

TEN OAKS ROAD @ BRIGHTON DAM ROAD INTERSECTION IMPROVEMENTS

HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS

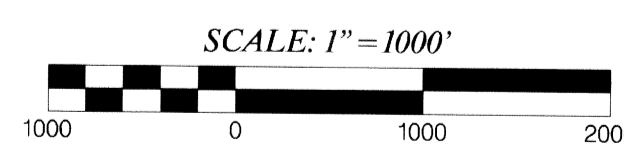
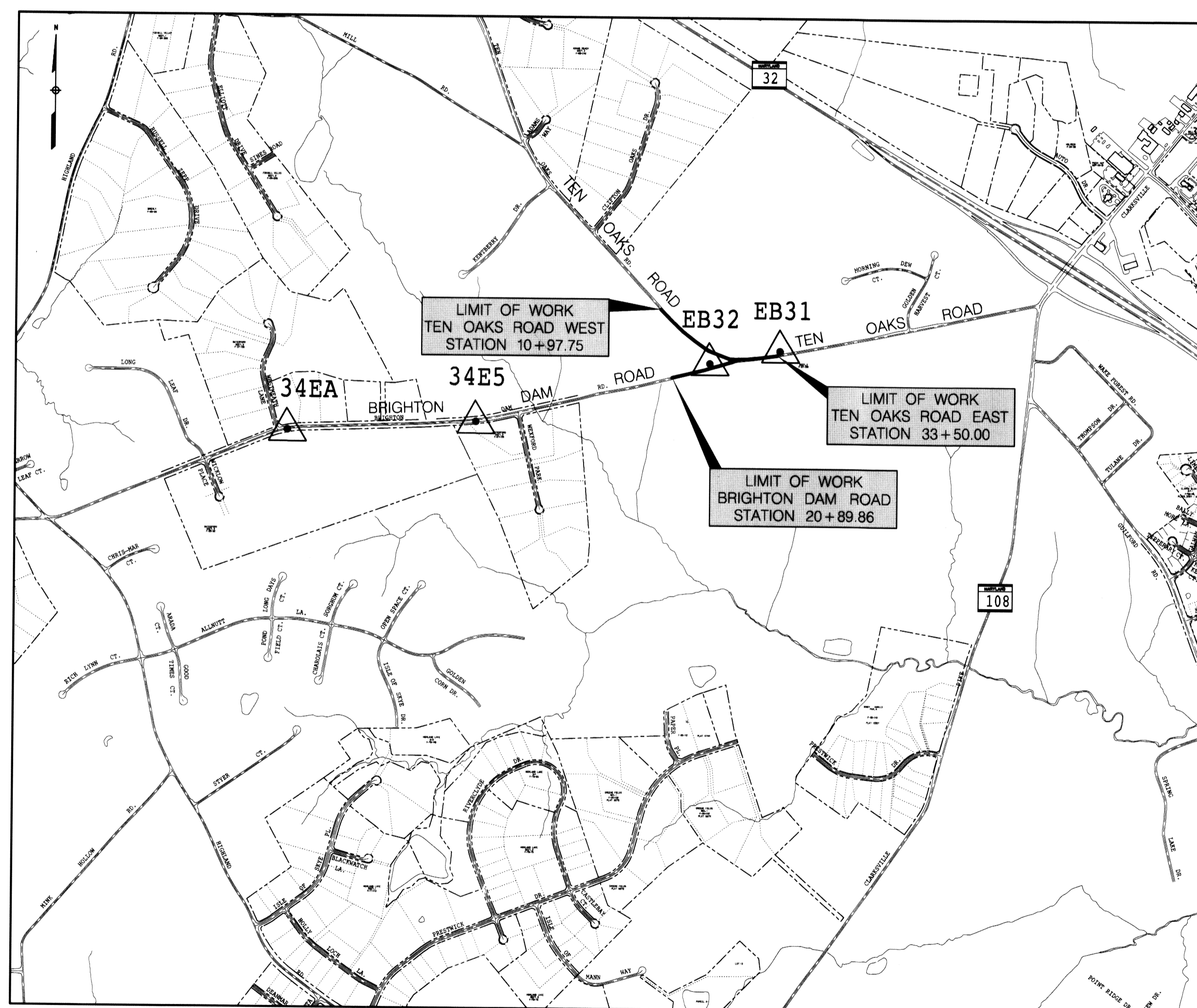
PROJECT No. J-4164-04

GENERAL NOTES

- APPROXIMATE LOCATION OF EXISTING UTILITIES ARE SHOWN FROM SELECTED AVAILABLE RECORDS IT IS THE CONTRACTOR'S RESPONSIBILITY TO SOLICIT ALL UTILITY RECORDS AND VERIFY ALL EXISTING UTILITIES TO HIS OWN SATISFACTION, INCLUDING THE USE OF TEST PITS. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING UTILITIES AND SERVICES AND MAINTAIN UNINTERRUPTED SERVICE ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
- COORDINATES SHOWN HEREON ARE BASED ON MARYLAND STATE REFERENCE SYSTEM NAD 83 AND NGVD 29 AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS NO. 34EA AND NO. 34E5 AS ESTABLISHED BY EBA ENGINEERING, INCORPORATED IN 2001.
- SURVEY DATA WAS RECORDED BY EBA ENGINEERING, INCORPORATED IN 2001.
- ALL PIPE ELEVATIONS SHOWN ARE INVERT ELEVATIONS UNLESS OTHERWISE NOTED ON PLANS.
- FOR DETAILS NOT SHOWN ON THE DRAWINGS AND FOR MATERIALS AND CONSTRUCTION METHODS USE HOWARD COUNTY DESIGN MANUAL VOLUME IV, STANDARD SPECIFICATIONS AND DETAILS FOR CONSTRUCTION (LATEST EDITION) OR THE MSHA STANDARD DETAILS AND SPECIFICATIONS. THE CONTRACTOR SHALL HAVE A COPY OF VOLUME IV ON THE JOB.
- CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITY COMPANIES OR AGENCIES AT LEAST FIVE WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS:
 - STATE HIGHWAY ADMINISTRATION (410) 531-5533
 - BALTIMORE GAS & ELECTRIC CO - CONTRACTOR SERVICES (410) 850-4620
 - BALTIMORE GAS & ELECTRIC CO - UNDERGROUND DAMAGE CONTROL SERVICES (410) 859-9004
 - BALTIMORE GAS & ELECTRIC CO - TROUBLE SHOOTING (410) 298-9040
 - MISS UTILITY - (800) 257-7777 (TO HAVE ALL UTILITIES LOCATED IN THE FIELD)
 - VERIZON - (410) 224-9452
 - BUREAU OF UTILITIES, HOWARD CO. DEPT. OF PUBIC WORKS (410) 313-4900
- TREES AND SHRUBS ARE TO BE PROTECTED FROM DAMAGE TO THE MAXIMUM EXTENT.
- CONTRACTOR SHALL REMOVE TREES, STUMPS, AND ROOTS ALONG LINE OF EXCAVATION. PAYMENT FOR SUCH REMOVAL SHALL BE INCLUDED IN THE UNIT PRICES BID FOR CLEARING AND GRUBBING.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF HOWARD COUNTY 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.
- IN ACCORDANCE WITH HOWARD COUNTY REGULATIONS, THIS PROJECT QUALIFIES FOR A FOREST CONSERVATION EXEMPTION, SINCE IT IS A LINEAR PROJECT INVOLVING THE CLEARING OF LESS THAN 40,000 SQUARE FEET OF FOREST.

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DEVELOPER'S CERTIFICATION

"I/WE CERTIFY THAT ALL DEVELOPMENT AND CONSTRUCTION WILL BE DONE ACCORDING TO THIS PLAN AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A DEPARTMENT OF THE ENVIRONMENT APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I/ALSO AUTHORIZE PERIODIC ON-SITE INSPECTION BY THE HOWARD SOIL CONSERVATION DISTRICT"

Signature of Developer: *[Signature]* DATE: 5/1/07
SIGNATURE OF DEVELOPER

ENGINEER'S CERTIFICATION

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

Signature of Engineer: *[Signature]* DATE: 4/27/07
RUMMEL KLEPPER & KAHL, LLP
81 MOSHER STREET
BALTIMORE, MARYLAND 21217
(410) 728-2900

REVIEWED FOR HOWARD SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS

Signature: *[Signature]* DATE: 5/2/07
US NATURAL RESOURCES CONSERVATION SERVICE

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

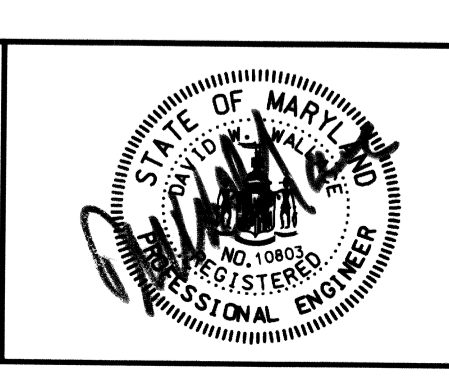
Signature: *[Signature]* DATE: 5/2/07
HOWARD SOIL CONSERVATION DISTRICT

THE CONTRACTOR SHALL NOTIFY MISS UTILITY 1-800-257-7777, FIVE (5) WORKING DAYS BEFORE STARTING WORK SHOWN ON THESE DRAWINGS.

8 DATES \$
8 FILE \$

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND	
Signature: <i>[Signature]</i> DATE: 5/2/07 DIRECTOR OF PUBLIC WORKS	Signature: <i>[Signature]</i> DATE: 5/1/07 CHIEF, BUREAU OF ENGINEERING
Signature: <i>[Signature]</i> DATE: 5/1/07 CHIEF, BUREAU OF HIGHWAYS	Signature: <i>[Signature]</i> DATE: 5/1/07 CHIEF, TRANSPORTATION & SPECIAL PROJECTS DIVISION

RK & K
RUMMEL KLEPPER & KAHL, LLP
CONSULTING ENGINEERS
81 MOSHER STREET
BALTIMORE, MD
21217

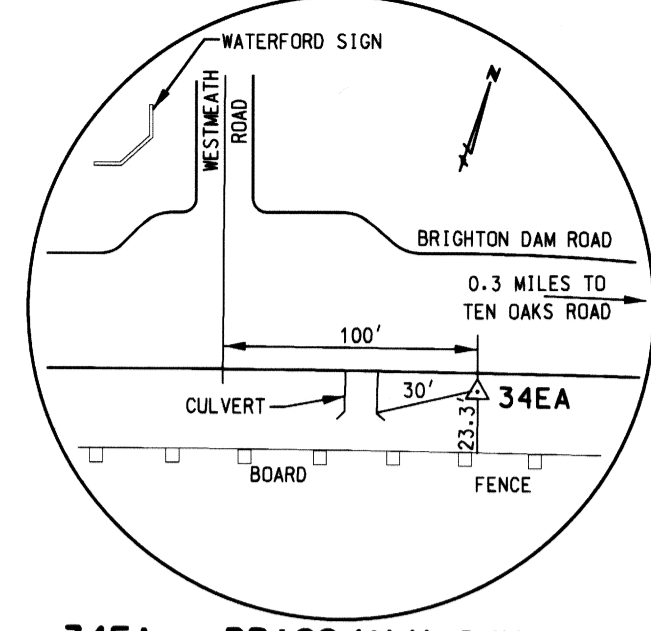


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DRN: TMB					
CHK: RJA					
DATE:	BY	NO.	REVISION	DATE	

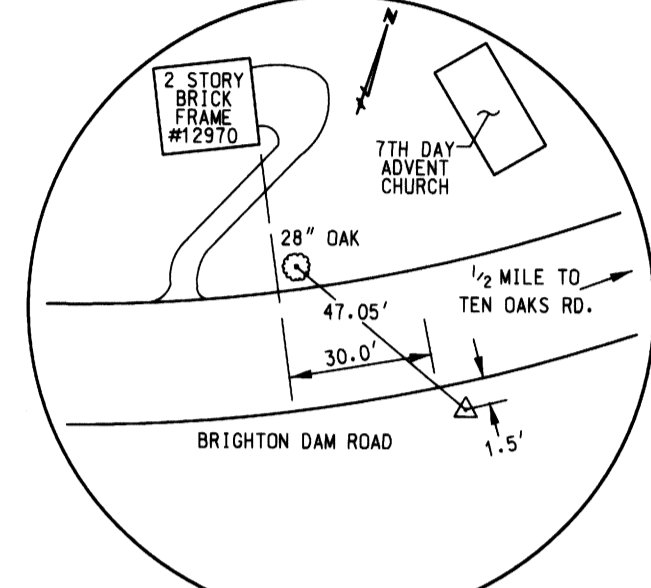
TITLE SHEET,
INDEX OF SHEETS,
GENERAL NOTES

TEN OAKS ROAD @ BRIGHTON DAM ROAD
INTERSECTION IMPROVEMENTS
CAPITAL PROJECT NO. J-4164-04
HOWARD COUNTY, MARYLAND

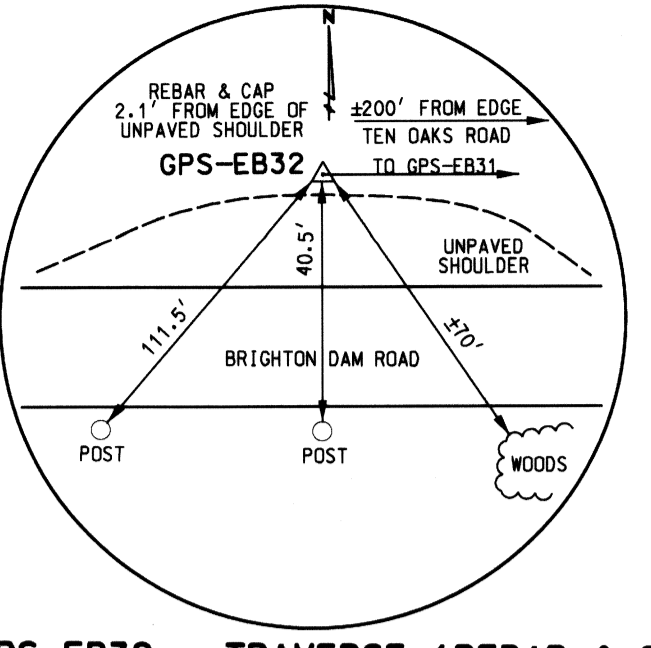
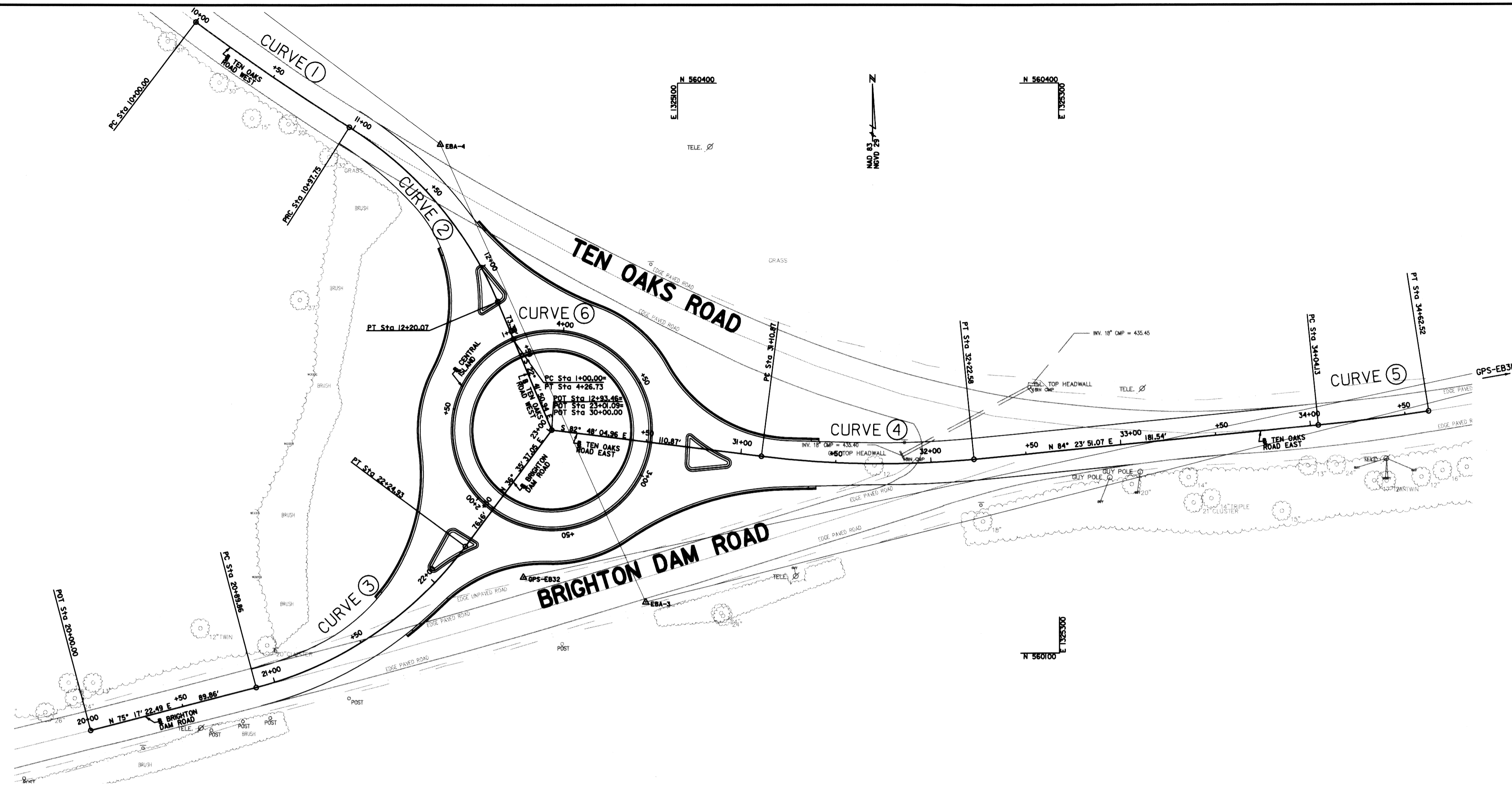
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SHEET NO.
1 OF 20



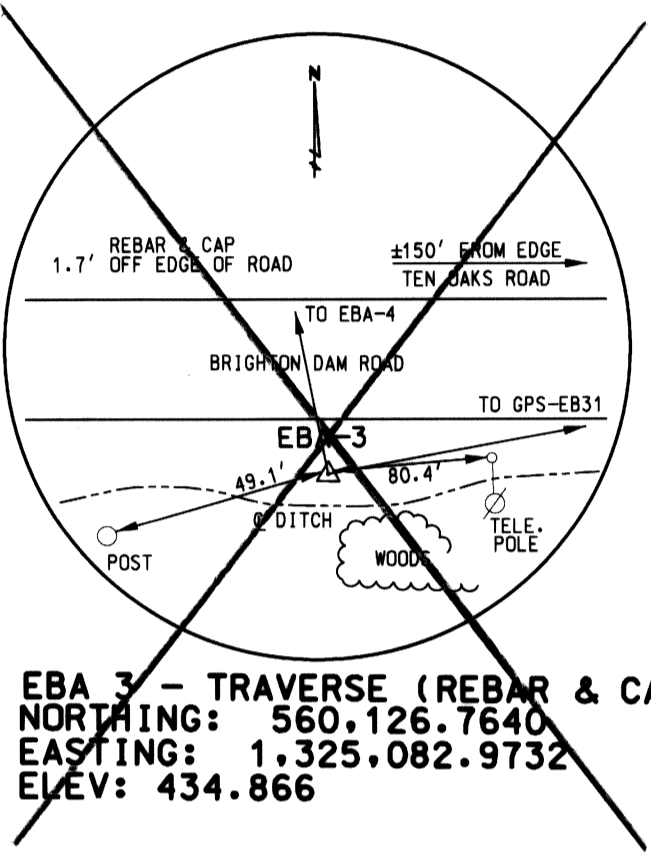
34EA - BRASS/ALUMINUM DISC
 NORTHING: 559,441.247
 EASTING: 1,320,528.02
 ELEV: 495.64



34E5 - BRASS/ALUMINUM DISC
 NORTHING: 559,538.080
 EASTING: 1,322,535.82
 ELEV: 460.55



GPS-EB32 - TRAVERSE (REBAR & CAP)
 NORTHING: 560139.934
 EASTING: 1,325,5018.832
 ELEV: 433.726
 433.37



EBA-3 - TRAVERSE (REBAR & CAP)
 NORTHING: 560,126.7640
 EASTING: 1,325,082.9732
 ELEV: 434.866

**TEN OAKS ROAD WEST
BASELINE OF CONSTRUCTION**

STATION	NORTHING	EASTING
PC 10+00.00	560,432.3875	1,324,847.2944
PI 10+48.90	560,402.9925	1,324,886.3786
PRC 10+97.75	560,376.8889	1,324,927.7336
PI 11+60.89	560,343.1864	1,324,981.1272
PT 12+20.07	560,284.9358	1,325,005.4910
POT 12+93.46	560,217.2380	1,325,033.8061

**BRIGHTON DAM ROAD
BASELINE OF CONSTRUCTION**

STATION	NORTHING	EASTING
POT 20+00.00	560,059.0590	1,324,791.7070
PC 20+89.86	560,081.8762	1,324,878.6167
PI 21+60.08	560,099.7093	1,324,946.5419
PT 22+24.93	560,156.0934	1,324,988.4067
POT 23+01.09	560,217.2380	1,325,033.8061

**TEN OAKS ROAD EAST
BASELINE OF CONSTRUCTION**

STATION	NORTHING	EASTING
POT 30+00.00	560,217.2380	1,325,033.8061
PC 31+10.87	560,203.3446	1,325,143.8052
PI 31+66.96	560,196.3161	1,325,199.4520
PT 32+22.58	560,201.7918	1,325,255.2729
PC 34+04.13	560,219.5152	1,325,435.9494
PI 34+33.33	560,222.3664	1,325,465.0152
PT 34+62.52	560,226.8200	1,325,493.8790

**ROUNDAABOUT
BASELINE OF CONSTRUCTION**

STATION	NORTHING	EASTING
PC 1+00.00	560,265.2108	1,325,013.7411
PT 4+26.73	560,265.2108	1,325,013.7411

**CURVE DATA
TEN OAKS ROAD WEST**

CURVE (1) PI = 10+48.90 $\Delta = 4^\circ 41' 10.75''$ (LT) Dc = 4' 47' 38.32" T = 48.90 R = 1,195.16 L = 97.75 C = 97.73(S55° 23' 47.16"E) E = 1.00
CURVE (2) PI = 11+60.89 $\Delta = 35^\circ 02' 31.60''$ (RT) Dc = 28' 38' 52.40" T = 63.14 R = 200.00 L = 122.32 C = 120.42(S40° 13' 06.74"E) E = 9.28

**CURVE DATA
BRIGHTON DAM ROAD**

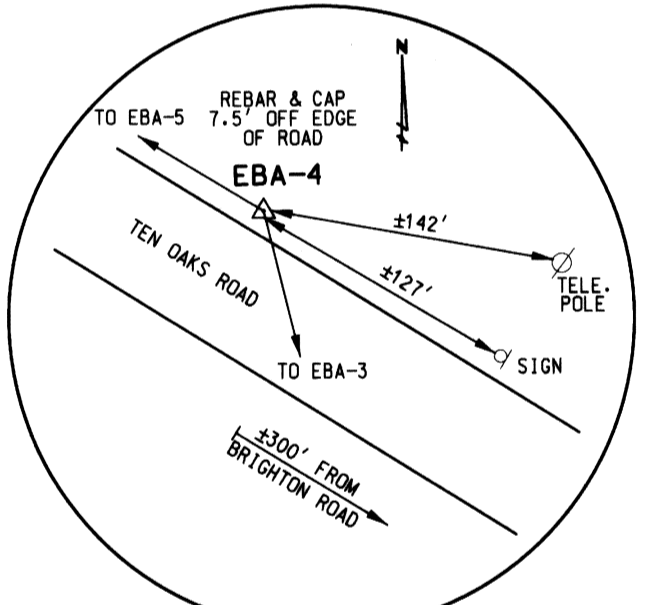
CURVE (3) PI = 21+60.08 $\Delta = 38^\circ 41' 45.44''$ (LT) Dc = 28' 38' 52.40" T = 70.23 R = 200.00 L = 135.07 C = 132.52(N55° 56' 29.77"E) E = 11.30
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**CURVE DATA
TEN OAKS ROAD EAST**

