

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	PLAN SHEET
3	TYPICAL SECTIONS AND DETAILS
4	SEDIMENT AND EROSION CONTROL PLAN
5-7	SEDIMENT AND EROSION CONTROL DETAILS
8	TRAFFIC CONTROL PLAN
9	TRAFFIC CONTROL SIGNS
10	ROAD PROFILE
11	DRIVEWAY AND DRAINAGE PROFILES
12-13	CROSS SECTIONS

GENERAL NOTES

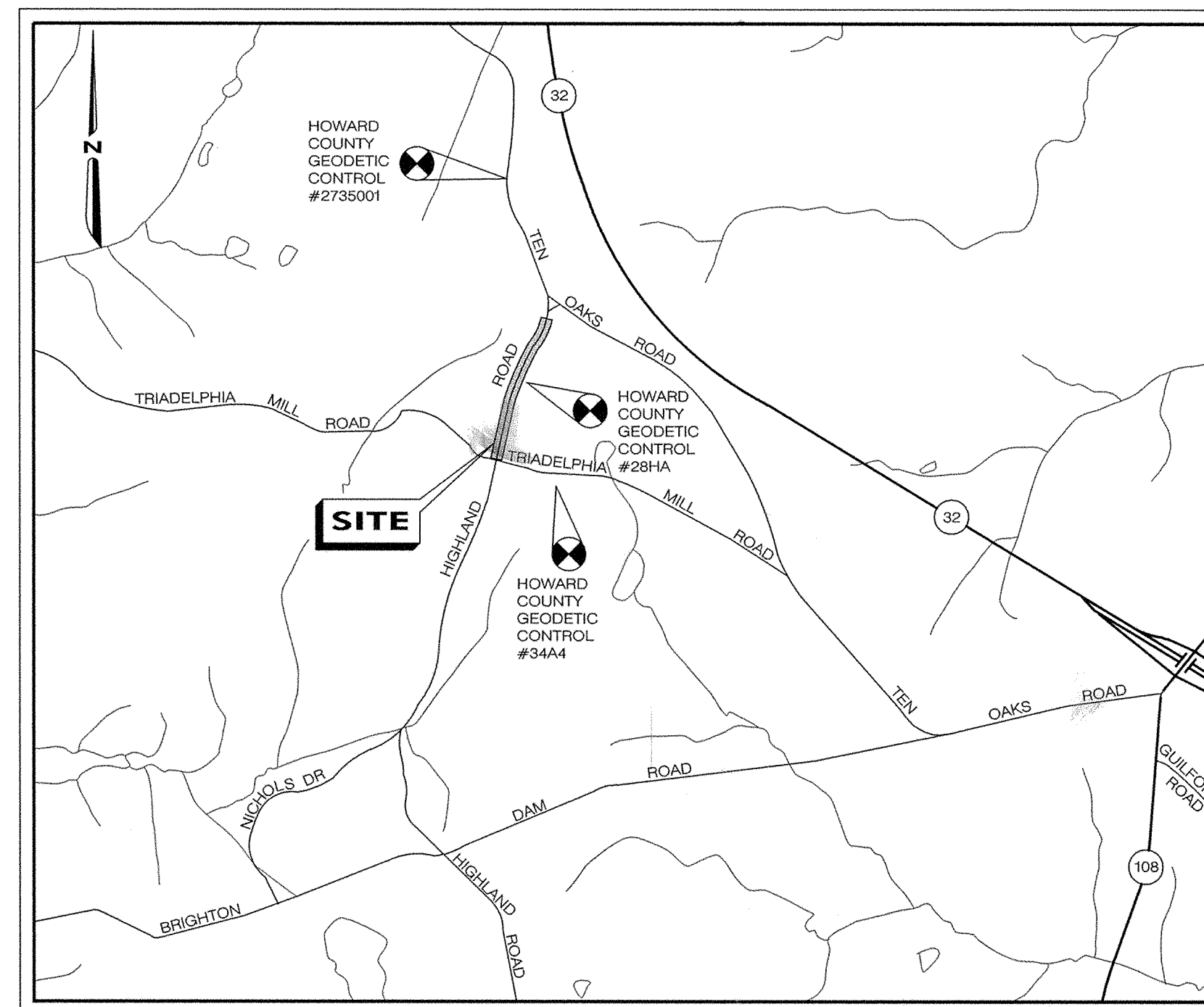
- ALL INFORMATION AND DETAILS ON THESE DRAWINGS SHALL BE AS DIRECTED BY THE HOWARD COUNTY ENGINEER.
- ALL STATIONING AND DIMENSIONING ARE TO BE FIELD VERIFIED BY THE CONTRACTOR.
- STORM DRAINAGE SLOPES ARE TO BE AS DIRECTED BY HOWARD COUNTY ENGINEER UNLESS OTHERWISE SHOWN ON PLANS.
- APPROXIMATE LOCATIONS OF EXISTING UTILITIES ARE SHOWN. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT EXISTING UTILITIES AND TO MAINTAIN UNINTERRUPTED SERVICE. ANY DAMAGE INCURRED SHALL BE REPAIRED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE. CONTRACTOR SHALL NOTIFY THE FOLLOWING UTILITIES OR AGENCIES AT LEAST FIVE (5) DAYS BEFORE STARTING WORK SHOWN ON THESE PLANS.

MISS UTILITY 1-800-257-7777
 BALTIMORE GAS & ELECTRIC COMPANY - ELECTRIC DISTRIBUTION ENGINEERING 234-6313

THE CONTRACTOR SHALL CONTACT THE HOWARD COUNTY CONSTRUCTION INSPECTION DIVISION OF ENGINEERING FOR VERIFICATION AND/OR INFORMATION REGARDING:

- PROPOSED EXISTING RIGHT-OF-WAY.
- UTILITY RELOCATION.
- MAINTENANCE OF TRAFFIC DURING CONSTRUCTION.
- EROSION/SEDIMENT CONTROL CERTIFICATION AND PERMIT.
- HORIZONTAL/VERTICAL SURVEY CONTROL.
- GRADING PERMIT.

- SEE HOWARD COUNTY STANDARD DETAILS NO'S G-1.01 AND G-1.02 FOR STANDARD SYMBOLS.
- COORDINATES BASED ON NAD '83 AND NAVD '29 MARYLAND COORDINATE SYSTEM AS PROJECTED BY HOWARD COUNTY GEODETIC CONTROL STATIONS NO. 2735001, 28HA AND 34A4.
- MAINTENANCE OF TRAFFIC SHALL BE HANDLED BY CLOSING THE WORK ZONE TO ALL BUT LOCAL TRAFFIC FOR THE DURATION OF THE PROJECT. THE DETOUR ROUTE WILL INCLUDE PORTIONS OF TRIADELPHIA MILL ROAD AND TEN OAKS ROAD.
- A STAGING AND STOCKPILE AREA TO BE DETERMINED BY THE CONTRACTOR AND APPROVED BY HOWARD COUNTY ENGINEER.
- TOPOGRAPHIC SURVEY INFORMATION BASED ON FIELD SURVEY PERFORMED BY THE REA GROUP DATED 12298 AND 1098. ADDITIONAL TOPOGRAPHIC INFORMATION CAME FROM "IMPROVEMENTS TO HIGHLAND ROAD" (HOWARD COUNTY CAPITAL PROJECT T-7058) DATED 92582 AND REVISED 12293.
- AS DIRECTED BY THE COUNTY, REMOVE, STORE AND RESET EXISTING TRAFFIC SIGNS UNDER CLEARING AND GRUBBING. IF DURING THIS WORK THE EXISTING SIGN PANEL, SUPPORT POST OR HARDWARE IS DAMAGED, THE CONTRACTOR SHALL REPAIR OR REPLACE THE MATERIAL AT NO COST TO THE COUNTY. SEE SHEET 2 FOR SIGN LOCATION TABLE.
- PLACE 5" SOLID WHITE STRIPE ALONG BOTH PAVEMENT EDGES AND 5" SOLID DOUBLE YELLOW STRIPES ALONG THE PROPOSED ROAD CENTERLINE OVER THE ENTIRE NEW BITUMINOUS CONCRETE SURFACE. PLACE 5" WHITE DASHED LINE AT THE ANGUS COURT INTERSECTION TURNING LANE ACCORDING TO THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.



LOCATION MAP
 SCALE 1" = 2000'

CAPITAL PROJECT NO. J-4164

Highland Road Improvements Triadelphia Mill Road to Ten Oaks Road

HOWARD COUNTY, MARYLAND

DEPARTMENT OF PUBLIC WORKS

HOWARD COUNTY GEODETIC CONTROL

- #2735001**
 N 506548.622 E 806859.909 ELEV. 591.35
 BRASS OR ALUMINUM DISC SET ON TOP OF CONCRETE CYLINDRIC BASE. USUALLY 1" OR 2" INCHES BELOW TERRAIN SURFACE.
- #28HA**
 N 504599.4 E 806847.9 ELEV. 588.69
 BRASS OR ALUMINUM DISC SET ON TOP OF CONCRETE CYLINDRIC BASE. USUALLY 1" OR 2" INCHES BELOW TERRAIN SURFACE.
- #34A4**
 N 503699.7 E 805906.5 ELEV. 563.33
 BRASS OR ALUMINUM DISC SET ON TOP OF CONCRETE CYLINDRIC BASE. USUALLY 1" OR 2" INCHES BELOW TERRAIN SURFACE.

REVIEWED FOR HOWARD COUNTY SOIL CONSERVATION DISTRICT AND MEETS TECHNICAL REQUIREMENTS.
Kevin Simmons 4/28/00
 U.S. Natural Resources Conservation Service Date

THIS DEVELOPMENT IS APPROVED FOR EROSION AND SEDIMENT CONTROL BY THE HOWARD SOIL CONSERVATION DISTRICT.
Heather Schermy 4/28/00
 Howard Soil Conservation District Date

APPROVED FOR STORM DRAINAGE SYSTEMS AND PUBLIC ROADS. HOWARD COUNTY DEPARTMENT OF PUBLIC WORKS

CHIEF, DIVISION OF TRANSPORTATION PROJECTS AND WATERSHED MANAGEMENT DATE

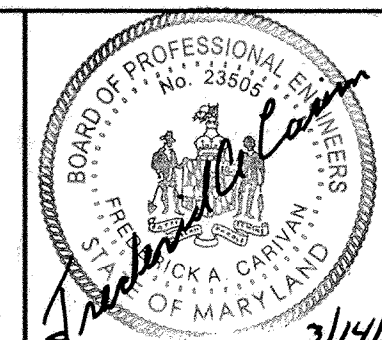
DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

Jan M. Chan 4/27/00
 DEPARTMENT OF PUBLIC WORKS CHIEF, BUREAU OF ENGINEERING DATE

Elizabeth Anderson-Cole 4/27/00
 CHIEF TRANSPORTATION PROJECTS AND WATERSHED MANAGEMENT DIVISION DATE

William J. Madh... 4/27/00
 CHIEF, BUREAU OF HIGHWAYS DATE

A/E GROUP, INC.
 ENGINEERS • PLANNERS
 181 E. Main Street
 Westminster, Maryland 21158
 A/E Job No. 96-309-047



DES: F.A.C.					
DRN: J.N.W.					
CHK: F.A.C.					
DATE: 300	BY	NO.	REVISION	DATE	600' SCALE MAP NO. DATE:

CAPITAL PROJECT NO.
J-4164

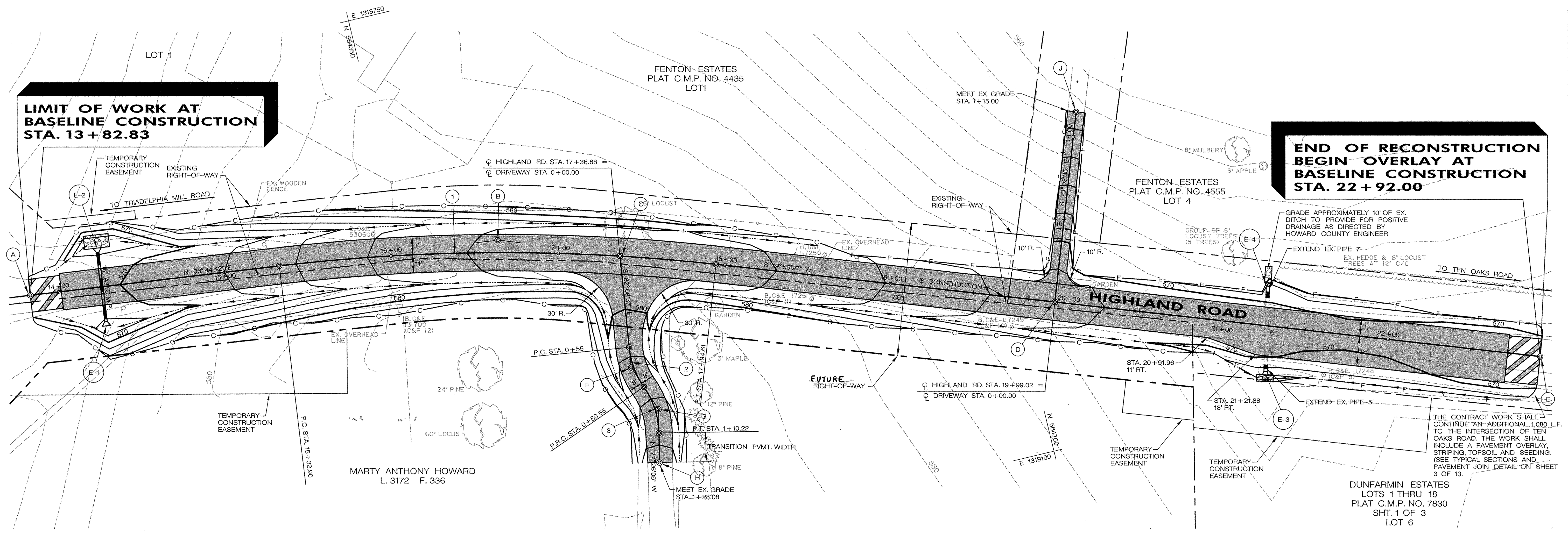
TITLE SHEET
**Highland Rd. Improvements
 Triadelphia Mill Road to
 Ten Oaks Road**

SCALE AS SHOWN

SHEET 1 OF 13

**LIMIT OF WORK AT
BASELINE CONSTRUCTION
STA. 13+82.83**

**END OF RECONSTRUCTION
BEGIN OVERLAY AT
BASELINE CONSTRUCTION
STA. 22+92.00**



PLAN
SCALE: 1" = 30'

CONSTRUCTION & GEOMETRY			
POINT NO.	NORTH	EAST	REMARK
A	564126.117	1318865.895	STA. 13+82.83 LIMIT OF WORK
B	564405.655	1318898.955	STA. 16+64.32 P.I. CURVE NO. 1
C	564474.517	1318925.348	STA. 17+36.88, HIGHLAND ROAD = STA. 0+00.00, DRIVEWAY
D	564721.565	1319012.943	STA. 19+99.02, HIGHLAND ROAD = STA. 0+00.00, DRIVEWAY
E	564997.156	1319112.384	STA. 22+92.00, END OF RECONSTRUCTION BEGIN OVERLAY
F	564465.217	1318992.744	STA. 0+68.03 P.I. CURVE NO. 2
G	564475.573	1319019.133	STA. 0+95.81 P.I. CURVE NO. 3
H	564468.357	1319051.509	STA. 1+28.08 MEET EX. GRADE
J	564760.785	1318904.838	STA. 1+15.00 MEET EX. GRADE

STRUCTURE SCHEDULE				
STRUCTURE NO.	TYPE	STANDARD	STATION/OFFSET	
E-1	METAL END SECTION, CIRC. PIPE	HO. CO. SD-5.61	14+22	21' RT.
E-2	METAL END SECTION, CIRC. PIPE	HO. CO. SD-5.61 RIP-RAP 15'x8'	14+22	21' LT.
E-3	METAL END SECTION, CIRC. PIPE	HO. CO. SD-5.61 RIP-RAP 10'x4'	21+28	28' RT.
E-4	METAL END SECTION, CIRC. PIPE	HO. CO. SD-5.61 RIP-RAP 4'x10'	21+25	24' LT.

RELOCATE EXISTING FENCE
AS DIRECTED BY THE ENGINEER
STA. 14+00 TO STA. 19+75 LT. 575 LF.
STA. 14+40 TO STA. 16+00 RT. 230 LF.

RELOCATE EXISTING SIGNS
AS DIRECTED BY THE ENGINEER
STA. 14+40 RT. 1 EA.
STA. 15+25 LT. 1 EA.
STA. 15+25 RT. 1 EA.
STA. 18+75 LT. 1 EA.

REMOVE EXISTING TREE
AS DIRECTED BY THE ENGINEER
STA. 17+38 LT. 1 EA.

RELOCATE EXISTING MAILBOXES
AS DIRECTED BY THE ENGINEER
STA. 17+75 LT. 1 EA.
STA. 19+75 LT. 1 EA.
STA. 19+80 LT. 1 EA.

RELOCATE EXISTING UTILITY POLES
(BY OTHERS)
STA. 15+90 LT. 1 EA.
STA. 16+00 RT. 1 EA.
STA. 18+55 RT. 1 EA.
STA. 18+60 LT. 1 EA.
STA. 19+75 RT. 1 EA.

DRIVEWAY TABLE		
STATION	WIDTH	STD. DETAIL
17+36.88 RT.	16'	*R-6.06
19+99.02 LT.	10'	*R-6.06

* EXTEND P-1 PAVING SECTION FROM THE RIGHT-OF-WAY LINE TO THE LIMIT OF DRIVEWAY RECONSTRUCTION

PIPE SCHEDULE									
FROM	TO	TYPE	SIZE	LENGTH	SLOPE	INV. FROM	INV. TO	Q (cfs)	V (fps)
E-1	E-2	A.L.C.M.P.	18"	42 LF.	0.83%	566.89	566.54	6.30	3.56
E-3	E-4	A.L.C.M.P.	18"	5 LF.	1.73%	565.80	565.72	NA	NA
EX.	E-4	A.L.C.M.P.	18"	7 LF.	1.73%	565.03	564.92	NA	NA

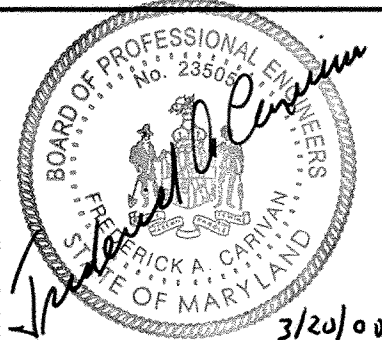
CURVE DATA								
CURVE NO.	P.C. COORDINATES		P.T. COORDINATES		Δ	R	T	L
	NORTH	EAST	NORTH	EAST				
1	564275.139	1318883.519	564529.280	1318943.562	13° 05' 45"	1145.00'	131.43'	261.71'
2	564467.003	1318979.804	564469.989	1319004.904	29° 16' 59"	50.00'	13.06'	25.55'
3	564469.989	1319004.904	564472.248	1319034.050	33° 59' 30"	50.00'	15.28'	29.66'

LEGEND

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

4/27/00
DATE: 4/27/00
CHIEF, BUREAU OF ENGINEERING
CHIEF, BUREAU OF HIGHWAYS

A/E GROUP, INC.
ENGINEERS • PLANNERS
181 E. Main Street
Westminster, Maryland 21158
A/E Job No. 96-309-047



