

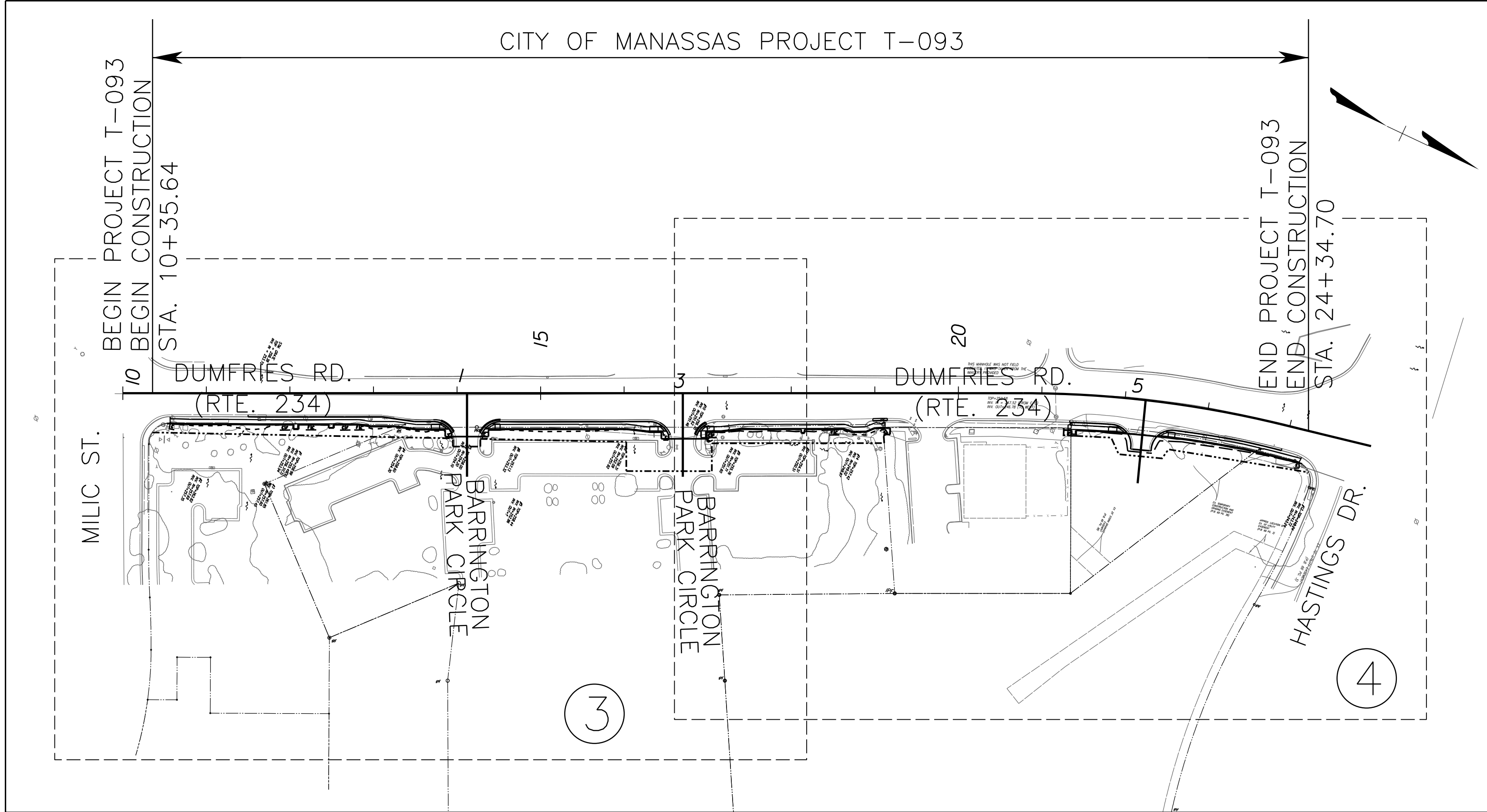
INDEX OF SHEETS

SHEET NO:	DESCRIPTION:
1	TITLE SHEET
1A(1)–1A(3)	CONSTRUCTION ALIGNMENT DATA AND SURVEY CONTROL
1B(1)–1B(5)	TRAFFIC MAINTENANCE PLAN AND SEQUENCE OF CONSTRUCTION
1C(1)–1C(2)	EXISTING CONDITIONS
2A	GENERAL NOTES
2B	TYPICAL SECTIONS
2C(1)–2C(3)	CURB RAMP DETAILS
2D	DETAILS
2E(1)–2E(4)	SWPPP GENERAL INFORMATION SHEET
3	PLAN (STA. 10+00 TO STA 17+50)
3A	PROFILE (STA. 10+00 TO STA 17+50)
4	PLAN (STA. 17+50 TO STA 25+00)
4A	PROFILE (STA. 17+50 TO STA 25+00)
5	ENTRANCE PROFILES
6(1)–6(6)	EROSION & SEDIMENT CONTROL PLANS
7	DRAINAGE DESCRIPTIONS
8	STORM SEWER PROFILES
9	STORM SEWER COMPUTATIONS
10	EXISTING DRAINAGE AREA MAP
11	PROPOSED DRAINAGE AREA MAP
12(1)–12(2)	OUTFALL ANALYSES
13(1)	STORMWATER MANAGEMENT NARRATIVE AND COMPUTATIONS
13(2)	WATER QUALITY MAPS
13(3)	WATER QUANTITY MAP
14(1)–14(4)	SIGNING AND PAVEMENT MARKING PLAN
X1–X14	CROSS SECTIONS

CITY OF MANASSAS  
PUBLIC WORKS – ENGINEERING

DUMFRIES ROAD SIDEWALK

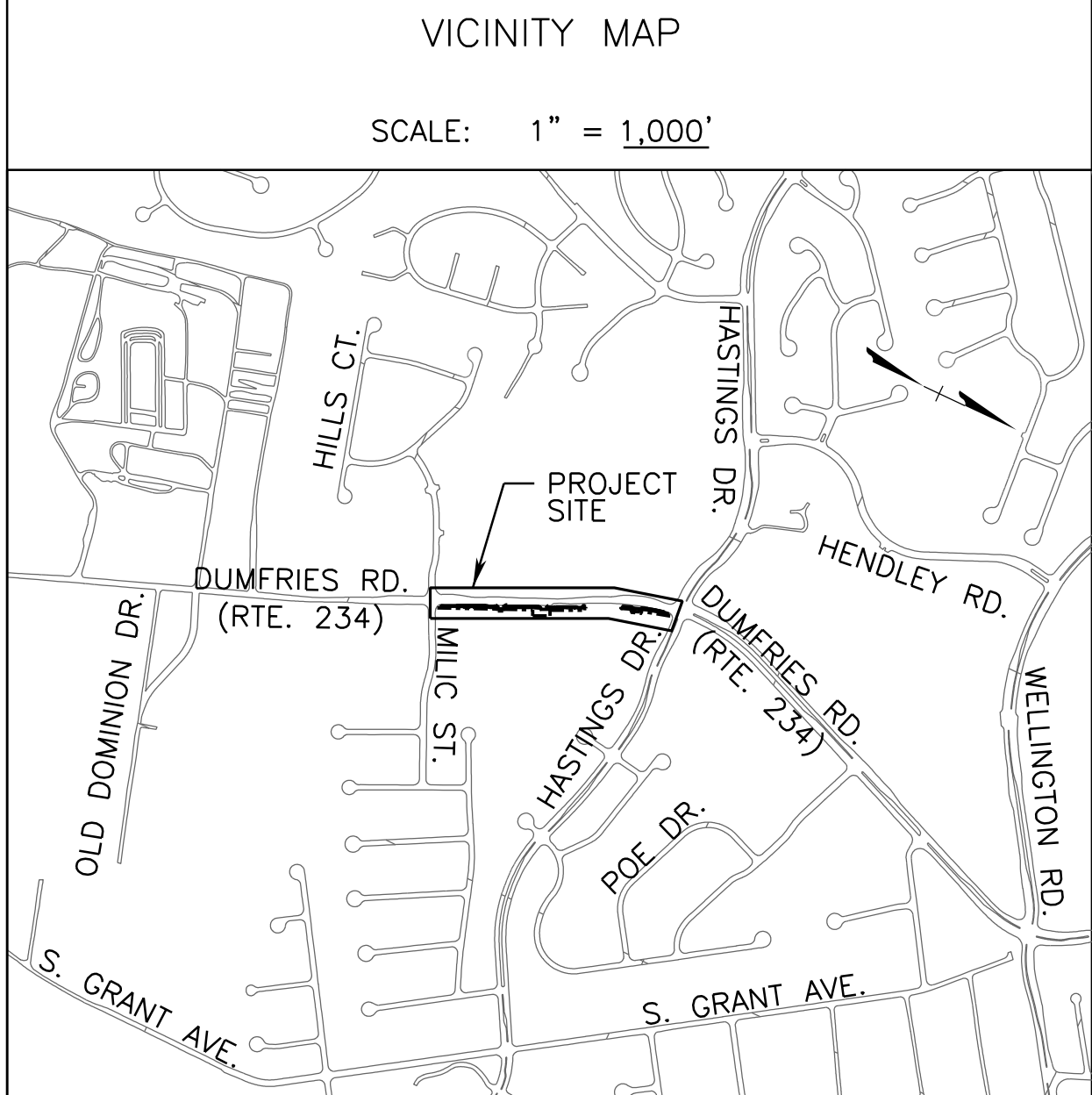
FROM: MILIC STREET  
TO: HASTINGS DRIVE



SCALE: 1"=100'

LEGEND	
	SIGN
	BENCHMARK
	STORM MANHOLE
	GROUND LIGHT
	TRAFFIC SIGNAL POLE
	LIGHT POLE
	FIRE HYDRANT
	WATER VALVE
	GUY WIRE
	POWER POLE
	SANITARY MANHOLE
	SANITARY CLEANOUT


FUNCTIONAL CLASSIFICATION	
ROAD NAME	DUMFRIES ROAD (ROUTE 234)
FROM:	MANASSAS SOUTH COUNTY LINE
TO:	HASTINGS DRIVE
VDOT STREET CLASSIFICATION	URBAN MINOR ARTERIAL (GS-6)
STREET TYPOLOGY	COLLECTOR/CONNECTOR
TERRAIN	ROLLING
AADT (2021)	9,000
AADT (2046)	11,500
DHV	765
D (%)	60.2%
T (%)	1%
DESIGN V (MPH)	35 MPH
POSTED V (MPH)	35 MPH
ROAD NAME	HASTINGS DRIVE
FROM:	DUMFRIES ROAD (ROUTE 234)
TO:	LIBERIA AVENUE
VDOT STREET CLASSIFICATION	URBAN MINOR ARTERIAL (GS-6)
STREET TYPOLOGY	COLLECTOR/CONNECTOR
TERRAIN	ROLLING
AADT (2020)	5,000
AADT (2045)	6,400
DHV	435
D (%)	66.5%
T (%)	1%
DESIGN V (MPH)	25 MPH
POSTED V (MPH)	25 MPH



Responsible Land Disturber (RLD) means an individual holding a certificate of competence issued by DCR who will be in charge of and responsible for carrying out the land-disturbing activity in accordance with the approved plan. The RLD may be the owner, applicant, permittee, designer, superintendent, project manager, contractor, or any other project or development team member. The RLD must be designated as a prerequisite for obtaining City permit and prior to any land disturbing activities. Ref VESCH.

Official Approved Plan The City of Manassas	
The following endorsement hereby represent that this plan has been reviewed by all of the appropriate departments and agencies, using the City of Manassas Code of Ordinances and the City DCSM; and based upon the affirmative recommendation of those departments and agencies has been found to be consistent with the regulations, ordinances, conditions and provisions related to the development and use of this parcel and may be Approved as the Official Plan.	
Development Services Manager	Date

THESE PLANS ARE UNFINISHED  
AND UNAPPROVED AND ARE NOT  
TO BE USED FOR ANY TYPE  
OF CONSTRUCTION OR THE  
ACQUISITION OF RIGHT OF WAY.



CITY OF MANASSAS, VIRGINIA  
DEPARTMENT OF ENGINEERING  
8500 PUBLIC WORKS DR.  
MANASSAS, VIRGINIA 20110

REVISIONS	DATE	DESCRIPTION

MANASSAS PROJECT NO:	T-093
DATE OF PLAN ISSUANCE:	TBD
CONSULTANT PROJECT ID:	RK&K
DESIGNED BY:	DVK DATE: 11/10/23
DRAWN BY:	DVK DATE: 11/10/23
CHECKED BY:	MJK DATE: 11/10/23
APPROVED BY:	DATE:

TITLE SHEET

SHEET  
1

SCALE: AS NOTED

DUMFRIES ROAD SIDEWALK (T-093)

60% DESIGN SUBMITTAL



CONSTRUCTION ALIGNMENT DATA  
AND SURVEY CONTROL



CITY OF MANASSAS, VIRGINIA  
DEPARTMENT OF ENGINEERING  
8500 PUBLIC WORKS DR.  
MANASSAS, VIRGINIA 20110

60% DESIGN SUBMITTAL

REVISIONS  
DATE BY DESCRIPTION

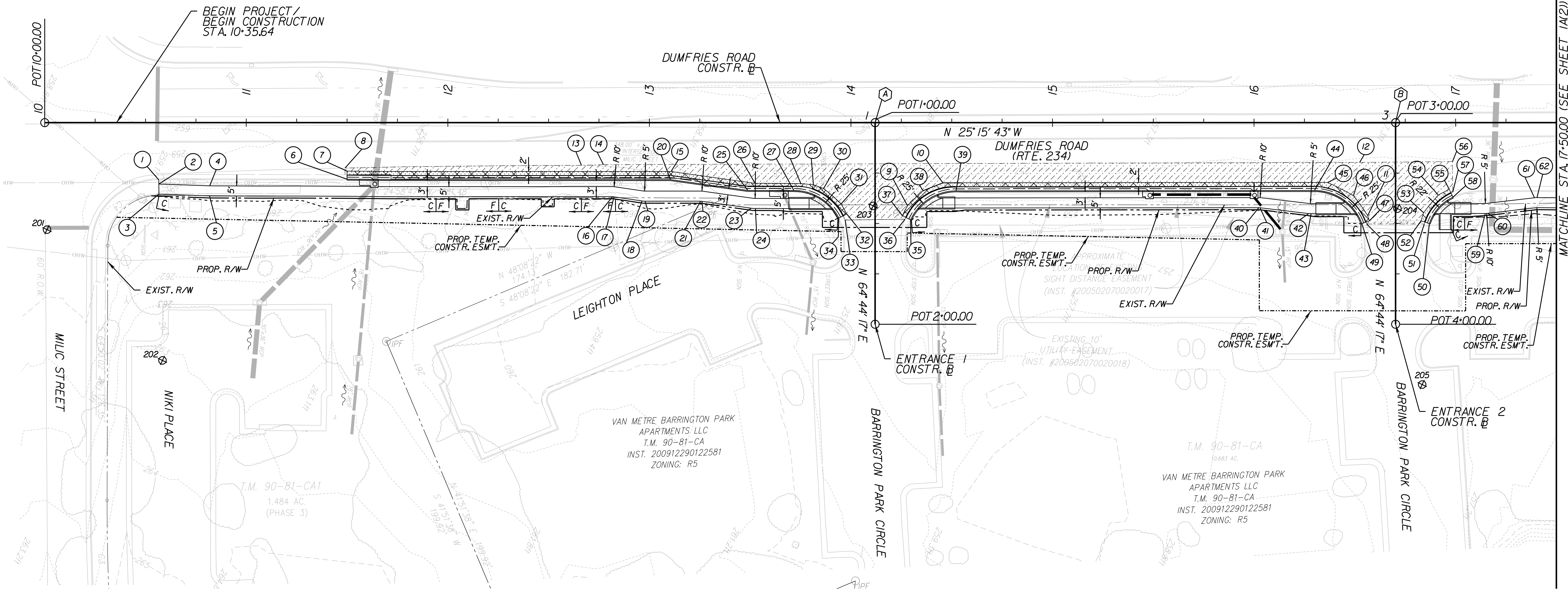
MANASSAS PROJECT NO: T-093  
DATE OF PLAN ISSUANCE: TBD  
CONSULTANT PROJECT ID: RKKK  
DESIGNED BY: DWK DATE: 11/10/23  
DRAWN BY: DWK DATE: 11/10/23  
CHECKED BY: MJK DATE: 11/10/23  
APPROVED BY: DATE:

CONSTRUCTION ALIGNMENT DATA  
AND SURVEY CONTROL

SHEET  
1A(1)

SCALE: 1"=25'

VA STATE GRID NORTH  
NAD83 (2011)



GEOMETRY DETAILS						
POINT	REF. ALIGNMENT	STA.	OFFSET	SIDE	ELEV.	DESCR.
1	DUMFRIES ROAD	10+56.58	28.35	RT	MATCH EX.	BOC
2	DUMFRIES ROAD	10+56.61	30.44	RT	MATCH EX.	SLT
3	DUMFRIES ROAD	10+56.66	35.45	RT	MATCH EX.	SRT
4	DUMFRIES ROAD	10+81.85	31.35	RT	259.02	SLT
5	DUMFRIES ROAD	10+81.75	36.35	RT	259.12	SRT
6	DUMFRIES ROAD	11+50.00	28.04	RT	MATCH EX.	FL
7	DUMFRIES ROAD	11+49.88	24.03	RT	MATCH EX.	EP
8	DUMFRIES ROAD	11+48.98	22.51	RT	MATCH EX.	EP
9	DUMFRIES ROAD	14+28.05	41.15	RT	MATCH EX.	EP
10	DUMFRIES ROAD	14+45.65	29.85	RT	MATCH EX.	EP
11	DUMFRIES ROAD	16+56.37	46.11	RT	MATCH EX.	EP
12	DUMFRIES ROAD	16+52.41	19.72	RT	MATCH EX.	EP
13	DUMFRIES ROAD	12+66.27	21.19	RT	MATCH EX.	EP
14	DUMFRIES ROAD	12+77.17	20.82	RT	MATCH EX.	EP
15	DUMFRIES ROAD	13+10.76	24.24	RT	MATCH EX.	EP
16	DUMFRIES ROAD	12+81.71	36.74	RT	258.63	SRT
17	DUMFRIES ROAD	12+82.44	36.80	RT	258.63	SRT
18	DUMFRIES ROAD	12+96.35	38.86	RT	258.67	SRT
19	DUMFRIES ROAD	12+97.81	38.97	RT	258.67	SRT
20	DUMFRIES ROAD	13+10.48	28.24	RT	257.94	FL
21	DUMFRIES ROAD	13+25.39	38.97	RT	258.67	SRT
22	DUMFRIES ROAD	13+26.08	39.02	RT	258.68	SRT
23	DUMFRIES ROAD	13+51.18	42.54	RT	258.50	SRT
24	DUMFRIES ROAD	13+51.88	45.58	RT	258.50	SRT
25	DUMFRIES ROAD	13+48.87	33.63	RT	257.84	FL
26	DUMFRIES ROAD	13+52.40	30.08	RT	MATCH EX.	EP
27	DUMFRIES ROAD	13+71.69	33.63	RT	257.55	FL
28	DUMFRIES ROAD	13+75.12	30.20	RT	MATCH EX.	EP
29	DUMFRIES ROAD	13+81.38	30.84	RT	MATCH EX.	EP
30	DUMFRIES ROAD	13+86.44	32.68	RT	MATCH EX.	EP
31	DUMFRIES ROAD	13+95.12	40.26	RT	MATCH EX.	EP

GEOMETRY DETAILS						
POINT	REF. ALIGNMENT	STA.	OFFSET	SIDE	ELEV.	DESCR.
32	ENTRANCE 1	1+45.29	14.06	RT	MATCH EX.	EP
33	ENTRANCE 1	1+48.31	14.88	RT	MATCH EX.	EP
34	ENTRANCE 1	1+47.30	18.01	RT	MATCH EX.	FL
35	ENTRANCE 1	1+48.21	17.59	LT	MATCH EX.	FL
36	ENTRANCE 1	1+47.94	14.83	LT	MATCH EX.	EP
37	ENTRANCE 1	1+46.10	13.51	LT	MATCH EX.	EP
38	DUMFRIES ROAD	14+35.74	33.79	RT	MATCH EX.	EP
39	DUMFRIES ROAD	14+52.19	33.84	RT	256.58	FL
40	DUMFRIES ROAD	16+02.36	42.18	RT	256.81	SRT
41	DUMFRIES ROAD	16+02.96	42.22	RT	256.82	SRT
42	DUMFRIES ROAD	16+27.09	45.09	RT	257.13	SRT
43	DUMFRIES ROAD	16+28.28	45.16	RT	257.16	SRT
44	DUMFRIES ROAD	16+29.96	33.65	RT	256.45	FL
45	DUMFRIES ROAD	16+36.54	29.65	RT	MATCH EX.	EP
46	ENTRANCE 2	3+36.17	20.87	RT	MATCH EX.	EP
47	ENTRANCE 2	3+48.71	13.00	RT	MATCH EX.	EP
48	ENTRANCE 2	3+50.28	14.36	RT	MATCH EX.	EP
49	ENTRANCE 2	3+50.08	16.75	RT	MATCH EX.	FL
50	ENTRANCE 2	3+50.07	16.75	LT	MATCH EX.	FL
51	ENTRANCE 2	3+50.28	14.22	LT	MATCH EX.	EP
52	ENTRANCE 2	3+48.71	12.64	LT	MATCH EX.	EP
53	ENTRANCE 2	3+44.70	13.89	LT	MATCH EX.	EP
54	DUMFRIES ROAD	16+91.39	35.50	RT	MATCH EX.	EP
55	DUMFRIES ROAD	16+96.85	33.04	LT	MATCH EX.	EP
56	DUMFRIES ROAD	16+98.45	19.28	RT	MATCH EX.	EP
57	DUMFRIES ROAD	16+98.60	34.45	RT	MATCH EX.	EP
58	DUMFRIES ROAD	16+98.66	36.97	RT	MATCH EX.	FL
59	DUMFRIES ROAD	17+14.70	45.08	RT	256.98	SRT
60	DUMFRIES ROAD	17+15.87	45.01	RT	256.99	SRT
61	DUMFRIES ROAD	17+39.14	37.25	RT	256.93	SLT
62	DUMFRIES ROAD	17+40.38	37.19	RT	256.94	SLT

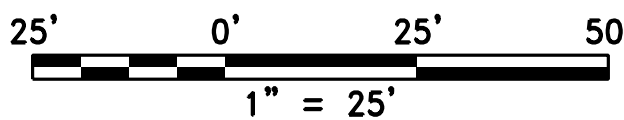
BOC: BACK OF CURB  
EP: EDGE OF PAVEMENT  
FL: FLOWLINE  
SRT: SIDEWALK RIGHT  
SLT: SIDEWALK LEFT

VERTICAL DATUM: NAVD 88  
HORIZONTAL DATUM: VA STATE GRID NORTH NAD83 (2011)

TRAVERSE POINT LOCATION TABLE				
POINT #	NORTHING	EASTING	ELEVATION	DESCRIPTION
201	6950460.1764	11776119.7475	259.40	PNP/NAI AT STOP BAR
202	6950539.6660	11776153.9770	263.21	PNP/NAI AT END PARKING SPACE
203	6950825.8650	11775934.580	257.45	PNP/NAI AT STOP BAR
204	6951061.6240	11775824.4050	256.21	PNP/NAI AT STOP BAR
205	6951109.9930	11775898.0900	256.75	PNP/NAI AT END PARKING SPACE

- (A) DUMFRIES ROAD CONSTR. @  
STA. 14+11.99 -  
ENTRANCE 1 CONSTR. @  
STA. 1+00.00  
DELTA A= 90° 00' 00.00"
- (B) DUMFRIES ROAD CONSTR. @  
STA. 16+70.23 -  
ENTRANCE 2 CONSTR. @  
STA. 3+00.00  
DELTA A= 90° 00' 00.00"

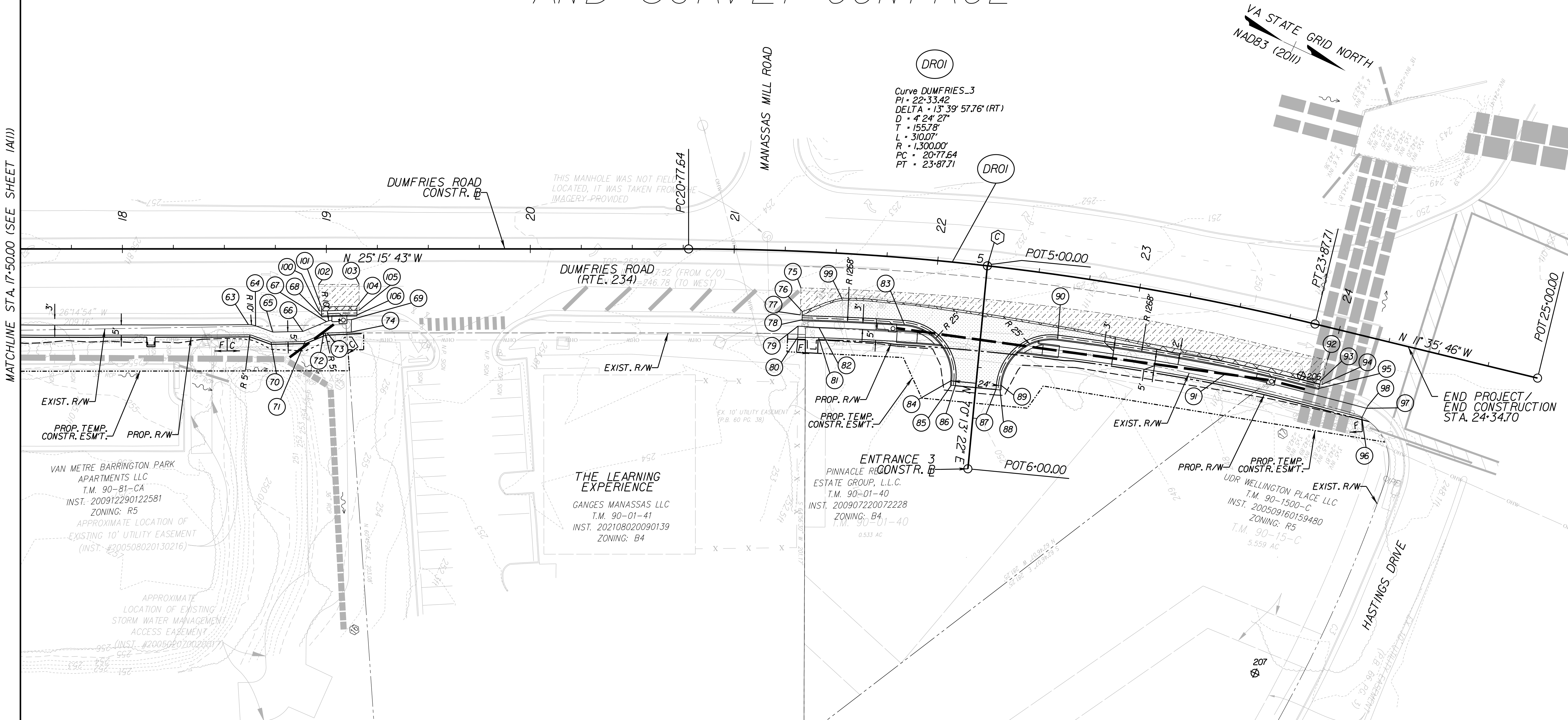
GRAPHIC SCALE



THESE PLANS ARE UNFINISHED  
AND UNAPPROVED AND ARE NOT  
TO BE USED FOR ANY TYPE  
OF CONSTRUCTION OR THE  
ACQUISITION OF RIGHT OF WAY.



CONSTRUCTION ALIGNMENT DATA  
AND SURVEY CONTROL



GEOMETRY DETAILS						
POINT	REF. ALIGNMENT	STA.	OFFSET	SIDE	ELEV.	DESCR.
63	DUMFRIES ROAD	18+61.81	37.11	RT	256.50	SLT
64	DUMFRIES ROAD	18+65.30	37.71	RT	256.48	SLT
65	DUMFRIES ROAD	18+73.72	40.75	RT	MATCH EX.	SLT
66	DUMFRIES ROAD	18+88.53	40.44	RT	MATCH EX.	SLT
67	DUMFRIES ROAD	19+00.08	35.64	RT	256.18	SLT
68	DUMFRIES ROAD	18+97.68	32.90	RT	MATCH EX.	FL
69	DUMFRIES ROAD	19+12.33	34.66	RT	MATCH EX.	SLT
70	DUMFRIES ROAD	18+72.89	45.77	RT	256.36	SRT
71	DUMFRIES ROAD	18+89.57	45.42	RT	256.14	SRT
72	DUMFRIES ROAD	18+98.68	41.64	RT	256.31	SRT
73	DUMFRIES ROAD	19+00.38	41.26	RT	256.30	SRT
74	DUMFRIES ROAD	19+12.19	40.74	RT	MATCH EX.	SRT
75	DUMFRIES ROAD	21+33.49	17.90	RT	MATCH EX.	EP
76	DUMFRIES ROAD	21+34.71	29.52	RT	MATCH EX.	EP
77	DUMFRIES ROAD	21+33.71	31.15	RT	MATCH EX.	EP
78	DUMFRIES ROAD	21+34.78	33.52	RT	MATCH EX.	FL
79	DUMFRIES ROAD	21+32.86	36.72	RT	MATCH EX.	SLT
80	DUMFRIES ROAD	21+32.99	42.15	RT	MATCH EX.	SRT
81	DUMFRIES ROAD	21+43.52	41.87	RT	252.51	SRT
82	DUMFRIES ROAD	21+43.43	36.87	RT	252.41	SLT
83	DUMFRIES ROAD	21+86.29	32.64	RT	251.02	FL
84	ENTRANCE 3	5+57.53	12.00	RT	250.96	FL
85	ENTRANCE 3	5+60.00	12.00	RT	250.99	FL
86	ENTRANCE 3	5+60.00	10.00	RT	250.95	EP
87	ENTRANCE 3	5+60.00	10.00	LT	250.71	EP
88	ENTRANCE 3	5+60.00	12.00	LT	250.54	FL
89	ENTRANCE 3	5+57.53	12.00	LT	250.50	FL
90	DUMFRIES ROAD	22+63.69	31.31	RT	249.78	FL

GEOMETRY DETAILS						
POINT	REF. ALIGNMENT	STA.	OFFSET	SIDE	ELEV.	DESCR.
91	DUMFRIES ROAD	23+50.02	33.33	RT	249.55	SLT
92	DUMFRIES ROAD	23+97.78	15.80	RT	MATCH EX.	EP
93	DUMFRIES ROAD	23+96.94	26.28	RT	MATCH EX.	EP
94	DUMFRIES ROAD	23+97.80	28.04	RT	MATCH EX.	EP
95	DUMFRIES ROAD	23+97.00	30.28	RT	MATCH EX.	FL
96	DUMFRIES ROAD	24+20.87	39.18	RT	MATCH EX.	SRT
97	DUMFRIES ROAD	24+22.05	34.20	RT	MATCH EX.	SLT
98	DUMFRIES ROAD	24+22.34	32.94	RT	MATCH EX.	SRT
99	DUMFRIES ROAD	21+54.11	21.97	RT	MATCH EX.	EP
100	DUMFRIES ROAD	18+96.61	30.49	RT	MATCH EX.	EP
101	DUMFRIES ROAD	18+97.55	28.46	RT	MATCH EX.	EP
102	DUMFRIES ROAD	18+96.18	17.42	RT	MATCH EX.	EP
103	DUMFRIES ROAD	19+16.05	17.36	RT	MATCH EX.	EP
104	DUMFRIES ROAD	19+15.02	28.13	RT	MATCH EX.	EP
105	DUMFRIES ROAD	19+16.02	30.13	RT	MATCH EX.	EP
106	DUMFRIES ROAD	019+15.00	32.41	RT	MATCH EX.	FL

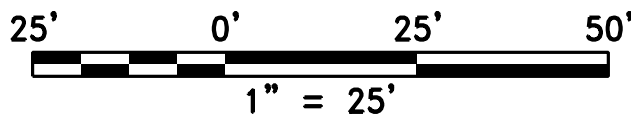
BOC= BACK OF CURB  
EP= EDGE OF PAVEMENT  
FL= FLOWLINE  
SRT= SIDEWALK RIGHT  
SLT= SIDEWALK LEFT

VERTICAL DATUM: NAVD 88  
HORIZONTAL DATUM: VA STATE GRID NORTH NAD83 (2011)

TRAVERSE POINT LOCATION TABLE			
POINT #	NORTHING	EASTING	ELEVATION
206	6951709.3220	11775540.3780	248.58
207	6951750.9570	11775681.9770	249.47

DUMFRIES ROAD CONSTR. @  
STA 22+24.44  
ENTRANCE 3 CONSTR. @  
STA 5+00.00  
DELTA= 90° 42' 47.00"

GRAPHIC SCALE



THESE PLANS ARE UNFINISHED  
AND UNAPPROVED AND ARE NOT  
TO BE USED FOR ANY TYPE  
OF CONSTRUCTION OR THE  
ACQUISITION OF RIGHT OF WAY.

MANASSAS VIRGINIA  
1873

CITY OF MANASSAS, VIRGINIA  
DEPARTMENT OF ENGINEERING  
8500 PUBLIC WORKS DR  
MANASSAS, VIRGINIA 20110

60% DESIGN SUBMITTAL

REVISIONS  
DATE BY DESCRIPTION

MANASSAS PROJECT NO: T-093  
DATE OF PLAN ISSUANCE: TBD  
CONSULTANT PROJECT ID: RKKK  
DESIGNED BY: DWK DATE: 11/10/23  
DRAWN BY: DWK DATE: 11/10/23  
CHECKED BY: MJK DATE: 11/10/23  
APPROVED BY: DATE:

DUMFRIES ROAD SIDEWALK (T-093)

CONSTRUCTION ALIGNMENT DATA  
AND SURVEY CONTROL

SHEET  
1A(2)  
SCALE: 1"=25'



CONSTRUCTION ALIGNMENT DATA  
AND SURVEY CONTROL

DROI

Beginning chain DUMFRIES description  
Feature: 25 Scale Baselines  
.....  
Point DUMFRIES1 X 11,776,072.24 Y 6,950,436.50 Sta 10+00.00  
Course from DUMFRIES1 to PC DUMFRIES\_3 N 25°15' 43.45" W Dist 1,077.64  
Curve Data  
.....  
Curve DUMFRIES\_3  
P.I. Station 22+33.42 X 11,775,545.87 Y 6,951,551.96  
Delta 13°39' 57.76" (RT)  
Degree 4°24' 26.52"  
Tangent 155.78  
Length 310.07  
Radius 1,300.00  
External 9.30  
Long Chord 309.34  
Mid. Ord. 9.23  
P.C. Station 20+77.64 X 11,775,612.35 Y 6,951,411.08  
P.T. Station 23+87.71 X 11,775,514.56 Y 6,951,704.55  
C.C. X 11,776,788.03 Y 6,951,965.87  
Back N 25°15' 43.45" W  
Ahead N 1°35' 45.69" W  
Chord Bear N 18°25' 44.57" W  
Course from PT DUMFRIES\_3 to DUMFRIES5 N 1°35' 45.69" W Dist 112.29  
Point DUMFRIES5 X 11,775,491.99 Y 6,951,814.55 Sta 25+00.00  
.....  
Ending chain DUMFRIES description

Beginning chain ENTRANCE1 description  
Feature: 25 Scale Baselines  
.....  
Point ENTRANCE11 X 11,775,896.42 Y 6,950,809.08 Sta 1+00.00  
Course from ENTRANCE11 to ENTRANCE12 N 64°44' 16.55" E Dist 100.00  
Point ENTRANCE12 X 11,775,986.86 Y 6,950,851.76 Sta 2+00.00  
.....  
Ending chain ENTRANCE1 description

Beginning chain ENTRANCE2 description  
Feature: 25 Scale Baselines  
.....  
Point ENTRANCE21 X 11,775,786.22 Y 6,951,042.63 Sta 3+00.00  
Course from ENTRANCE21 to ENTRANCE22 N 64°44' 16.55" E Dist 100.00  
Point ENTRANCE22 X 11,775,876.66 Y 6,951,085.30 Sta 4+00.00  
.....  
Ending chain ENTRANCE2 description

Beginning chain ENTRANCE3 description  
Feature: 25 Scale Baselines  
.....  
Point ENTRANCE31 X 11,775,557.33 Y 6,951,547.09 Sta 5+00.00  
Course from ENTRANCE31 to ENTRANCE32 N 70°13' 21.7" E Dist 100.00  
Point ENTRANCE32 X 11,775,651.43 Y 6,951,580.92 Sta 6+00.00  
.....  
Ending chain ENTRANCE3 description

THESE PLANS ARE UNFINISHED  
AND UNAPPROVED AND ARE NOT  
TO BE USED FOR ANY TYPE  
OF CONSTRUCTION OR THE  
ACQUISITION OF RIGHT OF WAY.

DUMFRIES ROAD SIDEWALK (T-093)

60% DESIGN SUBMITTAL

CONSTRUCTION ALIGNMENT DATA  
AND SURVEY CONTROL

SHEET  
1A(3)  
SCALE: N/A

REVISIONS

DATE BY DESCRIPTION

MANASSAS PROJECT NO: T-093  
DATE OF PLAN ISSUANCE: TBD  
CONSULTANT PROJECT ID: RK&K  
DESIGNED BY: DWK DATE: 11/10/23  
DRAWN BY: DWK DATE: 11/10/23  
CHECKED BY: MJK DATE: 11/10/23  
APPROVED BY: DATE:

CITY OF MANASSAS, VIRGINIA  
DEPARTMENT OF ENGINEERING  
8500 PUBLIC WORKS DR  
MANASSAS, VIRGINIA 20110





# TRAFFIC MAINTENANCE PLAN AND SEQUENCE OF CONSTRUCTION

## TEMPORARY TRAFFIC CONTROL PLAN

### GENERAL NOTES:

1. TMP/SOC TYPE A PROJECT INFORMATION:

- A. IDENTIFY THE PROJECT'S TMP TYPE:  
THIS PROJECT'S TMP/SOC PLAN HAS BEEN DESIGNED IN CONFORMANCE WITH A TYPE A TMP/SOC PLAN.
- B. IDENTIFY THE WORK ZONE LOCATION, LENGTH, AND WIDTHS:  
THE PROJECT LOCATION IS AS SHOWN ON SHEET 1.  
THE WORK ZONE AREAS HAVE BEEN DELINEATED AS DETAILED ON THE TMP/SOC PLAN SHEET 1B(2)
- C. NOTE THE HOURS THE CONSTRUCTION AREA WILL BE ACTIVE:  
THE CONSTRUCTION AREA SHALL BE CONSIDERED ACTIVE WHEN ANY IMPACT TO TRAFFIC OCCURS. (1ST CONE IN ROAD)

LANE CLOSURE HOURS HAVE THE FOLLOWING LIMITATIONS:

SINGLE LANE CLOSURES (URBAN MINOR ARTERIAL)				
	MONDAY TO THURSDAY	FRIDAY	SATURDAY TO SUNDAY	SUNDAY TO MONDAY
DAY	9:00 AM TO 3:30 PM	9:00 AM TO 2:00 PM	–	–
NIGHT	9:00 PM TO 5:00 AM	–	–	–

WEEKEND WORK SHALL NOT BE ALLOWED.

NO LANE CLOSURES WILL BE ALLOWED FROM NOON ON THE DAY BEFORE A HOLIDAY UNTIL NOON ON THE WORKDAY FOLLOWING THE HOLIDAY. HOLIDAYS INCLUDE ALL STATE AND FEDERAL HOLIDAYS.

NIGHT TIME WORK SHALL NOT BE PERMITTED UNLESS APPROVED BY THE CITY. NIGHT TIME CLOSURE HOURS ARE SHOWN IN THE LANE CLOSURE TABLES FOR INFORMATION ONLY IN THE EVENT THAT NIGHT TIME WORK IS PERMITTED BY THE CITY.

IF NIGHT TIME WORK IS REQUIRED, CONTRACTOR SHALL SUBMIT REQUIRED DOCUMENTATION AND OBTAIN PERMISSION FOR ANY NIGHT TIME WORK DUE TO NOISE ORDINANCE.

- D. THE TMP/SOC PLAN, DURING CONSTRUCTION, SHALL BE IN ACCORDANCE WITH SECTIONS 512, 701, 703 & 704 OF THE VIRGINIA DEPARTMENT OF TRANSPORTATION ROAD AND BRIDGE SPECIFICATIONS, DATED 2020; THE 2011 VIRGINIA WORK AREA PROTECTION MANUAL (WAPM), REVISION 2.1, NOVEMBER 1, 2020; THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), 2009 EDITION; AND THE VIRGINIA SUPPLEMENT TO THE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, 2011 EDITION, REVISION 1 – SEPTEMBER 30, 2013.

- E. THE CONTRACTOR SHALL:  
DESIGNATE A PERSON ASSIGNED TO THE PROJECT WHO WILL HAVE THE PRIMARY RESPONSIBILITY, WITH SUFFICIENT AUTHORITY, FOR IMPLEMENTING THE TMP/SOC AND OTHER SAFETY AND MOBILITY ASPECTS OF THE PERMIT WORK. THIS PERSON SHALL COORDINATE WITH THE CITY'S CONSTRUCTION INSPECTOR FOR THE DURATION OF CONSTRUCTION.

ENSURE THAT PERSONNEL ASSIGNED TO THE PROJECT ARE TRAINED IN TRAFFIC CONTROL TO A LEVEL COMMENSURATE WITH THEIR RESPONSIBILITIES IN ACCORDANCE WITH VDOT'S WORK ZONE TRAFFIC CONTROL TRAINING GUIDELINES.

INFORM THE ENGINEER OF ANY WORK REQUIRING LANE SHIFTS, LANE CLOSURES, AND/OR PHASE CHANGES; A MINIMUM OF ONE WEEK PRIOR TO IMPLEMENTING THIS ACTIVITY.

PERFORM REVIEWS OF THE CONSTRUCTION AREA, TO ENSURE COMPLIANCE WITH CONTRACT DOCUMENTS, AT REGULARLY SCHEDULED INTERVALS AT THE DIRECTION OF THE ENGINEER. CONTRACTOR SHALL MAINTAIN A COPY OF THE TEMPORARY TRAFFIC CONTROL PLAN AT THE WORK SITE AT ALL TIMES.

COORDINATE WITH CITY OF MANASSAS POLICE DEPARTMENT AND FIRE/RESCUE DEPARTMENT FOR ANY LANE CLOSURES AND ANY DETOURS OF ANY NATURE.

SCHEDULE ALL PHASES OF CONSTRUCTION IN SUCH A MANNER THAT WATER, SANITARY SEWER, CABLE, FIBER CABLE/OPTIC CABLE, ANY OVERHANGING UTILITIES, AND ANY UNDERGROUND UTILITIES SERVICES WILL NOT BE INTERRUPTED.

2. THIS APPROVED TMP/SOC PLAN IS INTENDED AS A GUIDE. IT IS NOT TO ENUMERATE EVERY DETAIL WHICH MUST BE CONSIDERED IN THE CONSTRUCTION OF EACH PHASE, BUT ONLY TO SHOW THE GENERAL HANDLING OF EXISTING TRAFFIC. THE CONTRACTOR IS EXPECTED TO FOLLOW THE TMP/SOC PLAN AS PROPOSED. IF THE CONTRACTOR WISHES TO DEVIATE FROM THE APPROVED TMP/SOC PLAN, THE CONTRACTOR SHALL DEVELOP TMP/SOC PLANS, AT NO COST TO THE CITY, AND SUBMIT THE TMP/SOC PLAN FOR REVIEW AND APPROVAL BY THE CITY.
3. ALL AREAS EXCAVATED BELOW THE EXISTING PAVEMENT SURFACE AND WITHIN THE CLEAR ZONE AT THE CONCLUSION OF EACH WORKDAY, SHALL BE BACKFILLED TO FORM ON APPROXIMATE 6:1 WEDGE AGAINST THE EXISTING PAVEMENT OR NEWLY CONSTRUCTED PAVEMENT SURFACE FOR THE SAFETY AND PROTECTION OF VEHICULAR TRAFFIC.
4. TRAFFIC BARRIER SERVICE IS NOT PROPOSED FOR THE CONSTRUCTION OF THIS PROJECT.
5. IF A GEOTECHNICAL INVESTIGATION HAS BEEN PERFORMED FOR THE PROJECT, THE CONTRACTOR SHALL FOLLOW THE GEOTECHNICAL RECOMMENDATIONS PROVIDED BY THE CITY OF MANASSAS.
6. CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE FOR THE DURATION OF THE PROJECT. CONTRACTOR SHALL ADD ANY ADDITIONAL TEMPORARY MEASURES NECESSARY TO FACILITATE PROPER, POSITIVE DRAINAGE FOR THE DURATION OF CONSTRUCTION.
7. WHERE GROUP 2 CHANNELIZING DEVICES ARE USED TO SEPARATE THE CONSTRUCTION AREA AND TRAFFIC, A MINIMUM CLEAR ZONE AREA AS DEFINED IN THE VA. WAPM. IS TO BE MAINTAINED.
8. THE CONTRACTOR SHALL COORDINATE WITH CITY OF MANASSAS FOR LOCATION(S) OF THE CONSTRUCTION STAGING AREA. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND/OR EASEMENTS FOR THE STAGING AREA.
9. IMPLEMENTING THE TRANSPORTATION MANAGEMENT PLAN:

DURING THE FIRST DAY OF THE NEW WORK ZONE TRAFFIC PATTERN, THE PROJECT'S MANAGER AND CITY'S CONSTRUCTION INSPECTOR SHALL INSPECT THE WORK ZONE TO ENSURE COMPLIANCE WITH THE TMP. ON THE THIRD TO FOURTH DAY OF THE IMPLEMENTATION OF THE TMP'S NEW WORK ZONE TRAFFIC PATTERN, THE CONSTRUCTION INSPECTOR SHALL CONDUCT AN ON-SITE REVIEW OF THE WORK ZONE'S PERFORMANCE IN COORDINATION WITH THE CONSTRUCTION INSPECTOR AND RECOMMEND TO THE CONTRACTOR ANY REQUIRED CHANGES TO THE TMP TO ENHANCE THE WORK ZONE'S SAFETY AND MOBILITY. ANY SUCH CHANGES SHALL BE DOCUMENTED. AN ON-SITE REVIEW OF THE PROJECT'S WORK ZONE TRAFFIC CONTROL BY THE CITY'S CONSTRUCTION INSPECTOR AND THE CONTRACTOR SHALL BE CONDUCTED WITHIN 48 HOURS OF ANY FATAL INCIDENT/CRASH WITHIN THE WORK ZONE.

10. EVALUATION OF THE TRANSPORTATION MANAGEMENT PLAN:

A PERFORMANCE ASSESSMENT OF THE TMP INCLUDING AREA WIDE IMPACTS ON ADJACENT ROADWAYS SHALL BE PERFORMED BY THE CITY OF MANASSAS, IF REQUESTED BY VDOT.

11. PUBLIC COMMUNICATIONS PLAN:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR:

- A. NOTIFYING THE PROJECT MANAGER AND CONSTRUCTION INSPECTOR TWO WEEKS IN ADVANCE OF ANY SCHEDULED WORK PLANS AND TRAFFIC DELAYS.
- B. NOTIFYING THE PROJECT MANAGER, CONSTRUCTION INSPECTOR, AND CORRESPONDING ENGINEER OF ANY UNSCHEDULED TRAFFIC DELAYS.

12. TRANSPORTATION OPERATIONS:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING AND PROVIDING THE FOLLOWING:

- A. NOTIFY THE VDOT NORTHERN VIRGINIA TRAFFIC OPERATION CENTER (TOC) ONE WEEK IN ADVANCE IN ORDER TO PLACE LANE CLOSURE INFORMATION ON THE 511 SYSTEM AND VA-TRAFFIC.
- B. POST A LIST OF LOCAL EMERGENCY RESPONSE AGENCIES INSIDE THE PROJECT'S CONSTRUCTION OFFICE/TRAILER.
- C. IMMEDIATELY REPORT ANY TRAFFIC INCIDENTS THAT MAY OCCUR IN THE WORK ZONE.
- D. NOTIFY THE PROJECT'S CONSTRUCTION INSPECTOR AND CORRESPONDING ENGINEER OF ANY INCIDENTS AND EXPECTED TRAFFIC DELAYS.
- E. WITHIN 24 HOURS OF ANY INCIDENTS WITHIN THE CONSTRUCTION WORK ZONE, A REVIEW OF THE TRAFFIC CONTROLS SHALL BE COMPLETED AND NECESSARY ADJUSTMENTS MADE TO REDUCE THE FREQUENCY AND SEVERITY OF ANY FUTURE INCIDENTS.

CONTACT NUMBERS:

CITY PROJECT MANAGER – SUNG JIN CHUNG, PE – (703) 257-8339  
CITY CONSTRUCTION MANAGER – TBD  
CITY CONSTRUCTION INSPECTOR – TBD  
POLICE/AMBULANCE/FIRE SAFETY/HAZMAT SPILLS – 911  
VDOT NORTHERN VIRGINIA TRAFFIC OPERATION CENTER – (800) 367-7623  
VIRGINIA STATE POLICE – (703) 803-8660  
VDOT NOVA DISTRICT OFFICE – (703) 877-3401 (8:15 AM – 4:00 PM)  
CITY OF MANASSAS DEPARTMENT OF PUBLIC WORKS – (703) 257-8429

NON-EMERGENCY NUMBERS:

CITY OF MANASSAS POLICE DEPARTMENT – (703) 257-8000  
CITY OF MANASSAS FIRE AND RESCUE DEPARTMENT – (703) 257-8458

### GENERAL CONSTRUCTION NOTES:

1. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL INSTALL PROJECT LIMIT SIGNAGE IN ACCORDANCE WITH VA. WAPM. FIGURE TTC-53.0 (NOT GRAPHICALLY SHOWN ON THE PLANS). FOR THE DURATION OF CONSTRUCTION, THE CONTRACTOR SHALL ENSURE THIS SIGNAGE REMAINS IN COMPLIANCE IF THE PROJECT LIMITS CHANGE.
2. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING PROPER DRAINAGE FOR THE DURATION OF ALL CONSTRUCTION PHASES AND INSTALLING ANY NECESSARY MEASURES TO FACILITATE PROPER DRAINAGE.
3. THE CONTRACTOR SHALL MAKE ANY NECESSARY ADJUSTMENTS DURING BOTH WORK AND NON-WORK HOURS TO ENSURE THE PROTECTION AND SAFETY OF THE ADJACENT PROPERTY OWNERS, PEDESTRIANS, VEHICULAR TRAFFIC AND THE GENERAL PUBLIC FROM ANY CONSTRUCTION RELATED ACTIVITY, CONSTRUCTION EQUIPMENT AND THE CONSTRUCTION SITE ITSELF.
4. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE SAFE TRAVEL ON THE ROADWAYS WITHIN THE WORK ZONE.
5. THE PUBLIC SHALL BE NOTIFIED OF THE EXPECTED CONSTRUCTION SCHEDULE ON THE CITY'S WEB SITE FOR THIS PROJECT. INFORMATION OF THE POTENTIAL FOR BACK-UPS DURING THE PEAK HOURS OF OPERATION IS PROVIDED BY THE VDOT NORTHERN VIRGINIA TRAFFIC OPERATION CENTER (TOC). THE CITY PROJECT MANAGER NEEDS TO COORDINATE WITH VDOT.
6. THE VDOT NORTHERN VIRGINIA TRAFFIC OPERATION CENTER (TOC) SHALL BE NOTIFIED OF LANE AND ROADWAY CLOSURE INFORMATION FOR DISTRIBUTION ON THE 511 SYSTEM AND VIRGINIA OPERATIONS INFORMATION SYSTEM (VOIS). EMERGENCY RESPONSE PROFESSIONALS SHALL RESPOND TO TRAFFIC INCIDENTS IN THE WORK ZONE AS SOON AS POSSIBLE.
7. THE APPROPRIATE CLEAR ZONE SHALL BE MAINTAINED, FREE OF PARKED EQUIPMENT AND STORED MATERIAL, OR PROTECTED AT THE END OF EACH DAY IN ACCORDANCE WITH THE VIRGINIA WORK AREA PROTECTION MANUAL. EQUIPMENT AND MATERIAL SHALL NOT BE STORED WITHIN THE ESTABLISHED CLEAR ZONE AND/OR DEFLECTION ZONE OF PHYSICAL BARRIERS IN ACCORDANCE WITH THE WORK AREA PROTECTION MANUAL.
8. CONTRACTOR SHALL REQUIRE THE APPROVAL OF THE ENGINEER FOR SELECTED LOCATIONS OF ANY STAGING AREA FOR STAGING AND FOR MATERIALS OR EQUIPMENT STORAGE.
9. ACCESS TO PRIVATE DRIVEWAYS WITHIN THE PROJECT LIMITS SHALL BE MAINTAINED AT ALL TIMES.

### CONSTRUCTION NARRATIVE:

THE CONTRACTOR SHALL INSTALL PROJECT LIMIT SIGNAGE IN ACCORDANCE WITH WAPM FIGURE TTC-53.0.

CONTRACTOR SHALL INSTALL EROSION AND SEDIMENT CONTROLS AS APPROPRIATE PRIOR TO STARTING WORK ON EACH PHASE.

PRIOR TO OPENING CLOSED LANES TO DAILY PEAK HOUR TRAFFIC, COVER AND PROTECT UNFINISHED

EXCAVATED AREAS WITHIN THE CLEAR ZONE WITH TEMPORARY BACKFILL OR STEEL PLATES.

THE TRAFFIC PATTERN SHOULD REMAIN IN THE CURRENT CONFIGURATION UNTIL ALL LANE MARKINGS AND SIGNING ARE IN PLACE BEFORE SHIFTING TRAFFIC TO THE NEW PATTERN.

### CONSTRUCTION NARRATIVE (CONTINUED):

1. CONTRACTOR SHALL INSTALL EROSION AND SEDIMENT CONTROLS AS APPROPRIATE PRIOR TO STARTING WORK.
2. WHEN CONSTRUCTION OF A WORK ZONE IS COMPLETE, THE CONTRACTOR SHALL REMOVE TEMPORARY TRAFFIC CONTROL DEVICES AND CONSTRUCTION SIGNS AND RESTORE TRAFFIC TO NORMAL CONDITIONS.
3. PLACE TEMPORARY TRAFFIC CONTROL DEVICES AND SIGNS PER VA WAPM FIGURES TTC-1.1, TTC-5.2, TTC-16.2, TTC-22.2, TTC-27.2, TTC-28.2, TTC-35.1, TTC-53.0, AND TTC-57.2.
4. CONSTRUCT PROPOSED DRAINAGE, CURB AND GUTTER, CURB, CONCRETE SIDEWALKS, CURB RAMPS, PAVEMENT MILLING, PAVEMENT WIDENING, PAVEMENT RESURFACING, PAVEMENT MARKINGS, AND SIGN PLACEMENT.
5. PRIOR TO DAILY PEAK HOUR TRAFFIC, REMOVE LANE CLOSURE.