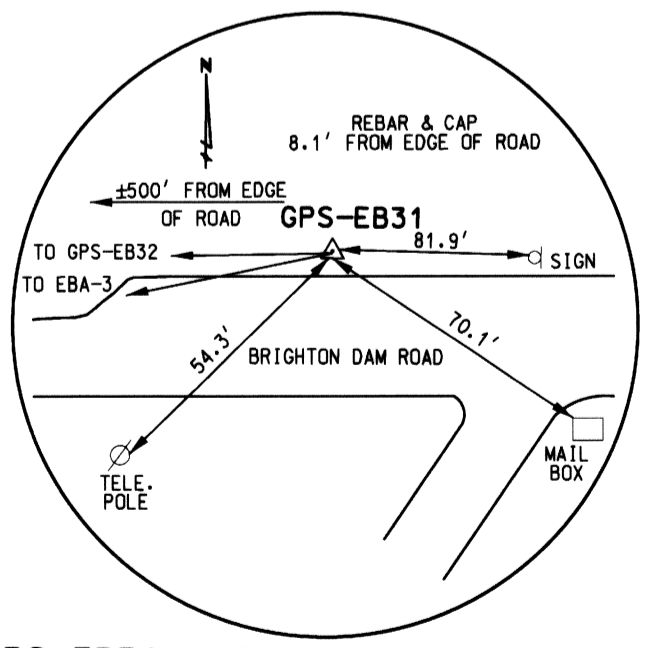
CURVE (4) PI = 31+66.96 $\Delta = 12^\circ 48' 03.97''$ (LT) Dc = 11' 27' 32.96" T = 56.09 R = 500.00 L = 111.71 C = 111.48(S89° 12' 06.95"E) E = 3.12
CURVE (5) PI = 34+33.33 $\Delta = 3^\circ 10' 08.08''$ (LT) Dc = 5' 25' 35.79" T = 29.21 R = 1,055.83 L = 58.40 C = 58.39(N82° 48' 47.03"E) E = 0.40

**CURVE DATA
ROUNDAABOUT**

CURVE (6) PI = 1+00.00 $\Delta = 360^\circ 00' 00.00''$ (LT) Dc = 110' 11' 03.09" R = 52.00 L = 326.73
--



EBA-4 - TRAVERSE (REBAR & CAP)
 NORTHING: 560,367.8926
 EASTING: 1,324,975.4673
 ELEV: 430.2904
 438.51



GPS-EB31 - TRAVERSE (REBAR & CAP)
 NORTHING: 560,300.386
 EASTING: 1,325,768.388
 ELEV: 457.295

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

John J. M... 5/1/07
 DIRECTOR OF PUBLIC WORKS DATE

Steve Shavar 5/1/07
 CHIEF, BUREAU OF ENGINEERING DATE

Steve Shavar 5/2/07
 CHIEF, TRANSPORTATION & SPECIAL PROJECTS DIVISION DATE

RK & K
RUMMEL KLEPPER & KAHL, LLP
 CONSULTING ENGINEERS
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 21217

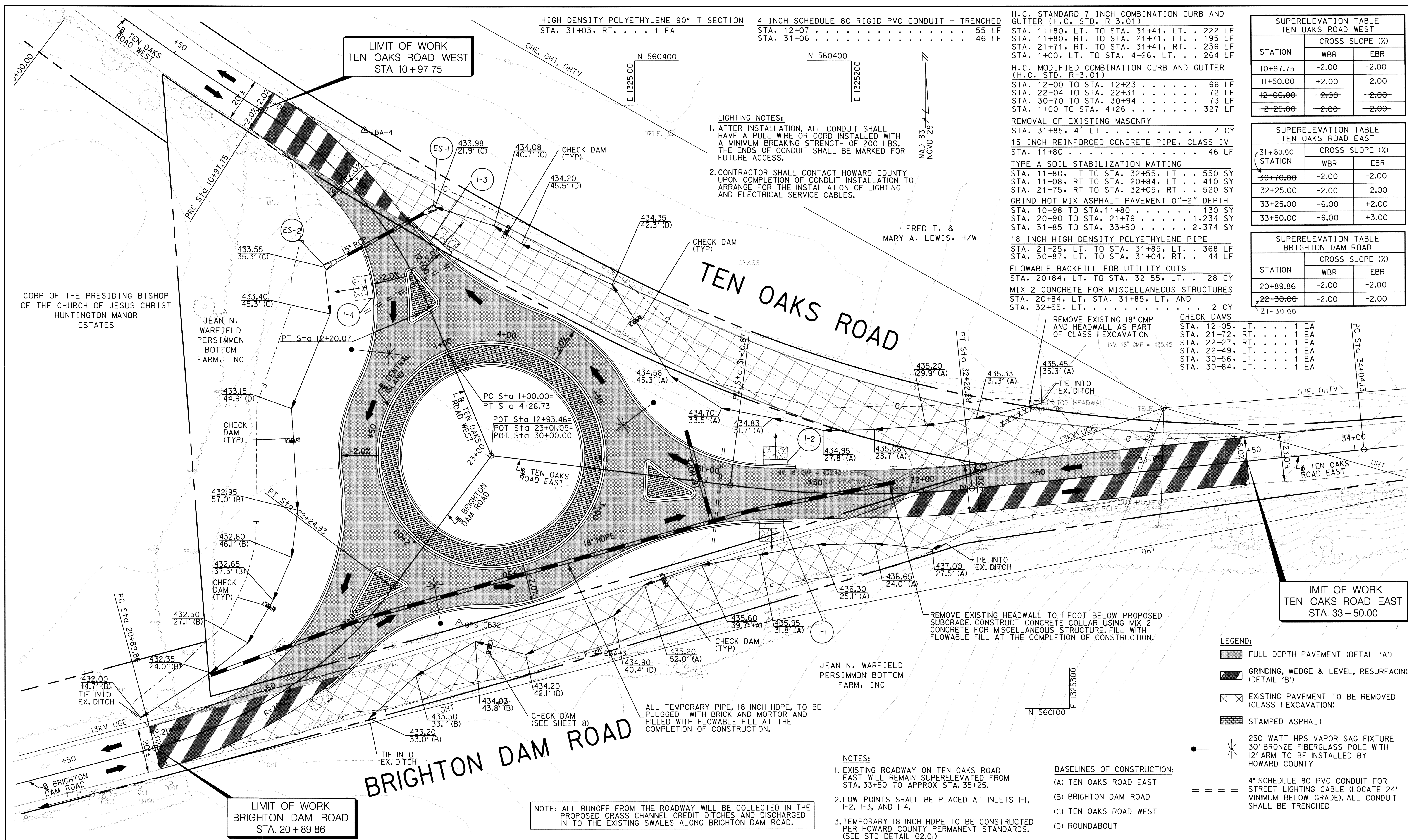


DES: TMB	TMB	1	SURVEY CONTROL & SPOT ELEVATIONS	10/3/07
DRN: TMB				
CHK: RJA				
DATE:	BY	NO.	REVISION	DATE

GEOMETRY PLAN

TEN OAKS ROAD @ BRIGHTON DAM ROAD
 INTERSECTION IMPROVEMENTS
 CAPITAL PROJECT NO. J-4164-04
 HOWARD COUNTY, MARYLAND

SCALE
 1"=40'
 SHEET NO.
 2 OF 20



HIGH DENSITY POLYETHYLENE 90° T SECTION
 STA. 31+03, RT. 1 EA
 4 INCH SCHEDULE 80 RIGID PVC CONDUIT - TRENCHED
 STA. 12+07 55 LF
 STA. 31+06 46 LF

H.C. STANDARD 7 INCH COMBINATION CURB AND GUTTER (H.C. STD. R-3.01)
 STA. 11+80, LT. TO STA. 31+41, LT. . . 222 LF
 STA. 11+80, RT. TO STA. 21+71, LT. . . 195 LF
 STA. 21+71, RT. TO STA. 31+41, RT. . . 236 LF
 STA. 1+00, LT. TO STA. 4+26, LT. . . . 264 LF

H.C. MODIFIED COMBINATION CURB AND GUTTER (H.C. STD. R-3.01)
 STA. 12+00 TO STA. 12+23 66 LF
 STA. 22+04 TO STA. 22+31 72 LF
 STA. 30+70 TO STA. 30+94 73 LF
 STA. 1+00 TO STA. 4+26 327 LF

SUPERELEVATION TABLE TEN OAKS ROAD WEST		
STATION	CROSS SLOPE (%)	
	WBR	EBR
10+97.75	-2.00	-2.00
11+50.00	+2.00	-2.00
12+00.00	-2.00	-2.00
12+25.00	-2.00	-2.00

SUPERELEVATION TABLE TEN OAKS ROAD EAST		
STATION	CROSS SLOPE (%)	
	WBR	EBR
31+60.00	-2.00	-2.00
30+70.00	-2.00	-2.00
32+25.00	-2.00	-2.00
33+25.00	-6.00	+2.00
33+50.00	-6.00	+3.00

SUPERELEVATION TABLE BRIGHTON DAM ROAD		
STATION	CROSS SLOPE (%)	
	WBR	EBR
20+89.86	-2.00	-2.00
22+30.00	-2.00	-2.00

LIGHTING NOTES:
 1. AFTER INSTALLATION, ALL CONDUIT SHALL HAVE A PULL WIRE OR CORD INSTALLED WITH A MINIMUM BREAKING STRENGTH OF 200 LBS. THE ENDS OF CONDUIT SHALL BE MARKED FOR FUTURE ACCESS.
 2. CONTRACTOR SHALL CONTACT HOWARD COUNTY UPON COMPLETION OF CONDUIT INSTALLATION TO ARRANGE FOR THE INSTALLATION OF LIGHTING AND ELECTRICAL SERVICE CABLES.

REMOVAL OF EXISTING MASONRY
 STA. 31+85, 4' LT. 2 CY
 15 INCH REINFORCED CONCRETE PIPE, CLASS IV
 STA. 11+80 46 LF

TYPE A SOIL STABILIZATION MATTING
 STA. 11+80, LT TO STA. 32+55, LT. . . 550 SY
 STA. 11+08, RT TO STA. 20+84, LT. . . 410 SY
 STA. 21+75, RT TO STA. 32+05, RT. . . 520 SY

GRIND HOT MIX ASPHALT PAVEMENT 0"-2" DEPTH
 STA. 10+98 TO STA. 11+80 130 SY
 STA. 20+90 TO STA. 21+79 1,234 SY
 STA. 31+85 TO STA. 33+50 2,374 SY

18 INCH HIGH DENSITY POLYETHYLENE PIPE
 STA. 21+25, LT. TO STA. 31+85, LT. . . 368 LF
 STA. 30+87, LT. TO STA. 31+04, RT. . . 44 LF

FLOWABLE BACKFILL FOR UTILITY CUTS
 STA. 20+84, LT. TO STA. 32+55, LT. . . 28 CY

MIX 2 CONCRETE FOR MISCELLANEOUS STRUCTURES
 STA. 20+84, LT. STA. 31+85, LT. AND
 STA. 32+55, LT. 2 CY

CHECK DAMS
 STA. 12+05, LT. 1 EA
 STA. 21+72, RT. 1 EA
 STA. 22+27, RT. 1 EA
 STA. 22+49, LT. 1 EA
 STA. 30+56, LT. 1 EA
 STA. 30+84, LT. 1 EA

LIMIT OF WORK
 TEN OAKS ROAD EAST
 STA. 33+50.00

LIMIT OF WORK
 BRIGHTON DAM ROAD
 STA. 20+89.86

BRIGHTON DAM ROAD

TEN OAKS ROAD

CORP OF THE PRESIDING BISHOP
 OF THE CHURCH OF JESUS CHRIST
 HUNTINGTON MANOR
 ESTATES

JEAN N.
 WARFIELD
 PERSIMMON
 BOTTOM
 FARM, INC

FRED T. &
 MARY A. LEWIS, H/W

JEAN N. WARFIELD
 PERSIMMON
 BOTTOM
 FARM, INC

NOTE: ALL RUNOFF FROM THE ROADWAY WILL BE COLLECTED IN THE PROPOSED GRASS CHANNEL CREDIT DITCHES AND DISCHARGED IN TO THE EXISTING SWALES ALONG BRIGHTON DAM ROAD.

ALL TEMPORARY PIPE, 18 INCH HDPE, TO BE PLUGGED WITH BRICK AND MORTAR AND FILLED WITH FLOWABLE FILL AT THE COMPLETION OF CONSTRUCTION.

REMOVE EXISTING HEADWALL TO 1 FOOT BELOW PROPOSED SUBGRADE. CONSTRUCT CONCRETE COLLAR USING MIX 2 CONCRETE FOR MISCELLANEOUS STRUCTURE. FILL WITH FLOWABLE FILL AT THE COMPLETION OF CONSTRUCTION.

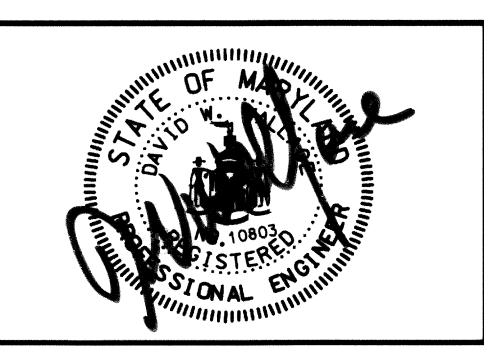
NOTES:
 1. EXISTING ROADWAY ON TEN OAKS ROAD EAST WILL REMAIN SUPERELEVATED FROM STA. 33+50 TO APPROX STA. 35+25.
 2. LOW POINTS SHALL BE PLACED AT INLETS I-1, I-2, I-3, AND I-4.
 3. TEMPORARY 18 INCH HDPE TO BE CONSTRUCTED PER HOWARD COUNTY PERMANENT STANDARDS. (SEE STD DETAIL G2.01)

BASELINES OF CONSTRUCTION:
 (A) TEN OAKS ROAD EAST
 (B) BRIGHTON DAM ROAD
 (C) TEN OAKS ROAD WEST
 (D) ROUNDABOUT

LEGEND:
 [Symbol] FULL DEPTH PAVEMENT (DETAIL 'A')
 [Symbol] GRINDING, WEDGE & LEVEL, RESURFACING (DETAIL 'B')
 [Symbol] EXISTING PAVEMENT TO BE REMOVED (CLASS I EXCAVATION)
 [Symbol] STAMPED ASPHALT
 [Symbol] 250 WATT HPS VAPOR SAG FIXTURE 30' BRONZE FIBERGLASS POLE WITH 12' ARM TO BE INSTALLED BY HOWARD COUNTY
 [Symbol] 4" SCHEDULE 80 PVC CONDUIT FOR STREET LIGHTING CABLE (LOCATE 24" MINIMUM BELOW GRADE). ALL CONDUIT SHALL BE TRENCHED

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND
 Director of Public Works: [Signature] 5/2/07
 Chief, Bureau of Engineering: [Signature] 5/1/07
 Chief, Bureau of Highways: [Signature] 5-2-07
 Chief, Transportation & Special Projects Division: [Signature] 5/1/07

RUMMEL KLEPPER & KAHL, LLP
 CONSULTING ENGINEERS
 81 MOSHER STREET
 BALTIMORE, MD 21217



DES:	TMB	TMB	I	SURVEY CONTROL & SPOT ELEVATIONS	10/2/07
DRN:	TMB				
CHK:	RJA				
DATE:		BY:	NO.	REVISION	DATE

ROADWAY PLAN

TEN OAKS ROAD @ BRIGHTON DAM ROAD
 INTERSECTION IMPROVEMENTS
 CAPITAL PROJECT NO. J-4164-04
 HOWARD COUNTY, MARYLAND

SCALE
 1"=20'
 SHEET NO.
 3 OF 20

TEN OAKS ROAD WEST

LIMIT OF WORK
TEN OAKS ROAD WEST
STA. 10+97.75

BRIGHTON DAM ROAD

LIMIT OF WORK
BRIGHTON DAM ROAD
STA. 20+89.86

NAD 83
NGVD 29

N 560400
E 1325100

N 560100
E 1325100

N 560100
E 1325300

CURB STAKEOUT-TEN OAKS ROAD WEST			
NO.	ELEV.	NORTHING	EASTING
100	438.47	560,333.23	1,324,989.38
101	438.46	560,324.77	1,324,996.16
102	437.85	560,316.56	1,325,003.54
103	437.54	560,316.56	1,325,003.54
104	437.65	560,302.62	1,325,019.90
105	437.77	560,296.43	1,325,028.81
106	437.89	560,290.90	1,325,038.13
107	438.02	560,286.05	1,325,047.83
108	438.14	560,281.91	1,325,057.85
109	438.17	560,273.39	1,325,068.89
110	438.60	560,335.58	1,324,961.56
111	438.42	560,327.53	1,324,967.95
112	438.18	560,318.66	1,324,973.19
113	437.93	560,309.17	1,324,977.20
114	437.69	560,299.23	1,324,979.88
115	437.52	560,289.02	1,324,981.19
116	437.66	560,278.73	1,324,981.11
117	437.73	560,268.54	1,324,979.64
118	437.79	560,258.64	1,324,976.81
119	437.85	560,249.22	1,324,972.67
120	437.82	560,237.41	1,324,967.82
121	437.94	560,300.60	1,324,993.97
122	437.94	560,302.64	1,324,999.27
123	437.94	560,290.46	1,325,009.25
124	437.94	560,284.71	1,325,008.34
125	437.92	560,278.22	1,324,998.22
126	437.92	560,279.88	1,324,995.29

CURB STAKEOUT-TEN OAKS ROAD EAST			
NO.	ELEV.	NORTHING	EASTING
200	437.51	560,210.58	1,325,193.49
201	437.34	560,211.04	1,325,176.07
202	437.26	560,211.50	1,325,158.64
203	437.39	560,212.40	1,325,148.82
204	437.52	560,214.57	1,325,139.20
205	437.65	560,217.96	1,325,129.94
206	437.79	560,222.52	1,325,121.19
207	437.91	560,228.18	1,325,113.11
208	438.00	560,234.84	1,325,105.84
209	438.10	560,242.38	1,325,099.48
210	438.19	560,250.66	1,325,094.17
211	438.18	560,266.72	1,325,081.89
212	437.45	560,188.19	1,325,193.35
213	437.29	560,187.77	1,325,174.52
214	437.20	560,187.35	1,325,155.71
215	437.37	560,186.82	1,325,145.93
216	437.53	560,185.65	1,325,136.22
217	437.68	560,183.86	1,325,126.59
218	437.77	560,181.44	1,325,117.11
219	437.84	560,178.41	1,325,107.80
220	437.89	560,174.80	1,325,098.71
221	437.94	560,170.60	1,325,089.87
222	437.99	560,165.83	1,325,081.32
223	438.04	560,160.52	1,325,073.10
224	437.99	560,152.45	1,325,057.55
225	438.14	560,213.43	1,325,104.30
226	438.14	560,214.78	1,325,107.44
227	437.93	560,202.49	1,325,126.45
228	437.93	560,197.05	1,325,125.67
229	438.10	560,195.46	1,325,107.93
230	438.10	560,199.51	1,325,103.68
231	437.76	560,200.11	1,325,139.01
232	437.51	560,199.38	1,325,156.98

CURB STAKEOUT-BRIGHTON DAM ROAD			
NO.	ELEV.	NORTHING	EASTING
300	434.54	560,114.64	1,324,927.24
301	435.00	560,121.49	1,324,935.26
302	435.46	560,129.14	1,324,942.52
303	435.92	560,137.51	1,324,948.92
304	436.39	560,146.51	1,324,954.41
305	436.80	560,156.04	1,324,958.92
306	437.15	560,165.98	1,324,962.40
307	437.35	560,176.25	1,324,964.82
308	437.49	560,186.71	1,324,966.14
309	437.64	560,197.24	1,324,966.35
310	437.79	560,207.75	1,324,965.46
311	437.81	560,227.29	1,324,965.54
312	434.58	560,095.58	1,324,936.42
313	435.46	560,109.74	1,324,957.00
314	436.34	560,126.26	1,324,975.75
315	436.69	560,133.00	1,324,983.53
316	437.02	560,138.62	1,324,992.14
317	437.34	560,143.03	1,325,001.44
318	437.52	560,146.14	1,325,011.24
319	437.71	560,147.90	1,325,021.38
320	437.89	560,148.27	1,325,031.65
321	437.94	560,149.44	1,325,046.65
322	437.76	560,163.68	1,324,978.49
323	437.76	560,165.12	1,324,983.96
324	437.80	560,158.64	1,324,994.42
325	437.80	560,155.28	1,324,994.15
326	436.92	560,143.07	1,324,973.51
327	436.92	560,146.89	1,324,969.25
328	436.53	560,135.85	1,324,965.64
329	436.06	560,127.21	1,324,958.18
330	435.60	560,119.28	1,324,950.01

TEN OAKS ROAD EAST

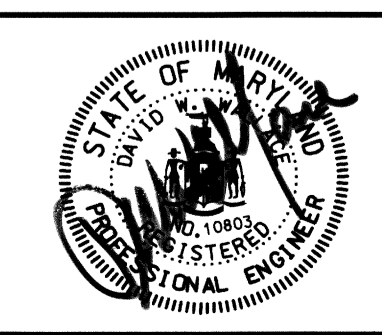
LIMIT OF WORK
TEN OAKS ROAD EAST
STA. 33+50.00

NOTES:
1. ALL POINTS AND ELEVATIONS ARE LOCATED AT EDGE OF PAVEMENT/EDGE OF GUTTER PAN. SEE TYPICAL SECTIONS (SHEET 7).

