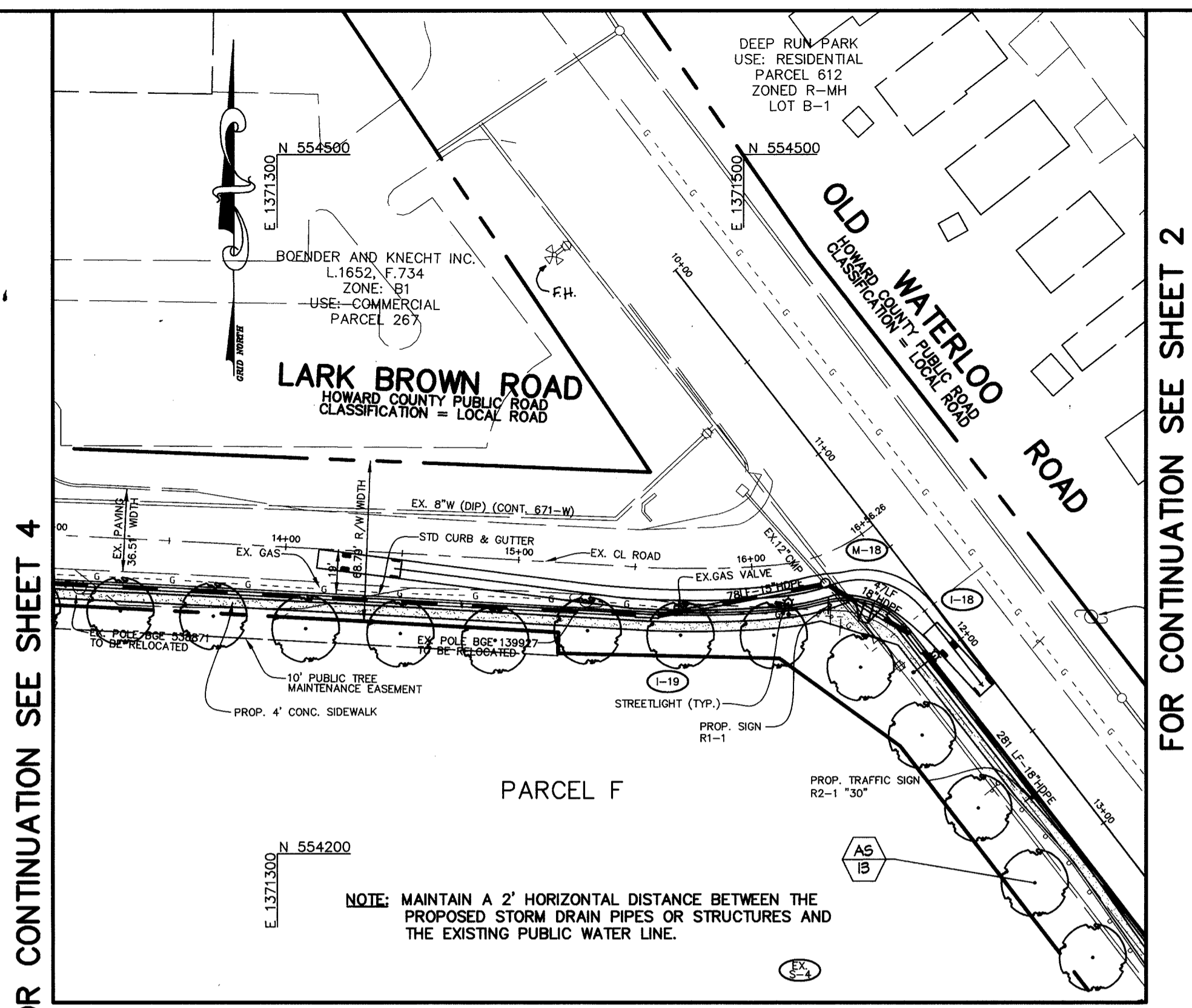
LIGHT POLE DETAIL
NO SCALE



DUAL LIGHT POLE DETAIL
NO SCALE



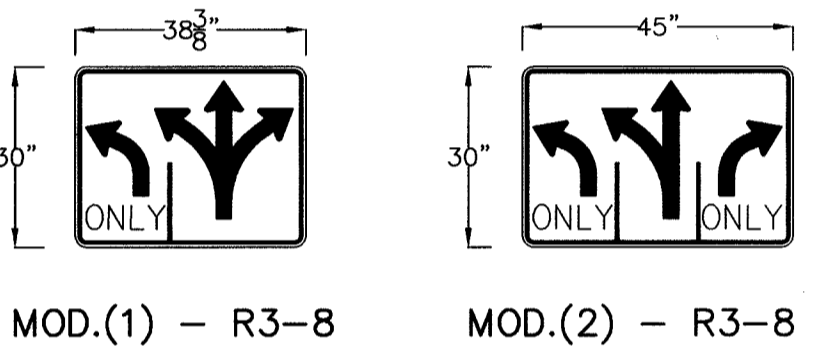
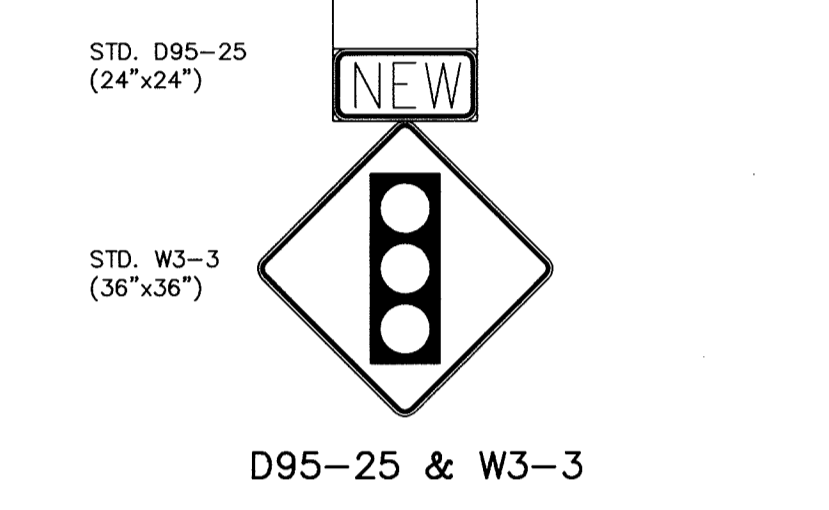
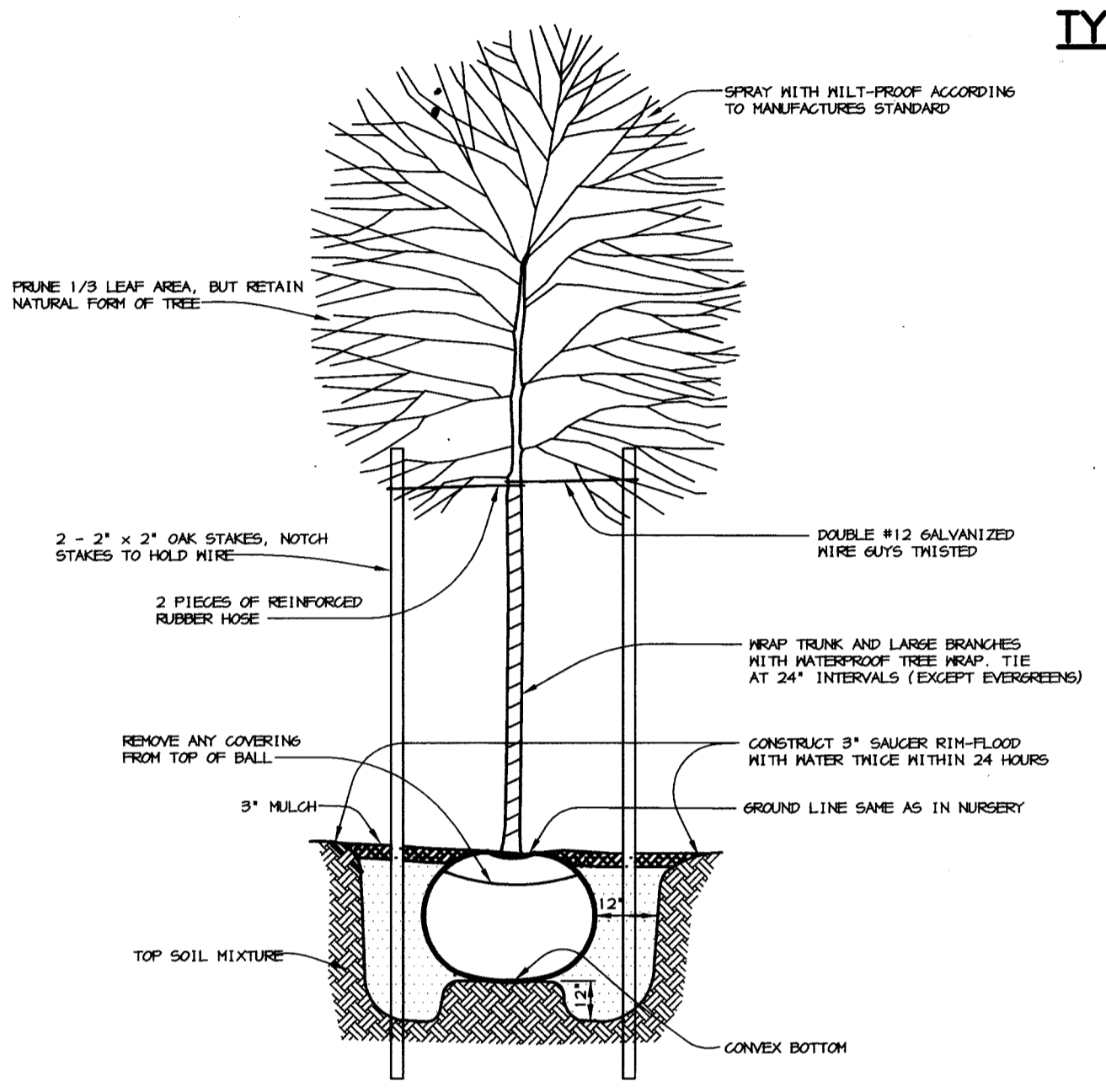
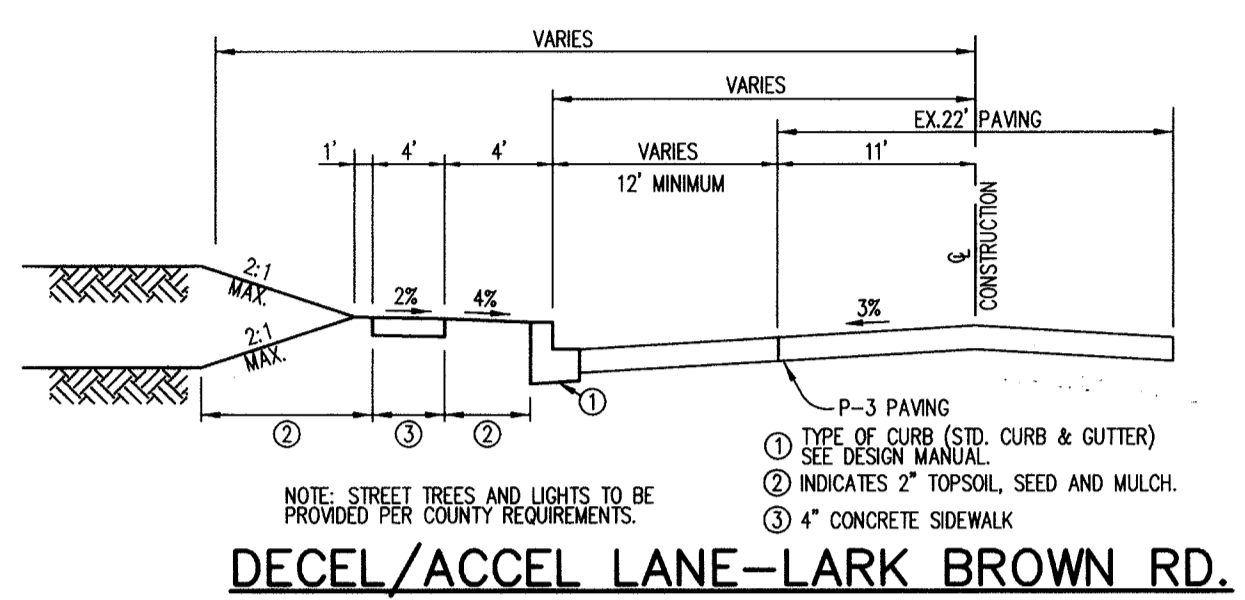
1. ALL LIGHT FIXTURES TO BE SINGLE LUMINAIRE 400 WATT MERCURY TYPE WITH METAL POLES AND DIRECTED DOWNWARD
2. LOCATIONS OF LIGHT FIXTURES ARE ON THE PLAN AND ARE SHOWN THUS.
3. LIGHTS TO BE MODULE II TYPE AS MANUFACTURED BY MOLDCAST OR APPROVED EQUAL.
4. POLE AND FIXTURE TO HAVE BLACK POLYESTER ENAMEL FINISH.
5. POLE TO BE LOCATED 3' BACK FROM BACK OF CURB.



