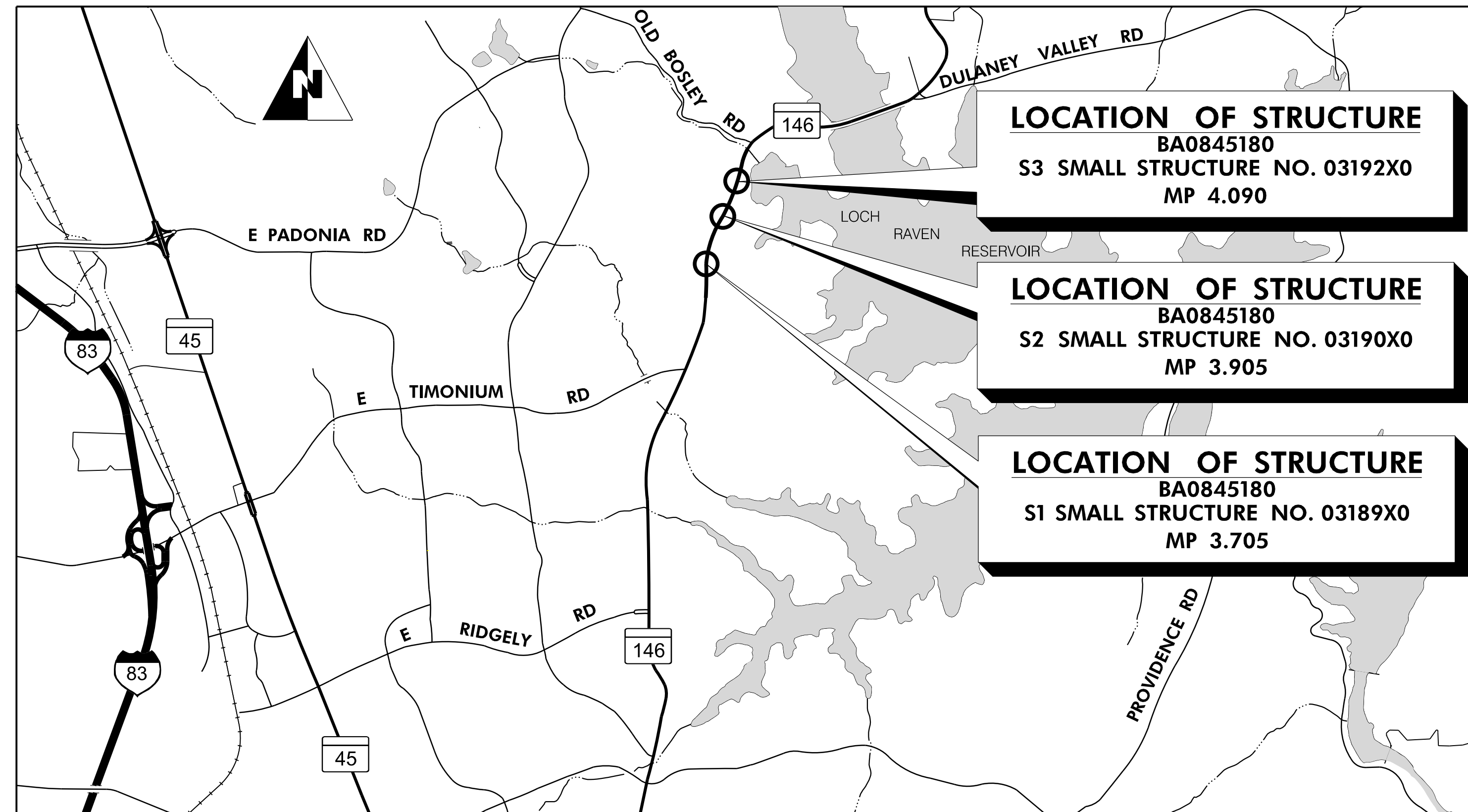


MDOT MARYLAND DEPARTMENT OF TRANSPORTATION

STATE HIGHWAY ADMINISTRATION

S.H.A. CONTRACT NO. – BA0845180 FEDERAL AID PROJECT NO. – PENDING REPLACEMENT OF SMALL STRUCTURES NOS. 03189X0, 03190X0, & 03192X0 ON MD 146 (DULANEY VALLEY ROAD) OVER DRAINAGE DITCH

SEE SHEET 2 FOR SHEET INDEX



LOCATION OF STRUCTURE
BA0845180
S3 SMALL STRUCTURE NO. 03192X0
MP 4.090

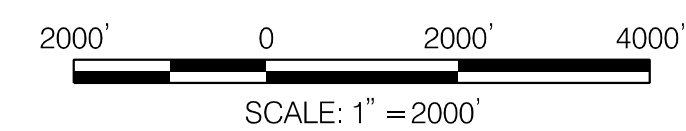
LOCATION OF STRUCTURE
BA0845180
S2 SMALL STRUCTURE NO. 03190X0
MP 3.905

LOCATION OF STRUCTURE
BA0845180
S1 SMALL STRUCTURE NO. 03189X0
MP 3.705

BALTIMORE COUNTY

LENGTH OF PROJECT:
MD 146 = 0.48 MILES

HORIZONTAL DATUM	NAD 83 / 91
VERTICAL DATUM	NAVD 88



GEOMETRIC DESIGN CRITERIA

THIS PROJECT WAS DESIGNED IN ACCORDANCE WITH THE 2011 PUBLICATION OF AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO) "A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS".

STANDARD SPECIFICATIONS BOOK, BOOK OF STANDARDS AND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD)

ALL WORK ON THIS PROJECT SHALL CONFORM TO: THE LATEST APPROVED MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION (MDOT SHA) "STANDARD SPECIFICATIONS FOR CONSTRUCTION AND MATERIALS" REVISIONS THEREOF OR ADDITIONS THERETO, AS INDICATED IN THE PROJECT DESCRIPTION OF THE INVITATION FOR BIDS BOOK; THE SPECIAL PROVISIONS INCLUDED IN THE INVITATION FOR BIDS BOOK; THE ADMINISTRATION'S "BOOK OF STANDARDS FOR HIGHWAYS AND INCIDENTAL STRUCTURES" AND THE LATEST ADOPTED MUTCD.

RIGHT OF WAY

RIGHT OF WAY AND EASEMENT LINES SHOWN ON THESE PLANS ARE FOR ASSISTANCE IN INTERPRETING THE PLANS. THEY ARE NOT OFFICIAL. FOR OFFICIAL FEE RIGHT OF WAY AND EASEMENT INFORMATION, SEE APPROPRIATE RIGHT OF WAY PLATS.

UTILITIES

THE LOCATION OF UTILITIES SHOWN ON THE PLANS ARE FOR INFORMATION AND GUIDANCE ONLY. NO GUARANTEE IS MADE OF THE ACCURACY OF SAID LOCATIONS.

ADA COMPLIANCE

THE DESIGN OF THIS PROJECT HAS INCORPORATED FACILITIES TO ACCOMMODATE PERSONS WITH DISABILITIES IN COMPLIANCE WITH STATE AND FEDERAL REQUIREMENTS.

ENVIRONMENTAL INFORMATION

ALL STORMWATER MANAGEMENT FACILITIES CONSTRUCTED FOR THIS CONTRACT SHALL BE INSPECTED AND MAINTAINED IN ACCORDANCE WITH THE MDOT SHA BEST MANAGEMENT PRACTICES (BMP) INSPECTION AND REMEDIATION PROGRAM.

PRD NO.: 15-PR-0068

STANDARD STABILIZATION NOTE:

FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1), AND SEVEN DAYS (7) AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.

OWNERS / DEVELOPERS CERTIFICATION:

I / WE HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION AND/OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS PLAN, AND THAT ANY RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE A CERTIFICATE OF ATTENDANCE AT A MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) APPROVED TRAINING PROGRAM FOR THE CONTROL OF SEDIMENT AND EROSION BEFORE BEGINNING THE PROJECT. I HEREBY AUTHORIZE THE RIGHT OF ENTRY FOR PERIODIC ON-SITE EVALUATION BY MDE COMPLIANCE INSPECTORS.

EXISTING STRUCTURES PLANS

FOR THE CONVENIENCE AND INFORMATION OF BIDDERS, PRINTS OF PLANS OF EXISTING PERTINENT STRUCTURE(S) ARE INCLUDED WITH THIS CONTRACT. NO RESPONSIBILITY FOR THEIR ACCURACY OR COMPLETENESS IS ASSUMED BY THE MDOT SHA. DIMENSIONS, DETAILS, ETC., AS SHOWN THEREON MAY NOT BE AS BUILT.

STORMWATER AND SEDIMENT CONTROL FINAL APPROVAL	MODIFICATIONS
APPROVED _____ DATE _____	
DIVISION CHIEF, PLAN REVIEW DIVISION	
PRD NO.: _____ EXPIRATION DATE: _____	

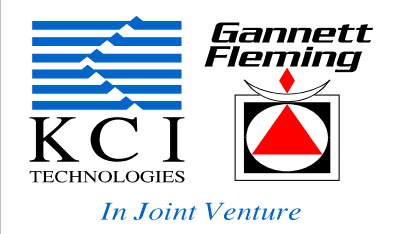
APPROVED _____ DATE _____	
DEPUTY DIRECTOR, STRUCTURES ENGINEERING	
APPROVED _____ DATE _____	
DIRECTOR, OFFICE OF STRUCTURES	
APPROVED _____ DATE _____	
DEPUTY ADMINISTRATOR / CHIEF ENGINEER FOR PLANNING, ENGINEERING, REAL ESTATE AND ENVIRONMENT	

DESIGN DESIGNATION	SURVEY BOOK NUMBERS	RIGHT OF WAY PLAT NUMBERS	REVISIONS NOTE: SEE SHEET NO. 2 FOR LIST OF REVISED SHEET NUMBERS
ROADWAY			
ROADWAY LENGTH (MILES)			
CONTROLS YEARS	2015	2035 (EST)	
AVERAGE DAILY TRAFFIC (A.D.T.)	18,150	22,150	
DESIGN HOURLY VOLUME (D.H.V.)	9.4%	9.4%	
DIRECTIONAL DISTRIBUTION	82%	82%	
% TRUCKS (A.D.T.)	4%	4%	
% TRUCKS (D.H.V.)	4%	4%	
FUNCTIONAL CLASSIFICATION	URBAN OTHER PRINCIPAL ARTERIAL		
CONTROL OF ACCESS			
INTENSITY OF DEVELOPMENT			
TERRAIN	ROLLING		
DESIGN SPEED (M. P. H.)	40 MPH		
ANTICIPATED POSTED SPEED (M. P. H.)	40 MPH		

SHEET NOS. 1 - XX

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND.

MD LICENSE NO. _____
EXPIRATION DATE: _____

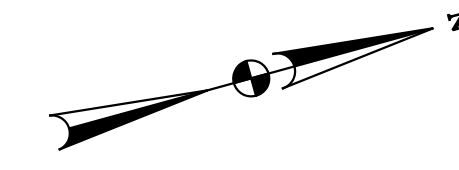
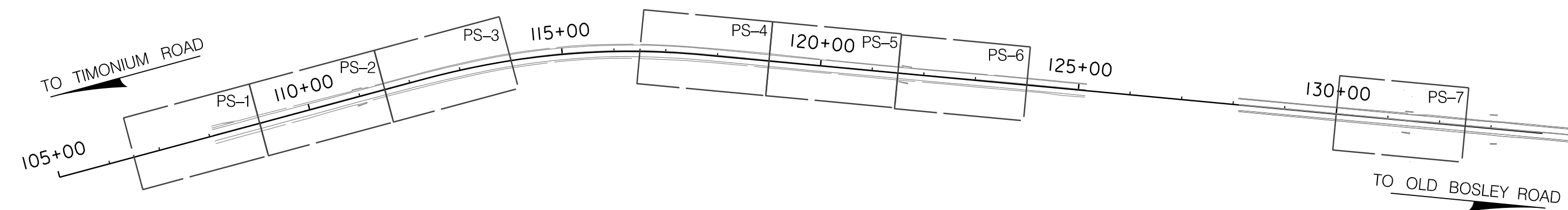


BY: Josue Menendez


INDEX OF SHEETS

SHEET NO.	DRAWING NO.	DESCRIPTION
1	T-1	TITLE SHEET
2	IS-1	INDEX OF SHEETS & PLAN SHEET LAYOUT
3	AB-01	NOTES AND ABBREVIATIONS SHEET
4	PD-1	PAVEMENT DETAILS
5	GS-1	GEOMETRY SHEET
6-12	PS-1 TO PS-7	ROADWAY PLANS
13	MT-1	MOT GENERAL NOTES
14-15	MT-2 TO MT-3	MOT PLAN SHEETS
16	ES-1	EROSION AND SEDIMENT CONTROL GENERAL NOTES
17-19	ES-2 TO ES-4	EROSION AND SEDIMENT CONTROL DETAILS
20-29	ES-5 TO ES-14	EROSION AND SEDIMENT CONTROL PLANS
30	ES-15	EROSION AND SEDIMENT CONTROL NOTES & DETAILS
31	LD-01	PLANTING PLAN, NOTES & DETAIL
32	LD-02	PLANTING PLAN
33	S0-1	STRUCTURE LOCATION MAP
34	S1-1	GENERAL PLAN AND NOTES
35	S1-2	HYDROLOGIC AND HYDRAULIC DATA
36	S1-3	PIPE PROFILE AND DETAILS
37	S1-4	PIPE DETAILS
38	S1-5	UPSTREAM HEADWALL PLAN & ELEVATION
39	S1-6	UPSTREAM HEADWALL SECTIONS
40	S1-7	UPSTREAM HEADWALL REINFORCING DETAILS
41	S1-8	DOWNSTREAM HEADWALL PLAN & ELEVATION
42	S1-9	DOWNSTREAM HEADWALL SECTIONS
43	S1-10	DOWNSTREAM HEADWALL REINFORCING DETAILS
44	S1-11	DOWNSTREAM RIPRAP CHANNEL PROTECTION
45	S1-12	HEADWALL DETAILS
46-48	S1-13 TO S1-15	SEQUENCE OF CONSTRUCTION
49-51	S1-16 TO S1-18	STANDARD DETAILS
52	S1-19	BORINGS AND DRIVE TESTS
53	S2-1	GENERAL PLAN AND NOTES
54	S2-2	HYDROLOGIC AND HYDRAULIC DATA
55	S2-3	PIPE PROFILE AND DETAILS
56	S2-4	PIPE DETAILS
57	S2-5	UPSTREAM HEADWALL PLAN & ELEVATION
58	S2-6	UPSTREAM HEADWALL SECTIONS
59	S2-7	UPSTREAM HEADWALL REINFORCING DETAILS
60	S2-8	DOWNSTREAM HEADWALL PLAN & ELEVATION
61	S2-9	DOWNSTREAM HEADWALL SECTIONS
62	S2-10	DOWNSTREAM HEADWALL REINFORCING DETAILS
63	S2-11	DOWNSTREAM RIPRAP CHANNEL PROTECTION
64	S2-12	HEADWALL DETAILS
65-67	S2-13 TO S2-15	SEQUENCE OF CONSTRUCTION
68-70	S2-16 TO S2-18	STANDARD DETAILS
71	S2-19	BORINGS AND DRIVE TESTS
72	S3-1	GENERAL PLAN AND NOTES
73	S3-2	HYDROLOGIC AND HYDRAULIC DATA
74	S3-3	PIPE PROFILE AND DETAILS
75	S3-4	PIPE DETAILS
76	S3-5	UPSTREAM HEADWALL PLAN & ELEVATION
77	S3-6	UPSTREAM HEADWALL SECTIONS
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79	S3-8	DOWNSTREAM HEADWALL PLAN & ELEVATION
80	S3-9	DOWNSTREAM HEADWALL SECTIONS
81	S3-10	DOWNSTREAM HEADWALL REINFORCING DETAILS
82	S3-11	DOWNSTREAM RIPRAP CHANNEL PROTECTION
83	S3-12	HEADWALL DETAILS
84-86	S3-13 TO S3-15	SEQUENCE OF CONSTRUCTION
87-89	S3-16 TO S3-18	STANDARD DETAILS
90	S3-19	BORING AND DRIVE TESTS

PLAN SHEET LAYOUT



DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical



MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

HIGHWAY DESIGN DIVISION

REPLACEMENT OF SMALL STRUCTURES
NOS. 03189X0, 03190X0, & 03192X0
ON MD 146 (DULANEY VALLEY ROAD)
OVER DRAINAGE DITCH

ROADWAY LEGEND	R / W PLAT NUMBER	CROSS REFERENCE	REVISIONS																
<div style="display: flex; align-items: center;"> <div style="width: 15px; height: 10px; background-color: gray; margin-right: 5px;"></div> FULL DEPTH RECONSTRUCTION </div> <div style="display: flex; align-items: center; margin-top: 5px;"> <div style="width: 15px; height: 10px; background: repeating-linear-gradient(45deg, transparent, transparent 2px, gray 2px, gray 4px); margin-right: 5px;"></div> GRINDING AND OVERLAY </div>		<table border="1"> <thead> <tr> <th>ITEM</th> <th>SHEET NOS.</th> </tr> </thead> <tbody> <tr><td>TYPICAL SHEETS</td><td>4</td></tr> <tr><td>GEOMETRIC LAYOUT SHEETS</td><td>5</td></tr> <tr><td>ROADWAY PLAN SHEETS</td><td>6-12</td></tr> <tr><td>TRAFFIC CONTROL SHEETS</td><td>13-15</td></tr> <tr><td>EROSION & SEDIMENT CONTROL</td><td>16-30</td></tr> <tr><td>LANDSCAPE PLAN SHEETS</td><td>31-32</td></tr> <tr><td>STRUCTURAL SHEETS</td><td>33-90</td></tr> </tbody> </table>	ITEM	SHEET NOS.	TYPICAL SHEETS	4	GEOMETRIC LAYOUT SHEETS	5	ROADWAY PLAN SHEETS	6-12	TRAFFIC CONTROL SHEETS	13-15	EROSION & SEDIMENT CONTROL	16-30	LANDSCAPE PLAN SHEETS	31-32	STRUCTURAL SHEETS	33-90	
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INDEX OF SHEETS & PLAN SHEET LAYOUT			
SCALE 1" = 200'	ADVERTISED DATE	TBD	CONTRACT NO. BA0845180
DESIGNED BY	JDM	COUNTY	BALTIMORE
DRAWN BY	JDM	LOGMILE	
CHECKED BY	JER	HORIZONTAL SCALE	
MDE/PRD	15-PR-0068	VERTICAL SCALE	
DRAWING NO.	IS-1	OF	1
SHEET NO.	2	OF	90



KCI
TECHNOLOGIES



Gannett Fleming

In Joint Venture

BY: Josue Menendez

ABBREVIATIONS


AASHTO American Association of State Highway Transportation Officials	HDWL..... Headwall	RW or RW... Right of Way
ADT.....Average Daily Traffic	HERCP..... Horizontal Elliptical Reinforced Concrete Pipe	RCP Reinforced Concrete Pipe
AHD.....Ahead	HP.....High Point	RCPD Reinforced Concrete Pressure Pipe
APPROX..... Approximate	IN.....Inch	R.Q.D. Rock Quality Designation
BL or BL..... Baseline	I.S.T..... Inlet Sediment Trap	R.M. Rootmat
BK Back /Book	INV..... Invert	S South
BIT..... Bituminous	J.B. Junction Box	SAN. Sanitary Sewer
B.C. Bituminous Concrete	K K Inlet	SB or SB Southbound
B.M. Bench Mark	L Length	S.D. Storm Drain
BOT..... Bottom	LF Linear Feet	S.D.D. Surface Drain Ditch
C.C. Center of Curve	L.L. Liquid Limit	SE Super Elevation
CAP Corrugated Aluminum Pipe	LP Low Point	SF Silt Fence
CAPA Corrugated Aluminum Pipe Arch	L.P. Light Pole	SF Square Feet
CATV..... Cable Television	LT..... Left	SHT. Sheet
C.B.R..... California Bearing Ratio	MAC..... Macadam	SPP Structural Steel Plate Pipe
CL or CL..... Centerline	M.C. Moisture Content	SPPA Structural Steel Plate Pipe Arch
CL Class	MAX. Maximum	S.P.T. Standard Penetration Testing
CLF..... Chainlink Fence	M.D.D..... Maximum Dry Content	SRP Steel Spiral Rib Pipe -
CMP..... Corrugated Metal Pipe	MOD..... Modified	Aluminized Type 2
C.O. Cleanout	MIN..... Minimum	SRPA Steel Spiral Rib Pipe Arch -
COMB..... Combination	N North	Aluminized Type 2
CONC..... Concrete	NB Northbound	SSD Stopping Sight Distance
CONSTR. Construction	NE Northeast	SSF Super Silt Fence
COR..... Corner	N.P. Non-Plastic	STD. Standard
CORR..... Correction	O.C. On Center	STA. Station
CPP-S Corrugated Polyethylene Pipe - Type 'S'	OHE Overhead Electric	SO. Single Opening
CSP Corrugated Steel Pipe - Aluminized Type 2	O.M. Optimum Moisture	SY Square Yards
CSPA Corrugated Steel Pipe Arch -	PAV T..... Pavement	SWM Stormwater Management
Aluminized Type 2	PC Point of Curvature	T Tangent
DC.....Degree of Curve	PCC Point of Compound Curvature	T Telephone
D.H.V..... Design Hourly Volume	P/C Point of Crown	T.C. Top of Cover
D.I. Drop Inlet	PGE Profile Grade Elevation	T.G. Top of Grate
DIA..... Diameter	P.G.E. Profile Ground Elevation	T or TL Traverse Line
D.O..... Double Opening	P.G.L. Profile Grade Line	T.M. Top of Manhole
E East	P.G.L. Profile Ground Line	TRAV..... Traverse
E Electric	P/R Point of Rotation	TS Temporary Swale
E External Distance	P.I. Plasticity Index	T.S. Top of Slab
EA Each	PI Point of Intersection	T.S. Topsoil
EB Eastbound	POC Point On Curve	TYP Typical
ELEV Elevation	POT Point On Tangent	U.D. Under Drain
ES End Section	PPWP Polyvinyl Chloride Profile Wall Pipe	U.G. Underground
EX or EXIST. Existing	PROP Proposed	U.P. Utility Pole
FT Feet	PRC Point of Reverse Curve	USDA United States Department of Agriculture
F or FL Flowline	PT Point	VCL Vertical Clearance
F.B.D. Flat Bottom Ditch	PT Point of Tangency	V.C.L. Vertical Curve Length
F.H. Fire Hydrant	PVC Point of Vertical Curve	W Water
FWD. Forward	PVC Polyvinyl Chloride	W West
G Gas	PVI Point of Vertical Intersection	WB Westbound
G.V. Gas Valve	PVRC Point of Vertical Reverse Curve	WB Wetland Buffer
H.B. Handbox	PVT Point of Vertical Tangency	W.M. Water Meter
HDPE High Density Polyethylene	R Radius	W.S. Wrapped Steel
	R.F. Rock Fragments	WUS Waters of the United States
	RT Right	W.V. Water Valve

CONVENTIONAL SIGNS

PROPOSED MEDIAN BARRIER		PROPOSED PIPE / CULVERT	
ELECTRICAL HAND BOX - SIGNALS		EXISTING PIPE / CULVERT	
FLOW LINE		EXISTING DROP INLET	
STATE, COUNTY OR CITY LINES		UTILITY POLE	
PROPOSED TRAFFIC BARRIER		WETLAND	
EXISTING TRAFFIC BARRIER		WETLAND BUFFER	
PROPOSED FENCE LINE		WATERS OF THE U.S.	
EXISTING FENCE LINE		HEDGE / TREE LINE	
RIGHT OF WAY LINE		BUSH / TREE	
EXISTING ROADWAY		CONIFEROUS TREE	
RAILROAD		GROUND ELEVATION	
BASE LINE OR SURVEY LINE		GRADE ELEVATION	
FIRE HYDRANT			
HISTORIC BOUNDARY			
WETLAND BOUNDARY			

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

HIGHWAY DESIGN DIVISION





REPLACEMENT OF SMALL STRUCTURES
NOS. 03189X0, 03190X0, & 03192X0
ON MD 146 (DULANEY VALLEY ROAD)
OVER DRAINAGE DITCH

STATE HIGHWAY
ADMINISTRATION

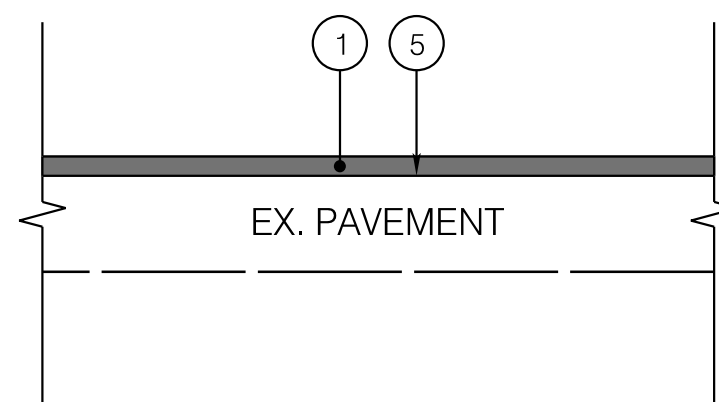
CROSS REFERENCE	REVISIONS
ITEM	SHEET NOS.
TYPICAL SHEETS.....	4
GEOMETRIC LAYOUT SHEETS	5
ROADWAY PLAN SHEETS	6-12
TRAFFIC CONTROL SHEETS	13-15
EROSION & SEDIMENT CONTROL	16-30
LANDSCAPE PLAN SHEETS	31-32
STRUCTURAL SHEETS	33-90

NOTES AND ABBREVIATIONS	
SCALE _____ NTS _____	ADVERTISED DATE _____ TBD _____ CONTRACT NO. _____ BA0845180 _____
DESIGNED BY _____ JDM _____	COUNTY _____ BALTIMORE _____
DRAWN BY _____ JDM _____	LOGMILE _____
CHECKED BY _____ JER _____	HORIZONTAL SCALE _____
MDE/PRD _____ 15-PR-0068 _____	VERTICAL SCALE _____
DRAWING NO. AB-1 OF 1	SHEET NO. 4 OF 90

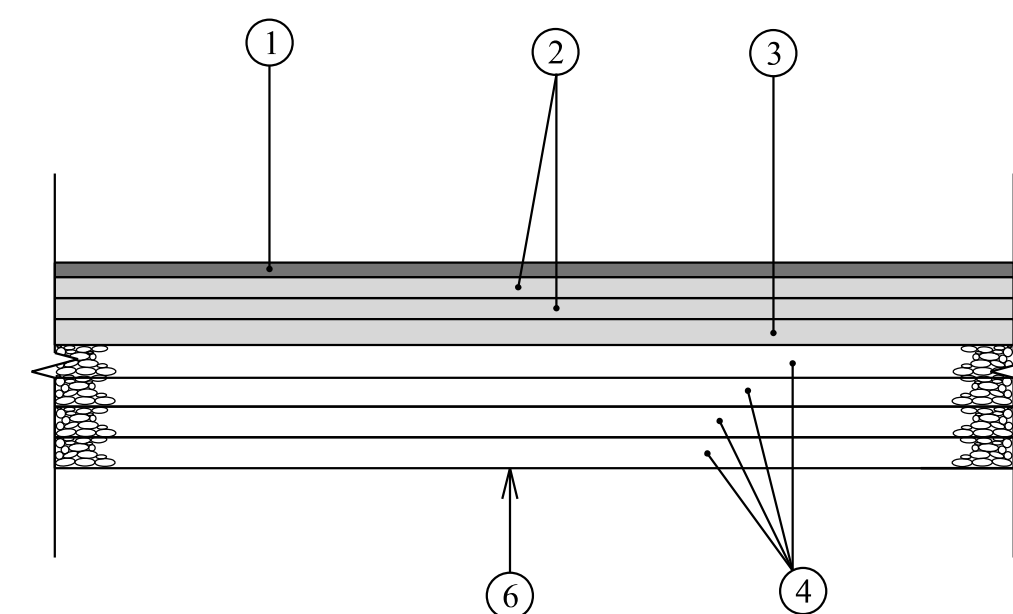
BY: Josue Menendez

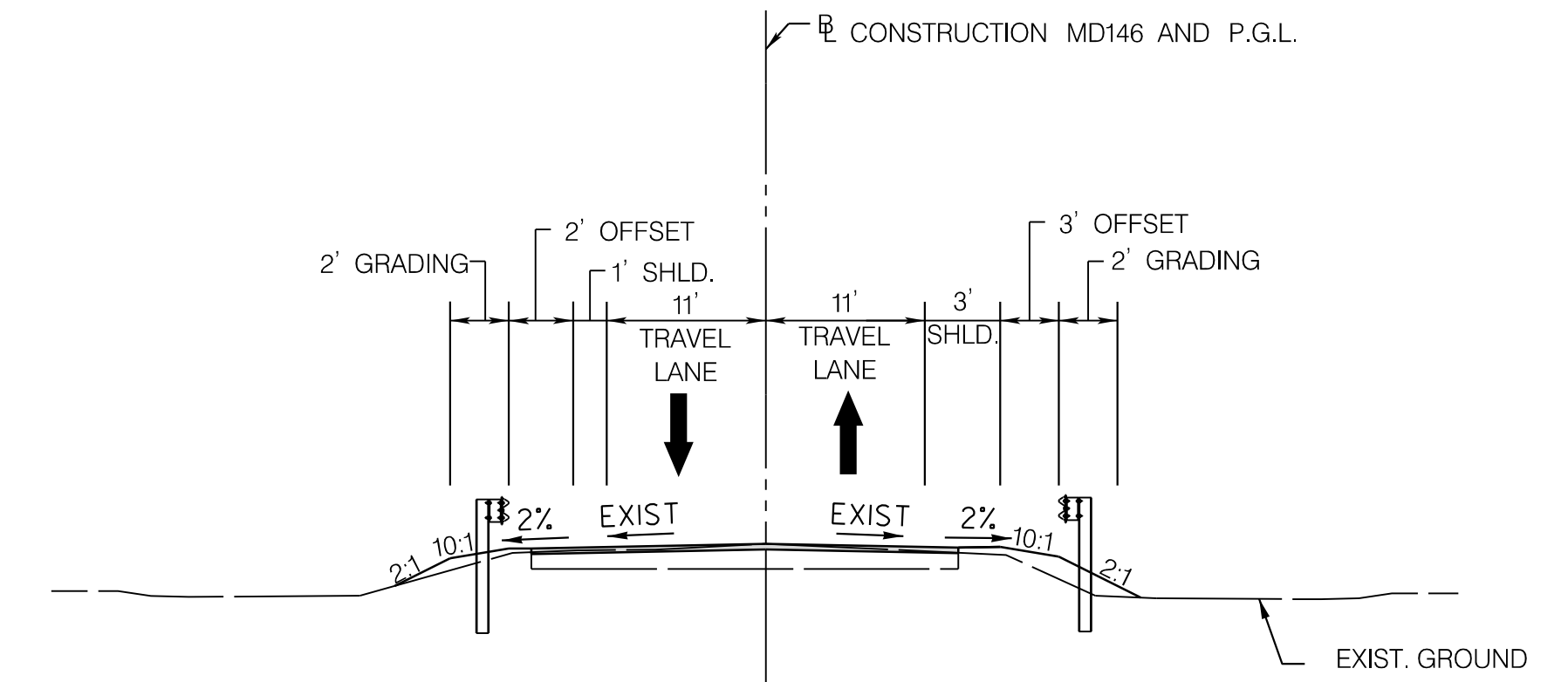
In Joint Venture



MILL AND OVERLAY
N.T.S.



FULL DEPTH
N.T.S.



MD 146
TYPICAL SECTION
STA. 10+05.00 TO STA. 12+05.00
STA. 20+15.00 TO STA. 22+15.00
STA. 29+00.00 TO STA. 31+00.00
NOT TO SCALE

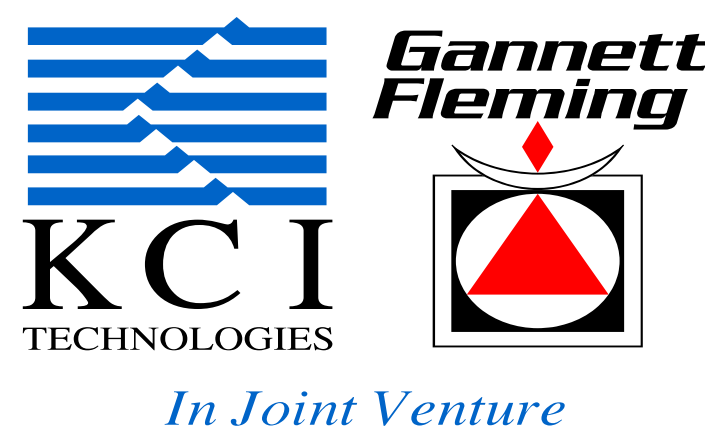
PAVEMENT LEGEND

- ① 2" SUPERPAVE ASPHALT MIX 12.5 MM FOR SURFACE, PG 64S-22, LEVEL 2
- ② 3.0" SUPERPAVE ASPHALT MIX 19.0 MM FOR BASE PG 64S-22, LEVEL 2
- ③ 4.0" SUPERPAVE ASPHALT MIX 19.0 MM FOR BASE PG 64S-22, LEVEL 2
- ④ 6.0" GRADED AGGREGATE BASE
- ⑤ TOP OF EXISTING PAVEMENT AFTER 2" FINE MILLING
- ⑥ TOP OF SUBGRADE AND LIMIT OF CLASS 1 EXCAVATION (SEE NOTE 1)

PAVEMENT NOTES

1. IN AREAS WHERE THE EXISTING PAVEMENT IS BEING REMOVED, THE LIMIT OF CLASS 1 EXCAVATION SHALL BE AT THE BOTTOM OF THE BOUND MATERIALS IN THE EXISTING PAVEMENT OR AT THE TOP OF SUBGRADE, WHICHEVER IS LOWER.
2. WHEREVER WEDGE /LEVELING IS NECESSARY TO MAKE GRADE OR CROSS SLOPE CORRECTIONS, USE THE FOLLOWING:
FOR A MAXIMUM OF 2" LIFT THICKNESS:
SUPERPAVE ASPHALT MIX 9.5 mm FOR WEDGE /LEVEL, PG 64S-22, LEVEL 2 (1" MINIMUM AND 2" MAXIMUM LIFT THICKNESS).
3. BASED ON INFORMATION FROM CONSTRUCTION HISTORY THE PAVEMENT STRUCTURE WITHIN THE PROJECT LIMIT CONSISTS OF:
MD 146 TRAVEL LANES:
10" ASPHALT OVER 6" TO 8" JOINTED PLAIN CONCRETE PAVEMENT.
SHOULDER & STRUCTURE APPROACH:
7" TO 12" ASPHALT OVER 10" TO 15" CRUSHED STONE.
4. PATCHING: REFER TO STANDARD NO.578.03 AND NO.578.03-01 FOR PARTIAL-DEPTH PATCHING.
USE THE FOLLOWING FOR PARTIAL-DEPTH PATCHING:
SUPERPAVE ASPHALT MIX 19.0 mm FOR PARTIAL-DEPTH PATCHING, PG64S-22, LEVEL 2. PATCH 6" OR TO THE TOP OF CONCRETE WHICHEVER OCCURS FIRST.

BY: Josue Menendez



PLOTTED: Thursday, November 07, 2019 AT 02:45 PM

HIGHWAY DESIGN DIVISION



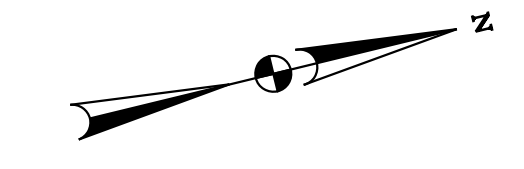
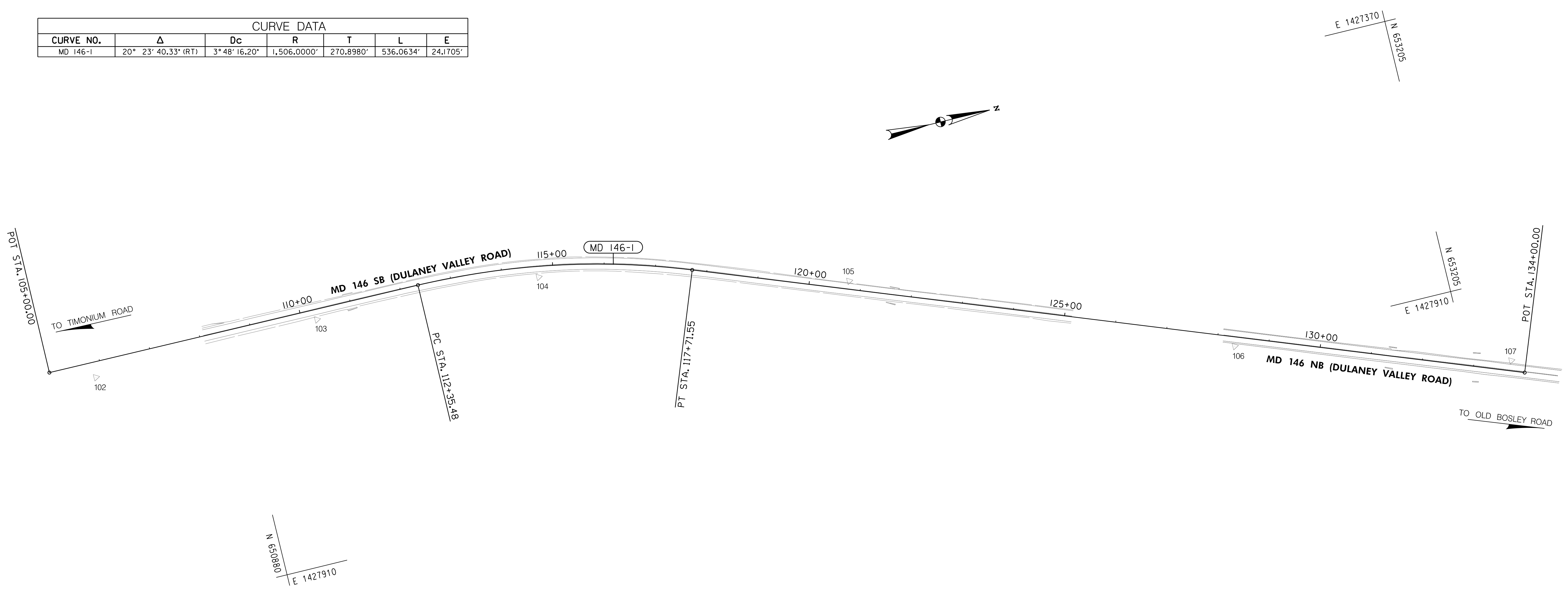
REPLACEMENT OF SMALL STRUCTURES
NOS. 03189X0, 03190X0, & 03192X0
ON MD 146 (DULANEY VALLEY ROAD)
OVER DRAINAGE DITCH

REVISIONS		PAVEMENT DETAILS	
SCALE	NTS	ADVERTISED DATE	TBD
DESIGNED BY	TTC	COUNTY	BALTIMORE
DRAWN BY	TTC	LOGMILE	
CHECKED BY		HORIZONTAL SCALE	
MDE/PRD	15-PR-0068	VERTICAL SCALE	
DRAWING NO.	PD-1	OF	1
		SHEET NO.	4 OF 90

BASELINE CONTROL COORDINATES					
LOCATION	STATION	NORTH	EAST	REMARKS	
MD 146	POT	105+00.00	650,524.5623	1,427,419.3419	
	PC	112+35.48	651,260.0338	1,427,423.4874	
	PI MD 146-1	115+06.38	651,530.9276	1,427,425.0142	
	PT	117+71.55	651,784.3083	1,427,520.8472	
	POT	134+00.00	653,307.4596	1,428,096.9291	


TRAVERSE POINTS			
POINT NO.	NORTH	EAST	ELEVATION
102	650,610.1848	1,427,449.6552	317.9800
103	651,053.6089	1,427,442.1492	283.9400
104	651,491.4175	1,427,463.7785	289.6700
105	652,075.4251	1,427,613.8136	277.0000
106	652,772.7751	1,427,914.0332	281.4000
107	653,287.8605	1,428,068.0483	273.5600

CURVE DATA						
CURVE NO.	Δ	Dc	R	T	L	E
MD 146-1	20° 23' 40.33" (RT)	3° 48' 16.20"	1,506.0000'	270.8980'	536.0634'	24.1705'



DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

HIGHWAY DESIGN DIVISION



REPLACEMENT OF SMALL STRUCTURES
NOS. 03189X0, 03190X0, & 03192X0
ON MD 146 (DULANEY VALLEY ROAD)
OVER DRAINAGE DITCH

STATE HIGHWAY
ADMINISTRATION

R / W PLAT NUMBER	CROSS REFERENCE	REVISIONS
	ITEM SHEET NOS.	
	TYPICAL SHEETS..... 4	
	GEOMETRIC LAYOUT SHEETS..... 5	
	ROADWAY PLAN SHEETS..... 6-12	
	TRAFFIC CONTROL SHEETS..... 13-15	
	EROSION & SEDIMENT CONTROL..... 16-30	
	LANDSCAPE PLAN SHEETS..... 31-32	
	STRUCTURAL SHEETS..... 33-90	

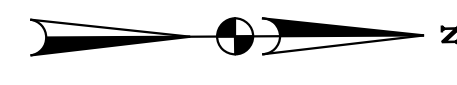
GEOMETRY SHEET	
SCALE 1" = 100'	ADVERTISED DATE TBD CONTRACT NO. BA0845180
DESIGNED BY JDM	COUNTY BALTIMORE
DRAWN BY JDM	LOGMILE
CHECKED BY JER	HORIZONTAL SCALE
MDE/PRD 15-PR-0068	VERTICAL SCALE
DRAWING NO. GS-1 OF 1	SHEET NO. 5 OF 90

BY: Josue Menendez

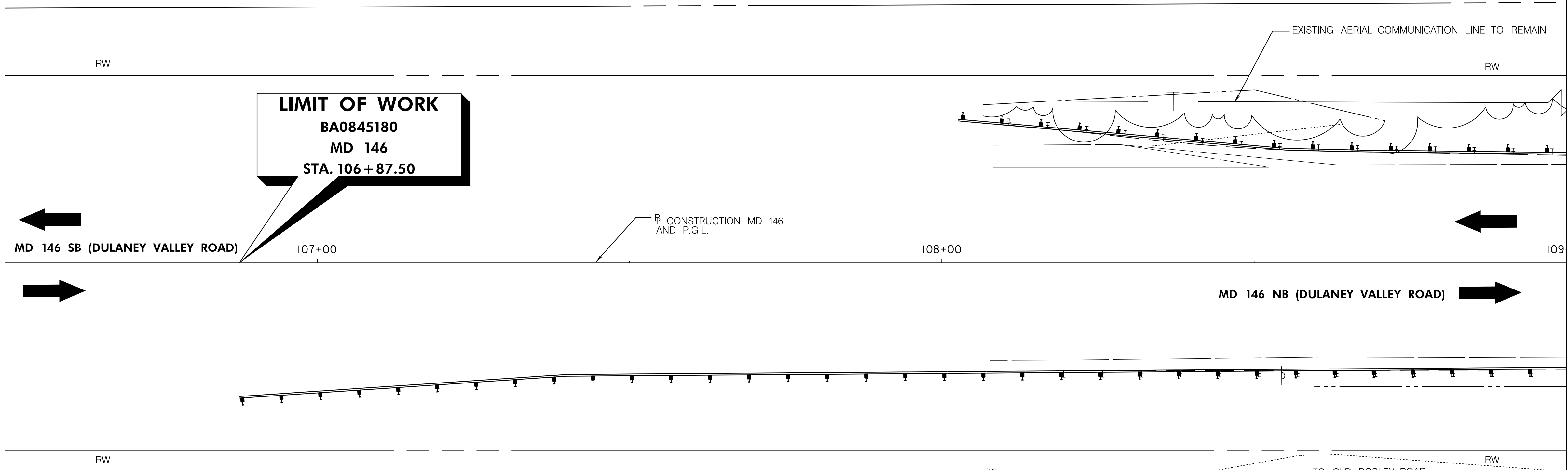
KCI TECHNOLOGIES
Gannett Fleming
In Joint Venture