DES: F.A.C.			
DRN: J.N.W.			
CHK: F.A.C.			
DATE: 3/00	BY	NO.	REVISION

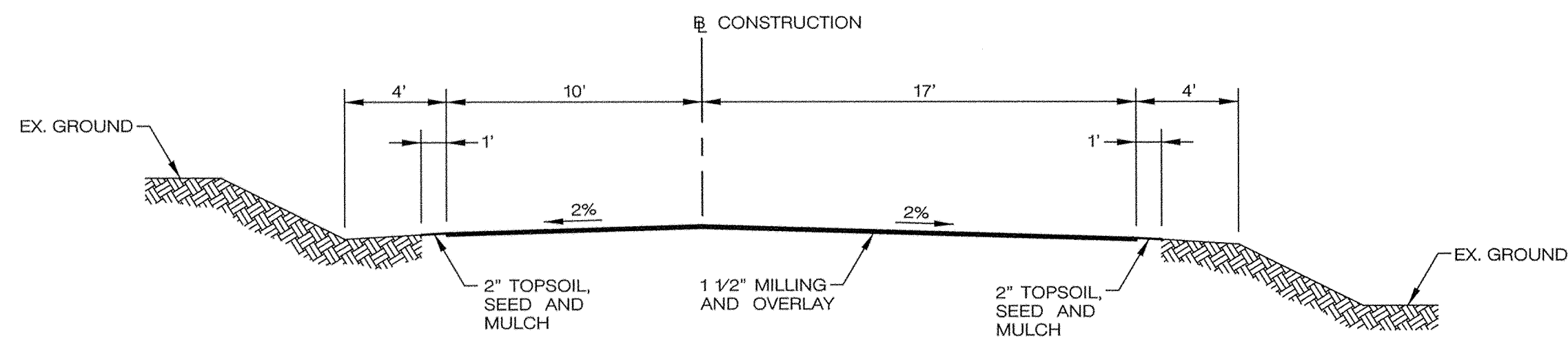
CAPITAL PROJECT NO.
J-4164

600' SCALE MAP NO. _____ DATE: _____

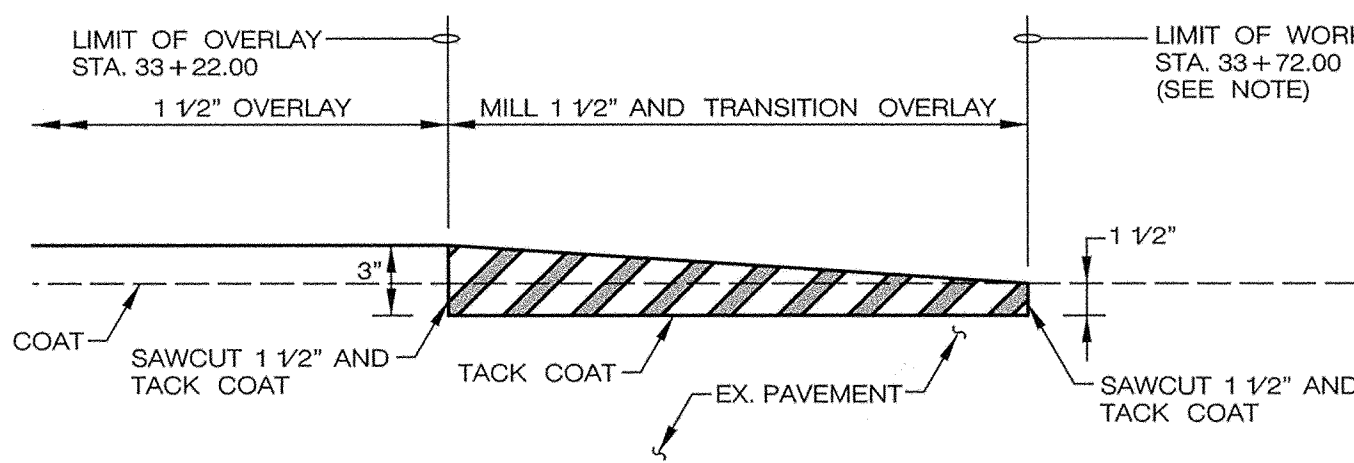
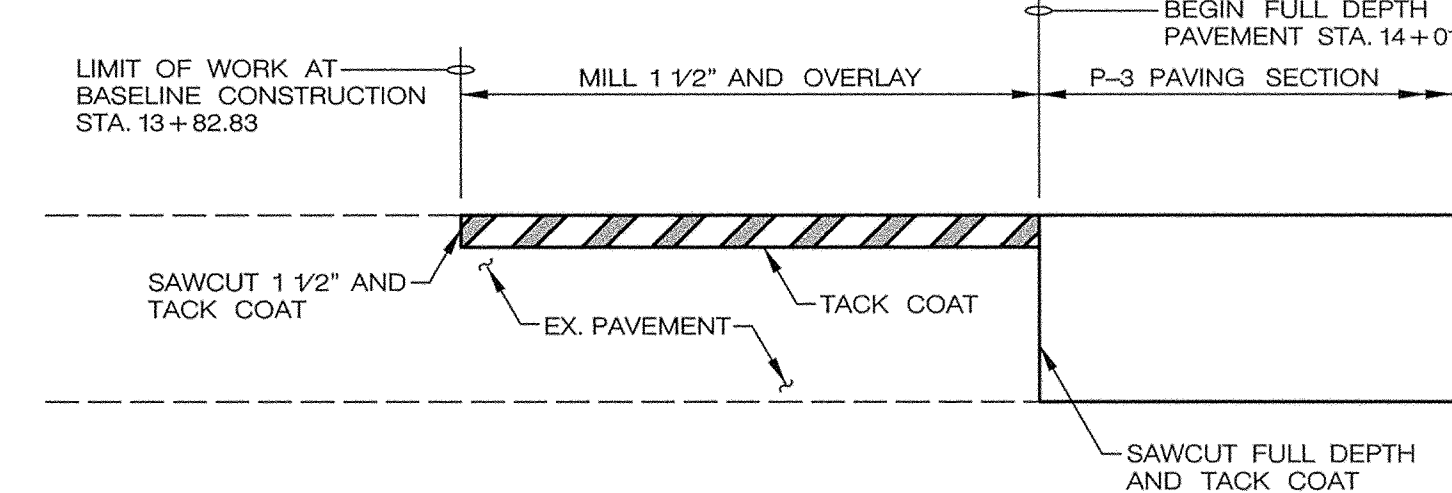
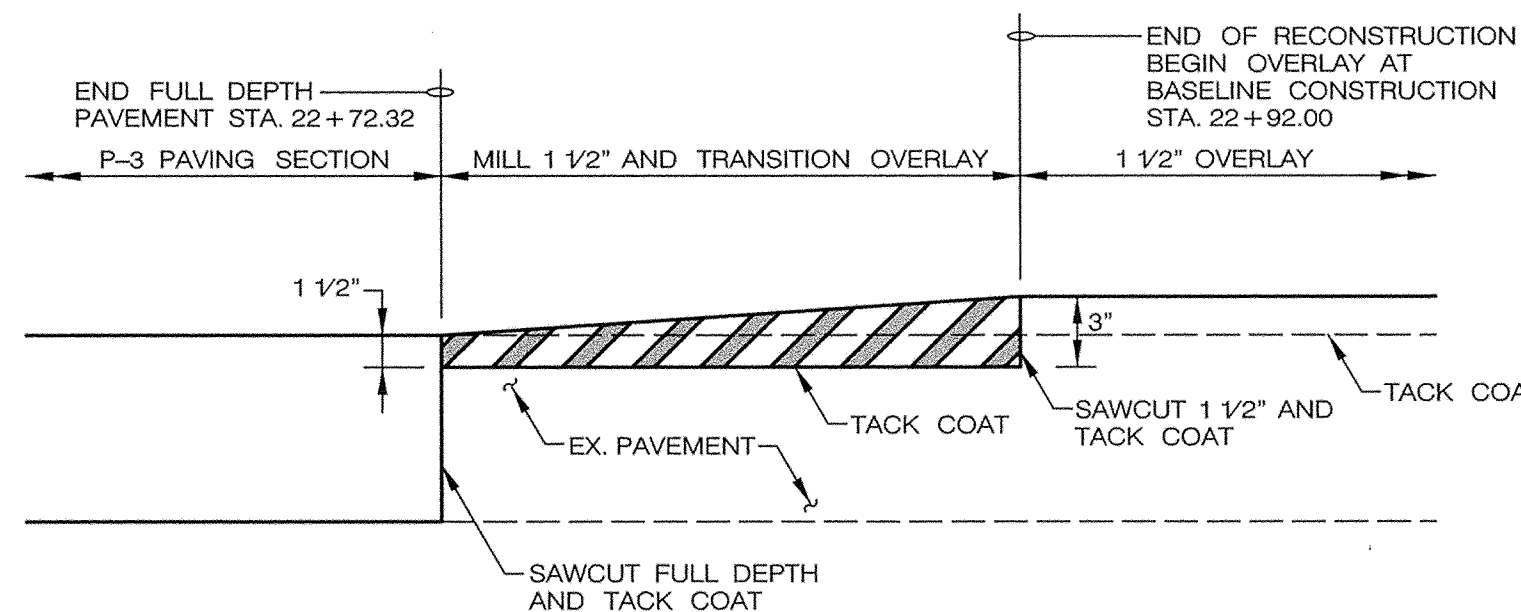
PLAN SHEET
**Highland Rd. Improvements
Triadelphia Mill Road to
Ten Oaks Road**

SCALE AS SHOWN
SHEET 2 OF 13

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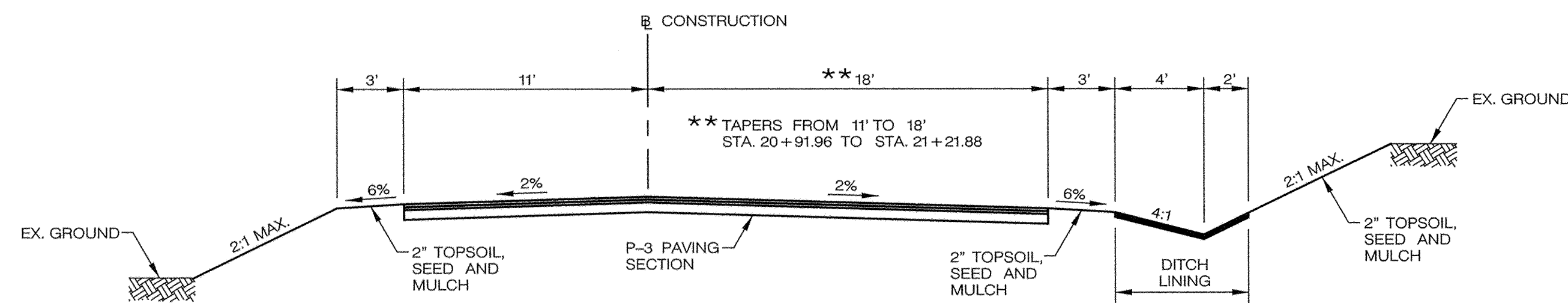


TYPICAL MILLING AND OVERLAY SECTION
 STA. 22+72.32 TO STA. 22+92.00
 NOT TO SCALE

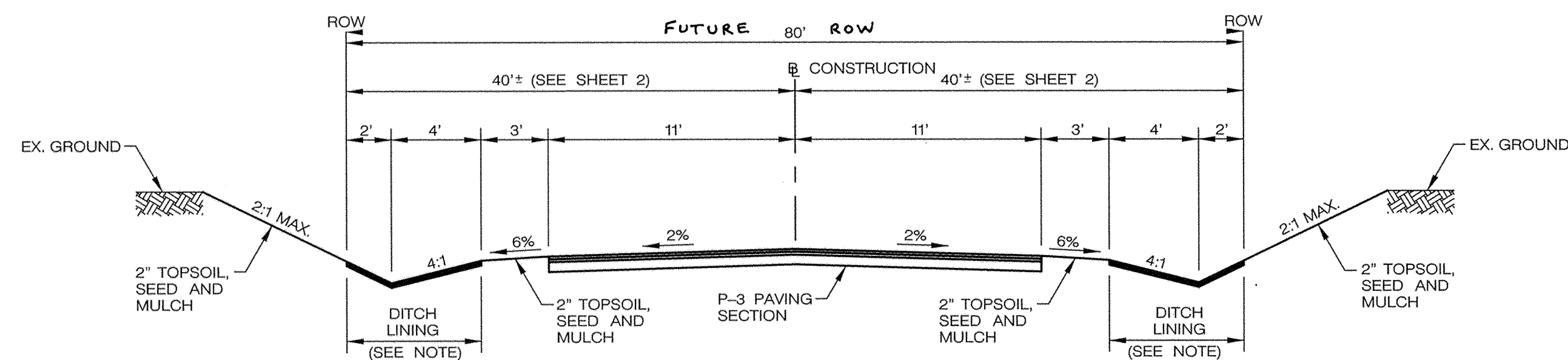


NOTE:
 THE INTERSECTION OF HIGHLAND ROAD AT TEN OAKS ROAD MAY BE UNDER RECONSTRUCTION AT THE SAME TIME AS THIS PROJECT. THIS LIMIT OF WORK SHALL BE ADJUSTED TO MEET THE WORK LIMIT OF THE OTHER PROJECT. THE CONTRACTOR SHALL COOPERATE AND COORDINATE THE WORK INCLUDING TRAFFIC CONTROL BETWEEN THE COUNTY AND THE OTHER CONTRACTOR.

PAVEMENT JOIN DETAILS
 NOT TO SCALE

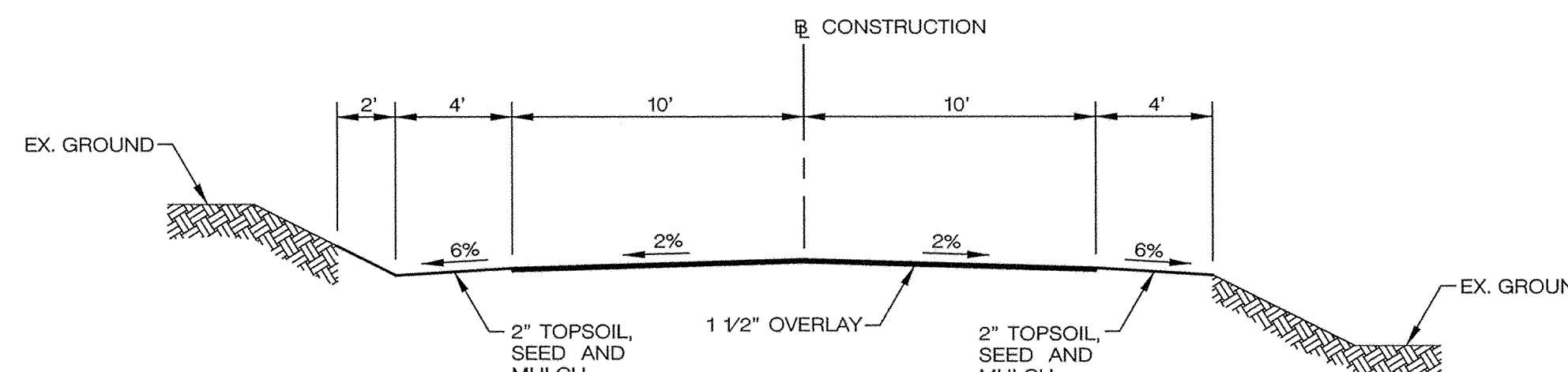


TYPICAL SECTION
 STA. 20+91.96 TO STA. 22+72.32
 NOT TO SCALE

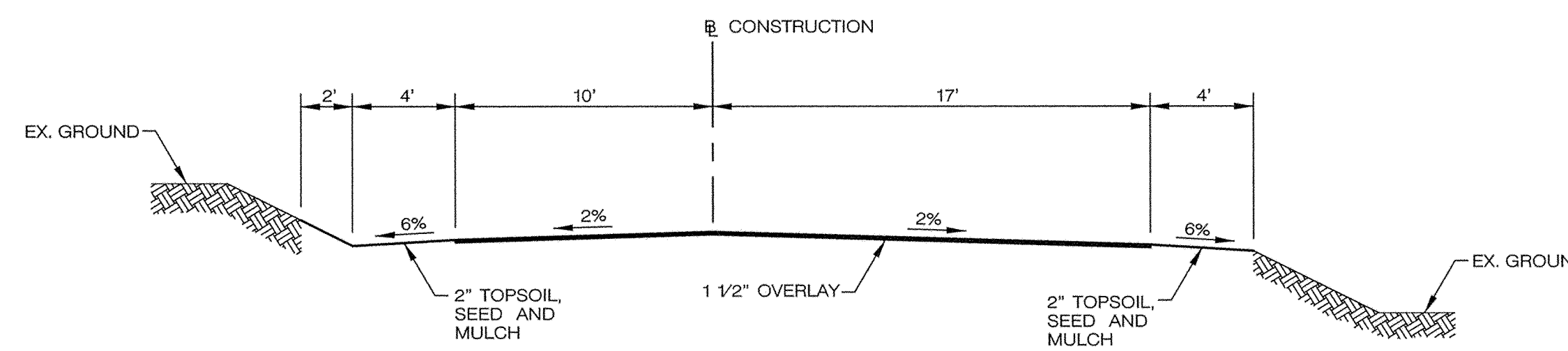


NOTE:
 DITCH LINING SHALL BE EROSION CONTROL MATTING,
 PERMANENT SEED MIX, SOD OR RIP RAP AS NEEDED.

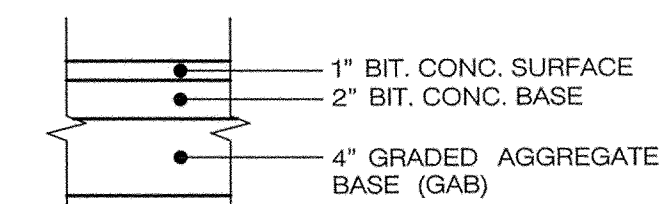
TYPICAL SECTION
 STA. 14+01.59 TO STA. 20+91.96
 NOT TO SCALE



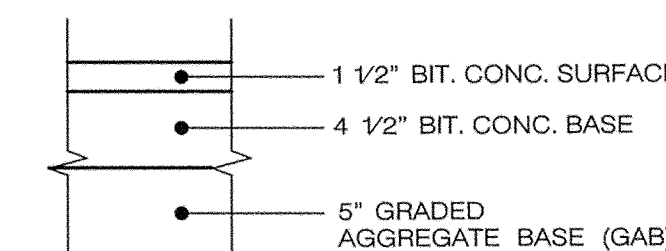
TYPICAL OVERLAY SECTION
 STA. 26+12.00 TO STA. 33+72.00
 NOT TO SCALE



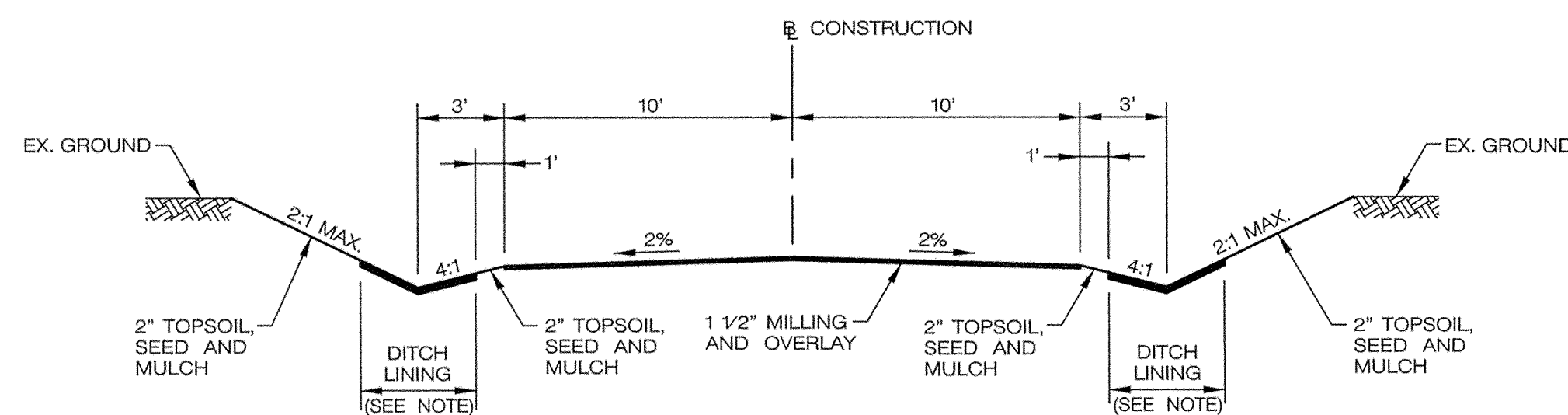
TYPICAL OVERLAY SECTION
 STA. 22+92.00 TO STA. 26+12.00
 NOT TO SCALE



P-1 PAVING SECTION (DRIVEWAY)
 NOT TO SCALE



P-3 PAVING SECTION
 NOT TO SCALE

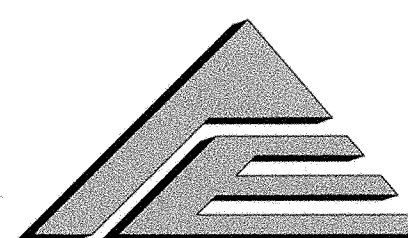


NOTE:
 DITCH LINING SHALL BE EROSION CONTROL MATTING,
 PERMANENT SEED MIX, SOD OR RIP RAP AS NEEDED.

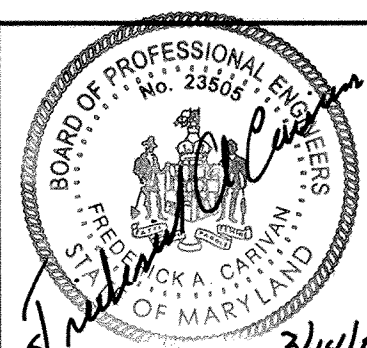
TYPICAL MILLING AND OVERLAY SECTION
 STA. 13+82.83 TO STA. 14+01.59
 NOT TO SCALE

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

DATE: 4/27/00
 DATE: 4/27/00
 DATE: 4/27/00



A/E GROUP, INC.
 ENGINEERS • PLANNERS
 181 E. Main Street
 Westminster, Maryland 21158
 A/E Job No. 96-309-047



DES:	F.A.C.				
DRN:	J.N.W.				
CHK:	F.A.C.				
DATE:	3/00	BY:	NO.	REVISION	DATE

CAPITAL PROJECT NO.
J-4164

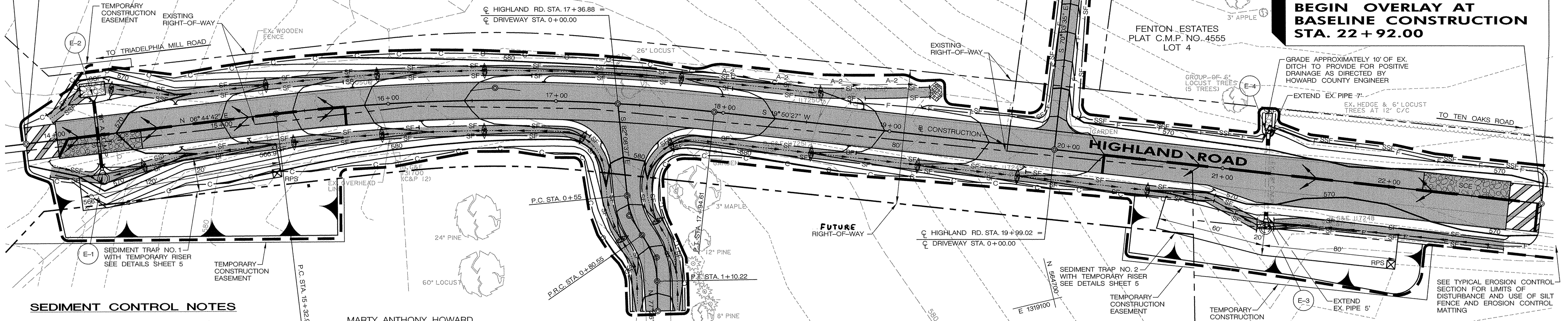
TYPICAL SECTIONS AND DETAILS
**Highland Rd. Improvements
 Triadelphia Mill Road to
 Ten Oaks Road**

SCALE
 AS
 SHOWN
 SHEET
 3 OF 13



**LIMIT OF WORK AT
BASELINE CONSTRUCTION
STA. 13 + 82.83**

**END OF RECONSTRUCTION
BEGIN OVERLAY AT
BASELINE CONSTRUCTION
STA. 22 + 92.00**



SEDIMENT CONTROL NOTES

- A MINIMUM OF 48 HOURS NOTICE MUST BE GIVEN TO THE HOWARD COUNTY DEPARTMENT OF INSPECTIONS, LICENSES AND PERMITS, SEDIMENT CONTROL DIVISION PRIOR TO THE START OF ANY CONSTRUCTION (410) 913-1855.
- ALL VEGETATIVE AND STRUCTURAL PRACTICES ARE TO BE INSTALLED ACCORDING TO THE PROVISIONS OF THIS PLAN AND ARE TO BE IN CONFORMANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL AND REVISIONS THERETO.
- FOLLOWING INITIAL SOIL DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN:
 - 7 CALENDAR DAYS FOR ALL PERIMETER SEDIMENT CONTROL STRUCTURES, DIKES, PERIMETER SLOPES AND ALL SLOPES STEEPER THAN 3:1
 - 14 DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.
- ALL SEDIMENT TRAPS/BASINS SHOWN MUST BE FENCED AND WARNING SIGNS POSTED AROUND THEIR PERIMETER IN ACCORDANCE WITH VOL. 1, CHAPTER 7, OF THE HOWARD COUNTY DESIGN MANUAL, STORM DRAINAGE.
- ALL DISTURBED AREAS MUST BE STABILIZED WITHIN THE TIME PERIOD SPECIFIED ABOVE IN ACCORDANCE WITH THE 1994 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL FOR PERMANENT SEEDINGS, SOD, TEMPORARY SEEDING, AND MULCHING (SEC. G). TEMPORARY STABILIZATION WITH MULCH ALONE SHALL ONLY BE DONE WHEN RECOMMENDED SEEDING DATES DO NOT ALLOW FOR PROPER GERMINATION AND ESTABLISHMENT OF GRASSES.
- ALL SEDIMENT CONTROL STRUCTURES ARE TO REMAIN IN PLACE AND ARE TO BE MAINTAINED IN OPERATIVE CONDITION UNTIL PERMISSION FOR THEIR REMOVAL HAS BEEN OBTAINED FROM HOWARD COUNTY SEDIMENT CONTROL INSPECTOR.
- SITE ANALYSIS:

TOTAL AREA OF SITE	NA
AREA DISTURBED	2.35 ACRES
AREA TO BE ROOFED OR PAVED	1.34 ACRES
AREA TO BE VEGETATIVELY STABILIZED	1.01 ACRES
TOTAL CUT	3500 CU. YDS.
TOTAL FILL	453 CU. YDS.
OFFSITE WASTE/BORROW AREA LOCATION	TO BE DETERMINED BY THE CONTRACTOR (SITE WITH A CURRENT ACTIVE GRADING PERMIT)
- ANY SEDIMENT CONTROL PRACTICE WHICH IS DISTURBED BY GRADING ACTIVITY FOR PLACEMENT OF UTILITIES MUST BE REPAIRED ON THE SAME DAY OF DISTURBANCE.
- ADDITIONAL SEDIMENT CONTROLS MUST BE PROVIDED, IF DEEMED NECESSARY BY THE HOWARD COUNTY INSPECTOR.
- 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 AGENCY IS MADE.
- TRENCHES FOR THE CONSTRUCTION OF UTILITIES IS LIMITED TO THREE PIPE LENGTHS OF THAT WHICH SHALL BE BACK-FILLED AND STABILIZED WITHIN ONE WORKING DAY, WHICHEVER IS SHORTER.

MARTY ANTHONY HOWARD
L. 3172 F. 336

SEDIMENT AND EROSION CONTROL PLAN

SCALE: 1" = 30'

NOTES:

- CONTRACTOR TO PROVIDE STONE CONSTRUCTION ENTRANCES IN THE WORK ZONES DURING ALL PHASES OF CONSTRUCTION. SEE DETAIL NO. 24 ON SHEET 6 OF 11.
- PROVIDE E.C.M. DITCH LINING FOR ALL SWALES WHERE RIP-RAP LINING IS NOT INDICATED.
- AS DIRECTED BY THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR ADDITIONAL STONE CHECK DAMS MAY BE REQUIRED.