FOR CONTINUATION SEE SHEET 4

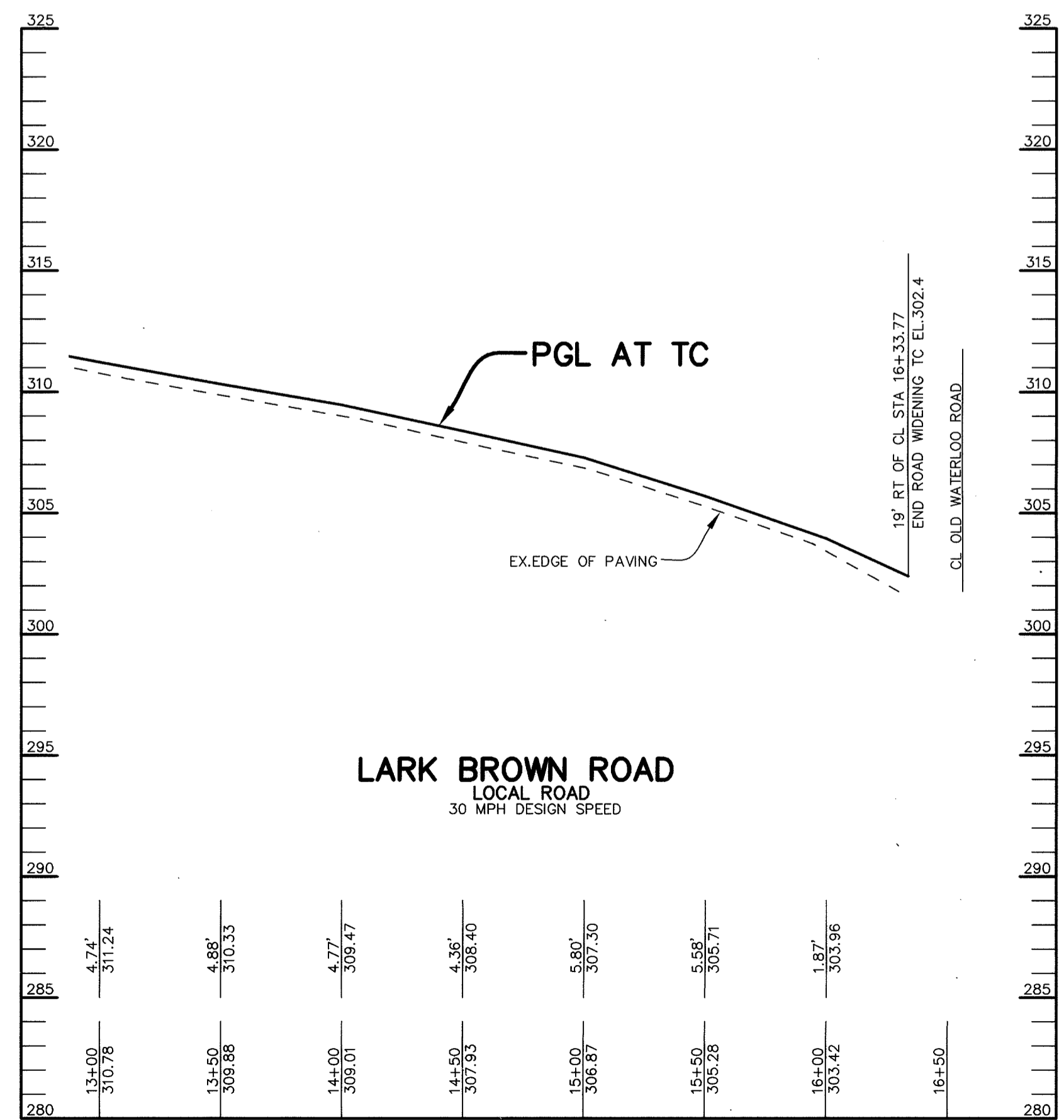
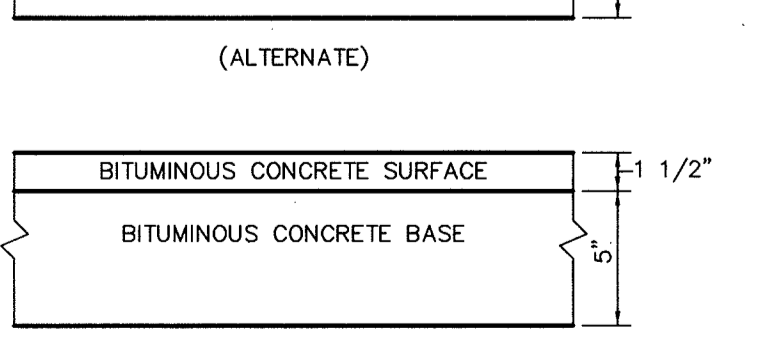
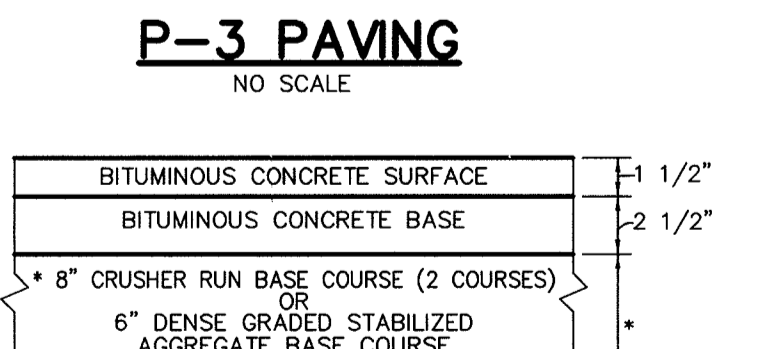
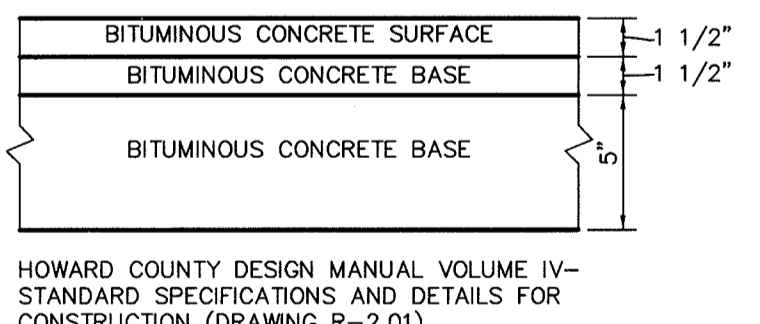
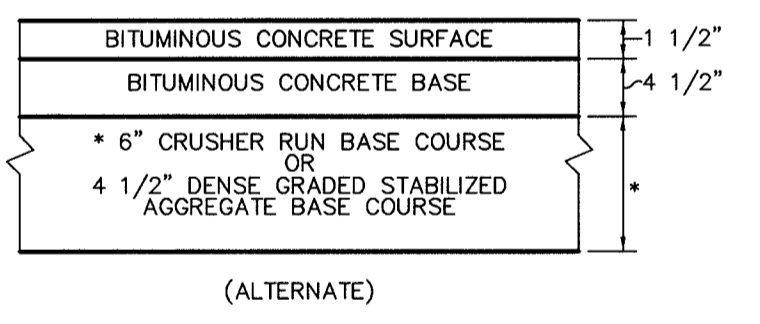
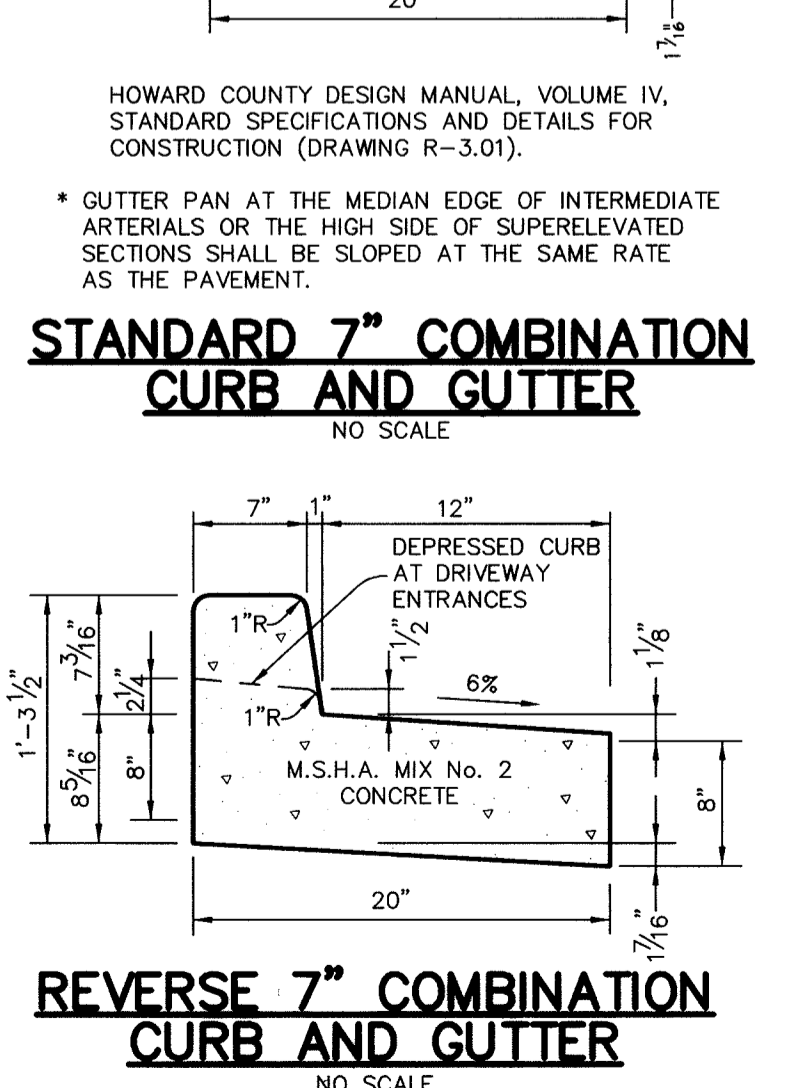
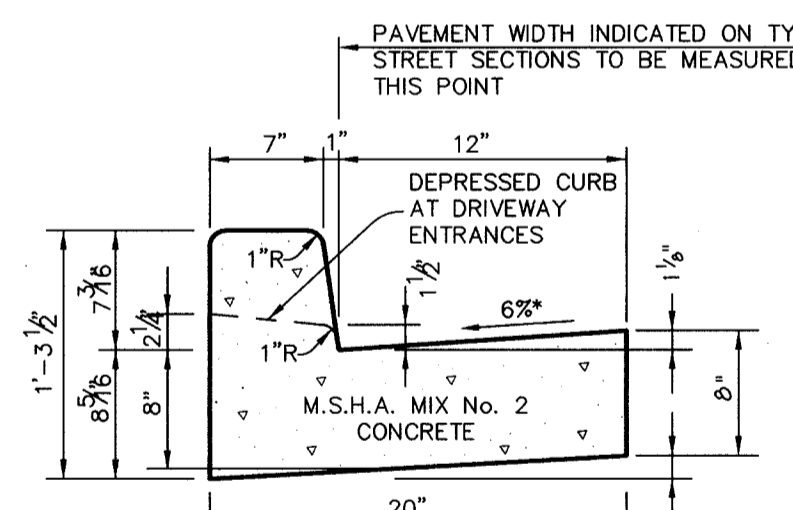
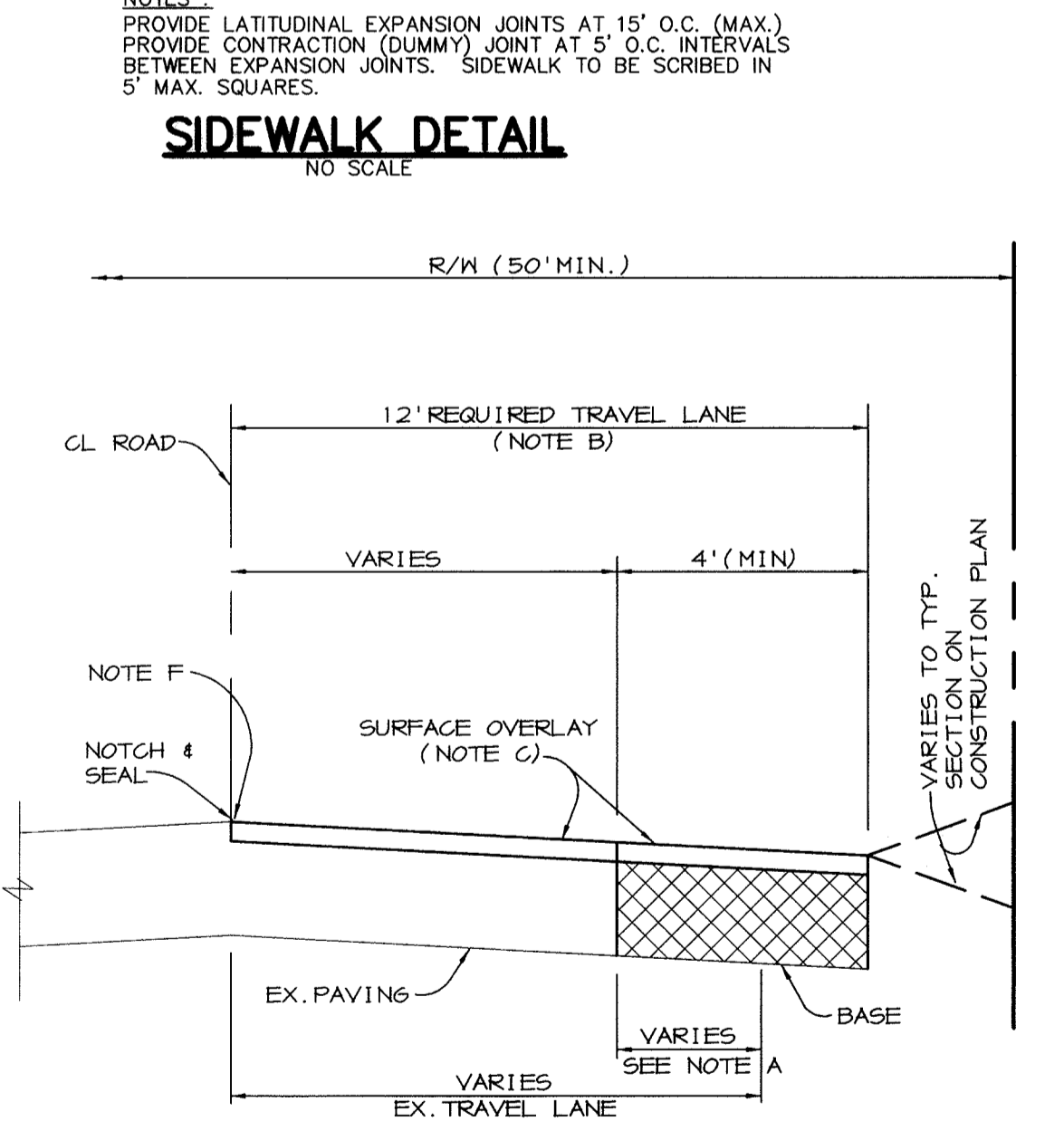
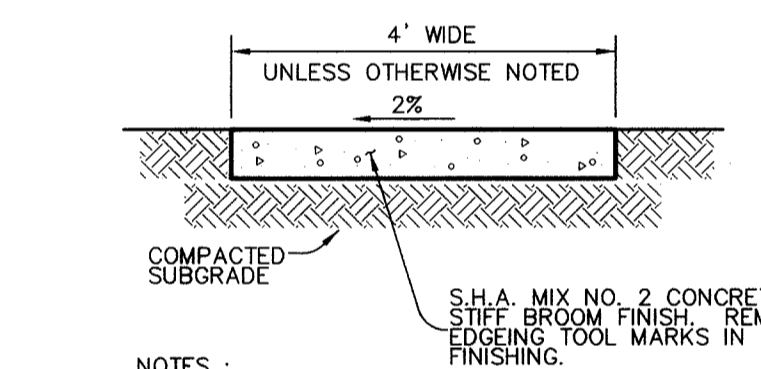
FOR CONTINUATION SEE SHEET 2

FOR CONTINUATION SEE SHEET 2



STREET TREE PLANTING SCHEDULE				
SYMBOL	QTY.	SCIENTIFIC COMMON NAME	SIZE	REMARKS
AS	76	Acer saccharum Sugar Maple	2.5'-3' cal.	Plant as shown

- NOTES:
1. SIGNS SHOWN HERE ARE MODIFICATIONS OF STANDARD SIGNS FOUND IN THE MARYLAND STATE HIGHWAY ADMINISTRATION (MSHA) STANDARD SIGN BOOK. ALL OTHER SIGNS ON ROAD PLANS AND STRIPING PLANS ARE STANDARD MSHA SIGNS.
 2. ALL SIGNS SHOWN HERE ARE GROUND-MOUNTED.
 3. MODIFICATIONS TO THE R3-8 SIGN SHALL REMAIN CONSISTENT WITH THE STANDARD SIZE, COLOR, AND REFLECTIVITY OF ARROWS, TEXT, LEGEND AND BACKGROUND OF STANDARD SIGN.
 4. SIGNS ARE SUBJECT TO APPROVAL BY HOWARD COUNTY TRAFFIC DIVISION AND MSHA.



APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
Walter Z. ... 9-19-05
CHIEF, BUREAU OF HIGHWAYS

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.
Cliff ... DATE
CHIEF, DIVISION OF LAND DEVELOPMENT

CHIEF, DEVELOPMENT ENGINEERING DIVISION *gno* DATE

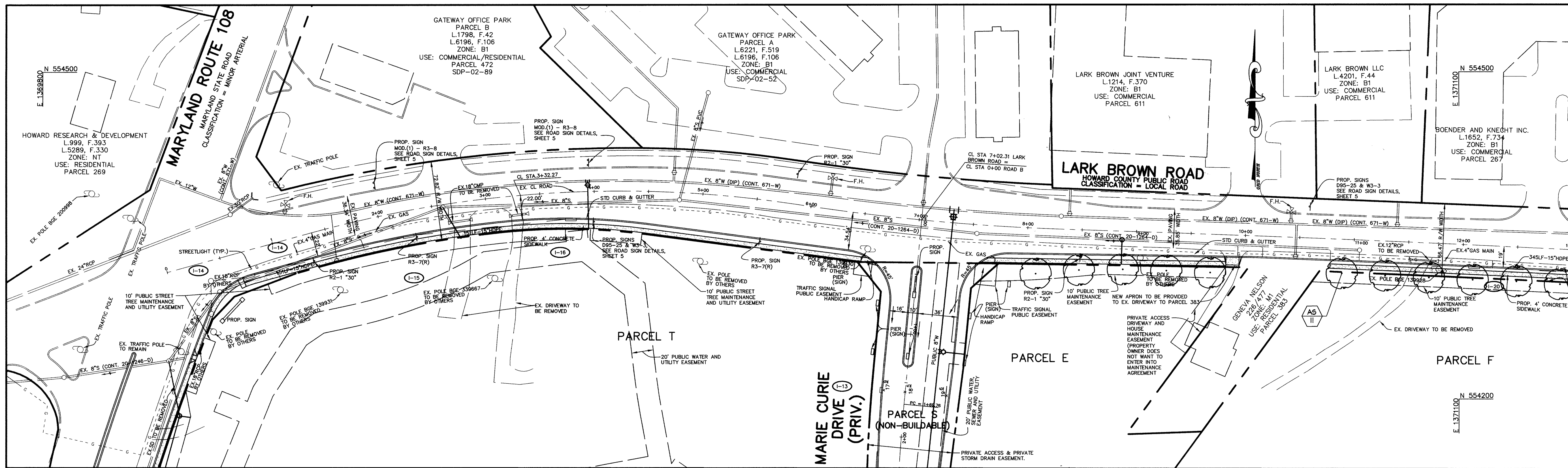
06/14/06 1 INCORPORATE ROAD R.O.W PER PB CASE NO 373; REVISE PARCEL DESIGNATIONS AND ADD EASEMENTS AND ROAD NAME

DATE NO. REVISION

OWNER / DEVELOPER
HRD LAND HOLDINGS, INC.
HOWARD RESEARCH AND DEVELOPMENT CORPORATION
THE ROUSE BUILDING
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
410-992-6000

PROJECT **BENSON EAST**
PARCELS A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z, AA, AB, AC, AD, AE, AF, AG, AH, AI, AJ, AK, AL, AM, AN, AO, AP, AQ, AR, AS, AT, AU, AV, AW, AX, AY, AZ, BA, BB, BC, BD, BE, BF, BG, BH, BI, BJ, BK, BL, BM, BN, BO, BP, BQ, BR, BS, BT, BU, BV, BW, BX, BY, BZ, CA, CB, CC, CD, CE, CF, CG, CH, CI, CJ, CK, CL, CM, CN, CO, CP, CQ, CR, CS, CT, CU, CV, CW, CX, CY, CZ, DA, DB, DC, DD, DE, DF, DG, DH, DI, DJ, DK, DL, DM, DN, DO, DP, DQ, DR, DS, DT, DU, DV, DW, DX, DY, DZ, EA, EB, EC, ED, EE, EF, EG, EH, EI, EJ, EK, EL, EM, EN, EO, EP, EQ, ER, ES, ET, EU, EV, EW, EX, EY, EZ, FA, FB, FC, FD, FE, FF, FG, FH, FI, FJ, FK, FL, FM, FN, FO, FP, FQ, FR, FS, FT, FU, FV, FW, FX, FY, FZ, GA, GB, GC, GD, GE, GF, GG, GH, GI, GJ, GK, GL, GM, GN, GO, GP, GQ, GR, GS, GT, GU, GV, GW, GX, GY, GZ, HA, HB, HC, HD, HE, HF, HG, HH, HI, HJ, HK, HL, HM, HN, HO, HP, HQ, HR, HS, HT, HU, HV, HW, HX, HY, HZ, IA, IB, IC, ID, IE, IF, IG, IH, II, IJ, IK, IL, IM, IN, IO, IP, IQ, IR, IS, IT, IU, IV, IW, IX, IY, IZ, JA, JB, JC, JD, JE, JF, JG, JH, JI, JJ, JK, JL, JM, JN, JO, JP, JQ, JR, JS, JT, JU, JV, JW, JX, JY, JZ, KA, KB, KC, KD, KE, KF, KG, KH, KI, KJ, KK, KL, KM, KN, KO, KP, KQ, KR, KS, KT, KU, KV, KW, KX, KY, KZ, LA, LB, LC, LD, LE, LF, LG, LH, LI, LJ, LK, LL, LM, LN, LO, LP, LQ, LR, LS, LT, LU, LV, LW, LX, LY, LZ, MA, MB, MC, MD, ME, MF, MG, MH, MI, MJ, MK, ML, MM, MN, MO, MP, MQ, MR, MS, MT, MU, MV, MW, MX, MY, MZ, NA, NB, NC, ND, NE, NF, NG, NH, NI, NJ, NK, NL, NM, NN, NO, NP, NQ, NR, NS, NT, NU, NV, NW, NX, NY, NZ, OA, OB, OC, OD, OE, OF, OG, OH, OI, OJ, OK, OL, OM, ON, OO, OP, OQ, OR, OS, OT, OU, OV, OW, OX, OY, OZ, PA, PB, PC, PD, PE, PF, PG, PH, PI, PJ, PK, PL, PM, PN, PO, PP, PQ, PR, PS, PT, PU, PV, PW, PX, PY, PZ, QA, QB, QC, QD, QE, QF, QG, QH, QI, QJ, QK, QL, QM, QN, QO, QP, QQ, QR, QS, QT, QU, QV, QW, QX, QY, QZ, RA, RB, RC, RD, RE, RF, RG, RH, RI, RJ, RK, RL, RM, RN, RO, RP, RQ, RR, RS, RT, RU, RV, RW, RX, RY, RZ, SA, SB, SC, SD, SE, SF, SG, SH, SI, SJ, SK, SL, SM, SN, SO, SP, SQ, SR, SS, ST, SU, SV, SW, SX, SY, SZ, TA, TB, TC, TD, TE, TF, TG, TH, TI, TJ, TK, TL, TM, TN, TO, TP, TQ, TR, TS, TT, TU, TV, TW, TX, TY, TZ, UA, UB, UC, UD, UE, UF, UG, UH, UI, UJ, UK, UL, UM, UN, UO, UP, UQ, UR, US, UT, UY, UZ, VA, VB, VC, VD, VE, VF, VG, VH, VI, VJ, VK, VL, VM, VN, VO, VP, VQ, VR, VS, VT, VU, VV, VW, VX, VY, VZ, WA, WB, WC, WD, WE, WF, WG, WH, WI, WJ, WK, WL, WM, WN, WO, WP, WQ, WR, WS, WT, WU, WV, WW, WX, WY, WZ, XA, XB, XC, XD, XE, XF, XG, XH, XI, XJ, XK, XL, XM, XN, XO, XP, XQ, XR, XS, XT, XU, XV, XW, XX, XY, XZ, YA, YB, YC, YD, YE, YF, YG, YH, YI, YJ, YK, YL, YM, YN, YO, YP, YQ, YR, YS, YT, YU, YV, YW, YX, YY, YZ, ZA, ZB, ZC, ZD, ZE, ZF, ZG, ZH, ZI, ZJ, ZK, ZL, ZM, ZN, ZO, ZP, ZQ, ZR, ZS, ZT, ZU, ZV, ZW, ZX, ZY, ZZ

DESIGNED BY: C.J.R.
DRAWN BY: DAM
PROJECT NO: 11621/PRELIM RD5.DWG
DATE: AUGUST 18, 2005
SCALE: AS SHOWN
DRAWING NO. 5 OF 25

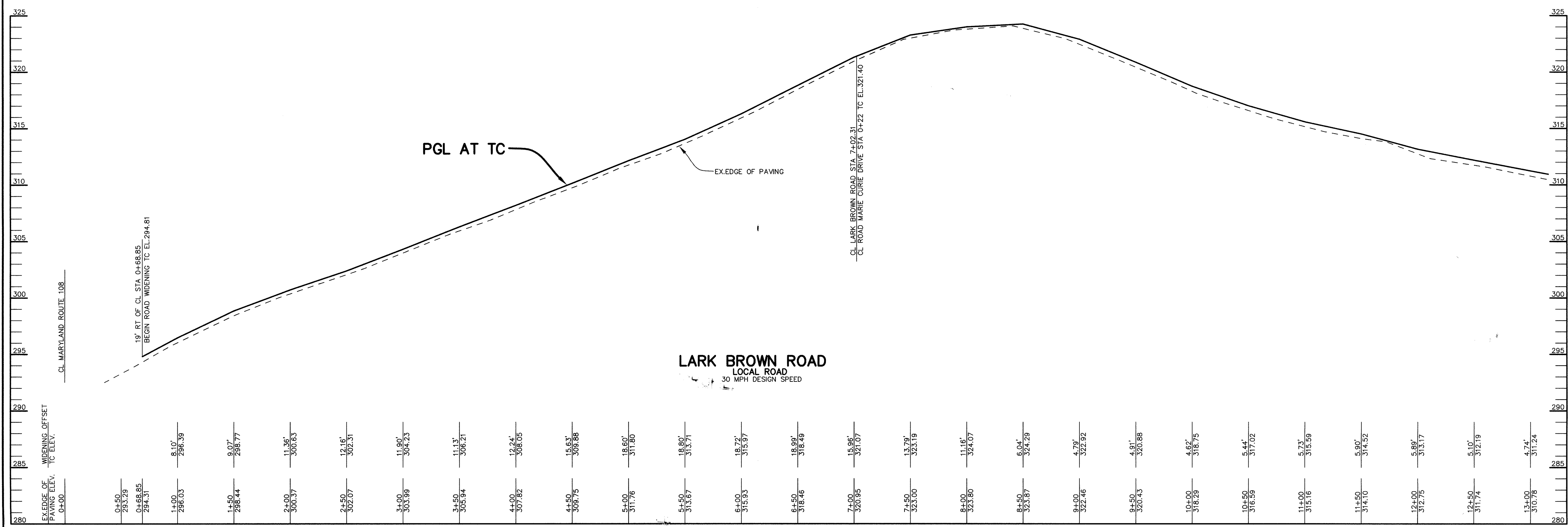


FOR CONTINUATION SEE SHEET 5

PLAN
SCALE: 1"=50'

NOTE: FOR CONSTRUCTION DRAWINGS OF MD ROUTE 108 SEE PLANS FROM WALLACE MONTGOMERY & ASSOCIATES, HOWARD COUNTY SOIL CONSERVATION DISTRICT (SCD) TRACKING NUMBER GP-05-51.

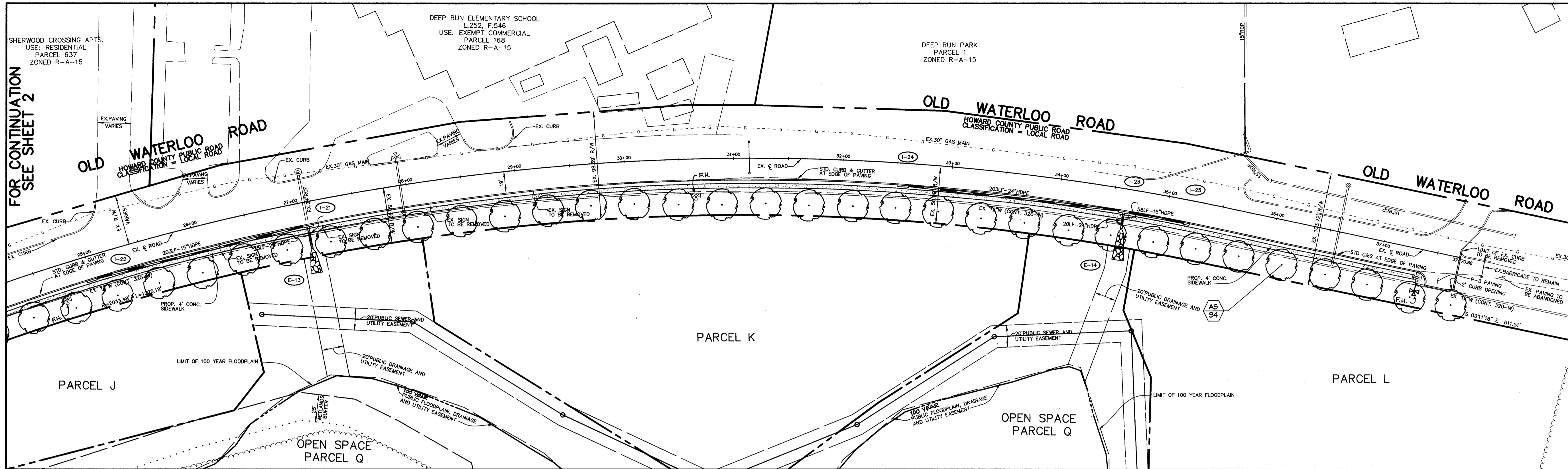
NOTES:
1. 1' FULLDEPTH SAW CUT ALONG LARK BROWN ROAD AND OLD WATERLOO ROAD WIDENINGS.
2. STORM DRAINS UNDER PRIVATE ROADS OVERLOOK DRIVE AND MARIE CURIE DRIVE SHALL BE PRIVATELY OWNED AND MAINTAINED.



LARK BROWN ROAD
LOCAL ROAD
30 MPH DESIGN SPEED

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

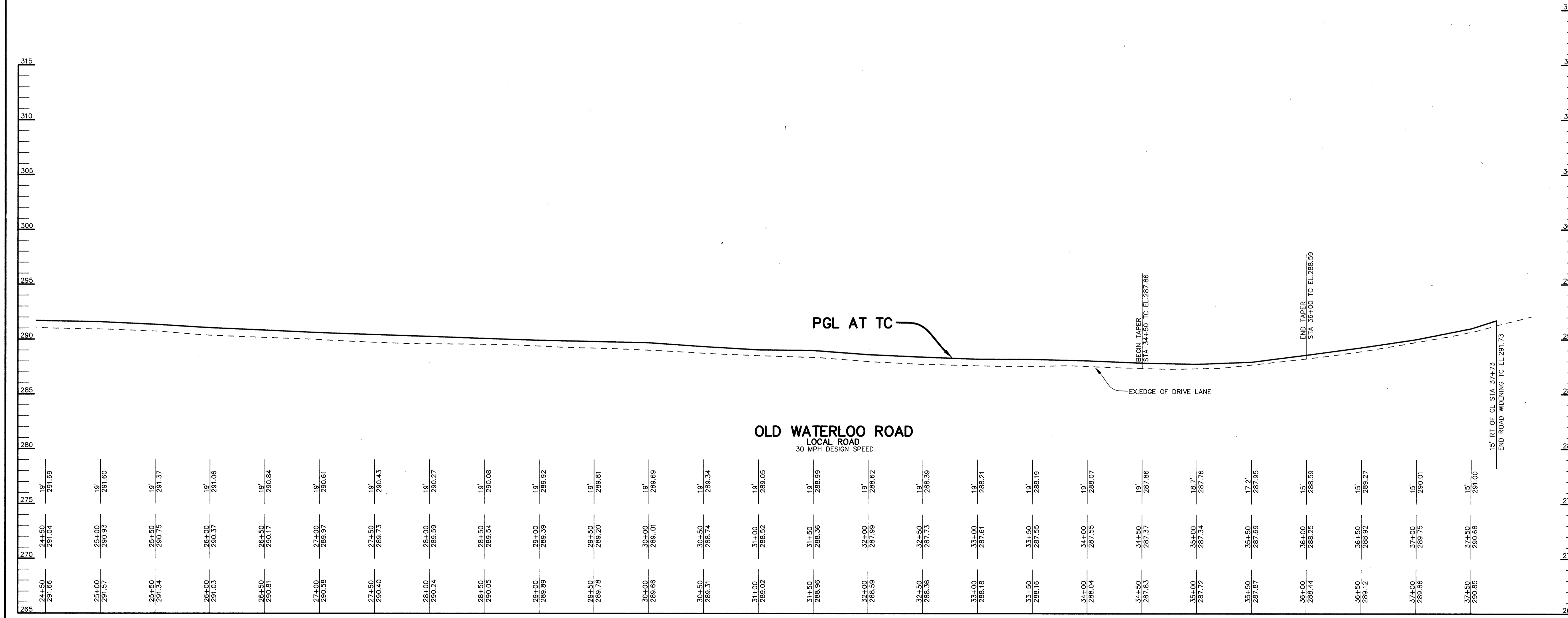
APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS. <i>Mark D. [Signature]</i> 7/28/06 CHIEF, BUREAU OF HIGHWAYS AS DATE	
APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING. <i>Cindy [Signature]</i> 8/9/06 CHIEF, DIVISION OF LAND DEVELOPMENT GS DATE	
<i>[Signature]</i> 8/8/06 CHIEF, DEVELOPMENT ENGINEERING DIVISION GS DATE	
07/06/06	1 INCORPORATE ROAD R.O.W. PER PB CASE NO. 373; REVISE
DATE	NO. REVISION
OWNER / DEVELOPER HRD LAND HOLDINGS, INC. HOWARD RESEARCH AND DEVELOPMENT CORPORATION THE ROUSE BUILDING 10275 LITTLE PATUXENT PARKWAY COLUMBIA, MARYLAND 21044 410-992-6000	
PROJECT BENSON EAST PARCELS A, E-G, J-M, P, R, T, U, NON-BUILDABLE PARCELS S (PRIVATE ROAD) AND OPEN SPACE PARCELS Q AND V	
AREA TAX MAP 37 & 43 ZONED - NEWTOWN PARCELS 482, 587, 382, 421, 547 6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND	
TITLE PLAN AND PROFILE AND STREET TREE PLANTINGS OF LARK BROWN ROAD FROM STA 0+00 TO 13+00	
Patton Harris Rust & Associates, pc Engineers. Surveyors. Planners. Landscape Architects. 8818 Centre Park Drive Columbia, MD 21045 T 410.997.8900 F 410.997.9282	
<div style="display: flex; justify-content: space-between;"> <div> <p>07/06/06 DATE</p> <p>DOMENICK W. COLANGELO 27200</p> </div> <div> <p>DESIGNED BY : C.J.R.</p> <p>DRAWN BY: DAM</p> <p>PROJECT NO : 11621/PRELIM RD4.DWG</p> <p>DATE : AUGUST 18, 2005</p> <p>SCALE : AS SHOWN</p> <p>DRAWING NO. 4 OF 25</p> </div> </div>	