### CONSTRUCTION PAVEMENT MARKING GENERAL NOTES: (DURING CONSTRUCTION ONLY)

1. ALL CONSTRUCTION PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE MOST CURRENT EDITION OF EACH OF THE FOLLOWING AND ANY REVISION THEREOF:
- A. MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), 2009, REVISED JULY 2022
- B. THE VIRGINIA SUPPLEMENT TO THE 2009 MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, 2011, REVISION 1, SEPTEMBER 30, 2013
- C. THE VIRGINIA DEPARTMENT OF TRANSPORTATION ROAD AND BRIDGE SPECIFICATIONS, DATED DECEMBER, 2020
- D. THE VIRGINIA DEPARTMENT OF TRANSPORTATION ROAD AND BRIDGE STANDARDS, 2016, REVISED – SEPTEMBER 2022
2. ALL CONSTRUCTION PAVEMENT MARKINGS SHALL BE OF TYPE A OR TYPE D, CLASS II, UNLESS OTHERWISE DIRECTED BY THE ENGINEER. DURING CONSTRUCTION ANY PAVEMENT MARKINGS WHICH WILL CONFLICT WITH THOSE SHOWN ON THE TMP/SOC PLANS, OR AS DIRECTED BY THE ENGINEER, SHALL BE COVERED WITH TYPE E, NON REFLECTIVE BLACK TAPE (OR ERADICATED AT THE DIRECTION OF THE ENGINEER).
3. ELONGATED ARROWS SHALL BE IN ACCORDANCE WITH MUTCD AND VDOT ROAD AND BRIDGE STANDARD.

### TRANSPORTATION OPERATION PLAN:

THE VDOT PUBLIC AFFAIRS SECTION AND THE VDOT TRANSPORTATION OPERATIONS CENTER SHALL BE NOTIFIED BY THE CONSTRUCTION PROJECT MANAGER OF LANE CLOSURE INFORMATION FOR DISTRIBUTION ON THE 511 SYSTEM AND VIRGINIA OPERATIONS INFORMATION SYSTEM (VOIS). THE CONTRACTOR SHALL ACQUIRE APPROVAL FROM VDOT 4 WEEKS PRIOR TO CONSTRUCTION. FOLLOWING ANY TRAFFIC INCIDENTS, THE CONTRACTOR SHALL CLEAN AND RESTORE THE SITE FOR NORMAL OPERATIONS AS SOON AS POSSIBLE.

ADVANCED WORK  
ZONE TRAFFIC  
CONTROL TRAINING

DESIGNER  
GLADSTON R. ROSE  
VERIFICATION NO.:  
022422244  
EXP.: 02/02/2026

THESE PLANS ARE UNFINISHED  
AND UNAPPROVED AND ARE NOT  
TO BE USED FOR ANY TYPE  
OF CONSTRUCTION OR THE  
ACQUISITION OF RIGHT OF WAY.

DUMFRIES ROAD SIDEWALK (T-093)

60% DESIGN SUBMITTAL



CITY OF MANASSAS, VIRGINIA  
DEPARTMENT OF ENGINEERING  
8500 PUBLIC WORKS DR  
MANASSAS, VIRGINIA 20110

REVISIONS

DATE BY DESCRIPTION

MANASSAS PROJECT NO:	T-093
DATE OF PLAN ISSUANCE:	TBD
CONSULTANT PROJECT ID:	RK&K
DESIGNED BY:	DVK
DATE:	11/10/23
DRAWN BY:	DVK
DATE:	11/10/23
CHECKED BY:	MJK
DATE:	11/10/23
APPROVED BY:	DATE:

TRAFFIC MAINTENANCE PLAN AND  
SEQUENCE OF CONSTRUCTION

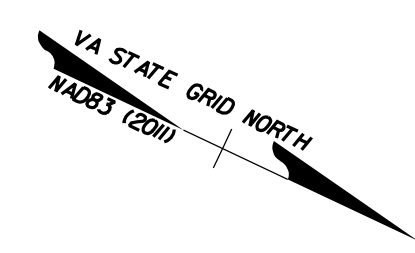
SHEET

1B(1)

SCALE: N/A



TRAFFIC MAINTENANCE PLAN AND SEQUENCE OF CONSTRUCTION



60% DESIGN SUBMITTAL

CITY OF MANASSAS, VIRGINIA  
DEPARTMENT OF ENGINEERING  
8500 PUBLIC WORKS DR  
MANASSAS, VIRGINIA 20110

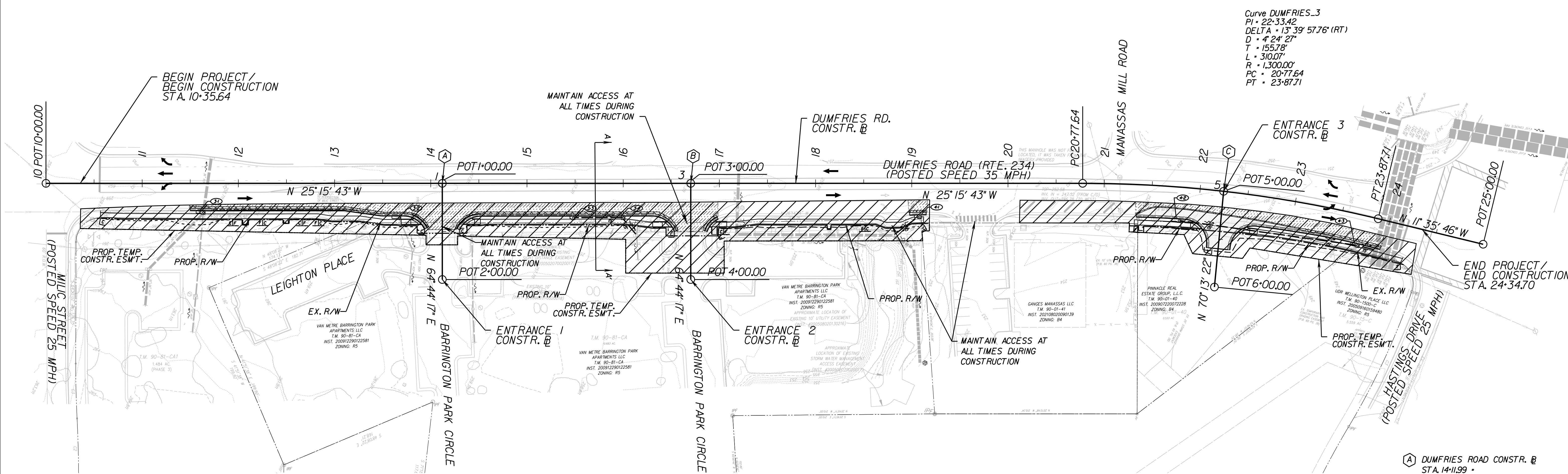
REVISIONS	
DATE	DESCRIPTION

MANASSAS PROJECT NO:	T-093
DATE OF PLAN ISSUANCE:	TBD
CONSULTANT PROJECT ID:	RK&K
DESIGNED BY:	DVK DATE: 11/10/23
DRAWN BY:	DVK DATE: 11/10/23
CHECKED BY:	MJK DATE: 11/10/23
APPROVED BY:	

TRAFFIC MAINTENANCE PLAN AND SEQUENCE OF CONSTRUCTION

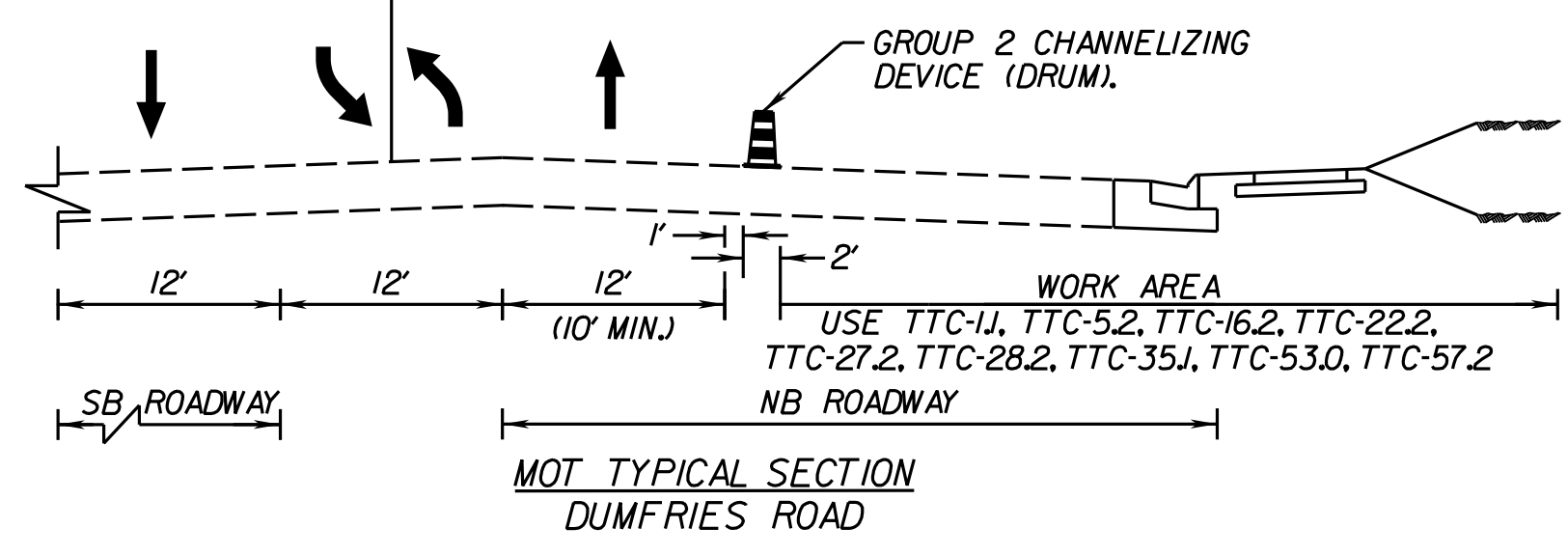
SHEET  
1B(2)

SCALE 1"=50'



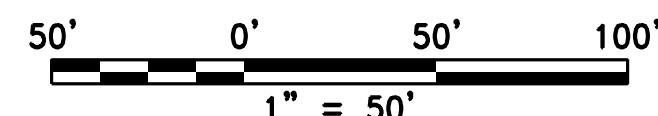
Curve DUMFRIES\_3  
PI • 22+33.42  
DELTA • 13° 39' 57.76" (RT)  
D • 4' 24' 27"  
T • 155.78'  
L • 310.07'  
R • 1,300.00'  
PC • 20+77.64  
PT • 23+87.71

SECTION A-A'  
N.T.S.  
DUMFRIES ROAD



- A DUMFRIES ROAD CONSTR. @ STA. 14+11.99 • ENTRANCE 1 CONSTR. @ STA. 1+00.00 DELTA • 90° 00' 00.00"
- B DUMFRIES ROAD CONSTR. @ STA. 16+70.23 • ENTRANCE 2 CONSTR. @ STA. 3+00.00 DELTA • 90° 00' 00.00"
- C DUMFRIES ROAD CONSTR. @ STA. 22+24.44 • ENTRANCE 3 CONSTR. @ STA. 5+00.00 DELTA • 90° 42' 47.00"

GRAPHIC SCALE



LEGEND

WORK AREA

OPEN TRAFFIC LANE

THESE PLANS ARE UNFINISHED AND UNAPPROVED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION OR THE ACQUISITION OF RIGHT OF WAY.



# TRAFFIC MAINTENANCE PLAN AND SEQUENCE OF CONSTRUCTION

Page 6H-8

September 2019

## Typical Traffic Control Work Beyond the Shoulder Operation (Figure TTC-1.1)

### NOTES

#### Guidance:

1. The minimum distance between the sign and work vehicle should be 1300'-1500' on Limited Access highways, and on all other roadways 500'-800' where the posted speed limit is greater than 45 mph, and 350'-500' where the posted speed limit is 45 mph or less.

#### Option:

1. The ROAD WORK AHEAD (W20-1) sign may be replaced with other appropriate signs such as the SHOULDER WORK (W21-5) sign. The SHOULDER WORK sign may be used for work adjacent to the shoulder.
2. The ROAD WORK AHEAD sign may be omitted where the work space is behind a barrier, more than 4 feet behind vertical curb (Standard CG-2 and CG-6) on urban roadways, or outside of the clear zone for all other roadways. For clear zone values see Page A-4 of Appendix A.
3. For short-term, short duration or mobile operations<sup>1</sup>, all signs and channelizing devices may be eliminated if a vehicle with activated high-intensity amber rotating, flashing, or oscillating lights is used.

#### Standard:

5. Vehicle hazard warning signals shall not be used instead of the vehicle's high-intensity amber rotating, flashing, or oscillating lights. Vehicle hazard warning signals can be used to supplement high-intensity amber rotating, flashing, or oscillating lights.
6. If the work space is in the median of a divided highway, an advance warning sign shall also be placed on the left side of the directional roadway.

1: Revision 1 - 4/1/2015

Page 6H-16

September 2019

## Typical Traffic Control Shoulder Operation with Minor Encroachment (Figure TTC-5.2)

### NOTES

#### Standard:

1. For required sign assemblies for multi-lane roadways see Note 1, TTC-4.<sup>1</sup>

#### Guidance:

2. Sign spacing should be 1300'-1500' for Limited Access highways. For all other roadways, the sign spacing should be 500'-800' where the posted speed limit is greater than 45 mph, and 350'-500' where the posted speed limit is 45 mph or less.
3. When work takes up part of a lane on a high volume roadway, vehicular traffic volumes, vehicle mix, speed and capacity should be analyzed to determine whether the affected lane should be closed. Unless the lane encroachment analysis permits a remaining lane width of 10 feet, the lane should be closed. If the closure operation is on a Limited Access highway, the minimum lane width is 11 feet.

#### Option:

4. The ROAD WORK AHEAD (W20-1) sign on an intersecting roadway may be omitted where drivers emerging from that roadway will encounter another advance warning sign prior to this activity area.

#### Standard:

5. A shadow vehicle with either an arrow board operating in the caution mode, or at least one high-intensity amber rotating, flashing, or oscillating light shall be parked 80' - 120' in advance of the first work crew.
6. Vehicle hazard warning signals shall not be used instead of the vehicle's high-intensity amber rotating, flashing, or oscillating lights. Vehicle hazard warning signals can be used to supplement high-intensity amber rotating, flashing, or oscillating lights.
7. Taper length (L) and channelizing device spacing shall be at the following:

Taper Length L					
Speed Limit (mph)	9	10	11	12	Remarks
25	95	105	115	125	L=SW/60
30	135	150	165	180	L=SW/60
35	185	205	225	245	L=SW/60
40	240	270	295	320	L=SW/60
45	405	450	495	540	L=SW

Shoulder Taper = 1/2 L Minimum					
Speed Limit (mph)	9	10	11	12	Remarks
25	50	450	500	550	600 L=SW
30	55	495	550	605	660 L=SW
35	60	540	600	660	720 L=SW
40	65	585	650	715	780 L=SW
45	70	630	700	770	840 L=SW

Limited Access highways shall use a 1000' merging taper regardless of the posted speed, a 750' shifting taper for posted speeds < 65 mph and a 1000' shifting taper for posted speeds ≥ 65 mph.<sup>2</sup>

8. Channelizing device spacing shall be at the following:

Channelizing Device Spacing			
Location Spacing	Speed Limit (mph)	Location Spacing	Speed Limit (mph)
Transition	0-35 36+	Travelway	40' 80'
*Construction access spacing may be increased to this distance, but shall not exceed one access per 1/4 mile.			

9. On roadways with paved shoulders having a width of 8 feet or more, channelizing devices shall be used to close the shoulder in advance of the merging taper to direct vehicular traffic to remain within the traveled way.<sup>3</sup>
10. The buffer space length. The buffer space length shall be as shown in Table 6H-3 on Page 6H-5 for the posted speed limit.
11. A truck-mounted attenuator (TMA) shall be used on Limited Access highways and multi-lane roadways with posted speed limit equal to or greater than 45 mph.
12. When a side road intersects the highway within the temporary traffic control zone, additional traffic control devices shall be placed as needed.

1: Revision 1 - 4/1/2015  
2: Revision 2 - 9/1/2019

Page 6H-40

September 2019

## Typical Traffic Control Outside Lane Closure Operation on a Four-Lane Roadway (Figure TTC-16.2)

### NOTES

#### Standard:

1. On divided highways having a median wider than 8', right and left sign assemblies shall be required.

#### Guidance:

2. Sign spacing should be 1300'-1500' for Limited Access highways. For all other roadways, the sign spacing should be 500'-800' where the posted speed limit is greater than 45 mph, and 350'-500' where the posted speed limit is 45 mph or less.
3. When closing a lane, a PCMS should be used in advance of the first warning sign if all of the left side signs cannot be installed.
4. Care should be exercised when establishing the limits of the work zone to insure maximum possible sight distance in advance of the transition, based on the posted speed limit and at least equal to or greater than the values in Table 6H-3. For Limited Access highways a minimum of 1000' is desired.
5. All vehicles, equipment, workers, and their activities should be restricted to one side of the pavement.

#### Standard:

6. Taper length (L) and channelizing device spacing shall be at the following:

Taper Length L					
Speed Limit (mph)	9	10	11	12	Remarks
25	95	105	115	125	L=SW/60
30	135	150	165	180	L=SW/60
35	185	205	225	245	L=SW/60
40	240	270	295	320	L=SW/60
45	405	450	495	540	L=SW

Shoulder Taper = 1/2 L Minimum					
Speed Limit (mph)	9	10	11	12	Remarks
25	50	450	500	550	600 L=SW
30	55	495	550	605	660 L=SW
35	60	540	600	660	720 L=SW
40	65	585	650	715	780 L=SW
45	70	630	700	770	840 L=SW

Limited Access highways shall use a 1000' merging taper regardless of the posted speed.

Shifting Tapers see Table 6H-3<sup>2</sup>

7. Channelizing device spacing shall be at the following:

Channelizing Device Spacing			
Location Spacing	Speed Limit (mph)	Location Spacing	Speed Limit (mph)
Transition	0-35 36+	Travelway	40' 80'
*Construction access spacing may be increased to this distance, but shall not exceed one access per 1/4 mile.			

8. An arrow board shall be used when a lane is closed. When more than one lane is closed, a separate arrow board shall be used for each closed lane (see Figure TTC-18).
9. The buffer space length shall be shown in Table 6H-3 on Page 6H-5 for the posted speed limit.
10. A shadow vehicle with either a Type B or C arrow board operating in the caution mode, or at least one high-intensity amber rotating, flashing, or oscillating light shall be parked 80'-120' in advance of the first work crew. When the posted speed limit is 45 mph or greater, a truck-mounted attenuator shall be used.
11. Vehicle hazard warning signals shall not be used instead of the vehicle's high-intensity amber rotating, flashing, or oscillating lights but can be used to supplement the amber rotating, flashing, or oscillating lights.
12. When a side road intersects the highway within the TTC zone, additional TTC devices shall be placed as needed.

#### Option:

13. PTRS and their supporting signs may be used, see Sections 6F-99 and 6G-25. Long-term transverse rumble strips may be used in long-term situations, see Section 6F-99 and TTC-20.<sup>3</sup>
14. The supplemental PTRS may be eliminated.<sup>4</sup>

1: Revision 1 - 4/1/2015  
2: Revision 2 - 9/1/2019

Page 6H-52

September 2019

## Typical Traffic Control Right Lane Closure Operation on a Three-Lane Roadway (Figure TTC-22.2)

### NOTES

#### Guidance:

1. The distance between signs should be 500'-800' where the posted speed limit is greater than 45 mph, and 350'-500' where the posted speed limit is 45 mph or less.<sup>1</sup> The distance of the beginning of channelizing device transition should be a minimum of 500' and a maximum of 800'.
2. The buffer space length should be as shown in Table 6H-3 on Page 6H-5 for the posted speed limit.
3. For locations with a high volume of left turning movements, the graphic NO LEFT TURN (R3-2) signs should be used within the closed lane.

#### Option:

4. Where Right-of-Way or geometric conditions prevent use of 48" x 48" signs, 36" x 36" signs may be used.

#### Standard:

5. Taper length (L) shall be at the following:

Taper Length L					
Speed Limit (mph)	9	10	11	12	Remarks
25	95	105	115	125	L=SW/60
30	135	150	165	180	L=SW/60
35	185	205	225	245	L=SW/60
40	240	270	295	320	L=SW/60
45	405	450	495	540	L=SW

Shoulder Taper = 1/2 L Minimum					
Speed Limit (mph)	9	10	11	12	Remarks
25	50	450	500	550	600 L=SW
30	55	495	550	605	660 L=SW
35	60	540	600	660	720 L=SW
40	65	585	650	715	780 L=SW
45	70	630	700	770	840 L=SW

Shifting Tapers - full lane width shifts on Limited Access Highways shall use a 750' shifting taper for posted speeds less than 65 mph and a 1000' shifting taper for posted speeds equal to or greater than 65 mph. For all other roadways 1/2 L should be used.<sup>2</sup>

6. Channelizing device spacing shall be at the following:

Channelizing Device Spacing			
Location Spacing	Speed Limit (mph)	Location Spacing	Speed Limit (mph)
Transition	0-35 36+	Travelway	40' 80'
*Construction access spacing may be increased to this distance, but shall not exceed one access per 1/4 mile.			

7. To prevent vehicles from entering into the buffer and activity areas<sup>1</sup>, channelizing device spacing shall be a maximum of 20' on center.
8. A shadow vehicle with either a Type B or C arrow board operating in the caution mode, or at least one rotating amber light or high intensity amber flashing or oscillating light shall be parked 80'-120' in advance of the work crew in both directions of travel. When the posted speed limit is 45 mph or greater, the shadow vehicle shall be equipped with a truck-mounted attenuator (TMA).<sup>2</sup>
9. When a side road intersects the highway within the temporary traffic control zone, additional traffic control devices shall be placed as needed.
10. For long-term work zones existing conflicting pavement markings and markers shall be removed and temporary pavement markings and markers shall be installed per Figure TTC-60.

#### Guidance:

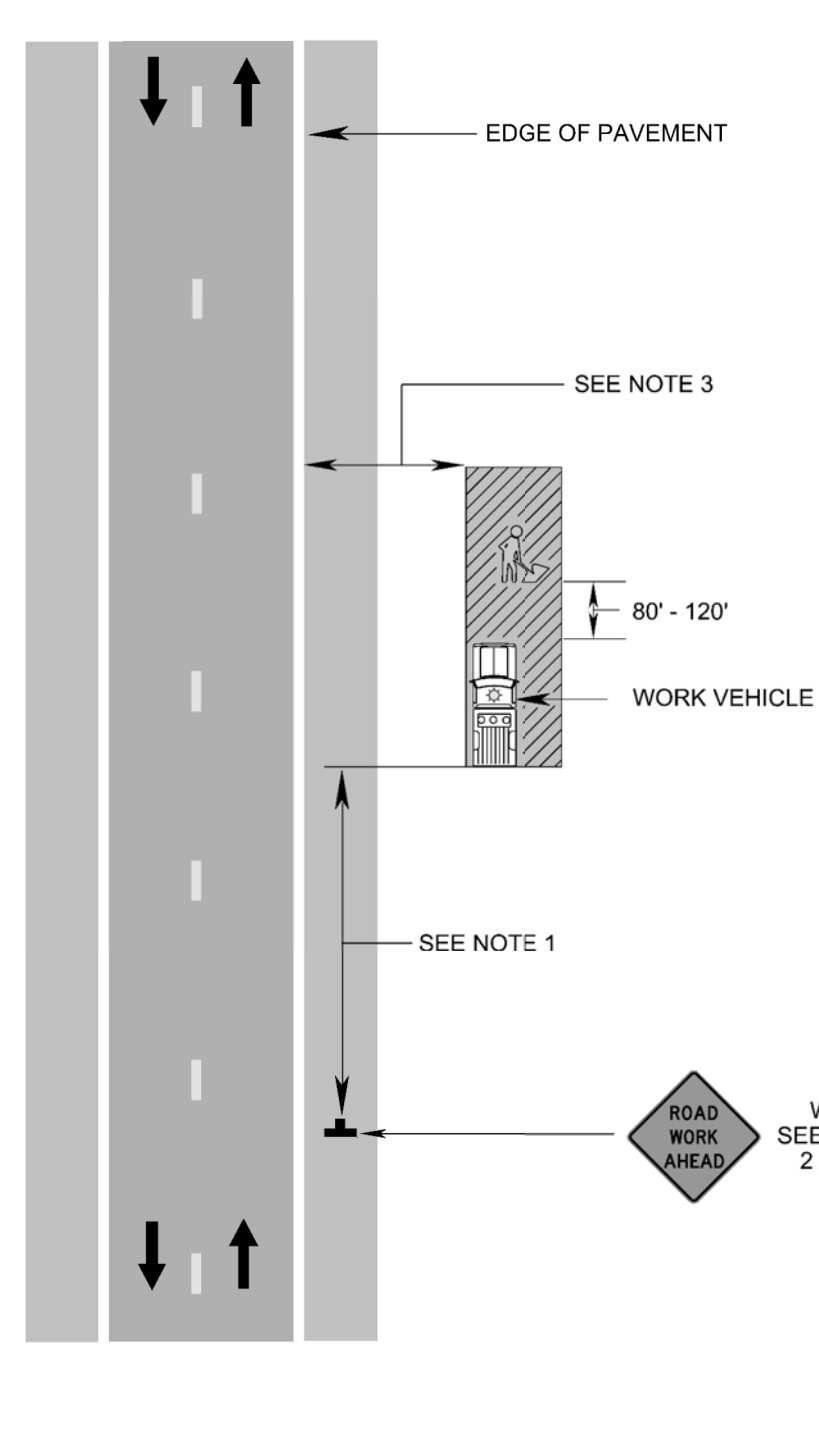
11. When channelizing devices have the potential of leading vehicular traffic out of the intended traffic space, the channelizing devices should be extended a distance with 4 additional channelizing devices beyond the downstream end of the transition area as depicted.<sup>3</sup>

1: Revision 1 - 4/1/2015  
2: Revision 2 - 9/1/2019

September 2019

Page 6H-9

## Work Beyond the Shoulder Operation (Figure TTC-1.1)

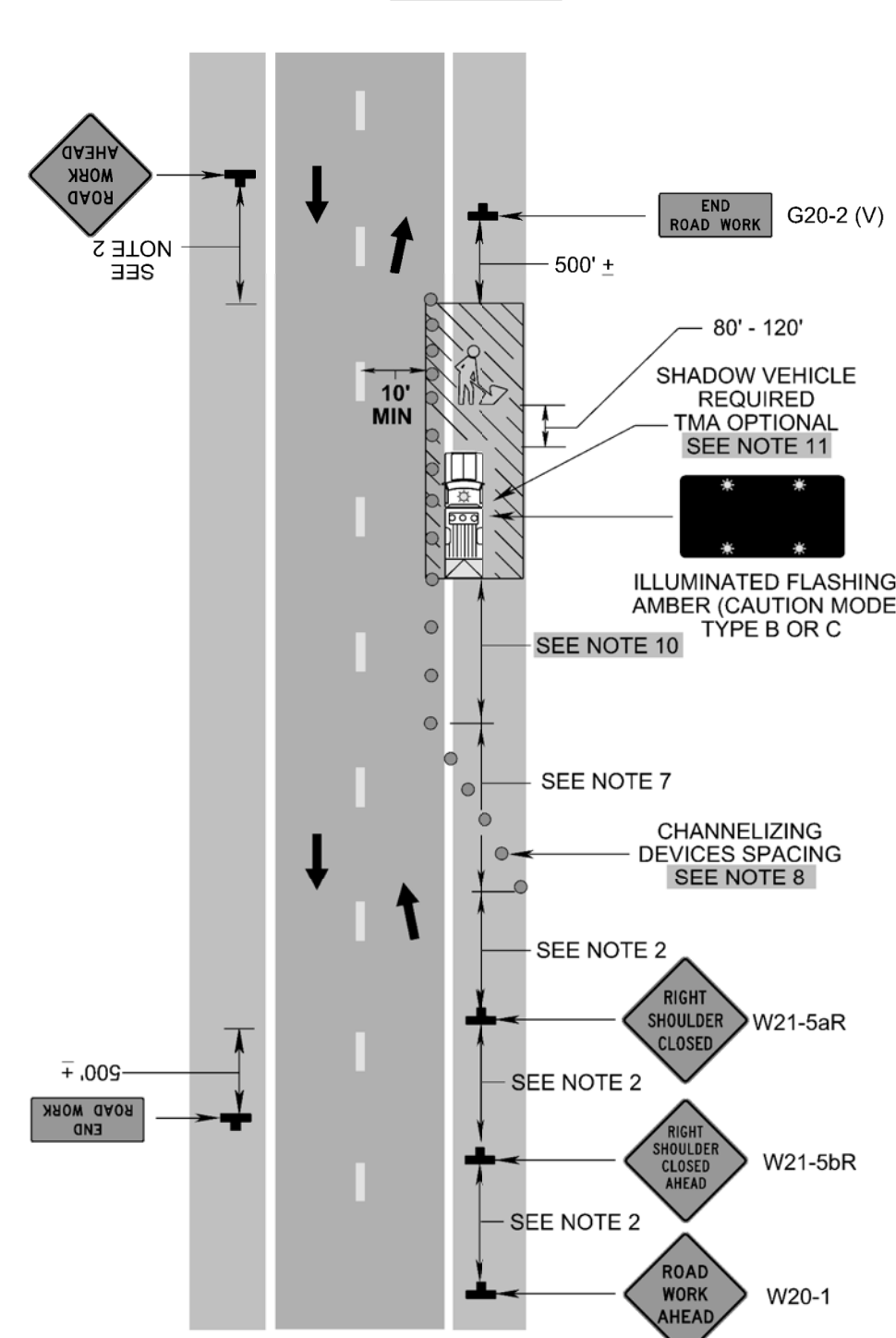


1: Revision 1 - 4/1/2015

September 2019

Page 6H-17

## Shoulder Operation with Minor Encroachment (Figure TTC-5.2)

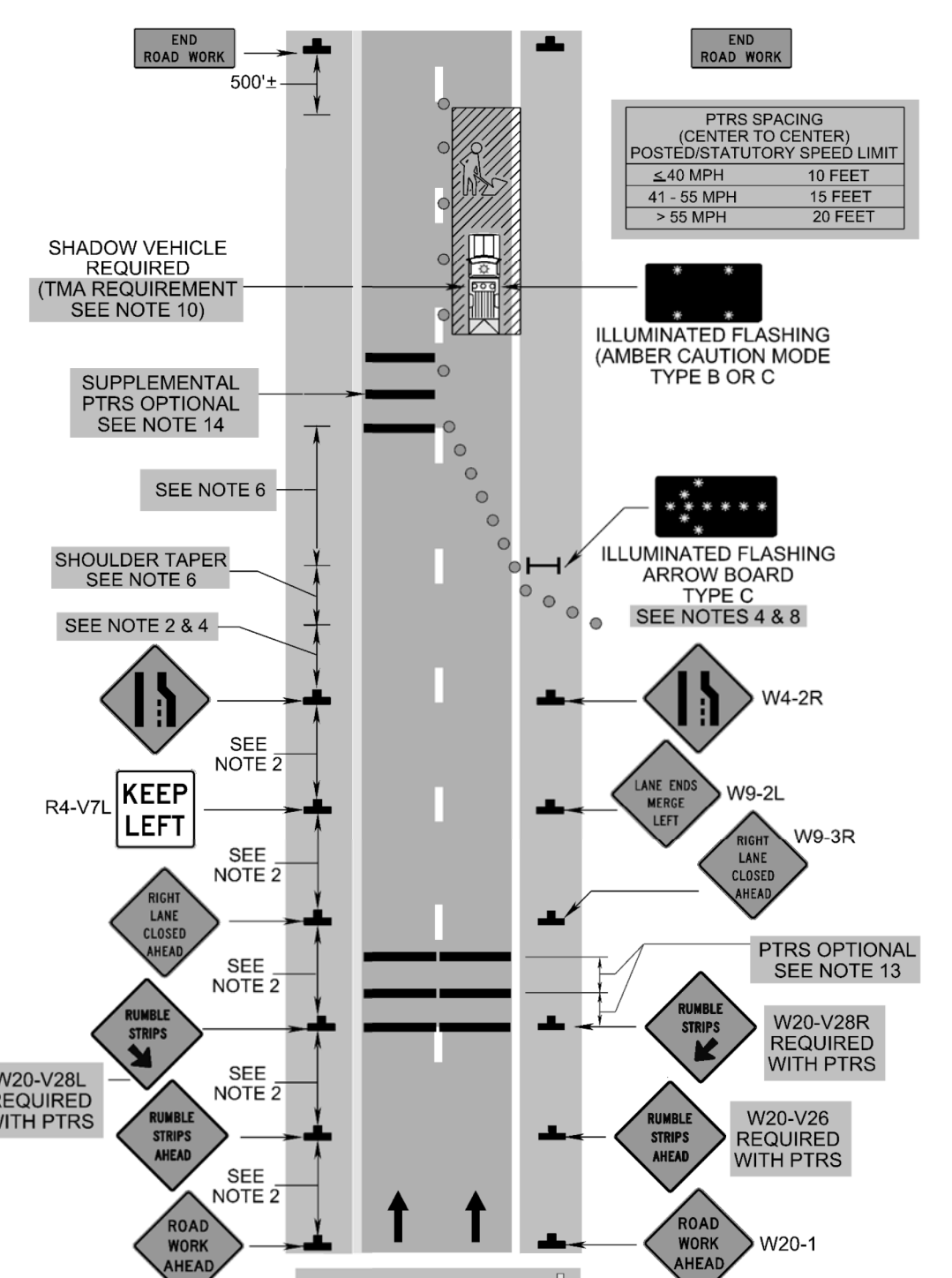


1: Revision 1 - 4/1/2015  
2: Revision 2 - 9/1/2019

September 2019

Page 6H-41

## Outside Lane Closure Operation on a Four-Lane Roadway (Figure TTC-16.2)

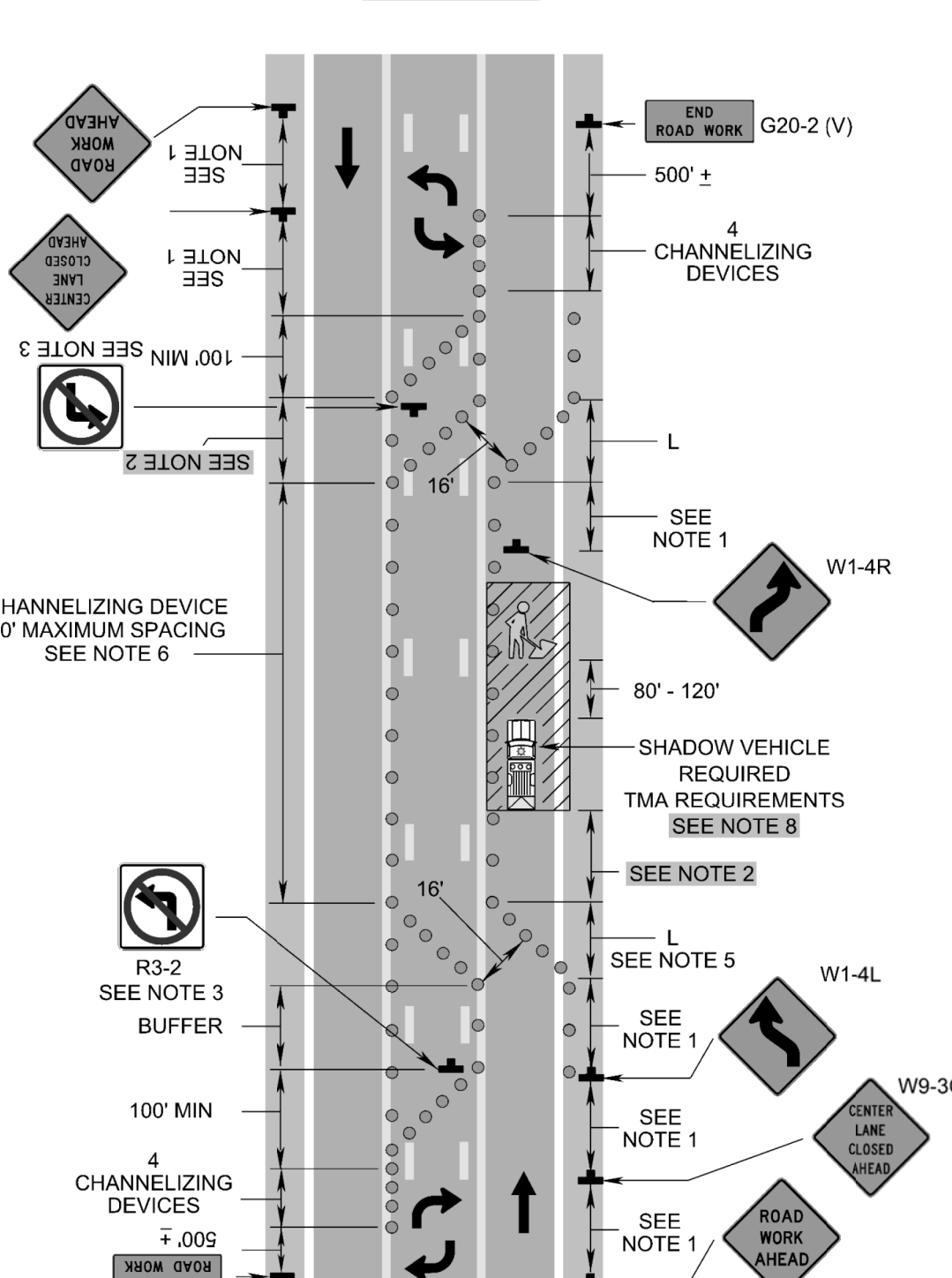


2: Revision 2 - 9/1/2019  
3: Revision 2.1 - 11/1/2020

September 2019

Page 6H-53

## Right Lane Closure Operation on a Three-Lane Roadway (Figure TTC-22.2)



1: Revision 1 - 4/1/2015  
2: Revision 2 - 9/1/2019

THESE PLANS ARE UNFINISHED  
AND UNAPPROVED AND ARE NOT  
TO BE USED FOR ANY TYPE  
OF CONSTRUCTION OR THE  
ACQUISITION OF RIGHT OF WAY.



CITY OF MANASSAS, VIRGINIA  
DEPARTMENT OF ENGINEERING  
8500 PUBLIC WORKS DR  
MANASSAS, VIRGINIA 20110

REVISIONS  
DATE BY DESCRIPTION

MANASSAS PROJECT NO: T-093  
DATE OF PLAN ISSUANCE: TBD  
CONSULTANT PROJECT ID: R&K  
DESIGNED BY: DWK DATE: 11/10/23  
DRAWN BY: DWK DATE: 11/10/23  
CHECKED BY: MJK DATE: 11/10/23  
APPROVED BY: DATE:

TRAFFIC MAINTENANCE PLAN AND  
SEQUENCE OF CONSTRUCTION

SHEET  
1B(3)  
SCALE: N/A

DUMFRIES ROAD SIDEWALK (T-093)

60% DESIGN SUBMITTAL



# TRAFFIC MAINTENANCE PLAN AND SEQUENCE OF CONSTRUCTION

Page 6H-62

September 2019

## Typical Traffic Control Lane Closure Operation – Far Side of an Intersection (Figure TTC-27.2)

### NOTES

#### Guidance:

1. Sign spacing distance should be 350'-500' where the posted speed limit is 45 mph or less, 500'-800' where the posted speed limit is greater than 45 mph.
2. On divided highways having a median wider than 8', right and left sign assemblies shall be required.
3. Taper length (L) shall be at the following:

Taper Length L					
Speed Limit (mph)	9	10	11	12	Remarks
25	95	105	115	125	L=SW/W6
30	135	150	165	180	L=SW/W6
35	185	205	225	245	L=SW/W6
40	240	270	295	320	L=SW/W6
45	405	450	495	540	L=SW
50	555	600	645	690	L=SW
55	705	750	795	840	L=SW
60	855	900	945	990	L=SW
65	1005	1050	1095	1140	L=SW
70	1155	1200	1245	1290	L=SW
75	1305	1350	1395	1440	L=SW
80	1455	1500	1545	1590	L=SW
85	1605	1650	1695	1740	L=SW
90	1755	1800	1845	1890	L=SW
95	1905	1950	1995	2040	L=SW
100	2055	2100	2145	2190	L=SW

Channelizing Device Spacing					
Location Spacing	Speed Limit (mph)	Location Spacing	Speed Limit (mph)	Location Spacing	Speed Limit (mph)
Transition	20'	40'	Travelway	40'	80'

#### Guidance:

5. If room permits, a shadow vehicle with at least one amber<sup>1</sup> rotating, oscillating, or high intensity flashing<sup>2</sup> light should be parked 80'-120' in advance of the first work crew.
6. If the posted speed limit is 45 mph or greater, the shadow vehicle shall have a truck-mounted attenuator.
7. For emergency situations (any non-planned operation) of 30 minutes or less duration, two rotating amber lights or high intensity amber flashing or oscillating<sup>2</sup> lights mounted on the vehicle and visible for 360° shall be required in addition to the channelizing devices shown around the vehicle. Also, vehicle hazard warning signals shall be used.

#### Guidance:

8. If the work space extends across a crosswalk, the crosswalk should be closed using the information and devices shown in Figure TTC-36.

#### Standard:

9. If the left turn lane is closed a NO LEFT TURN (Symbol) (R3-20) shall be used.<sup>1</sup>

#### Option:<sup>2</sup>

10. PTRS may be used as shown in Figure TTC-17 and in accordance with Section 6F-99.<sup>2</sup>
11. The supplemental PTRS may be eliminated.<sup>2</sup>

1: Revision 1 – 4/1/2015  
2: Revision 2 – 9/1/2019

Page 6H-64

September 2019

## Typical Traffic Control Lane Closure Operation in an Intersection (Figure TTC-28.2)

### NOTES

#### Guidance:

1. The control of traffic through the intersection in order of preference should be:
  - a. Obtain the services of law enforcement personnel.
  - b. Detour the effective routes to other roads and streets as approved and directed by the District Traffic Engineer.
  - c. Place a state certified flagger on each leg of the intersection controlling a single lane of traffic.
2. Sign spacing distance should be 350'-500' where the posted speed limit is 45 mph or less, 500'-800' where the posted speed limit is greater than 45 mph.
3. To maintain efficient traffic flow in a flagging operation on a two-lane roadway the maximum time motorist should be stopped at a flagger station is 8 minutes for high volume roadways (average daily traffic of 500 or more vehicles per day) to a maximum of 12 minutes for low volume roadways (less than 500 vehicles per day). For additional information see Section 6E-07.<sup>2</sup>

#### Standard:

4. Channelizing device spacing shall be on 20' centers or less.
5. PTRS shall be used as noted in Section 6F-99.<sup>2</sup>

#### Guidance:

6. If room permits, a shadow vehicle with at least one rotating amber light or high intensity amber flashing or oscillating<sup>2</sup> light should be parked 80'-120' in advance of the first work crew.

#### Standard:

7. For emergency situations (any non-planned operation) of 30 minutes or less duration, two rotating amber lights or high intensity amber flashing or oscillating<sup>2</sup> lights mounted on the vehicle and visible for 360° shall be required in addition to the channelizing devices shown around the vehicle. Also, vehicle hazard warning signals shall be used.

#### Guidance:

8. If the work space extends across a crosswalk, the crosswalk should be closed using the information and devices shown in Figure TTC-36.

#### Support:

9. Turns can be prohibited as required by vehicular traffic conditions. Unless the streets are wide, it might be physically impossible to make certain turns, especially for large vehicles.

1: Revision 1 – 4/1/2015  
2: Revision 2 – 9/1/2019

Page 6H-78

September 2019

## Typical Traffic Control Sidewalk Closure and Bypass Sidewalk Operation (Figure TTC-35.1)

### NOTES

#### Standard:

1. When crosswalks or other pedestrian facilities are closed or relocated, temporary facilities shall be detectable and shall include accessibility features consistent with the features present in the existing pedestrian facility.

#### Guidance:

2. Where high speeds are anticipated, a temporary traffic barrier and, if necessary, a crash cushion should be used to separate the temporary sidewalks from vehicular traffic.
3. Audible information devices should be considered where midblock closings and changed crosswalk areas cause inadequate communication to be provided to pedestrians who have visual disabilities.
4. Temporary markings should be considered for operations exceeding three days in duration.

#### Option:

5. Only the TTC devices related to pedestrians are shown. Other devices, such as lane closure signing or ROAD NARROWS (W5-1) signs, may be used to control vehicular traffic.
6. For nighttime closures, Type A Flashing warning lights may be used on barricades that support signs and close sidewalks.
7. Signs, such as KEEP RIGHT (R4-V7R) and KEEP LEFT (R4-V7L), may be placed along a temporary sidewalk to guide or direct pedestrians.

#### Standard:

8. All sidewalk closures shall be closed with Type 3 Barricades. The SIDEWALK CLOSED (R9-9) sign and the SIDEWALK CROSS HERE (R9-11) sign shall be installed above the Type 3 barricade. The KEEP RIGHT sign can cover the top rail of the Type 3 Barricade.<sup>2</sup>

2: Revision 2 – 9/1/2019

Page 6H-114

September 2019

## Typical Traffic Control Signing for Project Limits (Figure TTC-53.0)

### NOTES

#### Support:

1. This layout depicts signing requirements for notifying motorist when they are entering and exiting a potential construction/maintenance area with a duration equal to or greater than 60 days.

#### Standard:

2. The ROAD WORK AHEAD (W20-1) sign or the ROAD WORK NEXT XX MILES (G20-1 (V)) sign shall be placed far enough in advance of the project limits so that other warning signs in a series may be adequately placed prior to the condition they are warning about.
3. The ROAD WORK NEXT XX MILES sign shall be used for projects with activity areas greater than 2 miles in length, or when multiple work activities (such as pavement patching, guardrail installations, shoulder restoration, etc.) occur along a highway.
4. The distance displayed on the ROAD WORK NEXT XX MILES sign shall be stated to the nearest whole mile from the point of installation to the END ROAD WORK (G20-2 (V)) sign.
5. On divided highways having a median wider than 8', right and left sign assemblies shall be required.

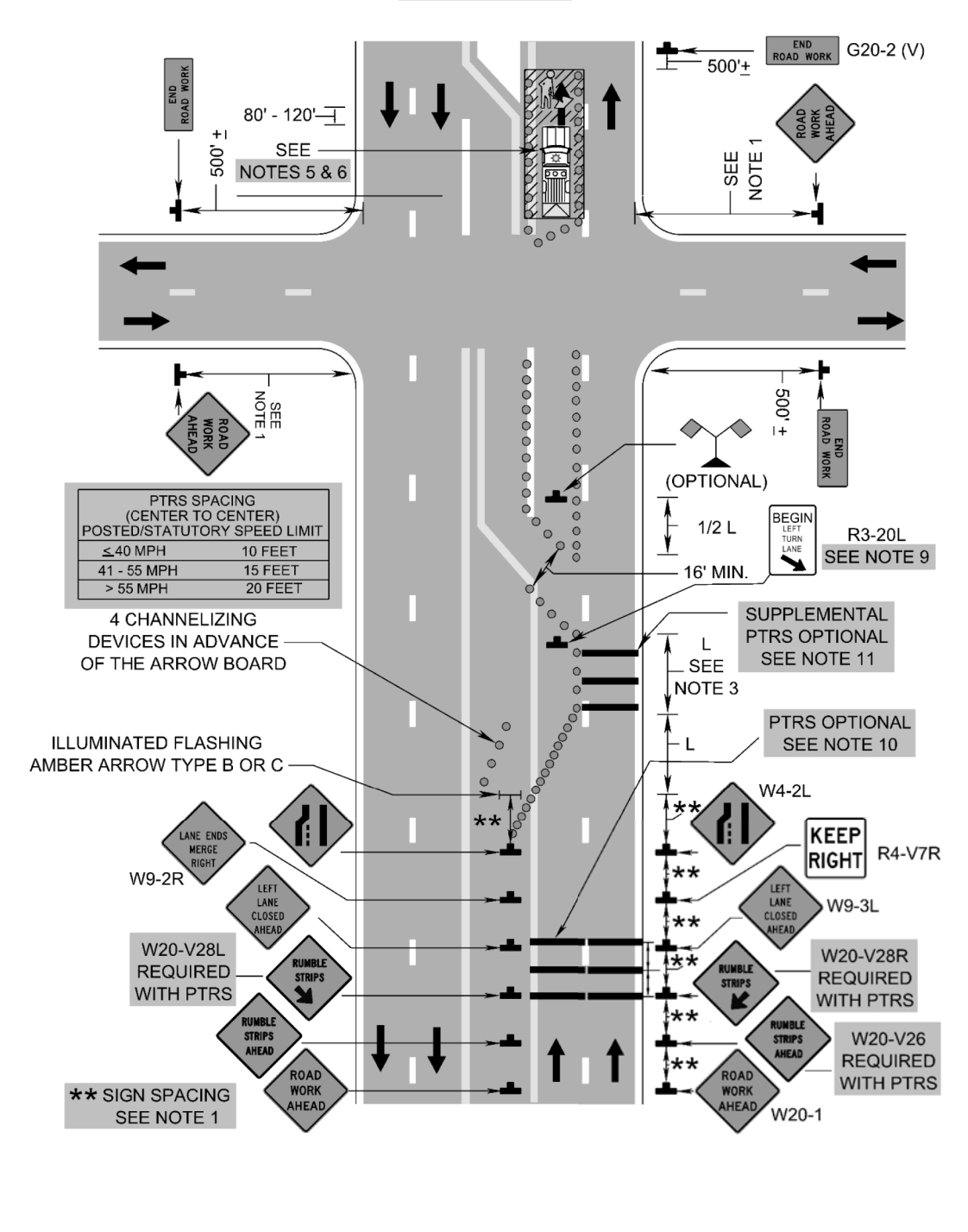
#### Guidance:

6. For projects with activity areas 2 miles or less in length, the ROAD WORK AHEAD sign should be the first sign motorist encounter.
7. Sign spacing should be 1300'-1500' for Limited Access highways. For all other roadways, the sign spacing should be 500'-500' where the posted speed limit is greater than 45 mph, and 350'-500' where the posted speed limit is 45 mph or less.
8. All connections within the project limits should be identified with signs indicating to motorist they are entering or exiting a potential construction/maintenance area.