SEQUENCE OF CONSTRUCTION

- OBTAIN PERMISSION FROM HOWARD COUNTY SEDIMENT CONTROL INSPECTOR TO PROCEED. (1 DAY)
- OBTAIN GRADING PERMIT. (1 DAY)
- RELOCATE FIVE (5) EXISTING UTILITY POLES AS REQUIRED BY THEIR OWNERS. (3 DAYS)
- INSTALL ALL DETOUR SIGNING AND WORK ZONE SIGNING. (2 DAYS)
- INSTALL SEDIMENT CONTROL MEASURES SHOWN ON PLANS. (2 DAYS)
- EXCAVATE AND EMBANK FOR THE RECONSTRUCTION OF HIGHLAND ROAD. STABILIZE THE WORKZONE WITH D.G.A.B. MATERIAL. INSTALL TEMPORARY SEED AND MULCH TO ALL SLOPE AREAS THAT ARE DISTURBED. DURING CONSTRUCTION, THE CONTRACTOR SHALL NOT EXPOSE EARTH THAT CANNOT BE TEMPORARILY OR PERMANENTLY STABILIZED WITHIN 24 HOURS. (7 DAYS)
- PLACE PERMANENT STABILIZATION ON EARTH SLOPES. (2 DAYS)
- INSTALL TWO BITUMINOUS CONCRETE BASE COURSES ON RECONSTRUCTED HIGHLAND ROAD. (3 DAYS)
- PLACE BITUMINOUS CONCRETE SURFACE COURSE FROM TRIADELPHIA MILL ROAD TO TEN OAKS ROAD. (5 DAYS)
- PLACE SIGNING, STRIPING AND PAVEMENT MARKINGS. (2 DAYS)
- REMOVE SEDIMENT CONTROL DEVICES WITH APPROVAL FROM THE HOWARD COUNTY SEDIMENT CONTROL INSPECTOR. (1 DAY)
- REMOVE DETOUR SIGNING WITH APPROVAL OF HOWARD COUNTY. (2 DAYS)

CONSTRUCTION STAGING AREA WILL BE OUTSIDE THE LIMITS OF CONSTRUCTION.

TYPICAL OVERLAY EROSION CONTROL SECTION
NOT TO SCALE

LEGEND

- PROPOSED CONSTRUCTION
- MILL AND RESURFACE
- STABILIZED CONSTRUCTION ENTRANCE
- EROSION CONTROL MATTING
- TOP OF CUT
- LIMIT OF FILL
- SILT FENCE
- SUPER SILT FENCE
- DRAINAGE DIVIDE
- TEMPORARY CHECK DAM
- EARTH DIKE
- LIMIT OF DISTURBANCE
- TEMPORARY STONE OUTLET SEDIMENT TRAP
- REMOVABLE PUMPING STATION
- SPECIAL TEMPORARY RISER

ENGINEER CERTIFICATE

"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."

Frederick A. Carvan, P.E. 3/29/00
SIGNATURE OF ENGINEER DATE
FREDERICK A. CARVAN, P.E.

DEVELOPER'S CERTIFICATE

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

Paul D. Egan 4/27/00
SIGNATURE OF DEVELOPER DATE
PRINT NAME BELOW SIGNATURE

FOR SEDIMENT & EROSION CONTROL ONLY

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

James P. Lee 4/27/00
CHIEF, BUREAU OF PUBLIC WORKS DATE

Robert H. Egan 4-27-00
CHIEF, BUREAU OF ENGINEERING DATE

Robert H. Egan 4-27-00
CHIEF, TRANSPORTATION PROJECTS AND WATERSHED MANAGEMENT DIVISION DATE

Robert H. Egan 4-27-00
CHIEF, BUREAU OF HIGHWAYS DATE

A/E GROUP, INC.
ENGINEERS • PLANNERS
181 E. Main Street
Westminster, Maryland 21158
A/E Job No. 96-309-047

Frederick A. Carvan 3/29/00
BOARD OF PROFESSIONAL ENGINEERS
STATE OF MARYLAND

DES: F.A.C.					
DRN: J.N.W.					
CHK: F.A.C.					
DATE: 3/00	BY	NO.	REVISION	DATE	

CAPITAL PROJECT NO.
J-4164

600' SCALE MAP NO. _____ DATE: _____

SEDIMENT AND EROSION CONTROL PLAN
**Highland Rd. Improvements
Triadelphia Mill Road to
Ten Oaks Road**

SCALE AS SHOWN
SHEET 4 OF 13

FILE: \\96-309-047\station\newdesign\ep04high.dgn
DATE: 07-Mar-00 16:00

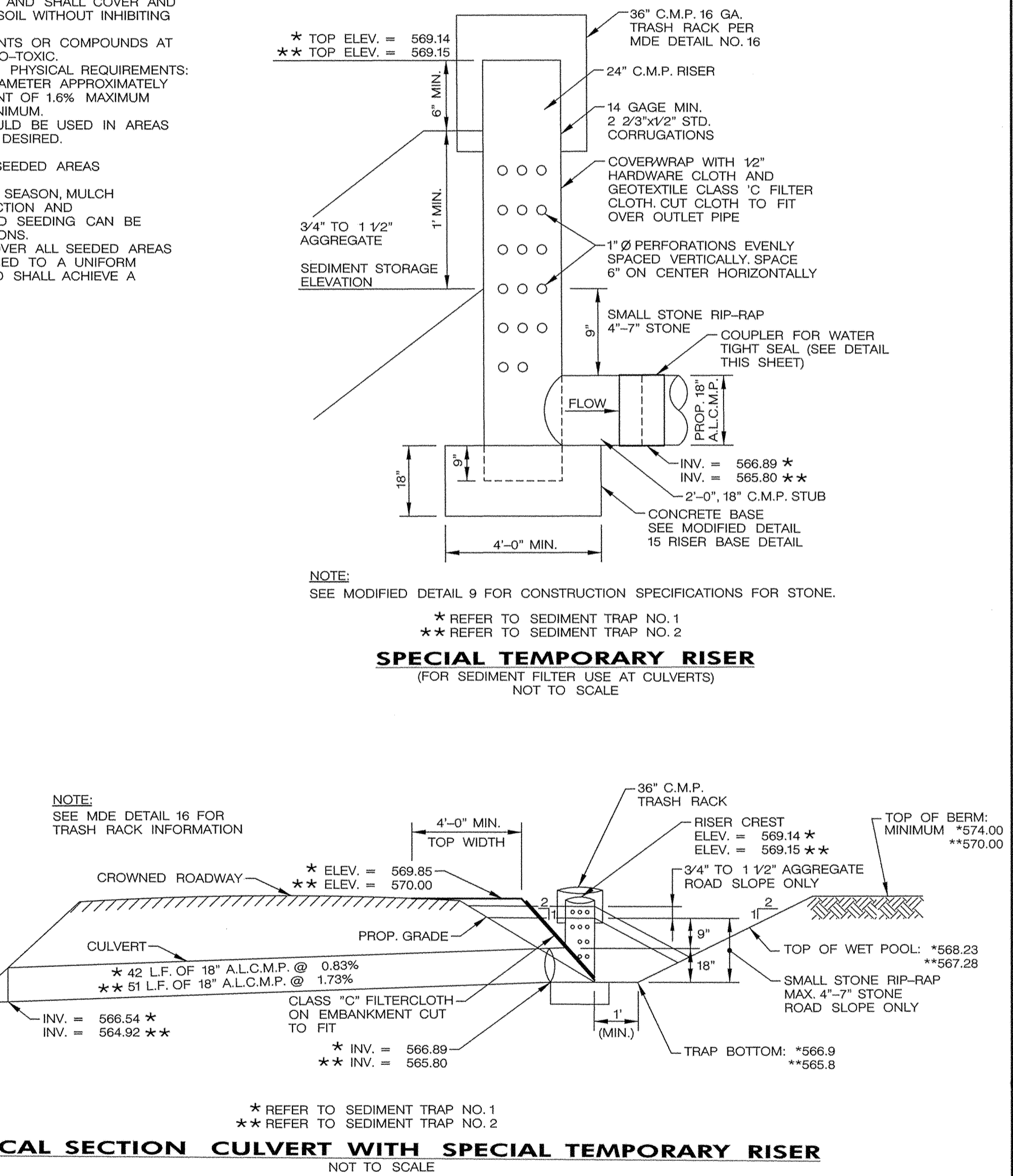
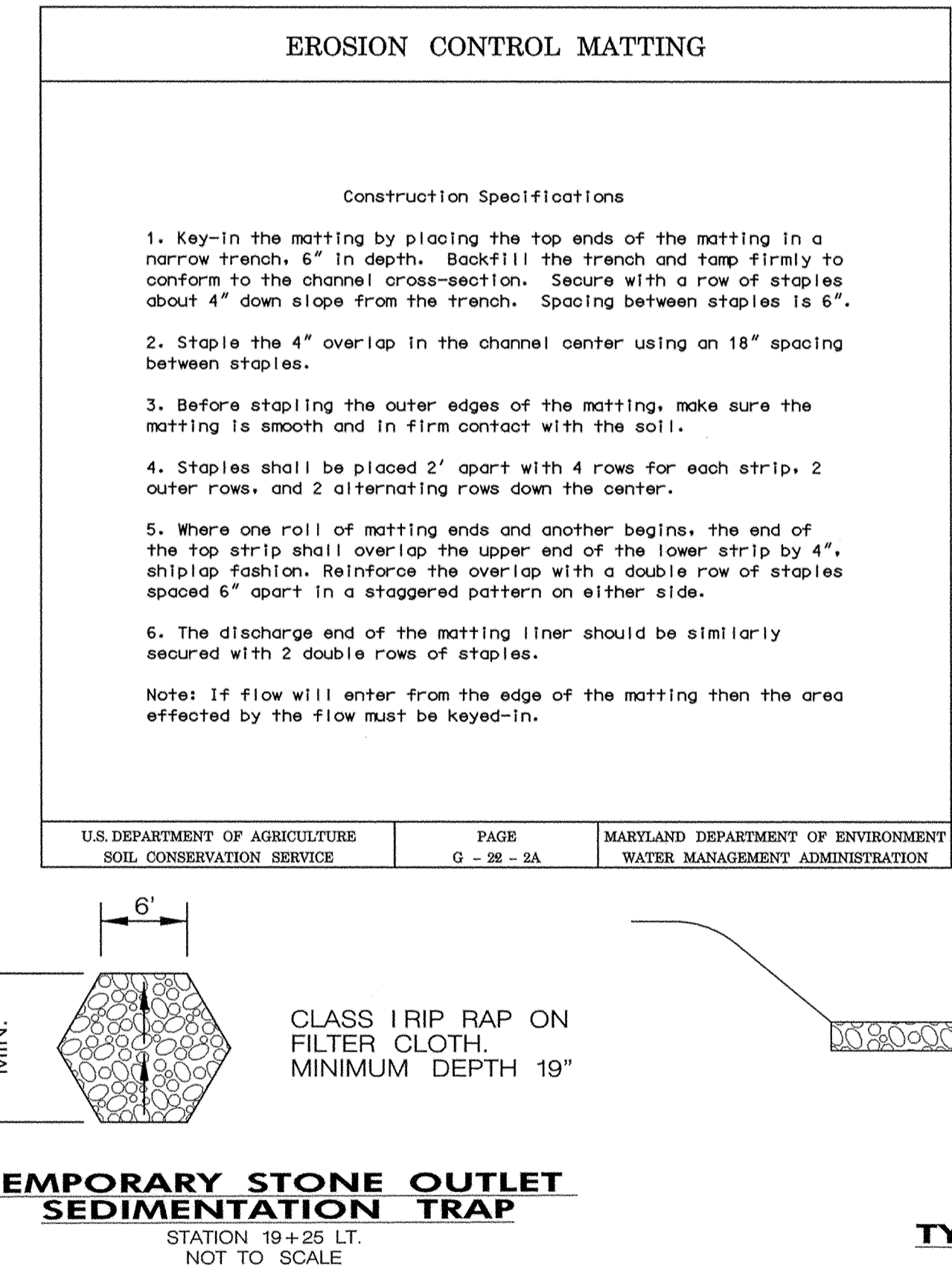
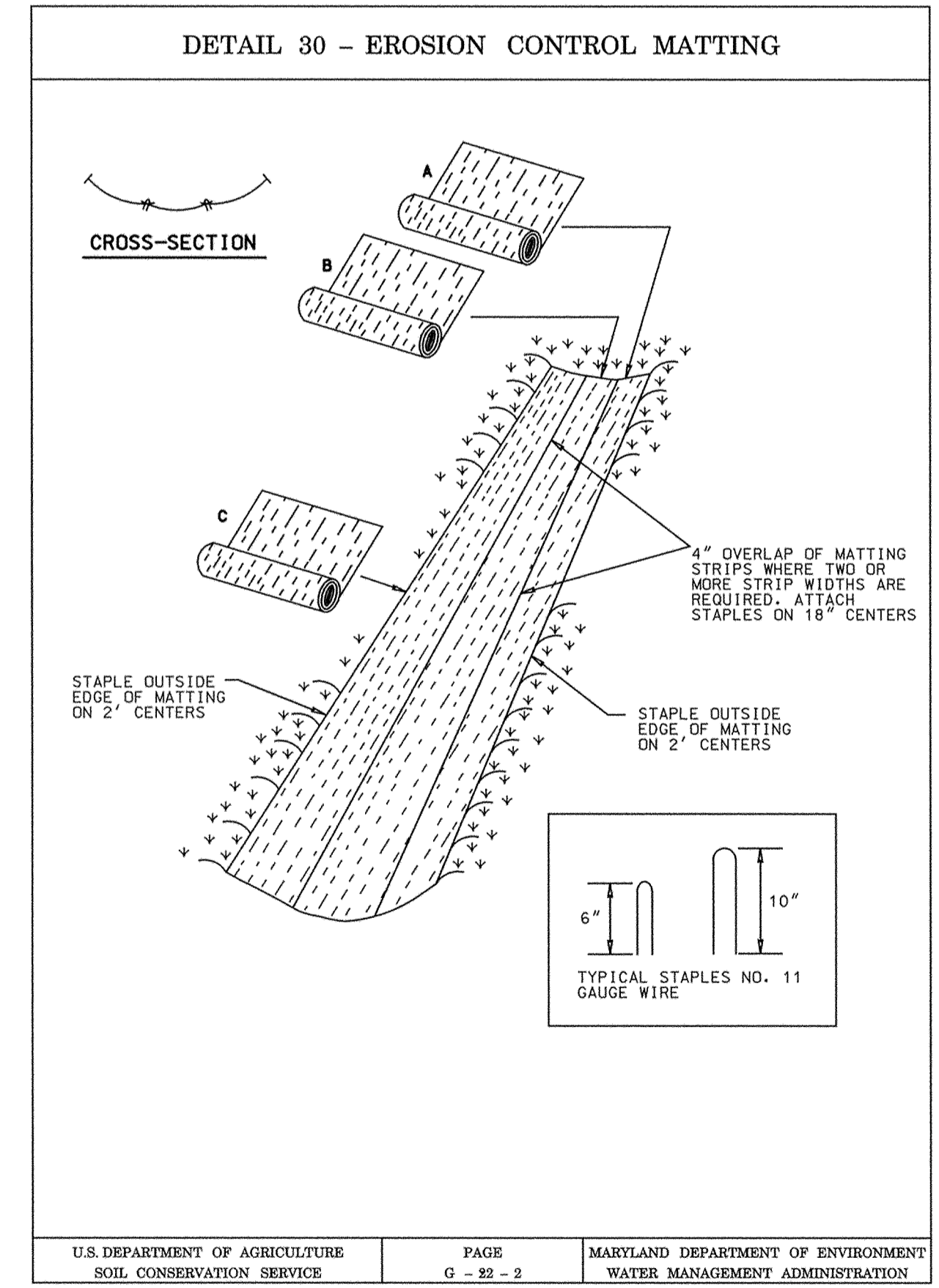
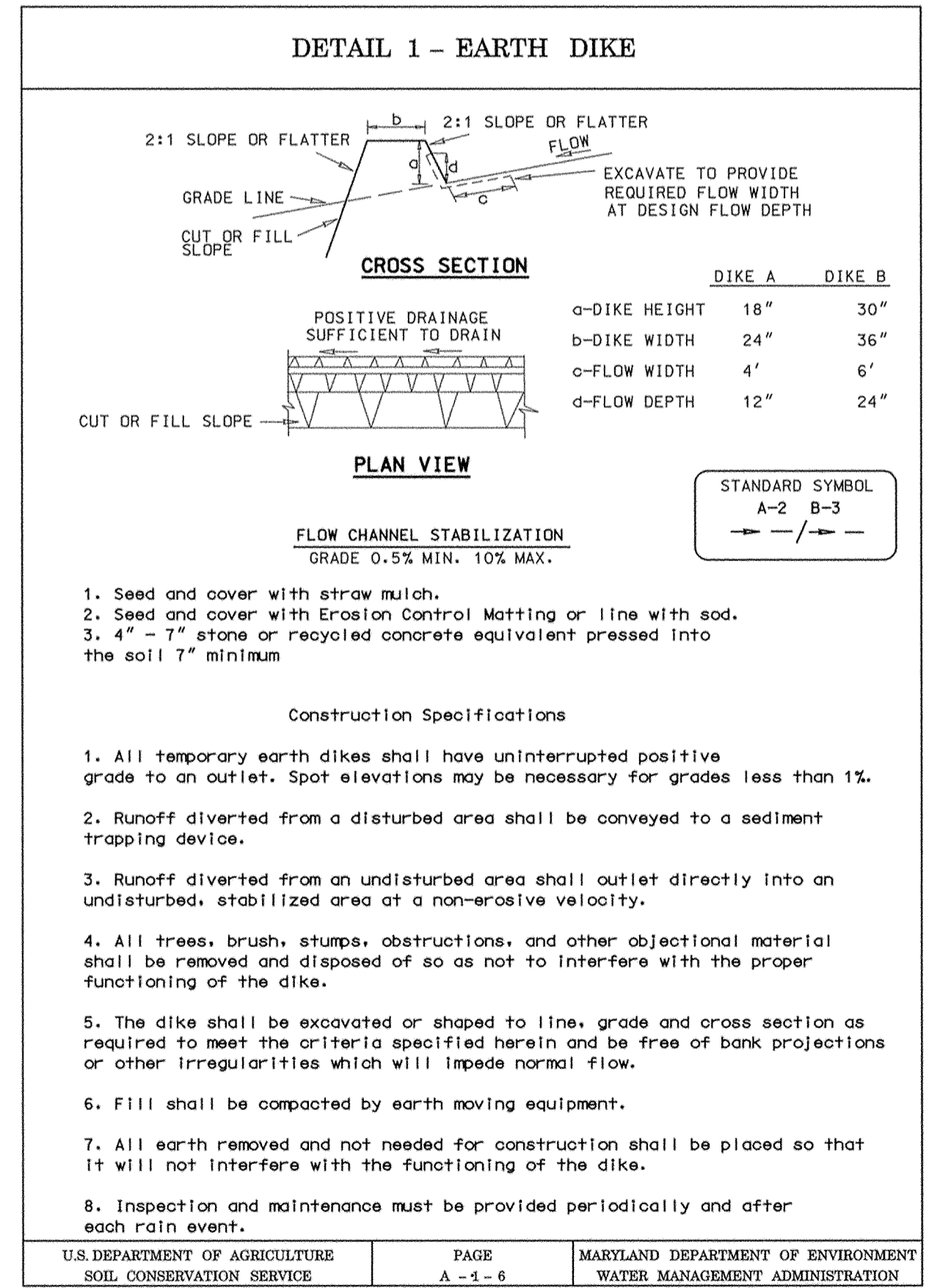
SECTION I - VEGETATIVE STABILIZATION METHODS AND MATERIALS

- A. SITE PREPARATION**
- INSTALL EROSION AND SEDIMENT CONTROL STRUCTURES (EITHER TEMPORARY OR PERMANENT) SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, BERMS, WATERWAYS, OR SEDIMENT CONTROL BASINS.
 - PERFORM OPERATIONS AT RIGHT ANGLES TO THE SLOPE. FINAL GRADING AND SHAPING IS NOT USUALLY NECESSARY FOR TEMPORARY SEEDING. SCHEDULE REQUIRED SOIL TESTS TO DETERMINE SOIL AMENDMENT COMPOSITION AND APPLICATION RATES FOR SITE HAVING DISTURBED AREA OVER 5 ACRES.
- B. SOIL AMENDMENTS (FERTILIZER AND LIME SPECIFICATIONS)**
- SOIL TESTS MUST BE PERFORMED TO DETERMINE THE EXACT RATIOS AND APPLICATION RATES FOR BOTH LIME AND FERTILIZER ON SITES HAVING DISTURBED AREAS OVER 5 ACRES. SOIL ANALYSIS MAY BE PERFORMED BY THE UNIVERSITY OF MARYLAND OR A RECOGNIZED COMMERCIAL LABORATORY. SOIL SAMPLES TAKEN FOR ENGINEERING PURPOSES MAY ALSO BE USED FOR CHEMICAL ANALYSES.
 - FERTILIZERS SHALL BE UNIFORM IN COMPOSITION, FREE FLOWING AND SUITABLE FOR ACCURATE APPLICATION BY APPROVED EQUIPMENT. MANURE MAY BE SUBSTITUTED FOR FERTILIZER WITH PRIOR APPROVAL FROM THE APPROPRIATE APPROVAL AUTHORITY. FERTILIZERS SHALL ALL BE DELIVERED TO THE SITE FULLY LABELED ACCORDING TO THE APPLICABLE STATE FERTILIZER LAWS AND SHALL BEAR THE NAME, TRADE NAME OR TRADEMARK AND WARRANTEE OF THE PRODUCER.
 - LIME MATERIALS SHALL BE GROUND LIMESTONE (HYDRATED OR BURNT LIME MAY BE SUBSTITUTED) WHICH CONTAINS AT LEAST 50% TOTAL OXIDES (CALCIUM OXIDE PLUS MAGNESIUM OXIDE). LIMESTONE SHALL BE GROUND TO SUCH FINENESS THAT AT LEAST 50% WILL PASS THROUGH A #100 MESH SIEVE AND 98-100% WILL PASS THROUGH A #20 MESH SIEVE.
 - INCORPORATE LIME AND FERTILIZER INTO THE TOP 3-5" OF SOIL BY DISKING OR OTHER SUITABLE MEANS.
- C. SEEDBED PREPARATION**
- TEMPORARY SEEDING**
 - SEEDBED PREPARATION SHALL CONSIST OF LOOSENING SOIL TO A DEPTH OF 3" TO 5" BY MEANS OF SUITABLE AGRICULTURAL OR CONSTRUCTION EQUIPMENT SUCH AS DISC HARROWS OR CHISEL PLOWS OR RIPERS MOUNTED ON CONSTRUCTION EQUIPMENT. AFTER THE SOIL IS LOOSENEED IT SHOULD NOT BE ROLLED OR DRAGGED SMOOTH BUT LEFT IN THE ROUGHENED CONDITION. SLOPED AREAS (GREATER THAN 3:1) SHOULD BE TRACKED LEAVING THE SURFACE IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE.
 - APPLY FERTILIZER AND LIME AS PERSCRIBED ON THE PLANS.
 - INCORPORATE LIME AND FERTILIZER INTO THE TOP 3 - 5" OF SOIL BY DISKING OR OTHER SUITABLE MEANS.
 - PERMANENT SEEDING**
 - MINIMUM SOIL CONDITIONS REQUIRED FOR PERMANENT VEGETATIVE ESTABLISHMENT:
 - SOIL PH SHALL BE BETWEEN 6.0 AND 7.0.
 - SOLUBLE SALTS SHALL BE LESS THAN 500 PARTS PER MILLION (PPM).
 - THE SOIL SHALL CONTAIN LESS THAN 40% CLAY BUT ENOUGH FINE GRAINED MATERIAL (>30% SILT PLUS CLAY) TO PROVIDE THE CAPACITY TO HOLD A MODERATE AMOUNT OF MOISTURE. AN EXCEPTION IS IF LOVEGRASS OR SERICIA LESPEDEZA IS TO BE PLANTED, THEN A SANDY SOIL (<30% SILT PLUS CLAY) WOULD BE ACCEPTABLE.
 - SOIL SHALL CONTAIN 1.5% MINIMUM ORGANIC MATTER BY WEIGHT.