FOR CONTINUATION
SEE SHEET 2

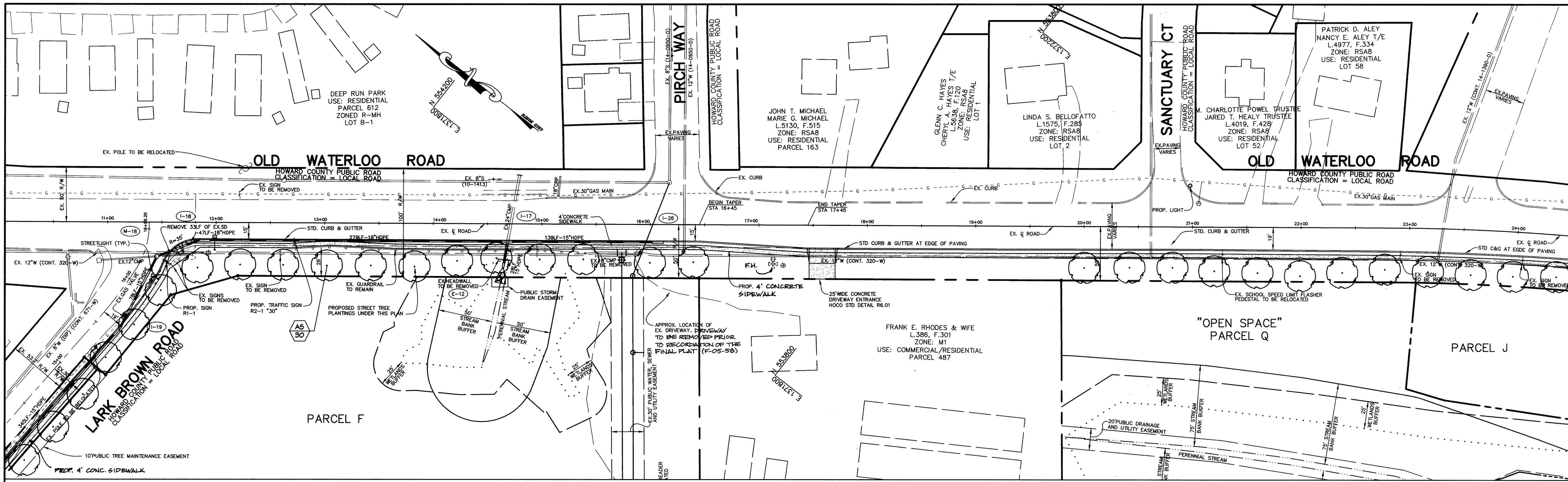
PLAN
SCALE: 1"=50'

NOTE: PARCEL Q (OPEN SPACE) TO BE OWNED BY HRD LAND HOLDINGS, INC..



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

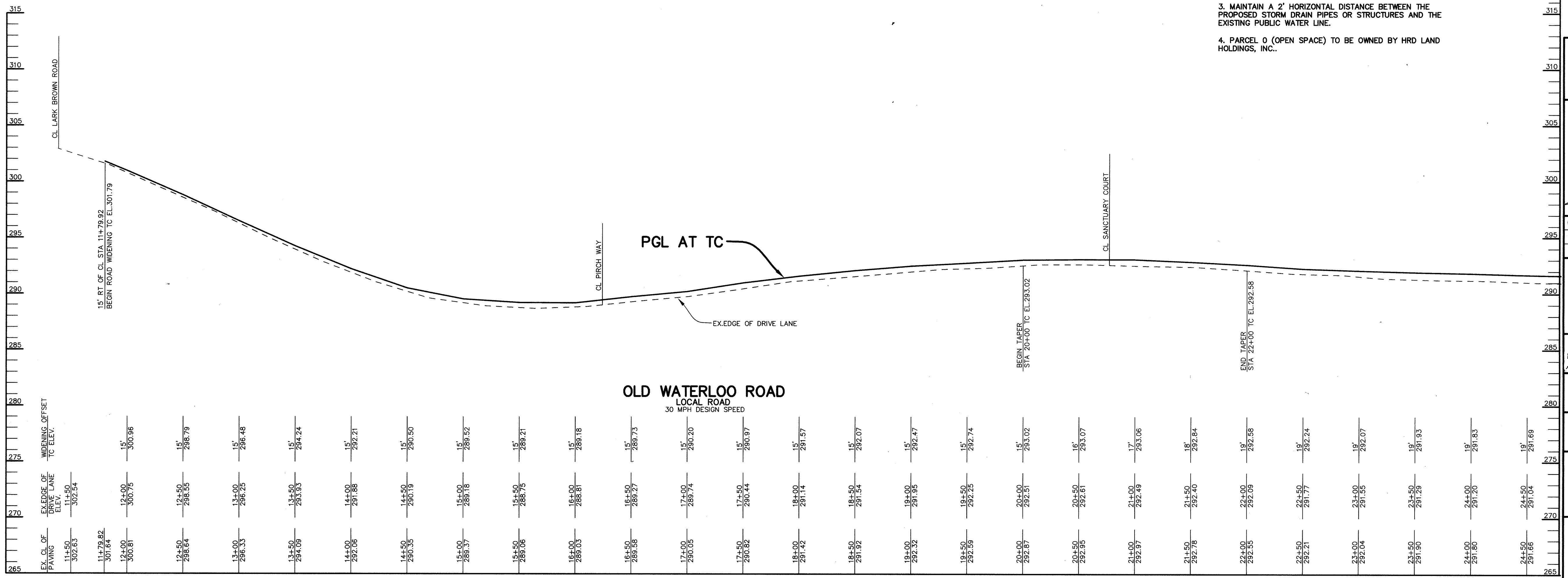
APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.	
<i>William Z. ...</i>	9-19-05
CHIEF, BUREAU OF HIGHWAYS	DATE
APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.	
<i>David ...</i>	10/11/05
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
<i>[Signature]</i>	9/29/05
CHIEF, DEVELOPMENT ENGINEERING DIVISION	DATE
04/14/06	1. INCORPORATE ROAD R.O.W. PER PB CASE NO. 373; REVISE PARCEL DESIGNATIONS AND ADD EASEMENTS AND ROAD NAME
DATE	NO. REVISION
OWNER / DEVELOPER HRD LAND HOLDINGS, INC. HOWARD RESEARCH AND DEVELOPMENT CORPORATION THE ROUSE BUILDING 10275 LITTLE PATUXENT PARKWAY COLUMBIA, MARYLAND 21044 410-992-6000	
PROJECT BENSON EAST PARCELS A, E-G, J-M, P, R, T, U, NON-BUILDABLE PARCEL 8 (COURT ROAD) AND OPEN SPACE PARCELS Q AND V	
AREA TAX MAP 37 & 43 ZONED - NEWTOWN PARCELS 482, 587, 382, 421, 547 6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND	
TITLE PLAN AND PROFILE AND STREET TREE PLANTINGS OF OLD WATERLOO ROAD FROM STA 24+50 TO END	
Patton Harris Rust & Associates, pc Engineers, Surveyors, Planners, Landscape Architects. 8818 Centre Park Drive Columbia, MD 21045 T 410.997.8900 F 410.997.9282	
8-18-05	DATE
DESIGNED BY: C.J.R.	
DRAWN BY: DAM	
PROJECT NO.: 11621/PRELIM RD3.DWG	
DATE: AUGUST 18, 2005	
SCALE: AS SHOWN	
DRAWING NO. 3 OF 25	
<i>Aimee C. Remington</i> AIMEE C. REMINGTON #29923	



PLAN
SCALE: 1"=50'

NOTES:

1. NO ROAD DEDICATION REQUIRED ALONG OLD WATERLOO ROAD. EXISTING 100' R/W IS ADEQUATE FOR ROAD WORK/SIDEWALK INSTALLATION.
2. 1' FULLDEPTH SAW CUT ALONG LARK BROWN ROAD AND OLD WATERLOO ROAD WIDENINGS.
3. MAINTAIN A 2' HORIZONTAL DISTANCE BETWEEN THE PROPOSED STORM DRAIN PIPES OR STRUCTURES AND THE EXISTING PUBLIC WATER LINE.
4. PARCEL Q (OPEN SPACE) TO BE OWNED BY HRD LAND HOLDINGS, INC..



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

FOR CONTINUATION SEE SHEET 3

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.	
<i>William J. ...</i>	9-19-05
CHIEF, BUREAU OF HIGHWAYS	DATE
APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.	
<i>Christy ...</i>	10/11/05
CHIEF, DIVISION OF LAND DEVELOPMENT	DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION	
<i>[Signature]</i>	9/20/05
DATE	REVISION
06/19/06	1 INCORPORATE ROAD ROW PER PB CASE NO. 373; REVISED PARCEL DESIGNATIONS AND ADD EASEMENTS, ROAD NAME AND DRIVEWAY.
OWNER / DEVELOPER	
HRD LAND HOLDINGS, INC. HOWARD RESEARCH AND DEVELOPMENT CORPORATION THE ROUSE BUILDING 10275 LITTLE PATUXENT PARKWAY COLUMBIA, MARYLAND 21044 410-992-6000	
PROJECT	
BENSON EAST PARCELS A, E, G, J, M, R, T, V, NON-BUILDABLE PARCELS (PRIVATE ROAD) AND OPEN SPACE PARCELS Q AND V	
AREA	
TAX MAP 37 & 43 ZONED - NEWTOWN PARCELS 482, 587, 382, 421, 547 6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND	
TITLE PLAN AND PROFILE AND STREET TREE PLANTINGS OF OLD WATERLOO ROAD FROM STA 11+00 TO 24+50	
Patton Harris Rust & Associates, pc Engineers, Surveyors, Planners, Landscape Architects. 8818 Centre Park Drive Columbia, MD 21045 T 410.997.8900 F 410.997.9282	
DATE	DESIGNED BY : C.J.R.
8-16-05	DRAWN BY: DAM
	PROJECT NO : 11621/PRELIM RD2.DWG
	DATE : AUGUST 18, 2005
	SCALE : AS SHOWN
	DRAWING NO. 2 OF 25

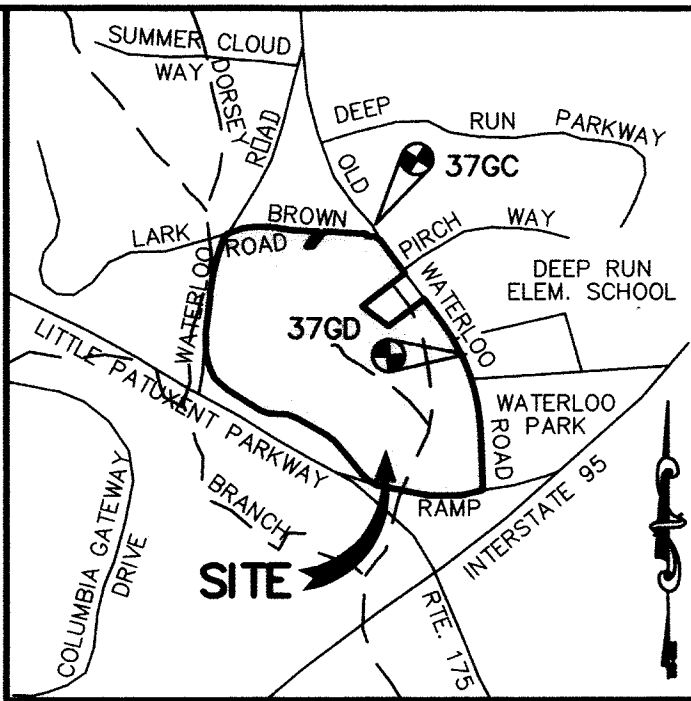
SHEET INDEX	
NO	DESCRIPTION
1	TITLE SHEET
2	PLAN AND PROFILE AND STREET TREE PLANTINGS OF OLD WATERLOO ROAD FROM STA 11+00 TO 24+50
3	PLAN AND PROFILE AND STREET TREE PLANTINGS OF OLD WATERLOO ROAD FROM STA 24+50 TO END
4	PLAN AND PROFILE AND STREET TREE PLANTINGS OF LARK BROWN ROAD FROM STA 0+00 TO 13+00
5	PLAN AND PROFILE AND STREET TREE PLANTINGS OF LARK BROWN ROAD FROM STA 13+00 TO END
6	PLAN OF MARYLAND ROUTE 108 FROM STA 50+00 TO 75+89
7	STRIPING PLAN FOR LARK BROWN ROAD AND OLD WATERLOO ROAD
8	GRADING AND SEDIMENT CONTROL PLAN AND DRAINAGE AREA MAP
9	GRADING AND SEDIMENT CONTROL PLAN AND DRAINAGE AREA MAP
10	GRADING AND SEDIMENT CONTROL PLAN AND DRAINAGE AREA MAP
11	GRADING AND SEDIMENT CONTROL PLAN AND DRAINAGE AREA MAP
12	GRADING AND SEDIMENT CONTROL PLAN AND DRAINAGE AREA MAP
13	PLAN AND PROFILE OF GATEWAY OVERLOOK DRIVE FROM STA 0+00 TO 13+50
14	PLAN AND PROFILE OF GATEWAY OVERLOOK DRIVE FROM STA 13+50 TO 18+81
15	PLAN AND PROFILE OF MARIE CURIE DRIVE FROM STA 0+00 TO 9+88
16	SEDIMENT CONTROL DETAILS
17	NOTES AND DETAILS
18	STRIPING PLAN FOR GATEWAY OVERLOOK DRIVE, MARIE CURIE DRIVE AND ROBINSON JEFFERS DRIVE
19	STRIPING PLAN FOR GATEWAY OVERLOOK DRIVE AND GRADING, SEDIMENT CONTROL PLAN
20	STORM DRAIN PROFILES
21	STORM DRAIN PROFILES
22	STORM DRAIN PROFILES
23	SIGNAL PLAN
24	MOT PLAN
25	MOT PLAN