TRAFFIC BARRIER 'W' BEAM		
STATION	L.F.	END TREATMENT
STA. 108+15 TO STA. 109+00 LT	85	TYPE A
STA. 107+00 TO STA. 109+00 RT	200	TYPE A

E 1427355
N 650695



TO TIMONIUM ROAD




N 650685
E 1427475

N 650895
E 1427475

TO OLD BOSLEY ROAD

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

HIGHWAY DESIGN DIVISION




REPLACEMENT OF SMALL STRUCTURES
NOS. 03189X0, 03190X0, & 03192X0
ON MD 146 (DULANEY VALLEY ROAD)
OVER DRAINAGE DITCH

STATE HIGHWAY
ADMINISTRATION

ROADWAY LEGEND	R / W PLAT NUMBER	CROSS REFERENCE	REVISIONS																
<div style="display: flex; align-items: center;"> <div style="width: 15px; height: 10px; background-color: #cccccc; margin-right: 5px;"></div> FULL DEPTH RECONSTRUCTION </div> <div style="display: flex; align-items: center; margin-top: 5px;"> <div style="width: 15px; height: 10px; background: repeating-linear-gradient(45deg, transparent, transparent 2px, #cccccc 2px, #cccccc 4px); margin-right: 5px;"></div> GRINDING AND OVERLAY </div>		<table border="1"> <thead> <tr> <th>ITEM</th> <th>SHEET NOS.</th> </tr> </thead> <tbody> <tr> <td>TYPICAL SHEETS</td> <td>4</td> </tr> <tr> <td>GEOMETRIC LAYOUT SHEETS</td> <td>5</td> </tr> <tr> <td>ROADWAY PLAN SHEETS</td> <td>6-12</td> </tr> <tr> <td>TRAFFIC CONTROL SHEETS</td> <td>13-15</td> </tr> <tr> <td>EROSION & SEDIMENT CONTROL</td> <td>16-30</td> </tr> <tr> <td>LANDSCAPE PLAN SHEETS</td> <td>31-32</td> </tr> <tr> <td>STRUCTURAL SHEETS</td> <td>33-90</td> </tr> </tbody> </table>	ITEM	SHEET NOS.	TYPICAL SHEETS	4	GEOMETRIC LAYOUT SHEETS	5	ROADWAY PLAN SHEETS	6-12	TRAFFIC CONTROL SHEETS	13-15	EROSION & SEDIMENT CONTROL	16-30	LANDSCAPE PLAN SHEETS	31-32	STRUCTURAL SHEETS	33-90	
ITEM	SHEET NOS.																		
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LANDSCAPE PLAN SHEETS	31-32																		
STRUCTURAL SHEETS	33-90																		

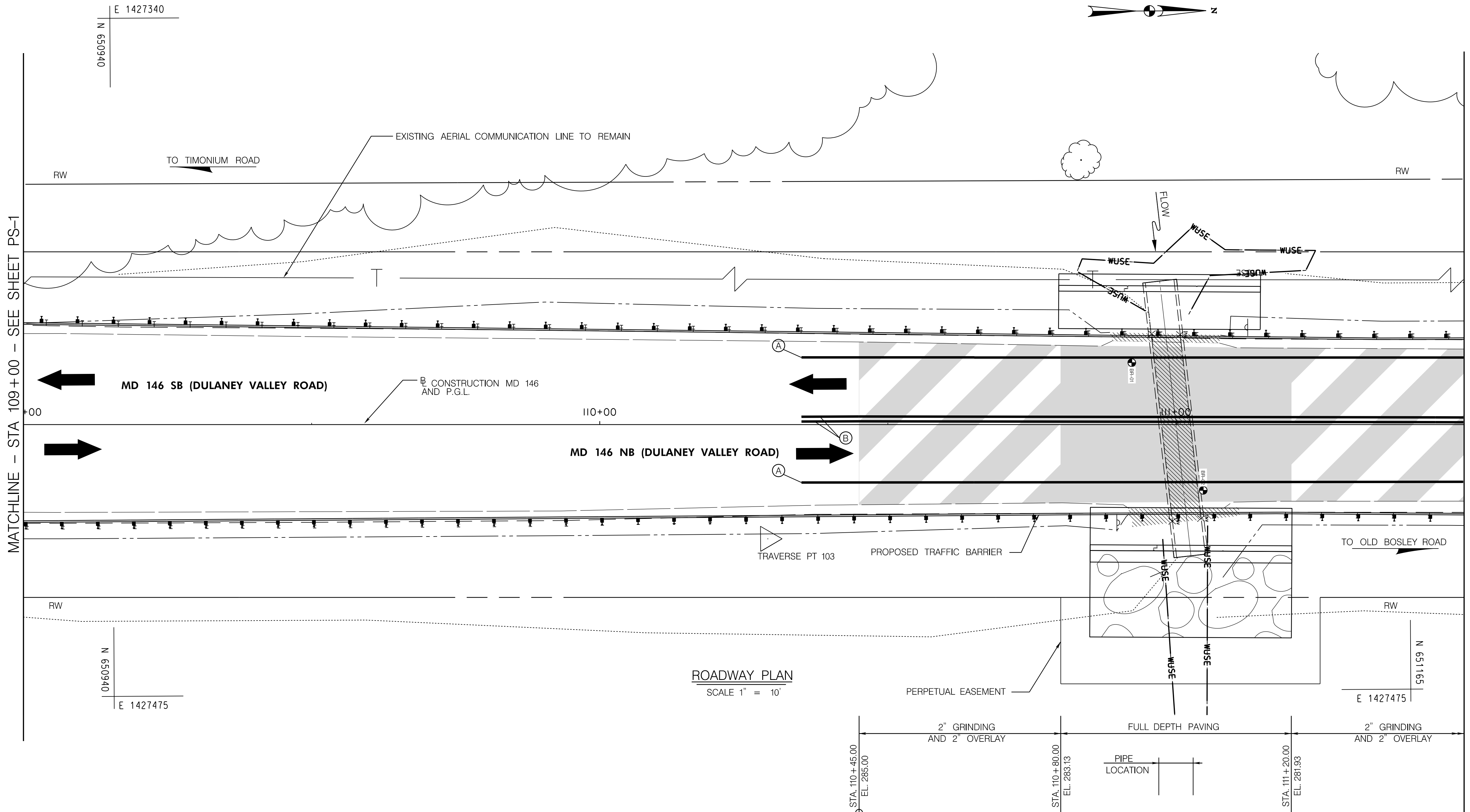
PLAN SHEET	
SCALE 1" = 10'	ADVERTISED DATE TBD CONTRACT NO. BA0845180
DESIGNED BY JDM	COUNTY BALTIMORE
DRAWN BY JDM	LOGMILE
CHECKED BY JER	HORIZONTAL SCALE
MDE/PRD 15-PR-0068	VERTICAL SCALE
DRAWING NO. PS-1 OF 7	SHEET NO. 6 OF 90

BY: Josue Menendez

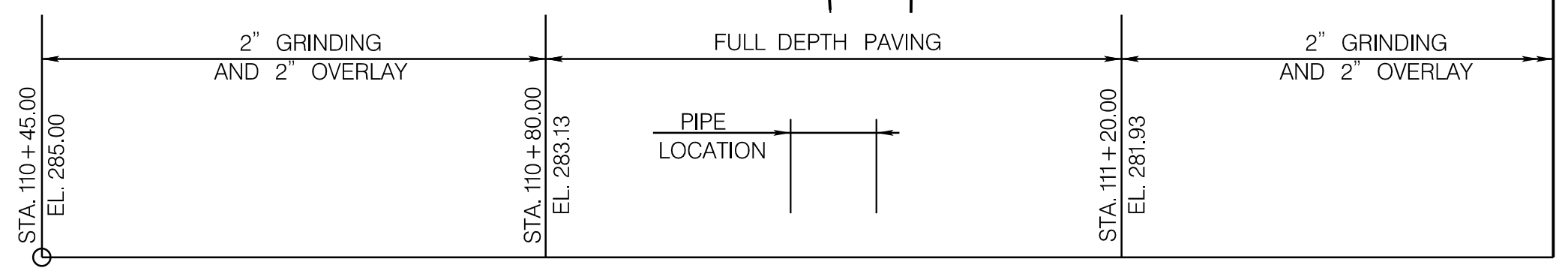


In Joint Venture

TRAFFIC BARRIER 'W' BEAM		
STATION	L.F.	END TREATMENT
STA. 109+00 TO STA. 111+50 LT	250	-
STA. 109+00 TO STA. 111+50 RT	250	-



ROADWAY PLAN
SCALE 1" = 10'



VERTICAL GRADE DATA - MD 146
ROADWAY PROFILE
SCALE : 1" = 10'

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

- (A) 5" WHITE NON TOXIC LEAD FREE WATERBORNE PAVEMENT MARKING PAINT
 - (B) 5" YELLOW NON TOXIC LEAD FREE WATERBORNE PAVEMENT MARKING PAINT. INSTALL DOUBLE YELLOW LINE AS SHOWN.
- ALL NEW PAVEMENT MARKINGS TO EXTEND 10' BEYOND LIMITS OF PAVING.

HIGHWAY DESIGN DIVISION

MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

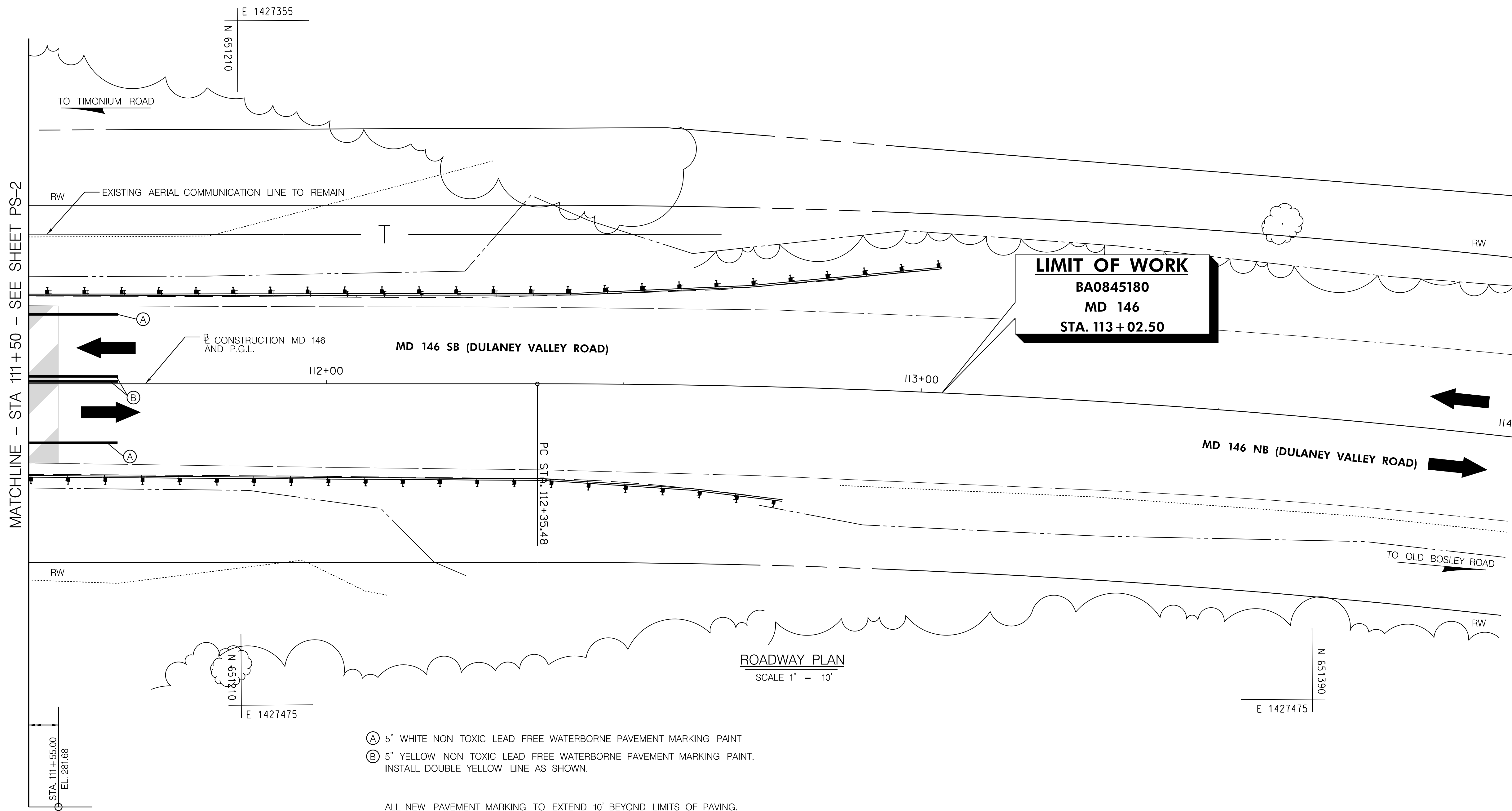
REPLACEMENT OF SMALL STRUCTURES
NOS. 03189X0, 03190X0, & 03192X0
ON MD 146 (DULANEY VALLEY ROAD)
OVER DRAINAGE DITCH

ROADWAY LEGEND	R / W PLAT NUMBER	CROSS REFERENCE	REVISIONS
FULL DEPTH RECONSTRUCTION		ITEM SHEET NOS.	
GRINDING AND OVERLAY		TYPICAL SHEETS..... 4	
		GEOMETRIC LAYOUT SHEETS..... 5	
		ROADWAY PLAN SHEETS..... 6-12	
		TRAFFIC CONTROL SHEETS..... 13-15	
		EROSION & SEDIMENT CONTROL..... 16-30	
		LANDSCAPE PLAN SHEETS..... 31-32	
		STRUCTURAL SHEETS..... 33-90	

PLAN SHEET	
SCALE 1" = 10'	ADVERTISED DATE TBD CONTRACT NO. BA0845180
DESIGNED BY JDM	COUNTY BALTIMORE
DRAWN BY JDM	LOGMILE
CHECKED BY JER	HORIZONTAL SCALE
MDE/PRD 15-PR-0068	VERTICAL SCALE
DRAWING NO. PS-2 OF 7	SHEET NO. 7 OF 90

BY: Josue.Mendez

TRAFFIC BARRIER 'W' BEAM			
STATION	L.F.	END TREATMENT	
STA. 111+50 TO STA. 112+90 LT	140	TYPE A	
STA. 111+50 TO STA. 112+65 RT	115	TYPE A	



- (A) 5" WHITE NON TOXIC LEAD FREE WATERBORNE PAVEMENT MARKING PAINT
- (B) 5" YELLOW NON TOXIC LEAD FREE WATERBORNE PAVEMENT MARKING PAINT. INSTALL DOUBLE YELLOW LINE AS SHOWN.


ALL NEW PAVEMENT MARKING TO EXTEND 10' BEYOND LIMITS OF PAVING.

VERTICAL GRADE DATA - MD 146

ROADWAY PROFILE
SCALE : 1" = 10'

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

HIGHWAY DESIGN DIVISION




REPLACEMENT OF SMALL STRUCTURES
NOS. 03189X0, 03190X0, & 03192X0
ON MD 146 (DULANEY VALLEY ROAD)
OVER DRAINAGE DITCH

STATE HIGHWAY
ADMINISTRATION

ROADWAY LEGEND	R / W PLAT NUMBER	CROSS REFERENCE	REVISIONS
FULL DEPTH RECONSTRUCTION		ITEM	SHEET NOS.
GRINDING AND OVERLAY		TYPICAL SHEETS.....	4
		GEOMETRIC LAYOUT SHEETS.....	5
		ROADWAY PLAN SHEETS.....	6-12
		TRAFFIC CONTROL SHEETS.....	13-15
		EROSION & SEDIMENT CONTROL.....	16-30
		LANDSCAPE PLAN SHEETS.....	31-32
		STRUCTURAL SHEETS.....	33-90

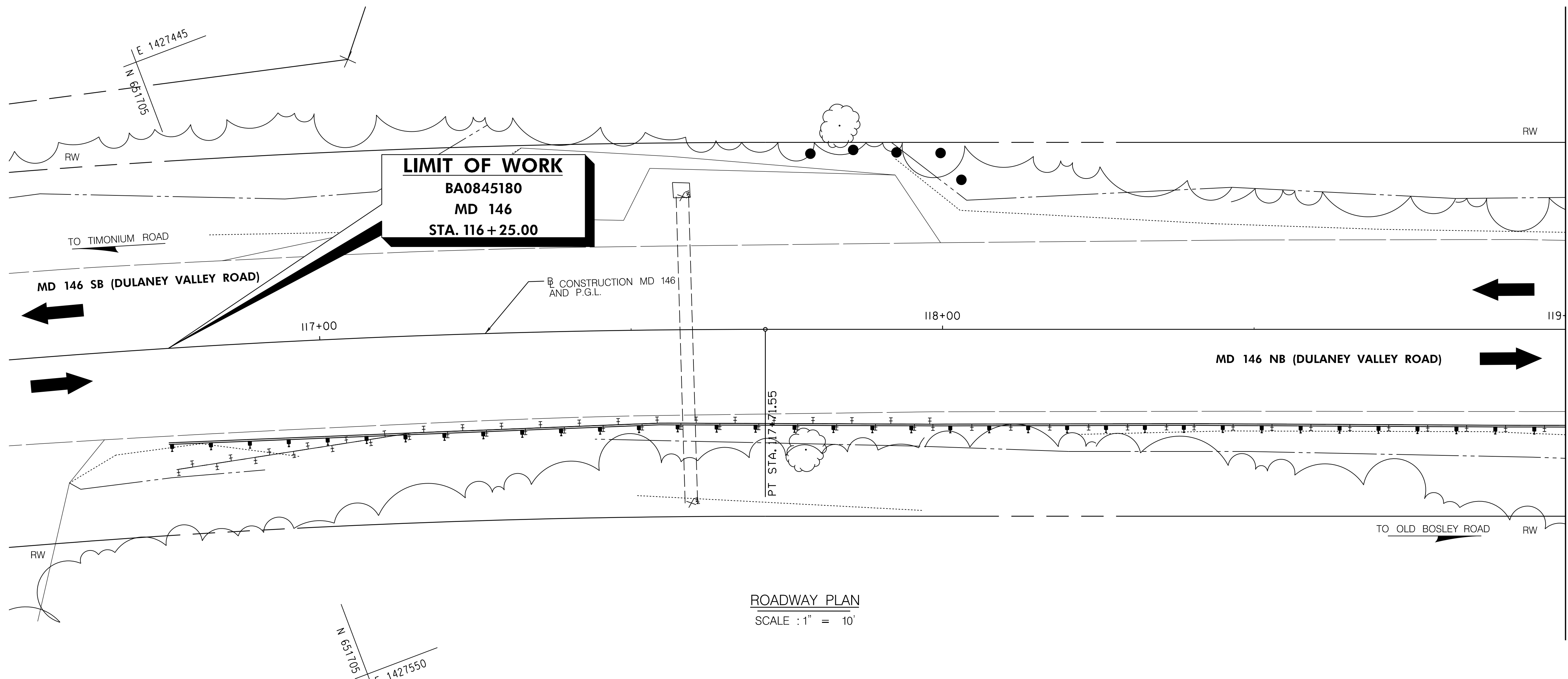
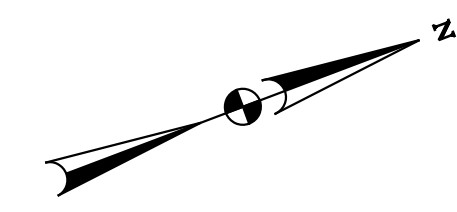
PLAN SHEET			
SCALE 1" = 10'	ADVERTISED DATE	TBD	CONTRACT NO. BA0845180
DESIGNED BY JDM	COUNTY	BALTIMORE	
DRAWN BY JDM	LOGMILE		
CHECKED BY JER	HORIZONTAL SCALE		
MDE/PRD 15-PR-0068	VERTICAL SCALE		
DRAWING NO. PS-3	OF 7	SHEET NO. 8	OF 90

BY: Josue Menendez

In Joint Venture

TRAFFIC BARRIER 'W' BEAM		
STATION	L.F.	END TREATMENT
STA. 117+25 TO STA. 119+00 RT	175	TYPE C




ROADWAY PLAN
SCALE : 1" = 10'

MATCHLINE - STA 119+00 - SEE SHEET PS-5

N 65°19'30"
E 142°15'50"

N 65°17'05"
E 142°15'50"

HIGHWAY DESIGN DIVISION



REPLACEMENT OF SMALL STRUCTURES
NOS. 03189X0, 03190X0, & 03192X0
ON MD 146 (DULANEY VALLEY ROAD)
OVER DRAINAGE DITCH



STATE HIGHWAY
ADMINISTRATION

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

ROADWAY LEGEND	R / W PLAT NUMBER	CROSS REFERENCE	
		ITEM	SHEET NOS.
FULL DEPTH RECONSTRUCTION		TYPICAL SHEETS	4
GRINDING AND OVERLAY		GEOMETRIC LAYOUT SHEETS	5
		ROADWAY PLAN SHEETS	6-12
		TRAFFIC CONTROL SHEETS	13-15
		EROSION & SEDIMENT CONTROL	16-30
		LANDSCAPE PLAN SHEETS	31-32
		STRUCTURAL SHEETS	33-90

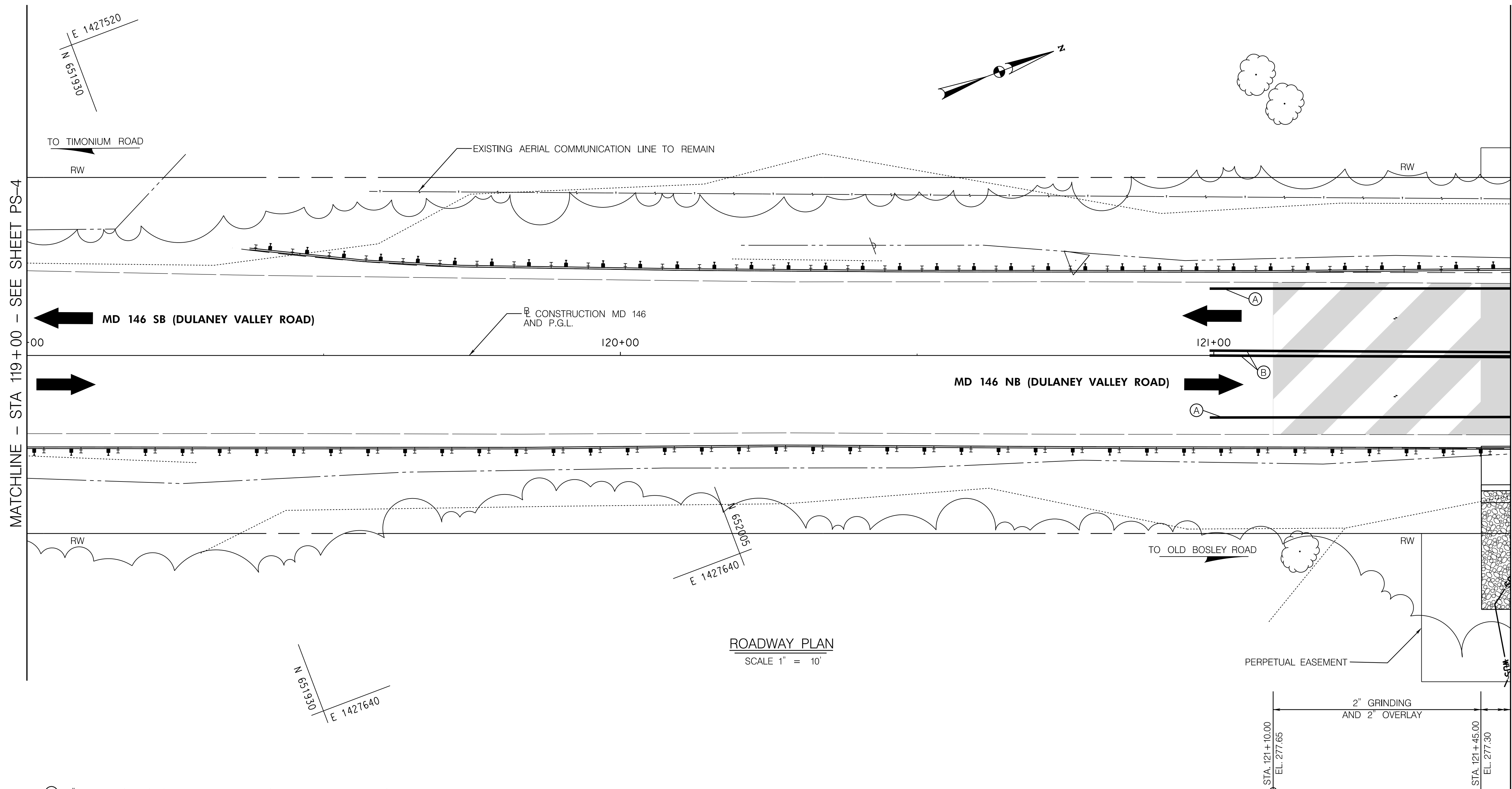
PLAN SHEET			
SCALE 1" = 10'	ADVERTISED DATE	TBD	CONTRACT NO. BA0845180
DESIGNED BY JDM	COUNTY	BALTIMORE	
DRAWN BY JDM	LOGMILE		
CHECKED BY JER	HORIZONTAL SCALE		
MDE/PRD 15-PR-0068	VERTICAL SCALE		
DRAWING NO. PS-4	OF 7	SHEET NO. 9	OF 90

BY: Josue Menendez

In Joint Venture

TRAFFIC BARRIER 'W' BEAM		
STATION	L.F.	END TREATMENT
STA. 119+50 TO STA. 121+50 LT	200	TYPE A
STA. 119+00 TO STA. 121+50 RT	250	-



ROADWAY PLAN
SCALE 1" = 10'

VERTICAL GRADE DATA - MD 146
ROADWAY PROFILE

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

- (A) 5" WHITE NON TOXIC LEAD FREE WATERBORNE PAVEMENT MARKING PAINT.
- (A) 5" YELLOW NON TOXIC LEAD FREE WATERBORNE PAVEMENT MARKING PAINT. INSTALL DOUBLE YELLOW LINE AS SHOWN.

ALL NEW PAVEMENT MARKINGS TO EXTEND 10' BEYOND LIMITS OF PAVING.

MATCHLINE - STA 119+00 - SEE SHEET PS-4

MATCHLINE - STA 121+50 - SEE SHEET PS-6

HIGHWAY DESIGN DIVISION

REPLACEMENT OF SMALL STRUCTURES
NOS. 03189X0, 03190X0, & 03192X0
ON MD 146 (DULANEY VALLEY ROAD)
OVER DRAINAGE DITCH

STATE HIGHWAY ADMINISTRATION

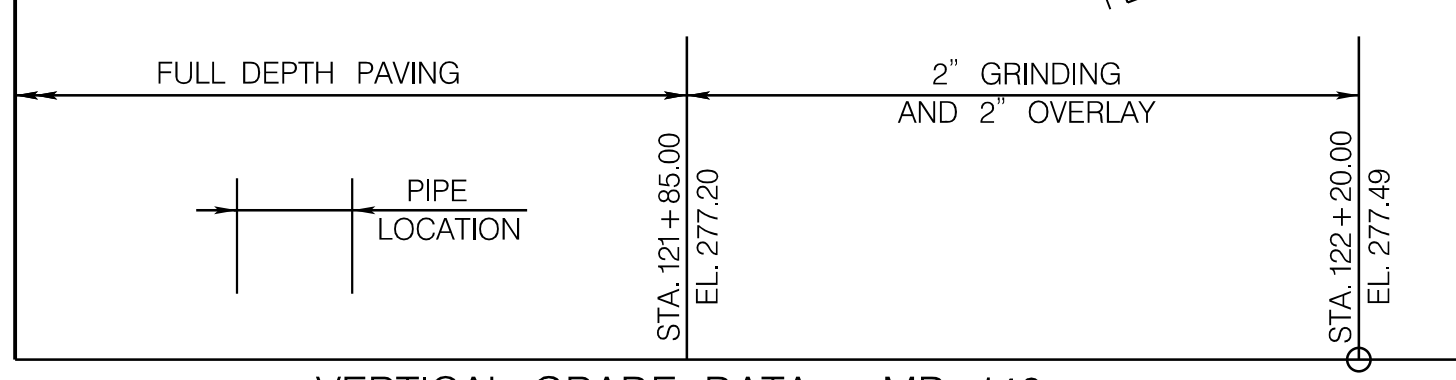
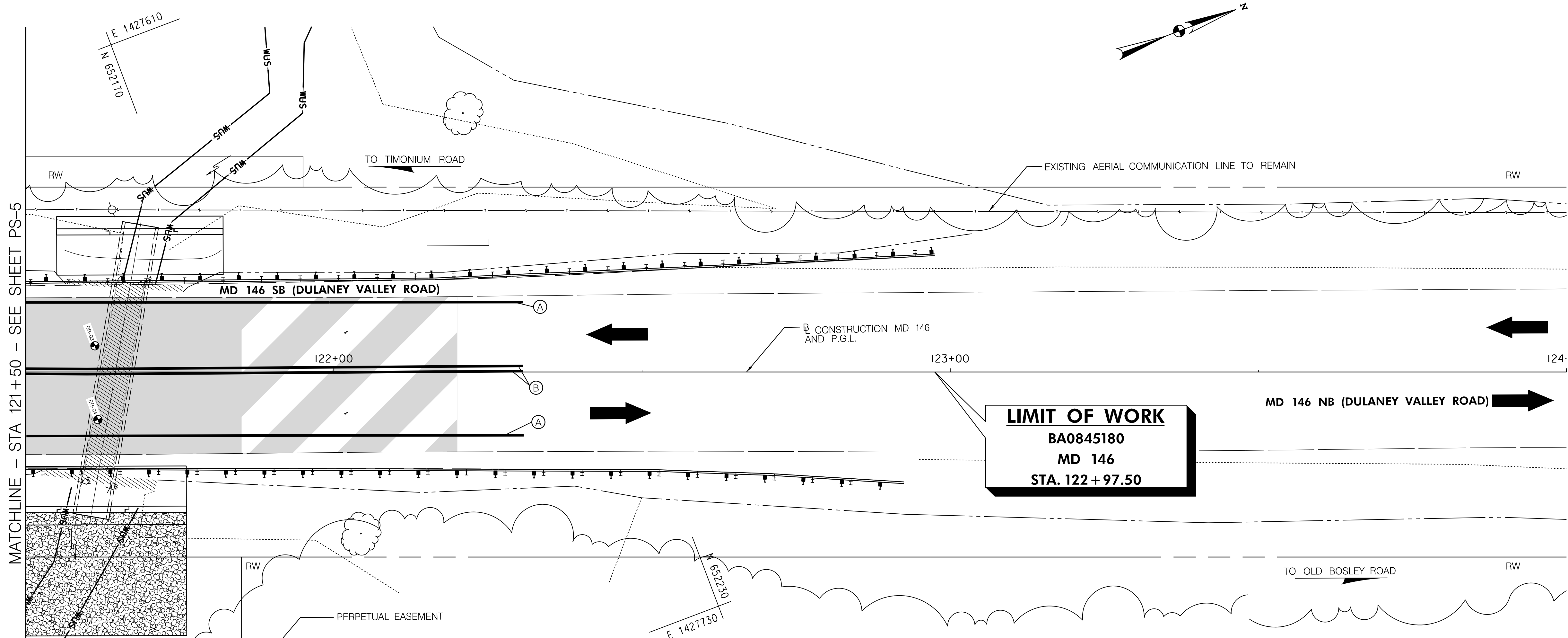
ROADWAY LEGEND	R / W PLAT NUMBER	CROSS REFERENCE	REVISIONS
FULL DEPTH RECONSTRUCTION		ITEM SHEET NOS.	
GRINDING AND OVERLAY		TYPICAL SHEETS 4	
		GEOMETRIC LAYOUT SHEETS 5	
		ROADWAY PLAN SHEETS 6-12	
		TRAFFIC CONTROL SHEETS 13-15	
		EROSION & SEDIMENT CONTROL 16-30	
		LANDSCAPE PLAN SHEETS 31-32	
		STRUCTURAL SHEETS 33-90	

PLAN SHEET			
SCALE 1" = 10'	ADVERTISED DATE	TBD	CONTRACT NO. BA0845180
DESIGNED BY JDM	COUNTY	BALTIMORE	
DRAWN BY JDM	LOGMILE		
CHECKED BY JER	HORIZONTAL SCALE		
MDE/PRD 15-PR-0068	VERTICAL SCALE		
DRAWING NO. PS-5	OF 7	SHEET NO. 10	OF 90

In Joint Venture

BY: Josue Menendez


TRAFFIC BARRIER 'W' BEAM		
STATION	L.F.	END TREATMENT
STA. 121+50 TO STA. 122+85 LT	135	TYPE A
STA. 121+50 TO STA. 122+80 RT	130	TYPE A



- (A) 5" WHITE NON TOXIC LEAD FREE WATERBORNE PAVEMENT MARKING PAINT.
- (B) 5" YELLOW NON TOXIC LEAD FREE WATERBORNE PAVEMENT MARKING PAINT. INSTALL DOUBLE YELLOW LINE AS SHOWN.

ALL NEW PAVEMENT MARKINGS TO EXTEND 10' BEYOND LIMITS OF PAVING.

HIGHWAY DESIGN DIVISION



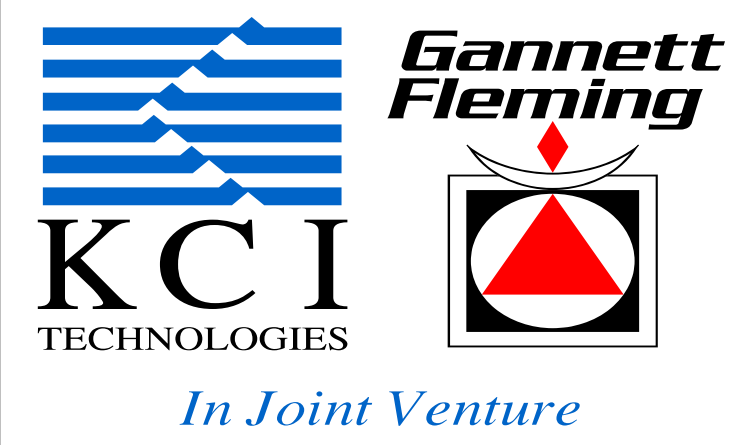
REPLACEMENT OF SMALL STRUCTURES
NOS. 03189X0, 03190X0, & 03192X0
ON MD 146 (DULANEY VALLEY ROAD)
OVER DRAINAGE DITCH

STATE HIGHWAY
ADMINISTRATION

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

ROADWAY LEGEND	R / W PLAT NUMBER	CROSS REFERENCE	REVISIONS
FULL DEPTH RECONSTRUCTION		ITEM	SHEET NOS.
GRINDING AND OVERLAY		TYPICAL SHEETS.....	4
		GEOMETRIC LAYOUT SHEETS.....	5
		ROADWAY PLAN SHEETS.....	6-12
		TRAFFIC CONTROL SHEETS.....	13-15
		EROSION & SEDIMENT CONTROL.....	16-30
		LANDSCAPE PLAN SHEETS.....	31-32
		STRUCTURAL SHEETS.....	33-90

PLAN SHEET	
SCALE 1" = 10'	ADVERTISED DATE TBD CONTRACT NO. BA0845180
DESIGNED BY JDM	COUNTY BALTIMORE
DRAWN BY JDM	LOGMILE
CHECKED BY JER	HORIZONTAL SCALE
MDE/PRD 15-PR-0068	VERTICAL SCALE
DRAWING NO. PS-6	OF 7 SHEET NO. 11 OF 90



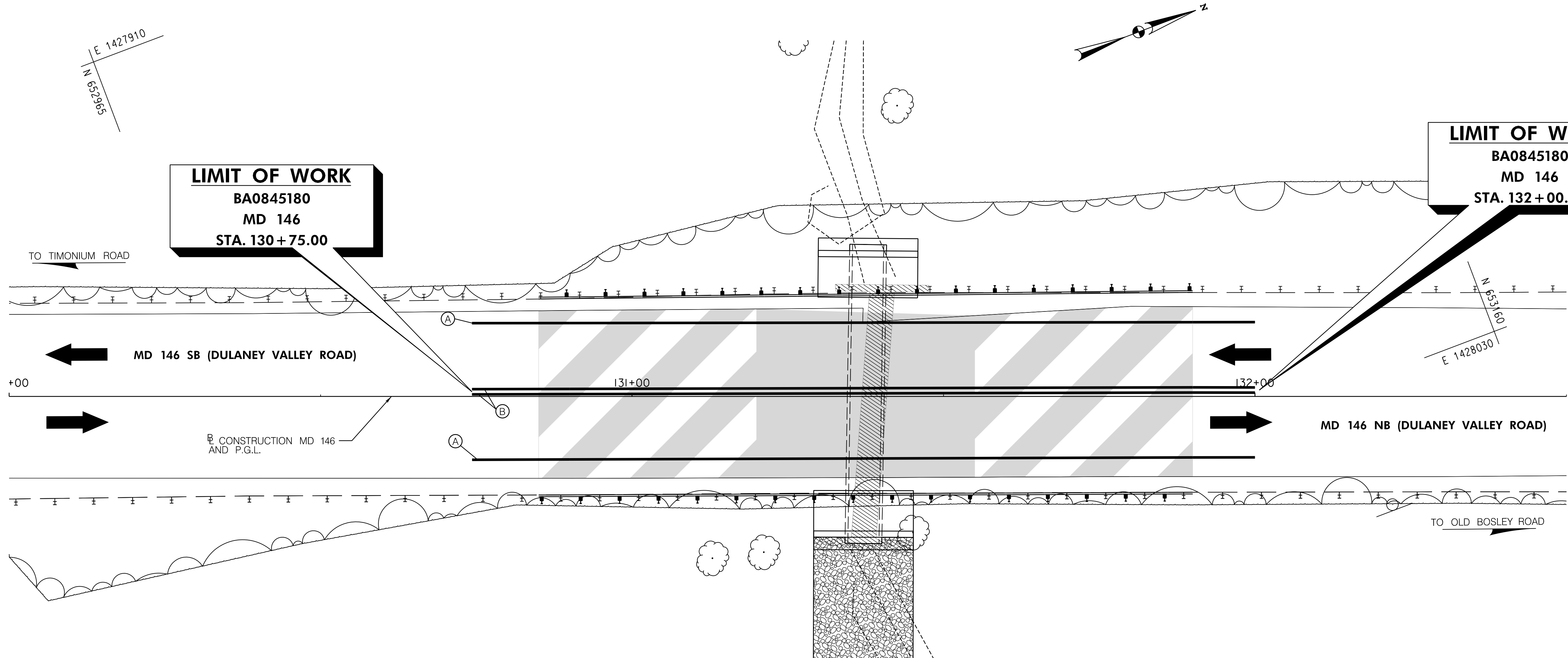
Gannett Fleming

KCI TECHNOLOGIES

In Joint Venture

BY: Josue Menendez

TRAFFIC BARRIER 'W' BEAM		
STATION	L.F.	END TREATMENT
STA. 130+85 TO STA. 131+90 LT	105	TIE INTO EXISTING
STA. 130+85 TO STA. 131+90 RT	105	TIE INTO EXISTING



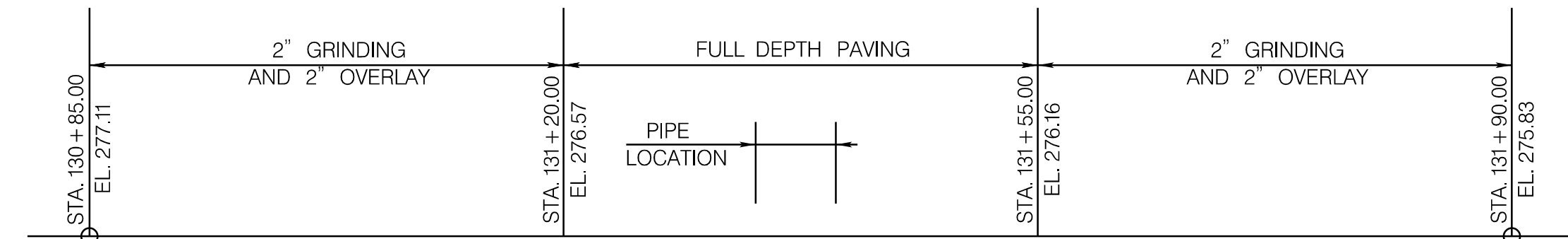
LIMIT OF WORK
BA0845180
MD 146
STA. 130+75.00

LIMIT OF WORK
BA0845180
MD 146
STA. 132+00.00

ROADWAY PLAN
SCALE 1" = 10'

- (A) 5" WHITE NON TOXIC LEAD FREE WATERBORNE PAVEMENT MARKING PAINT.
- (B) 5" YELLOW NON TOXIC LEAD FREE WATERBORNE PAVEMENT MARKING PAINT. INSTALL DOUBLE YELLOW LINE AS SHOWN.

ALL NEW PAVEMENT MARKINGS TO EXTEND 10' BEYOND LIMITS OF PAVING.