- SOIL MUST CONTAIN PORE SPACE TO PERMIT ADEQUATE ROOT PENETRATION.
 - IF THESE CONDITIONS CANNOT BE MET BY SOILS ON SITE, ADDING TOPSOIL IS REQUIRED IN ACCORDANCE WITH SECTION 21 STANDARD AND SPECIFICATION FOR TOPSOIL.
- B. AREAS PREVIOUSLY GRADED IN CONFORMANCE WITH THE DRAWINGS SHALL BE MAINTAINED IN A TRUE AND EVEN GRADE, THEN SCARIFIED OR OTHERWISE LOOSENEED TO A DEPTH OF 3 - 5" TO PERMIT BONDING OF THE TOPSOIL TO THE SURFACE AREA AND TO CREATE HORIZONTAL EROSION CHECK SLOTS TO PREVENT TOPSOIL FROM SLIDING DOWN A SLOPE.**
- C. APPLY SOIL AMENDMENTS AS PER SOIL TEST OR AS INCLUDED ON THE PLANS.**
- D. MIX SOIL AMENDMENTS INTO THE TOP 3 - 5" OF TOPSOIL BY DISKING OR OTHER SUITABLE MEANS. LAWN AREAS SHOULD BE RAKED TO SMOOTH THE SURFACE, REMOVE LARGE OBJECTS LIKE STONES AND BRANCHES, AND READY THE AREA FOR SEED APPLICATION. WHERE SITE CONDITIONS WILL NOT PERMIT NORMAL SEEDBED PREPARATION, LOOSEN SURFACE SOIL BY DRAGGING WITH A HEAVY CHAIN OR OTHER EQUIPMENT TO ROUGHEN THE SURFACE.**
- STEEP SLOPES (STEEPER THAN 3:1) SHOULD BE TRACKED BY A DOZER LEAVING THE SOIL IN AN IRREGULAR CONDITION WITH RIDGES RUNNING PARALLEL TO THE CONTOUR OF THE SLOPE. THE TOP 1 - 3" OF SOIL SHOULD BE LOOSE AND FRIABLE. SEEDBED LOOSENING MAY NOT BE NECESSARY ON NEWLY DISTURBED AREAS.
- E. SEED SPECIFICATIONS**
- ALL SEED MUST MEET THE REQUIREMENTS OF THE MARYLAND STATE SEED LAW. ALL SEED SHALL BE SUBJECT TO RE-TESTING BY A RECOGNIZED SEED LABORATORY. ALL SEED USED SHALL HAVE BEEN TESTED WITHIN THE 6 MONTHS IMMEDIATELY PRECEDING THE DATE OF SOWING SUCH MATERIAL ON THIS JOB. NOTE: SEED TAGS SHALL BE MADE AVAILABLE TO THE INSPECTOR TO VERIFY TYPE AND RATE OF SEED USED.
 - INOCULANT - THE INOCULANT FOR TREATING LEGUME SEED IN THE SEED MIXTURES SHALL BE A PURE CULTURE OF NITROGEN-FIXING BACTERIA ON THE CONTAINER. ADD FRESH INOCULANT AS DIRECTED ON PACKAGE. USE FOUR TIMES THE RECOMMENDED RATE WHEN HYDROSEEDING. NOTE: IT IS VERY IMPORTANT TO KEEP INOCULANT AS COOL AS POSSIBLE UNTIL USED. TEMPERATURES ABOVE 75-80 F. CAN WEAKEN BACTERIA AND MAKE THE INOCULANT LESS EFFECTIVE.
- F. METHODS OF SEEDING**
- HYDROSEEDING: APPLY SEED UNIFORMLY WITH HYDROSEEDER (SLURRY INCLUDES SEED AND FERTILIZER), BROADCAST OR DROP SEEDER, OR A CULTIPACKER SEEDER.
 - IF FERTILIZER IS BEING APPLIED AT THE TIME OF SEEDING, THE APPLICATION RATES AMOUNTS WILL NOT EXCEED THE FOLLOWING: NITROGEN; MAXIMUM OF 100 LBS. PER ACRE TOTAL OF SOLUBLE NITROGEN; P205 (PHOSPHOROUS); 200 LBS./AC; K2O (POTASSIUM); 200 LBS./AC.
 - LIME - USE ONLY GROUND AGRICULTURAL LIMESTONE, (UP TO 3 TONS PER ACRE MAY BE APPLIED BY HYDROSEEDING), NORMALLY, NOT MORE THAN 2 TONS ARE APPLIED BY HYDROSEEDING AT ANY ONE TIME. DO NOT USE BURNT OR HYDRATED LIME WHEN HYDROSEEDING.
 - SEED AND FERTILIZER SHALL BE MIXED ON SITE AND SEEDING SHALL BE DONE IMMEDIATELY AND WITHOUT INTERRUPTION.
 - DRY SEEDING: THIS INCLUDES USE OF CONVENTIONAL DROP OF BROADCAST SPREADERS.

- A. SEED SPREAD DRY SHALL BE INCORPORATED INTO THE SUBSOIL AT THE RATES PRESCRIBED ON THE TEMPORARY OR PERMANENT SEEDING SUMMARIES OR TABLES 25 OR 26. THE SEEDED AREA SHALL THEN BE ROLLED WITH A WEIGHTED ROLLER TO PROVIDE GOOD SEED TO SOIL CONTACT.**
- B. WHERE PRACTICAL, SEED SHOULD BE APPLIED IN TWO DIRECTIONS PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION.**
- III. DRILL OR CULTIPACKER SEEDING: MECHANIZED SEEDERS THAT APPLY AND COVER SEED WITH SOIL.**
- CULTIPACKER SEEDERS ARE REQUIRED TO BURY THE SEED IN SUCH A FASHION AS TO PROVIDE AT LEAST 1/4 INCH SOIL COVERING.
 - WHERE PRACTICAL, SEED SHOULD BE APPLIED IN TWO DIRECTIONS PERPENDICULAR TO EACH OTHER. APPLY HALF THE SEEDING RATE IN EACH DIRECTION.
- F. MULCH SPECIFICATIONS (IN ORDER OF PREFERENCE)**
- STRAW SHALL CONSIST OF THOROUGHLY THRESHED WHEAT, RYE OR OAT STRAW, REASONABLY BRIGHT IN COLOR, AND SHALL NOT BE MUSTY, MOLDY, CAKED, DECAYED, OR EXCESSIVELY DUSTY AND SHALL BE FREE OF NOXIOUS WEED SEEDS AS SPECIFIED IN THE MARYLAND SEED LAW.
 - WOOD CELLULOSE FIBER MULCH (WC FM).
 - WC FM SHALL CONSIST OF SPECIALLY PREPARED WOOD CELLULOSE PROCESSED INTO A UNIFORM FIBROUS PHYSICAL STATE.
 - WC FM SHALL BE DYED GREEN OR CONTAIN A GREEN DYE IN THE PACKAGE THAT WILL PROVIDE AN APPROPRIATE COLOR TO FACILITATE VISUAL INSPECTION OF THE UNIFORMLY SPREAD SLURRY.
 - WC FM, INCLUDING DYE, SHALL CONTAIN NO GERMINATION OR GROWTH INHIBITING FACTORS.
 - WC FM MATERIALS SHALL BE MANUFACTURED AND PROCESSED IN SUCH A MANNER THAT THE WOOD CELLULOSE FIBER MULCH WILL REMAIN IN UNIFORM SUSPENSION IN WATER UNDER AGITATION AND WILL BLEND WITH SEED, FERTILIZER AND OTHER ADDITIVES TO FORM A HOMOGENEOUS SLURRY. THE MULCH MATERIAL SHALL FORM A BLOTTER-LIKE GROUND COVER ON APPLICATION HAVING MOISTURE ABSORPTION AND PERCOLATION PROPERTIES AND SHALL COVER AND HOLD GRASS SEED IN CONTACT WITH THE SOIL WITHOUT INHIBITING THE GROWTH OF THE GRASS SEEDINGS.
 - WC FM MATERIAL SHALL CONTAIN NO ELEMENTS OR COMPOUNDS AT CONCENTRATION LEVELS THAT WILL BE PHYTO-TOXIC.
 - WC FM MUST CONFORM TO THE FOLLOWING PHYSICAL REQUIREMENTS: FIBER LENGTH TO APPROXIMATELY 10 MM. DIAMETER APPROXIMATELY 1 MM. PH. RANGE OF 4.0 TO 8.5. ASH CONTENT OF 1.6% MAXIMUM AND WATER HOLDING CAPACITY OF 90% MINIMUM. NOTE: ONLY STERILE STRAW MULCH SHOULD BE USED IN AREAS WHERE ONE SPECIES OF GRASS IS DESIRED.
- G. MULCHING SEEDED AREAS MULCH SHALL BE APPLIED TO ALL SEEDED AREAS IMMEDIATELY AFTER SEEDING.**
- IF GRADING IS COMPLETED OUTSIDE OF THE SEEDING SEASON, MULCH ALONE SHALL BE APPLIED AS PRESCRIBED IN THIS SECTION AND MAINTAINED UNTIL THE SEEDING SEASON RETURNS AND SEEDING CAN BE PERFORMED IN ACCORDANCE WITH THESE SPECIFICATIONS.
 - WHEN STRAW MULCH IS USED, IT SHALL BE SPREAD OVER ALL SEEDED AREAS AT THE RATE OF 2 TONS/ACRE. MULCH SHALL BE APPLIED TO A UNIFORM LOOSE DEPTH OF BETWEEN 1" AND 2". MULCH APPLIED SHALL ACHIEVE A

- III. UNIFORM DISTRIBUTION AND DEPTH SO THAT THE SOIL SURFACE IS NOT EXPOSED. IF A MULCH ANCHORING TOOL IS TO BE USED, THE RATE SHOULD BE INCREASED TO 2.5 TONS/ACRE.**
- WOOD CELLULOSE FIBER USED AS A MULCH SHALL BE APPLIED AT A NET DRY WEIGHT OF 1,500 LBS. PER ACRE. THE WOOD CELLULOSE FIBER SHALL BE MIXED WITH WATER, AND THE MIXTURE SHALL CONTAIN A MAXIMUM OF 50 LBS. OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.**
- H. SECURING STRAW MULCH (MULCH ANCHORING): MULCH ANCHORING SHALL BE PERFORMED IMMEDIATELY FOLLOWING MULCH APPLICATION TO MINIMIZE TOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE FOLLOWING METHODS (LISTED BY PREFERENCE), DEPENDING UPON SIZE OF AREA AND EROSION HAZARD:**
- A MULCH ANCHORING TOOL IS A TRACTOR DRAWING IMPLEMENT DESIGNED TO PUNCH AND ANCHOR MULCH INTO THE SOIL SURFACE A MINIMUM OF TWO (2) INCHES. THE PRACTICE IS MOST EFFECTIVE ON LARGE AREAS, BUT IS LIMITED TO FLATTER SLOPES WHERE EQUIPMENT CAN OPERATE SAFELY. IF USED ON SLOPING LAND, THIS PRACTICE SHOULD BE USED ON THE CONTOUR IF POSSIBLE.
 - WOOD CELLULOSE FIBER MAY BE USED FOR ANCHORING STRAW. THE FIBER BINDER SHALL BE APPLIED AT A NET DRY WEIGHT OF 750 POUNDS/ACRE. THE WOOD CELLULOSE FIBER SHALL BE MIXED WITH WATER AND THE MIXTURE SHALL CONTAIN A MAXIMUM OF 50 POUNDS OF WOOD CELLULOSE FIBER PER 100 GALLONS OF WATER.
 - APPLICATIONS OF LIQUID BINDERS SHOULD BE HEAVIER AT THE EDGES WHERE WIND CATCHES MULCH, SUCH AS IN VALLEYS AND ON CRESTS OF BANKS. THE REMAINDER OF AREA SHOULD APPEAR TO BE UNIFORM AFTER BINDER APPLICATION. SYNTHETIC BINDERS - SUCH AS ACRYLIC DLR (AGRO-TACK), DCA-70, PETROSET, TERRA TACK II, TERRA TACK AR OR OTHER APPROVED EQUAL MAY BE USED AT RATES RECOMMENDED BY THE MANUFACTURER TO ANCHOR MULCH.



FOR SEDIMENT & EROSION CONTROL ONLY

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND

DES: F.A.C.

DRN: J.N.W.

CHK: F.A.C.

DATE: 3/00

CAPITAL PROJECT NO. **J-4164**

SEDIMENT AND EROSION CONTROL DETAILS

Highland Rd. Improvements Triadelphia Mill Road to Ten Oaks Road

SCALE AS SHOWN

SHEET 5 OF 13

FILE: K:\96-309-047\station\newdesign\ep05hgh.dgn DATE: 13-Mar-00 08:40

DEPARTMENT OF PUBLIC WORKS HOWARD COUNTY, MARYLAND

4/27/00 DATE

4/27/00 DATE

CHIEF, TRANSPORTATION PROJECTS AND WATERSHED MANAGEMENT DIVISION

CHIEF, BUREAU OF ENGINEERING

CHIEF, BUREAU OF HIGHWAYS

A/E GROUP, INC.

ENGINEERS • PLANNERS

181 E. Main Street Westminister, Maryland 21158 A/E Job No. 96-309-047

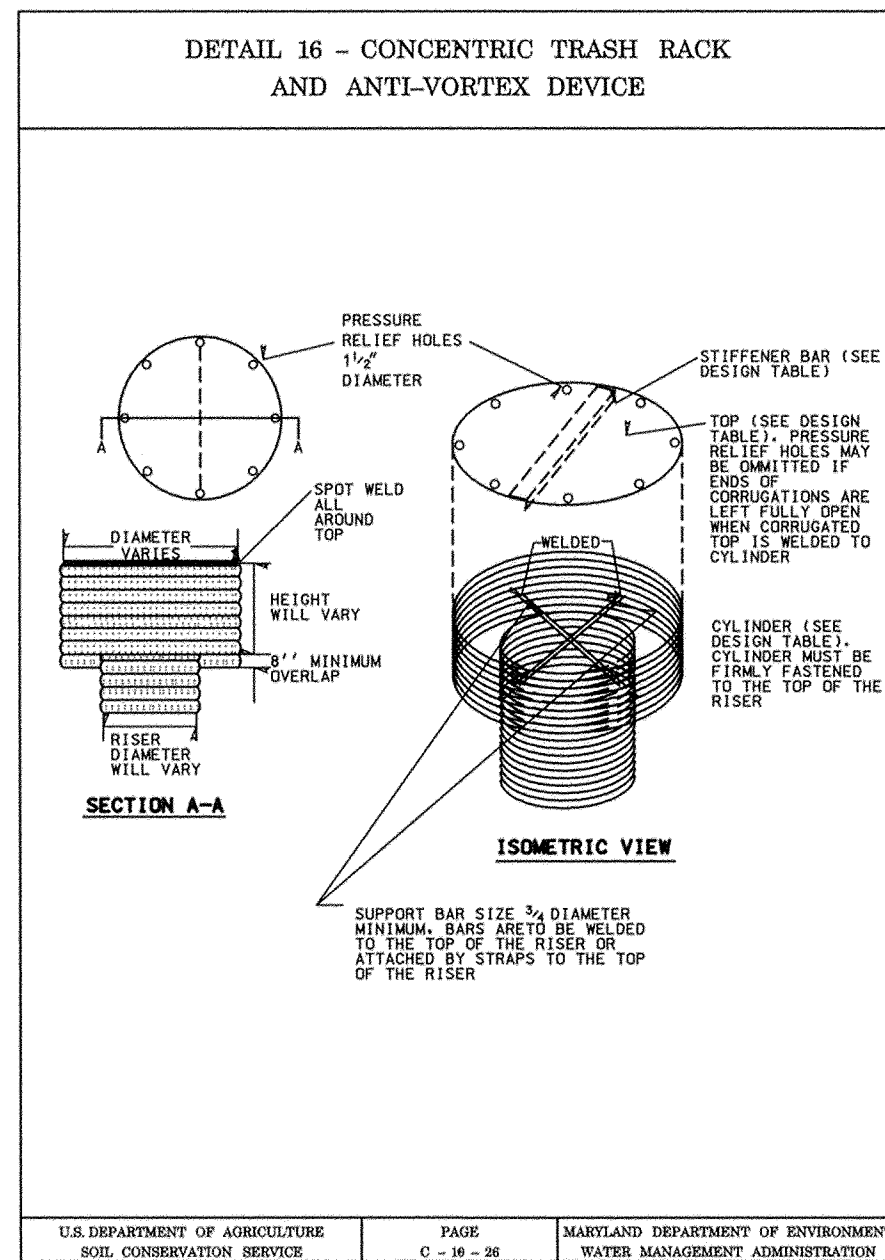
BOARD OF PROFESSIONAL ENGINEERS

TRICK A. CANNON

3/1/00

DES: F.A.C.					
DRN: J.N.W.					
CHK: F.A.C.					
DATE: 3/00	BY	NO.	REVISION	DATE	
					600' SCALE MAP NO. DATE:

600' SCALE MAP NO. DATE:

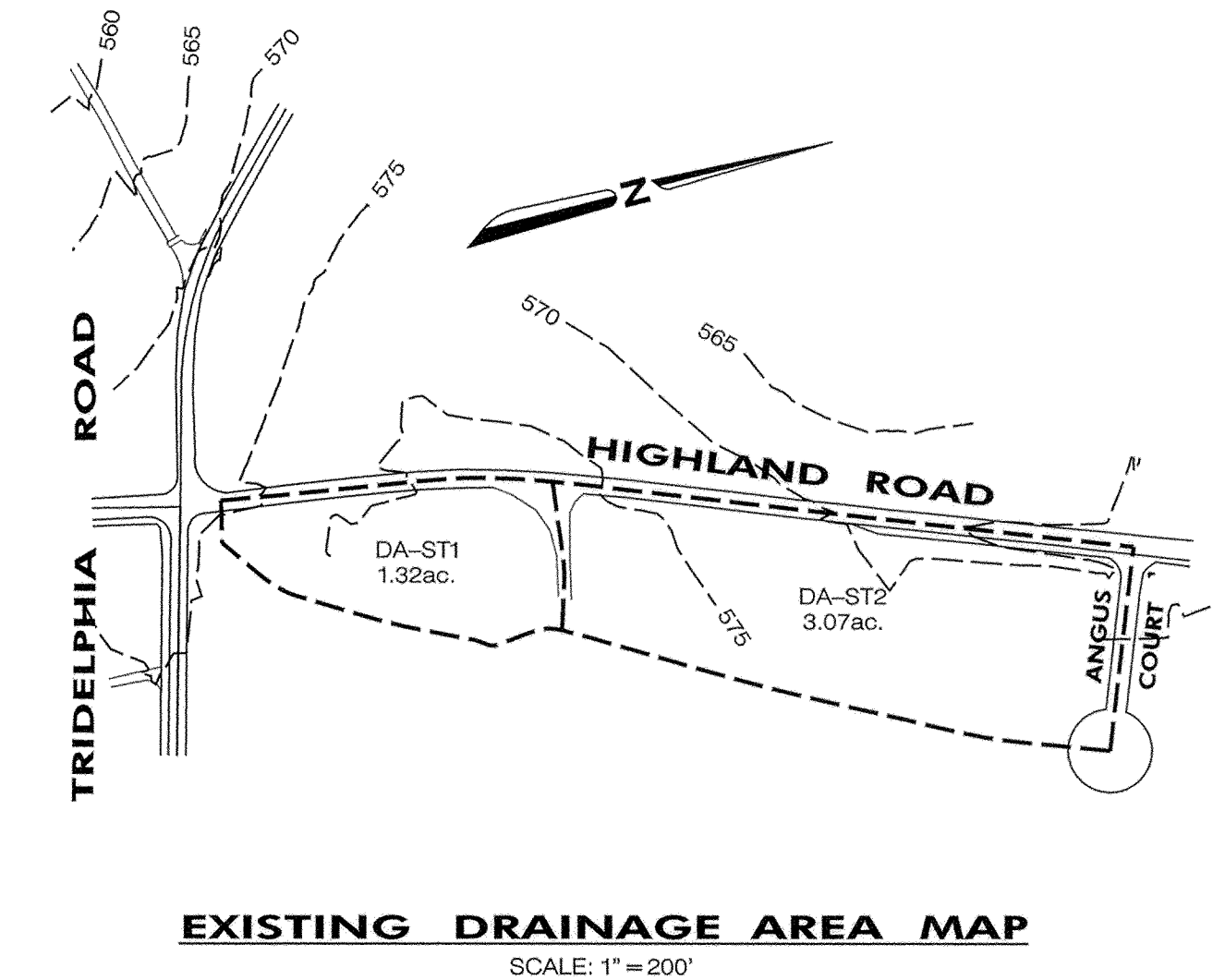
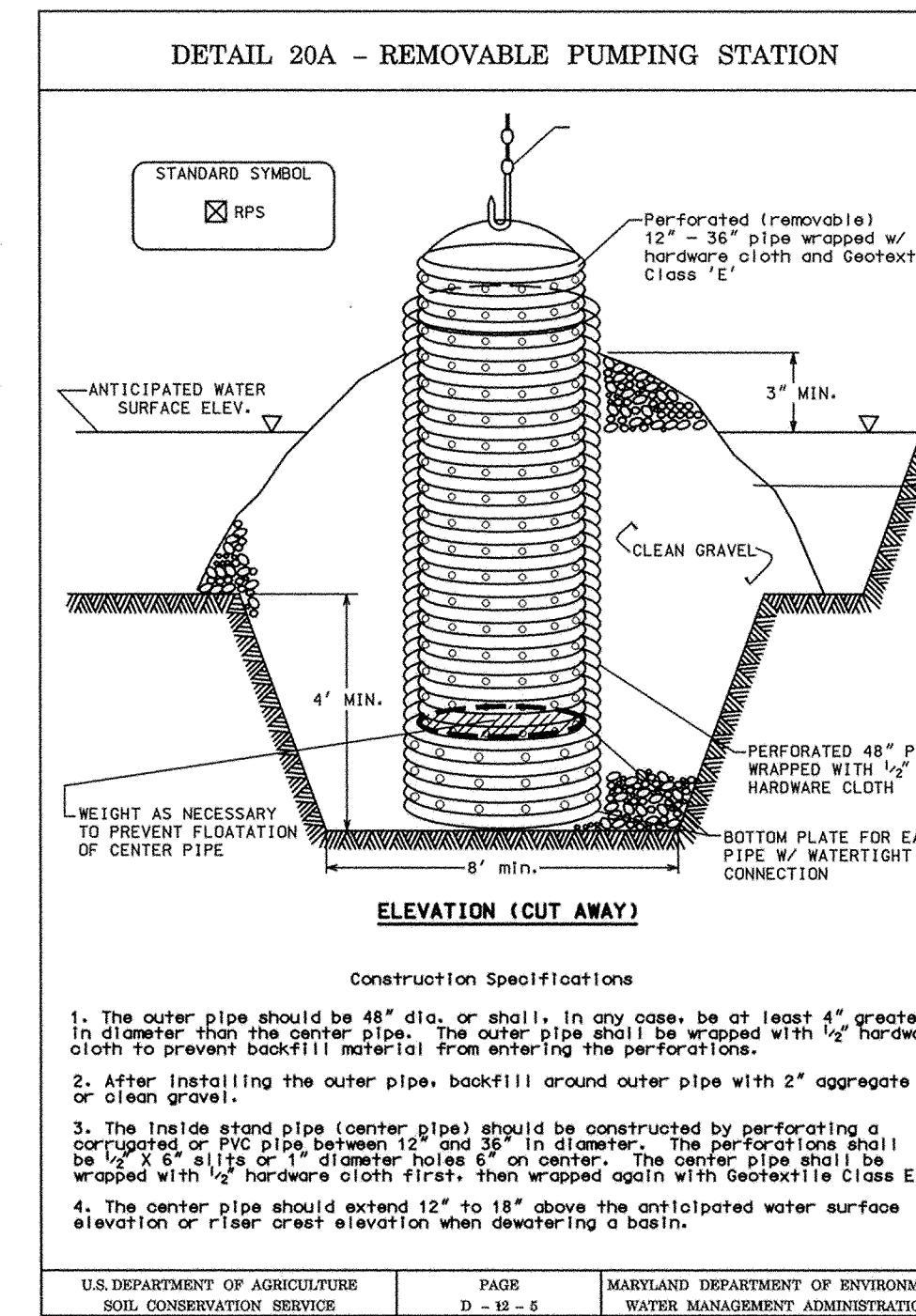
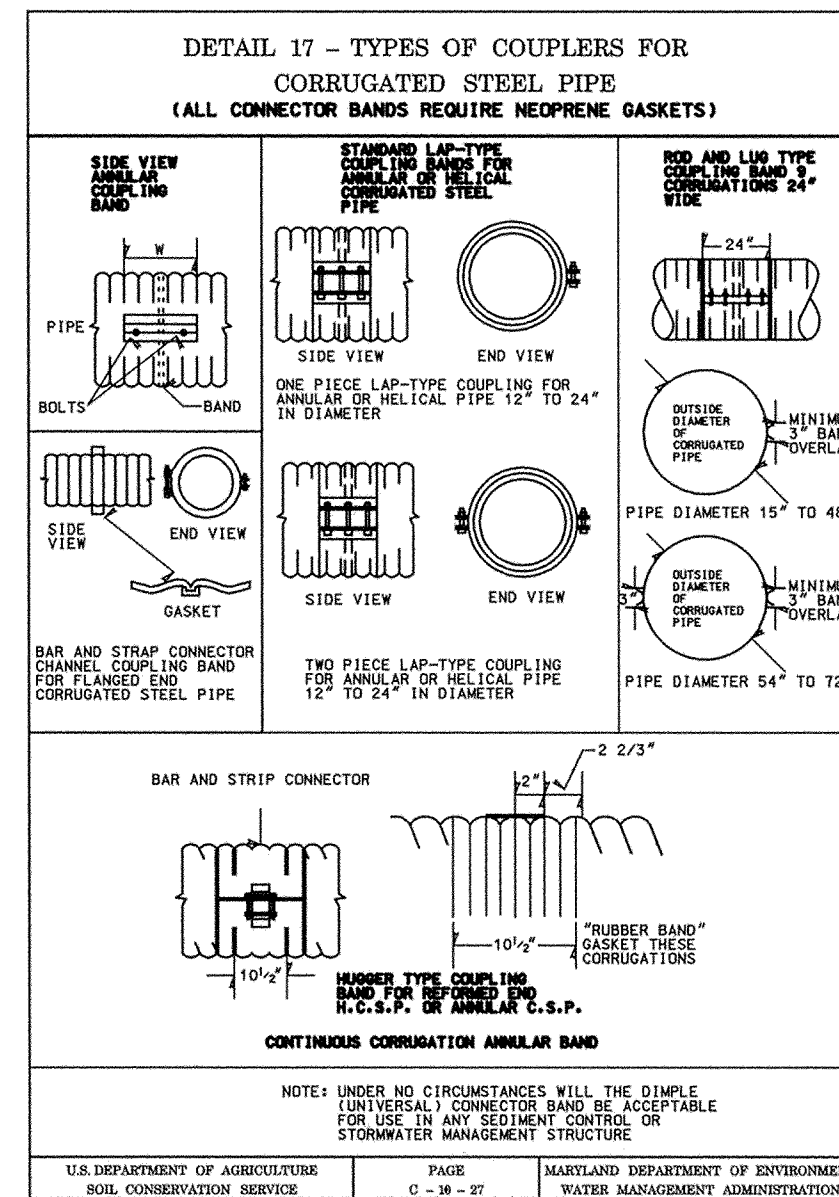