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

Director of Public Works: *5/1/07*
Chief, Bureau of Engineering: *5/1/07*
Chief, Bureau of Highways: *5-2-07*
Chief, Transportation & Special Projects Division: *5/1/07*

RUMMEL KLEPPER & KAHL, LLP
CONSULTING ENGINEERS
81 MOSHER STREET
BALTIMORE, MD
21217

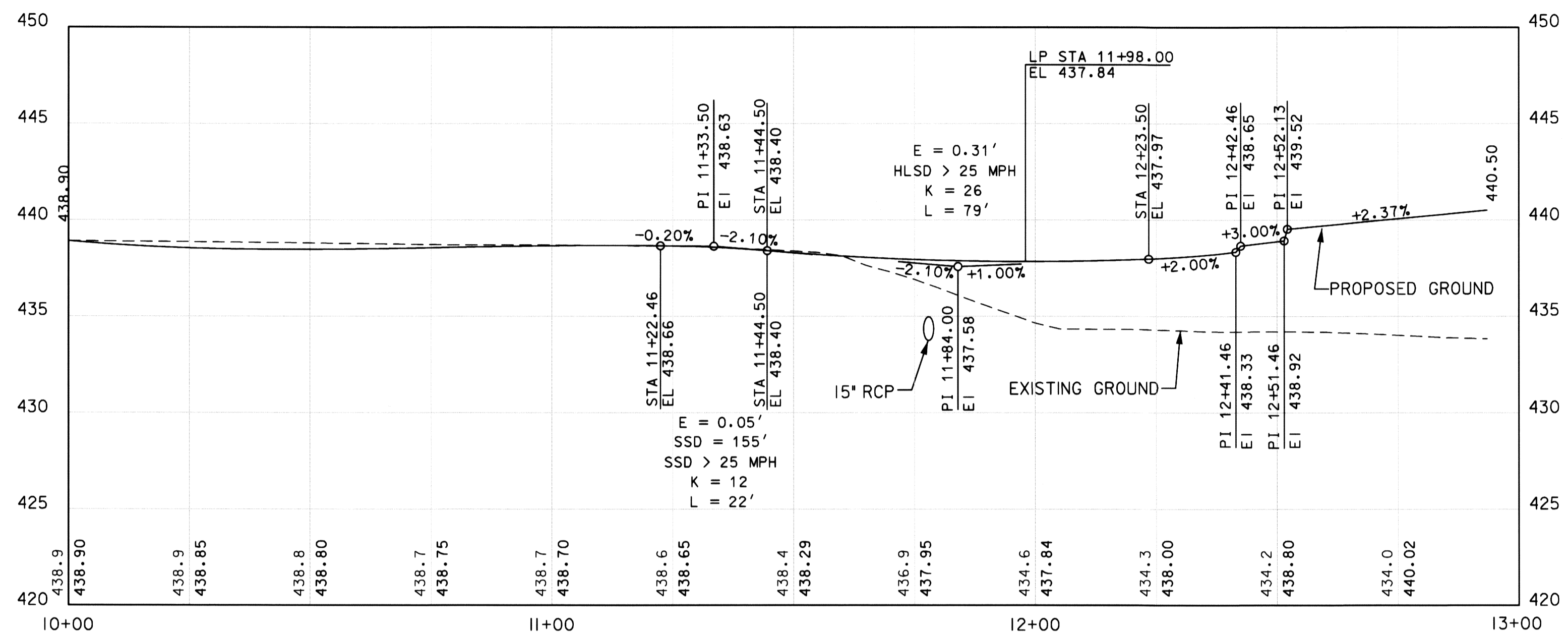


DES: TMB	TMB	1	SURVEY CONTROL & SPOT ELEVATIONS	4/3/07
DRN: TMB				
CHK: RJA				
DATE:	BY	NO.	REVISION	DATE

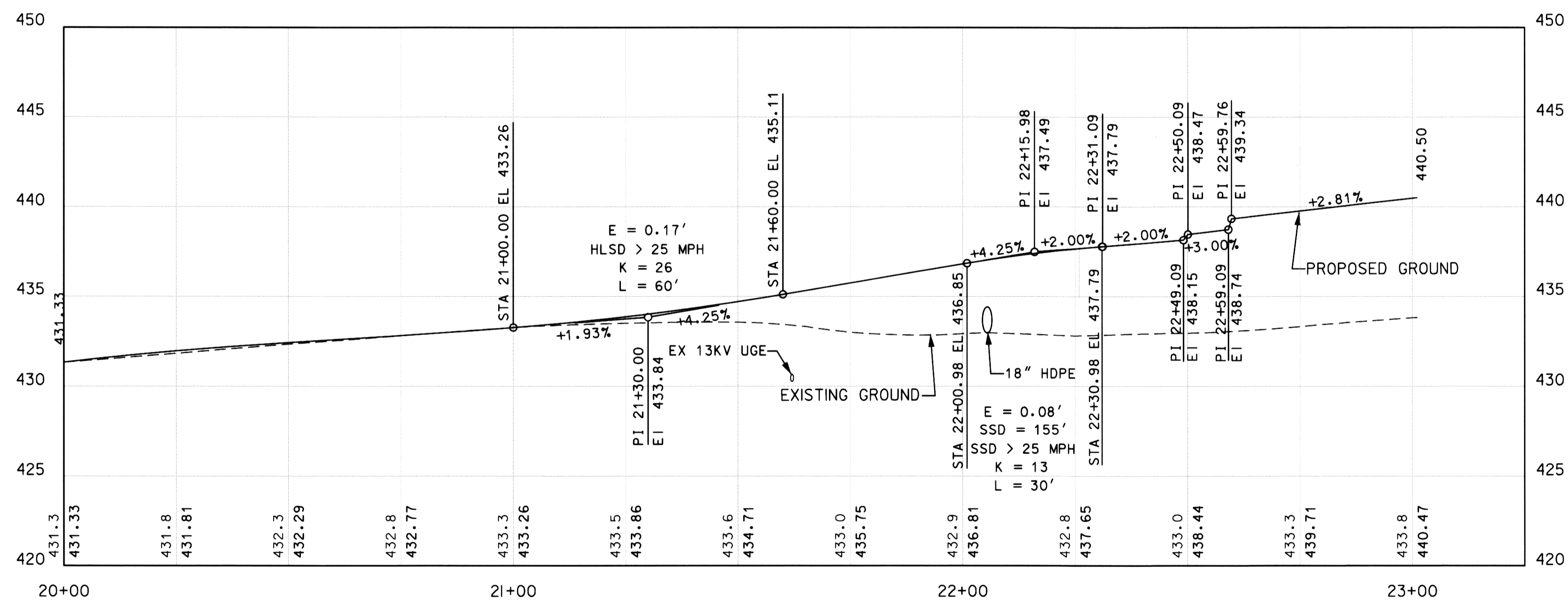
PAVEMENT ELEVATION PLAN

TEN OAKS ROAD @ BRIGHTON DAM ROAD
INTERSECTION IMPROVEMENTS
CAPITAL PROJECT NO. J-4164-04
HOWARD COUNTY, MARYLAND

SCALE
1"=20'
SHEET NO.
4 OF 20



TEN OAKS ROAD WEST



BRIGHTON DAM ROAD

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

John G. Shaw
DIRECTOR OF PUBLIC WORKS DATE 5-2-07

Steve Sharan
CHIEF, BUREAU OF ENGINEERING DATE 5/1/07

Steve Sharan
CHIEF, TRANSPORTATION & SPECIAL PROJECTS DIVISION DATE 5/1/07

RK & K
RUMMEL KLEPPER & KAHL, LLP
CONSULTING ENGINEERS
81 MOSHER STREET
BALTIMORE, MD
21217



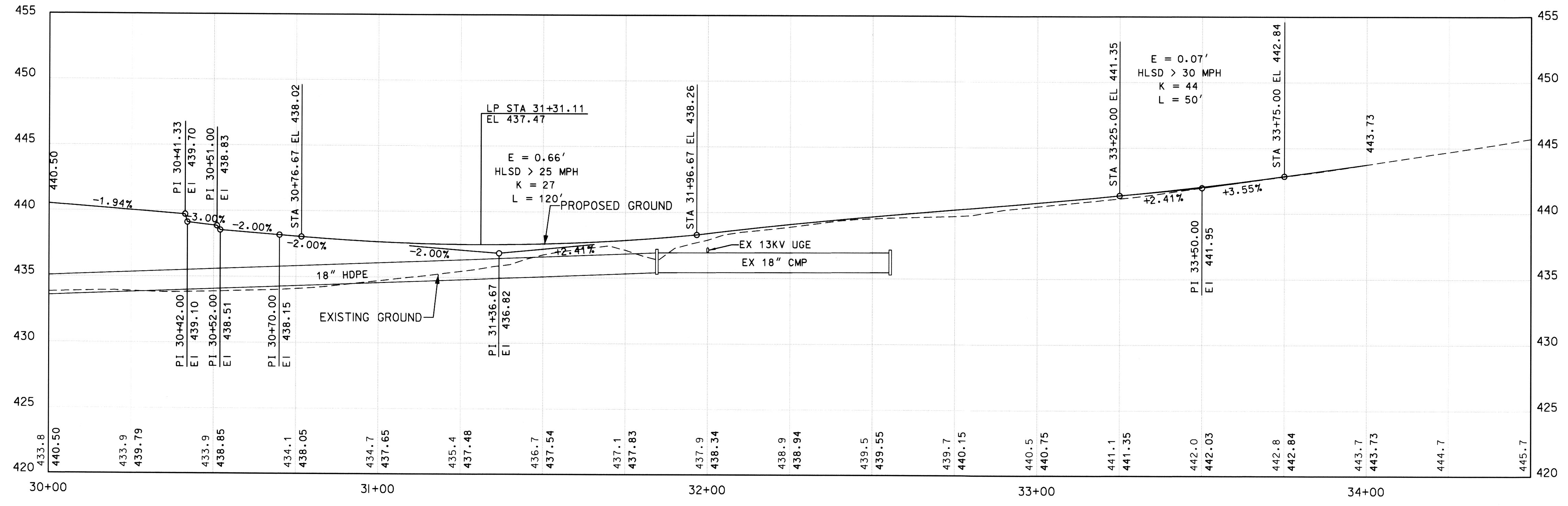
DES:	TMB			
DRN:	TMB			
CHK:	RJA			
DATE:	BY	NO.	REVISION	DATE

ROADWAY PROFILE

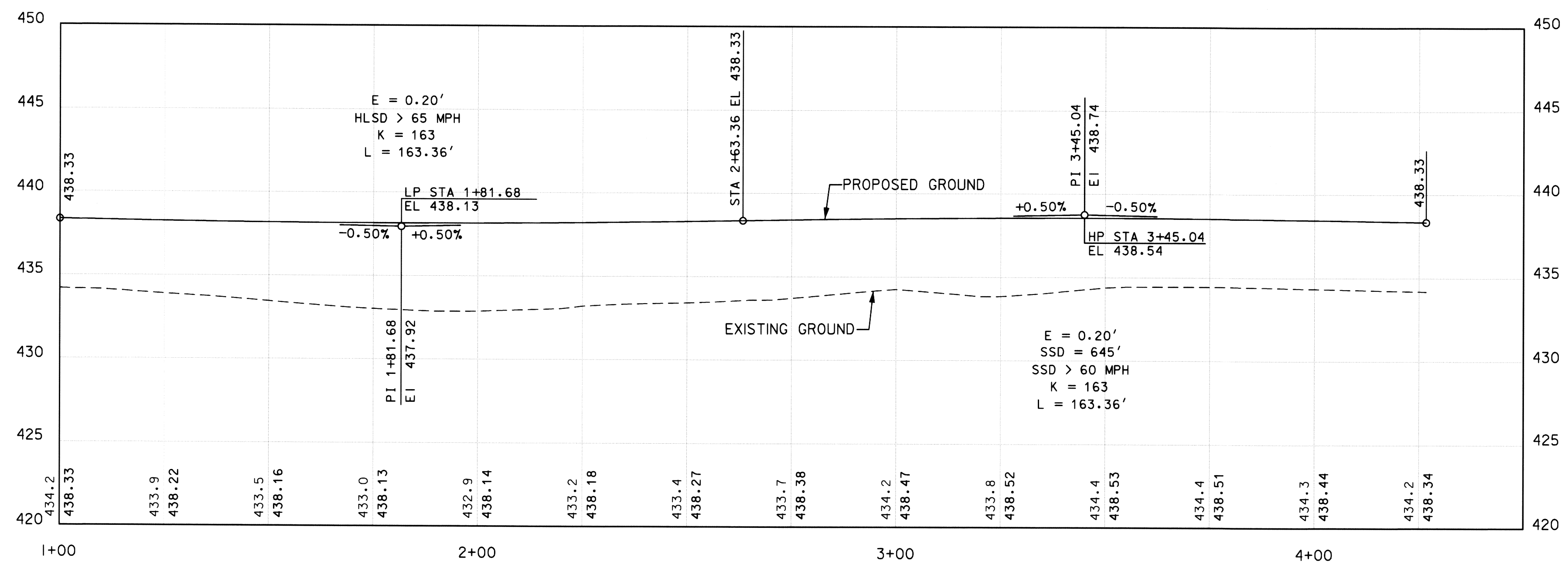
TEN OAKS ROAD @ BRIGHTON DAM ROAD
INTERSECTION IMPROVEMENTS
CAPITAL PROJECT NO. J-4164-04
HOWARD COUNTY, MARYLAND

SCALE
HOR: 1"=20'
VER: 1"=5'

SHEET NO.
5 OF 20

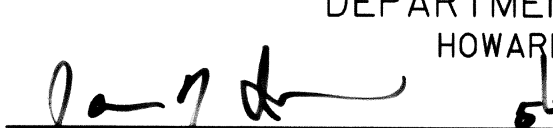

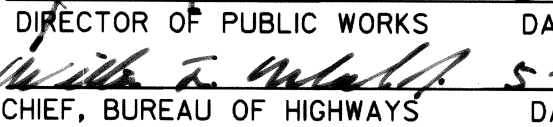



TEN OAKS ROAD - EAST LEG



CENTRAL ISLAND

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

 5/1/07
 DIRECTOR OF PUBLIC WORKS DATE
 5/1/07
 CHIEF, BUREAU OF ENGINEERING DATE
 5-2-07
 CHIEF, BUREAU OF HIGHWAYS DATE
 5/1/07
 CHIEF, TRANSPORTATION & SPECIAL PROJECTS DIVISION DATE

 RUMMEL KLEPPER & KAHL, LLP
 CONSULTING ENGINEERS
 81 MOSHER STREET
 BALTIMORE, MD
 21217



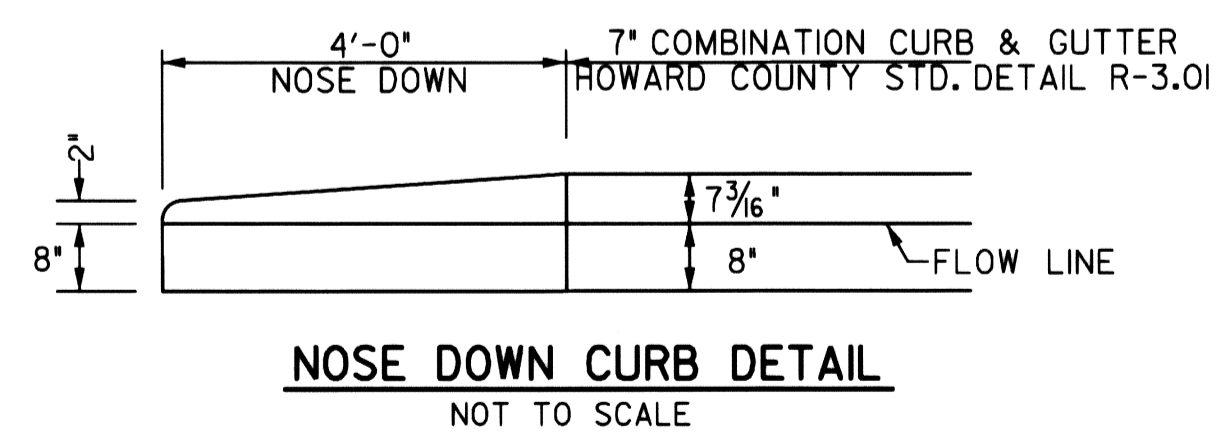
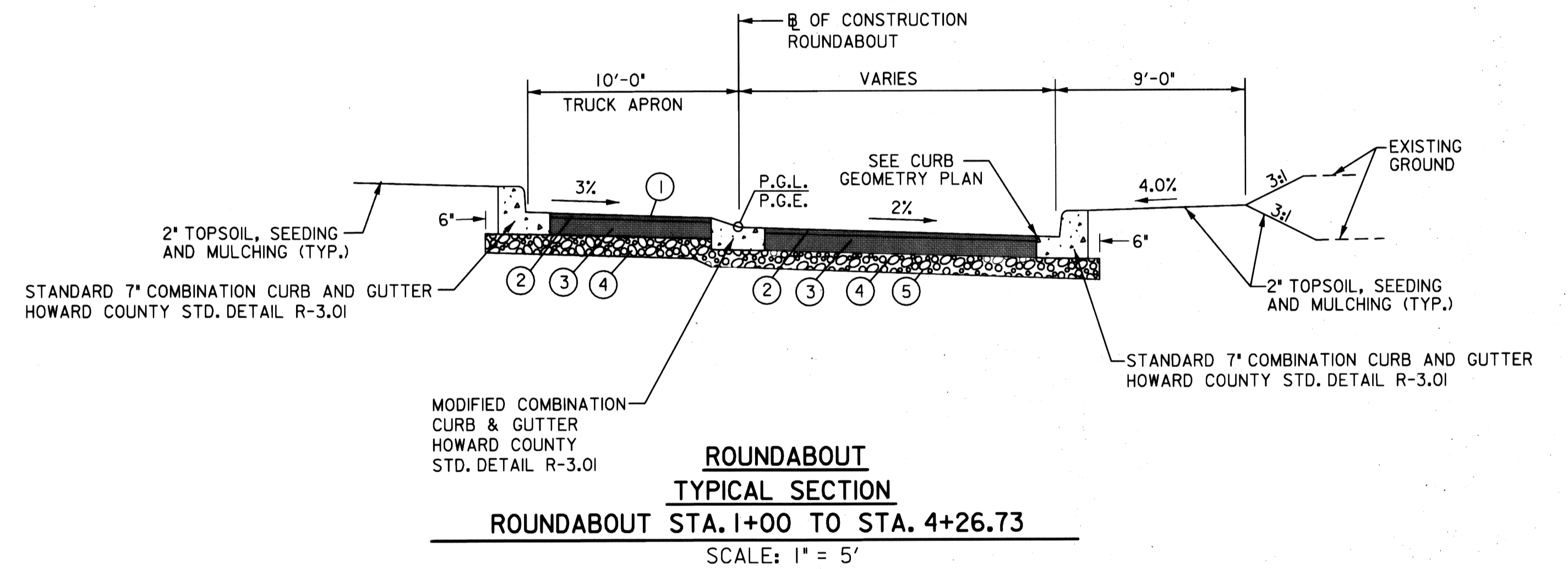
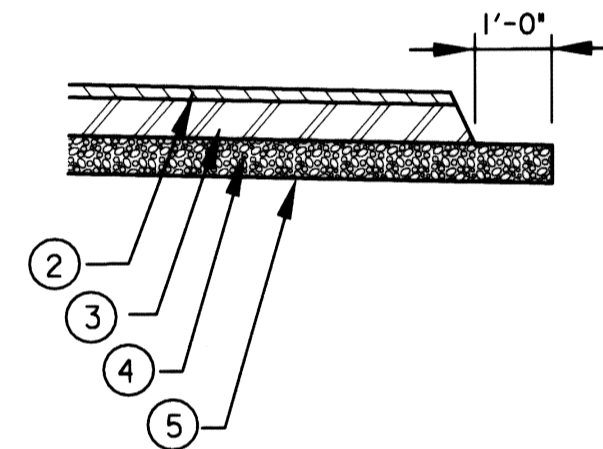
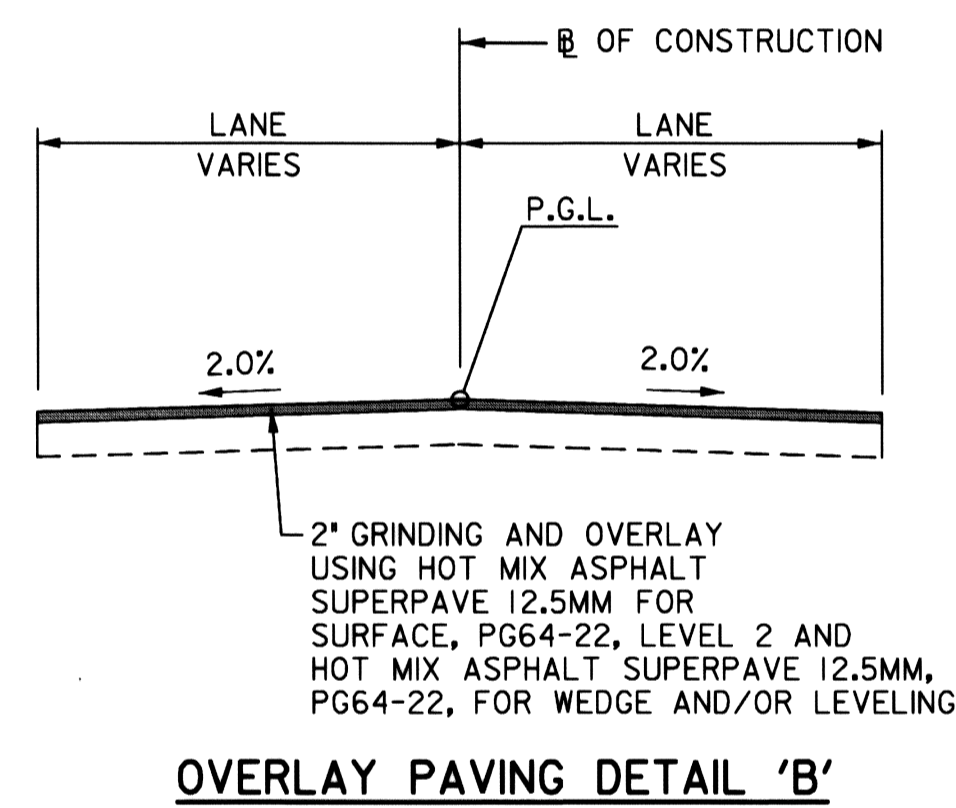
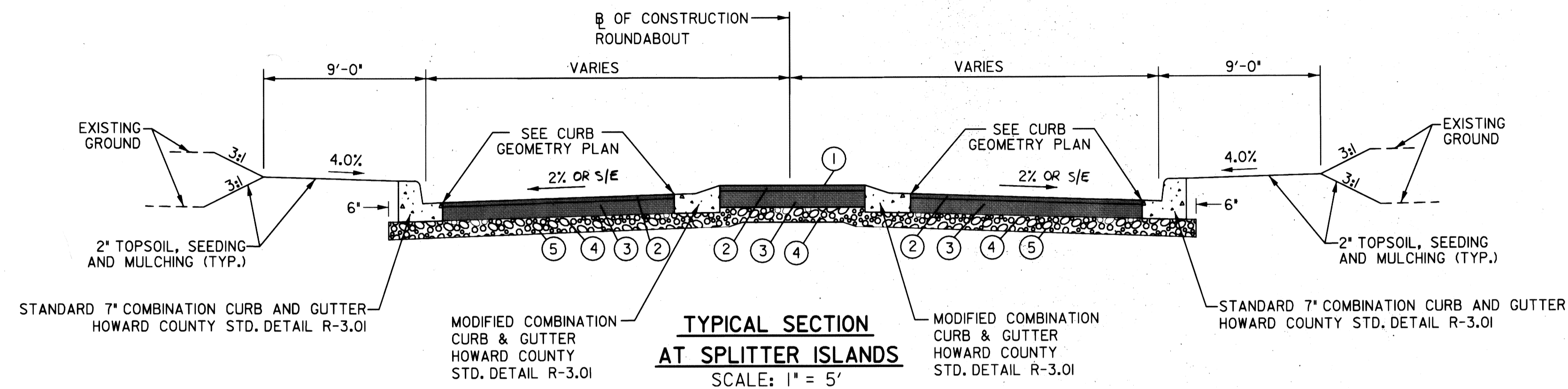
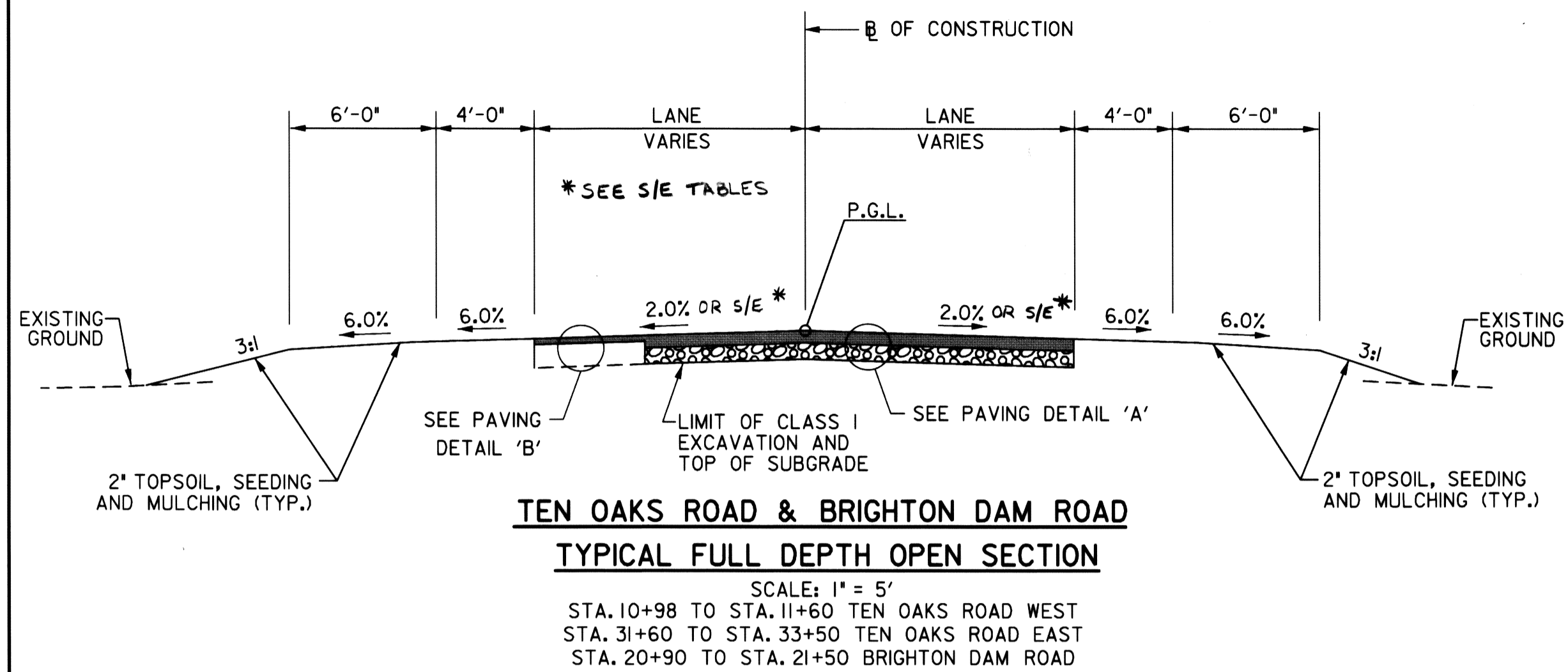
DES: TMB			
DRN: TMB			
CHK: RJA			
DATE:	BY	NO.	REVISION

ROADWAY PROFILE

TEN OAKS ROAD @ BRIGHTON DAM ROAD
 INTERSECTION IMPROVEMENTS
 CAPITAL PROJECT NO. J-4164-04
 HOWARD COUNTY, MARYLAND

SCALE
 HOR: 1"=20'
 VER: 1"=5'

SHEET NO.
 6 OF 20



- PAVEMENT LEGEND**
- ① STAMPED ASPHALT
 - ② 2" HOT MIX ASPHALT SUPERPAVE 12.5 MM FOR SURFACE PG 64-22, LEVEL 2
 - ③ 6" HOT MIX ASPHALT SUPERPAVE 19.0 MM FOR BASE PG 64-22, LEVEL 2 (PLACE USING 2 - 3" LIFTS)
 - ④ 6" GRADED AGGREGATE BASE COURSE
 - ⑤ LIMITS OF CLASS I EXCAVATION AND TOP OF SUBGRADE

NOTES:
 1. SEE SHEET 8 FOR ROADSIDE DITCH DETAILS.
 2. SEE CURB GEOMETRY PLAN (SHEET 4) FOR EDGE OF PAVEMENT ELEVATIONS.