September 2019

Page 6H-63

## Lane Closure Operation – Far Side of an Intersection (Figure TTC-27.2)

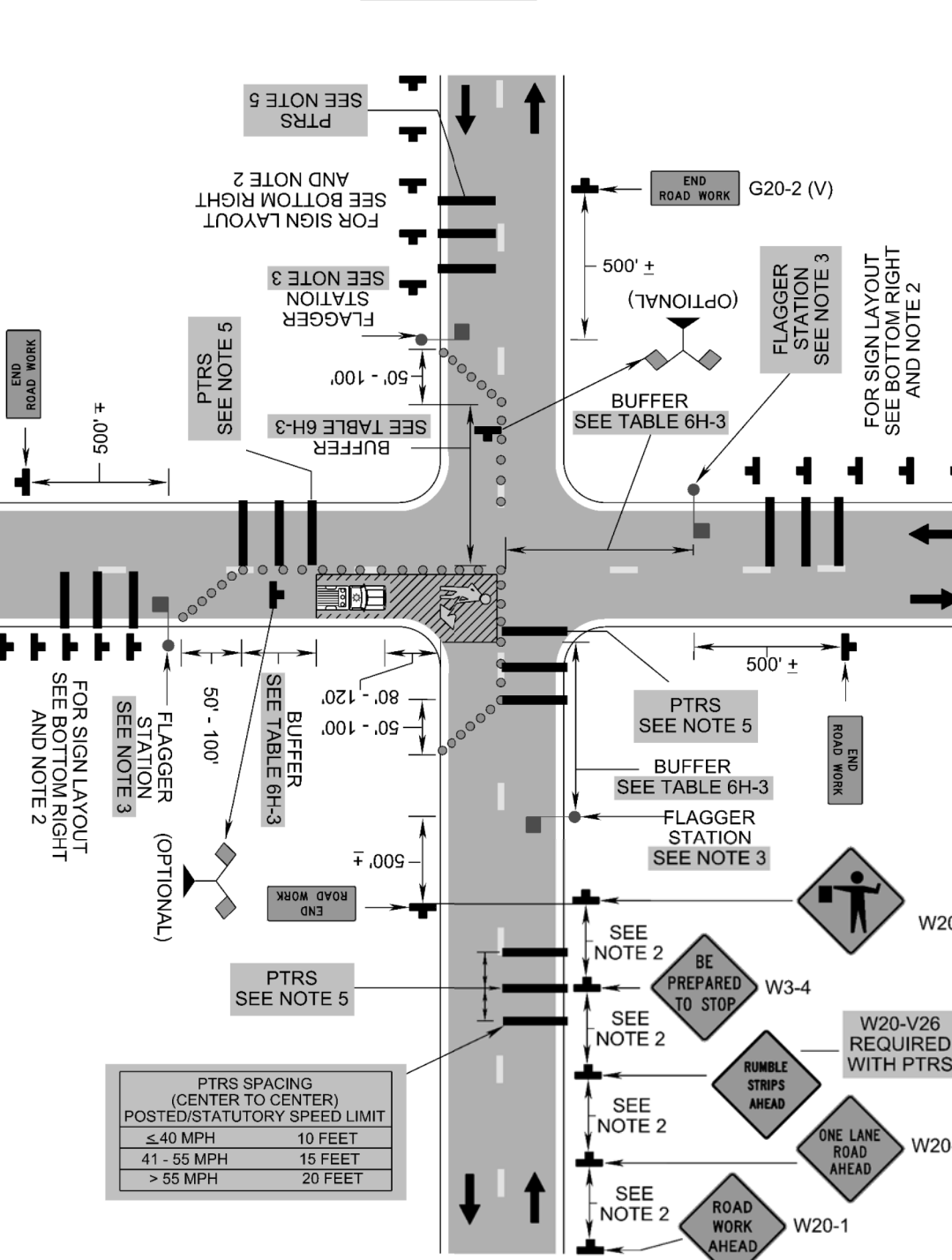


1: Revision 1 – 4/1/2015  
2: Revision 2 – 9/1/2019

September 2019

Page 6H-65

## Lane Closure Operation in an Intersection (Figure TTC-28.2)

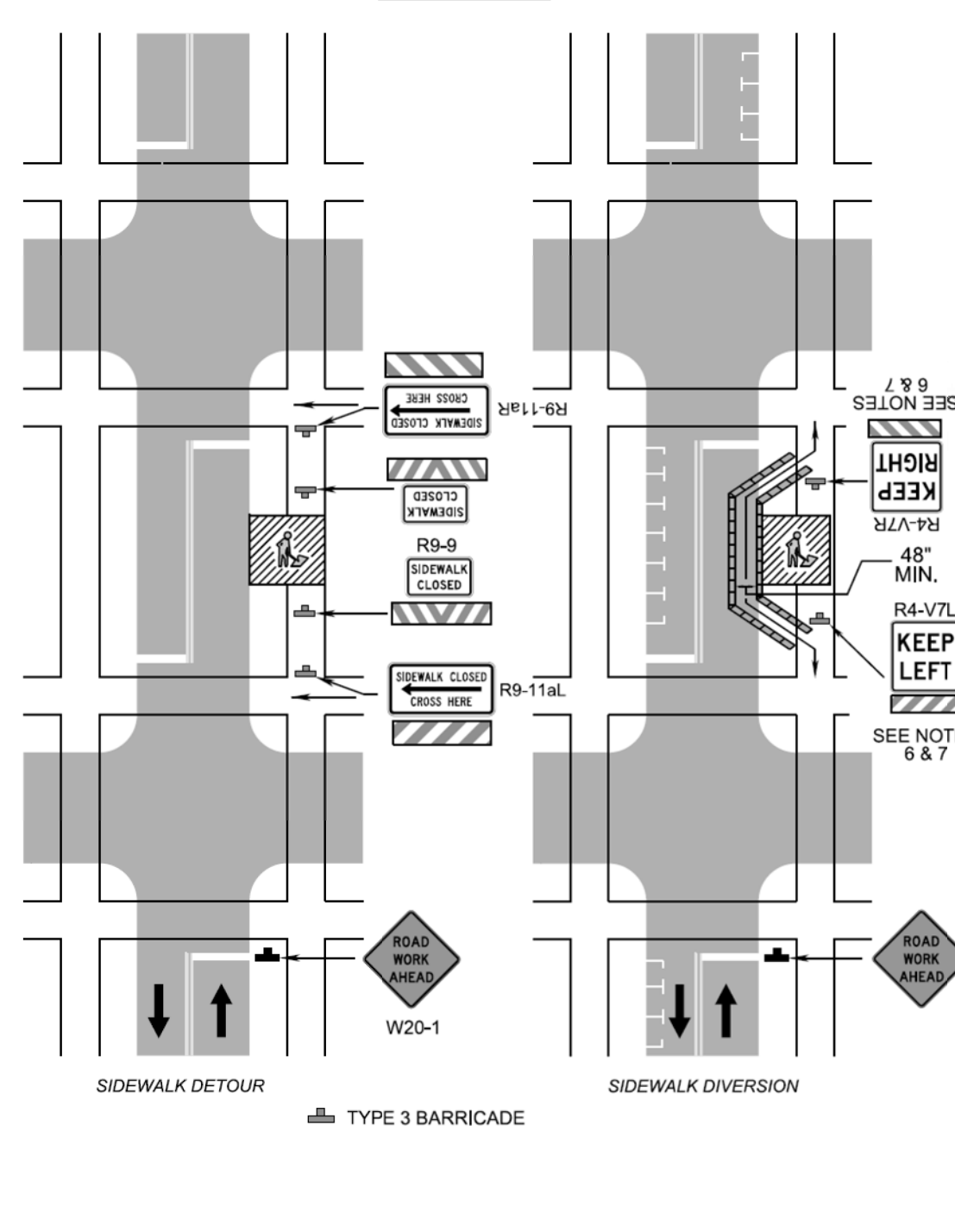


2: Revision 2 – 9/1/2019

September 2019

Page 6H-79

## Sidewalk Closure and Bypass Sidewalk Operation (Figure TTC-35.1)

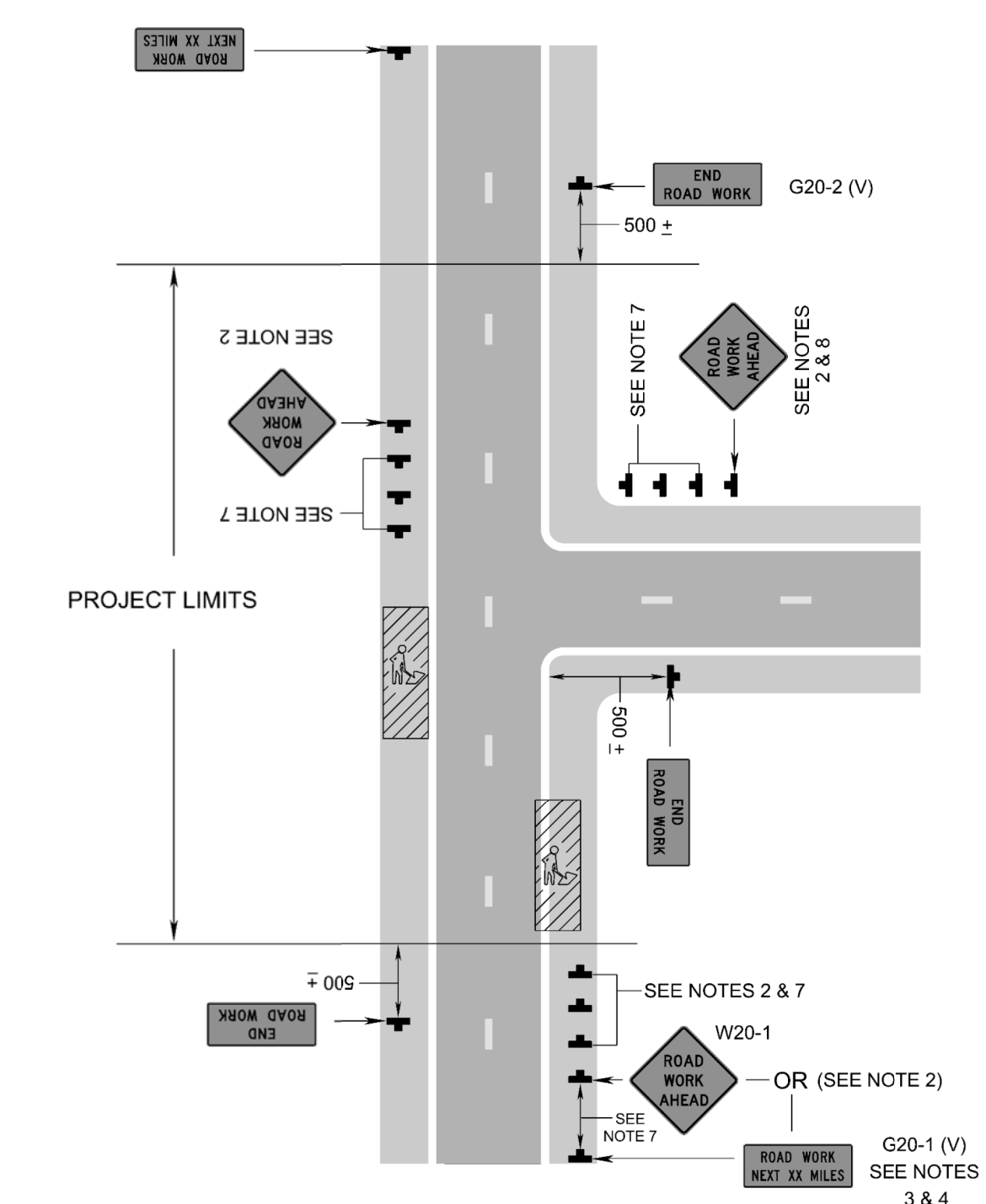


2: Revision 2 – 9/1/2019

September 2019

Page 6H-115

## Signing for Project Limits (Figure TTC-53.0)



THESE PLANS ARE UNFINISHED  
AND UNAPPROVED AND ARE NOT  
TO BE USED FOR ANY TYPE  
OF CONSTRUCTION OR THE  
ACQUISITION OF RIGHT OF WAY.



CITY OF MASSACHUSETTS, VIRGINIA  
DEPARTMENT OF ENGINEERING  
8500 PUBLIC WORKS DR  
MASSACHUSETTS, VIRGINIA 20110

REVISIONS  
DATE BY DESCRIPTION

MANASSAS PROJECT NO: T-093  
DATE OF PLAN ISSUANCE: TBD  
CONSULTANT PROJECT ID: R&K  
DESIGNED BY: DWK DATE: 11/10/23  
DRAWN BY: DWK DATE: 11/10/23  
CHECKED BY: MJK DATE: 11/10/23  
APPROVED BY: DATE:

TRAFFIC MAINTENANCE PLAN AND  
SEQUENCE OF CONSTRUCTION

SHEET  
1B(4)  
SCALE: N/A

DUMFRIES ROAD SIDEWALK (T-093)

60% DESIGN SUBMITTAL



**Typical Traffic Control**  
*End of Day Signing for Partial Paving Operations on a Multi-Lane Roadway*  
**(Figure TTC-57.2)**

## NOTES

**Standard:**

1. On divided highways having a median wider than 8', right and left sign assemblies shall be used. Median barrier is considered to be part of the shoulder and its measurement shall be used to determined the total width of the shoulder.
2. The maximum pavement edge drop-off between traffic lanes shall be 2 inches or less.
3. Open travel lane(s) shall not be exposed to more than 2 to 3 mile sections of milled or uneven surface.
4. On undivided channels, message sign with "ROUGH ROAD AHEAD" and other appropriate messages shall be used.
5. A BUMP (W8-1) sign shall be placed in advance of the end of the pavement drop-off.
6. The District's Traffic Engineer shall determine speed reductions.
7. The UNEVEN LANES (W8-11), STAY IN LANE (R4-9), and BUMP signs shall be adjusted daily with the work operation and their sign stand shall be supported with a sand bag weighing approximately 25-pounds on each leg or two (2) drum collar weights positioned on the center of the sign stand<sup>1</sup>. Additional UNEVEN LANES signs shall be installed every 2 miles and on entrance ramps.
8. Where conditions warrant, ROUGH ROAD (W8-8) and BUMP signs shall be installed 500' ± in advance of the affected roadway surface on entrance ramps, and BUMP signs shall be installed 500' ± in advance of unaffected roadway surface on exit ramps.
9. All signs shall be post-mounted at locations after 72 consecutive hours of non-work activities.

*Guidance:*

10. Sign spacing distance should be 1300'-1500' for Limited Access highways, and on all other roadways 500'-800' where the posted speed limit is greater than 45 mph, and 350'-500' where the posted speed limit is 45 mph or less.

Option:

11. Only traffic control signing for partial pavement resurfacing is shown. Other devices may be used for the control of traffic through the work area.
12. Temporary pavement markers spaced at 10 foot centers for two-way traffic centerlines or three per skip line for lane division lines may be added as directed by the engineer.
13. The LOW SHOULDER (W8-9) sign may be used to warn of a shoulder condition where there is an elevation difference of less than 2 inches between the shoulder and the travel lane.

**Standard:**

14. If used, the **LOW SHOULDER** sign shall be repeated at 1 mile intervals if the condition extends over a distance in excess of 1 mile.
15. The **SHOULDER DROP OFF (W8-V5)** sign shall be used when an unprotected shoulder drop-off, adjacent to the travel lane, exceeds 2 inches depth between the shoulder and the travel lane. Where the condition extends over a distance in excess of 1 mile, the sign shall be repeated at 1 mile intervals.

Option:

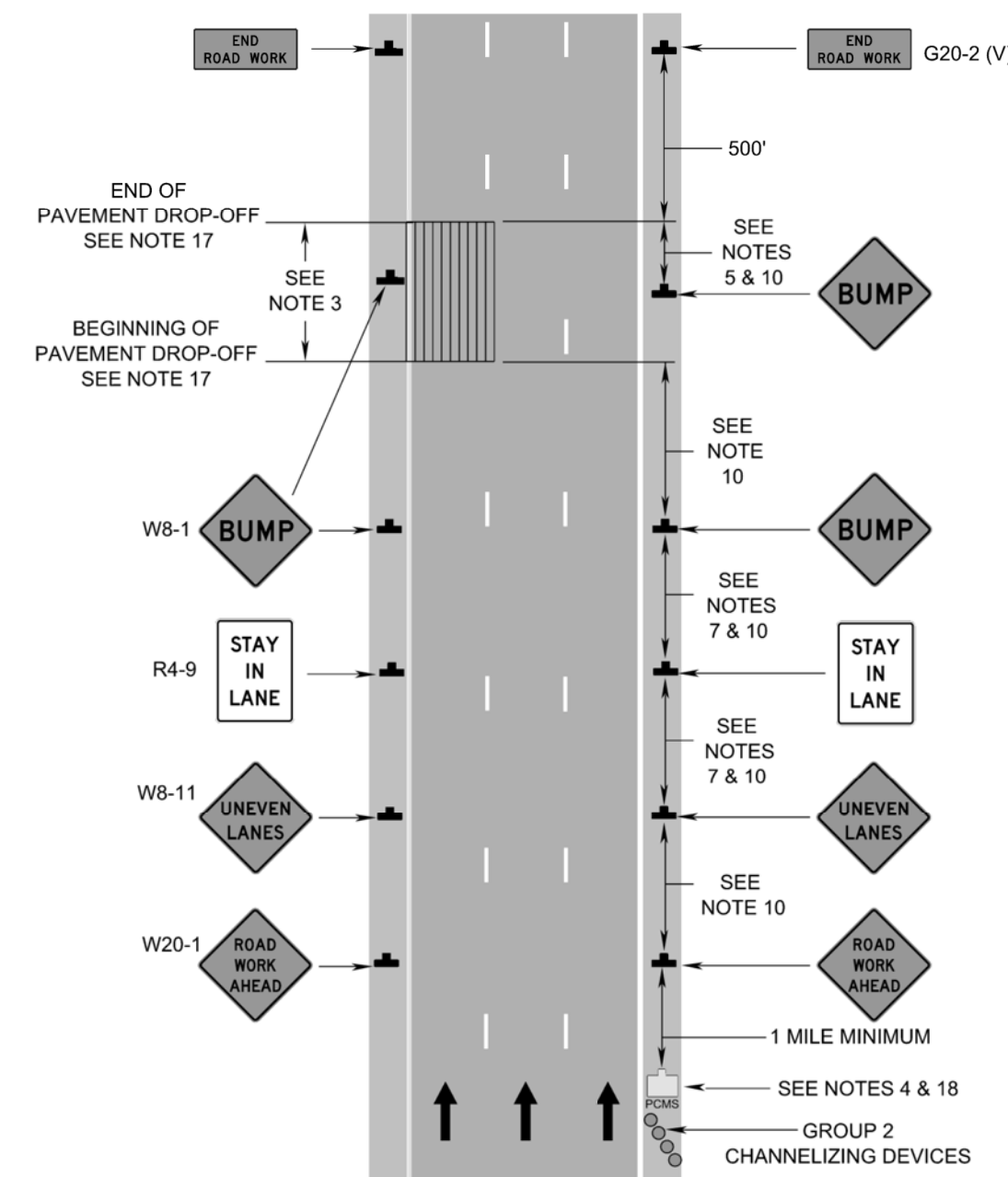
16. The SHOULDER DROP OFF sign may be eliminated if a 6:1 (desirable) to 4:1 (minimum) wedge is used between the travel lane and the shoulder.
- Standard:**
17. A temporary pavement wedge shall be constructed of surface mix asphalt a minimum of three (3) feet in length for every inch of depth of pavement milling on the approach and departure end of the milled travel lane(s). Refer to Standard ACOT-1 of the Road and Bridge Standards for details.
18. A minimum of four (4) drum channelizing devices shall be placed on the shoulder in advance of the PCMS in a taper for delimitation (see Figure 6F-6).

1: Revision 1 – 4/1/2015; 2: Revision 2 – 9/1/2019

July 2019

Page 6H-123

**End of Day Signing for Partial Paving Operations on a Multi-Lane Roadway  
(Figure TTC-57.2)**



THESE PLANS ARE UNFINISHED  
AND UNAPPROVED AND ARE NOT  
TO BE USED FOR ANY TYPE  
OF CONSTRUCTION OR THE  
ACQUISITION OF RIGHT OF WAY.



CITY OF MANASSAS, VIRGINIA  
DEPARTMENT OF ENGINEERING  
8500 PUBLIC WORKS DR  
MANASSAS, VIRGINIA 20110

## 60% DESIGN SUBMITTAL

[illegible]

DATE OF PLAN ISSUANCE:	TBD
CONSULTANT PROJECT ID:	RK&K
DESIGNED BY: <u>DKV</u>	DATE: 11/10/23
DRAWN BY: <u>DKV</u>	DATE: 11/10/23
CHECKED BY: <u>MJK</u>	DATE: 11/10/23
APPROVED BY: _____	DATE: _____

# TRAFFIC MAINTENANCE PLAN AND SEQUENCE OF CONSTRUCTION

SHEET

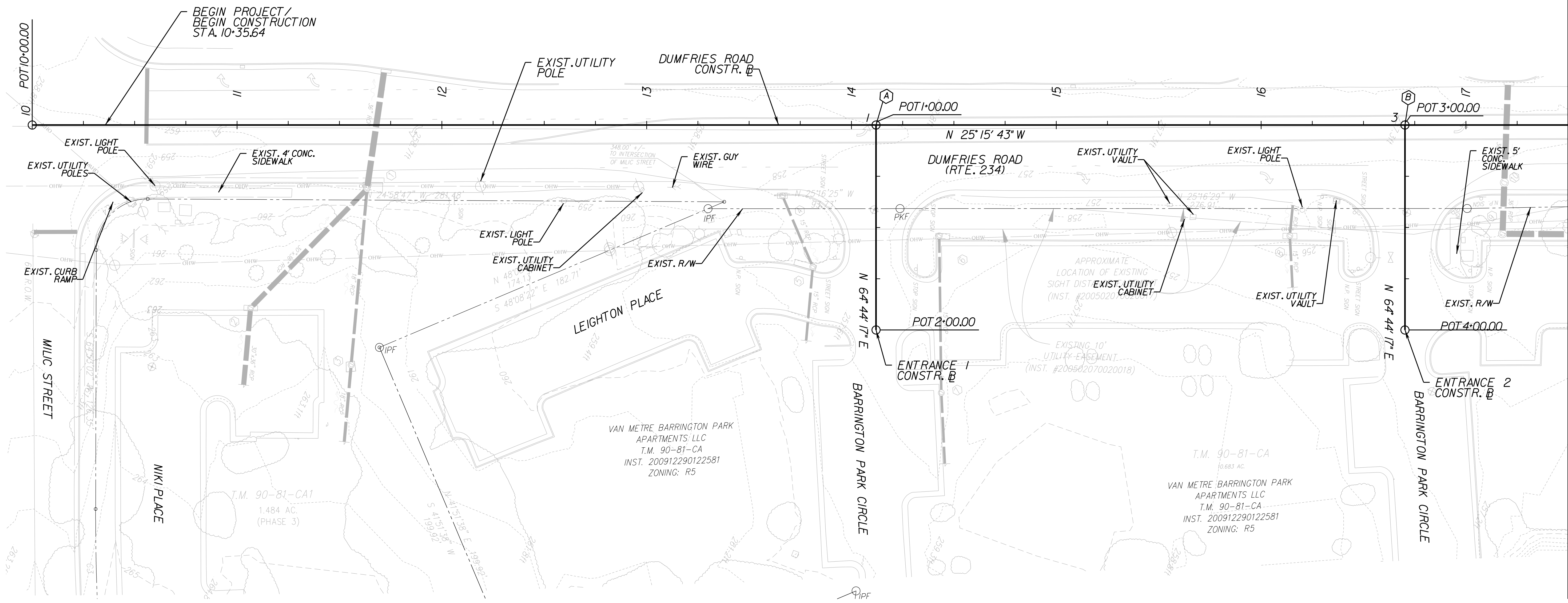
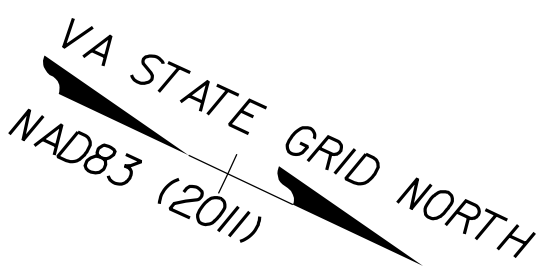
B(5)

SCALE: N/A

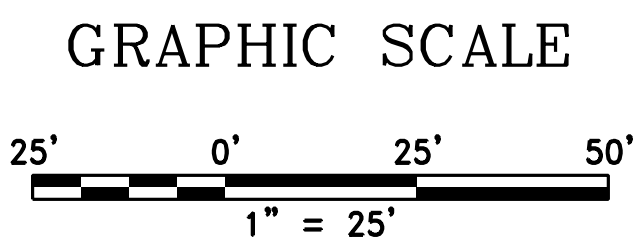
DUMFRIES ROAD SIDEWALK (T-093)



EXISTING CONDITIONS



- (A) DUMFRIES ROAD CONSTR. @  
STA. 14+11.99 •  
ENTRANCE 1 CONSTR. @  
STA. 1+00.00  
DELTA= 90° 00' 00.00"
- (B) DUMFRIES ROAD CONSTR. @  
STA. 16+70.23 •  
ENTRANCE 2 CONSTR. @  
STA. 3+00.00  
DELTA= 90° 00' 00.00"



THESE PLANS ARE UNFINISHED AND UNAPPROVED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION OR THE ACQUISITION OF RIGHT OF WAY.

60% DESIGN SUBMITTAL

CITY OF MANASSAS, VIRGINIA

DEPARTMENT OF ENGINEERING

8500 PUBLIC WORKS DR.

MANASSAS, VIRGINIA 20110

REVISIONS

DATE	BY	DESCRIPTION

MANASSAS PROJECT NO: T-093

DATE OF PLAN ISSUANCE: TBD

CONSULTANT PROJECT ID: RK&K

DESIGNED BY: DWK DATE: 11/10/23

DRAWN BY: DWK DATE: 11/10/23

CHECKED BY: MJK DATE: 11/10/23

APPROVED BY:

EXISTING CONDITIONS

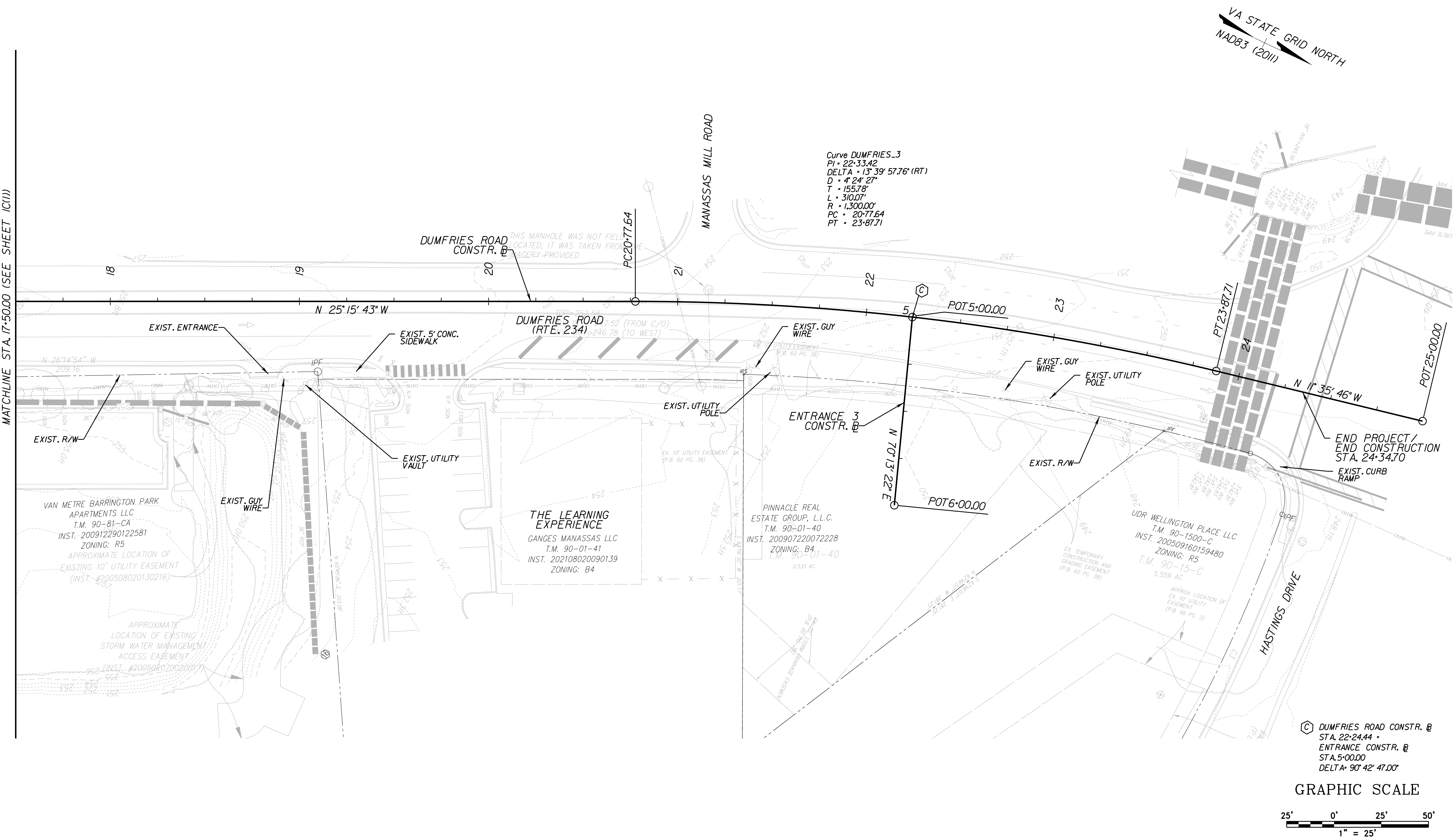
SHEET 1C(1)

SCALE: 1"=25'

DUMFRIES ROAD SIDEWALK (T-093)



EXISTING CONDITIONS



**GRAPHIC SCALE**

25' 0' 25' 50'

1" = 25'

THESE PLANS ARE UNFINISHED AND UNAPPROVED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION OR THE ACQUISITION OF RIGHT OF WAY.

60% DESIGN SUBMITTAL

CITY OF MANASSAS, VIRGINIA  
DEPARTMENT OF ENGINEERING  
8500 PUBLIC WORKS DR  
MANASSAS, VIRGINIA 20110

REVISIONS	
DATE	DESCRIPTION

MANASSAS PROJECT NO: T-093

DATE OF PLAN ISSUANCE: TBD

CONSULTANT PROJECT ID: RK&K

DESIGNED BY: DWK DATE: 11/10/23

DRAWN BY: DWK DATE: 11/10/23

CHECKED BY: MJK DATE: 11/10/23

APPROVED BY: DATE:

DUMFRIES ROAD SIDEWALK (T-093)

EXISTING CONDITIONS

SHEET 1C(2)

SCALE: 1"=25'



ALL CONSTRUCTION WITHIN EXISTING AND/ OR PROPOSED R/W IS TO CONFORM TO THE VDOT STANDARDS AND SPECIFICATIONS, THE CURRENT EDITION OF THE CITY OF MANASSAS DESIGN AND CONSTRUCTION STANDARDS MANUAL (DSCM), LATEST EDITION MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND THE VIRGINIA WORK AREA PROTECTION MANUAL (VWAPM), UNLESS OTHERWISE NOTED.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR COSTS INCURRED FOR THE RELOCATION OF OR DAMAGE TO ANY PUBLIC UTILITIES DUE TO CONSTRUCTION.

THE CONTRACTOR IS REQUIRED TO SCHEDULE A PRECONSTRUCTION MEETING WITH THE DEVELOPMENT SERVICES SITE INSPECTION DIVISION PRIOR TO ANY LAND DISTURBING ACTIVITIES (703-257-8278).

PRIOR TO ANY LAND DISTURBING ACTIVITIES, ALL NECESSARY PERMITS SHALL BE OBTAINED (703-257-8278).

ALL STREETS SHALL BE COMPACTED TO A DENSITY OF NOT LESS THAN 95% OF MAXIMUM DENSITY DETERMINED IN CONFORMITY WITH VTM-1 METHOD. THE SUBDIVIDER SHALL USE MECHANICAL MEANS TO ACHIEVE THE REQUIRED COMPACTION.

ALL CITY OF MANASSAS STANDARD PAVEMENT DESIGNS ARE BASED ON A MINIMUM CBR VALUE OF 10.

ALL UNDERGROUND UTILITIES MUST BE PLACED FROM THE UTILITY MAIN TO THE RIGHT-OF-WAY LINE FOR EACH LOT AND ALL UNDERGROUND UTILITY MAINS AND CONNECTIONS MUST BE INSTALLED AND TESTED IN-PLACE PRIOR TO THE APPLICATION OF ANY BITUMINOUS MATERIALS OR BASE STONE.

THE CONTRACTOR SHALL PROVIDE ADEQUATE MEANS OF CLEANING TRUCKS AND/ OR OTHER EQUIPMENT OF MUD PRIOR TO ENTERING PUBLIC STREETS, AND IT IS THE CONTRACTOR'S RESPONSIBILITY TO CLEAN STREETS, ALLAY DUST, AND TO TAKE WHATEVER MEASURES ARE NECESSARY TO INSURE THAT THE ROAD IS MAINTAINED IN A CLEAN, MUD AND DUST FREE CONDITIONS AT ALL TIMES. NO SEPARATE PAY ITEM WILL BE PROVIDED FOR THIS WORK.

ALL UTILITY TIE IN WORK SHALL BE COORDINATED WITH THE CITY INSPECTOR.

- D-1 The horizontal location of all drainage structures shown on these plans is approximate only, with the exception of structures showing specific stations, special design bridges and storm sewer systems.
- D-2 The horizontal location and invert elevations shown for proposed culverts and storm sewer outfall pipes are based on existing survey data and required design criteria. If during construction, it is found that the horizontal location or invert elevations shown on the plans differ significantly from the horizontal location or elevations of the stream or swale in which the culvert or storm sewer outfall pipe is to be placed, the Engineer shall confer with, and get approval from, the applicable District Drainage Engineer before installing the culvert or storm sewer outfall pipe.
- D-3 The "H" dimensions shown on plans for drop inlets and junction boxes and the "L.F." dimensions shown for manholes are for estimating purposes and are based on the proposed invert elevations shown for the structure and the anticipated top (rim) elevation based on existing or proposed finished grade. The actual "H" or "L.F." dimensions are to be determined by the contractor from field conditions.
- D-7 All pipe on this project shall be class IV reinforced concrete. For strength, sheet thickness, or class designation; available sizes; height of cover limitations; and other restrictions for a particular pipe type or height cover, see the applicable sections of the VDOT Road and Bridge Standards PC-1.
- D-12 All existing drainage facilities labeled "To Be Abandoned" shall be left in place, backfilled and plugged in accordance with the VDOT Road and Bridge Standard PP-1. Basis of Payment will be C.Y. of Flowable Backfill.
- D-13 Existing drainage facilities being utilized as a part of the drainage system, and designated on the plans "To Be Cleaned Out" shall be cleaned as directed by the Engineer. The cost incidental to this shall be included in the contract price for other items.
- D-14 Proposed drop inlets with a height (H) less than the standard minimum shown in the VDOT Road and Bridge Standards shall be considered and paid for as Standard Drop Inlets for the type specified. Pipes with less than standard minimum finished height of cover shall be noted as such in the drainage description for the pipe. Specific pipe bedding and cover requirements are provided in the applicable PB-1 and PC-1 standard drawings of the VDOT Road and Bridge Standards.

P-2 The pavement materials on this project will be paid for on a tonnage basis. The weight will vary in accordance with the specific gravity of the aggregates and the asphaltic content of the mix actually used to secure the design depth. The weight of the asphalt concrete is based on 95% of the theoretical maximum density.

60% DESIGN SUBMITTAL



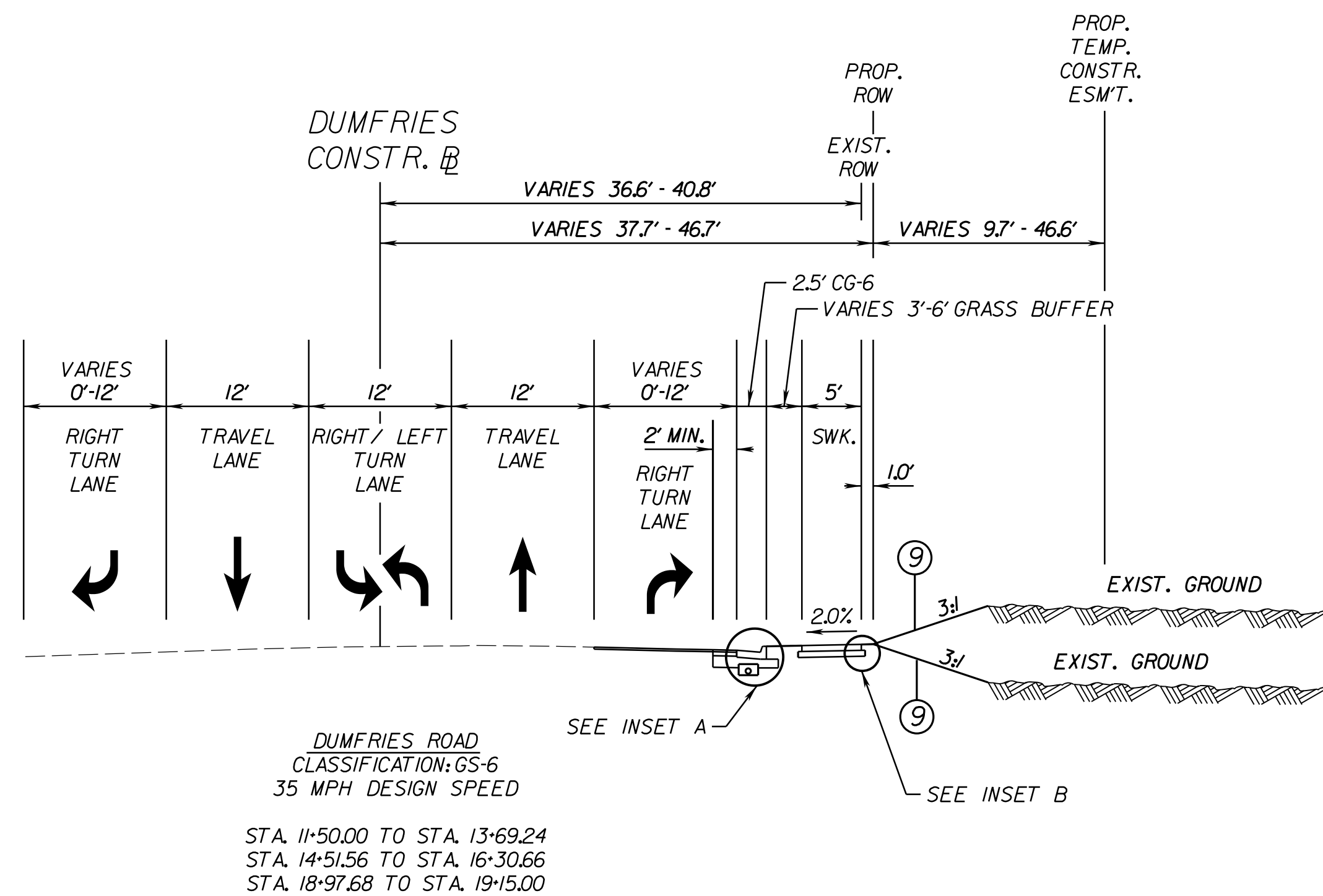
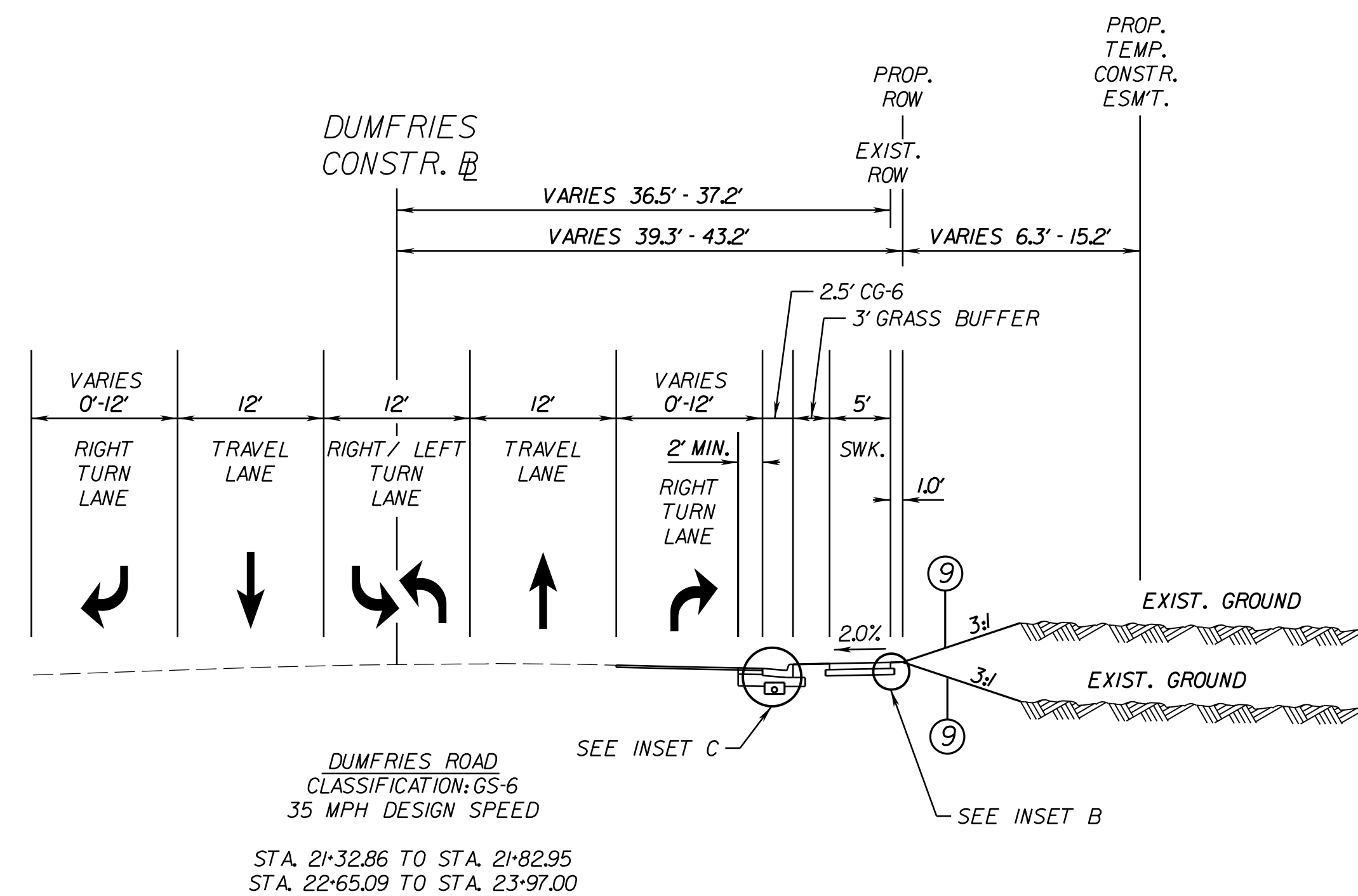
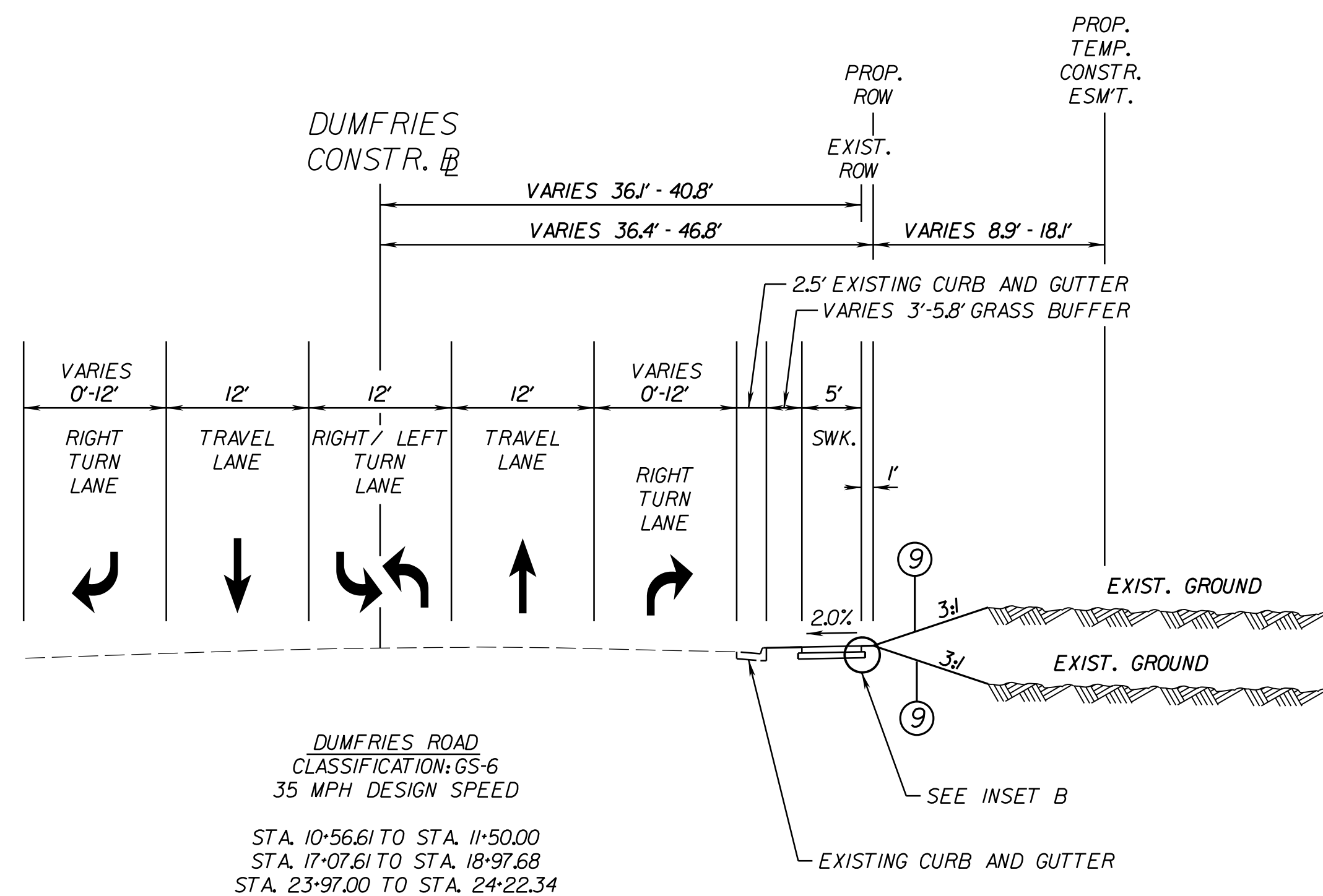
MANASSAS PROJECT NO:	T-093
DATE OF PLAN ISSUANCE:	TBD
CONSULTANT PROJECT ID:	RK&K
DESIGNED BY: <u>DMK</u>	DATE: 11/10/23
DRAWN BY: <u>DMK</u>	DATE: 11/10/23
CHECKED BY: <u>MJK</u>	DATE: 11/10/23
APPROVED BY: _____	DATE: _____

SHEET  
2A  
SCALE: N/A

THESE PLANS ARE UNFINISHED  
AND UNAPPROVED AND ARE NOT  
TO BE USED FOR ANY TYPE  
OF CONSTRUCTION OR THE  
ACQUISITION OF RIGHT OF WAY.



# TYPICAL SECTIONS



**CURB RAMP LIMITS**

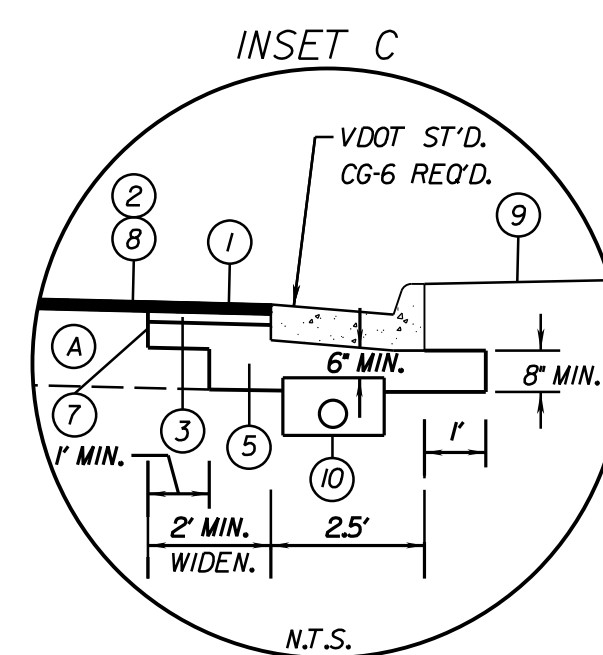
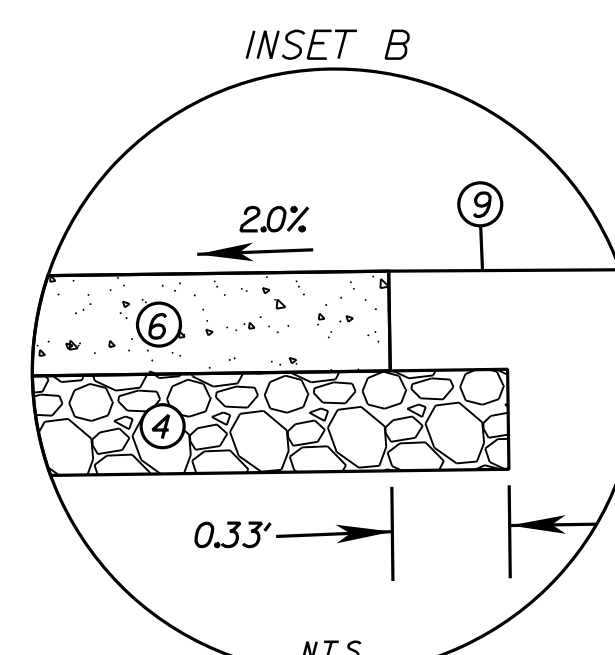
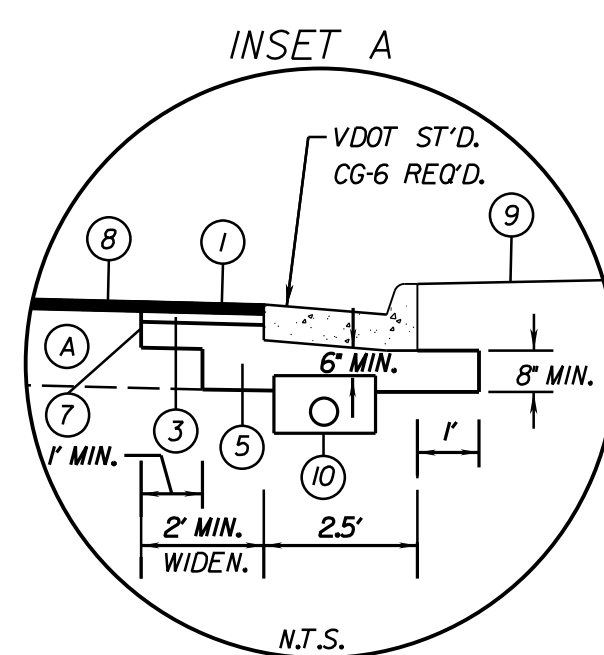
STA. 13+69.24 TO STA. 13+93.98  
STA. 14+29.58 TO STA. 14+51.56  
STA. 16+30.66 TO STA. 16+53.47  
STA. 16+88.75 TO STA. 17+07.61  
STA. 21+82.95 TO STA. 22+06.63  
STA. 22+43.71 TO STA. 22+65.09

**ENTRANCE LIMITS**

STA. 13+93.98 TO STA. 14+29.58  
STA. 16+53.47 TO STA. 16+88.75  
STA. 22+06.63 TO STA. 22+43.71

- LEGEND**
- (A) EXISTING PAVEMENT (TO REMAIN)
- (1) 2" ASPHALT CONCRETE TYPE SM-9.5D
- (2) VARIABLE DEPTH ASPHALT CONCRETE TYPE SM-9.5D (WEDGE AND LEVEL) 2" MIN. DEPTH
- (3) 8" ASPHALT CONCRETE BASE COURSE TYPE BM-25.0A
- (4) 4" AGGREGATE BASE MATERIAL, TYPE I, SIZE NO. 21A OR 21B
- (5) 12" AGGREGATE BASE MATERIAL, TYPE I, SIZE NO. 21A OR 21B
- (6) 4" HYDRAULIC CONCRETE SIDEWALK
- (7) SAWCUT ASPHALT CONCRETE PAVEMENT (FULL DEPTH)
- (8) 2" MILL & OVERLAY
- (9) 2" TOPSOIL CLASS A AND SEEDING REQ'D.
- (10) VDOT ST'D. UNDERDRAIN UD-4

NOTE: ALL PAVEMENT WIDENING SHALL BE DONE IN ACCORDANCE WITH VDOT ST'D. WP-2.



THESE PLANS ARE UNFINISHED AND UNAPPROVED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION OR THE ACQUISITION OF RIGHT OF WAY.



CITY OF MANASSAS, VIRGINIA  
DEPARTMENT OF ENGINEERING  
8500 PUBLIC WORKS DR.  
MANASSAS, VIRGINIA 20110

DATE	BY	DESCRIPTION

MANASSAS PROJECT NO:	T-093
DATE OF PLAN ISSUANCE:	TBD
CONSULTANT PROJECT ID:	RK&K
DESIGNED BY:	DVK
DRAWN BY:	DVK
CHECKED BY:	MJK
APPROVED BY:	
DATE:	11/10/23
DATE:	11/10/23
DATE:	11/10/23

TYPICAL SECTIONS

SHEET  
2B  
SCALE: NTS

DUMFRIES ROAD SIDEWALK (T-093)

60% DESIGN SUBMITTAL



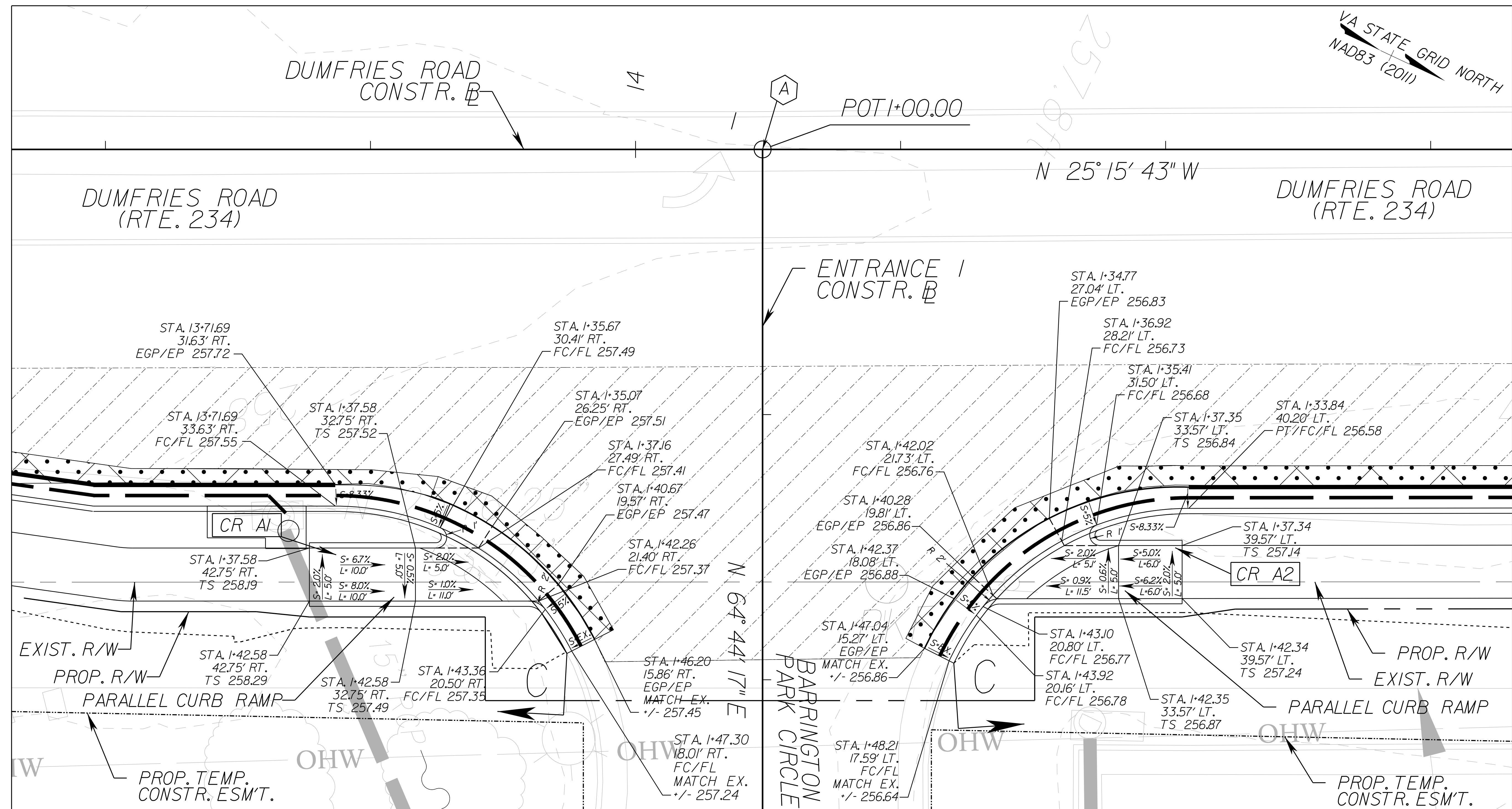
# CURB RAMP DETAILS

## ABBREVIATIONS

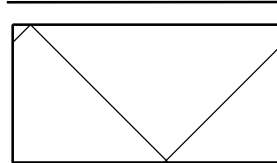
EGP - EDGE OF GUTTER PAN  
EP - EDGE OF PAVEMENT  
FC - FACE OF CURB  
FL - FLOW LINE

L - LENGTH  
PC - POINT OF CURVATURE  
PT - POINT OF TANGENCY  
S - SLOPE

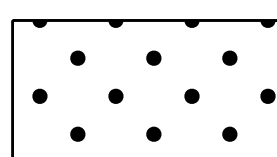
TC - TOP OF CURB  
TS - TOP OF SIDEWALK (SURFACE)



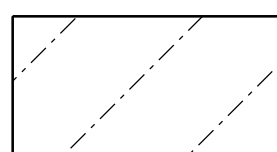
## LEGEND



DENOTES DEMOLITION OF PAVEMENT



DENOTES FULL DEPTH PAVEMENT

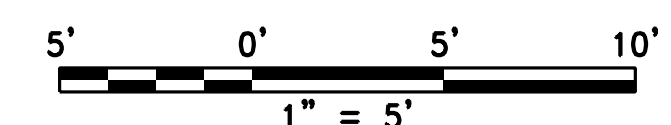


DENOTES MILL AND OVERLAY



DUMFRIES ROAD CONSTR.  $\text{\textcircled{B}}$   
STA. 14+11.99 =  
ENTRANCE 1 CONSTR.  $\text{\textcircled{B}}$   
STA. 1+00.00  
DELTA = 90° 00' 00.00"

## GRAPHIC SCALE



THESE PLANS ARE UNFINISHED  
AND UNAPPROVED AND ARE NOT  
TO BE USED FOR ANY TYPE  
OF CONSTRUCTION OR THE  
ACQUISITION OF RIGHT OF WAY.