DETAIL 16 CONCENTRIC TRASH RACK AND ANTI-VORTEX DEVICE (continued)

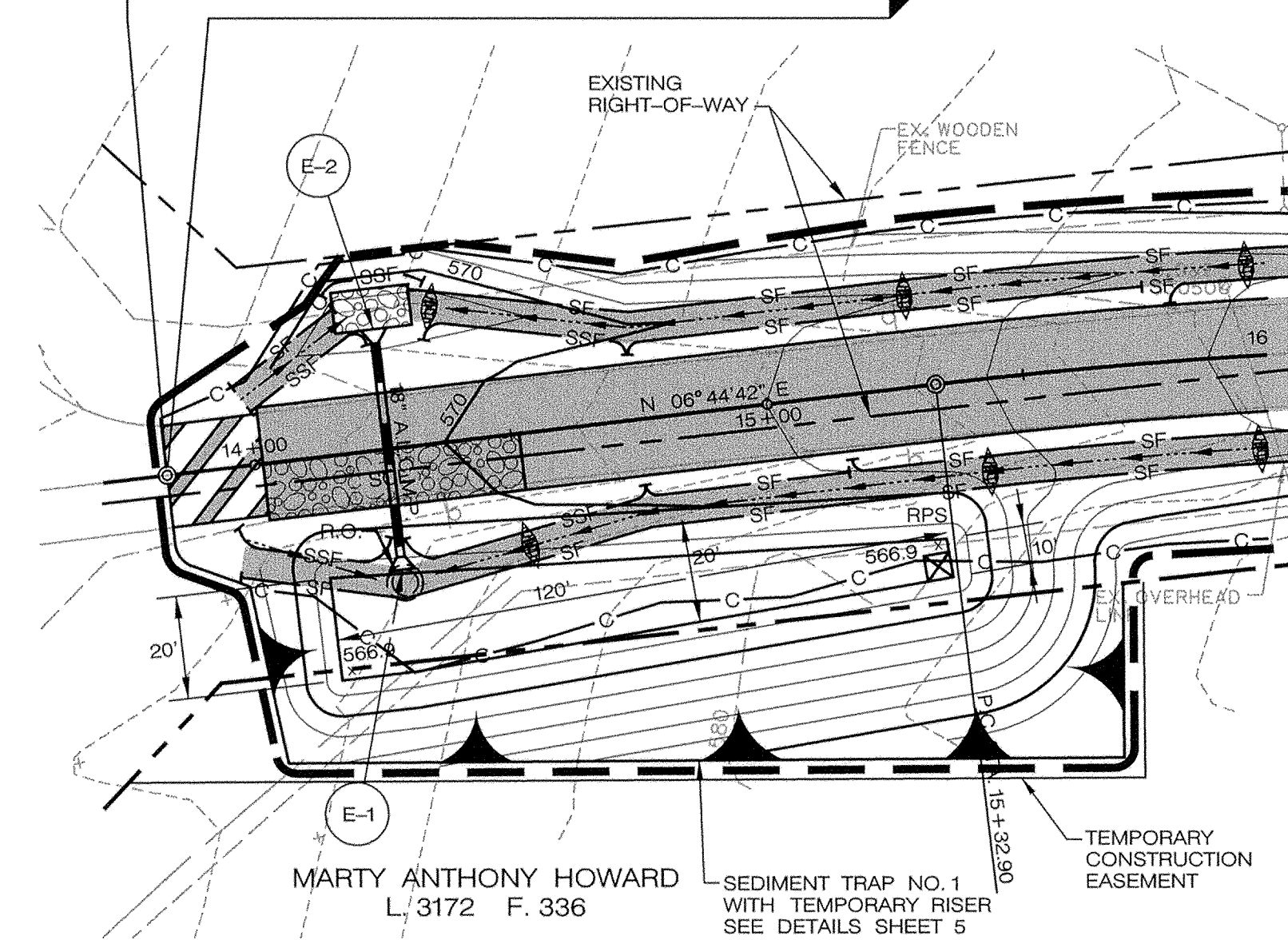
Riser Diam. - In.	Trash Rack Cylinder Diam. - In.	Trash Rack Ht. - In.	Minimum Size Support Bar	Minimum Top Thickness Stiffener
12	18	6	#6 Rebar	16 ga.
15	21	7	"	"
18	27	8	"	"
21	30	11	"	"
24	36	13	"	14 ga.
27	42	15	"	14 ga.
36	54	14	#8 Rebar	12 ga.
42	60	14	"	"
48	72	12	1-1/2" pipe or 1-1/4" x 1-1/4" angle	10 ga.
54	78	12	"	"
60	90	12	1-1/2" pipe or 1-1/2" x 1-1/2" angle	8 ga.
66	96	10	3" pipe or 2x2 1/2" angle	8 ga. 2x2 1/4" w/ stiffener angle
72	102	10	36"	2-1/2x2-1/2" angle
78	114	10	2-1/2" pipe or 2x2 1/4" angle	"
84	120	10	2-1/2" pipe or 2-1/2x1-1/2" angle	2-1/2 x 2-1/2" 1/4" angle

Note: The above trash rack and anti-vortex device information is only for corrugated metal pipe. Concrete risers must meet the requirements of MD 316.

U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE PAGE C-19-36A MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



LIMIT OF WORK AT BASELINE CONSTRUCTION STA. 13 + 82.83



SEDIMENT TRAP NO. 1 GRADING PLAN

SCALE: 1" = 30'

SEDIMENT TRAP NO. 1

(MODIFIED ST-1)

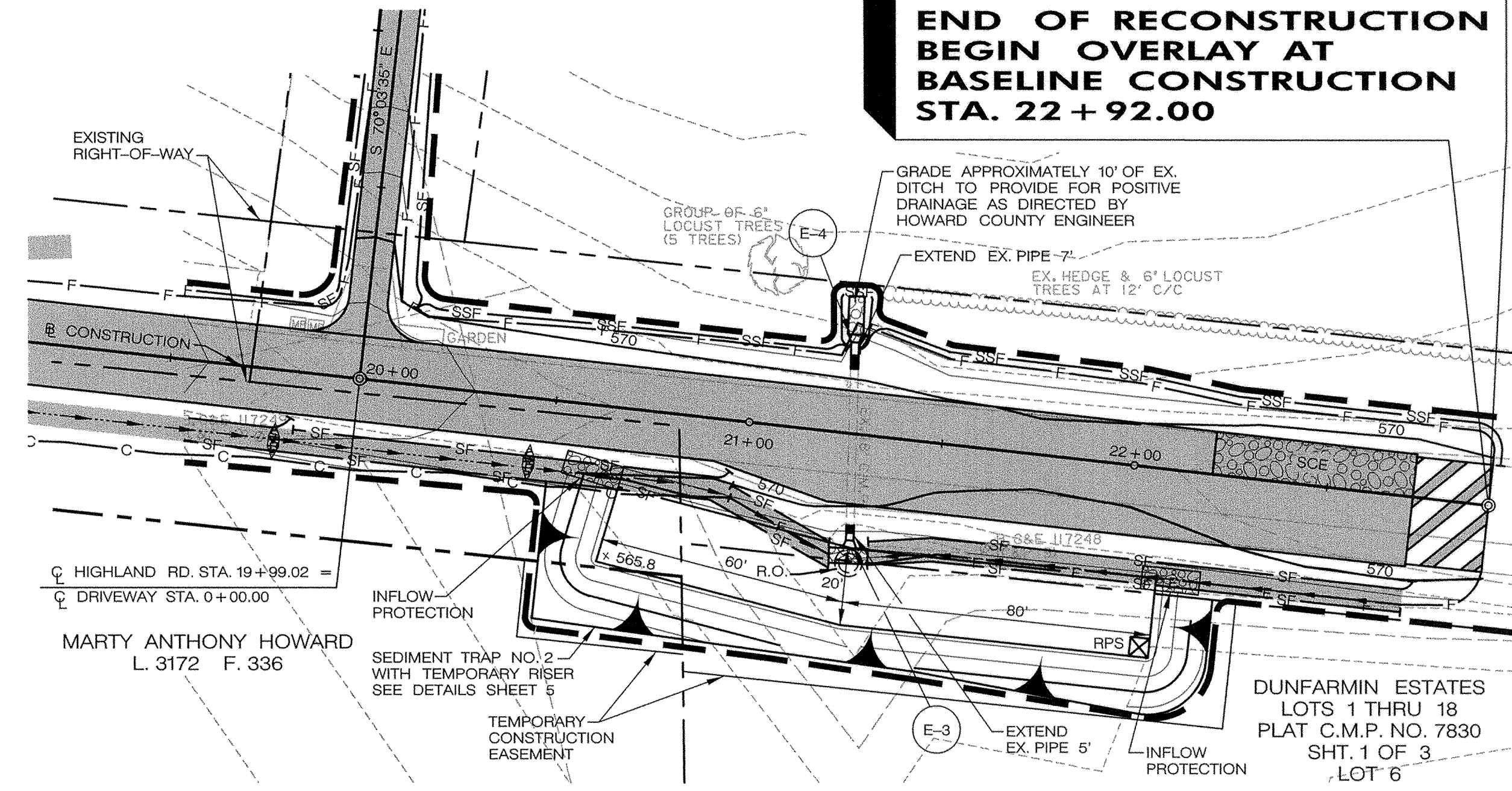
DRAINAGE AREA	=	1.32 AC.
SIDE SLOPES	=	2:1
STORAGE VOLUME PROVIDED	=	120'xAVG. 15'x3'
	=	5,400 CF.
STORAGE VOLUME REQUIRED		
WET	=	2,400 CF.
DRY	=	2,400 CF.
TOTAL	=	4,800 CF.
WET POOL ELEVATION	=	568.23

SEDIMENT TRAP NO. 2

(MODIFIED ST-1)

DRAINAGE AREA	=	3.07 AC.
SIDE SLOPES	=	2:1
STORAGE VOLUME PROVIDED	=	140'x20'x4'
	=	11,200 CF.
STORAGE VOLUME REQUIRED		
WET	=	5,525 CF.
DRY	=	5,525 CF.
TOTAL	=	11,050 CF.
WET POOL ELEVATION	=	567.28

END OF RECONSTRUCTION BEGIN OVERLAY AT BASELINE CONSTRUCTION STA. 22 + 92.00



SEDIMENT TRAP NO. 2 GRADING PLAN

SCALE: 1" = 30'

FOR SEDIMENT & EROSION CONTROL ONLY

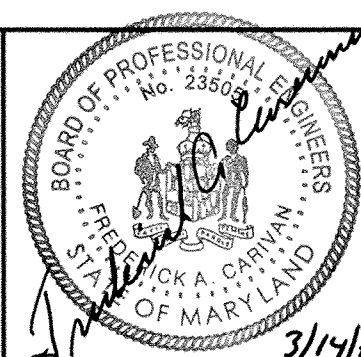
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

James P. Shaw 4/27/00
DEPARTMENT OF PUBLIC WORKS DATE
Chief, Bureau of Engineering

Robert J. Larson 4/27/00
DATE
Chief, Bureau of Highways

Chief, Transportation Projects and Watershed Management Division

A/E GROUP, INC.
ENGINEERS • PLANNERS
181 E. Main Street
Westminster, Maryland 21158
A/E Job No. 96-309-047



DES: F.A.C.					
DRN: M.T.					
CHK: F.A.C.					
DATE: 3/00	BY: NO.	REVISION	DATE	600' SCALE MAP NO.	DATE:

CAPITAL PROJECT NO.
J-4164

SEDIMENT AND EROSION CONTROL DETAILS
**Highland Rd. Improvements
Triadelphia Mill Road to
Ten Oaks Road**

SCALE AS SHOWN
SHEET 7 OF 13






GENERAL NOTES

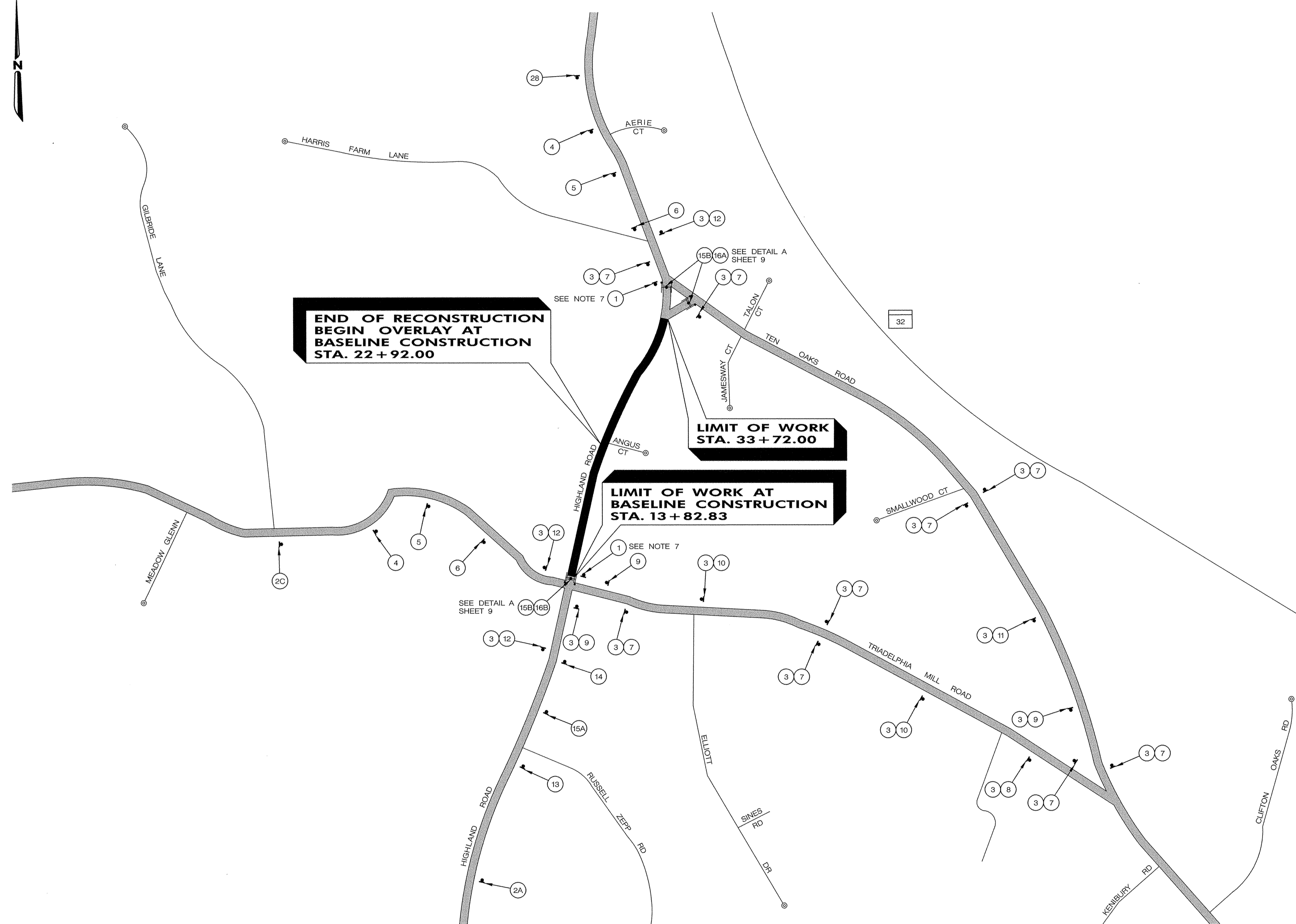
1. HOWARD COUNTY TRAFFIC ENGINEER SHALL REVIEW PROPOSED SIGN LOCATIONS IN THE FIELD PRIOR TO ANY SIGN INSTALLATION.
2. ALL SIGNS SHALL BE MOUNTED ON AT LEAST ONE 4"x4" WOODEN POST.
3. ALL SIGN DISTANCES MAY BE ADJUSTED TO FIT FIELD CONDITIONS WITH THE ENGINEERS APPROVAL.
4. THE CONTRACTOR SHALL FURNISH, ERECT AND MAINTAIN TRAFFIC CONTROL SIGNS AND DEVICES, MAINTAIN TRAFFIC DURING HOURS OF CONSTRUCTION AND AT ALL OTHER TIMES IN ACCORDANCE WITH METHODS INDICATED ON THESE DRAWINGS, CONTRACT SPECIFICATIONS AND THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. ALL SIGNS SHALL BE PLACED IN ACCORDANCE WITH THE MARYLAND STANDARD SPECIFICATIONS OR AS DIRECTED BY HOWARD COUNTY.
5. SIGNS LARGER THAN 10 SQUARE FEET IN TOTAL AREA SHALL BE INSTALLED ON TWO 4"x4" WOODEN POSTS.
6. ALL SIGNS NOT IN USE SHALL BE EITHER COVERED WITH AN OPAQUE MATERIAL APPROVED BY THE COUNTY OR REMOVED FROM THE SITE IMMEDIATELY UPON COMPLETION OF USE.
7. SIGN NO. 1 SHALL BE PLACED 14 DAYS PRIOR TO ROAD CLOSING AND REMOVED ONCE ROAD IS CLOSED.
8. THE POSSIBILITY EXISTS THAT ONE OR MORE SIGNS MAY HAVE TO BE MOUNTED ON WOODEN STANDS, OR BARRICADES.
9. THE CONTRACTOR SHALL MEET WITH THE ENGINEER, LOCAL POLICE AND RESIDENTS OF HIGHLAND ROAD, WITH IN THE LIMIT OF WORK, ONE WEEK PRIOR TO SETTING UP THE DETOUR AND ROAD CLOSURE TO ADVISE THEM OF HIS WORK SCHEDULE. THE CONTRACTOR SHALL THEN ADVISE THE RESIDENCES BI-WEEKLY ON THE PROGRESS OF CONSTRUCTION.
10. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL DRIVEWAYS ON HIGHLAND ROAD WITHIN THE WORK ZONE.
11. THE CONTRACTOR SHALL SCHEDULE THE WORK SUCH THAT THE DETOUR SYSTEM SHALL BE IN EFFECT FOR THE SHORTEST TIME PRACTICAL. THE CONTRACTOR SHALL PRESENT A SCHEDULE OF WORK TO THE COUNTY PRIOR TO THE START OF THE WORK. THAT SCHEDULE WILL BE REVIEWED TO MINIMIZE THE DETOUR TIME.

PHASE 1

- 1.1 SET UP SIGNING AND CHANNELIZING DEVICES AS SHOWN ON SHEET 8 AND 9. THE WORK ZONE SHALL BE ENTIRELY CLOSED TO THROUGH TRAFFIC. THE CONTRACTOR MAY USE EITHER HIGHLAND ROAD APPROACH FOR SITE ACCESS.
- 1.2 THE ENTIRE REPLACEMENT THROUGH FINAL STRIPING, SIGNING, TOPSOIL AND SEEDING SHALL BE FINISHED BEFORE THE ROAD IS OPEN TO TRAVEL.
- 1.3 ALL DETOUR AND TEMPORARY TRAFFIC CONTROL SIGNS SHALL BE REMOVED IN ONE WORK DAY, BEGINNING WITH THE SIGNS NEAREST THE WORK SITE.