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

Walter T. McCall
 DIRECTOR OF PUBLIC WORKS
 DATE: 5-2-07

Steve Sharan
 CHIEF, BUREAU OF ENGINEERING
 DATE: 5/1/07

Steve Sharan
 CHIEF, TRANSPORTATION & SPECIAL PROJECTS DIVISION
 DATE: 5/1/07

RK & K
RUMMEL KLEPPER & KAHL, LLP
 CONSULTING ENGINEERS
 81 MOSHER STREET
 BALTIMORE, MD 21217

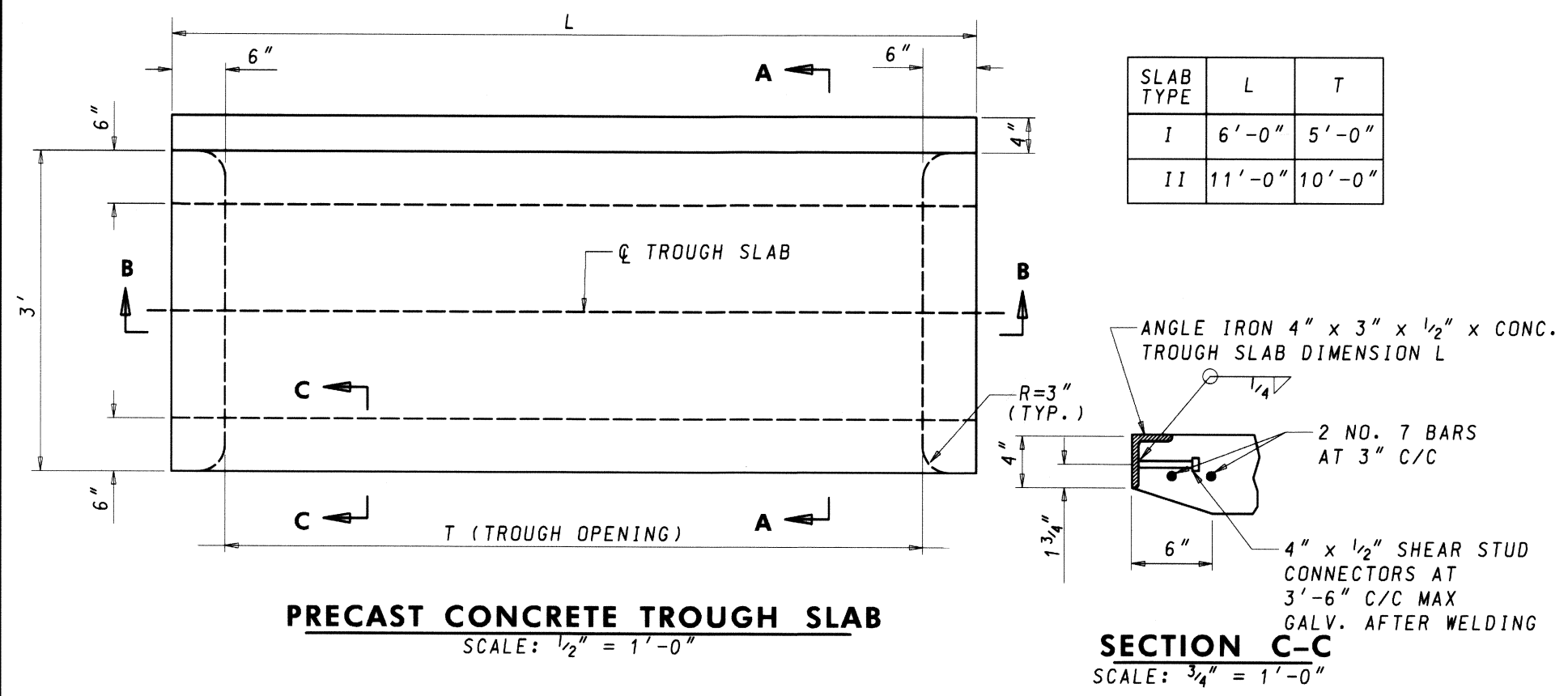


DES: TMB	TMB	I	SURVEY CONTROL & SPOT ELEVATIONS	10/3/07
DRN: TMB				
CHK: RJA				
DATE:	BY	NO.	REVISION	DATE

TYPICAL SECTION

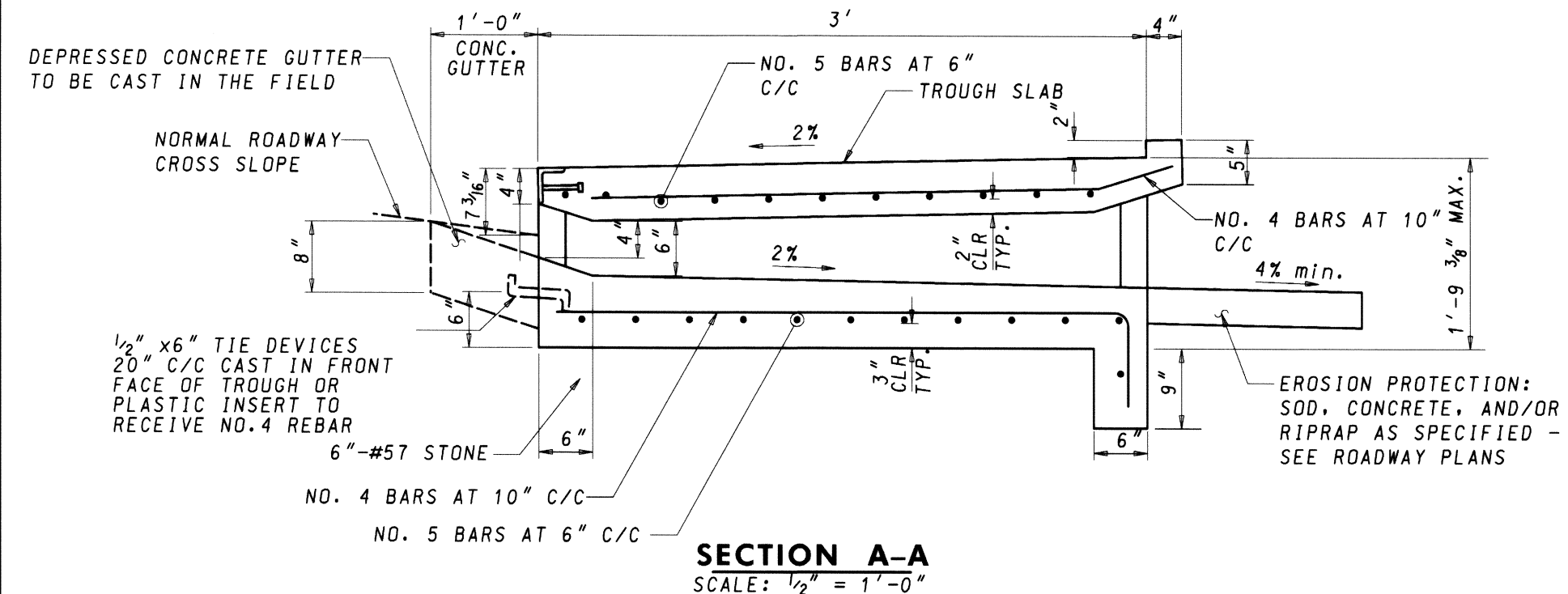
TEN OAKS ROAD @ BRIGHTON DAM ROAD
 INTERSECTION IMPROVEMENTS
 CAPITAL PROJECT NO. J-4164-04
 HOWARD COUNTY, MARYLAND

SCALE
 1" = 5'
 SHEET NO.
 7 OF 20

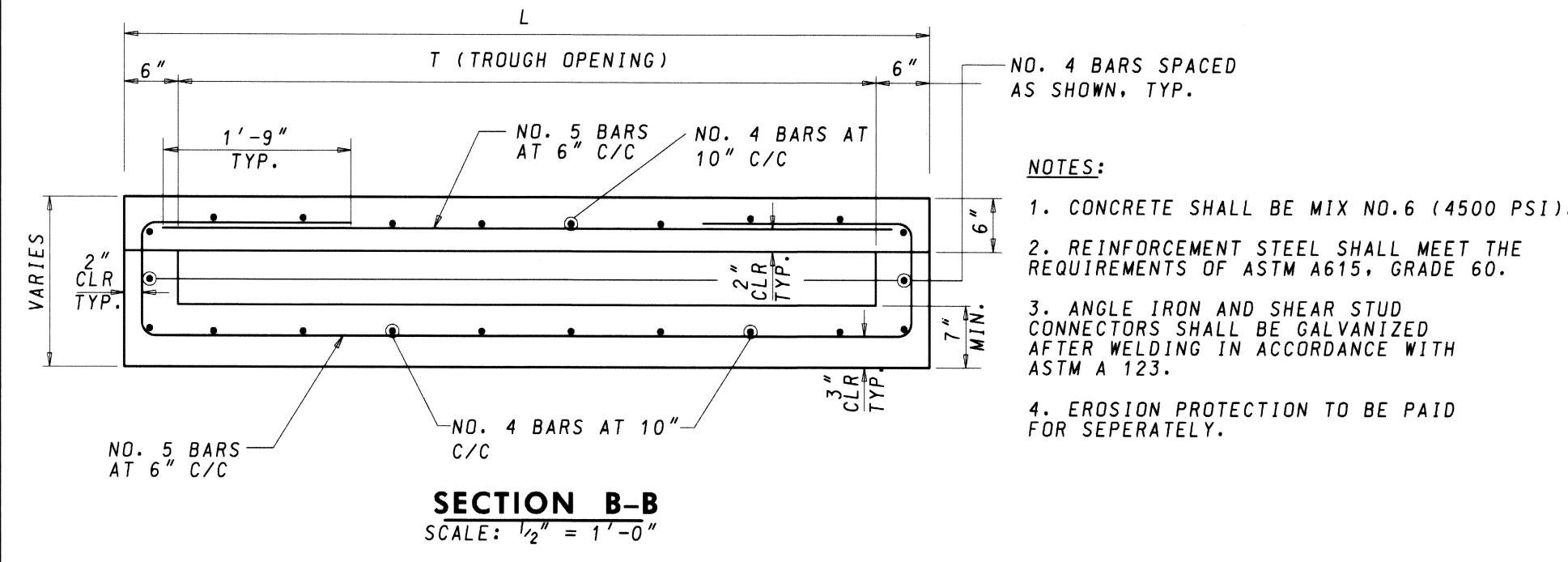


PRECAST CONCRETE TROUGH SLAB
SCALE: 1/2" = 1'-0"

SECTION C-C
SCALE: 3/4" = 1'-0"



SECTION A-A
SCALE: 1/2" = 1'-0"



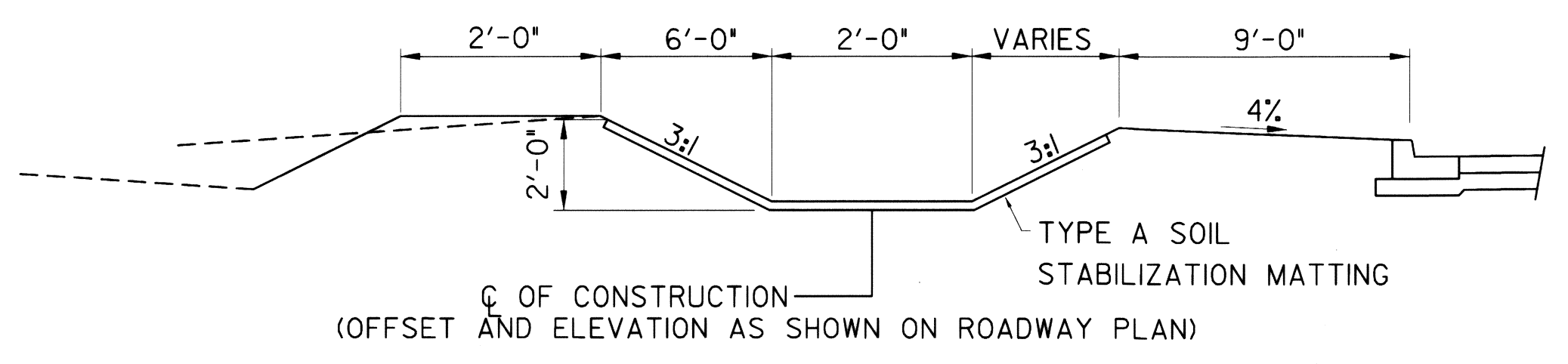
SECTION B-B
SCALE: 1/2" = 1'-0"

**PRECAST OR CAST-IN-PLACE
COS OPENING
5' OR 10' ONLY
MODIFIED SHA STANDARD NO. MD-374.68**

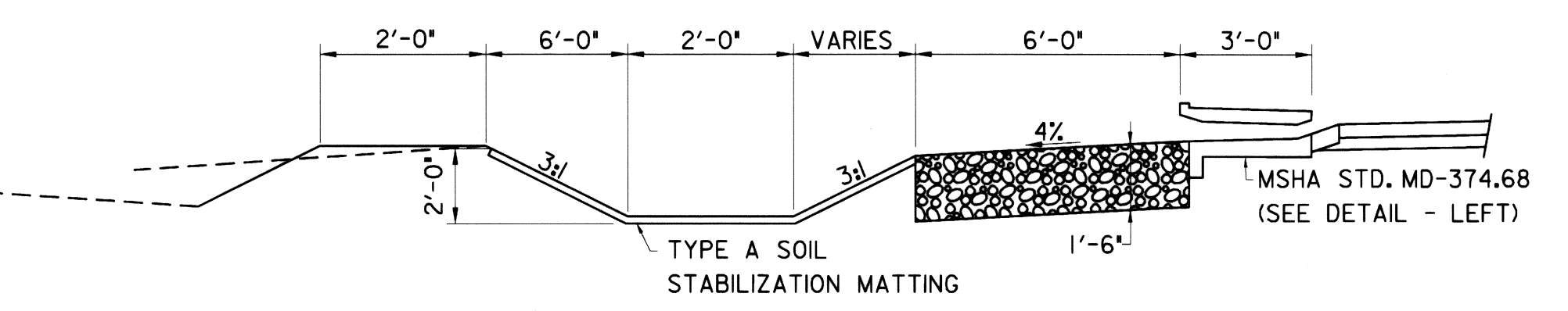
STRUCTURE	TYPE	STATION	OFFSET	INVERT	STANDARD NO.	REMARKS
ES-1	CONCRETE END SECTION	11+81	15.8' LT.	433.95	SD-5.51	HO CO STD
ES-2	CONCRETE END SECTION	11+76	30.0' RT.	433.55	SD-5.51	HO CO STD
I-1	OPEN BACK COS 10'	31+31	14.76' RT.	437.72	MD 374-68	MD SHA STD
I-2	OPEN BACK COS 10'	31+31	11.1' LT.	437.77	MD 374-68	MD SHA STD
I-3	OPEN BACK COS 10'	11+98	15.8' LT.	438.13	MD 374-68	MD SHA STD
I-4	OPEN BACK COS 10'	11+98	19.0' RT.	437.07	MD 374-68	MD SHA STD

NOTE: STATION, OFFSET AND INVERT TAKEN FROM C OF INLET AT TOP OF CURB.