60% DESIGN SUBMITTAL



CITY OF MANASSAS, VIRGINIA  
DEPARTMENT OF ENGINEERING  
8500 PUBLIC WORKS DR.  
MANASSAS, VIRGINIA 20110

REVISIONS  
DATE BY DESCRIPTION

MANASSAS PROJECT NO: T-093  
DATE OF PLAN ISSUANCE: TBD  
CONSULTANT PROJECT ID: R&K  
DESIGNED BY: DWK DATE: 11/10/23  
DRAWN BY: DWK DATE: 11/10/23  
CHECKED BY: MJK DATE: 11/10/23  
APPROVED BY: DATE:

CURB RAMP DETAILS

SHEET  
2C(1)

SCALE: 1" = 5'

DUMFRIES ROAD SIDEWALK (T-093)



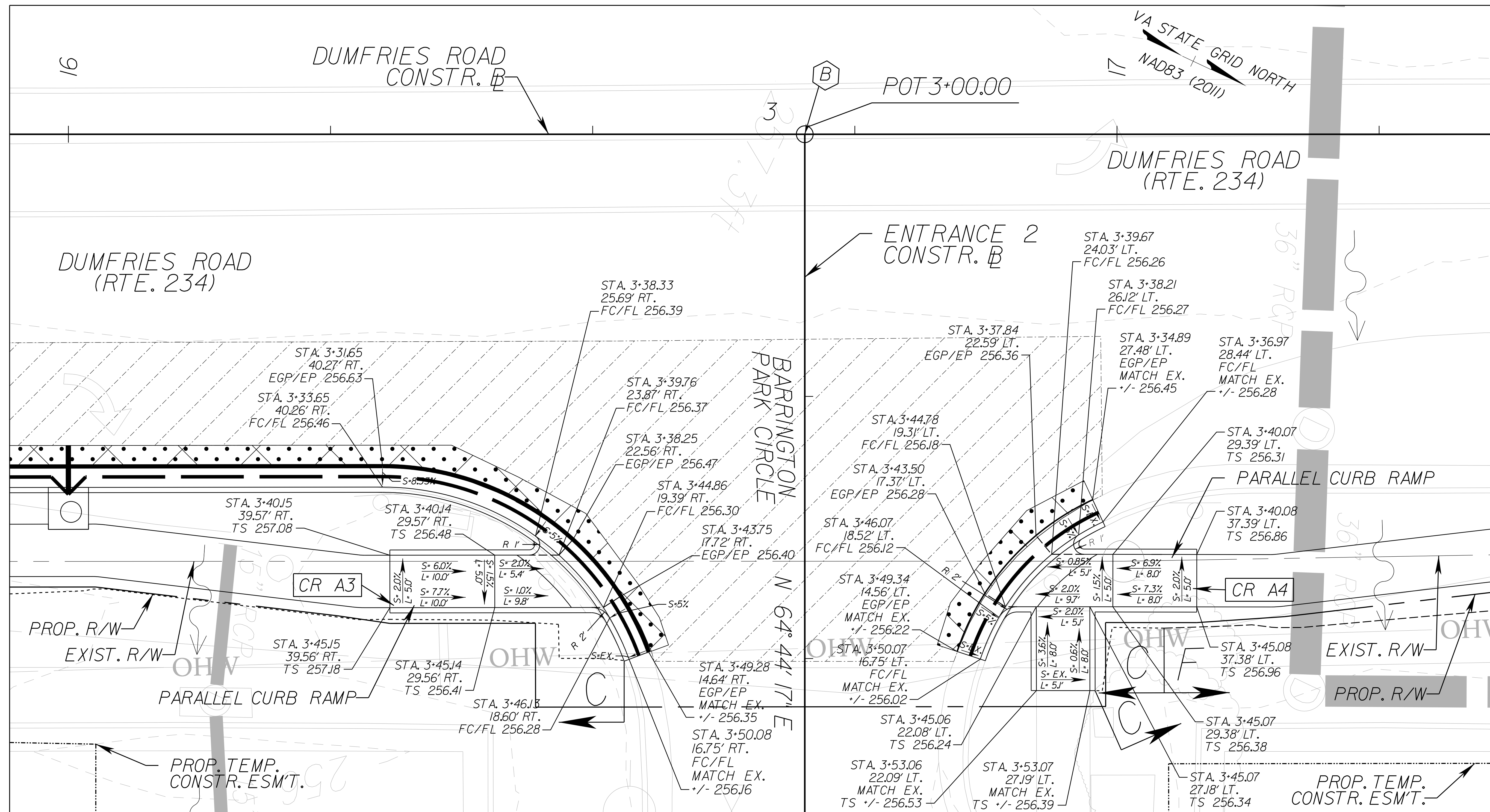
# CURB RAMP DETAILS

## ABBREVIATIONS

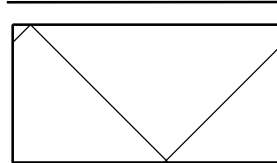
EGP - EDGE OF GUTTER PAN  
EP - EDGE OF PAVEMENT  
FC - FACE OF CURB  
FL - FLOW LINE

L - LENGTH  
PC - POINT OF CURVATURE  
PT - POINT OF TANGENCY  
S - SLOPE

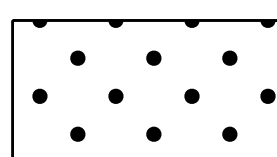
TC - TOP OF CURB  
TS - TOP OF SIDEWALK (SURFACE)



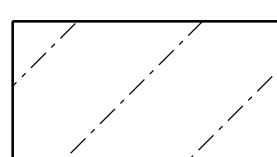
## LEGEND



DENOTES DEMOLITION OF PAVEMENT



DENOTES FULL DEPTH PAVEMENT

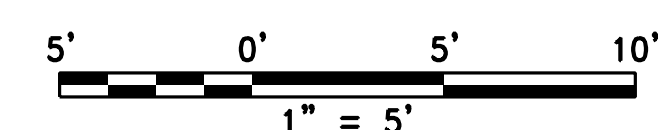


DENOTES MILL AND OVERLAY



DUMFRIES ROAD CONSTR. B  
STA. 16+70.23 =  
ENTRANCE 2 CONSTR. B  
STA. 3+00.00  
DELTA= 90° 00' 00.00"

## GRAPHIC SCALE



THESE PLANS ARE UNFINISHED AND UNAPPROVED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION OR THE ACQUISITION OF RIGHT OF WAY.

60% DESIGN SUBMITTAL



CITY OF MANASSAS, VIRGINIA  
DEPARTMENT OF ENGINEERING  
8500 PUBLIC WORKS DR.  
MANASSAS, VIRGINIA 20110

REVISIONS  
DATE BY DESCRIPTION

DATE	BY	DESCRIPTION
T-093	TBD	DATE OF PLAN ISSUANCE:
TBD	DATE	CONSULTANT PROJECT ID:
11/10/23	DATE	DESIGNED BY: DWK
11/10/23	DATE	DRAWN BY: DWK
11/10/23	DATE	CHECKED BY: MJK
11/10/23	DATE	APPROVED BY: MJK

CURB RAMP DETAILS

SHEET  
2C(2)

SCALE: 1"=5'

DUMFRIES ROAD SIDEWALK (T-093)



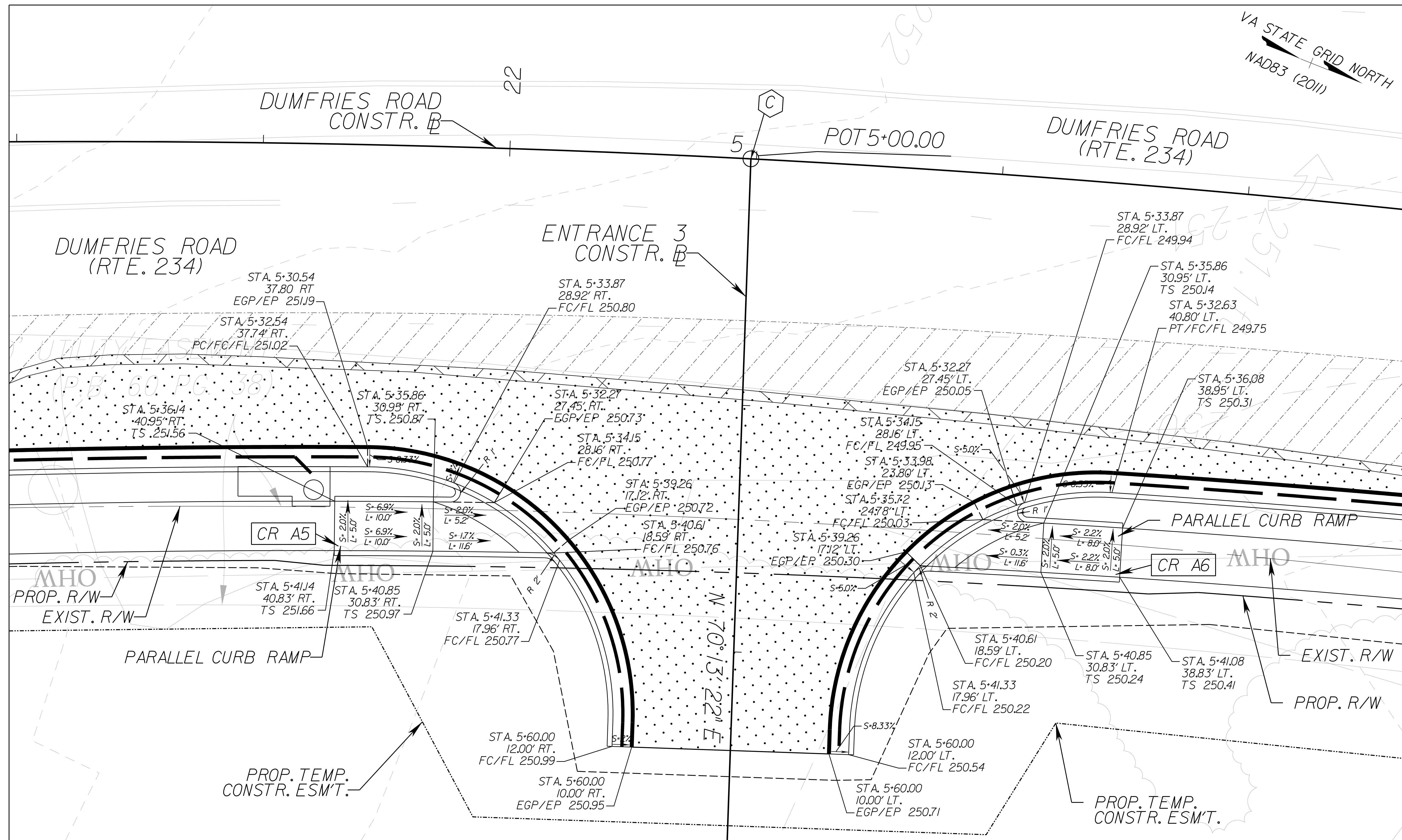
# CURB RAMP DETAILS

## ABBREVIATIONS

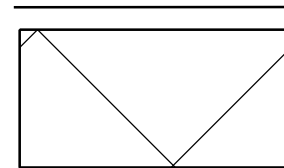
EGP - EDGE OF GUTTER PAN  
EP - EDGE OF PAVEMENT  
FC - FACE OF CURB  
FL - FLOW LINE

L - LENGTH  
PC - POINT OF CURVATURE  
PT - POINT OF TANGENCY  
S - SLOPE

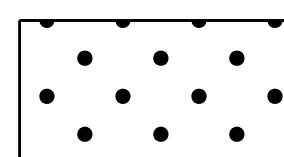
TC - TOP OF CURB  
TS - TOP OF SIDEWALK (SURFACE)



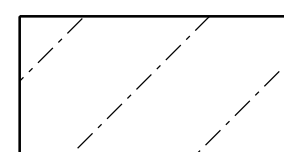
## LEGEND



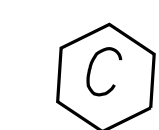
DENOTES DEMOLITION OF PAVEMENT



DENOTES FULL DEPTH PAVEMENT

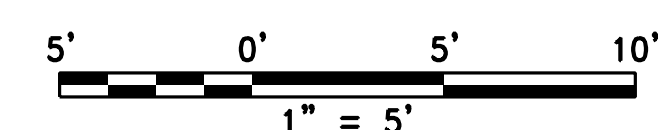


DENOTES MILL AND OVERLAY



DUMFRIES ROAD CONSTR. @  
STA. 22+24.44 =  
ENTRANCE CONSTR. @  
STA. 5+00.00  
DELTA= 90° 42' 47.00"

## GRAPHIC SCALE



THESE PLANS ARE UNFINISHED  
AND UNAPPROVED AND ARE NOT  
TO BE USED FOR ANY TYPE  
OF CONSTRUCTION OR THE  
ACQUISITION OF RIGHT OF WAY.

60% DESIGN SUBMITTAL



CITY OF MANASSAS, VIRGINIA  
DEPARTMENT OF ENGINEERING  
8500 PUBLIC WORKS DR.  
MANASSAS, VIRGINIA 20110

REVISIONS  
DATE BY DESCRIPTION

MANASSAS PROJECT NO: T-093  
DATE OF PLAN ISSUANCE: TBD  
CONSULTANT PROJECT ID: RK&K  
DESIGNED BY: DWK DATE: 11/10/23  
DRAWN BY: DWK DATE: 11/10/23  
CHECKED BY: MJK DATE: 11/10/23  
APPROVED BY: DATE:

CURB RAMP DETAILS

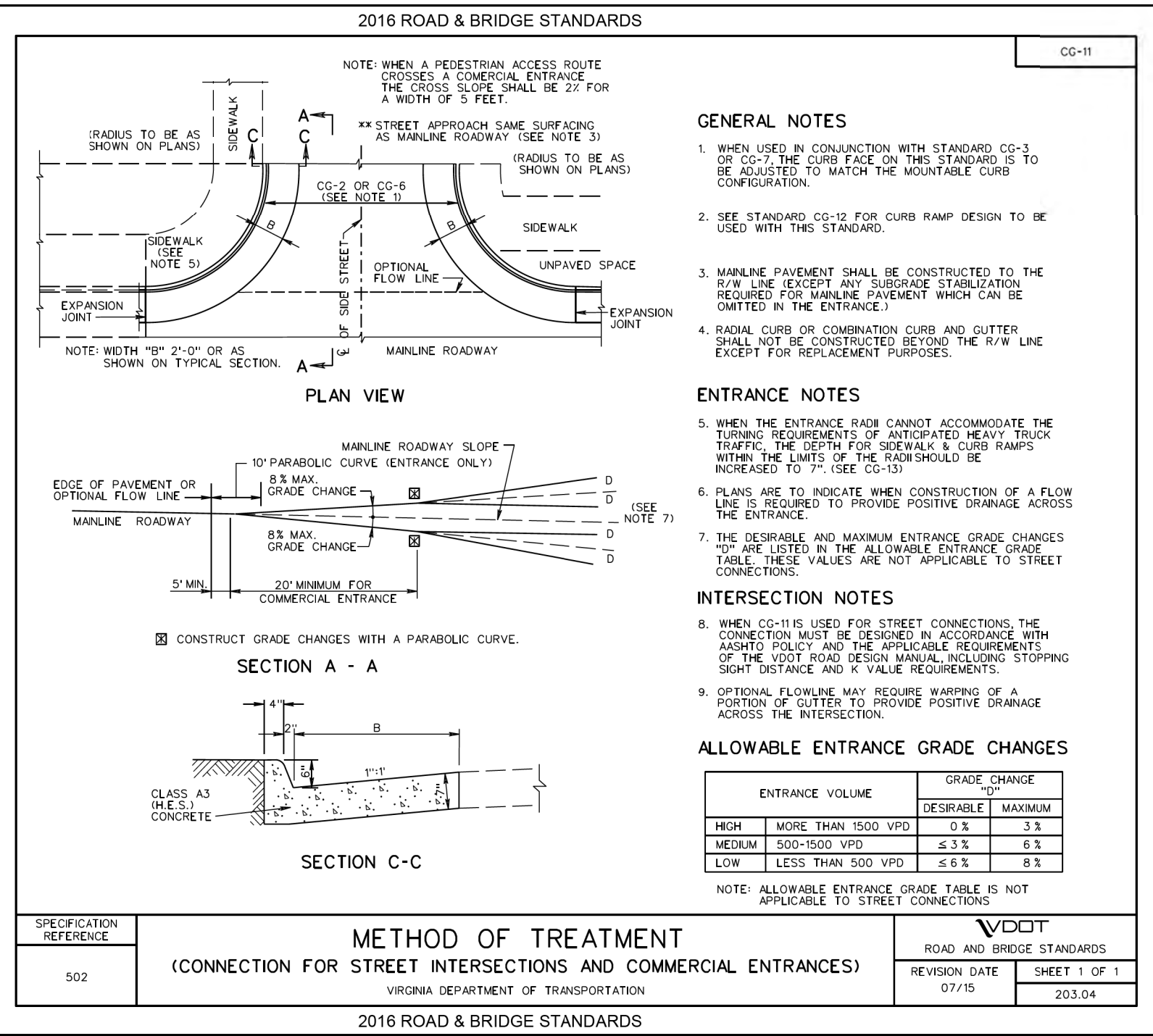
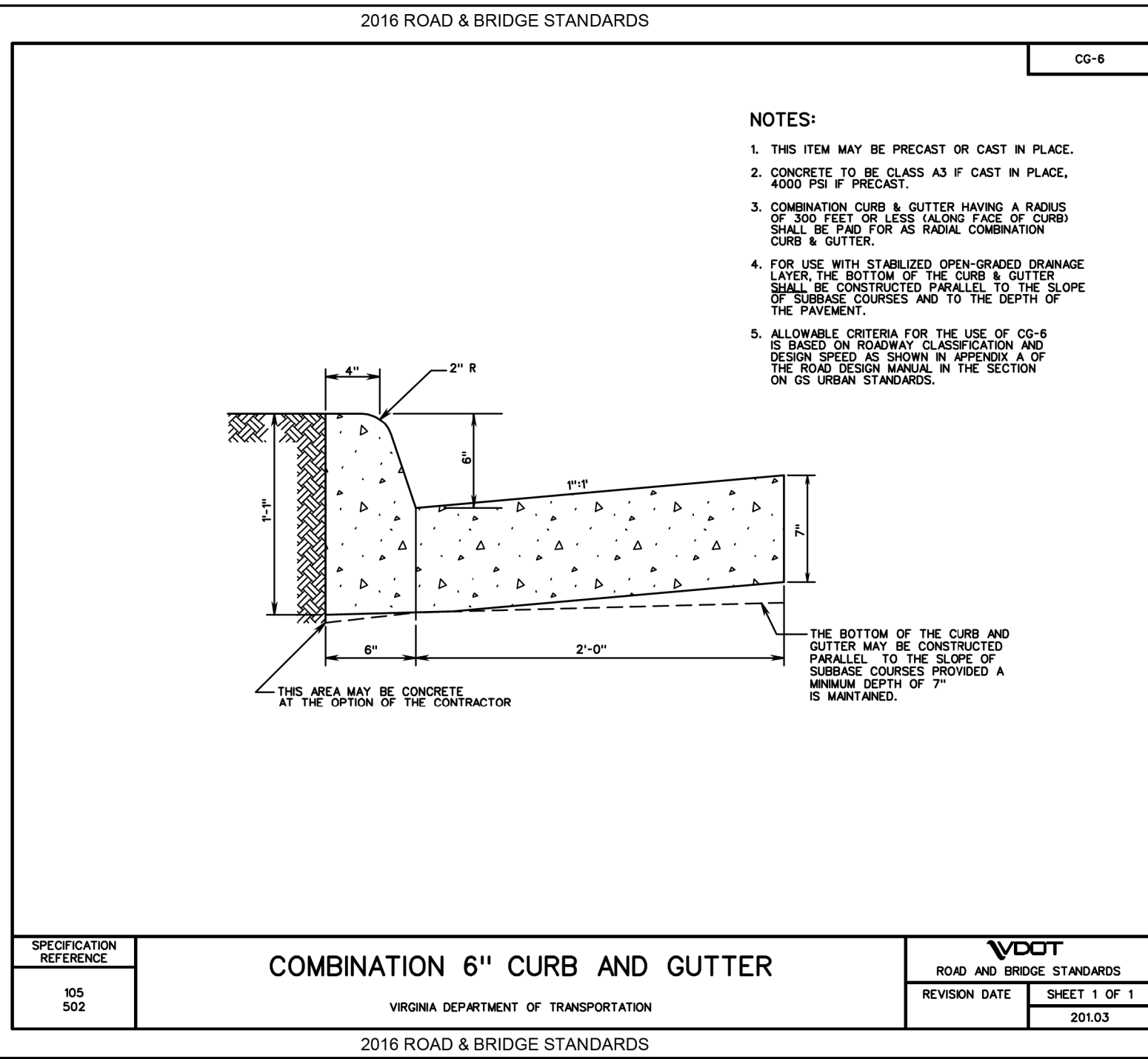
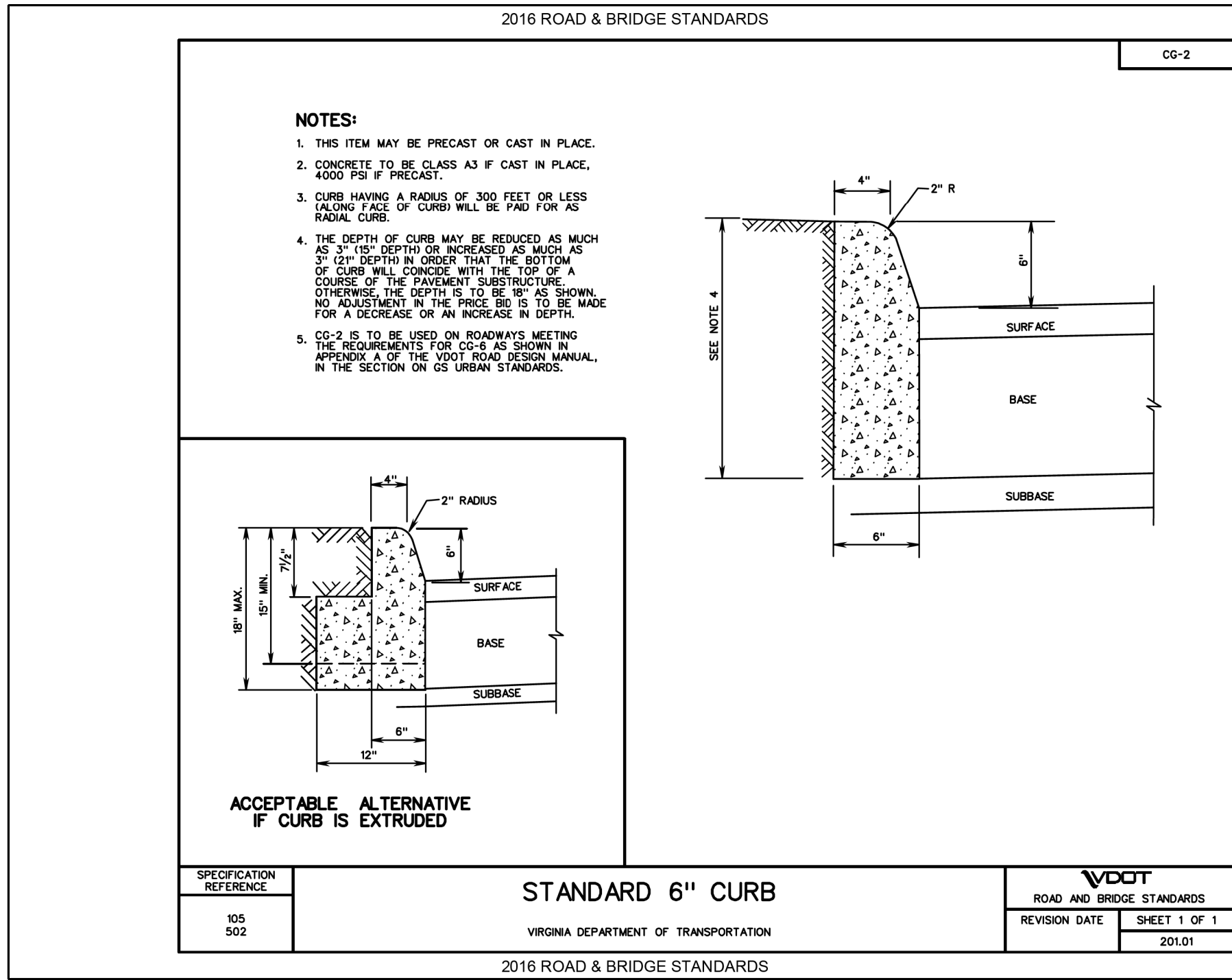
SHEET  
2C(3)

SCALE: 1"=5'

DUMFRIES ROAD SIDEWALK (T-093)



DETAILS



THESE PLANS ARE UNFINISHED AND UNAPPROVED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION OR THE ACQUISITION OF RIGHT OF WAY.

MANASSAS VIRGINIA  
1873

CITY OF MANASSAS, VIRGINIA  
DEPARTMENT OF ENGINEERING  
8500 PUBLIC WORKS DR  
MANASSAS, VIRGINIA 20110

60% DESIGN SUBMITTAL

REVISIONS

DATE BY DESCRIPTION

T-093 TBD RK&K 11/10/23 11/10/23 11/10/23

MANASSAS PROJECT NO: T-093

DATE OF PLAN ISSUANCE: TBD

CONSULTANT PROJECT ID: RK&K

DESIGNED BY: DVK DATE: 11/10/23

DRAWN BY: DVK DATE: 11/10/23

CHECKED BY: MJK DATE: 11/10/23

APPROVED BY: DATE:

DUMFRIES ROAD SIDEWALK (T-093)

DETAILS

SHEET 2D

SCALE: N/A



STORMWATER POLLUTION PREVENTION PLAN (SWPPP) GENERAL INFORMATION SHEET

The information contained in the SWPPP GeneralInformation sheets is intended to comply with the requirements of the VPDES General Permit For Discharges Of Stormwater From Construction Activities (the VPDES Construction Permit) issued July 1, 2019 and VDOT's approved AnnualESC and SWM Standards and Specifications.

The SWPPP GeneralInformation sheets are to be completed and included in the construction plan set (or other such documents) for land disturbance activities that disturb an area equalto or greater than 10,000 square feet outside the Chesapeake Bay Preservation Area, or equalto or greater than 2,500 square feet in the area defined as Tidewater, Virginia in the Virginia Chesapeake Bay Preservation Act.

The VDOT RLD (as defined in the latest IIM 242) willensure that the information shown on the SWPPP GeneralInformation sheets is updated/revised as necessary in order to reflect changes that may occur during the construction phase of the land disturbing (construction) activity. The updated/revised sheets shallbe maintained with the designated record set of plans (or other such documents)for the land disturbance (construction) activity.

I certify under penalty of law that I have read and understand this document and that this document and all attachments were prepared in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

I further certify that this document and all other documents related to the SWPPP, as identified on the SWPPP General Information Sheets, are maintained at the activity site, or at a location convenient to the activity site where no on-site facilities are available, and such documents will be made available for review upon request in accordance with the provisions of the GeneralVPDES Permit for Discharges of Stormwater from Construction Activities (VAR10) when applicable. Where the SWPPP documents are not stored on-site, a copy of such documents shall be in the possession of those with day to day operational control over the implementation of the SWPPP whenever they are on site.

\* or \*\* Delegated Authority Signature"

Signature: \_\_\_\_\_  
Printed Name: \_\_\_\_\_  
Date: \_\_\_\_\_

(1) See Section 1, Item 11 relating to delegation of authority, and form LD-445H (Delegation of Authority).

ACRONYMS

CBPA - Chesapeake Bay Preservation Act  
BMP - Best Management Practice  
DEQ - Department of Environmental Quality  
EPA - U.S. Environmental Protection Agency  
ESC - Erosion and Sediment Control  
IIM - Instructional and Informational Memorandum  
R&B - Road and Bridge  
RLD - Responsible Land Disturber

SWPPP - Stormwater Pollution Prevention Plan  
TMDL - Total Maximum Daily Load  
VDOT - Virginia Department of Transportation  
VPDES - Virginia Pollutant Discharge Elimination System  
VSMP - Virginia Stormwater Management Program  
VESCP - Virginia Erosion and Sediment Control Program  
WLA - Waste Load Allocation  
SWM - Stormwater Management

SECTION I GENERAL INFORMATION

1. This project consists of sidewalk improvements along the east side of Dumfries Road from Milic Street to Hastings Drive.

2. This land disturbance (construction) activity site is located in City of Manassas and approximately 1.19 acres will be disturbed by excavation, grading or other construction activities.

3. This proposed activity disturbs one acre or greater and requires coverage under the VPDES General Permit for Discharges Of Stormwater from Construction Activities (the VPDES Construction Permit) as issued by the DEQ. A copy of the VPDES Construction Permit (VAR10), the registration information (LD-445 & LD-445C forms) and the permit coverage letter received from DEQ shall be maintained with other SWPPP documents for this land disturbing activity.

XX 4. The location of on-site support facilities that will be covered under the VPDES Construction Permit coverage for this land disturbance (construction) activity shall be provided by the contractor and identified on the record set of plans or in other appropriate contract documents. Support facilities shall include, but not be limited to, borrow and disposal areas, construction and waste material storage areas, equipment and vehicle washing, maintenance, storage and fueling areas, storage areas for fertilizers, fuels or chemicals, concrete wash out areas, sanitary waste facilities and any other areas that may generate a stormwater or non-stormwater discharge directly related to the construction site.

XX 5. Written Evidence of permit coverage shall be provided by the contractor for all support activities located outside of VDOT right of way or easement in the form of the Construction General Permit coverage letter: (List VPDES Permit # or Letter from VSMP Authority stating coverage not needed)

6. List the surface waters that have been identified as impaired in the DEQ 2012 305(b)/303(d) Water Quality Assessment Integrated Report for sediment, total suspended solids, turbidity, Nitrogen or Phosphorus. These pollutants are considered benthic impairments: (List the impaired surface waters, when applicable)

7. Identify the TMDL's where stormwater from construction activities discharges into a watershed with a TMDL waste load allocation established and approved by the State Water Control Board prior to July 1, 2016 for sediment, total suspended solids, turbidity, nitrogen or phosphorus: (List the TMDL and pollutant(s) of concern, when applicable)

8. This land disturbance activity discharges stormwater to the following surface waters that have been identified as exceptional in Section 9VAC25-260-30 A 3 c of the Virginia Administrative Code: (List name of surface waters) or not applicable (N/A).

9. Locations of surface waters and locations where concentrated stormwater is discharged from this land disturbance (construction) activity are identified in the construction plan set (or other such documents) for this land disturbance (construction) activity. (List name of surface waters and locations here if not shown in construction plan or other such documents).

10. The ESC and SWM plans (where applicable) for this land disturbance (construction) activity have been developed in accordance with VDOT's Approved Annual Erosion and Sediment Control and Stormwater Management Standards and Specifications as approved by the DEQ.

11. List the RLD and other responsible parties for the land disturbance activity: (required for erosion and sediment control). The following individual(s) have "delegated authority" to sign all reports required by the construction permit including the SWPPP General Information Sheets and Inspection Reports (C-107). Reference form LD-445H for delegation of authority (form 445H for the project is hereby incorporated by reference into this SWPPP). These individual(s) has/have overall responsibility or the environmental matters for the project: (required only for permitted projects):

Name	Position	Responsibility
	RLD	Certify the SWPPP (with date & sig.)
	Certified Inspector	Sign (C-107) Inspection Form Part 1
	Certified Inspector	Sign (C-107) Inspection Form Part 2

X 12. The name of the VDOT individual(s) responsible for the oversight inspection in accordance with IIM-LD-256 on these land disturbance construction activities as identified on these SWPPP General Information Sheets. The names will be updated and maintained with the other SWPPP documents for this land disturbance activity.

VDOT Individuals	Position	Responsibility
	NPDES	NPDES coordinator responsible for the oversight inspection in accordance with IIM-LD-256
	Dist. Hyd. Engineer	District Hydraulic Engineer or designee(s) responsible for the review & the coordination approval of ESC SWM plan modification(s).

X 13. The ESC and P2 inspections for this land disturbing (construction) activity shall follow (Select Schedule 1 or 2, if schedule \*2 is used, void note \*14) as defined in 2016 R&B Specifications except for Section 107.16(e) 4. an Inspection Requirements Rain gauge notes apply only to Inspection Schedule 1.

XX 14. The location of the on-site rain gage that will be used to determine the occurrence of a measurable storm event for the purposes of ESC and Pollution Prevention inspections will be provided by the contractor and identified on the record set of plans or in other appropriate SWPPP documents for this land disturbance activity: (List location of rain gage).

The rain gage shall be observed daily at "\_\_\_\_\_" to determine the occurrence of a measurable storm event (i.e., 0.25 inches of rainfall or greater in a 24 hour period). A log book shall be maintained to record observation information which shall include (1) the date, (2) the time, (3) whether or not rainfall is occurring at the time of the observation, (4) the amount of accumulated rainfall in the gage, if any, and (5) whether or not an inspection is required based on the amount of accumulated rainfall in the gage. If there is no rainfall occurring at the time of the observation, the observation information shall be noted in the log book and the rain gage emptied and replaced. An inspection is required if there is 0.25 inches or more accumulation noted in the rain gage. If there is rainfall occurring at the time of the observation, the observation information is to be noted in the log book. The rain gage is not to be emptied but left to accumulate additional rainfall until the conclusion of the rainfall event. At the conclusion of the rainfall event, an observation of the rain gage shall be made and the observation information shall be noted in the log book and the rain gage emptied and replaced. An inspection is required if there is 0.25 inches or more accumulation noted in the rain gage.

15. The following VDOT documents are applicable to a) permitted projects b) non-permitted projects in Chesapeake Bay Preservation Areas (CBPA) with 2,500 S.F. to 1.0 acre of land disturbance c) non-permitted projects requiring a SWPPP and d) Non-permitted, Non-CBPA with BMP projects that have a water quantity BMP:

VDOT LD-445: Permitted projects, CBPA projects and Non-permitted, Non-CBPA with BMP projects that have a water quantity BMP and ESC projects > 10,000 s.f. but <1 acre.  
VDOT LD-445A: Permitted projects only.  
VDOT LD-445C: Projects that require a permit, ESC Plan, or SWPPP.  
VDOT LD-445D: Permitted projects, CBPA projects and Non-permitted, Non-CBPA with BMP projects that have a water quantity BMP.  
VDOT LD-445F: Emergency work projects (when applicable).  
Water Quality Requirement (when applicable)  
VDOT LD-445H: Permitted projects only.  
VDOT C-107 Part I and Part II. All projects that require a permit or SWPPP.  
VDOT LD-445I: AS&S Approval Form (when applicable)

16. If there is an excessive loading of sediment from the project (i.e. more than to be expected from the project with an implemented ESC plan) that is discovered within a local watershed with a sediment TMDL that allocates a WLA to VDOT's MS4, (see note \*7) the contractor shall investigate the area of concern at the site within 24 hours of discovery and ensure all erosion and sediment control best management practices are being implemented in accordance with the permits approved standards and specifications required by Part I.B of the current Construction General Permit. If corrective action is necessary, the contractor shall initiate corrective actions no later than 5 business days after the initial investigation.

17. If excessive loading of sediment from a land disturbing activity that is not the responsibility of the contractor is discovered discharging into a MS-4, the contractor shall notify the municipality with jurisdiction over erosion and sediment control activities.

X Denotes information that is to be provided/completed by the RLD.  
XX Denotes information that is to be provided/completed by the contractor.

Revised 5/1/19

THESE PLANS ARE UNFINISHED AND UNAPPROVED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION OR THE ACQUISITION OF RIGHT OF WAY.

60% DESIGN SUBMITTAL



CITY OF MANASSAS, VIRGINIA  
DEPARTMENT OF ENGINEERING  
8500 PUBLIC WORKS DR.  
MANASSAS, VIRGINIA 20110

REVISIONS

DATE BY DESCRIPTION

T-093	TBD	RK&K	11/10/23	11/10/23
MANASSAS PROJECT NO:	DATE OF PLAN ISSUANCE:	CONSULTANT PROJECT ID:	DESIGNED BY: DWK	DRAWN BY: DWK
			CHECKED BY: MJK	APPROVED BY: _____

SWPPP GENERAL INFORMATION SHEET

SHEET  
2E(1)

DUMFRIES ROAD SIDEWALK (T-093)



STORMWATER POLLUTION PREVENTION PLAN (SWPPP) GENERAL INFORMATION SHEET

SECTION II EROSION AND SEDIMENT CONTROL

- XX 1. The intended sequence and timing of activities that disturb soils at the site (e.g., grubbing, excavation, grading, utilities and infrastructure installation, etc.) shall be provided by the contractor in accordance with the current edition of Section 108.03 of the VDOT R&B Specifications and shall be included with the other SWPPP documents for this land disturbance (construction) activity.
2. Directions of stormwater flow and approximate slopes anticipated after major grading activities are identified in the construction plan set (or other such documents) for this land disturbance (construction) activity.
3. Areas of soil disturbance and areas of the site which will not be disturbed are identified in the construction plan set (or other such documents) for this land disturbance (construction) activity.
4. Locations of major structural and nonstructural ESC measures intended to filter, settle or similarly remove sediment are identified in the construction plan set (or other such documents) for this land disturbance (construction) activity.
5. Locations where stabilization practices are expected to occur are identified in the construction plan set (or other such documents) for this land disturbance (construction) activity.
6. A description of interim and permanent stabilization practices for the site are identified in the applicable sections of the documents identified in the Note 1 of Section IV.
- XX 7. A record of the dates when major grading activities occur, when construction activities temporarily or permanently cease on a portion of the site, and when stabilization measures are initiated will be provided by the contractor and maintained with the record set of plans or other SWPPP documents for this land disturbance (construction) activity: (List how this will be tracked and the location)
8. A description and schedule of procedures to maintain vegetation, erosion and sediment control measures and other protective measures in good and effective operating conditions are identified in the current edition of Sections 107.16 and 303.03 of the VDOT R&B Specifications.
9. Nutrients shall be applied in accordance with the current edition of Sections 603 and 604 of the VDOT Road and Bridge Specifications. Nutrients shall not be applied during rainfall events. Top soil shall be applied in accordance with the current edition of section 602 of the latest Road and Bridge Specifications.
10. All engineering calculations supporting the design of erosion and sediment control measures proposed for this land disturbance (construction) activity are contained in the project drainage file located in the (insert appropriate location, i.e., VDOT Central Office Hydraulics Section or the VDOT (specify) District Hydraulics Section or the VDOT (specify) Residency Office) and will be made available for review upon request during normal business hours.
11. The temporary erosion and siltation control items shown on the ESC Plan for this land disturbing (construction) activity are intended to provide a general plan for controlling erosion and sediment within the project limits. The ESC Plan is based on field conditions at the time of plan development and an assumed sequence of construction for the project. The contractor, in conjunction with the VDOT Project Engineer and/or ESC Inspector, shall adjust the location, quantity and type of erosion and sediment control items required based on the actual field conditions encountered at the time of construction and the actual scheduling and sequencing of the construction activities. Significant changes to the proposed ESC Plan (e.g., those that require an engineering analysis, elimination of a perimeter control, change to ESC concept that would affect the quantity or direction of flow of water) shall be submitted to the applicable District Hydraulics Engineer for review and approval. Any changes to the proposed ESC Plan must be noted on the designated record set of plans which shall be retained on the project site and made available upon request during normal business hours.
12. The areas beyond the project's construction limits are to be protected from siltation. Perimeter controls such as silt fence, diversion dikes, turbidity curtains, etc. shall be installed prior to any grubbing operations or other earth moving activities.
13. Temporary earthen structures such as dikes and berms are to be stabilized immediately upon installation. Stabilization may include temporary or permanent seeding, riprap, aggregate, sod, mulching, and/or soil stabilization blankets and matting in conjunction with seeding.
14. All channel relocations are to be constructed during the earliest stage of construction and shall be constructed in accordance with all applicable permit requirements and shall be constructed in the dry wherever possible. Stabilization or vegetation shall be established before flow is redirected through the constructed area as directed by the Engineer.
15. The contractor shall plan and implement his land disturbance operations in order to:
- Control the volume and velocity of stormwater runoff within the site to minimize erosion.
  - Control the peak flow rates, volume and velocity of stormwater discharges to minimize erosion at outlets and in downstream channels.
  - Minimize the amount of soil exposed.
  - Minimize the disturbance of steep slopes.
  - Minimize sediment discharge from the site.
  - Provide and maintain natural buffers around surface waters, direct stormwater runoff to vegetated areas and maximize stormwater infiltration, unless infeasible.
  - Minimize soil compaction (except in those areas where compaction is required by the contract documents) and preserve topsoil where feasible.

- XX 16. The name of the individual(s) or contractor(s) responsible for the installation and maintenance of the erosion and sediment control measures shall be supplied by the contractor and maintained with the other SWPPP documents for this land disturbance (construction) activity.
17. Soil stockpiles temporarily placed within the project area or on VDOT right of way or easement shall be identified, stabilized, and protected with sediment trapping measures.
18. A construction entrance or other approved measure shall be installed at all locations where construction vehicular traffic access routes intersect a paved or a public road in order to minimize the transport of sediment by vehicular tracking onto the paved surface. Where sediment is transported onto a paved or a public road surface, the road shall be cleaned thoroughly at the end of each work day by shoveling or sweeping. Removed sediment shall be disposed of in accordance with Section 106.04 of the R&B Specifications.
19. Any variance, exception or deviation approved by DEQ must be listed below and supporting documentation (exception/variance/deviation request and DEQ approval) must be maintained with the SWPPP.

The following exceptions to the Water Quantity criteria of the VSMP Regulation have been approved by the DEQ for this land disturbance (construction) activity: (list all approved exceptions and include a brief description of the exception, the date approved and the approving DEQ Office)

Type(1)	Regulation Modified(2)	Approval Date(3)	Description of Variance

- (1) Type of modification (Variance from ESC regulations, or Deviation from published guidance)  
(2) Section of Regulation or Guidance Document Modified (e.g. ESC Min. Std. 15)  
(3) Date that variance/exception/deviation was approved by DEQ.

SECTION III POST CONSTRUCTION STORMWATER MANAGEMENT

Choose the appropriate note 1A or 1B that is applicable to the proposed post construction SWM Plan for this land disturbance (construction) activity. (Delete, strikethrough or mark as NA those notes not applicable.)

1. This land disturbance activity utilizes the Part IIB technical criteria (i.e., Runoff Reduction Method, Energy Balance Equation, etc.) in Section 9VAC25-870-62 et seq. of the VSMP Regulations.

2. Any variance, exception or deviation approved by DEQ must be listed below and supporting documentation (exception/variance/deviation request and DEQ approval) must be maintained with the SWPPP.

The following exceptions to the Water Quantity criteria of the VSMP Regulation have been approved by the DEQ for this land disturbance activity: (list all approved exceptions and include a brief description of the exception, the date approved and the approving DEQ Office)

Type(1)	Regulation Modified(2)	Approval Date(3)	Description of Waiver

- (1) Type of modification (Variance, or Exception from SWM Regulations or Deviation from published guidance)  
(2) Section of Regulation or Guidance Document Modified (e.g. ESC Min. Std. 15)  
(3) Date that variance/exception/deviation was approved by DEQ.

3. A description of all post-construction stormwater management measures that will be installed during the construction process to control pollutants in stormwater discharges after construction operations have been completed is included in the construction plan set (or other such documents) for this land disturbance (construction) activity.

4. All engineering calculations supporting the design of the post-construction stormwater management measures for this land disturbance (construction) activity, including an explanation of the technical basis used to select the practices, are contained in the project drainage file located in the (insert appropriate location, i.e., VDOT Central Office Hydraulics Section or the VDOT (specify) District Hydraulics Section or the VDOT (specify) Residency Office) and will be made available for review upon request during normal working business hours.

ACRONYMS

CBPA - Chesapeake Bay Preservation Act	SWPPP - Stormwater Pollution Prevention Plan
BMP - Best Management Practice	TMDL - Total Maximum Daily Load
DEQ - Department of Environmental Quality	VDOT - Virginia Department of Transportation
EPA - U.S. Environmental Protection Agency	VPDES - Virginia Pollutant Discharge Elimination System
ESC - Erosion and Sediment Control	VSMP - Virginia Stormwater Management Program
IIM - Instructional and Informational Memorandum	VESCP - Virginia Erosion and Sediment Control Program
R&B - Road and Bridge	WLA - Waste Load Allocation
RLD - Responsible Land Disturber	SWM - Stormwater Management

✖ Denotes information that is to be provided/ completed by the RLD.

XX Denotes information that is to be provided/completed by the contractor.

Revised 5/1/19

THESE PLANS ARE UNFINISHED AND UNAPPROVED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION OR THE ACQUISITION OF RIGHT OF WAY.

DUMFRIES ROAD SIDEWALK (T-093)

REVISIONS

DATE BY DESCRIPTION

MANASSAS PROJECT NO:	T-093
DATE OF PLAN ISSUANCE:	TBD
CONSULTANT PROJECT ID:	RK&K
DESIGNED BY:	DVK
DATE:	11/10/23
DRAWN BY:	DVK
DATE:	11/10/23
CHECKED BY:	MJK
DATE:	11/10/23
APPROVED BY:	
DATE:	

SWPPP GENERAL INFORMATION SHEET

SHEET  
2E(2)

60% DESIGN SUBMITTAL



CITY OF MANASSAS, VIRGINIA  
DEPARTMENT OF ENGINEERING  
8500 PUBLIC WORKS DR  
MANASSAS, VIRGINIA 20110



STORMWATER POLLUTION PREVENTION PLAN (SWPPP) GENERAL INFORMATION SHEET

The information contained in the SWPPP GeneralInformation sheets is intended to comply with the requirements of the VPDES GeneralPermit For Discharges Of Stormwater From Construction Activities (the VPDES Construction Permit) issued July 1, 2019 and VDOT's approved AnnualESC and SWM Standards and Specifications.

The SWPPP GeneralInformation sheets are to be completed and included in the construction plan set (or other such documents) for land disturbance (construction) activities that disturb an area equal to or greater than 10,000 square feet outside the Chesapeake Bay Preservation Area, or equal to or greater than 2,500 square feet in the area defined as Tidewater, Virginia in the Virginia Chesapeake Bay Preservation Act.

The VDOT RLD willensure that the information shown on the SWPPP GeneralInformation sheets is updated/revised as necessary in order to reflect changes that may occur during the construction phase of the land disturbing (construction) activity. The updated/revised sheets shallbe maintained with the designated record set of plans (or other such documents) for the land disturbance (construction) activity.

SECTION IV SWPPP

1. All documents related to the SWPPP for this land disturbance (construction) activity shallbe maintained at the activity site and shallbe readily available for review upon request during normalbusiness hours. Such documents include, but are not limited to, the construction plans (or other such documents), the ESC Plan, the Pollution Prevention Plan, the post construction SWM Plan (if applicable), the VDOT R&B Standards and Specifications, Supplemental Specifications, Special Provisions and SpecialProvision Copied Notes. Documents related to stormwater pollution prevention which are not a part of those documents referenced above, such as copies of the VPDES Construction Permit coverage letter (when applicable) and the VPDES GeneralPermit For Discharges Of Stormwater From Construction Activities (when applicable) and those required to be developed by the contractor for pollution prevention associated with any on-site support facilities being included in the VPDES Construction Permit coverage for this land disturbance (construction) activity are to be maintained at the activity site with the other SWPPP documents for this land disturbance (construction) activity. Where no facilities are available at the activity site to maintain the SWPPP documents, they are to be kept by or with the designated RLD at a location convenient to the activity site where they would be made available for review upon request during normalbusiness hours.

2. The SWPPP and any subsequent amendments, modifications and updates shallbe implemented from commencement of land disturbance until termination of VPDES Construction Permit coverage or completion of land disturbance (construction) activities where no VPDES Construction Permit coverage is required.

XX 3. For all on-site support facilities that willbe included in the VPDES Construction Permit coverage for this land disturbance (construction) activity, the contractor shall develop a SWPPP in accordance with, but not limited to, Section 106.08, 107.02 and 107.16 of the VDOT Road and Bridge Specifications. The SWPPP for the on-site support facilities shallbe maintained with and become a component of the SWPPP for this land disturbance (construction) activity. Support facilities shall include, but not be limited to, borrow and disposal areas, construction and waste material storage areas, equipment and vehicle washing, maintenance, storage and fueling areas, storage areas for fertilizers, fuels or chemicals, concrete wash out areas, sanitary waste facilities and any other areas that may generate a stormwater or non-stormwater discharge directly related to the construction site.

4. For those land disturbing (construction) activities requiring coverage under the VPDES Construction Permit, the SWPPP shallbe made available for review upon the request of the DEQ, the EPA, the VSMP Authority, the VESCP Authority, local government officials or the operator of a municipal separate storm sewer system (MS4) receiving discharge from the construction site.

X 5. For those land disturbing (construction) activities requiring coverage under the VPDES Construction Permit, the VDOT RLD shall post, or have posted, a copy of the General Permit coverage letter and a copy of a completed LD-445A form, noting the name and contact information for the VDOT person responsible for the land disturbing (construction) activity and its SWPPP, outside the project's construction office along with other Federal and State mandated information. Where there is no construction office (e.g., a maintenance activity), the permit coverage letter and the LD-445A form are to be maintained with the other SWPPP documents for the land disturbing (construction) activity.

6. The SWPPP shallbe made available for review by the public upon request. Such reviews shallbe at a time and publicly accessible location convenient to the VDOT and shallbe scheduled during normalbusiness hours and no less than once per month.

SECTION V - POLLUTION PREVENTION PLAN

1. The following non-stormwater discharges from this land disturbing (construction) activity and any on-site support facilities are prohibited:
- a. Wastewater from concrete washouts.
  - b. Wastewater from the washout and cleanout of stucco, paint, from release oils, curing compounds and other construction materials.
  - c. Fuels, oils or other pollutants used in vehicle and equipment operation and maintenance.
  - d. Oils, toxic substances or hazardous substances from spills or other releases.
  - e. Soaps, solvents or detergents used in equipment and vehicle washing.
  - f. There shall be no discharge of floating solids or visible foam in other than trace amounts
2. The following non-stormwater discharges from this land disturbing (construction) activity and any on-site support facilities are allowed when discharged in compliance with the VPDES Construction Permit:
- a. Discharges from firefighting activities.
  - b. Fire hydrant flushings.
  - c. Waters used to wash vehicles or equipment where soaps, solvents or detergents have not been used and the wash water has been filtered, settled or similarly treated prior to discharge.
  - d. Water used to control dust that has been filtered, settled or similarly treated prior to discharge.
  - e. Potable water sources including uncontaminated waterline flushings managed in a manner to avoid stream impacts.
  - f. Routine external building wash down where soaps, solvents or detergents have not been used and the wash water has been filtered, settled or similarly treated prior to discharge.
  - g. Pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred (or where all spilled or leaked material has been removed prior to washing), where soaps, solvents or detergents have not been used and where the wash water has been filtered, settled or similarly treated prior to discharge.
  - h. Uncontaminated air conditioning or compressor condensate.
  - i. Uncontaminated ground water or spring water.
  - j. Foundation or footing drains where flows are not contaminated with process materials such as solvents.
  - k. Uncontaminated excavation dewatering, including dewatering trenches and excavations that have been filtered, settled or similarly treated prior to discharge.
  - l. Landscape irrigation.

XX 3. The contractor shall develop a Pollution Prevention Plan to address any of his on-site operations that have a potential to generate a pollutant that may reasonably be expected to affect the quality of stormwater discharges from this land disturbance (construction) activity. The Pollution Prevention Plan shall be developed in accordance with, but not limited to, Sections 106.08, 107.02 and 107.16 of the VDOT Road and Bridge Specifications and shall include a narrative with appropriate plan detail and shall be provided on standard 8.5 x 11 inch paper or larger and shall:

- a. Identify the potential pollutant-generating activities and the pollutant that is expected to be exposed to stormwater.
- b. Describe the location where the potential pollutant-generating activities will occur, or if identified on the record set of plans, reference the record set of plans.
- c. Identify all non-stormwater discharges, as described in note two of this section, that are or will be commingled with stormwater discharges from the construction activity, including any on-site support activities.
- d. Identify the person(s) or contractor(s) responsible for implementing and maintaining the pollution prevention practice or practices for each pollutant-generating activity.
- e. Describe the pollution prevention practices and procedures that will be implemented to:
  - 1) Prevent and respond to leaks, spills, and other releases, including procedures for expeditiously stopping, containing, and cleaning up spills, leaks, and other releases, and procedures for reporting leaks, spills, and other releases in accordance with Section 107.16 of the VDOT Road and Bridge Specifications and the requirements within the VPDES Construction Permit.

- 2) Prevent the discharge of spilled and leaked fuels and chemicals from vehicle fueling and maintenance activities.

- 3) Prevent the discharge of soaps, solvents, detergents, and wash water from construction materials, including procedures for the clean-up of stucco, paint, form release oils, and curing compounds.

- 4) Minimize the discharge of pollutants from vehicle and equipment washing, wheel wash water, and other types of washing.

- 5) Direct concrete wash water into a leak-proof container or leak-proof settling basin. The container or basin shall be designed so that no overflows can occur due to inadequate sizing or precipitation. Hardened concrete wastes shall be removed and disposed of in a manner consistent with the handling of other construction wastes. Liquid concrete wastes shall be removed and disposed of in a manner consistent with the handling of other construction wash waters and shall not be discharged to surface waters.

- 6) Minimize the discharge of pollutants from storage, handling, and disposal of construction products, materials, and wastes including building products (such as asphalt sealants, copper flashing, roofing materials, adhesives, and concrete admixtures), pesticides, herbicides, insecticides, fertilizers, landscape materials, construction and domestic wastes (such as packaging materials), scrap construction materials, masonry products, timber, pipe and electrical cuttings, plastics, styrofoam, concrete, and other trash or building materials.

- 7) Prevent the discharge of fuels, oils, and other petroleum products, hazardous or toxic wastes, waste concrete and sanitary wastes.

- 8) Address any other discharge from any potential pollutant-generating activity not listed herein.

- 9) Minimize the exposure of waste materials to precipitation by closing or covering waste containers during precipitation events and at the end of the business day, or implementing other similarly effective practices. Minimization of exposure is not required in case where the exposure to precipitation will not result in a discharge of pollutants.

- 10) Describe and implement procedures for providing pollution prevention awareness (including but not limited to prevention practices, disposal practices and appropriate disposal locations) for all applicable wastes (including any wash water), to appropriate personnel.

X Denotes information that is to be provided/completed by the RLD.

XX Denotes information that is to be provided/completed by the contractor.

Revised 5/1/19

THESE PLANS ARE UNFINISHED AND UNAPPROVED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION OR THE ACQUISITION OF RIGHT OF WAY.