VERTICAL GRADE DATA - MD 146
ROADWAY PROFILE
SCALE : 1" = 10'

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

HIGHWAY DESIGN DIVISION

REPLACEMENT OF SMALL STRUCTURES
NOS. 03189X0, 03190X0, & 03192X0
ON MD 146 (DULANEY VALLEY ROAD)
OVER DRAINAGE DITCH

STATE HIGHWAY
ADMINISTRATION

ROADWAY LEGEND	R / W PLAT NUMBER	CROSS REFERENCE	REVISIONS
FULL DEPTH RECONSTRUCTION		ITEM	SHEET NOS.
GRINDING AND OVERLAY		TYPICAL SHEETS.....	4
		GEOMETRIC LAYOUT SHEETS.....	5
		ROADWAY PLAN SHEETS.....	6-12
		TRAFFIC CONTROL SHEETS.....	13-15
		EROSION & SEDIMENT CONTROL.....	16-30
		LANDSCAPE PLAN SHEETS.....	31-32
		STRUCTURAL SHEETS.....	33-90

PLAN SHEET	
SCALE 1" = 10'	ADVERTISED DATE TBD CONTRACT NO. BA0845180
DESIGNED BY JDM	COUNTY BALTIMORE
DRAWN BY JDM	LOGMILE
CHECKED BY JER	HORIZONTAL SCALE
MDE/PRD 15-PR-0068	VERTICAL SCALE
DRAWING NO. PS-7	OF 7 SHEET NO. 12 OF 90

BY: Josue Menendez

In Joint Venture

GENERAL NOTES:

1. ALL TRAFFIC CONTROL DEVICES AND PRACTICES SHALL CONFORM WITH THE GUIDELINES OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (LATEST ADOPTED REVISION), THE "MARYLAND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" MD MUTCD (LATEST EDITION), THE MDSHA "STANDARD SIGN BOOK", THE MDSHA "BOOK OF STANDARDS, HIGHWAY AND INCIDENTAL STRUCTURES" (LATEST EDITION).
2. THE TRAFFIC CONTROL PLAN DEPICTS THE MINIMUM TRAFFIC CONTROLS REQUIRED DURING CONSTRUCTION TO MAINTAIN VEHICULAR TRAFFIC FLOW AND THE SAFETY OF VEHICLES, PEDESTRIANS, AND WORKERS. ADDITIONAL DEVICES OR ADJUSTMENT OF THE LOCATION OF DEVICES SHALL BE INCORPORATED AS DIRECTED BY THE ENGINEER.
3. IN THE EVENT THAT ADJACENT CONSTRUCTION PROJECTS OCCUR SIMULTANEOUSLY WITH THIS PROJECT, COORDINATION OF THE TRAFFIC CONTROL PLANS FOR EACH PROJECT WILL BE REQUIRED. SPECIFICALLY THE LOCATION OF OVERLAPPING ADVANCE WARNING SIGNS SHALL BE ADJUSTED AS REQUIRED.
4. ALL TEMPORARY SIGNS INSTALLED FOR THIS PROJECT SHALL BE HIGH INTENSITY GRADE RETROREFLECTIVE SHEETING.
5. ANY WORK NOT AFFECTING TRAFFIC PATTERNS MAY BE COMPLETED AT ANY TIME AS APPROVED BY THE ENGINEER.
6. CONTRACTOR SHALL MAINTAIN DROP-OFF PROTECTION IN ACCORDANCE WITH MDSHA TYPICAL STANDARDS. DROP-OFFS GREATER THAN 2-INCHES SHALL BE COVERED WITH STEEL PLATES AT THE END OF EACH WORK PERIOD.
7. EXISTING SIGNS NO LONGER APPLICABLE DURING WORK PERIODS SHALL BE COVERED OR REMOVED AS DIRECTED BY THE ENGINEER.
8. ALL DRUMS AND FLAGGERS SHALL BE MOVED ACCORDINGLY AS CONSTRUCTION PROGRESSES.
9. THE CONTRACTOR IS RESPONSIBLE FOR ALL COSTS RELATED TO TRAFFIC CONTROL (PAVEMENT MARKINGS, SIGNING, FLAGGERS, ETC.).
10. THE CONTRACTOR SHALL TEMPORARILY REPAIR ALL LINE STRIPING AT THE END OF EACH WORK SHIFT. ALL DISTURBED LINE STRIPING WILL BE RESTORED AT THE COMPLETION OF THE PROJECT. PAVEMENT MARKINGS SHALL BE RESTORED IN KIND (EX. THERMOPLASTIC SHALL BE REPLACED BY NEW THERMOPLASTIC, EX. PAINT SHALL BE RE-PAINTED).
11. WORK HOURS ARE 9:00PM FRIDAY TO 4:00AM MONDAY.
12. TEMPORARY SIGNS NO LONGER APPLICABLE DURING NON-WORK PERIODS SHALL BE COVERED OR REMOVED AS DIRECTED BY THE ENGINEER.
13. THE CONTRACTOR SHALL PREVENT ACCESS TO LOCH RAVEN RESERVOIR WITHIN THE WORK ZONE.
14. PORTABLE VARIABLE MESSAGE SIGNS SHALL BE LOCATED AND DISPLAY MESSAGES AS DIRECTED BY THE ENGINEER. PROTECT AND DELINEATE PORTABLE VARIABLE MESSAGE SIGNS IN ACCORDANCE WITH MSHA STANDARD NO. 104.01-22.
15. PORTABLE VARIABLE MESSAGE SIGNS SHALL BE INSTALLED AND OPERATIONAL ALERTING THE PUBLIC OF UPCOMING FLAGGING AND NEW TRAFFIC PATTERNS AT LEAST 7 DAYS PRIOR TO BEGINNING CONSTRUCTION AND SHALL REMAIN DURING CONSTRUCTION.
16. SEE CONTRACT SPECIAL PROVISIONS FOR LANE CLOSURE RESTRICTIONS. ROADWAY AND LANE CLOSURES NOT SPECIFICALLY IDENTIFIED IN THE CONTRACT SPECIAL PROVISIONS SHALL BE AT THE DISCRETION OF THE ENGINEER. DRUMS SHALL BE PLACED AT 40 FOOT INTERVALS ALONG TANGENT ROADWAY SECTIONS AND AT 10 FOOT INTERVALS WHERE TRANSITIONING AT FLAGGER LOCATIONS.
17. ALL TRAVEL LANES THROUGHOUT CONSTRUCTION MUST BE A MINIMUM OF 11 FEET WIDE.
18. TEMPORARY CONCRETE TRAFFIC BARRIERS SHALL HAVE TOP AND SIDE BARRIER WALL MARKERS IN ACCORDANCE WITH MSHA STANDARD NO. 104-01-25.
19. LIGHTING SHALL BE PROVIDED AT ALL FLAGGING STATIONS AND SHALL BE INCIDENTAL TO THE MAINTENANCE OF TRAFFIC.

SEQUENCE OF CONSTRUCTION:


STAGE 1 (1 WEEKEND)

1. USE FLAGGING OPERATIONS TO INSTALL EROSION AND SEDIMENT CONTROLS AND TEMPORARY TRAFFIC CONTROL DEVICES AS SHOWN ON PLANS IN ACCORDANCE WITH MSHA STANDARD NO. 104.02-09. REFER TO SHEET NOS. S1-4 TO S1-6, S2-4 TO S2-6 AND S3-4 TO S3-6 FOR TYPICAL SECTIONS. CONTRACTOR SHALL MAINTAIN 1-11 FOOT MINIMUM LANE.
2. CONSTRUCT PORTION OF DRAINAGE STRUCTURE NUMBERS 03189X0, 03190X0, AND 03192X0 ALONG NORTHBOUND MD 146 (DULANEY VALLEY ROAD) BEHIND TEMPORARY CONCRETE BARRIER.
3. BACKFILL AND INSTALL ROADWAY ASPHALT TO FINISHED ROADWAY ELEVATION. INTALL TEMPORARY REMOVABLE PAVEMENT MARKINGS TO RESTORE EXISTING TRAVEL LANES.
4. RE-OPEN MD 146 TO 2-LANE TRAFFIC.

STAGE 2 (1 WEEKEND)

1. USE FLAGGING OPERATIONS TO INSTALL TEMPORARY TRAFFIC CONTROL DEVICES AS SHOWN ON PLANS IN ACCORDANCE WITH MSHA STANDARD NO. 104.02-09. REFER TO SHEET NOS. S1-4 TO S1-6, S2-4 TO S2-6 AND S3-4 TO S3-6 FOR TYPICAL SECTIONS. CONTRACTOR SHALL MAINTAIN 1-12 FOOT MINIMUM LANE.
2. COMPLETE CONSTRUCTION OF DRAINAGE STRUCTURE NUMBERS 03189X0, 03190X0, AND 03192X0 ALONG SOUTHBOUND MD 146 (DULANEY VALLEY ROAD) BEHIND TEMPORARY CONCRETE BARRIER.
3. BACKFILL AND INSTALL ROADWAY ASPHALT TO FINISHED ROADWAY ELEVATION.
4. REMOVE TEMPORARY CONCRETE BARRIER. INSTALL FINAL PAVEMENT MARKINGS OVER DRAINAGE STRUCTURE NUMBERS 03189X0, 03190X0, AND 03192X0 ALONG NORTHBOUND AND SOUTHBOUND MD 146 (DULANEY VALLEY ROAD). REFER TO SHEET NOS. S1-4 TO S1-6, S2-4 TO S2-6 AND S3-4 TO S3-6 FOR FINAL ROADWAY TYPICAL SECTIONS.
5. RE-OPEN MD 146 TO 2-LANE TRAFFIC.

HIGHWAY DESIGN DIVISION



REPLACEMENT OF SMALL STRUCTURES
NOS. 03189X0, 03190X0, & 03192X0
ON MD 146 (DULANEY VALLEY ROAD)
OVER DRAINAGE DITCH

REVISIONS	MOT GENERAL NOTES		
	SCALE	N.T.S.	ADVERTISED DATE
			TBD
		CONTRACT NO.	BA0845180
	DESIGNED BY	AMH	COUNTY
			BALTIMORE
	DRAWN BY	AMH	LOGMILE
	CHECKED BY	JFL	HORIZONTAL SCALE
	MDE/PRD	15-PR-0068	VERTICAL SCALE
	DRAWING NO.	MT - 1	OF 3
		SHEET NO.	4 OF 90




In Joint Venture

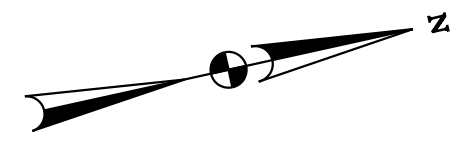
BY: aaron.hottenstein

PVMS MESSAGE TO BE DISPLAYED 7 DAYS IN ADVANCE OF STARTING CONSTRUCTION

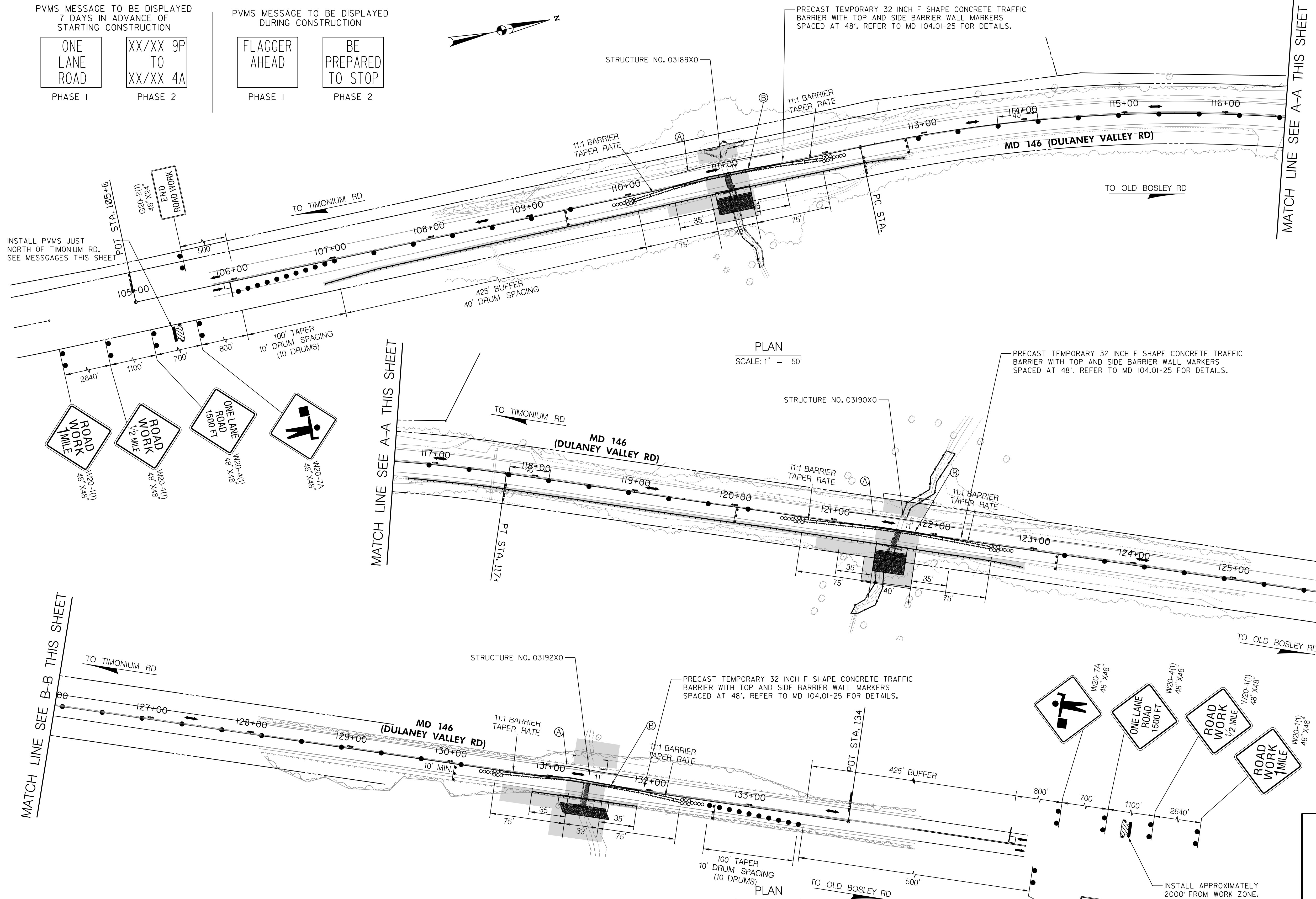
ONE LANE ROAD PHASE 1
XX/XX 9P TO XX/XX 4A PHASE 2

PVMS MESSAGE TO BE DISPLAYED DURING CONSTRUCTION

FLAGGER AHEAD PHASE 1
BE PREPARED TO STOP PHASE 2



PRECAST TEMPORARY 32 INCH F SHAPE CONCRETE TRAFFIC BARRIER WITH TOP AND SIDE BARRIER WALL MARKERS SPACED AT 48". REFER TO MD 104.01-25 FOR DETAILS.



PLAN
SCALE: 1" = 50'

PLAN
SCALE: 1" = 50'

LEGEND

- DRUM
- 2 POST SIGN
- PORTABLE VARIABLE MESSAGE SIGN
- FLAGGER
- TRAFFIC FLOW ARROW
- PRECAST F-SHAPE BARRIER
- TYPE III BARRICADE
- 50 MPH CRASH CUSHION
- CURRENT PHASE WORK AREA
- PROPOSED SIGN

- TEMPORARY PAVEMENT MARKING LEGEND
- 5 INCH WHITE REMOVABLE PAVEMENT LINE MARKINGS
 - 5 INCH YELLOW REMOVABLE PAVEMENT LINE MARKINGS

HIGHWAY DESIGN DIVISION
MOT
 MARYLAND DEPARTMENT OF TRANSPORTATION
 STATE HIGHWAY ADMINISTRATION
 REPLACEMENT OF SMALL STRUCTURES NOS. 03189X0, 03190X0, & 03192X0 ON MD 146 (DULANEY VALLEY ROAD) OVER DRAINAGE DITCH

REVISIONS		MOT PLAN SHEET - STAGE 1	
SCALE	1" = 50'	ADVERTISED DATE	TBD
DESIGNED BY	AMH	COUNTY	BALTIMORE
DRAWN BY	AMH	LOGMILE	
CHECKED BY	JFL	HORIZONTAL SCALE	
MDE/PRD	15-PR-0068	VERTICAL SCALE	
DRAWING NO.	MT-2	OF	3
SHEET NO.	5	OF	90

BY: aaron.hottenstein

PVMS MESSAGE TO BE DISPLAYED
7 DAYS IN ADVANCE OF
STARTING CONSTRUCTION

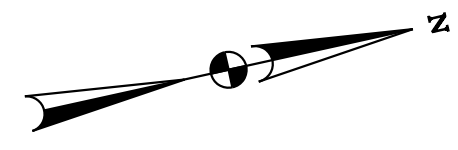
ONE
LANE
ROAD
PHASE 1

XX/XX 9P
TO
XX/XX 4A
PHASE 2

PVMS MESSAGE TO BE DISPLAYED
DURING CONSTRUCTION

FLAGGER
AHEAD
PHASE 1

BE
PREPARED
TO STOP
PHASE 2



PRECAST TEMPORARY 32 INCH F SHAPE CONCRETE TRAFFIC BARRIER WITH TOP AND SIDE BARRIER WALL MARKERS SPACED AT 48'. REFER TO MD 104.01-25 FOR DETAILS.

STRUCTURE NO. 03189X0

11:1 BARRIER TAPER RATE

MD 146 (DULANEY VALLEY RD)

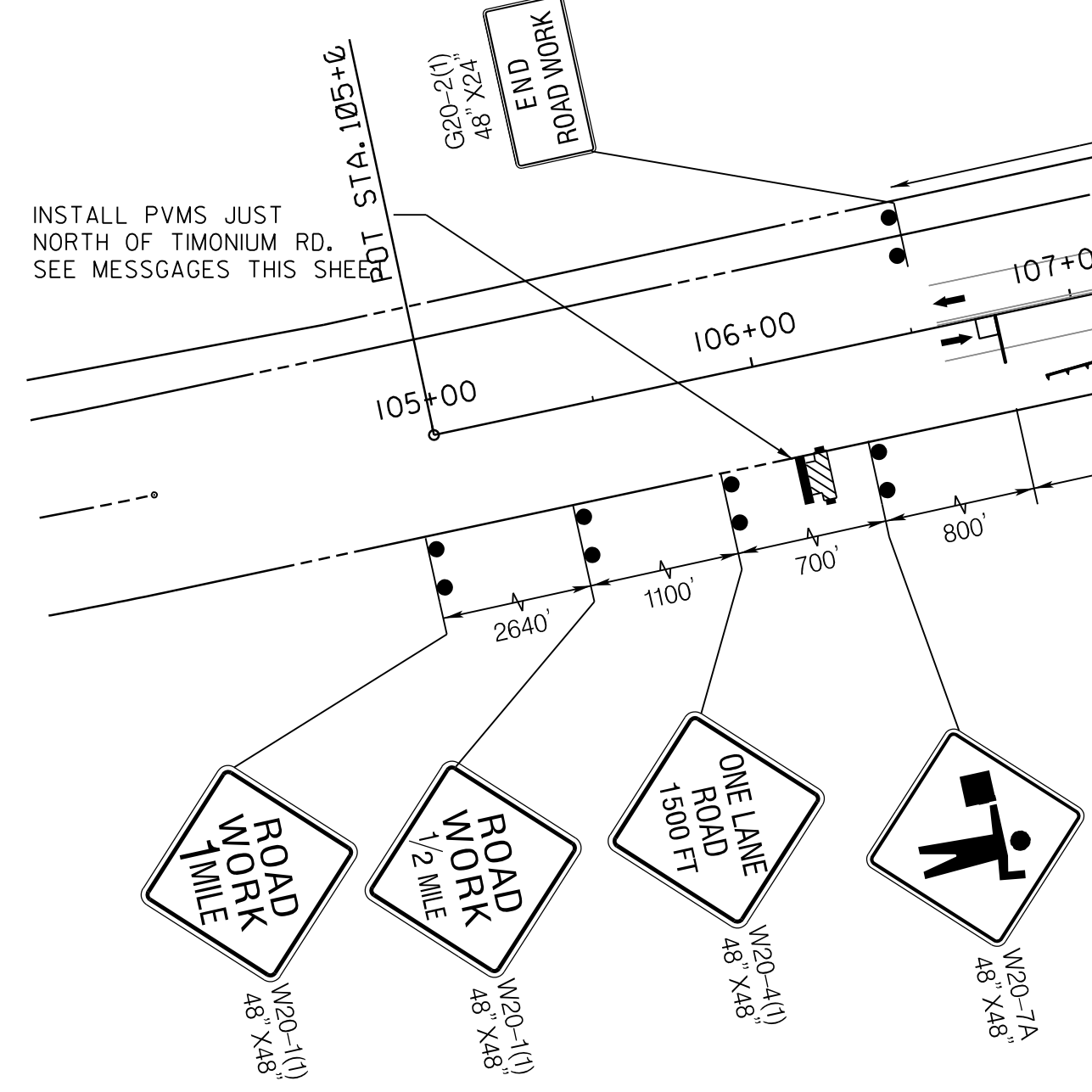
TO OLD BOSLEY RD

MATCH LINE SEE A-A THIS SHEET

LEGEND

- DRUM
- 2 POST SIGN
- PORTABLE VARIABLE MESSAGE SIGN
- FLAGGER
- TRAFFIC FLOW ARROW
- PRECAST F-SHAPE BARRIER
- TYPE III BARRICADE
- 50 MPH CRASH CUSHION
- CURRENT PHASE WORK AREA
- PROPOSED SIGN

INSTALL PVMS JUST NORTH OF TIMONIUM RD. SEE MESSAGES THIS SHEET



PLAN
SCALE: 1" = 50'

PRECAST TEMPORARY 32 INCH F SHAPE CONCRETE TRAFFIC BARRIER WITH TOP AND SIDE BARRIER WALL MARKERS SPACED AT 48'. REFER TO MD 104.01-25 FOR DETAILS.

STRUCTURE NO. 03190X0

11:1 BARRIER TAPER RATE

TO OLD BOSLEY RD

MATCH LINE SEE B-B THIS SHEET

- TEMPORARY PAVEMENT MARKING LEGEND
- 5 INCH WHITE REMOVABLE PAVEMENT LINE MARKINGS
 - 5 INCH YELLOW REMOVABLE PAVEMENT LINE MARKINGS

MATCH LINE SEE B-B THIS SHEET

MD 146 (DULANEY VALLEY RD)

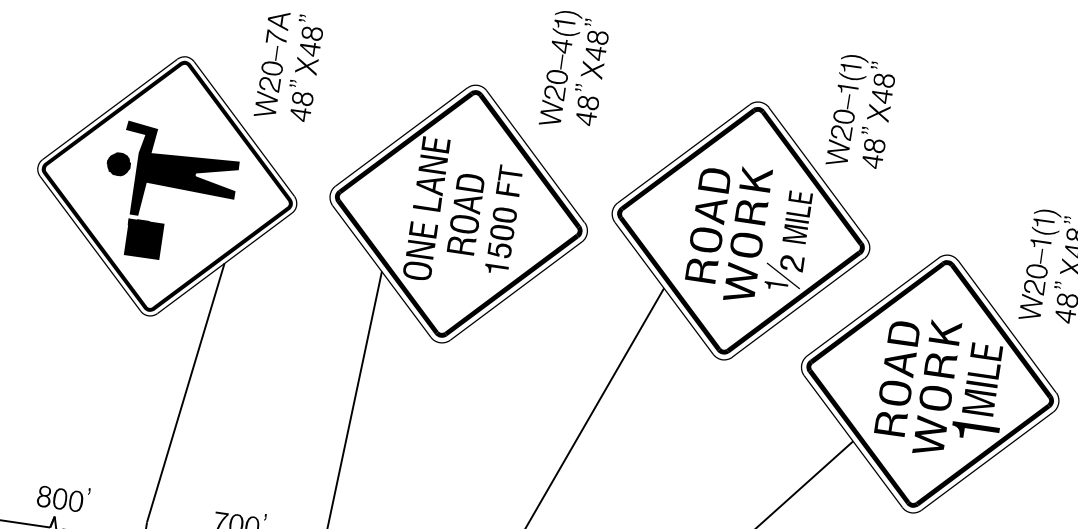
STRUCTURE NO. 03192X0

PRECAST TEMPORARY 32 INCH F SHAPE CONCRETE TRAFFIC BARRIER WITH TOP AND SIDE BARRIER WALL MARKERS SPACED AT 48'. REFER TO MD 104.01-25 FOR DETAILS.

11:1 BARRIER TAPER RATE

11:1 BARRIER TAPER RATE

PLAN
SCALE: 1" = 50'



INSTALL APPROXIMATELY 2000' FROM WORK ZONE. SEE MESSAGES THIS SHEET

HIGHWAY DESIGN DIVISION



REPLACEMENT OF SMALL STRUCTURES
NOS. 03189X0, 03190X0, & 03192X0
ON MD 146 (DULANEY VALLEY ROAD)
OVER DRAINAGE DITCH

MOT PLAN SHEET - STAGE 2

REVISIONS	SCALE 1" = 50'	ADVERTISED DATE	TBD	CONTRACT NO.	BA0845180
DESIGNED BY	AMH	COUNTY	BALTIMORE		
DRAWN BY	AMH	LOGMILE			
CHECKED BY	JFL	HORIZONTAL SCALE			
MDE/PRD	15-PR-0068	VERTICAL SCALE			
DRAWING NO.	MT-2	OF	3	SHEET NO.	5 OF 90

BY: aaron.hottenstein

EROSION AND SEDIMENT CONTROL – GENERAL NOTES

1. NOTIFICATION

NOTIFY THE REGIONAL ENVIRONMENTAL COORDINATOR (REC) IN WRITING AND/OR BY TELEPHONE AT (410) 365-0164 PRIOR TO THE FOLLOWING POINTS:

- PRE-CONSTRUCTION MEETING.
- EROSION AND SEDIMENT CONTROL (ESC) MEETING (MINIMUM 7 WORKING DAYS PRIOR TO COMMENCING EARTH DISTURBING ACTIVITIES).
- UPON INSTALLATION OF INITIAL ESC MEASURES.
- INSTALLATION OF MAJOR ESC BASINS/TRAPS.
- REMOVAL OR MODIFICATION OF ANY ESC MEASURES.
- REMOVAL OF ALL ESC DEVICES.
- FINAL ACCEPTANCE BY THE ADMINISTRATION.

2. STANDARDS AND SPECIFICATIONS

CONSTRUCT THIS PLAN ACCORDING TO THE MARYLAND DEPARTMENT OF THE ENVIRONMENT (MDE) "2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL", THE MDE "2000 MARYLAND STORMWATER DESIGN MANUAL, VOLUMES I & II", THE MDT SHA "FIELD GUIDE FOR EROSION AND SEDIMENT CONTROL", THE ANNOTATED CODE OF MARYLAND, THE CODE OF MARYLAND (COMAR) 26.17.01 AND 26.17.02, ALL REVISIONS THERE OF, AND AS SPECIFIED. KEEP A COPY OF THE 2011 "MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL" ON THE SITE AT ALL TIMES. PERFORM VEGETATIVE STABILIZATION ACCORDING TO THOSE STANDARDS AND AS SPECIFIED.

3. INSPECTION

DAILY INSPECT ALL ESC MEASURES AND MAINTAIN THEM IN A CONTINUOUSLY-EFFECTIVE OPERATING CONDITION UNTIL REMOVED AS APPROVED BY THE REC AND THE ENGINEER.

4. SHUTDOWNS / LIQUIDATED DAMAGES

COMPLETE COMPLIANCE WITH THE APPROVED ESC PLAN IS EXPECTED AT ALL TIMES. IN CASES WHERE THE CONTRACTOR IS FOUND TO BE IN NON-COMPLIANCE, THE ADMINISTRATION WILL TAKE STEPS TO IMPOSE SELECTED OR TOTAL SHUTDOWNS AND MAY IMPOSE LIQUIDATED DAMAGES FOR NON-COMPLIANCE.

THE ADMINISTRATION'S DISTRICT ENGINEER MAY IMPOSE A TOTAL OR PARTIAL SHUTDOWN IF THE PROJECT MAY ADVERSELY IMPACT THE WATERS OF THE STATE.

5. RECORD KEEPING

ENSURE THE STORMWATER MANAGEMENT (SWM)/ESC APPROVAL LETTER, APPROVED EROSION AND SEDIMENT CONTROL PLANS, APPROVED MODIFICATIONS, MODIFICATION APPROVAL LETTER(S), DAILY LOG BOOKS, TEST REPORTS, AND NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) NOTICE OF INTENT (NOI) PERMIT ARE AVAILABLE ON-SITE FOR REVIEW AND INSPECTION BY THE ADMINISTRATION.

6. CLEARING AND GRUBBING

UNLESS OTHERWISE SPECIFIED OR APPROVED, LIMIT THE CLEARING AND GRUBBING AREA TO A SINGLE 20-ACRE GRADING UNIT PER GRADING OPERATION. ONCE THIS FIRST UNIT IS HALF GRADED, STABILIZATION MEASURES ARE IN PLACE, AND APPROVED, WORK MAY PROCEED TO A SECOND 20-ACRE GRADING UNIT. UNLESS SPECIFICALLY APPROVED, NO MORE THAN 30 ACRES MAY BE DISTURBED AT ANY TIME.

7. SENSITIVE AREAS

WITH THE APPROVAL AND ASSISTANCE OF THE ENGINEER, COORDINATE WITH THE APPROPRIATE ADMINISTRATION REPRESENTATIVES TO COORDINATE WITH THE APPROPRIATE REGULATORY AGENCIES TO ENSURE THAT ALL PERMIT CONDITIONS ARE MET PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES WITHIN SPECIFIED SENSITIVE AREAS. SENSITIVE AREAS INCLUDE BUT ARE NOT LIMITED TO FLOODPLAINS, WETLANDS, WETLAND BUFFERS, CHESAPEAKE BAY CRITICAL AREA, FORESTS, ARCHEOLOGICAL SITES, HISTORIC SITES, PARKLAND, AND OPEN WATERS. DESIGNATE A RESPONSIBLE PARTY TO MONITOR ALL WORK IN THESE AREAS AND ENSURE THAT REASONABLE CARE IS TAKEN DURING WORK IN AND ADJACENT TO THESE AREAS.

8. INGRESS / EGRESS CONTROLS

PROTECT ALL POINTS OF CONSTRUCTION INGRESS AND EGRESS AND PREVENT THE DEPOSITION OF MATERIALS ON PUBLIC ROADS. IF DEPOSITION OCCURS, MECHANICALLY REMOVE ALL MATERIALS DEPOSITED ON PUBLIC ROADS IMMEDIATELY. FLUSHING OF ROAD SURFACES IS PROHIBITED. WHEN NO SCE IS PROVIDED, KEEP ALL CONSTRUCTION EQUIPMENT WITHIN THE LOD UNTIL THE WORK IS COMPLETE. CLEAN TREADS/TIRES PRIOR TO THE EQUIPMENT LEAVING THE LOD.

9. EROSION AND SEDIMENT CONTROL EXCAVATION

DISPOSE OF MATERIAL REMOVED FROM ESC DEVICES IN AN APPROVED WASTE SITE AS SPECIFIED IN SECTION 201. MATERIALS MAY BE STORED FOR RE-USE. MATERIALS STORED ON-SITE MAY BE REUSED ONCE IT IS DRIED AND IF IT MEETS THE REQUIREMENTS FOR EMBANKMENTS OR OTHER UNSPECIFIED NEEDS.

10. DEWATERING PRACTICES

OPERATE DEWATERING PRACTICES IN A MANNER THAT DOES NOT DISCHARGE SEDIMENT INTO WATERWAYS. NO VISIBLE CHANGES TO STREAM CLARITY ARE ACCEPTABLE.

11. STANDARD STABILIZATION NOTE

FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, COMPLETE PERMANENT OR TEMPORARY STABILIZATION WITHIN THREE (3) CALENDAR DAYS FOR SURFACES OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND SEVEN (7) DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE SITE. ENSURE CONTINUED STABILIZATION.

12. INCREMENTAL STABILIZATION

REFER TO THE MDE "2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL" FOR THE INCREMENTAL STABILIZATION OF CUT AND FILLS.

13. SEDIMENT TRAPS AND BASINS

PLAN DIMENSIONS ARE RELATIVE TO THE OUTLET ELEVATION. MAINTAIN INFLOW AND OUTFLOW LOCATIONS FOR TRAPS AND BASINS IN STABLE CONDITION.

14. OFF-SITE UTILITY WORK

FOLLOW ADDITIONAL BEST MANAGEMENT ESC PRACTICES FOR UTILITY CONSTRUCTION IN AREAS OUTSIDE OF DESIGNED CONTROLS:

- CALL "MISS UTILITY" AT 1-800-257-7777 AT LEAST 48 HOURS PRIOR TO THE START OF WORK.
- PLACE EXCAVATED MATERIAL ON THE HIGH SIDE OF TRENCHES.
- BACKFILL, COMPACT, AND STABILIZE AT THE END OF EACH WORKING DAY ALL TRENCHES FOR UTILITY INSTALLATIONS. WHEN THIS IS NOT POSSIBLE, CONFORM TO (d).
- PLACE TEMPORARY SILT FENCES IMMEDIATELY DOWNSTREAM OF ANY DISTURBED AREA THAT IS INTENDED TO REMAIN DISTURBED FOR MORE THAN ONE (1) DAY.

15. SITE INFORMATION*

- A. TOTAL AREA DISTURBED 0.56 ACRES
 B. TOTAL CUT 720 CU. YDS.
 C. TOTAL FILL 355 CU. YDS.
 D. OFFSITE WASTE/BORROW AREA LOCATION (IF KNOWN) TO BE DETERMINED

* (NOT FOR BIDDING PURPOSES)

16. MODIFICATIONS

SUBMIT MODIFICATIONS OF THE ESC MEASURES OR PLAN TO THE ADMINISTRATION FOR APPROVAL. OBTAIN ALL APPROVALS PRIOR TO IMPLEMENTING ANY MODIFICATION.

STANDARD SYMBOLS

100-YEAR FLOODPLAIN		MEDIAN INLET PROTECTION		STONE CHECK DAM	
AT-GRADE INLET PROTECTION		MEDIAN SUMP INLET PROTECTION		STONE/RIPRAP OUTLET SEDIMENT TRAP ST II	
BAFFLE BOARDS		MOUNTABLE BERM		SUBSURFACE DRAINS	
BENCHING		PERIMETER DIKE/SWALE		SUMP PIT	
CATCH BASIN INSERT		PERMANENT SOIL STABILIZATION MATTING-TYPE B		SUPER SILT FENCE	
CHESAPEAKE BAY CRITICAL AREA		PERMANENT SOIL STABILIZATION MATTING-TYPE C		TEMPORARY ACCESS BRIDGE	
CLEAR WATER DIVERSION PIPE		PIPE OUTLET SEDIMENT TRAP ST I		TEMPORARY ACCESS CULVERT	
CLEAR WATER PIPE		PIPE SLOPE DRAIN		TEMPORARY ASPHALT BERM	
COMBINATION INLET PROTECTION		PLUNGE POOL		TEMPORARY BARRIER DIVERSION	
CONCRETE WASHOUT STRUCTURE		PORTABLE SEDIMENT TANK		TEMPORARY GABION OUTLET STRUCTURE	
CURB INLET PROTECTION		PROPOSED CONTOURS		TEMPORARY ORANGE CONSTRUCTION FENCE (TOCF)	
DIVERSION FENCE		REMOVABLE PUMPING STATION		TEMPORARY SOIL STABILIZATION MATTING-TYPE A	
DRAINAGE BOUNDARY		RIPRAP INFLOW PROTECTION		TEMPORARY SOIL STABILIZATION MATTING-TYPE E	
EARTH DIKE		RIPRAP OUTLET SEDIMENT TRAP ST III		TEMPORARY SOIL STABILIZATION MATTING-TYPE D	
EMERGENCY SPILLWAY		ROCK OUTLET PROTECTION I		TEMPORARY STONE OUTLET STRUCTURE	
EXISTING CONTOURS		ROCK OUTLET PROTECTION II		TEMPORARY SWALE	
FILTER BAG		ROCK OUTLET PROTECTION III		TREE PROTECTION FENCE	
FILTER BERM		SILT FENCE		VERTICAL DRAW-DOWN DEVICE	
FILTER LOG		SILT FENCE ON PAVEMENT		WASH RACK OPTION	
GABION INFLOW PROTECTION		SOD		WETLAND	
GABION INLET PROTECTION		STABILIZED CONSTRUCTION ENTRANCE (SCE)		WETLAND BUFFER	
HORIZONTAL DRAW-DOWN DEVICE		STANDARD INLET PROTECTION			
LIMIT OF DISTURBANCE		STOCKPILE AREA			

P.E. CERTIFICATION

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND

LICENSE NO. 20903

EXPIRATION DATE: 7/18/2021

DESIGN CERTIFICATION


I HEREBY CERTIFY THAT THIS PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH THE MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, THE 2000 MARYLAND STORMWATER DESIGN MANUAL, VOLUMES I & II INCLUDING SUPPLEMENTS, THE ENVIRONMENT ARTICLE SECTIONS 4-101 THROUGH 116 AND SECTIONS 4-201 AND 215, AND THE CODE OF MARYLAND REGULATIONS (COMAR) 26.17.01 AND COMAR 26.17.02 FOR EROSION AND SEDIMENT CONTROL AND STORMWATER MANAGEMENT, RESPECTIVELY.

DATE _____ DESIGNER'S SIGNATURE _____

MD REGISTRATION NO. 20903 PRINTED NAME JAMES G. KESTER

(P.E.) R.L.S., R.L.A. OR R.A. (CIRCLE ONE)

HIGHWAY HYDRAULICS DIVISION



MARYLAND DEPARTMENT OF TRANSPORTATION
 STATE HIGHWAY ADMINISTRATION

REPLACEMENT OF SMALL STRUCTURES
 NOS. 03189X0, 03190X0, & 03192X0
 ON MD 146 (DULANEY VALLEY ROAD)
 OVER DRAINAGE DITCH

EROSION AND SEDIMENT CONTROL GENERAL NOTES

SCALE NTS ADVERTISED DATE TBD CONTRACT NO. BA0845180

DESIGNED BY MSK COUNTY BALTIMORE

DRAWN BY MSK LOGMILE _____

CHECKED BY JGK HORIZONTAL SCALE _____

MDE/PRD 15-PR-0068 VERTICAL SCALE _____

DRAWING NO. **ES-1** OF **15** SHEET NO. 16 OF 90




In Joint Venture

EROSION AND SEDIMENT CONTROL – DETAILS

APPLICABLE

**DETAIL E-1 SILT FENCE
(REPLACES MDE DETAIL E-1)**

ELEVATION

CROSS SECTION

JOINING TWO ADJACENT SILT FENCE SECTIONS (TOP VIEW)

POSTS
STEP 1: STAPLE STAPLE
STEP 2: TWIST POSTS TOGETHER STAPLE STAPLE
STEP 3: STAPLE STAPLE
FINAL STAPLE STAPLE

STANDARD SYMBOL
—SF—

NOTES

- USE WOOD POSTS 1 3/4" X 1 3/4" +/- 1/8" INCH (MINIMUM) SQUARE CUT, OF SOUND QUALITY HARDWOOD, AS AN ALTERNATIVE TO WOODEN POST USE STANDARD "T" OR "U" SECTION STEEL POSTS WEIGHING NOT LESS THAN 1 POUND PER LINEAR FOOT
- USE 42 INCH MINIMUM POSTS DRIVEN 16 INCH MINIMUM INTO GROUND NO MORE THAN 10 FEET APART.
- USE CLASS F GEOTEXTILE AND FASTEN GEOTEXTILE SECURELY TO UPSLOPE SIDE OF FENCE POSTS WITH WIRE TIES OR STAPLES AT TOP AND MID-SECTION.
- EMBED GEOTEXTILE A MINIMUM OF 8 INCHES VERTICALLY INTO THE GROUND, BACKFILL AND COMPACT THE SOIL ON BOTH SIDES OF FABRIC.
- WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN, OVERLAP, TWIST, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL.
- EXTEND BOTH ENDS OF THE SILT FENCE A MINIMUM OF 5 HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SILT FENCE.
- REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN, IF UNDERMINING OCCURS, REINSTALL FENCE.

NOT APPLICABLE

**DETAIL E-3 SUPER SILT FENCE
(REPLACES MDE DETAIL E-3)**

ELEVATION

CROSS SECTION

STANDARD SYMBOL
—SSF—

NOTES

- INSTALL 2 3/8" INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND 6 FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART, DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND.
- FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2 3/8" INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HUG RINGS.
- RUN A 7 GAUGE TENSION WIRE CONTINUOUSLY BETWEEN POSTS NEAR THE TOP OF THE GEOTEXTILE. ATTACH THE WIRE TO THE GEOTEXTILE WITH HOG RING FASTENERS AT 18 INCH INTERVALS.
- FASTEN GEOTEXTILE SECURELY TO THE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.
- WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN, OVERLAP ENDS BY 6 INCHES, FOLD, AND STAPLE TO PREVENT SEDIMENT BYPASS.
- EXTEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SUPER SILT FENCE
- REMOVE ACCUMULATED SEDIMENTS AND DEBRIS WHEN BULGES DEVELOP IN FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN, IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE.

NOT APPLICABLE

DETAIL CATCH BASIN INSERT

ISOMETRIC VIEW

STANDARD SYMBOL
CBI

MAXIMUM DRAINAGE AREA = 1/4 ACRE

NOTES

- LIFT GRATE AND PLACE GEOTEXTILE INSERT IN POSITION SO THAT THE GEOTEXTILE FORMS A BASKET SHAPE WITHIN THE INLET, LEAVE APPROXIMATELY 6 INCHES OF THE FABRIC OUTSIDE THE FRAME.
- TO REMOVE CATCH BASIN INSERT, PLACE REBAR THROUGH THE LIFTING LOOPS ON EACH SIDE OF THE SACK.
- THE GEOTEXTILE SHALL BE WOVEN POLYPROPYLENE THAT MEETS OR EXCEEDS THE FOLLOWING:

PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	300 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20%
PUNCTURE	ASTM D-4833	120 LBS
MULLEN BURST	ASTM D-3786	800 PSI
TRAPEZOIDAL TEAR	ASTM D-4533	120 LBS
UV RESISTANCE	ASTM D-4355	80%
APPARENT OPENING SIZE	ASTM D-4751	40 US SIEVE
FLOW RATE	ASTM D-4491	40 GAL/MIN/SQ. FT.
PERMITTIVITY	ASYM D-4491	0.55 SEC-1

- INSPECT AND PROVIDE NECESSARY MAINTENANCE PERIODICALLY AND AFTER EACH RAIN EVENT.
- INSPECT FREQUENTLY AND REPLACE THE GEOTEXTILE INSERT OR CLEAN WHEN CLOGGED WITH SEDIMENT.