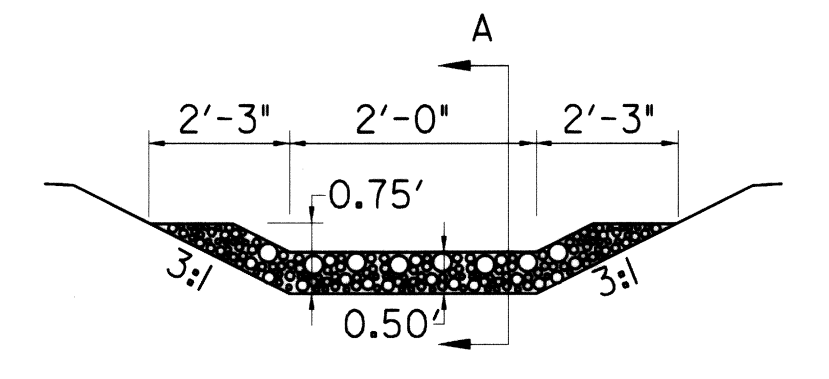
DRAINAGE STRUCTURE TABLE



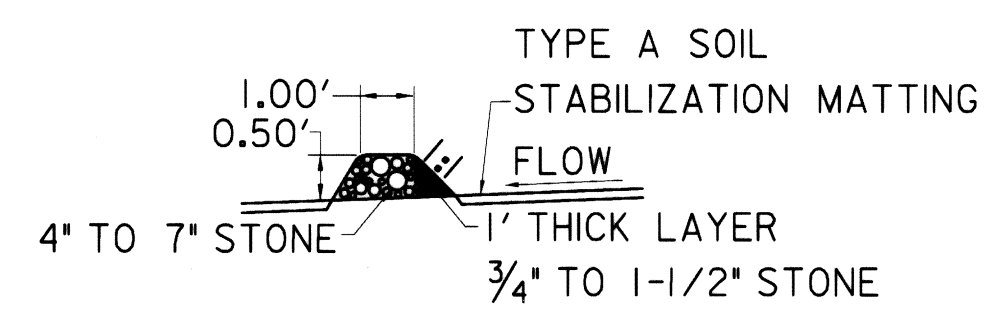
**TYPICAL SECTION:
GRASS CHANNEL CREDIT DITCH**



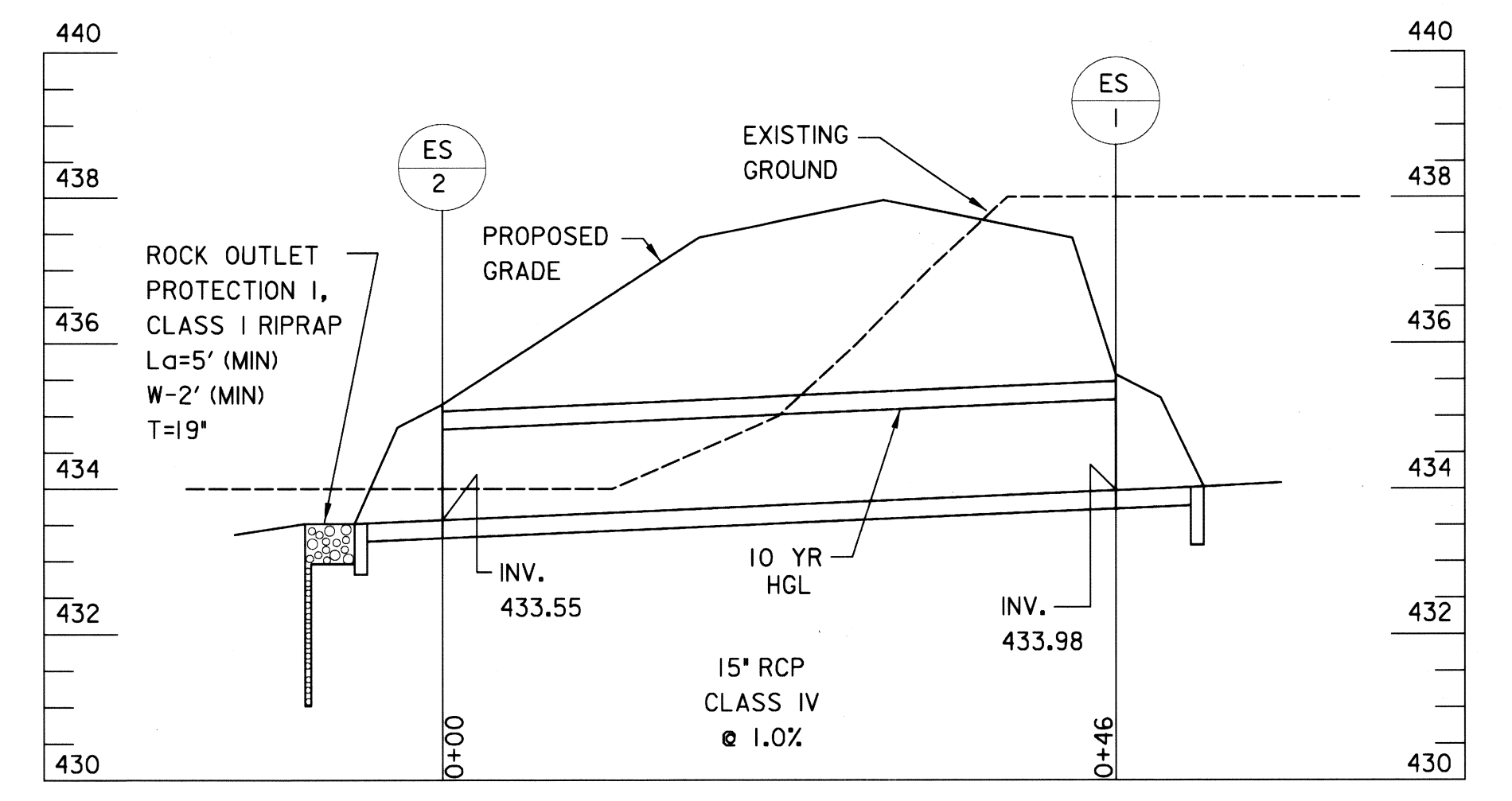
TYPICAL SECTION AT OPEN BACK COS



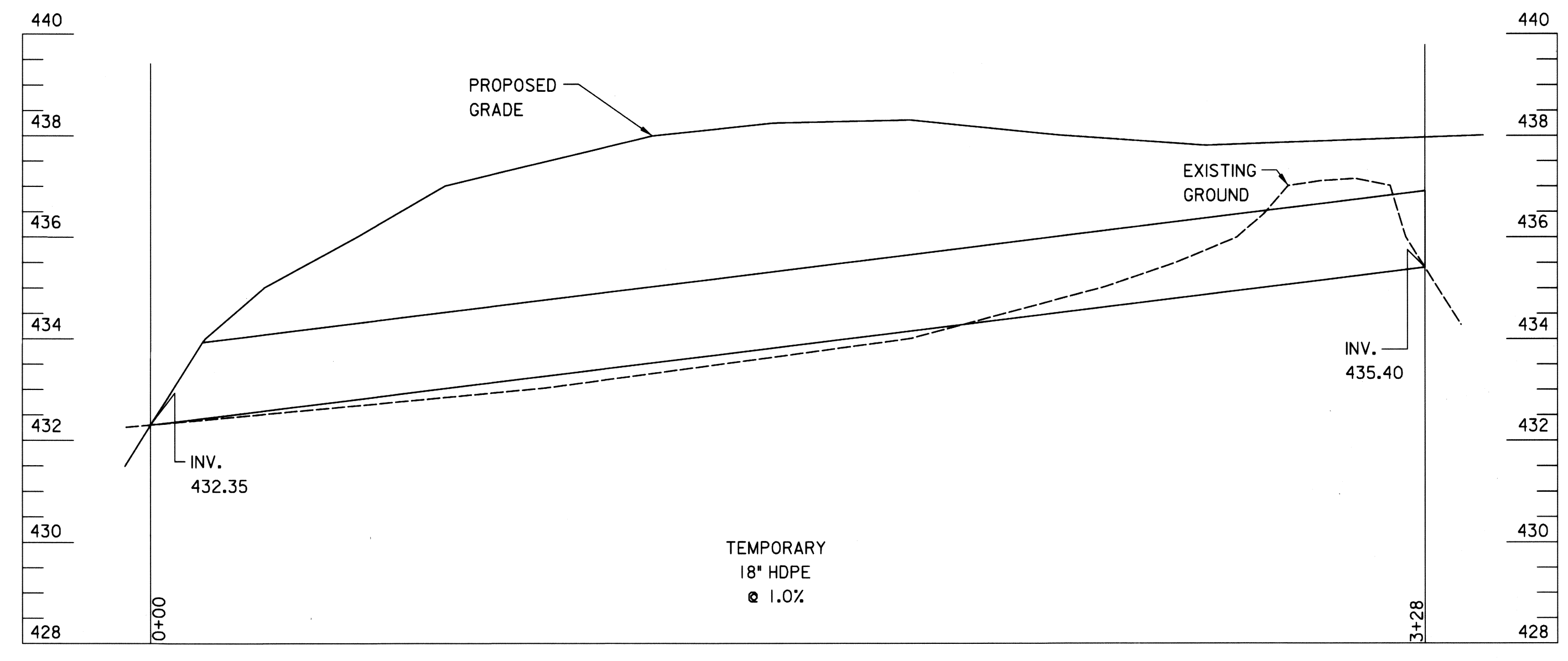
CHECK DAM DETAIL



SECTION A



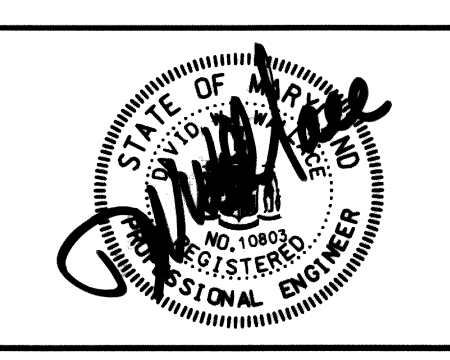
**STA. 11+79
TEN OAKS ROAD WEST**



**TEMPORARY PIPE
FOR CONSTRUCTION BYPASS**

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND
Director of Public Works DATE 5/1/07
Chief, Bureau of Engineering DATE 5/1/07
Chief, Bureau of Highways DATE 5-2-07
Steve Sharav 5/1/07
Chief, Transportation & Special Projects Division

RUMMEL KLEPPER & KAHL, LLP
CONSULTING ENGINEERS
81 MOSHER STREET
BALTIMORE, MD 21217



DES: DMK	TMB	I	SURVEY CONTROL & SPOT ELEVATIONS	10/3/07
DRN: DMK				
CHK: RJA				
DATE:	BY	NO.	REVISION	DATE

DRAINAGE DETAILS

**TEN OAKS ROAD @ BRIGHTON DAM ROAD
INTERSECTION IMPROVEMENTS
CAPITAL PROJECT NO. J-4164-04
HOWARD COUNTY, MARYLAND**

SCALE N.T.S.
SHEET NO. 8 OF 20

HOWARD SOIL CONSERVATION DISTRICT
STANDARD SEDIMENT CONTROL NOTES

1. A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (313-1855).
2. ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE MOST CURRENT MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO.
3. FOLLOWING INITIAL SOIL DISTURBANCE OR RE-DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN: A) 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES GREATER THAN 3:1, B) 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
4. ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL 1, CHAPTER 12 OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
5. ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDING (SEC. 51), SOD (SEC. 54), TEMPORARY SEEDING (SEC. 50) AND MULCHING (SEC. 52). TEMPORARY STABILIZATION WITH MULCH ALONE CAN ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
6. ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
7. SITE ANALYSIS:

TOTAL AREA OF SITE:	4.42	ACRES
AREA DISTURBED:	1.53	ACRES
AREA TO BE ROOFED OR PAVED:	0.45	ACRES
AREA TO BE VEGETATIVELY STABILIZED:	1.08	ACRES
TOTAL CUT:	2500	CU. YDS.
TOTAL FILL:	6500	CU. YDS.
OFFSITE WASTE/BORROW AREA LOCATION:		
8. ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
9. ADDITIONAL SEDIMENT CONTROL MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
10. ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 2 ACRES, APPROVAL OF THE INSPECTION AGENCY SHALL BE REQUESTED UPON COMPLETION OF INSTALLATION OF PERIMETER EROSION AND SEDIMENT CONTROLS, BUT BEFORE PROCEEDING WITH ANY OTHER EARTH DISTURBANCE OR GRADING. OTHER BUILDING OR GRADING INSPECTION APPROVALS MAY NOT BE AUTHORIZED UNTIL THIS INITIAL APPROVAL BY THE INSPECTION AGENCY IS MADE.
11. TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OR THAT WHICH SHALL BE BACK-FILLED AND STABILIZED BY THE END OF EACH WORK DAY, WHICHEVER IS SHORTER.

SEQUENCE OF CONSTRUCTION

1. OBTAIN A GRADING PERMIT.
2. CONTACT HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION TO SCHEDULE PRE-CONSTRUCTION MEETING.
3. INSTALL SCE.
4. INSTALL SF ALONG WEST SIDE OF PROJECT, NORTH SIDE OF BRIGHTON DAM ROAD, AND SOUTH SIDE OF TEN OAKS ROAD.
5. INSTALL TEMPORARY 18" HDPE AS SHOWN ON PLAN.
6. INSTALL SSF AT 20+90.
7. CONSTRUCT BERM AND DITCH ALONG WEST SIDE OF PROJECT AND STABILIZE. UPON COMPLETION OF BERM, CLEAR AND GRUB SITE BOUND BY BERM, BRIGHTON DAM ROAD, AND TEN OAKS ROAD.
8. CONSTRUCT ROUNDABOUT AND STORM DRAIN PIPE FROM ES-2 TO ES-1 IN ACCORDANCE WITH TCP STAGES 1 AND 2. OMIT CONSTRUCTION OF GRADING BEHIND CURB FROM STATION 2+35 TO STATION 2+85 AND FROM STATION 3+50 TO STATION 4+00 TO KEEP GRADING OFF OF EXISTING BRIGHTON DAM ROAD AND TEN OAKS ROAD. MAINTAIN POSITIVE GRADING ALONG EXISTING TEN OAKS ROAD TO TEMPORARY OUTFALL PIPE. THERE SHALL BE NO STANDING WATER DURING CONSTRUCTION. TEMPORARILY PLUG ES-1.
9. UPON COMPLETION, DIVERT TRAFFIC TO ROUNDABOUT AS SPECIFIED IN TCP STAGE 2A.
10. INSTALL SF ALONG SOUTH SIDE OF BRIGHTON DAM ROAD.
11. INSTALL SSF AT STATION 21+70.
12. REMOVE EXISTING PAVEMENT, COMPLETE ROADSIDE GRADING FROM STATION 2+35 TO STATION 2+85, AND CONSTRUCT DITCH ALONG BRIGHTON DAM ROAD. PERMANENTLY STABILIZE DITCH.
13. INSTALL SSF AT STATION 11+90.
14. REMOVE EXISTING PAVEMENT, COMPLETE ROADSIDE GRADING FROM STATION 3+50 TO STATION 4+00, AND CONSTRUCT DITCH ALONG TEN OAKS ROAD. PERMANENTLY STABILIZE DITCH. UPON COMPLETION UN-PLUG ES-1.
15. UPON STABILIZATION OF DITCHES, INSTALL CHECK DAMS AS SHOWN ON ROADWAY PLAN.
16. REMOVE EXISTING PIPE AND HEADWALL AND GRADE EXISTING DITCH TO FLOW INTO NEWLY CONSTRUCTED DITCH.
17. ABANDON TEMPORARY 18" HDPE WITH FLOWABLE FILL.
18. WITH PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR, REMOVE REMAINING EROSION SEDIMENT CONTROL DEVICES AND IMMEDIATELY STABILIZE ANY DISTURBANCES CREATED BY THIS WORK.

HOWARD SOIL CONSERVATION DISTRICT
PERMANENT SEEDING NOTES

APPLY TO GRADED OR CLEARED AREAS NOT SUBJECT TO IMMEDIATE FURTHER DISTURBANCE WHERE A PERMANENT LONG-LIVED VEGETATIVE COVER IS NEEDED.

SEEDBED PREPARATION: LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISKING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

SOIL AMENDMENTS: IN LIEU OF SOIL TEST RECOMMENDATIONS, USE ONE OF THE FOLLOWING SCHEDULES:

1. PREFERRED -- APPLY 2 TONS/ACRE DOLOMITIC LIMESTONE (92 IBS/1000 SQ. FT.) AND 600 IBS/ACRE 10-10-10 FERTILIZER (14 IBS/1000 SQ. FT.) BEFORE SEEDING. HARROW OR DISK INTO UPPER THREE INCHES OF SOIL. AT TIME OF SEEDING, APPLY 400 IBS/ACRE 30-0-0 UREAFORM FERTILIZER (9 IBS/1000 SQ. FT.)

2. ACCEPTABLE -- APPLY 2 TONS/ACRE DOLOMITIC LIMESTONE (92 IBS/1000 SQ. FT.) AND 1000 IBS/ACRE 10-10-10 FERTILIZER (23 IBS/1000 SQ. FT.) BEFORE SEEDING. HARROW OR DISK INTO UPPER THREE INCHES OF SOIL.

SEEDING -- FOR THE PERIODS MARCH 1 -- APRIL 30, AND AUGUST 1 -- OCTOBER 15, SEED WITH 60 IBS/ACRE (1.4 IBS/1000 SQ. FT.) OF KENTUCKY 31 TALL FESCUE. FOR THE PERIOD MAY 1 -- JULY 31, SEED WITH 60 IBS KENTUCKY 31 TALL FESCUE PER ACRE AND 2 IBS/ACRE (.05 IBS/100() SQ. FT.) OF WEEPING LOVEGRASS. DURING THE PERIOD OF OCTOBER 16 -- FEBRUARY 28, PROTECT SITE BY:

OPTION 1 -- TWO TONS PER ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING.
OPTION 2 -- USE SOD. OPTION 3 --- SEED: WITH 60 IBS/ACRE KENTUCKY 30 TALL FESCUE AND MULCH WITH 2 TONS/ACRE WELL ANCHORED STRAW.

MULCHING -- APPLY 1-1/2 TO 2 TONS PER ACRE (70 TO 90 IBS/1000 SQ. FT.) OF UNROTTED SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GALLONS PER ACRE (5 GAL/1000 SQ. FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPE 8 FEET OR HIGHER, USE 348 GALLONS PER ACRE (8 GAL/1000 SQ. FT.) FOR ANCHORING.

MAINTENANCE -- INSPECT ALL SEEDING AREAS AND MAKE NEEDED REPAIRS, REPLACEMENTS AND RESEEDINGS.

TEMPORARY SEEDING NOTES

APPLY TO GRADED OR CLEARED AREAS LIKELY TO BE RE-DISTURBED WHERE A SHORT-TERM VEGETATIVE COVER IS NEEDED.

SEEDBED PREPARATION: -- LOOSEN UPPER THREE INCHES OF SOIL BY RAKING, DISKING OR OTHER ACCEPTABLE MEANS BEFORE SEEDING, IF NOT PREVIOUSLY LOOSENED.

SOIL AMENDMENTS: -- APPLY 600 IBS/ACRE 10-10-10 FERTILIZER (14 IBS/1000 SQ. FT.).

SEEDING: -- FOR PERIODS MARCH 1 -- APRIL 30 AND FROM AUGUST 15 -- OCTOBER 15, SEED WITH 2-1/2 BUSHEL PER ACRE OF ANNUAL RYE (3.2 IBS/1000 SQ. FT.). FOR THE PERIOD MAY 1 -- AUGUST 14, SEED WITH 3 IBS/ACRE OF WEEPING LOVEGRASS (.07 IBS/1000 SQ. FT.). FOR THE PERIOD NOVEMBER 16 -- FEBRUARY 28, PROTECT SITE BY APPLYING 2 TONS/ACRE OF WELL ANCHORED STRAW MULCH AND SEED AS SOON AS POSSIBLE IN THE SPRING, OR USE SOD.

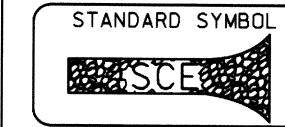
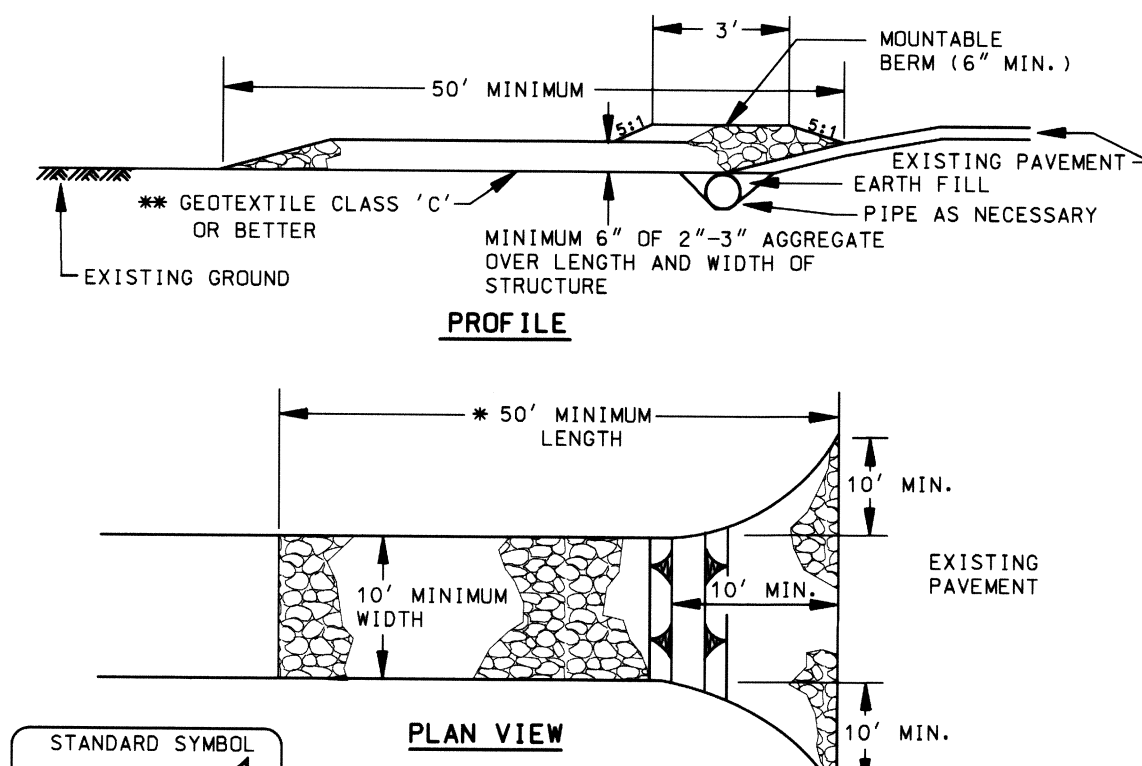
MULCHING: -- APPLY 1-1/2 TO 2 TONS/ACRE (70 TO 90 IBS/1000 SQ. FT.) OF UNROTTED WEED-FREE, SMALL GRAIN STRAW IMMEDIATELY AFTER SEEDING. ANCHOR MULCH IMMEDIATELY AFTER APPLICATION USING MULCH ANCHORING TOOL OR 218 GAL. PER ACRE (5 GAL/1000 SQ. FT.) OF EMULSIFIED ASPHALT ON FLAT AREAS. ON SLOPE 8 FT. OR HIGHER, USE 348 GAL. PER ACRE (8 GAL/1000 SQ. FT.) FOR ANCHORING.

REFER TO THE 1994 MAR4AND STANDARDS AND SPECIFICATIONS FOR SOL EROSION AND SEDIMENT CONTROL FOR ADDITIONAL RATES AND METHODS NOT COVERED.

REVIEWED FOR HOWARD SOIL CONSERVATION AND MEETS TECHNICAL REQUIREMENTS	
<i>Jim Meyer</i> 5/2/07	DATE
U.S. NATURAL RESOURCES CONSERVATION SERVICE	
THIS DEVELOPMENT IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT	
<i>John K. Stanton</i> 5/2/07	DATE
HOWARD SOIL CONSERVATION DISTRICT	

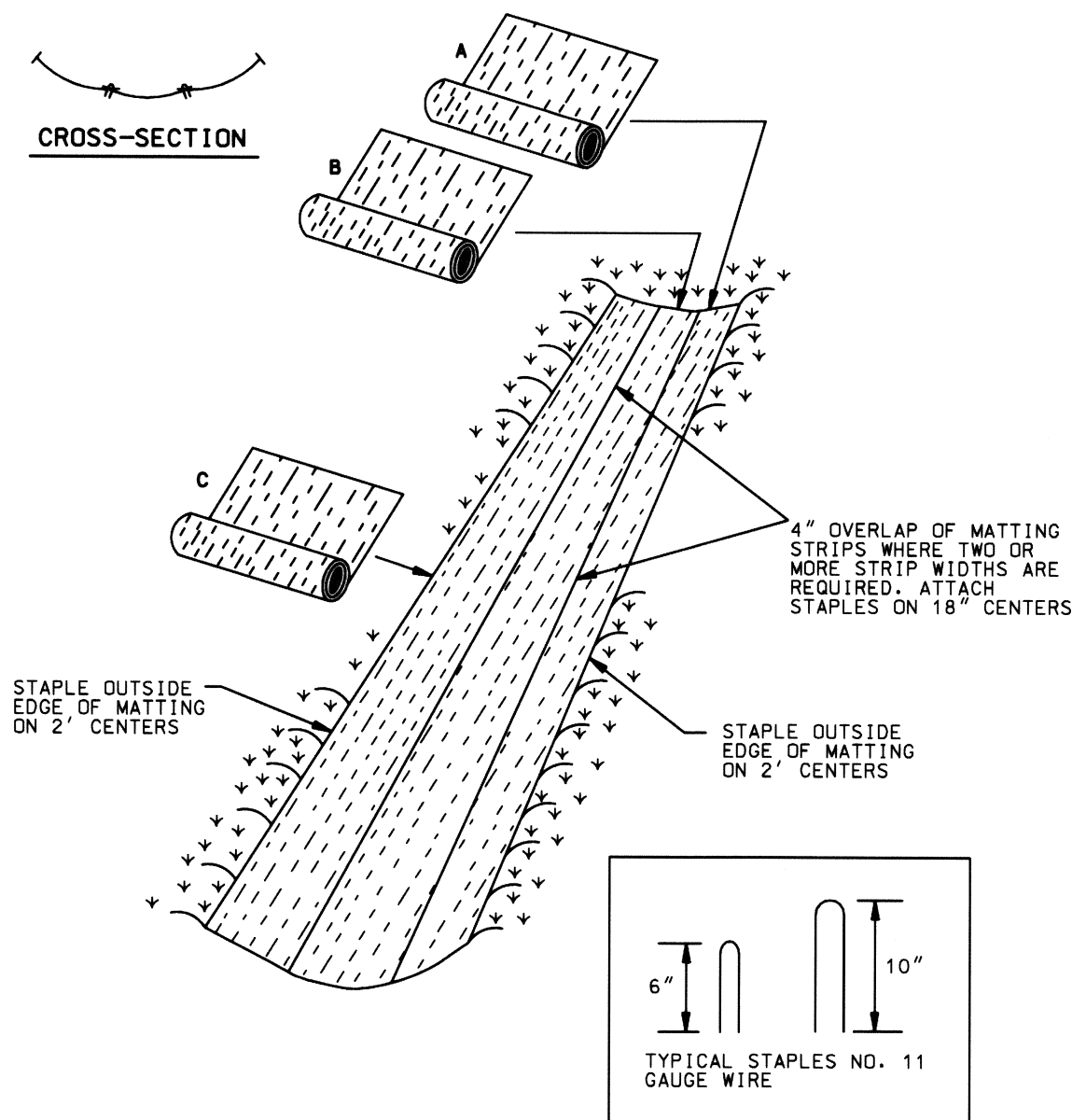
DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND <i>Jan P. K.</i> 5-2-07 DIRECTOR OF PUBLIC WORKS DATE <i>William E. Mallon</i> 5-2-07 CHIEF, BUREAU OF HIGHWAYS DATE	Steve Shaven 5/1/07 CHIEF, TRANSPORTATION & SPECIAL PROJECTS DIVISION DATE	RUMMEL KLEPPER & KAHL, LLP CONSULTING ENGINEERS 81 MOSHER STREET BALTIMORE, MD 21217	DES: KAR				EROSION AND SEDIMENT CONTROL GENERAL NOTES	TEN OAKS ROAD @ BRIGHTON DAM ROAD INTERSECTION IMPROVEMENTS CAPITAL PROJECT NO. J-4164-04 HOWARD COUNTY, MARYLAND	SCALE N/A
			DRN: EBS						
			CHK:						
			DATE:	BY	NO.	REVISION			

DETAIL 24 - STABILIZED CONSTRUCTION ENTRANCE



- Construction Specifications**
- Length - minimum of 50' (#30' for single residence lot).
 - Width - 10' minimum, should be flared at the existing road to provide a turning radius.
 - Geotextile fabric (filter cloth) shall be placed over the existing ground prior to placing stone. The plan approval authority may not require single family residences to use geotextile.
 - Stone - crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.
 - Surface Water - all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.
 - Location - A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

DETAIL 30 - EROSION CONTROL MATTING



EROSION CONTROL MATTING

- Construction Specifications**
- Key-in the matting by placing the top ends of the matting in a narrow trench, 6" in depth. Backfill the trench and tamp firmly to conform to the channel cross-section. Secure with a row of staples about 4" down slope from the trench. Spacing between staples is 6".
 - Staple the 4" overlap in the channel center using an 18" spacing between staples.
 - Before stapling the outer edges of the matting, make sure the matting is smooth and in firm contact with the soil.
 - Staples shall be placed 2' apart with 4 rows for each strip, 2 outer rows, and 2 alternating rows down the center.
 - Where one roll of matting ends and another begins, the end of the top strip shall overlap the upper end of the lower strip by 4", ship-lap fashion. Reinforce the overlap with a double row of staples spaced 6" apart in a staggered pattern on either side.
 - The discharge end of the matting liner should be similarly secured with 2 double rows of staples.
- Note: If flow will enter from the edge of the matting then the area effected by the flow must be keyed-in.