ROADWAY AND STORM DRAIN PLANS

BENSON EAST

6th ELECTION DISTRICT

HOWARD COUNTY, MARYLAND



VICINITY MAP
SCALE: 1" = 2000'

BENCHMARKS

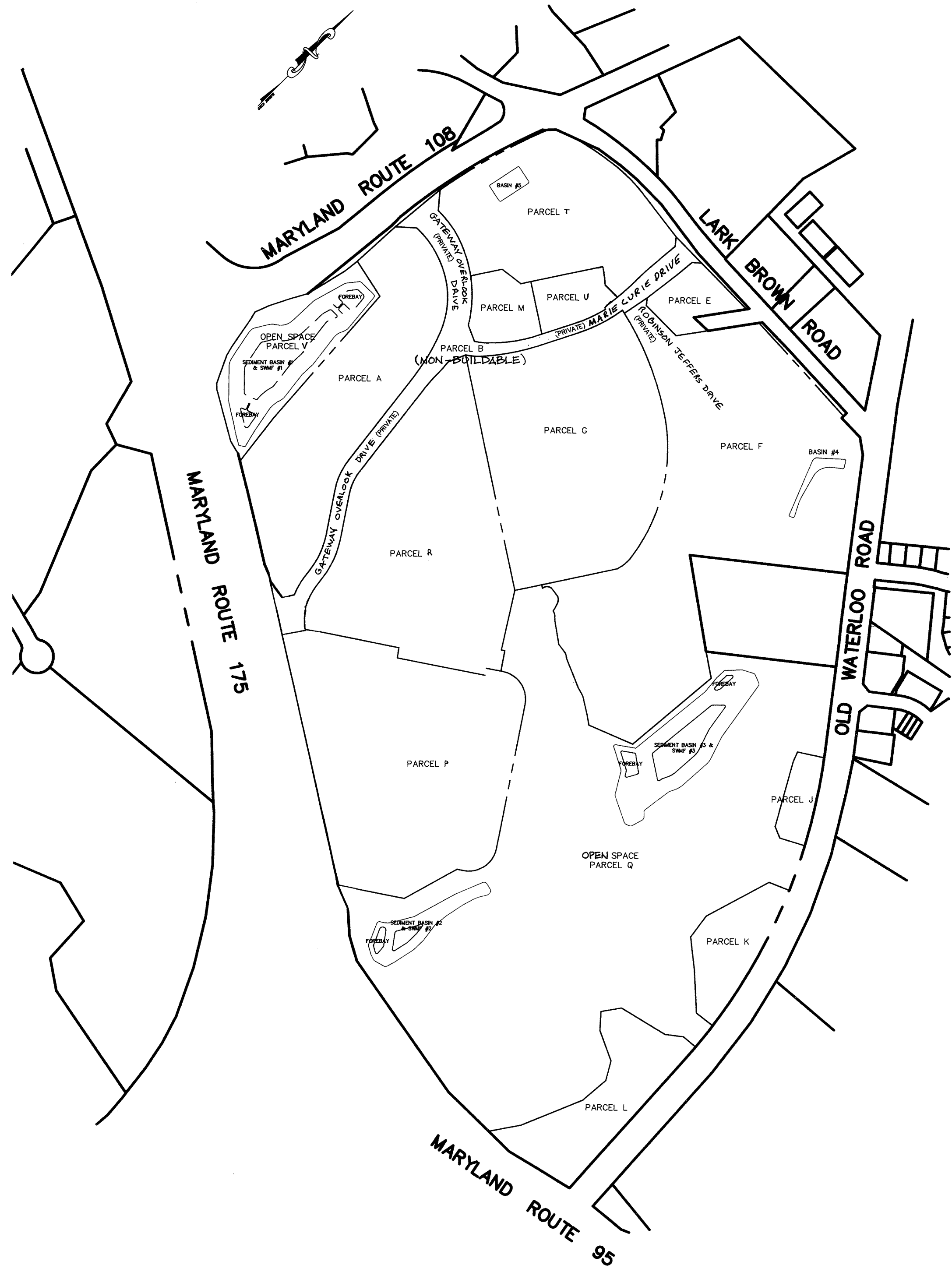
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E 1,370,946.348

CONTROL STATION 37GC
ELEVATION 307.455
N 552,081.826
E 1,370,625.818

GENERAL NOTES

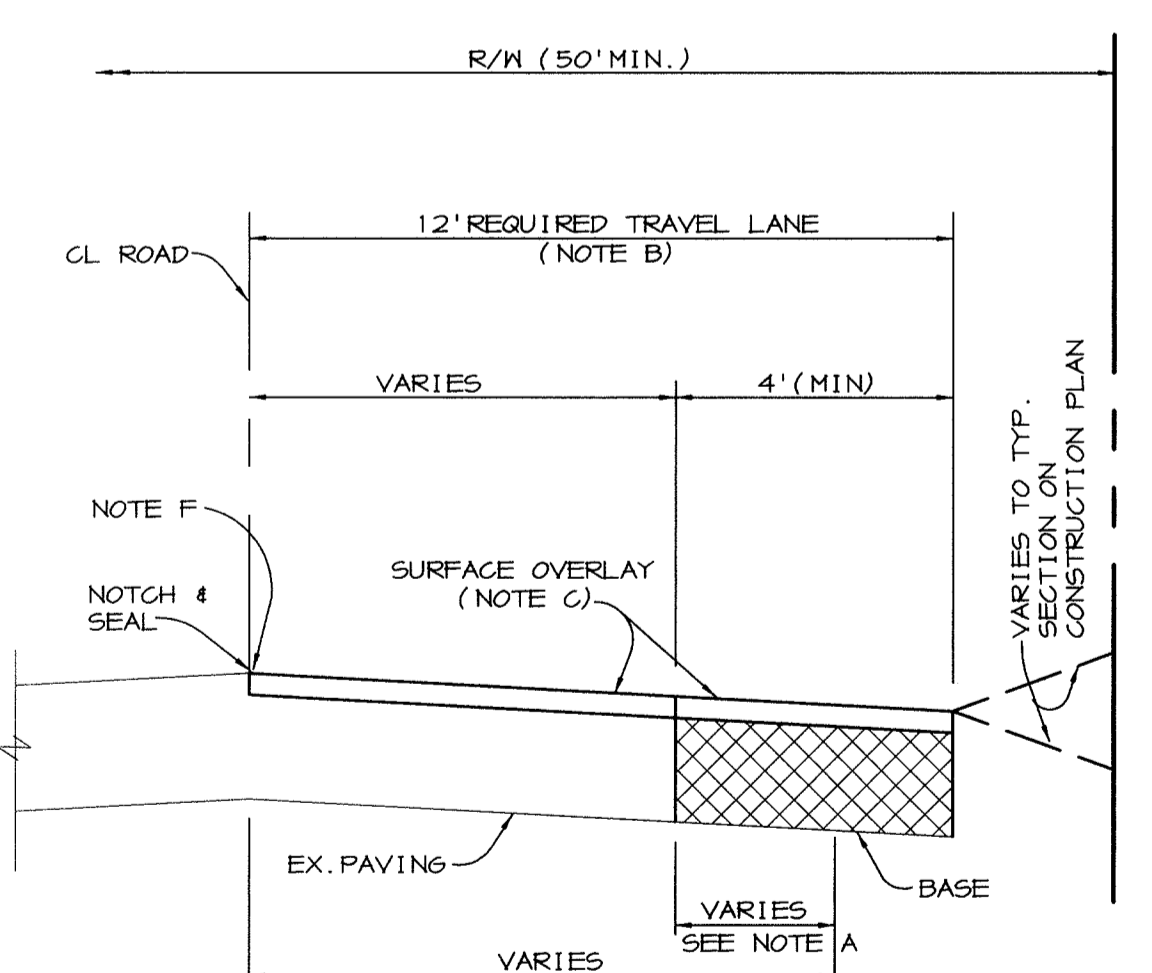
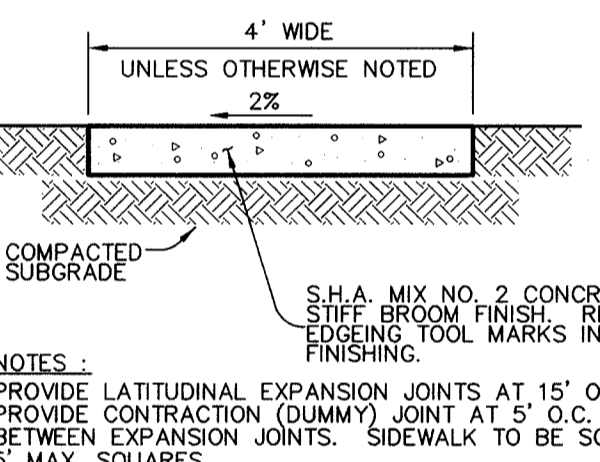
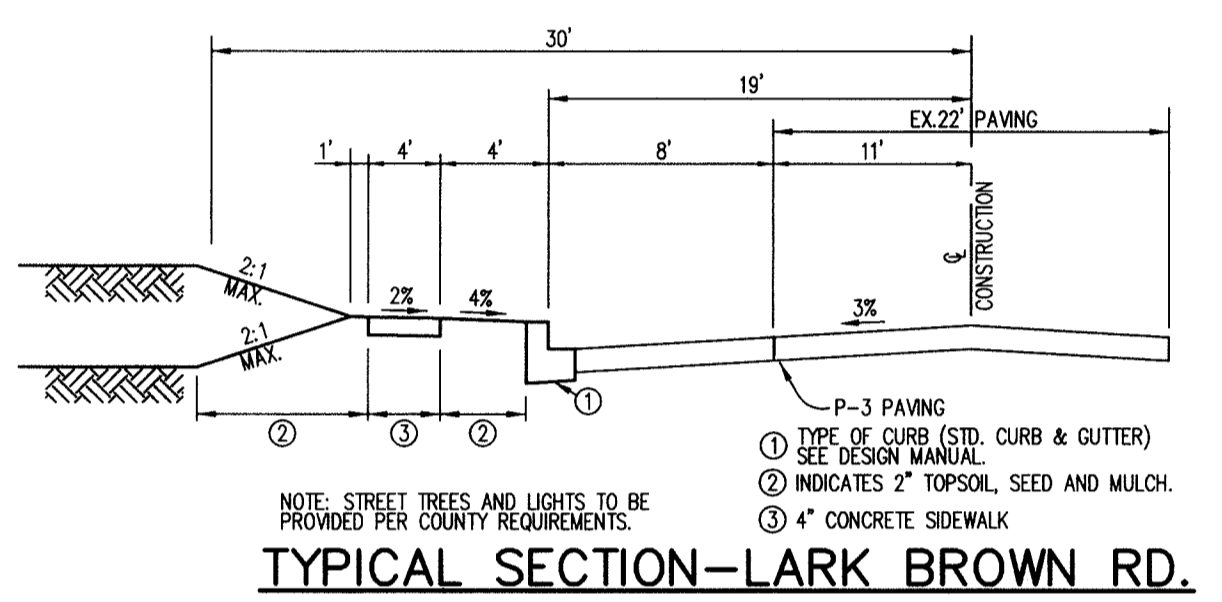
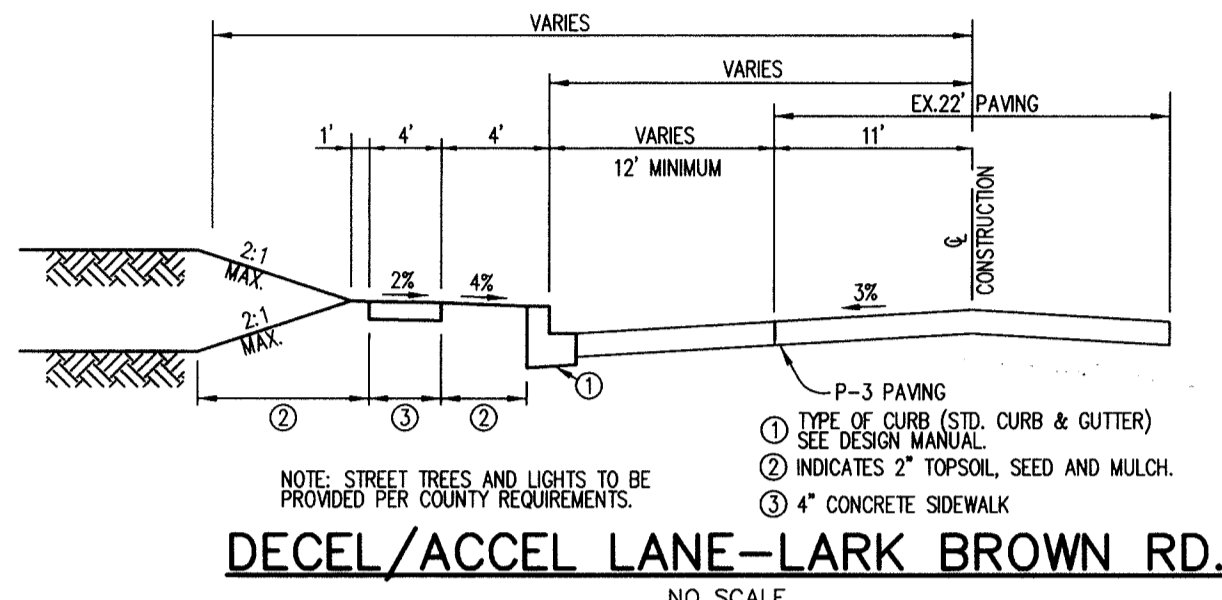
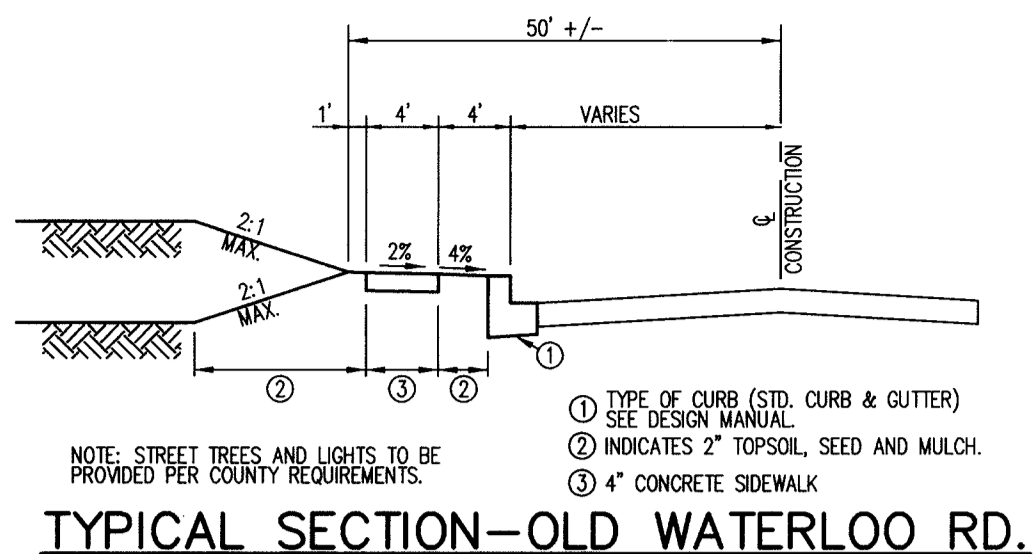
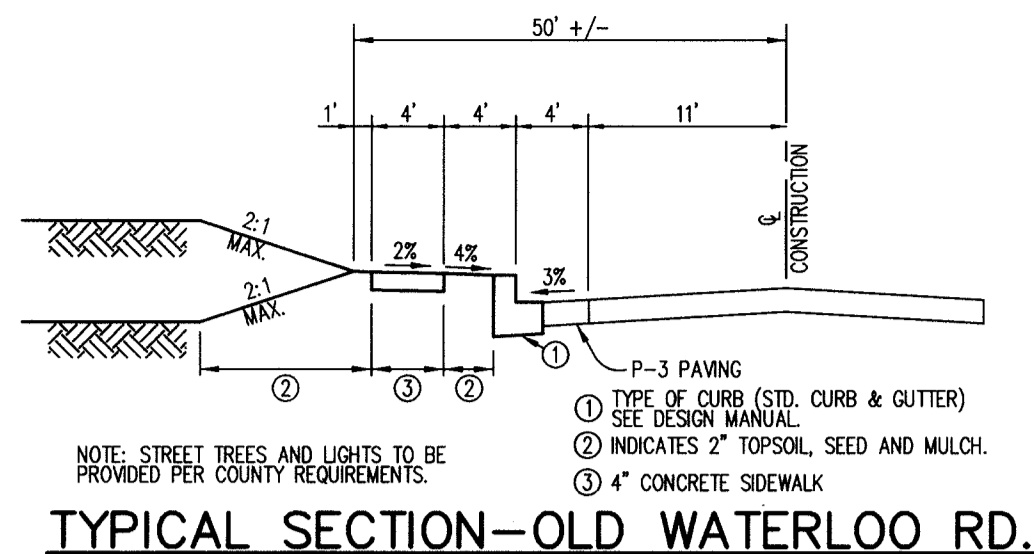
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOL. IV "STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION" PLUS MSHA STANDARDS AND SPECIFICATIONS, IF APPLICABLE.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PUBLIC WORKS/BUREAU OF ENGINEERING/CONSTRUCTION INSPECTION DIVISION AT (410) 313-1880 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF WORK.
- THE CONTRACTOR SHALL NOTIFY "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO ANY EXCAVATION WORK BEING DONE.
- TRAFFIC CONTROL DEVICES, MARKINGS, AND SIGNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD). ALL STREET AND REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF ANY ASPHALT.
- STREET LIGHT PLACEMENT AND THE TYPE OF FIXTURE AND POLE SHALL BE IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME III (1993) AND AS MODIFIED BY "GUIDELINES FOR STREET LIGHTS IN RESIDENTIAL DEVELOPMENTS, (JANUARY 1998)." A MINIMUM SPACING OF 20' SHALL BE MAINTAINED BETWEEN ANY STREET LIGHT AND ANY TREE.
- THE EXISTING TOPOGRAPHY IS TAKEN FROM FIELD RUN SURVEY WITH MAXIMUM TWO FOOT CONTOUR INTERVALS PREPARED BY DAFT MCCUNE WALKER, INC. DATED MAY 2003.
- THE COORDINATES SHOWN HEREON ARE BASED UPON THE HOWARD COUNTY GEODETIC CONTROL WHICH IS BASED UPON THE MARYLAND STATE PLANE COORDINATE SYSTEM. HOWARD COUNTY MONUMENT NOS. 37GD AND 43AI WERE USED FOR THIS PROJECT.
- WATER IS PUBLIC. CONTRACT NO. 24-4209-D AND 24-4284-D.
- SEWER IS PUBLIC. CONTRACT NO. 24-4209-D AND 24-4284-D.
- THE STORMWATER MANAGEMENT FACILITIES PROPOSED UNDER SDP-04-163 FOR THIS SITE ARE ALL PRIVATELY OWNED AND MAINTAINED. WATER QUALITY VOLUME AND CHANNEL PROTECTION WILL BE PROVIDED IN ONE WET POND AND TWO MICROPOOL EXTENDED DETENTION PONDS. REV. MANAGEMENT WILL BE ADDRESSED AT THE TIME OF ULTIMATE SITE DEVELOPMENT OF THE INDIVIDUAL PARCELS. NO STORMWATER MANAGEMENT IS PROVIDED FOR RESIDENTIAL USE PARCELS ALONG OLD WATERLOO ROAD.
- APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING UTILITIES AND MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED DUE TO CONTRACTOR'S OPERATION SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTOR'S EXPENSE. EXISTING UTILITIES ARE SHOWN BASED ON THE BEST AVAILABLE INFORMATION.
- THE WETLANDS AND STREAMS ARE BASED ON FIELD OBSERVATIONS BY DMW AND CONFIRMED BY ON-SITE MEETING WITH US ARMY CORP. OF ENGINEERS ON DEC. 13, 2002.
- THE TRAFFIC STUDY FOR THIS PROJECT WAS PREPARED BY WELLS & ASSOCIATES DATED APRIL, 2005.
- THE NOISE STUDY IS NOT REQUIRED FOR THIS PROJECT.
- THIS PROJECT IS EXEMPT FROM FOREST CONSERVATION PER SECTION 16.12.02 (3)(1)(i) OF THE FOREST CONSERVATION MANUAL SINCE IT HAD PRELIMINARY APPROVAL PRIOR TO 12-31-92.
- THE BOUNDARY SURVEY FOR THIS PROJECT WAS PREPARED BY DAFT, MCCUNE & WALKER, INC. SEPTEMBER 2002.
- SUBJECT PROPERTY ZONED NT PER 2-2-04 COMPREHENSIVE ZONING PLAN.
- ALL ELEVATIONS SHOWN ARE BASED ON THE U.S.C. AND G.S. MEAN SEA LEVEL DATUM, 1929.
- SEE DEPARTMENT OF PLANNING AND ZONING FILE NO'S: S-03-05, FDP-240, PB 360, WP-04-113, 24-4209-D, WP-04-135, SDP-04-163.
- THE CONTRACTOR SHALL TEST PIT EXISTING UTILITIES AT LEAST (5) DAYS BEFORE STARTING WORK SHOWN ON THESE DRAWINGS.
- CONTRACTOR IS SOLELY RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, PROCEDURES, AND SAFETY PRECAUTIONS AND PROGRAMS.
- PIPE SHALL NOT BE INSTALLED BY THE CONTRACTOR UNTIL THE LENGTH CALLED FOR AT EACH STATION HAS BEEN APPROVED BY THE ENGINEER IN THE FIELD.
- NO PIPE SHALL BE LAID UNTIL LINES OF EXCAVATION HAVE BEEN BROUGHT WITHIN 6" OF FINISHED GRADE.
- ALL INLETS SHALL BE CONSTRUCTED IN ACCORDANCE WITH HOWARD COUNTY STANDARDS.
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS.
- STORM DRAIN TRENCHES WITHIN ROAD RIGHT OF WAY SHALL BE BACKFILLED AND COMPACTED IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL, VOLUME IV, I.E., STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION, LATEST AMENDMENTS.
- PROFILE STATIONS SHALL BE ADJUSTED AS NECESSARY TO CONFORM TO PLAN DIMENSIONS.
- DESIGNED TRAFFIC SPEED IN ACCORDANCE WITH THE HOWARD COUNTY DESIGN MANUAL VOL. III.
- ALL FILL AREAS WITHIN ROADWAY AND UNDER STRUCTURES TO BE COMPACTED TO A MINIMUM OF 95% COMPACTION OF AASHTO T180.
- ALL STREET CURB RETURNS SHALL HAVE 25' RADII UNLESS OTHERWISE NOTED.
- ALL STREET LIGHTS SHALL BE LOCATED BETWEEN 2'-0" AND 4'-0" BEHIND FACE OF CURB.
- PERIMETER LANDSCAPING, PRIVATE ROAD STREET TREES AND PROPOSED SWM FACILITY PLANTINGS ARE DEFERRED UNTIL SITE DEVELOPMENT PLAN. STREET TREE PLANTINGS FOR LARK BROWN ROAD AND OLD WATERLOO ROAD SHALL BE PROVIDED AS SHOWN ON STREET TREE PLANTING SHEETS OF THESE ROAD CONSTRUCTION DRAWINGS. SURETY FOR 72 SHADE TREES SHALL BE POSTED WITH THE DPW'S DEVELOPERS AGREEMENT.
- STREAM BUFFERS ARE DETERMINED BY LAND USE ADJOINING THE OPEN SPACE. EMPLOYMENT USE = 50' BUFFER FROM ANY STREAM. RESIDENTIAL USES= 50' BUFFER FOR INTERMITTENT STREAMS AND 75' BUFFER FOR PERENNIAL STREAMS.
- FLOODPLAIN STUDY WAS PREPARED BY DAFT MCCUNE & WALKER, INC. DATED 2003.
- THERE ARE NO KNOWN CEMETERIES OR GRAVE SITES ON THIS PROPERTY. ADDITIONAL FOREBAY LOCATIONS AND STORAGE VOLUME MAY BE REQUIRED AT THAT TIME.
- WP-04-113 DENIED REQUEST TO WAIVE SECTION 16.155.a.1.(i), WHICH REQUIRES APPROVAL OF SITE DEVELOPMENT PLAN PRIOR TO ISSUANCE OF GRADING OR BUILDING PERMIT, TO ALLOW THE PETITIONER TO MASS GRADE THE SUBJECT PROPERTY.
- WP-04-135 APPROVED REQUEST TO WAIVE SECTION 16.146.a.(1), WHICH REQUIRES SUBMISSION OF PRELIMINARY PLAN APPLICATION WITHIN A CERTAIN TIME AFTER APPROVAL OF A SKETCH PLAN, AND PRIOR TO SUBMISSION OF A FINAL PLAN.