BY: Susan L. Foster

R / W PLAT NUMBER	CROSS REFERENCE	REVISIONS	EROSION AND SEDIMENT CONTROL DETAILS – SHEET 1																
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>ITEM</th> <th>SHEET NOS.</th> </tr> </thead> <tbody> <tr> <td>TYPICAL SHEETS</td> <td>4</td> </tr> <tr> <td>GEOMETRIC LAYOUT SHEETS</td> <td>5</td> </tr> <tr> <td>ROADWAY PLAN SHEETS</td> <td>6-12</td> </tr> <tr> <td>TRAFFIC CONTROL SHEETS</td> <td>13-15</td> </tr> <tr> <td>EROSION & SEDIMENT CONTROL</td> <td>16-30</td> </tr> <tr> <td>LANDSCAPE PLAN SHEETS</td> <td>31-32</td> </tr> <tr> <td>STRUCTURAL SHEETS</td> <td>33-90</td> </tr> </tbody> </table>	ITEM	SHEET NOS.	TYPICAL SHEETS	4	GEOMETRIC LAYOUT SHEETS	5	ROADWAY PLAN SHEETS	6-12	TRAFFIC CONTROL SHEETS	13-15	EROSION & SEDIMENT CONTROL	16-30	LANDSCAPE PLAN SHEETS	31-32	STRUCTURAL SHEETS	33-90		<p>SCALE _____ NTS _____ ADVERTISED DATE _____ TBD _____ CONTRACT NO. _____ BA0845180 _____</p> <p>DESIGNED BY _____ HHD _____ COUNTY _____ BALTIMORE _____</p> <p>DRAWN BY _____ HHD _____ LOGMILE _____</p> <p>CHECKED BY _____ HHD _____ HORIZONTAL SCALE _____</p> <p>MDE/PRD _____ 15-PR-0068 _____ VERTICAL SCALE _____</p> <p>DRAWING NO. ES-2 OF 15 SHEET NO. 17 OF 90</p>
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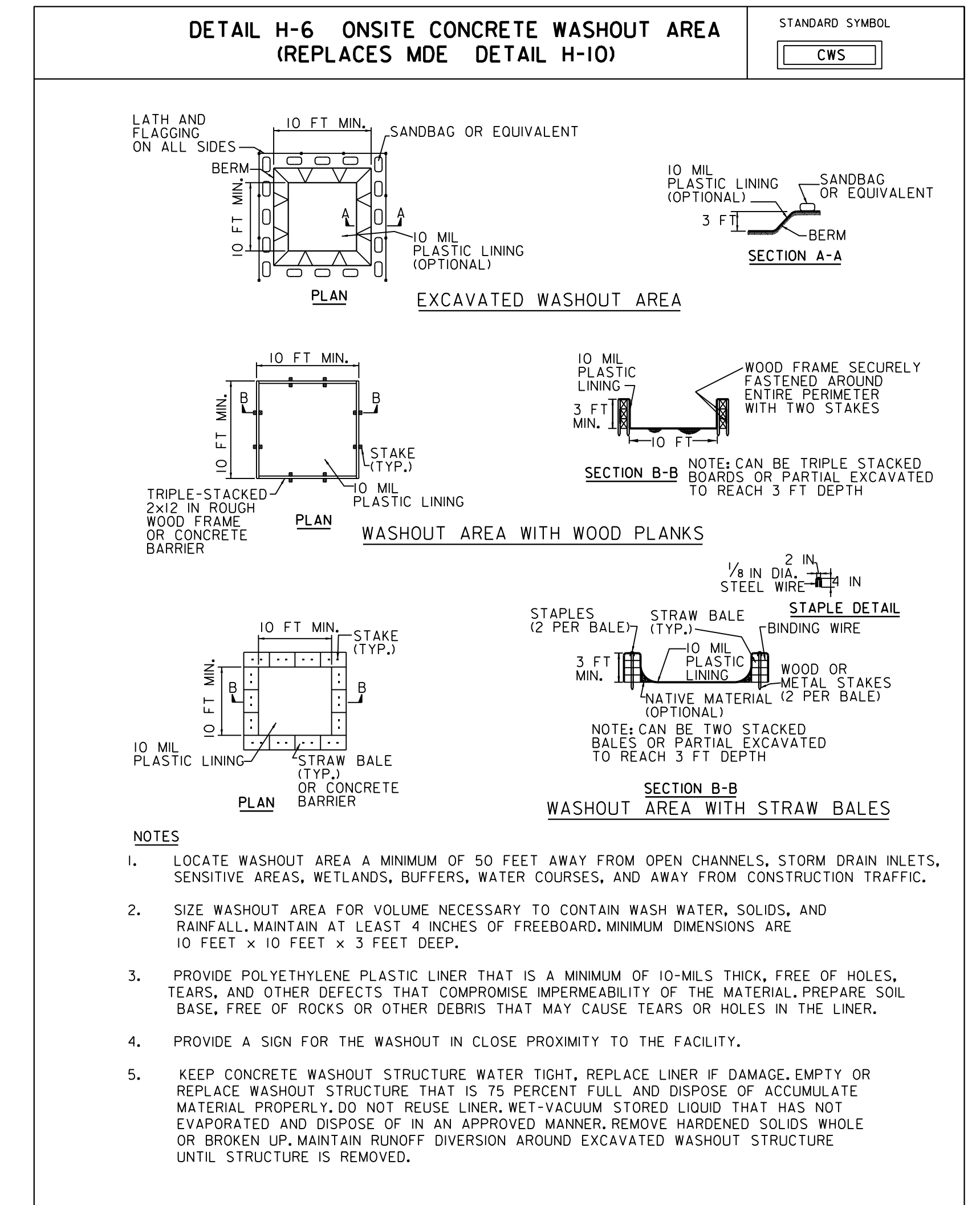
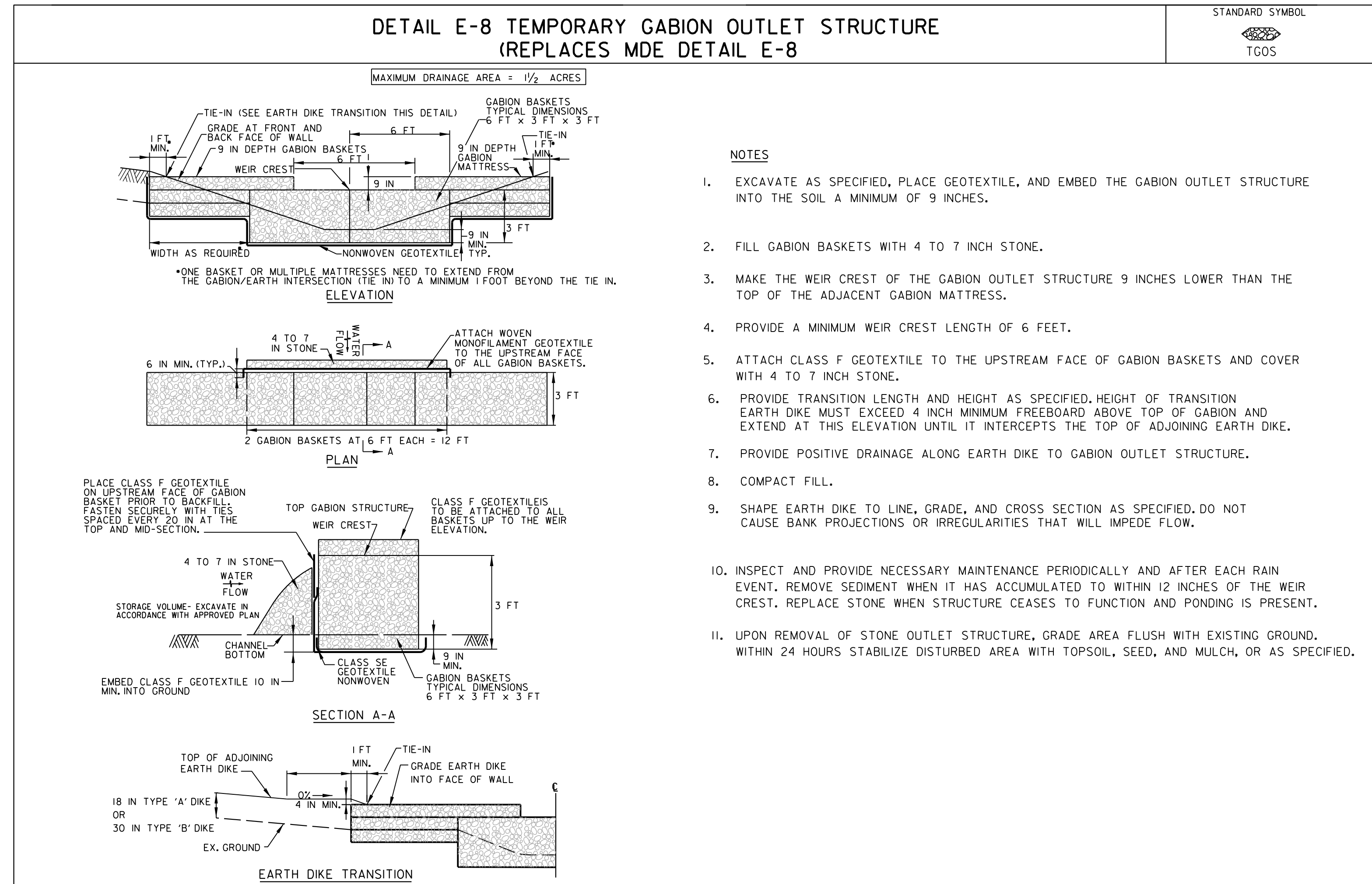
STATE HIGHWAY ADMINISTRATION

HIGHWAY HYDRAULICS DIVISION

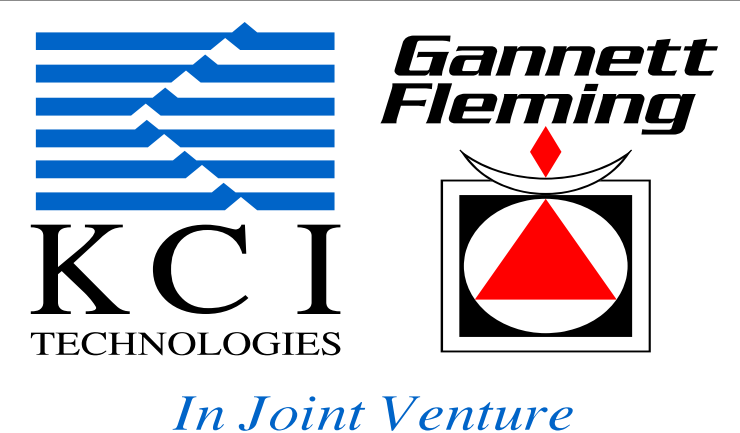
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EROSION AND SEDIMENT CONTROL – DETAILS

NOT APPLICABLE



BY: Susan, Foster



PLOTTED: Thursday, November 07, 2019 AT 04:25 PM

R /W PLAT NUMBER	CROSS REFERENCE	REVISIONS	EROSION AND SEDIMENT CONTROL DETAILS – SHEET 2																
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MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

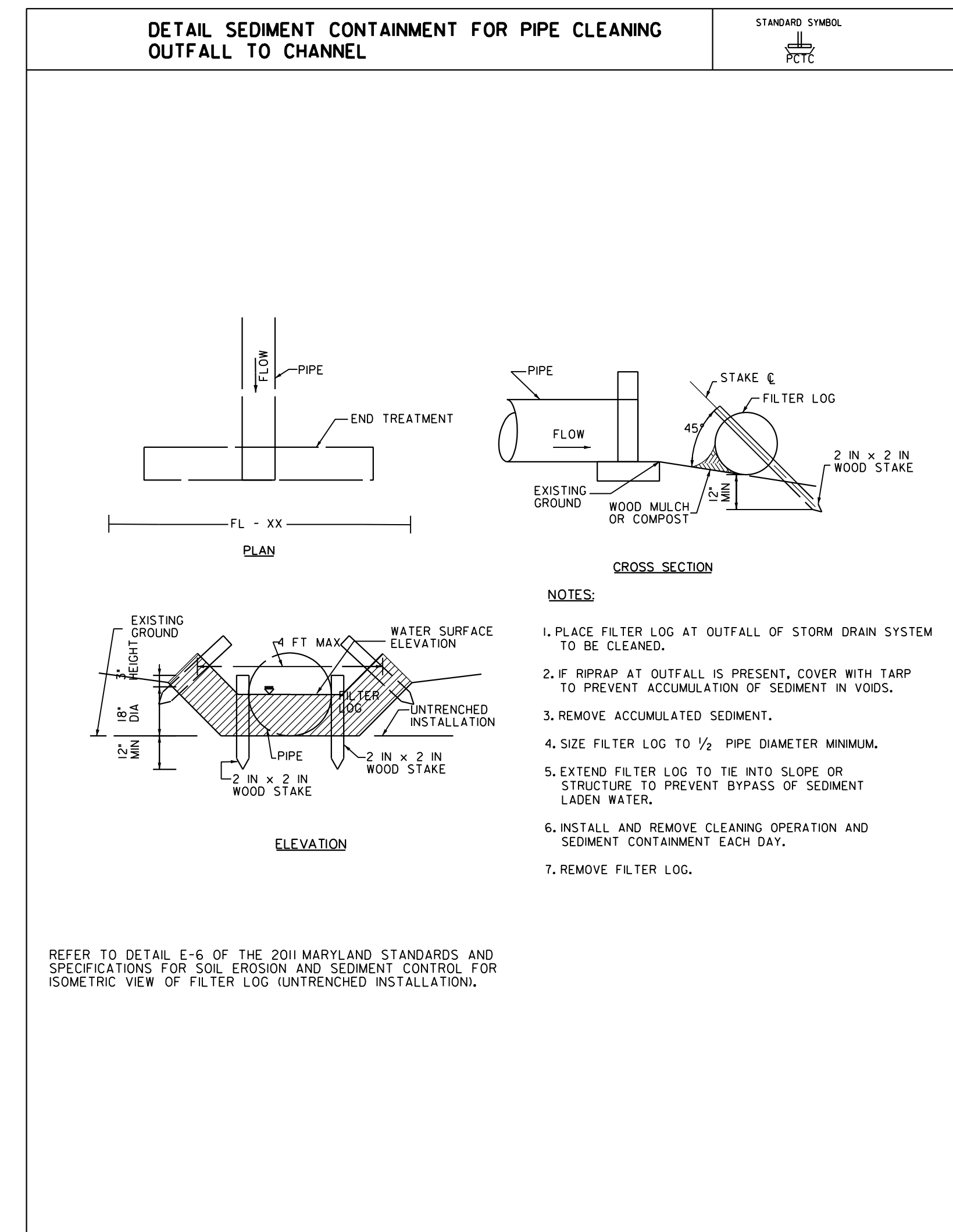
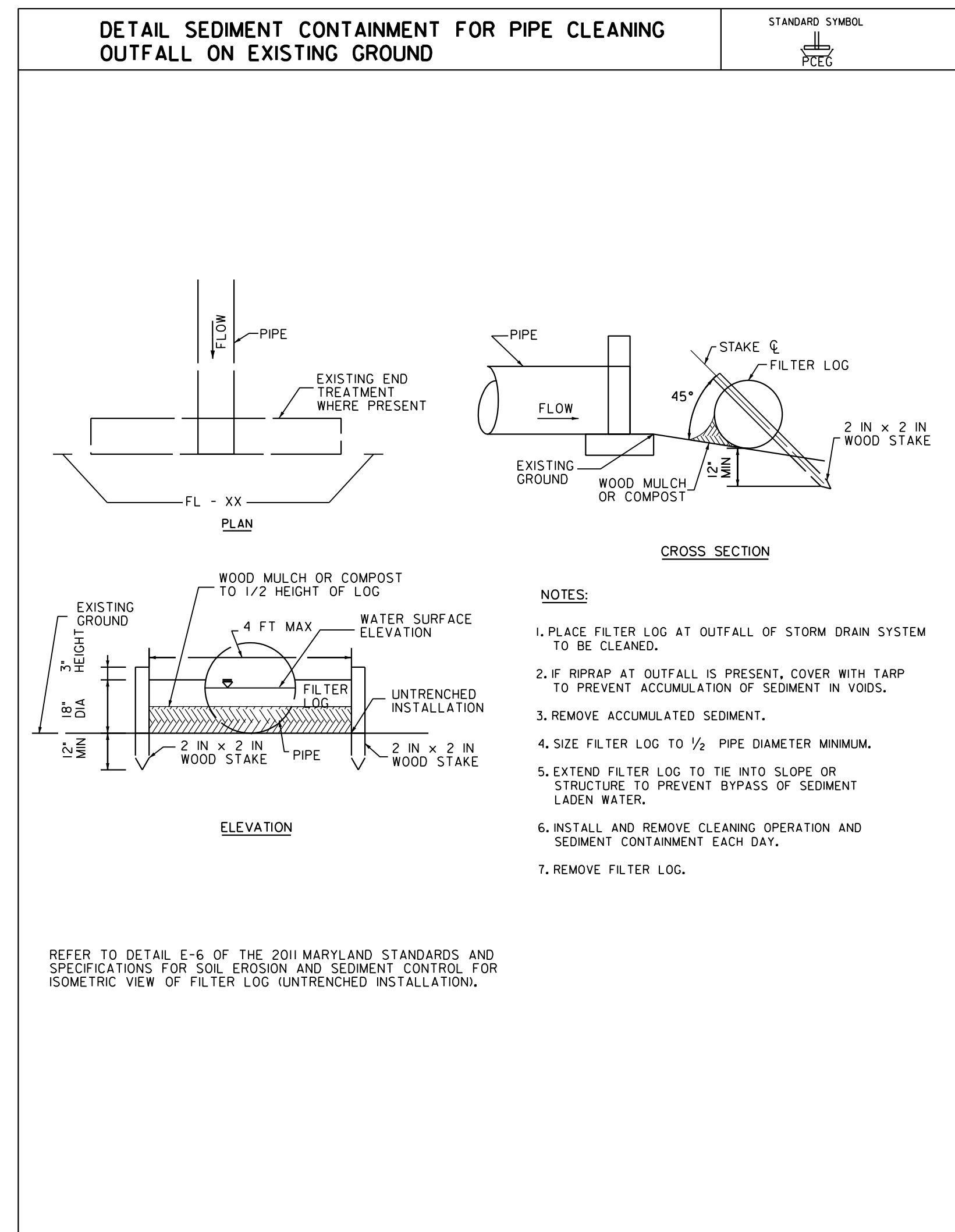
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NOT APPLICABLE

NOT APPLICABLE



**MARYLAND DEPARTMENT
OF TRANSPORTATION**

STATE HIGHWAY
ADMINISTRATION

HIGHWAY HYDRAULICS DIVISION

REPLACEMENT OF SMALL STRUCTURES
NOS. 03189X0, 03190X0, & 03192X0
ON MD 146 (DULANEY VALLEY ROAD)
OVER DRAINAGE DITCH

**KCI
TECHNOLOGIES**

**Gannett
Fleming**

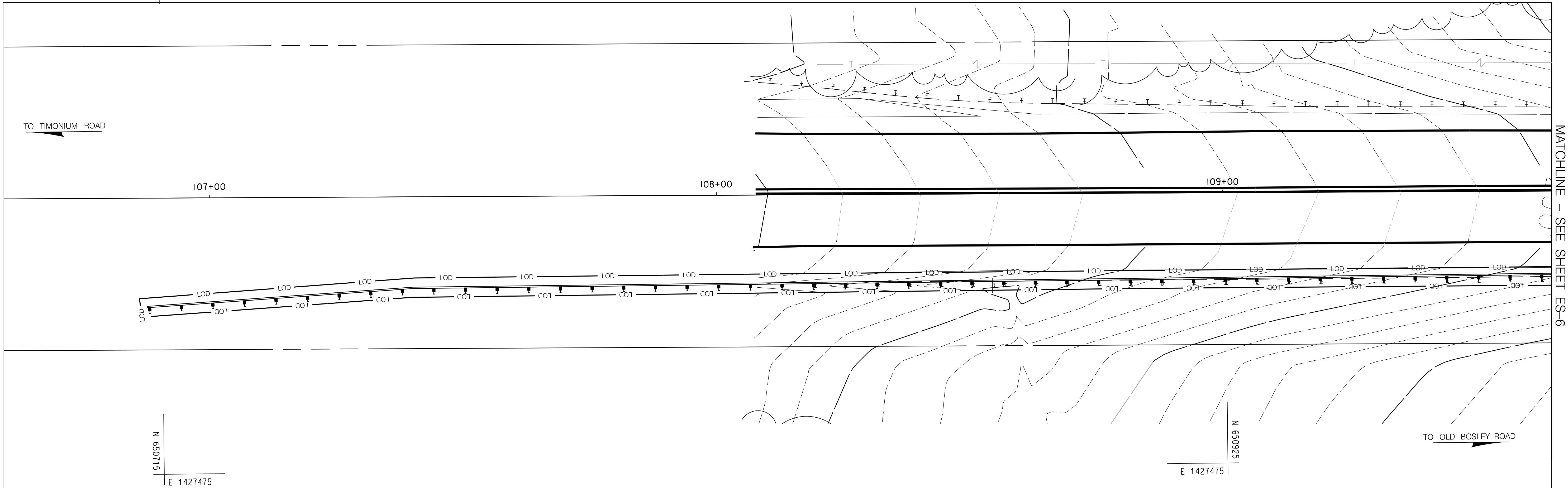
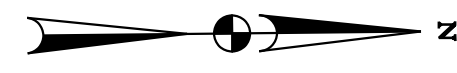
In Joint Venture

R /W PLAT NUMBER	CROSS REFERENCE	REVISIONS
	ITEM	SHEET NOS.
	TYPICAL SHEETS.....	4
	GEOMETRIC LAYOUT SHEETS.....	5
	ROADWAY PLAN SHEETS.....	6-12
	TRAFFIC CONTROL SHEETS.....	13-15
	EROSION & SEDIMENT CONTROL.....	16-30
	LANDSCAPE PLAN SHEETS.....	31-32
	STRUCTURAL SHEETS.....	33-90

EROSION AND SEDIMENT CONTROL DETAILS – SHEET 3			
SCALE	NTS	ADVERTISED DATE	TBD CONTRACT NO. BA0845180
DESIGNED BY	HHD	COUNTY	BALTIMORE
DRAWN BY	HHD	LOGMILE	
CHECKED BY	HHD	HORIZONTAL SCALE	
MDE/PRD	15-PR-0068	VERTICAL SCALE	
DRAWING NO.	ES-4	OF	15 SHEET NO. 19 OF 90

BY: Susan Foster

E 1427370
N 650715

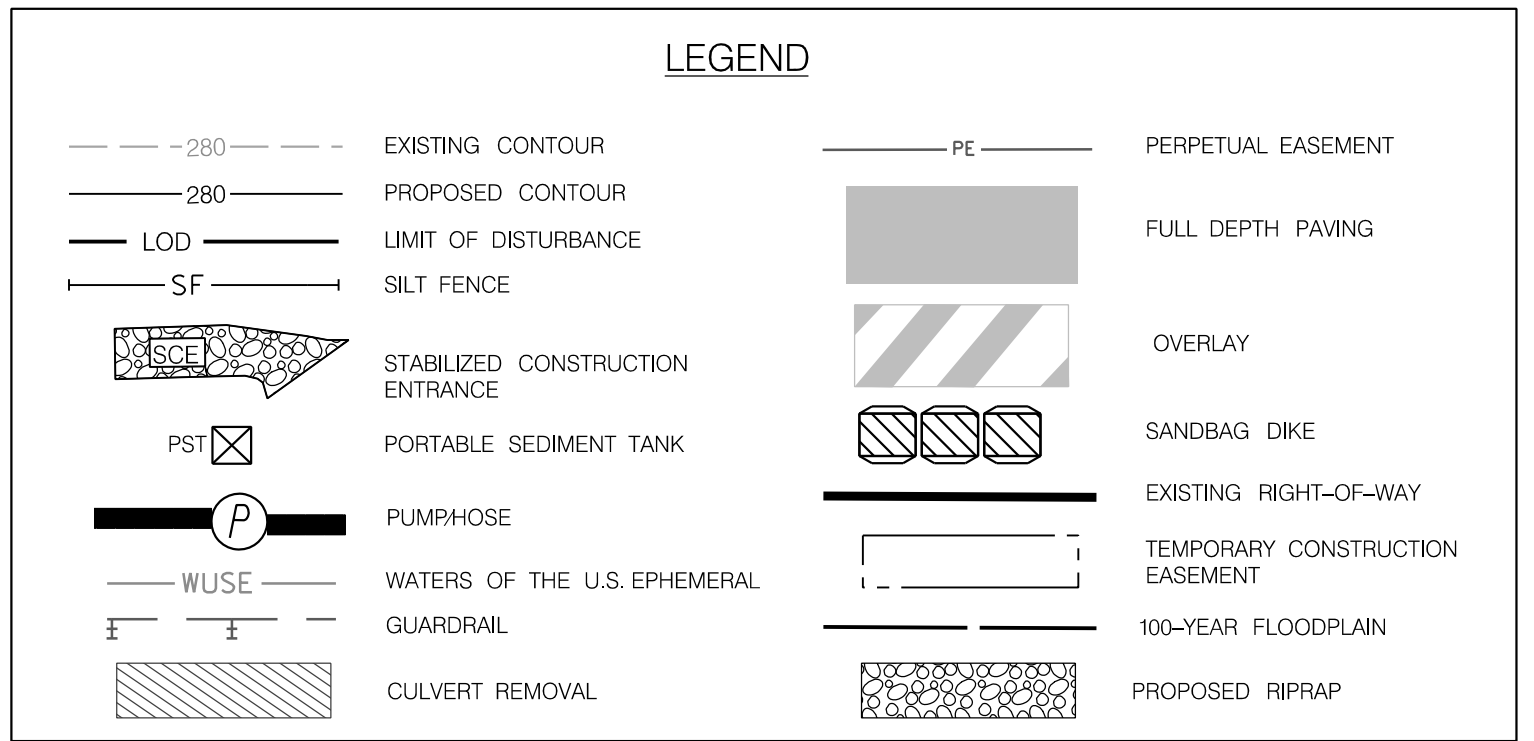


SEQUENCE OF CONSTRUCTION:

STAGE 1 (1 WEEKEND)

1. THE CONTRACTOR SHALL NOTIFY THE REGIONAL ENVIRONMENTAL COORDINATOR (REC) IN ACCORDANCE WITH GENERAL NOTE NO. 1 ON THE EROSION AND SEDIMENT CONTROL NOTE SHEET (ES-1). IN-STREAM WORK IS PROHIBITED FROM OCTOBER 1 THROUGH APRIL 30, INCLUSIVE OF ANY YEAR.
2. CLEAR AND GRUB FOR INSTALLATION OF SEDIMENT CONTROL MEASURES.
3. REMOVE GUARDRAIL AND INSTALL STABILIZED CONSTRUCTION ENTRANCE (SCE-1) AND SILT FENCE (SF-1A AND SF-1B).
4. SAW CUT AND EXCAVATE PAVEMENT TO PROVIDE A CONDUIT ACROSS MD 146 (DULANEY VALLEY ROAD), LAY PORTION OF PUMP-AROUND HOSE IN ROADWAY CONDUIT AND PATCH ROADWAY PER DETAIL "CONDUIT IN SLOTTED PAVEMENT DETAIL" ON SHEET 30. ENSURE HOSE CAN BE CONNECTED AND DISCONNECTED TO PUMP-AROUND SYSTEM. INSTALL SANDBAG DIKES AND PUMP-AROUND AS SHOWN AND CONNECT TO HOSE EMBEDDED IN ROADWAY. SEDIMENT-LADEN FLOW SHALL NOT BE DISCHARGED TO DOWNSTREAM CHANNEL.
5. INSTALL TEMPORARY SUPPORT OF EXCAVATION. REMOVE PORTION OF EXISTING CULVERT INDICATED ON THIS STAGE 1 (NO. 03189X0) PLAN. CONSTRUCT PORTION OF DRAINAGE STRUCTURE NUMBER 03189X0 UNDER NORTHBOUND MD 146 (DULANEY VALLEY ROAD) DOWNSTREAM OF TEMPORARY SUPPORT OF EXCAVATION INCLUDING ENDWALL AND RIPRAP OUTLET PROTECTION PER THE PLANS.
6. BACKFILL AND INSTALL ROADWAY ASPHALT TO FINISHED ROADWAY ELEVATION AND REMOVE ANY ACCUMULATED SEDIMENT IN THE RIPRAP OUTFALL PROTECTION.
7. UPON STABILIZATION OF ALL AREAS AND WITH CONCURRENCE OF REC, REMOVE STABILIZED CONSTRUCTION ENTRANCE AND SILT FENCE AND STABILIZE AREAS DISTURBED BY THIS PROCESS. REMOVE CHANNEL PORTION OF DOWNSTREAM SANDBAG DIKE. THE REST OF THIS SANDBAG DIKE CAN BE LEFT IN PLACE FOR STAGE 2 (NO. 03189X0). MAINTAIN FLOW THROUGH CULVERT FOR PERIOD BETWEEN STAGE 1 (NO. 03189X0) AND STAGE 2 (NO. 03189X0).
8. USING THE METHOD OF SAME DAY STABILIZATION, INSTALL GUARDRAIL AS SHOWN IN STAGE 1 ON THIS PLAN. NO MORE AREA SHALL BE DISTURBED THAN CAN BE STABILIZED BY THE END OF THE WORK DAY. NO DISTURBED AREA SHALL BE LEFT UNSTABILIZED OVERNIGHT UNLESS THE RUNOFF IS DIRECTED TO AN MDE APPROVED SEDIMENT CONTROL DEVICE.

STAGE 1
STRUCTURE NO. 03189X0
SCALE: 1" = 10'



DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

MDOT
MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

HIGHWAY HYDRAULICS DIVISION

REPLACEMENT OF SMALL STRUCTURES
NOS. 03189X0, 03190X0, & 03192X0
ON MD 146 (DULANEY VALLEY ROAD)
OVER DRAINAGE DITCH

R / W PLAT NUMBER	CROSS REFERENCE	REVISIONS
	ITEM	SHEET NOS.
	TYPICAL SHEETS.....	4
	GEOMETRIC LAYOUT SHEETS.....	5
	ROADWAY PLAN SHEETS.....	6-12
	TRAFFIC CONTROL SHEETS.....	13-15
	EROSION & SEDIMENT CONTROL.....	16-30
	LANDSCAPE PLAN SHEETS.....	31-32
	STRUCTURAL SHEETS.....	33-90

EROSION AND SEDIMENT CONTROL PLAN

SCALE 1" = 10' ADVERTISED DATE TBD CONTRACT NO. BA0845180

DESIGNED BY JGK COUNTY BALTIMORE

DRAWN BY KKP LOGMILE

CHECKED BY JGK HORIZONTAL SCALE

MDE/PRD 15-PR-0068 VERTICAL SCALE

DRAWING NO. **ES-5** OF 15 SHEET NO. 20 OF 90

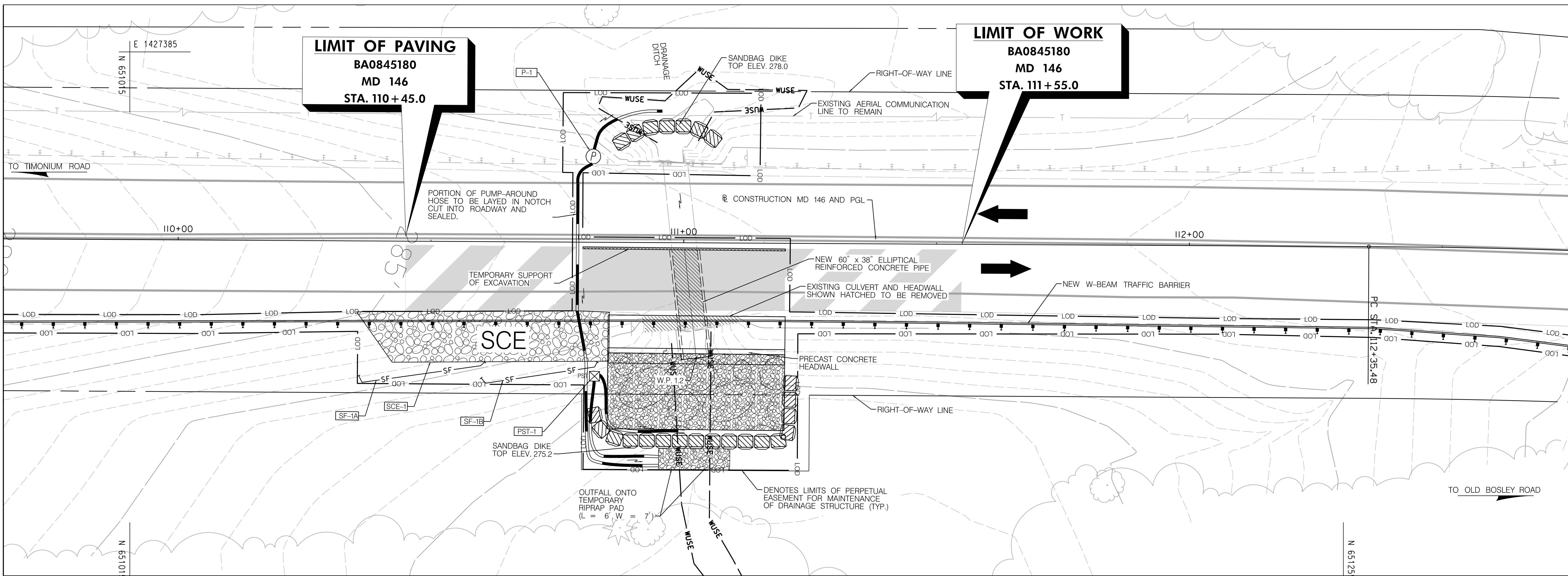
BY: Susan Foster

Gannett Fleming

KCI TECHNOLOGIES

In Joint Venture

NOTE: STRUCTURE NO. 03189X0, 03190X0, AND 03192X0 MAY BE CONSTRUCTED CONCURRENTLY.



**STAGE 1
STRUCTURE NO. 03189X0**
SCALE: 1" = 10'

- THE CONTRACTOR SHALL NOTIFY THE REGIONAL ENVIRONMENTAL COORDINATOR (REC) IN ACCORDANCE WITH GENERAL NOTE NO.1 ON THE EROSION AND SEDIMENT CONTROL NOTE SHEET (ES-1). IN-STREAM WORK IS PROHIBITED FROM OCTOBER 1 THROUGH APRIL 30, INCLUSIVE OF ANY YEAR.
- CLEAR AND GRUB FOR INSTALLATION OF SEDIMENT CONTROL MEASURES.
- REMOVE GUARDRAIL AND INSTALL STABILIZED CONSTRUCTION ENTRANCE (SCE-1) AND SILT FENCE (SF-1A AND SF-1B).
- SAW CUT AND EXCAVATE PAVEMENT TO PROVIDE A CONDUIT ACROSS MD 146 (DULANEY VALLEY ROAD), LAY PORTION OF PUMP-AROUND HOSE IN ROADWAY CONDUIT AND PATCH ROADWAY PER DETAIL "CONDUIT IN SLOTTED PAVEMENT DETAIL" ON SHEET 30. ENSURE HOSE CAN BE CONNECTED AND DISCONNECTED TO PUMP-AROUND SYSTEM. INSTALL SANDBAG DIKES AND PUMP-AROUND AS SHOWN AND CONNECT TO HOSE EMBEDDED IN ROADWAY. SEDIMENT-LADEN FLOW SHALL NOT BE DISCHARGED TO DOWNSTREAM CHANNEL.
- INSTALL TEMPORARY SUPPORT OF EXCAVATION. REMOVE PORTION OF EXISTING CULVERT INDICATED ON THIS STAGE 1 (NO. 03189X0) PLAN. CONSTRUCT PORTION OF DRAINAGE STRUCTURE NUMBER 03189X0 UNDER NORTHBOUND MD 146 (DULANEY VALLEY ROAD) DOWNSTREAM OF TEMPORARY SUPPORT OF EXCAVATION INCLUDING ENDWALL AND RIPRAP OUTLET PROTECTION PER THE PLANS.
- BACKFILL AND INSTALL ROADWAY ASPHALT TO FINISHED ROADWAY ELEVATION AND REMOVE ANY ACCUMULATED SEDIMENT IN THE RIPRAP OUTFALL PROTECTION.
- UPON STABILIZATION OF ALL AREAS AND WITH CONCURRENCE OF REC, REMOVE STABILIZED CONSTRUCTION ENTRANCE AND SILT FENCE AND STABILIZE AREAS DISTURBED BY THIS PROCESS. REMOVE CHANNEL PORTION OF DOWNSTREAM SANDBAG DIKE. THE REST OF THIS SANDBAG DIKE CAN BE LEFT IN PLACE FOR STAGE 2 (NO. 03189X0). MAINTAIN FLOW THROUGH CULVERT FOR PERIOD BETWEEN STAGE 1 (NO. 03189X0) AND STAGE 2 (NO. 03189X0).
- USING THE METHOD OF SAME DAY STABILIZATION, INSTALL GUARDRAIL AS SHOWN IN STAGE 1 ON THIS PLAN. NO MORE AREA SHALL BE DISTURBED THAN CAN BE STABILIZED BY THE END OF THE WORK DAY. NO DISTURBED AREA SHALL BE LEFT UNSTABILIZED OVERNIGHT UNLESS THE RUNOFF IS DIRECTED TO AN MDE APPROVED SEDIMENT CONTROL DEVICE.

LIMIT OF DISTURBANCE (STRUCTURE NO. 03189X0)		107+50.0	16.0	RT	110+80.3	45.5	RT	
		108+00.0	15.7	RT	110+80.4	28.2	RT	
STAGE 1		108+00.0	19.4	RT	111+00.0	45.6	RT	
STATION	OFFSET(FT)	108+07.8	15.6	RT	111+21.0	13.5	RT	
110+76.0	13.8	LT	108+50.0	19.1	RT	111+22.7	17.9	RT
110+76.0	29.5	LT	108+50.0	15.4	RT	111+22.7	45.7	RT
110+78.0	13.7	LT	108+83.3	18.8	RT	111+23.0	13.6	RT
110+80.0	13.7	LT	109+00.0	18.8	RT	111+50.0	13.8	RT
110+80.0	1.0	LT	109+00.0	15.2	RT	111+50.0	17.7	RT
111+00.0	1.0	LT	109+50.0	15.0	RT	112+00.0	17.5	RT
111+00.0	13.5	LT	109+50.0	18.6	RT	112+00.0	14.3	RT
111+00.0	29.6	LT	110+00.0	18.5	RT	112+06.6	14.4	RT
111+15.0	13.3	LT	110+00.0	14.8	RT	112+06.6	17.5	RT
111+15.1	29.6	LT	110+04.4	14.8	RT	112+36.5	18.0	RT
111+21.1	1.0	LT	110+04.5	18.5	RT	112+36.6	14.5	RT
106+86.0	19.9	RT	110+35.6	28.2	RT	112+50.0	18.8	RT
106+86.5	23.5	RT	110+35.6	17.9	RT	112+50.0	15.0	RT
107+00.0	22.6	RT	110+35.6	13.9	RT	112+61.6	19.4	RT
107+00.0	18.9	RT	110+50.0	28.2	RT	112+61.9	15.4	RT
107+40.0	19.9	RT	110+50.0	13.9	RT	112+78.1	21.1	RT
107+40.2	16.0	RT	110+55.0	13.8	RT	112+78.6	17.0	RT
107+50.0	19.8	RT	110+78.0	13.6	RT			

LEGEND

- EXISTING CONTOUR
- PROPOSED CONTOUR
- LIMIT OF DISTURBANCE
- SILT FENCE
- STABILIZED CONSTRUCTION ENTRANCE
- PORTABLE SEDIMENT TANK
- PUMPHOSE
- WATERS OF THE U.S. EPHEMERAL
- GUARDRAIL
- CULVERT REMOVAL
- PERPETUAL EASEMENT
- FULL DEPTH PAVING
- OVERLAY
- SANDBAG DIKE
- EXISTING RIGHT-OF-WAY
- TEMPORARY CONSTRUCTION EASEMENT
- 100-YEAR FLOODPLAIN
- PROPOSED RIPRAP

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

MDOT
MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

HIGHWAY HYDRAULICS DIVISION

REPLACEMENT OF SMALL STRUCTURES
NOS. 03189X0, 03190X0, & 03192X0
ON MD 146 (DULANEY VALLEY ROAD)
OVER DRAINAGE DITCH

PUMP*

NO.	STA.	CAPACITY (GPM)
P-1	110+82.16' LT	57

*CONTRACTOR TO SIZE SUBMERSIBLE PUMP PER THE REQUIRED CAPACITY IN THE PUMP SCHEDULE

R / W PLAT NUMBER	CROSS REFERENCE	REVISIONS
	ITEM	SHEET NOs.
	TYPICAL SHEETS	4
	GEOMETRIC LAYOUT SHEETS	5
	ROADWAY PLAN SHEETS	6-12
	TRAFFIC CONTROL SHEETS	13-15
	EROSION & SEDIMENT CONTROL	16-30
	LANDSCAPE PLAN SHEETS	31-32
	STRUCTURAL SHEETS	33-90

EROSION AND SEDIMENT CONTROL PLAN

SCALE 1" = 10' ADVERTISED DATE TBD CONTRACT NO. BA0845180

DESIGNED BY MSK COUNTY BALTIMORE

DRAWN BY MSK LOGMILE

CHECKED BY JGK HORIZONTAL SCALE

MDE/PRD 15-PR-0068 VERTICAL SCALE

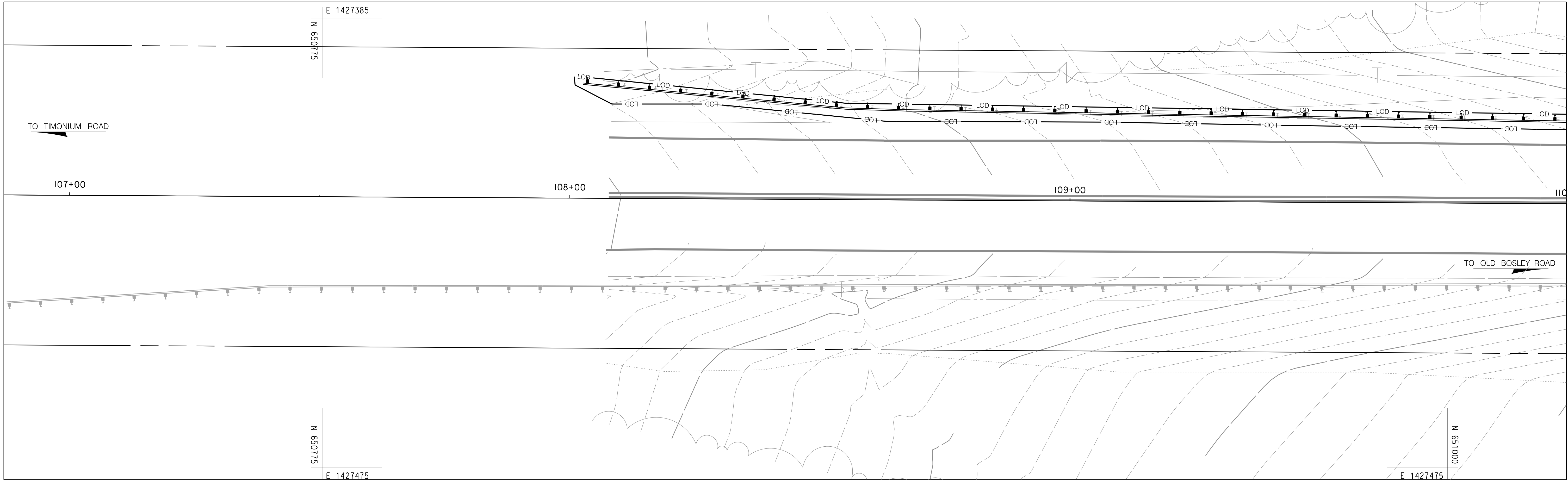
DRAWING NO. **ES-6** OF 15 SHEET NO. 21 OF 90

BY: Susan Foster

Gannett Fleming

KCI TECHNOLOGIES

In Joint Venture



**STAGE 2
STRUCTURE NO. 03189X0**
SCALE: 1"=10'

SEQUENCE OF CONSTRUCTION:

STAGE 2 (NO. 03189X0) (1 WEEKEND)

1. CLEAR AND GRUB FOR INSTALLATION OF SEDIMENT CONTROL MEASURES.
2. REMOVE GUARDRAIL AND INSTALL STABILIZED CONSTRUCTION ENTRANCE (SCE-2) AND SILT FENCE (SF-2A AND SF-2B) PER THIS STAGE 2 (NO. 03189X0) PLAN.
3. INSTALL SANDBAG DIKES AND PUMP-AROUND AS SHOWN (CONNECT PUMP-AROUND TO EXISTING HOSE IN ROADWAY). SEDIMENT-LADEN FLOW SHALL NOT BE DISCHARGED TO DOWNSTREAM CHANNEL.
4. REMOVE PORTION OF EXISTING CULVERT INDICATED ON STAGE 2 (NO. 03189X0) PLAN. CONSTRUCT PORTION OF DRAINAGE STRUCTURE NUMBER 03189X0 UNDER SOUTHBOUND MD 146 (DULANEY VALLEY ROAD) UPSTREAM OF TEMPORARY SUPPORT OF EXCAVATION INCLUDING ENDWALL PER THE PLANS.
5. BACKFILL AND INSTALL ROADWAY ASPHALT TO FINISHED ROADWAY ELEVATION. CAP BOTH ENDS OF CONDUIT.
6. REMOVE ANY ACCUMULATED SEDIMENT IN THE RIPRAP OUTFALL PROTECTION INSTALLED UNDER STAGE 1.
7. UPON STABILIZATION OF ALL AREAS AND WITH CONCURRENCE OF REC, REMOVE THE SANDBAG DIKES, STABILIZED CONSTRUCTION ENTRANCE, AND SILT FENCE AND STABILIZE AREAS DISTURBED BY THIS PROCESS.
8. USING THE METHOD OF SAME DAY STABILIZATION, INSTALL GUARDRAIL AS SHOWN IN STAGE 2 (NO. 03189X0). NO MORE AREA SHALL BE DISTURBED THAN CAN BE STABILIZED BY THE END OF THE WORK DAY. NO DISTURBED AREA SHALL BE LEFT UNSTABILIZED OVERNIGHT UNLESS THE RUNOFF IS DIRECTED TO AN MDE APPROVED SEDIMENT CONTROL DEVICE.