LEGEND

-  - ROAD CLOSED
-  - RURAL AREA ROADS
-  - POST MOUNTED SIGN
-  - SIGN MOUNTED ON TYPE III LIGHTED BARRICADE
-  - TYPE III LIGHTED BARRICADE



TRAFFIC CONTROL PLAN
NOT TO SCALE

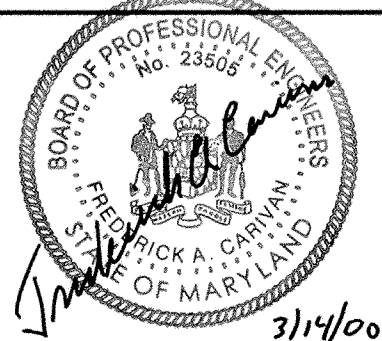
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

James J. Lee 4/27/00
CHIEF, BUREAU OF ENGINEERING

Charles J. Pappas 4/27/00
CHIEF, BUREAU OF HIGHWAYS

Barbara 4/27/00
CHIEF, TRANSPORTATION PROJECTS AND WATERSHED MANAGEMENT DIVISION

A/E GROUP, INC.
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DES: F.A.C.				
DRN: J.N.W.				
CHK: F.A.C.				
DATE: 3/00	BY	NO.	REVISION	DATE

CAPITAL PROJECT NO.
J-4164

600' SCALE MAP NO. _____ DATE: _____

TRAFFIC CONTROL PLAN
**Highland Rd. Improvements
Triadelphia Mill Road to
Ten Oaks Road**

SCALE AS SHOWN
SHEET 8 OF 13

SIGN NO. SIGN SIZE TEXT/BACKGROUND SIGN NO. SIGN SIZE TEXT/BACKGROUND SIGN NO. SIGN SIZE TEXT/BACKGROUND

1

NOTICE

ROAD TO BE CLOSED ON OR ABOUT / /

INFO CALL 313-2214

6" LETTERS BLACK/YELLOW

4" LETTERS 72"x84" BLACK/WHITE

4" LETTERS WHITE/BLUE

4

DETOUR 1/2 MILE

W20-2 36"x36" BLACK/ORANGE

13

ROAD CLOSED 1/2 MILE

W20-3 36"x36" BLACK/ORANGE

2A

NOTICE

HIGHLAND ROAD CLOSED TO TRIADDELPHIA MILL ROAD 1 MILE NORTH

DETOUR AHEAD TO TEN OAKS ROAD

6" LETTERS BLACK/WHITE

4" LETTERS 84"x96" BLACK/ORANGE

4" LETTERS BLACK/YELLOW

5

DETOUR 1500 FT

W20-2 36"x36" BLACK/ORANGE

14

ROAD CLOSED 800 FT

W20-3 36"x36" BLACK/ORANGE

6

DETOUR 800 FT

W20-2 36"x36" BLACK/ORANGE

15A

ROAD CLOSED 1/4 MILE AHEAD LOCAL TRAFFIC ONLY

R11-3A 60"x30" BLACK/WHITE PLACED ON TYPE III BARRICADE W/2 HIGH INTENSITY FLASHERS PER BARRICADE

2B

NOTICE

HIGHLAND ROAD CLOSED AT TEN OAKS ROAD 1 MILE SOUTH

DETOUR AHEAD TO TRIADDELPHIA MILL ROAD

6" LETTERS BLACK/WHITE

4" LETTERS 84"x96" BLACK/ORANGE

4" LETTERS BLACK/YELLOW

7

DETOUR

M4-9 30"x24" BLACK/ORANGE

15B

ROAD CLOSED TO THRU TRAFFIC

R11-4 60"x30" BLACK/WHITE PLACED ON TYPE III BARRICADE W/2 HIGH INTENSITY FLASHERS PER BARRICADE

8

DETOUR

M4-9L 30"x24" BLACK/ORANGE

16A

DETOUR

M4-10L 18"x48" BLACK/ORANGE

9

DETOUR

M4-9R 30"x24" BLACK/ORANGE

16B

DETOUR

M4-10R 18"x48" BLACK/ORANGE

2C

NOTICE

HIGHLAND ROAD CLOSED 1 MILE EAST

DETOUR AHEAD

6" LETTERS BLACK/YELLOW

4" LETTERS 48"x72" BLACK/WHITE

4" LETTERS BLACK/ORANGE

10

DETOUR

M4-9 30"x24" BLACK/ORANGE

11

DETOUR

M4-9 30"x24" BLACK/ORANGE

3

Highland Rd

D3-2 30"x8" BLACK/WHITE

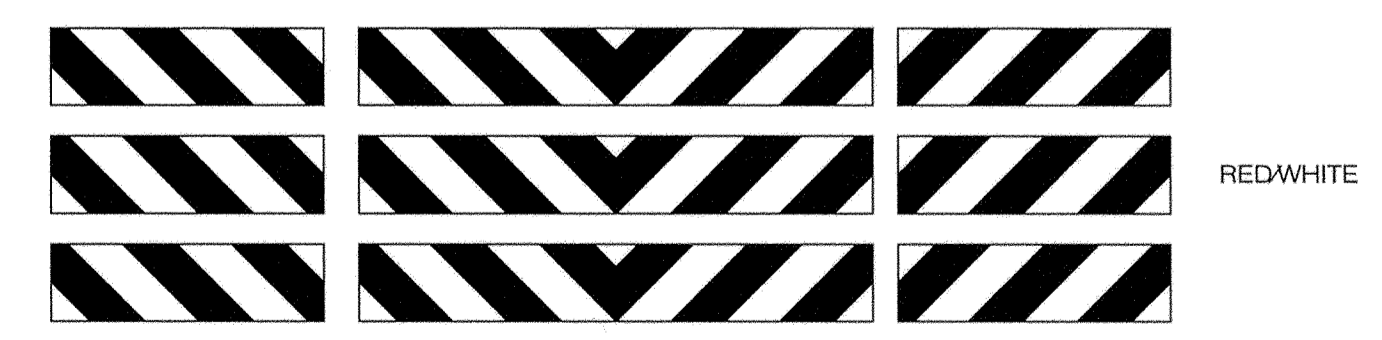
12

END DETOUR

M4-8A 24"x18" BLACK/ORANGE

NOTE: WHEN USING "ROAD NAME" SIGN WITH A DETOUR SIGN, ALWAYS PLACE ROAD NAME PANEL ON TOP.

BARRICADE PANEL DETAIL 'A'



NOTE: PLACE ON 3-TYPE III BARRICADES.

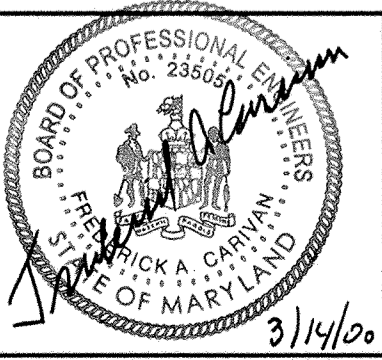
DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

James P. ... 4/27/00
CHIEF, BUREAU OF ENGINEERING

Ed ... 4/27/00
CHIEF, TRANSPORTATION PROJECTS AND WATERSHED MANAGEMENT DIVISION

Michael ... 4-27-00
CHIEF, BUREAU OF HIGHWAYS

A/E GROUP, INC.
ENGINEERS • PLANNERS
181 E. Main Street
Westminster, Maryland 21158
A/E Job No. 96-309-047



DES: F.A.C.				
DRN: J.N.W.				
CHK: F.A.C.				
DATE: 3/00	BY	NO.	REVISION	DATE

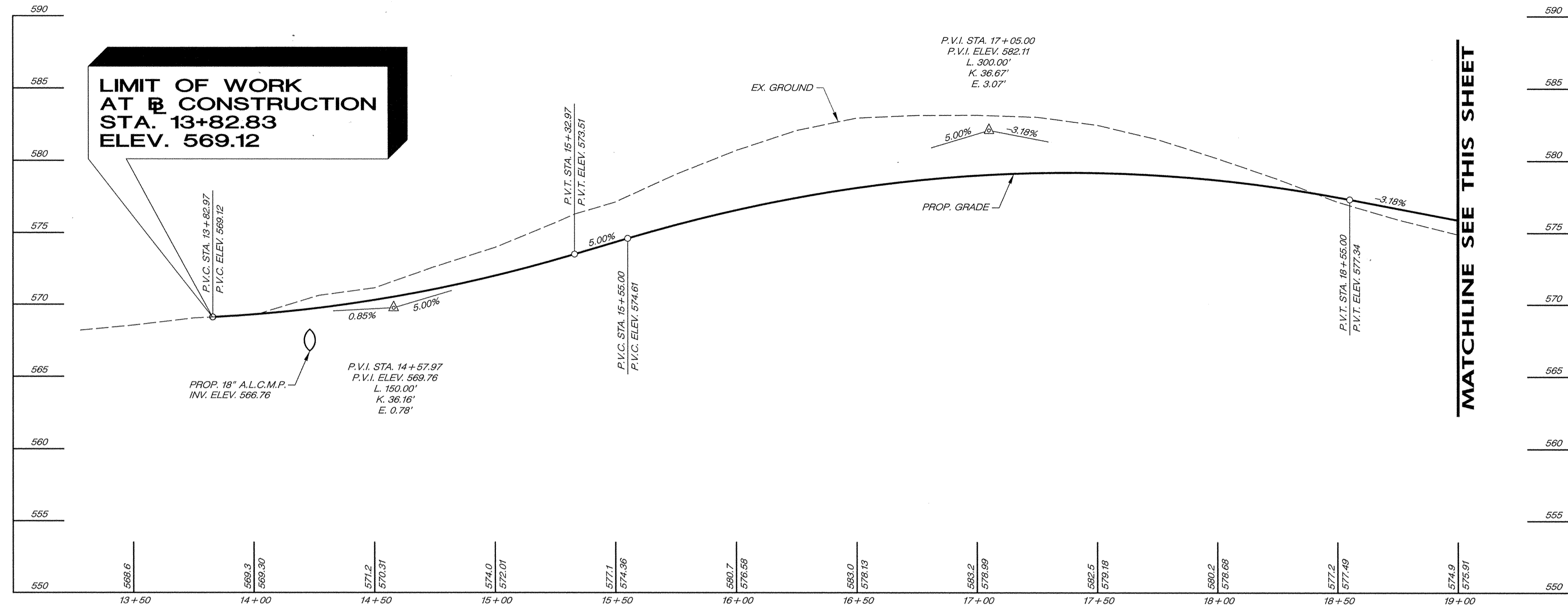
CAPITAL PROJECT NO.
J-4164

600' SCALE MAP NO. _____ DATE: _____

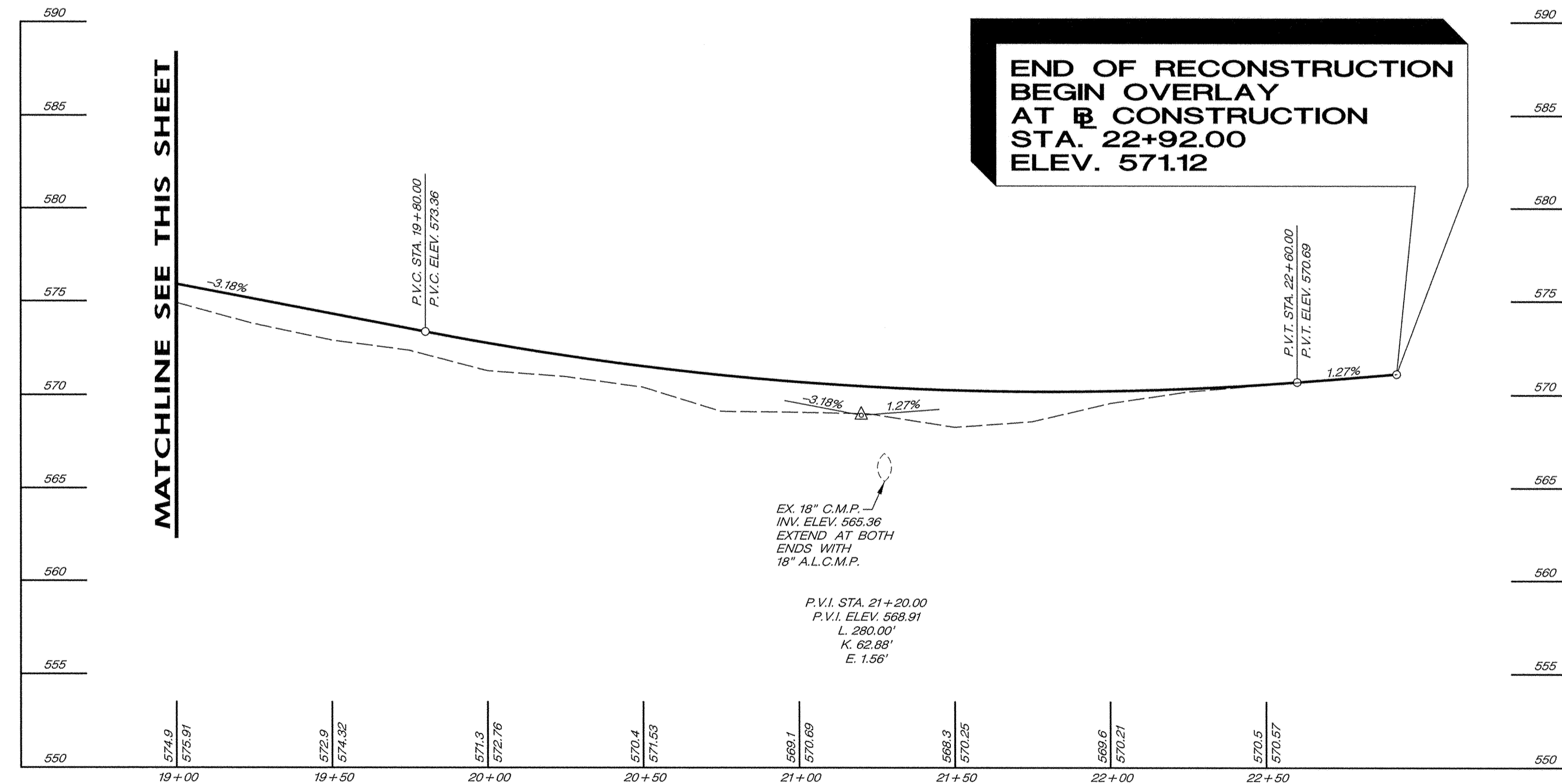
TRAFFIC CONTROL SIGNS
**Highland Rd. Improvements
Triadelphia Mill Road to
Ten Oaks Road**

SCALE AS SHOWN

SHEET 9 OF 13



PROFILE
SCALE: HORZ. 1" = 30'
VERT. 1" = 5'



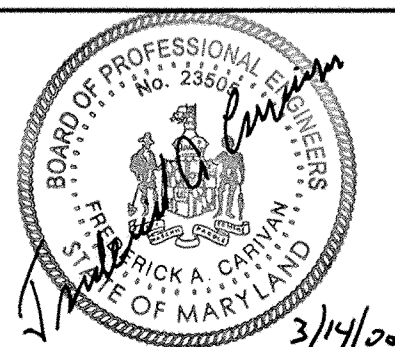
PROFILE
SCALE: HORZ. 1" = 30'
VERT. 1" = 5'

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

[Signature] 4/27/00
DATE: 4/27/00
CHIEF, BUREAU OF ENGINEERING

[Signature] 4-27-00
DATE: 4-27-00
CHIEF, BUREAU OF HIGHWAYS

A/E GROUP, INC.
ENGINEERS • PLANNERS
181 E. Main Street
Westminster, Maryland 21158
A/E Job No. 96-309-047



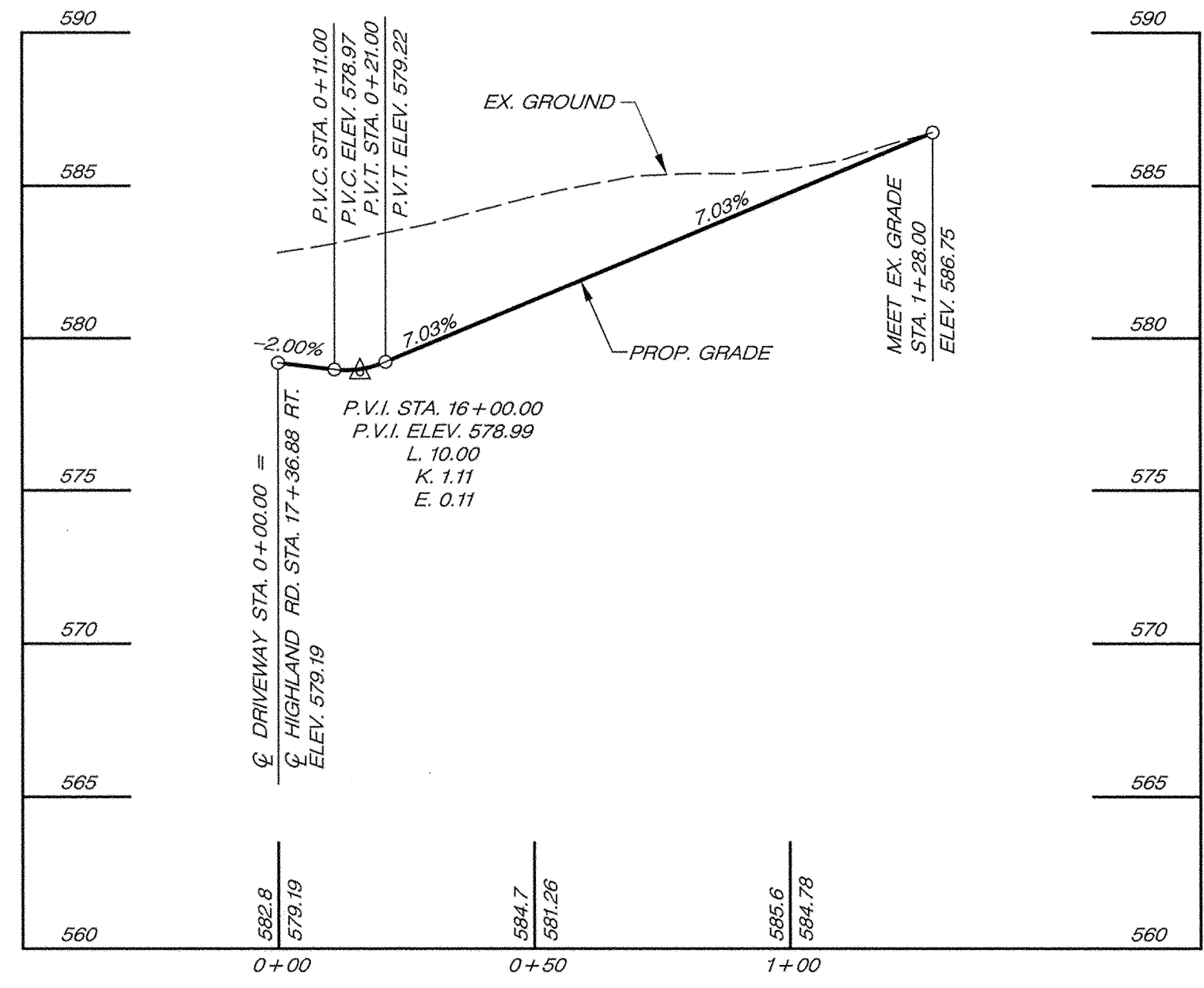
DES:	F.A.C.				
DRN:	J.N.W.				
CHK:	F.A.C.				
DATE:	3/00	BY:	NO.	REVISION	DATE

CAPITAL PROJECT NO.
J-4164

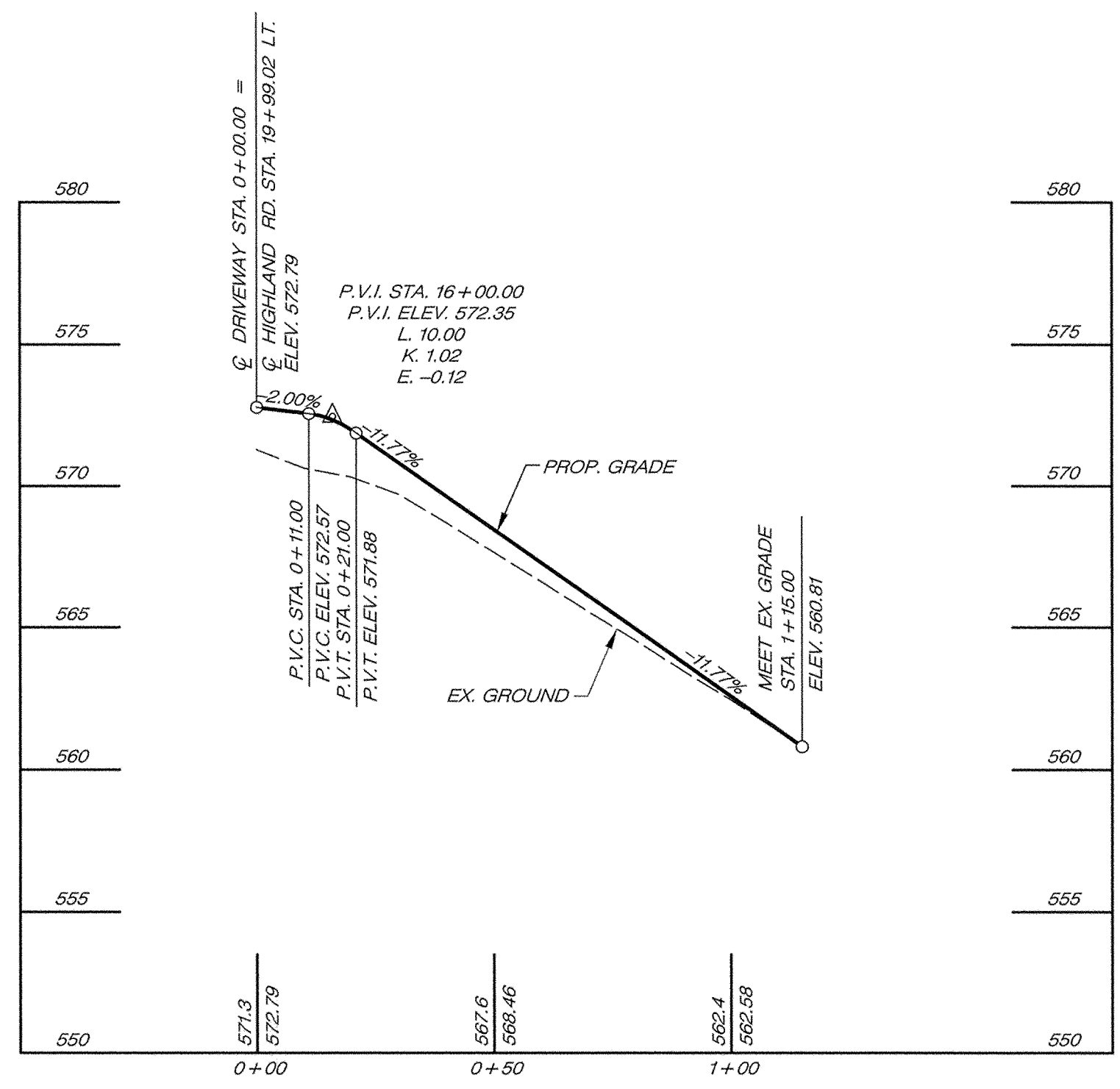
600' SCALE MAP NO. _____ DATE: _____

HIGHLAND ROAD PROFILE
**Highland Rd. Improvements
Triadelphia Mill Road to
Ten Oaks Road**