- APPROVAL IS SUBJECT TO THE FOLLOWING CONDITIONS:
- THE FINAL PLAN SHALL BE SUBMITTED WITHIN 4 MONTHS OF APPROVAL FOR THIS WAIVER (ON OR BEFORE 10/23/04) FOR THE AREA ASSOCIATED WITH PHASE 1; WITHIN 6 MONTHS OF APPROVAL OF THIS WAIVER (ON OR BEFORE 12/23/04) FOR THE AREA ASSOCIATED WITH PHASE 2; AND WITHIN 9 MONTHS OF APPROVAL OF THIS WAIVER (ON OR BEFORE 03/23/05) FOR THE NON-RESIDENTIAL AREA OF THE SUBDIVISION. YOU MAY SUBMIT A SINGLE FINAL PLAN APPLICATION TO COVER THE ENTIRE SUBDIVISION SINCE THE MILESTONE DATE TO REMAIN IN COMPLIANCE WITH APFO REQUIREMENTS.
 - YOU MAY NOT CONVERT THE ROADS TO PUBLIC ROADS.
 - YOU WILL HAVE TO COMPLY WITH ALL SHA REQUIREMENTS FOR ROAD IMPROVEMENTS ON ROUTE 108, IN CONJUNCTION WITH THE REVIEW AND APPROVAL OF THE FINAL.
 - LANDSCAPING FOR THE EXISTING SWM FACILITIES WAS ADDRESSED UNDER SDP-04-163. PERIMETER LANDSCAPING, PROPOSED SWM PLANTINGS AND ALL OTHER REQUIRED LANDSCAPING IN ACCORDANCE WITH SECTION 16.124 OF THE LANDSCAPE MANUAL SHALL BE DEFERRED UNTIL SITE DEVELOPMENT PLAN APPROVAL FOR THIS SITE.
 - PROPOSED STORMWATER MANAGEMENT DRAINAGE AREA BOUNDARIES WILL REQUIRE VERIFICATION AT THE ULTIMATE DEVELOPMENT SDP SUBMITTED. MODIFICATIONS TO DRAINAGE AREAS CURRENTLY SHOWN FOR THESE POND DESIGNS MAY REQUIRE ADDITIONAL SWM DRAINAGE AREA PERCENT IMPERVIOUSNESS VALUES USED TO DESIGN PROPOSED PONDS MUST BE VERIFIED AT THE TIME ULTIMATE DEVELOPMENT SITE DEVELOPMENT PLAN SUBMITTAL. ANY INCREASE IN DRAINAGE AREA PERCENT IMPERVIOUSNESS VALUES WILL REQUIRE STORMWATER MANAGEMENT. AT THE ULTIMATE DEVELOPMENT SITE DEVELOPMENT PLAN SUBMISSION, FOREBAY REQUIREMENTS WILL BE VERIFIED. ADDITIONAL FOREBAY LOCATIONS AND STORAGE VOLUME MAY BE REQUIRED AT THAT TIME.
 - ALL SIGN POSTS USED FOR TRAFFIC CONTROL SIGNS INSTALLED IN THE COUNTY RIGHT OF WAY SHALL BE MOUNTED ON A 2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE POST (14 GAUGE) INSERTED INTO A 2-1/2" GALVANIZED STEEL, PERFORATED, SQUARE TUBE SLEEVE (12 GAUGE) - 3' LONG. A GALVANIZED STEEL POLE CAP SHALL BE MOUNTED ON TOP OF EACH POST.
 - STORM DRAINS UNDER PRIVATE ROADS GATEWAY OVERLOOK DRIVE AND MARIE CURIE DRIVE SHALL BE PRIVATELY OWNED AND MAINTAINED.



PLAN
SCALE: 1" = 300'

APPROVED : HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.	
<i>William T. Mahala</i>	9-19-05 DATE
CHIEF, BUREAU OF HIGHWAYS	
APPROVED : HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.	
<i>Cathy Hamner</i>	10/11/05 DATE
CHIEF, DIVISION OF LAND DEVELOPMENT	
<i>gmo</i>	9/26/05 DATE
CHIEF, DEVELOPMENT ENGINEERING DIVISION	
06/14/06	1 INCORPORATE ROAD R.O.W. PER PB CASE NO. 373; REVISE PARCEL DESIGNATIONS AND/ADD EASEMENTS AND ROADNAME
DATE NO.	REVISION
OWNER / DEVELOPER	
HRD LAND HOLDINGS, INC. HOWARD RESEARCH AND DEVELOPMENT CORPORATION THE ROUSE BUILDING 10275 LITTLE PATUXENT PARKWAY COLUMBIA, MARYLAND 21044 410-992-6000	
PROJECT	
BENSON EAST PARCELS A-E-G-I, M, P, R, T, U, NON-BUILDABLE PARCELS S (PRIVATE ROAD) AND OPEN SPACE PARCELS Q AND V	
AREA	
TAX MAP 37 & 43 ZONED - NEWTOWN PARCELS 482, 587, 382, 421, 547 6th ELECTION DISTRICT HOWARD COUNTY, MARYLAND	
TITLE	
TITLE SHEET	
Patton Harris Rust & Associates, pc Engineers, Surveyors, Planners, Landscape Architects. 8818 Centre Park Drive Columbia, MD 21045 T 410.997.8900 F 410.997.9282	
8-18-05 DATE	DESIGNED BY : C.J.R.
	DRAWN BY: DAM
	PROJECT NO : 11621/PRELIM RD1.DWG
	DATE : AUGUST 18, 2005
	SCALE : AS SHOWN
<i>Alimee C. Remington</i> AIMEE C. REMINGTON #29923	DRAWING NO. 1 OF 25



NOTE A - WHEN EXISTING TRAVEL LANE IS LESS THAN THE REQUIRED 12' LANE, CONTRACTOR SHALL REMOVE ENOUGH OF THE EXISTING ROAD BED TO PROVIDE A MINIMUM BASE WIDENING OF 4'.