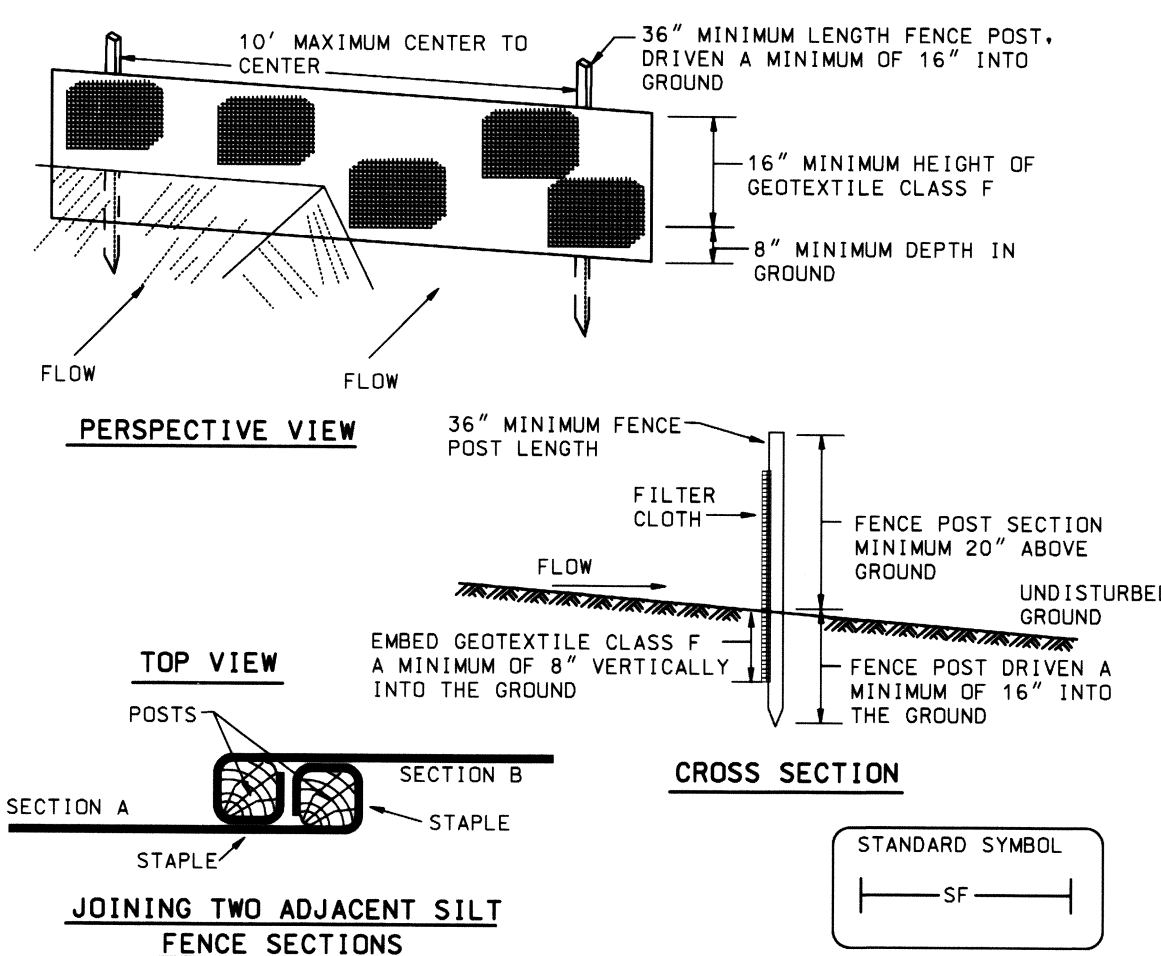
REVIEWED FOR HOWARD SOIL CONSERVATION AND MEETS TECHNICAL REQUIREMENTS

Jim Meyer 5/1/07
U.S. NATURAL RESOURCES CONSERVATION SERVICE DATE

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

Paul White 5/1/07
HOWARD SOIL CONSERVATION DISTRICT DATE

DETAIL 22 - SILT FENCE



- Construction Specifications**
- Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 1 1/2" x 1 1/2" square (minimum cut), or 1 3/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighting not less than 1.00 pound per linear foot.
 - Geotextile shall be fastened securely to each fence post with wire ties or staples at top and mid-section and shall meet the following requirements for Geotextile Class F:
- | | | |
|----------------------|--|----------------|
| Tensile Strength | 50 lbs/in (min.) | Test: MSMT 509 |
| Tensile Modulus | 20 lbs/in (min.) | Test: MSMT 509 |
| Flow Rate | 0.3 gal/ft ² /minute (max.) | Test: MSMT 322 |
| Filtering Efficiency | 75% (min.) | Test: MSMT 322 |
- Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
 - Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

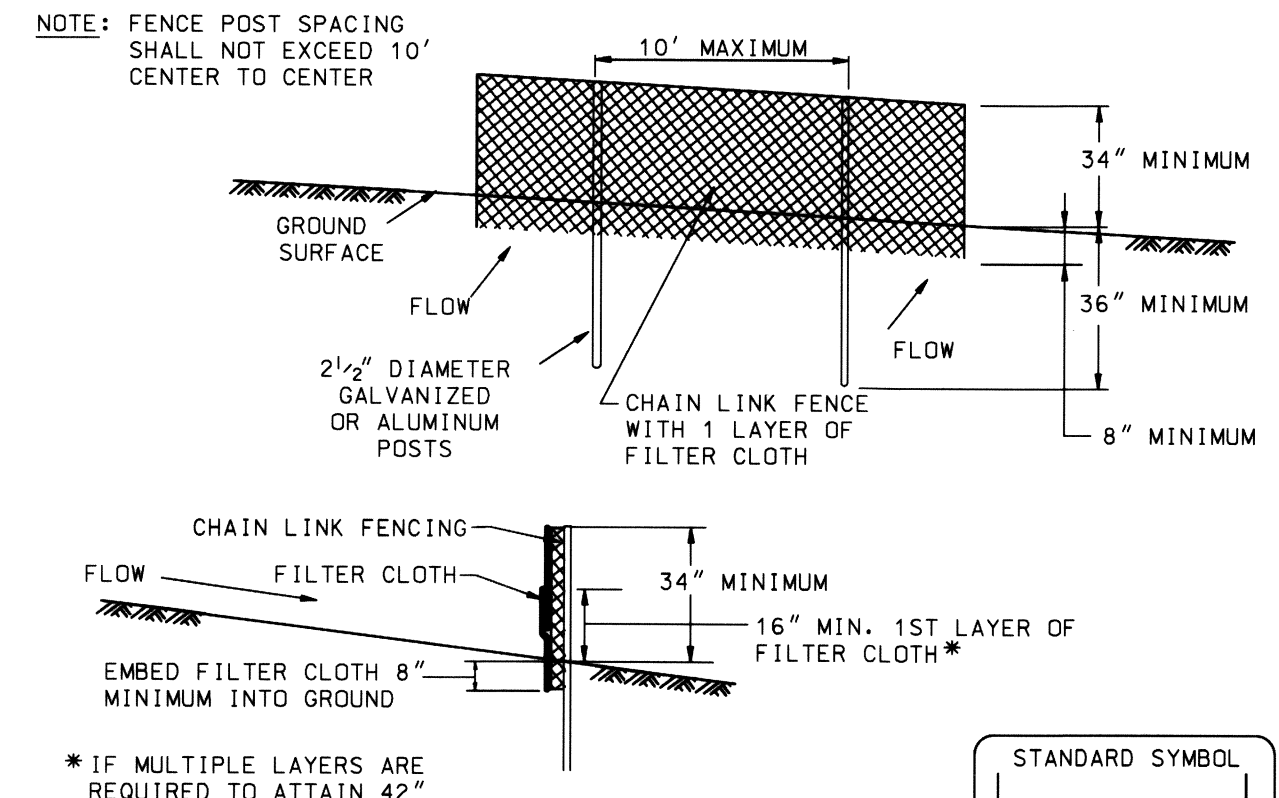
SILT FENCE

Silt Fence Design Criteria

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

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

DETAIL 33 - SUPER SILT FENCE



- Construction Specifications**
- Fencing shall be 42" in height.
 - Chain link fence shall be fastened securely to the fence posts with wire ties. The lower tension wire, brace and truss rods, drive anchors and post caps are not required except on the ends of the fence.
 - Filter cloth shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid section.
 - Filter cloth shall be embedded a minimum of 8" into the ground.
 - When two sections of filter cloth adjoin each other, they shall be overlapped by 6" and folded.
 - Maintenance shall be performed as needed and silt buildups removed when "bulges" develop in the silt fence, or when silt reaches 50% of fence height
 - Filter cloth shall be fastened securely to each fence post with wire ties or staples at top and mid section and shall meet the following requirements:

Tensile Strength	50 lbs/in (min.)
Tensile Modulus	20 lbs/in (min.)
Flow Rate	0.3 gal/ft ² /minute (max.)
Filtering Efficiency	75% (min.)

SUPER SILT FENCE

Design Criteria

Slope	Slope Steepness	Slope Length (maximum)	Silt Fence Length (maximum)
0 - 10%	0 - 10:1	Unlimited	Unlimited
10 - 20%	10:1 - 5:1	200 feet	1,500 feet
20 - 33%	5:1 - 3:1	100 feet	1,000 feet
33 - 50%	3:1 - 2:1	100 feet	500 feet
50% +	2:1 +	50 feet	250 feet

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

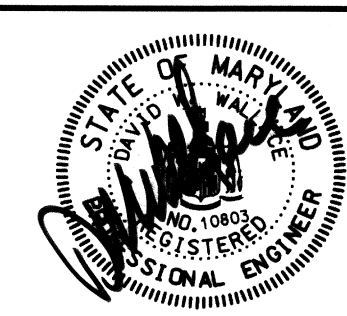
John G. ... 5/1/07
DIRECTOR OF PUBLIC WORKS DATE

Steve Sharan 5/1/07
CHIEF, BUREAU OF ENGINEERING DATE

Michelle ... 5-2-07
CHIEF, BUREAU OF HIGHWAYS DATE

Steve Sharan 5/1/07
CHIEF, TRANSPORTATION & SPECIAL PROJECTS DIVISION DATE

RK & K
RUMMEL KLEPPER & KAHL, LLP
CONSULTING ENGINEERS
81 MOSHER STREET
BALTIMORE, MD
21217



DES: EBS			
DRN: EBS			
CHK: RJA			
DATE:	BY	NO.	REVISION

EROSION AND
SEDIMENT CONTROL
DETAILS

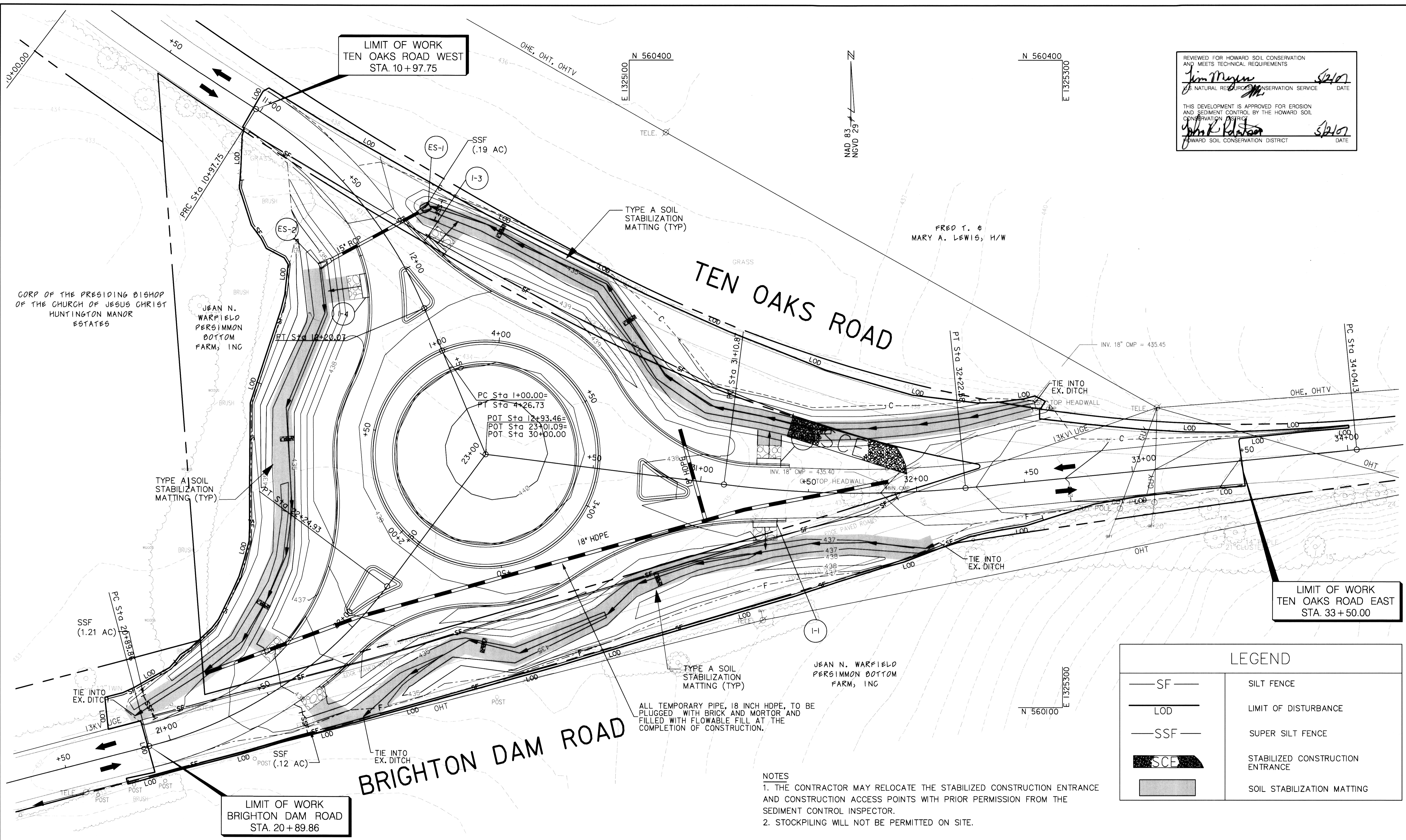
TEN OAKS ROAD @ BRIGHTON DAM ROAD
INTERSECTION IMPROVEMENTS
CAPITAL PROJECT NO. J-4164-04
HOWARD COUNTY, MARYLAND

SCALE
N/A

SHEET NO.
10 OF 20

REVIEWED FOR HOWARD SOIL CONSERVATION AND MEETS TECHNICAL REQUIREMENTS
Jim Meyer 5/2/07
 HOWARD COUNTY NATURAL RESOURCES CONSERVATION SERVICE DATE

THIS DEVELOPMENT IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT
John K. Kanton 5/2/07
 HOWARD SOIL CONSERVATION DISTRICT DATE



LIMIT OF WORK
 TEN OAKS ROAD EAST
 STA. 33+50.00

LIMIT OF WORK
 BRIGHTON DAM ROAD
 STA. 20+89.86

LIMIT OF WORK
 TEN OAKS ROAD WEST
 STA. 10+97.75

LEGEND	
— SF —	SILT FENCE
— LOD —	LIMIT OF DISTURBANCE
— SSF —	SUPER SILT FENCE
■ SCE	STABILIZED CONSTRUCTION ENTRANCE
■	SOIL STABILIZATION MATTING

NOTES
 1. THE CONTRACTOR MAY RELOCATE THE STABILIZED CONSTRUCTION ENTRANCE AND CONSTRUCTION ACCESS POINTS WITH PRIOR PERMISSION FROM THE SEDIMENT CONTROL INSPECTOR.
 2. STOCKPILING WILL NOT BE PERMITTED ON SITE.

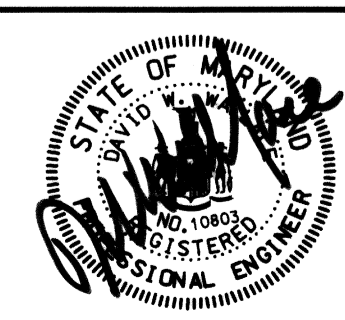
DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

David B. ... 5/2/07
 DIRECTOR OF PUBLIC WORKS DATE

Steve Shaver 5/1/07
 CHIEF, BUREAU OF ENGINEERING DATE

Steve Shaver 5/1/07
 CHIEF, TRANSPORTATION & SPECIAL PROJECTS DIVISION DATE

RK & K
RUMMEL KLEPPER & KAHL, LLP
 CONSULTING ENGINEERS
 81 MOSHER STREET
 BALTIMORE, MD 21217



DES: KAR			
DRN: EBS			
CHK: RJA			
DATE:	BY	NO.	REVISION

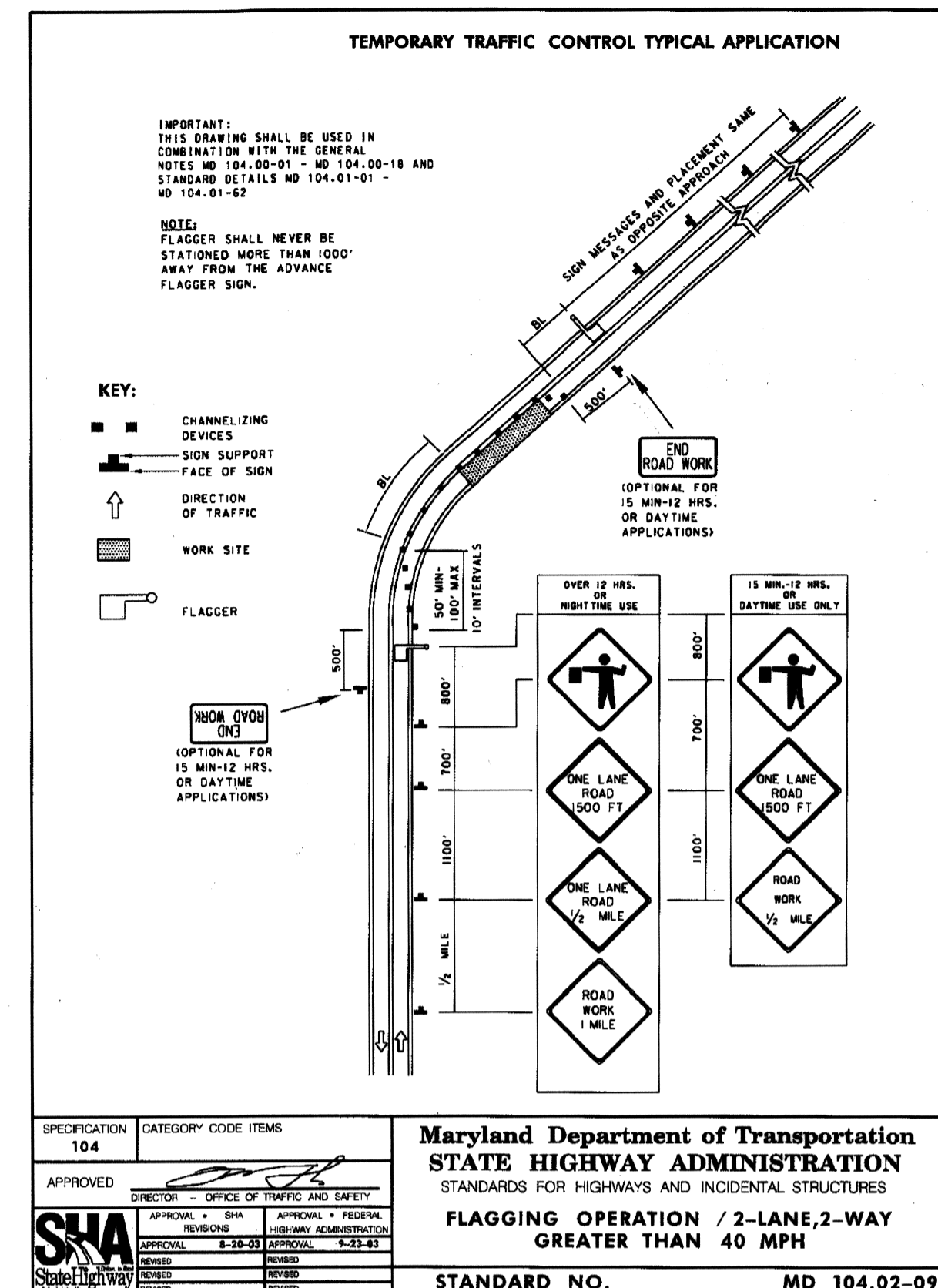
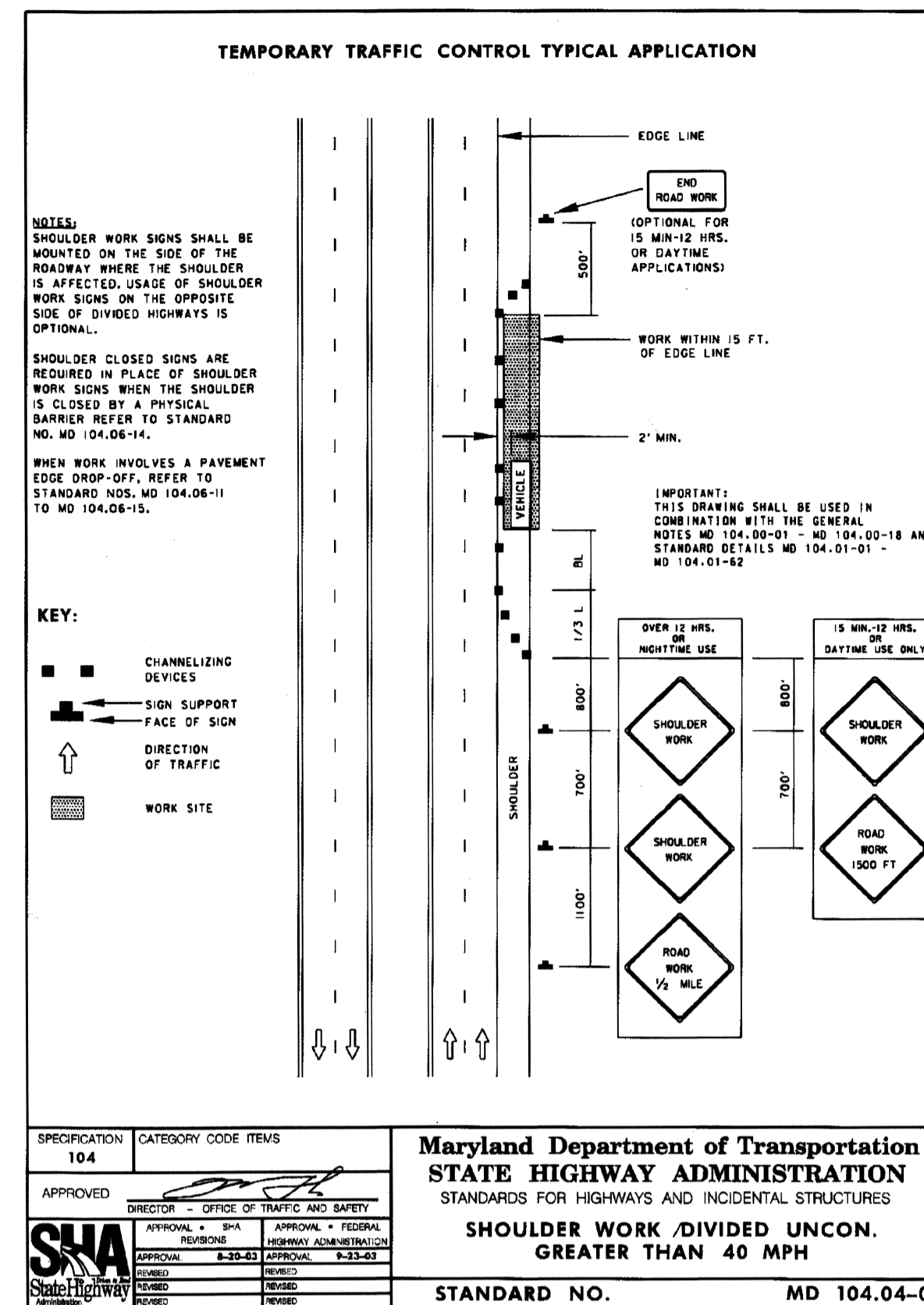
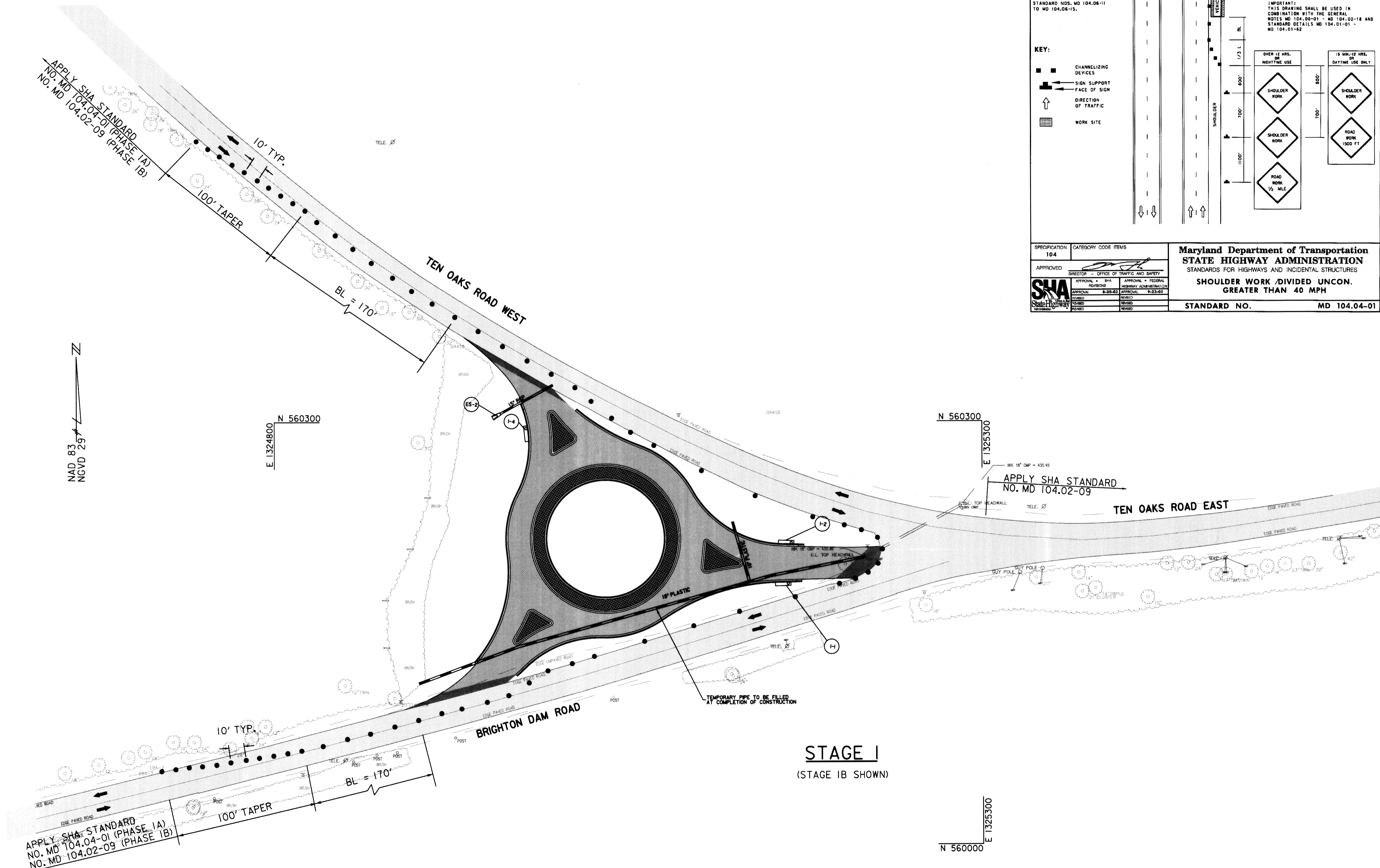
EROSION AND SEDIMENT CONTROL PLAN