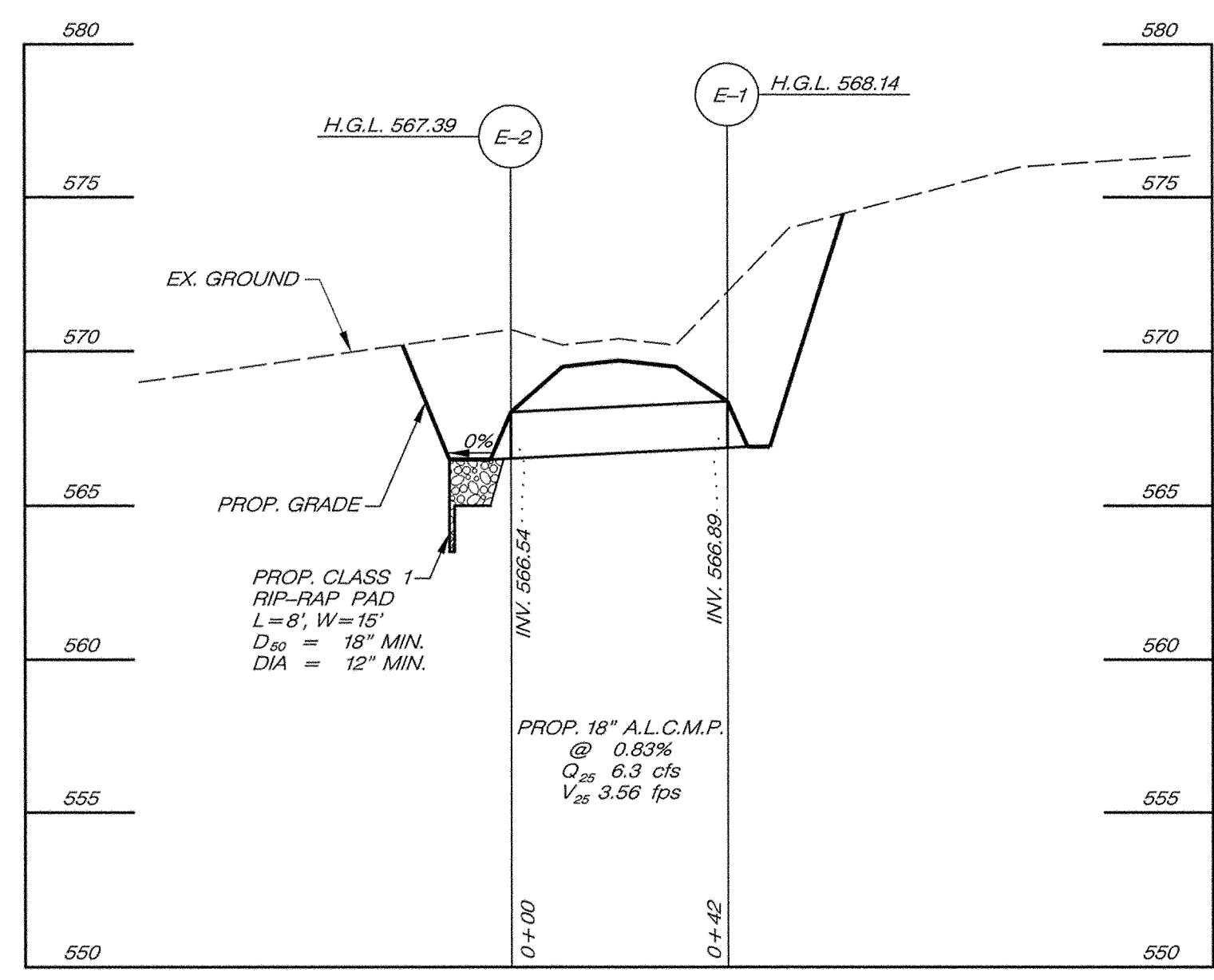
SCALE AS SHOWN
SHEET 10 OF 13



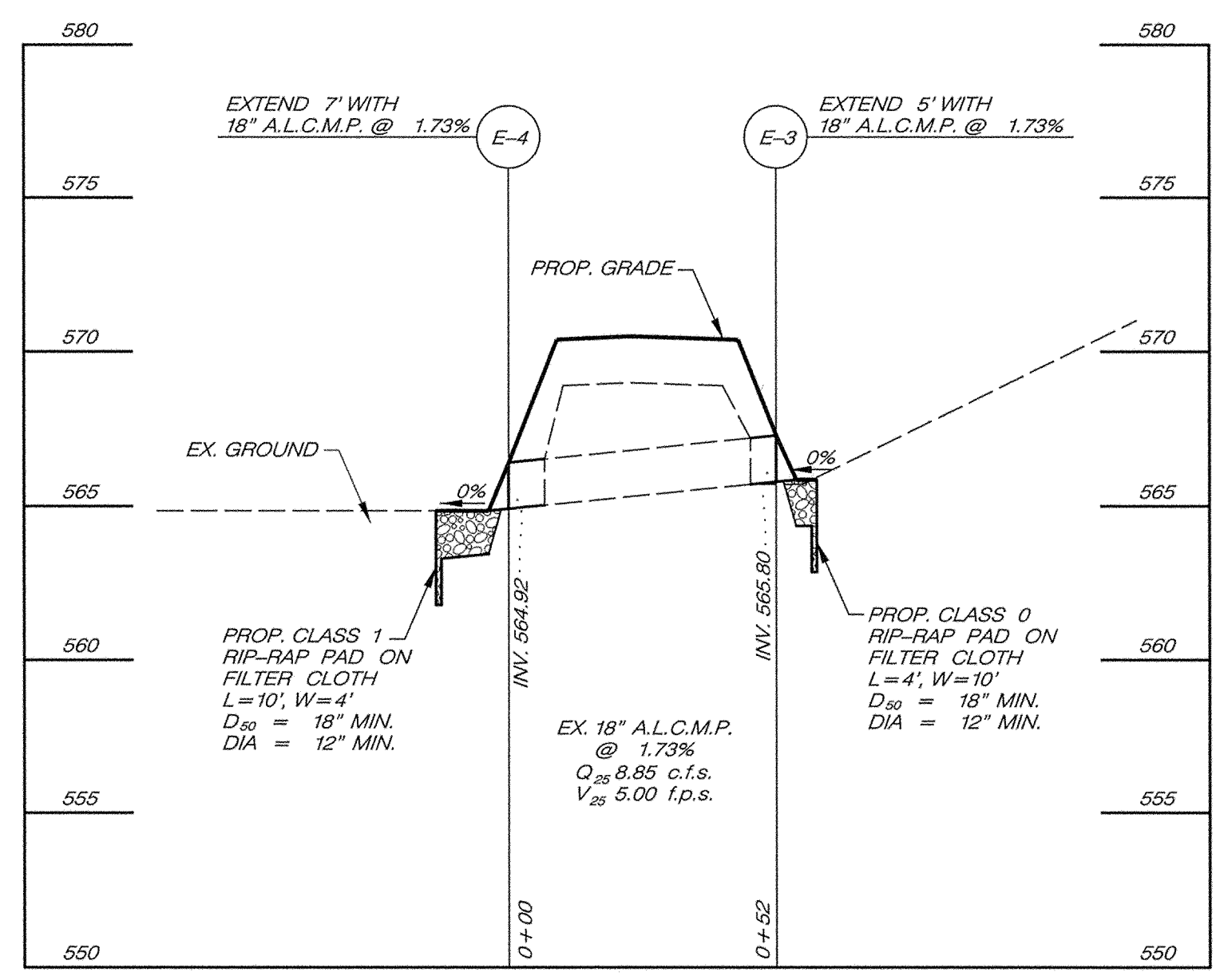
DRIVEWAY PROFILE
SCALE: HORIZ. 1" = 30'
VERT. 1" = 5'



DRIVEWAY PROFILE
SCALE: HORIZ. 1" = 30'
VERT. 1" = 5'



STORM DRAIN PROFILE
SCALE: HORIZ. 1" = 30'
VERT. 1" = 5'



STORM DRAIN EXTENSION PROFILE
SCALE: HORIZ. 1" = 30'
VERT. 1" = 5'

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

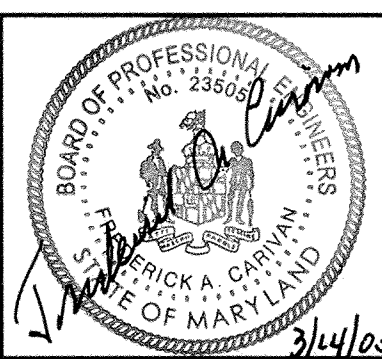
James P. Ullw 4/27/00
DEPARTMENT OF PUBLIC WORKS DATE

Robert J. Johnson 4/27/00
CHIEF, BUREAU OF ENGINEERING DATE

Edward W. Male 4-27-00
CHIEF, BUREAU OF HIGHWAYS DATE

CHIEF, TRANSPORTATION PROJECTS AND WATERSHED MANAGEMENT DIVISION

A/E GROUP, INC.
ENGINEERS • PLANNERS
181 E. Main Street
Westminster, Maryland 21158
A/E Job No. 96-309-047



DES:	F.A.C.			
DRN:	J.N.W.			
CHK:	F.A.C.			
DATE:	3/00	BY:	NO.	REVISION

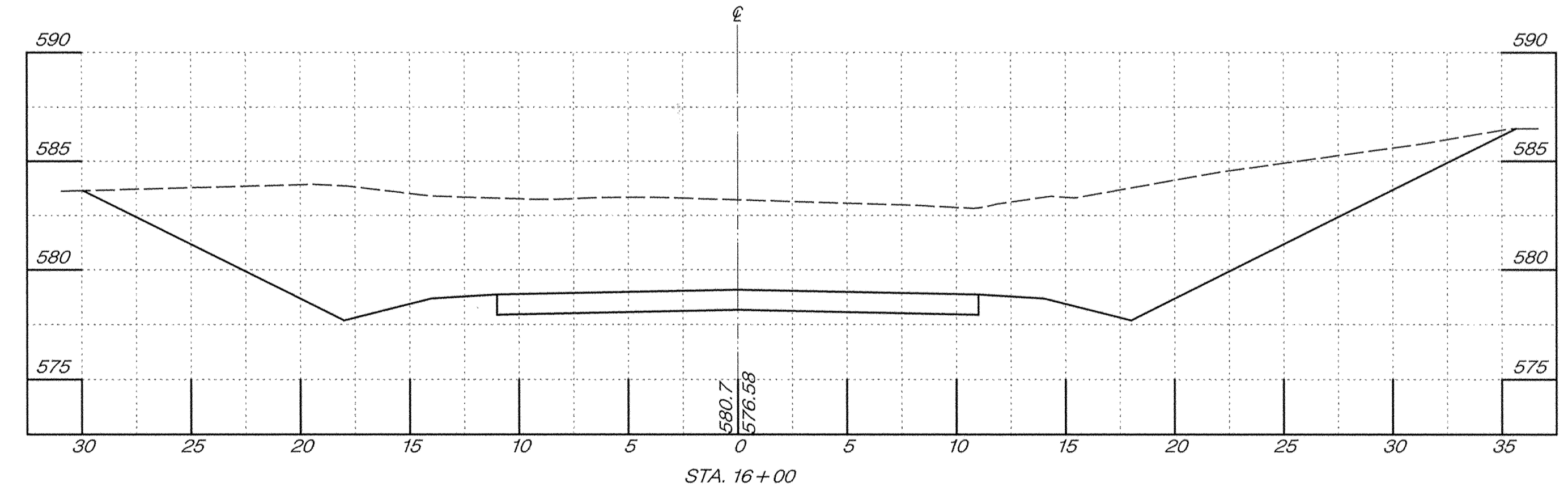
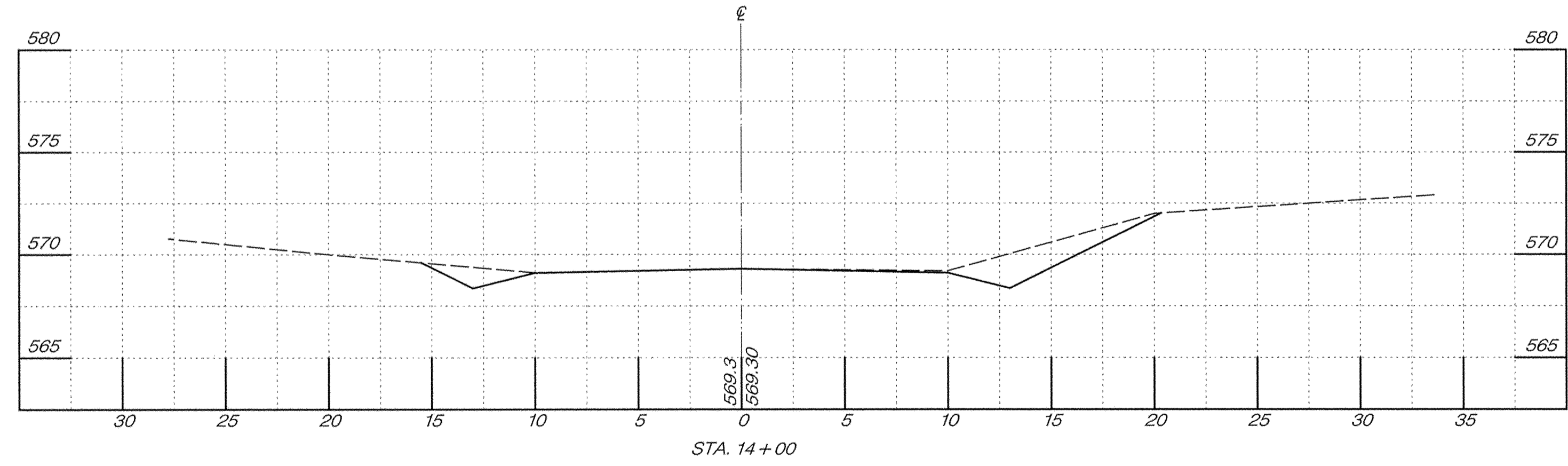
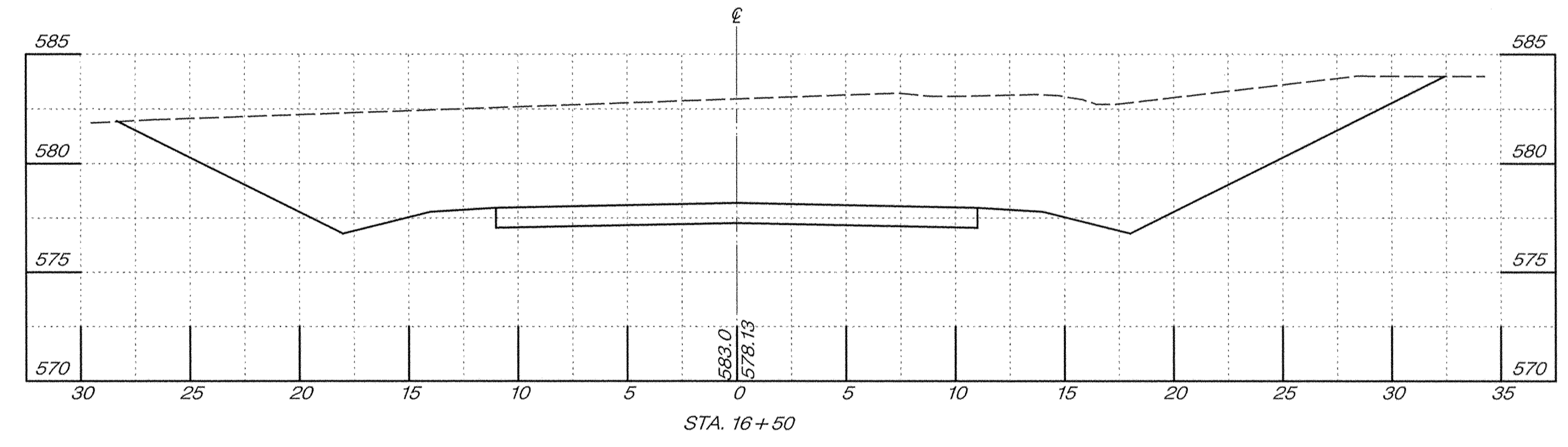
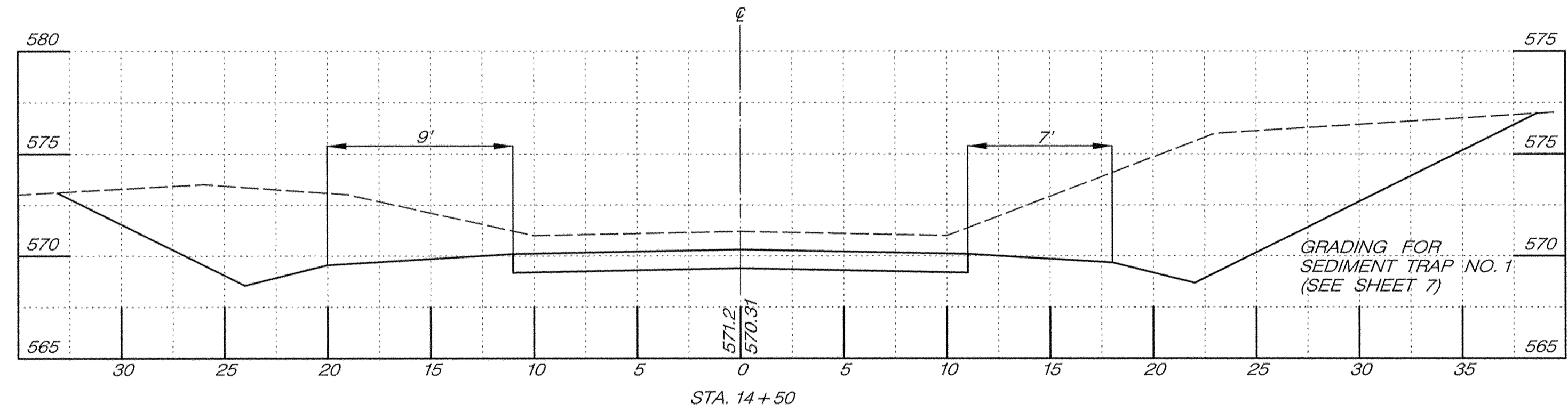
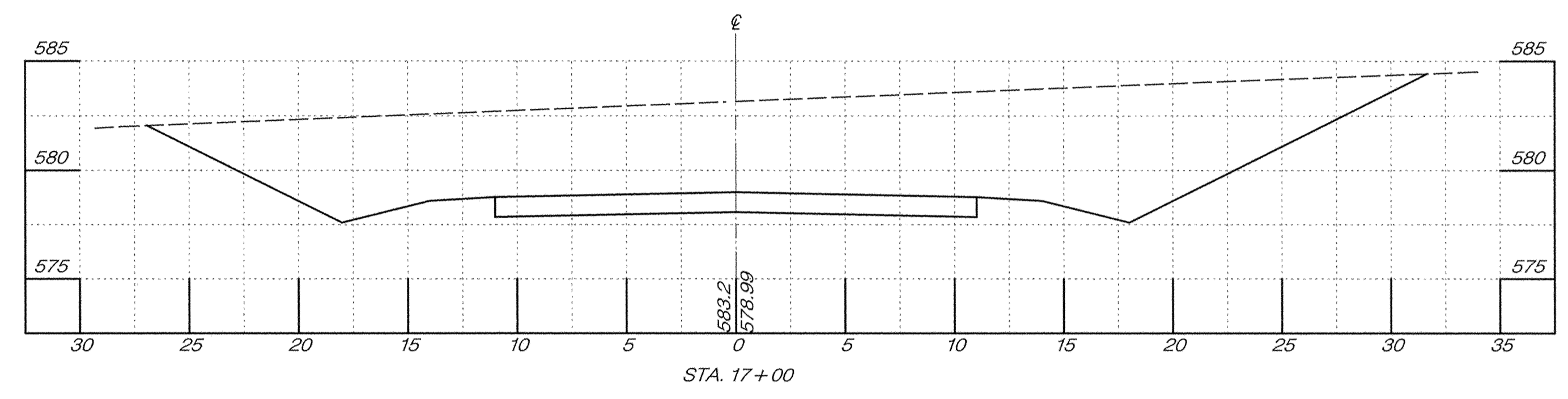
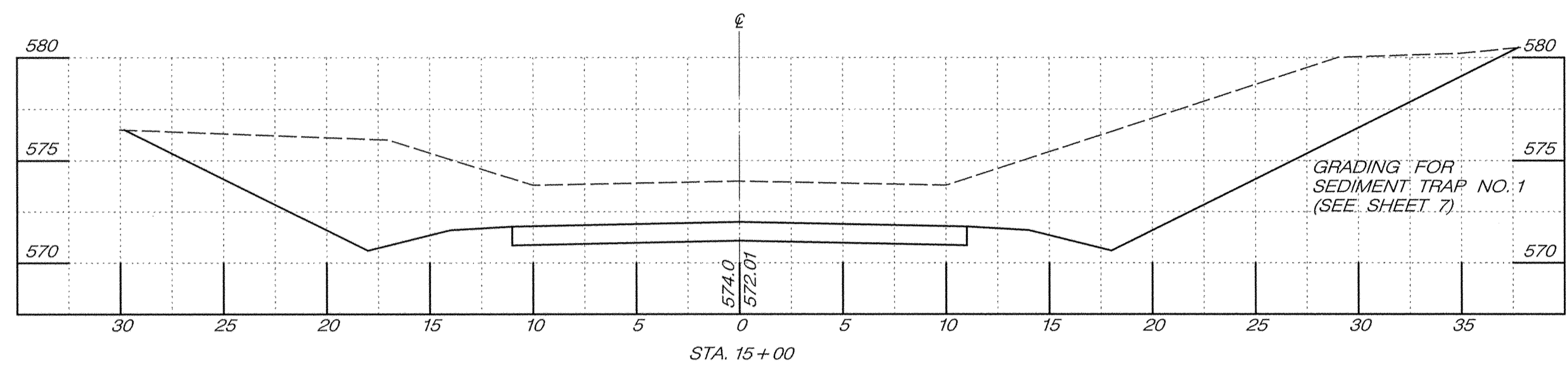
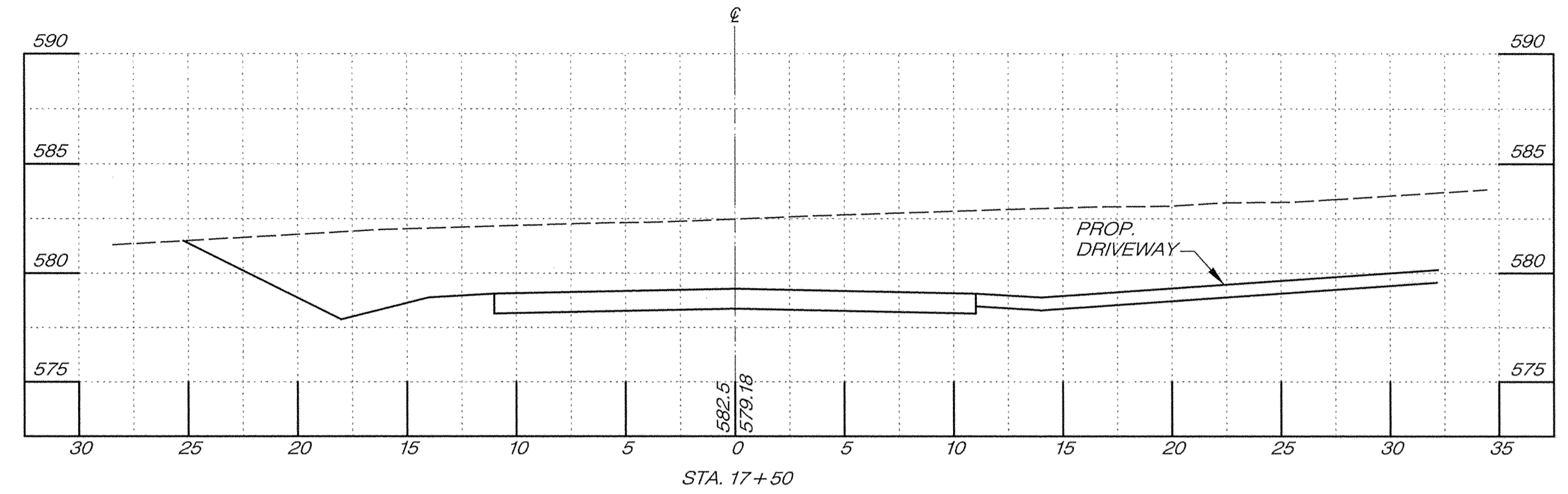
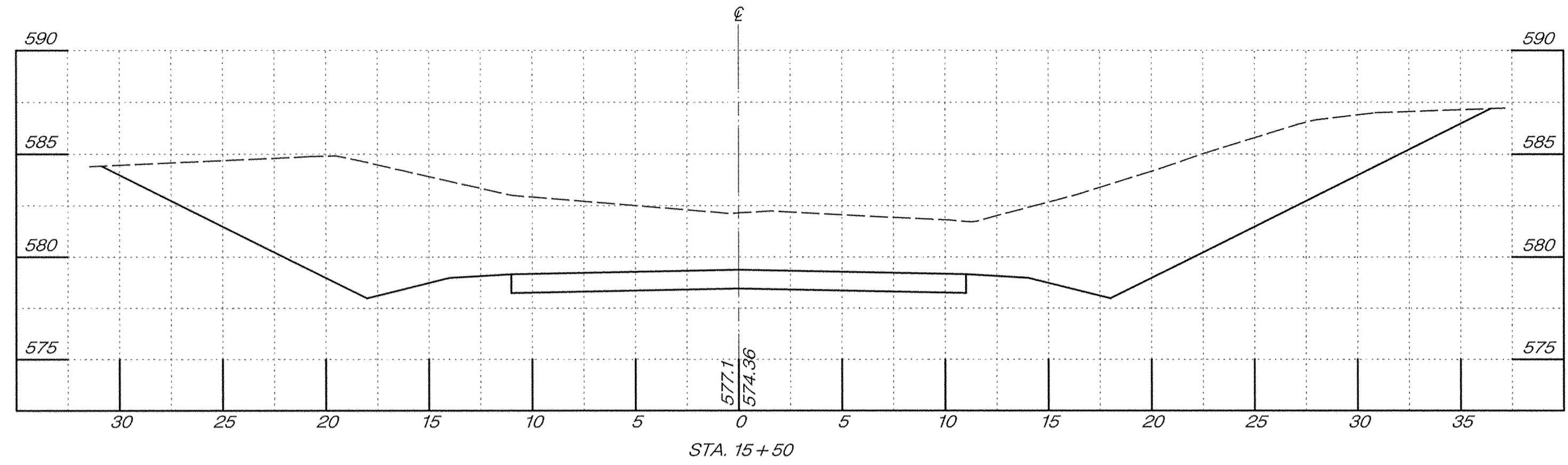
CAPITAL PROJECT NO.
J-4164