DUMFRIES ROAD SIDEWALK (T-093)

60% DESIGN SUBMITTAL



CITY OF MANASSAS, VIRGINIA  
DEPARTMENT OF ENGINEERING  
8500 PUBLIC WORKS DR.  
MANASSAS, VIRGINIA 20110

REVISIONS

DATE BY DESCRIPTION

T-093	TBD	
MANASSAS PROJECT NO:	DATE OF PLAN ISSUANCE:	CONSULTANT PROJECT ID:
		RK&K
	DESIGNED BY: DWK	DATE: 11/10/23
	DRAWN BY: DWK	DATE: 11/10/23
	CHECKED BY: MJK	DATE: 11/10/23
	APPROVED BY:	DATE:

SWPPP GENERAL INFORMATION SHEET

SHEET  
2E(3)



The VDOT RLD will ensure that the information shown on the SWPPP General Information sheets is updated/revised as necessary in order to reflect changes that may occur during the construction phase of the land disturbing (construction) activity. The updated/revised sheets shall be maintained with the designated record set of plans (or other such documents) for the land disturbance (construction) activity.

SECTION VI - PERMANENT BMP INFORMATION  $\Delta$ 

INSTALLED BMP INFORMATION  
(VDOT Owned/Operated)

### ALTERNATIVE BMP INFORMATION

Perpetual Nutrient Credits Acquired for Project

[illegible]

Table A: Permanent BMP Types (1999 Va. SWM Handbook)

Table C: Permanent BMP Types (BMP Clearing House)

NOTES:

(1) In decimal degrees to the nearest one ten-thousandth of a degree.

(2) For streams with no names, list "(Unnamed Tributary to downstream name)".

(3) Show acres treated to the nearest one hundredths acre.

(4) Include agreements with off-site BMP owners.

(5) Information pertains to the alternative BMP option location, where applicable.  
Exception - Not required for nutrient credit purchase option.

(6) Applies to the purchase of nutrient credits only.

(7) Virginia 6th Order HUC (VAHU6) Example - YO30.

(8) Final approved shop drawings of Manufactured Treatment Devices (MTDs) are to be included with the BMP information submitted with the LD-445D form.

(9) List the name of any impaired water to which the BMP discharges. The determination of impaired water shall be based on those streams listed as impaired in the DEQ 2012 305(b)/303(d) Water Quality Assessment Integrated Report and shall be the first named waterbody to which the BMP discharges. The impaired waters are those impaired by sediment, total suspended solids, turbidity, nitrogen or phosphorus.

(10) BMP Maintenance ID Number is to be assigned by the District Maintenance Division at permit termination or project completion. This ID number shall be assigned prior to the permit close out process and entered by the area construction engineer under this column, per IIM-LD-95

(11) Provide the section of each Maintenance manual that pertains to the type of BMP. Both manuals can be found at [www.vdot.virginia.gov/business/manuals](http://www.vdot.virginia.gov/business/manuals) in the Maintenance selections. Example: Section 4 would be noted for both the maintenance and inspection manuals for a Bioretention / infiltration BMP.

(12) Nutrient credits purchased to the nearest one hundredth pound.

THESE PLANS ARE UNFINISHED  
AND UNAPPROVED AND ARE NOT  
TO BE USED FOR ANY TYPE  
OF CONSTRUCTION OR THE  
ACQUISITION OF RIGHT OF WAY.

60% DESIGN SUBMITTAL

CITY OF MANASSAS, VIRGINIA  
DEPARTMENT OF ENGINEERING  
8500 PUBLIC WORKS DR  
MANASSAS, VIRGINIA 20110

REVISIONS	
DATE	BY DESCRIPTION

MANASSAS PROJECT NO:	T-093
DATE OF PLAN ISSUANCE:	TBD
CONSULTANT PROJECT ID:	RK&K
DESIGNED BY: <u>DVK</u>	11/10/23
DRAWN BY: <u>DVK</u>	11/10/23
CHECKED BY: <u>MJK</u>	11/10/23
APPROVED BY: _____	DATE: _____

SWPPP GENERAL INFORMATION SHEET

SHEET  
2E(4)

DUMFRIES ROAD SIDEWALK (T-093)



PLAN

THESE PLANS ARE UNFINISHED  
AND UNAPPROVED AND ARE NOT  
TO BE USED FOR ANY TYPE  
OF CONSTRUCTION OR THE  
ACQUISITION OF RIGHT OF WAY.

VA STATE GRID NORTH  
NAD83 (2011)



CITY OF MANASSAS, VIRGINIA  
DEPARTMENT OF ENGINEERING  
8500 PUBLIC WORKS DR.  
MANASSAS, VIRGINIA 20110

REVISIONS		DATE		DESCRIPTION	
	BY				

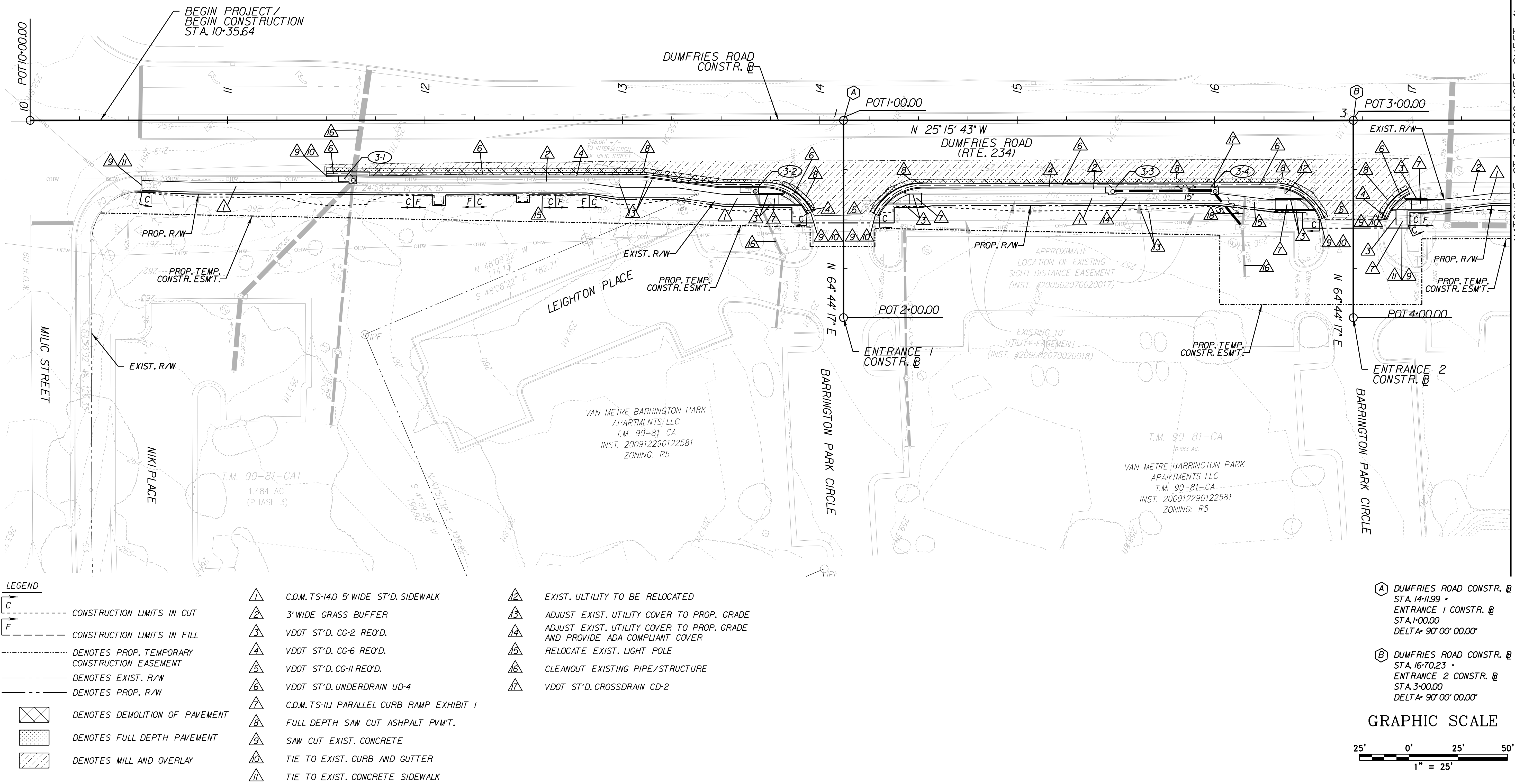
MANASSAS PROJECT NO:	T-093
DATE OF PLAN ISSUANCE:	TBD
CONSULTANT PROJECT ID:	RK&K
DESIGNED BY:	DVK
DRAWN BY:	DVK
CHECKED BY:	MJK
APPROVED BY:	
DATE:	11/10/23
DATE:	11/10/23
DATE:	11/10/23

DUMFRIES ROAD SIDEWALK (T-093)

PLAN

SHEET  
3

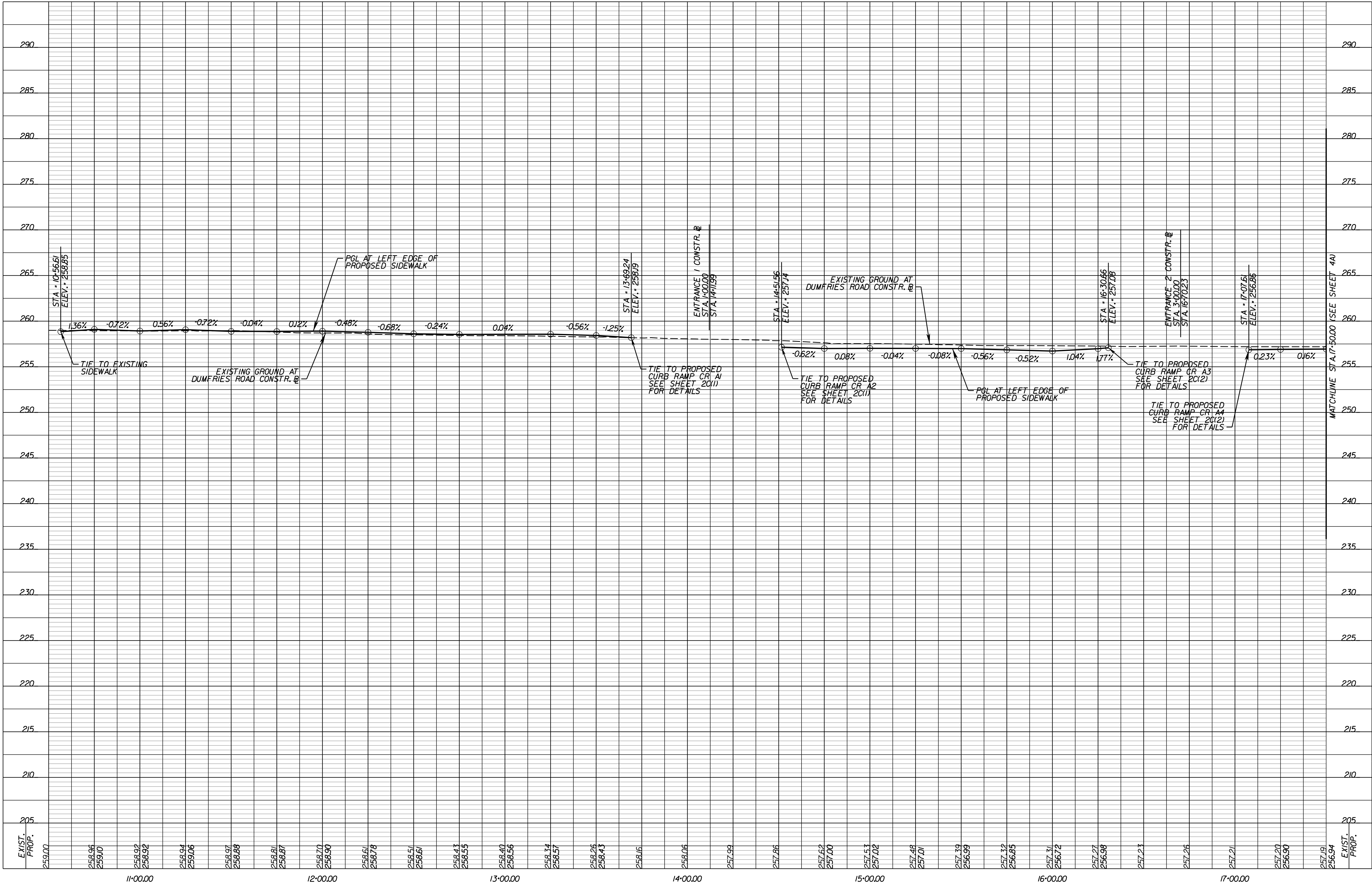
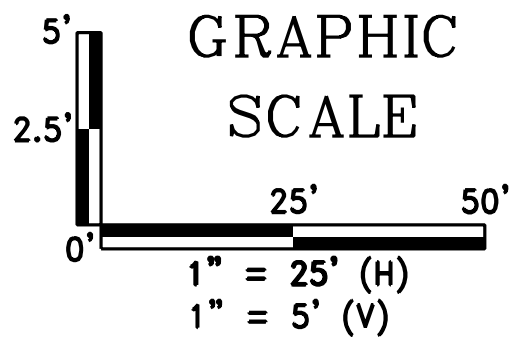
SCALE: 1"=25'





THESE PLANS ARE UNFINISHED  
AND UNAPPROVED AND ARE NOT  
TO BE USED FOR ANY TYPE  
OF CONSTRUCTION OR THE  
ACQUISITION OF RIGHT OF WAY.

PROFILE



DUMFRIES ROAD SIDEWALK (T-093)

60% DESIGN SUBMITTAL

SHEET  
3A  
SCALE: AS SHOWN

PROFILE

MANASSAS PROJECT NO: T-093  
DATE OF PLAN ISSUANCE: TBD  
CONSULTANT PROJECT ID: RK&K  
DESIGNED BY: DWK DATE: 11/10/23  
DRAWN BY: DWK DATE: 11/10/23  
CHECKED BY: MJK DATE: 11/10/23  
APPROVED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

REVISIONS

DATE BY DESCRIPTION

CITY OF MANASSAS, VIRGINIA  
DEPARTMENT OF ENGINEERING  
8500 PUBLIC WORKS DR  
MANASSAS, VIRGINIA 20110





PLAN

THESE PLANS ARE UNFINISHED  
AND UNAPPROVED AND ARE NOT  
TO BE USED FOR ANY TYPE  
OF CONSTRUCTION OR THE  
ACQUISITION OF RIGHT OF WAY.

VA STATE GRID NORTH  
NAD83 (2011)



CITY OF MANASSAS, VIRGINIA  
DEPARTMENT OF ENGINEERING  
8500 PUBLIC WORKS DR.  
MANASSAS, VIRGINIA 20110

60% DESIGN SUBMITTAL

REVISIONS  
DATE BY DESCRIPTION

MANASSAS PROJECT NO:	T-093
DATE OF PLAN ISSUANCE:	TBD
CONSULTANT PROJECT ID:	RK&K
DESIGNED BY:	DVK
DRAWN BY:	DVK
CHECKED BY:	MJK
APPROVED BY:	
DATE:	11/10/23
DATE:	11/10/23
DATE:	11/10/23

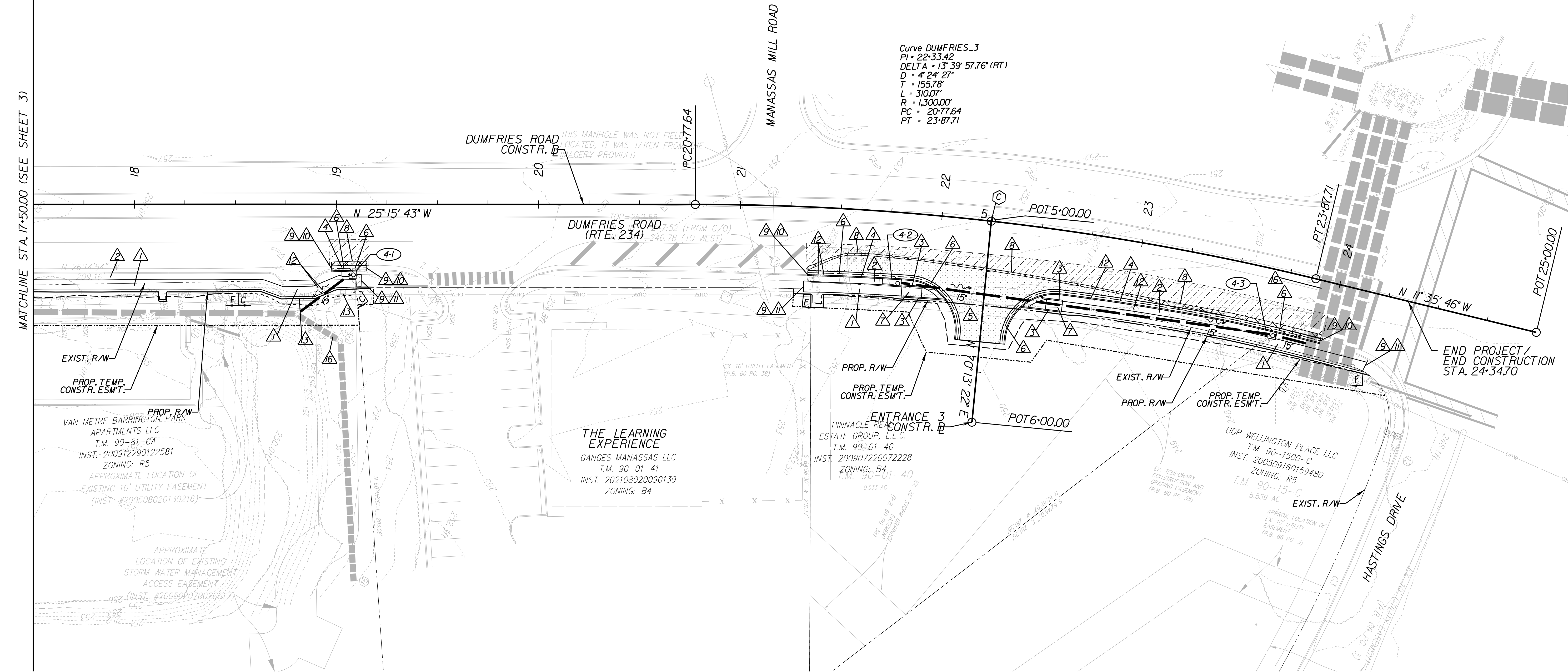
PLAN

SHEET

4

SCALE: 1"=25'

MATCHLINE STA. 17+50.00 (SEE SHEET 3)



LEGEND

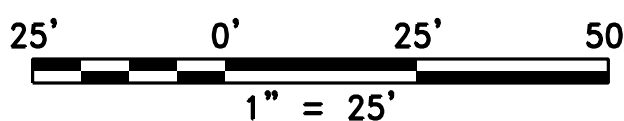
- |  |   |  |  |
|--|---|--|--|
|  | CONSTRUCTION LIMITS IN CUT                    |  | C.O.M. TS-14.0 5' WIDE ST'D. SIDEWALK      |
|  | CONSTRUCTION LIMITS IN FILL                   |  | 3' WIDE GRASS BUFFER                       |
|  | DENOTES PROP. TEMPORARY CONSTRUCTION EASEMENT |  | VDOT ST'D. CG-2 REQ'D.                     |
|  | DENOTES EXIST. R/W                            |  | VDOT ST'D. CG-6 REQ'D.                     |
|  | DENOTES PROP. R/W                             |  | VDOT ST'D. CG-11 REQ'D.                    |
|  | DENOTES DEMOLITION OF PAVEMENT                |  | VDOT ST'D. UNDERDRAIN UD-4                 |
|  | DENOTES FULL DEPTH PAVEMENT                   |  | C.O.M. TS-11J PARALLEL CURB RAMP EXHIBIT 1 |
|  | DENOTES MILL AND OVERLAY                      |  | FULL DEPTH SAW CUT ASPHALT PVM'T.          |
|  |   |  | SAW CUT EXIST. CONCRETE                    |
|  |   |  | TIE TO EXIST. CURB AND GUTTER              |
|  |   |  | TIE TO EXIST. CONCRETE SIDEWALK            |

- |  |  |
|--|--|
|  | EXIST. UTILITY TO BE RELOCATED   |
|  | ADJUST EXIST. UTILITY COVER TO PROP. GRADE                                 |
|  | ADJUST EXIST. UTILITY COVER TO PROP. GRADE AND PROVIDE ADA COMPLIANT COVER |
|  | RELOCATE EXIST. LIGHT POLE   |
|  | CLEANOUT EXISTING PIPE/STRUCTURE   |
|  | VDOT ST'D. CROSSDRAIN CD-2   |

Curve DUMFRIES\_3  
PI • 22+33.42  
DELTA • 13° 39' 57.76" (RT)  
D • 4' 24' 27"  
T • 155.78'  
L • 310.07'  
R • 1,300.00'  
PC • 20+77.64  
PT • 23+87.71

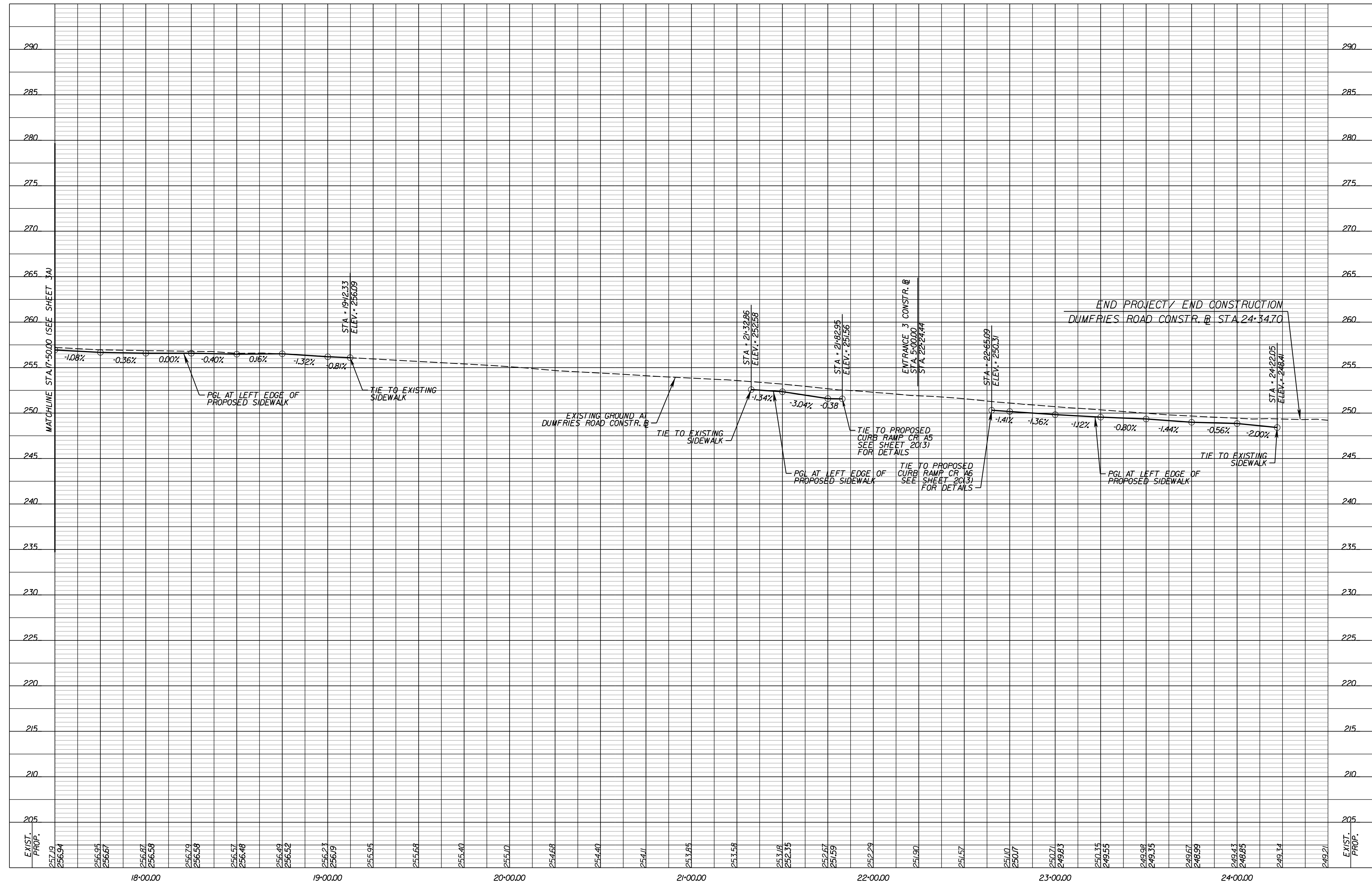
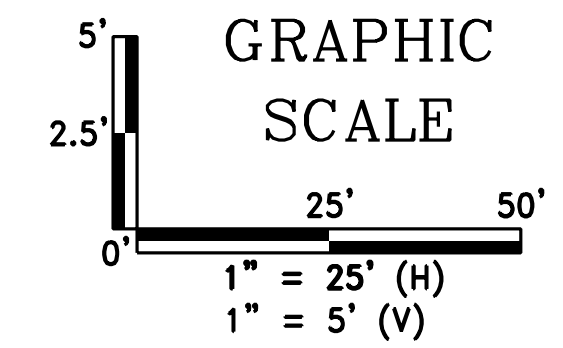
DUMFRIES ROAD CONSTR. @  
STA. 22+24.44 •  
ENTRANCE CONSTR. @  
STA. 5+00.00  
DELTA • 90° 42' 47.00"

GRAPHIC SCALE





# PROFILE



**DUMFRIES ROAD SIDEWALK (T-093)**

60% DESIGN SUBMITTAL



CITY OF MANASSAS, VIRGINIA  
DEPARTMENT OF ENGINEERING  
8500 PUBLIC WORKS DR  
MANASSAS, VIRGINIA 20110

REVISIONS	
DATE	BY DESCRIPTION

MANASSAS PROJECT NO:	T-093
DATE OF PLAN ISSUANCE:	TBD
CONSULTANT PROJECT ID:	RK&K
DESIGNED BY: <u>DVK</u>	11/10/23
DRAWN BY: <u>DVK</u>	11/10/23
CHECKED BY: <u>MJK</u>	11/10/23
APPROVED BY: _____	DATE: _____

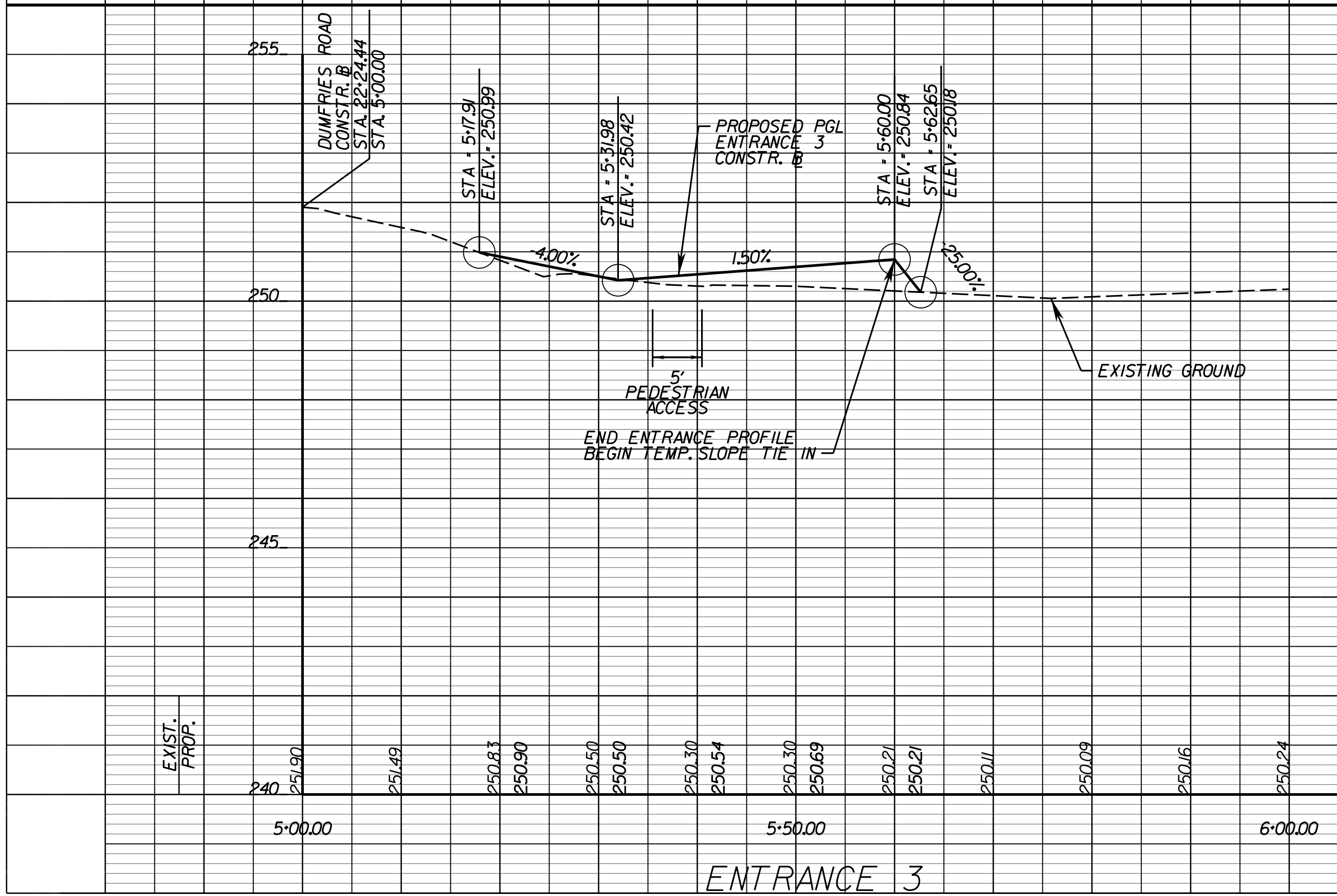
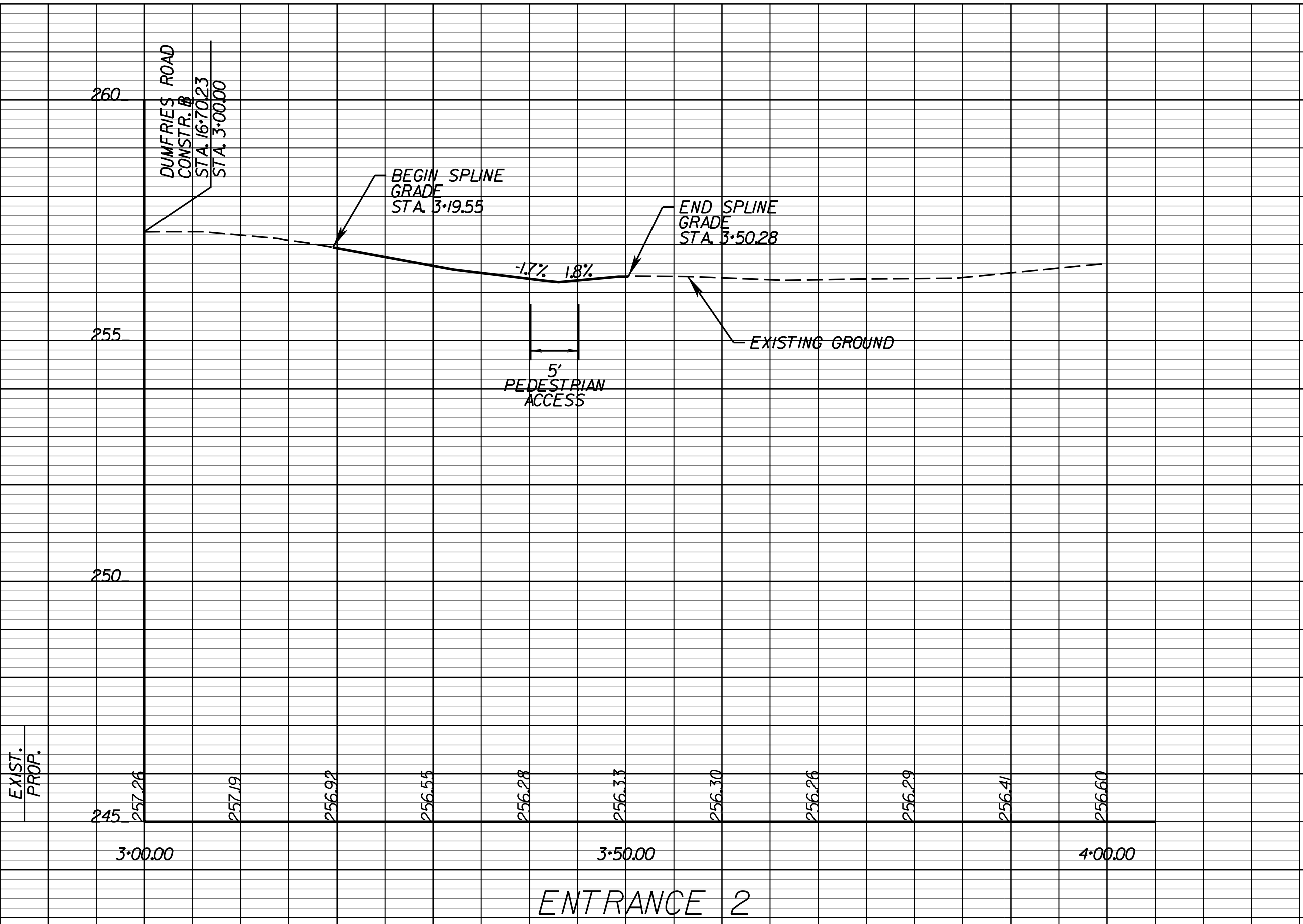
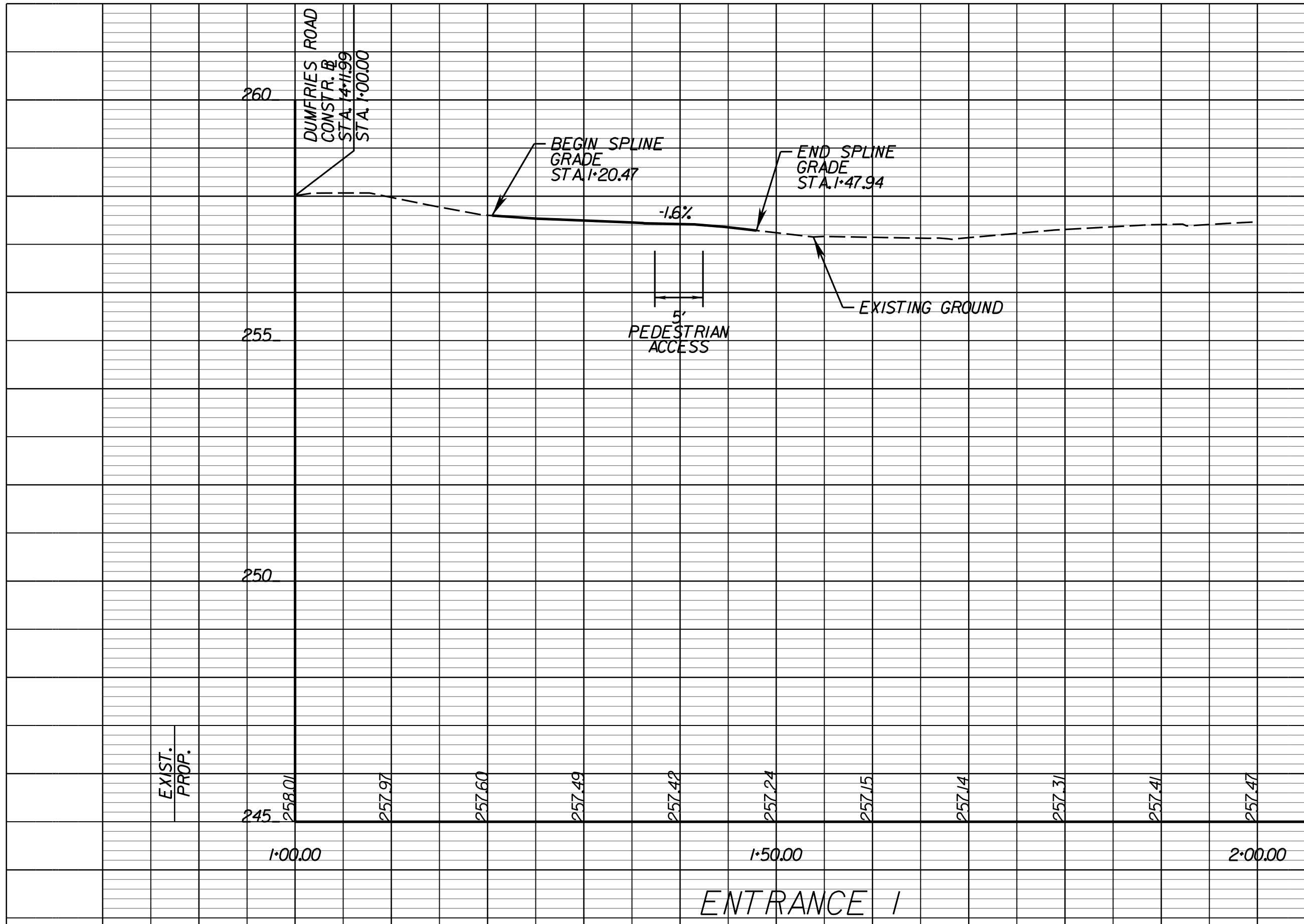
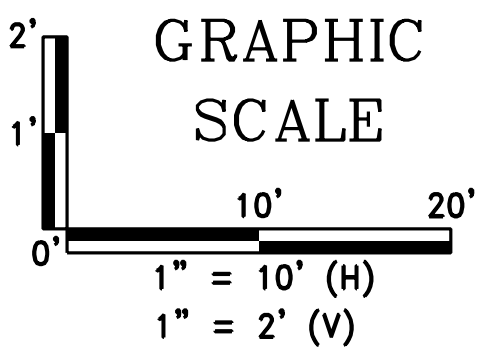
## PROFILE

SHEET  
4A  
SCALE: AS SHOWN



THESE PLANS ARE UNFINISHED  
AND UNAPPROVED AND ARE NOT  
TO BE USED FOR ANY TYPE  
OF CONSTRUCTION OR THE  
ACQUISITION OF RIGHT OF WAY.

# ENTRANCE PROFILES



MANASSAS PROJECT NO:	T-093
DATE OF PLAN ISSUANCE:	TBD
CONSULTANT PROJECT ID:	RK&K
DESIGNED BY:	DVK DATE: 11/10/23
DRAWN BY:	DVK DATE: 11/10/23
CHECKED BY:	MJK DATE: 11/10/23
APPROVED BY:	DATE:

REVISIONS	DATE	BY	DESCRIPTION
-----------	------	----	-------------





REVISIONS	
DATE	BY DESCRIPTION

MANASSAS PROJECT NO:	T-093
DATE OF PLAN ISSUANCE:	TBD
CONSULTANT PROJECT ID:	RK&K
MJD 3NED BY: DVK DATE:	11/10/2/2
MJD VN BY: DVK DATE:	11/10/2/2
TIS 3KED BY: MJK DATE:	11/10/2/2
APPROVED BY:	DATE:

SHEET

6-1

SCALE: N/A

60% DESIGN SUBMITTAL

DUMFRIES ROAD SIDEWALK (T-093)



SOURCE: PRINCE WILLIAM COUNTY MAPPER, OFFICIAL 2022

SOILS MAP  
N.T.S.

COST ESTIMATE OF SILTATION CONTROL MEASURES (In-Place)

Cost of Erosion and Sediment Control Measures is provided in the combined cost estimate for the entire project.

STORMWATER MANAGEMENT COMPLIANCE  
(Check Appropriate Block)

☐ Owner/developer will provide on-site stormwater management facility(ies) to accommodate additional storm drain run-off.

☐ Owner/developer requests the ability to provide off-site cash contribution in-lieu of providing on-site stormwater management facility(ies).

Less Than or Equal to 40% Impervious Formula:  $\$/Acre = A \times I$   
 Greater Than 40% Impervious Formula:  $\$/Acre = B + (I^2 \times C)$

Disturbed Acreage = \_\_\_\_\_

ENR Construction Cost Number \_\_\_\_\_

A = \_\_\_\_\_ (3,400 x D)  
 B = \_\_\_\_\_ (400 x D)  
 C = \_\_\_\_\_ (6,000 x D)  
 D = \_\_\_\_\_ (Current ENR Construction Cost Index / 3,726)

I = \_\_\_\_\_ (Percent of Imperviousness, i.e., 40% = .40)

\$ \_\_\_\_\_ (Dollar Amount)  
 \* To Be Computed With Final Submission

☐ Owner/developer already complies with stormwater management requirements. Examples would include: a reduction in the impervious area or facility(ies) or existing on-site facilities which are installed to accommodate this proposed development. No fee is required or applicable in this circumstance.

FOR ADDITIONAL INFORMATION PERTAINING TO THESE DRAWINGS,  
PLEASE REFERENCE THE VIRGINIA EROSION AND SEDIMENT CONTROL  
HANDBOOK, CURRENT EDITION, CHAPTER 3, ARTICLES 3.01 THRU 3.39.

ANY DEVIATION OR CHANGE IN THESE PLANS MUST BE APPROVED BY THE DEVELOPMENT SERVICES MANAGER PRIOR TO CONSTRUCTION.

\*\*\* ALL DRAWINGS NOT TO SCALE

EROSION AND SEDIMENT CONTROL NARRATIVE (CONTINUED)

ON-SITE SOILS CONSIST OF ALBANO SILT LOAM (3A) AND BRENTSVILLE SANDY LOAM (9C). SEE SOILS MAP AND TABLE ON THIS SHEET. THE PROJECT AREA IS OUTSIDE THE FLOODPLAIN, AND RESOURCE PROTECTION AREA (RPA). ALL SLOPES ARE LESS THAN CRITICAL.

UNLESS OTHERWISE NOTED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH THE MOST CURRENT MINIMUM STANDARDS AND SPECIFICATIONS OF THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK (VESCH). ALL NECESSARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IN PLACE PRIOR TO BEGINNING CONSTRUCTION.

TEMPORARY AND PERMANENT STABILIZATION SHALL BE DONE IN ACCORDANCE WITH THE VESCH. TEMPORARY SEEDING WILL FOLLOW IMMEDIATELY AFTER GRADING. IN ALL SEEDING OPERATIONS, SEED, FERTILIZER, AND LIME WILL BE APPLIED PRIOR TO MULCHING. ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE STABILIZED WITH PERMANENT SEEDING IMMEDIATELY FOLLOWING FINISHED GRADING. EROSION AND SEDIMENT CONTROL MEASURES SHALL REMAIN IN PLACE UNTIL THE GRASS IS ESTABLISHED. TEMPORARY SEEDING MIXTURES SHALL CONFORM TO TABLE 3.31-B OF THE VESCH.

SEE OUTFALL ANALYSES AND STORMWATER MANAGEMENT SHEETS THAT ADDRESS STORMWATER RUNOFF CONSIDERATIONS AND PROVIDE DETAILED CALCULATIONS OF PRE-AND POST-DEVELOPMENT RUNOFF.

GENERAL NOTES

1. LAND DISTURBING ACTIVITY WHICH OCCURS WITHIN THE VDOT RIGHT-OF-WAY MUST BE SUPERVISED BY PERSONNEL MEETING THE REQUIREMENTS OF VDOT ROAD AND BRIDGE SPECIFICATION 10216 (A).

2. THE CITY IS RESPONSIBLE FOR COMPLYING WITH APPLICABLE LOCAL, STATE, AND FEDERAL ENVIRONMENTAL LAWS AND REGULATIONS, INCLUDING ACQUIRING CLEARANCES/AUTHORIZATIONS FROM APPROPRIATE REGULATORY AGENCIES.

3. ALL E&S CONTROLS SHALL BE REMOVED WITHIN 30 DAYS AFTER PROJECT IS STABILIZED WITH THE APPROVAL OF THE CITY PROJECT MANAGER OR THEIR DESIGNEE.

4. IN GENERAL, ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CHECKED DAILY AND AFTER EACH SIGNIFICANT RAINFALL.

5. THE RLD OF RECORD SHALL BE RESPONSIBLE FOR THE INSTALLATION, DAILY INSPECTION, AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL PRACTICES.

CITY OF MANASSAS
STANDARD DETAIL- EROSION CONTROL
REVISED: APRIL 28, 2010

EROSION AND SEDIMENT CONTROL NARRATIVE

THE TOTAL PROJECT AREA IS 1.19 ACRES AND CONSISTS OF SIDEWALK IMPROVEMENTS ALONG THE EAST SIDE OF DUMFRIES ROAD FROM MILIC STREET TO HASTINGS LANE. IN THE EXISTING CONDITION, THE SITE IS PAVED, WITH LANDSCAPING SEPARATING THE RIGHT-OF-WAY AND ADJACENT COMMERCIAL PROPERTIES. THE SITE IS RELATIVELY FLAT, AND ALL WATER DRAINS TO THE BOX CULVERTS CROSSING HASTINGS LANE.

THE AREAS ADJACENT TO THIS PROJECT ARE COMMERCIAL HIGH DENSITY RESIDENTIAL. THIS PROJECT DOES NOT PROPOSE ANY OFF-SITE WORK. IN THE EVENT THAT THE CONTRACTOR SHOULD DEEM ANY OFF-SITE WORK IS NECESSARY THEN ALL NECESSARY EASEMENTS AND PERMITS ARE TO BE OBTAINED PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION OF ACCEPTABLE BORROW AND/OR DISPOSAL SITES INCLUDING STAGING AND STORAGE AREAS, AND THESE SHALL BE IN ACCORDANCE WITH VDOT AND CITY REGULATIONS.



SCALE: N/A



EROSION & SEDIMENT CONTROL PLAN - PHASE I

VA STATE GRID NORTH  
NAD83 (2011)



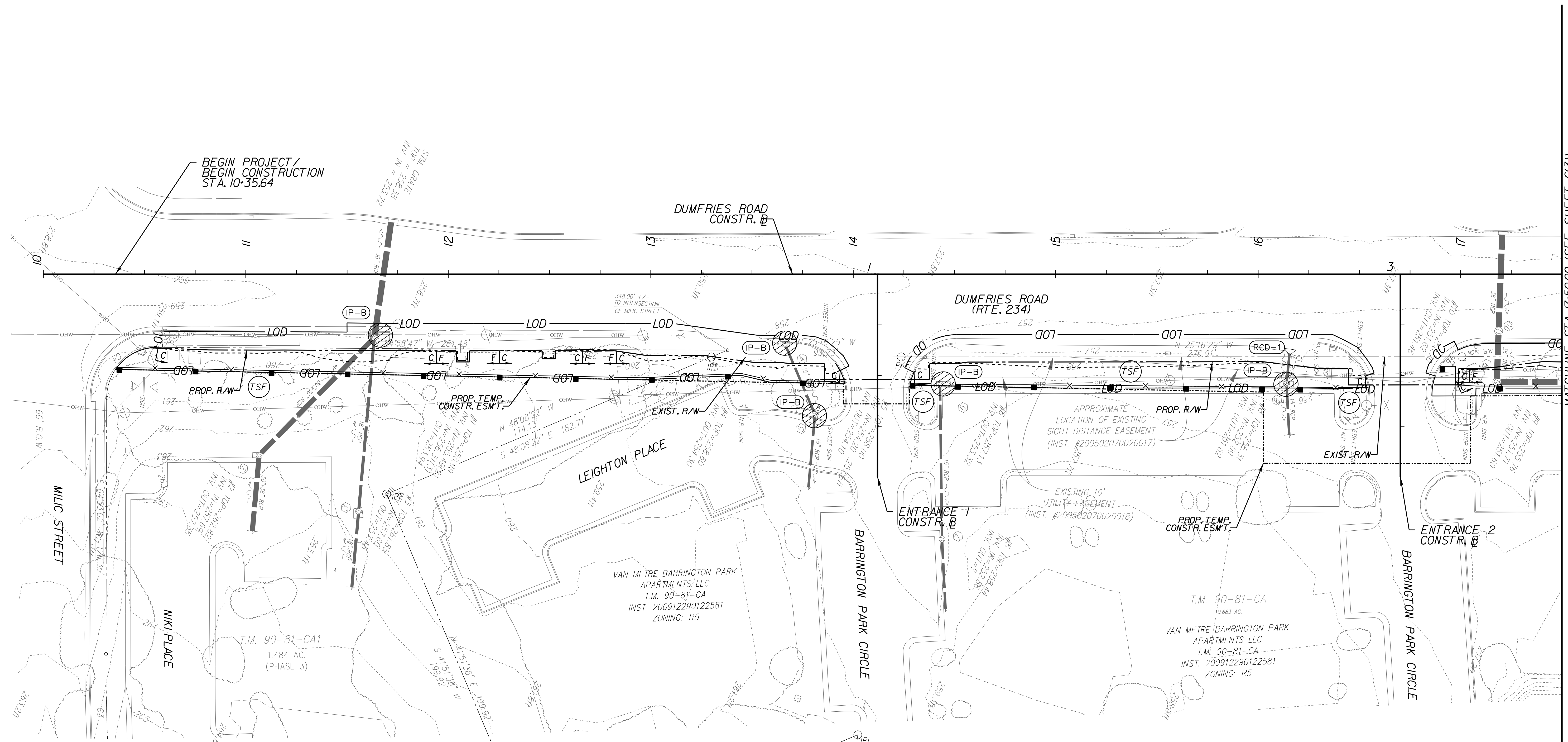
CITY OF MANASSAS, VIRGINIA  
DEPARTMENT OF ENGINEERING  
8500 PUBLIC WORKS DR  
MANASSAS, VIRGINIA 20110

REVISIONS	
DATE	DESCRIPTION

MANASSAS PROJECT NO:	T-093
DATE OF PLAN ISSUANCE:	TBD
CONSULTANT PROJECT ID:	RK&K
DESIGNED BY:	DVK
DRAWN BY:	DVK
CHECKED BY:	MJK
APPROVED BY:	

EROSION & SEDIMENT CONTROL PLAN  
PHASE 1

SHEET  
6(3)  
SCALE: 1"=25'



PHASE I GENERAL NOTES:

- INSTALL THE FOLLOWING ESC MEASURES AS SHOWN ON PLANS PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION.  
I) INSTALL INLET PROTECTION ON EXISTING INLETS  
II) INSTALL TEMPORARY SILT FENCE
- REMOVE ALL ESC ITEMS UPON FINAL GRADING, STABILIZATION, AND SEEDING AND MULCHING. ANY ESC MEASURES TO BE REMOVED ON THE PROJECT SHALL HAVE WRITTEN APPROVAL FROM THE CITY PROJECT MANAGER OR THEIR DESIGNEE PRIOR TO REMOVAL.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE A SUITABLE STAGING / STORAGE AREA AND PROVIDE NECESSARY ESC PLAN AND PERMIT AMENDMENTS FOR THIS SITE. ADDITIONAL ESC BONDS MAY BE REQUIRED TO BE POSTED.
- ADDITIONAL ESC MEASURES TO BE DETERMINED AND APPROVED BY THE CITY PROJECT MANAGER OR THEIR DESIGNEE.
- THIS SHEET IS FOR TEMPORARY EROSION AND SEDIMENT CONTROL ONLY.
- CUT AND FILL LINE IS TO BE USED FOR CLEARING LIMITS.
- E&S MEASURES SHALL BE INSPECTED AT LEAST ONCE EVERY 5 BUSINESS DAYS OR AT LEAST ONCE EVERY TEN BUSINESS DAYS AND NO LATER THAN 24 HOURS FOLLOWING A MEASURABLE STORM EVENT.
- ANY CORRECTIVE ACTIONS OR REPAIRS MUST BE PERFORMED AS SOON AS PRACTICABLE, BUT NO LATER THAN SEVEN DAYS AFTER DISCOVERY.

- (IP-B) DENOTES INLET PROTECTION, TYPE B: VDOT ST'D. EC-6
- (IP-A) DENOTES INLET PROTECTION, TYPE A: VDOT ST'D. EC-6
- (TSF) DENOTES TEMPORARY SILT FENCE, VDOT ST'D. EC-5
- (TR) DENOTES AN EXISTING TREE TO BE REMOVED
- (TP) DENOTES TREES TO HAVE PROTECTION BARRICADE
- LOD DENOTES LIMITS OF DISTURBANCE

GRAPHIC SCALE

25' 0' 25' 50'

1" = 25'

THESE PLANS ARE UNFINISHED AND UNAPPROVED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION OR THE ACQUISITION OF RIGHT OF WAY.