TEN OAKS ROAD @ BRIGHTON DAM ROAD
 INTERSECTION IMPROVEMENTS
 CAPITAL PROJECT NO. J-4164-04
 HOWARD COUNTY, MARYLAND

SCALE
 1"=20'

SHEET NO.
 11 OF 20

LEGEND	
	DIRECTION OF TRAFFIC
	SIGN
	TRAFFIC DRUMS
	FULL DEPTH PAVEMENT - STAGE IA
	FULL DEPTH PAVEMENT - STAGE IB

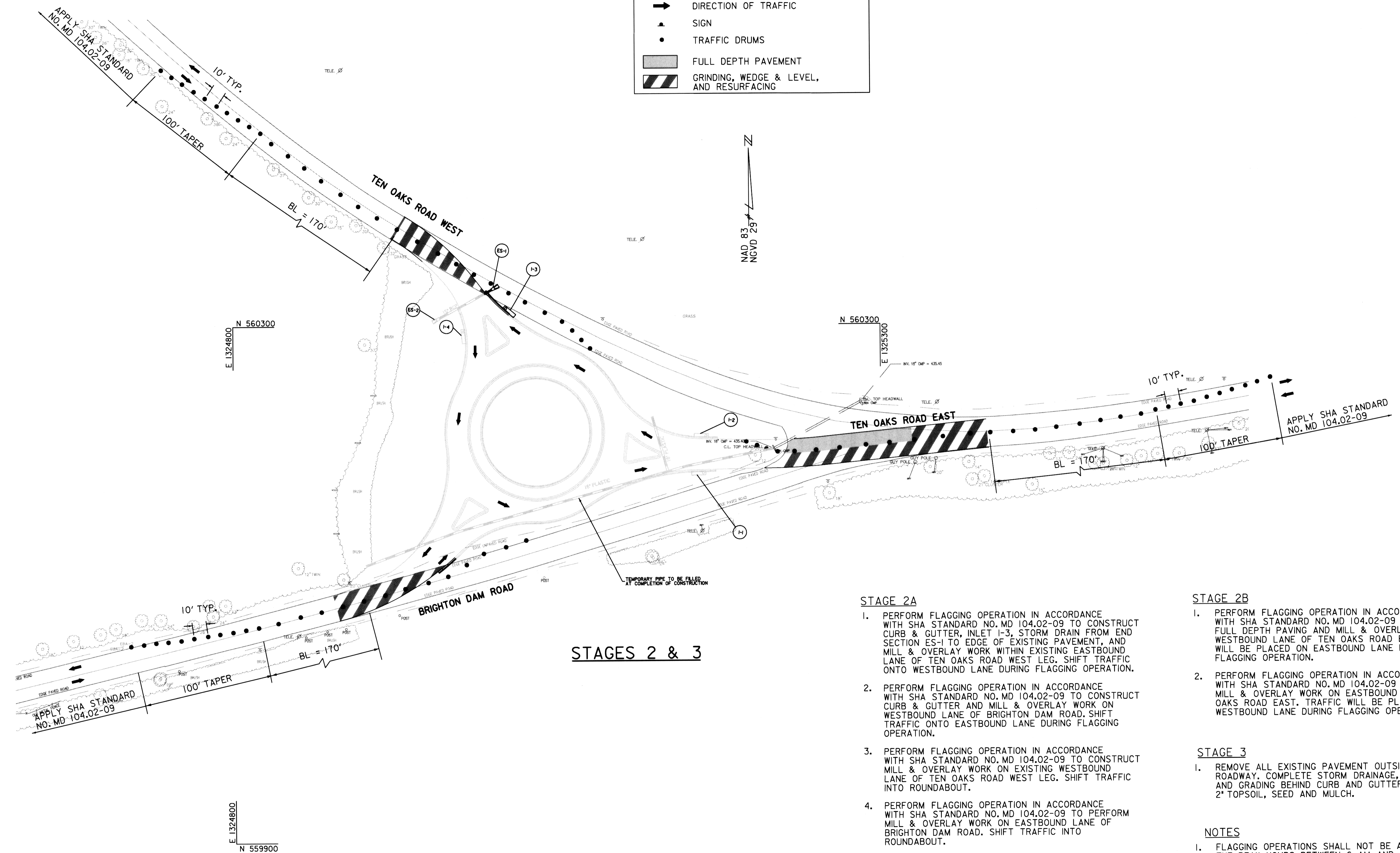


- STAGE IA**
- INSTALL ADVANCE WARNING SIGNS IN ACCORDANCE WITH SHA STANDARD NO. MD 104.04-01.
 - CONSTRUCT TEMPORARY 18" PLASTIC PIPE FROM STATION 21+25 TO STATION 31+85. REMOVE EXISTING HEADWALL AT STATION 31+85, LEFT. CONSTRUCT INLETS I-1, I-2, I-4.
 - PERFORM ROUGH GRADING OF ROUNDABOUT.
 - CONSTRUCT PORTION OF STORM DRAIN FROM ES-2 TO EDGE OF EXISTING ROAD.
 - PERFORM FINAL GRADING AND FULL DEPTH PAVEMENT CONSTRUCTION AS SHOWN ON PLAN.
 - TO AVOID IMPACTS TO EXISTING BRIGHTON DAM ROAD DURING CONSTRUCTION APPLY TEMPORARY GRADING AT 1:1 SLOPE BEHIND PROPOSED ROUNDABOUT CURB WHERE NECESSARY.
- STAGE IB**
- PERFORM FLAGGING OPERATION IN ACCORDANCE WITH SHA STANDARD NO. MD 104.02-09 TO PERFORM PHASE IB FULL DEPTH PAVING CONSTRUCTION AS SHOWN ON PLAN. NO CONSTRUCTION IS ALLOWED TO BE PERFORMED DURING THE PEAK HOURS BETWEEN 6 AM AND 9 AM AND BETWEEN 3 PM AND 7 PM ON WEEKDAYS.
- NOTES**
- EXISTING SWALE TO REMAIN ALONG WESTBOUND BRIGHTON DAM ROAD DURING CONSTRUCTION.

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND Director of Public Works DATE 5/1/07 Chief, Bureau of Highways DATE 5/2/07		Steve Sharar Chief, Transportation & Special Projects Division DATE 5/1/07		RK & K RUMMEL KLEPPER & KAHL, LLP CONSULTING ENGINEERS 81 MOSHER STREET BALTIMORE, MD 21217		DES: TMB DRN: TMB CHK: RJA DATE:		BY NO. REVISION DATE		TRAFFIC CONTROL PLAN PHASE 1		TEN OAKS ROAD @ BRIGHTON DAM ROAD INTERSECTION IMPROVEMENTS CAPITAL PROJECT NO. J-4164-04 HOWARD COUNTY, MARYLAND		SCALE 1" = 40' SHEET NO. 12 OF 20	
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LEGEND

- ➔ DIRECTION OF TRAFFIC
- ▲ SIGN
- TRAFFIC DRUMS
- ▨ FULL DEPTH PAVEMENT
- ▨ GRINDING, WEDGE & LEVEL, AND RESURFACING



STAGES 2 & 3

STAGE 2A

1. PERFORM FLAGGING OPERATION IN ACCORDANCE WITH SHA STANDARD NO. MD 104.02-09 TO CONSTRUCT CURB & GUTTER, INLET 1-3, STORM DRAIN FROM END SECTION ES-1 TO EDGE OF EXISTING PAVEMENT, AND MILL & OVERLAY WORK WITHIN EXISTING EASTBOUND LANE OF TEN OAKS ROAD WEST LEG. SHIFT TRAFFIC ONTO WESTBOUND LANE DURING FLAGGING OPERATION.
2. PERFORM FLAGGING OPERATION IN ACCORDANCE WITH SHA STANDARD NO. MD 104.02-09 TO CONSTRUCT CURB & GUTTER AND MILL & OVERLAY WORK ON WESTBOUND LANE OF BRIGHTON DAM ROAD. SHIFT TRAFFIC ONTO EASTBOUND LANE DURING FLAGGING OPERATION.
3. PERFORM FLAGGING OPERATION IN ACCORDANCE WITH SHA STANDARD NO. MD 104.02-09 TO CONSTRUCT MILL & OVERLAY WORK ON EXISTING WESTBOUND LANE OF TEN OAKS ROAD WEST LEG. SHIFT TRAFFIC INTO ROUNDABOUT.
4. PERFORM FLAGGING OPERATION IN ACCORDANCE WITH SHA STANDARD NO. MD 104.02-09 TO PERFORM MILL & OVERLAY WORK ON EASTBOUND LANE OF BRIGHTON DAM ROAD. SHIFT TRAFFIC INTO ROUNDABOUT.
5. OPEN ROUNDABOUT TO TRAFFIC FROM ALL APPROACHES. (ALL PERMANENT TRAFFIC CONTROL SIGNS SHALL BE IN PLACE PRIOR TO OPENING)

STAGE 2B

1. PERFORM FLAGGING OPERATION IN ACCORDANCE WITH SHA STANDARD NO. MD 104.02-09 TO CONSTRUCT FULL DEPTH PAVING AND MILL & OVERLAY WORK ON WESTBOUND LANE OF TEN OAKS ROAD EAST. TRAFFIC WILL BE PLACED ON EASTBOUND LANE DURING FLAGGING OPERATION.
2. PERFORM FLAGGING OPERATION IN ACCORDANCE WITH SHA STANDARD NO. MD 104.02-09 TO CONSTRUCT MILL & OVERLAY WORK ON EASTBOUND LANE OF TEN OAKS ROAD EAST. TRAFFIC WILL BE PLACED ON WESTBOUND LANE DURING FLAGGING OPERATION.

STAGE 3

1. REMOVE ALL EXISTING PAVEMENT OUTSIDE PROPOSED ROADWAY. COMPLETE STORM DRAINAGE, SWM FACILITIES AND GRADING BEHIND CURB AND GUTTER AND PROVIDE 2" TOPSOIL, SEED AND MULCH.

NOTES

1. FLAGGING OPERATIONS SHALL NOT BE ALLOWED DURING THE PEAK HOURS BETWEEN 6 AM AND 9 AM AND BETWEEN 3 PM AND 7 PM ON WEEKDAYS.

DATE: \$
FILE: \$

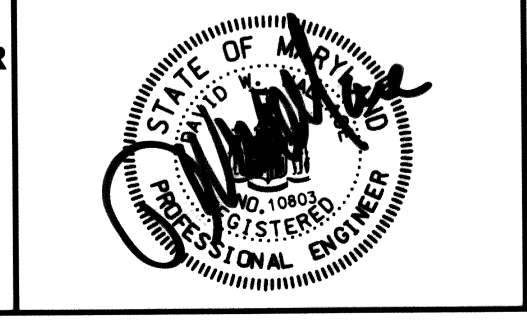
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

John K. ... 5/24
DIRECTOR OF PUBLIC WORKS DATE

Steve Shuman 5/1/07
CHIEF, BUREAU OF ENGINEERING DATE

Steve Shuman 5/1/07
CHIEF, TRANSPORTATION & SPECIAL PROJECTS DIVISION DATE

RK & K RUMMEL KLEPPER & KAHL, LLP
CONSULTING ENGINEERS
81 MOSHER STREET
BALTIMORE, MD 21217

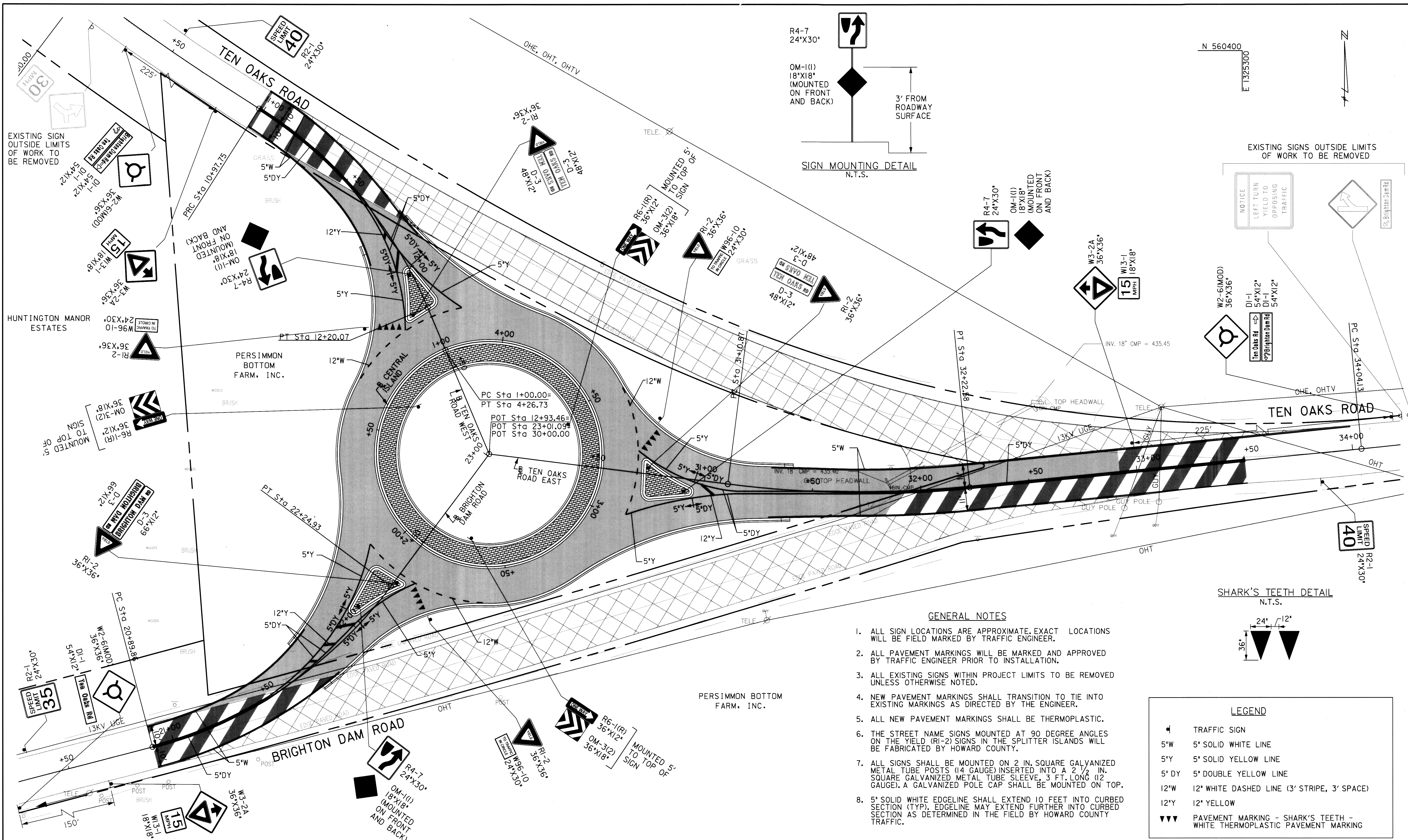


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DRN: TMB				
CHK: RJA				
DATE:	BY	NO.	REVISION	DATE

**TRAFFIC CONTROL PLAN
PHASE 2**

**TEN OAKS ROAD @ BRIGHTON DAM ROAD
INTERSECTION IMPROVEMENTS
CAPITAL PROJECT NO. J-4164-04
HOWARD COUNTY, MARYLAND**

SCALE
1" = 40'
SHEET NO.
13 OF 20



GENERAL NOTES

1. ALL SIGN LOCATIONS ARE APPROXIMATE. EXACT LOCATIONS WILL BE FIELD MARKED BY TRAFFIC ENGINEER.
2. ALL PAVEMENT MARKINGS WILL BE MARKED AND APPROVED BY TRAFFIC ENGINEER PRIOR TO INSTALLATION.
3. ALL EXISTING SIGNS WITHIN PROJECT LIMITS TO BE REMOVED UNLESS OTHERWISE NOTED.
4. NEW PAVEMENT MARKINGS SHALL TRANSITION TO TIE INTO EXISTING MARKINGS AS DIRECTED BY THE ENGINEER.
5. ALL NEW PAVEMENT MARKINGS SHALL BE THERMOPLASTIC.
6. THE STREET NAME SIGNS MOUNTED AT 90 DEGREE ANGLES ON THE YIELD (R1-2) SIGNS IN THE SPLITTER ISLANDS WILL BE FABRICATED BY HOWARD COUNTY.
7. ALL SIGNS SHALL BE MOUNTED ON 2 IN. SQUARE GALVANIZED METAL TUBE POSTS (14 GAUGE) INSERTED INTO A 2 1/2 IN. SQUARE GALVANIZED METAL TUBE SLEEVE, 3 FT. LONG (12 GAUGE). A GALVANIZED POLE CAP SHALL BE MOUNTED ON TOP.
8. 5' SOLID WHITE EDGELINE SHALL EXTEND 10 FEET INTO CURBED SECTION (TYP). EDGELINE MAY EXTEND FURTHER INTO CURBED SECTION AS DETERMINED IN THE FIELD BY HOWARD COUNTY TRAFFIC.