600' SCALE MAP NO. _____ DATE: _____

DRIVEWAY AND DRAINAGE PROFILES
Highland Rd. Improvements
Triadelphia Mill Road to
Ten Oaks Road

SCALE AS SHOWN
SHEET 11 OF 13

FILE: k:\96-309-047\station\newdesign\ps11high.dgn
DATE: 13-Mar-00 09:11



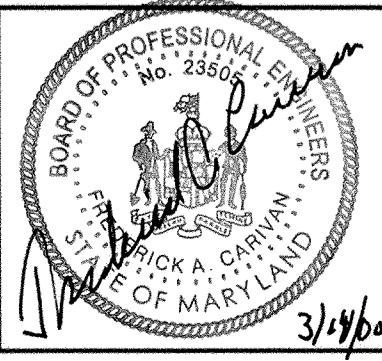
CROSS SECTIONS
 SCALE: HORZ. 1" = 5'
 VERT. 1" = 5'

DEPARTMENT OF PUBLIC WORKS
 HOWARD COUNTY, MARYLAND

Ramon J. Velez 4/27/00
 DATE CHIEF, BUREAU OF ENGINEERING

Robert M. Savelle 4-27-00
 DATE CHIEF, BUREAU OF HIGHWAYS

A/E GROUP, INC.
 ENGINEERS • PLANNERS
 181 E. Main Street
 Westminster, Maryland 21158
 A/E Job No. 96-309-047



DES: F.A.C.			
DRN: A.M.T.			
CHK: F.A.C.			
DATE: 300	BY	NO.	REVISION

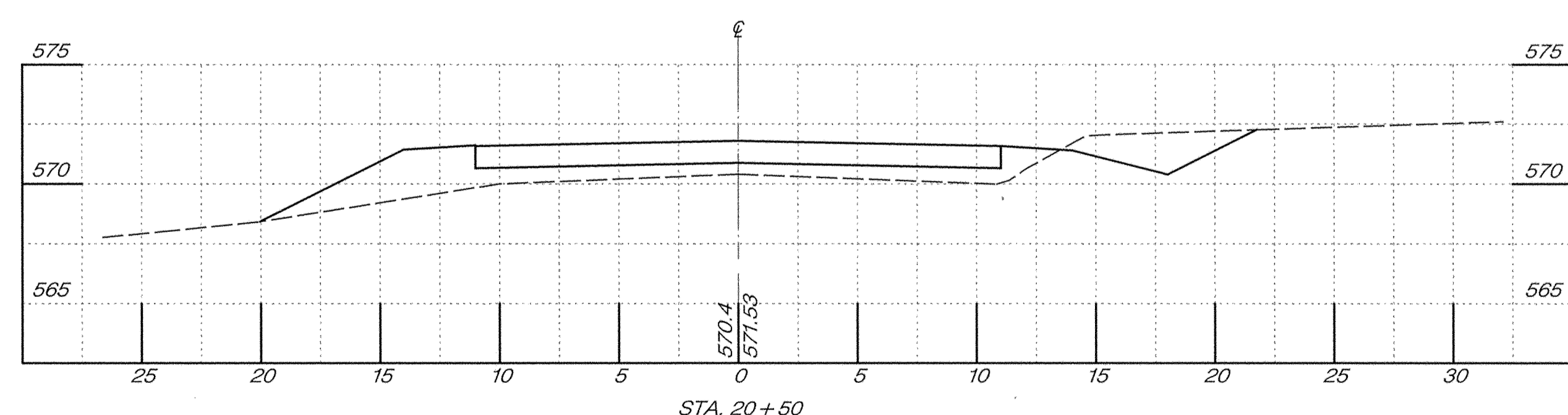
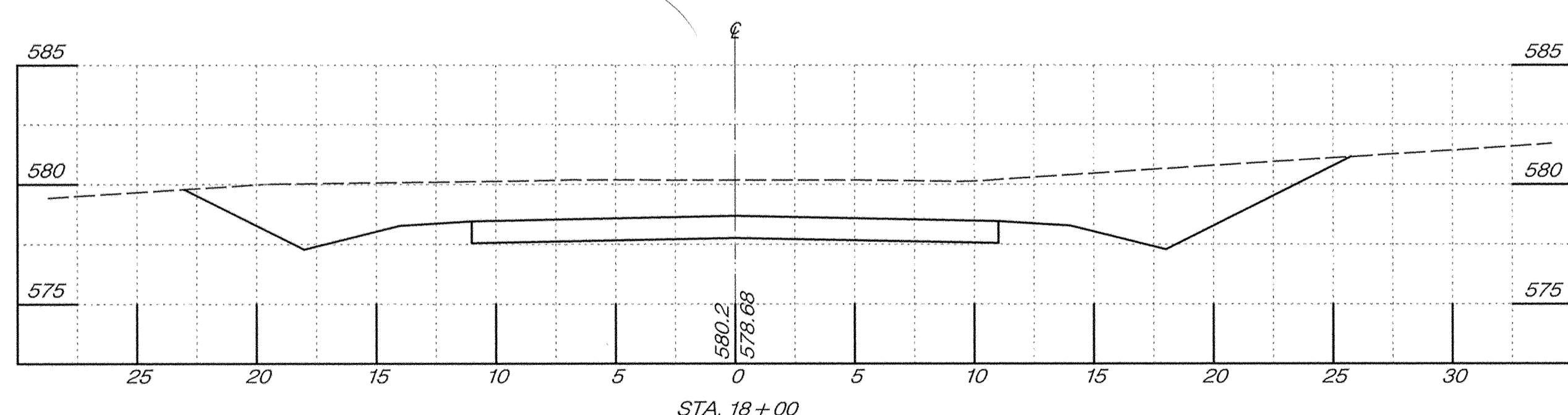
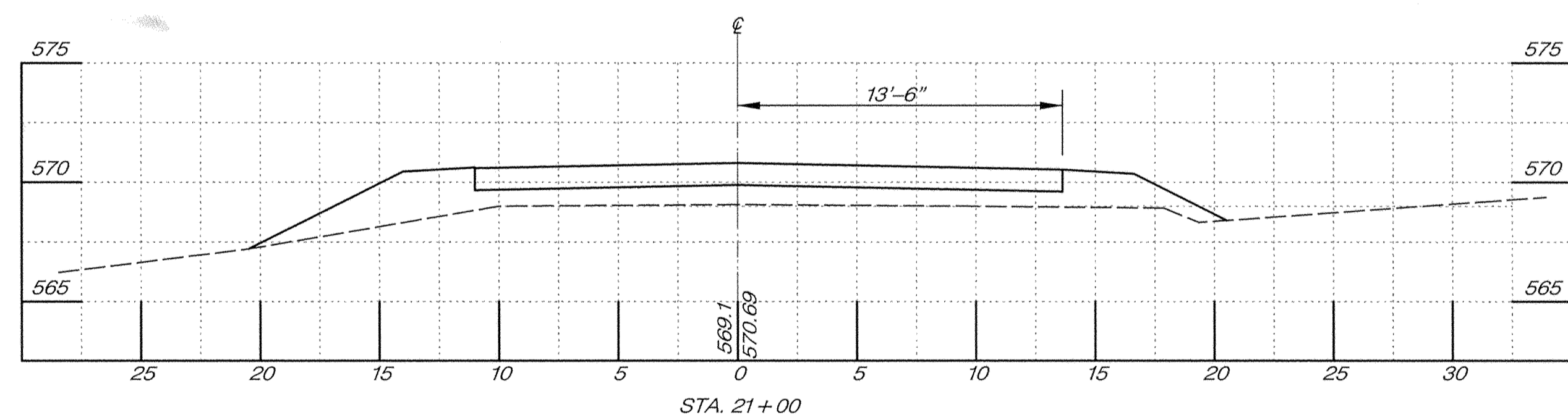
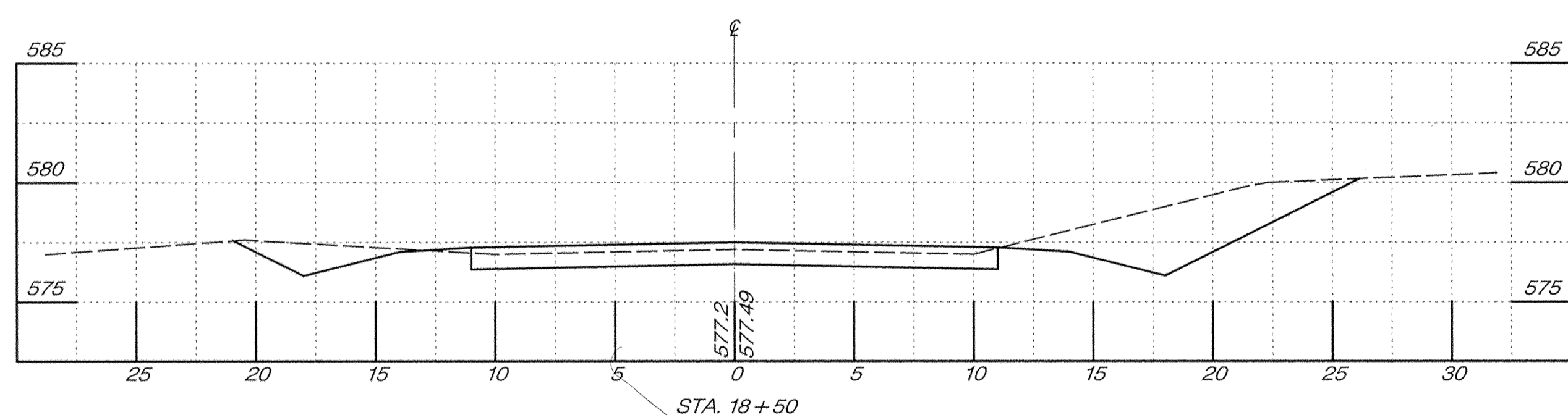
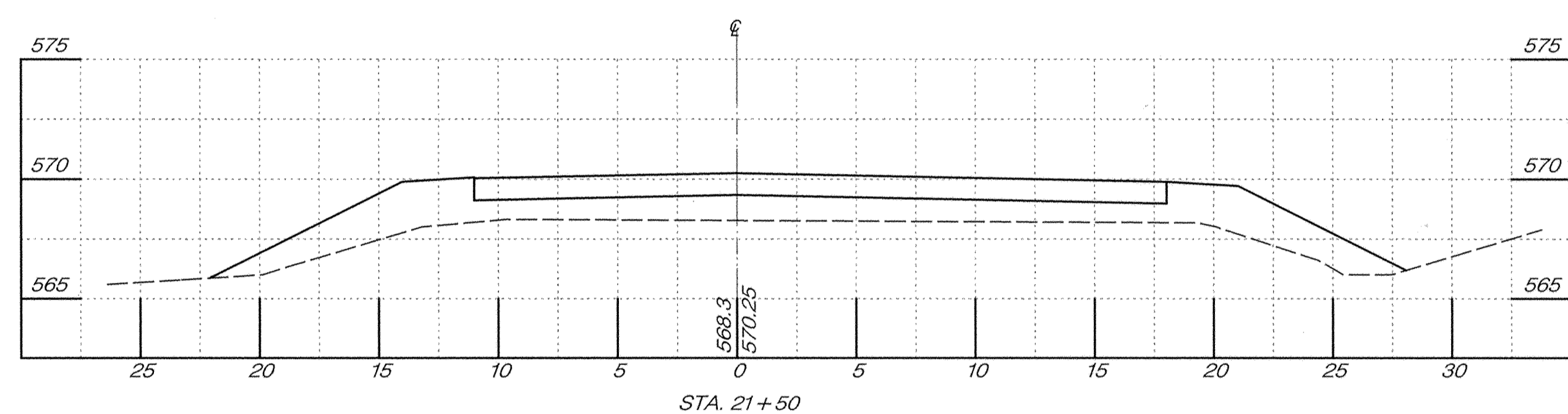
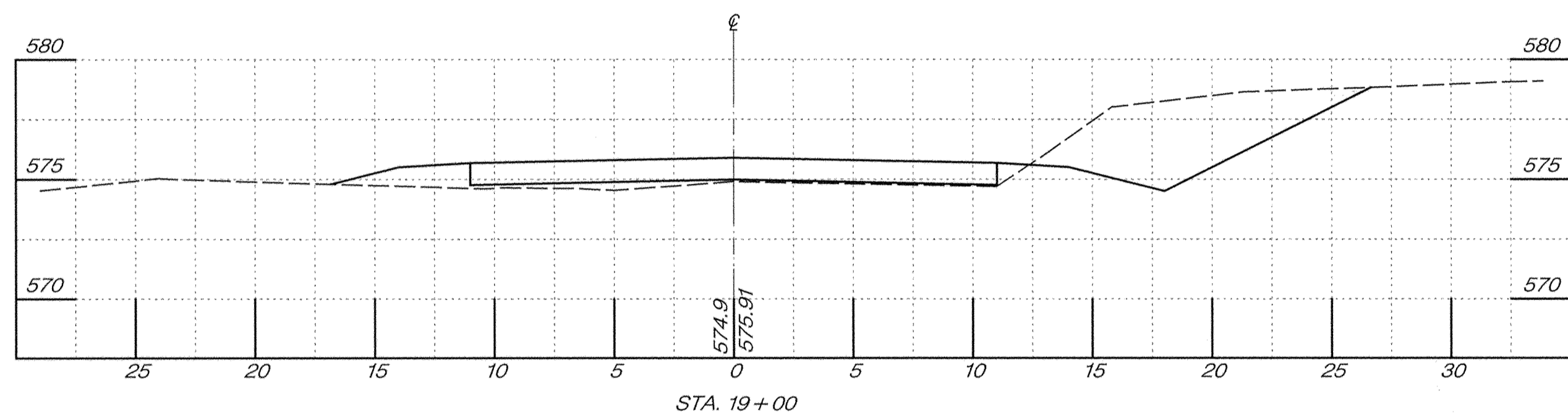
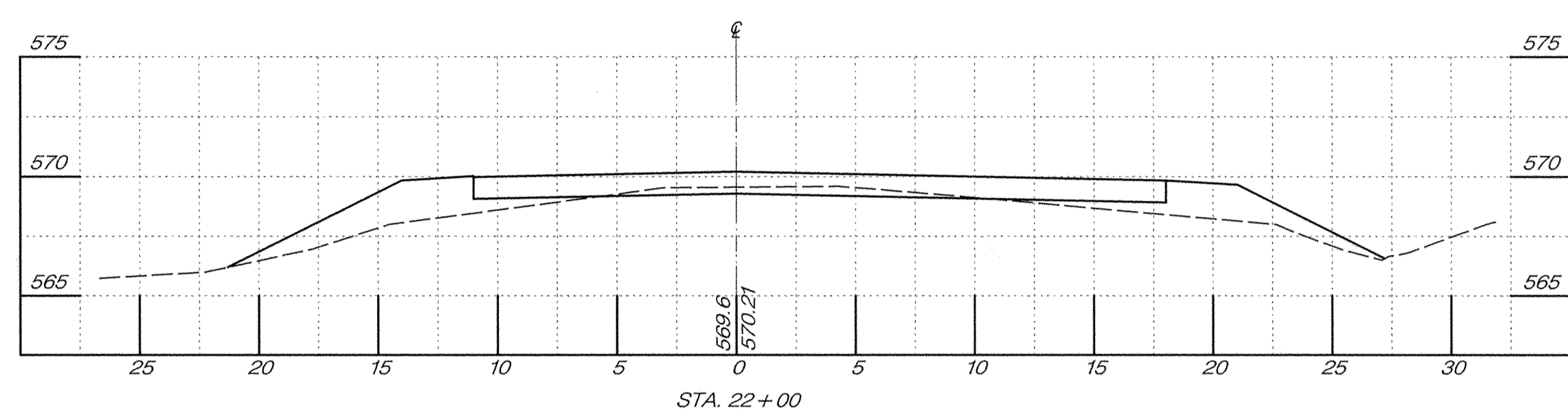
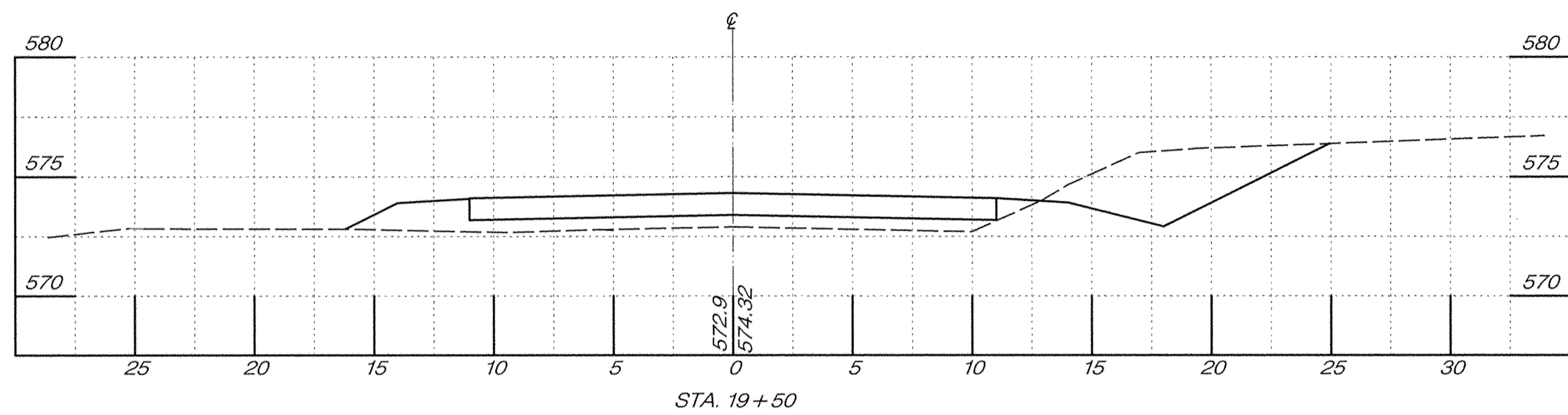
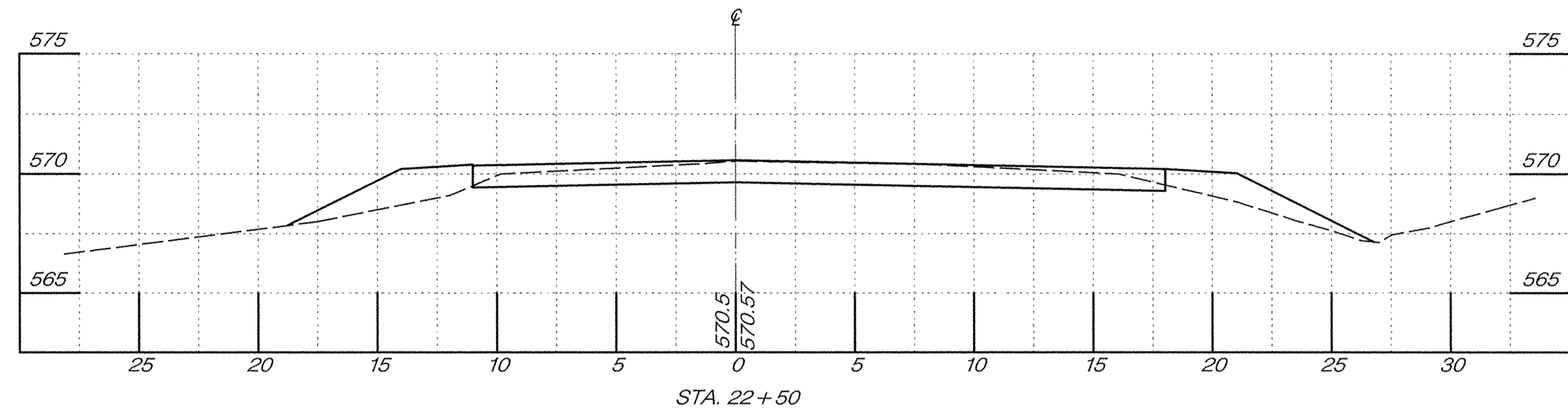
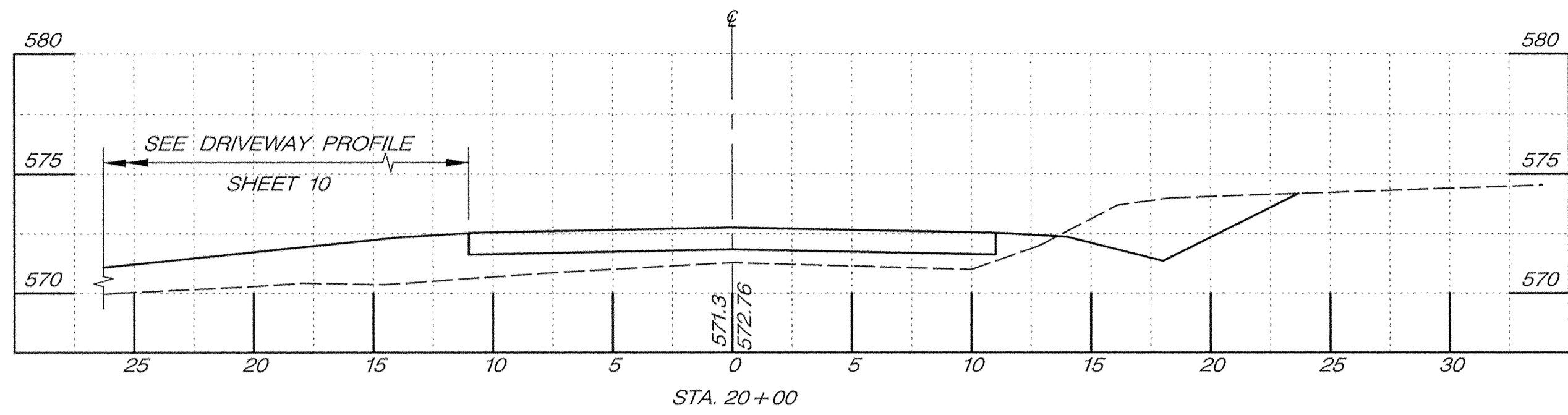
CAPITAL PROJECT NO.
J-4164

600' SCALE MAP NO. _____ DATE: _____

CROSS SECTIONS
Highland Rd. Improvements
Triadelphia Mill Road to
Ten Oaks Road

SCALE AS SHOWN
 SHEET 12 OF 13

FILE: h:\96-309-047\station\newdesign\cs12high.dgn
 DATE: 18-Mar-00 12:33



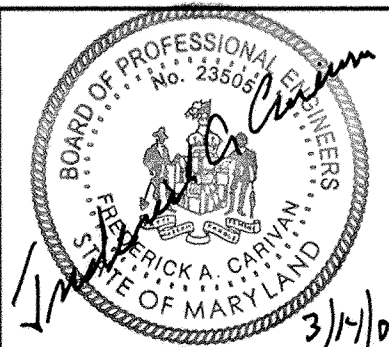
CROSS SECTIONS
SCALE: HORIZ. 1" = 5'
VERT. 1" = 5'

DEPARTMENT OF PUBLIC WORKS
HOWARD COUNTY, MARYLAND

DATE: 4/27/00
CHIEF, BUREAU OF ENGINEERING

DATE: 4/27/00
CHIEF, BUREAU OF HIGHWAYS

A/E GROUP, INC.
ENGINEERS • PLANNERS
181 E. Main Street
Westminster, Maryland 21158
A/E Job No. 96-309-047



DES: F.A.C.				
DRN: A.M.T.				
CHK: F.A.C.				
DATE: 300	BY:	NO.	REVISION	DATE

CAPITAL PROJECT NO.
J-4164

600' SCALE MAP NO. _____ DATE: _____

CROSS SECTIONS
**Highland Rd. Improvements
Triadelphia Mill Road to
Ten Oaks Road**

SCALE AS SHOWN

SHEET 13 OF 13

FILE: h:\96-309-047\station\newdesign\cst12high.dgn
DATE: 19-Mar-00 12:33