# EROSION & SEDIMENT CONTROL PLAN - PHASE I



CITY OF MANASSAS, VIRGINIA  
DEPARTMENT OF ENGINEERING  
8500 PUBLIC WORKS DR.  
MANASSAS, VIRGINIA 20110

60% DESIGN SUBMITTAL

REVISIONS	DATE	BY	DESCRIPTION

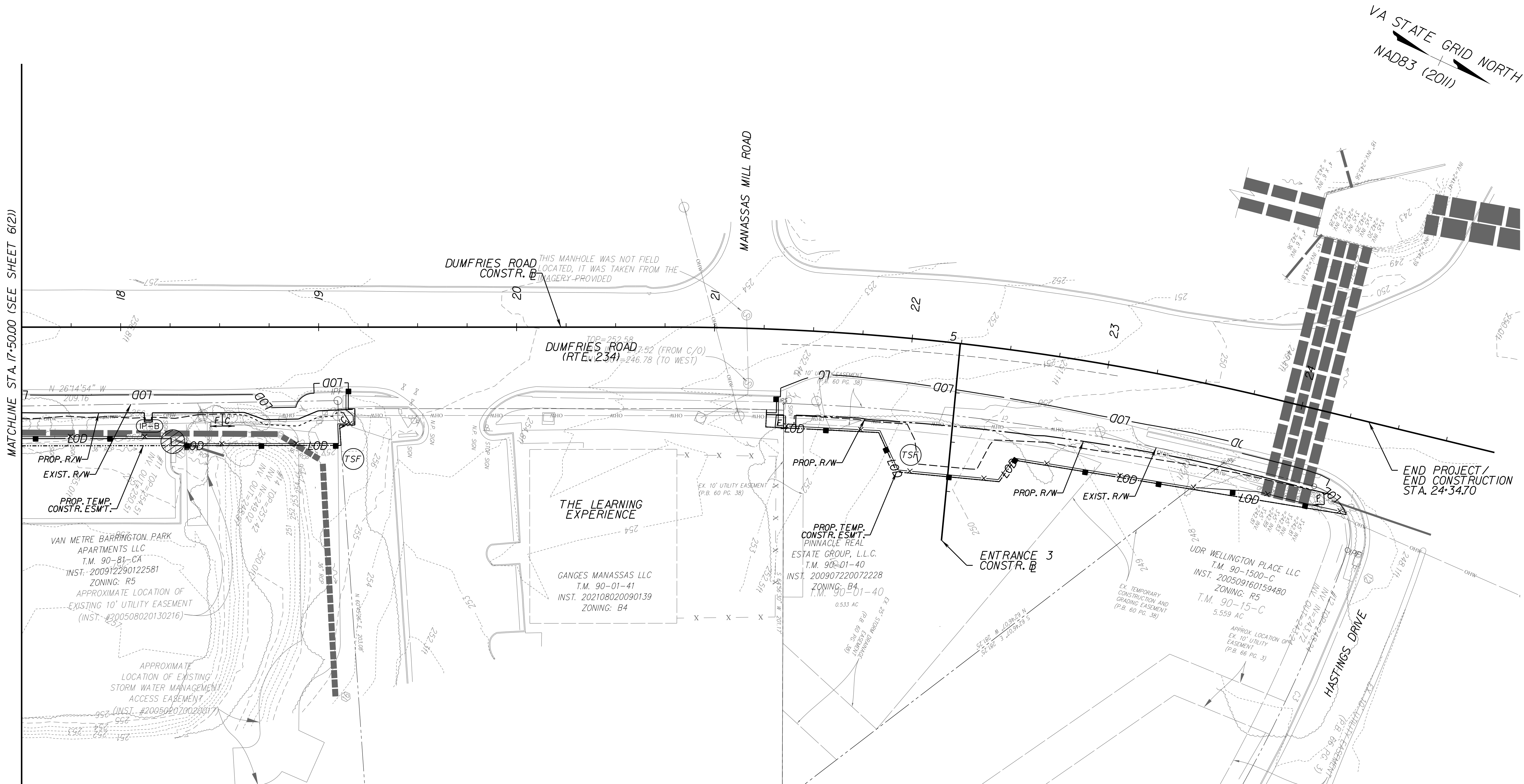
MANASSAS PROJECT NO:	T-093
DATE OF PLAN ISSUANCE:	TBD
CONSULTANT PROJECT ID:	RK&K
DESIGNED BY:	DVK
DRAWN BY:	DVK
CHECKED BY:	MJK
APPROVED BY:	
DATE:	11/10/23
DATE:	11/10/23
DATE:	11/10/23

EROSION & SEDIMENT CONTROL PLAN  
PHASE 1

SHEET  
6(4)

SCALE: 1"=25'

DUMFRIES ROAD SIDEWALK (T-093)



MATCHLINE STA. 17+50.00 (SEE SHEET 6(2))

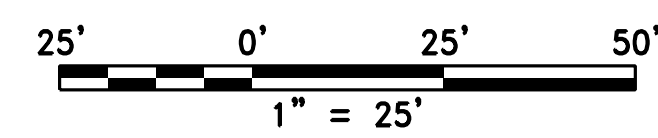
VA STATE GRID NORTH  
NAD83 (2011)

## PHASE I GENERAL NOTES:

- INSTALL THE FOLLOWING ESC MEASURES AS SHOWN ON PLANS PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION.  
I) INSTALL INLET PROTECTION ON EXISTING INLETS  
II) INSTALL TEMPORARY SILT FENCE
- REMOVE ALL ESC ITEMS UPON FINAL GRADING, STABILIZATION, AND SEEDING AND MULCHING. ANY ESC MEASURES TO BE REMOVED ON THE PROJECT SHALL HAVE WRITTEN APPROVAL FROM THE CITY PROJECT MANAGER OR THEIR DESIGNEE PRIOR TO REMOVAL.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE A SUITABLE STAGING / STORAGE AREA AND PROVIDE NECESSARY ESC PLAN AND PERMIT AMENDMENTS FOR THIS SITE. ADDITIONAL ESC BONDS MAY BE REQUIRED TO BE POSTED.
- ADDITIONAL ESC MEASURES TO BE DETERMINED AND APPROVED BY THE CITY PROJECT MANAGER OR THEIR DESIGNEE.
- THIS SHEET IS FOR TEMPORARY EROSION AND SEDIMENT CONTROL ONLY.
- CUT AND FILL LINE IS TO BE USED FOR CLEARING LIMITS.
- E&S MEASURES SHALL BE INSPECTED AT LEAST ONCE EVERY 5 BUSINESS DAYS OR AT LEAST ONCE EVERY TEN BUSINESS DAYS AND NO LATER THAN 24 HOURS FOLLOWING A MEASURABLE STORM EVENT.
- ANY CORRECTIVE ACTIONS OR REPAIRS MUST BE PERFORMED AS SOON AS PRACTICABLE, BUT NO LATER THAN SEVEN DAYS AFTER DISCOVERY.

- (IP-B) DENOTES INLET PROTECTION, TYPE B: VDOT ST'D. EC-6
- (IP-A) DENOTES INLET PROTECTION, TYPE A: VDOT ST'D. EC-6
- (TSF) DENOTES TEMPORARY SILT FENCE, VDOT ST'D. EC-5
- (TR) DENOTES AN EXISTING TREE TO BE REMOVED
- (TP) DENOTES TREES TO HAVE PROTECTION BARRICADE
- (LOD) DENOTES LIMITS OF DISTURBANCE

## GRAPHIC SCALE



THESE PLANS ARE UNFINISHED AND UNAPPROVED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION OR THE ACQUISITION OF RIGHT OF WAY.



EROSION & SEDIMENT CONTROL PLAN - PHASE 2

VA STATE GRID NORTH  
NAD83 (2011)



CITY OF MANASSAS, VIRGINIA  
DEPARTMENT OF ENGINEERING  
8500 PUBLIC WORKS DR  
MANASSAS, VIRGINIA 20110

REVISIONS	DATE	BY	DESCRIPTION

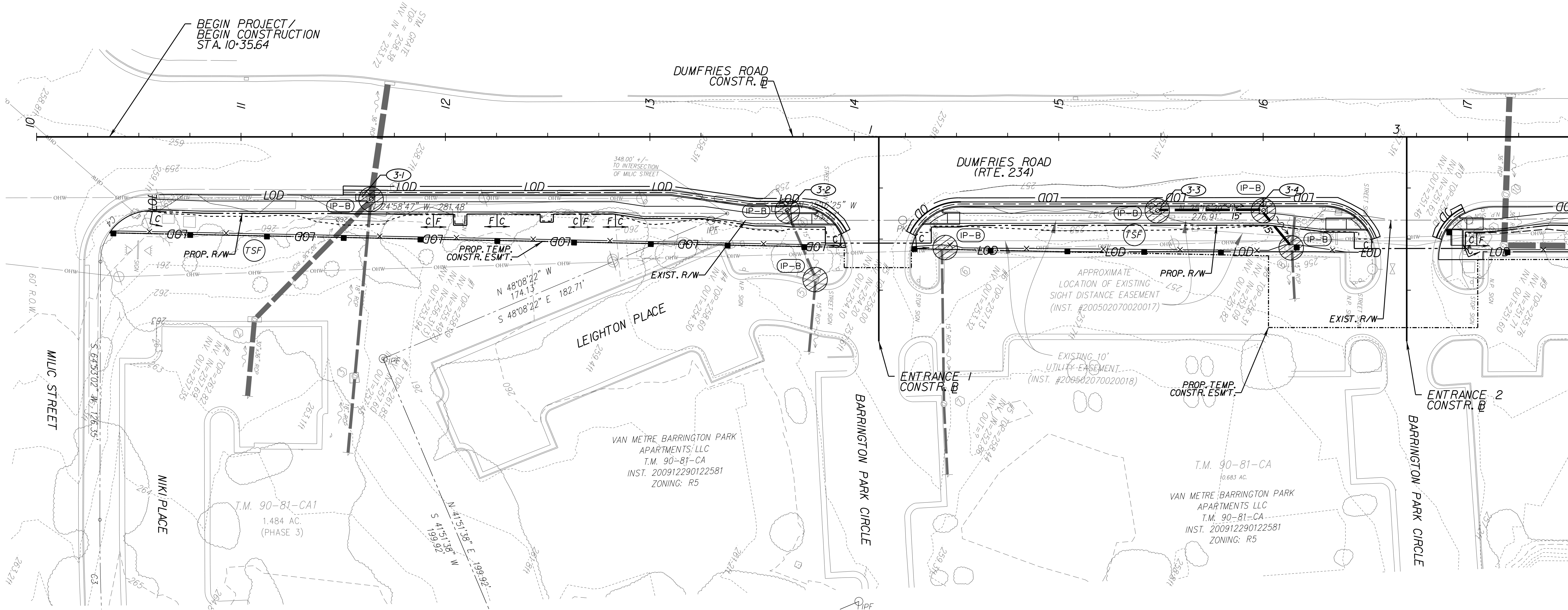
MANASSAS PROJECT NO:	T-093
DATE OF PLAN ISSUANCE:	TBD
CONSULTANT PROJECT ID:	RK&K
DESIGNED BY:	DVK
DRAWN BY:	DVK
CHECKED BY:	MJK
APPROVED BY:	
DATE:	11/10/23
DATE:	11/10/23
DATE:	11/10/23


EROSION & SEDIMENT CONTROL PLAN PHASE 2

SHEET 6(5) SCALE: 1"=25'
--------------------------------

DUMFRIES ROAD SIDEWALK (T-093)

60% DESIGN SUBMITTAL



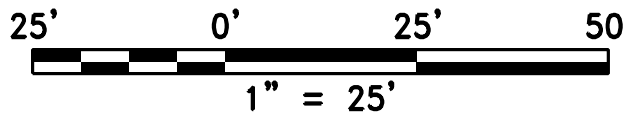
GENERAL NOTES:

1. INSTALL THE FOLLOWING ESC MEASURES AS SHOWN ON PLANS PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION.  
I) INSTALL INLET PROTECTION ON EXISTING INLETS  
II) INSTALL TEMPORARY SILT FENCE
2. INSTALL INLET PROTECTION ON PROPOSED INLETS
3. REMOVE ALL ESC ITEMS UPON FINAL GRADING, STABILIZATION, AND SEEDING AND MULCHING. ANY ESC MEASURES TO BE REMOVED ON THE PROJECT SHALL HAVE WRITTEN APPROVAL FROM THE CITY PROJECT MANAGER OR THEIR DESIGNEE PRIOR TO REMOVAL.
4. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE A SUITABLE STAGING / STORAGE AREA AND PROVIDE NECESSARY ESC PLAN AND PERMIT AMENDMENTS FOR THIS SITE. ADDITIONAL ESC BONDS MAY BE REQUIRED TO BE POSTED.
5. ADDITIONAL ESC MEASURES TO BE DETERMINED AND APPROVED BY THE CITY PROJECT MANAGER OR THEIR DESIGNEE.
6. THIS SHEET IS FOR TEMPORARY EROSION AND SEDIMENT CONTROL ONLY.
7. CUT AND FILL LINE IS TO BE USED FOR CLEARING LIMITS.

8. E&S MEASURES SHALL BE INSPECTED AT LEAST ONCE EVERY 5 BUSINESS DAYS OR AT LEAST ONCE EVERY TEN BUSINESS DAYS AND NO LATER THAN 24 HOURS FOLLOWING A MEASURABLE STORM EVENT.
9. ANY CORRECTIVE ACTIONS OR REPAIRS MUST BE PERFORMED AS SOON AS PRACTICABLE, BUT NO LATER THAN SEVEN DAYS AFTER DISCOVERY.

- (IP-B) DENOTES INLET PROTECTION, TYPE B: VDOT ST'D. EC-6
- (IP-A) DENOTES INLET PROTECTION, TYPE A: VDOT ST'D. EC-6
- (TSF) DENOTES TEMPORARY SILT FENCE, VDOT ST'D. EC-5
- (TR) DENOTES AN EXISTING TREE TO BE REMOVED
- (TP) DENOTES TREES TO HAVE PROTECTION BARRICADE
- LOD DENOTES LIMITS OF DISTURBANCE

GRAPHIC SCALE



THESE PLANS ARE UNFINISHED AND UNAPPROVED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION OR THE ACQUISITION OF RIGHT OF WAY.



EROSION & SEDIMENT CONTROL PLAN - PHASE 2



CITY OF MANASSAS, VIRGINIA  
DEPARTMENT OF ENGINEERING  
8500 PUBLIC WORKS DR  
MANASSAS, VIRGINIA 20110

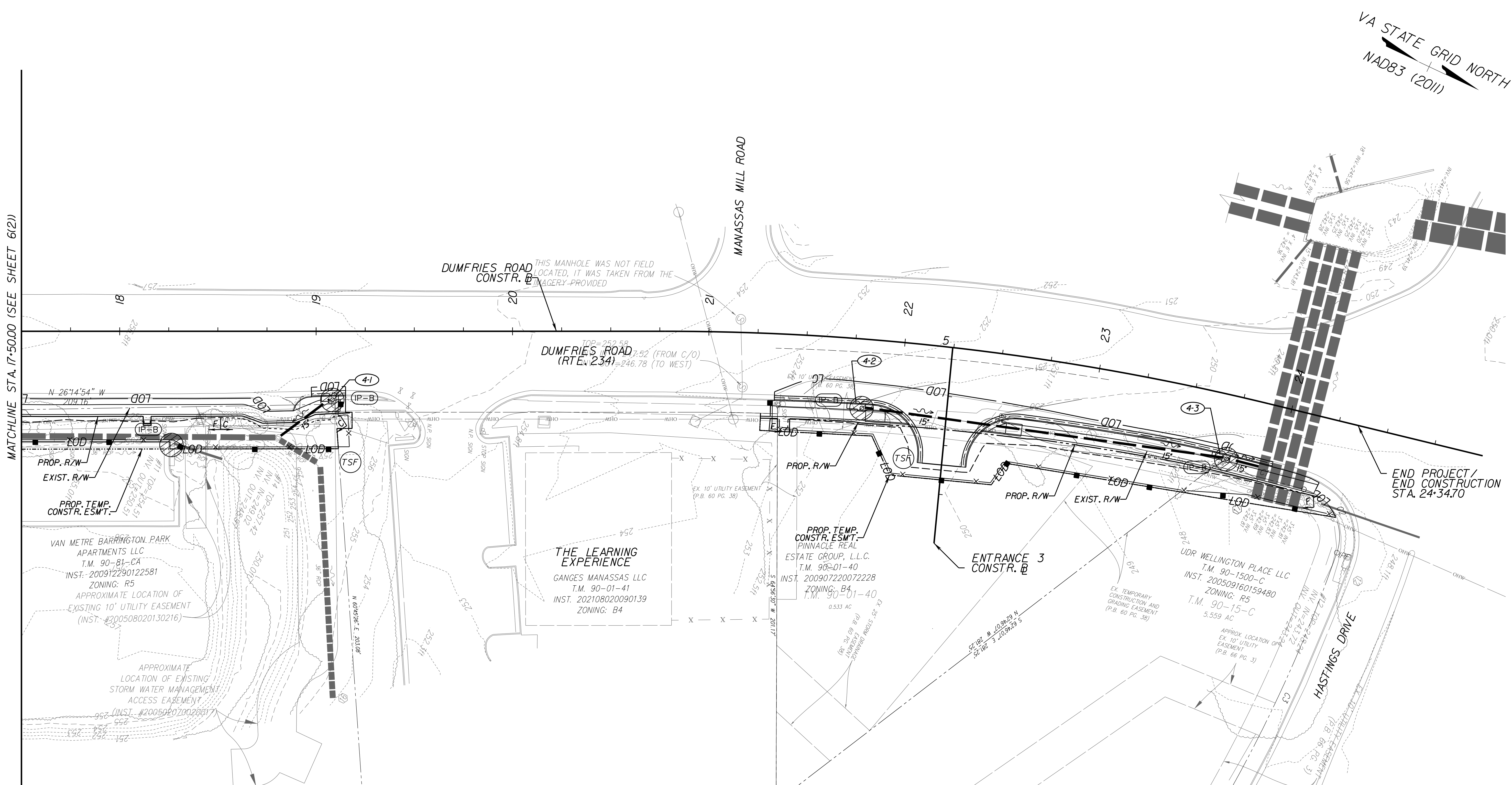
REVISIONS	
DATE	DESCRIPTION

MANASSAS PROJECT NO:	T-093
DATE OF PLAN ISSUANCE:	TBD
CONSULTANT PROJECT ID:	RK&K
DESIGNED BY:	DVK
DRAWN BY:	DVK
CHECKED BY:	MJK
APPROVED BY:	
DATE:	11/10/23
DATE:	11/10/23
DATE:	11/10/23

EROSION & SEDIMENT CONTROL PLAN  
PHASE 2

60% DESIGN SUBMITTAL

DUMFRIES ROAD SIDEWALK (T-093)

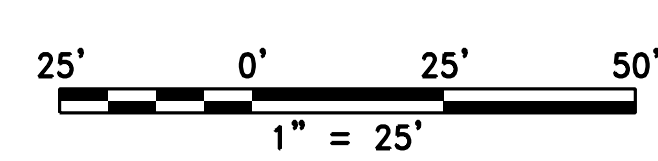


GENERAL NOTES:

- INSTALL THE FOLLOWING ESC MEASURES AS SHOWN ON PLANS PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION.  
I) INSTALL INLET PROTECTION ON EXISTING INLETS  
II) INSTALL TEMPORARY SILT FENCE
- INSTALL INLET PROTECTION ON PROPOSED INLETS
- REMOVE ALL ESC ITEMS UPON FINAL GRADING, STABILIZATION, AND SEEDING AND MULCHING. ANY ESC MEASURES TO BE REMOVED ON THE PROJECT SHALL HAVE WRITTEN APPROVAL FROM THE CITY PROJECT MANAGER OR THEIR DESIGNEE PRIOR TO REMOVAL.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE A SUITABLE STAGING / STORAGE AREA AND PROVIDE NECESSARY ESC PLAN AND PERMIT AMENDMENTS FOR THIS SITE. ADDITIONAL ESC BONDS MAY BE REQUIRED TO BE POSTED.
- ADDITIONAL ESC MEASURES TO BE DETERMINED AND APPROVED BY THE CITY PROJECT MANAGER OR THEIR DESIGNEE.
- THIS SHEET IS FOR TEMPORARY EROSION AND SEDIMENT CONTROL ONLY.
- CUT AND FILL LINE IS TO BE USED FOR CLEARING LIMITS.
- ESC MEASURES SHALL BE INSPECTED AT LEAST ONCE EVERY 5 BUSINESS DAYS OR AT LEAST ONCE EVERY TEN BUSINESS DAYS AND NO LATER THAN 24 HOURS FOLLOWING A MEASURABLE STORM EVENT.
- ANY CORRECTIVE ACTIONS OR REPAIRS MUST BE PERFORMED AS SOON AS PRACTICABLE, BUT NO LATER THAN SEVEN DAYS AFTER DISCOVERY.

- (IP-B) DENOTES INLET PROTECTION, TYPE B; VDOT ST'D. EC-6
- (IP-A) DENOTES INLET PROTECTION, TYPE A; VDOT ST'D. EC-6
- (TSF) DENOTES TEMPORARY SILT FENCE, VDOT ST'D. EC-5
- (TR) DENOTES AN EXISTING TREE TO BE REMOVED
- (TP) DENOTES TREES TO HAVE PROTECTION BARRICADE
- (LOD) DENOTES LIMITS OF DISTURBANCE

GRAPHIC SCALE



THESE PLANS ARE UNFINISHED AND UNAPPROVED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION OR THE ACQUISITION OF RIGHT OF WAY.



DRAINAGE DESCRIPTIONS

EXISTING

- 1

TOP=258.99  
INV. IN=255.49(2)  
INV. IN=256.31(3)  
INV. OUT=253.94
- 2

TOP=262.82  
INV. IN=257.69  
INV. OUT=257.35
- 3

TOP=261.85  
INV. IN=257.60  
INV. OUT=257.45
- 4

TOP=258.60  
INV. OUT=254.30
- 5

TOP=258.00  
INV. IN=254.20  
INV. OUT=254.10
- 6

TOP=257.13  
INV. OUT=253.32
- 7

TOP=258.44  
INV. IN=252.86  
INV. OUT=?
- 8

TOP=256.31  
INV. IN=252.09  
INV. OUT=251.82
- 9

TOP=255.76  
INV. IN=251.71  
INV. OUT=251.60
- 10

TOP=256.70  
INV. IN=251.62  
INV. OUT=251.46
- 11

TOP=254.51  
INV. OUT=250.51
- 12

TOP=248.24  
INV. IN=243.72  
INV. OUT=243.24
- 13

TOP = 258.38  
INV. IN = 253.72
- 14

TOP=257.42  
INV. IN=249.02  
INV. OUT=248.97
- 15

TOP=256.81  
INV. IN=248.51  
INV. OUT=248.31
- 16

INV. OUT=247.17

- 17

INV. IN=242.81  
INV. IN=242.89  
INV. IN=242.83  
INV. IN=242.81  
INV. OUT=242.28  
INV. OUT=242.25  
INV. OUT=242.25  
INV. OUT=242.20

PROPOSED

- 3-1

Modify Existing Drop Inlet  
Adjust to Grade, Lower 0.18'  
Add DI-3B Top, L=8'  
Proposed Top Elev = 258.81'  
Connect UD-4 to Structure
- 3-2

Modify Existing Drop Inlet  
Adjust to Grade, Lower 0.63'  
Add DI-3B Top, L=8'  
Proposed Top Elev = 257.97'  
Connect UD-4 to Structure
- 3-3

1 Std. DI-3B Req.  
L = 4', H = 4J', Inv = 252.80'  
Std. IS-I Req.  
Connect UD-4 to Structure
- 3-3

3-4

49' - 15" Conc. Pipe Class IV Req. (2' Cover)  
Silt Tight Joint Type  
Inv(In) = 252.80', Inv(Out) = 252.50'
- 3-4

3-4

20' - 15" Conc. Pipe Class IV Req. (2' Cover)  
Silt Tight Joint Type  
Inv(In) = 252.30', Inv(Out) = 252.09'
- 4-1

1 Std. DI-3B Req.  
L = 6', H = 4.2', Inv = 251.90'  
Std. IS-I Req.  
Connect UD-4 to Structure
- 4-1

14

31' - 15" Conc. Pipe Class IV Req. (2' Cover)  
Silt Tight Joint Type  
Inv(In) = 251.90', Inv(Out) = 251.70'
- 4-2

1 Std. DI-3B Req.  
L = 8', H = 4J', Inv = 247.40'  
Std. IS-I Req.  
Connect UD-4 to Structure
- 4-2

4-3

184' - 15" Conc. Pipe Class IV Req. (2' Cover)  
Silt Tight Joint Type  
Inv(In) = 247.40', Inv(Out) = 244.80'
- 4-3

4-3

1 Std. DI-3B Req.  
L = 8', H = 4.3', Inv = 244.60'  
Std. IS-I Req.  
Connect UD-4 to Structure
- 4-3

17

16' - 15" Conc. Pipe Class IV Req. (2' Cover)  
Silt Tight Joint Type  
Inv(In) = 244.60', Inv(Out) = 244.50'  
Connect to Ex. Box Culvert

UNDERDRAIN OUTLET SUMMARY

Station	Side	Remarks
11+63.53	RT	Connect UD-4 to Str. 3-1
13+67.02	RT	Connect UD-4 to Str. 3-2
15+48.08	RT	Connect UD-4 to Str. 3-3
16+00.00	RT	Connect (2) UD-4 to Str. 3-4
16+00.00	RT	Connect CD-2 to Str. 3-4
19+08.10	RT	Connect UD-4 to Str. 4-1
21+80.45	RT	Connect UD-4 to Str. 4-2
23+73.04	RT	Connect UD-4 to Str. 4-3

NOTES:

1. A POST INSTALLATION INSPECTION SHALL BE CONDUCTED BY THE CONTRACTOR ON ALL STORM SEWER PIPES IN ACCORDANCE WITH SECTION 302.03(D) OF THE VDOT 2020 ROAD AND BRIDGE SPECIFICATIONS AND VTM 123.
2. FOR EXISTING PIPES WITHIN THE PROJECT TO REMAIN, THE CONTRACTOR WILL NEED TO VERIFY IF THE CONDITION OF THE PIPE IS ACCEPTABLE, IF REPAIRS ARE NEEDED, OR IF THE PIPE NEEDS TO BE REPLACED.

THESE PLANS ARE UNFINISHED AND UNAPPROVED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION OR THE ACQUISITION OF RIGHT OF WAY.

60% DESIGN SUBMITTAL

MANASSAS VIRGINIA

1873

City of Manassas, Virginia

Department of Engineering

8500 Public Works Dr

Manassas, Virginia 20110

REVISIONS

DATE	BY	DESCRIPTION

MANASSAS PROJECT NO: T-093

DATE OF PLAN ISSUANCE: TBD

CONSULTANT PROJECT ID: RK&K

DESIGNED BY: DWK DATE: 11/10/23

DRAWN BY: DWK DATE: 11/10/23

CHECKED BY: MJK DATE: 11/10/23

APPROVED BY:

DUMFRIES ROAD SIDEWALK (T-093)

DRAINAGE DESCRIPTIONS

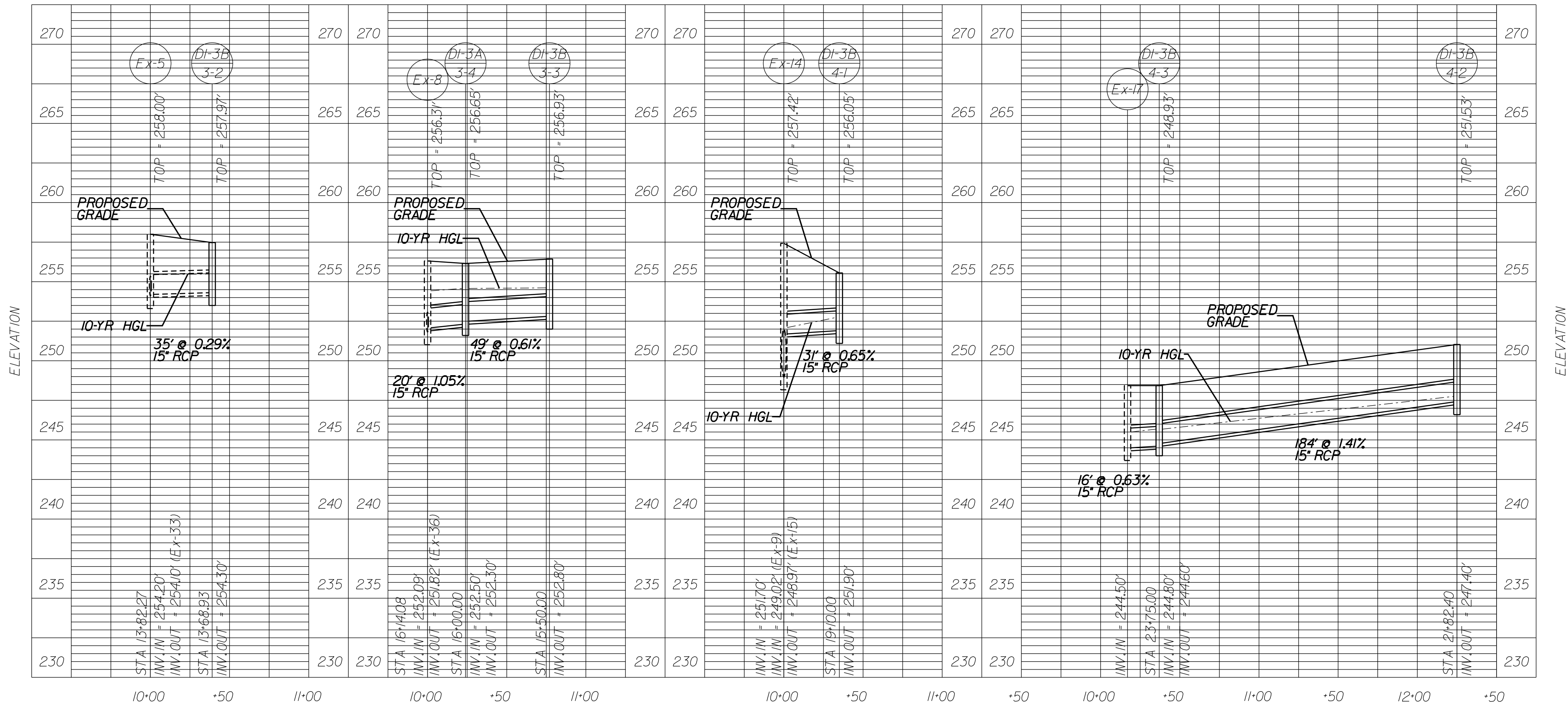
SHEET

7

SCALE: N/A



STORM SEWER PROFILES



THESE PLANS ARE UNFINISHED  
AND UNAPPROVED AND ARE NOT  
TO BE USED FOR ANY TYPE  
OF CONSTRUCTION OR THE  
ACQUISITION OF RIGHT OF WAY.

DUMFRIES ROAD SIDEWALK (T-093)

STORM SEWER PROFILES

SHEET  
8  
SCALE: N/A

MANASSAS PROJECT NO:	T-093
DATE OF PLAN ISSUANCE:	TBD
CONSULTANT PROJECT ID:	RK&K
DESIGNED BY:	DVK
DRAWN BY:	DVK
CHECKED BY:	MJK
APPROVED BY:	
DATE:	11/10/23
DATE:	11/10/23
DATE:	11/10/23

DATE	BY	DESCRIPTION

CITY OF MANASSAS, VIRGINIA  
DEPARTMENT OF ENGINEERING  
8500 PUBLIC WORKS DR  
MANASSAS, VIRGINIA 20110



60% DESIGN SUBMITTAL



[illegible]

# STORM SEWER COMPUTATIONS

SCALE: N/A

DUMFRIES ROAD SIDEWALK (T-093)

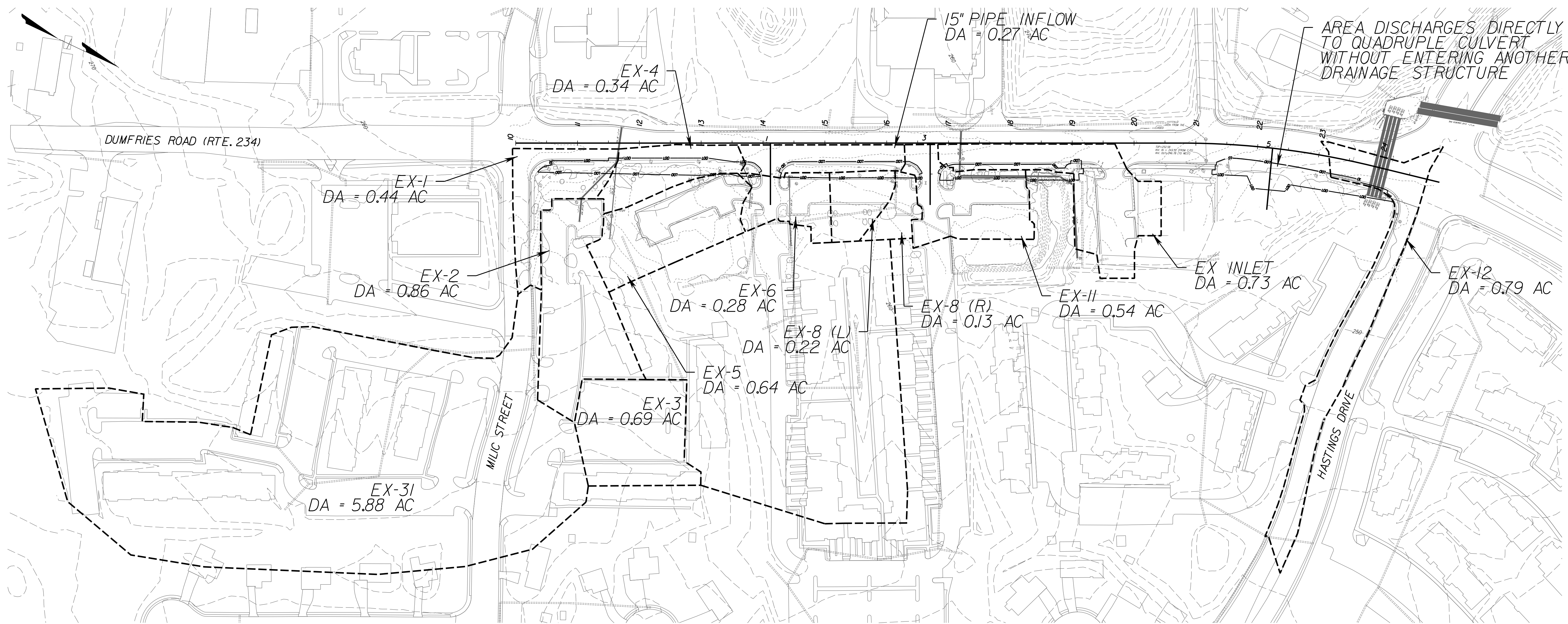
[illegible]

LD-347		PROJECT:		Dumfries Road Sidewalk		DESIGNED BY: MJD																				
HYDRAULIC GRADE LINE ANALYSIS						Checked: SY																				
INCIDENCE PROBABILITY		10 Year																								
INLET OR JUNCTION	STA.	INVERT EL OUTFLOW PIPE	DEPTH OF FLOW PIPE	OUTLET WATER SURFACE ELEV.	DIA. PIPE Do (in/mm)	DESIGN DISCH. Qc (CFS/MS)	LENGTH PIPE Lo (Ft/M)	FRICTION SLOPE Sfo (Ft/Ft)	FRICTION LOSS Hf (Ft)	JUNCTION LOSS					SURFACE FLOW	Adj. Ht (Ft)	Inlet Shaping? Y/N	0.5 Ht (Ft)	FINAL Ht (Ft)	Inlet Water Surface Elevation	Top of MH Top of Inlet Elev. APPROX.	Adjustment				
										Vo (Ft/M)	Contr. Ho (Ft/M)	Vi (Ft/M)	V1/2/2g (V1/2/2g)	H (Expn) 0.35*MAX (V1/2/2g)									SKEW Angle	K	Bend H (Ft/M)	Sum HL (Ft/M)
(1)	(2)			(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)		(16)	(17)	(18)	(19)					
Ex32																				256.120						
3-1	11+65.45	253.720	3.00	256.120	36	34.863	56.00	0.00286	0.160	6.619	0.170	12.636	2.479	0.868	36.0	0.39	0.960	1.998	1.874	1.998	0.999	1.159	257.279	258.310	O.K.	
Ex2		255.490	2.50	257.490	36 X 30	29.454	78.00	0.00319	0.249	12.636	0.620	9.691	1.458	0.510	0.0	0.00	0.000	1.130	1.414	1.130	YES	0.565	0.814	258.410	262.820	O.K.
Ex31		257.690	2.50	259.690	36 X 30	25.139	165.00	0.00232	0.383	9.691	0.365	0.000	0.000	0.000	0.0	0.00	0.000	0.365	0.000	0.365	YES	0.182	0.566	260.990	265.000	O.K.
Ex3		256.510	1.50	257.510	18	3.602	83.00	0.00123	0.102	6.048	0.142	0.000	0.000	0.000	0.0	0.00	0.000	0.142	3.602	0.185	YES	0.092	0.194	258.096	261.850	O.K.
Ex40																								252.400		
Ex38		250.000	3.00	252.400	36	26.865	14.00	0.00170	0.024	10.176	0.402	9.553	1.417	0.496	73.0	0.62	0.872	1.770	0.000	1.770	YES	0.885	0.909	253.309	258.200	O.K.
Ex37		250.700	2.50	253.309	30	13.848	60.00	0.00119	0.071	5.840	0.132	6.203	0.597	0.209	59.0	0.55	0.328	0.669	0.000	0.669	YES	0.335	0.406	253.715	257.550	O.K.
Ex36		251.000	2.50	253.700	30	13.848	102.00	0.00119	0.122	6.203	0.149	5.711	0.506	0.177	36.0	0.39	0.196	0.523	0.000	0.523	YES	0.261	0.383	254.098	258.300	O.K.
Ex34		251.700	2.25	254.098	27	11.941	173.00	0.00155	0.269	5.711	0.127	5.072	0.399	0.140	90.0	0.70	0.280	0.546	0.000	0.546	YES	0.273	0.542	254.639	258.400	O.K.
Ex33		253.400	1.25	254.639	15	4.122	53.00	0.00426	0.226	4.444	0.077	4.724	0.347	0.121	90.0	0.70	0.243	0.441	0.000	0.441	YES	0.220	0.446	255.085	259.500	O.K.
Ex5	13+62.27	253.700	1.25	255.085	15	4.122	61.00	0.00426	0.260	4.724	0.087	2.633	0.108	0.038	28.0	0.32	0.034	0.158	2.791	0.206	YES	0.103	0.363	255.448	258.000	O.K.
3-2	13+68.93	254.200	1.25	255.448	15	1.330	35.00	0.00044	0.016	2.633	0.027	0.000	0.000	0.000	0.0	0.00	0.000	0.027	1.330	0.353	YES	0.017	0.033	255.481	257.470	O.K.
Ex39		251.200	2.00	253.309	24	23.279	130.00	0.01107	1.439	9.553	0.354	0.000	0.000	0.000	0.0	0.00	0.000	0.354	23.279	0.461	YES	0.230	1.669	254.978	260.500	O.K.

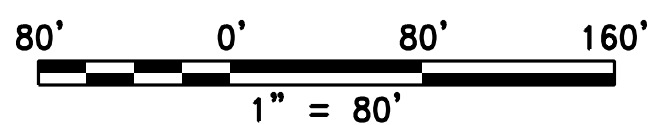
THESE PLANS ARE UNFINISHED  
AND UNAPPROVED AND ARE NOT  
TO BE USED FOR ANY TYPE  
OF CONSTRUCTION OR THE  
ACQUISITION OF RIGHT OF WAY.



# EXISTING DRAINAGE AREA MAP



## GRAPHIC SCALE



THESE PLANS ARE UNFINISHED AND UNAPPROVED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION OR THE ACQUISITION OF RIGHT OF WAY.

DUMFRIES ROAD SIDEWALK (T-093)

60% DESIGN SUBMITTAL

EXISTING DRAINAGE AREA MAP

SHEET  
10  
SCALE 1"=100'

REVISIONS  
DATE BY DESCRIPTION

MANASSAS PROJECT NO:	T-093
DATE OF PLAN ISSUANCE:	TBD
CONSULTANT PROJECT ID:	RK&K
DESIGNED BY:	DVK DATE: 11/10/23
DRAWN BY:	DVK DATE: 11/10/23
CHECKED BY:	MJK DATE: 11/10/23
APPROVED BY:	DATE:

CITY OF MANASSAS, VIRGINIA  
DEPARTMENT OF ENGINEERING  
8500 PUBLIC WORKS DR  
MANASSAS, VIRGINIA 20110





Site plan for the proposed 100' wide, 100' deep stormwater pond. The plan shows the pond layout with various basins labeled 3-1 through 4-3 and EX-2 through EX-12. Each basin is labeled with its Design Area (DA) in acres and its Coefficient of Imperviousness (C). The pond is situated between Dumfries Road (Rte. 234) to the north and Milc Street to the west. Hastings Drive is to the east. A north arrow is in the top left corner. The plan also shows existing structures, roads, and topographic contours.

Basin Label	Design Area (DA) in AC	Coefficient of Imperviousness (C)
3-1	0.44	0.68
3-2	0.34	0.61
3-3	0.20	0.82
3-4(L)	0.05	0.80
3-4(R)	0.03	0.90
4-1	0.21	0.85
4-2	0.25	0.84
4-3	0.28	0.86
EX-2	0.86	0.79
EX-3	0.69	0.81
EX-5	0.64	0.69
EX-6	0.28	0.80
EX-8 (L)	0.22	0.83
EX-8 (R)	0.13	0.86
EX-11	0.54	0.83
EX INLET	0.52	N/A
EX-12	0.74	N/A
EX-31	5.88	0.67

80' 0' 80' 160'

1" = 80'

DUMFRIES ROAD SIDEWALK (T-093)

SCALE 1"=100'



CITY OF MANASSAS, VIRGINIA  
DEPARTMENT OF ENGINEERING  
8500 PUBLIC WORKS DR  
MANASSAS, VIRGINIA 20110

REVISIONS	
DATE	DESCRIPTION
T-093	
TBD	
RK&K	
DESIGNED BY: <u>DVK</u> DATE: <u>11/10/23</u>	
DRAWN BY: <u>DVK</u> DATE: <u>11/10/23</u>	
CHECKED BY: <u>MJK</u> DATE: <u>11/10/23</u>	
APPROVED BY: _____ DATE: _____	



OUTFALL ANALYSES

NARRATIVE:

PER DCSM 8-530.4.A OUTFALL ANALYSES ARE REQUIRED A MINIMUM OF 300' DOWNSTREAM FOR A CAPACITY CHECK FOR CLOSED DRAINAGE SYSTEMS, OPEN CHANNEL DRAINAGE SYSTEMS MUST BE CHECKED FOR CAPACITY AND EROSION EVERY 100' DOWNSTREAM UP TO THE 300' LIMIT. ADDITIONALLY EXISTING DOWNSTREAM CULVERTS MUST BE ANALYZED FOR THE 25-YR STORM.

DOWNSTREAM OF OUTFALL 1 IS A CONCRETE LINED CHANNEL AND DOUBLE BARREL PIPE. THE CHANGE IN LAND USE IN THE DRAINAGE AREA OF OUTFALL 1 IS TOO SMALL (LESS THAN 0.01 AC) TO CREATE A MEASURABLE CHANGE IN LAND USE. EROSION AND CAPACITY ANALYSES ARE NOT NEEDED AS THE LAND USE CHANGES GENERATED BY THE PROJECT WILL NOT MEASURABLY CHANGE THE EXISTING FLOWS IN THE DOWNSTREAM CHANNEL AND CULVERT.

OUTFALL 3 IS LOCATED DOWNSTREAM OF OUTFALL 2. AS SUCH THE DOWNSTREAM ANALYSES ARE COMBINED. DOWNSTREAM OF OUTFALL 3 IS A QUADRUPLE BOX CULVERT THAT DISCHARGES INTO A SMALL DEPRESSION, WHERE OTHER OUTFALLS ARE LOCATED. THESE FLOWS COMBINE AND DISCHARGE INTO A DOUBLE BOX CULVERT. THE DOWNSTREAM END OF THE DOUBLE BOX CULVERT IS APPROX. 300' DOWNSTREAM FROM OUTFALL 3. ANALYSES HAVE BEEN PERFORMED IN THE DEPRESSION BETWEEN THE CULVERTS AND AT THE DOWNSTREAM ENDS OF BOTH BOX CULVERTS.

FLOWS WERE GENERATED USING THE RATIONAL METHOD. LAND USE WAS DETERMINED USING AERIAL PHOTOGRAPHY AND GIS DATA. CROSS SECTIONS AND CULVERT INFORMATION WAS OBTAINED FROM SURVEY DATA. THE CHANNEL WAS EVALUATED USING FLOWMASTER. THE BOX CULVERTS WERE ANALYZED USING HY-8. ANALYSES WERE PERFORMED FOR EROSION (2-YR STORM) AND CAPACITY (10-YR STORM). IT WAS FOUND THAT THERE IS ADEQUATE CAPACITY IN THE CHANNEL AND THE BOX CULVERTS AND THAT THE FLOW IN THE CHANNEL IS NONEROSIVE.

SECTION A-A CULVERT ANALYSIS:

Culvert Barrel Data

Culvert Barrel Type Straight Culvert

Inlet Elevation (invert): 242.83 ft,

Outlet Elevation (invert): 242.25 ft

Culvert Length: 134.50 ft,

Culvert Slope: 0.0043

Site Data - Dumfries Culvert

Site Data Option: Culvert Invert Data

Inlet Station: 0.00 ft

Inlet Elevation: 242.83 ft

Outlet Station: 134.50 ft

Outlet Elevation: 242.25 ft

Number of Barrels: 4

Culvert Data Summary - Dumfries Culvert

Barrel Shape: Concrete Box

Barrel Span: 5.00 ft

Barrel Rise: 3.00 ft

Barrel Material: Concrete

Embedment: 0.00 in

Barrel Manning's n: 0.0120

Culvert Type: Straight

Inlet Configuration: Square Edge (90°) Headwall

Inlet Depression: None

Tailwater Channel Data - Dumfries - 10yr

Tailwater Channel Option: Irregular Channel

Channel Slope: Irregular Channel

User Defined Channel Cross-Section

Coord No.	Station (ft)	Elevation (ft)	Manning's n
1	0.00	250.00	0.0300
2	13.50	246.00	0.0130
3	14.00	243.00	0.0300
4	23.80	243.25	0.0300
5	35.00	243.00	0.0300
6	40.50	242.25	0.0300
7	46.70	243.00	0.0300
8	63.80	250.00	0.0000

Roadway Data for Crossing: Dumfries - 10yr

Roadway Profile Shape: Constant Roadway Elevation

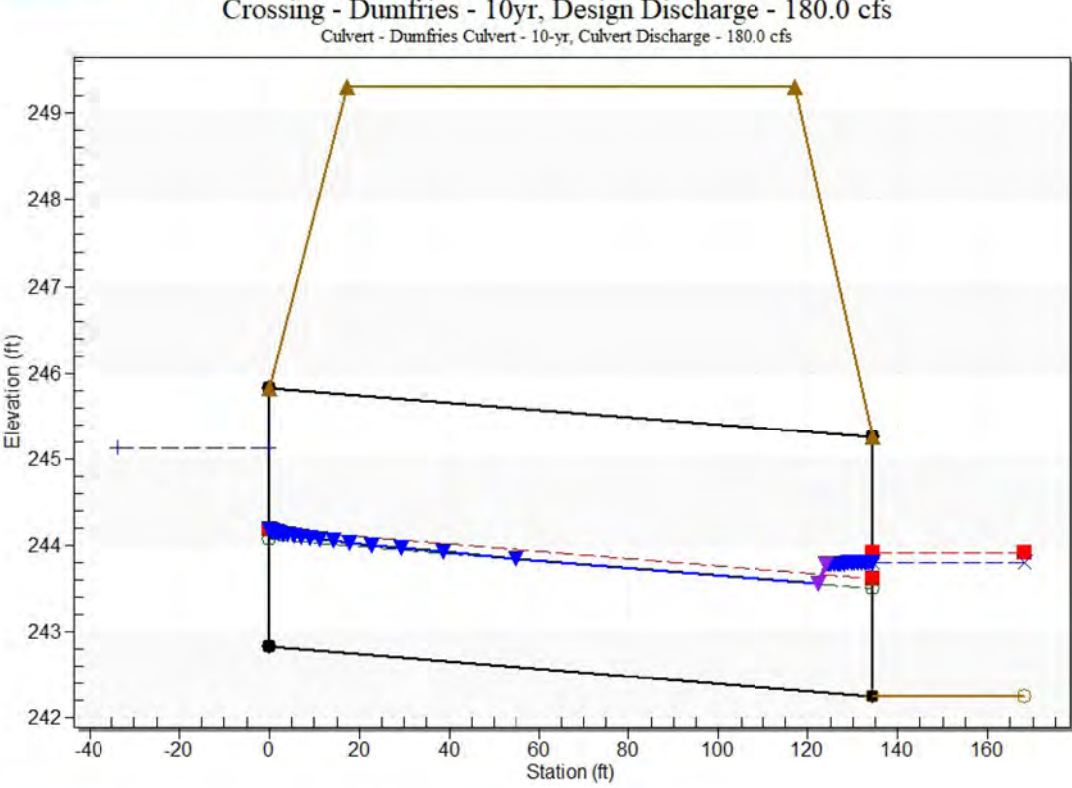
Crest Length: 13.00 ft

Crest Elevation: 249.30 ft

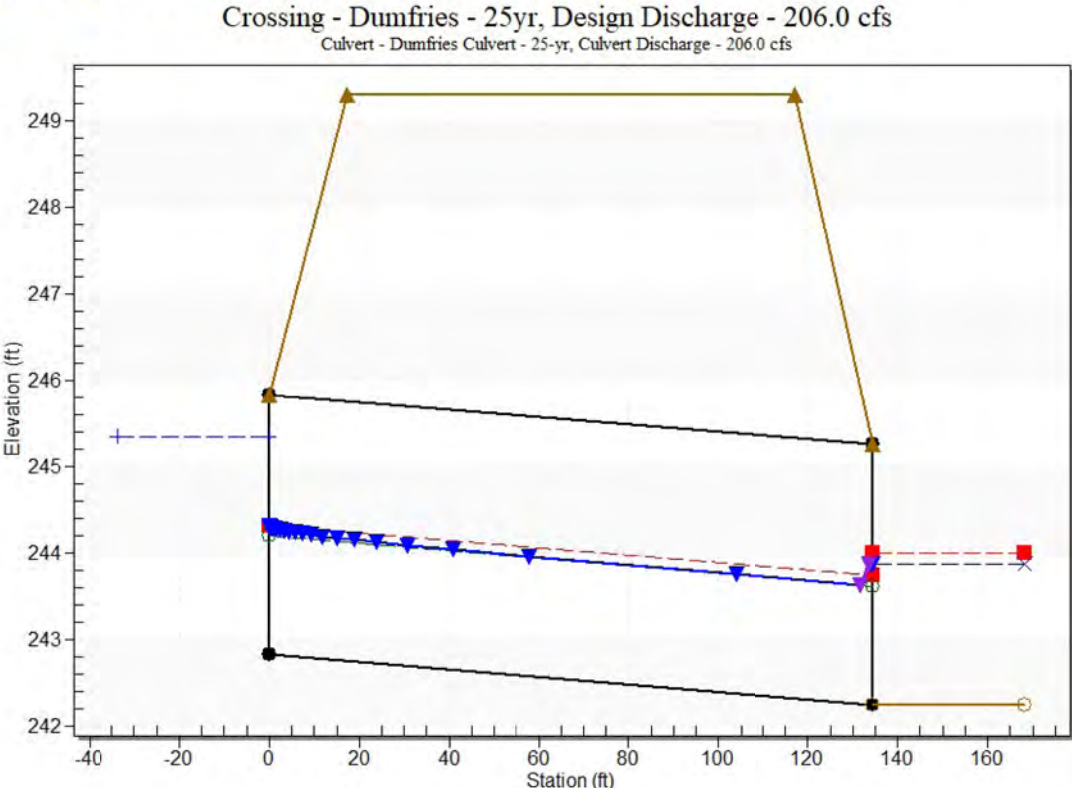
Roadway Surface: Paved

Roadway Top Width: 100.00 ft

Water Surface Profile Plot for Culvert: Dumfries Culvert - 10-yr



Water Surface Profile Plot for Culvert: Dumfries Culvert - 25-yr



B-B CHANNEL ANALYSIS:

Worksheet for 2-yr Storm

Project Description	
Friction Method	Manning
Solve For	Formula
Normal Depth	
Input Data	
Channel Slope	0.020 ft/ft
Discharge	210.00 cfs

Section Definitions		
Station (ft)	Elevation (ft)	
0+00	250.00	
0+14	246.00	
0+14	243.00	
0+24	243.25	
0+35	243.00	
0+41	242.25	
0+47	243.00	
0+64	250.00	

Roughness Segment Definitions		
Start Station	Ending Station	Roughness Coefficient
(0+00, 250.00)	(0+14, 246.00)	0.050
(0+14, 246.00)	(0+14, 243.00)	0.013
(0+14, 243.00)	(0+47, 243.00)	0.035
(0+47, 243.00)	(0+64, 250.00)	0.050

Options	
Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results	
Normal Depth	21.1 in
Elevation Range	242.3 to 250.0 ft
Flow Area	36.1 ft²
Wetted Perimeter	36.5 ft
Hydraulic Radius	11.9 in
Top Width	35.34 ft
Normal Depth	21.1 in
Critical Depth	21.2 in
Critical Slope	0.019 ft/ft
Velocity	5.81 ft/s

B-B.mis 11/21/2023 Bentley Systems, Inc. Haestad Methods Solution Center 27 Siemon Company Drive Suite 200 W Watertown, CT 06795 USA +1-203-755-1666 FlowMaster (10.02.00.01) Page 1 of 2

Worksheet for 10-yr Storm

Project Description	
Friction Method	Manning
Solve For	Formula
Normal Depth	
Input Data	
Channel Slope	0.020 ft/ft
Discharge	292.00 cfs

Section Definitions		
Station (ft)	Elevation (ft)	
0+00	250.00	
0+14	246.00	
0+14	243.00	
0+24	243.25	
0+35	243.00	
0+41	242.25	
0+47	243.00	
0+64	250.00	

Roughness Segment Definitions		
Start Station	Ending Station	Roughness Coefficient
(0+00, 250.00)	(0+14, 246.00)	0.030
(0+14, 246.00)	(0+14, 243.00)	0.013
(0+14, 243.00)	(0+64, 250.00)	0.030

Options	
Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results	
Normal Depth	22.2 in
Elevation Range	242.3 to 250.0 ft
Flow Area	39.4 ft²
Wetted Perimeter	36.8 ft
Hydraulic Radius	12.8 in
Top Width	35.58 ft
Normal Depth	22.2 in
Critical Depth	24.3 in
Critical Slope	0.012 ft/ft
Velocity	7.42 ft/s
Velocity Head	0.85 ft

B-B.mis 11/21/2023 Bentley Systems, Inc. Haestad Methods Solution Center 27 Siemon Company Drive Suite 200 W Watertown, CT 06795 USA +1-203-755-1666 FlowMaster (10.02.00.01) Page 1 of 2

Rational Method Calculations										
Cross Section	A-A			B-B			C-C			
Surface Cover	Land Use	Area		C	Area		C	Area		C
	Impervious	7.58	ac	0.9	11.95	ac	0.9	12.19	ac	0.9
	Commercial	1.09	ac	0.85	21.46	ac	0.85	22.64	ac	0.85
	Res - Townhomes	21.63	ac	0.7	32.72	ac	0.7	32.72	ac	0.7
	Res - House	32.3	ac	0.4	41.91	ac	0.4	41.91	ac	0.4
	Park	0.00	ac	0.35	11.40	ac	0.35	11.40	ac	0.35
	Woods	3.36	ac	0.25	17.13	ac	0.25	17.13	ac	0.25
	<b>Total</b>	<b>65.96</b>	<b>ac</b>	<b>0.66</b>	<b>136.57</b>	<b>ac</b>	<b>0.64</b>	<b>137.99</b>	<b>ac</b>	<b>0.64</b>
Intensities	Tc									
	15 min 2-yr	3.25	in/hr		3.25	in/hr		3.25	in/hr	
	30 min 2-yr	2.25	in/hr		2.25	in/hr		2.25	in/hr	
	15 min 10-yr	4.36	in/hr		4.36	in/hr		4.36	in/hr	
	30 min 10-yr	3.16	in/hr		3.16	in/hr		3.16	in/hr	
	15 min 25-yr	4.95	in/hr		4.95	in/hr		4.95	in/hr	
	30 min 25-yr	3.66	in/hr		3.66	in/hr		3.66	in/hr	
	<b>I2</b>	<b>3.05</b>	<b>in/hr</b>		<b>2.40</b>	<b>in/hr</b>		<b>2.32</b>	<b>in/hr</b>	
	<b>I10</b>	<b>4.12</b>	<b>in/hr</b>		<b>3.34</b>	<b>in/hr</b>		<b>3.24</b>	<b>in/hr</b>	
	<b>I25</b>	<b>4.69</b>	<b>in/hr</b>		<b>4.40</b>	<b>in/hr</b>		<b>3.75</b>	<b>in/hr</b>	
Flows	Q2									
	<b>Q10</b>	<b>180</b>	<b>cfs</b>		<b>292</b>	<b>cfs</b>		<b>287</b>	<b>cfs</b>	
	<b>Q25</b>	<b>206</b>	<b>cfs</b>		<b>385</b>	<b>cfs</b>		<b>332</b>	<b>cfs</b>	

DESCRIPTION: Tc to A-A		
Overland Flow Time (Kirpich) - AB	Length: 90 (ft)	Tc: 27.73 (min)
Slope: 0.1111 (ft/ft)		
Ground Cover: Forest	C: 0.35 unitless	
Tc: 9.04 (min)		
Channel Flow Time (Kirpich) - BC	Length: 430 (ft)	Tc: 2.77 (min)
Slope: 0.0795 (ft/ft)		
Ground Cover: Forest	C: 0.35 unitless	
Tc: 8.07 (min)		
Channel Flow Time (Kirpich) - CD	Length: 800 (ft)	Tc: 1.64 (min)
Slope: 0.0795 (ft/ft)		
Ground Cover: Forest	C: 0.35 unitless	
Tc: 8.07 (min)		
BMP - DE	Length: 2 (ft)	Tc: 0.00 (min)
Channel Flow Time (Kirpich) - EF	Length: 70 (ft)	Tc: 0.18 (min)
Slope: 0.0795 (ft/ft)		
Ground Cover: Forest	C: 0.35 unitless	
Tc: 8.07 (min)		
BMP - FG	Length: 2 (ft)	Tc: 0.00 (min)
Channel Flow Time (Kirpich) - GH	Length: 320 (ft)	Tc: 0.61 (min)
Slope: 0.0795 (ft/ft)		
Ground Cover: Forest	C: 0.35 unitless	
Tc: 8.07 (min)		
Channel Flow Time (Kirpich) - HI	Length: 135 (ft)	Tc: 0.41 (min)
Slope: 0.0795 (ft/ft)		
Ground Cover: Forest	C: 0.35 unitless	
Tc: 8.07 (min)		
TOTAL Tc: 18.0 (min)		
Lag Time: 10.8 (min)		

DESCRIPTION: Tc to B-B		
Overland Flow Time (Kirpich) - AB	Length: 100 (ft)	Tc: 27.73 (min)
Slope: 0.1111 (ft/ft)		
Ground Cover: Forest	C: 0.35 unitless	
Tc: 9.04 (min)		
Channel Flow Time (Kirpich) - BC	Length: 430 (ft)	Tc: 2.77 (min)
Slope: 0.0795 (ft/ft)		
Ground Cover: Forest	C: 0.35 unitless	
Tc: 8.07 (min)		
Channel Flow Time (Kirpich) - CD	Length: 800 (ft)	Tc: 1.64 (min)
Slope: 0.0795 (ft/ft)		
Ground Cover: Forest	C: 0.35 unitless	
Tc: 8.07 (min)		
BMP - DE	Length: 2 (ft)	Tc: 0.00 (min)
Channel Flow Time (Kirpich) - EF	Length: 70 (ft)	Tc: 0.18 (min)
Slope: 0.0795 (ft/ft)		
Ground Cover: Forest	C: 0.35 unitless	
Tc: 8.07 (min)		
BMP - FG	Length: 2 (ft)	Tc: 0.00 (min)
Channel Flow Time (Kirpich) - GH	Length: 320 (ft)	Tc: 0.61 (min)
Slope: 0.0795 (ft/ft)		
Ground Cover: Forest	C: 0.35 unitless	
Tc: 8.07 (min)		
Channel Flow Time (Kirpich) - HI	Length: 135 (ft)	Tc: 0.41 (min)
Slope: 0.0795 (ft/ft)		
Ground Cover: Forest	C: 0.35 unitless	
Tc: 8.07 (min)		
TOTAL Tc: 18.0 (min)		
Lag Time: 10.8 (min)		

DESCRIPTION: Tc to C-C		
Overland Flow Time (Kirpich) - AB	Length: 100 (ft)	Tc: 27.73 (min)
Slope: 0.1111 (ft/ft)		
Ground Cover: Forest	C: 0.35 unitless	
Tc: 9.04 (min)		
Channel Flow Time (Kirpich) - BC	Length: 430 (ft)	Tc: 2.77 (min)
Slope: 0.0795 (ft/ft)		
Ground Cover: Forest	C: 0.35 unitless	
Tc: 8.07 (min)		
Channel Flow Time (Kirpich) - CD	Length: 800 (ft)	Tc: 1.64 (min)
Slope: 0.0795 (ft/ft)		
Ground Cover: Forest	C: 0.35 unitless	
Tc: 8.07 (min)		
BMP - DE	Length: 2 (ft)	Tc: 0.00 (min)
Channel Flow Time (Kirpich) - EF	Length: 70 (ft)	Tc: 0.18 (min)
Slope: 0.0795 (ft/ft)		
Ground Cover: Forest	C: 0.35 unitless	
Tc: 8.07 (min)		
BMP - FG	Length: 2 (ft)	Tc: 0.00 (min)
Channel Flow Time (Kirpich) - GH	Length: 320 (ft)	Tc: 0.61 (min)
Slope: 0.0795 (ft/ft)		
Ground Cover: Forest	C: 0.35 unitless	
Tc: 8.07 (min)		
Channel Flow Time (Kirpich) - HI	Length: 135 (ft)	Tc: 0.41 (min)
Slope: 0.0795 (ft/ft)		
Ground Cover: Forest	C: 0.35 unitless	
Tc: 8.07 (min)		
TOTAL Tc: 18.0 (min)		
Lag Time: 10.8 (min)		

60% DESIGN SUBMITTAL



CITY OF MANASSAS, VIRGINIA  
DEPARTMENT OF ENGINEERING  
8500 PUBLIC WORKS DR.  
MANASSAS, VIRGINIA 20110

REVISIONS

DATE

T-093

MANASSAS PROJECT NO: T-093

DATE OF PLAN ISSUANCE: TBD

CONSULTANT PROJECT ID: RK&K

DESIGNED BY: DWK DATE: 11/10/23

DRAWN BY: DWK DATE: 11/10/23

CHECKED BY: MJK DATE: 11/10/23

DUMFRIES ROAD SIDEWALK (T-093)

OUTFALL ANALYSES

SHEET

12(1)

THESE PLANS ARE UNFINISHED AND UNAPPROVED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION OR THE ACQUISITION OF RIGHT OF WAY.