LEGEND

- ▲ TRAFFIC SIGN
- 5'W 5' SOLID WHITE LINE
- 5'Y 5' SOLID YELLOW LINE
- 5' DY 5' DOUBLE YELLOW LINE
- 12'W 12' WHITE DASHED LINE (3' STRIPE, 3' SPACE)
- 12'Y 12' YELLOW
- ▼▼ PAVEMENT MARKING - SHARK'S TEETH - WHITE THERMOPLASTIC PAVEMENT MARKING

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

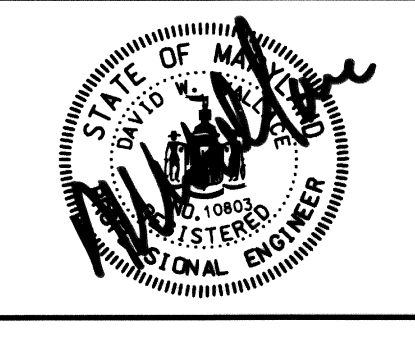
John K. ... 5/1/07
DIRECTOR OF PUBLIC WORKS DATE

Steve Sloman 5/1/07
CHIEF, BUREAU OF ENGINEERING DATE

... 5-2-07
CHIEF, BUREAU OF HIGHWAYS DATE

CHIEF, TRANSPORTATION & SPECIAL PROJECTS DIVISION

RK & K
RUMMEL KLEPPER & KAHL, LLP
CONSULTING ENGINEERS
81 MOSHER STREET
BALTIMORE, MD
21217



DES: HEH				
DRN: TC				
CHK: BLB				
DATE:	BY	NO.	REVISION	DATE

SIGNING AND PAVEMENT MARKING PLAN

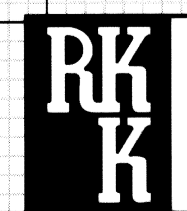
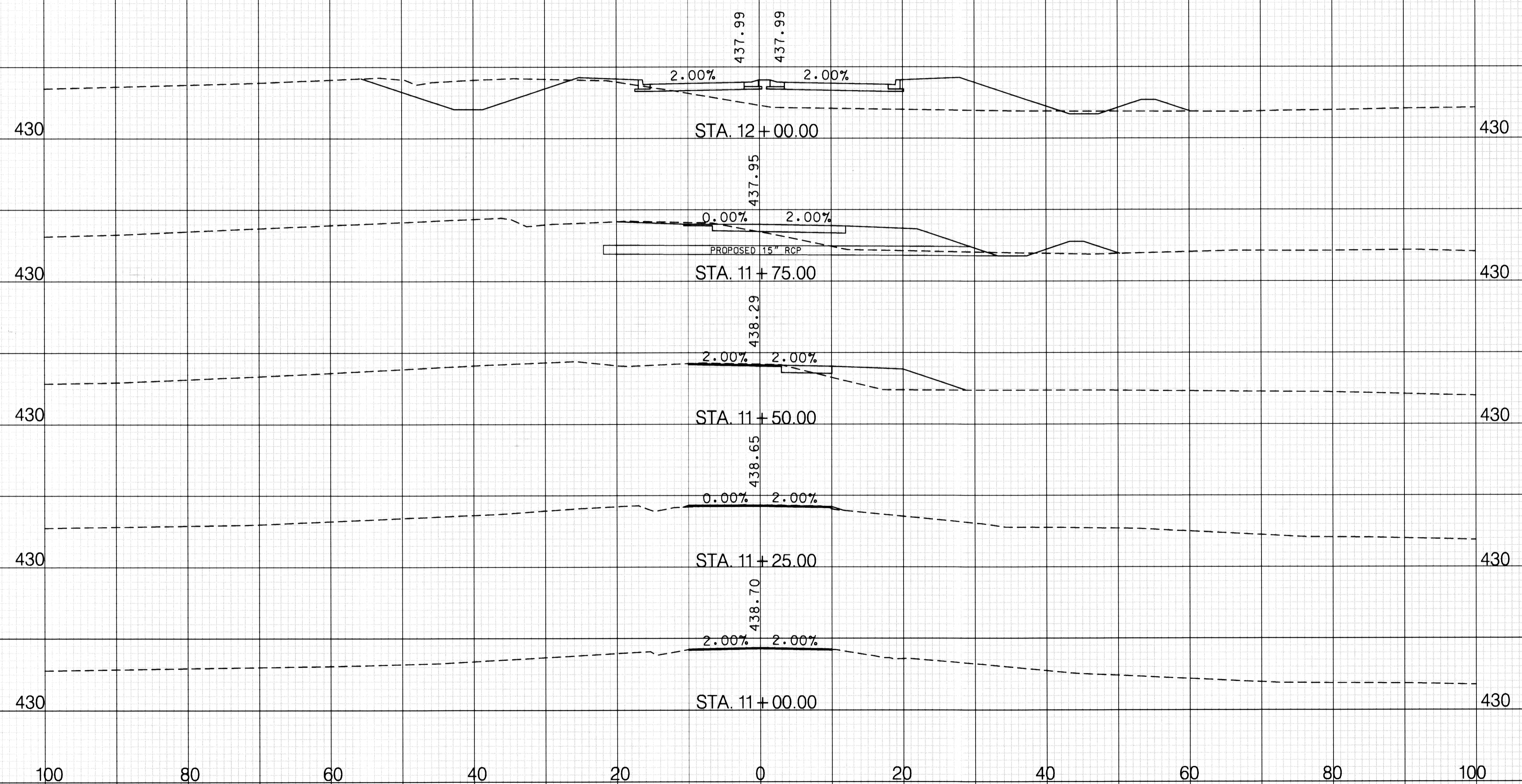
TEN OAKS ROAD @ BRIGHTON DAM ROAD
INTERSECTION IMPROVEMENTS
CAPITAL PROJECT NO. J-4164-04
HOWARD COUNTY, MARYLAND

SCALE
1"=20'

SHEET NO.
14 OF 20

DATE: \$
FILE: \$

Monday, September 11, 2006 AT 02:24 PM
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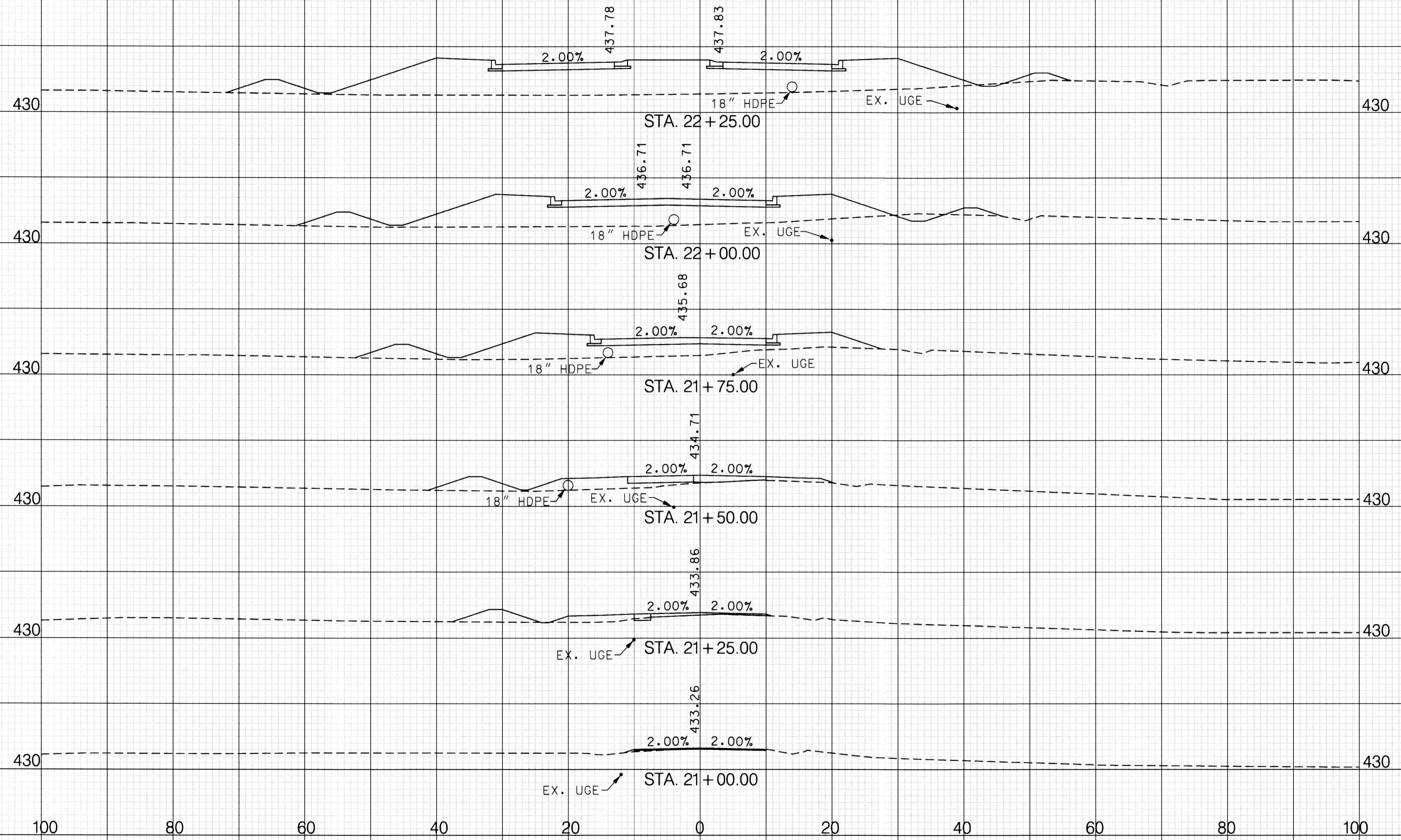
RUMMEL, KLEPPER & KAHL, LLP
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

NO.	REVISION	DATE	BY

TEN OAKS ROAD WEST
Designed by : TMB Drawn by : TMB Checked by : RJA

CROSS SECTIONS
TEN OAKS ROAD AT
BRIGHTON DAM ROAD
INTERSECTION IMPROVEMENTS
Project No. : J-4164-04 Scale : 1" = 10' Sheet 15 of 20

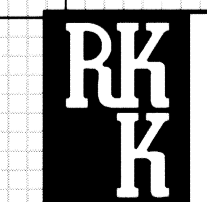
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CROSS SECTIONS

TEN OAKS ROAD AT
BRIGHTON DAM ROAD
INTERSECTION IMPROVEMENTS

BRIGHTON DAM ROAD



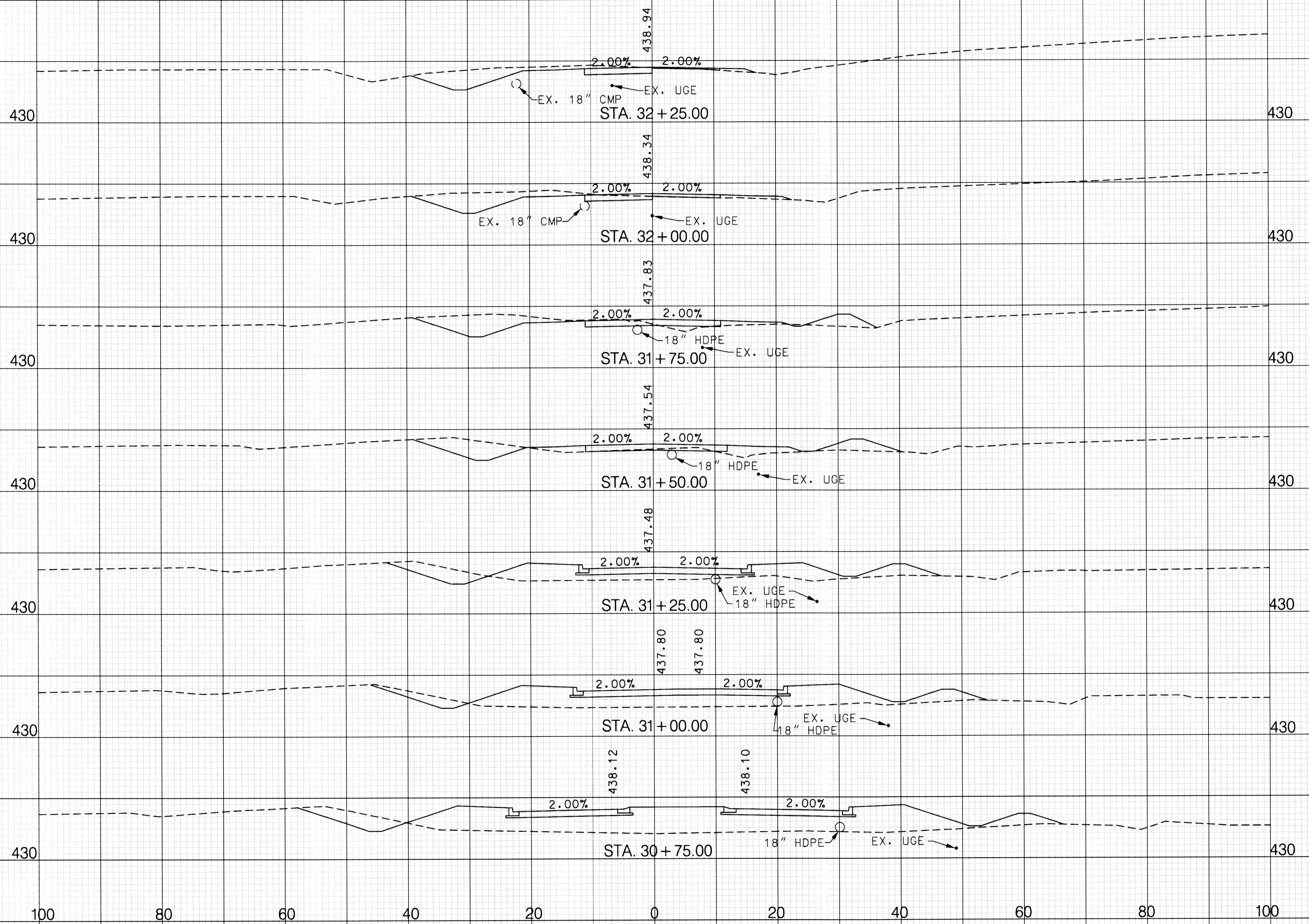
RUMMEL, KLEPPER & KAHL, LLP
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

NO.	REVISION	DATE	BY

Designed by : TMB Drawn by : TMB Checked by : RJA

Project No. : J-4164-04 Scale : 1" = 10' Sheet 16 of 20

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CROSS SECTIONS	
TEN OAKS ROAD AT BRIGHTON DAM ROAD INTERSECTION IMPROVEMENTS	
Project No.: J-4164-04	Scale: 1" = 10' Sheet 17 of 20

TEN OAKS ROAD EAST

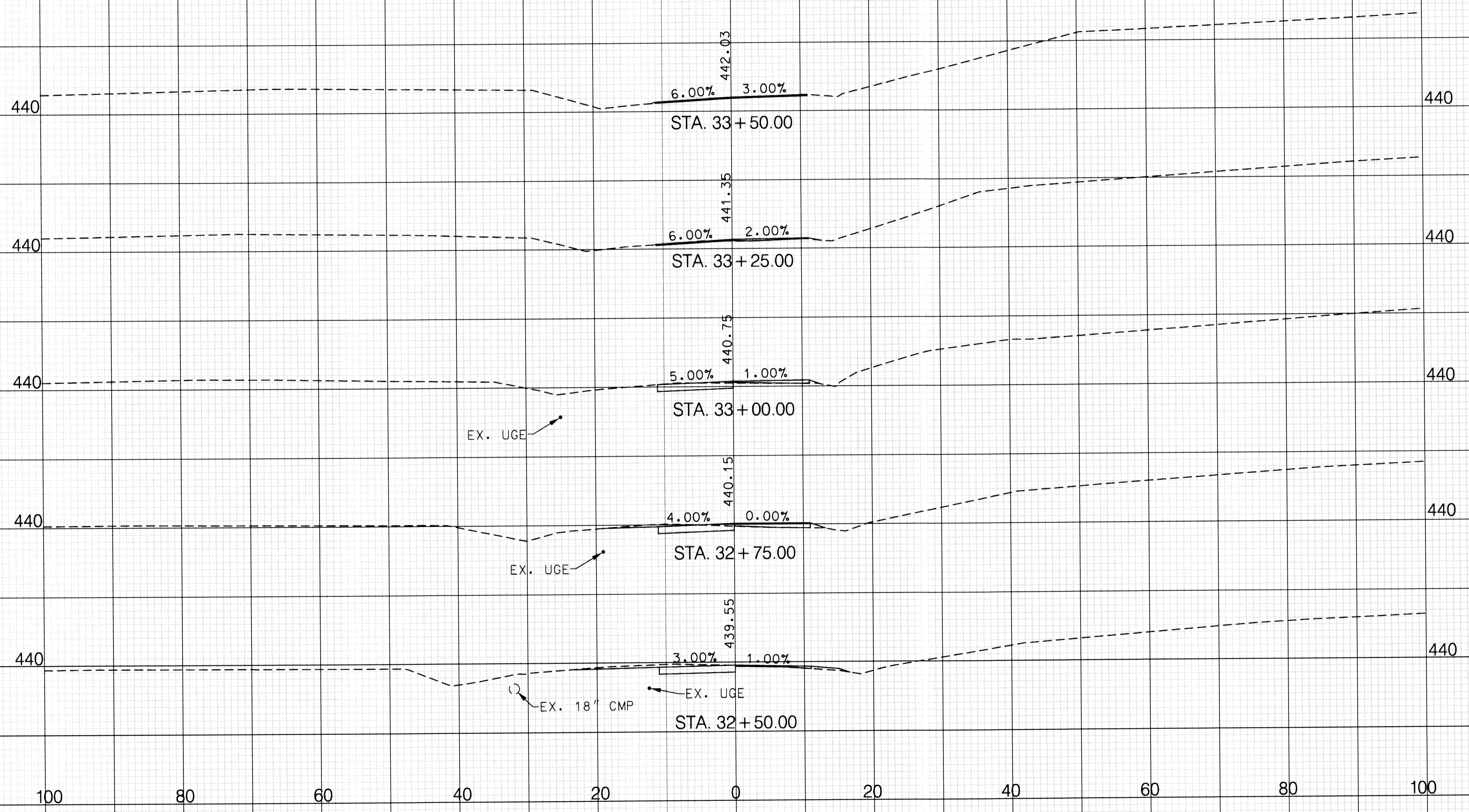
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RUMMEL, KLEPPER & KAHL, LLP
 CONSULTING ENGINEERS
 BALTIMORE, MARYLAND

NO.	REVISION	DATE	BY

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CROSS SECTIONS

TEN OAKS ROAD EAST
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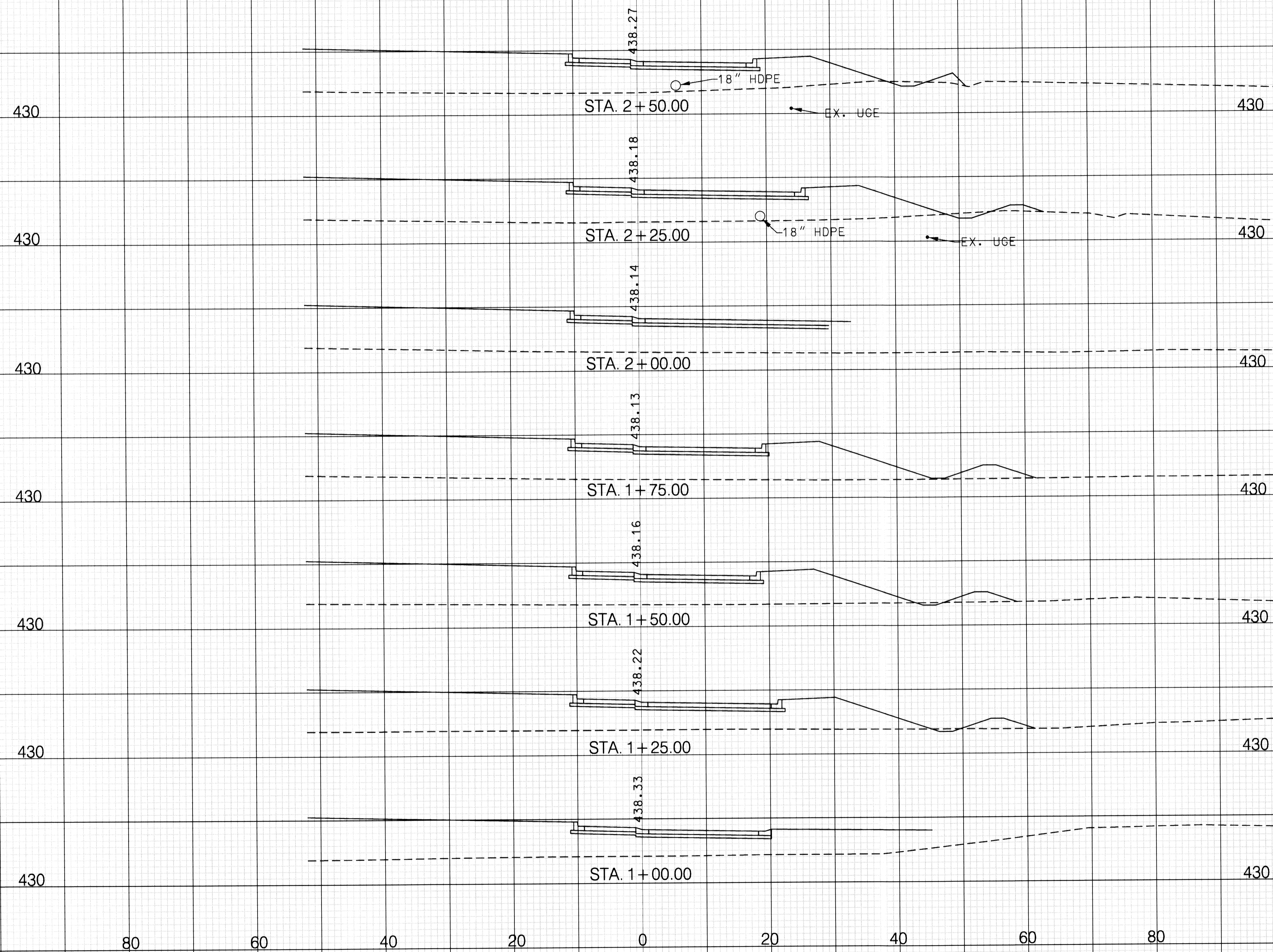
TEN OAKS ROAD AT
 BRIGHTON DAM ROAD
 INTERSECTION IMPROVEMENTS
 Project No. : J-4164-04 Scale : 1" = 10' Sheet 18 of 20



RUMMEL, KLEPPER & KAHL, LLP
 CONSULTING ENGINEERS
 BALTIMORE, MARYLAND

NO.	REVISION	DATE	BY

Monday, September 11, 2006 AT 02:26 PM
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CROSS SECTIONS

ROUNDABOUT

TEN OAKS ROAD AT
BRIGHTON DAM ROAD
INTERSECTION IMPROVEMENTS



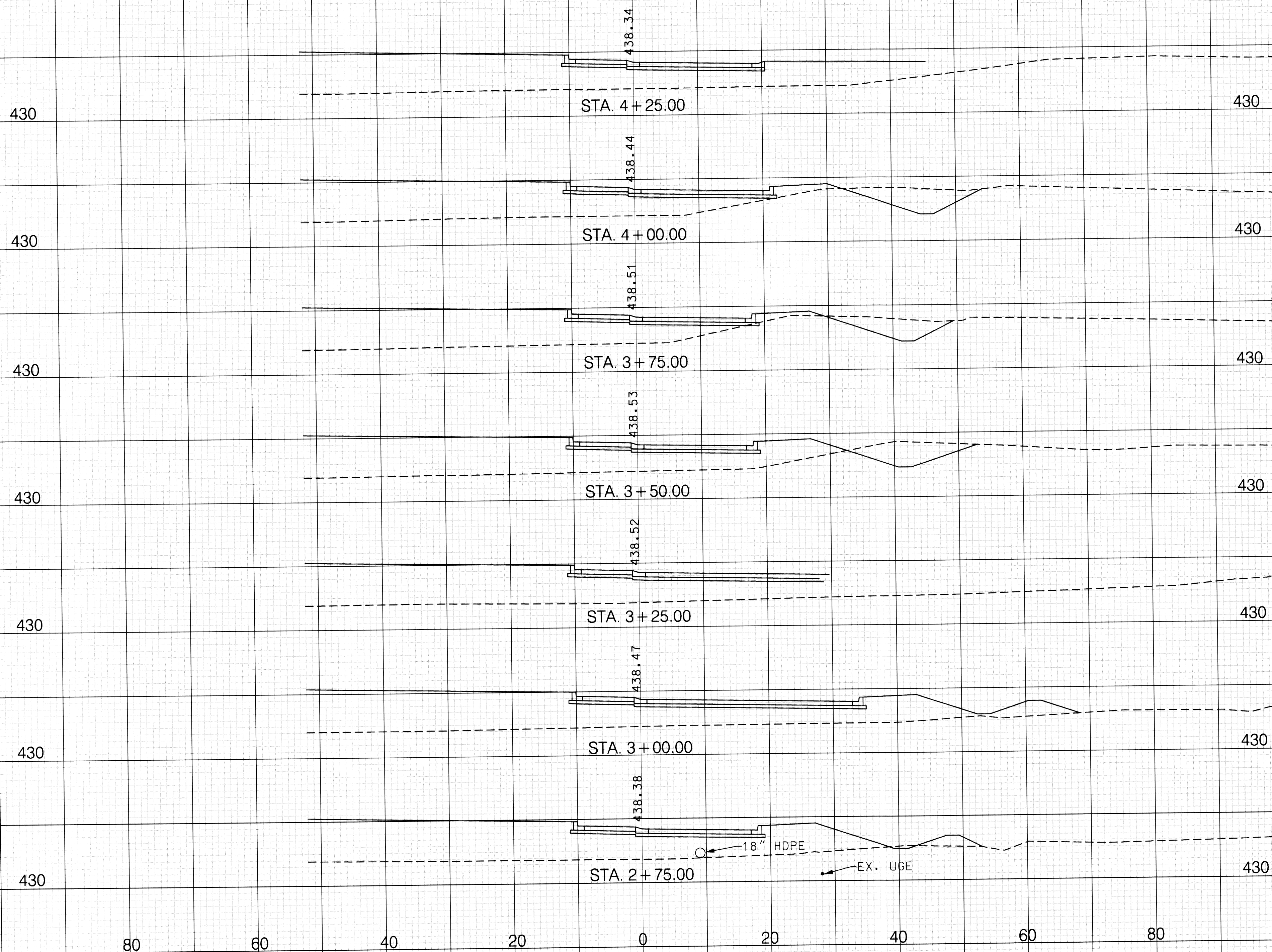
RUMMEL, KLEPPER & KAHL, LLP
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

NO.	REVISION	DATE	BY

Designed by : TMB Drawn by : TMB Checked by : RJA

Project No.: J-4164-04 Scale: 1" = 10' Sheet 19 of 20

Monday, September 11, 2006 AT 02:26 PM
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CROSS SECTIONS

ROUNDABOUT

TEN OAKS ROAD AT
BRIGHTON DAM ROAD
INTERSECTION IMPROVEMENTS



RUMMEL, KLEPPER & KAHL, LLP
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

NO.	REVISION	DATE	BY

Designed by : TMB Drawn by : TMB Checked by : RJA

Project No. : J-4164-04 Scale : 1" = 10' Sheet 20 of 20