LEGEND			
	-280-	EXISTING CONTOUR	
	280	PROPOSED CONTOUR	
		LIMIT OF DISTURBANCE	
		SILT FENCE	
		STABILIZED CONSTRUCTION ENTRANCE	
		PORTABLE SEDIMENT TANK	
		PUMPHOSE	
		WATERS OF THE U.S. EPHEMERAL	
		GUARDRAIL	
		CULVERT REMOVAL	
		PERPETUAL EASEMENT	
		FULL DEPTH PAVING	
		OVERLAY	
		SAND BAG DAM	
		EXISTING RIGHT-OF-WAY	
		TEMPORARY CONSTRUCTION EASEMENT	
		100-YEAR FLOODPLAIN	
		PROPOSED RIPRAP	

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

HIGHWAY HYDRAULICS DIVISION

REPLACEMENT OF SMALL STRUCTURES
NOS. 03189X0, 03190X0, & 03192X0
ON MD 146 (DULANEY VALLEY ROAD)
OVER DRAINAGE DITCH

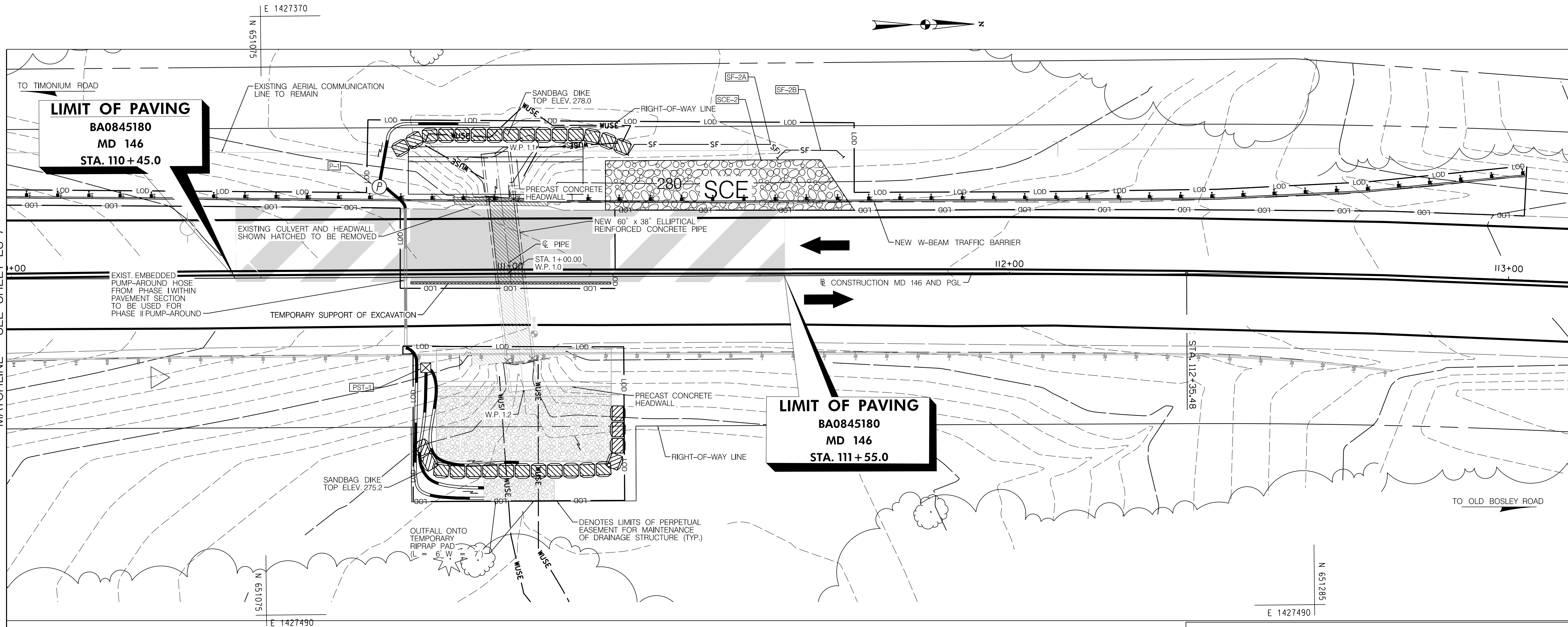
STATE HIGHWAY ADMINISTRATION

In Joint Venture

NOTE: STRUCTURE NO. 03189X0, 03190X0, AND 03192X0 MAY BE CONSTRUCTED CONCURRENTLY.

R / W PLAT NUMBER	CROSS REFERENCE	REVISIONS
	ITEM	SHEET NOS.
	TYPICAL SHEETS.....	4
	GEOMETRIC LAYOUT SHEETS.....	5
	ROADWAY PLAN SHEETS.....	6-12
	TRAFFIC CONTROL SHEETS.....	13-15
	EROSION & SEDIMENT CONTROL.....	16-30
	LANDSCAPE PLAN SHEETS.....	31-32
	STRUCTURAL SHEETS.....	33-90

EROSION AND SEDIMENT CONTROL PLAN			
SCALE 1" = 10'	ADVERTISED DATE	TBD	CONTRACT NO. BA0845180
DESIGNED BY	MSK	COUNTY	BALTIMORE
DRAWN BY	MSK	LOGMILE	
CHECKED BY	JGK	HORIZONTAL SCALE	
MDE/PRD	15-PR-0068	VERTICAL SCALE	
DRAWING NO.	ES-7	OF	15
		SHEET NO.	22 OF 90



**STAGE 2
STRUCTURE NO. 03189X0**
SCALE: 1" = 10'

SEQUENCE OF CONSTRUCTION:

STAGE 2 (NO. 03189X0) (1 WEEKEND)

- CLEAR AND GRUB FOR INSTALLATION OF SEDIMENT CONTROL MEASURES.
- REMOVE GUARDRAIL AND INSTALL STABILIZED CONSTRUCTION ENTRANCE (SCE-2) AND SILT FENCE (SF-2A AND SF-2B) PER THIS STAGE 2 (NO. 03189X0) PLAN.
- INSTALL SANDBAG DIKES AND PUMP-AROUND AS SHOWN (CONNECT PUMP-AROUND TO EXISTING HOSE IN ROADWAY). SEDIMENT-LADEN FLOW SHALL NOT BE DISCHARGED TO DOWNSTREAM CHANNEL.
- REMOVE PORTION OF EXISTING CULVERT INDICATED ON STAGE 2 (NO. 03189X0) PLAN. CONSTRUCT PORTION OF DRAINAGE STRUCTURE NUMBER 03189X0 UNDER SOUTHBOUND MD 146 (DULANEY VALLEY ROAD) UPSTREAM OF TEMPORARY SUPPORT OF EXCAVATION INCLUDING ENDWALL PER THE PLANS.
- BACKFILL AND INSTALL ROADWAY ASPHALT TO FINISHED ROADWAY ELEVATION. CAP BOTH ENDS OF CONDUIT.
- REMOVE ANY ACCUMULATED SEDIMENT IN THE RIPRAP OUTFALL PROTECTION INSTALLED UNDER STAGE 1.
- UPON STABILIZATION OF ALL AREAS AND WITH CONCURRENCE OF REC, REMOVE THE SANDBAG DIKES, STABILIZED CONSTRUCTION ENTRANCE, AND SILT FENCE AND STABILIZE AREAS DISTURBED BY THIS PROCESS.
- USING THE METHOD OF SAME DAY STABILIZATION, INSTALL GUARDRAIL AS SHOWN IN STAGE 2 (NO. 03189X0). NO MORE AREA SHALL BE DISTURBED THAN CAN BE STABILIZED BY THE END OF THE WORK DAY. NO DISTURBED AREA SHALL BE LEFT UNSTABILIZED OVERNIGHT UNLESS THE RUNOFF IS DIRECTED TO AN MDE APPROVED SEDIMENT CONTROL DEVICE.

LIMIT OF DISTURBANCE STRUCTURE NO. 03189X0		110+71.2	17.0	LT	110+80.3	45.5	RT	
		110+71.6	31.6	LT	110+80.4	15.4	RT	
STAGE 2		110+78.0	13.9	LT	111+21.0	2.4	RT	
STATION	OFFSET(FT)	111+21.0	13.3	LT	111+22.7	14.1	RT	
108+00.7	24.4	LT	111+69.0	13.1	LT	111+22.7	45.7	RT
108+00.9	22.6	LT	111+69.0	16.6	LT			
108+03.6	24.2	LT	111+69.0	30.6	LT			
108+08.3	18.9	LT	112+05.4	16.6	LT			
108+28.5	19.0	LT	112+05.4	13.0	LT			
108+55.1	19.3	LT	112+34.7	12.9	LT			
108+63.2	15.7	LT	112+41.6	16.9	LT			
109+06.4	15.8	LT	112+54.9	12.8	LT			
109+27.7	15.6	LT	112+71.1	18.7	LT			
109+48.9	15.3	LT	112+75.1	12.9	LT			
109+71.6	15.1	LT	113+02.7	12.8	LT			
109+94.2	14.9	LT	113+02.7	22.9	LT			
110+04.8	14.8	LT	110+77.9	2.2	RT			
110+04.8	17.8	LT	110+78.4	15.4	RT			
110+65.0	14.1	LT	110+78.4	13.8	RT			

LEGEND

	EXISTING CONTOUR		PERPETUAL EASEMENT
	PROPOSED CONTOUR		FULL DEPTH PAVING
	LIMIT OF DISTURBANCE		SILT FENCE
	STABILIZED CONSTRUCTION ENTRANCE		OVERLAY
	PORTABLE SEDIMENT TANK		SAND BAG DAM
	PUMPHOSE		EXISTING RIGHT-OF-WAY
	WATERS OF THE U.S. EPHEMERAL		TEMPORARY CONSTRUCTION EASEMENT
	GUARDRAIL		100-YEAR FLOODPLAIN
	CULVERT REMOVAL		PROPOSED RIPRAP

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

MDOT
MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

HIGHWAY HYDRAULICS DIVISION

REPLACEMENT OF SMALL STRUCTURES
NOS. 03189X0, 03190X0, & 03192X0
ON MD 146 (DULANEY VALLEY ROAD)
OVER DRAINAGE DITCH

PUMP*

NO.	STA.	CAPACITY (GPM)
P-1	110+74, 16'	57

*CONTRACTOR TO SIZE SUBMERSIBLE PUMP PER THE REQUIRED CAPACITY IN THE PUMP SCHEDULE

R / W PLAT NUMBER	CROSS REFERENCE	REVISIONS
	ITEM SHEET NOS.	
	TYPICAL SHEETS.....	4
	GEOMETRIC LAYOUT SHEETS.....	5
	ROADWAY PLAN SHEETS.....	6-12
	TRAFFIC CONTROL SHEETS.....	13-15
	EROSION & SEDIMENT CONTROL.....	16-30
	LANDSCAPE PLAN SHEETS.....	31-32
	STRUCTURAL SHEETS.....	33-90

EROSION AND SEDIMENT CONTROL PLAN

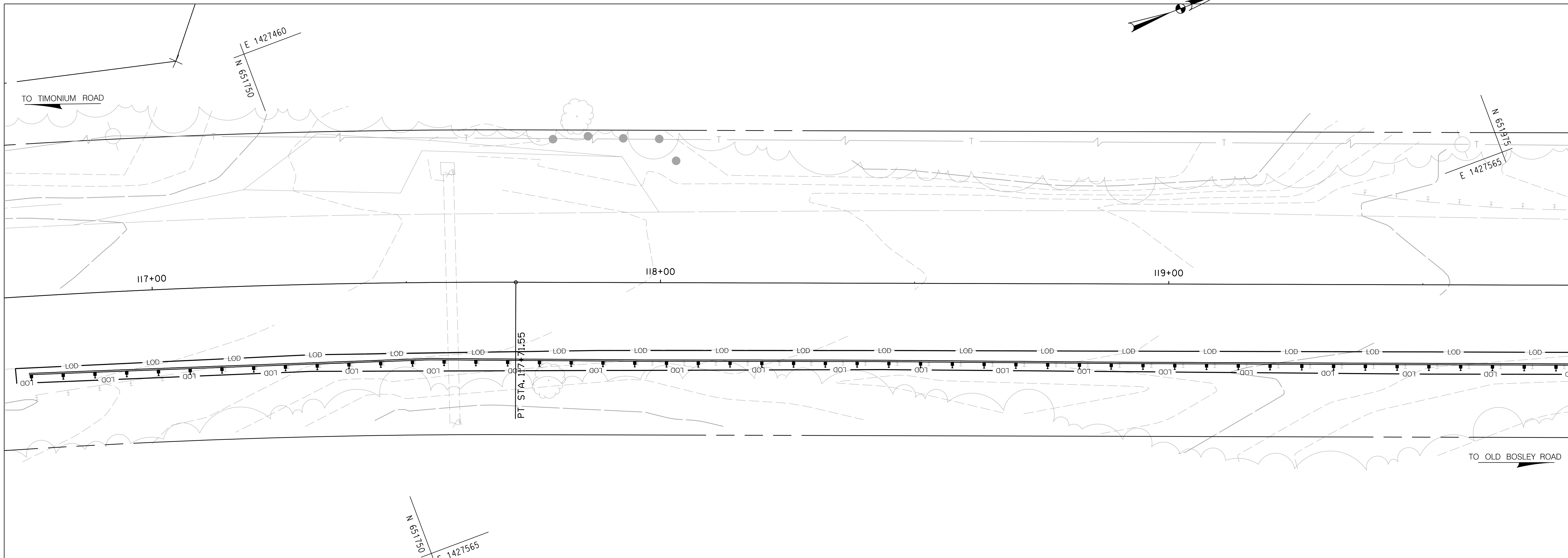
SCALE 1" = 10' ADVERTISED DATE TBD CONTRACT NO. BA0845180

DESIGNED BY MSK COUNTY BALTIMORE
DRAWN BY MSK LOGMILE
CHECKED BY JGK HORIZONTAL SCALE
MDE/PRD 15-PR-0068 VERTICAL SCALE

DRAWING NO. **ES-8** OF 15 SHEET NO. 23 OF 90

BY: Susan Foster

Gannett Fleming
KCI TECHNOLOGIES
In Joint Venture



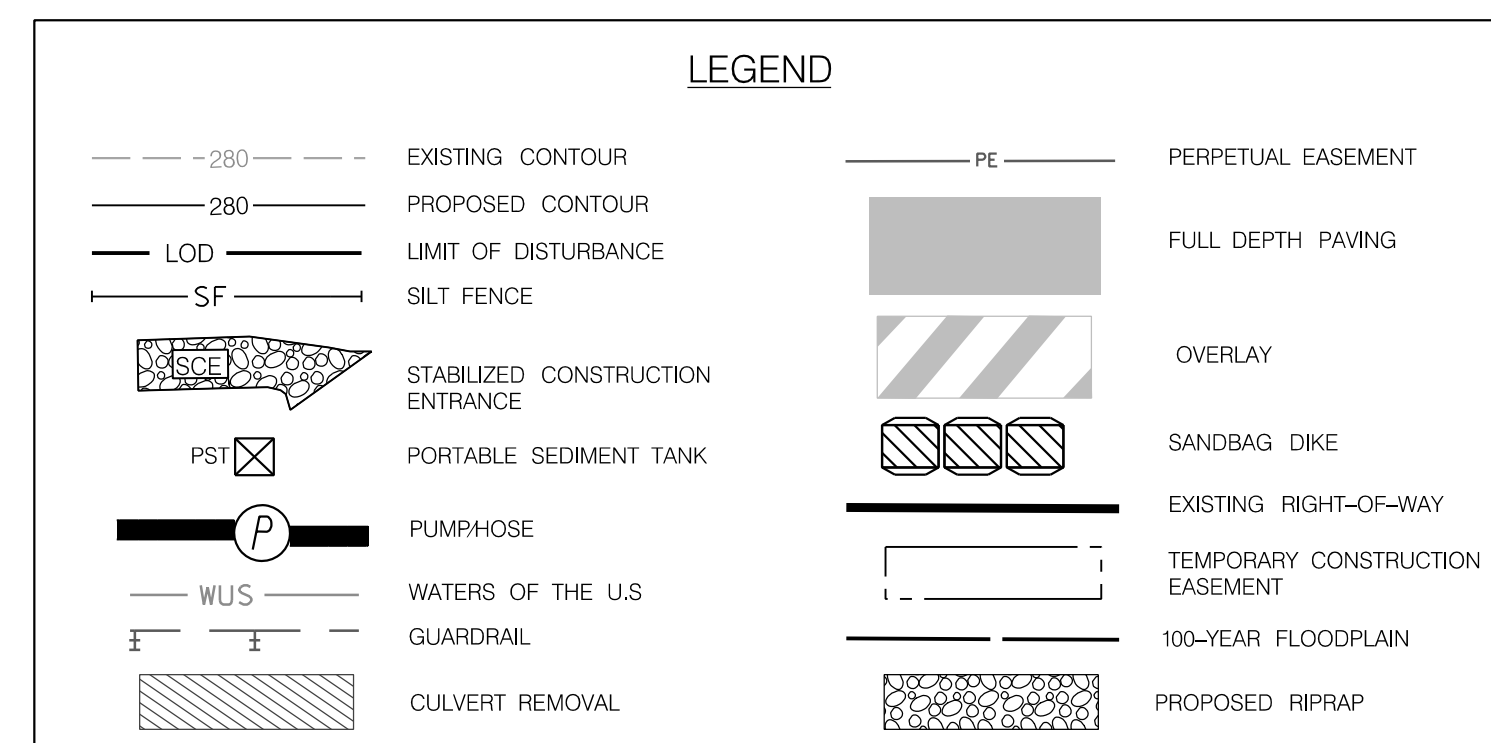
MATCHLINE - SEE SHEET ES-10

SEQUENCE OF CONSTRUCTION:

STAGE 1 (NO. 03190X0) (1 WEEKEND)

1. THE CONTRACTOR SHALL NOTIFY THE REGIONAL ENVIRONMENTAL COORDINATOR (REC) IN ACCORDANCE WITH GENERAL NOTE NO. 1 ON THE EROSION AND SEDIMENT CONTROL NOTE SHEET (ES-1). IN-STREAM WORK IS PROHIBITED FROM OCTOBER 1 THROUGH APRIL 30, INCLUSIVE OF ANY YEAR.
2. CLEAR AND GRUB FOR INSTALLATION OF SEDIMENT CONTROL MEASURES.
3. REMOVE GUARDRAIL AND INSTALL STABILIZED CONSTRUCTION ENTRANCE (SCE-3) AND SILT FENCE (SF-3A AND SF-3B).
4. SAW CUT AND EXCAVATE PAVEMENT TO PROVIDE A CONDUIT ACROSS MD 146 (DULANEY VALLEY ROAD), LAY PORTION OF PUMP-AROUND HOSE IN ROADWAY CONDUIT AND PATCH ROADWAY PER DETAIL "CONDUIT IN SLOTTED PAVEMENT DETAIL" ON SHEET 30. ENSURE HOSE CAN BE CONNECTED AND DISCONNECTED TO PUMP-AROUND SYSTEM. INSTALL SANDBAG DIKES AND PUMP-AROUND AS SHOWN AND CONNECT TO HOSE EMBEDDED IN ROADWAY. SEDIMENT-LADEN FLOW SHALL NOT BE DISCHARGED TO DOWNSTREAM CHANNEL.
5. INSTALL TEMPORARY SUPPORT OF EXCAVATION. REMOVE PORTION OF EXISTING CULVERT INDICATED ON THIS STAGE 1 (NO. 03190X0) PLAN. CONSTRUCT PORTION OF DRAINAGE STRUCTURE NUMBER 03190X0 UNDER NORTHBOUND MD 146 (DULANEY VALLEY ROAD) DOWNSTREAM OF TEMPORARY SUPPORT OF EXCAVATION INCLUDING ENDWALL AND RIPRAP OUTLET PROTECTION PER THE PLANS.
6. BACKFILL AND INSTALL ROADWAY ASPHALT TO FINISHED ROADWAY ELEVATION AND REMOVE ANY ACCUMULATED SEDIMENT IN THE RIPRAP OUTFALL PROTECTION.
7. UPON STABILIZATION OF ALL AREAS AND WITH CONCURRENCE OF REC, REMOVE THE STABILIZED CONSTRUCTION ENTRANCE AND SILT FENCE AND STABILIZE AREAS DISTURBED BY THIS PROCESS. REMOVE CHANNEL PORTION OF DOWNSTREAM SANDBAG DIKE. THE REST OF THIS SANDBAG DIKE CAN BE LEFT IN PLACE FOR STAGE 2-2. MAINTAIN FLOW THROUGH CULVERT FOR PERIOD BETWEEN STAGE 1 (NO. 03190X0) AND STAGE 2 (NO. 03190X0).
8. USING THE METHOD OF SAME DAY STABILIZATION, INSTALL GUARDRAIL AS SHOWN IN STAGE 1 (NO. 03190X0). NO MORE AREA SHALL BE DISTURBED THAN CAN BE STABILIZED BY THE END OF THE WORK DAY. NO DISTURBED AREA SHALL BE LEFT UNSTABILIZED OVERNIGHT UNLESS THE RUNOFF IS DIRECTED TO AN MDE APPROVED SEDIMENT CONTROL DEVICE.

**STAGE 1
STRUCTURE NO. 03190X0
SCALE: 1" = 10'**



DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

HIGHWAY HYDRAULICS DIVISION



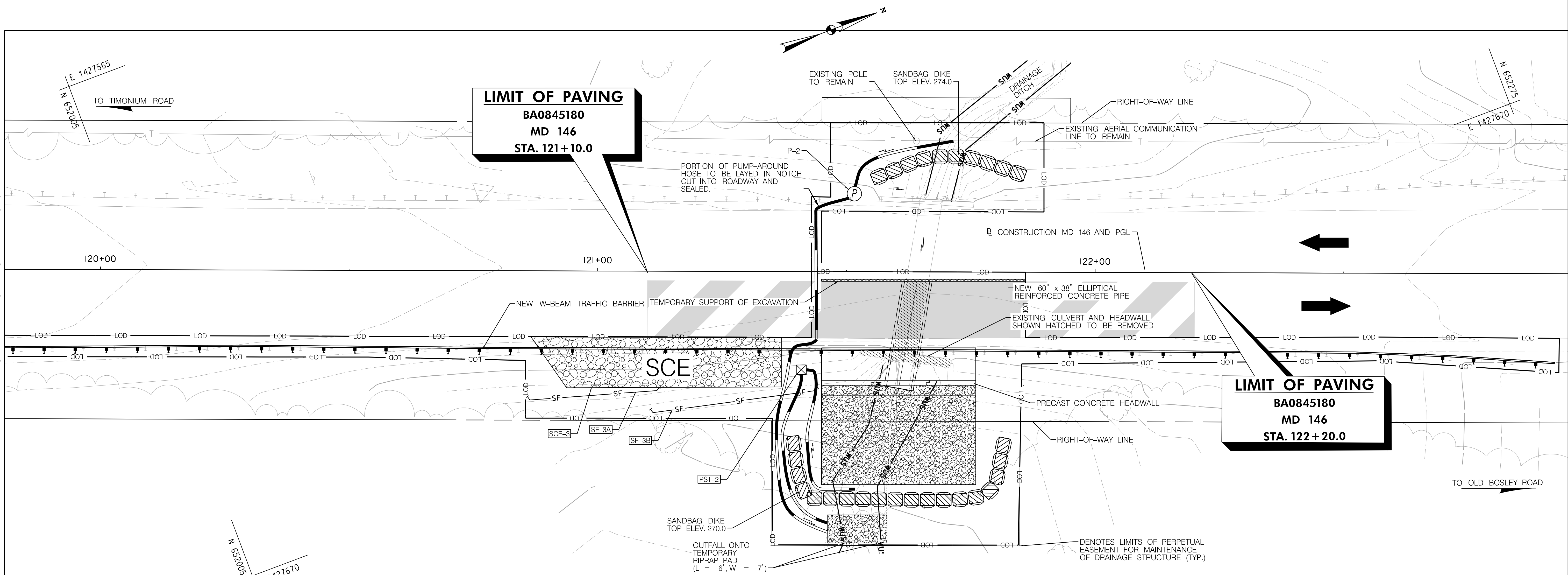
REPLACEMENT OF SMALL STRUCTURES
NOS. 03189X0, 03190X0, & 03192X0
ON MD 146 (DULANEY VALLEY ROAD)
OVER DRAINAGE DITCH

STATE HIGHWAY
ADMINISTRATION

R / W PLAT NUMBER	CROSS REFERENCE	REVISIONS	EROSION AND SEDIMENT CONTROL PLAN
	ITEM	SHEET NOS.	SCALE 1" = 10' ADVERTISED DATE TBD CONTRACT NO. BA0845180
	TYPICAL SHEETS	4	DESIGNED BY MSK COUNTY BALTIMORE
	GEOMETRIC LAYOUT SHEETS	5	DRAWN BY SF LOGMILE
	ROADWAY PLAN SHEETS	6-12	CHECKED BY JGK HORIZONTAL SCALE
	TRAFFIC CONTROL SHEETS	13-15	MDE/PRD 15-PR-0068 VERTICAL SCALE
	EROSION & SEDIMENT CONTROL	16-30	
	LANDSCAPE PLAN SHEETS	31-32	
	STRUCTURAL SHEETS	33-90	
			DRAWING NO. ES-9 OF 15 SHEET NO. 24 OF 90

NOTE: STRUCTURE NO. 03189X0, 03190X0, AND 03192X0 MAY BE CONSTRUCTED CONCURRENTLY.

BY: Susan Foster



**STAGE 1
STRUCTURE NO. 03190X0**
SCALE: 1"=10'

SEQUENCE OF CONSTRUCTION:

STAGE 1 (NO. 03190X0) (1 WEEKEND)

1. THE CONTRACTOR SHALL NOTIFY THE REGIONAL ENVIRONMENTAL COORDINATOR (REC) IN ACCORDANCE WITH GENERAL NOTE NO.1 ON THE EROSION AND SEDIMENT CONTROL NOTE SHEET (ES-1). IN-STREAM WORK IS PROHIBITED FROM OCTOBER 1 THROUGH APRIL 30, INCLUSIVE OF ANY YEAR.
2. CLEAR AND GRUB FOR INSTALLATION OF SEDIMENT CONTROL MEASURES.
3. REMOVE GUARDRAIL AND INSTALL STABILIZED CONSTRUCTION ENTRANCE (SCE-3) AND SILT FENCE (SF-3A AND SF-3B).
4. SAW CUT AND EXCAVATE PAVEMENT TO PROVIDE A CONDUIT ACROSS MD 146 (DULANEY VALLEY ROAD). LAY PORTION OF PUMP-AROUND HOSE IN ROADWAY CONDUIT AND PATCH ROADWAY PER DETAIL 'CONDUIT IN SLOTTED PAVEMENT DETAIL' ON SHEET 30. ENSURE HOSE CAN BE CONNECTED AND DISCONNECTED TO PUMP-AROUND SYSTEM. INSTALL SANDBAG DIKES AND PUMP-AROUND AS SHOWN AND CONNECT TO HOSE EMBEDDED IN ROADWAY. SEDIMENT-LADEN FLOW SHALL NOT BE DISCHARGED TO DOWNSTREAM CHANNEL.
5. INSTALL TEMPORARY SUPPORT OF EXCAVATION. REMOVE PORTION OF EXISTING CULVERT INDICATED ON THIS STAGE 1 (NO. 03190X0) PLAN. CONSTRUCT PORTION OF DRAINAGE STRUCTURE NUMBER 03190X0 UNDER NORTHBOUND MD 146 (DULANEY VALLEY ROAD) DOWNSTREAM OF TEMPORARY SUPPORT OF EXCAVATION INCLUDING ENDWALL AND RIPRAP OUTLET PROTECTION PER THE PLANS.
6. BACKFILL AND INSTALL ROADWAY ASPHALT TO FINISHED ROADWAY ELEVATION AND REMOVE ANY ACCUMULATED SEDIMENT IN THE RIPRAP OUTFALL PROTECTION.
7. UPON STABILIZATION OF ALL AREAS AND WITH CONCURRENCE OF REC, REMOVE THE STABILIZED CONSTRUCTION ENTRANCE AND SILT FENCE AND STABILIZE AREAS DISTURBED BY THIS PROCESS. REMOVE CHANNEL PORTION OF DOWNSTREAM SANDBAG DIKE. THE REST OF THIS SANDBAG DIKE CAN BE LEFT IN PLACE FOR STAGE 2-2. MAINTAIN FLOW THROUGH CULVERT FOR PERIOD BETWEEN STAGE 1 (NO. 03190X0) AND STAGE 2 (NO. 03190X0).
8. USING THE METHOD OF SAME DAY STABILIZATION, INSTALL GUARDRAIL AS SHOWN IN STAGE 1 (NO. 03190X0). NO MORE AREA SHALL BE DISTURBED THAN CAN BE STABILIZED BY THE END OF THE WORK DAY. NO DISTURBED AREA SHALL BE LEFT UNSTABILIZED OVERNIGHT UNLESS THE RUNOFF IS DIRECTED TO AN MDE APPROVED SEDIMENT CONTROL DEVICE.

LIMIT OF DISTURBANCE STRUCTURE NO. 03190X0		117+87.7	13.4	RT	121+00.0	13.2	RT	
STAGE 1		118+00.0	17.3	RT	121+00.0	29.6	RT	
STAGE 1		118+00.0	13.4	RT	121+32.3	29.5	RT	
	OFFSET(FT)	118+43.6	17.0	RT	121+32.4	56.0	RT	
121+43.0	15.1	LT	118+43.6	13.2	RT	121+43.0	9.2	RT
121+45.0	12.2	LT	118+50.0	17.0	RT	121+43.0	13.2	RT
121+45.0	0.0	LT	118+50.0	13.2	RT	121+50.0	56.0	RT
121+46.7	29.9	LT	119+00.0	13.2	RT	121+85.3	18.4	RT
121+46.8	15.0	LT	119+00.0	17.3	RT	121+85.5	55.9	RT
121+50.0	29.9	LT	119+50.0	13.2	RT	121+86.0	0.0	RT
121+50.0	12.2	LT	119+50.0	17.6	RT	121+86.0	13.2	RT
121+50.0	0.0	LT	119+50.9	17.6	RT	122+00.0	13.1	RT
121+89.6	30.0	LT	119+51.2	13.2	RT	122+00.0	18.3	RT
121+89.7	12.1	LT	120+00.0	13.2	RT	122+50.0	12.9	RT
116+72.2	14.0	RT	120+00.0	17.5	RT	122+50.0	17.7	RT
116+72.2	17.0	RT	120+50.0	17.4	RT	122+57.2	12.8	RT
117+00.0	14.2	RT	120+50.0	13.2	RT	122+57.2	17.6	RT
117+00.0	17.3	RT	120+53.9	17.4	RT	122+93.3	19.9	RT
117+30.7	17.1	RT	120+54.0	13.2	RT	122+93.4	13.0	RT
117+30.8	13.9	RT	120+85.6	13.2	RT			
117+50.0	17.4	RT	120+85.6	18.0	RT			
117+50.0	13.9	RT	120+85.6	29.6	RT			

LEGEND

- -280 --- EXISTING CONTOUR
- 280 --- PROPOSED CONTOUR
- LOD --- LIMIT OF DISTURBANCE
- SF --- SILT FENCE
- [SCE] STABILIZED CONSTRUCTION ENTRANCE
- [PST] PORTABLE SEDIMENT TANK
- [P] PUMPHOSE
- WUS --- WATERS OF THE U.S.
- G --- GUARDRAIL
- [Hatched] CULVERT REMOVAL
- PE --- PERPETUAL EASEMENT
- [Solid Grey] FULL DEPTH PAVING
- [Diagonal Lines] OVERLAY
- [Sandbag] SANDBAG DIKE
- [Dashed] EXISTING RIGHT-OF-WAY
- [Dotted] TEMPORARY CONSTRUCTION EASEMENT
- [Dotted] 100-YEAR FLOODPLAIN
- [Riprap] PROPOSED RIPRAP

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

MDOT
MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

HIGHWAY HYDRAULICS DIVISION

REPLACEMENT OF SMALL STRUCTURES
NOS. 03189X0, 03190X0, & 03192X0
ON MD 146 (DULANEY VALLEY ROAD)
OVER DRAINAGE DITCH

PUMP*

NO.	STA.	CAPACITY (GPM)
P-2	121+51, 16' LT	45

*CONTRACTOR TO SIZE SUBMERSIBLE PUMP PER THE REQUIRED CAPACITY IN THE PUMP SCHEDULE

R /W PLAT NUMBER	CROSS REFERENCE	REVISIONS
	ITEM SHEET NOS.	
	TYPICAL SHEETS.....	4
	GEOMETRIC LAYOUT SHEETS.....	5
	ROADWAY PLAN SHEETS.....	6-12
	TRAFFIC CONTROL SHEETS.....	13-15
	EROSION & SEDIMENT CONTROL.....	16-30
	LANDSCAPE PLAN SHEETS.....	31-32
	STRUCTURAL SHEETS.....	33-90

EROSION AND SEDIMENT CONTROL PLAN

SCALE 1" = 10' ADVERTISED DATE TBD CONTRACT NO. BA0845180

DESIGNED BY MSK COUNTY BALTIMORE

DRAWN BY MSK LOGMILE

CHECKED BY JGK HORIZONTAL SCALE

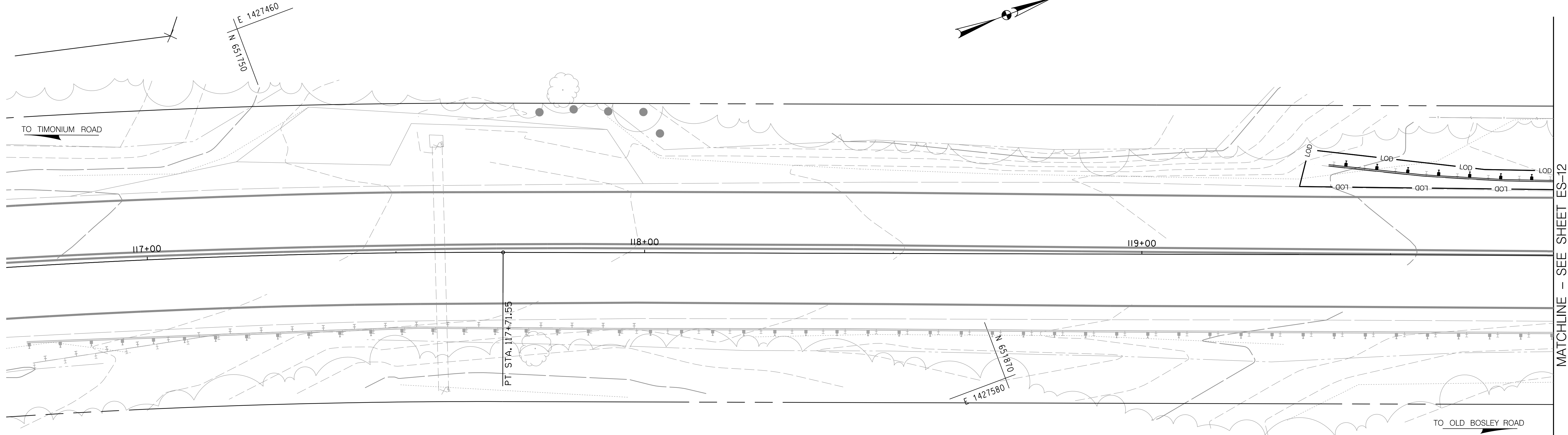
MDE/PRD 15-PR-0068 VERTICAL SCALE

DRAWING NO. **ES-10** OF 15 SHEET NO. 25 OF 90

Gannett Fleming

KCI TECHNOLOGIES

In Joint Venture



SEQUENCE OF CONSTRUCTION:
 STAGE 2 (NO. 03190X0) (1 WEEKEND)

- CLEAR AND GRUB FOR INSTALLATION OF SEDIMENT CONTROL MEASURES.
- REMOVE GUARDRAIL AND INSTALL STABILIZED CONSTRUCTION ENTRANCE (SCE-4) AND SILT FENCE (SF-4) PER THIS STAGE 2 (NO. 03190X0) PLAN.
- INSTALL SANDBAG DIKES AND PUMP-AROUND AS SHOWN (CONNECT PUMP-AROUND TO EXISTING HOSE IN ROADWAY). SEDIMENT-LADEN FLOW SHALL NOT BE DISCHARGED TO DOWNSTREAM CHANNEL.
- REMOVE PORTION OF EXISTING CULVERT INDICATED ON STAGE 2 (NO. 03190X0) PLAN. CONSTRUCT PORTION OF DRAINAGE STRUCTURE NUMBER 03190X0 UNDER SOUTHBOUND MD 146 (DULANEY VALLEY ROAD) UPSTREAM OF TEMPORARY SUPPORT OF EXCAVATION INCLUDING ENDWALL PER THE PLANS.
- BACKFILL AND INSTALL ROADWAY ASPHALT TO FINISHED ROADWAY ELEVATION. CAP BOTH ENDS OF CONDUIT.
- REMOVE ANY ACCUMULATED SEDIMENT IN THE RIPRAP OUTFALL PROTECTION INSTALLED UNDER STAGE 1.
- UPON STABILIZATION OF ALL AREAS AND WITH CONCURRENCE OF REC. REMOVE THE SANDBAG DIKES, STABILIZED CONSTRUCTION ENTRANCE, AND SILT FENCE AND STABILIZE AREAS DISTURBED BY THIS PROCESS.
- USING THE METHOD OF SAME DAY STABILIZATION, INSTALL GUARDRAIL AS SHOWN IN STAGE 2 (NO. 03190X0). NO MORE AREA SHALL BE DISTURBED THAN CAN BE STABILIZED BY THE END OF THE WORK DAY. NO DISTURBED AREA SHALL BE LEFT UNSTABILIZED OVERNIGHT UNLESS THE RUNOFF IS DIRECTED TO AN MDE APPROVED SEDIMENT CONTROL DEVICE.

**STAGE 2
 STRUCTURE NO. 03190X0**
 SCALE: 1" = 10'

LIMIT OF DISTURBANCE STRUCTURE NO. 03190X0	
STAGE 2	
STATION	OFFSET
MD 146 1+67.65	56.3' RT
MD 146 1+67.65	13.6' RT
MD 146 2+20.64	13.5' RT
MD 146 2+20.64	56.2' RT
MD 146 0+89.36	15.3' LT
MD 146 0+89.36	12.1' LT
MD 146 1+74.23	11.9' LT
MD 146 1+74.23	29.6' LT
MD 146 1+74.35	16.4' LT
MD 146 1+82.58	29.6' LT
MD 146 1+82.58	31.4' LT
MD 146 2+29.23	31.4' LT
MD 146 2+29.23	29.4' LT
MD 146 2+72.49	17.0' LT
MD 146 2+72.49	29.3' LT
MD 146 2+72.49	11.7' LT
MD 146 2+90.75	12.9' LT
MD 146 2+90.75	17.8' LT
MD 146 2+15.22	11.8' LT
MD 146 2+15.22	3.2' RT
MD 146 1+84.63	3.2' RT
MD 146 1+84.63	12.0' LT

LEGEND

	EXISTING CONTOUR		PERPETUAL EASEMENT
	PROPOSED CONTOUR		FULL DEPTH PAVING
	LIMIT OF DISTURBANCE		OVERLAY
	SILT FENCE		SANDBAG DIKE
	STABILIZED CONSTRUCTION ENTRANCE		EXISTING RIGHT-OF-WAY
	PORTABLE SEDIMENT TANK		TEMPORARY CONSTRUCTION EASEMENT
	PUMP/HOSE		100-YEAR FLOODPLAIN
	WATERS OF THE U.S.		PROPOSED RIPRAP
	GUARDRAIL		
	CULVERT REMOVAL		

DATUM: NAD 83/91 Horizontal
 NAVD 88 Vertical

MDOT
 MARYLAND DEPARTMENT OF TRANSPORTATION
 STATE HIGHWAY ADMINISTRATION

HIGHWAY HYDRAULICS DIVISION
 REPLACEMENT OF SMALL STRUCTURES
 NOS. 03189X0, 03190X0, & 03192X0
 ON MD 146 (DULANEY VALLEY ROAD)
 OVER DRAINAGE DITCH

R / W PLAT NUMBER	CROSS REFERENCE	REVISIONS
	ITEM	SHEET NOS.
	TYPICAL SHEETS.....	4
	GEOMETRIC LAYOUT SHEETS.....	5
	ROADWAY PLAN SHEETS.....	6-32
	TRAFFIC CONTROL SHEETS.....	13-15
	EROSION & SEDIMENT CONTROL.....	16-30
	LANDSCAPE PLAN SHEETS.....	31-32
	STRUCTURAL SHEETS.....	33-90

EROSION AND SEDIMENT CONTROL PLAN

SCALE 1" = 10' ADVERTISED DATE TBD CONTRACT NO. BA0845180

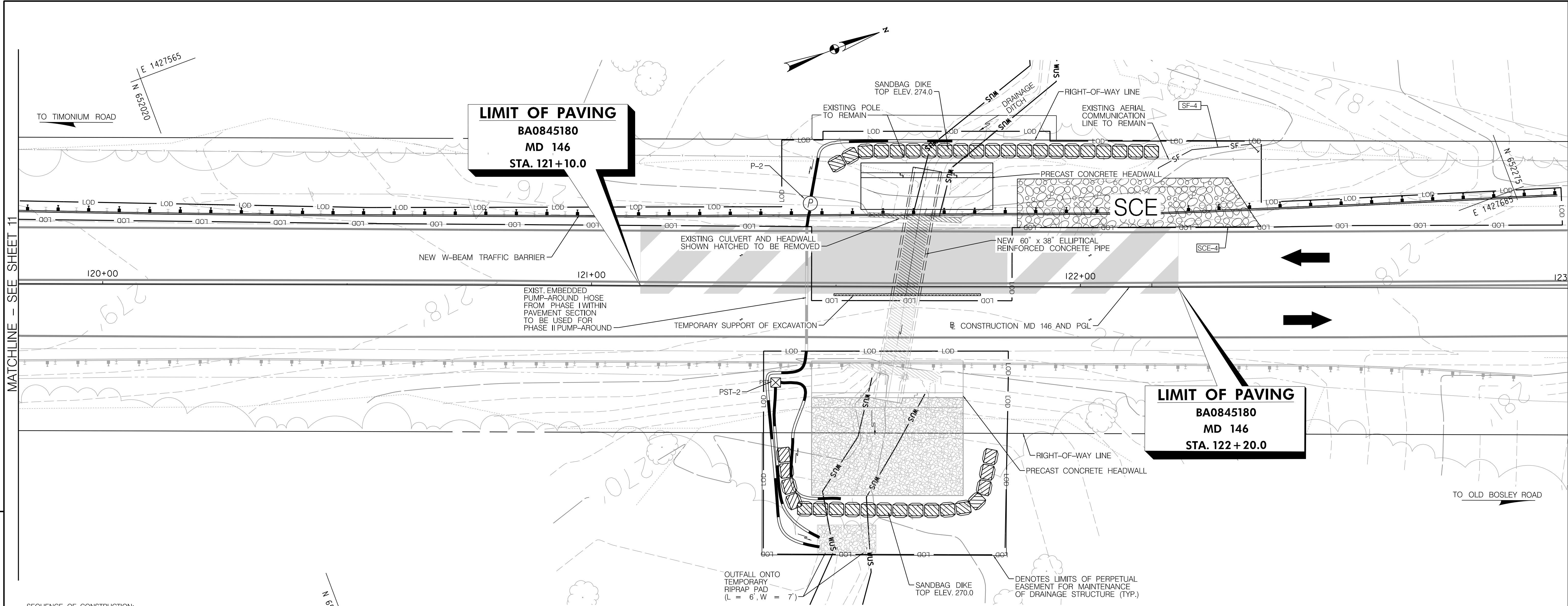
DESIGNED BY HHD COUNTY BALTIMORE
 DRAWN BY HHD LOGMILE
 CHECKED BY HHD HORIZONTAL SCALE
 MDE/PRD 15-PR-0068 VERTICAL SCALE

DRAWING NO. **ES-11** OF **15** SHEET NO. 26 OF 90

BY: Susan Foster

Gannett Fleming
KCI TECHNOLOGIES
 In Joint Venture

NOTE: STRUCTURE NO. 03189X0, 03190X0, AND 03192X0 MAY BE CONSTRUCTED CONCURRENTLY.