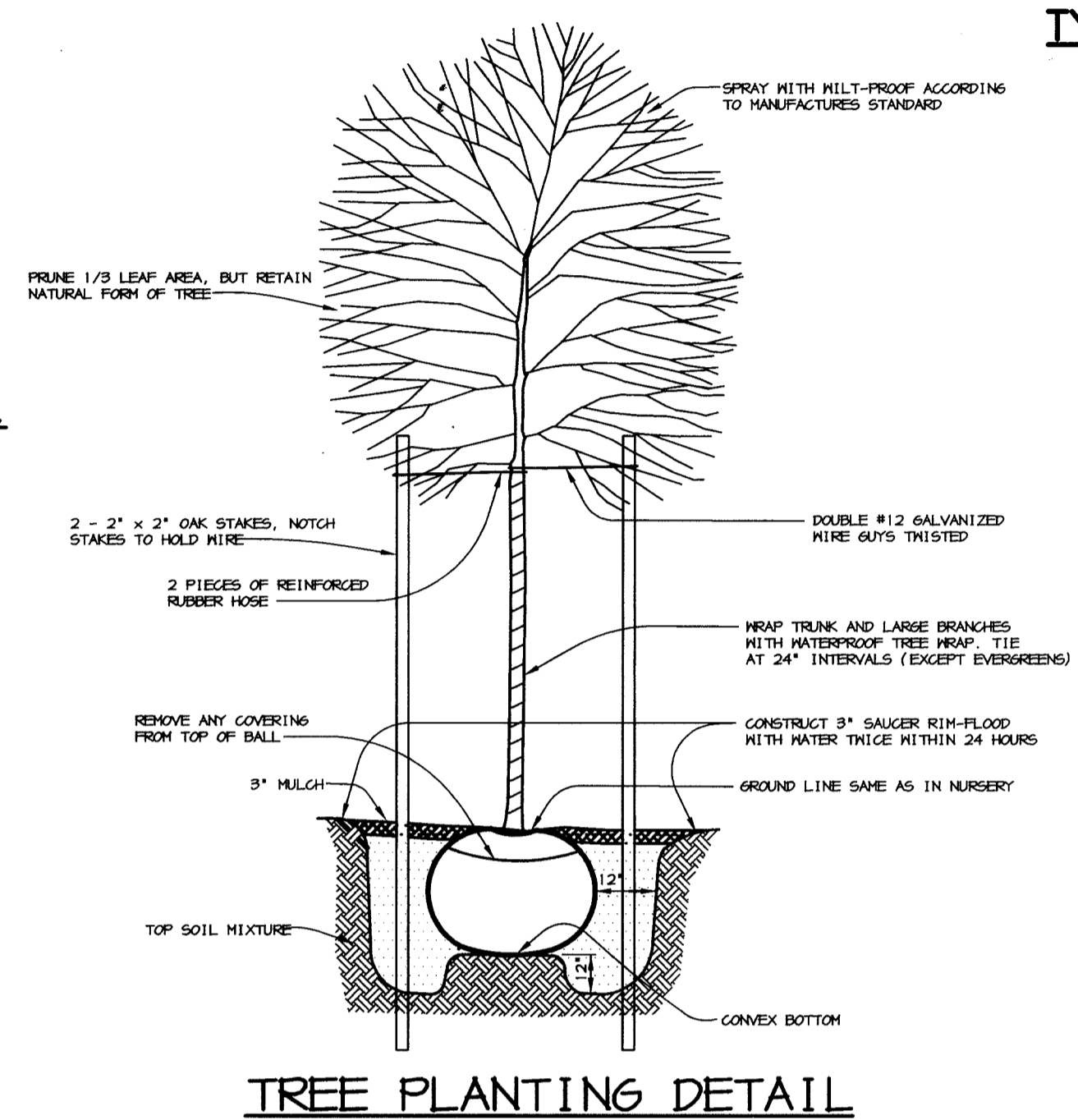
NOTE B - THE SURFACE OVERLAY SHALL BE CARRIED TO THE CL OF THE ROAD AND NOTCHED AND SEALED.

NOTE C - SURFACE OVERLAY COURSE TO BE EQUAL TO SURFACE COURSE OF TYPICAL PAVING SECTION OF SUBDIVISION.

NOTE D - CL OF ROAD TO BE MILLED AT DEPTH OF 1 1/2"x1" WIDE USING A MILLING MACHINE.

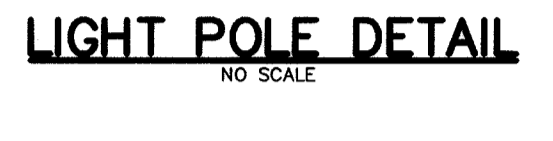
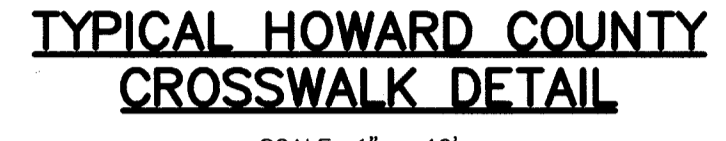
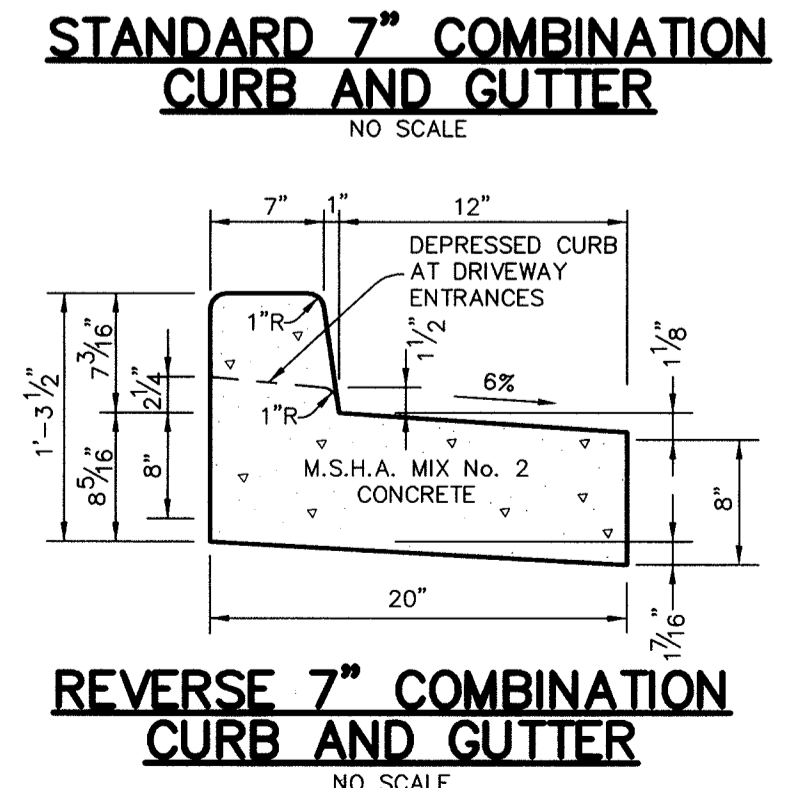
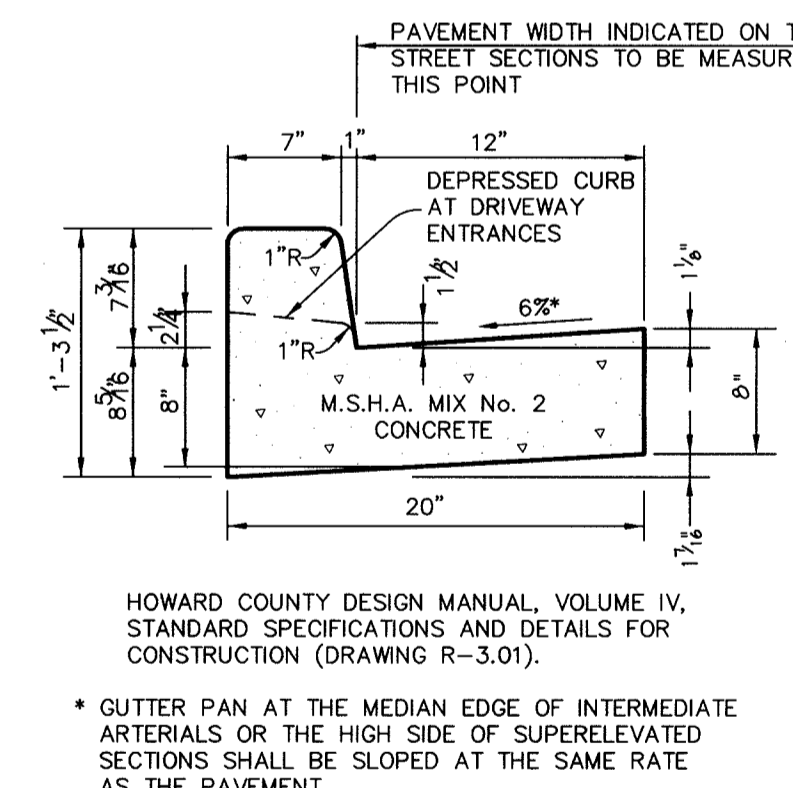
NOTE E - FULL CUT ONE FOOT INTO EX. PAVING

NOTE F - OVERLAY SHALL COVER BOTH STRIPES OF DOUBLE YELLOW CENTER STRIPING.

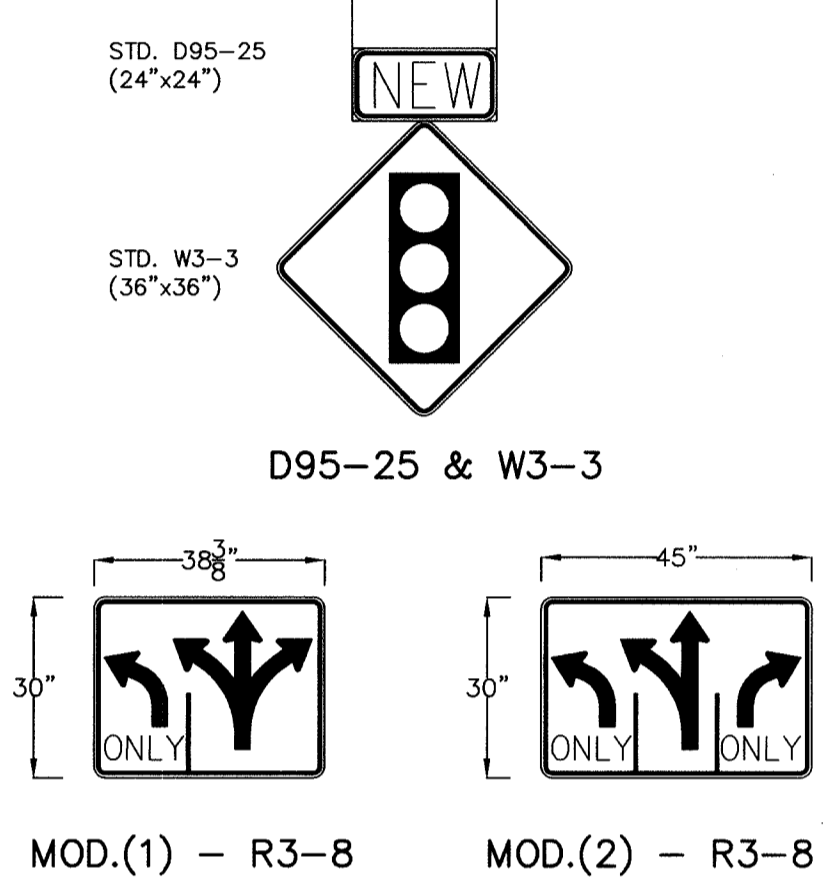


STREET TREE PLANTING SCHEDULE

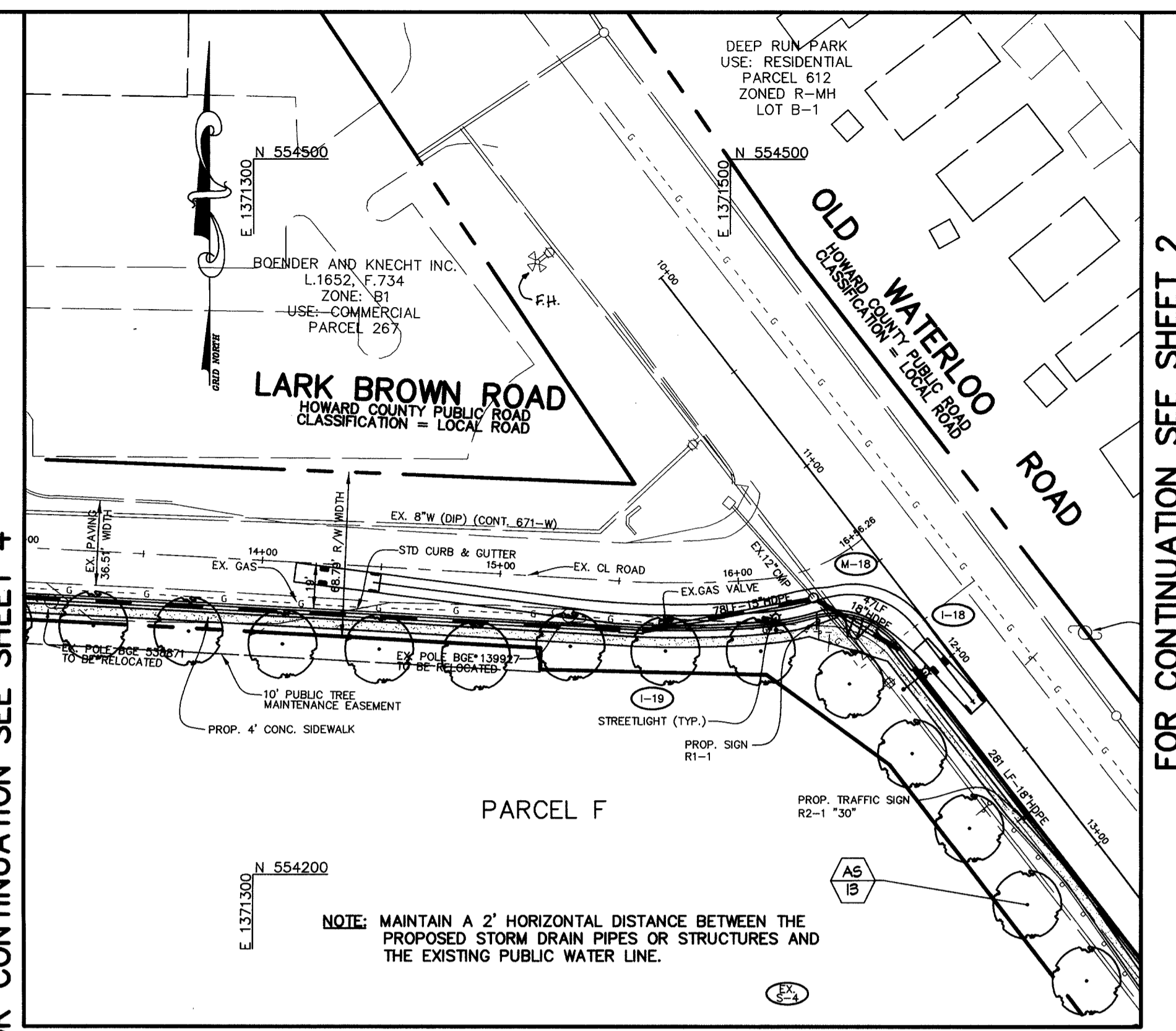
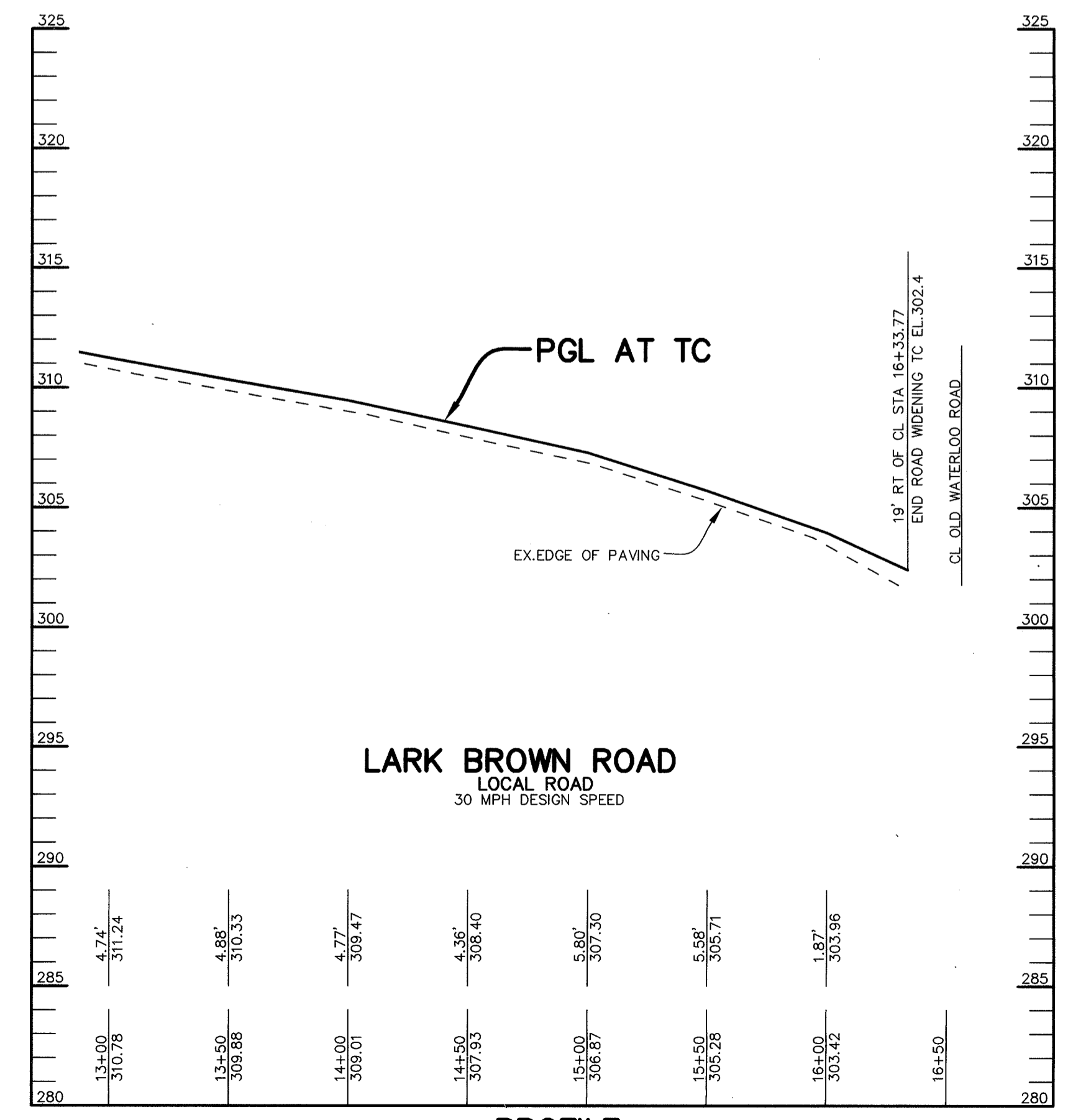
SYMBOL	QTY.	SCIENTIFIC COMMON NAME	SIZE	ROOT	REMARKS
AS	66	<i>Acer saccharum</i> Sugar Maple	2.5'-3' cal.	BIB	Plant as shown