SECTION C-C CULVERT ANALYSIS:

**Culvert Barrel Data**  
Culvert Barrel Type: Straight Culvert  
Inlet Elevation (invert): 241.41 ft.  
Outlet Elevation (invert): 240.69 ft.  
Culvert Length: 131.20 ft.  
Culvert Slope: 0.0055

**Site Data - Hastings Culvert - 10-yr**  
Site Data Option: Culvert Invert Data  
Inlet Station: 0.00 ft  
Inlet Elevation: 241.41 ft  
Outlet Station: 131.20 ft  
Outlet Elevation: 240.69 ft  
Number of Barrels: 2

**Culvert Data Summary - Hastings Culvert - 10-yr**  
Barrel Shape: Concrete Box  
Barrel Span: 10.00 ft  
Barrel Rise: 4.00 ft  
Barrel Material: Concrete  
Embedment: 0.00 in  
Barrel Manning's n: 0.0120  
Culvert Type: Straight  
Inlet Configuration: Square Edge (90°) Headwall  
Inlet Depression: None

**Tailwater Channel Data - Hastings - 10yr**  
Tailwater Channel Option: Irregular Channel

Channel Slope: Irregular Channel

User Defined Channel Cross-Section

Coord No.	Station (ft)	Elevation (ft)	Manning's n
1	0.00	248.00	0.0300
2	10.60	242.00	0.0300
3	19.00	240.69	0.0300
4	35.40	244.00	0.0300
5	47.30	248.00	0.0300

**Roadway Data for Crossing: Hastings - 10yr**  
Roadway Profile Shape: Constant Roadway Elevation

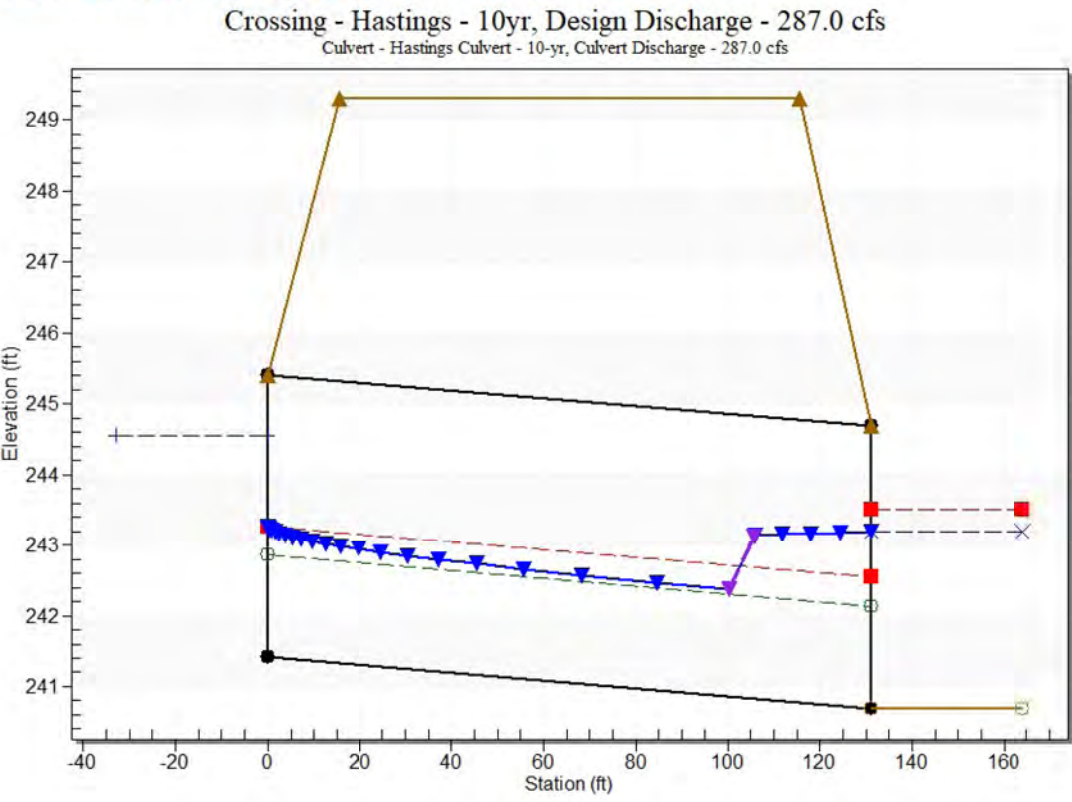
Crest Length: 10.40 ft

Crest Elevation: 249.30 ft

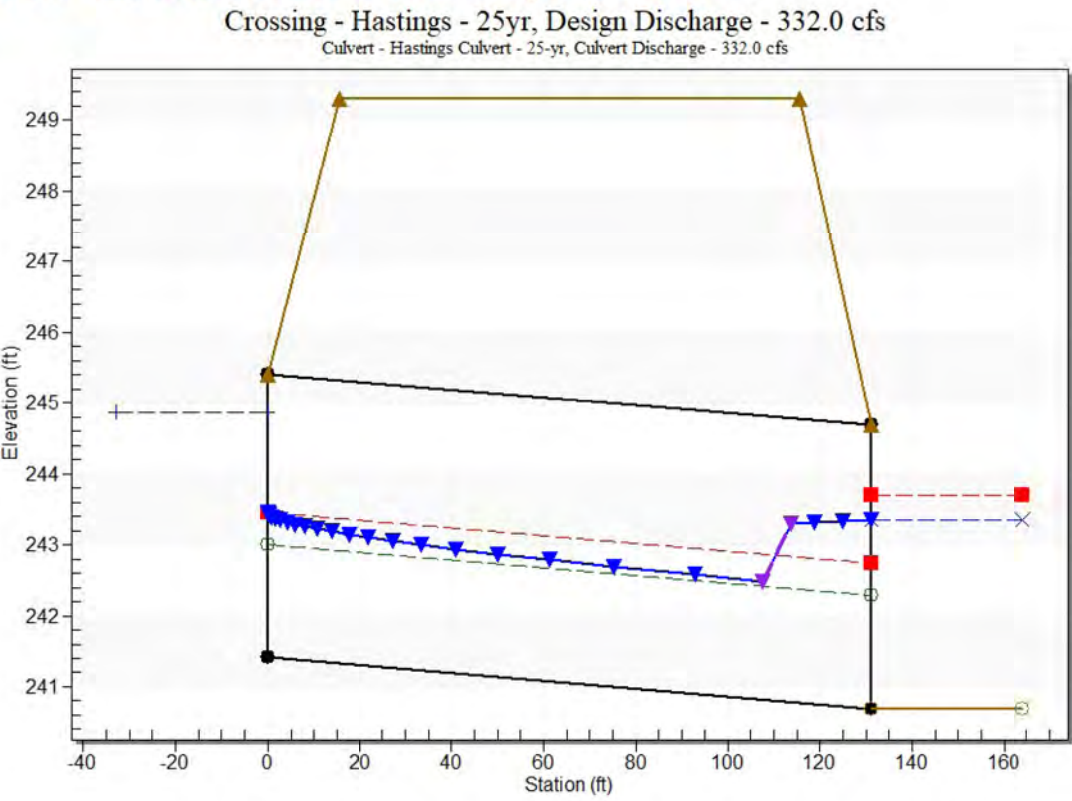
Roadway Surface: Paved

Roadway Top Width: 100.00 ft

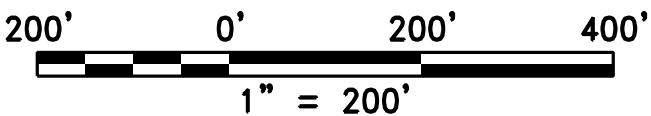
**Water Surface Profile Plot for Culvert: Hastings Culvert - 10-yr**



**Water Surface Profile Plot for Culvert: Hastings Culvert - 25-yr**



GRAPHIC SCALE



THESE PLANS ARE UNFINISHED  
AND UNAPPROVED AND ARE NOT  
TO BE USED FOR ANY TYPE  
OF CONSTRUCTION OR THE  
ACQUISITION OF RIGHT OF WAY.

DUMFRIES ROAD SIDEWALK (T-093)

60% DESIGN SUBMITTAL



CITY OF MANASSAS, VIRGINIA  
DEPARTMENT OF ENGINEERING  
8500 PUBLIC WORKS DR.  
MANASSAS, VIRGINIA 20110

REVISIONS  
DATE BY DESCRIPTION

MANASSAS PROJECT NO:	T-093
DATE OF PLAN ISSUANCE:	TBD
CONSULTANT PROJECT ID:	RK&K
DESIGNED BY:	DWK DATE: 11/10/23
DRAWN BY:	DWK DATE: 11/10/23
CHECKED BY:	MJK DATE: 11/10/23
APPROVED BY:	DATE:

OUTFALL ANALYSES

SHEET

12(2)

SCALE 1"=200'



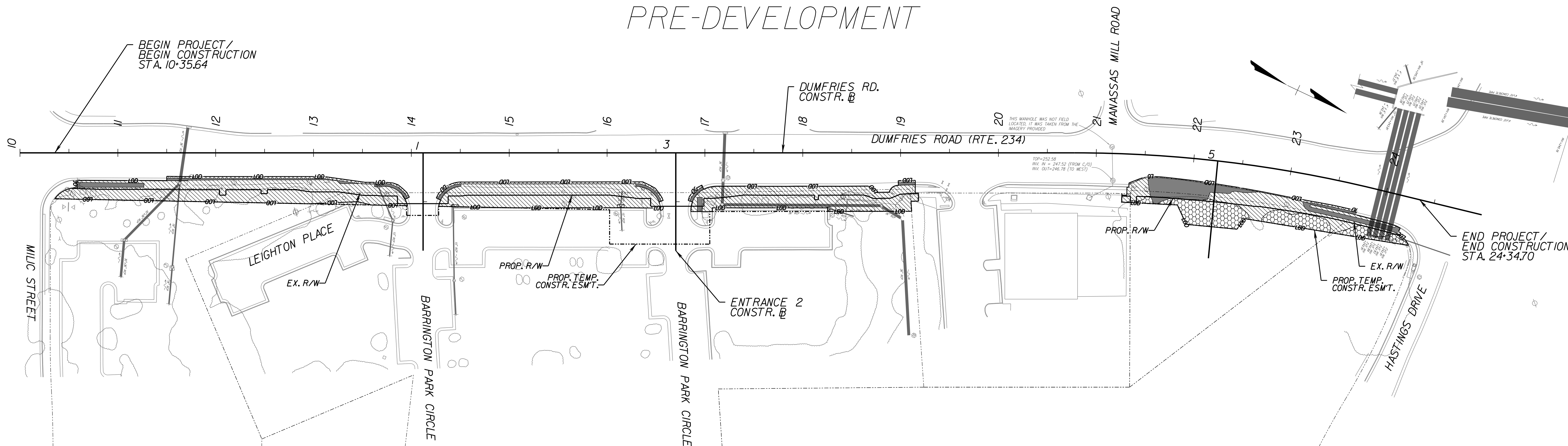
# STORMWATER MANAGEMENT NARRATIVE AND COMPUTATIONS

SCALE 1"=50'

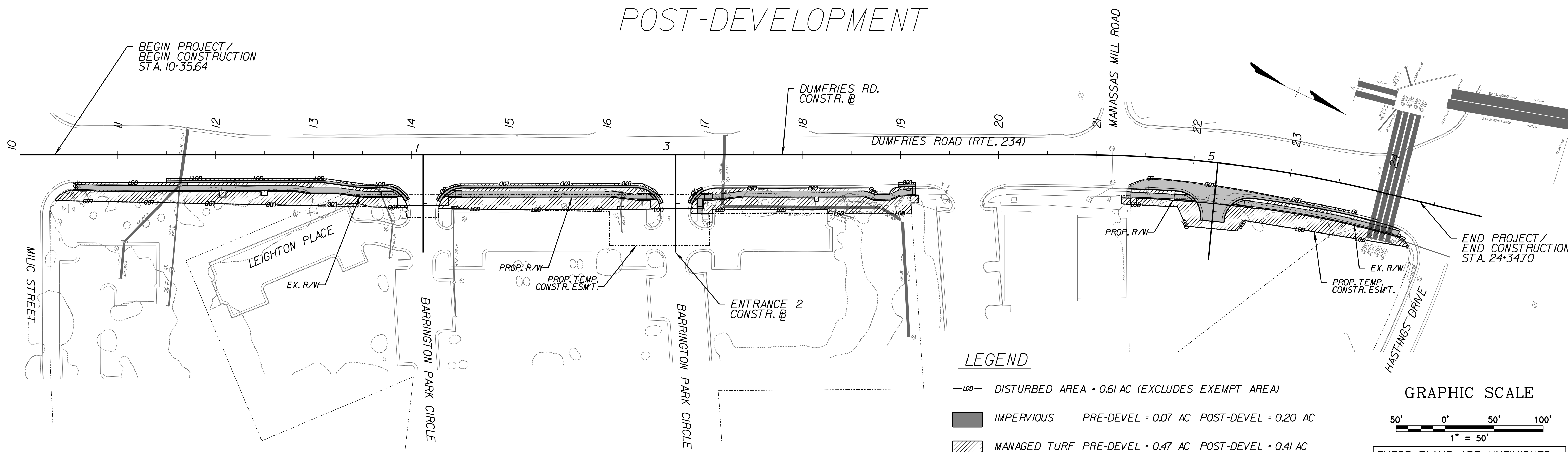


# WATER QUALITY MAPS

## PRE-DEVELOPMENT



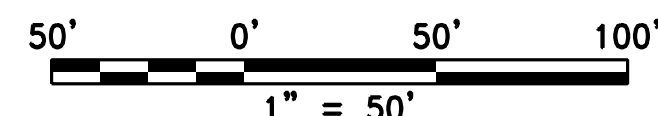
## POST-DEVELOPMENT



### LEGEND

---	DISTURBED AREA = 0.61 AC (EXCLUDES EXEMPT AREA)
■	IMPERVIOUS PRE-DEVEL = 0.07 AC POST-DEVEL = 0.20 AC
▨	MANAGED TURF PRE-DEVEL = 0.47 AC POST-DEVEL = 0.41 AC
▩	OPEN SPACE PRE-DEVEL = 0.07 AC POST-DEVEL = 0.00 AC
▤	EXEMPT = 0.03 AC (IMPERV. WITHIN IN LOD TO REMAIN UNCHANGED)

### GRAPHIC SCALE



THESE PLANS ARE UNFINISHED AND UNAPPROVED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION OR THE ACQUISITION OF RIGHT OF WAY.

60% DESIGN SUBMITTAL



CITY OF MANASSAS, VIRGINIA  
DEPARTMENT OF ENGINEERING  
8500 PUBLIC WORKS DR.  
MANASSAS, VIRGINIA 20110

DATE	BY	DESCRIPTION
		WATER QUALITY MAP

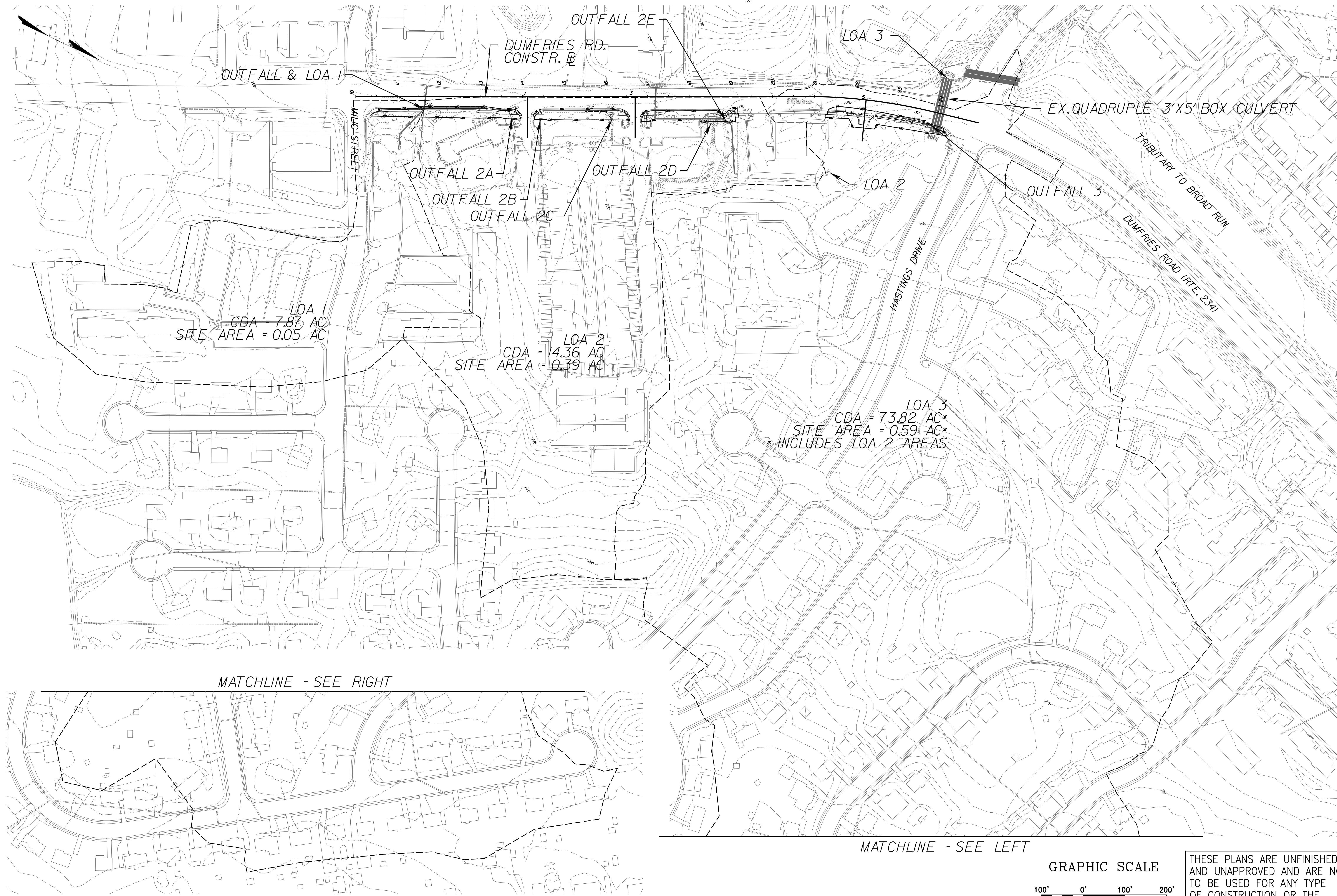
MANASSAS PROJECT NO:	T-093
DATE OF PLAN ISSUANCE:	TBD
CONSULTANT PROJECT ID:	RK&K
DESIGNED BY:	DVK DATE: 11/10/23
DRAWN BY:	DVK DATE: 11/10/23
CHECKED BY:	MJK DATE: 11/10/23
APPROVED BY:	DATE:

WATER QUALITY MAPS

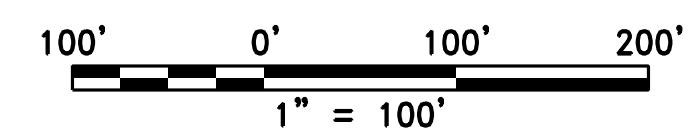
SHEET  
13(2)  
SCALE 1"=50'



# WATER QUANTITY MAP



## GRAPHIC SCALE



THESE PLANS ARE UNFINISHED AND UNAPPROVED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION OR THE ACQUISITION OF RIGHT OF WAY.

DUMFRIES ROAD SIDEWALK (T-093)

## WATER QUANTITY MAP

SHEET  
13(3)

SCALE 1"=100'

60% DESIGN SUBMITTAL

REVISIONS	DATE	BY	DESCRIPTION

MANASSAS PROJECT NO:	T-093
DATE OF PLAN ISSUANCE:	TBD
CONSULTANT PROJECT ID:	RR&K
DESIGNED BY:	DVK
DRAWN BY:	DVK
CHECKED BY:	MJK
APPROVED BY:	
DATE:	11/10/23
DATE:	11/10/23
DATE:	11/10/23

CITY OF MANASSAS, VIRGINIA  
DEPARTMENT OF ENGINEERING  
8500 PUBLIC WORKS DR  
MANASSAS, VIRGINIA 20110





SIGNING AND PAVEMENT MARKING PLAN

GENERAL NOTES

1. ALL PROPOSED SIGNING AND MARKING SHALL BE IN ACCORDANCE WITH:
  - VDOT ROAD AND BRIDGE SPECIFICATIONS, DATED 2020
  - VDOT ROAD AND BRIDGE STANDARDS, DATED 2016, REVISED - SEPTEMBER 2022
  - WORK AREA PROTECTION MANUAL, DATED 2011, REVISION 21, NOVEMBER 1, 2020
  - MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), DATED 2009, REVISION 3, DATED JULY 2022
  - VIRGINIA SUPPLEMENT TO THE 2009 MUTCD, DATED 2011, REVISION 1, SEPTEMBER 30, 2013
2. PRIOR TO BEGINNING WORK, THE CONTRACTOR SHALL CONTACT "MISS UTILITY OF VIRGINIA" (1-800-522-7001) IN ORDER TO DETERMINE THE EXTENT AND LOCATION OF ALL UNDERGROUND UTILITIES WITHIN THE PROJECT LIMITS. UTILITY COMPANIES SHALL BE NOTIFIED THROUGH "MISS UTILITY OF VIRGINIA" 48 HOURS IN ADVANCE OF ANY EXCAVATION WITHIN THE PROXIMITY OF THEIR UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING OR REPLACING, AT THEIR OWN EXPENSE, ANY EXISTING UTILITIES, PAVEMENT, CONCRETE ITEMS, PIPES, ETC. THAT ARE DAMAGED DURING CONSTRUCTION.
3. UNLESS OTHERWISE APPROVED BY THE ENGINEER OR INDICATED IN THE MAINTENANCE OF TRAFFIC AND SEQUENCE OF CONSTRUCTION PLANS, EXISTING TRAFFIC SIGNS WHICH ARE TO BE RELOCATED SHALL REMAIN IN PLACE UNTIL THE NEW SIGN STRUCTURE IS IN PLACE.
4. THE REMOVAL OR MODIFICATION OF EXISTING SIGN PANELS, STRUCTURES, OR FOUNDATIONS SHALL CONFORM TO SECTION 510 OF THE SPECIFICATIONS.
5. NEW MATERIALS AND ITEMS REQUIRED TO COMPLETE THE REMOVAL OR MODIFICATION OF EXISTING ITEMS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL IN ACCORDANCE WITH SECTION 105 OF THE SPECIFICATIONS.
6. ALL EXISTING AND PROPOSED SIGN LOCATIONS ARE APPROXIMATE AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR. ALL PROPOSED SIGN LOCATIONS SHALL BE STAKED BY THE CONTRACTOR FOR REVIEW AND APPROVAL BY THE TRAFFIC ENGINEER PRIOR TO ANY INSTALLATION OR RELOCATION.
7. ALL SIGN PANELS, FRAMING MEMBERS, AND MISCELLANEOUS HARDWARE SHALL BE SALVAGED OR DISPOSED OF AT THE DIRECTION OF THE ENGINEER.
8. ALL STRIPING, WHERE MATCHING TO EXISTING, SHALL BE DONE IN A MANNER APPROVED BY THE ENGINEER.
9. EXISTING PAVEMENT MARKINGS THAT CONFLICT WITH THE PROPOSED MARKINGS SHOWN HEREIN SHALL BE ERADICATED.
10. LIMITS SHOWN OF PROPOSED PAVEMENT MARKINGS ARE APPROXIMATE AND SHALL BE MODIFIED IN THE FIELD TO ENSURE THAT PROPOSED PAVEMENT MARKINGS CONTINUE UNTIL EXISTING PAVEMENT MARKINGS CAN BE MATCHED.
11. PAVEMENT MARKING ARROWS, WORDS, AND SYMBOLS SHALL BE IN ACCORDANCE WITH STANDARD PM-10.
12. MEASUREMENT AND PAYMENT FOR SIGNS AND PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH STANDARD VDOT BID ITEMS.

STANDARD SIGN LEGEND

PLAN ITEM	PLAN SYMBOL	
	PROPOSED	EXISTING
Single Post Sign Support		
Double Post Sign Support		
Triple Post Sign Support		
SIGN CALL-OUTS		
Existing sign and structure to be replaced in current location		
Existing Sign to be Removed		

SIGN LABELS

Proposed Sign Assemblies

Relocated Sign Assemblies

denotes Sign Assembly No.

denotes Sign Assembly No.

denotes Text No.

denotes Text No.

Sign Relocation or Payable Sign Disposal/Salvage

denotes Existing Sign Structure and/or Sign Panel Type

STRUCTURE & SIGN PANEL

- GM - Ground Mounted
- OM - Overhead Mounted
- CM - Cantilever Mounted

SIGN PANEL

- SP-GM - Ground Mounted Sign Panel
- SP-OH - Overhead Mounted Sign Panel

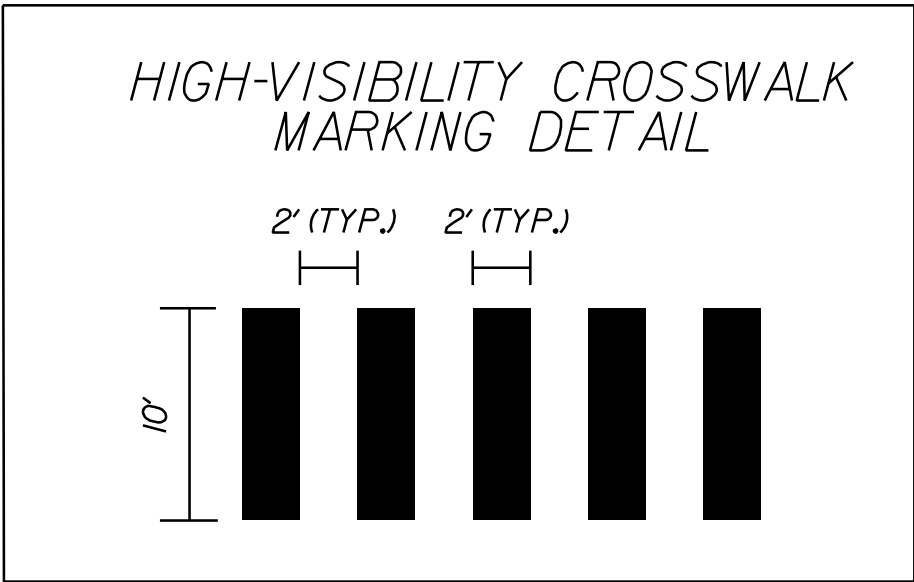
denotes Action and Measurement & Payment Item

- A - Remove & Dispose
- B - Remove & Salvage
- C - Relocate
- D - Overlay Sign Panel
- E - Reset Sign Panel

STRUCTURE ONLY

- ST-GM - Ground Mounted

Signs noted on plans to be removed that do not have an accompanying sign label shall not be measured separately for payment. Removal and disposal for such signs shall be incidental to other contract items.



THESE PLANS ARE UNFINISHED AND UNAPPROVED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION OR THE ACQUISITION OF RIGHT OF WAY.

60% DESIGN SUBMITTAL

MANASSAS VIRGINIA

1873

CITY OF MANASSAS, VIRGINIA  
DEPARTMENT OF ENGINEERING  
8500 PUBLIC WORKS DR  
MANASSAS, VIRGINIA 20110

REVISIONS

DATE	BY	DESCRIPTION

MANASSAS PROJECT NO: T-093

DATE OF PLAN ISSUANCE: TBD

CONSULTANT PROJECT ID: RKK&K

DESIGNED BY: DWK DATE: 11/10/23

DRAWN BY: DWK DATE: 11/10/23

CHECKED BY: MJK DATE: 11/10/23

APPROVED BY:  DATE:

SIGNING AND PAVEMENT MARKING PLAN

SHEET  
14(1)

DUMFRIES ROAD SIDEWALK (T-093)



CITY OF MANASSAS, VIRGINIA  
DEPARTMENT OF ENGINEERING  
8500 PUBLIC WORKS DR  
MANASSAS, VIRGINIA 20110

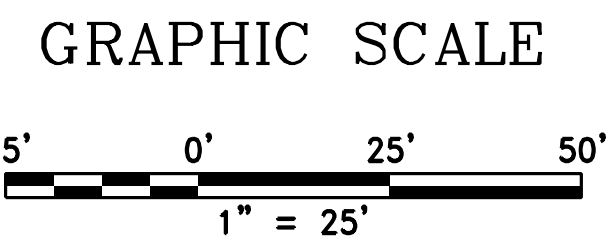
DATE	BY	DESCRIPTION
------	----	-------------

DATE OF PLAN ISSUANCE:	TBD
CONSULTANT PROJECT ID:	RK&K
DESIGNED BY: DWK	DATE: 11/10/23
DRAWN BY:	DWK DATE: 11/10/23
CHECKED BY: MJK	DATE: 11/10/23
APPROVED BY: _____	DATE: _____

2  
 3  
 4  
 5  
 6  
 7  
 8  
 9  
 10  
 11  
 12  
 13  
 14  
 15  
 16  
 17  
 18  
 19  
 20  
 21  
 22  
 23  
 24  
 25  
 26  
 27  
 28  
 29  
 30  
 31  
 32  
 33  
 34  
 35  
 36  
 37  
 38  
 39  
 40  
 41  
 42  
 43  
 44  
 45  
 46  
 47  
 48  
 49  
 50  
 51  
 52  
 53  
 54  
 55  
 56  
 57  
 58  
 59  
 60  
 61  
 62  
 63  
 64  
 65  
 66  
 67  
 68  
 69  
 70  
 71  
 72  
 73  
 74  
 75  
 76  
 77  
 78  
 79  
 80  
 81  
 82  
 83  
 84  
 85  
 86  
 87  
 88  
 89  
 90  
 91  
 92  
 93  
 94  
 95  
 96  
 97  
 98  
 99  
 100  
 101  
 102  
 103  
 104  
 105  
 106  
 107  
 108  
 109  
 110  
 111  
 112  
 113  
 114  
 115  
 116  
 117  
 118  
 119  
 120  
 121  
 122  
 123  
 124  
 125  
 126  
 127  
 128  
 129  
 130  
 131  
 132  
 133  
 134  
 135  
 136  
 137  
 138  
 139  
 140  
 141  
 142  
 143  
 144  
 145  
 146  
 147  
 148  
 149  
 150  
 151  
 152  
 153  
 154  
 155  
 156  
 157  
 158  
 159  
 160  
 161  
 162  
 163  
 164  
 165  
 166  
 167  
 168  
 169  
 170  
 171  
 172  
 173  
 174  
 175  
 176  
 177  
 178  
 179  
 180  
 181  
 182  
 183  
 184  
 185  
 186  
 187  
 188  
 189  
 190  
 191  
 192  
 193  
 194  
 195  
 196  
 197  
 198  
 199  
 200  
 201  
 202  
 203  
 204  
 205  
 206  
 207  
 208  
 209  
 210  
 211  
 212  
 213  
 214  
 215  
 216  
 217  
 218  
 219  
 220  
 221  
 222  
 223  
 224  
 225  
 226  
 227  
 228  
 229  
 230  
 231  
 232  
 233  
 234  
 235  
 236  
 237  
 238  
 239  
 240  
 241  
 242  
 243  
 244  
 245  
 246  
 247  
 248  
 249  
 250  
 251  
 252  
 253  
 254  
 255  
 256  
 257  
 258  
 259  
 260  
 261  
 262  
 263  
 264  
 265  
 266  
 267  
 268  
 269  
 270  
 271  
 272  
 273  
 274  
 275  
 276  
 277  
 278  
 279  
 280  
 281  
 282  
 283  
 284  
 285  
 286  
 287  
 288  
 289  
 290  
 291  
 292  
 293  
 294  
 295  
 296  
 297  
 298  
 299  
 300  
 301  
 302  
 303  
 304  
 305  
 306  
 307  
 308  
 309  
 310  
 311  
 312  
 313  
 314  
 315  
 316  
 317  
 318  
 319  
 320  
 321  
 322  
 323  
 324  
 325  
 326  
 327  
 328  
 329  
 330  
 331  
 332  
 333  
 334  
 335  
 336  
 337  
 338  
 339  
 340  
 341  
 342  
 343  
 344  
 345  
 346  
 347  
 348  
 349  
 350  
 351  
 352  
 353  
 354  
 355  
 356  
 357  
 358  
 359  
 360  
 361  
 362  
 363  
 364  
 365  
 366  
 367  
 368  
 369  
 370  
 371  
 372  
 373  
 374  
 375  
 376  
 377  
 378  
 379  
 380  
 381  
 382  
 383  
 384  
 385  
 386  
 387  
 388  
 389  
 390  
 391  
 392  
 393  
 394  
 395  
 396  
 397  
 398  
 399  
 400  
 401  
 402  
 403  
 404  
 405  
 406  
 407  
 408  
 409  
 410  
 411  
 412  
 413  
 414  
 415  
 416  
 417  
 418  
 419  
 420  
 421  
 422  
 423  
 424  
 425  
 426  
 427  
 428  
 429  
 430  
 431  
 432  
 433  
 434  
 435  
 436  
 437  
 438  
 439  
 440  
 441  
 442  
 443  
 444  
 445  
 446  
 447  
 448  
 449  
 450  
 451  
 452  
 453  
 454  
 455  
 456  
 457  
 458  
 459  
 460  
 461  
 462  
 463  
 464  
 465  
 466  
 467  
 468  
 469  
 470  
 471  
 472  
 473  
 474  
 475  
 476  
 477  
 478  
 479  
 480  
 481  
 482  
 483  
 484  
 485  
 486  
 487  
 488  
 489  
 490  
 491  
 492  
 493  
 494  
 495  
 496  
 497  
 498  
 499  
 500  
 501  
 502  
 503  
 504  
 505  
 506  
 507  
 508  
 509  
 510  
 511  
 512  
 513  
 514  
 515  
 516  
 517  
 518  
 519  
 520  
 521  
 522  
 523  
 524  
 525  
 526

(2)

SCALE: 1"=25'



THESE PLANS ARE UNFINISHED  
AND UNAPPROVED AND ARE NOT  
TO BE USED FOR ANY TYPE  
OF CONSTRUCTION OR THE  
ACQUISITION OF RIGHT OF WAY.

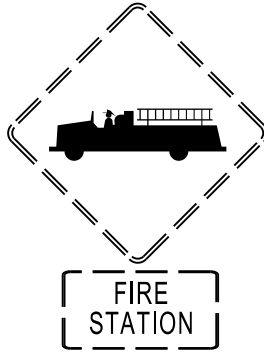

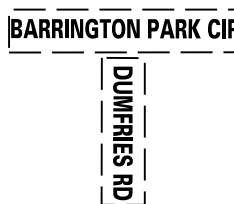




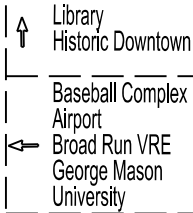
- (A) TYPE B, CLASS 1, WHITE PAVEMENT LINE MARKING, 4" WIDTH
- (B) TYPE B, CLASS 1, DOUBLE YELLOW PAVEMENT LINE MARKING, 4" WIDTH
- (C) TYPE B, CLASS 1, WHITE PAVEMENT LINE MARKING, 4" WIDTH, 2' STRIPE, 6' SKIP
- (D) TYPE B, CLASS 1, WHITE PAVEMENT LINE MARKING, 24" WIDTH
- (E) TYPE B, CLASS 1, WHITE PAVEMENT LINE MARKING, 24" WIDTH (10' LONGITUDINAL CROSSING, 2' GAPS)
- (F) TYPE B, CLASS 1, PAVEMENT MARKING SYMBOL, RIGHT TURN ARROW
- (G) ERADICATE EX. LINEAR PAVEMENT MARKING







SIGN SCHEDULE

TEXT NO.	SIGN ASSEMBLY NO(s).	TEXT	SIGN ASSEMBLY COMPONENTS			SIGN PANEL AREA (s.f.)		PROP. SIGN STRUCTURE ST'D.	PROP. FOUNDATION ST'D.	REMARKS
			MUTCD ST'D.	PANEL SIZE		QTY.	PER ASSEMBLY			
				W	H					
1	301		EXIST.	-	-	1	-	STP-1 2.5" 12 GA.	TYPE A	
			EXIST.	-	-	1	-			
2	302		EXIST.	-	-	1	-	STP-1 2" 14 GA.	TYPE A	
3	303,306		EXIST.	-	-	2	-	STP-1 2.5" 12 GA.	TYPE A	
			EXIST.	-	-	2	-			
4	304,307		EXIST.	-	-	2	-	STP-1 2" 14 GA.	TYPE A	
5	305		EXIST.	-	-	1	-	STP-1 2" 14 GA.	TYPE A	
6	308		EXIST.	-	-	1	-	STP-1 2" 14 GA.	TYPE A	
7	401		EXIST.	-	-	1	-	STP-1 2.5" 12 GA.	TYPE A	
			EXIST.	-	-	1	-			
8	402		EXIST.	-	-	1	-	NON-STANDARD	NON-STANDARD	CUSTOMIZED SIGN BY THE CITY OF MANASSAS

NOTES:

- 1) ALL SIGNS SHALL BE ORIENTATED AS SHOWN ON THE PLANS.  
2) SIGN COLOR COMBINATIONS SHALL BE IN ACCORDANCE WITH THE FHWA SHS BOOK AND THE 2011VIRGINIA SHS BOOK OR AS NOTED IN THE PLANS.

- 3) ALL POSITIVE CONTRAST GUIDE AND SPECIFIC SERVICE SIGNS SHALL UTILIZE FABRICATION LETTER TYPE L-3 OR L-4 UNLESS OTHERWISE NOTED IN THE REMARKS.ALL OTHER SIGNS SHALL UTILIZE FABRICATION LETTER TYPE L-1 OR L-2 UNLESS OTHERWISE NOTED IN THE REMARKS.

- 4) ALL BLACK SHEETING SHALL BE NON-REFLECTIVE.  
5) SIGN STRUCTURES SHALL BE INSTALLED PER THE NOTED SIGN ST'D.  
6) ALL ST'D.STP-1 STRUCTURES TO BE SINGLE POST UNLESS OTHERWISE NOTED.

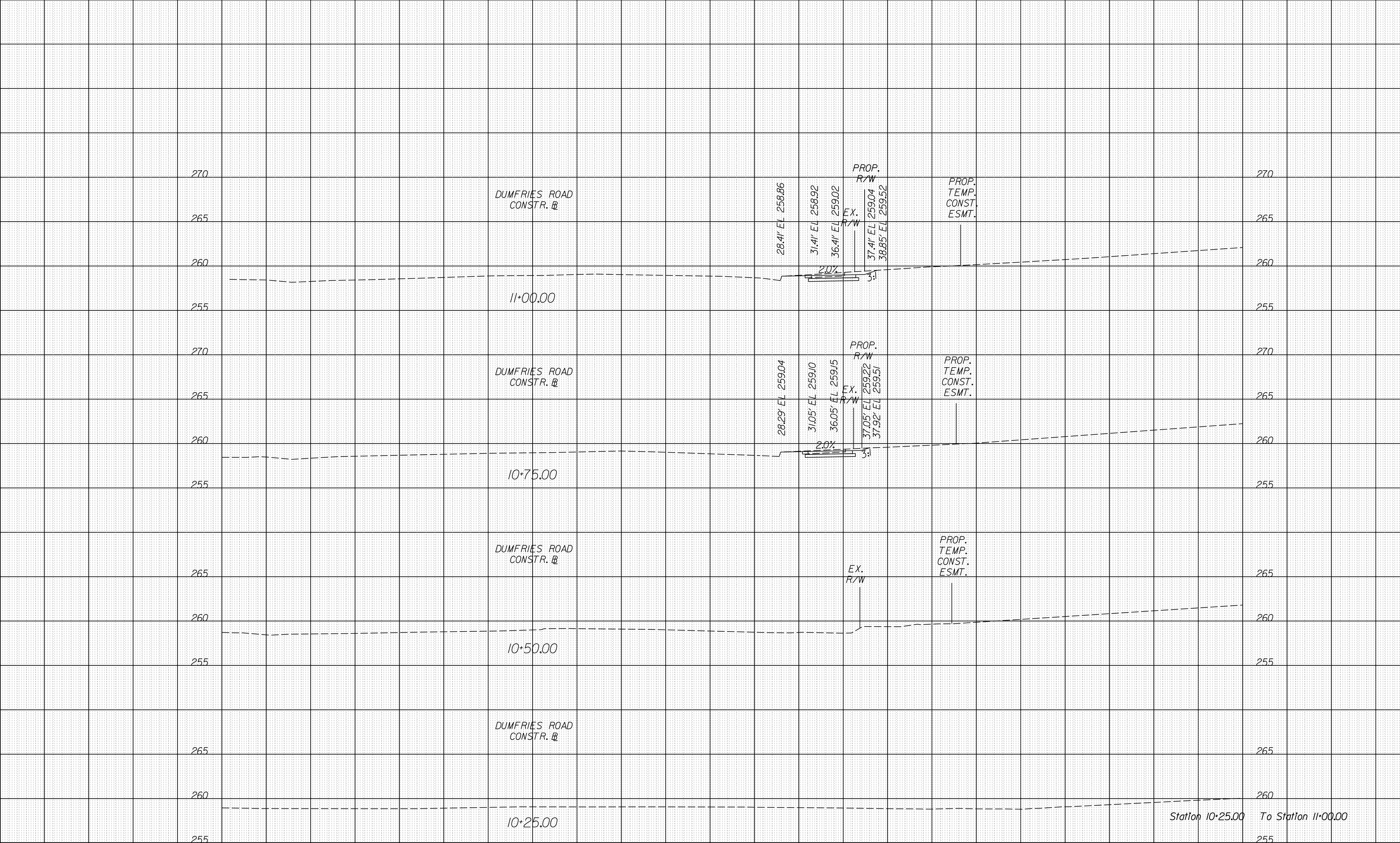
THESE PLANS ARE UNFINISHED AND UNAPPROVED AND ARE NOT TO BE USED FOR ANY TYPE OF CONSTRUCTION OR THE ACQUISITION OF RIGHT OF WAY.





CROSS SECTIONS

SCALE 1 IN. = 5 FT



THESE PLANS ARE UNFINISHED  
AND UNAPPROVED AND ARE NOT  
TO BE USED FOR ANY TYPE  
OF CONSTRUCTION OR THE  
ACQUISITION OF RIGHT OF WAY.

CITY OF MANASSAS, VIRGINIA  
DEPARTMENT OF ENGINEERING  
8500 PUBLIC WORKS DR  
MANASSAS, VIRGINIA 20110

REVISIONS  
DATE  
BY  
DESCRIPTION

MANASSAS PROJECT NO: T-093  
DATE OF PLAN ISSUANCE: TBD  
CONSULTANT PROJECT ID: RK&K  
DESIGNED BY: DVK DATE: 11/10/23  
DRAWN BY: DVK DATE: 11/10/23  
CHECKED BY: MJK DATE: 11/10/23  
APPROVED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

CROSS SECTIONS

SHEET  
XI  
SCALE 1"=5'

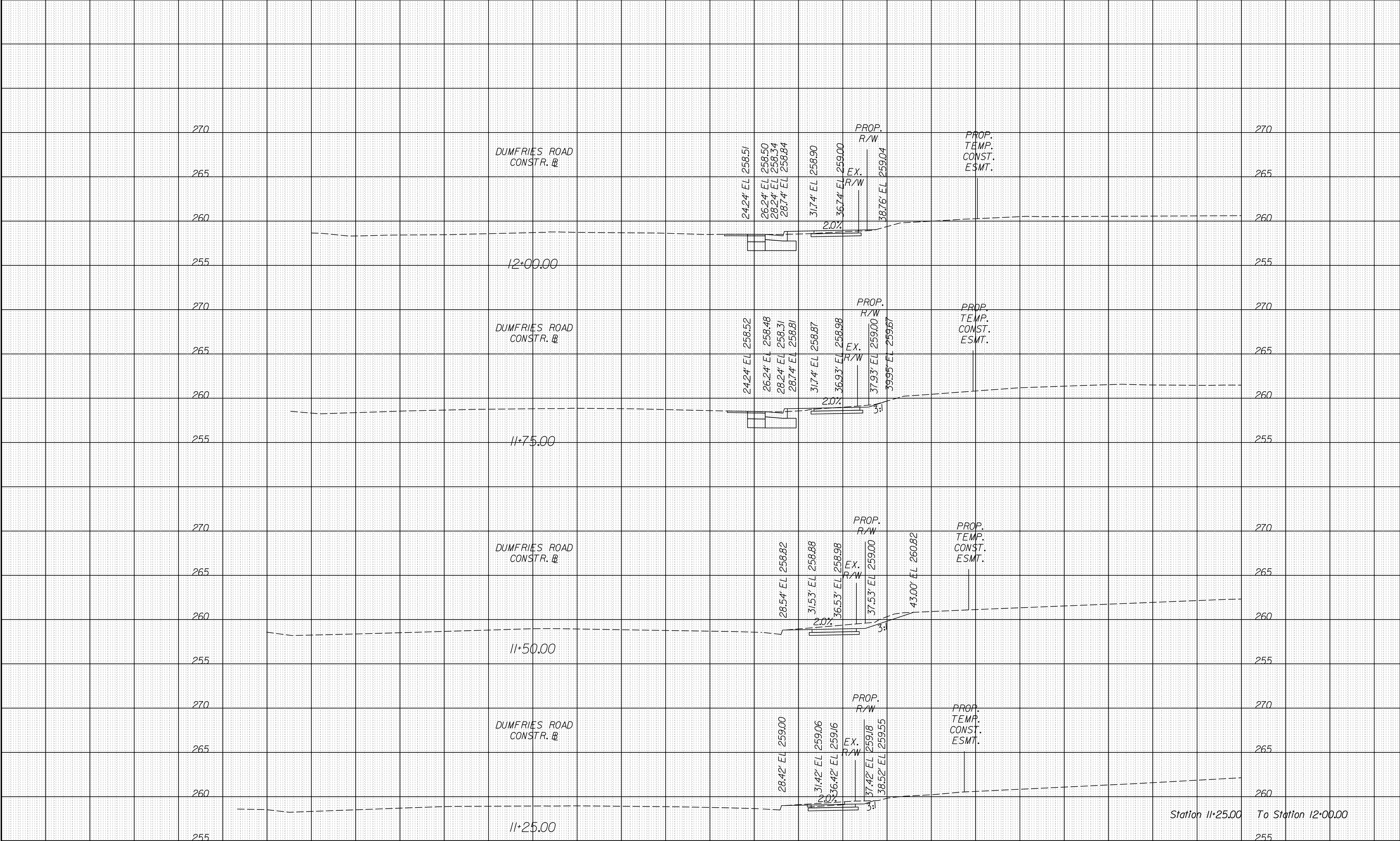
DUMFRIES ROAD SIDEWALK (T-093)

60% DESIGN SUBMITTAL



CROSS SECTIONS

SCALE 1 IN. = 5 FT



THESE PLANS ARE UNFINISHED  
AND UNAPPROVED AND ARE NOT  
TO BE USED FOR ANY TYPE  
OF CONSTRUCTION OR THE  
ACQUISITION OF RIGHT OF WAY.