MATCHLINE - SEE SHEET 11

SEQUENCE OF CONSTRUCTION:

STAGE 2 (NO. 03190X0) (1 WEEKEND)

1. CLEAR AND GRUB FOR INSTALLATION OF SEDIMENT CONTROL MEASURES.
2. REMOVE GUARDRAIL AND INSTALL STABILIZED CONSTRUCTION ENTRANCE (SCE-4) AND SILT FENCE (SF-4) PER THIS STAGE 2 (NO. 03190X0) PLAN.
3. INSTALL SANDBAG DIKES AND PUMP-AROUND AS SHOWN (CONNECT PUMP-AROUND TO EXISTING HOSE IN ROADWAY). SEDIMENT-LADEN FLOW SHALL NOT BE DISCHARGED TO DOWNSTREAM CHANNEL.
4. REMOVE PORTION OF EXISTING CULVERT INDICATED ON STAGE 2 (NO. 03190X0) PLAN. CONSTRUCT PORTION OF DRAINAGE STRUCTURE NUMBER 03190X0 UNDER SOUTHBOUND MD 146 (DULANEY VALLEY ROAD) UPSTREAM OF TEMPORARY SUPPORT OF EXCAVATION INCLUDING ENDWALL PER THE PLANS.
5. BACKFILL AND INSTALL ROADWAY ASPHALT TO FINISHED ROADWAY ELEVATION. CAP BOTH ENDS OF CONDUIT.
6. REMOVE ANY ACCUMULATED SEDIMENT IN THE RIPRAP OUTFALL PROTECTION INSTALLED UNDER STAGE 1.
7. UPON STABILIZATION OF ALL AREAS AND WITH CONCURRENCE OF REC, REMOVE THE SANDBAG DIKES, STABILIZED CONSTRUCTION ENTRANCE, AND SILT FENCE AND STABILIZE AREAS DISTURBED BY THIS PROCESS.
8. USING THE METHOD OF SAME DAY STABILIZATION, INSTALL GUARDRAIL AS SHOWN IN STAGE 2 (NO. 03190X0). NO MORE AREA SHALL BE DISTURBED THAN CAN BE STABILIZED BY THE END OF THE WORK DAY. NO DISTURBED AREA SHALL BE LEFT UNSTABILIZED OVERNIGHT UNLESS THE RUNOFF IS DIRECTED TO AN MDE APPROVED SEDIMENT CONTROL DEVICE.

LIMIT OF DISTURBANCE STRUCTURE NO. 03190X0		121+93.7	29.8	LT
		122+15.0	12.2	LT
STAGE 2		122+36.9	29.9	LT
STATION	OFFSET (FT)	122+36.9	17.4	LT
119+31.7	13.7	122+37.0	12.3	LT
119+33.5	21.1	122+54.9	18.2	LT
119+68.9	17.2	122+55.2	12.7	LT
120+54.0	15.8	122+98.2	20.6	LT
120+54.2	12.5	122+98.5	12.9	LT
121+38.8	29.9	121+32.2	13.3	RT
121+38.9	16.2	121+32.4	56.0	RT
121+38.9	12.2	121+45.0	3.0	RT
121+45.0	12.1	121+49.3	2.9	RT
121+47.2	31.7	121+85.3	13.2	RT
121+47.2	29.9	121+85.5	55.9	RT
121+86.0	12.1	121+86.0	2.9	RT
121+93.7	31.8			

LEGEND

	EXISTING CONTOUR		PERPETUAL EASEMENT
	PROPOSED CONTOUR		FULL DEPTH PAVING
	LIMIT OF DISTURBANCE		OVERLAY
	SILT FENCE		SANDBAG DIKE
	STABILIZED CONSTRUCTION ENTRANCE		EXISTING RIGHT-OF-WAY
	PORTABLE SEDIMENT TANK		TEMPORARY CONSTRUCTION EASEMENT
	PUMPHOSE		100-YEAR FLOODPLAIN
	WATERS OF THE U.S.		PROPOSED RIPRAP
	GUARDRAIL		
	CULVERT REMOVAL		

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

MDOT
MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

HIGHWAY HYDRAULICS DIVISION

REPLACEMENT OF SMALL STRUCTURES
NOS. 03189X0, 03190X0, & 03192X0
ON MD 146 (DULANEY VALLEY ROAD)
OVER DRAINAGE DITCH

Gannett Fleming
KCI TECHNOLOGIES
In Joint Venture

NOTE: STRUCTURE NO. 03189X0, 03190X0, AND 03192X0 MAY BE CONSTRUCTED CONCURRENTLY.

PUMP*

NO.	STA.	CAPACITY (GPM)
P-2	1+87, 16' LT	45

*CONTRACTOR TO SIZE SUBMERSIBLE PUMP PER THE REQUIRED CAPACITY IN THE PUMP SCHEDULE

R / W PLAT NUMBER	CROSS REFERENCE	REVISIONS
	ITEM	SHEET NOS.
	TYPICAL SHEETS	4
	GEOMETRIC LAYOUT SHEETS	5
	ROADWAY PLAN SHEETS	6-12
	TRAFFIC CONTROL SHEETS	13-15
	EROSION & SEDIMENT CONTROL	16-30
	LANDSCAPE PLAN SHEETS	31-32
	STRUCTURAL SHEETS	33-90

EROSION AND SEDIMENT CONTROL PLAN

SCALE 1" = 10' ADVERTISED DATE TBD CONTRACT NO. BA0845180

DESIGNED BY MSK COUNTY BALTIMORE
DRAWN BY MSK LOGMILE
CHECKED BY JGK HORIZONTAL SCALE
MDE/PRD 15-PR-0068 VERTICAL SCALE

DRAWING NO. **ES-12** OF 15 SHEET NO. 27 OF 90

SEQUENCE OF CONSTRUCTION:

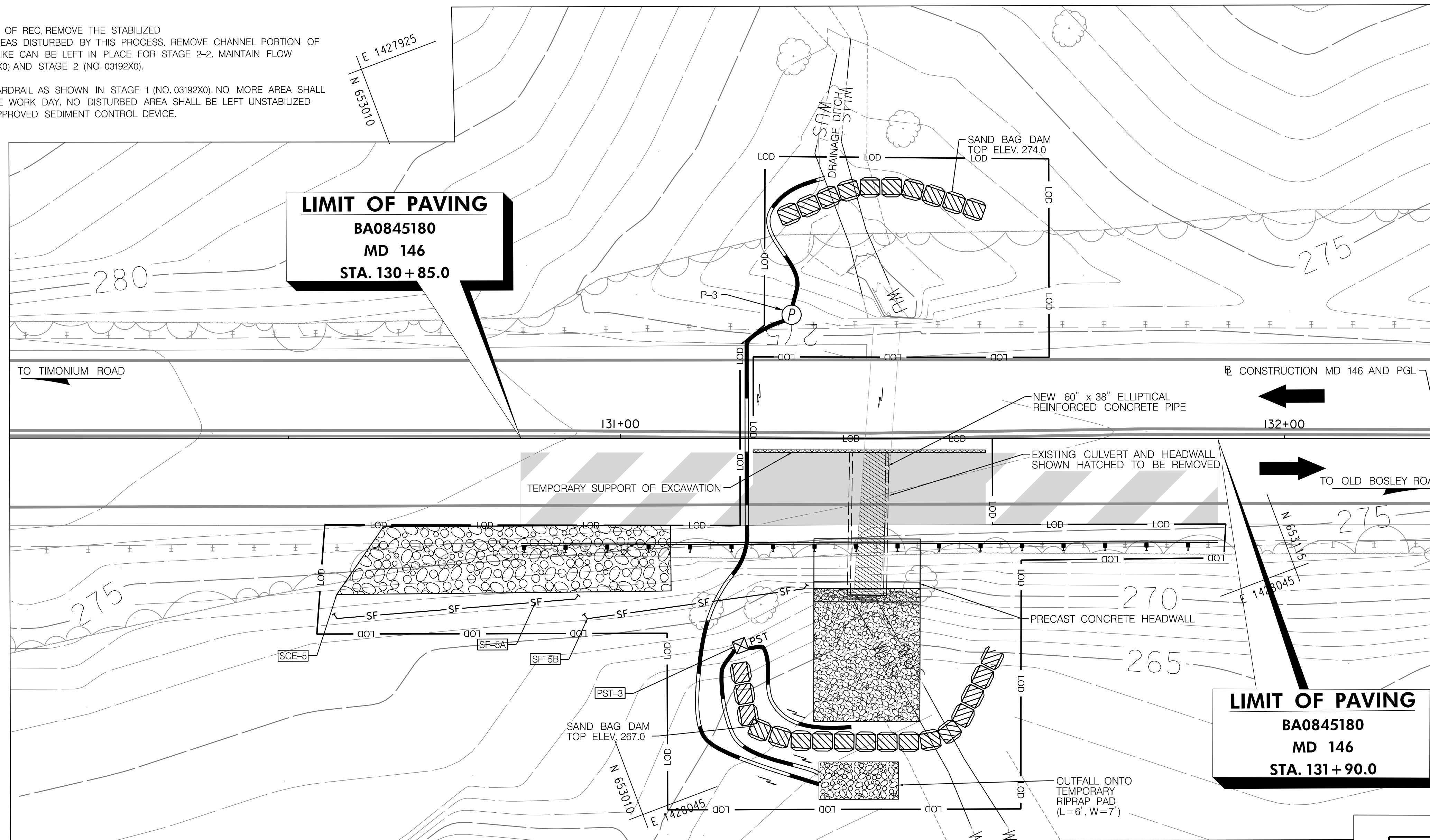
STAGE 1 (NO. 03192X0) (1 WEEKEND)

1. THE CONTRACTOR SHALL NOTIFY THE REGIONAL ENVIRONMENTAL COORDINATOR (REC) IN ACCORDANCE WITH GENERAL NOTE NO. 1 ON THE EROSION AND SEDIMENT CONTROL NOTE SHEET (ES-1). IN-STREAM WORK IS PROHIBITED FROM OCTOBER 1 THROUGH APRIL 30, INCLUSIVE OF ANY YEAR.
2. CLEAR AND GRUB FOR INSTALLATION OF SEDIMENT CONTROL MEASURES.
3. REMOVE GUARDRAIL AND INSTALL STABILIZED CONSTRUCTION ENTRANCE (SCE-5) AND SILT FENCE (SF-5A AND SF-5B).
4. SAW CUT AND EXCAVATE PAVEMENT TO PROVIDE A CONDUIT ACROSS MD 146 (DULANEY VALLEY ROAD), LAY PORTION OF PUMP-AROUND HOSE IN ROADWAY CONDUIT AND PATCH ROADWAY PER DETAIL "CONDUIT IN SLOTTED PAVEMENT DETAIL" ON SHEET 30. ENSURE HOSE CAN BE CONNECTED AND DISCONNECTED TO PUMP-AROUND SYSTEM. INSTALL SANDBAG DIKES AND PUMP-AROUND AS SHOWN AND CONNECT TO HOSE EMBEDDED IN ROADWAY. SEDIMENT-LADEN FLOW SHALL NOT BE DISCHARGED TO DOWNSTREAM CHANNEL.
5. INSTALL TEMPORARY SUPPORT OF EXCAVATION. REMOVE PORTION OF EXISTING CULVERT INDICATED ON THIS STAGE 1 (NO. 03192X0) PLAN. CONSTRUCT PORTION OF DRAINAGE STRUCTURE NUMBER 03190X0 UNDER NORTHBOUND MD 146 (DULANEY VALLEY ROAD) DOWNSTREAM OF TEMPORARY SUPPORT OF EXCAVATION INCLUDING ENDWALL AND RIPRAP OUTLET PROTECTION PER THE PLANS.
6. BACKFILL AND INSTALL ROADWAY ASPHALT TO FINISHED ROADWAY ELEVATION AND REMOVE ANY ACCUMULATED SEDIMENT IN THE RIPRAP OUTFALL PROTECTION.
7. UPON STABILIZATION OF ALL AREAS AND WITH CONCURRENCE OF REC, REMOVE THE STABILIZED CONSTRUCTION ENTRANCE AND SILT FENCE AND STABILIZE AREAS DISTURBED BY THIS PROCESS. REMOVE CHANNEL PORTION OF DOWNSTREAM SANDBAG DIKE. THE REST OF THIS SANDBAG DIKE CAN BE LEFT IN PLACE FOR STAGE 2-2. MAINTAIN FLOW THROUGH CULVERT FOR PERIOD BETWEEN STAGE 1 (NO. 03192X0) AND STAGE 2 (NO. 03192X0).
8. USING THE METHOD OF SAME DAY STABILIZATION, INSTALL GUARDRAIL AS SHOWN IN STAGE 1 (NO. 03192X0). NO MORE AREA SHALL BE DISTURBED THAN CAN BE STABILIZED BY THE END OF THE WORK DAY. NO DISTURBED AREA SHALL BE LEFT UNSTABILIZED OVERNIGHT UNLESS THE RUNOFF IS DIRECTED TO AN MDE APPROVED SEDIMENT CONTROL DEVICE.

LIMIT OF DISTURBANCE STRUCTURE NO. 03192X0	
STAGE 1	
STATION	OFFSET (FT)
131+18.0	14.0 LT
131+20.0	12.3 LT
131+20.0	0.0 LT
131+21.7	17.1 LT
131+21.8	42.5 LT
131+50.0	12.2 LT
131+50.0	42.3 LT
131+64.5	42.1 LT
131+64.6	12.2 LT
130+54.3	29.5 RT
130+55.5	13.0 RT
131+00.0	13.1 RT
131+00.0	29.4 RT
131+07.1	29.4 RT
131+07.1	55.9 RT
131+18.1	13.1 RT
131+50.0	55.8 RT
131+50.0	0.0 RT
131+56.0	0.0 RT
131+56.1	13.0 RT
131+60.3	55.8 RT
131+60.4	13.0 RT
131+60.4	18.3 RT
131+90.9	18.0 RT
131+91.2	12.9 RT

PUMP*		
NO.	STA.	CAPACITY (GPM)
P-3	131+25, 18' LT	45

*CONTRACTOR TO SIZE SUBMERSIBLE PUMP PER THE REQUIRED CAPACITY IN THE PUMP SCHEDULE



LIMIT OF PAVING
BA0845180
MD 146
STA. 130+85.0

LIMIT OF PAVING
BA0845180
MD 146
STA. 131+90.0

NOTE: STRUCTURE NO. 03189X0, 03190X0, AND 03192X0 MAY BE CONSTRUCTED CONCURRENTLY.

LEGEND	
	EXISTING CONTOUR
	PROPOSED CONTOUR
	LIMIT OF DISTURBANCE
	SILT FENCE
	STABILIZED CONSTRUCTION ENTRANCE
	PORTABLE SEDIMENT TANK
	PUMP/HOSE
	WATERS OF THE U.S.
	GUARDRAIL
	CULVERT REMOVAL
	PERPETUAL EASEMENT
	FULL DEPTH PAVING
	OVERLAY
	SANDBAG DIKE
	EXISTING RIGHT-OF-WAY
	TEMPORARY CONSTRUCTION EASEMENT
	100-YEAR FLOODPLAIN
	PROPOSED RIPRAP

STAGE 1
STRUCTURE NO. 03192X0

DATUM: NAD 83/91 Horizontal
NAVD 88 Vertical

R / W PLAT NUMBER	CROSS REFERENCE	REVISIONS
	ITEM	SHEET NOS.
	TYPICAL SHEETS	4
	GEOMETRIC LAYOUT SHEETS	5
	ROADWAY PLAN SHEETS	6-32
	TRAFFIC CONTROL SHEETS	13-15
	EROSION & SEDIMENT CONTROL	16-30
	LANDSCAPE PLAN SHEETS	31-32
	STRUCTURAL SHEETS	33-90

HIGHWAY HYDRAULICS DIVISION

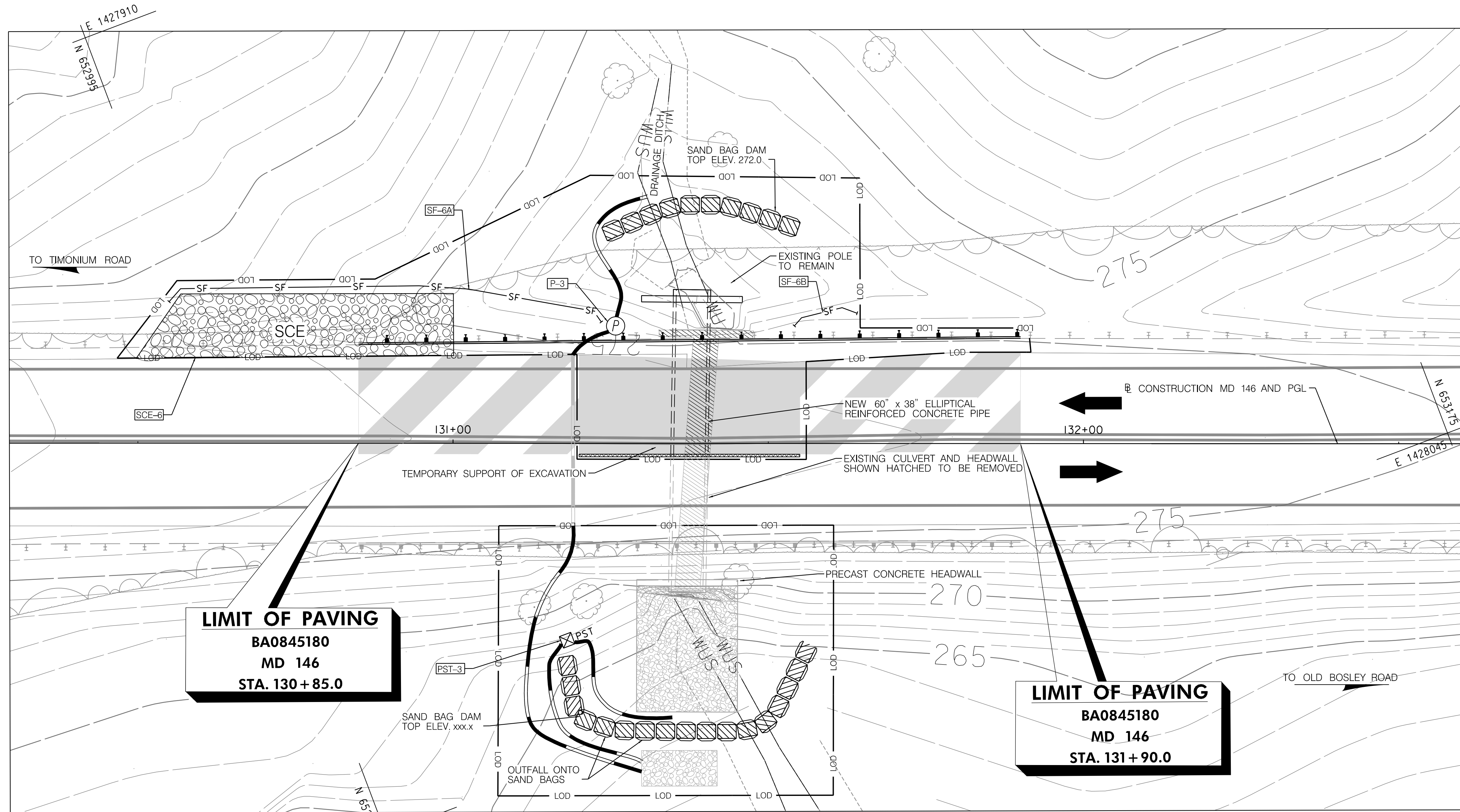
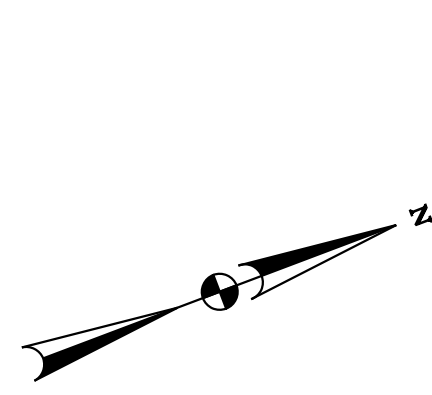
MDOT
MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

REPLACEMENT OF SMALL STRUCTURES
NOS. 03189X0, 03190X0, & 03192X0
ON MD 146 (DULANEY VALLEY ROAD)
OVER DRAINAGE DITCH

EROSION AND SEDIMENT CONTROL PLAN	
SCALE 1" = 10'	ADVERTISED DATE TBD
CONTRACT NO. BA0845180	
DESIGNED BY MSK	COUNTY BALTIMORE
DRAWN BY MSK	LOGMILE
CHECKED BY JGK	HORIZONTAL SCALE
MDE/PRD 15-PR-0068	VERTICAL SCALE
DRAWING NO. ES-13	OF 15 SHEET NO. 28 OF 90

BY: Susan Foster

Gannett Fleming
KCI TECHNOLOGIES
In Joint Venture



LIMIT OF PAVING
BA0845180
MD 146
STA. 130 + 85.0

LIMIT OF PAVING
BA0845180
MD 146
STA. 131 + 90.0

STAGE 2
STRUCTURE NO. 03192X0
SCALE: 1" = 10'

LEGEND

---280---	EXISTING CONTOUR	PE	PERPETUAL EASEMENT
—280—	PROPOSED CONTOUR	[Solid Grey Box]	FULL DEPTH PAVING
—LOD—	LIMIT OF DISTURBANCE	[Diagonal Lines Box]	OVERLAY
—SF—	SILT FENCE	[Sandbag Pattern Box]	SANDBAG DIKE
[SCE Symbol]	STABILIZED CONSTRUCTION ENTRANCE	[Dashed Line Box]	EXISTING RIGHT-OF-WAY
[PST Symbol]	PORTABLE SEDIMENT TANK	[Dashed Line Box]	TEMPORARY CONSTRUCTION EASEMENT
[P Symbol]	PUMPHOSE	[Dashed Line Box]	100-YEAR FLOODPLAIN
[WUS Symbol]	WATERS OF THE U.S.	[Stippled Box]	PROPOSED RIPRAP
[Guardrail Symbol]	GUARDRAIL		
[Culvert Removal Symbol]	CULVERT REMOVAL		

LIMIT OF DISTURBANCE
STRUCTURE NO. 03192X0
STAGE 2

STATION	OFFSET (FT)
130+46.7	13.5 LT
130+56.2	25.8 LT
130+87.6	26.0 LT
131+00.1	13.9 LT
131+19.6	14.1 LT
131+21.7	42.5 LT
131+32.5	42.5 LT
131+56.0	13.0 LT
131+64.5	42.2 LT
131+64.5	42.1 LT
131+64.6	18.3 LT
131+80.0	14.5 LT
131+91.3	18.3 LT
131+91.7	14.5 LT
131+07.1	29.4 RT
131+07.1	55.9 RT
131+07.3	13.1 RT
131+18.1	13.1 RT
131+19.7	2.5 RT
131+56.0	2.5 RT
131+60.3	55.8 RT
131+60.4	13.0 RT
131+60.4	13.0 RT
131+60.4	18.3 RT

PUMP*

NO.	STA.	CAPACITY (GPM)
P-3	131+25, 18' LT	45

*CONTRACTOR TO SIZE SUBMERSIBLE PUMP PER THE REQUIRED CAPACITY IN THE PUMP SCHEDULE

SEQUENCE OF CONSTRUCTION:

STAGE 2 (NO. 03192X0) (1 WEEKEND)

- CLEAR AND GRUB FOR INSTALLATION OF SEDIMENT CONTROL MEASURES.
- REMOVE GUARDRAIL AND INSTALL STABILIZED CONSTRUCTION ENTRANCE (SCE-6) AND SILT FENCE (SF-6A & SF-6B) PER THIS STAGE 2 (NO. 03192X0) PLAN.
- INSTALL SANDBAG DIKES AND PUMP-AROUND AS SHOWN (CONNECT PUMP-AROUND TO EXISTING HOSE IN ROADWAY). SEDIMENT-LADEN FLOW SHALL NOT BE DISCHARGED TO DOWNSTREAM CHANNEL.
- REMOVE PORTION OF EXISTING CULVERT INDICATED ON STAGE 2 (NO. 03192X0) PLAN. CONSTRUCT PORTION OF DRAINAGE STRUCTURE NUMBER 03192X0 UNDER SOUTHBOUND MD 146 (DULANEY VALLEY ROAD) UPSTREAM OF TEMPORARY SUPPORT OF EXCAVATION INCLUDING ENDWALL PER THE PLANS.
- BACKFILL AND INSTALL ROADWAY ASPHALT TO FINISHED ROADWAY ELEVATION. CAP BOTH ENDS OF CONDUIT.
- REMOVE ANY ACCUMULATED SEDIMENT IN THE RIPRAP OUTFALL PROTECTION INSTALLED UNDER STAGE 1.
- UPON STABILIZATION OF ALL AREAS AND WITH CONCURRENCE OF REC, REMOVE THE SANDBAG DIKES, STABILIZED CONSTRUCTION ENTRANCE, AND SILT FENCE AND STABILIZE AREAS DISTURBED BY THIS PROCESS.
- USING THE METHOD OF SAME DAY STABILIZATION, INSTALL GUARDRAIL AS SHOWN IN STAGE 2 (NO. 03192X0). NO MORE AREA SHALL BE DISTURBED THAN CAN BE STABILIZED BY THE END OF THE WORK DAY. NO DISTURBED AREA SHALL BE LEFT UNSTABILIZED OVERNIGHT UNLESS THE RUNOFF IS DIRECTED TO AN MDE APPROVED SEDIMENT CONTROL DEVICE.

DATUM: NAD 83/91 Horizontal
 NAVD 88 Vertical

MDOT
 MARYLAND DEPARTMENT OF TRANSPORTATION
 STATE HIGHWAY ADMINISTRATION

HIGHWAY HYDRAULICS DIVISION

REPLACEMENT OF SMALL STRUCTURES
 NOS. 03189X0, 03190X0, & 03192X0
 ON MD 146 (DULANEY VALLEY ROAD)
 OVER DRAINAGE DITCH

Gannett Fleming
KCI TECHNOLOGIES
 In Joint Venture

NOTE: STRUCTURE NO. 03189X0, 03190X0, AND 03192X0 MAY BE CONSTRUCTED CONCURRENTLY.

R / W PLAT NUMBER	CROSS REFERENCE	REVISIONS
	ITEM	SHEET NOS.
	TYPICAL SHEETS	4
	GEOMETRIC LAYOUT SHEETS	5
	ROADWAY PLAN SHEETS	6-12
	TRAFFIC CONTROL SHEETS	13-15
	EROSION & SEDIMENT CONTROL	16-30
	LANDSCAPE PLAN SHEETS	31-32
	STRUCTURAL SHEETS	33-90

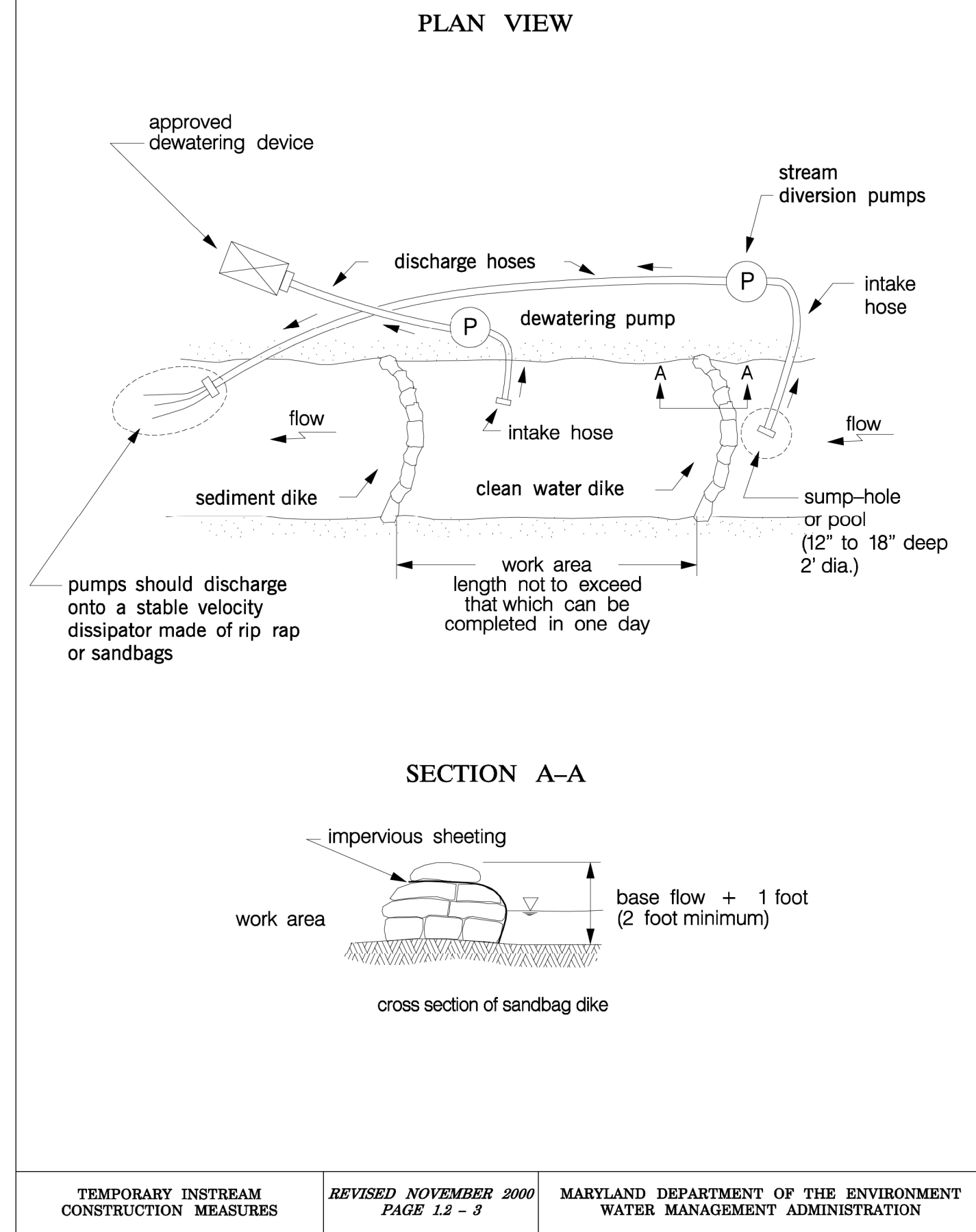
EROSION AND SEDIMENT CONTROL PLAN

SCALE 1" = 10' ADVERTISED DATE TBD CONTRACT NO. BA0845180

DESIGNED BY MSK COUNTY BALTIMORE
 DRAWN BY SF LOGMILE
 CHECKED BY JGK HORIZONTAL SCALE
 MDE/PRD 15-PR-0068 VERTICAL SCALE

DRAWING NO. **ES-14** OF **15** SHEET NO. 29 OF 90

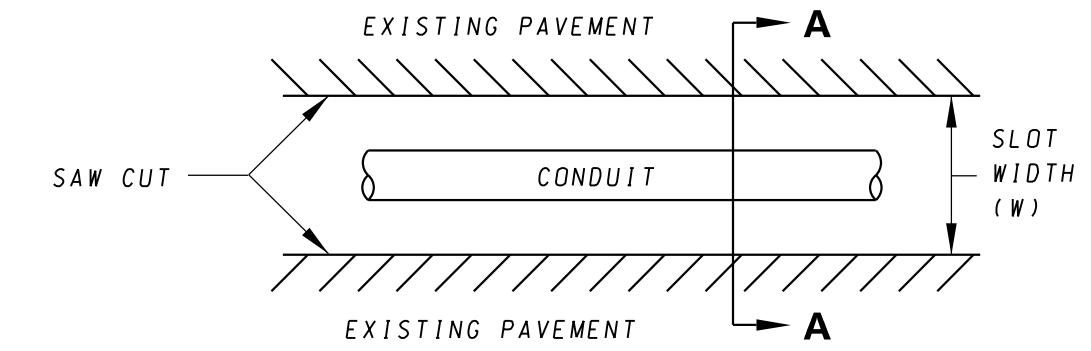
**Maryland's Guidelines To Waterway Construction
DETAIL 1.2: PUMP-AROUND PRACTICE**



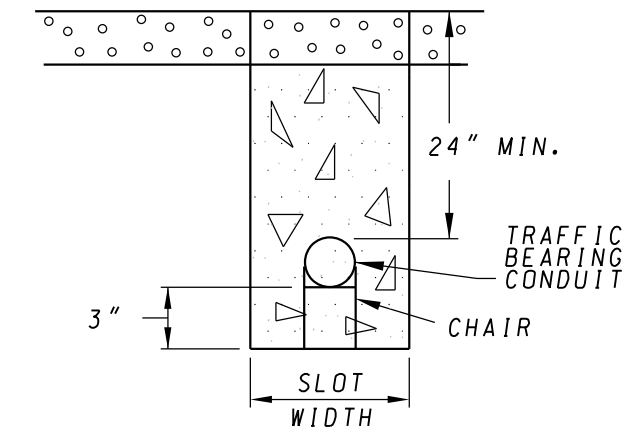
TEMPORARY INSTREAM CONSTRUCTION MEASURES REVISED NOVEMBER 2000 PAGE 1.2 - 3 MARYLAND DEPARTMENT OF THE ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

1. NO EXCESS FILL, CONSTRUCTION MATERIAL, OR DEBRIS SHALL BE STOCKPILED OR STORED IN NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.
2. PLACE MATERIALS IN A LOCATION AND MANNER THAT DOES NOT ADVERSELY IMPACT SURFACE OR SUBSURFACE WATER FLOW INTO OR OUT OF NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.
3. DO NOT USE THE EXCAVATED MATERIAL AS BACKFILL IF IT CONTAINS WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL, OR ANY OTHER DELETERIOUS SUBSTANCE. IF ADDITIONAL BACKFILL IS REQUIRED, USE CLEAN MATERIAL FREE OF WASTE METAL PRODUCTS, UNSIGHTLY DEBRIS, TOXIC MATERIAL, OR ANY OTHER DELETERIOUS SUBSTANCE.
4. PLACE HEAVY EQUIPMENT ON MATS OR SUITABLY OPERATE THE EQUIPMENT TO PREVENT DAMAGE TO NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, WATERWAYS, OR THE 100-YEAR FLOODPLAIN.
5. REPAIR AND MAINTAIN ANY SERVICEABLE STRUCTURE OR FILL SO THERE IS NO PERMANENT LOSS OF NONTIDAL WETLANDS, NONTIDAL WETLAND BUFFERS, OR WATERWAYS, OR PERMANENT MODIFICATION OF THE 100-YEAR FLOODPLAIN IN EXCESS OF THAT LOST UNDER THE ORIGINALLY AUTHORIZED STRUCTURE OR FILL.
6. RECTIFY ANY NONTIDAL WETLANDS, WETLAND BUFFERS, WATERWAYS, OR 100-YEAR FLOODPLAIN TEMPORARILY IMPACTED BY ANY CONSTRUCTION.
7. ALL STABILIZATION IN THE NONTIDAL WETLAND AND NONTIDAL WETLAND BUFFER SHALL CONSIST OF THE FOLLOWING SPECIES: ANNUAL RYEGRASS (LOLIUM MULTIFLORUM), MILLET (SETARIA ITALICA), BARLEY (HORDEUM SP.), OATS (UNIOLA SP.), AND/OR RYE (SECALE CEREALE). THESE SPECIES WILL ALLOW FOR THE STABILIZATION OF THE SITE WHILE ALSO ALLOWING FOR THE VOLUNTARY VEGETATION OF NATURAL WETLAND SPECIES. OTHER NON-PERSISTENT VEGETATION MAY BE ACCEPTABLE, BUT MUST BE APPROVED BY THE NONTIDAL WETLANDS AND WATERWAYS DIVISION. KENTUCKY 31 FESCUE SHALL NOT BE UTILIZED IN WETLAND OR BUFFER AREAS. THE AREA SHOULD BE SEEDED AND MULCHED TO REDUCE EROSION AFTER CONSTRUCTION ACTIVITIES HAVE BEEN COMPLETED.
8. AFTER INSTALLATION HAS BEEN COMPLETED, MAKE POST-CONSTRUCTION GRADES AND ELEVATIONS THE SAME AS THE ORIGINAL GRADES AND ELEVATIONS IN TEMPORARILY IMPACTED AREAS.
9. TO PROTECT AQUATIC SPECIES, IN-STREAM WORK IS PROHIBITED AS DETERMINED BY THE CLASSIFICATION OF THE STREAM:

USE III WATERS; IN-STREAM WORK SHALL NOT BE CONDUCTED DURING THE PERIOD OCTOBER 1 THROUGH APRIL 30, INCLUSIVE, DURING ANY YEAR.
10. STORMWATER RUNOFF FROM IMPERVIOUS SURFACES SHALL BE CONTROLLED TO PREVENT THE WASHING OF DEBRIS INTO THE WATERWAY.
11. CULVERTS SHALL BE CONSTRUCTED AND ANY RIPRAP PLACED SO AS NOT TO OBSTRUCT THE MOVEMENT OF AQUATIC SPECIES, UNLESS THE PURPOSE OF THE ACTIVITY IS TO IMPOUND WATER.



PLAN VIEW



**SECTION A-A
ASPHALT SURFACE**

**CONDUIT IN SLOTTED PAVEMENT DETAIL
(FOR E&S PUMP-AROUND HOSE ACROSS MD 146)**

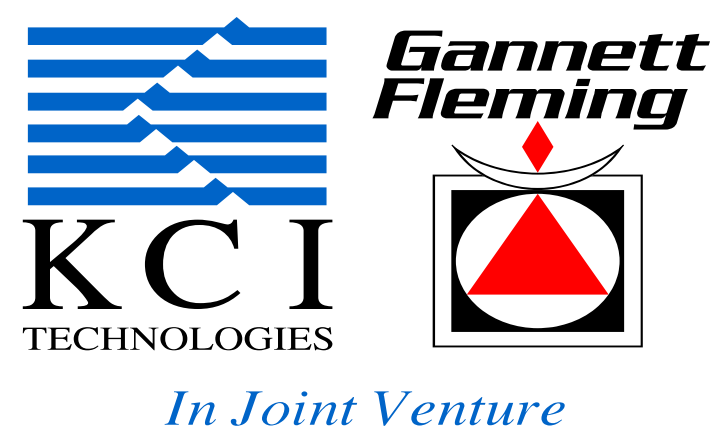
NOTES:

1. IF THE EXISTING ROAD SURFACE IS CONCRETE, FILL THE SLOT WITH CONCRETE MIX NO.6. PROTECT THE SURFACE WITH STEEL PLATES UNTIL THE CONCRETE ATTAINS A MINIMUM COMPRESSIVE STRENGTH OF 2500 PSI AS INDICATED IN SECTION 522. MINIMUM COMPRESSIVE STRENGTH MUST BE ATTAINED WITHIN 12 HOURS. IF THE CONTRACTOR WISHES TO ATTAIN A QUICKER COMPRESSIVE STRENGTH, THE MATERIALS SHALL BE APPROVED BY THE ENGINEER.
2. THE CONTRACTOR SHALL REPAIR THE CONCRETE PAVEMENT ABOVE THE SLOT IN ACCORDANCE WITH SECTION 522.
3. IF THE EXISTING ROAD SURFACE IS ASPHALT, FILL THE SLOT WITH CONCRETE MIX NO. 6 TO 3" OF THE ROAD SURFACE. PROTECT THE SURFACE WITH STEEL PLATES UNTIL THE CONCRETE ATTAINS A MINIMUM COMPRESSIVE STRENGTH OF 2500 PSI AS INDICATED IN SECTION 522. MINIMUM COMPRESSIVE STRENGTH MUST BE ATTAINED WITHIN 12 HOURS. UPON CONCRETE CURING, PLACE TACK COAT COMPOUND AND 3" HOT MIX ASPHALT CAP UP TO ROAD GRADE.
4. FOR CONCRETE SURFACES, SAWCUT SEALER FOR ROADWAY JOINTS SHALL BE USED AS INDICATED IN SECTION 523.
5. CHAIRS SHALL BE USED TO SUSPEND CONDUIT IN CONCRETE.
6. INSTALL DUCT SEAL IN BOTH CONDUIT SLEEVE ENDS.
7. SLEEVE AND SAWCUT SHALL NOT DAMAGE OR CONTACT EXISTING CURB AND GUTTER, AS INDICATED IN SPECIFICATION SECTION 805.03.
8. CONTRACTOR SHALL USE STEEL PLATES AS INDICATED IN SPECIFICATION SECTION 522.03 ON ROAD SURFACE. STEEL PLATES MUST BE REMOVED WITHIN 24 HOURS.
9. EXISTING PAVEMENT SHALL BE REMOVED BY MAKING A LONGITUDINAL SAWCUT PARALLEL TO THE GUTTER PAN AND AT LEAST 18" FROM COMBINATION CURB AND GUTTER.

STREAM DIVERSION NOTES

1. THESE UNNAMED TRIBUTARIES OF LOCH RAVEN RESERVOIR ARE USE III-P STREAMS, THEREFORE, IN-STREAM CONSTRUCTION IS PROHIBITED DURING THE PERIOD OF OCTOBER 1 THROUGH APRIL 30, INCLUSIVE OF ANY YEAR. EVERY EFFORT MUST BE TAKEN TO AVOID UNDUE DISTURBANCE TO THE STREAM CHANNEL.
2. THIS PLAN DOES NOT COVER PASSING THE TWO YEAR STORM EVENT. IN THE EVENT OF A STORM, THE CONTRACTOR WILL BE RESPONSIBLE FOR THE REMOVAL AND PROTECTION OF ANY EQUIPMENT, TOOLS, MATERIALS OR OTHER ITEMS NEEDED TO COMPLETE THE WORK THAT COULD BE AFFECTED BY STORM FLOWS.