- ALL LIGHT FIXTURES TO BE SINGLE LUMINAIRE 400 WATT MERCURY TYPE WITH METAL POLES AND DIRECTED DOWNWARD
- LOCATIONS OF LIGHT FIXTURES ARE ON THE PLAN AND ARE SHOWN THUS.
- LIGHTS TO BE MODULE II TYPE AS MANUFACTURED BY MOLDCAST OR APPROVED EQUAL.
- POLE AND FIXTURE TO HAVE BLACK POLYESTER ENAMEL FINISH.
- POLE TO BE LOCATED 3' BACK FROM BACK OF CURB.



- NOTES:
- SIGNS SHOWN HERE ARE MODIFICATIONS OF STANDARD SIGNS FOUND IN THE MARYLAND STATE HIGHWAY ADMINISTRATION (MSHA) STANDARD SIGN BOOK. ALL OTHER SIGNS ON ROAD PLANS AND STRIPING PLANS ARE STANDARD MSHA SIGNS.
 - ALL SIGNS SHOWN HERE ARE GROUND-MOUNTED.
 - MODIFICATIONS TO THE R3-8 SIGN SHALL REMAIN CONSISTENT WITH THE STANDARD SIZE, COLOR, AND REFLECTIVITY OF ARROWS, TEXT, LEGEND AND BACKGROUND OF STANDARD SIGN.
 - SIGNS ARE SUBJECT TO APPROVAL BY HOWARD COUNTY TRAFFIC DIVISION AND MSHA.



FOR REVISION NO. 2
MORRIS & RITCHEY ASSOCIATES, INC.
Kerri S. Kington 12/15/06
KERRI S. KINGTON, PE NO. LIC. 201132

DATE	NO.	REVISION
11/27/06	2	REMOVED TREES PER F-06-203 AND SDP-06-128

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.

William J. Mahoney 9-19-05
CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.

Clifford Stankovic 9/16/05
CHIEF, DIVISION OF LAND DEVELOPMENT DATE

gn 9/16/05
CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

09/19/06 1 INCORPORATE ROAD R.O.W. PER PB CASE NO 373; REVISE PARCEL DESCRIPTIONS AND ADD EASEMENTS AND ROAD NAME

DATE	NO.	REVISION
09/19/06	1	INCORPORATE ROAD R.O.W. PER PB CASE NO 373; REVISE PARCEL DESCRIPTIONS AND ADD EASEMENTS AND ROAD NAME

OWNER / DEVELOPER
HRD LAND HOLDINGS, INC.
HOWARD RESEARCH AND DEVELOPMENT CORPORATION
THE ROUSE BUILDING
10275 LITTLE PATUXENT PARKWAY
COLUMBIA, MARYLAND 21044
410-992-6000

PROJECT **BENSON EAST**
PARCELS A, E, G, J, M, P, R, T, U, NON-RECLAIMABLE PARCELS (PRIVATE ROAD) AND OPEN SPACE PARCELS A AND V

AREA TAX MAP 37 & 43 ZONED - NEWTOWN
PARCELS 482, 587, 382, 421, 547
6th ELECTION DISTRICT
HOWARD COUNTY, MARYLAND

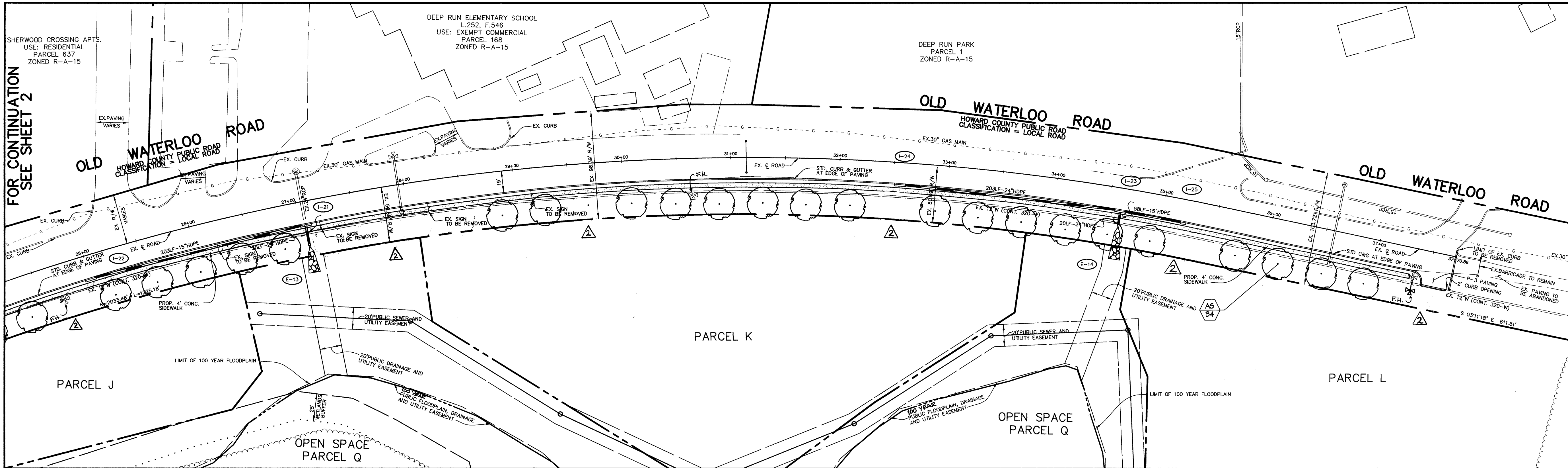
TITLE PLAN AND PROFILE AND STREET TREE PLANTINGS FOR LARK BROWN ROAD FROM STA 13+00 TO END

Patton Harris Rust & Associates, pc
Engineers, Surveyors, Planners, Landscape Architects.
8818 Centre Park Drive
Columbia, MD 21045
T 410.997.8900
F 410.997.9282

DESIGNED BY: C.J.R.
DRAWN BY: DAM
PROJECT NO: 11621/PRELIM RDS.DWG
DATE: AUGUST 18, 2005
SCALE: AS SHOWN
DRAWING NO. 5 OF 25

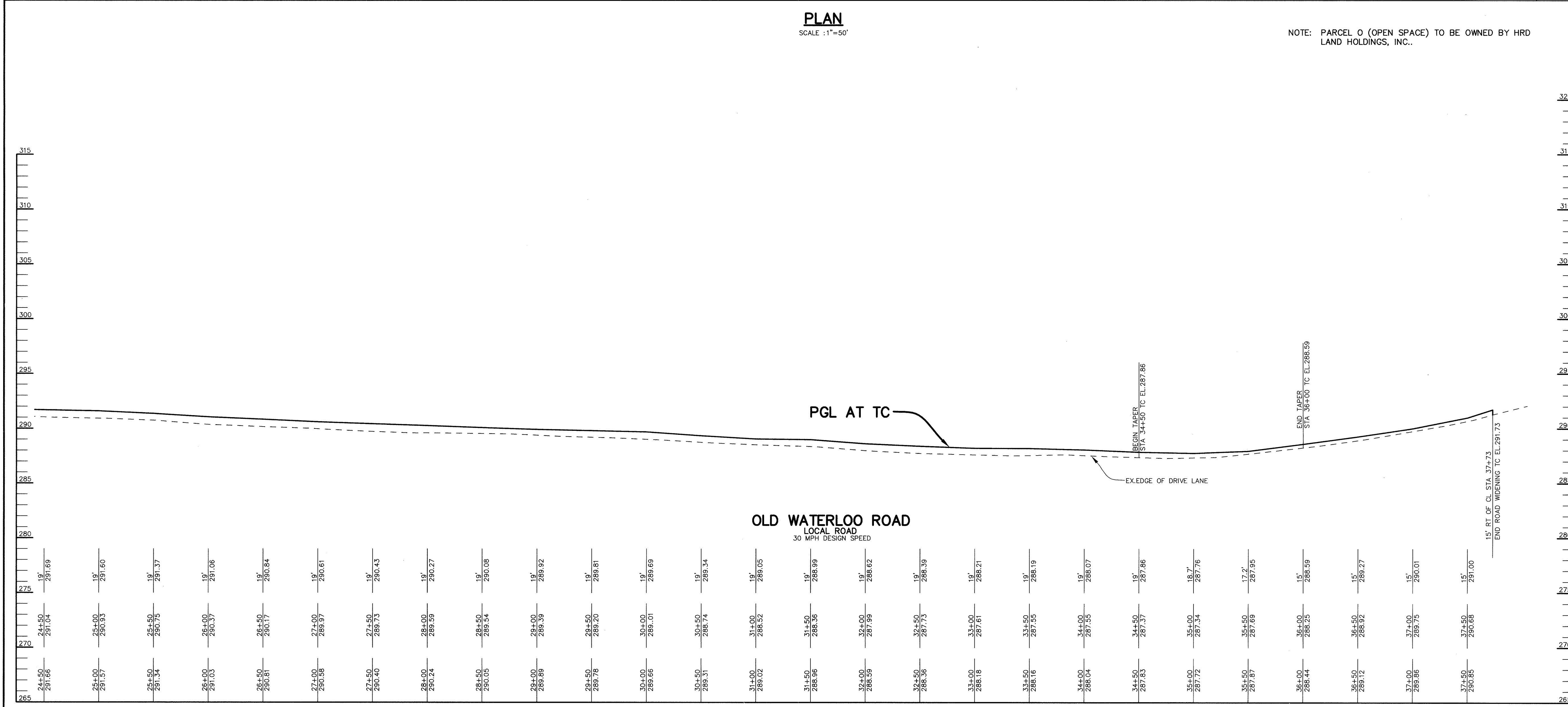
DATE 8-18-05
SCALE
HOR. - 1" = 50'
VERT. - 1" = 5'

AIMES C. REMINGTON #29923
AIMEE C. REMINGTON #29923

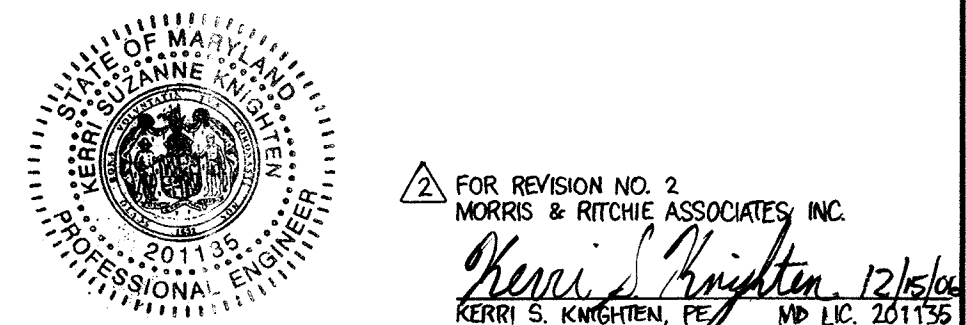


PLAN
SCALE: 1"=50'

NOTE: PARCEL Q (OPEN SPACE) TO BE OWNED BY HRD LAND HOLDINGS, INC.



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



DATE	NO.	REVISION
11/27/06	2	REMOVED TREES PER F-06-203 AND SDP-06-12B

APPROVED: HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS.
William Z. ... 9-19-05
 CHIEF, BUREAU OF HIGHWAYS DATE

APPROVED: HOWARD COUNTY DEPARTMENT OF PLANNING AND ZONING.
... .. 10/11/05
 CHIEF, DIVISION OF LAND DEVELOPMENT DATE

... 9/24/05
 CHIEF, DEVELOPMENT ENGINEERING DIVISION DATE

04/14/06 1 INCORPORATE ROAD R.O.W. PER PB CASE NO. 373; REVISE PARCEL DESIGNATIONS AND ADD EASEMENTS AND ROAD NAME

OWNER / DEVELOPER
 HRD LAND HOLDINGS, INC.
 HOWARD RESEARCH AND DEVELOPMENT CORPORATION
 THE ROUSE BUILDING
 10275 LITTLE PATUXENT PARKWAY
 COLUMBIA, MARYLAND 21044
 410-992-6000

PROJECT
BENSON EAST
 PARCELS A, E, G, J, M, P, R, T, U, NON-BUILDABLE PARCEL S, PRIVATE ROAD AND OPEN SPACE PARCELS Q AND V

AREA
 TAX MAP 37 & 43 ZONED - NEWTOWN
 PARCELS 482, 587, 382, 421, 547
 6th ELECTION DISTRICT
 HOWARD COUNTY, MARYLAND

TITLE
PLAN AND PROFILE AND STREET TREE PLANTINGS OF OLD WATERLOO ROAD FROM STA 24+50 TO END

Patton Harris Rust & Associates, pc
 Engineers, Surveyors, Planners, Landscape Architects.
 8818 Centre Park Drive
 Columbia, MD 21045
 T 410.997.8900
 F 410.997.9282

DESIGNED BY: C.J.R.
 DRAWN BY: DAM
 PROJECT NO.: 11621/PRELIM RD3.DWG
 DATE: AUGUST 18, 2005
 SCALE: AS SHOWN
 DRAWING NO.: 3 OF 25