DUMFRIES ROAD SIDEWALK (T-093)

60% DESIGN SUBMITTAL

SHEET  
X2  
SCALE 1"=5'

CROSS SECTIONS

MANASSAS PROJECT NO:	T-093
DATE OF PLAN ISSUANCE:	TBD
CONSULTANT PROJECT ID:	RK&K
DESIGNED BY:	DVK DATE: 11/10/23
DRAWN BY:	DVK DATE: 11/10/23
CHECKED BY:	MJK DATE: 11/10/23
APPROVED BY:	DATE:

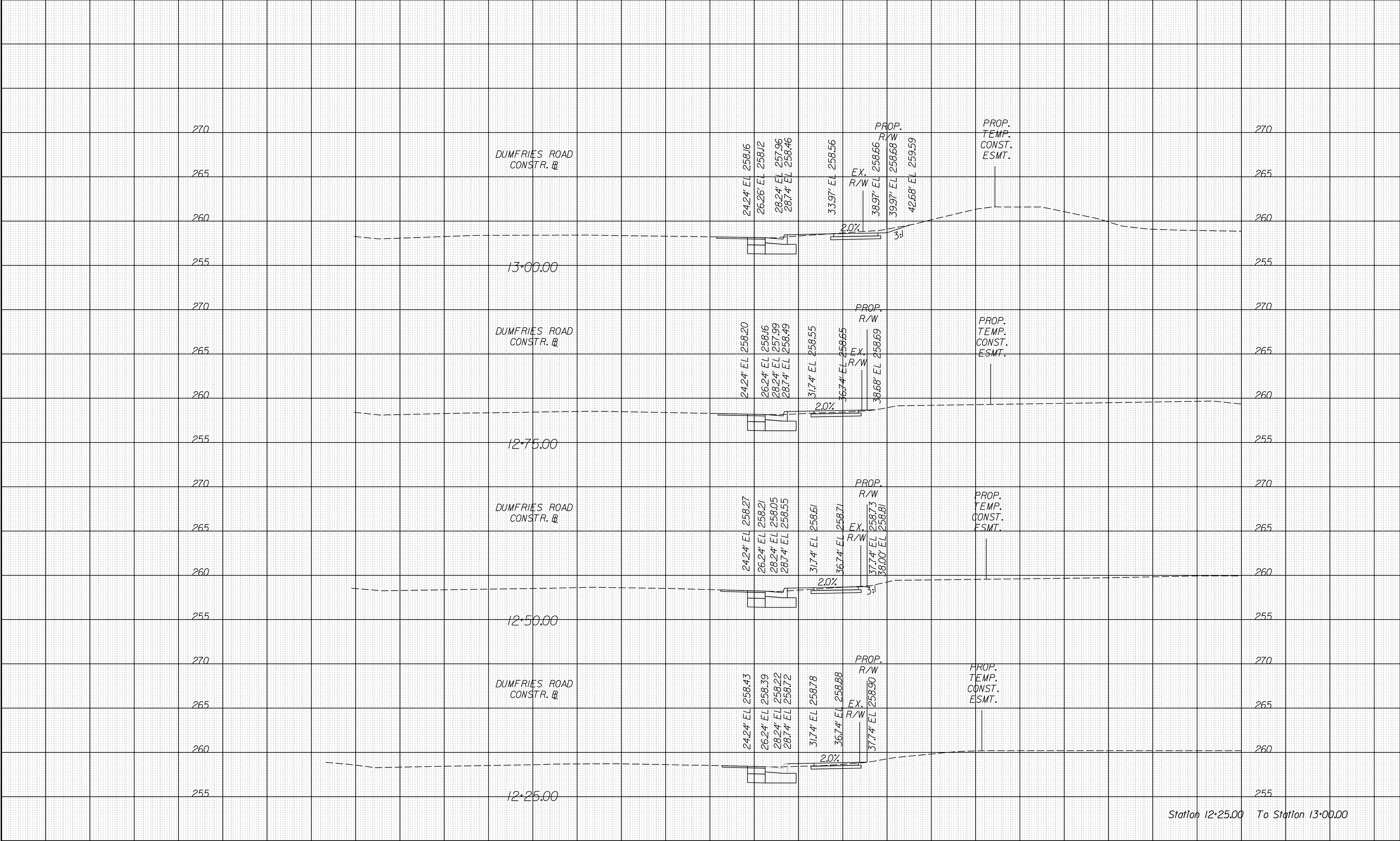
REVISIONS	
DATE	DESCRIPTION

CITY OF MANASSAS, VIRGINIA  
DEPARTMENT OF ENGINEERING  
8500 PUBLIC WORKS DR  
MANASSAS, VIRGINIA 20110



CROSS SECTIONS

SCALE 1 IN. = 5 FT



THESE PLANS ARE UNFINISHED  
AND UNAPPROVED AND ARE NOT  
TO BE USED FOR ANY TYPE  
OF CONSTRUCTION OR THE  
ACQUISITION OF RIGHT OF WAY.

CITY OF MANASSAS, VIRGINIA  
DEPARTMENT OF ENGINEERING  
8500 PUBLIC WORKS DR  
MANASSAS, VIRGINIA 20110

REVISIONS  
DATE  
BY  
DESCRIPTION

MANASSAS PROJECT NO: T-093  
DATE OF PLAN ISSUANCE: TBD  
CONSULTANT PROJECT ID: RK&K  
DESIGNED BY: DVK DATE: 11/10/23  
DRAWN BY: DVK DATE: 11/10/23  
CHECKED BY: MJK DATE: 11/10/23  
APPROVED BY: DATE:

CROSS SECTIONS

SHEET  
X3  
SCALE 1"=5'

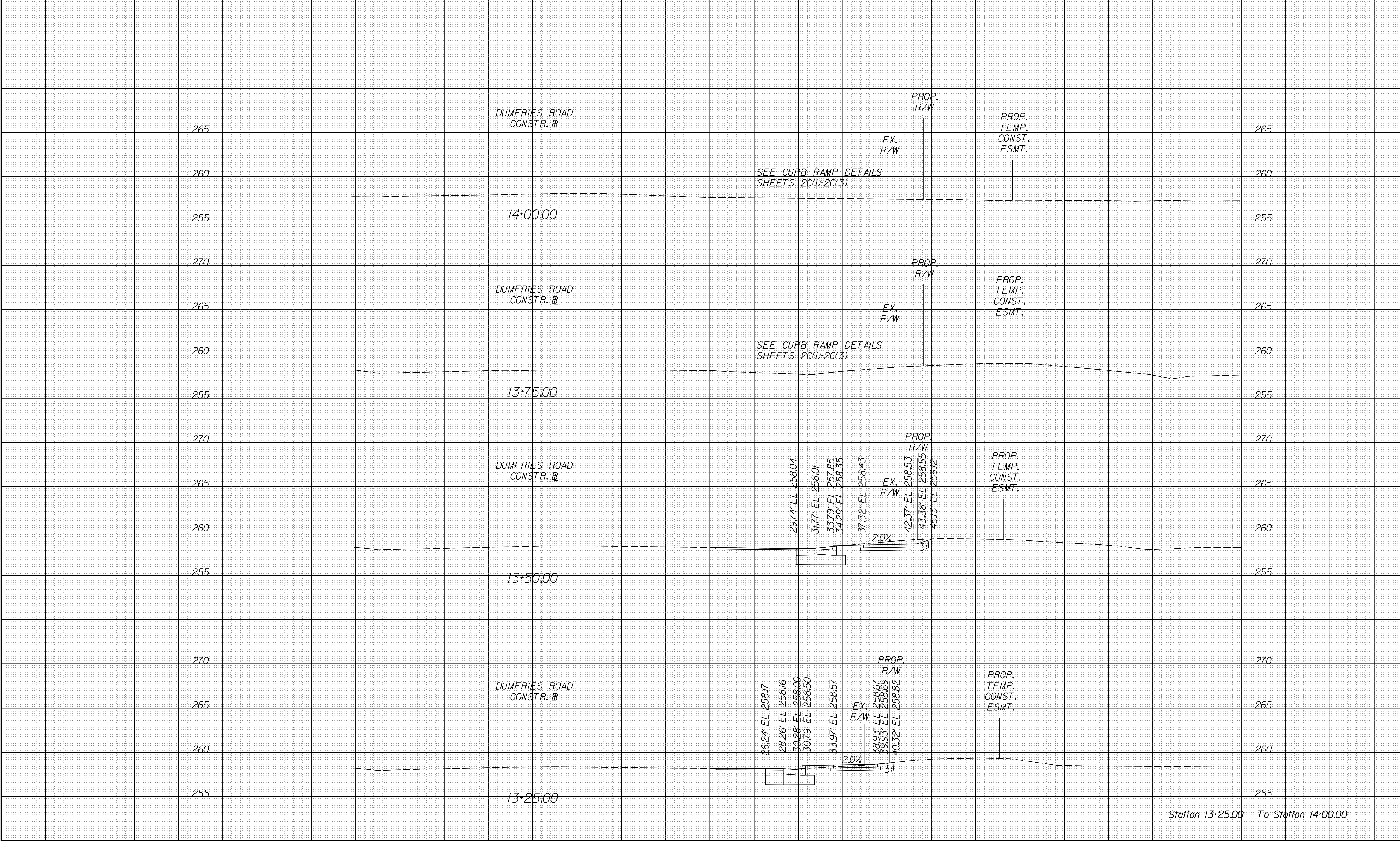
DUMFRIES ROAD SIDEWALK (T-093)

60% DESIGN SUBMITTAL



CROSS SECTIONS

SCALE 1 IN. = 5 FT

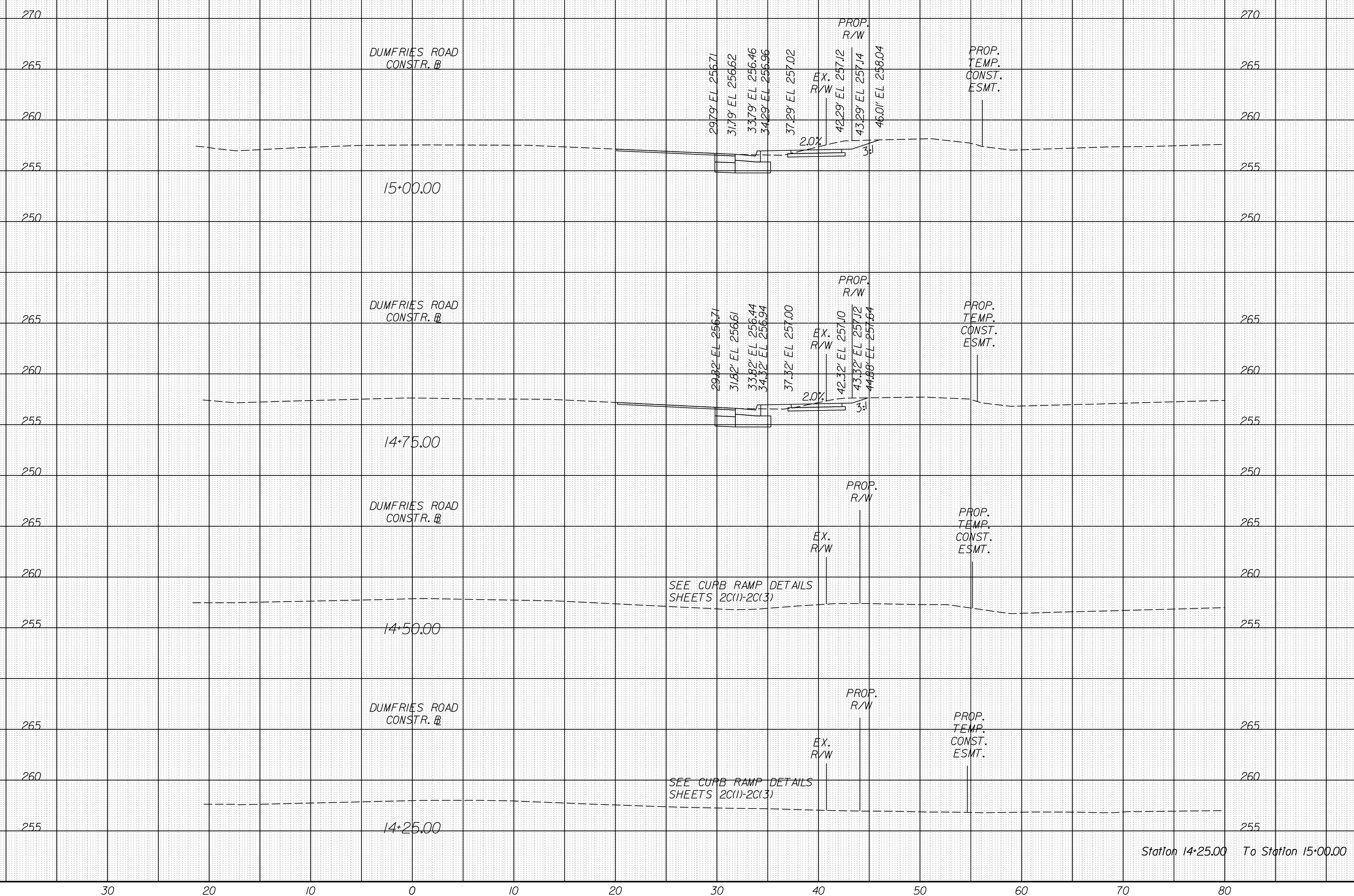


THESE PLANS ARE UNFINISHED  
AND UNAPPROVED AND ARE NOT  
TO BE USED FOR ANY TYPE  
OF CONSTRUCTION OR THE  
ACQUISITION OF RIGHT OF WAY.

60% DESIGN SUBMITTAL		CITY OF MANASSAS, VIRGINIA DEPARTMENT OF ENGINEERING 8500 PUBLIC WORKS DR MANASSAS, VIRGINIA 20110	
DUMFRIES ROAD SIDEWALK (T-093)		CROSS SECTIONS	
DATE		DATE	
BY		BY	
DESCRIPTION		DESCRIPTION	
MANASSAS PROJECT NO: T-093		DATE OF PLAN ISSUANCE: TBD	
DATE OF PLAN ISSUANCE: TBD		CONSULTANT PROJECT ID: RK&K	
DESIGNED BY: DWK		DATE: 11/10/23	
DRAWN BY: DWK		DATE: 11/10/23	
CHECKED BY: MJK		DATE: 11/10/23	
APPROVED BY: _____		DATE: _____	
SHEET		X4	
SCALE 1"=5'			



SCALE 1 IN. = 5 FT



Station 14+25.00 To Station 15+00.00

THESE PLANS ARE UNFINISHED  
AND UNAPPROVED AND ARE NOT  
TO BE USED FOR ANY TYPE  
OF CONSTRUCTION OR THE  
ACQUISITION OF RIGHT OF WAY.

60% DESIGN SUBMITTAL

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	5
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	---

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	5
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	---

DUMFRIES ROAD SIDEWALK (T-093)

CITY OF MANASSAS, VIRGINIA  
DEPARTMENT OF ENGINEERING  
8500 PUBLIC WORKS DR  
MANASSAS, VIRGINIA 20110

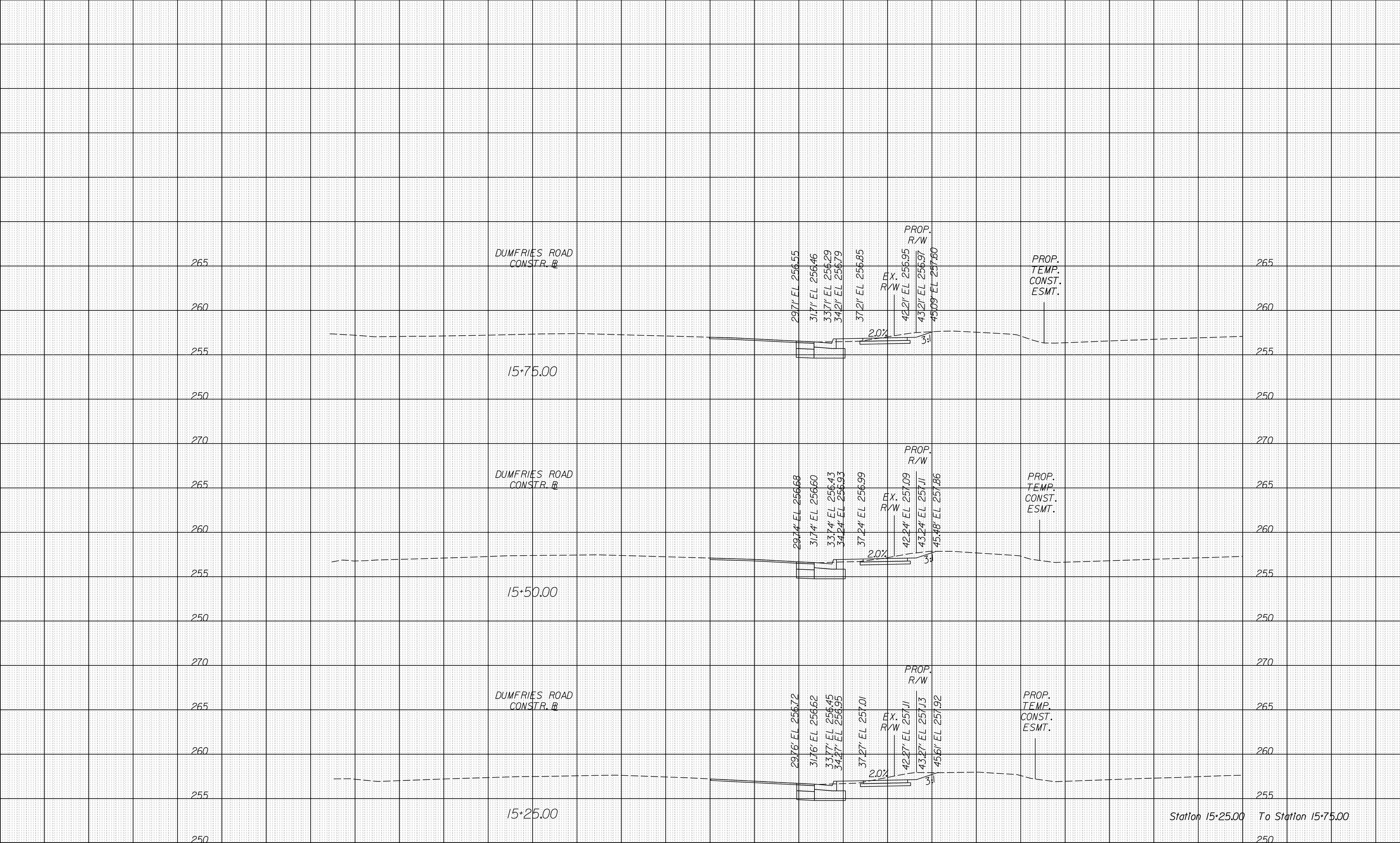
## CROSS SECTIONS

SHEET  
X5  
SCALE 1"=5'



CROSS SECTIONS

SCALE 1 IN. = 5 FT



THESE PLANS ARE UNFINISHED  
AND UNAPPROVED AND ARE NOT  
TO BE USED FOR ANY TYPE  
OF CONSTRUCTION OR THE  
ACQUISITION OF RIGHT OF WAY.

CITY OF MANASSAS, VIRGINIA  
DEPARTMENT OF ENGINEERING  
8500 PUBLIC WORKS DR  
MANASSAS, VIRGINIA 20110

DATE: \_\_\_\_\_  
BY: \_\_\_\_\_  
DESCRIPTION: \_\_\_\_\_

MANASSAS PROJECT NO: T-093  
DATE OF PLAN ISSUANCE: TBD  
CONSULTANT PROJECT ID: RK&K  
DESIGNED BY: DWK DATE: 11/10/23  
DRAWN BY: DWK DATE: 11/10/23  
CHECKED BY: MJK DATE: 11/10/23  
APPROVED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

CROSS SECTIONS

SHEET  
X6  
SCALE 1"=5'

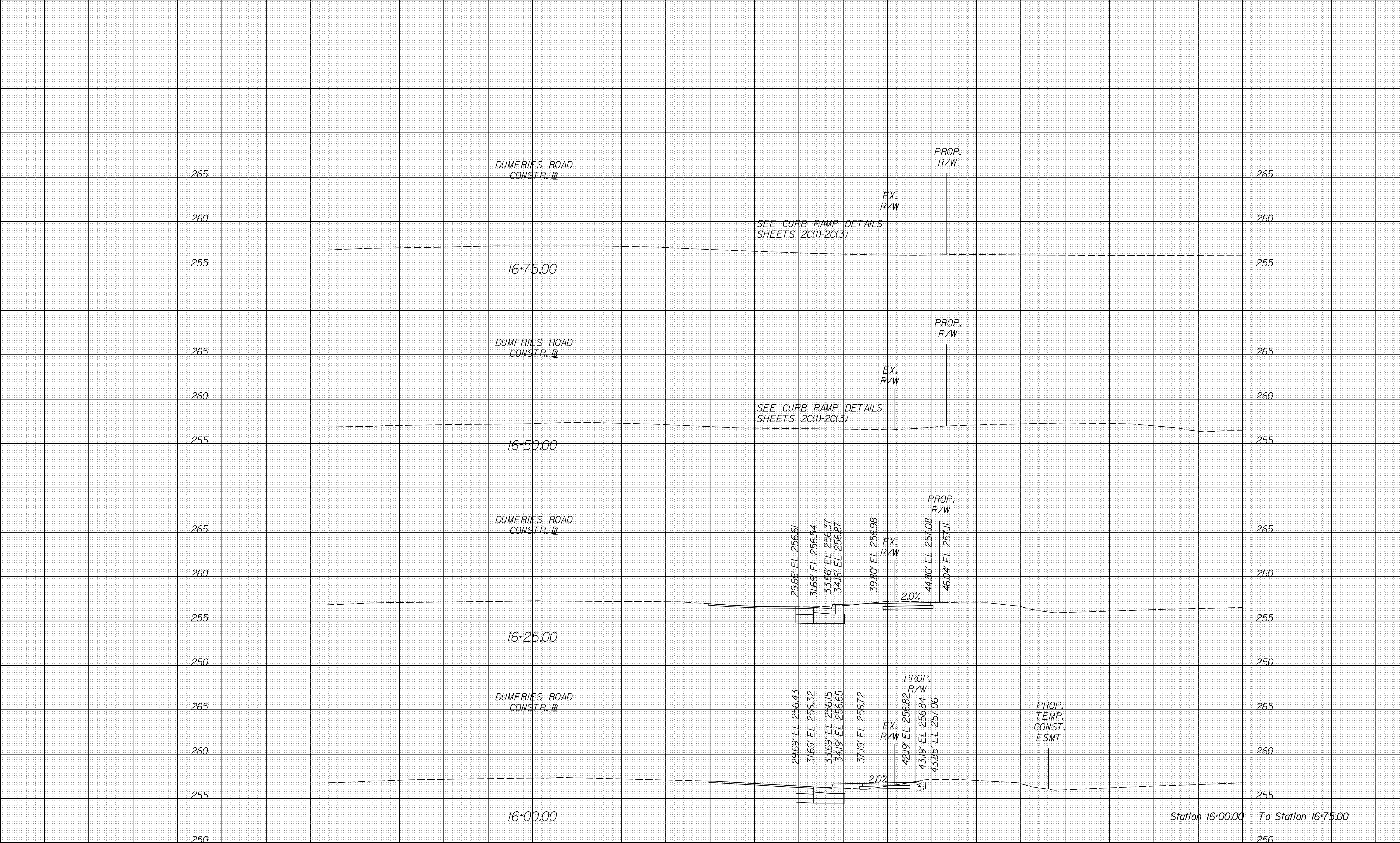
DUMFRIES ROAD SIDEWALK (T-093)

60% DESIGN SUBMITTAL



CROSS SECTIONS

SCALE 1 IN. = 5 FT



THESE PLANS ARE UNFINISHED  
AND UNAPPROVED AND ARE NOT  
TO BE USED FOR ANY TYPE  
OF CONSTRUCTION OR THE  
ACQUISITION OF RIGHT OF WAY.

CITY OF MANASSAS, VIRGINIA  
DEPARTMENT OF ENGINEERING  
8500 PUBLIC WORKS DR  
MANASSAS, VIRGINIA 20110

DATE: \_\_\_\_\_  
BY: \_\_\_\_\_  
DESCRIPTION: \_\_\_\_\_

MANASSAS PROJECT NO: T-093  
DATE OF PLAN ISSUANCE: TBD  
CONSULTANT PROJECT ID: RK&K  
DESIGNED BY: DWK DATE: 11/10/23  
DRAWN BY: DWK DATE: 11/10/23  
CHECKED BY: MJK DATE: 11/10/23  
APPROVED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

CROSS SECTIONS

SHEET  
X7  
SCALE 1"=5'

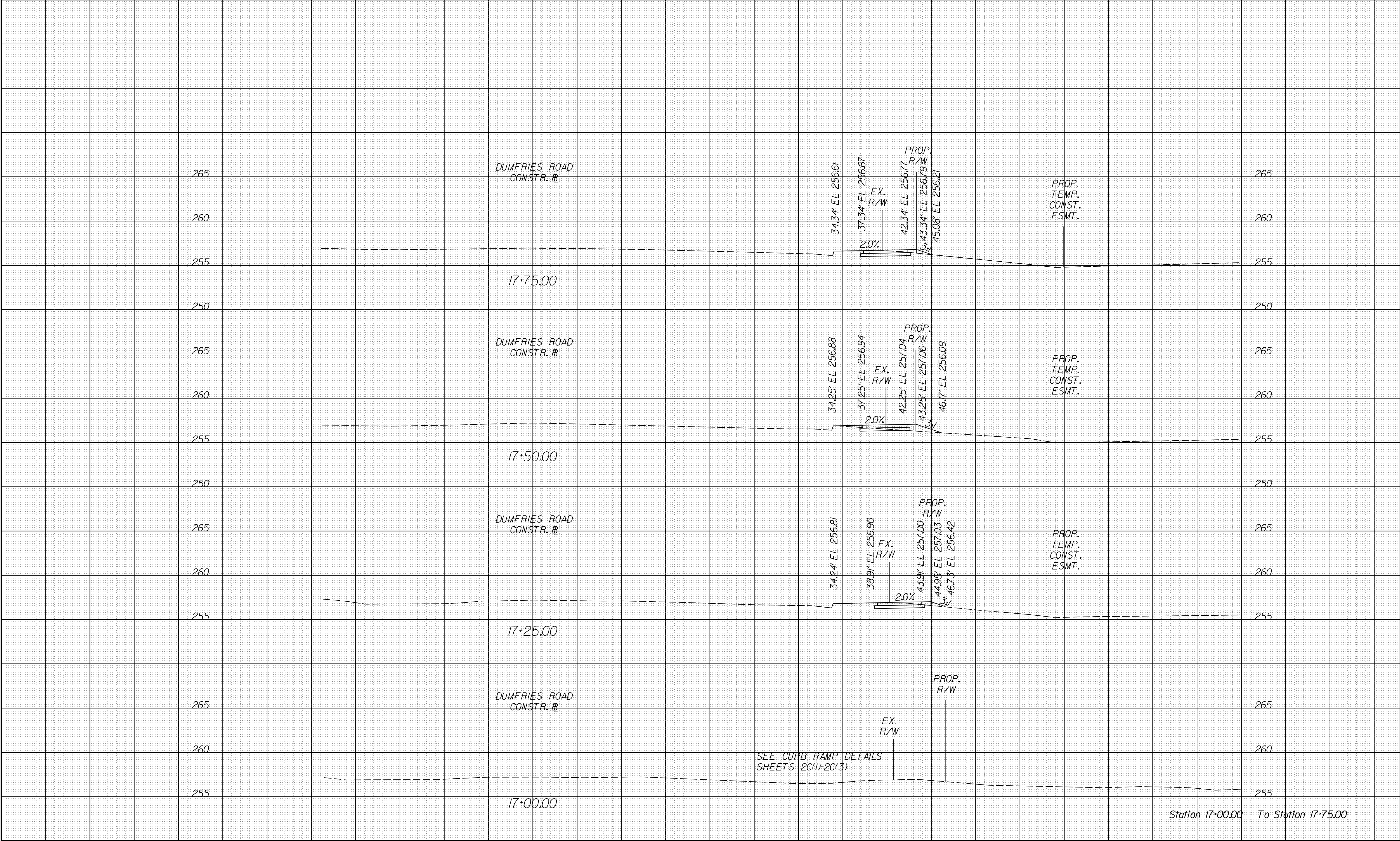
DUMFRIES ROAD SIDEWALK (T-093)

60% DESIGN SUBMITTAL



CROSS SECTIONS

SCALE 1 IN. = 5 FT



THESE PLANS ARE UNFINISHED  
AND UNAPPROVED AND ARE NOT  
TO BE USED FOR ANY TYPE  
OF CONSTRUCTION OR THE  
ACQUISITION OF RIGHT OF WAY.

CITY OF MANASSAS, VIRGINIA  
DEPARTMENT OF ENGINEERING  
8500 PUBLIC WORKS DR  
MANASSAS, VIRGINIA 20110

REVISIONS  
DATE  
BY  
DESCRIPTION

MANASSAS PROJECT NO: T-093  
DATE OF PLAN ISSUANCE: TBD  
CONSULTANT PROJECT ID: RK&K  
DESIGNED BY: DVK DATE: 11/10/23  
DRAWN BY: DVK DATE: 11/10/23  
CHECKED BY: MJK DATE: 11/10/23  
APPROVED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

CROSS SECTIONS

SHEET  
X8  
SCALE 1"=5'

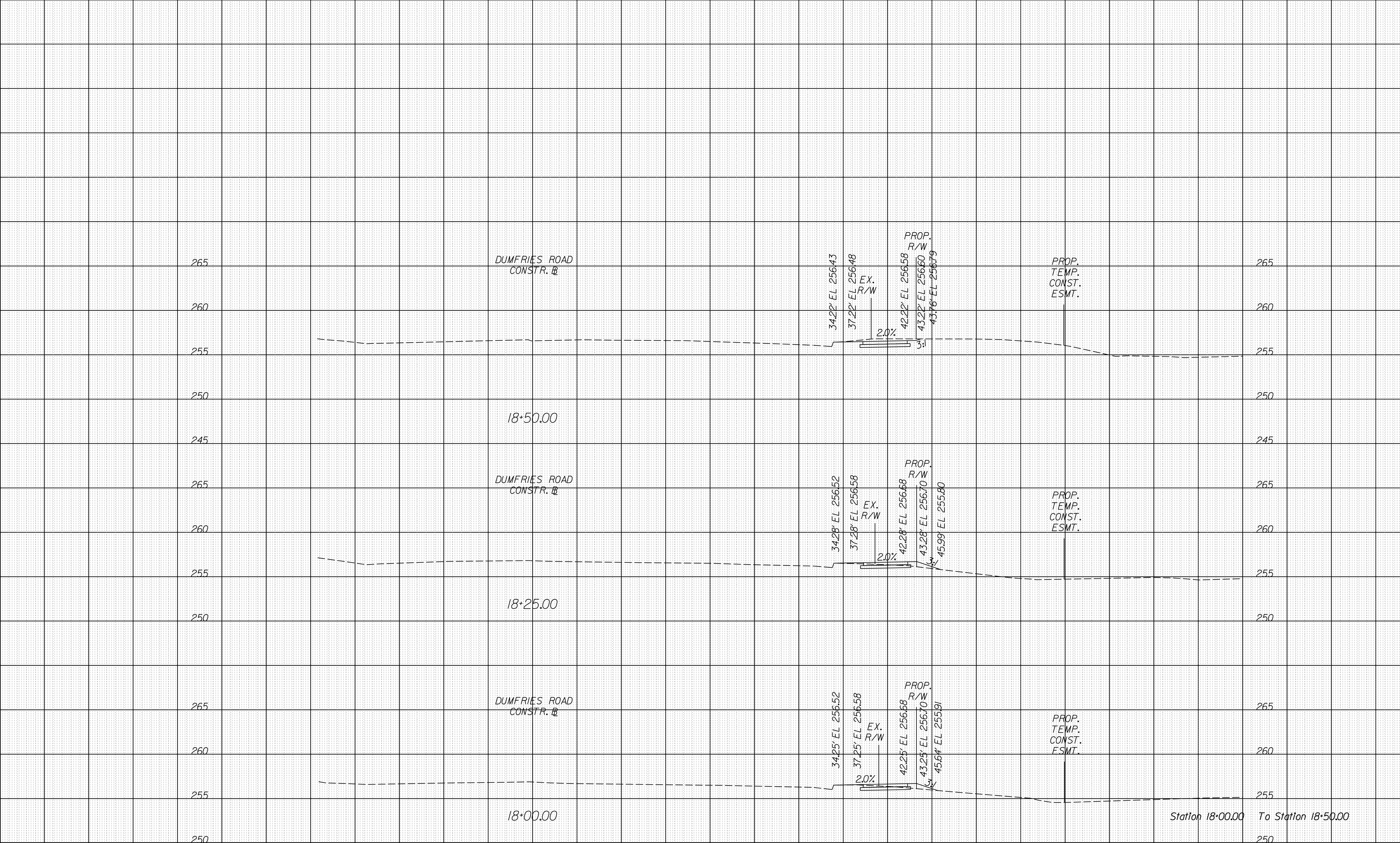
DUMFRIES ROAD SIDEWALK (T-093)

60% DESIGN SUBMITTAL



CROSS SECTIONS

SCALE 1 IN. = 5 FT



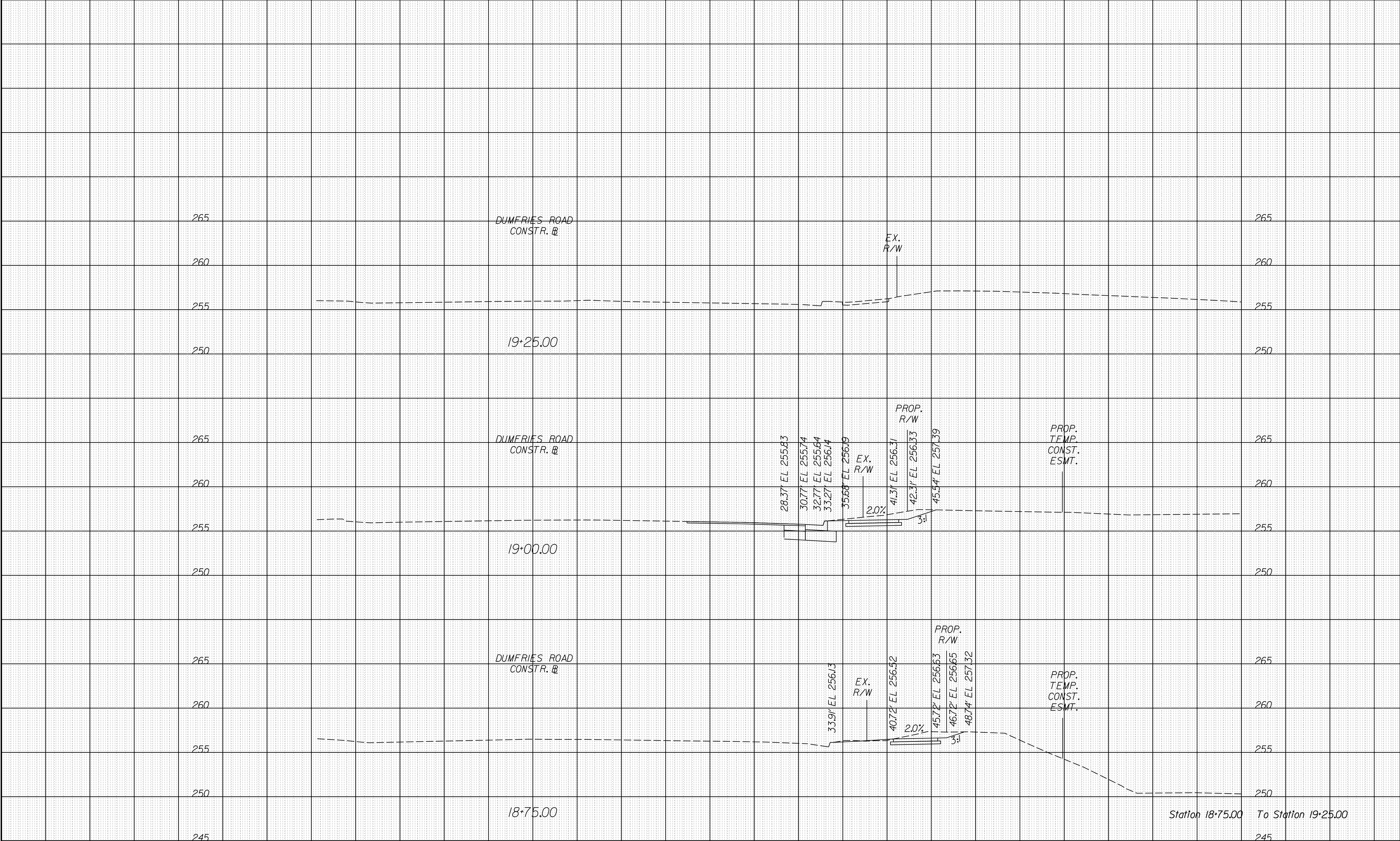
THESE PLANS ARE UNFINISHED  
AND UNAPPROVED AND ARE NOT  
TO BE USED FOR ANY TYPE  
OF CONSTRUCTION OR THE  
ACQUISITION OF RIGHT OF WAY.

60% DESIGN SUBMITTAL		CITY OF MANASSAS, VIRGINIA DEPARTMENT OF ENGINEERING 8500 PUBLIC WORKS DR MANASSAS, VIRGINIA 20110	
CROSS SECTIONS		REVISIONS	
DATE		BY	
DESCRIPTION			
MANASSAS PROJECT NO: T-093		DATE OF PLAN ISSUANCE: TBD	
CONSULTANT PROJECT ID: RK&K		DESIGNED BY: DWK DATE: 11/10/23	
DRAWN BY: DWK DATE: 11/10/23		CHECKED BY: MJK DATE: 11/10/23	
APPROVED BY: _____ DATE: _____			
SHEET X9		SCALE 1"=5'	



CROSS SECTIONS

SCALE 1 IN. = 5 FT



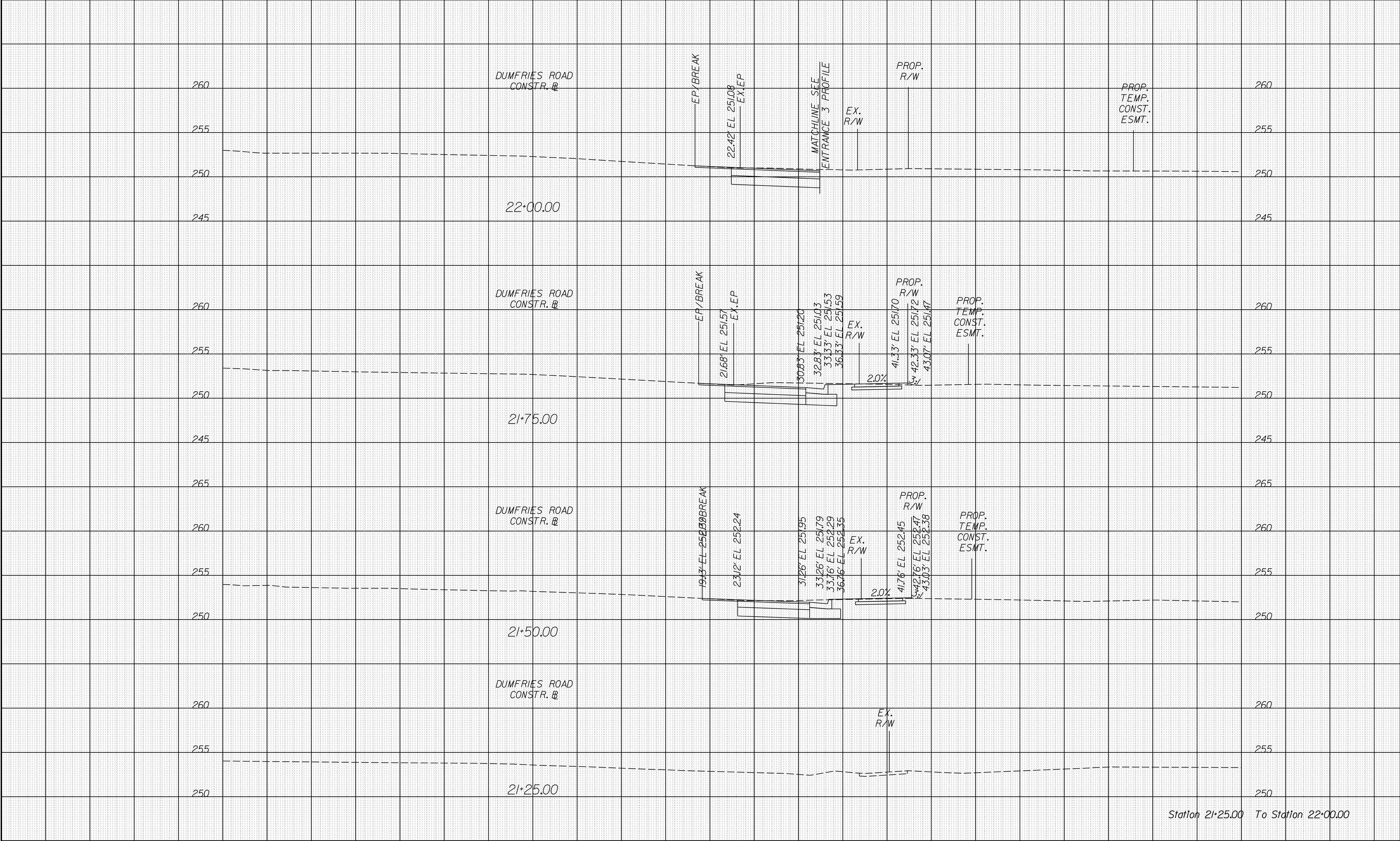
THESE PLANS ARE UNFINISHED  
AND UNAPPROVED AND ARE NOT  
TO BE USED FOR ANY TYPE  
OF CONSTRUCTION OR THE  
ACQUISITION OF RIGHT OF WAY.

60% DESIGN SUBMITTAL		CITY OF MANASSAS, VIRGINIA DEPARTMENT OF ENGINEERING 8500 PUBLIC WORKS DR MANASSAS, VIRGINIA 20110	
REVISIONS		MANASSAS PROJECT NO: T-093	
DATE	BY	DESCRIPTION	DATE
CROSS SECTIONS		SHEET X10 SCALE 1"=5'	



CROSS SECTIONS

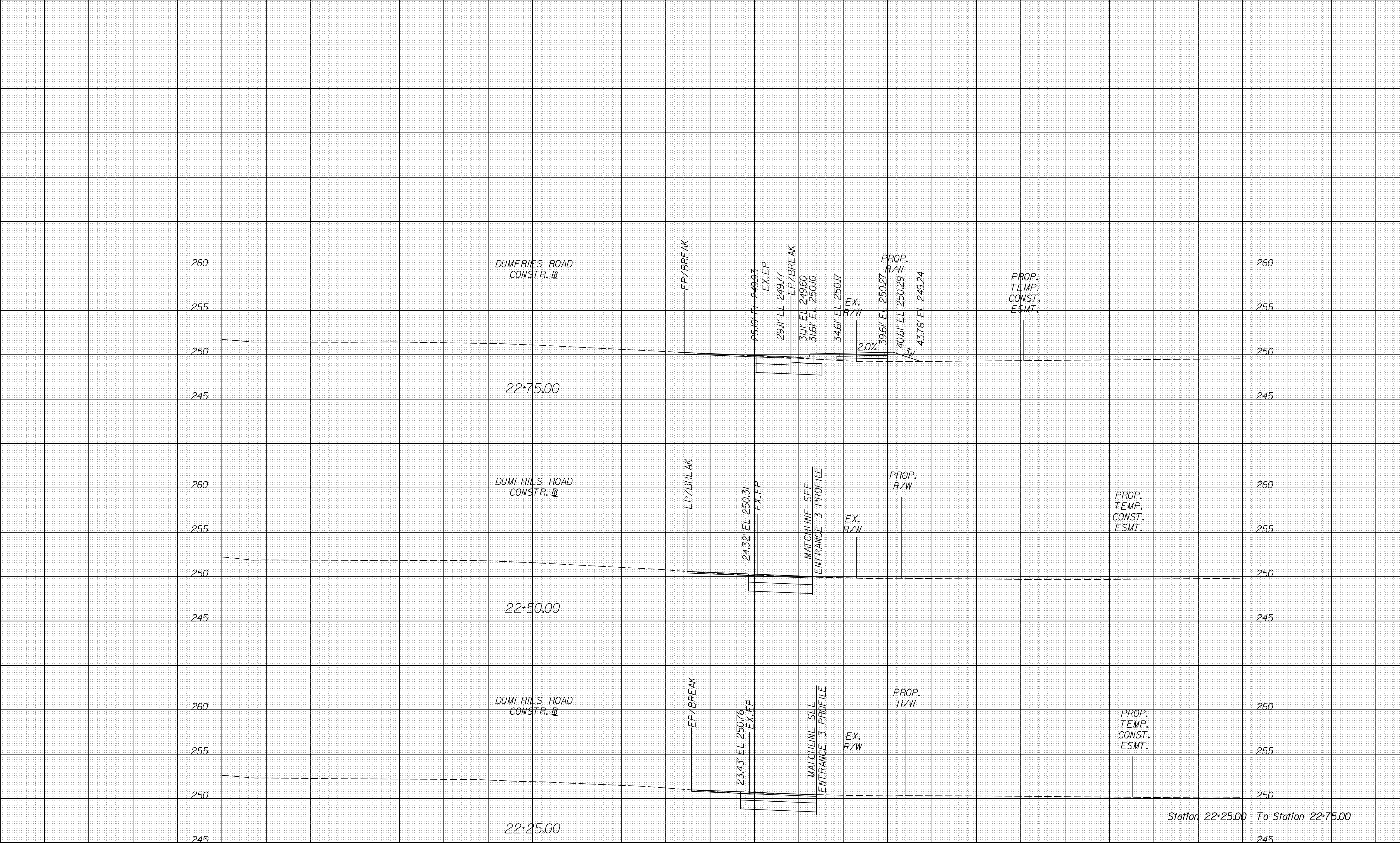
SCALE 1 IN. = 5 FT





CROSS SECTIONS

SCALE 1 IN. = 5 FT



THESE PLANS ARE UNFINISHED  
AND UNAPPROVED AND ARE NOT  
TO BE USED FOR ANY TYPE  
OF CONSTRUCTION OR THE  
ACQUISITION OF RIGHT OF WAY.

CITY OF MANASSAS, VIRGINIA  
DEPARTMENT OF ENGINEERING  
8500 PUBLIC WORKS DR  
MANASSAS, VIRGINIA 20110

60% DESIGN SUBMITTAL

MANASSAS PROJECT NO: T-093

DATE OF PLAN ISSUANCE: TBD

CONSULTANT PROJECT ID: RK&K

DESIGNED BY: DVK DATE: 11/10/23

DRAWN BY: DVK DATE: 11/10/23

CHECKED BY: MJK DATE: 11/10/23

APPROVED BY: \_\_\_\_\_ DATE: \_\_\_\_\_

CROSS SECTIONS

SHEET  
X12  
SCALE 1"=5'

DUMFRIES ROAD SIDEWALK (T-093)

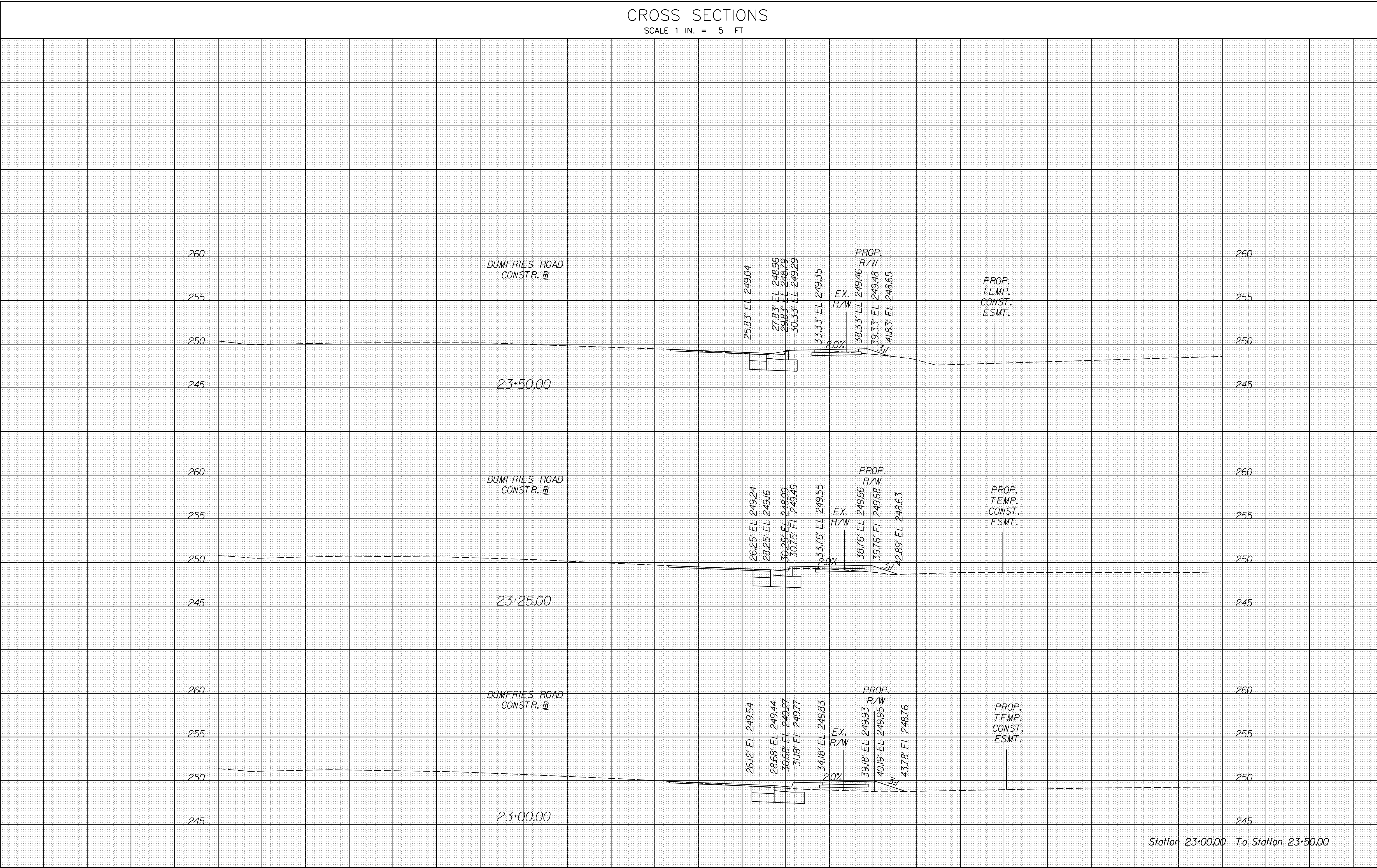
REVISIONS

DATE BY DESCRIPTION



CROSS SECTIONS

SCALE 1 IN. = 5 FT



Station 23+00.00 To Station 23+50.00

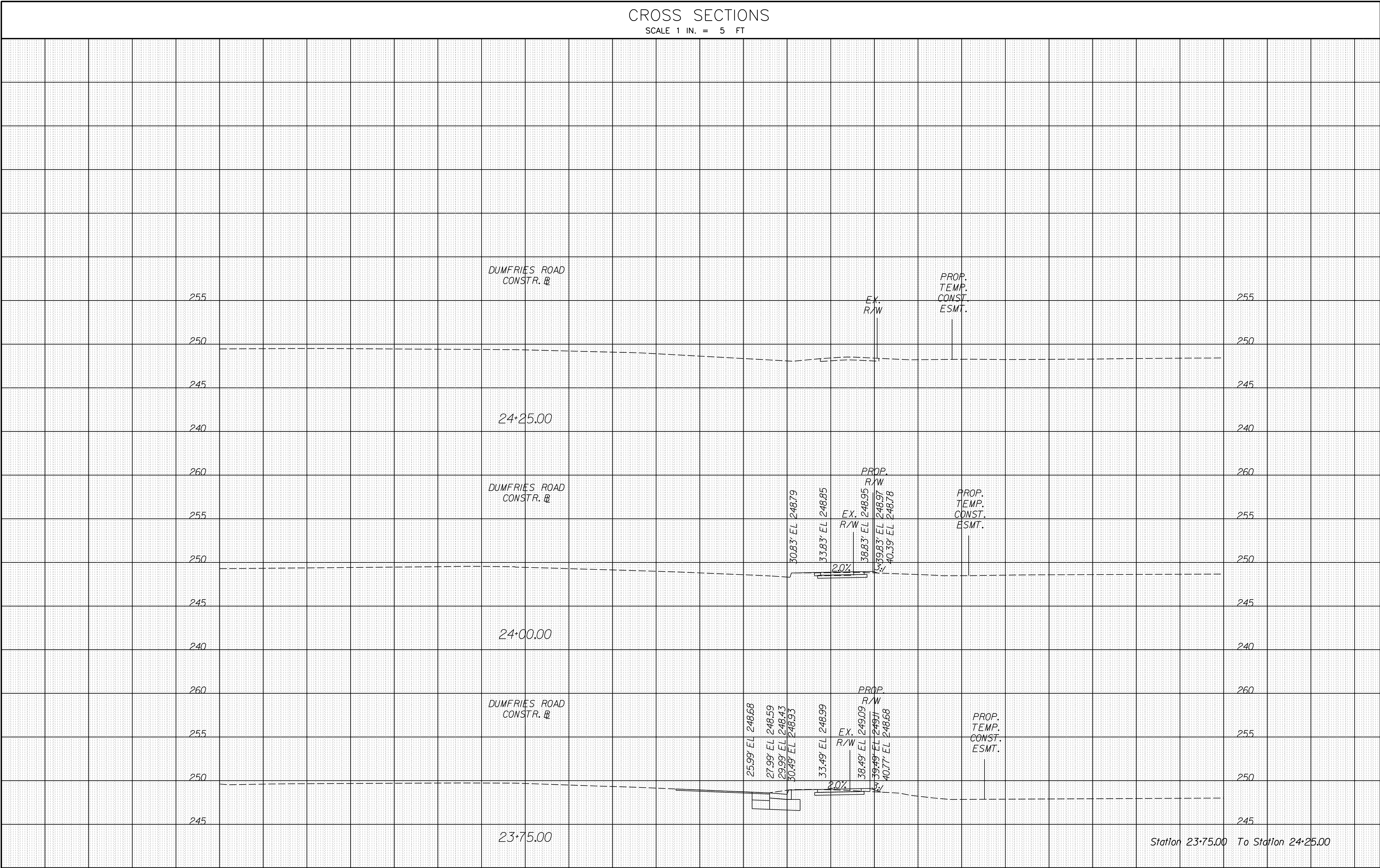
THESE PLANS ARE UNFINISHED  
AND UNAPPROVED AND ARE NOT  
TO BE USED FOR ANY TYPE  
OF CONSTRUCTION OR THE  
ACQUISITION OF RIGHT OF WAY.

60% DESIGN SUBMITTAL		CITY OF MANASSAS, VIRGINIA DEPARTMENT OF ENGINEERING 8500 PUBLIC WORKS DR MANASSAS, VIRGINIA 20110	
DUMFRIES ROAD SIDEWALK (T-093)		CROSS SECTIONS	
DATE		DATE	
BY		BY	
DESCRIPTION		DESCRIPTION	
T-093		T-093	
DATE OF PLAN ISSUANCE:		DATE OF PLAN ISSUANCE:	
CONSULTANT PROJECT ID:		CONSULTANT PROJECT ID:	
DESIGNED BY:		DESIGNED BY:	
DRAWN BY:		DRAWN BY:	
CHECKED BY:		CHECKED BY:	
APPROVED BY:		APPROVED BY:	
SHEET		SHEET	
X13		X13	
SCALE 1"=5'		SCALE 1"=5'	



CROSS SECTIONS

SCALE 1 IN. = 5 FT



THESE PLANS ARE UNFINISHED  
AND UNAPPROVED AND ARE NOT  
TO BE USED FOR ANY TYPE  
OF CONSTRUCTION OR THE  
ACQUISITION OF RIGHT OF WAY.

DUMFRIES ROAD SIDEWALK (T-093)	60% DESIGN SUBMITTAL									
	CITY OF MANASSAS, VIRGINIA DEPARTMENT OF ENGINEERING 8500 PUBLIC WORKS DR MANASSAS, VIRGINIA 20110									
	REVISIONS DATE BY DESCRIPTION									
MANASSAS PROJECT NO: T-093		DATE OF PLAN ISSUANCE: TBD	CONSULTANT PROJECT ID: RK&K	DESIGNED BY: DWK	DATE: 11/10/23	DRAWN BY: DWK	DATE: 11/10/23	CHECKED BY: MJK	DATE: 11/10/23	APPROVED BY: _____
CROSS SECTIONS		SHEET X14 SCALE 1"=5'								