BY: Susan L. Foster




HIGHWAY HYDRAULICS DIVISION
MDOT
 MARYLAND DEPARTMENT OF TRANSPORTATION
 STATE HIGHWAY ADMINISTRATION
 REPLACEMENT OF SMALL STRUCTURES
 NOS. 03189X0, 03190X0, & 03192X0
 ON MD 146 (DULANEY VALLEY ROAD)
 OVER DRAINAGE DITCH



EROSION AND SEDIMENT CONTROL NOTES & DETAILS

SCALE	NTS	ADVERTISED DATE	TBD	CONTRACT NO.	BA0845180
DESIGNED BY	MSK	COUNTY	BALTIMORE		
DRAWN BY	MSK	LOGMILE			
CHECKED BY	JGK	HORIZONTAL SCALE			
MDE/PRD	15-PR-0068	VERTICAL SCALE			
DRAWING NO.	ES-15	OF	15	SHEET NO.	30 OF 90



SCALE: 1" = 600'

REVISIONS		 MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION	REPLACEMENT OF SMALL STRUCTURES NO. 03189X0 & NO. 03190X0 ON MD 146 (DULANEY VALLEY ROAD) OVER DRAINAGE DITCH
STRUCTURE LOCATION MAP			
SCALE AS SHOWN		ADVERTISED DATE	DATE
		CONTRACT NO. BA0845180	
DESIGNED BY	RDJ	TENTATIVE OFFICE OF STRUCTURES <small>This plan is draft and subject to change. It is the property of the agency and no part of it shall be disclosed or used for any other purpose without the written consent of the agency. Section 4-341 Maryland Public Information Act.</small>	
DRAWN BY	DRC		
CHECKED BY	XXX		
DRAWING NO.	S0-1	OF	1
		SHEET NO.	19 OF 57

In Joint Venture

BY: david clayton

PLOTTED: 03:54 PM on Friday, May 17, 2019

STRUCTURE INVENTORY NO.

SURVEY BOOK NO.

PLOTTED: 03:54 PM on Friday, May 17, 2019
FILE: M:\2010\23100466.29\Drawings\IGN-LMAP_MD_146.dgn



GENERAL NOTES:

SPECIFICATIONS:

-SHA SPECIFICATIONS DATED MAY, 2017
 -REVISIONS THEREOF AND ADDITIONS THERETO AND SPECIAL PROVISIONS FOR MATERIALS AND CONSTRUCTION.

AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS DATED 2014 WITH INTERIMS.

CONCRETE DESIGN: LOAD AND RESISTANCE FACTOR DESIGN METHOD. $f'c = 4,000$ PSI

REINFORCING STEEL DESIGN:

$f's = 60,000$ PSI

LOADING:

HL-93

PIPE:

60"x38" ELLIPTICAL PIPE SHALL BE CONCRETE CONFORMING TO CLASS V PIPE. ALL PIPE JOINTS SHALL HAVE GASKETS TO PROVIDE A WATER TIGHT CONNECTION.

CONCRETE:

ALL CONCRETE FOR PRECAST HEADWALLS SHALL BE MIX NO. 6 (4,500 PSI).

REINFORCING STEEL:

REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60. ALL SPLICES, NOT SHOWN, SHALL BE LAPPED AS PER BAR LAP CHARTS. MINIMUM COVER FOR ANY BAR SHALL BE 2" UNLESS OTHERWISE NOTED, WITH THE EXCEPTION OF BARS AT THE BOTTOM AND SIDES OF ALL FOOTINGS WHICH SHALL HAVE 3" MINIMUM COVER.

FOR TIES AND STIRRUPS: STANDARD ACIBENDING TOLERANCES ARE MODIFIED TO PLUS (+) ZERO INCHES, MINUS (-) NORMAL ACI BENDING TOLERANCES.

ONLY GRADE 60 CAN BE USED ON THIS PROJECT.

ALL REINFORCING STEEL IN THE HEADWALLS SHALL BE EPOXY COATED.

KEYS:

ALL KEYS ARE NOMINAL SIZE.

EXCAVATION:

ALL EXCAVATION REQUIRED FOR THE PLACEMENT OF THE NEW HEADWALLS AND PIPE WILL BE MEASURED AND PAID FOR AS CLASS I EXCAVATION. NO OTHER CLASS OF EXCAVATION WILL BE PAID FOR ON THIS PROJECT.

EXISTING STRUCTURE:

ALL DIMENSIONS AFFECTED BY THE GEOMETRICS, AND/OR LOCATION OF THE EXISTING STRUCTURE SHALL BE CHECKED IN THE FIELD BY THE CONTRACTOR, BEFORE ANY CONSTRUCTION IS DONE, AND BEFORE ANY MATERIAL IS ORDERED OR FABRICATED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO SUPPLY THE ENGINEER WITH ALL FIELD DIMENSIONS REQUIRED TO CHECK DETAIL DRAWINGS. THE ± MARKS SHOWN WITH DIMENSIONS AND STATIONS DO NOT INDICATE ANY DEGREE OF PRECISION. THESE MARKS (±) INDICATE EXISTING DIMENSIONS AND STATIONS THAT MAY VARY AND DO REQUIRE FIELD VERIFICATION BY THE CONTRACTOR.

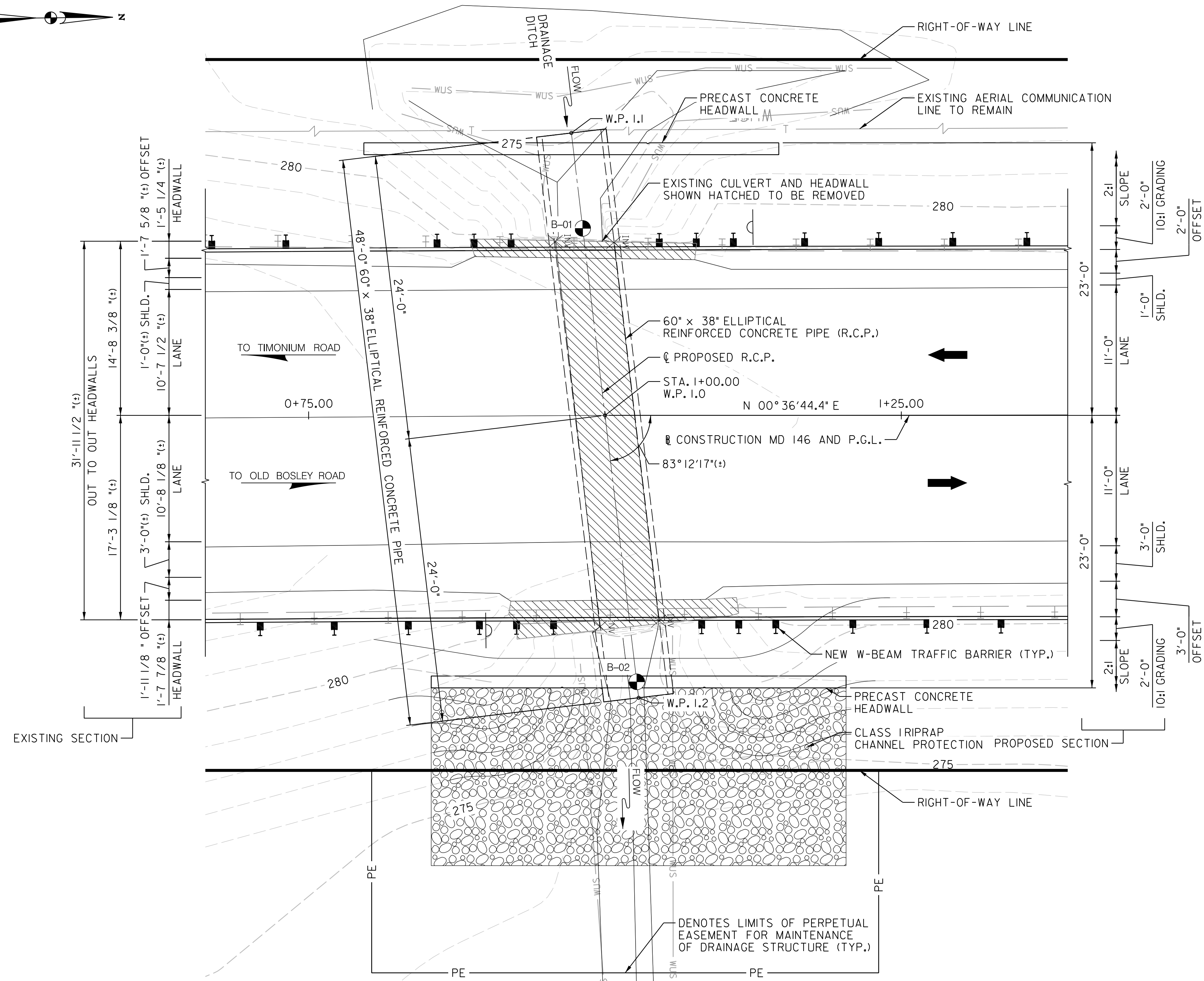
EXISTING CULVERT AND HEADWALLS SHOWN IN LONG DASHED LINES TO BE COMPLETELY REMOVED.

COVER FOR CONCRETE BOXES, PIPES AND/OR PIPE ARCHES:

NO CONSTRUCTION EQUIPMENT, WITH THE EXCEPTION OF THE ROADWAY PAVING EQUIPMENT DURING THE PAVING OPERATION, SHALL BE PERMITTED TO PASS OVER THE PIPE UNTIL THE ROADWAY PAVING HAS BEEN COMPLETED.

NOTES:

FOR MOT PLANS AND NOTES, SEE SHEET NOS. 4 TO 6.
 FOR PIPE PROFILE AND DETAILS, SEE DRAWING NO. SI-3.
 FOR HEADWALL DETAILS, SEE DRAWING NOS. SI-5 TO SI-10 AND SI-12.
 FOR PIPE SEQUENCE OF CONSTRUCTION, SEE DRAWING NOS. SI-13 TO SI-15.



WORKING POINT COORDINATES

W.P.	NORTHING	EASTING
I.0	651124.4357	1427421.6537
I.1	651121.8507	1427397.7933
I.2	651127.0206	1427445.5141

PLAN
 SCALE: 3/16" = 1'-0"

NOTE: INDICATES PROPOSED BORING LOCATION.

BORING LOCATION

BORING NO.	STATION	OFFSET	NORTHING	EASTING
B-01	0+98.20	15.75' L	651,122.72'	1,427,405.85'
B-02	1+02.57	22.50' R	651,126.87'	1,427,444.17'

REVISIONS		 MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION	REPLACEMENT OF SMALL STRUCTURE NO. 03189X0 SINGLE 60" x 38" ELLIPTICAL REINFORCED CONCRETE PIPE ON MD 146 (DULANEY VALLEY ROAD) OVER DRAINAGE DITCH
SCALE AS SHOWN ADVERTISED DATE DATE CONTRACT NO. BA0845180			
GENERAL PLAN AND NOTES			
DESIGNED BY	RDL	TENTATIVE OFFICE OF STRUCTURES <small>This plan is draft and subject to change. It is Intergovernmental agency deliberative communication and is not for public disclosure under MD General Provisions, Code Annotated Section 4-341 Maryland Public Information Act.</small>	
DRAWN BY	DRC		
CHECKED BY	XXX		
DRAWING NO.	SI-1 OF 18	SHEET NO.	20 OF 57

BY: david.clayton

PLOTTED: 03:54 PM on Friday, May 17, 2019

STRUCTURE INVENTORY NO. 03189X0

SURVEY BOOK NO.

PLOTTED: 03:54 PM on Friday, May 17, 2019
 FILE: M:\2010\23100466.29\Drawings\pBR-GP00_MD_146.dgn

HYDROLOGIC DATA

I. SOURCE: _____

PREPARED BY: SHA CONSULTANT: _____ DATE: _____

FILE LOCATION: _____

II. DRAINAGE AREA: ACRES _____ SQUARE MILES _____

III. METHOD(S) OF ANALYSIS:

- USGS GAGE DATA ANALYSIS
o GAGING STATION NO.
o LOCATION
o DRAINAGE AREA
o YEARS OF CONTINUOUS RECORD
USGS REGRESSION EQUATIONS
REFERENCE
SCS TR - 20 METHOD - VERSION USED (DATE)
o RCN (EXISTING-HOMOGENEOUS WATERSHED)
o RCN (ULTIMATE HOMOGENEOUS WATERSHED)
o Tc (HOMOGENEOUS WATERSHED)
FEMA BASE FLOOD (100-YEAR) DISCHARGE (CFS) METHOD USED BY FEMA
OTHER (DESCRIBE)

HAS FLOOD ROUTING BEEN USED IN DETERMINING FLOOD DISCHARGES? YES _____ NO _____
METHOD SELECTED _____

IV. COMPUTED FLOOD DISCHARGES

Table with columns: RETURN PERIOD (YEARS), FLOOD DISCHARGE (CFS) - BASED ON EXISTING WATERSHED DEVELOPMENT, FLOOD DISCHARGE (CFS) - BASED ON ULTIMATE WATERSHED DEVELOPMENT. Rows for 2, 10, 25, 50, 100, 500 years.

V. HISTORIC FLOODS

Table with columns: YEAR, MAGNITUDE (CFS), HIGH WATER ELEVATION, WHERE MEASURED, SOURCE OF DATA.

VI. STREAM MORPHOLOGY

STREAM TYPE _____ VALLEY TYPE _____

STREAM BED MATERIAL: DESCRIPTION _____ D16 _____ D50 _____ D84 _____

BANK FULL CHARACTERISTICS: Q _____ AREA _____ WIDTH _____ DEPTH _____
SLOPE _____ MANNINGS "n" VALUE _____ SINUOSITY _____

VII. TIDAL FLOWS

100-YEAR STORM TIDE ELEVATION (FT) _____ MAXIMUM DISCHARGE (CFS) _____

500-YEAR STORM TIDE ELEVATION (FT) _____ MAXIMUM DISCHARGE (CFS) _____

SOURCE OF INFORMATION _____

DESIGN DISCHARGE (CFS) _____ RETURN PERIOD _____ YEARS TIDAL PERIOD (HRS) _____

HOW DETERMINED? (EXPLAIN) _____

WATER SURFACE-ELEVATION FOR DESIGN CONDITION (FT) _____
(IF TIDAL FLOW GOVERNS HYDRAULIC DESIGN) _____

VII. COMMENTS:

Blank lines for comments.

HYDRAULIC DATA

I. SOURCE: _____

PREPARED BY: SHA CONSULTANT: _____ DATE: _____

FILE LOCATION: _____ ITEM 71 RATING² _____

METHOD(S) OF ANALYSIS: _____

II. HYDRAULIC DATA

Large table for hydraulic data with columns for flow conditions, channel cross-section, structure waterway area, energy slope, water surface elevation, channel, left overbank, right overbank, and discharge over road. Includes rows for design, 100-year, and incipient overtopping.

III. BRIDGE SCOUR DATA

A. SCOUR EVALUATION STUDY TITLE: _____

PREPARED BY: SHA CONSULTANT: _____ DATE: _____

FILE LOCATION: _____ ITEM 113 RATING² _____

B. SCOUR ESTIMATES:

Table for scour estimates with columns for design conditions, flood discharge, long term degradation, contraction scour depth, channel bed load, and type of scour. Includes a section for total scour and location of channel or substructure element.

NOTES:

- BLANK SPACES INDICATE THAT DATA IS NOT AVAILABLE OR IS NOT APPLICABLE
1. PARAMETERS COMPUTED ASSUMING THE WATERSHED IS HOMOGENEOUS WITHOUT SUBDIVISIONS
2. ITEM 71 RATING AND ITEM 113 RATING; REFER TO THE OBD GUIDE FOR COMPLETING THE S18A INPUT FORMS.
3. RECORD FLOW CONDITIONS USED IN ANALYSIS; DISCHARGE (Q), TAILWATER CONDITION AND HOW SELECTED, ETC. (FOR DEPRESSED CULVERTS, INDICATE UNDER COMMENTS THE ASSUMPTIONS MADE AS TO WHETHER SEDIMENT WILL REMAIN DURING FLOODS)
4. FOR CULVERTS, USE THESE THREE COLUMNS TO RECORD:
o DEPTH OF FLOW AT CULVERT INLET AND OUTLET
o WATER-SURFACE ELEVATION AT CULVERT INLET AND OUTLET
o ENERGY SLOPE FOR CULVERT BARREL
5. SYMBOLS USED:
O = FLOW OR DISCHARGE (CFS)
W = CHANNEL WIDTH OR FLOODPLAIN WIDTH (FT)
V = FLOW VELOCITY (FPS)
D = DEPTH OF FLOW (FT)
6. FOR CULVERTS, RECORD OUTLET VELOCITY HERE
7. FOR CULVERTS, RECORD TAILWATER DEPTH HERE
8. APPROACH SECTION SHOULD BE SELECTED AS PER GUIDANCE IN ABSOUR USERS MANUAL
9. ENTER CONTRACTION SCOUR DEPTHS ONLY (APPROXIMATE LINE 121 IN ABSOUR OUTPUT) - NOT ABUTMENT SCOUR
10. IF SCOUR RESISTENT BEDROCK CONTROLS SCOUR, ENTER BEDROCK ELEVATION AND NOTE THIS CONDITION UNDER COMMENTS
11. RECORD INCIPIENT OVERTOPPING DISCHARGE (Q) AND RECURRENCE INTERVAL
12. RECORD CLEARANCE BETWEEN WATER SURFACE ELEVATION AND LOW CHORD FOR DESIGN DISCHARGE
13. RECORD TOTAL FLOW AREA UNDER STRUCTURE (DOWNSTREAM END) FOR 100 & 500 YEAR FLOODS
14. FOR BRIDGES:
ENTER TYPE, SPAN LENGTH AND MAXIMUM VERTICAL CLEARANCE FOR CULVERTS;
ENTER SIZE, NUMBER OF CELLS, AND LENGTH;
DESCRIBE ANY SPECIAL FEATURES UNDER COMMENTS
15. FOR CULVERTS, DESCRIBE TYPE OF INLET/OUTLET AND EROSION PROTECTION
16. COMPOSITE "N" VALUE OF STRUCTURE

IV. ROADWAY AND STRUCTURE DATA

Table for roadway and structure data with columns: ITEM, EXISTING STRUCTURE, PROPOSED STRUCTURE. Rows include Name of Waterway, Date Built, Overtopping Elevation, Overtopping Location, Incipient Overtopping Flow Condition, Freeboard, Total Structure Waterway Area, Structure Description, Inlet Treatment, Outlet Treatment, and Mannings "N" Value.

V. SURVEY BOOK NUMBERS: _____

REFERENCE DATUM FOR ELEVATIONS _____

VI. FLOOD PLAIN MANAGEMENT DATA

DATE OF FLOOD INSURANCE STUDY _____ COMMUNITY PANEL NO. _____

PROJECT LOCATION (CHECK BELOW):

_____ BEYOND FEMA PROGRAM LIMITS (NOT IN "A" HAZARD ZONE)

_____ FEMA HAZARD ZONE "A"; NO BASE FLOOD ELEVATIONS ESTABLISHED

_____ FEMA HAZARD ZONE "A"; BASE FLOOD ELEVATIONS ESTABLISHED

REGULATORY FLOODWAY _____ YES _____ NO
MAXIMUM CHANGE IN WATER SURFACE ELEVATION UPSTREAM OF BRIDGE DUE TO HIGHWAY PROJECT (MAX. BACKWATER) _____ FT.

LOCATION OF MAX. BACKWATER FROM UPSTREAM FACE OF BRIDGE _____ FT.

DESCRIBE TYPE OF STUDY DONE TO DETERMINE CONSISTENCY WITH NFIP STANDARDS _____
DATE COMMUNITY ACKNOWLEDGEMENT FORM ISSUED: _____

IS THE PROJECT CONSISTENT WITH THE CODE OF FEDERAL REGULATIONS, PART 650 A, LOCATION AND HYDRAULIC DESIGN OF ENCROACHMENTS ON FLOOD PLAINS (23 CFR 650 A). Y/N _____

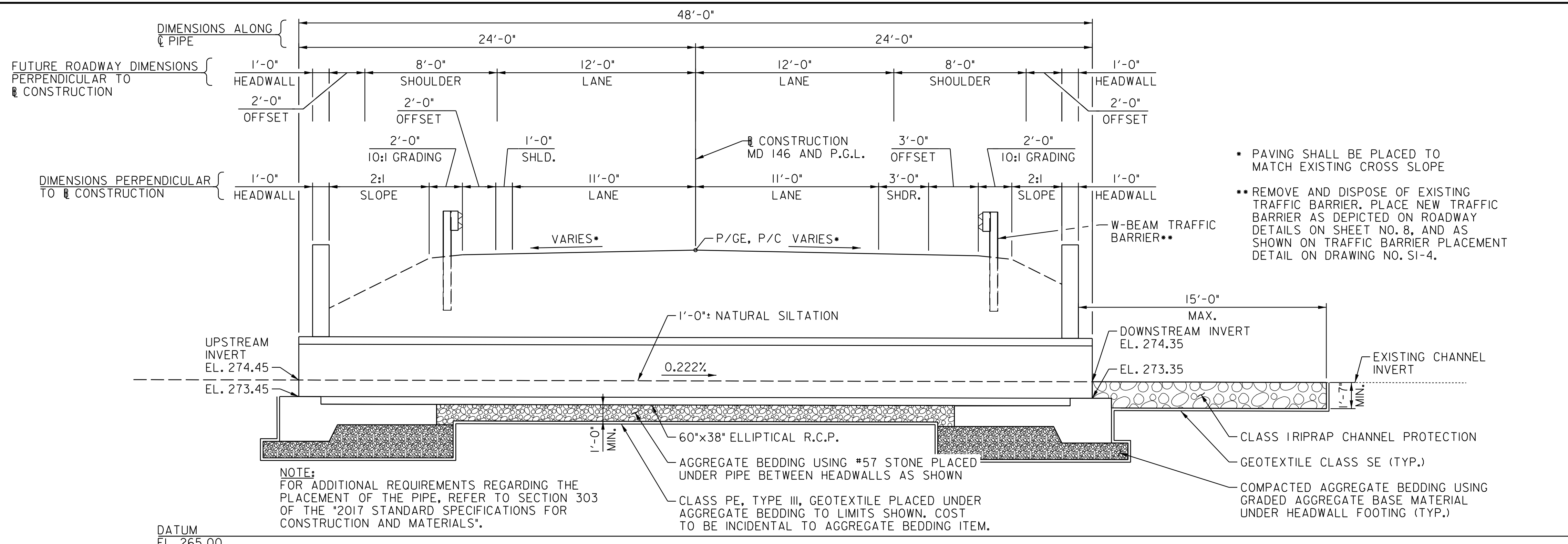
IS THE PROJECT CONSISTENT WITH THE ANNOTATED CODE OF MARYLAND (COMAR 08.05.03)? Y/N _____

VII. COMMENTS:

Blank lines for comments.

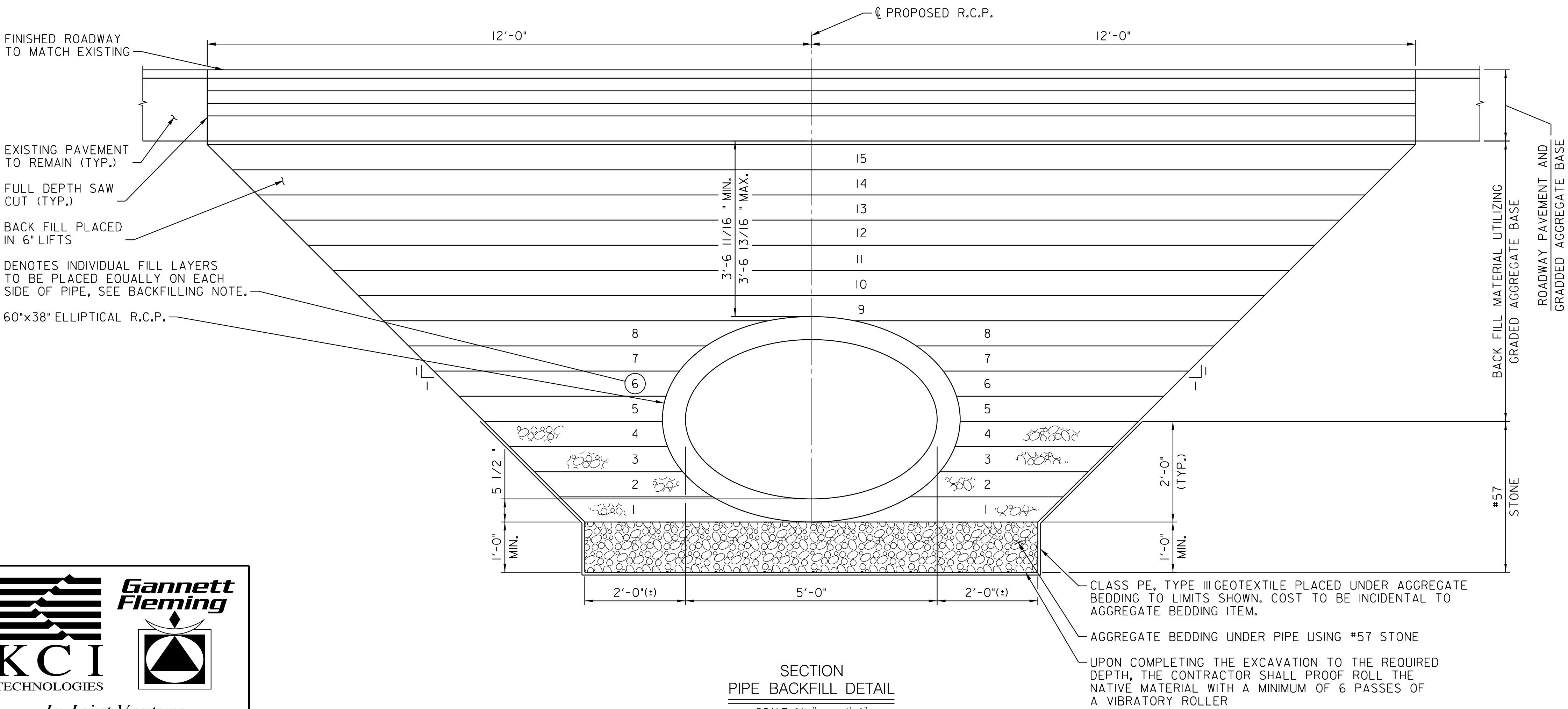
Revisions table and project information including MDOT logo, project title 'REPLACEMENT OF SMALL STRUCTURE NO. 03189X0', location 'MD 146 (DULANEY VALLEY ROAD) OVER DRAINAGE DITCH', and drawing details 'DRAWING NO. S1-2 OF 18 SHEET NO. 21 OF 57'.

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- PAVING SHALL BE PLACED TO MATCH EXISTING CROSS SLOPE
- REMOVE AND DISPOSE OF EXISTING TRAFFIC BARRIER. PLACE NEW TRAFFIC BARRIER AS DEPICTED ON ROADWAY DETAILS ON SHEET NO. 8, AND AS SHOWN ON TRAFFIC BARRIER PLACEMENT DETAIL ON DRAWING NO. SI-4.

SECTION
PROFILE DETAIL AT 60" x 38" ELLIPTICAL PIPE
SCALE: 1/4" = 1'-0"

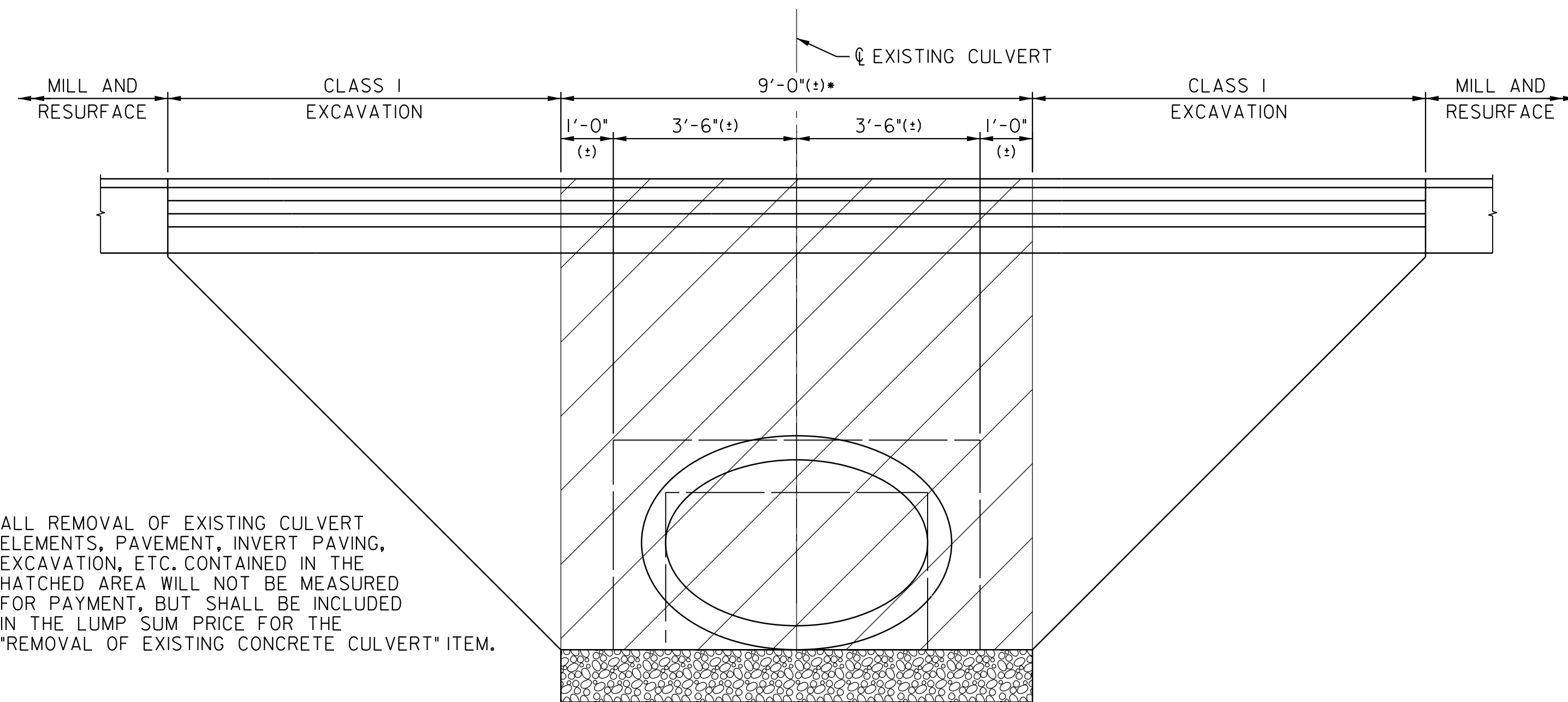


- BACKFILLING NOTE:**
- WHEN BACKFILLING THE NEW ELLIPTICAL PIPE, THE CONTRACTOR SHALL PLACE THE BACKFILL IN 6" LIFTS AS SHOWN. THE CONTRACTOR SHALL PLACE THE LIFTS IN THE NUMBERED SEQUENCE SHOWN. THE CORRESPONDING LIFTS ON EACH SIDE OF THE ELLIPTICAL PIPE MUST BE COMPLETED PRIOR TO PROCEEDING TO THE NEXT NUMBERED LIFT.
- NOTES:**
1. FOR MOT PLANS AND GENERAL NOTES, SEE SHEET NO. 4 TO 6.
 2. FOR GENERAL PLAN OF PIPE, SEE DRAWING NO. SI-1.
 3. FOR ADDITIONAL PIPE DETAILS, SEE DRAWING NO. SI-4.

REVISIONS	
<p>MDOT MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION</p>	
<p>REPLACEMENT OF SMALL STRUCTURE NO. 03189X0 SINGLE 60" x 38" ELLIPTICAL REINFORCED CONCRETE PIPE ON MD 146 (DULANEY VALLEY ROAD) OVER DRAINAGE DITCH</p>	
<p>PIPE PROFILE AND DETAILS</p>	
SCALE AS SHOWN ADVERTISED DATE _____ DATE _____ CONTRACT NO. _____ BA0845180 _____	
DESIGNED BY _____ RDL _____	<p>TENTATIVE OFFICE OF STRUCTURES <small>This plan is draft and subject to change. It is the property of the agency. No liability is assumed for any errors or omissions. It is not for public disclosure under the General Provisions, Code Annotated Section 4-34 Maryland Public Information Act.</small></p>
DRAWN BY _____ DRC _____	
CHECKED BY _____ XXX _____	
DRAWING NO. S1-3 OF 18	SHEET NO. 22 OF 57

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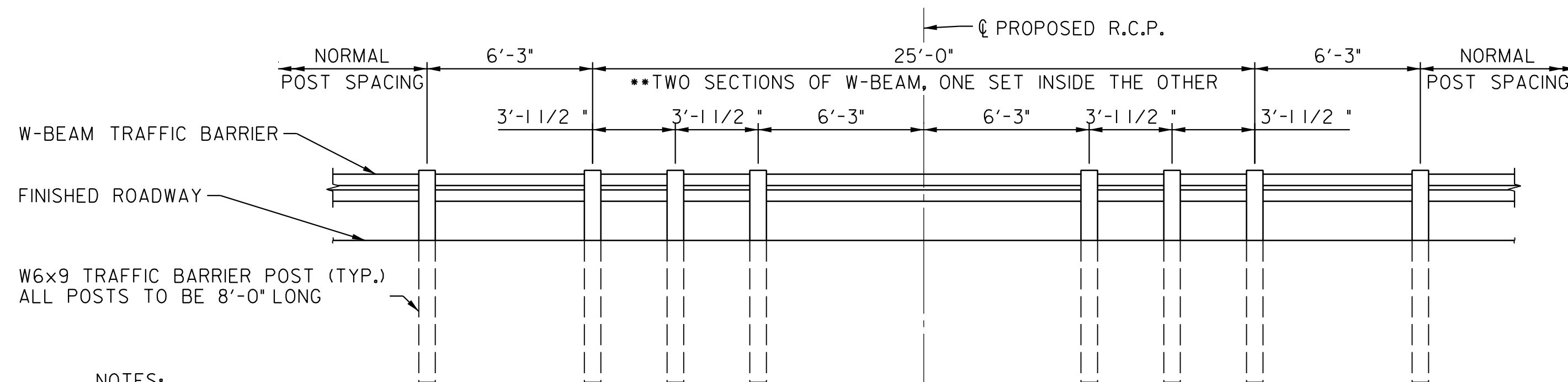
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• ALL REMOVAL OF EXISTING CULVERT ELEMENTS, PAVEMENT, INVERT PAVING, EXCAVATION, ETC. CONTAINED IN THE HATCHED AREA WILL NOT BE MEASURED FOR PAYMENT, BUT SHALL BE INCLUDED IN THE LUMP SUM PRICE FOR THE "REMOVAL OF EXISTING CONCRETE CULVERT" ITEM.

SECTION EXCAVATION AT EXISTING CULVERT

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



NOTES:

- BEGIN TRAFFIC BARRIER POST PLACEMENT AT CENTER LINE OF PIPE AND WORK EACH WAY FROM PIPE AS SHOWN.
- CONTRACTOR SHALL PROBE EACH POST LOCATION IN AREA OF PIPE PRIOR TO PLACING TRAFFIC BARRIER POSTS TO ENSURE THERE WILL BE NO CONFLICTS WITH NEW PIPE.

•• THE COST OF THE SECOND SECTION OF THE W-BEAM SHALL BE INCIDENTAL TO THE LINEAR FOOT PRICE BID ON THE INITIAL PLACEMENT OF THE W-BEAM TRAFFIC BARRIER.

ELEVATION TRAFFIC BARRIER POST PLACEMENT AT PIPE

SCALE: 1/4" = 1'-0"

NOTES:


- FOR GENERAL PLAN OF PIPE, SEE DRAWING NO. SI-1.
- FOR PIPE PROFILE AND DETAILS, SEE DRAWING NO. SI-3.



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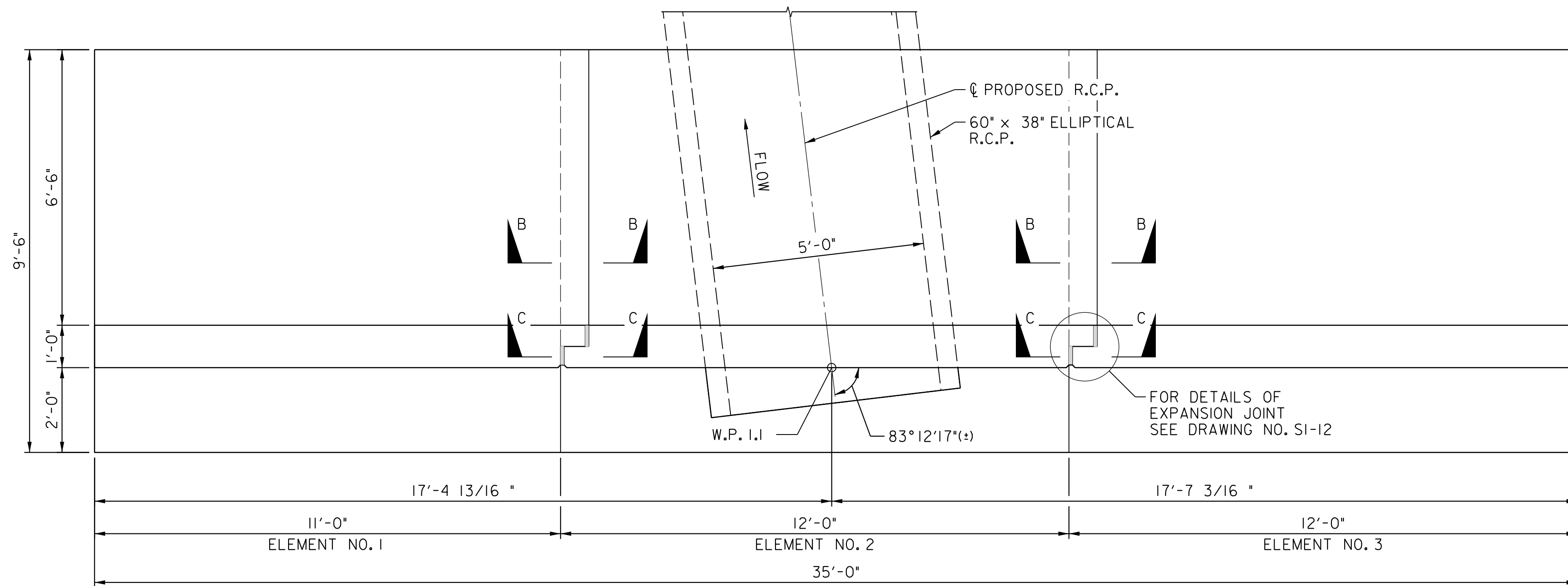
PLOTTED: 03:55 PM on Friday, May 17, 2019

REVISIONS		 MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION	
		REPLACEMENT OF SMALL STRUCTURE NO. 03189X0 SINGLE 60" x 38" ELLIPTICAL REINFORCED CONCRETE PIPE ON MD 146 (DULANEY VALLEY ROAD) OVER DRAINAGE DITCH	
PIPE DETAILS			
SCALE AS SHOWN		ADVERTISED DATE	DATE
		CONTRACT NO. BA0845180	
DESIGNED BY	RDL	TENTATIVE OFFICE OF STRUCTURES <small>This plan is draft and subject to change. It is for agency/inter-agency deliberative communication and is not for public disclosure under the General Provisions, Code Article 21, Section 4-34 Maryland Public Information Act.</small>	
DRAWN BY	DRC		
CHECKED BY	XXX		
DRAWING NO.	SI-4 OF 18	SHEET NO.	23 OF 57

STRUCTURE INVENTORY NO. 03189X0

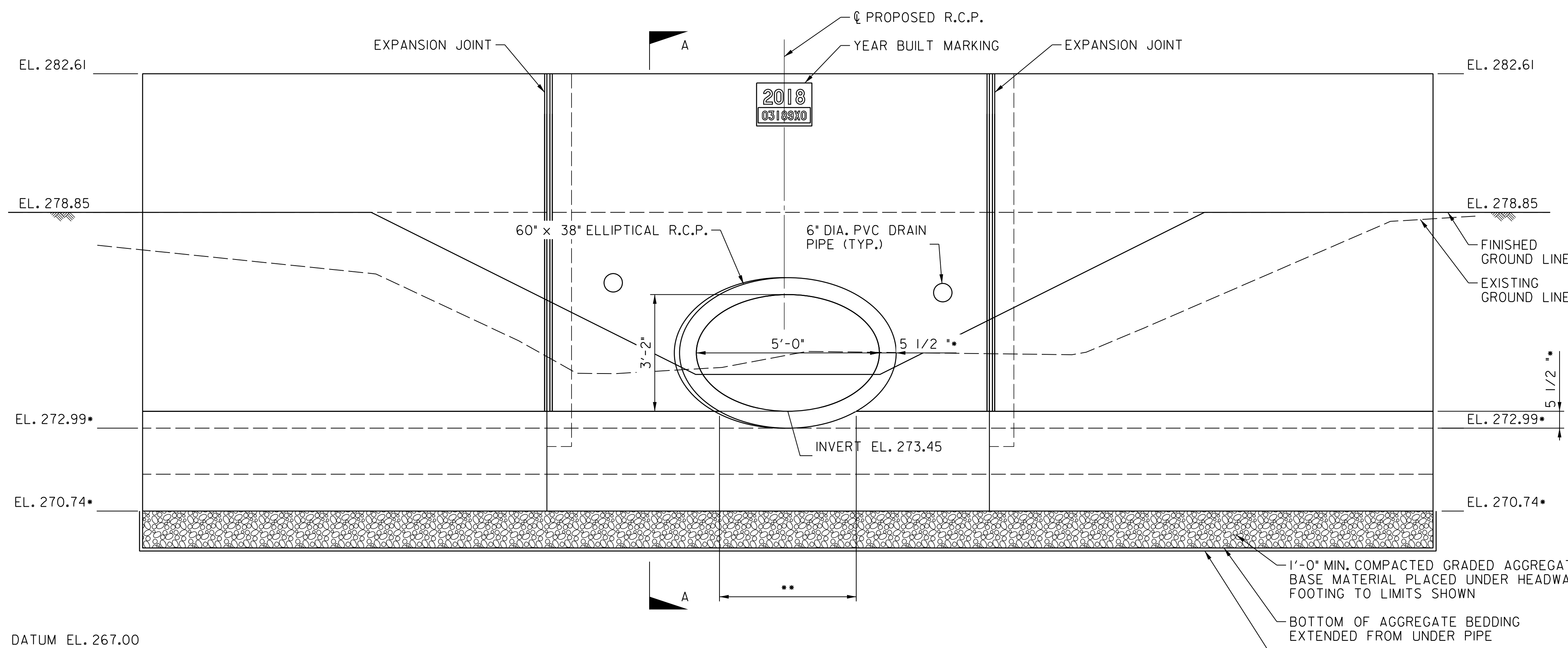
SURVEY BOOK NO.

PLOTTED: 03:55 PM on Friday, May 17, 2019
FILE: M:\2010\23100466.29\Drawings\pBR-DE02_MD_146.dgn



PLAN - PRECAST UPSTREAM HEADWALL

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



ELEVATION - PRECAST UPSTREAM HEADWALL

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

NOTE:

ALL COSTS ASSOCIATED WITH THE CONSTRUCTION OF THE UPSTREAM HEADWALL WILL NOT BE MEASURED FOR PAYMENT, BUT SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR THE "UPSTREAM HEADWALL" ITEM.

THE ENTIRE UPSTREAM HEADWALL SHALL BE CONSTRUCTED OF PRECAST ELEMENTS AND BE ON THE SITE READY FOR INSTALLATION PRIOR TO THE CLOSURE OF THE ROADWAY.

NOTE:

END OF PIPE TO BE PLACED THROUGH HEADWALL WITH SQUARED END AS SHOWN.


NOTE:

HOLES THROUGH PRECAST HEADWALL SHALL BE ADJUSTED TO ACCOMMODATE THE SKEWED ORIENTATION OF PIPE AS IT PASSES THROUGH THE HEADWALL. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND PLACEMENT OF LIFTING DEVICES. IN ADDITION, THE CONTRACTOR AND HIS PRECAST SUPPLIER SHALL VERIFY THAT THE LIFTING POINTS WILL NOT DAMAGE THE HEADWALL OR FOOTING DURING LIFTING.

- THIS DIMENSION AND FOOTING ELEVATIONS WERE DEVELOPED ON AN ASSUMED PIPE WALL THICKNESS OF 5 1/2 ". SHOULD THE WALL THICKNESS BE DIFFERENT, THE ELEVATIONS SHALL BE ADJUSTED ACCORDINGLY. THE INVERT ELEVATIONS SHALL NOT BE CHANGED. ALL DIMENSIONS SHOWN FOR PIPE ARE NORMAL TO THE CENTERLINE OF THE PIPE.
- DISCONTINUE PORTION OF STEPPED KEY AT PIPE AND PROVIDE OPENING FOR PIPE. STEPPED KEY SHALL BE PLACED FOR REMAINDER OF HEADWALL.

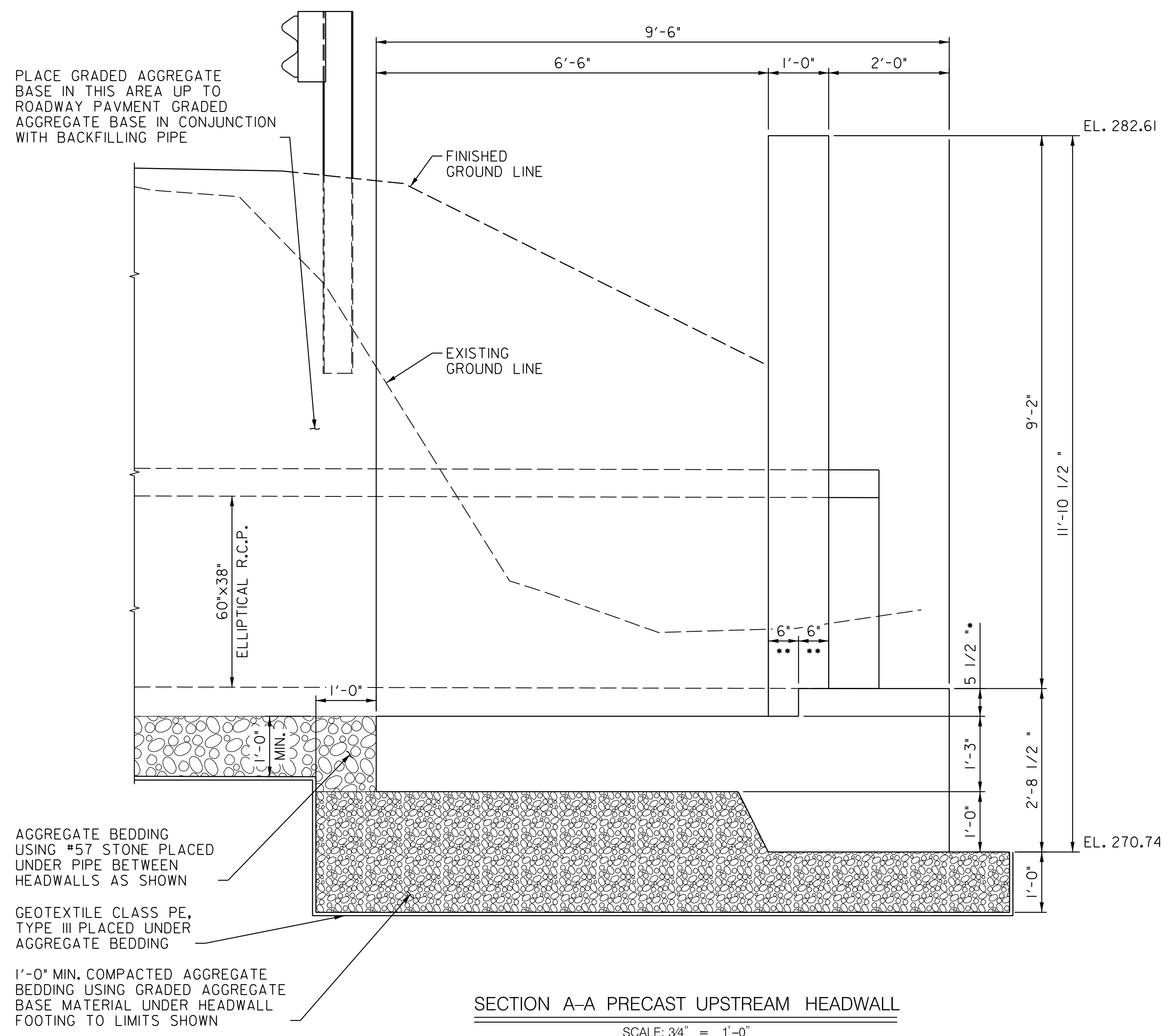
NOTES:

FOR PLAN AND PROFILE OF PIPE, SEE DRAWING NOS. SI-1 AND SI-3.
 FOR DOWNSTREAM HEADWALL, SEE DRAWING NOS. SI-8 TO SI-10.
 FOR SECTION A-A, SEE DRAWING NO. SI-6.
 FOR SECTION B-B, SEE DRAWING NO. SI-12.
 FOR SECTION C-C, SEE DRAWING NO. SI-12.
 FOR PVC DRAIN PIPE, SEE MD SHA STANDARD NO. RW-301.

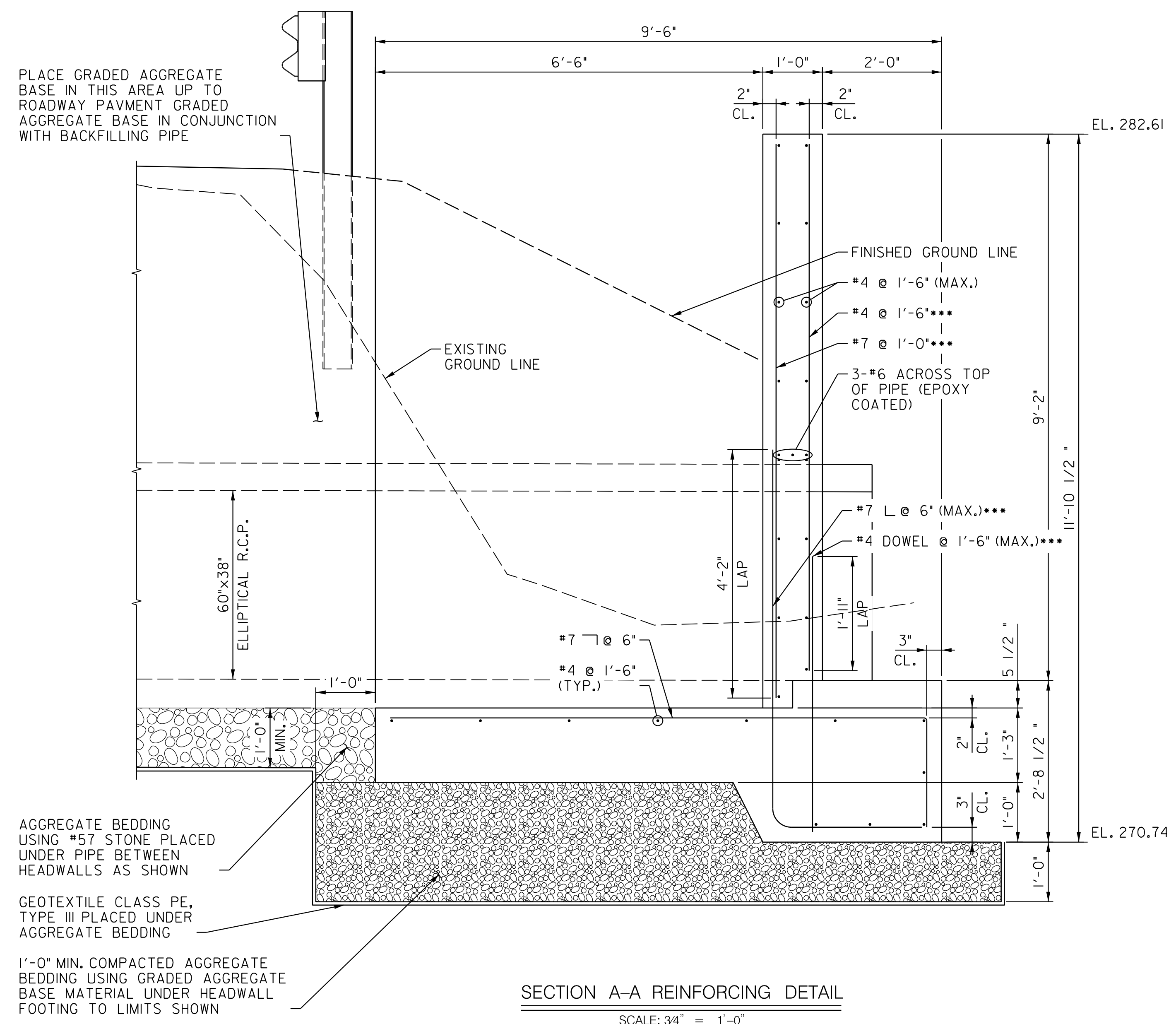
REVISIONS		 MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION		REPLACEMENT OF SMALL STRUCTURE NO. 03189X0 SINGLE 60" x 38" ELLIPTICAL REINFORCED CONCRETE PIPE ON MD 146 (DULANEY VALLEY ROAD) OVER DRAINAGE DITCH	
UPSTREAM HEADWALL PLAN & ELEVATION					
SCALE AS SHOWN ADVERTISED DATE _____ DATE _____ CONTRACT NO. _____ BA0845180 _____					
DESIGNED BY _____ RDL _____		TENTATIVE OFFICE OF STRUCTURES <small>This plan is draft and subject to change. It is inter-agency/inter-agency collaborative communication and is not for public disclosure under the General Provisions, Code Annotated Section 4-341 Maryland Public Information Act.</small>		DRAWING NO. S1-5 OF 18	
DRAWN BY _____ DRC _____				SHEET NO. 24 OF 57	
CHECKED BY _____ XXX _____					

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SECTION A-A PRECAST UPSTREAM HEADWALL
SCALE: 3/4" = 1'-0"



SECTION A-A REINFORCING DETAIL
SCALE: 3/4" = 1'-0"

NOTES:


FOR PLAN AND PROFILE OF PIPE, SEE DRAWING NOS. SI-1 AND SI-3.
FOR DOWNSTREAM HEADWALL, SEE DRAWING NOS. SI-8 TO SI-10.
FILL VOID UNDER RCP ABOVE FOOTING AND IN HEADWALL AROUND RCP WITH NON-SHRINK GROUT. GROUT SHALL CONFORM TO 902.11(C).

NOTE:

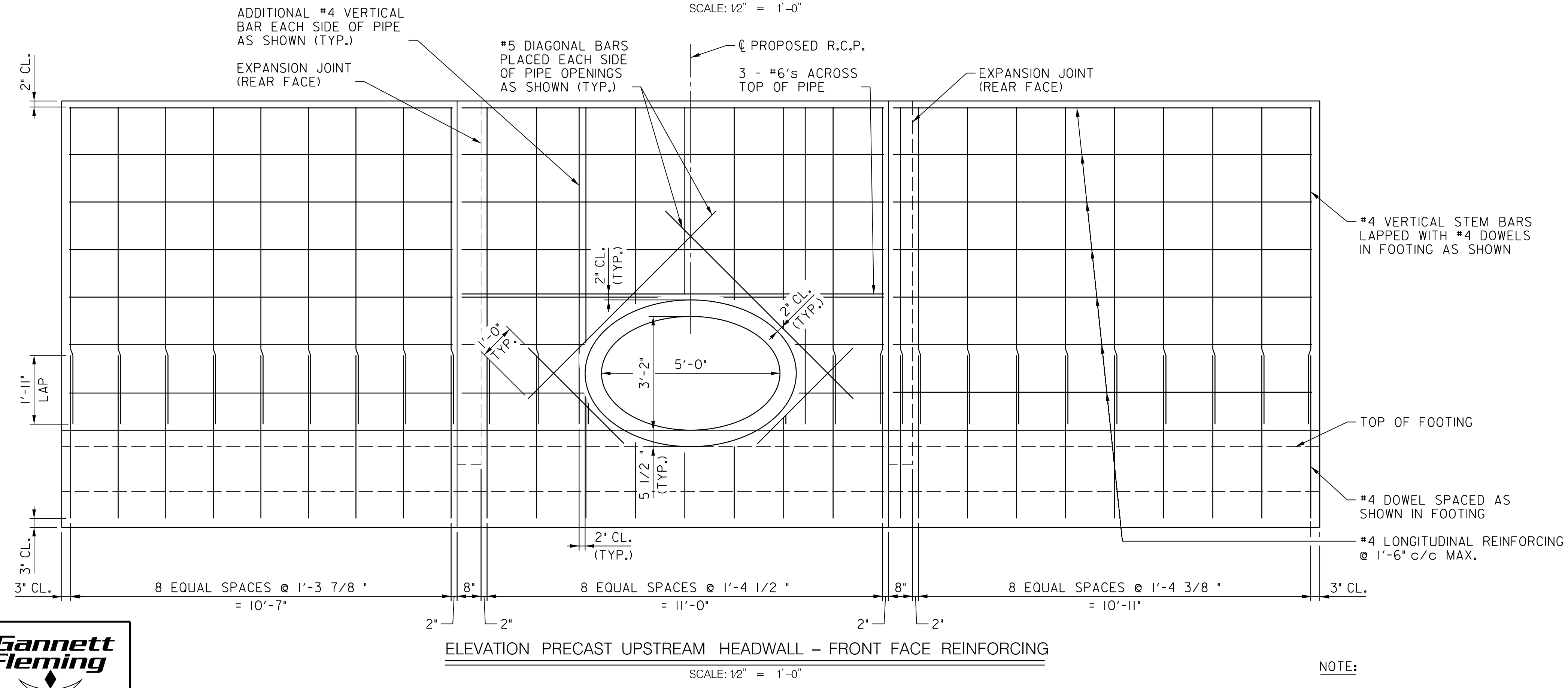
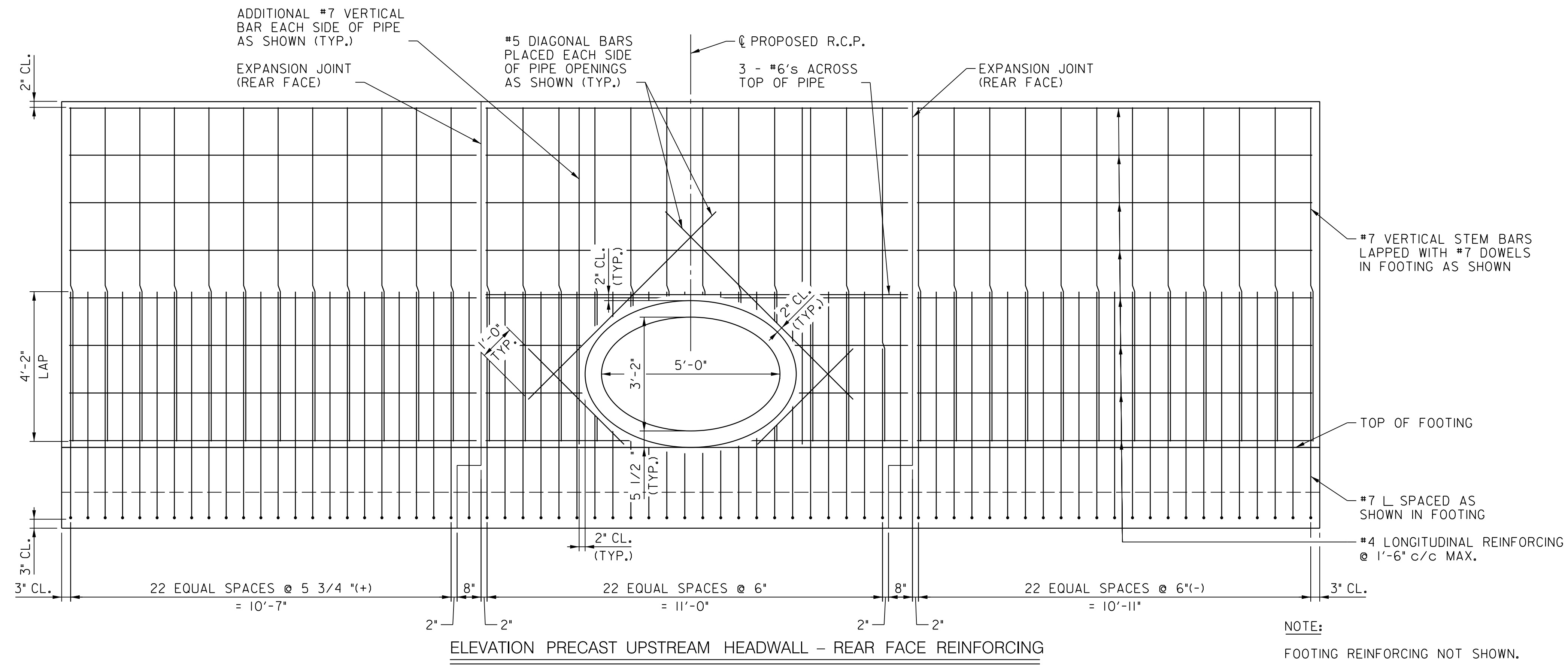
- THE MAXIMUM FOUNDATION DESIGN BEARING PRESSURE FOR STRENGTH LOAD COMBINATIONS IS X.XX TONS/SQ. FT.
- THE MAXIMUM FOUNDATION DESIGN BEARING PRESSURE FOR SERVICE LOAD COMBINATIONS IS X.XX TONS/SQ. FT.
- THE MAXIMUM FOUNDATION DESIGN BEARING PRESSURE FOR EXTREME EVENT LOAD COMBINATIONS IS X.XX TONS/SQ. FT.

NOTE:

- THIS DIMENSION AND FOOTING ELEVATIONS WERE DEVELOPED ON AN ASSUMED PIPE WALL THICKNESS OF 5 1/2". SHOULD THE WALL THICKNESS BE DIFFERENT, THE ELEVATIONS SHALL BE ADJUSTED ACCORDINGLY. THE INVERT ELEVATIONS SHALL NOT BE CHANGED.
- DISCONTINUE STEPPED KEY AT PIPE AND PROVIDE OPENING FOR PIPE.
- AT THE CONTRACTORS OPTION, THE DOWEL AND STEM BAR MAY BE PLACED AS A CONTINUOUS BAR.


REVISIONS	
 MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION	
REPLACEMENT OF SMALL STRUCTURE NO. 03189X0 SINGLE 60" x 38" ELLIPTICAL REINFORCED CONCRETE PIPE ON MD 146 (DULANEY VALLEY ROAD) OVER DRAINAGE DITCH	
UPSTREAM HEADWALL SECTIONS	
SCALE AS SHOWN ADVERTISED DATE _____ DATE _____ CONTRACT NO. _____ BA0845180	
DESIGNED BY _____ RDL	TENTATIVE OFFICE OF STRUCTURES <small>This plan is draft and subject to change. It is inter-agency/inter-agency collaborative construction and is not for public disclosure under the General Provisions, Code Article 21, Section 4-341 Maryland Public Information Act.</small>
DRAWN BY _____ DRC	
CHECKED BY _____ XXX	
DRAWING NO. SI-6 OF 18	SHEET NO. 25 OF 57

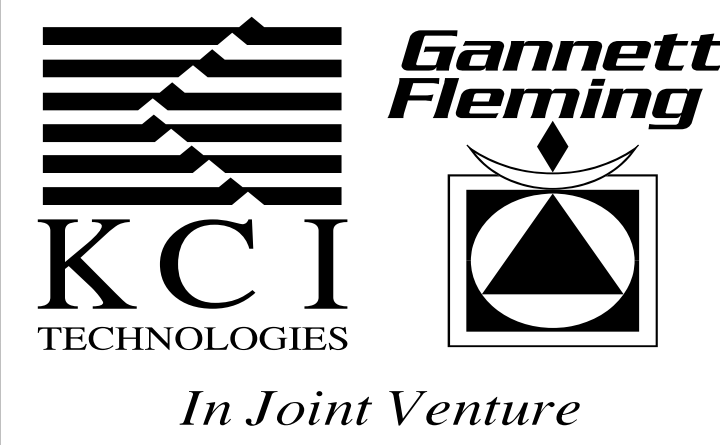
BY: david.clayton



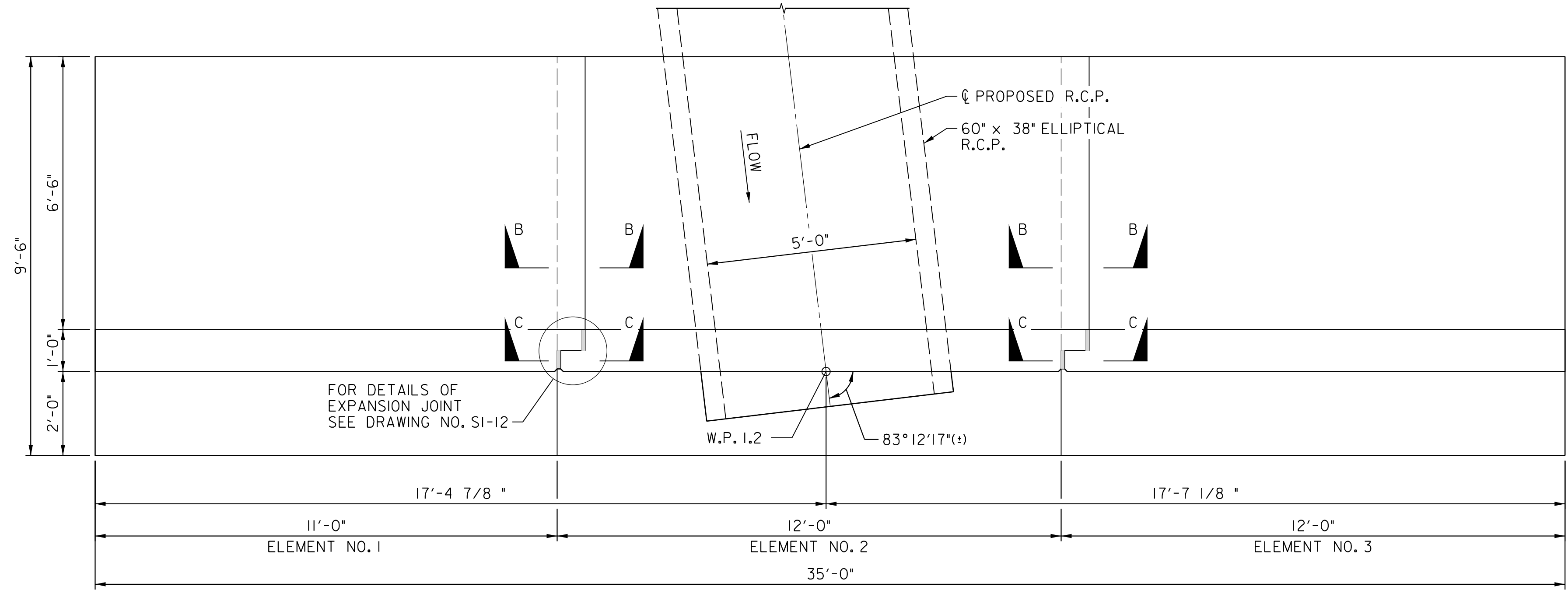
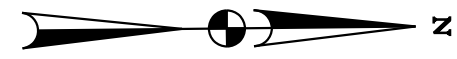
NOTE:
HOLES THROUGH PRECAST HEADWALL SHALL BE ADJUSTED TO ACCOMMODATE THE SKEWED ORIENTATION OF PIPE AS IT PASSES THROUGH THE HEADWALL. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND PLACEMENT OF LIFTING DEVICES. IN ADDITION, THE CONTRACTOR AND HIS PRECAST SUPPLIER SHALL VERIFY THAT THE LIFTING POINTS WILL NOT DAMAGE THE HEADWALL OR FOOTING DURING LIFTING.

NOTES:
FOR PLAN AND PROFILE OF PIPE, SEE DRAWING NOS. SI-1 AND SI-3.
FOR ADDITIONAL PIPE DETAILS, SEE DRAWING NO. SI-4.
FOR SECTION DETAIL, SEE DRAWING NO. SI-6.

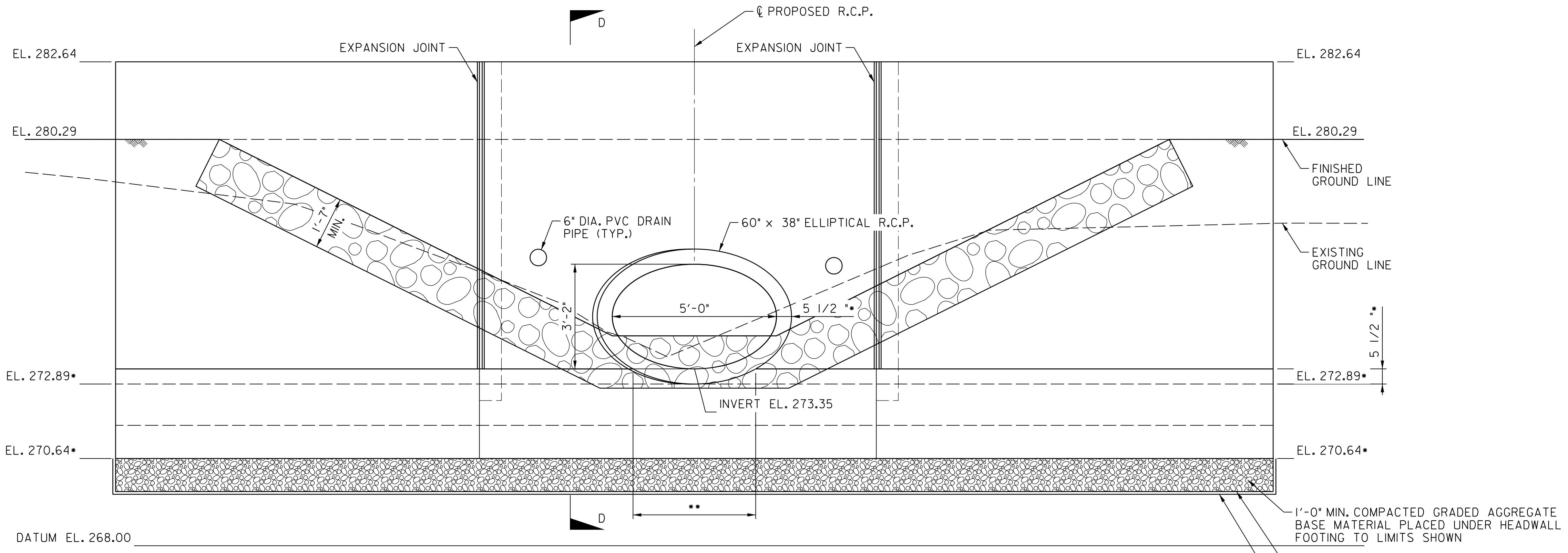
REVISIONS		 MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION	REPLACEMENT OF SMALL STRUCTURE NO. 03189X0 SINGLE 60" x 38" ELLIPTICAL REINFORCED CONCRETE PIPE ON MD 146 (DULANEY VALLEY ROAD) OVER DRAINAGE DITCH
UPSTREAM HEADWALL REINFORCING DETAILS			
SCALE AS SHOWN ADVERTISED DATE _____ DATE _____ CONTRACT NO. _____ BA0845180			
DESIGNED BY	RDJ	TENTATIVE OFFICE OF STRUCTURES <small>This plan is draft and subject to change. It is inter-agency advisory and no liability is assumed for its use. It is not for public disclosure under the General Provisions, Code Annotated Section 4-34 Maryland Public Information Act.</small>	
DRAWN BY	DRC		
CHECKED BY	XXX		
DRAWING NO.	SI-7 OF 18	SHEET NO.	26 OF 57



BY: david.clayton



PLAN - PRECAST DOWNSTREAM HEADWALL
SCALE: 1/2" = 1'-0"



ELEVATION - PRECAST DOWNSTREAM HEADWALL
SCALE: 1/2" = 1'-0"

NOTE:
ALL COSTS ASSOCIATED WITH THE CONSTRUCTION OF THE DOWNSTREAM HEADWALL WILL NOT BE MEASURED FOR PAYMENT, BUT SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR THE "DOWNSTREAM HEADWALL" ITEM.


THE ENTIRE DOWNSTREAM HEADWALL SHALL BE CONSTRUCTED OF PRECAST ELEMENTS AND BE ON THE SITE READY FOR INSTALLATION PRIOR TO THE CLOSURE OF THE ROADWAY.

NOTE:
END OF PIPE TO BE PLACED THROUGH HEADWALL WITH SQUARED END AS SHOWN.

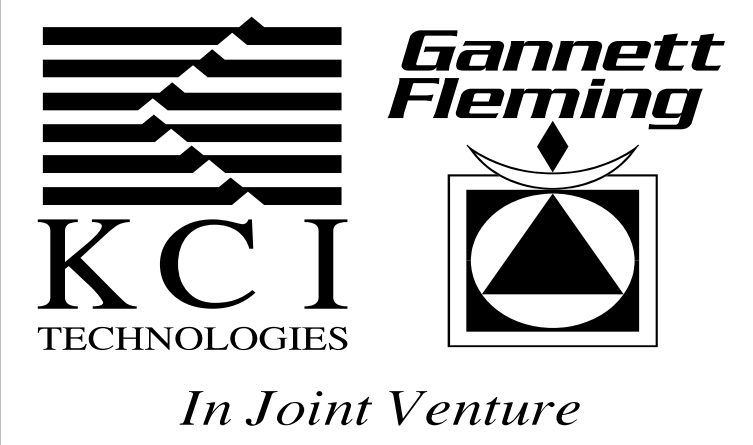
NOTE:
HOLES THROUGH PRECAST HEADWALL SHALL BE ADJUSTED TO ACCOMMODATE THE SKEWED ORIENTATION OF PIPE AS IT PASSES THROUGH THE HEADWALL. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND PLACEMENT OF LIFTING DEVICES. IN ADDITION, THE CONTRACTOR AND HIS PRECAST SUPPLIER SHALL VERIFY THAT THE LIFTING POINTS WILL NOT DAMAGE THE HEADWALL OR FOOTING DURING LIFTING.

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- ** DISCONTINUE PORTION OF STEPPED KEY AT PIPE AND PROVIDE OPENING FOR PIPE. STEPPED KEY SHALL BE PLACED FOR REMAINDER OF HEADWALL.

NOTES:
FOR PLAN AND PROFILE OF PIPE, SEE DRAWING NOS. SI-1 AND SI-3.
FOR UPSTREAM HEADWALL, SEE DRAWING NOS. SI-5 TO SI-7.
FOR SECTION B-B, SEE DRAWING NO. SI-12.
FOR SECTION C-C, SEE DRAWING NO. SI-12.
FOR SECTION D-D, SEE DRAWING NO. SI-9.
FOR PVC DRAIN PIPE, SEE MD SHA STANDARD DETAIL RW-301.

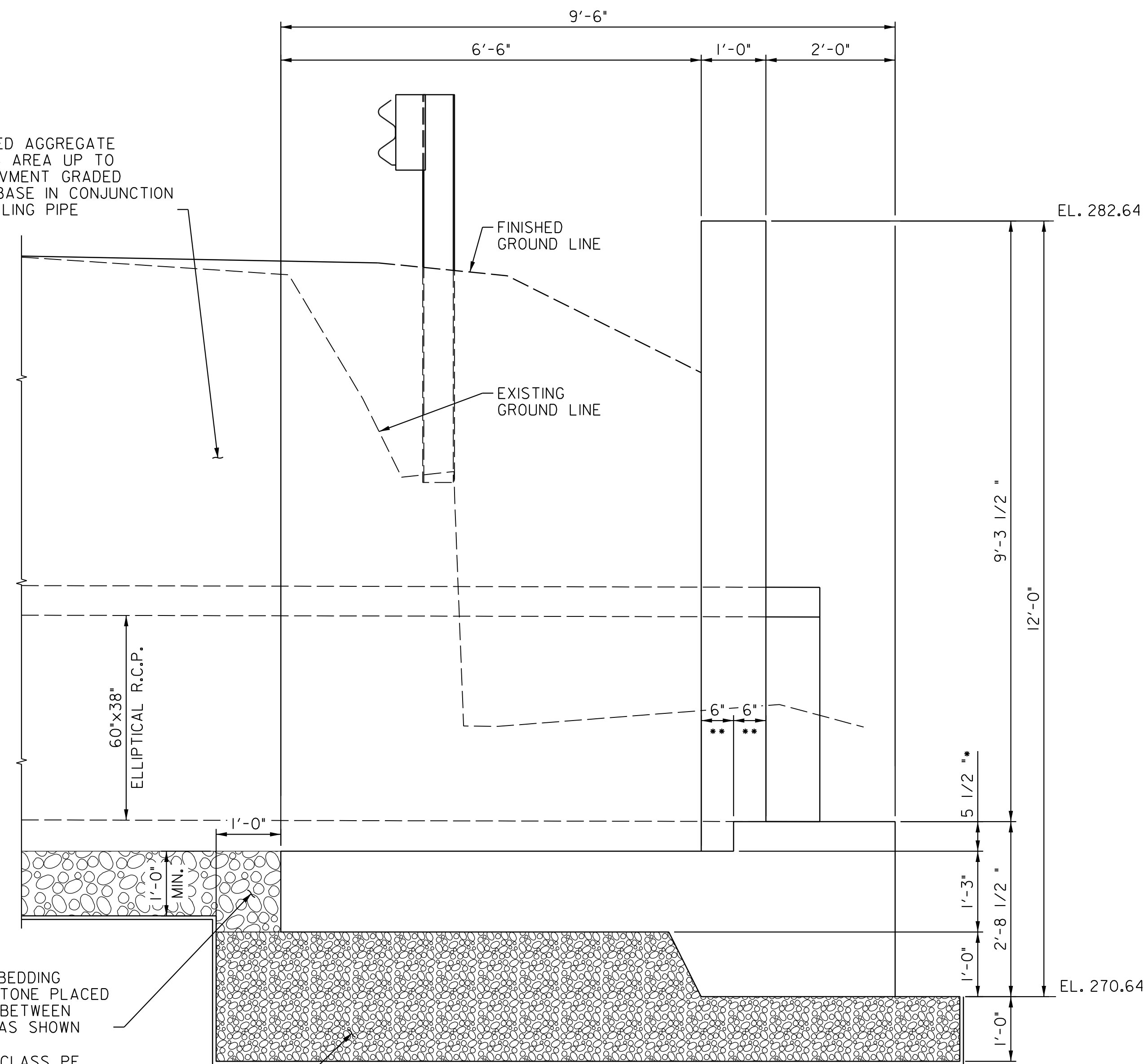
REVISIONS		 REPLACEMENT OF SMALL STRUCTURE NO. 03189X0 SINGLE 60" x 38" ELLIPTICAL REINFORCED CONCRETE PIPE ON MD 146 (DULANEY VALLEY ROAD) OVER DRAINAGE DITCH	
DOWNSTREAM HEADWALL PLAN & ELEVATION SCALE AS SHOWN ADVERTISED DATE _____ DATE _____ CONTRACT NO. _____ BA0845180			
DESIGNED BY	RDJ	TENTATIVE OFFICE OF STRUCTURES <small>This plan is draft and subject to change. It is interagency/inter-agency collaborative communication and is not for public disclosure under the General Provisions, Code Annotated Section 4-341 Maryland Public Information Act.</small>	
DRAWN BY	DRC		
CHECKED BY	XXX		
DRAWING NO.	SI-8 OF 18	SHEET NO.	27 OF 57

BY: david.clayton -



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PLACE GRADED AGGREGATE BASE IN THIS AREA UP TO ROADWAY PAVMENT GRADED AGGREGATE BASE IN CONJUNCTION WITH BACKFILLING PIPE



SECTION D-D PRECAST UPSTREAM HEADWALL

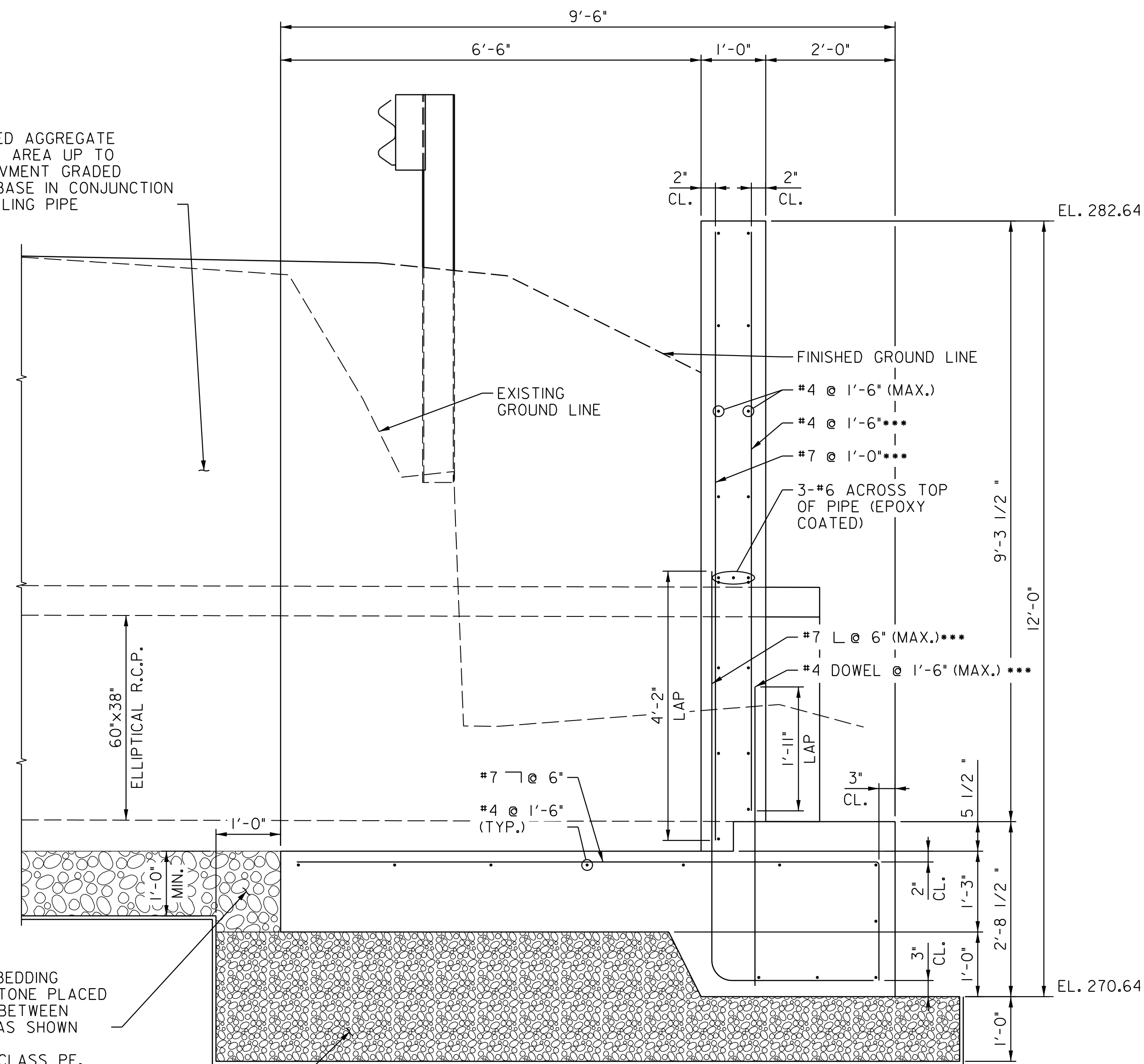
SCALE: 3/4" = 1'-0"

AGGREGATE BEDDING USING #57 STONE PLACED UNDER PIPE BETWEEN HEADWALLS AS SHOWN

GEOTEXTILE CLASS PE, TYPE III PLACED UNDER AGGREGATE BEDDING

1'-0" MIN. COMPACTED AGGREGATE BEDDING USING GRADED AGGREGATE BASE MATERIAL UNDER HEADWALL FOOTING TO LIMITS SHOWN

PLACE GRADED AGGREGATE BASE IN THIS AREA UP TO ROADWAY PAVMENT GRADED AGGREGATE BASE IN CONJUNCTION WITH BACKFILLING PIPE



SECTION D-D REINFORCING DETAIL

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

AGGREGATE BEDDING USING #57 STONE PLACED UNDER PIPE BETWEEN HEADWALLS AS SHOWN

GEOTEXTILE CLASS PE, TYPE III PLACED UNDER AGGREGATE BEDDING

1'-0" MIN. COMPACTED AGGREGATE BEDDING USING GRADED AGGREGATE BASE MATERIAL UNDER HEADWALL FOOTING TO LIMITS SHOWN

NOTES:


FOR PLAN AND PROFILE OF PIPE, SEE DRAWING NOS. SI-1 AND SI-3.
FOR UPSTREAM HEADWALL, SEE DRAWING NOS. SI-5 TO SI-7.

NOTE:

- THE MAXIMUM FOUNDATION DESIGN BEARING PRESSURE FOR STRENGTH LOAD COMBINATIONS IS X.XX TONS/SQ. FT.
- THE MAXIMUM FOUNDATION DESIGN BEARING PRESSURE FOR SERVICE LOAD COMBINATIONS IS X.XX TONS/SQ. FT.
- THE MAXIMUM FOUNDATION DESIGN BEARING PRESSURE FOR EXTREME EVENT LOAD COMBINATIONS IS X.XX TONS/SQ. FT.

NOTE:

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- ** DISCONTINUE STEPPED KEY AT PIPE AND PROVIDE OPENING FOR PIPE.
- *** AT THE CONTRACTORS OPTION, THE DOWEL AND STEM BAR BE PLACED AS A CONTINUOUS BAR.

REVISIONS	
 MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION	
REPLACEMENT OF SMALL STRUCTURE NO. 03189X0 SINGLE 60" x 38" ELLIPTICAL REINFORCED CONCRETE PIPE ON MD 146 (DULANEY VALLEY ROAD) OVER DRAINAGE DITCH	
DOWNSTREAM HEADWALL SECTIONS	
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DESIGNED BY _____ RDL	TENTATIVE OFFICE OF STRUCTURES <small>This plan is draft and subject to change. It is the property of the agency and no liability is assumed for its use. It is not for public disclosure under the General Provisions, Code Annotated Section 4-341 Maryland Public Information Act.</small>
DRAWN BY _____ DRC	
CHECKED BY _____ XXX	
DRAWING NO. S1-9 OF 18	SHEET NO. 28 OF 57



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